liftroller® wall

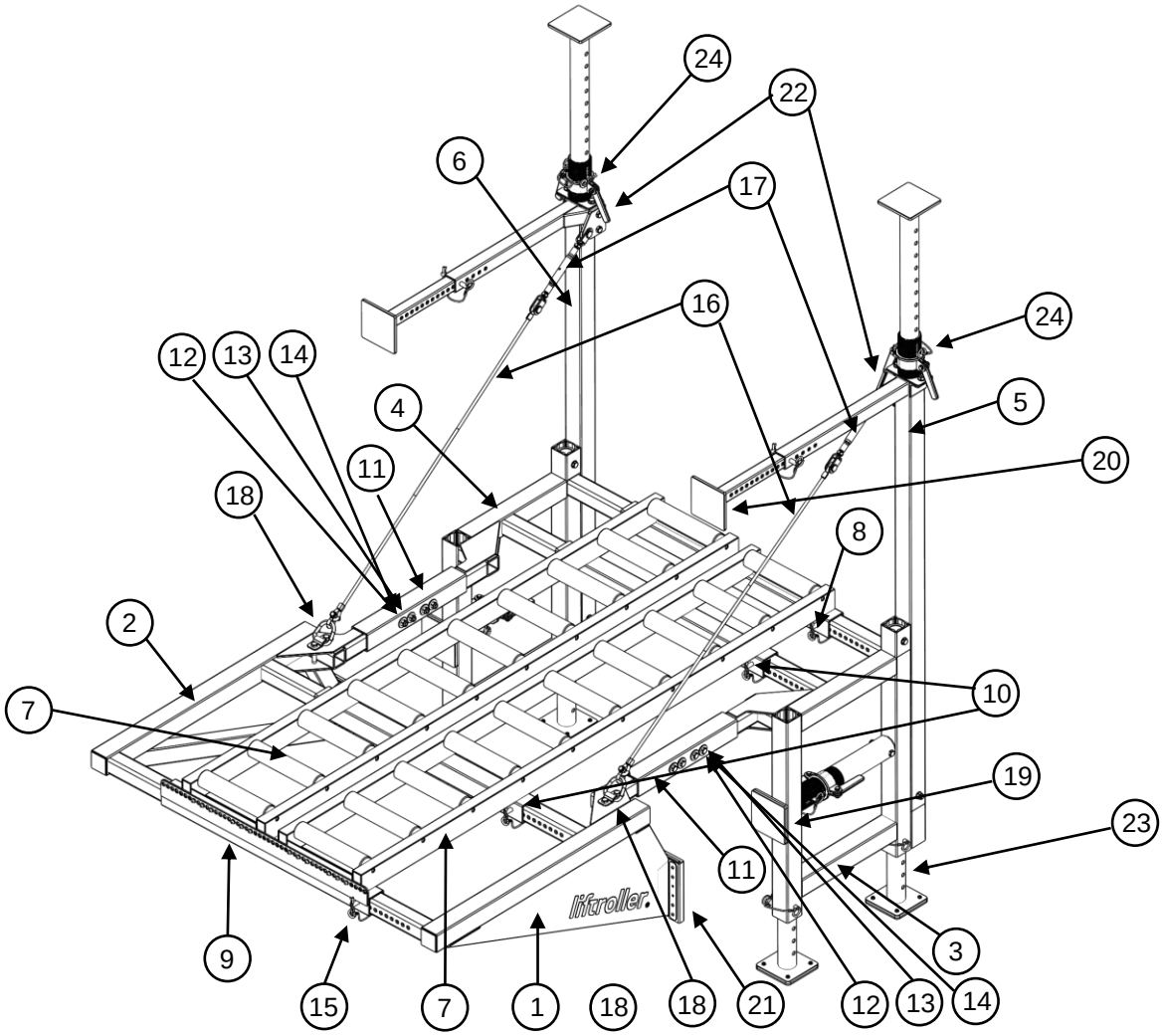
User manual

EN User manual

Version 1 - 2023

INDEX

PARTS OVERVIEW



NO.	EXPLANATION	QUANTITY
1	Left frame outer	1
2	Right frame outer	1
3	Left frame inner	1
4	Right frame inner	1
5	Left ceiling support	1
6	Right ceiling support	1
7	Roller table	2
8	Lateral Beam Inner	1
9	Lateral Beam Outer	1
10	Lateral Beam Centre	2
11	Middle Beam	2
12	Washer M12	16

NO.	EXPLANATION	QUANTITY
13	Nut M12	8
14	Hex bolt M12 x 90	8
15	Quick release bolt	16
16	Steel wire	2
17	Turnbuckle	2
18	D-ring	2
19	Lower wall support	2
20	Upper Wall support	2
21	Outer wall support	2
22	Inner wire connector	2
23	Table leg	4
24	Vise Handle	2

Note: In addition to above stated parts; 1 pcs Pulling hook is delivered with each Liftroller Wall.
The Pulling hook is used for help guiding the live load on to the roller table.

SAFETY INSTRUCTIONS

Please read the entire user manual before use.

The Liftroller Wall is designed to reduce heavy lifting for the workers at a construction site by enable a safe conveyor system from the outside to the inside of a building. Everyone that shall use it must read this manual or be trained by a supervisor.

- Maximum capacity is 1,200 kg. This limit must not be exceeded.
- Make sure the building construction can withstand the forces that occurs
- Check that the wall clamps, ceiling supports and wires are tightened before use.
- Note that there is a risk of crushing fingers, especially when pulling the locking pins out of the ceiling supports. Hold the upper part of the roof support firmly while pulling out the locking pin to prevent the support from descending uncontrollably.
- Ensure that no one enters the space underneath the load.
- If the building has timber joists, establish their direction and place a perpendicular reinforcement on them that can withstand the load if necessary.
- Do not modify the product.
- The Lateral Beams on the Liftroller Wall must overlap by at least 100 mm. This maximum limit is visible on the product. To not exceed this limit, always use quick release pin with R-clip on left side of Lateral Beam, and see to that max limit mark (orange colour or “max” mark) is not visible on right side of Lateral Beams.
- Do not step on the rollers because of fall risk.
- Do not climb out of the window opening in order to grab hold of the load.
- Ensure that the load’s centre of balance is as close to the facade as possible before releasing the slings and bringing the live load to a rest on the Liftroller Wall. No more than 1/3 of the load should protrude beyond the roller tables on the outside.
- Take care not to crush body parts between the Liftroller and the load.
- Ensure that the roller tables slope gently towards the inside of the building. You can achieve this by tightening the wire. Tighten the wire too much and it may result in an too excessive incline. Check before use.

SAFETY INSTRUCTIONS

- Before the load is unhooked from the cranes lifting straps, be sure to have another Liftroller product ready to receive the rolling load. This can be a Liftroller Table with mechanical stopper in the end to prevent the load to roll off the roller table inside the room. Or place a Liftroller Wagon or E Wagon on the inside and follow the chosen products safety instructions before rolling the load further.

- Ensure that the height of the roller tables on the various Liftroller products corresponds in height before moving a load from one to the other. Check that the roller brakes have been disengaged before moving the load from Liftroller Wall to the other Liftroller product, if such lock is present on the product. Remember to lock the rollers on the device before moving the product. This is described in the user manual of the chosen device.

- The Liftroller Wall is not an approved scaffolding device.

- Never leave a load unsecured on the Liftroller Wall, as the rollers offer little resistance and could put the load in motion as the roller tables have an incline.

- Use personal safety equipment according to the rules on your construction site. We recommend at least safety shoes, glows and helmet. In situations where window sill is low and there is a fall risk, use safety harness. All safety equipment must be used according to the various manufacturers instructions.

- It is possible for one person to do the assembly alone using the right technique, however we recommend to use at least two persons to avoid back injuries.

Ensure that you have read, understood and can adhere to all the safety instructions and warnings before using the Liftroller Wall. Failing to comply with the above can result in damage to the product and/or personal injury.

TECHNICAL DATA

	Available models		
	Narrow	**Standard**	**Extended**
Minimum window width *	900 mm	1200 mm	1200 mm
Maximum width loading area **	990 mm	1550 mm	1550 mm
Maximum wall thickness	500 mm	500 mm	800 mm
Minimum ceiling height	2150 mm	2150 mm	2950 mm
Maximum ceiling height	3900 mm	3900 mm	4700 mm
Minimum height roller table	930 mm	930 mm	930 mm
Maximum height roller table	1225 mm	1225 mm	1225 mm
Maximum parapet height	1050 mm	1050 mm	1050 mm
Tare weight total***	177 kg	187 kg	197 kg
Max. load capacity (WLL)	1200 kg	1200 kg	1200 kg

Do you need other sizes?
Parts from each of the models can be combined to fit your needs. The values stated above may therefore deviate depending on the combinations made. Contact your local Liftroller dealer for more info if above stated sizes does not fit your needs.

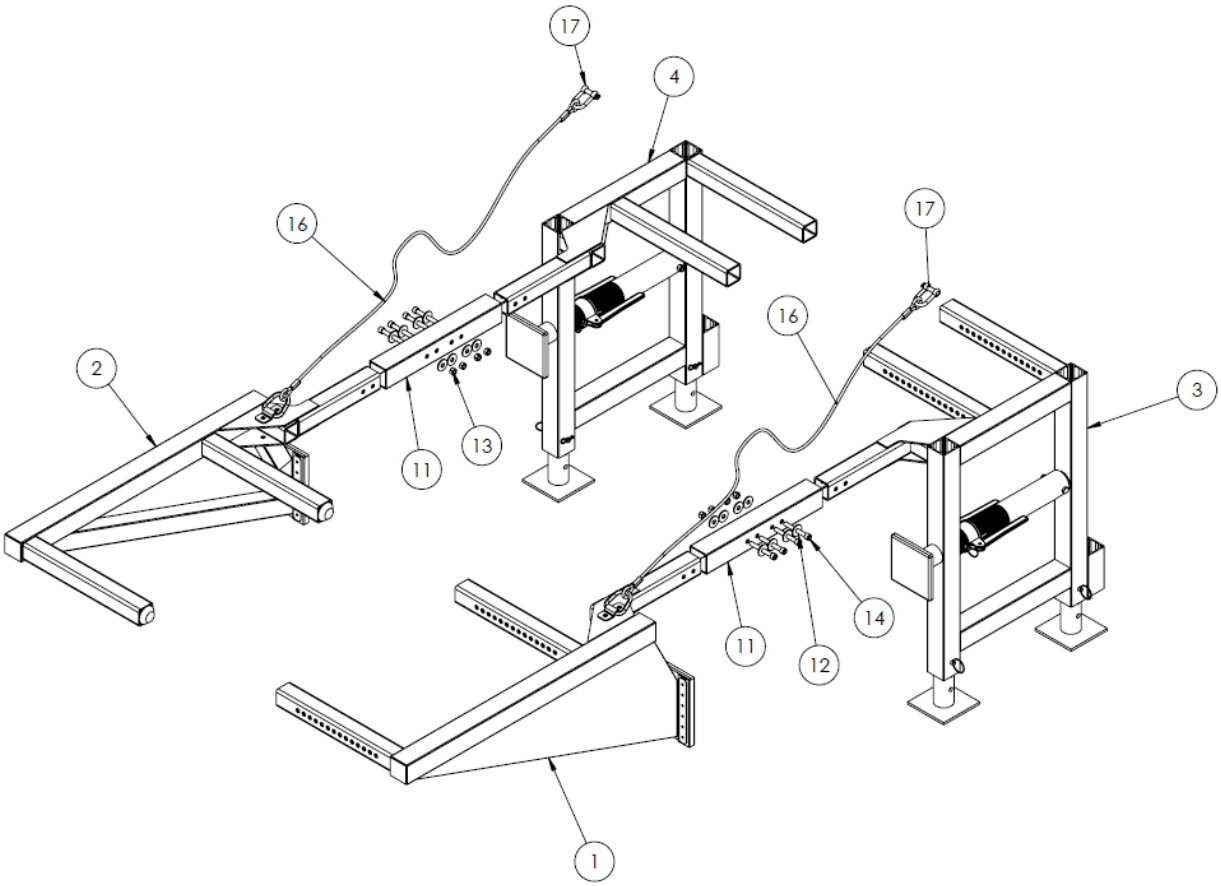
* Adjustable width to fit window size.
** Fully extended width between the wires.
*** Easily disassembled into manageable parts, no tools needed.

(For windows wider than 1700 mm, contact your local Liftroller Dealer for advice on how make **on site adaptions**. See also examples of this on page 21-24 in this manual)

HANDLING

The outer and inner part can be carried without disassemble the middle beam. This saves time, and you can skip the process described on page 8.

INSTALLATION MANUAL

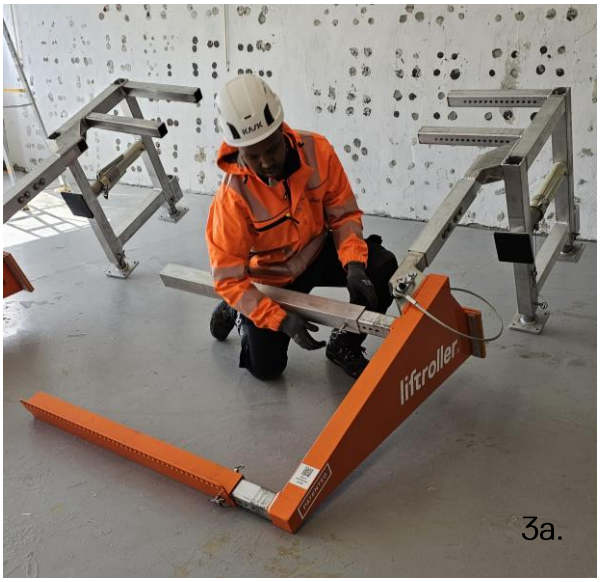


The left frame (1 and 3) and right frame (2 and 4) of the Liftroller Wall can be separated at the Middle Beam(11). This allows all the parts to be carried by one person alone since no part is heavier than 25 kg. Remember to tighten the bolts properly when reattaching the frames. Carried by two people? Keep the Middle Beam connected to save time in assembly.

ASSEMBLY:

1. Assemble Middle Beam
   If needed to disassemble the outer and the inner frame: Use a 19 mm ratchet and a 19 mm spanner, Use washers on both the bolt head and nut side and see to that all eight bolts and nuts are in place and tightened before use. NB! If tightened to hard the threads might be damaged.

INSTALLATION MANUAL



3a.

2. Measure the width of the façade opening you are going to use.

3. Place the left frame on the floor like shown in the picture 3a.

4. Slide on the four Lateral Beams, starting with the orange one. Lock them in position by inserting the quick release bolts into the holes on the left frame. Remember to insert the locking split pins. Set the position according to the width of the façade opening. To help decide which hole suits best, see hole overview table:

NB! This is just an indication. The optimal hole is found by doing a test assembly in the window opening. See page 12 for where to measure Liftrollers widest point.

Standard model		Narrow model	
Facade opening (mm.)	Hole no.	Facade opening (mm.)	Hole no.
1200	1	900	1
1240	2	940	2
1270	3	970	3
1290	4	990	4
1310	5	1010	5
1340	6	1040	6
1370	7	1070	7
1400	8	1100	8
1430	9	1130	9
1460	10	1160	10
1490	11	1190	11
1520	12	1220	11
1550	13	1250	11
1610	14	1310	11

INSTALLATION MANUAL

4a.


4b.

Orientation of the four Lateral Beams:

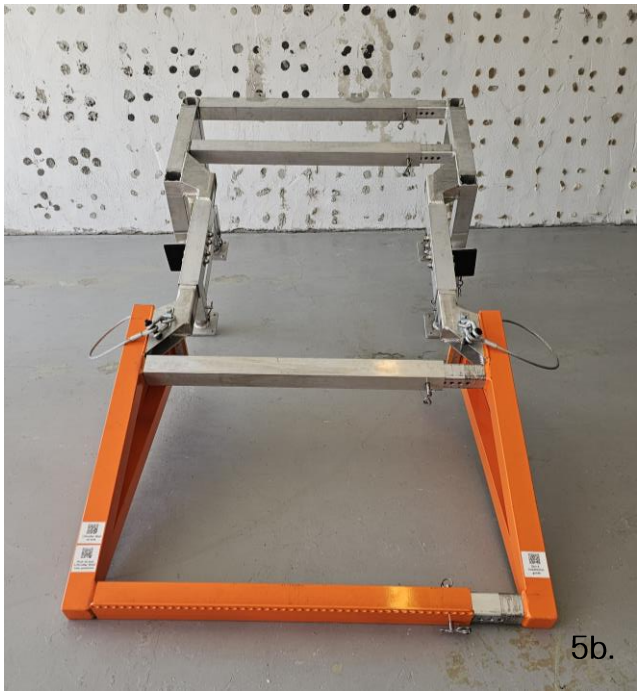
The outer orange one shall have the guide holes for roller table facing up. (pic. 4a.)

The two in the middle are equal and has no additional parts welded to them.

The inner one has two L profiles welded on to it. These are for locking the roller table in position. The L profiles shall point inwards on the upper side. (pic. 4b.)

INSTALLATION MANUAL


5a.


5b.

5. <u>Assemble right side into left side</u>
   Slide the right frame into the four Lateral Beams. (pic. 5a)

   NB! All four profiles must be inserted simultaneously to avoid too much friction and to prevent them from getting stuck. See to that the profiles are clean and smooth. Lubrication spray can be used if necessary.

   Once fully inserted, the greatest width of the Liftroller Wall should be narrower than the opening it is being fitted to. If it is not, adjust the Lateral Beams further by moving the quick release bolts to different holes.

   Remember to lock the pin with the R-clip. (pic. 5c)


5c.

INSTALLATION MANUAL


6a.

7a.

6. Measure the height of window sill and adjust the height of the four feet's into a position where the Liftroller has at least 2 cm distance to the window sill when it is installed. It shall not rest on the window sill during use. Se orange arrow in picture 6a.

Remember to protect the window frame from damage during installation of Liftroller if the permanent window frame is already installed. Example: (pic. 6b)


6b.

7. Move the Liftroller Wall into the façade opening and rest the front part on the window sill. (7a)

Control that the widest point of Liftroller is not wider than the opening it shall be lifted out of. See green arrow. (pic. 7a) Make width adjustment if necessary. It shall be as wide as possible to be able to maximize the width between the wires in the final steps of installation.

INSTALLATION MANUAL

Lifting the outer part into the opening
This can be done in several ways. On-site conditions like for example radiators or other installations needs to be taken into consideration. Also thickness of outer wall, height of window sill, decorations on the façade, etc. will affect which method is the best. Here we have described a few alternative methods.

8. Alternative one:

a) Put the ceiling supports into position (page 15 pic. 10a.), and use them as a tilt rod to lift the outer part up from the window sill. (pic. 8a.)

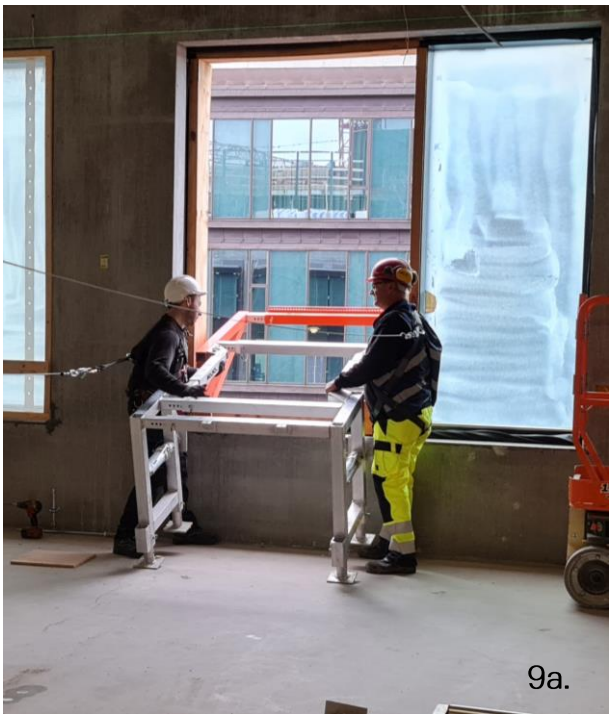
b) Slide the Liftroller out the opening and gently lower the outer part using the ceiling supports. (pic. 8b.)To slide it out it is recommended to be at least two people

c) When all four legs are on the floor, slide the Liftroller to the left until the inner wall support is aligned on the left side of the window.

d) Pull the Liftroller towards you so that the outer wall support rests against the façade. To make it aligned, use the ceiling support to help tilt the outer part a bit and then tighten the lower wall support.

Before installing, *check that the building structure can withstand the forces that occur during use. All contact points must meet a solid surface. See page 25 for minimum requirements. If necessary, distribute the forces by using for example a wooden beam across the building structure.*

INSTALLATION MANUAL



9a.

9c.

9. <u>Alternative two:</u>

a) Lift one side slightly higher than the window sill, slide it out and lower it gently down on the outside. Now the Middle Beam on this side rests on the window sill. (Remember to protect the window sill if the permanent window frame is installed.) (6b page 11)

b) Lift the other side, slide it out and lower it gently down on the outside.

c) When all four legs are on the floor, Slide the Liftroller to the left until the inner wall support is aligned on the left side of the window.

d) Pull the Liftroller towards you so that the outer wall support rests against the façade. To make it aligned, use the ceiling support to help tilt the outer part a bit and then tighten the lower wall support. For how to put the ceiling support into its position, see picture 10a on next page.

Make sure the outer wall support is in full contact with the façade. If the façade is not flat in this area, adapt a piece of wood to the Liftroller using the perforated holes in the outer wall support. At least 2/3 of the wall support must have full support. See example in page 20.

INSTALLATION MANUAL


10a.


11a.


12a.

10. Attach left ceiling support.
(pic. 10a) Connector for wire and turnbuckle shall face inwards. See green ring in pic. 11a.

11. Adjust upper wall support.
Pull out the quick release bolt. The upper wall support has five adjustment holes. (pic. 11a) Push back the ceiling support and fit the quick release bolt in the hole that gives the tightest fit against the wall. One person pushing back the roof support while another person putting in the quick release bolt gives the tightest possible fit.

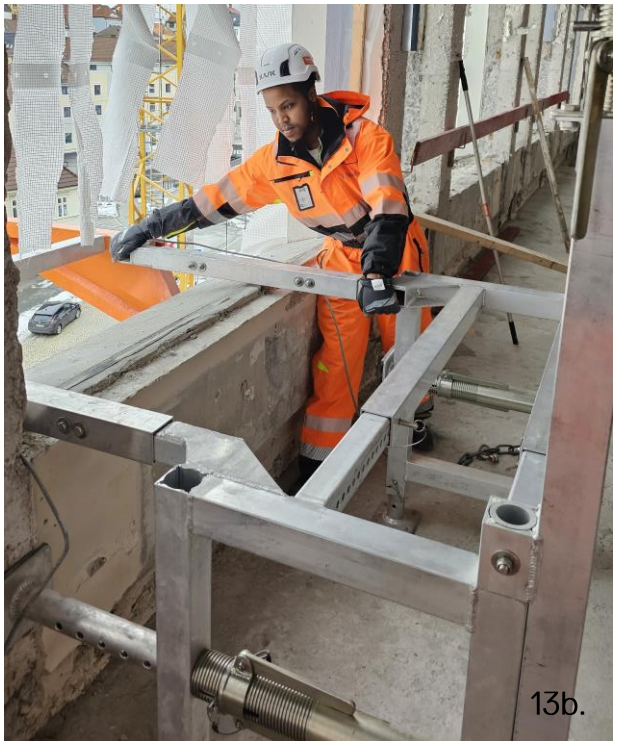
12. Fit against ceiling:
Pull out the quick release bolt in the threaded part (pic. 12a.) with one hand while holding the upper part of the ceiling support with the other. Push the upper part up against the ceiling. When it hits the ceiling, put the quick release bolt back in. Turn the nut counter clockwise and tighten the ceiling support against the ceiling. (Tip: Start with the nut in lowest position before putting in the quick release bolt. This gives more room for adjustment)

Before attaching the Right Ceiling Support, follow the steps on page 16.

Caution: If you need to use a step ladder to perform 12 & 13, remember to do a risk analysis and follow applicable safety guidelines for the work situation.

INSTALLATION MANUAL


13a.


13b.

The left side is now locked against the external wall. (pic. 13a.)

13. Adjust width
Slide the right frame out from the Lateral Beams to widen the Liftroller until right wall support meets a load-bearing part on the right-hand side of the opening. (pic. 13b.) See to that the max limit mark on right side of Lateral Beams is not visible. Tighten the lower right wall support.

NB! It is important to extend all 4 Lateral Beams evenly to prevent excessive friction between the aluminium parts. They may get stuck if pulled unevenly. Make sure the profiles are clean and smooth. Dirt or damaged surface on the profiles will make it hard to slide. Lubrication can be used if necessary, but with clean and smooth surface it shall be ok to adjust sideways even without lubrication.

If it gets stuck and wont slide, you may use a rubber hammer or a wooden beam to help it get loose. *NB! Secure yourself and your tools if leaning out the window!*

Max width adjustment is described in page 5. If the window is wider than max width possible, see page 28 for alternative installation method.

14. Install the Right Roof support:
Repeat step 10-12 on previous page for how to install the right side Roof Support.

INSTALLATION MANUAL


15a.

15. Install wire on both roof supports
Connect the wire with turnbuckle between the D-ring on the outer frame and the roof support. (pic. 15a.) Lock the turnbuckle to the roof support with included nut and bolt.

16. Tighten the wire
Rotate the turnbuckle to tighten the wire. Use only hands, no tool, to ensure it is not tighten too hard.

17. Check tension. (pic. 17a)

18. Lock the turnbuckle (pic. 18a.)
Lock the turnbuckle in chosen position by tightening the nut on both sides of the turnbuckle.

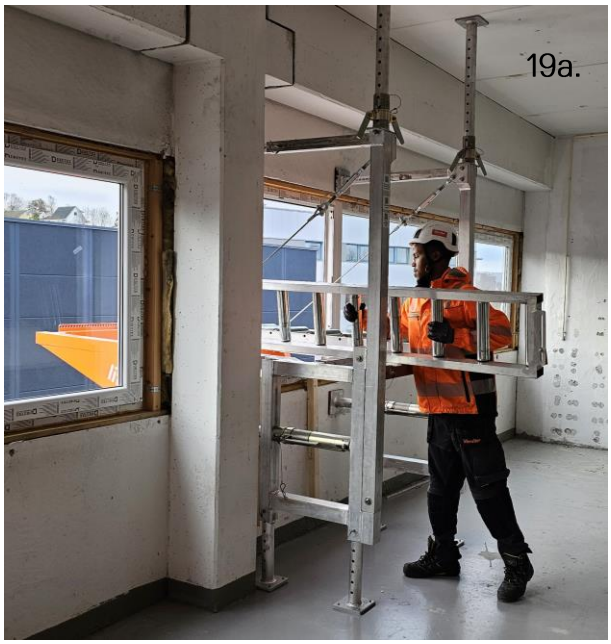
Tighten both sides evenly.

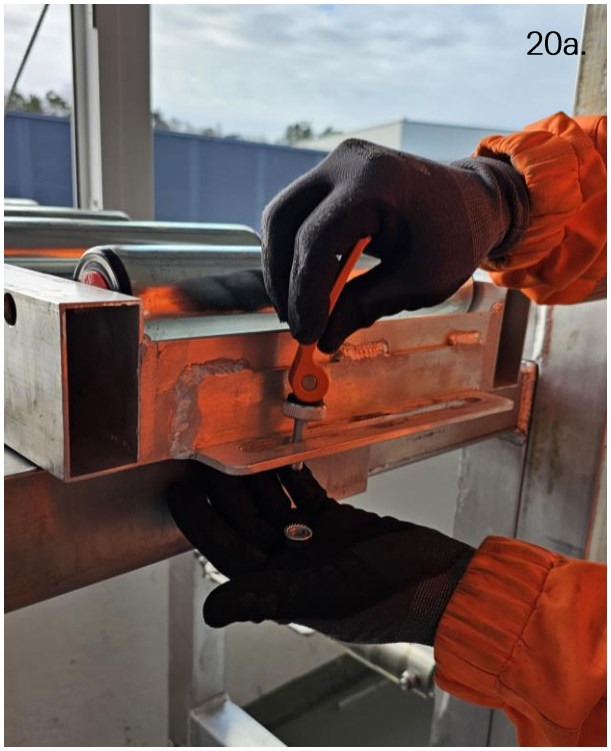

16a.


17a.

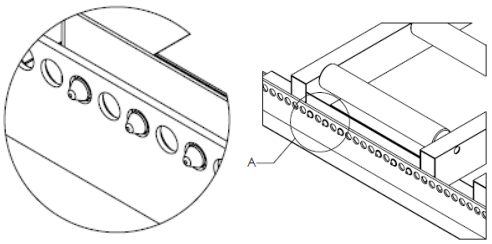

18a.

INSTALLATION MANUAL


19a.


20a.

19. Assemble the roller tables. Adjust the tables to the desired width using the outer adjustment holes in the orange Lateral Beam.



20. Attach the roller tables to the inner Lateral Beam using the accompanying quick release clamps. (pic. 20a)

21. Do a last check on every connection point and tighten where necessary. Ensure that the roof supports are perpendicular, that the Left and Right side are reasonably level, and that the wires have been tensioned so that the roller table conveyor path slopes gently towards the inside of the room.(around 2 degrees) Readjust if necessary.

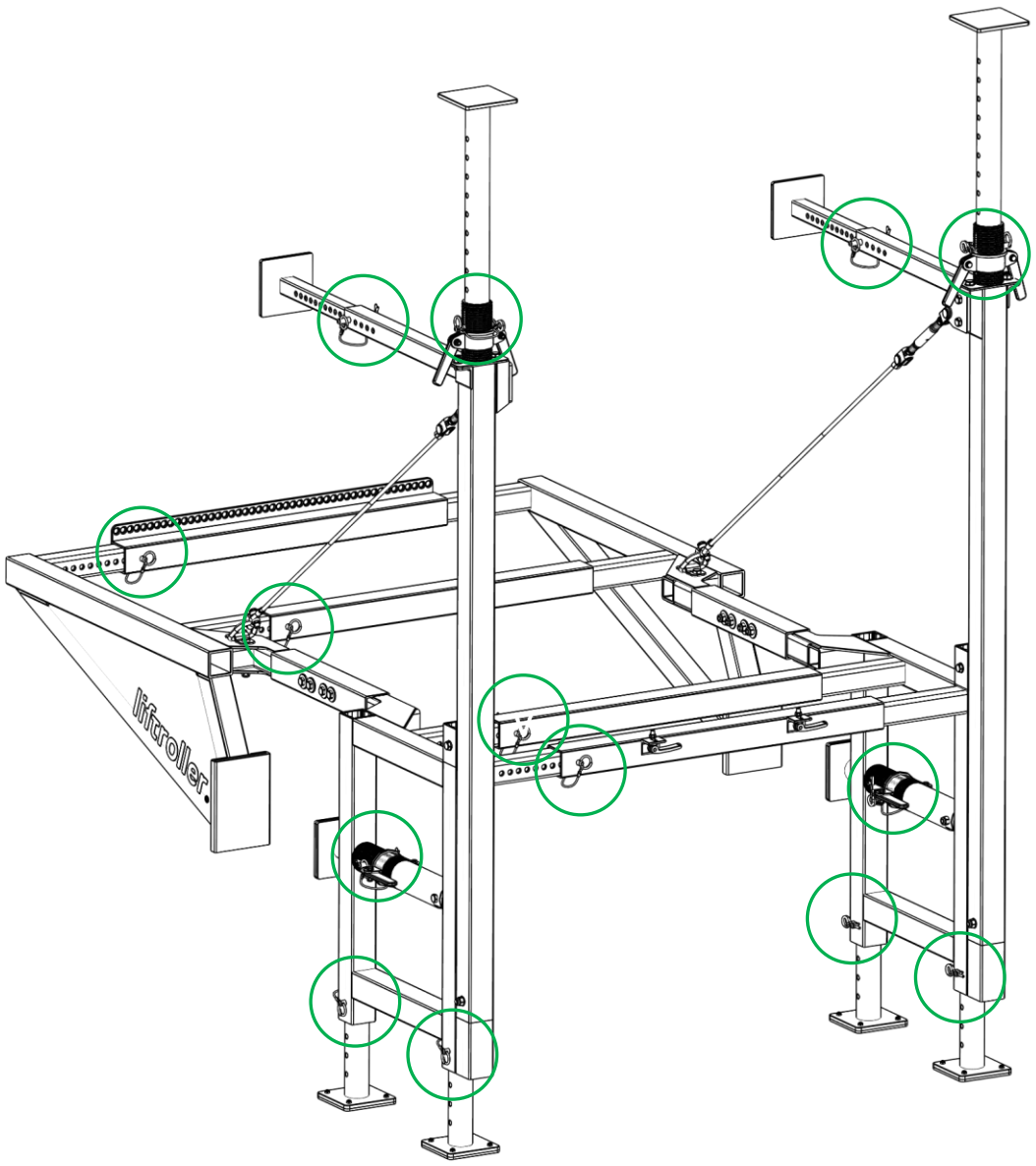
The Liftroller Wall is now ready.

Enjoy a **Faster**, **Easier** and **Safer** way of handling materials on construction site.

Thank you for choosing Liftroller.

(For user tips, check out page 26-30.)

INSTALLATION MANUAL



The illustration above shows all 16 quick release bolts. (Item no. 15 on the parts overview on page 3) Check to ensure that they have all been fitted and locked with R-pin.

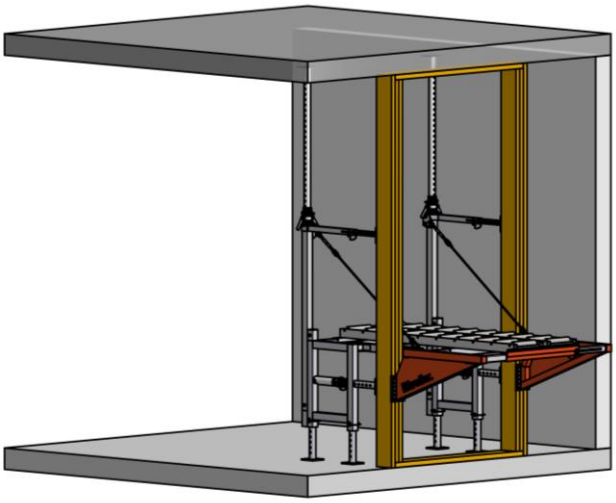
INSTALLATION MANUAL

Make sure that at least 2/3 of the outer wall supports rests firmly against a solid surface.

If the external wall is uneven due to its design, use for example a correct sized piece of wood to give the wall an even surface to rest against.

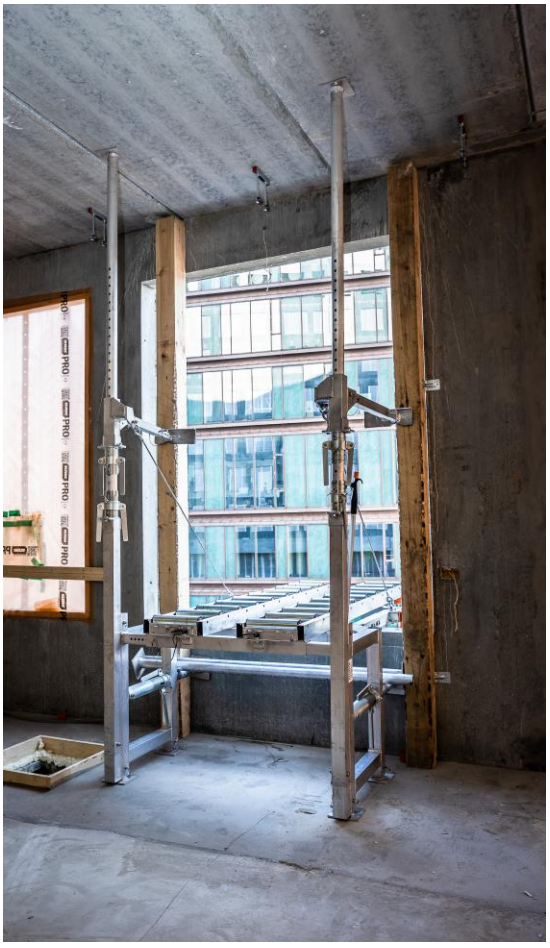
NB! To ensure the wooden piece does not fall down, fix it to the Liftroller Wall through the perforated holes with screws.

INSTALLATION TIPS



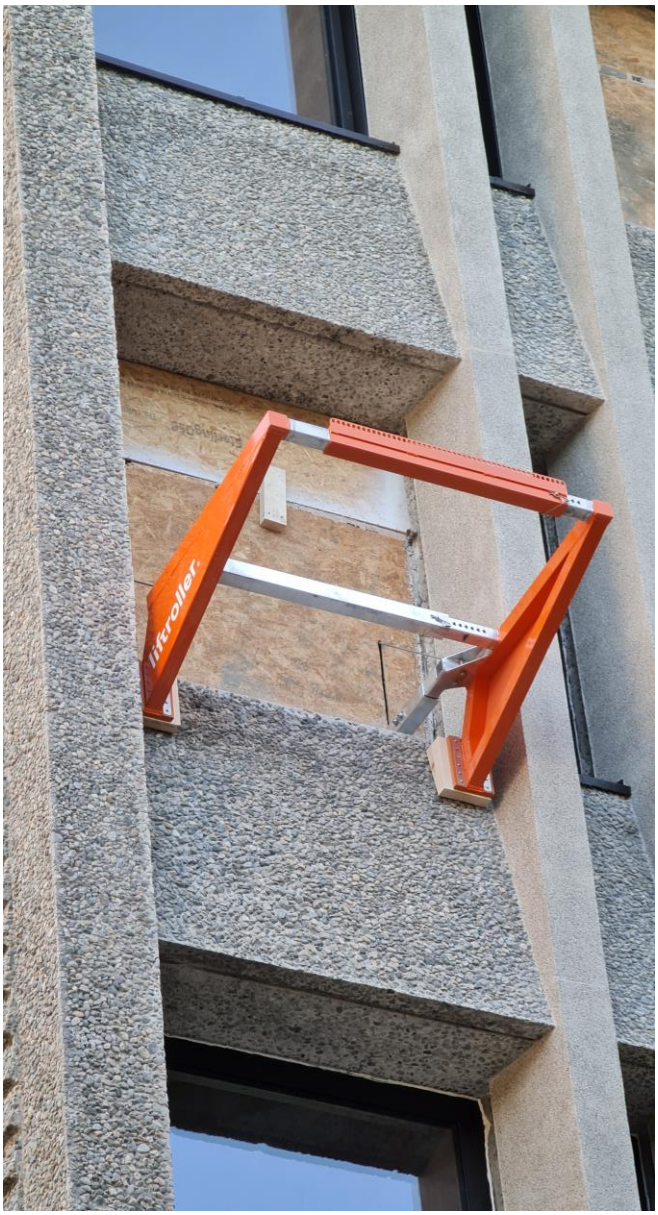
When an outer wall is not present due to an early face of a new building; build a temporary wooden or metal construction that is bolted to the floor and ceiling. In the example showed, the wooden beams are 48x198 mm. One on top towards the ceiling, one on floor and three on each side. This gives a stabile and solid platform for Liftroller Wall.

For windows that are wider than 1700 mm, use for example wooden beams to narrow the opening.



INSTALLATION TIPS

An angled façade can be leveled by using a wooden wedge. Screw the wooden wedge on to the outer wall support before lifting the Liftroller Wall out of the window.



INSTALLATION TIPS

Pipes in the ceiling or other obstacles can be worked around using wooden planks. As shown on page 25, the load reaction forces towards the ceiling is not big.

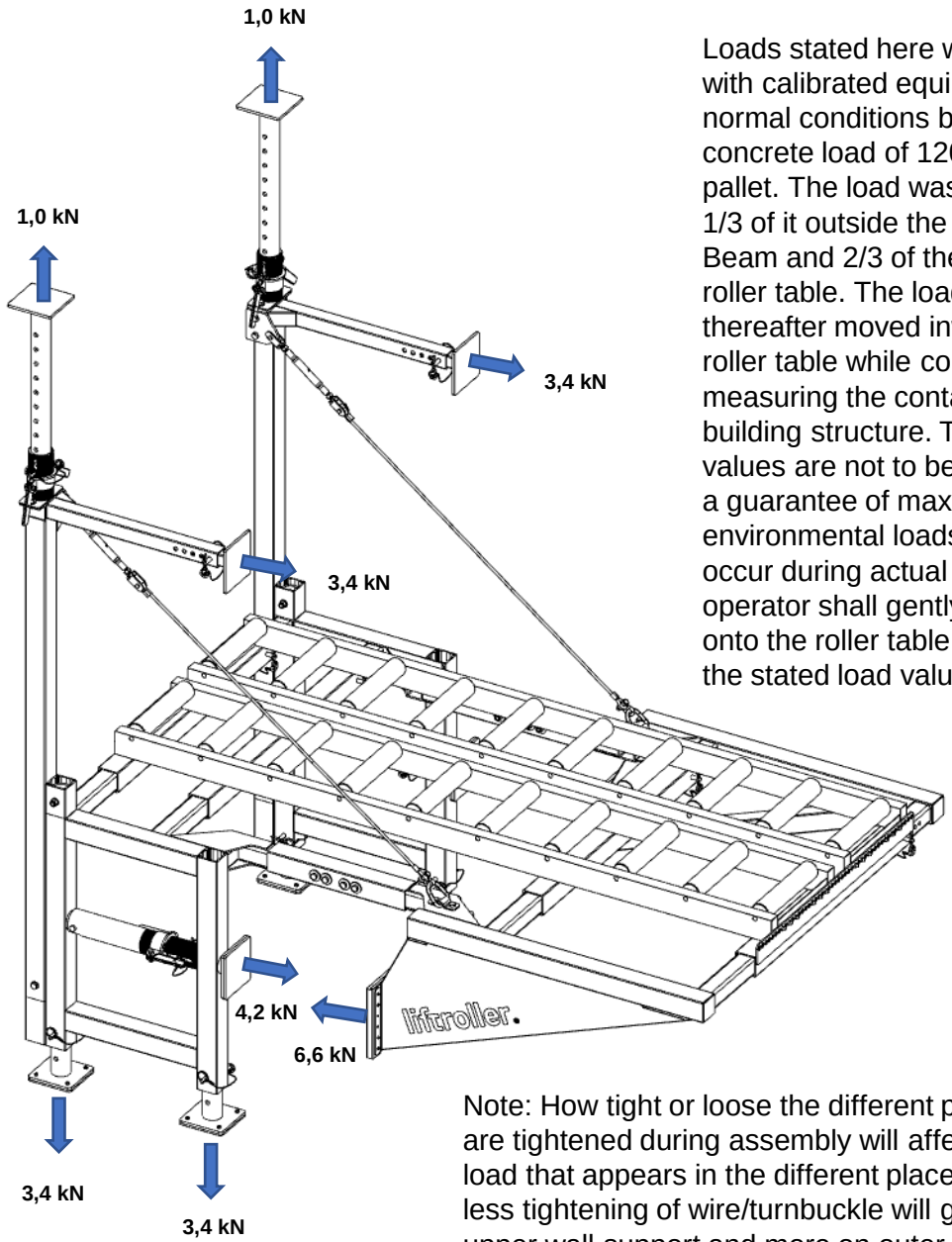
INSTALLATION TIPS

If you are not confident whether the surface can withstand the forces that occurs during use, put for example a wooden beam 48x198 mm to distribute the force over a bigger area. This can also be done on the inside on the floor, wall or ceiling when needed.

REACTION FORCES DURING NORMAL USE

Indication of load values that occurs on the different point of contact to the building construction during rolling in a load of 1200 kg on a pallet with measures 80x120 cm.

Note: **Not all forces showed here will be present simultaneously**. They will vary as the load moves along the roller table. For example, max load on the four legs will occur when the load is centered upon them. If necessary, distribute the forces by using for example a wooden beam as reinforcement across the building construction. See example on page 24.

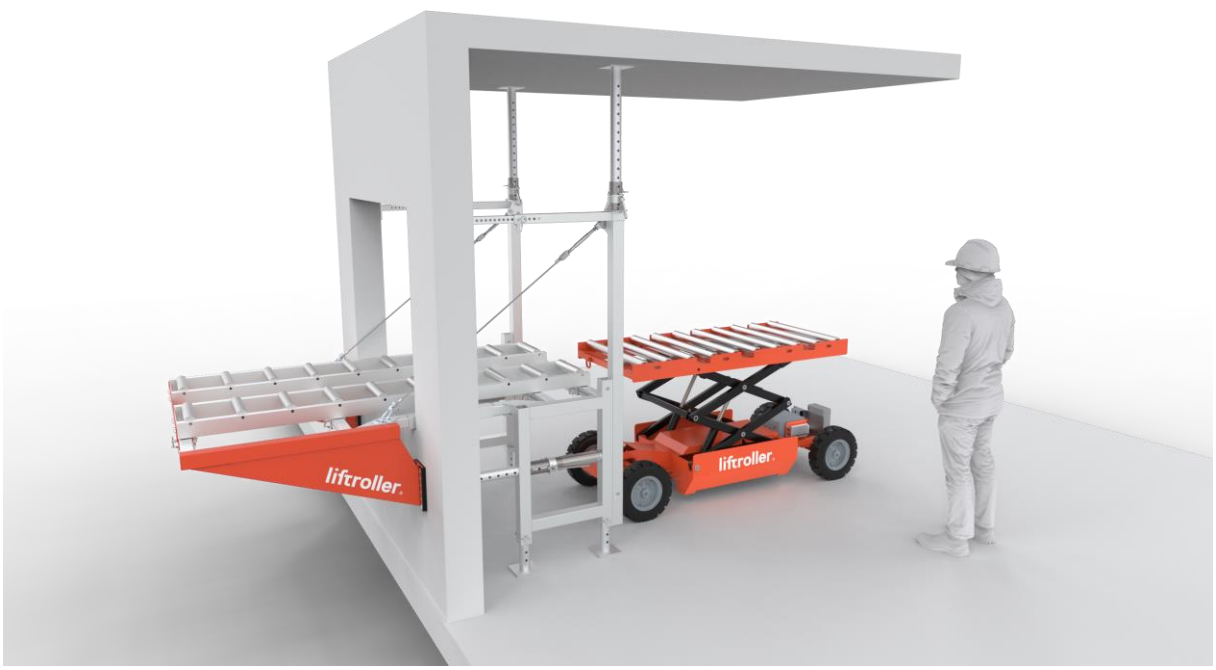


Loads stated here were measured with calibrated equipment during normal conditions by using concrete load of 1200 kg on a Euro pallet. The load was placed with 1/3 of it outside the outer Lateral Beam and 2/3 of the weight on the roller table. The load was thereafter moved inwards on the roller table while continuously measuring the contact points to the building structure. These loads values are not to be considered as a guarantee of maximum environmental loads that may occur during actual use. The crane operator shall gently lower the load onto the roller table to keep within the stated load values.

Note: How tight or loose the different point of contact are tightened during assembly will affect the actual load that appears in the different places. For example, less tightening of wire/turnbuckle will give less load on upper wall support and more on outer wall support.

USER MANUAL

1. Ensure that all parts have been securely fastened. Consult the assembly instructions.
2. Place another Liftroller product on the inside to extend the roller path depending of what is to be rolled in. Read more about the different options on www.liftroller.com. For example Liftroller E Wagon as shown in illustration below. Place the Liftroller E Wagon back-to-back with the Liftroller Wall and ensure that the height of the Liftroller E Wagon's roller table corresponds with those of the Liftroller Wall. Check that the Liftroller E Wagon's roller brakes have been disengaged.
3. Grab the slings holding the load with the accompanying pulling hook and help guide the load correctly onto the Liftroller Wall. (see items 4 and 5 below)
4. The load's centre of balance must be within the outer orange Lateral Beam, and should be as close to the external wall as possible. It must be centred and aligned with the roller tables so that it stays clear of the wires on both sides when being rolled in.
5. Once the load is in the correct position, lower the load until the slings slacken. Ensure that at least 2/3 of the load is inside the orange cross bar at the far end of the Liftroller Wall.
6. Pull the slings with the boathook until you reach the crane hook and can unhitch the slings. Ensure that the load is safely inside before unhitching it from the crane.
7. Next, roll the load onto the Liftroller E Wagon. Before the last part of the load leaves the Liftroller Wall, lift up the wagon slightly up so that the load no longer rests on the Liftroller Wall. Lock the brakes on the rollers and drive in clear of the Liftroller Wall. Lower the load before you start driving to the loads destination. (See separate manual on how to use the Liftroller E Wagon.)



USER TIPS

When not in use, disassemble the roller tables, and close the opening with a suitable plywood board or similar. The small remaining opening can be closed with isolation or plastic if neccessary.

If needed, the wires can also be detached. Remember to re-attach them again before use!

USER TIPS

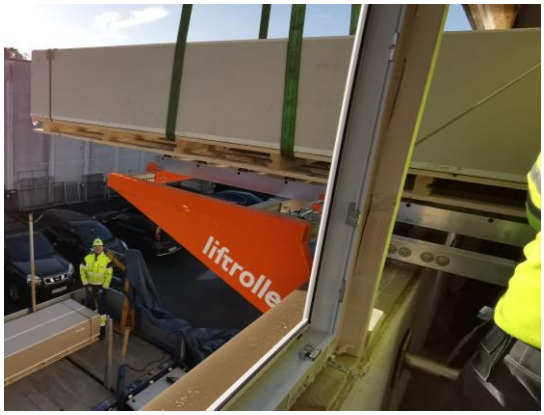
Use pallets with longitudinal stringers and thread the slings through the pallet. If the slings is underneath the pallet they may block the rollers from turning.

If you use pallets with transverse stringers/bearers, place a couple of wooden planks or metal profiles on top of the Liftroller Wall roller table and lower the load onto them. The planks also offer a good grip for you to pull in the load. **Do not leave planks unattended** on the rollers. Secure the planks to avoid them rolling out.

If you are not using a couple of planks like advised above, always ensure that the lifting straps land between the rollers. If they end up on top of the rollers, it may be difficult to pull the load inside as the slings prevent the rollers from turning.

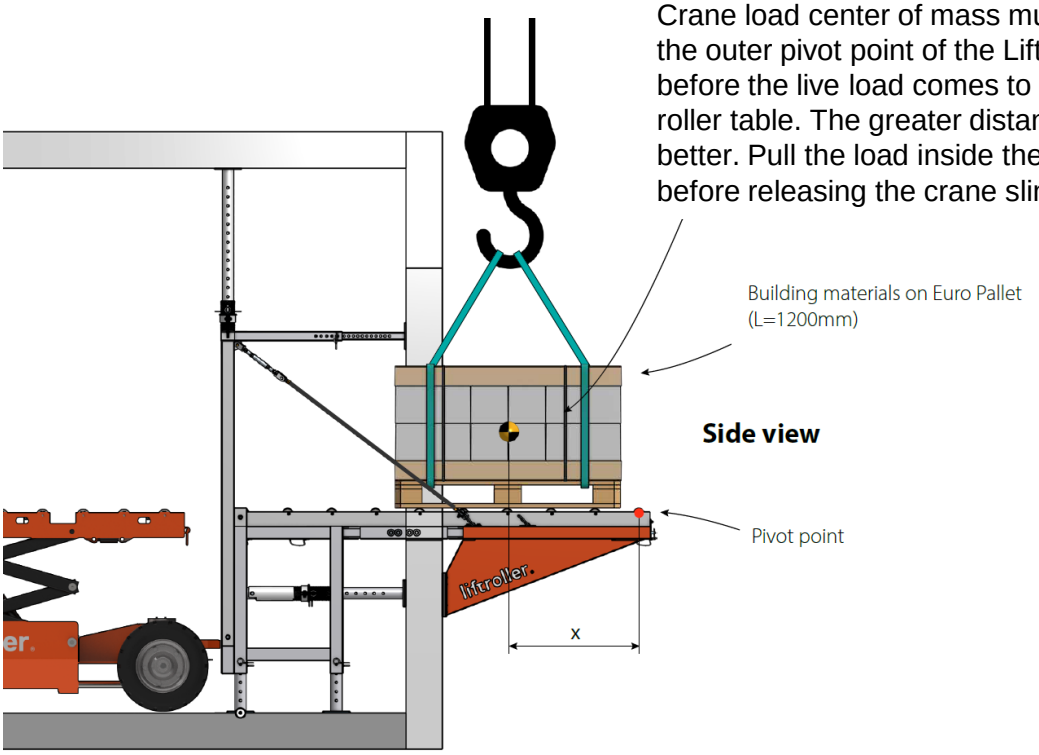
USER TIPS

Lifting straps/slings are safer to use than pallet fork. With lifting straps you are able to roll the load in and unhook the straps from the crane safely on the inside of the building.

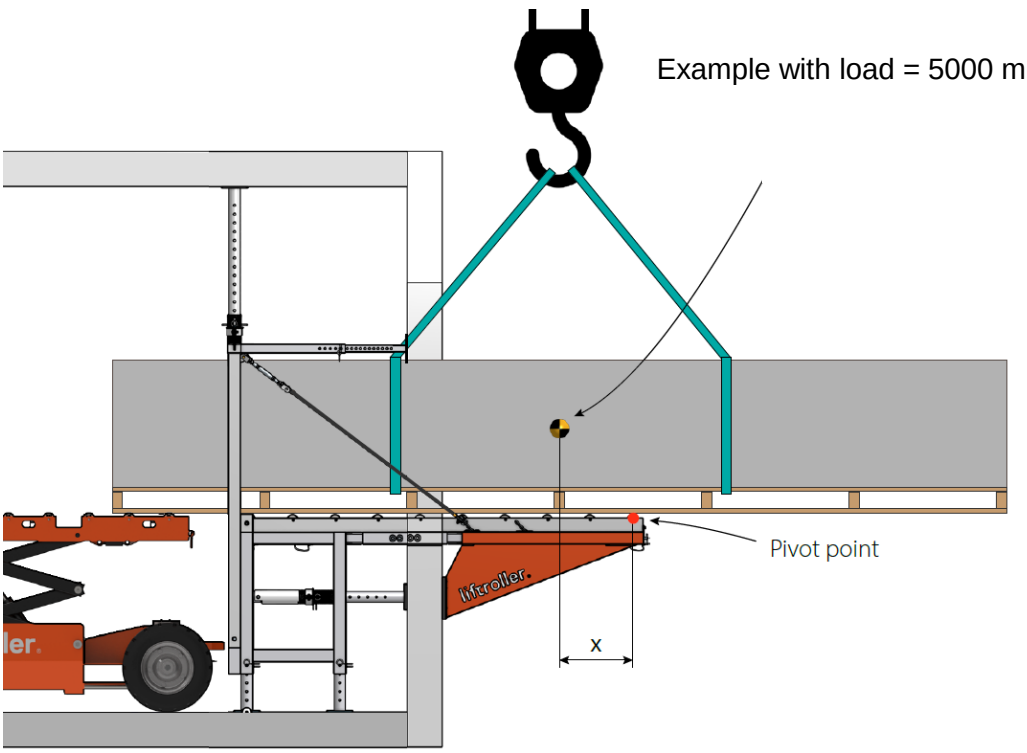


USER TIPS

Crane load center of mass must be within the outer pivot point of the Liftroller Wall before the live load comes to rest on the roller table. The greater distance «x» the better. Pull the load inside the building before releasing the crane sling/chains.

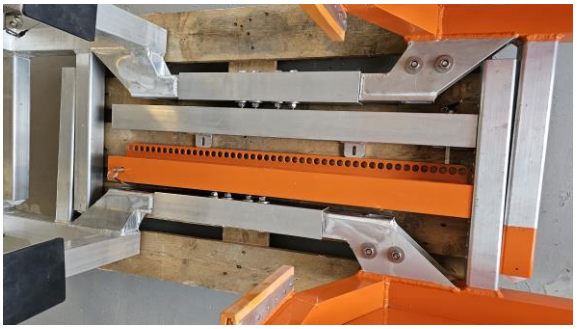


Example with load = 5000 mm.



READY FOR TRANSPORT – STEP BY STEP

1: PUT BOTH SIDE FRAMES ON A PALLET.



2: PUT OUTER AND INNER LATERAL BEAM LIKE THIS

3: PUT ONE CENTRAL LATERAL BEAM BETWEEN THEM

4: PUT THE ROLLER TABLES ON TOP OF EACH OTHER

5: PUT CEILING SUPPORTS ON TOP

6: PUT THE LAST CENTRAL LATERAL BEAM BETWEEN THEM

7: PUT THE PULLING HOOK ON TOP IN THE MIDDLE AND SECURE THE LOAD WITH RATCHET STRAPS

MAINTENANCE & REGULAR INSPECTIONS

- Regularly check that all moving parts are operating freely. Wipe off visible dust and dirt from a profile before inserting it into another profile.
- Inspect all parts before use. If you identify damage to any part of the Liftroller Wall, do not use the product until the damage has been repaired. Remember to do visible check of welding joints for cracks and deformation. Check the wires for weaknesses.
- Check that screws that holds rollers in place have not loosened. Use 5 mm unbraco to retighten if needed.
- Regular inspection and maintenance along with dry storage will extend the product’s life span.
- Exposing the product to impact can cause deformation and make it difficult to adjust its width and height.

liftroller®

Industry

EC - Declaration of conformity
CE - Déclaration de conformité
EG - Konformitätserklärung

Holder of Certificate:

CE

Liftroller AS

VAT registration number 911687321
Leirvikåsen 45
5179 Godvik
Norway

This declares that the following designated product

Model: **Liftroller Wall max load 1200 kg**
Descripion: The Liftroller Wall model is an aluminum construction with rollers. Designed for moving goods through façade openings.

Complies with the essential protection requirements of the European Parliament and of the COUNCIL Directive 2004/108/EC on the approximation of the laws of the Member States relating to safety requirements and verification.

This declaration applies to all specimens manufactured in accordance with attached manufacturing drawings which from part of this declaration.

Assessment of compliance of the product is produced in accordance with harmonized standard and Conformity is assured according to the following standards:

- **NS-EN ISO 10042:2018 Welding — Arc-welded joints in aluminium and its alloys**
- **2006/42/EF EU Machinery Directive of the European Parliament and the Council**

Identifications of regulations/ standards

Godvik 06.03.2020

Place and date of issue

StartBANK

This declaration of conformity is issued under the sole responsibility of the manufacturer or representative. It certifies compliance with the indicated Directive, but implies no warranty of properties.