Installation Manual
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Observe the following points before installation!

This installation manual is written for all installation teams authorised by Lehner-Liftechnik.

Installation teams must have a general knowledge in

- working on electric controls.
- reading and understanding circuit diagrams and wiring schematics.

In order to save time and energy, it is wise to be properly prepared before installing the OMEGA-platform lift. The following points will assist in completing the installation efficiently and on schedule.

- Have a complete electrical and mechanical tool kit on hand.
- Have different flexible electrical cables for the electrical connections on hand. These flexible cables should have the following characteristics:
  
  - 2x1mm²
  - 4x1mm²
  - 7x0,75mm²
  - 7x1,5mm²

  The length on the cables depends on the length of the rail and the position of the electrical control box.

- Check the packages for shipping damage and missing parts before bringing the lift to the site.

- Open the installation package (which is in the box of the OMEGA lift). Review the enclosed Installation notes, if supplied. In some cases, additional components must be brought to the site.

- Ensure that the main power will be supplied on time.

- Assemble a team of two technicians to mount the plant.

- Read the sections for any optional equipment that is supplied with the lift before beginning the installation.

- Refer to the tube layout drawing and familiarise yourself with the tube configuration.
General procedure of installation the Omega:

1. step: Installing / fixing the rail system on pillars or directly to the wall

2. step: Installing / fixing the motor at the end of the rail

3. step: Installing the rope

4. step: Installing the platform onto the rail / rope system

5. step: Tensioning the rope - please make sure that the motor / traction system is completely installed and tightened

6. step: Connecting the current collector and rope to the platform switchboard

7. step: Installing the mechanical landing limit switches and external controls

8. step: Installing the electrical control box and the electrical connections to the traction system, the landing switches and the external controls.

9. step: Turn on the unit and check the functions.

10. step: When the unit is running the mechanical switches on the landings, the mounting brackets and the loading ramps have to be adjusted.
Step 1. - Installing the Railway

- **Note:** See the following diagrams for some typical mounting arrangements. The bows between the tubes of the railway can be mounted on pillars or on the wall.

**Mounting onto the wall.**

**Mounting on pillars.**
Pillar screwed onto the wall of the staircase.

**Mounting on pillars.**
Pillars mounted in the well hole.

**Mounting on pillars.**
Pillar mounted onto the steps.

**Mounting on pillars.**
Pillar screwed onto the side of the stairs.

**Wall Mounted Unit:**
Place the first tube section onto the wall, in reference to the measures of the first step shown in the layout drawing. Affix the first section to the wall provisionally and be sure the bows behind the railway are in plumb line. Take the second tube section and connect it with the first one. Look at the plumb of the bows, at the measures shown in the layout plan and fix the rail section provisionally. Continue in this manner until reaching the last section. Then check all measures between the staircase and the railway. Fix the wall mounted units with dowels, adhesive anchors, wood screws, etc., depending on the material of the wall.

**Pillar Mounted Unit:**

Fix the first pillar as shown in the layout plan on the bottom or on the side of the stairs. It will now be possible to place the first tube section and secure it onto the first pillar with a screw clamp. Adjust the rail into its right position, then drill a thread M10 into the pillar (the pillar requires a minimum of 4mm wall thickness). You can go on with the next rail section and the next pillars as described above.

**Note:** The support pillars have the serial letters stamped on the base. You can find the corresponding serial letters in the layout drawing.

Depending on the order, the pillars and distances can be delivered from Lehner-Lifttechnik or you can produce them yourself by referring to our layout drawing. If the lift is supplied with mounting brackets, install them with the corresponding tube section.

- **Note:** It is necessary to distinguish between brackets (to bridge the distance to the wall or pillar) and distances (for unevenness of walls or mounting tolerances). Brackets can be ordered from Lehner-Lifttechnik, but for distances you must use washers or shims with 50 mm in outside diameter.

- Drill the mounting holes, starting at the bottom with Pillar A and working up the system. In concrete, use a 10 mm diameter masonry bit. Otherwise use a dowel and drill a 12 mm hole!. When mounting in wood, use a standard 6 mm wood drill.
- Pass the lag bolt (screw materials like lag bolts, nuts, washers, etc., are not included in *Lehner-Lifttechnik* delivery-specification) through a washer, and screw it into the end of a plug anchor. The anchor can then be tapped into position using a small hammer. Avoid spilling dust into the hole. Do not use plug anchors when mounting into wood.

**Note:** Lag bolts used for mounting into concrete are longer than those used for wood.

- Drill and fasten each hole in turn; this will prevent the tower from shifting.

- Check each splice for damage and lightly grease both ends before joining the tube sections. Fasten the splices with the splice bolts and nuts provided.

- Check the clearance dimensions. Ensure that the actual measurements correspond with the clearance dimensions on the layout drawing. If they do not meet the required clearances, have the lift serial number on hand and call *Lehner-Lifttechnik*.

- **Remember:** Vertical clearances are measured from the centreline of the tube (this is also the lower point of the bows on the railway) to the stair nose or to the floor.

- **Installation Tip:** The clearance dimension at the lower landing is often 42 mm from the centreline to the bottom. You can therefore use a shim to support the tube at the lower landing.

- Install the rest of the pillars if you are installing a pillar mounted lift. Remember to check the pillar numbers with those shown on the tube layout drawing.

- Clean any debris from the inside of the tubes.

- With the tubes in position, check all splice connections for alignment. Note that the proper fit of the splices is critical to ensure smooth lift operation. When fixing the lift in place, smooth out any misalignment using shims behind the mounting struts.

- On longer lifts some discrepancies may occur. Try to average them out while making a final check for landing clearances, splice alignment and fit.

- With the system in place, check that all struts and support pillars are plumb. Use a water level for this work!

- Note that when a lift is supplied with distances that must be located in core-drilled holes, it will be necessary to mark the holes and remove the tubes for core drilling at this stage. The lift can then be relocated for installation.
Step 2. - Installing the drive box

When the tube system is anchored in place and you are satisfied that everything is as it should be, mount the drive box.

It is possible to have either a small or a large drive box, depending on the size of the gear.

Small drive box

- Dismantle the cover as shown on the pictures below.
- Fix the drive on the end of the railway. Do not close the box yet, the rope and the electric must be installed first.
Large drive box (only for long installations)

- Adjust the drive box to the appropriate height in reference to the railway and fasten the box on the support construction.

- Move the drive box with the support construction into the correct position and mark the holes on the bottom for fixing the support.

- Move the drive box out of the way, drill the mounting holes, and tap the anchor plugs in place. Now anchor the drive box in place.

- Mount the gear motor into the drive box.

1. gear motor
2. lever for unbreak
3. hand wheel
4. upper tube of railway
5. lower tube of railway
6. tube for electric installation (in option only!)
7. device for tensioning the rope
8. slack rope switch
Step 3. Installing the rope system

1. tension rope
2. support rope

- Lay the complete support rope on the bottom. Open the rope clamp on the end and compress the plastic support parts (in order to avoid any clearance between the support parts) before fastening the rope clamp again.

- Remove the arrestor section (at the bottom of the system).

- Then feed in the support (lower) rope, starting with the splice end and work your way down from the drive (top) to the bottom of the system. Lubricate every third to fifth plastic part lightly with special grease! Do not overgrease!

- At the bottom, use some clean paper to protect the rope against dust!
• Now feed the tension (upper) rope into the upper tube. Lubricate each ball lightly as it goes into the tube.

• Feed the lower rope through the arrestor section.

• Complete the ends of both ropes with the rope levers shown in the illustration below.

Please note that the end of the lower rope should not go through the hole in the plastic cap, but look like in the picture shown above or the illustration below.

• Draw back the tension rope while inserting the rope lever into the slot on the lower side of the upper tube. Install the sliding contact into the tube below the upper rope lever and pull the support rope up into the upper tube. The sliding contact will then be positioned between rope levers, as shown in the diagram on this page.

• Now check the distance between the rope levers. This must be a distance of 90mm. The rope may be too long. In this case pull the support rope out from the upper tube, then dismantle the end of the support rope and remove one (or more) plastic support part. Begin the installation of the support rope once more.
Step 4. Installation of the platform onto the rail/rope system

When the tube system is securely in place, begin mounting the carriage. Complete the following steps:

- Bring the carriage to the bottom of the tube system and unwrap it.

- Remove the shoulder bolts for the conical rollers and the rope liners.

- Carefully lift the carriage into position, guiding the upper carriage rollers onto the upper tube. Ensure that the rope levers fit between the bosses of the upper carriage. Be careful not to scratch the paint on the tubes.

**Note:** The carriage weighs about 90 kg, so two people should install it to ensure safety and avoid damage.

- Screw the carriage on the rope levers of the tension and support rope.

- Install the conical rollers on the lower tube. Put some grease on the area of the shoulder bolt on which the conical rollers will rotate.

- This diagram on the right side shows the carriage arrangement on the lower tube.
Step 5. Tightening of the rope

When the carriage is mounted, the rope must be tensioned.

- Feed the support rope into the rope clamping system on the upper carriage of the platform.

  **Note:** Close the cover of the drive box before tightening the rope! The cover of the drive box is the bearing for the drive wheel!!!

- Use the special tool for rope tightening. Put it on the rope and secure the rope with a rope clamp (see illustration). Now you can turn the thread out of the main body – the rope will be tightened. If it is too loose, it may short against the tube.

- When you have the right tension, clamp the rope in the clamping system and secure the rope with two rope clamps.

  **Note:** Do not cut the rest of the support rope!!!

- Take the plastic tube, put it over the rest of the support rope, turn it to a circle (see illustration) and fix it with cable binding screws.
Step 6. Connecting the platform switchboard with the current collector and the rope

The platform communicated via the rail and rope with the main electrical control box and vice versa. The functions (folding and unfolding of platform and the command from the platform control) are communicated via low voltage current alterations.

- Open the upper front side of the carriage by using a hexagon socket wrench.

**Note:** Remove the four-pole plug from the socket and put the special plug for mounting only (delivered from Lehner-Liftechnik with the first plant) into the socket. Now you have bridged key switch and emergency stop.

- Open the lower front side of the carriage by using a hexagon socket wrench.

**Note:** Dismantle the connection between slider and platform first!

**Caution:** The barriers are without support now – they will fall down – watch your head!

- When you dismantle the lower front side part, fix the connection between platform and slider again.

- Connect the carriage switchboard with the rope and sliding connector. Connect the black wire for the rope (S) to the to the rope clamp after tensioning of the rope. Then connect the brown wire for the rail (R) to the sliding contact between the platform fixings. Please see picture of left side.

- Do not close the carriage yet. It needs to be open in order to test the power functions after the installation has been completed.
Step 7. Mounting the mechanical switches

Explanation of the position of the levers for unblocking of the barrier arms and the bypass switch:
Mounting of the limit switches in the landing stations

- Mount the plate with the limit switch on the C-profile on the lower tube of the railway.

Mounting the control cams

Note: The control cams are normally pre-mounted.

Mount the control cams on the profiles between the upper and lower tube of the railway in the area of the platform stop position.

Note: Adjust the control cams according to the description on the layout drawing. Under some circumstances, it may be necessary to unclamp both barriers in the lower stop position. Use two control cams in this situation.

Caution: Do not mount two control cams in the upper stop position (or intermediate stop positions)!
Mounting the ultimate limit switch

- Adjust the mechanical limit block so that it is properly aligned with the sensor on the cover of the upper carriage.

Adjust the ultimate limit switch and the mechanical limit block together!
Step 8. Installing the electric control box and electrical connections

Instruct the person who will be supplying the main power to connect the drive box main leads. Refer to the electric diagram (and the layout drawing).

**Note:** Stairlifts require a 230/400V service.

**Caution:** Ensure that the fuses F1/F2 in the control cabinet are deactivated.

**Note:** Check the drive direction of the motor after connection to the electric field!

- Complete the field wiring in accordance with the electrical drawings supplied in the installation package. The following pictures show a typical arrangement, but note that no two systems are the same; you must choose the most effective method of wiring in your situation.
The electrical control box can be placed in any location. Nevertheless, the best location is to place it as close as possible to the upper or the lower end of the rail, because various cables lead from the control box to both ends of the rail. If there is an installation pipe on the rail, then the cables can be brought through this pipe from one end to the other. In general, the following electrical connections have to be made on site:

**Connection on the lower end of the rail:**
- 1 cable with 7 x 0.75 mm² for external hall call at the lower landing station
- 1 cable with 2 x 1 mm² for ultimate down emergency stop switch and safety gear switch (both switches are connected in series)
- 1 cable with 2 x 1 mm² for lower landing stop switch

**Connection on the upper end of the rail:**
- 1 cable with 7 x 0.75 mm² for external hall call at the upper landing station
- 1 cable with 7 x 1.5 mm² for the motor connections
- 1 cable with 4 x 1 mm² for the ultimate up stop switch and the upper landing stop switch
- 1 cable with 2 x 1 mm² for the connection of current collector of the rope (“S”) and the rail (“R”) (both are located inside the motor box)

**General layout of the electrical installations:**

![Diagram of electrical installations](image_url)
Connection scheme for the upper and lower end of the rail:

Connection scheme for an intermediate landing switch:
Connection scheme for hall call stations (external controls):

- Mount the Call Stations, starting with the Call Station at the lowest landing.

- When mounting the Call Station, remember to allow enough clearance for the carriage at the lower landing. The height of each Call Station should be 1 m, measured from the floor to the centre of the Call Station.

- Wire the Call Stations according to the electrical drawings.

- On outdoor lifts, install the hood that is supplied with each Call Station.

- If the Call Station is supplied with a pedestal, ensure that the pedestal is plumb before mounting the Call Station.
Connection scheme for the current collector on the traction wheel:

- Connect the current collector with the “Ra” and “Sa” ("R" and "S" for a manual platform respectively) connections in the control cabinet as shown in the picture below:
Step 9. Turning on the Power

Before turning on the power, check the following items:

- Ensure that the rope is tensioned properly. If it is too loose, it may short against the tube.
- All station boards should be wired and plugged in.
- All safety and final limit circuits should be wired.
- The wires to the carriage should be properly connected and the carriage emergency stop switch should be released.
- All support pillars (if supplied) should be secure and the strut fasteners should be snug.

Note: The strut fasteners will be fully tightened once the carriage landing locations and stair clearances are checked.

Caution: Do not ride on the lift until all of the fasteners have been fully tightened!

Now you can switch on the building breaker, the drive box main switch. Look for the two fuses F1/F2 in the control cabinet to be active.

If you encounter problems, refer to the user handbook or technical documentation.

- Unfold the platform and run the unit out of the lower landing for a short distance using the remote control.
Step 10. Adjustments

Adjustment of the limit switches in the landing stations and the control cams

- Adjust the position of the plate in reference to the stop position of the platform.

**Note:** The carriage must touch down slightly on the bottom with the buffers on the lower end of the backside of the carriage in the lower stop position.

- In the upper stop position (and also intermediate stop positions) the platform should be in one line with the landing height.

- Adjust bolt 1 and bolt 2 now, in reference to the bypass switch

Adjust the control cams according to the scheme below. First always the bypass switch \( S_{16} \) has to be activated before the control cams start to unblock the barrier arms. The same applies for the lower stop. Otherwise the lift will stop when the barrier arms are unblocked, as thus the switches \( S_{14} \) and/or \( S_{15} \) are pushed and the safety circuit is interrupted!

Run the carriage down to the lower landing again and stop it in the desired loading position.

**Note:** Allow the carriage to bottom out on the lower landing.

Run the carriage out of the landings and back again. If the lift does not stop in the correct position, adjust it as necessary.
Adjustment of the platform inclination

- For the following chapter, first look over the Technical Documentation to know the definitions of the components.

- To adjust the platform correctly it is necessary that all electric installations (limit switch, emergency limit switch, overspeed governor, landing controls, electrical connection of the carriage, etc.) are finished. The front side of the carriage should be opened!

- Adjust the platform into horizontal position first. It is necessary to dismantle the connection between the platform and the slider in the carriage again. Use a water level!

- Counter the adjusting screw with the counter nut after successful adjustment.

  **Note:** Check the horizontal line of the platform only in loaded condition!

  **Caution:** Check if both adjusting screws are supporting the platform!

- Adjust the slider for platform.

  Left and right side, the slider must a slight distance to the bearing support.

  Bearing for lifting the platform

- Mount the connection between platform and carriage again. The platform slider must have around 1mm distance to the bearing support on both sides (see illustration). This can be adjusted by changing the length of the connection between the platform and the carriage. This is important so that mechanical force of the platform in an unfolded position is not directly carried forward to the mechanical parts inside the platform, but rather held by the adjusting screws.
Note: Every time you modify the horizontal adjustment of the platform, it is necessary to adjust also the slider again!

Move the limit switch S11p, until it makes contact with the platform slider.

- Check the horizontal position of the barriers. They are pre-adjusted from Lehner-Lifttechnik already, but it could be necessary to finish them on site.

- It is possible to adjust both barriers separately. Open the screw shown in the illustration, adjust the barrier and lock the adjustment with the screw again.

- Adjust limit switch S11m, so the barriers are in horizontal position when the automatic platform is opened.

- Adjust limit switch S11o, so the platform is pressed towards the carriage by the automatic drive when the platform is closed.
Adjustment of the loading ramps

- Be sure the control ramps on the railway and all limit switches are adjusted before looking for the ramps.

- Adjust the ramps to achieve a 45 ° angle between the platform and ramp when the barrier is in horizontal position. When the barrier is open, the ramp has to fit to the bottom of the landing area.

- During closed and drive position of the platform, the ramps are used as safety pads also. To get a secure switch function it is necessary to move the fixing of the ramps as far outside as possible.

**Note:** Look for a safety switch function, but do not adjust too “secure”! This would require some service after a few weeks.

- Check the loading ramps for proper operation.

  **Note:** Remember to check the travel clearances of the carriage. Do not let the unit run past the upper limit position.

- Before you close the carriage, ensure that all screws fixing the limit switches are secured.
Last checks before using the stairlift

- With all limit blocks and interlock cams in place, unfold the platform and run the carriage up to the top of the system and back while checking the travel clearances of the carriage. If you encounter any problems, have the lift’s serial number on hand and call Lehner-Liftechnik.

  Caution: Do not ride on the unit until the fasteners are tightened.

- When you are satisfied that the lift clearances are correct, tighten all strut fasteners.

- When the landing is uneven and the loading ramp does not rest properly on the floor, adjust the ramps on the platform once more.

- To adjust the ramps, see chapter “Adjusting the platform”.