



Learn Mode - Recommendations

- Using the Learn Mode functionality allows easy current limit setting to help the lift comply with the ISO 10535 requirement.
- The Learn Mode functionality is recommended to use for channel 1 when adjusting the lifting actuator to fit the Safe Working Load rating of the lift.
- Based on settings from the Learn Mode function use, the lift shall not be able to lift more than 1.5 times the maximum load. However, the current limit setting will not stop the actuator at the exact same load as used for the Learn Mode function. This is due to the fact that an actuator uses less current when its components have been run in.
- When making new current limit settings, be aware to use a defined set of actuator and control box. For Learn Mode, the following conditions must be fulfilled:
When using Standard Learn Mode, the actuator current consumption must be at least 2 Amp and the function must either be active for at least 2 seconds or the actuator must run at least 20 mm.
When using Advanced Learn Mode, the actuator stroke length must be specified in the software.
Run the actuator to full stroke length to set new current limits.
- Always use fully charged batteries (as a minimum more than 50% battery capacity) for Learn Mode procedures.
- A maximum cut-off value of 12 Amp can be registered (stored).
- The ambient temperature must be approx. 20 °C.
- The difference between the highest and lowest load should exceed 10% if using the Standard Learn Mode function.
- To activate the Learn Mode function, use the special Learn Mode hand control.
- If an actuator or control box is exchanged, it is necessary to reset the maximum load to ensure the correct cut-off value for the new system.
- The preset current cut-off value of a specific lift can be reset by means of the Learn Mode function, however, this may not be in accordance with EN10535 if done with different loads than the rated load of the lift.
- There is a risk of false position due to the use of manual lowering/quick release and this may therefore impact the use of advanced learn mode.



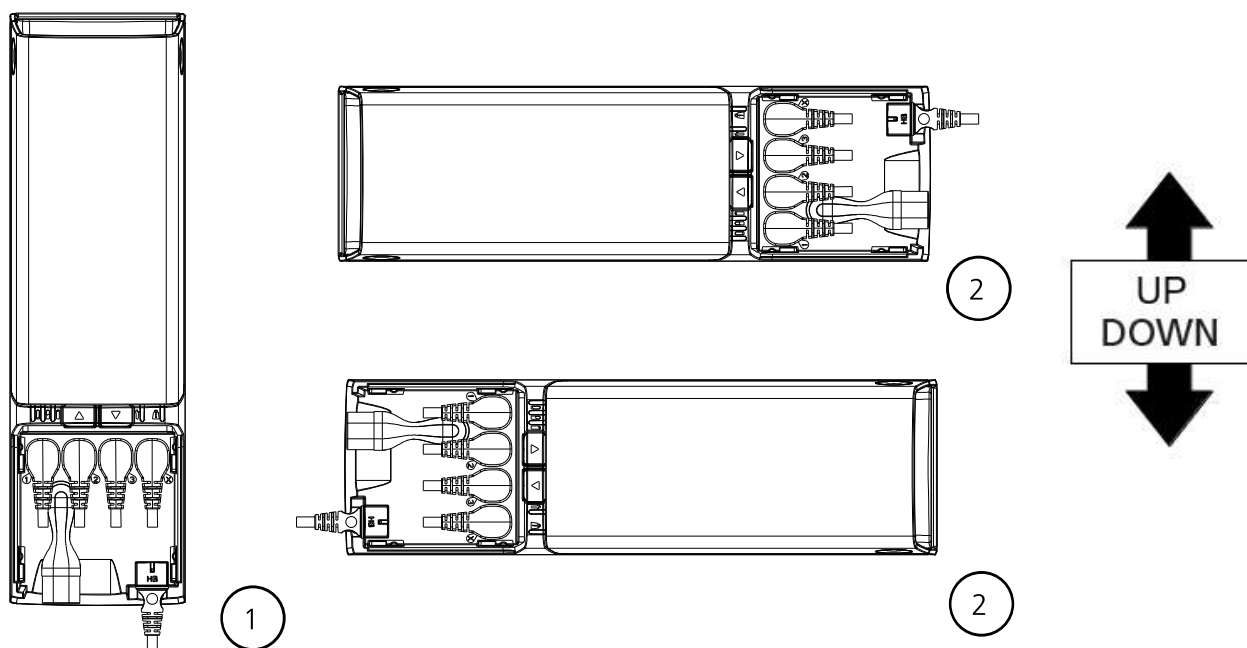
LIFT50 mounting



* The bracket kit includes 3 M5x10 mm screws. This is a special screw type (Bossard Ecosyn-grip) with a wide collar for improved fixing. Screw torque for the screw between COL50 and the bracket must be max. 1 Nm.



LIFT50 position for maintaining IP degree



Drawing no. 1039w4000



Recommendations – positioning

LIFT50 only complies with IPX6 when the control box is mounted correctly (see illustration 1 and 2).

LIFT50 can be mounted as shown on the pictures above:

- Battery upwards, cable outlets downwards (see illustration 1)
- Control box lying on either side, seen from the front (see illustrations 2)

Cables and blind plugs must be inserted correctly in the control box to maintain the IP degree in cleaning situations.

Cable hanger

COL50 comes with a cable hanger for parking mains cable or hand control when not in use.

The cable hanger can be located on either the left or right side of the control box.

Place hanger in designated grooves on the back before mounting the control box on the patient lift steel bracket.

When mounted, the hanger is locked in place.





Recommendations

- The control buttons of redundant hand controls for lifting and lowering work as normal hand control buttons.
- The service counter is only active in COL50 when a sufficiently charged BAL50 is mounted.
- During charging, LIFT50 will not be able to operate any actuators.
- Only use original LINAK® mains cables to ensure a proper connection to the internal charger.
- Only use correct LINAK charger (CHL50 or integrated charger in LIFT50).
- To avoid cables from being damaged by pulling, LINAK recommends to make safe cabling.
- Push mains cable fully into correct sockets and make sure that the plugs are completely inserted.
- In combination with BAL50, IPX6 Washable can only be guaranteed if a minimum interval of 24 hours between each wash is observed.

Motor cable

Always use 6-wire cables. Please note that angled motor cable plugs are required for connection to the control box.

Hot plugging

Removing or adding any OpenBus cables is not allowed when the control box is on power via mains supply or battery! If necessary anyway, follow this procedure:

1. Remove mains or battery and wait 5 seconds
2. Mount or dismount the required cables

If this procedure is NOT followed, it may result in a damaged OpenBus driver circuit. The risk of a damaged circuit increases if the accessory has a high start current (inrush current).



Warnings

- Always check correct assembly after mounting and service to ensure that the cable lock is mounted. (Connectors are usually removed during cleaning)
- Always use approved chemicals with the housing as the plastic may show corrosion caused by some chemicals. As a result water may accumulate/gather in housing.
- When using a control box with emergency stop, the stop button must be activated in cleaning situations to avoid unintended operation of the lift.
- Take special precautions concerning 3rd party interfacing. Please contact LINAK® for further information.
- Make a review of all product specifications before system set-up if the current cut-off limit is higher than the maximum allowed actuator current cut-off.
- Make a proper cable installation and inspect regularly for wear and damage to avoid cable interruption and actuator defects. Defective parts must be replaced.
- After service inspection, the application must be tested for correct functionality before it is put into operation to avoid actuator plugs being mixed during service. Operators must not be inside entrapment area.
- Inspect regularly for wear and damage to avoid electrical failure or system disturbance. Defective parts must be replaced.
- Make a proper cable installation to avoid short-circuit cables for hand controls and other controls. Regular inspection must be made for wear and damage. Defective parts must be replaced.
- To avoid injury, the battery should not be mounted in (all) transport situations. Use LINAK original packaging to store battery during transportation.
- Wireless: Be aware that a hand control can run an application that is out of sight.



BAL50



The BAL50 Li-Ion battery pack is a part of the LIFT50 product series specially developed for patient lifts.

LIFT50 is a complete system consisting of the control box COL50, a battery BAL50 and an external charger CHL50 in a flexible solution.

Usage

Compatibility:	COL50 and CHL50
Duty cycle:	Max. 10% (or 2 min. continuous use followed by 18 min. without use) at max. discharge current (10 A)
Charging:	Via external wall charger CHL50 or via COL50 with integrated charger
Charging state:	Maximum 30% when shipped from LINAK
Recharging during storage:	First recharge of the battery must be no later than 12 months after production date stated on the label. Hereafter the battery must be recharged at least every 12 months.
Operating temperature:	+5 °C to +40 °C
Charging temperature:	+5 °C to +40 °C Charging at elevated temperatures can impact the charging time
Charging time:	Approx. 4 hours
Storage temperature:	+10 °C to +40 °C (+10 °C to +25 °C recommended) The batteries must be stored in an applicable storage room without direct sunlight.
Relative humidity:	20% - 80% – non-condensing
Atmospheric pressure	700 to 1060 hPa
Meters above sea level:	Max. 3000 meters
Approvals:	IEC 60601-1 ANSI/AAMI ES60601-1 CSA CAN/CSA-C22.2 NO. 60601-1 IEC 60601-2 IEC62133-2



Mounting

Mounting of the BAL50 battery will follow the placement of the COL50 and CHL50.

Deep discharge protection

The BAL50 has a deep discharge protection to extend the battery life. The deep discharge protection is activated when the battery is discharged.

If the battery is completely discharged, the charging will be started at a very small rate to protect the battery. Depending on the battery state, it may take several hours to get to the normal charging state.

For long-term storage, remove the battery from the application and store separately.

Transportation

The lithium ion batteries must be packed and transported according to applicable regulations. Always ask your local transportation provider how to handle the transportation of lithium ion batteries.



Recommendations

- Charge the battery fully before first use.
- Adhere to the battery storage temperature or else the product life and performance will be reduced.
- Allow the battery to settle to room temperature before use or charging.
- Only use correct LINAK® charger (CHL50 or integrated charger in COL50).
- Do not exceed the duty cycle as it will shorten the product life and reduce performance.
- BAL50 is intended for use in indoor applications, however not in indoor pool environments.
- Recharge the battery before storage if it has been completely discharged.
- In combination with COL50, IPX6 Washable can only be guaranteed if a minimum interval of 24 hours between each wash is observed.





Warnings

ALL LI-ION BATTERY USERS MUST READ THESE IMPORTANT BATTERY SAFETY INSTRUCTIONS AND WARNINGS BEFORE USING LI-ION BATTERIES.

Failure to read and follow these safety instructions and warnings may result in fire, personal injury, and equipment damage if the batteries are charged and/or used improperly.

Lithium ion batteries differ from the lead acid technology as they have a built-in deep discharge protection.

- In case of continuous use despite warnings, a power loss might occur due to the battery deep discharge protection. In this event, there may be no warning and the application may not be able to move when expected.
- If product caution is not clearly visible at low light intensity, read the product label instructions symbol. A warning must be included in the application manufacturer's manual for the medical device.
- The application manufacturer must test the application and ensure that intentional and unintended operations do not exceed the battery specification limits. The risk analysis for the final application must allow for the ensurance of alternative means to make movement, for instance quick release or manual lowering.
- Do not open, disassemble or modify the battery housing as cell or circuitry damage may develop excessive heat.
- Discontinue the battery use immediately if the battery emits an unusual smell, feels hot, changes colour or shape, shows signs of damage or corrosion or appears abnormal in any other way.
- In case the battery turns hot, disconnect and remove the battery from the room. If not possible to remove the battery, then evacuate the room.
- Defective or damaged lithium ion batteries or batteries that produce excessive heat or fire are not allowed for transportation.
- For safety reasons, please adhere to the indicated charging, storage, and operation temperature as extreme temperatures (low or high) might ignite the batteries and cause fire.
- The mounting instructions must be followed in order to avoid exposing batteries to water.
- The customer is responsible for determining that charger and host device work properly.
- Recharge batteries every 12 months at a minimum.
- Dispose of batteries in accordance with local regulations.

DO NOT:

- heat, burn or short circuit the batteries
- expose the batteries to high impact
- crush or puncture the batteries
- charge or store the batteries near combustible material
- charge the batteries without supervision
- expose the batteries to water or other liquids
- use the batteries in pool areas

Any of the above mentioned can cause fire or injury.

LINAK® will remedy defective Li-Ion batteries built into LINAK products in accordance with the terms stipulated in the LINAK Li-Ion battery disclaimer available on the LINAK website. LINAK explicitly disclaims all other remedies and liability.



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