Multirall™ 200

Overhead lift

Instructions for Use

Liko™ Multirall™ 200 overhead lift Prod. No. 3130001

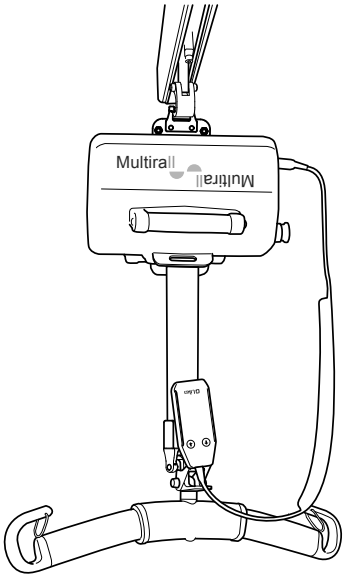

fig. 1

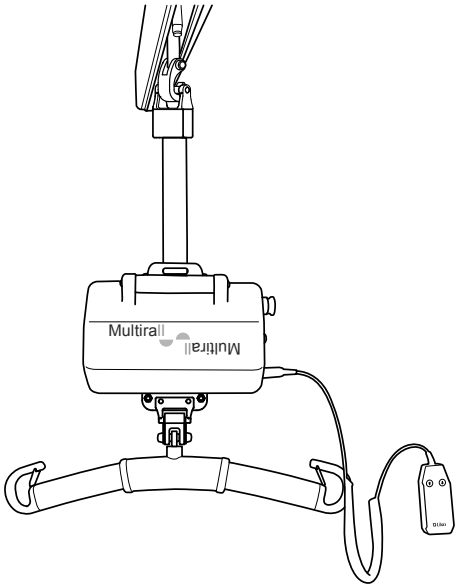

fig. 2

Product Description

Multirall™ 200 overhead lift is a general-purpose lift with the intended use in; health care, intensive care and rehabilitation. Multirall 200 overhead lift is easy to move between facilities and useful for room-to-room transitions.

Multirall™ 200 overhead lift can be mounted to the rail carriage in two different ways;
- mounted with the lift strap under the lift unit (fig. 1), or
- mounted with the lift strap above the lift unit (fig. 2).

Intended for use in all common lift and transfer situations, for example, between bed/wheelchair, to/ from floor, toilet visits, gait training, and for horizontal lifts with stretchers.

Accessories
The Liko™ product range includes several sling models in many sizes and different designs. Also available as an accessory is a practical trolley for transfer and storage of the lift, as well as an Extension Arm, for use when connecting the liftstrap to the rail carriage.

Multirall™ 200 overhead lift is adapted to Liko™ Quick Release System for safe and easy changing of lifting accessories.

In this document, the person being lifted is referred to as the patient, and the person helping is referred to as the caregiver.

IMPORTANT!
Lifting and transferring a patient always involves a certain level of risk. Read the instructions for use for both the patient lift and lifting accessories before use. It is important to completely understand the contents of the instructions for use. The equipment should only be used by trained personnel. Ensure that the lifting accessories are suitable for the lift used. Exercise care and caution during use. As a caregiver, you are always responsible for the patient's safety. You must be aware of the patient's ability to make it through the lifting situation. If something is unclear, contact the manufacturer or supplier.

7EN125103 Rev. 13
ENGLISH 2020

Enhancing outcomes for patients and their caregivers.

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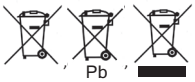
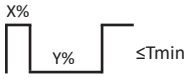
Symbol Description

These symbols can be found in this document and/or on the product.

Symbol	Description
	For indoor use only.
	The product has extra protection against electric shock (Insulation Class II).
	Protection level against electric shock Type B.
	Warning; this situation requires extra care and attention.
	Read instructions for use before use.
	CE-mark.
IP N_1 N_2	Protection level against: ingress of solid objects (N1) and ingress of water (N2).
	Legal Manufacturer.
	Date of manufacture.
	Caution! consult instructions for use.
	Read instructions for use before use.
	Battery.
	All batteries in this product must be recycled separately. - Pb underneath the symbol indicate batteries containing lead - Single Black line underneath the symbol indicate this product have been placed on the market after 2005.
	UL Recognized Component Mark for Canada and the United States.
	EFUP, Environmental Friendly Usage Period (years).
	Environmentally-friendly product which can be recycled and reused.
	The Australian Safety/EMC.
	PSE Mark (Japan).
	Product Identifier.
	Serial Number.
	Medical Device.
	Recyclable.
	The safety and essential performance of medical electrical equipment.
	Proof of Product compliance to North American safety standards.
	Non-ionizing electromagnetic radiation.
	Duty cycle for non-continuous operation. The maximum active operation time X% of any given time unit, followed by a deactivation time, Y%. The active operation time shall not exceed the specified time in minutes, T.
	GS1 Data Matrix Barcode that may contain following information (01) Global Trade Item Number (11) Production Date (21) Serial Number

Safety Instructions

Intended use
This product is not intended to be used by the patient alone. Lifting and transferring a patient shall always be performed with the assistance of at least one caregiver. This product is used as a means to perform the lift but is not in contact with the patient; therefore we do not go into the various patient conditions in this instruction for use.
Contact your Hill-Rom representative for support and advice.

⚠ **Installation of carriages for Multirall™ overhead lift shall be made by personnel authorized by Liko™ in accordance with the installation instructions and recommendations for the current lift system.**

Before use, make sure that:
- the lift is assembled in accordance with the assembly instructions
- the lifting accessories are properly attached to the lift
- the batteries have been charged for at least 8 hours
- you have read the instruction for use for the lift and lifting accessories
- personnel using the lift are informed of the correct use of the lift and lifting accessories
- the lifting accessory is selected appropriately, in terms of type, size, material and design with regard to the patient's needs.

Before lifting, <u>always</u> make sure that:
- the lift strap is not twisted or worn and can move in and out of the lift freely
- the lifting accessories are not damaged
- the lifting accessory is correctly and safely applied to the patient in order to prevent injuries
- the lifting accessories are properly attached to the lift
- the lifting accessories hang vertically and can move freely
- the sling bar latches are intact; missing or damaged latches must always be replaced
- the sling's strap loops are correctly connected to the sling bar hooks when the sling straps are extended, but before the patient is lifted from the underlying surface.

⚠ **Incorrect attachment of sling to slingbar may cause severe injury to the patient.**

⚠ **Only use the Multirall™ overhead lift with a carriage, adapter, sling bar and other accessories approved by Liko™.**

⚠ **Never leave a patient unattended during a lifting situation!**

Multirall™ 200 overhead lift has been tested by an accredited testing institute

⚠ **No modification of the product is allowed.**

⚠ **Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the lift, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.**

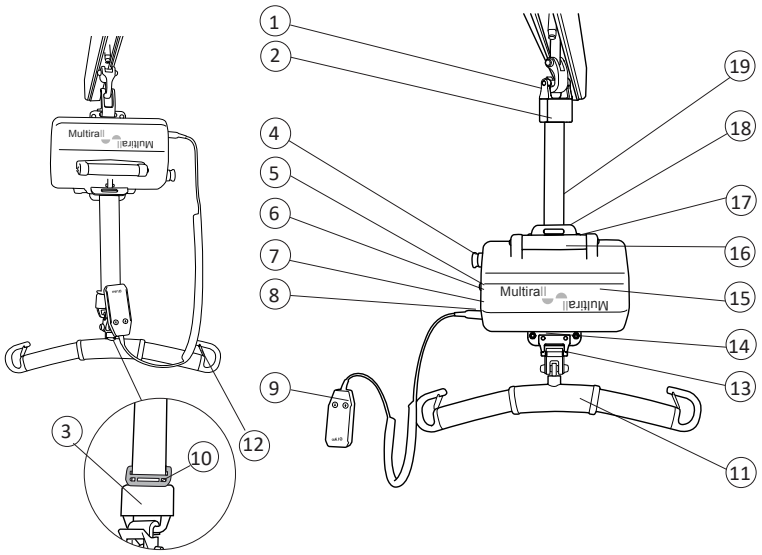
⚠ **Use of the product adjecent to other equipment should be avoided because it could result in improper operation, if such use is neccessary, observe and verify that the other equipment is operating normally.**

Electromagnetic disturbance, may affect the lifting performance of the product. Modification using other parts than original spare parts (cables etc.) may affect the electromagnetic compatibility of the product. Particular care must be taken when using powerful sources of electromagnetic disturbance, such as diathermy, etc, so that, for example, diathermy cables are not positioned on or near the lift.

If you have any questions, please consult the responsible assistive device technician or the supplier.

The lift is not suitable for use in the presence of flammable mixtures, for example, in areas where flammable goods are stored.

Definitions



1. Carriage Hook (S65 Carriage with Single Hook)
2. Q-Link II (quick fastener)
3. Q-Link (quick fastener)
4. Emergency stop
5. End cover
6. Mechanical Emergency Lowering
7. Electrical Emergency Lowering/Raising
8. Contact for hand control
9. Hand control
10. Hang-up HandControl Hanger
11. Sling bar
12. Latches
13. Quick-Release Hook
14. Carriage Adapter MR for S65
15. Lift unit
16. Handle
17. SSP Limit Switch
18. Extension Belt connector
19. Lift strap

Technical Data

Maximum load:	200 kg (440 lbs)
Batteries:	2 X 12 V DC, (2.4 Ah - 2.6 Ah), Valve-regulated lead-acid gel-type batteries. New batteries are provided by Liko®.
Battery charger:	*SMP CC-10-43-24*; 100-240 V AC, 40-60 Hz, max 600 m A
Lifting speed:	60 mm/s (2.3 in/s)
Lifting interval:	1600 mm (63 in)
Electrical data:	24 V DC, 8.5 A
Lift motor weight:	8.7 kg (19 lbs)
Emergency lowering device:	Mechanical and electrical
Intermittent power:	Int. Op 10/90, active operation max 6 min.
Sound level:	62.2 dB(A)
Protection class:	IP 30 (lift unit) IP 43 (hand control)
Operating forces of controls:	Button on hand control: 4.5 N Button on end cover: 4 N
Surrounding functional environment:	Temperature: +10°C to +40°C, (50° F to 122° F) Humidity: 20% to 90% at 30°C non-condensing, Atmospheric pressure: 700-1060hPa.

Intended for indoor use.

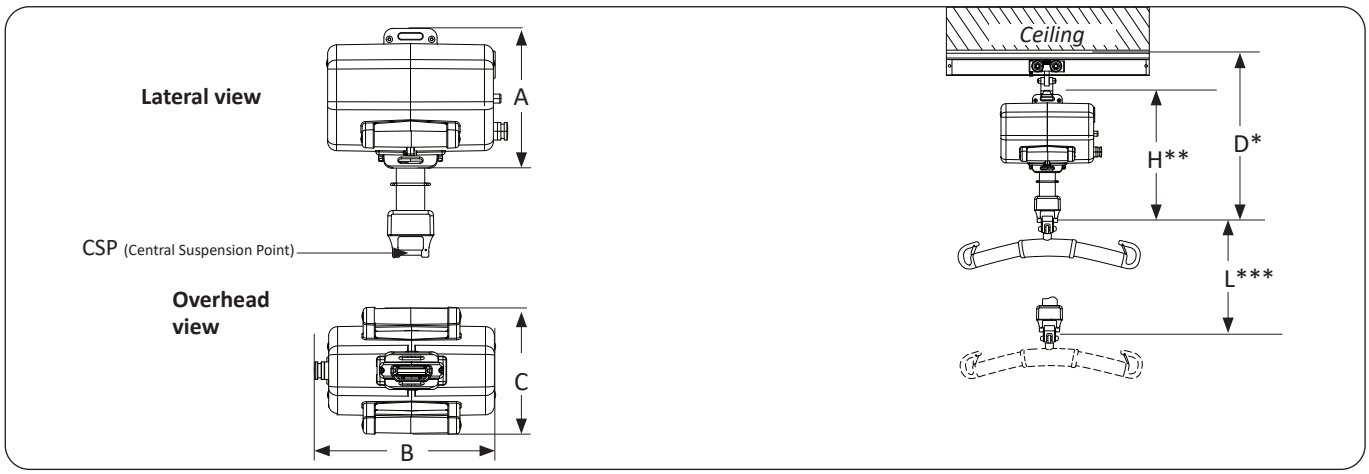
Type B, in accordance with the electrical shock protection class.

Class II equipment.

Multirall™ 200 overhead lift is equipped with an SFS (Single Fault Safety) safety drum. This safety design provides protection against uncontrolled lowering. The lift strap has a tenfold safety.

Component X1 (Murata CSTCC4M00G53) on PCBA contains a SVHC, Lead titanium zirconium oxide (Pb(Ti,Zr)O3), which exceeds the limit according to REACH Regulation.

Dimensions



Measurements in mm.

A	B	C	D*	H**	L***
264	295	210	443	308	1600

Measurements in inch.

A	B	C	D*	H**	L***
10.4	11.6	8.3	17.4	12.1	63.0

* Min. distance from ceiling to CSP at max. lifting height.

** Installation dimensions: the distance between the attachment point for the lift unit on the carriage and the CSP at max. lifting height.

*** Lifting interval: the distance between max. lifting height and min. lifting height measured in CSP.

EMC Table

Guidance and manufacturer's declaration – electromagnetic emissions

The overhead lift is intended for use in the electromagnetic environment specified below. The customer or the user of the overhead lift should assure that it is used in such an environment.
"Essential performance according to the manufacturer: The lift shall not move unintentionally while being submitted to disturbances."

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The overhead lift uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The overhead lift is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity

The overhead lift is intended for use in the electromagnetic environment specified below. The customer or the user of the overhead lift should assure that it is used in such an environment.
"Essential performance according to the manufacturer: The hoist shall not move unintentionally while being submitted to disturbances."

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	+/- 6 kV contact +/- 8 kV air	+/- 6 kV contact +/- 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient / Burst IEC 61000-4-4	+/- 2 kV for power supply lines +/- 1 kV for input/output lines	+/- 2 kV for power supply lines +/- 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	+/- 1 kV Line to Line +/- 2 kV Line(s) to Earth	+/- 1 kV Line to Line +/- 2 kV Line(s) to Earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT)) for 5 sec	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT)) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the [Equipment or System] requires continued operation during power mains interruptions, it is recommended that the [Equipment or System] be powered from an uninterruptible power supply or battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment

NOTE U_T is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration – electromagnetic immunity

The overhead lift is intended for use in the electromagnetic environment specified below. The customer or the user of the overhead lift should assure that it is used in such an environment.
"Essential performance according to the manufacturer: The hoist shall not move unintentionally while being submitted to disturbances."

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the overhead lift, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vmrs	$d = 1{,}2\sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m 80MHz to 2,5GHz	10 V/m	$d = 0{,}35\sqrt{P}$ 80 MHz to 800 MHz $d = 0{,}7\sqrt{P}$ 800 MHz to 2,5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a] should be less than the compliance level in each frequency range. [b] Interference may occur in the vicinity of equipment marked with the following symbol.

NOTE 1 At 80MHz and 800MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflected from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the overhead lift is used exceeds the applicable RF compliance level above, the overhead lift should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the overhead lift.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the overhead lift

The overhead lift is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the overhead lift can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the overhead lift as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
	150 kHz to 80 MHz $d = 1{,}2\sqrt{P}$	**80 MHz to 800 MHz** $d = 0{,}35\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 0{,}7\sqrt{P}$
0.01	0,12	0,035	0,07
0.1	0,38	0,11	0,22
1	1,2	0,35	0,7
10	3,8	1,11	2,21
100	12	3,5	7,0

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

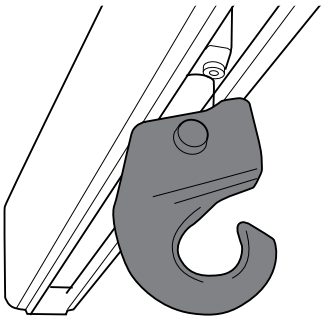
Assembly

Approved combinations

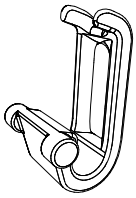
See individual combinations 1, 2 and 3, below.

Note! no other combinations are allowed, whether the parts are Liko™ products or products from another company.

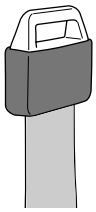
Combination 1: Q-Link or Q-Link II, # 3136015, # 3136016, # 3136040



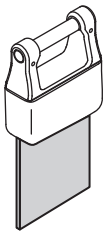
3136015
Carriage Hook for MR/LR:
Available as a service part only



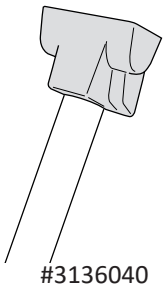
3136016
Adapter MR/
LR: Available as a service part only



Q-Link: Available as a service part only



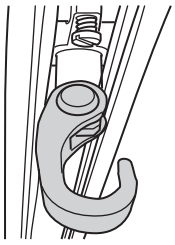
Q-Link II
(Multirall std)



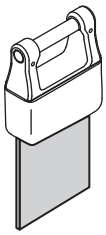
#3136040
Extension Arm Adapter MR:
Available as a service part only

Assembly: See chapter ”Assembly to Carriage Hook for MR/LR” in this document.

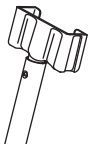
Combination 2: Q-Link or Q-Link II, # 3136011, # 31390013



#3136011
Carriage S65
with single hook

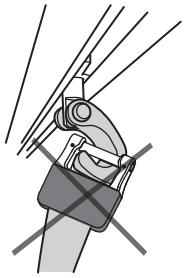


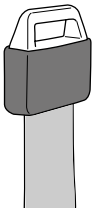
Q-Link II
(Multirall std)



#31390013
Extension Arm Multirall

⚠ Incorrect use!

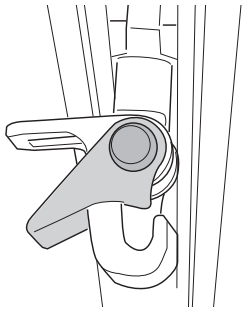




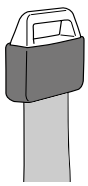
Q-Link: Available as a service part only

Assembly: See ”Assembly to Carriage S65 with single hook” in this document.

Combination 3: Q-Link or Q-Link II, # 3136010, # 31390012

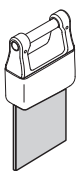


#3136010
Carriage MR, S50

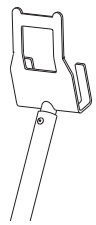


Q-Link

Available as a service part only

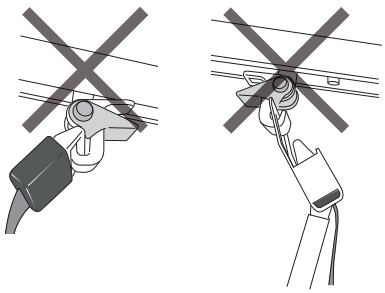


Q-Link II
(Multirall std)



#31390012
Helping Hand Multirall

⚠ Incorrect use!



Prod. No. 3136010 Available as a service part only.
Prod. No. 31390012 Available as a service part only.
Assembly: See assembly instruction for item 31390012.

Assembly to Carriage Hook for MR/LR:

Before the first use,

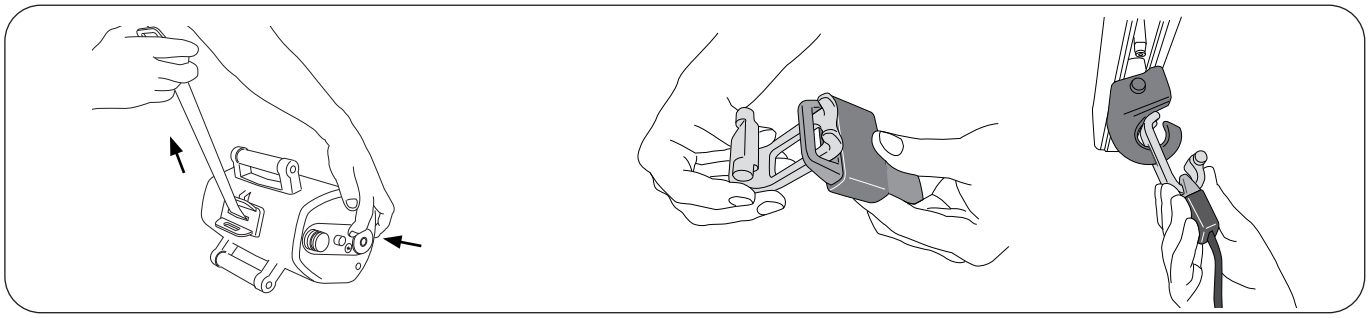
- Charge the lift's battery for at least 8 hours, see chapter "Charging the Batteries".
- Connect the Handcontrol MR-2 (Prod. No. 3136001) to the contact for handcontrol on the lift unit.

Multirall™ 200 overhead lift can be mounted to the Carriage hook for MR/LR in two different ways. See alternatives below.

Alt. A, with the lift strap <u>above</u> the lift unit

This alternative is recommended in cases where the lift is to be moved frequently between different rail systems, or when the lift is to be used for room-to-room transfers.

⚠ **A lift assembled with the lift strap above the lift unit must not be used in wet areas.**

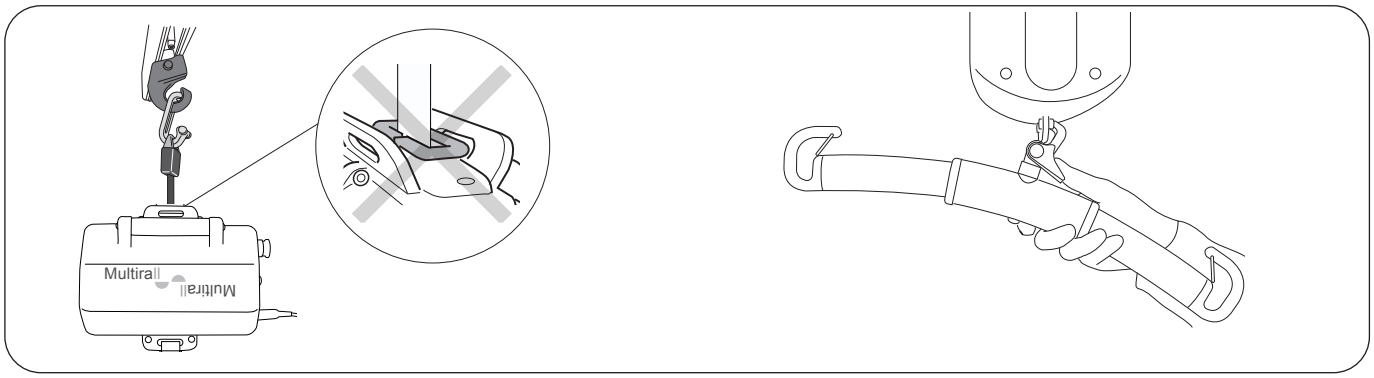


1. Feed out desired length of lift strap by applying tension to the lift strap and simultaneously pressing the electrical emergency lowering button.

⚠ **Operate the lift <u>only</u> when tension is applied to the lift strap!**

2. Insert the Adapter MR/LR in to the Q-Link or Q-Link II.

3. Connect the Adapter MR/LR to the Carriage Hook for MR/LR.



4. Raise the lift to an appropriate height.

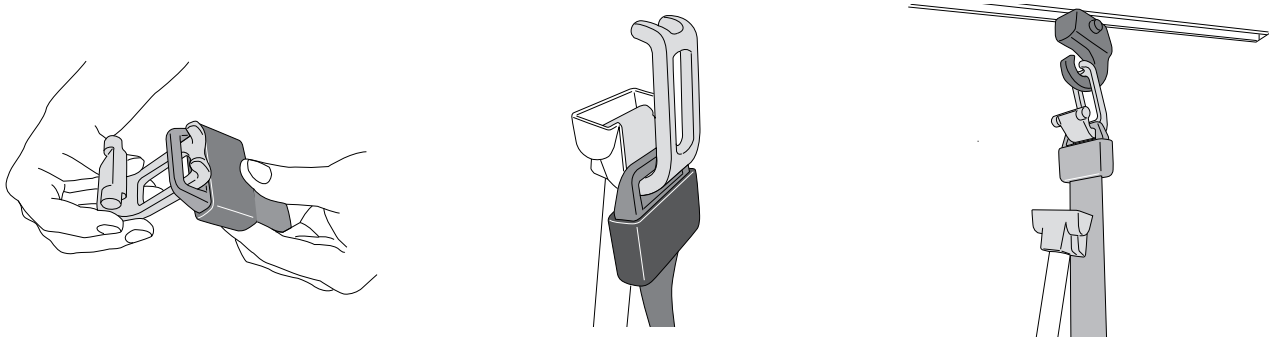
NOTE! Remove the Hang-Up HandControl Hanger when the lift is installed with the lift strap above the lift unit.

5. Connect the desired lifting accessory to the universal connector at the lift unit, see chapter "Operation".

Recommended accessory for (**Alt. A, with the lift strap <u>above</u> the lift unit**).

Extension Arm Adapter MR Prod. No 3136040: Available as a service part only.

connect or disconnect the Adapter MR/LR to or from the Carriage Hook for MR/LR.



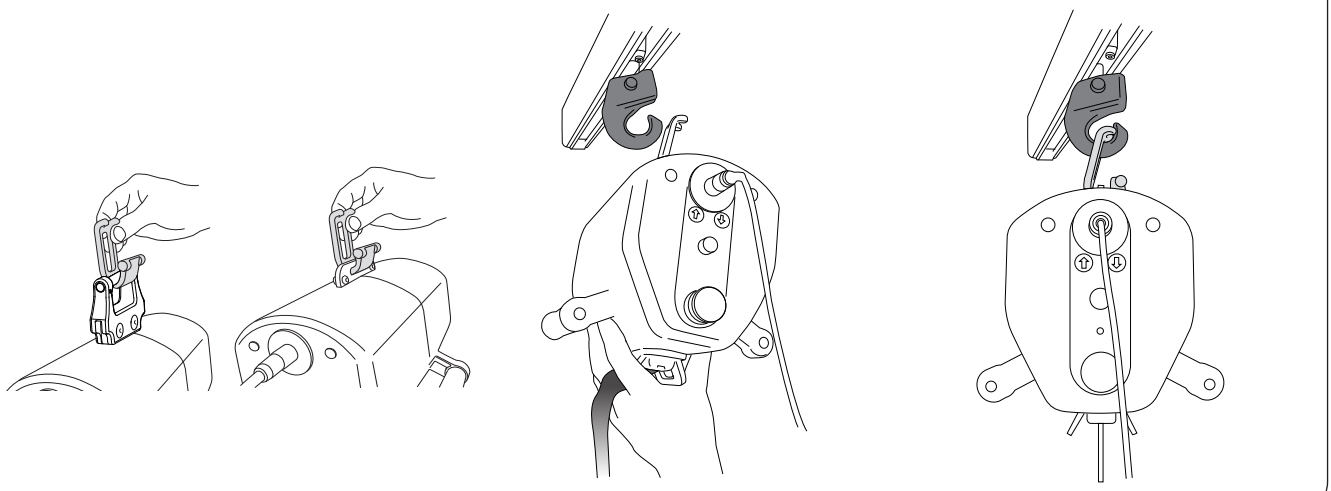
1. Insert the Adapter MR/LR in to the Q-Link or Q-Link II.

2. Place the Adapter MR/LR in the Extension Arm Adapter MR, in its intended holder.

3. Connect disconnect the Adapter MR to/from the Carriage hook MR/LR with the Extension Arm Adapter MR.

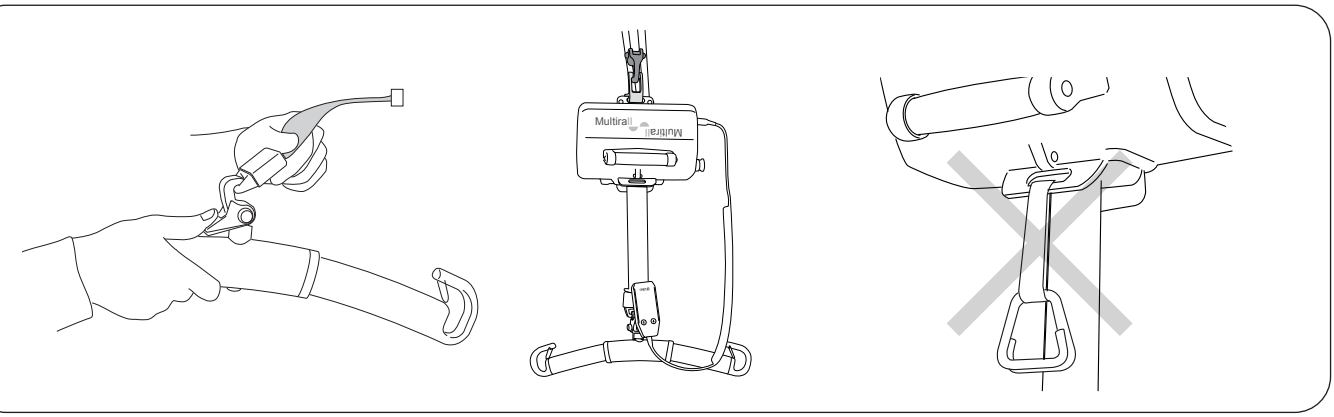
Alt. B, with the lift strap <u>under</u> the lift unit

This alternative is recommended in cases where the lift is to be installed in the same rail system for a longer period of time without being moved.



1. Insert the Adapter MR/LR in to the universal connector or MultiRall carriage adapter 3126020.

2. Connect the Adapter MR/LR in to the Carriage Hook for MR/LR.



3. Connect the desired lifting accessory to the Q-Link or Q-Link II, see chapter “Operation”. The lift strap and lifting accessory are then suspended under the lift unit.

⚠ **Multirall™ 200 overhead lift must not be equipped with a Strap Gripper when the lift strap is mounted under the lift unit. This may result in the Strap Gripper getting caught in the lift strap.**

After assembly, make sure that:

- the lift’s functions correspond to the markings of the hand control
- emergency lowering works properly (mechanical and electrical)
- the battery charger works properly and the indicator lamps are illuminated during charging
- the batteries are charged.

Assembly to Carriage S65 with single hook

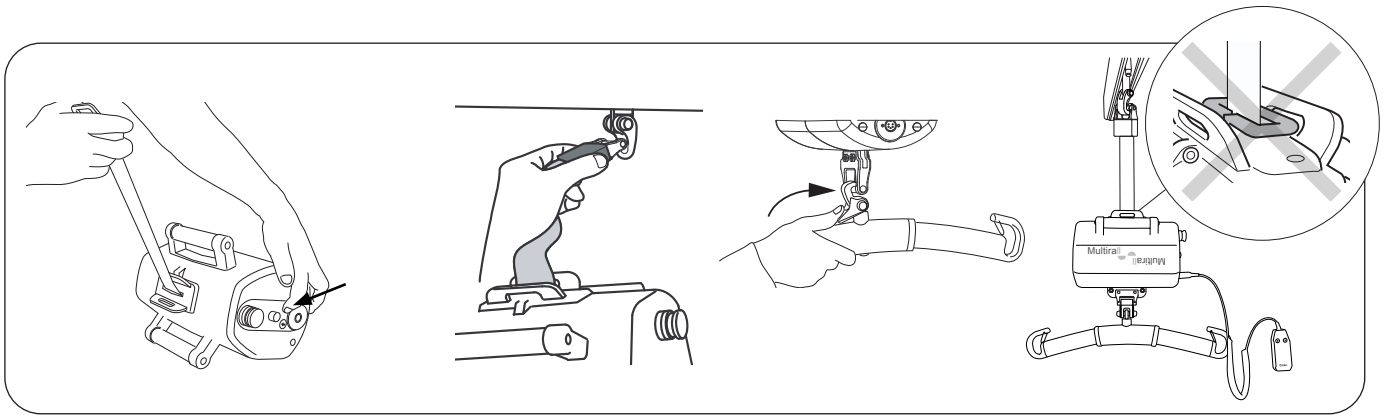
Before the first use,

- Charge the lift's battery for at least 8 hours, see chapter "Charging the Batteries".
- Connect the Handcontrol MR-2 (Prod. No. 3136001) to the contact for handcontrol on the lift unit.

Multirall™ 200 overhead lift can be mounted to the **Carriage S65 with single hook** in two different ways, see alternatives below.

Alt. A, with the lift strap <u>above</u> the lift unit
This alternative is recommended in cases where the lift is to be moved frequently between different rail systems, or when the lift is to be used for room-to-room transfers.

⚠ **A lift assembled with the lift strap above the lift unit must not be used in wet areas.**



1. Feed out desired length of lift strap by applying tension to the lift strap and simultaneously pressing the electrical emergency lowering button.

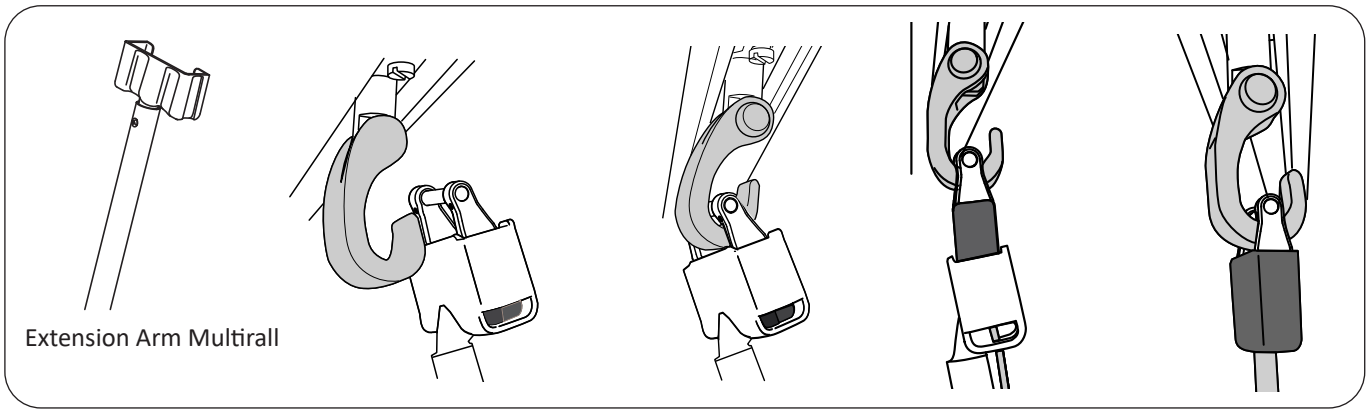
   ⚠ **Operate the lift <u>only</u> when tension is applied to the lift strap!**

2. Connect the Q-Link or Q-Link II to the rail carriage and raise the lift to an appropriate height.

3. Connect the desired lifting accessory to the universal connector of the lift unit, see "Operation".

NOTE! Remove the Hang-Up HandControl Hanger when the lift is installed with the lift strap above the lift unit.

Alt. A, with the lift strap <u>above</u> the lift unit, using the: Extension Arm Multirall Art. nr. 31390013

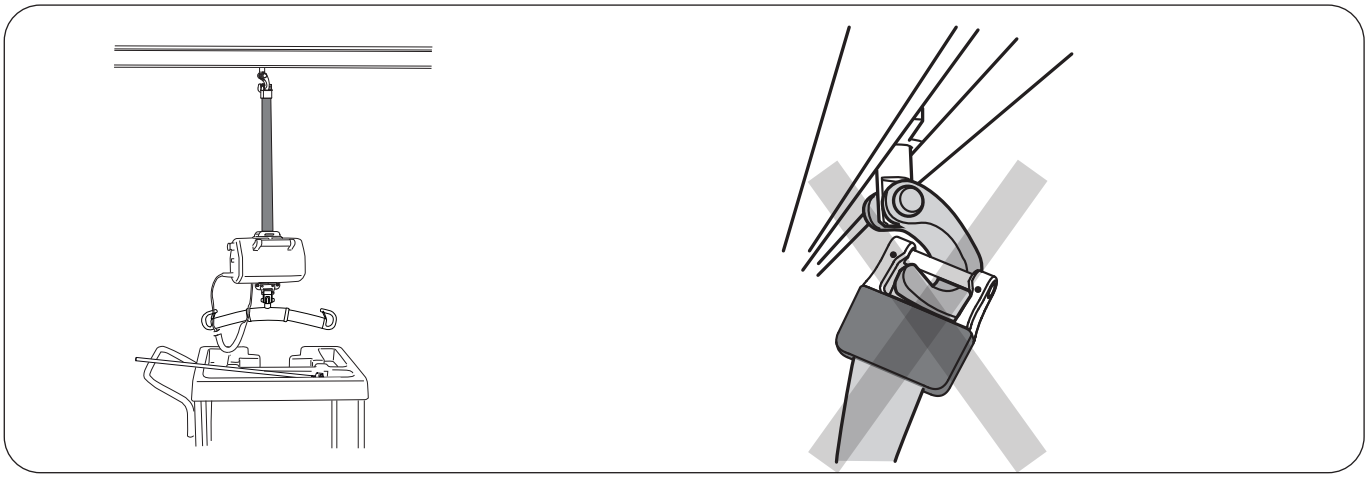


Extension Arm Multirall

1. Place the lift strap with the Q-Link or Q-Link II in the Extension Arm. Move the Extension Arm with the Q-Link or Q-Link II towards the carriage hook according to the illustration above.

2. Connect the Q-Link or Q-Link II to the carriage hook.

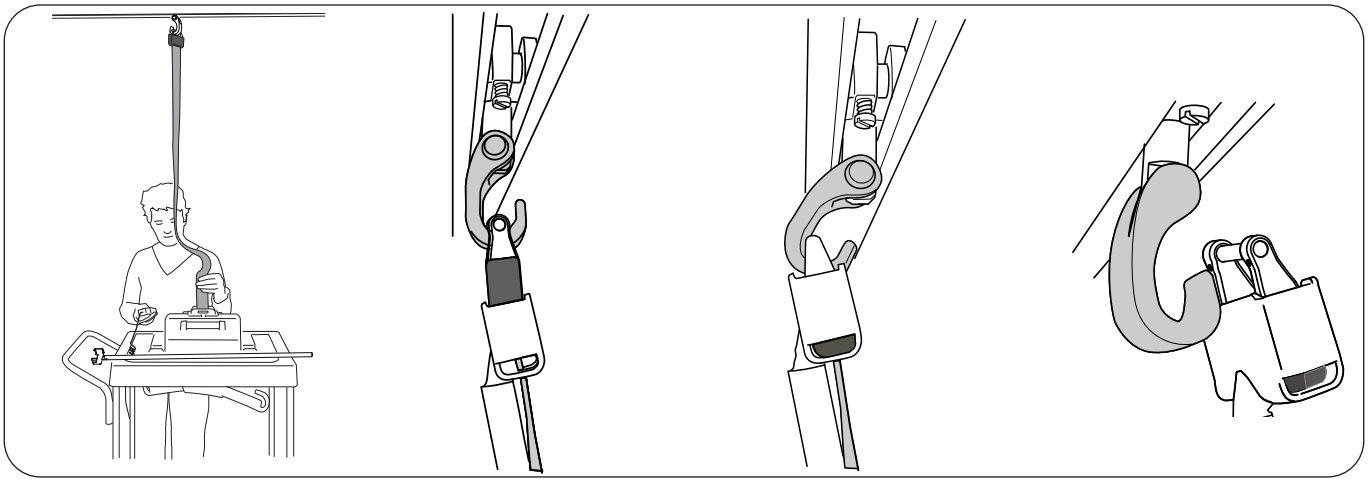
3. ⚠ After mounting, make sure that the Q-Link or Q-Link II is properly positioned into the carriage hook and that the lift strap is safely attached to the hook. The lift strap must hang vertically before lifting begins (see illustration).



4. Multirall™ overhead lift is now properly mounted and ready for use.

⚠ Before lifting it is important to ensure that the Q-Link or Q-Link II is securely fastened to the carriage hook. If this is not the case, repeat steps 1-4 before starting a lift.

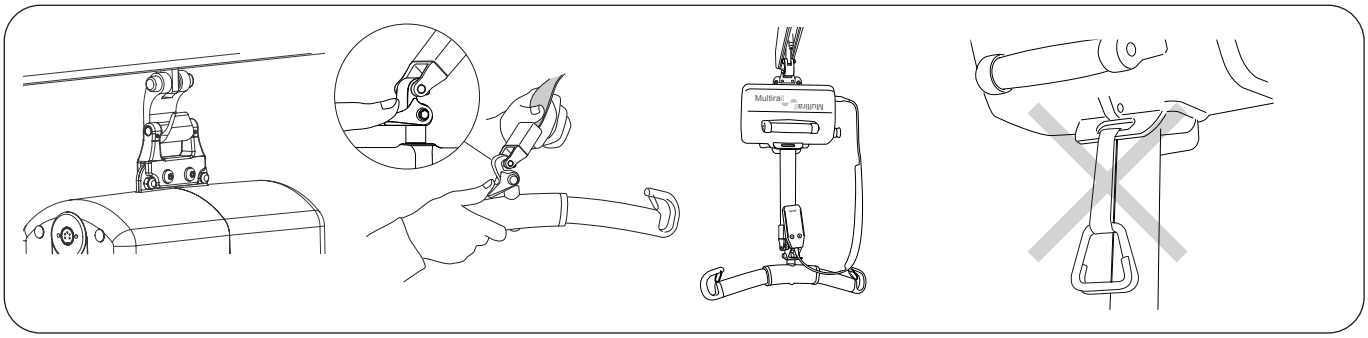
Remove the lift strap from the carriage hook S65, using the: Extension Arm Multirall Art. nr. 31390013



1. Lower the lift motor to a Multirall™ overhead lift Trolley or other suitable location. Unload the lift strap by applying tension to the strap, while pressing the button, marked in the desired direction.
2. Place the Q-Link or Q-Link II in the Extension Arm according to the illustration above.
3. Unhook the Q-Link or Q-Link II from the carriage hook.
4. Remove the Q-Link or Q-Link II and the Extension Arm from the carriage hook.

Alt. B, with the lift strap <u>under</u> the lift unit

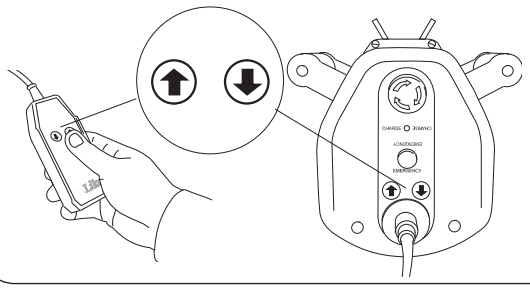
This alternative is recommended in cases where the lift is to be installed in the same rail system for a longer period of time without being moved.

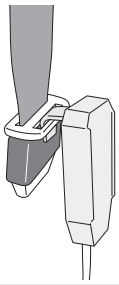


1. Install the Multirall™ overhead lift by placing the top connector directly into the carriage hook. Check that the unit is resting securely at the bottom of the hook before applying a load or lifting a patient.
2. Connect the desired lifting accessory to the Q-Link or Q-Link II, see “Operation”. The lift strap and lifting accessory are then suspended under the lift unit.

⚠ Multirall™ 200 overhead lift must not be equipped with a Strap Gripper when the lift strap is mounted under the lift unit. This may result in the Strap Gripper getting caught in the lift strap.

Operation





Operating

Multirall™ 200 overhead lift is operated by lightly pressing the buttons on the hand control. The arrows indicate the direction of movement. The movement stops when the buttons are released. Multirall™ 200 overhead lift can also be operated with the corresponding buttons on the end cover of the lift unit.

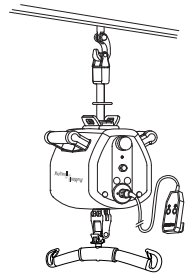
⚠ The arrow corresponds to the direction of travel when the lift is mounted with the lift strap above the lift unit.

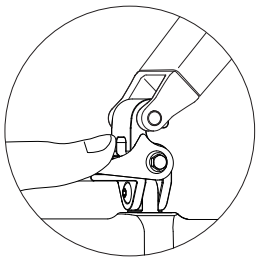
⚠ Operate the lift only when tension is applied to the lift strap!

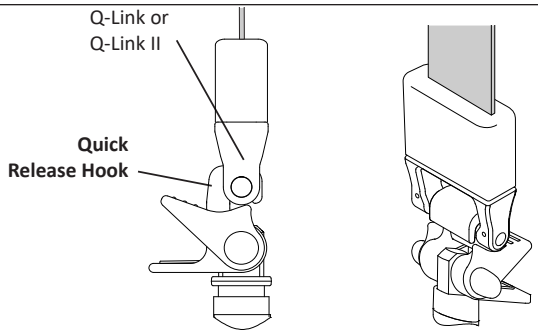
⚠ Operate the lift only when the lift is correctly mounted to the carriage hook.

Hang-up HandControl Hanger

When not in use, the hand control can be hung on the Hang-up HandControl Hanger.





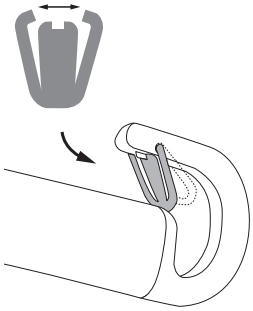


Change of lifting accessories

Multirall™ 200 overhead lift is adapted to Liko™ Quick Release System for safe and easy changing of lifting accessories.

Lifting accessories that are not equipped with a Quick Release Hook can easily be updated with a Quick Release Hook so that they can be used with Multirall. See “Quick Release Hook”, page. 21.

⚠ Before lifting check that the Quick-release Hook is correctly attached to the Q-Link or Q-Link II, see illustration above.



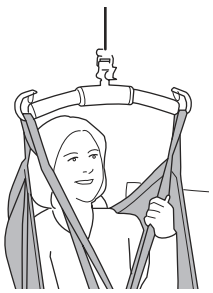


Figure 1.

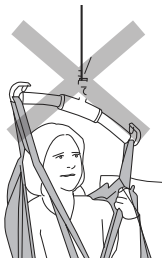


Figure 2.

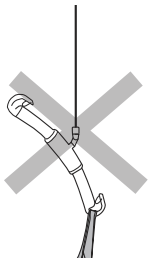


Figure 3.

Installation of Latches

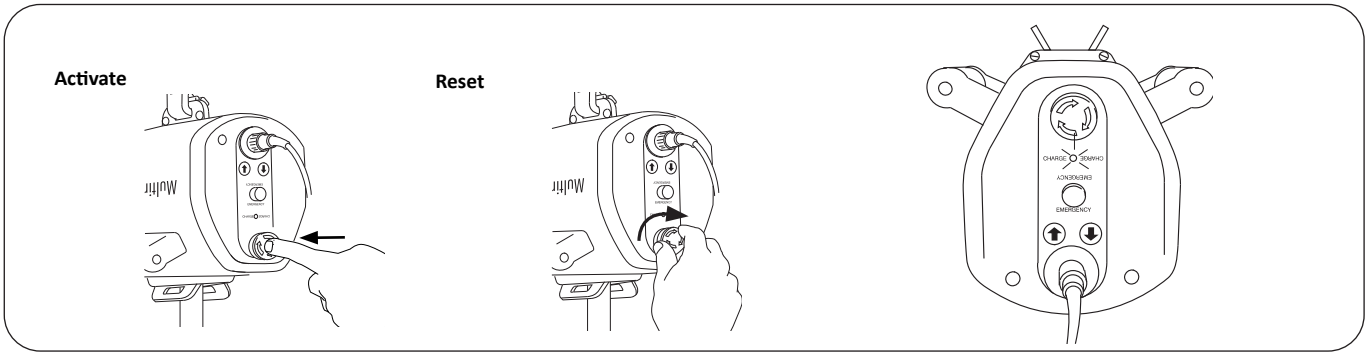
After installation, check that the latch locks and moves freely in the sling bar hook.

Lift correctly!

Before each lift, make sure that:
– the Sling loops at opposite sides of the Sling are at the same height
– all the Sling loops are fastened securely in to the Slingbar hooks
– the Slingbar is level during the lift, see Figure 1.

⚠ If Slingbar is not level (see Figure 2) or if the sling loops is wrongly attached to the slingbar (see Figure 3) lower the user to a firm surface and adjust according to the Instruction for use of Sling in use.

⚠ An improper lift can be uncomfortable for the user and cause damage to the lift equipment! (see Figure 2 and figure 3).



Emergency Stop

Enable the emergency stop: press the red button.

Reset the emergency stop: turn the button in the direction indicated by the arrows on the button.

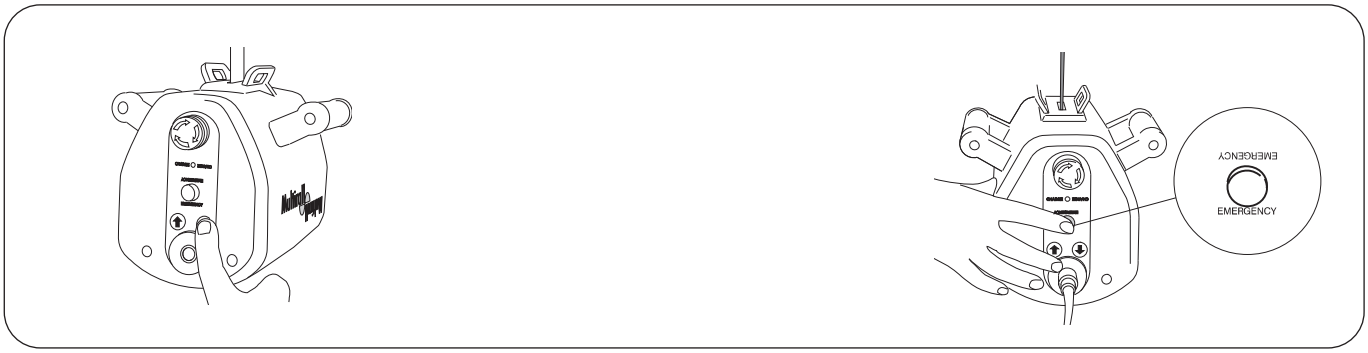
The red button on the lift unit end cover is intended for use in an emergency situation. When the button is pressed, contact between the motor and power source is broken, which stops the lifting motion.

Charge Indicator

Two indicators will warn when the battery has a low charge:

- buzzer that sounds when lifting
- LED that is lit during lifting.

When either of these signals sounds or illuminates, the unit should be charged as soon as possible. See "Charging the Batteries" below.



Electrical Emergency Lowering

In the event that the hand control or electronics malfunction, the lift can be lowered by pressing the button on the end cover of the lift unit.

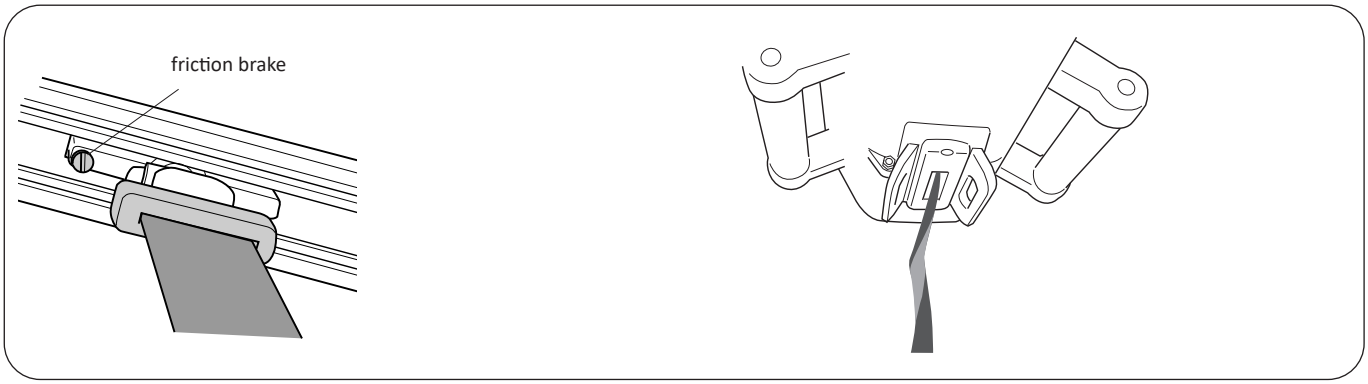
⚠ **The arrow corresponds to the direction of travel when the lift is mounted with the lift strap above the lift unit.**

Ensure the patient is lowered into a bed, wheelchair or other suitable place.

Mechanical Emergency Lowering

Press the button marked "Emergency" on the end cover of the lift unit. Note that load must be applied to the lift in order for the mechanical emergency lowering to work.

Ensure the patient is lowered into a bed, wheelchair or other suitable place.



Adjustable Friction Brake

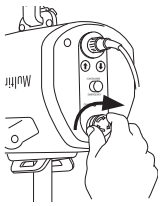
The amount of drag on the lift can be adjusted with the friction brake on the carriage. Turn the brake clockwise for increased resistance and counter clockwise for reduced resistance.

SSP Limit Switch

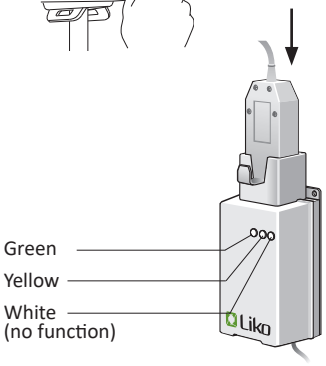
It is important that the lifting motion of the lift strap is performed as vertically as possible to ensure safe operation. The SSP Limit Switch is intended to stop the lifting motion if the lift strap is subjected to harmful strain, for example, if it is pulled sideways or folded over during the lifting motion. The SSP Limit Switch also provides protection against pinching. If the SSP Limit Switch has been activated and the lifting motion stopped, the lift strap must first be operated downwards before it can be operated upwards again.

Charging the Batteries

1.

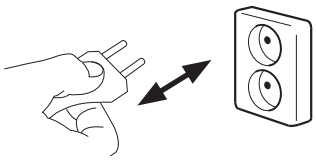


2.



Prod. No. 3126101- 3126104

3.



⚠ **The AC connector of the charger unit must be easy accessible to the operator.**

In order to ensure maximum battery life, it is important to charge the batteries regularly. We recommend that you charge the batteries after use or every night.

The batteries are fully charged after approximately 8 hours. When fully charged, batteries in good condition are sufficient for approximately 60 lift cycles. The connector cable of the battery charger cannot be repaired. If the cable is damaged, it should be replaced by a new one!

Charging

1. Check to ensure that the emergency stops are not pressed in during charging.
2. Place the hand control in its intended place on the charger.
3. Connect the charger to an electrical outlet (100-240 V AC).
   The charging starts automatically. The green LED indicates that the charger is connected to a power supply. The yellow LED indicates that the battery is charging. When the battery is fully charged, the charger is switched off automatically and the yellow LED turns off.

NOTE! If the lift is not to be used for a longer period of time, the hand control should be placed in the charger. If the charger is not connected to a power supply, the emergency stop button should be pressed in order to prevent the battery from discharging.

Please read the instruction for use before use.

Battery is charging when yellow led is lit.

AC is connected when green led is lit.

Room-to-Room transfer

The Liko™ R2R (Room-to-Room) system is an effective solution for safe and easy transfer of patients between two or more rooms. The R2R system is mounted without making openings in walls over doors, and full isolation is therefore retained between the rooms supported by the system.

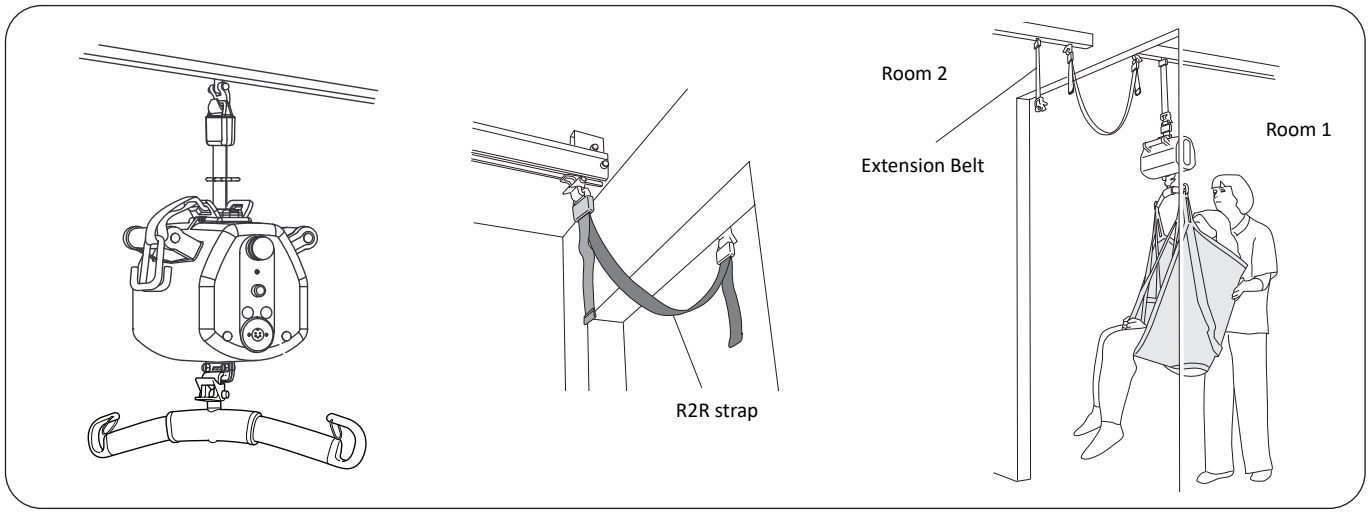
In order to perform room-to-room transfers with Multirall™ 200 overhead lift, the following conditions are required:

- Both rooms have separate rail systems, each with a carriage mounted in the rail.
- Between the rooms, suspended under the doorframe, a Room-to-Room Strap is mounted, acting as a bridge between the rooms.
- Multirall™ 200 overhead lift is equipped with a Strap Gripper, which is installed to either of the Extension Belt connectors on the lift.
- An adjustable extension belt is mounted to the carriage, in order to obtain an appropriate lifting height. Alternatively, if the lifting height becomes too low when using the Extension Belt, the Extension Arm Multirall/Multirall Helping Hand can be used for connecting Q-Link II or Q-Link directly to the carriage hook, providing a maximum lifting height.

Room-to-Room Transfer

Below is a description of an R2R transfer with Multirall, Strap Gripper, Room-to-Room Strap and adjustable Extension belt.

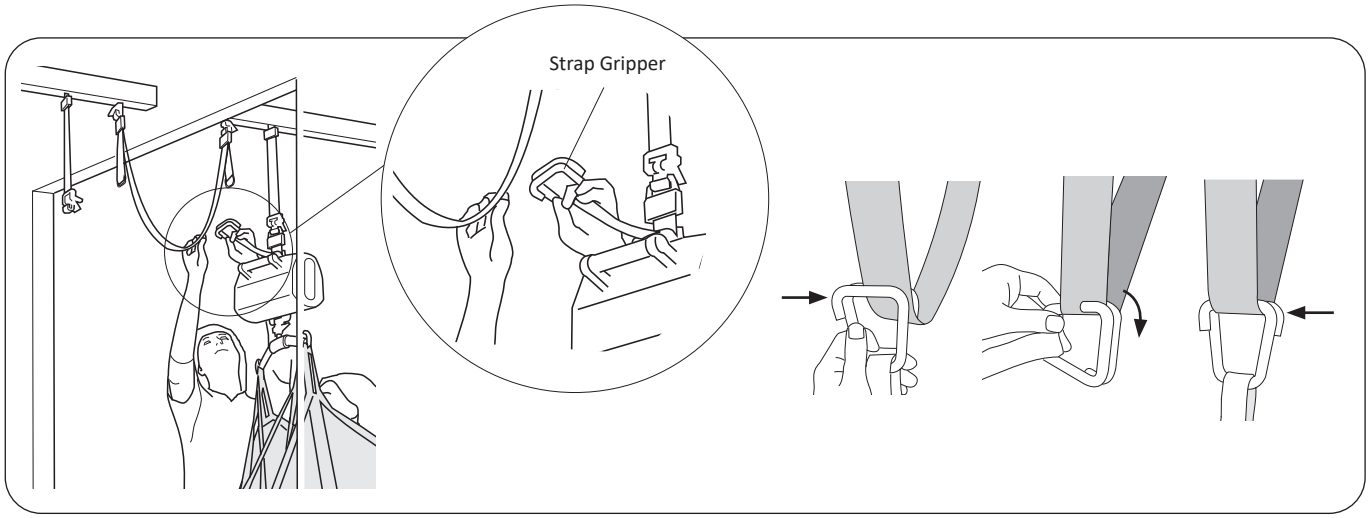
⚠ **Check carefully at each stage that the Q-Link or Q-Link II is correctly applied to the carriage hook/extension belt!**



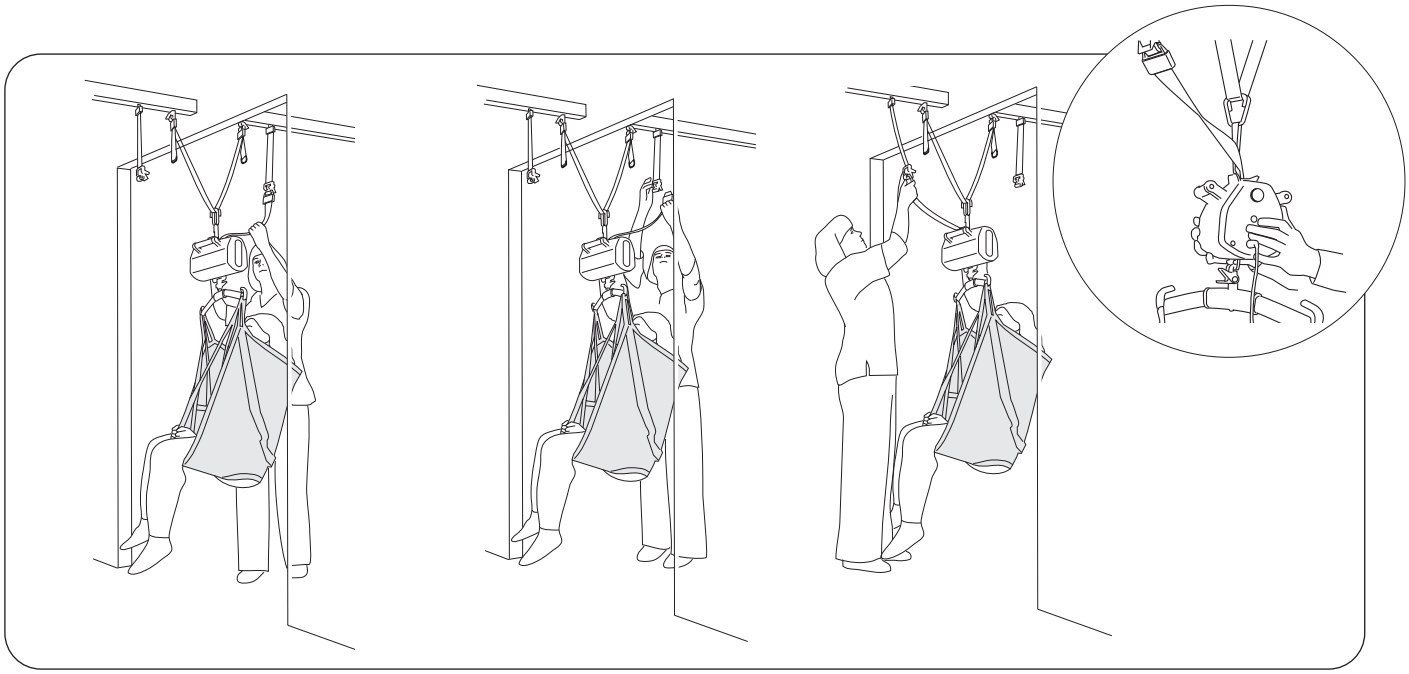
Install the lift according to assembly alternative A. Install the Strap Gripper in accordance with applicable assembly instructions.

Install the Room-to-Room Strap between the two rooms. For installation and length adjustment, see applicable assembly instructions.

Multirall is pending in the carriage, alternatively in an extension belt, in room 1. Move the lift with the patient forwards, as close as possible to the doorway. Lower the patient as far down as is comfortably possible, but not so far that the caregiver cannot reach the Room-to-Room Strap with the Strap Gripper.



Connect the Strap Gripper with both hooks to the Room-to-Room Strap, see illustration to the right.

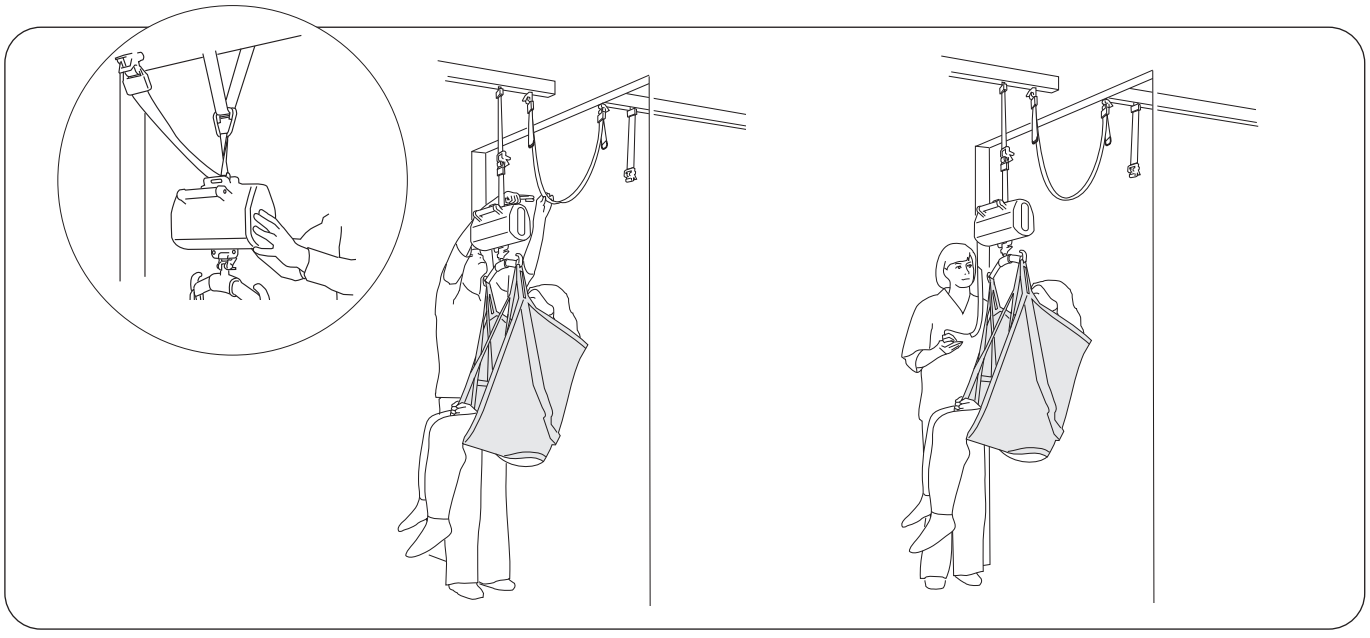


Lower the Multirall™ 200 overhead lift until the Room-to-Room Strap carries the full weight of the patient. Then run out an extra 10 cm (4 in) of lift strap to provide enough slack for disconnection.

⚠ **Keep hand tension on the lift strap as you run it out of the lift motor.**

Disconnect the lift strap from the carriage/extension belt in room 1 and connect it to the carriage/extension belt in room 2. To prevent the lift strap from twisting, which in turn may cause the SSP limit switch to activate (see p. 16), the lift unit must be turned manually so that the lift strap is straight when it enters the lift unit (see small illustration).

⚠ **Check carefully to ensure that the Q-Link or Q-Link II is correctly applied to the carriage hook/extension belt!**



Only when the lift strap runs straight into the lift unit can the transfer to room 2 proceed (see small illustration). Raise the lift until the weight of the patient has been fully transferred to the carriage in room 2.

⚠ **While the lift is raised, it is very important to ensure that the lift strap is not twisted, in order for it not to fold when it enters the lift unit.**

Then disconnect the Strap Gripper.

Move the patient further on in room 2.

Maximum Load

Different maximum loads may apply to different products on the assembled lift system: rail, lift, sling bar, sling and any other accessories used. For the assembled lift system, the maximum load is always the lowest maximum load rating of any of the components. For example: a Multirall™ 200 overhead lift that is approved for 200 kg (440 lbs) can be equipped with a lifting accessory that is approved for 300 kg (660 lbs). In this case, the maximum load of 200 kg (440 lbs.) applies to the assembled lift system. Check the markings on the lift and lifting accessory or contact your Hill-Rom representative if you have any questions.

Recommended Lifting Accessories

⚠ **Using lifting accessories other than those approved can entail a risk.**

Recommended sling bars and accessories for Multirall™ 200 overhead lift are described below.

For additional guidance in selecting a sling, study the instruction for use for the respective sling models. Here, you will also find guidance for combining Liko® sling bars with Liko® slings.

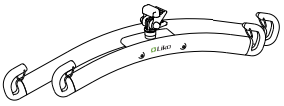
Contact your Hill-Rom representative for advice and information on the Liko® product range.

Universal SlingBar 350 with Quick-release Hook Prod. No. 3156084
Fixed connection, prod. no. 3156074*
Max. load 300 kg (660 lbs)

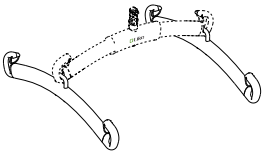
Universal SlingBar 450 with Quick-release Hook Prod. No. 3156085
Fixed connection, prod. no. 3156075*
Max. load 300 kg (660 lbs)

Universal SlingBar 600 with Quick-release Hook Prod. No. 3156086
Fixed connection, prod. no. 3156076*
Max. load 300 kg (660 lbs)

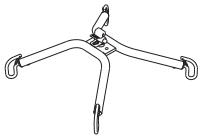
Universal SlingBar 670 Twin with Quick-release Hook Prod. No. 3156087
Fixed connection, prod. no. 3156077*
Max. load 300 kg (660 lbs)



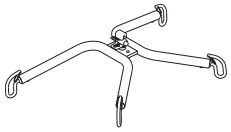
Universal SideBars 450 Prod. No. 3156079
including bag
Max. load 300 kg (660 lbs)



Sling Cross-bar 450 with Quick-release Hook Prod. No. 3156022
Fixed connection, prod. no. 3156021*
Max. load 300 kg (660 lbs)



Sling Cross-bar 670 with Quick-release Hook Prod. No. 3156019
Fixed connection, prod. no. 3156018*
Max. load 300 kg (660 lbs)



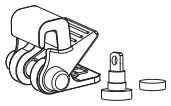
***** Sling bars with fixed connection can be equipped with Quick-release Hook

Carriage Adapter MultiRall for S65 Prod. No 3126020

Quick-Release Hook

Quick-release Hooks form a system providing safe and easy changing of lifting accessories. Liko™ Quick-release Hooks protect against unintentional detachment.

Update existing Liko™ sling bars not equipped with a Quick-release Hook. Quick-Release Hook Universal fits the Universal Bars 350, 450 and 600 (prod. no. 3156074 - 3156076). The Quick-Release Hook TDM fits the Sling Cross-bar 450 and 670 (prod. no. 3156021 and 3156018) and Universal TwinBar 670 (prod. no. 3156077). Contact your Hill-Rom representative for more information.



Quick-Release Hook TDM
Prod. No. 3156502

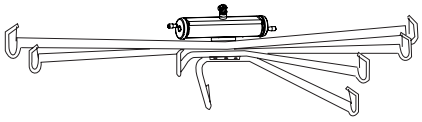
Quick-Release Hook Universal
Prod. No. 3156508

Stretchers

Multirall can be used for horizontal lifting in combination with

Liko OctoStretch	Prod. No. 3156056
LikoStretch Mod 600 IC	Prod. No. 3156065B
FlexoStretch	Prod. No. 3156057

Contact your Hill-Rom representative for more information.



Prod. No. 3156056

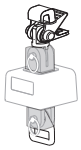
LikoScale for Weighing a patient in combination with Multirall 200

LikoScale 350, Max 400 kg (880 lbs) Prod. No. 3156228
LikoScale 350 is certified according to the European Directive NAWI 2014/31/EU (Non-Automatic Weighing Instruments).

For United states and Canada only:
LikoScale 200, Max. 200 kg (440 lbs.) Prod. No. 3156225
LikoScale 400, Max. 400 kg (880 lbs.) Prod. No. 3156226.

Contact your Hill-Rom representative for more information.

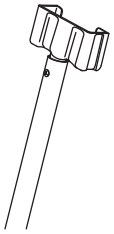
LikoScale 350
Prod. No. 3156228



Adapter Kit LikoScale
Prod. No. 3156232

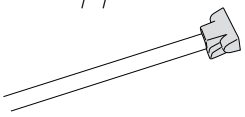
Extension Arm Prod. No. 31390013

Facilitates to connect or disconnect the Q-Link or Q-Link II from the S65 Carriage with Single Hook.



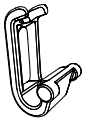
Extension Arm Adapter MR Prod. No. 3136040

Facilitates to connect or disconnect the Q-Link or Q-Link II combined with Adapter MR/LR. Available as a service part only.



Adapter MR/LR Prod. No 3136016

Note! only for use with the rail carriage: Carriage Hook MR/LR (prod. no. 3136015).



Multirall Trolley Prod. No. 3136300

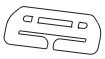
Convenient trolley for transfer and storage of Multirall™ 200 overhead lift and accessories.

Holder for Accessories Prod. No. 3136310

For attaching Extension Arm Multirall/
Multirall Helping Hand to the Multirall Trolley.

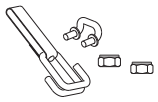
Hang-Up HandControl Hanger Prod. No. 3156100

10 pcs/set.

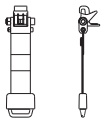


Strap Gripper Prod. No. 3136250

For room-to-room transfers.



Extension Belt, adjustable Prod. No. 3136226-29
(length 30-40 cm/12-16 in, 40-60 cm/16-24 in,
60-100 cm/24-40 in, and 100-140 cm/40-55 in)



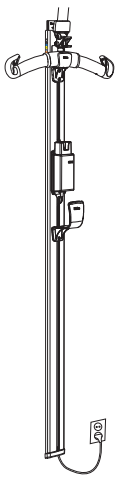
Room-to-Room Strap Prod. No. 3136251-53

(length 117 cm/46 in, 177 cm/70 in, and 237 cm/93 in)

Parking panel

Parking Panel 600, LR/MR Prod. No.
3126075
Parking Panel 1500, LR/MR Prod. No.
3126080

Complete the Parking Panel with appropriate Quick Reference Guide, Hook for SlingBar, Hook for Accessories, charger and, if necessary, Bracket for Charger.



Contact your Hill-Rom representative for more information.

Simple Troubleshooting

The lift doesn't work.

1. Check that the Emergency Stop button is not activated.
2. Check that the battery is charged.
3. Check that the hand control is correctly connected.
4. Try to lower the lift, the limit switch might be engaged.
5. *If the lift still does not work satisfactorily, please contact Hill-Rom.*

The lift emits a repeated sound or light signal.

1. Charge the battery immediately.
2. *If the lift still does not work satisfactorily, please contact Hill-Rom.*

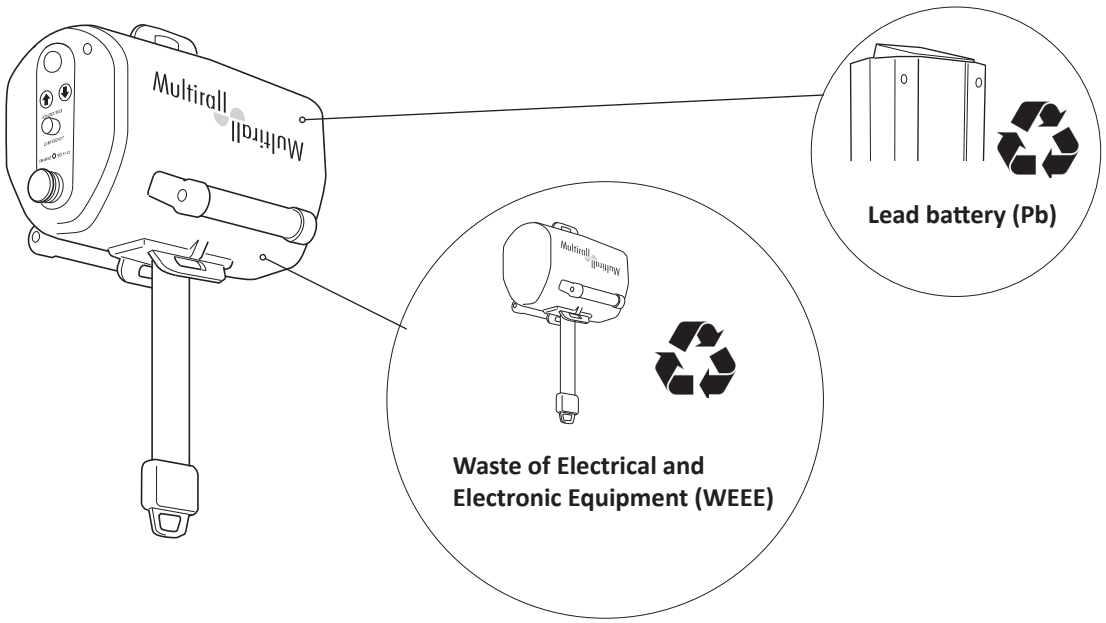
The lift is stuck in the high position.

1. Check that the Emergency Stop button is not activated.
2. Check that the battery is charged.
3. Check that the hand control is correctly connected.
4. Use indicated electrical or mechanical emergency lowering to lower the patient onto a firm surface.
5. *If the lift still does not work satisfactorily, please contact Hill-Rom.*

You hear unusual sounds.

Please contact Hill-Rom.

Recycling Instructions



Old batteries are to be deposited at the nearest recycling station or given to personnel authorized by Hillrom. Multirall overhead lift comply with the Directive 2012/19/EEC on waste electrical and electronic equipment.

Hillrom evaluates and provides guidance to its users on the safe handling and disposal of its devices to aid in the prevention of injury, including, but not limited to: cuts, punctures of the skin, abrasions, and any required cleaning and disinfection of the medical device after use and prior to its disposal. Customers should adhere to all federal, state, regional, and/or local laws and regulations as it pertains to the safe disposal of medical devices and accessories.
If in doubt, the user of the device shall first contact Hillrom Technical Support for guidance on safe disposal protocols.

Cleaning and Disinfection

These instructions do not replace the facility's own cleaning and disinfection policies.

⚠ Warnings:
To help prevent injury and/or equipment damage, obey these warnings:

- **Warning**—The potential for electrical shock exists with electrical equipment. Failure to follow facility protocol could cause death or serious injury.
- **Warning**—Do not reuse wiping material for multiple steps or on multiple products.
- **Warning**—Harmful cleaning solutions may cause skin rash and/or irritation upon contact. Follow the manufacturer's instructions found on the product label and Safety Data Sheet (SDS).
- **Warning**—Lift and move items correctly. Do not twist, and seek assistance when necessary.
- **Warning**—Fluid spills on to the lift electronics could cause a hazard. If this happens do not put the lift back into service until it is completely dry, tested, and found to be safe to operate.

⚠ Cautions:
To help prevent equipment damage, obey these cautions:

- **Caution**—Do not steam clean or power wash the lift. Pressure and excessive moisture can damage the protective surfaces of the lift and its electrical components.
- **Caution**—Do not use harsh cleansers/detergents, heavy duty grease removers, solvents such as toluene, xylene, or acetone, and do not use scouring pads (you may use a soft bristle brush).
- **Caution**—Fully extend the lift strap prior to the cleaning and disinfection process.

Safety Recommendations

- Wear protective equipment according to manufacturer's instruction and per facility protocol throughout the cleaning operations, such as: gloves, eye protection, apron, face mask and shoe covers.
- Unplug mains (AC power source) before cleaning and disinfection.
- Never clean the lift by pouring water on it, steam cleaning it, or by using a high-pressure jet.
- Refer to the recommendations made by the cleaning and disinfecting product manufacturer.

Process Recommendations:

For proper cleaning and disinfection, staff members should be trained.
The trainer should carefully read the instructions and follow them when the trainee is being trained.
The trainee should:

- Be given time to read the instructions and to ask any questions.
- Clean and disinfect the product while the trainer supervises. During, and/or after this process, the trainer should correct the trainee about any differences from the instructions for use.

The trainer should supervise the trainee until the trainee can clean and disinfect the lift as instructed.
Hill-Rom recommends to clean and disinfect the lift between patient use and regularly during extended patient stays.

Some fluids used in the hospital environment, such as iodophor and zinc oxide creams, can cause permanent stains. Remove temporary stains by wiping vigorously with a lightly-dampened wiping cloth.

Cleaning and Disinfection Overview:

Cleaning and disinfection are distinctly different processes. **Cleaning** is the physical removal of visible and non-visible soil and contaminants. **Disinfection** is intended to kill microorganisms.
When you perform the detailed cleaning steps, please note the following:

- A microfiber cloth is recommended as the wiping cloth.
- A soft bristle brush is recommended as a cleaning tool for the small holes in the Q-Link II.
- Always replace the wiping cloth when visibly soiled.
- Always replace the wiping cloth between steps (spot clean, clean, and disinfect)
- Always use Personal Protective Equipment (PPE) such as gloves, eye proection, apron, face mask, and shoe covers, as recommended by the facility protocol and manufacturers instructions

Cleaning and Disinfection Equipment:

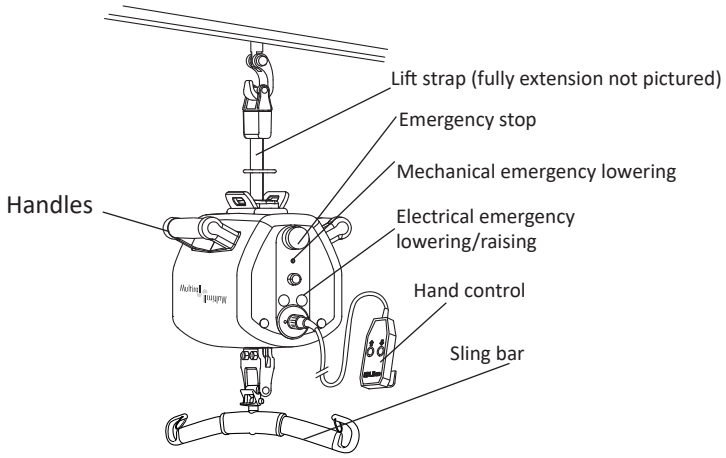
- Protective equipment (such as: gloves, eye protection, apron, face mask and shoe covers) as recommended by the facility protocol and manufacturers instructions
- Disposable microfiber cloths recommended
- Soft bristle brush
- Warm water
- To find Cleaning / Disinfectants compatible or not compatible for use on Liko® products, follow the "Application of commonly used Cleaning / Disinfectants on Liko products" in this document.

Prepare the Unit for Cleaning and Disinfecting:

1. ⚠ **Unplug mains (AC power source) before cleaning and disinfection.**
2. Fully extend the lift strap.

Step 1: Cleaning

1. As necessary, first remove visible soil from the lift with a cloth moistened with warm water and a neutral, approved cleaner/disinfectant. See "Application of commonly used Cleaning / Disinfectants on Liko products." Do not use a cloth that is dripping wet.
   - A soft bristle brush may be used for hard-to-clean areas to remove stains and resistant dirt and to loosen hardened soil.
   - Use as many wiping cloths as needed to remove the soil.
   - Make sure the lift strap is dry.
2. Wipe down the entire lift starting from the top down. Give special attention to seams, cracks and other areas where soil may accumulate. In particular, pay special attention to the following areas:
   - Lift strap
   - Electrical emergency lowering/raising
   - Emergency stop
   - Emergency stop cord
   - Mechanical emergency lowering (where applicable)
   - Sling bar
   - Hand control



Cleaner/Disinfection:

NOTE:

It is important to remove all visible soil from all areas before continuing to remove non-visible soil.

With a new wiping cloth soaked in an approved cleaner/disinfectant, use firm pressure to wipe all surfaces of the lift. Use a new or clean wiping cloth as often as necessary. Make sure the following items are cleaned:

- Hand Control
- Lift Motor
- Lift Strap
- Slinguard
- Connection points
- Any part of the rail that may be soiled
- Sling (refer to the specific sling Instruction for use and 7EN160884 Care and Maintenance of Liko Slings)
- Power cord
- Scale (if applicable)

Damaged items should be replaced!

Step 2: Disinfection:

1. For the use of suitable disinfectants see "Application of commonly used Cleaning / Disinfectants on Liko products" in this document.
2. Follow the manufacturer's instructions.
3. Make sure all surfaces r**emain wet with the cleaner/disinfectant** for the **specified contact time**. Rewet surfaces with a new wiping cloth as necessary.

NOTE:

If bleach is used with another cleaner/disinfectant, use a new or clean cloth/wipe soaked in tap water to remove any disinfectant residue prior to and after the bleach application.

⚠ **The lift may not be cleaned with CSI or equivalent.**

⚠ **The hand control may not be cleaned with Viraguard or equivalent.**

⚠ **The lift strap may not be cleaned with Oxivir Tb, Dispatch, Chlor-Clean, Dismozon Pur or equivalent.**

Application of commonly used Cleaning / Disinfectants on Liko™ products

Chemical class	Active ingredient	pH	Cleaners / Disinfectant *)	Manufacturer *)	May not be used on the following items:
Quaternary ammonium chloride	Didecyl dimethyl ammonium chloride = 8.704% Alkyl dimethyl benzyl ammonium chloride = 8.19%	9.0 – 10.0 in use	Virex II (256)	Johnson/Diversey	**Foot rest for Sabina™ and Roll-On™**
Quaternary ammonium chloride	Alkyl dimethyl benzyl ammonium chloride = 13.238% Alkyl dimethyl ethylbenzyl ammonium chloride = 13.238%	9.5 in use	HB Quat 25L	3M	
Accelerated Hydrogen Peroxide	Hydrogen Peroxide 0.1 -1.5% BenzylAlcohol: 1-5% Hydrogen Peroxide 0.1 -1.5% BenzylAlcohol: 1-5%	3	Oxivir Tb	Johnson/Diversey	**The lift straps for Golvo™ and ceiling lifts**
Phenolic	Ortho-Phenylphenol = 3.40% Ortho-Benzyl-para-Chlorophenol = 3.03	3.1 +/- 0.4 in use	Wexcide	Wexford Labs	
Bleach	Sodium hypochlorite	12.2	Dispatch	Caltech	**The lift straps for Golvo™ and ceiling lifts**
Alcohol	Isopropyl alcohol = 70%	5.0 – 7.0	Viraguard	Veridien	**Hand controls for all lifts**
Quaternary ammonium	n-Alkyl dimethyl benzyl ammonium chlorides = 0.105% n-Alkyl dimethyl ethylbenzyl ammonium chlorides = 0.105%	11.5 - 12.5	CSI	Central Solutions Inc.	**Viking™, Liko M220™, Liko M230™, Uno™, Sabina™, Golvo™, LikoLight™, Roll-On™, Likorall™, Multirall™**
Benzyl-C12-18-alkyldimethylammonium, chlorides	Benzyl-C12-18-alkyldimethylammonium, chlorides (22 %) 2-Phenoxyethanol (20 %) Tridecylpolyethylenglycolether (15 %) Propan-2-ol (8 %)	approx 8.6 in use	Terralin Protect	Shülke	**Foot rest for Sabina™ and Roll-On™**
Organic peroxide (type E, solid)	Magnesium monoperoxyphtalate hexahydrate (50-100%) Anionic surfactant (5-10%) Nonionic surfactant (1-5%)	5.3 in use	Dismozon Pur	Bode	**The lift straps for Golvo™ and ceiling lifts**
Ethanol	Hydrogen peroxyde (2.5-10 %) Lauryldimethylamine oxid (0-2.5 %) Ethanol (2.5-10 %)	7	Anioxy-Spray WS	Anios	**Control box for all mobile lifts**
Troclosene sodium	Adipic acid 10-30% Amorphous silica < 1% Sodium Toluene sulphonate 5-10 % Troclosene sodium 10-30 %	4-6 in use	Chlor-Clean	Guest Medical Ltd	**The lift straps for Golvo™ and ceiling lifts**

***) Or equivalent**

Inspection and Maintenance

For trouble-free use, certain details should be checked each day the lift is used:

- Inspect the lift and check to make sure that there is no external damage
- Check the sling bar attachment
- Check the lift strap for wear and to ensure the strap is not twisted
- Check the functionality of the latches
- Check the control function of the lift movement
- Check to make sure that the emergency lowering works
- Charge the batteries each day the lift is used and check to ensure the charger works.

When necessary, clean the lift with a moist cloth. Find more detailed information in chapter “Cleaning and Disinfection”.

⚠ **The lift should not be exposed to running water.**

Service

A periodic inspection of the lift should be carried out at least once per year.

⚠ **Periodic inspection, repair and maintenance should be performed only in accordance with the Liko™ Service Manual and by personnel authorized by Hill-Rom and using original Liko spare parts.**

⚠ **Service activities are not allowed with the patient in the lift.**

Service Agreement

Hill-Rom offers the opportunity to enter into service contracts for the maintenance and periodic inspection of your Liko products.

Expected Service Life (Life Time)

The product has an expected life time of 10 years when correctly handled, serviced and periodically inspected in accordance with Liko instructions.

Parts listed below are subject to wear and tear and have specific expected life time:
- Handcontrol, expected life time 2 years,
- Battery, expected life time 3 years.

Transport and Storage

During transportation, or when the lift is not to be used for a long time, the emergency stop should be engaged.
The environment where the lift is transported and stored should have a temperature of -10°C to +50°C (14°F to 122°F) and a relative humidity of 20 to 90 %. The atmospheric pressure should be 700–1060 hPa.

Product Changes

Change to Liko products undergo continuous development, which is why we reserve the right to make product changes without prior notice. Contact your Hill-Rom representative for advice and information about product upgrades.

Design and Quality by Liko in Sweden

The management system for both manufacturing and development of the product is certified in accordance with ISO9001 and its equivalent for the medical device industry, ISO13485. The management system is also certified in accordance with the environmental standard ISO14001.

Notice to Users and/or Patients in EU

Any serious incident that has occurred in relation to the device, should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

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Liko AB is a subsidiary of Hill-Rom Holdings Inc.

Enhancing outcomes for patients and their caregivers.
Hill-Rom