

Periodic Inspection

Liko™ overhead lifts



3EN191001 Rev. 2

Valid for following overhead lifts: LikoGuard™, Likorall™, Multirall™, Masterlift™

Lift information		Customer reference	
Lift:		Agreement No:	
Product Number:		Name:	
Serial Number:		Address:	
Production year:		Post Code	

△ Liko™ overhead lifts must be thoroughly inspected at least once per year. Inspection and service must be carried out by Hill-Rom authorized personnel. If the lift is installed in a corrosive environment such as indoor pool or bathroom, see inspection point 11 before starting inspection.

NOTE! For inspection of the rail system, use Periodic Inspection Liko™ Rail System (3EN111001)
If printed: Make a colour print of this instruction.

OVERHEAD LIFT		Action required:	Approved	Not approved
1	Product Decal			
2	General Inspection			
3	Carriages			
4	Hand Control			
5	Emergency Stop			
6	Emergency Lowering			
7	Limit Switch (Not valid for MasterLift)			
8	Charger (Not valid for MasterLift)			
9	SlingBar			
10	Lift Strap			
ENVIRONMENTAL IMPACT		N/A	Action required:	Approved Not approved
11	Corrosive environments			
LOAD TESTING		Max Load applied:		Approved Not approved
12	Maximum Load overhead lift	Kg:	Lbs:	
	Emergency lowering Maximum Load	Kg:	Lbs:	
Required Measurements:		Measured dimensions:		Approved Not approved
12	Load testing / Lift strap drift	mm:	Inch:	
Clear service		N/A	Action required:	Approved Not approved
13	Service Symbol reset			

Inspection sign off

Complete inspection according to Instructions for the check points (page 2-8), fill in this page and sign below.

Approval to use the overhead lift Approved Not approved

If the overhead lift has one or more inspection points "Not approved", the lift must not be used.

Action required: Actions according to the inspection items "NOT APPROVED" should be performed immediately. After performed actions sign below. If anything is unclear or if you have questions, please contact Hill-Rom or your local Hill-Rom representative.

Contact information is to be found at www.hill-rom.com.

Inspection performed by:		Date:	
Next inspection:			

Inspection performed in accordance with ISO 10535:2006 Annex B- Periodic inspection

Enhancing outcomes for patients and their caregivers:



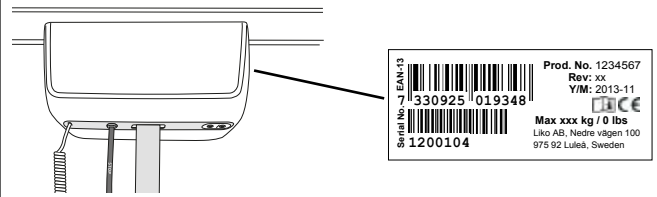
Instructions for the check points

Liko™ overhead lifts

△ In this document, this warning symbol indicates that special care should be taken.
If instructions are not followed there is a risk of serious injury.

1 Product Decal

- Verify presence of Product Decal with model type and serial number and maximum load.

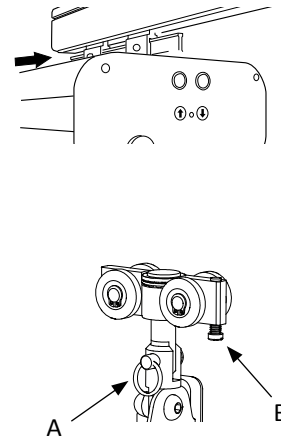


2 General Inspection

- Check for scratches, dents, sharp edges, deformities or unusual surface wear.
- Verify that the protective covers are secure.
- Check plastic covers for cracks.

3 Carriages

- Verify that carriages are secured to motor and check these parts for abnormal wear.
- Roll the carriage within the rail. Verify that each wheel turns freely and the plastic wheel bearing covers not are cracked or missing.
- If the carriage is equipped with a latch clip, make sure the clip is mounted and fall back.
- **R2R Turnable Hanger:**
- Verify that the center pin (A) is held secure with a split pin.
- **Carriage with brake:**
- Check the brake (B) function of the carriage.



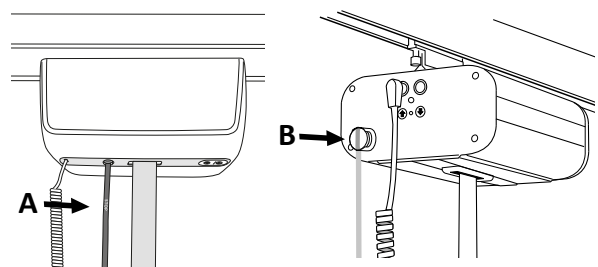
4 Hand Control

- With the emergency stop deactivated, press each button and check for corresponding lift operation.
- Check cord for exposed wear or tear in the insulation sleeve.
- Inspect casing for damage, verify dust & water seal is intact.



5 Emergency Stop

- Check that the emergency stop (A) cord is secured properly and have no damage (if applicable).
- Activate the emergency stop button (B). Verify that it holds and locks in the activated position.
- With the emergency stop activated, check that the motor does not operate when the hand control buttons are pressed.
- Deactivate the emergency button. Verify that the button releases from the activated position into the deactivated position.



Instructions for the check points

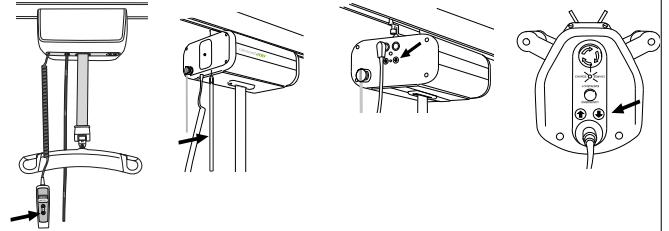
Liko™ overhead lifts

6 Emergency Lowering

Electrical Emergency Lowering

LikoGuard™, Likorall™ 200/242 and Multirall™:

- Test the electrical emergency lowering device. Make sure the emergency stop is deactivated. Check for corresponding lift operation.

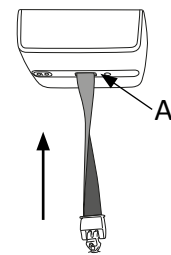


Mechanical Emergency Lowering

See chapter 12.

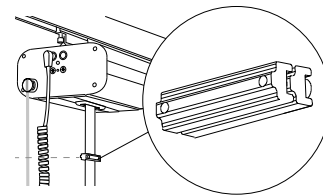
7 Limit Switch

- Check function of twist protection by twisting the strap when raising it (make sure the motor stops).
- With the emergency stop deactivated, move the lift strap all the way up to the Limit switch (A). Check that the motor does not operate when touching the Limit switch.



Fixed strap-stop (Likorall™ 242)

- Verify that screws (2) are tight in two-piece assembly
- If requested and/or necessary, reset the strap-stop height according to service manual instructions.



8 Charger

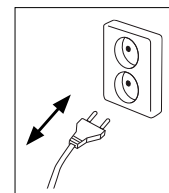
- Access to the mains connections must not be blocked and have no damage

Wall Charger

- With the emergency stop deactivated, insert the hand-control into the wall-mounted charger outlet (110 - 240V)
- Visually inspect that charger diode lights, light up according to the User Manual.

IRC Charger (In Rail Charging system)

- Make sure the IRC charging function is working according to the user manual.



Instructions for the check points

Liko™ overhead lifts

9 SlingBar

- Make sure only recommended sling bar is used according to the overhead lifts User Manual.
- Visually inspect the sling bar to detect any cracks or deformities.

SlingGuard™

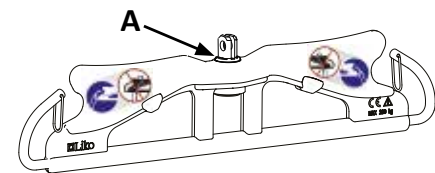
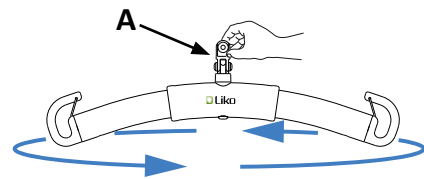
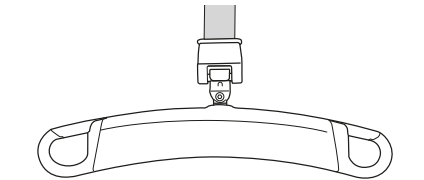
- Check that the unit rotates freely on its bearings.
- Make sure the spring function on the latches are working. The latches on the SlingGuard should still be locked in place while the SlingGuard is held upside down.

Universal SlingBar

- Check that the unit rotates freely on its bearings. Make sure the sling bar doesn't rotate unevenly, wobble or the spinning stops due to high friction.
- Make sure that both latches are mounted and fall back against the body of the sling bar.
- Check that the sling bar is correctly fastened.
- Make sure there are no deformities in the attachment points (A).

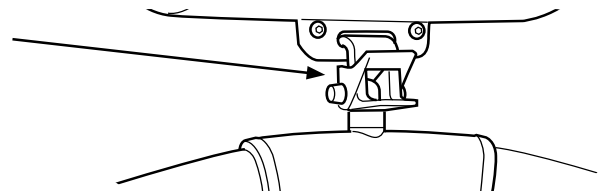
SlingBar Standard

- Verify that the o-ring is present and positioned in the center bolt groove.
- Check that the unit rotates freely on its bearings.
- Make sure that both latches are mounted and fall back against the body of the sling bar.
- Make sure the SlingBar cover is attached to the sling bar.



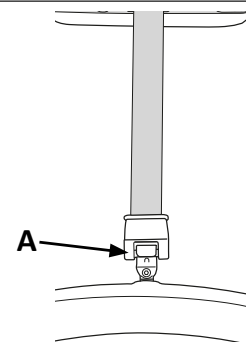
Quick-release Hook TDM™

- Verify that fasteners in red plastic covers are tight.
- Inspect spring recoil. Manually press and lower the plastic covers and spring assembly away from the aluminium hook.
- Verify that the spring snaps back against the hook, providing a secure snap-fit lock.



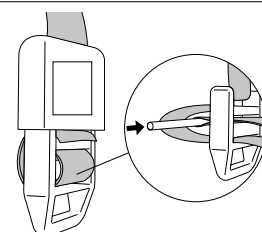
10 Δ Lift Strap

- Make sure the lift strap is not older than 5 years, according to service history. If service history not is available, the recommendation is to replace the lift strap if the lift is 5 years or older.
- Using the hand control, lower the strap to its maximum extension. Inspect the strap for frayed edges, heavy wrinkles or wear-through areas.
- Make sure the plastic cover is not damaged and the screws are properly fastened
- Verify that the sling bar attachment is secure on strap.
- Make sure there are no deformities in the slingbar attachment (A)



Q-Link / Lift Strap Joint (Likorall™)

- Verify that the link is secure on strap. Slide plastic cover off the link and visually inspect that the lift strap safety pin is seated securely in the middle recess of the link.



Instructions for the check points

Liko™ overhead lifts

11 Environmental Impact – corrosive environments

Due to the environment an overhead system is installed in, components may be subject to corrosion. High temperature, high relative humidity, poor ventilation, presence of chlorine and different combinations of these factors, will affect the corrosion rate. Depending on material type a corrosion attack can occur suddenly or in other cases form gradually. The corrosion rate and type of corrosion attack might be different in one area of the installation compared to another.

△ Fixing points classified as safety critical, installed in a corrosive environment such as indoor pool or bathroom, must be inspected. When a component has reached a certain stage of corrosion it might need to be replaced.

Note! If printed - print out in color.

Check for visible severe corrosion and material loss and identify if components need to be replaced.

Galvanized steel

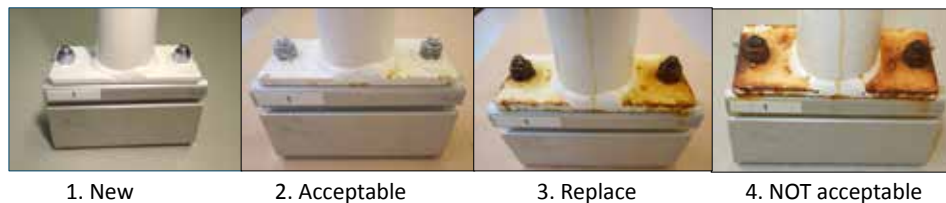
These pictures describes the evaluation method for all galvanized steel components.



1. A galvanized steel component.
2. White rust on a component appears when the surface treatment corrodes.
3. Red rust appears when the actual steel has started to corrode. Corroding steel will result in material loss and should therefore be replaced.
4. A component covered in red rust is unfit for use.

Powder coated steel

These pictures describes the evaluation method for all powder coated steel components.



1. A powder coated steel component.
2. Local discoloration may occur in close proximity to corroding non-painted components. Stains on the painted surface is acceptable.
3. Cracks in the paint and red corrosion under the paint is a sign of corroding steel. Corroding steel will result in material loss and should therefore be replaced.
4. A component with peeling coating, bubbles in the paint and red corrosion under the paint is unfit to use.

Instructions for the check points

Liko™ overhead lifts

11 Environmental Impact – corrosive environments, cont.

Stainless steel

These pictures describe the evaluation method for all stainless steel components.



1. New

2. Acceptable

3. Replace

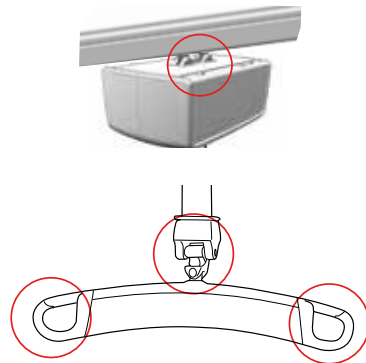
4. NOT acceptable

1. A stainless steel component.
2. Local discoloration may occur on stainless steel components. Minor stains on stainless steel surfaces NOT in the direct proximity of welds are acceptable.
3. Discoloration of stainless steel surfaces in the direct proximity of a weld might be an indication of Intergranular Corrosion. Corrosion will lead to material loss and the component should therefore be replaced.
4. A stainless steel component with visible cracking, gouging or extensive corrosion in the direct proximity of a weld is unfit to use.

Safety critical fixing points:

- Carrier bolts and pins
- Load bearing components below lift motor.

Example of load bearing parts:



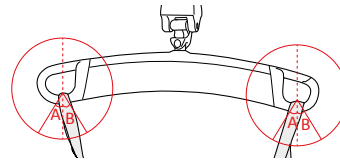
Instructions for the check points

Liko™ overhead lifts

12 Load Testing

⚠ *All handling of heavy weights can pose a risk. Ensure that weights are securely fastened before lifting. Attach the test load so that the weight is evenly distributed over all sling bar attachment points. Ensure that the sling bar is level when lifting.*

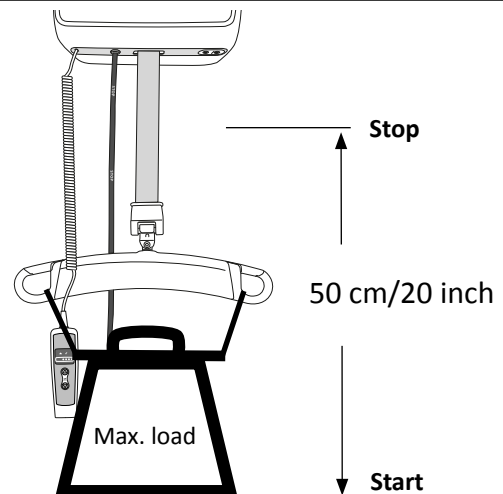
- Make sure to use material when secure the weights which do not harm the sling bar.
- When performing the load test, make sure the straps are: $A < 25^\circ$ and $B < 25^\circ$



⚠ Maximum-load test

- With the emergency stop deactivated, and the strap with the sling bar lowered, secure the maximum load $\pm 5\%$.
- Using the hand control, raise the load 50 cm (20 inch).
- Make sure the lift strap does not drift more than 15 cm (6 inch)/30 sek.
- Lower the maximum load to the start position.
- Listen for abnormal noises and vibrations.

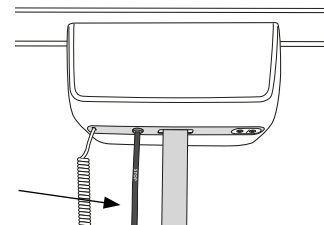
⚠ **Note:**
Never go below start position with the maximum load!



Mechanical lowering load test (minimum load 50 kg / 110 lbs)

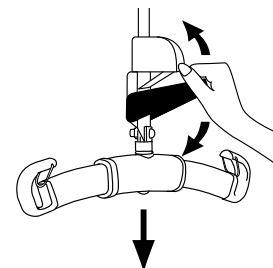
LikoGuard™

- With the emergency stop deactivated, and the strap with the Sling Bar lowered, secure the weights.
- Using the hand control, raise the weights approximately 10-15 cm (4-6 inch).
- Pull the red emergency-lowering strap repeatedly until the lift strap begins to slowly lower the weight to the floor.



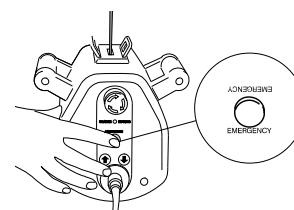
Likorall™ 242 and MasterLift™

- With the emergency stop deactivated, and the strap with the sling bar lowered, secure the weights.
- Using the hand control, raise the weights approximately 10-15 cm (4-6 inch).
- Pump the mechanical emergency-lowering handle until the strap begins to slowly lower the weight to the floor.
- Remove the weights and rewind the strap to its original position.



Multirall™

- With the emergency stop deactivated, and the strap with the slingbar lowered, secure the weights.
- Using the hand control, raise the weights approximately 10-15 cm (4-6 inches).
- 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.




Instructions for the check points

Liko™ overhead lifts

13 Clear Service (if applicable):

LikoGuard™

- When approved Periodic Inspection has been performed, reset the hand control service symbol  according to instructions in LikoGuard™ Service Manual chapter “Reset Service”.

