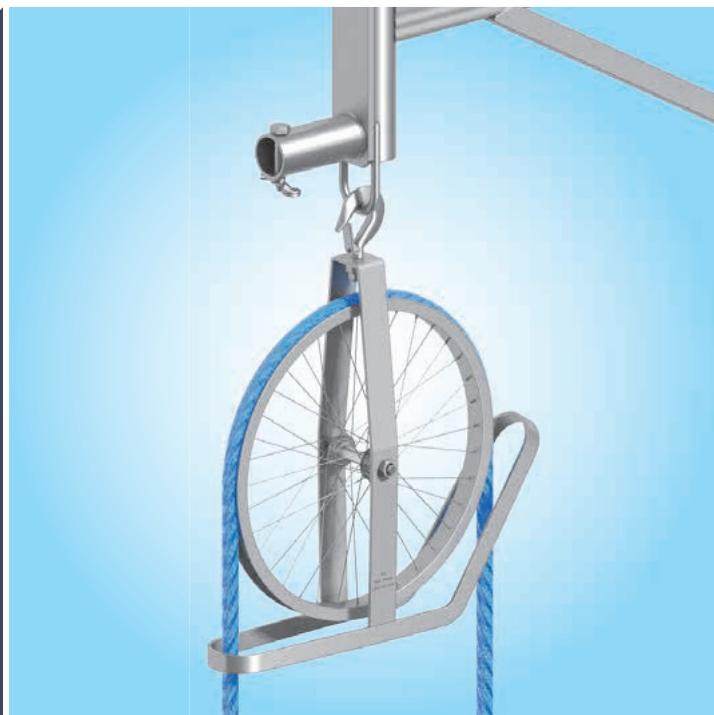


Layher®



More Possibilities. The Scaffolding System.

## LAYHER HOIST WHEEL INSTRUCTIONS FOR ASSEMBLY AND USE



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Quality management  
certified as per  
DIN EN ISO 9001:2008



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## **NOTE**

The products and assembly variants shown in these instructions for assembly and use may be subject to country-specific regulations. The user of the products bears the responsibility for compliance with such regulations. Subject to local regulations, we reserve the right not to supply all the products illustrated here.

Your Layher partner on the spot will be happy to provide advice and answers to all questions relating to the approvals for the products, to their use or to specific assembly regulations.

The contents of this document relate exclusively to original Layher scaffolding components. Layher has prepared these contents, in particular the specifications, representations, images, directions and recommendations, with the utmost care. Nevertheless, Layher cannot accept any liability for the correctness, completeness and currentness of the contents. No liability shall be accepted for obvious mistakes, typing errors and printing errors. Use of the contents shall be at the user's own risk. The details and the intended uses must be understood only as non-binding examples. The country-specific and relevant requirements, provisions and regulations applying at the respective place of use must be checked on the users' own responsibility.

# 1. GENERAL

The present instructions for assembly and use were drafted in accordance with the 2006/42/EC machinery directive. They provide all the necessary instructions for dependable and correct:

- assembly
- use
- safety precautions
- maintenance and checking
- repair
- spare parts

Requirements placed on the operating personnel:

Unsupervised operation of the equipment may only be entrusted to qualified and suitable personnel who are familiar with it. They must be commissioned by the contractor with operation of the equipment. The erecting personnel must have read and understood the instructions for assembly and use.

## 2. TECHNICAL DATA FOR HOIST WHEEL AND ROPE

Weight	2.7 kg
Maximum load capacity	50 kg
Maximum recommended delivery height	30 m
Maximum delivery height	40 m
Rope diameter	20 mm

## 3. BASIC SAFETY DIRECTIONS

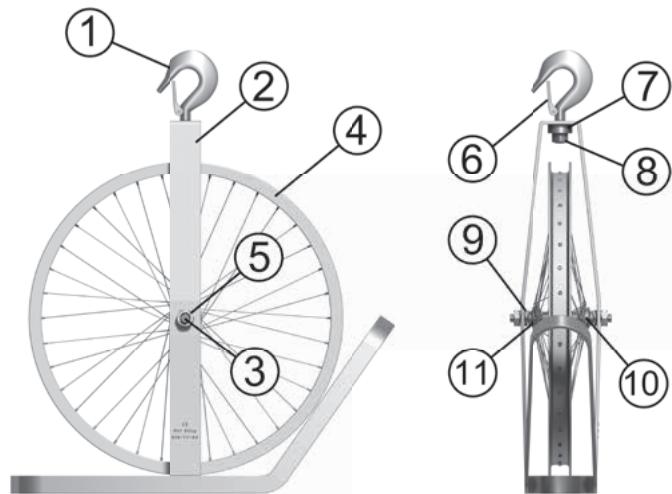
Use the hoist wheel exclusively in accordance with the instructions for assembly and use.

The rope hoist is used for manual vertical transport of loads during scaffolding assembly and dismantling.

- Do not walk or stand under suspended loads.
- Comply with the warnings on the rope hoist itself and in the instructions for assembly and use.
- Ensure correct safety distances.
- Use the rope hoist only in good visibility.
- Only use the rope hoist for the intended purpose.
- The rope hoist is intended only for moving goods. Personnel may not be transported under any circumstances.
- Never subject the rope hoist to a load greater than the specified permissible load capacity of 50 kg.
- Comply with German accident prevention regulations (UVV).
- If using the equipment outside Germany, comply with the appropriate national regulations.
- Scaffolding which the rope hoist is fitted to or suspended from must be assembled and anchored in line with the respective scaffolding approval. In case of doubt, please consult a structural analyst.
- After lengthy non-use of the rope hoist, visually check all components important for its functioning, and replace any damaged components with new and original spare parts.
- Do not use a defective rope hoist. Listen for any irregularities in the operating noise.
- In the event of trouble, stop operation immediately and rectify the fault.
- Report immediately any damage or defect to the person in charge.
- When working with the rope hoist, warn personnel in the immediate vicinity.
- The lifting tackle or the load must be securely suspended from the load hook and placed right inside this hook.
- The safety latches on the load hook must be closed.
- Motor-powered operation is not permitted.
- Do not use any rope with a diameter differing from what is specified in Section 2.
- Ropes that are damaged, deformed or below the minimum diameter due to wear must not be used.
- Use the components of the rope hoist only in their original condition. Make repairs only using original spare parts.

## 4. FUNCTION PRINCIPLE OF HOIST WHEEL

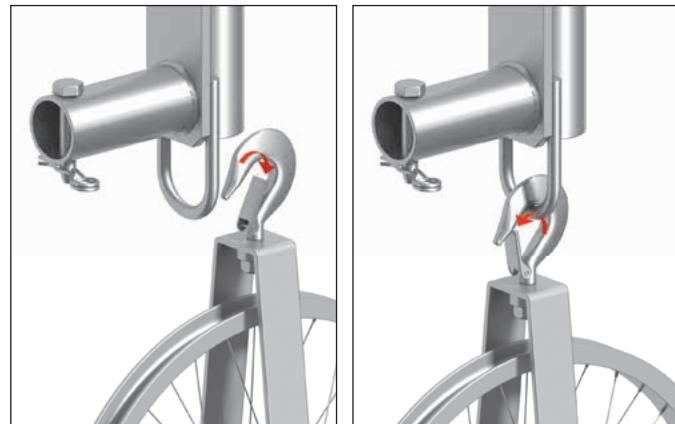
The hoist wheel is recognised with the CE symbol in accordance with the provisions of the 2006/42/EC machinery directive.



*Structure of the hoist wheel*

1. Suspension hook
2. Deflection wheel mounting bracket
3. Deflection wheel axle M8
4. Deflection wheel
5. Collar nut M8
6. Snapper
7. Washer 30x10
8. Hex nut M12  
(permanently welded to suspension hook thread)
9. Hex nut M8 – flat
10. Ball bearing bush M8
11. Ball bearing

The suspension hook (1) permits secure fastening of the hoist wheel on the bracket adapter.



The deflection wheel mounting bracket (2) can be swivelled using the suspension hook, with the deflection wheel (4) rotating about the deflection wheel axle M8 (3).



The deflection wheel runs between the deflection wheel mounting bracket arms on the deflection wheel axle M8. The deflection wheel axle is bolted with a collar nut M8 (5) on each side against the deflection wheel mounting bracket with a hex nut M8 (9). The deflection wheel runs on both sides on a ball bearing bush M8 (10) in conjunction with one ball bearing (11) on each side on the deflection wheel axle.

The load to be lifted is fastened on that side of the rope where the horizontal section of the deflection wheel mounting bracket is located. The rope for handling is accordingly on the opposite side in the case of an angled bracket.



*Positions of handling rope and load rope*

## 5. ROPE FOR HOIST WHEEL



### Rope description

This description relates to:

a 16-strand round-braided rope

- of isotactic UV-stabilised polypropylene
- blue in colour
- of 20 mm diameter
- with rope cores laid without knots or interruptions to increase strength and shape stability
- with sewn-on loops on both sides with seams passing through the entire rope cross section, safeguarded with cable ties opposite the tip of the loop to prevent spreading and covered with printed shrunk-on hoses
- with a high-strength shackle clip NG 2.0 in one of the loops
- with standard lengths 20 m and 40 m

### Technical data of rope

- min. breaking force: 3500 daN (sewn)
- rope weight: approx. 160 g/m

### Increased operating coefficient as result of risk assessment

- Load capacity: 50 kg

### Authorised use of hoist rope

The hoist rope may only be used for manual lifting of loads, where it must be suspended using a movable deflection wheel. The connection of several ropes, the circular arrangement of ropes and routing them over several deflection pulleys is possible as long as a load of no more than 50 kg is lifted and the loops are not pulled through the hoist wheel. The connection of the load to the hoist rope must be made using additional load-bearing equipment, such as load hooks, belts or rope slings.

### Possible and typical incorrect uses

- Do not pull the loop of the hoist rope through the pulley under load or using force! If the situation does not permit any other option for dismantling, then pass the loop gently by hand over the deflection wheel!
- Never connect the rope to winches or any other motor-powered conveying means!
- Do not pull the rope over edges! Ensure that the deflection wheel moves easily. Avoid any crushing, e.g. due to placing heavy loads on the rope!
- Do not twist the rope under load! Let the free end of the rope untwist itself!
- Do not use the rope to secure or support personnel!
- Do not use the rope as a lifting fibre rope / lifting sling!
- Do not knot any ropes together or make knots in a rope!
- Never use the rope in a choker hitch!
- Do not use the rope for towing or salvaging vehicles!
- Do not subject looped and protruding-strand ropes to tension, instead carefully untwist them and straighten out the rope at this point through your closed hand!

### Further safety directions

- Check your hoist rope for any damage beforehand whenever you use it!
- Do not use any hoist ropes where there is no protective hose around the stitching!
- Do not use the rope at temperatures above 80 °C!

- Do not use with chemicals! (The soiling usual at construction sites is harmless.)
- Never wrap the rope around your limbs!
- Remove the rope at once when kinks appear!
- Remove the rope at once when the splice comes undone!
- Remove the rope at once when the core protrudes through the rope sheath or the latter is so damaged that the core has become visible!
- Store the ropes in a cool and dry place protected from sunlight (UV radiation)!
- Do not use any ropes more than seven years old!

#### **Wear states and rope damage**



*Looping (untwist)*



*Kink (remove rope) – wear limit reached!*



*Birdcaging (remove rope) – wear limit reached!*



*Strand protrusion (untwist, straighten out)*

## 6. FITTING AND REMOVING THE ROPE HOIST

Consisting of:

- bracket
- bracket adapter
- hoist wheel
- rope for hoist wheel
- load hook

**Generally speaking, all scaffolding must be assembled and anchored in accordance with its approval and with the instructions for assembly and use.**



Fit a bracket, 0.73 m swivelling, over a spigot of the top level. Alternatively, a bracket can be fitted to the corner plate of the assembly frame with a half-coupler.



Fit the bracket adapter for the hoist wheel over the spigot of the bracket.



Secure the bracket adapter on the spigot using a hinged pin. Alternatively, a locking pin, a pin with safety clip or an M12 bolt with nut can be used.



Attach the suspension hook of the hoist wheel to the lug on the bracket adapter.



The snapper on the suspension hook of the hoist wheel must be closed.



Pass the rope through the deflection wheel mounting bracket on the horizontal side of the hoist wheel.



Pass the rope through at the top of the deflection wheel mounting bracket of the hoist wheel.



Slide the suspension hook into the shackle clip and then insert the threaded bolt.



Pass the rope on the angled side of the hoist wheel through the deflection wheel mounting bracket.



Screw the threaded bolt tightly into the shackle clip.



Pass the rope over the deflection wheel until both rope ends are on the ground or the rope weight is balanced on both sides of the deflection wheel.



Attach the material to be lifted to the suspension hook.



At the shackle clip of the rope, undo the threaded bolt and pull it out.

## 7. MATERIAL TRANSPORT

### Lifting of scaffolding components

Fasten the scaffolding material on the loading side.



Pull the lifted material to the required height.



Swivel the bracket towards the scaffolding and take the scaffolding material off the hook.

To return the now-empty loading side to the original situation after material transport, an additional and permanently attached weight of 2 kg must be attached. This is used as a counterweight to compensate for the dead weight of the rope.

**Caution: after removing the lifted material, let the rope down in a controlled manner until the load rope end reaches the bottom.**

Dismantling is in the reverse order.

## 8. TROUBLESHOOTING

Fault	Remedy
One of the rotating parts sticks:	Remove foreign bodies / dirt.
Deflection wheel	If necessary lightly lubricate.
Deflection wheel axle	
Suspension hook swivel joint	

## 9. MAINTENANCE

To ensure a long service life, the following is essential:

- Regular checking and cleaning depending on frequency of use.
- Replacement of defective and worn parts.
- Storage in a dry area.
- Protection from dirt.

## 10. REPAIR

### Snapper on suspension hook:



To replace the snapper, drill out the rivet and remove the snapper.



Position a new snapper and insert a hollow rivet through the snapper and the suspension hook.



Deform the hollow rivet on the opposite side of the rivet head.

## 11. SPARE PARTS

- 1    **Snapper incl. rivet**  
Ref. No. 6494.763



## 12. EC Declaration of Conformity



Mehr möglich. Das Gerüst System.

### EC Declaration of Conformity

In accordance with the EEC machine directive 2006/42/EEC, appendix II A

Wilhelm Layher GmbH & Co KG  
Scaffolding Grandstands Ladders  
Ochsenbacher Straße 56  
74363 Göglingen-Eibensbach

Hereby certifies that the following described machine in its conception, construction and form put by us into circulation is in accordance with all the relevant essential health and safety requirements of the EC machinery directive 2006/42/EEC as amended and the national laws and regulations adopting this directive. This declaration is no longer valid if the machine is modified without our consent or is not used as shown in the instructions for assembly and use – also if the regular inspections according to the Ordinance for health and safety (BetSchV) are not executed.

**Description of the machine:**  
Hoist wheel  
Ref. No. 4419.000  
Load capacity 50 kg  
For use with bracket adaptor for hoist wheel  
of hot-dip-galvanised steel, Ref. No. 4419.003  
and the rope for hoist wheel  
Ref. No. 4420.200 und 4420.400

**Relevant guidelines/regulations:**  
EEC machine directive  
2006/42/EEC

**Applied harmonized standards  
in particular:**  
DIN EN ISO 12100, DIN EN ISO 13849, DIN EN 13414

**Date:** 21.09.2017

**Signature:**

**Personal data of the signer:**  
ppa. Dr. Rolf Sontheimer | Head of technical department, Representative  
with power of attorney

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EG-Konformitätserklärung ✕ EC Declaration of Conformity ✕ EG-Konformitätser



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