

Operating instructions

Load tilting device LNG05/LNG30



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1. Introduction

The load tilting device is used to vertically raise, lower and tilt non-guided loads.

Thoroughly read these operating instructions before you use the load tilting device for the first time. The operating instructions explain how to use, service, inspect and dispose of the load tilting device safely. These operating instructions form an important part of the product and must be made available for all users. Retain these operating instructions for reuse.

1.1 Producer/Service

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INFO

We are readily available should you have any questions concerning your product.

1.2 Terms & Conditions

You can obtain the general terms & conditions directly from the producer or at: www.carlstahl-hebetechnik.de/downloads/

1.3 EU Declaration of Conformity

Content related reproduction:

For the product designated below

Designation:	Load tilting device
Type:	LNG05 / LNG30

is hereby declared as complying with **the fundamental requirements**, which are defined in the harmonisation legislation specified below:

DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL dated 17th May 2006 on machinery and amending Directive 95/16/EC (recast) – in short: **Machinery Directive**

Information regarding the relevant harmonized standards, which are used as a basis, or details of the specifications, for which the conformity is declared:

Source	Date of issue	Title
Harmonized standards for the Machinery Directive:		
DIN EN ISO 12100 + amendment 1	2010-11 2013-08	Safety of machinery – General design principles – Risk assessment and risk reduction
DIN EN 13155	2009-08	Cranes – Safety – Loose load suspension devices
Other applicable technical specifications (not released in the EU Official Journal):		
DIN ISO/TR 14121-2 DIN SPEC 33885	2013-02	Safety of machinery – Risk assessment – Part 2: Practical guidance and examples of methods

Authorised in accordance with annex II no. 1. A. no. 2, 2006/42/EC for the compilation of the technical documents:

Company	Carl Stahl Nord GmbH
Address	Am Jägerberg 4 D-16727 Velten

The sole responsibility for the issuance of this declaration of conformity with regard to the fulfilment of the fundamental requirements and the preparation of the technical documentation shall fall with the producer (or installer):

Company	Carl Stahl Nord GmbH
Address	Am Jägerberg 4 D-16727 Velten

Issued by:

Surname, first name	Weinreich, Thomas
Function	Managing Director

This declaration confirms the compliance with the harmonisation legislation specified, yet does not include any assurance of characteristic features.

Additional information:

This declaration applies to all specimens produced in accordance with the corresponding production drawings, which form part of the technical documentation. Please see the attached conformity statement and attached accompanying documentation for further details about the compliance with the above sources.

The complete declaration of conformity has been attached as a separate document.

2. Information processing

Symbols, designations, instructions for action and itemizations are illustrated under Chapter 2.1 to Chapter 2.2 in these present operating instructions.

2.1 Symbols and designations

Warning notes

The warning notes are classified and illustrated as follows:



DANGER

A warning note with the signal word "DANGER" indicates a hazard that can immediately and invariably lead to fatal or serious permanent injuries.



WARNING

A warning note with the signal word "WARNING" indicates a hazard that can possibly lead to fatal or serious injuries.



CAUTION

A warning note with the signal word "CAUTION" indicates a hazard that can possibly lead to light to moderate injuries.

ATTENTION

A warning note with the signal word "ATTENTION" indicates a hazard that can possibly lead to material damages.

Steps for action marked with ► and chronologically structured are listed in a **warning note**.

Pictograms for specific hazards



Meaning:

Warning of suspended load.



Meaning:

Warning of crushing hazard.



Meaning:

Warning of hand injuries.

The pictograms are used in conjunction with the corresponding classification and the most appropriate signal word.

Useful information and tips



INFO

The symbol indicates useful information and tips.

Disposal



DISPOSAL INFORMATION

Regarding packaging materials and load lifting attachments.

2.2 Instructions for action and itemizations

All instructions for action are structured and numbered in chronological action sequences, e.g.:

1. Action step 1
2. Action step 2

The result of an action is indicated by an arrow:

- Result / device reaction

Instructions for action, which do not necessarily have to follow a specific action sequence, are indicated as follows:

- Action step
- Action step

The result of an action is indicated by an arrow:

- Result / device reaction

Itemizations are indicated by indents:

- Itemization

3. Safety

Thoroughly read the following safety information before you use the load tilting device.

Basic rules of behaviour are listed under Chapter 3.1 to Chapter 3.3, which must be observed when handling the load tilting device. It is imperative to follow the instructions indicated with a  symbol in order to avoid danger to personnel. Warning notes, which belong to the individual instructions for action, are always listed before the respective action step.

3.1 Fundamental safety instructions

The load tilting device has been constructed, tested and left the company in a technically and operationally safe condition. The instructions in this manual must be followed in order to maintain this condition.

- Fully read these operating instructions;
- Observe the warning and safety information;
- Make sure that these operating instructions are always available at the installation site;
- Please note that only qualified specialized personnel can carry out work with and on the load tilting device (see Tab. 1);
- Observe the locally valid obligations regarding occupational safety and the work instructions of the operator during use;
- Observe the conditions on-site;
- Observe the maximum carrying capacity;
- Observe the weight of the load tilting device, this weight must be added to the load:
Weight of the device + load weight = total weight ► Consider the weight of all components in terms of the maximum carrying capacity!
- Damages that influence safety must be rectified immediately;
- Carry out all work with great care;
- Wear your personal protective equipment;
- Tie back long hair;
- Do not wear any loose clothing, rings, chains or other jewellery;
- Never linger under suspended loads, this is prohibited;
- Never open a load suspension device when it is under load;
- Only use the TF cross beam with a nameplate that is clearly legible;
- Observe the additional weight of the lifting tackle:

Classification of qualifying areas for load suspension devices

Field of activity	Qualification	Specialist knowledge
Delivery and transport	Dealer, forwarder	– Proof of load securing instruction – Safe handling with load handling devices
Storage	Storekeeper	– Safe handling with load handling devices
Commissioning, maintenance and servicing	Specialist personnel	– Specialist: professional training and experience, sufficient knowledge in the field of load handling devices – Safe handling with load handling devices – Product-specific knowledge
Use, simple visual inspection	Specialist personnel	– Safe handling with the load handling devices, professional training and experience
Disposal	Specialist personnel	– Knowledge of the provisions for proper disposal and reuse

Table 1 Overview

3.2 Proper use

The following points are classified as proper use:

- The vertical raising and lowering of non-guided loads;
- Observing the permissible carrying capacity: **Weight of the individual components + load weight;**
- The temperature range from 0 °C to + 80 °C;
- Use and storage only indoors;
- The even distribution of the load;
- Designed for maximum 20,000 load cycles, depending on external conditions the number of load cycles reduces.

Further information should be taken from the Technical Data (Chapter 4) and observed in addition to the points listed here.

3.3 Improper use

The following points are classified as improper use:

- Exceeding the maximum carrying capacity;
- The transport of persons and animals;
- The transport of liquids and hazardous substances;
- The angled pulling and single-sided loading;
- The breaking free of fixed loads;
- Design changes;
- If persons linger under suspended loads;
- Use in potentially explosive, salty, corrosive and/or alkaline environments;
- The pulling of loads on the ground;
- Use and storage outdoors.

Chapter 3.3 makes no claims to completeness. Everything, which is not expressly permitted, falls under improper use.

4. Technical data

Designation:	Load tilting device
Type:	LNG05

General specifications	Designation	Specification/Unit
	Number of load cycles	maximum 100,000
	Carrying capacity	500 kg
	Net weight	5 kg
	Permissible lifting speed	max. 8 m/min
	Permissible travel speed	max. 20 m/min
	Rail joints	max. 0.5mm

Crane connection dimensions	Designation	Specification/Unit
	Width	30 mm
	Height	50 mm
	Depth	12 mm

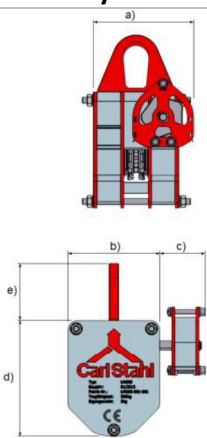
Base body dimensions	Designation	Specification/Unit
	a)	101 mm
	b)	110 mm
	c)	55 mm
	d)	140 mm
	e)	68 mm

Table 2 Technical data LNG05

Designation:	Load tilting device
Type:	LNG30

General specifications	Designation	Specification/Unit
	Load change	maximum 20,000
	Carrying capacity	3,000 kg
	Net weight	45 kg

Crane connection dimensions	Designation	Specification/Unit
	Width	90 mm
	Height	122 mm
	Depth	16 mm

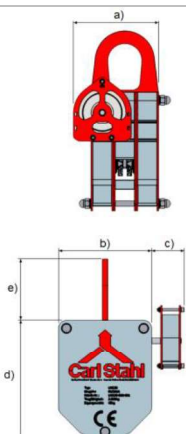
Crane connection dimensions	Designation	Specification/Unit
	a)	228 mm
	b)	250 mm
	c)	87 mm
	d)	320 mm
	e)	163 mm

Table 3 Technical data LNG30

5. Delivery and transport

5.1 Scope of delivery

Check the delivery for its completeness.

LNG05

Pcs.	Article
1	Load tilting device LNG05
1	Translation of the original operating instructions
1	Declaration of Conformity (copy)
1	Inspection document

Table 4 Scope of delivery LNG05

LNG30

Pcs.	Article
1	Load tilting device LNG05
1	Storage rack
1	Transport crate
1	Translation of the original operating instructions
1	Declaration of Conformity (copy)
1	Inspection document

Table 5 Scope of delivery LNG30

Contact the producer/dealer if parts are missing or damaged (Chapter 1.1).

5.2 Transport

The load tilting device is tested, inspected and properly packaged before delivery. Delivery takes place as a package or on a one-way pallet.

Always transport the load tilting device on a suitable transport system.

Load tilting devices of type LNG30 are supplied with a suitable storage rack.

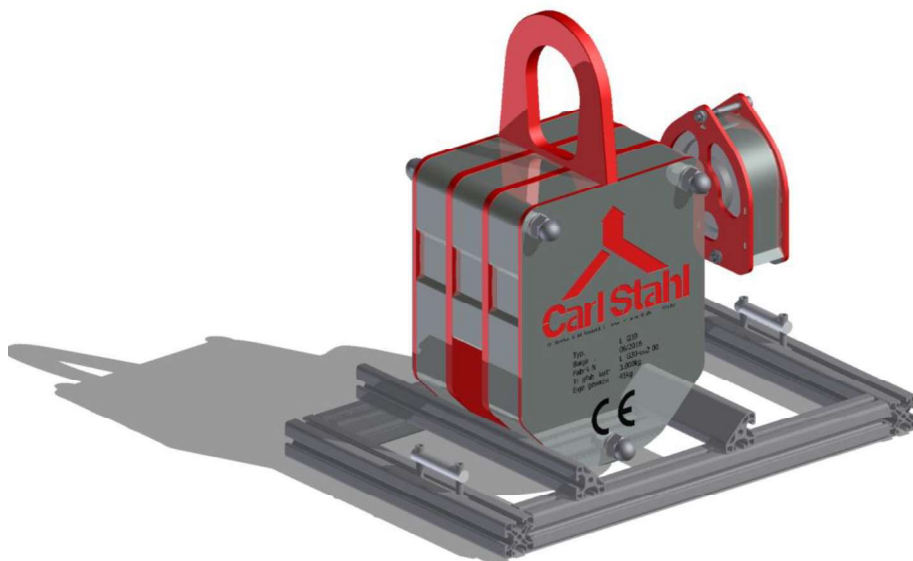


Figure 1 Storage rack

5.3 Storage

ATTENTION

Damage to the device due to improper storage!

Improper storage can damage the load tilting device.

- ▶ Store the load tilting device in suitable storage systems.
 - ▶ Store the load tilting device in a clean and dry location indoors.
 - ▶ Protect the load tilting device against:
 - Temperature influences that fall below or exceed the permissible temperature range (see Chapter 4).
 - Moisture
 - Contamination
 - Damages
 - Corrosion
-

6. Structure and function

In principle, the load tilting device consists of the following components:

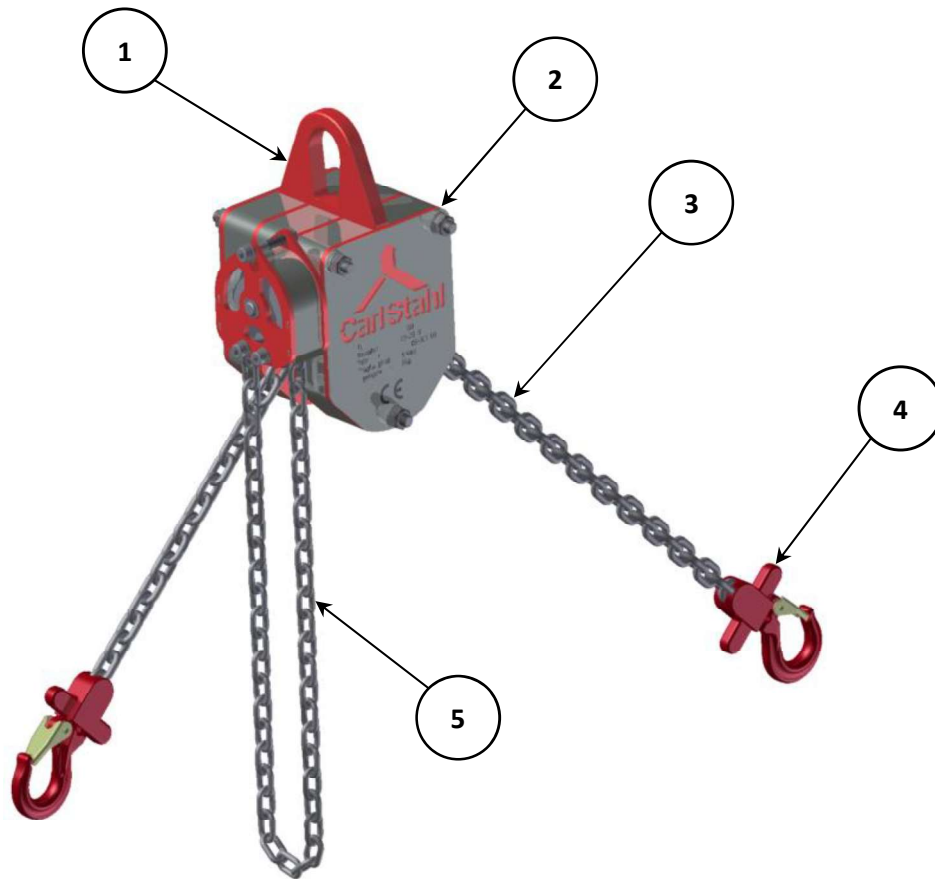


Figure 2 Structure

Item	Designation	Function
1	Suspension eyes	Crane connection
2	Housing	Drive protection
3	Load chain	Load suspension and adjustment
4	Load hook	Load suspension
5	Hand chain	Adjustment drive

Table 6 Structure and function

Figure 1 shows the structure of the standard version. With special versions, a drawing of the corresponding version will be enclosed with this document.

7. Use

7.1 Check before use

A check must be carried out before each use. You must undertake a check prior to first use (initial commissioning), before each recurring use or after servicing.

This check should ensure that the load tilting device is in a flawless state and ready for operation.

Refer to the maintenance/inspection plan for precise information regarding the respective checks. Read Chapter 8 for this purpose, especially 8.3 - 8.5.

You must observe the following before using the load tilting device:



DANGER

Danger to life due to load crashing!

Crashing of the load can lead to serious or fatal injuries.

- ▶ Never linger under suspended loads.
- ▶ Never walk under suspended loads.
- ▶ Ensure a sufficient working area.
- ▶ Make sure that nobody is present in the working area.



WARNING

Danger of crushing due to lack of space!

There is a danger of crushing due to insufficient clearances at the load receiving point, on the load transport path and at the load discharge point.

- ▶ Check your working environment.
- ▶ Ensure sufficient space at the load receiving point, on the load transport path and at the load discharge point.

7.2 Carrying capacity depending on the spreading angle

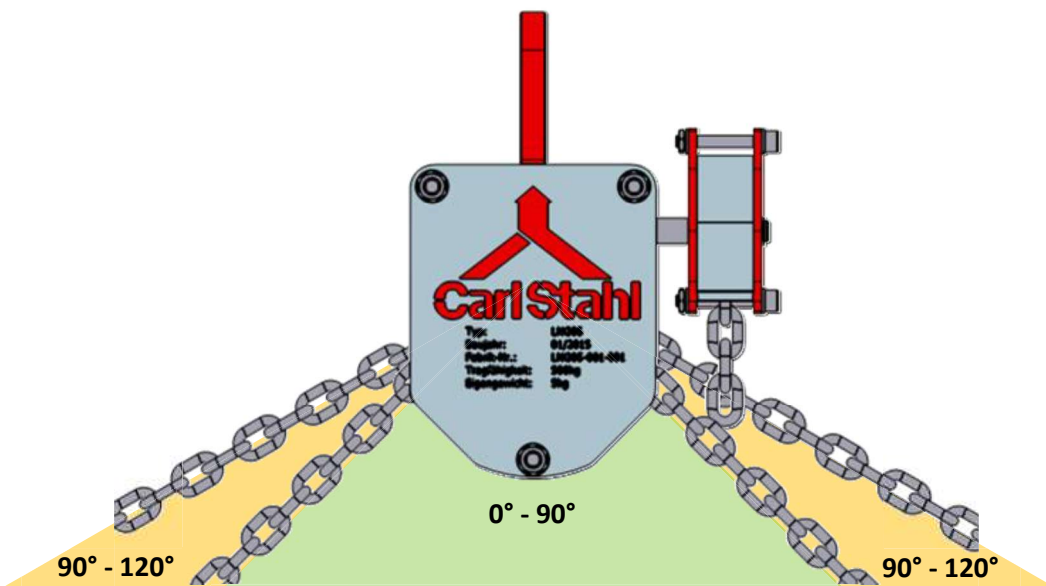


DANGER

Danger to life due to load crashing!

The load may crash with incorrect loading. This can lead to serious or fatal injuries.

- ▶ Please observe the maximum carrying capacity of the load tilting device.
- ▶ Observe the reduction in the carrying capacity with a spreading angle of more than 90°.



Carrying capacity	0° – 90°	0° – 120°
LNG05	500 kg	350 kg
LNG30	3,000 kg	2,100 kg

7.3 Attaching the load tilting device to the crane

Proceed as follows to attach the load tilting device, which is mounted on the storage system, to the crane:

1. Vertically position the crane hooks above the load tilting device
2. Attach the crane hooks to the suspension eyes.
 - Crane hook safety device latches into place.
3. Check the crane hook safety device.
4. Slowly and carefully lift the load tilting device.
5. Select the lifting height such that the working width can be adjusted with ease.

7.4 Raising, transporting and lowering loads

1. Attach the load hooks to suitable attachment points on the load.
 - The hook safety device latches into place.
2. Check the hook safety devices.
3. Vertically position the load tilting device above the load centre of gravity.



WARNING

Danger to life due to load moving uncontrolled!

Uncontrolled movement of the load can arise due to prohibited, single-sided loading.

- ▶ Check whether both strands of the load tilting device are loaded.
- ▶ Correct the load chain setting with the hand chain.

4. Slowly and carefully lift the load.
5. Set the desired angle of the load with the hand chain.
 - Depending on the movement of the load centre of gravity during tilting, the effort on the hand chain may vary.
6. Slowly and carefully lower the load until it is resistant to tilting.
7. Remove the lifting tackle from the load.

8. Maintenance

A load suspension device must be regularly cleaned, maintained and inspected. Refer to maintenance/inspection plan for the maintenance/inspection intervals.

8.1 Cleaning



INFO

Regular cleaning and careful handling will mean that you benefit from the complete service life of the load tilting device.

Component	Cleaning criteria	Measures
Housing	Housing must be free of corrosive substances	Cleaning with cleaning cloths. The cleaning cloths can be soaked with brake cleaner.
Chain	Free of metal and mineral dust.	Clean chain and grease with CondorLube wire and chain spray 52-10 G

Table 7 Cleaning

8.2 Inspection document

The inspection document serves as proof that the tests have taken place. Furthermore, all noted defects must be remedied and the recorded proof presented to the authorities if necessary. The inspection document provided below is only an example. The original inspection document has been attached as a separate document.

[illegible]

Figure 3 Inspection document

8.3 Maintenance / Inspection Plan

Maintenance / inspection intervals	Activity
Before initial use (initial commissioning)	– Visual and functional inspection
Before every repeat use of the load tilting device without extraordinary incidents	– Visual inspection
Annually	– Visual and functional inspection
Extraordinary inspection	– The annual inspection cycles can be shortened depending on the external conditions. This includes the following: – After cases of damage, servicing or special occurrences, – Continuous use in shift operation, – Increased wear, – Corrosion, heat exposure due to environmental influences, – etc.

Table 8 Maintenance / inspection plan

8.4 Inspection criteria

Withdrawal of the load tilting device from service is based on the inspection criteria in the following table. The basic value, specified in mm, can be found in the Technical Data (see Chapter 4).

Component	Inspection criteria	Measures
Housing	Any type of deformation	Decommissioning and contact with producer
Load chain	Any type of deformation and wear (use control gauge)	Decommissioning/have load chain replaced by the producer
Lifting eye	Any type of deformation and wear over 5% of the nominal cross section	Decommissioning and contact with producer
Hook safety device	Functionality	Decommissioning/have hook safety device replaced by the producer
Hand chain	Functionality	Decommissioning/have hand chain replaced by the producer
Nameplate	Legibility	Decommissioning and contact with producer

Table 9 Inspection criteria

8.5 Visual and functional inspection

The load tilting device must be checked and inspected before each use. Criteria are listed in the table on page 14, which could lead to the load tilting device being taken out of service.



DANGER

Danger to life due to load crashing!

Deformation and wear of the individual components can lead to a reduction of the carrying capacity and to crashing of the load.

- ▶ Check the load tilting device for defects.
- ▶ Check to which extent the individual components are functional.
- ▶ Mark the load tilting device as being out of service, if it is no longer functional and irreparably damaged (see Chapter 9.1).
- ▶ Contact the producer/service department if necessary (see Chapter 1.1).
- ▶ Dispose of the load tilting device if necessary (see Chapter 9.2).

Visual inspection

1. Check the load tilting device for visual defects, such as:
 - Cracks,
 - Deformations,
 - Wear,
 - Completeness
2. Take the load tilting device out of operation if it shows signs of any defects.

Functional inspection

1. Check all moveable parts for ease of movement.
2. Check the functionality of the load tilting device
3. Take the load tilting device out of operation if the functionality is impaired.

9. Decommissioning and disposal

9.1 Decommissioning

1. Mark the load tilting device as being out of service.
2. Contact the producer/service department (see Chapter 1.1).
3. Dispose of the load tilting device if necessary.

9.2 Disposal

Disposal



DISPOSAL INFORMATION

The load tilting device must be disposed of in accordance with the valid legal regulations if it is no longer repairable or functional.

Disposal of packaging material



DISPOSAL INFORMATION

The Packaging Ordinance obliges the dealer to accept return of the packaging used for their products, which does not bear the symbol of one of the general disposal systems (such as the 'Green Dot' of the Duales System Deutschland AG) and to ensure its reuse or proper disposal.

