Self-locking clevis hook

> IAGH, IMAGH <

> VAGH(S), VMAGH(S) <

Assembly instruction

This Assembly instruction/declaration of the manufacturer has to be kept on file for the whole lifetime of the product.

TRANSLATION OF THE ORIGINAL ASSEMBLY INSTRUCTION

This assembly instruction is valid in addition to the safety instructions for RUD Sling chains (ICE-Nr. 7995555 or VIP-Nr. 7101649).

Simple inspection, administration and documentation of work equipment and components which must be inspected regularly

EC-Mounting declaration

According to the EC-Machinery Directive 2006/42/EC, annex II B and amendments

Manufacturer:
RUD Ketten
Rieger & Dietz GmbH u. Co. KG
Friedensinsel
73432 Aalen

We hereby declare that the following incomplete machines correspond to the basic requirements of the Machinery Directive 2006/42/EC (annex 1). The following incomplete machine, in the delivered machine, may only be put into operation when the machine in which the incomplete machine shall be assembled has been tested according to the requirements of the EC-Machinery Directive 2006/42/EC.

Product name:
Self-locking hook
IAGH / IMAGH / VAGH(S) / VMAGH(S)

The following harmonized norms were applied:

<table>
<thead>
<tr>
<th>Norm</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN EN 1677-1</td>
<td>2009-03</td>
</tr>
<tr>
<td>DIN EN 1677-3</td>
<td>2008-06</td>
</tr>
<tr>
<td>DIN EN ISO 12100</td>
<td>2011-03</td>
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</table>

The following national norms and technical specifications were applied:

<table>
<thead>
<tr>
<th>Norm</th>
<th>Version</th>
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<tbody>
<tr>
<td>BGR 900, KAP2</td>
<td>2004-04</td>
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</table>

The special documents about the incomplete machine according to annex VII part B have been created and can be handed over in a suitable form on request.

Authorized person for the configuration of the declaration documents:
Michael Betzler, RUD Ketten, 73432 Aalen

Dr.-Ing. Arne Kriegsmann (Prokurist/QMB)
Name, function and signature of the responsible person
The present user’s instruction is valid for the following item variants of the self-locking clevis hook:

- **IAGH** - ICE Self-locking clevis hook in ICE-Pink (Purple colour, quality grade 120, D1 stamping)
- **IMAGH** - ICE Self-locking clevis hook for dump trucks in ICE-Pink (Purple colour, quality grade 120, D1 stamping)
- **VAGH(S)** - VIP Self-locking clevis hook - in skeleton design, in VIP-Pink colour / magenta (Quality grade 100, H1 stamping)
- **VMAGH(S)** - VIP Self-locking hook for dump trucks in skeleton design, in VIP-Pink colour / magenta (Quality grade 10, H1 stamping)

Please read assembly instruction carefully before initial operation of self-locking clevis hook. Make sure to understand all volumes. Disregard of the assembly manual can lead to serious physical injury and property damage and eliminates warranty. In doubt or in misconception please note that the German version of this document is decisive.

1 Safety instructions

**ATTENTION**
Wrong assembled or damaged lifting and lashing means as well as improper use can lead to injuries of persons and damage of objects when load drops. Please inspect all lifting points before each use.

- Please be also aware of extreme circumstances or shock loads when selecting the used self-locking clevis hook.
- RUD Self-locking clevis hook must only be used by instructed and competent persons considering BGR 500 / DGUV 100-500 and outside Germany noticing the country specific statutory regulations.

2 Intended use

The described self-locking clevis hook must only be used for lifting of loads when locked. Please note that the self-locking clevis hook must align into the pull direction. Hook must not be bent.

The bucket self-locking clevis hook IMAGH-10/13 and VMAGH(S)-13 are designed for lifting and transportation of buckets acc. DIN 30720-1 and DIN 30720-2. The RUD self-locking clevis hook must only be used with RUD chains.

RUD self-locking clevis hooks must only be used in the hereby described operation purpose for lifting resp. for the transport of loads (see chapter 4 Missuse).

3 Assembly- and instruction manual

3.1 General information

- **Capability of temperature usage of ICE-components (IAGH/IMAGH):**
  When using the ICE Clevis self-locking hook at temperatures beyond 200°C the permissible WLL of the ICE self-locking clevis hooks has to be reduced:
  -60°C up to 200°C no reduction
  200°C up to 250°C minus 10 %
  250°C up to 300°C minus 40 %
  Temperatures exceeding 300°C are prohibited!

- **Capability of temperature usage of VIP-components (VAGH(S)/VMAGH(S)):**
  When using the VIP self-locking clevis hooks at temperatures beyond 200°C the permissible WLL has to be reduced:
  -40°C up to 200°C no reduction
  200°C up to 300°C minus 10 %
  300°C up to 380°C minus 40 %
  Temperatures exceeding 380°C are prohibited!

- RUD VIP self-locking clevis hooks must not be used with aggressive chemicals such as acids, alkaline solutions and their vapours.

- The WLL of components are depending on the following variables:
  - Quality grade of component (picture 1-2)
  - Nominal size of component
  - in the present case The permissible WLL should be taken out of the according ICE- and VIP user’s instruction (or alternatively from the RUD website www.rud.com).

3.2 Hints for the assembly

Please observe correct assignment of chain and component when assembling the self-locking clevis hook. The quality grade/nominal size or the component can be identified by the stamping at component/bolt/chain resp. at the colour.

**ATTENTION**
Observe in any case the quality grade assignment at the components

- Assemble with **ICE components (IAGH, IMAGH)** only G-pins with a D1-12 stamping
- Assemble with **VIP components (VAGH(S), VMAGH(S))** only G-pins with a H1-10 stamping

Mixing of system components from different quality grades is not allowed.
Hints for the assembly at dump trucks

The self-locking clevis hook for dump trucks IMAGH-10/13 and VMAGH(S)-13 are designed for the lifting and transportation of buckets acc. to DIN 30720-1 and DIN 30720-2.

The inside contour is designed to avoid unintentional bucket off-hook acc. to DIN 30720-1 and DIN 30720-2. For this kind of securing the hook must be according to picture 6 assembled and locked at the bucket pin.

When side load occurs the hook must be able to align itself in the pulling direction (picture 7).
3.3 General user information

• Check before each usage of the self-locking clevis hooks that the securing of the G-pin is in correct position.
• Observe pivoting function of upper part of the automatic hook before each loading. Closing of the latch must be possible and the locking lever must engage, resp. lock in (see chapter 5 Inspection criteria, last section).

HINT
Regularly lubrication protects the Automatic-Clevis-Hook also from corrosion (see chapter 5 Inspection criteria, last section).

• Make sure that the load force happens in the straight leg without being twisted, fold-over or kinked.
• Control frequently and before each operation the total lifting/lashing mean in regard of ongoing ability, strong corrosion, wear, deformation etc. (see chapter 5 Inspection criteria).

WARNING
Wrong assembled or damaged lifting- and lashing means as well as improper usage can lead to physical injury and damage of property when load falls. Inspect lifting means before each use carefully!

• Please check carefully the wear indicator markings of the Self-locking clevis hook (see picture 8):

Usage permitted: no wear marks visible
Use prohibited: Replacement criteria reached. Material all the way down to the wear lenses has gone

Pic. 8: Wear indicators

• Leave hazardous area when possible.
• Watch always attached loads.
• Read for all lifting/lashing means the RUD sling chain Safety instructions for RUD lifting means resp. the relevant WLL (ICE quality grade 120 and VIP quality grade 100).

3.4 Usage of the self-locking clevis hook

ATTENTION
Body parts (fingers, hands, arms etc.) inside the hook can lead to pinch injuries at attaching and lifting of load
Remove limbs from functional range of self-locking clevis hook when lifting loads.

1. Attach load into the self-locking clevis hook.
2. Press upper part (1) of the hook down until it snaps into place.
The sel-locking clevis hook is now locked. The locking lever (2) is in the upright direction.

Pic. 9: self-locking clevis hook is opened
Pic. 10: self-locking clevis hook is closed

3. To open the self-locking clevis hook press locking lever (2) down. The upper part of the self-locking clevis hook (1) can be opened again.

Pic. 11: Opening of the self-locking clevis hook

3.5 Hints for the periodically inspection

Check by a competent person in periods, which are determined by usage but at least 1x year, the continuous appropriateness of the lifting means (see chapter 5 Inspection criteria).
Depending on the working conditions, f.e. when often used, or if increased wear or corrosion occurs, inspections could be necessary in shorter periods than one year.

4 Missuse

The following practises of the Automatic Clevis Hook are not permissible and have to be forbidden in any case!

WARNING
Wrong assembled or damaged lifting- and lashing means as well as improper usage can lead to physical injury and damage of property when load falls. Inspect lifting means before each use carefully!
5 Inspection criteria

Check and control the following points before each initial operation, in periodical periods after the assembly and after special incidents:

- Completeness of the self-locking clevis hook
- Readable size and manufacturer sign
- Mechanical damage like strong notches, especially in areas where tensile stress occurs
- Widening of the mouth must not exceed by more than 10% of the nominal dimension (see embossed measurement Fmax at the hook)
- Cracks or other damage, especially existing notches at the bail of the hook
- Deformation of component
- It must be guaranteed that locking lever is able to be released
- Distance between top and bottom of hook (acc. to DIN EN 1677-3):

<table>
<thead>
<tr>
<th>No. (=Nominal size)</th>
<th>WLL</th>
<th>max. distance</th>
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<tbody>
<tr>
<td>6 up to 10</td>
<td>1.2 - 3.15 t</td>
<td>1 mm</td>
</tr>
<tr>
<td>11 up to 14</td>
<td>4.00 - 6.00 t</td>
<td>1.5 mm</td>
</tr>
<tr>
<td>16 up to 18</td>
<td>8.00 - 10.00 t</td>
<td>2.0 mm</td>
</tr>
<tr>
<td>19 up to 26</td>
<td>11.20 - 21.20 t</td>
<td>3.0 mm</td>
</tr>
</tbody>
</table>

- Function control of the locking mechanism:
  If the hook resp. the latch closes only sluggishly, lubricate the joint (uncoated areas) with spray oil. Then open and close the latch multiple times to spread out the oil on the inside of the joint. Locking of the latch must be possible in a way that the locking mechanism engages properly.
6 Hints for repairing

- Repairings must only be carried out by competent persons, which can show that they have the therefor necessary skills.
- Only RUD original spare parts must be used and all repairing and overhauling operations must be documented in the chain card file (of the complete lifting mean) or use the AYE-D.NET-System.

<table>
<thead>
<tr>
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<td>24</td>
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<td>167</td>
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</table>

Chart 1: Dimension chart

HINT

The permissible WLL should be taken out of the according ICE- and VIP user’s instruction (or alternatively from the RUD website www.rud.com)

Securing set

(1) with locking lever

(2) without locking lever

Size chart Securing set

<table>
<thead>
<tr>
<th>Mentioned size on the part</th>
<th>Ref.-No. (1)</th>
<th>Ref.-No. (2)</th>
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<tr>
<td>8 8503713 7910417 IAGH-8 und VAGH(S)-10</td>
<td></td>
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<tr>
<td>10 7998255 7910418 IAGH-10, IMAGH-10, IMAGH-13, VAGH(S)-13 + VMAGH(S)-13</td>
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RUD components are tested in accordance with DIN EN 1677, with a minimum of 20,000 load cycles at 1.5 x WLL.

At high dynamical loads with high number of load cycles the bearing stress must be reduced acc. to FEM Group 1Bm (M3 acc. To DIN EN 818-7)