

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).



Self-locking clevis hook



Self-locking clevis hook for dump trucks



RUD Ketten
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RUD-Art.-Nr.: 7902350-EN / 08.019



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

EG-Einbauerklärung

entsprechend der EG-Maschinenrichtlinie 2006/42/EG, Anhang II B und ihren Änderungen

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

Hiermit erklären wir, dass die nachfolgend bezeichnete unvollständige Maschine den grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG (Anhang 1) entspricht. Die nachfolgend bezeichnete unvollständige Maschine darf, in der gelieferten Ausführung erst dann in Betrieb genommen werden, wenn festgestellt wurde, dass die Maschine, in die diese unvollständige Maschine eingebaut werden soll, den Anforderungen der EG-Maschinenrichtlinie 2006/42/EG entspricht.

Produktbezeichnung: Automatik-Gabelkopfhaken
IAGH / IMAGH / VAGH(S) / VMAGH(S)

Folgende harmonisierten Normen wurden angewandt:

<u>DIN EN 1677-1 : 2009-03</u>	<u>DIN EN 1677-3 : 2008-06</u>
<u>DIN EN ISO 12100 : 2011-03</u>	_____
_____	_____
_____	_____

Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:

<u>BGR 500, KAP2.8 : 2008-04</u>	_____
_____	_____
_____	_____
_____	_____

Die speziellen Unterlagen zur unvollständigen Maschine nach Anhang VII Teil B wurden erstellt und werden auf begründetes Verlangen in geeigneter Form übermittelt.

Für die Zusammenstellung der Konformitätsdokumentation bevollmächtigte Person:
Michael Betzler, RUD Ketten, 73432 Aalen

Aalen, den 26.09.2016 Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB)
Name, Funktion und Unterschrift Verantwortlicher *Arne Kriegsmann*

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:

<u>DIN EN 1677-1 : 2009-03</u>	<u>DIN EN 1677-3 : 2008-06</u>
<u>DIN EN ISO 12100 : 2011-03</u>	_____
_____	_____
_____	_____

The following national norms and technical specifications were applied:

<u>BGR 500, KAP2.8 : 2008-04</u>	_____
_____	_____
_____	_____
_____	_____

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

Aalen, den 26.09.2016 Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB)
Name, function and signature of the responsible person *Arne Kriegsmann*

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, H 1 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 so-lutions 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.

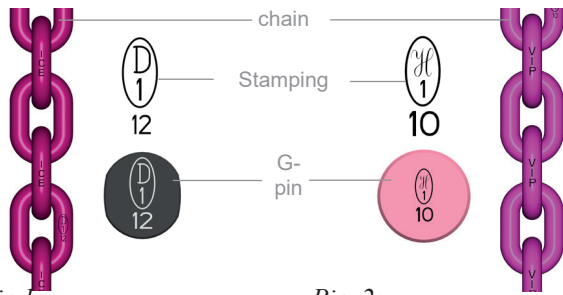


ATTENTION

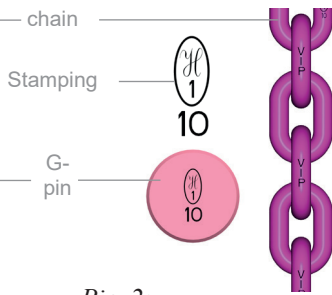
Observe in any case the quality grade assignment at the components

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

Mixing of system components from different quality grades is not allowed.



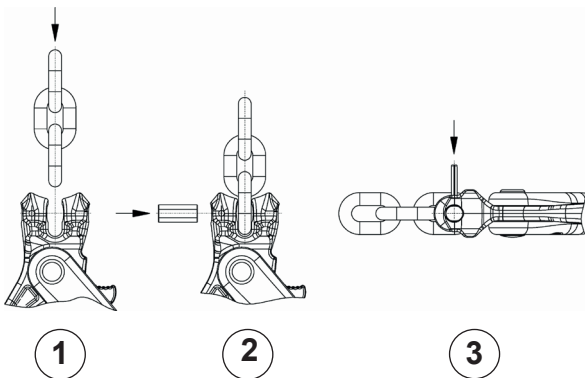
Pic. 1:
ICE chain quality gr. 120
Stamping D1-12
Oval pin D1-12



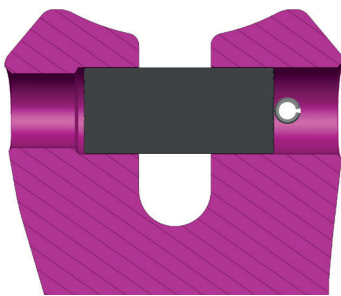
Pic. 2:
VIP chain quality gr. 100
Stamping H1-10
Round pin H1-10

Basically essential:

- Assemble slotted spring pin for the securing of the G-pin in the clevis in such a way that the slot can be seen resp. faces to the outside
- RUD G-pins are fool-proof:
 - For the ICE components use only the oval ICE-G-pin (picture 1)
 - For the VIP components use only the round VIP G-pin (picture 2)
- The G-pin must be assembled captive with the slotted pin and with the step hole in the component (picture 4)
- Use slotted pin only once!
- Use only original RUD spare parts.
- Check finally the correct assembly (see chapter 5 Inspection criteria).



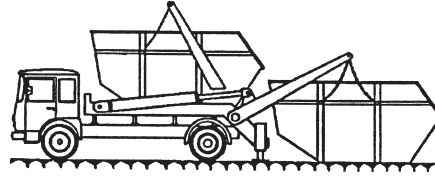
Pic. 3: Assembly of connecting pin



Pic. 4: G-pin assembly with slotted pin and step hole (left). G-pin of the next smaller size falls out.

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.



Pic 5: Usage of buckets



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.

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.



Pic 6: Component attached and locked into bucket pin

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



Pic. 7: Alignment of hook at inclined pull

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).

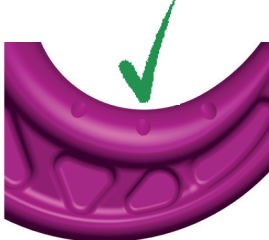
- Make sure that the load force happens in the straight leg without being twisted, fold-over or kinked.
- Control frequently and before each operation the total lifting/lashing mean in regard of ongoing ability, strong corrosion, wear, deformation etc. (see chapter 5 *Inspection criteria*).



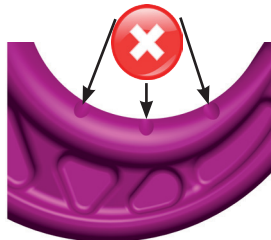
WARNING

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).

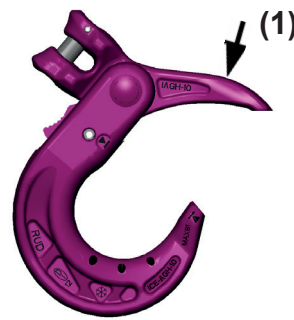
3.4 Usage of the self-locking clevis hook



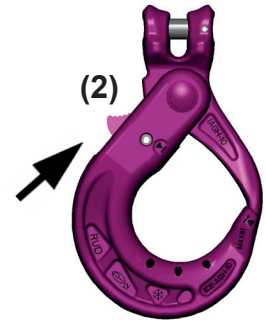
ATTENTION

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 self-locking clevis hook is now locked. The locking lever (2) is in the upright direction.

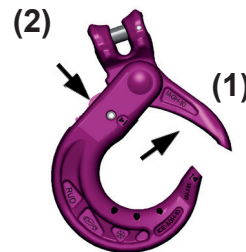


Pic. 9: self-locking clevis hook is opened



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

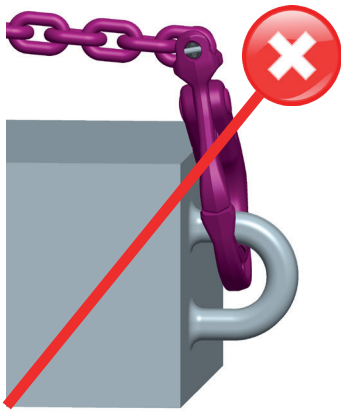
The following practises of the Automatic Clevis Hook are not permissible and have to be forbidden in any case!



WARNING

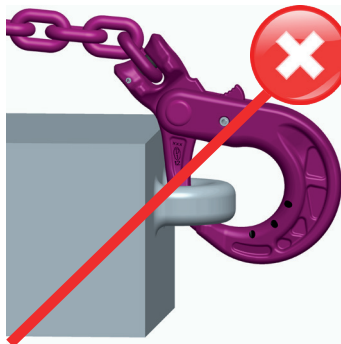
Wrong assembled or damaged lifting- and lashing means as well as improper usage can lead to physical injury and damage of property when load falls. Inspect lifting means before each use carefully!

Make sure that....



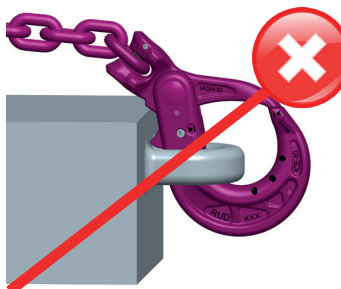
Pic. 12: No edge loading

... the hook will always be loaded just in the pulling direction and that no bending occurs (neither edge nor tip loading)



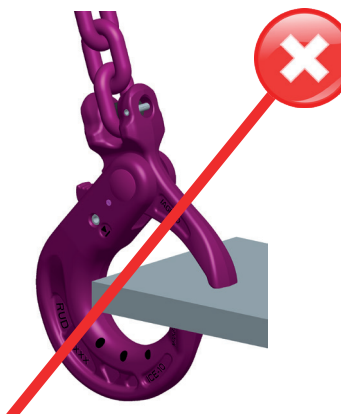
Pic. 13: No edge loading

... the hook will always be loaded just in the pulling direction and that no bending occurs (neither edge nor tip loading)



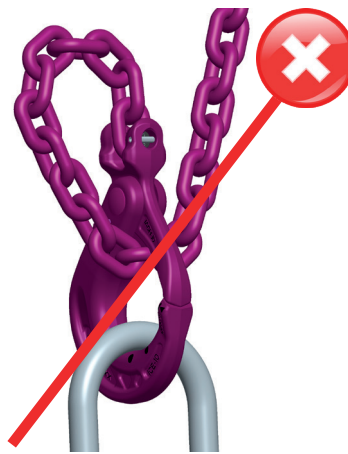
Pic. 14: No edge loading

... the hook will always be loaded just in the pulling direction and that no bending occurs (neither edge nor tip loading)



Pic. 15: No tip loading / not correctly locked

... the top part of the hook is correctly locked and that no tip loading occurs.



Pic. 16: No choke hitch

...the load force in the straight strand is not twisted, and no kinking or buckling occurs. The chain strand must not be looped through the hook.

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 F_{max} 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):



No. (=Nominal size)	WLL	max. distance
6 up to 10	1.2 - 3.15 t	1 mm
11 up to 14	4.00 - 6.00 t	1.5 mm
16 up to 18	8.00 - 10.00 t	2.0 mm
19 up to 26	11.20 - 21.20 t	3.0 mm

- Function control of the locking mechanism: If the hook resp. the latch closes only sluggish, lubricate the joint (uncoated areas) with spray oil. Then open and close the 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.

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)

	Deno- mination	Chain	WLL [t]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Fmax [mm]	T [mm]	weight [kg/pc.]	Ref.-No.
ICE	IAGH-6	ICE-6	1.8	34	24	27	28	97	44	60	113	0.9	7900085
	IAGH-8	ICE-8	3.0	45	31	30	31	106	48	66	124	1.2	7997691
	IAGH-10	ICE-10	5.0	50	38	36	40	136	61	81	154	2.4	7997692
	IAGH-13	ICE-13	8.0	73	50	44	51	173	78	107	200	4.9	7997693
	IAGH-16	ICE-16	12.5	90	61	49	53	192	85	121	232	7.4	7900086
	IMAGH-10	ICE-10	5.0	61	37	36	40	137	50	81	171	3	7902113
IMAGH-13	ICE-13	8.0	70	37	40	40	140	50	81	167	3.6	7906216	
VIP	VAGH(S)-8	VIP-8	2.5	40	30	27	28	97	44	60	121	1	7900046
	VAGH(S)-10	VIP-10	4.0	49	37	30	31	107	48	66	135	1.5	7900047
	VAGH(S)-13	VIP-13	6.7	61	48	36	40	133	61	81	169	2.9	7900048
	VMAGH(S)	VIP-13	6.7	61	37	36	40	137	50	81	167	3	7902114

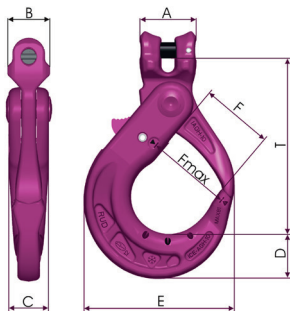
Chart 1: Dimension chart

Technical alterations subject to change

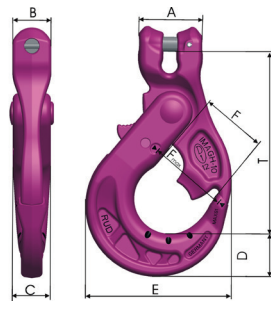


HINT

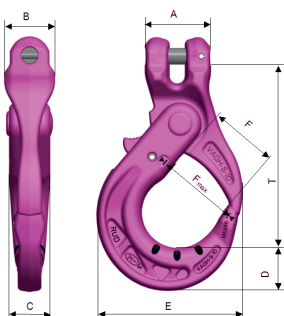
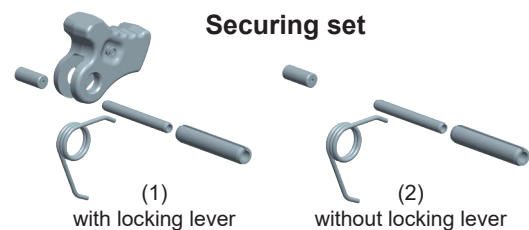
The permissible WLL should be taken out of the according ICE- and VIP user's instruction (or alternatively from the RUD website www.rud.com)



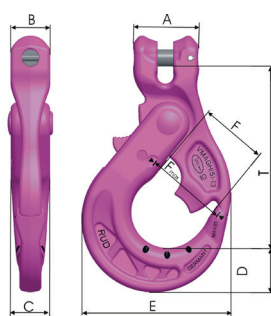
Pic. 17: IAGH



Pic. 18: IMAGH



Pic. 19: VAGH(S)



Pic. 20: VMAGH-13

Size chart Securing set

	Mentioned size on the part		can be used for the follo- wing types:
	Ref.-No. (1)	Ref.-No. (2)	
6	8503759	7910416	IAGH-6 und VAGH(S)-8
8	8503713	7910417	IAGH-8 und VAGH(S)-10
10	7998255	7910418	IAGH-10, IMAGH-10, IMAGH-13, VAGH(S)-13 + VMAGH(S)-13
13	8503714	7910419	IAGH-13
16	8503760	7910420	IAGH-16