

# Excavator hook VABH-W - for welding

## Safety instructions

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

Translation of the Original instructions



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## Excavator hook - for welding VABH-W



### EG-Konformitätserklärung

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

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

Hiermit erklären wir, dass die nachfolgend bezeichnete Maschine aufgrund ihrer Konzipierung und Bauart, sowie in der von uns in Verkehr gebrachten Ausführung, den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Maschinenrichtlinie 2006/42/EG sowie den unten aufgeführten harmonisierten und nationalen Normen sowie technischen Spezifikationen entspricht.  
 Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Produktbezeichnung: Anbauhaken  
VABH-B / VABH-W / VCGH-G / VCGH-S

Folgende harmonisierten Normen wurden angewandt:  
EN 12100 : 2011-03      EN 1677-1 : 2009-03  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:  
BGR 500, KAP2.8 : 2008-04      DIN 15428 : 1978-08  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Für die Zusammenstellung der Konformitätsdokumentation bevollmächtigte Person:  
 Reinhard Smetz, RUD Ketten, 73432 Aalen

Aalen, den 27.06.2014      Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB) *Arne Kriegsmann*  
 Name, Funktion und Unterschrift Verantwortlicher



### EC-Declaration of conformity

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

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

We hereby declare that the equipment sold by us because of its design and construction, as mentioned below, corresponds to the appropriate, basic requirements of safety and health of the corresponding EC-Machinery Directive 2006/42/EC as well as to the below mentioned harmonized and national norms as well as technical specifications.  
 In case of any modification of the equipment, not being agreed upon with us, this declaration becomes invalid.

Product name: Bolt on / Weld on hook  
VABH-B / VABH-W / VCGH-G / VCGH-S

The following harmonized norms were applied:  
EN 12100 : 2011-03      EN 1677-1 : 2009-03  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

The following national norms and technical specifications were applied:  
BGR 500, KAP2.8 : 2008-04      DIN 15428 : 1978-08  
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Authorized person for the configuration of the declaration documents:  
 Reinhard Smetz, RUD Ketten, 73432 Aalen

Aalen, den 27.06.2014      Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB) *Arne Kriegsmann*  
 Name, function and signature of the responsible person

## User Instructions

1. Reference should be made to German Standards according BGR 500/DGUV 100-500 or other country specific statutory regulations and inspections are to be carried out by competent persons only.

2. Before installing and every use, visually inspect RUD lifting points, paying particular attention to any evidence of weld cracks, corrosion, wear, deformations, etc.

3. The material construction to which the lifting point will be attached should be of adequate strength to withstand forces during lifting without deformation. The contact areas must be free from impurities, oil, colour, ect.

The Material of the VABH-W is 1.6541 (23MnNiCrMo52 / SAE 8620)

The installation should be in the direction of pull. (See picture 1 : Possible use area.)

4. The lifting points must be positioned on the load in such a way that movement is avoided during lifting.

a.) For single leg lifts, the lifting point should be vertically above the centre of gravity of the load.

b.) For two leg lifts, the lifting points must be equidistant to/or above the centre of gravity of the load.

c.) For three and four leg lifts, the lifting points should be arranged symmetrically around the centre of gravity in the same plane.

### 5. Load Symmetry:

The working load limits of individual RUD lifting points are calculated using the following formula and are based on symmetrical loading:

$$W_{LL} = \frac{G}{n \times \cos \beta}$$

$W_{LL}$  = working load limit  
 $G$  = load weight (kg)  
 $n$  = number of load bearing legs  
 $\beta$  = angle of inclination of the chain to the vertical

The calculation of load bearing legs is as follows:

	symmetrical	asymmetrical
two leg	2	1
three / four leg	3	1

(see table 1)

6. All fittings connected to the VABH-W should be free moving. When connecting and disconnecting the lifting means (sling chain), pinches and impacts should be avoided. Damage of the lifting means caused by sharp edges should be avoided as well.

### 7. Effect of temperatur:

During use in overheated areas the WLL of the VABH-W has to be reduced according the chart:

-40° up to 200°C no reduction

200° up to 300°C minus 10% (392°F up to 572°F)

300° up to 400°C minus 25% (572°F up to 752°F)

Temperatures above 400°C (752°F) are not allowed.

8. The places where the lifting points are fixed should be marked with colour.

9. RUD-Lifting points must not be used under chemical influences such as acids, alkaline solutions and vapours e.g. in pickling baths or hot dip galvanising plants. If this cannot avoided, please contact the manufacturer indicating the concentration, period of penetration and temperature of use.

10. RUD-lifting points must not be used with aggressive chemicals such as acids, alkaline solutions and their vapours.

11. If the lifting points are used **exclusively** for lashing the value of the working load limit can be doubled. LC = 2 x WLL

12. After welding, an annual inspection or sooner if conditions dictate should be undertaken by a competent person examining the continued suitability. Also after damage and special occurrences.

### Inspection criteria concerning paragraphs 2 and 12:

- The lifting point should be complete.
- The working load limit and manufacturers stamp should be clearly visible.
- Deformation of the component parts such as body .
- Mechanical damage, such as notches, particularly in high stress areas.
- Wear should be no more than 10 % of cross sectional diameter.
- Evidence of corrosion.
- Evidence of cracks.
- Cracks or other damages to the welding.

*A non-adherence to this advice may result damages of persons and materials!*

Method of lift										
Number of legs	1	1	2	2	2	2	2	3 and 4	3 and 4	3 and 4
Angle of inclination <math>\beta</math>	0°	90°	0°	90°	0-45°	45-60°	unsym.	0-45°	45-60°	unsym.
Factor	1	1	2	2	1.4	1	1	2.1	1.5	1
Type	WLL > G< (total weight)									
VABH-B 1.5 t	1.5 t 3300 lbs	1.5 t 3300 lbs	3.0 t 6600 lbs	3.0 t 6600 lbs	2.1 t 4620 lbs	1.5 t 3300 lbs	1.5 t 3300 lbs	3.15 t 6900 lbs	2.25 t 4950 lbs	1.5 t 3300 lbs
VABH-B 2.5 t	2.5 t 5500 lbs	2.5 t 5500 lbs	5.0 t 11000 lbs	5.0 t 11000 lbs	3.5 t 7700 lbs	2.5 t 5500 lbs	2.5 t 5500 lbs	5.25 t 11550 lbs	3.75 t 8250 lbs	2.5 t 5500 lbs
VABH-B 4 t	4.0 t 8800 lbs	4.0 t 8800 lbs	8.0 t 17600 lbs	8.0 t 17600 lbs	5.6 t 12320 lbs	4.0 t 8800 lbs	4.0 t 8800 lbs	8.4 t 18500 lbs	6.0 t 13200 lbs	4.0 t 8800 lbs
VABH-W 6.7 t	6.7 t 15000 lbs	6.7 t 15000 lbs	13.4 t 30000 lbs	13.4 t 30000 lbs	9.4 t 21000 lbs	6.7 t 15000 lbs	6.7 t 15000 lbs	14 t 31500 lbs	10 t 22500 lbs	6.7 t 15000 lbs

Table 1

The welding should only be carried out according to DIN EN ISO 9606-1 or AWS Standards by an authorized welder.

**Welding sequence:**

- Tack Weld at the right position. Before carrying out the top run, carefully clean the root.
- The welding process must not be interrupted for such a time that the welding plate loses the welding temperature
- The fillet welding process had to be carried out circulated

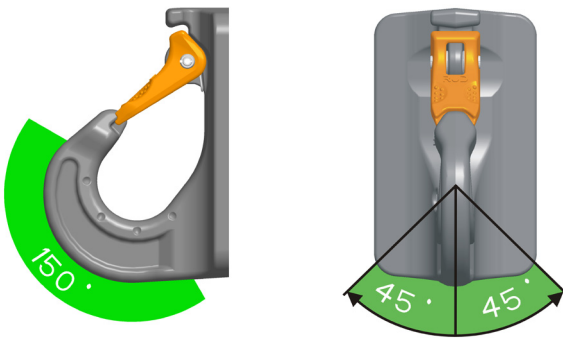
Type	welding beam		
	size fillet weld a	length [mm]	volume [cm <sup>3</sup> ]
VABH-W 1,5t	4	322	5,2
VABH-W 2,5t	5	424	10,6
VABH-W 4t	6	481	17,3
VABH-W 6,7t	6	574	20,6

Table 2

**Welding procedure + Welding filler metals:**

	Europe (DE, GB, FR, .... )		USA, Canada, ...
	Mild steel, Low alloyed steel		Mild steel, Low alloyed steel
<b>MAG / MIG</b> (135)	ISO 14341: G4 Si 1 z.B. Castolin 45250	<b>GAS SHIELDED WIRE WELDING</b>	ISO 14341: G4 Si 1 AWS A 5.18 : ER 70 S-6 z.B. Eutectic MIG-Tec A88
<b>E-Hand Direct current</b> = (111)	EN ISO 2560-A - E 42 6 B 3 2; EN ISO 2560-A - E 38 2 B 12 H10 z.B. Castolin 6666 * Castolin 6666N *	<b>Stick Electrode Direct Current</b>	AWS A 5.5 : E 8018-G * AWS A 5.1 : E 7016 * z.B. Eutectic Castolin 6666 / 6666N / 35066
<b>E-Hand Alternating current</b> ~ (111)	ISO 14343 A : G 18.8 Mn DIN 8555: E- 8-UM-200-400 CKZ z.B. Castolin 640 Castolin 33033	<b>Stick Electrode Alternating Current</b>	DIN EN 1600: E 23 12 2 LR 12 AWS A 5.4 : E 309 Mo L-16 z.B. Castolin 33700 CP
<b>WIG</b> (141)	ISO 636: W3 Si 1 z.B. Castolin 45255W	<b>TIG Tungsten Arc Welding</b>	ISO 636: W3 Si 1 AWS A 5.18 : ER 70 S-G z.B. Eutectic TIG-Tec-Tic A 88

Table 3 \* Follow the drying instructions!

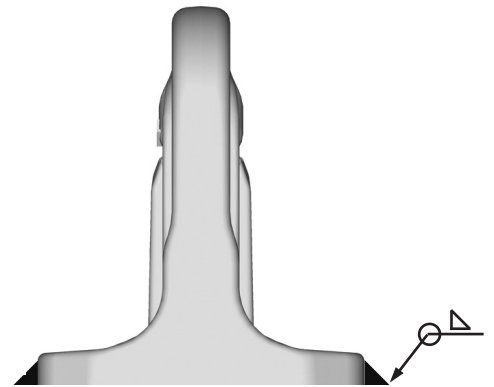


picture 1. Possible use area

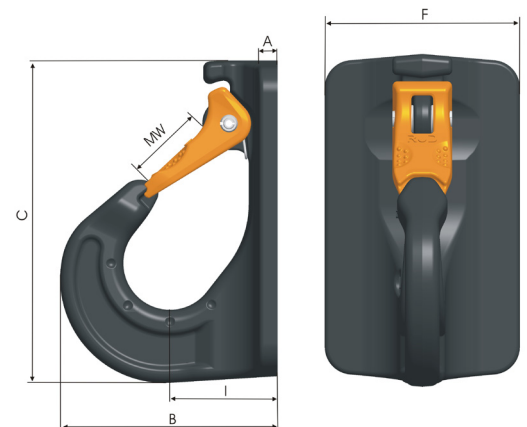
Type	WLL	weight	A	B	C	F	I	MW	ref-no.
VABH-W 1.5 t	1.5 t	0.8 kg	7,5	78	117	70	38	25	7991208*
VABH-W 2.5 t	2.5 t	1.8 kg	8,5	101	148	85	49	30	7991209*
VABH-W 4 t	4 t	3.1 kg	11	122	171	104	59	35	7991210**
VABH-W 6.7 t	6.7 t	5.9 kg	13	156	208	120	70	40	8502239
VABH-W 1.5 t	3300 lbs	1.76 lbs	19/64"	3 1/16"	4 5/8"	2 3/4"	1 1/2"	1"	7991208*
VABH-W 2.5 t	5500 lbs	3,97 lbs	1 1/32"	4"	5 13/16"	3 11/32"	1 15/16"	1 3/16"	7991209*
VABH-W 4 t	8800 lbs	6.88 lbs	7/16"	4 13/16"	6 3/4"	4 3/32"	2 5/16"	1 3/8"	7991210**
VABH-W 6.7 t	15000 lbs	12.99 lbs	1/2"	6 1/8"	8 3/16"	4 3/4"	2 3/4"	1 9/16"	8502239

Table 4 \*package unit = 4 pcs \*\*package unit = 2 pcs

**Welding seam definition:**



picture 2



picture 3

Subject to technical alterations!