



Excavator hook VCGH-G for bolting

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



RUD Ketten
Rieger & Dietz GmbH u. Co. KG

RUD-Art.-Nr.: 8502511-EN / 08.017

Excavator hook
VCGH-G
for bolting



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:
DIN EN 1677-1 : 2009-03 DIN EN ISO 12100 : 2011-03

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:
Michael Betzler, RUD Ketten, 73432 Aalen

Aalen, den 26.09.2016 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:
DIN EN 1677-1 : 2009-03 DIN EN ISO 12100 : 2011-03

The following national norms and technical specifications were applied:
BGR 500, KAP2.8 : 2008-04 DIN 15428 : 1978-08

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) *Arne Kriegsmann*
Name, function and signature of the responsible person

User Instructions

1. Reference should be made to German Standards accord. DGUV 100-500 (BGR 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 corrosion, wear and weld cracks and deformations. Please ensure compatibility of bolt thread and tapped hole.

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 German testing authority BG, recommends the following minimum bolt lengths:

- 1 x M in steel (minimum quality S235JR [1.0037])
 - 1,25 x M in cast iron (for example GG 25)
 - 2 x M in aluminium alloys
 - 2,5 x M in aluminium-magnesium alloys
- (M = diameter of RUD lifting point bolt, for ex. M 20)

When lifting light metals, nonferrous heavy metals and gray cast iron the thread has to be chosen in such a way that the working load limit of the thread corresponds to the requirements of the respective base material.

RUD excavator hooks are delivered with 100 % crack tested ICE-Bolts. Original ICE-Bolts are available from RUD as spare parts. When using your own bolts, the bolts have to be 100 % crack tested. The min quality of the hexagon bolt had to be 10.9 accord. EN 24014 (DIN 931) with the nominal diameter.



HINT

A combination of bolts made of different strength classes is not allowed to be used for a fixation of the excavator hooks.

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, if possible.

5. Load Symmetry:

The working load limit 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
 β = angle of inclination of the chain to the vertical

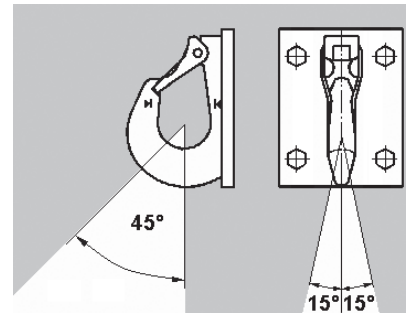
The calculation of load bearing legs is as follows:

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

(see table 1)

6. A Plane bolting surface must be guaranteed. The holes must be drilled with a sufficient depth in order to guarantee compatibility with the supporting surface. *The bolts should be tightened with torque according to table 2.*

7. The installation should be in the direction of pull. Possible use area:



8. To prevent unintended dismounting through shock loading, rotation or vibration, thread locking fluid such as Loctite (depending on the application, please pay attention to the manufacturer's instruction) could be used to secure the bolt, or use form-closed devices.

9. Effects of temperature:

Due to the DIN/EN bolts that are used with the VCGH-G the working load limit should be reduced accordingly:

-20° to 100°C	no reduction	-4 °F to 212 °F
100° to 200°C	minus 15 %	212 °F to 392 °F
200° to 250°C	minus 20 %	392 °F to 482 °F
250° to 350°C	minus 25 %	482 °F to 662 °F

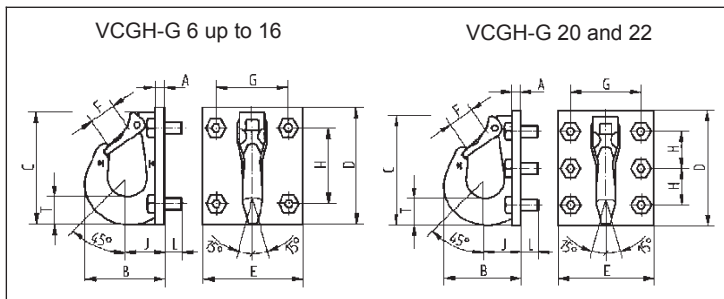
Temperatures above 350°C (662°F) are not permitted.

Method of lift									
Number of legs	1	2	2	2	2	3 and 4	3 and 4	3 and 4	
Angle of inclination β	90°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.	
Factor	1	2	1.4	1	1	2.1	1.5	1	
Type	WLL in metric tons, bolted								
	VCGH-G 6 *	1.5 t	3 t	2.1 t	1.5 t	1.5 t	3.15 t	2.25 t	1.5 t
	VCGH-G 8 *	2.5 t	5 t	3.5 t	2.5 t	2.5 t	5.25 t	3.75 t	2.5 t
	VCGH-G 10 *	4 t	8 t	5.6 t	4 t	4 t	8.4 t	6 t	4 t
	VCGH-G 13 *	6.5 t	13 t	9.1 t	6.5 t	6.5 t	13.65 t	9.75 t	6.5 t
	VCGH-G 16	10 t	20 t	14 t	10 t	10 t	21 t	15 t	10 t
	VCGH-G 20	16 t	32 t	22.4 t	16 t	16 t	33.6 t	24 t	16 t
	VCGH-G 22	20 t	40 t	28 t	20 t	20 t	42 t	30 t	20 t

Table 1

Subject to technical modifications

* are replaced by Type VABH-B



Type	WLL t	weight kg	A	B	C	D	E	F	G	H	J	L	M	T	torque Nm	ref-no.	safety latch
VCGH-G 6 *	1.5	0.9	10	68	92	100	100	25	70	60	37	15	4xM12	20	100	*	7100299
VCGH-G 8 *	2.5	1.7	10	84	125	135	110	30	80	75	41	15	4xM12	28	100	*	7100300
VCGH-G 10 *	4	2.4	12	106	148	155	130	35	95	100	50	23	4xM16	36	240	*	7100301
VCGH-G 13 *	6.5	4.4	15	120	170	185	160	40	110	120	60	25	4xM20	38	450	*	7100302
VCGH-G 16	10	6.4	15	141	200	220	170	48	120	150	70	35	4xM24	50	800	7984048	7100303
VCGH-G 20	16	10.4	20	187	272	288	210	63	150	110	87	30	6xM24	70	800	7984311	7101604
VCGH-G 22	20	17.5	20	196	276	292	240	63	150	110	92	30	6xM24	75	950	7984312	7101604

Table 2

* are replaced by Type VABH-B

10. All fittings connected to the VCGH-G 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.

11. 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 be avoided, please contact the manufacturer indicating the concentration, period of penetration and temperature of use.

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

13. If the lifting points are used **exclusively** for lashing, the value of the working load limit can be doubled. $LC = 2 \times WLL$

14. After fitting, 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 14:

- Ensure correct bolt and nut size, quality and length.
- Ensure compatibility of bolt thread and tapped hole - control of the torque
- The lifting point should be complete.
- The excavator hook has to be mount on plane bolting surfaces with the full side.
- The working load limit and manufacturers stamp should be clearly visible.
- Deformation of the component parts such as body and bolt.
- Mechanical damage, such as notches, particularly in high stress areas.
- Wear should be no more than 10 %
- opening of the mouth is deformed more than 10 %
- Evidence of corrosion.
- Evidence of cracks.

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

Method of lift								
Number of legs	1	2	2	2	2	3 and 4	3 and 4	3 and 4
Angle of inclination α	90°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.
Factor	1	2	1.4	1	1	2.1	1,5	1
Type	WLL in lbs, bolted							
VCGH-G 6 *	3300	6600	4620	3300	3300	6930	4950	3300
VCGH-G 8 *	5500	11000	7700	5500	5500	11550	8250	5500
VCGH-G 10 *	8800	17600	12300	8800	8800	18500	13200	8800
VCGH-G 13 *	14300	28600	20000	14300	14300	30000	21450	14300
VCGH-G 16	22000	44000	30800	22000	22000	46200	33000	22000
VCGH-G 20	35200	70400	49300	35200	35200	74000	52800	35200
VCGH-G 22	44000	88000	61600	44000	44000	92400	66000	44000

Table 3

* are replaced by Type VABH-B