

Complies with the machinery directives 2006/42/EC



4 better lifting

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NB: Please ensure that the safety instructions have been fully read and understood before initial use of the ABA weld-on lifting point. Failure to do so may result in serious injuries and/or material damage and eliminates manufacturers warranty.

User Instructions - Part 1

Safety instructions

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

ATTENTION: Please inspect all lifting points prior to use. Damage, incorrect assembly or improper use can result in serious injuries and/or material damage.

EC-Declaration of the manufacturer

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

We hereby declare that the design and construction of the equipment detailed within this document, adheres to the appropriate level of health and safety of the corresponding EC regulation.

Any un-authorized modification and/or any incorrect use of the equipment not adhered to within these user instructions waives this declaration invalid.

The equipment must be regularly tested and inspected as per BGR 500. Failure to carry out the recommended maintenance and testing waives this declaration invalid.

Designation of the equipment:

Type: **Excavator hook for bolting - VABH-B**

Manufacturer's mark:

Drawings (iges, dxf and step), product information and other support material can be downloaded from www.rud.com.au.

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
_____	_____
_____	_____

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)

Name, function and signature of the responsible person

User Instructions - Part 2

1. Reference should be made to relevant standards and other statutory regulations. Inspections should be carried out by competent persons only.

2. Before installing and every use, visually inspect RUD lifting points, with 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. RUD, with reference to the German testing authority BG, recommends the following minimum for bolt lengths:

- 1.5 x M in steel (minimum quality S235JR [1.0037]) ≈ AS3678 GR250.
- 1.5 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, e.g. 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 bolts. **When using your own bolts, the bolts have to be 100% crack tested.** The min quality hexagon bolt has to be 10.9 accord. EN 24014 (DIN 931) with the nominal diameter.

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/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.

The installation should be in the direction of pull (picture 1).

5. Load Symmetry: The working load limit of individual RUD lifting points are calculated using the following formula and are based on symmetrical loading:

$W_{LL} = \frac{G}{n \times \cos \beta}$	WLL = required of lifting point/individual leg (kg) G = load weight (kg) n = number of load bearing legs β = angle of inclination of the individual leg
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NOTE: For WLL Calculations

- β angle is taken from the vertical plane.
- Included angle is the angle between the sling legs.



6. Safety: When lifting points are used in a multileg assembly, care should be taken to calculate the WLL (Working Load Limit) due to the deration caused by forces acting in multiple directions. The reduction in WLL (Working Load Limit) for multileg assemblies should be checked with relevant Standards e.g. AS 3775-2004 - Chain Slings-Gr t (8)

The lifting points should be mounted in such a way that they may easily be accessed for inspection and assembly/disassembly of the sling.

7. A plane bolting surface must be guaranteed to ensure correct mating of the lifting component.

8. The VABH-B should be tightened to torque according to table 1 (+/- 10%).

9. All fittings connected to the VABH-B should be free moving. When connecting and disconnecting the lifting means (wire ropes, chain slings, round slings) pinches and impacts should be avoided. Damage to lifting components caused by sharp corners should also be avoided.

10. To prevent unintended dismounting through shock loading, rotation or vibration, thread locking fluid such as Loctite (depending on the application, please refer to the manufacturer's instruction) should be used to secure the bolt.

11. If the lifting points are used exclusively for lashing, the value of the working load can be doubled. LC (lashing capacity) = 2 x WLL.

12. Effects of temperature: Due to the DIN/EN bolts that are used with the VABH-B the working load limit should be reduced accordingly:

-10° to 100°C	no reduction	14°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.

13. 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.

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

Inspection criteria regarding 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 working load limit and manufacturers stamp should be clearly visible.
- Deformation of the component parts such as body, load ring and bolt.
- Mechanical damage, such as notches, particularly in high stress areas.
- Wear should be no more than 10% (see wear indicators for measuring).
- Evidence of corrosion.
- Evidence of cracks.
- The excavator hook has to be mounted on plane bolting surfaces with the full back side.
- Opening of the mouth is deformed no more than 10%.
- Damage to the bolt, nut and/or thread.

Any non-adherence to this advice may result in damages of persons and/or materials!

User Instructions - Part 3

Type	Torque Nm *	Thread d
VABH-B 1.5 t	55	M10
VABH-B 2.5 t	100	M12
VABH-B 4 t	240	M16
VABH-B 6.5 t	450	M20

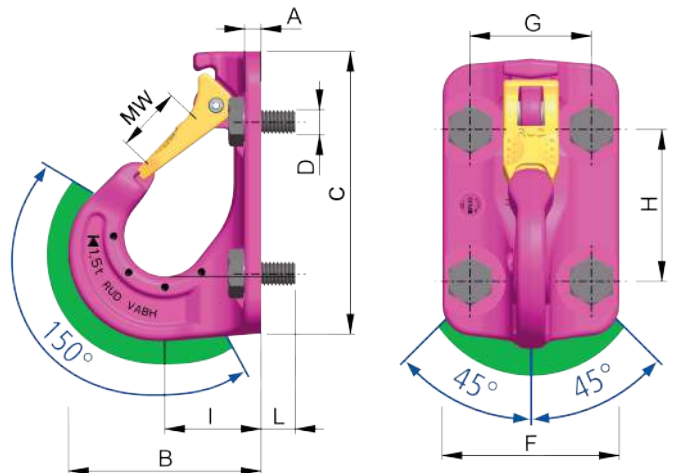
Table 1

WORKING LOAD LIMITS (G - in tonnes)				
PRODUCT DESCRIPTION	Single Leg	2, 3 or 4 Legs		
		60°	90°	120°
		Maximum Included Angle (Degrees)		
VABH-B 1.5 t	1.5	2.6	2.1	1.5
VABH-B 2.5 t	2.5	4.3	3.5	2.5
VABH-B 4 t	4.0	6.9	5.6	4.0
VABH-B 6.5 t	6.5	11.2	9.2	6.5

Table 2

Type	WLL (t)	A	B	C	F	G	H	I	L	MW	d	Weight (kg)	Reference	Package Unit
VABH-B 1.5t	1.5	7.5	78	117	70	48	60	38	15	25	M10	0.8	7991205	4
VABH-B 2.5t	2.5	8.5	101	148	85	60	75	49	18	30	M12	1.8	7991206	4
VABH-B 4t	4.0	11	122	171	104	70	90	59	25	35	M16	3.2	7991207	2
VABH-B 6.5t	6.5	13	156	208	120	85	110	70	30	40	M20	5.9	8502238	1

Table 3



Picture 1