

# Load ring - for welding VLBS

## 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**

## Load ring VLBS - for welding



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MO 075107



### 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 weiteren EG-Richtlinien entspricht. Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Produktbezeichnung: Lastbock VLBS

Folgende harmonisierten Normen wurden angewandt:

EN 12100-1                      EN 12100-2  
 EN 14121-1                    EN 1677-1

Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:

BGR 500, KAP2.8  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Für die Zusammenstellung der Konformitätsdokumentation bevollmächtigte Person:  
 Daniel Klose, RUD Ketten, 73432 Aalen

Aalen, den 14.12.2009                      Dr. Ing. Rolf Sinz, (Prokurist/QMB)  
 Name, Funktion und Unterschrift Verantwortlicher



### EG-Declaration of the manufacturer

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

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

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

Product name: Load ring VLBS

The following harmonized norms were applied:

EN 12100-1                      EN 12100-2  
 EN 14121-1                    EN 1677-1

The following national norms and technical specifications were applied:

BGR 500, KAP2.8  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Authorized person for the configuration of the declaration documents:  
 Daniel Klose, RUD Ketten, 73432 Aalen

Aalen, 14.12.2009                      Dr. Ing. Rolf Sinz, (Prokurist/QMB)  
 Name, function and signature of the responsible person

## User Instructions

- Reference should be made to German Standards accord. BGR 500 or other country specific statutory regulations and inspections are to be carried out by competent persons only.
- Before installing and every use, visually inspect RUD lifting points, paying particular attention to any evidence of weld cracks, corrosion, wear, deformations, etc.
- 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 forged welding block is S355J2+N (St52-3, 1.0577+N), B.S. 4360.50 D or AISI 1019

- The lifting points must be positioned on the load in such a way that movement is avoided during lifting.
  - For single leg lifts, the lifting point should be vertically above the centre of gravity of the load.
  - For two leg lifts, the lifting points must be equidistant to/or above the centre of gravity of the load.
  - 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	2

(see chart 1+ 5)

- All fittings connected to the VLBS 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.

- Suitability of temperature use: RUD-Lifting points VLBS are suitable for the temperature range from -20°C up to 400°C. For the use within the following temperature range, the WLL must be reduced by the following factors:  
 200°C up to 300°C: by -10 % and  
 300°C up to 400°C: by -25 %

The lifting points VLBS can be stress-relieved one-time in an unloaded condition, together with the load (e.g. welded construction): Temperature < 600°C (1100°F)

The evidence of the suitability of the used weld metal must be mentioned by the respective filler material manufacturer.

- The places where the lifting points are fixed should be marked with colour.
- At outdoor sites or in case of special danger of corrosion, the welds should only be designed as continuous, fillet welds. The HV weld at the VLBS guarantees a connection via the whole cross section of the material. This corresponds to a closed weld showing no signs of corrosion.
- The distance lugs assist in achieving the correct root weld (approx. 3 mm = 0.1 inch). They may not be removed.
- If the lifting points are used **exclusively** for lashing the value of the working load limit can be doubled.  $LC = 2 \times WLL$
- 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 and load ring.
- 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°	unsymm.	0-45°	45-60°	unsymm.
Factor	1	1	2	2	1,4	1	1	2,1	1,5	1
Type	<b>max weight of load &gt; G &lt; in t</b>									
	1,5 t	1,5 t	3 t	3 t	2,1 t	1,5 t	1,5 t	3,15 t	2,25 t	1,5 t
VLBS 2,5 t	2,5 t	2,5 t	5 t	5 t	3,5 t	2,5 t	2,5 t	5,25 t	3,75 t	2,5 t
VLBS 4 t	4 t	4 t	8 t	8 t	5,6 t	4 t	4 t	8,4 t	6 t	4 t
VLBS 6,7 t	6,7 t	6,7 t	13,4 t	13,4 t	9,5 t	6,7 t	6,7 t	14 t	10 t	6,7 t
VLBS 10 t	10 t	10 t	20 t	20 t	14,0 t	10 t	10 t	21 t	15 t	10 t
VLBS 16 t	16 t	16 t	32 t	32 t	22,4 t	16 t	16 t	33,6 t	24 t	16 t

chart 1

The welding should only be carried out according to EN 287 or AWS Standards by an authorized welder.

**Welding sequence:**

- Start of the root welding has to be in the center of the welding block.
- Before carrying out the top run, carefully clean the root.
- The welding process must not be interrupted for such a time that the welding block loses the welding temperature.
- Attention: Do not weld at the pink powder coated, heat treated load ring.

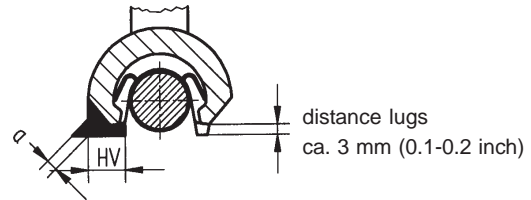
	weld		
	size	length	volume
VLBS 1,5 t	HV 5 + a 3	2 x 33 mm	ca. 1,2 cm <sup>3</sup>
VLBS 2,5 t	HV 7 + a 3	2 x 40 mm	ca. 2,6 cm <sup>3</sup>
VLBS 4 t	HV 8 + a 3	2 x 46 mm	ca. 3,2 cm <sup>3</sup>
VLBS 6,7 t	HV 12 + a 4	2 x 60 mm	ca. 8,7 cm <sup>3</sup>
VLBS 10 t	HV 16 + a 4	2 x 60 mm	ca. 15,5 cm <sup>3</sup>
VLBS 16 t	HV 25 + a 6	2 x 90 mm	ca. 56 cm <sup>3</sup>

chart 2

**Welding seam definition:**



distance lugs for root welding

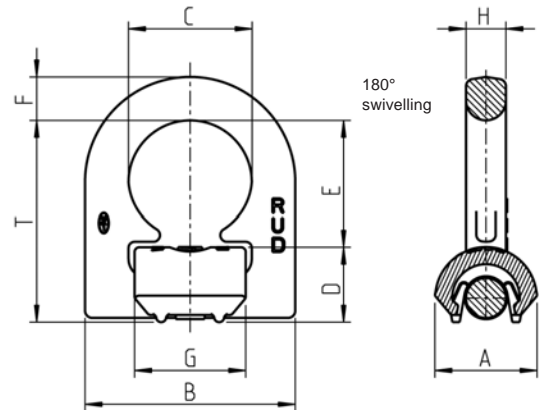


**Welding procedure + Welding filler metals:**

	Europa (DE, GB, FR, ....)	USA, Canada, ..
	Mild steel Low alloyed steel	
<b>MAG / MIG</b> (135) GAS SHIELDED WIRE WELDING	EN 440: G4 Si 1 z.B. Castolin 45250	AWS A 5.18 : ER 70 S-6 z.B. Eutectic MIG-Tec TicA88
<b>E-Hand</b> <b>Gleichstrom =</b> (111) Stick Electrode <b>Direct Current</b>	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 6666 N*	AWS A 5.5 : E 8018-G AWS A 5.5 : E 7016 EN ISO 2560-A - E 42 6 B 3 2; EN ISO 2560-A - E 38 2 B 12 H10 z.B. Eutectic 6666/ 35066 CP *
<b>E-Hand</b> <b>Wechselstrom ~</b> (111) Stick Electrode <b>Alternating Current</b>	EN ISO 2560-A - E 38 0 RR 1 2 EN ISO 2560-A - E 42 0 RR 1 2; z.B. Castolin 6600 Castolin 35086 no-load-voltage 35-48 (max.) V	AWS A 5.1 : E 6013 EN ISO 2560-A - E 38 0 RR 1 2 EN ISO 2560-A - E 42 0 RR 1 2; z.B. Eutectic Beauty Weld II
<b>WIG</b> (141) TIG Tungsten Arc Welding	EN 1668: W3 Si 1 z.B. Castolin 45255W	AWS A 5.18 : ER 70 S-6 z.B. Eutectic TIG-Tec-Tic: A 88

chart 3 \* Stick dry weld

The specific processing informations of the welding fillers have to be attended.



Type	WLL t	weight kg	A	B	C	D	E	F	G	H	T	ref-no.		D-ring	welding block	spring
												VLBS complete	VLBS without spring			
VLBS 1,5 t	1,5	0,35	33	66	38	25	40	14	33	13,5	65	7993119 *	7993130 *	7993028	7993021	7102228
VLBS 2,5 t	2,5	0,47	36	77	45	27	48	16	40	13,5	75	7995610 *	7995611 *	7994847	7994849	7102228
VLBS 4 t	4	0,8	42	87	51	31	52	18	46	16,5	83	7993120**	7993131**	7993029	7993022	7102232
VLBS 6,7 t	6,7	1,9	61	115	67	44	73	24	60	22,5	117	7993121***	7993132***	7993030	7993023	7102236
VLBS 10 t	10	2,9	75	129	67	55	71	27	60	26,5	126	7993122***	7993133***	7993031	7993024	7102133
VLBS 16 t	16	6,8	95	190	100	69	105	40	90	27	174	-	7993041	7993032	7993025	-

chart 4

\* = package unit 20 pieces

\*\* = package unit 10 pieces

\*\*\* = package unit 4 pieces

