

# 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.



Load ring VLBS - for welding



**RUD Ketten**  
**Rieger & Dietz GmbH u. Co. KG**  
 D-73428 Aalen  
 Tel. 07361/504-1351/1370/1262  
 Fax 07361/504-1460  
 www.rud.com  
 info@rud.com

RUD-Art.-Nr.: 8503014-EN / 07.006

### EG-Herstellererklärung

im Sinne der EG-Maschinenrichtlinie 98/37/EG,  
 Anhang II B und ihre Änderungen


Hiermit erklären wir (unterstützt durch die Zertifizierung nach ISO 9001), daß die nachfolgend bezeichnete Ausrüstung aufgrund ihrer Konzipierung und Bauart, sowie der von uns in Verkehr gebrachten Ausführung, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie entspricht. Bei einer nicht mit uns abgestimmten Änderung der Ausrüstung verliert diese Erklärung ihre Gültigkeit. Weiterhin verliert diese Erklärung ihre Gültigkeit, wenn die Ausrüstung nicht entsprechend den in der Betriebsanleitung aufgezeigten bestimmungsmäßigen Fällen eingesetzt wird und die regelmäßig durchzuführenden Überprüfungen laut BGR 500, Kapitel 2.8 „Betreiben von Lastaufnahmeeinrichtungen im Hebezeugbetrieb“, und den entsprechenden landesspezifische Vorschriften, nicht vorgenommen werden.

Hinweis: Die Inbetriebnahme der Maschine, an die die gelieferten Bauteile angebaut werden, ist solange untersagt, bis festgestellt wurde, daß sie den Bestimmungen der Maschinenrichtlinie 98/37/EG der Europäischen Gemeinschaft entspricht. Beim Lastbock angewendete harmonisierte Normen DIN EN ISO 12100 T1 und T2 sowie in Anlehnung an EN 1677. Dies gilt nur für Mitgliedstaaten der EU und EFTA.

Bezeichnung der Ausrüstung:

**Anschlagpunkt**

Type: **Lastbock schweißbar - VLBS**

Herstellerzeichen: 

### EC-Declaration of the manufacturer

according to the Machinery Directive 98/37/EC,  
 annex II B and amendments


We hereby declare (supported by certification as per ISO 9001) that the equipment, as mentioned below, corresponds to the appropriate, basic requirements of safety and health of the corresponding EC regulation 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. Furthermore, this declaration will become invalid if the equipment is not used according to the prescriptions mentioned in the manual and if the necessary examinations are not carried out regularly as per BGR 500.

Hint: The commissioning of the machine in which the delivered components of this consignment will be installed is only permitted if it can be stated that the machine corresponds to the machine directive 98/37/EC of the European Community. Applied standards: DIN EN ISO 12100 T1 and T2 in particular EN 1677. This is only valid for countries which are member of the EC and of the EFTA.

Designation of the equipment:

**Lifting point**

Type: **Load Ring - VLBS**

Manufacturer's sign: 

## 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.
- The complete design can be annealed stress-free several times up to <math>600^{\circ}\text{C}</math> (1100°F) without reduction of WLL.
- The places where the lifting points are fixed should be marked with colour.

9. 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.

10. The distance lugs assist in achieving the correct root weld (approx. 3 mm = 0.1 inch). They may not be removed.

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

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 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 !**

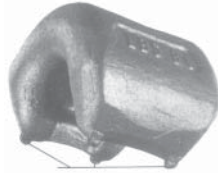
Method of lift										
Number of legs	1	1	2	2	2	2	3 and 4	3 and 4	3 and 4	
Angle of inclination <math>\beta</math>	0°	90°	0°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.
Factor	1	1	2	2	1,4	1	1	2,1	1,5	1
Type	<b>WLL in metric tonnes</b>									
VLBS 1,5 t	1,5 t	1,5 t	3 t	3 t	2,1 t	1,5 t	1,5 t	3,15 t	2,25 t	1,5 t
VLBS 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.

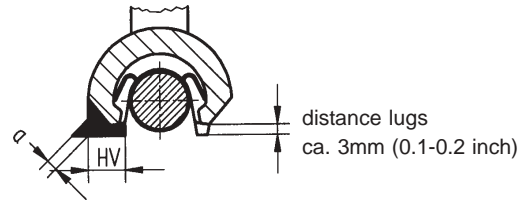


distance lugs for root welding

	weld		
	size	length	volume
VLBS 1,5 t	HV 5 + a 3	2 x 33 mm	ca. 1,2 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

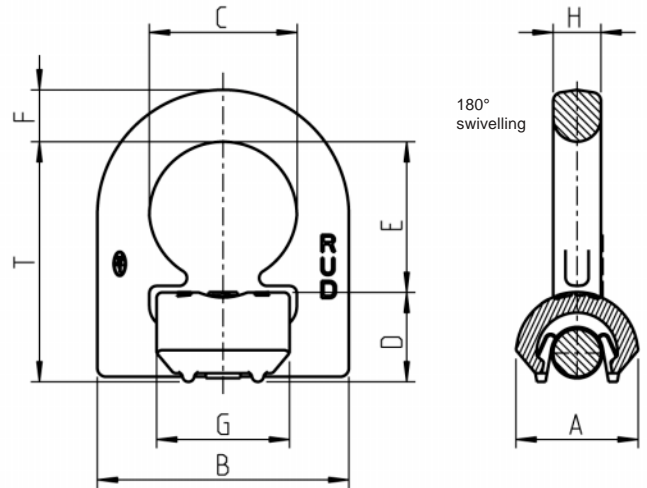
**Welding seam definition:**



**Welding procedure + Welding filler metals:**

	Europa (BRD, GB, F .. )	USA, Canada, ..
	Mild steel Low alloyed steel	
<b>MAG / MIG</b> GAS SHIELDED WIRE WELDING	EN 440 G4Si1 z.B. Castolin 45250	AWS : A 5.18 ER 70 S-6 z.B. Eutectic MIG-Tec Tic A88
<b>E-Hand</b> <b>Gleichstrom =</b> Stick Electrode	EN 499 E 426 B32 H5 z.B. Castolin 6666 * 6666 N*	AWS : A 5.5 E 8018-G E 7016 z.B. Eutectic 6666/35066 CP*
<b>E-Hand</b> <b>Wechselstrom ~</b> Stick Electrode Alternating Current	EN 499 E 380 RR 12 z.B. Castolin 35086 CP 6600	AWS : A 5.1 E 6013 z.B. Eutectic Beauty Weld II
<b>WIG</b> TIG Tungsten Arc Welding	DIN 8575 WSG CrMo1 z.B. Castolin 45252 W	AWS : A 5.18 ER 70 S-6 z.B. Eutectic TIG-Tec-Tic: A 88

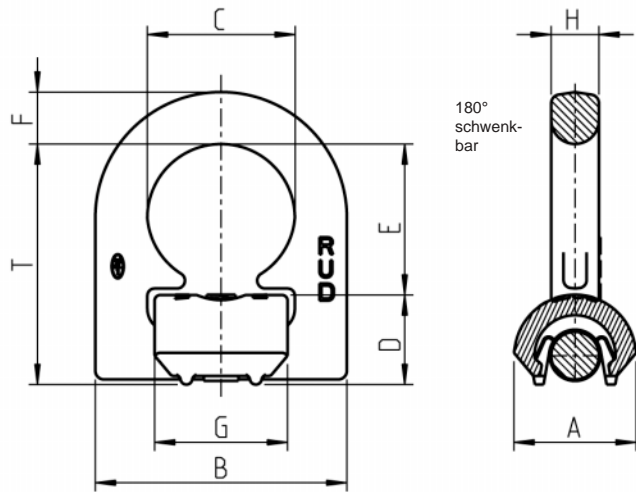
chart 3 \* Stick dry weld



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 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



Type	WLL lbs	weight lbs	A	B	C	D	E	F	G	H	T	VLBS complete	VLBS without spring
VLBS 1,5 t	3300	0,77	1 5/16"	2 19/32"	1 1/2"	1"	1 9/16"	9/16"	1 5/16"	17/32"	2 9/16"	7993119 *	7993130 *
VLBS 4 t	8800	1,75	1 21/32"	3 7/16"	2"	1 7/32"	2 1/16"	23/32"	1 13/16"	21/32"	3 1/4"	7993120**	7993131**
VLBS 6,7 t	14750	4,2	2 13/32"	4 1/2"	2 5/8"	1 3/4"	2 7/8"	61/64"	2 3/8"	7/8"	4 5/8"	7993121***	7993132***
VLBS 10 t	22000	6,4	2 15/16"	5"	2 5/8"	2 1/8"	2 13/16"	1 1/16"	2 3/8"	1 3/64"	5"	7993122***	7993133***
VLBS 16 t	35200	15	3 3/4"	7 1/2"	3 15/16"	2 23/32"	4 1/8"	1 9/16"	3 9/16"	1 1/16"	6 7/8"	-	7993041

chart 5

\* = package unit 20 pieces

\*\* = package unit 10 pieces

\*\*\* = package unit 4 pieces

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>\alpha</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	WLL in lbs										
VLBS 1,5 t	3300	3300	6600	6600	4620	3300	3300	6930	4950	3300	
VLBS 4 t	8800	8800	17600	17600	12320	8800	8800	18500	13200	8800	
VLBS 6,7 t	14750	14750	29500	29500	20650	14750	14750	30980	22100	14750	
VLBS 10 t	22000	22000	44000	44000	30800	22000	22000	46200	33000	22000	
VLBS 16 t	35200	35200	70400	70400	49300	35200	35200	73920	52800	35200	

chart 6