

# Load ring - for welding

## VLBS-U-LT

(for low temperatures)



### 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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### Load ring - for welding

#### for low temperatures

## VLBS-U-LT



#### 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: Lastbock VLBS-LT

Folgende harmonisierten Normen wurden angewandt:

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

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 \_\_\_\_\_  
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Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:

BGR 500, KAP2.8 : 2008-04      \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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: Load ring VLBS-LT

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      \_\_\_\_\_

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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

- Reference should be made to German Standards accord. BGR 500/DGUV 100-500 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	1

(see chart 1 + 5)

6. All fittings connected to the VLBS-U-LT 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. Suitability of temperature use: RUD-Lifting points VLBS-U-LT are suitable for the temperature range from **-45°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-U-LT 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.

Impact energy >= 27 Joule at -45°C

- 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-U-LT 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.
- 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 the lifting points are used **exclusively** for lashing the value of the working load limit can be doubled. LC = 2 x 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.



### HINT

The VLBS-U-LT can be recognized by the additional marking (-45°C) at the weld-on block.

### Inspection criteria concerning paragraphs 2 and 13:

- 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>									
VLBS-U-LT 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-U-LT 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-U-LT 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-U-LT 10 t	10 t	10 t	20 t	20 t	14.0 t	10 t	10 t	21 t	15 t	10 t

chart 1

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

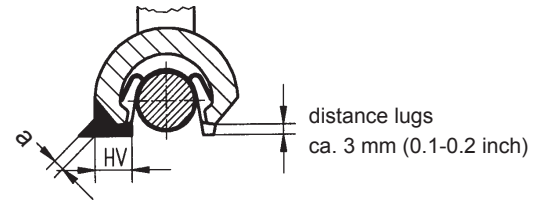
**Welding sequence:**

- Start tacking in the center of the welding block.
- Welding in stringer beads
- 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 powder coated, heat treated load ring.

	weld size	length	volume
VLBS-U-LT 2,5 t	HV 7 + a 3	2 x 40 mm	ca. 2,6 cm³
VLBS-U-LT 4 t	HV 8 + a 3	2 x 46 mm	ca. 3,2 cm³
VLBS-U-LT 6,7 t	HV 12 + a 4	2 x 60 mm	ca. 8,7 cm³
VLBS-U-LT 10 t	HV 16 + a 4	2 x 60 mm	ca. 15,5 cm³

Chart 2

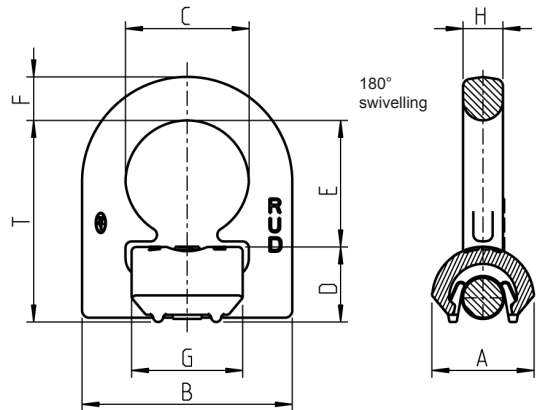
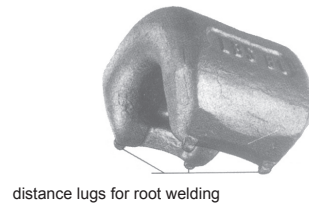
**Welding seam definition:**



**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	ISO 14341: G4 Si 1 z.B. Castolin 45250	ISO 14341: G4 Si 1 AWS A 5.18 : ER 70 S-6 z.B. Eutectic MIG-Tec Tic A88
<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	ISO 636: W3 Si 1 z.B. Castolin 45255W	ISO 636: W3 Si 1 AWS A 5.18 : ER 70 S-6 z.B. Eutectic TIG-Tec-Tic: A 88

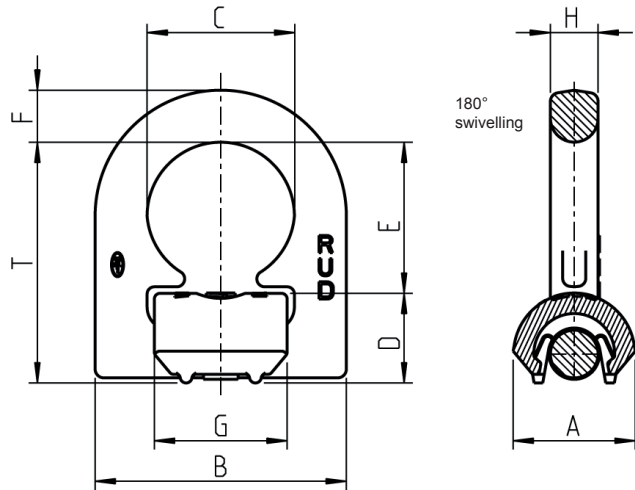
chart 3 \* Stick dry weld



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. VLBS-U-LT complete
VLBS-U-LT 2.5 t	2.5	0.47	36	77	45	27	48	16	40	14	75	7903522*
VLBS-U-LT 4 t	4	0.8	42	87	51	31	52	18	46	16	83	7903400**
VLBS-U-LT 6.7 t	6.7	1.9	61	115	67	44	73	24	60	22	117	7903684***
VLBS-U-LT 10 t	10	2.9	75	129	67	55	71	26.5	60	26	126	7903135***

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	Ref.-No. VLBS-U-LT complete
VLBS-U-LT 2.5 t	5500	1.03	1 <sup>27</sup> / <sub>64</sub> "	3 <sup>1</sup> / <sub>32</sub> "	1 <sup>25</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>16</sub> "	1 <sup>7</sup> / <sub>8</sub> "	<sup>5</sup> / <sub>8</sub> "	1 <sup>9</sup> / <sub>16</sub> "	<sup>9</sup> / <sub>16</sub> "	2 <sup>15</sup> / <sub>16</sub> "	7903522*
VLBS-U-LT 4 t	8800	1.75	1 <sup>21</sup> / <sub>32</sub> "	3 <sup>7</sup> / <sub>16</sub> "	2 "	1 <sup>7</sup> / <sub>32</sub> "	2 <sup>1</sup> / <sub>16</sub> "	<sup>23</sup> / <sub>32</sub> "	1 <sup>13</sup> / <sub>16</sub> "	<sup>5</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>4</sub> "	7903400**
VLBS-U-LT 6.7 t	14750	4.2	2 <sup>13</sup> / <sub>32</sub> "	4 <sup>1</sup> / <sub>2</sub> "	2 <sup>5</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>4</sub> "	2 <sup>7</sup> / <sub>8</sub> "	<sup>15</sup> / <sub>16</sub> "	2 <sup>3</sup> / <sub>8</sub> "	<sup>7</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	7903684***
VLBS-U-LT 10 t	22000	6.4	2 <sup>15</sup> / <sub>16</sub> "	5 <sup>1</sup> / <sub>16</sub> "	2 <sup>5</sup> / <sub>8</sub> "	2 <sup>5</sup> / <sub>32</sub> "	2 <sup>13</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>64</sub> "	2 <sup>3</sup> / <sub>8</sub> "	1 "	5 "	7903135***

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	<b>max weight of load &gt; G &lt; in lbs</b>										
	VLBS-U-LT 2.5 t	5500	5500	11000	11000	7700	5500	5500	11550	8250	5500
	VLBS-U-LT 4 t	8800	8800	17600	17600	12320	8800	8800	18500	13200	8800
	VLBS-U-LT 6.7 t	14750	14750	29500	29500	20650	14750	14750	30980	22100	14750
	VLBS-U-LT 10 t	22000	22000	44000	44000	30800	22000	22000	46200	33000	22000

chart 6 Subject to technical alterations