

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



RUD Ketten
Rieger & Dietz GmbH u. Co. KG
 D-73428 Aalen
 Tel. +49 7361 504-1370
 Fax +49 7361 504-1171
 www.rud.com
 sling@rud.com

RUD-Art.-Nr.: 7903754-EN / 02.020

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

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 _____

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. DGUV 100-500/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
 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 chart 1)

- 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.
- 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) - max. 1 hour

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. $LC = 2 \times WLL$

- 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.



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.
- Cracks or other damages to the welding.

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

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 heat treated load ring.**

Method of lift										
Number of legs	1	1	2	2	2	2	2	3 / 4	3 / 4	3 / 4
Angle of inclination β	0°	90°	0°	90°	0-45°	>45-60°	Un-symm.	0-45°	>45-60°	Un-symm.
Factor	1	1	2	2	1.4	1	1	2.1	1.5	1
Type	max. weight of load									
VLBS-U-LT 2.5 t	2.5 t 5500 lbs	2.5 t 5500 lbs	5 t 11000 lbs	5 t 11000 lbs	3.5 t 7700 lbs	2.5 t 5500 lbs	2.5 t 5500 lbs	5.25 t 11550 lbs	3.75 t 8250 lbs	2.5 t 5500 lbs
VLBS-U-LT 4 t	4 t 8800 lbs	4 t 8800 lbs	8 t 17600 lbs	8 t 17600 lbs	5.6 t 12320 lbs	4 t 8800 lbs	4 t 8800 lbs	8.4 t 18500 lbs	6 t 13200 lbs	4 t 8800 lbs
VLBS-U-LT 6.7 t	6.7 t 14750 lbs	6.7 t 14750 lbs	13.4 t 29500 lbs	13.4 t 29500 lbs	9.5 t 20650 lbs	6.7 t 14750 lbs	6.7 t 14750 lbs	14 t 30980 lbs	10 t 22100 lbs	6.7 t 14750 lbs
VLBS-U-LT 10 t	10 t 22000 lbs	10 t 22000 lbs	20 t 44000 lbs	20 t 44000 lbs	14.0 t 30800 lbs	10 t 22000 lbs	10 t 22000 lbs	21 t 46200 lbs	15 t 33000 lbs	10 t 22000 lbs

Chart 1

Welding procedure + Welding filler metals:

	Europe, USA, Asia, Australia, Africa
	Baustähle, niedrig legierte Stähle EN 10025 Mild steels, low alloyed steel
MIG / MAG (135) Gas shielded wire welding (135)	DIN EN ISO 14341: G4Si1 (G3Si1) Z.B. PEGO G4Si1
E-Hand Gleichstrom (111, =) Stick Electrode direct current	DIN EN ISO 2560-A: E 42 6 B 3 2 H10 DIN EN ISO 2560-A: E 38 2 B 1 2 H10 z.B. PEGO B Spezial* / PEGO BR Spezial*
E-Hand (Wechselstrom 111, ~) Stick Electrode alternating current	DIN EN ISO 2560-A: E 38 2 RB 1 2 DIN EN ISO 2560-A: E 42 0 RC 1 1 z.B. PEGO RC 3 / PEGO RR B 7 Alternativ: DIN EN ISO 3581: E 23 12 2 L R 3 2 z.B. PEGO 309 MoL
WIG (141) TIG Tungsten arc welding	DIN EN ISO 636-A: W 3 Si 1 (W2 Si 1) DIN EN ISO 636-A: W 2 Ni 2 z.B. PEGO WSG 2 / PEGO WSG2Ni2

Welding seam definition:

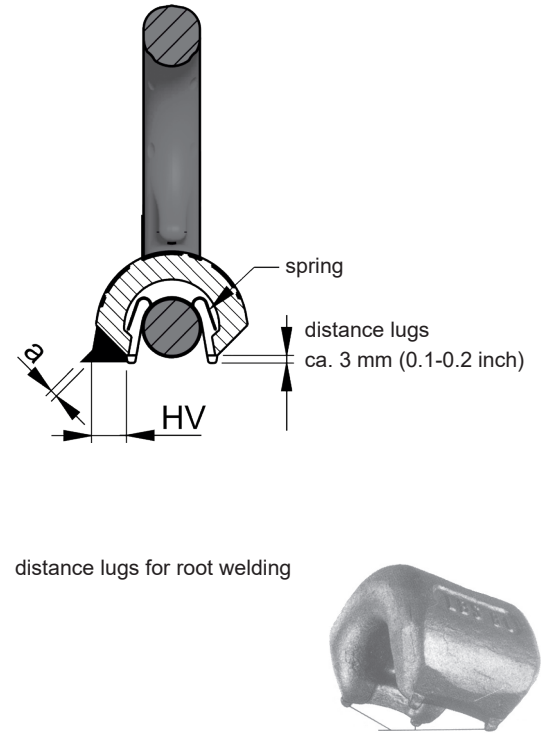
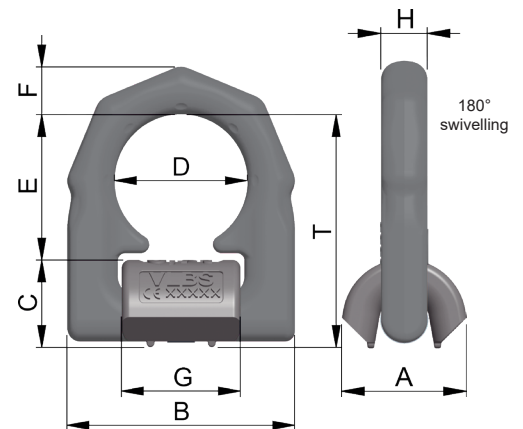


Chart 2: * Stick dry weld

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

	weld		
	size	length	volume
VLBS-U-LT 2.5 t	HV 7 + a 3 \triangle	2 x 40 mm	approx. 2.6 cm ³
VLBS-U-LT 4 t	HV 8 + a 3 \triangle	2 x 46 mm	approx. 3.2 cm ³
VLBS-U-LT 6.7 t	HV 12 + a 4 \triangle	2 x 60 mm	approx. 8.7 cm ³
VLBS-U-LT 10 t	HV 16 + a 4 \triangle	2 x 60 mm	approx. 15.5 cm ³

Chart 3



Type	WLL	Gewicht [pc.]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	T [mm]	packing unit [piece]	VLBS-U-LT Ref.-No. complete
VLBS-U-LT 2.5 t*	2.5 t	0.5 kg	36	77	27	45	48	16	40	14	75	--	--
VLBS-U-LT 2.5 t	2.5 t	0.53 kg	38	77	28	45	47	16	40	16	75	20	7903522
VLBS-U-LT 4 t	4 t	0.8 kg	42	87	31	51	52	18	46	16	83	10	7903400
VLBS-U-LT 6.7 t	6.7 t	1.9 kg	61	115	44	67	73	24	60	22	117	4	7903684
VLBS-U-LT 10 t	10 t	2.9 kg	75	129	55	67	71	26.5	60	26.5	126	4	7903135
VLBS-U-LT 2.5 t*	5500 lbs	1.03 lbs	1 13/32"	3 1/32"	1 3/4"	1 1/16"	1 7/8"	5/8"	1 19/32"	9/16"	3"	--	--
VLBS-U-LT 2.5 t	5500 lbs	1.03 lbs	1 13/32"	3 1/32"	1 3/4"	1 1/16"	1 7/8"	5/8"	1 19/32"	9/16"	3"	20	7903522
VLBS-U-LT 4 t	8800 lbs	1.75 lbs	1 21/32"	3 7/16"	2"	1 7/32"	2 1/16"	23/32"	1 13/16"	21/32"	3 1/4"	10	7903400
VLBS-U-LT 6.7 t	14750 lbs	4.2 lbs	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"	4	7903684
VLBS-U-LT 10 t	2200 lbs	6.4 lbs	2 15/16"	5"	2 5/8"	2 1/8"	2 13/16"	1 1/16"	2 3/8"	1 3/64"	5"	4	7903135

Chart 4 * = Model in round design (up to April 2017) - Discounted part

Subject to technical alterations