

# Load ring for 90° corners VRBK - for welding

## 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, for welding  
for 90°-corners - VRBK



MO 075106



**RUD Ketten**  
**Rieger & Dietz GmbH u. Co. KG**  
 D-73428 Aalen/Germany  
 Tel. +49 7361 504-1371-1314-1527  
 Fax +49 7361 504-1460  
 www.rud.com  
 info@rud.com

RUD-Art.-Nr.: 8503157-EN / 12.009



### 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: Ringbock  
 VRBS / VRBG / VRBK / VRBSS

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  
 VRBS / VRBG / VRBK / VRBSS

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

1. Reference should be made to German Standards according BGR 500 or other country specific statutory regulations and inspections are to be carried out by competent persons only.

2. Before installing and every use, visually inspect RUD lifting points, paying particular attention to any evidence of weld cracks, corrosion, wear, deformations, etc.

3. 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, etc.

The material of the forged welding block is S355J2+N (St52-3 1.0577+N), B.S. 4360.50 D or AISI 1019

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/or 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.

### 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 table 1)

6. All fittings connected to the VRBK 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 VRBK are suitable for the temperature range from  $-20^{\circ}\text{C}$  up to  $400^{\circ}\text{C}$ . 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 VRBK can be stress-relieved one-time in an unloaded condition, together with the load (e.g. welded construction): Temperature  $< 600^{\circ}\text{C}$  ( $1100^{\circ}\text{F}$ )

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

8. 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 VRBK guarantees a connection via the whole cross section of the material. This corresponds to a closed weld showing no signs of removed.

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

11. 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.

12. If the lifting points are used **exclusively** for lashing the value of the working load limit can be doubled:

$$LC = 2 \times WLL$$

13. After welding, an annual inspection or sooner if conditions dictate should be undertaken by a competent person paying particular attention to the following.

### 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 damage to the weld.

*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 und 4	3 und 4	3 und 4	
Angle of inclination $< \beta$	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	
<b>Type</b>	<b>max weight of load in t (total weight)</b>										
	VRBK 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 (18480 lbs)	6 t (13200 lbs)	4 t (8800 lbs)
	VRBK 6,7 t	6,7 t (14750 lbs)	6,7 t (14750 lbs)	13,4 t (29500 lbs)	13,4 t (29500 lbs)	9,4 t (20650 lbs)	6,7 t (14750 lbs)	6,7 t (14750 lbs)	14 t (30900 lbs)	10 t (22000 lbs)	6,7 t (14750 lbs)
	VRBK 10 t	10 t (22000 lbs)	10 t (22000 lbs)	20 t (44000 lbs)	20 t (44000 lbs)	14 t (30800 lbs)	10 t (22000 lbs)	10 t (22000 lbs)	21 t (46200 lbs)	15 t (33000 lbs)	10 t (22000 lbs)

Table 1

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

**Welding sequence:**

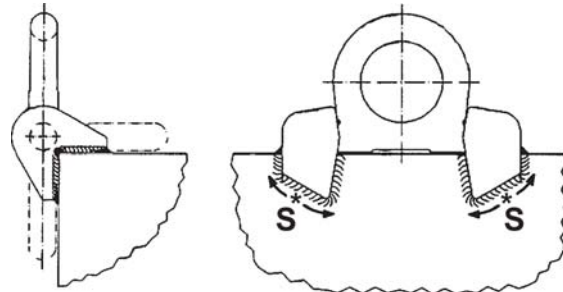
- ① Welding of welding block VRBK.  
The distance lugs serve as distance measurement for required gap for the root welding. Start of root and fillet weld at point „S“ (see drawing). Before carrying out the fillet weld, carefully clean the root. Possibly filled weld. Fix size „a“ acc. the table 3. The complete weld should be carried out in one heat.
  - ② Insert ring in welding block. Attach second welding block as tight as possible to the ring, in order to still guarantee moveability of same. Only fasten provisionally.
  - ③ Examine on 180° tilting ability. Possibly make corrections.
  - ④ Weld on second welding block, as described under ①.
- **Attention: Do not weld at the pink powder coated, heat treated load ring.**

**weld size (per welding block):**

	welding beam		
	size	length	volume
VRBK 4 t	HV 4 + a 3	approx. 85mm	approx. 3,2 cm <sup>3</sup>
VRBK 6,7 t	HV 5 + a 3	approx. 95mm	approx. 6 cm <sup>3</sup>
VRBK 10 t	HV 8 + a 3	approx. 155mm	approx. 11 cm <sup>3</sup>

Table 3

**Welding seam definition:**

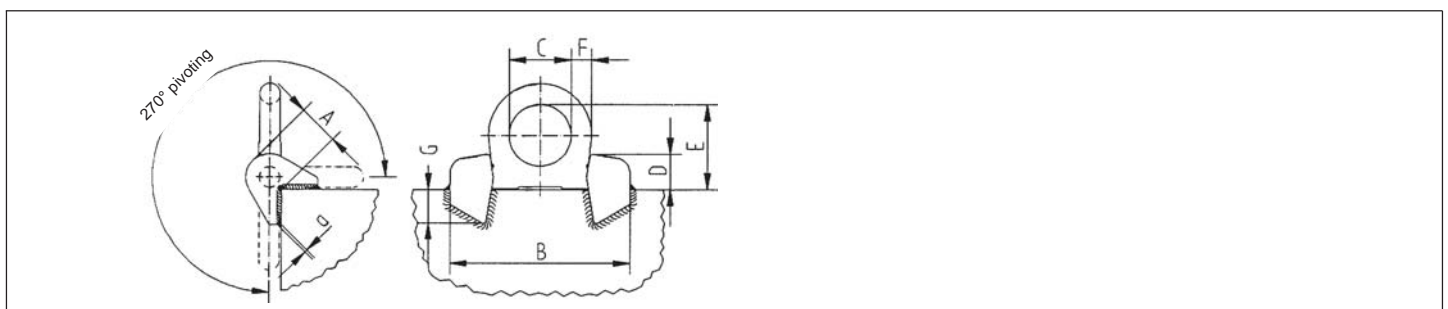


**Welding procedure + Welding filler metals:**

	Europa (DE, GB, FR, ...)	USA, Canada, ..
	structural steel Low alloyed steel	
<b>pulsed MIG arc welding MAG</b>	EN 440: G4 Si 1 z.B. Castolin 45250	AWS A 5.18 : ER 70 S-6 z.B. Eutectic MIG-Tec Tic A88
<b>electric manual DC =</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>electric manual AC ~</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>TIG (tungsten inert-gas shielded) welding</b>	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

Table 2 \* Follow the drying instructions!

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



Type	WLL t	weight kg	A	B	C	D	E	F	G	a	Ref-No.
VRBK 4	4	1,1	32	138	48	30	67	16	30	4+3	7992879
VRBK 6,7	6,7	2,1	40	176	60	37	86	20	34	5+3	7992880
VRBK 10	10	4,3	52	208	65	50	98	22	46	8+3	7992881

Table 4