

Load Ring for bolting VRBG / RBG

Safety instructions

This safety instruction / declaration of the manufacturer has to be kept on file for the whole lifetime of the product.



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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 RBG 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: Ringbock Gewinde - VRBG / RBG

Herstellerzeichen: 



Load Ring for bolting
VRBG / RBG



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 for bolting - VRBG / RBG

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 installation and every use, visually inspect RUD lifting points, paying particular attention to any evidence of corrosion, wear, weld cracks and deformations. Please ensure compatibility of bolt thread and tapped hole.
- The material construction to which the lifting point will be attached should be of adequate strength to withstand forces during lifting without deformation. The German testing authority BG, recommends the following minimum for the bolt lengths:
 - 1 x M in steel (min. quality S235JR [1.0037])
 - 1,25 x M in cast iron (e.g. GG25)
 - 2 x M in aluminium
 - 2,5 x M in aluminium-magnesium alloys
 (M = thread Ø, e.g. M 20)

When lifting light metals, nonferrous metals and cast iron the thread has to be chosen in such a way that the WLL of the thread corresponds to the requirements of the corresponding base material.

RUD-VRBG/RBG are delivered with 100 % crack tested bolts. Variable bolt length available when using DIN EN ISO 4014 (DIN 931) e.g. DIN EN ISO 4762 (DIN 912) bolts. When using your own bolts they have to be 100% crack tested. You have to use at least a hexagon bolt according to ISO 4014 (DIN 931) with quality 10.9 (for RBG 3) or a hex head bolt accord. ISO 4762 (DIN 912) with quality 8.8 (for RBG 8) and quality 12.9 (for RBG 15 and VRBG 16) with the correct nom. diameter.

- The lifting points must be positioned to the load in such a way that movements are 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 symmetrical around the centre of gravity in the same plane if possible.
- Load symmetry:
The required WLL of the individual RUD lifting point 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 the load bearing legs is as follows:

	symmetrical	unsymmetrical
Two leg	2	1
Three/four leg	3	2

(also refer to table 1 and 3)

- A plane bolting surface must be guaranteed. The holes must be drilled in the recommended tolerance field and with a sufficient depth in order to guarantee compatibility with the supporting surface.

Drilling sequence for the RBG 3:

- Mark the blind hole (Dim F) then drill and countersink the dimensions H,G,K.
- After stick in and adjustment the welding blocks the hole for the tapped hole can be drilled.
- The core hole and thread can be machined. For through holes drill only the dimension "H".

7. The VRBG/RBG-Ring must be able to pivot 180° after assembly. For single use just tighten with spanner. For long term application the VRBG/RBG should be tightened with torque accord. chart 2 (+/-10%) inclusive using the locking washer.

8. To prevent unintended dismounting through shock loading, rotation or vibrations thread locking devices are recommended. Therefore different locking systems are possible. Liquid locking fluid such as Loctite (respect manufacturer specifications) or form closed versions such as hex castel nut, counter nut, etc.

9. All fittings connected to the VRBG/RBG 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.

10. Effects of temperature:

Due to the DIN/EN bolts that are used with the VRBG/RBG the working load limit should be reduced accordingly:

-40° to 100°C	no reduction	(-40°F to 212°F)
100° to 200°C	minus 15%	(212°F to 392°F)
200° to 250°C	minus 20%	(392°F to 482°F)
250° to 350°C	minus 25%	(482°F to 662°F)

Temperatures above 350°C (662°F) are not permitted.

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.

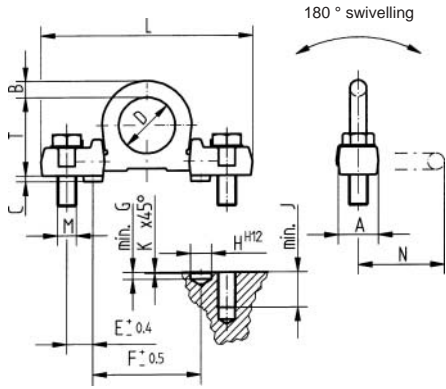
12. The position where the lifting points should be attached should be clearly marked with colour.

13. After fitting, 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.

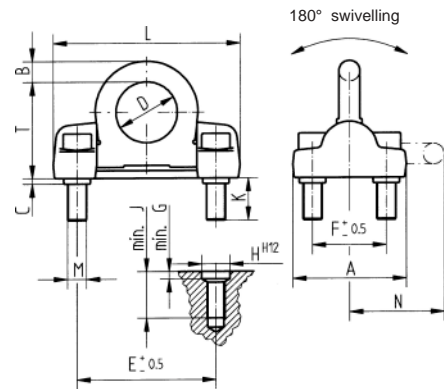
Inspection criteria concerning paragraphs 2 and 13:

- Ensure correct bolt size, quality and length
- Ensure compatibility of bolt thread and tapped hole
- The Lifting point should be complete
- Deformations of the components parts such as body fittings and thread
- Mechanical damages such as notches, especially in high stress areas.
- Wear should be not more than 10% of cross sectional diameter.
- Evidence of corrosion.
- Evidence of cracks.
- Damage to the bolt and/or thread.

RBG 3



RBG 8
RBG 15
VRBG 16



Type	WLL t	weight kg	A	B	C	D	E	F	G	H	J	K	L	M	N	screw	Torque	reference
RBG 3	3	0,9	34	16	5	48	22	92	6	18	30	1	178	16	71	ISO 4014 (DIN 931) M16x50-10.9	120 Nm	0051817
RBG 8	8	3,8	120	22	6	65	143	78	8	30	50	45	194	20	100	ISO 4762 (DIN 912) M20x70 -8.8	200 Nm	0059971
RBG 15*	15	7,8	170	30	8	90	198	104	10	46	70	75	270	30	134	ISO 4762 (DIN 912) M30x90-12.9	600 Nm	0059974*
VRBG 16	16	7,8	170	30	8	90	198	104	10	46	70	75	270	30	134	ISO 4762 (DIN 912) M30x90-12.9	600 Nm	7993255

Table 1

* until stock is cleared

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 α	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 metric tonnes										
	RBG 3 t	3 t	3 t	6 t	6 t	4,2 t	3 t	3 t	6,3 t	4,5 t	3 t
	RBG 8 t	8 t	8 t	16 t	8 t	11,2 t	8 t	8 t	16,8 t	12 t	8 t
	RBG* 15 t	15 t	15 t	30 t	30 t	21,0 t	15 t	15 t	31,5 t	22,5 t	15 t
	VRBG 16 t	16 t	16 t	32 t	32 t	22,4 t	16 t	16 t	33,6 t	24 t	16 t

Table 2

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 α	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										
	RBG 3 t	6600 lbs	6600 lbs	13200 lbs	13200 lbs	9240 lbs	6600 lbs	6600 lbs	13860 lbs	9900 lbs	6600 lbs
	RBG 8 t	17600 lbs	17600 lbs	35200 lbs	35200 lbs	24640 lbs	17600 lbs	17600 lbs	36960 lbs	26400 lbs	17600 lbs
	RBG* 15 t	33000 lbs	33000 lbs	66000 lbs	66000 lbs	46200 lbs	33000 lbs	33000 lbs	69300 lbs	49500 lbs	33000 lbs
	VRBG 16 t	35200 lbs	35200 lbs	70400 lbs	70400 lbs	49300 lbs	35200 lbs	35200 lbs	74000 lbs	52800 lbs	35200 lbs

Table 3

* until stock is cleared