

# Wirbelbock-Gewinde WBG-V / WBG



## Safety instructions

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



Lifting points bolted  
**WBG-V / WBG**



MO  
045121



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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. Bei Wirbelbock angewendete harmonisierte Normen DIN EN 292 T1 und T2 sowie in Anlehnung an EN 1677. Dies gilt nur für Mitgliedsstaaten der EU und EFTA.

Bezeichnung der Ausrüstung:

**Anschlagpunkt**

Type: **Wirbelbock-Gewinde**

**WBG-V / WBG**

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 292 T1 and T2 in particular EN 1677. This is only valid for countries which are member of the EC and the EFTA.

Designation of the equipment:

**Lifting point**

Type: load ring

**WBG-V / WBG**

Manufacturer's sign:

# User Instruction

- 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, inspect visually 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 gray 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.

- 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.

### 5. Load symmetry:

The required WLL of the individual RUD lifting point are calculated using the following formula and are based on symmetrical loading:

$$W_{LL} = \frac{G}{n \times \cos \beta}$$

WLL = working load limit  
 G = load weight ( kg)  
 N = number of the load bearing legs  
 β = angle of inclination of the chain strand 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 and 3)

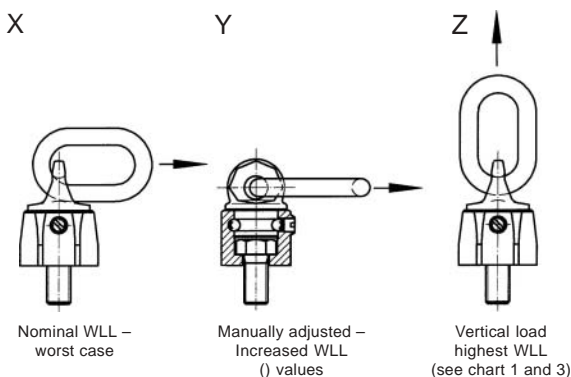
- Drill and tap the workpiece so that the WBG is installed perpendicular to the surface of the work piece. The workpiece surface must be flat, providing complete contact for the WBG ball bearing house.

Countersink the tapped hole (Nom. dia of thread + 4 mm).

- Due to the ball bearing it is sufficient to tighten by hand with a spanner. Without using a bar. For a long term application the WBG-V/WBG should be tightened with torque according table 2 or 4 (+/- 10%).

- The WBG-V/WBG is designed to rotate and turn the load, therefore the lifting point can engage any position. That's why the WLL is embossed for the worst case situation which can happen (Picture X)

The ring can be manually adjusted to direction of pull (Picture Y). Than the values in the brackets can be used.



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

- All fittings connected to the WBG-V / WBG should be free moving. Also the lifting ring must be free moveable and should not be used over sharp corners.

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.

- With shock loadings, twisting or vibrations, especially with through bore-hole and nuts, an unintentional dismounting may occur. Possibilities of securing: liquid means such as Loctite (respect manufacturer's recommendations) or form closed bolt securing such as crown nut, counter nut etc.

### 11. Effects of temperature:

Due to the greasing we recommend to use the WBG-V/WBG not in overheated areas. If this cannot be avoided please take the reduced WLL into consideration.

-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.

- 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 galvanizing plants. If this cannot be avoided, please contact the manufacturer indicating the concentration, period of penetration and temperature of use.

- The places where the lifting points are fixed should be marked with colour.

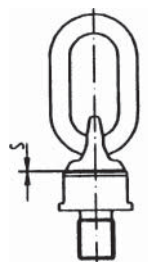
- The WBG-V can supplied with variable thread sizes (see Fvario table 2) and metric variations with washers and crack-detected nuts. The assembly or modification of the bolt should only be done by RUD or authorized persons.

- After fitting, an annual inspection or sooner if conditions dictate should be under taken by a competent person examining the continued suitability. Also after damage and special occurrences.

### Inspection criteria concerning paragraphs 2 and 15:

- Ensure correct bolt and nut size, quality and length.
- Ensure compatibility of bolt thread and tapped hole.
- 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, load ring, bolt or threaded bolt.
- 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.
- Damage to the bolt, nut and/or thread.
- On the WBG-V/WBG the ring must always rotate smoothly.
- The WBG-V/WBG should only be used within its WLL. See RUD chart.
- The max. gap between the upper and lower parts of the WBG-V/WBG should not be exceeded:

WBG-V 0,3 up to 0,45:	max. 1,2 mm
WBG-V 0,6 up to 2,0:	max. 1,5 mm
WBG-V 3,5 up to 5,0:	max. 3,0 mm
WBG 6 up to 35:	max. 4,0 mm



**Attention: The WBG-V/WBG is not suitable for prolonged turning application !**

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 $\alpha$	0°	90°	0°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.	
Factor		1		2	1,4	1	1	2,1	1,5	1	
<b>WLL in metric tonnes, bolted and adjusted to the direction of pull</b>											
Type	Thread										
WBG-V 0,3	M 8 / 5/16"-18UNC	0,6	<b>0,3</b> (0,4)	1,2	0,6 (0,8)	0,42 (0,56)	0,3 (0,4)	0,3 (0,4)	0,63 (0,84)	0,45 (0,6)	0,3 (0,4)
WBG-V 0,45	M 10 / 3/8"-16UNC	0,9	<b>0,45</b> (0,6)	1,8	0,9 (1,2)	0,63 (0,84)	0,45 (0,6)	0,45 (0,6)	0,95 (1,26)	0,68 (0,9)	0,45 (0,6)
WBG-V 0,6	M 12 / 1/2"-13UNC	1,2	<b>0,6</b> (0,75)	2,4	1,2 (1,5)	0,84 (1,05)	0,6 (0,75)	0,6 (0,75)	1,26 (1,58)	0,9 (1,12)	0,6 (0,75)
WBG-V 1,0	M 14	2,0	<b>1,0</b> (1,25)	4,0	2,0 (2,5)	1,4 (1,75)	1,0 (1,25)	1,0 (1,25)	2,1 (2,62)	1,5 (1,87)	1,0 (1,25)
WBG-V 1,3	M 16 / 5/8"-11UNC	2,6	<b>1,3</b> (1,5)	5,2	2,6 (3)	1,82 (2,1)	1,3 (1,5)	1,3 (1,5)	2,73 (3,15)	1,95 (2,25)	1,3 (1,5)
WBG-V 1,8	M 18	3,6	<b>1,8</b> (2)	7,2	3,6 (4)	2,5 (2,8)	1,8 (2)	1,8 (2)	3,78 (4,2)	2,7 (3)	1,8 (2)
WBG-V 2,0	M 20 / 3/4"-10UNC	4	<b>2</b> (2,5)	8	4 (5)	2,8 (3,5)	2 (2,5)	2 (2,5)	4,2 (5,25)	3 (3,75)	2 (2,5)
WBG-V 3,5	M 24 / 1"-8UNC	7	<b>3,5</b> (4)	14	7 (8)	4,9 (5,6)	3,5 (4)	3,5 (4)	7,35 (8,4)	5,25 (6)	3,5 (4)
WBG-V 5,0	M 30 / 1 1/4"-7UNC	10	<b>5</b> (6)	20	10 (12)	7 (8,4)	5 (6)	5 (6)	10,5 (12,6)	7,5 (9)	5 (6)
WBG 6	M 33 / 1 3/8"	12,5	<b>6</b> (7,5)	25	12 (15)	8,4 (10,5)	6 (7,5)	6 (7,5)	12,6 (15,75)	9 (11,25)	6 (7,5)
WBG 8	M 36 / M 39 / 1 1/2"	12,5	<b>8</b> (10)	25	16 (20)	11,2 (14)	8 (10)	8 (10)	16,8 (21)	12 (15)	8 (10)
WBG 10	M 42 - M 52 / 2"	16	<b>10</b> (12,5)	32	20 (25)	14 (17,5)	10 (12,5)	10 (12,5)	21 (26,2)	15 (18,8)	10 (12,5)
WBG 15	M 56 - M 68 / 2 1/2"	25	<b>15</b> (18)	50	30 (36)	21 (25,2)	15 (18)	15 (18)	31,5 (38)	22,5 (27)	15 (18)
WBG 25	M 72 - M 76 / 2 3/4"	35	<b>25</b> (30)	70	50 (60)	35 (42)	25 (30)	25 (30)	52,5 (63)	37,5 (45)	25 (30)
WBG 30	M 80 - M 85 / 3"	35	<b>30</b> (35)	70	60 (70)	42 (49)	30 (35)	30 (35)	63 (73,5)	45 (52,5)	30 (35)
WBG 35	M 90-M 150 / 3 1/2"-5"	35	<b>35</b> (40)	70	70 (80)	49 (56)	35 (40)	35 (40)	73,5 (84)	52,5 (60)	35 (40)

Table 1

Type	WLL t	weight kg												torque	reference	
			A	B	C	Ø D	E	F	Fvario	G	M	N	SW		F	Fvario
WBG-V 0,3 - M 8	<b>0,3</b> (0,4)	0,25	8	33	29	36	76	13	8 - 102	36	8	18	28	10 Nm	7103720	8600330
WBG-V 0,45 - M 10	<b>0,45</b> (0,6)	0,3	8	33	29	36	78	17	10 - 122	38	10	19	30	10 Nm	7103715	8600331
WBG-V 0,6 - M 12	<b>0,6</b> (0,75)	0,5	10	51	35	42	105	21	12 - 140	45	12	19	36	10 Nm	7100180	8600332
WBG-V 1,0 - M 14	<b>1,0</b> (1,25)	0,6	13	47	38	48	112	21	14 - 65	54	14	28	41	25 Nm		8600337
WBG-V 1,3 - M 16	<b>1,3</b> (1,5)	0,6	13	47	38	48	112	25	16 - 180	54	16	28	41	30 Nm	7100430	8600333
WBG-V 1,8 - M 18	<b>1,8</b> (2,0)	1,1	13	56	35	64	135	33	18 - 83	65	18	30	55	50 Nm		8600338
WBG-V 2,0 - M 20	<b>2,0</b> (2,5)	1,1	13	56	35	64	135	33	20 - 223	65	20	30	55	70 Nm	7100800	8600334
WBG-V 3,5 - M 24	<b>3,5</b> (4,0)	2,7	18	68	40	81	172	40	24 - 255	87	24	25	70	150 Nm	7100640	8600335
WBG-V 5,0 - M 30	<b>5,0</b> (6,0)	5,5	22	93	50	99	220	50	30 - 330	105	30	32	85	225 Nm	7100650	8600336
WBG 6 - special	<b>6</b> (7,5)		22	87	50	90	210		50 - 300	99	33		80	350 Nm		8600150
WBG 8 - M 36	<b>8</b> (10)	5,6	22	87	50	90	210	54	-	99	36		80	410 Nm	51872	
WBG 8 - special	<b>8</b> (10)		22	87	50	90	210		50 - 300	99	36-39		80	410 Nm		8600151
WBG 10 - M 42	<b>10</b> (12,5)	6,1	26	112	65	98	240	63	-	100	42		85	550 Nm	51874	
WBG 10 - M 48	<b>10</b> (12,5)	6,2	26	112	65	98	240	68	-	100	48		85	550 Nm	51930	
WBG 10 - special	<b>10</b> (12,5)		26	112	65	98	240		60 - 300	100	42-52		85	550 Nm		8600152
WBG 15 - M 56	<b>15</b> (18)	10,5	32	120	70	120	280	84	-	130	56		95	800 Nm	51941	
WBG 15 - M 64	<b>15</b> (18)	11,5	32	120	70	120	280	95	-	130	64		95	800 Nm	7100406	
WBG 15 - special	<b>15</b> (18)		32	120	70	120	280		80 - 300	130	56-68		95	800 Nm		8600153
WBG 25 - M 72	<b>25</b> (30)	27,0	40	125	80	160	332	108	-	163	72		130	1200 Nm	7990332	
WBG 25 - special	<b>25</b> (30)		40	125	80	160	332		100-300	163	72-76		130	1200 Nm		8600155
WBG 30 - M 80	<b>30</b> (35)	28,7	40	125	80	170	332	120	-	163	80		130	1500 Nm	7990333	
WBG 30 - special	<b>30</b> (35)		40	125	80	170	332		100-300	163	80-85		130	1500 Nm		8600156
WBG 35 - M 90	<b>35</b> (40)	29,2	40	125	80	170	332	135	-	163	90		130	2000 Nm	7985363	
WBG 35 - special	<b>35</b> (40)		40	125	80	170	332		100 - 300	163	90-150		130	2000 Nm		8600154

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 $\alpha, \beta$	0°	90°	0°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.	
Factor		1		2	1,4	1	1	2,1	1,5	1	
		<b>WLL in lbs, bolted and adjusted to the direction of pull</b>									
Type	Thread	1320	660 (880)	2640	1320 (1760)	925 (1230)	660 (880)	660 (880)	1385 (1850)	990 (1320)	660 (880)
WBG-V 0,3	M 8 / $\frac{5}{16}$ "-18UNC	1980	990 (1320)	3960	1980 (2640)	1385 (1850)	990 (1320)	990 (1320)	2090 (2770)	1495 (1980)	990 (1320)
WBG-V 0,45	M 10 / $\frac{3}{8}$ "-16UNC	2640	1320 (1650)	5280	2640 (3300)	1850 (2310)	1320 (1650)	1320 (1650)	2770 (3475)	1980 (2465)	1320 (1650)
WBG-V 0,6	M 12 / $\frac{1}{2}$ "-13UNC	4400	2200 (2750)	8800	4400 (5500)	3080 (3850)	2200 (2750)	2200 (2750)	4650 (5750)	3300 (4125)	2200 (2750)
WBG-V 1,0	M 14	5720	2860 (3300)	11440	5720 (6600)	4000 (4620)	2860 (3300)	2860 (3300)	6000 (6930)	4290 (4950)	2860 (3300)
WBG-V 1,3	M 16 / $\frac{5}{8}$ "-11UNC	7900	3960 (4400)	15840	7900 (8800)	5500 (6160)	3960 (4400)	3960 (4400)	8320 (9240)	5940 (6600)	3960 (4400)
WBG-V 1,8	M 18	8800	4400 (5500)	17600	8800 (11000)	6160 (7700)	4400 (5500)	4400 (5500)	9240 (11550)	6600 (8250)	4400 (5500)
WBG-V 2,0	M 20 / $\frac{3}{4}$ "-10UNC	15400	7700 (8800)	30800	15400 (17600)	10780 (12320)	7700 (8800)	7700 (8800)	16170 (18480)	11550 (13200)	7700 (8800)
WBG-V 3,5	M 24 / 1"-8UNC	22000	11000 (13200)	44000	22000 (26400)	15400 (18480)	11000 (13200)	11000 (13200)	23100 (27720)	16500 (19800)	11000 (13200)
WBG-V 5,0	M 30 / 1 $\frac{1}{4}$ "-7UNC	27500	13200 (16500)	55000	29000 (33000)	18500 (23100)	13200 (16500)	13200 (16500)	27700 (34650)	19800 (24750)	13200 (16500)
WBG 6	M33 / 1 $\frac{3}{8}$ "	27500	17600 (22000)	55000	35200 (44000)	24640 (30800)	17600 (22000)	17600 (22000)	36960 (46200)	26400 (33000)	17600 (22000)
WBG 8	M 36 / M 39 / 1 $\frac{1}{2}$ "	35200	22000 (27500)	70400	44000 (55000)	30800 (38500)	22000 (27500)	22000 (27500)	46200 (57640)	33000 (41360)	22000 (27500)
WBG 10	M 42 - M 52 / 2"	55000	33000 (39600)	110000	66000 (79200)	46200 (55440)	33000 (39600)	33000 (39600)	69300 (83600)	49500 (59400)	33000 (39600)
WBG 15	M 56 - M 68 / 2 $\frac{1}{2}$ "	77000	55000 (66000)	154000	110000(132000)	77000 (92400)	55000 (66000)	55000 (66000)	115500(138600)	82500 (99000)	55000 (66000)
WBG 25	M 72 - M 80 / 2 $\frac{3}{4}$ "	77000	66000 (77000)	154000	132000(154000)	92400 (108000)	66000 (77000)	66000 (77000)	138600(160000)	99000 (115000)	66000 (77000)
WBG 30	M 80 - M 85 / 3"	77000	77000 (88000)	154000	154000(176000)	108000(123000)	77000 (88000)	77000 (88000)	160000(185000)	115000(132000)	77000 (88000)
WBG 35	M 90-M 150 / 3 $\frac{1}{2}$ "-5"										

Table 3

Type	WLL t	weight kg	A	B	C	Ø D	E	F	Fvario	G	M	SW	torque	reference
													F	Fvario
WBG-V 0,3-5/16"-18UNC	0,3(0,4)	0,25	8	33	29	36	76	13	-	36	5/16"	28	10 Nm	7991090
WBG-V 0,45-3/8"-16UNC	0,45(0,6)	0,3	8	33	29	36	78	17	-	38	3/8"	30	10 Nm	7991091
WBG-V 0,6-1/2"-13UNC	0,6(0,75)	0,5	10	51	35	42	105	21	-	45	1/2"	36	10 Nm	7991092
WBG-V 1,3-5/8"-11UNC	1,3(1,5)	0,6	13	44	38	48	112	30	-	54	5/8"	41	30 Nm	7991093
WBG-V 2,0-3/4"-10UNC	2,0(2,5)	1,1	13	56	35	64	135	33	-	65	3/4"	55	70 Nm	7991094
WBG-V 3,5-1"-8UNC	3,5(4,0)	2,7	18	68	40	81	172	40	-	87	1"	70	150 Nm	7991095
WBG-V 5,0-1 1/4"-7UNC	5,0(6,0)	5,5	22	93	50	99	220	50	-	105	1 1/4"	85	225 Nm	7991096
WBG 6 - special	6(7,5)	22	87	50	90	210			50 - 300	99	1 3/8"	80	350 Nm	8600150
WBG 8 - special	8(10)	22	87	50	90	210			50 - 300	99	1 1/2"	80	410 Nm	8600151
WBG 10 - special	10(12,5)	26	112	65	98	240			60 - 300	100	1 3/4" - 2"	85	550 Nm	8600152
WBG 15 - special	15(18)	32	120	70	120	280			80 - 300	130	2 1/4" - 2 1/2"	95	800 Nm	8600153
WBG 25 - special	25(30)	40	125	80	160	332			100-300	163	2 3/4"	130	1200 Nm	8600155
WBG 30 - special	30(35)	40	125	80	170	332			100-300	163	3"	130	1500 Nm	8600156
WBG 35 - special	35(40)	40	125	80	170	332			100 - 300	163	3 1/2" - 5"	130	2000 Nm	8600154

Table 4