

RUD- Ringmutter



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
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RUD-Art.-Nr.: 8502509-EN/ 06.021

RUD-Eyenut RM
Standard application for bolts with min.
quality class 8.8



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: Ringmutter
RM

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)
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: Eye nut
RM

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)
Name, function and signature of the responsible person

User instructions

- Reference should be made to German Standards accord. DGUV rules 109-017 or other country specific statutory regulations and inspections are to be carried out by competent persons only.
- Before installing and every use, inspect visually RUD lifting points, paying particular attention to any evidence of corrosion, wear and weld cracks and deformations. Please ensure compatibility of bolt thread and tapped hole.

3. RUD eyenuts are only be used with bolts or threaded studs with a min. quality class 8.8 and who are 100 % crack detected.
Non certified bolts or threaded studs are not allowed.

Determine the location for the lifting point in regard of design with adequate base material strength so that introduced forces will be absorbed without causing deformations.

- 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 limit 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 table 1 and 3)

6. A plane bolting surface must be guaranteed. The internal thread has to be 100 % engaged on the bolt thread. The treaded stud must guarantee that the plane area of the eyenut can completely flat down to the work piece. When using the eyenut perpendicular only, the WLL from table no. 1 can be used.

7. Rotation during the transportation must be avoided.

8. All fittings connected to the eyenut 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.

9. To prevent unintended dismounting through shock loading, rotation or vibration, thread locking fluid such as Loctite (depending on the application, please pay attention to the manufacturer's instruction) could be used to secure the bolt, or use form-closed devices.

10. Effects of temperature:

If the RUD-Eyenuts are to be used in temperatures ranging from 200°C upwards, the WLL has to be reduced accordingly:

-40° up to 200°C no reduction
 200° up to 300°C minus 10 % (392°F up to 572°F)
 300° up to 400°C minus 25 % (572°F up to 752°F)

Temperatures above 400°C (752°F) are not permitted. Please pay attention to the max. temperature areas for the bolts and threaded studs.

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 avoided, please contact the manufacturer indicating the concentration, period of penetration and temperature of use.

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

13. 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 13:

- Ensure tightness
- Ensure correct bolt (treaded stud) size, quality and length
- The plane area of the eyenut must properly flat down on the work piece.
- 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 and threaded stud
- 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.

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

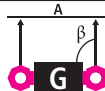
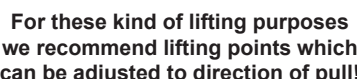
Method of lift								
Number of legs	1		2		2		3/4	
Angle of inclination <β	0°	90°	0°	90°	0°-45° / 45°-60°	unsymm.	0°-45° / 45°-60°	unsymm.
Factor	1		2		1		1.5	1
Metric type	RUD-Eyenut -WLL in metric tonnes, bolted							
RM- M6		0.4 t	0.1 t	0.8 t				
RM- M8		0.8 t	0.2 t	1.6 t				
RM- M10		1 t	0.25 t	2 t				
RM- M12		1.6 t	0.4 t	3.2 t				
RM- M14	M14x1.5	3 t	0.75 t	6 t				
RM- M16	M16x1.5	3.2 t	0.8 t	6.4 t				
RM - M18	M18x1.5	4.8 t	1.2 t	9.6 t				
RM- M20 + M22	M22x1.5	6 t	1.5 t	12 t				
RM- M24 + M27	M24x2 / M27x2	8 t	2 t	16 t				
RM- M30 + M33		12 t	3 t	24 t				
RM- M36		16 t	4 t	32 t				
RM- M39		20 t	5 t	40 t				
RM- M42		24 t	6 t	48 t				
RM- M48	M48x3	32 t	8 t	64 t				

table 1

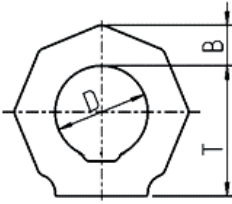
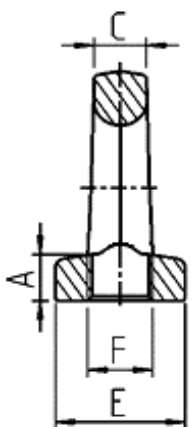
	Type	WLL	WLL axial	weight [kg]	A	B	C	D	E	F	T	Ref.-no.	
ISO metric thread	RM-M 6	0.1 t	0.4 t	0.1 kg	12	11	10	25	25	6	34	55254	
	RM-M 8	0.2 t	0.8 t	0.1 kg	12	11	10	25	25	8	34	55255	
	RM-M 10	0.25 t	1 t	0.1 kg	12	11	10	25	25	10	34	55258	
	RM-M 12	0.4 t	1.6 t	0.2 kg	14	13	12	30	30	12	41	55271	
	RM-M 14	0.75 t	3 t	0.3 kg	16	15	14	35	35	14	48	55281	
	RM-M 16	0.8 t	3.2 t	0.3 kg	16	15	14	35	35	16	48	55460	
	RM-M 18	1.2 t	4.8 t	0.4 kg	18	17	16	40	40	18	55	55342	
	RM-M 20	1.5 t	6 t	0.35 kg	18	17	16	40	40	20	55	55343	
	RM-M 22	1.5 t	6 t	0.65 kg	22	21	20	50	50	22	70	55387	
	RM-M 24	2 t	8 t	0.6 kg	22	21	20	50	50	24	70	55394	
	RM-M 27	2 t	8 t	1.4 kg	28	26	24	60	60	27	85	55399	
	RM-M 30	3 t	12 t	1.3 kg	28	26	24	60	60	30	85	55438	
	RM-M 33	3 t	12 t	5.8 kg	37	43	38	90	100	33	130	7994437	
	RM-M 36	4 t	16 t	5.5 kg	40	43	38	90	100	36	130	53093	
	RM-M 39	5 t	20 t	5.65 kg	37	43	38	90	100	39	130	7904790	
	RM-M 42	6 t	24 t	5.4 kg	40	43	38	90	100	42	130	53095	
	RM-M 48	8 t	32 t	5.3 kg	40	43	38	90	100	48	130	53098	
metric fine thread	RM-M 14x1,5	0.75 t	3 t	0.3 kg	16	15	14	35	35	M14x1.5	48	7902750	
	RM-M 16x1,5	0.8 t	3.2 t	0.3 kg	16	15	14	35	35	M16x1.5	48	7906923	
	RM-M 18x1,5	1.2 t	4.8 t	0.4 kg	18	17	16	40	40	M18x1.5	55	7902751	
	RM-M 22x1,5	1.5 t	6 t	0.65 kg	22	21	20	50	50	M22x1.5	70	7906924	
	RM-M 24x2	2 t	8 t	0.6 kg	22	21	20	50	50	M24x2	70	7907625	
	RM-M 27x2	2 t	8 t	1.4 kg	28	26	24	60	60	M27x2	85	7901995	
	RM-M 48x3	8 t	32 t	5.3 kg	40	43	38	90	100	M48x3	130	7995961	
ISO Imperial thread UNC	RM-3/8"-16UNC	0.2 t	0.8 t	0.1 kg	12	11	10	25	25	3/8"	34	7101103	
	RM-1/2"-13UNC	0.35 t	1.4 t	0.2 kg	14	13	12	30	30	1/2"	41	7101104	
	RM-5/8"-11UNC	0.75 t	3 t	0.3 kg	16	15	14	35	35	5/8"	48	7101105	
	RM-3/4"-10UNC	1.2 t	4.8 t	0.45 kg	18	17	16	40	40	3/4"	55	7101106	
	RM-7/8"-9UNC	1.5 t	6 t	0.7 kg	22	21	20	50	50	7/8"	70	7101107	
	RM-1"-8UNC	2 t	8 t	1.5 kg	28	26	24	60	60	1"	85	7101108	
	RM-1 1/4"-7UNC	3 t	12 t	1.4 kg	28	26	24	60	60	1 1/4"	85	7982594	
BSW-Whitworth inch thread	RM-1/2"-BSW	0.35 t	1.4 t	0.17	14	13	12	30	30	1/2"-BSW	41	7993984	
	RM-5/8"-BSW	0.75 t	3 t	0.3	16	15	14	35	35	5/8"-BSW	48	7993985	
	RM-3/4"-BSW	1.2 t	4.8 t	0.42	18	17	16	40	40	3/4"-BSW	55	7993986	
	RM-7/8"-BSW	1.5 t	6 t	0.7	22	21	20	50	50	7/8"-BSW	70	7993988	
	RM-1"-BSW	2 t	8 t	0.7	22	21	20	50	50	1"-BSW	70	7993989	
	RM-1 1/8"-BSW	2.5 t	10 t	1.3	28	26	24	60	60	1 1/8"-BSW	85	7994198	

table 2

Subject to technical modifications

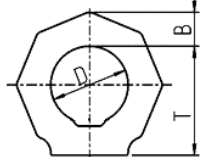
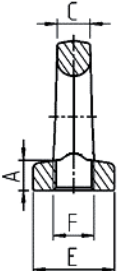
	Type	WLL	WLL axial	weight [kg]	A	B	C	D	E	F	T	Ref.-no.	
ISO metric thread	RM-M 6	220 lbs	880 lbs	0.22 lbs	15/32"	7/16"	25/64"	1"	1"	M6	1 11/32"	55254	
	RM-M 8	440 lbs	1760 lbs	0.22 lbs	15/32"	7/16"	25/64"	1"	1"	M8	1 11/32"	55255	
	RM-M 10	550 lbs	2200 lbs	0.22 lbs	15/32"	7/16"	25/64"	1"	1"	M10	1 11/32"	55258	
	RM-M 12	880 lbs	3520 lbs	0.44 lbs	9/16"	1/2"	15/32"	1 3/16"	1 3/16"	M12	1 5/8"	55271	
	RM-M 14 (M14x1.5)	1650 lbs	6610 lbs	0.66 lbs	5/8"	19/32"	9/16"	1 3/8"	1 3/8"	M14	1 7/8"	55281	
	RM-M 16 (M16x1.5)	1760 lbs	8820 lbs	0.66 lbs	5/8"	19/32"	9/16"	1 3/8"	1 3/8"	M16	1 7/8"	55460	
	RM-M 18 (M18x1.5)	2640 lbs	10580 lbs	0.88 lbs	23/32"	43/64"	5/8"	1 9/16"	1 9/16"	M18	2 5/32"	55342	
	RM-M 20	3300 lbs	13230 lbs	0.77 lbs	23/32"	43/64"	5/8"	1 9/16"	1 9/16"	M20	2 5/32"	55343	
	RM-M 22 (M22x2)	3300 lbs	13230 lbs	1.4 lbs	7/8"	13/16"	25/32"	1 31/32"	1 31/32"	M22	2 3/4"	55387	
	RM-M 24 (M24x2)	4400 lbs	17630 lbs	1.35 lbs	7/8"	13/16"	25/32"	1 31/32"	1 31/32"	M24	2 3/4"	55394	
	RM-M 27 (M27x2)	4400 lbs	17630 lbs	3.0 lbs	1 1/8"	1"	15/16"	2 3/8"	2 3/8"	M27	3 11/32"	55399	
	RM-M 30	6610 lbs	26450 lbs	2.8 lbs	1 1/8"	1"	15/16"	2 3/8"	2 3/8"	M30	3 11/32"	55438	
	RM-M 33	6610 lbs	26450 lbs	12.79 lbs	1 9/16"	1 11/16"	1 1/2"	3 1/2"	3 15/16"	M33	5 1/8"	7994437	
	RM-M 36	8820 lbs	35270 lbs	12 lbs	1 9/16"	1 11/16"	1 1/2"	3 1/2"	3 15/16"	M36	5 1/8"	53093	
	RM-M 39	11000 lbs	44090 lbs	12.46 lbs	1 9/16"	1 11/16"	1 1/2"	3 1/2"	3 15/16"	M39	5 1/8"	7904790	
	RM-M 42	13230 lbs	52910 lbs	11.9 lbs	1 9/16"	1 11/16"	1 1/2"	3 1/2"	3 15/16"	M42	5 1/8"	53095	
	RM-M 48 (M48x3)	17630 lbs	70540 lbs	11.7 lbs	1 9/16"	1 11/16"	1 1/2"	3 1/2"	3 15/16"	M48	5 1/8"	53098	
ISO Imperial thread UNC	RM- 3/8"-16UNC	440 lbs	1760 lbs	0.22 lbs	15/32"	7/16"	25/64"	1"	1"	3/8"	1 11/32"	7101103	
	RM- 1/2"-13UNC	770 lbs	3080 lbs	0.44 lbs	9/16"	1/2"	15/32"	1 3/16"	1 3/16"	1/2"	1 5/8"	7101104	
	RM- 5/8"-11UNC	1650 lbs	6610 lbs	0.66 lbs	5/8"	19/32"	9/16"	1 3/8"	1 3/8"	5/8"	1 7/8"	7101105	
	RM- 3/4"-10UNC	2640 lbs	10580 lbs	1.0 lbs	23/32"	43/64"	5/8"	1 9/16"	1 9/16"	3/4"	2 5/32"	7101106	
	RM- 7/8"-9UNC	3300 lbs	13230 lbs	1.5 lbs	7/8"	13/16"	25/32"	1 31/32"	1 31/32"	7/8"	2 3/4"	7101107	
	RM- 1"-8UNC	4400 lbs	17630 lbs	3.3 lbs	1 1/8"	1"	15/16"	2 3/8"	2 3/8"	1"	3 11/32"	7101108	
	RM- 1 1/4"-7UNC	6610 lbs	26450 lbs	3.1 lbs	1 1/8"	1"	15/16"	2 3/8"	2 3/8"	1 1/4"	3 11/32"	7982594	

table 3

Sous réserve de modifications techniques