

RUD- Ringmutter



Safety instructions

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

- Translation of the Original instructions -



**RUD Ketten
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RUD-Art.-Nr.: 8502509-EN / V03 - 07.023

RUD-Eyenuit 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:

| | |
|--------------------------------|-----------------------------------|
| <u>DIN EN 1677-1 : 2009-03</u> | <u>DIN EN ISO 12100 : 2011-03</u> |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:

| | |
|---------------------------------|-------|
| <u>DGUV-R 109-017 : 2020-12</u> | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Für die Zusammenstellung der Konformitätsdokumentation bevollmächtigte Person:
Michael Betzler, RUD Ketten, 73432 Aalen

Aalen, den 15.04.2021

Hermann Kolb, Bereichsleitung MA 
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:


| | |
|--------------------------------|-----------------------------------|
| <u>DIN EN 1677-1 : 2009-03</u> | <u>DIN EN ISO 12100 : 2011-03</u> |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

The following national norms and technical specifications were applied:

| | |
|---------------------------------|-------|
| <u>DGUV-R 109-017 : 2020-12</u> | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Authorized person for the configuration of the declaration documents:
Michael Betzler, RUD Ketten, 73432 Aalen

Aalen, den 15.04.2021

Hermann Kolb, Bereichsleitung MA 
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.
- 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.
- 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 thightness
- 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 | |
| Metric type | RUD-Eyenut -WLL in metric tonnes, bolted | | | | | | | |
| RM- M6 | | 0.4 t | 0.1 t | 0.8 t | For these kind of lifting purposes we recommend lifting points which can be adjusted to direction of pull! | | | |
| 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

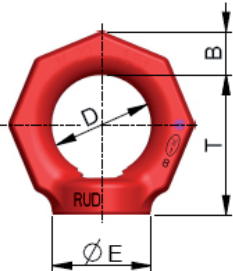
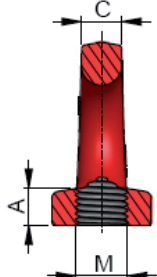
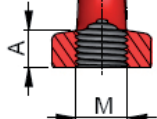
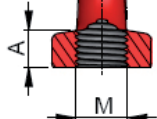
| | Type | WLL | WLL axial | weight [kg] | A | B | C | D | E | F | T | ref.-no. | |
|---------------------------|----------------|--------|-----------|-------------|----|----|----|-----|------------|----------|---------|----------|---|
| ISO metric thread | RM-M 6 | 0.1 t | 0.4 t | 0.1 kg | 12 | 11 | 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 | |
| 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 | |
| BSW-Whitworth inch thread | RM-1 1/4"-7UNC | 3 t | 12 t | 1.4 kg | 28 | 26 | 24 | 60 | 60 | 1 1/4" | 85 | 7982594 |  |
| | 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

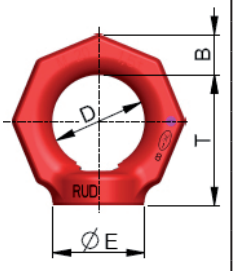
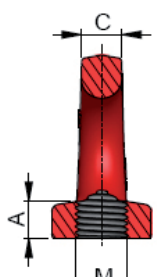
| | Type | WLL | WLL axial | weight [kg] | A | B | C | D | E | F | T | ref.-no. | |
|---------------------|-------------------|-----------|-----------|-------------|----------|----------|--------|----------|----------|----------|----------|----------|---|
| ISO metric thread | RM-M 6 | 220 lbs | 880 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 | | |
| 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