

# > STARPOINT <

## VRS with extension adaptor



### 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**  
**Rieger & Dietz GmbH u. Co. KG**  
 73428 Aalen  
 Tel. +49 7361 504-1370  
 Fax +49 7361 504-1171  
 sling@rud.com  
 www.rud.com

RUD: 7909054-EN / 09.018

Eye bolts of a different kind  
 with extension adaptor

**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:** StarPoint Ringschraube  
VRS

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>BGR 500, KAP2.8 : 2008-04</u>	_____
_____	_____
_____	_____
_____	_____

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

Aalen, den 26.09.2016 Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB) *Arne Kriegsmann*  
 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:** STARPOINT eye bolt  
VRS

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>BGR 500, KAP2.8 : 2008-04</u>	_____
_____	_____
_____	_____
_____	_____

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) *Arne Kriegsmann*  
 Name, function and signature of the responsible person



Before initial usage of the RUD-VRS with extension adaptor please read carefully the safety instructions. Make sure that you have understood all subjected matters. Non-observance can lead to serious personal injuries and material damage and eliminates warranty.

## 1 Safety instructions



### ATTENTION

Wrong assembled or damaged lifting points as well as improper use can lead to injuries of persons and damage of objects when load drops.

Please inspect all lifting points before each use.

- Not suitable for turning operations under load.
- VRS with extension adaptors must only be loaded with the stated WLL.
- VRS with extension adaptors must only be used by instructed and competent persons considering DGUV 100-500 (BGR 500) and outside Germany noticing the country specific statutory regulations.

## 2 Intended use

The VRS with extension adaptors must only be used in the here described usage purpose.

## 3 Assembly- and instruction manual

### 3.1 General information

- Capability of temperature usage:  
Due to installed bolts in the VRS with extension adaptors, the working load limit must be reduced accordingly to the strength class of the bolts as follows:  
-40° up to 100°C no reduction  
100° up to 200°C minus 15 % 212°F up to 392°F  
200° up to 250°C minus 20 % 392°F up to 482°F  
250° up to 350°C minus 25 % 482°F up to 662°F  
Temperatures above 350°C (662°F) are not permitted
- RUD VRS with extension adaptors 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.
- The position where the lifting points will be installed should be clearly marked with a contrast colour.
- The WLL F is stamped at the extension adapter depending on the execution.

## 3.2 Hints for the assembly

Basically essential:

- 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 (thread diameter) in steel  
(min. quality 235JR [1.0037])  
1,25 x M (thread diameter) in cast iron (e.g. GG 25)  
2 x M (thread diameter) in aluminium  
2,5 x M (thread diameter) in light alloys of low strength (M = thread size/diameter, e.g. M20)
- The position of the lifting points must be carried out in such a way that unintended movement like turning or flipping will be avoided.
- The position of the lifting points must be carried out in such a way that unintended movement like turning or flipping will be avoided
  - For single leg lifts, the lifting point should be vertically above the centre of gravity of the load.
- A plane bolt-on surface (ØA) with a perpendicular thread hole must be guaranteed.  
The thread must be carried out acc. to DIN 76. Tolerance of the thread is 7H.  
Thread holes must be machined deep enough to assure that the supporting area of the extension is in full contact.



### HINT

To make sure that the requested torque value will be achieved we recommend to use our cranked hexagon tool (see chart 2). Tighten the VRS with a torque of (+/-10 %) according to chart 2.

- Check finally the correct assembly (see chapter 4, Inspection criteria).

### 3.3 User instructions

- Check frequently and before each initial operation the whole lifting mean in regard of linger ability as a lifting mean, regarding corrosion, wear, deformation etc. (see chapter 4, Inspection criteria).



#### ATTENTION

*Wrong assembled or damaged lifting means as well as improper use can lead to injuries of persons and damage of objects when load falls.  
Please inspect all lifting points before each use.*

- When lifting means (sling chains) are hinged or unhinged, no pinching, shearing or joint spots must occur during the handling. Avoid damage of lifting means resulting from sharp edges.
- Leave direct danger zone as far as possible.
- Watch always your hinged loads.
- Avoid impulsive and tiltful loading.



#### ATTENTION

*Impulsive loading or vibration, especially at through hole connections with nuts, can lead to unintentional loosening.*

- Securing possibilities: liquid thread securing products f.e. Loctite (read manufacturer's instruction) or form closed bolt securing such as a crown nut with split pin, lock nut etc. can be used. Secure in general all lifting points which are installed permanently, e.g. with glue.
- Please observe for the whole lifting mean the RUD sling chain safety instruction.

### 3.4 Hints for regular inspection

Lingering appropriateness of lifting means should be tested by a competent person, depending on the operational demands or at least once a year (see chapter 4 Inspection criteria).

Depending on the operational demands, resulting from a numerous use, f.e. increased wear or corrosion, could make an earlier inspection necessary which means in a shorter interval than one year.

Type metric	torque [Nm]	Ref.-No. cranked hexagon tool metric
VRS-M 8	10	7997749
VRS-M 10	15	7997749
VRS-M 12	25	7997750
VRS-M 16	30	7997751
VRS-M 20	115	7997752
VRS-M 24	190	7997753
VRS-M 30	330	7902078

Table 1: overview torque / cranked hexagon tool

## 4 Inspection criteria

Observe and control the following points before each operation, in regularly periods, after the assembly and special incidents.

- Solid bolt fixture - Inspection of bolting torque
- Completeness of the lifting point
- Complete, readable WLL statements as well as manufacturer sign
- Deformations at the extension adapter and at the VRS
- Mechanical damage, like strong notches, especially in areas where tensile stress occurs.
- Reduction of cross-section due to wear >10 %
- Evidence of corrosion (Pitting)
- Function and damage at the bolt and/or thread.
- Easy and jerk free turning of the ring must be guaranteed

## 5 Hints for repairing

Repair work must only be carried out by a competent person at RUD or by a RUD trained and authorized service station, which has obtained the necessary knowledge and skills.

RUD-VRS with extension adaptors are designed for a dynamical loading of 20.000 load cycles at nominal working load. The BG recommends: At a high dynamic loading with high numbers of load cycles (continuous work) the bearing stress acc. to FEM group 1Bm (M3 acc. to DIN 818-7) must be reduced.

## 6 RUD-ID-NET®

The VRS with extension adaptors will be equipped with a RUD-ID-Point® and can clearly be related by the identification number. This number can be determined with the RUD-ID-EASY-CHECK® readers and data can be transferred into the AYE-D.NET-Application.



The application will support your product administration and documentation. For further information please go to the RUD webpage or ask your RUD authorized distributor.

VRS-size	WLL axial [t]	WLL F [t]	weight [kg]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	L [mm]	M	T [mm]	Ref.-No.	Ref.-No. cranked hexagon tool
VRS-M 8	0.3	0.1	0.6	29	SW 27	<b>45</b>	25	9	123	12	M 8	135	7908492	7997749
VRS-M 8	0.3	0.1	0.6	29	SW 27	<b>100</b>	25	9	123	12	M 8	135	*	7997749
VRS-M 10	0.4	0.17	0.6	29	SW 27	<b>100</b>	25	9	123	15	M 10	135	*	7997749
VRS-M 12	0.75	0.25	0.85	34.5	SW 30	<b>100</b>	30	10	127	18	M 12	142	7906187*	7997750
VRS-M 16	1.5	0.5	1.2	41.5	SW 36	<b>97</b>	35	14	129	23	M 16	154	7904862*	7997751
VRS-M 20	2.3	1	2	53	SW 46	<b>100</b>	40	16	137	30	M 20	158	7904863*	7997752
VRS-M 24	3.2	1.5	1.8	58	SW 50	<b>50</b>	48	19	95	36	M 24	119	7908106*	7997753
VRS-M 24	3.2	1.2	2.7	58	SW 50	<b>100</b>	48	19	145	36	M 24	173	7904864*	7997753
VRS-M 24	3.2	0.9	4.5	69	SW 60	<b>150</b>	48	19	195	36	M24	222	7903652*	7997753
VRS-M 30	4.5	2	4.5	69	SW 60	<b>100</b>	60	24	156	45	M 30	186	7903654*	7902078
VRS-M 30	4.5	1.4	5.7	69	SW 60	<b>147</b>	60	24	203	43	M 30	234	7903655*	7902078
VRS-M 30	4.5	0.7	9.6	69	SW 60	<b>300</b>	60	24	356	45	M 30	386	7903656*	7902078

Chart 2: Dimensioning

Subject to technical modifications

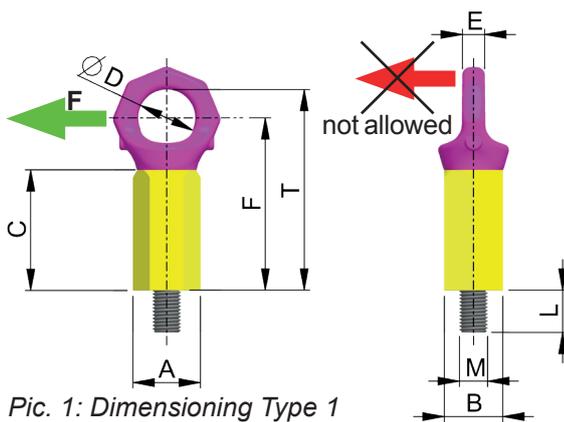


\* The VRS with hexagon-extension adapter can be supplied acc. to customer's needs with various lengths resp. dimension C between 50 and 300 mm:

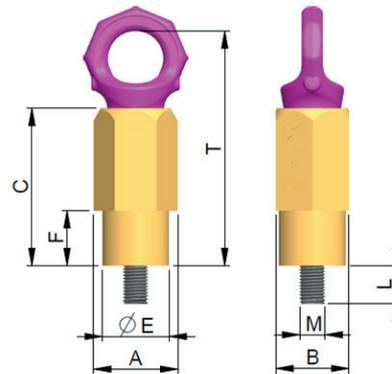
Type 1: KMAT-Nr. 8600620 or

Type 2: KMAT-NR 8600621 (with step machining)

The WLL F is stamped at the extension adapter depending on the execution.



Pic 1: Dimensioning Type 1



Pic 2: Dimensioning Type 2 (with step machining)

Method of lift										
Number of legs	1	1	2	2	2	2	2	3 & 4	3 & 4	3 & 4
Angle of inclination <math>\alpha</math>	0°	90°	0°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.
Factor					1.3x1.4	1	1	1.3x2.1	1.5	1
Type	Max. weight in metric tons, screwed according to torque chart and suspension ring adjusted to the load direction.									
VRS-M8-C100	0.3	<b>0.1**</b>	0.6	0.2	0.182	0.1	0.1	0.273	0.15	0.1
VRS-M10-C100	0.4	<b>0.17**</b>	0.8	0.34	0.309	0.1	0.1	0.464	0.255	0.17
VRS-M12-C100	0.75	<b>0.25**</b>	1.5	0.5	0.455	0.25	0.25	0.683	0.375	0.25
VRS-M16-C97	1.5	<b>0.5**</b>	3	1	0.910	0.5	0.5	1.365	0.75	0.5
VRS-M20-C100	2.3	<b>1**</b>	4.6	2	1.820	1	1	2.730	1.5	1
VRS-M24-C50	3.2	<b>1.5**</b>	6.4	3	2.730	1.5	1.5	4.095	2.25	1.5
VRS-M24-C100	3.2	<b>1.2**</b>	6.4	2.4	2.184	1.2	1.2	3.276	1.8	1.2
VRS-M24-C150	3.2	<b>0.9**</b>	6.4	1.8	1.638	0.9	0.9	2.457	1.35	0.9
VRS-M30-C100	4.5	<b>2**</b>	9	4	3.640	2	2	5.460	3	2
VRS-M30-C147	4.5	<b>1.4**</b>	9	2.8	2.548	1.4	1.4	3.822	2.1	1.4
VRS-M30-C300	4.5	<b>0.7**</b>	9	1.4	1.274	0.7	0.7	1.911	1.05	0.7

Chart 3: WLL overview (examples)

\*\* please observe stamping

Subject to technical modifications