



# > STARPOINT <

## 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



Starpoint VRS (-F)



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### 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:**  
EN 12100 : 2011-03      EN 1677-1 : 2009-03  
\_\_\_\_\_  
\_\_\_\_\_

**Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:**  
BGR 500, KAP2.8 : 2008-04  
\_\_\_\_\_  
\_\_\_\_\_

Für die Zusammenstellung der Konformitätsdokumentation bevollmächtigte Person:  
Reinhard Smetz, RUD Ketten, 73432 Aalen

Aalen, den 27.06.2014      Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB)  
Name, Funktion und Unterschrift Verantwortlicher      *Arne Kriegsmann*



### 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:**  
EN 12100 : 2011-03      EN 1677-1 : 2009-03  
\_\_\_\_\_  
\_\_\_\_\_

**The following national norms and technical specifications were applied:**  
BGR 500, KAP2.8 : 2008-04  
\_\_\_\_\_  
\_\_\_\_\_

Authorized person for the configuration of the declaration documents:  
Reinhard Smetz, RUD Ketten, 73432 Aalen

Aalen, den 27.06.2014      Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB)  
Name, function and signature of the responsible person      *Arne Kriegsmann*

## User Instructions

1. Application only by designated and trained people, by observing the BGR 500/DGUV 100-500 requirements and outside of Germany according to the country specific statutory regulations.

2. Please inspect regularly and before each usage the lifting points in regard of tightening, strong corrosion, wear, deformation etc.

3. 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 engagement depth for steel with a tensile strength of  $R_m > 340 \text{ N/mm}^2$ , f.e. S235JR (1.0037) or cast iron GG25 (0.6025-without blowholes):  $1.5 \times M (=L)$

For material with lower tensile strength please use lifting points with longer thread engagement.

The German BG (Employer's insurance association), recommends the following minimum thread engagements:

- 2 x M in aluminium alloys
- 2,5 x M in light alloys with low strength

(M = thread Ø, e.g. M 20)

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

4. The lifting points must be positioned at the load in such a way that prohibited assignments like turning or flipping of the load are avoided.

- a.) Position the lifting point for a single leg lift vertically above the centre of gravity of the load.
- b.) For two leg lifts, the lifting points must be equidistant to or above the centre of gravity of the load.
- c.) For three and four leg lifts, the lifting points should be arranged symmetrical around the centre of gravity, coplanar, if possible.

### 5. Symmetry of loading

Determine the required WLL of the individual RUD lifting point for symmetrical resp. unsymmetrical loading according to the following physical formula context:

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

$W_{LL}$  = working load limit  
 $G$  = load weight (kg)  
 $n$  = number of load bearing legs  
 $\beta$  = 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 5)

6. A plane bolt-on surface (ØE) with a perpendicular thread hole must be guaranteed.

The thread must be carried out acc. to DIN 76 (countersink max. 1.05xd). Tapped holes must be machined deep enough so that the bearing surface of the lifting point will be supported.

7. For mounting without a tool, especially for a one-time lift, the STARPOINT can be supplied resp. retrofitted with a key (type: VRS-F) see also chart 2. Simply engage into the hexagon socket bolt the star profile key - use your fingers to respectively tighten or untighten the arrangement. Disengage key before you attach the lifting mean - STARPOINT must be rotatable! Do not use an extension for the tightening in combination with the profile key.

**Hint:** For the usage of a torque wrench a joggled hexagon tool is available on request (see table 4).

For a permanent installation, please tighten the VRS with a torque moment according to chart 2 (+/- 10 %).

8. Shock loading or vibrations can cause unintentional dismantling. Securing options: Torque moment + liquid thread locker such as Loctite or WEICONLOCK (depending on the application, please pay attention to the manufacturer's instruction).

**Attention:** Ring must be free rotatable.

In general secure all lifting points which are permanently installed, f.e. by using glue.

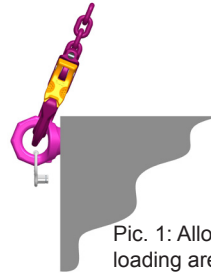
9. The STARPOINT must be adjustable by 360° when fitted and with disengaged key. Adjust to direction of pull before lifting mean is attached.

**Attention: STARPOINTS are not suited to be turned under load!**

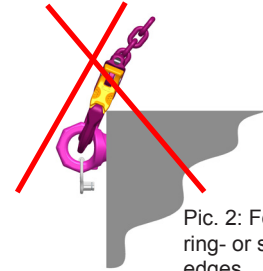


10. The lifting mean must be free moveable in the STARPOINT and must not bear the load edge.

The WLL mentioned in the user instruction are relating to the cross and axial loading. **In addition to that, the loading of the lifting point with nominal load can also be done in the direction of the tapped hole of the work piece (pic. 1 and 2).**



Pic. 1: Allowed loading area



Pic. 2: Forbidden bearing- or support point at edges

11. When connecting and disconnecting lifting means (sling chains, wire rope slings and webbings) no pinches, shearings and impacts must occur.

Damage of the lifting means caused by sharp edges must be avoided.

### 12. Temperature usage capability

Due to installed DIN/EN bolts in the STARPOINTS, the working load limit must be reduced accordingly to the strength class of the bolts as follows:

-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.

13. 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.

14. The position where the lifting points will be installed should be clearly marked with a contrast colour.

15. If lifting points are used solely for lashing, the value of the working load limit can be doubled: Lashing capacity  $LC = 2 \times WLL$ .

16. After installation, an annual inspection or if necessary even sooner must be carried out by a competent person to guarantee the lingering ability. This is becomes also effective after a damage or a special occurrence.

### Inspection criteria concerning paragraphs 2 and 16:

- Observe correct torque moment.
- The lifting point must be complete.
- The working load limit and manufacturer's stamp should be clearly visible.
- Deformation of the component parts such as body and bolt.
- Mechanical damage, such as notches, particularly in high stress areas.
- Wear should be no more than 10 % of cross sectional diameter.
- Strong of corrosion.
- Cracks at load bearing areas
- Damage at the bolt and/or thread.
- Easy and jerk free turning of the ring must be guaranteed.

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

type	WLL [t]	weight [kg/St.]	T [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	article-no.
<b>VRS-F STARPOINT – metric</b>															
VRS-F-M6	0,1	0,07	28	9	7	20	23	28	13	37	9	M6	6	5	7900906
VRS-F-M8	0,3	0,12	35	11	9	25	25	30	16,3	47	12	M8	6	10	8500911
VRS-F-M10	0,4	0,12	35	11	9	25	25	30	16,3	47	15	M10	6	15	7104029
VRS-F-M12	0,75	0,2	42	13	10	30	30	34	19,8	56	18	M12	8	25	7101313
VRS-F-M14	0,75	0,21	42	13	10	30	30	34	19,8	56	18	M14	8	30	7999330
VRS-F-M16	1,5	0,3	49	15	13	35	36	40	23,5	65	24	M16	10	60	7101314
VRS-F-M16	1,5	0,3	49	15	13	35	36	40	23,5	65	35	M16	10	60	7983306
VRS-F-M18	1,5	0,35	49	15	13	35	36	40	23,5	65	24	M18	10	80	7903387
VRS-F-M20	2,3	0,5	58	17	16	40	41	50	29,3	76	30	M20	12	115	7101315
VRS-F-M22	2,3	0,5	58	17	16	40	41	50	29,3	76	30	M22	12	125	7992197
VRS-F-M24	3,2	0,8	70	20	19	49	51	60	35	92	36	M24	14	190	7101316
VRS-F-M27	3,2	1	70	20	19	49	51	60	35	92	36	M27	14	250	7994138
VRS-F-M30	4,5	1	87	26	24	60	66	75	44	114	45	M30	17	330	7101317
VRS-F-M33	4,5	1,8	87	26	24	60	66	75	44	114	45	M33	17	400	7993439
VRS-F-M36	7	3,5	103	32	29	72	76	97	53	135	54	M36	22	590	7984201
VRS-F-M42	9	4,9	121	37	33	84	86	111	62	158	63	M42	24	925	7984202
VRS-F-M48	12	7	138	42	42	94	100	128	70	180	72	M48	27	1400	7984203

type	WLL [t]	weight [kg/St.]	T [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	article-no.
<b>VRS STARPOINT without key– metric</b>															
VRS-M6	0,1	0,07	28	9	7	20	23	28	13	37	9	M6	6	5	7900909
VRS-M8	0,3	0,1	35	11	9	25	25	30	16,3	47	12	M8	6	10	7100554
VRS-M10	0,4	0,1	35	11	9	25	25	30	16,3	47	15	M10	6	15	7100555
VRS-M12	0,75	0,2	42	13	10	30	30	34	19,8	56	18	M12	8	25	7100556
VRS-M14	0,75	0,2	42	13	10	30	30	34	19,8	56	18	M14	8	30	7100557
VRS-M16	1,5	0,33	49	15	13	35	36	40	23,5	65	24	M16	10	60	7100558
VRS-M18	1,5	0,3	49	15	13	35	36	40	23,5	65	24	M18	10	80	7992219
VRS-M20	2,3	0,5	58	17	16	40	41	50	29,3	76	30	M20	12	115	7100559
VRS-M22	2,3	0,61	58	17	16	40	41	50	29,3	76	30	M22	12	125	7904625
VRS-M24	3,2	0,86	70	20	19	49	51	60	35	92	36	M24	14	190	7100560
VRS-M24	3,2	1	70	20	19	49	51	60	35	92	48	M24	14	190	7990615
VRS-M27	3,2	0,94	70	20	19	49	51	60	35	92	36	M27	14	250	7904626
VRS-M30	4,5	1,5	87	26	24	60	66	75	44	114	45	M30	17	330	7100561
VRS-M30	4,5	1,6	87	26	24	60	66	75	44	114	60	M30	17	330	7991307
VRS-M33	4,5	1,66	87	26	24	60	66	75	44	114	45	M33	17	400	7904627
VRS-M36	7	3,3	103	32	29	72	76	97	53	135	54	M36	22	590	7984198
VRS-M36	7	3,5	103	32	29	72	76	97	53	135	54	M36	22	590	7991247
VRS-M42	9	4,6	121	37	33	84	86	111	62	158	63	M42	24	925	7984199
VRS-M48	12	7,44	138	42	42	94	100	128	70	180	72	M48	27	1400	7984200

table 1

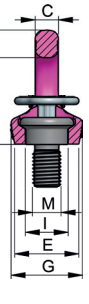
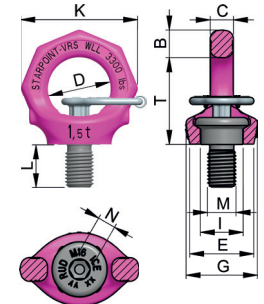
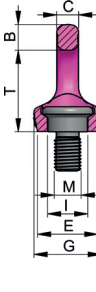
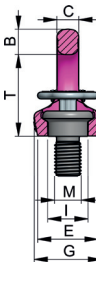
Subject to technical alterations!

type	WLL [t]	weight [kg/St.]	T [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	article-no.
<b>VRS-F STARPOINT – metric- fine thread</b>															
VRS-F-M8×1	0,3	0,12	35	11	9	25	25	30	16,3	47	12	M8 x 1	6	10	7904332
VRS-F-M12×1,5	0,75	0,2	42	13	10	30	30	34	19,8	56	18	M12 x 1,5	8	25	7992929
VRS-F-M16×1,5	1,5	0,3	49	15	13	35	36	40	23,5	65	24	M16 x 1,5	10	60	7902676
VRS-F-M20×2	2,3	0,5	58	17	16	40	41	50	29,3	76	30	M20 x 2	12	115	7992634
VRS-F-M24×2	3,2	0,8	70	20	19	49	51	60	35	92	36	M24 x 2	14	190	7992566
VRS-F-M30×2	4,5	1,6	87	26	24	60	66	75	44	114	45	M30 x 2	17	330	7991856
VRS-M36×3	7	3,5	103	32	29	72	76	97	53	135	54	M36 x 3	22	590	7992728
<b>VRS-F STARPOINT – metric with variable length</b>															
VRS-F-M10	0,4	*	35	11	9	25	25	30	16,3	47	16-70	M10	6	15	8600270
VRS-F-M12	0,75	*	42	13	10	30	30	34	19,8	56	18-150	M12	8	25	8600271
VRS-F-M16	1,5	*	49	15	13	35	36	40	23,5	65	24-120	M16	10	60	8600272
VRS-F-M20	2,3	*	58	17	16	40	41	50	29,3	76	30-160	M20	12	115	8600273
VRS-F-M24	3,2	*	70	20	19	49	51	60	35	92	36-140	M24	14	190	8600274
VRS-F-M30	4,5	*	87	26	24	60	66	75	44	114	45-190	M30	17	330	8600275

table 2

\* = weight depends on version

Subject to technical alterations!



type	WLL [t]	weight [kg/St.]	T [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	article-no.
<b>VRS-F STARPOINT – UNC</b>															
VRS-F 5/16"-18UNC	0,3	0,13	35	11	9	25	25	30	16,3	47	12	5/16"-18UNC	1/4"	10	7999106
VRS-F 3/8"-16UNC	0,4	0,12	35	11	9	25	25	30	16,3	47	19	3/8"-16UNC	1/4"	15	7104480
VRS-F 7/16"-14UNC	0,4	0,12	35	11	9	25	25	30	16,3	47	15	7/16"-14UNC	1/4"	15	7904195
VRS-F 1/2"-13UNC	0,75	0,22	42	13	10	30	30	34	19,8	56	19	1/2"-13UNC	5/16"	25	7104481
VRS-F 5/8"-11UNC	1,5	0,33	49	15	13	35	36	40	23,5	65	24	5/8"-11UNC	3/8"	60	7104482
VRS-F 3/4"-10UNC	1,5	0,33	49	15	13	35	36	40	23,5	65	30	3/4"-10UNC	1/2"	115	7104483
VRS-F 7/8"-9UNC	2,3	0,64	58	17	16	40	41	50	29,5	76	33	7/8"-9UNC	1/2"	125	7104484
VRS-F 1"-8UNC	3,2	0,98	70	20	19	49	51	60	35	92	36	1"-8UNC	9/16"	190	7104485
VRS-F 1 1/8"-8UN	3,2	0,98	70	20	19	49	51	60	35	92	36	1 1/8"-8UN	9/16"	250	7903386
VRS-F 1 1/8"-7UNC	3,2	0,98	70	20	19	49	51	60	35	92	36	1 1/8"-7UNC	9/16"	250	7903383
VRS-F 1 1/4"-7UNC	4,5	1,82	87	26	24	60	66	75	44	114	48	1 1/4"-7UNC	3/4"	330	7104486
VRS-F 1 1/2"-6UNC	7	3,6	103	32	29	72	76	97	53	135	54	1 1/2"-6UNC	7/8"	590	7104487
VRS-F 1 3/4"-5UNC	9	4,95	121	37	33	84	86	111	62	158	63	1 3/4"-5UNC	1"	925	7104488
VRS-F 2"-4,5UNC	12	7,6	138	42	42	94	100	128	70	180	72	2"-4,5UNC	1 1/8"	1400	7104469

<b>VRS STARPOINT without key – UNC</b>															
VRS-1/4"-20UNC	0,1	0,24	28	9	7	20	23	28	13	37	9	1/4"-20UNC	1/4"	5	7999105
VRS-3/8"-16UNC	0,4	0,09	35	11	9	25	25	30	16,3	47	15	3/8"-16UNC	1/4"	15	7103959
VRS-7/16"-14UNC	0,4	0,1	35	11	9	25	25	30	16,3	47	19	7/16"-14UNC	1/4"	15	7903118
VRS-1/2"-13UNC	0,75	0,2	42	13	10	30	30	34	19,8	56	19	1/2"-13UNC	5/16"	25	7103960
VRS-5/8"-11UNC	1,5	0,3	49	15	13	35	36	40	23,5	65	24	5/8"-11UNC	3/8"	60	7103961
VRS-3/4"-10UNC	1,5	0,33	49	15	13	35	36	40	23,5	65	30	3/4"-10UNC	1/2"	115	7103962
VRS-7/8"-9UNC	2,3	0,6	58	17	16	40	41	50	29,3	76	33	7/8"-9UNC	1/2"	125	7103963
VRS-1"-8UNC	3,2	0,9	70	20	19	49	51	60	35	92	36	1"-8UNC	9/16"	190	7103964
VRS-1 1/8"-8UN	3,2	0,9	70	20	19	49	51	60	35	92	36	1 1/8"-8UN	9/16"	250	7999385
VRS-1 1/8"-7UNC	3,2	0,9	70	20	19	49	51	60	35	92	36	1 1/8"-7UNC	9/16"	250	7999384
VRS-1 1/4"-7UNC	4,5	1,7	87	26	24	60	66	75	44	114	48	1 1/4"-7UNC	3/4"	330	7103965
VRS-1 1/2"-6UNC	7	2,9	103	32	29	72	76	97	53	135	54	1 1/2"-6UNC	7/8"	590	7103966
VRS-1 3/4"-5UNC	9	4,6	121	37	33	84	86	111	62	158	63	1 3/4"-5UNC	1"	925	7103967
VRS-2"-4,5UNC	12	7	138	42	42	94	100	128	70	180	72	2"-4,5UNC	1 1/8"	1400	7103968

table 3

Subject to technical alterations!


type	weight [kg/St.]	A [mm]	B [mm]	C [mm]	D [mm]	torque [Nm]	M / UNC	article-no.
<b>VRS-socket wrench</b>								
socket wrench VRS	0,09	118	7,5	6	1/2"	5 / 10 / 15	M6*+M8+M10	7997749
socket wrench VRS	0,11	118	9	8	1/2"	25 / 30	M12+M14	7997750
socket wrench VRS	0,15	138	12	10	1/2"	60 / 80	M16+M18	7997751
socket wrench VRS	0,2	137	14	12	1/2"	115 / 125	M20+M22	7997752
socket wrench VRS	0,24	140	16,5	14	1/2"	190 / 250	M24+M27	7997753
socket wrench VRS	0,47	152	22	17	1/2"	330 / 400	M30+M33	7902078
socket wrench VRS	1,0	192	26	22	1"	590	M36	7902079
socket wrench VRS	1,2	276	29	24	1"	925	M42	7902080
socket wrench VRS	2,0	304	33	27	1"	1400	M48	7902081


<b>VRS- star key – metric</b>								
star key- metric	0,02					5 / 10 / 15	M6*+M8+M10	7983986
star key- metric	0,02					25 / 30	M12+M14	7905453
star key- metric	0,03					60 / 80	M16+M18	7903254
star key- metric	0,04					115 / 125	M20+M22	7904282
star key- metric	0,08					190 / 250	M24+M27	7904283
star key- metric	0,12					330 / 400	M30+M33	7904284
star key- metric	0,15					590	M36	7904285
star key- metric	0,3					925	M42	7904286
star key- metric	0,4					1400	M48	7904287

<b>VRS- star key – UNC</b>								
star key- UNC	0,02					10 / 15 / 15	5/16"-18UNC + 3/8"-16UNC + 7/16"-14UNC	7983995
star key- UNC	0,02					25	1/2"-13UNC	7984001
star key- UNC	0,03					60	5/8"-11UNC	7983997
star key- UNC	0,04					115 / 125	3/4"-10UNC + 7/8"-9UNC	7983998
star key- UNC	0,08					190 / 250 / 250	1"-8UNC + 1 1/8"-8UN + 1 1/8"-7UNC	7983999
star key- UNC	0,12					330	1 1/4"-7UNC	7984000
star key- UNC	0,15					590	1 1/2"-6UNC	7984001
star key- UNC	0,3					925	1 3/4"-5UNC	7984002
star key- UNC	0,4					1400	2"-4,5UNC	7984003

table 4 \*Attention: When tightening the VRS M6, do not exceed the torque value of 12 Nm.

Subject to technical alterations!

 Translation of the original instruction manual  
In case of doubts or misunderstandings,  
the German version of the document is decisive.

 Special lengths and surface coatings  
possible on request.

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 <math>\alpha</math>	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

Type		STARPOINT -WLL in metric tons, bolted and adjusted to the direction of pull									
VRS-M6	VRS-1/4"-20UNC	0.5 t	<b>0.1 t</b>	1 t	0.2 t	0.14 t	0.1 t	0.1 t	0.21 t	0.15 t	0.1 t
VRS-M8	VRS-5/16"-18UNC	1 t	<b>0.3 t</b>	2 t	0.6 t	0.42 t	0.3 t	0.3 t	0.63 t	0.45 t	0.3 t
VRS-M10	VRS-3/8"-16UNC	1 t	<b>0.4 t</b>	2 t	0.8 t	0.56 t	0.4 t	0.4 t	0.84 t	0.6 t	0.4 t
	VRS-7/16"-14UNC	1 t	<b>0.4 t</b>	2 t	0.8 t	0.56 t	0.4 t	0.4 t	0.84 t	0.6 t	0.4 t
VRS-M12	VRS-1/2"-13UNC	2 t	<b>0.75 t</b>	4 t	1.5 t	1.0 t	0.75 t	0.75 t	1.6 t	1.12 t	0.75 t
VRS-M12x1.5		2 t	<b>0.75 t</b>	4 t	1.5 t	1.0 t	0.75 t	0.75 t	1.6 t	1.12 t	0.75 t
VRS-M14		2 t	<b>0.75 t</b>	4 t	1.5 t	1.0 t	0.75 t	0.75 t	1.6 t	1.12 t	0.75 t
VRS-M16	VRS-5/8"-11UNC	4 t	<b>1.5 t</b>	8 t	3 t	2.1 t	1.5 t	1.5 t	3.15 t	2.25 t	1.5 t
VRS-M16x1.5		4 t	<b>1.5 t</b>	8 t	3 t	2.1 t	1.5 t	1.5 t	3.15 t	2.25 t	1.5 t
VRS-M18		4 t	<b>1.5 t</b>	8 t	3 t	2.1 t	1.5 t	1.5 t	3.15 t	2.25 t	1.5 t
VRS-M20	VRS-3/4"-10UNC	6 t	<b>2.3 t</b>	12 t	4.6 t	3.22 t	2.3 t	2.3 t	4.83 t	3.45 t	2.3 t
VRS-M20x2		6 t	<b>2.3 t</b>	12 t	4.6 t	3.22 t	2.3 t	2.3 t	4.83 t	3.45 t	2.3 t
VRS-M22	VRS-7/8"-9UNC	6 t	<b>2.3 t</b>	12 t	4.6 t	3.22 t	2.3 t	2.3 t	4.83 t	3.45 t	2.3 t
VRS-M24	VRS-1"-8UNC	8 t	<b>3.2 t</b>	16 t	6.4 t	4.48 t	3.2 t	3.2 t	6.7 t	4.8 t	3.2 t
VRS-M24x2		8 t	<b>3.2 t</b>	16 t	6.4 t	4.48 t	3.2 t	3.2 t	6.7 t	4.8 t	3.2 t
VRS-M27	VRS-1 1/8"-7UNC	8 t	<b>3.2 t</b>	16 t	6.4 t	4.48 t	3.2 t	3.2 t	6.7 t	4.8 t	3.2 t
	VRS-1 1/8"-8UN	8 t	<b>3.2 t</b>	16 t	6.4 t	4.48 t	3.2 t	3.2 t	6.7 t	4.8 t	3.2 t
VRS-M30	VRS-1 1/4"-7UNC	12 t	<b>4.5 t</b>	24 t	9 t	6.3 t	4.5 t	4.5 t	9.4 t	6.7 t	4.5 t
VRS-M30x2		12 t	<b>4.5 t</b>	24 t	9 t	6.3 t	4.5 t	4.5 t	9.4 t	6.7 t	4.5 t
VRS-M33		12 t	<b>4.5 t</b>	24 t	9 t	6.3 t	4.5 t	4.5 t	9.4 t	6,7 t	4.5 t
VRS-M36	VRS-1 1/2"-6UNC	16 t	<b>7 t</b>	32 t	14 t	9.8 t	7 t	7 t	14.7 t	10.5 t	7 t
VRS-M42	VRS-1 3/4"-5UNC	24 t	<b>9 t</b>	48 t	18 t	12.6 t	9 t	9 t	18.9 t	13.5 t	9 t
VRS-M48	VRS-2"-4.5UNC	32 t	<b>12 t</b>	64 t	24 t	16.8 t	12 t	12 t	25.2 t	18.0 t	12 t

Type		STARPOINT -WLL in lbs, bolted and adjusted to the direction of pull									
VRS-M6	VRS-1/4"-20UNC	1100 lbs	<b>220 lbs</b>	2200 lbs	440 lbs	308 lbs	220 lbs	220 lbs	462 lbs	330 lbs	220 lbs
VRS-M8	VRS-5/16"-18UNC	2200 lbs	<b>660 lbs</b>	4400 lbs	1320 lbs	925 lbs	660 lbs	660 lbs	1380 lbs	990 lbs	660 lbs
VRS-M10	VRS-3/8"-16UNC	2200 lbs	<b>880 lbs</b>	4400 lbs	1760 lbs	1235 lbs	880 lbs	880 lbs	1850 lbs	1320 lbs	880 lbs
	VRS-7/16"-14UNC	2200 lbs	<b>880 lbs</b>	4400 lbs	1760 lbs	1235 lbs	880 lbs	880 lbs	1850 lbs	1320 lbs	880 lbs
VRS-M12	VRS-1/2"-13UNC	4400 lbs	<b>1650 lbs</b>	8800 lbs	3300 lbs	2200 lbs	1650 lbs	1650 lbs	3460 lbs	2470 lbs	1650 lbs
VRS-M12x1.5		4400 lbs	<b>1650 lbs</b>	8800 lbs	3300 lbs	2200 lbs	1650 lbs	1650 lbs	3460 lbs	2470 lbs	1650 lbs
VRS-M14		4400 lbs	1650 lbs	8800 lbs	3300 lbs	2200 lbs	1650 lbs	1650 lbs	3460 lbs	2470 lbs	1650 lbs
VRS-M16	VRS-5/8"-11UNC	8820 lbs	<b>3300 lbs</b>	17640 lbs	6610 lbs	4630 lbs	3300 lbs	3300 lbs	6940 lbs	4960 lbs	3300 lbs
VRS-M16x1.5		8820 lbs	<b>3300 lbs</b>	17640 lbs	6610 lbs	4630 lbs	3300 lbs	3300 lbs	6940 lbs	4960 lbs	3300 lbs
VRS-M18		8820 lbs	<b>3300 lbs</b>	17640 lbs	6610 lbs	4630 lbs	3300 lbs	3300 lbs	6940 lbs	4960 lbs	3300 lbs
VRS-M20	VRS-3/4"-10UNC	13250 lbs	<b>5070 lbs</b>	26500 lbs	10140 lbs	7100 lbs	5070 lbs	5070 lbs	10650 lbs	7600 lbs	5070 lbs
VRS-M20x2		13250 lbs	<b>5070 lbs</b>	26500 lbs	10140 lbs	7100 lbs	5070 lbs	5070 lbs	10650 lbs	7600 lbs	5070 lbs
VRS-M22	VRS-7/8"-9UNC	13250 lbs	<b>5070 lbs</b>	26500 lbs	10140 lbs	7100 lbs	5070 lbs	5070 lbs	10650 lbs	7600 lbs	5070 lbs
VRS-M24	VRS-1"-8UNC	17630 lbs	<b>7050 lbs</b>	35260 lbs	14100 lbs	9880 lbs	7050 lbs	7050 lbs	14800 lbs	10580 lbs	7050 lbs
VRS-M24x2		17630 lbs	<b>7050 lbs</b>	35260 lbs	14100 lbs	9880 lbs	7050 lbs	7050 lbs	14800 lbs	10580 lbs	7050 lbs
VRS-M27	VRS-1 1/8"-7UNC	17630 lbs	<b>7050 lbs</b>	35260 lbs	14100 lbs	9880 lbs	7050 lbs	7050 lbs	14800 lbs	10580 lbs	7050 lbs
	VRS-1 1/8"-8UN	17630 lbs	<b>7050 lbs</b>	35260 lbs	14100 lbs	9880 lbs	7050 lbs	7050 lbs	14800 lbs	10580 lbs	7050 lbs
VRS-M30	VRS-1 1/4"-7UNC	26450 lbs	<b>9920 lbs</b>	52900 lbs	19840 lbs	13880 lbs	9920 lbs	9920 lbs	20800 lbs	14880 lbs	9920 lbs
VRS-M30x2		26450 lbs	<b>9920 lbs</b>	52900 lbs	19840 lbs	13880 lbs	9920 lbs	9920 lbs	20800 lbs	14880 lbs	9920 lbs
VRS-M33		26450 lbs	9920 lbs	52900 lbs	19840 lbs	13880 lbs	9920 lbs	9920 lbs	2080 lbs	14880 lbs	9920 lbs
VRS-M36	VRS-1 1/2"-6UNC	35270 lbs	<b>15430 lbs</b>	70540 lbs	30860 lbs	21600 lbs	15430 lbs	15430 lbs	32400 lbs	23150 lbs	15430 lbs
VRS-M42	VRS-1 3/4"-5UNC	52900 lbs	<b>19480 lbs</b>	105800 lbs	39680 lbs	27700 lbs	19840 lbs	19840 lbs	41600 lbs	29760 lbs	19840 lbs
VRS-M48	VRS-2"-4.5UNC	70550 lbs	<b>26450 lbs</b>	141100 lbs	52910 lbs	37000 lbs	26450 lbs	26450 lbs	55500 lbs	39680 lbs	26450 lbs

table 5