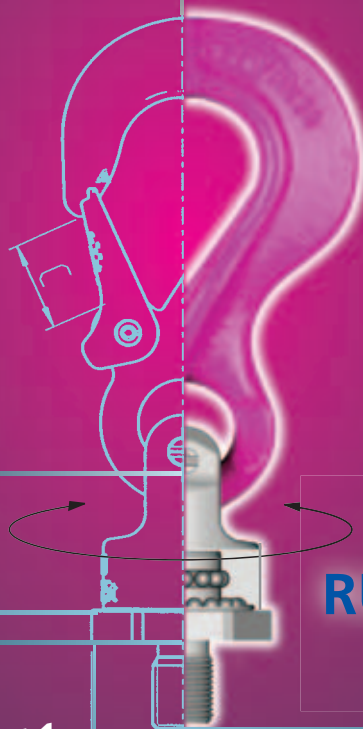


LIFTING AND LASHING POINT COLLECTION

– for bolting, for welding, simply strong –



RUD ID System

4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION

RUD means Quality

... since almost 140 years!



The passion of chain manufacturing!

The round steel chain link production in Unterkochen has been running for about 130 years. Producing chains for lifting, lashing, conveying, tire protection as well as snow and off-road chains.

Our headquarters and manufacturing plant is one of the most modern chain producing companies world wide.

Developed from a small chain forging company by the river Kocher, the RUD group has stood to the test of time to become a global player with approximately 800 motivated employees, subsidiaries and sales representatives around the world.

Almost 500 national and international protective clauses are the evidence for our progress.

The well established brand name RUD stands for quality, technical innovation and know how. Continuous research and development has enabled us not only to produce products meeting the highest expectations but also with consistent quality standards. Experience, diligence, ambition and passion are the virtues we manifest in order to remain favourite for our customers. With the above virtues in mind, RUD has successfully entered a new century with the trust and satisfaction of our customers as our prime objective for the future. What are tomorrow's concepts? This is one of the questions which RUD is trying to address while facing the challenge of consistently providing the best solutions to our customers.



Innovation and quality take first priority at RUD. We are always leading in decisive developments.

Examples in the lifting and lashing chains field:

1967: 1. Approval of quality class 5, H1-5 by the Berufsgenossenschaft (*Employers Liability Insurance Association).

1972: First chain factory to gain approval for the quality class 8, H1-8 by the BG* Technical Committee "Steel and Metal".

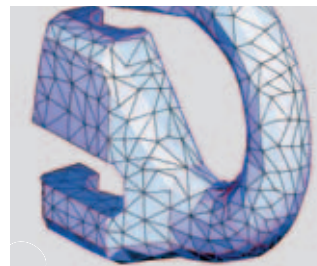
The first idea of a **mecano system from RUD** – foolproof connection of the correct chains and components, as well as suspension links. This idea became the standard at Ruhrkohle RAG (coal board mining).

1981: The first series of lifting points type RBS and RBG with a safety factor 4:1 in any direction.

1992: First chain factory to obtain certification for their quality assurance system acc. to **DIN/ISO 9001**.

1994: First chain factory to obtain approval of the BG* for their **VIP-special quality** with up to 50 % higher WLL than Grade 8.

2002: The first universal lifting point – called PPS.

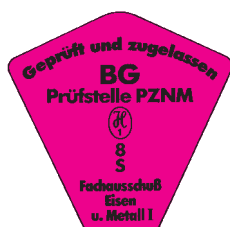


2006: First manufacturer who received the "Type Examination Certificate" from the Inspection and Certification authority PZNM of the Technical Committee MO (*Employers Liability Insurance Association = BG), for VIP-round steel chains according to PAS 1061 (Publicly Available Specification according to the Standard DIN EN 818 Grade 10).
As the First H1-10!

2007: RUD receives as the first chain manufacturer the approval for Grade 12 (D1-12) from the BG. World premiere of the strongest lifting chain ICE (Grade 12). Innovation leap in chain technology. Always one chain diameter thinner.

In December 1992, TÜV-Südwest has certified RUD's quality assurance system acc. to DIN/ISO 9001 which contributes a decisive factor to fulfill these requirements.

This fact enlarges once more the quality claim compared to the since more than 10 years practiced quality assurance system acc. to AQAP4.



8S 10 12

BG and TÜV approved!

***BG = German Employers Liability Assurance Association.**



Product Range



... the most comprehensive range of RUD-Lifting/Lashing points – with

- thread sizes from M6 to M150
- WLL ranging from 0.1 to 200 tonnes



Lifting Points – for bolting –



| | | | | | |
|--------------------------------------|--|--|---|--|---|
| <p>WLL chart and lifting methods</p> | <p>PP-S PowerPoint-Star</p> <p>Page 10</p> | <p>PP-B (Vario) PowerPoint-B</p> <p>Page 11</p> | <p>PP-VIP (Vario) PowerPoint-B</p> <p>Page 11</p> | <p>VWBG-V-Load-Ring for bolt on</p> <p>Page 12</p> | <p>VWBG-Load-Ring for bolt on</p> <p>Page 13</p> |
| | <p>VLBG-Load-Ring for bolt on</p> <p>Page 14</p> | <p>VRS Starpoint-eye bolt/eye nut</p> <p>INOX-STAR</p> <p>Page 16–18</p> | <p>RS/RM high-tensile eye bolt/eye nut</p> <p>ASP-A Thread adapter</p> <p>Page 19</p> | <p>VRBG/RBG Load-Ring for bolt on</p> <p>Page 20</p> | <p>VABH-B Excavator hook for bolt on</p> <p>Page 22</p> |



Lifting Points – for welding –



| | | | | | | | |
|--------------------------------------|--|---|--|---|---|--|---|
| <p>WLL chart and lifting methods</p> | <p>Serie WPP PowerPoint (rotation)</p> <p>Page 26–27</p> | <p>Serie WPPH PowerPoint (fixed)</p> <p>Page 28</p> | <p>VLBS-Load Ring for weld on</p> <p>Page 28</p> | <p>VRBS-FIX-Load Ring for weld on</p> <p>VRBK-FIX-Load Ring for 90° edges</p> <p>Page 30–32</p> | <p>VABH-W Excavator hook for weld on</p> <p>Page 33</p> | <p>ABA loadable from any direction 1.6 t – 31.5 t</p> <p>Page 34</p> | <p>Lashing points</p> <p>Page 34–37</p> |
|--------------------------------------|--|---|--|---|---|--|---|



Important check list

...for the designer!



- Do I intend to design my construction in such a way that it complies with the European machine guidelines or other statutory regulations?
- Will it be of interest to me how safely and economically my construction will be lifted, turned, lashed and mounted during the complete manufacturing process?

If then go on...

- Have I provided suitable suspensions (lifting-/lashing points) for every individual part weighing > 15 kg/33 lbs, every individual subassembly and for the complete construction?
- Have I prepared the load from the initial production step with the proper thread hole to attach RUD lifting points?
- Have the suspensions been arranged and chosen in such a way that the sling system and the construction itself allows a safe and smooth lifting procedure?
- Have the suspensions been chosen in such a way that every sling system (hook assembly, ring assembly, wire rope slings and round slings) can be used without necessitating additional manipulations which are time-consuming and insecure, e.g., with bolting shackles?
- Is the position at which the lifting point is to be attached suitable for the force introduction?
- Are the chosen lifting points nicely designed and shapely?



Selection of insufficient suspensions!

Eye bolt
DIN 580

Insufficient!



Lifting only in clearly defined range of sling angle (up to 45° to the vertical).
When turning the load, the eye bolt will turn out
⇒ no support ⇒ **Risk of failure!**

Incorrect loading on improvised lifting points!

Additional manipulation



Frequently, heavy plates are used which have not been designed for a possible inclined load, or they have been over dimensioned such, that hooks with a small width or shackles cannot be attached.

DIY solutions (Do it yourself solutions)

Safety hazard!



Non rated lifting points mean a high safety risk. Lifting points are load accepting devices and must be acc. to BGR and the European Machinery Guideline tested resp. inspected parts. They must have an identified "Working Load Limit", manufacturers identification markings and must meet all lifting requirement standards.

Interactive programme

...with useful hints for the user

www.rud.com



Always
"up to
date"!

More than 320 different tested and certified lifting/ lashing points (70 % of which are for bolting and 30 % for welding) can be ordered to specifically meet your requirements. All you need to consider is the weight of the load, the number of lifting/ lashing points used and the angle of inclination of the lifting sling.

With just a mouse click, the working load limits can be calculated for 14 different applications.

Using the simple layout or the much easier search function with features like the thread size of the lifting point, you can easily determine the appropriate product. Just put the required products into your shopping basket, update them upon request and print them out.

Over 600 drawings can be exported as DXF files. They are then accessible as 2D and 3D geometrical data in JGES and STEP format, which is available for CAD - systems. With lashing chain protocol and capacity calculation.





Lifting Points - for bolting -

Maximum transport weight „G“ in „tonnes“ with different lifting methods

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



Complies with the machinery directives 2006/42/EG

| Thread sizes M 6- M 150 Imperial (UNC....) and special lengths on request | | PP-S (Vario) PowerPoint-Star | | PP-B (Vario) PowerPoint-B | | PP-VIP (Vario) PowerPoint-VIP | | VLBG – Load Ring (Vario) | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|---------------------------------|-------------|------------------------------|------------|----------------------------------|------------|--------------------------|------------|-------------|----------|------------|------------|----------|----------------|----------|----------------|----------|-----------|-----------|-----------|----------------|----------------|------|------|------|------|------|------|------|
| Number of legs | Load direction | Thread size | PP-S 0.63 t | | PP-S 1.5 t | | PP-S 2.5 t | | PP-S 4 t | | PP-S 5 t | | PP-S 8 t | | Stain- less | | | | | | | | | | | | | | | |
| | | | M 12 | M 16 | M 20 | M 24 | M 30 | M 36 | VLBG 0.3 t | VLBG 0.63 t | VLBG 1 t | VLBG 1.5 t | VLBG 2.5 t | VLBG 4 t | VLBG 4 t | VLBG 5 t | VLBG 7 t Sond. | VLBG 8 t | VLBG 10 t | VLBG 15 t | VLBG 20 t | VLBG M16 RS 1t | VLBG M20 RS 2t | | | | | | | |
| | 1 0° | | 0.6 | 1.5 | 2.5 | 4 | 6.7 | 10 | | | | | | | | 0.3 | 0.6 | 1 | 1.5 | 2.5 | 4 | 4 | 5 | 7 | 8 | 10 | 15 | 20 | 1 | 2 |
| | 2 0° | | 1.2 | 3 | 5 | 8 | 13.4 | 20 | | | | | | | | 0.6 | 1.2 | 2 | 3 | 5 | 8 | 8 | 10 | 14 | 16 | 20 | 30 | 40 | 2 | 4 |
| | 1 90° | | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | | | | | | | | 0.3 | 0.6 | 1 | 1.5 | 2.5 | 4 | 4 | 5 | 7 | 8 | 10 | 15 | 20 | 1 | 2 |
| | 2 90° | | 1.2 | 3 | 5 | 8 | 10 | 16 | | | | | | | | 0.6 | 1.2 | 2 | 3 | 5 | 8 | 8 | 10 | 14 | 16 | 20 | 30 | 40 | 2 | 4 |
| | 2 0-45° | | 0.8 | 2.1 | 3.5 | 5.6 | 7 | 11.2 | | | | | | | | 0.4 | 0.8 | 1.4 | 2.1 | 3.5 | 5.6 | 5.6 | 7 | 9.8 | 11.2 | 14 | 21 | 28 | 1.4 | 2.8 |
| | 2 45-60° | | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | | | | | | | | 0.3 | 0.6 | 1 | 1.5 | 2.5 | 4 | 4 | 5 | 7 | 8 | 10 | 15 | 20 | 1 | 2 |
| | 2 unsymmetrical | | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | | | | | | | | 0.3 | 0.6 | 1 | 1.5 | 2.5 | 4 | 4 | 5 | 7 | 8 | 10 | 15 | 20 | 1 | 2 |
| | 3+4 0-45° | | 1.3 | 3.1 | 5.2 | 8.4 | 10.5 | 16.8 | | | | | | | | 0.6 | 1.3 | 2.1 | 3.1 | 5.2 | 8.4 | 8.4 | 10.5 | 14.7 | 16.8 | 21 | 31.5 | 42 | 2.1 | 4.2 |
| | 3+4 45-60° | | 0.9 | 2.2 | 3.7 | 6 | 7.5 | 12 | | | | | | | | 0.4 | 0.9 | 1.5 | 2.2 | 3.7 | 6 | 6 | 7.5 | 10.5 | 12 | 15 | 22.5 | 30 | 1.5 | 3 |
| | 3+4 unsymmetrical | | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | | | | | | | | 0.3 | 0.6 | 1 | 1.5 | 2.5 | 4 | 4 | 5 | 7 | 8 | 10 | 15 | 20 | 1 | 2 |
| | | Thread size | M 12 | M 16 | M 20 | M 24 | M 30 | M 36 | | | | | | | | M 8 | M 10 | M 12 | M 16 | M 20 | M 24 | M 27 | M 30 | M 36 | M 36 | M 42 | M 42 | M 48 | M 16 | M 20 |

RUD Lifting Points

- All parts are either 100 % crack detected or proof loaded accord. to EN 1677.
- All original bolts from RUD are 100 % crack detected.
- Loadable in any direction. Safety factor 4 : 1.
- Types VRS, VRM and VLBG have to be adjusted to the load direction.
- RUD patented features such as clamping spring (VLBS) for noise reduction and distance lugs for a perfect root pass weld increase the ease of use.

- Low installation height, high dynamic and static strength.
- RUD Lifting Points are in accordance with DIN EN 818 and 1677 with a dynamic loading of more than 20,000 load cycles. The BG* recommends: At high dynamic applications with high load cycles (permanent operation), the WLL must be reduced or ask the manufacturer.

* BG-German Employers Liability Insurance.



Lifting Points - for bolting -

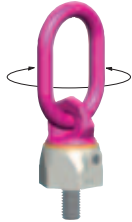
Maximum transport weight „G“ in „tonnes“
with different lifting methods

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

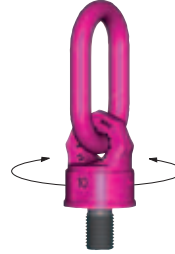


Complies with the machinery directives 2006/42/EG

**VWBG-V
Load Ring
(Vario)**



**VWBG
Load Ring**



| VWBG-V Load Ring (Vario) | | | | | | | | | | | VWBG Load Ring | | | | | | | | | | | | | | | | | | | |
|--------------------------|----------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|--------------|--------------|-----|
| WVWG-V 0.3 t | WVWG-V 0.45 t | WVWG-V 0.6 t | WVWG-V 1.0 t | WVWG-V 1.3 t | WVWG-V 1.8 t | WVWG-V 2 t | WVWG-V 2 t | WVWG-V 3.5 t | WVWG-V 3.5 t | WVWG-V 5 t | WVWG 6 (7.5) | WVWG 8 (10) | WVWG 8 (10) | WVWG 12 (13) | WVWG 12 (13) | WVWG 12 (15) | WVWG 13 (16) | WVWG 13 (16) | WVWG 14 (20) | WVWG 16 (22) | WVWG 16 (22) | WVWG 16 (25) | WVWG 16 (25) | WVWG 31.5 (40) | WVWG 31.5 (40) | WVWG 35 (48) | WVWG 35 (48) | WVWG 40 (50) | WVWG 40 (50) | |
| M 8 | M 10 | M 12 | M 14 | M 16 | M 18 | M 20 | M 22 | M 24 | M 27 | M 30 | M 33 | M 36 | M 36-39 | M 42 | M 42-45 | M 45 | M 48 | M 48-52 | M 52 | M 56 | M 56-62 | M 64 | M 64-76 | M 72 | M 72-76 | M 80 | M 80-85 | M 90 | M 90-150 | |
| 0.6 | 0.9 | 1.2 | 2.0 | 2.6 | 3.6 | 4 | 4 | 7 | 7 | 10 | 15 | 15 | 15 | 17 | 17 | 18 | 18 | 18 | 25 | 28 | 28 | 28 | 28 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 1.2 | 1.8 | 2.4 | 4.0 | 5.2 | 7.2 | 8 | 8 | 14 | 14 | 20 | 30 | 30 | 30 | 34 | 34 | 36 | 36 | 36 | 50 | 56 | 56 | 56 | 56 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 0.3 (0.4) | 0.45 (0.6) | 0.6 (0.75) | 1.0 (1.25) | 1.3 (1.5) | 1.8 (2.0) | 2 (2.5) | 2 (2.5) | 3.5 (4) | 3.5 (4) | 5 (6) | 6 (7.5) | 8 (10) | 8 (10) | 12 (13) | 12 (13) | 12 (15) | 13 (16) | 13 (16) | 14 (20) | 16 (22) | 16 (22) | 16 (25) | 16 (25) | 31.5 (40) | 31.5 (40) | 35 (48) | 35 (48) | 40 (50) | 40 (50) | |
| 0.6 (0.8) | 0.9 (1.2) | 1.2 (1.5) | 2.0 (2.5) | 2.6 (3) | 3.6 (4.0) | 4 (5) | 4 (5) | 7 (8) | 7 (8) | 10 (12) | 12 (15) | 16 (20) | 16 (20) | 24 (26) | 24 (26) | 24 (30) | 26 (32) | 26 (32) | 28 (40) | 32 (44) | 32 (44) | 32 (50) | 32 (50) | 63 (80) | 63 (80) | 70 (96) | 70 (96) | 80 (100) | 80 (100) | |
| 0.42 (0.56) | 0.63 (0.84) | 0.84 (1.05) | 1.4 (1.75) | 1.81 (2.1) | 2.52 (2.8) | 2.8 (3.5) | 2.8 (3.5) | 4.9 (5.6) | 4.9 (5.6) | 7 (8.4) | 8.4 (10.5) | 11.2 (14) | 11.2 (14) | 16.8 (18.2) | 16.8 (18.2) | 16.8 (21) | 18.2 (22.4) | 18.2 (22.4) | 19.6 (28) | 22.4 (30.8) | 22.4 (30.8) | 22.4 (35) | 22.4 (35) | 44.1 (56) | 44.1 (56) | 49 (67.2) | 49 (67.2) | 56 (70) | 56 (70) | |
| 0.3 (0.4) | 0.45 (0.6) | 0.6 (0.75) | 1.0 (1.25) | 1.3 (1.5) | 1.8 (2) | 2 (2.5) | 2 (2.5) | 3.5 (4) | 3.5 (4) | 5 (6) | 6 (7.5) | 8 (10) | 8 (10) | 12 (13) | 12 (13) | 12 (15) | 13 (16) | 13 (16) | 14 (20) | 16 (22) | 16 (22) | 16 (25) | 16 (25) | 31.5 (40) | 31.5 (40) | 35 (48) | 35 (48) | 40 (50) | 40 (50) | |
| 0.3 (0.4) | 0.45 (0.6) | 0.6 (0.75) | 1.0 (1.25) | 1.3 (1.5) | 1.8 (2) | 2 (2.5) | 2 (2.5) | 3.5 (4) | 3.5 (4) | 5 (6) | 6 (7.5) | 8 (10) | 8 (10) | 12 (13) | 12 (13) | 12 (15) | 13 (16) | 13 (16) | 14 (20) | 16 (22) | 16 (22) | 16 (25) | 16 (25) | 31.5 (40) | 31.5 (40) | 35 (48) | 35 (48) | 40 (50) | 40 (50) | |
| 0.63 (0.84) | 0.94 (1.26) | 1.26 (1.57) | 2.1 (2.62) | 2.73 (3.15) | 3.78 (4.2) | 4.2 (5.25) | 4.2 (5.25) | 7.35 (8.4) | 7.35 (8.4) | 10.5 (12.6) | 12.6 (15.7) | 16.8 (21) | 16.8 (21) | 25.2 (27.3) | 25.2 (27.3) | 25.2 (31.5) | 27.3 (33.6) | 27.3 (33.6) | 29.4 (42) | 33.6 (46.2) | 33.6 (46.2) | 33.6 (52.5) | 33.6 (52.5) | 66.15 (84) | 66.15 (84) | 73.5 (100) | 73.5 (100) | 84 (105) | 84 (105) | |
| 0.45 (0.6) | 0.67 (0.9) | 0.9 (1.12) | 1.5 (1.87) | 1.95 (2.25) | 2.7 (3) | 3 (3.75) | 3 (3.75) | 5.25 (6) | 5.25 (6) | 7.5 (9) | 9 (11.2) | 12 (15) | 12 (15) | 18 (19.5) | 18 (19.5) | 18 (22.5) | 19.5 (24) | 19.5 (24) | 21 (30) | 24 (33) | 24 (33) | 24 (37.5) | 24 (37.5) | 47.25 (60) | 47.25 (60) | 52.5 (72) | 52.5 (72) | 60 (75) | 60 (75) | |
| 0.3 (0.4) | 0.45 (0.6) | 0.6 (0.75) | 1.0 (1.25) | 1.3 (1.5) | 1.8 (2) | 2 (2.5) | 2 (2.5) | 3.5 (4) | 3.5 (4) | 5 (6) | 6 (7.5) | 8 (10) | 8 (10) | 12 (13) | 12 (13) | 12 (15) | 13 (16) | 13 (16) | 14 (20) | 16 (22) | 16 (22) | 16 (25) | 16 (25) | 31.5 (40) | 31.5 (40) | 35 (48) | 35 (48) | 40 (50) | 40 (50) | |
| M 8 | M 10 | M 12 | M 14 | M 16 | M 18 | M 20 | M 22 | M 24 | M 27 | M 30 | M 33 | M 36 | M 36-39 | M 42 | M 42-45 | M 45 | M 48 | M 48-52 | M 52 | M 56 | M 56-60 | M 64 | M 64-76 | M 72 | M 72-76 | M 80 | M 80-85 | M 90 | M 90-150 | |

We have the right tools for you. Call us! Phone no. or e-mail:

+49 7361-504-1170 or slings@rud.com

The perfect service for the CAD department.

We provide you with geometry datas for your design.

For the calculation of the right lifting point. Especially useful for the designer is the 3D-presentation of the lifting points.

...click www.rud.com

Click on **lifting means** → **lifting points**



Subject to technical alternatives!





Lifting Points - for bolting -

Maximum transport weight „G“ in „tonnes“ with different lifting methods

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



Complies with the machinery directives 2006/42/EG

| Thread sizes M 6- M 150 Imperial (UNC....) and special lengths on request | | VRS Starpoint Vario eyebolt | VRM Starpoint Vario eyenut | INOX-STAR | RS/RM High-tensile eye bolt/eye nut | RBG/VRBG Load Ring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|--------------------------------|-------------------------------|-----------------|--|-----------------------|-------------------|-------------------|-------------------|-------------------|---------|---------|----------------|---------|----------|----------|----------|---|----------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------|-----------|-----------|-------------|-----------|-----------|
| Number of legs Load direction | Thread size | * * * * * | | | | | | | | | | | Stain- less | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Typ | VRS M6 / VRM M6 | VRS M8 / VRM M8 | VRS M10 / VRM M10 | VRS M12 / VRM M12 | VRS M16 / VRM M16 | VRS M20 / VRM M20 | VRS M24 / VRM M24 | VRS M30 / VRM M30 | VRS M36 | VRS M42 | | VRS M48 | INOX M12 | INOX M16 | INOX M20 | INOX M24 | INOX M30 | RS M6 / RM M6 | RS M8 / RM M8 | RS M10 / RM M10 | RS M12 / RM M12 | RS M14 / RM M14 | RS M16 / RM M16 | RS M20 / RM M20 | RS M24 / RM M24 | RS M30 / RM M30 | RS M36 / RM M36 | RS M42 / RM M42 | RS M48 / RM M48 | RBG 3 t | VRBG 10 t | VRBG 16 t | VRBG 31.5 t | VRBG 50 t | WBPG 80 t |
| | 1 0° | 0.5 | 1 | 1 | 2 | 4 | 6 | 8 | 12 | 16 | 24 | 32 | 1.2 | 2.4 | 3.6 | 5.2 | - | 0.4 | 0.8 | 1 | 1.6 | 3 | 4 | 6 | 8 | 12 | 16 | 24 | 32 | 3 | 10 | 16 | 31.5 | 50 | 85 | 100 | 200 |
| | 2 0° | 1 | 2 | 2 | 4 | 8 | 12 | 16 | 24 | 32 | 48 | 64 | 2.4 | 4.8 | 7.2 | 10.4 | - | 0.8 | 1.6 | 2 | 3.2 | 6 | 8 | 12 | 16 | 24 | 32 | 48 | 64 | 6 | 20 | 32 | 63 | 100 | 170 | 200 | 400 |
| | 1 90° | 0.1 | 0.3 | 0.4 | 0.7 | 1.5 | 2.3 | 3.2 | 4.5 | 7 | 9 | 12 | 0.5 | 1.0 | 2.0 | 2.5 | - | <p>We recommend to use either "VRS Starpoint" or "PowerPoint" which can be adjusted to the direction of pull!</p> | | | | | | | | | | | 3 | 10 | 16 | 31.5 | 50 | 85 | 100 | 200 | |
| | 2 90° | 0.2 | 0.6 | 0.8 | 1.5 | 3 | 4.6 | 6.4 | 9 | 14 | 18 | 24 | 1.0 | 2.0 | 4.0 | 5.0 | - | | | | | | | | | | | | 6 | 20 | 32 | 63 | 100 | 170 | 200 | 400 | |
| | 2 0-45° | 0.14 | 0.42 | 0.56 | 1 | 2.1 | 3.2 | 4.4 | 6.3 | 9.8 | 12.6 | 16.8 | 0.7 | 1.4 | 2.8 | 3.5 | - | | | | | | | | | | | | 4.2 | 14 | 22.4 | 44.1 | 70 | 119 | 140 | 280 | |
| | 2 45-60° | 0.1 | 0.3 | 0.4 | 0.7 | 1.5 | 2.3 | 3.2 | 4.5 | 7 | 9 | 12 | 0.5 | 1.0 | 2.0 | 2.5 | - | | | | | | | | | | | | 3 | 10 | 16 | 31.5 | 50 | 85 | 100 | 200 | |
| | 2 unsymmetrical | 0.1 | 0.3 | 0.4 | 0.7 | 1.5 | 2.3 | 3.2 | 4.5 | 7 | 9 | 12 | 0.5 | 1.0 | 2.0 | 2.5 | - | | | | | | | | | | | | 3 | 10 | 16 | 31.5 | 50 | 85 | 100 | 200 | |
| | 3+4 0-45° | 0.21 | 0.63 | 0.8 | 1.5 | 3.1 | 4.8 | 6.7 | 9.4 | 14.7 | 18.9 | 25 | 1.0 | 2.1 | 4.2 | 5.2 | - | | | | | | | | | | | | 6.3 | 21 | 33.6 | 66 | 105 | 178 | 210 | 420 | |
| | 3+4 45-60° | 0.15 | 0.45 | 0.6 | 1.1 | 2.2 | 3.4 | 4.8 | 6.7 | 10.5 | 13.5 | 18 | 0.7 | 1.5 | 3.0 | 3.7 | - | | | | | | | | | | | | 4.5 | 15 | 24 | 47.5 | 75 | 127 | 150 | 300 | |
| | 3+4 unsymmetrical | 0.1 | 0.3 | 0.4 | 0.7 | 1.5 | 2.3 | 3.2 | 4.5 | 7 | 9 | 12 | 0.5 | 1.0 | 2.0 | 2.5 | - | | | | | | | | | | | | 3 | 10 | 16 | 31.5 | 50 | 85 | 100 | 200 | |
| | Thread size | M 6 | M 8 | M 10 | M 12 | M 16 | M 20 | M 24 | M 30 | M 36 | M 42 | M 48 | M 12 | M 16 | M 20 | M 24 | M 30 | | | | | | | | | | | | M 6 | M 8 | M 10 | M 12 | M 14 | M 16 | M 20 | M 24 | M 30 |

* The WLL values of the URM are only valid with threaded bolts of quality 10.9 min.

We have the right tools for you. Call us! Phone no. or e-mail:

+49 7361-504-1170 or slings@rud.com



Always
"up to
date"!

The perfect service for the CAD department.
We provide you with geometry datas for your design.
For the calculation of the right lifting point. Especially
useful for the designer is the 3D-presentation of the lifting points.

...click www.rud.com

Click on **lifting means** → **lifting points**

Subject to technical alternations!



RUD ID System®

Inspection and administration system Testing and inspection made easy



Required regular inspections of lifting means are currently still work-intensive and Error-prone.

But due to the **RFID-Technology** (Radio-Frequency-Identification) these time-consuming Methods and the huge amount of paper work became history. Now chain slings/components can be inspected touch-free, faultless and fast, and also be register and managed

The modern and digital age of documentation and the management of work equipment reaches hereby a new height. The valid data protection requirements will of course be observed.

- Reduction of the inspection costs and the time exposure
- Maintenance and administration of relevant product data and documents (RUD webportal)

- Digital listing of all components which must be inspected
- Time saving, simple retrofit of components based on already collected data
- No installation on computer or server necessary
- Automatic generating of test reports
- Uncomplicated and extendable software for the administration
- RUD readers are compatible with common high-frequency transponders
- Cost effective modular solution

The usage of RFID transponders in a drillhole at safety components for lifting and conveying is **protected by a patent**

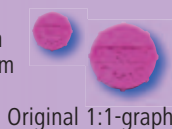


RUD-ID-POINT®

The exclusive and unbeatable **RUD-ID-Point®** convinces at complicated usages and circumstances, applicable from -80°C up to +270°C, very high resistancy against beats, water, dirt, no detracton of components by the in parts integrated transponder.

RUD-ID-Point® (13.56 MHz HF): Press-fit transponder in metal surrounding, without necessity of glue.

Size: Ø 4 mm x 3.5 mm
Ø 8 mm x 3.25 mm



Original 1:1-graph

RUD-ID-TAG® (13.56 MHz HF):

With stainless steel metal reinforced tag for chains, connecting links, wire ropes, alternatively to bolt-on.

Size: 50 x 32 x 6 mm



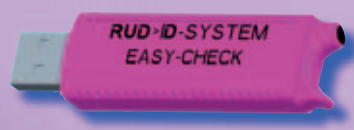
Beside both very robust and resistible transponders, additional transponder variants (glue-on, sticker transponders etc.) can be offered for different kind of usage applications.

RUD-ID-EASY-CHECK®

RUD-ID-EASY-CHECK®-readers are compatible with the common high-frequency readers (ISO15693). The transfer of the identification number is done via USB or Bluetooth and can be transferred into the RUD user-owned **RUD-ID-NET®**-application as well as almost into all Office applications like WordPad, MS Word, MS Excel, OpenOffice and SAP or other programs.

RUD-ID-EASY-CHECK® (13.56 MHz): USB readers for reading the RUD-ID-Point identification number

RUD-ID-DISPLAY-CHECK® (13.56 MHz): Bluetooth reader, reads the unique **RUD-ID-Point®**-identification number, shows it on the integrated LCD-display and transfers it to any Bluetooth compatible receiver (with a reach of 10 Meters).



RUD-ID-NET®



RUD-ID-NET®-Application makes many things easier. This internet based application supports you during the inspection and minimizes the IT administration effort:

- Uncomplicated digital maintenance, analysis, administration of product data, test reports as well as documents (efficient testing, automatic test date reminder message for the by law required tests, automatic test reports)
- Digital connection to most current product information and documents (f.e. test certificates) by access to the RUD web portal.
- Applications for all common testing required work equipments (f.e. work platforms, roller shutters etc.)
- Large, already existing product data base which makes the administration of your work equipment much easier.





Lifting Points - for bolting -

PowerPoint
...360° swivelling - PP-S -
Star



4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

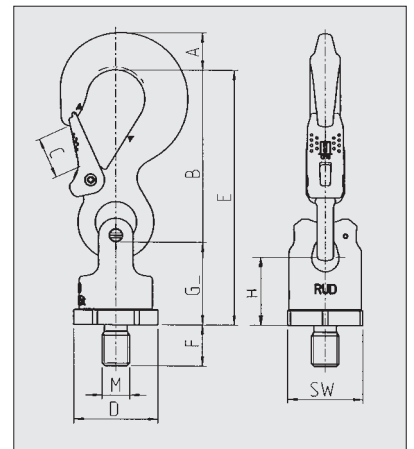


▲ Gauge marks to determine overload

Complies with the machinery directives 2006/42/EG

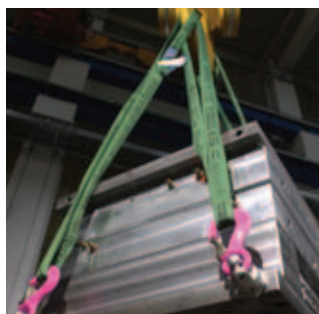
PowerPoint-Star - PP-S -

- Double ballbearing for free turning and soft winding
- Suitable for all lifting/lashing means for example hooks, rings and slings.
- **Non-protruding hook tip**
- Forged safety latch, engages in the tip of the hook therefore protected against lateral bending.
- Triple coiled corrosion protected double leg spring
- Thickened tip of the hook prevents handling malpractices and resists bending.
- Wearing edges on both sides and gauge marks for measuring the width of the hook opening.
- Not suitable for permanent swivelling under load
- Even under full load, can be turned in a 90° position from the bolt centre line.



| Type | WLL (t) | A | B | C | D | E | F Standard | F Vario | G | H | M | SW | Weight (kg) | Torque | Ref.-No. (Standard) | Ref.-No. (Vario) |
|-----------------------|----------|----|-----|----|-----|-----|------------|---------|-----|----|--------|----|-------------|------------------------------------|---------------------|------------------|
| PP-S-0.63t-M12 | 0.63 | 13 | 75 | 18 | 40 | 116 | 18 | 12-140 | 41 | 33 | 12 | 36 | 0.4 | According to the user instructions | 7990719 | 8600320 |
| PP-S-1.5t-M16 | 1.5 | 20 | 97 | 25 | 46 | 147 | 24 | 16-180 | 50 | 40 | 16 | 41 | 1.0 | | 7989719 | 8600321 |
| PP-S-2.5t-M20 | 2.5 | 28 | 126 | 30 | 61 | 187 | 30 | 20-223 | 61 | 47 | 20 | 55 | 1.7 | | 7989075 | 8600322 |
| PP-S-4t-M24 | 4.0 | 36 | 150 | 35 | 78 | 227 | 36 | 24-255 | 77 | 60 | 24 | 70 | 3.2 | | 7989076 | 8600323 |
| PP-S-5t-M30 | 5.0(6.7) | 37 | 174 | 40 | 95 | 267 | 45 | 30-330 | 93 | 71 | 30 | 85 | 7.2 | | 7989720 | 8600324 |
| PP-S-8t-M36 | 8.0(10) | 49 | 208 | 48 | 100 | 310 | 54 | 36-300 | 102 | 76 | 36 | 90 | 9.2 | | 7989077 | 8600305 |
| PP-S-0.63t-1/2"-13UNC | 0.63 | 13 | 75 | 18 | 40 | 116 | 18 | - | 41 | 33 | 1/2" | 36 | 0.4 | According to the user instructions | 7990720 | 8600320 |
| PP-S-1.5t-5/8"-11UNC | 1.5 | 20 | 97 | 25 | 46 | 147 | 24 | 16-55 | 50 | 40 | 5/8" | 41 | 1.0 | | 7989908 | 8600321 |
| PP-S-2.5t-3/4"-10UNC | 2.5 | 28 | 126 | 30 | 61 | 187 | 30 | 19-65 | 61 | 47 | 3/4" | 55 | 1.7 | | 7989909 | 8600322 |
| PP-S-2.5t-7/8"-9UNC | 2.5 | 28 | 126 | 30 | 61 | 187 | 30 | - | 61 | 47 | 7/8" | 55 | 1.7 | | 7989910 | 8600323 |
| PP-S-4t-1"-8UNC | 4.0 | 36 | 150 | 35 | 78 | 227 | 36 | 25-74 | 77 | 60 | 1" | 70 | 3.2 | | 7989911 | 8600323 |
| PP-S-5t-1 1/4"-7UNC | 5.0(6.7) | 37 | 174 | 40 | 95 | 267 | 45 | 31-91 | 93 | 71 | 1 1/4" | 85 | 7.2 | | 7989912 | 8600324 |

() increased WLL at axial load direction



Subject to technical alternations!

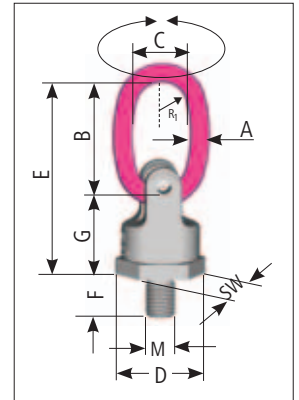


Complies with the machinery directives 2006/42/EG

PP-B – the ring connection for hook assemblies

| Type | WLL (t) | A | B | C | D | E | F | G | M | SW | R ₁ | Weight (kg) | Ref.-No. | Ref.-No. |
|----------------|----------|----|-----|----|-----|-----|----|-----|----|----|----------------|-------------|----------|--------------------------|
| | | | | | | | | | | | | | metric | imperial |
| PP-B-0.63t-M12 | 0.63 | 9 | 65 | 35 | 40 | 105 | 18 | 41 | 12 | 36 | 15 | 0.35 | 7989522 | 0.63t-1/2"-13UNC 7989901 |
| PP-B-1.5t-M16 | 1.5 | 11 | 65 | 35 | 46 | 115 | 24 | 50 | 16 | 41 | 15 | 0.6 | 7989523 | 1.5t-5/8"-11UNC 7989902 |
| PP-B-2.5t-M20 | 2.5 | 13 | 75 | 40 | 61 | 135 | 30 | 61 | 20 | 55 | 18 | 1.1 | 7989081 | 2.5t-3/4"-10UNC 7989903 |
| | | | | | | | | | | | | | -- | 2.5t-7/8"-9UNC 7989904 |
| PP-B-4t-M24 | 4.0 | 16 | 95 | 45 | 78 | 172 | 36 | 77 | 24 | 70 | 20 | 2.1 | 7989082 | 4t-1"-8UNC 7989905 |
| PP-B-5t-M30 | 5.0(6.7) | 21 | 130 | 60 | 95 | 223 | 45 | 93 | 30 | 85 | 25 | 4.5 | 7989524 | 5t-1 1/4"-7UNC 7989906 |
| PP-B-8t-M36 | 8.0(10) | 24 | 140 | 65 | 100 | 242 | 54 | 102 | 36 | 90 | 28 | 6.1 | 7989083 | – – |

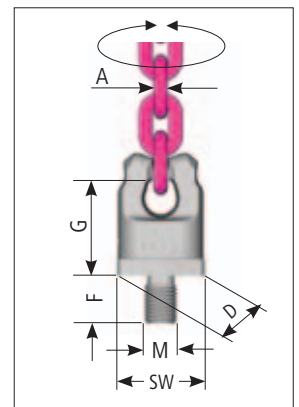
() increased WLL at axial load direction



PP-VIP – for direct chain connection of the VIP chain

| Type | WLL (t) | A VIP-Chain-connection | D | F | G | M | SW | Weight | Ref.-No. | Ref.-No. |
|-------------------|----------|---------------------------|-----|----|-----|----|----|--------|----------|--------------------------|
| | | | | | | | | | metric | imperial |
| PP-VIP4-0.63t-M12 | 0.63 | 4 | 40 | 18 | 41 | 12 | 36 | 0.25 | 7989525 | 0.63t-1/2"-13UNC 7989920 |
| PP-VIP6-1.5t-M16 | 1.5 | 6 | 46 | 25 | 50 | 16 | 41 | 0.45 | 7989526 | 1.5t-5/8"-11UNC 7989921 |
| PP-VIP8-2.5t-M20 | 2.5 | 8 | 61 | 30 | 61 | 20 | 55 | 0.95 | 7989527 | 2.5t-3/4"-10UNC 7989922 |
| | | | | | | | | | -- | 2.5t-7/8"-9UNC 7989923 |
| PP-VIP10-4t-M24 | 4.0 | 10 | 78 | 36 | 77 | 24 | 70 | 2.2 | 7989528 | 4t-1"-8UNC 7989924 |
| PP-VIP13-5t-M30 | 5.0(6.7) | 13 | 95 | 45 | 93 | 30 | 85 | 3.5 | 7989529 | 5t-1 1/4"-7UNC 7989925 |
| PP-VIP16-8t-M36 | 8.0(10) | 16 | 100 | 54 | 102 | 36 | 90 | 5.2 | 7989530 | – – |

() increased WLL at axial load direction



PP-S/PP-B/PP-VIP

– all types in special thread lengths available

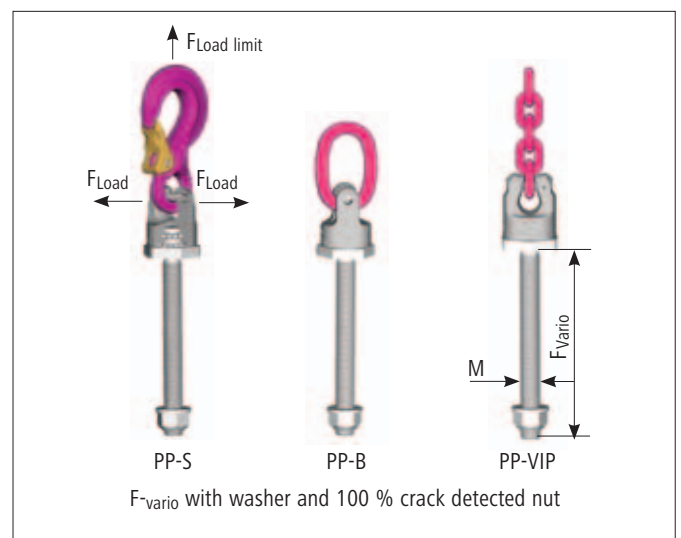
Please indicate type, thread size and F-vario!

| Type | WLL (t) | thread size | F-vario max. | thread size | F-vario max. |
|---------------------|------------|-------------|--------------|-------------|--------------|
| So-PP-S/PP-B/PP-VIP | 0.6 (0.63) | M 12 | 140 | 1/2"-13UNC | 45 |
| So-PP-S/PP-B/PP-VIP | 1.0 (1.5) | M 14 | 65 | – | – |
| So-PP-S/PP-B/PP-VIP | 1.3 (1.5) | M 16 | 180 | 5/8"-11UNC | 55 |
| PP-S/PP-B/PP-VIP | 2.5 | M 20 | 200 | – | – |
| So-PP-S/PP-B/PP-VIP | 3.5 (4) | M 24 | 255 | 1"-8UNC | 74 |
| So-PP-S/PP-B/PP-VIP | 5.0 (6.7) | M 30 | 330 | 1 1/4"-7UNC | 91 |
| So-PP-S/PP-B/PP-VIP | 8.0 (10) | M 36 | 300 | – | – |

Warranty can only be guaranteed with originally assembled RUD components and chains!

- Easy identification of WLL
- Loadable in any direction. Safety factor 4 : 1
- Double ballbearing for free turning and soft winding
- Cr, Ni, Mo-steel special quenched and tempered
- All parts 100 % crack detected
- Max. load limit at smallest thread diameter
- Variable screw lengths available
- Can also be used for through holes
- Surface: pink powder coated
- Fast amortization because of easy handling

Notice: Follow the Instructions for use!



- Can be turned under full load even in a 90° position from the bolt centre line.
- Not suitable for permanent swivelling under full load





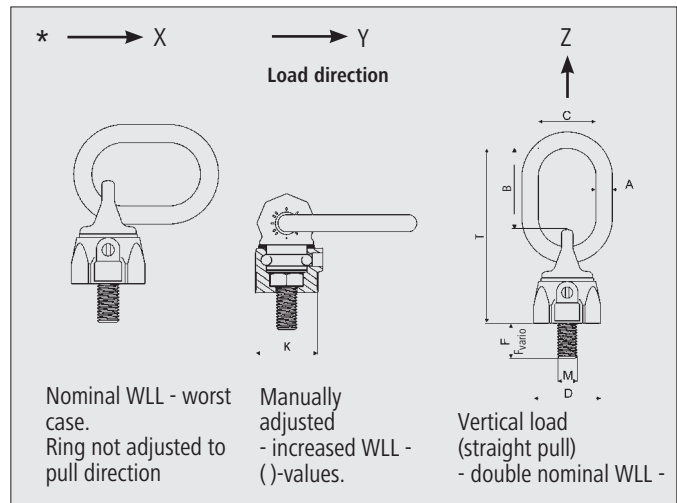
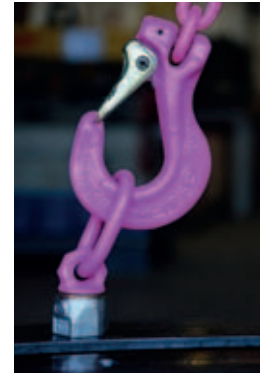
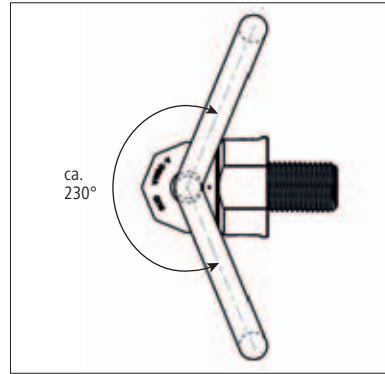
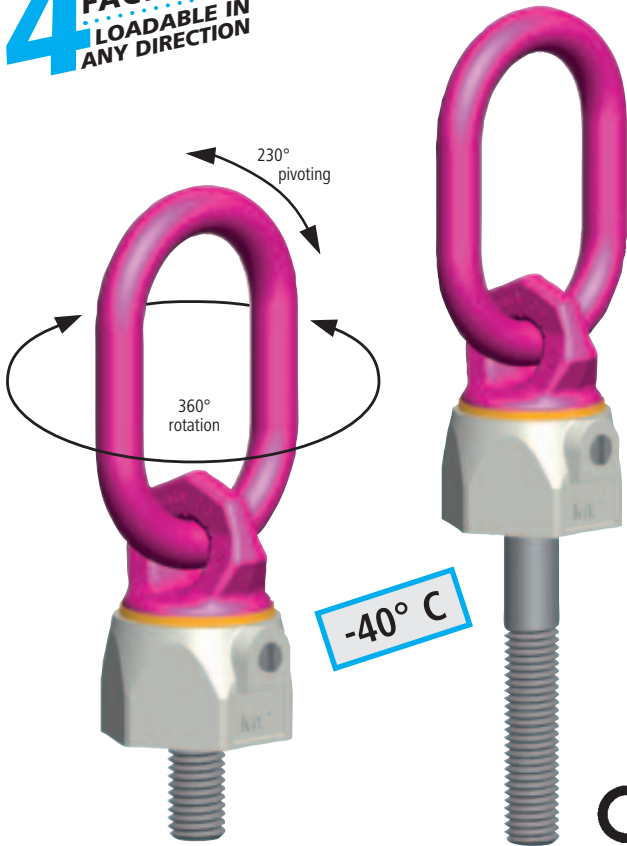
Lifting Points - for bolting - Load Ring bolted - VWBG-V -

– 360° swivelling/230° pivoting –

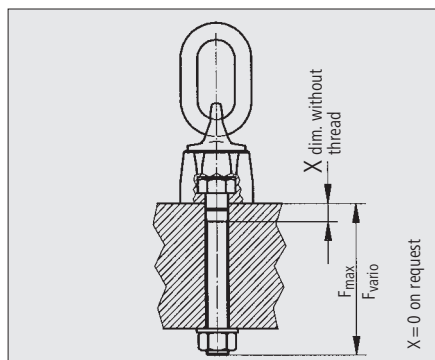


Complies with the machinery directives 2006/42/EG

**4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION**



| Type | WLL [t] | A [mm] | B [mm] | C [mm] | D [mm] | F _{stand.} [mm] | F _{vario} [mm] | K [mm] | M [mm] | T [mm] | X [mm] | Ref.-No. Stand. | Ref.-No. Vario with washer and nut |
|-----------------|-----------|--------|--------|--------|--------|--------------------------|-------------------------|--------|--------|--------|--------|-----------------|------------------------------------|
| VWBG-V 0.3 M8 | 0.3(0.4) | 8 | 31 | 29 | 30 | 13 | 8-102 | 28 | 8 | 76 | 18 | 7103720 | 8600330 |
| VWBG-V 0.45 M10 | 0.45(0.6) | 8 | 31 | 29 | 36 | 17 | 10-122 | 30 | 10 | 78 | 19 | 7103715 | 8600331 |
| VWBG-V 0.6 M12 | 0.6(0.7) | 10 | 49 | 35 | 42 | 21 | 12-140 | 36 | 12 | 107 | 19 | 7100180 | 8600332 |
| VWBG-V 1.0 M14 | 1.0(1.25) | 13 | 46 | 38 | 48 | 21 | 14-65 | 41 | 14 | 113 | – | – | 8600337 |
| VWBG-V 1.3 M16 | 1.3(1.5) | 13 | 46 | 38 | 48 | 25 | 16-180 | 41 | 16 | 113 | 28 | 7100430 | 8600333 |
| VWBG-V 1.8 M18 | 1.8(2.0) | 13 | 54 | 35 | 62 | 27 | 18-83 | 55 | 18 | 137 | – | – | 8600338 |
| VWBG-V 2.0 M20 | 2.0(2.5) | 13 | 54 | 35 | 62 | 33 | 20-223 | 55 | 20 | 137 | 30 | 7100800 | 8600334 |
| VWBG-V 2.0 M22 | 2.0(2.5) | 13 | 54 | 35 | 62 | 33 | 22-94 | 55 | 22 | 137 | – | – | 8600334 |
| VWBG-V 3.5 M24 | 3.5(4.0) | 18 | 66 | 40 | 81 | 40 | 24-255 | 70 | 24 | 173 | 25 | 7100640 | 8600335 |
| VWBG-V 3.5 M27 | 3.5(4.0) | 18 | 66 | 40 | 81 | 40 | 27-92 | 70 | 27 | 173 | – | – | 8600335 |
| VWBG-V 5.0 M30 | 5.0(6.0) | 22 | 90 | 50 | 99 | 50 | 30-330 | 85 | 30 | 221 | 32 | 7100650 | 8600336 |



Example to investigate the required thread length F_{vario}:
F_{vario}: Plate thickness 50 mm, through hole for M 20 bolt, height of nut 22 mm, thickness of the washer 3 mm, plus bolt projection 5 mm = 80 mm.
Order length: VWBG-V-2.0 M 20 x 80.

***Caution:** During lifting, the ring of the lifting point can engage in any position. The embossed WLL is for the worst case scenario (see image X). If the ring is manually adjusted to the horizontal position, higher WLL values in brackets () can be chosen (see image Y). In case of straight pull (see image Z: vertical load direction) Maximum WLL can be chosen. The nominal WLL can be increased acc. the chart from page 7!

Swivelling lifting point:

- Loadable in any direction. Safety factor 4 : 1.
- Turnable under load in vertical direction.
- Not suitable for permanent swivelling under full load, especially in 90° direction.
- Simple installation, just a thread hole is required.
- Variable lengths (Vario) available.
- Can also be used for through holes.
- Bolts 100 % magnetic crack detected! Surface protection CORRUD-DT (20 times better than zinc plating).
- High tensile, approved suspension ring acc. EN 1677-4.
- Surface: Ring pink powder coating, housing zinc plated.
- Type Vario with washer and 100 % crack detected nut.
- VWBG-V and VWBG are also available with Imperial thread.
- Turning without jerk due to additional bush bearing washer.
- Wear marks in the main load directions 45°, 60° and 90°.



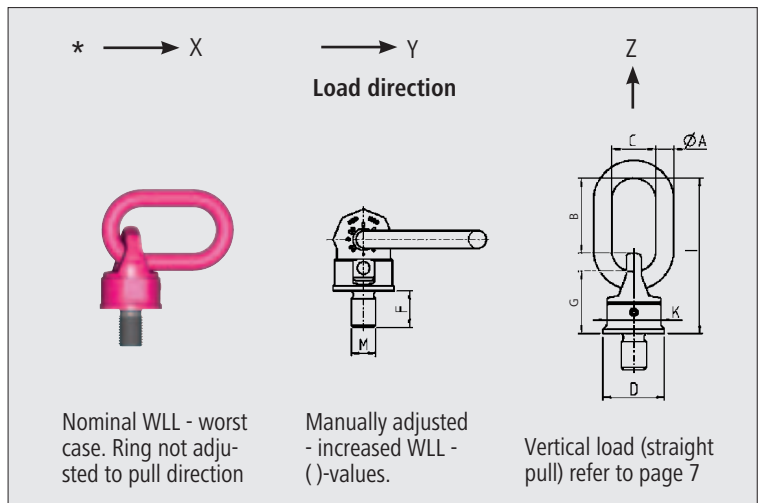
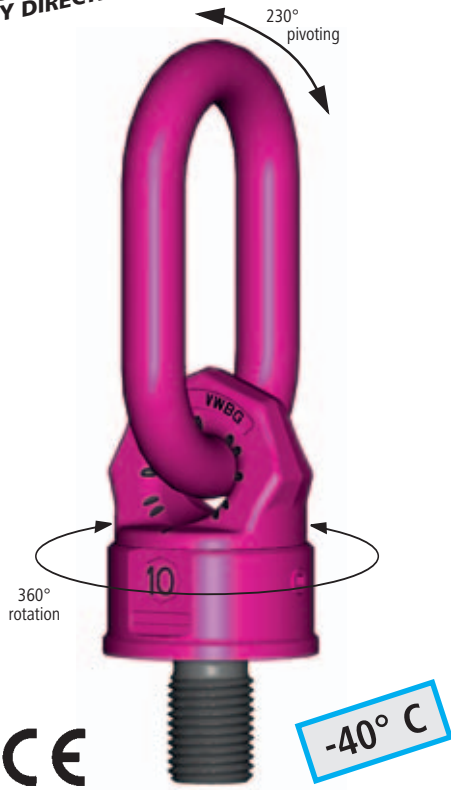
Lifting Points - for bolting - Load Ring bolted - VWBG -

- 360° swivelling/230° pivoting – with a ball bearing



Complies with the machinery directives 2006/42/EG

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



| Type | WLL [t] | A [mm] | B [mm] | C [mm] | D [mm] | F _{stand.} [mm] | F _{vario} [mm] | G [mm] | K [mm] | M [mm] | T [mm] | Ref.-No. Stand. | Ref.-No. Vario with washer and nut |
|----------------------|----------|--------|--------|--------|--------|--------------------------|-------------------------|--------|--------|--------|--------|-----------------|------------------------------------|
| VWBG 6(7.5) M33 | 6(7.5) | 22 | 86 | 50 | 90 | — | 33-300 | 94 | 80 | 33 | 208 | — | 8600150 |
| VWBG 8(10) M36-39 | 8(10) | 22 | 86 | 50 | 90 | 54 | 36-300 | 94 | 80 | 36-39 | 208 | 7999059 | 8600451 |
| VWBG 12(13) M42-45 | 12(13) | 26 | 111 | 65 | 98 | 63 | 42-300 | 96 | 85 | 42-45 | 235 | 7999044 | 8600452 |
| VWBG 12(15) M45 | 12(15) | 26 | 111 | 65 | 98 | 67 | — | 96 | 85 | 45 | 235 | 7900455 | — |
| VWBG 13(16) M48-52 | 13(16) | 26 | 111 | 65 | 98 | 68 | 48-300 | 96 | 85 | 48-52 | 235 | 7999045 | 8600453 |
| VWBG 14(20) M52 | 14(20) | 32 | 119 | 70 | 120 | 78 | 52-300 | 120 | 95 | 52 | 274 | 7901081 | 8600158 |
| VWBG 16(22) M56-62 | 16(22) | 32 | 119 | 70 | 120 | 84 | 56-300 | 120 | 95 | 56-62 | 274 | 7999004 | 8600454 |
| VWBG 16(25) M64-76 | 16(25) | 32 | 119 | 70 | 120 | 94 | 64-300 | 120 | 95 | 64-76 | 274 | 7999043 | 8600455 |
| VWBG 31.5(40) M72-76 | 31.5(40) | 46 | 130 | 90 | 170 | 108 | 72-300 | 159 | 145 | 72-76 | 338 | 7900097 | 8600456 |
| VWBG 35(48) M80-85 | 35(48) | 46 | 130 | 90 | 170 | 120 | 80-300 | 159 | 145 | 80-85 | 338 | 7900100 | 8600457 |
| VWBG 40(50) M90-150 | 40(50) | 46 | 130 | 90 | 170 | 135 | 90-300 | 159 | 145 | 90-150 | 338 | 7995545 | 8600157 |
| VWBG 40(50) M90-150 | 40(50) | 46 | 170 | 110 | 170 | 135 | 90-300 | 159 | 145 | 90-150 | 378 | 7903408 | 8600458 |

Definieren Sie bitte Ihre gewünschten Abmessungen F und M

***Caution:** During lifting, the ring of the lifting point can engage in any position. The embossed WLL is for the worst case scenario (see image X). If the ring is manually adjusted to the horizontal position, higher WLL values in brackets () can be chosen (see image Y). In case of straight pull (see image Z: vertical load direction) Maximum WLL can be chosen. The nominal WLL can be increased acc. the chart from page 7!

For heavy loads which have to be turned and swivelled.

- **With ball bearings.** Swivels under full load.
- Not suitable for permanent swivelling under full load, especially in 90° direction.
- Loadable in any direction. Safety factor 4 : 1.
- Suspension ring manufactured acc. EN 1677-4 grade 80 (100 % proof loaded).
- S = max. allowed gap, see hints for Installation page 39.
- VWBG: Wear marks in the main load directions 45°, 60° and 90°.

Safety notice:

Please provide plain bolting surface. The countersunk for the thread should be: thread diameter plus 4 mm (0,15 inch). The base material of the workpiece must be capable to withstand the occurring lifting forces. Minimum required material = S235JR/St 37 (1.0037).





Lifting Points - for bolting - Load Ring bolted - VLBG -

– ...will turn 360° –

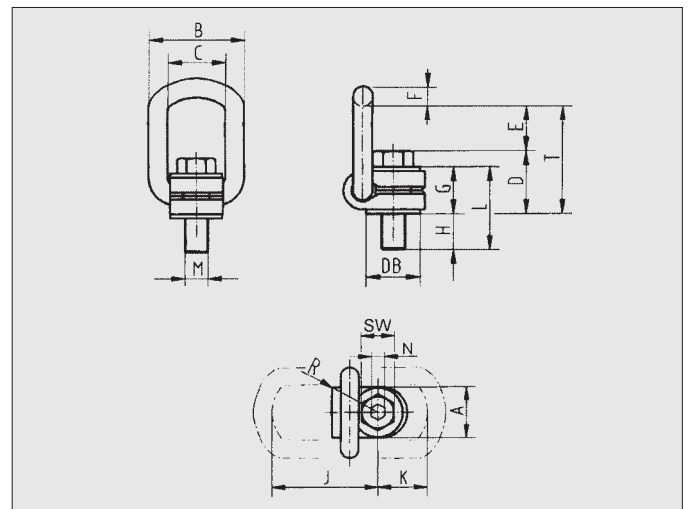
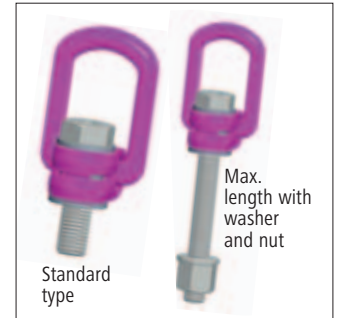
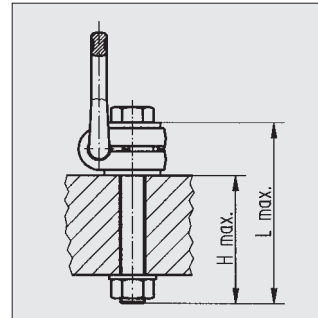


Complies with the machinery directives 2006/42/EG

**4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION**



-40° C



| Type | WLL (t) | A | B | C | D | E | F | G | H stand. | H max. | J | K | L stand. | L max. | M | N | SW | R | T | DB | Weight kg | Torque | Ref.-No. (Standard) | Ref.-No. Vario with washer and nut | |
|--|---------|----|-----|-----|-----|-----|------|----|----------|--------|-----|-----|----------|--------|--------|--------|---------|-----|-----|----|-----------|---------|---------------------|------------------------------------|--|
| VLBG 0.3t M 8 | 0.3 | 30 | 54 | 34 | 35 | 40 | 10 | 29 | 11 | 76 | 75 | 45 | 40 | 105 | 8 | 5 | 13 | 32 | 75 | 24 | 0.3 | 30 Nm | 8500821 | 8600280 | |
| VLBG 0.63t M 10 | 0.63 | 30 | 54 | 34 | 36 | 39 | 10 | 29 | 16 | 96 | 75 | 45 | 45 | 125 | 10 | 6 | 17 | 32 | 75 | 24 | 0.32 | 60 Nm | 8500822 | 8600281 | |
| VLBG 1t M 12 | 1 | 32 | 54 | 34 | 37 | 38 | 10 | 29 | 21 | 116 | 75 | 45 | 50 | 145 | 12 | 8 | 19 | 32 | 75 | 26 | 0.33 | 100 Nm | 8500823 | 8600382 | |
| VLBG 1.2t M 14 | 1.2 | 33 | 56 | 36 | 46 | 39 | 13.5 | 36 | — | 34 | 86 | 47 | — | 70 | 14 | 10 | 24 | 38 | 85 | 30 | 0.55 | 120 Nm | — | 8600399 | |
| VLBG 1.5t M 16 | 1.5 | 33 | 56 | 36 | 46 | 39 | 13.5 | 36 | 24 | 149 | 86 | 47 | 60 | 185 | 16 | 10 | 24 | 38 | 85 | 30 | 0.55 | 150 Nm | 8500824 | 8600383 | |
| VLBG 2.0t M 18 | 2.0 | 50 | 82 | 54 | 55 | 55 | 16.5 | 43 | — | 47 | 113 | 64 | — | 90 | 18 | 12 | 30 | 48 | 110 | 45 | 1.3 | 200 Nm | — | 8600384 | |
| VLBG 2.5t M 20 | 2.5 | 50 | 82 | 54 | 55 | 55 | 16.5 | 43 | 32 | 187 | 113 | 64 | 75 | 230 | 20 | 12 | 30 | 48 | 110 | 45 | 1.3 | 250 Nm | 8500826 | 8600385 | |
| VLBG 4t M 24 | 4 | 50 | 82 | 54 | 58 | 67 | 18 | 43 | 37 | 222 | 130 | 78 | 80 | 265 | 24 | 14 | 36 | 48 | 125 | 45 | 1.5 | 400 Nm | 8500827 | 8600386 | |
| VLBG 4t M 27 | 4 | 60 | 103 | 65 | 78 | 69 | 22.5 | 61 | 39 | 239 | 151 | 80 | 100 | 300 | 27 | 17 | 41 | 67 | 147 | 60 | 3.1 | 400 Nm | 7983658 | 8600387 | |
| VLBG 5t M 30 | 5 | 60 | 103 | 65 | 80 | 67 | 22.5 | 61 | 49 | 279 | 151 | 80 | 110 | 340 | 30 | 17 | 46 | 67 | 147 | 60 | 3.3 | 500 Nm | 8500828 | 8600388 | |
| VLBG 7t M 36 ▲ | 7 | 60 | 103 | 65 | 72 | 74 | 22.5 | 55 | 52 | — | 151 | 80 | 107 | — | 36 | — | 55 | 67 | 146 | 60 | 3.4 | 700 Nm | 8500829 | — | |
| VLBG 8t M 36 | 8 | 77 | 122 | 82 | 100 | 97 | 26.5 | 77 | 63 | 223 | 205 | 110 | 140 | 300 | 36 | 22 | 55 | 87 | 197 | 70 | 6.2 | 800 Nm | 7983553 | 8600289 | |
| VLBG 10t M 42 | 10 | 77 | 122 | 82 | 103 | 94 | 26.5 | 77 | 73 | 273 | 205 | 110 | 150 | 350 | 42 | 24 | 65 | 87 | 197 | 70 | 6.7 | 1000 Nm | 7983554 | 8600290 | |
| VLBG 15t M 42 | 15 | 95 | 156 | 100 | 113 | 109 | 36 | 87 | 63 | 263 | 230 | 130 | 150 | 350 | 42 | 24 | 65 | 100 | 222 | 85 | 11.2 | 1500 Nm | 7982966 | 8600291 | |
| VLBG 20t M 48 | 20 | 95 | 156 | 100 | 117 | 105 | 36 | 87 | 73 | 303 | 230 | 130 | 160 | 390 | 48 | 27 | 75 | 100 | 222 | 95 | 11.6 | 2000 Nm | 7982967 | 8600292 | |
| LBG(3) M 16 RS 1t | 1 | 50 | 85 | 50 | 45 | 43 | 16.5 | 38 | 25 | — | 95 | 45 | 63 | — | 16 | — | 24 | 46 | 88 | 30 | 1 | 100 Nm | 62086 | Stainless | |
| LBG(3) M 20 RS 2t | 2 | 50 | 85 | 50 | 46 | 42 | 16.5 | 38 | 27 | — | 95 | 45 | 65 | — | 20 | — | 30 | 46 | 88 | 30 | 1.1 | 200 Nm | 62813 | Stainless | |
| Attention: the stainless load ring is not suitable for use in chloride media (e.g. indoor swimming-pools)! | | | | | | | | | | | | | | | | | | | | | | | | | |
| VLBG-Z 0.63t 3/8"-16UNC | 0.63 | 30 | 54 | 34 | 36 | 39 | 10 | 29 | 16 | 96 | 75 | 45 | 45 | 125 | 3/8" | 1/4" | 9/16" | 32 | 75 | 24 | 0.32 | 60 Nm | — | 8600440 | |
| VLBG-Z 1t 1/2"-13UNC | 1 | 32 | 54 | 34 | 38 | 37 | 10 | 29 | 22 | 121 | 75 | 45 | 50 | 150 | 1/2" | 5/16" | 3/4" | 32 | 75 | 26 | 0.33 | 100 Nm | 8502349 | 8600441 | |
| VLBG-Z 1.5t 5/8"-11UNC | 1.5 | 33 | 56 | 36 | 46 | 38 | 13.5 | 36 | 24 | 148 | 87 | 47 | 60 | 184 | 5/8" | 3/8" | 15/16" | 38 | 85 | 30 | 0.55 | 150 Nm | 8502350 | 8600442 | |
| VLBG-Z 2.5t 3/4"-10UNC | 2.5 | 50 | 82 | 54 | 56 | 54 | 16.5 | 43 | 28 | 187 | 113 | 64 | 71 | 230 | 3/4" | 1/2" | 1 1/8" | 48 | 110 | 45 | 1.3 | 250 Nm | 8502351 | 8600443 | |
| VLBG-Z 2.5t 7/8"-9UNC | 2.5 | 50 | 82 | 54 | 58 | 52 | 16.5 | 43 | 27 | 211 | 113 | 64 | 70 | 254 | 7/8" | 1/2" | 1 5/16" | 48 | 110 | 45 | 1.3 | 300 Nm | 8502352 | 8600444 | |
| VLBG-Z 4t 1"-8UNC | 4 | 50 | 82 | 54 | 61 | 64 | 18 | 43 | 41 | 211 | 130 | 78 | 84 | 254 | 1" | 9/16" | 1 1/2" | 48 | 125 | 45 | 1.5 | 400 Nm | 8502353 | 8600445 | |
| VLBG-Z 5t 1 1/4"-7UNC | 5 | 60 | 103 | 65 | 80 | 64 | 22.5 | 61 | 41 | 279 | 151 | 80 | 102 | 340 | 1 1/4" | 5/8" | 1 7/8" | 67 | 147 | 60 | 3.3 | 500 Nm | 8503187 | 8600446 | |
| VLBG-Z 8t 1 1/2"-6UNC | 8 | 77 | 122 | 82 | 100 | 97 | 26.5 | 77 | 39 | 270 | 205 | 110 | 116 | 347 | 1 1/2" | 7/8" | 2 1/4" | 87 | 197 | 70 | 6.2 | 800 Nm | — | 8600447 | |
| VLBG-Z 20t 2"-4 1/2UNC | 20 | 95 | 156 | 100 | 117 | 105 | 36 | 87 | 77 | 303 | 230 | 130 | 164 | 390 | 2" | 1 1/8" | 3" | 100 | 222 | 95 | 11.6 | 2000 Nm | — | 8600448 | |

▲ = Special construction – bolt cannot be changed!

VLBG Load Ring will turn 360°, adjustable in pull direction. Load ring foldable, full WLL in any load direction, surface pink powder coated.

BG = German Employers Requires:
Use only the supplied bolts.

The max. lengths of the RUD - bolts are adjusted in such a way that if a hex-head-shaped nut (DIN EN ISO 7042) is used, assemblies of material thickness of approximately 8 *M (for M8 - M30) and 5 *M (for M36 - M48) can be realised respectively. In case of flipping fixtures dies and molds, under full load, we recommend to use our double ball bearing power point collection.

Subject to technical alternations!



Lifting Points - for bolting - Load Ring bolted - VLBG -

– ...will turn 360° –

Complies with the machinery directives 2006/42/EG



- RUD Universal bolts and nuts for VLBG - 100 % crack detected!
- The hex-head-bolt is suitable for internal and external wrench mounting for types with metric threads.

■ **Surface protection:**
CORRUD - DT - at least 20 times better corrosion protection than zinc plating (except for the spot face) after length shortening.

- Thread over whole bolting length „H“.
- Bolt is held captive in the body. Replace only with the same quality class bolt.
- Clear identification at the bolt head: RUD, thread size, quality class.



■ **The load ring must be installed perpendicular to the work piece. The work piece must be flat, providing complete contact for the load ring bushing.**

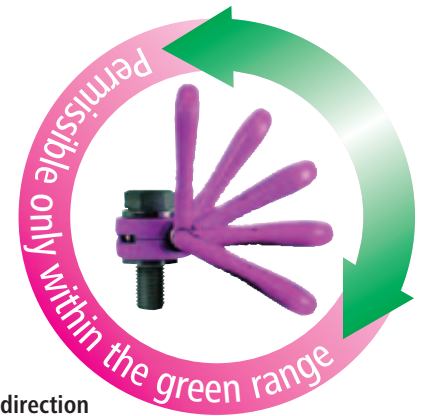
■ **Load ring has to be adjusted in pull direction, free to move, and must not support on edges.**

■ Use acc. to hints for installation and by trained persons (see page 39).

■ The lifting attachment must be free to move when attached to the load ring!

■ Regular inspections should be carried out by a competent person (BGR 500).

■ Load should not be turned during lifting.



Load direction



Why are RUD-Lifting Points "Pink"?

Epoxy powder coating in colour "pink".

Special RUD products are coated with a fluorescent pink powder coating (Patent). This coating is used for example as a heat indicator: With temperature increase the pink colour changes permanently from beige into brown and turns finally when exceeding a temperature of 380° Celsius into black.

In addition to that bubbles on the surface will appear. See page 38 for necessary WLL reduction and max. allowed temperature!





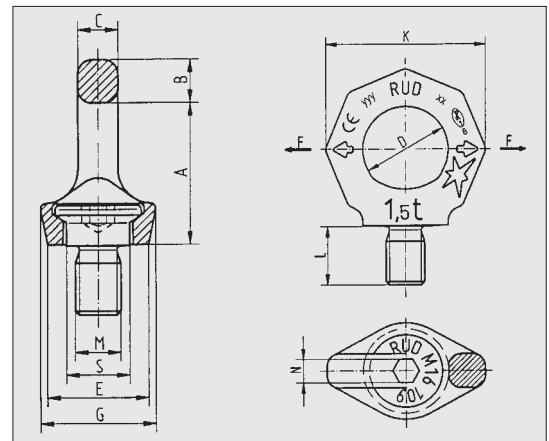
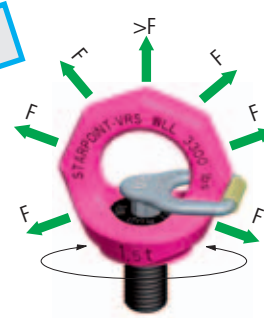
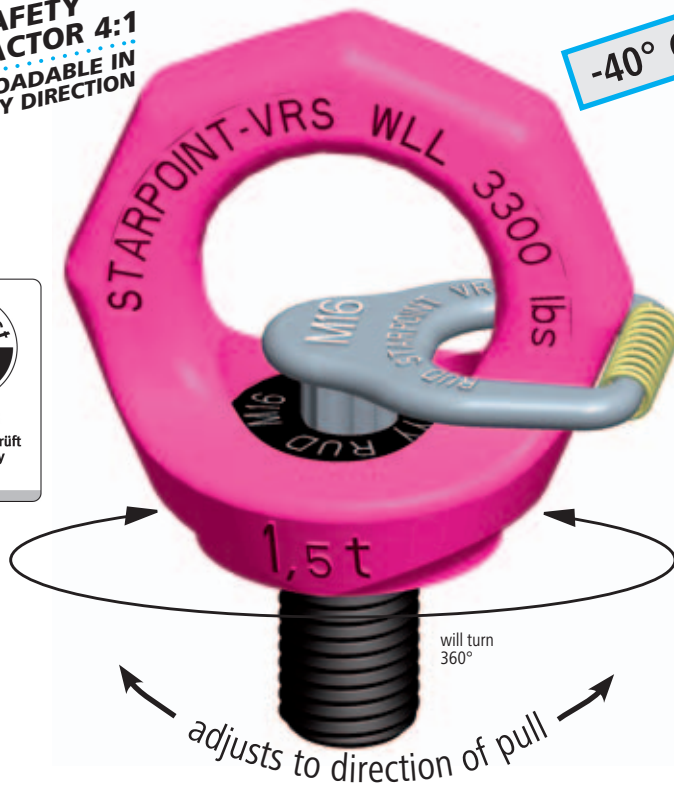
Lifting Points - for bolting - »STARPOINT« - VRS -



- ...the absolute **STAR** among eye bolts -

Complies with the machinery directives 2006/42/EG

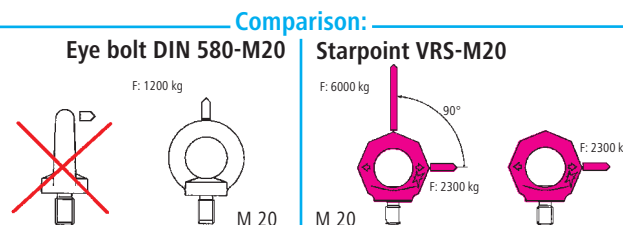
4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



| Type | WLL F (t) | Weight (kg) | A | B | C | D | E | G | K | L | M | N | S | Ref.-No. VRS | Ref.-No. VRS-F |
|-----------------|--------------|----------------|------|----|-----|----|-----|-----|-----|----|--------|--------|------|-----------------|-------------------|
| VRS-M 6 | 0.1 | 0.06 | 27 | 9 | 7 | 20 | 23 | 28 | 37 | 9 | 6 | 6 | 13 | 79 00 909 | 79 00 906 |
| VRS-M 8 | 0.3 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 32 | 47 | 12 | 8 | 6 | 16 | 71 00 554 | 85 00 911 |
| VRS-M10 | 0.4 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 32 | 47 | 15 | 10 | 6 | 16 | 71 00 555 | 71 04 029 |
| VRS-M12 | 0.75 | 0.2 | 42 | 13 | 10 | 30 | 30 | 34 | 56 | 18 | 12 | 8 | 20 | 71 00 556 | 71 01 313 |
| VRS-M14 | 0.75 | 0.2 | 42 | 13 | 10 | 30 | 30 | 34 | 56 | 18 | 14 | 8 | 20 | 79 99 337 | 79 99 330 |
| VRS-M16 | 1.5 | 0.3 | 49 | 15 | 14 | 35 | 35 | 40 | 65 | 24 | 16 | 10 | 23.5 | 71 00 558 | 71 01 314 |
| VRS-M18 | 1.5 | 0.3 | 49 | 15 | 15 | 35 | 35 | 40 | 65 | 24 | 18 | 10 | 23.5 | 79 92 219 | - |
| VRS-M20 | 2.3 | 0.5 | 57 | 17 | 16 | 40 | 42 | 50 | 75 | 30 | 20 | 12 | 29 | 71 00 559 | 71 01 315 |
| VRS-M22 | 2.3 | 0.5 | 57 | 17 | 16 | 40 | 42 | 50 | 75 | 30 | 22 | 12 | 29 | - | 79 92 197 |
| VRS-M24 | 3.2 | 0.9 | 70 | 21 | 19 | 48 | 50 | 60 | 90 | 36 | 24 | 14 | 35 | 71 00 560 | 71 01 316 |
| VRS-M27 | 3.2 | 0.9 | 70 | 21 | 19 | 48 | 48 | 60 | 90 | 36 | 27 | 14 | 35 | - | 79 94 138 |
| VRS-M30 | 4.5 | 1.7 | 86 | 26 | 24 | 60 | 60 | 75 | 112 | 45 | 30 | 17 | 44 | 71 00 561 | 71 01 317 |
| VRS-M33 | 4.5 | 1.8 | 86 | 36 | 24 | 60 | 60 | 75 | 112 | 45 | 33 | 17 | 41.5 | - | 79 93 439 |
| VRS-M36 | 7 | 2.9 | 103 | 32 | 29 | 72 | 75 | 90 | 135 | 54 | 36 | 22 | 53 | 79 84 198 | 79 84 201 |
| VRS-M42 | 9 | 4.6 | 120 | 38 | 34 | 82 | 85 | 105 | 158 | 63 | 42 | 24 | 61.5 | 79 84 199 | 79 84 202 |
| VRS-M48 | 12 | 7.0 | 137 | 43 | 38 | 94 | 100 | 120 | 180 | 72 | 48 | 27 | 70.5 | 79 84 200 | 79 84 203 |
| VRS-1/4"-20UNC | 0.1 | 0.06 | 27.5 | 9 | 7 | 20 | 23 | 27 | 37 | 9 | 1/4" | 7/32" | 13 | 79 99 105 | - |
| VRS-5/16"-18UNC | 0.3 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 28 | 47 | 12 | 5/16" | 1/4" | 14 | - | 79 99 106 |
| VRS-3/8"-16UNC | 0.4 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 28 | 47 | 15 | 3/8" | 1/4" | 15 | 71 03 959 | 71 04 480 |
| VRS-7/16"-14UNC | 0.4 | 0.12 | 34 | 11 | 8.5 | 25 | 25 | 28 | 47 | 15 | 7/16" | 1/4" | 15 | 79 03 118 | - |
| VRS-1/2"-13UNC | 0.75 | 0.2 | 42 | 13 | 10 | 30 | 30 | 34 | 56 | 18 | 1/2" | 5/16" | 18 | 71 03 960 | 71 04 481 |
| VRS-5/8"-11UNC | 1.5 | 0.3 | 49 | 15 | 14 | 35 | 35 | 40 | 65 | 24 | 5/8" | 3/8" | 22 | 71 03 961 | 71 04 482 |
| VRS-3/4"-10UNC | 2.3 | 0.5 | 57 | 17 | 16 | 40 | 40 | 50 | 75 | 30 | 3/4" | 1/2" | 27.5 | 71 03 962 | 71 04 483 |
| VRS-7/8"-9UNC | 2.3 | 0.6 | 57 | 17 | 16 | 40 | 40 | 50 | 75 | 32 | 7/8" | 1/2" | 27.5 | 71 03 963 | 71 04 484 |
| VRS-1"-8UNC | 3.2 | 0.9 | 69 | 21 | 19 | 48 | 48 | 60 | 90 | 36 | 1" | 9/16" | 33 | 71 03 964 | 71 04 485 |
| VRS-1 1/4"-7UNC | 4.5 | 1.7 | 86 | 26 | 24 | 60 | 60 | 75 | 112 | 45 | 1 1/4" | 5/8" | 41.5 | 71 03 965 | 71 04 486 |
| VRS-1 1/2"-6UNC | 7 | 2.9 | 103 | 32 | 29 | 72 | 75 | 90 | 135 | 54 | 1 1/2" | 7/8" | 49.5 | 71 03 966 | 71 04 487 |
| VRS-1 3/4"-5UNC | 9 | 4.6 | 120 | 38 | 34 | 82 | 85 | 105 | 158 | 63 | 1 3/4" | 1" | 58 | 71 03 967 | 71 04 488 |
| VRS-2"-4.5UNC | 12 | 7.0 | 137 | 43 | 38 | 94 | 100 | 120 | 180 | 72 | 2" | 1 1/8" | 66 | 71 03 968 | 71 04 489 |

Further sizes available on request.

Attention: Lateral forces with standard eye bolts acc. to DIN 580 are forbidden! In case of multiple leg suspensions, 2-leg and 3/4-legs, the ring-eye plane of the ring bolt must be in the direction of pull. This is not likely to be the case if standard eye bolts are tightened.



This is only possible with RUD- STARPOINT eye bolt, because it can be adjusted in pull direction in tightened condition! In case of flipping fixtures dies and molds, under full load, we recommend that our double ball bearing power point collection be used.
Attention: Refer to RUD user instructions!

Subject to technical alternations!



Lifting Points - for bolting - »STARPOINT« - VRS -

– ...the absolute **STAR** among eye bolts –



Complies with the machinery directives 2006/42/EG

Shape: Star shaped - clear distinction from standard eye bolt DIN 580.

Colour: Striking fluorescent pink powder coating

Marking: Clear indication of WLL (in metric tonnes and lbs) for side load direction F (not allowed with standard eye bolt).

- Forged material 1.6541, alloy quenched and tempered, 100 % electromagnetic crack detected according to EN 1677-1

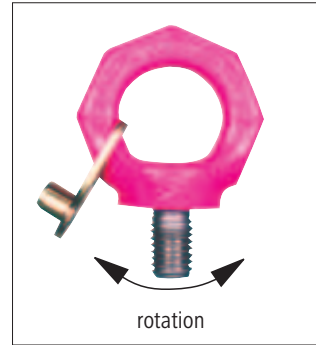
STARPOINT Type VRS-F

Type VRS-F includes the installation tool/STAR KEY. This STARPOINT comes with an integrated installation tool. Just engage the tool into the hexagon socket screw – tighten by hand – disengage tool. STARPOINT can be adjusted 360°. Type VRS without STAR KEY can be assembled by using a hexagon key or Allen wrench.

Alternative-Tip:
Special RUD hexagon socket wrench is available upon request.

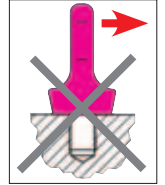


VRS-F fixed



rotation

- **Safety factor 4 : 1.**
- Workpiece material must conform to minimum steel quality S235JR/St 37. (1.0037).
- Maximum countersink of tapped hole = nominal thread diameter.
- Provide plane seat of the special hexagon bolt.
- VRS must be able to rotate by 360° in bolted condition.
- Adjust to load direction before loading.
- Component protected by patents: Europe patent EP 654 611. US patent 5690457.
- Specifically engineered-Grade 10.9 captive hexagon socket screw.



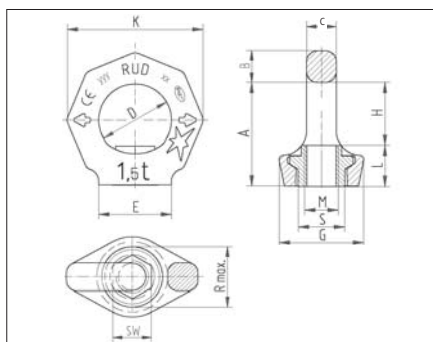
Simply engage the hexagon socket bolt with the star profile key – use your fingers to respectively tighten or untighten the arrangement. Disengage the key before you hook in the lifting mean. Do not use an elongation piece.

»STARPOINT«-eye nut

– VRM –



Complies with the machinery directives 2006/42/EG



- The body of the STARPOINT nut must be turnable 360° in bolted condition. Adjust in pull direction before attaching the sling means.
- A plane support (E) for the eye nut at the bolt-on surface must be guaranteed. The nut thread must be engaged to 100 % with the bolt thread.
- Sizes of VRM - see drawing VRS-StarPoint, page 16. Size „L“ corresponds with the minimum length of the bolt thread.
- In case of flipping fixtures dies and molds, under full load, we recommend to use our double ball bearing power point collection.
- The given WLL is only valid in connection with threaded bolts of at least quality class 10.9.

Attention: Refer to RUD user instructions!

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

-40° C

| Type | WLL (t) | Weight (kg) | A | B | C | D | E | G | H | K | L | M | R _{max} | S | SW | Ref.-No. |
|---------|---------|-------------|----|----|-----|----|------|----|----|-----|----|----|------------------|----|----|----------|
| VRM-M6 | 0.1 | 0.06 | 28 | 9 | 7 | 20 | 23 | 28 | 16 | 37 | 11 | 6 | 16 | 13 | 9 | 7900786 |
| VRM-M8 | 0.3 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 28 | 20 | 47 | 14 | 8 | 20 | 16 | 12 | 7992989 |
| VRM-M10 | 0.4 | 0.1 | 34 | 11 | 8.5 | 25 | 25 | 28 | 20 | 47 | 14 | 10 | 20 | 16 | 12 | 7990311 |
| VRM-M12 | 0.75 | 0.2 | 42 | 13 | 10 | 30 | 30 | 34 | 25 | 56 | 17 | 12 | 24 | 20 | 14 | 7990312 |
| VRM-M16 | 1.5 | 0.3 | 51 | 15 | 14 | 35 | 35.5 | 40 | 30 | 65 | 21 | 16 | 30 | 22 | 19 | 7990314 |
| VRM-M20 | 2.3 | 0.5 | 57 | 17 | 16 | 40 | 40 | 50 | 34 | 75 | 23 | 20 | 37 | 29 | 24 | 7990315 |
| VRM-M24 | 3.2 | 0.9 | 69 | 21 | 19 | 48 | 50 | 60 | 40 | 90 | 29 | 24 | 45 | 35 | 30 | 7990316 |
| VRM-M30 | 4.5 | 1.5 | 86 | 26 | 24 | 60 | 60 | 75 | 52 | 112 | 34 | 30 | 56 | 44 | 36 | 7993008 |



Lifting Points - for bolting - INOX-STAR eyebolt

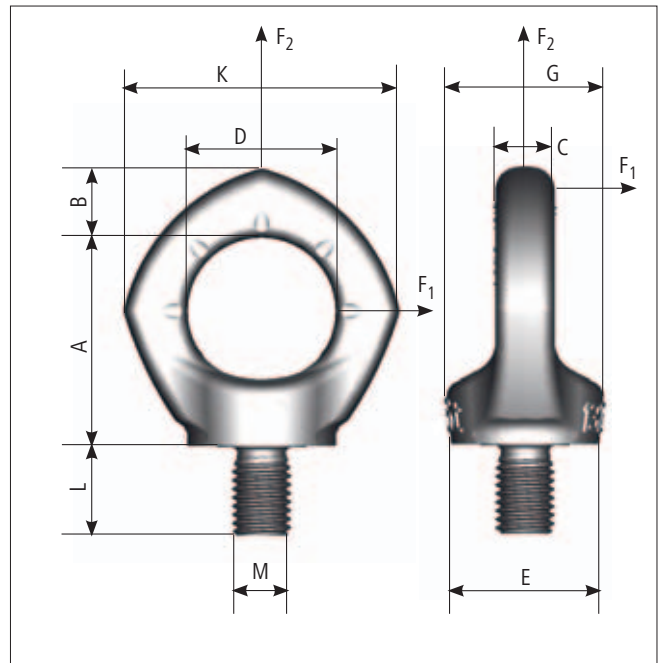
– stainless –



Complies with the machinery directives 2006/42/EG



4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION



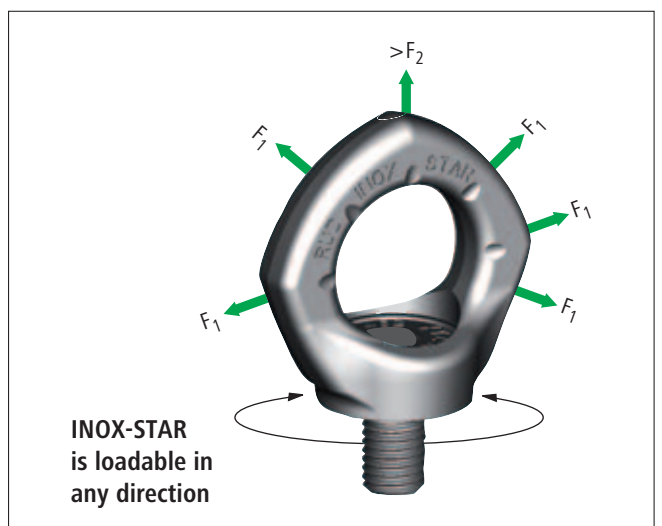
| Type | Rated load | | A mm | B mm | C mm | D mm | E mm | G mm | K mm | L mm | M | SW | Weight kg | Ref.-No. |
|---------------|--------------------|--------------------|------|------|------|------|------|------|------|------|-----|----|-----------|----------|
| | F ₁ (t) | F ₂ (t) | | | | | | | | | | | | |
| INOX-STAR M12 | 0.5 | 1.2 | 43 | 14 | 10 | 30 | 30 | 32 | 56 | 18 | M12 | 8 | 0.2 | 7993835 |
| INOX-STAR M16 | 1.0 | 2.4 | 50 | 16 | 14 | 35 | 35.5 | 38 | 65 | 24 | M16 | 10 | 0.3 | 7993836 |
| INOX-STAR M20 | 2.0 | 3.6 | 57 | 19 | 16 | 40 | 41 | 46.5 | 74 | 30 | M20 | 12 | 0.5 | 7993837 |
| INOX-STAR M24 | 2.5 | 5.2 | 70 | 24 | 19 | 48 | 50 | 56 | 92 | 36 | M24 | 14 | 0.9 | 7993838 |

INOX-STAR eyebolt

– stainless – 50 % more than DIN with no directional restrictions!

- Pentagonal shape – significantly different to the DIN 580 eyebolt.
- Turns through 360°. Can be set in the direction of the load.
- Clear statement of rated load F₁ for the unfavourable load range. Safety factor 4 : 1.
- Forged eye body.
- Material of eye body and screw: 1.4462, duplex steel (high durability in sea water and in environments with high chlorine ion concentrations).
- 100 % crack-tested
- Captive mounted bolt.
- Patented wear marks on the eye body.
- Tighten hand-tight when mounting with hexagonal wrench or adapter piece. Do not use an extension.
- The INOX-STAR must be able to be turned through 360° when screwed in.
- Maximum countersink of the threaded hole = Nominal diameter of thread

Notice: Follow the Instructions for use!



- Set in the direction of force before loading.
- Component protected under patent law: European patent EP 654611.

Right reserved to alter specifications without notice.



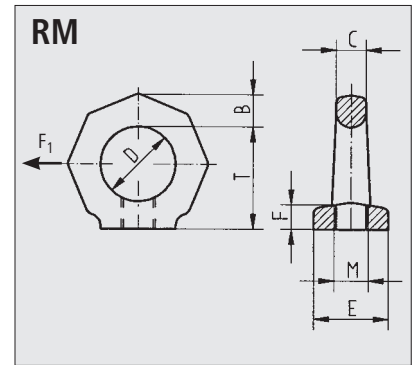
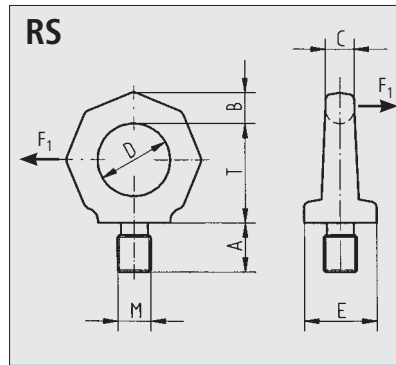
Lifting Points - for bolting - Eye bolt/-nut - RS/RM -

... high tensile and distinctive



-40° C

SAFETY
FACTOR 4:1



| Type | WLL F ₁ (t) | A | B | C | D | E | F | M | T | Weight kg | Ref.-No. | |
|-----------|---------------------------|----|----|----|----|-----|----|----|-----|--------------|----------|-------|
| | | | | | | | | | | | RS | RM |
| RS - M 6 | 0.1 | 12 | 11 | 10 | 25 | 25 | 11 | 6 | 35 | 0.1 | 61401 | 55254 |
| RS - M 8 | 0.2 | 12 | 11 | 10 | 25 | 25 | 11 | 8 | 35 | 0.1 | 61402 | 55255 |
| RS - M 10 | 0.25 | 15 | 11 | 10 | 25 | 25 | 11 | 10 | 35 | 0.1 | 56397 | 55258 |
| RS - M 12 | 0.4 | 18 | 13 | 12 | 30 | 30 | 12 | 12 | 41 | 0.2 | 56398 | 55271 |
| RS - M 14 | 0.75 | 21 | 15 | 14 | 35 | 35 | 13 | 14 | 48 | 0.25 | 56403 | 55281 |
| RS - M 16 | 1 | 24 | 15 | 14 | 35 | 35 | 13 | 16 | 48 | 0.3 | 56404 | 55460 |
| RS - M 20 | 1.5 | 30 | 17 | 16 | 40 | 40 | 16 | 20 | 55 | 0.45 | 56407 | 55343 |
| RS - M 24 | 2 | 36 | 21 | 20 | 50 | 50 | 20 | 24 | 70 | 0.7 | 56408 | 55394 |
| RS - M 30 | 3 | 45 | 26 | 24 | 60 | 60 | 25 | 30 | 85 | 1.6 | 56409 | 55438 |
| RS - M 36 | 4 | 54 | 43 | 38 | 90 | 100 | 37 | 36 | 130 | 6.0 | 56954 | 53093 |
| RS - M 42 | 6 | 63 | 43 | 38 | 90 | 100 | 37 | 42 | 130 | 6.2 | 56955 | 53095 |
| RS - M 48 | 8 | 67 | 43 | 38 | 90 | 100 | 37 | 48 | 130 | 6.4 | 56956 | 53098 |

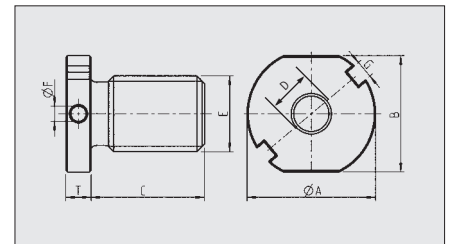
- Also available in many Inch and special sizes.
- Before lifting check the tightness of the eye bolt and nut!
Avoid rotating movement during transport.

- Assure a plane bolting surface.
- Attention: Refer to RUD user instruction!

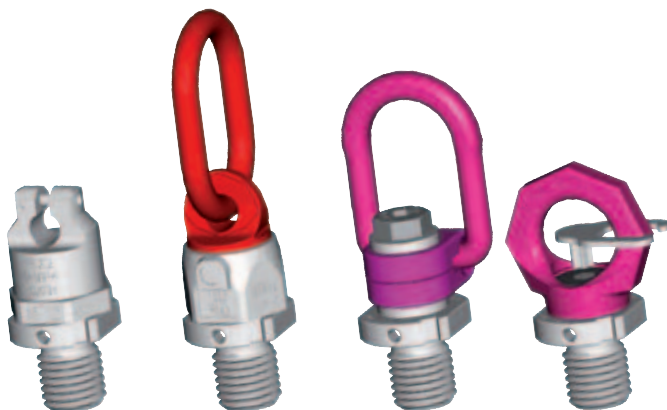
RUD-Thread-adapter for RUD lifting points

It often happens that the transport object has already thread holes for provided DIN-Eye bolts. When high tensile lifting points for bolting should be used, the holes are often too big and therefore, larger lifting points are used than necessary.

The RUD-thread-adapter offers the perfect solution. The outer thread is adjusted to the provided thread and the inner thread is adjusted to the new thread of the bolttable lifting point. This saves adjustments or expensive purchases.



| Type | Weight kg | A Ø | B | C | D | E | F | G | T | Ref.-No. |
|------------------|--------------|--------|----|----|-----|-----|---|----|----|------------|
| ASPA-M 16 x M 8 | 0,07 | 35 | 30 | 20 | M8 | M16 | 5 | 6 | 8 | 7994782 |
| ASPA-M 20 x M 10 | 0,11 | 38 | 32 | 24 | M10 | M20 | 5 | 6 | 9 | 7995682 |
| ASPA-M 24 x M 12 | 0,15 | 42 | 36 | 28 | M12 | M24 | 5 | 6 | 9 | 7993856 |
| ASPA-M 30 x M 16 | 0,27 | 51 | 46 | 36 | M16 | M30 | 6 | 7 | 10 | 7993857 |
| ASPA-M 36 x M 20 | 0,48 | 65 | 55 | 43 | M20 | M36 | 6 | 8 | 12 | 7993858 |
| ASPA-M 42 x M 24 | 0,8 | 82 | 70 | 50 | M24 | M42 | 8 | 10 | 16 | 7995674 |
| ASPA-M 48 x M 24 | 1,1 | 82 | 70 | 58 | M24 | M48 | 8 | 10 | 16 | 7995675 |
| ASPA-M 56 x M 30 | 1,75 | 100 | 90 | 67 | M30 | M56 | 8 | 10 | 16 | 7995676 |
| ASPA-M 64 x M 36 | 2,3 | 110 | 95 | 77 | M36 | M64 | 8 | 10 | 16 | 7995677 |
| ASPA-M 72 x M 45 | 2,6 | 110 | 95 | 86 | M45 | M72 | 8 | 10 | 16 | 7995976 |
| ASPA-M 80 x M 48 | 3,4 | 110 | 95 | 96 | M48 | M80 | 8 | 10 | 16 | 7900469 |
| ASPA-M 90 x M 48 | | | | | | | | | | on request |



Example: ASP-A

WLL must be chosen corresponding to the RUD-lifting points assembler in the inner thread.

Also available in fine or inch thread sizes.



Lifting Points - for bolting - Load Ring - RBG/VRBG -

... for bolting with patented relief lugs

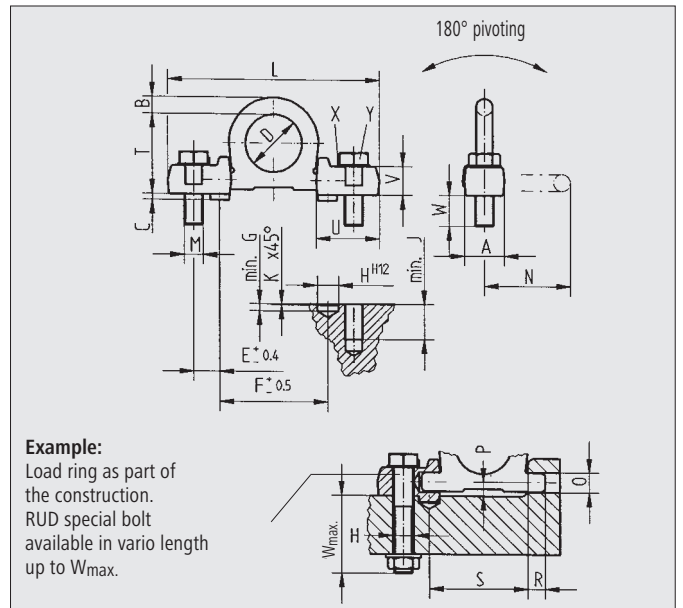


Complies with the machinery directives 2006/42/EG

4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION

RBG 3t

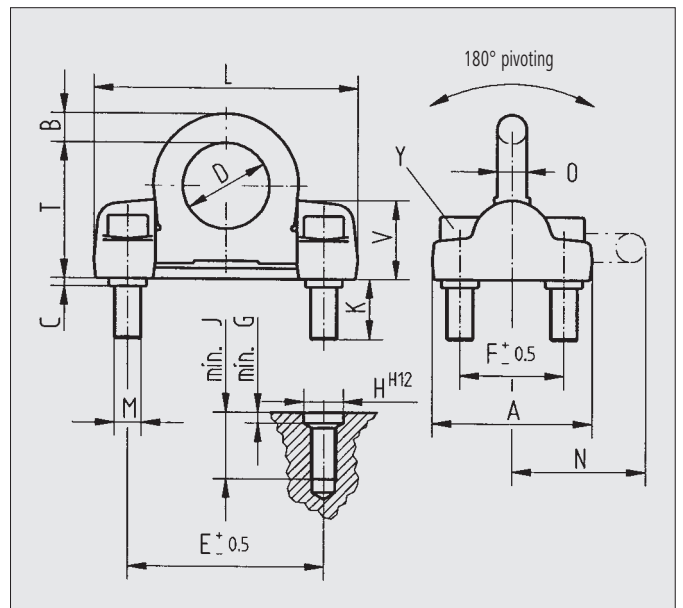
-40° C



4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION

VRBG 10/16t

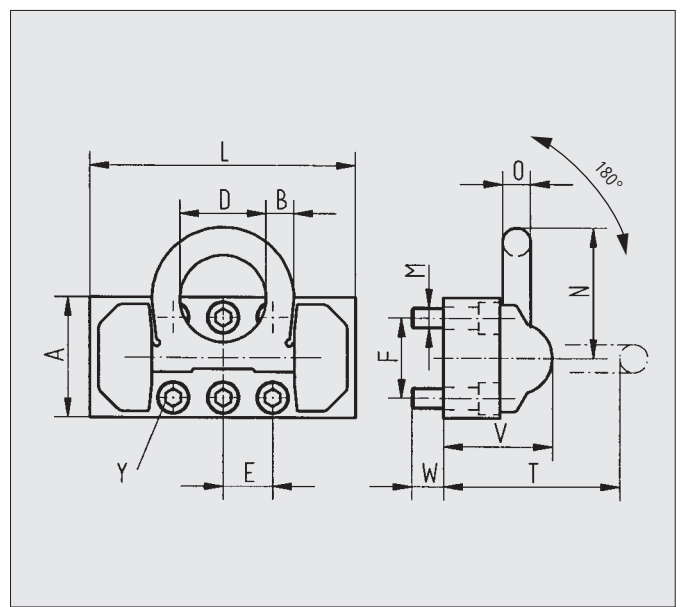
-40° C



4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION

VRBG 31.5/50/150t

-40° C





Lifting Points - for bolting - Load Ring - RBG -

... for bolting with relief lugs



Complies with the machinery directives 2006/42/EG

| Type | WLL (t) | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | R | S | T | U | V | W | W max. | X DIN 463 | Y 10.9 | Weight kg | Torque | Ref.-No. (with bolts and locking tabs) | |
|-------|------------|----|----|---|----|------|------|-----|-----|-----|------|---|----|----|---|----|----|----|----|----|----|----|-----------|-----------------|-----------|--------------|--------|---|--------|
| RBG 3 | 3 | 34 | 16 | 5 | 48 | ±0.4 | ±0.5 | min | H12 | min | x45° | 6 | 18 | 30 | 1 | 17 | 12 | 20 | 84 | 67 | 53 | 24 | 25 | 30-160 | 17 | M16x50 | 0.9 | 120 Nm | 51 817 |

Relief lugs up to 16 t.

Protect the securing bolts against bending- and shearing loads. This ensures additional safety!

- Smaller bolt and a low profile due to the pivoting ring.
- For description of the ring refer to VRBS, page 31.
- RUD special bolts (inner- and outer hexagon), 100 % crack detected with special corrosion protection Deltaton.
- Tension bolts to recommended torque (120 Nm) and secure with locking tabs supplied.
- For sealing and securing of the bolts, Loctite 270 for example can be used.

- Check tightness of bolts at regular intervals.
- Workpiece material at least 1.0037 (St 37-2) S235JR.
- Refer to RUD user instruction!

Mounting instructions:

- Use RUD special bolts only.
- Mount on plane bolting surfaces!
- Scribing and drilling acc. to tolerance range of RBG:
 1. First scribe pocket hole - relief bores size „F“, drill and countersink acc. to sizes „H, G, K“.
 2. After fitting and straight adjustment of the bolting blocks, the bore for the tapped hole can be drilled.
 3. Drill core hole and cut tapped hole. For through bolts, drill size „H“ only.

| Type | WLL (t) | A | B | C | D | E | F | G | H | J | L | M | N | O | V | K | T | Y ISO 4762 | Weight kg | Torque | Ref.-No. (with bolts) |
|---------|------------|-----|----|---|----|------|------|-----|-----|-----|-----|----|-----|----|----|----|-----|------------------|--------------|--------|-----------------------------|
| VRBG 10 | 10 | 120 | 22 | 6 | 65 | ±0.5 | ±0.5 | min | H12 | min | 213 | 20 | 100 | 25 | 54 | 43 | 102 | M20x70-12.9 | 4.1 | 300 Nm | 7994537 |
| VRBG 16 | 16 | 170 | 30 | 8 | 90 | ±0.5 | ±0.5 | min | H12 | min | 270 | 30 | 134 | 32 | 67 | 63 | 131 | M30x90-12.9 | 11.3 | 600 Nm | 7993255 |

Relief lugs.

With VRBG 10 and 16, the connecting bolts protect against bending- and shearing loads. This ensures additional safety.

- Smaller bolt and a low profile due to the pivoting ring.
- Scribing and drilling acc. to tolerance range of VRBG.

- Check tightness of bolts at regular intervals.
- Favourable load force introduction and distribution.
- For details of the ring, refer to VRBS, page 31.
- Supplied inner hexagon bolts are 100 % crack detected!
- Workpiece material at least 1.0037 (S235JR/St 37).

| Type | WLL (t) | A | B | C | D | E | F | G | H | J | L | M | N | O | T | V | W | Y ISO 4762 | Weight kg | Torque | Ref.-No. (with bolts) |
|-----------|------------|-----|----|---|-----|------|------|-----|-----|-----|-----|----|-----|----|-----|-----|----|------------------|--------------|---------|-----------------------------|
| VRBG 31.5 | 31.5 | 180 | 42 | - | 130 | ±0.5 | ±0.5 | min | H12 | min | 400 | 30 | 195 | 42 | 262 | 163 | 46 | 6xM30x100-12.9 | 67 | 900 Nm | 7985866 |
| VRBG 50 | 50 | 270 | 70 | - | 230 | ±0.5 | ±0.5 | min | H12 | min | 650 | 36 | 340 | 60 | 406 | 220 | 58 | 8xM36x120-12.9 | 198 | 1000 Nm | 7985867 |

...to 150 t on request!



Subject to technical alternations!

- For details of the ring, refer to VRBS page 31.
- Supplied inner hexagon bolts are 100 % crack detected!
- Bolting material at least 1.0037 (S235JR/St 37).
- Scribing and drilling acc. to the tolerance range of RBG.
- Check tightness of bolts at regular intervals.
- With light metals and grey cast iron the thread arrangements has to be chosen in such a way that the WLL of the thread fulfils the requirements of the corresponding base material.





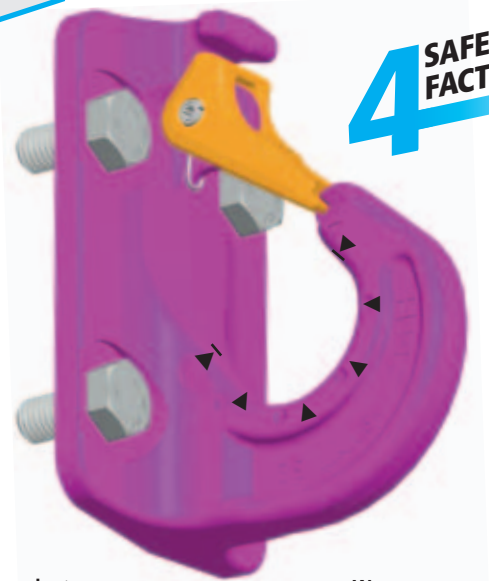
Lifting Points - for bolting - Excavator hook for bolting

- VABH-B - the light weight construction generation



Complies with the machinery directives 2006/42/EG

-40° C

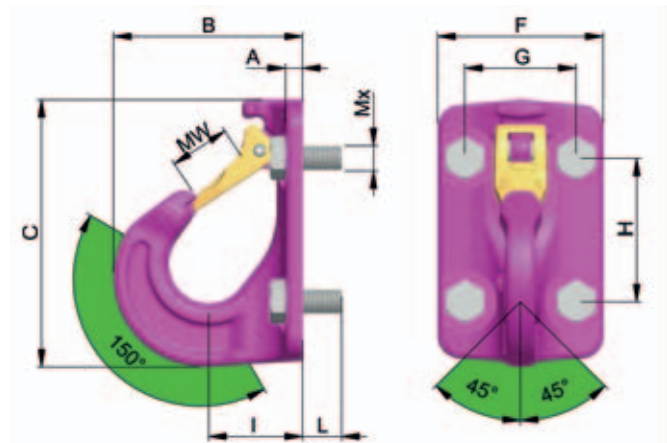


4 SAFETY FACTOR 4:1

VABH-B

Excavator hook used as a lifting point for spreader bars, wire rope slings, round slings, lifting means with an oval suspension ring or eye.

- Operating range: 150°
- Permissible loading: 45° in lateral pull direction



▲ Gauge marks to determine overload

▲ Wear marking

| Type | WLL (t) | MW | A | B | C | F | G | H | I | L | RUD Universal-bolt Mx | Weight kg | Ref.-No. with RUD-bolts |
|-------------|---------|----|-----|-----|-----|-----|----|-----|----|----|-----------------------|-----------|-------------------------|
| VABH-B 1.5t | 1.5 | 25 | 6.5 | 78 | 117 | 70 | 48 | 60 | 38 | 15 | 4 x M10 | 0.9 | 7991205 |
| VABH-B 2.5t | 2.5 | 30 | 7.5 | 101 | 148 | 85 | 60 | 75 | 49 | 18 | 4 x M12 | 1.75 | 7991206 |
| VABH-B 4t | 4 | 35 | 10 | 122 | 171 | 104 | 70 | 90 | 59 | 25 | 4 x M16 | 3.2 | 7991207 |
| VABH-B 6.7t | 6.7 | 40 | 12 | 156 | 208 | 120 | 85 | 110 | 70 | 30 | 4 x M20 | 5.6 | 8502238 |

- Extremely robust forged safety latch.
- Supplied with RUD special bolts 100 % crack detected and provided with special corrosion protection Deltaton.
- Non protruding tip of the hook – no unintentional hooking in.

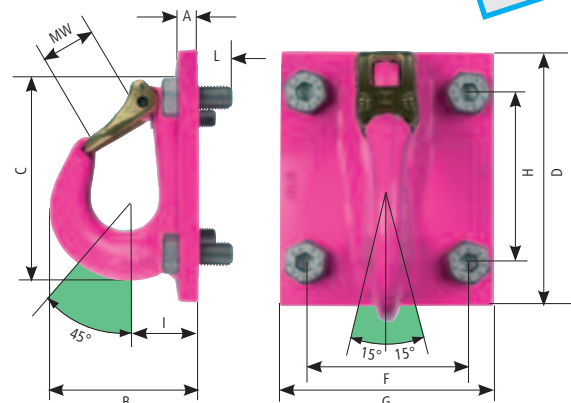
- Enlarged hook tip avoids improper use - thus no hooking - in smaller openings.
- Patented wear marks on the hook.
- Measurable overload indicator.
- Can also be used as an excavator hook.



4 SAFETY FACTOR 4:1

Hook can be used as a lifting point for spreader bars, for wire rope slings, round slings and lifting means with an oval suspension ring or eye.

- Permissible operating range up to max. 45°
- Permissible loading ±15° in lateral pull direction



-20° C

| Type | WLL (t) to 45° | MW | A | B | C | D | F | G | H | I | L | RUD Universal-bolt | Weight kg | Ref.-No. with RUD-bolts |
|----------|----------------|----|----|-----|-----|-----|-----|-----|-----|----|----|--------------------|-----------|-------------------------|
| VCGH-G16 | 10 | 48 | 15 | 141 | 200 | 220 | 120 | 170 | 150 | 70 | 35 | 4xM24 | 6.4 | 7984048 |
| VCGH-G20 | 16 | 63 | 20 | 187 | 272 | 288 | 150 | 210 | 220 | 87 | 30 | 6xM24 | 10.4 | 7984311 |
| VCGH-G22 | 20 | 63 | 20 | 195 | 276 | 292 | 150 | 240 | 220 | 92 | 30 | 6xM24 | 17.5 | 7984313 |

- Extremely robust forged safety latch.
- Supplied with RUD special bolts, 100 % crack detected and provided with special corrosion protection Deltatone.

- Due to the limited operation range, assembly should be in the direction of pull.



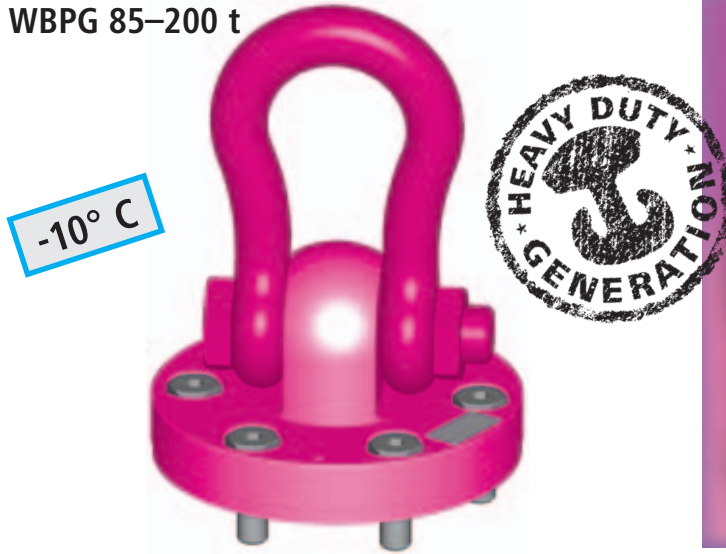
Lifting Points - for bolting - Hoist ring boltable on plate WBPG

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

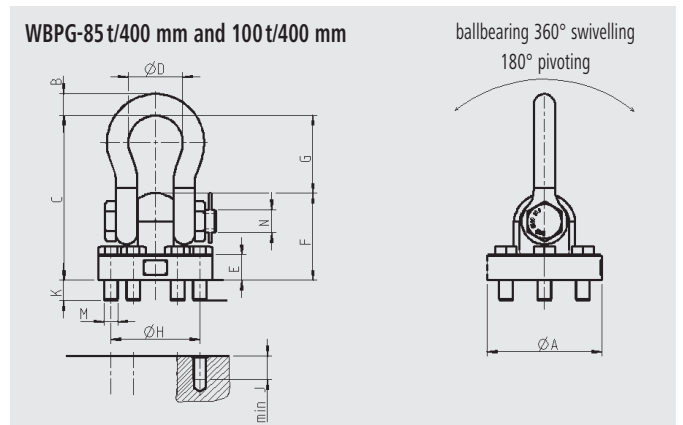


Complies with the machinery directives 2006/42/EG

WBPG 85–200 t



- Removable suspension ring in the shape of a shackle for the attachment of cable-laid grommets (with heavy load cable eyes).
- Loadable from any side in the direction of pivot, thereby suitable for lifting and turning of loads.
- With threaded hole for Starpoint-VRS for easy vertical assembly.
- On request with sling shackle for the direct attachment and a gentle use of cable-laid grommets.



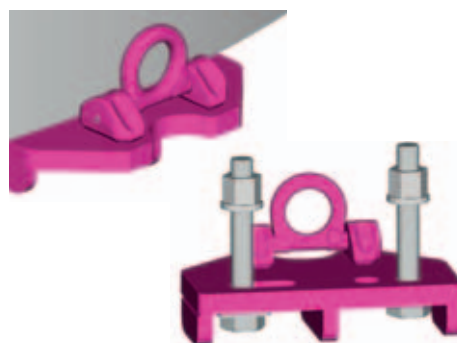
| Type | WLL (t) | Weight (kg) | A | B | C | D | E | F | G | H | J | K | M | N | Angular pitch | Bolts | Torque | Artikel/ Nr. |
|--------------------------------------|---------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|---------------|--|---------|--------------|
| WBPG 85 t/400 mm Standard | 85 | 170 | 400 | 75 | 577 | 190 | 89 | 304 | 273 | 310 | 73 | 71 | 48 | 83 | 60° | 6x RUD-Multiple head M48x160 – 10.9 | 6000 Nm | 79 93 712 |
| WBPG 100 t/400 mm Standard | 100 | 170 | 400 | 83 | 577 | 190 | 89 | 304 | 273 | 310 | 73 | 71 | 48 | 83 | 60° | 6x RUD-Multiple head M48x160 – 10.9 | 6000 Nm | 79 93 245 |
| WBPG 120 t/570 mm Standard | 120 | 360 | 571 | 95 | 651 | 238 | 110 | 344 | 307 | 445 | 77 | 75 | 48 | 95 | 60° | 6x RUD-Multiple head M48x160 – 10.9 | 6000 Nm | 79 00 917 |
| WBPG 200 t/650 mm Standard | 200 | 680 | 650 | 120 | 880 | 290 | 100 | 460 | 426 | 500 | 73 | 71 | 48 | 130 | 36° | ISO 4762 (DIN 912) 10x M48x150 – 12.9 | 6000 Nm | 79 00 383 |

FLARIBO – new Generation (Type F – H)

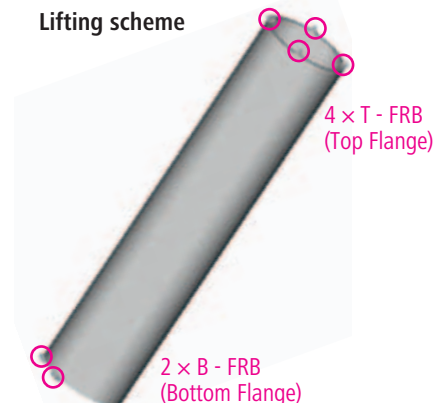
... the new Lifting point for the assembly of tower segments



T-FRB (Top Flange)



B-FRB (Bottom Flange)



Subject to technical alternations!






Lifting Points - for welding -

Maximum transport weight „G“ in „tonnes“
with different slinging methods

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



Complies with the machinery directives 2006/42/EG

|  | | WPP-Serie PowerPoint rotation | | | | | | WPPH-Serie PowerPoint fixed | | | | | | VLBS Load ring for welding (LPW in daN for lashing) | | | | | | | | |
|---|----------------------------------|-------------------------------------|-----------|-----------|-----------|-----------|---------|-----------------------------------|------------|------------|----------|----------|----------|---|------------|----------|------------|-----------|-----------|-----------------|---------------|---------------|
| | | all variations | | | | | | all variations | | | | | | Stain- less | | | | | | | | |
|  | Number of legs Load direction | WPP 0.63 t | WPP 1.5 t | WPP 2.5 t | WPP 4 t | WPP 5 t | WPP 8 t | WPPH 0.63 t | WPPH 1.5 t | WPPH 2.5 t | WPPH 4 t | WPPH 5 t | WPPH 8 t | VLBS 1.5 t | VLBS 2.5 t | VLBS 4 t | VLBS 6.7 t | VLBS 10 t | VLBS 16 t | LBS(1) RS 0.5 t | LBS(3) RS 1 t | LBS(5) RS 2 t |
| | | 3000 daN | 5000 daN | 8000 daN | 13400 daN | 20000 daN | | | | | | | | | | | | | | | | |
|  | 1 0° | 0.6 | 1.5 | 2.5 | 4 | 6.7 | 10 | 0.6 | 1.5 | 2.5 | 4 | 6.7 | 10 | 1.5 | 2.5 | 4 | 6.7 | 10 | 16 | 0.5 | 1 | 2 |
|  | 2 0° | 1.2 | 3 | 5 | 8 | 13.4 | 20 | 1.2 | 3 | 5 | 8 | 13.4 | 20 | 3 | 5.0 | 8 | 13.4 | 20 | 32 | 1 | 2 | 4 |
|  | 1 90° | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 1.5 | 2.5 | 4 | 6.7 | 10 | 16 | 0.5 | 1 | 2 |
|  | 2 90° | 1.2 | 3 | 5 | 8 | 10 | 16 | 1.2 | 3 | 5 | 8 | 10 | 16 | 3 | 5.0 | 8 | 13.4 | 20 | 32 | 1 | 2 | 4 |
|  | 2 0-45° | 0.8 | 2.1 | 3.5 | 5.6 | 7 | 11.2 | 0.8 | 2.1 | 3.5 | 5.6 | 7 | 11.2 | 2.1 | 3.5 | 5.6 | 9.3 | 14 | 22.4 | 0.7 | 1.4 | 2.8 |
|  | 2 45-60° | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 1.5 | 2.5 | 4 | 6.7 | 10 | 16 | 0.5 | 1 | 2 |
|  | 2 unsymmetrical | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 1.5 | 2.5 | 4 | 6.7 | 10 | 16 | 0.5 | 1 | 2 |
|  | 3+4 0-45° | 1.3 | 3.1 | 5.2 | 8.4 | 10.5 | 16.8 | 1.3 | 3.1 | 5.2 | 8.4 | 10.5 | 16.8 | 3.15 | 5.25 | 8.4 | 14 | 21 | 33.6 | 1.05 | 2.1 | 4.2 |
|  | 3+4 45-60° | 0.9 | 2.2 | 3.7 | 6 | 7.5 | 12 | 0.9 | 2.2 | 3.7 | 6 | 7.5 | 12 | 2.25 | 3.75 | 6 | 10 | 15 | 24 | 0.75 | 1.5 | 3 |
|  | 3+4 unsymmetrical | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 0.6 | 1.5 | 2.5 | 4 | 5 | 8 | 1.5 | 2.5 | 4 | 6.7 | 10 | 16 | 0.5 | 1 | 2 |
| Weld | | Δ | Δ | HY | HY | HY | HY | Δ | Δ | HY | HY | HY | HY | HV | HV | HV | HV | HV | HV | HV | HV | HV |
| | | 3.5 | 4.5 | 3+5 | 3+6 | 3+8 | 3+10 | 3.5 | 4.5 | 3+5 | 3+6 | 3+8 | 3+10 | 5+3 | 7+3 | 8+3 | 12+4 | 16+4 | 25+6 | 5+3 | 8+3 | 12+4 |

We have the right tools for you. **Call us!** Phone no. or e-mail:

+49 7361-504-1170 or slings@rud.com

The perfect service for the CAD department.
We provide you with geometry datas for your design.

For the calculation of the right lifting point. Especially useful for the designer is the 3D-presentation of the lifting points.

...click www.rud.com

Click on **lifting means** → **lifting points**





Lifting Points - for welding -

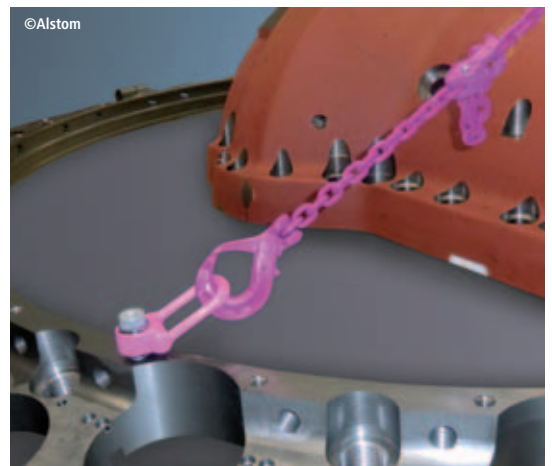
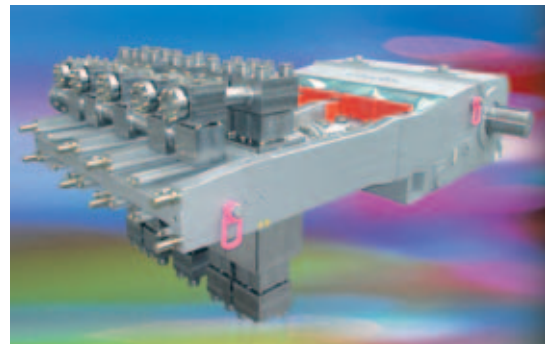
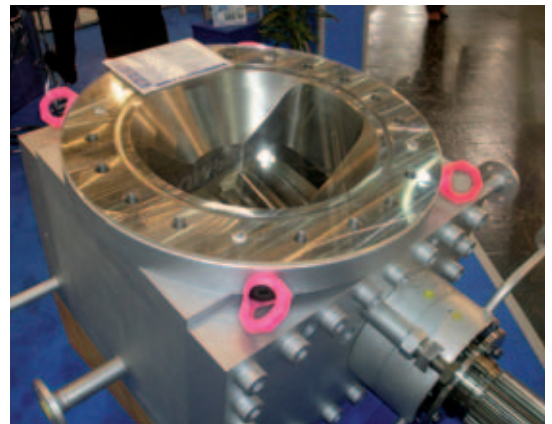
Maximum transport weight „G” in „tonnes” with different slinging methods

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



Complies with the machinery directives 2006/42/EG

| | VRBS-FIX Load ring for welding (LRBS-FIX in daN for lashing) | | VRBK-FIX (LRBK-FIX in daN for lashing) | | | ABA Loadable from any direction (L-ABA in daN for lashing) | | | | | | | | | | | |
|------|---|----------------|--|----------------|---------------|--|-----------------|-----------|--------------|---------------|--------------|-----------|-----------|-----------|-----------|----------|------------|
| | Number of legs | Load direction | VRBS-FIX 4 t | VRBS-FIX 6.7 t | VRBS-FIX 10 t | VRBS-FIX 16 t | VRBS-FIX 31.5 t | VRBS 50 t | VRBK-FIX 4 t | VRBK-FIX 6.7t | VRBK-FIX 10t | ABA 1.6 t | ABA 3.2 t | ABA 5 t | ABA 10 t | ABA 20 t | ABA 31.5 t |
| | 1 | 0° | 8000 daN | 13400 daN | 20000 daN | | | | 8000 daN | 13400 daN | 20000 daN | 3200 daN | 6400 daN | 10000 daN | 20000 daN | | |
| | 2 | 0° | 4 | 6.7 | 10 | 16 | 31.5 | 50 | 4 | 6.7 | 10 | 1.6 | 3.2 | 5 | 10 | 20 | 31.5 |
| | 1 | 90° | 4 | 6.7 | 10 | 16 | 31.5 | 50 | 4 | 6.7 | 10 | 1.6 | 3.2 | 5 | 10 | 20 | 31.5 |
| | 2 | 90° | 8 | 13.4 | 20 | 32 | 63 | 100 | 8 | 13.4 | 20 | 3.2 | 6.4 | 10 | 20 | 40 | 63 |
| | 2 | 0-45° | 5.6 | 9.38 | 14 | 22.4 | 45 | 70 | 5.6 | 9.3 | 14 | 2.2 | 4.5 | 7.1 | 14.1 | 28 | 45 |
| | 2 | 45-60° | 4 | 6.7 | 10 | 16 | 31.5 | 50 | 4 | 6.7 | 10 | 1.6 | 3.2 | 5 | 10 | 20 | 31.5 |
| | 2 | unsymmetrical | 4 | 6.7 | 10 | 16 | 31.5 | 50 | 4 | 6.7 | 10 | 1.6 | 3.2 | 5 | 10 | 20 | 31.5 |
| | 3+4 | 0-45° | 8.4 | 14.1 | 21 | 33.6 | 67 | 105 | 8.4 | 14 | 21 | 3.4 | 6.8 | 10.6 | 21.2 | 42 | 67 |
| | 3+4 | 45-60° | 6 | 10.1 | 15 | 24 | 47.5 | 75 | 6 | 10 | 15 | 2.4 | 4.8 | 7.5 | 15 | 30 | 47.5 |
| | 3+4 | unsymmetrical | 4 | 6.7 | 10 | 16 | 31.5 | 50 | 4 | 6.7 | 10 | 1.6 | 3.2 | 5 | 10 | 20 | 31.5 |
| Weld | | | HY 3 | HY 5 | HY 6 | HY 9 | HY 12 | HY 25+8 | HY 3+4 | HY 3+5 | HY 8+3 | Δ 4 | Δ 6 | Δ 7 | Δ 8 | Δ 12 | Δ 15 |





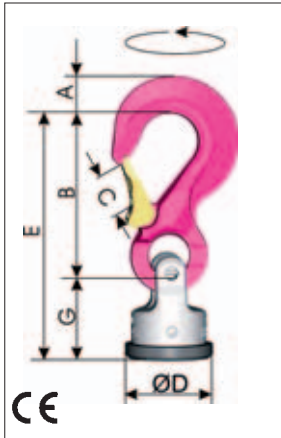
Lifting Points - for welding -

PowerPoint® – WPP... –
...with double ball bearing – 360° swivelling

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



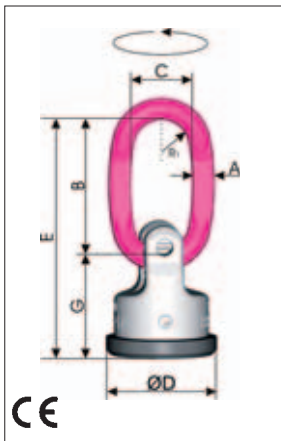
Complies with the machinery directives 2006/42/EG



WPP-S – the universal connection for round slings, wire ropes, hook and ring assemblies

| Type | WLL (t) | A | B | C | D | E | G | Weld HY+ Δ | Weight (kg) | Ref.-No. |
|-------------|-----------|----|-----|----|-----|-----|-----|------------|-------------|----------|
| WPP-S-0.63t | 0.63 | 13 | 75 | 18 | 40 | 115 | 40 | Δ 3.5 | 0.4 | 7990721 |
| WPP-S-1.5t | 1.5 | 20 | 97 | 25 | 46 | 147 | 50 | Δ 4.5 | 1.0 | 7989944 |
| WPP-S-2.5t | 2.5 | 28 | 126 | 30 | 61 | 187 | 61 | HY3+5 | 1.5 | 7989945 |
| WPP-S-4t | 4.0 | 36 | 150 | 35 | 78 | 227 | 77 | HY3+6 | 3.3 | 7989946 |
| WPP-S-5t | 5.0 (6.7) | 37 | 174 | 40 | 95 | 267 | 93 | HY3+8 | 7.1 | 7989947 |
| WPP-S-8t | 8.0 (10) | 49 | 208 | 48 | 100 | 310 | 102 | HY3+10 | 8.2 | 7989948 |

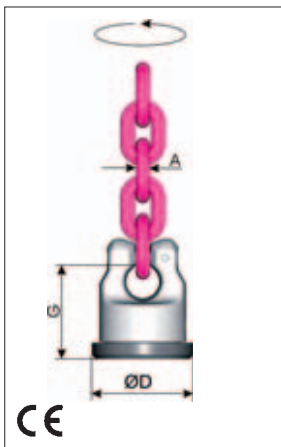
() increased WLL in axial load direction



WPP-B – the ring connection for hook assemblies

| Type | WLL (t) | A | B | C | D | E | G | R1 | Weld HY+ Δ | Weight (kg) | Ref.-No. |
|-------------|-----------|----|-----|----|-----|-----|-----|----|------------|-------------|----------|
| WPP-B-0.63t | 0.63 | 9 | 65 | 35 | 40 | 105 | 40 | 15 | Δ 3.5 | 0.35 | 7989954 |
| WPP-B-1.5t | 1.5 | 11 | 65 | 35 | 46 | 115 | 50 | 15 | Δ 4.5 | 0.6 | 7989955 |
| WPP-B-2.5t | 2.5 | 13 | 74 | 40 | 61 | 135 | 61 | 18 | HY3+5 | 1.0 | 7989956 |
| WPP-B-4t | 4.0 | 16 | 95 | 45 | 78 | 172 | 77 | 20 | HY3+6 | 2.3 | 7989957 |
| WPP-B-5t | 5.0 (6.7) | 19 | 130 | 60 | 95 | 223 | 93 | 25 | HY3+8 | 4.7 | 7989958 |
| WPP-B-8t | 8.0 (10) | 24 | 140 | 65 | 100 | 242 | 102 | 28 | HY3+10 | 5.3 | 7989959 |

() increased WLL in axial load direction



WPP-VIP – for direct connection with VIP chain

| Type | WLL (t) | A VIP-chain connection | D | G | Weld HY+ Δ | Weight (kg) | Ref.-No. without VIP-chain |
|----------------|-----------|------------------------------|-----|-----|------------|-------------|----------------------------------|
| WPP-VIP4-0.63t | 0.63 | 4 | 40 | 40 | Δ 3.5 | 0.25 | 7989960 |
| WPP-VIP6-1.5t | 1.5 | 6 | 46 | 50 | Δ 4.5 | 0.45 | 7989961 |
| WPP-VIP8-2.5t | 2.5 | 8 | 61 | 61 | HY3+5 | 0.85 | 7989962 |
| WPP-VIP10-4t | 4.0 | 10 | 78 | 77 | HY3+6 | 2.1 | 7989963 |
| WPP-VIP13-5t | 5.0 (6.7) | 13 | 95 | 93 | HY3+8 | 3.4 | 7989964 |
| WPP-VIP16-8t | 8.0 (10) | 16 | 100 | 102 | HY3+10 | 4.5 | 7989965 |

() increased WLL in axial load direction



- Can be turned even in a 90° position under full load from the bolt centre line.
- Warranty can only be given when assembled with original RUD components and chains!
- Clear identification of the WLL
- Safety factor 4 : 1
- Cr, Ni, Mo steel quenched and tempered in special steel
- All components 100 % crack detected
- Max. WLL with smallest welding surface
- Fluorescent pink powder coated
- No damage due to safe transport, fast amortization because of easy handling
- Not suitable for permanent swivelling under full load.

Notice: Follow the Instructions for use!

-40° C

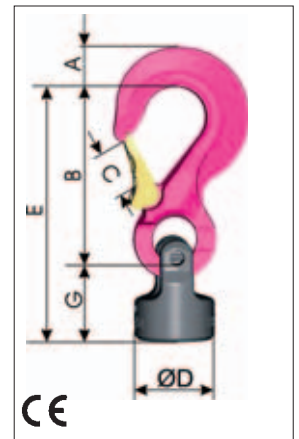


Complies with the machinery directives 2006/42/EG

WPPH-S – the universal connection for round slings. wire ropes. hook and ring assemblies

| Type | WLL (t) | A | B | C | D | E | G | Weld HY+ Δ | Weight (kg) approx. | Ref.-No. |
|--------------|-----------|----|-----|----|----|-----|----|------------|---------------------|----------|
| WPPH-S-0.63t | 0.63 | 13 | 75 | 18 | 34 | 109 | 34 | Δ 3.5 | 0.35 | 7990722 |
| WPPH-S-1.5t | 1.5 | 20 | 97 | 25 | 40 | 141 | 44 | Δ 4.5 | 0.95 | 7989966 |
| WPPH-S-2.5t | 2.5 | 28 | 126 | 30 | 53 | 179 | 53 | HY3+5 | 1.4 | 7989967 |
| WPPH-S-4t | 4.0 | 36 | 150 | 35 | 68 | 217 | 66 | HY3+6 | 3.2 | 7989968 |
| WPPH-S-5t | 5.0 (6.7) | 37 | 174 | 40 | 83 | 253 | 79 | HY3+8 | 6.9 | 7989969 |
| WPPH-S-8t | 8.0 (10) | 49 | 208 | 48 | 88 | 296 | 88 | HY3+10 | 8.0 | 7989970 |

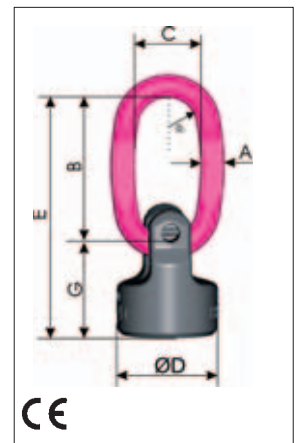
() increased WLL in axial load direction



WPPH-B – the ring connection for hook assemblies

| Type | WLL (t) | A | B | C | D | E | G | R1 | Weld HY+ Δ | Weight (kg) approx. | Ref.-No. |
|--------------|-----------|----|-----|----|----|-----|----|----|------------|---------------------|----------|
| WPPH-B-0,63t | 0,63 | 9 | 65 | 35 | 34 | 99 | 34 | 15 | Δ 3,5 | 0,3 | 7989976 |
| WPPH-B-1,5t | 1,5 | 11 | 65 | 35 | 40 | 109 | 44 | 15 | Δ 4,5 | 0,5 | 7989977 |
| WPPH-B-2,5t | 2,5 | 13 | 74 | 40 | 53 | 127 | 53 | 18 | HY3+5 | 0,9 | 7989978 |
| WPPH-B-4t | 4,0 | 16 | 95 | 45 | 68 | 163 | 66 | 20 | HY3+6 | 2,2 | 7989979 |
| WPPH-B-5t | 5,0 (6,7) | 19 | 130 | 60 | 83 | 209 | 79 | 25 | HY3+8 | 4,5 | 7989980 |
| WPPH-B-8t | 8,0 (10) | 24 | 140 | 65 | 88 | 228 | 88 | 28 | HY3+10 | 5,1 | 7989981 |

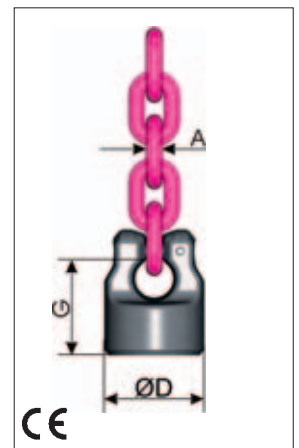
() increased WLL in axial load direction



WPPH-VIP – for direct connection with VIP chain

| Type | WLL (t) | A VIP-chain connection | D | G | Weld HY+ Δ | Weight (kg) | Ref.-No. without VIP-chain |
|-----------------|-----------|------------------------|----|----|------------|-------------|----------------------------|
| WPPH-VIP4-0,63t | 0,63 | 4 | 34 | 34 | Δ 3,5 | 0,2 | 7989982 |
| WPPH-VIP6-1,5t | 1,5 | 6 | 40 | 44 | Δ 4,5 | 0,35 | 7989983 |
| WPPH-VIP8-2,5t | 2,5 | 8 | 53 | 53 | HY3+5 | 0,75 | 7989984 |
| WPPH-VIP10-4t | 4,0 | 10 | 68 | 66 | HY3+6 | 2,0 | 7989985 |
| WPPH-VIP13-5t | 5,0 (6,7) | 13 | 83 | 79 | HY3+8 | 3,2 | 7989986 |
| WPPH-VIP16-8t | 8,0 (10) | 16 | 88 | 88 | HY3+10 | 4,3 | 7989987 |

() increased WLL in axial load direction



Warranty can only be given when assembled with original RUD components and chains!

- Loaded from any angle, swivels and pivots
- Easy identification of WLL
- Safety factor 4:1
- Cr, Ni, Mo-steel special quenched and tempered
- All parts 100 % crack detected
- Max. WLL at smallest welding surface
- Pink powder coated components
- Fast amortization due to better handling, no damage owing to safe transport
- Unsuitable for turning loads, use the WPP instead (page 26)



Notice: Follow the Instructions for use!



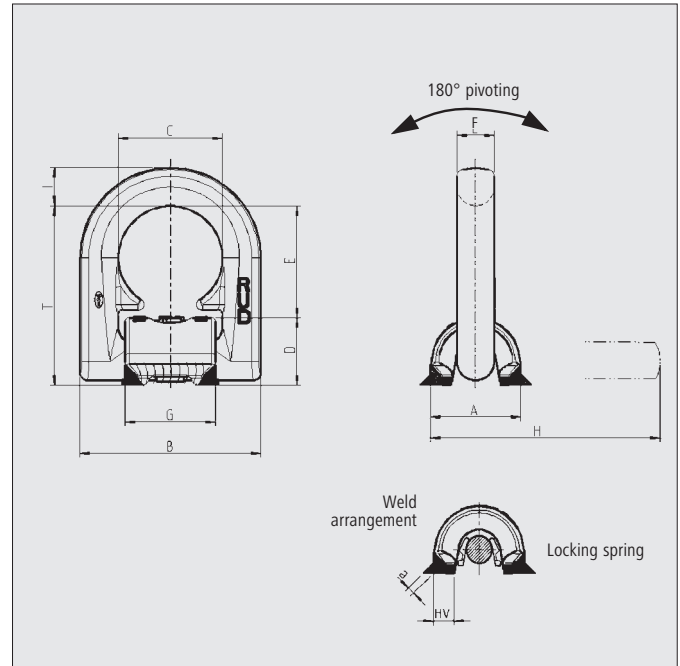
Lifting Points - for welding - Load Ring - VLBS -



Complies with the machinery directives 2006/42/EG

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

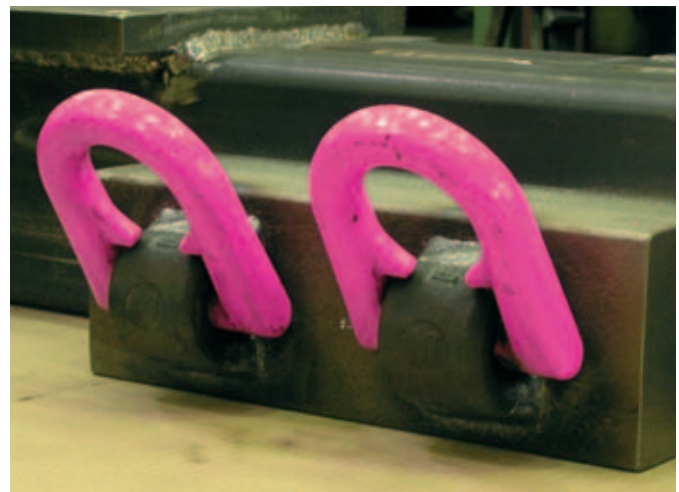
-20° C



| Type | WLL (t) | A | B | C | D | E | F | G | H | I | T | Weld HV+ Δ | Weight (kg) | Ref.-No. captive complete | Ref.-No. without spring |
|----------|---------|----|-----|-----|----|-----|------|----|-----|----|-----|------------|-------------|---------------------------|-------------------------|
| VLBS 1.5 | 1.5 | 33 | 66 | 38 | 25 | 40 | 13.5 | 33 | 87 | 14 | 65 | HV 5 + 3 | 0.35 | 79 93 035 | 79 93 115 |
| VLBS 2.5 | 2.5 | 36 | 77 | 45 | 27 | 48 | 13.5 | 40 | 97 | 16 | 75 | HV 7 + 3 | 0.5 | 79 94 830 | 79 95 346 |
| VLBS 4 | 4 | 42 | 87 | 51 | 31 | 52 | 16.5 | 46 | 112 | 18 | 83 | HV 8 + 3 | 0.8 | 79 93 036 | 79 93 116 |
| VLBS 6.7 | 6.7 | 61 | 115 | 67 | 44 | 73 | 22.5 | 60 | 157 | 24 | 117 | HV 12 + 4 | 1.9 | 79 93 037 | 79 93 117 |
| VLBS 10 | 10 | 75 | 129 | 67 | 55 | 71 | 26.5 | 60 | 173 | 27 | 126 | HV 16 + 4 | 2.9 | 79 93 040 | 79 93 118 |
| VLBS 16 | 16 | 95 | 190 | 100 | 69 | 105 | 26 | 90 | 243 | 40 | 174 | HV 25 + 6 | 6.8 | -- | 79 93 041 |

- The VLBS forged out of high tensile CrNiMo - steel with an innovative design offers many advantages.
 - up to 50 % higher WLL.
 - the two protective supporting lugs (inside the load ring) are patented and they improve the connection with the attachment in addition they protect the clamping spring.
 - The support effect is exceptional, especially if the ring is side loaded or the lifting point is welded on an uneven work piece.
 - Pink powder coating, a VIP recognition attribute and a heat indicator (refer to page 15).
- Easy and quick to weld assembly.
- Compact and shapely design.
- High dynamic and static strength.
- Forged suspension ring acc. to EN 1677, grade 80, electromagnetic crack detected, pink powder coated; meets the requirements of the appropriate safety authorities.
- The welding block has been forged of material 1.0570 (St 52-3) and clearly stamped with the permissible WLL. The patented distance lugs assist in achieving the correct root weld.
- Important: By the special weld design (continuous HV), the requirements of DIN 18800 are fulfilled, i.e., a closed weld avoids corrosion and thus suitable for outdoor use.

- **Distinctive features for type LBS-U:** A protected spring maintains the load ring in every required position. The parts are assembled in such a way that they remain captive.
- The spring reduces vibration induced noise.



Subject to technical alternations!



Lifting Points - for welding - Load Ring - for special usage



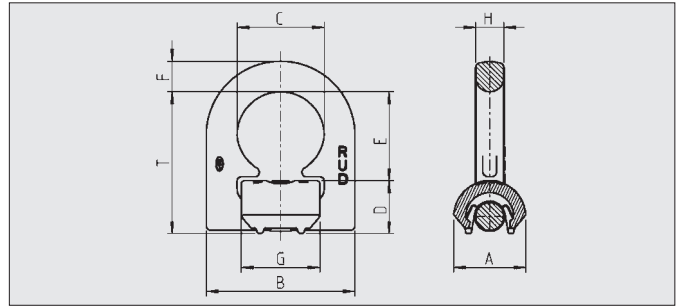
Complies with the machinery directives 2006/42/EG

VLBS-U-LT for low temperature



-45° C

- Load ring VLBS-U-LT for low temperature as far as 45 °C
- Analog to a conventional VLBS-U plus useable for low temperatures



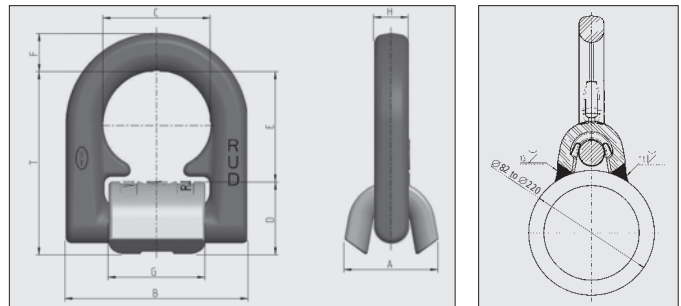
| Type | WLL (t) | A | B | C | D | E | F | G | H | T | Weight (kg) | Ref.-No. |
|-----------------|---------|----|-----|----|----|----|------|----|------|-----|-------------|-----------|
| VLBS-U-LT 2.5 t | 2.5 | 36 | 77 | 45 | 27 | 48 | 13 | 40 | 13.5 | 75 | 0.5 | 79 03 522 |
| VLBS-U-LT 4 t | 4 | 42 | 87 | 51 | 32 | 52 | 18 | 46 | 16.5 | 84 | 0.8 | 79 03 400 |
| VLBS-U-LT 6.7 t | 6.7 | 61 | 115 | 67 | 44 | 73 | 24 | 60 | 22.5 | 117 | 1.9 | 79 03 684 |
| VLBS-U-LT 10 t | 10 | 75 | 129 | 67 | 55 | 71 | 26.5 | 60 | 26 | 126 | 2.9 | 79 03 135 |

VLBS-P for pipes



-20° C

- For tubes with an outside diameter of 82 - 220 mm.
- For bigger tube diameters, the standard VLBS can be used.



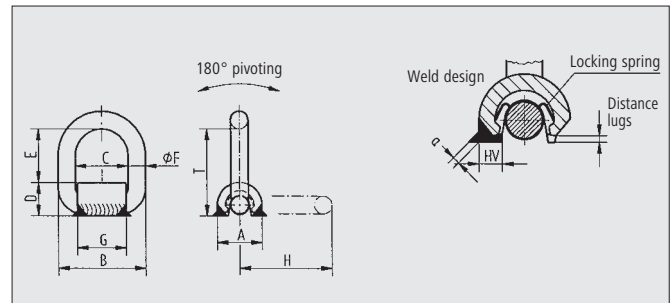
| Type | WLL | A | B | C | D | E | F | G | H | T | Weight | Ref.-No. complete |
|------------|----------|----------|---------|----|---------|---------|--------|----------|--------|----------|----------|-------------------|
| VLBS-P 4 t | 4 t | 45 | 87 | 51 | 35 | 52 | 18 | 46 | 16.5 | 87 | 0.8 kg | 79 95 472 |
| VLBS-P 4 t | 8800 lbs | 1 25/32" | 3 7/16" | 2" | 1 1/64" | 2 1/16" | 23/32" | 1 13/16" | 32/32" | 3 23/64" | 1.75 lbs | 79 95 472 |

LBS-RS-stainless



-100° C

Material No. 1.4571



| Type | WLL (t) | A | B | C | D | E | ∅ F | G | H | T | Weld HV+ Δ | Weight (kg) | Ref.-No. |
|----------------|---------|----|-----|----|----|----|------|----|-----|-----|------------|-------------|----------|
| LBS (1) RS 0.5 | 0.5 | 32 | 65 | 36 | 25 | 39 | 13.5 | 33 | 69 | 64 | HV 5 + 3 | 0.3 | 51 630* |
| LBS (3) RS 1 | 1 | 42 | 85 | 50 | 31 | 50 | 16.5 | 46 | 87 | 81 | HV 8 + 3 | 0.6 | 51 740* |
| LBS (5) RS 2 | 2 | 61 | 110 | 65 | 44 | 72 | 22.5 | 60 | 125 | 116 | HV 12 + 4 | 1.6 | 53 377 |

* Without locking spring

LBS () RS-version!

Welding block and suspension ring made of 1.4571, recommendable welding electrode e.g. Castolin ARC A Mo 90009N

Application examples:

1.4571 = in welded condition resistant against inner crystalline corrosion - in permanent operation up to 400°C.

The chemical resistance and resistance against pitting by chloride media has increased due to the Mo contents. The material 1.4571 is widely used in the chemical industry, petroleum, coal-tar, chemical and textile industries.



Lifting Points - for welding - Load Ring VRBS-FIX

with considerable improvements



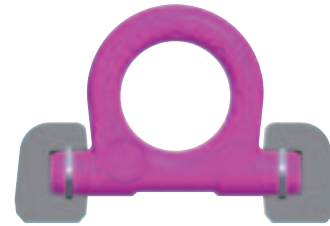
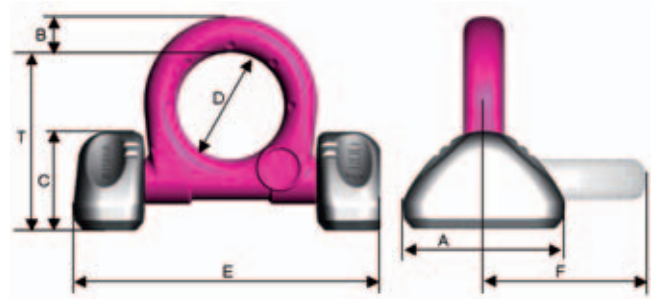
Complies with the machinery directives 2006/42/EG

**4 SAFETY
FACTOR 4:1
LOADABLE IN
ANY DIRECTION**

-40° C



CE



| Type | WLL (t) | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | T (mm) | Weld | Weight (kg/pc.) | Ref.-No. Pink |
|-----------------|---------|--------|--------|--------|--------|--------|--------|--------|-------|-----------------|---------------|
| VRBS-FIX 4 t | 4 | 60 | 14 | 39 | 48 | 132 | 69 | 74 | HY 3 | 0.93 | 7999019 |
| VRBS-FIX 6.7 t | 6.7 | 88 | 20 | 50 | 60 | 167 | 91 | 97 | HY 5 | 2.2 | 7999020 |
| VRBS-FIX 10 t | 10 | 100 | 22 | 60 | 65 | 191 | 100 | 108 | HY 6 | 3.7 | 7999021 |
| VRBS-FIX 16 t | 16 | 130 | 30 | 72 | 90 | 267 | 134 | 140 | HY 9 | 8.0 | 7999301 |
| VRBS-FIX 31.5 t | 31.5 | 160 | 42 | 99 | 130 | 366 | 195 | 202 | HY 12 | 18.4 | 7999302 |

- Weld-on parts without bothersome subsurface corrosion due to circular HY-weld seam. Smaller weld seam than the previous VRBS.
- **No time-consuming alignment between weld-on blocks and ring.**
- Clamp spring is protected placed inside the weld-on block. The spring fixes the weld-on blocks to the ring and creates at the same time a radial clamping. No loose items.
- Clamping spring avoids rattling noise.
- Recognition of inclination angle through markings on the ring and on the blocks in all levels.
- Total length and total width are the same as with the previous VRBS.
- VRBS-FIX can also be supplied with a axial bearing disc if permanently used in an 90° load direction to the ring level (x).
- Nicely shaped design.





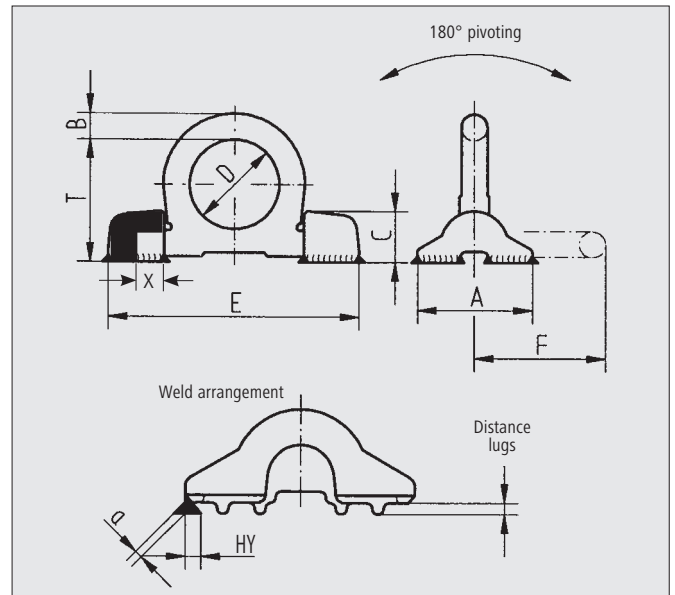
Lifting Points - for welding - Load Ring - VRBS -



Complies with the machinery directives 2006/42/EG

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

-20° C

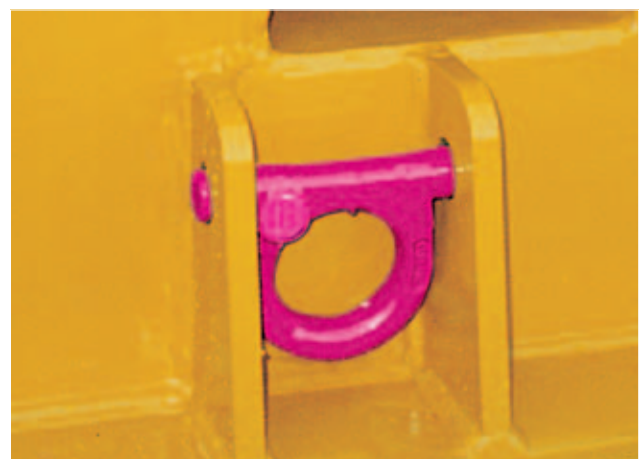
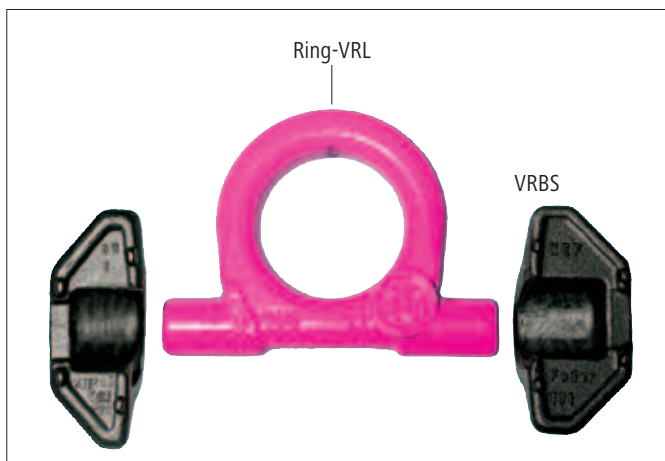


| Type | WLL (t) | A | B | C | D | E | F | O | Q | X | T | Weld HY + Δ a | Weight (kg) | Ref.-No. |
|-----------|---------|-----|----|-----|-----|-----|-----|----|-----|----|-----|---------------|-------------|-----------|
| VRBS 4 | 4 | 62 | 14 | 28 | 48 | 135 | 71 | 17 | 77 | 14 | 65 | HY 4 + 3 | 0.8 | 79 92 488 |
| VRBS 6.7 | 6.7 | 88 | 20 | 39 | 60 | 170 | 92 | 23 | 101 | 15 | 84 | HY 5.5 + 3 | 2.1 | 79 92 489 |
| VRBS 10 | 10 | 100 | 22 | 46 | 65 | 195 | 100 | 28 | 106 | 22 | 95 | HY 6 + 4 | 2.8 | 79 92 490 |
| VRBS 16 | 16 | 130 | 30 | 57 | 90 | 263 | 134 | 36 | 147 | 28 | 127 | HY 8.5 + 4 | 6.6 | 79 92 491 |
| VRBS 31.5 | 31.5 | 160 | 42 | 78 | 130 | 375 | 195 | 47 | 220 | 37 | 178 | HY 18 + 4 | 19.0 | 60267 |
| VRBS 50 | 50 | 240 | 70 | 120 | 230 | 620 | 340 | 65 | 380 | - | 313 | HY 25 + 8 | 54.1 | 56 834 |

- Distribution of the load force due to the 2 point fixing, hence an optimised force introduction to the work piece.
- Forged, suspension ring acc. to EN 1677-1, electromagnetic crack detected, pink powder coated. Suspension ring can also be ordered single. For instance VRL 4. This lifting point fulfils the requirements of the appropriate safety authorities (German Employers Insurance Association). Stamped.
- Lays flat when not in use.
- Low profile.
- Rounded well shaped design.
- High dynamic and static strength.
- The welding blocks are forged out of the ideal weldable steel S355J2+N (St 52-3N) and the nominal WLL is embossed.

- Patented distance lugs assist in achieving the correct root weld (approx. 3 mm).
- The weld arrangement (continuous HY weld) fulfils the requirements of DIN 18800 i.e. the closed weld avoids corrosion and is thus suitable for outdoor use.

Attention: Refer to the RUD user welding instructions!





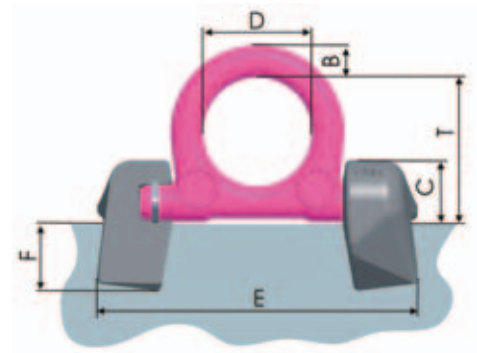
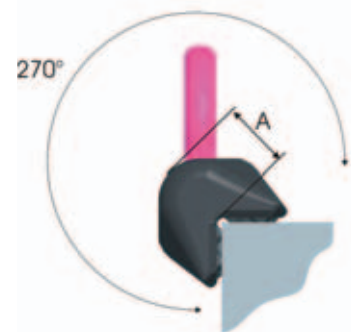
Lifting Points - for welding - Load Ring for edge attachments - VRBK-FIX



Complies with the machinery directives 2006/42/EG

4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION

-20° C

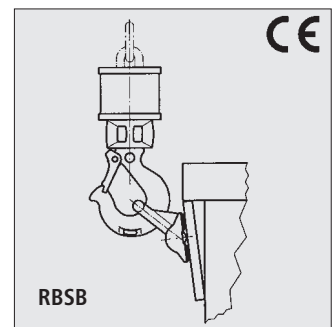


| Type | WLL (t) | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | a | T (mm) | Weight (kg/pc.) | Ref.-No. Pink |
|----------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------|---------------|
| VRBK-FIX 4 t | 4 | 32 | 14 | 28 | 48 | 140 | 29 | HY 4+3 | 65 | 1 | 7902149 |
| VRBK-FIX 6.7 t | 6.7 | 40 | 20 | 35 | 60 | 180 | 33 | HY 5+3 | 84 | 2.1 | 7902150 |
| VRBK-FIX 10 t | 10 | 52 | 22 | 46 | 65 | 212 | 46 | HY 8+3 | 94 | 4.4 | 7902256 |

- Welded on the corner, it reduces the number of lifting points, because instead of welding lifting points either on the top or on the side this type can be centrally located.
- Forged, suspension ring acc. to EN 1677-1, electromagnetic crack detected, pink powder coated. Order number of ring individually, e.g. VRL 10.
- Loadable in any direction.
- Safety factor 4 : 1.
- Favourable force introduction due to the two point attachment.
- Low profile and 270° pivoting.
- Welding blocks and ring body fix connected by special radial clamp spring
- Easy adjustment of the ring body
- Ring body stays in position
- Easy painting
- No loose parts
- No rattling
- Process reliability at welding: dimension E is assured

RBSB application

- The weldable load ring with limit stops is available for EHB containers and machines. The limit stops provide the necessary support for the ring and thus enabling a 45° hook - in inclined position from the work piece.
- Protects the load from severe damage.



| Type | WLL (t) | A | B | C | D | E | F | O | P | T | Weld HY + Δ a | Weight (kg) | Ref.-No. |
|--------|---------|----|----|----|----|-----|----|----|----|----|---------------|-------------|----------|
| RBSB 5 | 5 | 80 | 20 | 36 | 60 | 164 | 92 | 23 | 21 | 84 | HY 5 + 3 | 1.8 | 61 757 |



Lifting Points - for welding - Excavator hook for welding - VABH-W -



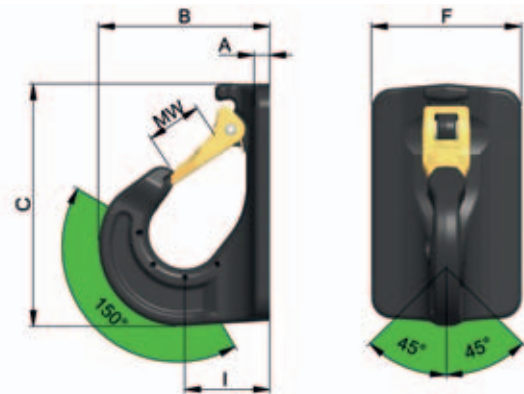
Complies with the machinery directives 2006/42/EG



VABH-W

Excavator hook used as a lifting point for spreader bars, wire rope slings, round slings, lifting means with an oval suspension ring or eye.

- Operating range: 150°
- Permissible loading: 45° in lateral pull direction.



| Type | WLL (t) | MW | A | B | C | F | I | Weld | Weight (kg) | Ref.-No. |
|-------------|---------|----|-----|-----|-----|-----|----|------|-------------|----------|
| VABH-W 1.5t | 1.5 | 25 | 7.5 | 78 | 117 | 70 | 38 | 3 | 0.8 | 7991208 |
| VABH-W 2.5t | 2.5 | 30 | 8.5 | 101 | 148 | 85 | 49 | 3 | 1.8 | 7991209 |
| VABH-W 4t | 4 | 35 | 11 | 122 | 171 | 104 | 59 | 4 | 3.1 | 7991210 |
| VABH-W 6.7t | 6.7 | 40 | 13 | 156 | 208 | 120 | 70 | 5 | 5.9 | 8502239 |

- Extremely robust safety latch protected by a ridge.
- Non protruding tip of the hook - no unintentional hooking in.
- Surface treatment: phosphated.
- Shapely design and light weight construction.
- To be preferably welded in the direction of pull.

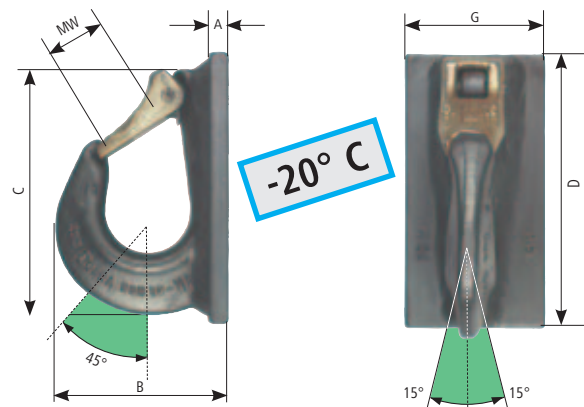
- Enlarged hook tip avoids improper use - thus no hook in smaller openings.
- Patented wear marks on the hook.
- Measurable overload indicator.
- Can also be used as an excavator hook.

Excavator hook used as a lifting point for spreader bars, wire rope slings, round slings, lifting means with an oval suspension ring or eye.

- Operating range: 45°
- Permissible loading: 15° in lateral pull direction.



VCGH-S-weld on



| Type | WLL (t) | MW | A | B | C | D | G | I | Weld | Weight (kg) | Ref.-No. |
|-----------|---------|----|----|-----|-----|-----|-----|----|------|-------------|----------|
| VCGH-S 16 | 10 | 48 | 15 | 141 | 200 | 220 | 100 | 70 | 8 | 5 | 7984047 |
| VCGH-S 20 | 16 | 63 | 20 | 187 | 272 | 288 | 120 | 87 | 8 | 8,4 | 7984310 |
| VCGH-S 22 | 20 | 63 | 20 | 195 | 276 | 292 | 120 | 92 | 8 | 14,5 | 7984312 |

- Extremely robust forged safety latch.
- Non protruding tip of the hook - thus no unintentional hooking in.
- Shapely design and light weight construction.
- To be preferably welded in the direction of pull.

- Enlarged hook tip avoids improper use - Enlarged hook tip avoids improper use smaller openings.
- Measurable overload indicator
- Phosphate treated surface.



Lifting Points - for welding - ABA

Weldable lifting point, loadable from any direction

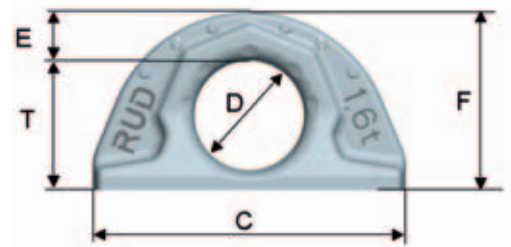


4 SAFETY FACTOR 4:1
LOADABLE IN ANY DIRECTION



LIFTING

-40° C



| Type | Lifting WLL (t) | A | B | C | D | E | F | T | Thickness of fillet weld | Weight (kg) | Ref.-No. |
|------------|-----------------|-----|----|-----|-----|------|-----|------|--------------------------|-------------|----------|
| ABA 1.6 t | 1.6 | 30 | 16 | 100 | 35 | 16 | 57 | 41.5 | 4 | 0.44 | 7900352 |
| ABA 3.2 t | 3.2 | 41 | 23 | 137 | 50 | 21 | 80 | 59 | 6 | 1.1 | 7900353 |
| ABA 5 t | 5 | 51 | 27 | 172 | 60 | 27.5 | 99 | 71.5 | 7 | 2.3 | 7900354 |
| ABA 10 t | 10 | 70 | 38 | 228 | 80 | 35 | 130 | 95 | 8 | 5.3 | 7900355 |
| ABA 20 t | 20 | 90 | 52 | 272 | 115 | 40 | 175 | 135 | 12 | 10.7 | 7902174 |
| ABA 31.5 t | 31.5 | 108 | 64 | 320 | 130 | 50 | 204 | 154 | 15 | 18.3 | 7902175 |

Subject to technical alterations

- Loadable from any direction
- Safety factor 4:1
- Quenched and tempered part, thereby wear resistant
- Patented wear markings inside and outside
- Smaller circular fillet weld seam
- Surface phosphated
- No sharp edges, shape is careful to lifting means
- If component is used as lashing point, stated WLL at the component can be doubled.



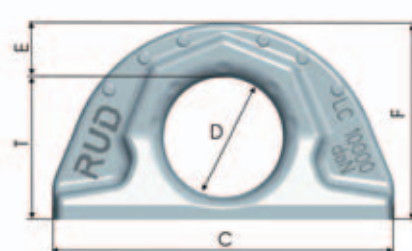
L-ABA (Lashing-ABA)

Weldable lashing point, loadable from any direction

- Loadable from any direction
- Safety factor 2:1
- Quenched and tempered part, thereby wear resistant
- Patented wear markings inside and outside
- Smaller circular fillet weld seam
- Surface phosphated
- No sharp edges, shape is careful to lashing means
- With statement for the permitted lashing force (LC = Lashing capacity) in daN

-40° C

LASHING

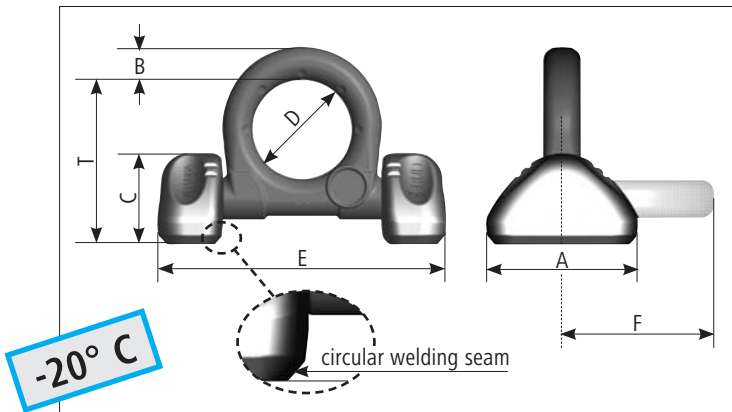


| Type | Lashing LC daN | A | B | C | D | E | F | T | Thickness of fillet weld | Weight (kg) | Ref.-No. |
|------------------|----------------|----|----|-----|----|------|-----|------|--------------------------|-------------|----------|
| L-ABA 3.200 daN | 3200 | 30 | 16 | 100 | 35 | 16 | 57 | 41.5 | 4 | 0.44 | 7902667 |
| L-ABA 6.400 daN | 6400 | 41 | 23 | 137 | 50 | 21 | 80 | 59 | 6 | 1.1 | 7902668 |
| L-ABA 10.000 daN | 10000 | 51 | 27 | 172 | 60 | 27.5 | 99 | 71.5 | 7 | 2.3 | 7901722 |
| L-ABA 20.000 daN | 20000 | 70 | 38 | 228 | 80 | 35 | 130 | 95 | 8 | 5.3 | 7901723 |

Subject to technical alterations!



Lashing Points - for welding - LRBS-FIX and LRBK-FIX with LC indication

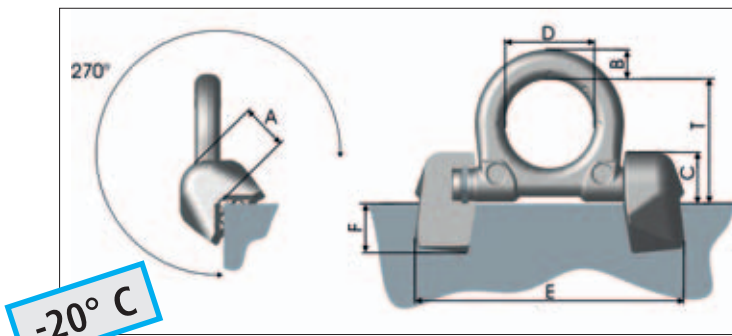


- Circular welding seam
 - No rusting under of the welding blocks
 - Smaller welding seam compared to LRBS
- Dimensions A, B, D, E, F identical to LRBS
- Welding blocks and ring body fix connected by special radial clamp spring
 - Easy adjustment of the ring body
 - Ring body stays in position
 - Easy painting
 - No loose parts
 - No rattling
 - Process reliability at welding: dimension E is assured
- Distance from ring body to weld contact area "T" bigger than at LRBS
 - Easy painting in the gap

| Type | LC (daN) | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | T (mm) | Weld | Weight (kg/pc.) | Ref.-No. |
|----------------|----------|--------|--------|--------|--------|--------|--------|--------|------|-----------------|----------|
| LRBS-FIX 8000 | 8000 | 60 | 14 | 39 | 48 | 132 | 69 | 74 | HY 3 | 0.9 | 7999 303 |
| LRBS-FIX 13400 | 13400 | 88 | 20 | 50 | 60 | 167 | 91 | 97 | HY 5 | 2.2 | 7999 304 |
| LRBS-FIX 20000 | 20000 | 100 | 22 | 60 | 65 | 191 | 100 | 108 | HY 6 | 3.7 | 7999 305 |
| LRBS 32000* | 32000 | 130 | 30 | 57 | 90 | 267 | 134 | 127 | HY 9 | 6.6 | 7993 151 |

* Will be supplied in the current version assembled with 3 components

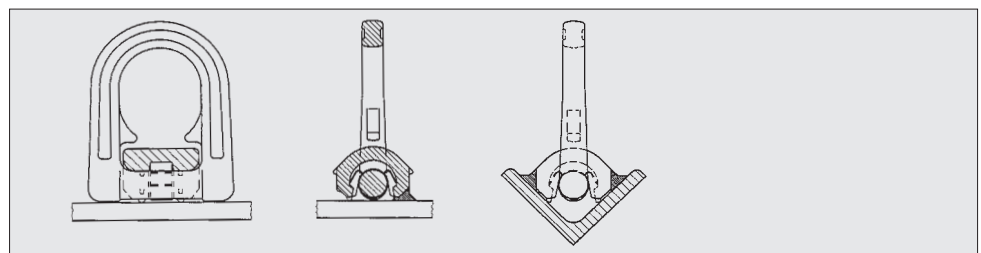
Lashing Points - for welding – LRBK-FIX –



- Welded on the corner, it reduces the number of lashing points
- Loadable in any direction.
- Low profile and 270° pivoting.
- Welding blocks and ring body fix connected by special radial clamp spring
 - Easy adjustment of the ring body
 - Ring body stays in position
 - Easy painting
 - No loose parts
 - No rattling
 - Process reliability at welding: dimension E is assured

| Type | LC (daN) | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | T (mm) | Weld a | Weight (kg/pc.) | Ref.-No. |
|-----------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------|----------|
| LRBK-FIX 8.000 | 8.000 | 32 | 14 | 28 | 48 | 141 | 29 | 65 | HY 4+3 | 1 | 7903056 |
| LRBK-FIX 13.400 | 13.400 | 40 | 20 | 35 | 60 | 181 | 33 | 84 | HY 5+3 | 2.1 | 7903057 |
| LRBK-FIX 20.000 | 20.000 | 52 | 22 | 46 | 65 | 212 | 46 | 94 | HY 8+3 | 4.4 | 7903058 |

Lashing Points in vehicle construction



RORO Lashing point acc. to DIN EN 29367-2
Reference no. 7983031

Max. lashing force = 10,000 daN, refer to drawing: possibilities of attaching to longitudinal and lateral profiles.

Other lashing points with embossed lashing capacity „daN“ are available on request.

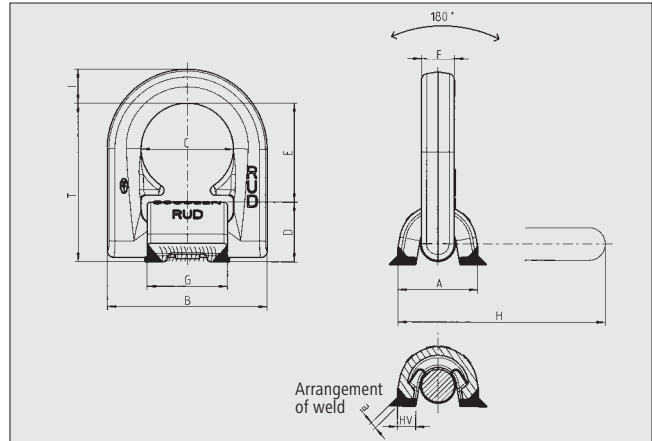
Subject to technical alternations!



Lashing Points - for welding - LPW with LC indication



-20° C



- Design in VIP quality, up to 50 % increased lashing capacity compared with standard design
- Shapely design, zinc- phosphated
- Welding block marked with LC in daN
- Inside spring for noise damping available
- The patented distance lugs assist in achieving the correct root weld.
- Optimized 90° load support - patented

| Type | LC (daN) | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | I (mm) | T (mm) | Weld HV + Δa | Weight (kg/pc.) | Ref.-No. |
|-------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|-----------------|----------|
| LPW-U 3000 | 3000 | 33 | 66 | 38 | 25 | 40 | 13,5 | 33 | 87 | 14 | 65 | HV 5 + 3 | 0,35 | 7992225 |
| LPW-U 5000 | 5000 | 36 | 77 | 45 | 27 | 48 | 13,5 | 40 | 97 | 16 | 75 | HV 7 + 3 | 0,5 | 7994831 |
| LPW-U 8000 | 8000 | 42 | 87 | 51 | 31 | 52 | 16,5 | 46 | 112 | 18 | 83 | HV 8 + 3 | 0,8 | 7992226 |
| LPW-U 13400 | 13400 | 61 | 115 | 67 | 44 | 73 | 22,5 | 60 | 157 | 24 | 117 | HV 12 + 4 | 1,9 | 7992227 |
| LPW-U 20000 | 20000 | 75 | 129 | 67 | 55 | 71 | 26,5 | 60 | 173 | 26,5 | 126 | HV 16 + 4 | 2,9 | 7992228 |
| LPW 32000 | 32000 | 95 | 190 | 100 | 69 | 105 | 26 | 90 | 243 | 40 | 174 | HV 25 + 6 | 6,8 | 7992229 |

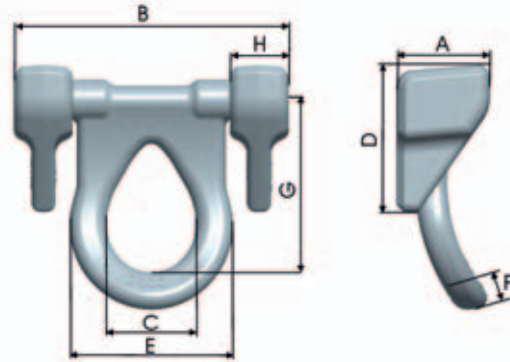


Subject to technical alternations!



Lashing Points - for welding - Star Lashing Point

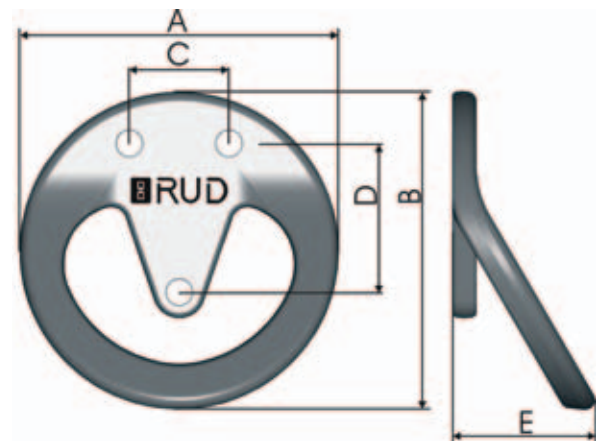
- Loadable from any side
- Pivots 225°
- Lashing possible even at overhanging load.
- No sub corrosion at weld-on blocks
- Clamping spring is protected because of position in weld-on block (Patented)
- Statement of permissible lashing force (LC = Lashing Capacity) in daN



| Nomination | LC (daN) | A | B | C | D | E | F | G | H | Weight (kg) | Ref.-No. with spring |
|------------|----------|----|-----|----|-----|-----|----|-----|----|-------------|----------------------|
| SLP 10000 | 10.000 | 63 | 185 | 60 | 100 | 110 | 25 | 115 | 14 | 3.75 | 7903370 |



Lashing Points - for bolting - SMILEY – the Ro/Ro-Lashing point



| Type | LC (daN) | A | B | C | D | E | 3 × bolt | Weight (kg) | Ref.-No. without bolt | Ref.-No. with bolt |
|--------|----------|-----|-----|----|----|----|-----------------|-------------|-----------------------|--------------------|
| SMILEY | 6000 | 160 | 160 | 50 | 75 | 72 | M12x50 Fk. 10.9 | 1.6 / 1.8 | 7994086 | 7997726 |

- Lashing and fixing device on road vehicles for sea transport on Ro/Ro-ships.
- Lashing point forged in one piece, noiseless
- 100 % - crack detected
- according to DIN EN 29367-2 resistance characteristics with a test force = 120 kN and a breaking force = 200 kN
- Easy fixing with 3 bolts M12, Fk. 10.9
- Surface: galvanic zined

- Well-shaped design, load-capable construction
- Light construction
- Suitable for all established lashing means
- The load-bearing point of the bracket has been chosen so that the load direction is in the center of gravity of the bolt group. Advantage: minimization of bolt loading, usage of a small bolt dimension

Up to date information under www.rud.com and click safety instructions.

1. Reference should be used in compliance with statutory regulations (BGR 500) and installation to be carried out by competent and skilled persons only.
2. Before installing and use, visually inspect the lifting points in regular intervals, paying special attention to the points, corrosion, wear, weld cracks, deformations, etc.
3. The installation points should be chosen in such a way that the induced forces are accommodated by the work piece without being deformed.
4. The lifting points must be positioned on the work piece in such a way that improper strain due to twisting or turning is avoided.
 - a.) For single leg lift, the lifting point should be vertically above the centre of gravity of the work piece.
 - b.) For two leg lifts, the lifting points must be on both sides and above the centre of gravity of the work piece.
 - c.) 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 required WLL of the individual lifting point has to be calculated based on the following physical formulas for symmetrical and unsymmetrical loading:

$$WLL = \frac{G}{n \times \cos \beta}$$

WLL = required of lifting point/
individual leg (kg)
G = load weight (kg)
n = number of load bearing legs
 β = angle of inclination of the
individual leg

6. Keep the RUD - lifting/lashing points away from aggressive chemicals, acids and their vapours.

The number of bearing legs is:

| | symmetrical | ansymmetrical |
|-------------------|-------------|---------------|
| Two lwg | 2 | 1 |
| Three or four leg | 3 | 1 |

7. Valuation of suitability respective to temperature.
The lifting/lashing points for weld on, types VLBS, VRBS, VRBK and ABA can be one time stress free, annealed together with the work piece without reduction of WLL. Temperatures $\leq 600^{\circ}\text{C}$

With lifting points for bolt on, the WLLs have to be reduced acc. to the following table:

Reduction of WLL:

| | | |
|-----------------|---------|------|
| - 40° to 200° C | → minus | 0 % |
| 200° to 300° C | → minus | 10 % |
| 300° to 400° C | → minus | 25 % |

8. The welding positions for the lifting/lashing points should be marked in colour for easy identification.
9. When handling the lifting means (sling chain), no squeezing, shearing, catching and impact spots must occur. Damaging of the lifting means and lifting points by sharp corners must be avoided.
10. For the assembly of the lifting points, please follow the user instructions enclosed.
11. RUD-Lifting points are designed for a max. high dynamic application of 20,000 load cycles.
If there are different loading spectrums, please ask the manufacturer.



For welding

Pay attention to the following points during welding:

- The welding should be carried out by a qualified welder acc. to DIN EN 287-1.
- Material of welding block is S355J2+N/St52-3N (1.0570).
- The connecting surfaces must be free from dirt, oil, colour, etc.
- Do not weld the powder coated tempered load ring.
- The complete construction can be annealed stress-free one time at $\leq 600^{\circ}\text{C}$ without reduction of WLL. (VLBS, VRBS, VRBK and ABA)
- The welding area has to be suitable for the corresponding force introduction.
- The distance lugs (VLBS/VRBS) assist in achieving the required root weld (approx. 3 mm).

Important:

By the arrangement of weld (continuous HV/HY), the following requirements are fulfilled:

DIN 18800 for steel building prescribes:

At outdoor sites or in case of special danger of corrosion, the welds should only be designed as continuous, fillet welds. The circular weld at all RUD-Lifting Points.

Hints for the Installation

Lifting Points for bolt and weld on



For bolting:

- The bolting position is to be designed in such way that the introduced forces are accommodated by the work piece without being deformed.

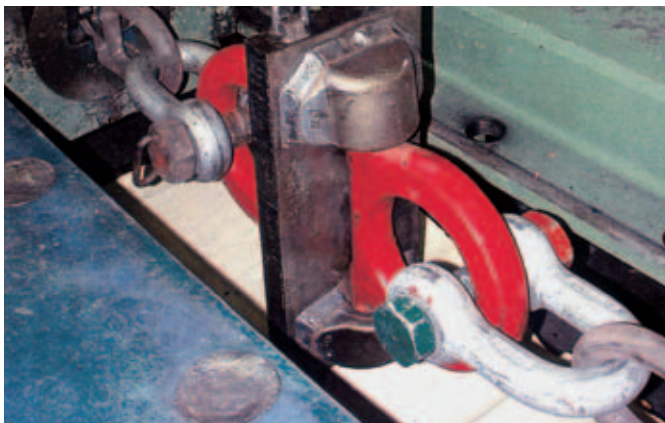
| | |
|----------|---------------------------------------|
| 1 x M | in steel (M = thread size, e.g. M 20) |
| 1,25 x M | in cast iron |
| 2 x M | in aluminium |

- In case of shock loadings, twisting or vibrations, especially with through bolts and nuts, an unintentional dismounting may occur. Possibilities of securing: Liquid means e.g. loctite (refer to the user instructions) or use form - closed securing bolts e.g. crown nuts with a key, counter nut, etc.
- With light metals, non ferrous heavy metals and grey cast, the thread arrangement has to be chosen in such a way that the WLL of the thread corresponds with that of the respective work piece material.
- RUD will not accept any warranty for the use of any bolts not supplied by RUD! Minimum quality for the base material „steel“ must be 1.0037 (S235JR/St 37).

Inspection criteria for items 2 and 10

- Ensure a tight bolt seat (possibly examine torque)
- Ensure that lifting point is complete
- Complete indications of WLL and manufacturer
- Deformations at bearing parts such as body, suspension bracket or latch
- Mechanical damages such as serious notches, especially in high stress areas
- Reductions of cross section by wear > 10 %
- Strong corrosion (pitting)
- Cracks at bearing parts
- Cracks or other damages at the weld (with lifting points for weld on)
- Correct bolt size, bolting quality and bolting length***
- Function and damage of bolts as well as bolt thread
- For lifting/lashing points which swivel, a smooth swivelling of the upper and lower part must be assured.

Tensile Test



Production control at RUD. Breaking test of a RUD RBS 50t lifting point with a minimum breaking strength of 2,000 kN.

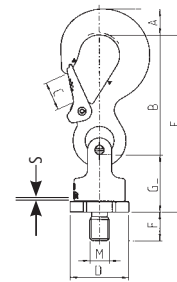


Warning!
Respect the user instructions for the corresponding lifting points!

Refer to the user instructions for the corresponding lifting points!

- Assembly or fitting of the different bolt lengths with types PP, VWBG-V and VWBG check maximum Gap between upper part and part below, size „s“ – refer to table. In case the maximum Gap has been exceeded, WBG and WBG-V must not be used any more. These parts must not be loaded to proof load.

| Type | Gap „s“ |
|----------------------|-------------|
| WPP/PP--0.63t a 2.5t | max. 1.5 mm |
| WPP/PP--4t a 8t | max. 2.5 mm |
| VWBG-V 0.3 - 0.45 | max. 1.2 mm |
| VWBG-V 0.6 - 2.0 | max. 1.5 mm |
| VWBG-V 3.5 - 5.0 | max. 3.0 mm |
| VWBG 6 - 50 | max. 4.0 mm |



Warning!
*Use original RUD bolts only!

Correct storage of lifting points

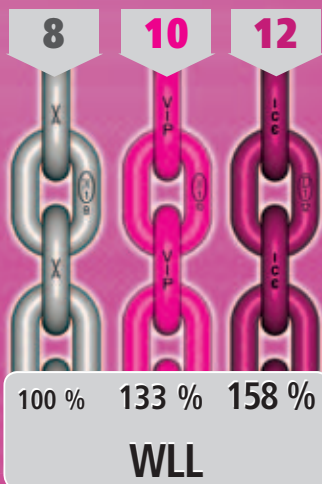


Correct storage of lifting points and sling chains BGR 500.

RUD-Quality in PIN

Grade 80, Grade 100 (VIP) and
WLL »in metric tons« of sling
According to inclination angle at symm

RUD quality grades



| Methods of sling | | 1-leg | | 2-leg | | 3-4 leg | |
|------------------|---------------|----------------------------|-------|-------------|-------|-------------|--|
| | | inclination angle: β | | load factor | | load factor | |
| | | 0 | 0-45° | > 45-60° | 0-45° | > 45-60° | |
| | | 1.0 | 1.4 | 1.0 | 2.1 | 1.5 | |
| Diam. of chains | Quality grade | | | | | | |
| Ø 4 | VIP | 0.63 | 0.88 | 0.63 | 1.32 | 0.95 | |
| Ø 6 | Gk 8 | 1.12 | 1.6 | 1.12 | 2.36 | 1.7 | |
| | VIP | 1.5 | 2.1 | 1.5 | 3.15 | 2.25 | |
| | ICE | 1.8 | 2.5 | 1.8 | 3.75 | 2.7 | |
| Ø 8 | Gk 8 | 2.0 | 2.8 | 2.0 | 4.25 | 3.0 | |
| | VIP | 2.5 | 3.5 | 2.5 | 5.25 | 3.75 | |
| | ICE | 3.0 | 4.2 | 3.0 | 6.3 | 4.5 | |
| Ø 10 | Gk 8 | 3.15 | 4.25 | 3.15 | 6.7 | 4.75 | |
| | VIP | 4.0 | 5.6 | 4.0 | 8.4 | 6.0 | |
| | ICE | 5.0 | 7.0 | 5.0 | 10.5 | 7.5 | |
| Ø 13 | Gk 8 | 5.3 | 7.5 | 5.3 | 11.2 | 8.0 | |
| | VIP | 6.7 | 9.5 | 6.7 | 14.0 | 10.0 | |
| | ICE | 8.0 | 11.2 | 8.0 | 16.8 | 12.0 | |
| Ø 16 | Gk 8 | 8.0 | 11.2 | 8.0 | 17.0 | 11.8 | |
| | VIP | 10.0 | 14.0 | 10.0 | 21.0 | 15.0 | |
| | ICE | 12.5 | 17.0 | 12.5 | 26.5 | 19.0 | |
| Ø 18 | Gk 8 | 10.0 | 14.0 | 10.0 | 21.0 | 15.0 | |
| Ø 20 | Gk 8 | 12.5 | 17.0 | 12.5 | 26.5 | 19.0 | |
| | VIP | 16.0 | 22.4 | 16.0 | 33.6 | 24.0 | |
| Ø 22 | Gk 8 | 15.0 | 21.2 | 15.0 | 31.5 | 22.4 | |
| | VIP | 20.0 | 28.0 | 20.0 | 42.0 | 30.0 | |
| Ø 26 | Gk 8 | 21.2 | 30.0 | 21.2 | 45.0 | 31.5 | |
| Ø 28 | VIP | 31.5 | 45.0 | 31.5 | 67.0* | 47.5* | |
| Ø 32 | Gk 8 | 31.5 | 45.0 | 31.5 | 67.0 | 47.5 | |



Attention:

Acc. to BGR 500 section 2.8, the WLL for single fall becomes valid when unsymmetrical load occurs at a multiple strand sling.



Temperature
°C / °F

Subject to technical modifications! *Only 2 x 2-leg type available.

K!

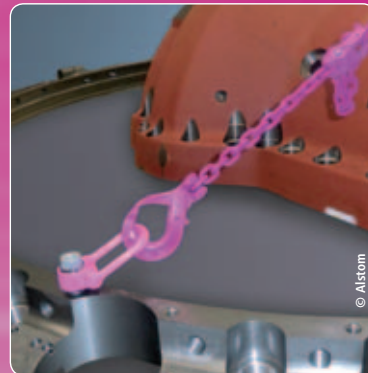
Grade 120 (ICE) g chains metric loading



„Made in Germany“

| endless** Basket sling chain with choke hitch | Basket sling chain** | | | | Choke hitch** | | |
|---|--|-------------|--|------------|--|------------|-------------|
| | single | | double | | single | double | |
| | 0-45° | > 45-60° | 0-45° | > 45-60° | 0° | 0-45° | > 45-60° |
| 1.6 | 1.1 | 0.8 | 1.7 | 1.2 | 0.8 | 1.1 | 0.8 |
| 1.0 | 0.69 | 0.5 | 1.1 | 0.75 | 0.5 | 0.69 | 0.5 |
| 1.8 | 1.2 | 0.9 | 1.9 | 1.3 | 0.9 | 1.2 | 0.9 |
| 2.4 | 1.65 | 1.2 | 2.55 | 1.8 | 1.2 | 1.65 | 1.2 |
| 2.88 | 2.0 | 1.44 | 3.1 | 2.1 | 1.44 | 2.0 | 1.44 |
| 3.2 | 2.2 | 1.6 | 3.4 | 2.4 | 1.6 | 2.2 | 1.6 |
| 4.0 | 2.75 | 2.0 | 4.25 | 3.0 | 2.0 | 2.75 | 2.0 |
| 4.8 | 3.3 | 2.4 | 5.1 | 3.6 | 2.4 | 3.3 | 2.4 |
| 5.0 | 3.5 | 2.5 | 5.3 | 3.8 | 2.5 | 3.5 | 2.5 |
| 6.4 | 4.4 | 3.2 | 6.8 | 4.8 | 3.2 | 4.4 | 3.2 |
| 8.0 | 5.5 | 4.0 | 8.5 | 6.0 | 4.0 | 5.5 | 4.0 |
| 8.5 | 5.8 | 4.0 | 9.0 | 6.0 | 4.0 | 5.8 | 4.0 |
| 10.6 | 7.5 | 5.3 | 11.2 | 8.0 | 5.3 | 7.5 | 5.3 |
| 12.8 | 8.8 | 6.4 | 13.6 | 9.6 | 6.4 | 8.8 | 6.4 |
| 12.5 | 8.8 | 6.4 | 13.6 | 9.6 | 6.4 | 8.8 | 6.4 |
| 16.0 | 11.0 | 8.0 | 17.0 | 12.0 | 8.0 | 11.0 | 8.0 |
| 20.0 | 14.0 | 10.0 | 21.2 | 15.0 | 10.0 | 14.0 | 10.0 |
| 16.0 | 11.0 | 8.0 | 17.0 | 12.0 | 8.0 | 11.0 | 8.0 |
| 20.0 | 14.0 | 10.0 | 21.2 | 15.0 | 10.0 | 14.0 | 10.0 |
| 25.6 | 17.6 | 12.8 | 27.2 | 19.2 | 12.8 | 17.6 | 12.8 |
| 23.6 | 16.5 | 12.0 | 25.5 | 18.0 | 12.0 | 16.5 | 12.0 |
| 32.0 | 22.0 | 16.0 | 34.0 | 24.0 | 16.0 | 22.0 | 16.0 |
| 33.5 | 23.3 | 17.0 | 36.0 | 25.4 | 17.0 | 23.0 | 17.0 |
| 50.0 | 35.5 | 25.0 | 53.0* | 37.5* | 25.0 | 35.5 | 25.0 |
| 50.0 | 35.5 | 25.0 | 53.0 | 37.5 | 25.0 | 35.5 | 25.0 |
| Grade 80 | -40° up to +200° C (+40° up to +392° F) | | higher 200° up to 300° C (higher 392° up to 572° F) | | higher 300° up to 400° C (higher 572° up to 752° F) | | |
| | 100 % | | 90 % | | 75 % | | |
| VIP 100 | -40° up to +200° C (+40° up to +392° F) | | higher 200° up to 300° C (higher 392° up to 572° F) | | higher 300° up to 380° C (higher 572° up to 716° F) | | |
| | 100 % | | 90 % | | 60 % | | |
| ICE 120 | -60° up to +200° C (-76° up to +392° F) | | higher 200° up to 250° C (higher 392° up to 482° F) | | higher 250° up to 300° C (higher 482° up to 572° F) | | |
| | 100 % | | 90 % | | 60 % | | |

****20 % reduction for basket chains, due to sharp edges, is considered.**



RUD Ketten
Rieger & Dietz GmbH u. Co. KG
Friedensinsel
73432 Aalen/Germany
Tel.: +49 7361 504-1371
Fax: +49 7361 504-1460
slings@rud.com · www.rud.com



RUD[®]

RUD-LIFTING POWER
...EVERY LOAD UNDER CONTROL!

ICE[®] **VIP**[®]
120 + **100**

MADE IN GERMANY

LIFTING POINTS

RUD[®]

Important information!

Optimal load securing...

...with **VIP** and **ICE-Lashing** means

Best load securing – a compulsory legal necessity!

ICE[®] **120** 

LC = 10000 t/day

Edition 21



Tradition in Dynamic Innovation

RUD Ketten
Rieger & Dietz GmbH u. Co. KG
Friedensinsel
73432 Aalen/Germany
Telefon +49 7361 504-1371
Telefax +49 7361 504-1460
sling@rud.com
www.rud.com

German engineering
from the heart
of Europe!

