



**ICE-LBG-SR // VLBG**

Edition 02 // EN



# READY FOR BOLTING



# LIFTING

RUD Lifting points / M6 – M150 / WLL 0.1 t – 200 t

**SUPER ROTATION**



p.18

ICE-LBG-SR



VWBG-V

VWBG

PowerPoint®



PP-S

PP-B

PP-VIP



WBPG

**Rost-fret**  
INOX STAINLESS STEEL



p.24

VLBG

LBG-RS



VRS



VRM

**Rost-fret**  
INOX STAINLESS STEEL




INOX-STAR



RBG

VRBG

FLARIBO



T-FRB

B-FRB




VABH-B

VCGH-G



B-ABA



RS

RM

personal protection equipment



PSA-VRS

PSA-INOX-STAR

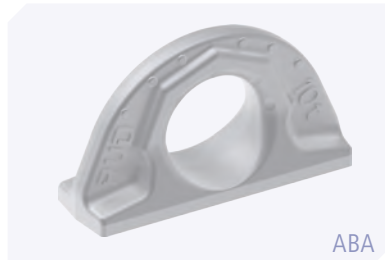
For all other products, please refer to the new RUD General brochure for lifting points (release targeted for February 2015) or to [www.rud.com](http://www.rud.com)

READY FOR  
WELDING

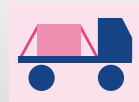


LIFTING

RUD Lifting points / WLL 0.63 t – 50 t

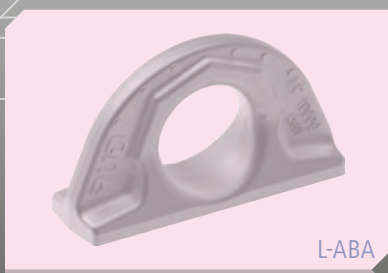
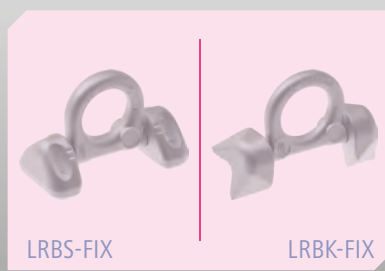
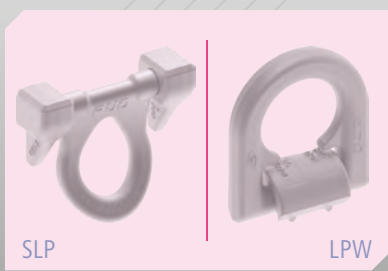


READY FOR  
BOLTING / WELDING



LASHING






























































Lashing points with LC indication for load securing  
LC 3,000 daN – 32,000 daN
































# SELECTION CHART

product features

	 ICE-LBG-SR	 VWBG-V	 VWBG	 PP-S /-B /-VIP	 WBPB	 VLBG	 LGB-RS
WLL	0.3 t – 20 t	0.63 t – 5 t	6 t – 40 t	0.63 t – 8 t	85 t – 200 t	0.3 t – 20 t	1 t / 2 t
Ideal for rotating and turning						–	–
ball bearing type						–	–
safety factor	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>
RUD-ID-System®							
full working load in all directions					–		
DGUV-approval		–	–		–		–
range of rotation	<b>360°</b>	<b>360°</b>	<b>360°</b>	<b>360°</b>	<b>360°</b>	<b>360°</b>	<b>360°</b>
pivoting range suspension link	<b>180°</b>	<b>230°</b>	<b>230°</b>	<b>230°</b>	<b>180°</b>	<b>180°</b>	<b>180°</b>
possible threads metric	 M8 – M48	 M8 – M30	 M33 – M150	 M12 – M42	 M42 – M48	 M8 – M48	 M16 / M20
metric fine thread	–	 M12x1.5 – M30x1.5	 M33x2 – M160x4	 M12x1.5 – M42x3	–	 M12x1.5 – M30x2	–
UNC inch thread	–	 5/16" – 18UNC – 1 1/4" – 7UNC	 1 1/2" – 6UNC – 5"	 1/2" – 13UNC – 1 1/2" – 6UNC	–	 3/8" – 16UNC – 2" – 4.5UNC	–
8-UN-inch thread	–	–		–	–	 1 1/4" 8-UN	–
UNF inch thread	–	–		The products marked in grey you can find in the latest RUD overall brochure for lifting points (targeted for February 2015) or under <a href="http://www.rud.com">www.rud.com</a>			
BSW – British Standard Whitworth	–	–	 1 1/2" – 5"				
G – pipe thread <small>(as per ISO 228) further thread types on request</small>	–	–					
variable thread length					–		–
clamping spring		–	–	–	–		
Maximum operation temperature range WITHOUT reduction of WLL	<b>-40° – 100°C</b>	<b>-40° – 100°C</b>	<b>-40° – 200°C</b>	<b>-40° – 200°C</b>	<b>-10° – 100°C</b>	<b>-40° – 100°C</b>	<b>-60° – 100°C</b>
Maximum operation temperature WITH reduction of WLL	<b>300°C max.</b>	<b>350°C max.</b>	<b>400°C max.</b>	<b>400°C max.</b>	<b>100°C max.</b>	<b>350°C max.</b>	<b>400°C max.</b>

# LIFTING









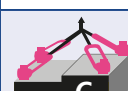
Lifting points – ready for bolting

									
0.1 t – 12 t	0.1 t – 4.5 t	0.5 t – 2.5 t	3 t – 50 t	18 t – 31.5 t	1.5 t – 6.7 t	10 t – 20 t	1.6 t – 31.5 t	0.1 t – 8 t	0.1 t – 8 t
–	–	–	–		–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>
									
					–	–		–	–
<b>DGUV Test</b>	–	–	–	–	–	–	–	–	–
<b>360°</b>	<b>360°</b>	<b>360°</b>	–	–	–	–	–	–	–
–	–	–	<b>180°</b>	–	–	–	–	–	–
<b>M</b> M6 – M48	<b>M</b> M6 – M30	<b>M</b> M16 – M24	<b>M</b> M16 – M36	<b>M</b> M20 – M64	<b>M</b> M10 – M20	<b>M</b> M24	<b>M</b> M12 – M36	<b>M</b> M6 – M48	<b>M</b> M6 – M48
<b>MF</b> M8x1 – M36x3	–	–	–	–	–	–	–	<b>MF</b> M10x1 – M48x3	<b>MF</b> M14x1.5 – M48x3
<b>UNC</b> 1/4" – 20UNC – 2" – 4.5UNC	–	–	–	–	–	–	–	<b>UNC</b> 1/4" – 20UNC – 2" – 4.5UNC	<b>UNC</b> 3/8" – 16UNC – 1 1/4" – 7UNC
–	–	–	–	–	–	–	–	<b>8UN</b> 1 1/4" – 8-UN – 1 3/4" – 8-UN	<b>8UN</b> 1 3/4" – 8-UN
<b>UNF</b> 3/4" – 16UNF	–	–	–	–	–	–	–	<b>UNF</b> 3/8" – 24UNF – 1" – 12UNF	–
–	–	–	–	–	–	–	–	<b>BSW</b> 1/4" – 2"	<b>BSW</b> 1/2" – 1 1/8"
<b>G</b> 1/4" – 3"	–	–	–	–	–	–	–	<b>G</b> 1/4" – 3/4"	<b>G</b> 1/4" – 3/4"
<b>VARIO</b>	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
<b>-40° – 100°C</b>	<b>-40° – 100°C</b>	<b>-40° – 280°C</b>	<b>-40° – 100°C</b>	<b>-40° – 100°C</b>	<b>-40° – 100°C</b>	<b>-20° – 100°C</b>	<b>-40° – 100°C</b>	<b>-40° – 200°C</b>	<b>-40° – 200°C</b>
<b>350°C max.</b>	<b>100°C max.</b>	<b>280°C max.</b>	<b>350°C max.</b>	<b>350°C max.</b>	<b>350°C max.</b>	<b>350°C max.</b>	<b>350°C max.</b>	<b>400°C max.</b>	<b>400°C max.</b>



# WORKING LOAD LIMIT

Maximum transport weight "G" in [t] with different lifting points

<p>Thread sizes <b>M8 – M48</b> further thread types and special lengths on request.  see p.18</p>		 <p><b>ICE-LBG-SR</b> ICE Load ring for bolting Super Rotation</p>										
type		0.3 t	0.63 t	1 t	1.5 t	2.5 t	4 t	5 t	8 t	10 t	15 t	20 t
thread size		M8	M10	M12	M16	M20	M24	M30	M36	M42	M42	M48
number of legs	$\beta$											
	1 0°	0.3	0.63	1	1.5	2.5	4	5	8	10	15	20
	2 0°	0.6	1.26	2	3	5	8	10	16	20	30	40
	1 90°	0.3	0.63	1	1.5	2.5	4	5	8	10	15	20
	2 90°	0.6	1.26	2	3	5	8	10	16	20	30	40
	2 0-45°	0.42	0.88	1.4	2.1	3.5	5.6	7	11.2	14	21	28
	2 45-60°	0.3	0.63	1	1.5	2.5	4	5	8	10	15	20
	2 unsymmetrical	0.3	0.63	1	1.5	2.5	4	5	8	10	15	20
	3+4 0-45°	0.63	1.32	2.1	3.15	5.25	8.4	10.5	16.8	21	31.5	42
	3+4 45-60°	0.45	0.95	1.5	2.25	3.75	6	7.5	12	15	22.5	30
	3+4 unsymmetrical	0.3	0.63	1	1.5	2.5	4	5	8	10	15	20

# LIFTING

Lifting points / ready for bolting



**VLBG**  
VIP Load ring for bolting



**LBG-RS**  
Load ring for bolting  
stainless steel



Thread sizes  
**M8 – M48**  
further thread types  
and special lengths  
on request.

see p.24

0.3 t	0.63 t	1 t	1.2 t	1.5 t	2 t	2.5 t	4 t	5 t	7 t	8 t	10 t	15 t	20 t	1 t	2 t	type	
M8	M10	M12	M14	M16	M18	M20 M22	M24 M27	M30	M36	M36	M42	M42	M48	M16	M20	thread size	
–	3/8"	1/2"	–	5/8"	–	3/4"	1"	1 1/4"	–	1-1/2"	–	–	2"	–	–	$\beta$	number of legs
0.3	0.63	1	1.2	1.5	2	2.5	4	5	7	8	10	15	20	1	2	0°	1
0.6	1.26	2	2.4	3	4	5	8	10	14	16	20	30	40	2	4	0°	2
0.3	0.63	1	1.2	1.5	2	2.5	4	5	7	8	10	15	20	1	2	90°	1
0.6	1.26	2	2.4	3	4	5	8	10	14	16	20	30	40	2	4	90°	2
0.42	0.88	1.4	1.68	2.1	2.8	3.5	5.6	7	9.8	11.2	14	21	28	1.4	2.8	0-45°	2
0.3	0.63	1	1.2	1.5	2	2.5	4	5	7	8	10	15	20	1	2	45-60°	2
0.3	0.63	1	1.2	1.5	2	2.5	4	5	7	8	10	15	20	1	2	unsym- metrical	2
0.6	1.32	2.1	2.52	3.15	4.2	5.25	8.4	10.5	14.7	16.8	21	31.5	42	2.1	4.2	0-45°	3+4
0.45	0.95	1.5	1.8	2.25	3	3.75	6	7.5	10.5	12	15	22.5	30	1.5	3	45-60°	3+4
0.3	0.63	1	1.2	1.5	2	2.5	4	5	7	8	10	15	20	1	2	unsym- metrical	3+4



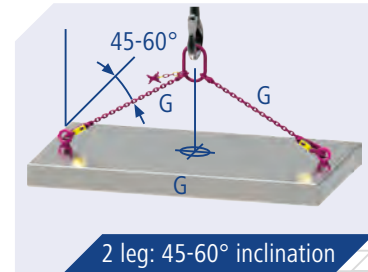
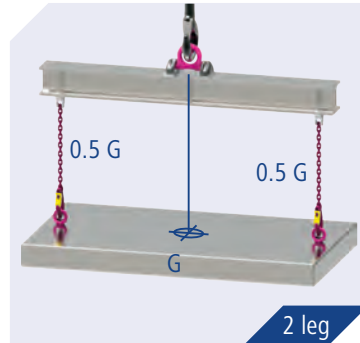
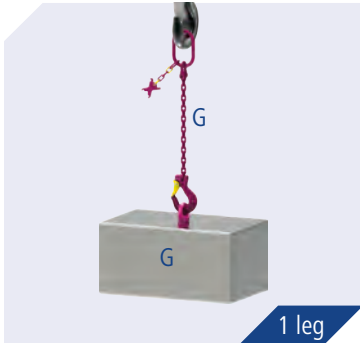
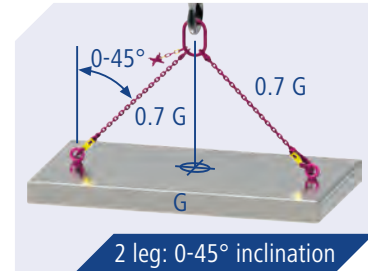
# DIMENSIONING

Important facts for the designer

Loads are lifted by various sling means (sling chains, wire ropes or synthetic slings) or secured on the lorry during transport.

As a result of different number of legs and their inclination angles there will be various loads and load directions in the lifting or lashing points. In particular, this load situation changes with symmetrical or unsymmetrical loads.

1 leg lifting process:  
Load factor 1 (pict. left below). The load may rotate, the lifting point opens. Danger of dropping. **Choose lifting point with double ball bearing.**



G = weight of load

## Turning and Rotating / 2 / 4 leg

During the complete manufacturing- and logistic process, i.e. production, transport, assembly, recycling – every

load, machine, construction has to be lifted, secured, turned, tilted or rotated.

Missing lifting points or those being unsuitable conceal a variety of accident risks and take precious time which are mostly not covered by any product calculation.

Thus a MUST: increase working safety, reduce down times, save costs – by up-to-date and approved lifting points.

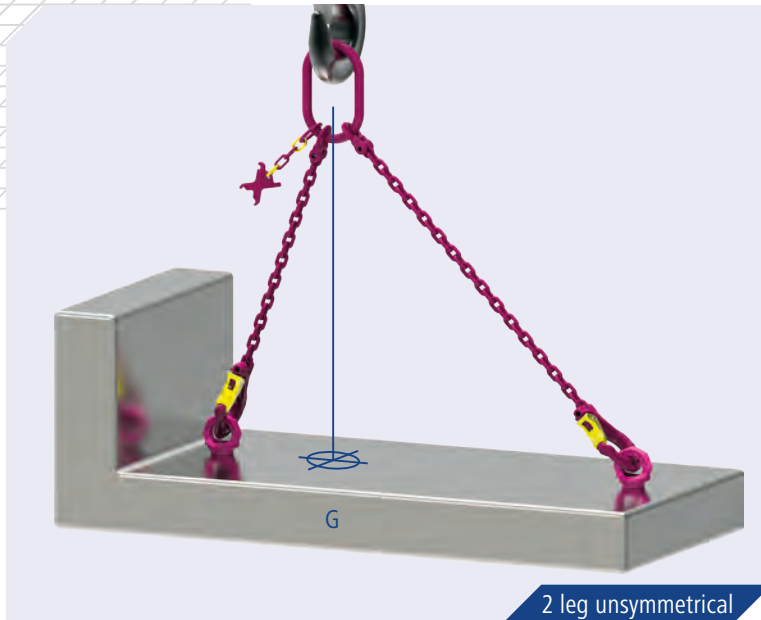


**These have to guarantee the 4-fold safety against breaking in all load directions and must not unbolt in case the load rotates.**



# UNSYMMETRICAL LOADS

Unsymmetrical 2/4 leg suspensions



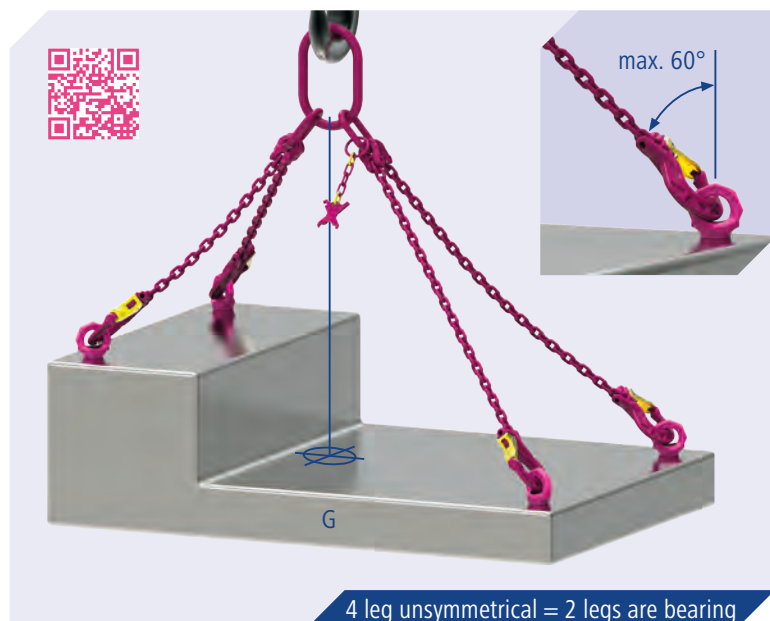
**Attention: With unsymmetrical load and two lifting points, one lifting point has to bear the complete load (see left figure). Load factor 1 (consider max. permissible inclination angle).**

**Correct dimensioning made easy:** whether as poster or in this brochure – the RUD WLL tables give you the correct information.

**With 4 leg assemblies, only 3 legs may be considered as bearing (static over-sized).** The permissible inclination angles of the sling legs are divided in two ranges of angle: from 0° to 45° and 45° to 60°. For calculations, always the maximum permissible inclination angle should be chosen (45° to 60°).

### Dimensioning of 4-leg suspensions with unsymmetrical load.

Unbelievable, but correct concerning the calculation. With 4 legs or 4 lifting points in one lifting direction and unsymmetrical load, only 2 legs are bearing. Max. permissible inclination angle = 45° to 60°. Every lifting point has to be designed in a way being able to lift the complete load (load factor 1).



WLL (G) of every individual lifting point with unsymmetrical 4-leg suspension

$$= \frac{\text{weight of Load (G)}}{\text{bearing legs (2) x cos } 60^\circ (0.5)} = G$$



# A CLASS OF ITS OWN

Definition "ICE" and the new ICE-Bolt

What does the definition ICE mean? RUD is the inventor of the **grade 120 round steel link chain** for lifting and lashing of loads.

**As first manufacturer of round steel link chains world-wide, RUD was awarded in 2007 the approval stamp D1-12 by the relevant professional organisation DGUV.** This quantum jump in a completely

new strength class, unimaginable so far, could only be realised thanks to the year-long development with a renowned German steel manufacturer.

The patented fine grain steel as well as the special shape and heat treatment allowed for the first time (even with smaller chain sizes) to reduce the respective nominal chain size by one size or to increase the WLL

of up to 60 % compared with chains of common quality class 8. The user thus benefits from chains whose handling is made easier by up to 40 %, a hardness increased by more than 30 %, less wear and less sensitive against damages caused by sharp edges.

**Further particularities: impact values at -60 °C of an unbelievable 56 Joule. For this reason, the chain has been called "ICE".** The increased danger generally resulting from an increased hardness in terms of the much-feared hydrogen embrittlement was reduced to the level of a quality class 8. Despite the increased hardness there is no reduction of bending toughness as per requirements of PAS 1061.



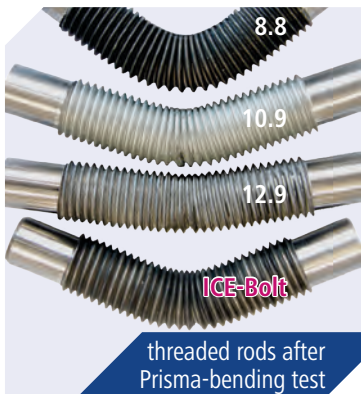
D1-12-stamp



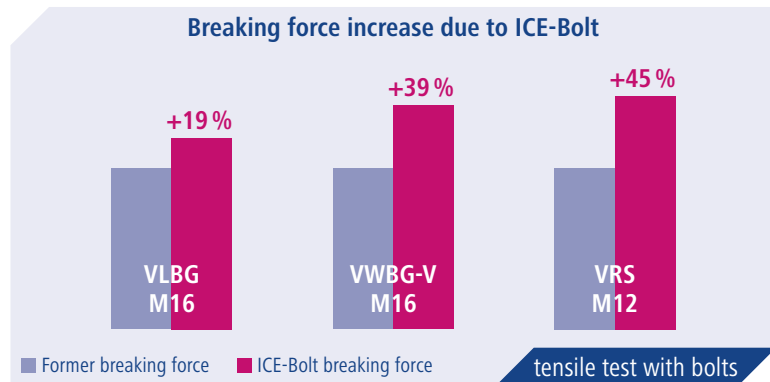
Grade 80 20 mm / ICE 16 mm

## ICE-Bolt with lifting points

The fastening bolts of modern boltable lifting Points have to withstand extreme daily loads – in any direction. This hardest forces on bending loads has safely to be accepted in terms of statics and dynamics – even under lowest temperatures and maximum heat. The patented material of the



threaded rods after Prisma-bending test



ICE chains has been predestinated for this safety-relevant challenge.

**The ICE-Bolt was born and will in future replace all common bolts,** meaning for the user: increased WLL or thinner bolt diameters, uncritical use with low temperatures up to -60 °C, increased toughness and thus

increased bending strength; less wear and increased insensitivity versus hydrogen embrittlement. Briefly summarized: **maximum safety!**

## WHY PINK?

Fool-proof in pink



As per the stipulations for approval and certification of lifting points, these have to be identified in a particular way.

For this reason, the RUD lifting points have been coloured in red which was common in Germany more than 30 years ago for the past chain quality. 20 years ago, RUD launched to the market the revolutionary chain program in quality class 10 under the name "VIP" in fluorescent powder coating.

**The special feature of the colour pink is that it can at the same time be used as an overheat indicator.**

The picture above shows the colour change of the pink powder coating (use in the VIP product range). Beyond 200 °C, the colour changes from pink to brown and at the forbidden temperature of nearly 400 °C to black at the same time developing bubbles.

Thanks to this approved system, the overheated lifting points can be identified and replaced.



The colour pink has become a protected RUD brand and changed to "VIP Pink" with all lifting points experiencing an improvement in shape, WLL and other additional benefits.

**The new ICE age has started.** The unique ICE chain quality class 12 or 120 has been "ICE Pink" powder coated.

This patented colour will also be used for all lifting points equipped with the ICE-Bolt.

This assures a clear differentiation. The picture above shows the new ICE-Pink overheat indicator. The colour change also starts at 200 °C; the black colour representing an overheating will be visible at 300 °C.



# WHY BALL BEARING?

An indispensable advancement for loads which have to be turned during lifting

**Common lifting points with unsymmetrical force introduction can only be adjusted in direction of force.**

This is sufficient in order to adjust the lifting point to the relevant pulling direction with multi-leg suspensions. This already has decisive advantages in comparison to the rigid standard eyebolt, because the standard eyebolt untwists hazardous and the WLL will

be reduced tremendously. **In practice, the necessity for lifting points which are suitable for the turning and flipping of loads becomes more and more apparent.**

For lifting with turning action, conventional lifting points without ball bearings at symmetrical and unsymmetrical force application are not suitable due to the extensive

friction within the lifting point. Under these circumstances unintended loosening of the bolt cannot be expelled, not even when the requested torque has been applied.

By extensive investments RUD succeeded in optimizing the popular type in such a way that without changing the mounting sizes a double ball bearing version was realised meeting all severe requirements.



VLBG adjustable in force direction – CANNOT be rotated under full load.



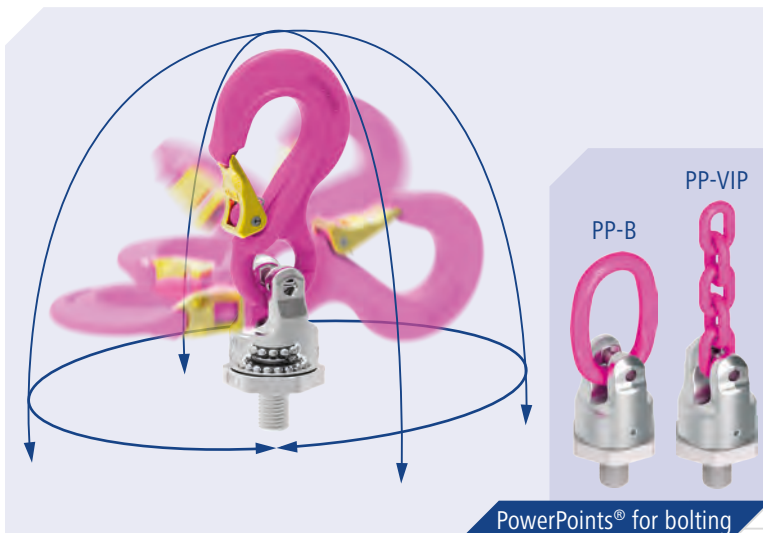
VLBG rotation test

## PowerPoint® Collection

**In a rotating use for 10 years.** Until so far the only lifting point with double ball bearing allowing a jerk-free rotation

in all directions. **Important: Can be rotated under load, also 90° to the bolt-in position.** The intentional

bigger chosen distance between suspension and load allows a proper rotation in this position neither damaging the load nor the lifting mean.



PowerPoints® for bolting

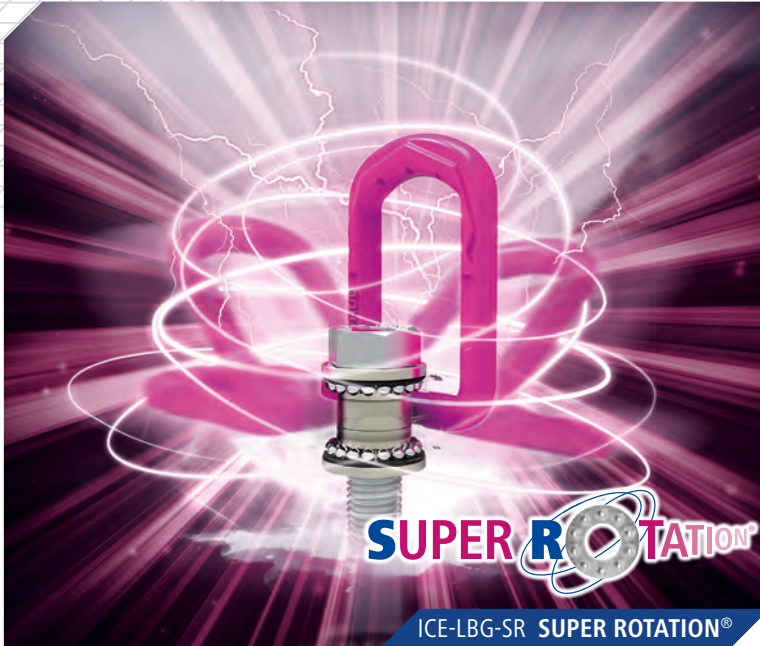
**The only lifting point with universal connection** – without additional, bothersome and time-consuming shackle assembly. Suitable for sling chains, wire ropes and round slings. Saving load and time and of course equipped with RFID. Refer to brochure "Lifting Point Collection" or to [www.rud.com](http://www.rud.com) (products and services / lifting- and lashing means / lifting points ready for bolting / PP PowerPoint®).



PowerPoints® in operation

# CORRECT ROTATION!

ICE-LBG-SR SUPER ROTATION®



New! We have got the knack for the popular VLBG series – in Colour ICE-Pink.

Maintaining the design, without changing the old mounting sizes of the common VLBG – **can be rotated under full load in all directions.** Whether vertical to the top or under 90°C to the mounted bolt – the special ball bearing arranged in a double way transfers the forces of the WLL into a rotation movement without jerks, avoiding an unintentional unbolting of the fastening bolt.

The ICE-bolts, made of fine grain steel, in addition guarantee high static and dynamic strength with smallest bolt diameter.

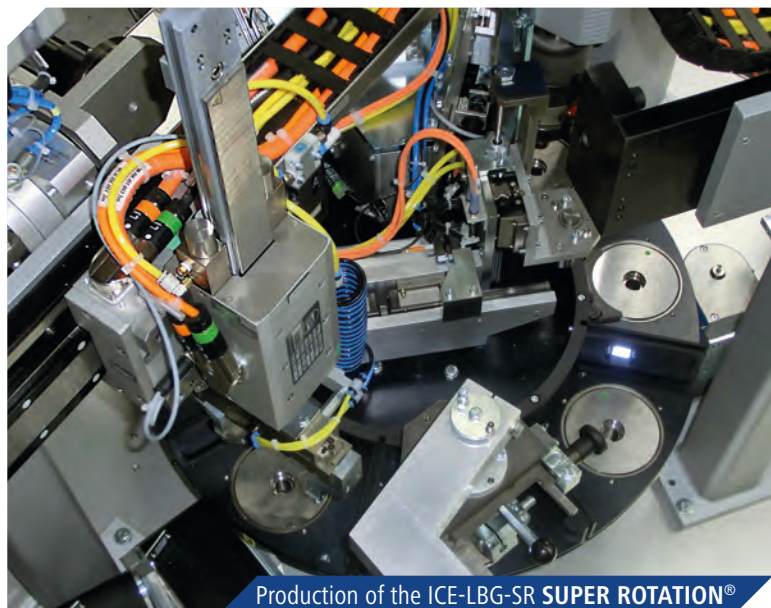
ICE-LBG-SR SUPER ROTATION® with double SR-ball-bearing, manufactured by RUD. MADE IN GERMANY. State-of-the art turning

and mounting machines assure safer benefit. Essential components of the ICE-LBG-SR have been applied for industrial property rights.

MADE  
IN  
GERMANY



ICE-LBG-SR SUPER ROTATION®



Production of the ICE-LBG-SR SUPER ROTATION®

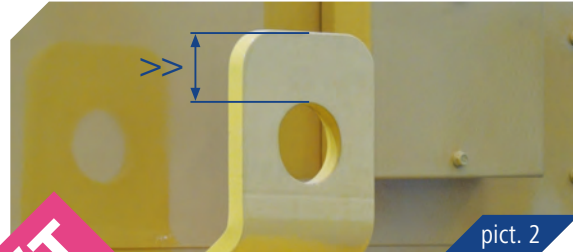


# BAD POINTS!

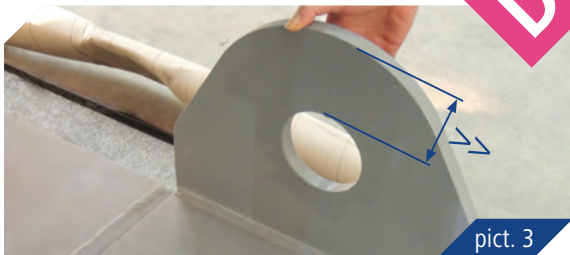
Examples for insufficient lifting points



pict. 1



pict. 2



pict. 3



pict. 4

**DON'T**

**Already with the design and planning, the course is set for a safe and functional application. However, there still remain many obstacles or irregularities...**

01. Insufficient lifting points (also partial loads).
02. Use of DIN eye bolts (pict. 1)
  - Large thread diameter / expensive thread cutting
  - must exactly be adjusted in pulling direction with Multi-leg suspensions
03. Not applicable for WLL in all directions (resp. 2-fold safety – load securing).
04. Bolts, profile cut lugs, etc have not been crack detected.
05. For sake of caution, steel plates or edge distances have been designed too big. Hooks cannot be attached, safety catches not closed (pict. 2, 3).
06. Hole diameter too small. Tip loading of hook – FORBIDDEN (pict. 4)!
07. The use of shackle connections result in additional, lateral loads and twisting (pict. 5).
08. In most instances profile plates have no calculation allowed for the connection of the shackle and a hook.
09. Non-ergonomic designs: sharp edges with danger of injuries (pict. 3).
10. Sharp edges at the outer contour and the suspension opening can cause damage to the sling (pict. 3, 5).
11. Wrong material chosen for the weld on plates.
12. No coloured identification of the lifting points (pict. 2, 3, 5, 6).
13. No clear indication of WLL (pict. 1, 2, 3, 6).

# APPLICATION EXAMPLES

Dangerous situations when using incorrect lifting points



Lifting points with the design principle as shown above do not always automatically adjust in pulling direction. **Actual pictures taken of incorrect usage: mould plate shall be used with four lifting points and two cranes.**

- A Hooking in the lifting points below.
- B Turning process at about 45°. Lifting points have not adjusted in the permissible force direction
- C Turning process at 90°. Lifting points have not adjusted. With full load and exterior use of hook, the bolt might break.



## Insist on approved lifting points from RUD "Made in Germany"!



# GOOD POINTS!

Convincing RUD advantages



Machinery Directive 2006/42/EC

01.



4:1 min. safety factor for lifting

02.



full working load in all directions

03.



dimensioning programs

04.



standard feature: RFID

05.



ICE-Pink overheating indicator

VIP-Pink overheating indicator

06.

## Convincing RUD advantages

01. According to European Machinery Directive 2006/42/EC.
02. Safety factor 4:1 against breakage in any loading direction.
03. Full working load in all directions.
04. Dimensioning programs for finding the correct WLL and reduced construction times thanks to 2D- and 3D data free of charge.
05. Lifting points for bolting: Standard equipment with RFID chip.
06. RUD ICE- and VIP Pink Powder Coating as a clear marking for the lifting point (RUD recognition feature) and as a heat indicator up from 200° C.
07. Turnable Lifting points are rotating 360° in mounted condition.
08. Distinctive WLL indication based on worst case scenario.
09. All load bearing parts are 100 % crack detected.
10. Patented wear marks for easily determining the replacement state of wear.
11. Due to octagon shape clear determination to commercial lifting points.
12. Ergonomic and innovative design.
13. Smallest possible design at highest WLL due to high tensile and heat treated materials, small thread diameters and clear defined welding parameters.
14. Comprehensive choice of variants ready for bolting and welding.
15. WLL range from 80 kilos to 200 t.
16. Designed for at least 20,000 load cycles, tested at 50 % overload.
17. ChromeVI-free coating at all galvanised components.
18. Made in Germany.

**Regard the operation manual before and during usage of the RUD lifting points.**



# LIFTING

Lifting points // ready for bolting // ready for welding



octagon shape/contour

11.



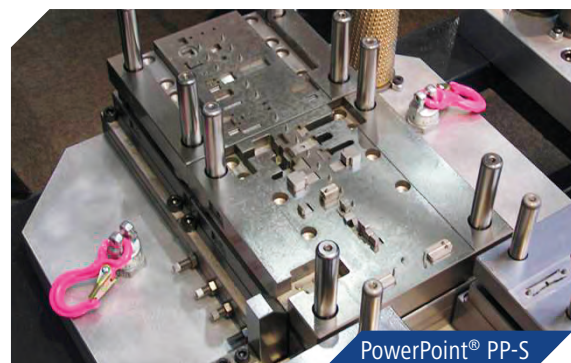
18.

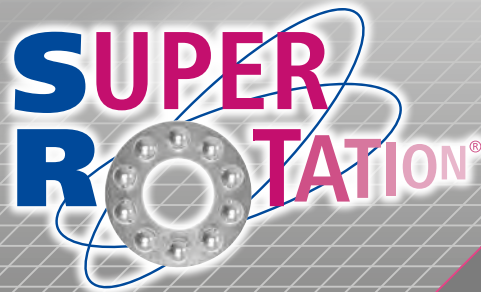


rotating 360° in mounted condition

07.

## State-of-the-art and approved lifting points increase the working safety!





# ICE-LBG-SR

ICE Load ring for bolting Super Rotation

ICE-bolt with revolutionary  
mechanical characteristics

No loosening thanks to **Super Rotation®**

Double SR-ball bearing,  
rotating 360° under load



New method to safely  
lift in a "rotating way".





SR ball bearing



ICE-Bolt made out of patented steel.



rotating 360°, swivelling 180°

# SUPER ROTATION®

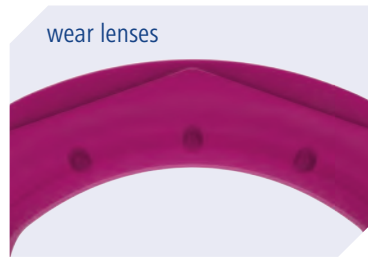


## ICE-LBG-SR

First lifting point with unsymmetrical force introduction rotating under load.



marking



wear lenses



clamping spring

## Product features / ICE-LBG-SR



- ✓ **SR-ball bearing** is the optimal solution for permanent turning and flipping actions at WLL and without loosening the mounting bolt.
- ✓ **Captive but exchangeable ICE-Bolt** made out of patented steel with special corrosion protection Corrod-DT. Non-hazardous deep temperature usage down to -60°; higher toughness and therefore higher bending strength as well as less wear occurrence. Original ICE-Bolt is available as a spare part. Clear marking at the bolt head: RUD, ICE, thread size, batch-no., class of strength.
- ✓ **Lashing point pivots 360°. Suspension ring pivots 180°.**
- ✓ **Clear marking of the minimum WLL for all loading directions.** Marking with requested torque moment and nominal WLL with a safety factor of 4:1 (MD 2006/42/EC) und 5:1 (ASME B 30.26)
- ✓ **Patented markings** for easy determination for withdrawal of service.
- ✓ **Clamping spring** works as a noise reduction and holds the suspension ring in the requested position; therefore simple hinge of lifting mean possible respectively flat design if turned down.
- ✓ Available as:
  - Standard Metric Thread (DIN EN 13)
  - Variable bolt lengths available for tapped or through holes (see p.22).
- ✓ Significant product characteristics of the ICE-LBG-SR are subject to property right claims
- ✓ Lifting point has been tested by DGUV (German legal accident insurance) and has the corresponding written approval.

# ICE-LBG-SR

ICE Load ring for bolting **SUPER ROTATION™**



Load direction

## Application-specific features ICE-LBG-SR

- ✓ Quick and easy installation with just one bolt connection.
- ✓ Assembly with flat / ring wrench or allen key possible.
- ✓ Hand tightening with appropriate wrench is sufficient for a singular lift.
- ✓ Please observe torque instructions when lifting point is permanently installed resp. at constant swivelling operations and tilting/ turning actions.

**Other important RUD specific information and specialities to our RUD lifting points can be found at page 16 and in the specific user instruction.**

## Accessories ICE-LBG-SR

For permanent installation of the lifting point at through hole fixtures we recommend the securing nut acc. to DIN 980-V, for variable installations with just one lifting action please use collar nut acc. to DIN 6331.

For special thread lengths in metric sizes, lock nuts (DIN 980-V crack tested) with washer are available.



## ICE-LBG-SR // metric thread



Type	WLL [t]	weight [kg/pc.]	T [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
<b>ICE-LBG-SR ICE Load ring for bolting Super Rotation® – metric</b>										
ICE-LBG-SR 0.3 t M8	0.3	0.3	75	32	50	34	24	40	10	29
ICE-LBG-SR 0.63 t M10	0.63	0.31	74	32	50	34	24	39	10	29
ICE-LBG-SR 1 t M12	1	0.34	74	32	50	34	26	38	10	29
ICE-LBG-SR 1.5 t M16	1.5	0.52	84	36	54	40	30	39	13.5	34
ICE-LBG-SR 2.5 t M20	2.5	1.3	110	54	82	60	45	53	17	45
ICE-LBG-SR 4 t M24	4	1.4	125	54	82	60	45	66	18	45
ICE-LBG-SR 5 t M30	5	3.2	145	63	102	69	55	66	22.5	60
ICE-LBG-SR 8 t M36	8	6.0	197	84	122	90	70	95	26.5	79
ICE-LBG-SR 10 t M42	10	6.7	197	84	122	90	70	92	26.5	79
ICE-LBG-SR 15 t M42	15	11.2	222	105	156	110	90	107	36	89
ICE-LBG-SR 20 t M48	20	11.6	222	105	156	110	90	103	36	89



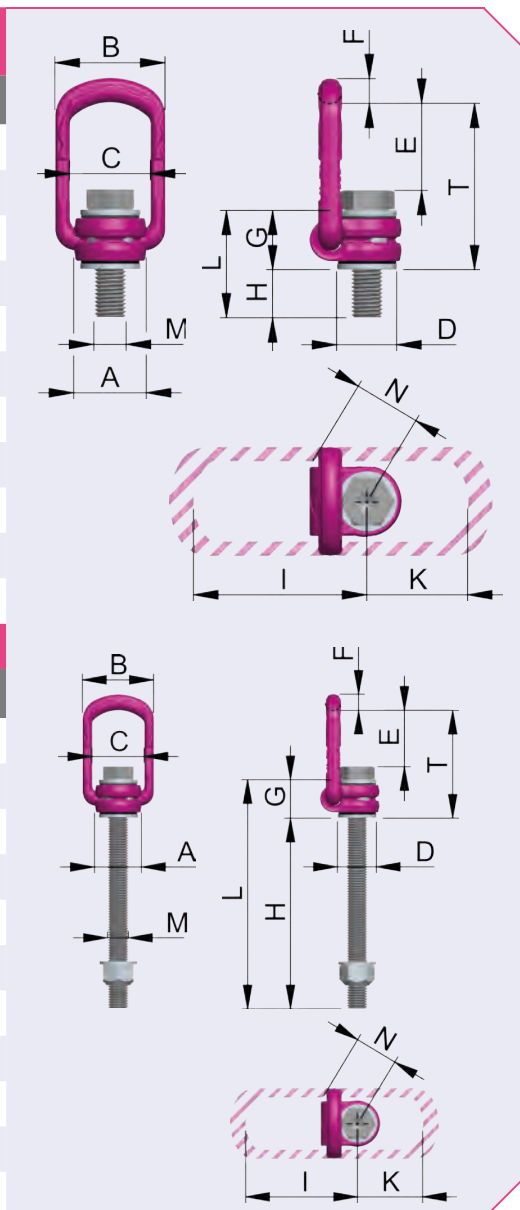
Type	WLL	weight	T	A	B	C	D	E	F	G
<b>ICE-LBG-SR ICE Load ring for bolting Super Rotation® – metric, longer vario bolt</b>										
ICE-LBG-SR 0.3 t M8	0.3	*	75	32	50	34	24	40	10	29
ICE-LBG-SR 0.63 t M10	0.63	*	74	32	50	34	24	39	10	29
ICE-LBG-SR 1 t M12	1	*	74	32	50	34	26	38	10	29
ICE-LBG-SR 1.5 t M16	1.5	*	84	36	54	40	30	39	13.5	34
ICE-LBG-SR 2.5 t M20	2.5	*	110	54	82	60	45	53	17	45
ICE-LBG-SR 4 t M24	4	*	125	54	82	60	45	66	18	45
ICE-LBG-SR 5 t M30	5	*	145	63	102	69	55	66	22.5	60
ICE-LBG-SR 8 t M36	8	*	197	84	122	90	70	95	26.5	79
ICE-LBG-SR 10 t M42	10	*	197	84	122	90	70	92	26.5	79
ICE-LBG-SR 15 t M42	15	*	222	105	156	110	90	107	36	89
ICE-LBG-SR 20 t M48	20	*	222	105	156	110	90	103	36	89



\* = weight depends on design specifics

# SUPER ROTATION®

H [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	Ref. No.
12	75	43	41	M8	32	30	8504284
15	75	43	44	M10	32	60	8504285
18	75	43	47	M12	32	100	8504286
24	86	46	58	M16	38	150	8504287
30	113	61	75	M20	48	250	8504288
36	130	76	80	M24	48	400	8504289
45	151	79	105	M30	66	500	8504290
54	205	110	133	M36	87	800	8504336
73	205	110	152	M42	87	1000	8504337
63	230	130	152	M42	100	1500	8504338
72	230	130	161	M48	100	2000	8504339
H	I	K	L	M	N	torque	Ref. No.
8-76	75	43	37-105	M8	32	30	8600500
10-96	75	43	39-125	M10	32	60	8600501
12-116	75	43	41-145	M12	32	100	8600502
16-149	86	46	50-185	M16	38	150	8600504
20-187	113	61	65-230	M20	48	250	8600506
24-222	130	76	69-265	M24	48	400	8600508
30-279	151	79	90-340	M30	66	500	8600510
36-221	205	110	105-300	M36	87	800	8600511
42-271	205	110	111-350	M42	87	1000	8600512
42-261	230	130	121-350	M42	100	1500	8600513
48-301	230	130	137-390	M48	100	2000	8600514



subject to technical modifications



# VLBG

VIP Load ring for bolting



Captive but exchangeable ICE-Bolt

Bracket adjustable in force direction

Comprehensive  
range of threads

The original – adjustable  
in force direction





ICE-Bolt made out of patented steel.

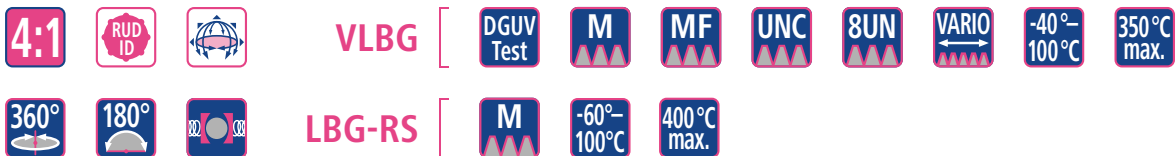


## VLBG

THE ORIGINAL. More than 30 years of experience as lifting point with unsymmetrical force application. Often copied – never achieved.



## Product features / VLBG

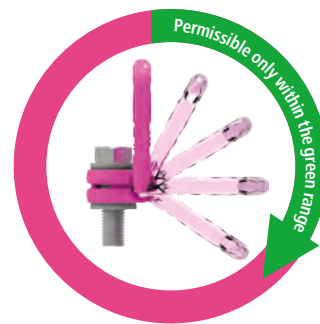


- ✓ Lifting points pivots 360°. VLBG: Suspension ring pivots 180°.
- ✓ Captive but exchangeable ICE-Bolt made out of patented steel with special corrosion protection CorruDT. Non-hazardous deep temperature usage down to -60°; higher toughness and therefore higher bending strength as well as less wear occurrence. Original ICE-Bolt is available as a spare part. Clear marking at the bolt head: RUD, ICE, thread size, batch-no., class of strength.
- ✓ Clamping spring works as a noise reduction and holds the suspension ring in the requested position; therefore simple hinge of lifting mean possible respectively flat design if turned down.
- ✓ Clear marking of the minimum WLL for all loading directions.
- ✓ Available as:  
VLBG: Standard Metric Thread (DIN EN 13)  
VLBG: Metric Fine Thread (DIN EN 13)  
VLBG: Coarse Pitch Thread UNC (ANSI B1.1)  
VLBG: Fine Thread UNF (ANSI B1.1)
- ✓ VLBG: Variable bolt lengths available for tapped or through holes (see p.28).
- ✓ VLBG: Tested and certified by DGVU  
Testing specifications:  
GS-OA-15-04:2012-05  
Certificate No.: OA 1451016



# VLBG

VIP ring bolt with threads



## Product features / Application-specific features VLBG

- ✓ LBG-RS: Component made out of 1.4571: therefore higher resistancy against intergranular corrosion.
- ✓ Quick and easy installation with just one bolt connection.
- ✓ Assembly with flat / ring wrench or allen key possible.
- ✓ Hand tightening with appropriate wrench is sufficient for a singular lift.
- ✓ Please observe torque instructions when lifting point is permanently installed resp. at constant swivelling operations and tilting/ turning actions.

**Other important RUD specific information and specialities to our RUD lifting points can be found at page 16 and in the specific user instruction.**

## Accessories VLBG

For permanent installation of the lifting point at through hole fixtures we recommend the securing nut acc. to DIN 980-V, for variable installations with just one lifting action please use collar nut acc. to DIN 6331.

For special thread lengths in metric sizes, lock nuts (DIN 980-V crack tested) with washer are available.

**VLBG // metric thread**

Type	WLL [t]	weight [kg/pc.]	T [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
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### VLBG VIP Load ring for bolting – metric

VLBG 0.3t M8	0.3	0.3	75	30	54	34	24	40	10	29
VLBG 0.63t M10	0.63	0.32	75	30	54	34	24	39	10	29
VLBG 1t M12	1	0.33	75	32	54	34	26	38	10	29
VLBG 1.2t M14 (H=21)	1.2	0.52	85	33	56	36	30	39	13.5	36
VLBG 1.5t M16	1.5	0.55	85	33	56	36	30	39	13.5	36
VLBG 2t M18 (H=27)	2	1.3	110	50	82	54	45	55	16.5	43
VLBG 2.5t M20	2.5	1.3	110	50	82	54	45	55	16.5	43
VLBG 2.5t M22 (H=33)	2.5	1.31	110	50	82	54	45	54	16.5	43
VLBG 4t M24	4	1.5	125	50	82	54	45	67	18	43
VLBG 4t M27	4	3.1	147	60	103	65	60	69	22.5	61
VLBG 5t M30	5	3.3	147	60	103	65	60	67	22.5	61
VLBG 7t M36 (So-Schr.)	7	3.4	146	60	103	65	60	74	22.5	55
VLBG 8t M36	8	6.2	197	77	122	82	70	97	26.5	77
VLBG 10t M42	10	6.7	197	77	122	82	70	94	26.5	77
VLBG 15t M42	15	10.9	222	95	156	100	85	109	36	87
VLBG 20t M48	20	11.6	222	95	156	100	95	105	36	87



Type	WLL	weight	T	A	B	C	D	E	F	G
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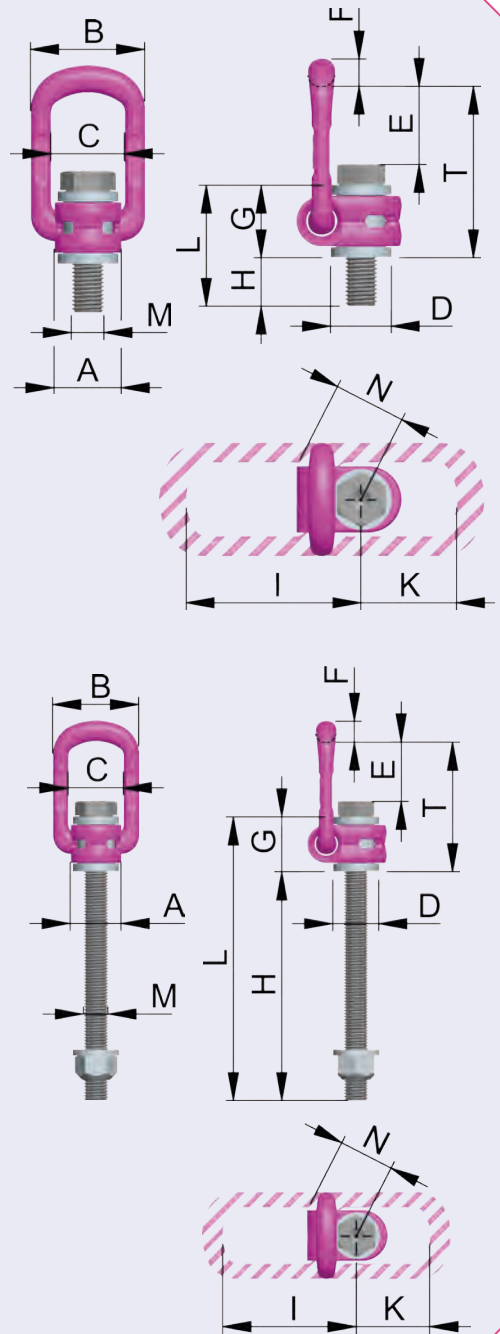
### VLBG VIP Load ring for bolting – metric with longer vario bolt

VLBG 0.3t M8	0.3	*	75	30	54	34	24	40	10	29
VLBG 0.63t M10	0.63	*	75	30	54	34	24	39	10	29
VLBG 1t M12	1	*	75	32	54	34	26	38	10	29
VLBG 1.2t M14	1.2	*	85	33	56	36	30	39	13.5	36
VLBG 1.5t M16	1.5	*	85	33	56	36	30	39	13.5	36
VLBG 2t M18	2	*	110	50	82	54	45	55	16.5	43
VLBG 2.5t M20	2.5	*	110	50	82	54	45	55	16.5	43
VLBG 2.5t M22	2.5	*	110	50	82	54	45	54	16.5	43
VLBG 4t M24	4	*	125	50	82	54	45	67	18	43
VLBG 4t M27	4	*	147	60	103	65	60	69	22.5	61
VLBG 5t M30	5	*	147	60	103	65	60	67	22.5	61
VLBG 8t M36	8	*	197	77	122	82	70	97	26.5	77
VLBG 10t M42	10	*	197	77	122	82	70	94	26.5	77
VLBG 15t M42	15	*	222	95	156	100	85	109	36	87
VLBG 20t M48	20	*	222	95	156	100	95	105	36	87



\* = weight depends on design specifics

H [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	Ref. No.
11	75	45	40	M8	32	30	8500821
16	75	45	45	M10	32	60	8500822
21	75	45	50	M12	32	100	8500823
21	86	47	57	M14	38	120	8600399
24	86	47	60	M16	38	150	8500824
27	113	64	70	M18	48	200	8600384
32	113	64	75	M20	48	250	8500826
33	113	64	75	M22	48	250	8600385
37	130	78	80	M24	48	400	8500827
39	151	80	100	M27	67	400	7983658
49	151	80	110	M30	67	500	8500828
52	151	80	107	M36	67	700	8500829
63	205	110	140	M36	87	800	7983553
73	205	110	150	M42	70	1000	7983554
63	230	130	150	M42	100	1500	7982966
73	230	130	160	M48	100	2000	7982967
H	I	K	L	M	N	torque	Ref. No.
8-76	75	45	37-105	M8	32	30	8600280
10-96	75	45	39-125	M10	32	60	8600281
12-116	75	45	41-145	M12	32	100	8600382
14-34	86	47	50-70	M14	38	120	8600399
16-149	86	47	52-185	M16	38	150	8600383
18-47	113	64	61-90	M18	48	200	8600384
20-187	113	64	63-230	M20	48	250	8600385
22-57	113	64	65-100	M22	48	250	8600385
24-222	130	78	67-265	M24	48	400	8600386
27-239	151	80	88-300	M27	67	400	8600387
30-279	151	80	91-340	M30	67	500	8600388
36-223	205	110	113-300	M36	87	800	8600289
42-273	205	110	119-350	M42	70	1000	8600290
42-263	230	130	129-350	M42	100	1500	8600291
48-303	230	130	135-350	M48	100	2000	8600292



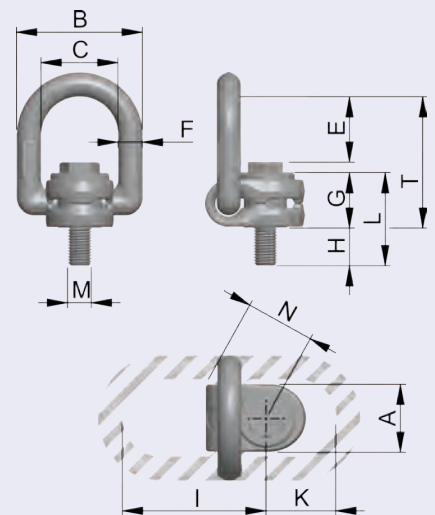
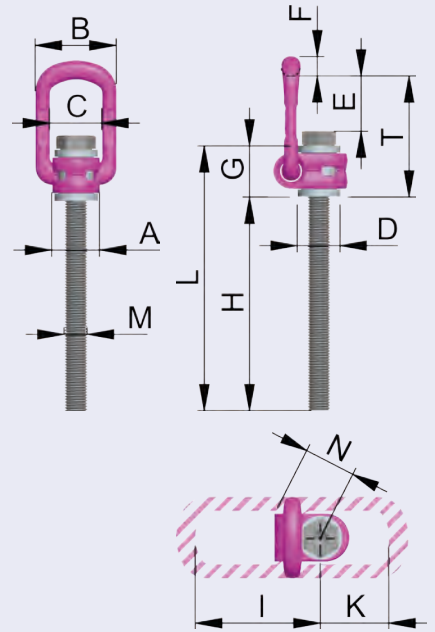
subject to technical modifications

**VLBG // metric fine thread / UNC inch thread / metric thread stainless steel**

Type	WLL [t]	weight [kg/pc.]	T [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
<b>VLBG VIP Load ring for bolting – metric fine thread with longer vario bolt</b>										
	VLBG 1t M12x1.5	1	*	75	32	54	34	26	38	10 29
	VLBG 1.2t M14x1.5	1.2	*	85	33	56	36	30	39	13.5 36
	VLBG 1.5t M16x1.5	1.5	*	85	33	56	36	30	39	13.5 36
	VLBG 2t M18x1.5	2	*	110	50	82	54	45	55	16.5 43
	VLBG 2.5t M20x1.5	2.5	*	110	50	82	54	45	55	16.5 43
	VLBG 4t M24x1.5	4	*	125	50	82	54	45	67	18 43
Type	WLL	weight	T	A	B	C	D	E	F	G
<b>VLBG-Z VIP Load ring for bolting – UNC inch thread</b>										
	VLBG-Z 0.63t 3/8"-16UNC	0.63	0.29	75	30	54	34	24	39	10 29
	VLBG-Z 1t 1/2"-13UNC	1	0.36	75	32	54	34	26	38	10 29
	VLBG-Z 1.5t 5/8"-11UNC	1.5	0.50	85	33	56	36	30	39	13.5 36
	VLBG-Z 2.5t 3/4"-10UNC	2.5	1.3	110	50	82	54	45	55	16.5 43
	VLBG-Z 2.5t 7/8"-9UNC	2.5	1.25	110	50	82	54	45	55	16.5 43
	VLBG-Z 4t 1"-8UNC	4	1.50	125	50	82	54	45	67	18 43
	VLBG-Z 5t 1-1/4"-7UNC	5	3.33	147	60	103	65	60	64	22.5 61
	VLBG-Z 5t 1-1/4"-8UN	5	3.33	147	60	103	65	60	64	22.5 61
	VLBG-Z 8t 1-1/2"-6UNC	8	6.2	197	77	122	82	70	97	26.5 77
	VLBG-Z 20t 2"-4.5UNC	20	11.7	222	95	156	100	95	105	36 87
Type	WLL	weight	T	A	B	C	D	E	F	G
<b>VLBG-Z VIP Load ring for bolting – UNC inch thread with longer vario bolt</b>										
	VLBG-Z 0.63t 3/8"-16UNC	0.63	*	75	30	54	34	24	39	10 29
	VLBG-Z 1t 1/2"-13UNC	1	*	75	32	54	34	26	38	10 29
	VLBG-Z 1.5t 5/8"-11UNC	1.5	*	85	33	56	36	30	39	13.5 36
	VLBG-Z 2.5t 3/4"-10UNC	2.5	*	110	50	82	54	45	55	16.5 43
	VLBG-Z 2.5t 7/8"-9UNC	2.5	*	110	50	82	54	45	55	16.5 43
	VLBG-Z 4t 1"-8UNC	4	*	125	50	82	54	45	67	18 43
	VLBG-Z 5t 1-1/4"-7UNC	5	*	147	60	103	65	60	64	22.5 61
	VLBG-Z 8t 1-1/2"-6UNC	8	*	197	77	122	82	70	97	26.5 77
	VLBG-Z 20t 2"-4.5UNC	20	*	222	95	156	100	95	105	36 87
Type	WLL	weight	T	A	B	C	D	E	F	G
<b>LBG-RS Load ring for bolting stainless steel – metric</b>										
	LBG (3) 1t M16 RS	1	1.1	88	50	85	50		43	16.5 38
	LBG (3) 2t M20 RS	2	1.2	88	50	85	50		42	16.5 38

\* = weight depends on design specifics

H [mm]	I [mm]	K [mm]	L [mm]	M	N [mm]	torque [Nm]	Ref. No.
12-31	75	45	41-60	M12 x 1.5	32	100	8600382
14-34	86	47	50-70	M14 x 1.5	38	120	8600399
16-39	86	47	52-75	M16 x 1.5	38	150	8600383
18-47	113	64	61-90	M18 x 1.5	48	200	8600384
20-52	113	64	63-95	M20 x 1.5	48	250	8600385
24-62	130	78	67-105	M24 x 1.5	48	400	8600386
H	I	K	L	M	N	torque	Ref. No.
16	75	45	45	3/8"-16UNC	32	60	8504256
22	75	45	50	1/2"-13UNC	32	100	8502349
24	86	47	60	5/8"-11UNC	38	150	8502350
28	113	64	71	3/4"-10UNC	48	250	8502351
27	113	64	70	7/8"-9UNC	48	250	8502352
41	130	78	84	1"-8UNC	48	400	8502353
41	151	80	102	1-1/4"-7UNC	67	500	8503187
41	151	80	102	1-1/4"-8UN	67	500	8502354
62	205	110	140	1-1/2"-6UNC	87	800	8504257
69	230	130	156	2"-4.5UNC	100	2000	8504258
H	I	K	L	M	N	torque	Ref. No.
10-98	75	45	39-127	3/8"-16UNC	32	60	8600440
13-123	75	45	42-152	1/2"-13UNC	32	100	8600441
16-148	86	47	52-184	5/8"-11UNC	38	150	8600442
19-185	113	64	62-228	3/4"-10UNC	48	250	8600443
22-211	113	64	65-254	7/8"-9UNC	48	250	8600444
25-211	130	78	68-254	1"-8UNC	48	400	8600445
32-278	151	80	93-339	1-1/4"-7UNC	67	500	8600446
38-270	205	110	115-347	1-1/2"-6UNC	87	800	8600447
51-302	230	130	138-389	2"-4.5UNC	100	2000	8600448
H	I	K	L	M	N	torque	Ref. No.
25	95	45	63	M16	45	100	62086
27	95	45	65	M20	45	200	62813



subject to technical modifications



# RUD ID System®



## Inspection and documentation made easy!



Compulsory regular inspections of load accepting means (see various national rules) are presently still costly and often error-prone.

However, thanks to the **RFID-Technique** (Radio Frequency Identification), these time-consuming procedures and huge paper work belong to the past.

Any assemblies/components can now be identified, registered and administered in a contact-free, accurate and fast way.

The modern and digital area of documentation and administration of operating means has thus hit a new peak.

## Advantages of the RUD-ID-System®

### ...general.

- / Distinctive identification
- / Reduction of inspection costs / time
- / Maintenance and administration of product data / documents
- / Overview and planning of your inspections
- / Process safety (avoiding errors)
- / Expandable for various working means subject to inspections
- / User friendly guidance

### ... for inspectors

- / Intuitive, self-explanatory user guidance
- / User-friendly surface
- / Automatic generation of test reports and filing
- / Clearly defined inspection planning
- / Immediate call-off possibility of inspection history
- / Easy search function
- / Various filter possibilities

### ...for IT.

- / No software implementation / installation
- / No costly user administration
- / No hosting
- / No separate data saving required
- / No software support





# THE THREE PILLARS

Core of the RUD-ID-Systems®

## RUD-ID-Point®



proportion

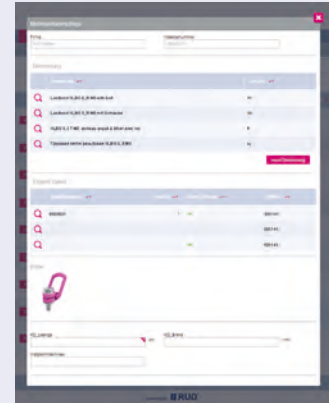
The components have been equipped with the **RUD-ID-Point®** (RFID-Chip) and can be clearly identified by the distinctive chip number.

## RUD-ID-READER



The robust **RUD-ID-READER** (reading devices) captures the identification number of the **RUD-ID-Point®** and transmits it to the **RUD-ID-NET®** application (online software) or optionally to your PC applications (e.g. MS Word, Excel, WordPad, SAP), etc.

## RUD-ID-NET®



The expandable **RUD-ID-NET®** online application supports you with the administration & documentation of your components.



view size



8 mm



4 mm

RFID chip original sizes

**RUD-ID-Point® 8 mm and 4 mm** (13.56 MHz HF):  
Press-in transponder (in metal surroundings); the use of glues or resins is not required. Sizes: Ø 8 mm x 3.25 mm, Ø 4 mm x 3.5 mm.

The use of **RFID chips** in a bore of safety components for lifting and conveying has been covered by patents.



original size

**RUD-ID-LINK** (13.56 MHz HF):  
Bending link with integrated transponder for chains, wire ropes, etc. Size: Ø 8 mm x 35 mm open

**RUD-ID-GLUE®** (13.56 MHz HF):  
Self-adhesive metal transponder for many further working means subject to inspection (clamps, pincers, cross bars, etc). Size: Ø 19 mm x 4.5 mm

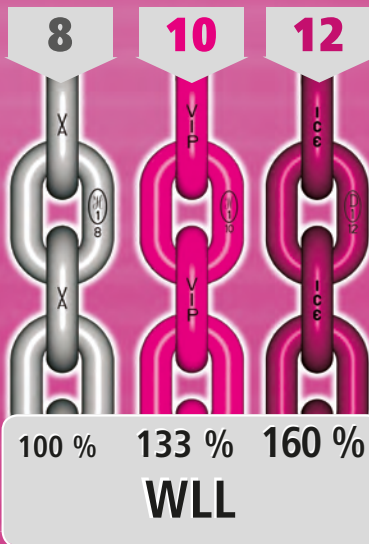
Further colours and designs available on request.

# RUD-Quality in PINK

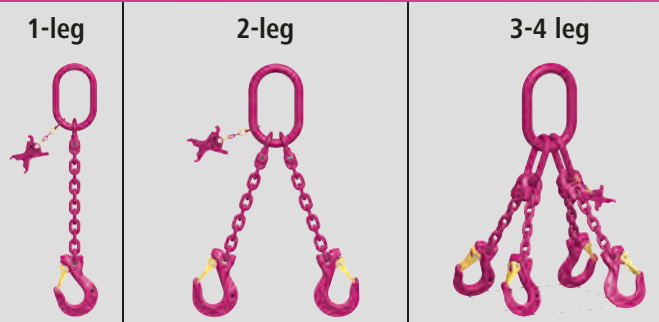


Grade 80, Grade 100 (VIP) und  
WLL »in metric tons« of sling  
According to inclination angle at symme

## RUD quality grades

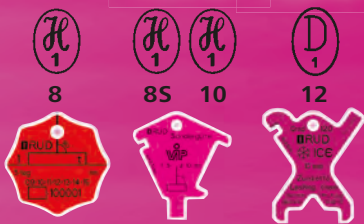


## Methods of sling

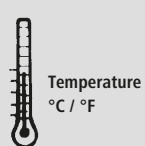


inclination angle: $\beta$		1-leg		2-leg		3-4 leg	
		0	0-45°	> 45-60°	0-45°	> 45-60°	
load factor		1.0	1.4	1.0	2.1	1.5	
Diam. of chains	Quality grade						
Ø 4	VIP	0.63	0.88	0.63	1.32	0.95	
	ICE	0.80	1.12	0.80	1.70	1.18	
Ø 6	Grade 80	1.12	1.6	1.12	2.36	1.7	
	VIP	1.5	2.1	1.5	3.15	2.25	
	ICE	1.8	2.5	1.8	3.75	2.7	
Ø 8	Grade 80	2.0	2.8	2.0	4.25	3.0	
	VIP	2.5	3.5	2.5	5.25	3.75	
	ICE	3.0	4.25	3.0	6.3	4.5	
Ø 10	Grade 80	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	Grade 80	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	17.0	11.8	
Ø 16	Grade 80	8.0	11.2	8.0	17.0	11.8	
	VIP	10.0	14.0	10.0	21.2	15.0	
	ICE	12.5	17.0	12.5	26.5	19.0	
Ø 18	Grade 80	10.0	14.0	10.0	21.2	15.0	
Ø 20	Grade 80	12.5	17.0	12.5	26.5	19.0	
	VIP	16.0	22.4	16.0	33.6	24.0	
Ø 22	Grade 80	15.0	21.2	15.0	31.5	22.4	
	VIP	20.0	28.0	20.0	42.0	30.0	
Ø 26	Grade 80	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	Grade 80	31.5	45.0	31.5	67.0	47.5	

## Grade 80



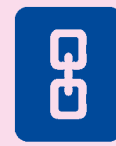
**Attention:**  
Acc. to DGUV 100-500 section 2.8, the WLL of single fall becomes valid when unsymmetrical load occurs at a multiple strand sling.



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

# K!

## Grade 120 (ICE) chains electric loading



# RUD®



Grade	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	
1.25	0.88	0.64	1.36	0.96	0.64	0.88	0.64	
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	
12.5	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	Temperature range		
	-40° up to +200° C (+40° bis +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)
Grade 80	100 %	90 %	75 %
VIP 10	-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 12	-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, if considered!**



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Tradition in Dynamic Innovation

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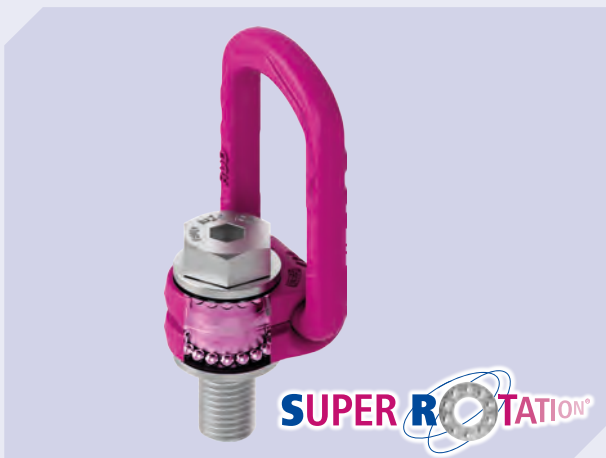
Engineered and made  
in the heart of Europe!



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# KEY

Explanation of the pictograms



Lifting points with these features are extremely suitable for turning and rotating of loads.



The lifting point has been designed with the innovative SR-ball-bearing (permanent rotation movement and turning under load).



Ball bearing suitable for turning and rotating, however, not for permanent rotation under load!



4:1 min. safety factor for lifting and 2:1 safety factor for lashing capacity.



Inspection and documentation made easy! By the RUD-ID-System® (equipped with own RFID chip).



Full working load in all directions.



Lifting point has been tested by DGUV (German legal accident insurance) and has the corresponding written approval.



Lifting point is able to rotate 360 degrees. However it is not suitable for turning and rotation under load.



The lifting point has got a rotation range of XXX° in the suspension link (XXX° being representative for the different values).



Available threads of the relevant lifting points. Relevant symbols: M, MF, UNC, 8-UN, UNF, BSW, G.



Lifting point is available with variable/various thread lengths.



Spring keeps the suspension link in position, preventing the link from clattering and simplifies the paint job.



Maximum operation temperature range of the lifting point without reduction of WLL.



Maximum operation temperature of the lifting point with percentage reduction of Working Load Limit dependent on the product.