POWERPOINT® PP-S/ PP-B/ PP-VIP

Complies with the machinery directives 2006/42/EC

NB: Please ensure that the safety instructions have been fully read and understood before initial use of the Power Point® PP-S / PP-B / PP-VIP bolt-on lifting point. Failure to do so may result in serious injuries and/or material damage and eliminates manufacturers warranty.

User Instructions - Part 1

Safety instructions

This safety instruction/declaration of the manufacturer must be kept on file for the lifetime of the product.

ATTENTION: Please inspect all lifting points prior to use. Damage, incorrect assembly or improper use may result in serious injuries and/or material damage.

EC-Declaration of the manufacturer

According to the Machinery Directive 2006/42/EC, annex II B and amendments.

We hereby declare that the design and construction of the equipment detailed within this document, adheres to the appropriate level of health and safety of the corresponding EC regulation.

Any un-authorised modification and/or any incorrect use of the equipment not adhered to within these user instructions waivers this declaration invalid.

The equipment must be regularly tested and inspected as per BGR 500. Failure to carry out the recommended maintenance and testing waivers this declaration invalid.

Designation of the equipment:

Type: **Power Point® PP-S / PP-B / PP-VIP bolt-on lifting point**

Manufacturer's mark:

Drawings (iges, dxf and step), product information and other support material can be downloaded from www.rud.com.au.

RUD

EC-Declaration of conformity

According to the EC-Machinery Directive 2006/42/EC, annex II A and amendments

Manufacturer: **RUD Ketten**
Rieger & Dietz GmbH u. Co. KG
Friedensinsel
73432 Aalen

We hereby declare that the equipment sold by us because of its design and construction, as mentioned below, corresponds to the appropriate, basic requirements of safety and health of the corresponding EC-Machinery Directive 2006/42/EC as well as to the below mentioned harmonized and national norms as well as technical specifications. In case of any modification of the equipment, not being agreed upon with us, this declaration becomes invalid.

Product name: Lifting point PowerPoint
PP / WPP / WPPH

The following harmonized norms were applied:
EN 12100-1, EN 12100-2
EN 14121-1, EN 1677-1
EN 1677-4

The following national norms and technical specifications were applied:
BGR 500, KAP2.8

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

Aalen, 29.12.2009 Dr. Ing. Rolf Sinz, (Prokurist/QMB)
Name, function and signature of the responsible person

POWERPOINT® PP-S/ PP-B/ PP-VIP

User Instructions - Part 2

RUD PowerPoint® are available in the following versions:

PP-S: the standard version

PP-B: the lifting ring version for hook assemblies

PP-VIP: the direct chain connection

Attention: Other combinations with non RUD lifting components maybe dangerous! These are not permitted and RUD will not accept any warranty claim.

User Instructions

1. Reference should be made to relevant standards and other statutory regulations. Inspections should be carried out by competent persons only.

2. Before installation and at every use, visually inspect RUD lifting points, with particular attention to any evidence of corrosion, wear, weld cracks and deformations. Please ensure compatibility of bolt thread and tapped hole.

3. The material construction to which the lifting point will be attached, should be of adequate strength to withstand forces during lifting without deformation. RUD, with reference to the German testing authority BG, recommends the following minimum for bolt lengths:

- 1.5 x M in steel (minimum quality S235JR [1.0037]) ≈ AS3678 GR250.
- 1.5 x M in cast iron (for example GG 25)
- 2 x M in aluminium alloys
- 2.5 x M in aluminium-magnesium alloys
- (M = diameter of RUD lifting point bolt, e.g. M 20)

When lifting light metals, nonferrous heavy metals and gray cast iron, the thread has to be chosen in such a way that the working load limit of the thread corresponds to the requirements of the respective base material.

4. The lifting points must be positioned to the load in such a way that movements are avoided during lifting.

a) For single leg lifts, the lifting point should be vertically above the centre of gravity of the load.

b) For two leg lifts, the lifting points must be equidistant to/or above the centre of gravity of the load.

c) For three and four leg lifts, the lifting points should be arranged symmetrical around the centre of gravity, in the same plane if possible.

5. Load Symmetry: The working load limits of individual RUD lifting points are calculated using the following formula and are based on symmetrical loading:

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

W_{LL} = required of lifting point/individual leg (kg)
G = load weight (kg)
n = number of load bearing legs
ß = angle of inclination of the individual leg

NOTE: For WLL Calculations

- ß angle is taken from the vertical plane.
- Included angle is the angle between the sling legs.

6. Safety: When lifting points are used in a multi leg assembly, care should be taken to calculate the WLL (Working Load Limit) due to the deration caused by forces acting in multiple directions. The reduction in WLL (Working Load Limit) for multi leg assemblies should be checked with relevant Standards e.g. AS 3775-2004 - Chain Slings-Gr t (8)

7. A plane bolting surface must be guaranteed to ensure correct mating of the lift component.

PP-S PP-B PP-VIP

9. Drill and tap the work piece so that the PowerPoint®-version is installed perpendicular to the surface of the work piece. The work piece surface must be flat, providing complete contact for the PowerPoint®-version ball bearing housing. Countersink the tapped hole.

9. For single use it is sufficient to tighten by hand with a spanner. For a long term application the PowerPoint® should be tightened to torque according to relevant table (+/- 10%).

10. The RUD PowerPoint® versions are designed for turning and rotating of loads, however, not for permanent, continuous rotations under load!

11. All fittings connected to the PowerPoint®-versions should be free moving. Also the assembled components on the PowerPoint® must be free moving and should not be used over sharp corners.

When connecting and disconnecting the lifting means (wire ropes, chain slings, round slings) pinches and impacts should be avoided. Damage to lifting components caused by sharp corners should also be avoided.

Adjust to the direction of pull before attaching to the lifting means.

12. To prevent unintended dismounting through shock loading, rotation or vibration, thread locking fluid such as Loctite (depending on the application, please refer to the manufacturer's instruction) should be used to secure the bolt.

13. Effect of temperature: Due to the lubrication, RUD recommends that PowerPoint® - versions are not used in high temperature applications. If this cannot be avoided please take the reduced WLL into consideration:

-10° up to 200°C no reduction (14°F up to 392°F)

200° up to 300°C minus 10% (392°F up to 572°F)

300° up to 400°C minus 25% (572°F up to 752°F)

Temperatures above 400°C (752°F) are not allowed.

14. RUD lifting points must not be used under chemical influences such as acids, alkaline solutions and vapours e.g. in pickling baths or hot dip galvanising plants. If this cannot be avoided, please contact the manufacturer indicating the concentration, period of penetration and temperature of use.

15. The PowerPoint® - versions are available with different thread lengths (refer to F Vario in table 1). The assembly of components must only be carried out by RUD or authorised specialists.

For the user it is not recommended to disassemble the ball bearing housing.

16. After fitting, an annual inspection or sooner if conditions dictate should be undertaken by a competent person examining the continued suitability. Also inspect after damage and special occurrences.

User Instructions - Part 3

Inspection criteria regarding paragraphs 2 and 16:

- Ensure correct bolt size, quality and length.
- Ensure compatibility of bolt thread and tapped hole - control of the torque.
- The lifting point should be complete.
- The WLL, thread size, batch code and manufacturers stamping should be clearly visible on the lifting point.
- Deformations of the components parts such as body, fittings and thread.
- Mechanical damages such as notches, especially in high stress areas.
- Wear should be not more than 10% of cross sectional diameter.
- Evidence of corrosion.
- Evidence of cracks.
- Damage to the bolt and/or thread.
- The upper fork head part of the PowerPoint®- versions must rotate smoothly.
- The PowerPoint®- versions should only be used within the nom WLL. See RUD chart.
- Due to double bearing races, proof testing is not suitable for the PowerPoint range. Testing should be MPI (Magnetic Partical Inspection) and visual.
- The maximum gap between upper- and lower part of the PowerPoint® must not be exceeded:

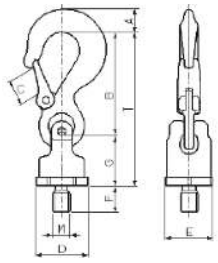
  PP-..-0.63t up to PP-..2.5t max. 1.5 mm

  PP-..-4t up to PP-..8t max. 2.5 mm

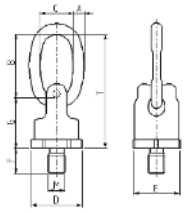
Any non-adherence to this advice may result in damages of persons and / or materials.

PP-S

and Vario lengths variants

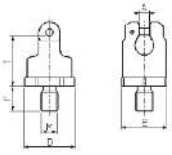


PP-B



PP-VIP

Only for original VIP chain



Type	WLL (t)	A	B	C	D	E	F Standard	F Vario	G	M	T	Weight (kg)	torque	Ref-no. Standard	Ref-no. Vario
PP-S-0.63t-M12	0.63	13	75	18	40	36	18	19-145*	41	12	116	0.4	10 Nm	7990719	8600320
PP-S-1.5t-M16	1.5	20	97	25	46	41	25	26-180*	50	16	147	1.0	30 Nm	7989719	8600321
PP-S-2.5t-M20	2.5	28	126	30	61	55	30	31-200	61	20	187	1.7	70 Nm	7989075	8600302
PP-S-4t-M24	4.0	36	150	35	78	70	36	37-255*	77	24	227	3.5	150 Nm	7989076	8600323
PP-S-5t-M30	5.0	37	174	40	95	85	45	46-330	93	30	267	7.2	225 Nm	7989720	8600324
PP-S-8t-M36	8.0	49	208	48	100	90	54	55-300	102	36	310	9.2	410 Nm	7989077	8600305
PP-B-0.63t-M12	0.63	9	65	35	40	36	18	19-145*	41	12	105	0.35	10 Nm	7989522	8600320
PP-B-1.5t-M16	1.5	11	65	35	46	41	25	26-180*	50	16	115	0.6	30 Nm	7989523	8600321
PP-B-2.5t-M20	2.5	13	74	40	61	55	30	31-200	61	20	135	1.1	70 Nm	7989081	8600302
PP-B-4t-M24	4.0	16	95	45	78	70	36	37-255*	77	24	172	2.4	150 Nm	7989082	8600323
PP-B-5t-M30	5.0	19	130	60	95	85	45	46-330	93	30	223	5.2	225 Nm	7989524	8600324
PP-B-8t-M36	8.0	24	140	65	100	90	54	55-300	102	36	242	6.3	410 Nm	7989083	8600305
PP-VIP-0.63t-M12	0.63	4	-	-	40	36	18	19-145*	-	12	41	0.25	10 Nm	7989525	8600320
PP-VIP-1.5t-M16	1.5	6	-	-	46	41	25	26-180*	-	16	50	0.45	30 Nm	7989526	8600321
PP-VIP-2.5t-M20	2.5	8	-	-	61	55	30	31-200	-	20	61	0.95	70 Nm	7989527	8600302
PP-VIP-4t-M24	4,0	10	-	-	78	70	36	37-255*	-	24	77	2,2	150 Nm	7989528	8600323
PP-VIP-5t-M30	5,0	13	-	-	95	85	45	46-330	-	30	93	3,5	225 Nm	7989529	8600324
PP-VIP-8t-M36	8,0	16	-	-	100	90	54	55-300	-	36	102	5,2	410 Nm	7989530	8600305

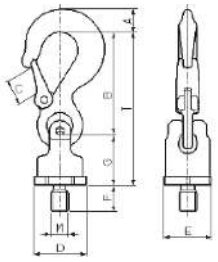
Table 1

User Instructions - Part 4

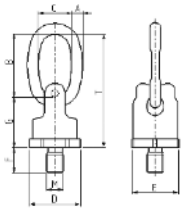
WORKING LOAD LIMITS (G - in tonnes)					
PRODUCT DESCRIPTION	Single Leg G	Single Leg G	2 , 3 or 4 Legs G		
			60°	90°	120°
			Maximum Included Angle (Degrees)		
PP - S / PP - B M12	0.63	0.63	1.1	0.89	0.63
PP - S / PP - B M16	1.5	1.5	2.6	2.1	1.5
PP - S / PP - B M20	2.5	2.5	4.3	3.5	2.5
PP - S / PP - B M24	4.0	4.0	6.9	5.6	4.0
PP - S / PP - B M30	6.7	5.0	8.6	7.0	5.0
PP - S / PP - B M36	10.0	8.0	13.8	11.3	8.0

Table 2

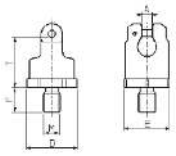
PP-S
and Vario lengths variants



PP-B



PP-VIP
Only for original VIP chain



Type	WLL (lbs)	A	B	C	D	E	F Standard	F Vario	G	M	T	Weight (lbs)	torque	Ref-no. Standard
PP-S-0.63t-1/2"-13UNC	1385	1/2	2 15/16	23/32	1 9/16	1 13/32	23/32	1/2 - 1 3/4	1 5/8	1/2	4 9/16	0.9	10 Nm	7990720
PP-S-1.5t-5/8"-11UNC	3300	23/32	3 13/16	1	1 13/16	1 5/8	1	5/8 - 2 5/32	2	5/8	5 3/4	2.0	30 Nm	7989908
PP-S-2.5t-3/4"-10UNC	5500	1 1/8	5	1 3/16	2 13/32	2 5/32	1 3/16	-	2 13/32	3/4	7 3/8	3.7	70 Nm	7989909
PP-S-2.5t-7/8"-9UNC	5500	1 1/8	5	1 3/16	2 13/32	2 5/32	1 3/16	-	2 13/32	7/8	7 3/8	3.8	80 Nm	7989910
PP-S-4t-1"-8UNC	8800	1 13/32	5 7/8	1 3/8	3	2 3/4	1 13/32	1 - 2 29/32	3	1	8 15/16	7.7	150 Nm	7989911
PP-S-5t-11/4"-7UNC	11000	1 7/16	6 7/8	1 9/16	3 3/4	3 11/32	1 3/4	1 1/4 - 3 9/16	3 5/8	1 1/4	10 1/2	14.3	225 Nm	7989912
PP-S-8t-11/2"-6UNC	17600	1 15/16	8 3/16	1 7/8	3 15/16	3 9/16	2 1/8	2 1/8 - 11 3/4	4	1 1/2	12 3/16	20.2	410 Nm	7989913
PP-B-0.63t-1/2"-13UNC	1385	3/8	2 9/16	1 3/8	1 9/16	1 13/32	23/32	1/2 - 1 3/4	1 5/8	1/2	4 1/8	0.8	10 Nm	7989901
PP-B-1.5t-5/8"-11UNC	3300	7/16	2 9/16	1 3/8	1 13/16	1 5/8	1	5/8 - 2 5/32	2	5/8	4 1/2	1.3	30 Nm	7989902
PP-B-2.5t-3/4"-10UNC	5500	1/2	2 7/8	1 9/16	2 13/32	2 5/32	1 3/16	-	2 13/32	3/4	5 5/16	2.4	70 Nm	7989903
PP-B-2.5t-7/8"-9UNC	5500	1/2	2 7/8	1 9/16	2 13/32	2 5/32	1 3/16	-	2 13/32	7/8	5 5/16	2.5	80 Nm	7989904
PP-B-4t-1"-8UNC	8800	5/8	3 3/4	1 3/4	3	2 3/4	1 13/32	1 - 2 29/32	3	1	6 3/4	5.3	150 Nm	7989905
PP-B-5t-11/4"-7UNC	11000	3/4	5 1/8	2 3/8	3 3/4	3 11/32	1 3/4	1 1/4 - 3 9/16	3 5/8	1 1/4	8 3/4	11.6	225 Nm	7989906
PP-B-8t-11/2"-6UNC	17600	15/16	5 1/2	2 9/16	3 15/16	3 9/16	2 1/8	2 1/8 - 11 3/4	4	1 1/2	9 1/2	13.8	410 Nm	7989907
PP-VIP-0.63t-1/2"-13UNC	1385	5/32	-	-	1 9/16	1 13/32	23/32	1/2 - 1 3/4	-	1/2	1 5/8	0.55	10 Nm	7989920
PP-VIP-1.5t-5/8"-11UNC	3300	15/16	-	-	1 13/16	1 5/8	1	5/8 - 2 5/32	-	5/8	2	1.0	30 Nm	7989921
PP-VIP-2.5t-3/4"-10UNC	5500	5/16	-	-	2 13/32	2 5/32	1 3/16	-	-	3/4	2 13/32	2.0	70 Nm	7989922
PP-VIP-2.5t-7/8"-9UNC	5500	5/16	-	-	2 13/32	2 5/32	1 3/16	-	-	7/8	2 13/32	2.2	80 Nm	7989923
PP-VIP-4t-1"-8UNC	8800	3/8	-	-	3	2 3/4	1 13/32	1 - 2 29/32	-	1	3	4.8	150 Nm	7989924
PP-VIP-5t-11/4"-7UNC	11000	1/2	-	-	3 3/4	3 11/32	1 3/4	1 1/4 - 3 9/16	-	1 1/4	3 5/8	7.7	225 Nm	7989925
PP-VIP-8t-11/2"-6UNC	17600	5/8	-	-	3 15/16	3 9/16	2 1/8	2 1/8 - 11 3/4	-	1 1/2	4	11.4	410 Nm	7989926

Table 3

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