

PowerPoint® PP-S/PP-B/PP-VIP



Safety instructions

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

- Translation of the Original instructions -



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lifting points for bolting PP-S / PP-B / PP-VIP



EG-Konformitätserklärung

entsprechend der EG-Maschinenrichtlinie 2006/42/EG, Anhang II A und ihren Änderungen

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

Hiermit erklären wir, dass die nachfolgend bezeichnete Maschine aufgrund ihrer Konzipierung und Bauart, sowie in der von uns in Verkehr gebrachten Ausführung, den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Maschinenrichtlinie 2006/42/EG sowie den unten aufgeführten harmonisierten und nationalen Normen sowie technischen Spezifikationen entspricht. Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Produktbezeichnung: Anschlagpunkt PowerPoint
PP / WPP / WPPH

Folgende harmonisierten Normen wurden angewandt:

<u>DIN EN 1677-1 : 2009-03</u>	<u>DIN EN 1677-4 : 2009-03</u>
<u>DIN EN ISO 12100 : 2011-03</u>	_____
_____	_____
_____	_____

Folgende nationalen Normen und technische Spezifikationen wurden außerdem angewandt:

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

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

Aalen, den 26.09.2016 Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB) *Arne Kriegsmann*
Name, Funktion und Unterschrift Verantwortlicher



EC-Declaration of conformity

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

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

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

Product name: Lifting point PowerPoint
PP / WPP / WPPH

The following harmonized norms were applied:

<u>DIN EN 1677-1 : 2009-03</u>	<u>DIN EN 1677-4 : 2009-03</u>
<u>DIN EN ISO 12100 : 2011-03</u>	_____
_____	_____
_____	_____

The following national norms and technical specifications were applied:

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

Authorized person for the configuration of the declaration documents:
Michael Betzler, RUD Ketten, 73432 Aalen

Aalen, den 26.09.2016 Dr.-Ing. Arne Kriegsmann, (Prokurist/QMB) *Arne Kriegsmann*
Name, function and signature of the responsible person

User Instruction

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



Pic. 1: PP-S PP-B PP-VIP

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

1. Reference should be made to German Standards accord. DGUV 100-500 or other country specific statutory regulations and inspections are to be carried out by competent persons only.

2. Before installation and every use, inspect visually RUD lifting points, paying 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. The German testing authority BG, recommends the following minimum for the bolt lengths:

- 1 x M in steel (min. quality S235JR [1.0037])
- 1,25 x M in cast iron (e.g. GG25)
- 2 x M in aluminium
- 2,5 x M in aluminium-magnesium alloys
- (M = thread Ø, e.g. M 20)

When lifting light metals, nonferrous metals and gray cast iron the thread has to be chosen in such a way that the WLL of the thread corresponds to the requirements of the corresponding 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/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 required WLL of the individual RUD lifting point are calculated using the following formula and are based on symmetrical loading:

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

WLL = working load limit / capacity of each lifting point
 G = load weight (kg)
 n = number of load bearing legs
 β = angle of inclination of the chain to the vertical

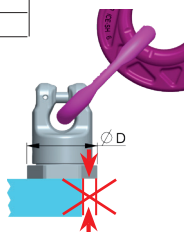
The calculation of the load bearing legs is as follows:

	symmetrical	unsymmetrical
Two leg	2	1
Three/four leg	3	1

(also refer to table 1)

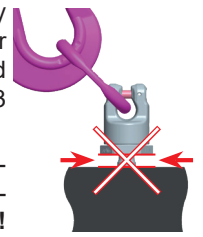
6. A plane bolt-on surface (with a minimum ØD) with a perpendicular machined thread hole must be given. The thread has to be machined acc. to DIN 76 (countersink max. 1.05xd).

Thread holes must be machined deep enough that the supporting area of the lifting point bears. Machine through holes up to DIN EN 20273-middle (Md, compare chart 2).



Pic. 2: Thread of the PP must be completely engaged and the lifting point must be installed full-faced. (The diameter of the bearing surface must be ≥ D)

7. For single use it is sufficient to tighten by hand with a spanner, without using a bar. For a long term application the PowerPoint® should be tightened with torque according table 2 or 3 (+/- 10%).



Pic. 3: PP must have been fully bolted in.

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

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

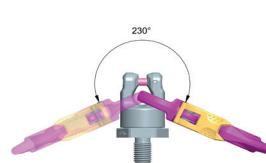
When connecting and disconnecting the lifting means (wire ropes, chain slings, round slings) pinches and impacts should be avoided. Damage of the lifting means caused by sharp corners should be avoided as well.

Before lifting the hooks must be installed without twists in the direction of pull. Ring/hook/chain of the adjusted PP can be pivot by 230° (Pic. 4). To guarantee the WLL and the function (compare table 1), the inclination angle of the ring/hook/chain must not exceed 25° when lifting point is attached from the side (compare Pic. 5).

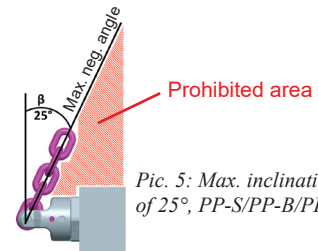


ATTENTION

Ring/hook/chain resp. the attached lifting mean must be free moveable in the PP and must neither have support at the load edge nor at the bottom part of the PP.



Pic. 4: Pivoting area of PP-S/PP-B/PP-VIP



Pic. 5: Max. inclination angle of 25°, PP-S/PP-B/PP-VIP

10. To prevent unintended dismounting through shock loading, rotation or vibrations thread locking devices are recommended. Therefore different locking systems are possible. Liquid locking fluid such as Loctite (respect manufacturer specifications) or form closed versions such as hex castel nut, counter nut, etc. For lifting points which remains on the construction we basically recommend to secure with liquid locking device and tighten with torque.

11. Effect of temperature:

Due to the greasing we recommend to use PowerPoint®-versions not in overheated areas. If this cannot be avoided please take the reduced WLL into consideration:

-40° up to 200°C no reduction

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.

The special fluorescent pink powder coating of the fittings permanently changes its colour during the use in higher temperatures areas. A deep black colour indicates the use beyond 400°C. A continued use will then be forbidden.

12. 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.

13. The position where the lifting points should be attached should be clearly marked with colour.

14. If the lifting points are used exclusively for lashing the value of the working load limit can be doubled: LC = 2 x WLL

15. The PowerPoint® versions are available with different thread lengths (refer to separat Safety instrucion So-PP). The assembly of components must only be carried out by RUD or by authorised specialists. For the user it is forbidden to disassemble the ball bearing.

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

17. The RUD PowerPoint must not be loaded with the Manufacturing Proof Force MPF (2.5 x WLL). Should at the production of lifting means or similar products, a singular proof loading be necessary, please ask RUD in advance.

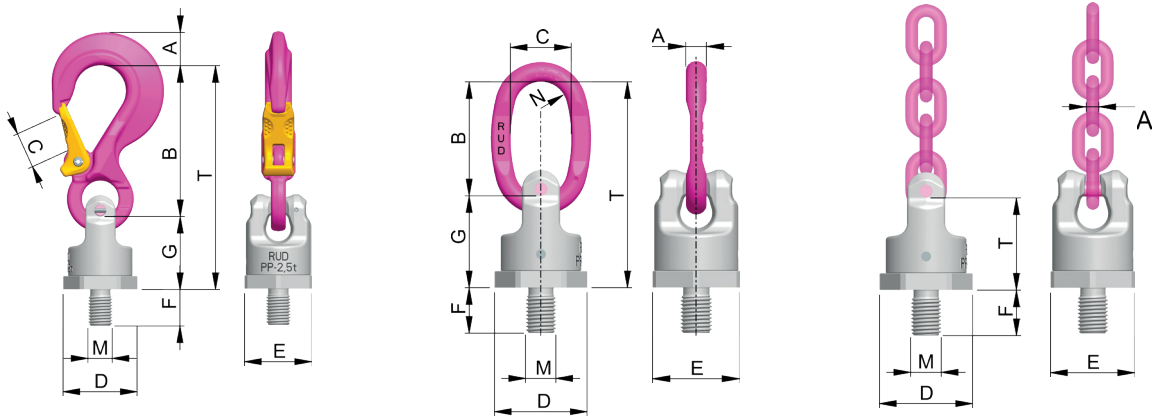
A non-adherence to this advice may result damages of persons and materials!



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

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.
- 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)
- 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



Type de fixation																
Lifting from the side	Attention, when lifting point is attached to the side the max. inclination angle β can only be 25° / resp. until lifting means touches load (compare point 9)!								β max. 25°				β max. 25°			
Number of legs	1	1	2	2	2	2	2	3 & 4	3 & 4	3 & 4						
Angle of inclination $\leq \beta$	0-7°	90°	0-7°	90°	0-45°	45-60°	unsymm.	0-45°	45-60°	unsymm.						
Factor	1	1	2	2	1.4	1	1	2.1	1.5	1						
Type	Max. weight of load >G< in metric tons for all PowerPoint types with different sling methods															
PP- ... - 0.63t - M12	0.63 t	0.63 t	1.26 t	1.26 t	0.88 t	0.63 t	0.63 t	1.32 t	0.95 t	0.63 t						
PP- ... - 1/2"-13UNC	(1385 lbs)	(1385 lbs)	(2770 lbs)	(2770 lbs)	(1940 lbs)	(1385 lbs)	(1385 lbs)	(2900 lbs)	(2080 lbs)	(1385 lbs)						
PP-B-1.0t-1 1/8"-12UNF	1.0 t	1.0 t	2.0 t	2.0 t	1.4 t	1.0 t	1.0 t	2.1 t	1.5 t	1.0 t						
PP- ... - 1.5t - M16	1.5 t	1.5 t	3.0 t	3.0 t	2.1 t	1.5 t	1.5 t	3.15 t	2.25 t	1.5 t						
PP- ... - 5/8"-11UNC	(3300 lbs)	(3300 lbs)	(6600 lbs)	(6600 lbs)	(4620 lbs)	(3300 lbs)	(3300 lbs)	(6930 lbs)	(4950 lbs)	(3300 lbs)						
PP- ... - 2.5t - M 20	2.5 t	2.5 t	5.0 t	5.0 t	3.5 t	2.5 t	2.5 t	5.25 t	3.75 t	2.5 t						
PP- ... - 3/4"-10UNC	(5500 lbs)	(5500 lbs)	(11000 lbs)	(11000 lbs)	(7700 lbs)	(5500 lbs)	(5500 lbs)	(11550 lbs)	(8250 lbs)	(5500 lbs)						
PP- ... - 7/8"-9UNC																
PP- ... - 4t - M 24	4.0 t	4.0 t	8.0 t	8.0 t	5.6 t	4.0 t	4.0 t	8.4 t	6.0 t	4.0 t						
PP- ... - 1"-8UNC	(8800 lbs)	(8800 lbs)	(17600 lbs)	(17600 lbs)	(12320 lbs)	(8800 lbs)	(8800 lbs)	(18480 lbs)	(13200 lbs)	(8800 lbs)						
PP- ... - 5t - M 30	6.7 t	5.0 t	13.4 t	10.0 t	7.0 t	5.0 t	5.0 t	10.5 t	7.5 t	5.0 t						
PP- ... - 1 1/4"-7UNC	(14750 lbs)	(11000 lbs)	(29500 lbs)	(22000 lbs)	(15400 lbs)	(11000 lbs)	(11000 lbs)	(23100 lbs)	(16500 lbs)	(11000 lbs)						
PP- ... - 8t - M 36	10.0 t	8.0 t	20.0 t	16.0 t	11.2 t	8.0 t	8.0 t	16.8 t	12.0 t	8.0 t						
PP- ... - 1 1/2"-6UNC	(22000 lbs)	(17600 lbs)	(44000 lbs)	(35200 lbs)	(24620 lbs)	(17600 lbs)	(17600 lbs)	(36960 lbs)	(26400 lbs)	(17600 lbs)						
At a lift with one strand and two parallel strands where the inclination angles are at the max. $\pm 7^\circ$, the lifting method can be assumed as a vertical lift.					When lifting with two, three or four leg lifting means, inclination angles of less than 15° shall be avoided, if possible (Risk of instability).											

Type	Type thread	WLL [t] (lbs)	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	M [mm]	Md [mm]	G [mm]	T [mm]	weight [kg/pc.]	torque	Ref-no.	
PP-S (hook)	VIP 4	M12	0.63 (1385)	13 1/2"	75 2 5/16"	18 23/32"	40 1 9/16"	36 1 13/32"	18	12	13.5	41 1 5/8"	116 4 9/16"	0.4	10 Nm	7990719
	PP-S	1/2"-13UNC							23/32"	1/2"	14					7990720
	Vario	up to 18 on request **							8600581							
	VIP 6	M16	1.5 (3300)	20 25/32"	97 3 13/16"	25 1"	46 1 13/16"	41 1 5/8"	24	16	17.5	49 2"	146 5 3/4"	0.9	30 Nm	7989719
	PP-S	5/8"-11UNC							1"	5/8"	17.5					7989908
	Vario	up to 24 on request **							8600582							
	VIP 8	M20	2.5 (5500)	28 1 1/8"	126 5"	30 13/16"	61 2 13/32"	55 2 5/32"	30	20	22	61 2 13/32"	187 7 3/8"	1.8	70 Nm	7989075
	PP-S	3/4"-10UNC							13/16"	3/4"	21					7989909
	Vario	7/8"-9UNC							13/16"	7/8"	24					8600583
	VIP 10	M24	4.0 (8800)	36 1 13/32"	150 5 7/8"	35 1 3/8"	78 3"	70 2 3/4"	36	24	26	77 3"	277 8 15/16"	3.5	150 Nm	7989076
	PP-S	1"-8UNC							1 13/32"	1"	28					7989911
	Vario	up to 36 on request **							8600584							
	VIP 13	M30	5.0 (11.000)	37 1 7/16"	174 6 7/8"	40 1 9/16"	95 3 3/4"	85 3 11/32"	45	30	33	93 3 5/8"	267 10 1/2"	7.2	225 Nm	7989720
	PP-S	1 1/4"-7UNC							1 3/4"	1 1/4"	35					7989912
	Vario	up to 45 on request **							8600585							
	VIP 16	M36	0.8 (17.600)	49 1 15/16"	208 8 3/16"	48 1 7/8"	100 3 5/16"	90 3 9/16"	54	36	39	102 4"	310 12 3/16"	9.2	410 Nm	7989077
	PP-S	1 1/2"-6UNC							2 1/8"	1 1/2"	41					7989913
	Vario	up to 300 on request **							8600526							
PP-B (ring)	VIP 4	M12	0.63 (1385)	9 3/8"	65 2 9/16"	35 1 3/8"	40 1 9/16"	36 1 13/32"	18	12	13.5	41 1 5/8"	106 4 1/8"	0.35	10 Nm	7989522
	PP-B	1/2"-13UNC							23/32"	1/2"	14					7989901
	Vario	up to 18 on request **							8600591							
	PP-B	1 1/8"-12UNF	1.0 t (2200)	3/4"	5 1/8"	2 3/8"	3 3/4"	3 11/32"	1 1/8"	1 1/8"	31	3 5/8"	8 3/4"	6.3	225 Nm	7909700
	VIP 6	M16	1.5 (3300)	11 7/16"	65 2 9/16"	35 1 3/8"	46 1 13/16"	41 1 5/8"	24	16	17.5	49 2"	114 4 1/2"	0.6	30 Nm	7989523
	PP-B	5/8"-11UNC							1"	5/8"	17.5					7989902
	Vario	up to 24 on request **							8600592							
	VIP 8	M20	2.5 (5500)	13 1/2"	74 2 7/8"	40 1 9/16"	61 2 13/32"	55 2 5/32"	30	20	22	61 2 13/32"	136 5 15/16"	1.1	70 Nm	7989081
	PP-B	3/4"-10UNC							13/16"	3/4"	21					7989903
	Vario	7/8"-9UNC							13/16"	7/8"	24					8600593
	VIP 10	M24	4.0 (8800)	16 5/8"	95 3 3/4"	45 1 3/4"	78 3"	70 2 3/4"	36	24	26	77 3"	172 6 3/4"	2.4	150 Nm	7989082
	PP-B	1"-8UNC							1 13/32"	1"	28					7989905
	Vario	up to 36 on request **							8600594							
	VIP 13	M30	5.0 (11.000)	19 3/4"	130 5 1/8"	60 2 3/8"	95 3 3/4"	85 3 11/32"	45	30	33	93 3 5/8"	223 8 3/4"	5.2	225 Nm	7989524
	PP-B	1 1/4"-7UNC							1 3/4"	1 1/4"	35					7989906
	Vario	up to 45 on request **							8600595							
	VIP 16	M36	0.8 (17.600)	24 1 5/16"	140 5 1/2"	65 2 9/16"	100 3 5/16"	90 3 9/16"	54	36	39	102 4"	242 9 1/2"	6.3	410 Nm	7989083
	PP-B	1 1/2"-6UNC							2 1/8"	1 1/2"	41					7989907
Vario	up to 300 on request **								8600566							
PP-VIP (chain connection)*	VIP 4	M12	0.63 (1385)	4 5/32"	--	--	40 1 9/16"	36 1 13/32"	18	12	13.5	--	41 1 5/8"	0.25	10 Nm	7989525
	PP-VIP	1/2"-13UNC							23/32"	1/2"	14					7989920
	Vario	up to 18 on request **							8600571							
	VIP 6	M16	1.5 (3300)	6 15/64"	--	--	46 1 13/16"	41 1 5/8"	24	16	17.5	--	49 2"	0.42	30 Nm	7989526
	PP-VIP	5/8"-11UNC							1"	5/8"	17.5					7989921
	Vario	up to 24 on request **							8600572							
	VIP 8	M20	2.5 (5500)	8 5/16"	--	--	61 2 13/32"	55 2 5/32"	30	20	22	--	61 2 13/32"	0.95	70 Nm	7989527
	PP-VIP	3/4"-10UNC							13/16"	3/4"	21					7989922
	Vario	7/8"-9UNC							13/16"	7/8"	24					8600573
	VIP 10	M24	4.0 (8800)	10 3/8"	--	--	78 3"	70 2 3/4"	36	24	26	--	77 3"	2.2	150 Nm	7989528
	PP-VIP	1"-8UNC							1 13/32"	1"	28					7989924
	Vario	up to 36 on request **							8600574							
	VIP 13	M30	5.0 (11.000)	13 1/2"	--	--	95 3 3/4"	85 3 11/32"	45	30	33	--	93 3 5/8"	3.5	225 Nm	7989529
	PP-VIP	1 1/4"-7UNC							1 3/4"	1 1/4"	35					7989925
	Vario	up to 45 on request **							8600575							
	VIP 16	M36	8.0 (17.600)	16 5/8"	--	--	100 3 5/16"	90 3 9/16"	54	36	39	--	102 4"	5.2	410 Nm	7989530
	PP-VIP	1 1/2"-6UNC							2 1/8"	1 1/2"	41					7989926
	Vario	up to 300 on request **							8600305							
VIP 28	M72	31.5 (69.300)	28 1 1/8"	--	--	160 6 11/16"	145 5 3/4"	108	72	78	--	146 5 3/4"	26.4	1200 Nm	7903437	
PP-VIP	Vario							up to 300 on request **							8600239	

Table 2 * Only for original VIP's chain || ** on request

Subject to technical alternations