

# 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.

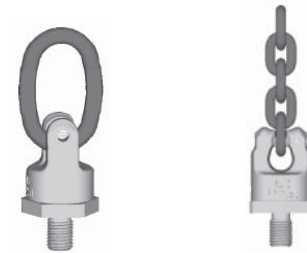


lifting Points for bolting  
**PP-S / PP-B / PP-VIP**



**RUD Ketten**  
**Rieger & Dietz GmbH u. Co. KG**  
D-73428 Aalen / Germany  
Tel. +49 (0)7361/504-1371 /  
1314 / 1527  
Fax +49 (0)7361/504-1460  
www.rud.com  
info@rud.com

RUD-Art.-Nr.: 8502206-EN / 07.006



## EG-Herstellererklärung

im Sinne der EG-Maschinenrichtlinie 98/37/EG,  
Anhang II B und ihre Änderungen

Hiermit erklären wir (unterstützt durch die Zertifizierung nach ISO 9001), daß die nachfolgend bezeichnete Ausrüstung aufgrund ihrer Konzipierung und Bauart, sowie der von uns in Verkehr gebrachten Ausführung, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie entspricht. Bei einer nicht mit uns abgestimmten Änderung der Ausrüstung verliert diese Erklärung ihre Gültigkeit. Weiterhin verliert diese Erklärung ihre Gültigkeit, wenn die Ausrüstung nicht entsprechend den in der Betriebsanleitung aufgezeigten bestimmungsmäßigen Fällen eingesetzt wird und die regelmäßig durchzuführenden Überprüfungen laut BGR 500, Kapitel 2.8 "Betreiben von Lastaufnahmeeinrichtungen im Hebezeugbetrieb", und den entsprechenden landesspezifische Vorschriften, nicht vorgenommen werden.

Hinweis: Die Inbetriebnahme der Maschine, an die die gelieferten Bauteile angebaut werden, ist solange untersagt, bis festgestellt wurde, daß sie den Bestimmungen der Maschinenrichtlinie 98/37/EG der Europäischen Gemeinschaft entspricht. Bei PowerPoint angewendete harmonisierte Normen DIN EN ISO 12100 T1 und T2 sowie in Anlehnung an EN 1677. Dies gilt nur für Mitgliedstaaten der EU und EFTA.

Bezeichnung der Ausrüstung:

**Anschlagpunkt**

Type:

**PowerPoint®**

**PP-S / PP-B / PP-VIP**

Herstellerzeichen:



## EC-manufacturer's explanation

according to the Machinery Directive 98/37/EC,  
annex II B and amendments

We hereby declare (supported by certification as per ISO 9001) that the equipment, as mentioned below, corresponds to the appropriate, basic requirements of safety and health of the corresponding EC regulation in the design as it is sold by us because of its design and construction. In case of any modification of the equipment, not being agreed upon with us, this declaration becomes invalid. Furthermore, this declaration will become invalid if the equipment is not used according to the prescriptions mentioned in the manual and if the necessary examinations are not carried out regularly as per BGR 500.

Hint: The commissioning of the machine in which the delivered components of this consignment will be installed is only permitted if it can be stated that the machine corresponds to the machine directive 97/38/EC of the European Community. Applied standards: DIN EN ISO 12100 T1 and T2 in particular EN 1677. This is only valid for countries which are member of the EC and of the EFTA.

Designation of the equipment:

**Lifting point**

Type:

**PowerPoint®**

**PP-S / PP-B / PP-VIP**

Manufacturer's sign:



## 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



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.**

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

- The lifting points must be positioned to the load in such a way that movements are avoided during lifting.
  - For single leg lifts, the lifting point should be vertically above the centre of gravity of the load.
  - For two leg lifts, the lifting points must be equidistant to/or above the centre of gravity of the load.
  - 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	2

(also refer to table 1 and 3)

6. 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 house. Countersink the tapped hole.

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 1 or 3 (+/- 10%).

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.

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. The PowerPoint® versions are available with different thread lengths (refer to Fvario in table 2). 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.

15. 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.

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

**Inspection criteria regarding paragraphs 2 and 15:**

- 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
- The PowerPoint® version are not allowed for proof load test. Magnetic crack test only.
- 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

		PP-S						PP-B					PP-VIP Only for original VIP chain			
and Vario lengths variants																
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	8600300*	
PP-S-1,5t-M16	1,5	20	97	25	46	41	25	26-180	50	16	147	1,0	30 Nm	7989719	8600301*	
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	8600303*	
PP-S-5t-M30	5,0	37	174	40	95	85	45	46-330	93	30	267	7,2	225 Nm	7989720	8600304*	
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	8600300*	
PP-B-1,5t-M16	1,5	11	65	35	46	41	25	26-180	50	16	115	0,6	30 Nm	7989523	8600301*	
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	8600303*	
PP-B-5t-M30	6,5	19	130	60	95	85	45	46-330	93	30	223	5,2	225 Nm	7989524	8600304*	
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	8600300*	
PP-VIP-1,5t-M16	1,5	6	-	-	46	41	25	26-180	-	16	50	0,45	30 Nm	7989526	8600301*	
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	8600303*	
PP-VIP-5t-M30	5,0	13	-	-	95	85	45	46-330	-	30	93	3,5	225 Nm	7989529	8600304*	
PP-VIP-8t-M36	8,0	16	-	-	100	90	54	55-300	-	36	102	5,2	410 Nm	7989530	8600305*	

Table 1

\* in preparations

Method of lift										
Number of legs	1	1	2	2	2	2	2	3 & 4	3 & 4	3 & 4
Angle of inclination <math>\alpha</math>	0°	90°	0°	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	<b>Max weight of load &gt;G&lt; for all PowerPoint types with different sling methods</b>									
PP- ... - 0,63t - M12	<b>0,63 t</b> (1385 lbs)	<b>0,63 t</b> (1385 lbs)	<b>1,26 t</b> (2770 lbs)	<b>1,26 t</b> (2770 lbs)	<b>0,88 t</b> (1940 lbs)	<b>0,63 t</b> (1385 lbs)	<b>0,63 t</b> (1385 lbs)	<b>1,32 t</b> (2900 lbs)	<b>0,95 t</b> (2080 lbs)	<b>0,63 t</b> (1385 lbs)
PP- ... - 1,5t - M16	<b>1,5 t</b> (3300 lbs)	<b>1,5 t</b> (3300 lbs)	<b>3,0 t</b> (6600 lbs)	<b>3,0 t</b> (6600 lbs)	<b>2,1 t</b> (4620 lbs)	<b>1,5 t</b> (3300 lbs)	<b>1,5 t</b> (3300 lbs)	<b>3,15 t</b> (6930 lbs)	<b>2,25 t</b> (4950 lbs)	<b>1,5 t</b> (3300 lbs)
PP- ... - 2,5t - M 20	<b>2,5 t</b> (5500 lbs)	<b>2,5 t</b> (5500 lbs)	<b>5,0 t</b> (11000 lbs)	<b>5,0 t</b> (11000 lbs)	<b>3,5 t</b> (7700 lbs)	<b>2,5 t</b> (5500 lbs)	<b>2,5 t</b> (5500 lbs)	<b>5,25 t</b> (11550 lbs)	<b>3,75 t</b> (8250 lbs)	<b>2,5 t</b> (5500 lbs)
PP- ... - 4t - M 24	<b>4,0 t</b> (8800 lbs)	<b>4,0 t</b> (8800 lbs)	<b>8,0 t</b> (17600 lbs)	<b>8,0 t</b> (17600 lbs)	<b>5,6 t</b> (12320 lbs)	<b>4,0 t</b> (8800 lbs)	<b>4,0 t</b> (8800 lbs)	<b>8,4 t</b> (18480 lbs)	<b>6,0 t</b> (13200 lbs)	<b>4,0 t</b> (8800 lbs)
PP- ... - 5t - M 30	<b>6,7 t</b> (14750 lbs)	<b>5,0 t</b> (11000 lbs)	<b>13,4 t</b> (29500 lbs)	<b>10,0 t</b> (22000 lbs)	<b>7,0 t</b> (15400 lbs)	<b>5,0 t</b> (11000 lbs)	<b>5,0 t</b> (11000 lbs)	<b>10 t</b> (23100 lbs)	<b>7,5 t</b> (16500 lbs)	<b>5,0 t</b> (11000 lbs)
PP- ... - 8t - M 36	<b>10,0 t</b> (22000 lbs)	<b>8,0 t</b> (17600 lbs)	<b>20,0 t</b> (44000 lbs)	<b>16,0 t</b> (35200 lbs)	<b>11,2 t</b> (24620 lbs)	<b>8,0 t</b> (17600 lbs)	<b>8,0 t</b> (17600 lbs)	<b>16,8 t</b> (36960 lbs)	<b>12,0 t</b> (26400 lbs)	<b>8,0 t</b> (17600 lbs)

Table 2

		PP-S		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)	Ref.no. (Vario *)
PP-S-0,63t-1/2"-13UNC	1385	1/2"	2 15/16"	2 3/32"	1 9/16"	1 13/32"	2 3/32"	3/4"-5 11/16"	1 5/8"	1/2"	4 9/16"	0,9	10 Nm	7990720	
PP-S-1,5t-5/8"-11UNC	3300	25/32"	3 13/16"	1"	1 13/16"	1 5/8"	1"	1" - 7"	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"	1 4/16"-7 3/4"	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"	1 4/16"-7 3/4"	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 7/16"-10"	3"	1"	8 15/16"	7,7	150 Nm	7989911	
PP-S-5t-1 1/4"-7UNC	11000	1 7/16"	6 7/8"	1 9/16"	3 3/4"	3 11/32"	1 3/4"	1 3/4"-13"	3 5/8"	1 1/4"	10 1/2"	14,3	225 Nm	7989912	
PP-S-8t-1 1/2"-6UNC	17600	1 15/16"	8 3/16"	1 7/8"	3 5/16"	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"	2 3/32"	3/4"-5 11/16"	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"	1" - 7"	2"	5/8"	4 1/2"	1,3	30 Nm	7989902	
PP-B-2,5t-3/4"-10UNC	5500	1 1/2"	2 7/8"	1 9/16"	2 13/32"	2 5/32"	1 3/16"	1 4/16"-7 3/4"	2 13/32"	3/4"	5 5/16"	2,4	70 Nm	7989903	
PP-B-2,5t-7/8"-9UNC	5500	1 1/2"	2 7/8"	1 9/16"	2 13/32"	2 5/32"	1 3/16"	1 4/16"-7 3/4"	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 7/16"-10"	3"	1"	6 3/4"	5,3	150 Nm	7989905	
PP-B-5t-1 1/4"-7UNC	11000	3/4"	5 1/8"	2 3/8"	3 3/4"	3 11/32"	1 3/4"	1 3/4"-13"	3 5/8"	1 1/4"	8 3/4"	11,6	225 Nm	7989906	
PP-B-8t-1 1/2"-6UNC	17600	1 5/16"	5 1/2"	2 9/16"	3 5/16"	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"	2 3/32"	3/4"-5 11/16"	-	1/2"	1 5/8"	0,55	10 Nm	7989920	
PP-VIP-1,5t-5/8"-11UNC	3300	15/64"	-	-	1 13/16"	1 5/8"	1"	1" - 7"	-	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"	1 4/16"-7 3/4"	-	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"	1 4/16"-7 3/4"	-	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 7/16"-10"	-	1"	3"	4,8	150 Nm	7989924	
PP-VIP-5t-1 1/4"-7UNC	11000	1/2"	-	-	3 3/4"	3 11/32"	1 3/4"	1 3/4"-13"	-	1 1/4"	3 5/8"	7,7	225 Nm	7989925	
PP-VIP-8t-1 1/2"-6UNC	17600	5/8"	-	-	3 5/16"	3 9/16"	2 1/8"	2 1/8"-11 3/4"	-	1 1/2"	4"	11,4	410 Nm	7989926	

Table 3

\* in preparations