

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-11/0160**  
**of 21 November 2018**

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Trade name of the construction product

Product family  
to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment  
contains

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

This version replaces

Deutsches Institut für Bautechnik

PFEIFER Wire Ropes

Prefabricated unalloyed steel and stainless steel wire  
ropes with end connectors

Pfeifer Seil- und Hebetechnik GmbH  
Dr.-Karl-Lenz-Str. 66  
87700 Memmingen  
DEUTSCHLAND

Pfeifer Seil- und Hebetechnik GmbH  
Dr.-Karl-Lenz-Str. 66  
87700 Memmingen  
DEUTSCHLAND

40 pages including 36 annexes which form an integral  
part of this assessment

EAD 200001-00-0602

ETA-11/0160 issued on 5 August 2011

**European Technical Assessment**

**ETA-11/0160**

English translation prepared by DIBt

**Page 2 of 40 | 21 November 2018**

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

## Specific part

### 1 Technical description of the product

The construction products are prefabricated high-strength unalloyed and stainless steel wire ropes with appropriate end connectors and the trade name "PFEIFER Wire Ropes".

The prefabricated high-strength wire ropes made of unalloyed steel consist of full locked coil cables or open spiral strands as well as the appropriate end connectors. The unalloyed wire ropes correspond to EN 10264-2:2012, EN 10264-3:2012 as well as to the series of the standards EN 12385<sup>1</sup>.

The prefabricated high-strength wire ropes made of stainless steel consist of open spiral strands and the appropriate end connectors. Wire ropes made of stainless steel correspond to EN 10264-4:2012 as well as to the series of the standards EN 12385<sup>1</sup>.

In addition to the above-mentioned standards, the unalloyed and stainless steel wire ropes comply with the specifications in Annexes C1 to H3.

The end connectors including the connection components consist of a combination of the individual components given in Annex B (B1 to B4), depending on the particular application. For the product characteristics of the components of the end connectors the indications in Annex C (C1 to C3) apply. The dimensions correspond to the indications in Annex D1 to Annex F4. Threads are metric ISO threads.

Drawings of the end connectors with its components with the essential dimensions are given in the Annexes to this European technical assessment.

Dimensions and tolerances not indicated in the Annexes shall correspond to the indications laid down in the technical documentation<sup>2</sup> to this European Technical Assessment.

### 2 Specification of the intended use in accordance with the applicable European Assessment Document

The intended use comprises all typical structural applications of high-strength wire ropes made of unalloyed respectively stainless steel taking into account the national provisions of the Member State applicable for the location where the product is incorporated in the works.

The wire ropes with the appropriate connectors are intended for the use in structures with static or quasi-static loads according to EN 1990:2002, where no verification of fatigue relating to EN 1993-1-9:2005 is necessary.

The performances given in Section 3 are only valid if the prefabricated high-strength wire ropes with the appropriate end connectors are used in compliance with the specifications and conditions given in the Annexes.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the prefabricated high-strength wire ropes with the appropriate end connectors of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

With regard to durability the regulations given in EN 1993-1-11:2006, section 4 and EN 1090-2:2008 shall be observed.

For sockets EN 13411-4:2009 applies.

<sup>1</sup> EN 12385-1:2009, EN 12385-2:2008, EN 12385-3:2008, EN 12385-4:2008 and EN 12385-10:2008

<sup>2</sup> The technical documentation to this European Technical Assessment is deposited with Deutsches Institut für Bautechnik and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

### 3 Performance of the product and references to the methods used for its assessment

#### 3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Breaking strength	See Annexes H1 to H3
Modulus of deformation / elasticity	See Annex C3

#### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1 according to EN 13501-1:2007+A1:2009

The components of the prefabricated unalloyed steel and stainless steel wire ropes with end connectors satisfy the requirements for performance class A1 of the characteristic reaction to fire, in accordance with the provisions of EC decision 96/603/EC (as amended).

### 4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 200001-00-0602 the applicable European legal act is: Decision 1998/214/EC.

The system to be applied is: 2+

### 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 21 November 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow  
Head of Department

*beglaubigt:*  
Bertram



## Annex A

### A.1 Assumptions concerning design

The design is carried out according to EN 1993-1-11:2006.

The design values of resistance given below are used for design.

The loading is static or quasi-static according to EN 1990:2002 without need of verification of fatigue relating to EN 1993-1-9:2005.

The dimensions, tolerances, material properties and thread engagements ("ETmin") stated in this European Technical Assessment are observed.

The wire ropes with appropriate end connectors are to be used that no systematic bending occurs in the connecting parts.

The design is carried out by a designer of the structure experienced in the field of steel structures.

#### **Design tension resistance of the wire ropes with end connectors**

The design value of the tension resistance  $F_{Rd}$  of the wire ropes including the end connectors shall be determined as follows:

$$F_{Rd} = F_{uk} / (1.5 \cdot \gamma_R)$$

Where:

$F_{uk}$  = characteristic value of the breaking strength of the wire ropes according to Annex H1 to H3

(General Remark:  $F_{uk} = F_{min} \cdot k_e$

With:  $F_{min}$  - minimum breaking force and  $k_e$  - loss factor)

$$\gamma_R = 1.0$$

The value given for the partial safety factor  $\gamma_R$  is a minimum value, that means values  $< 1.0$  for  $\gamma_R$  are not allowed. It should be used in cases where no values or no unfavourable values are given in national regulations of the Member State where the wire ropes with end connectors are used or in the respective National Annex to Eurocode 3.

#### **Resistance of pins**

The resistance of the pins of the fork end connectors is already covered by the tension resistance  $F_{Rd}$  of the wire ropes with end connectors (as before) if the thickness of the gusset plate "tLmin" is in accordance with the indications in Annexes D1, D2, D5, D6, D13, E1, E3, F1 and F3 and the steel grade of the gusset plate is at least S355.

#### **Resistance of sockets**

The resistance of the sockets is already covered by the tension resistance  $F_{Rd}$  of the wire ropes.

#### **Resistance of threads**

The resistance of the threads is already covered by the tension resistance  $F_{Rd}$  of the wire ropes in compliance with the minimum thread engagements "ETmin" according to the Annexes G1 to G3.

## A.2 Assumptions concerning installation

The installation is carried out such that the wire ropes with end connectors are accessible for repair or maintenance at any time.

The installation is only carried out according to the manufacturer's instructions. The manufacturer hands over the assembly instructions to the assembler. From the assembly instructions it is followed that, prior to installation, all components of the wire ropes with end connectors shall be checked for their perfect condition and that damaged components shall not be used.

The responsible assembler attests by notation that all connections with threads were checked concerning the keeping of the minimum thread engagements.

Below the lock nut of the sockets Type 803 and Type 804 washers according to EN ISO 7089-200HV-tzn shall be arranged. For undeliverable sizes washers shall be made of steel 34CrNiMo6+QT.

By installing the sockets of Type 803 and Type 804 attention is paid on accurate symmetric arrangement of thread bar to avoid eccentric loading of the sleeve.

An uneven distribution of the wire rope force and unfavourable compulsion on Type 803 and Type 804 are excluded. When installing the adjustable sockets Type 803 and Type 804 the two threaded rods are tightened evenly. The difference between the free lengths of the threaded rods in the final state is a maximum of 2 mm.




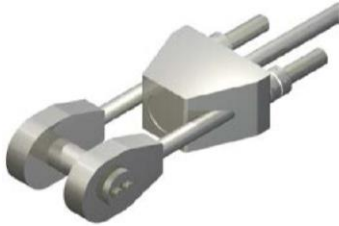




The conformity of the gusset plates and the installed wire ropes with end connectors with the provisions of the European Technical Assessment is attested by the executing assembler.

## A.3 Indications to the manufacturer

The manufacturer shall ensure that the information on the specific conditions is given to those who are concerned. This information may be given by reproduction of the European Technical Assessment.

In addition all essential installation data shall be shown clearly on the package or on an enclosed instruction sheet, preferably using illustration(s).







To prevent confusion the wire ropes with end connectors should be packaged and delivered as a complete unit.

PV			
	<p><b>Conical Socket with Internal Thread Type 800</b> Konische Vergusshülse mit Innengewinde Typ 800</p>	<p><b>Cylindrical Socket with Internal Thread Type 801</b> Zylindrische Vergusshülse mit Innengewinde Typ 801</p>	<p><b>Closed Bridge Socket Type 803</b> Vergusshülse mit Öse Typ 803</p>
PV			
	<p><b>Open Bridge Socket Type 804</b> Vergusshülse mit Augenstab Typ 804</p>	<p><b>Cyl. Socket with Internal and External Thread Type 810</b> Zyl. Vergusshülse mit Innen- und Außengewinde Typ 810</p>	<p><b>Cylindrical Socket Type 811</b> Zylindrische Vergusshülse Typ 811</p>
PV			
	<p><b>Cylindrical Socket with External Thread Type 812</b> Zylindrische Vergusshülse mit Außengewinde Typ 812</p>	<p><b>Spherical Nut / Spherical Disc Type 813 / 814</b> Sphärische Mutter / Sphärische Scheibe Typ 813 / 814</p>	

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

End Connectors – Components  
Endverankerungen – Bauteile

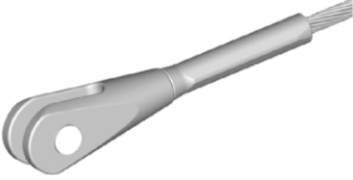
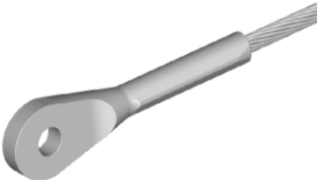


Annex B1  
Anhang B1

PV	 <p><b>Open Spelter Socket Type 700</b> <b>Gabelseilhülse Typ 700</b></p>	 <p><b>Open Spelter Socket adjustable Type 710</b> <b>Gabelseilhülse verstellbar Typ 710</b></p>
PV	 <p><b>Spherical Anchor Type 850</b> <b>Sphärischer Anker Typ 850</b></p>	 <p><b>Conical Socket- Fork End Type 864</b> <b>Konische Verguss- hülse- Gabelkopf Typ 864</b></p>
PV	 <p><b>Spherical Nut / Spherical Disc Type 813 / 814</b> <b>Sphärische Mutter / Sphärische Scheibe Typ 813 / 814</b></p>	 <p><b>Threaded Rod Type 840</b> <b>Gewindestange Typ 840</b></p>

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

End Connectors – Components  
Endverankerungen – Bauteile

Annex B2  
Anhang B2

PG	<div data-bbox="292 398 646 577"></div> <div data-bbox="312 689 579 819"> <p><b>Open Swaged Fitting Type 980 Gabelfitting Typ 980</b></p> </div> <div data-bbox="1058 398 1377 577"></div> <div data-bbox="1090 689 1377 819"> <p><b>Closed Swaged Fitting Type 982 Ösenfitting Typ 982</b></p> </div>
PG	<div data-bbox="312 902 651 1126"></div> <div data-bbox="376 1227 659 1357"> <p><b>Turnbuckle with Open Socket Type 984 Gabelspannschloss Typ 984</b></p> </div> <div data-bbox="1042 936 1417 1137"></div> <div data-bbox="1058 1227 1409 1357"> <p><b>Swaged Fitting with Thread Type 988 Gewindefitting Typ 988</b></p> </div>

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

End Connectors – Components  
Endverankerungen – Bauteile

Annex B3  
Anhang B3

PE	<div data-bbox="276 405 651 591" data-label="Image"> </div> <div data-bbox="304 685 582 819" data-label="Caption"> <p><b>Open Swaged Fitting Type 981 Gabelfitting Typ 981</b></p> </div> <div data-bbox="1046 416 1422 602" data-label="Image"> </div> <div data-bbox="1077 685 1385 819" data-label="Caption"> <p><b>Closed Swaged Fitting Type 983 Ösenfitting Typ 983</b></p> </div>
PE	<div data-bbox="300 920 651 1144" data-label="Image"> </div> <div data-bbox="298 1223 590 1355" data-label="Caption"> <p><b>Turnbuckle with Open Socket Type 985 Gabelspannschloss Typ 985</b></p> </div> <div data-bbox="1066 965 1422 1151" data-label="Image"> </div> <div data-bbox="1045 1223 1418 1355" data-label="Caption"> <p><b>Swaged Fitting with Thread Type 989 Gewindefitting Typ 989</b></p> </div>

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

End Connectors – Components  
Endverankerungen – Bauteile

Annex B4  
Anhang B4

Table 1.1 - Steel grade of components for wire ropes of unalloyed steel, mechanical properties (minimum values) Tabelle 1.1 - Stahlsorten der Bauteile für Seile aus unlegiertem Stahl, mechanische Eigenschaften (Mindestwerte)									
Components of end connectors Bauteile für die Endverankerungen	Steel grade Stahlsorte		mechanical properties (minimum values) Mechanische Eigenschaften (Mindestwerte)					Impact strength Kerbschlagarbeit $\alpha_k$ in J/°C (ISO-V)	
	Symbol Kurzname	Material-No. Werkstoff Nr.	Thickness Erzeugnisdicke t in mm	Yield strength Streckgrenze $R_{p0,2}$ in N/mm <sup>2</sup>	Tensile strength Zugfestigkeit $R_m$ in N/mm <sup>2</sup>	Elongation Bruchdehnung $A_5$ in %			
Socket / Vergusschülse Clamp / Klemme Guide / Umlenkklager	G18NiMoCr3-6	1.6759		according to / gemäß EN 10340:2008-01			≥27/-40		
Pin / Bolzen Socket / Vergusschülse Threaded rod Type 710 / Gewindestange Typ 710	34CrNiMo6	1.6582		according to / gemäß EN 10083-3:2007-01			≥27/-40		
Fitting Type / Typ 980, 982, 988	S460	1.8901		460	690	17	≥27/-20		
Threaded rod / Gewindestange Type / Typ 864	S460	1.8901		460	625	17	≥27/-20		
Threaded rod / Gewindestange Type / Typ 840, 850 Spherical nut-disc Sphärische Mutter-Scheibe Type / Typ 813, 814, 851, 852	S355J2	1.0577		according to / gemäß EN 10025-2:2005-04					
Fork end / Gabelkopf Type / Typ 980	EN-GJS-400-18-LT	5.3103		according to / gemäß EN 1563:2012-03					

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

Table 1.1 – Material / Steel grade, mechanical properties (minimum values)  
Tabelle 1.1 – Material / Stahlsorten, Mechanische Eigenschaften (Mindestwerte)

Annex C1  
Anhang C1



Table 1.2 - steel grade of components for wire ropes of stainless steel, mechanical properties (minimum values) Tabelle 1.2 - Stahlsorten der Bauteile für Seile aus nichtrostendem Stahl, Mechanische Eigenschaften (Mindestwerte)									
Components Bauteile	Steel grade Stahlsorte			mechanical properties (minimum values) Mechanische Eigenschaften (Mindestwerte)					
	Symbol Kurzname	Material-No. Werkstoff Nr.	Strength class Festigkeitsklasse	Yield strength Streckgrenze $R_{p0.2}$ in N/mm <sup>2</sup>	Tensile strength Zugfestigkeit $R_m$ in N/mm <sup>2</sup>	Elongation Bruchdehnung in %		Thermal expansion coefficient/ Temperaturdehnzahl $\alpha_k$ in K <sup>-1</sup>	
Wire rope / Seil	X4CrNiMo 17-13-3	1.4436	S1100	1100	1450	A <sub>5</sub>	A <sub>10</sub>	A <sub>GL</sub>	16x10 <sup>-6</sup>
	X5CrNiMo 17-12-2	1.4401	S1100	1100	1450		6	2	16x10 <sup>-6</sup>
Pin / Bolzen									
Open swaged fitting Type 981 Gabelfitting Typ 981									
Closed swaged fitting Type 983 Ösenfitting Typ 983	X2CrNiMoN 22-5-3	1.4462	S460		according to / gemäß EN 10088-3:2014-12				13x10 <sup>-6</sup>
Swaged fitting with thread Type 989 Gewindefitting Typ 989									

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

Table 1.2 - Material / Steel grade, mechanical properties (minimum values)  
Tabelle 1.2 – Material / Stahlsorten, Mechanische Eigenschaften (Mindestwerte)

Annex C2  
Anhang C2



Table 2 – Reference Values for modulus of elasticity  $E_Q$

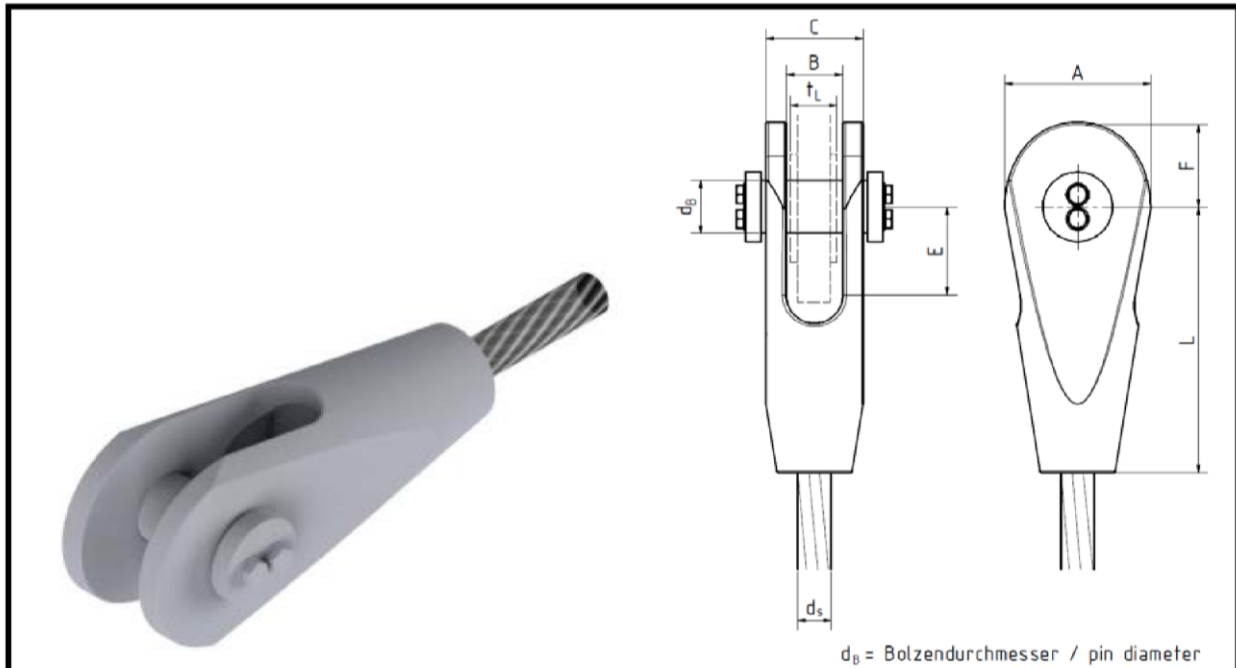
Tabelle 2 – Anhaltswerte für den Verformungsmodul  $E_Q$

	Cable Type Seiltyp	$E_Q$ in N/mm <sup>2</sup>
Unalloyed steel Unlegierter Stahl	Full locked cables Vollverschlossene Seile	$0,16 \times 10^6$
	Open spiral strands Offene Spiralseile	$0,16 \times 10^6$
	Structural wire ropes with steel core Rundlitzenseile mit Stahleinlage	$0,12 \times 10^6$
Stainless steel Nichtrostender Stahl	Open spiral strands Offene Spiralseile	$0,13 \times 10^6$
	Structural wire ropes with steel core Rundlitzenseile mit Stahleinlage	$0,10 \times 10^6$

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

Table 2 – Reference Values for Modulus of Elasticity  $E_Q$   
Tabelle 2 – Anhaltswerte für den Verformungsmodul  $E_Q$

Annex C3  
Anhang C3

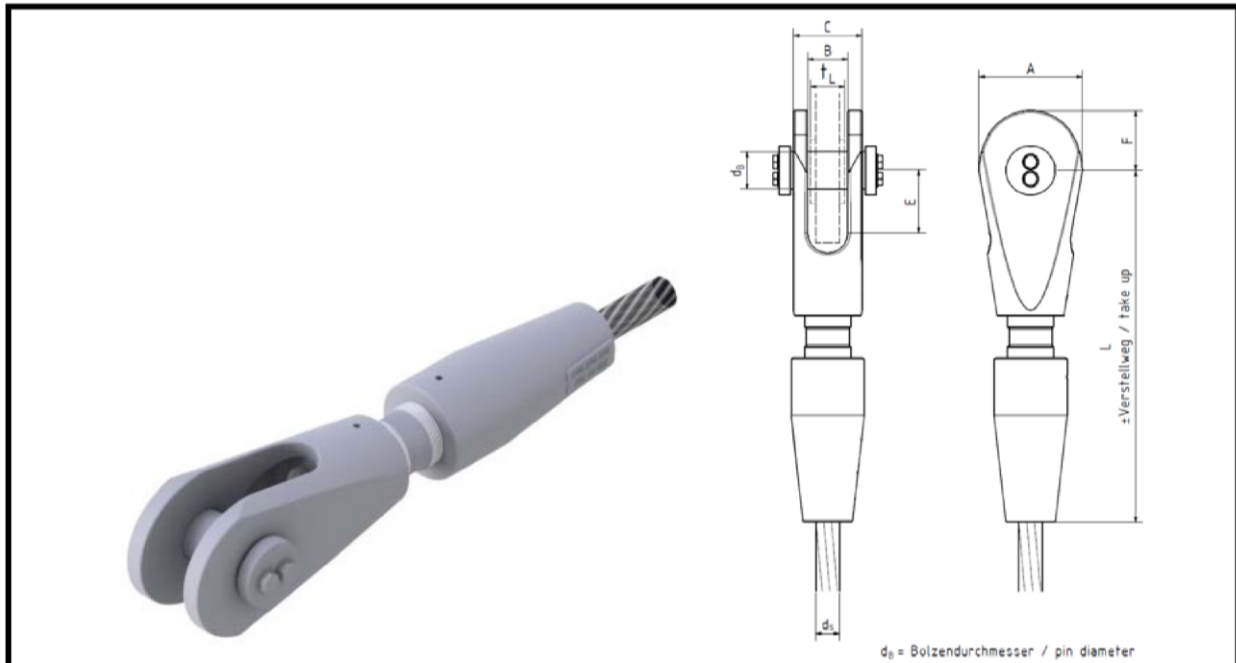


Size Größe	ds	A	B	C	dB	E	F	tL min	L
	mm	mm	mm	mm	mm	mm	mm	mm	mm
PV 40	21	92	35	61	39	55	57	29	168
PV 60	26	116	43	75	44	70	68	36	208
PV 90	31	137	52	90	54	83	86	45	248
PV 115	35	153	60	102	59	93	91	52	280
PV 150	40	176	68	116	64	106	98	60	320
PV 195	45	197	77	131	73	120	110	69	360
PV 240	50	220	85	145	83	133	123	76	400
PV 300	55	241	94	160	88	146	140	85	440
PV 360	60	263	102	174	98	159	153	92	480
PV 420	65	285	111	189	108	173	165	100	520
PV 490	70	308	119	203	118	186	178	107	560
PV 560	75	329	128	218	128	199	195	114	600
PV 640	80	351	136	232	138	212	208	121	640
PV 720	85	372	145	247	142	226	220	129	680
PV 810	90	395	153	261	153	239	233	136	720
PV 910	95	416	162	276	162	252	253	144	760
PV 1010	100	438	170	290	172	265	263	151	800
PV 1110	105	459	179	305	182	279	276	159	840
PV1220	110	484	187	319	187	292	286	165	880
PV1340	115	511	196	334	202	305	299	174	920
PV1450	120	532	204	348	207	318	312	180	960
PV1580	125	555	213	363	217	332	325	187	1000
PV1730	130	577	221	377	227	345	338	193	1040
PV1860	135	599	230	392	237	358	351	196	1080
PV2000	140	621	238	406	247	371	364	204	1120
PV2150	145	644	247	421	261	385	387	211	1160
PV2300	150	671	255	435	271	398	400	217	1200
PV2450	155	688	264	450	281	411	415	224	1240
PV2600	160	710	272	464	291	424	428	232	1280

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Type 700 Open Spelter Socket  
PV Typ 700 Gabelseilhülse

Annex D1  
Anhang D1

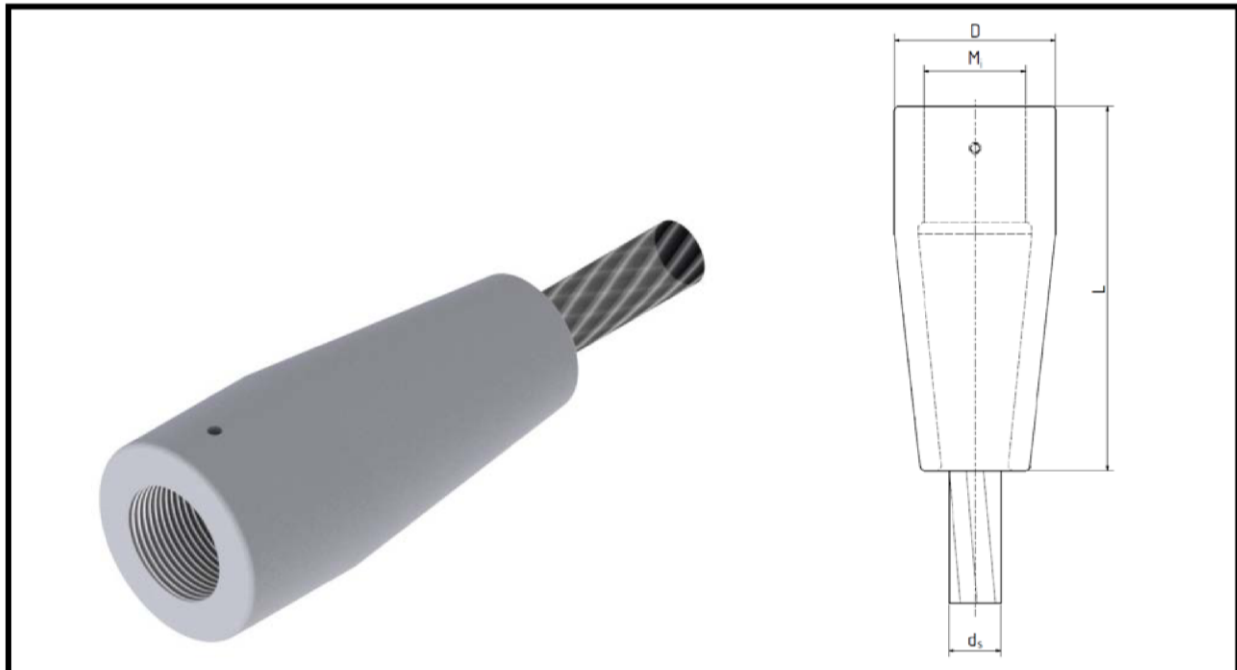


Size Größe	ds mm	A mm	B mm	C mm	dB mm	E mm	F mm	tL min mm	L mm	take up Verstellweg mm
PV 40	21	92	35	61	39	55	57	29	359	±32
PV 60	26	116	43	75	44	70	68	36	429	±36
PV 90	31	137	52	90	54	83	86	45	497	±38
PV 115	35	153	60	102	59	93	91	52	559	±42
PV 150	40	176	68	116	64	106	98	60	590	±42
PV 195	45	197	73	131	73	120	110	69	660	±46
PV 240	50	220	85	145	83	133	123	76	746	±56
PV 300	55	241	94	160	88	146	140	85	824	±58
PV 360	60	263	102	174	98	159	153	92	894	±62
PV 420	65	285	111	189	108	173	165	100	973	±70
PV 490	70	308	119	203	118	186	178	107	1041	±72
PV 560	75	329	128	218	128	199	195	114	1111	±76
PV 640	80	351	136	232	138	212	208	121	1181	±80
PV 720	85	372	145	247	142	226	220	129	1261	±84
PV 810	90	395	153	261	153	239	233	136	1345	±92
PV 910	95	416	162	276	162	252	253	144	1415	±96
PV 1010	100	438	170	290	172	265	263	151	1483	±98
PV1110	105	459	179	305	182	279	276	159	1561	±114
PV1220	110	484	187	319	187	292	286	165	1634	±124
PV1340	115	511	196	334	202	305	299	174	1731	±118
PV1450	120	532	204	348	207	318	312	180	1808	±122
PV1580	125	555	213	363	217	332	325	187	1885	±130
PV1730	130	577	221	377	227	345	338	193	1962	±134
PV1860	135	599	230	392	237	358	351	196	2037	±140
PV2000	140	621	238	406	247	371	364	204	2114	±144
PV2150	145	644	247	421	261	385	387	211	2199	±150
PV2300	150	671	255	435	271	398	400	217	2264	±156
PV2450	155	688	264	450	281	411	415	224	2330	±162
PV2600	160	710	272	464	291	424	428	232	2400	±168

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 710 Open Spelter Socket - adjustable  
PV Typ 710 Gabelseilhülse - verstellbar

Annex D2  
Anhang D2

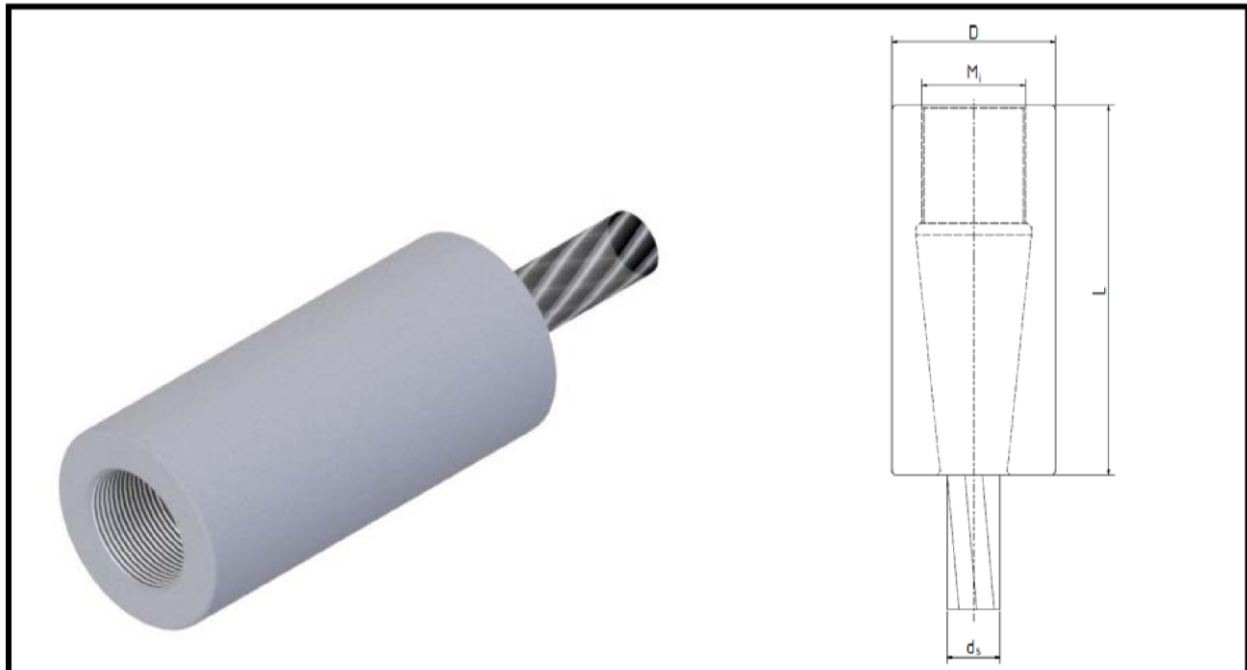


Size Größe	ds	D	Mi	L
	mm	mm	mm	mm
PV 40	21	80	42 x 3	165
PV 60	26	95	52 x 3	200
PV 90	31	110	64 x 4	235
PV 115	35	125	75 x 4	270
PV 150	40	125	75 x 4	270
PV 195	45	140	85 x 4	305
PV 240	50	155	95 x 4	350
PV 300	55	170	108 x 4	385
PV 360	60	185	118 x 4	420
PV 420	65	205	128 x 4	460
PV 490	70	220	140 x 4	495
PV 560	75	235	150 x 4	530
PV 640	80	250	160 x 4	565
PV 720	85	265	172 x 4	600
PV 810	90	280	185 x 6	645
PV 910	95	295	195 x 6	680
PV 1010	100	310	205 x 6	715
PV 1110	105	330	215 x 6	760
PV 1220	110	345	225 x 6	800
PV 1340	115	360	235 x 6	840
PV 1450	120	380	245 x 6	880
PV 1580	125	395	260 x 6	920
PV 1730	130	410	270 x 6	960
PV 1860	135	425	280 x 6	1000
PV 2000	140	440	290 x 6	1040
PV2150	145	460	300 x 6	1070
PV2300	150	475	310 x 6	1100
PV2450	155	490	325 x 6	1125
PV2600	160	510	335 x 6	1160

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 800 Conical Socket with Internal Thread  
PV Typ 800 Konische Vergusshülse mit Innengewinde

Annex D3  
Anhang D3

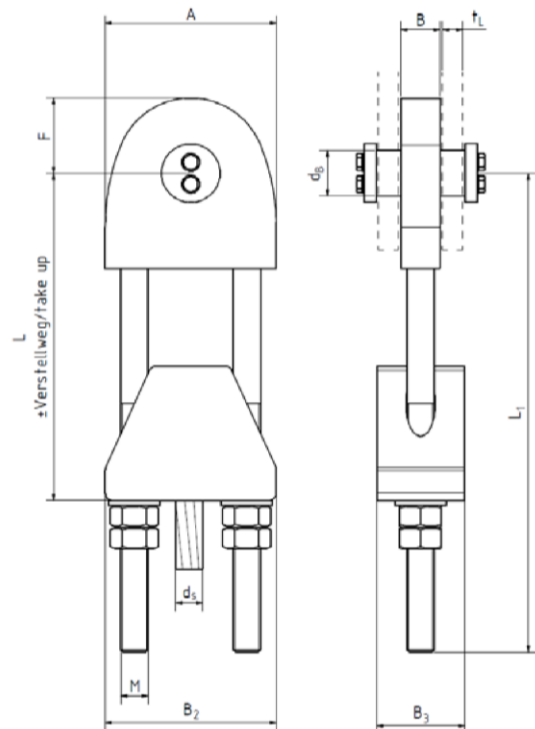


Size Größe	ds	D	Mi	L
	mm	mm	mm	mm
PV 40	21	80	42 x 3	165
PV 60	26	95	52 x 3	200
PV 90	31	110	64 x 4	235
PV 115	35	125	75 x 4	270
PV 150	40	125	75 x 4	270
PV 195	45	140	85 x 4	305
PV 240	50	155	95 x 4	350
PV 300	55	170	108 x 4	385
PV 360	60	185	118 x 4	420
PV 420	65	205	128 x 4	460
PV 490	70	220	140 x 4	495
PV 560	75	235	150 x 4	530
PV 640	80	250	160 x 4	565
PV 720	85	265	172 x 4	600
PV 810	90	280	185 x 6	645
PV 910	95	295	195 x 6	680
PV 1010	100	310	205 x 6	715
PV 1110	105	330	215 x 6	760
PV 1220	110	345	225 x 6	800
PV 1340	115	360	235 x 6	840
PV 1450	120	380	245 x 6	880
PV 1580	125	395	260 x 6	920
PV 1730	130	410	270 x 6	960
PV 1860	135	425	280 x 6	1000
PV 2000	140	440	290 x 6	1040
PV2150	145	460	300 x 6	1070
PV2300	150	475	310 x 6	1100
PV2450	155	490	325 x 6	1125
PV2600	160	510	335 x 6	1160

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 801 Cylindrical Socket with Internal Thread  
PV Typ 801 Zylindrische Vergusshülse mit Innengewinde

Annex D4  
Anhang D4



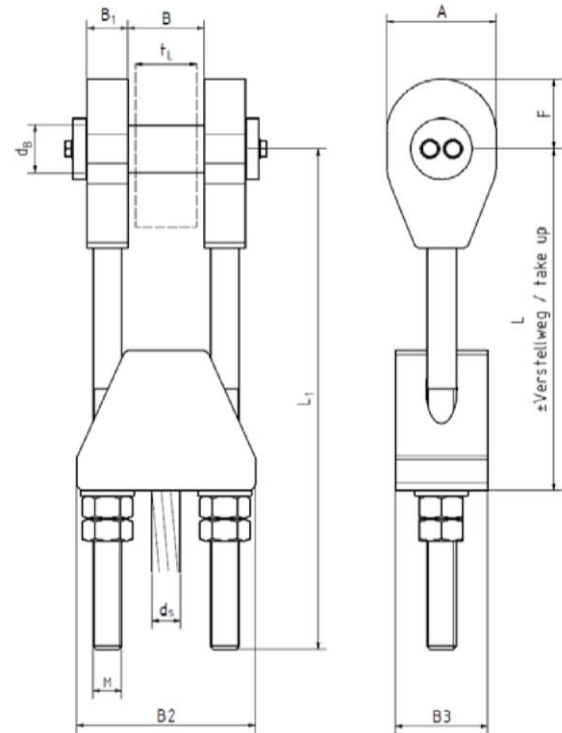
$d_B$  = Bolzendurchmesser / pin diameter

Size Größe	$d_s$ mm	A mm	B mm	B2 mm	B3 mm	$d_B$ mm	F mm	M mm	$t_L$ min mm	L1 mm	L mm	take up Verstellweg mm
PV 40	21	155	30	155	80	39	67	20	15	525	330	±150
PV 60	26	190	40	190	90	44	75	27	20	579	375	±150
PV 90	31	220	50	220	110	54	91	30	25	624	415	±150
PV 115	35	260	70	260	130	67	112	42	35	725	495	±150
PV 150	40	260	70	260	130	67	112	42	35	725	495	±150
PV 195	45	290	70	290	150	75	125	48	35	781	540	±150
PV 240	50	325	80	325	160	83	138	52	40	825	575	±150
PV 300	55	350	80	350	180	93	154	56	40	981	670	±200
PV 360	60	380	90	380	200	106	174	60	45	1035	715	±200
PV 420	65	420	100	420	220	115	189	68 x 6	50	1093	760	±200
PV 490	70	450	110	450	240	124	203	72 x 6	55	1147	805	±200
PV 560	75	480	110	480	250	133	218	76 x 6	55	1187	845	±200
PV 640	80	510	120	510	280	142	232,5	80 x 6	60	1342	940	±250
PV 720	85	550	120	550	300	151	247	85 x 6	60	1389	980	±250
PV 810	90	580	130	580	320	168	273,5	90 x 6	65	1437	1020	±250
PV 910	95	630	140	630	340	179	291	100 x 6	70	1514	1075	±250
PV 1010	100	650	150	650	350	188	305,5	105 x 6	75	1566	1120	±250

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Type 803 Closed Bridge Socket  
PV Typ 803 Vergusshülse mit Öse

Annex D5  
Anhang D5



$d_B$  = Bolzendurchmesser / pin diameter

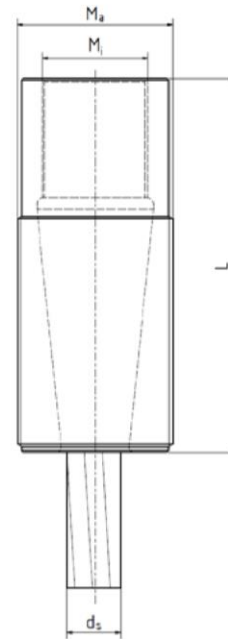
Size Größe	$d_s$ mm	A mm	B mm	B1 mm	B2 mm	B3 mm	$d_B$ mm	M mm	L1 mm	F mm	tL mm	L mm	take up Verstellweg mm
PV 40	21	94	65	30	155	80	39	20	525	61	60	330	±150
PV 60	26	110	75	40	190	90	44	27	579	71	70	375	±150
PV 90	31	127	85	50	220	110	54	30	624	83,5	80	415	±150
PV 115	35	148	95	70	260	130	67	42	725	96	90	495	±150
PV 150	40	148	95	70	260	130	67	42	725	96	90	495	±150
PV 195	45	165	120	70	290	150	75	48	781	107,5	115	540	±150
PV 240	50	200	130	80	325	160	83	52	825	128	125	575	±150
PV 300	55	215	150	80	350	180	93	56	981	136,5	145	670	±200
PV 360	60	235	160	90	380	200	106	60	1035	150	155	715	±200
PV 420	65	250	175	100	420	220	115	68 x 6	1093	163	170	760	±200
PV 490	70	270	180	110	450	240	124	72 x 6	1147	175	175	805	±200
PV 560	75	290	210	110	480	250	133	76 x 6	1187	190	205	845	±200
PV 640	80	310	230	120	510	280	142	80 x 6	1342	201	225	940	±250
PV 720	85	330	255	120	550	300	151	85 x 6	1389	215	250	980	±250
PV 810	90	365	270	130	580	320	168	90 x 6	1437	240	265	1020	±250
PV 910	95	385	285	140	630	340	179	100 x 6	1514	250	280	1075	±250
PV 1010	100	405	290	150	650	350	188	105 x 6	1566	265	285	1120	±250

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 804 Open Bridge Socket  
PV Typ 804 Vergusshülse mit Augenstab

Annex D6  
Anhang D6





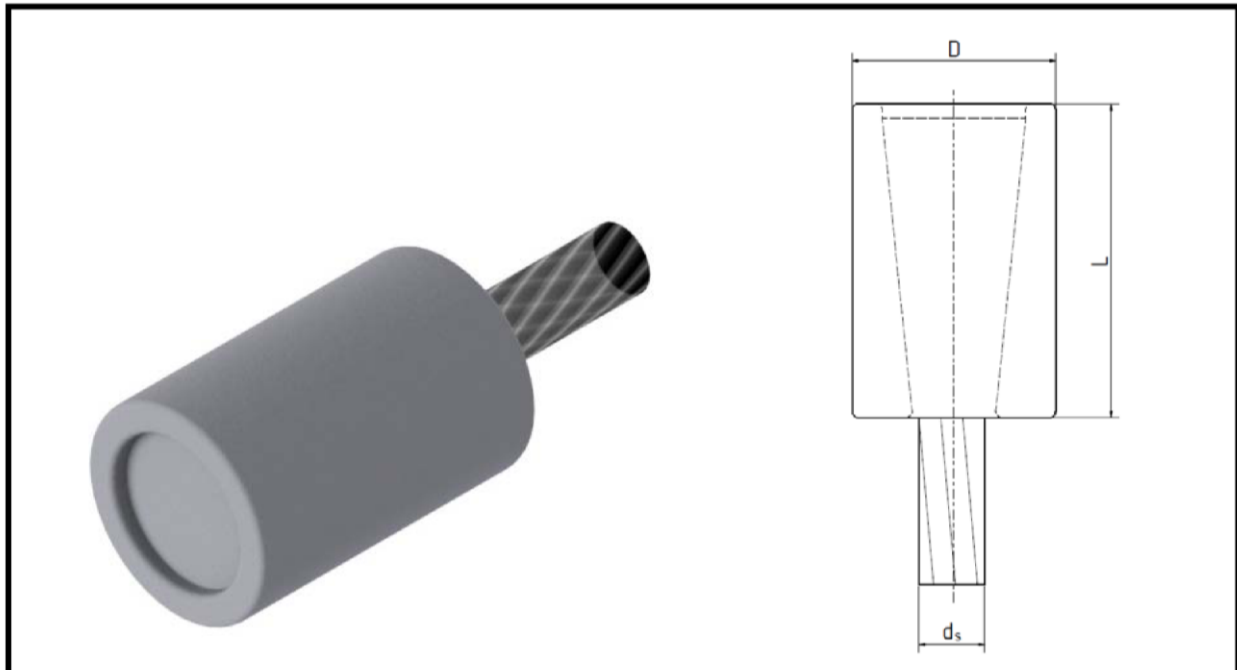
Size Größe	ds mm	Mi mm	Ma mm	L mm
PV 40	21	42 x 3	70 x 4	165
PV 60	26	52 x 3	85 x 4	200
PV 90	31	64 x 4	100 x 4	235
PV 115	35	75 x 4	115 x 6	270
PV 150	40	75 x 4	115 x 6	270
PV 195	45	85 x 4	130 x 6	305
PV 240	50	95 x 4	145 x 6	350
PV 300	55	108 x 4	160 x 6	385
PV 360	60	118 x 4	175 x 6	420
PV 420	65	128 x 4	195 x 6	460
PV 490	70	140 x 4	210 x 8	495
PV 560	75	150 x 4	225 x 8	530
PV 640	80	160 x 4	240 x 8	565
PV 720	85	172 x 4	255 x 8	600
PV 810	90	185 x 6	270 x 8	645
PV 910	95	195 x 6	285 x 8	680
PV 1010	100	205 x 6	300 x 8	715
PV 1110	105	215 x 6	320 x 8	760
PV 1220	110	225 x 6	335 x 8	800
PV 1340	115	235 x 6	350 x 8	840
PV 1450	120	245 x 6	370 x 8	880
PV 1580	125	260 x 6	385 x 10	920
PV 1730	130	270 x 6	400 x 10	960
PV 1860	135	280 x 6	415 x 10	1000
PV 2000	140	290 x 6	430 x 10	1040
PV2150	145	300 x 6	450 x 10	1070
PV2300	150	310 x 6	465 x 10	1100
PV2450	155	325 x 6	480 x 10	1125
PV2600	160	335 x 6	500 x 10	1160

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 810 Cylindrical Socket with Internal and External Thread  
PV Typ 810 Zylindrische Vergusshülse mit Innen- und Außengewinde

Annex D7  
Anhang D7



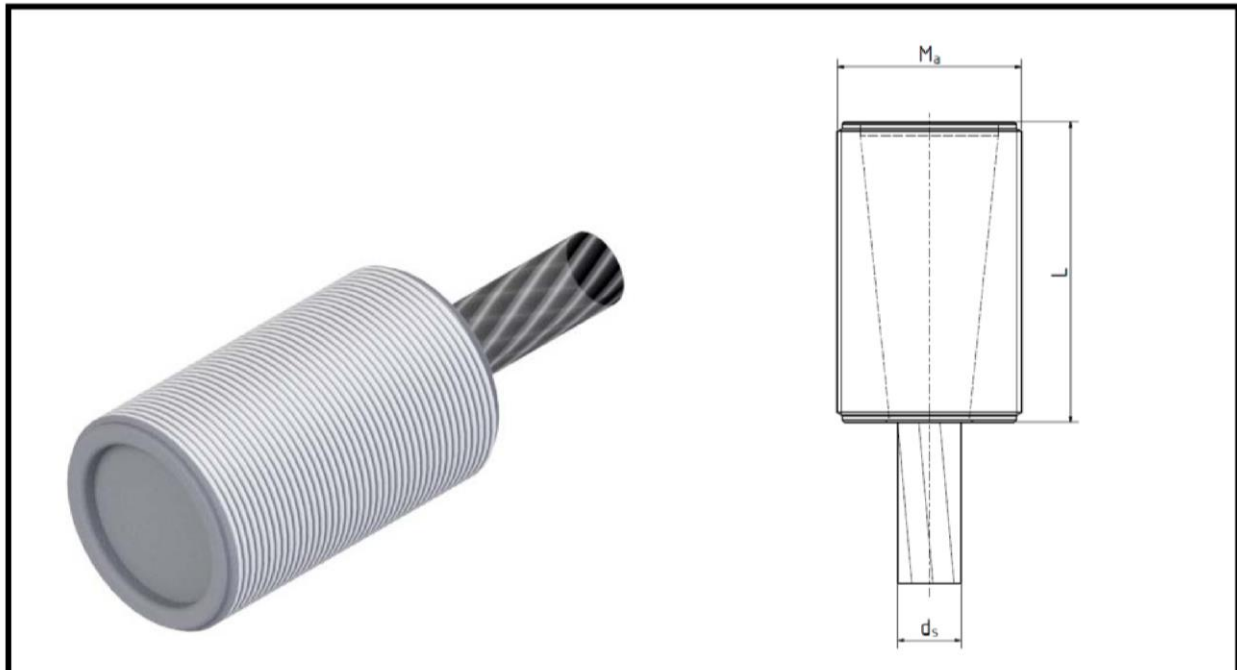


Size Größe	ds	D	L
	mm	mm	mm
PV 40	21	80	108
PV 60	26	95	133
PV 90	31	110	158
PV 115	35	125	183
PV 150	40	125	183
PV 195	45	140	208
PV 240	50	155	237
PV 300	55	170	262
PV 360	60	185	287
PV 420	65	205	312
PV 490	70	220	337
PV 560	75	235	362
PV 640	80	250	387
PV 720	85	265	412
PV 810	90	280	441
PV 910	95	295	466
PV 1010	100	310	491
PV 1110	105	330	516
PV 1220	110	345	541
PV 1340	115	360	566
PV 1450	120	380	591
PV 1580	125	395	616
PV 1730	130	410	645
PV 1860	135	425	670
PV 2000	140	440	695
PV2150	145	475	745
PV2300	150	490	770
PV2450	155	490	770
PV2600	160	510	800

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 811 Cylindrical Socket  
PV Typ 811 Zylindrische Vergusshülse

Annex D8  
Anhang D8

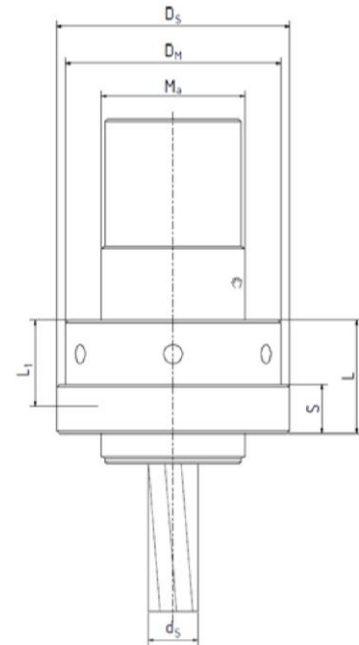


Size Größe	ds mm	Ma mm	L mm
PV 40	21	70 x 4	108
PV 60	26	85 x 4	133
PV 90	31	100 x 4	158
PV 115	35	115 x 6	183
PV 150	40	115 x 6	183
PV 195	45	130 x 6	208
PV 240	50	145 x 6	237
PV 300	55	160 x 6	262
PV 360	60	175 x 6	287
PV 420	65	195 x 6	312
PV 490	70	210 x 8	337
PV 560	75	225 x 8	362
PV 640	80	240 x 8	387
PV 720	85	255 x 8	412
PV 810	90	270 x 8	441
PV 910	95	285 x 8	466
PV 1010	100	300 x 8	491
PV 1110	105	320 x 8	516
PV 1220	110	335 x 8	541
PV 1340	115	350 x 8	566
PV 1450	120	370 x 8	591
PV 1580	125	385 x 10	616
PV 1730	130	400 x 10	645
PV 1860	135	415 x 10	670
PV 2000	140	430 x 10	695
PV2150	145	450 x 10	720
PV2300	150	465 x 10	745
PV2450	155	480 x 10	770
PV2600	160	500 x 10	800

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 812 Cylindrical Socket with External Thread  
PV Typ 812 Zylindrische Vergusshülse mit Außengewinde

Annex D9  
Anhang D9

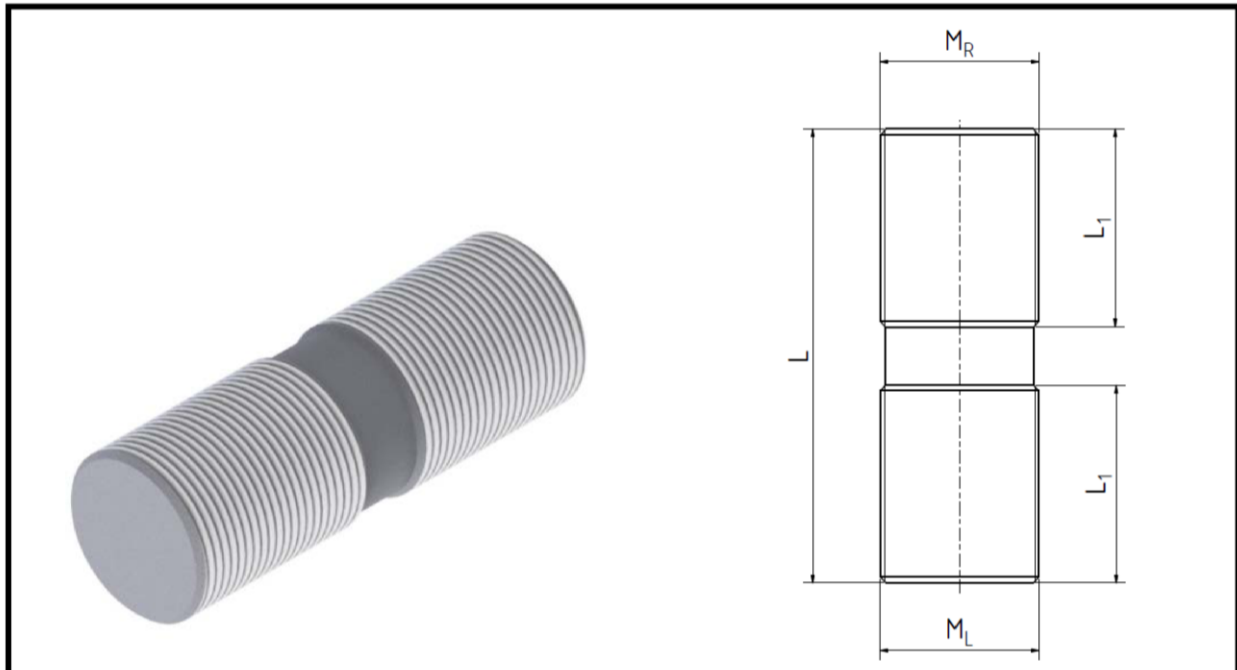


Size Größe	ds mm	DS mm	DM mm	Ma mm	S mm	L mm	L1 mm
PV 40	21	120	105	70 x 4	25	58	42
PV 60	26	140	125	85 x 4	25	66	52
PV 90	31	165	150	100 x 4	35	82	60
PV 115	35	190	170	115 x 6	35	89	69
PV 150	40	190	170	115 x 6	35	89	69
PV 195	45	215	195	130 x 6	45	106	79
PV 240	50	235	215	145 x 6	45	113	87
PV 300	55	260	240	160 x 6	55	130	97
PV 360	60	280	260	175 x 6	55	137	105
PV 420	65	310	290	195 x 6	65	156	117
PV 490	70	335	315	210 x 8	65	163	126
PV 560	75	355	335	225 x 8	75	180	135
PV 640	80	380	360	240 x 8	75	187	144
PV 720	85	405	380	255 x 8	85	204	153
PV 810	90	430	405	270 x 8	85	211	162
PV 910	95	450	425	285 x 8	95	228	171
PV 1010	100	475	450	300 x 8	95	235	180
PV 1110	105	505	480	320 x 8	105	253	192
PV 1220	110	525	500	335 x 8	105	264	201
PV 1340	115	550	525	350 x 8	115	278	210
PV 1450	120	580	555	370 x 8	115	286	222
PV 1580	125	600	575	385 x 10	125	306	231
PV 1730	130	630	600	400 x 10	125	312	240
PV 1860	135	650	620	415 x 10	135	329	249
PV 2000	140	675	645	430 x 10	135	334	258
PV2150	145	705	675	450 x 10	145	354	270
PV2300	150	725	695	465 x 10	145	359	279
PV2450	155	750	720	480 x 10	155	378	288
PV2600	160	780	750	500 x 10	155	387	300

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Type 813 / 814 Spherical Nut / Spherical Disc  
PV Typ 813 / 814 Sphärische Mutter / Sphärische Scheibe

Annex D10  
Anhang D10

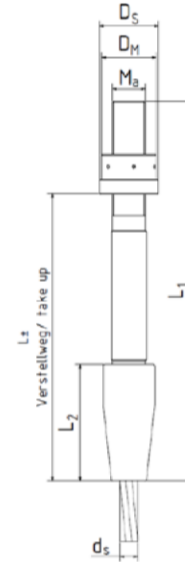


Size Größe	MR mm	ML mm	L mm	L1 mm
PV 40	42 x 3	42 x 3	160	65
PV 60	52 x 3	52 x 3	180	75
PV 90	64 x 4	64 x 4	200	85
PV 115	75 x 4	75 x 4	220	95
PV 150	75 x 4	75 x 4	220	95
PV 195	85 x 4	85 x 4	240	105
PV 240	95 x 4	95 x 4	280	125
PV 300	108 x 4	108 x 4	310	135
PV 360	118 x 4	118 x 4	330	145
PV 420	128 x 4	128 x 4	360	160
PV 490	140 x 4	140 x 4	380	170
PV 560	150 x 4	150 x 4	400	180
PV 640	160 x 4	160 x 4	420	190
PV 720	172 x 4	172 x 4	450	200
PV 810	185 x 6	185 x 6	490	220
PV 910	195 x 6	195 x 6	510	230
PV 1010	205 x 6	205 x 6	530	240
PV 1110	215 x 6	215 x 6	570	260
PV 1220	225 x 6	225 x 6	600	275
PV 1340	235 x 6	235 x 6	640	290
PV 1450	245 x 6	245 x 6	670	305
PV 1580	260 x 6	260 x 6	700	320
PV 1730	270 x 6	270 x 6	730	335
PV 1860	280 x 6	280 x 6	760	350
PV 2000	290 x 6	290 x 6	790	365
PV2150	300 x 6	300 x 6	820	370
PV2300	310 x 6	310 x 6	830	375
PV2450	325 x 6	325 x 6	830	375
PV2600	335 x 6	335 x 6	850	385

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 840 Threaded Rod  
PV Typ 840 Gewindestange

Annex D11  
Anhang D11

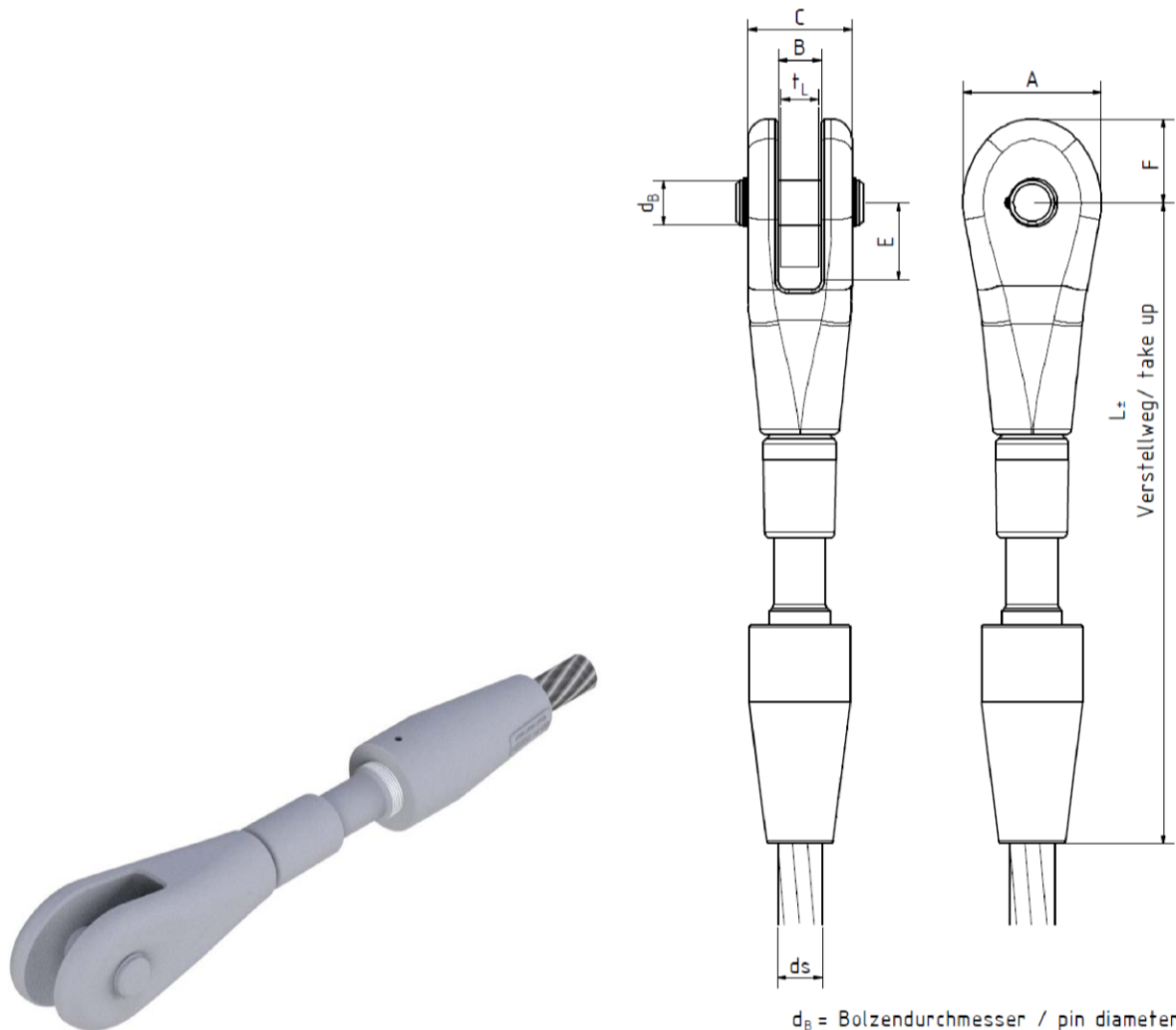


Size Größe	ds mm	DS mm	DM mm	Ma mm	L mm	L1 mm	L2 mm	take up Verstellweg ± mm
PV 40	21	75	70	42 x 3	449	632	165	100
PV 60	26	95	90	52 x 3	527	730	200	100
PV 90	31	115	110	64 x 4	615	839	235	101
PV 115	35	135	125	75 x 4	695	943	270	101
PV 150	40	135	125	75 x 4	695	943	270	101
PV 195	45	155	140	85 x 4	772	1042	305	102
PV 240	50	170	160	95 x 4	861	1142	350	103
PV 300	55	195	180	108 x 4	950	1256	385	103
PV 360	60	215	200	118 x 4	1028	1352	420	104
PV 420	65	230	215	128 x 4	1111	1455	460	106
PV 490	70	250	230	140 x 4	1196	1566	495	107
PV 560	75	270	250	150 x 4	1275	1655	530	109
PV 640	80	290	265	160 x 4	1352	1768	565	110
PV 720	85	310	285	172 x 4	1439	1871	600	112
PV 810	90	335	305	185 x 6	1546	1996	645	114
PV 910	95	350	320	195 x 6	1624	2088	680	116
PV 1010	100	370	340	205 x 6	1703	2192	715	117
PV 1110	105	385	355	215 x 6	1791	2294	760	119
PV 1220	110	405	370	225 x 6	1874	2404	800	121
PV 1340	115	425	385	235 x 6	1957	2501	840	123
PV 1450	120	440	405	245 x 6	2041	2599	880	125
PV 1580	125	470	430	260 x 6	2148	2749	920	129
PV 1730	130	485	445	270 x 6	2231	2848	960	131
PV 1860	135	505	460	280 x 6	2315	2958	1000	134
PV 2000	140	520	480	290 x 6	2400	3057	1040	136
PV2150	145	540	495	300 x 6	2470	3156	1070	140
PV2300	150	560	510	310 x 6	2550	3245	1100	145
PV2450	155	580	535	325 x 6	2645	3375	1125	152
PV2600	160	600	550	335 x 6	2730	3469	1160	157

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Type 850 Spherical Anchor  
PV Typ 850 Sphärischer Anker

Annex D12  
Anhang D12

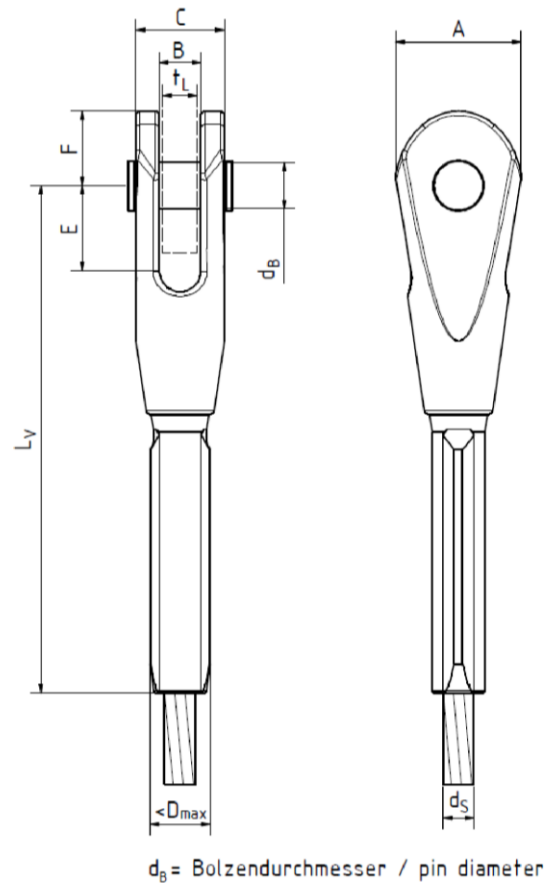


Size Größe	ds mm	A mm	B mm	C mm	dB mm	E mm	F mm	tL mm	L mm	take up Verstellweg ± mm
PV 40	21	90	28	72	32	57	58	25	480	35
PV 60	26	104	33	84	36	63	66	30	560	42
PV 90	31	120	38	96	40	68	74	35	630	41
PV 115	35	148	43	112	50	84	91	40	740	47
PV 150	40	170	53	128	55	95	103	50	790	50
PV 195	45	185	58	140	60	103	113	55	870	55
PV 240	50	210	68	160	70	117	132	65	1000	67
PV 300	55	240	78	180	79	132	150	75	1090	70
PV 360	60	265	83	200	89	150	165	80	1210	75

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Type 864 Conical Socket – Fork End  
PV Typ 864 Konische Vergusshülse – Gabelkopf

Annex D13  
Anhang D13



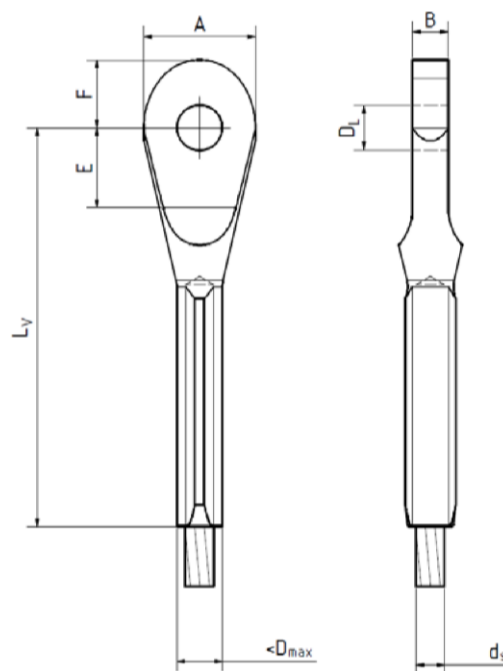
Size Größe	ds mm	A mm	B mm	C mm	Dmax mm	dB mm	E mm	F mm	tl min mm	~Lv mm
PG 5	8,1	33	12,5	25	16	12	24	20	10	135
PG 10	10,1	42	14,5	30	20	15	29	25	12	167
PG 15	12,2	51	17,5	37	25	19	35	30	15	200
PG 20	14,1	60	20,5	42	30	22	41	35	18	234
PG 25	17,0	70	22,5	49	34	25	48	40	20	276
PG 40	20,1	83	28,0	59	40	30	59	49	25	335
PG 55	24,4	102	28,0	70	49	33	66	60	25	403
PG 75	28,3	118	33,0	82	57	40	77	69	30	471
PG 90	31,3	127	38,0	87	64	45	84	74	35	514
PG 125	36,3	149	49,0	105	71	55	102	89	45	604

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PG Type 980 Open Swaged Fitting  
PG Typ 980 Gabelfitting

Annex E1  
Anhang E1





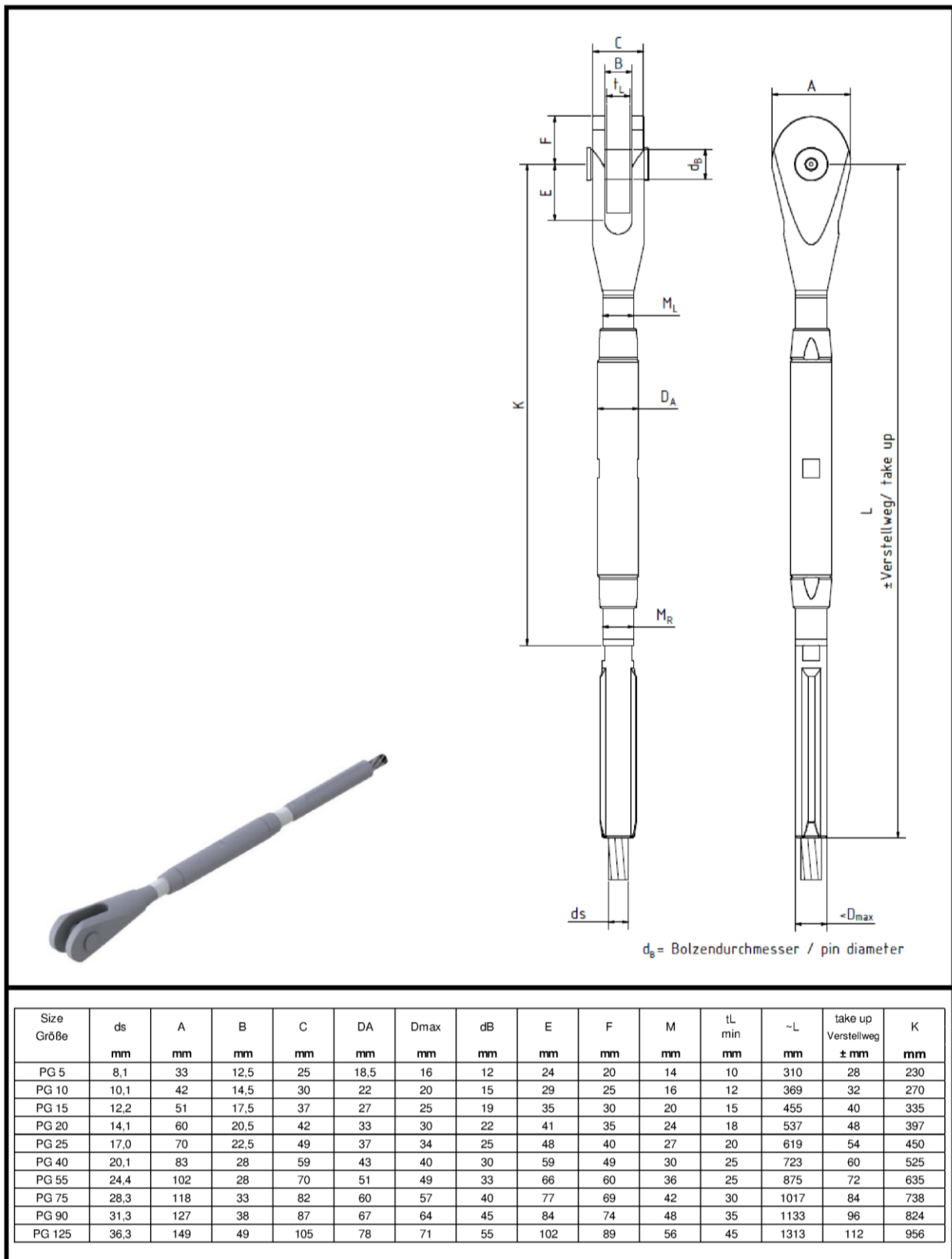
Size Größe	ds mm	A mm	B mm	Dmax mm	DL mm	E mm	F mm	~Lv mm
PG 5	8,1	32	10	16	13	24	20	120
PG 10	10,1	40	12	20	16	29	24	145
PG 15	12,2	50	15	25	20	35	30	175
PG 20	14,1	57	18	30	23	41	35	204
PG 25	17,0	67	20	34	27	48	41	245
PG 40	20,1	80	25	40	32	59	48	286
PG 55	24,4	96	25	49	35	66	57	338
PG 75	28,3	110	30	57	42	77	67	392
PG 90	31,3	117	35	64	47	84	71	437
PG 125	36,3	142	45	71	57	102	86	515

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PG Type 982 Closed Swaged Fitting  
PG Typ 982 Ösenfitting

Annex E2  
Anhang E2

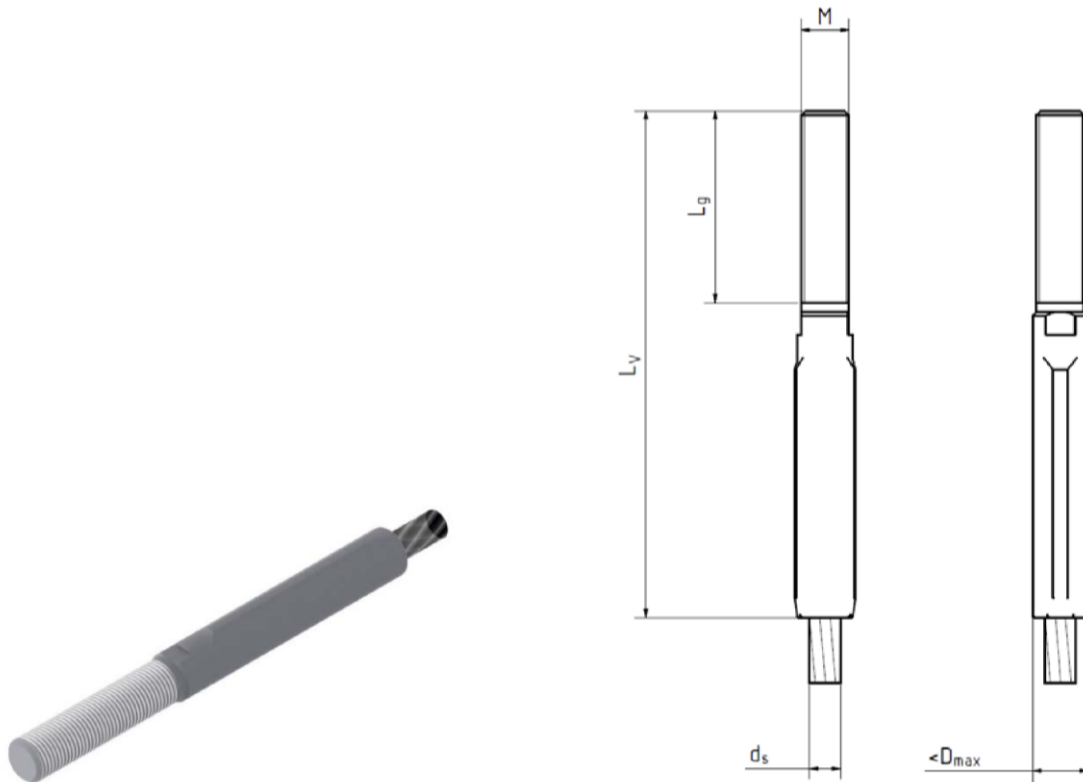




PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PG Type 984 Turnbuckle with Open Socket  
PG Typ 984 Gabelspannschloss

Annex E3  
Anhang E3

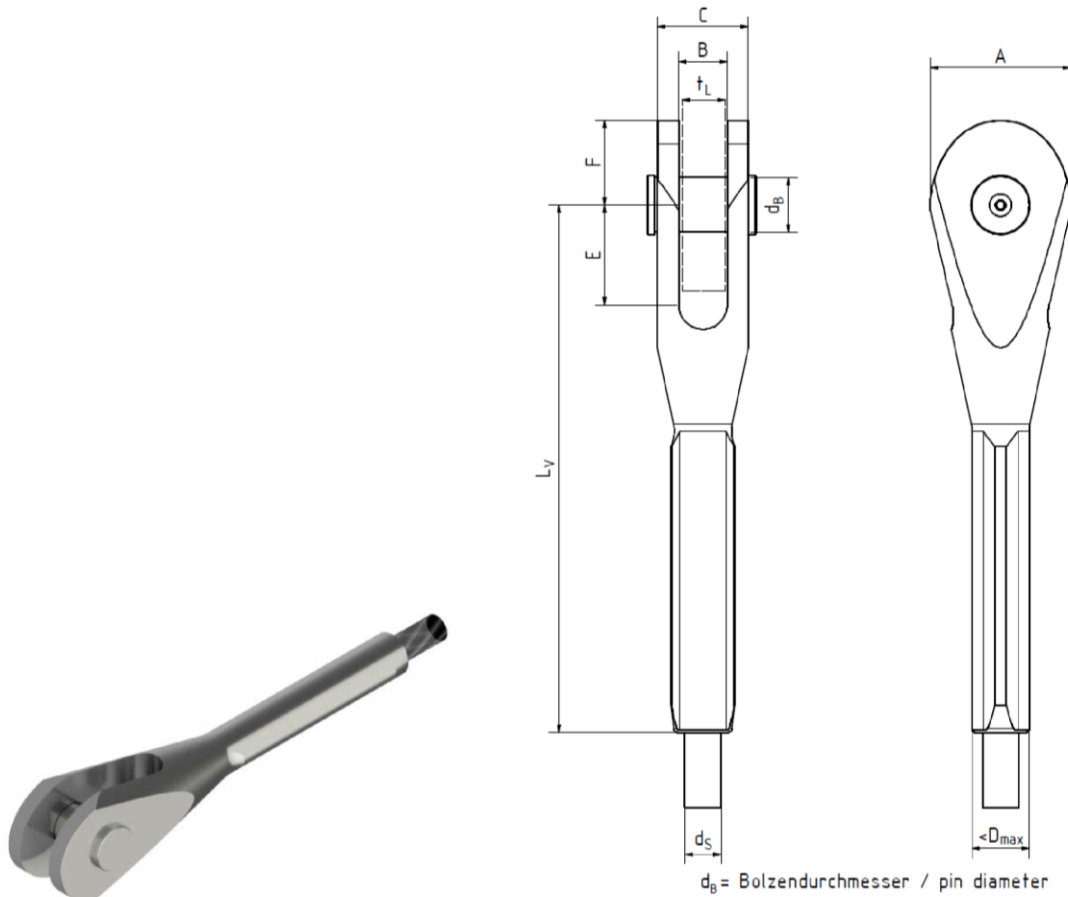


Size Größe	ds mm	Dmax mm	M mm	Lg mm	~Lv mm
PG 5	8,1	16	14	56	140
PG 10	10,1	20	16	64	167
PG 15	12,2	25	20	80	205
PG 20	14,1	30	24	96	242
PG 25	17,0	34	27	108	283
PG 40	20,1	40	30	120	325
PG 55	24,4	49	36	144	392
PG 75	28,3	57	42	168	456
PG 90	31,3	64	48	192	511
PG 125	36,3	71	56	224	592

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PG Type 988 Swaged Fitting with Thread  
PG Typ 988 Gewindefitting

Annex E4  
Anhang E4

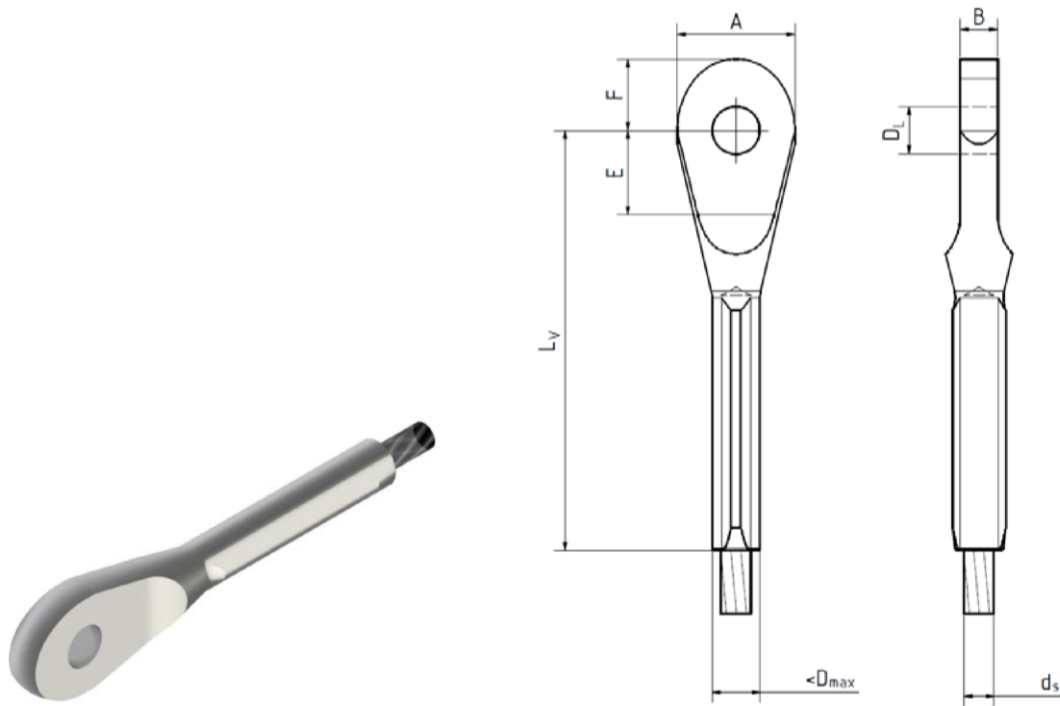


Size Größe	ds mm	A mm	B mm	C mm	Dmax mm	dB mm	E mm	F mm	tL mm	~Lv mm
PE 3	6,1	25	10,5	18	13	9	18	15	8	99
PE 5	8,1	32	12,5	23	15	12	24	20	10	127
PE 7	10,1	40	14,5	27	20	15	29	24	12	153
PE 10	11,9	50	17,5	33	22	19	35	30	15	187
PE 15	14,1	57	20,5	38	26	22	41	35	18	218
PE 20	16,6	67	22,5	43	30	25	48	41	20	253
PE 30	20,5	80	28,0	52	39	30	59	48	25	303
PE 45	24,1	96	28,0	58	44	34	66	57	25	375
PE 60	28,6	110	33,0	68	51	40	77	67	30	415
PE 75	32,1	117	38,0	76	59	45	84	71	35	458
PE 100	36,6	142	49,0	92	65	55	102	86	45	535

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PE Type 981 Open Swaged Fitting  
PE Typ 981 Gabelfitting

Annex F1  
Anhang F1

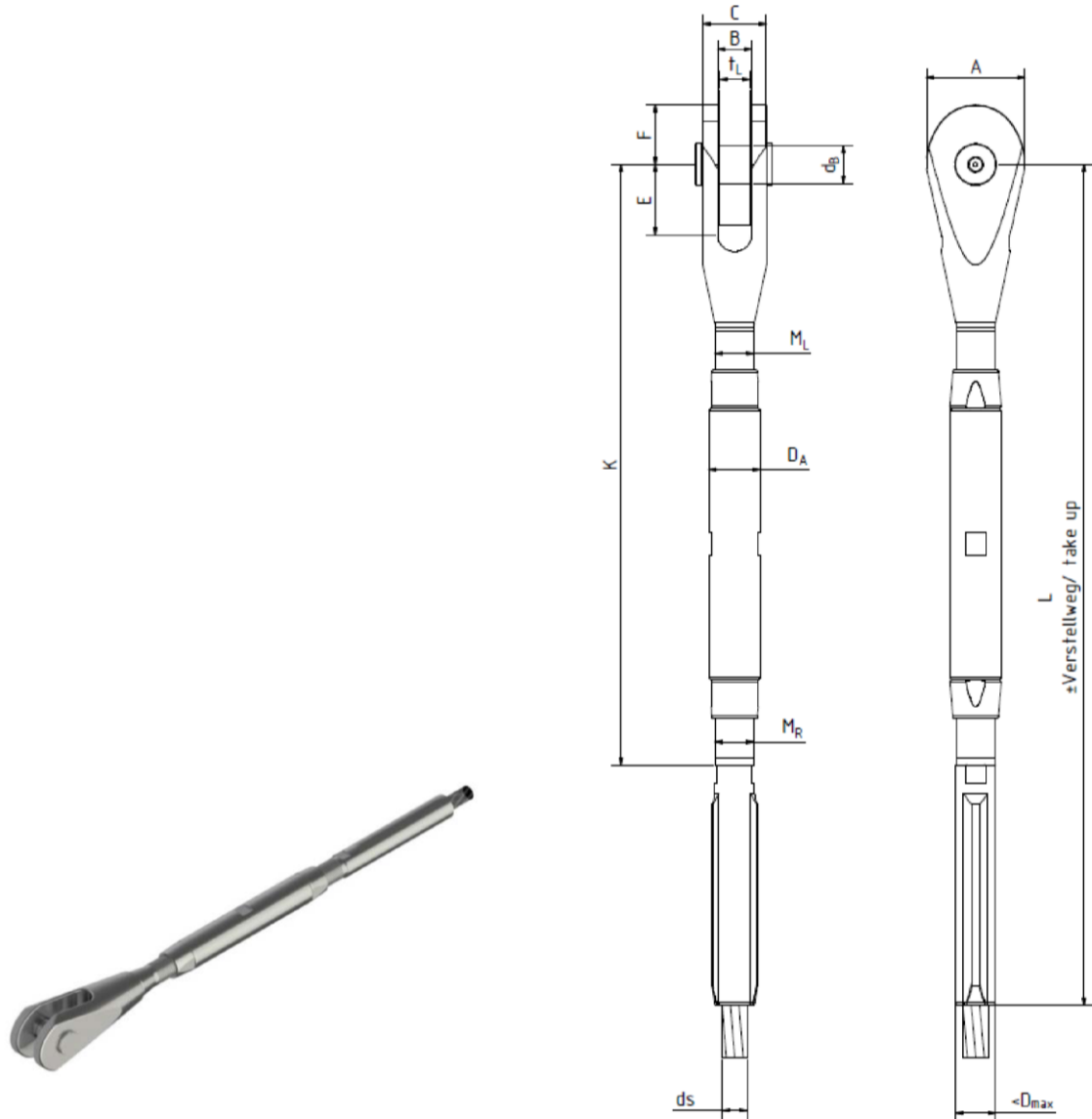


Size Größe	ds mm	A mm	B mm	Dmax mm	DL mm	E mm	F mm	~Lv mm
PE 3	6,1	25	8	13	11	18	15	85
PE 5	8,1	32	10	15	14	24	20	118
PE 7	10,1	40	12	20	16	29	24	140
PE 10	11,9	50	15	22	20	35	30	178
PE 15	14,1	57	18	26	23	41	35	203
PE 20	16,6	67	20	30	27	48	41	230
PE 30	20,5	80	25	39	32	59	48	283
PE 45	24,1	96	25	44	37	66	57	337
PE 60	28,6	110	30	51	43	77	67	391
PE 75	32,1	117	35	59	48	84	71	437
PE 100	36,6	142	45	65	57	102	86	508

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PE Type 983 Closed Swaged Fitting  
PE Typ 983 Ösenfitting

Annex F2  
Anhang F2



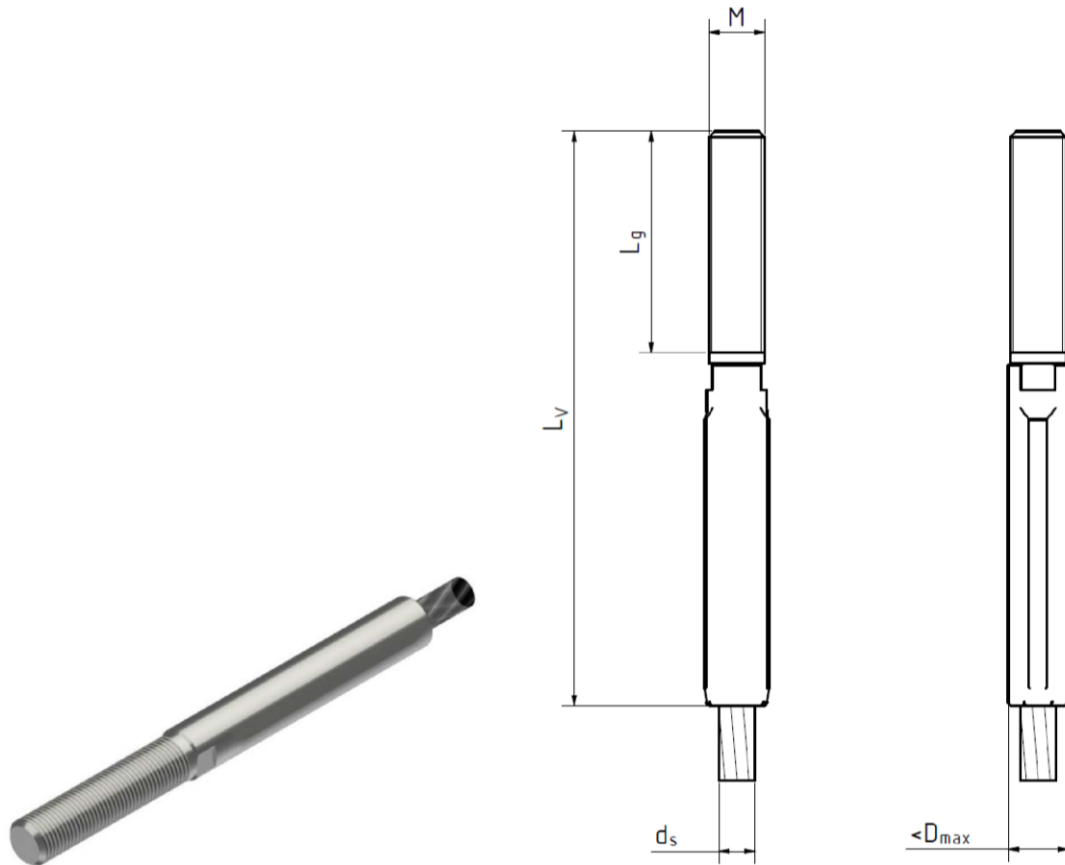
$d_s$  = Bolzendurchmesser / pin diameter

Size Größe	$d_s$ mm	A mm	B mm	C mm	$D_A$ mm	$D_{max}$ mm	$d_B$ mm	E mm	F mm	M mm	$t_L$ min mm	$\sim L$ mm	take up Verstellweg $\pm$ mm	K mm
PE 3	6,1	25	10,5	18	14	13	9	18	15	10	8	225	20	165
PE 5	8,1	32	12,5	23	18,0	15	12	24	20	14	10	294	28	216
PE 7	10,1	40	14,5	27	22	20	15	29	24	16	12	353	32	255
PE 10	11,9	50	17,5	33	27	22	19	35	30	20	15	427	40	310
PE 15	14,1	57	20,5	38	32	26	22	41	35	24	18	503	48	367
PE 20	16,6	67	22,5	43	37	30	25	48	41	27	20	575	54	420
PE 30	20,5	80	28,0	52	42	39	30	59	48	30	25	680	60	484
PE 45	24,1	96	28,0	58	49	44	34	66	57	36	25	816	72	583
PE 60	28,6	110	33,0	68	59	51	40	77	67	42	30	927	84	656
PE 75	32,1	117	38,0	76	64	59	45	84	71	48	35	1047	96	736
PE 100	36,6	142	49,0	92	74	65	55	102	86	56	45	1215	112	868

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PE Type 985 Turnbuckle with Open Socket  
PE Typ 985 Gabelspannschloss

Annex F3  
Anhang F3

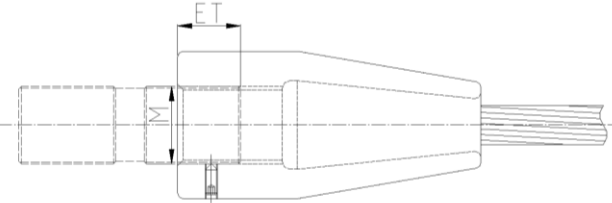
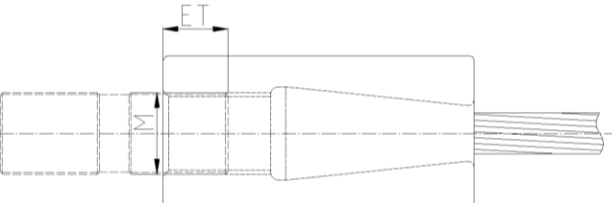
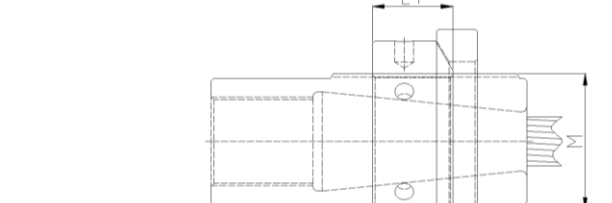
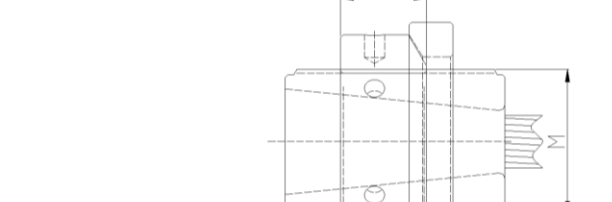
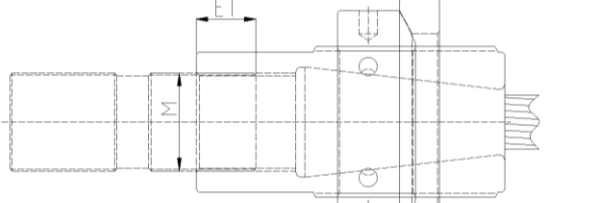


Size Größe	ds mm	M mm	Dmax mm	Lg mm	~Lv mm
PE 3	6,1	10	13	40	103
PE 5	8,1	14	15	56	138
PE 7	10,1	16	20	64	166
PE 10	11,9	20	22	80	202
PE 15	14,1	24	26	96	238
PE 20	16,6	27	30	108	269
PE 30	20,5	30	39	120	323
PE 45	24,1	36	44	144	385
PE 60	28,6	42	51	168	448
PE 75	32,1	48	59	192	513
PE 100	36,6	56	65	224	582

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PE Type 989 Swaged Fitting with Thread  
PE Typ 989 Gewindefitting

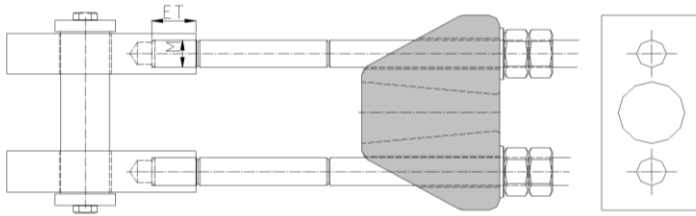
Annex F4  
Anhang F4

	<p><b>Conical socket Type 800 with threaded rod material S355</b></p> <p><b>Konische Vergusshülse Typ 800 mit Gewindestange Material S355</b></p> <p><b>ETmin = 1,0*M</b></p>
	<p><b>Cylindrical socket Type 801 with threaded rod material S355</b></p> <p><b>Zylindrische Vergusshülse Typ 801 mit Gewindestange Material S355</b></p> <p><b>ETmin = 1,0*M</b></p>
	<p><b>Cylindrical socket Type 810 with spherical nut / spherical disc Type 813 / 814</b></p> <p><b>Zylindrische Vergusshülse Typ 810 mit sphärischer Mutter / sphärischer Scheibe Typ 813 / 814</b></p> <p><b>ETmin = 0,6*M</b></p>
	<p><b>Cylindrical socket Type 812 with spherical nut / spherical disc Type 813 / 814</b></p> <p><b>Zylindrische Vergusshülse Typ 812 mit sphärischer Mutter / sphärischer Scheibe Typ 813 / 814</b></p> <p><b>ETmin = 0,6*M</b></p>
	<p><b>Only for installation Nur für Montage</b></p> <p><b>Cylindrical socket Type 810 with threaded rod material S355</b></p> <p><b>Zylindrische Vergusshülse Typ 810 mit Gewindestange Material S355</b></p> <p><b>ETmin = 1,0*M</b></p>

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Screw-in depths  
PV Einschraubtiefen

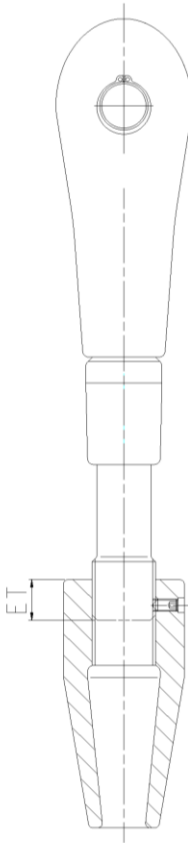
Annex G1  
Anhang G1



Open bridge socket Type 804  
Closed bridge socket Type 803

Vergusshülse mit Augenstab Typ 804  
Vergusshülse mit Öse Typ 803

ET = 1,5\*M



Conical socket – fork end  
Type 864

Konische Vergusshülse – Gabelkopf  
Typ 864

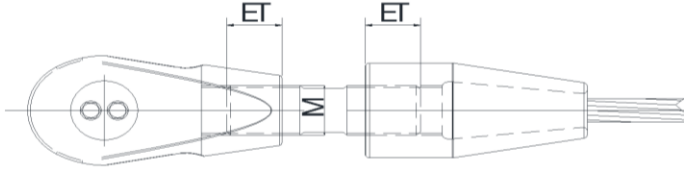
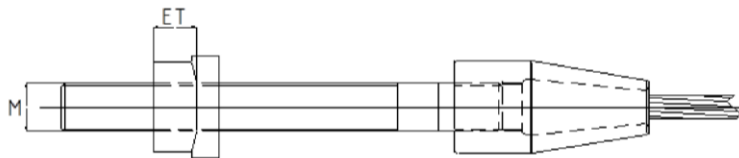
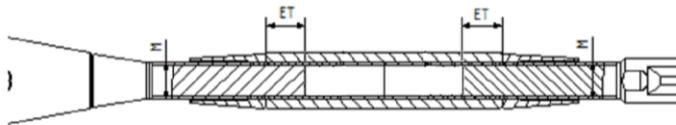
PV 040: ET min = 27 mm  
PV 060: ET min = 33 mm  
PV 090: ET min = 41 mm  
PV 115: ET min = 47 mm  
PV 150: ET min = 47 mm  
PV 195: ET min = 53 mm  
PV 240: ET min = 59 mm  
PV 300: ET min = 67 mm  
PV 360: ET min = 73 mm

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Screw-in depths  
PV Einschraubtiefen

Annex G2  
Anhang G2



	<p><b>Open spelter socket adjustable Type 710</b></p> <p><b>Gabelseilhülse verstellbar Typ 710</b></p> <p><b>ETmin = 0,6*M</b></p>
	<p><b>Spherical anchor Type 850</b></p> <p><b>Sphärischer Anker Typ 850</b></p> <p><b>ETmin = 0,9*M</b></p>
	<p><b>Turnbuckle with open socket Type 984 / 985</b></p> <p><b>Gabelspannschloss Typ 984 / 985</b></p> <p><b>ETmin = 1,0*M</b></p>

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PV Screw-in depths  
PV Einschraubtiefen

Annex G3  
Anhang G3

Size Größe	Nominal diameter of the rope Seil-Nennendurchmesser	Charact. breaking strength $F_{uk}$ Charakteristische Bruchkraft $F_{uk}$	Design resistance $F_{Rd}$ Bemessungszugkraft $F_{Rd}$
	mm	kN	kN
PV 40	21	405	270
PV 60	26	621	414
PV 90	31	916	611
PV 115	35	1170	780
PV 150	40	1520	1013
PV 195	45	1930	1287
PV 240	50	2380	1587
PV 300	55	3020	2013
PV 360	60	3590	2393
PV 420	65	4220	2813
PV 490	70	4890	3260
PV 560	75	5620	3747
PV 640	80	6390	4260
PV 720	85	7210	4807
PV 810	90	8090	5393
PV 910	95	9110	6073
PV 1010	100	10100	6733
PV 1110	105	11100	7400
PV 1220	110	12200	8133
PV 1340	115	13400	8933
PV 1450	120	14500	9667
PV 1580	125	15800	10533
PV 1730	130	17300	11533
PV 1860	135	18600	12400
PV 2000	140	20000	13333
PV 2150	145	21500	14333
PV 2300	150	23000	15333
PV 2450	155	24500	16333
PV 2600	160	26000	17333

sockets of wire rope sizes PV 115 and PV 150 are identical with the exception of type 700 and type 710  
die Hülsen der Seilgrößen PV 115 und PV 150 sind mit Ausnahme vom Typ 700 und 710 identisch

All corresponding PV-cable end connectors are designed for the characteristic breaking strengths  $F_{uk}$  respectively for the design resistances  $F_{Rd}$  shown in the table.

**Example:**

Cable PV 40 with end connectors Type 700-PV 40, Type 710-PV 40, Type 800-PV 40, Type 801-PV 40, Type 803-PV 40, Type 804-PV 40, Type 810-PV 40, Type 811-PV 40, Type 812-PV 40, Type 813 / 814-PV 40, Type 840-PV 40, Type 850-PV 40 or Type 864-PV 40 is designed for the characteristic breaking strength 405 kN respectively for the design resistance 270 kN.

Alle dazugehörenden PV-Seilendbeschläge sind auf die in der Tabelle angegebenen charakteristischen Bruchkräfte  $F_{uk}$  bzw. auf die in der Tabelle angegebenen Bemessungszugkräfte  $F_{Rd}$  ausgelegt.

**Beispiel:**

Seil PV 40 mit den Endbeschlägen und Verbindungsteilen Typ 700-PV 40, Typ 710-PV 40, Typ 800-PV 40, Typ 801-PV 40, Typ 803-PV 40, Typ 804-PV 40, Typ 810-PV 40, Typ 811-PV 40, Typ 812-PV 40, Typ 813 / 814-PV 40, Typ 840-PV 40, Typ 850-PV 40 oder Typ 864-PV 40 ist für eine charakteristische Bruchkraft von 405 kN bzw. für eine Bemessungszugkraft von 270 kN ausgelegt.

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zuglieder

PV Characteristic breaking strengths and design resistances  
PV Charakteristische Bruchkräfte und Bemessungszugkräfte

Annex H1  
Anhang H1

Size Größe	Nominal diameter of the rope Seil- Nenndurchmesser	Charact. breaking strength $F_{uk}$ Charakteristische Bruchkraft $F_{uk}$	Design resistance $F_{Rd}$ Bemessungszugkraft $F_{Rd}$
	mm	kN	kN
PG 5	8,1	59	39
PG 10	10,1	93	62
PG 15	12,2	134	89
PG 20	14,1	181	121
PG 25	17,0	260	173
PG 40	20,1	367	245
PG 55	24,4	537	358
PG 75	28,3	722	481
PG 90	31,3	884	589
PG 125	36,3	1189	793

All corresponding PG-cable end connectors are designed for the characteristic breaking strengths  $F_{uk}$  respectively for the design resistances  $F_{Rd}$  shown in the table.

**Example:**

Cable PG 5 with end connectors Type 980-PG 5, Type 982-PG 5, Type 984-PG 5 or Type 988-PG 5 is designed for the characteristic breaking strength 59 kN respectively for the design resistance 39 kN.

Alle dazugehörenden PG-Seilendbeschläge sind auf die in der Tabelle angegebenen charakteristischen Bruchkräfte  $F_{uk}$  bzw. auf die in der Tabelle angegebenen Bemessungszugkräfte  $F_{Rd}$  ausgelegt.

**Beispiel:**

Seil PG 5 mit den Endbeschlägen Typ 980-PG 5, Typ 982-PG 5, Typ 984-PG 5 oder Typ 988-PG 5 ist für eine charakteristische Bruchkraft von 59 kN bzw. für eine Bemessungszugkraft von 39 kN ausgelegt.

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PG Characteristic breaking strengths and design resistances  
PG Charakteristische Bruchkräfte und Bemessungszugkräfte

Annex H2  
Anhang H2

Size Größe	Nominal diameter of the rope Seil- Nenndurchmesser	Charact. breaking strength $F_{uk}$ Charakteristische Bruchkraft $F_{uk}$	Design resistance $F_{Rd}$ Bemessungszugkraft $F_{Rd}$
	<b>mm</b>	<b>kN</b>	<b>kN</b>
PE 3	6,1	26	17
PE 5	8,1	47	31
PE 7	10,1	73	49
PE 10	11,9	101	67
PE 15	14,1	141	94
PE 20	16,6	195	130
PE 30	20,5	298	199
PE 45	24,1	409	273
PE 60	28,6	578	385
PE 75	32,1	730	487
PE 100	36,6	945	630

All corresponding PE-cable end connectors are designed for the characteristic breaking strengths  $F_{uk}$  respectively for the design resistances  $F_{Rd}$  shown in the table.

**Example:**

Cable PE 3 with end connectors Type 981-PE 3, Type 983-PE 3, Type 985-PE 3 or Type 989-PE 3 is designed for the characteristic breaking strength 26 kN respectively for the design resistance of 17 kN.

Alle dazugehörenden PE-Seilendbeschläge sind auf die in der Tabelle angegebenen charakteristischen Bruchkräfte  $F_{uk}$  bzw. auf die in der Tabelle angegebenen Bemessungszugkräfte  $F_{Rd}$  ausgelegt.

**Beispiel:**

Seil PE 3 mit den Endbeschlägen Typ 981-PE 3, Typ 983-PE 3, Typ 985-PE 3 oder Typ 989-PE 3 ist für eine charakteristische Bruchkraft von 26 kN bzw. für eine Bemessungszugkraft von 17 kN ausgelegt.

PFEIFER – Wire Ropes  
PFEIFER – Seil-Zugglieder

PE Characteristic breaking strengths and design resistances  
PE Charakteristische Bruchkräfte und Bemessungszugkräfte

Annex H3  
Anhang H3