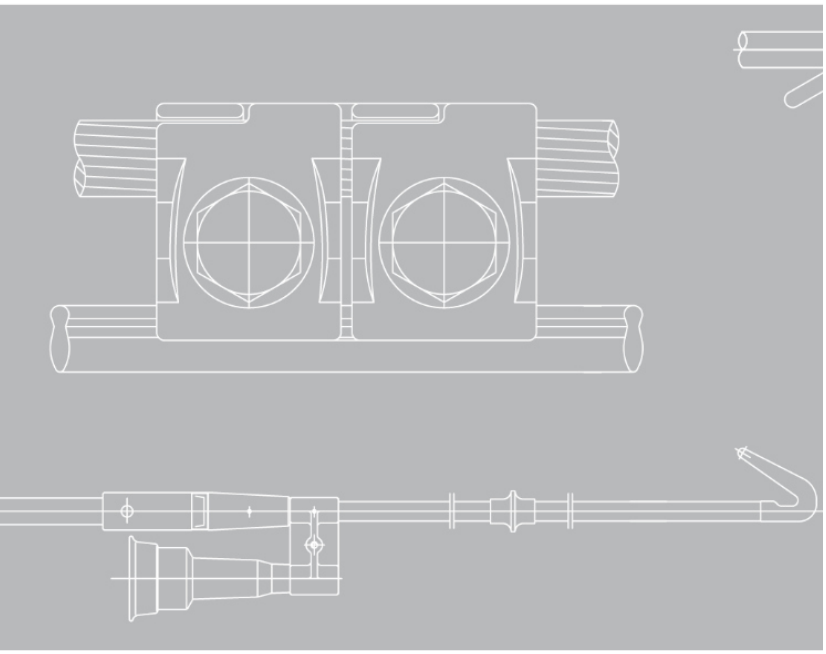
PFISTERER



EDITION 2021

RAILWAY CATENARY SYSTEMS

Solutions for Overhead Contact Lines

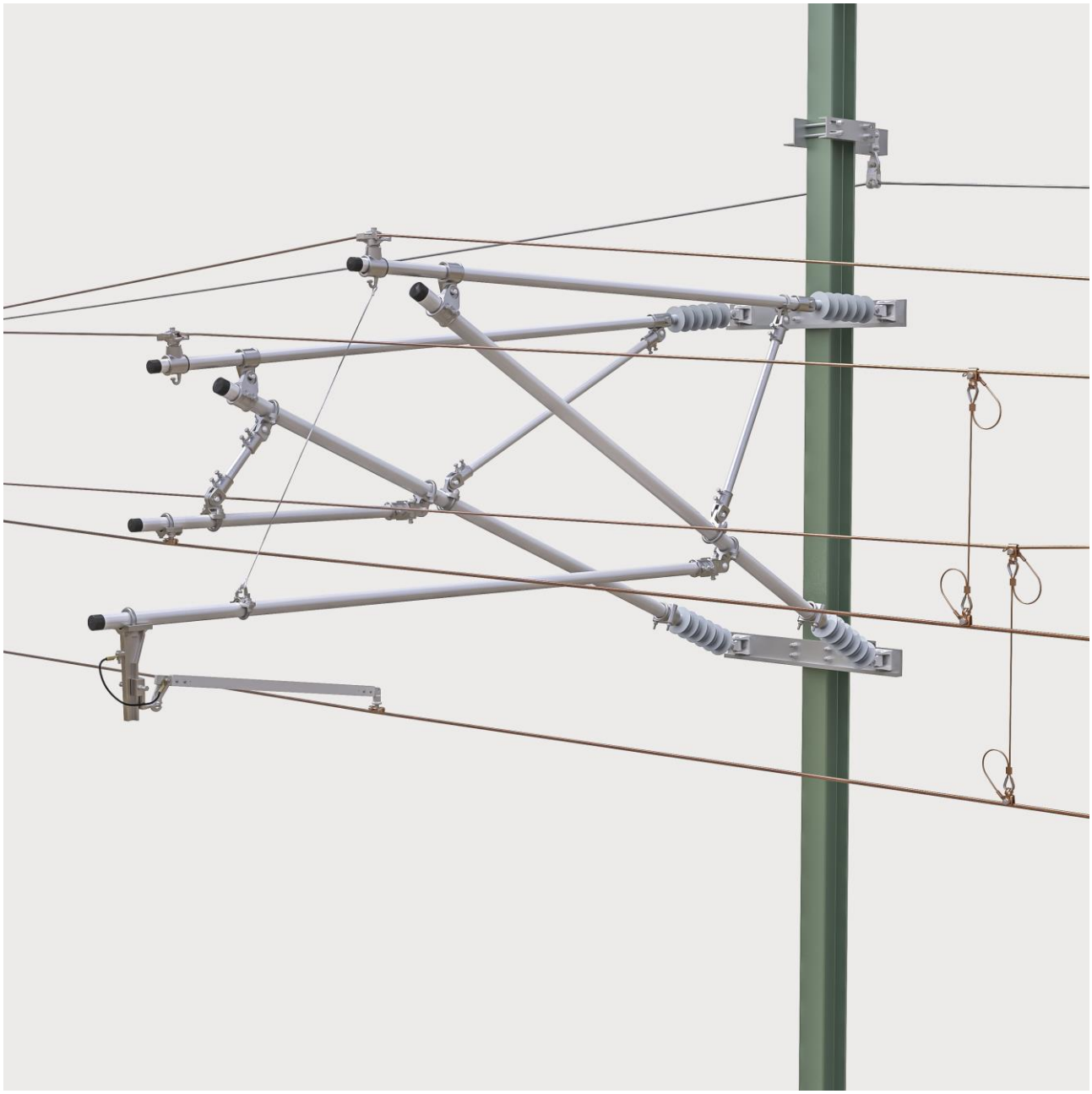
THE POWER CONNECTION

CABLE SYSTEMS | COMPONENTS | OVERHEAD LINES | RAILWAY CATENARY SYSTEMS

Content

Cantilever Assemblies	Page | 1 - 4	I
Forged Cantilever Components	Page | 5 - 18	II
Casted Cantilever Components	Page | 19 - 52	III
Electrical Screw and Compression Connectors	Page | 53 - 66	IV
Clamps	Page | 67 - 90	V
Droppers	Page | 91 - 100	VI
Wire Joints	Page | 101 -108	VII
Insulators	Page | 109 - 124	VIII
Tensorex C+ Spring Tensioning System	Page | 125 - 136	IX
Tensorex C+ Attachments	Page | 137 - 144	X
Safety Equipment	Page | 145 - 154	XI
Measuring Tools	Page | 155 - 158	XII
Compression and Cutting Tools	Page | 159 - 174	XIII
Tools	Page | 175 - 178	XIV

Cantilever Assemblies



CANTILEVER WITH FORGED ALUMINIUM FITTINGS

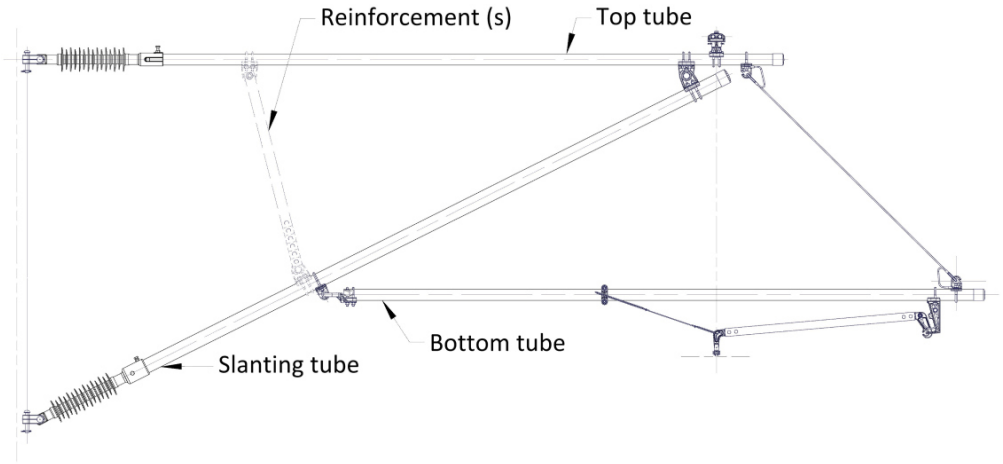
Assemblies include all necessary fittings. Ask for a list of components. Insulators and pipes on request.

Application:

- High speed lines
- 15/25 kV AC, 3 kV DC
- Contact wire: AC/BC 80/150
- Messenger wire: up to 150 mm^2

Advantages:

- Designed for demands of High Speed Lines.
- Forged fittings with higher strength and working loads.
- Improved corrosion resistance.
- Longer life cycle.
- Intelligent fitting design allows many different cantilever geometries.
- Ideal for maintenance and new railway line projects.



Example: Push-off cantilever assembly 000 701 286-00

No	Type	Tube diameter (*Top/Slanting/Bottom*) (mm)	Size (mm)
000 701 286-00000	Push-off	55 / 70 / 55	3450
000 701 286-00001	Pull-in	55 / 70 / 55	3450
000 701 264-00000	Out-of-running	55 / 70 / 55	3450

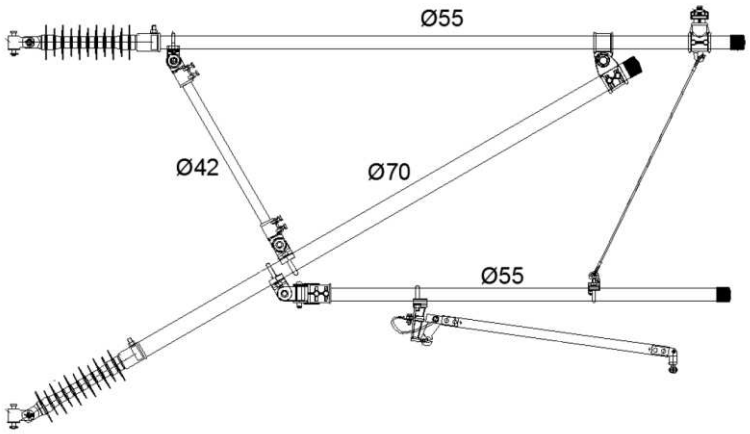
Remark: Reinforcements available on request. Many more cantilever assembly sets available. Please contact Pfisterer for your requirements or projects.

CANTILEVER WITH CASTED ALUMINIUM FITTINGS

Assemblies include all necessary fittings. Ask for a list of components. Insulators and pipes on request.

Application:
- Standard main lines
- 15/25 kV AC, 3 kV DC
- Contact wire: AC/BC 80/150
- Messenger wire: up to 150 mm^2

Advantages:
- Casted fittings for all railway applications.
- Costs efficient.
- Many different assembly variants possible.
- Intelligent fitting design allows many different cantilever geometries.
- Ideal for maintenance and new railway line projects



Example: cantilever assembly 234 000.001

No	Type	Tube diameter (*Top/Slanting/Bottom/ Reinforcement*) (mm)	Remarks
234 000 001	High Speed lines, pull-in	55 / 70 / 55 / 42	Including steady arm
234 000 006	Conventional lines, pull-in	55 / 70 / 55 / -	Including steady arm
234 000 010	Conventional lines, pull-in	55 / 70 / 42 / -	Including steady arm
234 000 011	Conventional lines	55 / 55 / 42 / -	For overlaps, without steady arm
234 000 012	Conventional lines, pull-in	55 / 55 / 42 / 42	Including steady arm
234 000 013	Conventional lines, push-off	55 / 55 / 42 / -	Including steady arm
234 000 014	Conventional lines, pull-in	55 / 55 / 42 / -	Including steady arm
234 000 015	Conventional lines, push-off	55 / 70 / 55 / 42	Double reinforcement, curved steady arm
234 000 017	Out-of-Running	55 / 70 / 55 / 42	Double reinforcement, without steady arm

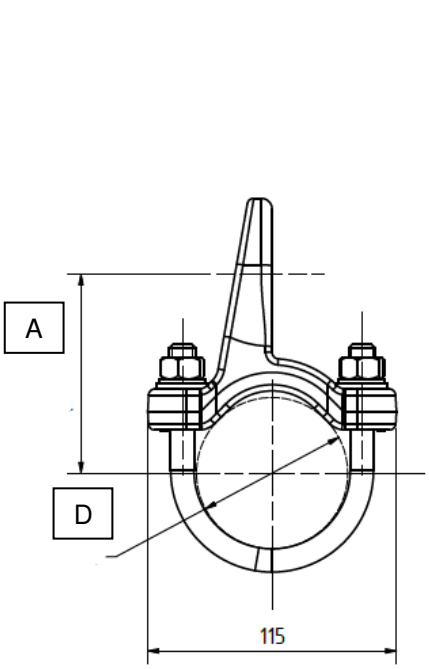
Remark: Many more cantilever assembly sets available. Please contact Pfisterer for your requirements or projects.

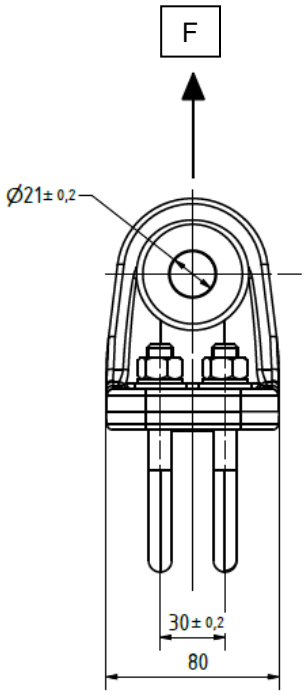
Forged Cantilever Components

EYE CLAMP

Application:
- Single eye clamp

Material:
- Forged double tube holder (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)



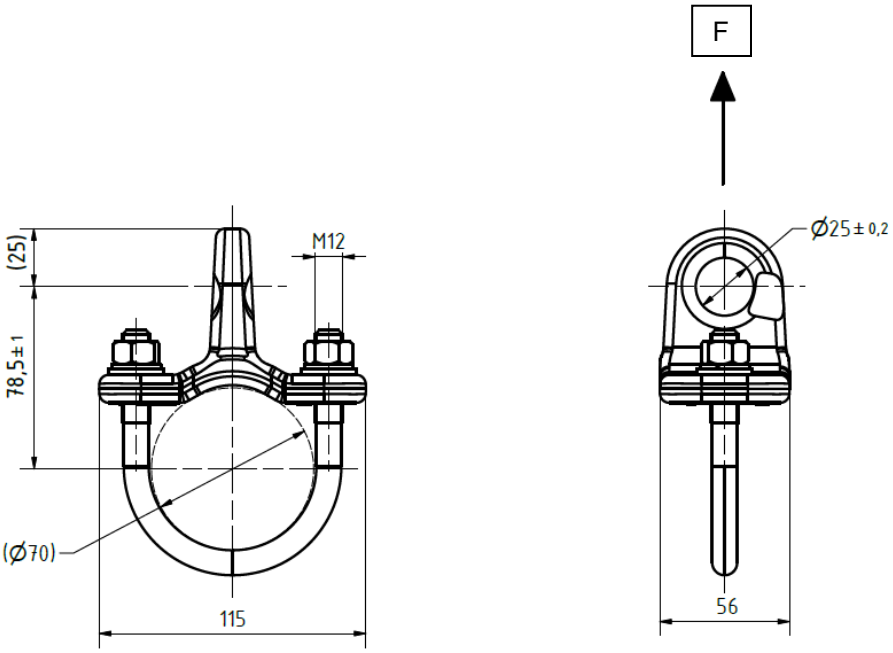


No	Pipe diameter D (mm)	Height A (mm)	Max. Service Load F (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 290 00000	70	92,1	10,7	M12	35	1,038
000 701 290 00001	55	81,5	10,7	M12	35	0,995

EYE CLAMP

Application:
- Single eye clamp

Material:
- Forged single tube holder (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)

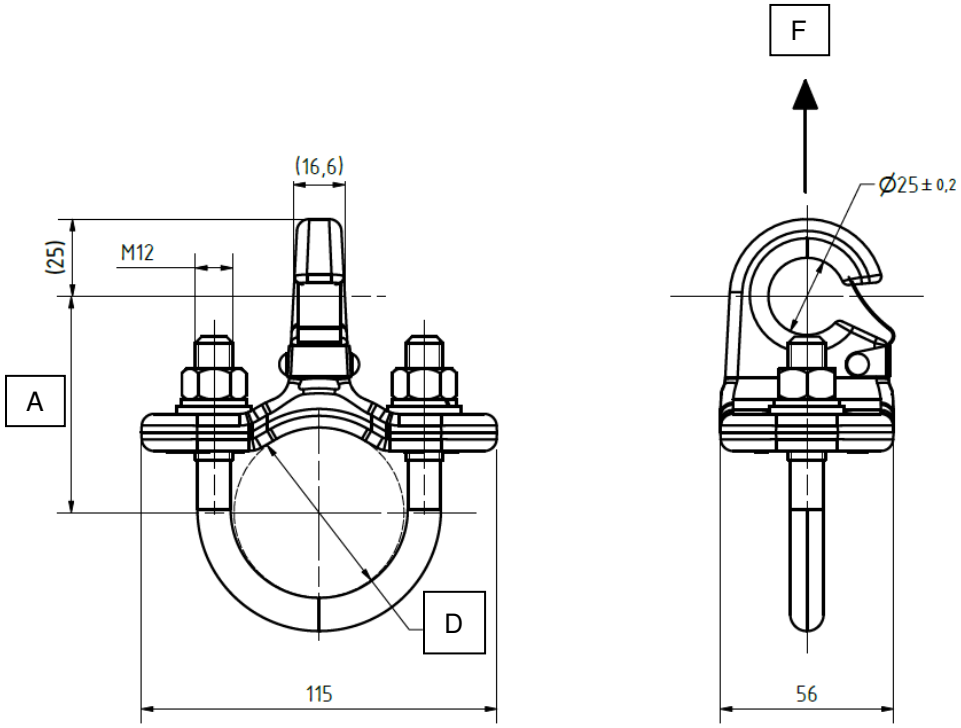


No	Pipe diameter (mm)	Max. Service Load F (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 291 00001	70	6,786	M12	35	0,523

HOOK CLAMP

Application:
- Stay yoke clamping hook

Material:
- Stay yoke clamping hook – forged (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)
- Clip sheet metal (AISI 304)
- Rivet Al-stainless steel

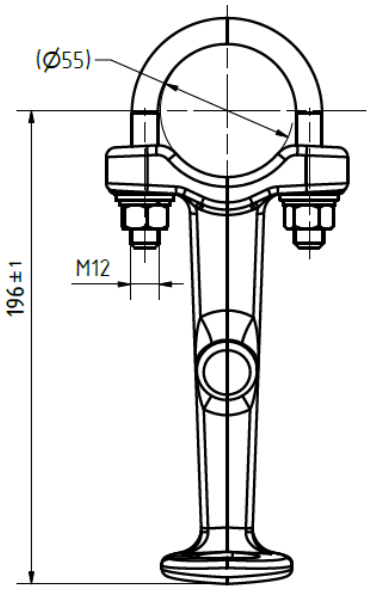


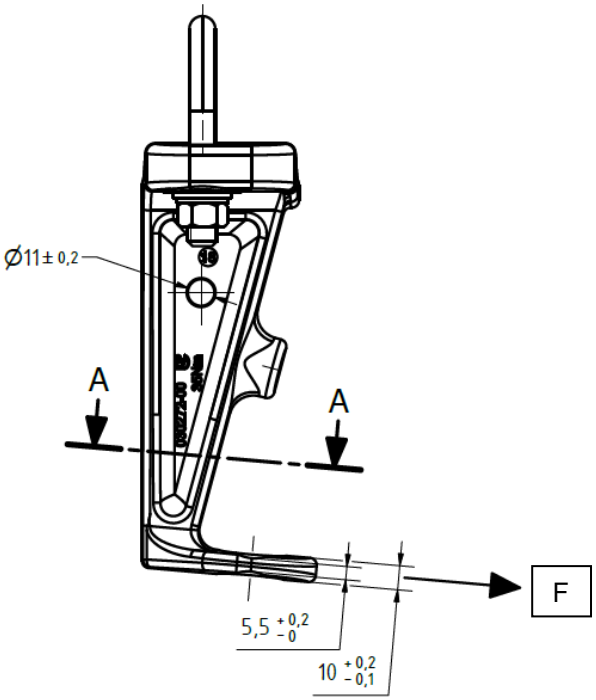
No	Pipe diameter D (mm)	Distance A (mm)	Max. Service Load F (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 292 00000	55	70	1,54	M12	35	0,5
000 701 292 00001	70	77,5	1,54	M12	35	0,52

STEADY ARM BRACKET

Application:
- To attach the steady arm to the horizontal support tube.

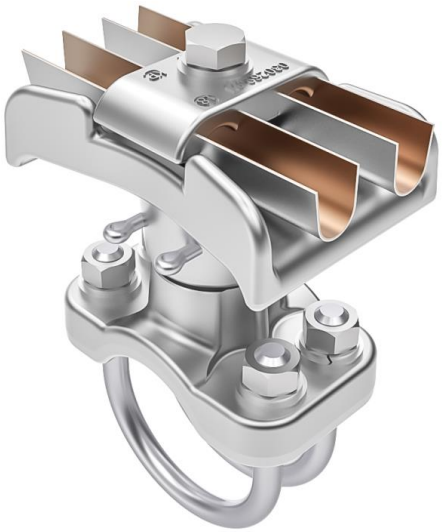
Material:
- Steady arm anchoring – forged (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)





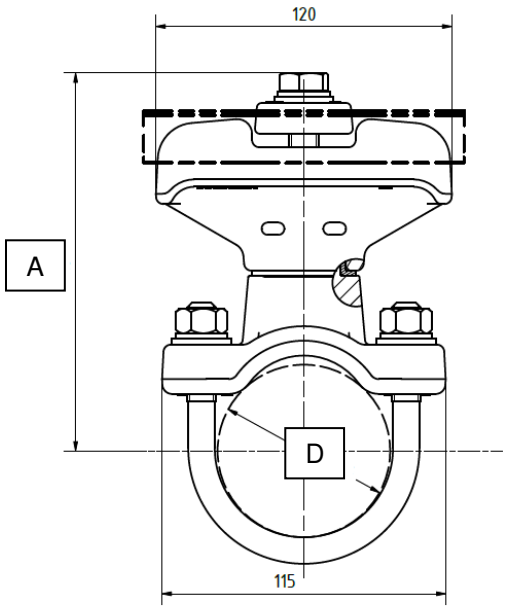
No	Pipe diameter (mm)	Max. Service Load F (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 293 00000	55	2,55	M12	35	0,81

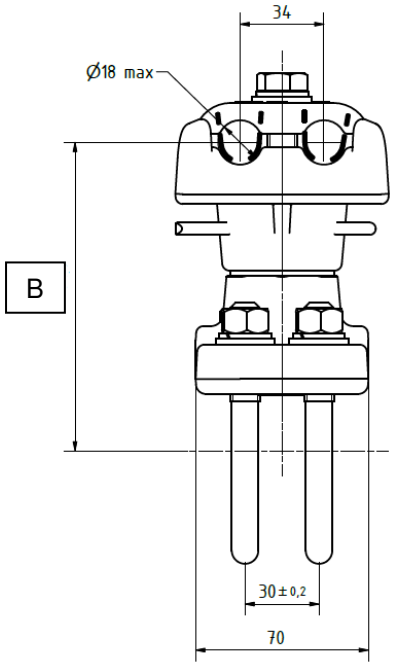
BRIDLE SUSPENSION



Application:
- Single and double messenger wire suspension, rotatable.

Material:
- Main wire clamp – forged (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)
- Flange bearing Ø 30x16 (Self-lubricating technopolymer)
- Split pin 5x63 ISO 1234 (A2-70)
- Screw hex cap M12x35 tot. thread UNI5739 (A2-70)





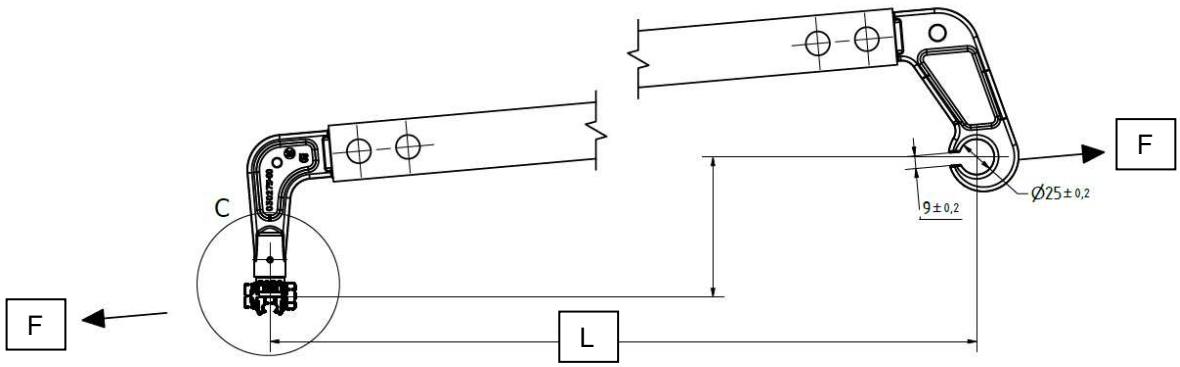
No	Pipe diameter D (mm)	Height A (mm)	Distance B (mm)	Max. Service Load (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 294 00001	55	142	114	4,524	M12	35 U-Bolt 50 Hex. screw	0,81
000 701 294 00002	70	153	125	4,524	M12	35 U-Bolt 50 Hex. screw	0,81

STEADY ARM, STRAIGHT

Application:
- Steady arm

Material:
- Hook for steady arm – forged (EN AW- 6082 T6)
- Body pin 5° – forged (EN AW- 6082 T6)
- Round head rivet (EN AW-6082 S T0)
- Tube rectangular 40x20x2,5, L=952mm (EN AW- 6082 T6)
- Pin (AISI 304)
- Spring pin Ø 4x24 (ISO 1337)

Optional: with contact wire clip p/n 304 741 00X or 304 742 00X

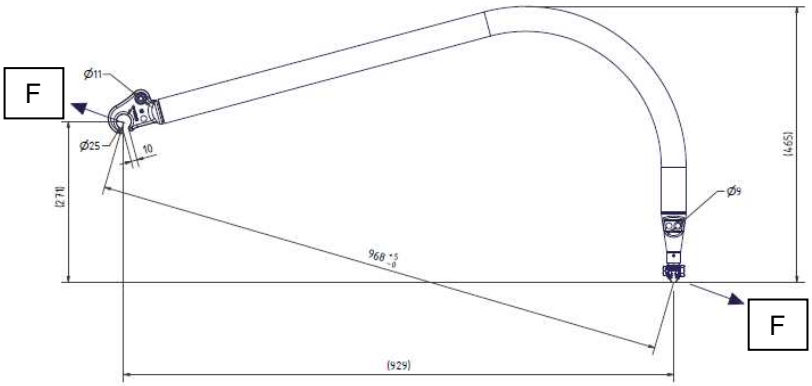


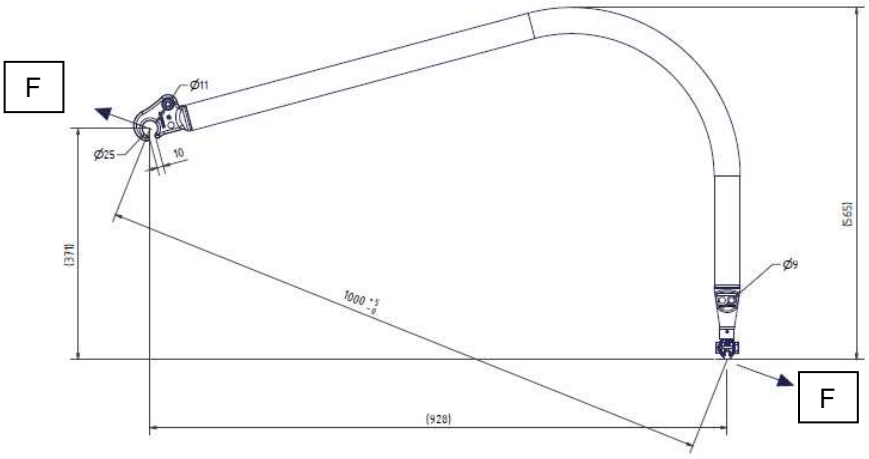
No	Max. Service Load F (kN)	Length L (mm)	Weight (kg)
000 701 295 00000	2,549	1050	1,17
000 701 295 00001	2,549	900	1,05

STEADY ARM, CURVED

Application:
- Steady arm in overlap

Material:
- Hook for steady arm – forged (EN AW- 6082 T6)
- Body pin 5° – forged (EN AW- 6082 T6)
- Round head rivet (EN AW-6082 S T0)
- Tube rectangular 40x20x2,5, L=952mm (EN AW- 6082 T6)
- Pin (AISI 304)
- Spring pin Ø 4x24 (ISO 1337)



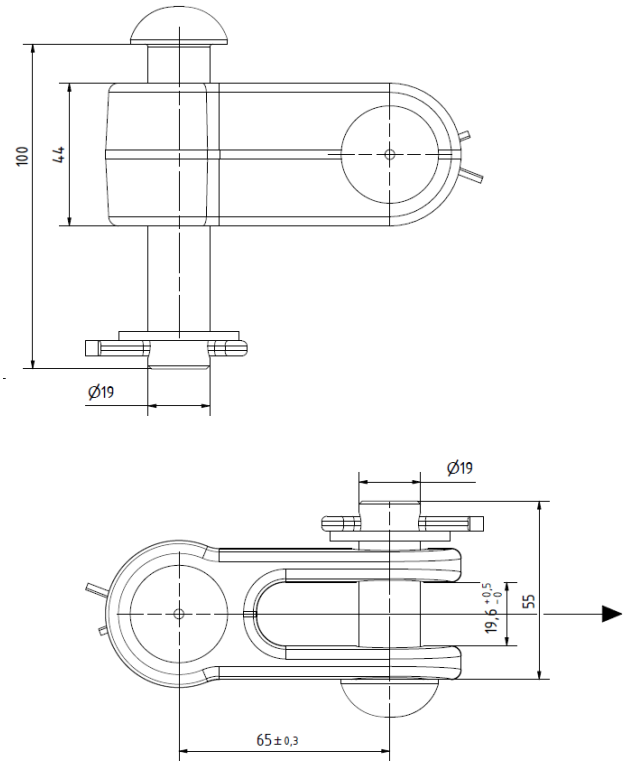


No	Max. Service Load F (kN)	Length (mm)	Weight (kg)
000 701 338 00000	1,56	968	2,274
000 701 338 00001	1,36	1000	2,418

SWIVEL WITH CLEVIS

Application:
- Swivel with clevis

Material:
- Swivel clevis for Al cantilever - forged (S355JR EN 10025), hdg
- Pins Ø 19 L=55mm and 100mm – forged (S355JR EN 10025), hdg
- Washers: Washer M20 UNI 6592 (A2-70)
- Split pin Ø 5x35 UNI 1336 (A2-70)

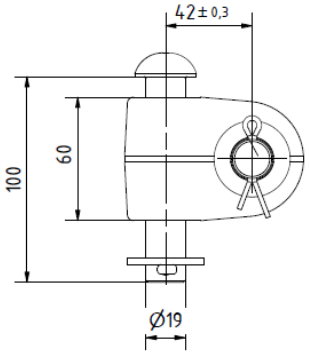


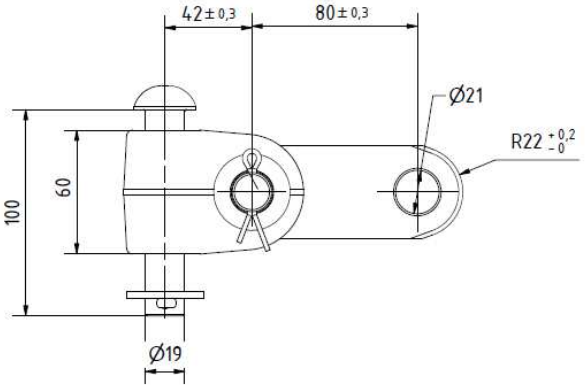
No	Min. failing Load (kN)	Weight (kg)
000 701 297 00000	> 60	1,268

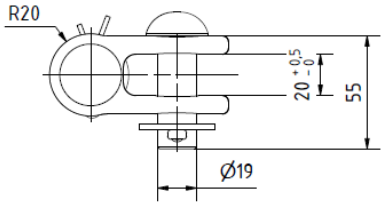
SWIVEL WITH CLEVIS AND PLATE

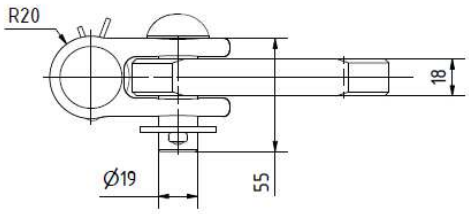
Application:
- Swivel with clevis

Material:
- Swivel back fork TRC+ - forged (C45 EN 10083)
- Pins Ø 19 L=55mm and 100mm – forged (S355JR EN 10025), hdg
- Plate with 2 holes Ø 21, L=80mm – C 40 UNI 7845
- Washers: Washer M20 UNI 6592 (A2-70)
- Split pin Ø 5x35 UNI 1336 (A2-70)







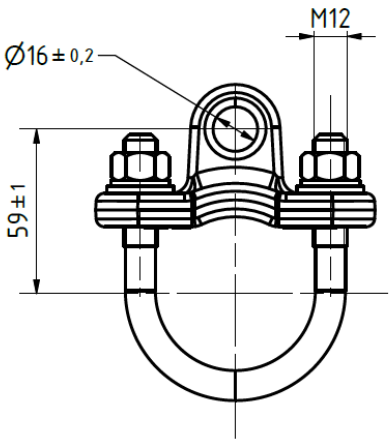


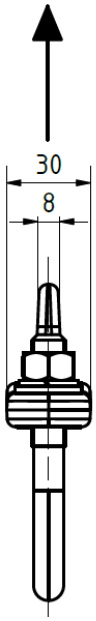
No	Min. failing Load (kN)	Weight (kg)
000 701 303 00000	> 80	1,606
000 701 303 00001	> 80	0,983

EYE CLAMP FOR WINDSTAY

Application:
- Eye clamp for windstay

Material:
- Eye Clamp Ø 55 for windstay, forged (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)



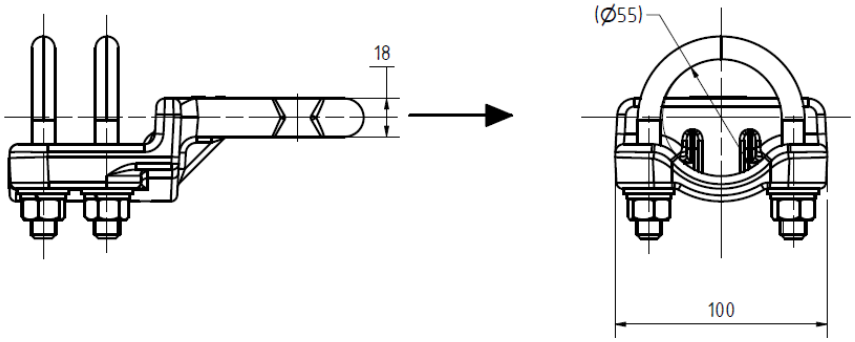


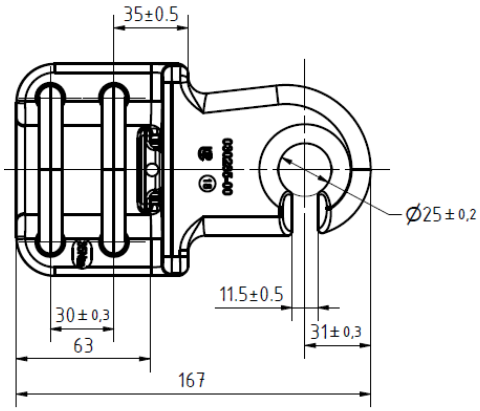
No	Pipe diameter (mm)	Min. failing Load (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 298 00000	55	> 6	M12	35	0,327

END FITTING WITH HOOK

Application:
- Pipe end fitting with hook

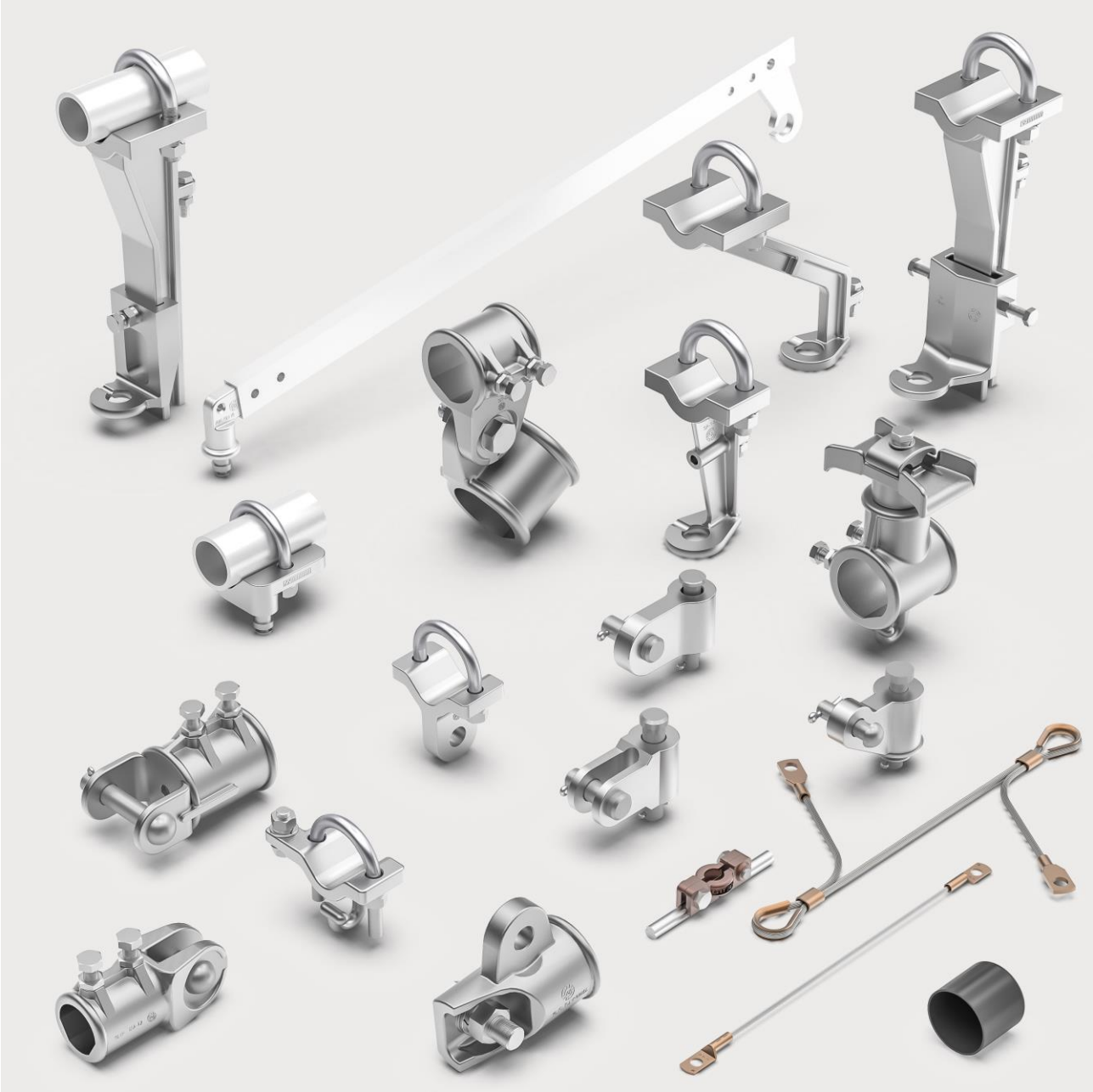
Material:
- Hook end fitting Ø 55, forged (EN AW- 6082 T6)
- U-bolt: M12 (Stainless steel A2-70)
- Nuts: M12 INOX UNI 5588 (Stainless steel A2-70)
- Washers: Washer 12x24 ISO 7089 (A2-70)
- Elastic washer: M12 UNI 1751 (A2-70)





No	Pipe diameter (mm)	Max. service Load (kN)	Bolt (mm)	Tightening Torque (Nm)	Weight (kg)
000 701 299 00000	55	4,524	M12	35	1,053

Casted Cantilever Components



SWIVEL BRACKET

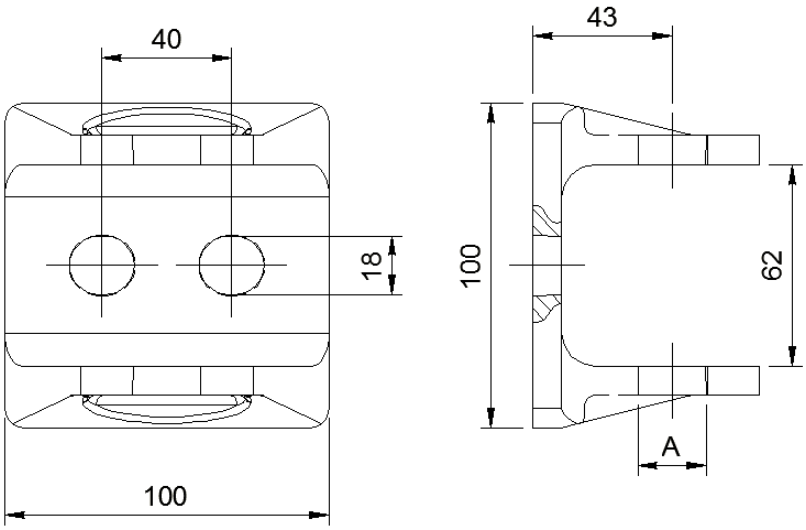
This part is used for the rotatable suspension of cantilevers.

Application:

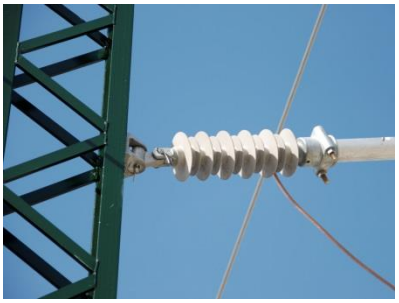
- Suspension of cantilevers. Swivel joint in combination with various cantilever supports.

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)

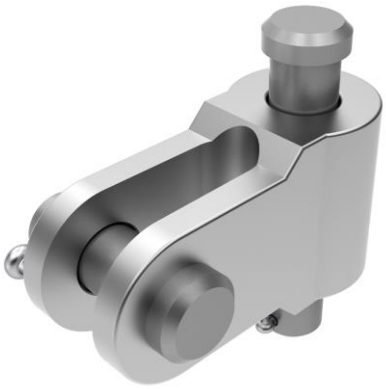


No	ID-code	Dimension A	*Weight*
		(mm)	(kg)
234 022 017	**SGM-01**	**17**	0,496
231 022 021	**SGM-05**	**21**	0,496



CANTILEVER SUPPORT WITH CLEVIS

This part is a swivel joint with clevis for cantilevers.

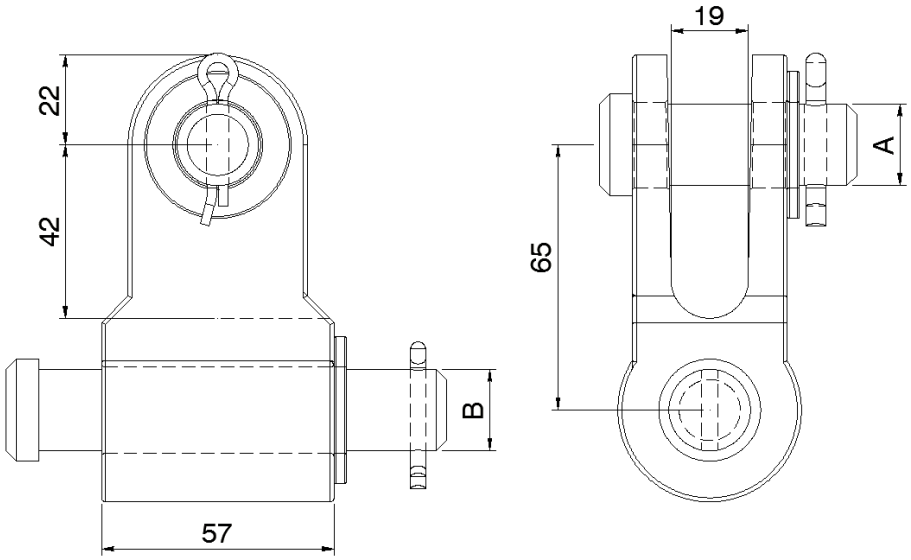


Application:

- Rotatable attachment of cantilevers to poles.

Material:

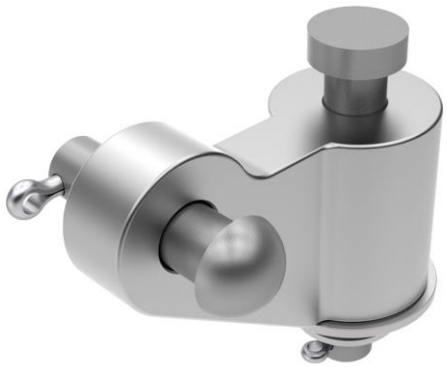
- Part: See table below
- Clevis pin: St. Steel (A2) (EN ISO 3506)
- Split pin: St. Steel (1.4301 UNE-EN 10088)
- Washers: St. Steel (A2) (EN ISO 3506)



No	ID-code	Material	Bolt Diameter A (mm)	B (mm)	Weight (kg)
234 001 001	**ASM.SSP-01**	AlSi7Mg0,6 T6 (UNE-EN 1706)	20	16	-
234 001 002	**ASM.SSP-02**	C-45 (EN-10083)	20	20	0,78
234 001 003	**ASM.SSP-03**	AlSi7Mg0,6 T6 (UNE-EN 1706)	20	20	0,51
234 001 004	**ASM.SSP-04**	C-45 (EN-10083)	17	20	-
234 001 005	**ASM.SSP-05**	AlSi7Mg0,6 T6 (UNE-EN 1706)	17	20	-

CANTILEVER SUPPORT WITH TONGUE

This part is a swivel joint with tongue for cantilevers.

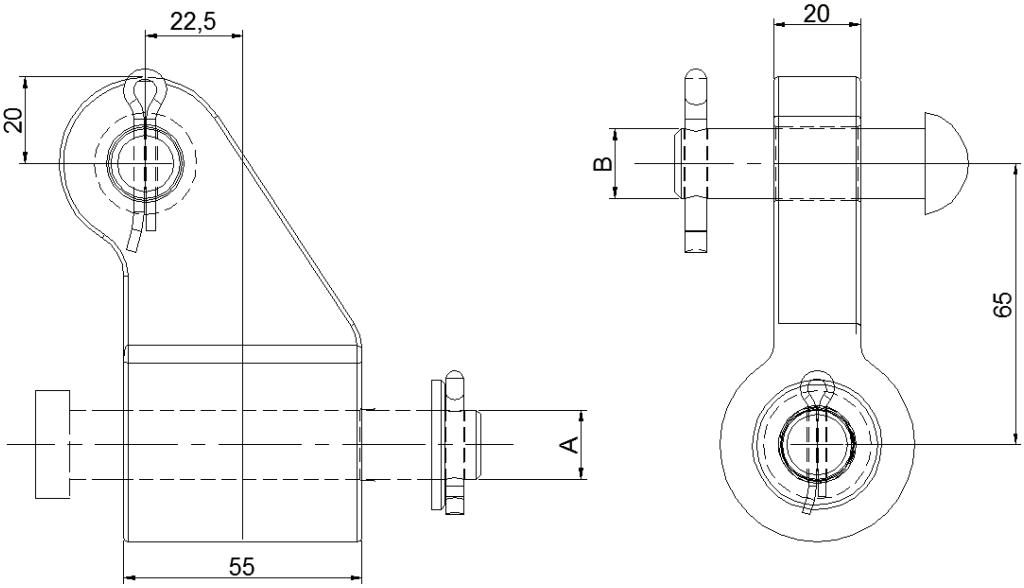


Application:

- Rotatable attachment for cantilevers to poles.

Material:

- Casting part: See table below
- Clevis pin: St. Steel (A2) (EN ISO 3506)
- Split pin: St. Steel (1.4301 UNE-EN 10088)
- Washers: St. Steel (A2) (EN ISO 3506)



No	ID-code	Material	Bolt Diameter A (mm)	B (mm)	Weight (kg)
234 002 001	**ASM.SIP-01**	AlSi7Mg0,6 T6 (UNE-EN 1706)	16	16	0,687

CANTILEVER SUPPORT WITH TONGUE

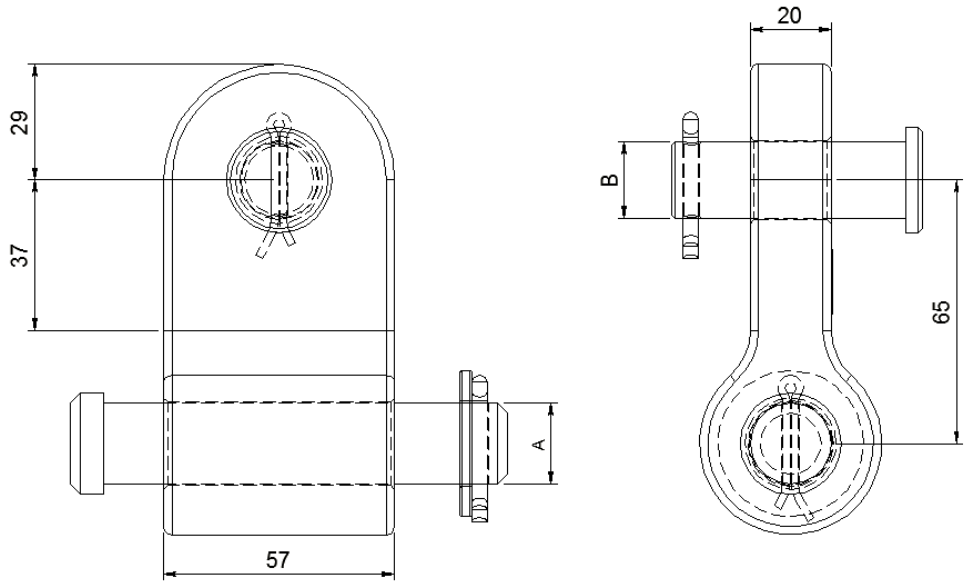
This part is a swivel with tongue for cantilevers.

Application:

- Rotatable attachment for cantilevers to poles.

Material:

- Casting part: See table below
- Clevis pin: St. Steel (A2) (EN ISO 3506)
- Split pin: St. Steel (1.4301 UNE-EN 10088)
- Washers: St. Steel (A2) (EN ISO 3506)



No	ID-code	Material	Bolt Diameter A (mm)	B (mm)	Weight (kg)
234 002 002	**ASM.SIP-02**	AlSi7Mg0,6 T6 (UNE-EN 1706)	20	19	0,82
234 002 003	**ASM.SIP-03**	AlSi7Mg0,6 T6 (UNE-EN 1706)	20	16	0,82

THREADED TONGUE END FITTING

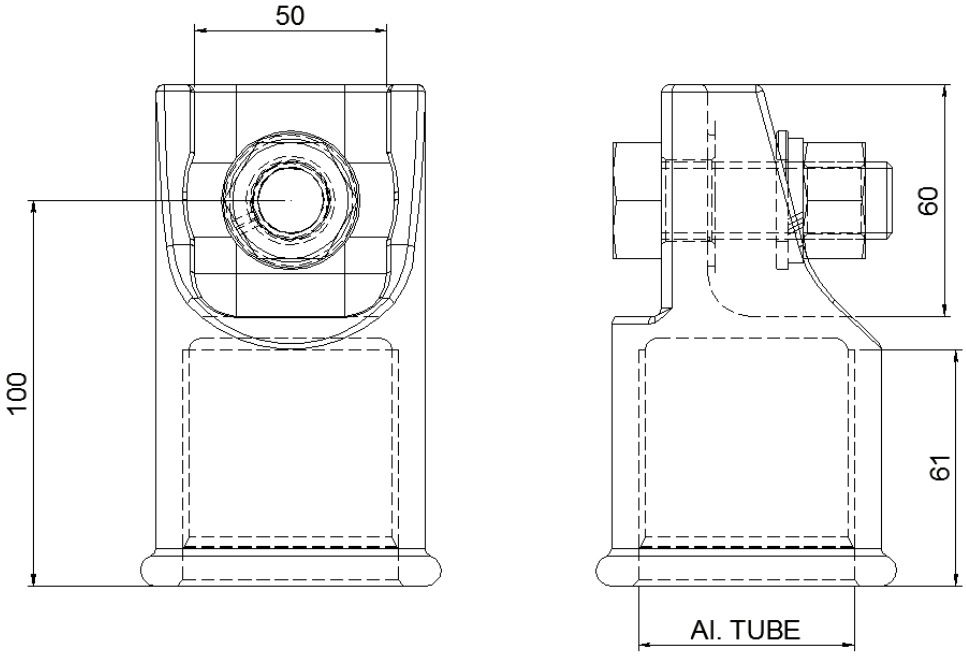
This part is used to connect the traction insulator with the top cantilever tube.

Application:

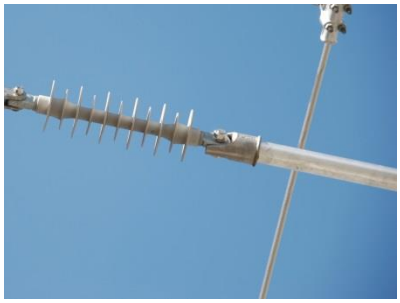
- Threaded end fitting

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE- EN ISO 3506)



No	ID-code	Diameter tube	Tightening torque M20	Weight
		(mm)	(Nm)	(kg)
234 003 055	ASM.UTA-55R	55	135	0,877

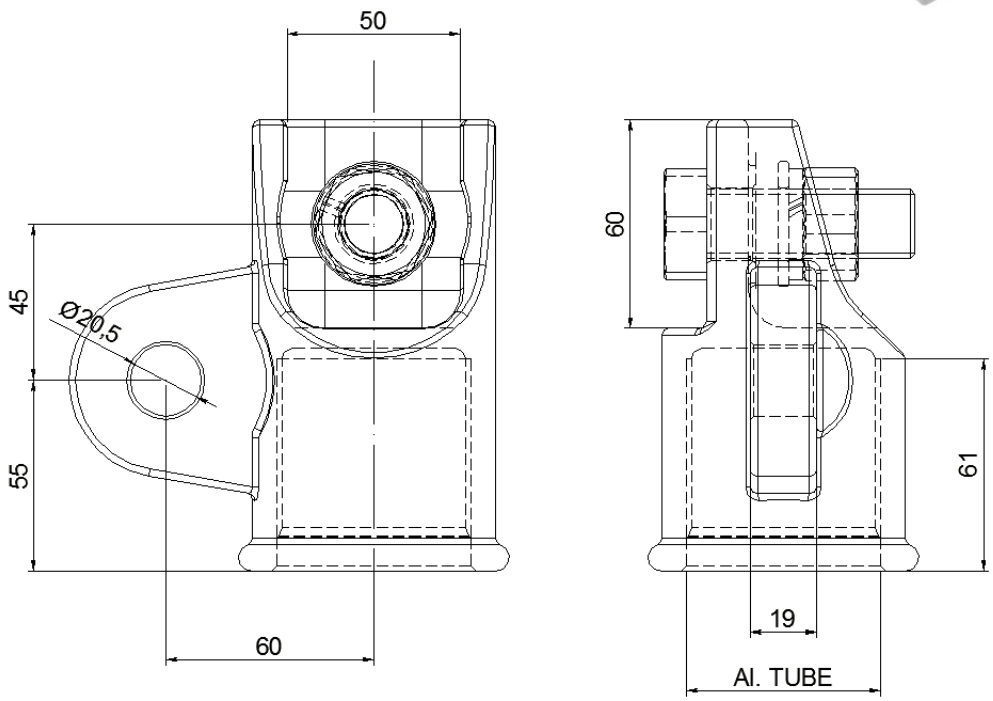


THREADED TONGUE T-END FITTING

This part is used to connect the traction insulator with the top cantilever tube.

Application:
- Threaded end T-fitting

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE- EN ISO 3506)



No	ID-code	Diameter tube (mm)	Tightening torque M20 (Nm)	Weight (kg)
234 003 155	**ASM.UTA-55RT**	55	135	1,020

DOUBLE TUBE HOLDER CLAMP

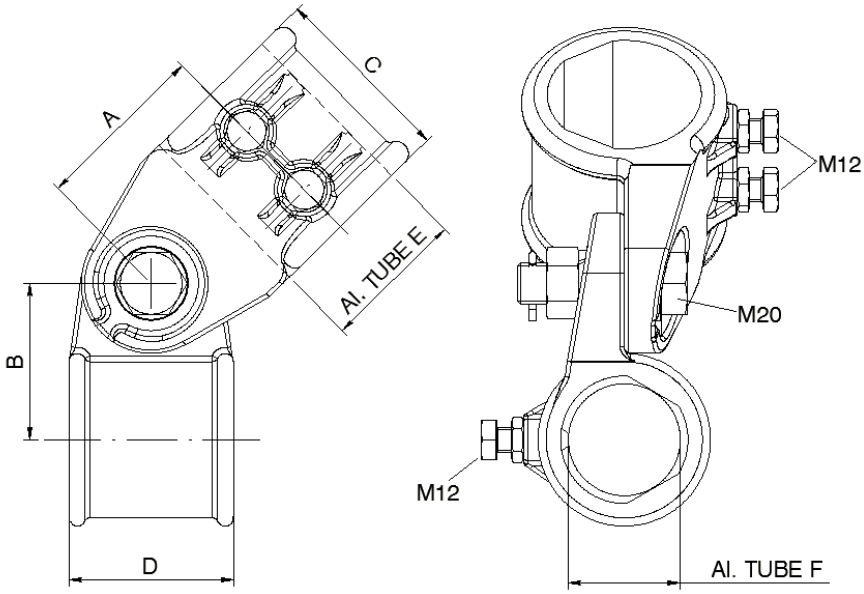
This clamp is used to connect the cantilever tube with the top tube.

Application:

- Double tube holder

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screw:
  -M20: St. Steel (A2-70) (UNE-EN ISO 3506)
  -M12: St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts:
  - M20: St. Steel (A2-70) (UNE- EN ISO 3506)
  - M12: St. Steel (A2-35) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- Pin: St. Steel A2 (UNE-EN ISO 3506)



No	ID-code	Diameter tube		Dimensions				Tightening torque		Weight
		Tube E	Tube F	A	B	C	D	M12	M20	
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	(Nm)	(kg)
234 004 555	ASM.SUT-55.55	55	55	76	76	80	80	58	135	1,80
234 004 570	ASM.SUT-55.70	55	70	85	76	90	80	58	135	2,02
234 004 770	ASM.SUT-70.70	70	70	85	85	90	90	58	135	2,26

BRIDLE SUSPENSION WITH HOOK

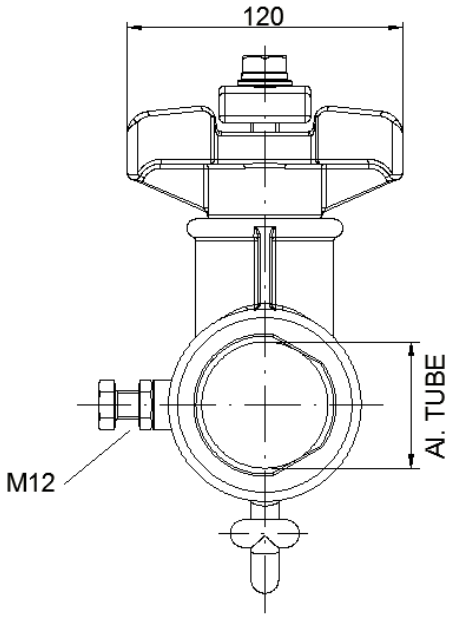
This clamp is used to connect the messenger wire with the top tube.

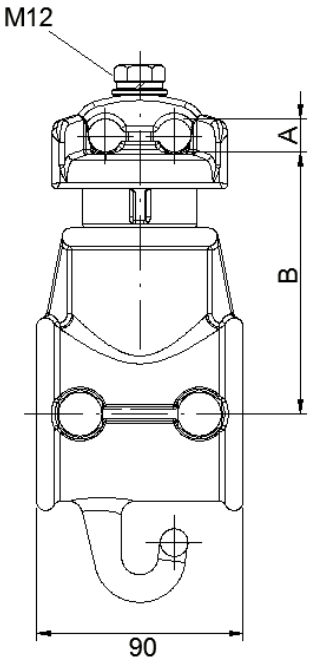
Application:

- Single and double messenger wire suspension, rotatable.

Material:

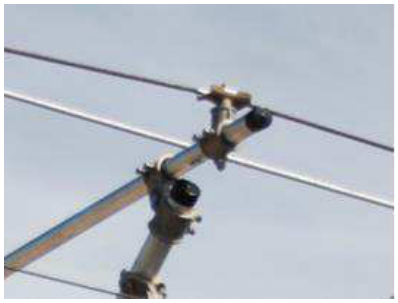
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (UNE-EN ISO 3506)
- Screw St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-35) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)





No	ID-code	Diameter tube	Messenger wire cross section	Dimensions		Tightening torque	Weight
				A	B	M12	
		(mm)	(mm^2)	(mm)	(mm)	(Nm)	(kg)
234 005 055	**ASM.SUS-55**	55	65-150	13-18	114	58	1,13
234 005 070	**ASM.SUS-70**	70	65-150	13-18	121	58	1,53

Suitable Bimetallic sleeves: 234.023.XXX



HOOK CLIP

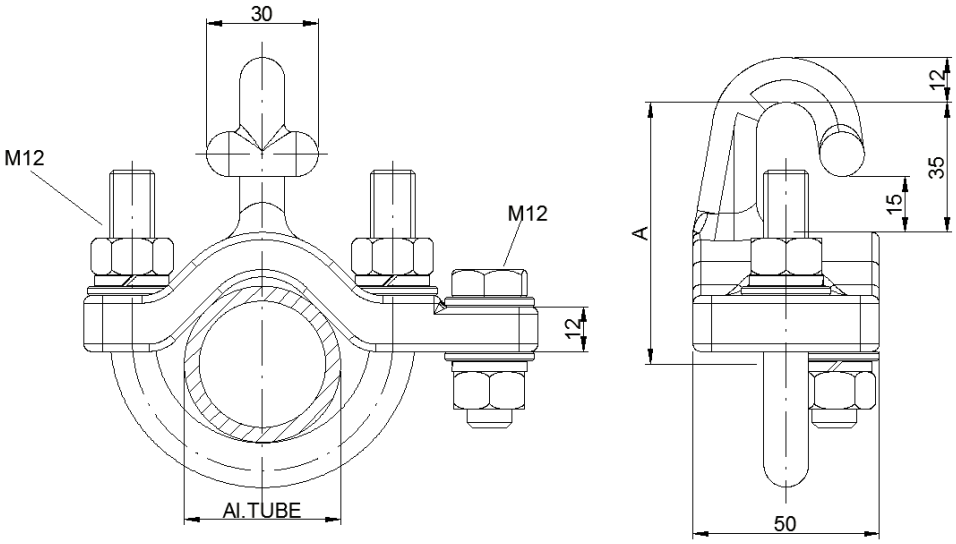
This part is used to connect the cantilever dropper with the registration tube.

Application:

- Cantilever dropper

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (UNE-EN ISO 3506)



No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 006 042	**ASM.SGD-42**	42	70	45	0,42
234 006 055	**ASM.SGD-55**	55	79	58	0,42

EYE CLAMP

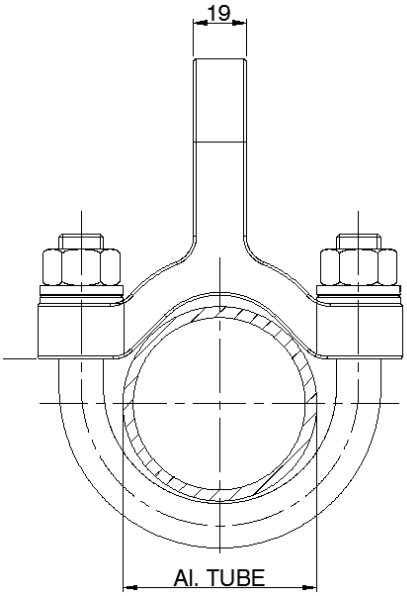
This clamp is used for articulated connections.

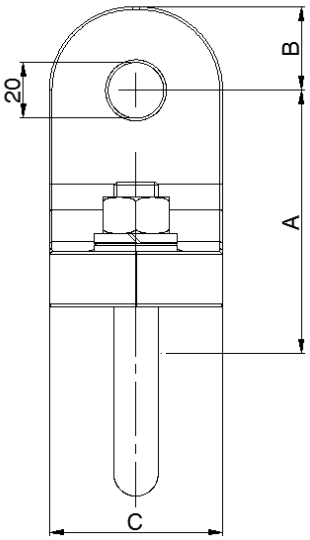
Application:

- Single eye clamp

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Nuts: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)





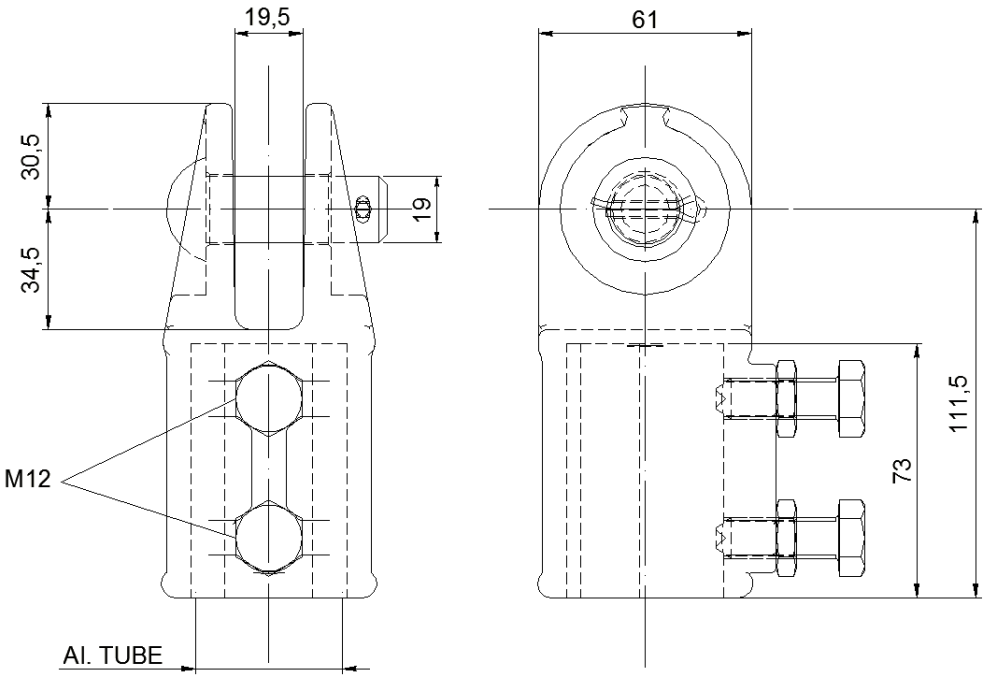
No	ID-code	Diameter tube	Dimension			U-bolt	Torque	Weight
			A	B	C			
		(mm)	(mm)	(mm)	(mm)		(Nm)	(kg)
234 007 042	**ASM.SUG-42**	42						
234 007 055	**ASM.SUG-55**	55	78	25	50	M12	58	0,49
234 007 070	**ASM.SUG-70**	70	94	30	62,5	M16	85	0,64

CLEVIS END FITTING

This part is used to connect the support tube with the cantilever tube or the top tube.

Application:
- End fitting

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-35) (UNE- EN ISO 3506)
- Clevis pin: Aluminium
- Split pin: St. Steel 1.4301 (UNE-EN 10088)



No	ID-code	Diameter tube (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 008 042	**ASM.UTA-42**	42	45	0,58

FORK JOINT

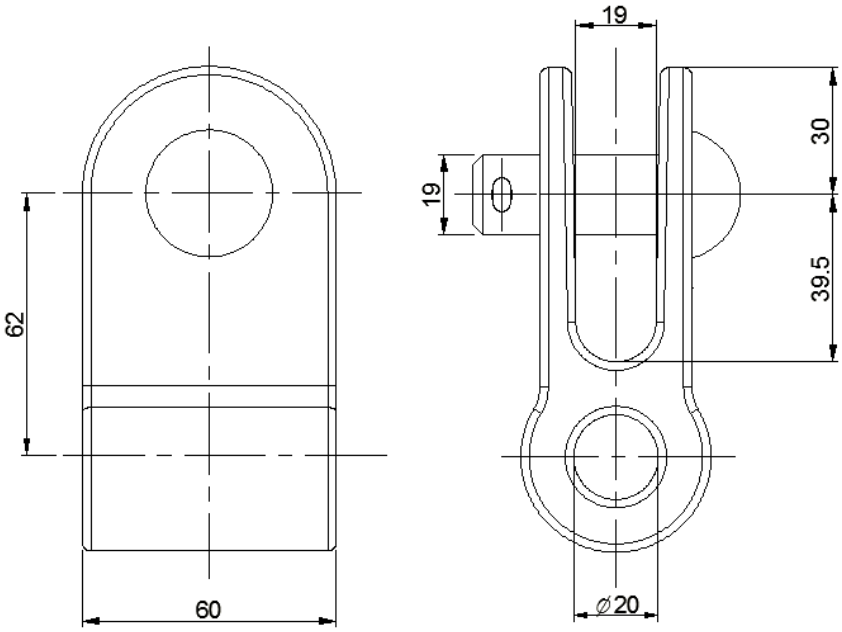
This part is used to connect cantilever tube with the registration tube.

Application:

- Fork joint in combination with 234 010 042 or 234 010 055.

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Clevis pin: Aluminium
- Split pin: St. Steel 1.4301 (UNE-EN 10088)



No	ID-code	Clevis pin (mm)	Weight (kg)
234 009 001	ASM.STG-01	19	0,425

CLEVIS END FITTING

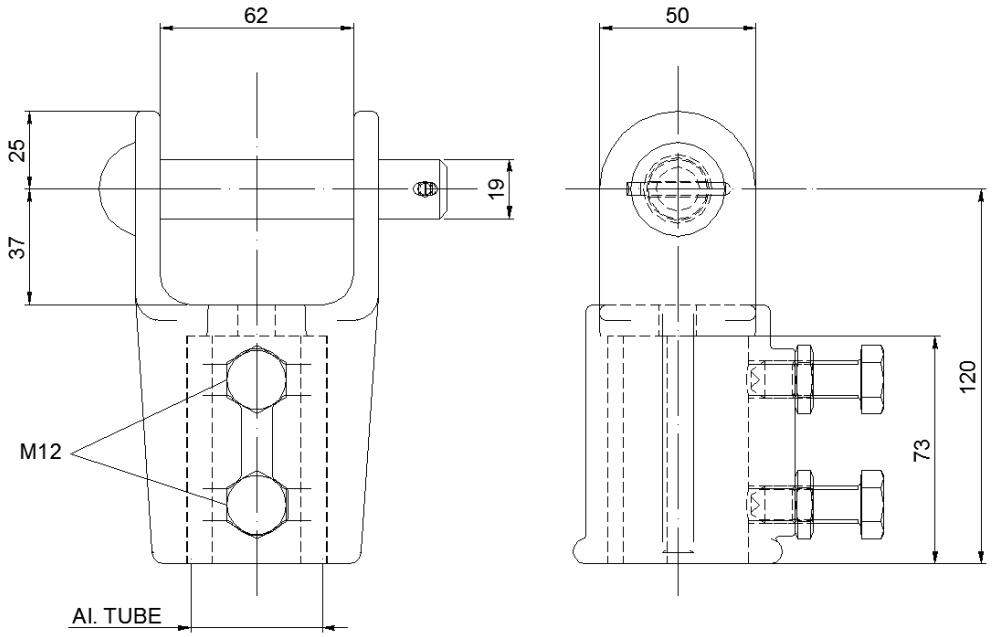
This part is used to connect the registration tube with the cantilever tube.

Application:

- Articulated connection in combination with fork joint 234 009 001.

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-35) (UNE- EN ISO 3506)
- Clevis pin: Aluminium
- Split pin: St. Steel 1.4301 (UNE-EN 10088)



No	ID-code	Diameter tube (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 010 042	**ASM.UTA-42A**	42	45	0,86

CLEVIS END FITTING

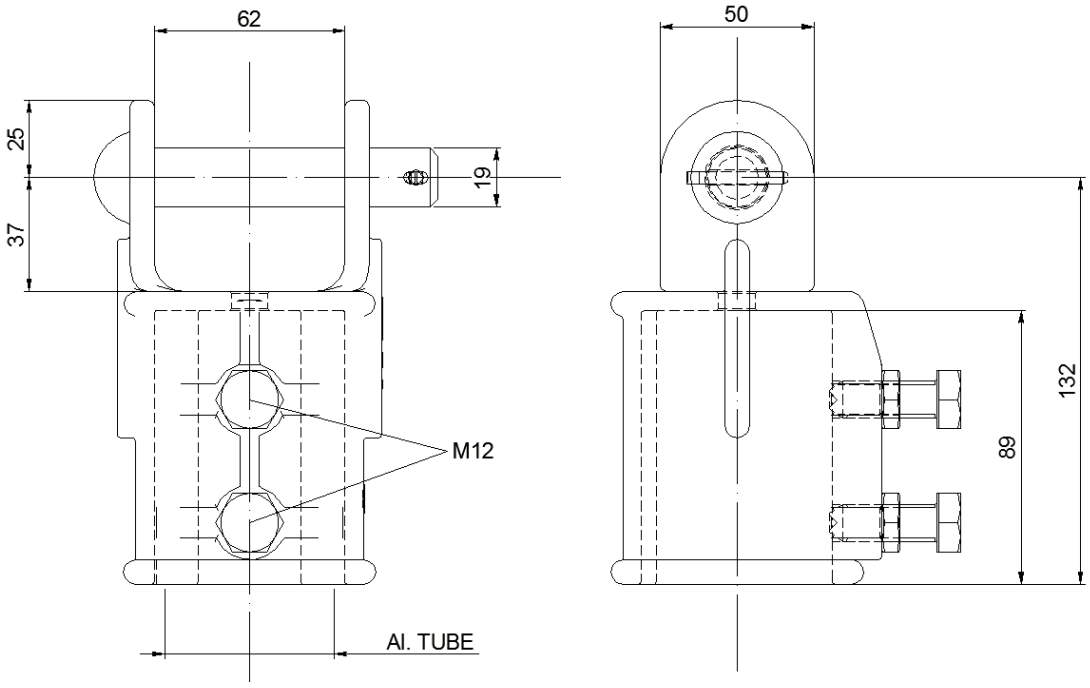
This clevis is used to connect the registration tube with the cantilever tube.

Application:

- Articulated connection in combination with fork joint 234 009 001.

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-35) (UNE- EN ISO 3506)
- Clevis pin: Aluminium
- Split pin: St. Steel 1.4301 (UNE-EN 10088)



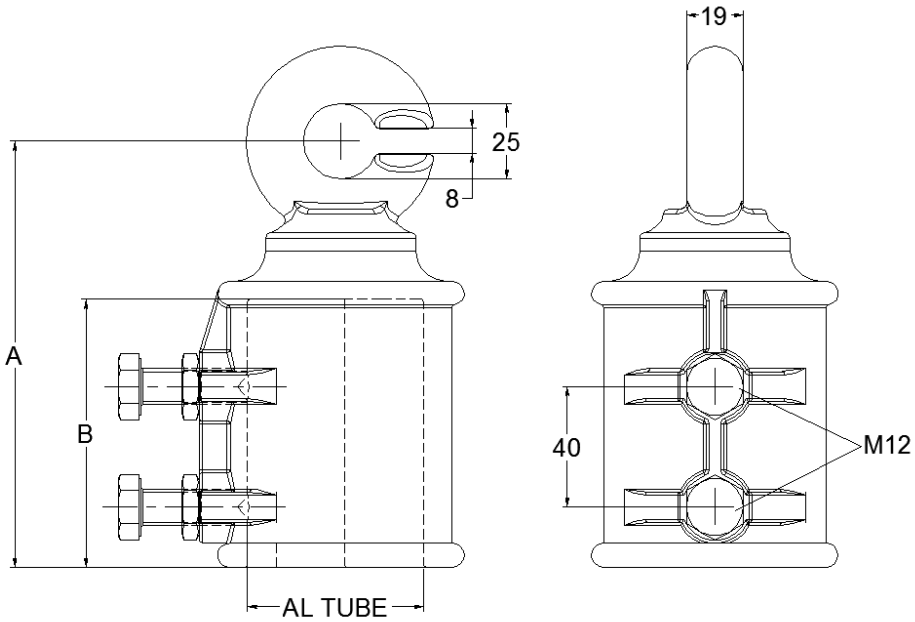
No	ID-code	Diameter tube (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 010 055	**ASM.UTA-55**	55	58	0,58

HOOK END FITTING

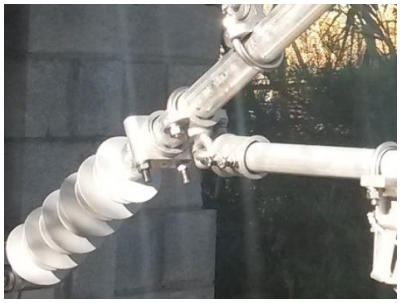
This fitting is used to connect the cantilever tube with the registration tube.

Application:
- End fitting

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-80) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-35)(UNE- EN ISO 3506)



No	ID-code	Diameter tube (mm)	Dimension A (mm)	B (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 011 042	**ASM.UGG-42**	42	108,7	69	45	0,70
234 011 055	**ASM.UGG-55**	55	141,5	89	58	0,77

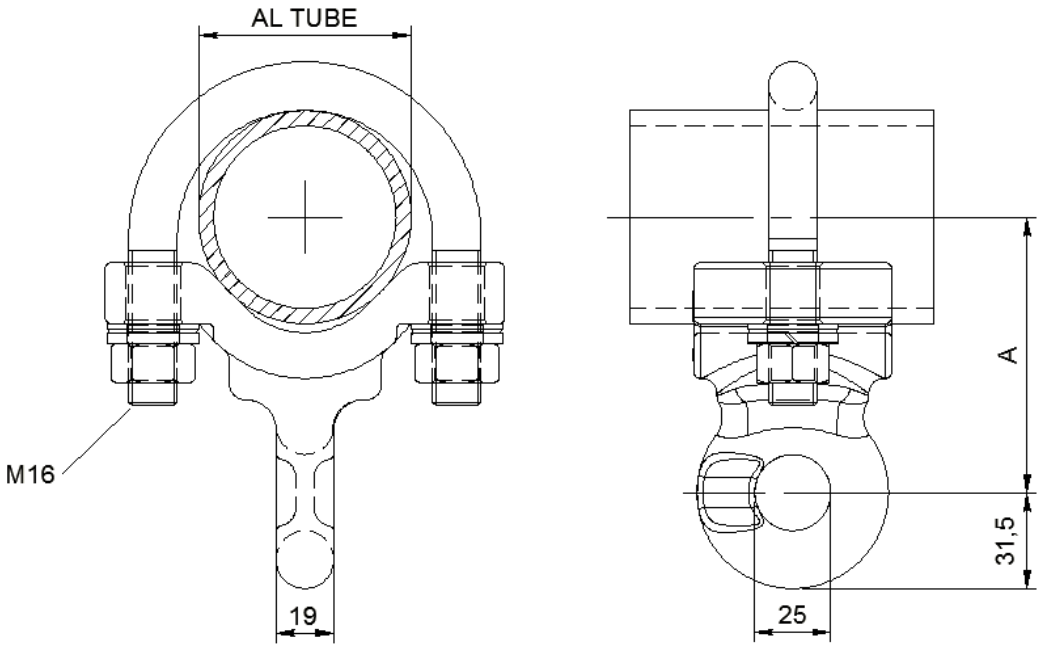


EYE CLAMP

This clevis is used to connect the registration tube with the cantilever tube.

Application:
- Eye clamp

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Nuts: St. Steel (A2-70) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (UNE-EN ISO 3506)



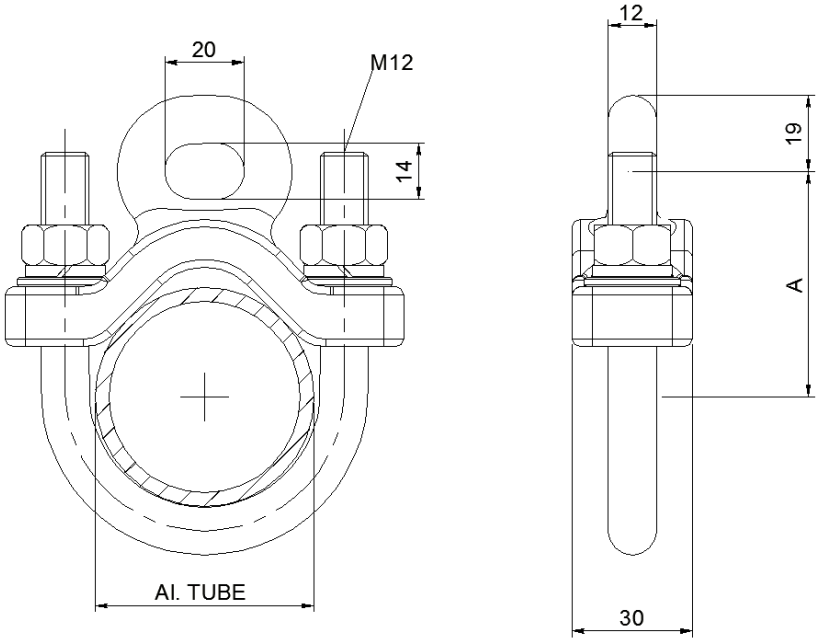
No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Weight (kg)
234 012 055	**ASM.SUA-55**	55	80	58	0,91
234 012 070	**ASM.SUA-70**	70	90	85	0,91

EYE CLAMP FOR WINDSTAY

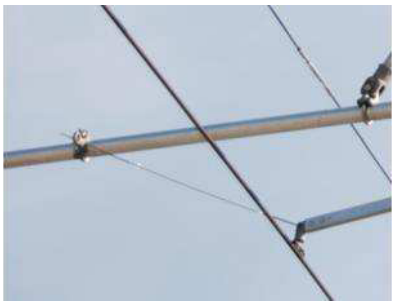
This clamp is used to connect the anti-wind hanger with the registration tube.

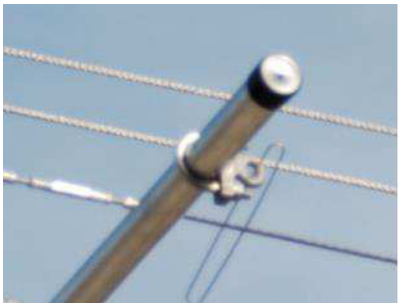
Application:
- Windstay

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Nuts: St. Steel (A2-70) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (UNE-EN ISO 3506)



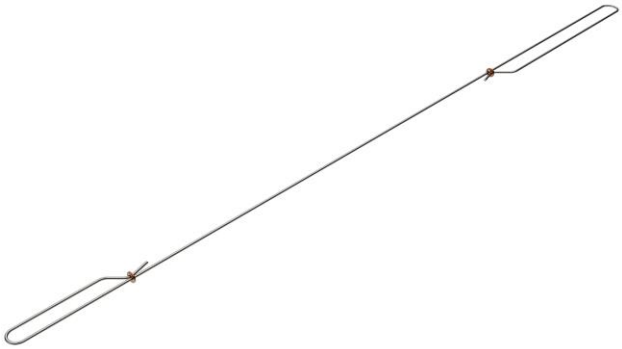
No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 013 042	**ASM.SAG-42**	42	47	45	0,35
234 013 055	**ASM.SAG-55**	55	56	58	0,35





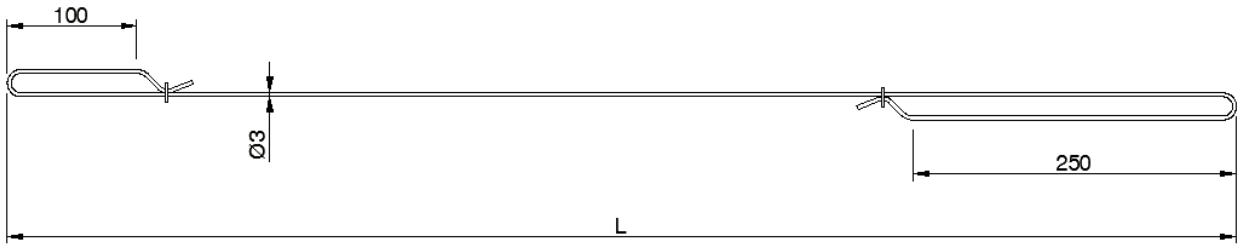
WINDSTAY

This part is used to connect the registration tube with the steady arm as a windstay. Used for cantilevers with forged and casted components.

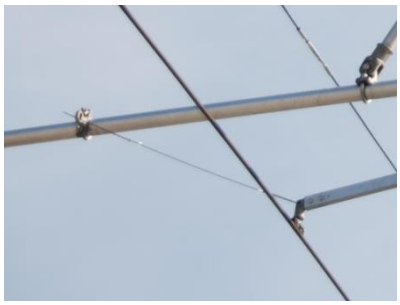


Application:
- Windstay

Material:
- Part: St. Steel
- Washer: St. Steel



No	ID-code	Length (mm)	Weight (kg)
234 014 065	**AV-650**	650	0,046
234 014 095	**AV-950**	950	0,070
234 014 100	**AV-1000**	1000	0,074
234 014 105	**AV-1050**	1050	0,078
234 014 110	**AV-1100**	1100	0,082



STEADY ARM BRACKET

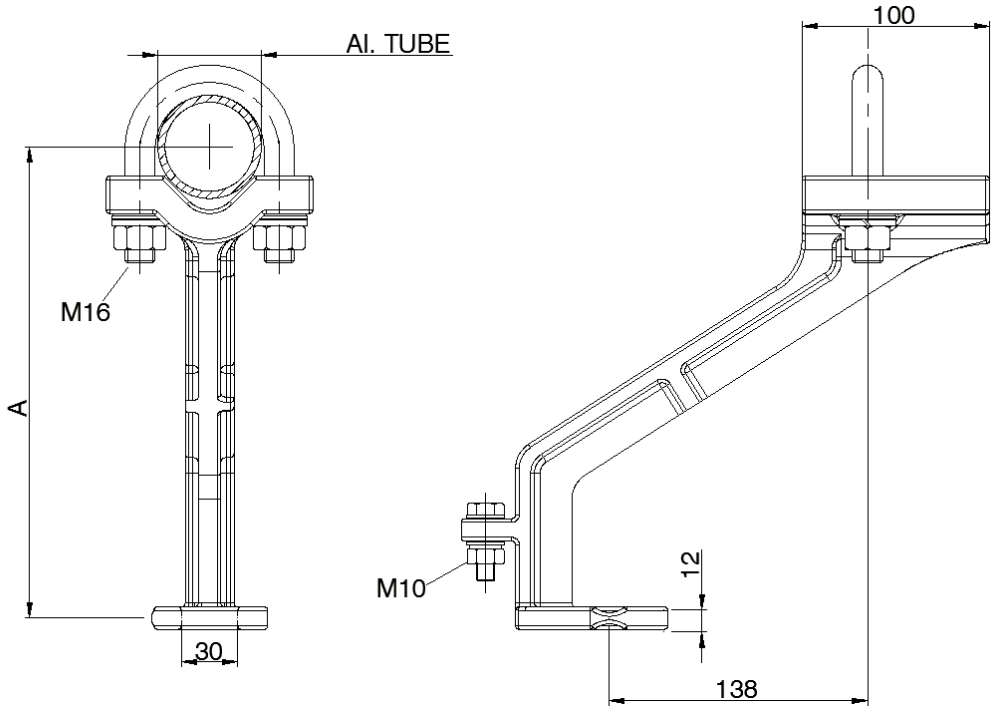
This clamp is used to connect the steady arm with the registration tube.

Application:

- Steady arm support

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)



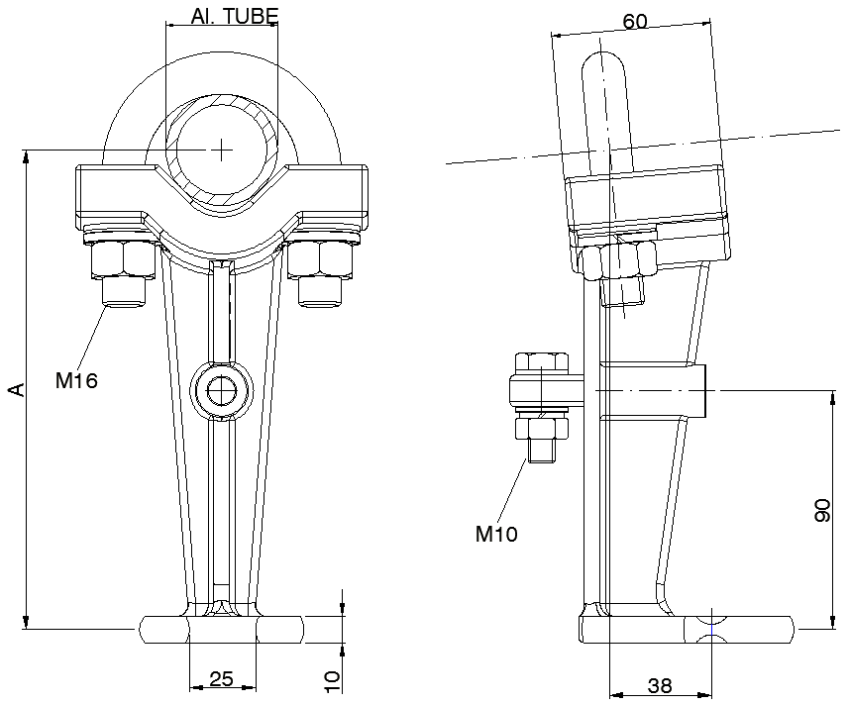
No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Tightening torque M10 (Nm)	Weight (kg)
234 015 042	**ASM.SCB-42**	42	240	58	38	1,68
234 015 055	**ASM.SCB-55**	55	250	85	38	1,68

STEADY ARM BRACKET

This clamp is used to connect the steady arm with the registration tube.

Application:
- Steady arm support

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)



No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Tightening torque M10 (Nm)	Weight (kg)
234 016 042	**ASM.SFB-42**	42	180	58	38	0,77
234 016 055	**ASM.SFB-55**	55	189	85	38	0,77

ADJUSTABLE STEADY ARM BRACKET

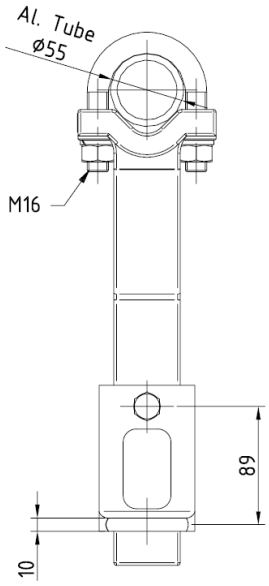
This clamp is used to connect the steady arms with the registration tube.

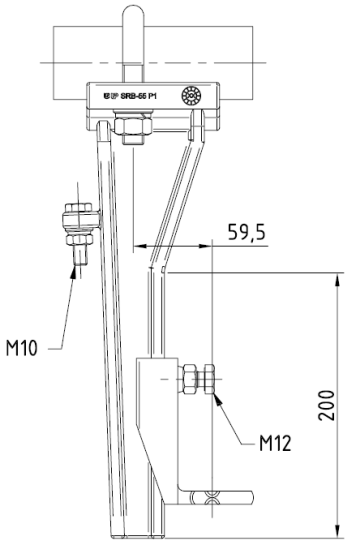
Application:

- Steady arm support

Material:

- Casting parts : AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)





No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Tightening torque M10 (Nm)	Weight (kg)
234 017 042	**ASM.SRB-42**	42	348	58	38	2,87
234 017 055	**ASM.SRB-55**	55	357	85	38	2,87

ADJUSTABLE DOUBLE STEADY ARM BRACKET

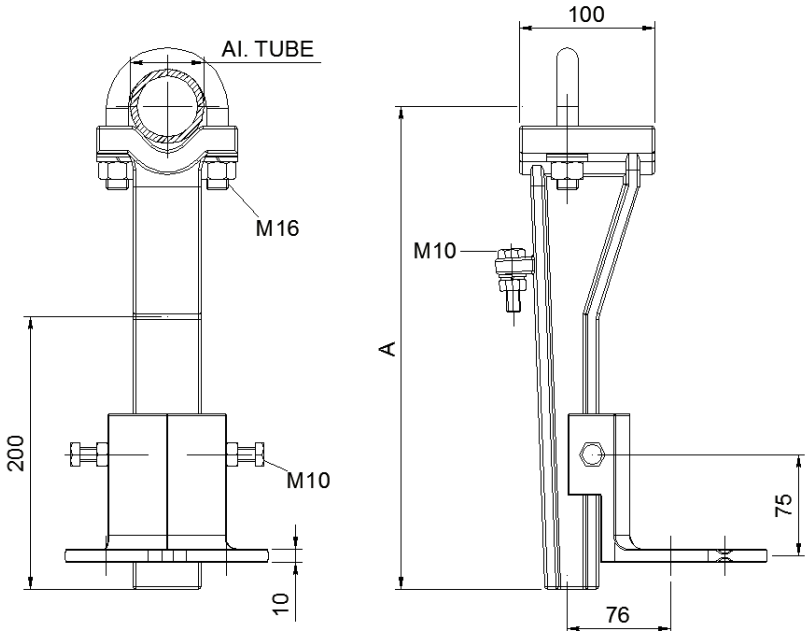
This clamp is used to connect two steady arms with the registration tube.

Application:

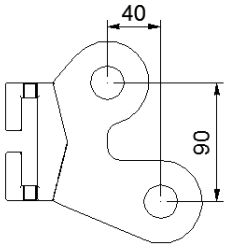
- Double steady arm support

Material:

- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)



Support detail



No	ID-code	Diameter tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Tightening torque M10 (Nm)	Weight (kg)
234 018 042	**ASM.SRD-42**	42	348	58	38	3,023
234 018 055	**ASM.SRD-55**	55	357	85	38	3,023

STEADY ARM, CURVED

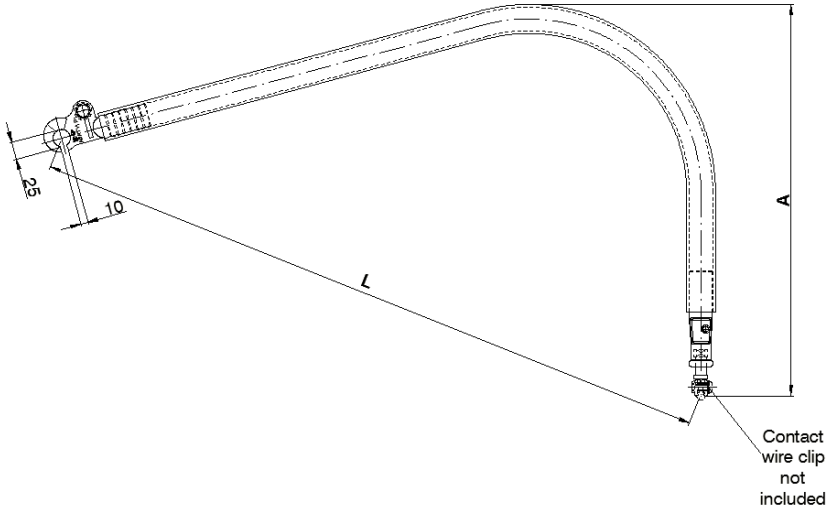
This part is used to connect the cantilever with the contact wire clip.

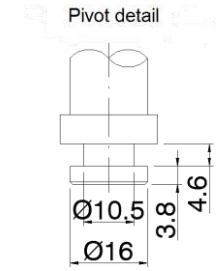
Application:

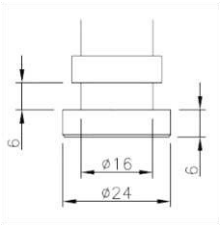
- Steady arm in overlap.

Material:

- Casting parts: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Tubular tube: EN AW-6082 (UNE-EN 573)
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- Pivot: St. Steel (A2) (UNE-EN ISO 3506)







Pivot Ø 24mm optional

No	ID-code	Length L (mm)	A (mm)	Pivot (mm)	Weight (kg)
234 019 100	ABAT-1000C	1000	568	16	1,99
234 019 097	ABAT-1000C V1	968	468	16	1,95

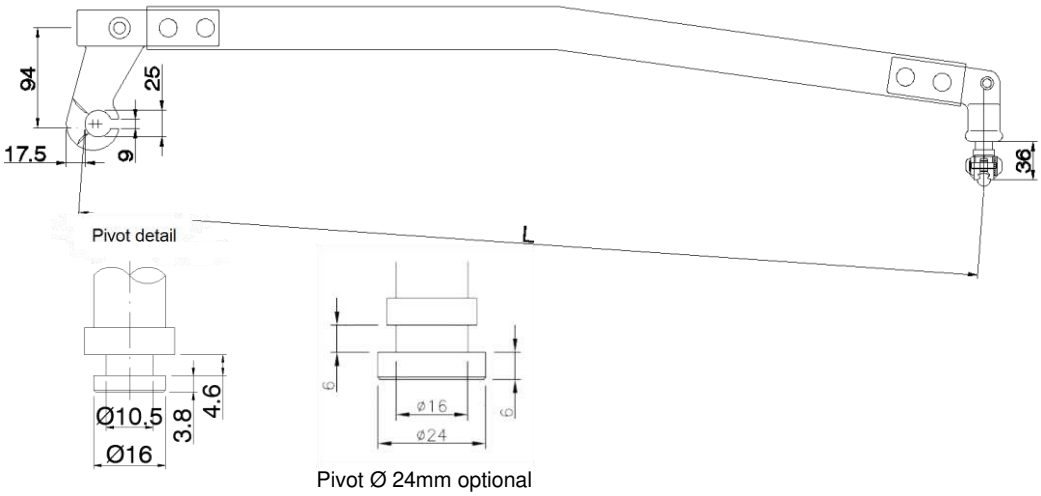
Remarks:
Other length available on request
Screw, nut and washer for earthing connection included (M10)
Contact wire clip supplied separatly

STEADY ARM, ANGLED

This part is used to connect the cantilever with the contact wire clip.

Application:
- Steady arm

Material:
- Casting parts: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Rectangular tube: EN AW-6082 T6 S/UNE-EN 573
- Rivet: EN AW-Al 99,5 S/UNE-EN 573
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- Pivot: St. Steel (A2) (UNE-EN ISO 3506)



Pivot Ø 24mm optional

No	ID-code	Length L (mm)	Pivot (mm)	Weight (kg)
234 020 115	ABAT-1150C	1500	16	1,55

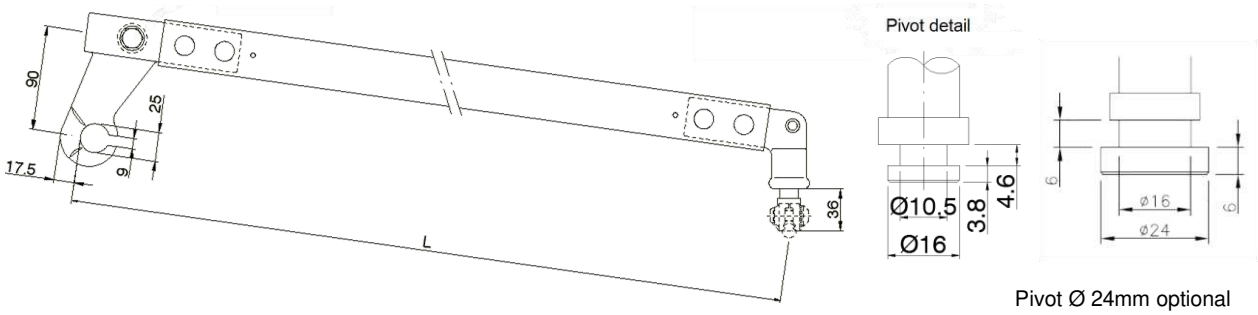
Remarks:
Other length available on request
Screw, nut and washer for earthing connection included (M10)
Contact wire clip supplied separatly

STEADY ARM, STRAIGHT

This part is used to connect the cantilever with the contact wire clip.

Application:
- Steady arm

Material:
- Casting parts: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Rectangular tube: EN AW-6082 T6 S/UNE-EN 573
- Rivet: EN AW-Al 99,5 S/UNE-EN 573
- Screws: St. Steel (A2-70) (UNE-EN ISO 3506)
- Nuts: St. Steel (A2-70) (UNE-EN ISO 3506)
- Washers: St. Steel (A2) (UNE-EN ISO 3506)
- Pivot: St. Steel (A2) (UNE-EN ISO 3506)



Pivot Ø 24mm optional

No	ID-code	Length (mm)	Weight (kg)
234 021 080	ABATC-800	800	1,16
234 021 085	ABATC-850	850	1,18
234 021 087	ABATC-875	875	1,19
234 021 090	ABATC-900	900	1,20
234 021 095	ABATC-950	950	1,22
234 021 100	ABATC-1000	1000	1,25
234 021 105	ABATC-1050	1050	1,28
234 021 110	ABATC-1100	1100	1,30
234 021 115	ABATC-1150V	1150	1,33
234 021 120	ABATC-1200	1200	1,36
234 021 125	ABATC-1250	1250	1,38
234 021 130	ABATC-1300	1300	1,40
234 021 138	ABATC-1385	1385	1,43
234 021 140	ABATC-1400	1400	1,44

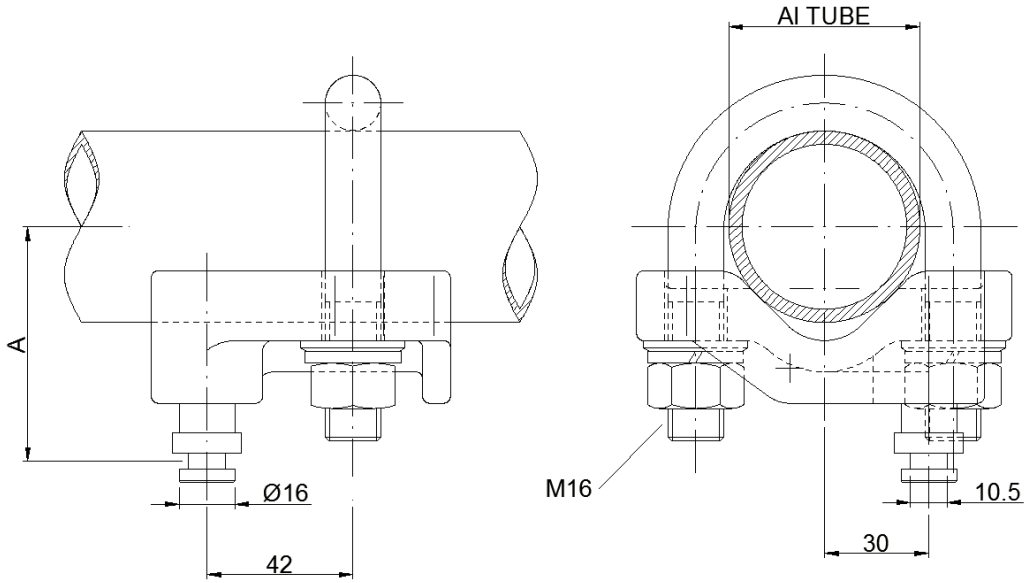
Contact wire clip supplied separatly
Screw, nut and washer for earthing connection included (M10)

CONTACT WIRE CLIP HOLDER CLAMP

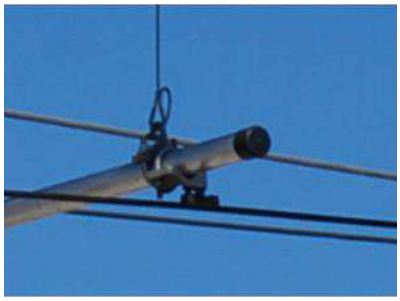
This clamp is used for out of running of the contact wire clip.

Application:
- Clamp Wire holder
- Overlap

Material:
- Casting part: AlSi7Mg 0,6 T6 (UNE-EN 1706)
- Nuts: St. steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)
- U-bolt: St. Steel (A2-70) (EN ISO 3506)
- Pivot: St. Steel (A2) (UNE-EN ISO 3506

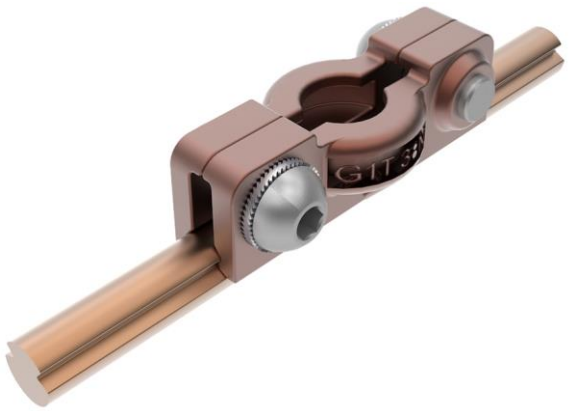


No	ID-code	Diameter Al tube (mm)	Dimension A (mm)	Tightening torque M16 (Nm)	Weight (kg)
234 027 042	**ASM.SGH-42**	42	67	58	0,83
234 027 055	**ASM.SGH-55**	55	58	85	0,83



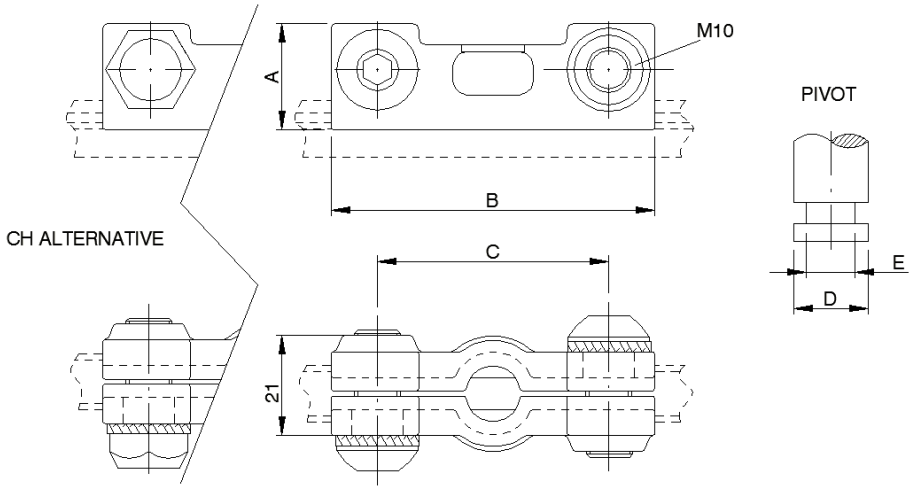
CONTACT WIRE CLIP

This clip is used to connect the steady arm or clamp holder with the contact wire so that it can rotate. Used for cantilevers with forged and casted components.



Application:
- Contact wire
- Steady Arm
- Clamp holder

Material:
- Forged parts: CuNi2Si (UNE-EN 12165)
- Washer: St. Steel (A2) (UNE- EN ISO 3506)
- Screw: St. Steel (A2-80) (UNE-EN ISO 3506-1)



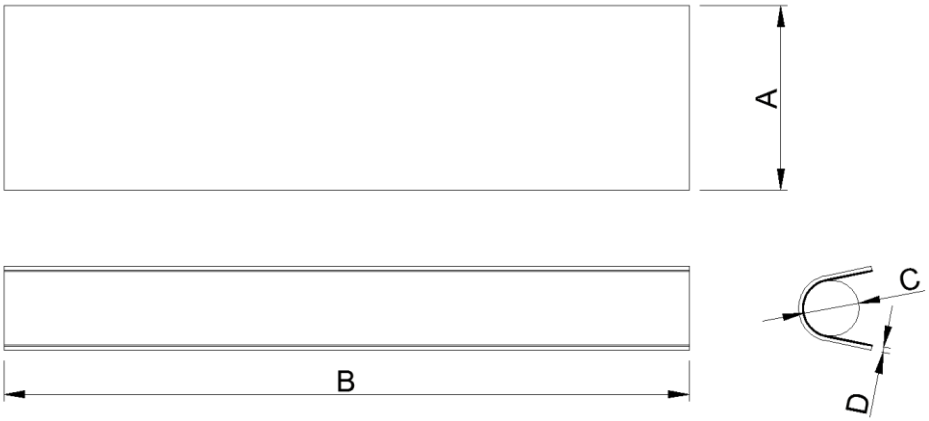
No	ID-code	Screw	Contact wire	Dimensions			Pivot Dimensions		Tightening Torque	Weight
				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	M10 (Nm)	(kg)
304 741 001	**G1T**	Allen	AC/BC 80-150	23.5	75	53	23.7	15.7	38	0,21
304 742 001	**G1TA**	Allen	AC/BC 80-150	23	70	50	16	10.5	38	0,18
304 741 002	**G1T CH**	Hexagonal	AC/BC 80-150	23.5	75	53	23.7	15.7	38	0,22
304 742 002	**G1TA CH**	Hexagonal	AC/BC 80-150	23	70	50	16	10.5	38	0,19

BIMETALLIC SLEEVE

This sleeve provides bimetallic connection between the messenger wire and the catenary wire support clamp. Used for cantilevers with forged and casted components.

Application:
- Bimetallic connection

Material:
- CUPAL



No	ID-code	Dimension				Compression tool	Weight
		A (mm)	B (mm)	C (mm)	D (mm)		(kg)
234 023 090	**BIMET 9**	30,5	130	9	1	HG BIMET	0,016
234 023 105	**BIMET 10,5**	35	130	10,5	1	HG BIMET 12	0,018
234 023 130	**000.025.023.V4**	43	130	13	1	HG BIMET 15	0,025
234 023 145	**BIMET 120**	47,5	130	14,5	1	HG BIMET 17	0,026
234 023 165	**BIMET 153**	52	130	16,5	1	HG BIMET 18,5	0,028

Remark: For suitable compression tools, please contact Pfisterer at: pds.ets.support@pfisterer.com

CANTILEVER TUBES

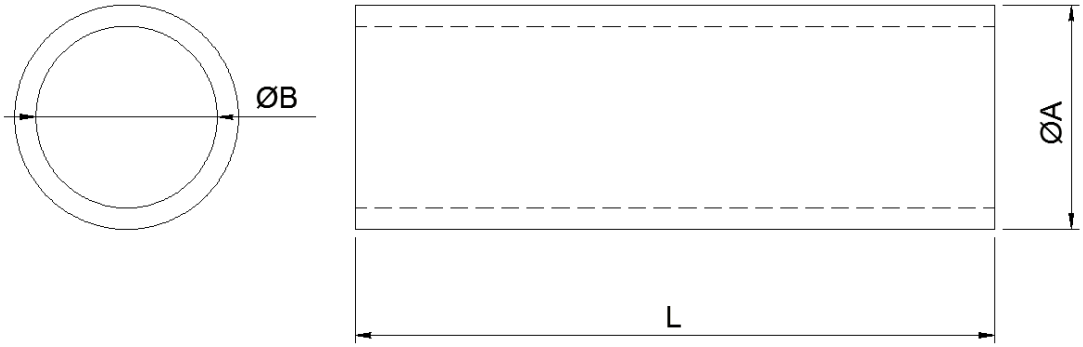
These tubes are used for aluminium cantilever with forged and casted components.

Application:

- Top tube
- Cantilever tube
- Registration tube
- Support tube

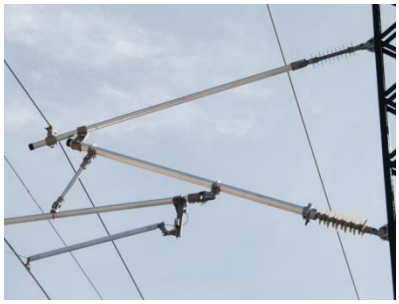
Material:

- Tube: EN AW-6082 T6 or EN AW-6063 T6



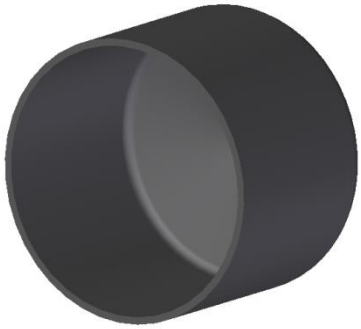
No	ID-code	Exterior diameter A (mm)	Internal diameter B (mm)
234 028 042	TA-42-4-X *)	42	34
234 028 055	TA-55-6-X *)	55	43
234 028 070	TA-70-6-X *)	70	58

**) X in metres*



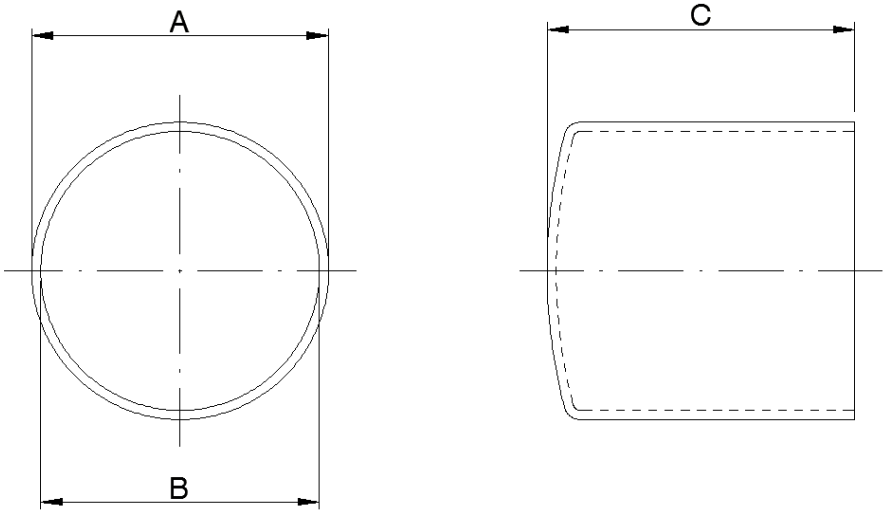
TUBE CAP

This cap is used for cantilever tubes for cantilevers with forged and casted components.

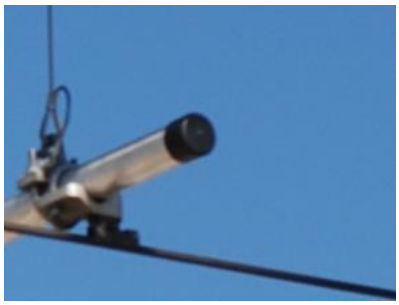


Application:
- End cap for aluminium tubes

Material:
- Black PVC



No	ID-code	Diameter tube	Dimensions		
			A	B	C
		(mm)	(mm)	(mm)	(mm)
234 024 042	**TP-42**	42	42	41,8	46
234 024 055	**TP-55**	55	55	51,6	57
234 024 070	**TP-70**	70	70	67,8	57

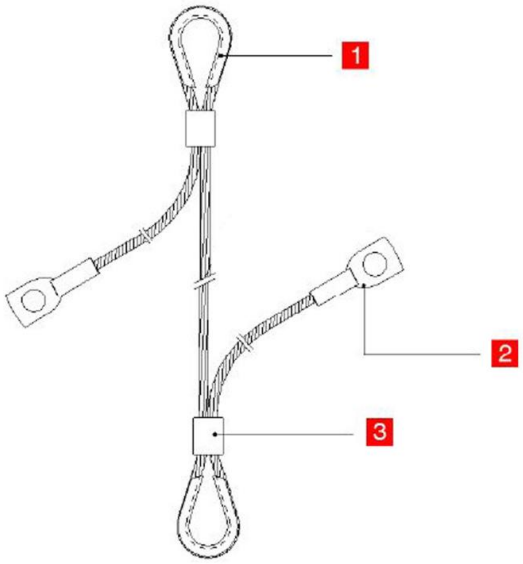


CANTILEVER DROPPER BUCLE 5.12 INOX

This dropper is used to connect the top tube with the registration tube. Used for cantilevers with forged and casted components.

Application:
- Cantilever dropper
- Registration arm dropper

Material:
- Compression sleeve: St. Steel (A2) (UNE- EN ISO 3506)
- Cable lug: AISI 316 (UNE-EN 10088)
- Thimble: St. Steel (A2) (UNE-EN ISO 3506)
- Cable: St. Steel 1.4401 (UNE-EN 10088)



No	ID-code	Description	Diameter Application (mm)	Compression die	Qty	
234 025 012		Assembly				
-	**625.012.81**	Thimble	5	-	2	1
-	**TPA 05 INOX 12**	Cable lug	5	HG 16 PO 11	2	2
-	**OVAL 5 INOX**	Compression sleeve	5	HG 16 PO 11	2	3

Delivery in individual parts, hanger wire is not included.

Remark: For suitable compression tools, please contact Pfisterer at: pds.ets.support@pfisterer.com

BONDING CONNECTION

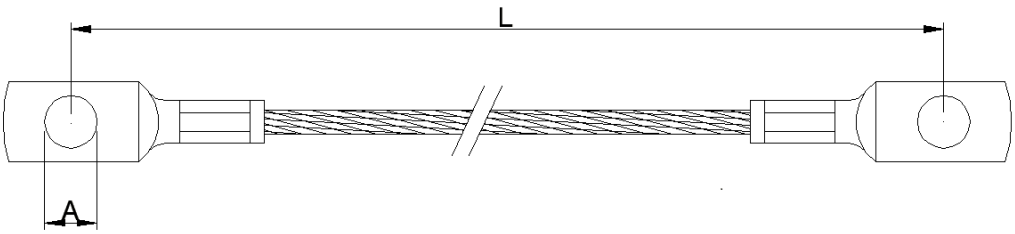
This connection provides a bonding connection. Used for cantilevers with forged and casted components.

Application:

- Steady arm bonding connection

Material:

- Cable lug: Cu-ETP (Tinned) (UNE-EN 12165)
- Cable: Cu-ETP (Tinned) (UNE-EN 12165)



No	ID-code	Dimensions A (mm)	L (mm)
234 026 350	CONJUNTO TC 16.10.T	10,5	350

Electrical Screw and Compression Connectors

BIMETALLIC CONNECTION CLAMP

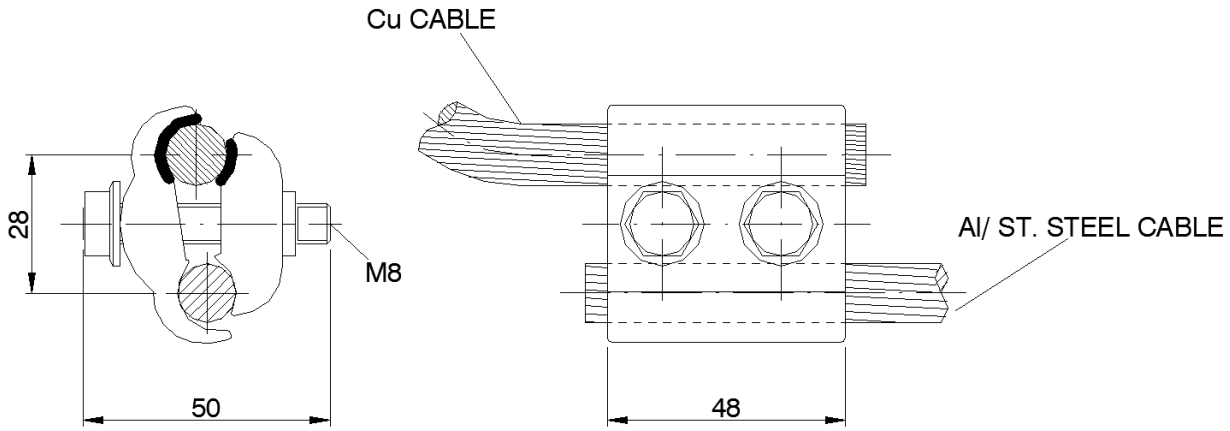
This clamp is used to connect Aluminum-Steel cables with copper cables or the horn gap discharger with the messenger wire.

Application:

- Electrical connections
- Earthing connections
- Bimetallic Al/Cu

Material:

- Casting parts: Aluminium AlSiMg0,5Mn (UNE-EN 573)
- Insert: Cu-ETP
- Screws: St. Steel (A2) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



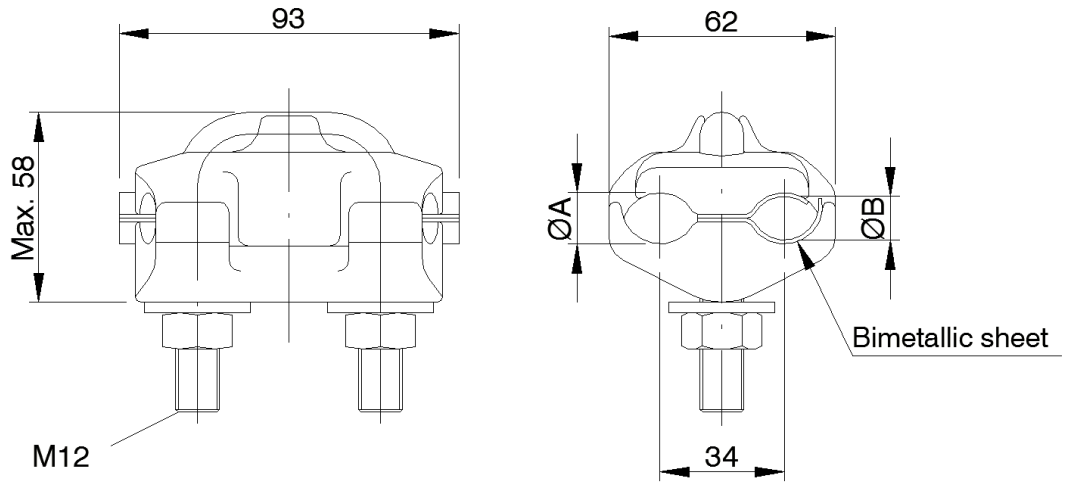
No.	Al Cable diameter (mm)	Cu cable diameter (mm)	Tightening torque M10 (Nm)
330 712 001	6,3-15,7	3,5-12,5	38

BIMETALLIC CONNECTION CLAMP

This clamp is used for fixed point and to connect aluminium cables with copper cables.

Application:
- Electrical connection
- Bimetallic connection Al/Cu

Material:
- Casting parts: EN AW-6351 (UNE-EN 573)
- Nuts: St. Steel (A2) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)
- U-bolt: St. Steel (A2) (EN ISO 3506)
- Bimetallic sheet: Cupal



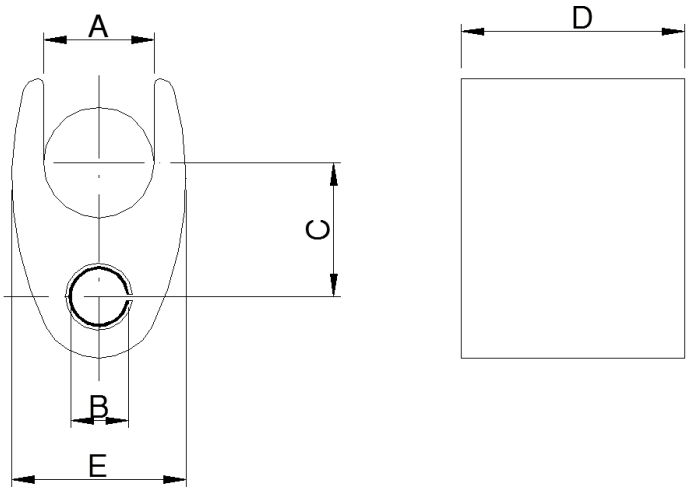
No.	Al cable section	Cu cable section	Cables diameter		Tightening torque
			A	B	M12
	(mm²)	(mm²)	(mm)	(mm)	(Nm)
332 235 235	95-280	70-185	12,5 – 21,8	10,5-17,5	75

BIMETALLIC COMPRESSION CLAMP

This clamp is used to connect aluminium cables with copper cables.

Application:
- Electrical connections
- Bimetallic connections Al/Cu

Material:
- Profile: Aluminium alloy (EN-AW-Al 99,55) (UNE-EN 573)
- Bimetallic sleeve: CUPAL

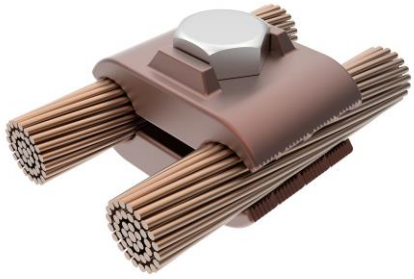


No.	ID-code	Copper cable cross section (mm²)	Aluminium cable cross section (mm²)	Dimensions A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Compression die
234 160 110	PB-50.110	50	LA-110	14,2	10	21	40	31	302.131.131 (DB3)
234 160 180	PB-50.180	50	LA-180	19,8	10	24	40	31	305 730 001
234 160 280	PB-50.280	50	LA-280	22,5	10	25,7	40	34	234 562 280 (ID-Code: M PB-95F.280)
234 161 110	PB-70.110	65-70	LA-110	14,2	12	21	40	31	302.131.131 DB3
234 162 180	PB-95F.180	95F	LA-180	19,8	16	24	40	31	305 730 001
234 162 280	PB-95F.280	95F	LA-280	22,5	16	25,7	40	34	234 562 280 (ID-Code: M PB-95F.280)
234 163 280	PB-120F.280	120F	LA-280	22,5	16	25,7	40	34	234 562 280 (ID-Code: M PB-95F.280)

Suitable compression head: e.g. Size III, item no. 305 678 009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305 853 012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305 799 002

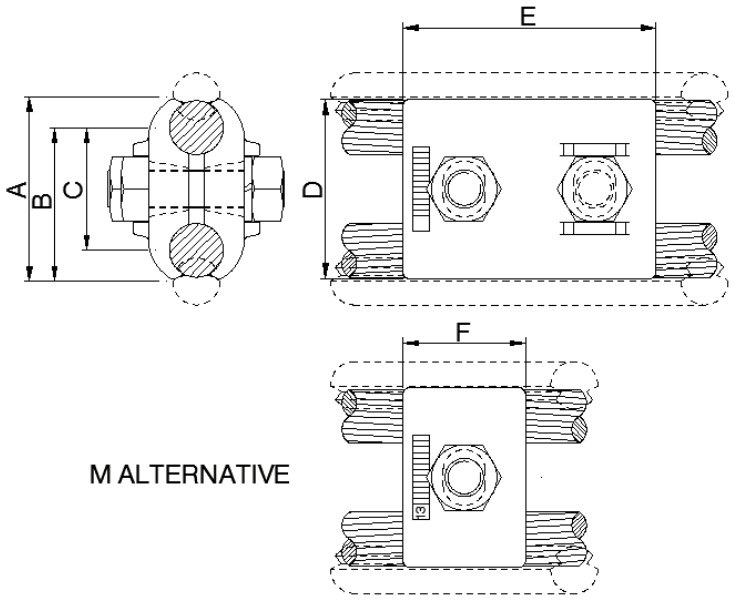
BOLTED ELECTRICAL CONNECTION CLAMP

This clamp is used to provide a full current connection.



Application:
- Jumpers
- Electrical connections

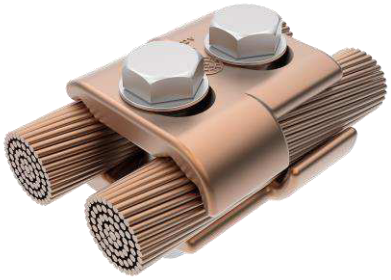
Material:
- Forged parts: See table below
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)



No.	ID-code	Material	Conductor	Branch cable cross section	Tightening Torque		Dimensions					
					M10	M12	A	B	C	D	E	F
			(mm²)	(mm²)	(Nm)	(Nm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
234 110 000	HC.106.VM	Brass	65-120 or AC/BC 80-150	50F-95F	38	-	48	40	32	47	66	-
234 110 001	HC.106.VM.M	Brass	65-120 or AC/BC 80-150	50F-95F	38	-	48	40	32	47	-	32
234 110 002	HC.106VM.C	CuNi2Si	65-120 or AC/BC 80-150	50F-95F	38	-	48	40	32	47	66	-
234 110 003	HC.106.VM.M.C	CuNi2Si	65-120 or AC/BC 80-150	50F-95F	38	-	48	40	32	47	-	32
234 110 004	HC.107.1.VM	Brass	95-150 or AC/BC 80-150	95F-120F	-	65	52	42	33	51	-	37
234 110 005	HC.107.VM	Brass	95-150 or AC/BC 80-150	95F-120F	-	65	52	42	33	53	75	-
234 110 006	HC.107.1.VM.C	CuNi2Si	95-150 or AC/BC 80-150	95F-120F	-	65	52	42	33	51	-	37
234 110 007	HC.107.VM.C	CuNi2Si	95-150 or AC/BC 80-150	95F-120F	-	65	52	42	33	53	75	-

BOLTED CONNECTION CLAMP

This clamp is used to connect two copper cables.

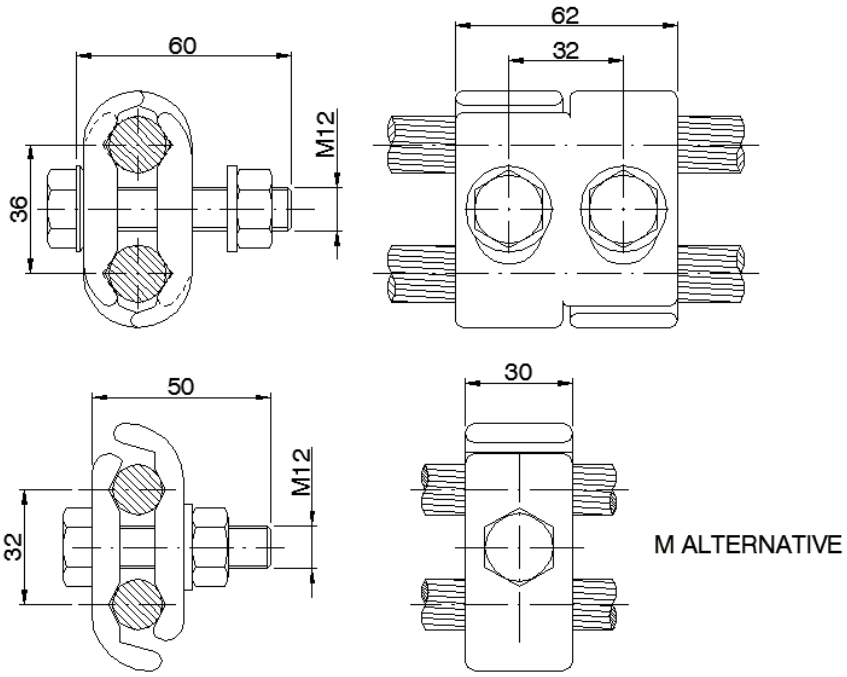


Application:

- Electric bridge
- Electrical connections

Material:

- Forged parts: See table below
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)



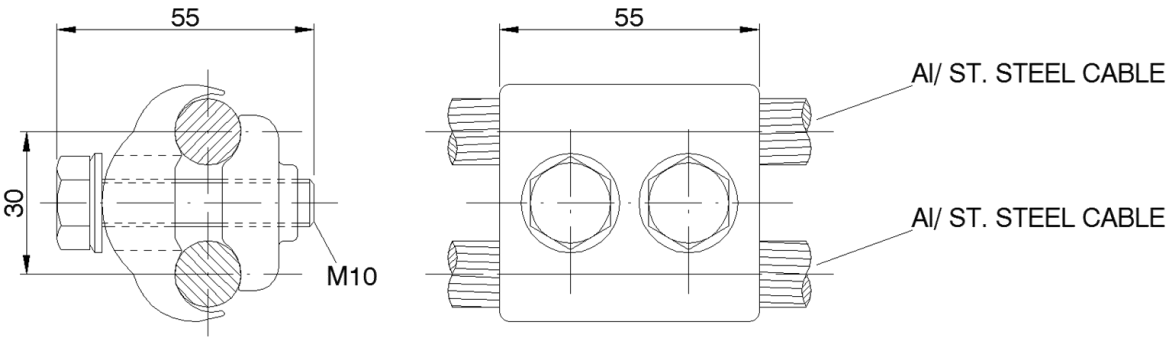
No.	ID-code	Material	Main cable cross section (mm²)	Branch cable cross section (mm²)	Tightening torque (Nm)
234 111 000	**HLT 10-22 V**	Brass	35-300	35-300	65
234 111 001	**HLT 10-22 VM**	Brass	35-150	35-150	65
234 111 002	**HLT 10-22 V.C**	CuNi2Si	35-300	35-300	65
234 111 003	**HLT 10-22 VM.C**	CuNi2Si	35-150	35-150	65

BOLTED CONNECTION CLAMP, Al

This clamp is used to connect two aluminium cables or the horn gap discharger with earthing cable.

Application:
- Electrical connections
- Earthing connections

Material:
- Casting parts: Aluminium AlSiMg0,5Mn (UNE-EN 573)
- Screws: St. Steel (A2) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



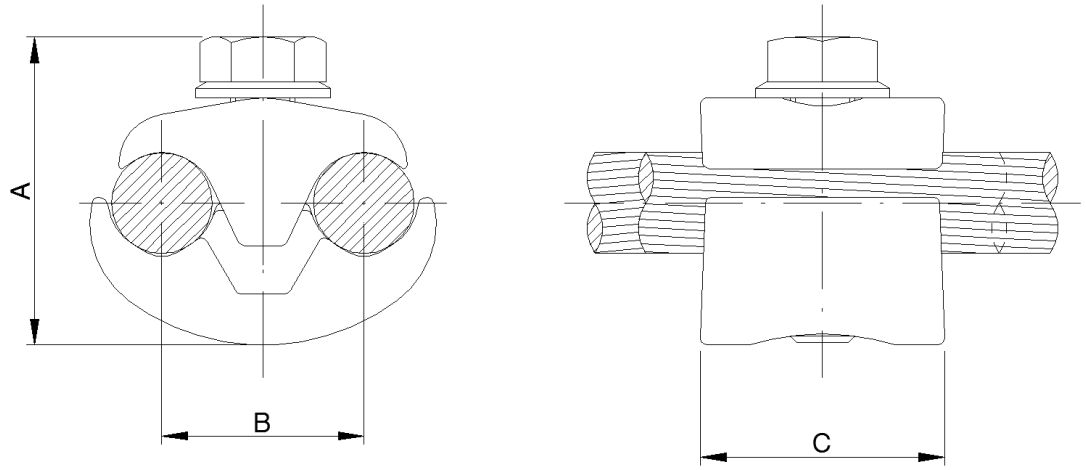
No.	ID-code	Cables cross section	Cables Diameters	Tightening torque M10
		(mm^2)	(mm)	(Nm)
330 869 869	**-**	25-150	6,3-15,7	38

BOLTED CONNECTION CLAMP, Al

This clamp is used to connect two aluminium cables.

Application:
- Electrical connections

Material:
- Casting parts: AC 47100 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)
- Nut: St. Steel (A2-70) (EN ISO 3506)



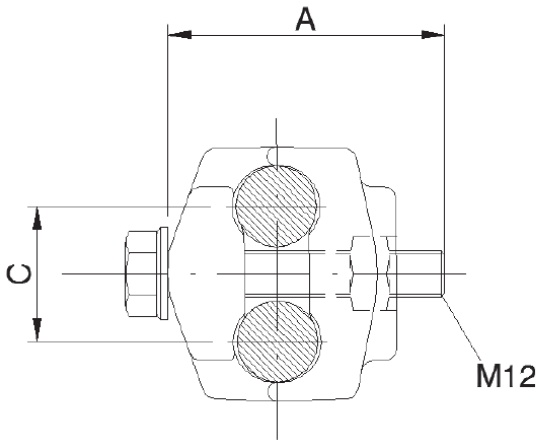
No.	ID-code	Main cable cross section	Branch cable cross section	Dimensions			Bolts	Tightening torque
				A	B	C		
		(mm^2)	(mm^2)	(mm)	(mm)	(mm)		(Nm)
234 121 020	**EGT 20**	25-70	25-56	31	20,5	30	M8	20
234 121 021	**EGT 21**	25-95	95-150	40	31,5	38	M10	30
234 121 022	**EGT 22**	70-150	70-150	48	31,5	38	M10	30
234 121 024	**EGT 24**	95-240	50-240	58	36	45	M12	60

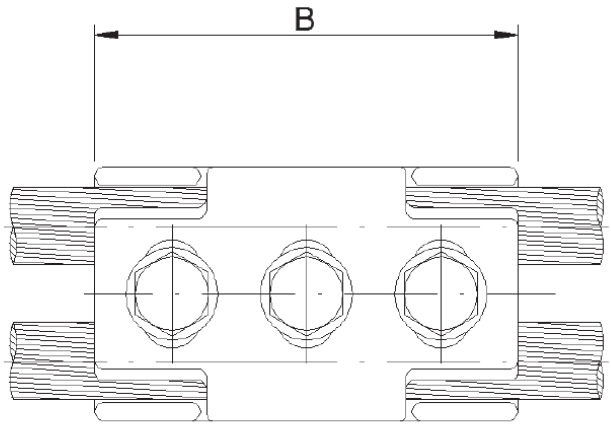
BOLTED CONNECTION CLAMP

This clamp is used to connect two aluminium cables.

Application:
- Electrical connections

Material:
- Casting parts: Aluminium alloy (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)
- Nut: St. Steel (A2-70) (EN ISO 3506)





No.	ID-code	Material	Bolts	Main cable cross section	Branch cable cross section	Dimensions			Tightening torque
						A	B	C	M12
				(mm^2)	(mm^2)	(mm)	(mm)	(mm)	(Nm)
234 131 001	**PTA 25.56**	AC 47100	2	25-56	25-56	37,5	80	25	38*
234 131 002	**PTA 35.200**	AC 47100	3	35-200	35-200	72	110	35	65
234 131 003	**PTA 35.300**	AC 42200	3	35-300	35-300	72	110	40	65
234 131 004	**PTA 50.150**	AC 47100	2	50-150	50-150	47	80	34	65
234 131 005	**PTA 193.377**	AC 42200	3	193-377	193-377	85	150	46	65

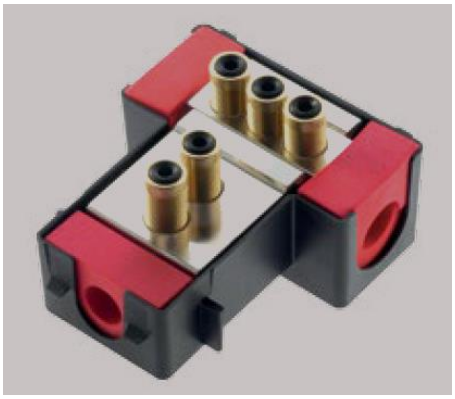
**) M10 instead of M12*

RSC-T TAP-OFF EARTHING CONNECTOR

For insulated power cables (IPC)

Using insulation piercing technology, main and tap cables are installed without having to strip the insulation. The compression of grounding and tap cables that was previously used, as well as the restoration of the insulation with a heatshrink sleeve, is no longer necessary.The plastic enclosure with its seals guarantees electric shock protection in accordance with IP1X.

The RSC-T ground tap connector comprises several parts and can be mounted directly onto an existing system. The ground cable is laid in place without any preparatory work and enclosed by the connector using a locking bolt. The SICON piercing bolts penetrate the insulation to establish safe and reliable contact with the ground conductor. Any possible damage to the metallic conductor is avoided by means of the proven SICON technology. The patented shear bolt has a stepless construction and utilizes the full load capacity of the thread at all times. The friction disc at the end of the bolt prevents the metal conductor from being damaged. For the RSC-T, the proven SICON bolt has been further developed and equipped with a friction disc which features insulationpiercing contact geometry. This establishes a reliable contact with optimum contact force. As usual, the SICON bolt is installed using a standard tool and gently shears off on successful installation.



Application:

- Earthing connections without stripping insulated cables.
- NR PADS approval number PA05/06096

Advantages:

- Easy assembly without stripping the cable insulation
- Reduced installation time
- No special tool required
- No cutting of main conductor necessary
- Tested according IEC 61284:1997-09 (Class B)
- Cover protects against accidental contact, dust and moisture
- Consistent and reliable connection due to shear bolt technology

No.	Product description	Main Conductor		Branch Conductor	
		External Diameter (mm)	Cross Section (mm^2)	External Diameter (mm)	Cross Section (mm^2)
332 846 001	RSC-T tap-off connector	19-21,5	240	15-16,5	120 - 150

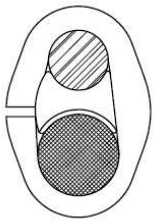
COMPRESSION TERMINALS (C-Clamps)

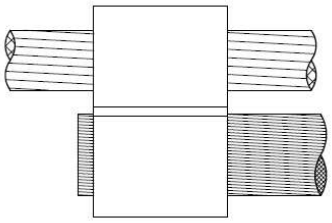
For wires up to 150 mm² cross section:

The compression branch terminals for current carrying cable connections of Cu or Bz wires with the same or different cross sections. They are installed hydraulically with compression tools.

Application:
- Jumper
- Electrical connection Cu/Cu, Cu/Bz, Bz/Bz

Material:
- Clamp parts: Cu-ETP (EN 12165)





No.	Main cable cross section (mm²)	Branch cable cross section (mm²)	Appropriate die for compressing	Appropriate die for removing	Remark
302 776 354	50	35F / 50	302 131 131	302 246 246	Ebs 10.21.14 – d
302 776 355	50	95F / 120	302 131 131	302 246 246	Ebs 10.21.14 – c
302 776 776	50	70F / 95	302 131 131	302 246 246	Ebs 10.21.14 – e
302 776 909	70	70F / 95	302 131 131	302 246 246	Ebs 10.21.14 – f
302 777 777	50	120F	302 131 131	302 246 246	Ebs 10.21.14 – g
302 827 827	150	50	305 730 001	305 729 001	
303 028 028	120F	70F / 95	302 131 131	302 246 246	Ebs 10.21.14 – i
303 120 120	120	120F / 150	305 730 001	305 729 001	Ebs 10.21.14 – n
303 132 132	150	120F / 150	305 730 001	305 729 001	
303 134 001	50	120F / 150	302 131 131	302 246 246	
303 398 397	95	95	305 730 001	305 729 001	
303 404 404	95 / 70F	50/40 Staku	305 730 001	305 729 001	ÖBB, SBB
303 405 405	95 / 92 Staku	95 / 92 Staku	305 730 001	305 729 001	ÖBB, SBB
304 331 331	150	95 / 92 Staku	305 730 001	305 729 001	
304 594 840	50 / 70 Staku	25F / 35	305 730 001	305 729 001	
304 800 003	70	95F / 120	302 131 131	302 246 246	Ebs 10.21.14 – l
304 800 004	70	70	302 131 131	302 246 246	Ebs 10.21.14 – m
304 800 438	70F / 95	70F / 95	302 131 131	302 246 246	Ebs 10.21.14 – b
304 800 800	70	35F / 50	302 131 131	302 246 246	Ebs 10.21.14 – k
304 800 906	95F / 120	95F / 120	302 131 131	302 246 246	Ebs 10.21.14 – a
304 800 910	70F / 95	95F / 120	302 131 131	302 246 246	Ebs 10.21.14 – h
304 993 135	50	120F	305 730 001	305 729 001	
304 993 139	Cut 70 / 50	95F / 120	305 730 001	305 729 001	

Suitable compression head: e.g. Size III, item no. 305.678.009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

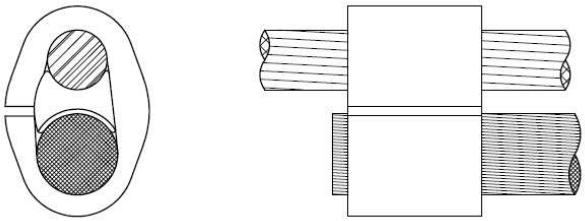
COMPRESSION TERMINALS (C-Clamps)

For wires over 150 mm² cross section:

The compression branch terminals for current carrying cable connections of Cu or Bz wires with the same or different cross sections. They are installed hydraulically with compression tools.

Application:
- Jumper
- Electrical connection Cu/Cu, Cu/Bz, Bz/Bz

Material:
- Clamp parts: Cu-ETP (EN 12165)

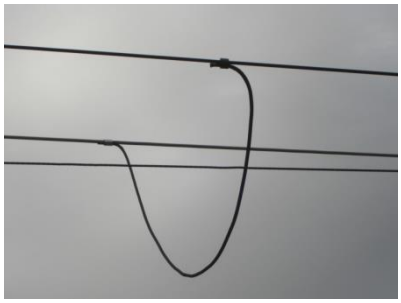


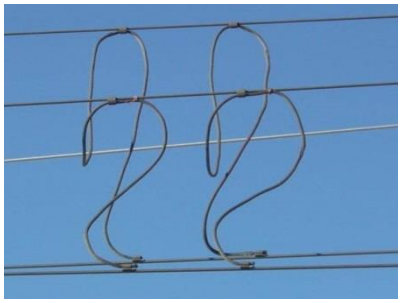
Compression terminals for wires over 150 mm² cross section:

No.	ID-Code	Main cable cross section (mm²)	Branch cable cross section (mm²)	Appropriate die for compressing	Appropriate die for removing
303 300 001	**GC-95F-225**	225	95F	305 730 001	305 729 001
303 300 002	**GC-125F-153**	153	125F	305 730 001	305 729 001
303 300 003	**GC-125F-225**	225	125F	305 730 001	305 729 001
303 300 004	**GC-100-225**	225	100	305 730 001	305 729 001
303 300 005	**GC-150-225**	225	150	305 730 001	305 729 001
303 300 006	**303.225.95**	225	95	305 730 001	305 729 001

Suitable compression head: e.g. Size III, item no. 305.678.009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

Remark: Compression terminals with other wire configurations available on request



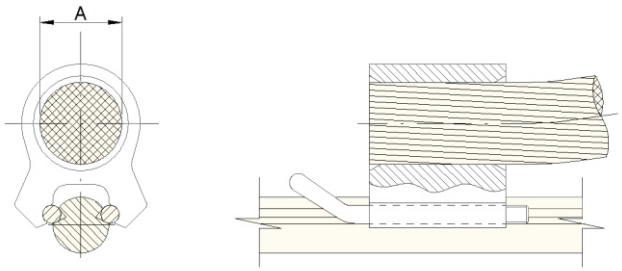


COMPRESSION FEEDER TERMINALS (E-Clamps)

The compression feeder terminals are used to feed power to the contact wire. Since the feeder terminals must not only provide good electrical contact but also provide a secure mechanical connection, they are mounted and compressed together with a bronze clip between the contact wire and the feeder terminal

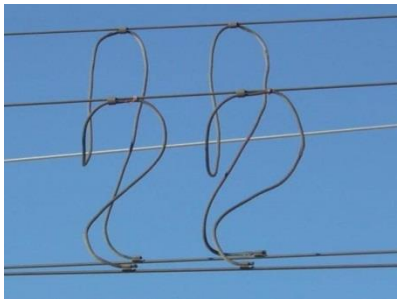
Application:
- Jumper
- Electrical feeder connection

Material:
- Clamp part: Cu-ETP (EN 12165)
- Clip: Bz



No.	ID-code	Contact Wire (mm²)	Branch cable cross section (mm²)	Comp. force (kN)	Dimension "A" (mm)	Compression die	Removing die	Remark
302 381 003		AC 80-120	70F	240	11,5	302 131 131	302 246 246	
302 381 380		AC 80-120	35F	240	9,6	302 131 131	302 246 246	Ebs 10.21.11-c
302 381 381		AC 80-120	95F	240	15,5	302 131 131	302 246 246	Ebs 10.21.11-a
302 381 698		AC 80-120	70F	240	11,5	302 131 131	302 246 246	Ebs 10.21.11-b
303 802 802		BC 107	95	240	13,5	305 802 001	305 803 001	SBB
303 802 325		BC 150	95	240	13,5	305 802 001	305 803 001	SBB
303 802 330		BC 107	150	240	16,5	305 802 001	305 803 001	SBB
303 802 329		BC 150	150	240	16,5	305 802 001	305 803 001	SBB
304 202 006		BC 80-100	95F	240	14,4	305 802 001	305 803 001	
304 839 001		BC 80-100	95F/120	240	15,0	305 802 001	305 803 001	
304 839 839		BC 80-100	120F	240	17,5	305 802 001	305 803 001	
303 305 001	**GC-95F-HC**	BC-107-150	95F	240	15,0	305 802 001	305 803 001	
303 305 002	**GC-120F-HC**	BC-107-150	120F	240	17,0	305 802 001	305 803 001	
303 305 003	**GC-150F-HC**	BC-107-150	150F	240	18,0	305 802 001	305 803 001	

Suitable compression head: e.g. Size III, item no. 305.678.009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002



Clamps

WEDGE-SHAPED END TERMINAL

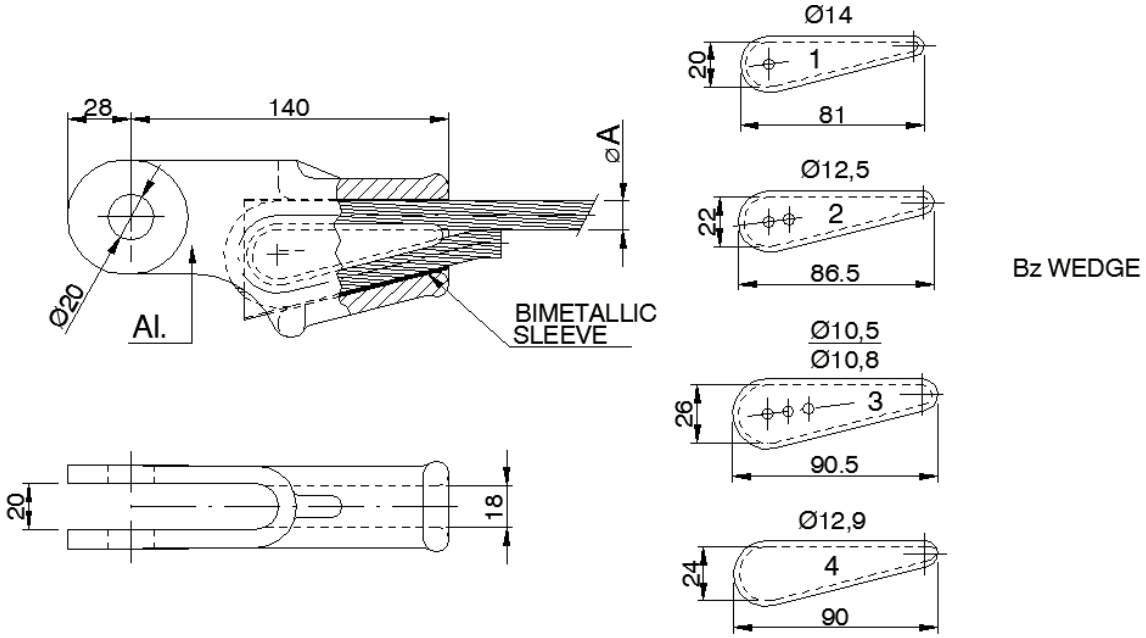
This part is used to anchor the messenger wire and contact wire.

Application:

- Contact wire anchoring clamp
- Messenger wire anchoring clamp

Material:

- Casting part: Aluminium EN AC-43000 (Al2560-T6) (UNE-EN 1706 CC491 K-GS S/UNE-EN 1982)
- Wedge: Bronze
- Bimetallic sleeve



No	ID-code	Wedge	Wire Diameter ØA (mm)	Application	Weight (Kg)
234 150 014	**GA 10 CH 1**	1	14	Messenger Wire Cu 120 mm^2	0,60
234 150 107	**GA 10 CH 2**	2	12,5	Messenger Wire Cu 95 mm^2/ Contact Wire Cu 107 mm^2	0,63
234 150 065	**GA 10 CH 3**	3	10,5 - 10,8	Messenger Wire Cu 70 mm^2/ Contact Wire Cu 85 mm^2	0,70
234 150 120	**GA 10 CH 4**	4	12,9	Contact Wire Cu 120 mm^2	0,68

WEDGE-SHAPED END TERMINAL

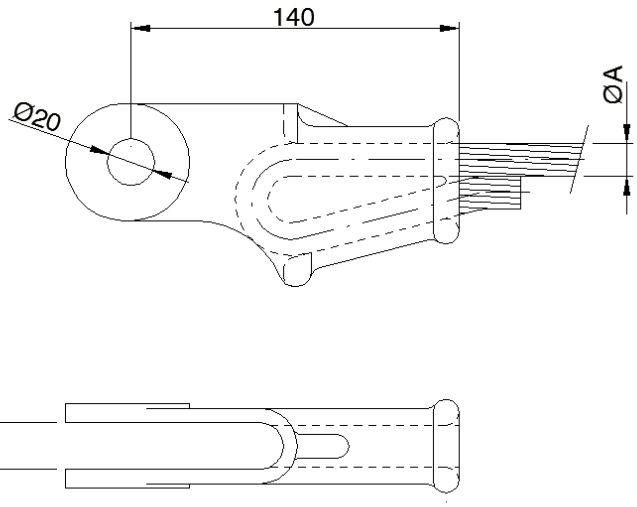
This part is used for the tension-proof tensioning of steel wires.

Application:

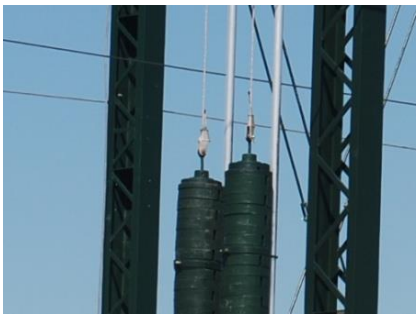
- Tensioning of steel wires

Material:

- Casting part: Aluminium EN AC-43000 (Al2560-T6) S/UNE-EN 1706 CC491 K-GS S/UNE-EN 1982
- Wedge: Aluminium EN AC-43000 (Al2560-T6) S/UNE-EN 1706 CC491 K-GS S/UNE-EN 1982



No	ID-code	Wire Diameter ØA (mm)	Weight (kg)
234 151 001	**GA 10.8**	8 - 12	0,47
234 151 002	**GA 10.12**	12	0,47
234 151 003	**GA 10.13**	13 - 15,5	0,47

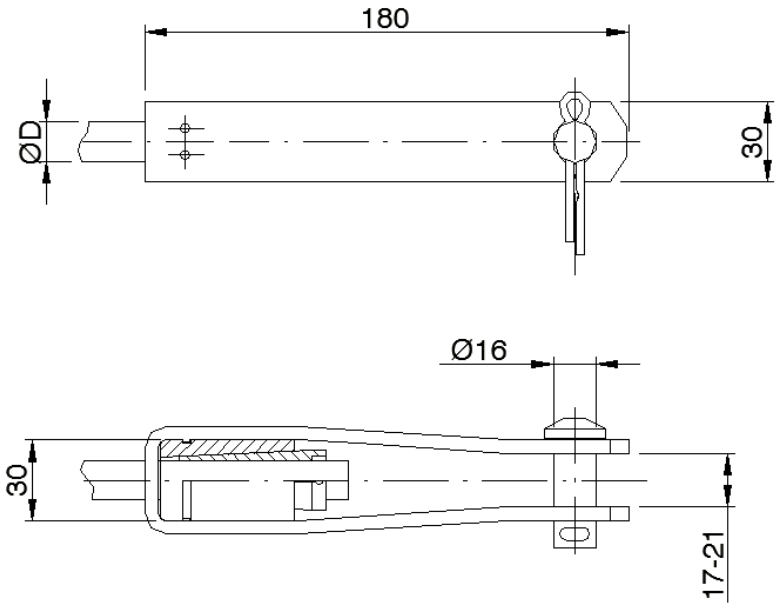


FORKED COLLAR SOCKET

The end terminal clamp is used to anchor the contact wire or the messenger wire.

Application:
- Anchorage

Material:
- Forged parts: St. Steel
- Cone: Al Bz 10
- Pin: St. Steel
- Split pin: St. Steel
- Elastic pin: St. Steel
- Contact grease: Wolfracoat-C



No.	ID-code	Contact / Messenger wire	Wire cross section (mm^2)	Diameter ØD (mm)	Breaking load (kN)	Weight (kg)
610 001 151	-	AC/BC 107	-	12,4	60	0,82
610 002 160	-	AC/BC 80	65	10,75	60	0,82
610 011 004	-	MW	95	12,85	60	0,82
610 016 105	-	MW	120	14,00	60	0,82
610 017 105	-	AC/BC 120	-	13,75	60	0,82
610 018 106	-	AC/BC 150	130	15,00	60	0,82
610 027 102	-	MW	50	9	60	0,82
610 048 000	-	MW	70	10,5	60	0,82

TERMINAL CLAMP FOR Z-WIRE

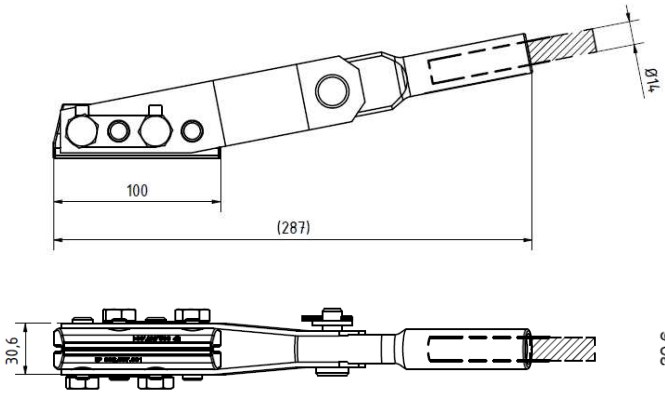
This clamp is used for contact wire anchorage in Z-Wire for midpoint.

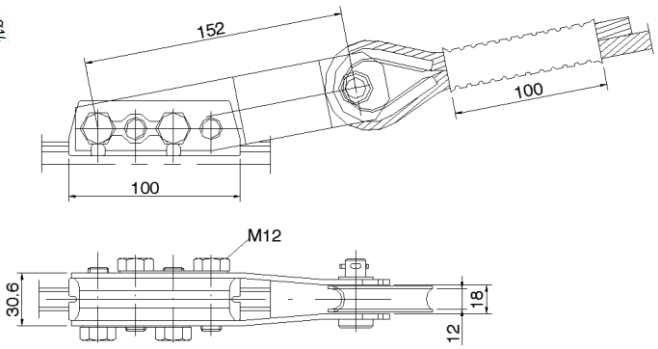
Application:

- Z-Wire
- Midpoint

Material:

- Contact wire splice: CuNi2Si
- Plates: X5CrNi18-10
- Screws: St. Steel (A4-80)
- Washers: St. Steel (A2)
- Clevis pin: X5CrNi18-10
- Split pin: St. Steel (A2-70)
- 3-Hole washer: X5CrNi18-10
- Rope fitting Ø14: X5CrNi18-11





No	ID-code	Clevis pin (mm)	Contact wire section	Tightening torque M12 (Nm)	Wire section (mm^2)	Max. working load (kN)
750 502 000	**75.05.02A**	12	AC/BC 80 - 150	75	65 - 70	17,5
000 701 314	**000.701.314-00**	12	AC/BC 80 - 150	100	120	27,5

TERMINAL CLAMP FOR CONTACT WIRE

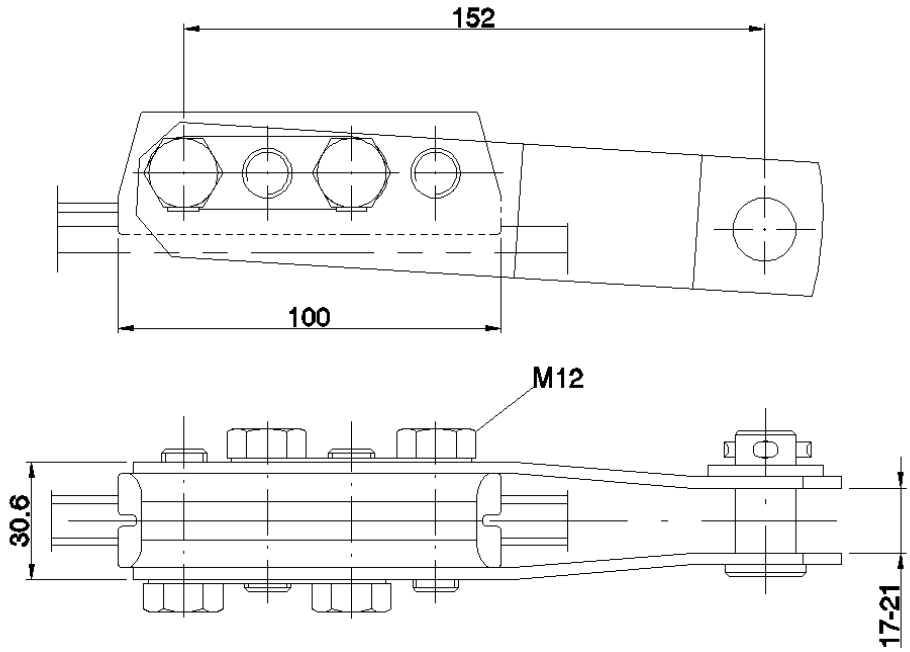
This clamp is used for contact wire anchorage.

Application:

- Contact wire anchor

Material:

- Forged parts: CuNi2Si (EN12165)
- Plates: X5CrNi18-10 (EN 10088)
- Screws: St. Steel (A2-80) (EN 3506)
- Washers: St. Steel (A2)
- Nuts: St. Steel (A2-80) (EN 3506)
- Clevis pin: St. Steel (A2) (EN 3506)
- Split pin: St. Steel (A2) (EN 3506)
- 3-Hole washer: X5CrNi18-10 (EN 10088)



No	ID-code	Clevis pin (mm)	Contact wire section	Tightening Torque M12 (Nm)
750 503 000	**75.05.03A**	16	AC/BC 80 - 150	75

DUO WEDGE TERMINAL CLAMP

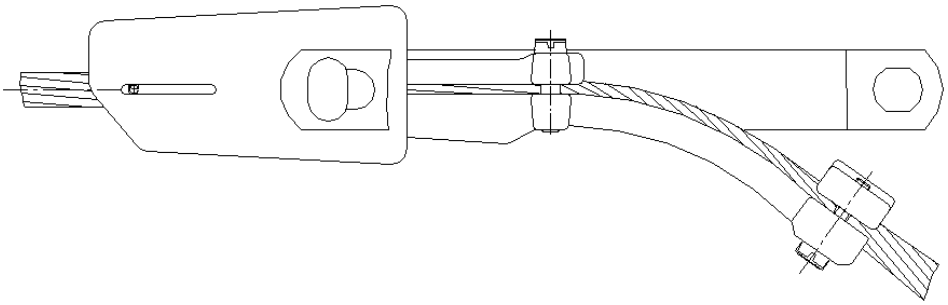
These clamps are used to strain all types of feeder and lines feeders in all overhead line constructions.

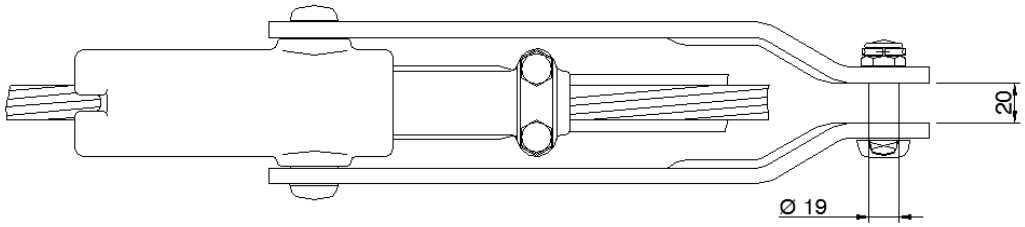
Application:

- Anchorage clamp for Al and Al/St wires

Material:

- Clamp parts: AlMgSi1
- Screws: St. Steel (A2) (UNE- EN ISO 3506)
- Nuts: St. Steel (A2) (UNE- EN ISO 3506)
- Washers: St. Steel (A2) (UNE- EN ISO 3506)
- Split pin: Cu-ETP





No	Fishplate	Conductor range (mm)	Wire cross section (mm^2)	Nominal. Load SMFL (kN)	Weight (kg)
439 171 004	Steel, HDG	20,1 – 22,5	240 - 300	100	4.0
439 171 006	Aluminium	20,1 – 22,5	240 - 300	40	3.92
437 582 001	Aluminium	16,0 – 18,0	153 - 193	50	-
437 582 002	Aluminium	14,0 – 15,9	110 - 150	50	-

CONNECTION CLAMP

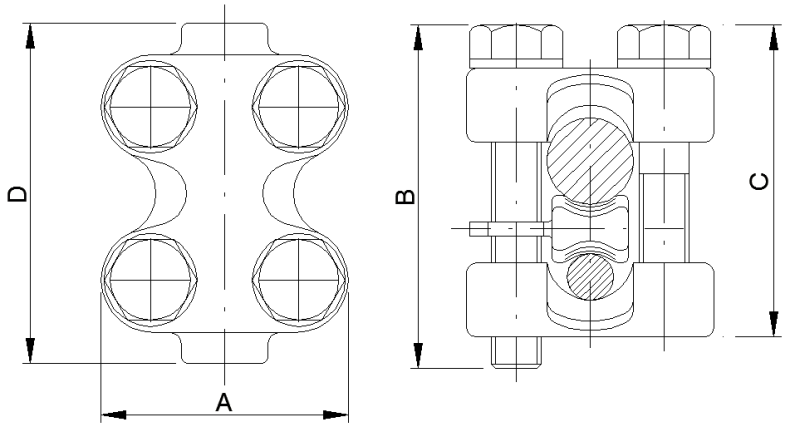
This clamp is used for high mechanical load applications providing a full current connection.

Application:

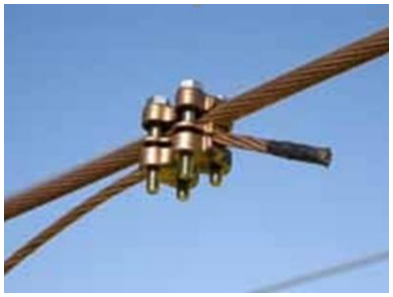
- Messenger wire anchor wire (Z-wire)
- Fixed point
- Stitch wire

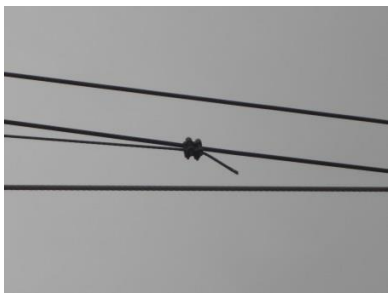
Material:

- Forged parts: CuNi2Si (CW111C) (EN 12165)
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Main wire cross section	Branch wire cross section	Dimensions				Tightening torque	Weight	Remark
				A	B	C	D			
		(mm^2)	(mm^2)	(mm)	(mm)	(mm)	(mm)	(Nm)	(kg)	
332 321 003	**KP 25/70**	25 - 70	25 - 70	40	50	45	55	20	0,362	Ebs 07.42.42-1
332 321 005	**KP 35/120**	25 - 95	25 - 95	42	50	45	55	20	0,380	
332 321 007	**KP 35/120X**	70 - 120	70 - 120	42	55	50	55	20	0,420	
332 321 006	**KP 70/150**	70 - 150	70 - 150	50	77	67	80	35	0,770	





DEAD END CLAMP

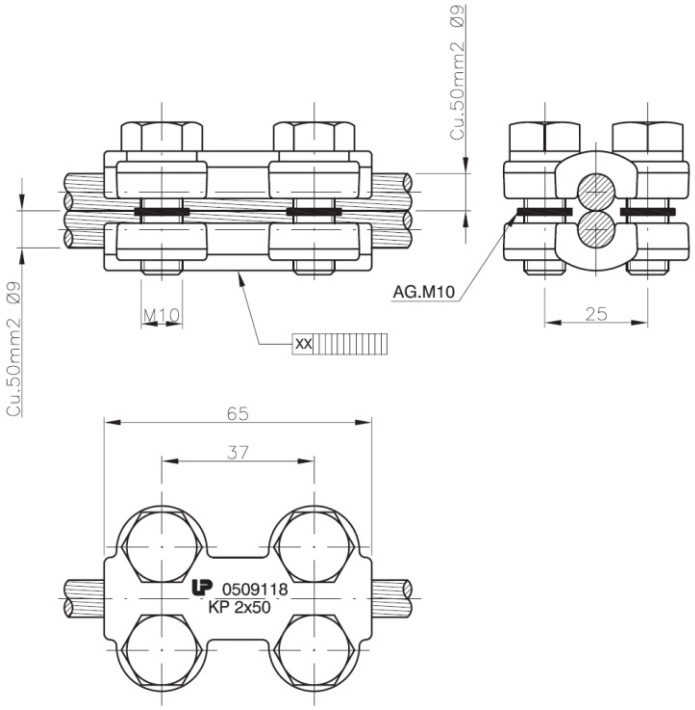
This clamp is used for high mechanical load applications providing a full current connection.

Application:

- Dead end clamp for two BZ II 50/7 wires

Material:

- Forged parts: CuNi2Si
- Screws: M10x30 Stainles Steel (A2-70)
- Washers: Stainless Steel (A2)



No.	ID-code	Wire cross sections	Wire diameters	Tightening torque	Weight	Remark
		(mm^2)	(mm)	(Nm)	(kg)	
332 322 001	**KP 2x50**	50	9,0	38	0,394	Ebs 20.02.04-2

DEAD END CLAMP

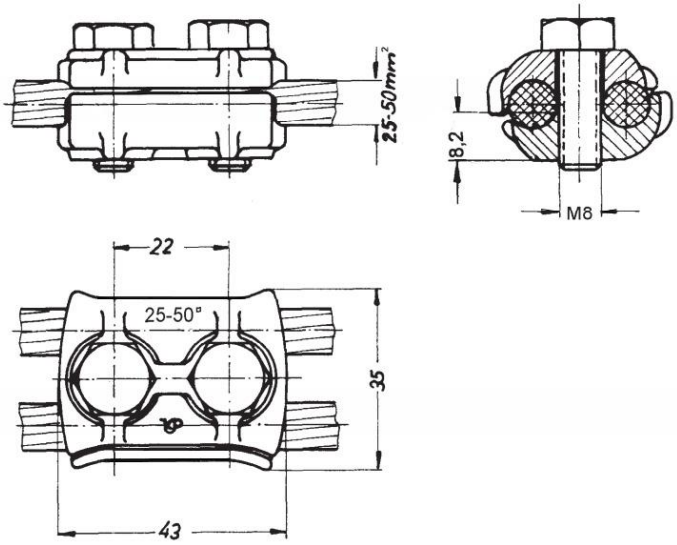
This clamp is used for connecting copper wires providing a full current connection.

Application:

- Electrical connection of copper wires

Material:

- Forged parts: CuNiSi
- Screws: M8 bronze



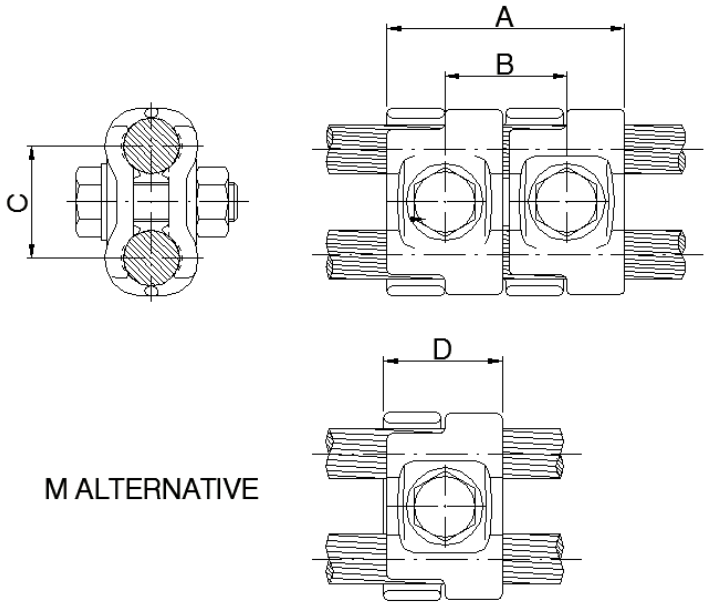
No.	ID-code	Conductor cross sections	Conductor diameters	Dimension B	Dimension L
		(mm²)	(mm)	(mm)	(mm)
330 622 622		25 - 50	6,3 - 9,0	35	43

CONNECTION CLAMP MESSENGER WIRE / Z-WIRE

This clamp is used to anchor the Z-Wire to the messenger wire for midpoint.

Application:
- Wires connection
- Z-Wire
- Midpoint

Material:
- Forged parts: CuNi2Si (CW111C) (EN 12165)
- Screws: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)



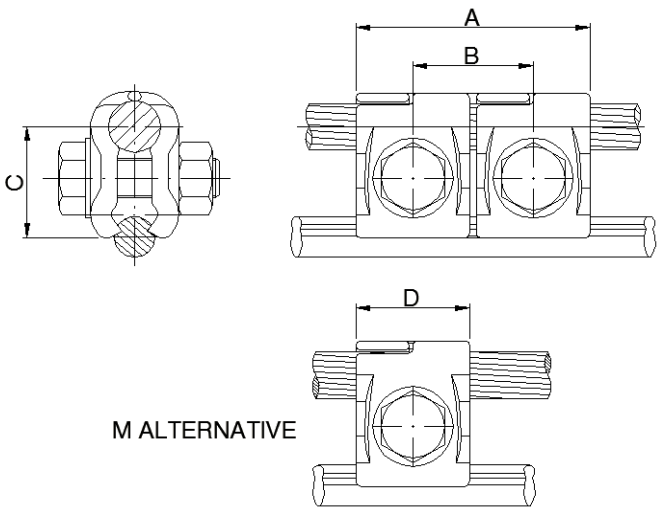
No.	ID-code	Main wire cross section	Branch wire cross section	Dimensions				Tightening torque
				A	B	C	D	M12
		(mm^2)	(mm^2)	(mm)	(mm)	(mm)	(mm)	(Nm)
325 102 001	**GPF2-70/150**	65 - 150F	65 - 150F	70	36	33	-	65
332 102 004	**GPF2-70/150 M**	65 - 150F	65 - 150F	-	-	33	30	65

CONNECTION CLAMP CONTACT WIRE / MESSENGER WIRE

This clamp is used to anchor contact wire to the Z-wire.

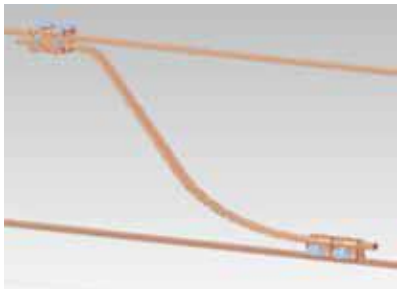
Application:
- Contact wire with anchor wire (Z-wire)

Material:
- Forged parts: CuNi2Si (CW111C) (EN 12165)
- Screws: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Contact wire	Branch wire cross section	Dimensions				Tightening torque
				A	B	C	D	M12
			(mm²)	(mm)	(mm)	(mm)	(mm)	(Nm)
332 330 001	**GPF-50/95 M**	AC/BC 80 - 150	Cu 50 - 95F	-	-	27,3	30	38 *
332 330 120	**GPF-70/120**	AC/BC 80 - 150	Cu 70 - 120	70	36	33,4	-	65
325 102 005	**GPF-70/120 M**	AC/BC 80 - 150	Cu 70 - 120	-	-	33,4	34	65
325 102 002	**GPF-70/150**	AC/BC 80 - 150	Cu 70 - 150F	70	36	31,5	-	65
325 102 003	**GPF-70/150 M**	AC/BC 80 - 150	Cu 70 - 150F	-	-	31,5	34	65

**M10 instead of M12*



CROSS CLAMP

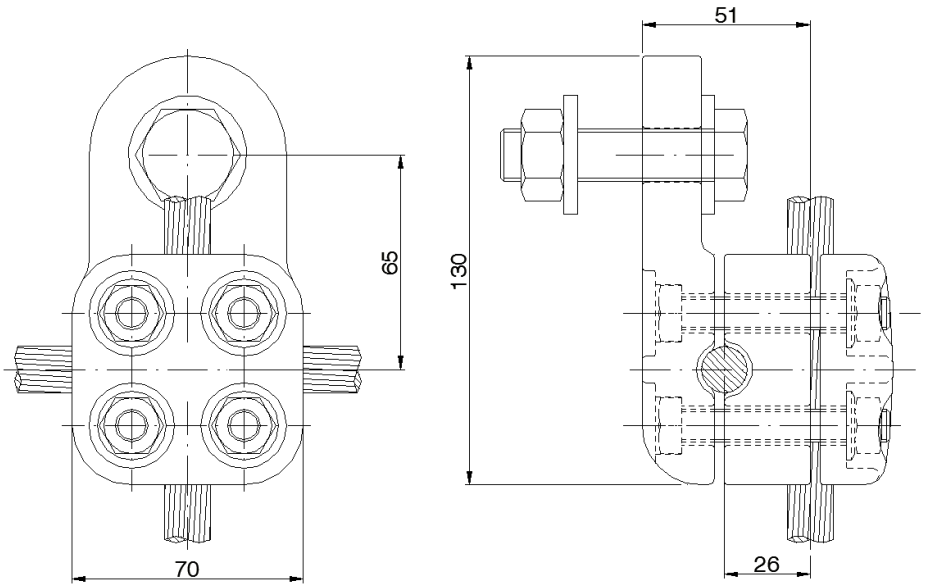
This clamp is used to connect aluminium earthing wires.

Application:

- Suspension earthing wire

Material:

- Clamp: Aluminum alloy EN-AC 42200(UNE-EN 1706)
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Earthing Wire	Wire diameter	Tightening torque		Weight
				M10	M16	
			(mm)	(Nm)	(Nm)	(kg)
234 141 001	**SXHAT.149**	LA-110	14	38	130	1,300

SUSPENSION CLAMP

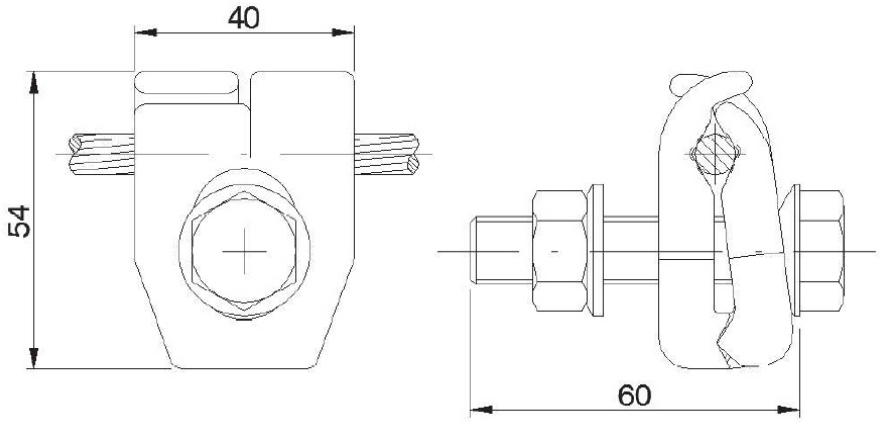
This clamp is used to hang copper wires on poles.

Application:

- Suspension feeder wire

Material:

- Forged part: CuNi2Si (UNE-EN 12165)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nut: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



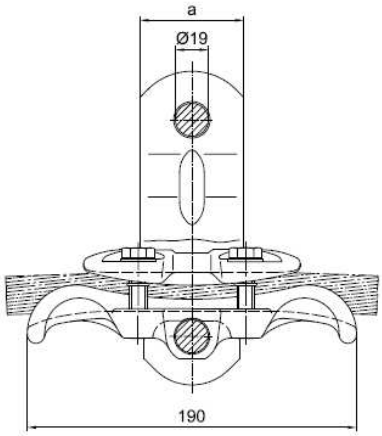
No.	ID-code	Wire cross section	Wire diameter	Tightening torque M12	Weight
		(mm²)	(mm)	(Nm)	(kg)
234 145 001	**HLT 119 V1 C**	35-300	7,5 - 22,5	65	-

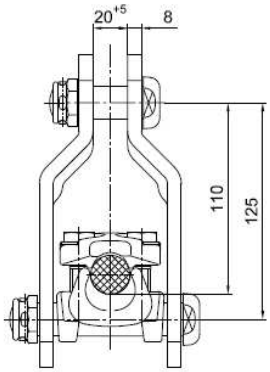
SWIVELLING SUSPENSION CLAMP

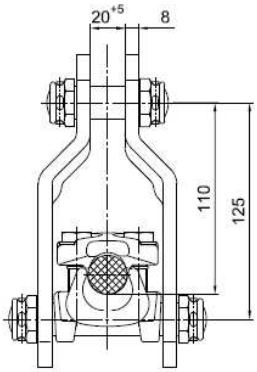
This clamp type is used to hang or support aluminium wires.

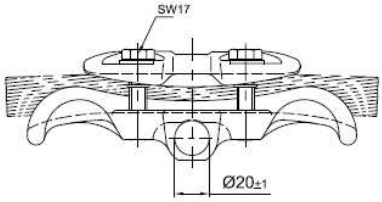
Application:
- Suspension of earthing wires or return wires.

Material:
- Clamp body: Aluminium alloy
- Fishplates: see table









No.	Fishplate	Earthing wire acc. DIN EN 50182	Wire diameter (mm)	Tightening torque (Nm)	Dimension a (mm)	Remark
438 618 002	Steel, hdg	243-AL1, 184-AL1/30-St1A	17,6 - 22,5	44	60	Ebs 16.03.04-1 a
438 618 006	Aluminium	243-AL1, 184-AL1/30-St1A	17,6 - 22,5	44	50	Ebs 16.03.04-1 c
438 591 001	Not Included	243-AL1, 184-AL1/30-St1A	17,6 - 22,5	44	-	Ebs 16.03.04-1 c1

SUSPENSION CLAMP

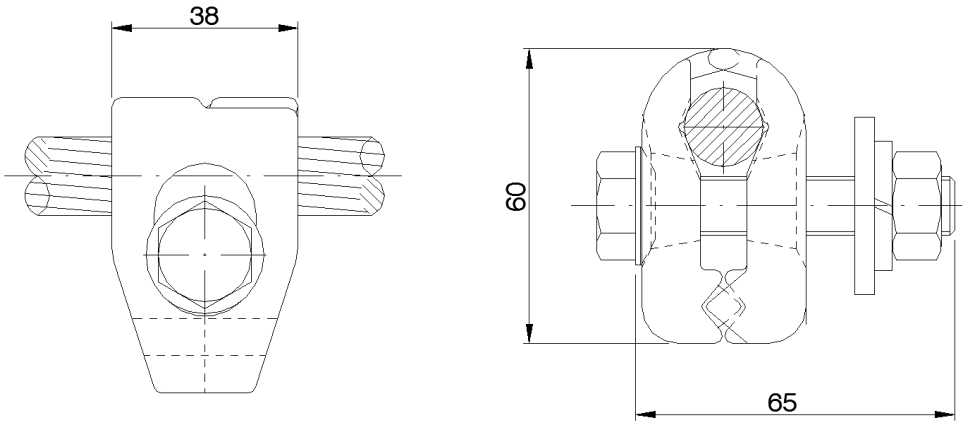
This clamp is used to hang the aluminium earthing wires on poles.

Application:

- Suspension earthing wire

Material:

- Casting part: Aluminium alloy EN-AC 43000 (UNE-EN 1706)
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nut: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Earthing Wire	Wire diameter (mm)	Tightening torque M12 (Nm)	Weight (kg)
234 145 010	**GTLA.11.21**	LA-110 – LA-280	14 - 21	65	0,250

SUSPENSION CLAMP

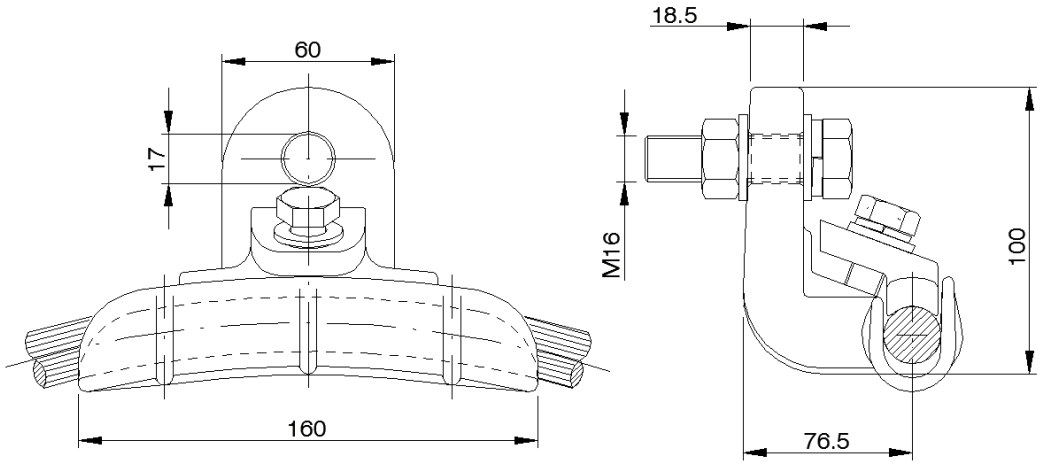
This clamp is used to hang aluminium earthing wires.

Application:

- Suspension of earthing wires

Material:

- Clamp: Aluminum alloy EN-AC 42200(UNE-EN 1706)
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Screw/Nut for pole	Earthing Wire	Wire diameter	Tightening torque M12	Tightening torque M16	Weight
				(mm)	(Nm)	(Nm)	(kg)
244 340 322	**GSLA 11-21 C**	Included	LA-110/180/230	14 - 20,3	65	130	0,860
244 340 323	**GSLA 11-21 C ST**	Not Included	LA-110/180/230	14 - 20,6	65	130	0,860

SUSPENSION CLAMP

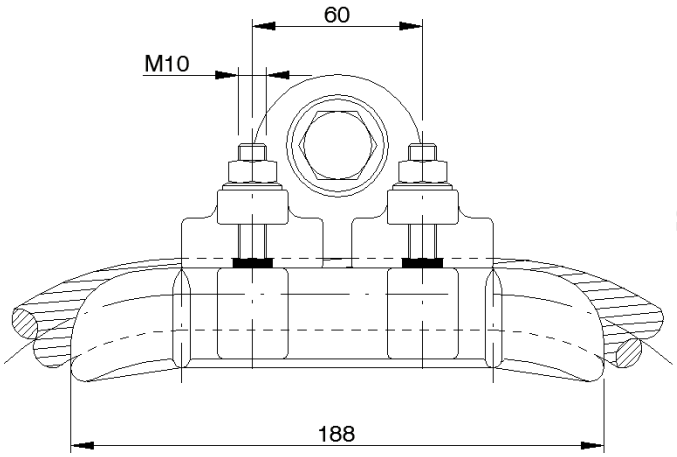
This clamp is used to hang aluminium earthing wires.

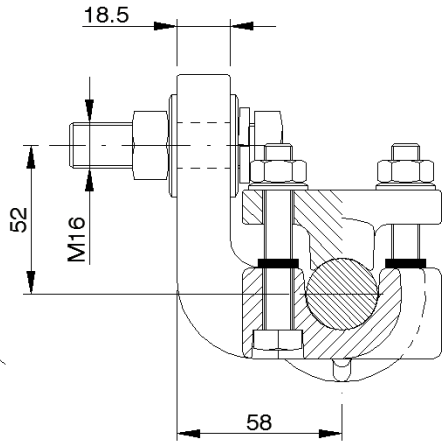
Application:

- Suspension earthing wire

Material:

- Casting part: Aluminium alloy EN-AC 43000 (UNE-EN 1706)
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Nuts: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)

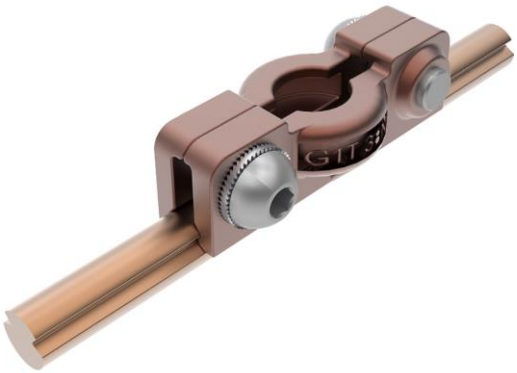




No.	ID-code	Screw/Nut for pole	Earthing Wire	Wire diameter	Tightening torque		Weight
					M10	M16	
				(mm)	(Nm)	(Nm)	(kg)
244 340 320	**GSLA 11-21 C V1**	Included	LA-110/180/280/380	14 - 25,5	38	130	1,350
244 340 321	**GSLA 11-21 C V1 ST**	Not Included	LA-110/180/280/380	14 - 25,5	38	130	1,350

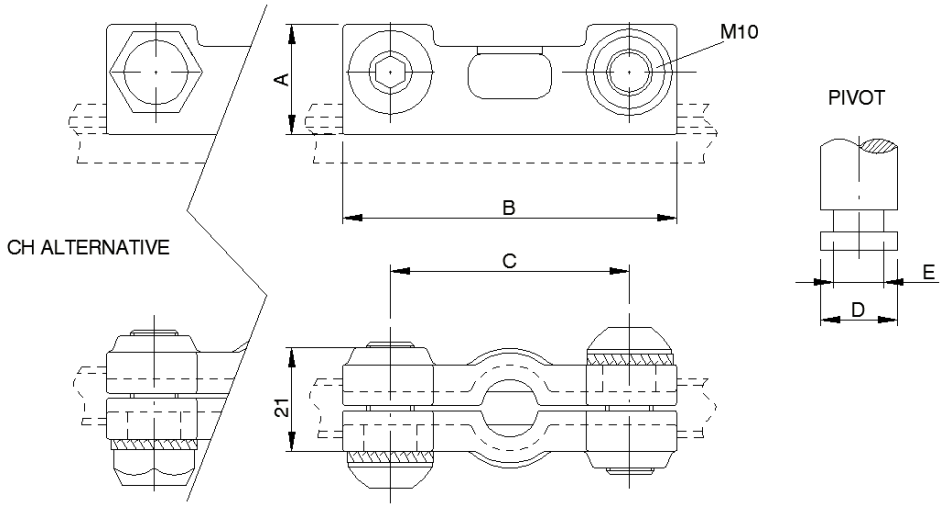
CONTACT WIRE CLIP

This clip is used to connect the steady arm or clamp holder with the contact wire so that it can rotate. Used for cantilevers with forged and casted components.



Application:
- Contact wire
- Steady Arm
- Clamp holder

Material:
- Forged parts: CuNi2Si (UNE-EN 12165)
- Washer: St. Steel (A2) (UNE- EN ISO 3506)
- Screw: St. Steel (A2-80) (UNE-EN ISO 3506-1)



No	ID-code	Screw	Contact wire	Dimensions			Pivot Dimensions		Tightening Torque	Weight
				A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	M10 (Nm)	(kg)
304 741 001	**G1T**	Allen	AC/BC 80 - 150	23.5	75	53	23.7	15.7	38	0,21
304 742 001	**G1TA**	Allen	AC/BC 80 - 150	23	70	50	16	10.5	38	0,18
304 741 002	**G1T CH**	Hexagonal	AC/BC 80 - 150	23.5	75	53	23.7	15.7	38	0,22
304 742 002	**G1TA CH**	Hexagonal	AC/BC 80 - 150	23	70	50	16	10.5	38	0,19

CONTACT WIRE SPACER

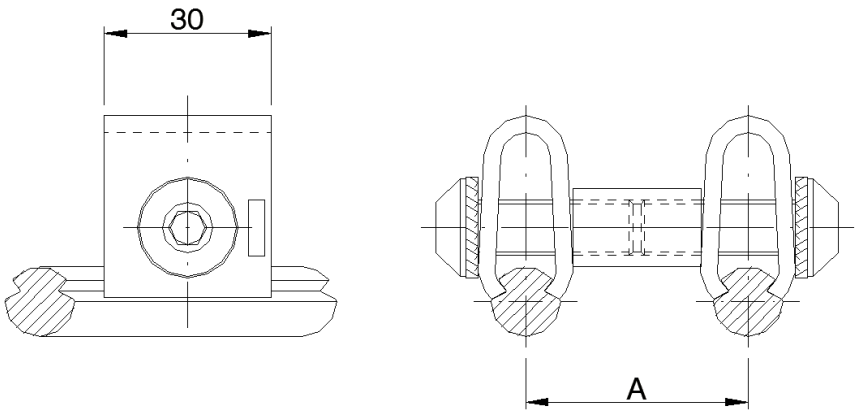
The contact wire spacer keeps two contact wires at a constant distance from one another.

Application:

- Contact wire spacer

Material:

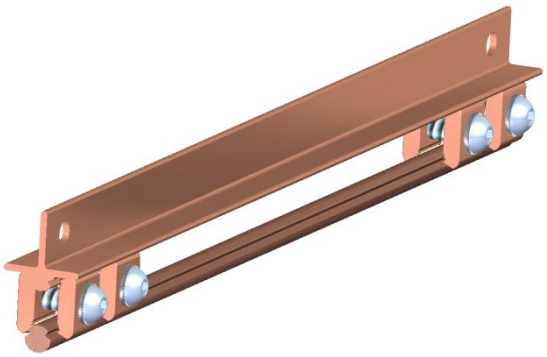
- Forged parts: CuNi2Si
- Spacer: St. Steel (A2) (EN ISO 3506)
- Screws: St. Steel (A2) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Contact wire	Dimensions A (mm)	Tightening Torque M10 (Nm)
234 112 035	**GS 35**	AC/BC 80 - 150	35	25
234 112 040	**GS 40**	AC/BC 80 - 150	40	25
234 112 050	**GS 50**	AC/BC 80 - 150	50	25
234 112 170	**GS 170**	AC/BC 80 - 150	170	25
234 112 200	**GS 200**	AC/BC 80 - 150	200	25

CONTACT WIRE CROSSING

This part is used for crossing of contact wires.

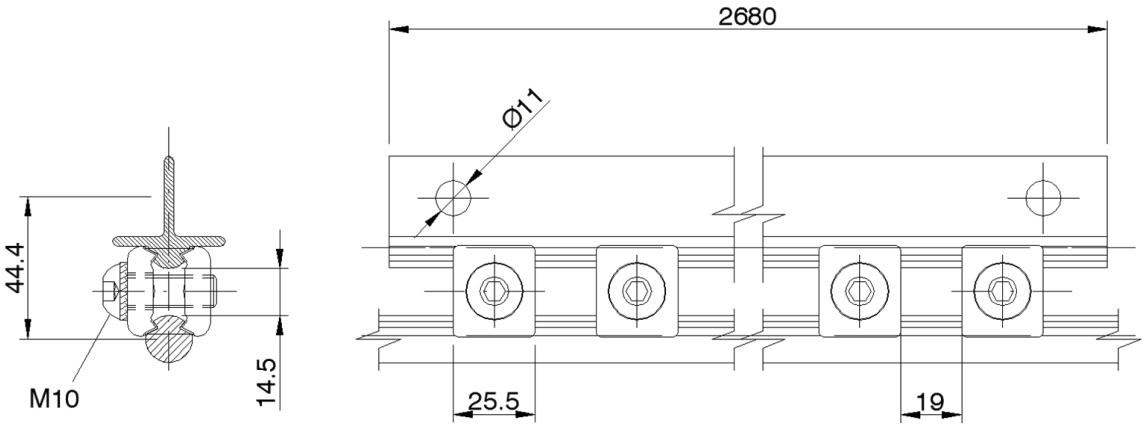


Application:

- Contact wire crossings

Material:

- Forged clamps: CuNi2Si
- Crossing profile: Cu-ETP
- Screws: St. Steel (A2-70) (EN ISO 3506)
- Washers: St. Steel (A2-70) (EN ISO 3506)



No.	ID-code	Contact wire	Tightening Torque M10 (Nm)
234 160 001	**ASM.AGU-01**	AC/BC 80 - 150	25

Hexagonal bolts available

EARTHING CLAMP TO MAIN ELECTRODE

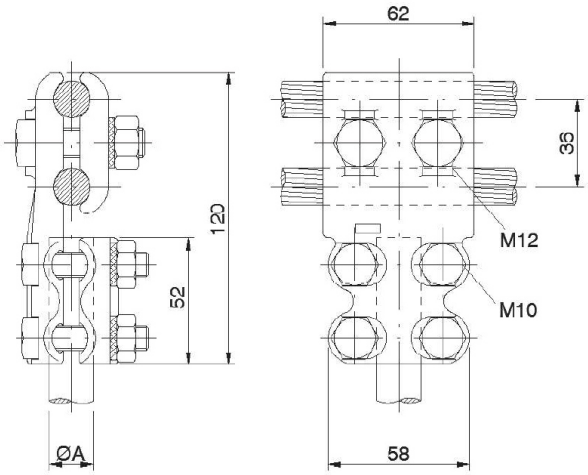
This clip is used to connect the main electrode with the other earthing electrodes.

Application:

- Earthing connections

Material:

- Casting parts : Cu alloy CC491 K-GS (UNE-EN 1982)
- Screws: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



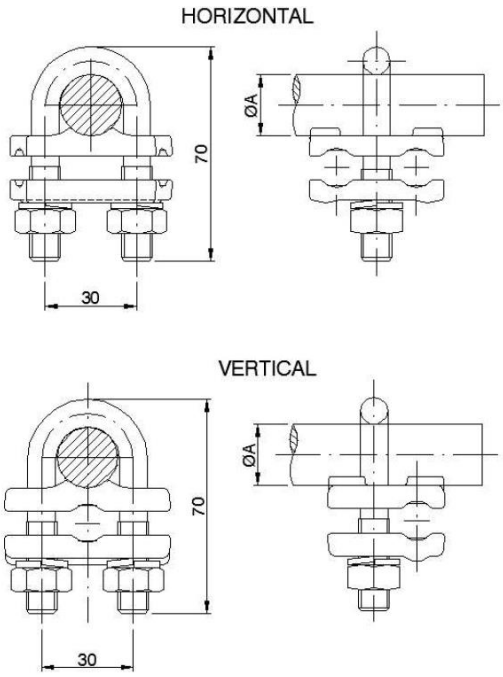
No.	ID-code	Branch wire cross section	Diameter Ø A	Tightening Torque M10	M12
		mm²	(mm)	(Nm)	(Nm)
234 180 001	TCT5.120x2.18	95 - 185	18	38	65
234 180 002	TCT5.120x2.24	95 - 185	24	38	65

VERTICAL / HORIZONTAL EARTHING CLAMP TO ELECTRODE

This clamp is used to connect the earthing electrodes with the copper wires.

Application:
- Earthing connections

Material:
- Forged parts : Brass CW 617N (UNE-EN 12165)
- U-Bolt: St. Steel (A2) (EN ISO 3506)
- Nuts: St. Steel (A2) (EN ISO 3506)
- Washers: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Description	Branch wire Cross section (mm²)	Diameter Ø A (mm)	Tightening Torque M10 (Nm)
234 181 001	**GPP.2014**	Horizontal connection clamp	35 - 120	16 - 20	38
234 181 002	**GPX.2014**	Vertical connection clamp	35 - 120	16 - 20	38

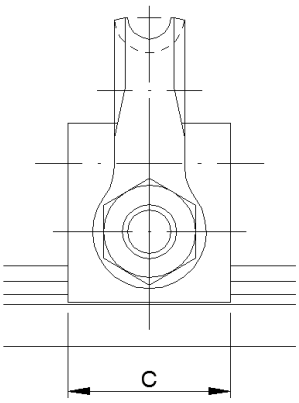
Droppers

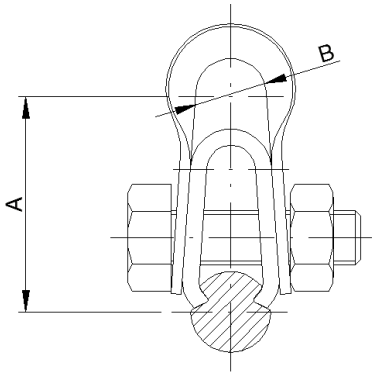
DROPPER CLAMP FOR CONTACT WIRE

The clamps are used to connect droppers to the contact wire.

Application:
- Dropper

Material:
- Forged parts: CuNi2Si or A2
- Loop: CuNi2Si or A2
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Nut: St. Steel (A2-70) (EN ISO 3506)





Example: current carrying dropper

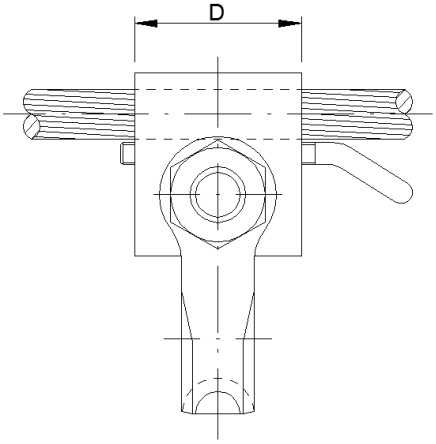
No.	ID-code	Contact wire	Dimensions A (mm)	B (mm)	C (mm)	Material	Tightening Torque (Nm)
625 012 000	**625 012 CONJ**	AC/BC 80 - 150	39,7	14	30	CuNi2Si	25
625 310 001		AC/BC 80 - 150	39,7	14	30	CuNi2Si	25
625 310 002		AC/BC 80 - 150	39,7	14	30	A2	25

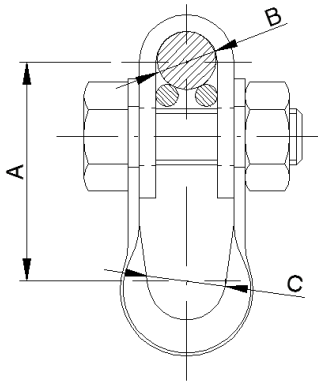
DROPPER CLAMPS FOR MESSENGER WIRE

The clamps are used to connect droppers to the messenger wire.

Application:
- Dropper

Material:
- Forged parts: CuNi2Si
- Loop: CuNi2Si
- Screw: St. Steel (A2) (EN ISO 3506)
- Nut: St. Steel (A2) (EN ISO 3506)
- Pin: Bz II





Example: current carrying dropper

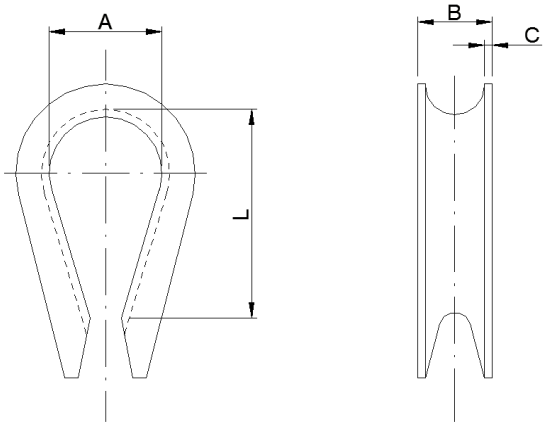
No.	ID-code	No pin alternative	Wire Cross section	Dimensions				Tightening Torque
				A	B	C	D	
			(mm^2)	(mm)	(mm)	(mm)	(mm)	(Nm)
625 012 120	**625 012 CONJ 120**	-	120	35	14,5	22	30	25
625 012 095	**625 012 CONJ 95**	625 012 CONJ 95.SH	95	39,5	13	17	40	25
625 012 065	**625 012 CONJ 70H**	625 012 CONJ 70	65 - 70	39,5	11	14	30	25
625 012 050	**-**	625.012CONJ.50CU.ALE	50	39,7	9	13	30	25
625 012 035	**625 012 CONJ 35**	625 012 CONJ 35.SH	35	36,25	8	14	30	25
625 012 025	**625 012 CONJ 25**	625 012 CONJ 25.SH	25	36,5	6,5	14	30	25

THIMBLE

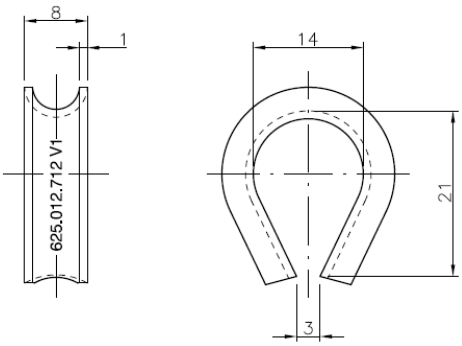
This part is used for wire loops to protect the wire from wear.

Application:
- Wire loops
- Droppers

Material:
- See table below



625.012.810 and 625.012.810



625.012.712V1

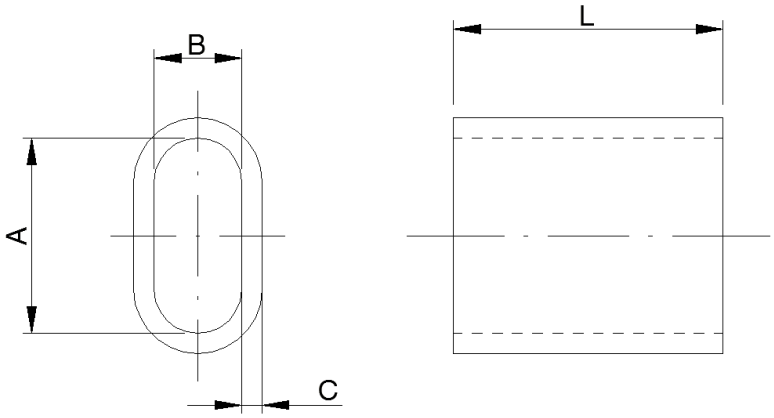
No.	ID-code	Material	Wire Cross section (mm²)	Dimensions L (mm)	A (mm)	B (mm)	C (mm)
625 012 710	**625.012.71**	Cu-ETP	16F - 25F	27	14,5	10	1
625 012 712	**625.012.712V1**	St. Steel A2	10F - 12F	21	14	8	1
625 012 713	**625.012.712CU**	Cu-ETP	10F - 12F	23	13	7	1
625 012 810	**625.012.81**	St. Steel A2	16F - 25F	35,7	22,5	12	1,2
625 012 813	**625.012.81CU**	Cu.-ETP	16F - 25F	39,75	21,5	11,5	1,5
625 012 910	**625.012.91**	St. Steel A4	65	50	29	15	1,5

COMPRESSION SLEEVE

This part is used for wire loops.

Application:
- Compression sleeve
- Droppers

Material:
- Cu-ETP (EN12165)



No.	ID-code	Wire cross section (mm²)	Dimensions L (mm)	A (mm)	B (mm)	C (mm)	Compression die Tool code
625 012 410	**625.012.41**	10F	20	10	5	0,75	HG 10, 8 PO
625 308 001 *)		10F	20	10	5	0,75	DB 10 K
625 012 003	**625.012.M3 V**	12F	20	11	5.4	1.5	HG 15, 8 PO
625 012 510	**625.012.51**	16F	20	14,5	6,5	1,5	HG 16, 12 PO
625 012 610	**625.012.61**	25F	20	15	8,7	1,5	HG 17, 16 PO

**) Remark: DB-Approval drawing Ebs 20.01.07-2*

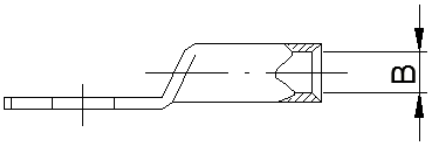
Suitable manual compression tool: *e.g. Primat O2, item no. 303 088 088*
e.g. Primat 06-T, item no. 303 871 002

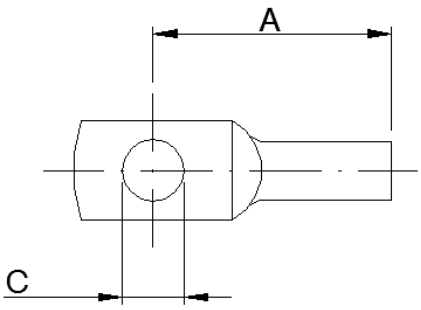
CABLE LUGS

This part is used for wire connections.

Application:
- Cable lug
- Current carrying dropper

Material:
- Cu-ETP (EN12165)





No.	ID-code	Wire cross section	Dimensions			Compression die		Remark
			A	B	C			
		(mm²)	(mm)	(mm)	(mm)	Tool code **)	Item no.	
300 004 004		10F - 12F	36	5,5	10,5	8	300 353 356	
300 008 008		16F - 25	38	7	10,5	10 / 9 ***)	300 353 358 / 300 353 357	
625 307 001 *)		10F		5	10,2	10 K	304 328 328	DB cable lug
625 312 001 *)		10F		4,5	10,5			DB filling for cable lug

**) DB-Approval drawing Ebs 07.42.26-2, manual compression tool type O2, item no. 303.088.088*
***) according DIN 48083 part IV*
****) For wire 16F, 1st compression with tool code 10, 2nd compression with tool code 9*
For wire 25 only one compression with tool code 10

Suitable manual compression tool: e.g. Type GO6, item no. 303 871 003

DROPPER CLAMP WITH CURRENT CARRYING LOOP

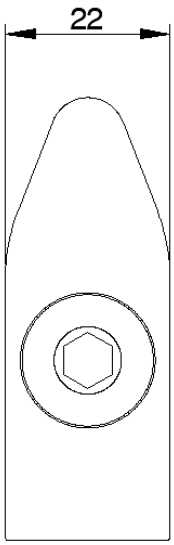
These clamps are used on messenger wire and contact wire for droppers with easy installation of current carrying loop.

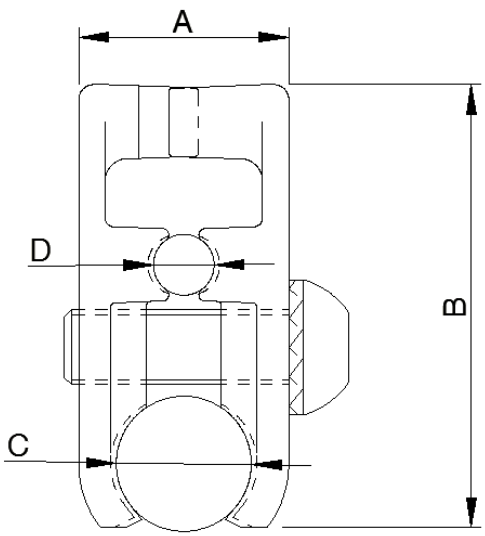
Application:

- For droppers with thimble and current carrying loop.

Material:

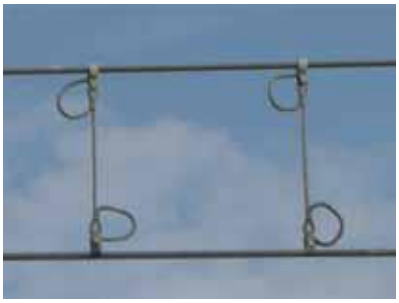
- Hot forged parts: CuNi2Si
- Screw: St. Steel (A2) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)





No.	ID-code	Contact wire	Messenger Wire Cross section	Dimensions A	B	C	D	Tightening Torque
			(mm^2)	(mm)	(mm)	(mm)	(mm)	(Nm)
305 859 035	**305 859 35**	-	35	24	54	8	8,4	30
305 859 570	**305 859 50 70***	AC/BC 107 - 150	50 - 70	20	47	9,25-11,25	5	30
305 859 120	**305 859 120**	AC/BC 107 - 150	95 - 120	24	57	14,3	8,4	30
305 859 002	**305 859 002**	AC/BC 107 - 150	150 - 185	28	59	18	8,1	30
305 859 300	**305 859 300**	**-**	300	26	65	22,5	7,5	30

**Hexagonal bolt*



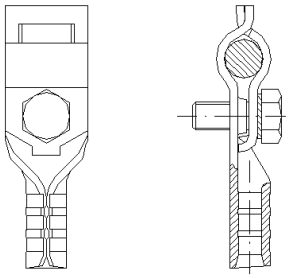
COLD FORGED DROPPER CLAMP

These clamps are used on messenger wire and contact wire for droppers.

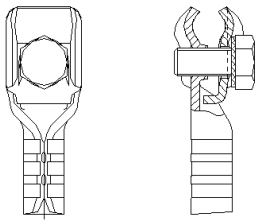
Application:
- For droppers, current feeding

Material:
- Cold forged parts: Cu-ETP (UNE-EN 13599)
- Screw: St. Steel (A2) (EN ISO 3506)
- Washer: St. St. Steel (A2) (EN ISO 3506)

Messenger Wire clamp



Contact Wire clamp



No.	ID-code	Application	MW / CW cross section (mm²)	Dropper wire cross section (mm²)	Tightening Torque (Nm)	Compression die Tool code	Item no.
625 013 001	**G-VT.1**	Messenger wire	95	Cu/Bz 25	12	13	300 353 361 *)
625 014 001	**G-VT.2**	Messenger wire	35	Cu/Bz 25	12	13	300 353 361 *)
625 015 001	**625 015 VUP**	Messenger wire	150 - 184	Cu/Bz 25	12	13	300 353 361 *)
625 016 001	**625 016 VUP**	Contact wire	AC/BC 107 - 150	Cu/Bz 25	20	13	300 353 361 *)

DROPPER CLAMP FOR CONTACT WIRE AND MESSENGER WIRE

These clamps will be used on messenger wire and contact wire for droppers.

Application:
- For droppers, current feeding

Material:
- Hot forged parts: CuNi2Si
- Screw: St. Steel (A2) (EN ISO 3506)

No.	ID-code	Contact wire	Messenger Wire cross section (mm²)	Droppers wire cross section (mm²)	Compression dies Tool code	Item no.
302 823 003	**302 823 003**	AC/BC 80 - 120	50	Bz 10F	10	300 353 358 *) 300 608 002 **)
302 825 825	**302 825 825**	AC/BC 80 - 120	50	Bz 25F	13	300 353 361 *) 300 608 004 **)
303 848 002	**303 848 002**	AC/BC 80 - 120	70 - 95	BZ 16F	13	300 353 361 *) 300 608 004 **)

**) Suitable manual compression tool: e.g. Type GO6, item no. 303 871 003*
***) Suitable compression head: e.g. Size III, item no. 305.678.009*
***) Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012*
***) Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002*

CONTACT WIRE DROPPER CLAMP

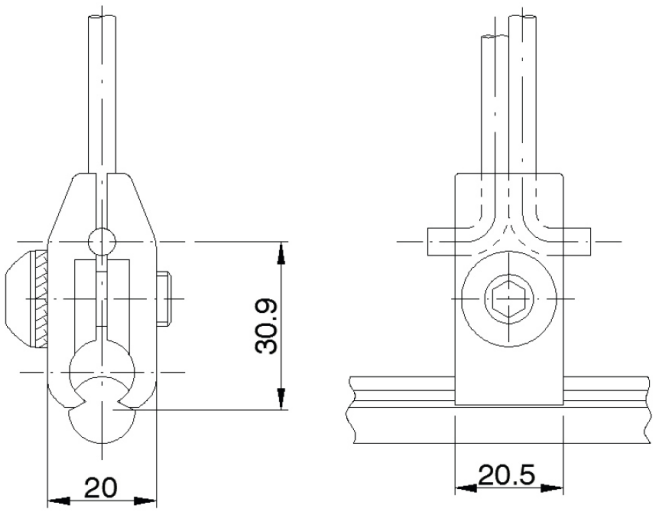
These clamps are used for current carrying droppers.

Application:

- Droppers for short system heights
- For current carrying droppers
- Where small and lightweight dropper clamps are required

Material:

- Forged parts: CuNi2Si (UNE-EN 12165
- Screw: St. Steel (A2-70) (EN ISO 3506)
- Washer: St. Steel (A2) (EN ISO 3506)



No.	ID-code	Contact wire	Tightening Torque (Nm)	Weight (kg)
625 020 001	**EPEN 108**	AC/BC 80 - 150	30	0,105

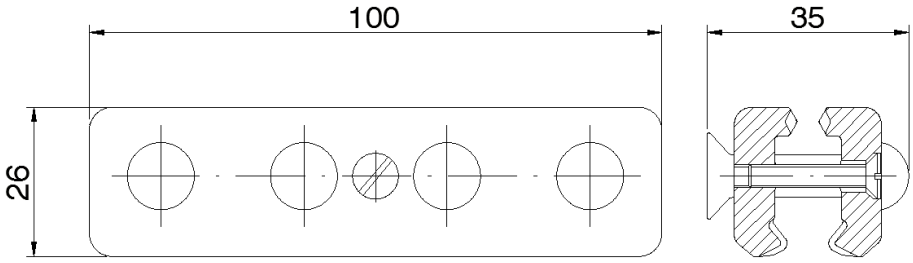
Wire Joints

CONTACT WIRE SPLICE RIVETED

This clamp is used to connect grooved overhead contact wires with full tension.

Application:
- Electrical and mechanical connection
- Traction wire splice

Material:
- Forged parts: CuNi2Si (UNE-EN 12165)
- Screw: St. Steel (A2) (EN ISO 3506)
- Rivet: Cu-ETP (UNE-EN 12165)



No.	Contact wire	Appropiate die for compressing	Appropiate die for removing	Weight (Kg)	Remarks
302 391 391	AC/BC 80 - 120	302 346 346, DB4-N / UIC-107	302 345 345 DB4-L / UIC-107	0,37	Ebs 07.42.23 *)

**) DB-Approval drawing*

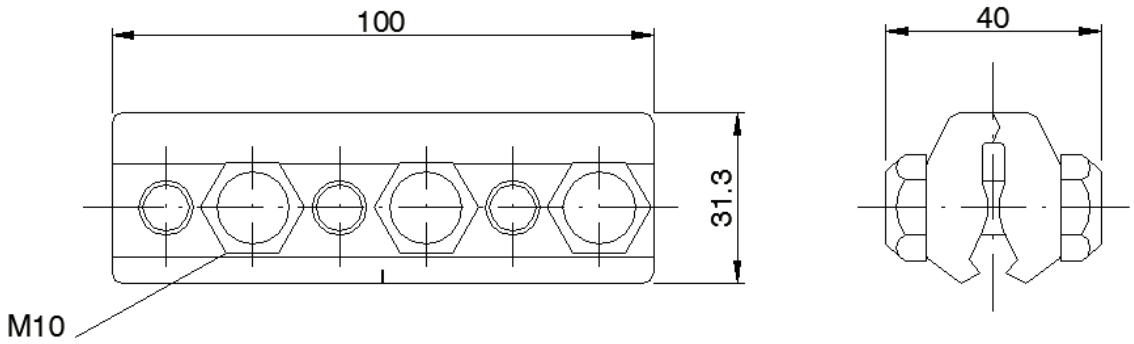
Suitable compression head: e.g. Size III, item no. 305.678.009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

CONTACT WIRE SPLICE SCREW-TYPE

This clamp is used to connect grooved overhead contact wires with full tension.

Application:
- Electrical and mechanical connection
- Traction wire splice

Material:
- Forged parts: CuNi2Si (UNE-EN 12165)
- Screw: St. Steel (A2) (EN ISO 3506)



No.	Contact wire	Tightening torque M10 (Nm)	Weight (kg)	Remarks
302 537 537	AC/BC 80 - 120	44	0,5	Ebs 07.42.59 *)

*) DB-Approval drawing

COMPRESSION JOINTS FOR Bz AND StCu WIRES

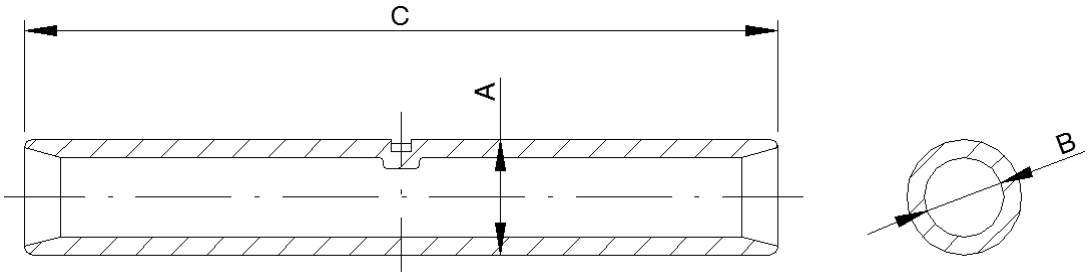
These compression joints are used to form a full-tension connection between Bronze and Steel Copper wires.

Application:

- Full tension compression joint
- For Bz I-II and Staku I-III wires

Material:

- CuNiSi



No.	Type of device *)	Conductor Cross section	Dimensions			Compression die				
			A	B	C	Tool Code **)	No. of comp.	Width	Comp. force	Comp. die part No.
		(mm²)	(mm)	(mm)	(mm)			(mm)	(kN)	
300 293 293 *)	a	25	13,5	6,3	110	13	3-3	14	240	300.608.004
300 294 294 *)	b	35	15,5	7,5	110	15	3-3	14	240	300.608.006
300 295 295 *)	c	50	17,5	9,0	110	17	3-3	14	240	300.608.008
300 296 296 *)	d	70	20	10,5	110	19	3-3	14	240	300.608.010
300 297 297 *)	e	95	21	12,5	142	21	4-4	14	240	300.608.012
303 801 801 *)	f	120	24	14,0	140	23	4-4	14	240	300.608.015

**) DB-Approval drawing Ebs 07.42.24*
***) according DIN 48083 part IV*

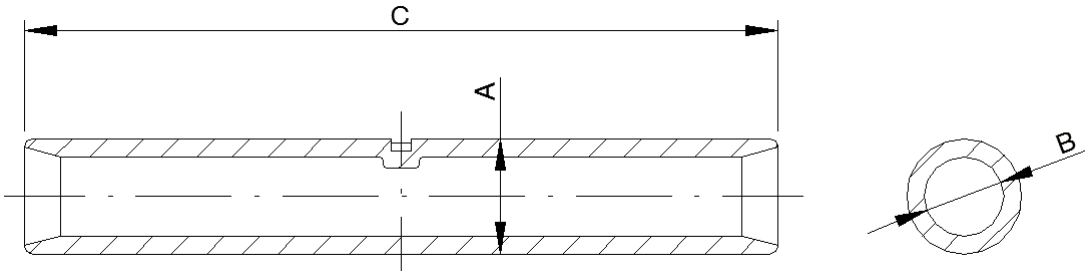
Suitable compression head: e.g. Size III, item no. 305.678.009
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

COMPRESSION JOINTS FOR Cu WIRES

These compression joints are used to form a full-tension connection of copper wires.

Application:
- Full tension compression joint
- For Cu messenger wires, DIN 48201

Material:
- Cu-ETP



No.	Type of device *)	Conductor cross section	Dimensions A	B	C	Compression die Tool code **)	Comp. No./width	Comp. No./width	Comp. force man. / hydr.	Comp. die part No. man. / hydr.
		(mm^2)	(mm)	(mm)	(mm)				(kN)	
305 573 002 *)	a	25	10,2	7	80	10	5-5 / 5	-	60 / -	300 438 443
300 950 950 *)	b	50	14,5	10	95	14	6-6 / 5	-	60 / -	300 438 447
300 951 001 *)	c	70	16,5	11,5	95	16	6-6 / 5	-	60 / -	300 438 448
305 513 002 *)	d	95	21	14	145	20	8-8 / 5	4-4 / 14	60 / 240	300 438 451 / 300 608 011
300 953 953 *)	e	120	23	15	160	22	8-8 / 5	4-4 / 14	60 / 240	300 438 452 / 300 608 014
300 954 954		150/153	25	17	182	25	12-12 / 5	4-4 / 14	60 / 240	300 438 453 / 300 608 016
300 955 001		182/185	30	18,5	260	30	-	5-5 / 14	- / 240	300 608 019
300 956 001		240/242	34,5	21,5	310	34	-	6-6 / 14	- / 240	300 608 021

**) DB-Approval drawing Ebs 20.01.17*
***) according DIN 48083 part IV*

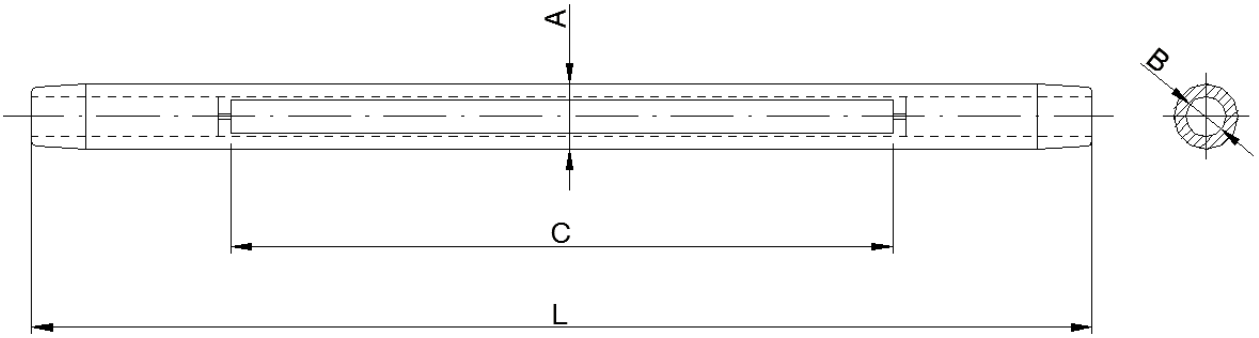
Suitable compression head: e.g. Size III, item no. 305.678.009,
Suitable manual compression tool: e.g. Type GO6, item no. 303 871 003
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

COMPRESSION JOINTS FOR AISt WIRES

The compression joints comprise of an inner steel sleeve combined with an outer aluminium sleeve. The joints are used for a full-tension connection of Aluminium/Steel cables.

Application:
- Full tension connection
- For steel reinforced aluminium conductors acc. EN 50182 Type AL1/ST1A

Material:
- Aluminium (EN AW-1050A)
- Steel sleeve S355J2 (tZn)



A = Outer diameter aluminium sleeve
B = Outer diameter steel sleeve

No.	Type of device *)	Conductor cross section	Dimensions				Compression die Alu			Compression die Steel		
			A	B	C	L	Tool Code **)	No. of Comp.	Item No.	Tool Code **)	No. of Comp.	Item No.
		(mm²)	(mm)	(mm)	(mm)	(mm)						
305 231 004		48-AL1/8-ST1A	16	7,5	95	280	16	9-9	300 608 007	7	6-6	300 512 514 ***)
305 231 011 *)	c	184-AL1/30-ST1A	30,5	15	140	435	30	6-6	300 608 019	15	4-4	300 608 006
305 231 015 *)	d	243-AL1/39-ST1A alt. ACSR "HAWK"	34,5	15	140	480	34	7-7	300 608 021	15	4-4	300 608 006
305 231 016		264-AL1/34-ST1A	38,5	15	140	525	38	8-8	300 608 022	15	4-4	300 608 006

**) DB-Approval drawing Ebs 20.01.18*
***) according DIN 48083 part IV*

Suitable compression head: e.g. Size III, item no. 305.678.009
****) Suitable manual compression tool: e.g. Type GO6, item no. 303 871 003*
Suitable electrical hydraulic compression pump: e.g. EHP 850 bar, item no. 305.853.012
Suitable foot operated hydraulic compression pump: e.g. FP 850 bar, item no. 305.799.002

Compression joints for other wire sizes are available on request.

Insulators

SILICONE COMPOSITE INSULATORS

OVERVIEW

PFISTERER Silicone Composite Insulators are available in a variety of configurations for systems ranging from 3kV DC, 15kV & 25kV AC. The insulators shown on the following pages are only examples from our extensive insulator product range. Pfisterer can provide tailor-made solutions for all railway appplications. Please contact Pfisterer for your specific needs.

Polymeric composite insulators offer significant advantages over porcelain and glass insulators:

- Superior hydrophobicity and the ability to transfer their intrinsic properties through the pollution layer.
- Superior tracking and erosion resistance.
- Excellent pollution performance.
- Light weight, lower construction and transportation costs.
- Vandalism resistant.
- High strength to weight ratio.
- Improved line aesthetics.

Tension insulators:
Tension and suspension insulators with alternating shed profiles for improved electrical performance. Units are design and tested in accordance with EN 50124, IEC 62621 and IEC 61109.
Available in a range of end fitting configurations

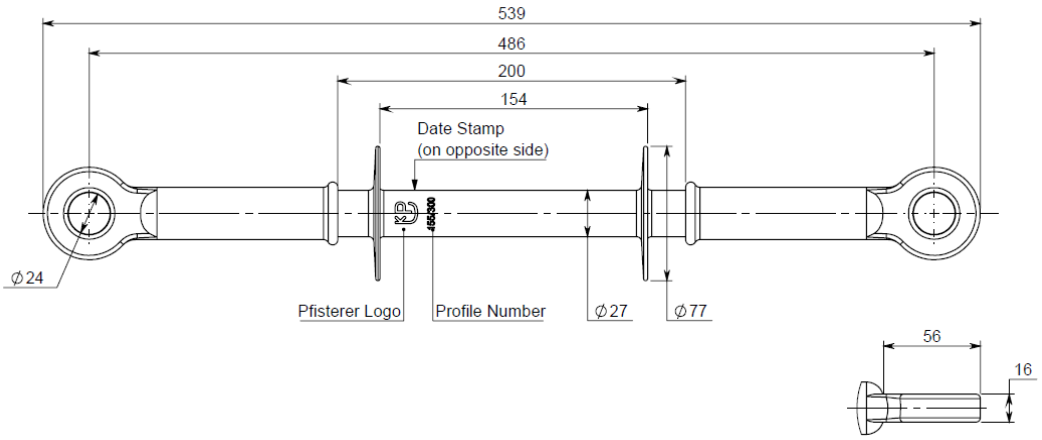
Cantilever insulators
Cantilever insulators with alternating shed profiles for improved electrical performance. Units are design and tested in accordance with EN 50124, IEC 62621 and IEC 61952.
Available in a range of end fitting configurations

Post / Feeder insulators
Cantilever insulators with alternating shed profiles for improved electrical performance. Units are design and tested in accordance with EN 50124, IEC 62621 and IEC 61952.
Available in a range of end fitting configurations

3 kV DC TENSION INSULATOR 155/300

Application:
- Tension insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø19mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to ISO 1461 (min. ave. 85µm thk)

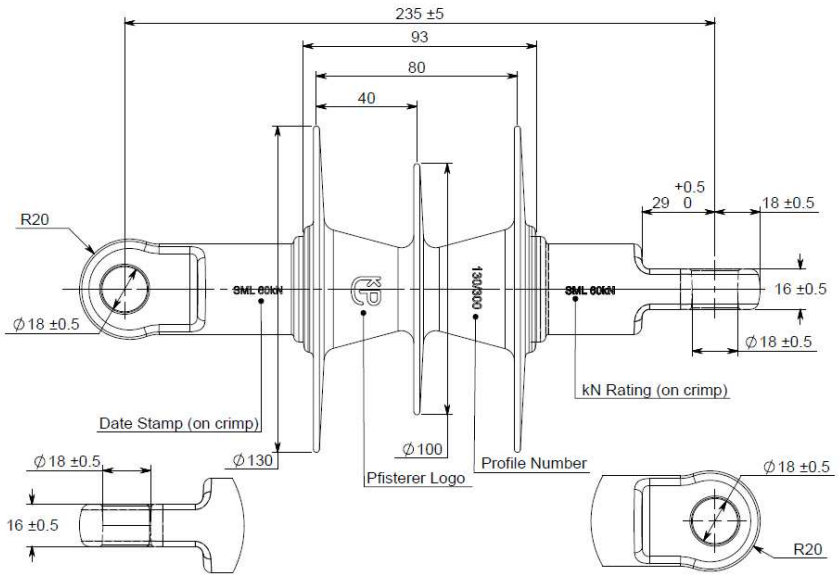


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 034 066	3	65	155	300	135	1,62

3 kV DC TENSION INSULATOR 130/300

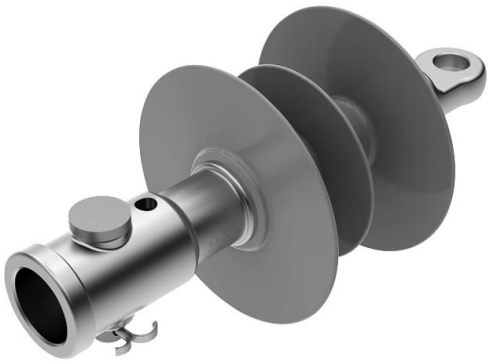
Application:
- Tension insulator

Material:
- Polymeric Housing: Injection Moulded HTV Silicone Rubber with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø25mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)



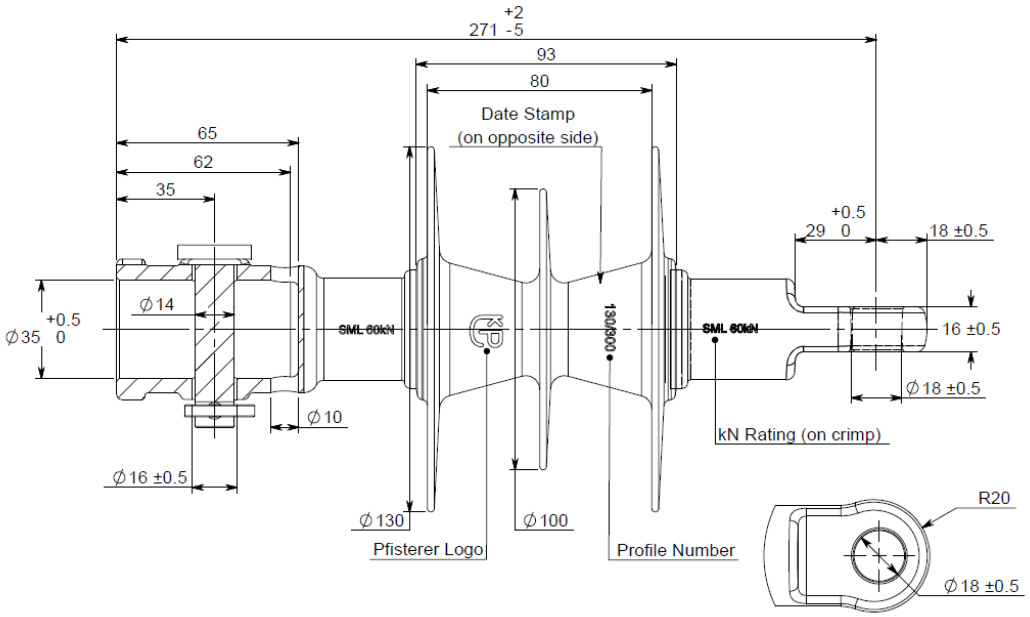
No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 034 386	3	40	130	300	60	1,18

3 kV DC CANTILEVER INSULATOR 130/300



Application:
- Cantilever insulator

Material:
- Polymeric Housing: Injection Moulded HTV Silicone Rubber with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø25mm Rod)
- End-Fittings: SG42 - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)

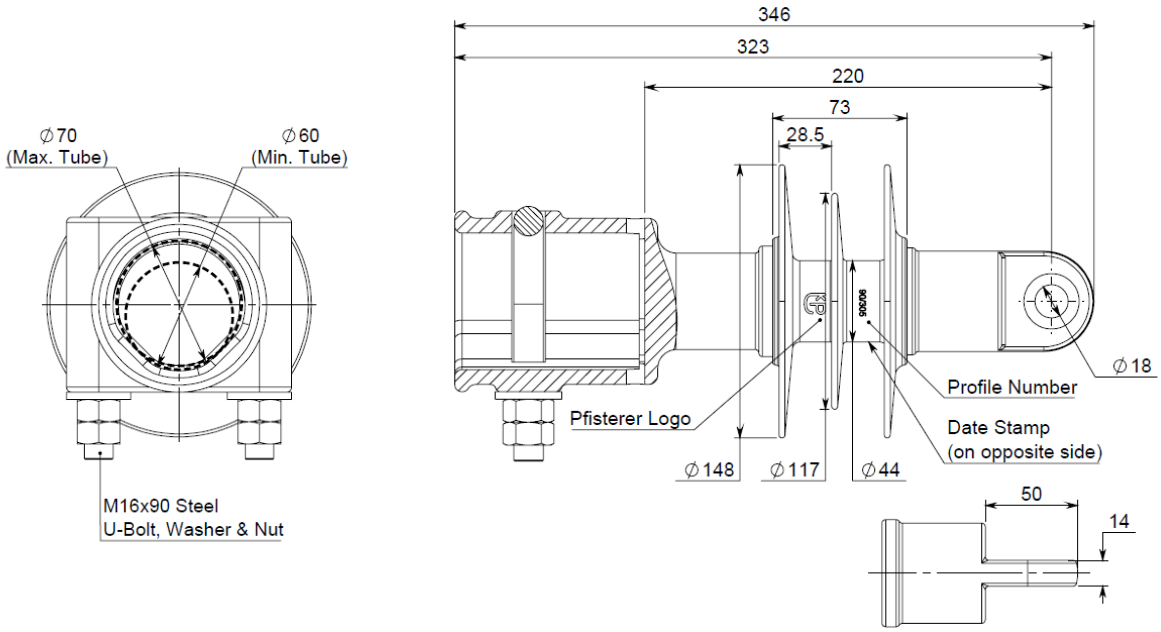


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 034 387	3	40	130	300	60	1,49

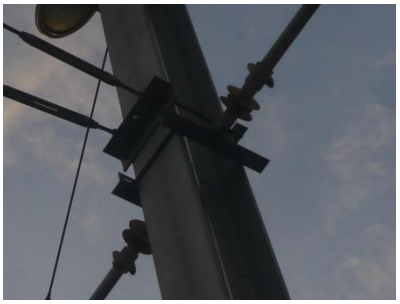
3 kV DC CANTILEVER INSULATOR 90/305

Application:
- Cantilever insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø19mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to ISO 1461 (min. ave. 85µm thk)



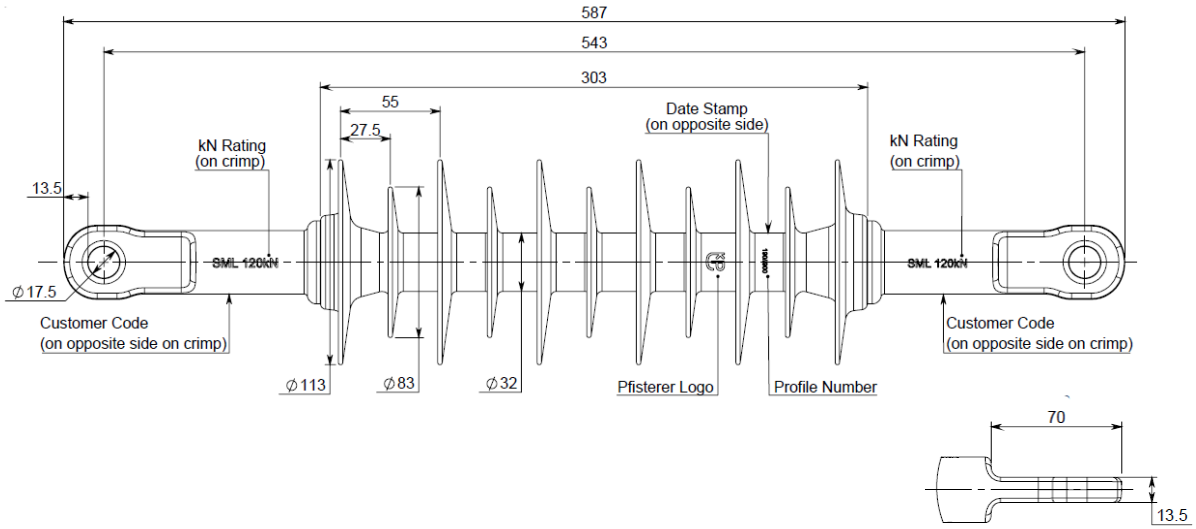
No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified tensile load (STL)	Specified cantilever load (SCL)	Maximum design cantilever load (MDCL)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kN)	(kN)	(kg)
144 034 282	3	35	90	305	60	10	6	5,72



15 kV AC TENSION INSULATOR 190/900

Application:
- Tension insulator

Material:
- Polymeric Housing: Injection Moulded HTV Silicone Rubber with ATH Filler (Grey RAL 7015, min. 3mm thk.)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø25mm Rod)
- End-Fittings: Drop Forged Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 120µm thk.)

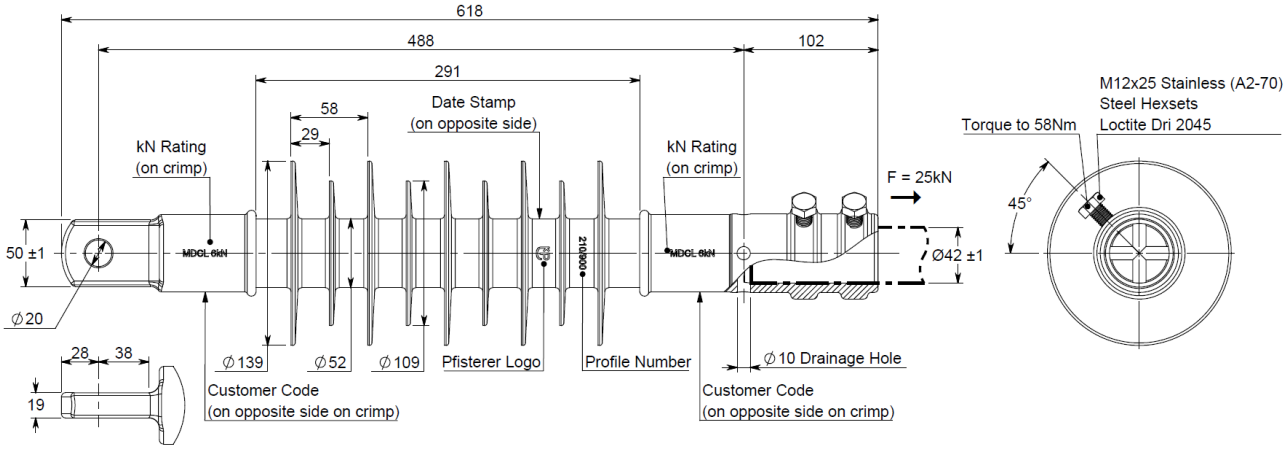


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 057 260	15	85	190	900	120	2,20

15 kV AC CANTILEVER INSULATOR 210/900

Application:
- Cantilever insulator

Material:
- Polymeric Housing: Injection Moulded HTV Silicone Rubber with ATH Filler (Grey RAL 7015, min. 3mm thk.)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø44mm Rod)
- End-Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)

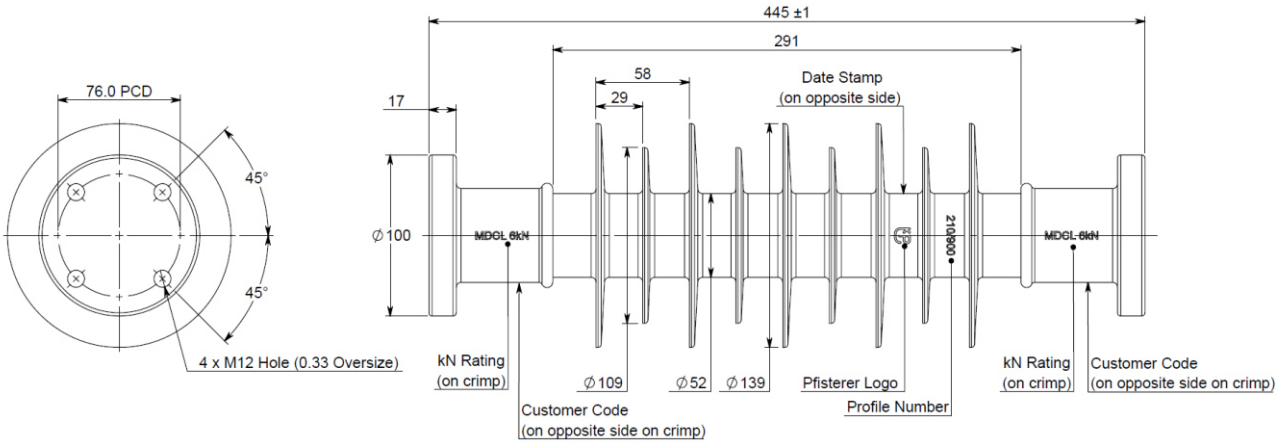


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified tensile load (STL)	Specified cantilever load (SCL)	Maximum design cantilever load (MDCL)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kN)	(kN)	(kg)
144 034 365	15	90	210	900	90	12,0	6,0	5,40

15 kV AC POST INSULATOR 210/900

Application:
- Post insulator

Material:
- Polymeric Housing: Injection Moulded HTV Silicone Rubber with ATH Filler (Grey RAL 7015, min. 3mm thk.)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø44mm Rod)
- End-Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)

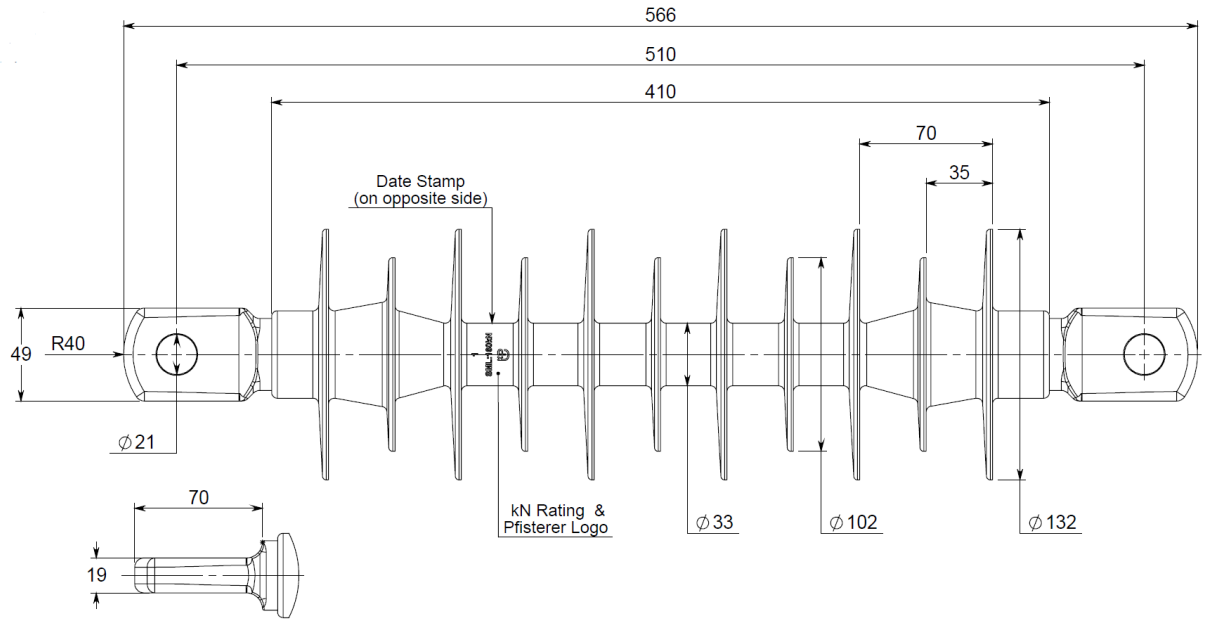


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified tensile load (STL)	Specified cantilever load (SCL)	Maximum design cantilever load (MDCL)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kN)	(kN)	(kg)
144 034 364	15	90	210	900	90	12,0	6,0	5,14

25 kV AC TENSION INSULATOR 250/1238

Application:
- Tension insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø25mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 120µm thk)

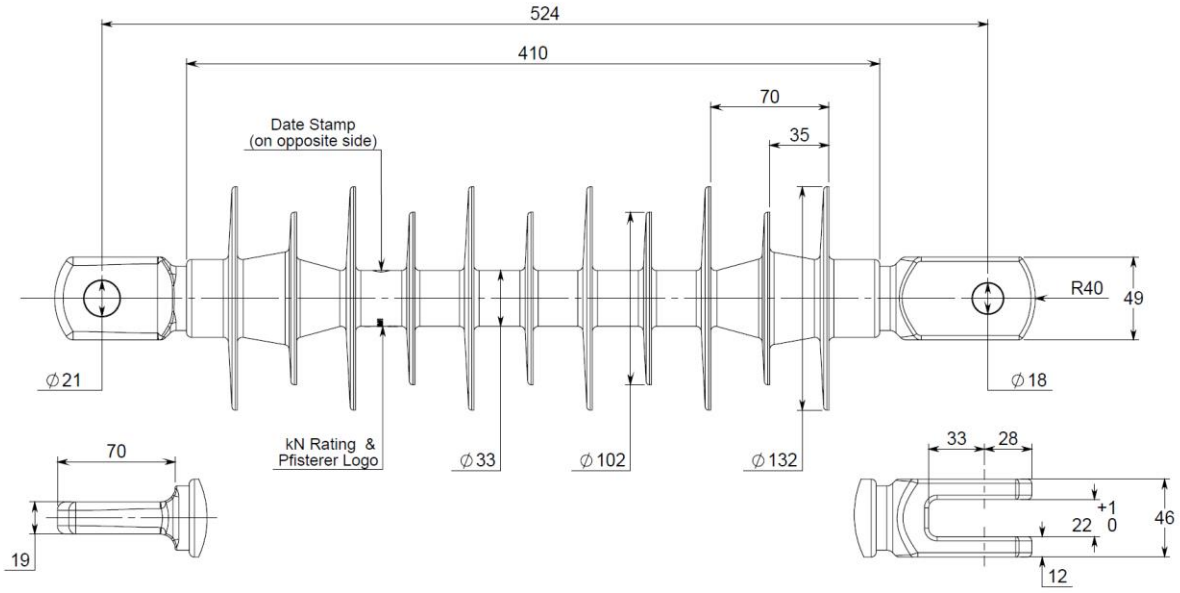


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 034 001	25	125	250	1238	160	2,94

25 kV AC TENSION INSULATOR 250/1238

Application:
- Tension insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø25mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)

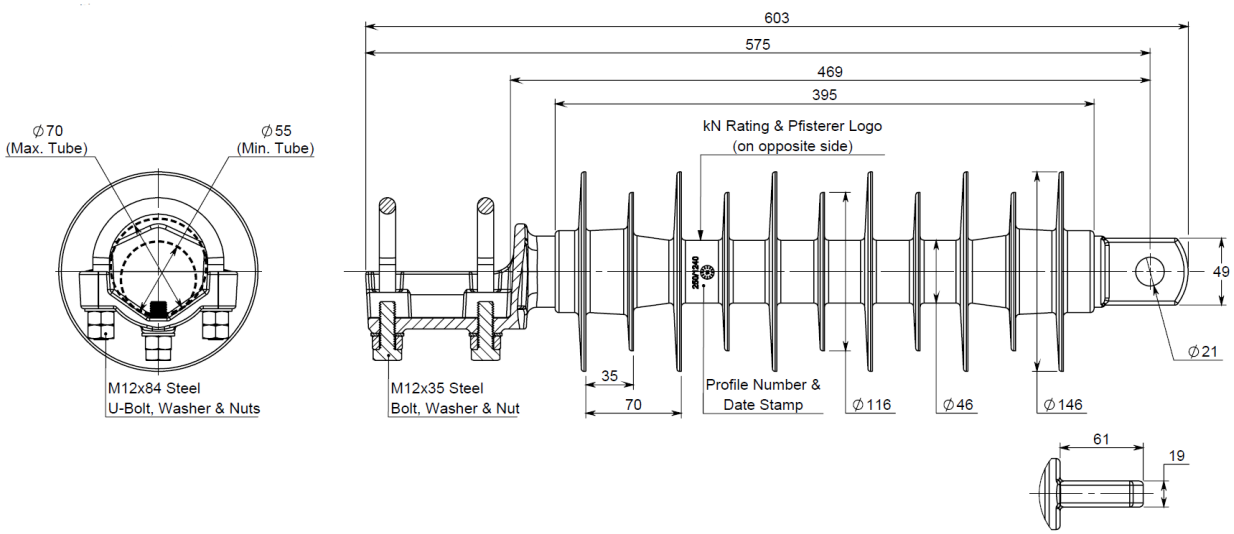


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified mechanical load (SML)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kg)
144 034 156	25	125	250	1238	160	3,77

25 kV AC CANTILEVER INSULATOR 250/1240

Application:
- Cantilever insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø38mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to ISO 1461 (min. ave. 85µm thk)
- U Bolt: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)

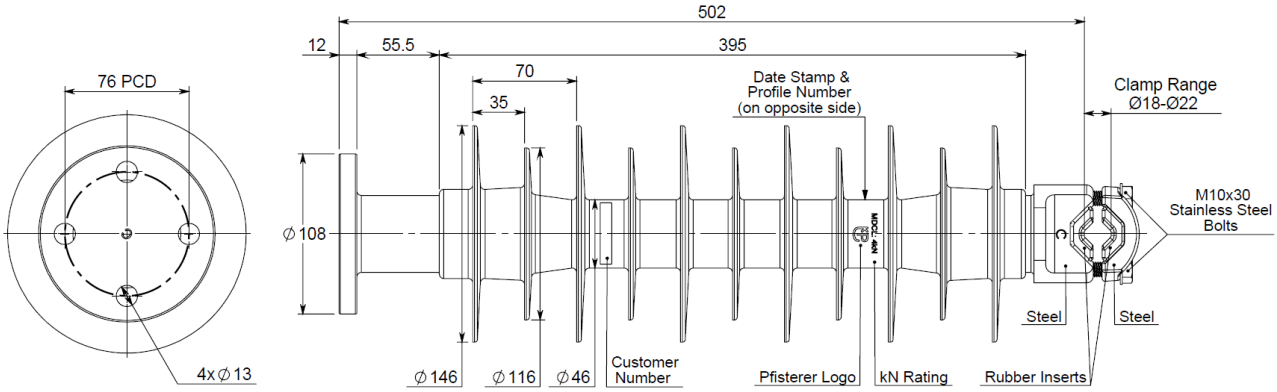


No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified tensile load (STL)	Specified cantilever load (SCL)	Maximum design cantilever load (MDCL)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kN)	(kN)	(kg)
144 034 377	25	125	250	1241	90	8,0	4,0	5,70

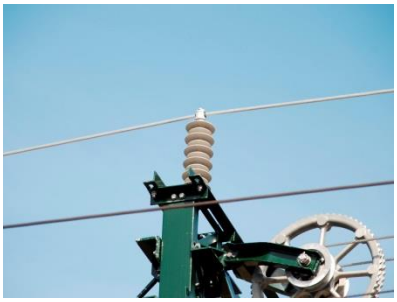
25 kV AC POST INSULATOR 250/1240

Application:
- Post insulator

Material:
- Housing: Injection Moulded HTV Silicone with ATH Filler (Grey RAL 7015, min. 3mm thk)
- Composite Core: Pultruded ECR-Glass Fibre and Epoxy Resin (Ø38mm Rod)
- End Fittings: Steel - Hot Dip Galv. in acc. to EN ISO 1461 (min. ave. 85µm thk)



No.	System Voltage	Power frequency withstand (wet)	Lightning impulse withstand voltage	Minimum creepage distance	Specified tensile load (STL)	Specified cantilever load (SCL)	Maximum design cantilever load (MDCL)	Weight
	(kV)	(kV)	(kV)	(mm)	(kN)	(kN)	(kN)	(kg)
144 034 003	25	125	250	1241	60	8	4	5,42



3 kV SECTION INSULATORS. SINGLE CONTACT WIRE

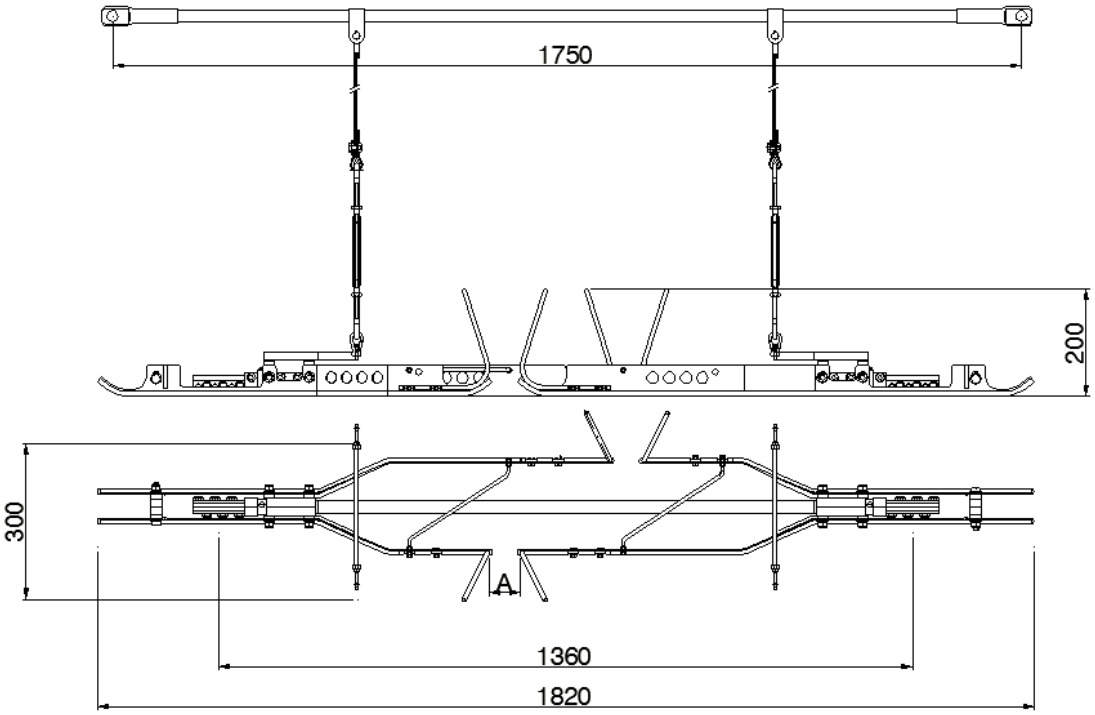
This insulator is used to electrically isolate and separate sections.

Application:

- Section insulator

Material:

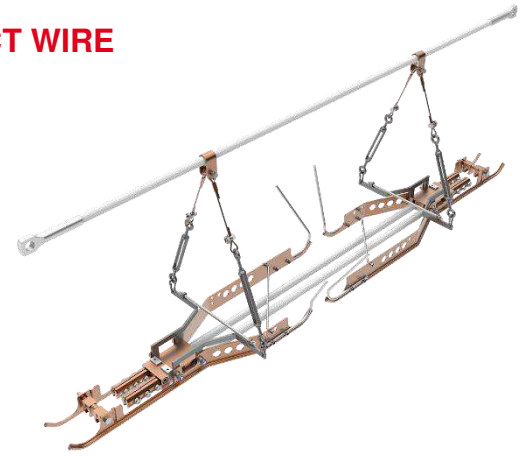
- Insulators: GRP/PTFE
- Deflectors: Cu-ETP
- Spark conductors: St. Steel
- Turnbuckles: St. Steel
- Supports: Cu-ETP
- Contact wire joints: CuNi2Si F50
- Hangers: Cu-ETP
- Cable tighteners: Cu-ETP
- Saddle clamp: Cu-ETP



No.	ID-code	Contact wire	Insulating length (mm)	Distance between arcing horns A (mm)	Total Width (mm)	Max. design speed (km/h)	Weight (kg)
305 422 101	**305 422 DDH SD2 V2**	AC/BC 80 - 120	955	65	220	80	15

3 kV SECTION INSULATORS. DOUBLE CONTACT WIRE

This insulator is used to electrically isolate and separate sections.

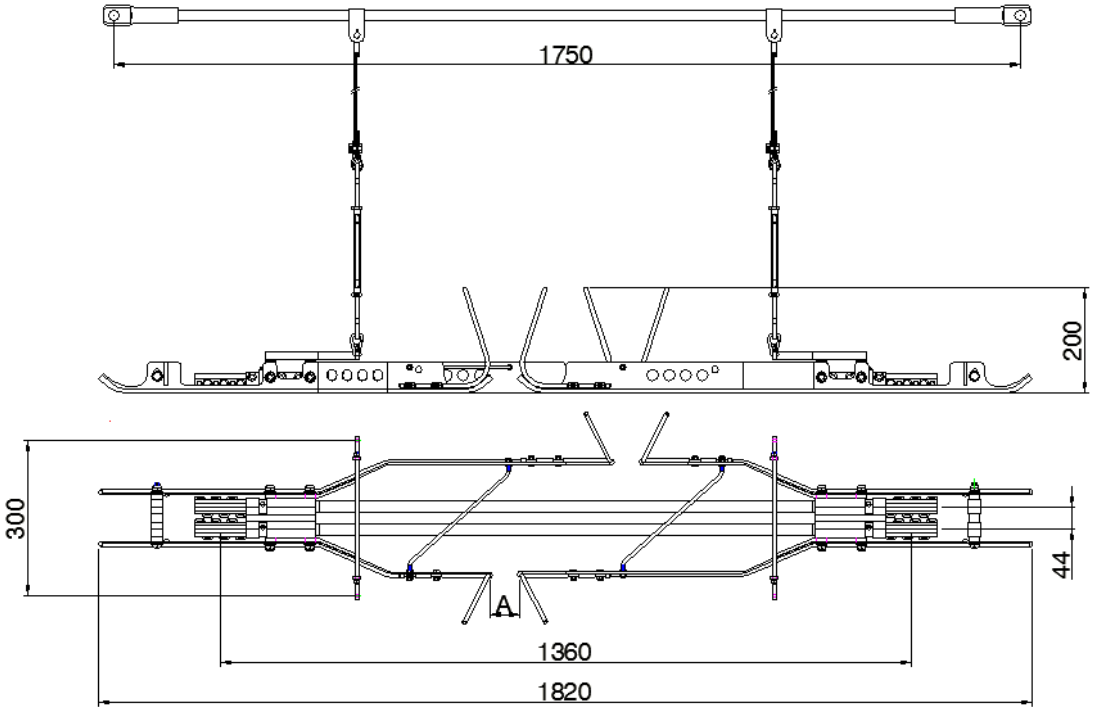


Application:

- Section insulator

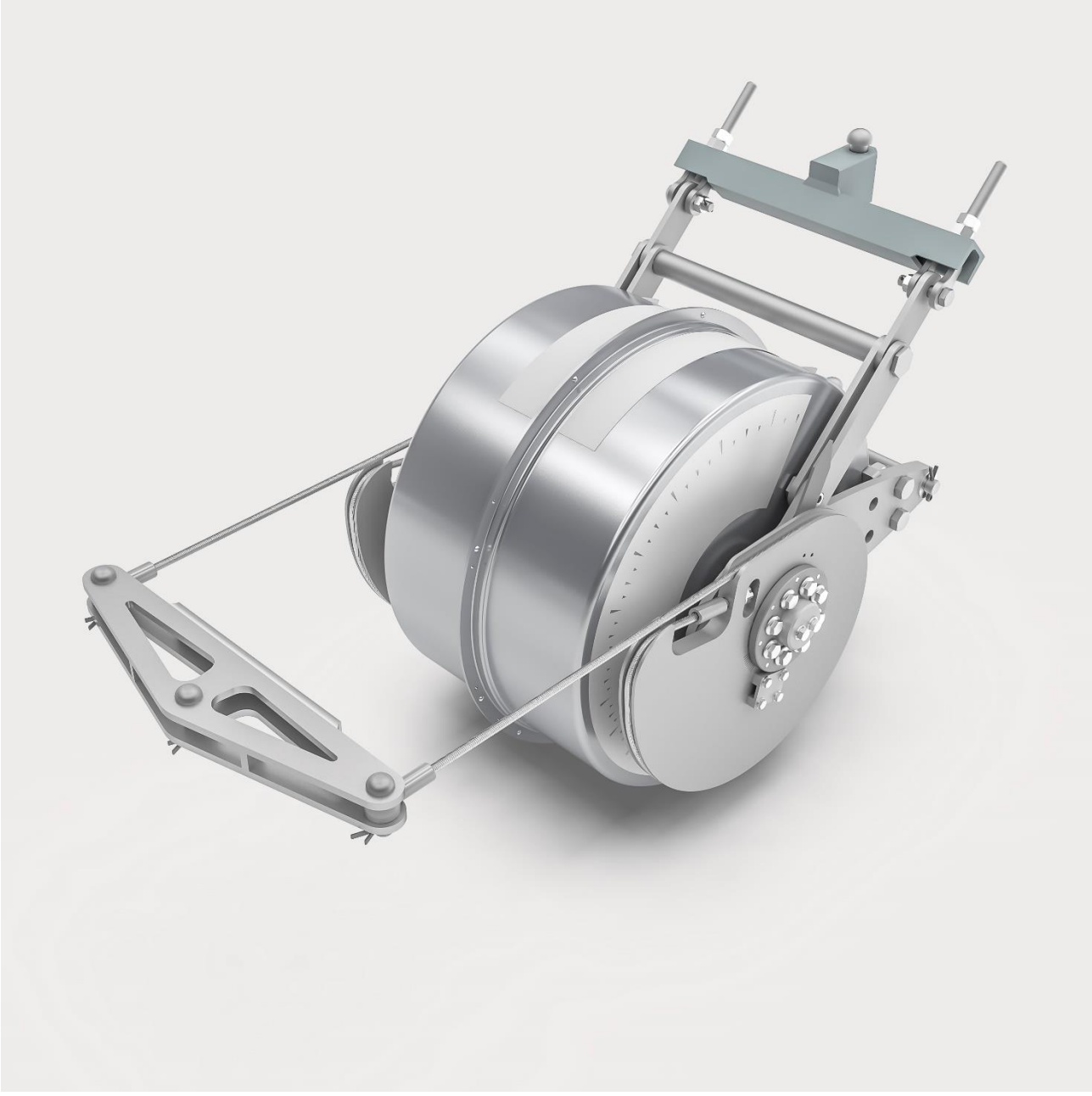
Material:

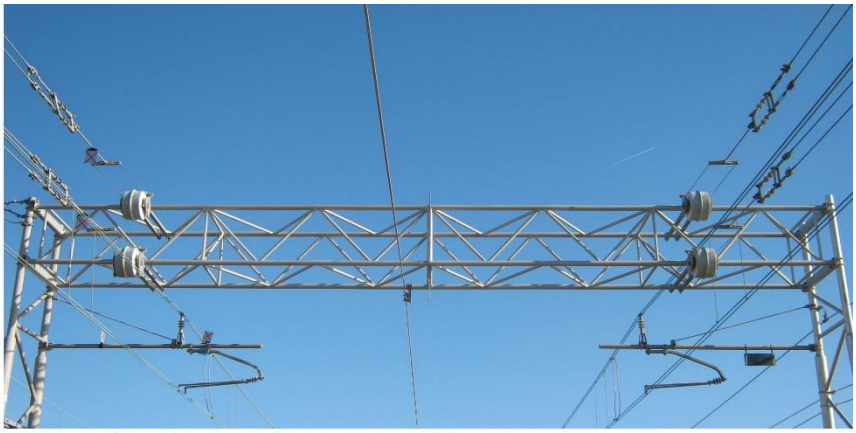
- Insulators: GRP/PTFE
- Deflectors: Cu-ETP
- Spark conductors: St. Steel
- Turnbuckles: St. Steel
- Supports: Cu-ETP
- Contact wire joints: CuNi2Si F50
- Hangers: Cu-ETP
- Cable tighteners: Cu-ETP
- Saddle clamp: Cu-ETP



No.	ID-code	Contact wire	Insulating length (mm)	Distance between arcing horns A (mm)	Total Width (mm)	Max. design speed (km/h)	Weight (kg)
305 422 102	**305 422 DDH DD2 V2**	AC/BC 80 - 120	955	65	220	80	20

TENSOREX C+ Spring Tensioning Device





TENSOREX C+

OVERVIEW

TENSOREX C+ is an automatic tensioning device that uses the force of a spiral spring to constantly tension the railway contact wire and/or messenger wire. It therefore effectively compensates the expansion caused by fluctuating daytime and night-time temperatures as well as the change in the seasons while keeping the tension at a constant level.

Applications:

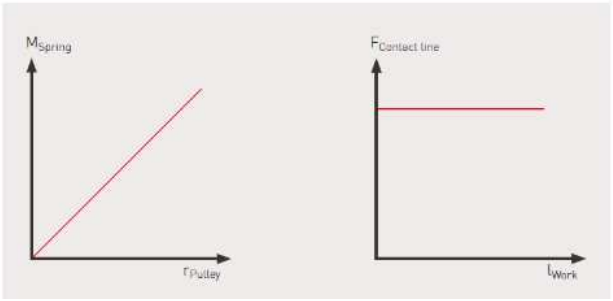
- For railways and tramways
- Best solution for portals, tunnels, noise protection walls and platforms
- Inner-city installations where low visual impact is requested

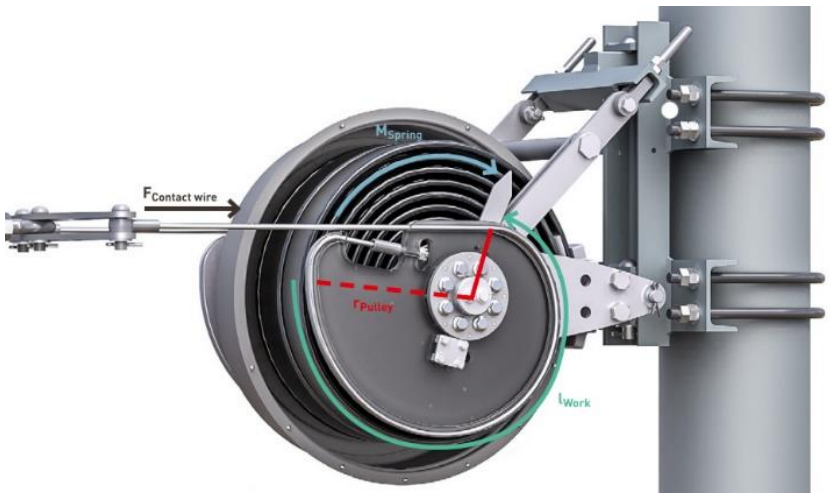
Advantages:

- **Highest safety**
  Designed and built for maximum safety. No falling counterweights in the event of an accident.
- **Highest reliability**
  Every **TENSOREX C+** unit is tested before shipping to the customer and supplied with test certificate.
- **Lowest life cycle costs**
  Minimal installation time and costs. Little maintenance work required, only visual inspection needed.
- **Compact design**
  Easy handling and transportation.
  Esthetical solution for inner-city installations.
- **Fast installation**
  Delivered ready to install, no assembly required, no weights have to be installed.
- **No tensioning weights required**
  Vandalism resistant. Free space on the mast base - escape routes are not blocked.
- **High precision**
  Constant tightening force over the entire compensation range.
  Fast and precise response - very small traction force hysteresis.
- **Purely mechanical device**
  Requires no additional power supply and electronics.
  No influences due to temperature changes.

HOW IT WORKS

TENSOREX C+ exerts a constant pulling force on the connected catenary wires. The tensile force is independent of the temperature-related length changes of the ropes. The one or more spiral springs are firmly connected to two pulleys (one on each side) on the same shaft. The degree of rotation of the shaft results in a variable torque, which is compensated by the variable radius of the pulleys. This produces a constant pulling force over the entire working range.





TENSOREX C+

PRODUCT FAMILY

TENSOREX C+ consists of seven different sizes with different numbers and sizes of springs. From the smallest 1-spring unit to the very powerful 5-spring unit with extra-long springs, the **TENSOREX C+** range covers all application requirements for tram and rail applications.

SIZE	SPRINGS	DRAWING NUMBER	COMPENSATION LENGTH (mm) *)	PULL FORCE *) (kg)	WEIGHT (kg)
TRC+ 1	9,5 x 60	000700696	800 to 450	450 to 800 (4,5 to 8 kN)	90
TRC+ 2	9,5 x 60	000700697	1000 to 400	500 to 1800 (5,0 to 18 kN)	120
TRC+ 3	9,5 x 60	000700698	1100 to 450	850 to 2400 (8,5 to 24 kN)	150
TRC+ 4	9,5 x 60	000700699	1100 to 450	1350 to 3000 (13,5 to 30 kN)	180
TRC+ 4S	11 x 60	000700695	1100 to 675	1500 to 2800 (15 to 28 kN)	235
TRC+ 5S	11 x 60	000700694	1100 to 550	2000 to 4000 (20 to 40 kN)	290
TRC+ 5SL	11 x 60 XL	000700693	1100 to 650	2400 to 4000 (24 to 40 kN)	350

*) Please note, that not all combinations of pull force and compensation length are possible due to technical limitations. Possible combinations (**TENSOREX C+** variants) are listed on the following pages. For more details please contact your local Pfisterer office or search in our online-catalogue for available variants. https://catalogue.pfisterer.com

PRODUCT SELECTION

This information will be needed to select the right **TENSOREX C+** type.

- Requested COMPENSATION or REGULATION length (range between 450 mm and 1100 mm)
- Requested PULL FORCE (range between 450 and 4000 kg / 4,5 and 40 kN)

The parameters above define the basic designation of the model type:

TENSOREX C+ ***COMPENSATION (in mm) / PULL FORCE (in kg)***

Example: TENSOREX C+ 750/1000 - with 750mm compensation length and 1000 kg pull force.

ADDITIONAL NECESSARY INFORMATION

- Contact / messenger wire tension length (from fix point to the tensioning device)
- Temperature range (Delta T)
- Medium standard temperature (to define the middle point of the compensation range)
- Interface details (Type A or type B)
- Desired variant (if a non-standard variant is needed)
- Desired accessories

TENSOREX C+

STANDARD VERSIONS AND VARIANTS

Installation set-up:

TENSOREX C+ can be installed vertically or horizontally:

- The vertical installation is the standard installation method. For this installation method a large variety of fixing brackets is available.
- Horizontal installation: Turned by 90°, for example tunnel installation where the available space (headroom) is limited. There are dedicated fixing brackets available.

Installation interface:

- The standard installation interface is referred to as the “Type A interface”. It consist of two hinge blocks, each 60 mm high, and with a 19 mm connecting pin.
- As an alternative to the Type A interface, Pfisterer offers an interface version that is compatible with a widely used connection standard in railway applications and in some regions also in tram applications. This type of interface is referred to as the "Type B interface". The interface has a 24 mm connecting axis, which is mounted between two L-profiles with a distance of 500mm (standard) or 400mm (compact).

Pull force orientation:

- The standard orientation of the pull force is horizontal (between 0° and -10°).
- For special applications, for example installation on portals, it is possible to order the **TENSOREX C+** with a -60° or -80° pull-force orientation.

Enhanced corrosion protection:

- The steel parts of the **TENSOREX C+** in standard version is corrosion protected with HDG coating (EN 1461).
- For installation sites in harsh environments, for example installation close to the sea front, we offer on request a special coating of the steel parts (Thermal spraying Zn coating as per ISO 2063 (1000 g / m2 or min 140 micron galvanization thickness).
- Stainless steel A4 version also available on request.

Spring Cover Colour:

- The standard colour is RAL 7040
- Other RAL colours are on request. Please note that the lead time will increase.

OPTIONAL VARIANT

- Blocking type: Useful for special maintenance applications. **TENSOREX C+** must be ordered pre-disposed together with blocking pins. Please ask for document “Blocking Pin – 000.300.502” at pds.ets.support@pfisterer.com.

SPARE PARTS

- Ropes (set comprises of two ropes): The ropes connect the pulleys with the front balance. Please ask for document “Replacement of Ropes – 000.300.408” at pds.ets.support@pfisterer.com. *)
- Front balance: The front balance connects the ropes with the catenary. *)

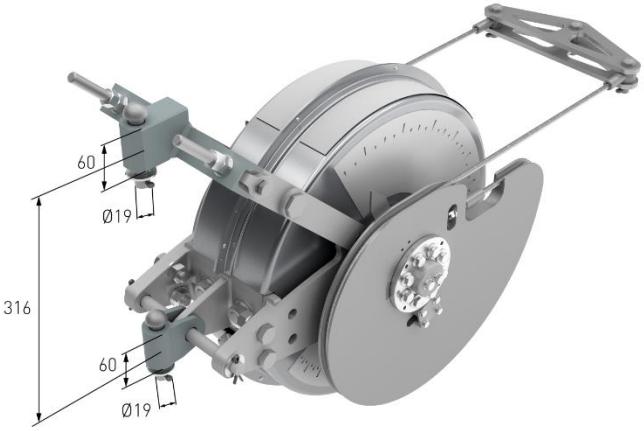
*) *Please supply model number and serial number when ordering.*

TENSOREX C+

INSTALLATION INTERFACE

Type A Interface (Standard)

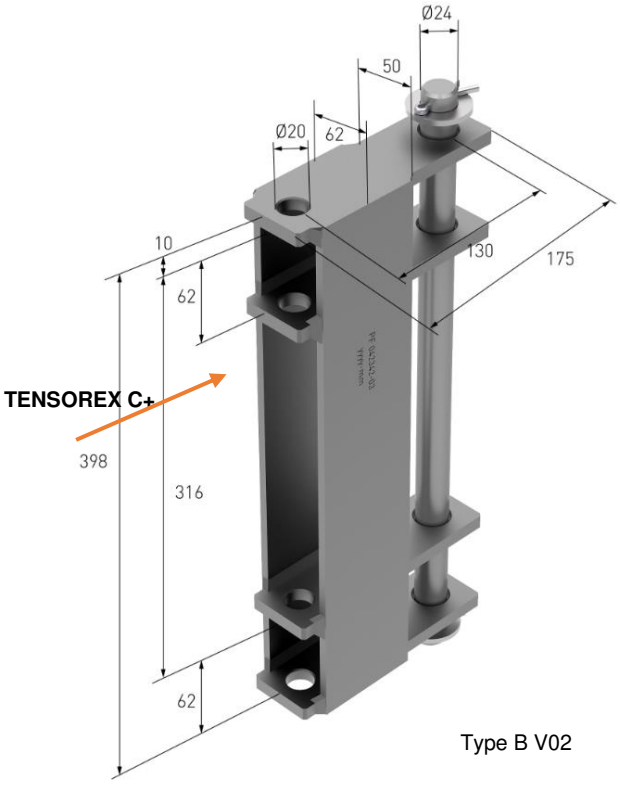
The standard interface to couple the **TENSOREX C+** with the fixing brackets is called “Type A Interface”. The interface consists of two hinge blocks that fit into the mounting frame.



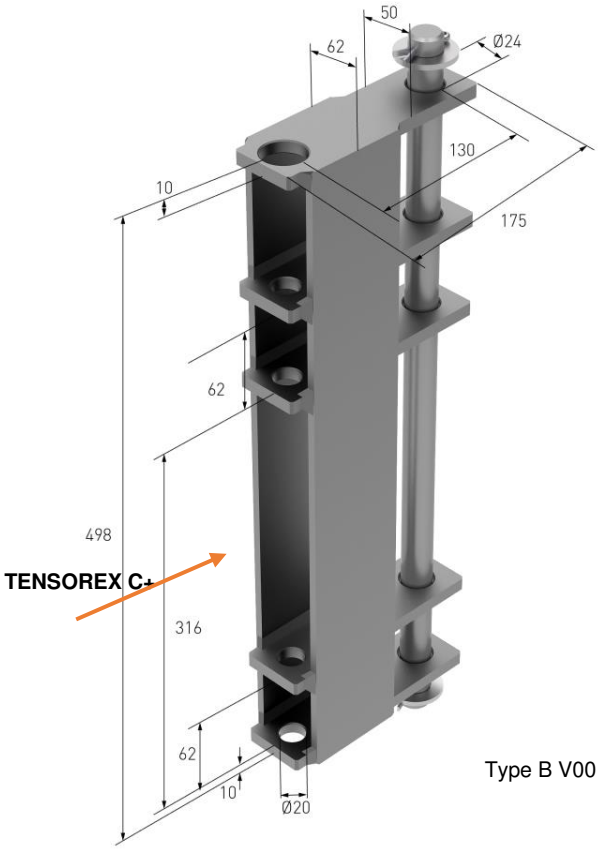
Type B Interface (optional)

Especially for railway applications Pfisterer designed an alternative interface which is compatible to a widely used installation standard for connecting tensioning devices to poles. Sometimes it is referred as DB-standard. This **Type B interface** has been now completely redesigned and greatly improved in handling and functionality. The new interface is called the “**New Type B Adaptor**”.

The New Type B Adaptor is available in two versions, one version for the standard 500 mm DB-connection distance between the mounting profiles, the second version has been reduced in size for better handling and lower weight for non-DB-standard applications. The distance for the second version between the mounting profiles is 400 mm.



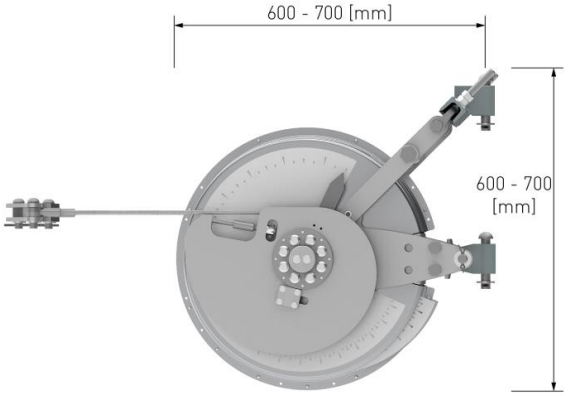
Type B V02

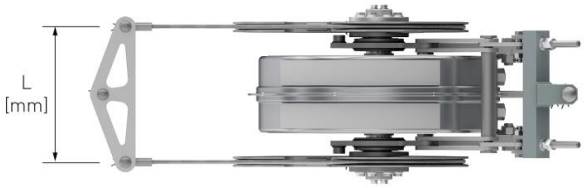


Type B V00

TENSOREX C+
1-SPRING-MODEL

Springs:	1 spring, 60x9,5mm
Weight:	90 kg
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700696
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	270 mm





Part No.	Description	Compensation (mm)	Pull Force (kg / kN)
000 700 435	Tensorex C+ 750/450, 1S	750	450 / 4,4
000 700 669	Tensorex C+ 800/450, 1S	800	450 / 4,4
000 700 850	Tensorex C+ 750/500, 1S	750	500 / 4,9
000 700 855	Tensorex C+ 450/600, 1S	450	600 / 5,9
000 700 497	Tensorex C+ 600/600, 1S	600	600 / 5,9
000 701 096	Tensorex C+ 550/650, 1S	550	650 / 6,4
000 701 204	Tensorex C+ 500/700, 1S	500	700 / 6,9
000 700 451	Tensorex C+ 450/750, 1S	450	750 / 7,4
000 701 067	Tensorex C+ 450/800, 1S	450	800 / 7,8

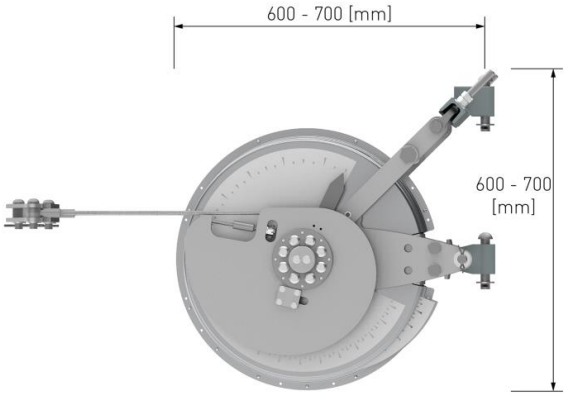
TENSOREX C+ with a 120 mm spring for special applications: *)

Part No.	Description	Compensation (mm)	Pull Force (kg / kN)
000 701 248	Tensorex C+ 450/1000, 1S(120)	450	1000 / 9,8
000 701 249	Tensorex C+ 400/1125, 1S(120)	400	1125 / 11,0
000 701 250	Tensorex C+ 400/1100, 1S(120)	400	1100 / 10,8
000 701 251	Tensorex C+ 400/1050, 1S(120)	400	1050 / 10,3
000 701 252	Tensorex C+ 375/1200, 1S(120)	375	1200 / 11,8

**) Please note that this type is only available for larger projects with a minimum order size of 50 units and with a longer lead time. Please contact us for details at PfistererRail@pfisterer.com.*

TENSOREX C+
2-SPRING-MODEL

Springs:	2 springs, 60x9,5mm
Weight:	120 kg
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700697
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	270 mm

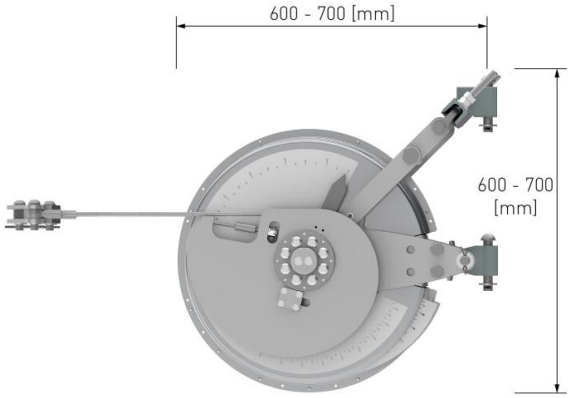


Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 684	Tensorex C+ 900/500, 2S	900	500 / 4,9
000 700 498	Tensorex C+ 750/600, 2S	750	600 / 5,9
000 700 477	Tensorex C+ 1000/600, 2S	1000	600 / 5,9
000 701 095	Tensorex C+ 1000/650, 2S	1000	650 / 6,4
000 700 476	Tensorex C+ 750/750, 2S	750	750 / 7,4
000 700 666	Tensorex C+ 900/750, 2S	900	750 / 7,4
000 700 481	Tensorex C+ 1000/750, 2S	1000	750 / 7,4
000 700 496	Tensorex C+ 750/800, 2S	750	800 / 7,8
000 700 663	Tensorex C+ 900/800, 2S	900	800 / 7,8
000 700 479	Tensorex C+ 750/850, 2S	750	850 / 8,3
000 701 039	Tensorex C+ 800/850, 2S	800	850 / 8,3
000 700 480	Tensorex C+ 850/850, 2S	950	850 / 8,3
000 700 484	Tensorex C+ 750/900, 2S	750	900 / 8,8
000 700 441	Tensorex C+ 750/1000, 2S	750	1000 / 9,8
000 701 127	Tensorex C+ 735/1020, 2S	735	1020 / 10,0
000 700 668	Tensorex C+ 700/1050, 2S	700	1050 / 10,3
000 700 494	Tensorex C+ 650/1100, 2S	650	1100 / 10,8
000 700 680	Tensorex C+ 650/1125, 2S	650	1125 / 11,0
000 700 425	Tensorex C+ 450/1200, 2S	450	1200 / 11,8

Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 475	Tensorex C+ 550/1200, 2S	550	1200 / 11,8
000 700 841	Tensorex C+ 600/1200, 2S	600	1200 / 11,8
000 701 097	Tensorex C+ 450/1225, 2S	450	1225 / 12,0
000 701 086	Tensorex C+ 550/1225, 2S	550	1225 / 12,0
000 700 692	Tensorex C+ 600/1250, 2S	600	1250 / 12,3
000 700 671	Tensorex C+ 450/1320, 2S	450	1320 / 12,9
000 701 077	Tensorex C+ 450/1345, 2S	450	1345 / 13,2
000 701 194	Tensorex C+ 525/1350, 2S	525	1350 / 13,2
000 701 174	Tensorex C+ 525/1360, 2S	525	1360 / 13,3
000 700 852	Tensorex C+ 450/1380, 2S	450	1380 / 13,5
000 700 859	Tensorex C+ 450/1425, 2S	450	1425 / 14,0
000 700 892	Tensorex C+ 500/1425, 2S	500	1425 / 14,0
000 700 423	Tensorex C+ 450/1500, 2S	450	1500 / 14,7
000 701 320	Tensorex C+ 500/1500, 2S	500	1500 / 14,7
000 701 304	Tensorex C+ 450/1575, 2S	450	1575 / 15,5
000 700 868	Tensorex C+ 450/1600, 2S	450	1600 / 15,7
000 700 459	Tensorex C+ 450/1640, 2S	450	1640 / 16,1
000 700 837	Tensorex C+ 400/1800, 2S	400	1800 / 17,7

TENSOREX C+
3-SPRING-MODEL

Springs:	3 springs, 60x9,5mm
Weight:	150 kg
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700698
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	340 mm

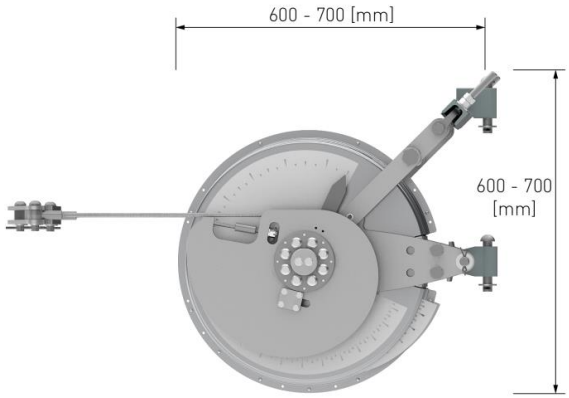


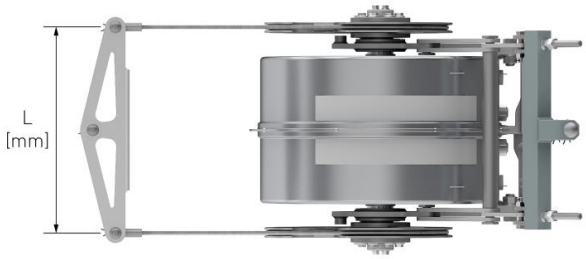
Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 871	Tensorex C+ 1100/750, 3S	1100	750 / 7,4
000 700 885	Tensorex C+ 1000/835, 3S	1000	835 / 8,2
000 701 038	Tensorex C+ 1000/850, 3S	1000	850 / 8,3
000 700 825	Tensorex C+ 1100/850, 3S	1100	850 / 8,3
000 700 887	Tensorex C+ 1000/875, 3S	1000	875 / 8,6
000 701 098	Tensorex C+ 900/1000, 3S	900	1000 / 9,8
000 700 482	Tensorex C+ 1000/1000, 3S	1000	1000 / 9,8
000 700 432	Tensorex C+ 1100/1000, 3S	1100	1000 / 9,8
000 700 828	Tensorex C+ 1100/1050, 3S	1100	1050 / 10,3
000 700 437	Tensorex C+ 750/1100, 3S	750	1100 / 10,8
000 700 683	Tensorex C+ 900/1100, 3S	900	1100 / 10,8
000 700 491	Tensorex C+ 1000/1100, 3S	1000	1100 / 10,8
000 700 886	Tensorex C+ 1000/1125, 3S	1000	1125 / 11,0
000 700 439	Tensorex C+ 750/1200, 3S	750	1200 / 11,8
000 700 845	Tensorex C+ 850/1200, 3S	850	1200 / 11,8
000 700 492	Tensorex C+ 900/1200, 3S	900	1200 / 11,8
000 701 027	Tensorex C+ 750/1225, 3S	750	1225 / 12,0
000 701 090	Tensorex C+ 840/1225, 3S	840	1225 / 12,0
000 700 455	Tensorex C+ 750/1250, 3S	750	1250 / 12,3
000 701 041	Tensorex C+ 850/1250, 3S	850	1250 / 12,3
000 701 074	Tensorex C+ 850/1275, 3S	850	1275 / 12,5
000 700 672	Tensorex C+ 750/1320, 3S	750	1320 / 12,9
000 700 846	Tensorex C+ 850/1320, 3S	850	1320 / 12,9
000 701 091	Tensorex C+ 840/1325, 3S	840	1325 / 13,0

Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 701 025	Tensorex C+ 750/1345, 3S	750	1345 / 13,2
000 701 092	Tensorex C+ 840/1345, 3S	840	1345 / 13,2
000 701 142	Tensorex C+ 850/1360, 3S	850	1360 / 13,3
000 700 454	Tensorex C+ 750/1375, 3S	750	1375 / 13,5
000 701 026	Tensorex C+ 750/1400, 3S	750	1400 / 13,7
000 700 493	Tensorex C+ 800/1400, 3S	800	1400 / 13,7
000 701 167	Tensorex C+ 600/1425, 3S	600	1425 / 14,0
000 700 440	Tensorex C+ 750/1425, 3S	750	1425 / 14,0
000 700 442	Tensorex C+ 750/1440, 3S	750	1440 / 14,1
000 700 433	Tensorex C+ 750/1500, 3S	750	1500 / 14,7
000 700 458	Tensorex C+ 700/1575, 3S	700	1575 / 15,5
000 700 870	Tensorex C+ 700/1600, 3S	700	1600 / 15,7
000 700 438	Tensorex C+ 650/1640, 3S	650	1640 / 16,1
000 701 044	Tensorex C+ 450/1680, 3S	450	1680 / 16,5
000 701 089	Tensorex C+ 550/1680, 3S	550	1680 / 16,5
000 700 821	Tensorex C+ 650/1700, 3S	650	1700 / 16,7
000 701 021	Tensorex C+ 600/1800, 3S	600	1800 / 17,7
000 700 424	Tensorex C+ 450/2000, 3S	450	2000 / 19,6
000 700 457	Tensorex C+ 550/2000, 3S	550	2000 / 19,6
000 700 427	Tensorex C+ 450/2100, 3S	450	2100 / 20,6
000 701 192	Tensorex C+ 500/2170, 3S	500	2170 / 21,3
000 700 490	Tensorex C+ 500/2250, 3S	500	2250 / 22,1
000 700 665	Tensorex C+ 450/2400, 3S	450	2400 / 23,5

TENSOREX C+
4-SPRING-MODEL

Springs:	4 springs, 60x9,5mm
Weight:	180 kg
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700699
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	410 mm



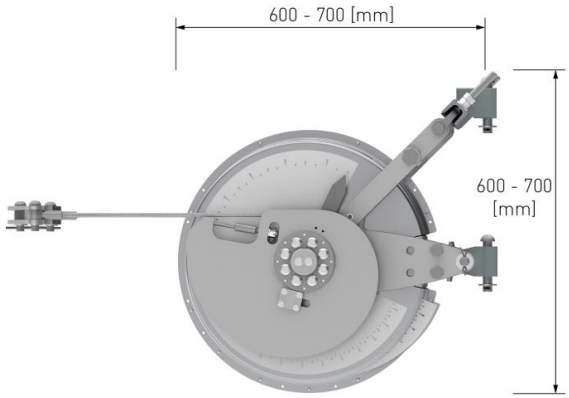


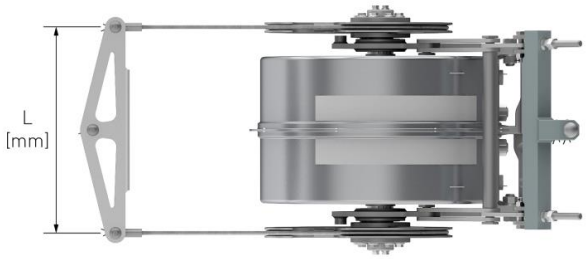
Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 833	Tensorex C+ 1350/1000, 4S	1350	1000 / 9,8
000 700 881	Tensorex C+ 1000/1150, 4S	1000	1150 / 11,3
000 700 691	Tensorex C+ 1000/1200, 4S	1000	1200 / 11,8
000 700 827	Tensorex C+ 1100/1200, 4S	1100	1200 / 11,8
000 700 884	Tensorex C+ 1000/1215, 4S	1000	1215 / 11,9
000 700 883	Tensorex C+ 1000/1225, 4S	1000	1225 / 12,0
000 701 203	Tensorex C+ 1100/1225, 4S	1100	1225 / 12,0
000 701 075	Tensorex C+ 1100/1275, 4S	1100	1275 / 12,5
000 700 847	Tensorex C+ 1000/1320, 4S	1000	1320 / 12,9
000 700 897	Tensorex C+ 1000/1345, 4S	1000	1345 / 13,2
000 701 193	Tensorex C+ 1100/1350, 4S	1100	1350 / 13,2
000 701 005	Tensorex C+ 1000/1360, 4S	1000	1360 / 13,3
000 700 670	Tensorex C+ 1000/1400, 4S	1000	1400 / 13,7
000 700 882	Tensorex C+ 1000/1425, 4S	1000	1425 / 14,0
000 701 058	Tensorex C+ 840/1500, 4S	840	1500 / 14,7
000 700 667	Tensorex C+ 900/1500, 4S	900	1500 / 14,7
000 700 483	Tensorex C+ 1000/1500, 4S	1000	1500 / 14,7
000 701 201	Tensorex C+ 980/1530, 4S	980	1530 / 15,0
000 701 002	Tensorex C+ 840/1600, 4S	840	1600 / 15,7
000 700 838	Tensorex C+ 900/1600, 4S	900	1600 / 15,7
000 700 436	Tensorex C+ 750/1640, 4S	750	1640 / 16,1
000 700 673	Tensorex C+ 750/1680, 4S	750	1680 / 16,5
000 701 093	Tensorex C+ 840/1680, 4S	840	1680 / 16,5
000 700 875	Tensorex C+ 750/1750, 4S	750	1750 / 17,2

Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 876	Tensorex C+ 850/1750, 4S	850	1750 / 17,2
000 701 000	Tensorex C+ 840/1780, 4S	840	1780 / 17,5
000 700 485	Tensorex C+ 750/1800, 4S	750	1800 / 17,7
000 700 489	Tensorex C+ 840/1800, 4S	840	1800 / 17,7
000 701 129	Tensorex C+ 750/1835, 4S	750	1835 / 18,0
000 700 864	Tensorex C+ 750/1875, 4S	750	1875 / 18,4
000 701 130	Tensorex C+ 750/1900, 4S	750	1900 / 18,6
000 701 123	Tensorex C+ 750/1940, 4S	750	1940 / 19,0
000 700 434	Tensorex C+ 750/2000, 4S	750	2000 / 19,6
000 701 128	Tensorex C+ 735/2040, 4S	735	2040 / 20,0
000 700 452	Tensorex C+ 700/2100, 4S	700	2100 / 20,6
000 700 449	Tensorex C+ 650/2150, 4S	650	2150 / 21,1
000 700 450	Tensorex C+ 650/2200, 4S	650	2200 / 21,6
000 700 848	Tensorex C+ 680/2200, 4S	680	2200 / 21,6
000 700 456	Tensorex C+ 650/2250, 4S	650	2250 / 22,1
000 700 478	Tensorex C+ 600/2400, 4S	600	2400 / 23,5
000 700 690	Tensorex C+ 625/2400, 4S	625	2400 / 23,5
000 700 488	Tensorex C+ 600/2500, 4S	600	2500 / 24,5
000 701 208	Tensorex C+ 525/2700, 4S	525	2700 / 26,5
000 700 682	Tensorex C+ 550/2700, 4S	550	2700 / 26,5
000 700 453	Tensorex C+ 550/2750, 4S	550	2750 / 27,0
000 701 057	Tensorex C+ 500/2800, 4S	500	2800 / 27,5
000 700 830	Tensorex C+ 450/3000, 4S	450	3000 / 29,4

TENSOREX C+
4S-SPRING-MODEL

Springs:	4 springs, 60x11mm
Weight:	235 kg
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700695
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	410 mm



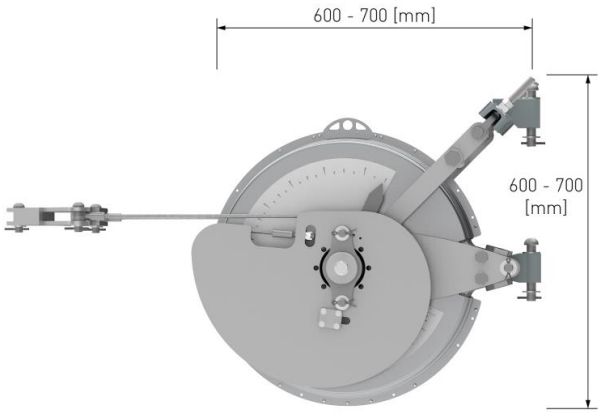


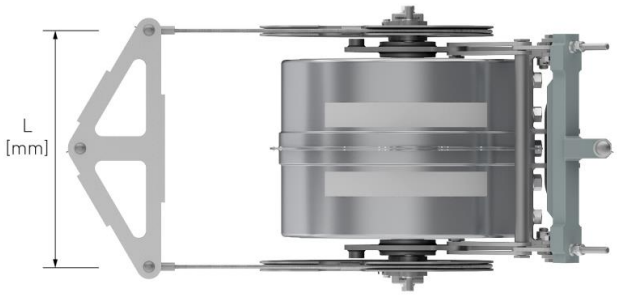
Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 831	Tensorex C+ 1350/1200, 4SS	1350	1200 / 11,8
000 700 688	Tensorex C+ 1100/1500, 4SS	1100	1500 / 14,7
000 701 045	Tensorex C+ 1125/1500, 4SS	1125	1500 / 14,7
000 700 839	Tensorex C+ 1000/1600, 4SS	1000	1600 / 15,7
000 700 873	Tensorex C+ 1100/1600, 4SS	1100	1600 / 15,7
000 700 877	Tensorex C+ 1000/1650, 4SS	1000	1650 / 16,2
000 700 687	Tensorex C+ 1000/1680, 4SS	1000	1680 / 16,5
000 700 826	Tensorex C+ 1100/1700, 4SS	1100	1700 / 16,7
000 701 050	Tensorex C+ 1000/1800, 4SS	1000	1800 / 17,7
000 701 049	Tensorex C+ 1050/1800, 4SS	1050	1800 / 17,7
000 701 059	Tensorex C+ 840/1900, 4SS	840	1900 / 18,6
000 701 001	Tensorex C+ 840/1955, 4SS	840	1955 / 19,2
000 701 066	Tensorex C+ 750/2000, 4SS	750	2000 / 19,6
000 701 083	Tensorex C+ 840/2000, 4SS	840	2000 / 19,6

Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 689	Tensorex C+ 900/2000, 4SS	900	2000 / 19,6
000 700 822	Tensorex C+ 900/2100, 4SS	900	2100 / 20,6
000 701 195	Tensorex C+ 750/2150, 4SS	750	2150 / 21,1
000 701 196	Tensorex C+ 750/2200, 4SS	750	2200 / 21,6
000 701 082	Tensorex C+ 840/2250, 4SS	840	2250 / 22,1
000 701 131	Tensorex C+ 750/2350, 4SS	750	2350 / 23,1
000 701 144	Tensorex C+ 800/2350, 4SS	800	2350 / 23,1
000 700 659	Tensorex C+ 750/2400, 4SS	750	2400 / 23,5
000 701 133	Tensorex C+ 785/2400, 4SS	785	2400 / 23,5
000 701 048	Tensorex C+ 750/2500, 4SS	750	2500 / 24,5
000 701 132	Tensorex C+ 750/2550, 4SS	750	2550 / 25,0
000 701 036	Tensorex C+ 700/2590, 4SS	700	2590 / 25,4
000 701 062	Tensorex C+ 675/2800, 4SS	675	2800 / 27,5

TENSOREX C+
5S-SPRING-MODEL

Springs:	5 springs, 60x11mm ML: 5 XL springs, 60x11mm
Weight:	290 kg (ML: 350 kg)
Design load:	40 kN
Minimum failing load:	65 kN
Service temperature:	-40°C to +70°C
GA drawing No.:	000700694 (ML: 000700693)
Horizontal rotation:	+/- 10°
Vertical inclination:	+ 0° / -10°
Front Balance Size L	482 mm

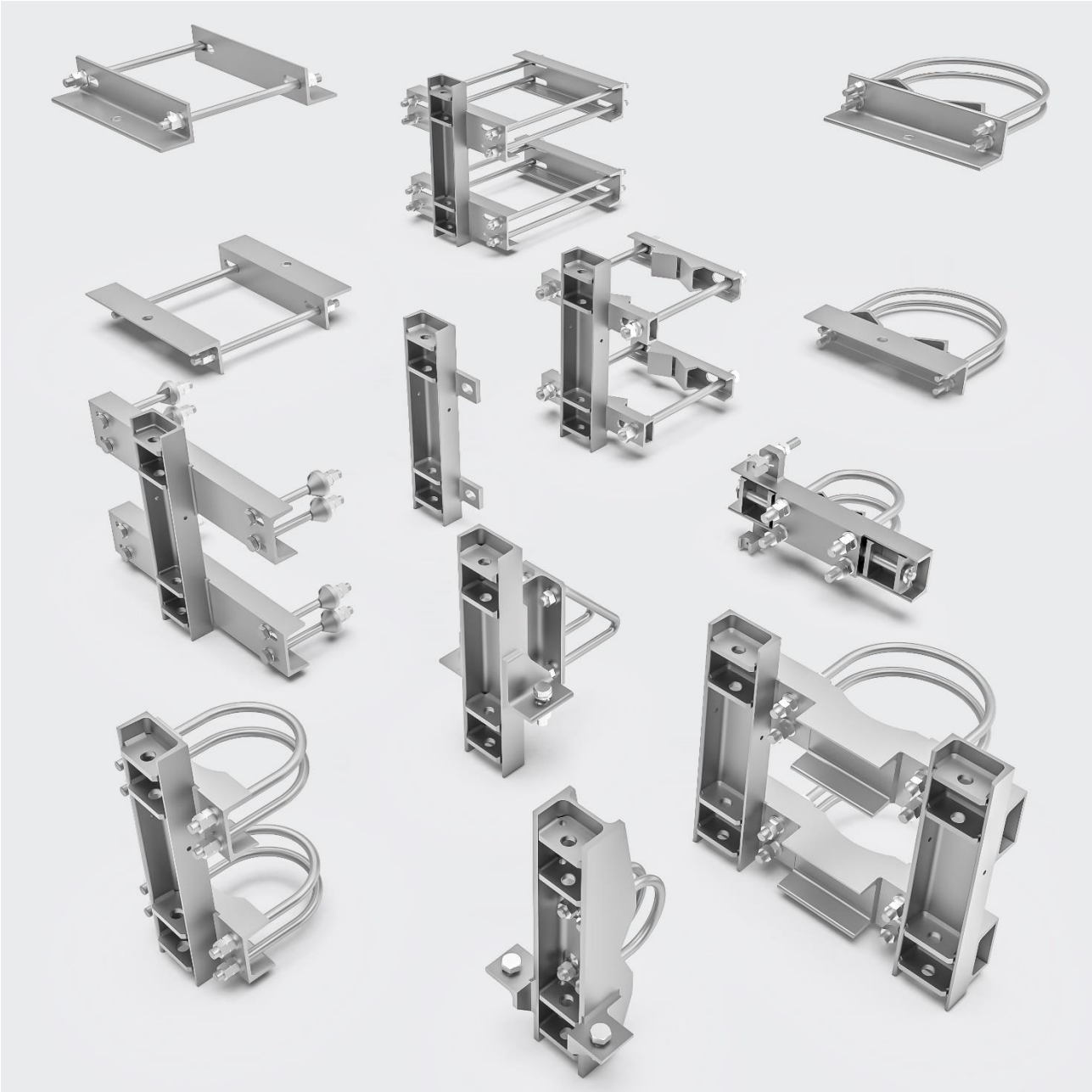




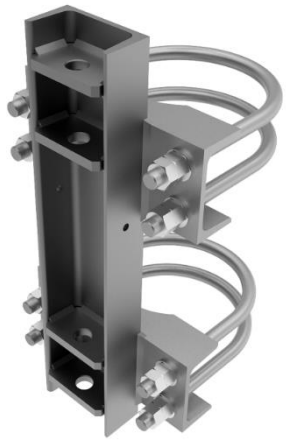
Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 700 834	Tensorex C+ 1350/1500, 5SS	1350	1500 / 14,7
000 700 832	Tensorex C+ 1350/1700, 5SS	1350	1700 / 16,7
000 700 878	Tensorex C+ 1000/1985, 5SS	1000	1985 / 19,5
000 701 032	Tensorex C+ 1000/2000, 5SS	1000	2000 / 19,6
000 700 840	Tensorex C+ 1100/2000, 5SS	1100	2000 / 19,6
000 700 880	Tensorex C+ 1000/2085, 5SS	1000	2085 / 20,5
000 700 829	Tensorex C+ 1100/2100, 5SS	1100	2100 / 20,6
000 701 020	Tensorex C+ 1050/2200, 5SS	1050	2200 / 21,6
000 700 879	Tensorex C+ 1000/2250, 5SS	1000	2250 / 22,1
000 701 006	Tensorex C+ 1000/2270, 5SS	1000	2270 / 22,3
000 701 022	Tensorex C+ 900/2400, 5SS	900	2400 / 23,5
000 700 842	Tensorex C+ 950/2400, 5SS	950	2400 / 23,5
000 701 191	Tensorex C+ 750/2500, 5SS	750	2500 / 24,5
000 701 023	Tensorex C+ 925/2500, 5SS	925	2500 / 24,5
000 701 035	Tensorex C+ 900/2590, 5SS	900	2590 / 25,4
000 700 836	Tensorex C+ 900/2600, 5SS	900	2600 / 25,5
000 701 051	Tensorex C+ 900/2640, 5SS	900	2640 / 25,9
000 701 141	Tensorex C+ 850/2720, 5SS	850	2720 / 26,7
000 700 835	Tensorex C+ 840/2800, 5SS	840	2800 / 27,5

Part No.	Description	Comp (mm)	Pull Force (kg / kN)
000 701 176	Tensorex C+ 800/2850, 5SS	800	2850 / 28,0
000 701 122	Tensorex C+ 750/2860, 5SS	750	2860 / 28,1
000 700 824	Tensorex C+ 750/3000, 5SS	750	3000 / 29,4
000 701 134	Tensorex C+ 750/3060, 5SS	750	3060 / 30,0
000 700 819	Tensorex C+ 750/3150, 5SS	750	3150 / 30,9
000 701 004	Tensorex C+ 640/3630, 5SS	640	3630 / 35,6
000 700 899	Tensorex C+ 550/4000, 5SS	550	4000 / 39,2
000 701 157	Tensorex C+ 1100/2200, 5SS-ML	1100	2200 / 21,6
000 701 156	Tensorex C+ 1100/2400, 5SS-ML	1100	2400 / 23,5
000 701 177	Tensorex C+ 1050/2500, 5SS-ML	1050	2500 / 24,5
000 701 175	Tensorex C+ 900/2850, 5SS-ML	900	2850 / 28,0
000 701 226	Tensorex C+ 825/3150, 5SS-ML	825	3150 / 30,9
000 701 171	Tensorex C+ 800/3300, 5SS-ML	800	3300 / 32,4
000 701 125	Tensorex C+ 780/3400, 5SS-ML	780	3400 / 33,4
000 701 184	Tensorex C+ 750/3560, 5SS-ML	750	3560 / 34,9
000 701 073	Tensorex C+ 700/3750, 5SS-ML	700	3750 / 36,8
000 701 081	Tensorex C+ 650/4000, 5SS-ML	650	4000 / 39,2
000 701 140	Tensorex C+ 625/4080, 5SS-ML	625	4080 / 40,0

TENSOREX C+ Attachments



ATTACHMENTS TYPE A FOR CIRCULAR MASTS



No.	Drawing No.	Back Fitting Type	Dimension (mm)
000 700 408 00000	000700408-00	A	Pole Ø 160 mm
000 700 408 00001	000700408-01	A	Pole Ø 215/219 mm
000 700 408 00002	000700408-02	A	Pole Ø 225/229 mm
000 700 408 00003	000700408-03	A	Pole Ø 168,3 mm
000 700 408 00004	000700408-04	A	Pole Ø 280 mm
000 700 408 00005	000700408-05	A	Pole Ø 193,7 mm
000 700 408 00006	000700408-06	A	Pole Ø 244,5 mm
000 700 408 00007	000700408-07	A	Pole Ø 323,9 mm
000 700 408 00008	000700408-08	A	Pole Ø 267 mm
000 700 408 00009	000700408-09	A	Pole Ø 240 mm
000 700 408 00010	000700408-10	A	Pole Ø 290 mm
000 700 408 00012	000700408-12	A	Pole Ø 273 mm
000 700 408 00013	000700408-13	A	Pole Ø 290 mm
000 700 408 00014	000700408-14	A	Pole Ø 290 mm INOX collar
000 700 408 00015	000700408-15	A	Pole Ø 280 mm INOX collar
000 700 408 00016	000700408-16	A	Pole Ø 185 mm
000 700 408 00017	000700408-17	A	Pole Ø 406,4 mm
000 700 408 00018	000700408-18	A	Pole Ø 300 mm
000 700 408 00019	000700408-19	A	Pole Ø 355,6 mm
000 700 408 00020	000700408-20	A	Pole Ø 285 mm
000 700 408 00021	000700408-21	A	Pole Ø 203 mm
000 700 408 00022	000700408-22	A	Pole Ø 254 mm
000 700 408 00023	000700408-23	A	Pole Ø 360 mm
000 700 408 00024	000700408-24	A	Pole Ø 440 mm
000 700 408 00025	000700408-25	A	Pole Ø 470 mm
000 700 408 00026	000700408-26	A	Pole Ø 457 mm
000 700 408 00027	000700408-27	A	Pole Ø 508 mm

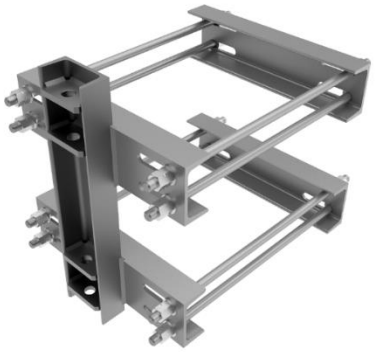
ATTACHMENTS TYPE A FOR WALLS

No.	Drawing No.	Back Fitting Type	Dimension
000 042 187 00010	042187-10	A	4x M20, slot-hole distance 148-168mm
000 042 187 00011	042187-11	A	4x M20, slot-hole distance 220-300mm

Other variants are available on request

ATTACHMENTS TYPE A FOR RECTANGULAR AND PEINER MASTS

No.	Drawing No.	Back Fitting Type	Dimension W x L of threaded rods (mm)
000 700 415 00000	000700415-00	A	Pole H 200 – 310 x 360
000 700 415 00001	000700415-01	A	Pole H 200 – 310 x 310
000 700 415 00002	000700415-02	A	Pole H 200 – 310 x 220
000 700 415 00003	000700415-03	A	Pole H 200 – 310 x 255
000 700 415 00004	000700415-04	A	Pole H 200 – 310 x 90
000 700 415 00005	000700415-05	A	Pole H 200 – 310 x 240
000 700 415 00006	000700415-06	A	Pole H 200 – 310 x 580
000 700 415 00007	000700415-07	A	Pole H 320 x L of threaded rod
000 700 415 00008	000700415-08	A	Pole H 200 x 200
000 700 415 00009	000700415-09	A	Pole H 320 – 435 x 356
000 700 415 00010	000700415-10	A	Pole H 320 – 435 x 100
000 700 415 00011	000700415-11	A	Pole H 320 – 435 x 600
000 700 415 00013	000700415-13	A	Pole H 210 – 378 x 160
000 700 415 00014	000700415-14	A	Pole H 200 – 300 x 210
000 700 415 00016	000700415-16	A	Pole H 150 – 220 x 230
000 700 415 00017	000700415-17	A	Pole H 100 – 124 x 240
000 700 415 00018	000700415-18	A	Pole H 200 – 310 x 465
000 700 415 00019	000700415-19	A	Pole H 200 – 310 x 610
000 700 415 00020	000700415-20	A	Pole H 200 – 310 x 770
000 700 415 00030	000700415-30	A	Pole H 500 – 550 x 300

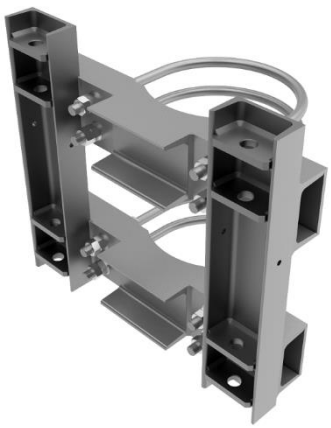


ATTACHMENTS TYPE A FOR 2X TENSOREX C+ FOR PARALLEL INSTALLATION ON RECTANGULAR MASTS

No.	Drawing No.	Back Fitting Type /TRC size	Dimension / TRC Distance D (mm)
000 700 461 00015	000700461-15	A / 2 springs	Pole H 240 x 240 / D = 440
000 700 461 00019	000700461-19	A / 2 springs	Pole H 306 x 300 / D = 500

ATTACHMENTS TYPE A FOR 2X TENSOREX C+ FOR PARALLEL INSTALLATION ON CIRCULAR MASTS

No.	Drawing No.	Back Fitting Type /TRC size	Dimension / TRC Distance D (mm)
000 700 461 00000	000700461-00	A / 2 springs	Pole Ø 215 – 219 / D = 400
000 700 461 00029	000700461-29	A / 3 springs	Pole Ø 273 / D = 540
000 700 461 00035	000700461-35	A / 2 springs	Pole Ø 406 / D = 380
000 700 461 00040	000700461-40	A / 4 springs	Pole Ø 330 - 400 / D = 630



ATTACHMENTS TYPE A, ADJUSTABLE, FOR CIRCULAR AND CIRCULAR TAPERED MASTS

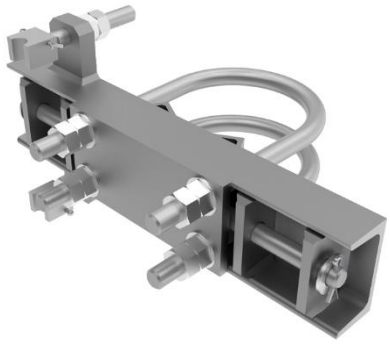
No.	Drawing No.	Back Fitting Type	Dimensions / Rods (mm)
000 700 462 00000	000700462-00	A	Pole Ø 190 - 230 mm / 4xM16
000 700 462 00001	000700462-01	A	Pole Ø 160 - 240 mm / 8xM16
000 700 462 00002	000700462-02	A	Pole Ø 240 - 340 mm / 8xM16
000 700 462 00004	000700462-04	A	Pole Ø 115 - 230 mm / 4xM20
000 700 462 00005	000700462-05	A	Pole Ø 170 - 230 mm / 4xM20
000 700 462 00006	000700462-06	A	Pole Ø 115 - 170 mm / 4xM20
000 700 462 00007	000700462-07	A	Pole Ø 200 - 330 mm / 4xM20
000 700 462 00008	000700462-08	A	Pole Ø 240 - 340 mm / 4xM20
000 700 462 00010	000700462-10	A	Pole Ø 250 - 390 mm / 4xM20
000 700 462 00012	000700462-12	A	Pole Ø 200 - 330 mm / 4xM20

ATTACHMENTS TYPE A FOR LATTICE POLES

No.	Drawing No.	Back Fitting Type	Dimension (mm)
000 700 463 00000	000700463-00	A	450 - 500
000 700 463 00006	000700463-06	A	450 - 650

ATTACHMENTS TYPE A FOR HORIZONTAL INSTALLATION

No.	Drawing No.	Back Fitting Type	Dimension (mm)
000 700 646 00020	000700646-20	A	Pole Ø 160, TRC+ 2S-3S
000 700 646 00028	000700646-28	A	Pole Ø 160, TRC+ 4S-5SS
000 700 646 00029	000700646-29	A	460x160 for portals, TRC+ 2S-3S
000 700 646 00030	000700646-30	A	460x200 for portals, TRC+ 2S-3S
000 700 646 00031	000700646-31	A	Pole Ø 160



Other variants are available on request

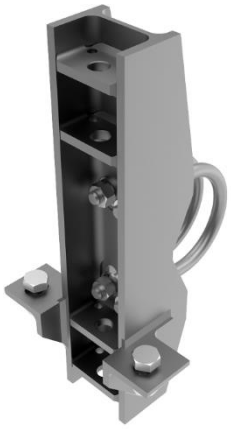
ATTACHMENTS TYPE A FOR BAND-IT FIXINGS

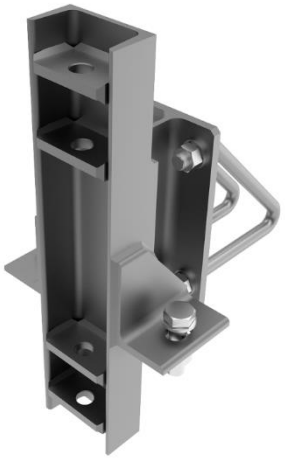
No.	Drawing No.	Back Fitting Type	Dimension
000 042 187 00001	042187-01	A	Pole Ø variable

ATTACHMENTS TYPE A AND B FOR PORTALS AND OTHER APPLICATIONS

Please contact Pfisterer for your specific application: PfistererRail@pfisterer.com

Examples:



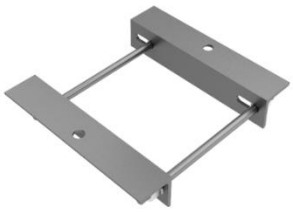


ATTACHMENTS TYPE B FOR CIRCULAR MASTS

No.	Drawing No.	Back Fitting Type	Dimension / Rods (mm)
000 700 468 00001	000700468-01	B	Pole Ø 324 / 4xM16 U-bolts
000 700 468 00016	000700468-16	B	Pole Ø 203 / 4xM16 U-bolts
000 700 468 00017	000700468-17	B	Pole Ø 215 - 219 / 4xM16 U-bolts
000 700 468 00018	000700468-18	B	Pole Ø 235 / 4xM16 U-bolts
000 700 468 00019	000700468-19	B	Pole Ø 250 / 4xM16 U-bolts
000 700 468 00020	000700468-20	B	Pole Ø 255 / 4xM16 U-bolts
000 700 468 00022	000700468-22	B	Pole Ø 300 / 4xM16 U-bolts
000 700 468 00099	000700468-99	B	Pole Ø 277 / 4xM16 U-bolts

ATTACHMENTS TYPE B FOR RECTANGULAR MASTS

No.	Drawing No.	Back Fitting Type	Dimension / Rods (mm)
000 700 468 00000	000700468-00	B	Pole H 300 - 370 x 320 / 4xM20
000 700 468 00002	000700468-02	B	Pole H 200 - 300 x 300 / 4xM20
000 700 468 00004	000700468-04	B	Pole H 100 - 240 x 240 / 4xM20
000 700 468 00005	000700468-05	B	Pole H 570 - 680 x 220 / 4xM20
000 700 468 00007	000700468-07	B	Pole H 100 - 240 x 580 / 4xM20



ATTACHMENTS TYPE B FOR LATTICE POLES

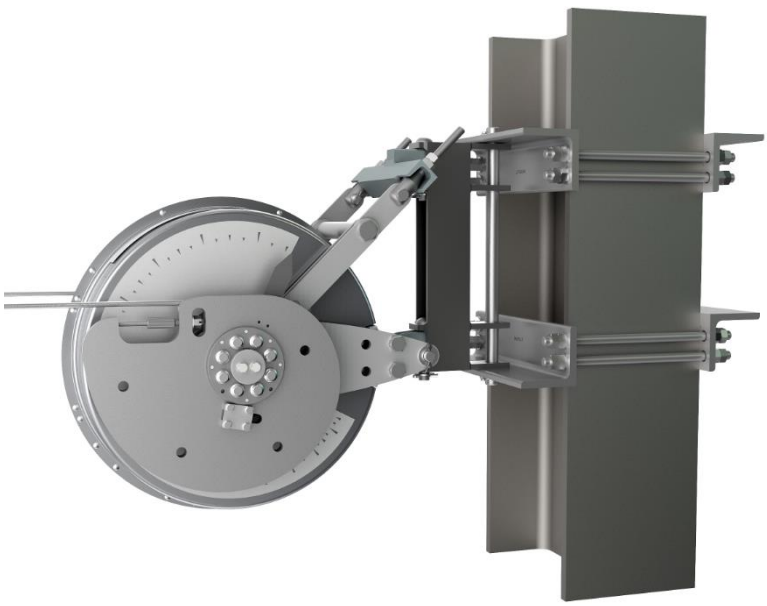
No.	Drawing No.	Back Fitting Type	Dimension (mm)
000 700 463 00001	000700463-01	B	280 - 410
000 700 463 00002	000700463-02	B	120 -260
000 700 463 00003	000700463-03	B	110 - 260
000 700 463 00004	000700463-04	B	1040 - 1240
000 700 463 00005	000700463-05	B	590 - 790
000 700 463 00008	000700463-08	B	208 - 304

ATTACHMENTS TYPE B FOR 2X TENSOREX C+ FOR PARALLEL INSTALLATION ON CIRCULAR MASTS

No.	Drawing No.	Back Fitting Type /TRC size	Dimension / TRC Distance D (mm)
000 700 461 00001	000700461-01	B / 2 springs	Pole Ø 193,7 / D = 540
000 700 461 00010	000700461-10	B / 2 springs	Pole Ø 240 / D = 470
000 700 461 00011	000700461-11	B / 2 springs	Pole Ø 250 / D = 470
000 700 461 00012	000700461-12	B / 2 springs	Pole Ø 215 - 219 / D = 470
000 700 461 00020	000700461-20	B / 2 springs	Pole Ø 224 / D = 540
000 700 461 00034	000700461-34	B / 3 springs	Pole Ø 406 / D = 540
000 700 461 00046	000700461-46	B / 4 springs	Pole Ø 304 / D = 540

ATTACHMENTS TYPE B FOR 2X TENSOREX C+ FOR PARALLEL INSTALLATION ON RECTANGULAR MASTS

No.	Drawing No.	Back Fitting Type /TRC size	Dimension / TRC Distance D (mm)
000 700 461 00002	000700461-02	B / 4 springs	Pole H 300 – 340 x 320 / D = 630
000 700 461 00003	000700461-03	B / 2 springs	Pole H 290 x 290 / D = 540
000 700 461 00004	000700461-04	B / 2 springs	Pole H 340 x 320 / D = 540
000 700 461 00005	000700461-05	B / 3 springs	Pole H 280 x 280 / D = 600
000 700 461 00014	000700461-14	B / 2 springs	Pole H 360 x 360 / D = 540
000 700 461 00051	000700461-51	B / 2 springs	Pole H 340 x 355 / D = 630



Safety Equipment

VOLTAGE DETECTORS

Electric railway systems around the world are operated with different voltage systems. PFISTERER can supply voltage detectors for all common voltage systems.

- 15 kV at 16.7 Hz
- 25 kV at 50 Hz
- 1500 V DC
- 3000 V DC
- Voltage supply for trolley lines
- Voltage supply for urban rail systems with third rail

Depending on type, our voltage detectors are suitable for use on railway catenaries and power lines as well as on switchgear.

VOLTAGE DETECTOR KP-TEST 5R FOR CATENARIES

The **KP-Test 5R 15 kV 16,7 Hz** and **KP-Test 5R 25 kV 50 Hz** capacitive voltage detectors are designed for use on railway catenaries. It indicates the presence of operating voltage when brought into contact with the conductor. For transport separable into two parts.

Technical description:

- Bright LEDs for clear recognition
- Particularly loud, integrated audible signal
- Extensive self-test functions at switch-on
- Contact electrode in hook form with contact pin for optimum contact with the catenary
- For single-phase networks

The KP-Test 5R 15 kV 16,7 Hz is designed and manufactured according DIN VDE 0681, Part 6.

KP-TEST 5R 15 kV 16,7 Hz

No	Version	Marking language	Total length L_G (mm)	Transport length L_T (mm)	Suitable bag	Carrying bag included
930 310 001	**00004 *)**	German	4795	2460	B3	No
930 310 001	**00005 *)**	German	4795	2460	B3	Yes
930 310 001	**00020**	German	4795	2460	B3	No
930 310 001	**00021**	German	4795	2460	B3	Yes

*) Versions with DB-approval Ebgw 02.15

KP-TEST 5R 25 kV 50 Hz

No	Version	Marking language	Total length L_G (mm)	Transport length L_T (mm)	Suitable bag	Carrying bag included
930 300 001	**00022**	German	4795	2460	B3	No
930 300 001	**00024**	German	4795	2460	B3	Yes

Versions in other languages or with other signal modes are available on request

VOLTAGE DETECTOR KP-TEST 5R FOR CATENARIES, DIVISIBLE

The **KP-Test 5R 15 kV 16,7 Hz** and **KP-Test 5R 15 kV 50 Hz** capacitive voltage detector designed for use on railway catenaries. It indicates the presence of operating voltage when brought into contact with the conductor.

The voltage detector can be disassembled into five individual components for transport in service vehicles.

Technical description:

- Bright LEDs for clear recognition
- Particularly loud, integrated audible signal
- Extensive self-test functions at switch-on
- Separable contact electrode in hook form with point-contact for optimum contact with the catenary
- For single-phase networks

The KP-Test 5R 15 kV 16,7 Hz is designed and manufactured according DIN VDE 0681, Part 6.

KP-Test 5R 15 kV 16,7 Hz

No	Version	Marking language	Total length L_G (mm)	Transport length L_T (mm)	Suitable bag	Carrying bag included
930 310 601	**00001 *)**	German	4795	1100	B1	No
930 310 601	**00002 *)**	German	4795	1100	B1	Yes
930 310 601	**00025**	German	4795	1100	B1	No
930 310 601	**00024**	German	4795	1100	B1	Yes

*) Versions with DB-approval Ebgw 02.16

KP-Test 5R 25 kV 50 Hz

No	Version	Marking language	Total length L_G (mm)	Transport length L_T (mm)	Suitable bag	Carrying bag included
930 300 601	**00001**	German	4795	1100	B1	No
930 300 601	**00002**	German	4795	1100	B1	Yes

Versions in other languages or with other signal modes are available on request

VOLTAGE DETECTOR KP-TEST 5R DC

The **KP-Test 5R DC** double-pole voltage detector is designed for use on the catenary systems of DC voltage railways. It indicates the presence of operating voltage when brought into contact with the conductor. With its extensive, integrated self-tests, the **KP-test 5R DC** voltage detector ensures maximum user safety.

Technical description:

- Double-pole type for the catenary systems of DC voltage railways with nominal voltages between 500 V DC and 4,000 V DC
- Second pole designed with practical magnetic connection to rail (cable length = 6.5 m)
- Hook-type contact electrode with high-quality contact pin for optimum contact
- Self-test at switch-on also checks the connecting cable
- Can be used in rain and snow
- Integrated audible signal for reliable voltage tests even in a noisy environment
- Extremely bright LEDs in clear layout to prevent confusion
- Induced AC voltage signal detection
- Voltage testing possible even with a high proportion of leakage current on disconnected contact wires
- Available separately without insulating pole
- Available separately without insulating pole, but with additional adapters
- Available with convenient carrying case

No	Version	Marking language	Nominal Voltage DC U_N (V)	Transport length L_T (mm)	Included insulating poles	Suitable bag
930 350 001	**00187**	German	650 - 750	2450	2	B3
930 350 001	**00172**	German	650 - 750	1111	4	B1
930 350 001	**00178**	German	650 - 750	1111	-	B1
930 350 001	**00182**	German	1500	2450	2	B3
930 350 001	**00199**	German	1500	1111	4	B1
930 350 001	**00198**	German	1500	1111	-	B1
930 350 001	**00167**	German	3000	2450	2	B3
930 350 001	**00100**	German	3000	1111	4	B1
930 350 001	**00145**	German	3000	1111	-	B1

Other versions with different nominal voltages, ranges of nominal voltages and languages are available on request or visit the PFISTERER Online Catalogue (https://catalogue.pfisterer.com/en/safety-equipment)

Accessories:

Insulating rods in three-part design. Overall length approx. 5.000 mm
- 624 780 001 - UP – Insulating pole top
- 620 780 001 - PR1 – Insulating pole lower part

Insulating rods in five-part design. Overall length approx. 4.880 mm
- 624 780 002 - UP – Insulating pole top
- 623 929 100 - RP4 - Insulating pole extension 2
- 623 929 001 - RP3 - Insulating pole extension 1
- 623 930 001 - PR2 – Insulating pole lower part

VOLTAGE DETECTOR KP-TEST 5R DC DUAL

The **KP-Test 5R DC dual** double-pole voltage detector is similar in design to the **KP-Test 5R DC**. In addition, this voltage detector can be switched between two nominal voltage ranges in two steps. This allows a larger system range to be covered even when there is a high proportion of leakage current.

The KP-Test 5R DC dual has two selectable voltage steps.

Step 1:
- Selection by briefly pressing the Power-On button.
- LED indicator: 1 x green

Step 2:
- Selection by long pressing the Power-On button.
- LED indicator: 2 x green

By deliberately selecting the voltage level at power-up and the associated self-test, a safe and unambiguous display of the **KP-Test 5R DC dual** is guaranteed.

Technical description:
- Double-pole type for the catenary systems of DC voltage railways with nominal voltages between 500 V DC and 4,000 V DC.
- Two-pole version for catenary systems of DC voltage systems with nominal voltages of 500 to 4,000 V DC.
- Second pole designed as a handy magnet connection to rail (cable length = 6.5 m).
- Switchable voltage range.
- Contact electrode designed as a hook with high-quality contact pin for optimum contact.
- Self-test at power up also checks the connection cable.
- Suitable for precipitation (rain, snow).
- Integrated acoustic signal for reliable voltage testing even in noisy environments.
- Extremely strong light-emitting diodes in a confusion-free arrangement.
- Detection of induced AC signals.
- Voltage test possible even with high leakage current share on disconnected contact wires.
- Available in separate design without insulating bar.
- Available in separate design without insulating bar, but with additional adapters.
- Available in a matching design with insulating rod in three parts (poles RP1 and UP, overall length.
- About 5,000 mm) or in five parts (poles RP2, RP3, RP4 and UP, total length about 4,880 mm).
- Available with matching bag.

No	Version	Marking language	Nominal Voltage DC STEP 1 U_N (V)	Nominal Voltage DC STEP 2 U_N (V)	Transport length L_T (mm)	Included insulating poles	Suitable bag
930 350 501	**00016**	German	600	1200	1111	-	B1
930 350 501	**00017**	German	600	1200	2450	2	B3
930 350 501	**00018**	German	600	1200	1111	4	B1
930 350 501	**00019**	German	750	1500	1111	-	B1
930 350 501	**00020**	German	750	1500	2450	2	B3
930 350 501	**00021**	German	750	1500	1111	4	B1

Other versions with different nominal voltages, ranges of nominal voltages and languages are available on request or visit the PFISTERER Online Catalogue (https://catalogue.pfisterer.com/en/safety-equipment)

Accessories:

Insulating rods in three-part design. Overall length approx. 5.000 mm
- 624 780 001 - UP – Insulating pole top
- 620 780 001 - PR1 – Insulating pole lower part

Insulating rods in five-part design. Overall length approx. 4.880 mm
- 624 780 002 - UP – Insulating pole top
- 623 929 100 - RP4 - Insulating pole extension 2
- 623 929 001 - RP3 - Insulating pole extension 1
- 623 930 001 - PR2 – Insulating pole lower part

OPERATING POLE SET 30 kV

Depending on requirements, the operating rod can be used as a switching rod or insulating rod for switching load-break switches or for inserting insulating protective plates and is suitable for use in systems with nominal voltages up to 30 kV.

Technical description:
The operating rod set consisting of:

- 1 handle
- 1 insulating rod with hand protection and red ring
- Max. 3 extension elements
- 4 bar tops
  - Shift rod head 900 mm
  - Shift rod head 500 mm
  - Working head / roller lock
  - Universal head
- Max. rod length: 4200 mm
- Max. length of single element: 990 mm
- Suitable for indoor and outdoor use, even when it is raining
- Insulating rods made of glass fiber reinforced polyester tube in white color
- Storage bag with 8 rod compartments

The **operating rod set 30 kV** can be put together individually from a total of 9 individual rod elements.

No	Handle	Insulating rod	Extension I	Extension II	Extension III	Top Hook long	Top Hook short	Top Roller lock	Top Universal lock	Transport length	Max. total length
	S33-HV	S33-IS	S33-IV	S33-IV	S33-IV	S33-SK	S33-SK	S33-AK	S33-UK	(mm)	(mm)
364 172 008 / 00001	▪	▪	▪	▪	▪	▪	▪	▪	▪	1000	5020
364 172 008 / 00002	▪	▪	▪	▪		▪	▪	▪	▪	1000	4120
364 172 008 / 00003	▪	▪	▪			▪	▪	▪	▪	1000	3220
364 172 008 / 00004	▪	▪				▪		▪		1000	2320
364 172 008 / 00005	▪	▪	▪			▪		▪		1000	3220
364 172 008 / 00006	▪	▪	▪	▪		▪		▪		1000	4120
364 172 008 / 00007	▪	▪	▪	▪	▪	▪		▪		1000	5020
364 172 008 / 00008	▪	▪				▪	▪	▪	▪	1000	2320

EARTHING POLES FOR RAILWAY SYSTEMS

Earthing poles for railway systems are used for connecting railway earthing devices. To do this, the earthing terminals are brought up to the contact wire. These earthing poles are marked with red stripes on a white background. This allows optimum identification of the work site.

Technical description:

- Contact wire earthing terminals held by spindle and cross-pin.
- Receiving head with roller locking device allows the earthing pole to be easily attached / detached from the contact wire earthing terminal.
- Robust construction for use in railway applications.

TELESCOPING EARTHING POLES, TWO-PART

Earthing poles for railway systems, in two-part design. These earthing poles are used mainly for transformers and railway power lines. They are continuously adjustable.

No	Length range	Pole length extended	Transport length	Insulating length	Weight
	(m)	L (mm)	L_T (mm)	L_I (mm)	(kg)
362 744 001	1,8 – 3,0	3500	1800	500	3,8
362 744 744	2,6 – 5,0	5000	2600	500	4,3

TELESCOPING EARTHING POLES, THREE-PARTS

Earthing poles for railway systems, in three-piece design. The upper section of this earthing pole is continuously adjustable.
A slider enables the connection between the earthing pole and the contact wire earthing terminal to be locked. The earthing pole can thus be used to mark the work site.

No	Length range	Pole length extended	Transport length	Insulating length	Weight
	(m)	L (mm)	L_T (mm)	L_I (mm)	(kg)
362 745 745	2,0 – 5,0	5080	2000	500	5,2
362 745 002	3,2 – 7,0	7000	3200	500	5,2

PLUGGABLE EARTHING POLES, FIVE-PARTS

Earthing pole for railway systems in five-piece design. Because of the short carrying length, this type is suitable for transport in all common passenger vehicle types.
The connection between the earthing pole and the contact wire earthing terminal can be locked using a slider. The earthing pole can thus be used to mark the work site.

No	Length range	Pole length extended	Transport length	Weight	Remark
	(m)	L (mm)	L_T (mm)	(kg)	
364 784 001	4,9	4892	1100	5,2	Ebgw 01.22

SINGLE-POLE EARTHING AND SHORT CIRCUIT CABLES

Fitted on both sides with compression type cable lugs with 30° angled palms and 13 mm mounting hole for M12 connecting screw. The conductor exits on the cable lugs are provided with a bending protection device.

No	Cable cross Section (mm²)	Max. short-circuit current I_K 0,12 s (kA)	Length of Earthing cable (m)	Non-protruding
362 138 138	50	36,5	8,5	
362 138 529	50	36,5	12	▪
362 138 004	50	36,5	13	

SUSPENSION HOOK

For non-protruding suspension of earthing wire

No	Material
360 453 453	A2

OVERVIEW RAIL EARTH CLAMPS FOR RAILWAY SYSTEMS

No.	Type		Max. cross section conn. cable (mm²)	Rail type	Max. short circuit current Ik (kA)	Clamping range (mm)	Clamping width (mm)	Weight (kg)
363 322 005	R50		50		40 (Ik 0,12s)			2,128
364 901 001	R51		70		13,8 (Ik 1s)			5,0

OVERVIEW CONTACT WIRE EARTH CLAMPS FOR RAILWAY SYSTEMS

No.	Type		Max. cross section conn. cable (mm²)	Wire size Ø (mm)	Max. short circuit current Ik (kA)	Clamping range (mm)	Clamping width (mm)	Weight (kg)
363 418 003	P50D		150	4,5 – 35	29,6 (Ik 1s)	4,5 - 35	34	0,815
361 499 001	P51D		50	Ri80 - 150	36,6 (Ik 0,12s)		30	1,07
361 499 499	P52D		50	Ri80 - 150	36,5 (Ik 0,12s)		30	0,942
362 947 947	P53D		50	Ri80 - 150	23,3 (Ik 0,12s)		30	1,97

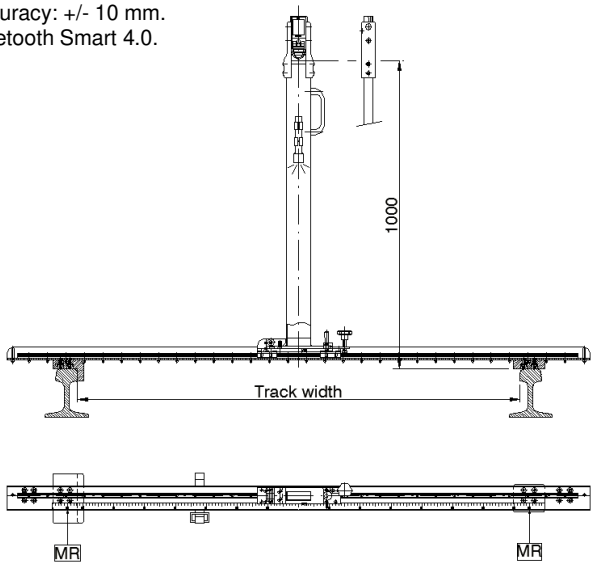
Measuring Tools

CONTACT WIRE LASER MEASURING DEVICE

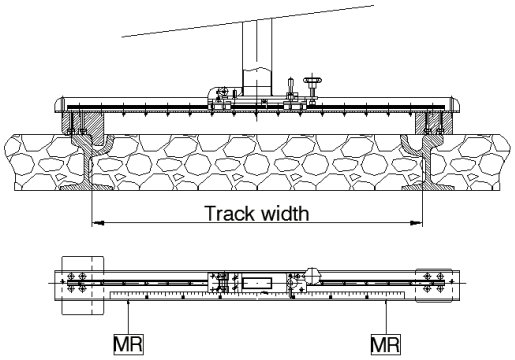
This measuring device uses a laser rangefinder to measure the height and stagger of the contact wire. Some versions can also be used for inclination measurement and for measuring the distance to the mast.

Application:
- Height and stagger measuring

Technical description:
- Laser measures
- No need touching wires
- Used in any weather conditions.
- Accuracy: +/- 10 mm.
- Bluetooth Smart 4.0.



Support for Tramway Rails



No	ID-code	Track gauge *) (mm)	Measuring range, on the stagger (MR) (mm)	Remarks
304 132 001	**GLI-7PK**	1435	+/- 750	
304 132 002	**GLI-7PK.60**	1435	+/- 600	
304 132 003	**GLM-7.PK**	1000	+/- 450	
304 132 004	**GLI-7 PK TRVIA.60**	1435	+/- 600	Tramway support
304 132 005	**GLI-7 PK TRVIA.35**	900	+/- 350	Tramway support
304 132 008	**GLI-7PK.FI**	1524	+/- 600	
304 132 012	**GLI-7PK.GB**	1435	+/- 750	
304 132 101	**GLI-7 PK.L**	1435	+/- 750	Light version, measuring of inclination and pole distance
304 132 102	**GLI-7 PK.60.L**	1435	+/- 600	Light version, measuring of inclination and pole distance

**) Other measuring devices with different track gauges available on request.*

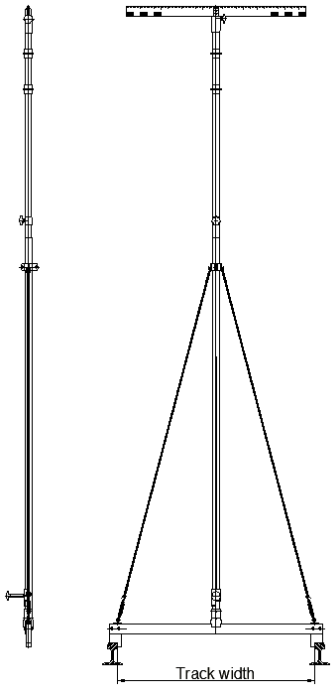
CONTACT WIRE MEASURING DEVICE

This unit is used to measure the height and stagger of the contact wire.

Application:
- Contact wire measuring

Technical description:
- Hot-dip galvanised sectional tubular steel supporting bar
- Slotted measuring tube
- Insulating rod with rain insulators
- Plastic surveyor's rod
- Movable sub frame (depending on the design)

Mobile type equipped by wheels



Stationary type without wheels

No	Description	Track width	Height, min.	Height, max.	Measuring range	Transporting length
		(mm)	(mm)	(mm)	(mm)	(mm)
304 130 003	Differential pressure sensor, mobile	1.435	4.630	6.300	+/- 600	3.000
304 130 130	Differential pressure sensor, mobile	1.425	4.630	6.300	+/- 600	3.000
304 131 131	Differential pressure sensor, stationary	1.425	4.630	6.300	+/- 600	3.000

**) Other measuring devices with different height range and track gauges available on request.*

Compression and Cutting Tools

MANUAL COMPRESSION TOOLS

Mechanical tools with open design of the compression head. The open design of the compression head allows the placement and removal of the compression pliers directly at the connection to be pressed without removing the compression dies.

MANUAL COMPRESSION PLIERS TYPE O2

Compressible cross sections:

- Copper up to 35 mm²
- Aluminium up to 50 mm²

Accessories:

- Case for mechanical hand compression tool, PRIMAT 02 and dies
- Holder for mechanical hand compression tool, PRIMAT 02 for clamping the tool into a vice

No	Type	Rotatable compression head	Compression force (kN)	Compressible cross sections Cu (mm²)	Compressible cross sections Al (mm²)	Compression dies type	Size (mm)
303 088 088	Primat O2	-	25	6 - 35	16 - 50	O2	370
303 527 527	Primat O2D	360°	25	6 - 35	16 - 50	O2	400

MANUAL COMPRESSION PLIERS TYPE O6 / GO6

The manual crimping plier is equipped with a C-shaped crimping head that can be rotated through 360°. The telescopic handle is released and tightened by simply turning for infinitely variable length adjustment.

Primat O6-T

Primat GO6-T

No	Type	Rotatable compression head	Compression force (kN)	Compressible cross sections Cu (mm²)	Compressible cross sections Al (mm²)	Compression dies type	Size (mm)
303 871 002	Primat O6-T	360°	60	6 - 185	16 - 150	O6	540 - 750
303 871 003	Primat GO6-T	360°	60	6 - 240	16 - 185	GO6	550 - 760

COMPRESSION DIES TYPE O2 AND O6

For manual compression pliers type O2 and O6 (O6 also for battery-powered compression tool PressMax 6)

No	Description	Type	Tool code	Compression Width (mm)
303 414 523	Oval Compression Die	O2	8 PO	5
303 109 468	Hexagonal compression die	O2	5	5
303 109 109	Hexagonal compression die	O2	6	5
303 109 110	Hexagonal compression die	O2	8	5
303 109 111	Hexagonal compression die	O2	10	5
303 109 400	Hexagonal compression die	O2	12	5
300 463 464	Oval Compression Die	O6	8 PO	5
300 463 465	Oval Compression Die	O6	10 PO	5
300 463 466	Oval Compression Die	O6	12 PO	5
300 463 467	Oval Compression Die	O6	16 PO	5
300 463 468	Oval Compression Die	O6	18 PO	5
300 463 469	Oval Compression Die	O6	20 PO	5
300 463 470	Oval Compression Die	O6	21 PO	5
300 463 473	Oval Compression Die	O6	25 PO	5
300 438 438	Hexagonal compression die	O6	5	5
300 438 439	Hexagonal compression die	O6	6	5
300 438 441	Hexagonal compression die	O6	8	5
300 438 443	Hexagonal compression die	O6	10	5
300 438 445	Hexagonal compression die	O6	12	5
300 438 446	Hexagonal compression die	O6	13	5
300 438 447	Hexagonal compression die	O6	14	5
300 438 448	Hexagonal compression die	O6	16	5
300 438 449	Hexagonal compression die	O6	18	5
300 438 451	Hexagonal compression die	O6	20	5

Please find more variants and sizes in our online catalogue: https://catalogue.pfisterer.com/ or contact PFISTERER directly.

COMPRESSION DIES TYPE GO6

For manual compression pliers type GO6-T and battery powered compression tool PressMax 6

No	Description	Type	Tool code	Compression Width (mm)
300 379 001	Oval Compression Die	GO6	10 PO	13
300 378 382	Oval Compression Die	GO6	16 PO	5
300 378 383	Oval Compression Die	GO6	18 PO	5
300 378 384	Oval Compression Die	GO6	20 PO	5
300 385 386	Oval Compression Die	GO6	22 PO	5
300 353 353	Hexagonal compression die	GO6	5	5
300 353 354	Hexagonal compression die	GO6	6	5
300 353 356	Hexagonal compression die	GO6	8	5
300 353 358	Hexagonal compression die	GO6	10	5
300 353 360	Hexagonal compression die	GO6	12	5
300 353 361	Hexagonal compression die	GO6	13	5
300 353 362	Hexagonal compression die	GO6	14	5
300 353 363	Hexagonal compression die	GO6	16	5
300 353 364	Hexagonal compression die	GO6	18	5

Please find more variants and sizes in our online catalogue: https://catalogue.pfisterer.com/ or contact PFISTERER directly.

COMPRESSION DIES TYPE C6

For battery-powered compression tool PressMax 6-C

No	Description	Type	Tool code	Compression Width (mm)
300 517 201	Oval Compression Die	C6	10 PO	13
300 517 202	Oval Compression Die	C6	16 PO	5
300 517 203	Oval Compression Die	C6	18 PO	5
300 517 204	Oval Compression Die	C6	20 PO	5
300 517 205	Oval Compression Die	C6	22 PO	5
	For Copper and Steel Connections			
300 517 001	Hexagonal compression die	C6	5	5
300 517 002	Hexagonal compression die	C6	6	5
300 517 003	Hexagonal compression die	C6	7	5
300 517 004	Hexagonal compression die	C6	8	5
300 517 005	Hexagonal compression die	C6	9	5
300 517 006	Hexagonal compression die	C6	10	5
300 517 007	Hexagonal compression die	C6	11	5
300 517 008	Hexagonal compression die	C6	12	5
300 517 009	Hexagonal compression die	C6	13	5
300 517 010	Hexagonal compression die	C6	14	5
300 517 011	Hexagonal compression die	C6	16	5
300 517 012	Hexagonal compression die	C6	18	5
300 517 013	Hexagonal compression die	C6	20	5
300 517 014	Hexagonal compression die	C6	22	5
300 517 015	Hexagonal compression die	C6	25	5
300 517 016	Hexagonal compression die	C6	28	5
	For Aluminium Connections			
300 517 101	Hexagonal compression die	C6	12	7
300 517 102	Hexagonal compression die	C6	14	7
300 517 103	Hexagonal compression die	C6	16	7
300 517 104	Hexagonal compression die	C6	18	7
300 517 105	Hexagonal compression die	C6	20	7
300 517 106	Hexagonal compression die	C6	22	7
300 517 107	Hexagonal compression die	C6	25	7
300 517 108	Hexagonal compression die	C6	27	7

Please find more variants and sizes in our online catalogue: https://catalogue.pfisterer.com/ or contact PFISTERER directly

COMPRESSION DIES TYPE C13

For battery-powered compression tool PressMax 14-A

No	Description	Type	Tool code	Compression Width (mm)
300 513 008	Hexagonal Compression Die	C13	12	14
300 513 010	Hexagonal Compression Die	C13	14	14
300 513 011	Hexagonal Compression Die	C13	16	14
300 513 012	Hexagonal Compression Die	C13	18	14
300 513 013	Hexagonal Compression Die	C13	20	14
300 513 014	Hexagonal Compression Die	C13	22	14
300 513 015	Hexagonal Compression Die	C13	25	14
300 514 009	Hexagonal Compression Die	C13	28	14
300 513 017	Hexagonal Compression Die	C13	32	5
300 514 011	Hexagonal Compression Die	C13	34	7

Please find more variants and sizes in our online catalogue: https://catalogue.pfisterer.com/ or contact PFISTERER directly.

HYDRAULIC COMPRESSION HEAD, Size III, 850 bar

Hydraulic tool head 850 bar with oil-loss-free coupling plug for two-stage high-pressure pumps ZHP, electrohydraulic high-pressure pump EHP and battery-operated high-pressure pump AHP with hose connection (coupling sleeve).

No	Type	Operating Pressure (bar)	Nominal compression force (kN)	Compressible cross sections Cu (mm²)	Compressible cross sections Al (mm²)	Stroke (mm)	Accessory
305 678 007	Size III	850	240	16 – 500	25 - 630	22,5	
305 678 009	Size III	850	240	16 – 500	25 - 630	22,5	With hook

COMPRESSION DIES SIZE III

For hydraulic compression head size III

COMPRESSION DIES FOR C- AND E-CLAMPS

No	Description	Size	Tool code	Compression Width (mm)
302 131 131	Compression die for compressing	III	DB 3	44
302 246 246	Compression die for detaching	III	DB 3-L	44

COMPRESSION DIES FOR RIVETED CONTACT WIRE SPLICES

No	Description	Size	Tool code
302 346 346	Compression die for riveting	III	DB 4-N / UIC-107
302 345 345	Compression die for detaching	III	DB 4-L / UIC-107

COMPRESSION DIES FOR WIRE JOINTS

No	Description	Size	Tool code	Compression Width (mm)
300 608 004	Hexagonal compression die	III	13	14
300 608 005	Hexagonal compression die	III	14	14
300 608 006	Hexagonal compression die	III	15	14
300 608 007	Hexagonal compression die	III	16	14
300 608 008	Hexagonal compression die	III	17	14
300 608 009	Hexagonal compression die	III	18	14
300 608 010	Hexagonal compression die	III	19	14
300 608 011	Hexagonal compression die	III	20	14
300 608 012	Hexagonal compression die	III	21	14
300 608 014	Hexagonal compression die	III	22	14
300 608 015	Hexagonal compression die	III	23	14
300 608 016	Hexagonal compression die	III	25	14
300 608 018	Hexagonal compression die	III	28	14
300 608 019	Hexagonal compression die	III	30	17
300 608 021	Hexagonal compression die	III	34	17
300 608 022	Hexagonal compression die	III	38	17
300 608 023	Hexagonal compression die	III	42	17
300 608 024	Hexagonal compression die	III	44	17

TWO-STAGE HIGH PRESSURE PUMP, 850 bar

The high-pressure unit is mounted on a galvanized U-frame. The valve body is made of an aluminium alloy, so the pump has a low weight. The high-pressure hose is equipped with an oil-loss-free coupling sleeve for connecting the compression head. The pump operates at rapid speed until the beginning of the compression phase, i.e. less strokes are necessary. A pressure relief valve protects the compression head from overloading.

No	Description	Operating Pressure (bar)	Nominal compression force (kN)	Hydraulic oil (cm^3)	Hose included, length (m)	Remarks
305 799 002	Two-stage high pressure pump	850	240	600	3	Operates in any position
SPARE PARTS						
300 772 776	Hose, 3m	850			3	
300 772 656	Hose, 4m	850			4	
300 772 312	Hose, 8m	850			8	

ELECTRO-HYDRAULIC HIGH PRESSURE PUMP, 850 bar

The high-pressure pump is installed in a handy carrying case. The well-proven double-hose system (supply and return) with control valve and oil-loss-free coupling sleeve for connecting a compression head completes the device. An overpressure valve protects the high-pressure pump against overload. The electric drive motor has a power consumption of 500 W. The power cable, which is suitable for use on construction sites, is 5 m long.

No	Description	Operating Pressure (bar)	Nominal compression force (kN)	Hydraulic oil (cm^3)	Power supply (V AC)	Hose included, length (m)
305 853 012	EHP, electro-hydraulic high pressure pump	850	240	650	230	3
305 853 013	EHP, electro-hydraulic high pressure pump	850	240	650	230	4
305 853 016	EHP, electro-hydraulic high pressure pump	850	240	650	230	8
SPARE PARTS						
300 772 776	Hose, 3m	850				3
300 772 656	Hose, 4m	850				4
300 772 312	Hose, 8m	850				8

PRESSMAX 6

BATTERY-OPERATED CRIMPING TOOL

The PressMax 6 has an ideal power to weight ratio for crimping jobs of up to 240 mm² according to DIN.
Especially the energy sector values their ergonomic design and the use of standard dies

Benefits

- Safe one-hand operation thanks to light-weight and well-balanced design with non-slip housing.
- Safe crimping even in confined spaces by narrow, rotatable crimping head with LED for lighting the working area.
- Standard spring and pin crimping dies.
- Very short crimping cycles by optimized 2-step hydraulic system.
- The accessories are interchangeable within the battery-operated hydraulic tool series from PFISTERER.

Crimping range		
Cu/Al accord. to DIN 48083		Cu: 10 – 240 mm² Al: 10 – 240 mm²
ACSR		Al: 16 – 120 mm² St: 2,5 – 25 mm²
Pre-Rounding		SE: 35 – 300 mm² SM: 10 – 240 mm²

Specification

No.	Description	Crimping force	Stroke	Weight approx. *)	Dimensions
305 909 022	PressMax 6	60 kN	15 mm	3,1 kg	365 x 79 x 255 mm

*) without battery

Accessories

Crimping Dies	Please find detailed information in in this catalogue or our online catalogue: https://catalogue.pfisterer.com/ If you have any further questions please contact our Technical Service Team: pds.ets.support@pfisterer.com

Scope of delivery

Battery operated crimping tool PressMax 6
Lithium-ion battery IPP-30
Battery charger IMC-1 (AC)
Carrying strap and transportation case

PRESSMAX 6-C

BATTERY-OPERATED CRIMPING TOOL

The PressMax 6 has an ideal power to weight ratio for crimping jobs of up to 300 mm² according to DIN.
Especially industry and the energy sector values their ergonomic design and the use of standard dies

Benefits

- Safe one-hand operation thanks to light-weight and well-balanced design with non-slip housing.
- Safe crimping even in confined spaces by narrow, rotatable crimping head with LED for lighting the working area.
- Standard 6-t C-shaped
- Very short crimping cycles by optimized 2-step hydraulic system.
- The accessories are interchangeable within the battery-operated hydraulic tool series from PFISTERER.

Crimping range		
Cu/Al accord. to DIN 48083		Cu: 10 – 300 mm² Al: 10 – 300 mm²
ACSR		Al: 16 – 120 mm² St: 2,5 – 25 mm²
Pre-Rounding		SE: 35 – 300 mm² SM: 10 – 240 mm²

Specification

No.	Description	Crimping force	Stroke	Weight approx. *)	Dimensions
305 909 023	PressMax 6-C	60 kN	15 mm	3,4 kg	350 x 79 x 265 mm

*) without battery

Accessories

Crimping Dies	Please find detailed information in this catalogue or in our online catalogue: https://catalogue.pfisterer.com/ If you have any further questions please contact our Technical Service Team: pds.ets.support@pfisterer.com

Scope of delivery

Battery operated crimping tool PressMax 6-C
Lithium-ion battery IPP-30
Battery charger IMC-1 (AC)
Carrying strip and transportation case

PRESSMAX 14-A

BATTERY-OPERATED CRIMPING TOOL

Time-saving and patented wide crimps of 400 mm² (K 38) according to DIN underline the PressMax 14-A's leading market position in the class of battery-powered manual tools. This adds to its range of applications, especially in the electrical industry and overhead line construction, e.g. 265/35 connector (K38) and tubular busbar clamps (K34).

Benefits

- Safe one-hand operation thanks to light-weight and well-balanced design with non-slip housing.
- Safe crimping even in confined spaces by narrow, rotatable crimping head with LED for lighting the working area.
- Standard spring and pin crimping dies.
- Very short crimping cycles by optimized 2-step hydraulic system.
- The accessories are interchangeable within the battery-operated hydraulic tool series from PFISTERER.

Crimping range		
Cu/Al accord. to DIN 48083		Cu: 10 – 400 mm² Al: 10 – 400 mm²
ACSR		Al: 16 – 340 mm² St: 2,5 – 40 mm²
Pre-Rounding		SE: 35 – 300 mm² SM: 10 – 300 mm²
Double Crimping Cable Lugs		50 - 120 mm²

Specification					
No.	**Description**	**Crimping force**	**Stroke**	**Weight approx. *)**	**Dimensions**
305 909 024	PressMax 14-A	140 kN	22 mm	4,7 kg	365 x 76 x 265 mm
				*) without battery	

Accessories	
Crimping Dies	Please find detailed information in in this catalogue or our online catalogue: https://catalogue.pfisterer.com/ If you have any further questions please contact our Technical Service Team: pds.ets.support@pfisterer.com

Scope of delivery
Battery operated crimping tool PressMax 14-A
Lithium-ion battery IPP-30
Battery charger IMC-1 (AC)
Carrying strip and transportation case

RS 5

BATTERY-OPERATED CUTTING TOOL

For cutting Cu- and Al-cable of up to ø 50 mm, e.g. NAYY 4 x 185 mm² and single-stranded Cu up to 630 mm²; for industry, energy supply and utility companies, service providers, as well as in telecommunications and wind energy industry.

Benefits

- Excellent cutting pattern due to circular cut.
- Improved, shock-resistant housing with ergonomically arranged control elements.
- The robust, well concerted motor provides short cutting time.
- The low-weight tool (2.1 kg) allows a good ergonomic one-hand operation.
- The accessories are interchangeable in battery-operated hydraulic tool series of PFISTERER.

Technical data	
Cutting force	25 kN
Opening width	50 mm
Weight (without battery)	2,1 kg
Dimensions	110 x 190 x 365 mm
Article no.	**305 911 003**

Cutting ranges	**Ø mm**	**Cable up to**
Cu Strand	50 mm	630 mm²
Al Strand	50 mm	800 mm²
Cu / Al Round Material	*)	
Cu / Al Conductor fine stranded	50 mm	
Cu / Al Conductor very fine stranded	50 mm	
ACSR	-	
Cu Energy Cable	50 mm	630 mm²
Al Energy Cable	50 mm	800 mm², 4x 185 mm²

*) on request

Spare parts	
Cutting blades	Please contact our Technical Service Team: pds.ets.support@pfisterer.com

Scope of delivery
Lithium-ion battery IPP-30
Charger
Transportation Case RS 5

RS 5-F

BATTERY-OPERATED CUTTING TOOL

Cuts fine and very fine-stranded conductors (class 5 and 6 according to DIN VDE 0295); for energy supply and utility companies, service providers, as well as in telecommunications and wind energy industry.

Benefits

- Cuts very fine-stranded conductors up to 630 mm² Cu and Al.
- Excellent cutting pattern due to circular cut.
- Improved, shock-resistant housing with ergonomically arranged control elements.
- The robust, well concerted motor provides short cutting time.
- The low-weight tool (2.1 kg) allows a good ergonomic one-hand operation.
- The accessories are interchangeable in battery-operated hydraulic tool series of PFISTERER.

Technical data	
Cutting force	25 kN
Opening width	50 mm
Weight (without battery)	2,1 kg
Dimensions	110 x 190 x 365 mm
Article no.	**304 634 003**

Cutting ranges	Ø mm	Cable up to
Cu Strand	*)	630 mm²
Al Strand	*)	800 mm²
Cu / Al Round Material	-	
Cu / Al Conductor fine stranded	50 mm	
Cu / Al Conductor very fine stranded	50 mm	
ACSR	-	
Cu Energy Cable	*)	630 mm²
Al Energy Cable	*)	800 mm², 4x 185 mm²

*) on request

Spare parts	
Cutting blades	Please contact our Technical Service Team: pds.ets.support@pfisterer.com

Scope of delivery
Lithium-ion battery IPP-30
Charger
Clamping inserts are not included in scope of delivery and must be ordered separately

Tools

COME-ALONG CLAMPS

For copper and steel II wires with a tensile strength of up to 650 N/mm² according DIN 48201

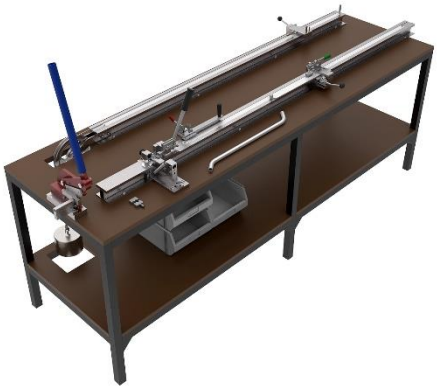
Application:
- Installation of cables

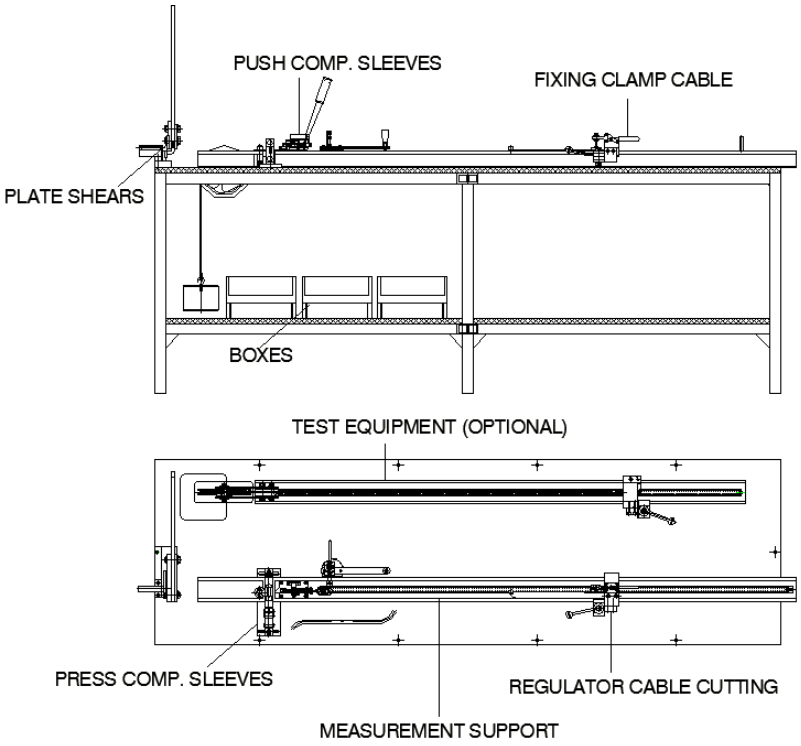
No	Conductor cross section (mm)	Diameter of conductor (mm)	Max. traction (kN)
330 656 002	6 – 35	3 – 9	10
330 656 003	16 – 70	4 – 12	17
330 656 004	50 – 150	6 – 18	30
330 656 005	90 – 400	10 – 28	35

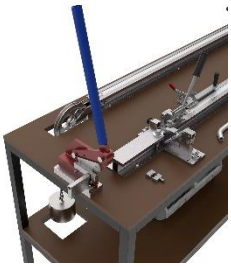
DROPPER MOUNTING BENCH

The dropper table is used to prefabricate complete PFISTERER droppers in various lengths and with different components and wires.

Application:
Dropper prefabrication

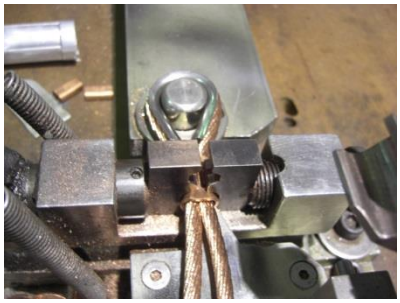






No	ID-code	Application	Wire cross section (mm²)	Test equipment included
305 859 102	**MM 305.859.002.2**	Dropper with loop	25	-
625 015 016	**MM 625.015Y016**	Simple dropper without loop	25	-
305 859 001	**MM 305.859V1**	Droppers with loop	16	-
625 035 095	**MM 625.35.95**	Droppers with loop	16	yes

Other configuration on request



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Subject to errors and technical changes
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