

Date: 29 APRIL 2005

## FITTINGS CATALOGUE FOR OPGW CABLE



### **TENSION ASSEMBLY** (L=0/1 for s/z)

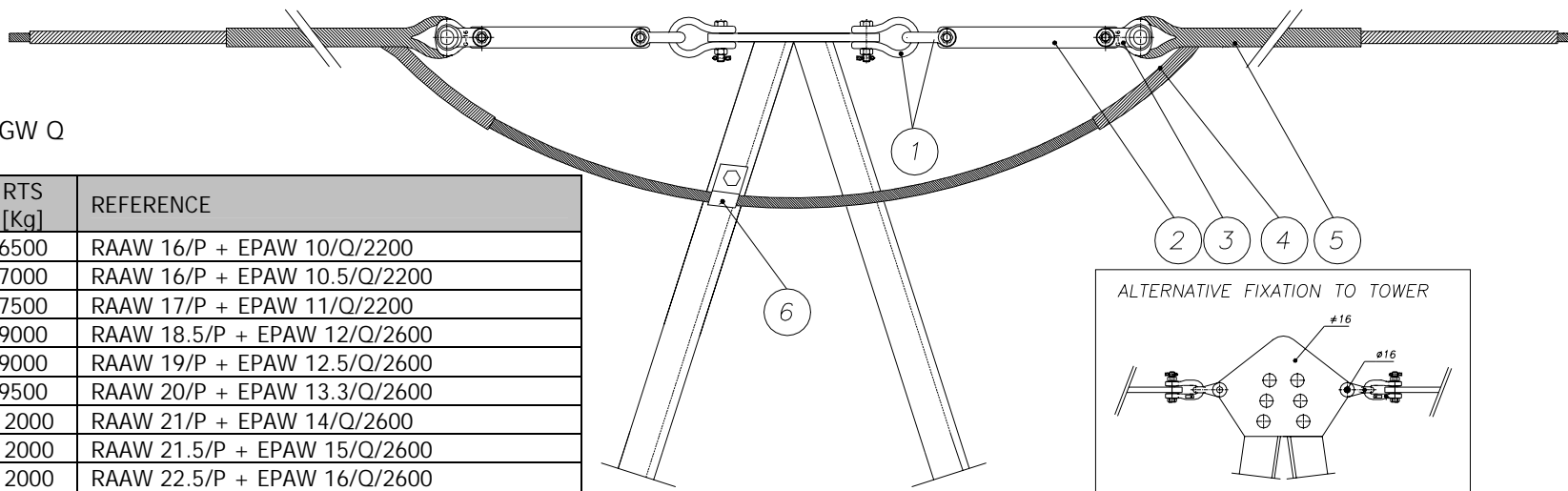
	CODE	REPLACES TO	REV	DENOMINATION
	28.025.L00 to 28.025.L14	A-11.001	0	DOUBLE DEAD END SET PASSING FOR OPGW
	28.025.L20 to 28.025.L34	A-11.002	0	SINGLE DEAD END SET FOR OPGW
	28.025.L40 to 28.025.L54	A-11.003	0	SPLICING TENSION ASSEMBLY FOR OPGW
	28.025.L60 to 28.025.L74	A-11.004	0	SPLICING TENSION ASSEMBLY IN SUSPENSION TOWER FOR OPGW CABLE

### **SUSPENSION ASSEMBLY** (L=2/3 for s/z)

	CODE	REPLACES TO	REV	DENOMINATION
	28.025.L00 to 28.025.L20	A-10.001	0	SUSPENSION ASSEMBLY WITH TWISTED CHAIN LINK
	28.025.L30 to 28.025.L50	A-10.002	0	SUSPENSION ASSEMBLY WITH CHAIN LINK
	28.025.L60 to 28.025.L80	A-10.004	0	DOUBLE SUSPENSION ASSEMBLY WITH SHACKLE

### **ATTACHING CLAMPS AND VIBRATION DAMPERS** (L=0/1 for s/z)

	CODE	REPLACES TO	REV	DENOMINATION
	28.025.680	A-20.003	0	ATTACHING CLAMP SFO-CD-3 (2 cables)
	28025.698	A-20.500	0	CABLE ACUMULATOR CLAMP
	28.025.400 to 28.025.408	A-21.001	0	FOUR RESONANCES ASYMMETRIC STOCKBRIDGE DAMPER (AMG TYPE)
	28.025.L83 to 28.025.L93	A-21.020	0	PROTECTION RODS FOR DAMPER AMG
	28.026.500 to 28.026.512	A-21.003	0	FOUR RESONANCES ASYMMETRIC STOCKBRIDGE DAMPER (AMORFO TYPE)
	28.026.080 to 28.026.092	A-41.020	0	PROTECTION RODS FOR DAMPER AMORFO



L=0 for OPGW P | L=1 for OPGW Q

CODE	OPGW Ø [mm]	RTS [Kg]	REFERENCE
28025L00	9.76-10.25	6500	RAAW 16/P + EPAW 10/Q/2200
28025L01	10.26-10.75	7000	RAAW 16/P + EPAW 10.5/Q/2200
28025L02	10.76-11.65	7500	RAAW 17/P + EPAW 11/Q/2200
28025L03	11.66-12.25	9000	RAAW 18.5/P + EPAW 12/Q/2600
28025L04	12.26-12.95	9000	RAAW 19/P + EPAW 12.5/Q/2600
28025L05	12.96-13.60	9500	RAAW 20/P + EPAW 13.3/Q/2600
28025L06	13.61-14.50	12000	RAAW 21/P + EPAW 14/Q/2600
28025L07	14.61-15.50	12000	RAAW 21.5/P + EPAW 15/Q/2600
28025L08	15.61-16.50	12000	RAAW 22.5/P + EPAW 16/Q/2600
28025L09	16.61-17.50	12000	RAAW 23.5/P + EPAW 17/Q/2600
28025L10	17.61-18.60	12000	RAAW 24.5/P + EPAW 18/Q/2600
28025L11	17.61-18.60	12500	RAAW 24.5/P/RF + EPAW 18/Q/2600 (*)
28025L12	18.71-19.50	12500	RAAW 25.5/P/RF + EPAW 19/Q/2600 (*)
28025L13	19.61-20.60	12500	RAAW 26.5/P/RF + EPAW 20/Q/2600 (*)
28025L14	20.71-22.00	12500	RAAW 27.5/P/RF + EPAW 21.5/Q/2600 (*)

REV	DATE	DESCRIPTION

P/Q: Lay/Opposite Lay sense of the cable = Z/S or S/Z  
 MATERIAL: AW (AlumoWeld) / RF (reinforced)  
 Dimensions in mm / Tolerances: Max(±0.7mm; ± 2%)

(\*) Designed for double armour cables

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
8				
7				
6	SINGLE TOWER CLAMP	1	ALUMINIUM	GCSAL
5	DEAD END	2	ALUMOWELD	RAAWFO
4	PROTECTION SPLICE	2	ALUMOWELD	EPAWFO
3	THIMBLE	2	FUND. G.E.	G-16
2	EXTENSION LINK	2	STEEL	TA/1-300
1	SHACKLE WITH SCREW	4	FORGED STEEL	GN-16T

<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	0	<b>PROJECT</b>	
<b>PRE</b>	<b>J. MARTIN</b>	<b>SCALE</b>	~	<b>OPGW</b>	
<b>1/7/1999</b>	<b>03/01/03</b>	<b>REF</b>			



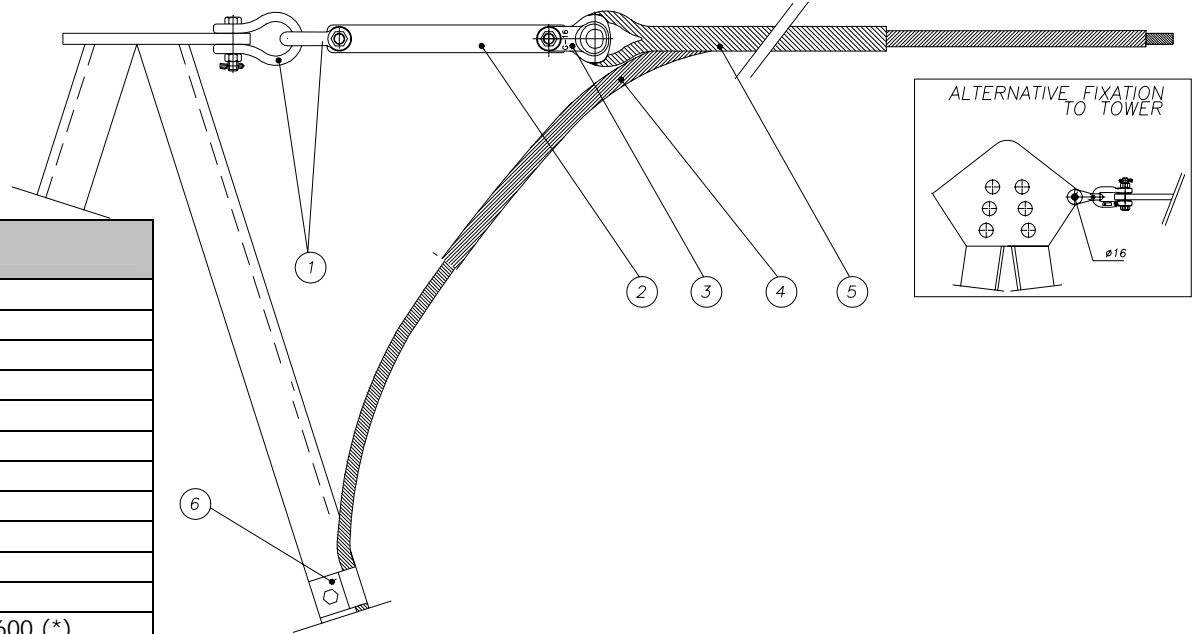
### DOUBLE DEAD END SET PASSING FOR OPGW CABLE

REPLACES TO: A-11.001 FO

**28.025.LDD**



L=0 for OPGW z | L=1 for OPGW s



CODE	OPGW Ø [mm]	RTS [Kg]	REFERENCE
28025L20	9.76-10.25	6500	RAAW 16/P + EPAW 10/Q/2200
28025L21	10.26-10.75	7000	RAAW 16/P + EPAW 10.5/Q/2200
28025L22	10.76-11.65	7500	RAAW 17/P + EPAW 11/Q/2200
28025L23	11.66-12.25	9000	RAAW 18.5/P + EPAW 12/Q/2600
28025L24	12.26-12.95	9000	RAAW 19/P + EPAW 12.5/Q/2600
28025L25	12.96-13.60	9500	RAAW 20/P + EPAW 13.3/Q/2600
28025L26	13.61-14.50	12000	RAAW 21/P + EPAW 14/Q/2600
28025L27	14.61-15.50	12000	RAAW 21.5/P + EPAW 15/Q/2600
28025L28	15.61-16.50	12000	RAAW 22.5/P + EPAW 16/Q/2600
28025L29	16.61-17.50	12000	RAAW 23.5/P + EPAW 17/Q/2600
28025L30	17.61-18.60	12000	RAAW 24.5/P + EPAW 18/Q/2600
28025L31	17.61-18.60	12500	RAAW 24.5/P/RF + EPAW 18/Q/2600 (*)
28025L32	18.71-19.50	12500	RAAW 25.5/P/RF + EPAW 19/Q/2600 (*)
28025L33	19.61-20.60	12500	RAAW 26.5/P/RF + EPAW 20/Q/2600 (*)
28025L34	20.71-22.00	12500	RAAW 27.5/P/RF + EPAW 21.5/Q/2600 (*)

REV	DATE	DESCRIPTION

P/Q: Lay/Opposite Lay sense of the cable = Z/S or S/Z  
 MATERIAL: AW (AlumoWeld) / RF (reinforced)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

(\*) Designed for double armour cables

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
8				
7				
6	SINGLE TOWER CLAMP	1	ALUMINIUM	GCSAL
5	DEAD END	1	ALUMOWELD	RAAWFO
4	PROTECTION SPLICE	1	ALUMOWELD	EPAWFO
3	THIMBLE	1	FUND. G.E.	G-16
2	EXTENSION LINK	1	STEEL	TA/1-600
1	SHACKLE WITH SCREW	2	FORGED STEEL	GN-16T

<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	0	PROJECT
<b>PRE</b>	<b>J. MARTIN</b>	<b>SCALE</b>	~	OPGW
<b>1/7/1999</b>	<b>03/01/03</b>	<b>REF</b>		

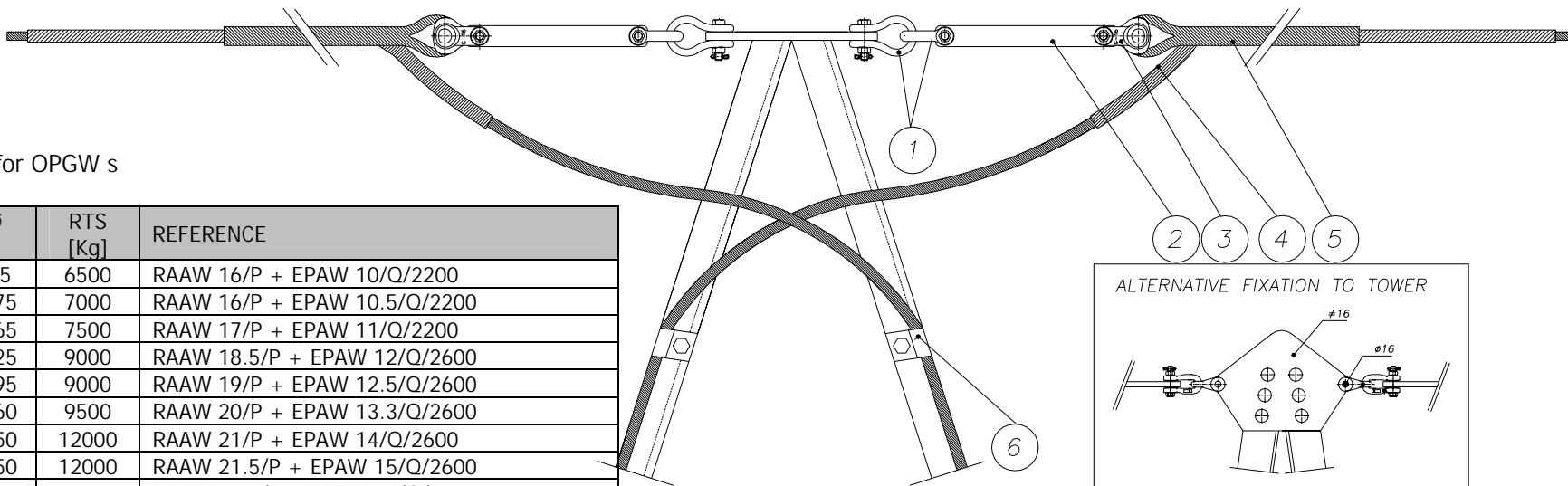


**SINGLE DEAD END SET  
FOR OPGW CABLE**

REPLACES TO: A-11.002 FO

**28.025.LDD**





L=0 for OPGW z | L=1 for OPGW s

CODE	OPGW Ø [mm]	RTS [Kg]	REFERENCE
28025L40	9.76-10.25	6500	RAAW 16/P + EPAW 10/Q/2200
28025L41	10.26-10.75	7000	RAAW 16/P + EPAW 10.5/Q/2200
28025L42	10.76-11.65	7500	RAAW 17/P + EPAW 11/Q/2200
28025L43	11.66-12.25	9000	RAAW 18.5/P + EPAW 12/Q/2600
28025L44	12.26-12.95	9000	RAAW 19/P + EPAW 12.5/Q/2600
28025L45	12.96-13.60	9500	RAAW 20/P + EPAW 13.3/Q/2600
28025L46	13.61-14.50	12000	RAAW 21/P + EPAW 14/Q/2600
28025L47	14.61-15.50	12000	RAAW 21.5/P + EPAW 15/Q/2600
28025L48	15.61-16.50	12000	RAAW 22.5/P + EPAW 16/Q/2600
28025L49	16.61-17.50	12000	RAAW 23.5/P + EPAW 17/Q/2600
28025L50	17.61-18.60	12000	RAAW 24.5/P + EPAW 18/Q/2600
28025L51	17.61-18.60	12500	RAAW 24.5/P/RF + EPAW 18/Q/2600 (*)
28025L52	18.71-19.50	12500	RAAW 25.5/P/RF + EPAW 19/Q/2600 (*)
28025L53	19.61-20.60	12500	RAAW 26.5/P/RF + EPAW 20/Q/2600 (*)
28025L54	20.71-22.00	12500	RAAW 27.5/P/RF + EPAW 21.5/Q/2600 (*)

REV	DATE	DESCRIPTION

P/Q: Lay/Opposite Lay sense of the cable = Z/S or S/Z  
 MATERIAL: AW (AlumoWeld) / RF (reinforced)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

(\*) Designed for double armour cables

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
8				
7				
6	SINGLE TOWER CLAMP	2	ALUMINIUM	GCSAL
5	DEAD END	2	ALUMOWELD	RAAWFO
4	PROTECTION SPLICE	2	ALUMOWELD	EPAWFO
3	THIMBLE	2	FUND. G.E.	G-16
2	EXTENSION LINK	2	STEEL	TA/1-600
1	SHACKLE WITH SCREW	4	FORGED STEEL	GN-16T

<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	0	PROJECT
<b>PRE</b>	<b>J. MARTIN</b>	<b>SCALE</b>	~	OPGW
<b>1/7/1999</b>	<b>03/01/03</b>	<b>REF</b>		

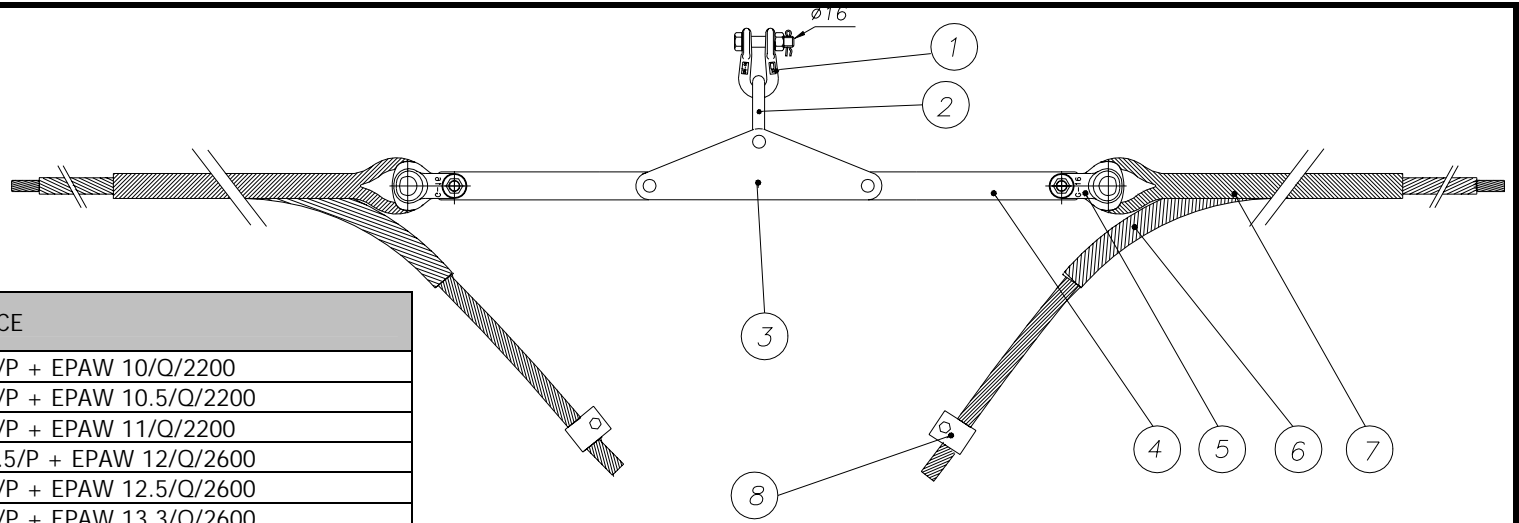


### SPLICING TENSION ASSEMBLY FOR OPGW CABLE

REPLACES TO: A-11.003 FO

**28.025.LDD**





L=0 for OPGW z | L=1 for OPGW s

CODE	OPGW Ø [mm]	RTS [Kg]	REFERENCE
28025L60	9.76-10.25	6500	RAAW 16/P + EPAW 10/Q/2200
28025L61	10.26-10.75	7000	RAAW 16/P + EPAW 10.5/Q/2200
28025L62	10.76-11.65	7500	RAAW 17/P + EPAW 11/Q/2200
28025L63	11.66-12.25	9000	RAAW 18.5/P + EPAW 12/Q/2600
28025L64	12.26-12.95	9000	RAAW 19/P + EPAW 12.5/Q/2600
28025L65	12.96-13.60	9500	RAAW 20/P + EPAW 13.3/Q/2600
28025L66	13.61-14.50	12000	RAAW 21/P + EPAW 14/Q/2600
28025L67	14.61-15.50	12000	RAAW 21.5/P + EPAW 15/Q/2600
28025L68	15.61-16.50	12000	RAAW 22.5/P + EPAW 16/Q/2600
28025L69	16.61-17.50	12000	RAAW 23.5/P + EPAW 17/Q/2600
28025L70	17.61-18.60	12000	RAAW 24.5/P + EPAW 18/Q/2600
28025L71	17.61-18.60	12500	RAAW 24.5/P/RF + EPAW 18/Q/2600 (*)
28025L72	18.71-19.50	12500	RAAW 25.5/P/RF + EPAW 19/Q/2600 (*)
28025L73	19.61-20.60	12500	RAAW 26.5/P/RF + EPAW 20/Q/2600 (*)
28025L74	20.71-22.00	12500	RAAW 27.5/P/RF + EPAW 21.5/Q/2600 (*)

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
8	SINGLE TOWER CLAMP	2	ALUMINIUM	GCSAL
7	DEAD END	2	ALUMOWELD	RAAWFO
6	PROTECTION SPLICE	2	ALUMOWELD	EPAWFO
5	THIMBLE	2	FUND. G.E.	G-16
4	EXTENSION LINK	2	STEEL	TA/1-600
3	YOKE PLATE	1	STEEL GALV.	YD-300
2	TWISTED CHAIN LINK	1	FORGED STEEL	ESR-16
1	SHACKLE WITH SCREW	1	FORGED STEEL	GN-16T

P/Q: Lay/Opposite Lay sense of the cable = Z/S or S/Z  
 MATERIAL: AW (AlumoWeld) / RF (reinforced)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

(\*) Designed for double armour cables

DRAWN	CHECKED	REV	0	PROJECT	
PRE	J. MARTIN	SCALE	~	OPGW	
1/7/1999	03/01/03	REF			

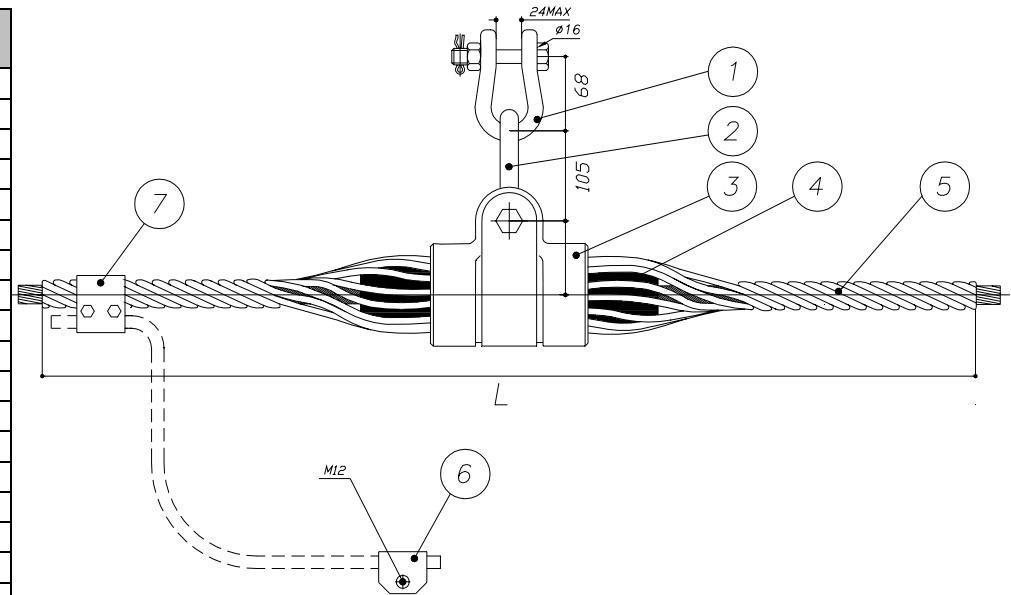


<b>SPLICING TENSION ASSEMBLY IN SUSPENSION TOWER FOR OPGW CABLE</b>	REPLACES TO: A-11.004 FO
	28.025.LDD



L=2 for OPGW z | L=3 for OPGW s

CODE	OPGW Ø [mm]	RTS [Kg]	L [mm]	REFERENCE
28025L00	10.76-11.25	5000	1600	GAS-1/11 + MGAS + VPGS1AL 11/P/1600
28025L01	11.26-11.75	5000	1600	GAS-1/11,5 + MGAS + VPGS1AL 11/P/1600
28025L02	11.76-12.25	7000	1800	GAS-3/12+ MGAS + VPGS3AL 12/P/1800
28025L03	12.26-12.75	7000	1800	GAS-3/12,5 + MGAS + VPGS3AL 12,5/P/1800
28025L04	12.76-13.25	7000	1800	GAS-3/13 + MGAS + VPGS3AL 13,3/P/1800
28025L05	13.26-13.75	7000	1800	GAS-3/13,5 + MGAS + VPGS3AL 13,3/P/1800
28025L06	13.76-14.25	7000	1800	GAS-3/14 + MGAS + VPGS3AL 14/P/1800
28025L07	14.26-14.75	7000	1800	GAS-3/14,5 + MGAS + VPGS3AL 14/P/1800
28025L08	14.76-15.25	7000	1800	GAS-3/15 + MGAS + VPGS3AL 15/P/1800
28025L09	15.26-15.75	7000	1800	GAS-3/15,5 + MGAS + VPGS3AL 15/P/1800
28025L10	15.76-16.25	7000	1800	GAS-3/16 + MGAS + VPGS3AL 16/P/1800
28025L11	16.26-16.75	7000	1800	GAS-3/16,5 + MGAS + VPGS3AL 16/P/1800
28025L12	16.76-17.25	7500	1800	GAS-4/17 + MGAS + VPGS4AL 17/P/1800
28025L13	17.26-17.75	7500	1800	GAS-4/17,5 + MGAS + VPGS4AL 17/P/1800
28025L14	17.76-18.25	7500	1800	GAS-4/18 + MGAS + VPGS4AL 18/P/1800
28025L15	18.26-18.75	7500	1800	GAS-4/18,5 + MGAS + VPGS4AL 18/P/1800
28025L16	18.76-19.25	7500	2000	GAS-4/19 + MGAS + VPGS4AL 19/P/2000
28025L17	19.26-19.75	7500	2000	GAS-4/20 + MGAS + VPGS4AL 20/P/2000
28025L18	19.76-20.25	9500	2000	GAS/H-5/20 + MGAS + VPGS5AL 20/P/2000
28025L19	20.26-20.75	9500	2000	GAS/H-5/20,5 + MGAS + VPGS5AL 20/P/2000
28025L20	20.76-21.25	9500	2000	GAS/H-5/21 + MGAS + VPGS5AL 21/P/2000



P: Lay sense of the cable = Z/S  
 MATERIAL: AW (AlumoWeld) / AL (Alum. Alloy)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION
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8				
7	PARALLEL CLAMP	1	ALUMINIUM	GPC-11/28
6	SINGLE TOWER CLAMP	1	ALUMINIUM	GCSAL
5	CLAMP RODS Ø mm	1	AL. ALLOY	VPGS
4	NEOPRENE INSERT	1	NEOPRENE-RE	MGAS
3	AGS CLAMP	1	AL. ALLOY	GAS
2	TWISTED CHAIN LINK	1	FORGED STEEL	ESR-16
1	SHACKLE WITH SCREW	1	FORGED STEEL	GN-16T
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. MARTIN	SCALE	~	OPGW
1/7/1999	03/01/03	REF		



### SUSPENSION ASSEMBLY WITH TWISTED CHAIN LINK FOR OPGW CABLE

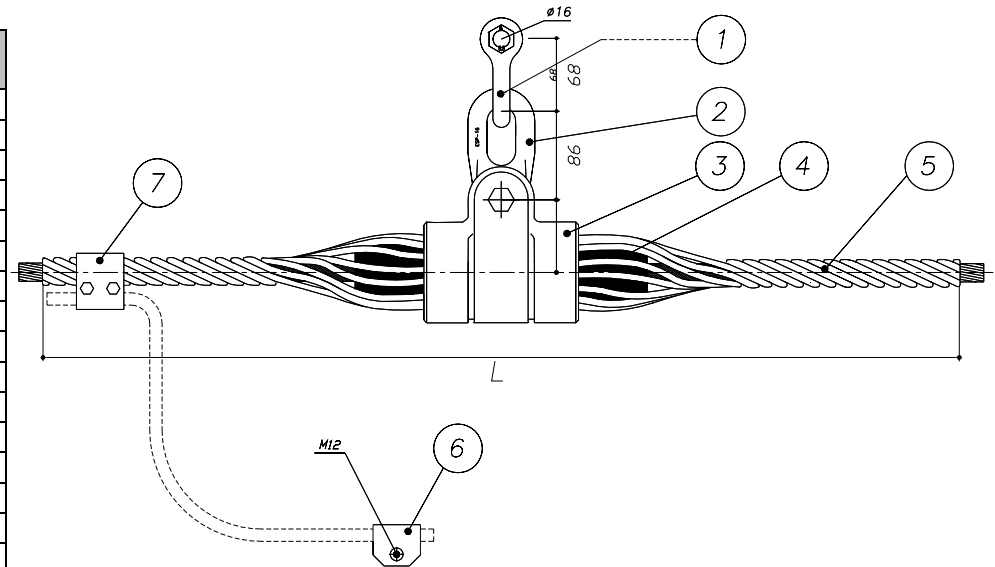
REPLACES TO: A-10.001 FO

28.025.LDD



L=2 for OPGW z | L=3 for OPGW s

CODE	OPGW Ø [mm]	RTS [Kg]	L [mm]	REFERENCE
28025L30	10.76-11.25	5000	1600	GAS-1/11 + MGAS + VPGS1AL 11/P/1600
28025L31	11.26-11.75	5000	1600	GAS-1/11,5 + MGAS + VPGS1AL 11/P/1600
28025L32	11.76-12.25	7000	1800	GAS-3/12+ MGAS + VPGS3AL 12/P/1800
28025L33	12.26-12.75	7000	1800	GAS-3/12,5 + MGAS + VPGS3AL 12,5/P/1800
28025L34	12.76-13.25	7000	1800	GAS-3/13 + MGAS + VPGS3AL 13,3/P/1800
28025L35	13.26-13.75	7000	1800	GAS-3/13,5 + MGAS + VPGS3AL 13,3/P/1800
28025L36	13.76-14.25	7000	1800	GAS-3/14 + MGAS + VPGS3AL 14/P/1800
28025L37	14.26-14.75	7000	1800	GAS-3/14,5 + MGAS + VPGS3AL 14/P/1800
28025L38	14.76-15.25	7000	1800	GAS-3/15 + MGAS + VPGS3AL 15/P/1800
28025L39	15.26-15.75	7000	1800	GAS-3/15,5 + MGAS + VPGS3AL 15/P/1800
28025L40	15.76-16.25	7000	1800	GAS-3/16 + MGAS + VPGS3AL 16/P/1800
28025L41	16.26-16.75	7000	1800	GAS-3/16,5 + MGAS + VPGS3AL 16/P/1800
28025L42	16.76-17.25	7500	1800	GAS-4/17 + MGAS + VPGS4AL 17/P/1800
28025L43	17.26-17.75	7500	1800	GAS-4/17,5 + MGAS + VPGS4AL 17/P/1800
28025L44	17.76-18.25	7500	1800	GAS-4/18 + MGAS + VPGS4AL 18/P/1800
28025L45	18.26-18.75	7500	1800	GAS-4/18,5 + MGAS + VPGS4AL 18/P/1800
28025L46	18.76-19.25	7500	2000	GAS-4/19 + MGAS + VPGS4AL 19/P/2000
28025L47	19.26-19.75	7500	2000	GAS-4/20 + MGAS + VPGS4AL 20/P/2000
28025L48	19.76-20.25	9500	2000	GAS/H-5/20 + MGAS + VPGS5AL 20/P/2000
28025L49	20.26-20.75	9500	2000	GAS/H-5/20,5 + MGAS + VPGS5AL 20/P/2000
28025L50	20.76-21.25	9500	2000	GAS/H-5/21 + MGAS + VPGS5AL 21/P/2000



P: Lay sense of the cable = Z/S  
 MATERIAL: AW (AlumoWeld) / AL (Alum. Alloy)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION
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8				
7	PARALLEL CLAMP	1	ALUMINIUM	GPC-11/28
6	SINGLE TOWER CLAMP	1	ALUMINIUM	GCSAL
5	CLAMP RODS Ø mm	1	AL. ALLOY	VPGS
4	NEOPRENE INSERT	1	NEOPRENE-RE	MGAS
3	AGS CLAMP	1	AL. ALLOY	GAS
2	CHAIN LINK	1	FORGED STEEL	ESP-16
1	SHACKLE WITH SCREW	1	FORGED STEEL	GN-16T
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. MARTIN	SCALE	~	OPGW
1/7/1999	03/01/03	REF		



### SUSPENSION ASSEMBLY WITH CHAIN LINK FOR OPGW CABLE Ø mm

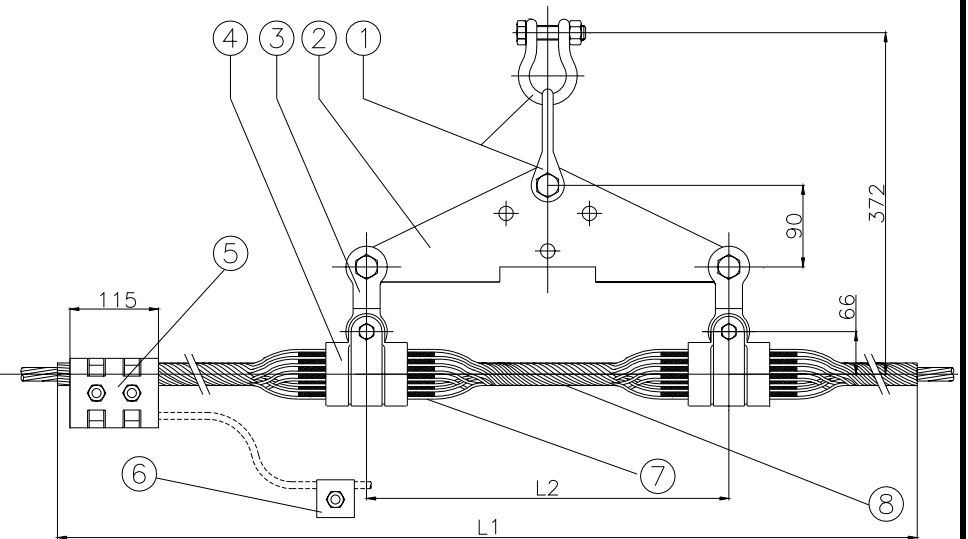
REPLACES TO: A-10.002 FO

**28.025.LDD**



L=2 for OPGW z | L=3 for OPGW s

CODE	OPGW Ø [mm]	RTS [Kg]	L [mm]	REFERENCE
28025L60	10.76-11.25	5000	2000	2x(GAS-1/11+MGAS) + VPGS1AL 11/P/2000
28025L61	11.26-11.75	5000	2000	2x(GAS-1/11,5+MGAS) + VPGS1AL 11/P/2000
28025L62	11.76-12.25	7000	2200	2xGAS-3/12+ 2xMGAS + VPGS3AL 12/P/2200
28025L63	12.26-12.75	7000	2200	2x(GAS-3/12,5+MGAS) + VPGS3AL 12,5/P/2200
28025L64	12.76-13.25	7000	2200	2x(GAS-3/13+MGAS) + VPGS3AL 13,3/P/2200
28025L65	13.26-13.75	7000	2200	2x(GAS-3/13,5+MGAS) + VPGS3AL 13,3/P/2200
28025L66	13.76-14.25	7000	2200	2x(GAS-3/14+MGAS) + VPGS3AL 14/P/2200
28025L67	14.26-14.75	7000	2200	2x(GAS-3/14,5+MGAS) + VPGS3AL 14/P/2200
28025L68	14.76-15.25	7000	2200	2x(GAS-3/15+MGAS) + VPGS3AL 15/P/2200
28025L69	15.26-15.75	7000	2200	2x(GAS-3/15,5+MGAS) + VPGS3AL 15/P/2200
28025L70	15.76-16.25	7000	2200	2x(GAS-3/16+MGAS) + VPGS3AL 16/P/2200
28025L71	16.26-16.75	7000	2200	2x(GAS-3/16,5+MGAS) + VPGS3AL 16/P/2200
28025L72	16.76-17.25	7500	2200	2x(GAS-4/17+MGAS) + VPGS4AL 17/P/2200
28025L73	17.26-17.75	7500	2200	2x(GAS-4/17,5+MGAS) + VPGS4AL 17/P/2200
28025L74	17.76-18.25	7500	2200	2x(GAS-4/18+MGAS) + VPGS4AL 18/P/2200
28025L75	18.26-18.75	7500	2200	2x(GAS-4/18,5+MGAS) + VPGS4AL 18/P/2200
28025L76	18.76-19.25	7500	2400	2x(GAS-4/19+MGAS) + VPGS4AL 19/P/2400
28025L77	19.26-19.75	7500	2400	2x(GAS-4/20+MGAS) + VPGS4AL 20/P/2400
28025L78	19.76-20.25	9500	2400	2x(GAS/H-5/20+MGAS) + VPGS5AL 20/P/2400
28025L79	20.26-20.75	9500	2400	2x(GAS/H-5/20,5+MGAS) + VPGS5AL 20/P/2400
28025L80	20.76-21.25	9500	2400	2x(GAS/H-5/21+MGAS) + VPGS5AL 21/P/2400



P: Lay sense of the cable = Z/S  
 MATERIAL: AW (AlumoWeld) / AL (Alum. Alloy)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION			
8		CLAMP RODS Ø mm	1	AL. ALLOY	VPGS
7		NEOPRENE INSERT	2	NEOPRENE-RE	MGAS
6		SINGLE TOWER CLAMP	1	ALUMINIUM	GCSAL
5		PARALLEL CLAMP	1	ALUMINIUM	GPC-11/28
4		AGS CLAMP	2	AL. ALLOY	GAS
3		CLEVIS EYES	2	STEEL	HP-16/20
2		YOKE PLATE	1	STEEL	Y-12/161
1		SHACKLE WITH SCREW	2	FORGED STEEL	GN-16T
POS	DENOMINATION		QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT	
PRE	J. MARTIN	SCALE	~	OPGW	
1/7/1999	03/01/03	REF			

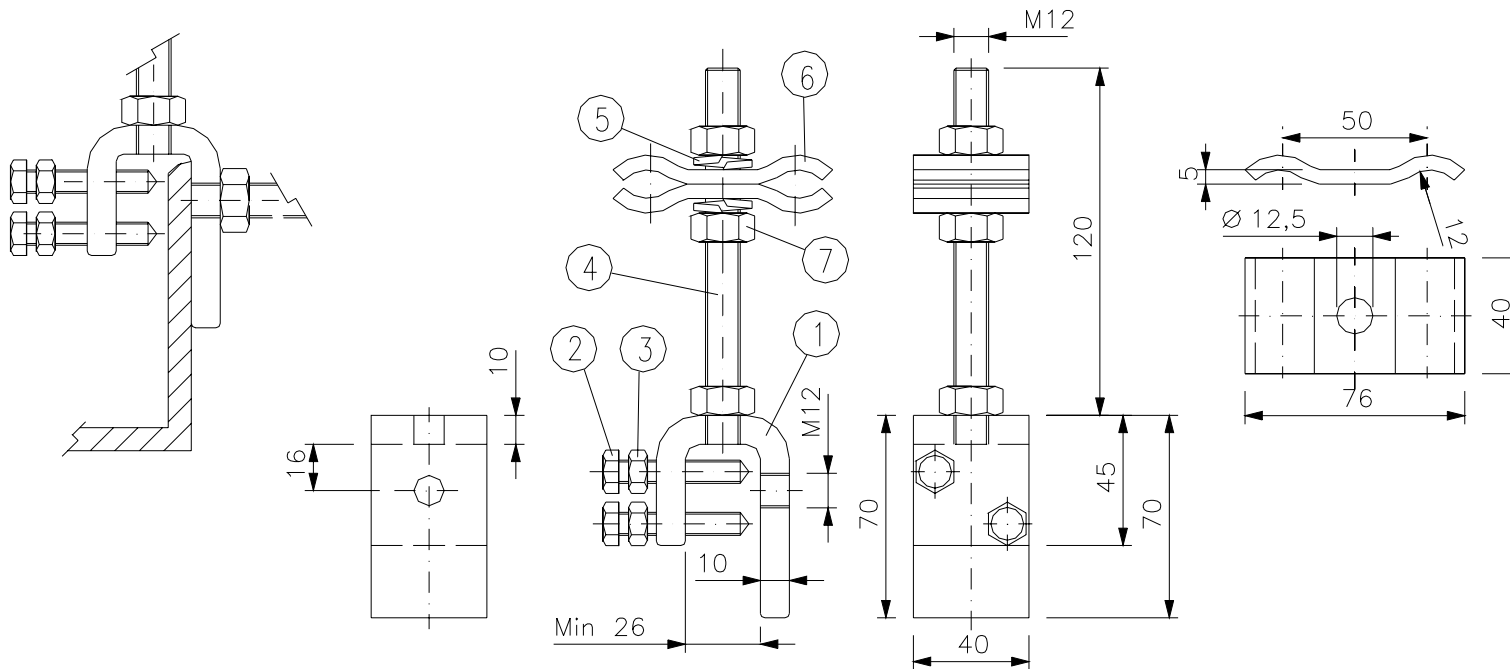


### DOUBLE SUSPENSION ASSEMBLY FOR OPGW CABLE

REPLACES TO: A-10.004 FO

28.025.LDD





TIGHTENING TORQUE FOR SCREW M-8: 2 Kgm  
 TIGHTENING TORQUE FOR NUT M-12: 3 Kgm

Dimensions in mm / Tolerances: ± 2%

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
7	NUT M-12	3	GALV. STEEL	
6	PARALLEL CLAMP	2	ALUMINIUM	
5	GROWER WASHER M-12	2	GALV. STEEL	
4	THREADED ROD M-12x130	1	GALV. STEEL	
3	NUT M-8	2	STAINLESS STEEL	
2	SCREW M-8x45	2	STAINLESS STEEL	
1	SUPPORT BODY	1	GALV. STEEL	CSFO 60/40/10

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. MARTIN	SCALE	~	OPGW
1/7/1999	03/01/03	REF		



**ATTACHING CLAMP  
SFO-CD-3**

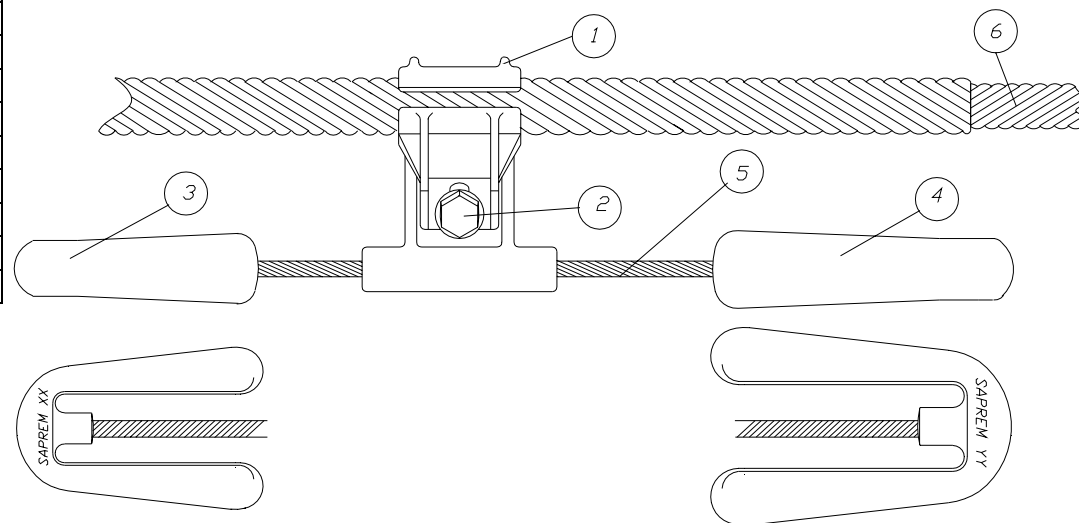
REPLACES TO: A-20.003 FO

**28.025.680**





Code	Name	Range [mm]	Weight [Kg]	M1	M2	XX	Torque [N·m]
28025400	AMG-050913	8.0-13.0	1.80	05	09	13	4.0
28025401	AMG-050920	13.0-20.0	1.80	05	09	20	3.0
28025402	AMG-050926	18.5-26.0	1.95	05	09	26	2.5
28025403	AMG-091520	13.0-20.0	3.00	09	15	20	3.0
28025404	AMG-091526	18.5-26.0	3.00	09	15	26	2.5
28025405	AMG-091529	21.0-29.0	3.10	09	15	29	2.5
28025406	AMG-091532	23.0-32.0	3.10	09	15	32	2.5
28025407	AMG-152426	18.5-26.0	4.50	15	24	26	2.5
28025408	AMG-152432	23.0-32.0	4.50	15	24	32	2.5



AMG dampers are always installed on protection rods: EPAW in dead-end, VPGS in suspension or VPAW if they shall be located outside. The clamp range of the damper refers to the cable diameter + twice the diameter of the protection rods. For example, for a 15mm OPGW, EPAW and VPAW rods have  $\varnothing=3.26\text{mm}$  whereas VPGS rods  $\varnothing=4.62\text{mm}$ . The resulting diameter is 21.5mm and 24.2mm at dead-end and suspension, respectively. The appropriate damper will be either AMGXXXX26 or AMGXXXX29.

CLAMP RANGE DIAMETER: (see table)  
DAMPER WEIGHT: (see table)  
TIGHTENING TORQUE: (see table)

Dimensions in mm / Tolerances:  $\pm 2\%$

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6	OPGW CABLE			
5	MESSENGER CABLE	1	GALV. STEEL	19 wires, $\varnothing=XX$ mm
4	FORGED MASS	1	GALV. FORG. STEEL	CP-M2
3	FORGED MASS	1	GALV. FORG. STEEL	CP-M1
2	HEXAGONAL BOLT	1	GLAV. STEEL	
1	BODY CLAMP	1	AL. ALLOY	G-XX

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. MARTIN	SCALE	~	OPGW
1/7/1999	03/01/03	REF		

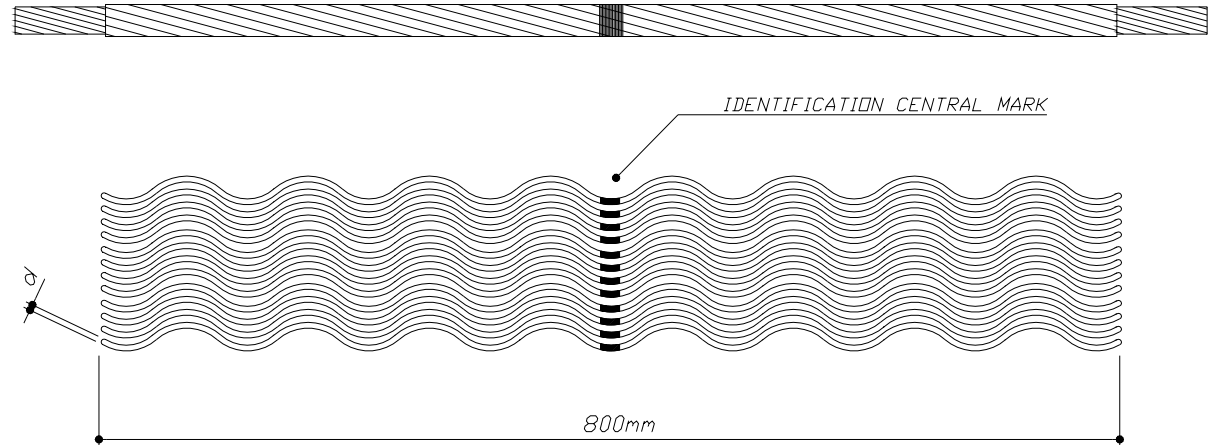


<b>DAMPER AMG- FOUR RESONANCES ASYMMETRIC STOCKBRIDGE</b>	REPLACES TO: A-21.001 FO
	28.025.4XX



L=0 for OPGW z | L=1 for OPGW s

CODE	OPGW Ø [mm]	Ø. rods [mm]	# RODS	REFERENCE
28025L83	11.7-12.2	3.26	12	VPAW 12/Q/800
28025L84	12.3-12.9	3.26	12	VPAW 12.5/Q/800
28025L85	13.0-13.6	3.26	13	VPAW 13.3/Q/800
28025L86	13.7-14.5	3.26	14	VPAW 14/Q/800
28025L87	14.6-15.5	3.26	15	VPAW 15/Q/800
28025L88	15.6-16.5	3.26	15	VPAW 16/Q/800
28025L89	16.6-17.5	3.26	16	VPAW 17/Q/800
28025L90	17.6-18.6	3.26	17	VPAW 18/Q/800
28025L91	18.7-19.5	3.26	18	VPAW 19/Q/800
28025L92	19.6-20.6	3.26	18	VPAW 20/Q/800
28025L93	20.7-22.0	3.26	19	VPAW 21.5/Q/800



Q: Opposite Lay sense of the cable = Z/S  
 MATERIAL: AW (AlumoWeld)  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION

DRAWN	CHECKED	REV	1	PROJECT
PRE	J. MARTIN	SCALE	~	OPGW
1/7/1999	03/01/03	REF		



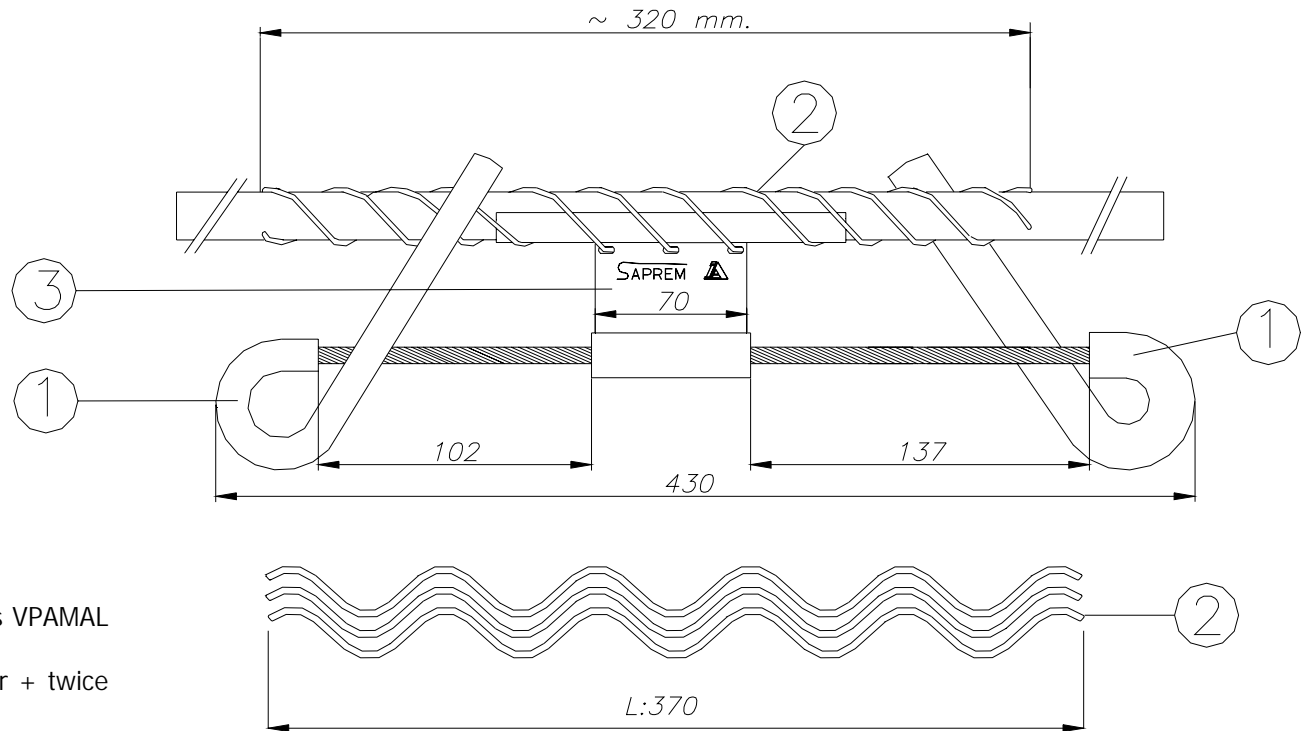
<b>VPAW</b>		REPLACES TO: A-21.020 FO
<b>DAMPER PROTECTION ARMOUR RODS</b>		<b>28.025.LDD</b>



12/35

Standard catalog for OPGW fittings (codified)

Code	Name	Range [mm]	Weight [Kg]
28026500	Amorfo 125-135	12.5-13.5	1.05
28026501	Amorfo 160-170	16.0-17.0	1.05
28026502	Amorfo 170-180	17.0-18.0	1.05
28026503	Amorfo 180-190	18.0-19.0	1.05
28026504	Amorfo 190-200	19.0-20.0	1.05
28026505	Amorfo 200-210	20.0-21.0	1.05
28026506	Amorfo 210-220	21.0-22.0	1.05
28026507	Amorfo 220-230	22.0-23.0	1.05
28026508	Amorfo 230-240	23.0-24.0	1.05
28026509	Amorfo 240-250	24.0-25.0	1.05
28026510	Amorfo 250-260	25.0-26.0	1.05
28026511	Amorfo 260-270	26.0-27.0	1.05
28026512	Amorfo 270-280	27.0-28.0	1.05



Amorfo dampers shall be always installed on protection rods VPAMAL if they shall be located outside.

The clamp range of the damper refers to the cable diameter + twice the diameter of the rods.

For example, for a 15mm OPGW cable, VPAMAL rods have  $\varnothing=3.45\text{mm}$ . The resulting diameter is 21.9mm. The appropriate dampers will be either Amorfo 210-220.

Dimensions in mm / Tolerances:  $\pm 2\%$

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6				
5				
4				
3	FIXING CLAMP	1	AL. ALLOY	
2	FIXING RODS	3	ALUMOWELD	VSAMAW
1	COUNTER-WEIGHT	2	GALV. STEEL	

<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	0	<b>PROJECT</b>	
<b>PRE</b>	<b>J. MARTIN</b>	<b>SCALE</b>	~	<b>ADSS</b>	
<b>1/7/1999</b>	<b>03/01/03</b>	<b>REF</b>			



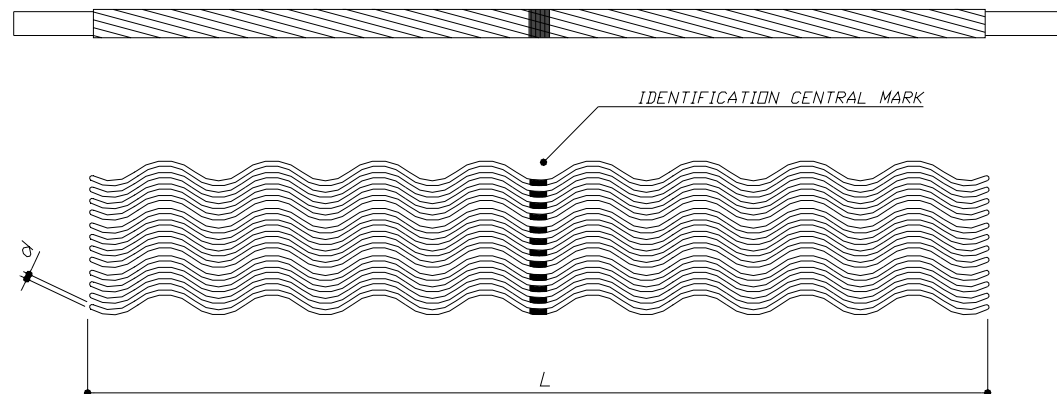
**DAMPER AMORFO FOR OPGW  
FOUR RESONANCES ASYMMETRIC STOCKBRIDGE**

REPLACES TO: A-21.003 FO

**28.026.5XX**



CODE	ADSS Ø [mm]	Ø. rods [mm]	# RODS	REFERENCE
28026080	9.6-10.5	3.45	10	VPAMAL 10/S/450
28026081	10.6-11.5	3.45	10	VPAMAL 11/S/450
28026082	11.6-12.5	3.45	11	VPAMAL 12/S/450
28026083	12.6-13.5	3.45	12	VPAMAL 13/S/450
28026084	13.6-14.5	3.45	13	VPAMAL 14/S/450
28026085	14.6-15.5	3.45	14	VPAMAL 15/S/450
28026086	15.6-16.5	3.71	14	VPAMAL 16/S/450
28026087	16.6-17.5	3.71	15	VPAMAL 17/S/450
28026088	17.6-18.5	3.71	15	VPAMAL 18/S/450
28026089	18.6-19.5	3.71	16	VPAMAL 19/S/450
28026090	19.6-20.5	3.71	17	VPAMAL 20/S/450
28026091	20.6-21.5	3.71	17	VPAMAL 21/S/450
28026092	21.6-22.5	3.71	18	VPAMAL 22/S/450



MATERIAL: AL (Aluminium)  
Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. MARTIN	SCALE	~	ADSS
1/7/1999	03/01/03	REF		



<b>VPAMAL</b>		REPLACES TO: A-41.020 FO
<b>DAMPER PROTECTION ARMOUR RODS</b>		<b>280260DD</b>

Date: 03 JAN 2003

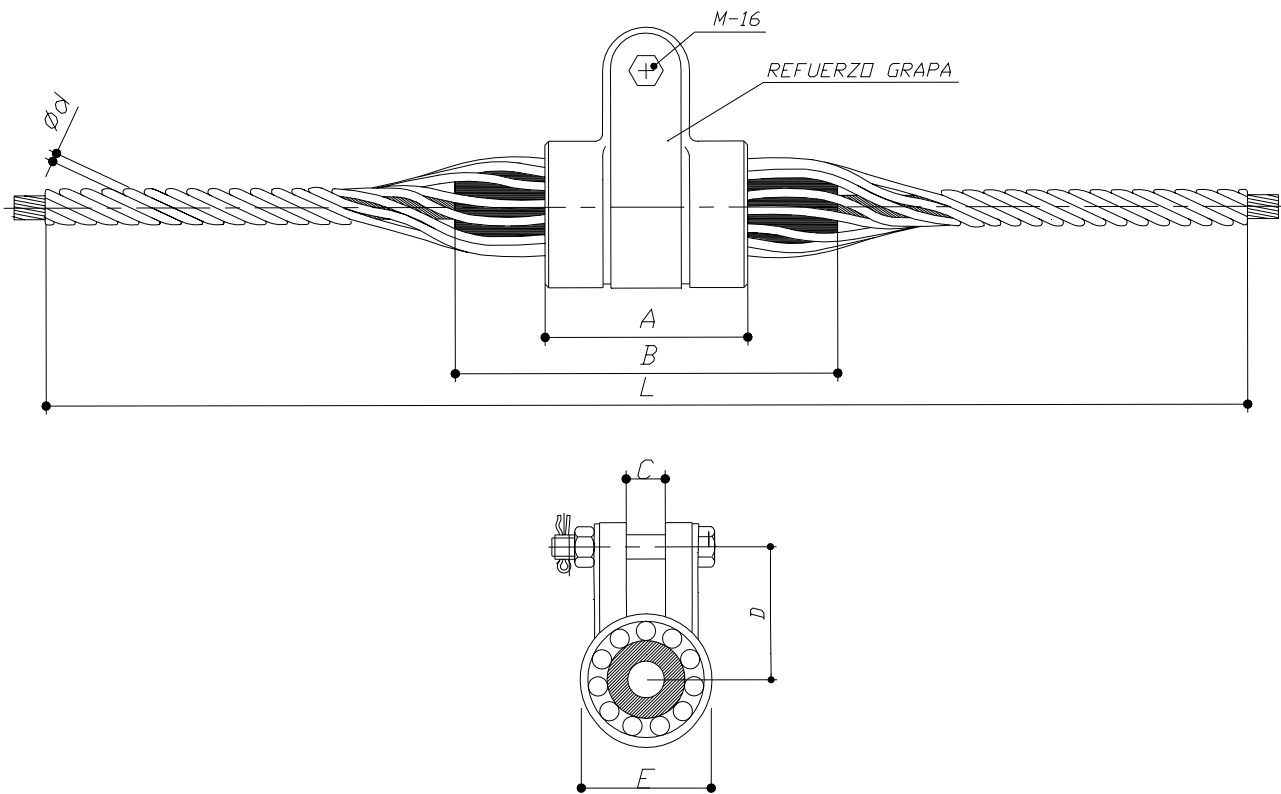
## FITTINGS



### TENSION ASSEMBLY (L=0/1 for s/z)

	CODE	REPLACES TO	REV	DENOMINATION	REFERENCE
	28.025.544 to 28.025.645	A-10.020	0	ARMOUR GRID SUSPENSION CLAMP	GAS
	"	A-10.021	0	ARMOUR GRID SUSPENSION CLAMP HINGE TYPE	GAS/H
	"	A-10.022	0	ARMOUR RODS FOR AGS CLAMP	VPGS
	"	A-10.122	0	ARMOUR RODS FOR DOUBLE AGS CLAMP	VPGS
	"	A-10.023	0	NEOPRENE INSERT	MGAS
	28.025.500 to 28.025.543	A-11.020	0	PREFORMED ELEMENTS OF DEAD END TENSION SET	RAAW/EPAW
	28.025.646	A-12.001	0	SHACKLE WITH SCREW	GN-16T
	28.025.658	A-12.002	0	TWISTED CHAIN LINK	ESR-16
	28.025.659	A-12.003	0	CHAIN LINK	ESP-16
	28.025.660	A-12.005	0	CLEVIS THIMBLE	G-16
	28.025.690	A-12.006/A	0	GROUNDING CLAMP	GCSAL-8/14
	28.025.691	A-12.006/A	0	GROUNDING CLAMP	GCSAL-14/18
	28.025.692	A-12.006/A	0	GROUNDING CLAMP	GCSAL-18/24
	28.025.696	A-12.007	0	PARALLEL CLAMP	GPC-8/16
	28.025.697	A-12.008	0	PARALLEL CLAMP	GPC-11/28
	28.025.672	A-12.010	0	YOKE PLATE	Y-12/161
	28.025.673	A-12.011	0	DOUBLE YOKE PLATE	YD-300
	28.025.654	A-12.020	0	PARALLEL CLEVIS EYES	HP-16/20
	28.025.662	A-12.023	0	EXTENSION LINK	TA-1/300
	28.025.664	A-12.026	0	EXTENSION LINK	TA-1/600

GAS	CABLE Ø [mm]	BODY CLAMP DIMENSIONS [mm]					RTS [Kg]	ARMOUR RODS		
		A	B	C	D	E		L [mm]	Ø [mm]	MAT
1/11	10.7-11.2	65	115	22	56	52	5000	1600	3,26	AW
1/11.5	11.3-11.7									
3/12	11.8-12.2									
3/12.5	12.3-12.7									
3/13	12.8-13.2									
3/13.5	13.3-13.7	90	144	22	66	66	7000	1800	4.62	AA
3/14	13.8-14.2									
3/14.5	14.3-14.7									
3/15	14.8-15.2									
3/15.5	15.3-15.7									
3/16	15.8-16.2	96	183	22	68	70	7500	1800	5.18	AA
3/16.5	16.3-16.7									
4/17	16.8-17.2							2000	5.18	AA
4/17.5	17.3-17.7									
4/18	17.8-18.2									
4/18.5	18.3-18.7									
4/19	18.8-19.2									
4/20	19.3-19.7									



Max. angle allowed:  $\alpha = 18^\circ$   
MATERIAL: AW (AlumoWeld) / AA (Alum. Alloy)  
Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}; \pm 2\%$ )

REV	DATE	DESCRIPTION		
3				
2		1	STAINLESS STEEL	
1		1	AL. ALLOY	A/B/C/D/E
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

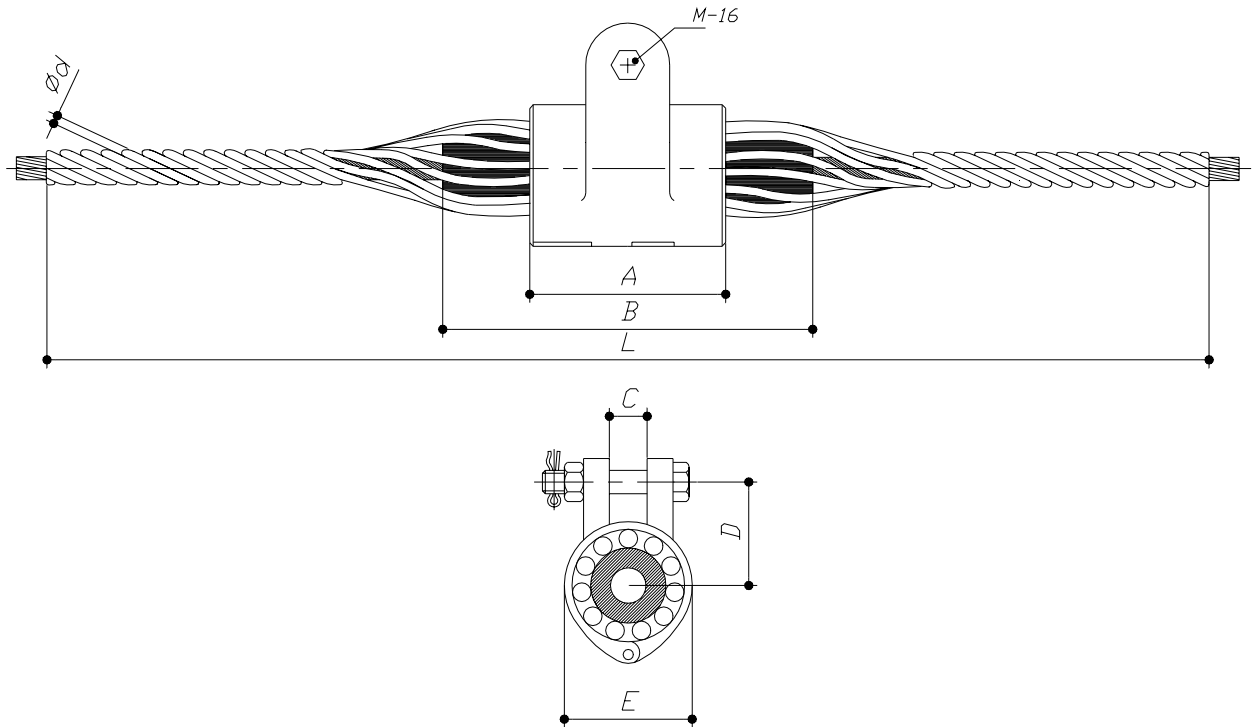
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



REPLACES TO: A-10.020 FO

28.025.544 to 28.025.645

### ARMOUR GRID SUSPENSION CLAMP



GAS/H	CABLE Ø [mm]	BODY CLAMP DIMENSIONS [mm]					RTS [Kg]	ARMOUR RODS		
		A	B	C	D	E		L [mm]	Ø [mm]	MAT
5/20	19,8-20,2	110	201	22	75	80	9500	2000	5.18	AA
5/20.5	20.3-20.7									
5/21	20,8-21,2									

Max. angle allowed:  $\alpha = 18^\circ$   
 MATERIAL: AA (Alum. Alloy)  
 Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}; \pm 2\%$ )

REV	DATE	DESCRIPTION
-----	------	-------------

3				
2				
1	BODY CLAMP	1	AL. ALLOY	A/B/C/D/E
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		

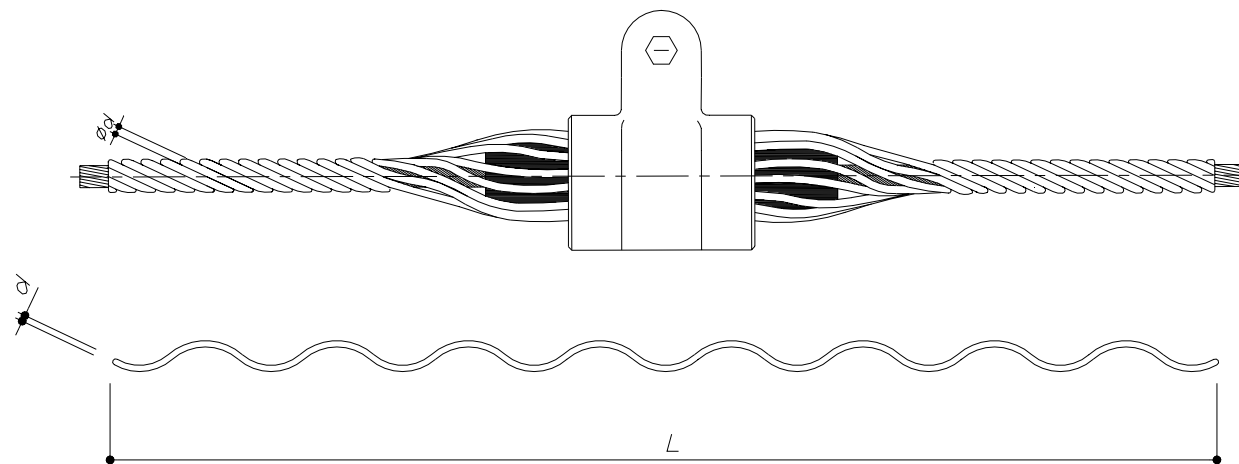


## ARMOUR GRID SUSPENSION CLAMP HINGE TYPE

REPLACES TO: A-10.021 FO

28.025.544 to 28.025.645

VPGS	CABLE Ø [mm]	GAS	ARMOUR RODS		
			L [mm]	Ø [mm]	MAT
1AW 11/P	10.8-11.6	GAS1	1600	3,26	AW
3AL 12/P	11.7-12.2	GAS3	1800	4.62	AL
3AL 12,5/P	12.3-12.7				
3AL 13,3/P	12.8-13.6				
3AL 14/P	13.7-14.5				
3AL 15/P	14.6-15.5				
3AL 16/P	15.6-16.5	GAS4	1800	5.18	AL
4AL 17/P	16.6-17.5		2000		
4AL 18/P	17.6-18.7				
4AL 19/P	18.8-19.5	GAS5	2000	5.18	AL
5AL 20/P	19.6-20.5				
5AL 21/P	20.6-21.5				



P: Lay sense of the cable (Z-Right / S-Left)  
MATERIAL: AW (AlumoWeld) / AL (Alum. Alloy)  
Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

3				
2				
1				
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	0	<b>PROJECT</b>	
PRE	J. Martín	<b>SCALE</b>	~	OPGW	
01-07-99	03/01/03	<b>REF</b>			

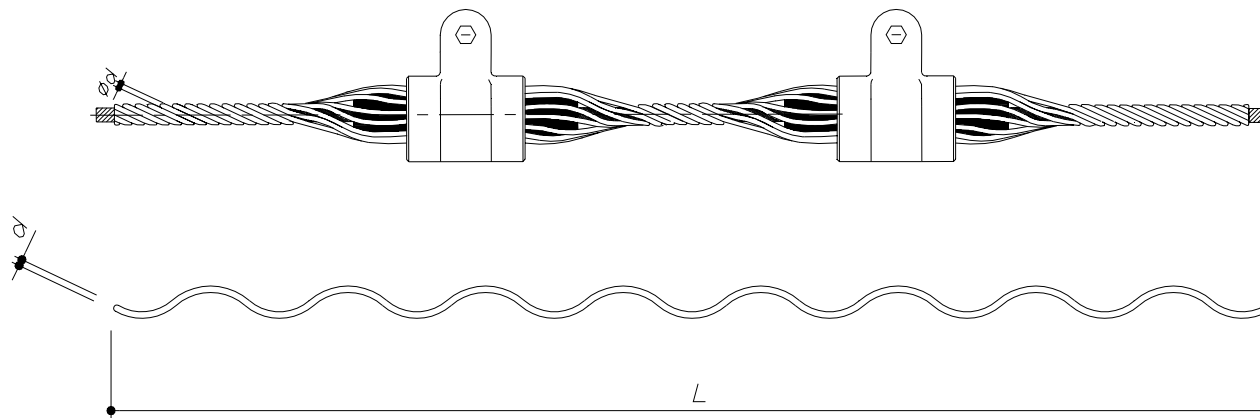


## ARMOUR RODS FOR AGS CLAMP VPGS

REPLACES TO: A-10.022 FO

**28.025.544 to 28.025.645**

VPGS	CABLE Ø [mm]	GAS	ARMOUR RODS		
			L [mm]	Ø [mm]	MAT
1AW 11/P	10.8-11.6	GAS1	2000	3,26	AW
3AL 12/P	11.7-12.2	GAS3	2200	4.62	AL
3AL 12,5/P	12.3-12.7				
3AL 13,3/P	12.8-13.6				
3AL 14/P	13.7-14.5				
3AL 15/P	14.6-15.5				
3AL 16/P	15.6-16.5	GAS4	2200	5.18	AL
4AL 17/P	16.6-17.5		2400		
4AL 18/P	17.6-18.7				
4AL 19/P	18.8-19.5	GAS5	2400	5.18	AL
5AL 20/P	19.6-20.5				
5AL 21/P	20.6-21.5				



P: Lay sense of the cable (Z-Right / S-Left)  
MATERIAL: AW (AlumoWeld) / AL (Alum. Alloy)  
Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION

3				
2				
1				
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		

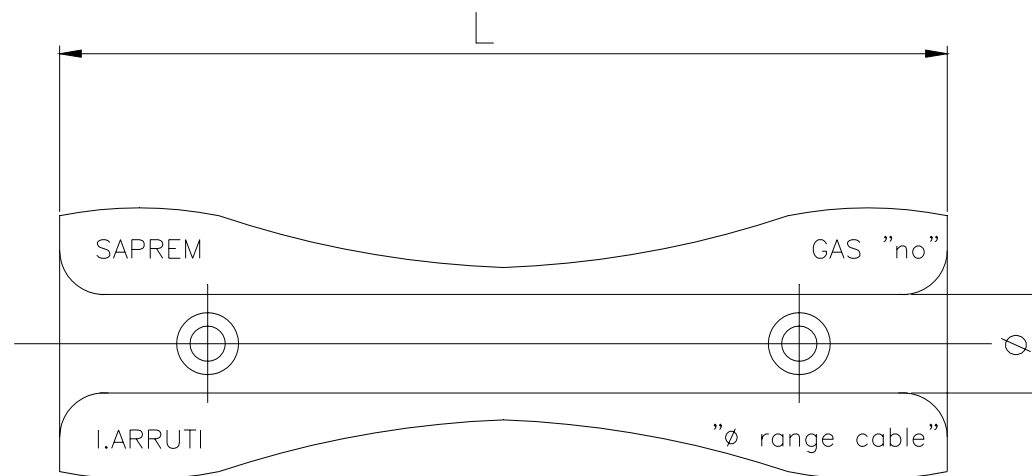


## ARMOUR RODS FOR DOUBLE AGS CLAMP VPGS

REPLACES TO: A-10.122 FO

**28.025.544 to 28.025.645**

MGAS	CABLE Ø [mm]	B
1/11	10.7-11.2	115
1/11.5	11.3-11.7	
3/12	11.8-12.2	
3/12.5	12.3-12.7	144
3/13	12.8-13.2	
3/13.5	13.3-13.7	
3/14	13.8-14.2	
3/14.5	14.3-14.7	
3/15	14.8-15.2	
3/15.5	15.3-15.7	183
3/16	15.8-16.2	
3/16.5	16.3-16.7	
4/17	16.8-17.2	
4/17.5	17.3-17.7	
4/18	17.8-18.2	
4/18.5	18.3-18.7	201
4/19	18.8-19.2	
4/20	19.3-19.7	
5/20	19.8-20.2	
5/20.5	20.3-20.7	
5/21	20.8-21.2	



Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION
-----	------	-------------

3				
2				
1				
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		

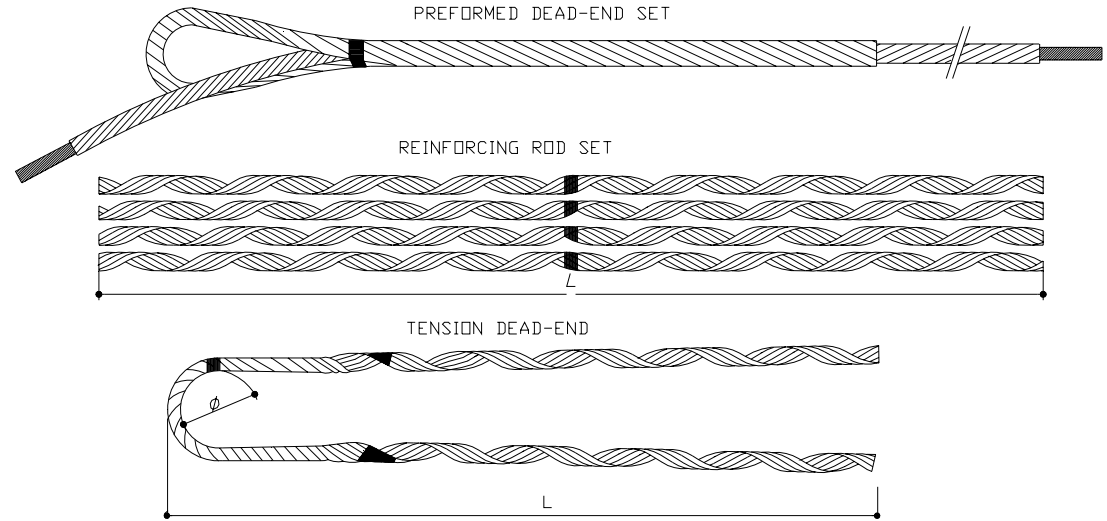


### NEOPRENE INSERT MGAS

REPLACES TO: A-10.023 FO

28.025.544 to 28.025.645

CABLE Ø [mm]	RAAW FO EPAW FO	Ø RODS [mm]	COMPO.	LENGTH [mm]	COLOR CODE	RTS [Kg]
9.7-10.2	15/P 10/Q/2200	4.12 2.59	6 (4+4+4)	1150 2200	BLUE GREEN	6500
10.3-10.7	16/P 10.5/Q/2200	4.12 2.59	6 (4+4+5)	1150 2200	GREEN GREEN	7000
10.8-11.6	17/P 11/Q/2200	4.12 2.91	6 (4+4+4)	1150 2200	BLACK BLUE	7500
11.7-12.2	18.5/P 12/Q/2600	4.12 3.26	6 (4+4+4)	1380 2600	RED RED	9000
12.3-12.9	19/P 12.5/Q/2600	4.12 3.26	6 (4+4+4)	1380 2600	YELLOW BLUE	9000
13.0-13.6	20/P 13.3/Q/2600	4.12 3.26	6 (4+3+3+3)	1380 2600	BLACK YELLOW	9500
13.7-14.5	21/P 14/Q/2600	4.12 3.26	7 (4+4+3+3)	1380 2600	RED RED	12000
14.6-15.5	21.5/P 15/Q/2600	4.12 3.26	7 (4+4+3+3)	1380 2600	GREEN BLUE	12000
15.6-16.5	22.5/P 16/Q/2600	4.12 3.26	7 (4+4+4+3)	1380 2600	BLUE GREEN	12000
16.6-17.5	23.5/P 17/Q/2600	4.12 3.26	7 (4+4+4+4)	1380 2600	YELLOW BLACK	12000
17.6-18.6	24.5/P 18/Q/2600	4.12 3.26	7 (5+4+4+4)	1380 2600	RED RED	12000
17.6-18.6	24.5/P/RF 18/Q/2600	4.62 3.26	7 (5+4+4+4)	1380 2600	RED RED	12500
18.7-19.5	25.5/P/RF 19/Q/2600	4.62 3.26	8 (5+5+4+4)	1380 2600	BLACK GREEN	12500
19.6-20.6	26.5/P/RF 20/Q/2600	4.62 3.26	8 (5+5+4+4)	1380 2600	BLUE BLACK	12500
20.7-22.0	27.5/P/RF 21.5/Q/2600	4.62 3.26	8 (5+5+5+5)	1380 2600	GREEN GREEN	12500



P/Q: Lay/Opposite Lay sense of the cable = Z/S or S/Z  
MATERIAL: AW (AlumoWeld) / RF (reinforced)  
Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

REV	DATE	DESCRIPTION
-----	------	-------------

3				
2				
1				
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

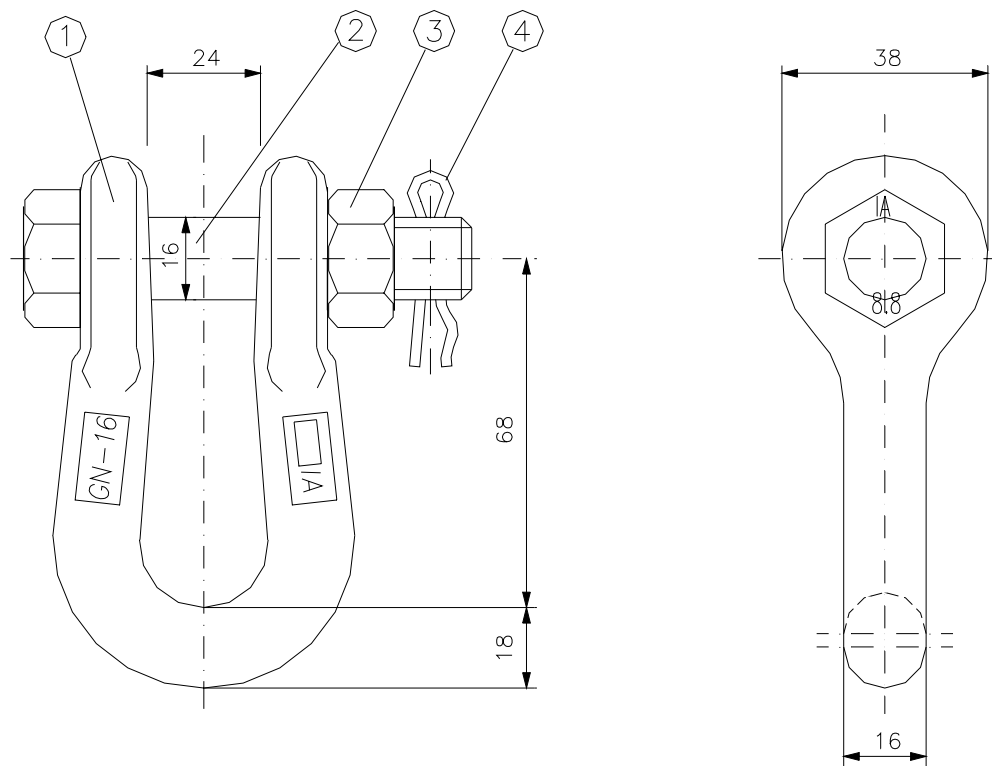
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



### PREFORMED ELEMENTS OF DEAD END SET TENSION DEAD END

REPLACES TO: a-11.020 FO

28.025.500 to 28.025.544



ULTIMATE STRENGTH: 12.500 dan  
 NORMALIZED TREATMENT

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
4	SAFETY SPLIT PIN	1	STAINLESS STEEL	4½x37
3	NUT	1	GALV. STEEL	M-16
2	SCREW	1	GALV. STEEL	M-16x75 8.8
1	SHACKLE BODY	1	GALV. FORG. STEEL	GN-16

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		

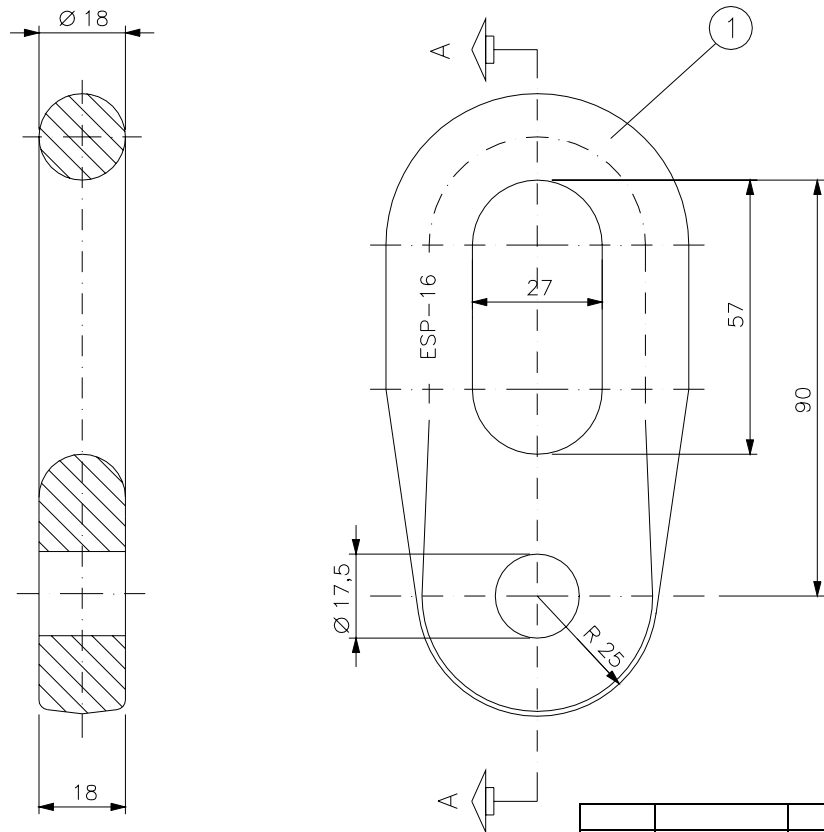


**SHACKLE WITH SCREW  
 GN-16T**

REPLACES TO: A-12.001 FO

**28.025.646**





ULTIMATE STRENGTH: 12.500 dan  
 NORMALIZED TREATMENT

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

1	12-01-04	Changed length of chain link from 86.5 to 90mm
REV	DATE	DESCRIPTION

4				
3				
2				
1	CHAIN LINK BODY	1	GALV. FORG. STEEL	ESP-16-20
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

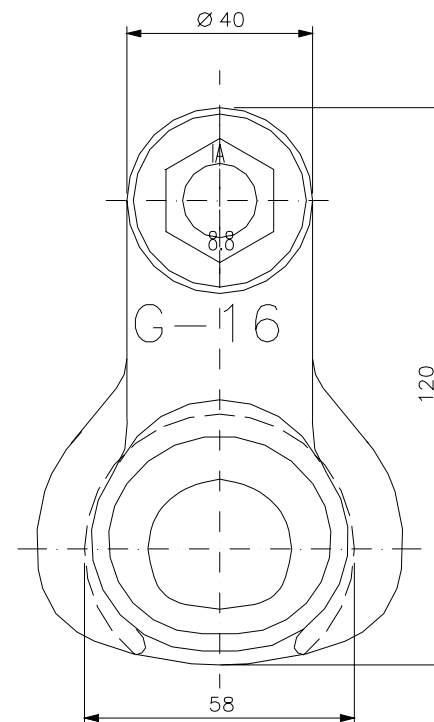
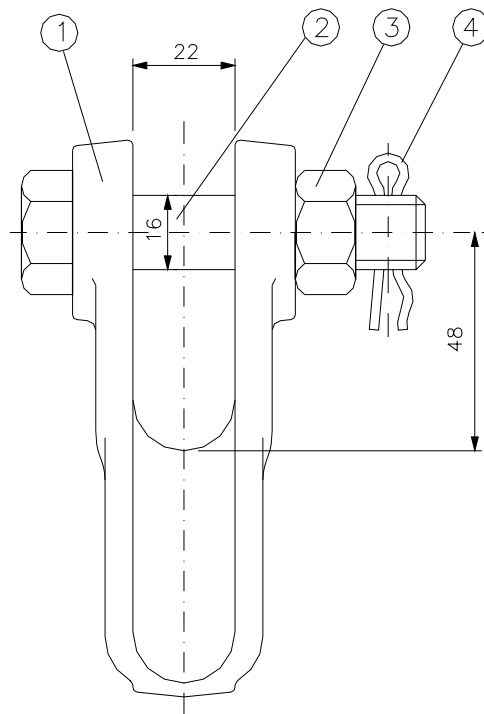
<b>DRAWN</b>	<b>CHECKED</b>	<b>REV</b>	1	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**CHAIN LINK  
 ESP-16**

REPLACES TO: A-12.003 FO

**28.025.659**



REV	DATE	DESCRIPTION

ULTIMATE STRENGTH: 12.500 dan  
NORMALIZED TREATMENT

Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6				
5				
4	SAFETY SPLIT PIN	1	STAINLESS STEEL	4½x37
3	NUT	1	GALV. STEEL	M-16
2	SCREW	1	GALV. STEEL	M-16x75 8.8
1	CLEVIS THIMBLE BODY	1	GALV. FORG. STEEL	G-16

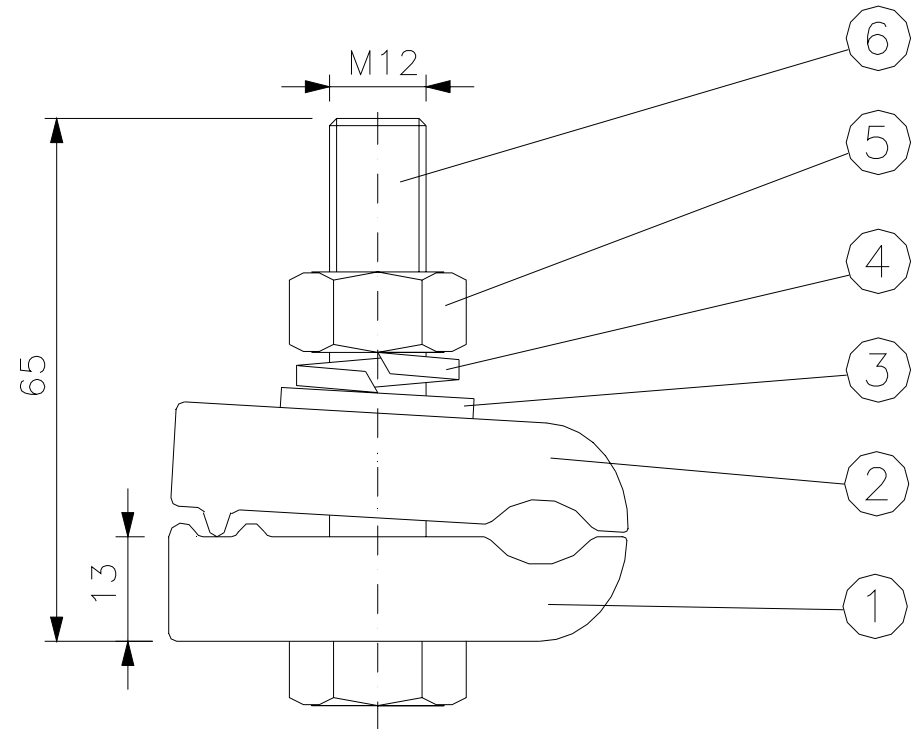
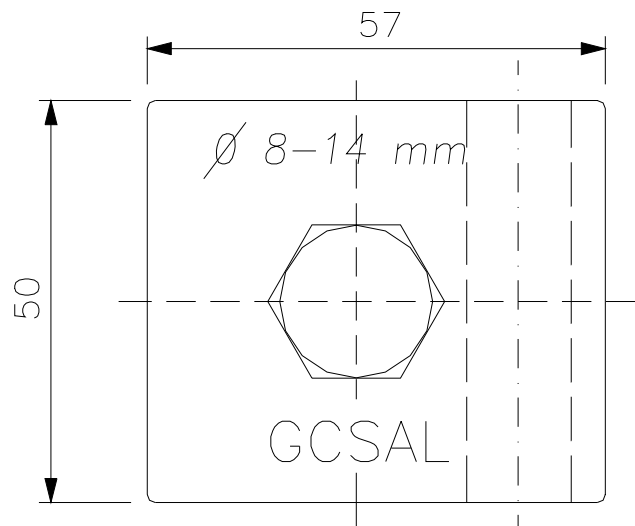
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**CLEVIS THIMBLE  
G-16**

REPLACES TO: A-12.005 FO

**28.025.660**



Cable range: 8-14 mm  
 Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6	SCREW	1	GALV. STEEL	M-12x65 8.8
5	NUT	1	GALV. STEEL	M-12
4	GROWER WASHER	1	GALV. STEEL	M-12
3	FLAT WASHER	1	GALV. STEEL	M-12
2	CLAMP BODY	1	ALUMINIUM	GMA-8/14
1	CLAMP BODY	1	ALUMINIUM	GHA-8/14

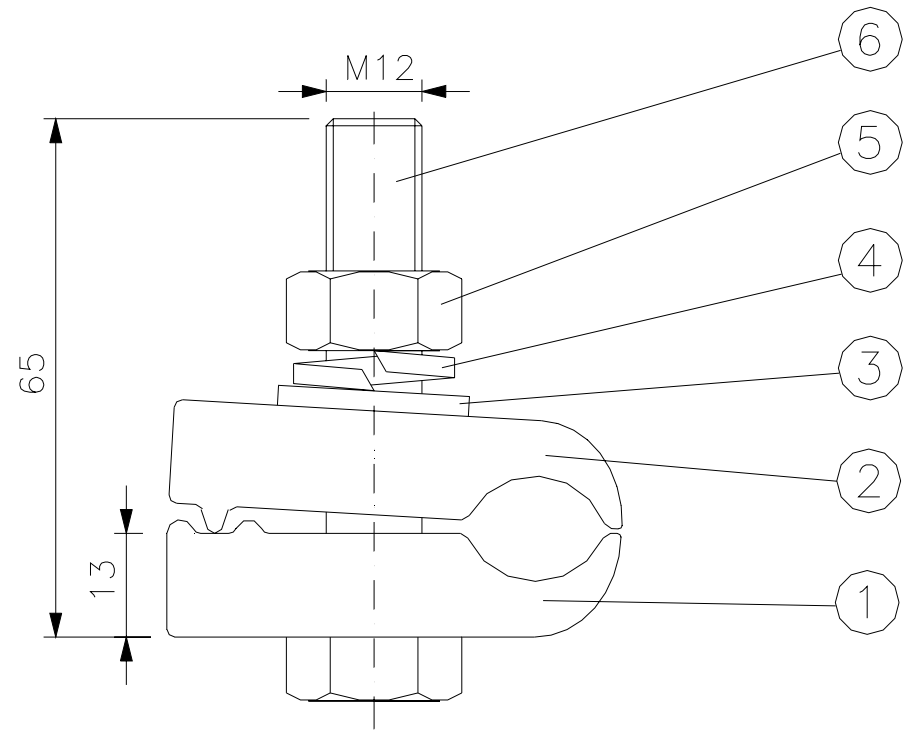
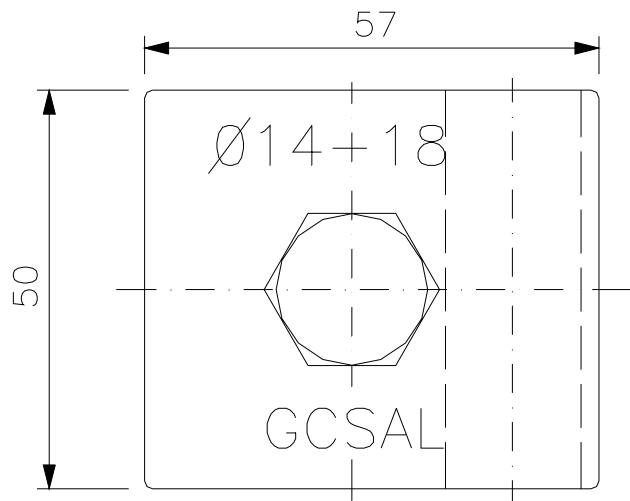
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**GROUNDING CLAMP  
 GCSAL-8/14**

REPLACES TO: A-12.006/A FO

**28.025.690**



Cable range: 14-18 -14mm

Dimensions in mm / Tolerances: Max(±0.7mm; ± 2%)

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6	SCREW	1	GALV. STEEL	M-12x60 8.8
5	NUT	1	GALV. STEEL	M-12
4	GROWER WASHER	1	GALV. STEEL	M-12
3	FLAT WASHER	1	GALV. STEEL	M-12
2	CLAMP BODY	1	ALUMINIUM	GMA-14/18
1	CLAMP BODY	1	ALUMINIUM	GHA-14/18

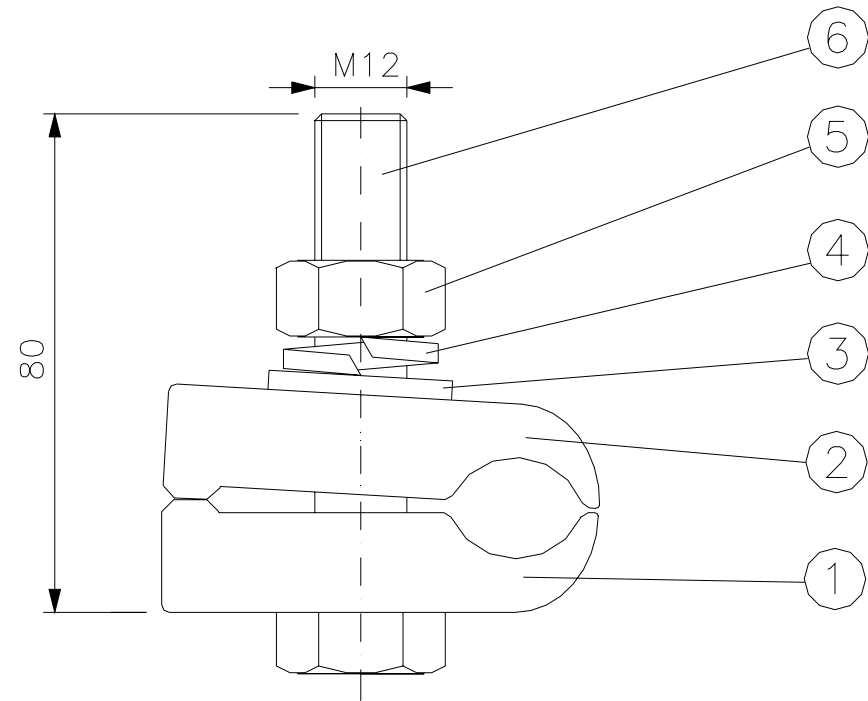
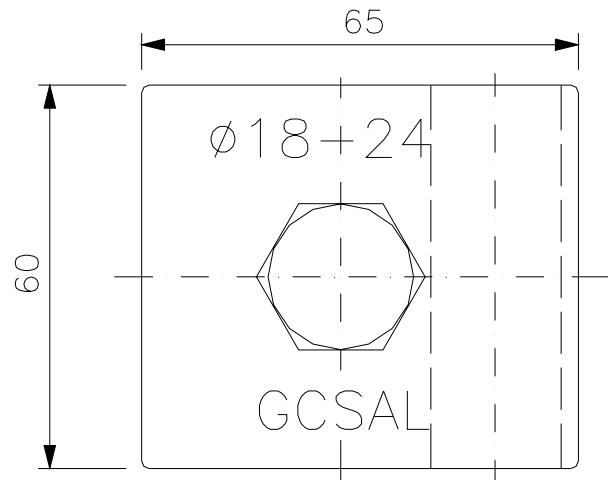
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**SINGLE CONNECTOR FOR ALUMINIUM  
GCSAL-14/18**

REPLACES TO: A-12.006/B

**28.025.691**



Cable range: 18-24 mm

Dimensions in mm / Tolerances: Max( $\pm 0.7$ mm;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6	SCREW	1	GALV. STEEL	M-12x80 8.8
5	NUT	1	GALV. STEEL	M-12
4	GROWER WASHER	1	GALV. STEEL	M-12
3	FLAT WASHER	1	GALV. STEEL	M-12
2	CLAMP BODY	1	ALUMINIUM	GMA-18/24
1	CLAMP BODY	1	ALUMINIUM	GHA-18/24

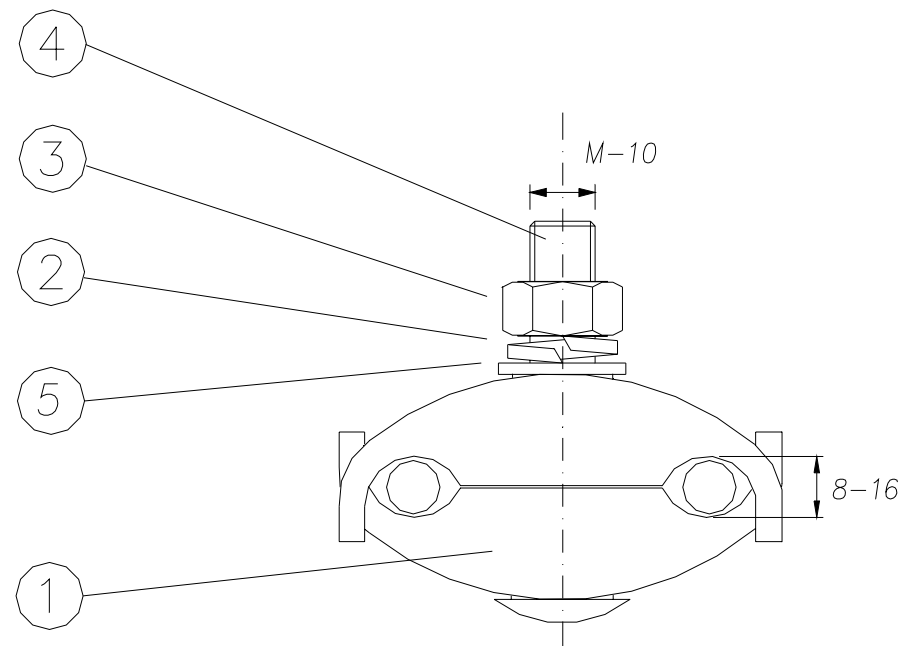
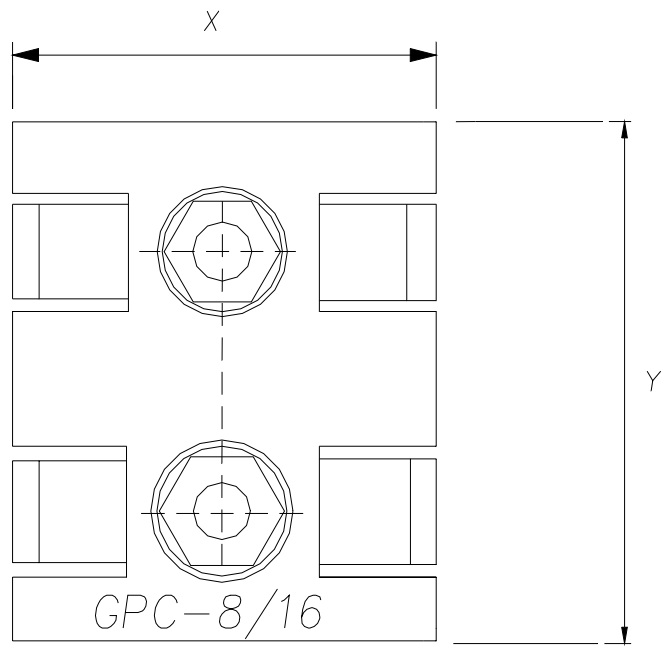
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**SINGLE CONNECTOR FOR ALUMINIUM  
GCSAL-18/24**

REPLACES TO: A-12.006/C

**28.025.692**



DIAMETER RANGE: 8-16 mm  
 TIGHTENING TORQUE: 2,5 Kg·m  
 MIN. SHORT-CIRCUIT CURRENT CAPACITY: 25KA  
 X= 55 mm  
 Y= 99 mm  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

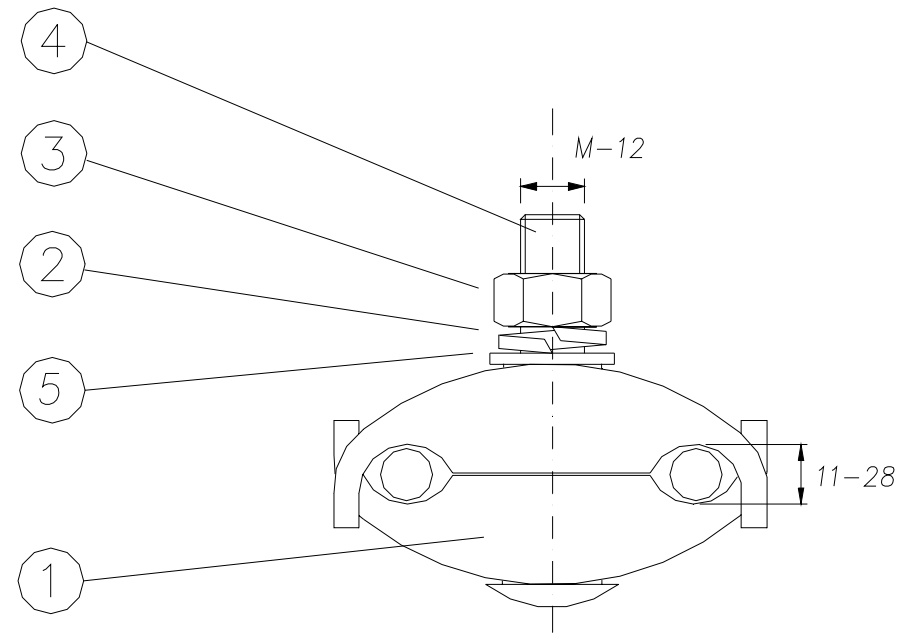
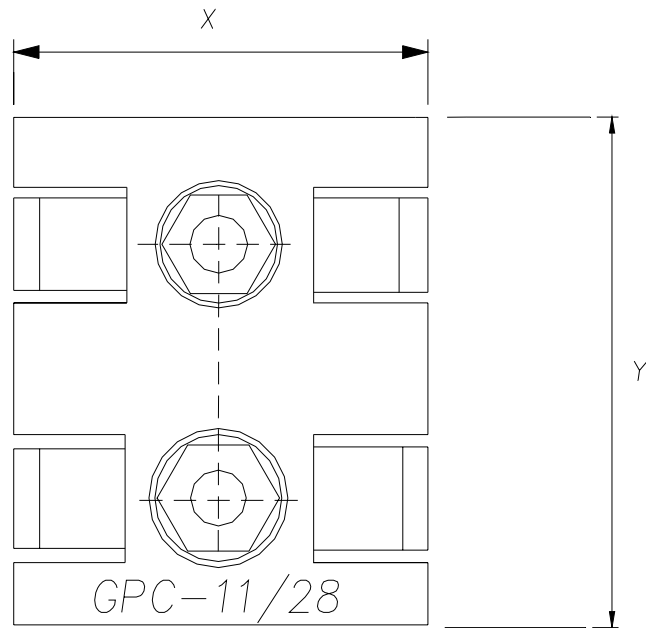
REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6				
5	FLAT WASHER	2	GALV. STEEL	M-10
4	SCREW	2	GALV. STEEL	M-10x45 8.8
3	NUT	2	GALV. STEEL	M-10
2	GROWER WASHER	2	GALV. STEEL	M-10
1	CLAMP BODY	2	ALUMINIUM	

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



<b>TAP-OFF CONNECTOR FOR ALUMINIUM GPC-8/16</b>	REPLACES TO: A-12.007 FO
	<b>28.025.696</b>



DIAMETER RANGE: 11-28 mm  
 TIGHTENING TORQUE: 2,5 Kg·m  
 MIN. SHORT-CIRCUIT CURRENT CAPACITY: 25KA  
 X= 90 mm  
 Y= 115 mm  
 Dimensions in mm / Tolerances: Max(±0.7mm;± 2%)

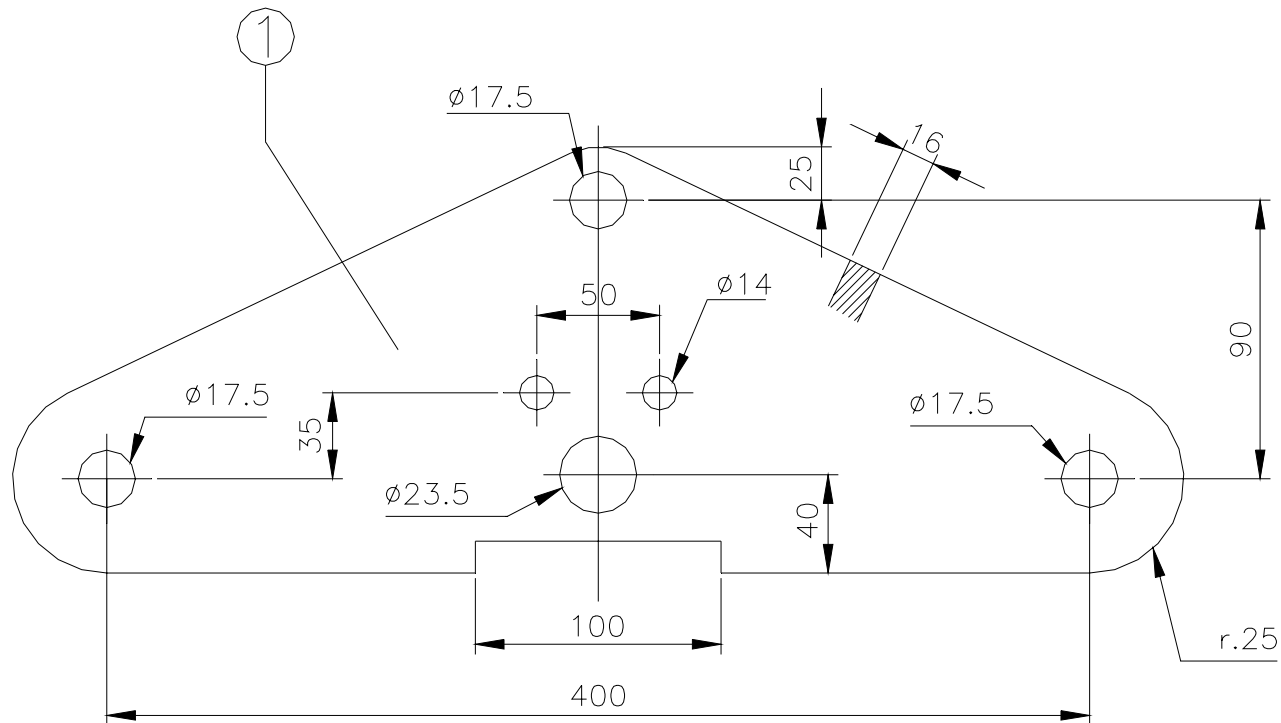
REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
6				
5	FLAT WASHER	2	GALV. STEEL	M-12
4	SCREW	2	GALV. STEEL	M-12x50 8.8
3	NUT	2	GALV. STEEL	M-12
2	GROWER WASHER	2	GALV. STEEL	M-12
1	CLAMP BODY	2	ALUMINIUM	

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



<b>PARALLEL CLAMP GPC-11/28</b>	REPLACES TO: A-12.008 FO
	28.025.697



VERTICAL ULTIMATE STRENGTH: 12.500 daN  
 HORIZONTAL ULTIMATE STRENGTH: 10.000 daN

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

6				
5				
4				
3				
2				
1	YOKE PLATE	1	GALV. STEEL	YD-12/161
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

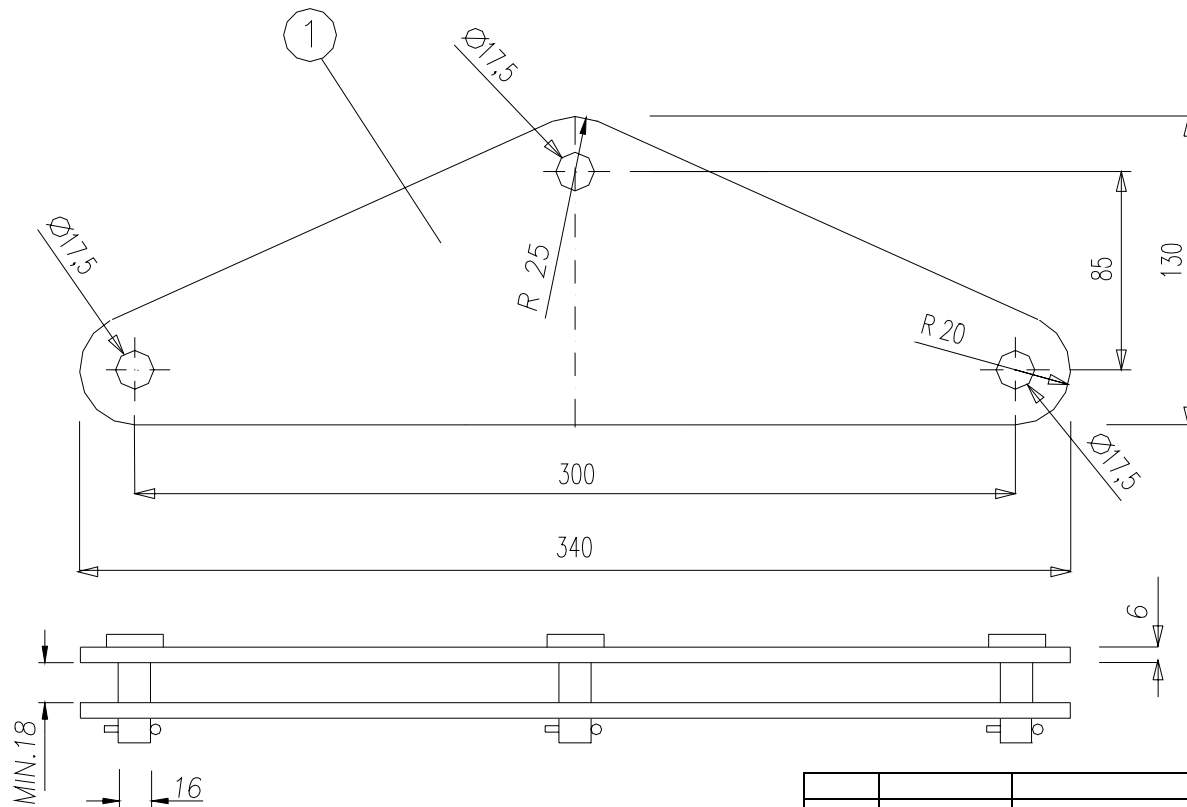
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**YOKE PLATE**  
**Y-12/161**

REPLACES TO: A-12.010 FO

**28.025.672**



VERTICAL ULTIMATE STRENGTH: 12.500 daN  
 HORIZONTAL ULTIMATE STRENGTH: 10.000 daN

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

6				
5				
4				
3				
2				
1	DOUBLE YOKE PLATE	1	GALV. STEEL	YD-300
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

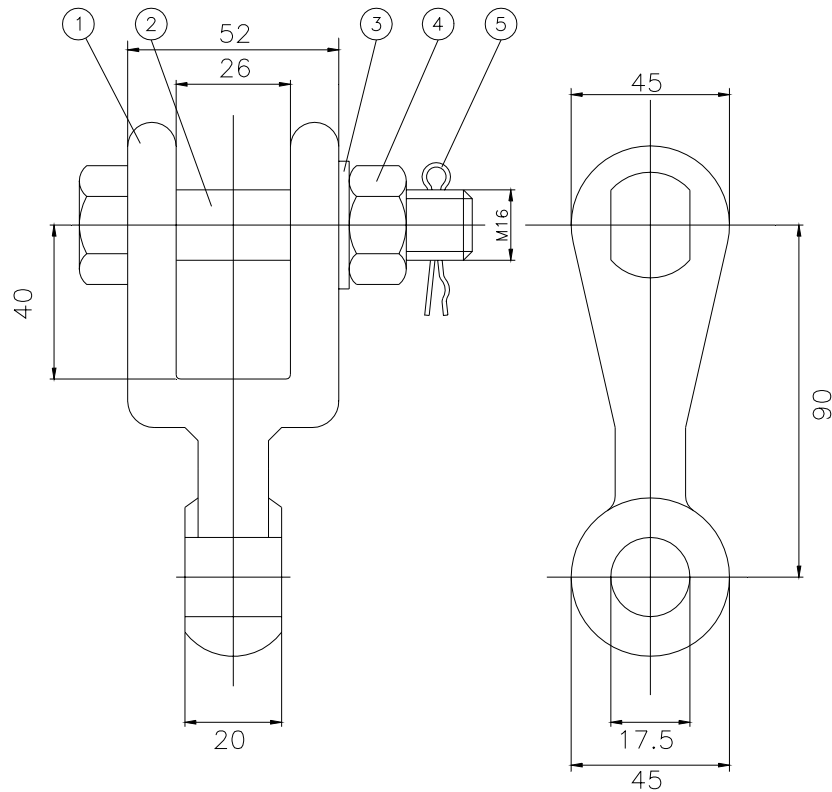
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**DOUBLE YOKE PLATE**  
**YD-300**

REPLACES TO: A-12.011 FO

**28.025.673**



ULTIMATE STRENGTH: 12.500 daN  
TREATMENT: NORMALIZED

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION
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5	SAFETY SPLIT PIN	1	STAINLESS STEEL	4½x37
4	NUT	1	GALV. STEEL	M-16
3	FLAT WASHER	1	STEEL	M-16
2	SCREW	1	GALV. STEEL	M-16x75 8.8
1	CLEVIS EYES BODY	1	GALV. FORG. STEEL	HP-16

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
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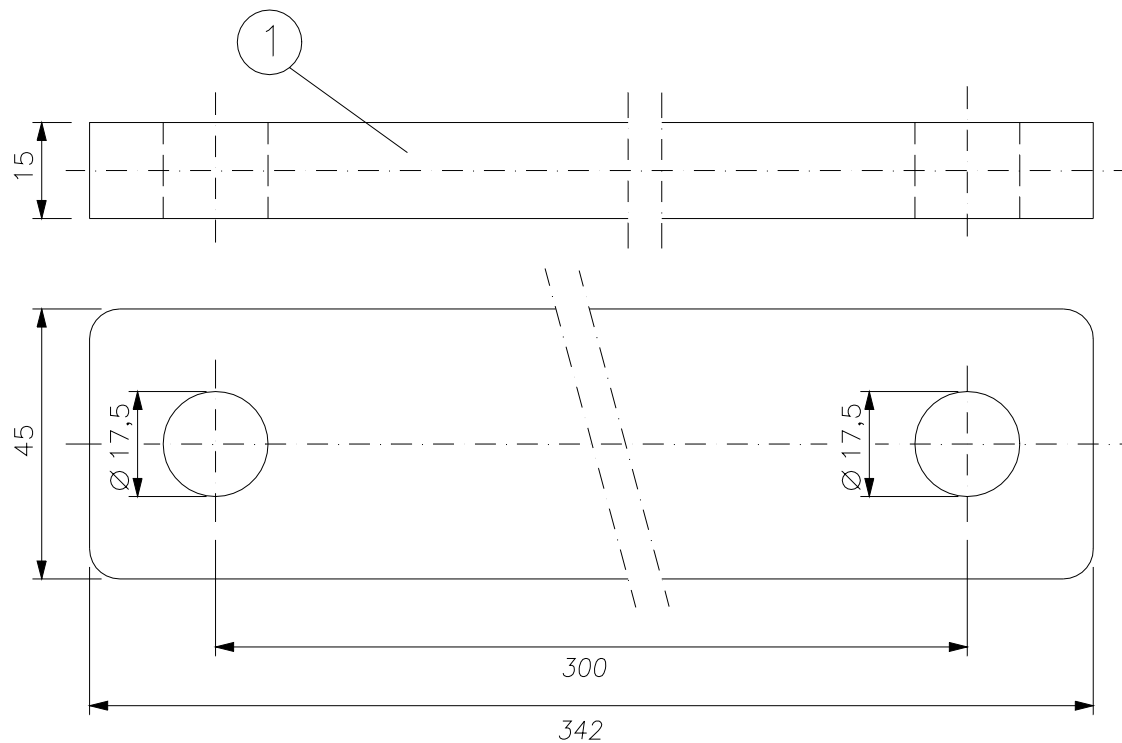
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**PARALLEL CLEVIS EYES  
HP-16/20**

REPLACES TO: A-12.020 FO

**28.025.654**



ULTIMATE STRENGTH: 12.500 daN  
TREATMENT: NORMALIZED

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

POS	DENOMINATION	QTY	MATERIAL	REFERENCE
4				
3				
2				
1	EXTENSION LINK	1	GALV. STEEL	TA-1/300

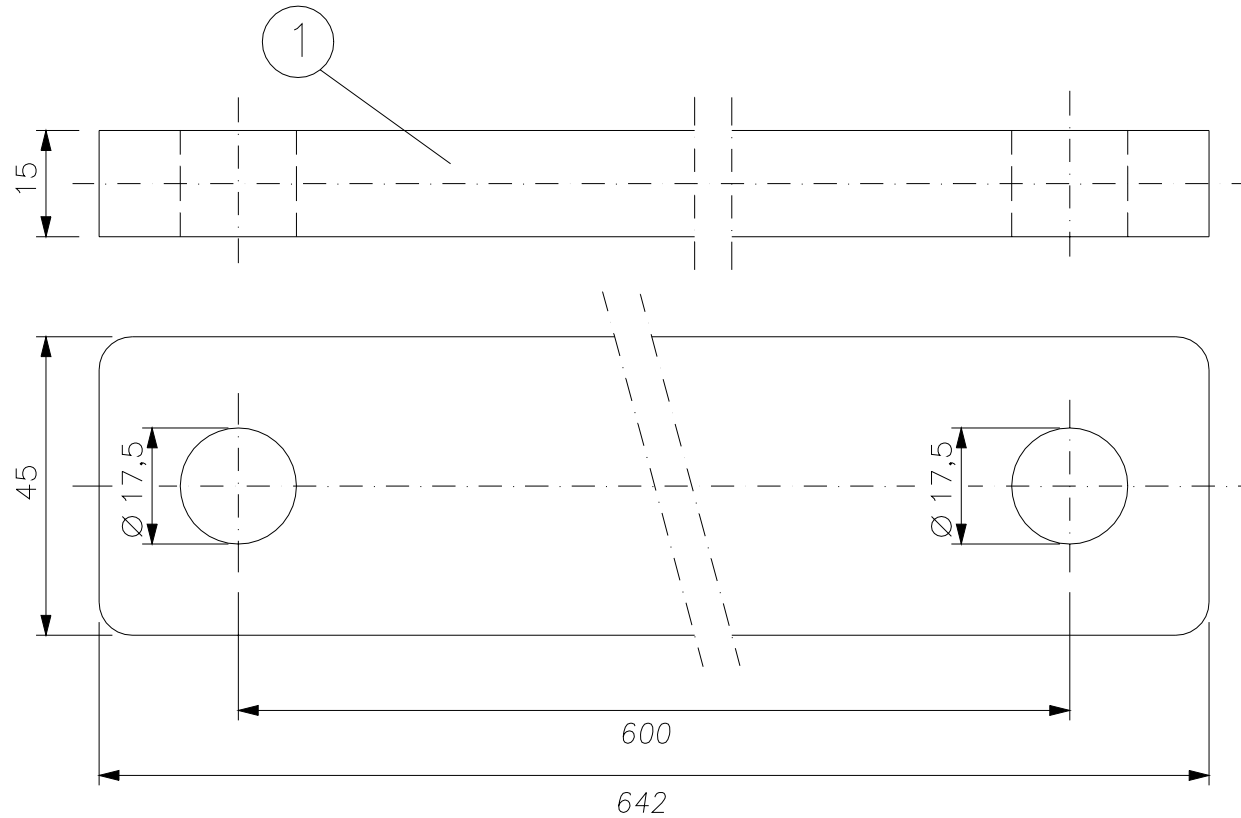
DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



**EXTENSION LINK  
TA-1/300**

REPLACES TO: A-12.023 FO

**28.025.662**



ULTIMATE STRENGTH: 12.500 daN  
TREATMENT: NORMALIZED

Dimensions in mm / Tolerances: Max( $\pm 0.7\text{mm}$ ;  $\pm 2\%$ )

REV	DATE	DESCRIPTION

4				
3				
2				
1	EXTENSION LINK	1	GALV. STEEL	TA-1/600
POS	DENOMINATION	QTY	MATERIAL	REFERENCE

DRAWN	CHECKED	REV	0	PROJECT
PRE	J. Martín	SCALE	~	OPGW
01-07-99	03/01/03	REF		



<b>EXTENSION LINK TA-1/600</b>	REPLACES TO: A-12.026 FO
	28.025.664