

**STRUCTURES AND LINE FITTINGS
FOR OVERHEAD LINES**

**INSTALLATION OF OVERHEAD SWITCHGEAR
IN MEDIUM-VOLTAGE LINES**

5
2024



CHAPTER 1

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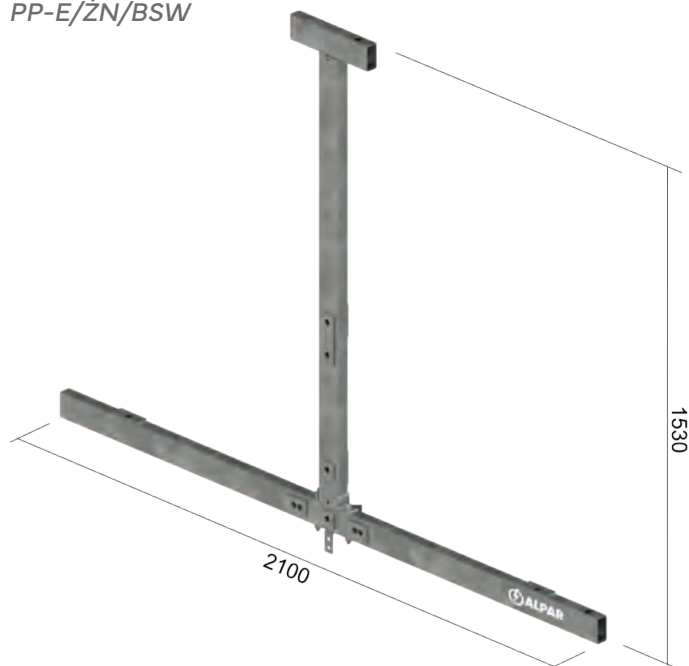
CHAPTER 4

Fixing of overhead switches in medium voltage lines

1. Lines with bare wires

1.1. For LSN AFL-6x35(50) lines in a triangular arrangement

PP-E/ŽN/BSW



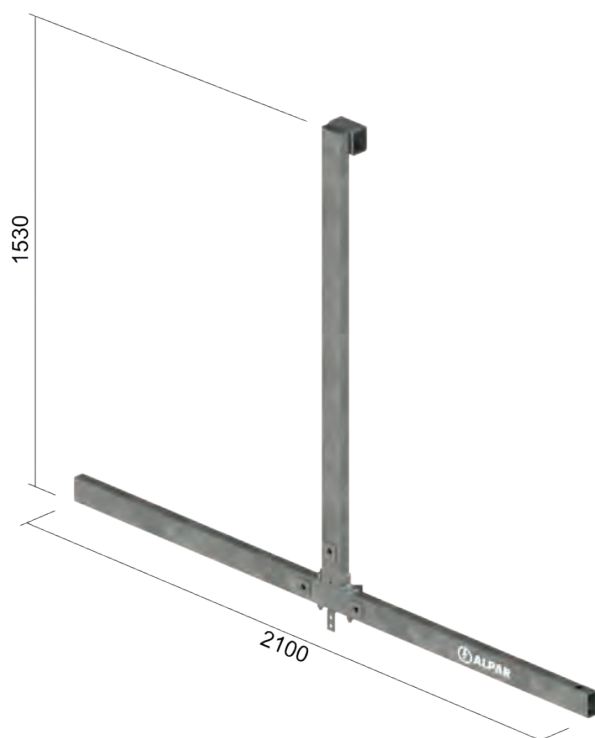
Type	PP-E/ŽN/BSW
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E /ŽN/BSW
Restriction	0°-1°
Unit weight [kg]	22,50
Material	steel, hot-dip galvanized

Fixing:

M16x280	2	BSW
M16x220	2	ŽN
M16x300	2	E dw=218
M16x240	2	E dw=173
Index	Quantity	Notes

Example application p. 89

PP-20a

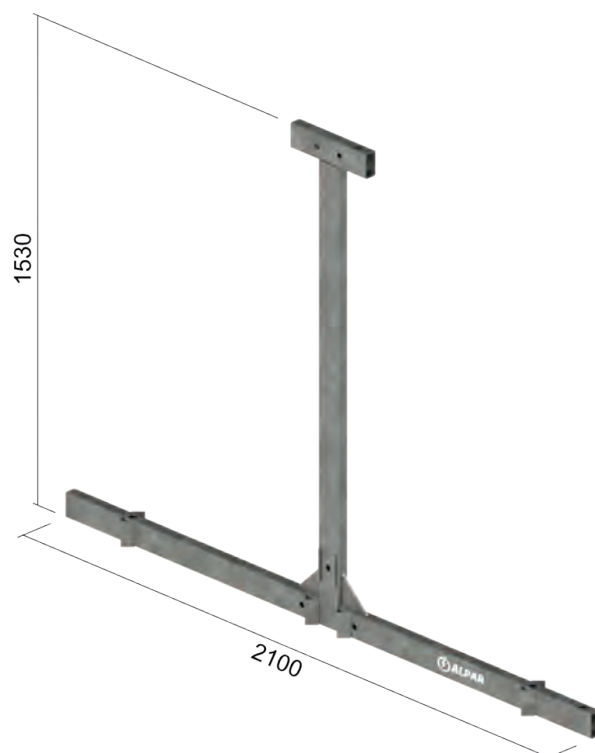


Type	PP-20a/1
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	20,70
Material	steel, hot-dip galvanized

Fixing:

OB-30	1	E dw=173
M16x280	1	
Index	Quantity	Notes

PP-21

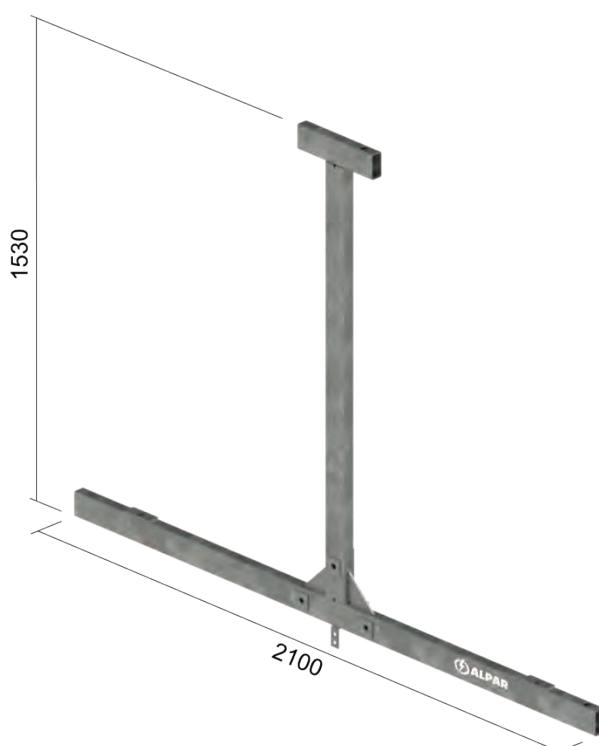


Type	PP-21
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	21,70
Material	steel, hot-dip galvanized

Fixing:

OB33	1	E dw=218
M16x320	1	
OB-30	1	E dw=173
M16x260	1	
Index	Quantity	Notes

PP-21b

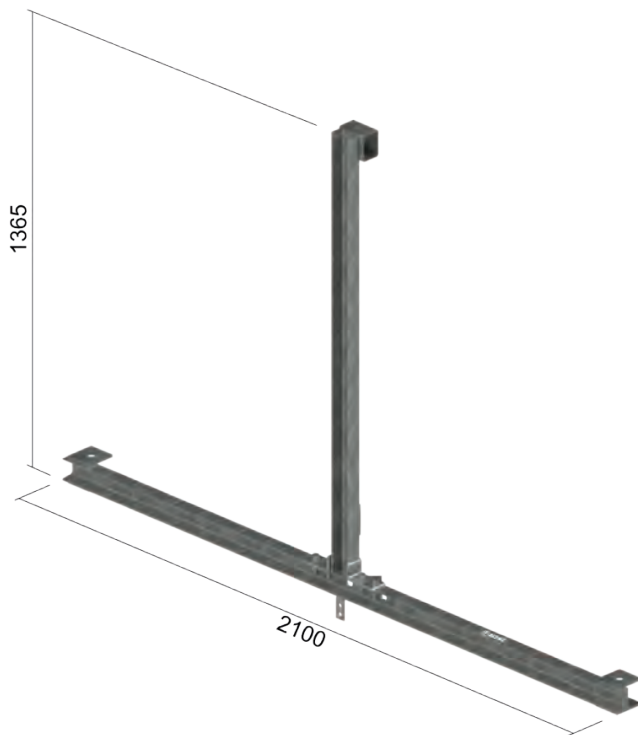


Type	PP-21b/1
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	21,60
Material	steel, hot-dip galvanized

Fixing:

OB-33	1	E dw=218
M16x320	1	
Index	Quantity	Notes

PP-351/E

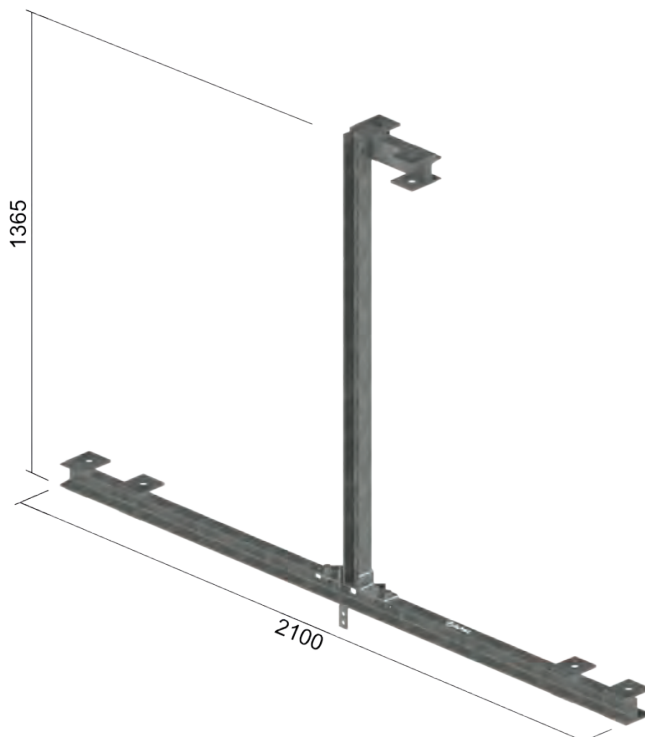


Type	PP-351/E
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	29,50
Material	steel, hot-dip galvanized

Fixing:

OB-3	1	E dw=218
M16x260	1	
Index	Quantity	Notes

PP-352/E

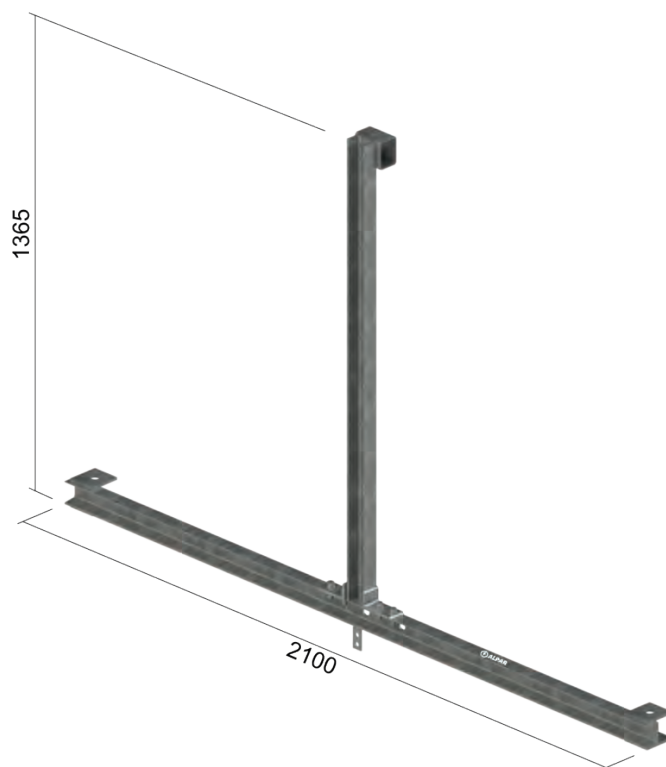


Type	PP-352/E
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E
Restriction	0°, 1°
Unit weight [kg]	33,50
Material	steel, hot-dip galvanized

Fixing:

OB-3	1	E dw=218
M16x260	1	
Index	Quantity	Notes

PP-351



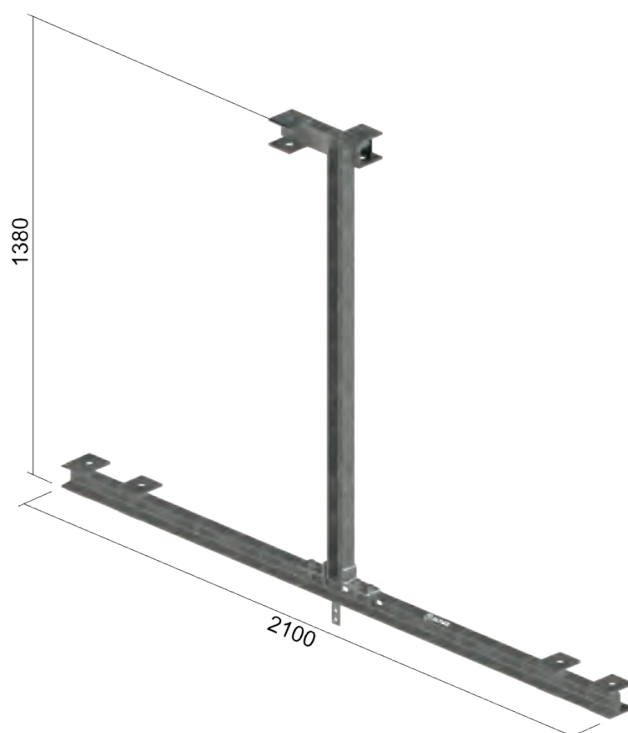
Type	PP-351
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	ŽN
Restriction	0°
Unit weight [kg]	29,00
Material	steel, hot-dip galvanized

Fixing:

M16x220	1	ŽN
Index	Quantity	Notes

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PP-352

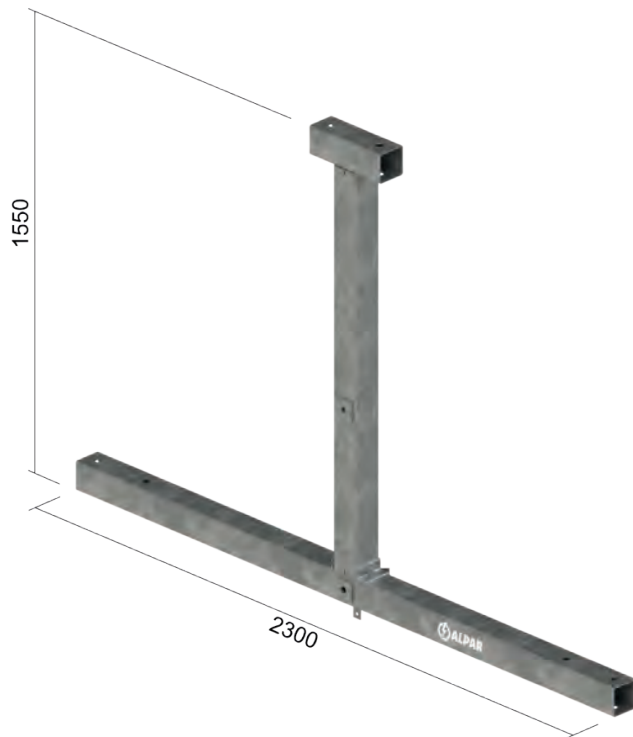


Type	PP-352
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	ŽN
Restriction	0°, 1°
Unit weight [kg]	33,50
Material	steel, hot-dip galvanized

Fixing:

M16x220	2	ŽN
Index	Quantity	Notes

PS-20a

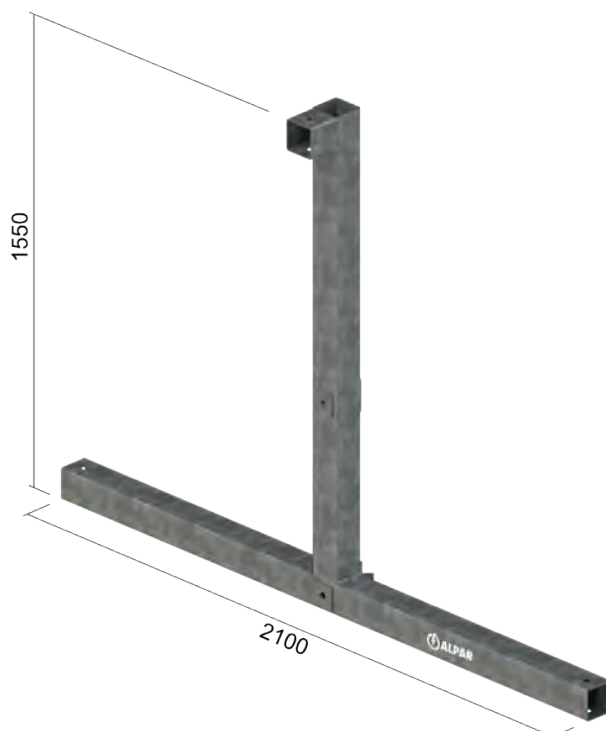


Type	PS-20a
Function	intersection crossbar
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	2°
Unit weight [kg]	48,40
Material	steel, hot-dip galvanized

Fixing:

M20x400	1	E dw=218
M16x400	1	
M20x350	1	E dw=173
M16x350	1	
Index	Quantity	Notes

PN-22a

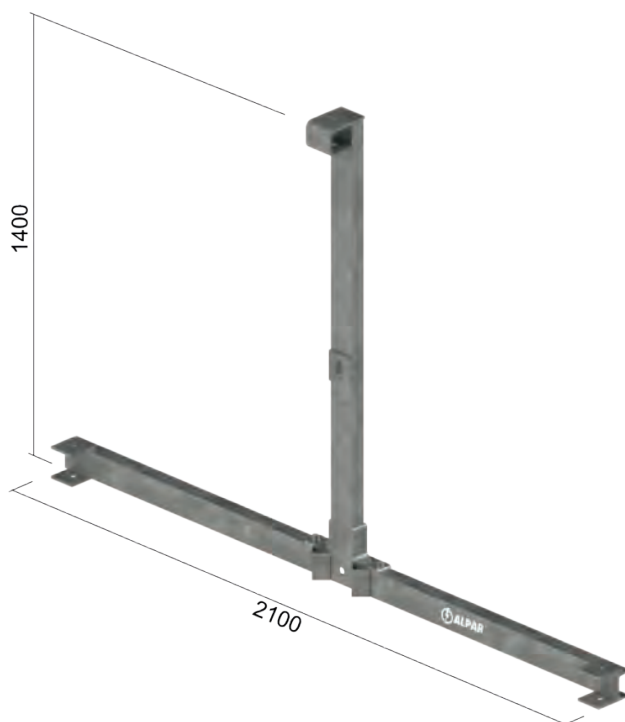


Type	PN-22a
Function	angle crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	21,70
Material	steel, hot-dip galvanized

Fixing:

M20x450	1	E dw=263
M16x450	1	
M20x400	1	E dw=218
M16x400	1	
Index	Quantity	Notes

PN-351E

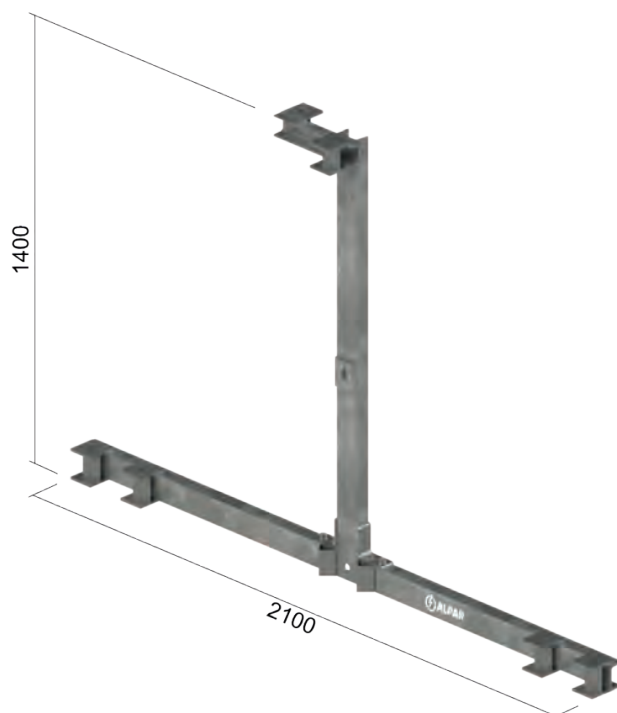


Type	PN-351/E
Function	angle crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	35,50
Material	steel, hot-dip galvanized

Fixing:

M16x380	2	E dw=263
M16x320	2	
Index	Quantity	Notes

PN-352E

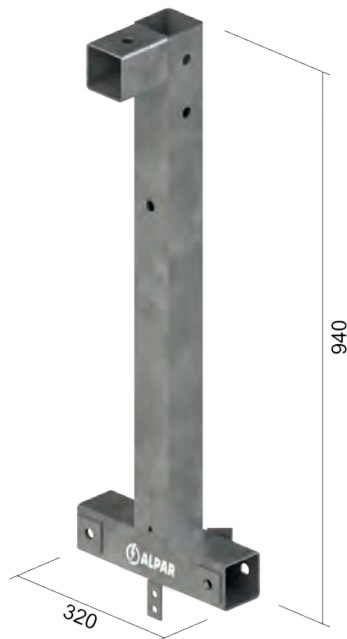


Type	PN-352/E
Function	angle crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	35,50
Material	steel, hot-dip galvanized

Fixing:

M16x380	2	E dw=263
M16x320	2	
Index	Quantity	Notes

PP-38



Type	PP-38
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E
Restriction	0°
Unit weight [kg]	12,60
Material	steel, hot-dip galvanized

Fixing:

M16x470	3	E dw=218
Index	Quantity	Notes

Note: Crossbar used at the RPK/ROK type stand.

PP-39



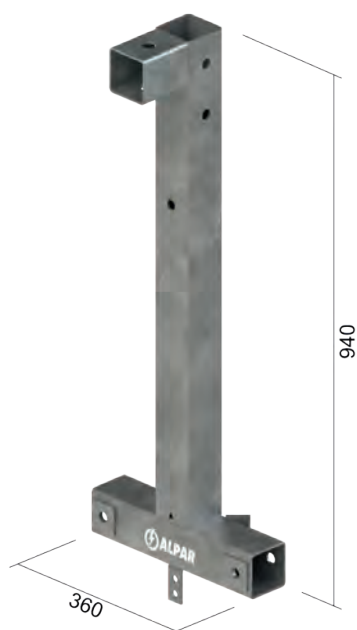
Type	PP-39
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E
Restriction	1°
Unit weight [kg]	14,40
Material	steel, hot-dip galvanized

Fixing:

M16x470	3	E dw=218
Index	Quantity	Notes

Note: Crossbar used at the RPK/ROK type stand.

PP-40



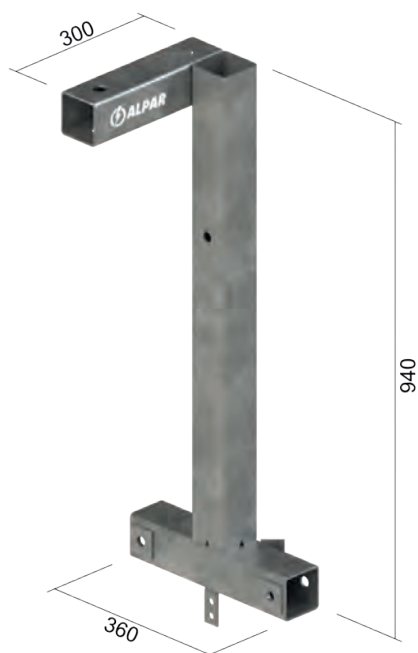
Type	PP-40
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E
Restriction	0°
Unit weight [kg]	12,90
Material	steel, hot-dip galvanized

Fixing:

M16x520	3	E dw=263
Index	Quantity	Notes

Note: Crossbar used at the RPK/ROK type stand.

PP-41

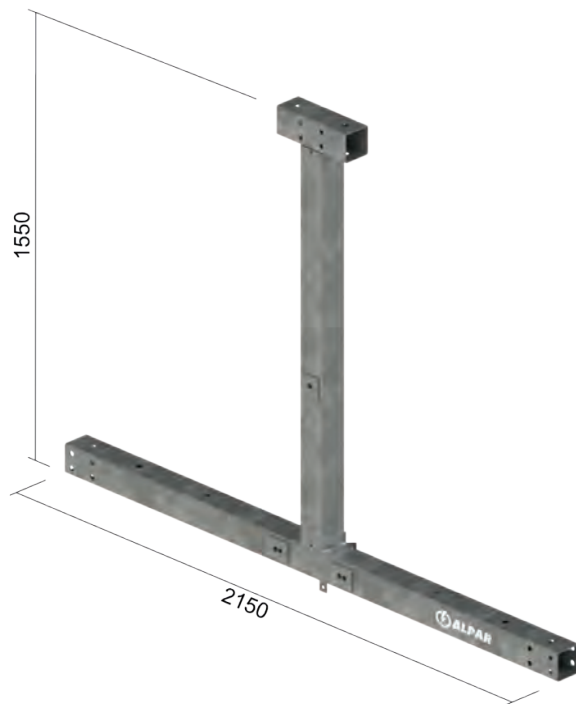


Type	PP-41
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	E
Restriction	1°
Unit weight [kg]	14,80
Material	steel, hot-dip galvanized

Fixing:

M16x520	3	E dw=263
Index	Quantity	Notes

Note: Crossbar used at the RPK/ROK type stand.

PK-20a
(PK-21)

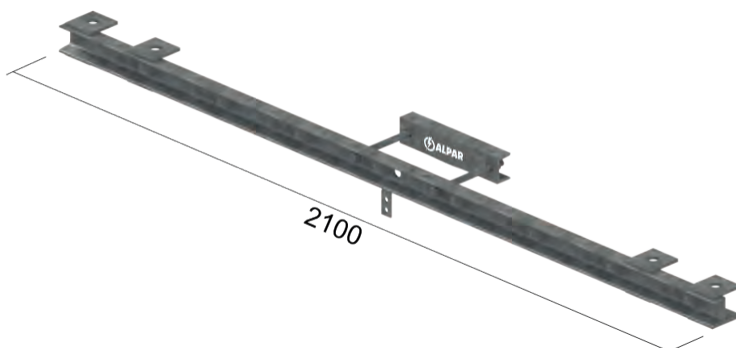
Type	PK-21	PK-20a
Function	terminal crossarm	
Line type	LSN AFL6x35(50)mm ²	
Line layout	triangular	
Type of pole	E-type spun concrete pole (dw=263)	E-type spun concrete pole (dw=218)
Restriction	0°-3°	
Unit weight [kg]	46,30	
Material	steel, hot-dip galvanized	

Fixing:

OB-34	1	for dw=263
M16x450	1	
OB-31	1	for dw=218
M16x400	1	
Index	Quantity	Notes

Example application p. 68, 69, 88, 95

PP-352 (lower crossbar)

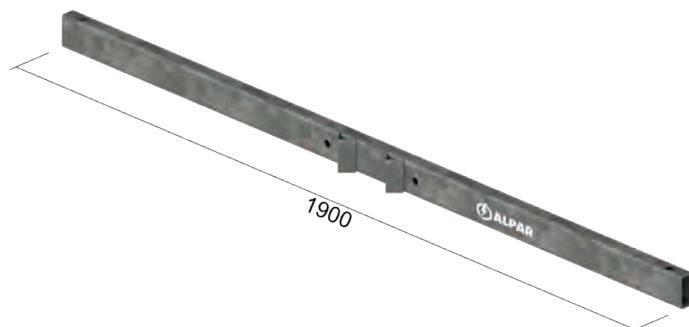


Type	PP-352 (lower crossbar)
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	ŽN/BSW
Restriction	0°, 1°
Unit weight [kg]	23,50
Material	steel, hot-dip galvanized

Fixing:

EMS-1/ ŽN/BSW	1	BSW
M16x300	2	
EMS-1/ ŽN/BSW	1	ŽN
M16x240	2	
Index	Quantity	Notes

PR-20a
(PR-22)



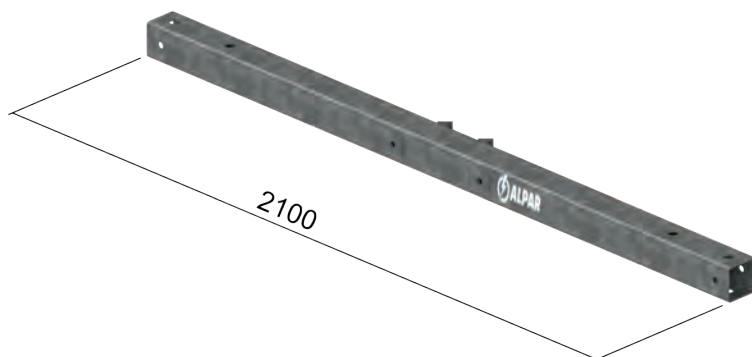
Type	PR-22	PR-20a
Function	straight-line crossarm	
Line type	LSN AFL6x35(50)mm ²	
Line layout	triangular	
Type of pole	E-type spun concrete pole	
Restriction	0°-1°	
Unit weight [kg]	11,90	
Material	steel, hot-dip galvanized	

Fixing:

OB-35	1	E dw=263
OB-32	2	E dw=218
Index	Quantity	Notes

Note: Crossbar used at the RPK/ROK type stand.

PR-21a
(PR-23)

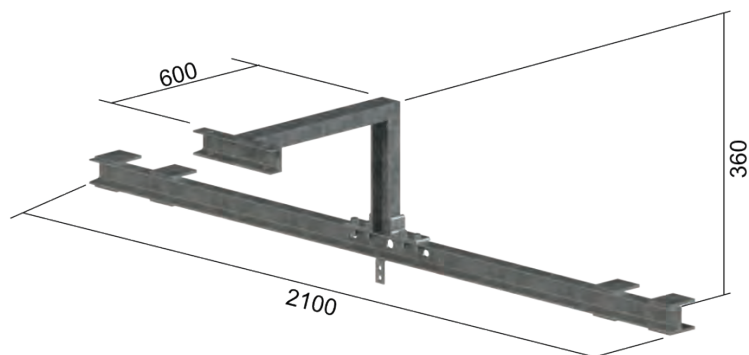


Type	PR-23	PR-21a
Function	straight-line crossarm	
Line type	LSN AFL6x35(50)mm ²	
Line layout	triangular	
Type of pole	E (dw=263)	E (dw=218)
Restriction	0°, 1°	
Unit weight [kg]	25,80	
Material	steel, hot-dip galvanized	

Fixing:

OB-35	1	E dw=263
OB-32	1	E dw=218
Index	Quantity	Notes

PR-352



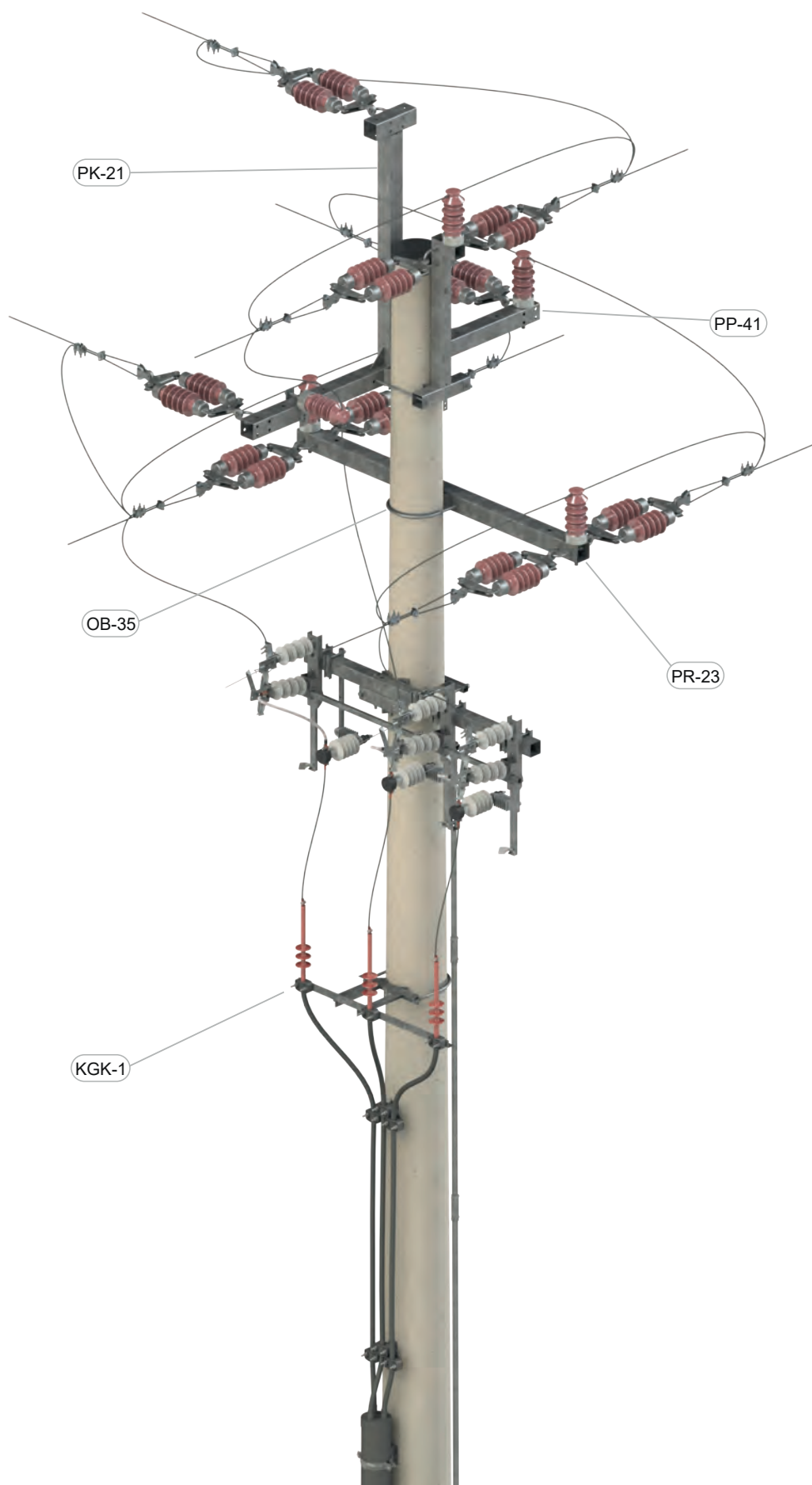
Type	PR-352 (stork)
Function	straight-line crossarm
Line type	LSN AFL6x35(50)mm ²
Line layout	triangular
Type of pole	ŽN/BSW
Restriction	0°, 1°
Unit weight [kg]	32,00
Material	steel, hot-dip galvanized

Fixing:

EMS-1/ŽN/ BSW	1	BSW
M16x280	2	
EMS-1/ŽN/ BSW	1	ŽN
M16x220	2	
Index	Quantity	Notes

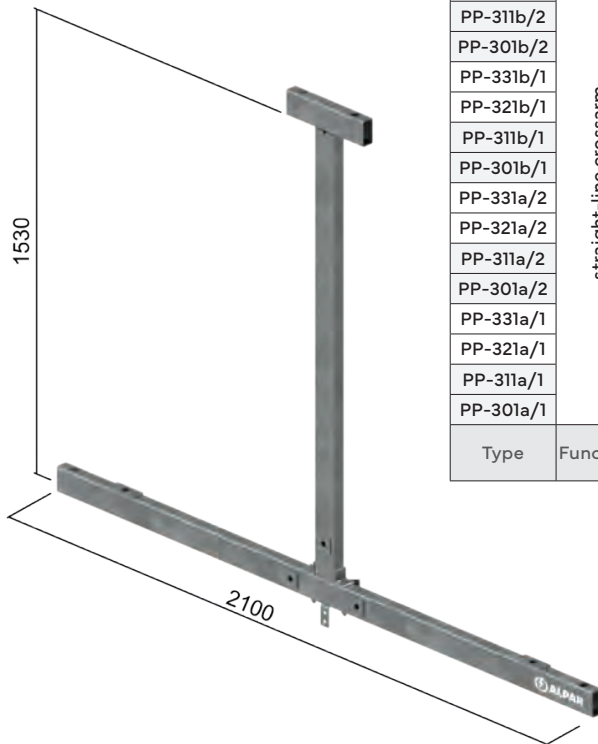
Assembly drawing

*Application of the structure on the example of a pole construction
type ROKgo-12/15 AFL6x35(50)mm² - triangular configuration.*



1.2. For LSN AFL-6x70(50) lines in a triangular configuration

PP-321

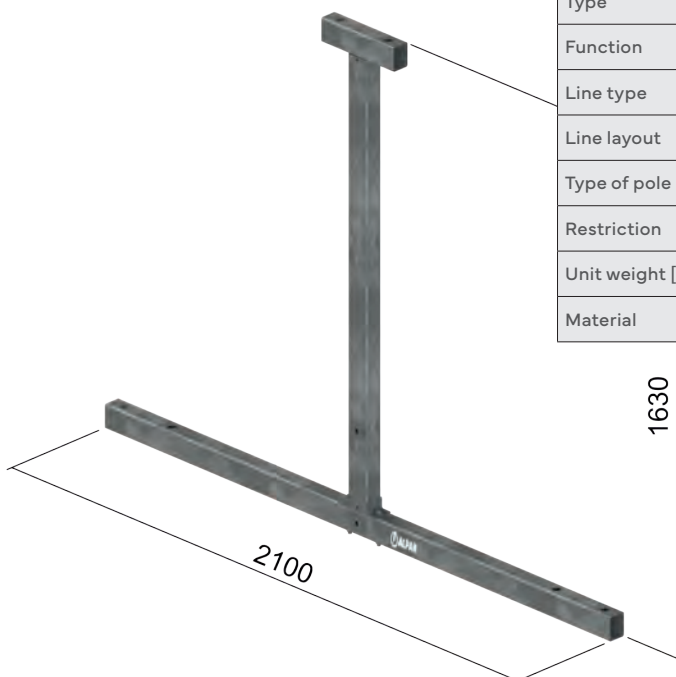


PP-331b/2	straight-line crossarm	LSN AFL6x70(50)mm ²	triangular	E-type spun concrete pole dw=218	1°, 3°	25,20	steel, hot-dip galvanized
PP-321b/2						23,90	
PP-311b/2					0°	23,50	
PP-301b/2						22,30	
PP-331b/1					1°, 3°	27,50	
PP-321b/1						25,60	
PP-311b/1					0°	26,80	
PP-301b/1						24,70	
PP-331a/2				E-type spun concrete pole dw=173	1°, 3°	25,20	
PP-321a/2						23,90	
PP-311a/2					0°	23,50	
PP-301a/2						22,30	
PP-331a/1					1°, 3°	27,50	
PP-321a/1						25,60	
PP-311a/1					0°	26,80	
PP-301a/1						24,70	
Type	Function	Line type	Line layout	Perch type	Restriction	Unit weight [kg]	Material

Fixing:

OB-1/VE	1	for PP-_a/2
M16x320	1	
OB-30	1	for PP-_a/1
M16x280	1	
OB-3/VE	1	for PP-_b/2
M16x260	1	
OB-33	1	for PP-_b/1
M16x220	1	
Index	Quantity	Notes

PP-36

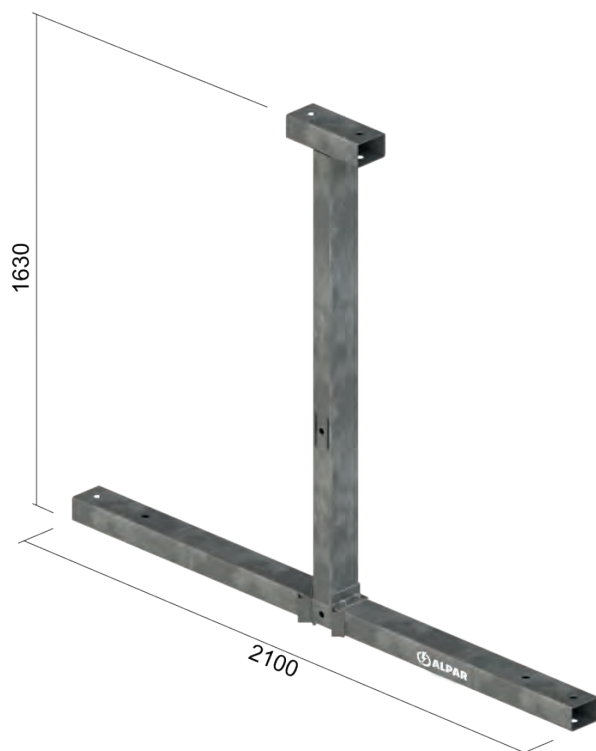


Type	PP-37/2	PP-37/1	PP-36/2	PP-36/1	PP-35/2	PP-35/1	PP-34/2	PP-34/1
Function	straight-line crossarm							
Line type	LSN AFL6x70(50)mm ²							
Line layout	triangular							
Type of pole	BSW-type reinforced concrete pole							
Restriction	1°, 3°				0°			
Unit weight [kg]	24,50	26,80	23,20	25,00	22,80	26,00	21,60	24,10
Material	steel, hot-dip galvanized							

Fixing:

M16x190	1	for PP-_ /2
M16x240	1	for PP-_ /1
Index	Quantity	Notes

PS-30

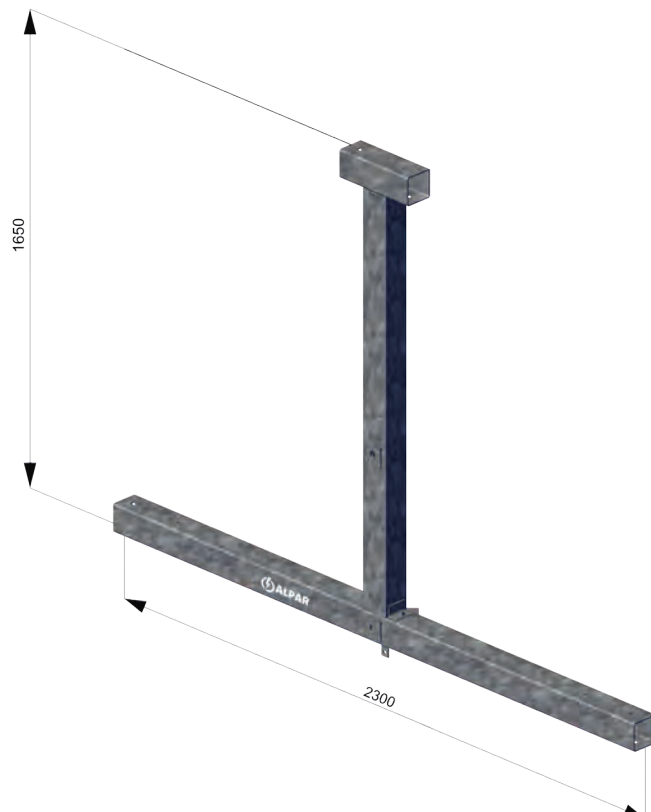


Type	PS-30
Function	intersection crossbar
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	2°
Unit weight [kg]	47,80
Material	steel, hot-dip galvanized

Fixing:

M20x420	2	dw=218
Index	Quantity	Notes

PN-32a

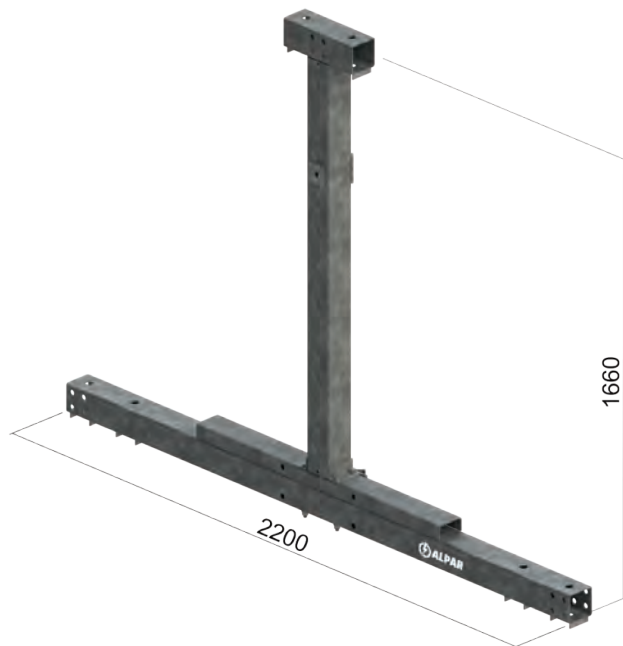


Type	PN-32a	PN-30a
Function	angle crossarm	
Line type	LSN AFL6x70(50)mm ²	
Line layout	triangular	
Type of pole	E-type spun concrete pole	
Restriction	1°-3°	0°
Unit weight [kg]	49,60	46,10
Material	steel, hot-dip galvanized	

Fixing:

M20x380	2	dw=218
M20x340	2	dw=173
Index	Quantity	Notes

PKs-30

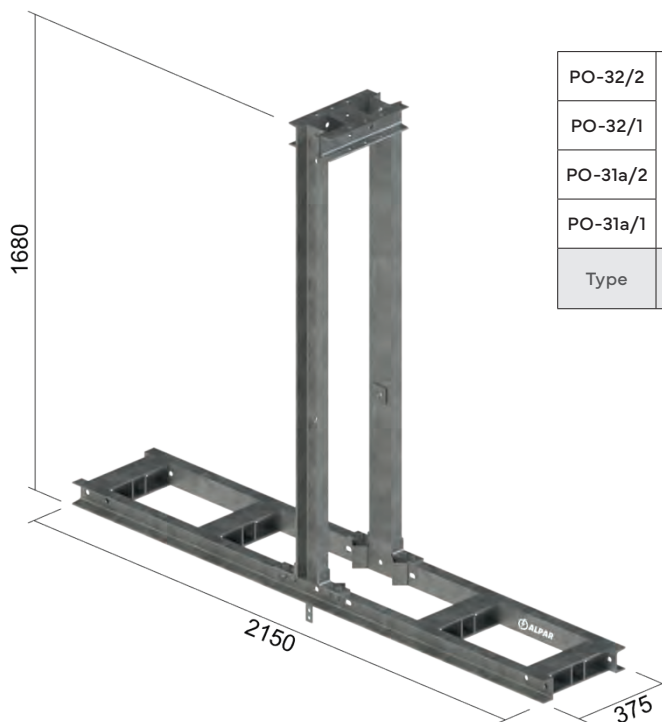


Type	PKs-30
Function	terminal crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	62,00
Material	steel, hot-dip galvanized

Fixing:

M20x530	2	dw=240, 263
EMs-3	1	
M24x450	1	
M16x400	1	
M20x530	2	dw=218
EMs-3	1	
M24x400	1	
M16x400	1	
Index	Quantity	Notes

PO-32/2



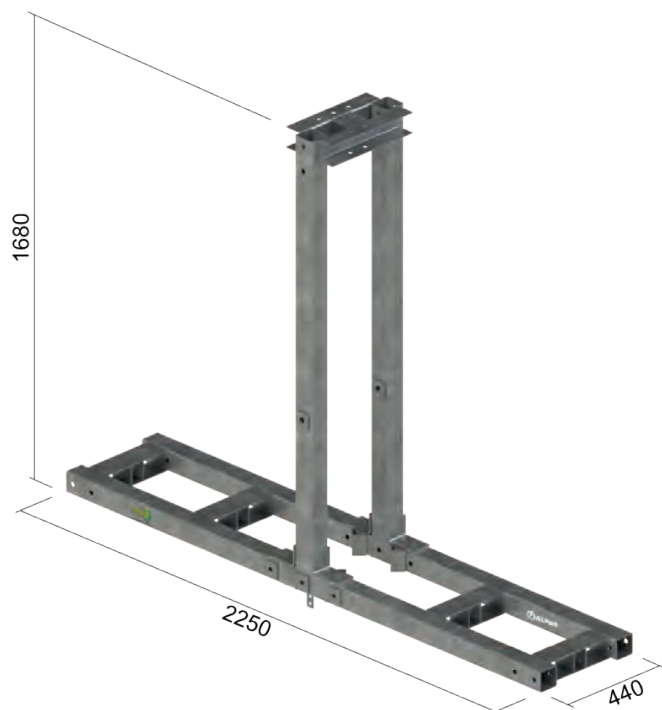
PO-32/2	tension crossarm	LSNAFL6x70(50)mm ²	triangular	E-type spun concrete pole dw=263	0°-3°	98,90	steel, hot-dip galvanized
PO-32/1				E-type spun concrete pole dw=218		82,20	
PO-31a/2				E-type spun concrete pole dw=218		95,70	
PO-31a/1				E-type spun concrete pole dw=218		80,00	
Type	Function	Line type	Line layout	Perch type	Restriction	Unit weight [kg]	Material

Fixing:

M20x350	1	dw=263
M16x350	3	
M20x300	1	dw=218
M16x300	3	
Index	Quantity	Notes

Example application p. 70-71

PO-33a

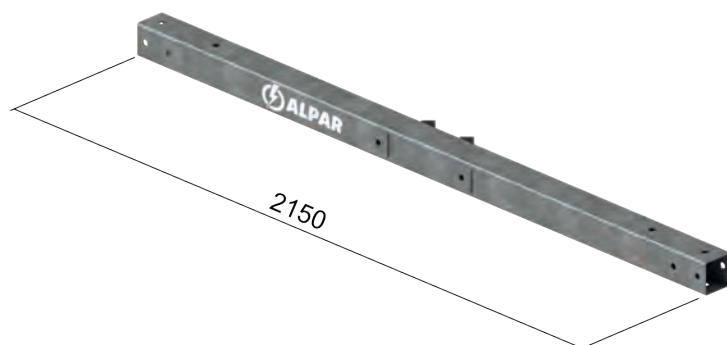


Type	PO-33a
Function	resistance crossbar
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole dw=263
Restriction	0°-3°
Unit weight [kg]	92,90
Material	steel, hot-dip galvanized

Fixing:

M20x500	1	dw=263
M16x500	3	
Index	Quantity	Notes

PR-41

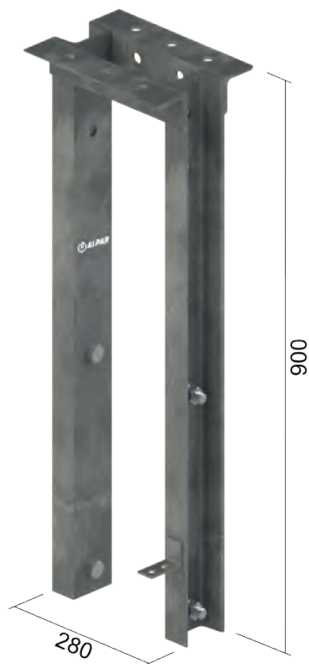


Type	PR-41
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	25,80
Material	steel, hot-dip galvanized

Fixing:

OB-35	1	dw=263
Index	Quantity	Notes

Gs -30



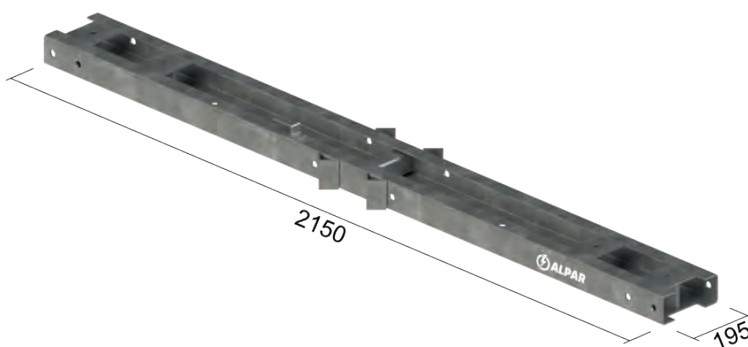
Type	Gs-30
Function	Double pole head
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	19,20
Material	steel, hot-dip galvanized

Fixing:

Os-5	4	dw=218
Ks-5	2	
Index	Quantity	Notes

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PO-301a

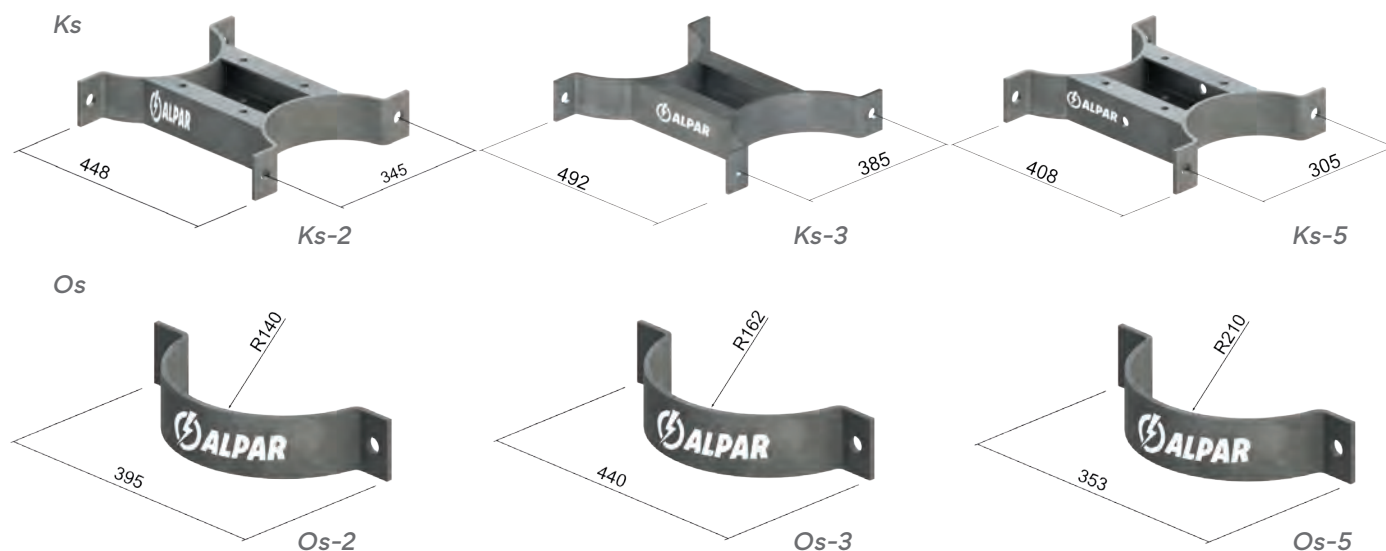


Type	PO-301a
Function	resistance crossbar
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	31,90
Material	steel, hot-dip galvanized

Fixing:

OB-5/VE	2	dw=218
Index	Quantity	Notes

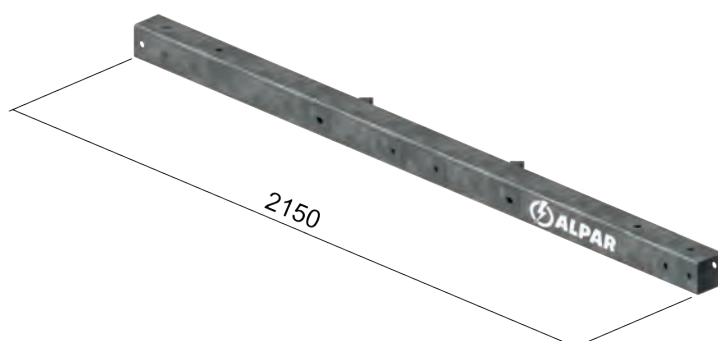
Example application p. 72, 73, 92



Type	Ks-3	Ks-2	Ks-5	Os-3	Os-2	Os-5
Function	bracing structures					
Line type	LSN AFL6x70(50)mm ²					
Line layout	triangular					
Type of pole	E-type spun concrete pole					
Restriction	n/a					
Unit weight [kg]	10,10	9,60	9,10	3,00	2,60	2,30
Material	steel, hot-dip galvanized					

Fixing:

M20x100	8	L=13,5m; 15m
M20x80	8	L=13,5m; 15m
	16	L=12m
M20x60	8	L=12m; 13,5m
	24	L=10,5m
Index	Quantity	Notes

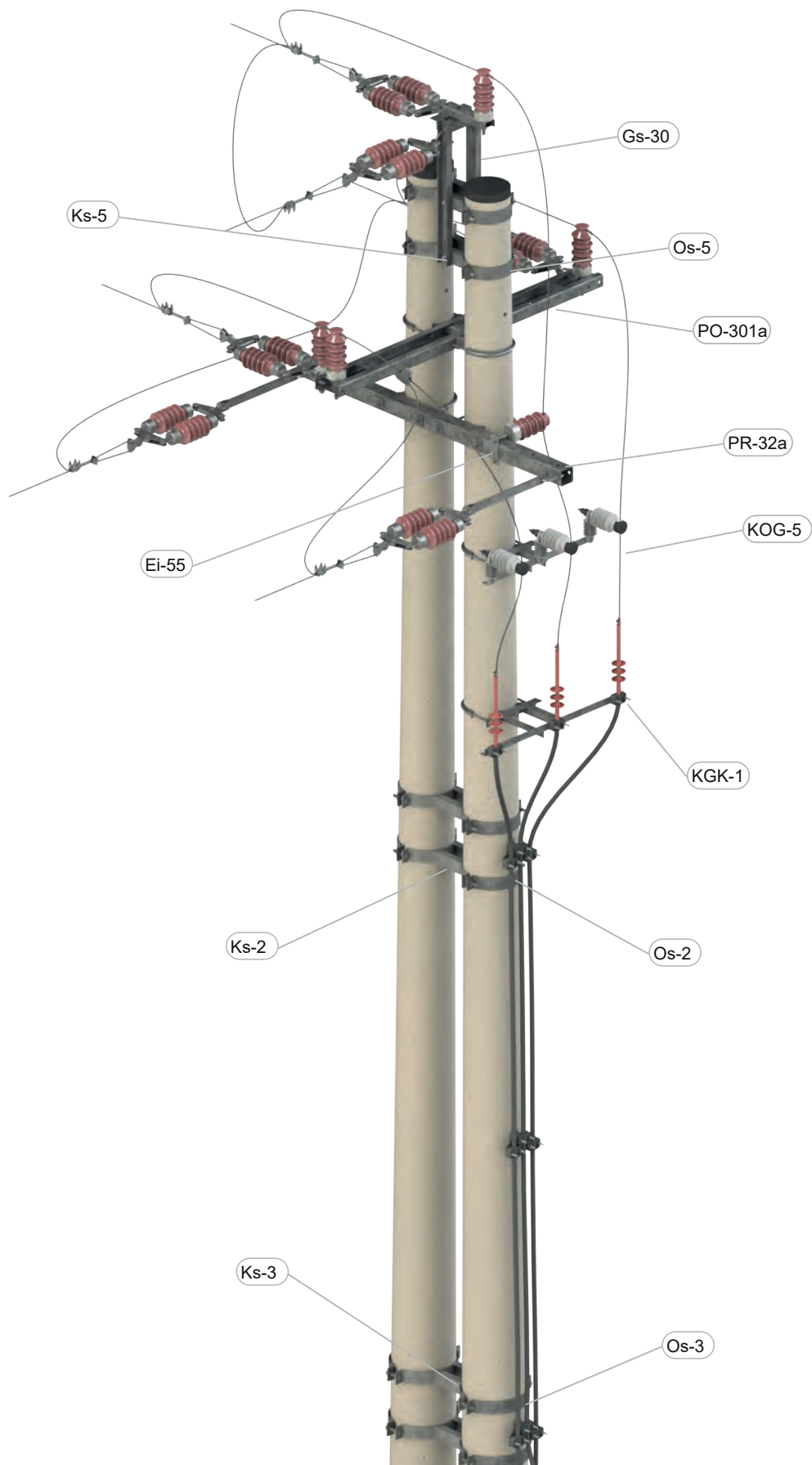
PR-32a

Type	PR-32a
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	triangular
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	26,00
Material	steel, hot-dip galvanized

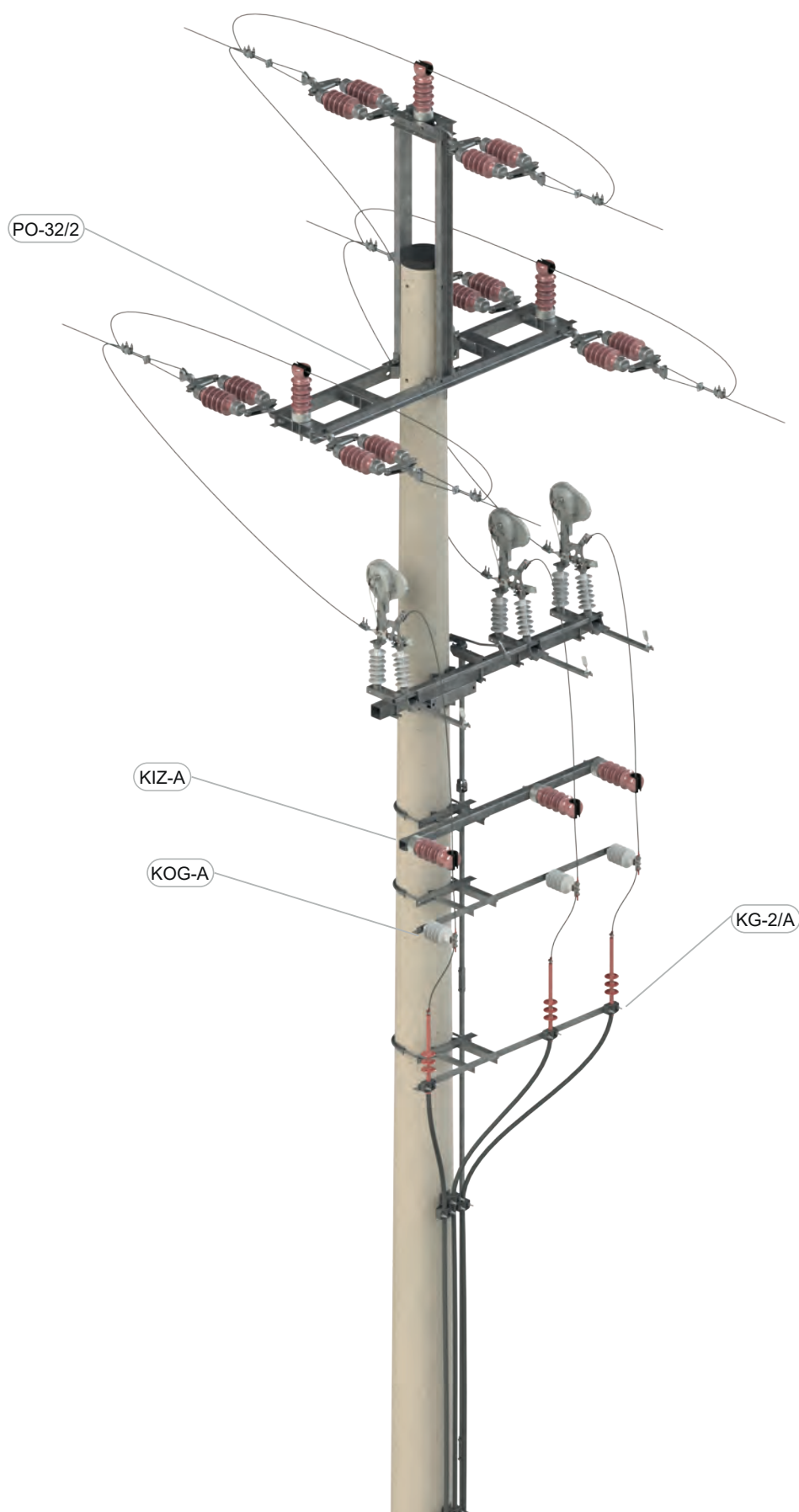
Fixing:

OB-32	2	dw=218 (x2)
Index	Quantity	Notes

Application of the structure on the example of a pole construction
type KKpg-13.5/15 AFL6x70(50)mm² - triangular configuration

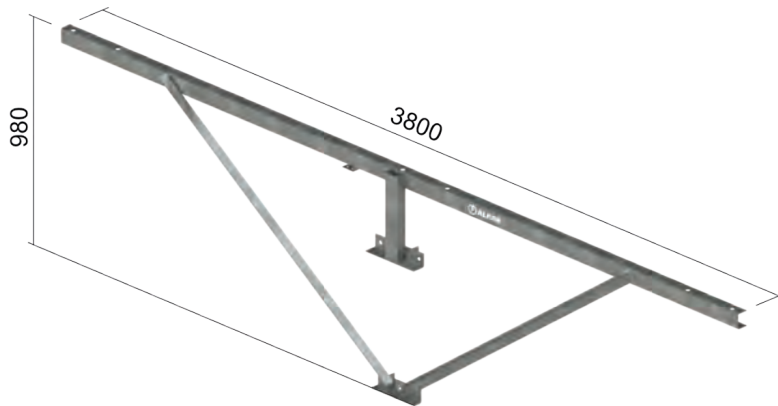


Application of the structure on the example of a pole construction
type Ogo-13.5/15 AFL6x70(50)mm² type - triangular configuration



1.3. For LSN AFL-6x70(50) lines in a horizontal configuration

PP-50
(PP-51)
(PP-56)
(PP-57)



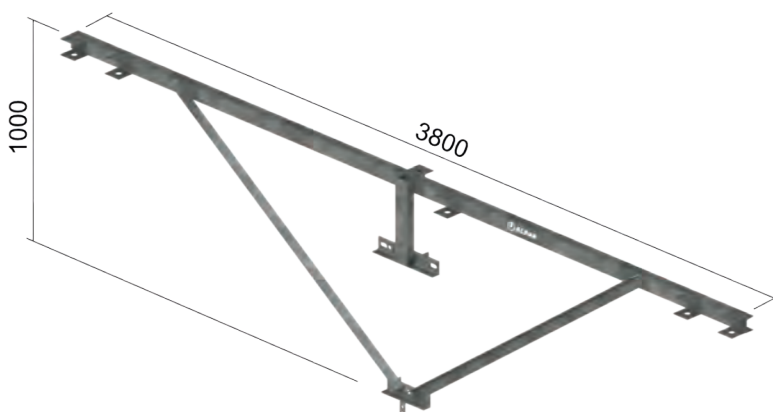
Type	PP-57	PP-56	PP-51	PP-50
Function	straight-line crossarm			
Line type	LSN AFL6x70(50)mm ²			
Line layout	horizontal configuration			
Type of pole	spun E dw=420	spun E dw=263	spun E dw=218	spun E dw=173
Restriction	0°-1°			
Unit weight [kg]	39,50	38,70	38,50	38,30
Material	steel, hot-dip galvanized			

Fixing:

OB-14	1	for dw=420
M16x480	1	
OB-7	1	for dw=263
M16x320	1	
OB-3	1	for dw=218
M16x280	1	
OB-1	1	for dw=173
M16x240	1	
Index	Quantity	Notes

Example application p. 91, 99, 100

PP-702/E

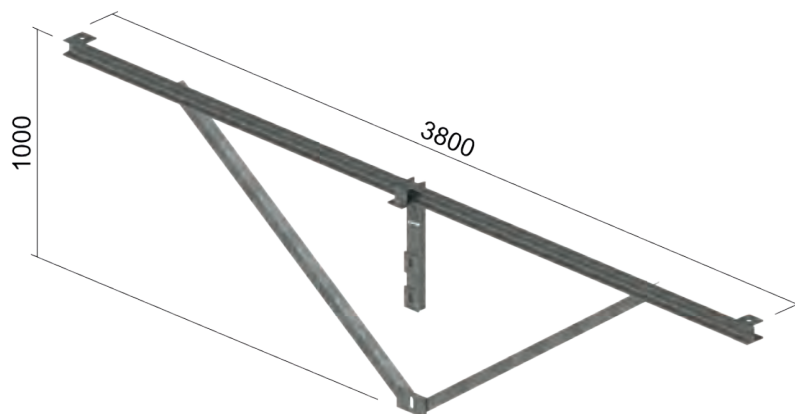


Type	PP-702/E
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	50,30
Material	steel, hot-dip galvanized

Fixing:

OB-3	1	dw=218
M16x280	1	
Index	Quantity	Notes

PP-701



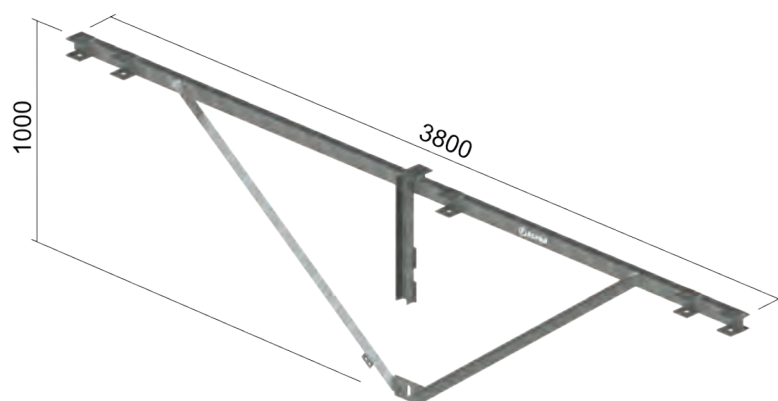
Type	PP-701
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	ŽN / BSW
Restriction	0°
Unit weight [kg]	47,60
Material	steel, hot-dip galvanized

Fixing:

M20x220	2	
Index	Quantity	Notes

Example application p. 103

PP-702

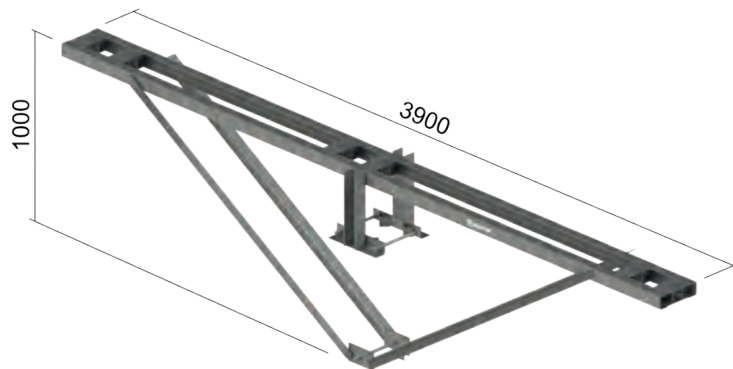


Type	PP-702
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	ŽN / BSW
Restriction	0°-1°
Unit weight [kg]	50,30
Material	steel, hot-dip galvanized

Fixing:

M20x220	2	BSW
M20x150	2	ŽN
Index	Quantity	Notes

PN-50
(PN-51)
(PN-54)



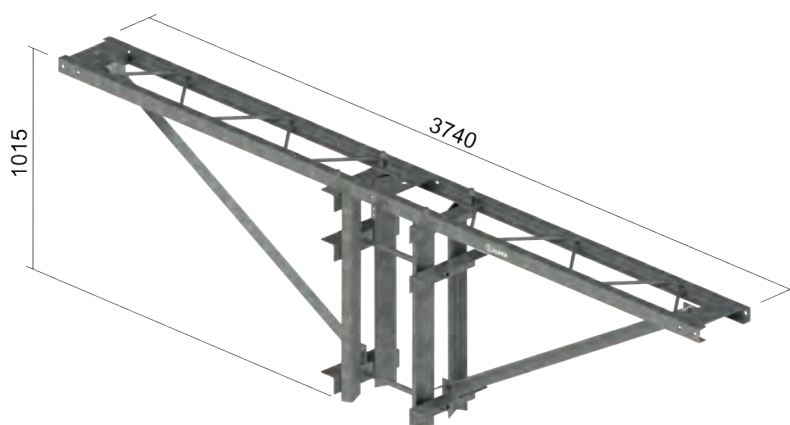
Type	PN-54	PN-51	PN-50
Function	angle crossarm		
Line type	LSN AFL6x70(50)mm ²		
Line layout	horizontal configuration		
Type of pole	spunE dw=263	spunE dw=218	spunE dw=173
Restriction	0°-1°		
Unit weight [kg]	96,50	94,40	92,50
Material	steel, hot-dip galvanized		

Fixing:

complete with crossbar

Notes

PO-51
(PO-52)



Type	PO-52	PO-51
Function	resistance crossbar	
Line type	LSN AFL6x70(50)mm ²	
Line layout	horizontal configuration	
Type of pole	spunE dw=308,420	spunE dw=218,263
Restriction	0°-2°	
Unit weight [kg]	129,15	
Material	steel, hot-dip galvanized	

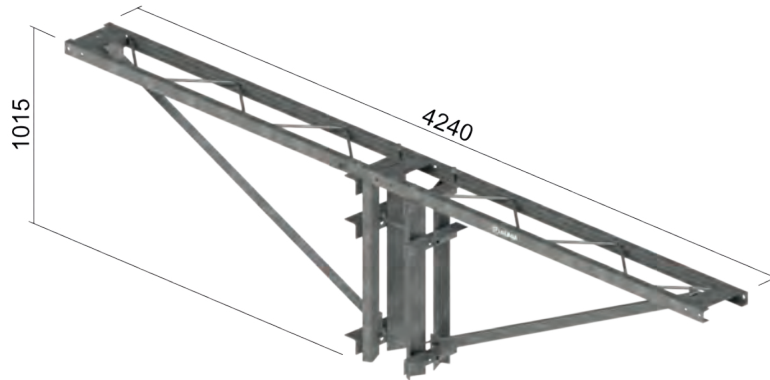
Fixing:

complete with crossbar

Notes

Example application p. 76-77

PON-51
(PON-52)



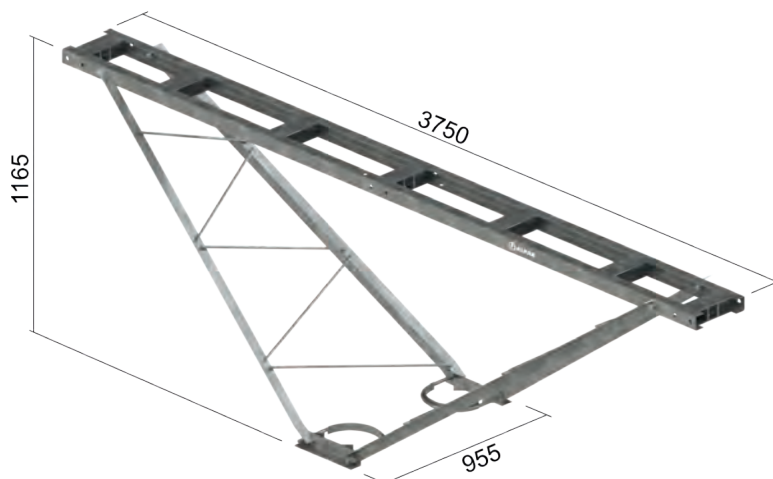
Type	PON-52	PON-51
Function	anchor-angular crossarm	
Line type	LSN AFL6x70(50)mm ²	
Line layout	horizontal configuration	
Type of pole	spunE dw=308,420	spunE dw=218,263
Restriction	0°-2°	
Unit weight [kg]	140,00	
Material	steel, hot-dip galvanized	

Fixing:

complete with crossbar

Notes

PO-50



Type	PO-50
Function	resistance crossbar
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-2°
Unit weight [kg]	92,30
Material	steel, hot-dip galvanized

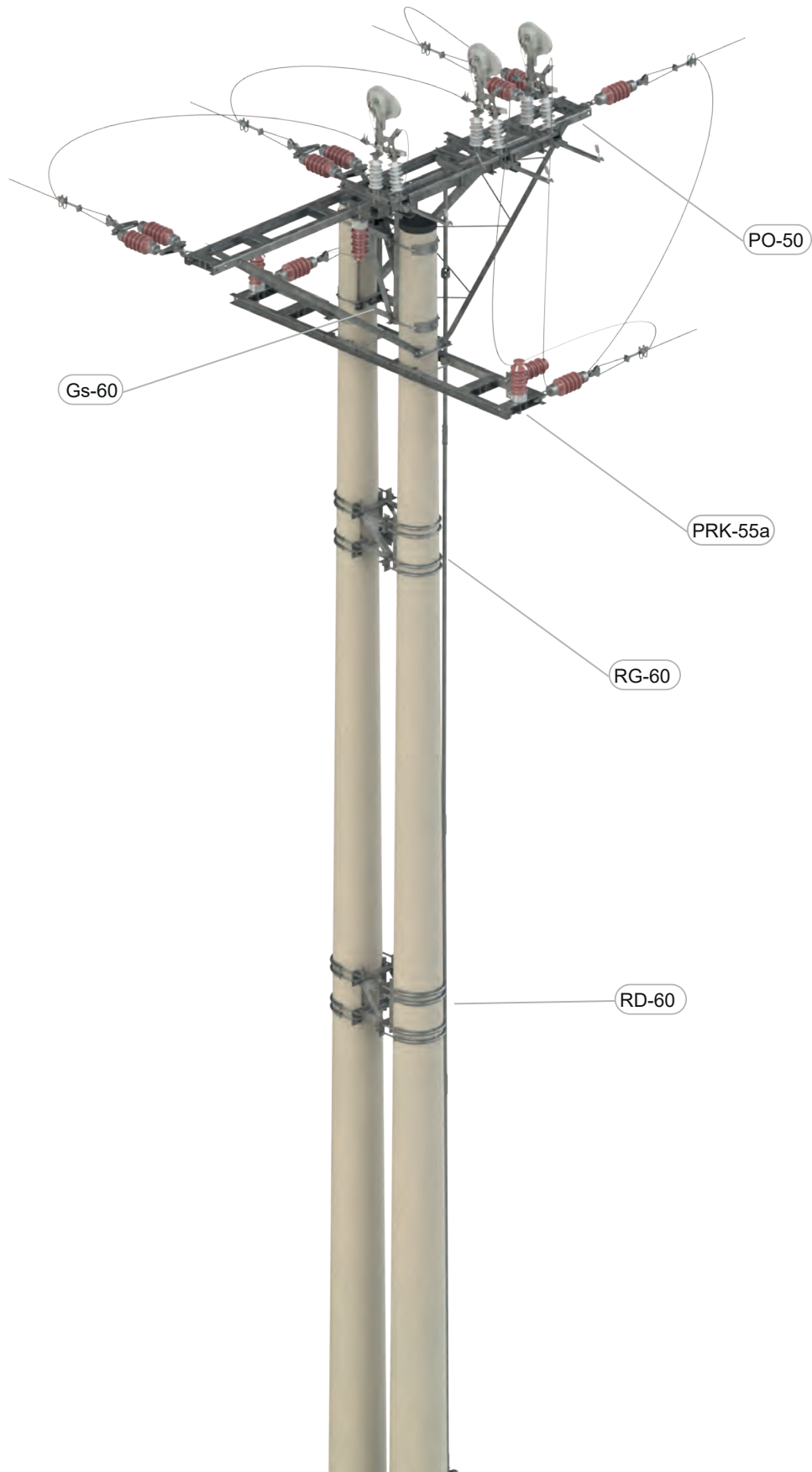
Fixing:

complete with crossbar

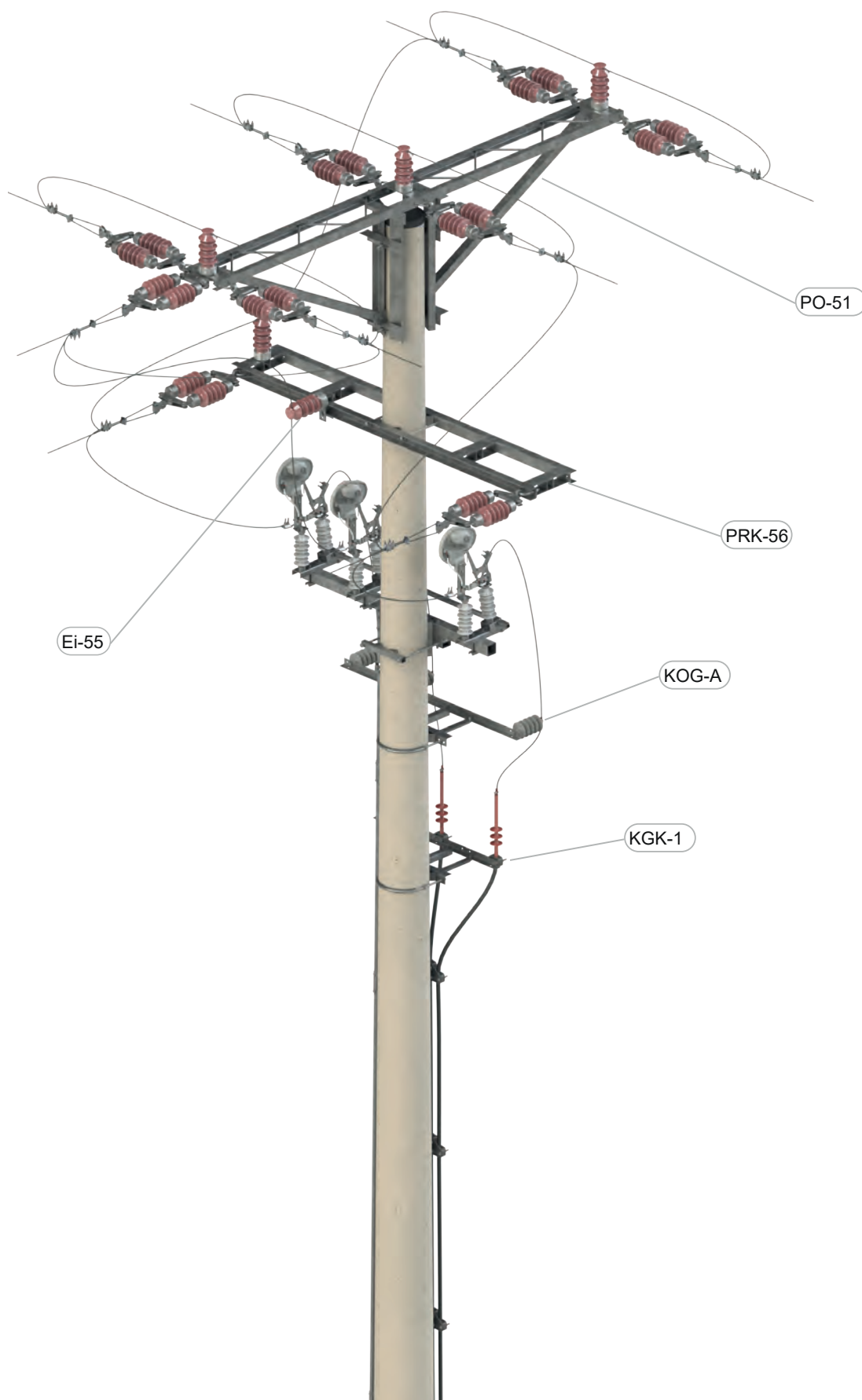
Notes

Example application p. 78, 79, 90

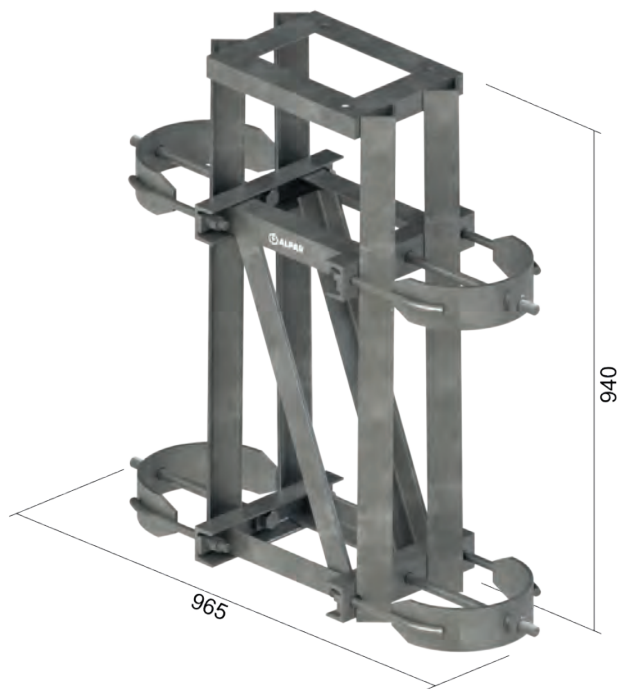
Application of the structure on the example of a pole construction type KKpo-13.5/12 AFL6x70(50)mm² - horizontal configuration.



Application of the structure on the example of a pole construction
type ROKgo-13.5/15 AFL6x70(50)mm² type - horizontal configuration.



GS-60

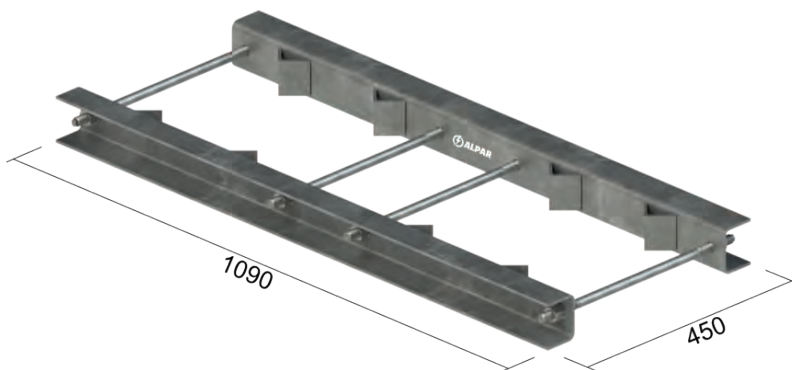


Type	Gs-60
Function	pole head
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	n/a
Unit weight [kg]	69,80
Material	steel, hot-dip galvanized

Fixing:

complete with head
Notes

KL-5



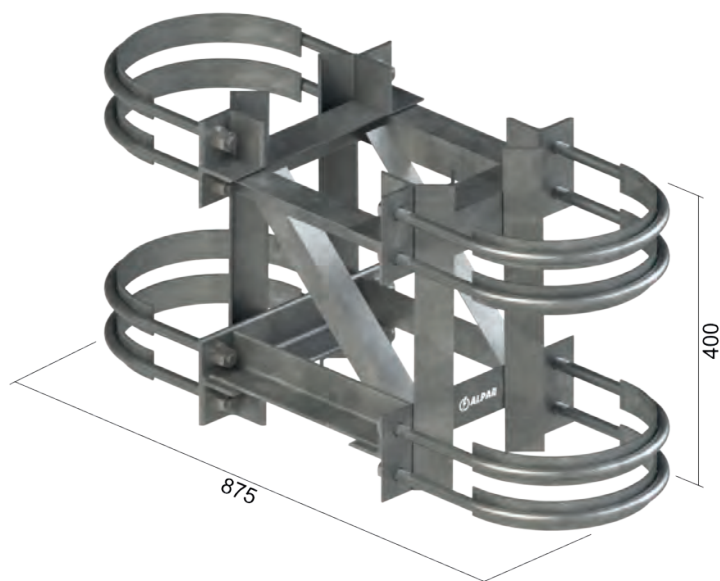
Type	KL-5
Function	bracing structure
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	n/a
Unit weight [kg]	17,10
Material	steel, hot-dip galvanized

Fixing:

complete with construction
Notes

Note: Design used for stations consisting of 2 poles.

RG-60

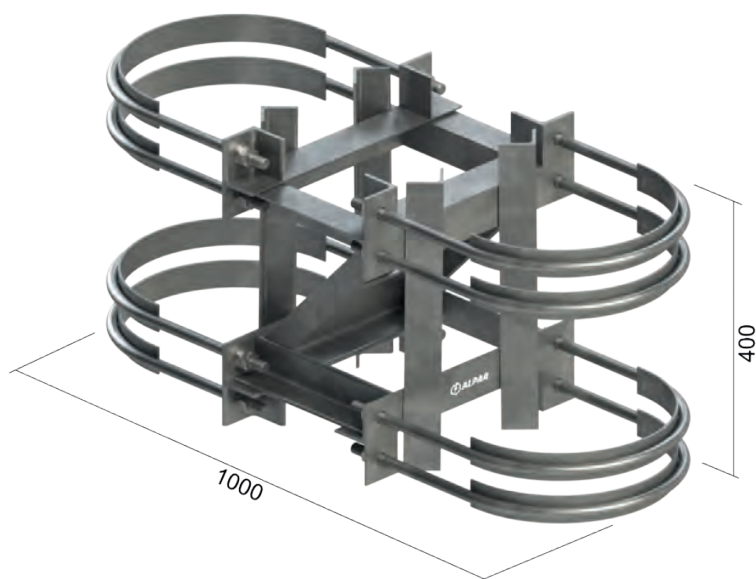


Type	RG-60
Function	upper frame
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	n/a
Unit weight [kg]	36,00
Material	steel, hot-dip galvanized

Fixing:

complete with frame
Notes

RD-60



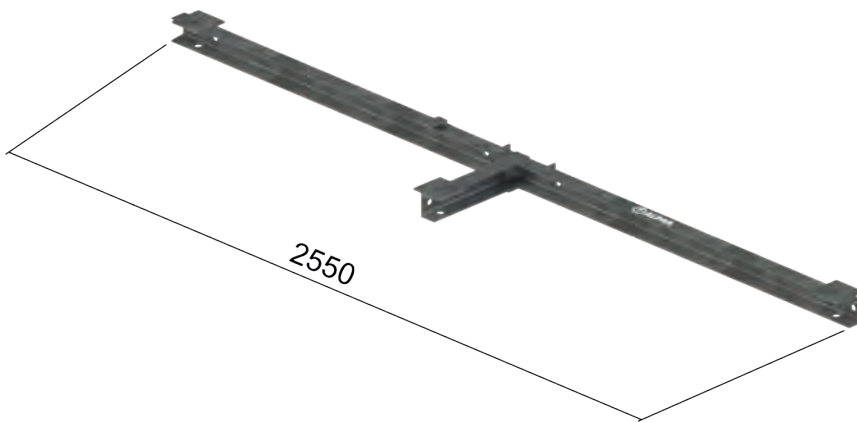
Type	RD-60
Function	lower frame
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	n/a
Unit weight [kg]	38,70
Material	steel, hot-dip galvanized

Fixing:

complete with frame
Notes

Note: Design used for stations consisting of 2 poles (ONp23, KKp22, RKp23, RONKp23).

PRK-50
(PRK-51)

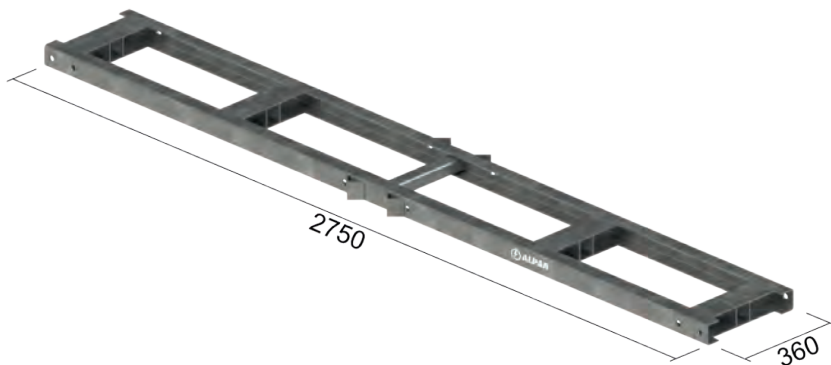


Type	PRK-51	PRK-50
Function	straight-line crossarm	
Line type	LSN AFL6x70(50)mm ²	
Line layout	horizontal configuration	
Type of pole	spunE dw=218	spunE dw=173
Restriction	0°-1°	
Unit weight [kg]	17,80	
Material	steel, hot-dip galvanized	

Fixing:

OB-5	1	dw=218
OB-2	1	dw=173
Index	Quantity	Notes

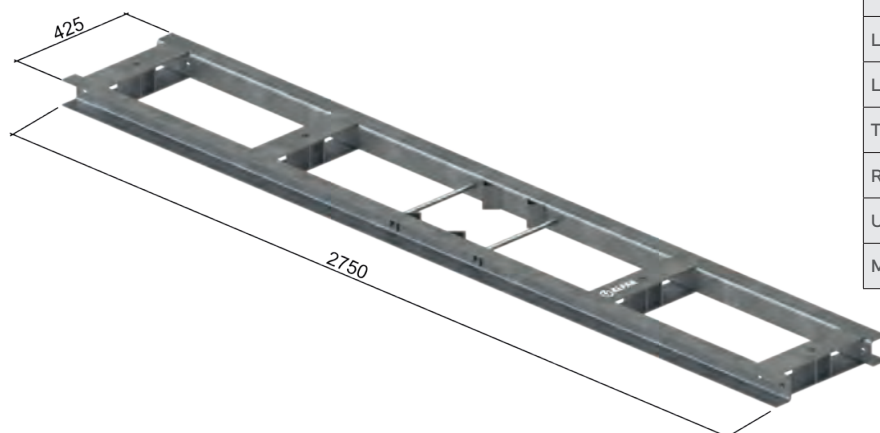
PRK-54



Type	PRK-54
Function	straight-line crossarm
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	44,60
Material	steel, hot-dip galvanized

Fixing:

OB-3	2	dw=218 (x2)
Index	Quantity	Notes

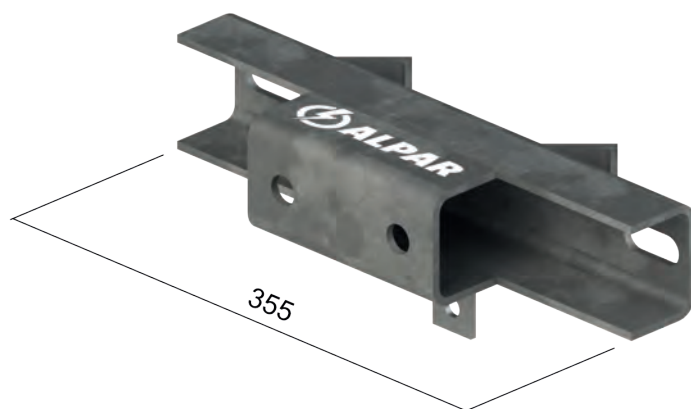
PRK-56
(PRK-57)

Type	PRK-57	PRK-56
Function	straight-line crossarm	
Line type	LSN AFL6x70(50)mm ²	
Line layout	horizontal configuration	
Type of pole	spunE dw=420	spunE dw=263
Restriction	0°-2°	
Unit weight [kg]	60,00	54,30
Material	steel, hot-dip galvanized	

Fixing:

complete with crossbars

Notes

Et-8a
(Et-9a)

Type	Et-9a	Et-8a
Function	chain element	
Line type	LSN AFL6x70(50)mm ²	
Line layout	horizontal configuration	
Type of pole	spunE dw=420	spunE dw=263
Restriction	0°-3°	
Unit weight [kg]	4,40	3,40
Material	steel, hot-dip galvanized	

Fixing:

OB-14	1	dw=420
OB-7	1	dw=263
Index	Quantity	Notes

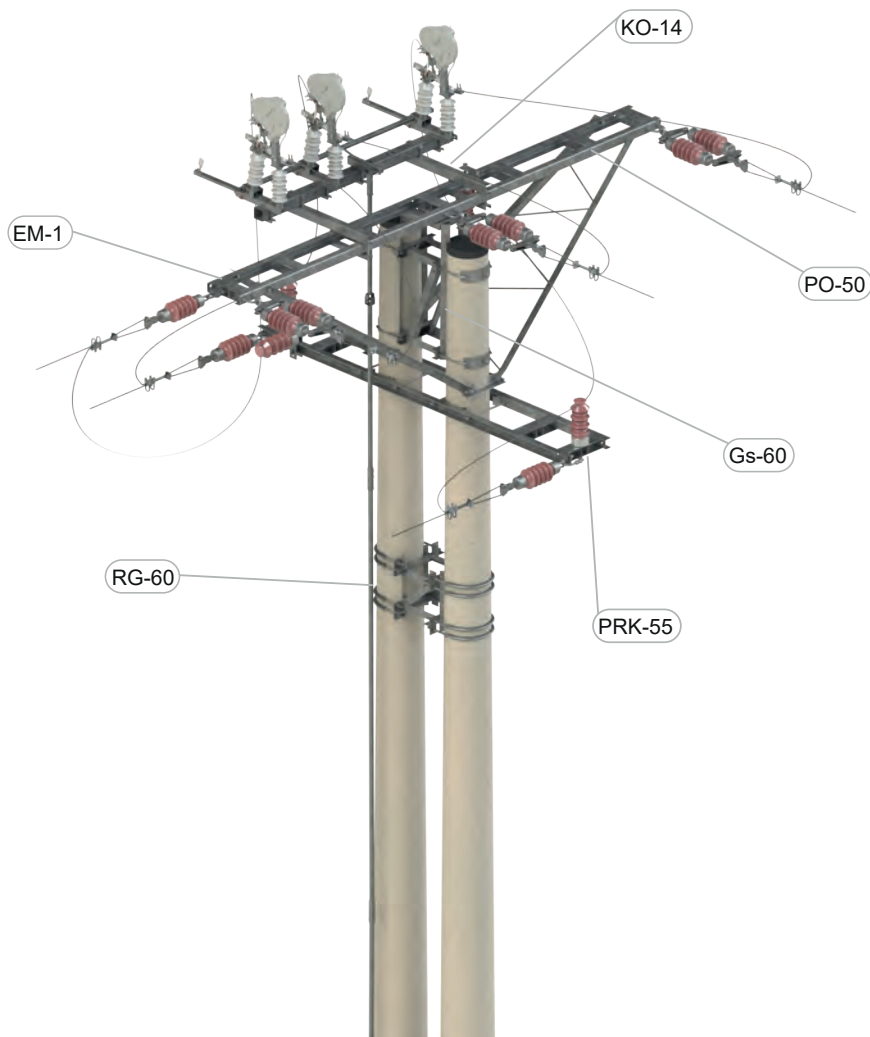
EM-1



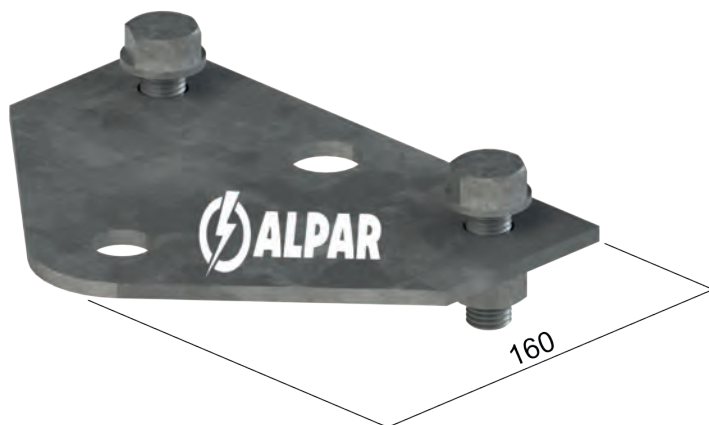
Type	EM-1
Function	fastening element
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-2°
Unit weight [kg]	1,30
Material	steel, hot-dip galvanized

Fixing:

include with the EM-1 element	1	for PRN-50 for PON-50 for PO-50
Index	Quantity	Notes

Application of the EM-1 element

EM-2

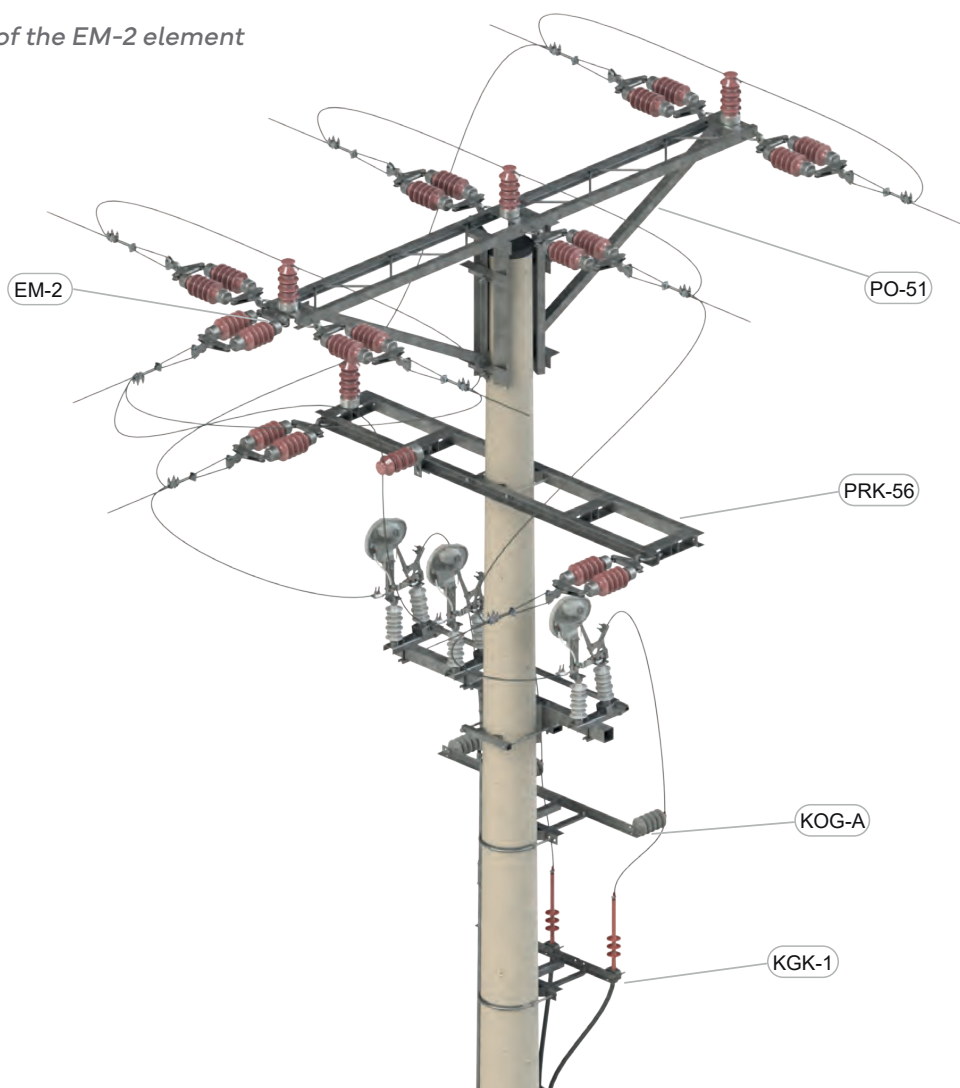


Type	EM-2
Function	fastening element
Line type	LSN AFL6x70(50)mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-2°
Unit weight [kg]	1,90
Material	steel, hot-dip galvanized

Fixing:

included with the EM-2 element	1	for PON-52
		for PON-51
		for PO-52
		for PO-51
Index	Quantity	Notes

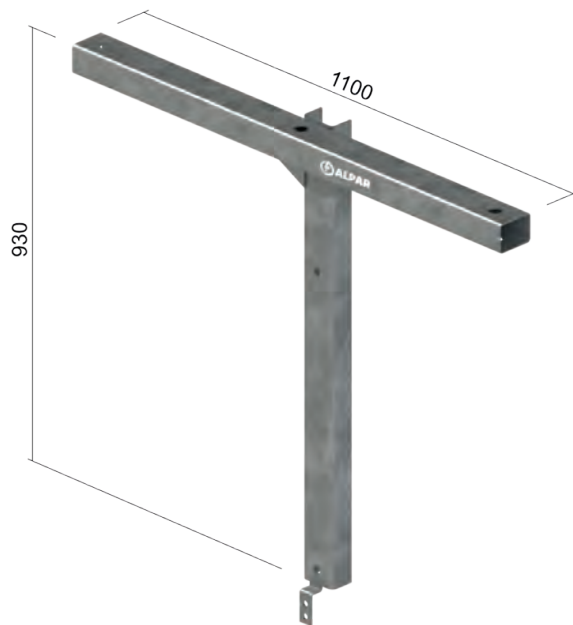
Application of the EM-2 element



2. Lines with partially insulated cables

2.1. for LSNi 50-120 lines in a horizontal configuration

PP-1a

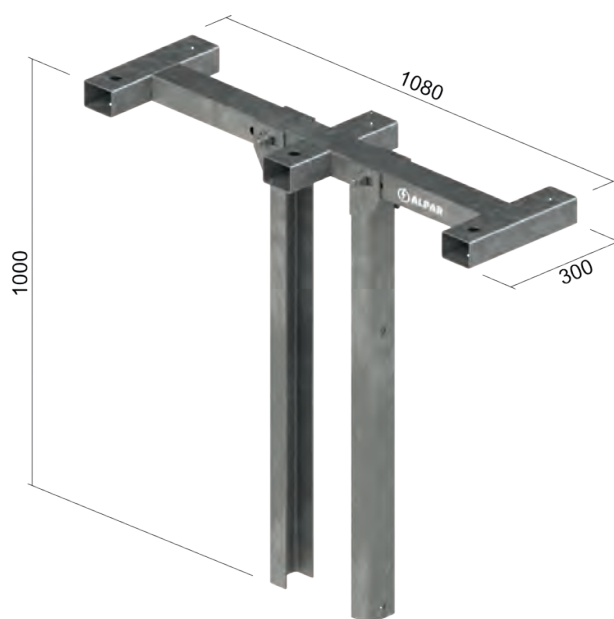


Type	PP-1a
Function	straight-line crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	13,20
Material	steel, hot-dip galvanized

Fixing:

M16x260	2	
Index	Quantity	Notes

PP-3a

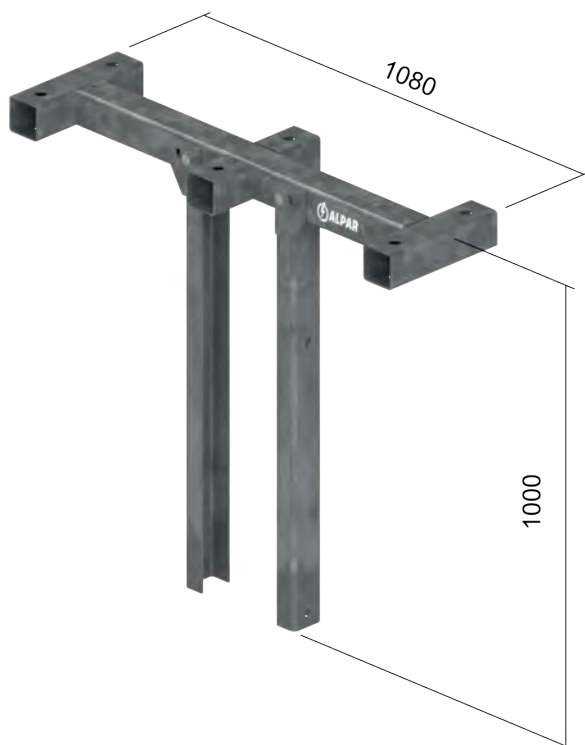


Type	PP-3a
Function	straight-line crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	24,80
Material	steel, hot-dip galvanized

Fixing:

M16x360	2	
Index	Quantity	Notes

PS-1a

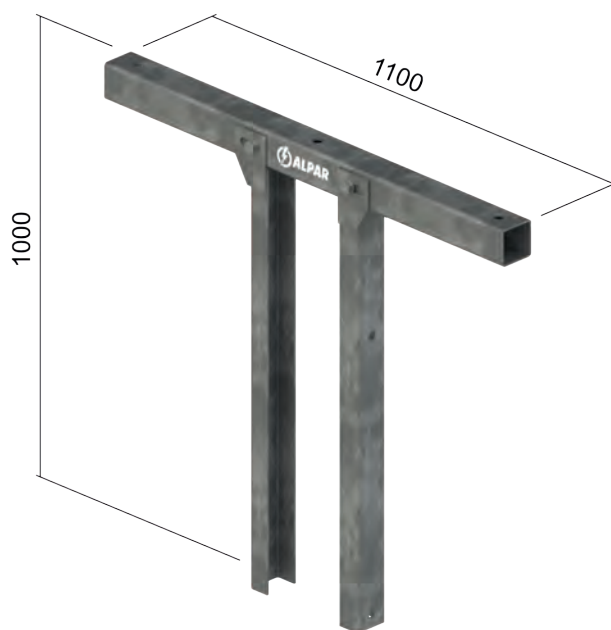


Type	PS-1a
Function	intersection crossbar
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	30,10
Material	steel, hot-dip galvanized

Fixing:

M16x360	2	dw=218
M16x320	2	dw=173
Index	Quantity	Notes

PS-3a

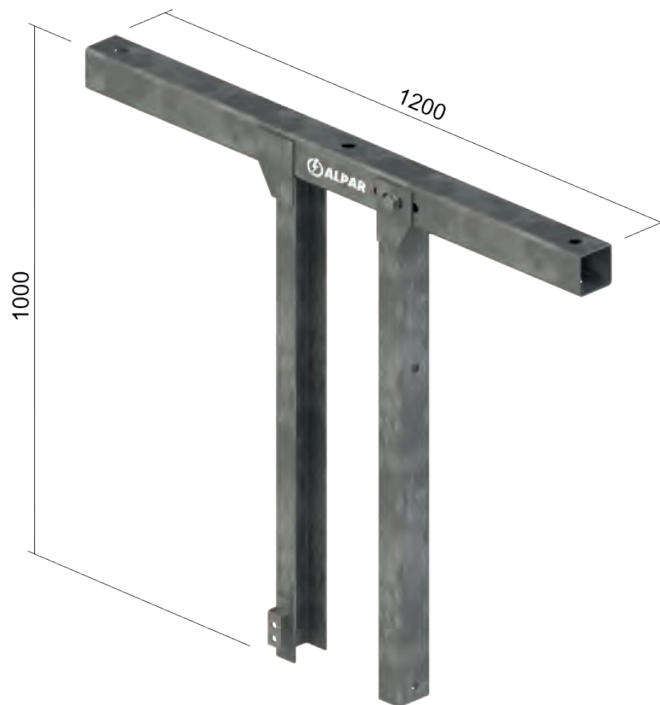


Type	PS-3a
Function	intersection crossbar
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	24,20
Material	steel, hot-dip galvanized

Fixing:

M16x360	2	dw=218
M16x320	2	dw=173
Index	Quantity	Notes

PN-1a

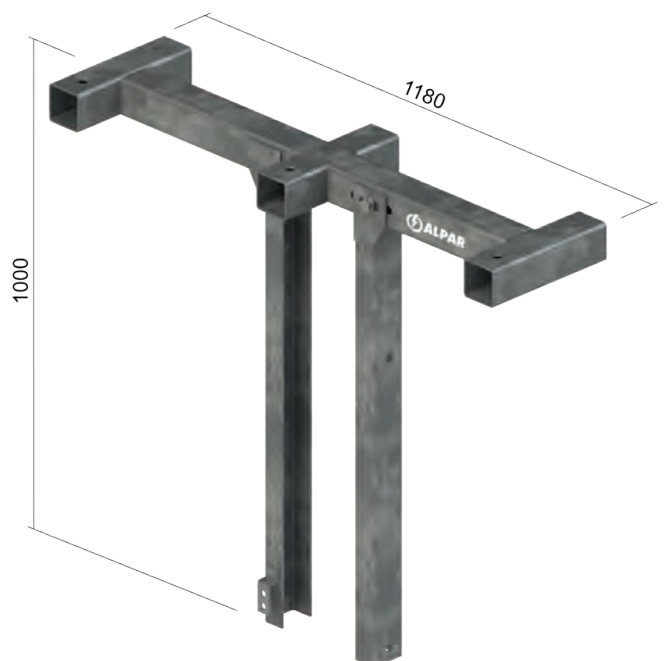


Type	PN-1a
Function	angle crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°
Unit weight [kg]	24,80
Material	steel, hot-dip galvanized

Fixing:

M16x360	2	dw=218
M16x320	2	dw=173
Index	Quantity	Notes

PN-3a

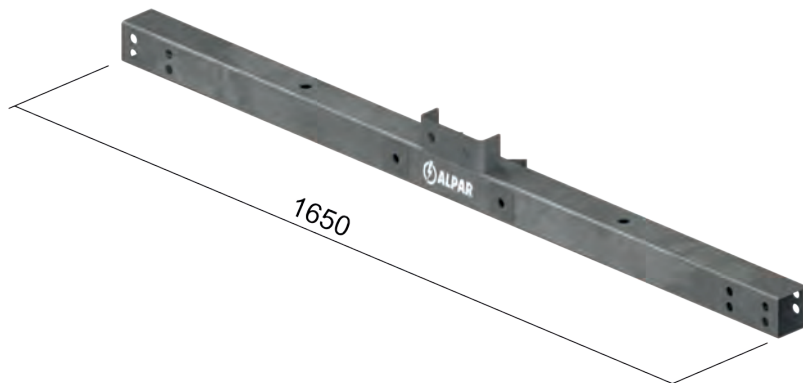


Type	PN-3a
Function	angle crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-1°
Unit weight [kg]	30,80
Material	steel, hot-dip galvanized

Fixing:

M16x360	2	dw=218
M16x320	2	dw=173
Index	Quantity	Notes

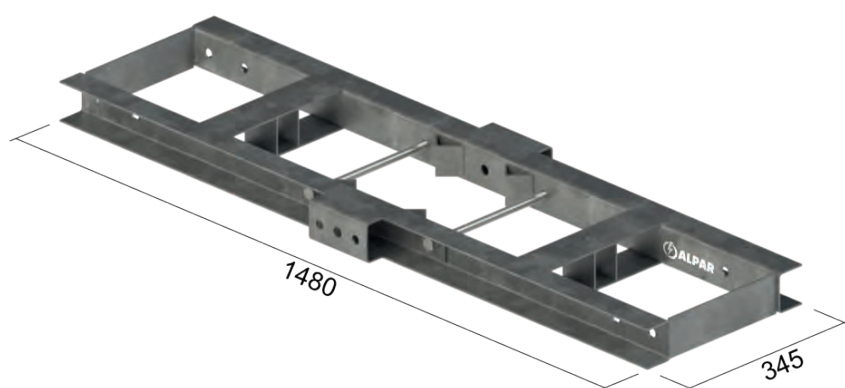
PON-1a



Type	PON-1a
Function	anchor-angular crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	spun E dw=218
Restriction	0°-3°
Unit weight [kg]	13,10
Material	steel, hot-dip galvanized

Fixing:

EŁ-1	1	dw=218
M16x450	2	
Index	Quantity	Notes

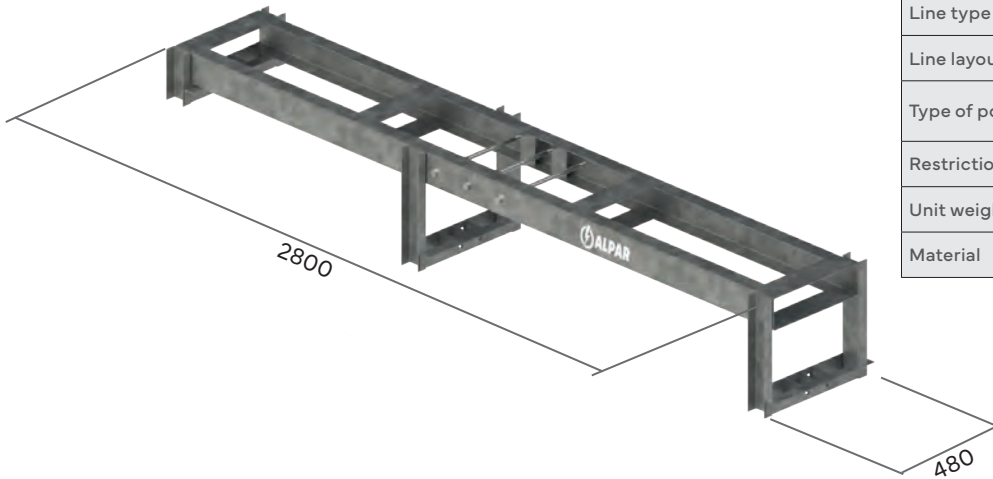
PON-3
(PON-4)

Type	PON-4	PON-3
Function	anchor-angular crossarm	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	25,30	24,50
Material	steel, hot-dip galvanized	

Fixing:

complete with crossbar
Notes

PN-27a
(PN-28a)
(PN-8a)
(PN-7a)



Type	PN-28a	PN-27a	PN-8a	PN-7a
Function	angle crossarm			
Line type	LSNi 50-120mm²			
Line layout	horizontal configuration			
Type of pole	E-type spun concrete pole dw=263		E-type spun concrete pole dw=218	
Restriction	0°-3°			
Unit weight [kg]	69,20	64,70	67,00	62,80
Material	steel, hot-dip galvanized			

Fixing:

in the construction set
Notes

PK-1a
(PK-3a)

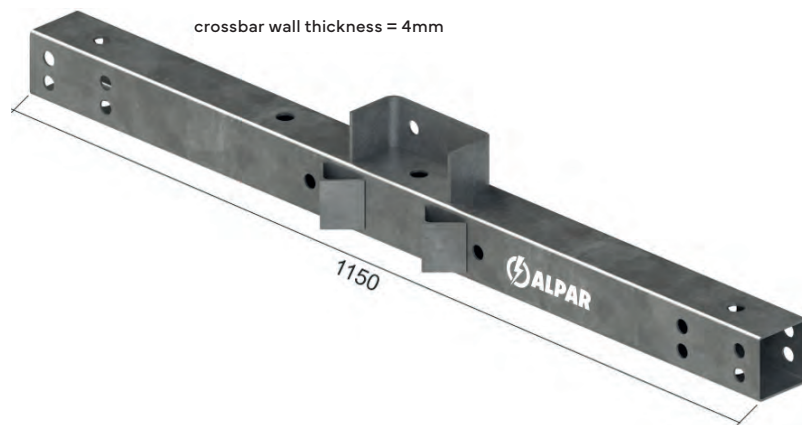


Type	PK-3a	PK-1a
Function	terminal crossarm	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	9,30	
Material	steel, hot-dip galvanized	

Fixing:

OG-5	1	for dw=263	for the end position
OG-2	1	for dw=218	
M16x450	2	for PK-1a, Et-1	for the resistance position
Index	Quantity	Notes	

PK-4a
(PK-7)

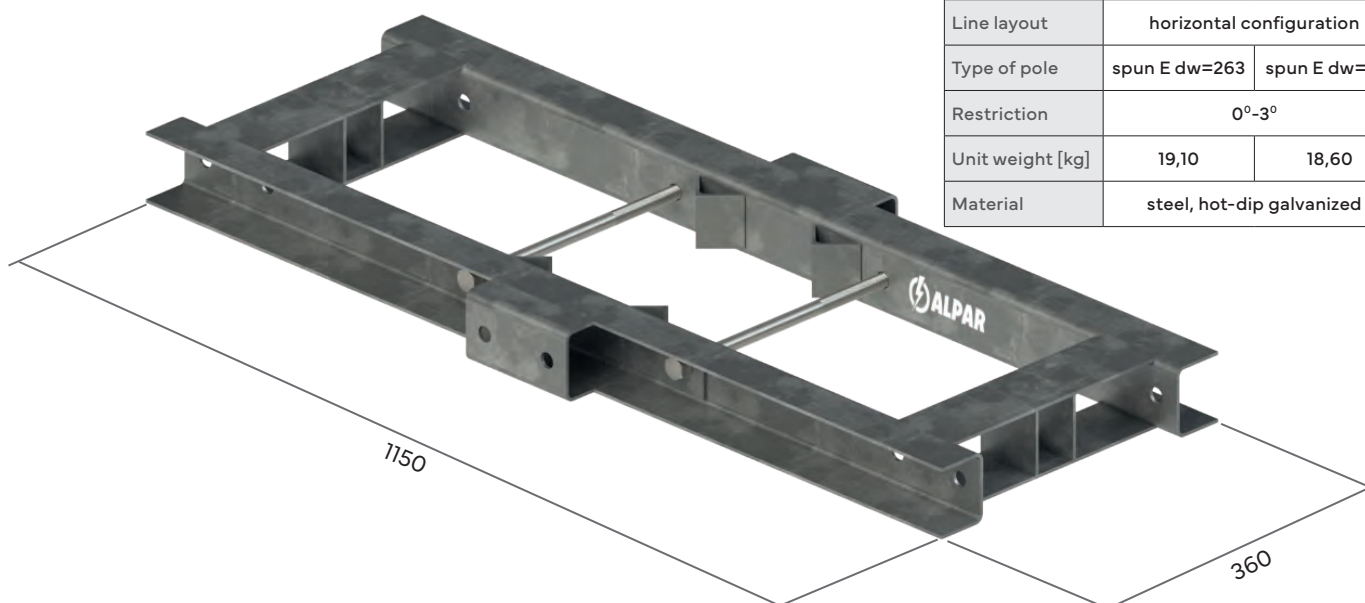


Type	PK-7	PK-4a
Function	terminal crossarm	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	11,80	
Material	steel, hot-dip galvanized	

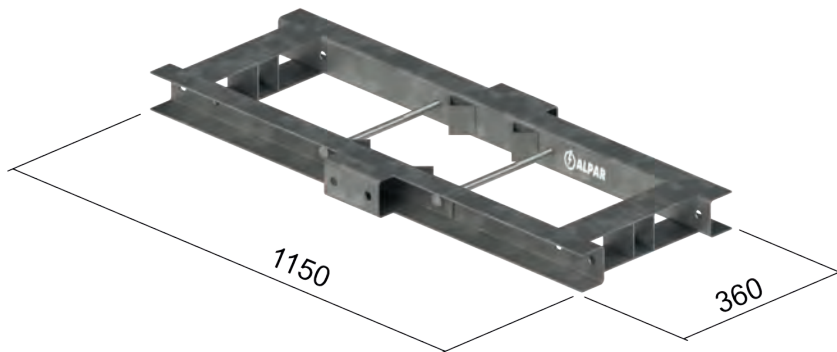
Fixing:

OG-5	1	for dw=263
OG-2	1	for dw=218
Index	Quantity	Notes

PK-5a
(PK-9)



Type	PK-9	PK-5a
Function	terminal crossarm	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	19,10	18,60
Material	steel, hot-dip galvanized	

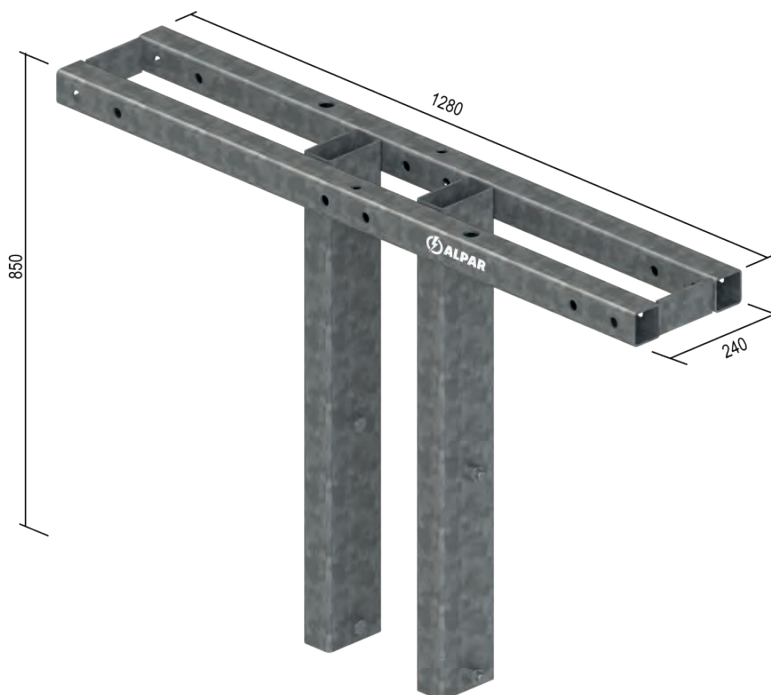
PK-8
(PK-10)

Type	PK-10	PK-8
Function	terminal crossarm (for RPK, RNK positions)	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	19,10	18,60
Material	steel, hot-dip galvanized	

Fixing:

complete with crossbar
Notes

PK-2b



Type	PK-2b
Function	terminal crossarm
Line type	LSNi 50-120mm ²
Line layout	horizontal configuration
Type of pole	E-type spun concrete pole
Restriction	0°-3°
Unit weight [kg]	36,80
Material	steel, hot-dip galvanized

Fixing:

complete with crossbar
Notes

Example application p. 75

PK-6
(PK-11)



Type	PK-11	PK-6
Function	terminal crossarm	
Line type	LSNi 50-120mm ²	
Line layout	horizontal configuration	
Type of pole	spun E dw=263	spun E dw=218
Restriction	0°-3°	
Unit weight [kg]	37,20	32,00
Material	steel, hot-dip galvanized	

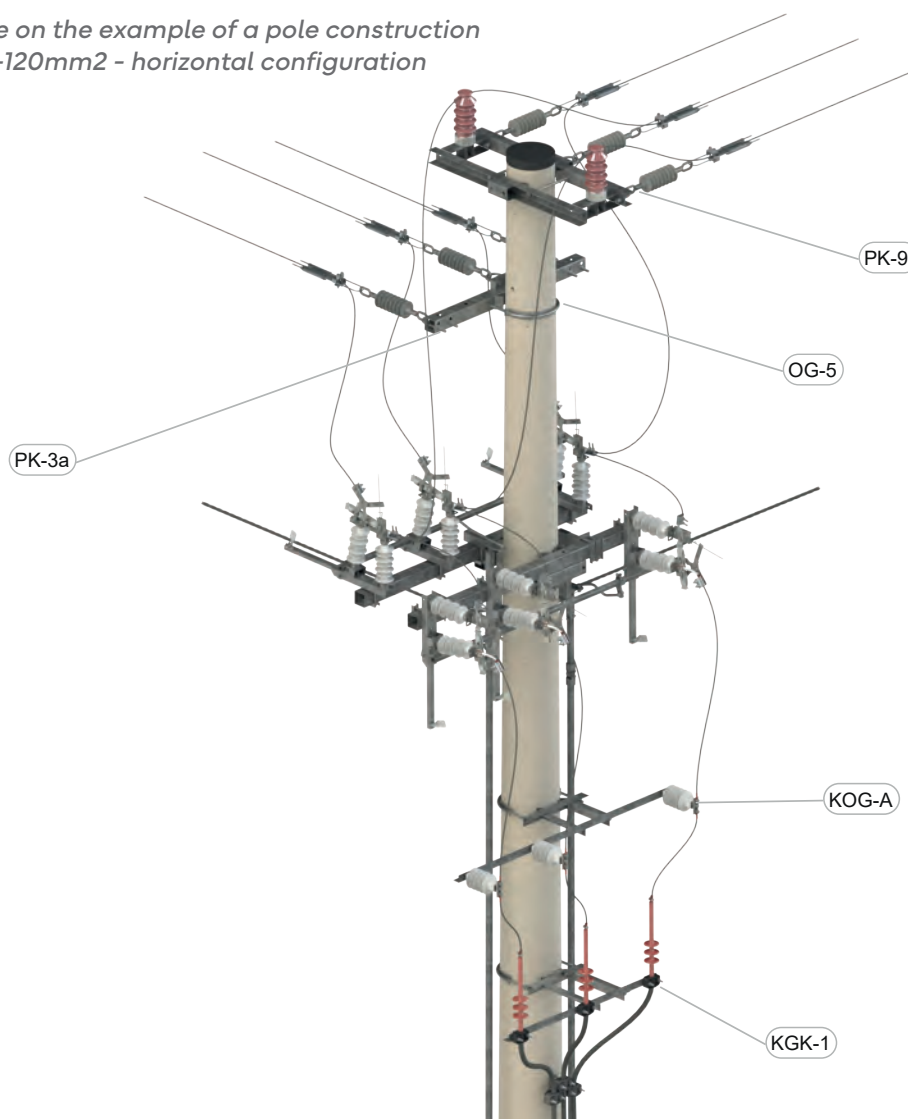
Fixing:

complete with crossbar

Notes

Example application p. 80-81

Application of the structure on the example of a pole construction
type KKgo-13.5/12 LSNi 50-120mm² - horizontal configuration

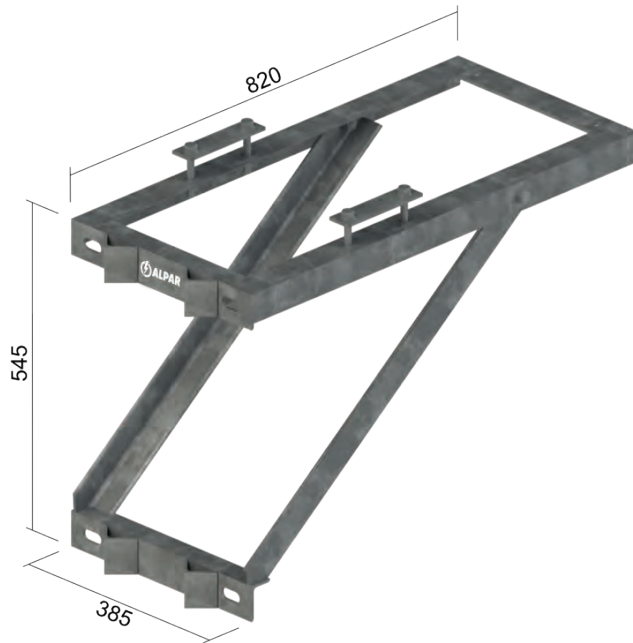


CHAPTER 2

Steel structures

1. Frame for disconnectors

KO-1



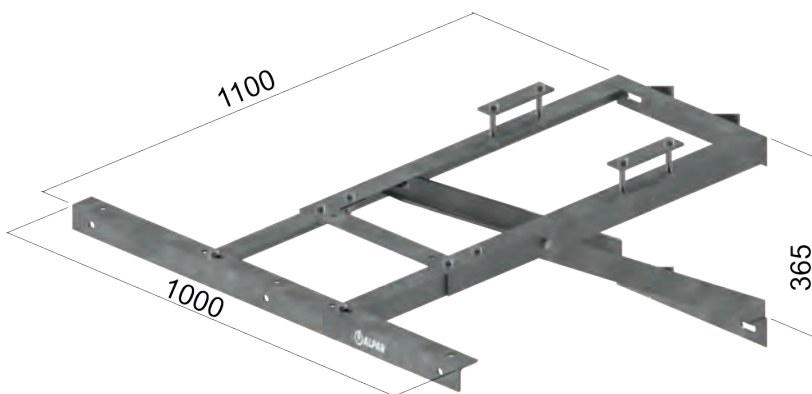
Type	KO-1
Function	frame for disconnectors
Type of pole	E-type spun concrete pole
Unit weight [kg]	16,80
Material	steel, hot-dip galvanized

Fixing:

OB-13	2	dw=263
OB-7	2	dw=218
Index	Quantity	Notes

Example application p. 90, 92

KO-1/1



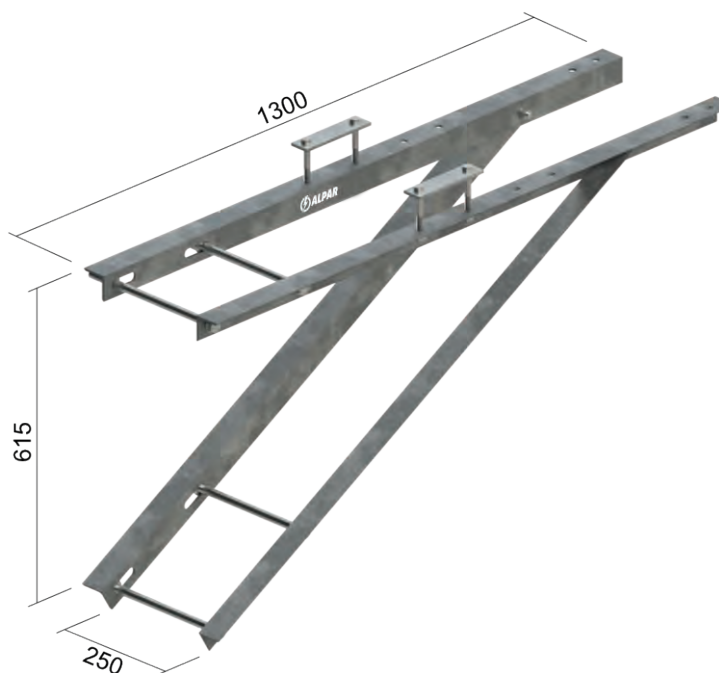
Type	KO-1/1
Function	frame for disconnectors and surge arresters
Type of pole	E-type spun concrete pole
Unit weight [kg]	21,90
Material	steel, hot-dip galvanized

Fixing:

OB-13	2	dw=263
OB-7	2	dw=218
Index	Quantity	Notes

Example application p. 90, 92

KO-12



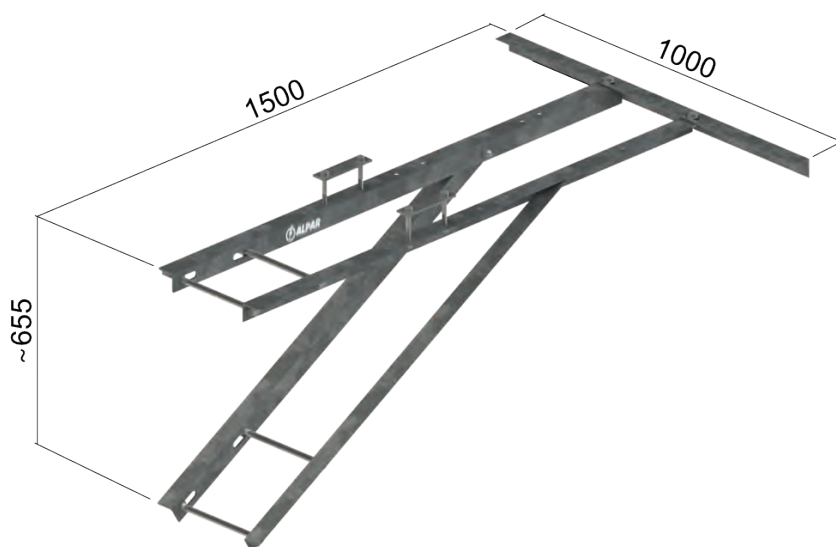
Type	KO-12
Function	frame for disconnectors
Type of pole	ŽN/BSW
Unit weight [kg]	19,00
Material	steel, hot-dip galvanized

Fixing:

M16x320	4	BSW
M16x220	4	ŽN
Index	Quantity	Notes

Example application p. 94

KO-12/1



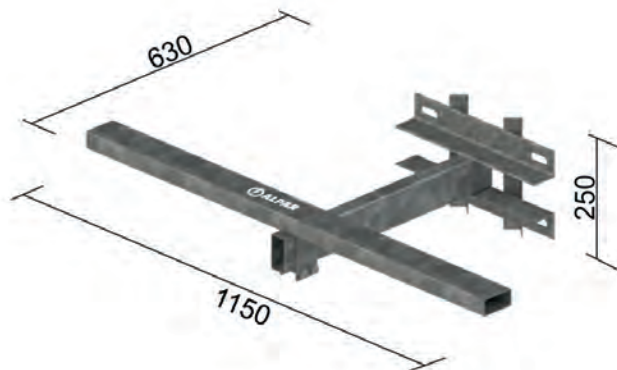
Type	KO-12/1
Function	frame for disconnectors and surge arresters
Type of pole	ŽN/BSW
Unit weight [kg]	24,80
Material	steel, hot-dip galvanized

Fixing:

M16x320	4	BSW
M16x220	4	ŽN
Index	Quantity	Notes

Example application p. 94

KPO-31



Type	KPO-31
Function	frame for disconnectors
Type of pole	E-type spun concrete pole
Unit weight [kg]	14,50
Material	steel, hot-dip galvanized

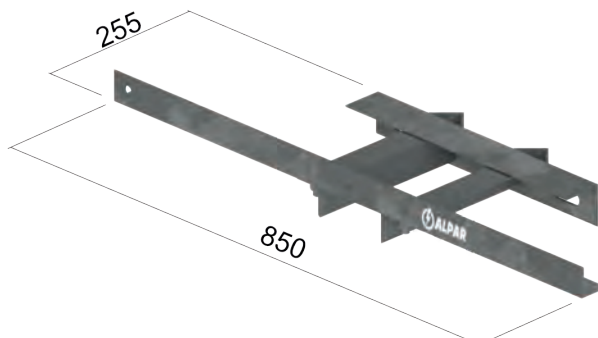
Fixing:

OB-13	2	dw=263
OB-7	2	dw=218
Index	Quantity	Notes

Example application p. 88

2. Structures for surge arresters

KOG-5/E

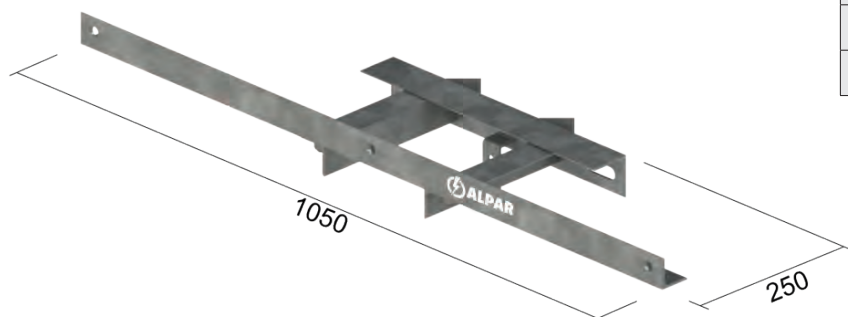


Type	KOG-5/E
Function	construction for surge arresters (symmetrical)
Type of pole	E-type spun concrete pole
Unit weight [kg]	5,70
Material	steel, hot-dip galvanized

Fixing:

OB-7	1	dw=218
Index	Quantity	Notes

KOG-6/M

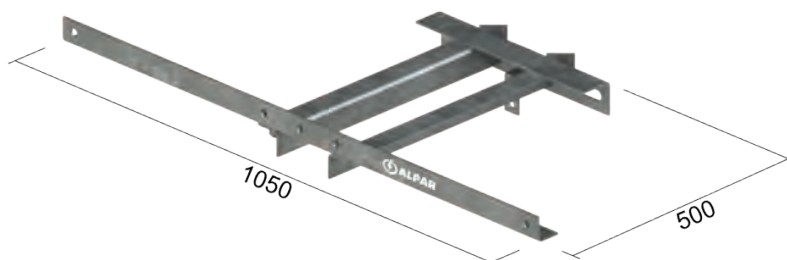


Type	KOG-6/M
Function	construction for surge arresters (symmetrical)
Type of pole	E-type spun concrete pole
Unit weight [kg]	6,00
Material	steel, hot-dip galvanized

Fixing:

OB-9	1	dw=263
Index	Quantity	Notes

KOG-7

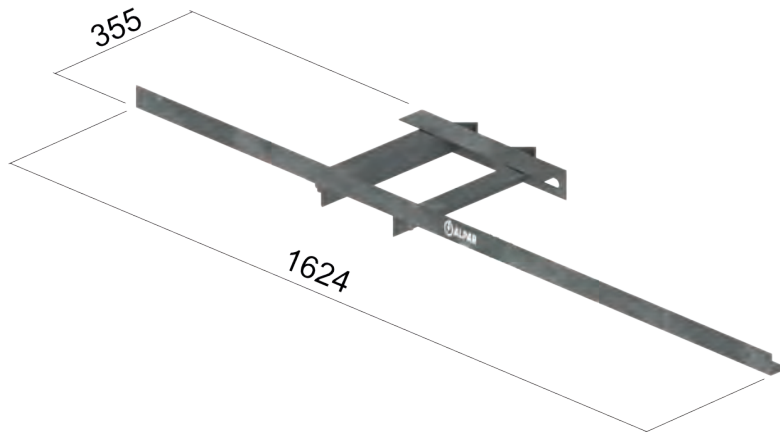


Type	KOG-7
Function	construction for surge arresters (symmetrical)
Type of pole	E-type spun concrete pole
Unit weight [kg]	7,10
Material	steel, hot-dip galvanized

Fixing:

OB-9	1	dw=263
OB-7	1	dw=218
OB-6	1	dw=173
Index	Quantity	Notes

KOG-A

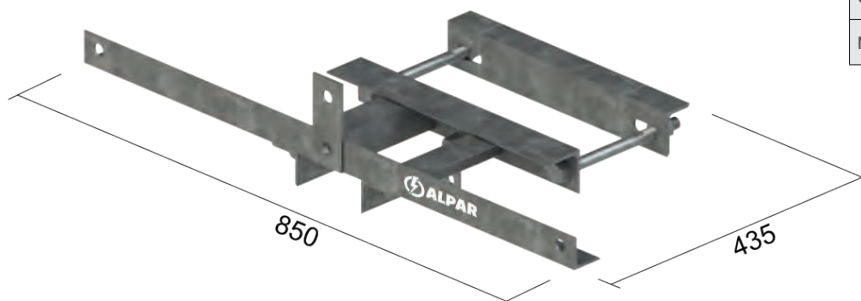


Type	KOG-A
Function	construction for surge arresters (for modular devices)
Type of pole	E-type spun concrete pole
Unit weight [kg]	9,00
Material	steel, hot-dip galvanized

Fixing:

OB-9	1	dw=263
OB-7	1	dw=218
OB-6	1	dw=173
Index	Quantity	Notes

KOG/ŽN/BSW

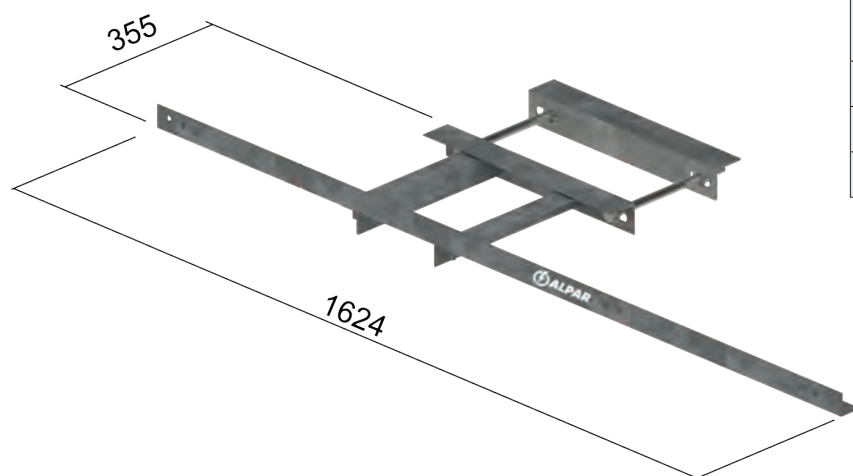


Type	KOG/BSW/ŽN
Function	construction for surge arresters (symmetrical)
Type of pole	ŽN/BSW
Unit weight [kg]	8,00
Material	steel, hot-dip galvanized

Fixing:

M16x240	2	BSW
M16x180	2	ŽN
Index	Quantity	Notes

KOG-A/ŽN/BSW



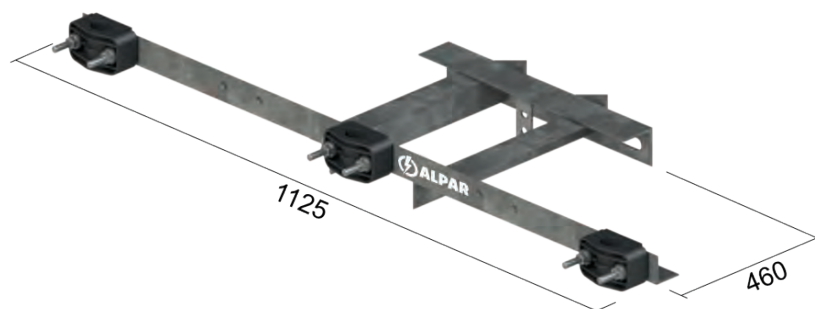
Type	KOG-A/ŽN/BSW
Function	construction for surge arresters (for modular devices)
Type of pole	ŽN/BSW
Unit weight [kg]	10,00
Material	steel, hot-dip galvanized

Fixing:

M16x240	2	BSW
M16x180	2	ŽN
Index	Quantity	Notes

3. Structures for cable heads

KGK-1

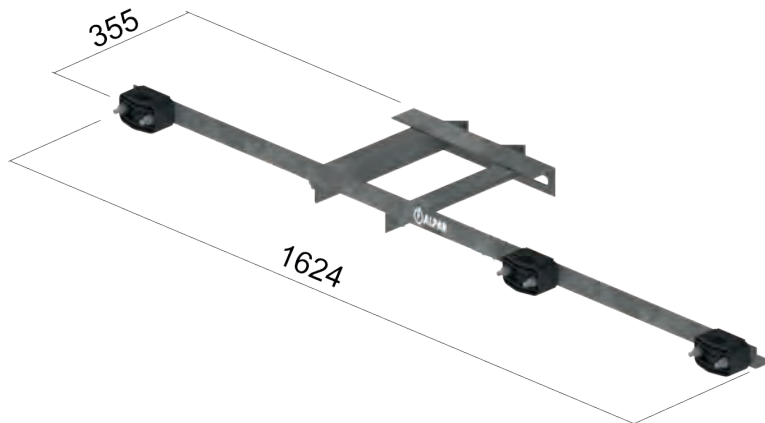


Type	KGK-1
Function	construction for cable heads (symmetric)
Type of pole	E-type spun concrete pole
Unit weight [kg]	8,20
Material	steel, hot-dip galvanized, polyamide

Fixing:

OB-9	1	dw=263
OB-7	1	dw=218
OB-6	1	dw=173
Index	Quantity	Notes

KG-2/A

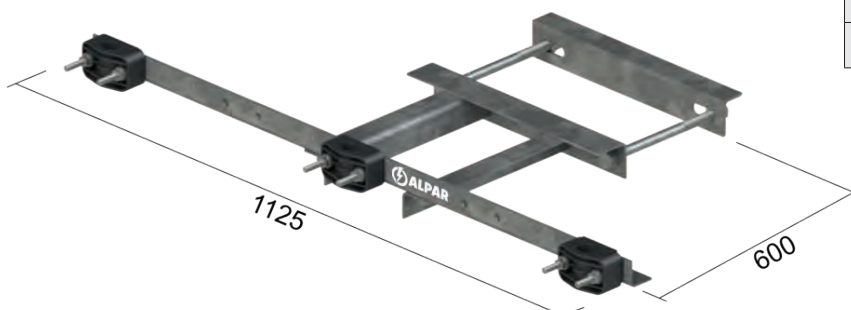


Type	KG-2/A
Function	construction for cable heads (for a modular device)
Type of pole	E-type spun concrete pole
Unit weight [kg]	9,00
Material	steel, hot-dip galvanized, polyamide

Fixing:

OB-9	1	dw=263
OB-7	1	dw=218
OB-6	1	dw=173
Index	Quantity	Notes

KGK/ŽN/BSW

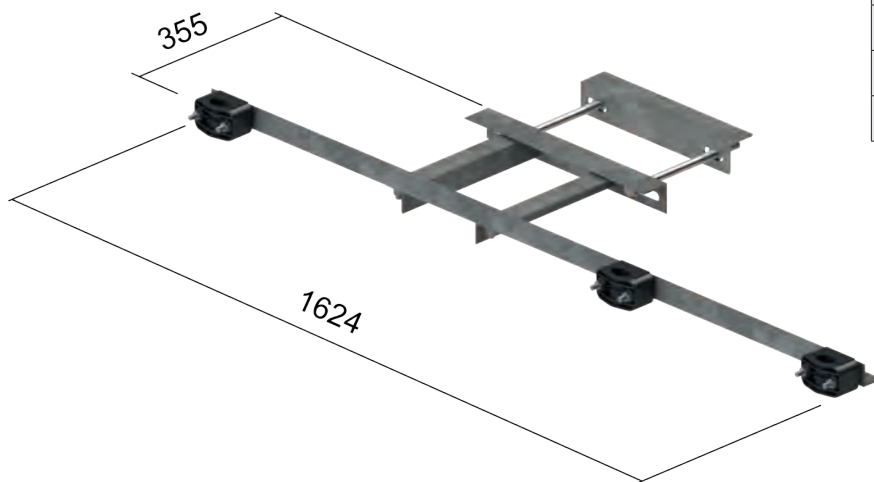


Type	KGK/ŽN/BSW
Function	construction for cable heads (symmetric)
Type of pole	ŽN/BSW
Unit weight [kg]	7,50
Material	steel, hot-dip galvanized, polyamide

Fixing:

M16x240	2	BSW
M16x180	2	ŽN
Index	Quantity	Notes

KG-2/A/ŽN/BSW



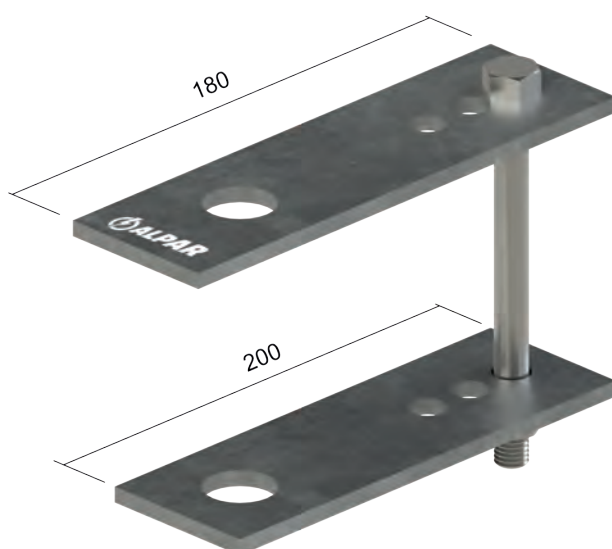
Type	KG-2/A/BSW/ŽN
Function	construction for cable heads (for a modular device)
Type of pole	ŽN/BSW
Unit weight [kg]	9,00
Material	steel, hot-dip galvanized, polyamide

Fixing:

M16x240	2	BSW
M16x180	2	ŽN
Index	Quantity	Notes

4. Frames for line post insulators

Ei-55



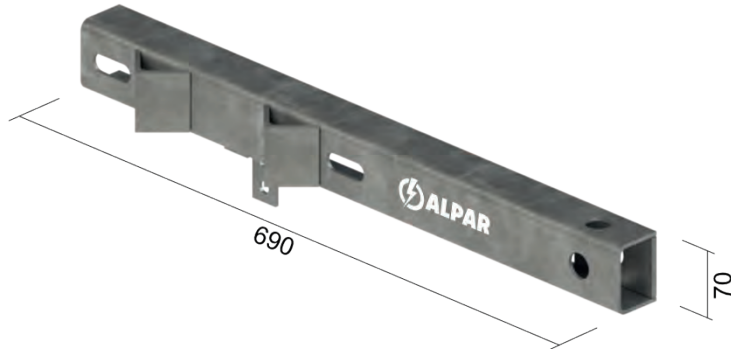
Type	Ei-55
Function	element for line post insulator
Type of pole	free
Unit weight [kg]	1,30
Material	steel, hot-dip galvanized

Fixing:

included
Notes

Application example on page 52

Ei-1a

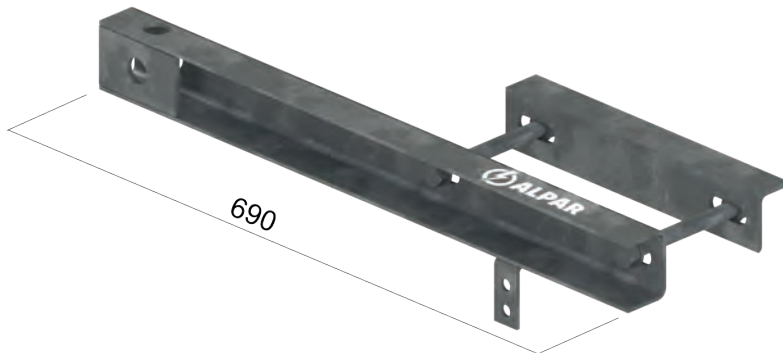


Type	Ei-1a
Function	element for line post insulator
Type of pole	E-type spun concrete pole
Unit weight [kg]	4,00
Material	steel, hot-dip galvanized

Fixing:

OB-9	1	dw=263
OB-7	1	dw=218
OB-6	1	dw=173
Index	Quantity	Notes

Ei-1a/ŽN/BSW



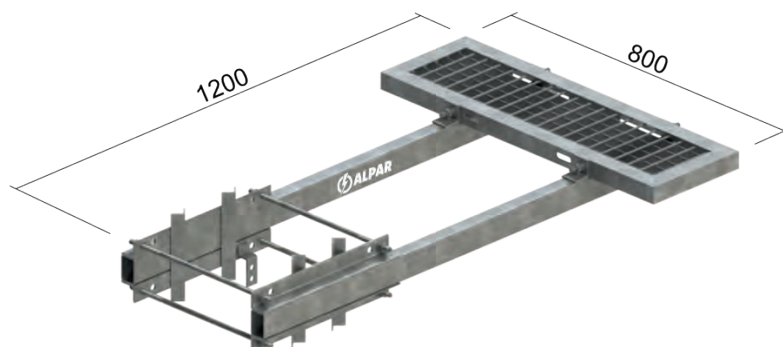
Type	Ei-1a/ŽN/BSW
Function	element for line post insulator
Type of pole	ŽN/BSW
Unit weight [kg]	4,90
Material	steel, hot-dip galvanized

Fixing:

included
Notes

5. Other constructions

PM-2

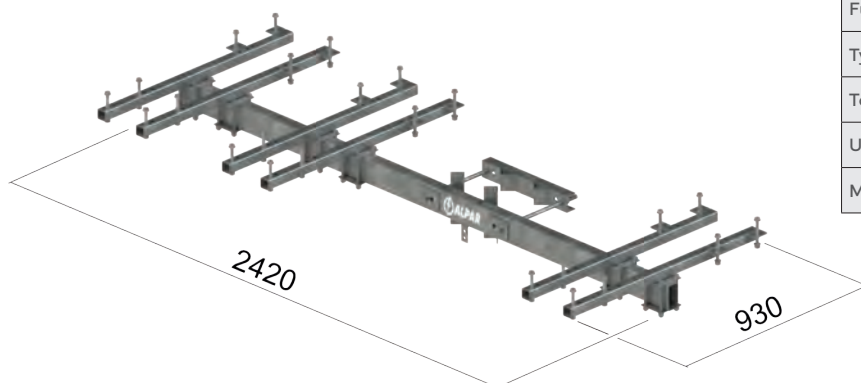


Type	PM-2
Function	assembly platform for handling cable heads
Type of pole	E-type spun concrete pole
Top diameter [mm]	dw=218/263
Unit weight [kg]	29,20
Material	steel, hot-dip galvanized

Fixing:

included
Notes

KUPs-1

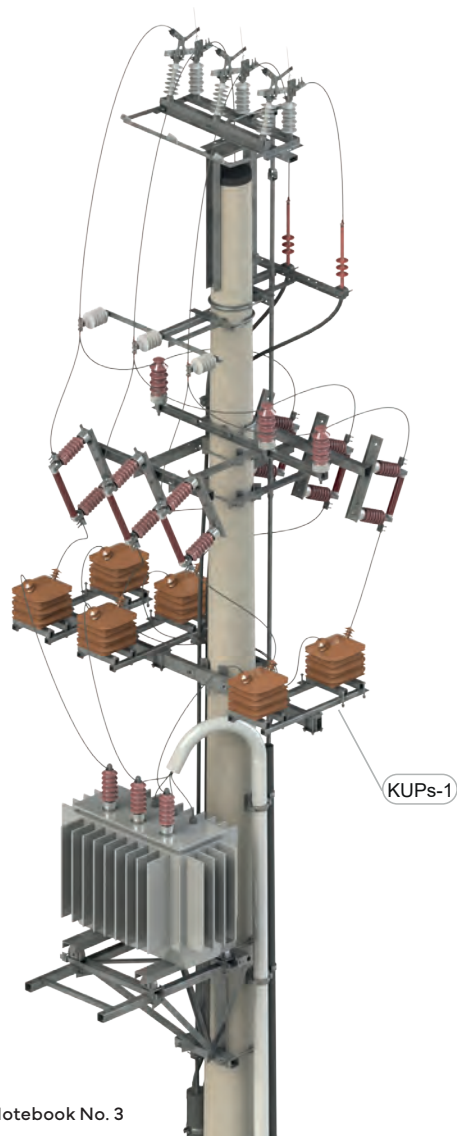


Type	KUPs-1
Function	set for MV transformers
Type of pole	E-type spun concrete pole
Top diameter [mm]	dw=218/263
Unit weight [kg]	53,40
Material	steel, hot-dip galvanized

Fixing:

M16x450	2	dw=263
EMs-2	1	
M16x380	2	dw=218
EMs-1	1	
Index	Quantity	Notes

An example of the use of the KUPs-1 structure



A detailed assembly summary is included in Notebook No. 3

ZMU-01
(ZMU-02)
(ZMU-03)



Type	ZMU-01	ZMU-02	ZMU-03
Function	earthing installation kit		
Type of pole	E-type spun concrete pole		
Top diameter [mm]	dw=218/263/308		
Unit weight [kg]			
Material	steel, hot-dip galvanized		
	porcelain insul.	silicone insul.	composite insul.

Fixing:

M16x140	2	dw=308
Os-7	2	
M16x140	2	dw=263
Os-3	2	
M16x140	2	dw=218
O4/A	2	
Index	Quantity	Notes

ZMU-01/A ZMU-01/A0
ZMU-02/A ZMU-02/A0
ZMU-03/A ZMU-03/A0
adjustable version with a long beam
l=1600 l=1100



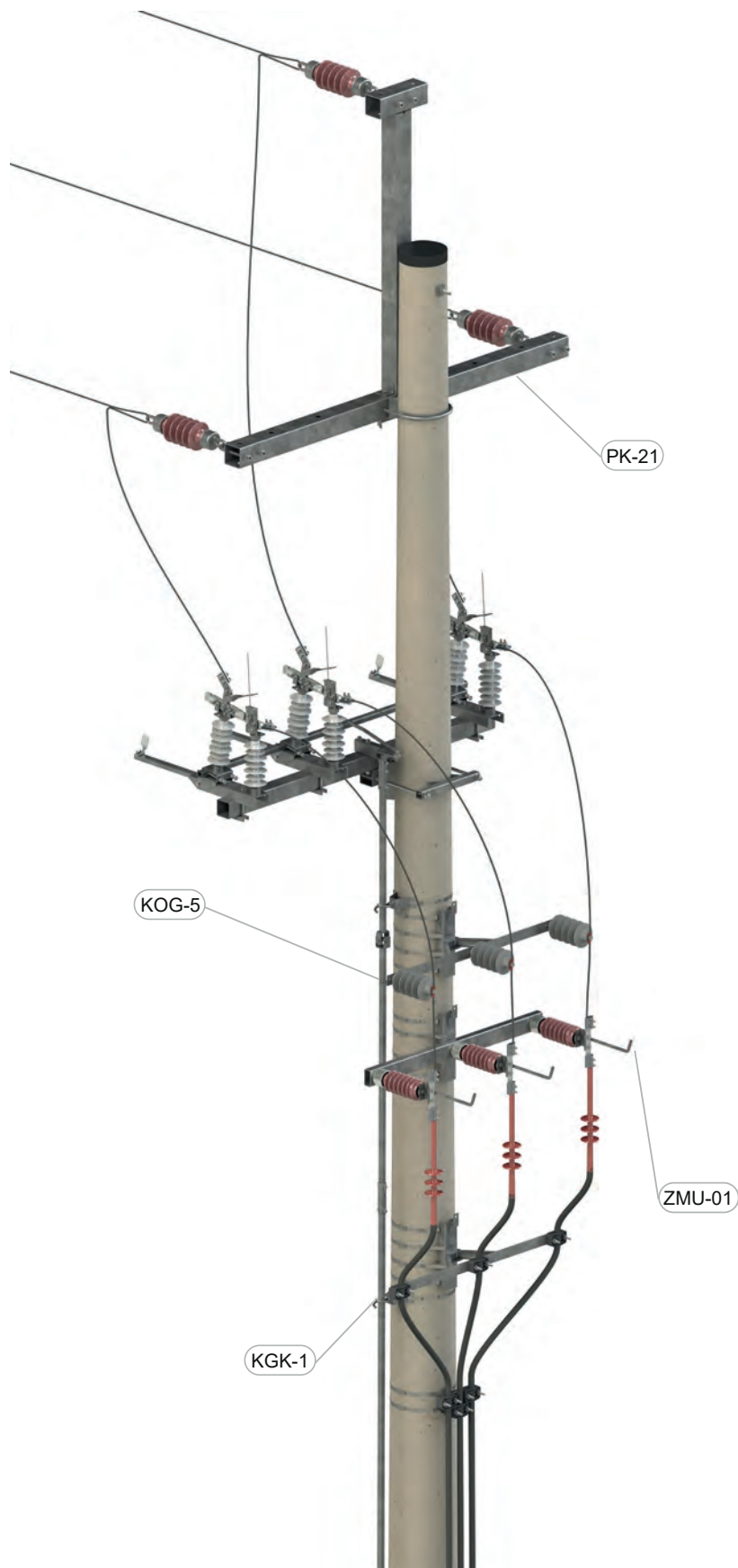
Type	ZMU-01/A ZMU-01 /A0	ZMU-02/A ZMU-02/A0	ZMU-03/A ZMU-03/A0
Function	earthing installation kit		
Type of pole	E-type spun concrete pole		
Top diameter [mm]	dw=218/263/308		
Unit weight [kg]			
Material	steel, hot-dip galvanized		
	porcelain insul.	silicone insul.	composite insul.

Fixing:

M16x140	2	dw=308
Os-7	2	
M16x140	2	dw=263
Os-3	2	
M16x140	2	dw=218
O4/A	2	
Index	Quantity	Notes

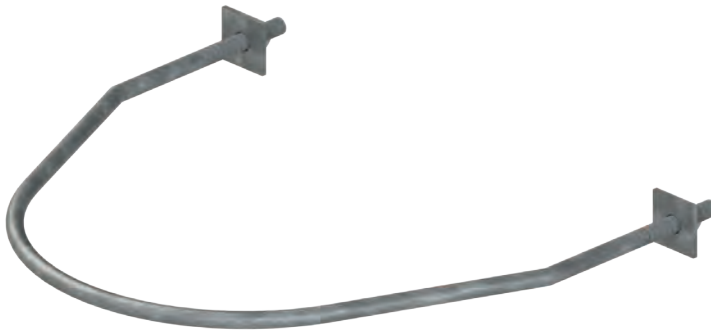
Structures based on a l=1600 beam are used only for installations with R(U)NM(p) cut-off switches, for other solutions l=1100.

An example of the use of the ZMU-01 structure



6. Footing components

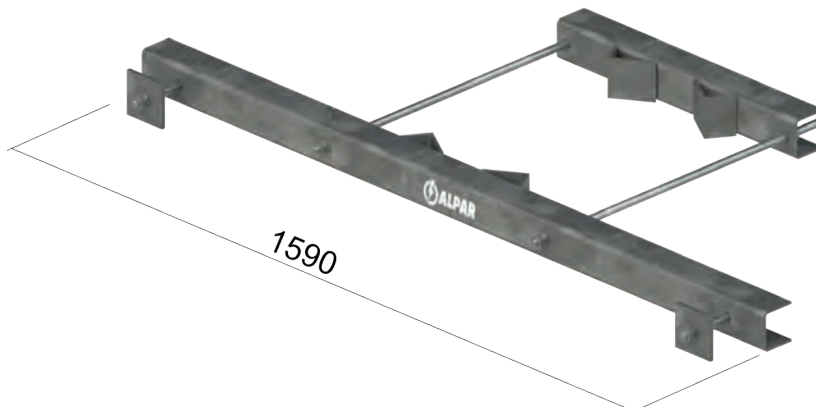
Ou-1



Eu-2p



Es-2a



SFP-111

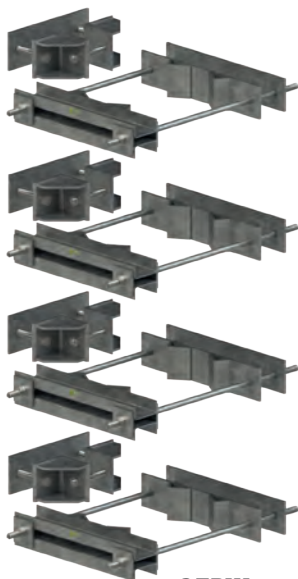
Example of using the SFP111+SP11 foundation



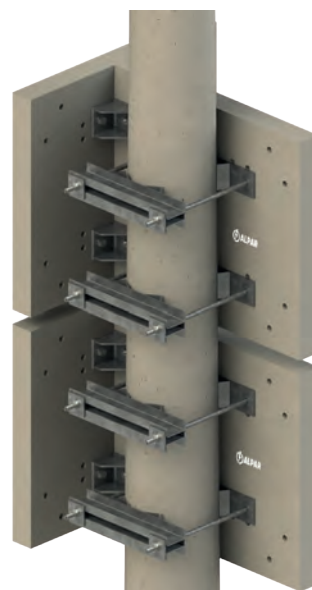
SP11 foundation



SFP111 foundation



SFP111 screwed connection

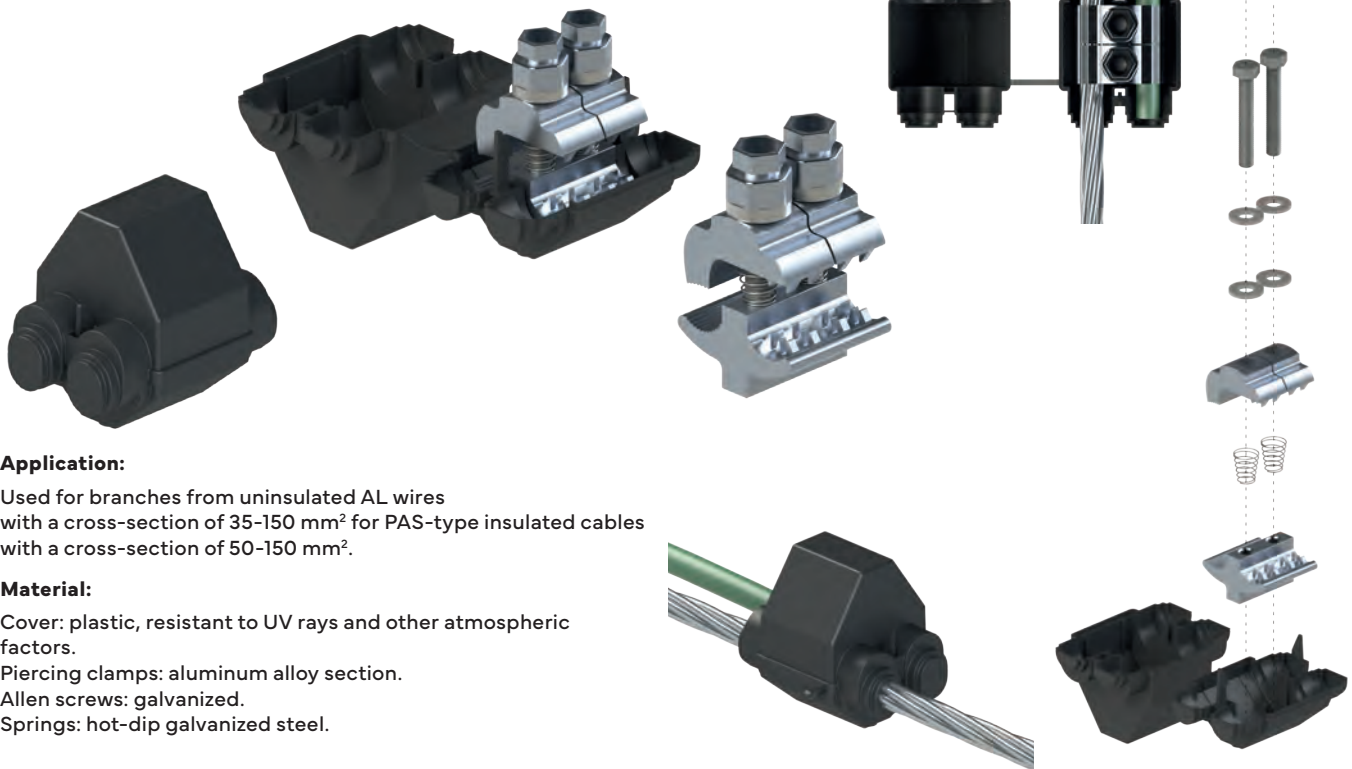


SFP111+SP11 foundation

Foundation weight [kg]				1064	1324	1584	440	570	700	880	1140	1400
6	Screwed connection to SP11, 22, 33		80	-			-			1 set		
	Screwed connection to SP1, 2, 3		40	-			1 set			-		
5	Screwed connection to SFP ____		153	1 set			-			-		
	Screwed connection to SFP /623		178									
4	Footing plate for weak soil	U-85	77	1	1	1	-	-	-	-	-	-
	Footing plate for medium soil	0,3x0,3	10	1	1	1	-	-	-	-	-	-
3	Foundation slab	PS-200	660	-	-	2	-	-	1	-	-	2
2		PS-160	530	-	2	-	-	1	-	-	2	-
1		PS-120	400	2	-	-	1	-	-	2	-	-
Lp	Specification		Unit weight [kg]	Quantity [pcs]								
				SFP111	SFP122	SFP133	SP1	SP2	SP3	SP11	SP22	SP33
				Foundation type								

CHAPTER 3

Accessories for overhead lines with partial insulation in the PAS system

ZPJ 150*Single-sided piercing clamp 50-150***Application:**

Used for branches from uninsulated AL wires with a cross-section of 35-150 mm² for PAS-type insulated cables with a cross-section of 50-150 mm².

Material:

Cover: plastic, resistant to UV rays and other atmospheric factors.

Piercing clamps: aluminum alloy section.

Allen screws: galvanized.

Springs: hot-dip galvanized steel.

ZPD 150*Double-sided piercing clamp 50-150 ZPD 150***Application:**

Used for branches from insulated PAS cables.

Material:

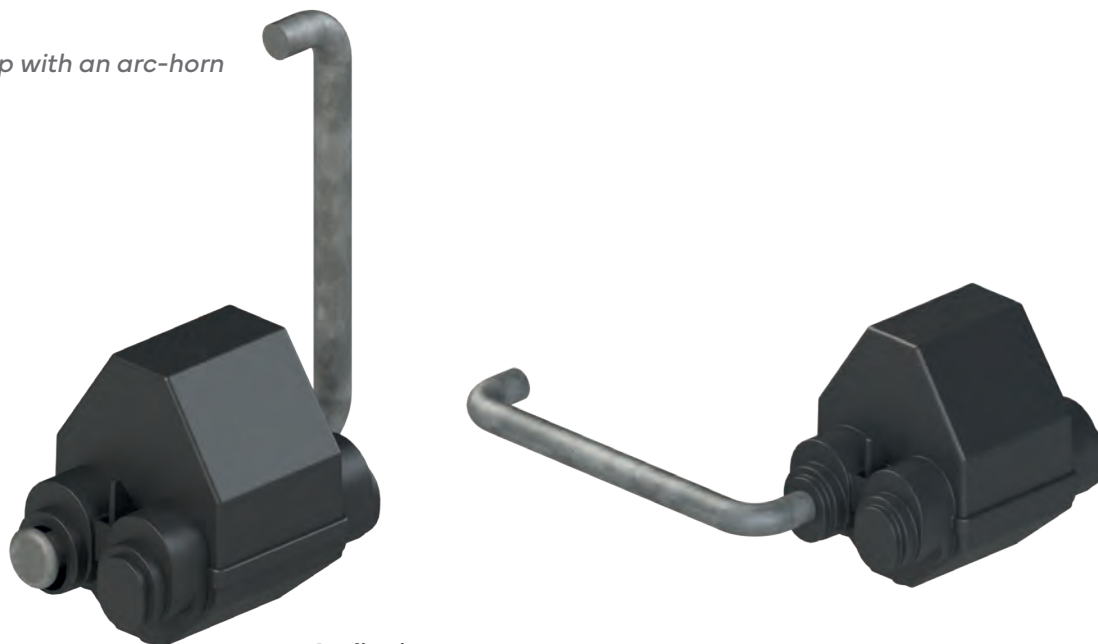
Cover: plastic, resistant to UV rays and other atmospheric factors.

Piercing clamps: aluminum alloy section.

Allen screws: galvanized.

Springs: hot-dip galvanized steel.

ZRU 150
Piercing clamp with an arc-horn



Application:

A set dedicated for building grounding points on a pole, adapted for installation in vertical insulated bridges in functional poles.

Material:

Cover: plastic, resistant to UV rays and other atmospheric factors.

Piercing clamps: aluminium alloy section.

Bolts with a nut with a shear head.

Springs: hot-dip galvanized steel.

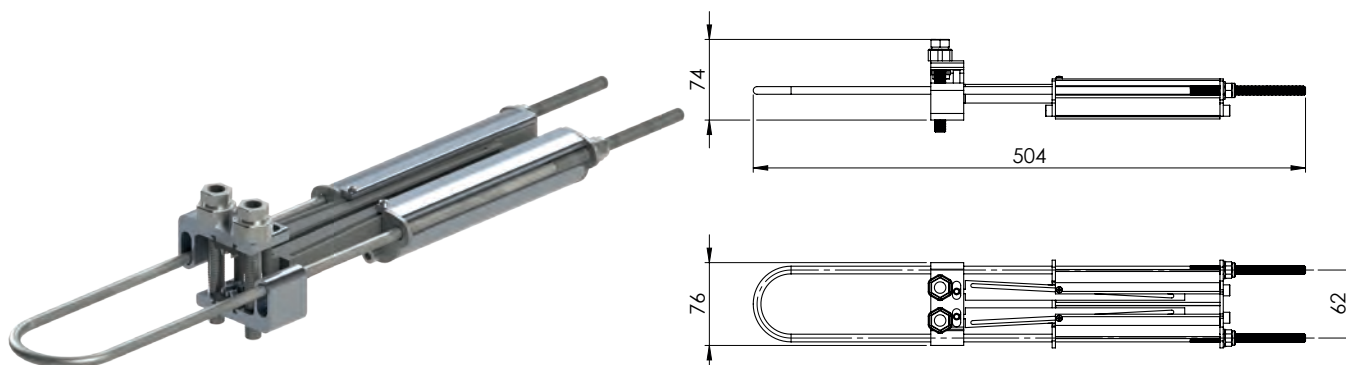
UOP 01
Arc Protection System for PAS line tension insulators



Application:

The UOP 01 arc protection system for PAS lines is designed for installation on tension insulators at dead-end (terminal) poles equipped with UO 70 tension clamps.

UO 70
Tension clamp



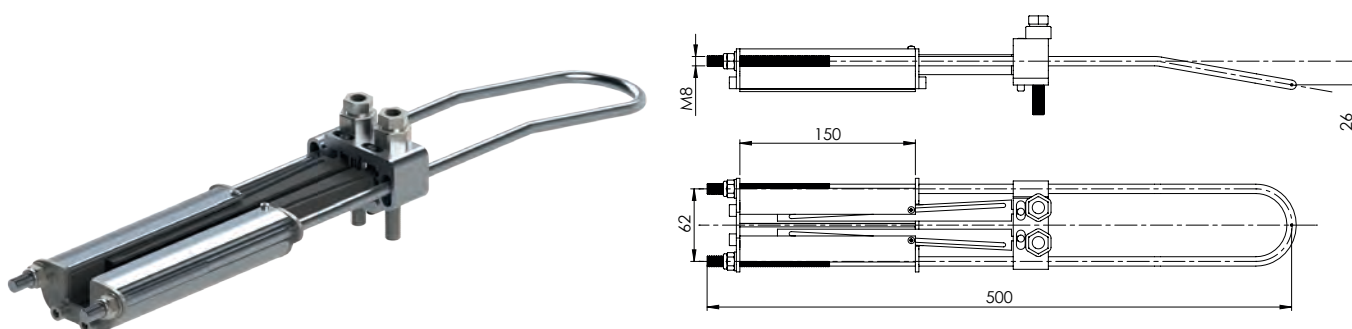
Application:

A clamp used for PAS cables to end guy poles. They are used to secure these cables to poles using standard hooks.

Technical parameters:

- cable cross-section from 50 to 95 mm²
- allowable load: 24Nm
- tightening torque: 25Nm

UO 70.1
Extraction holder

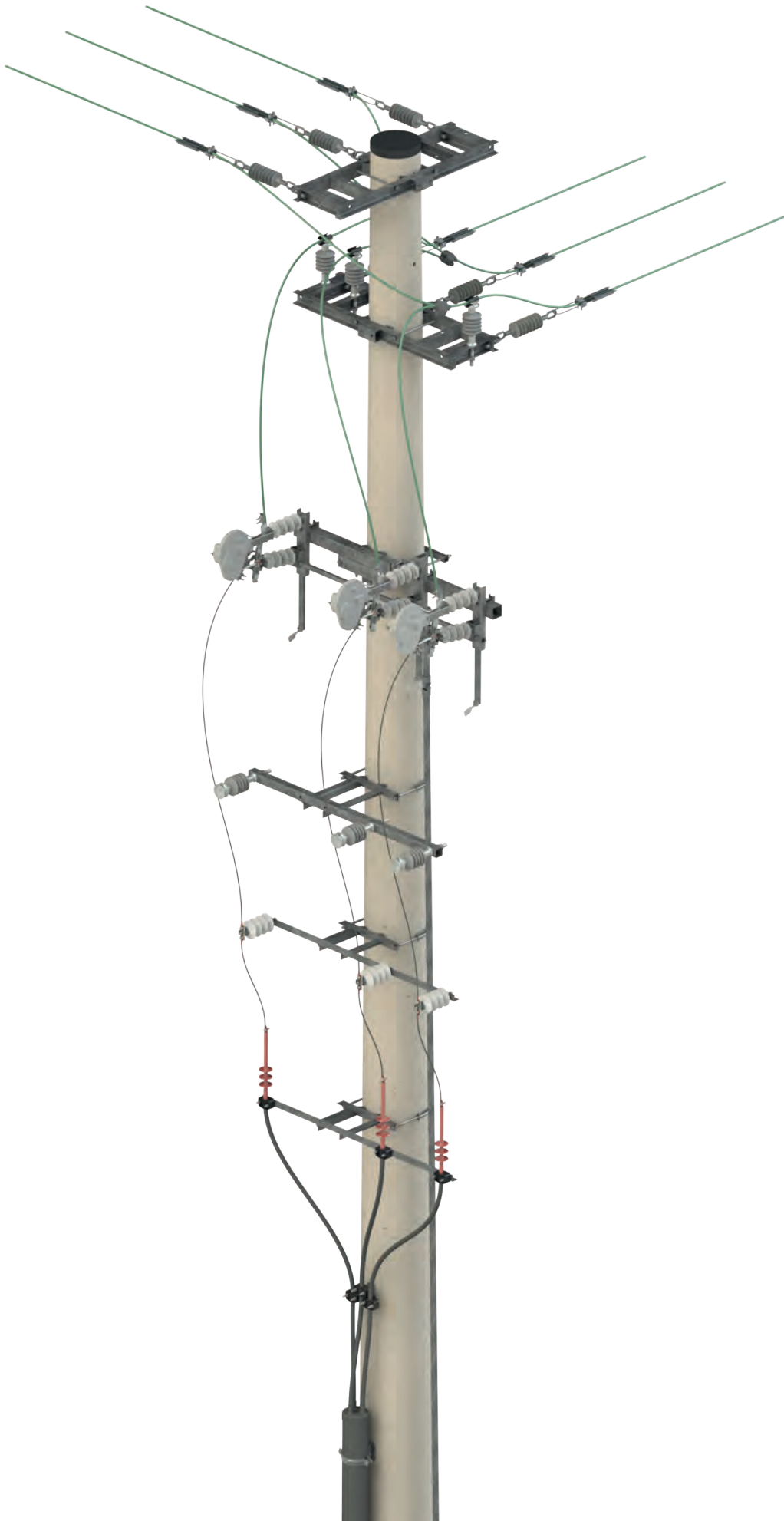


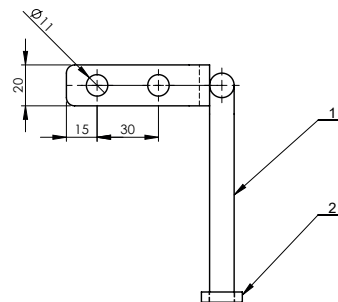
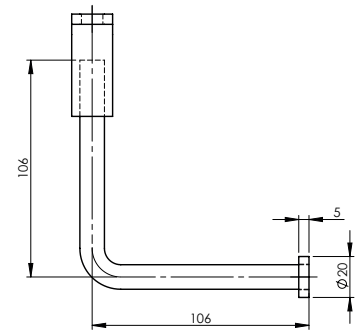
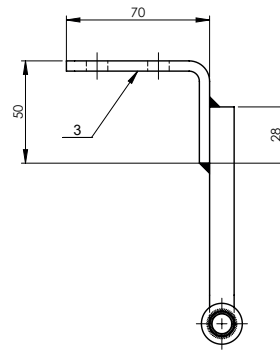
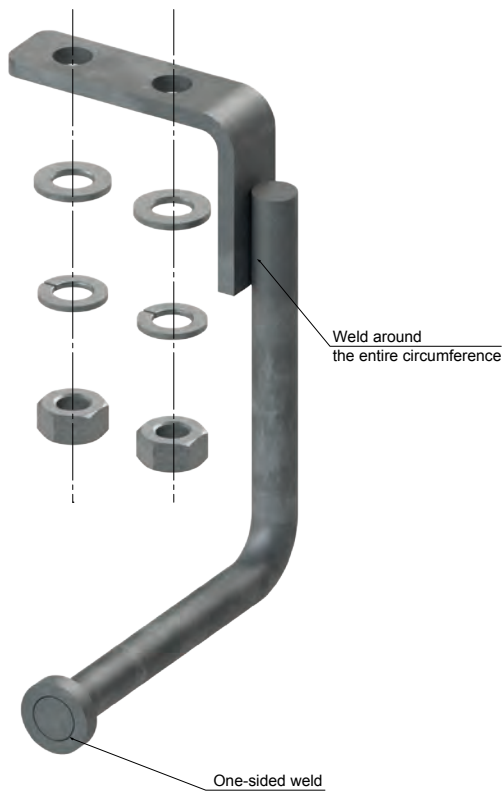
Application:

A guy holder is used in overhead non-insulated MV lines when installing a cut-off switch. This holder allows you to mount the disconnector on the line cable without having to take over the line tension at the cutting point using additional tools.

Technical parameters:

- cable cross-section: 35-120mm²
- allowable load: 20kN
- tightening torque: 25Nm

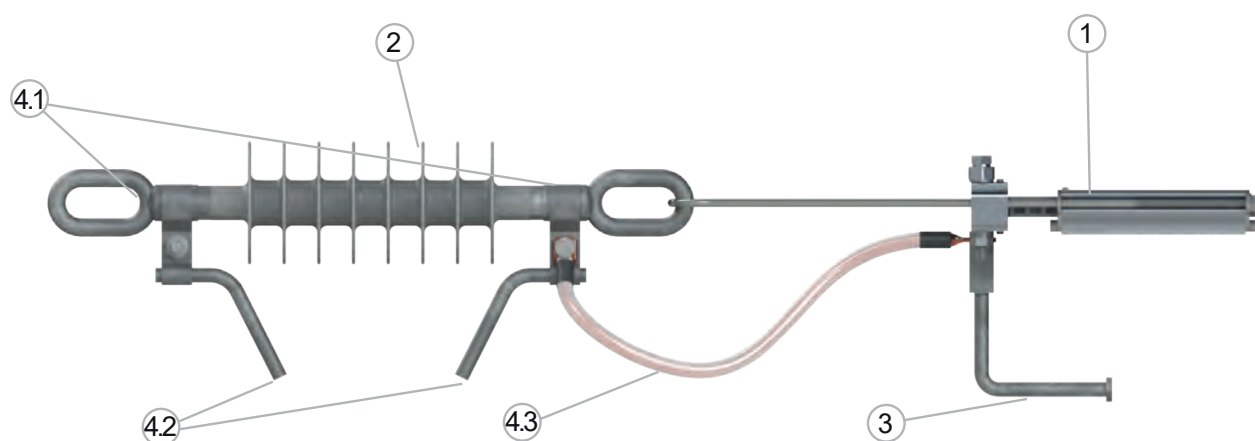


*RU/UO**An arc-horn for portable earthing devices***Application:**

Grounding set for UO 70 series extraction holders enabling easy installation of portable earthing devices at tension and end stations.

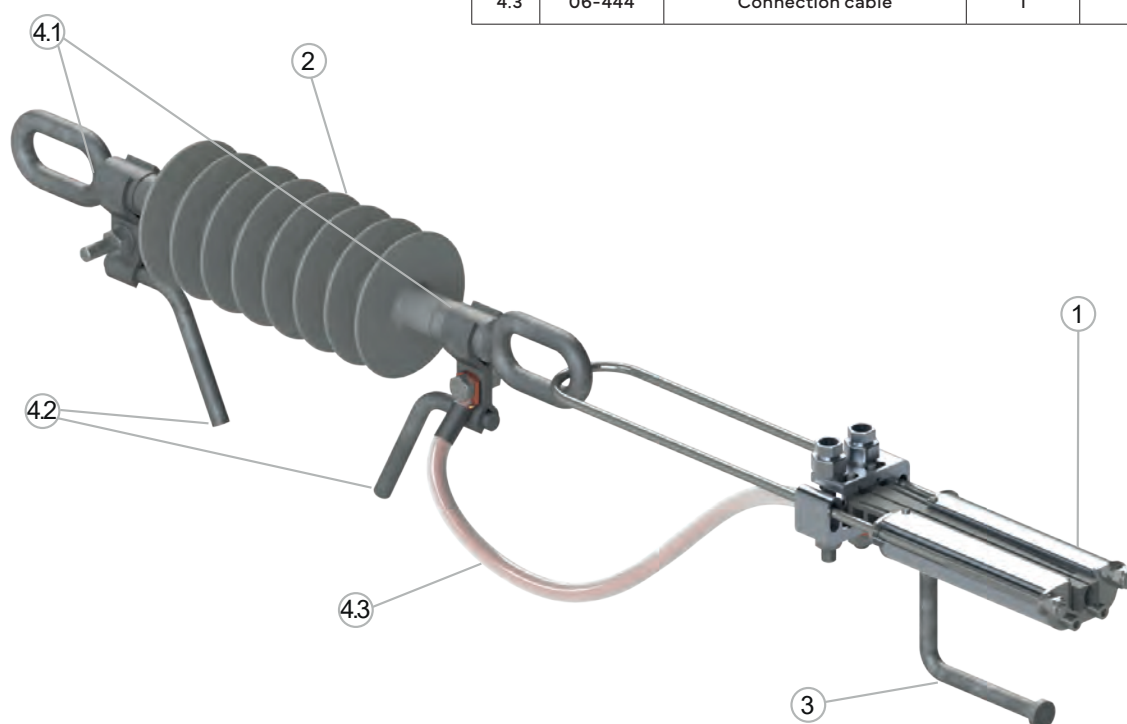
RU*GR**GUR*

UO 70 with horns and tension insulator



List of components for installing a chain of EO insulators into the UOP 01 arc protection system and a horn for installing RU/UO portable earthing devices

No.	Index	Name	Quan.	Unit weight [kg]
1	UO 70	Tension clamp	1	1,2
2	CS70	Tension insulator	1	1,4
3	RU/UO	Arcing horn for portable earthing devices	1	0,28
4	UOP 01	Anti-arc protection	1	1,1
4.1	GRU	Horn holder	2	1,1
4.2	GR	Horn handle	2	1,1
4.3	06-444	Connection cable	1	1,1

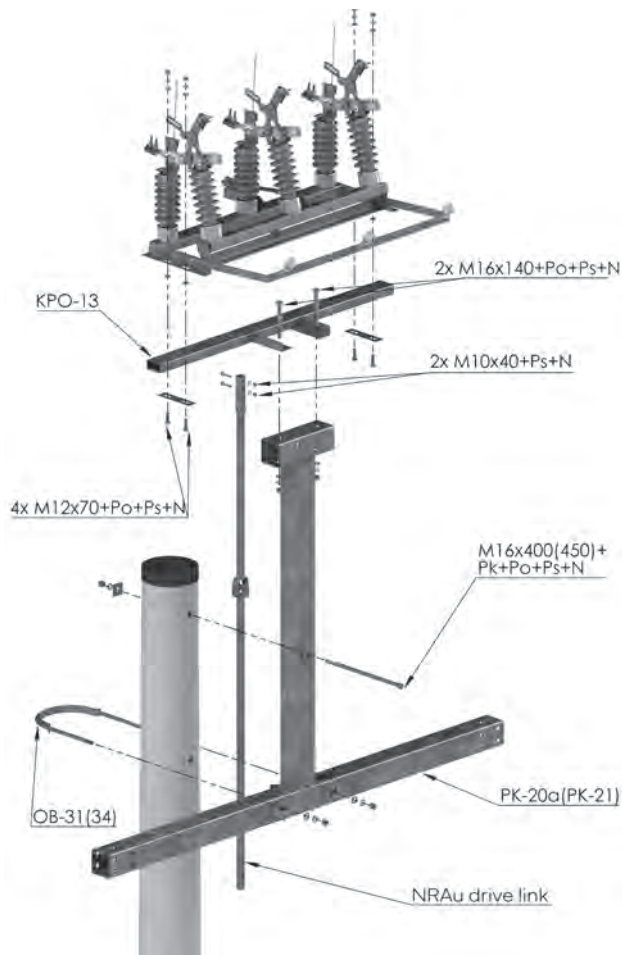


CHAPTER 4

Fixing: overhead connectors in medium voltage lines

1. FIXING: HORIZONTAL FRAME CONNECTOR TO THE CROSS BAR PK-20A (PK-21) AND STRUCTURE KPO-13

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Descriptions in brackets refer to spun pole with a top diameter of $dw=263$

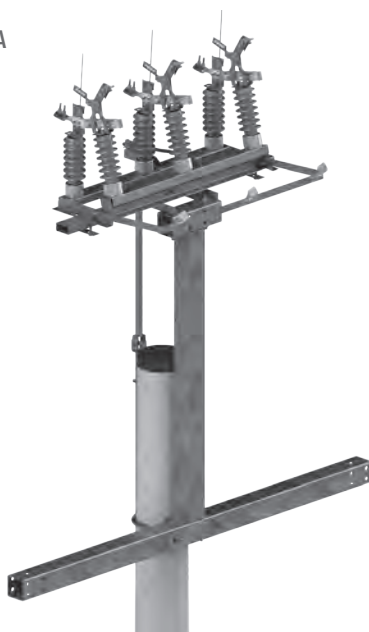
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

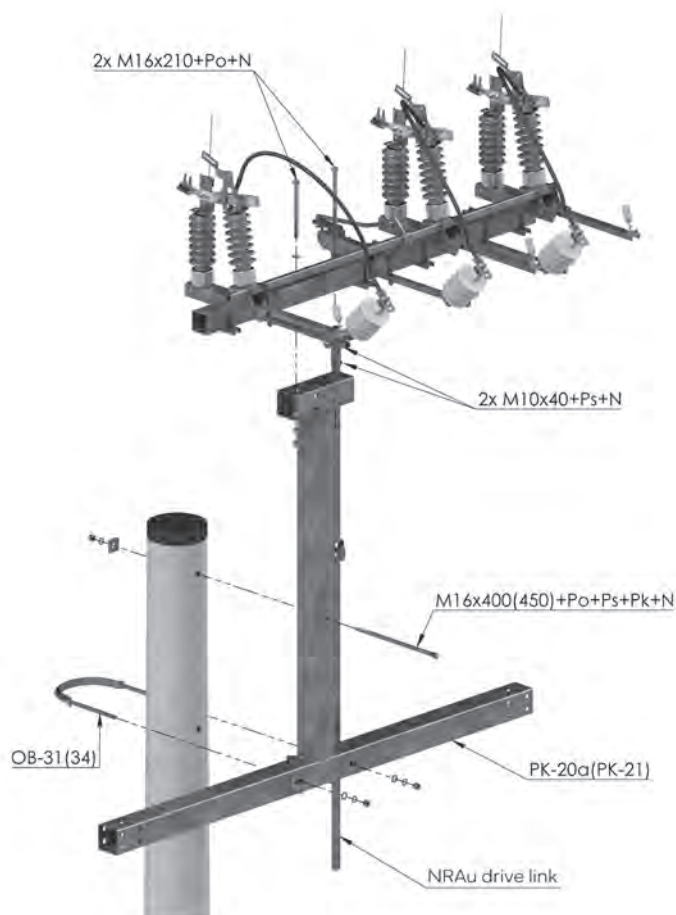


VIEW B



2. FIXING: MODULAR HORIZONTAL CONNECTOR FOR CROSS BAR PK-20a (PK-21)

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

Descriptions in brackets refer to spun pole with a top diameter of $d_w=263$

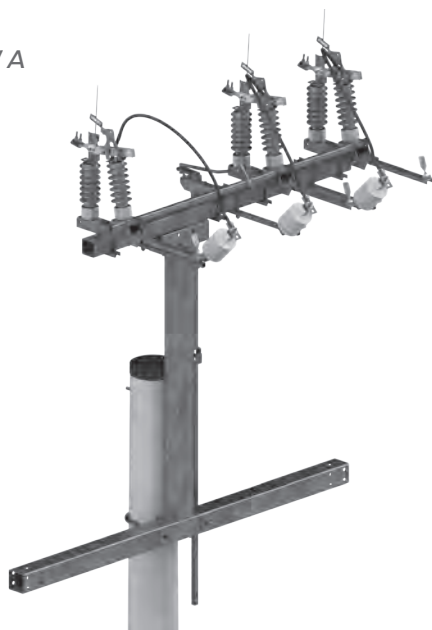
Ps – spring washer

Po – round washer

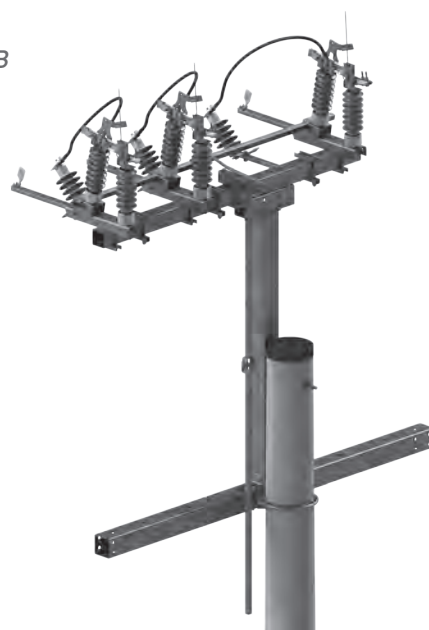
Pk – square washer

N – nut

VIEW A

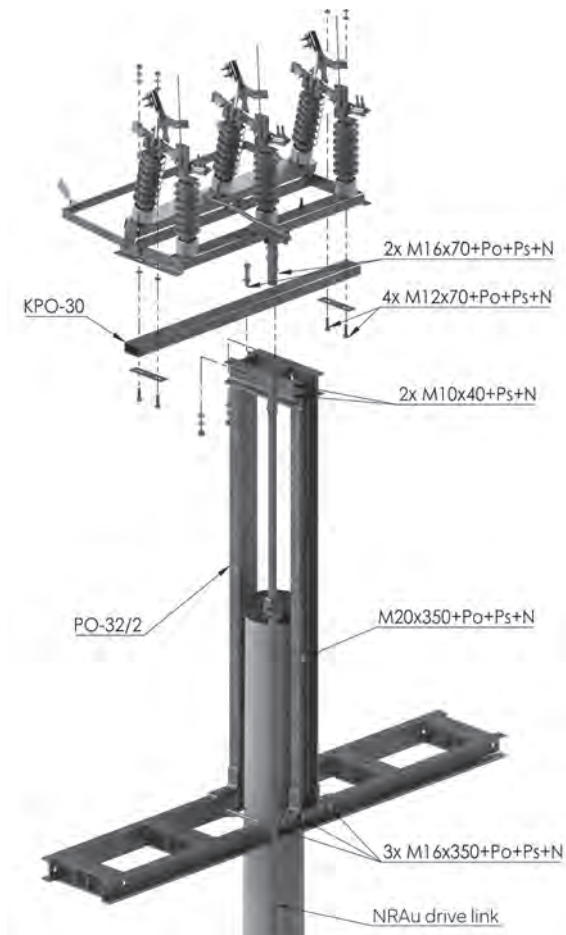


VIEW B



3. FIXING: HORIZONTAL FRAME CONNECTOR TO THE PO-32/2 CROSSBAR AND THE KPO-30 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter $d_w=263$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

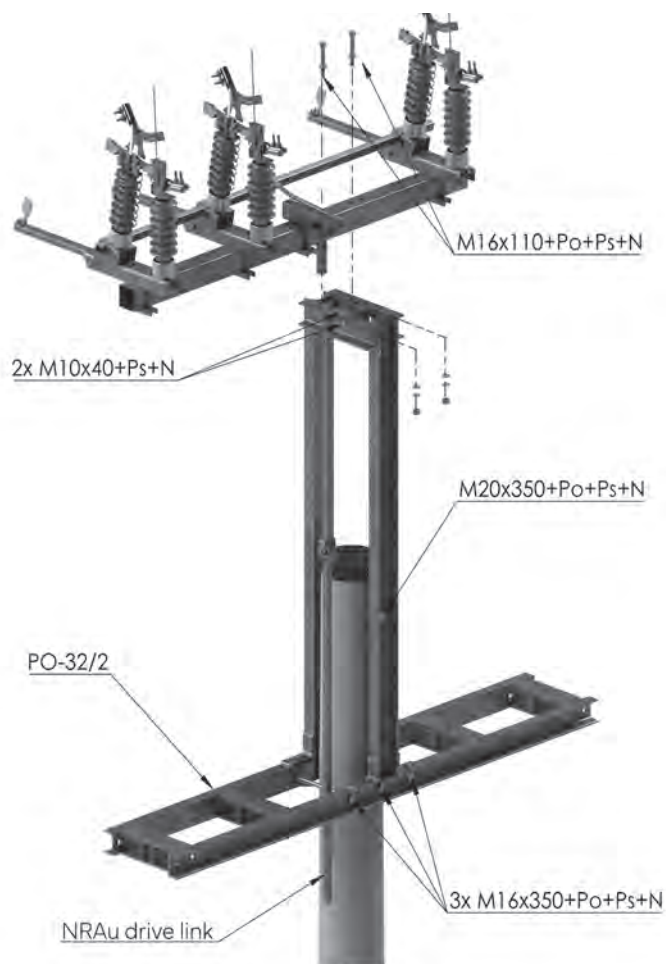


VIEW B



4. FIXING: HORIZONTAL MODULAR CONNECTOR TO THE PO-32/2 CROSSBAR

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=263$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

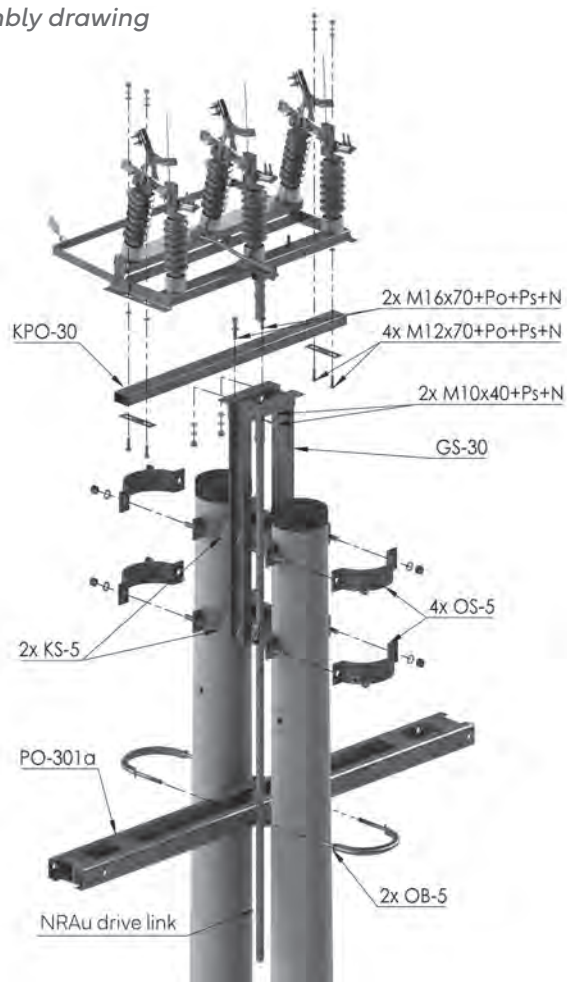


VIEW B



5. FIXING: HORIZONTAL FRAME CONNECTOR FOR THE GS-30 POLE HEAD AND THE KPO-30 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $\varnothing=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

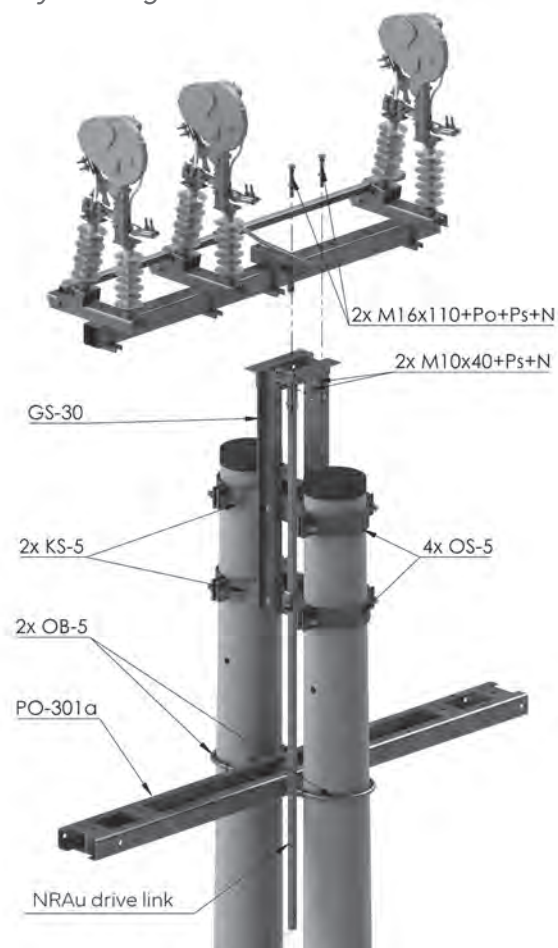


VIEW B



6. FIXING: HORIZONTAL MODULAR CONNECTOR TO THE GS-30 POLE HEAD

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

Ps – spring washer

Po – round washer

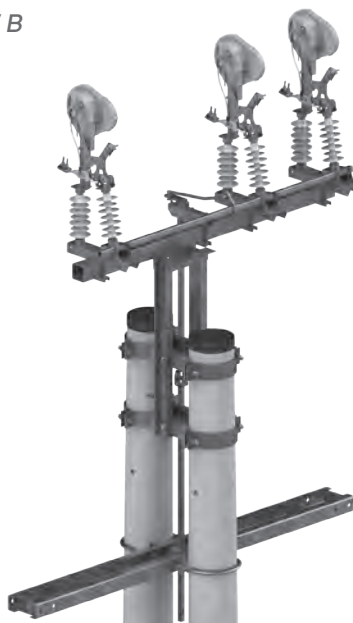
Pk – square washer

N – nut

VIEW A

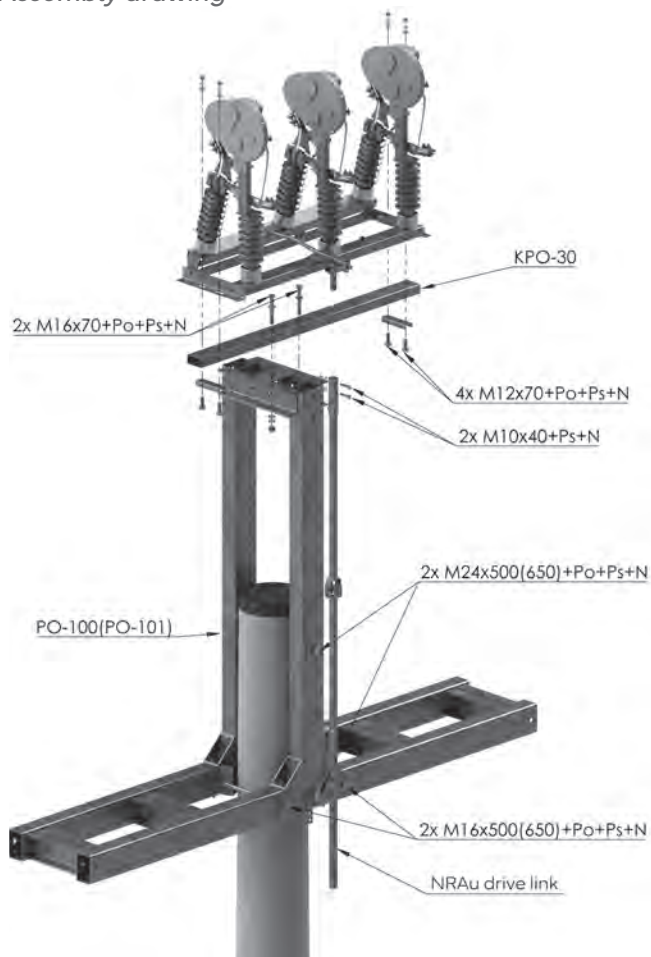


VIEW B



7. FIXING: HORIZONTAL FRAME CONNECTOR TO THE PO-100 CROSS BAR (PO-101) AND THE KPO-30 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=263$

Descriptions in brackets refer to spun pole with a top diameter of $dw=420$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

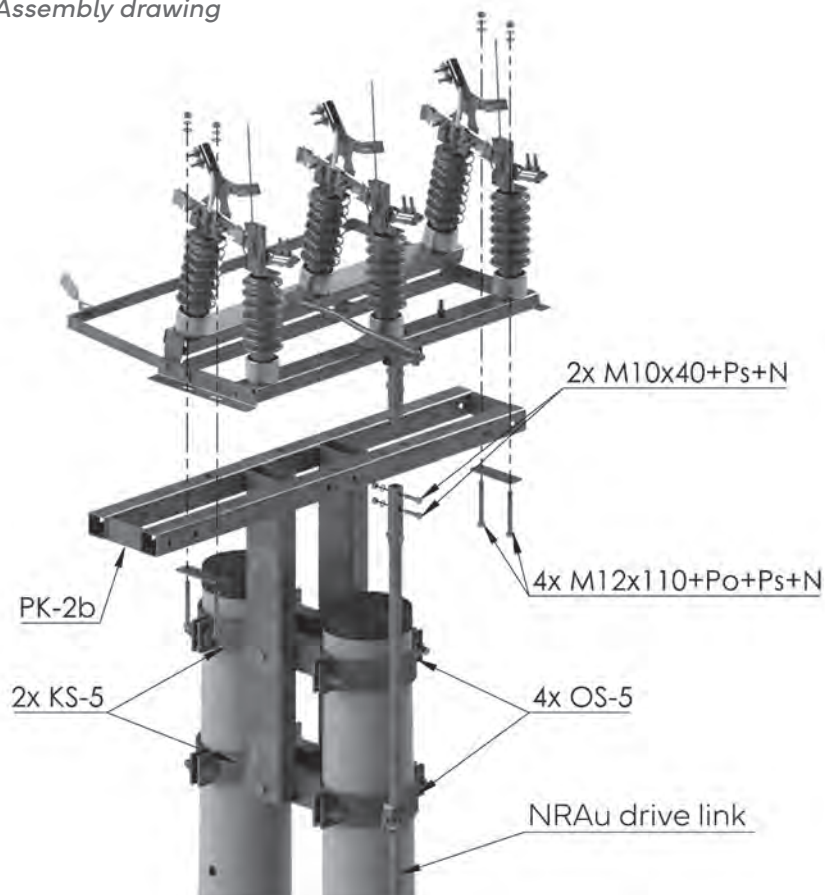


VIEW B



8. FIXING: HORIZONTAL FRAME CONNECTOR TO THE PK-2B CROSSBAR

Assembly drawing



The descriptions apply to spun pole
with a top diameter of $d_w=218$

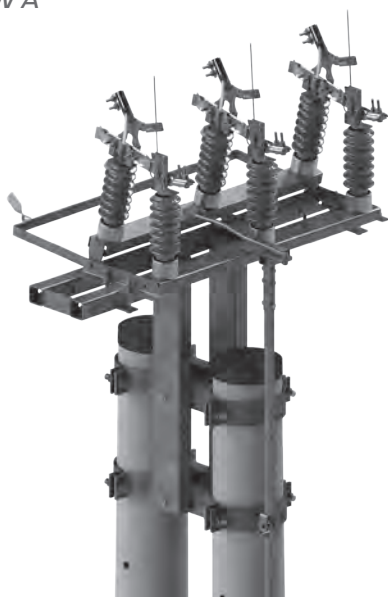
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

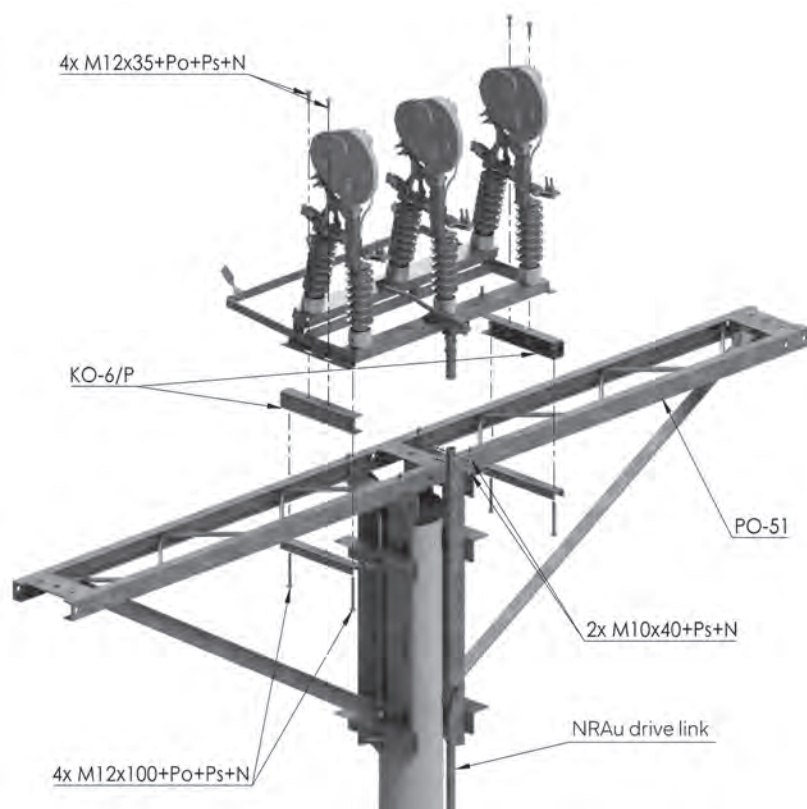


VIEW B



9. FIXING: HORIZONTAL FRAME CONNECTOR TO THE PO-51 CROSSBAR AND THE KO-6/P CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=263$

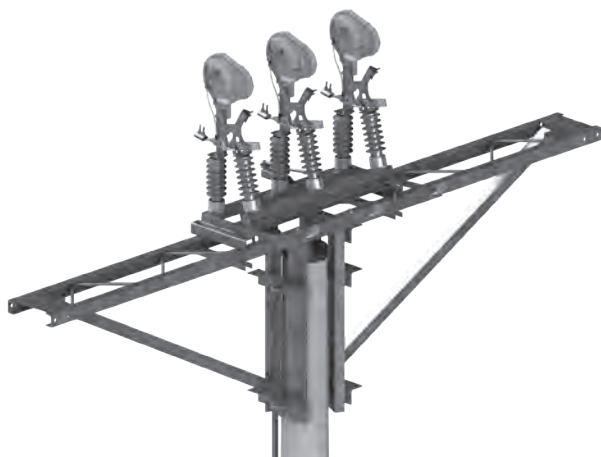
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

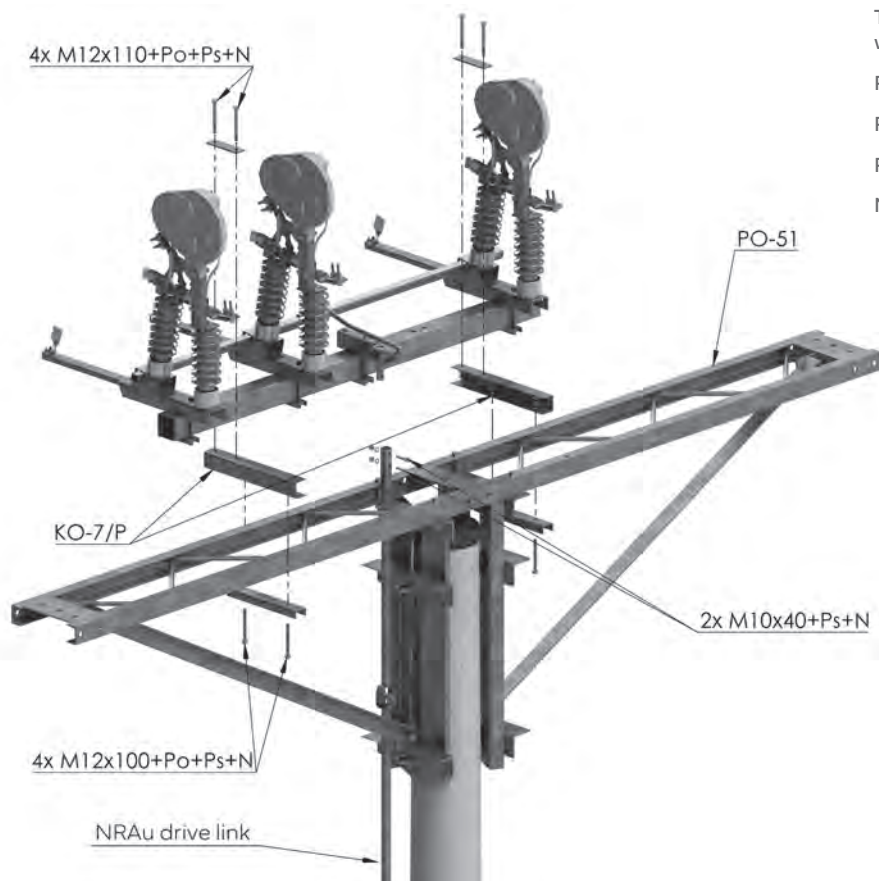


VIEW B



10. FIXING: MODULAR HORIZONTAL CONNECTOR FOR PO-51 CROSSBAR AND KO-7/P CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=263$

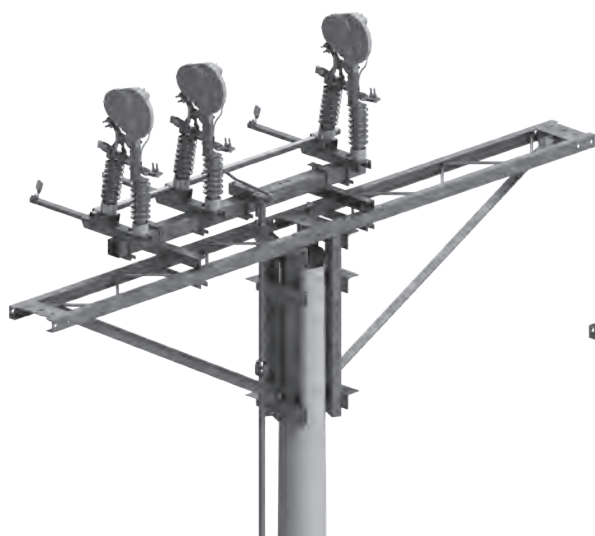
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

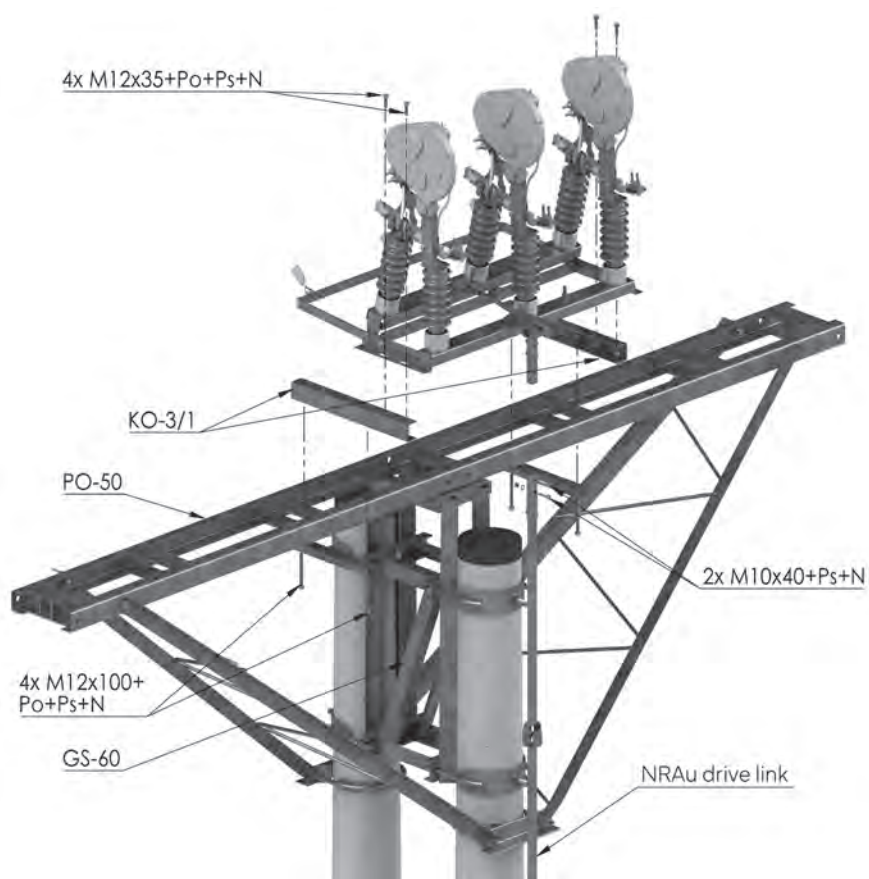


VIEW B



11. FIXING: HORIZONTAL FRAME CONNECTOR TO THE PO-50 CROSSBAR AND THE KO-3/1 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

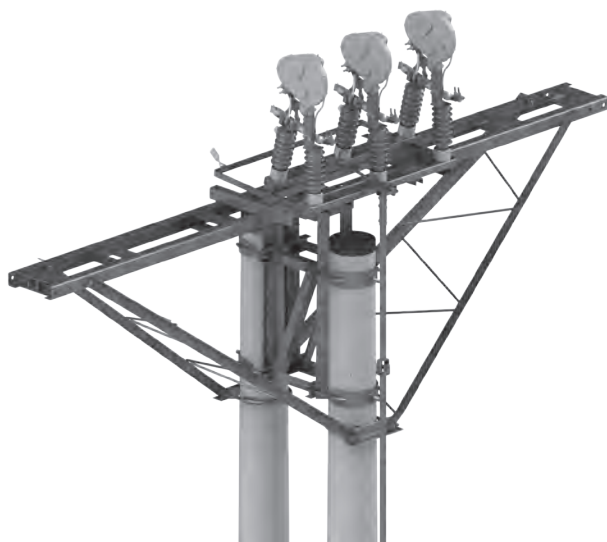
Ps – spring washer

Po – round washer

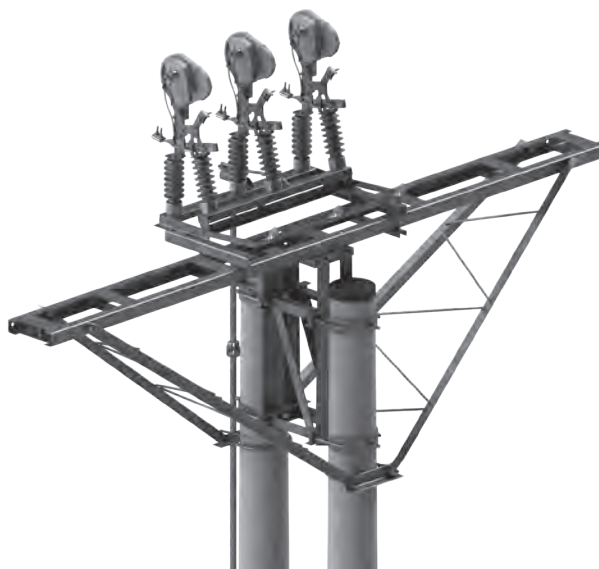
Pk – square washer

N – nut

VIEW A

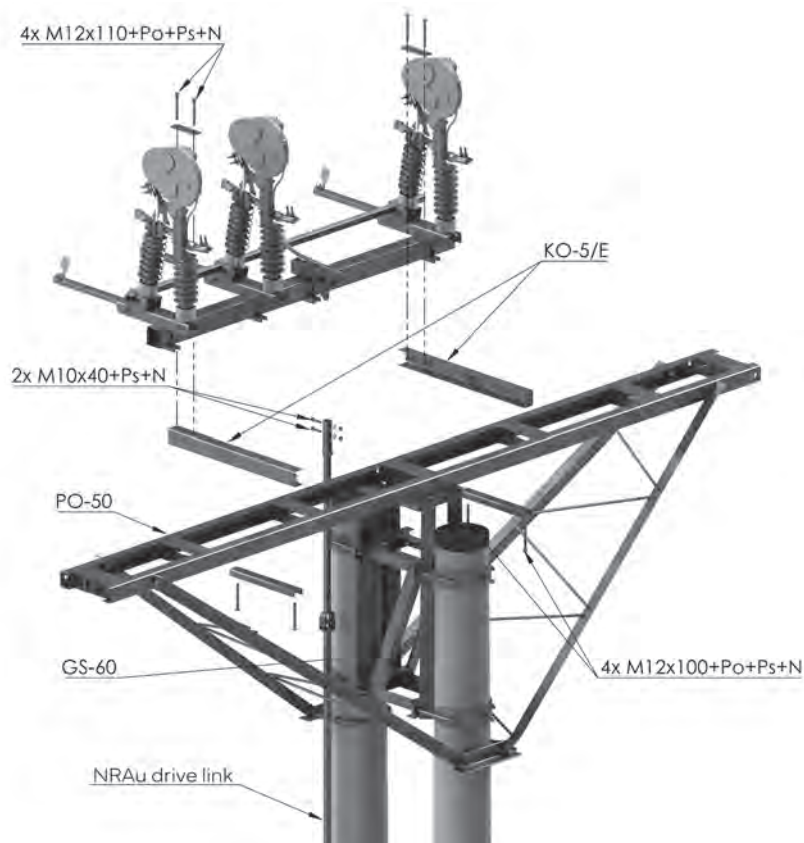


VIEW B



12. FIXING: MODULAR HORIZONTAL CONNECTOR FOR PO-50 CROSSBAR AND KO-5/E CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

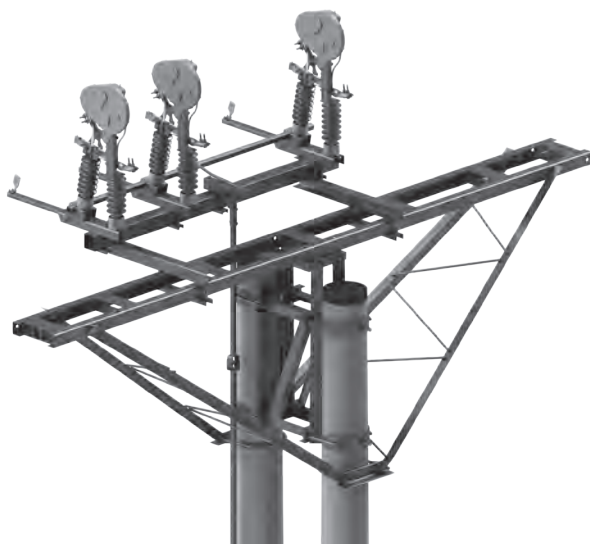
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

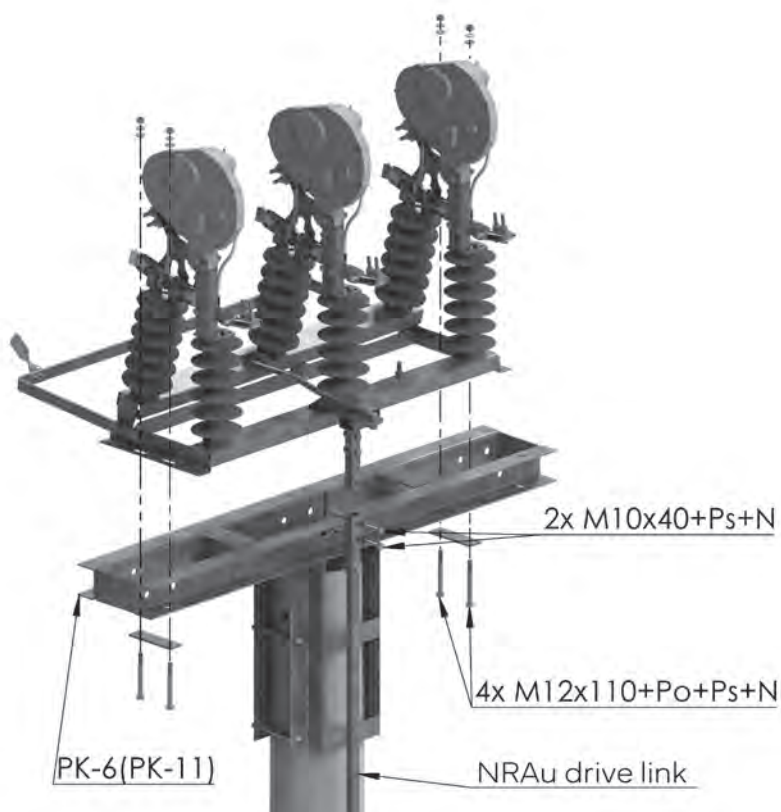


VIEW B



13. FIXING: HORIZONTAL FRAME CONNECTOR TO CROSSBAR PK-6 (PK-11)

Assembly drawing



The descriptions apply to spun pole with a top diameter of dw=218

Descriptions in brackets refer to spun pole with a top diameter of dw=263

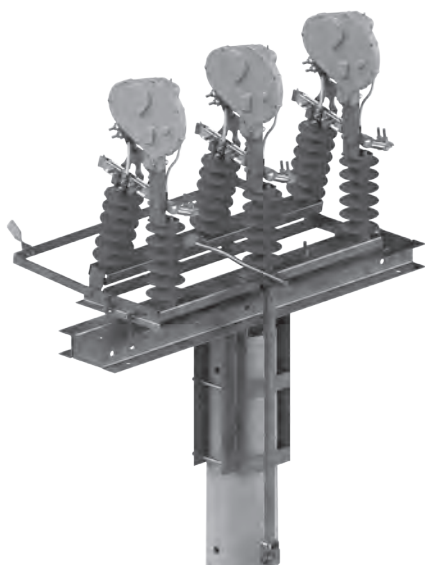
Ps – spring washer

Po – round washer

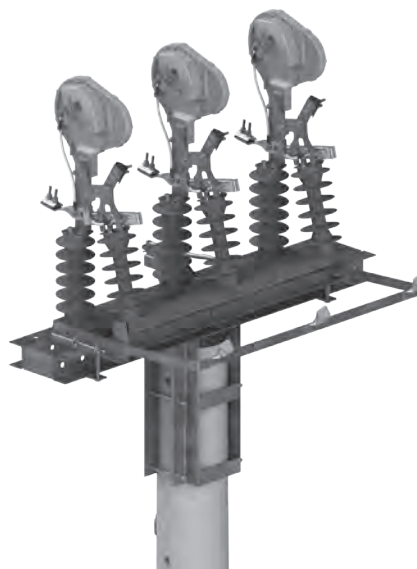
Pk – square washer

N – nut

VIEW A

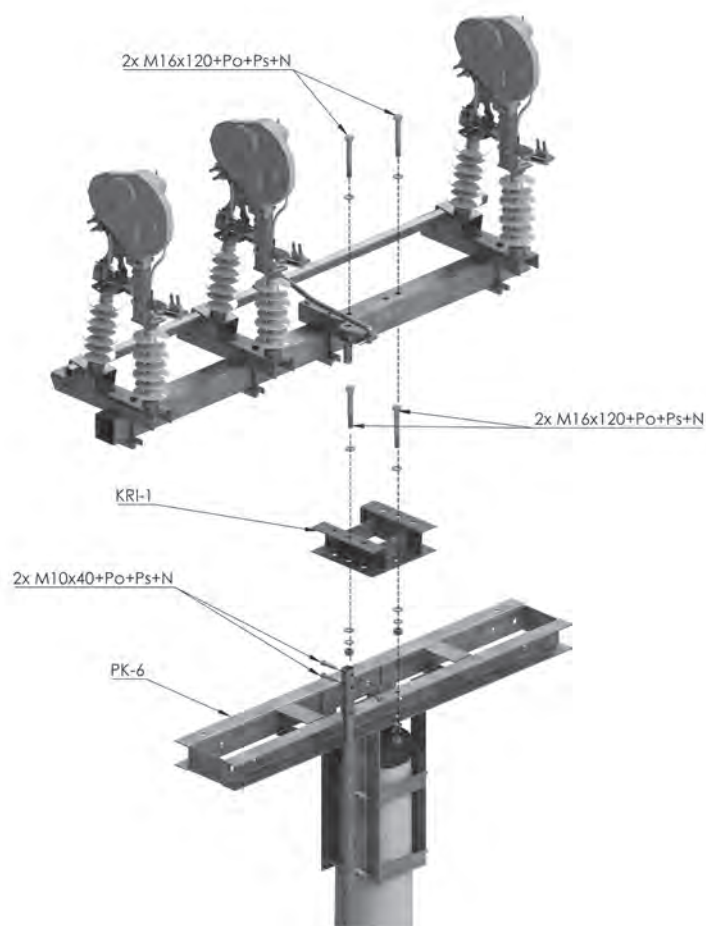


VIEW B



14. FIXING: MODULAR HORIZONTAL CONNECTOR FOR THE CROSS BAR PK-6 (PK-11)

Assembly drawing



The descriptions apply to spun pole
with a top diameter of $d_w=218$

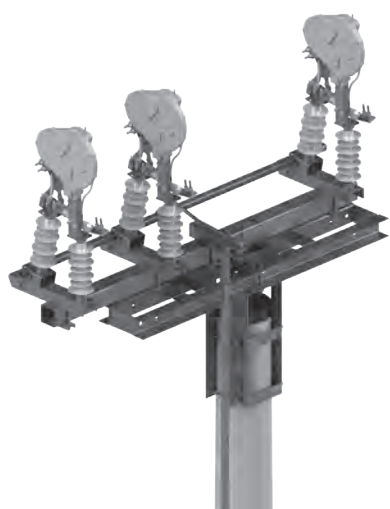
Ps – spring washer

Po – round washer

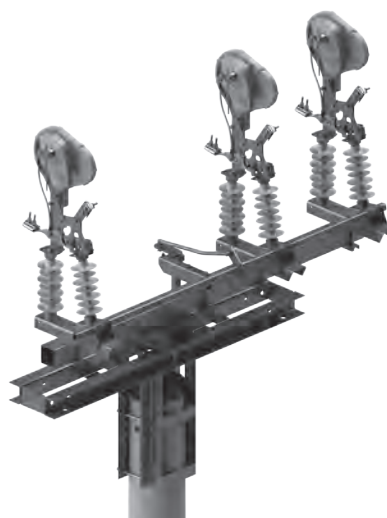
Pk – square washer

N – nut

VIEW A

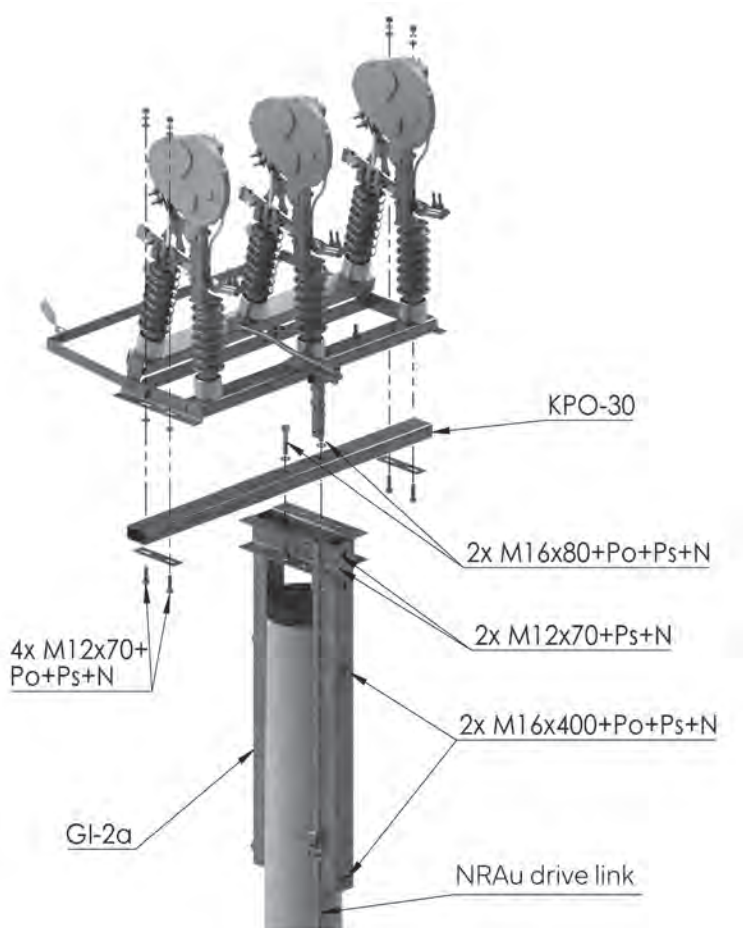


VIEW B



15. FIXING: HORIZONTAL FRAME CONNECTOR TO THE HEAD OF THE GI-2A POLE AND THE KPO-30 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

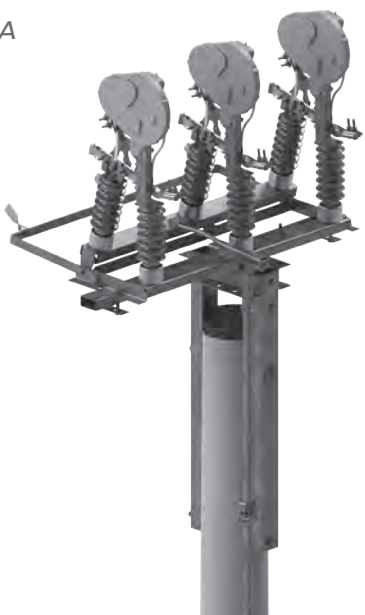
Ps – spring washer

Po – round washer

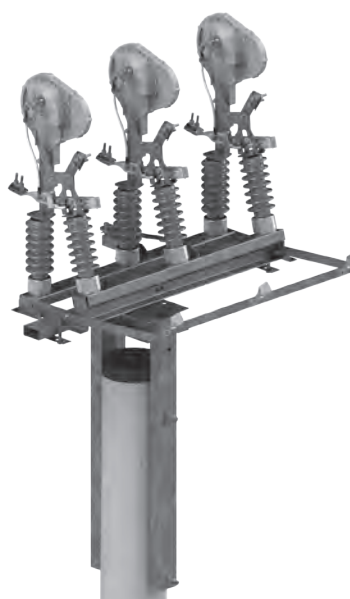
Pk – square washer

N – nut

VIEW A

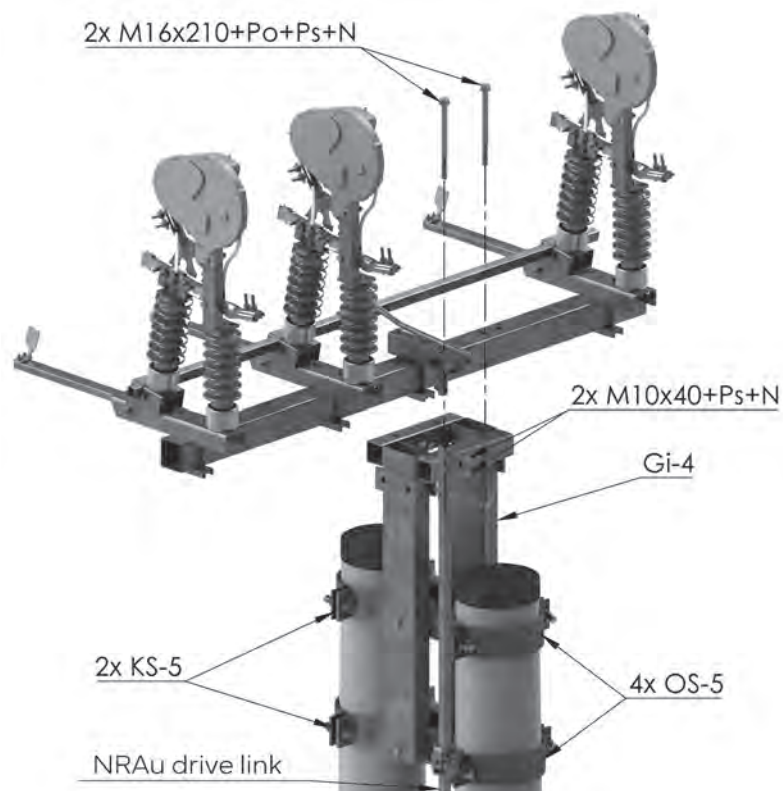


VIEW B



16. FIXING: HORIZONTAL MODULAR CONNECTOR TO THE GI-4 POLE HEAD

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

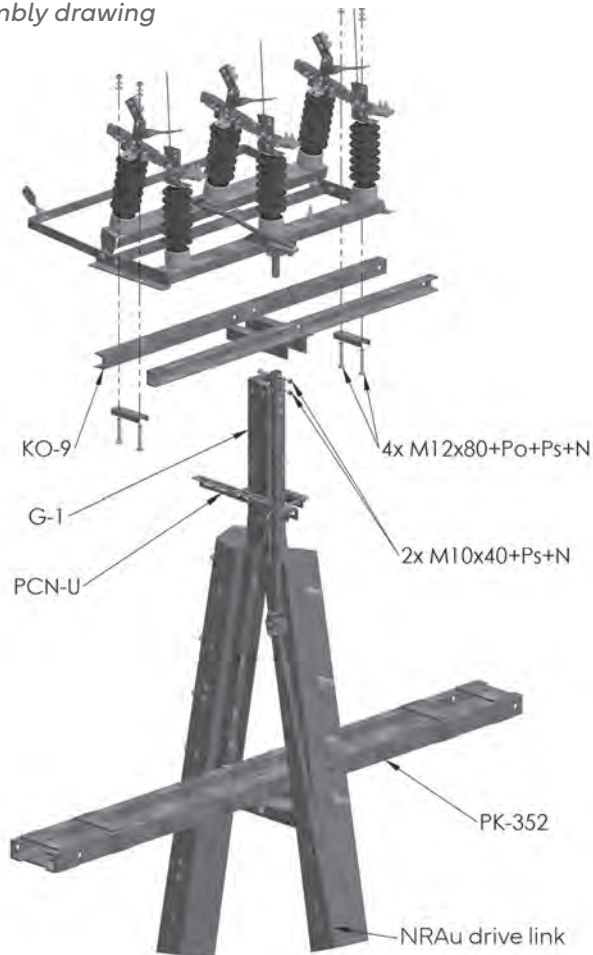


VIEW B



17. FIXING: HORIZONTAL FRAME CONNECTOR TO THE A-SHAPE CONCRETE POLE ON THE G-1 HEAD AND KO-9 CONSTRUCTION

Assembly drawing



Ps - spring washer

Po - round washer

Pk - square washer

N - nut

VIEW A

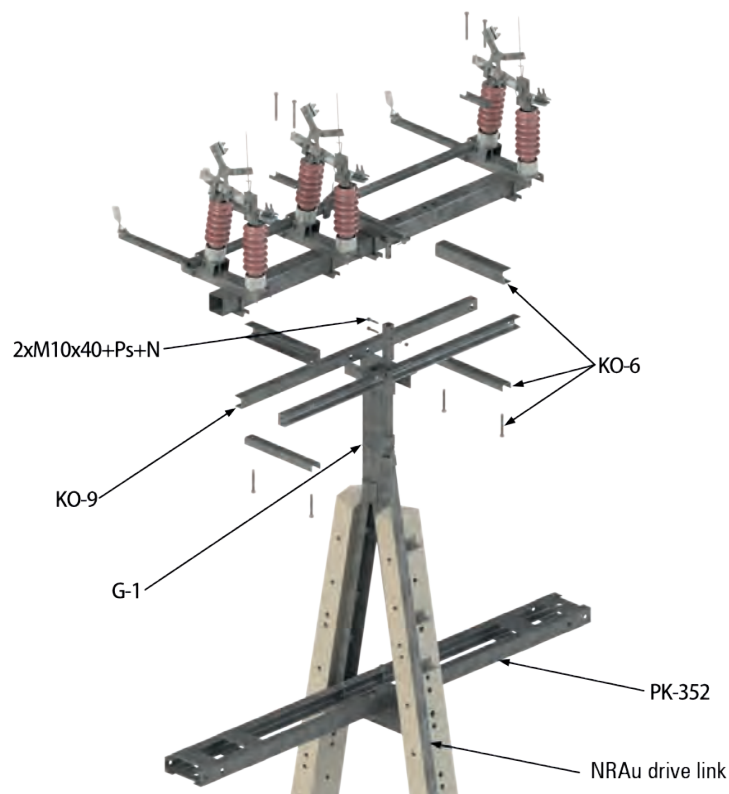


VIEW B



18. FIXING: MODULAR HORIZONTAL CONNECTOR TO THE A-SHAPE CONCRETE POLE NON-POWER POLE ON THE G-1 HEAD

Assembly drawing



VIEW A

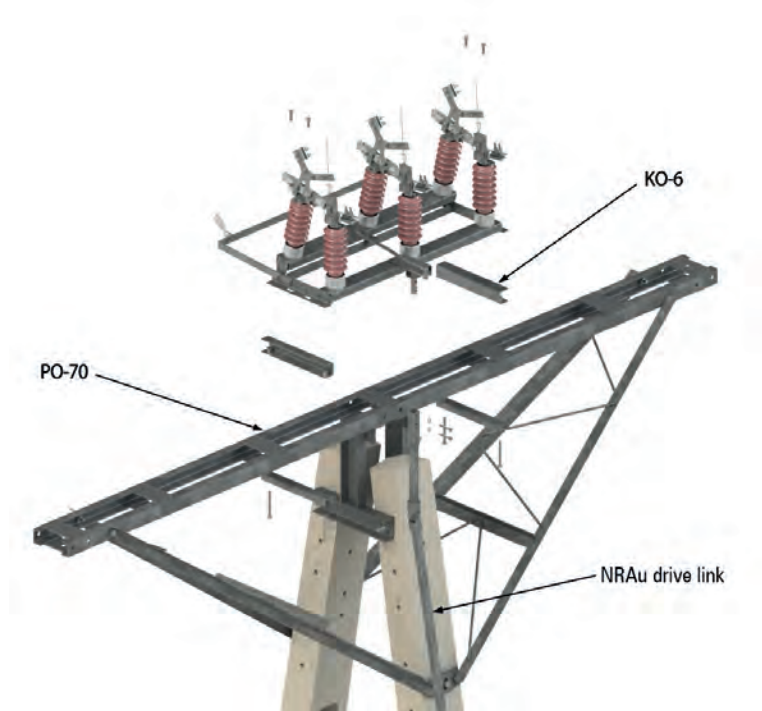


VIEW B



19. FIXING: HORIZONTAL FRAME CONNECTOR TO THE BSW A-SHAPE CONCRETE POLE ON THE PO-70 CONSTRUCTION

Assembly drawing



VIEW A

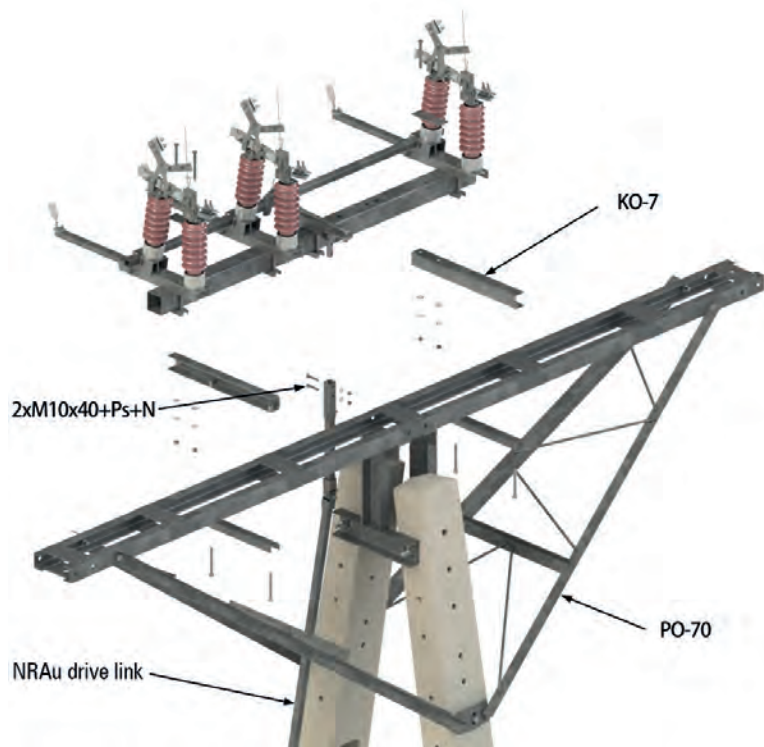


VIEW B



20. FIXING: MODULAR HORIZONTAL CONNECTOR TO THE BSW A-SHAPE CONCRETE POLE ON THE PO-70 CONSTRUCTION

Assembly drawing



VIEW A

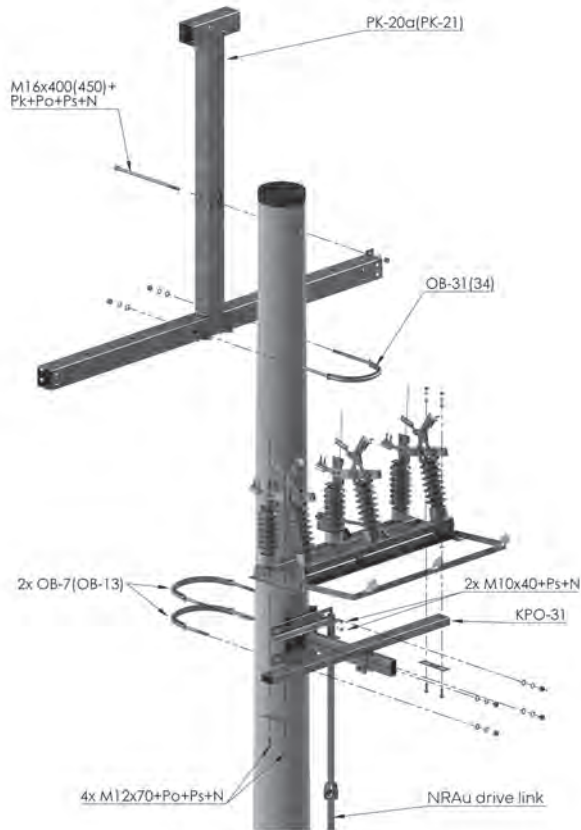


VIEW B



21. FIXING: HORIZONTAL FRAME CONNECTOR FOR THE KPO-31 CONSTRUCTION

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Descriptions in brackets refer to spun pole with a top diameter of $dw=263$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

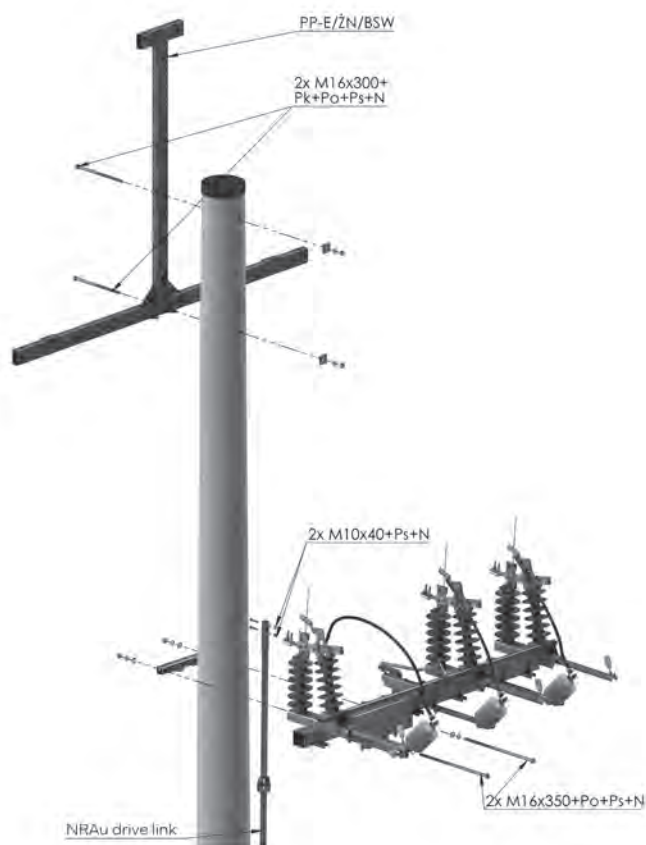


VIEW B



22. FIXING: MODULAR HORIZONTAL CONNECTOR ON THE LEG OF A SPUN CONCRETE POLE ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

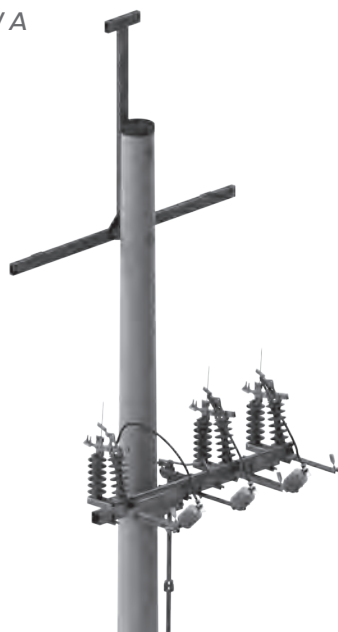
Ps – spring washer

Po – round washer

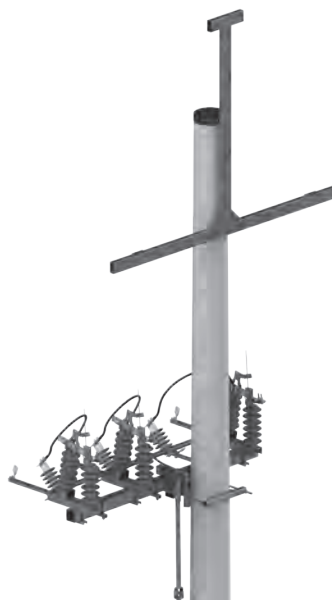
Pk – square washer

N – nut

VIEW A

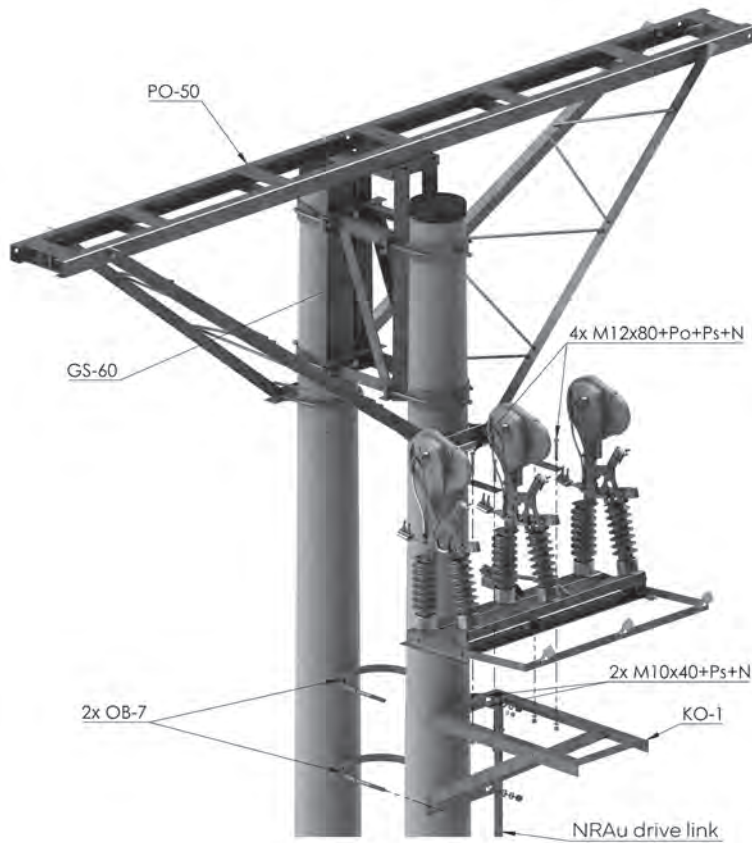


VIEW B



23. FIXING: HORIZONTAL FRAME CONNECTOR FOR THE KO-1 CONSTRUCTION ON THE LEG OF A SPUN CONCRETE POLE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

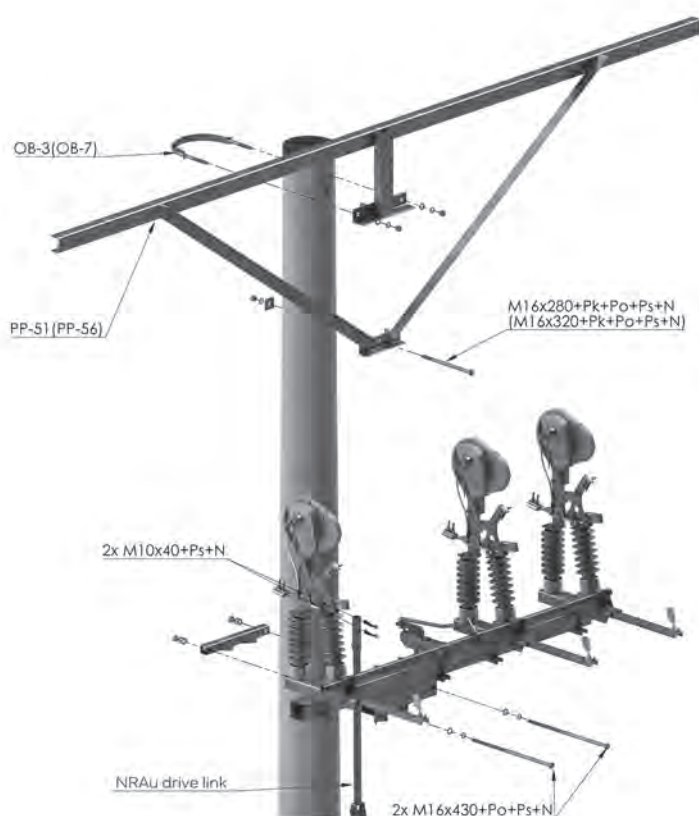


VIEW B



24. FIXING: MODULAR HORIZONTAL CONNECTOR ON THE LEG OF A SPUN CONCRETE ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Descriptions in brackets refer to spun pole with a top diameter of $dw=263$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

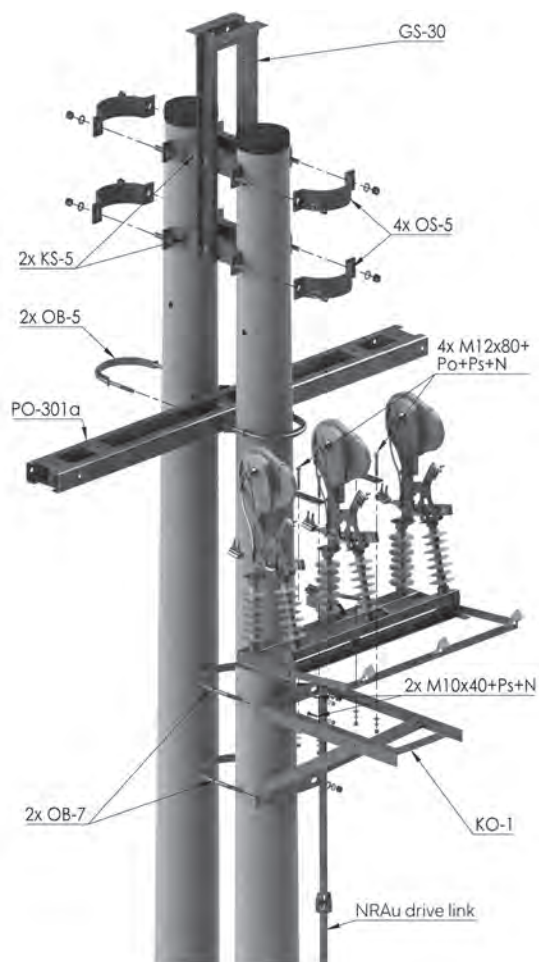


VIEW B



25. FIXING: HORIZONTAL FRAME CONNECTOR FOR THE KO-1 STRUCTURE ON THE LEG OF A SPUN CONCRETE POLE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

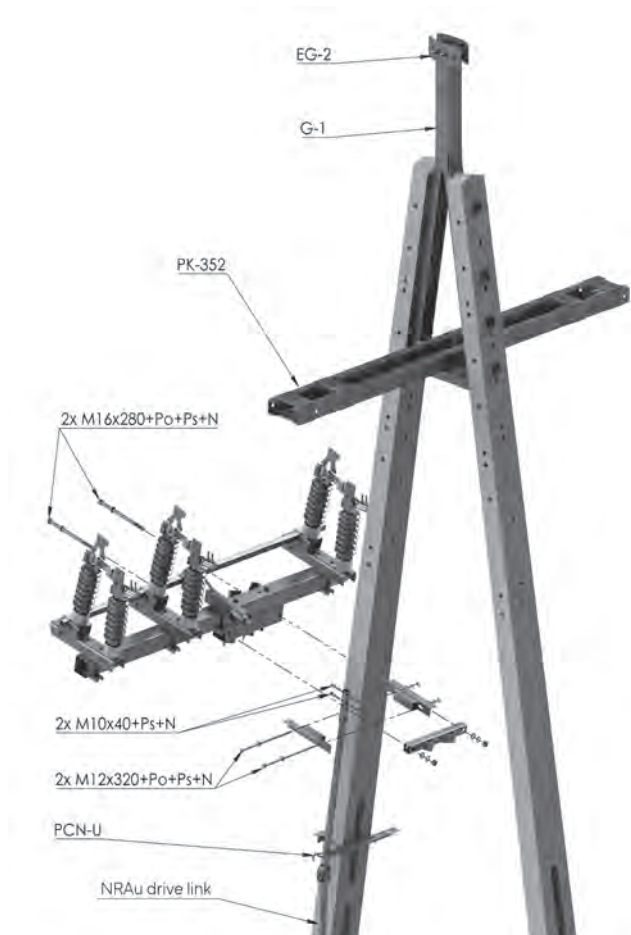


VIEW B



26. FIXING: MODULAR HORIZONTAL CONNECTOR TO THE A-SHAPE CONCRETE POLE POST LEG ITS OWN STRUCTURE

Assembly drawing



Ps – spring washer
Po – round washer
Pk – square washer
N – nut

VIEW A

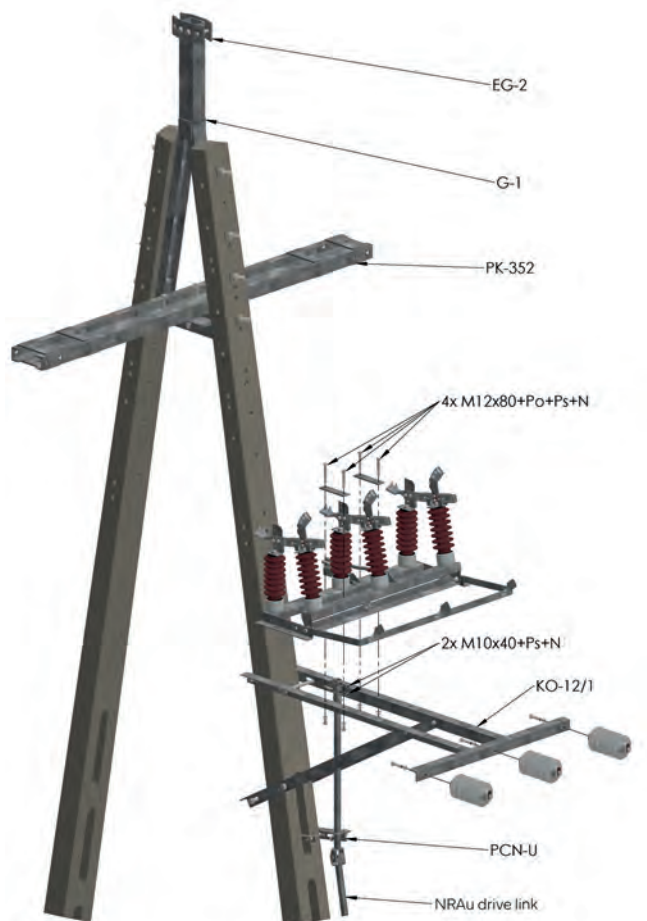


VIEW B



27. FIXING: HORIZONTAL FRAME CONNECTOR TO THE NON AND BSW A-SHAPE CONCRETE POLE ON THE KO-12/1 CONSTRUCTION

Assembly drawing



Ps - spring washer

Po - round washer

Pk - square washer

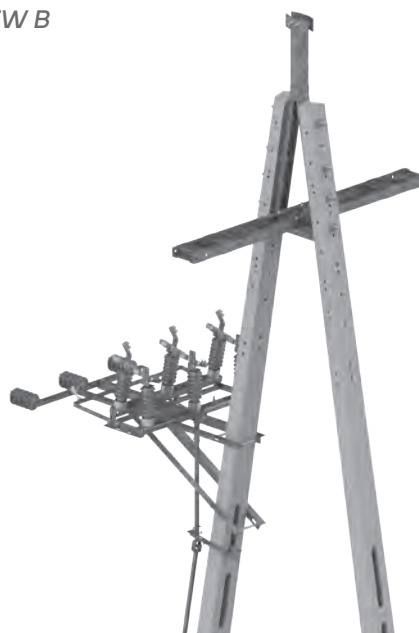
N - nut

screw dimensions in brackets refer to BSW poles

VIEW A

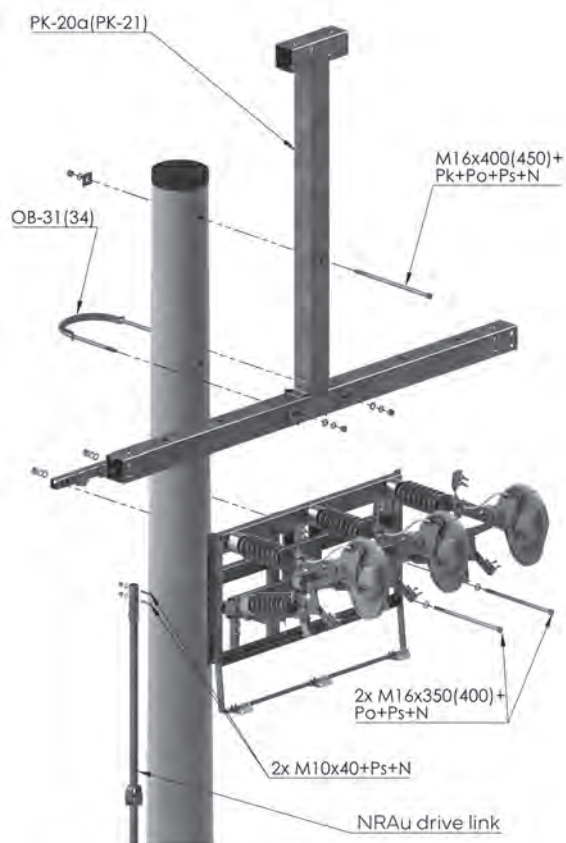


VIEW B



28. FIXING: VERTICAL FRAME CONNECTOR TO A POLE LEG ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Descriptions in brackets refer to spun pole with a top diameter of $dw=263$

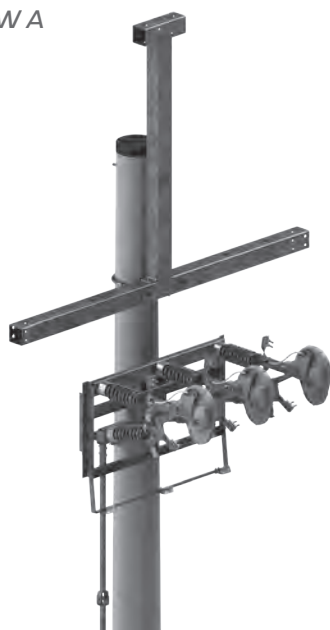
Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

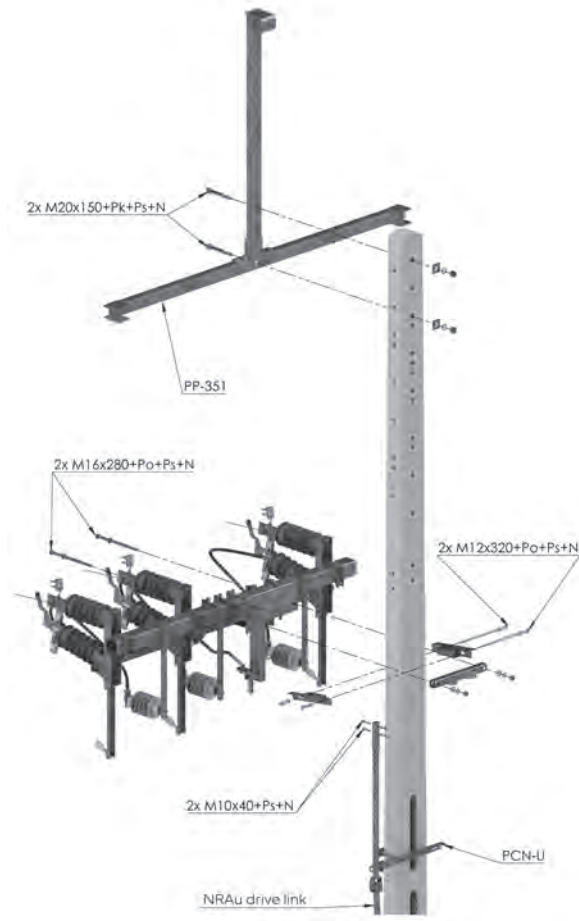


VIEW B



29. FIXING: MODULAR VERTICAL CONNECTOR TO THE ŽN-TYPE CONCRETE POLE LEG ITS OWN STRUCTURE

Assembly drawing



Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

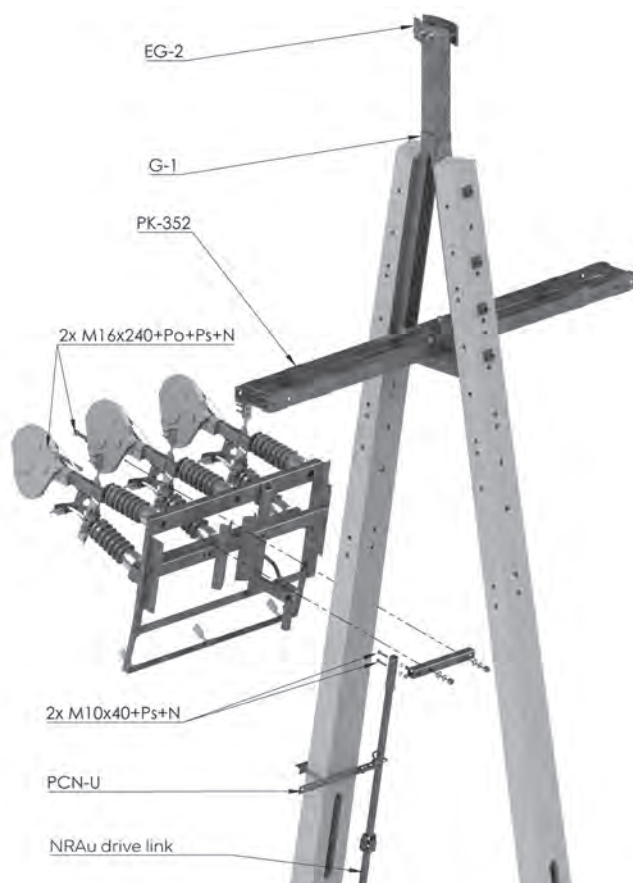


VIEW B



30. FIXING: MODULAR VERTICAL CONNECTOR TO THE LEG OF AN A-SHAPE CONCRETE POLE ITS OWN STRUCTURE

Assembly drawing



Ps – spring washer
Po – round washer
Pk – square washer
N – nut

VIEW A

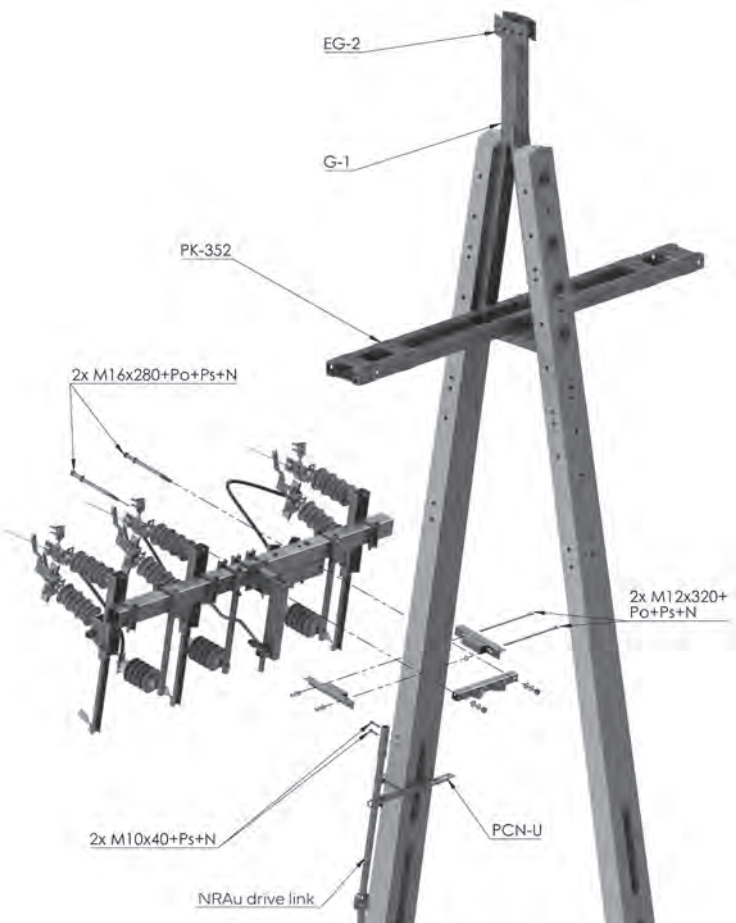


VIEW B



31. FIXING: MODULAR VERTICAL CONNECTOR TO THE LEG OF AN ITS OWN STRUCTURE

Assembly drawing



Ps – spring washer
Po – round washer
Pk – square washer
N – nut

VIEW A

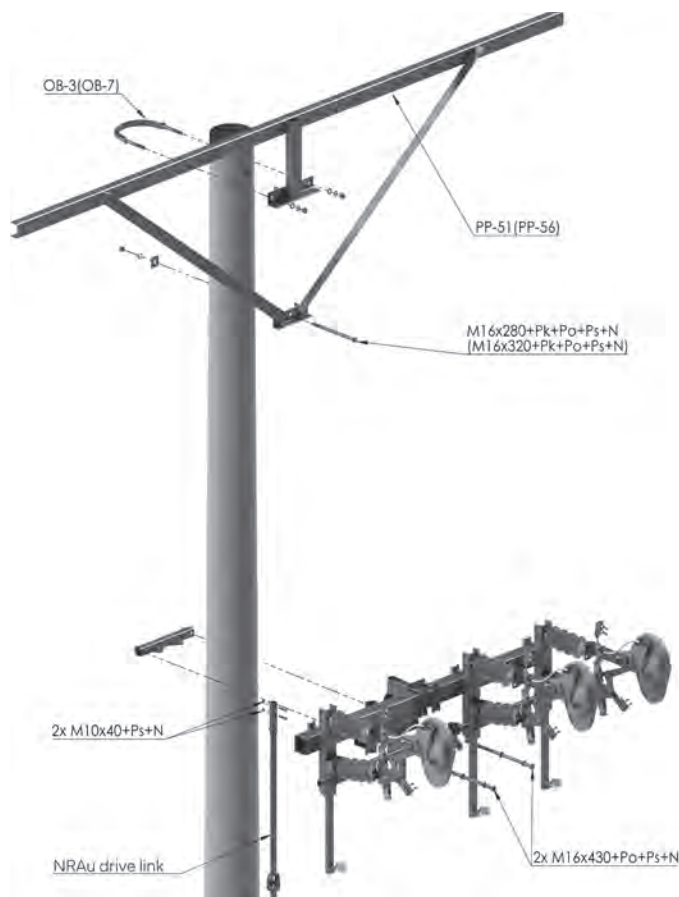


VIEW B



32. FIXING: MODULAR VERTICAL CONNECTOR TO A POLE LEG ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

Descriptions in brackets refer to spun pole with a top diameter $d_w=263$ Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

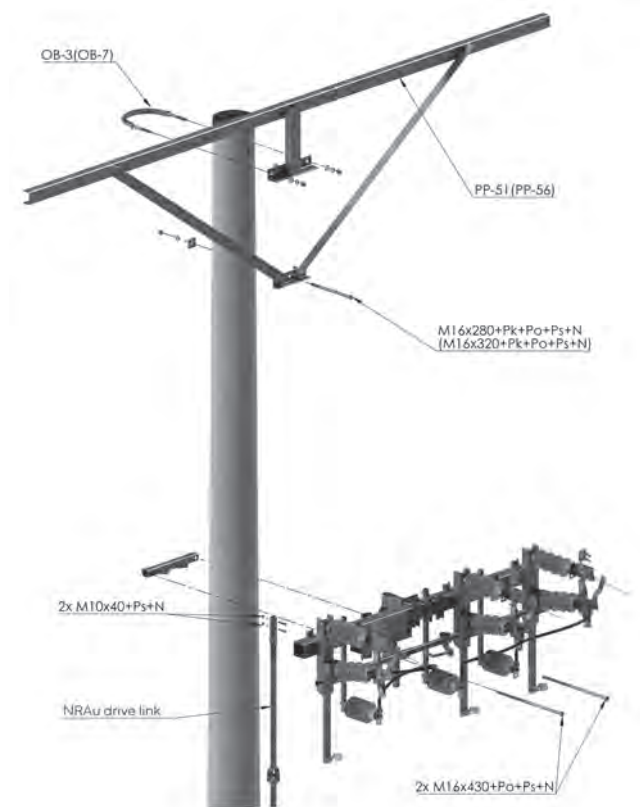


VIEW B



33. FIXING: MODULAR VERTICAL CONNECTOR TO A POLE LEG ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $dw=218$

Descriptions in brackets refer to spun pole with a top diameter of $dw=263$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

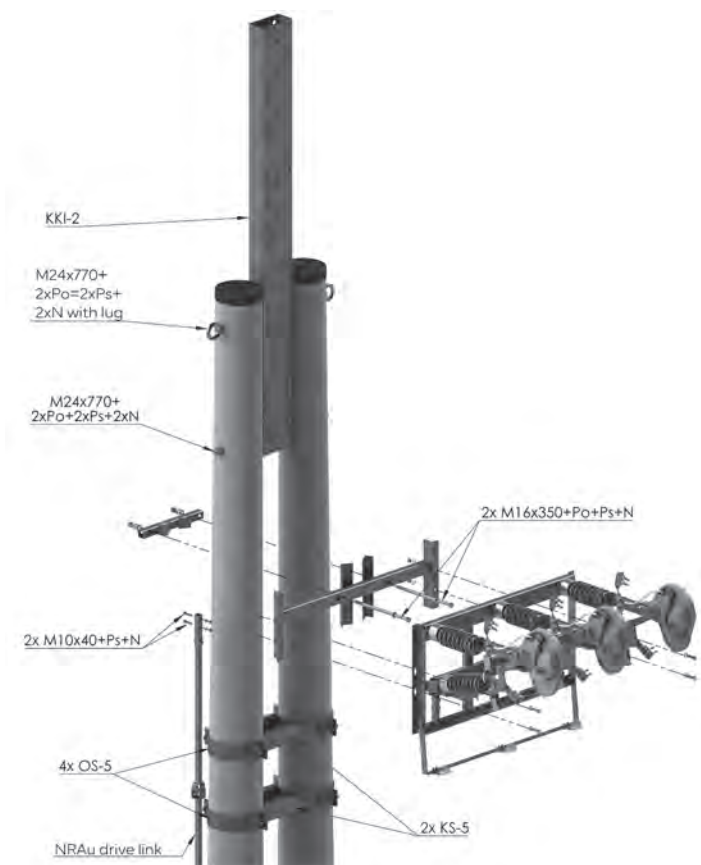


VIEW B



34. FIXING: VERTICAL FRAME CONNECTOR TO A POLE LEG ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $d_w=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

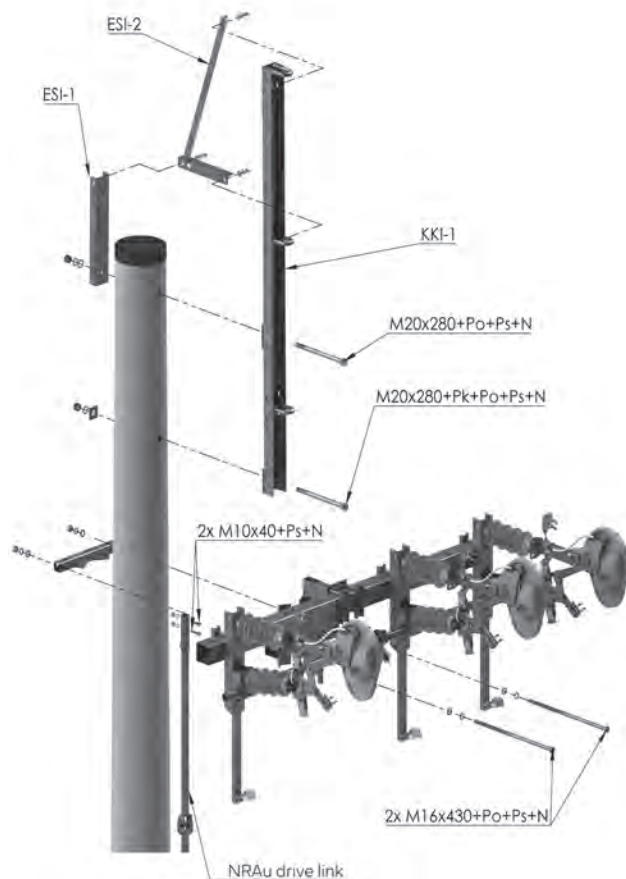


VIEW B



35. FIXING: MODULAR VERTICAL CONNECTOR TO A POLE LEG ITS OWN STRUCTURE

Assembly drawing



The descriptions apply to spun pole with a top diameter of $\varnothing=218$

Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

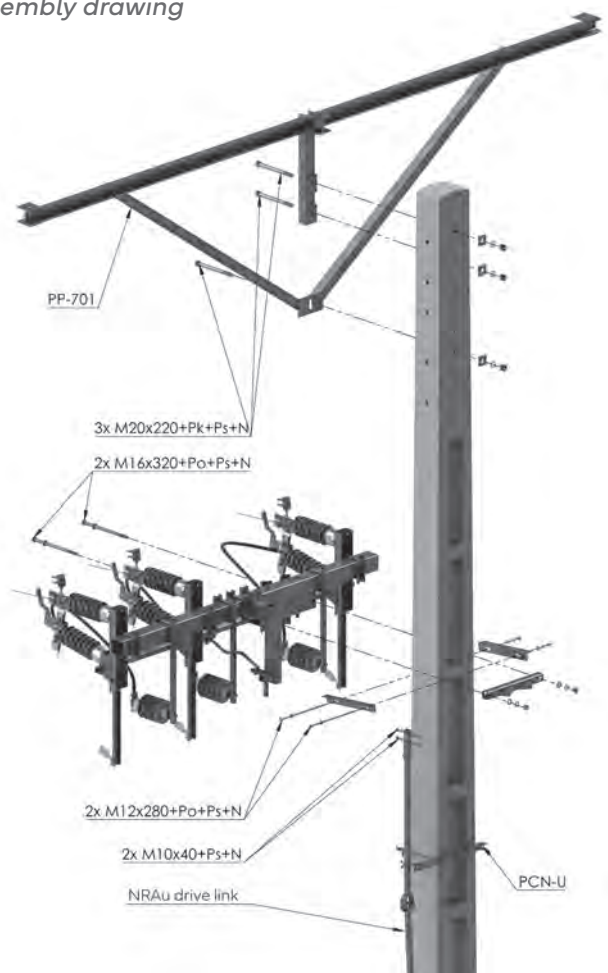


VIEW B



36. FIXING: MODULAR VERTICAL CONNECTOR TO THE BSW POLE LEG ITS OWN STRUCTURE

Assembly drawing



Ps – spring washer

Po – round washer

Pk – square washer

N – nut

VIEW A

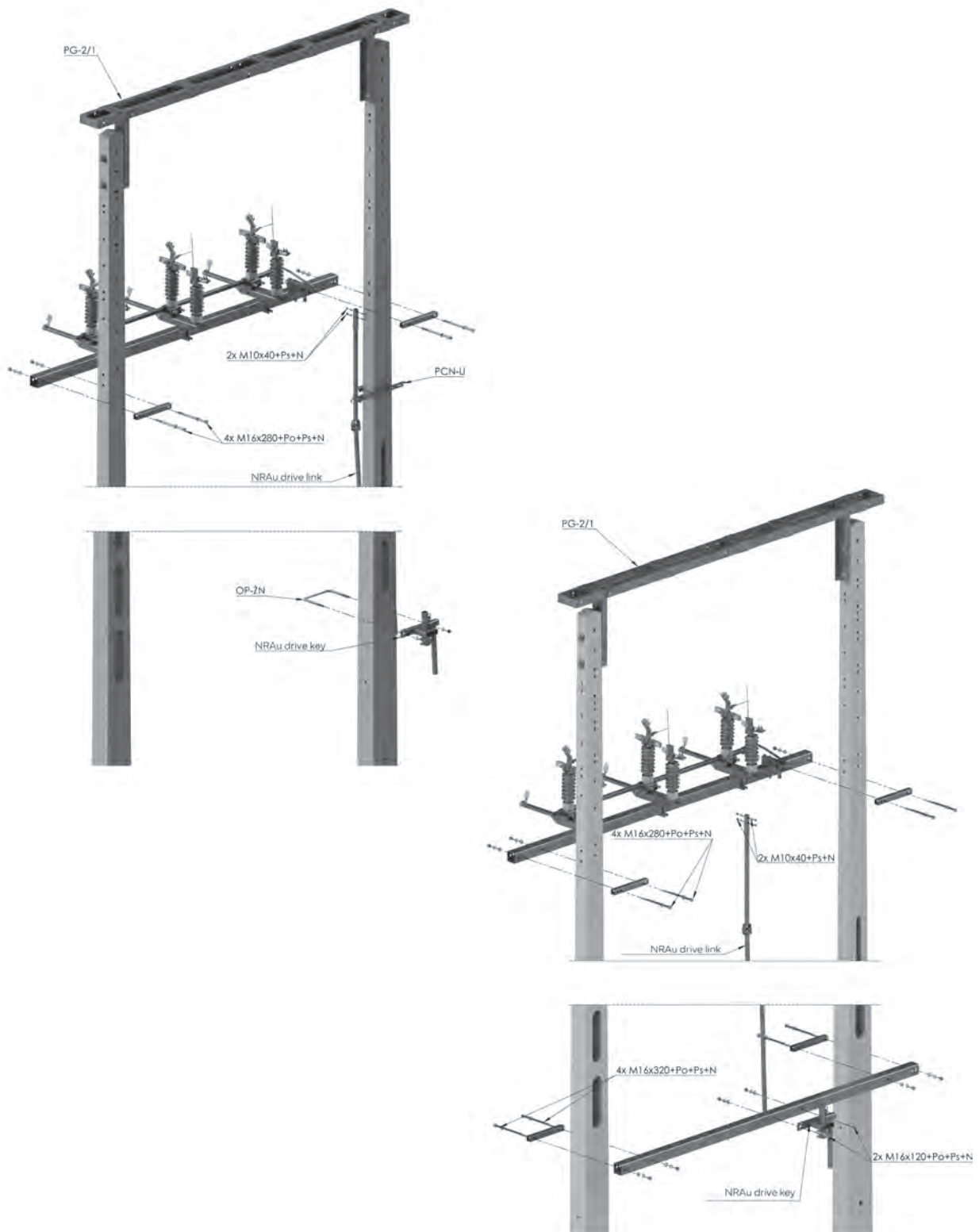


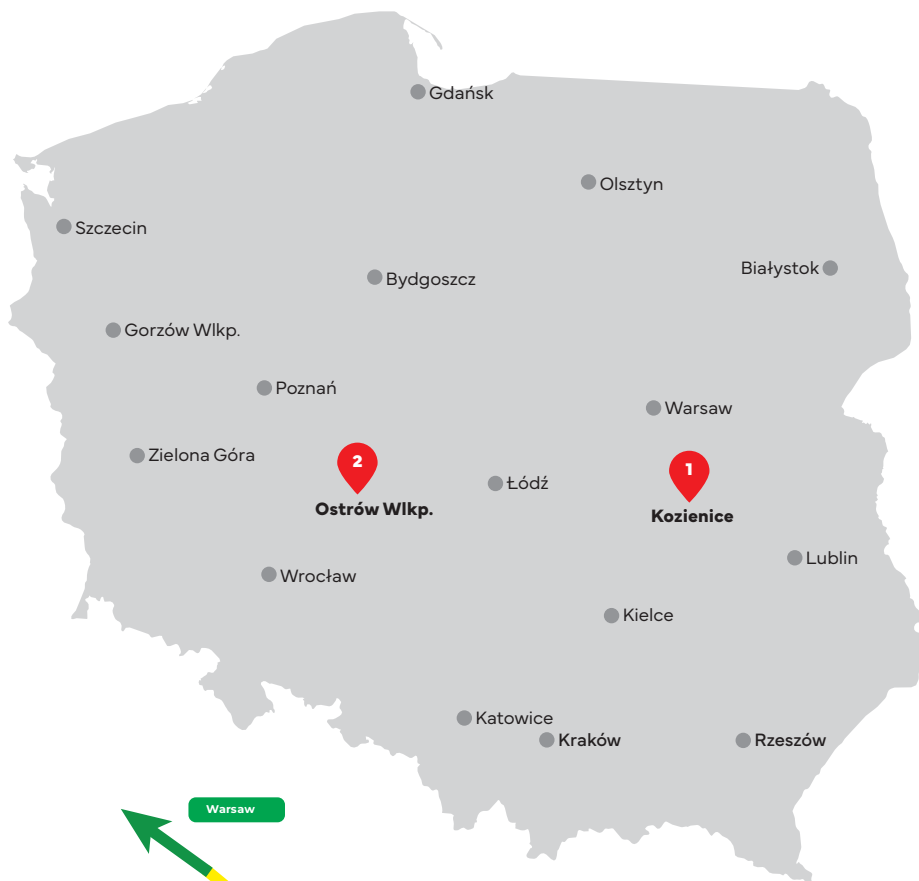
VIEW B



37. FIXING: MODULAR HORIZONTAL CONNECTOR EXTENDED TO LV POLES

Assembly drawing





1

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