climax
SUNSCREENS

EXTERNAL BLINDS

2026 / V2

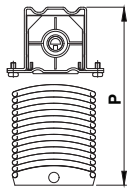
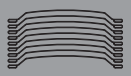
1. Common section - external blinds

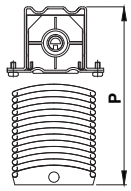
1.1 Limit dimensions for standard versions

Limit dimensions																	
Blind type	Operation	Width [cm]					Height [cm]				Max. area 1 blind		Max. width when connected [m]		Max. area when connected	
		Min. guide rail	Min. wire	Min. guarant.	Max.	Max. guarant.	Min.	Min. guarant.	Max.	Max. guarant.	Max.	Max. guarant.	Operation on the side	Operation in the middle	Max.	Max. guarant.
T-80	crank	49		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
C-80, C-80 CC	crank	49		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
C-80 VENTAL	crank	50		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
C-60	crank	49		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
Z-90 NOVAL	crank	50		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
Z-70	crank	49		**50**	590	**500**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
F-80	crank	49		**50**	450	**450**	35	**50**	590	**500**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									25 m²	**20 m²**			34 m²	
EXT-50 H	crank	46		**50**	400	**300**	35	**50**	500	**350**	10 m²	**8 m²**	6	12	10 m²	**8 m²**
	motor	see Chapter 1.1.1									11 m²	**9 m²**			27 m²	
EXT-50	cord chain crank	43		**50**	350	**250**	35	**50**	320	**250**	6 m²	**5 m²**	4	-	6 m²	**5 m²**
Self-supporting system 250	manual	50			280	**250**	35	**50**	520	**400**	9 m²	**8 m²**	6	12	9 m²	**8 m²**
	motor	see Chapter 1.1.1									12 m²	**10 m²**			20 m²	
Self-supporting system 400	crank	50			450	**400**	35	**50**	590	**500**	7 m²	**6 m²**	6	12	7 m²	**6 m²**
	motor	see Chapter 1.1.1									14 m²	**12 m²**			24 m²	
Self-supporting system MDS 250	manual	50			280	**250**	35	**50**	520	**400**	9 m²	**8 m²**	6	12	9 m²	**8 m²**
	motor	see Chapter 1.1.1									12 m²	**10 m²**			20 m²	
Self-supporting system MDS 400	crank	50			450	**400**	35	**50**	590	**500**	7 m²	**6 m²**	6	12	7 m²	**6 m²**
	motor	see Chapter 1.1.1									14 m²	**12 m²**			24 m²	
Self-supporting system Subtle 250	manual	50			280	**250**	35	**50**	520	**400**	9 m²	**8 m²**	-	-	-	
	motor	see Chapter 1.1.1									12 m²	**10 m²**			-	
MISTRAL	crank	70		**70**	280	**250**	35	**50**	520	**400**	10 m²	**8 m²**	6	9	10 m²	**8 m²**
	motor										12 m²	**10 m²**			34 m²	

Notice:
- when blinds are connected, a deviation of max. 20° concerning the tilting of slats towards each other occurs
- when the connection is straight, it is possible to connect max. 3 external blinds
- when the connection is at 90° or 45°, it is possible to connect max. 2 external blinds
- maximum ratio of width and height 1:4, width ≤ 100 cm is guaranteed for external blinds

1.2 Stack of slats height

P - Stack of slats height [cm]										
	T-80 		C-80 		C-80 CC 		C-80 VENTAL 		C-60 	
BLIND HEIGHT [CM]	crank	motor	crank	motor	crank	motor	crank	motor	crank	motor
50 - 75	13	15	14	16	13	15	12.5	14.5	18	20
75.1 - 100	15	17	16	18	14	16	14	16	20	22
100.1 - 125	16	18	18	20	16	18	15.5	17.5	22	24
125.1 - 150	17	19	20	22	17	19	17	19	24	26
150.1 - 175	18	20	22	24	19	21	18.5	20.5	26	28
175.1 - 200	19	21	24	26	21	23	20	22	28	30
200.1 - 225	20	22	26	28	22	24	21.5	23.5	30	32
225.1 - 250	21	23	28	30	24	26	22.5	24.5	32	34
250.1 - 275	22	24	30	32	25	27	23.5	25.5	34	36
275.1 - 300	23	25	32	34	27	29	25	27	36	38
300.1 - 325	24	26	34	36	28	30	26.5	28.5	38	40
325.1 - 350	25	27	36	38	30	32	27.5	29.5	40	42
350.1 - 375	27	29	38	40	31	33	29	31	42	44
375.1 - 400	28	30	40	42	33	35	30	32	44	46
400.1 - 425	29	31	42	44	34	36	31.5	33.5	46	48
425.1 - 450	30	32	44	46	36	38	33	35	48	50
450.1 - 475	31	33	46	48	37	39	34.5	36.5	50	52
475.1 - 500	32	34	48	50	39	41	36	38	52	54

P - Stack of slats height [cm]									
	Z-90 NOVAL 		Z-70 		F-80 		EXT-50 H 		EXT-50 
BLIND HEIGHT [CM]	crank	motor	crank	motor	crank	motor	crank	motor	crank
50 - 75	12	14	15	17	11.5	13.5	11.5	13.5	9.5
75.1 - 100	14	16	16	18	12.5	14.5			
100.1 - 125	15	17	17	19	13	15	13	15	11
125.1 - 150	16	18	19	21	14	16			
150.1 - 175	18	20	21	23	14.5	16.5	14	16	12
175.1 - 200	19	21	23	25	15.5	17.5			
200.1 - 225	20	22	25	27	16	18	15.5	17.5	13.5
225.1 - 250	22	24	27	29	17	19			
250.1 - 275	23	25	28	30	17.5	19.5	17	19	15
275.1 - 300	24	26	29	31	18.5	20.5			
300.1 - 325	25	27	31	33	19	21	18.5	20.5	16
325.1 - 350	27	28	33	35	20	22			
350.1 - 375	28	30	35	37	20.5	22.5	20	22	-
375.1 - 400	29	31	37	39	21	23			
400.1 - 425	30	32	38	40	22	24	-		
425.1 - 450	31	33	40	42	23	25			
450.1 - 475	33	35	41	43	23.5	25.5	-		
475.1 - 500	34	36	43	45	24.5	26.5			

Notice:

- when ordering the height of the cover plate with for blinds with a stack of slats height up to 17 cm, it is recommended to choose a cover plate of minimum height 18 cm; for Z-90 NOVAL with the stack of slats height up to 20 cm, it is recommended to choose a cover plate of minimum height 22 cm, or to choose a minimum gap between the first slat and the head rail (for all types of blinds)

1.3 Various versions

Operation						Guiding			Various versions				Sloped versions
Blind type	Slat width	Crank	Motor	Cord	Chain	Guide rail	Wire	Wire extra	Tilting to both sides	Open version	Self-supporting system	MISTRAL	
T-80	80 mm	■	●	NO	NO	■	●	●	YES	●	●	●	●
C-80	80 mm	■	●	NO	NO	■	●	●	YES	●	●	●	●
C-80 CC	80 mm	■	●	NO	NO	■	●	●	NO	●	●	●	●
C-80 VENTAL	80 mm	■	●	NO	NO	■	NO	NO	NO	●	●	●	●
C-60	60 mm	■	●	NO	NO	■	●	●	YES	NO	●	●	●
Z-90 NOVAL	90 mm	■	●	NO	NO	■	●	●	NO	●	●	●	●
Z-70	70 mm	■	●	NO	NO	■	●	●	NO	●	●	NO	●
F-80	80 mm	■	●	NO	NO	■	●	●	YES, only in wire	●	●	NO	NO
EXT-50 H	50 mm	●	●	NO	NO	NO	■	●	■	NO	NO	NO	NO
EXT-50	50 mm	●	NO	■	●	NO	■	●	■	NO	NO	NO	NO

Legend: ■ - standard ● - for extra charge / deduction

Notice:
- tilting to both sides cannot be combined with an open version

1.4 Colours of slats

1.4.1 Colours of slats T, C, Z, F

Slat number	Paint	Description	RAL	VSR	T-80	C-80, C-80 CC	C-80 VENTAL	C-60	Z-90 NOVAL	Z-70	F-80
010	H	white	9003	010	■	■	■	-	■	■	■
9010	H	white	9010	901	■	■	■	■	■	■	■
9001	H	creamy	9001	-	■	■	■	-	■	-	-
1013	H	oyster white	1013	-	■	■	■	-	■	-	-
240	H	light beige	-	240	■	■	■	-	■	■	-
1035 *	H	pearly beige	1035 *	-	■	■	■	-	■	■	-
780 H	H	bronze light	-	780	■	■	■	-	■	■	-
780 D	H	bronze dark	-	780	■	■	■	-	■	-	-
071	H	brown	8028	71	■	■	■	-	■	■	-
9002	H	grey white	9002	-	■	■	■	-	■	-	-
904	H	light grey	7035	904	■	■	■	-	■	-	-
130	H	grey	7038	130	■	■	■	-	■	■	-
140 S	S	silver (structured)	9006	140	■	■	■	-	■	■	■
140 H	H	silver	9006	140	■	■	■	■	■	■	■
140 MT	MT	silver	9006	140	●	●	-	-	●	-	-
9007	H	grey (silver)	9007	907	■	■	■	■	■	■	■
7048 M *	H	perlmausgrau	7048 *	-	■	■	■	-	■	-	-
7039	H	quartz gray	7039	-	■	■	■	-	■	-	-
2900	H	dark grey	2900 Sable		■	■	■	-	■	-	-
DB 703	H	dark grey	-	-	■	■	■	■	■	■	■
7012	H	basalt gray	7012	-	■	■	■	-	■	■	■
7022	H	grey	7022	-	■	■	■	-	■	■	■
7016	H	anthracite	7016	-	■	■	■	■	■	■	■
7016 M	M	anthracite (matt)	7016	-	■	■	■	-	■	-	-
7016 MT	MT	anthracite	7016	-	●	●	-	-	●	-	-
7021	H	black-gray	7021	-	■	■	■	-	■	-	-
905 M	H	black (matt)	9005	-	■	■	■	-	■	■	■
2100	S	black (structured)	Sable 2100		■	■	■	-	■	-	-
200	S	black (structured)	Sable 200		■	■	■	-	■	-	-

*- the specified number of the slat identifies the nearest RAL colour sample on the RAL swatch rather than a RAL colour shade directly

1.4.2 Colours of slats EXT-50 H, EXT-50

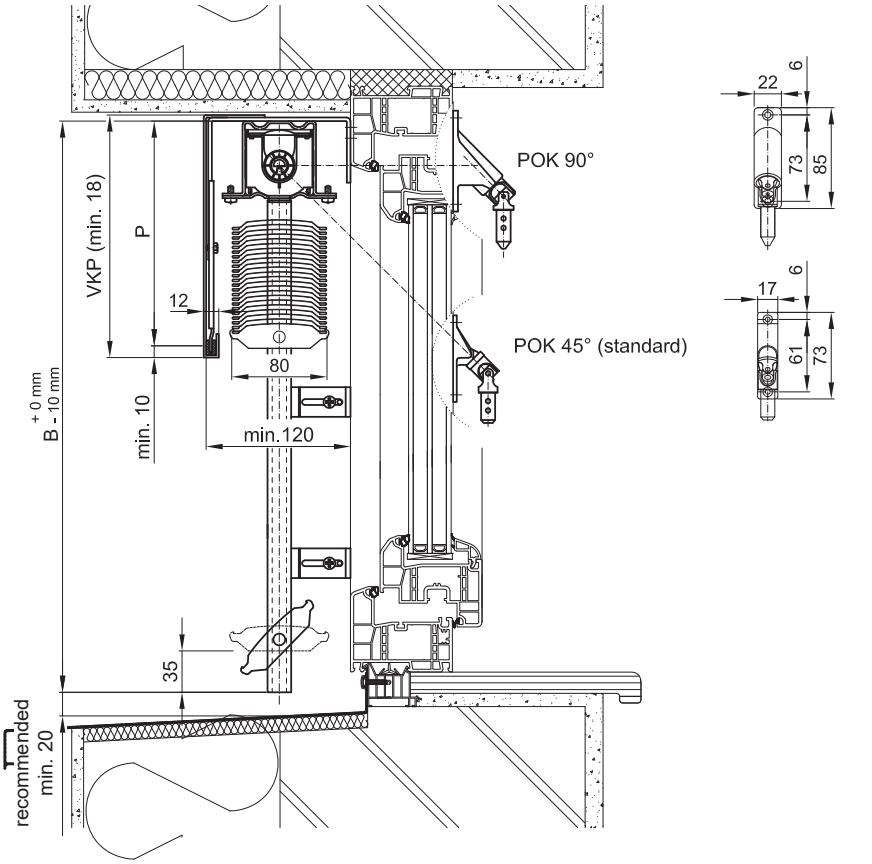
Slat number	Paint	Description	RAL	VSR	Ts [%]	Rs [%]	As [%]
101	H	white	9016	-	0	92.9	7.1
102	H	silver	9006	140	0	54.1	45.9
103	H	grey (silver)	9007	907	0	43.1	56.9
104	H	light grey	7035	904	0	63.4	36.6
105	H	grey	7038	130	0	47.7	52.3
106	H	dark grey	(DB 703)	-	0	14.6	85.4
107	H	anthracite	7016	-	0	9	91
108	H	bronze	-	-	0	23.2	76.8
109	H	ivory	1013	-	0	79.8	20.2
110	H	beige	-	-	0	55.8	44.2
111	H	light brown	-	-	0	36.8	63.2
112	H	coffee	-	-	0	10.5	89.5
113	H	light green	-	-	0	55.7	44.3
114	H	dark green	6005	220	0	8.8	91.2

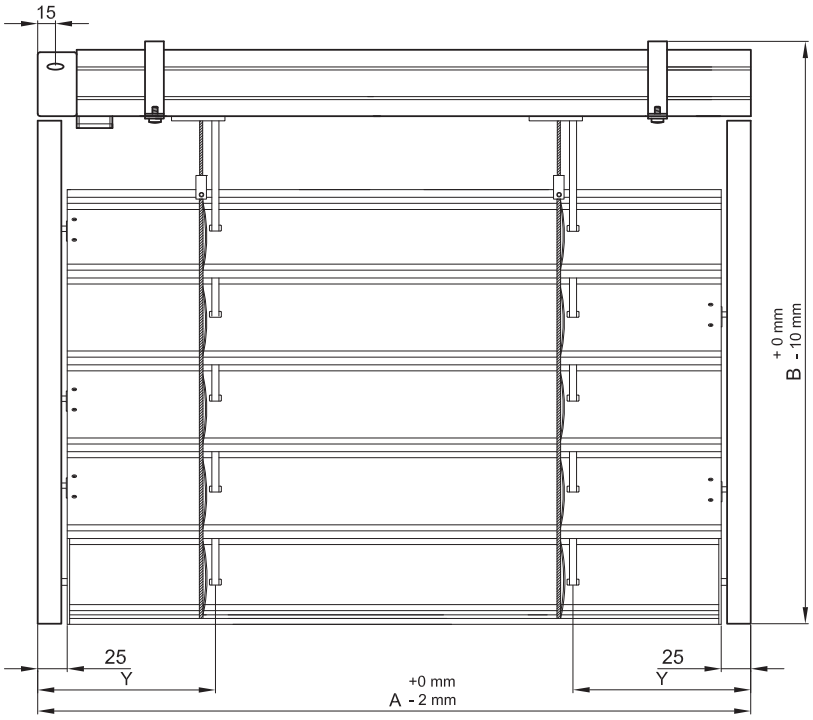
Note:
- each colour VSR is matched to the closest colour shade of the RAL collection
- slat colours - gloss 60 %, for colour of slat no. 905 M is gloss 30 %

Legend: **H** - smooth paint **S** - structured paint **M** - matt paint ■ - standard ● - for extra charge
MT - matt, structured, UV-resistant paint Meco Touch **Ts** - solar transmittance
Rs - solar reflectance **As** - solar absorptance

2.2 Versions

T-80





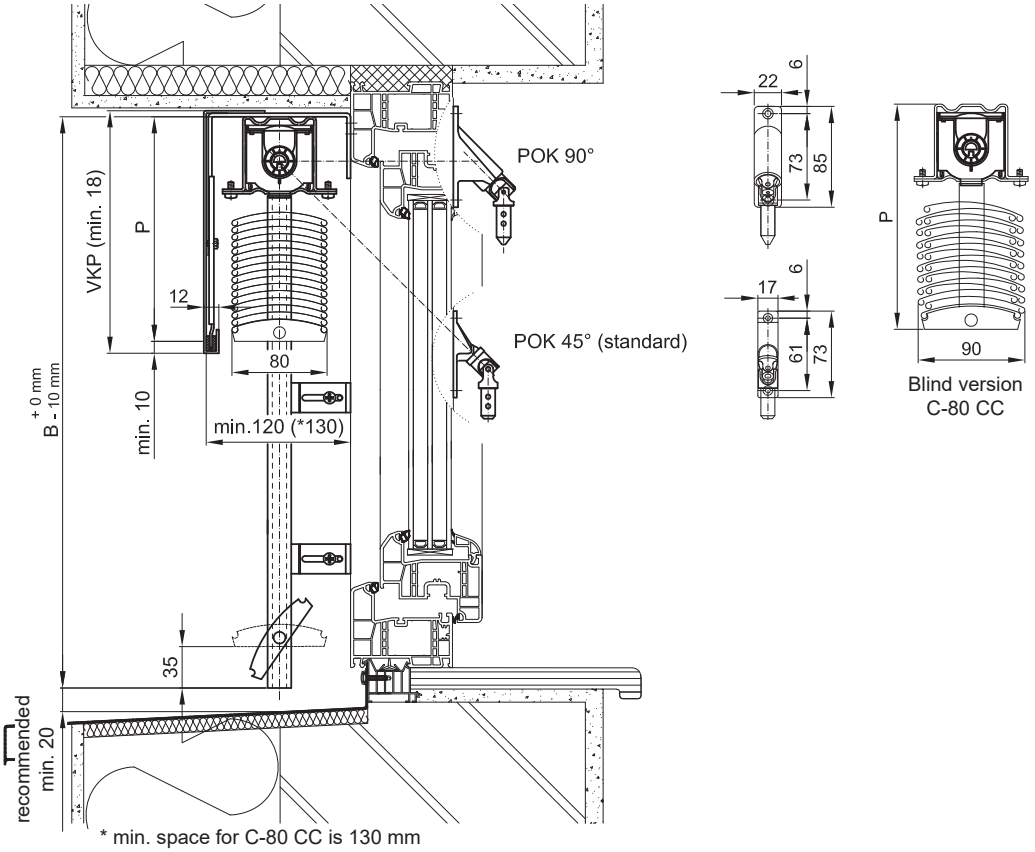
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 99.9	150	125
100 - 500	200	175

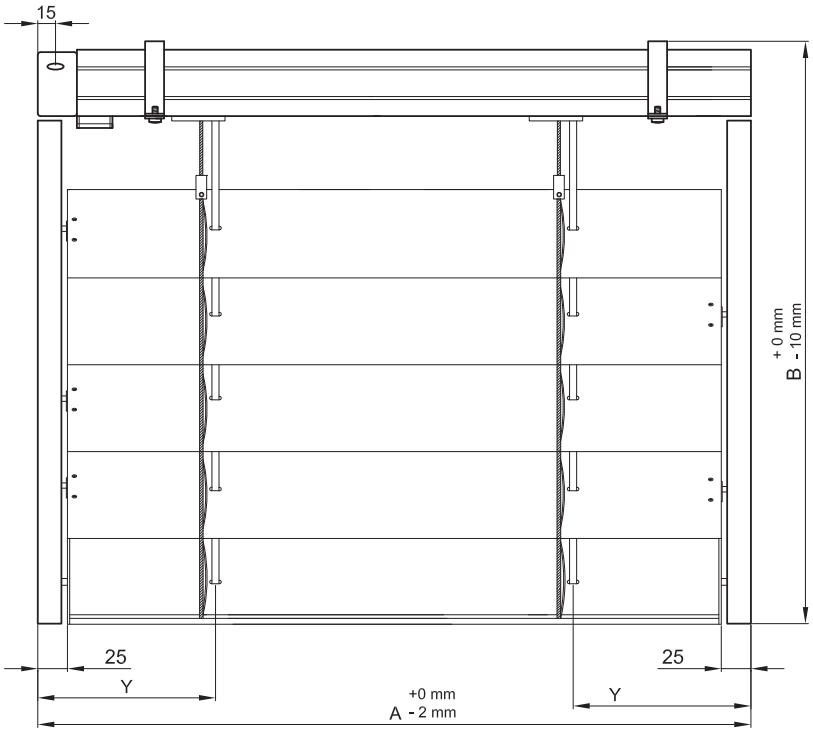
Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

3.2 Versions

C-80, C-80 CC





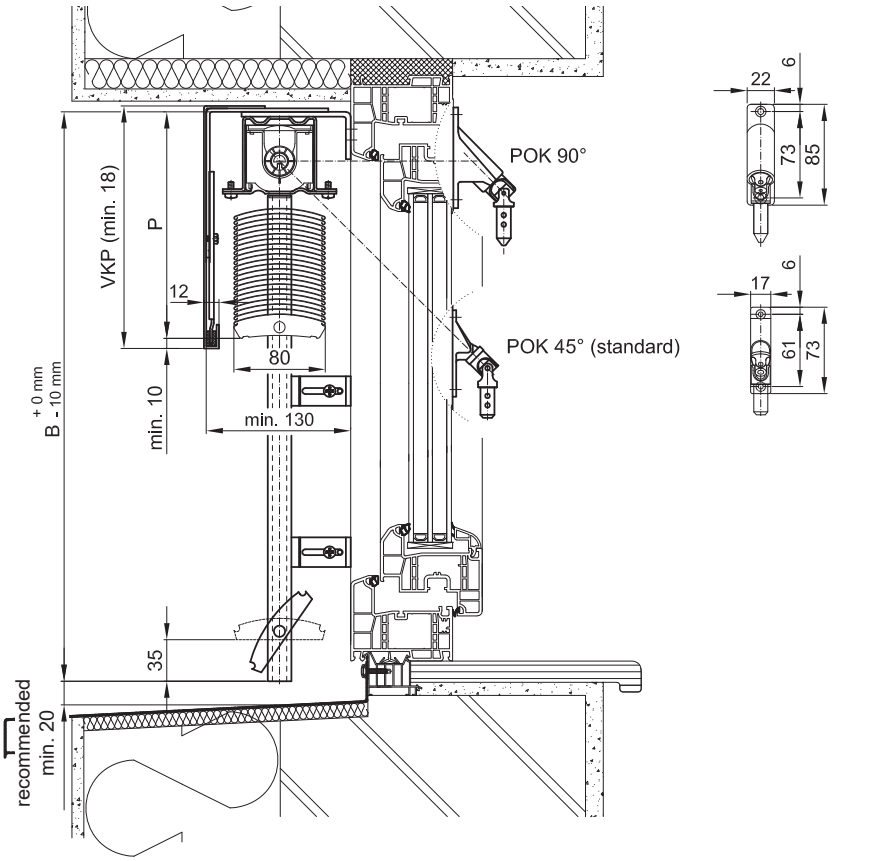
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 99.9	150	125
100 - 500	200	175

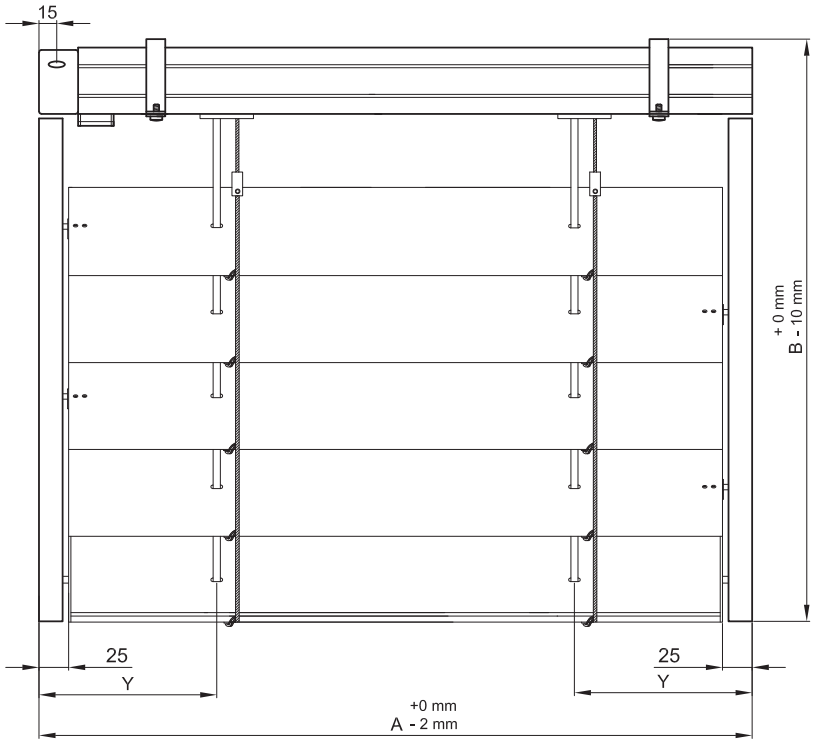
Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

4.2 Version

C-80 VENTAL





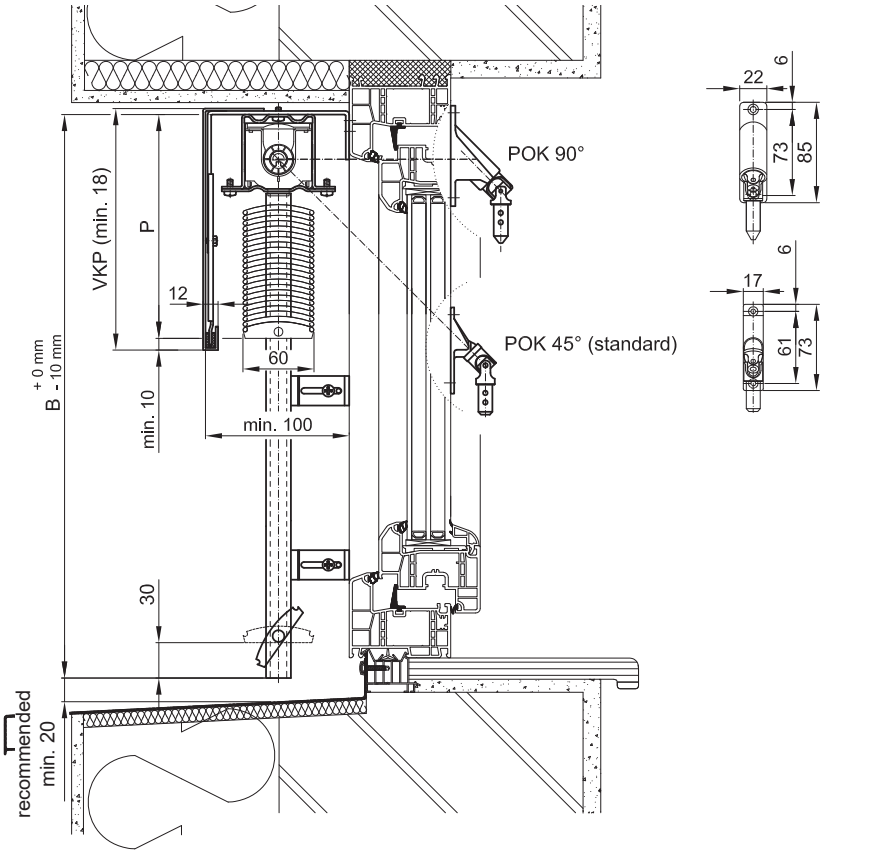
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 54.9	120	125
55 - 99.9	150	125
100 - 500	200	175

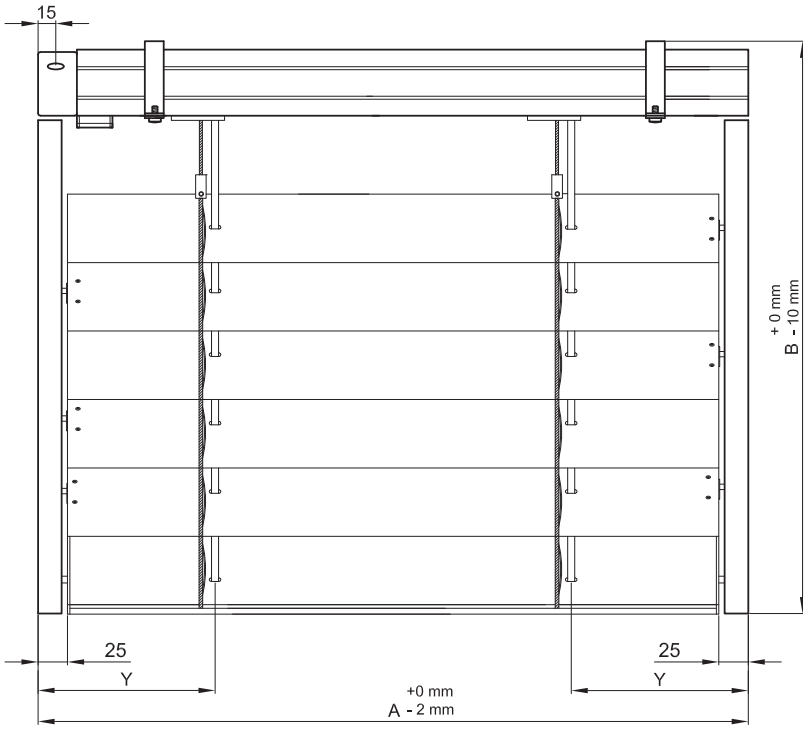
Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

5.2 Version

C-60





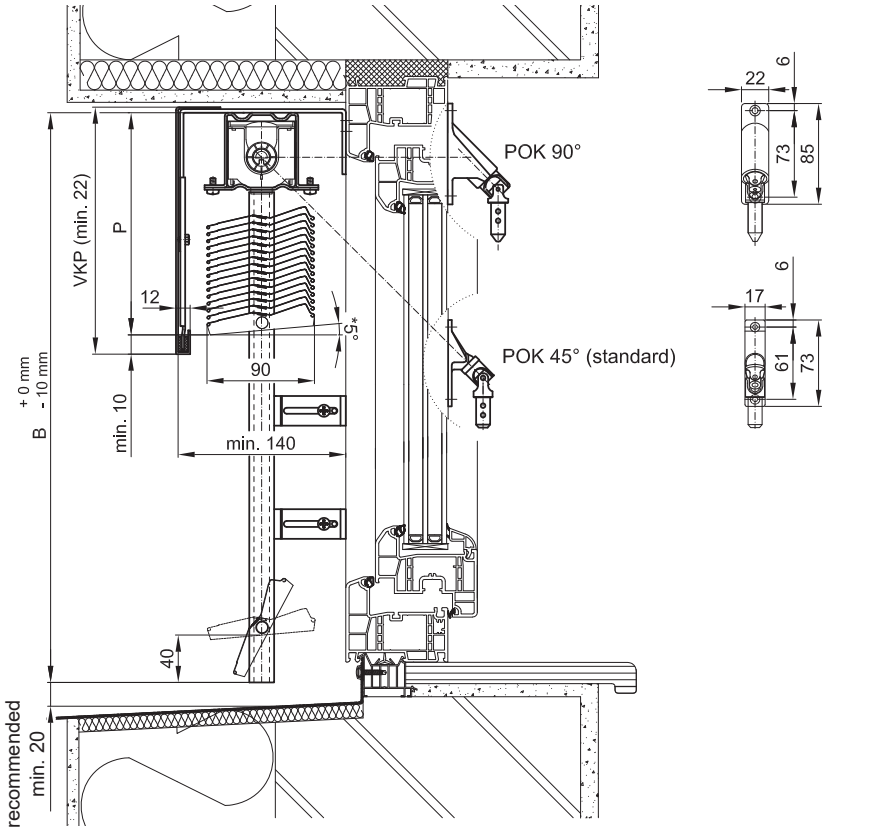
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 99.9	150	125
100 - 500	200	175

Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

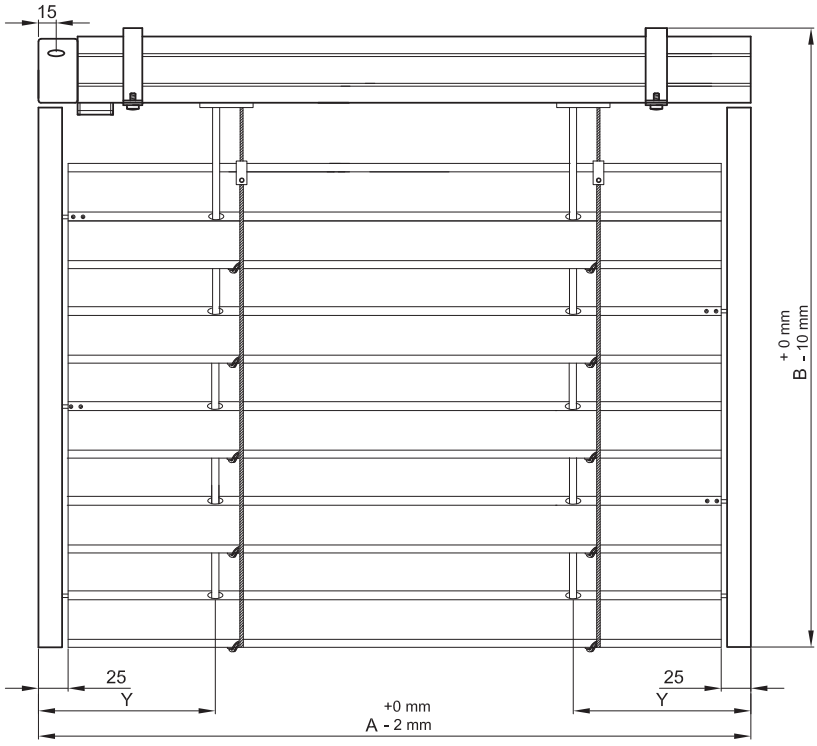
Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

6.2 Version

Z-90 NOVAL



* the angle is only approximate



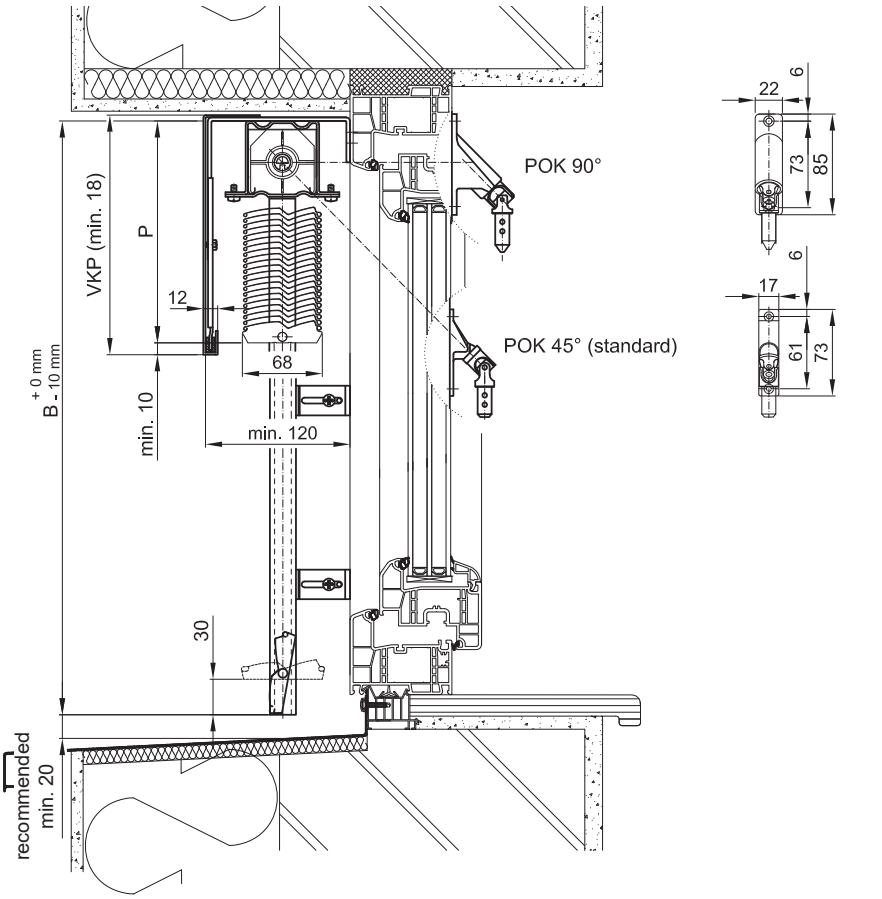
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 54.9	120	125
55 - 99.9	150	125
100 - 500	200	175

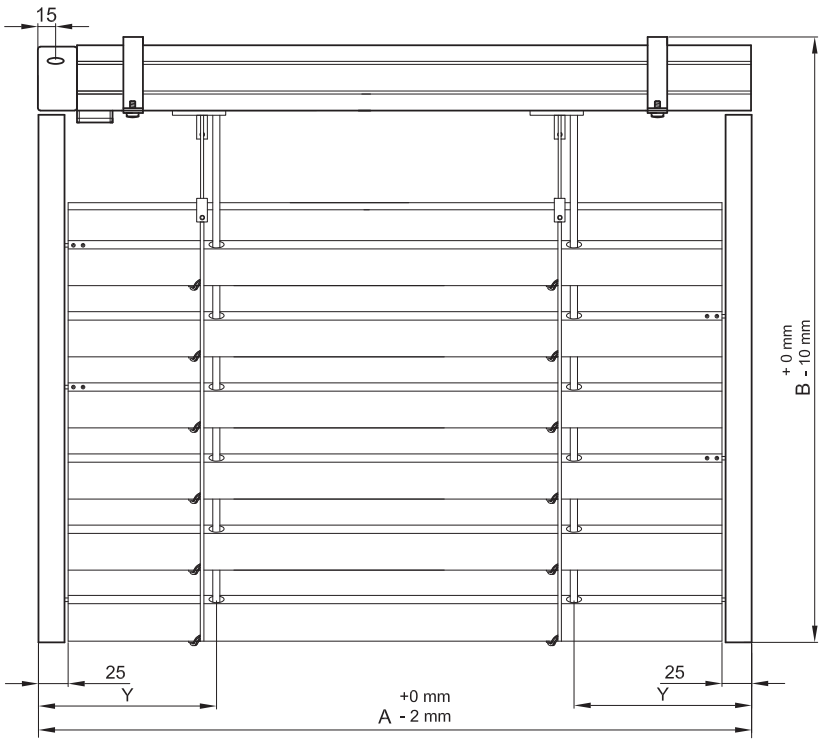
Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

7.2 Version

Z-70





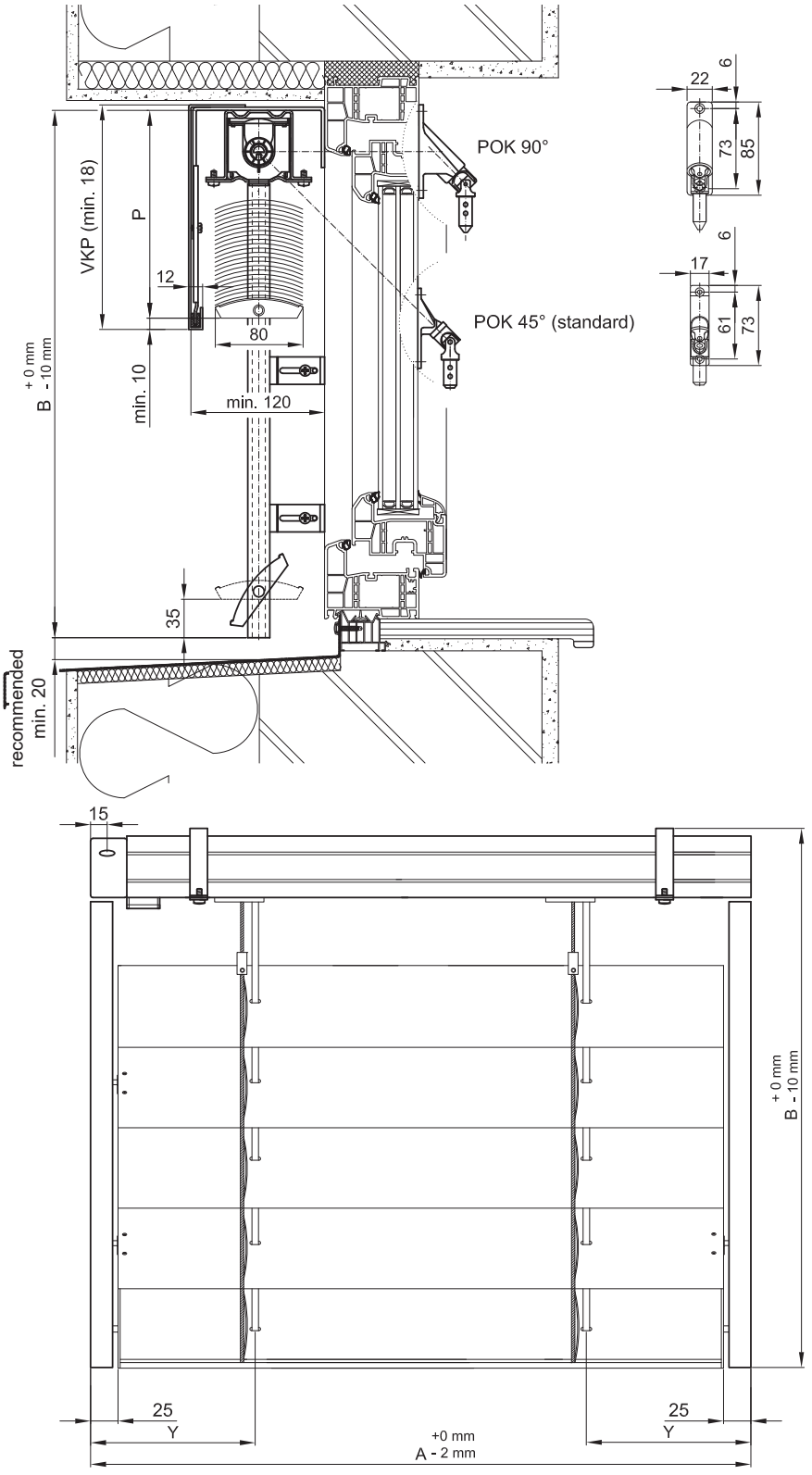
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 99.9	150	125
100 - 500	200	175

Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

8.2 Version

F-80



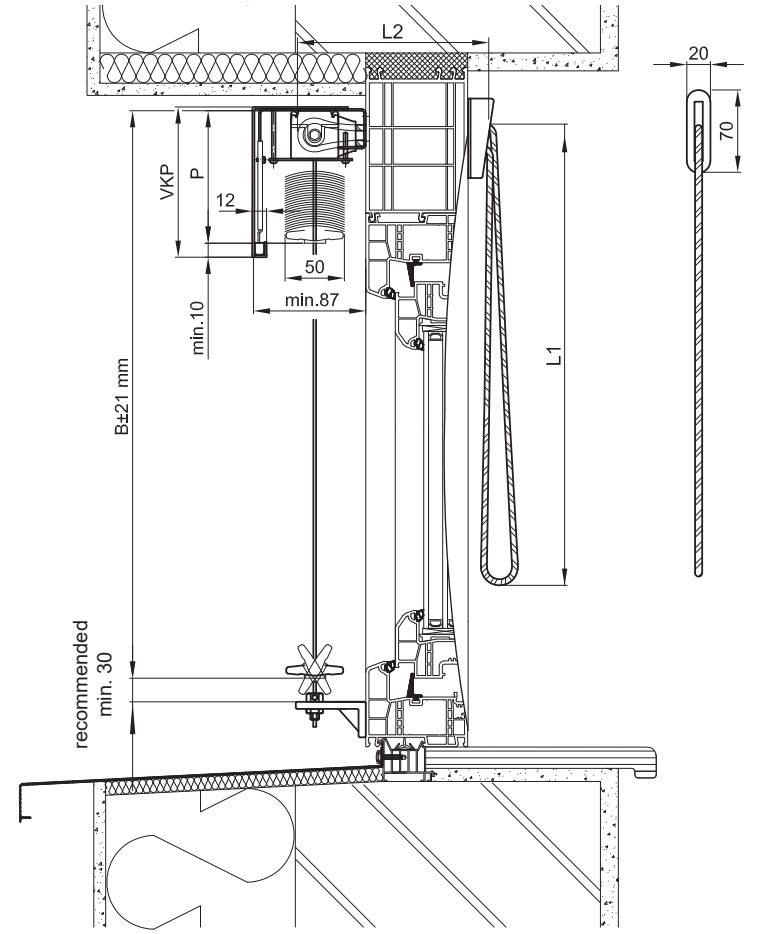
Axis of tape - crank		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 99.9	150	125
100 - 500	200	175

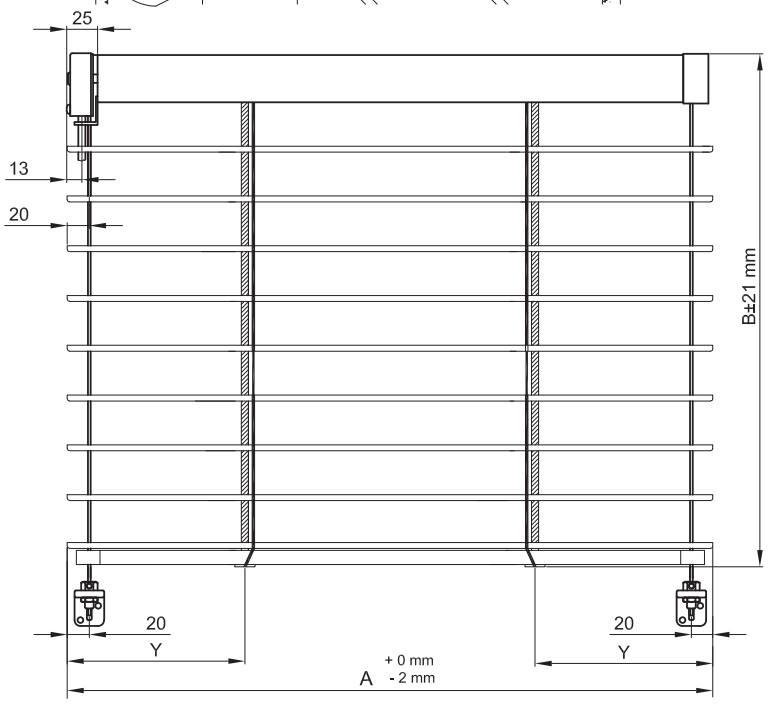
Axis of tape - motor		
A width [cm]	Y [mm]	
	guide rail	wire
50 - 60	85	110
60.1 - 75	110	135
75.1 - 99.9	150	150
100 - 500	200	200

Legend: **A** - blind width **B** - blind height **P** - stack of slats height **Y** - axis of tape **VKP** - cover plate height

16.2 Version

EXT-50





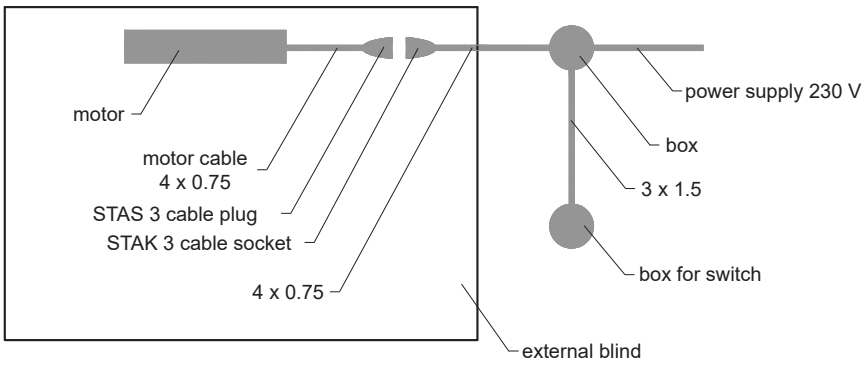
Axis of tape - manual operation	
A width [cm]	**Y [mm]**
< 45	100
45.1 - 350	150

Legend:	**A** - blind width	**B** - blind height	**P** - stack of slats height
	VKP - cover plate height	**L** - operating cord length (L=L1+L2)	**Y** - axis of tape

21. Technical documentation

21.1 Electrical wiring

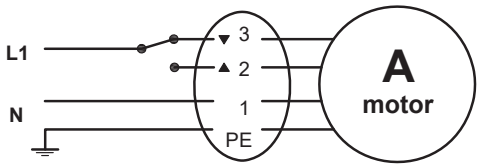
Diagram of electrical wiring - direct operation of motor



Motor wiring

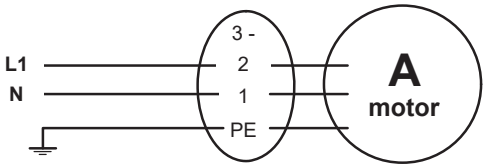
- the wiring shall be carried out by a skilled person

Wiring diagram of electric motor



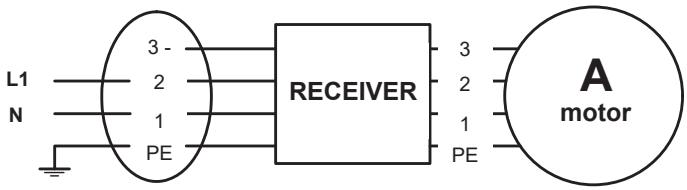
A - motor	connector terminal	B - Supply
neutral wire	1	blue neutral wire
hot wire UP	2	black hot wire
hot wire DOWN	3	brown hot wire
ground wire	PE	yellowgreen ground wire

Wiring diagram of electric motor - radio

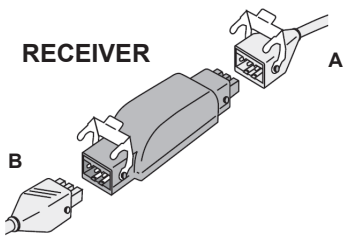


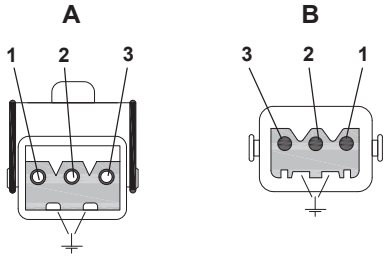
A - motor	connector terminal	B - Supply
neutral wire	1	neutral wire
hot wire UP	2	hot wire
hot wire DOWN	3	(unoccupied)
ground wire	PE	ground wire

Wiring diagram of Slim Receiver Plug



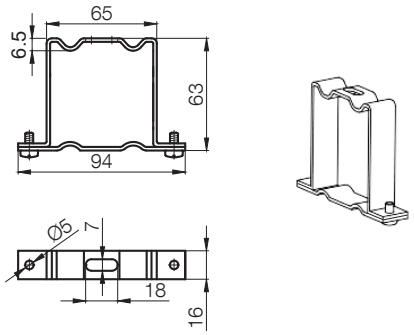
A - motor	connector terminal	B - Supply
neutral wire	1	neutral wire
hot wire UP	2	hot wire
hot wire DOWN	3	(unoccupied)
ground wire	PE	ground wire



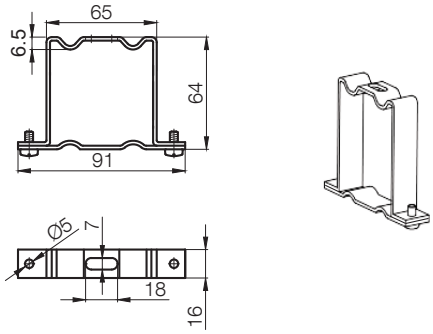


21.5 Mounting holders of head rail 56 x 58

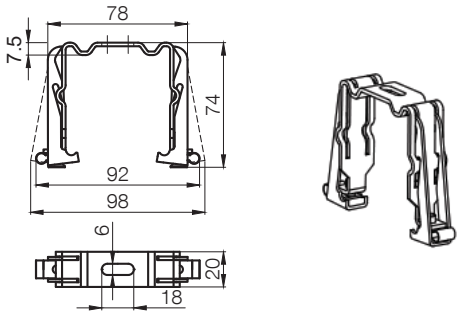
MD 1 - Mounting holder - standard



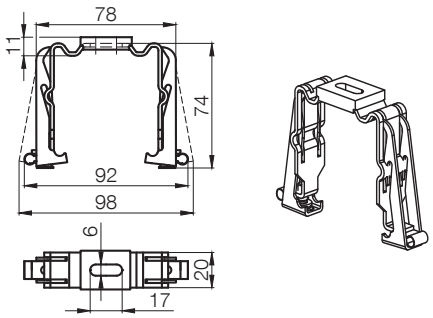
MD 1a - Mounting holder - stainless steel



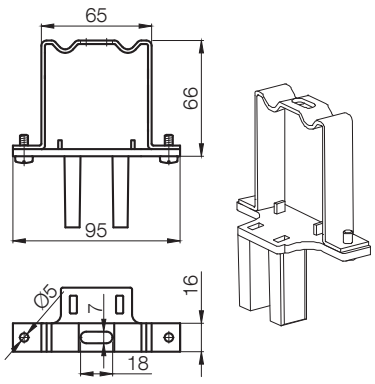
MD 1b - Mounting holder - spring



MD 1bg - Mounting holder - spring with rubber

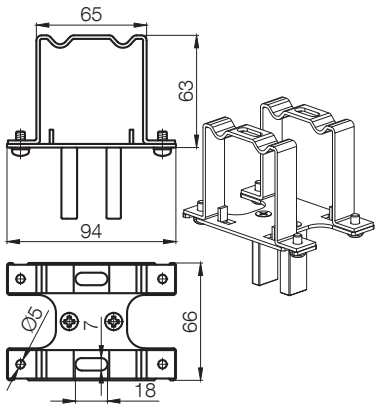


MD 1c - Mounting holder - self-supporting



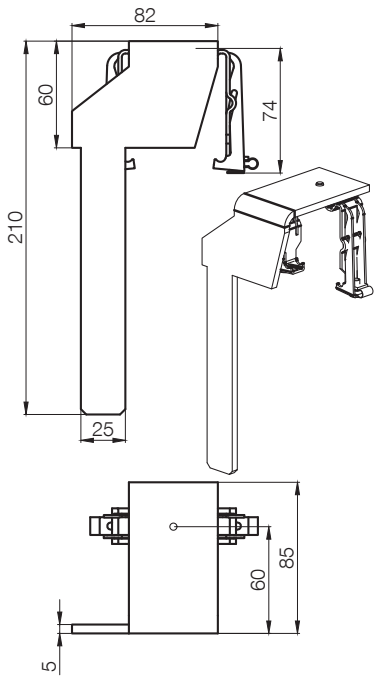
Only for self-supporting system (VL 4, VL 6, VL11 and VL 12).

MD 1cd - Mounting holder - self-supporting



Only for self-supporting system joining (VL5 or VL10).

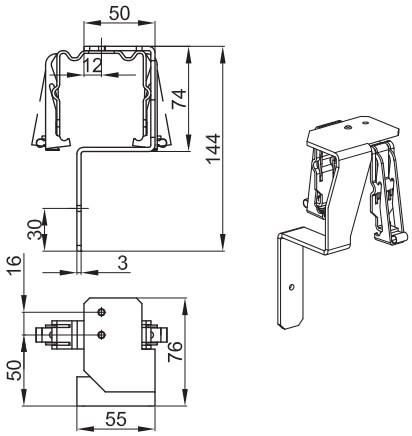
MD 1b9 - Mounting holder - self-supporting



Only for self-supporting system 250 with VL 9.

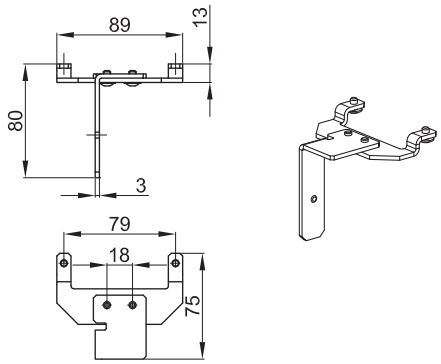
21.5 Mounting holders of head rail 56 x 58

MDS 250 - Self-supporting mounting holder



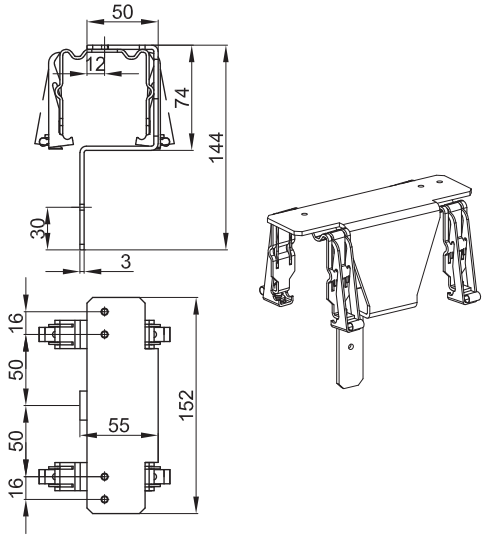
Only for self-supporting system MDS 250 with VL 13, VL 14.

MDS 400 - Self-supporting mounting holder



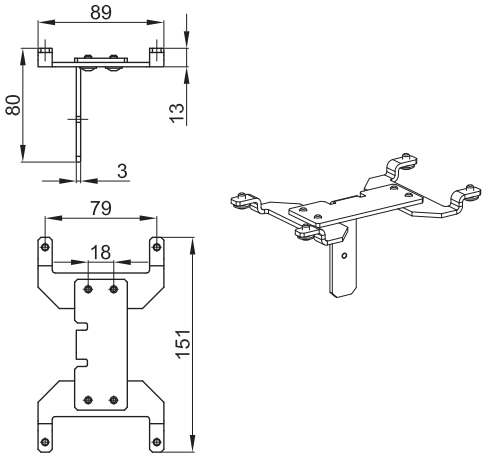
Only for self-supporting system MDS 400 with VL 13, VL 14.

MDS 250 - Self-supporting central mounting holder



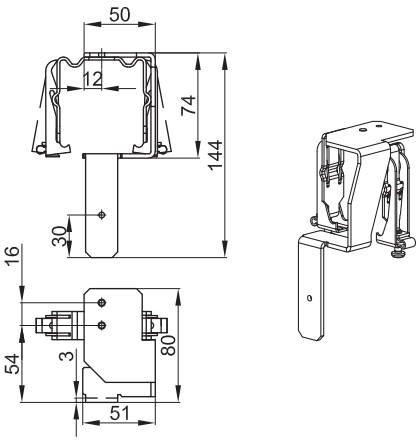
Only for self-supporting system MDS 250 with VL 15.

MDS 400 - Self-supporting central mounting holder



Only for self-supporting system MDS 400 with VL 15.

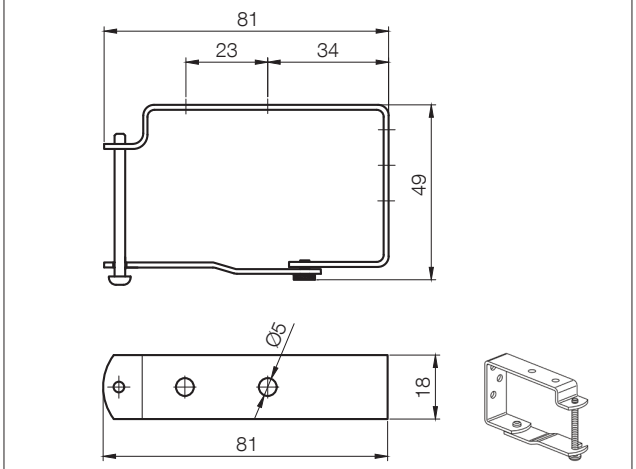
Subtle 250 - Self-supporting mounting holder



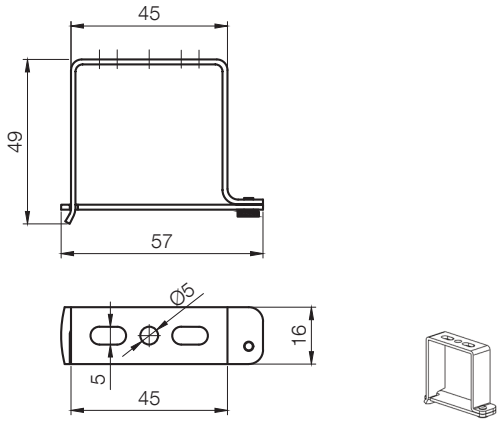
Only for self-supporting system subtle 250 with VL 16.

21.6 Mounting holders of head rail 40 x 40

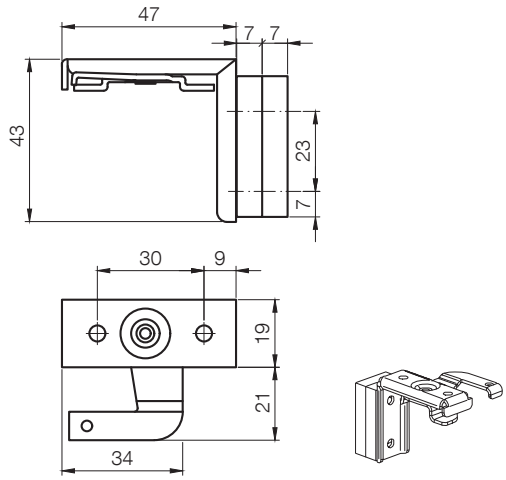
DU - Holder - universal



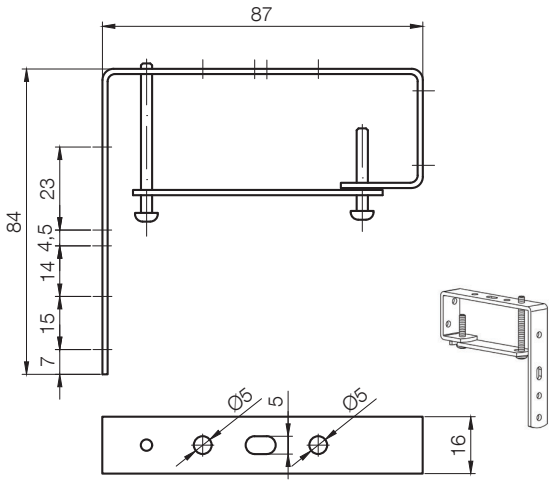
DS - Holder for installation on the ceiling



DO - Revolving holder with pad

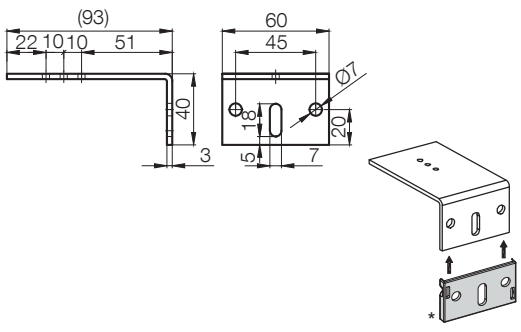


DKP - Holder of installation of cover plate

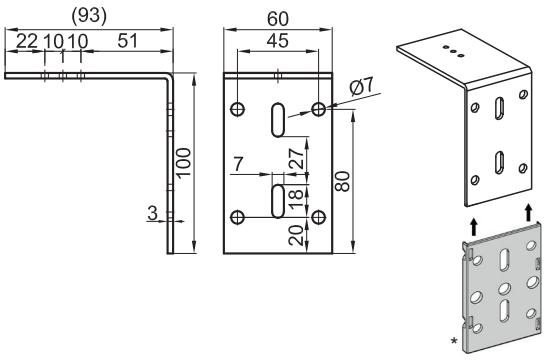


21.7 Holders

MD 2a - Holder on the frame



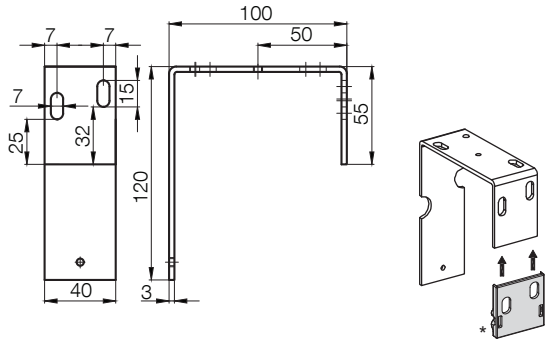
MD 2b - Holder on the wall



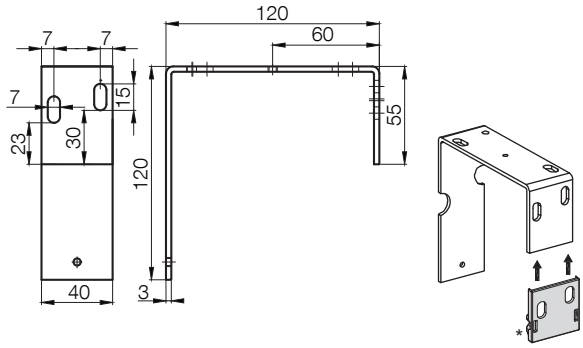
*plastic pad used to break the thermal bridge

21.7 Holders

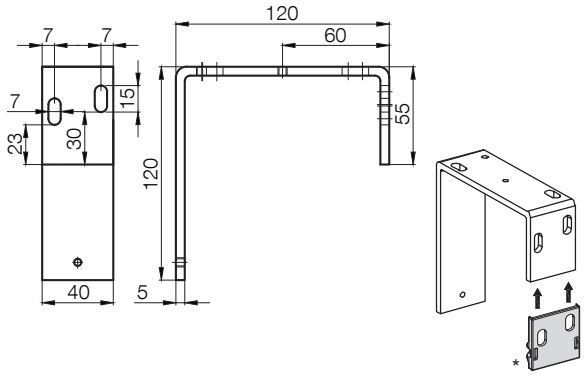
DK 2 - Cover plate holder



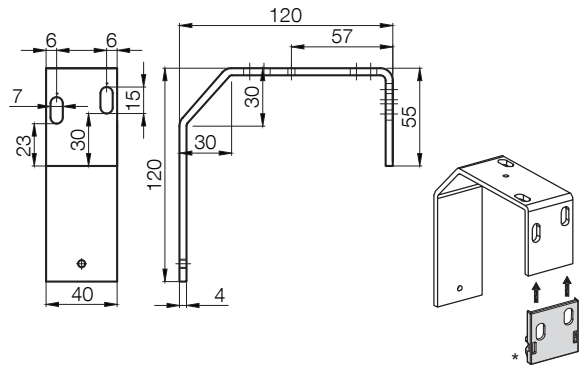
DK 3 - Cover plate holder



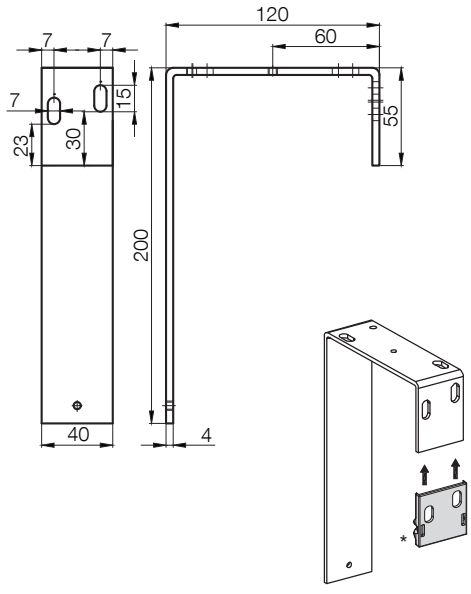
DK 3/5 - Cover plate holder - reinforced



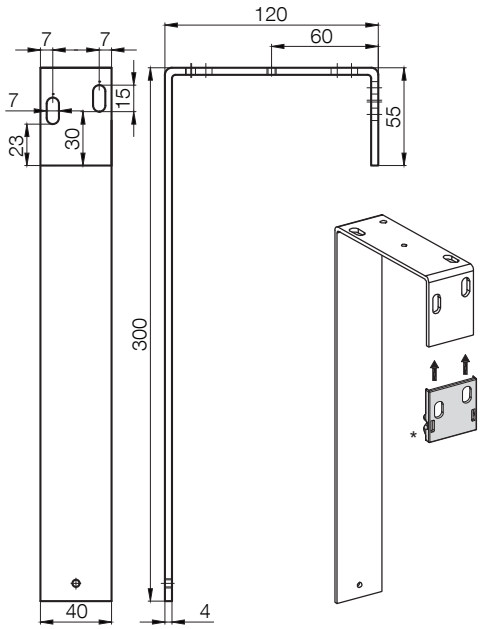
DK 3a - Cover plate holder - bevelled



DK 3 - 200 - Cover plate holder - enlarged



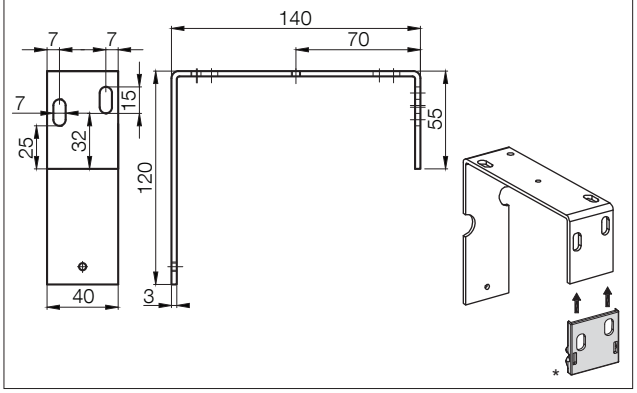
DK 3 - 300 - Cover plate holder - enlarged



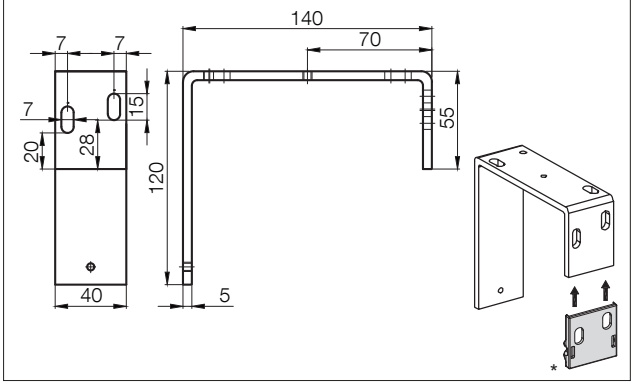
*plastic pad used to break the thermal bridge

21.7 Holders

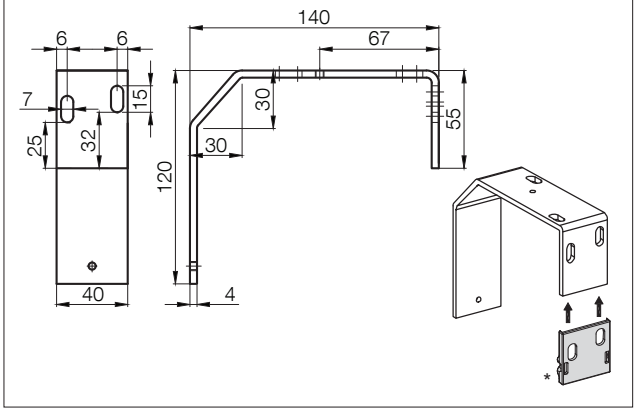
DK 4 - Cover plate holder



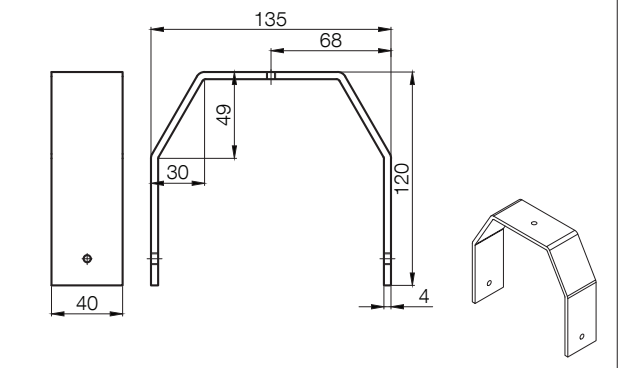
DK 4/5 - Cover plate holder - reinforced



DK 4a - Cover plate holder - bevelled

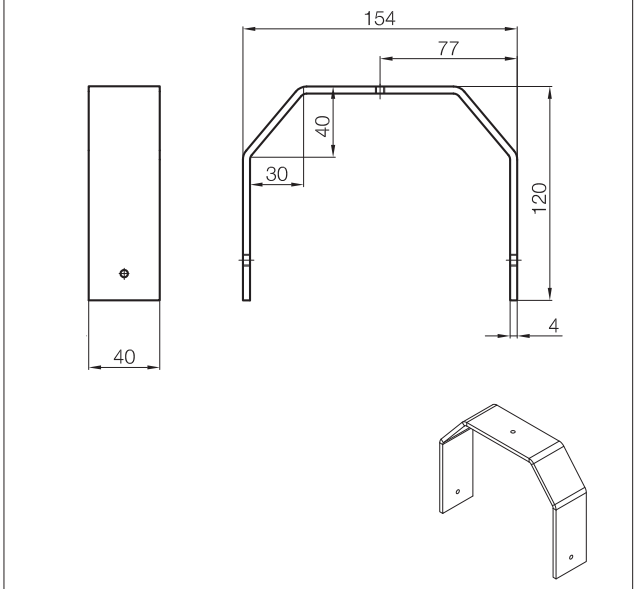


DK 4e 140 - Cover plate holder



For Cover plates KP 3e 140.

DK 4e 160 - Cover plate holder

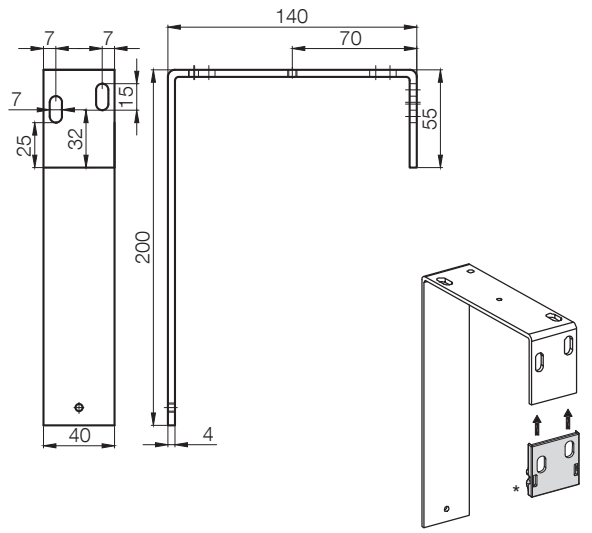


For Cover plates KP 3e 160.

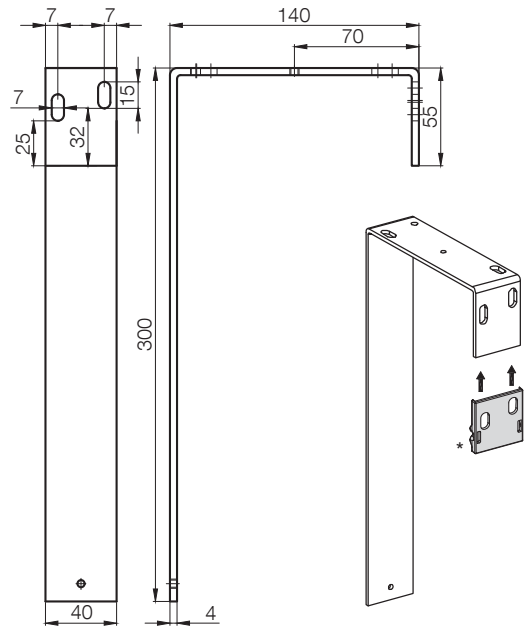
*plastic pad used to break the thermal bridge

21.7 Holders

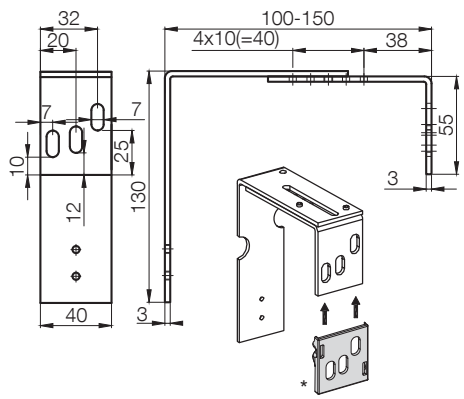
DK 4 - 200 - Cover plate holder - enlarged



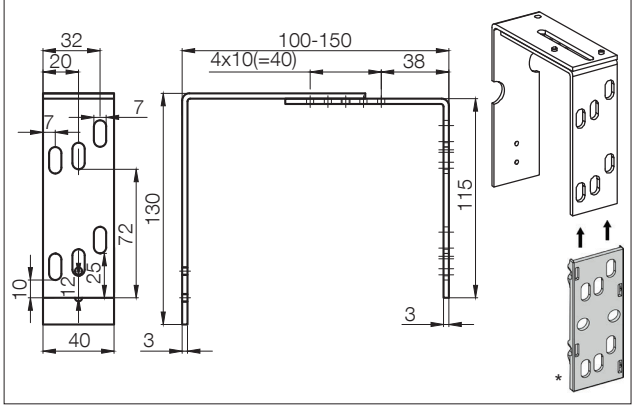
DK 4 - 300 - Cover plate holder - enlarged



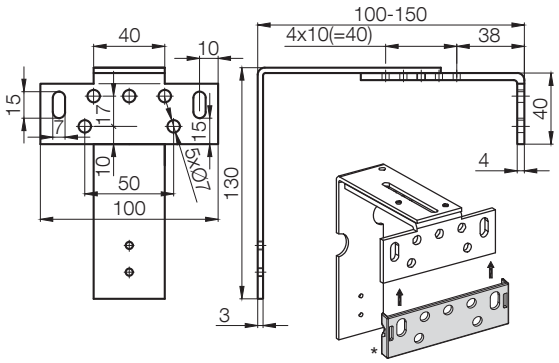
DK 5 - Cover plate holder



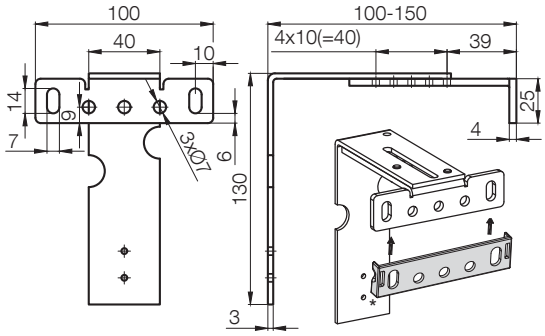
DK 5b - Cover plate holder - sliding, back part enlarged



DK 5c - Cover plate holder - sliding, widened



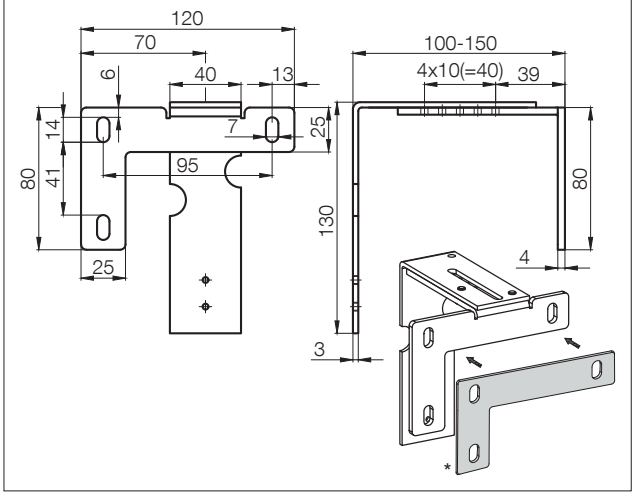
DK 5d - Cover plate holder - sliding, widened/shortened back part



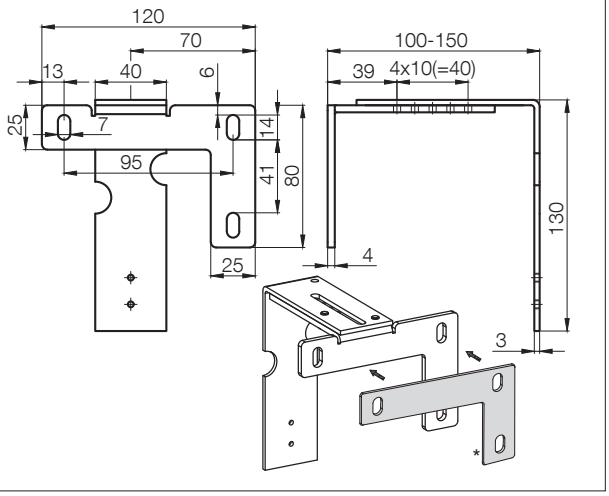
*plastic pad used to break the thermal bridge

21.7 Holders

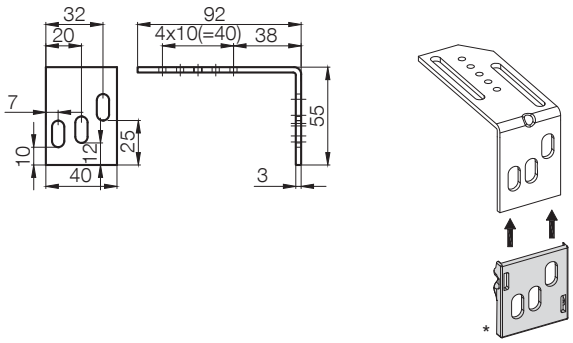
DK 5RL - Cover plate holder - sliding, corner left



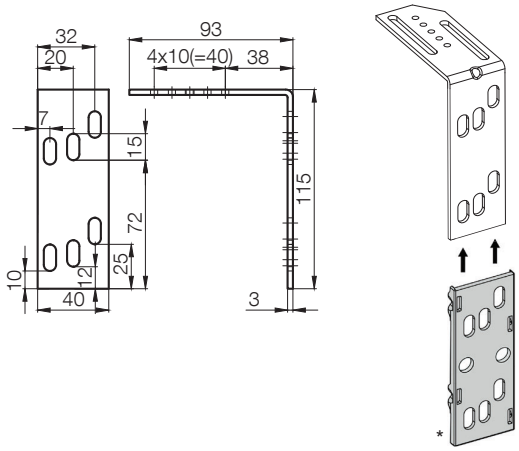
DK 5RP - Cover plate holder - sliding, corner right



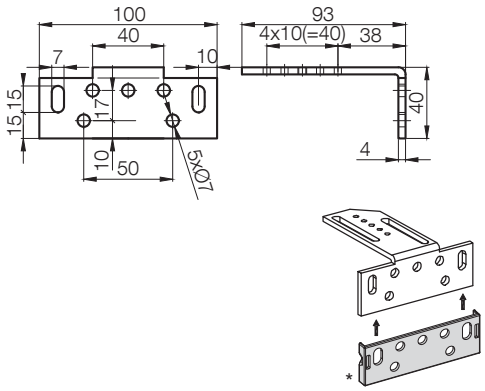
DK 5st - Back part of the holder on the wall



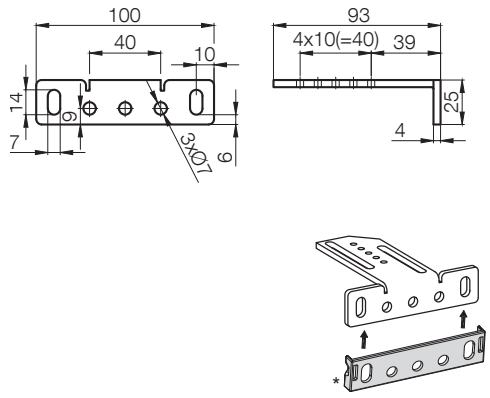
DK 5bst - Back part of the holder on the wall - enlarged



DK 5cst - Back part of the holder on the wall - widened



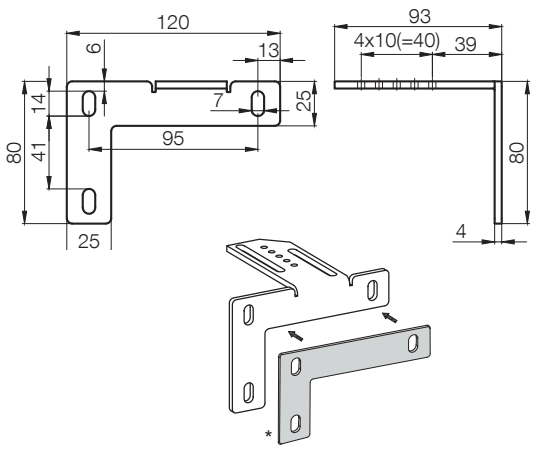
DK 5dst - Back part of the holder on the wall



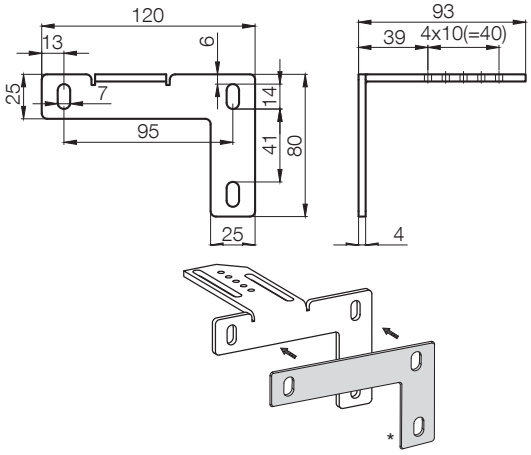
*plastic pad used to break the thermal bridge

21.7 Holders

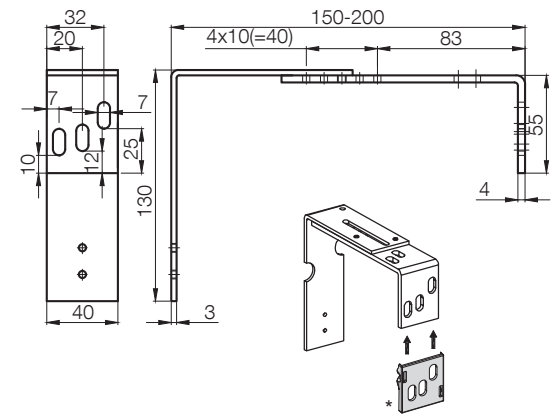
DK 5RLst - Back part of the holder on the wall



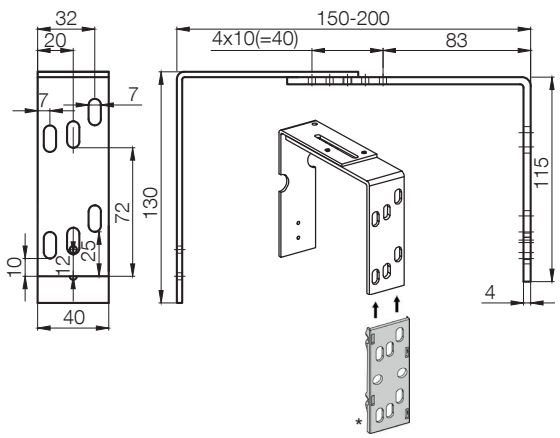
DK 5RPst - Back part of the holder on the wall



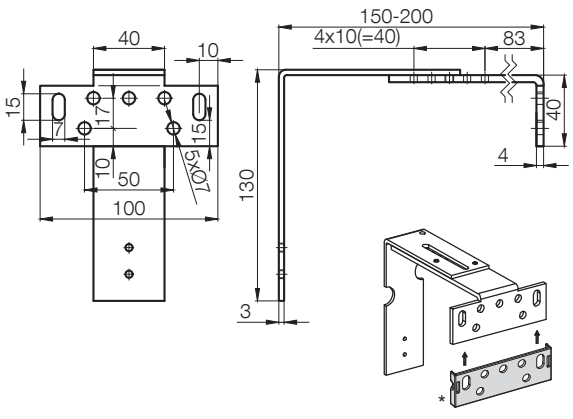
DK 6 - Cover plate holder - sliding



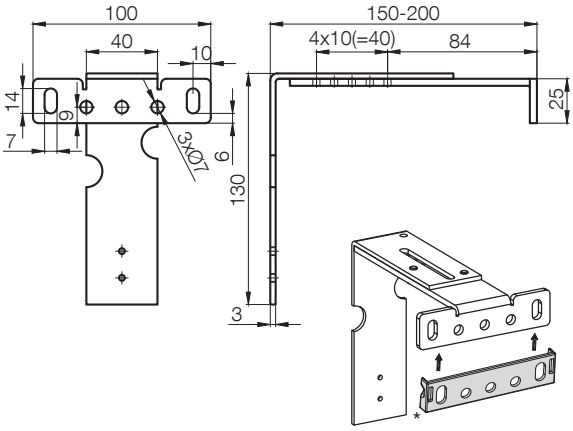
DK 6b - Cover plate holder - sliding, back part enlarged



DK 6c - Cover plate holder - sliding, widened



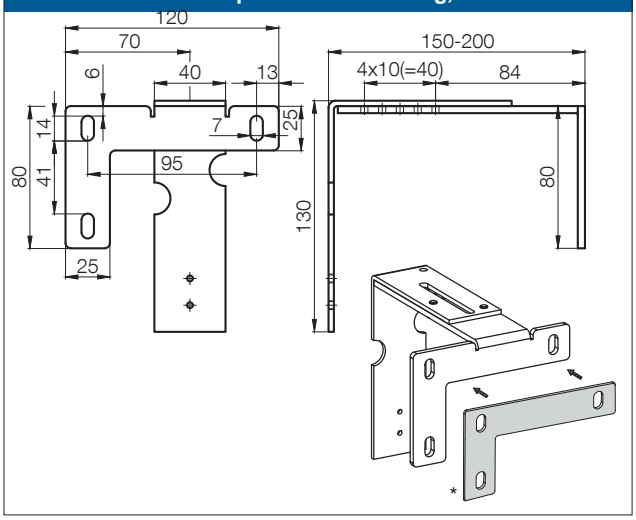
DK 6d - Cover plate holder - sliding, widened/shortened back part



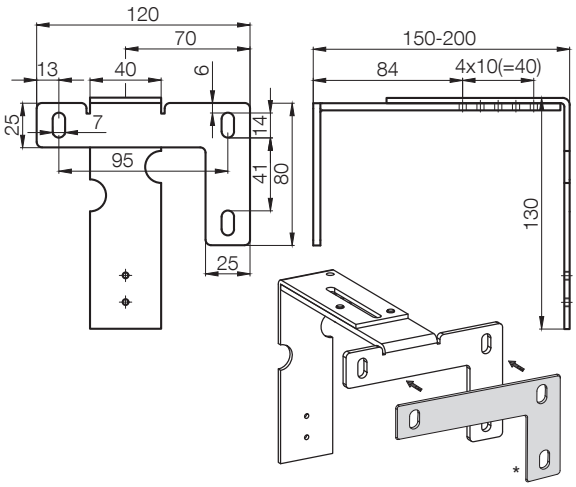
*plastic pad used to break the thermal bridge

21.7 Holders

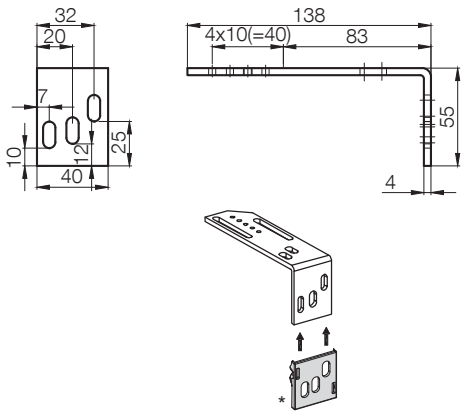
DK 6RL - Cover plate holder - sliding, corner left



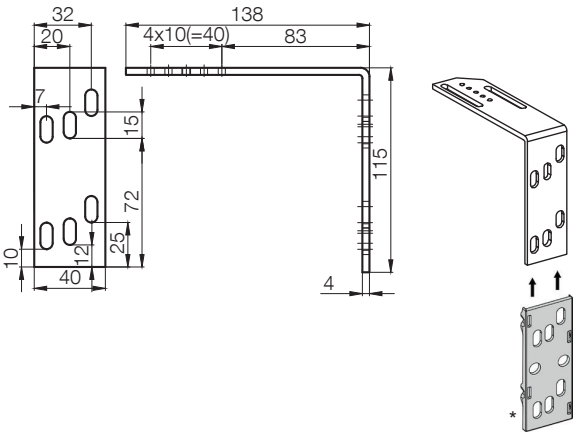
DK 6RP - Cover plate holder - sliding, corner right



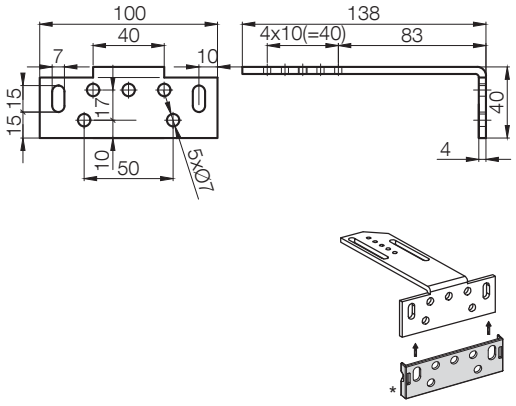
DK 6st - Back part of the holder on the wall



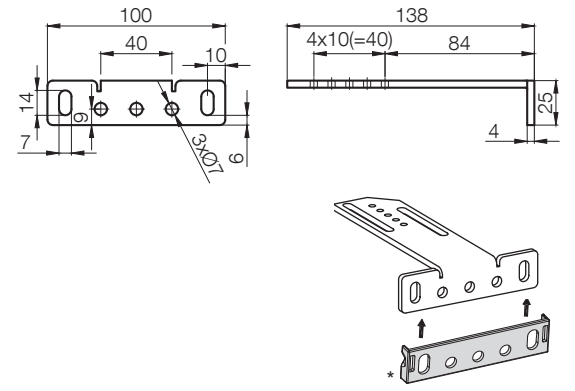
DK 6bst - Back part of the holder on the wall - enlarged



DK 6cst - Back part of the holder on the wall - widened



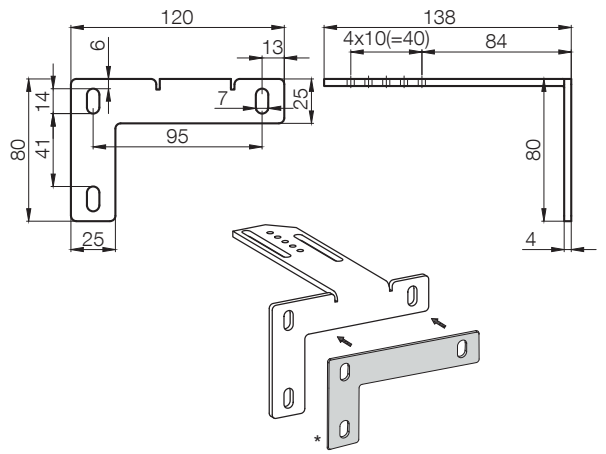
DK 6dst - Back part of the holder on the wall



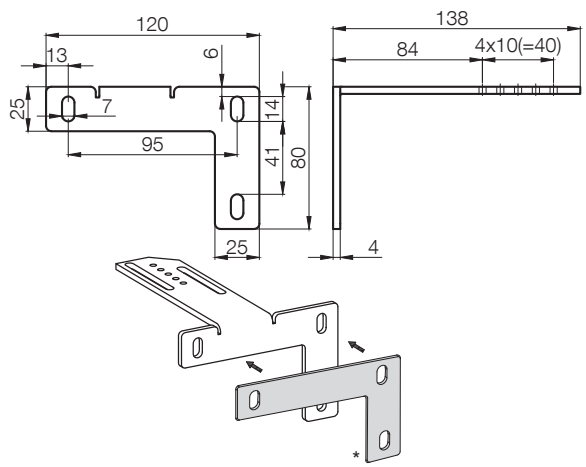
*plastic pad used to break the thermal bridge

21.7 Holders

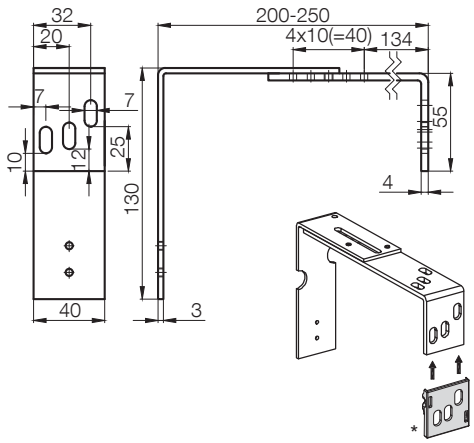
DK 6RLst - Back part of the holder on the wall



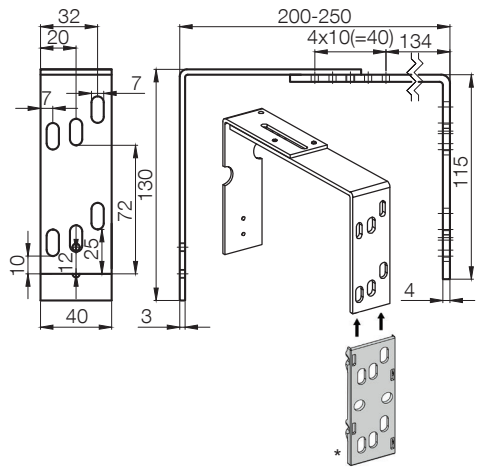
DK 6RPst - Back part of the holder on the wall



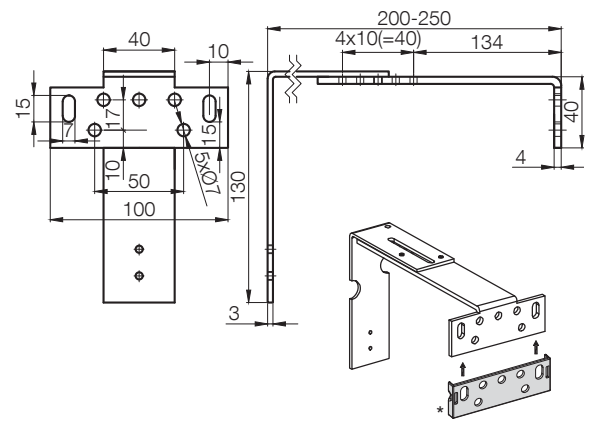
DK 7 - Cover plate holder - sliding



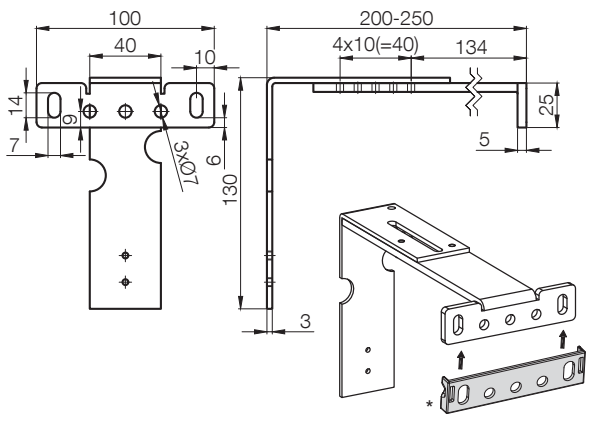
DK 7b - Cover plate holder sliding, back part enlarged



DK 7c - Cover plate holder - sliding, widened



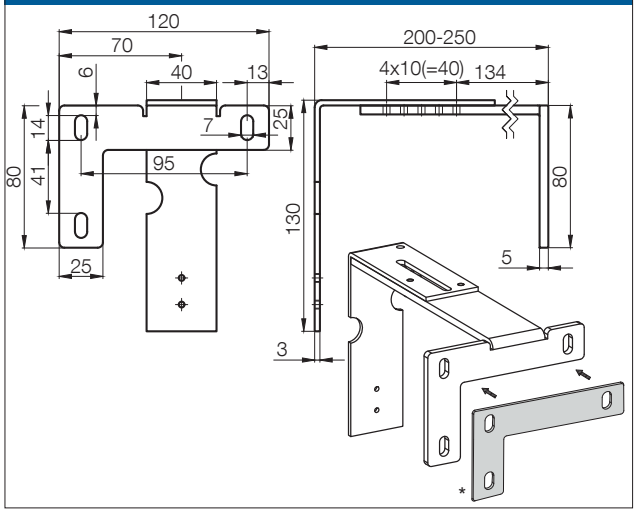
DK 7d - Cover plate holder - sliding, widened/shortened back part



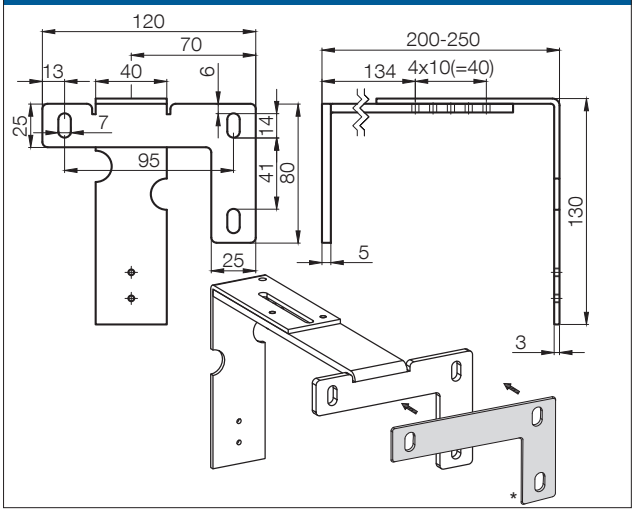
*plastic pad used to break the thermal bridge

21.7 Holders

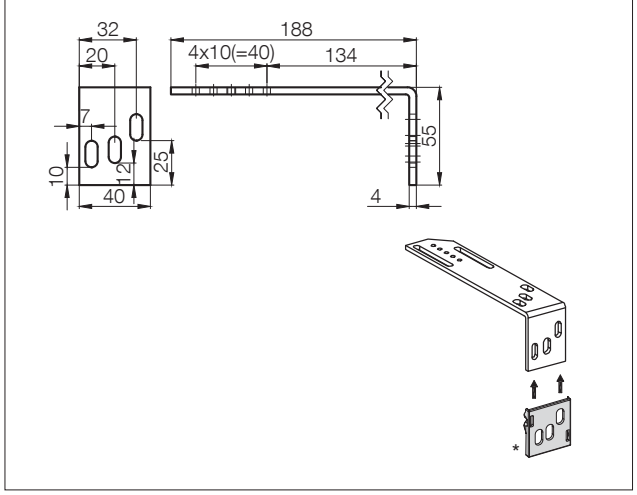
DK 7RL - Cover plate holder - sliding, corner left



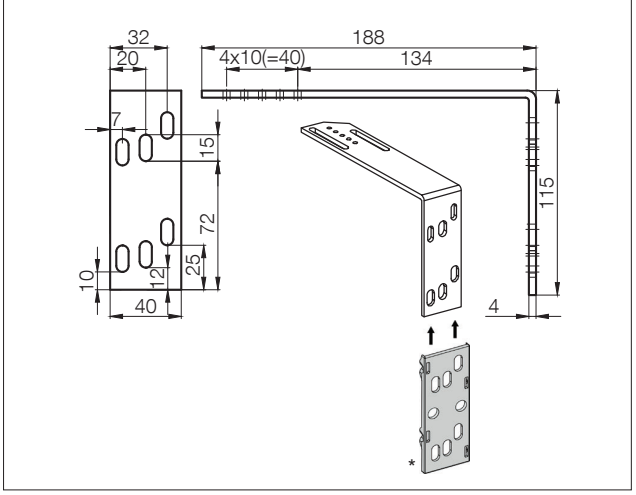
DK 7RP - Cover plate holder - sliding, corner right



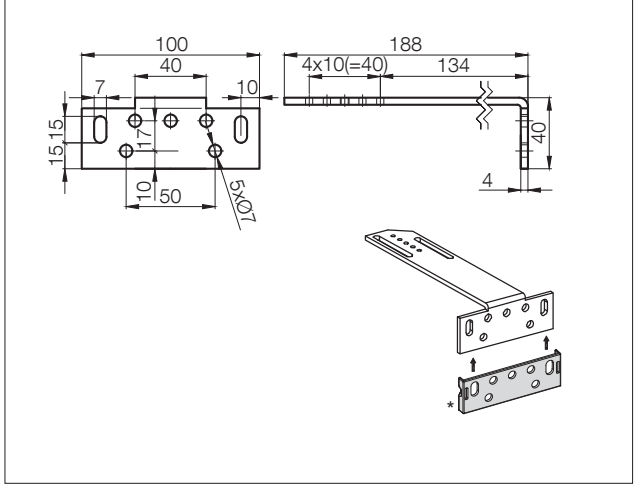
DK 7st - Back part of the holder on the wall



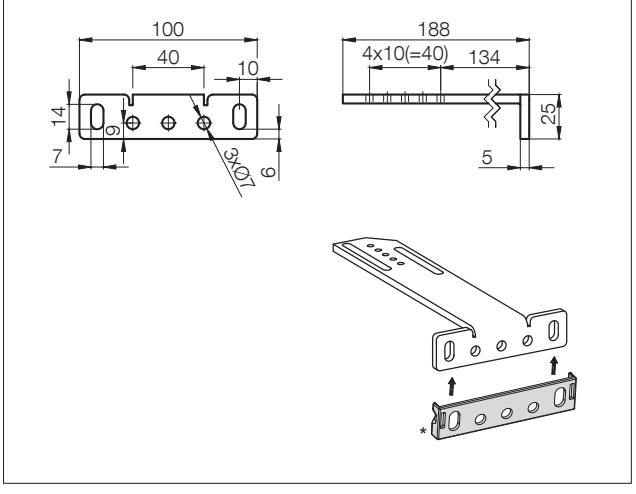
DK 7bst - Back part of the holder on the wall - enlarged



DK 7cst - Back part of the holder on the wall - widened



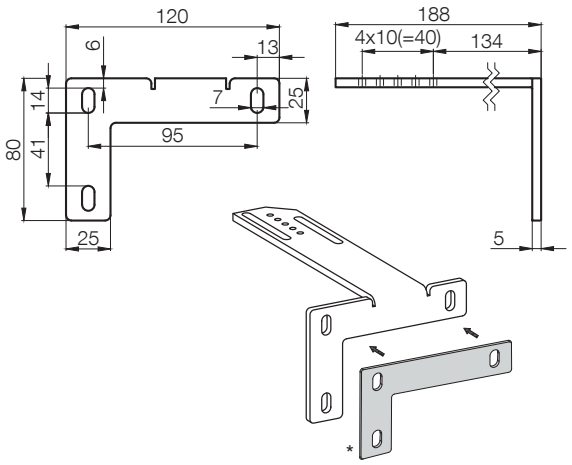
DK 7dst - Back part of the holder on the wall



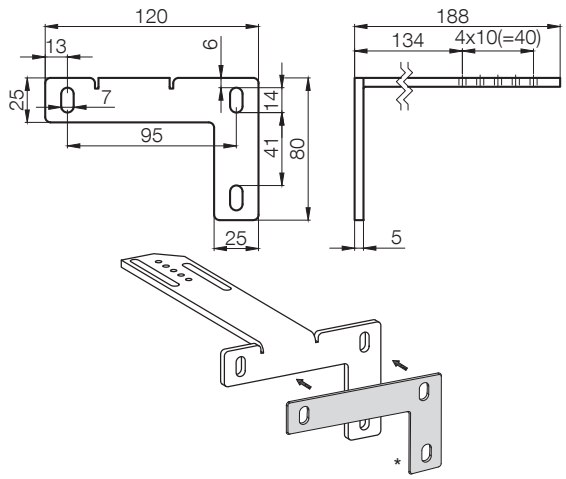
*plastic pad used to break the thermal bridge

21.7 Holders

DK 7RLst - Back part of the holder on the wall

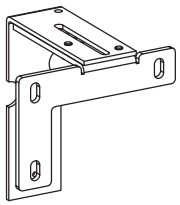


DK 7RPst - Back part of the holder on the wall



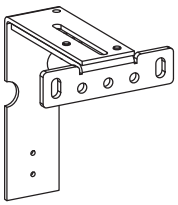
DK 5, 6, 7 set

DK 5, 6, 7 RL



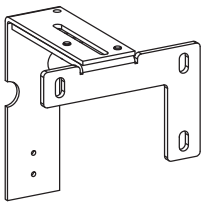
1 pc

DK 5, 6, 7 d



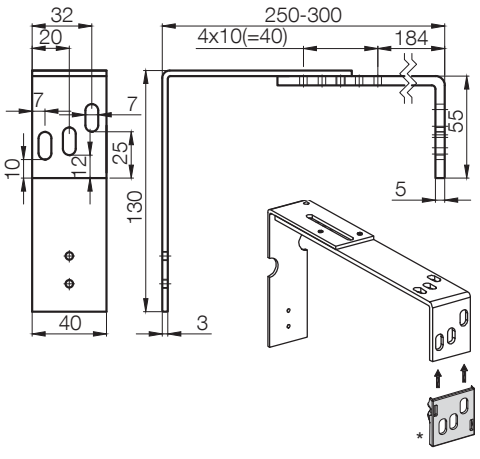
Total amount of holders by widht, minus 2.

DK 5, 6, 7 RP

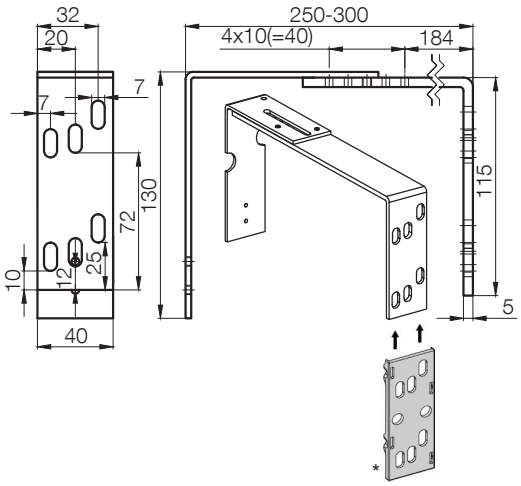


1 pc

DK 8 - Cover plate holder - sliding



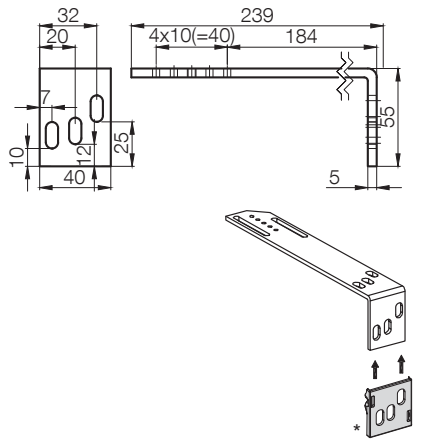
DK 8b - Cover plate holder - sliding, back part enlarged



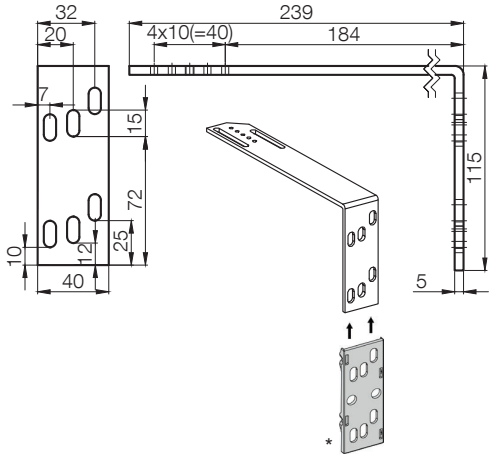
*plastic pad used to break the thermal bridge

21.7 Holders

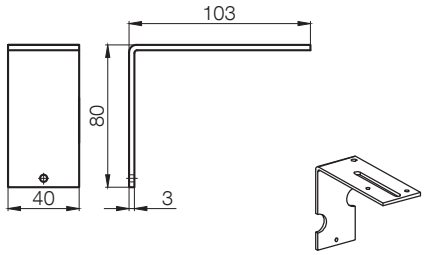
DK 8st - Back part of the holder on the wall



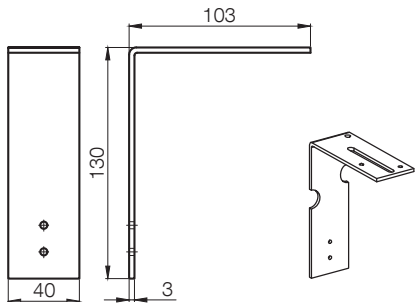
DK 8bst - Back part of the holder on the wall - enlarged



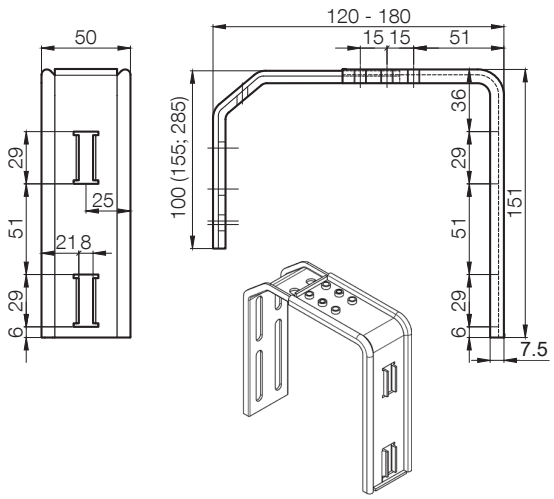
DK 567kp - 80 - Part for fixation of cover plate



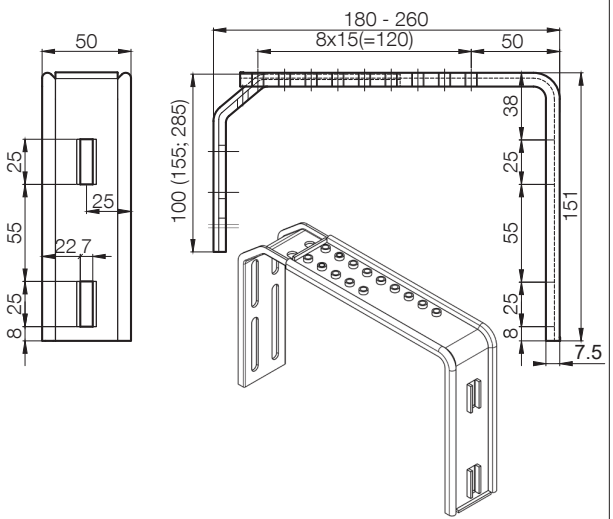
DK 567kp - 130 - Part for fixation of cover plate



PDK 1 - Cover plate holder - sliding



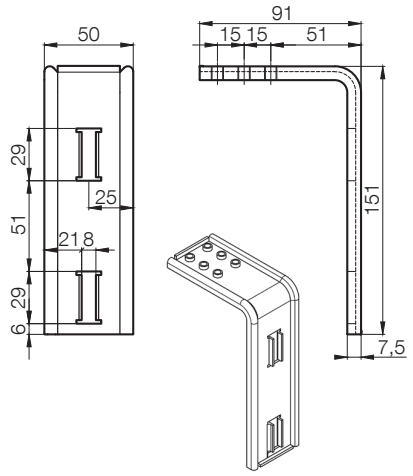
PDK 2 - Cover plate holder - sliding



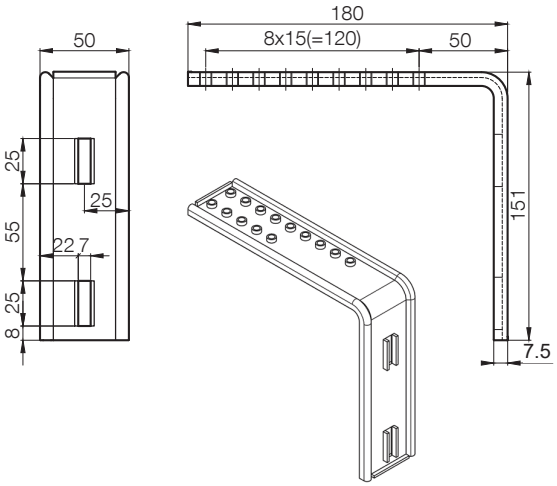
*plastic pad used to break the thermal bridge

21.7 Holders

PDK 1st - Back part of the holder on the wall

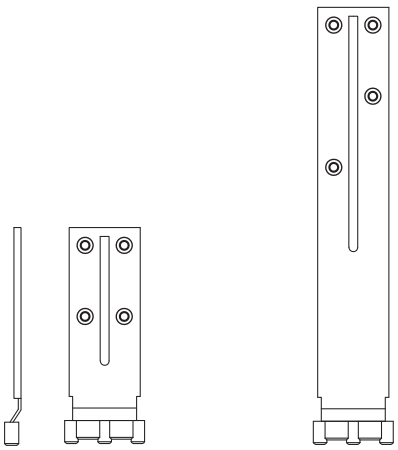


PDK 2st - Back part of the holder on the wall



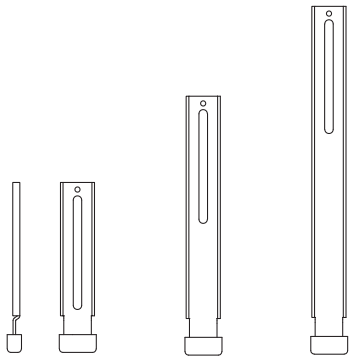
21.7.1 Extensions of mounting holders

Extensions of holders PDK



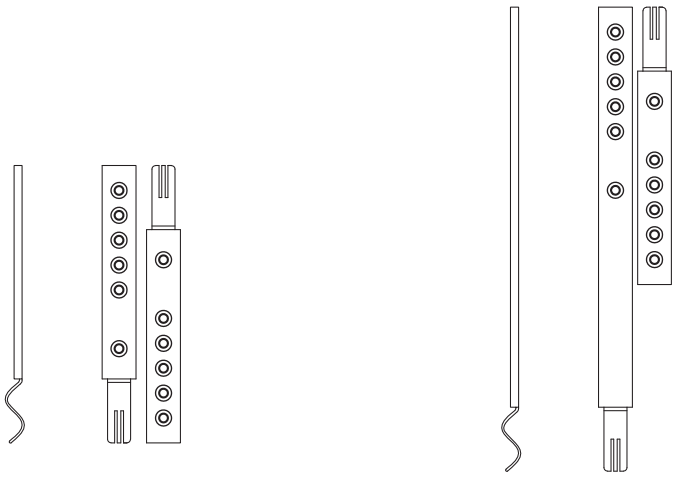
sa, sb sc, sd

Extensions of holders DKP pro EXT-50



xa xb xc

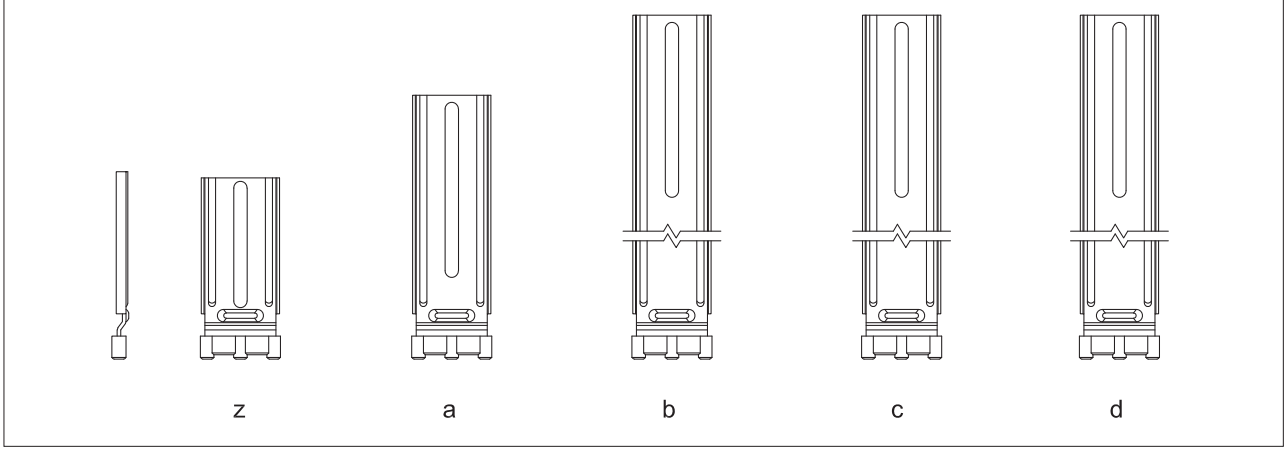
Extensions of holders PDK (only KP4a)



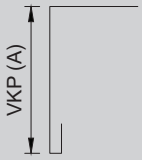
s4a s4b, s4c

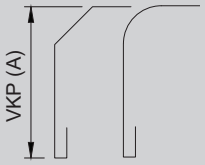
21.7.1 Extensions of mounting holders

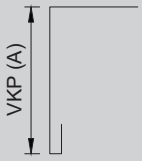
Extensions of holders DK



21.8 Selection of extension size

VKP - height of square cover plate (A)		Extension type DK
	13.0 - 17.3 cm	z
	17.4 - 25.3 cm	a
	25.4 - 33.0 cm	b
	33.1 - 41.2 cm	c
	41.3 - 48.0 cm	d

VKP - height of bevelled or half-round cover plate (A)		Extension type DK
	14.5 - 21.2 cm	z
	18.5 - 25.5 cm	a
	26.6 - 33.5 cm	b
	34.5 - 41.4 cm	c
	42.5 - 48.0 cm	d

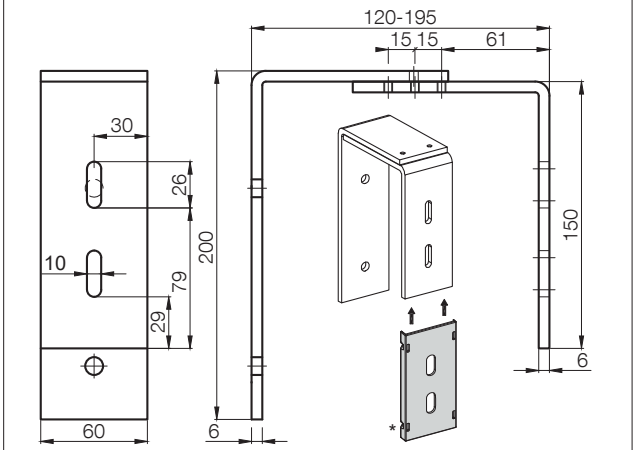
VKP - height of square cover plate (A)		Extension type DK
	12.0 - 18.0 cm	sa
	18.0 - 25.5 cm	sb
	25.5 - 38.0 cm	sc
	38.0 - 50 cm	sd

VKP - height of square cover plate (A)		Extension type DKP (for EXT-50)
	10.5 - 16.0 cm	xa
	16.1 - 21.0 cm	xb
	21.1 - 26 cm	xc

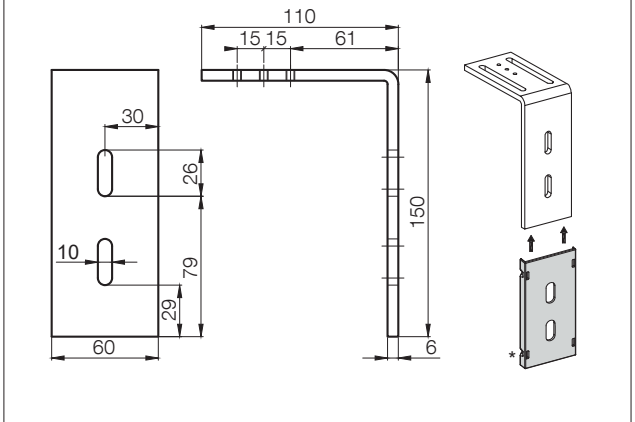
VKP - height of square cover plate (A)		Extension type DK (only for KP4a)
	18.0 - 28.0 cm	s4a
	28.1 - 38.5 cm	s4b
	38.6 - 50.0 cm	s4c

21.9 Under-plaster holder

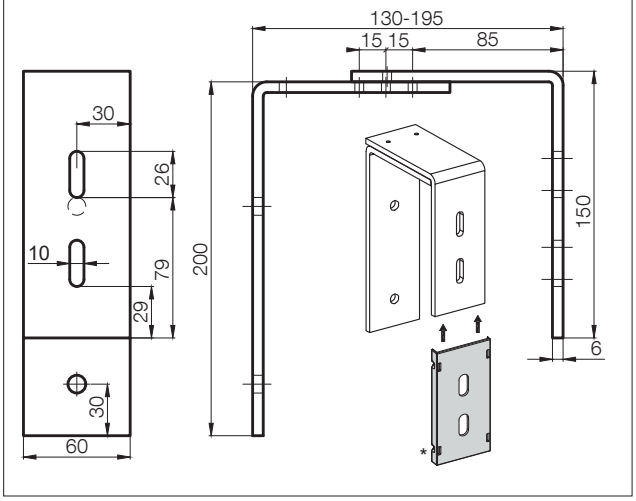
PP - Under-plaster holder - sliding



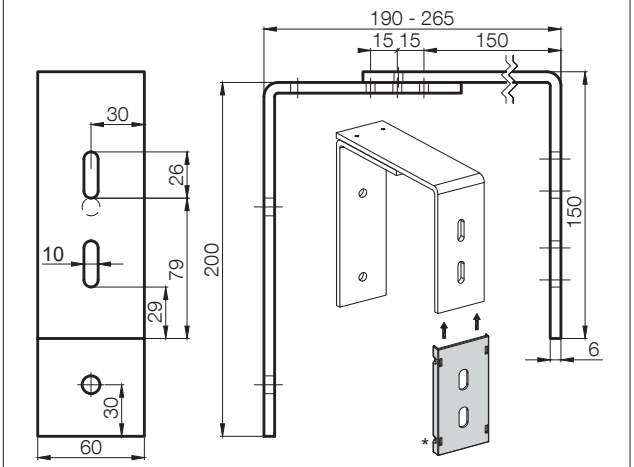
PP-st - Under-plaster holder - part on the wall



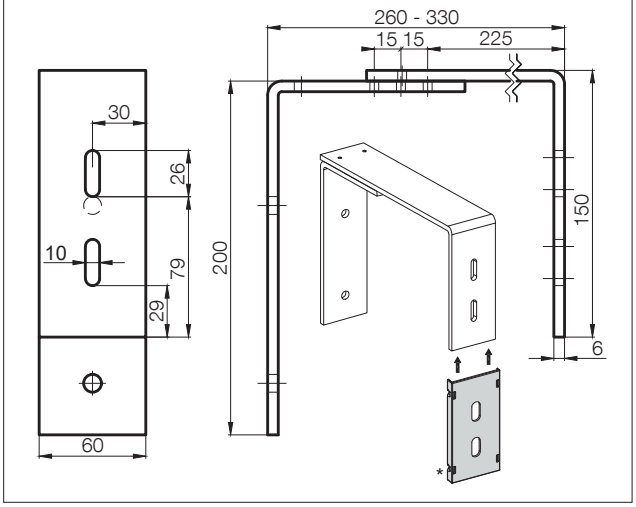
PPF 1 - Under-plaster holder - sliding



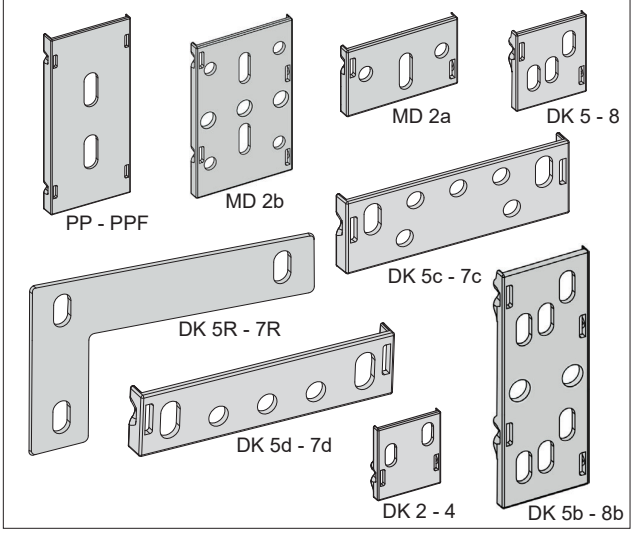
PPF 2 - Under-plaster holder - sliding



PPF 3 - Under-plaster holder - sliding



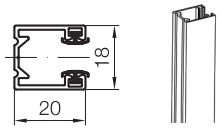
Plastic pads



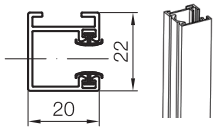
*plastic pad used to break the thermal bridge

21.10 Guide rails

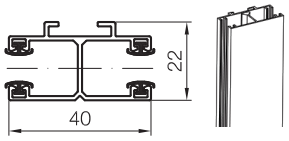
VL 1



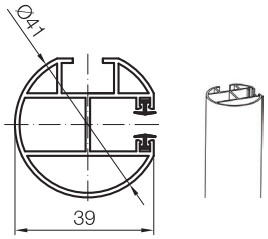
VL 2



VL 3

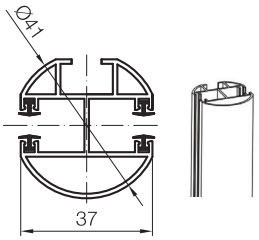


VL 4

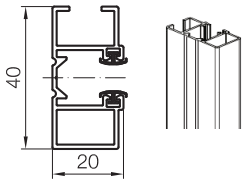


VL 4 exceed this dimension of the blind width by 20 mm on each side.

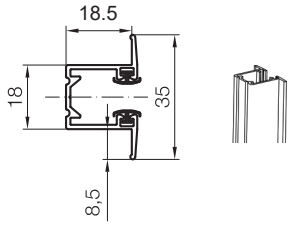
VL 5



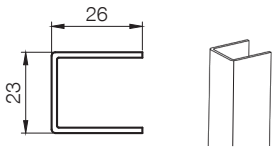
VL 6



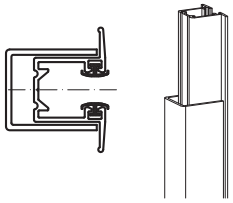
VL 7



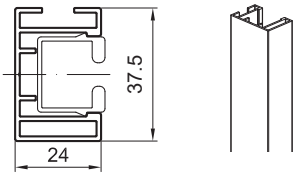
ZP



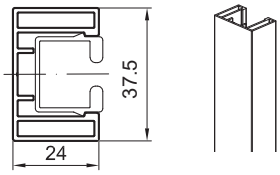
VL 7 + ZP



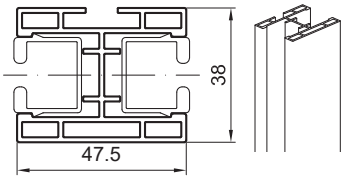
VL 13



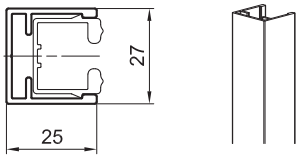
VL 14



VL 15

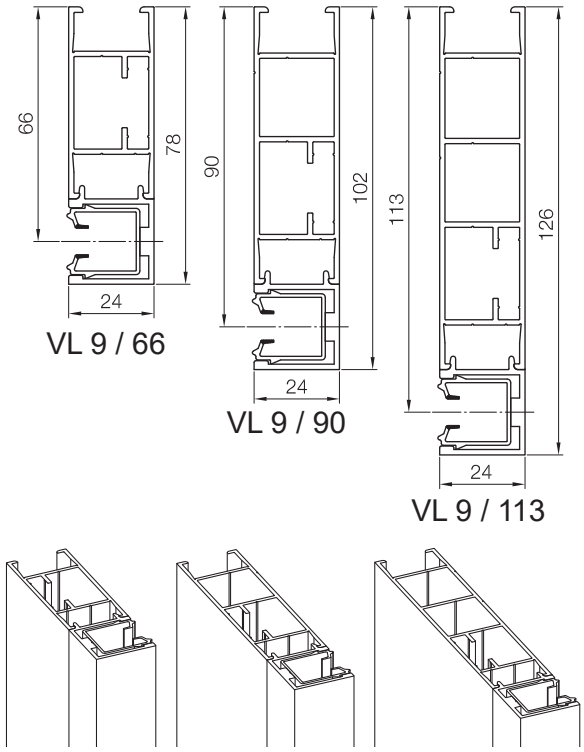


VL 16



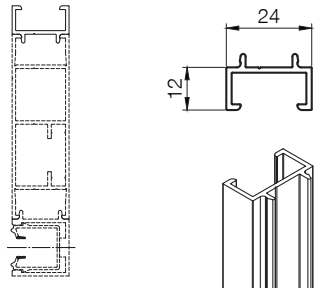
21.10 Guide rails

VL 9

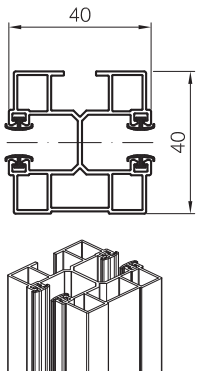


Plastic insert can be replaced by VL 1 or VL 7.

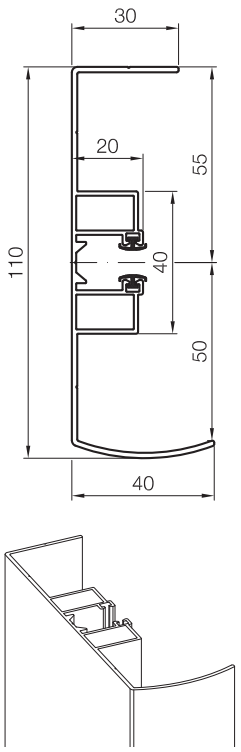
VL 9 off-set guide rail



VL 10

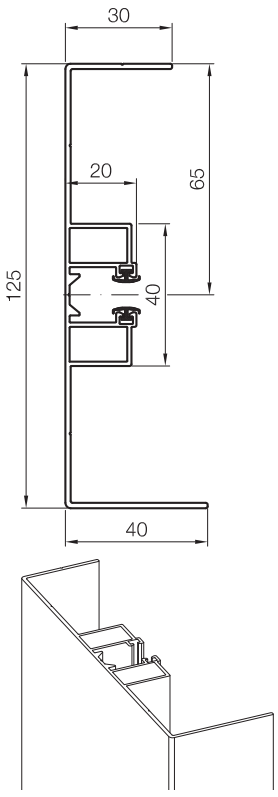


VL 11

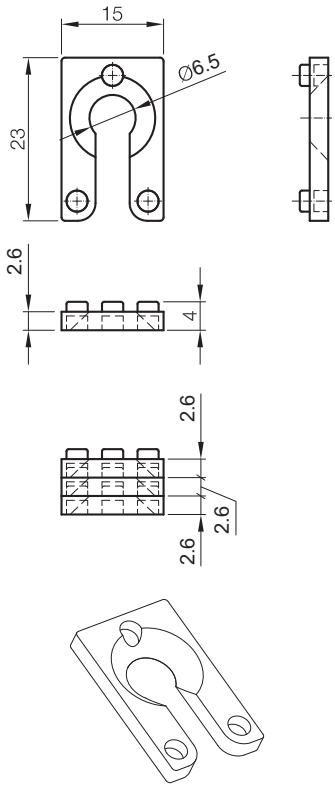


Not possible for Z-90 NOVAL.

VL 12



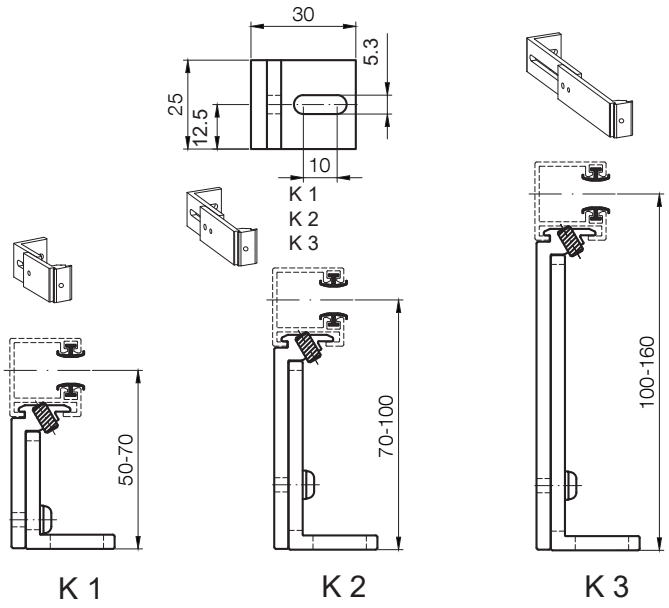
Pad between guide rails



21.11 Brackets for guide rails

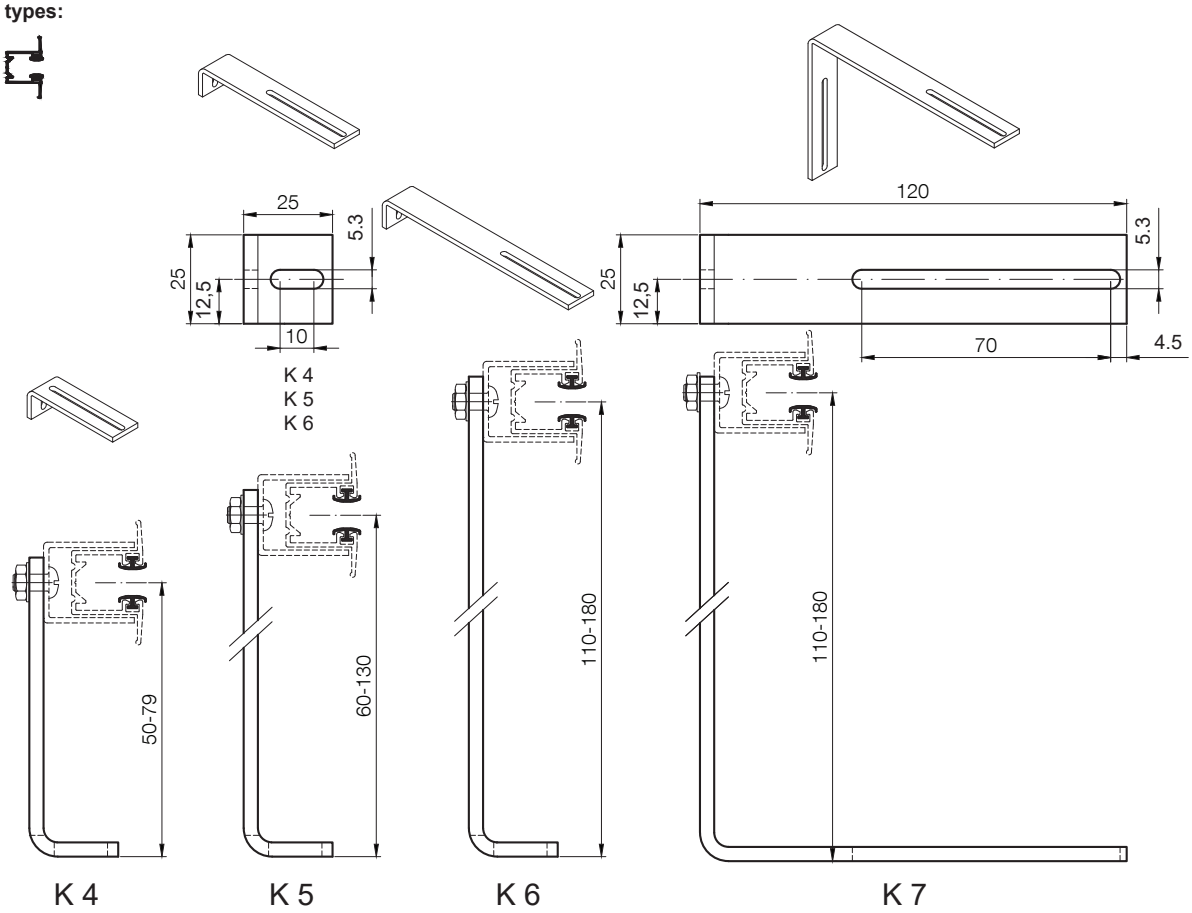
K 1, K 2, K 3 - Sliding bracket

VL types:



K 4, K 5, K 6, K 7 - Bracket for built-in case ZP

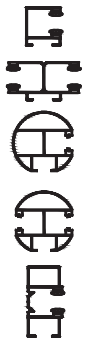
VL types:

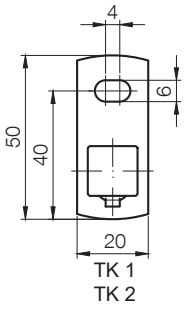


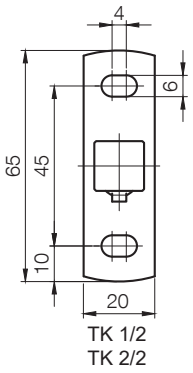
21.11 Brackets for guide rails

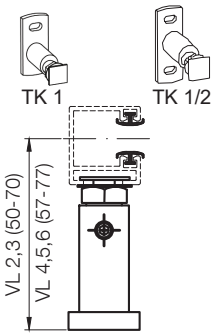
TK 1, TK 1/2, TK 2, TK 2/2 - Telescopic bracket

VL types:

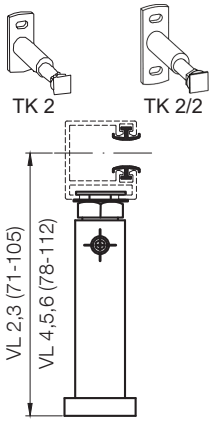








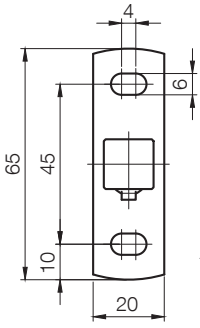
TK 1, 1/2

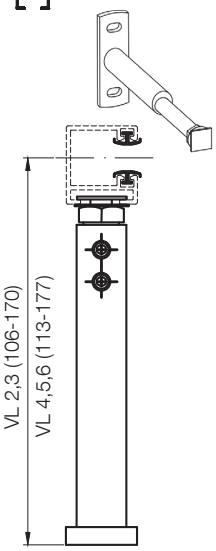


TK 2, 2/2

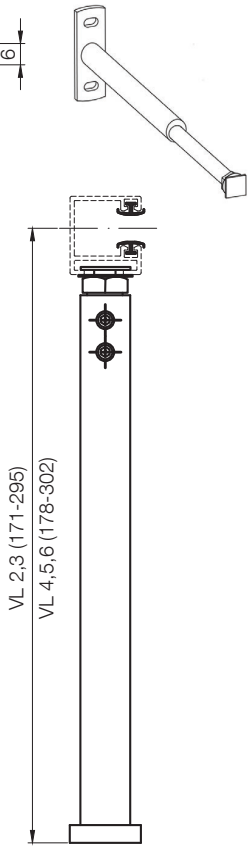
TK 3, TK 4 - Telescopic bracket

VL types:





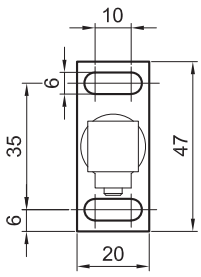
TK 3

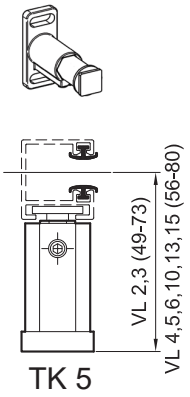


TK 4

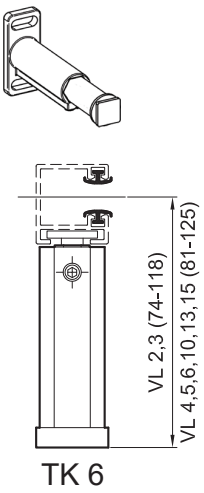
TK 5, TK 6 - Telescopic bracket

VL types:





TK 5

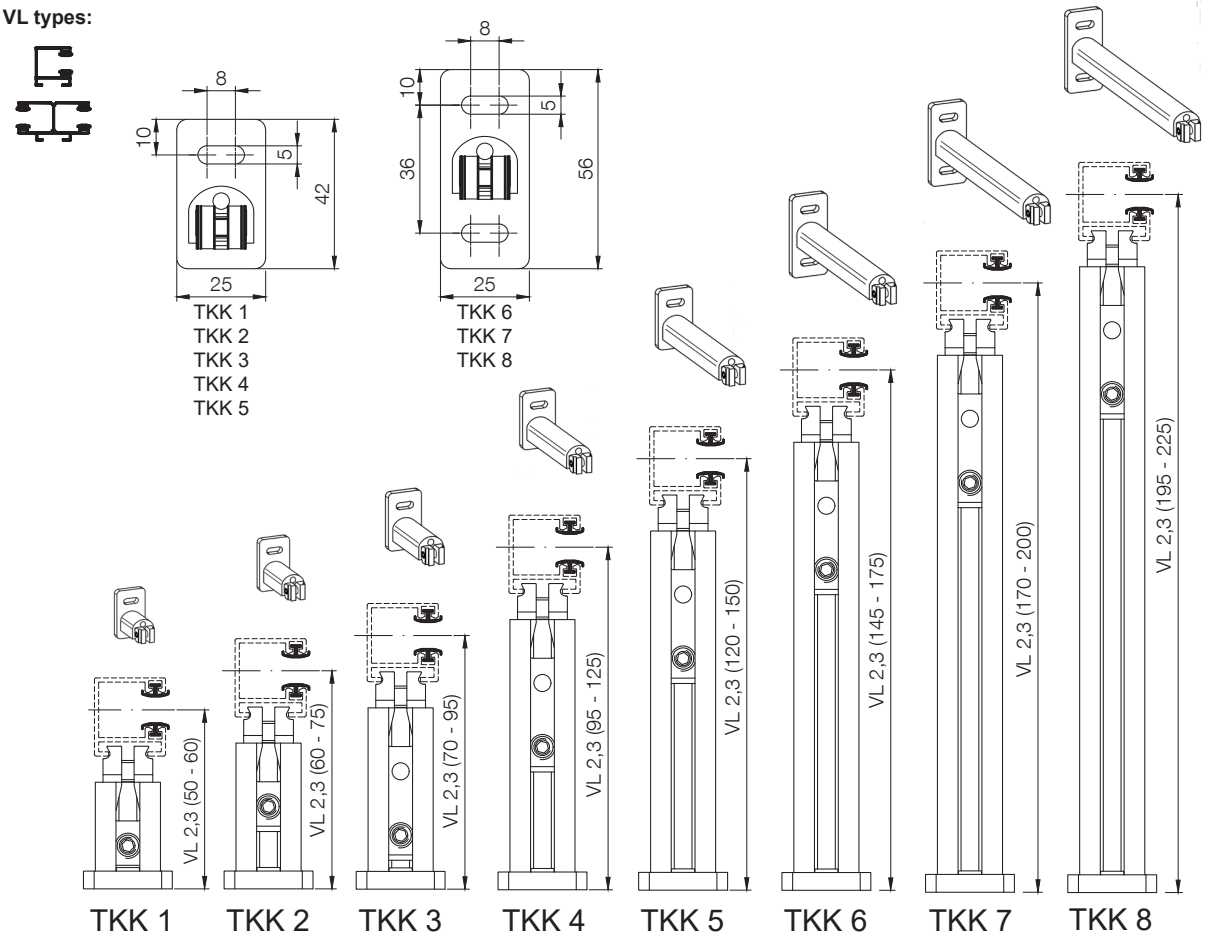


TK 6

21.11 Brackets for guide rails

TKK - Telescopic bracket - metal pin

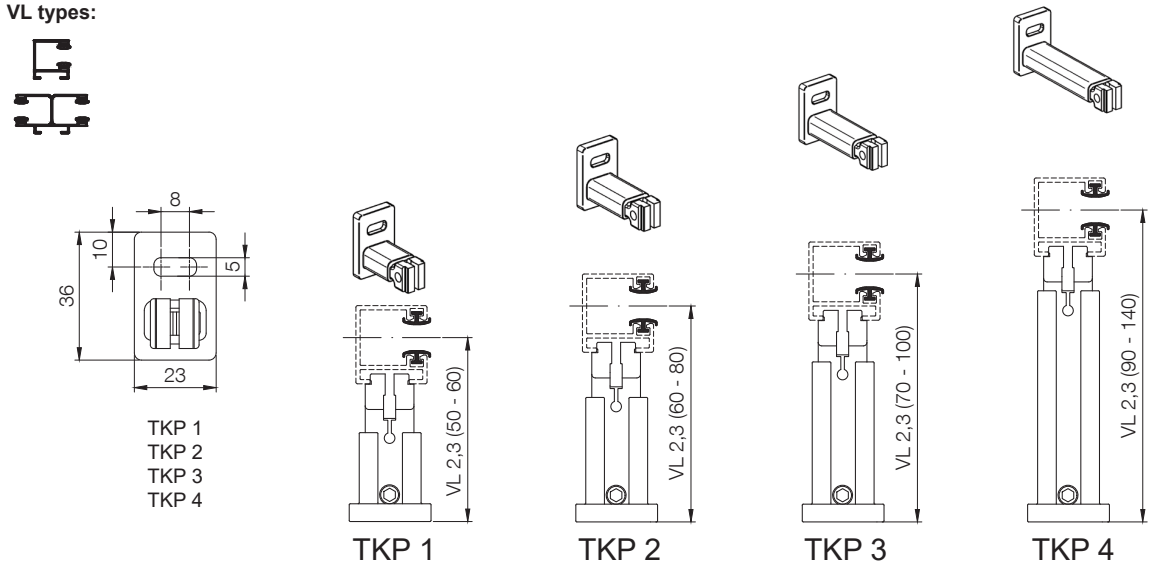
VL types:



The base TKK exceed this dimension of the blind width by 3.5 mm on each side.

TKP - Telescopic bracket - plastic pin

VL types:

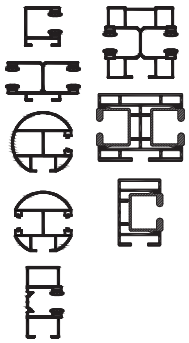


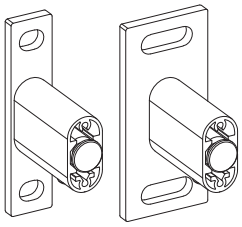
The base TKP exceed this dimension of the blind width by 2.5 mm on each side.

21.11 Brackets for guide rails

PK - Fixed bracket (no telescoping)

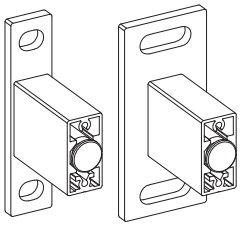
VL types:





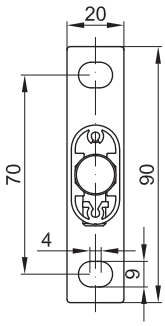
PK 70/20
PK 71-350/20

PK 70/40
PK 71-350/40

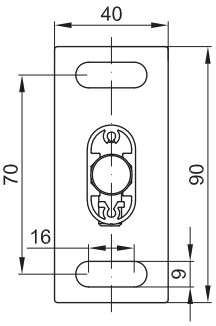


PK 70/20 H
PK 71-350/20 H

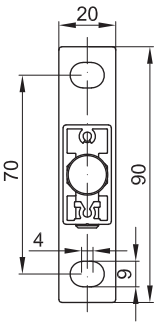
PK 70/40 H
PK 71-350/40 H



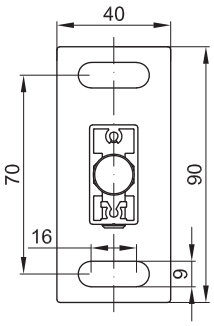
PK 70/20



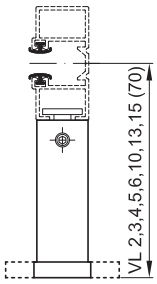
PK 70/40



PK 70/20 H

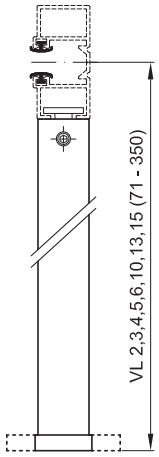


PK 70/40 H



PK 70/20
PK 70/40

PK 70/20 H
PK 70/40 H



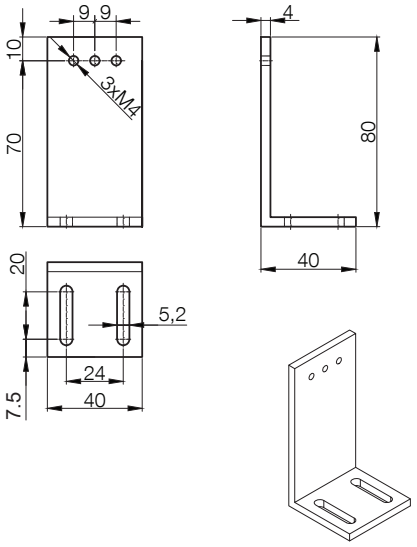
PK 71-350/20
PK 71-350/40

PK 71-350/20 H
PK 71-350/40 H

The base PK 70/20 and PK 71-350/20 exceed this dimension of the blind width by 1.5 mm on each side.
The base PK 70/40 and PK 71-350/40 exceed this dimension of the blind width by 11.5 mm on each side.

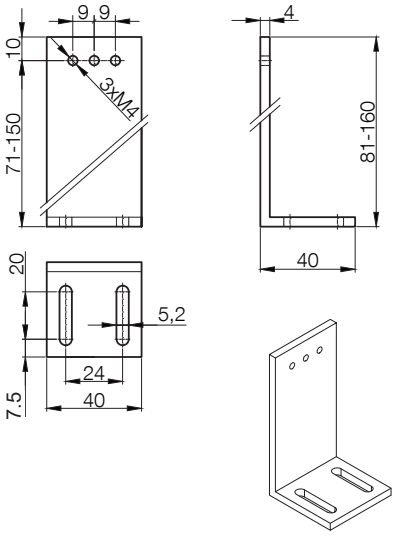
Bracket L 70

VL types:



Bracket L 71-150

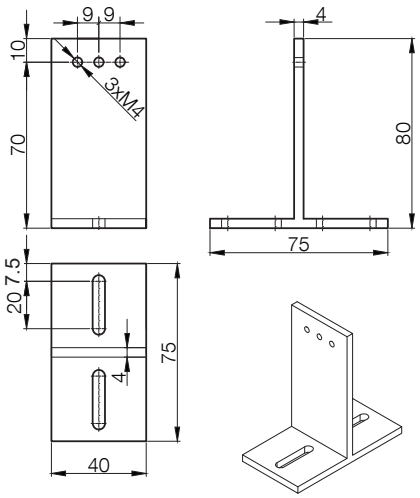
VL types:



21.11 Brackets for guide rails

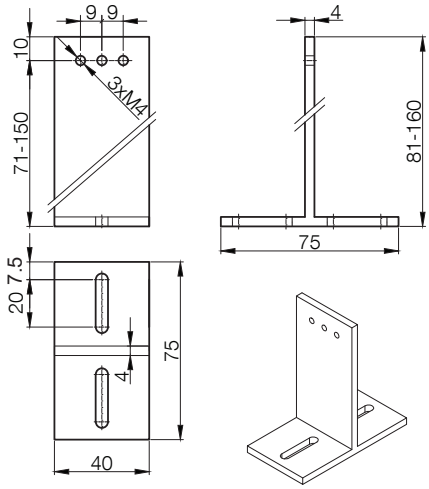
Bracket T 70

VL types:



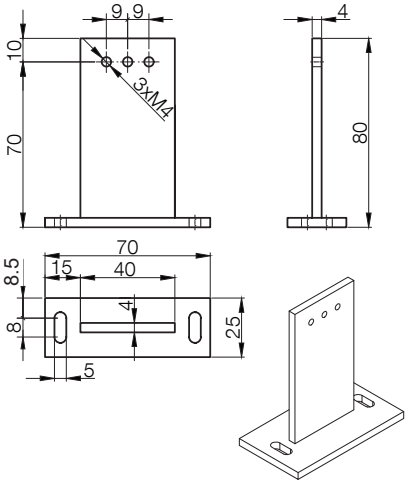
Bracket T 71-150

VL types:



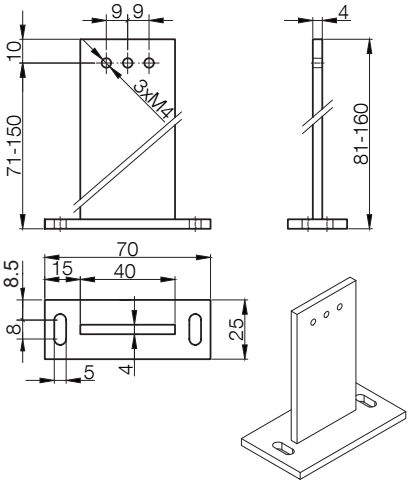
Bracket T 70 with reversed base

VL types:



Bracket T 71-150 with reversed base

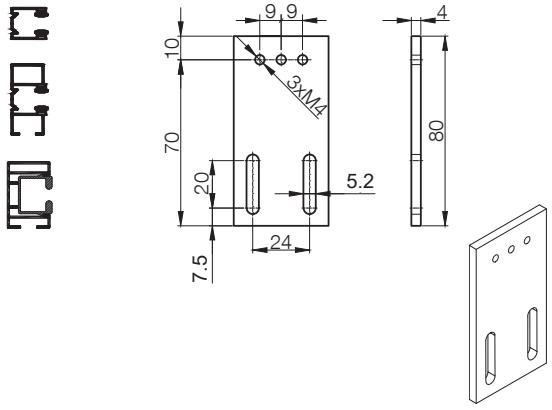
VL types:



21.11 Brackets for guide rails

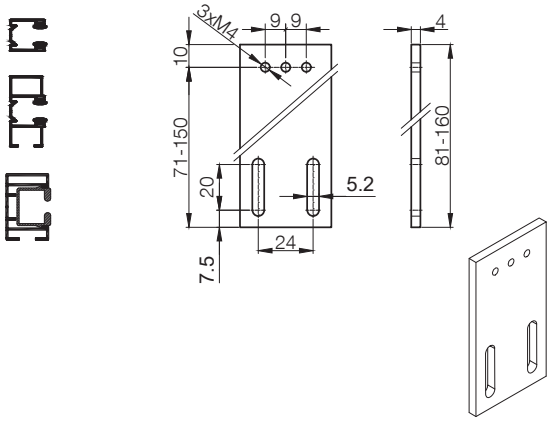
Bracket I 70

VL types:



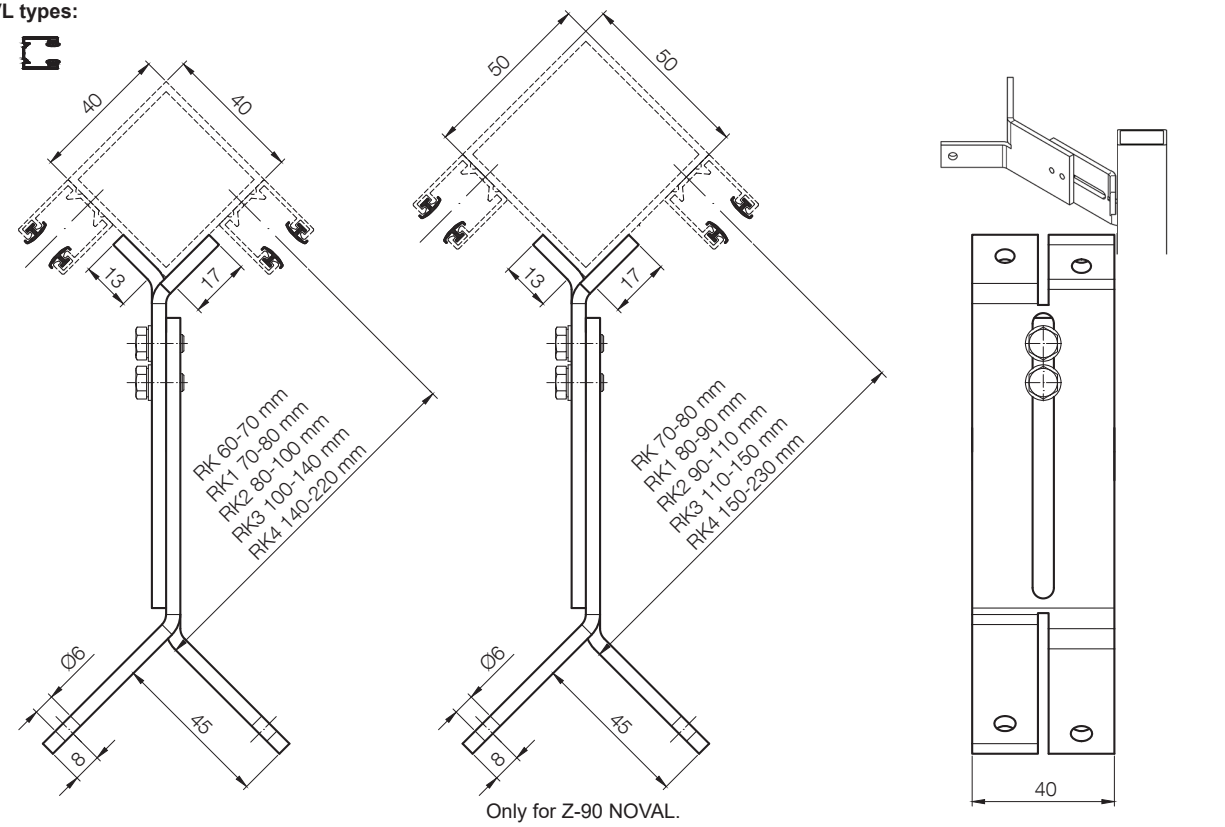
Bracket I 71-150

VL types:



RK - Corner bracket for outer corner

VL types:



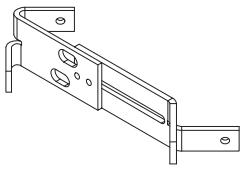
Only for Z-90 NOVAL.

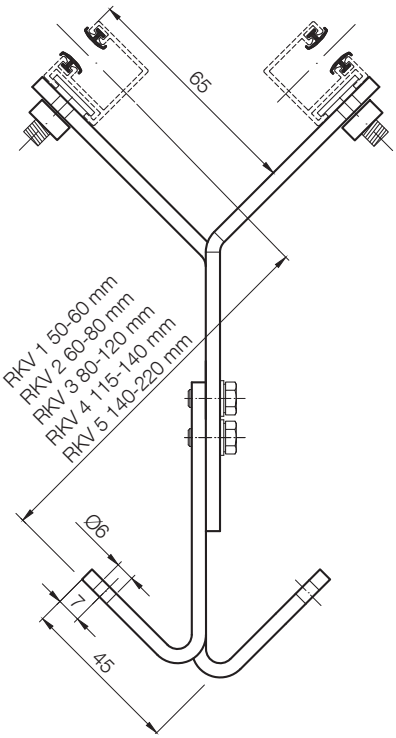
The guide rails are supplied separately.

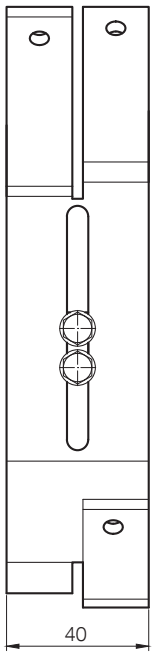
21.11 Brackets for guide rails

RKV 1 - Corner bracket for inner corner

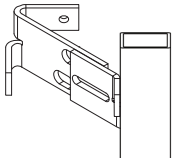
VL types:

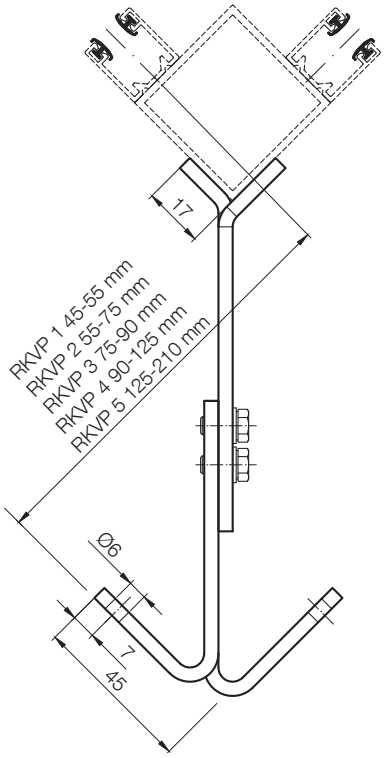


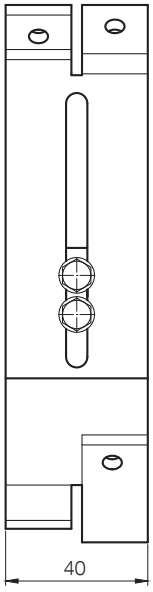




VL types:



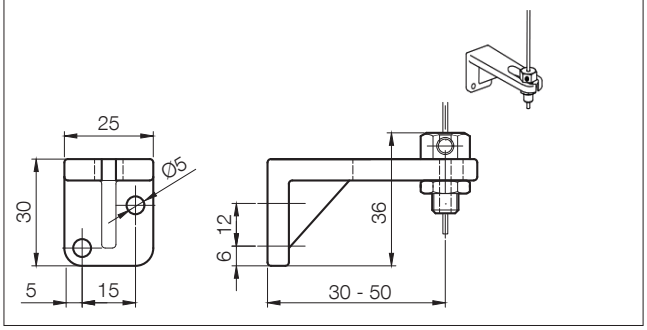




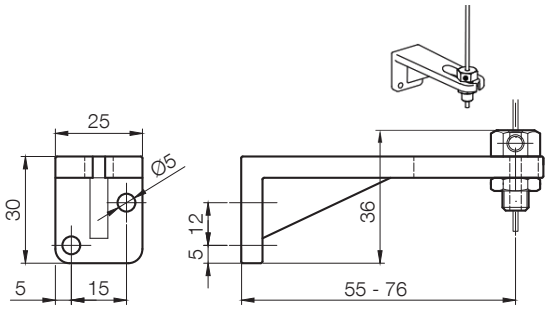
The guide rails are supplied separately.

21.12 Wire holders

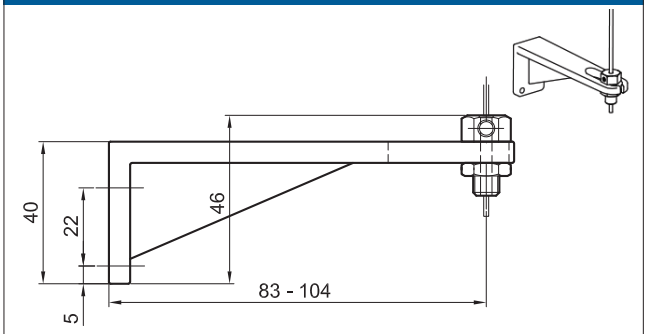
DL 0 - Wire holder



DL 1 - Wire holder

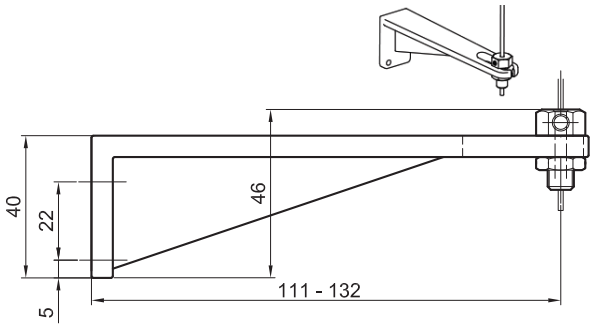


DL 2 - Wire holder



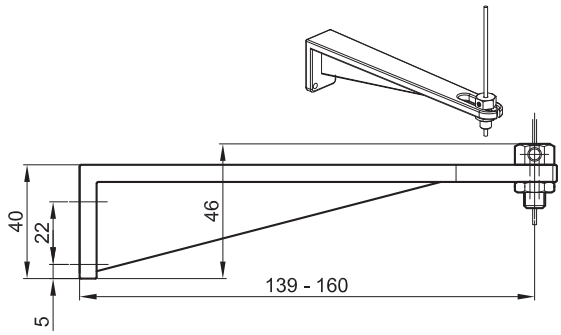
The base is identical with base DL 6.

DL 3 - Wire holder

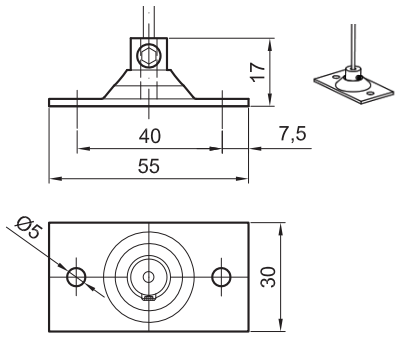


The base is identical with base DL 6.

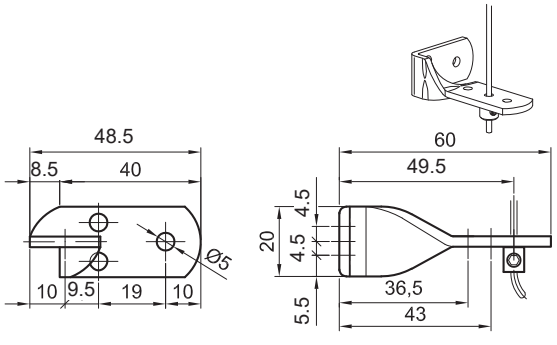
DL 6 - Wire holder



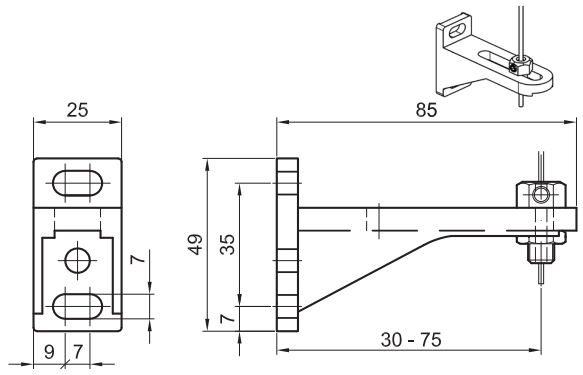
DL 4 - Wire holder for anchoring into the floor



DL 5 - Wire holder

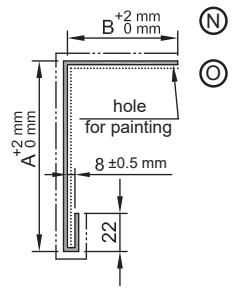


DLM 30 - 75 - Wire holder

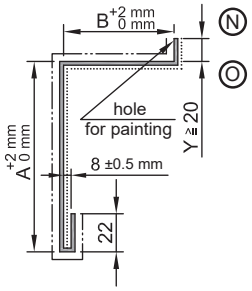


21.13 Cover plates

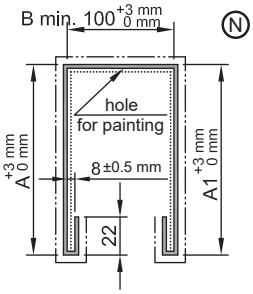
KP 1a L = A + B



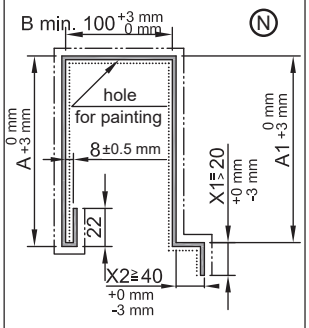
KP 2a L = A + B + Y



KP 3a L = A + B + A1

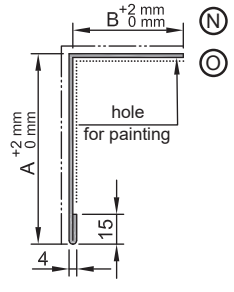


KP 3az L = A + B + A1 + X2 + X1

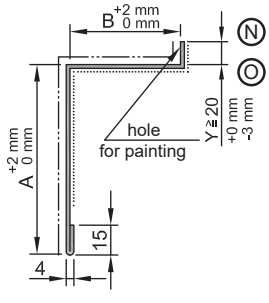


Both side only painting can be chosen.

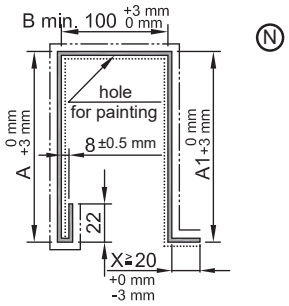
KP 1b L = A + B



KP 2b L = A + B + Y

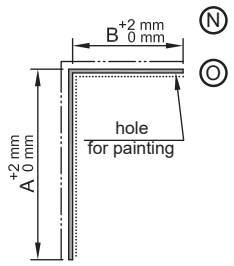


KP 3ac L = A + B + A1 + X

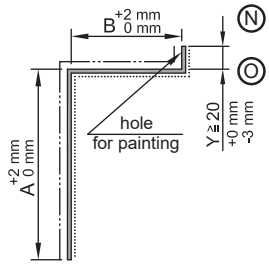


Both side only painting can be chosen.

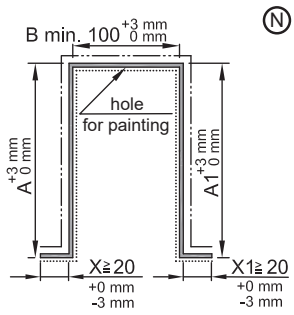
KP 1bz L = A + B



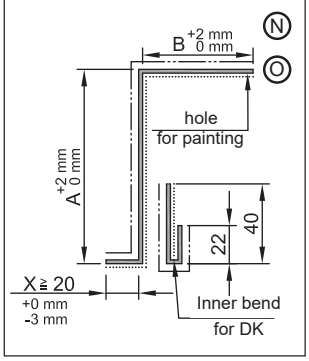
KP 2bz L = A + B + Y



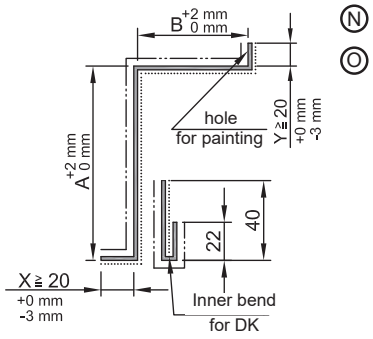
KP 3c L = X + A + B + A1 +X1



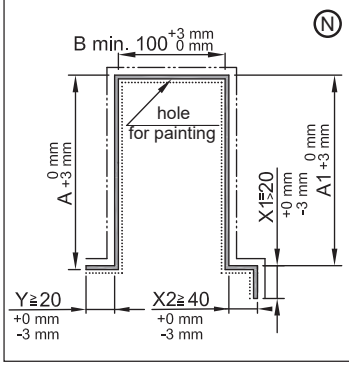
KP 1c L = X + A + B



KP 2c L = X + A + B + Y

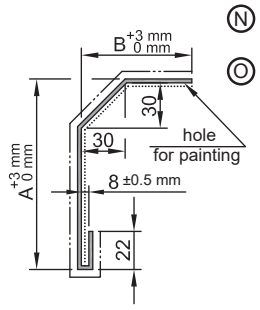


KP 3cz L = Y + A + B + A1 + X2 + X1



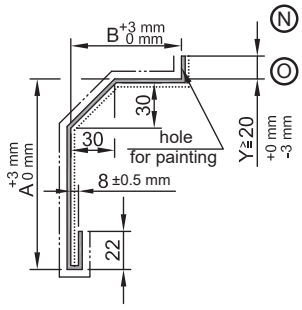
21.13 Cover plates

KP 1d L = A + B



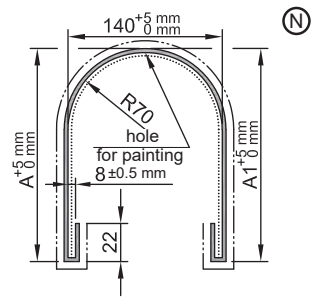
PDK holders cannot be used.

KP 2d L = A + B + Y

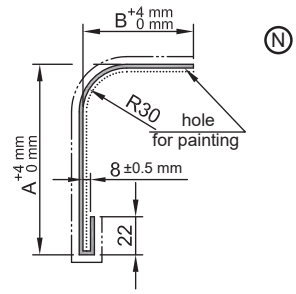


PDK holders cannot be used.

KP 3e 140 L = A + A1 + 140

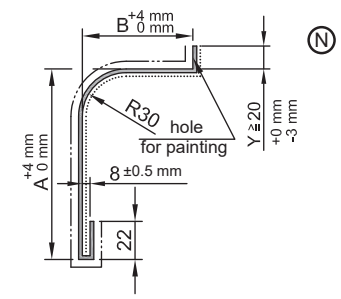


KP 1e L = A + B



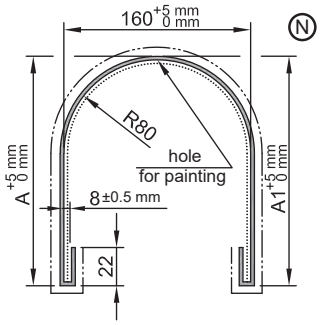
PDK holders cannot be used.

KP 2e L = A + B + Y

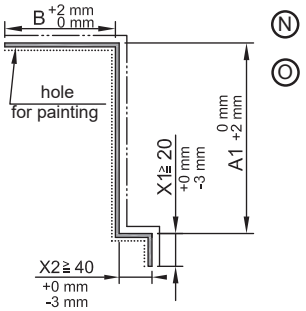


PDK holders cannot be used.

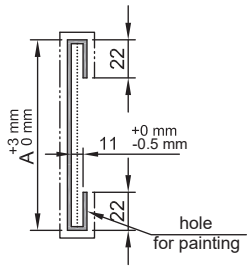
KP 3e 160 L = A + A1 + 160



KP 1z L = B + A1 + X2 + X1

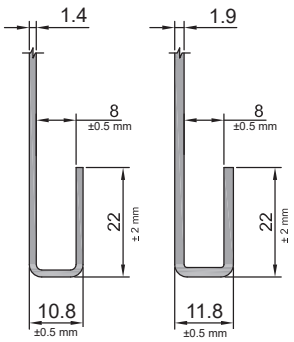


KP 4a L = A

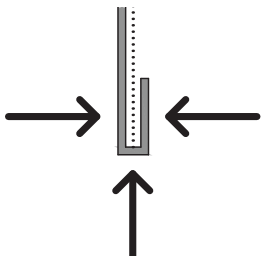


Only PDK holders can be used.

Tolerance



Notice



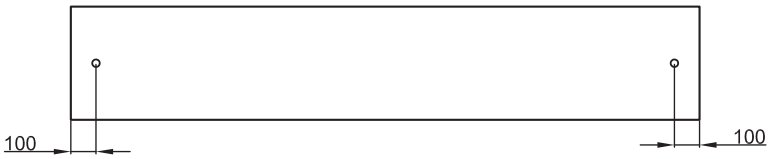
In case of inner side painting marked parts are not painted.

Legend: (N) - side part - riveted or enclosed; —·— - painted outer areas; (O) - side part - bent; ····· - painted inner areas; **L** - overall cover plate width

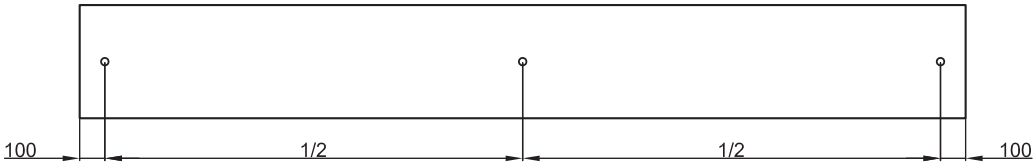
21.13 Cover plates

Holes for painting

2x hole
length KP < 2 500 mm

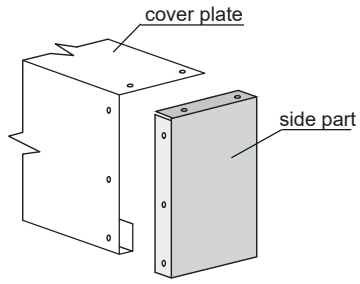


3x hole
length KP 2 501 mm - 3500 mm

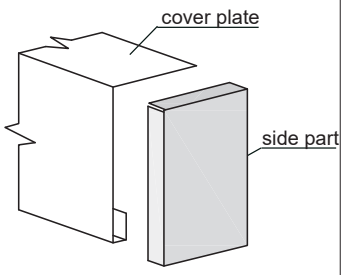


21.14 Side parts and couplings for KP

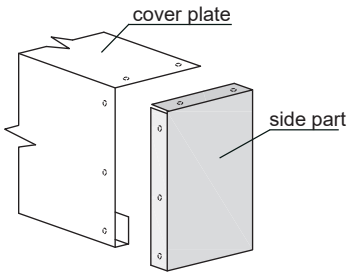
Side part - riveted



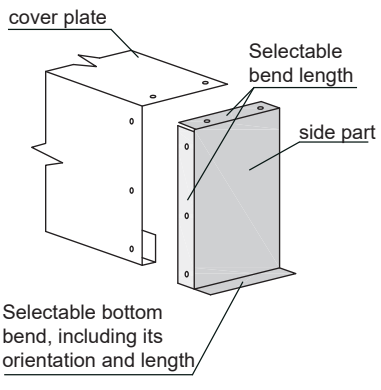
Side part - enclosed



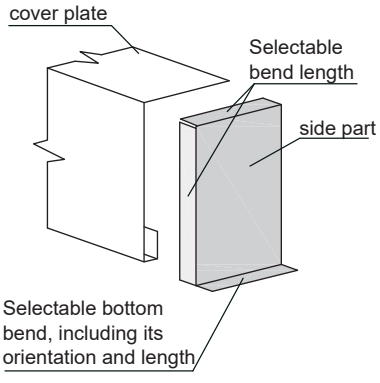
Side part - spot-welded



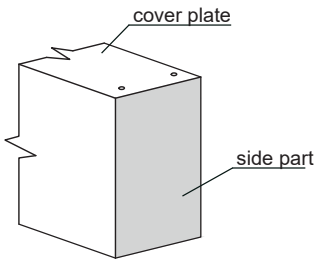
Side part riveted- atypical



Side part enclosed - atypical



Side part - bent

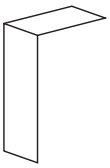
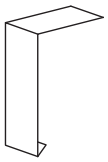
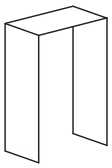
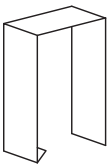
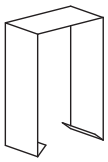
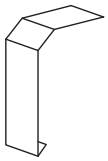
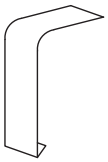
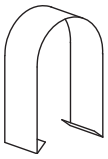


Notice:
- placement of side parts are determined while looking from the interior
- a cover plate with side parts reduces the space for the blind by approx. 5 mm, therefore it is necessary to order the cover plate longer (at least longer by the thickness of both side parts)

Side parts:
- riveted to KP
- enclosed (not pre-drilled, rivets just enclosed)
- spot-welded side part not available with unilateral RAL 9016 and double-sided RAL 7016, 9006, or anodized finish (only for KP1a, b, c, KP2a, b, c, KP3a, b, c)
- bent (only for KP 1a, b, c, KP 2a, b, c)
- bent side parts can be ordered for cover plates up to 350 cm long

21.14 Side parts and couplings for KP

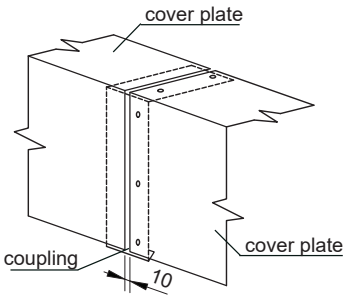
Straight couplings of cover plates

				
KP 1b, c, z **KP 2b, c**	**KP 1a, c*** **KP 2a, c***	**KP 3c, cz**	**KP 3az, ac**	**KP 3a**
				
KP 1d **KP 2d**	**KP 1e** **KP 2e**	**KP 3e 140** **KP 3e 160**	**KP 4a**	

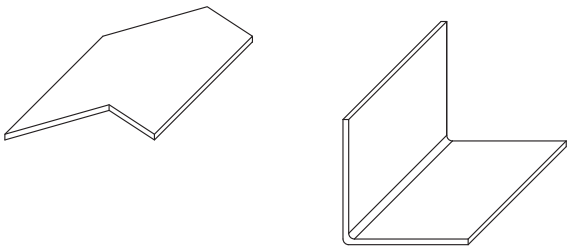
* - in combination with its reverse bend

Note:
- the coupling width is 60 mm

Scheme of straight coupling and cover plates



Corner coupling



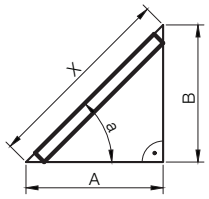
The plate is not cut off.

Notice:
- it is necessary to keep the joint gap (10 mm) when connecting the cover plates
- when connecting the cover plates, the coupling is riveted to one cover plate only

21.15 Sloped versions

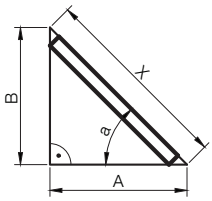
Notice: - limit dimensions cannot be exceeded
- only for T-80, C-80, C-80 VENTAL, C-60, Z-90 NOVAL, Z-70
- the order must always include a drawing showing a view from the interior for feasibility approval

Sloped version 1



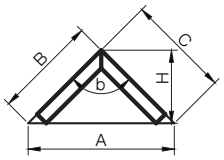
- only tilting (without holes for tape)
a - max 60°
A - max 300 cm
B - max 300 cm

Sloped version 2



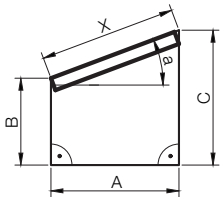
- only tilting (without holes for tape)
a - max 60°
A - max 300 cm
B - max 300 cm

Sloped version 3



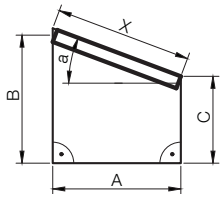
- only tilting (without holes for tape)
b - min 90°
A - max 250 cm

Sloped version 4



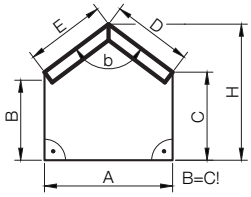
- only tilting (without holes for tape)
a - max 60°
A - max 300 cm
C - max 300 cm

Sloped version 5



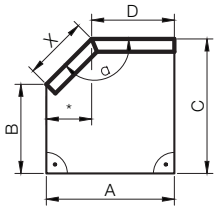
- only tilting (without holes for tape)
a - max 60°
A - max 300 cm
B - max 300 cm

Sloped version 6



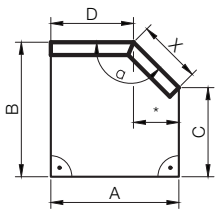
- only tilting (without holes for tape)
b - min 90°
A - max 300 cm
H - max 250 cm

Sloped version 7



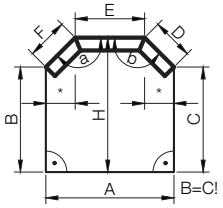
- can be lifted to the height B, if * < 30cm
a - min 135°
A - max 350 cm
C - max 350 cm (if C-B < 140; transport)

Sloped version 8



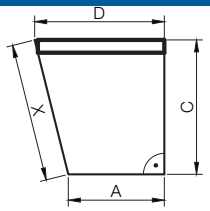
- can be lifted to the height C, if * < 30cm
a - min 135°
A - max 350 cm
B - max 350 cm (if B-C < 140; transport)

Sloped version 9



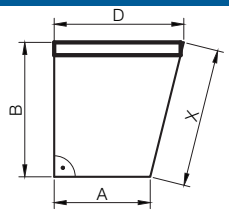
can be lifted to the height B(C), if *< 30cm
a,b - min 135°
A - max 350 cm
H - max 350 cm (if H-B < 140; transport)

Sloped version 10



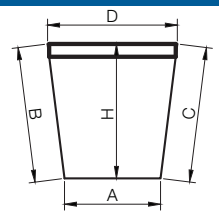
- can be lifted
(D-A) - max 30 cm
C - max 350 cm
D - max 350 cm
Side guiding: only wire up to the width A

Sloped version 11



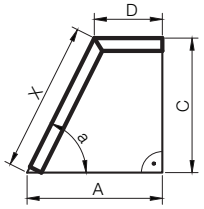
- can be lifted
B - max 350 cm
(D-A) - max 30 cm
D - max 350 cm
Side guiding: only wire up to the width A

Sloped version 12



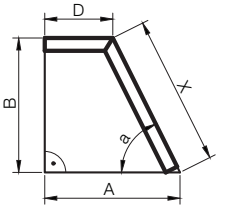
- can be lifted
(D-A) - max 50 cm
D - max 350 cm
H - max 350 cm
Side guiding: only wire up to the width A

Sloped version 13



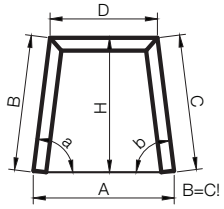
- only tilting (without holes for tape)
a - max 60° (if a reeler is on X)
A - max. 200 cm
C - max. 250 cm

Sloped version 14



- only tilting (without holes for tape)
a - max 60° (if a reeler is on X)
A - max. 200 cm
B - max. 250 cm

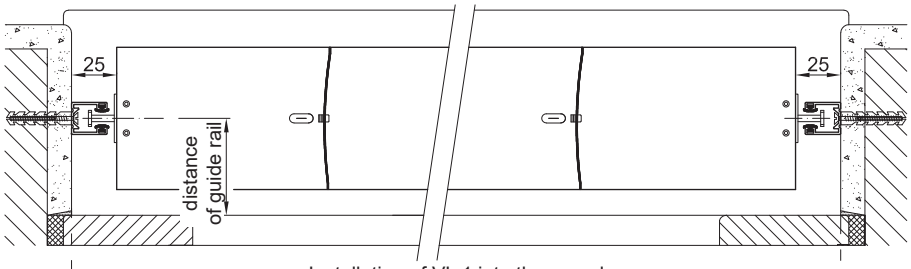
Sloped version 15



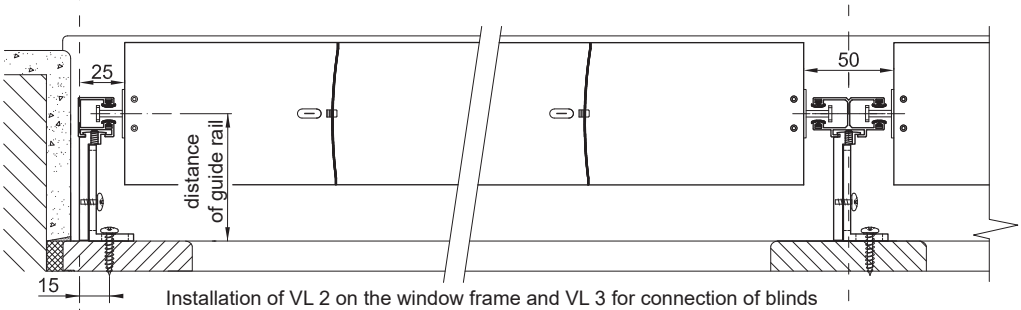
- only tilting (without holes for tape)
a, b - max 60° (if a reeler is on B, C)
A - max. 200 cm
H - max. 160 cm

21.21 Examples of installation of guide rails

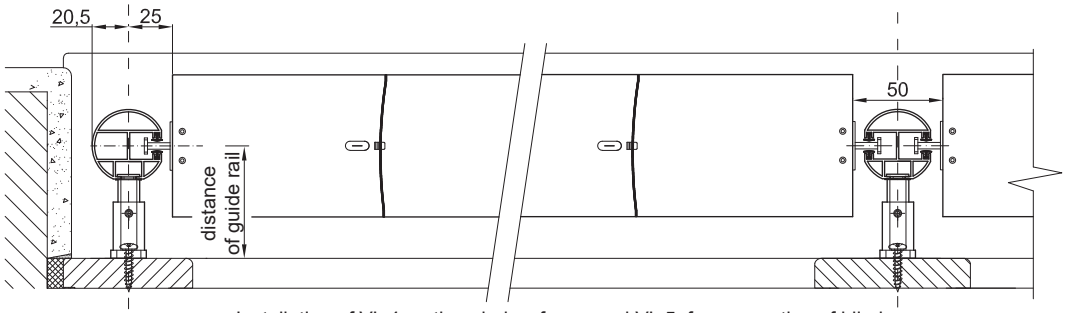
Installation of guide rails



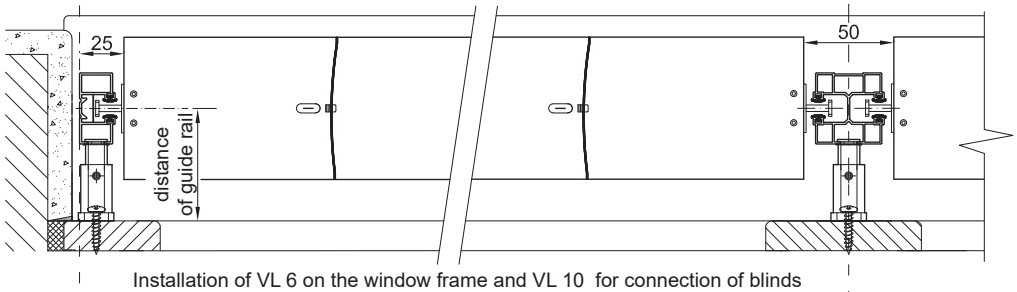
Installation of VL 1 into the reveal



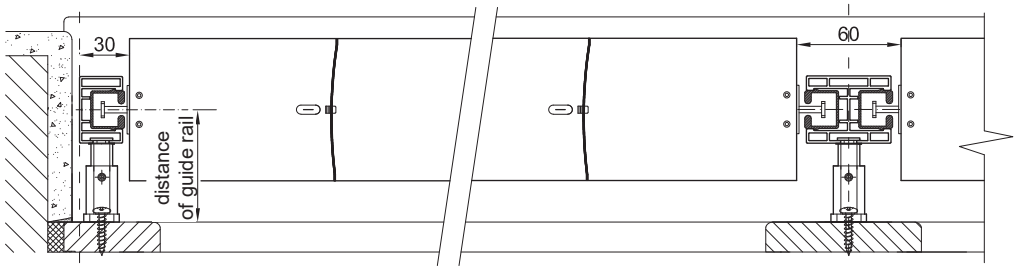
Installation of VL 2 on the window frame and VL 3 for connection of blinds



Installation of VL 4 on the window frame and VL 5 for connection of blinds



Installation of VL 6 on the window frame and VL 10 for connection of blinds



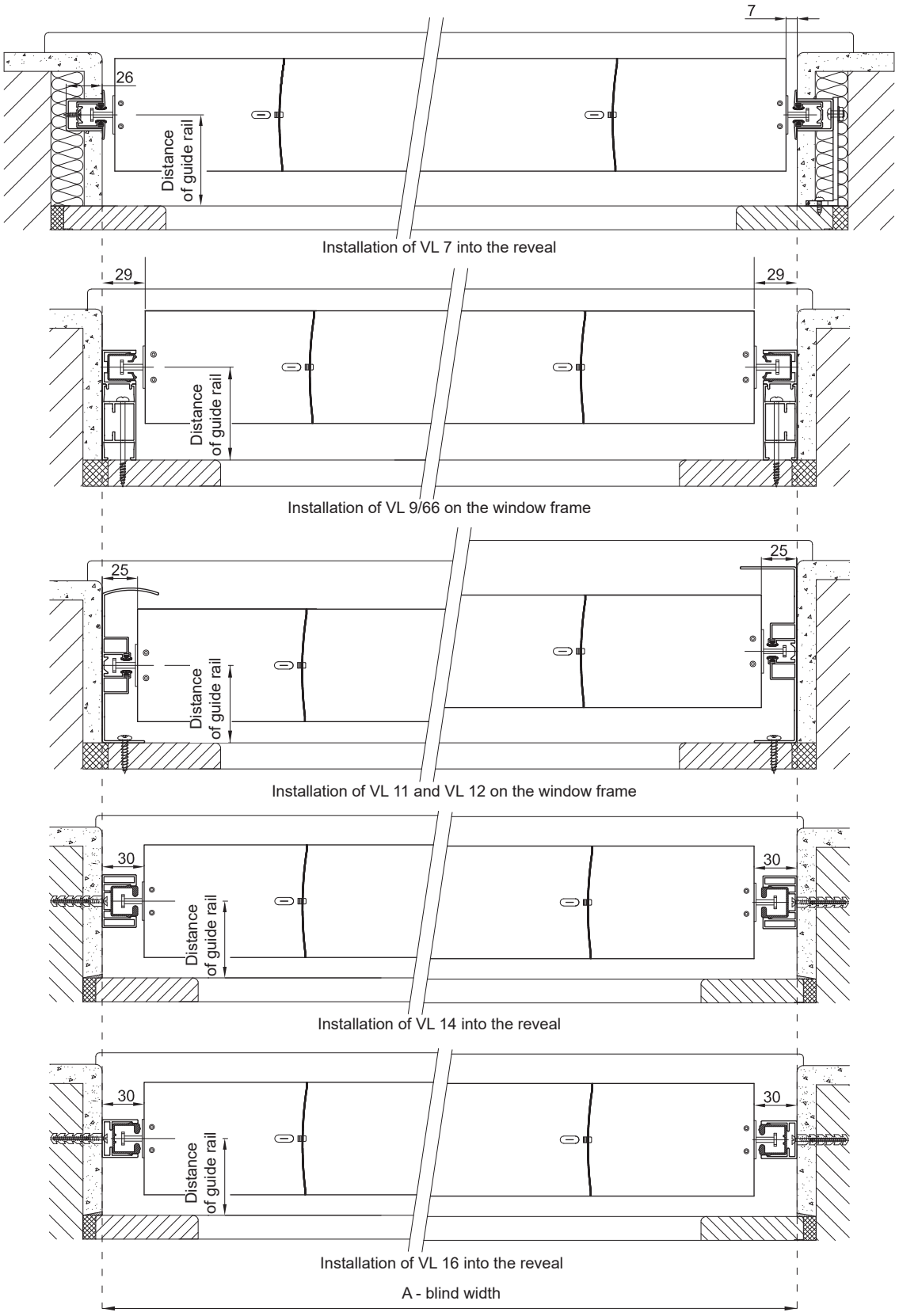
Installation of VL 13 on the window frame and VL 15 for connection of blinds

A - blind width

A - blind width

21.21 Examples of installation of guide rails

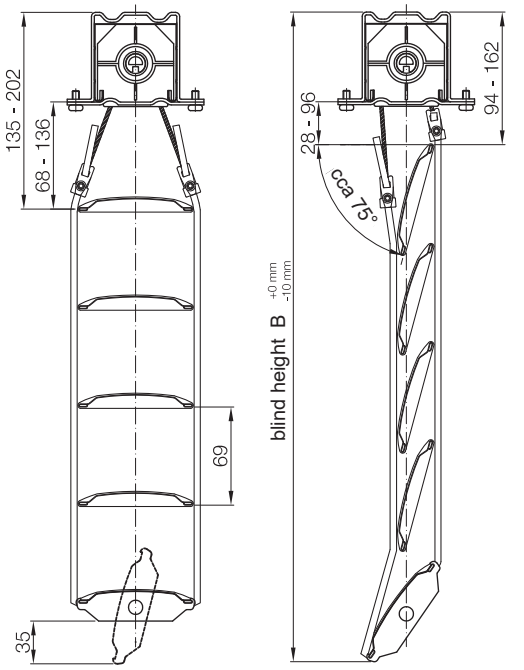
Installation of guide rails



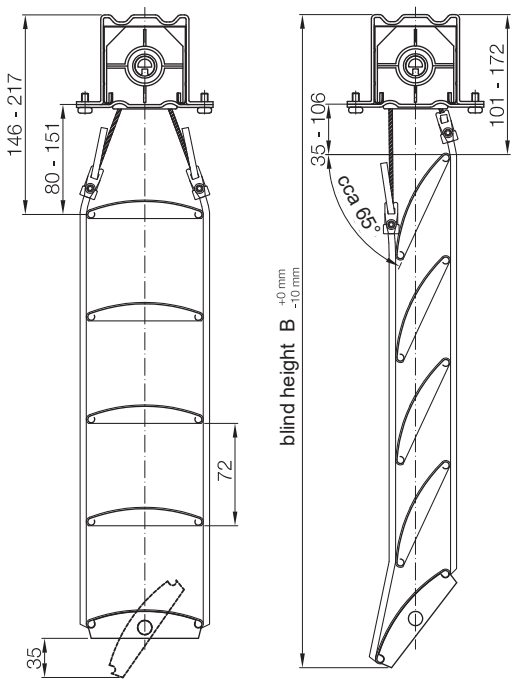
VL 11 no possible for Z-90 NOVAL.

21.23 Manufacturing dimensions of blinds

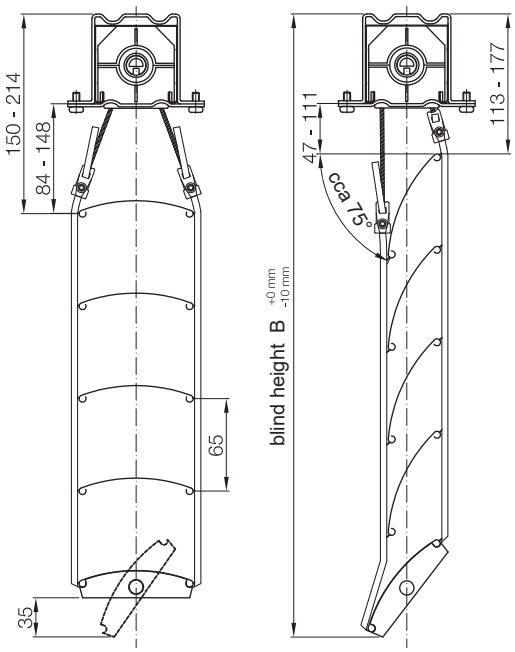
T-80



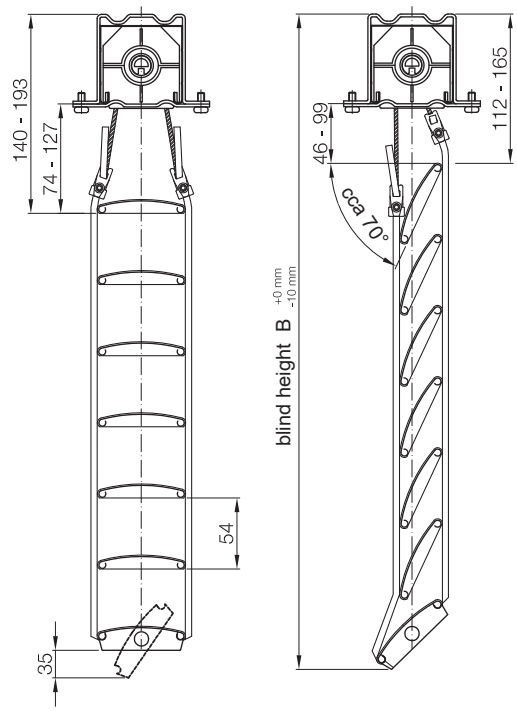
C-80



C-80 VENTAL

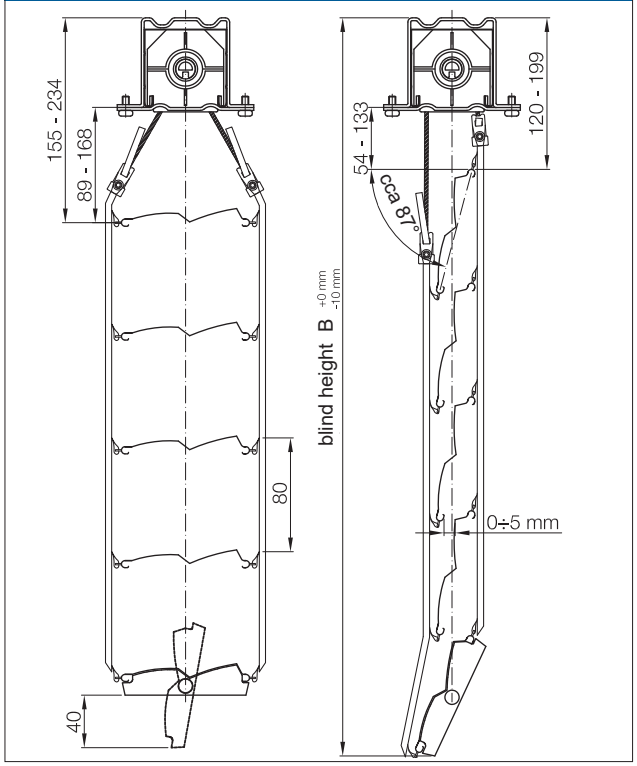


C-60

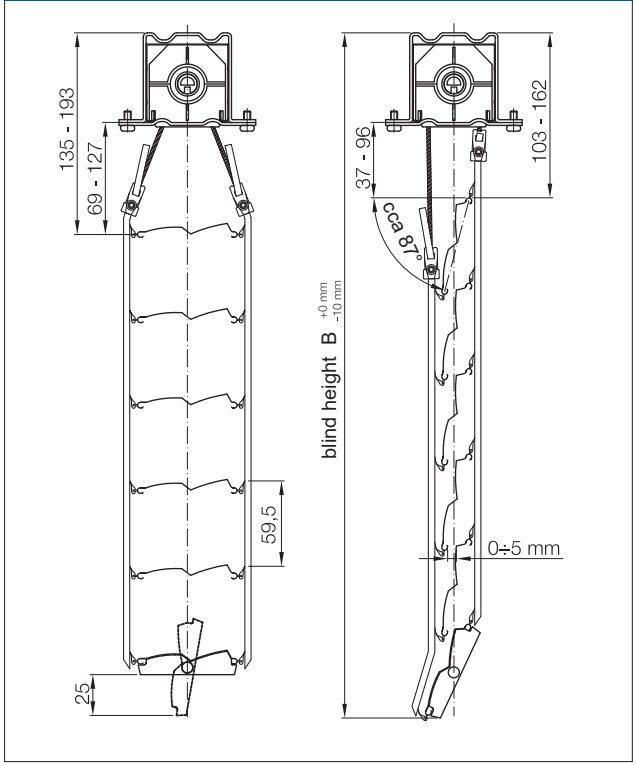


21.23 Manufacturing dimensions of blinds

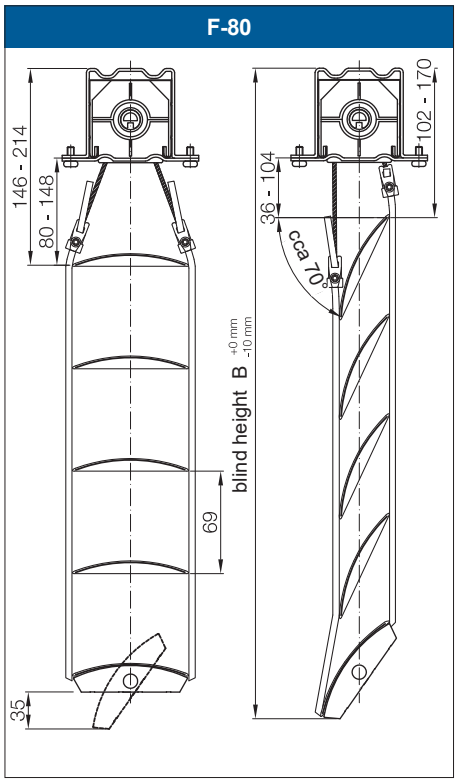
Z-90 NOVAL



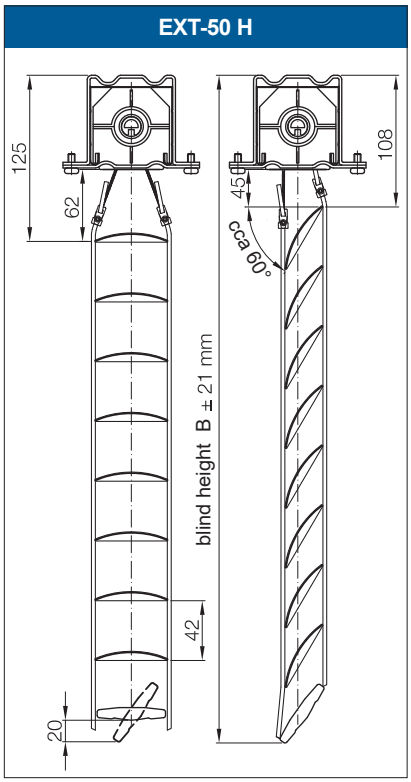
Z-70



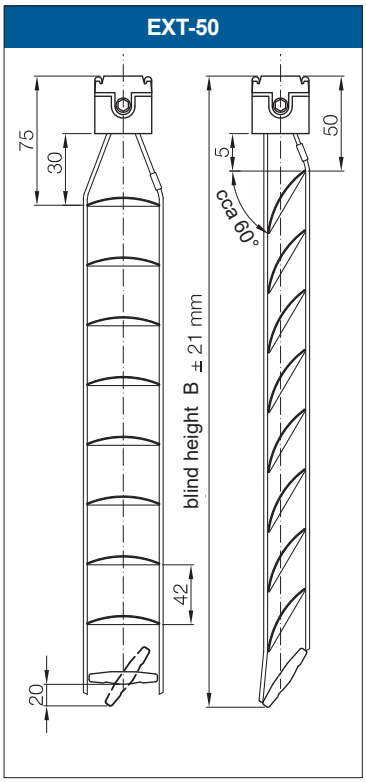
F-80



EXT-50 H



EXT-50



Notice:

- The angles of slat tilting are only approximate values
- when $Dist_{min}$ chosen the tolerance of height is max. ±40 mm (not valid for EXT-50 H and EXT-50)
- selection $Dist_{min}$ ±40 mm
  +0/80 mm
  -0/80 mm

21.27 Wind resistance of external blinds

Classes of wind resistance were assigned on the basis of tests carried out at Civil Engineering Centre (Centrum stavebního inženýrství) in Zlín in accordance with the standard ČSN EN 13 659 + A1.
All external blinds of the SERVIS CLIMAX company are produced in compliance with the standard ČSN EN 13659+A1, and they are marked with the CE mark.
The wind resistance of external blinds is determined by the standard ČSN EN 13659+A1 Window shutters - Functional and Safety Requirements.

Determination of the wind resistance class

Process:

1. Determine the Terrain category.
2. Based on the Wind zone map of the given country set the Wind class.
3. Choose the mounting height of the external blind - above the terrain.
4. After determination of all the criteria you will get the recommended value of Wind resistance class.
5. On p. 111 you will find Wind resistance classes of each type of slats and guide rails based on tests according to the standard ČSN EN 13659+A1.

Terrain category	Description of terrain category	
Category I	Stormy open sea; lakes up to 5 km against the wind direction; exposed flat terrain with no obstructions	
Category II	Agricultural land with border hedges; random small farms, houses and trees	

Terrain category	Description of terrain category	
Category III	Suburban or industrial areas and consistent forests	
Category IV	Urban areas where at least 15 % is covered with buildings the average height of which is more than 15 m	

Wind class	Wind speed
1	22.5 m/s
2	25.0 m/s
3	27.5 m/s
4	30.0 m/s

Criteria		Determination of wind resistance class based on mounting roller shutter height (recommended values)																			
		6 m				18 m				28 m				50 m				100 m			
Terrain category	Requirements	Wind class				Wind class				Wind class				Wind class				Wind class			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
I.	Wind resistance class	2	3	3	3	3	3	3	4	3	3	3	4	3	3	4	4	3	4	4	4
II.		1	2	2	3	2	3	3	3	2	3	3	4	3	3	4	4	3	3	4	4
III.		0	1	1	2	1	1	2	2	1	2	2	3	2	2	3	3	2	3	3	4
IV.		0	0	1	1	0	0	1	2	0	1	2	2	1	2	2	3	2	2	3	3

Wind resistance class	0	1	2	3	4	5	6
Nominal pressure p [N/m²]	< 50	50	70	100	170	270	400
Testing pressure p = 1.5 [N/m²]	< 75	75	100	150	250	400	600
Wind speed [km/h]	< 30	30	35	45	60	75	90

Notice:

- in case of wind exceeding the values in the tables, it is highly recommended to retract the blind and not to manipulate with it any more as it might result in damaging it

Beaufort scale				
Wind resistance class EN 13659+A1	**Beaufort class**	**Wind speed [km/h]**	**Wind type**	**Wind characteristics**
0	0	0 up to 1	calm	Smoke rises vertically.
	1	2 up to 5	light air	Smoke drift indicates wind directions, vanes do not move.
	2	6 up to 11	light	Wind felt on face; leaves rustle; vanes begin to move.
	3	12 up to 19	gentle breeze	Leaves, small twigs in constant motion; light flags extended.
1	4	20 up to 28	moderate	Dust, leaves and loose paper raised up; small branches move.
2	5	29 up to 38	fresh breeze	Small trees begin to sway.
3	6	39 up to 49	strong breeze	Large branches on trees in motion; whistling heard in wires.
4	7	50 up to 61	moderate gale	Whole trees in motion; resistance felt in walking against the wind.
5	8	62 up to 74	fresh gale	Twigs and small branches broken off trees; walking in straight position against the wind is not possible.
6	9	75 up to 88	strong gale	Slight structural damage occurs; slate, chimneys blown from roofs.
-	10	89 up to 102	whole gale	Seldom experienced on land; trees broken, structural damage occurs.
	11	103 up to 117	storm	Widespread damage on land.
	12	over 118	hurricane	Severe widespread damage to vegetation and structures. Debris and unsecured objects are hurled about.

Declared values of wind resistance classes based on tests according to the standard EN 13659+A1

Wind resistance for external blinds guided in rails															
Wind resistance classes valid for loading both with pressure and intake of blinds	**Width [cm]**	**A ≤ 100**		**100 < A ≤ 200**		**200 < A ≤ 300**		**300 < A ≤ 400**		**400 < A ≤ 450**		**450 < A ≤ 480**		**480 < A ≤ 500**	
	Height [cm]	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**
T-80	up to 400	5	8	4	7	3	6	2	5	1	4	0	3	0	3
C-80, C-80 CC		-	-	4	7	3	6	2	5	1	4	0	3	0	2
C-80 VENTAL		-	-	5	8	4	7	3	6	2	5	1	4	0	3
C-60		-	-	5	8	4	7	3	6	2	5	1	4	0	3
Z-90 NOVAL		5	8	4	7	3	6	2	5	2	5	1	4	0	3
Z-70		-	-	5	8	4	7	3	6	2	5	1	4	0	3
F-80		-	-	3	6	2	5	1	4	0	3	0	2	0	1

Wind resistance for external blinds guided in wire															
Wind resistance classes valid for loading both with pressure and intake of blinds	**Width [cm]**	**A ≤ 100**		**100 < A ≤ 200**		**200 < A ≤ 300**		**300 < A ≤ 400**		**400 < A ≤ 450**		**450 < A ≤ 480**		**480 < A ≤ 500**	
	Height [cm]	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**	**EN 13 659 + A1**	**Beaufort**
T-80	up to 250	3	6	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	2	5	1	4	0	3	0	2	0	1	0	0	0	0
C-80, C-80 CC	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
C-80 VENTAL	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
C-60	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
Z-90 NOVAL	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
Z-70	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
F-80	up to 250	-	-	2	5	1	4	0	3	0	2	0	1	0	0
	up to 400	-	-	1	4	0	3	0	2	0	1	0	0	0	0
EXT-50, EXT-50 H	up to 250	-	-	1	4	0	3	0	2	0	1	0	0	0	0
	up to 400	-	-	0	3	0	2	0	1	0	0	0	0	0	0

Legend: **A** - blind width

Notice:

- declared values of wind resistance are not valid for perforated slats