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R 72 Contents



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1. General

Material characteristics

Aluminium profile

Alloy	
AW-6060 T6	
Tensile strength $f_u(R_m)$	190 N/mm ²
Yield strength $f_y(R_p 0,2)$	150 N/mm ²
Modulus of elasticity E	70 000 N/mm ²
Коэфф. скольжения G	27 000 N/mm ²
Density	2700 kg/m ³
Heat deformation factor	$23 \cdot 10^{-6} / ^\circ\text{C}$
Insulating capacity λ	209 W/m ² °C

Gaskets

EPDM/ foamed EPDM

Hardness	$80 \pm 5^\circ \text{Sh}_2$
Tensile strength	10 H/mm ²
Tensile strength	150 % min
Compression (22 h/70°C)	25 % (max)

U-values

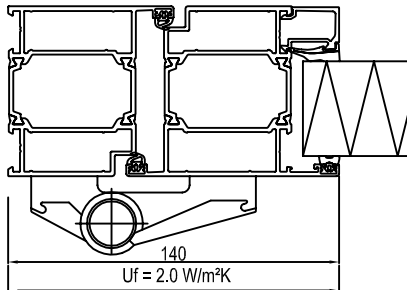
Thermal break

PA 6.6

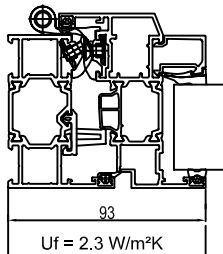
Screws and fastenings

Delta-coated	DT-DS 600 (DIN 50021)
or	
stainless steel	A2

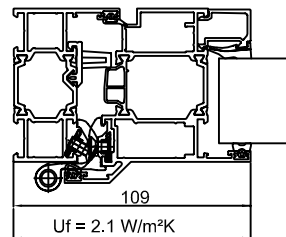
Door



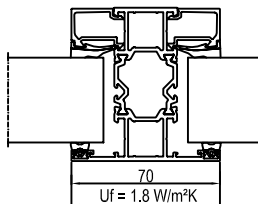
Window



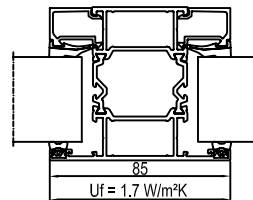
Outside openable window



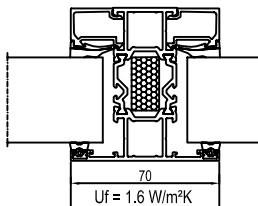
R72-132



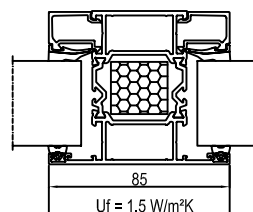
R72-122



R72-132 Termo +

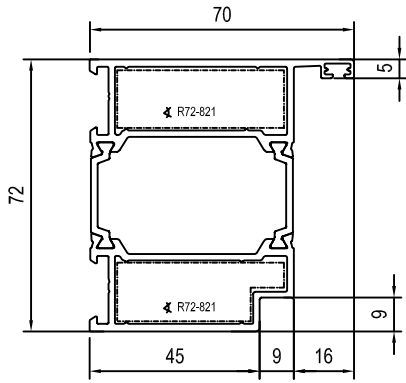


R72-122 Termo +

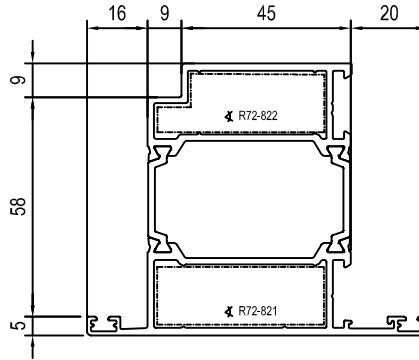


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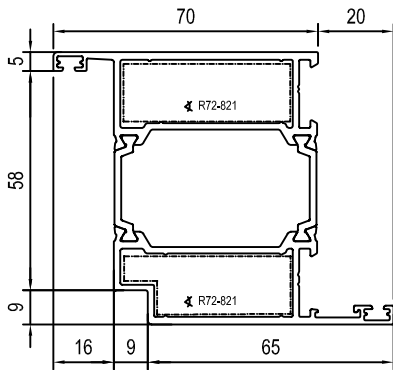
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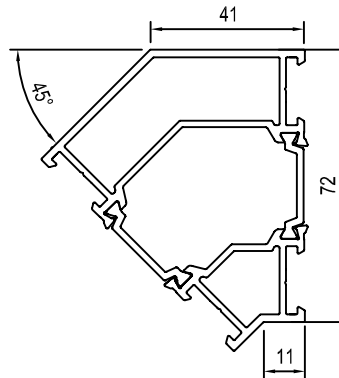
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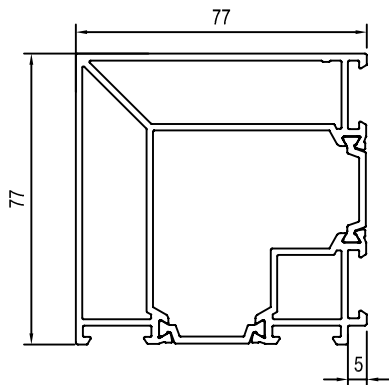
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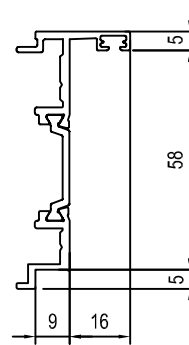
R72-126



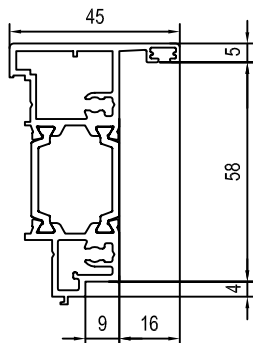
R72-127



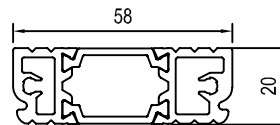
R72-201



R72-202



R72-203



R72-505



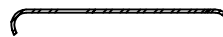
Brush seal profile

R72-510



Sliding window help profile

R72-503



Threshold cover

R72-523

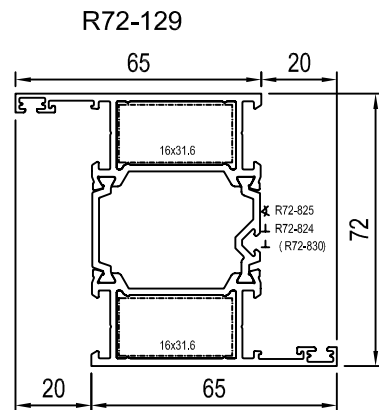
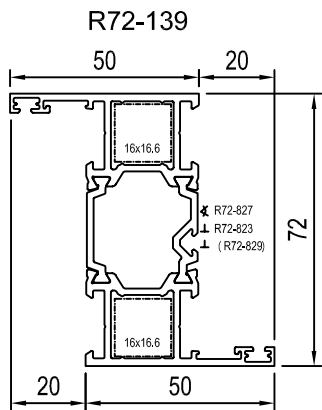
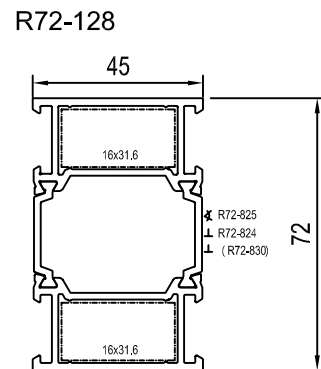
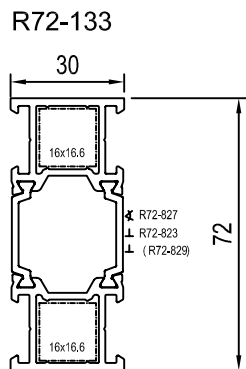
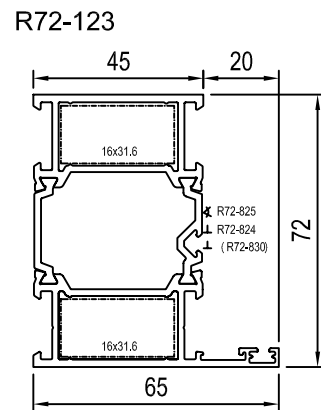
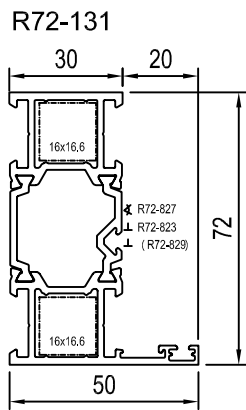
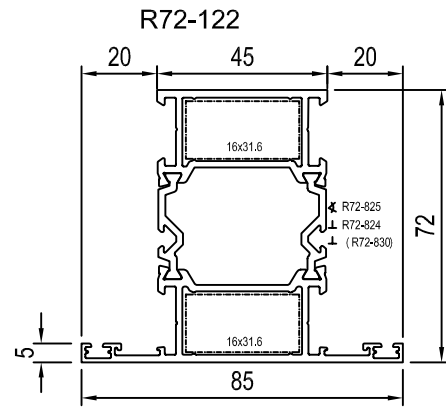
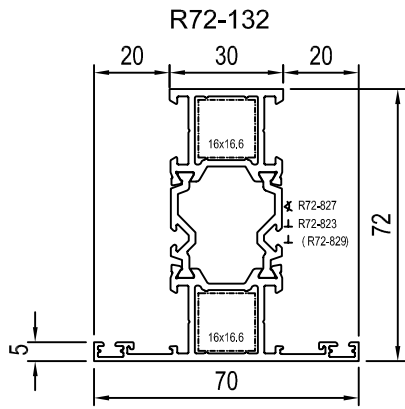


External sill profile

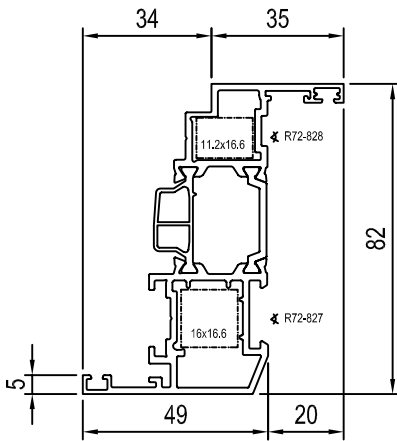
R72-524



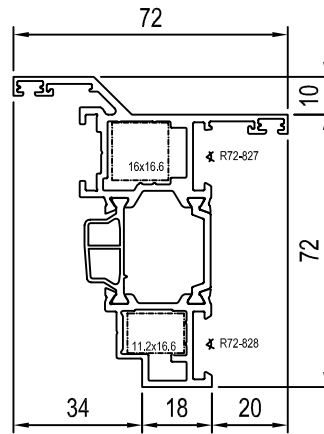
Drip moulding



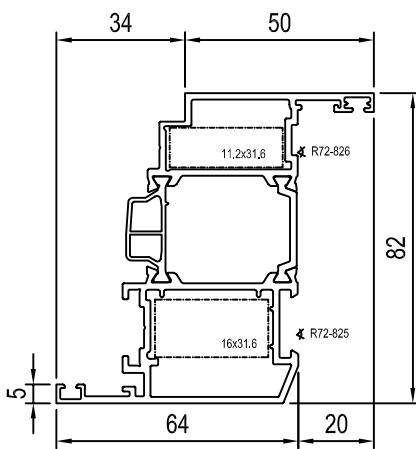
R72-135



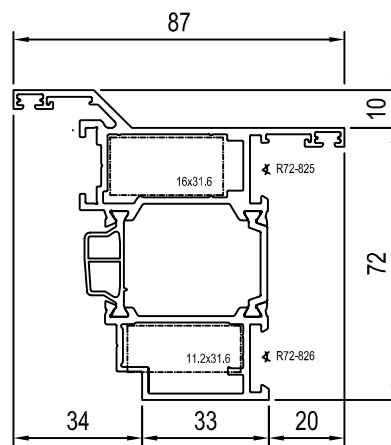
R72-138



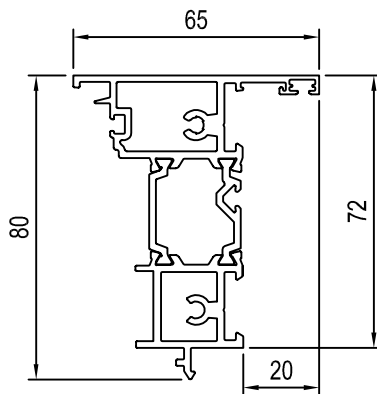
R72-136



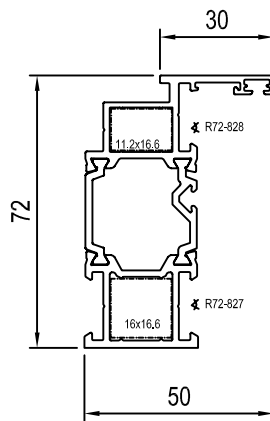
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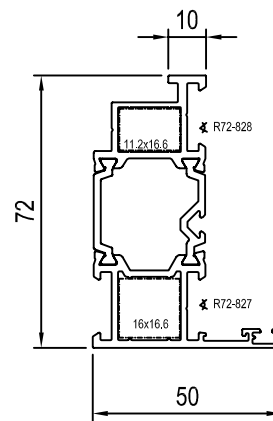
R72-204

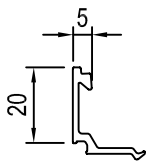


R72-222

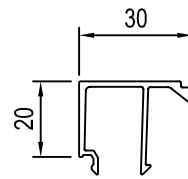


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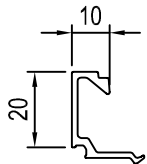




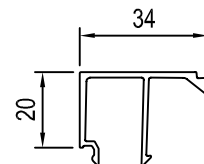
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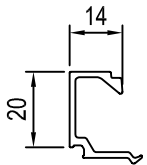
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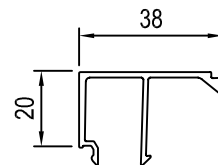
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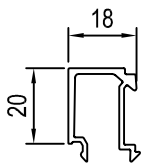
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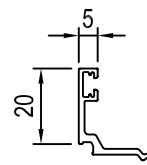
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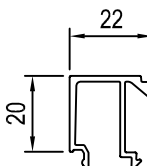
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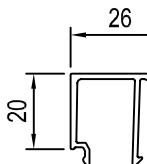
R72-323



R72-329



R72-324

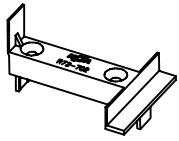


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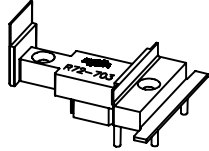
R72-701

Pair door sealing detail
R72-124/125



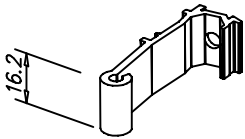
R72-702

Pair door sealing detail
R72-202



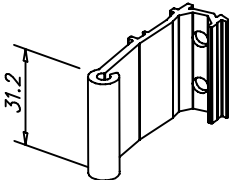
R72-703

Pair window sealing detail
R72-204



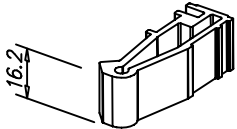
R72-823

T-joint piece
R72-131
R72-132
R72-133
R72-139



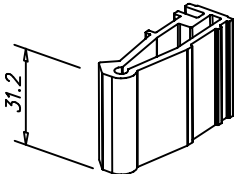
R72-824

T-joint piece
R72-122
R72-123
R72-128
R72-129



R72-829

T-joint piece
R72-131
R72-132
R72-133
R72-139



R72-830

T-joint piece
R72-122
R72-123
R72-128
R72-129



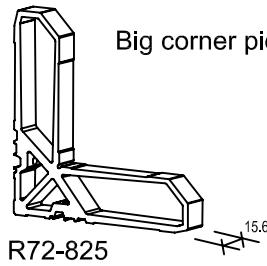
R72-801

Small corner plate



R72-802

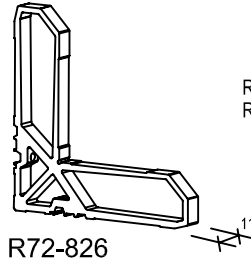
Big corner plate



R72-825

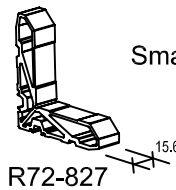
Big corner piece 15,6 mm

R72-122
R72-123
R72-128
R72-129
R72-136
R72-137



R72-826

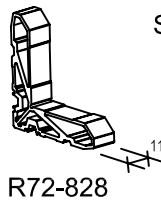
R72-136
R72-137



R72-827

Small corner piece 15,6 mm

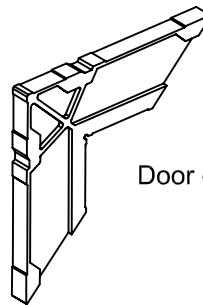
R72-131
R72-132
R72-133
R72-135
R72-138
R72-139



R72-828

Small corner piece 11 mm

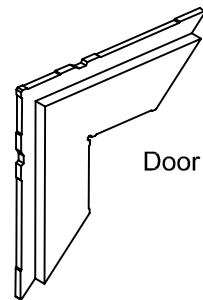
R72-135
R72-138



R72-821

Door corner piece

R72-121
R72-125



R72-822

Door corner piece

R72-121
R72-124



Drain hole cover

R72-708



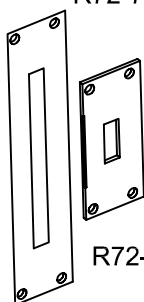
Элемент опоры стекла L=200 мм

R72-710



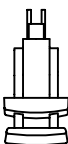
Counter plate for lever bolt

R72-725



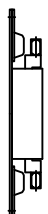
Lock counterplate

R72-726



Espagnolette

R72-727



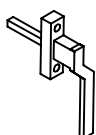
Lever bolt

R72-728



Mechanism for outside openable window

R72-729



Handle of outside openable window


R72-730




Transmission rod


R72-401

Gaskets

614  Brush seal

651  Rebate gasket

652  Glazing gasket


653  Glazing gasket

656  Glazing gasket


655  Central gasket

657  Rebate gasket


660 

661  Brush seal


Termo+ extra insulation

 R72-131
R72-132
R72-133
R72-135

R72-715
L=2m

 R72-122
R72-123
R72-128
R72-129

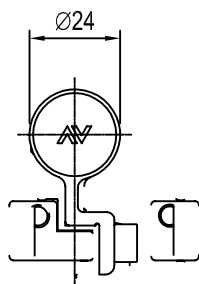
R72-716
L=2m

 R72-121
R72-124
R72-125

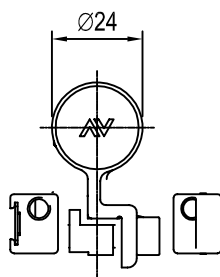
R72-717
L=2m

01.07.2013

Door hinges

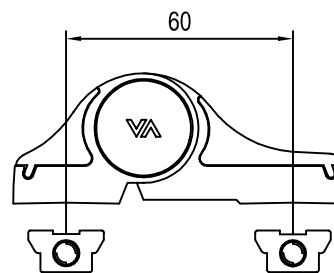


R72-722



R72-723

To be used with profile R72-201

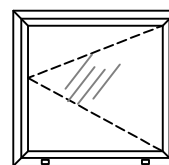


R72-724

Window fittings

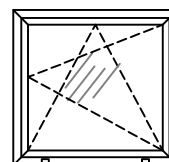
Side hung W (450-1700) H (400-2400)

R72-901	450-1200	400-1400
R72-902	1201-1400	1401-2400
R72-903	1401-1700	1401-2400



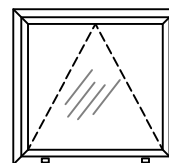
Tilt & turn W (495-1700) H (600-2400)

R72-905	495-1200	600-1400
R72-906	1201-1700	1401-2400



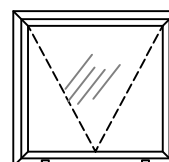
Bottom hung W (450-1500) H (450-1000)

R72-907	450-900	450-1000
R72-908	901-1500	450-1000



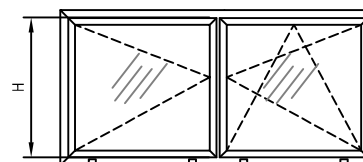
Top hung W (650-1000) H (500-1400)

R72-910	650-1000	500-1400
R72-911	1000-1400	500-1400



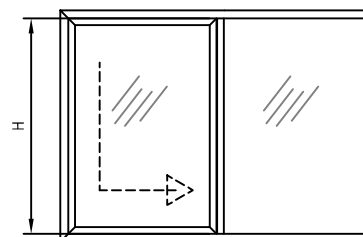
Pair window W (495-1200) H (600-1400)

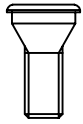
R72-913	495-1200	600-1400
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Sliding window W (900-1650) H (1401-2400)

On a special request





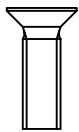
Special screw
Mitre joints

R72-720



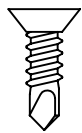
Special rivet nut M5
Fastening of the locks
Fastening of the counterplates
Fastening of the lead covers
Fastening of the door closers

R72-721



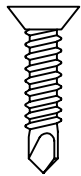
Fastening of the locks
Fastening of the counterplates
Fastening of the lead covers
Fastening of the door closers

M5x16



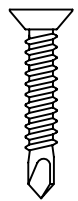
T-joint

Ø4,8x16P



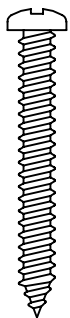
R72-204 fastening
R72-703 fastening
R72-702 fastening

Ø4,8x22P



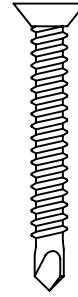
R72-701 fastening
R72-201 fastening

Ø4,2x25P



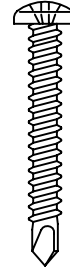
R72-203 fastening

Ø4,8x38



N98si-202 fastening

Ø4,8x38P



Screw T-joint

R72-829
R72-830

Ø4,2x32P



Rivet of the door closer's
counterplate

Ø4,0x12 niitti



R72-505 brush seal
fastening
Fastening of the lock
base plate

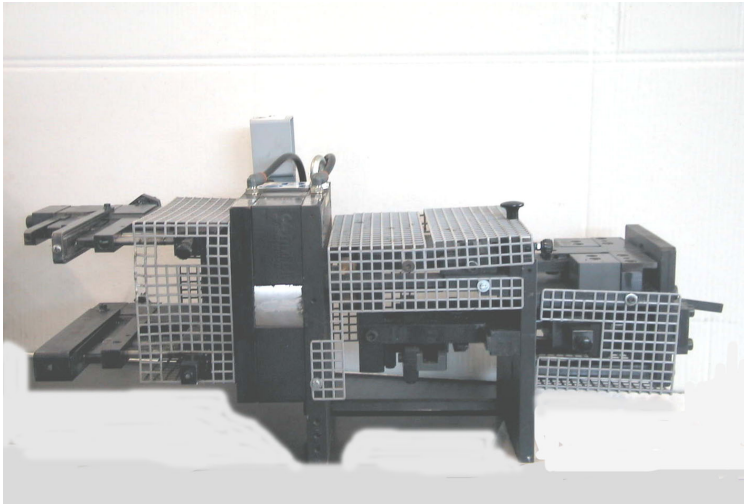
Ø4,2x13P

SURFACE TREATMENT

A2---AISI 304

DT-DS600---DIN 50021

R72 manufacturing tools



Multifunctional press machine for R72 windows

- Drain hole
- Handle hole
- Corner connections of sash
- Corner connections of frame

Multifunctional press machine with exchangeable modules for R72/N98si windows and doors

- Corner connections of frame and sash
- T-connections
- Threshold connection
- Corner connection of pair door Z(T)-profile



Drilling jigs R72

We do have drilling jigs for all kinds of machining operations

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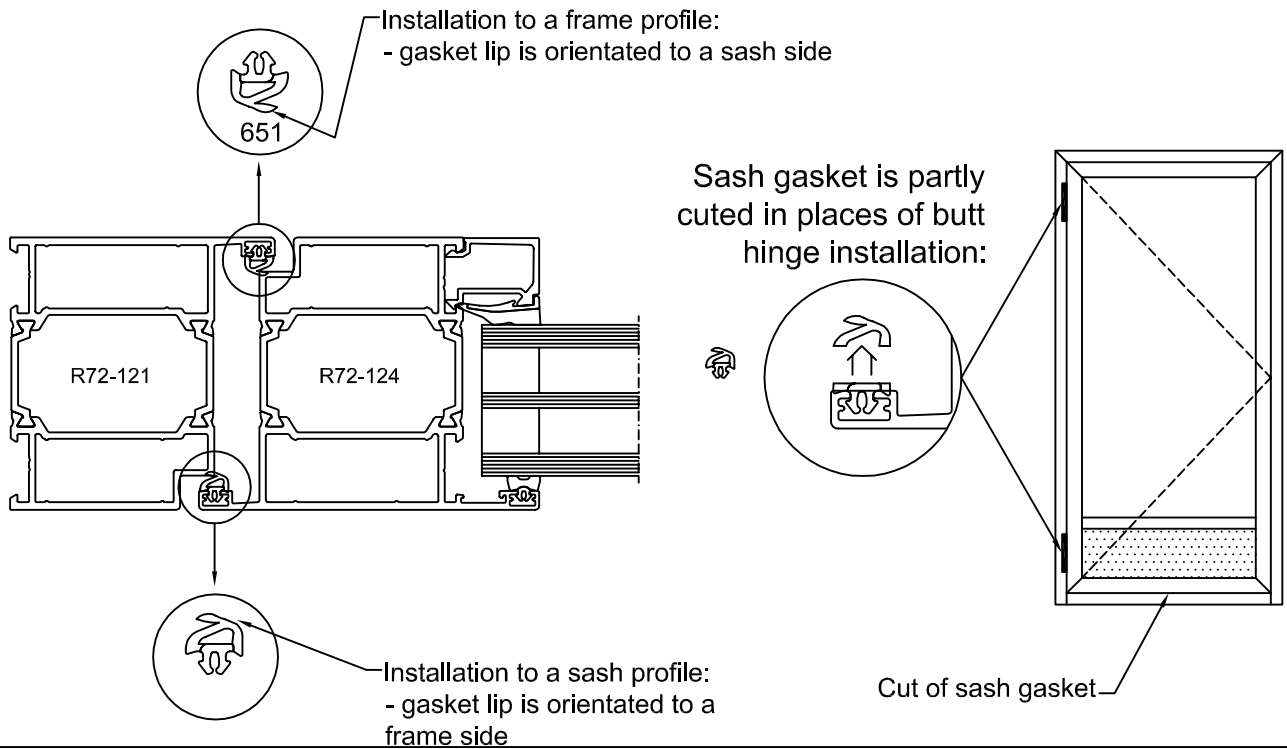
R72 1.9

NOKIAN
PROFILES

Press machines, drilling jigs

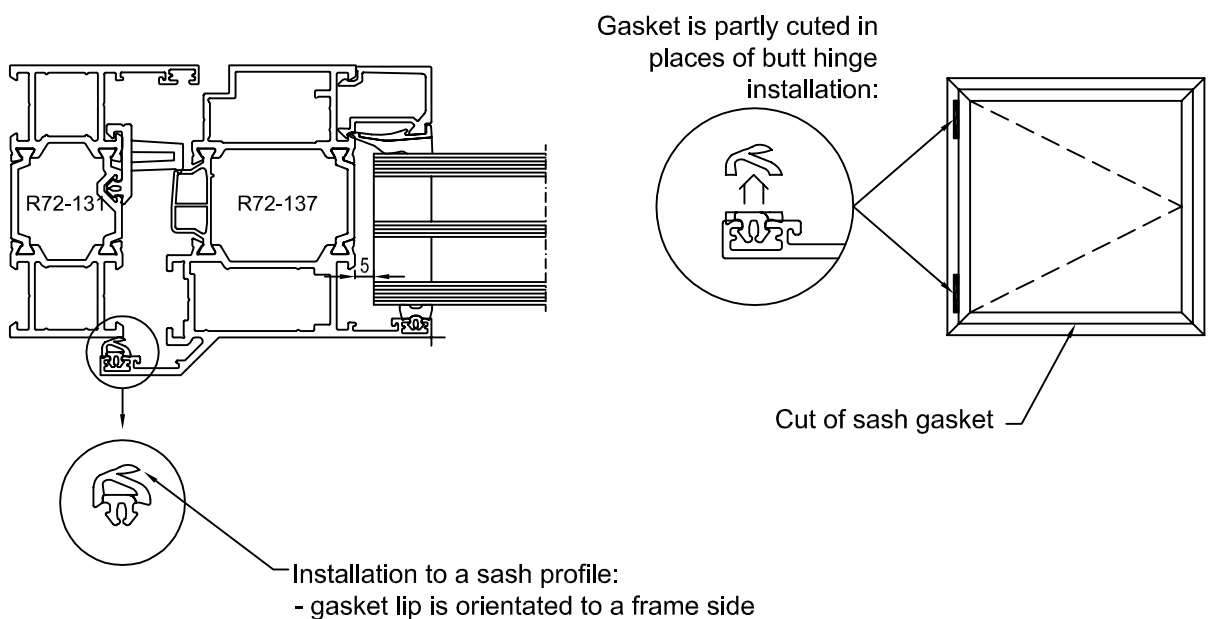
DOORS:

- rebate gasket 651 is installed into frame profile and sash profile
- gasket should not be cut in the corners and should be continuous all over the perimeter
- ends of gasket should be located in the middle of the bottom profile
- sash gasket is partly cut in places of butt hinge installation



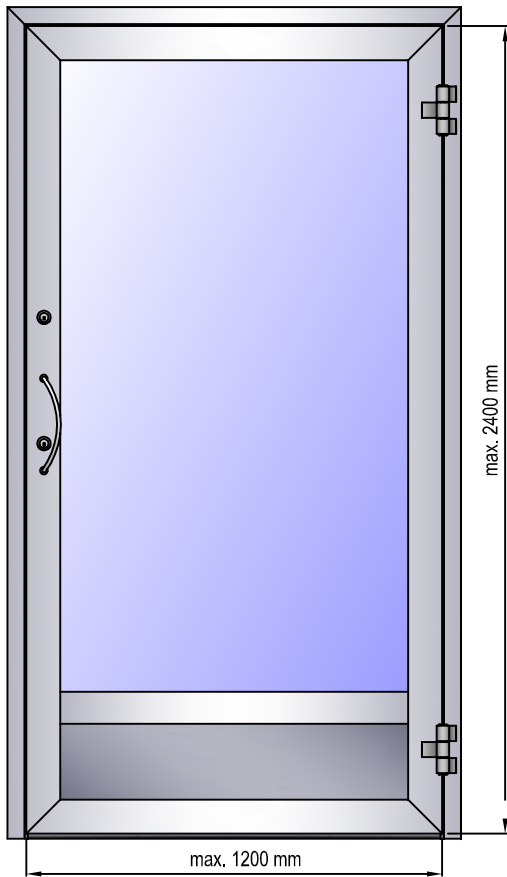
WINDOWS:

- rebate gasket 651 is installed only in a sash profile
- gasket should not be cut in the corners and should be continuous all over the perimeter
- ends of gasket should be located in the middle of the bottom profile
- sash gasket is partly cut in places of butt hinge installation

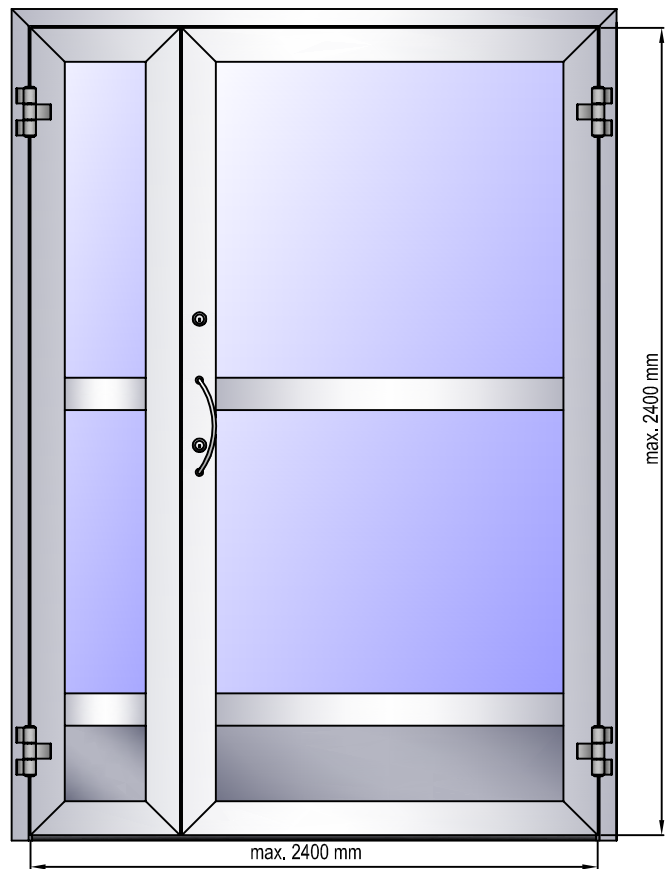


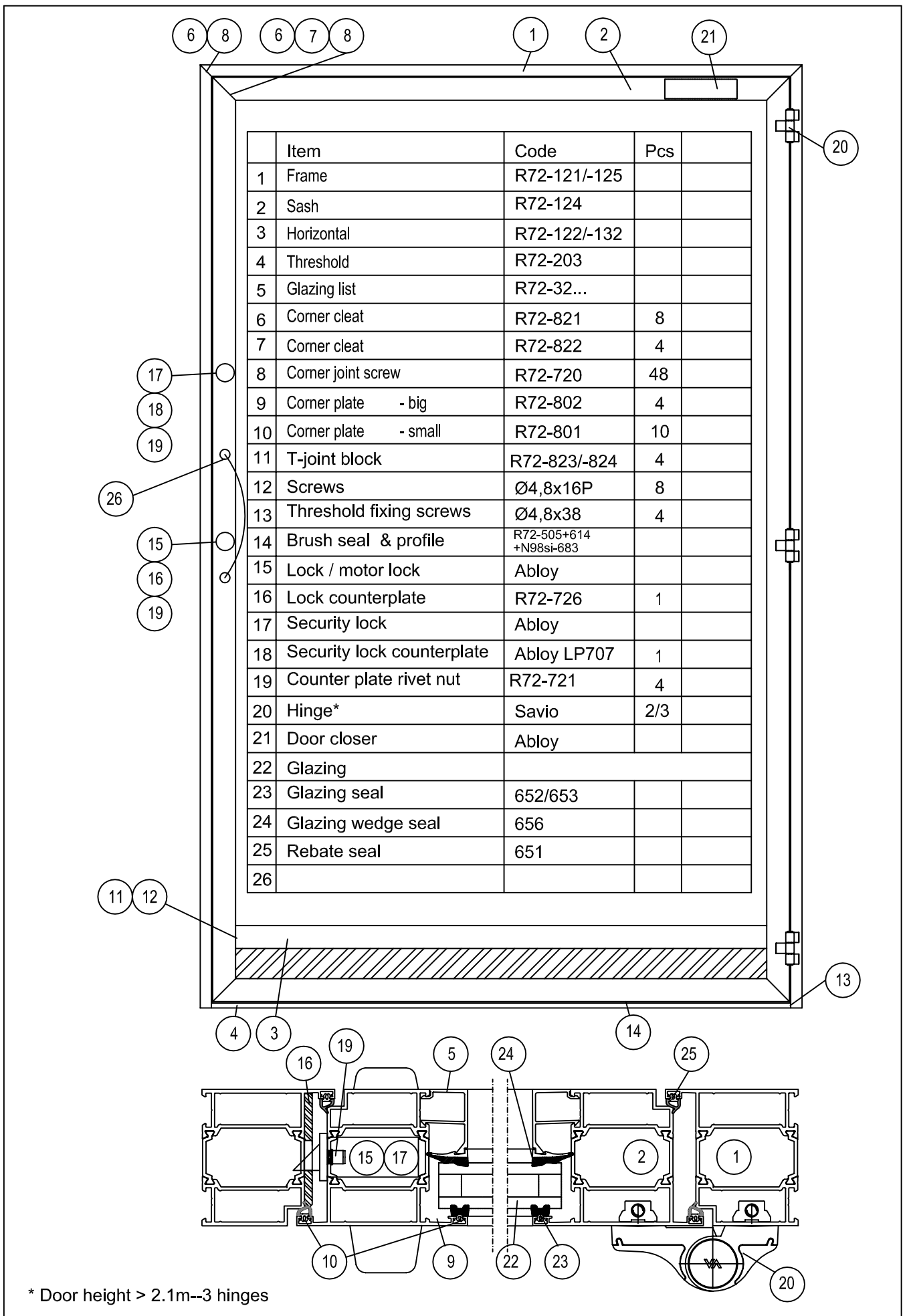
01.07.2013

2. Doors

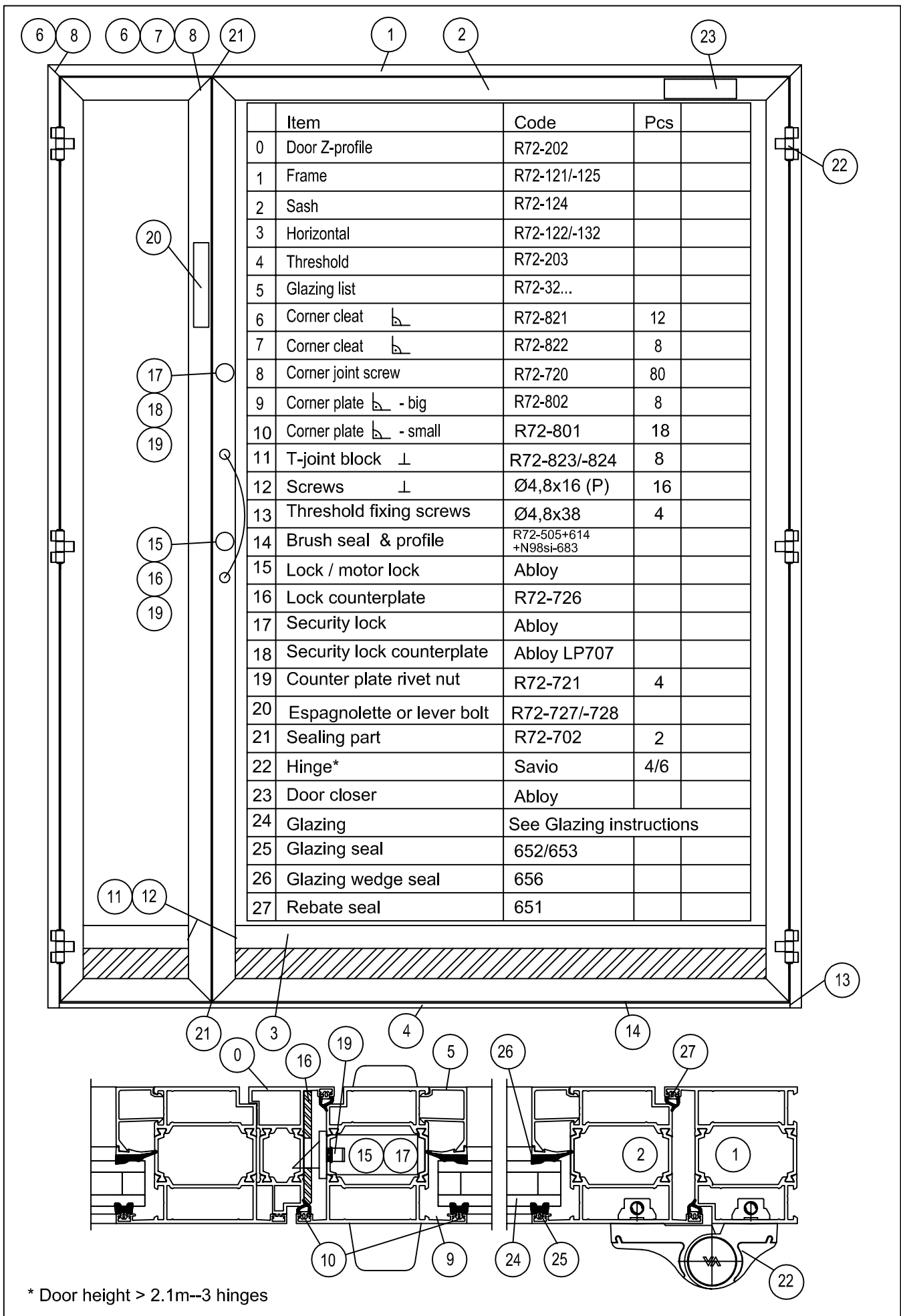


Sash max. weight: 120 kg





01.07.2013



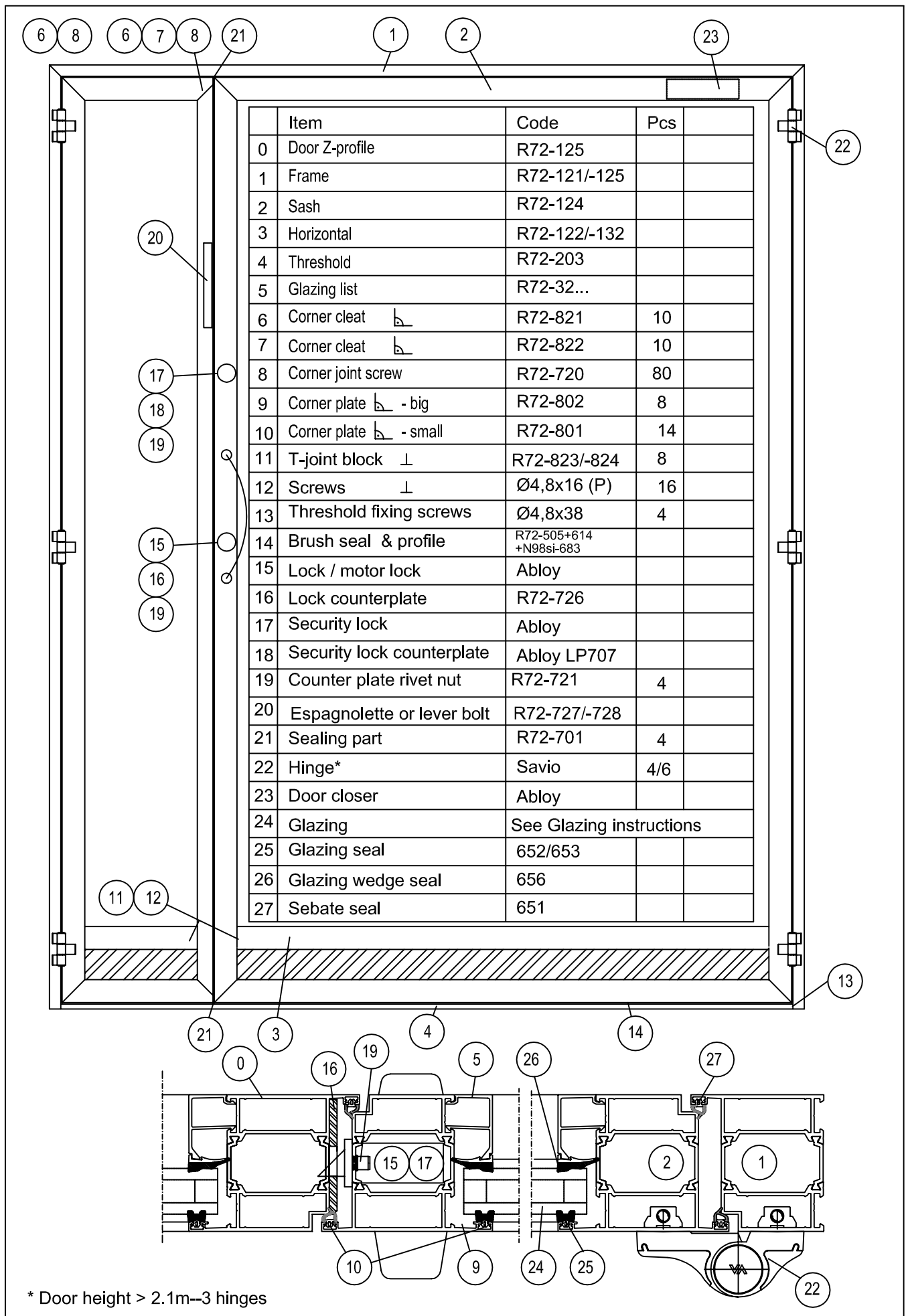
* Door height > 2.1m--3 hinges

01.07.2013

R72 2.2



Parts list of pair door with profile R72-202



01.07.2013

1. GENERAL INFORMATION











- given instructions are applicable to pages 2.5 / 2.6 / 2.7 (outside openable door) and 2.12 / 2.13 / 2.14 (inside openable door)
- given measurements are nominal
- sizes of elements can be found from specifications of elements which are given in tables

2. GLAZING

- glazing instructions are applicable to all types of elements
- see Glazing, page 6.0: adjustment of 656 gasket

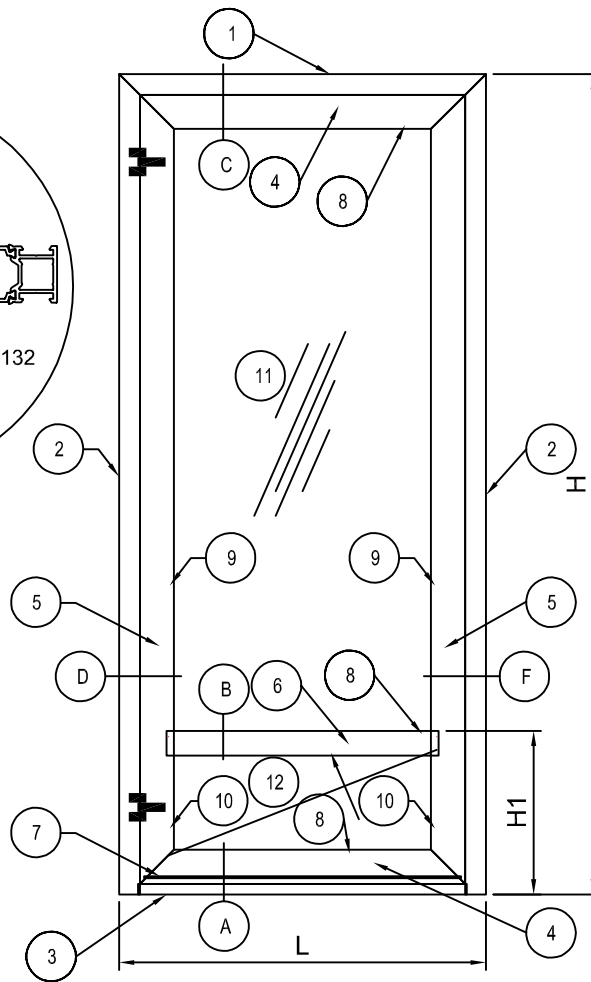
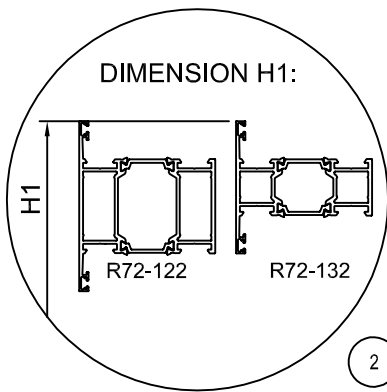
3. Visible widths of frames

- visible widths of different frame types are given in a table below:

Element type:	Door frame profile:	Visible width:		
		50 mm	70 mm	90 mm
Outside openable door	R72-121 	x		
	R72-128 + R72-201 	x		
	R72-124 		x	
	R72-125 		x	
	R72-123 + R72-201 		x	
Inside openable door	R72-121 		x	
	R72-128 + R72-201 		x	
	R72-124 			x
	R72-125 			x
	R72-123 + R72-201 			x

4. FRAME PROFILES R72-123 + R72-201

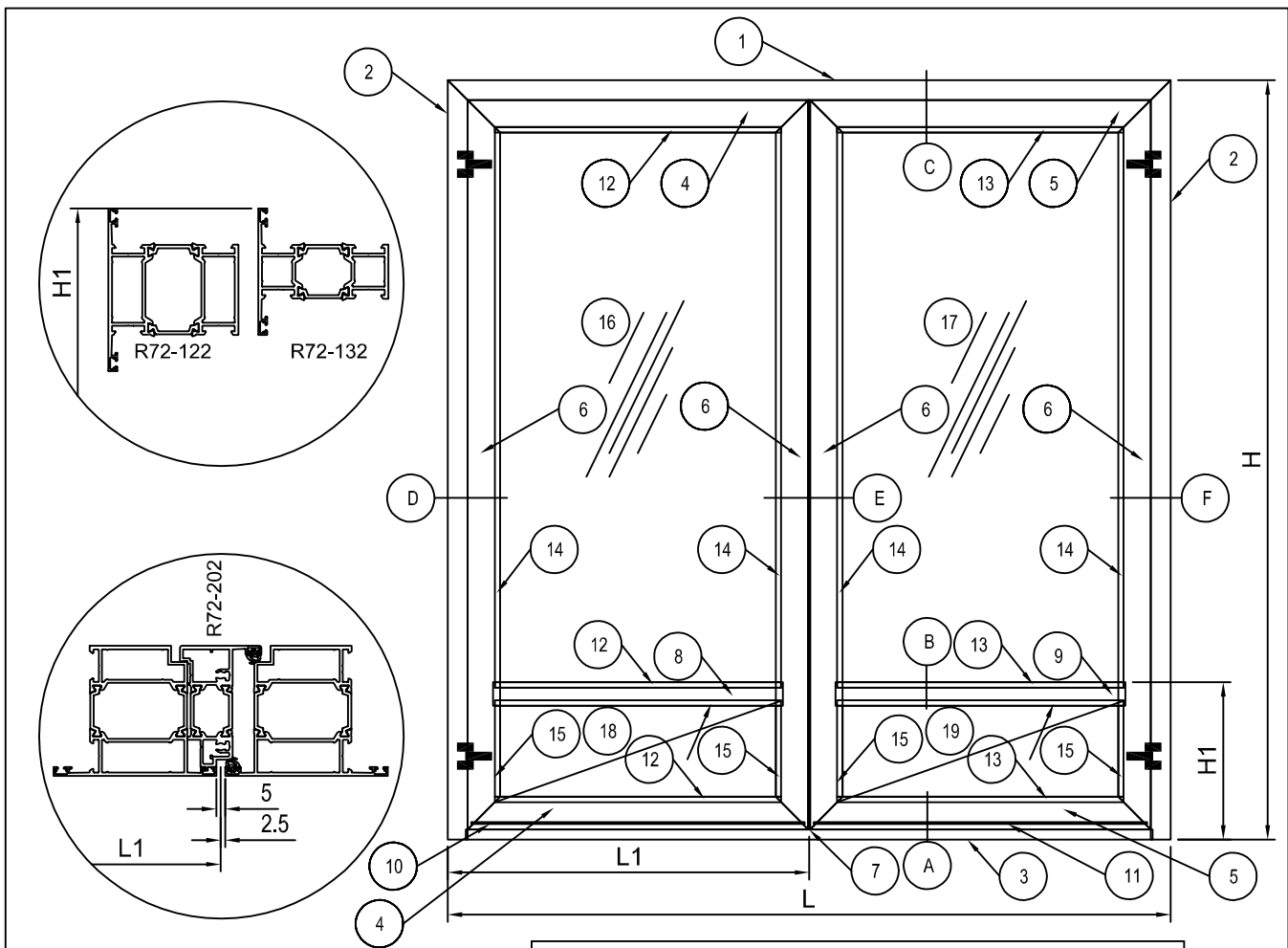
- dimensions of alternative frame variant R72-123 + R72-201 are shown on pages 2.8 & 2.11 (outside openable door) and 2.15 & 2.18 (inside openable door)



Cutting dimensions for different variants of frame:

No:	Element:	Profile/ position:	R72-121	R72-125	R72-128 + R72-201	Angles:
1	Horizontal frame	-	L	L	L L-80	45° / 45°
2	Vertical frame	-	H	H	H H-40	90° / 45°
3	Threshold	R72-203	L-108	L-148	L-108	90° / 90°
4	Horizontal sash	R72-124	L-100	L-140	L-100	45° / 45°
5	Vertical sash	R72-124	H-64	H-84	H-64	45° / 45°
6	Intermediate horizontal	R72-122 R72-132	L-240	L-280	L-240	90° / 90°
7	Threshold gasket	R72-505 & N98si-683	L-132	L-172	L-132	90° / 90°
8	Horizontal glazinglists	-	L-240	L-280	L-240	90° / 90°
9	Vertical glazinglists	With intermediate horizontal Without intermediate horizontal	H-H1-140 H-244	H-H1-160 H-264	H-H1-140 H-244	90° / 90°
10	Vertical glazinglists of panel	Horizontal R72-122 Horizontal R72-132	H1-189 H1-174	H1-189 H1-174	H1-189 H1-174	90° / 90°
11	Glass	Horizontal dimension Vertical with intermediate horizontal Vertical without intermediate horizontal	L-250 H-H1-110 H-214	L-290 H-H1-130 H-234	L-250 H-H1-110 H-214	
12	Panel	Horizontal dimension Vertical dimension (R72-122) Vertical dimension (R72-132)	L-250 H1-159 H1-144	L-290 H1-159 H1-144	L-250 H1-159 H1-144	

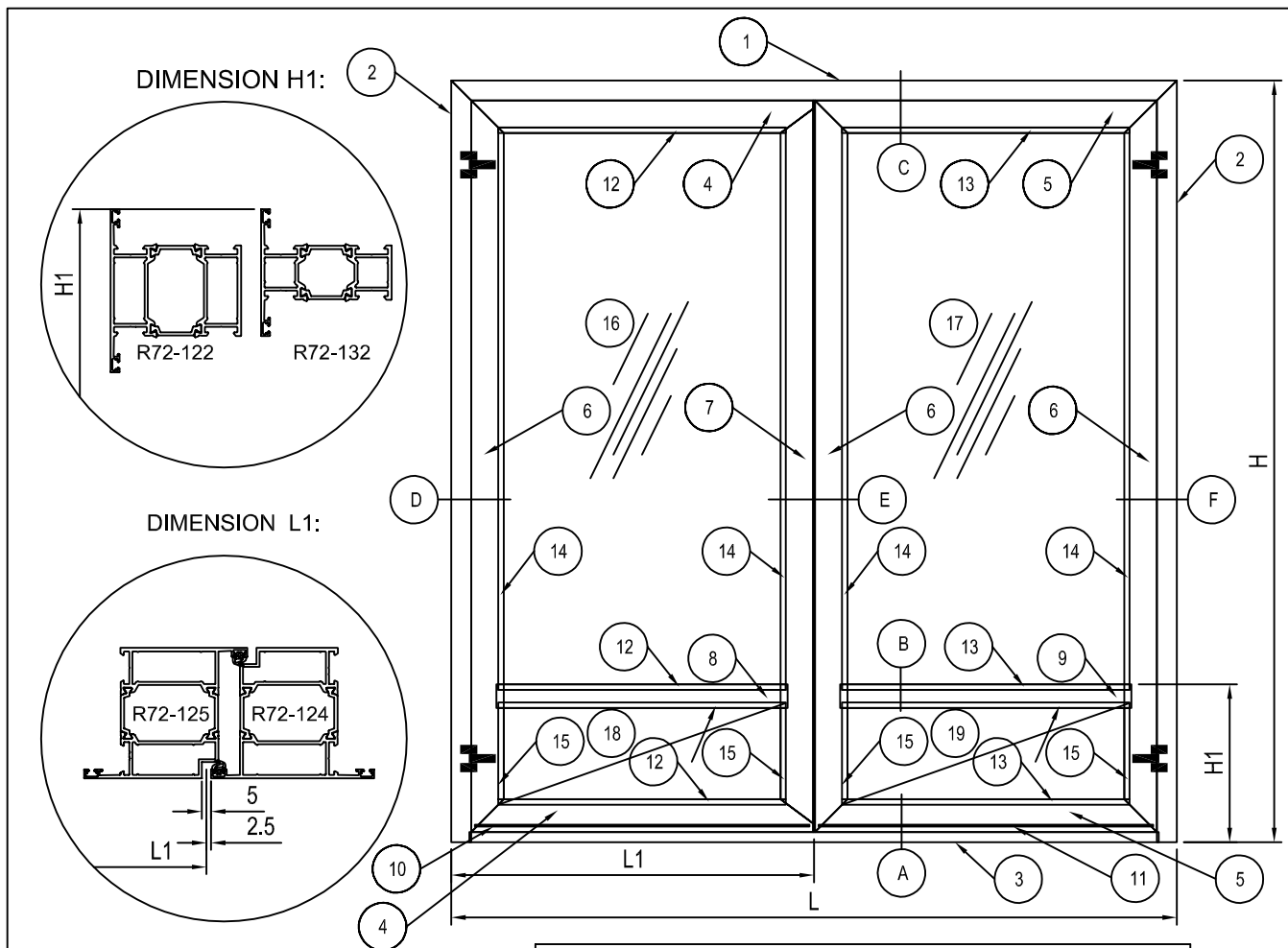




Cutting dimensions for different variants of frame:

No:	Element:	Profile/ position:	R72-121	R72-125	R72-128 + R72-201	Angles:	
1	Horizontal frame	-	L	L	L	L-80	45° / 45°
2	Vertical frame	-	H	H	H	H-40	90° / 45°
3	Threshold	R72-203	L-108	L-148	L-108		90° / 90°
4, 5	Horizontal sash	R72-124	4	L1-52.5	L1-72.5	L1-52.5	45° / 45°
			5	L-L1-52.5	L-L1-72.5	L-L1-52.5	
6	Vertical sash	R72-124	H-64	H-84	H-64	45° / 45°	
7	Rebate profile	R72-202	H-118	H-138	H-118	90° / 90°	
8,9	Intermediate horizontal	R72-122	8	L1-192.5	L1-212.5	L1-192.5	90° / 90°
			9	L-L1-192.5	L-L1-212.5	L-L1-192.5	
10,11	Threshold gasket	R72-505 & N98si-683	10	L1-59.5	L1-79.5	L1-59.5	90° / 90°
			11	L-L1-84.5	L-L1-104.5	L-L1-84.5	
12,13	Drip moulding	-	12	L1-192.5	L1-212.5	L1-192.5	90° / 90°
			13	L-L1-192.5	L-L1-212.5	L-L1-192.5	
14	Horizontal glazinglists	-	H-H1-140	H-H1-160	H-H1-140	90° / 90°	
			H-244	H-264	H-244		
15	Vertical glazinglists	-	H1-189	H1-189	H1-189	90° / 90°	
			H1-174	H1-174	H1-174		
16,17	Glass	-	16	L1-202	L1-222	L1-202	
			17	L-L1-202	L-L1-222	L-L1-202	
				H-H1-110	H-H1-130	H-H1-110	
				H-214	H-234	H-214	
18,19	Panel	-	18	L1-202	L1-222	L1-202	
			19	L-L1-202	L-L1-222	L-L1-202	
				H1-159	H1-159	H1-159	
				H1-144	H1-144	H1-144	

01.07.2013



Cutting dimensions for different variants of frame:

No:	Element:	Profile/ position:	R72-121	R72-125	R72-128 + R72-201	Angles:	
1	Horizontal frame	-	L	L	L	45° / 45°	
2	Vertical frame	-	H	H	H	90° / 45°	
3	Threshold	R72-203	L-108	L-148	L-108	90° / 90°	
4, 5	Horizontal sash	R72-124	4	L1-27.5	L1-47.5	L1-27.5	45° / 45°
			5	L-L1-52.5	L-L1-72.5	L-L1-52.5	45° / 45°
6	Vertical sash	R72-124	H-64	H-84	H-64	45° / 45°	
7	Vertical sash	R72-125	H-64	H-84	H-64	45° / 45°	
8,9	Intermediate horizontal	R72-122	8	L1-167.5	L1-187.5	L1-167.5	90° / 90°
			9	L-L1-192.5	L-L1-212.5	L-L1-192.5	
10,11	Threshold gasket	R72-505 & N98si-683	10	L1-59.5	L1-79.5	L1-59.5	90° / 90°
			11	L-L1-84.5	L-L1-104.5	L-L1-84.5	
12,13	Horizontal glazinglists		12	L1-167.5	L1-187.5	L1-167.5	90° / 90°
			13	L-L1-192.5	L-L1-212.5	L-L1-192.5	
14	Vertical glazinglists	With intermediate horizontal	H-H1-140	H-H1-160	H-H1-140	90° / 90°	
		Without intermediate horizontal	H-244	H-264	H-244		
15	Vertical glazinglists of panel	Horizontal R72-122	H1-189	H1-189	H1-189	90° / 90°	
		Horizontal R72-132	H1-174	H1-174	H1-174		
16,17	Glass		Horizontal dimension	16	L1-177	L1-197	L1-177
			17	L-L1-202	L-L1-222	L-L1-202	
			Vertical with Intermediate horizontal	H-H1-110	H-H1-130	H-H1-110	
			Vertical without Intermediate horizontal	H-214	H-234	H-214	
18,19	Panel		Horizontal dimension	18	L1-177	L1-197	L1-177
			19	L-L1-202	L-L1-222	L-L1-202	
			Vertical dimension (R72-122)	H1-159	H1-159	H1-159	
			Vertical dimension (R72-132)	H1-144	H1-144	H1-144	

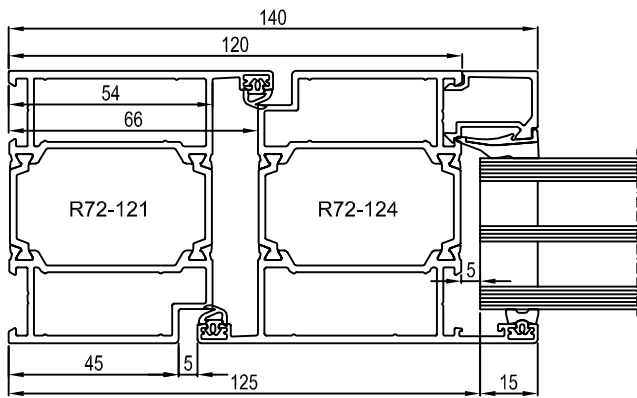
01.07.2013

Cutting dimensions of outside openable pair door. Z-profile R72-125

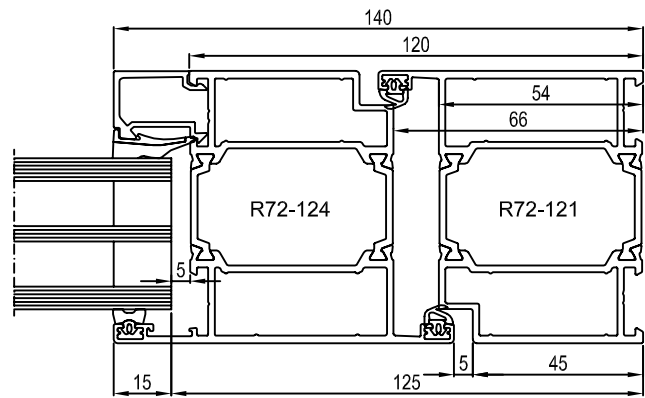


NOKIAN
PROFILES

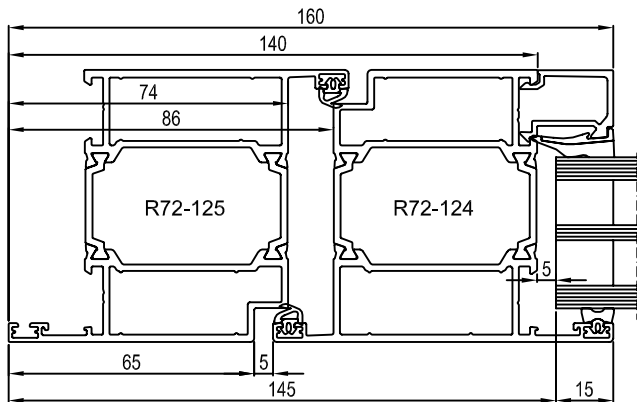
R72 2.7



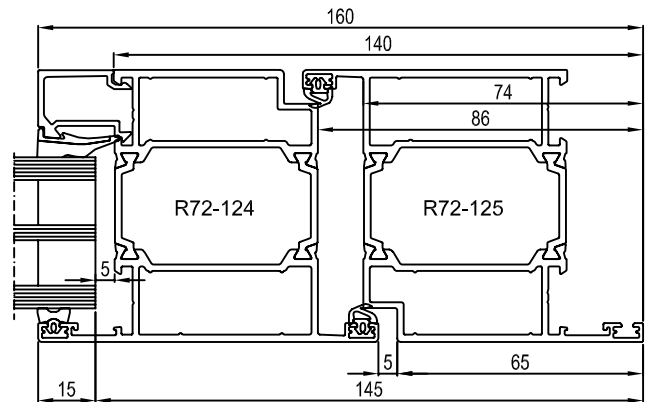
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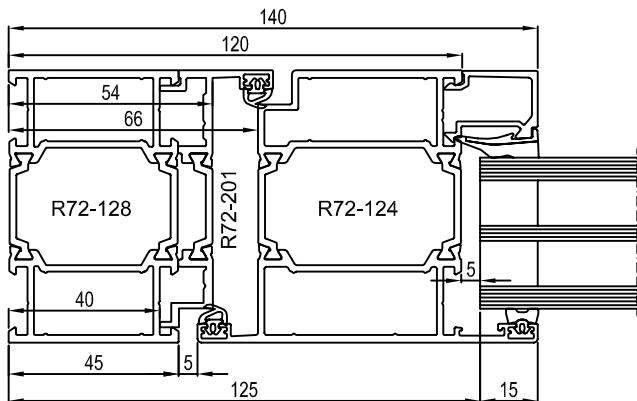
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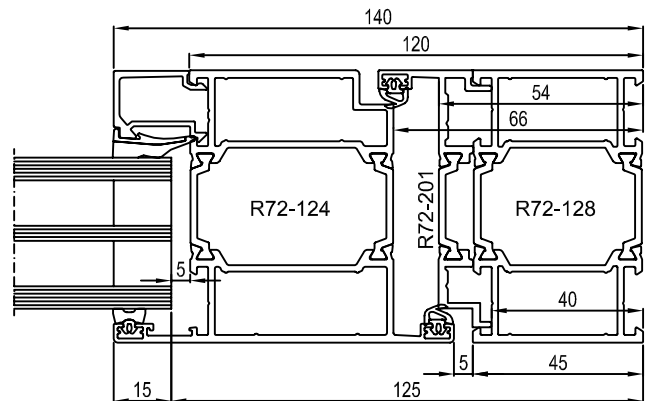
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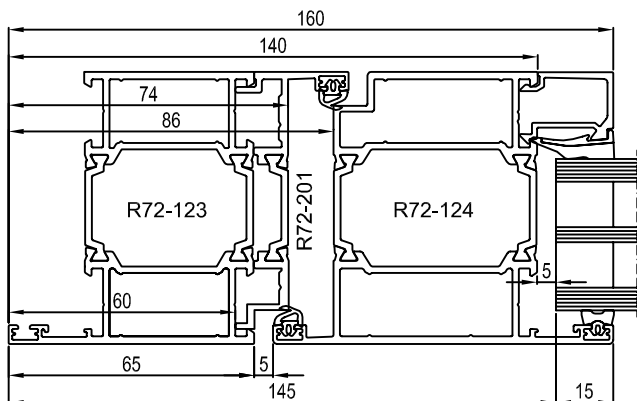
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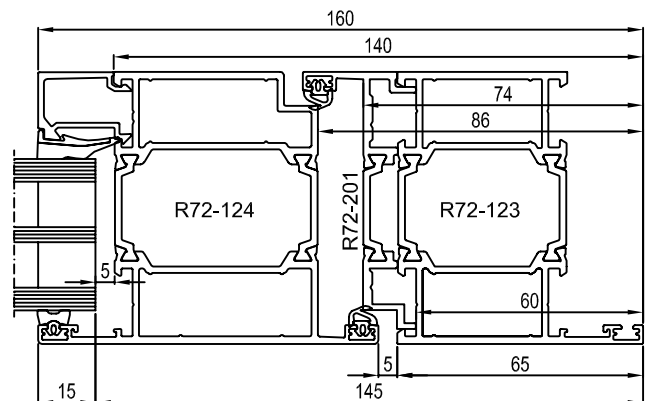
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F



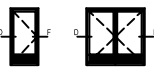
D



F

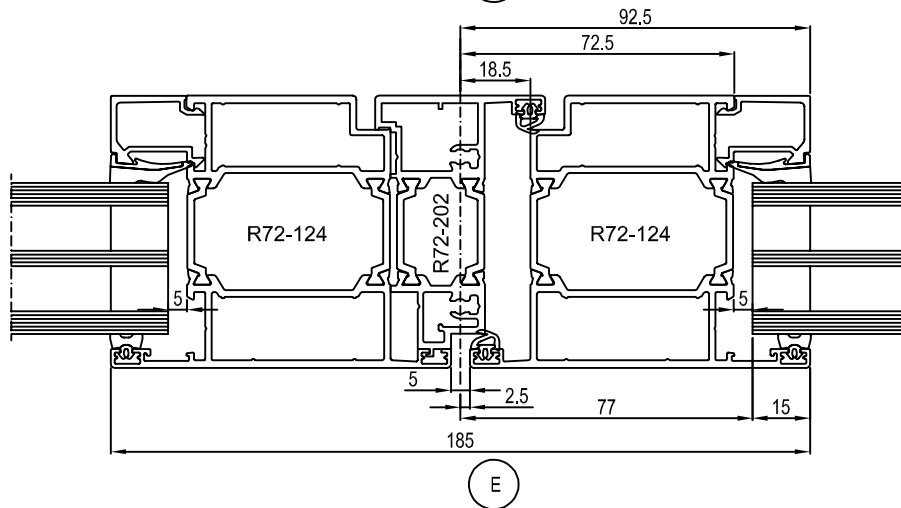
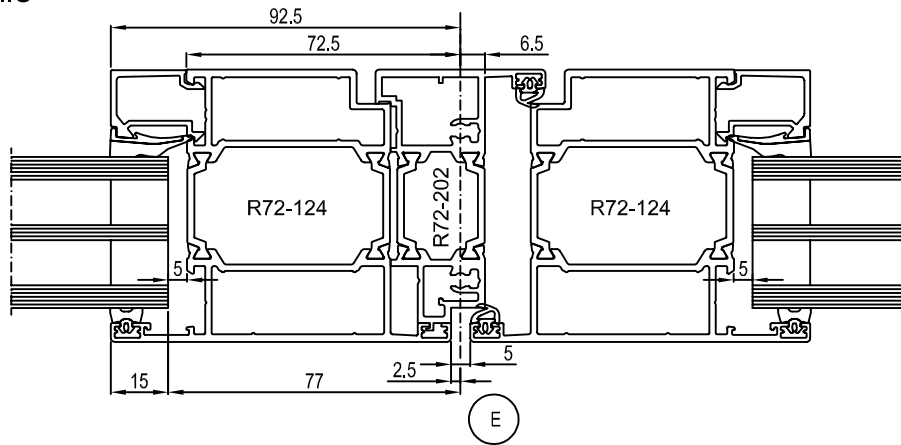
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R72 2.8

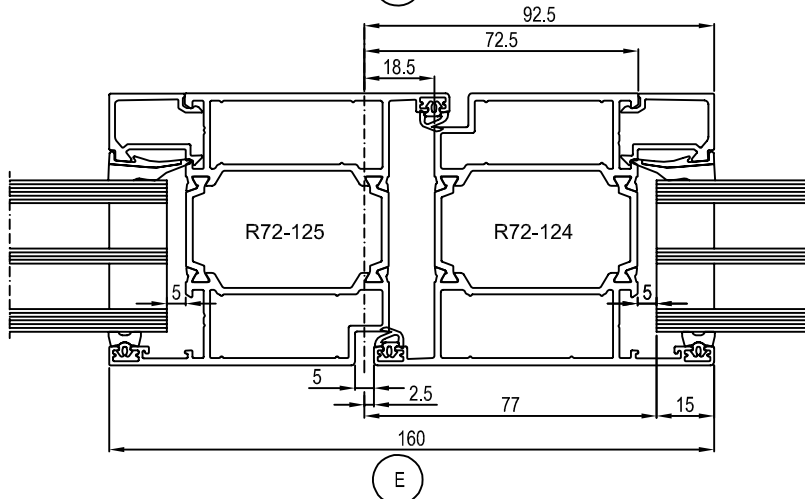
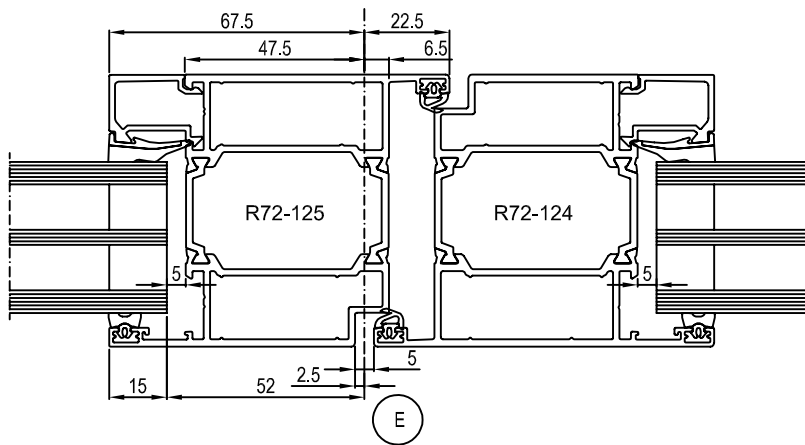


Outside openable doors.
Details D & F

Rebate profile
R72-202

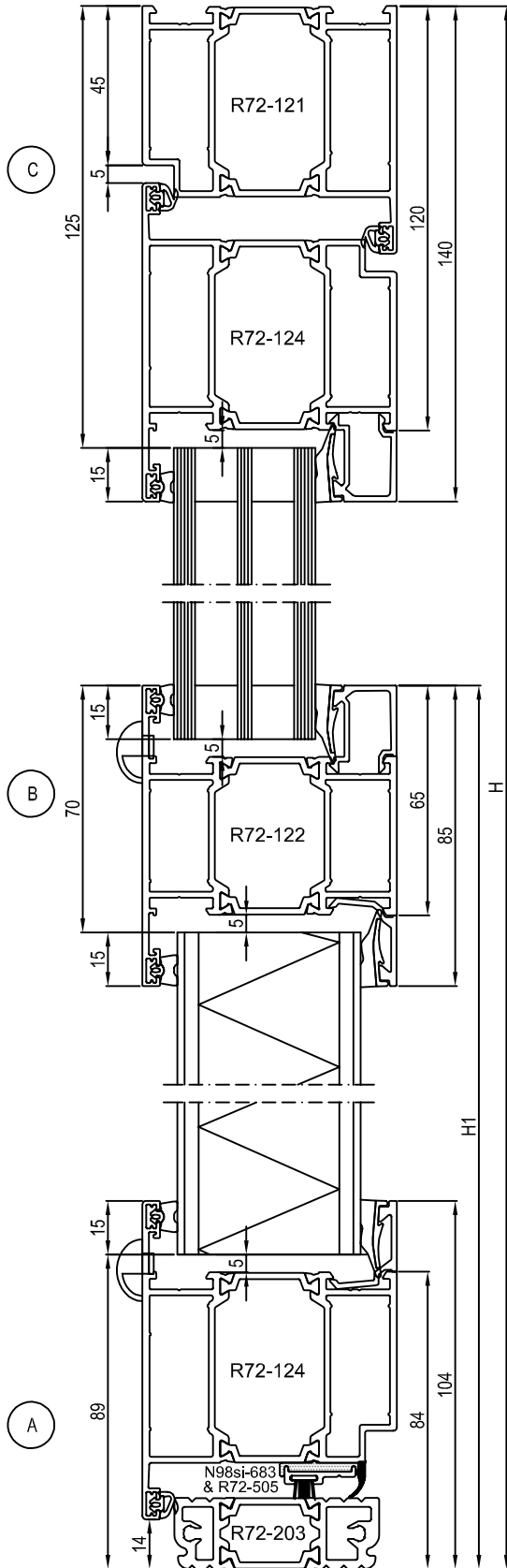
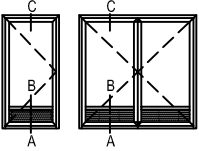


Z-profile R72-125

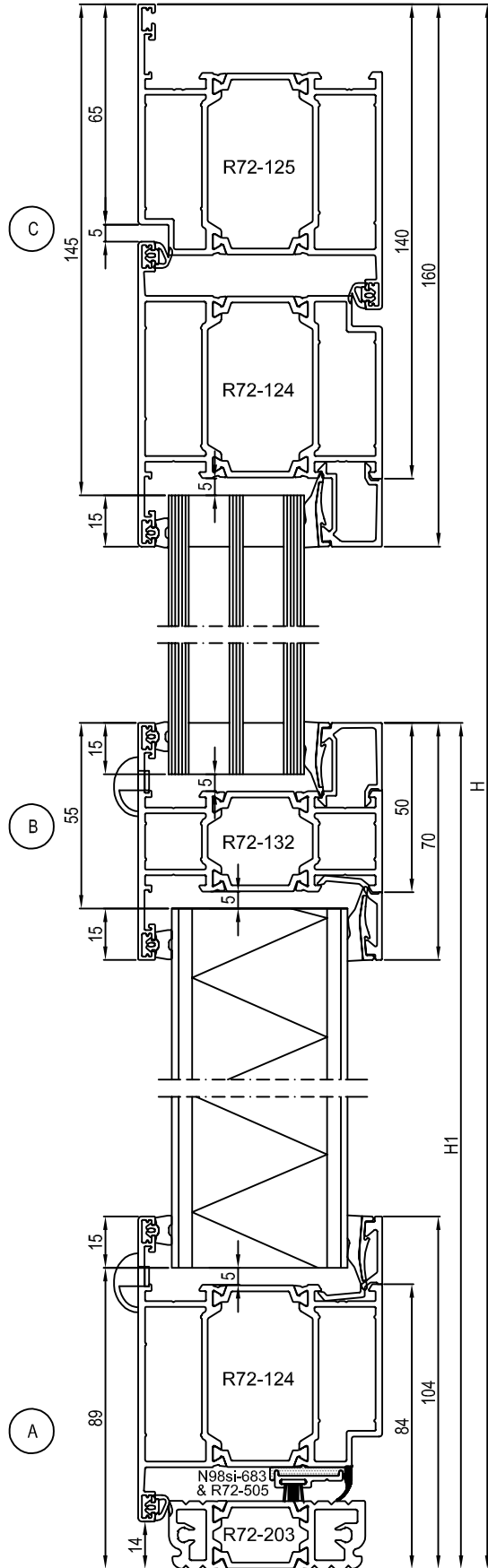


01.07.2013

Frame R72-121 / Intermediate
horizontal R72-122



Frame R72-125 / Intermediate
horizontal R72-132



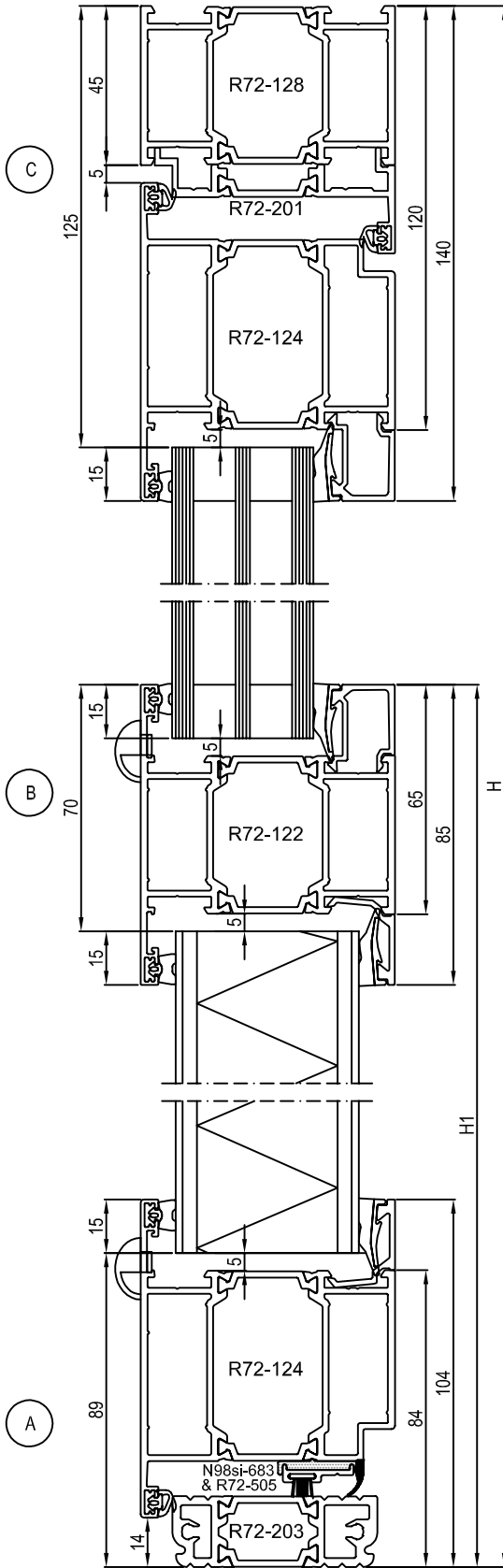
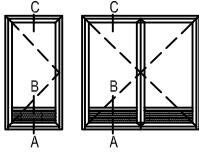
01.07.2013

R72 2.10

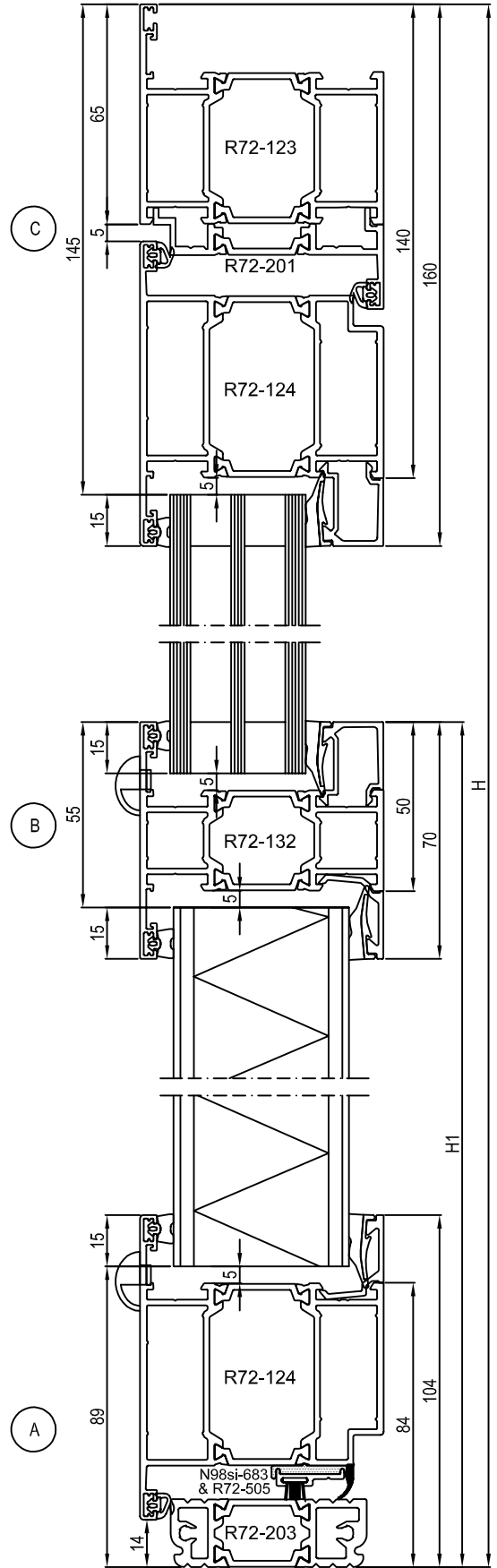


Outside openable doors. Details
A, B & C. Frames R72-124 & R72-125

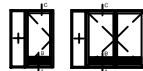
Frame R72-128 / Intermediate horizontal R72-122



Frame R72-123 / Intermediate horizontal R72-132



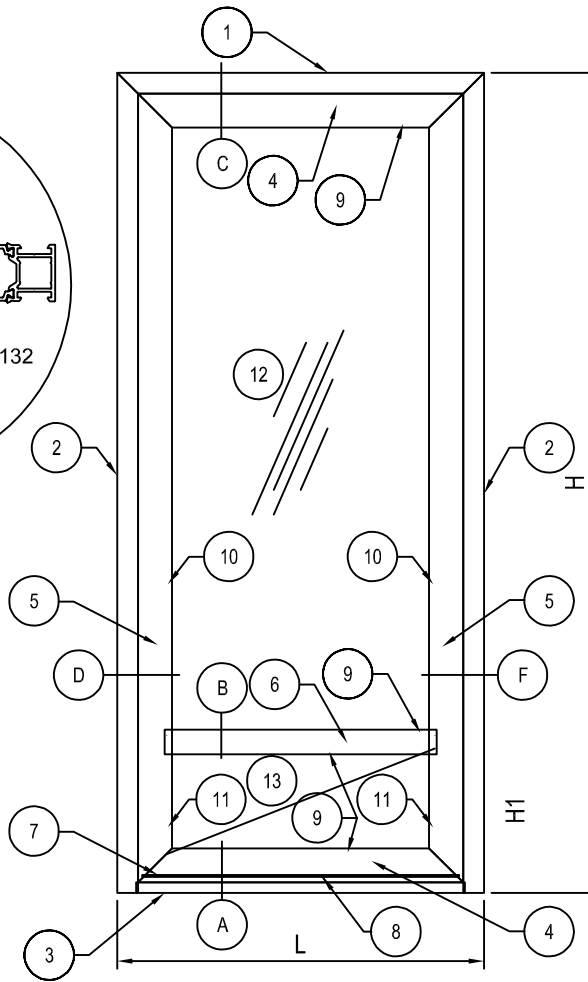
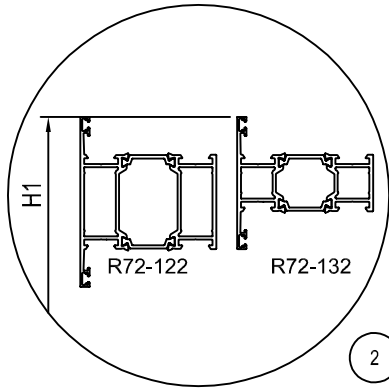
Outside openable doors. Details
A, B & C. Frame R72-128 & R72-123



NOKIAN
PROFILES

R72 2.11

DIMENSION H1:

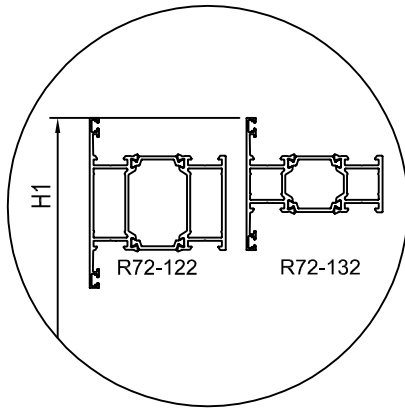


Cutting dimensions for different variants of frame:

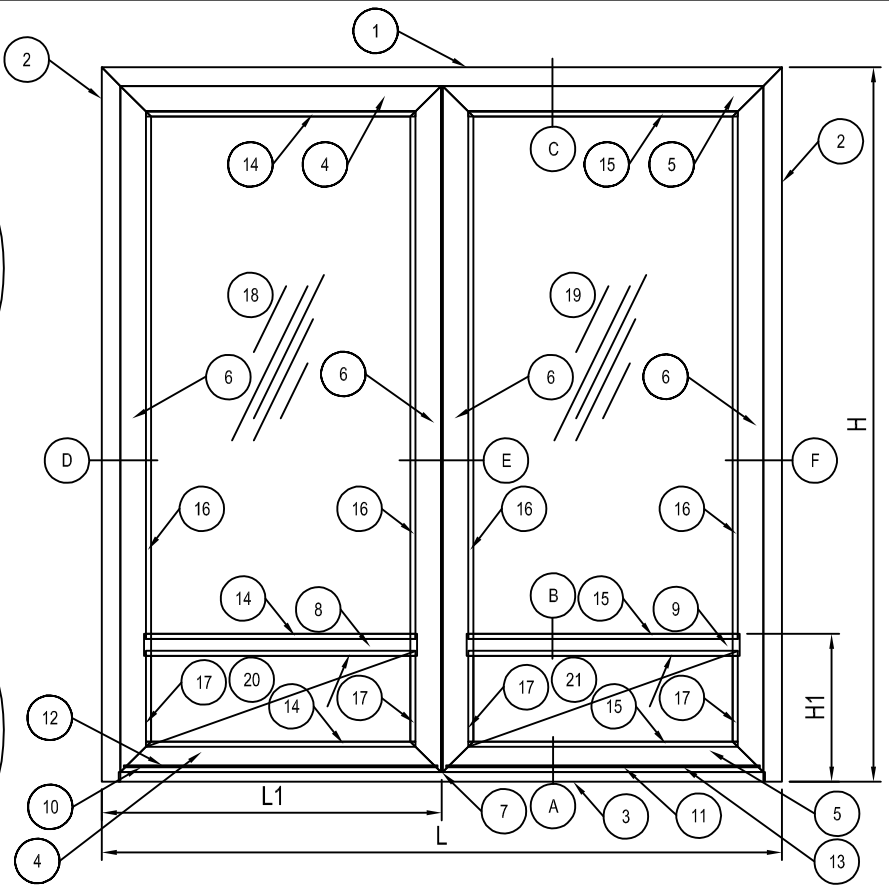
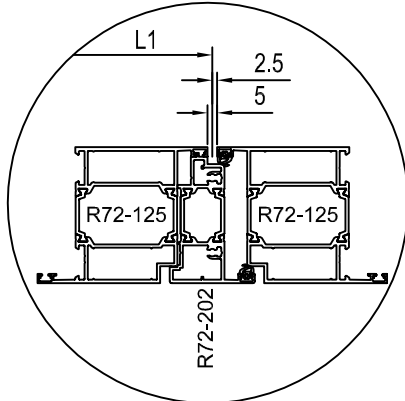
No:	Element:	Profile/ position:	Cutting dimensions for different variants of frame:			Angles:	
			R72-121	R72-124	R72-128 + R72-201		
1	Horizontal frame	-	L	L	L	L-80	45° / 45°
2	Vertical frame	-	H	H	H	H-40	90° / 45°
3	Threshold	R72-203	L-108	L-148	L-108		90° / 90°
4	Horizontal sash	R72-125	L-100	L-140	L-100		45° / 45°
5	Vertical sash	R72-125	H-64	H-84	H-64		45° / 45°
6	Intermediate horizontal	R72-122	L-240	L-280	L-240		90° / 90°
		R72-132					
7	Threshold gasket		L-132	L-172	L-132		90° / 90°
8	Drip moulding	R72-524	L-150	L-190	L-150		90° / 90°
9	Horizontal glazinglists		L-240	L-280	L-240		90° / 90°
10	Vertical glazinglists	With intermediate horizontal	H-H1-140	H-H1-160	H-H1-140		90° / 90°
		Without intermediate horizontal	H-244	H-264	H-244		
11	Vertical glazinglists of panel	Horizontal R72-122	H1-189	H1-189	H1-189		90° / 90°
		Horizontal R72-132	H1-174	H1-174	H1-174		
12	Glass	Horizontal dimension	L-250	L-290	L-250		
		Vertical with intermediate horizontal	H-H1-110	H-H1-130	H-H1-110		
		Vertical without intermediate horizontal	H-214	H-234	H-214		
13	Panel	Horizontal dimension	L-250	L-290	L-250		
		Vertical dimension (R72-122)	H1-159	H1-159	H1-159		
		Vertical dimension (R72-132)	H1-144	H1-144	H1-144		



DIMENSION H1:



DIMENSION L1:



Cutting dimensions for different variants of frame:

No:	Element:	Profile/ position:	Cutting dimensions for different variants of frame:			Angles:	
			R72-121	R72-124	R72-128 + R72-201		
1	Horizontal frame	-	L	L	L	45° / 45°	
2	Vertical frame	-	H	H	H	90° / 45°	
3	Threshold	R72-203	L-108	L-148	L-108	90° / 90°	
4, 5	Horizontal sash	R72-125	4	L1-52.5	L1-72.5	L1-52.5	45° / 45°
			5	L-L1-52.5	L-L1-72.5	L-L1-52.5	
6	Vertical sash	R72-125	H-64	H-84	H-64	45° / 45°	
7	Rebate profile	R72-202	H-118	H-138	H-118	90° / 90°	
8,9	Intermediate horizontal	R72-122	8	L1-192.5	L1-212.5	L1-192.5	90° / 90°
			R72-132	9	L-L1-192.5	L-L1-212.5	
10,11	Threshold gasket	R72-505 & N98si-683	10	L1-59.5	L1-79.5	L1-59.5	90° / 90°
			11	L-L1-84.5	L-L1-104.5	L-L1-84.5	
12,13	Drip moulding	R72-524	12	L1-52.5	L1-72.5	L1-52.5	-
			13	L-L1-47.5	L-L1-67.5	L-L1-47.5	
14,15	Horizontal glazinglists		14	L1-192.5	L1-212.5	L1-192.5	90° / 90°
			15	L-L1-192.5	L-L1-212.5	L-L1-192.5	
16	Vertical glazinglists	With intermediate horizontal	H-H1-140	H-H1-160	H-H1-140	90° / 90°	
		Without intermediate horizontal	H-244	H-264	H-244		
17	Vertical glazinglists of panel	Horizontal R72-122	H1-189	H1-189	H1-189	90° / 90°	
		Horizontal R72-132	H1-174	H1-174	H1-174		
18,19	Glass		Horizontal dimension	18	L1-202	L1-222	L1-202
			19	L-L1-202	L-L1-222	L-L1-202	
			Vertical with Intermediate horizontal	H-H1-110	H-H1-130	H-H1-110	
			Vertical without Intermediate horizontal	H-214	H-234	H-214	
20,21	Panel		Horizontal dimension	20	L1-202	L1-222	L1-202
			21	L-L1-202	L-L1-222	L-L1-202	
			Vertical dimension (R72-122)	H1-159	H1-159	H1-159	
			Vertical dimension (R72-132)	H1-144	H1-144	H1-144	

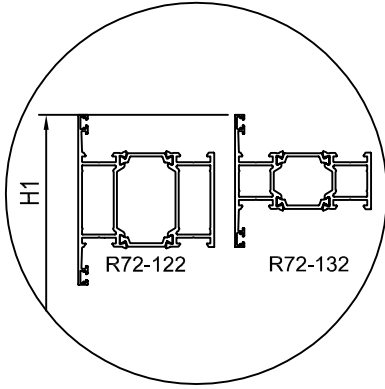
01.07.2013

Cutting dimensions of inside openable pair door. Rebate profile R72-202

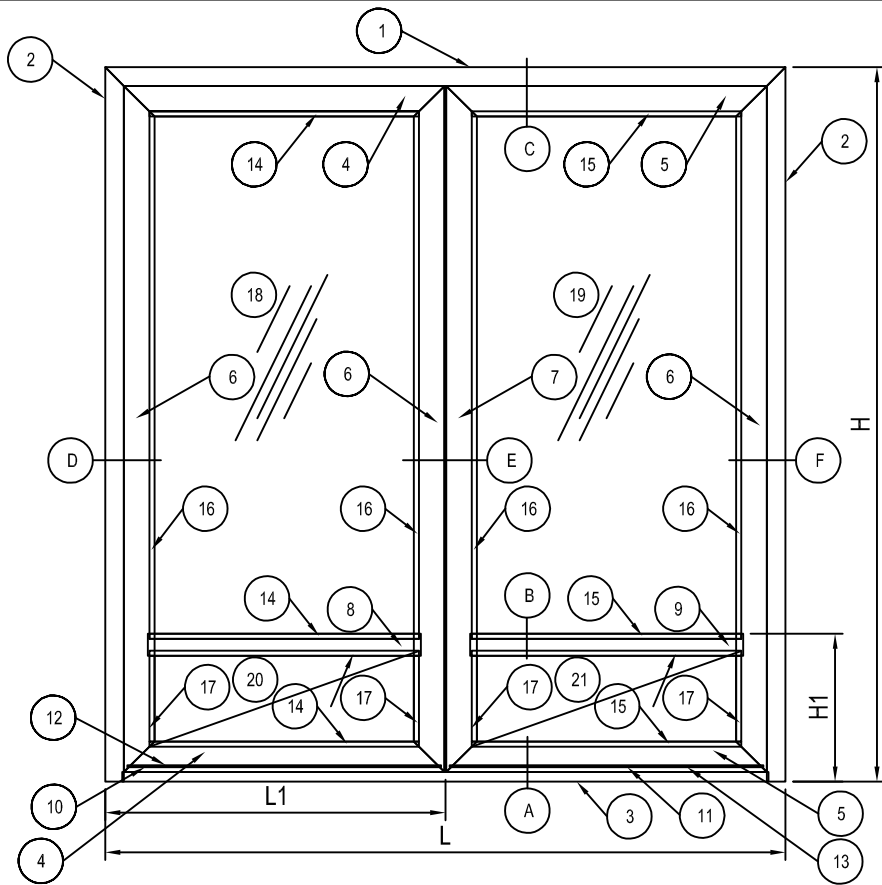
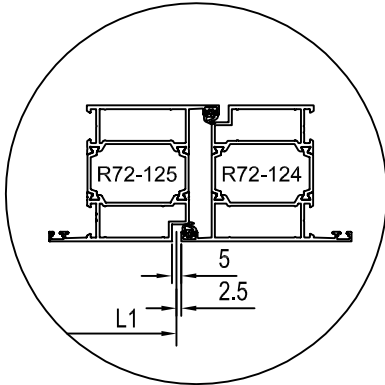


R72 2.13

DIMENSION H1:



DIMENSION L1:



Cutting dimensions for different variants of frame:

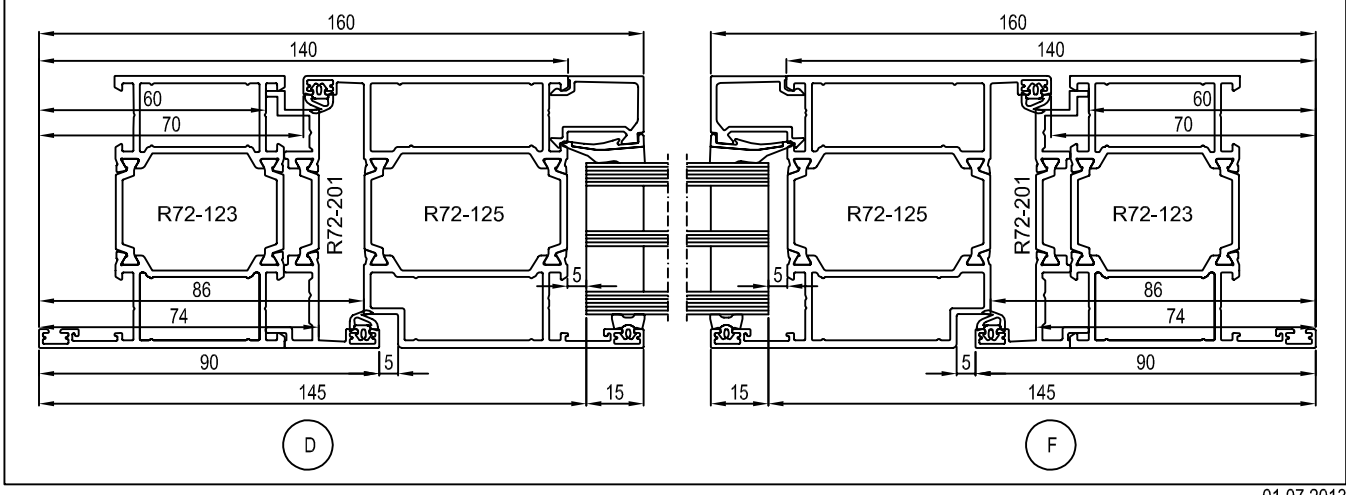
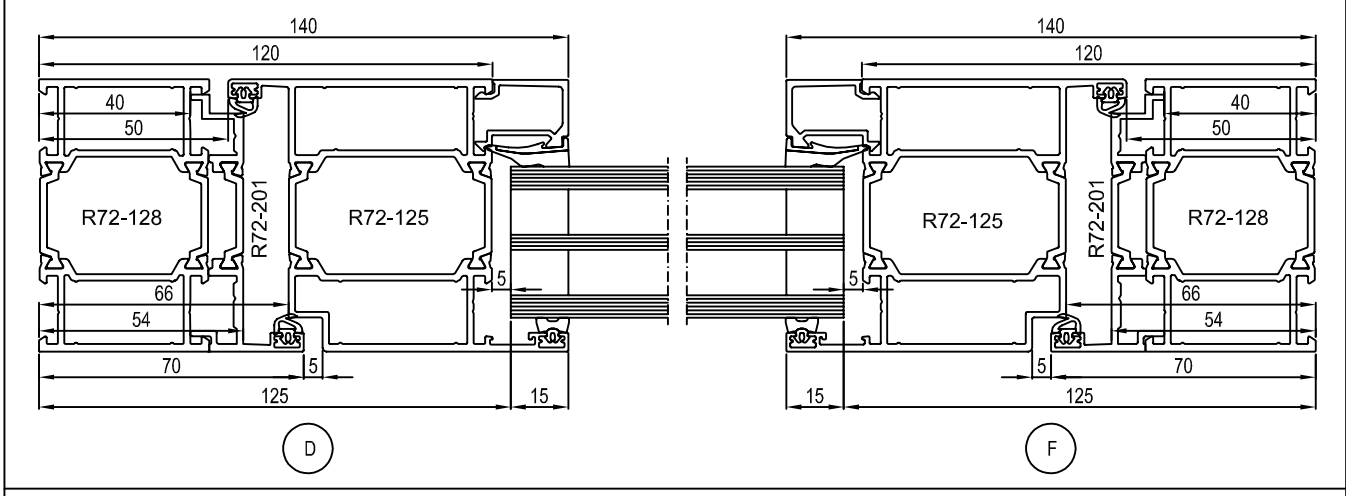
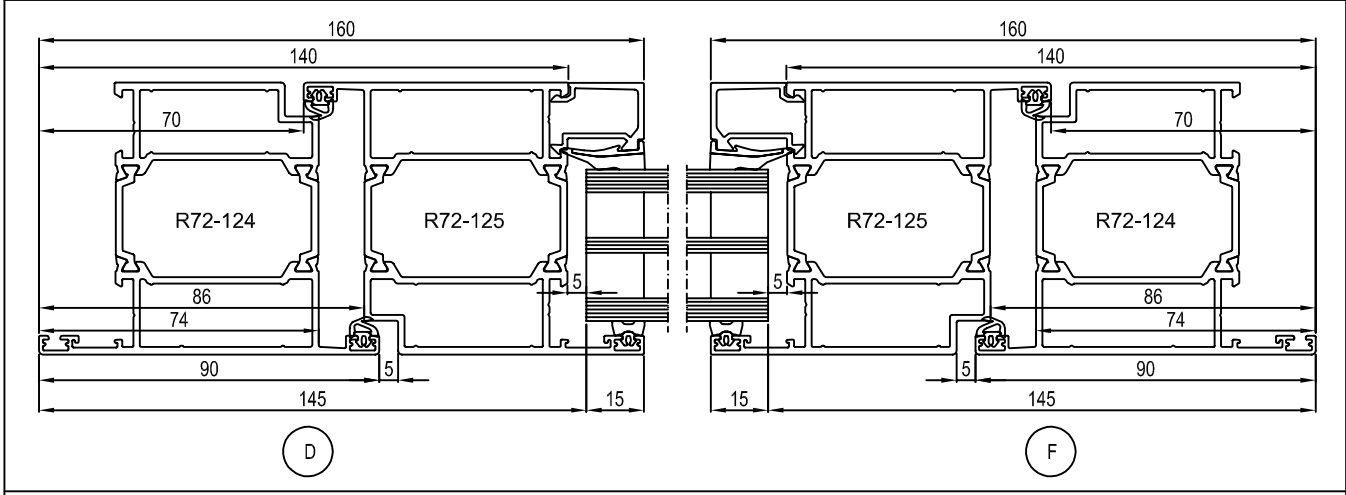
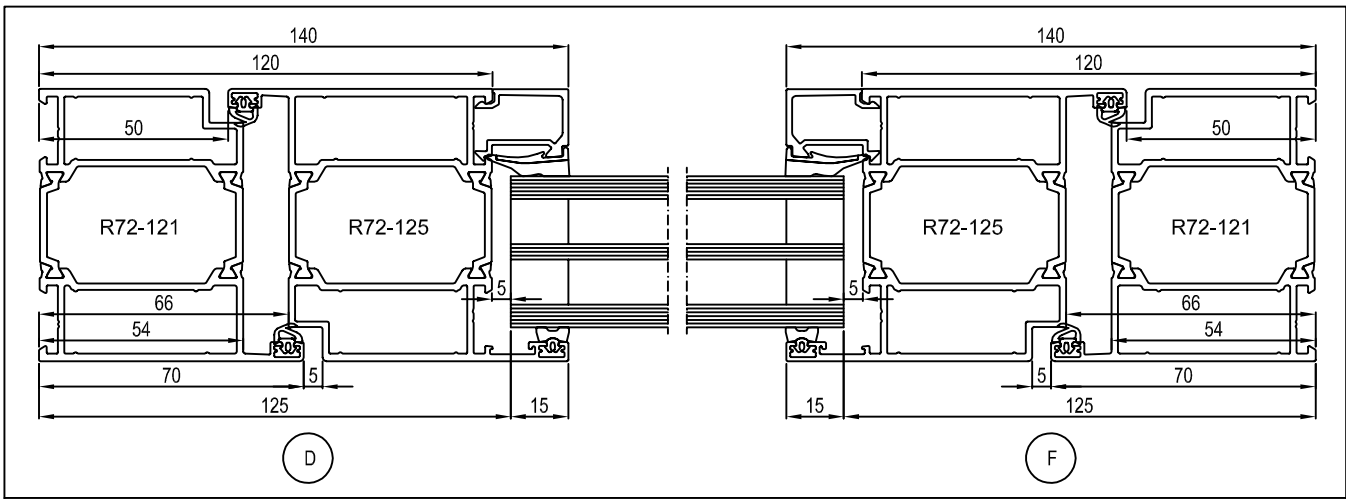
No:	Element:	Profile/ position:	Cutting dimensions for different variants of frame:			Angles:	
			R72-121	R72-124	R72-128 + R72-201		
1	Horizontal frame	-	L	L	L	45° / 45°	
2	Vertical frame	-	H	H	H	90° / 45°	
3	Threshold	R72-203	L-108	L-148	L-108	90° / 90°	
4, 5	Horizontal sash	R72-125	4	L1-27.5	L1-47.5	L1-27.5	45° / 45°
			5	L-L1-52.5	L-L1-72.5	L-L1-52.5	45° / 45°
6	Vertical sash	R72-125	H-64	H-84	H-64	45° / 45°	
7	Vertical sash	R72-124	H-64	H-84	H-64	45° / 45°	
8,9	Intermediate horizontal	R72-122	8	L1-167.5	L1-187.5	L1-167.5	90° / 90°
			R72-132	9	L-L1-192.5	L-L1-212.5	
10,11	Threshold gasket	R72-505 & N98si-683	10	L1-59.5	L1-79.5	L1-59.5	90° / 90°
			11	L-L1-84.5	L-L1-104.5	L-L1-84.5	
12,13	Drip moulding	R72-524	12	L1-77.5	L1-97.5	L1-77.5	-
			13	L-L1-77.5	L-L1-97.5	L-L1-77.5	
14,15	Horizontal glazinglists		14	L1-167.5	L1-187.5	L1-167.5	90° / 90°
			15	L-L1-192.5	L-L1-212.5	L-L1-192.5	
16	Vertical glazinglists	With intermediate horizontal	H-H1-140	H-H1-160	H-H1-140	90° / 90°	
		Without intermediate horizontal	H-244	H-264	H-244		
17	Vertical glazinglists of panel	Horizontal R72-122	H1-189	H1-189	H1-189	90° / 90°	
		Horizontal R72-132	H1-174	H1-174	H1-174		
18,19	Glass	Horizontal dimension	18	L1-177	L1-197	L1-177	
			19	L-L1-202	L-L1-222	L-L1-202	
			Vertical with intermediate horizontal	H-H1-110	H-H1-130	H-H1-110	
			Vertical without intermediate horizontal	H-214	H-234	H-214	
20,21	Panel	Horizontal dimension	20	L1-177	L1-197	L1-177	
			21	L-L1-202	L-L1-222	L-L1-202	
			Vertical dimension (R72-122)	H1-159	H1-159	H1-159	
			Vertical dimension (R72-132)	H1-144	H1-144	H1-144	

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R72 2.14

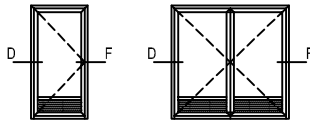


Cutting dimensions of inside openable pair door. T-profile R72-124



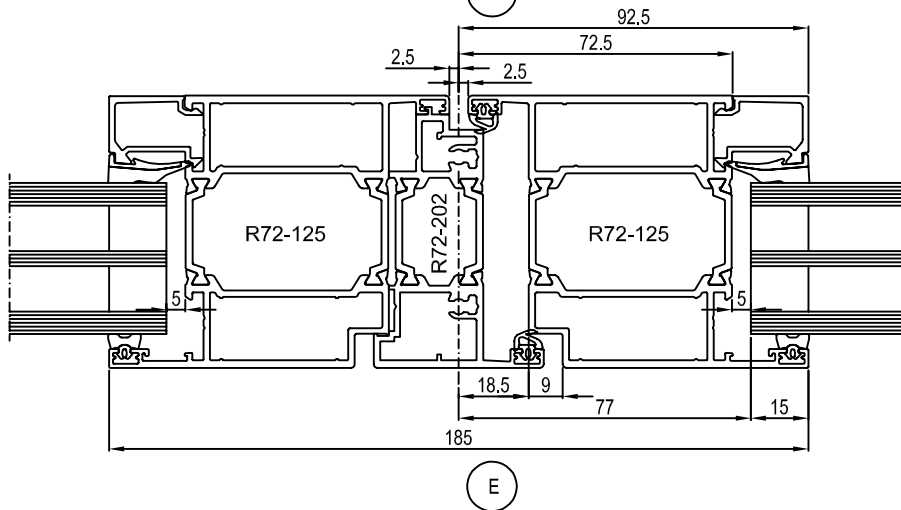
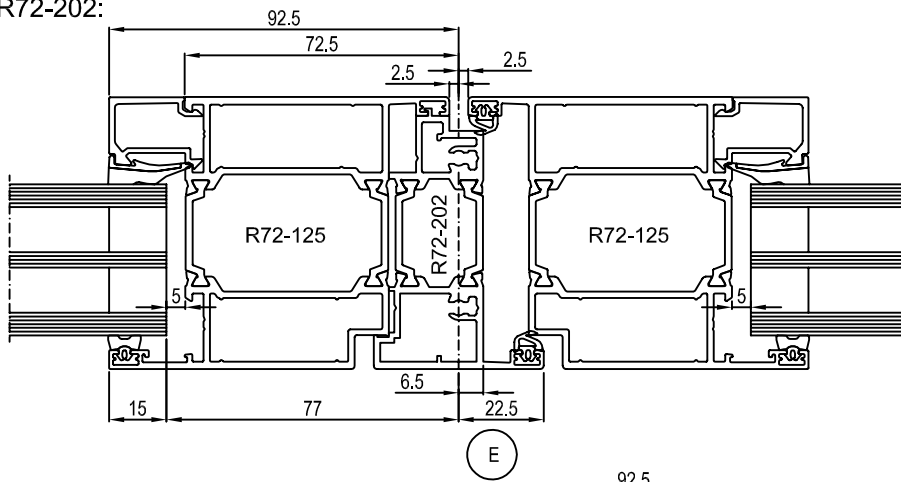
01.07.2013

Inside openable doors
Details D & F

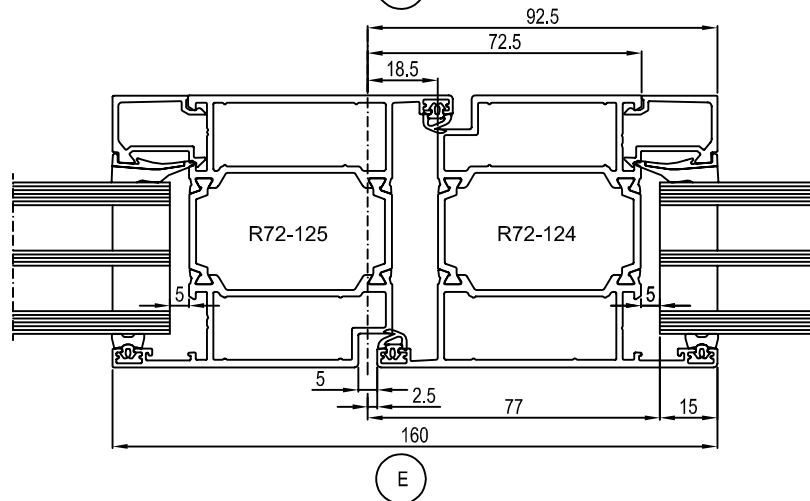
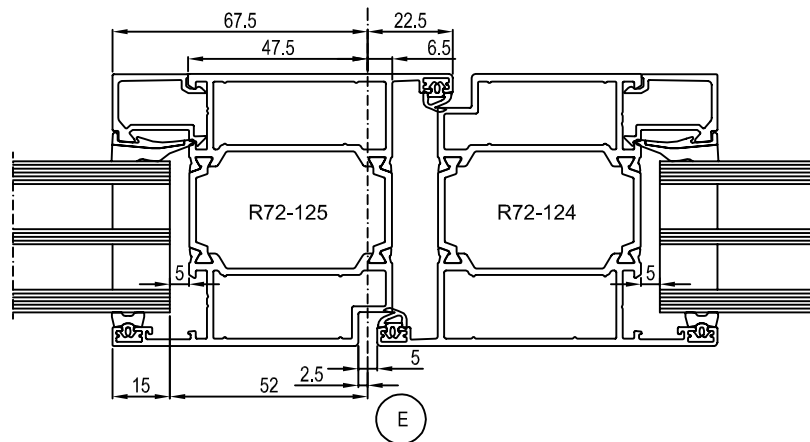


R72 2.15

Rebate profile R72-202:

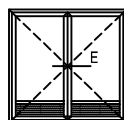


T-profile R72-124:



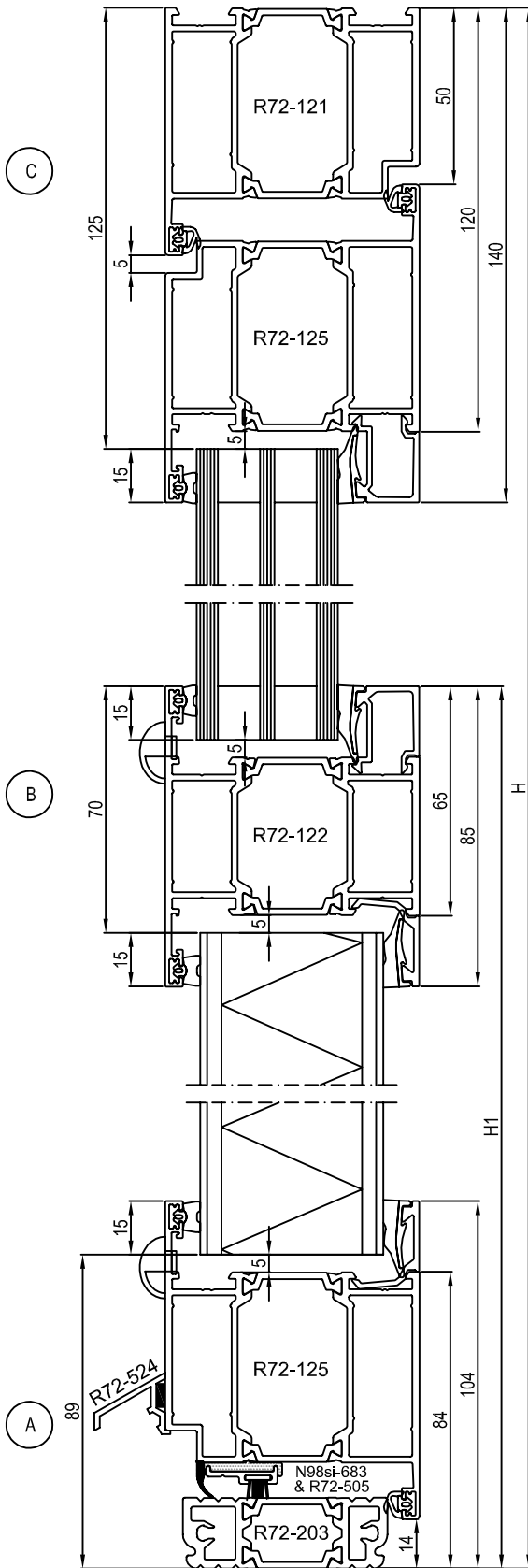
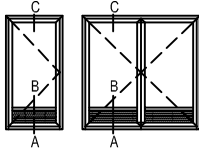
01.07.2013

R72 2.16

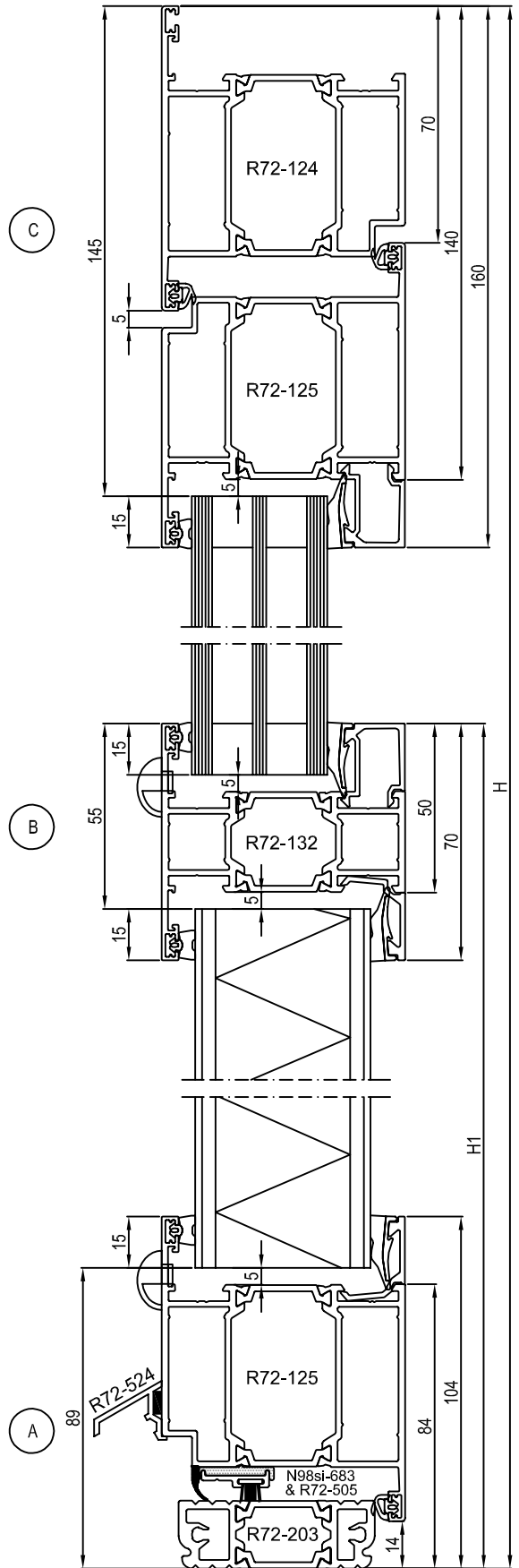


Inside openable doors.
Details E

Frame R72-121 / Intermediate horizontal R72-122 :

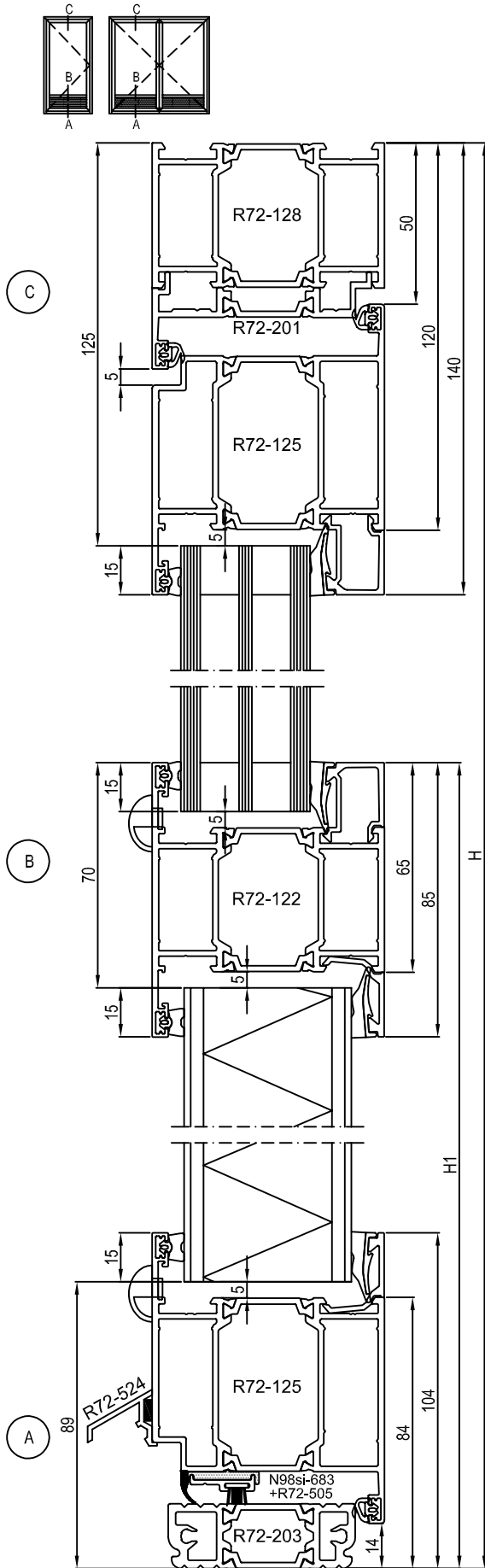


Frame R72-124 / Intermediate horizontal R72-132 :

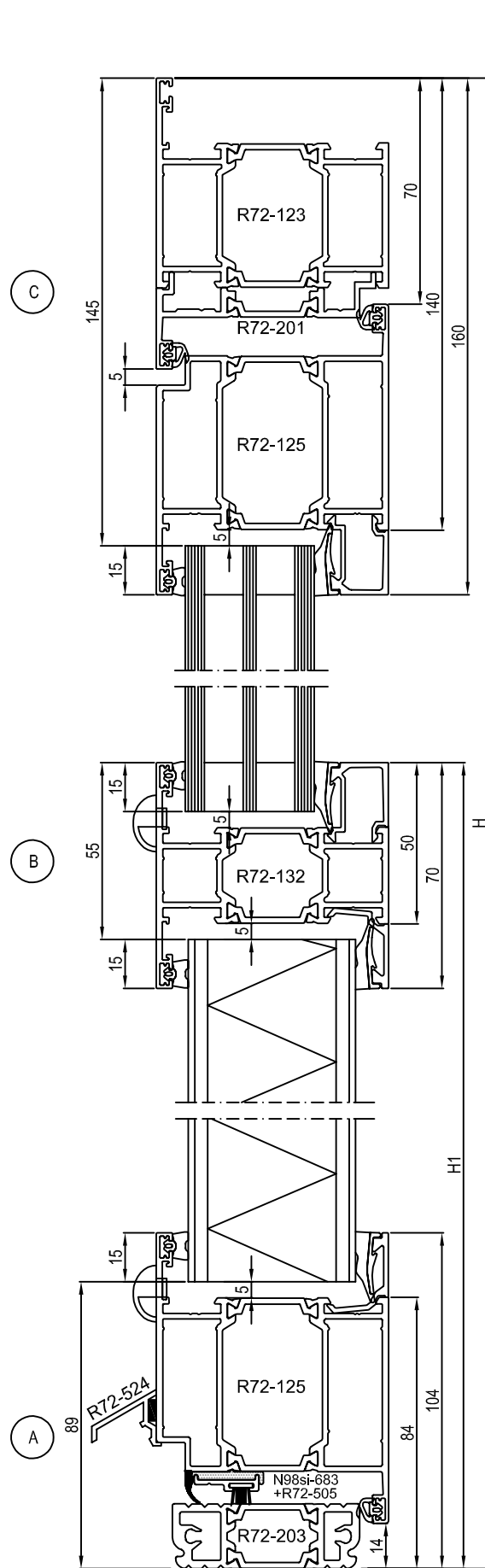


01.07.2013

Frame R72-128 / Intermediate horizontal R72-122 :



Frame R72-123 / Intermediate horizontal R72-132 :

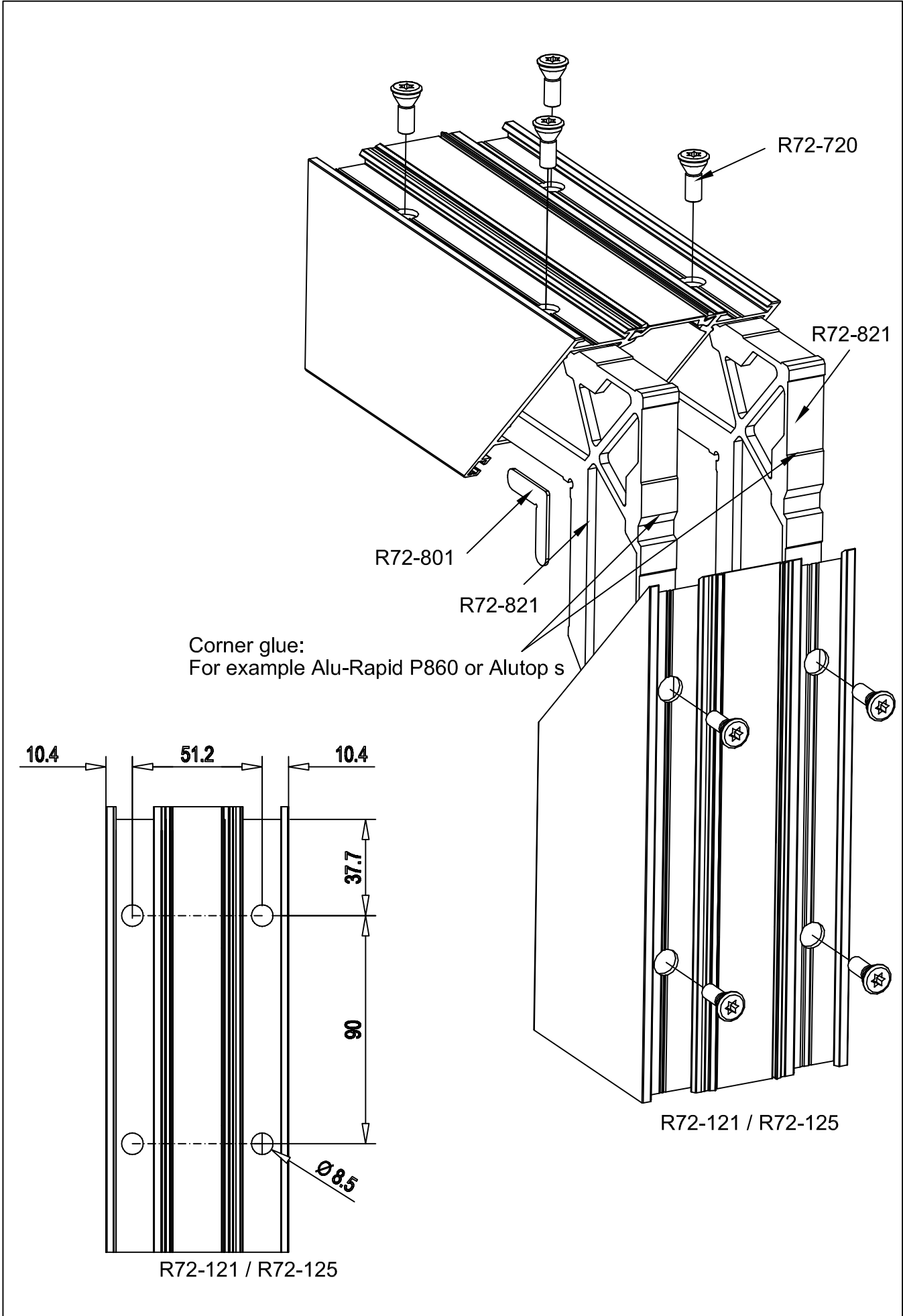


01.07.2013

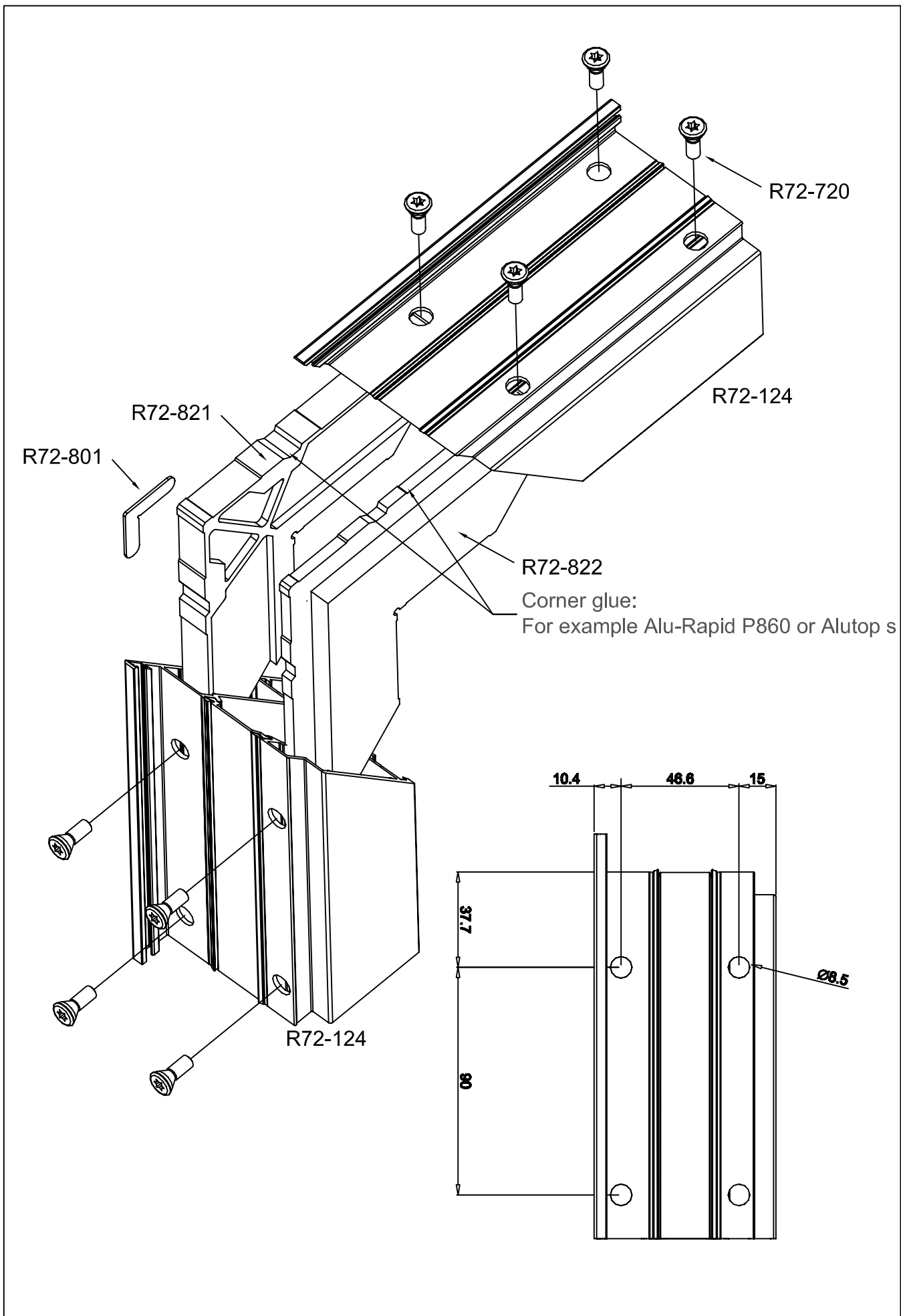
R72 2.18



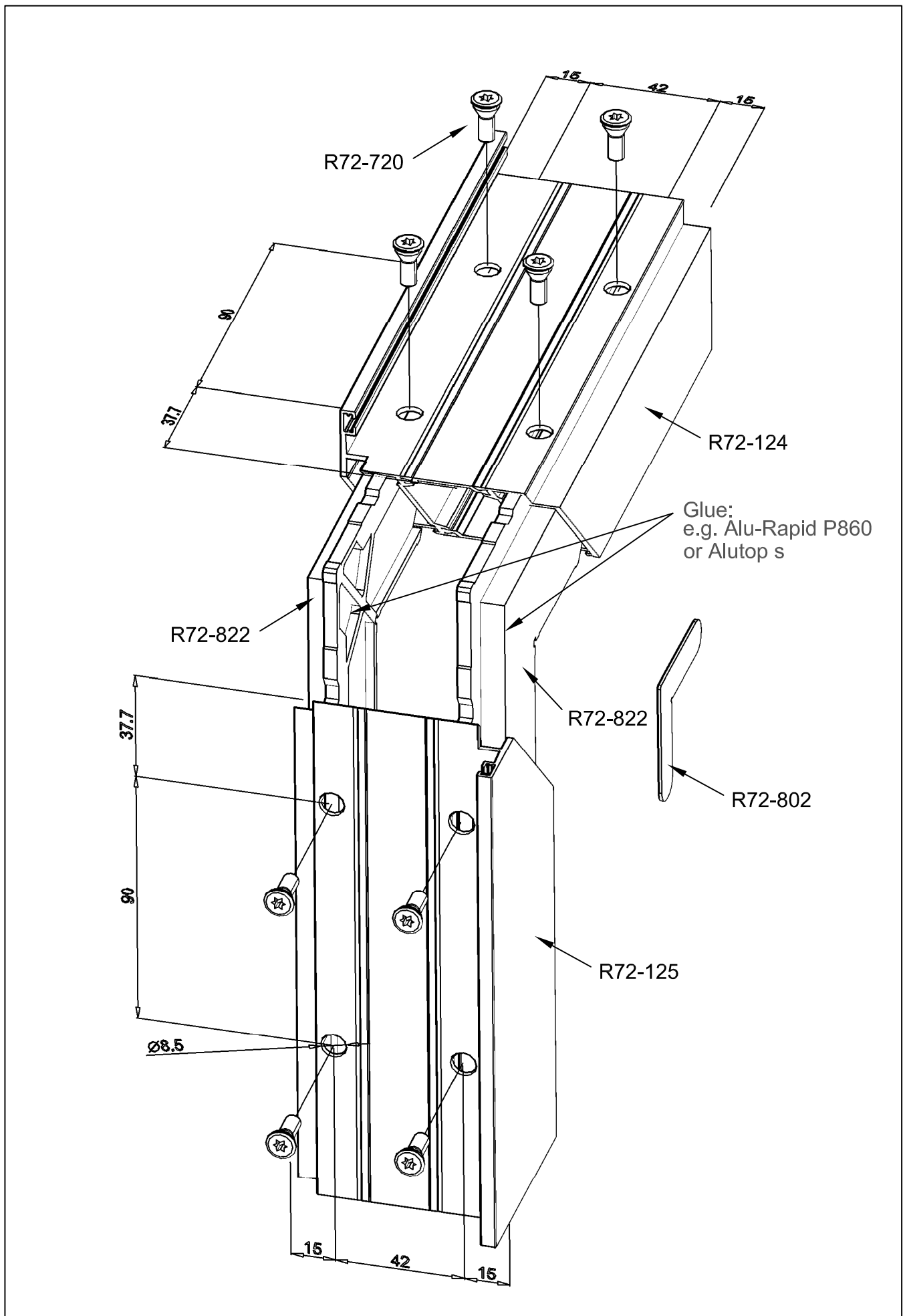
Inside openable doors. Details
A, B & C. Frames R72-128 & R72-123



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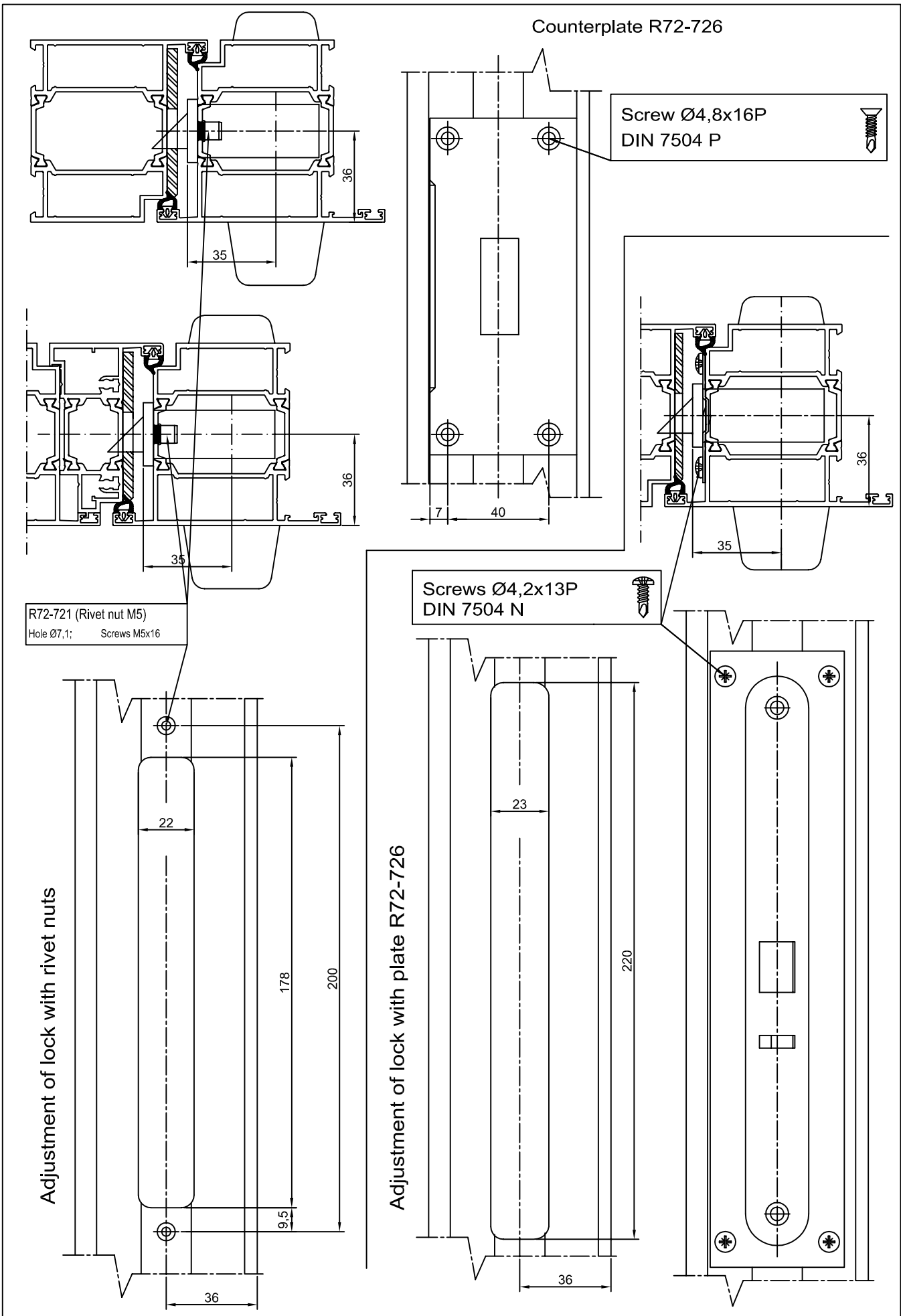


01.07.2013

R72-124/125 corner connection

NOKIAN
PROFILES

R72 2.21

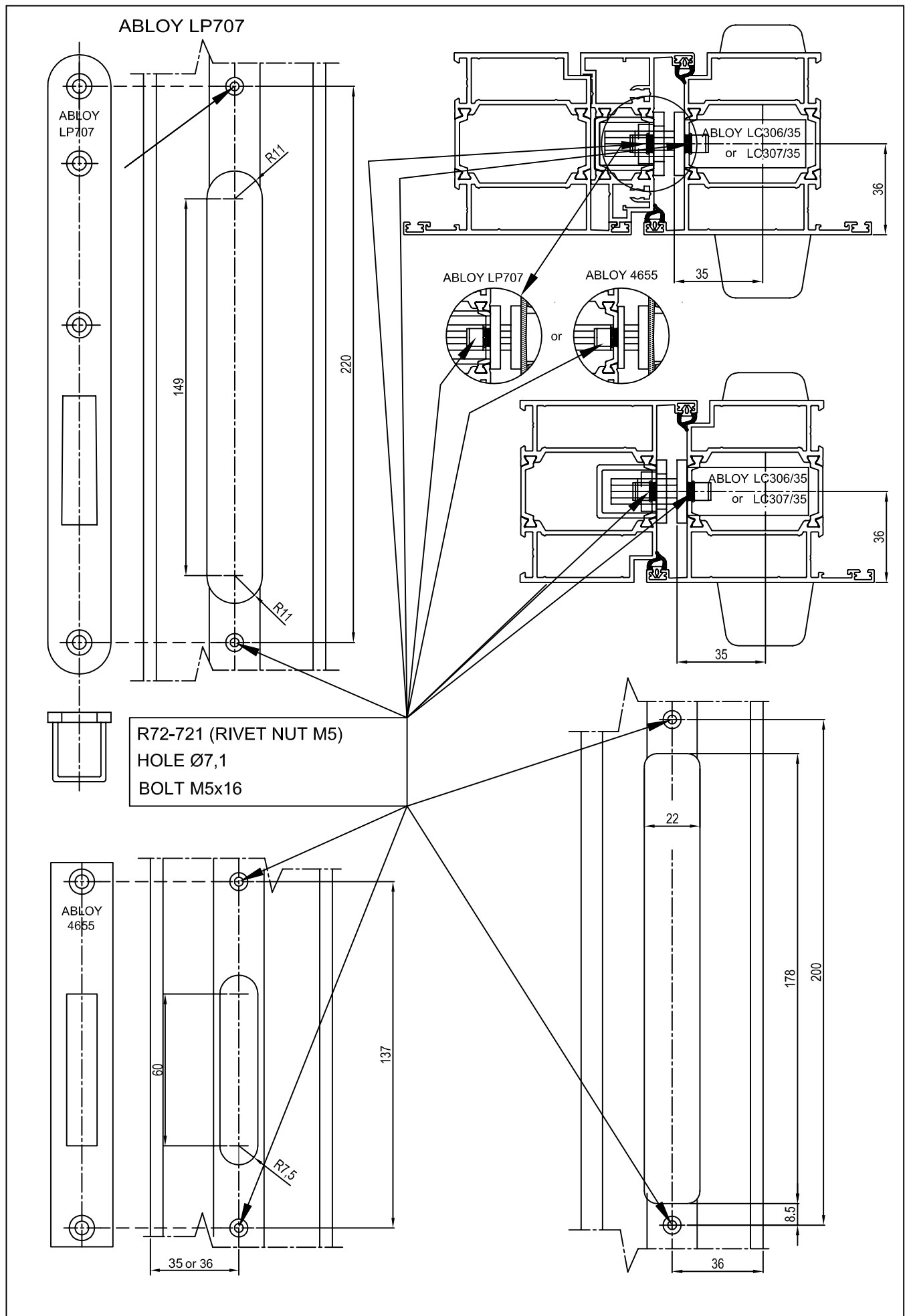


01.07.2013

R72 2.22

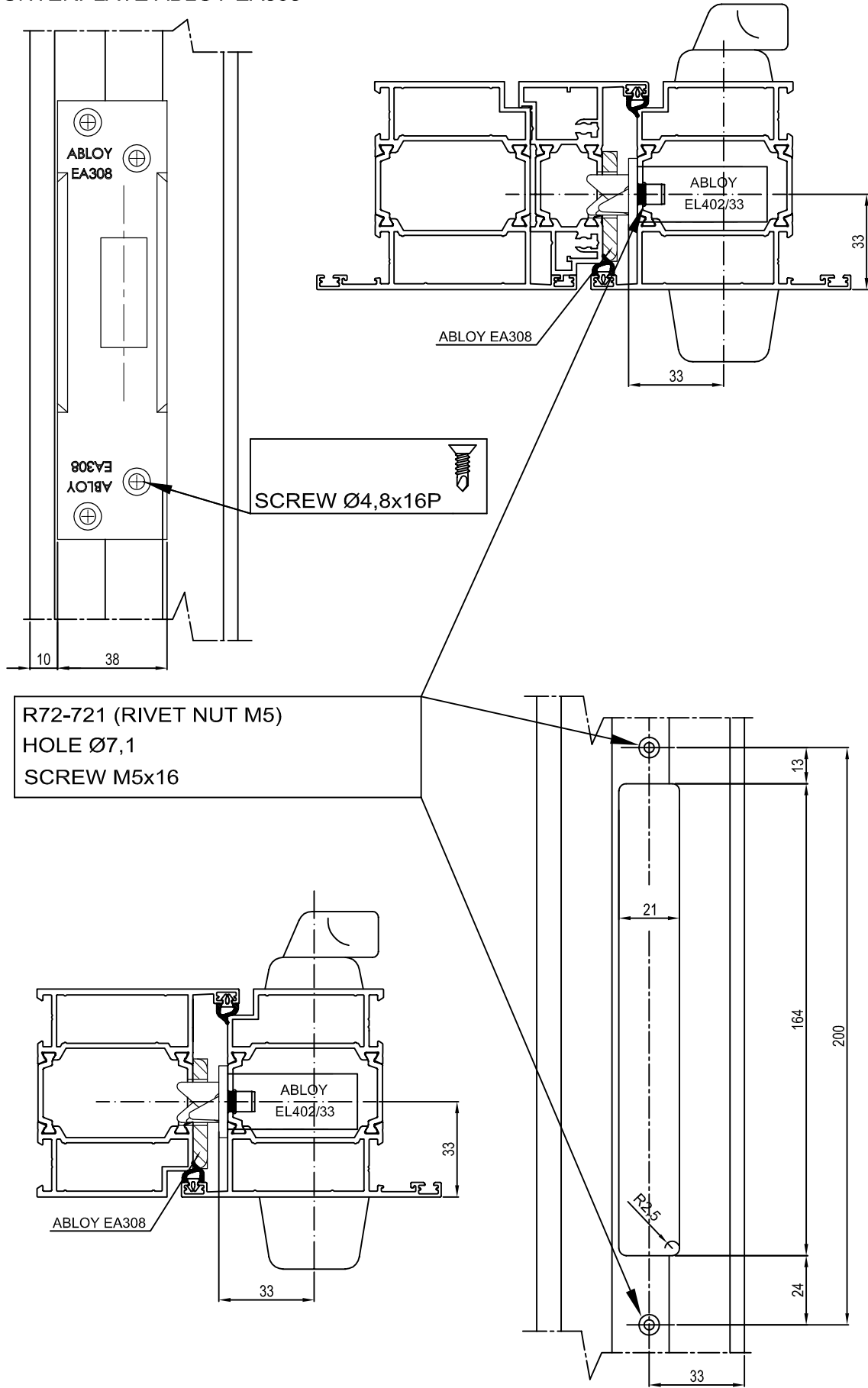
NOKIAN
PROFILES

Mechanical locks ABLOY



01.07.2013

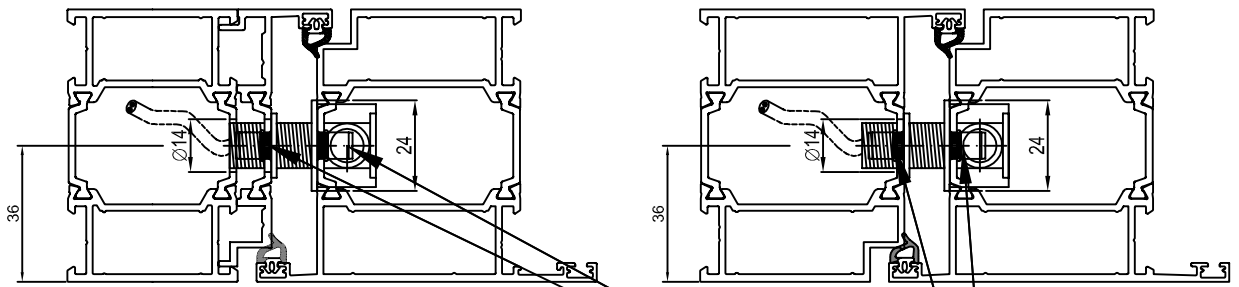
COUNTERPLATE ABLOY EA308



Additional information in Abloy metal door manufacturing catalogue

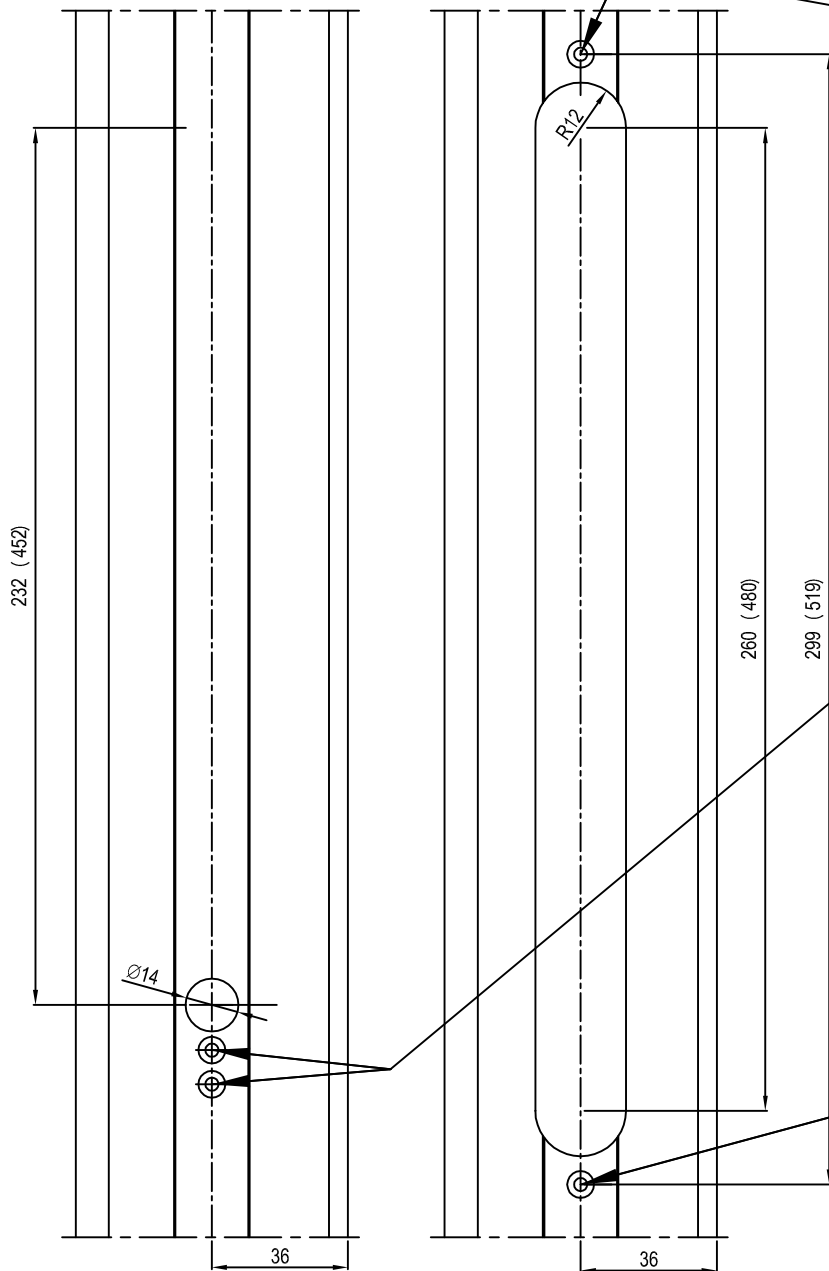
01.07.2013

Lead cover ABLOY EA280 (EA281)



Frame

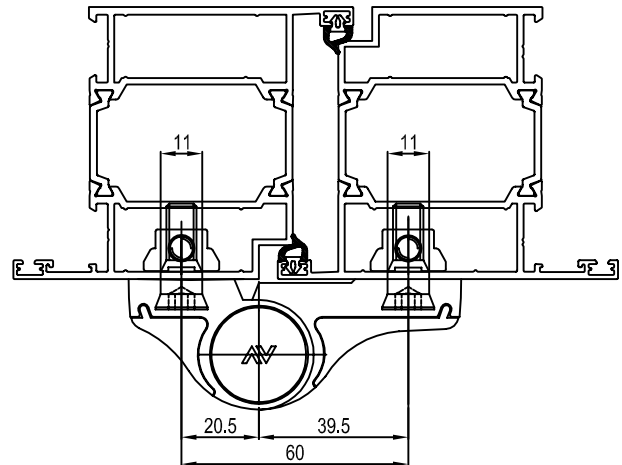
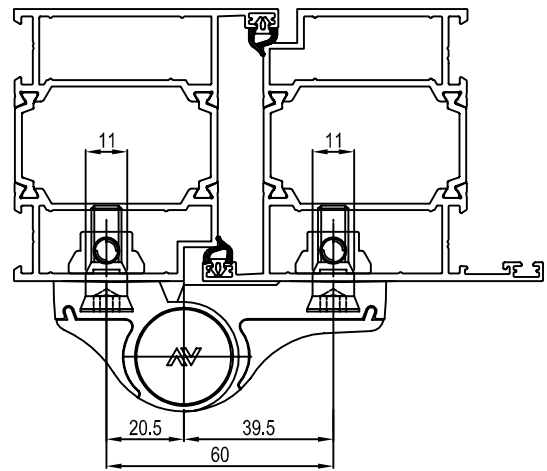
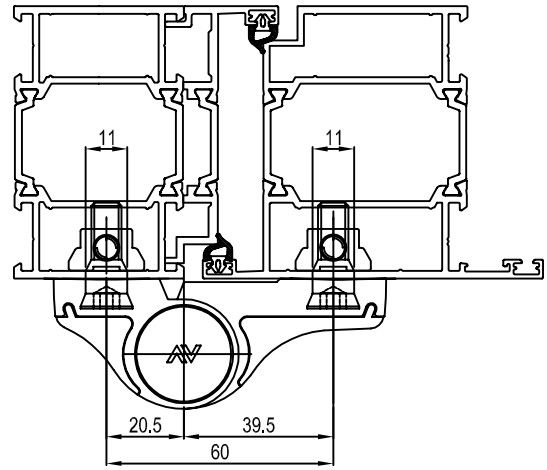
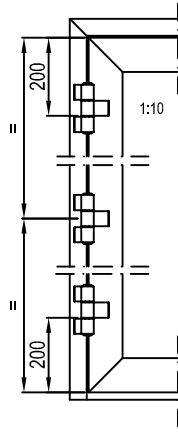
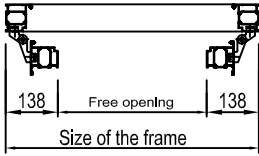
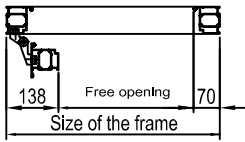
Sash



R72-721 (RIVET NUT M5)
HOLE Ø7,1
SCREW M5x16

More information in Abloy manufacturing catalogue for metal doors

01.07.2013



	L																				
H	4000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	3900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	5
	3800	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	10
	3700	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	5 15
	3600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	11 20
	3500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	6 16 25
	3400	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	11 21 30
	3300	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	6 17 26 35
	3200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	12 22 32 40
	3100	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	6 18 28 37 45
	3000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	13 24 33 42 50
	2900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	7 19 29 39 47 55
	2800	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	13 25 35 44 53 60
	2700	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	7 20 31 41 50 58 65
	2600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	14 27 38 47 56 63 70
	2500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	8 21 33 44 53 61 68 X
	2400	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	8 15 29 40 50 59 67 X X
2300	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	8 16 23 36 47 56 65 X X X	
2200	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	9 17 24 31 43 53 63 X X X X	
2100	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	9 17 25 32 38 50 60 69 X X X X	
2000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	10 18 26 33 40 46 57 67 X X X X	
	900	1000	1050	1100	1150	1200	1250	1300	1400	1500	1600	1700	1800	1900	2000						

X= Not useful
 17 (or other number)= percentage which increases your sash weight
 H= Door leaf height
 L= Door leaf width

First calculate the leaf weight. Then check if you need an additional weight adding with a table 1 percentages. With the final weight you can define the suitable hinges using the table 2. Door closers increases thr loads on the hinges and their wear. Wind-breaking door closers are loading the hinges more. In this case the total door sash's weight must be increased on 75%. If there is no wind-break in a door closer - weight must be increased on 20 %.

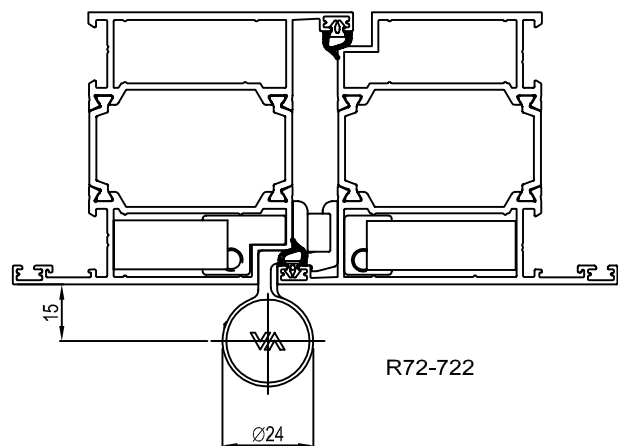
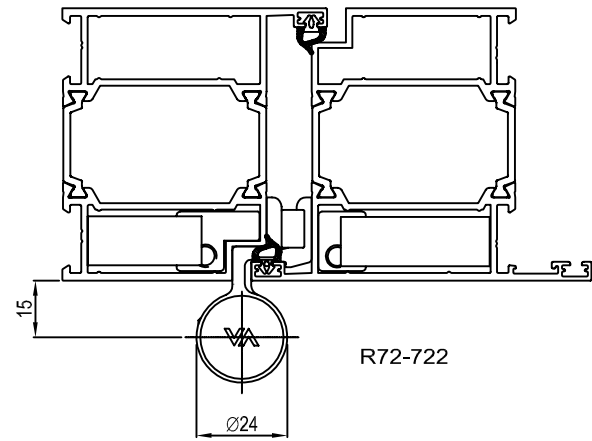
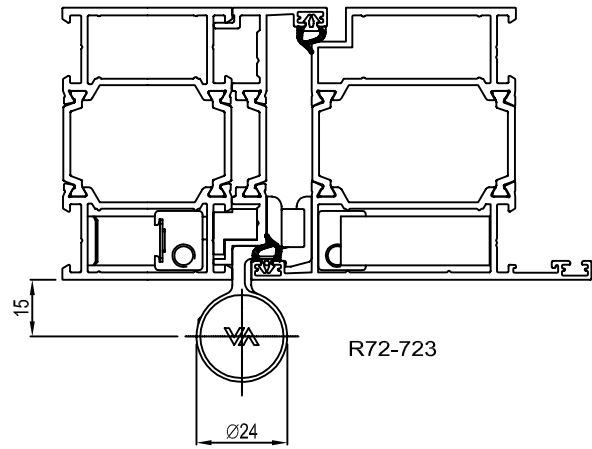
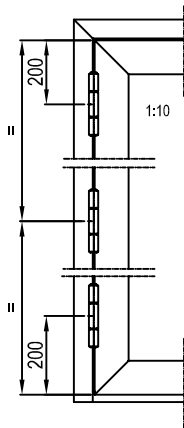
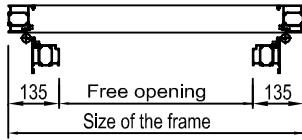
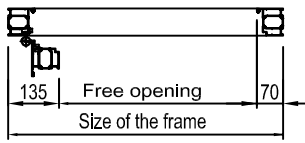
Table 2

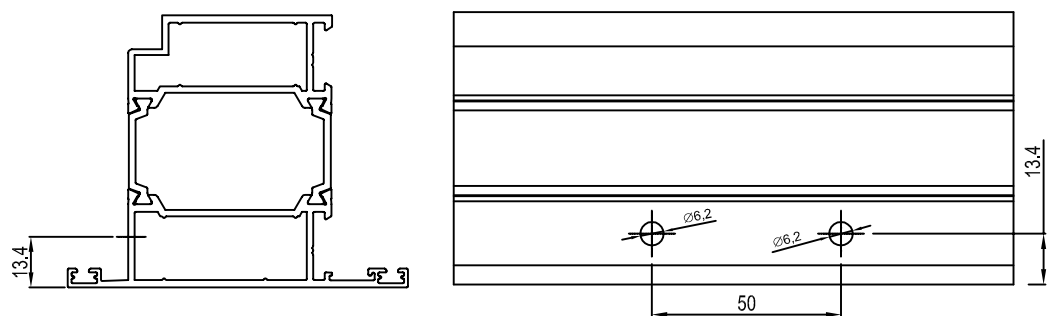
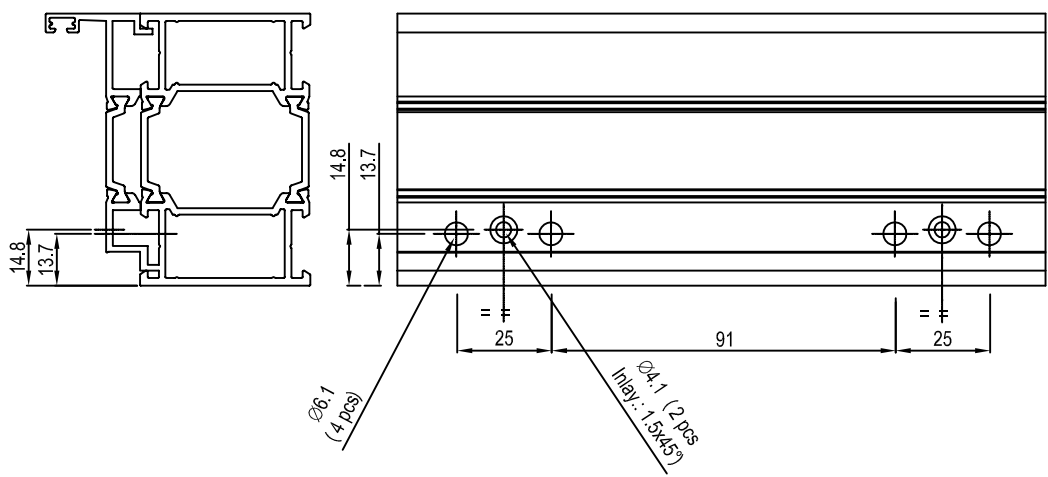
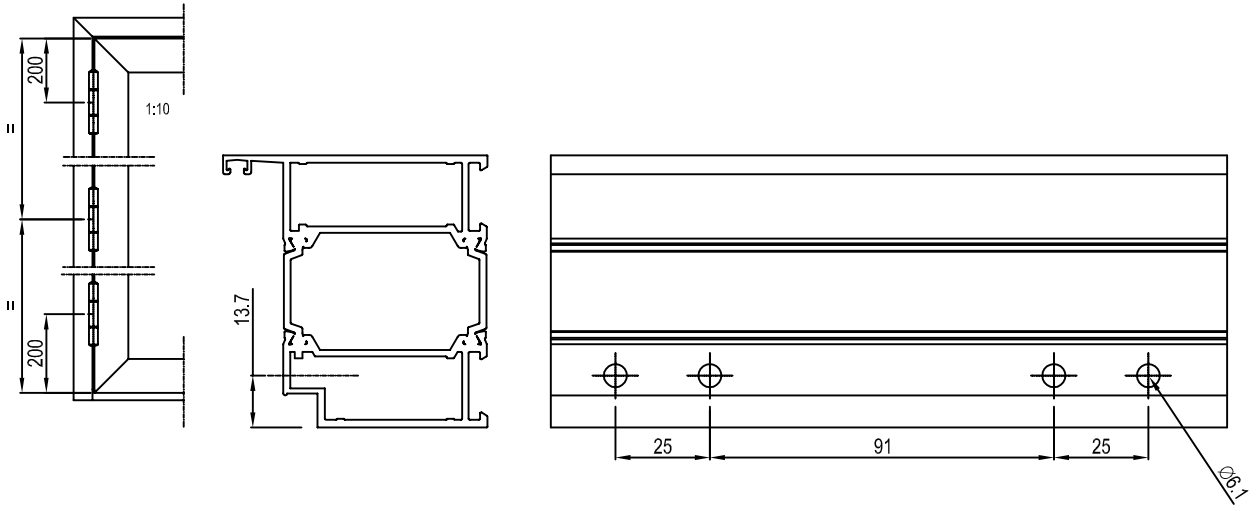
Hinge	2 parts	3 parts
R72-724-2 R72-724-3	160 кг	180 кг
R72-722 R72-723	120 кг	140 кг

height of the door leaf > 2,1m-- 3 hinges

Dril jigs are available

ATTENTION Drill the holes through the both walls





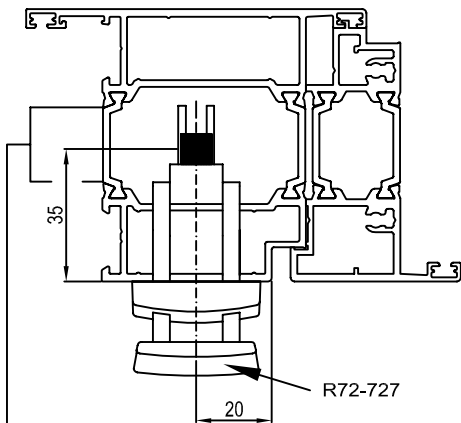
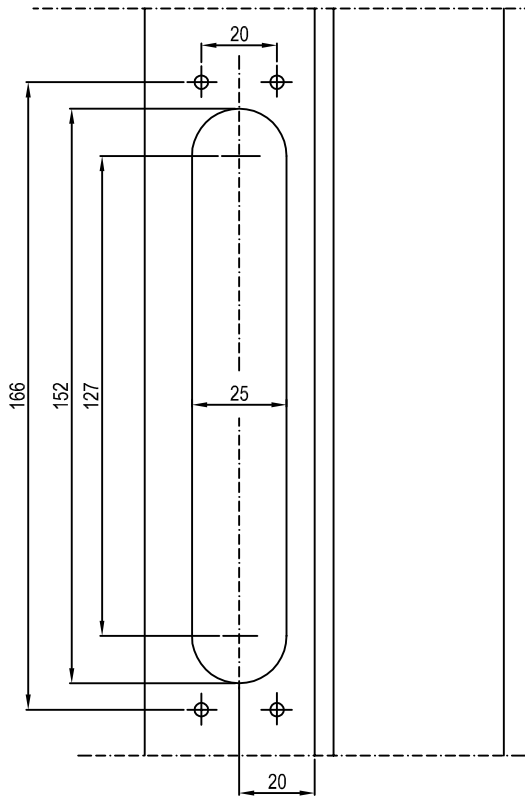
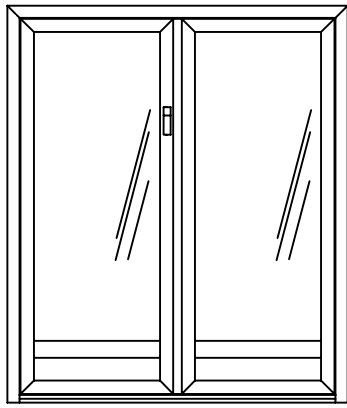
Drill jigs are available

01.07.2013

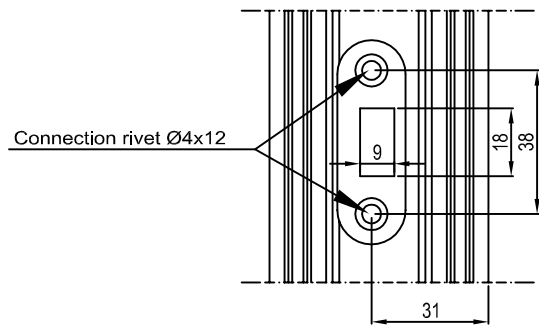
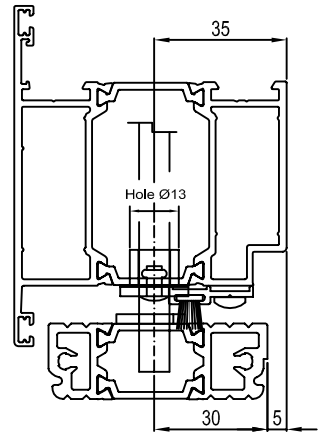
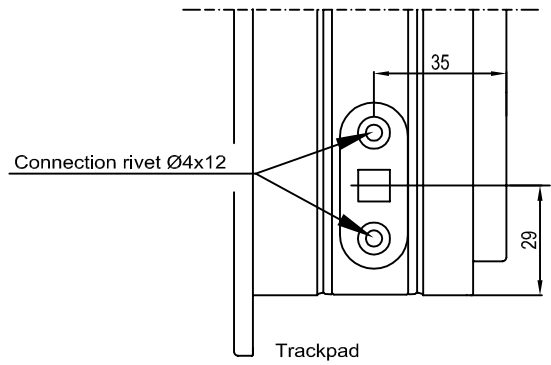
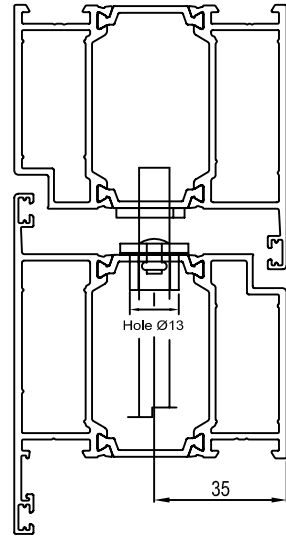
R72 2.28

NOKIAN
PROFILES

Machining for butt-hinges



Drill the installation holes on the glass side for the transmission rod fastening



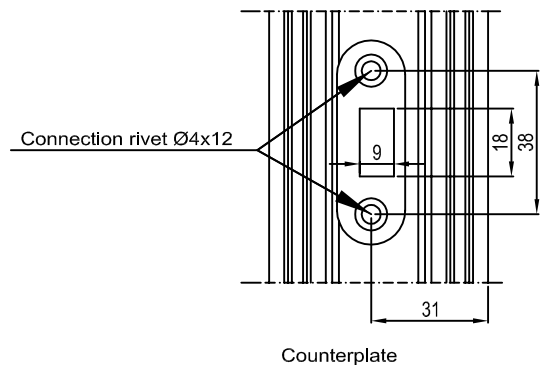
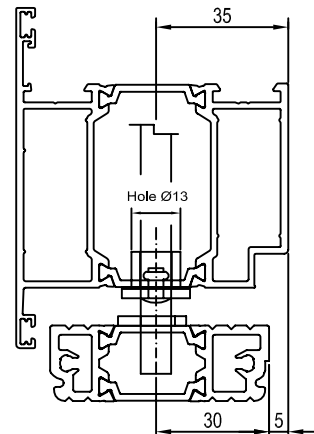
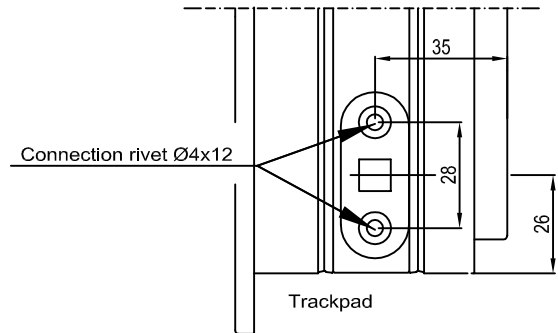
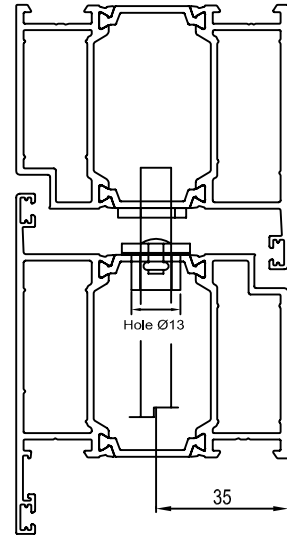
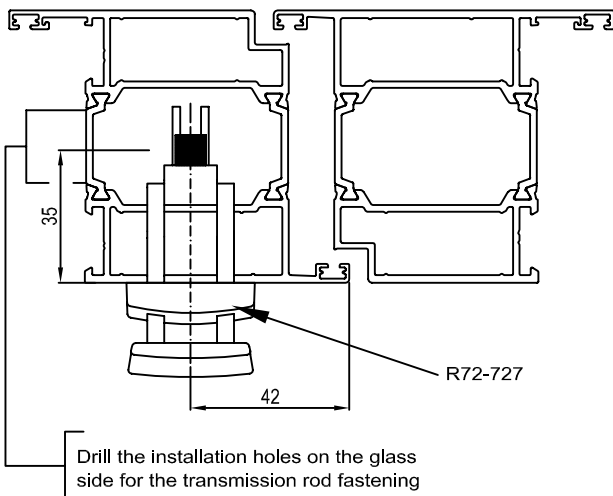
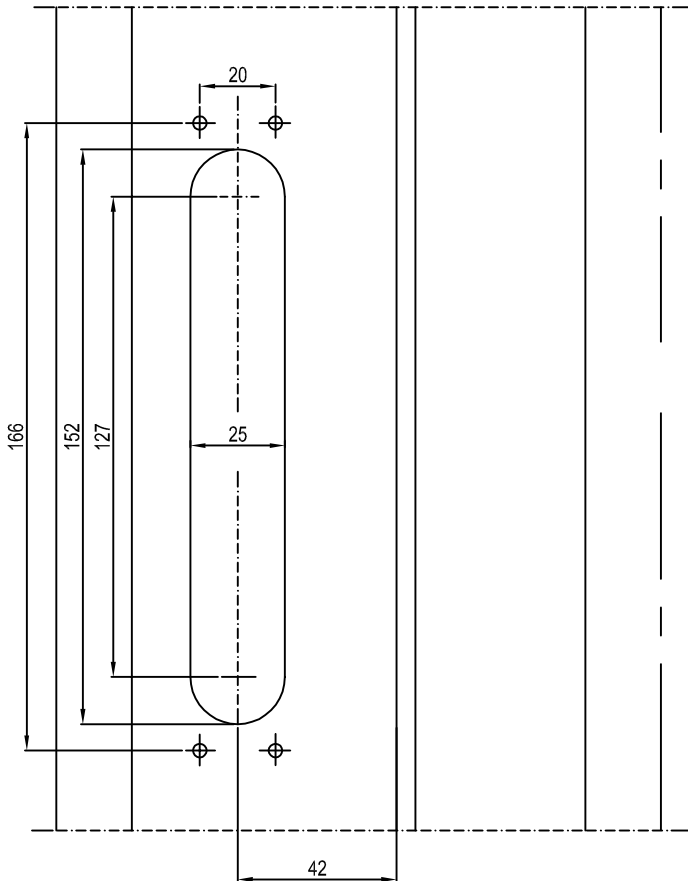
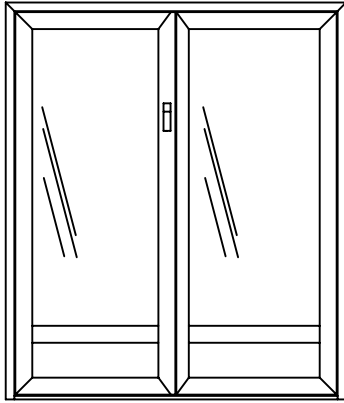
Counterplate

01.07.2013

Door shutter fastening in case of R72-202 profile

NOKIAN
PROFILES

R72 2.29



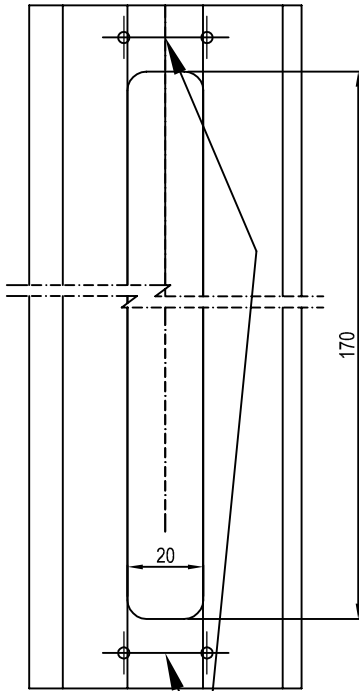
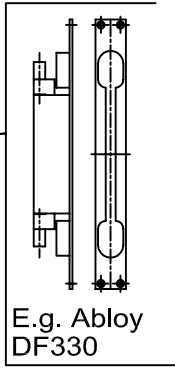
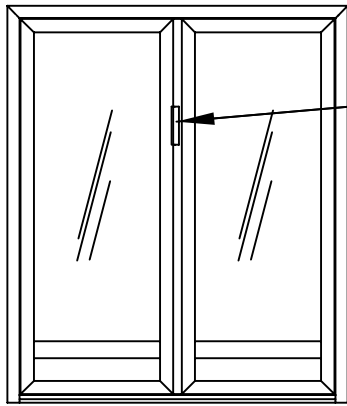
01.07.2013

R72 2.30

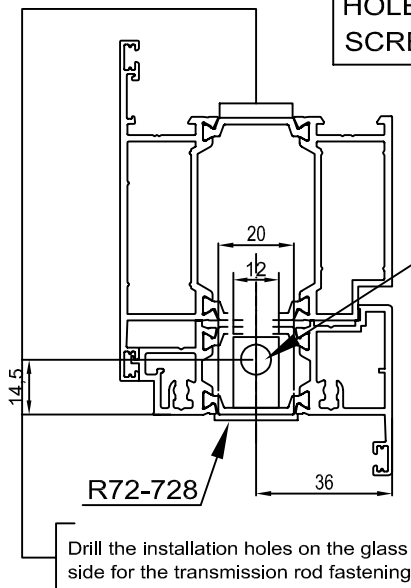
NOKIAN
PROFILES



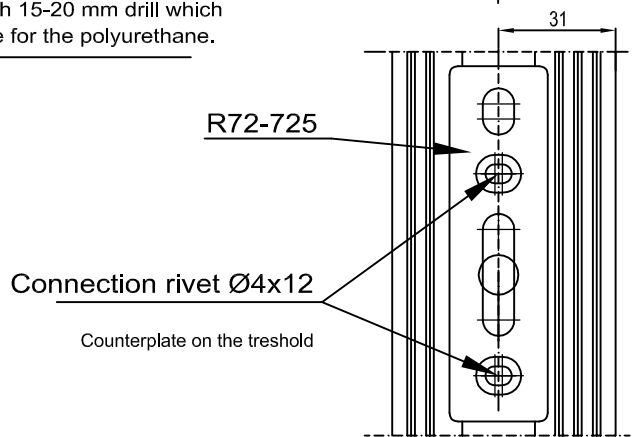
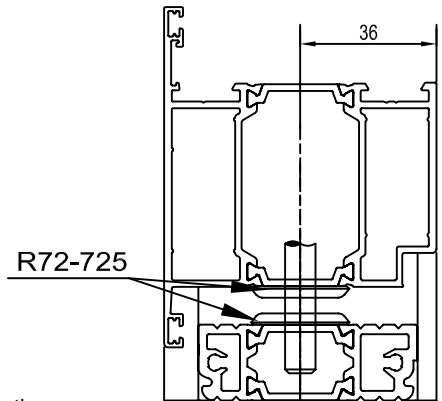
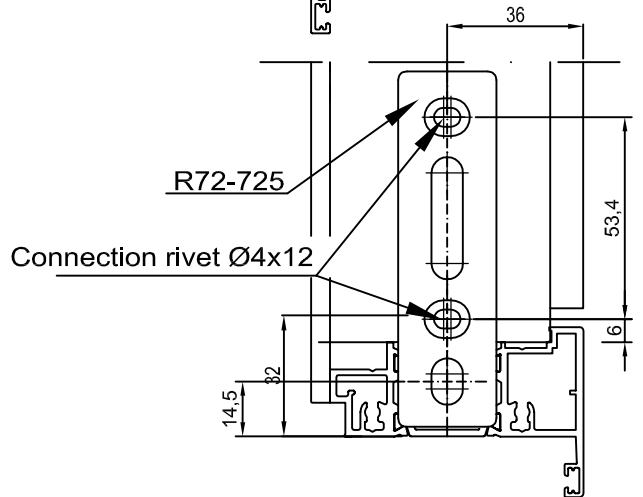
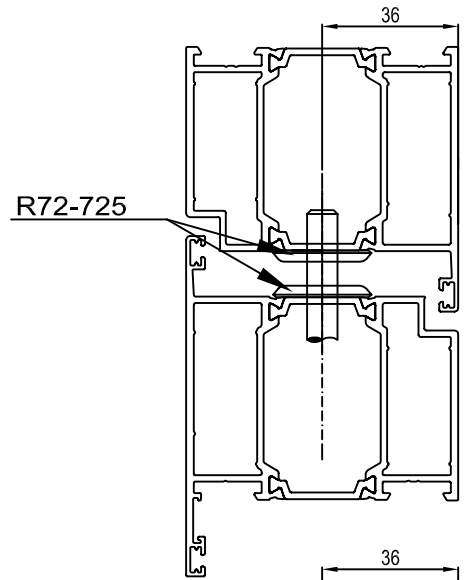
Door shutter fastening in case of R72-125 profile

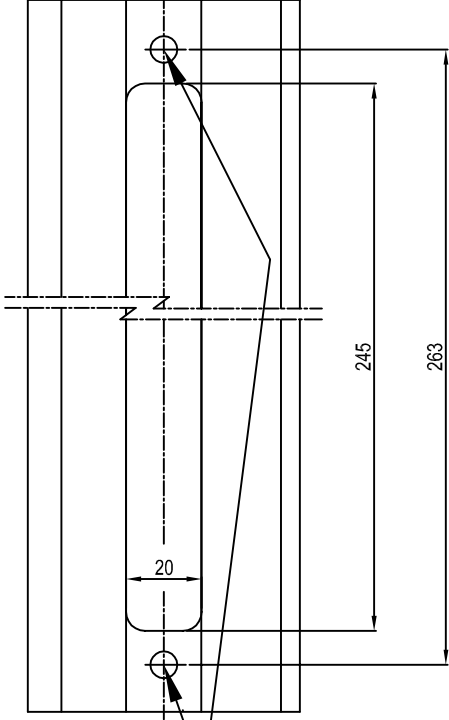
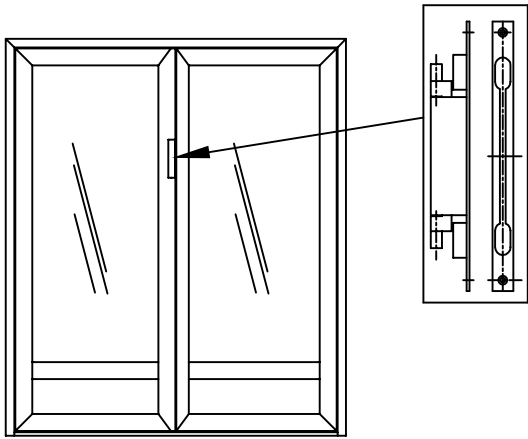


R72-721 (RIVET NUT M5)
HOLE Ø7,1
SCREW M5x16

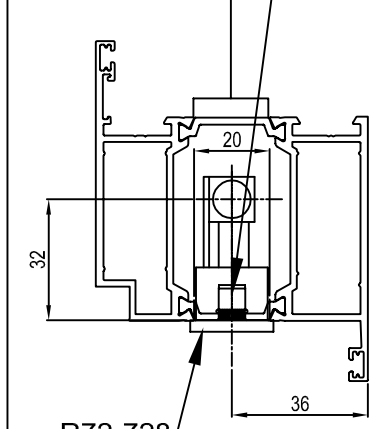


The rod groove is drilled along the profile with 15-20 mm drill which is suitable for the polyurethane.



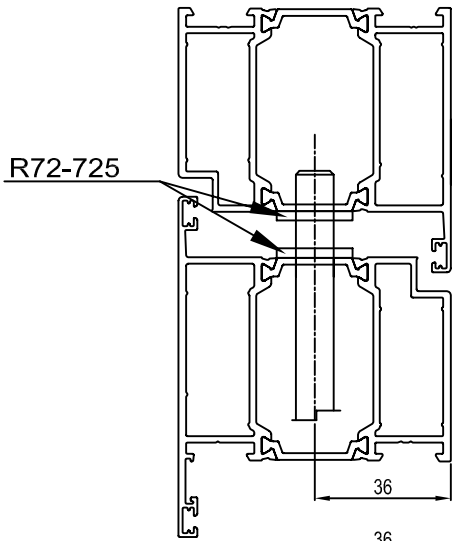


R72-721 (RIVET NUT M5)
HOLE Ø7,1
SCREW M5x16



R72-728

Drill the installation holes on the glass side for the transmission rod fastening

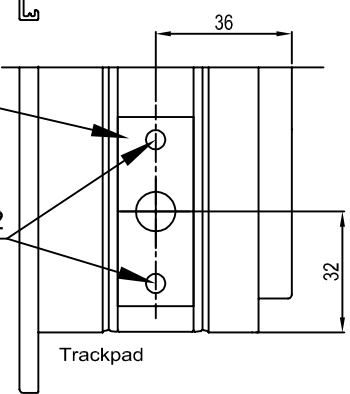


R72-725

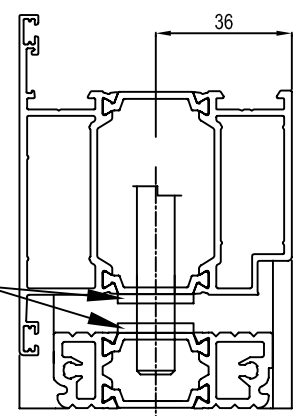
R72-725

Connection rivet Ø4x12

Trackpad

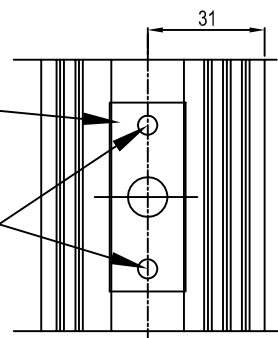


R72-725



R72-725

Connection rivet Ø4x12



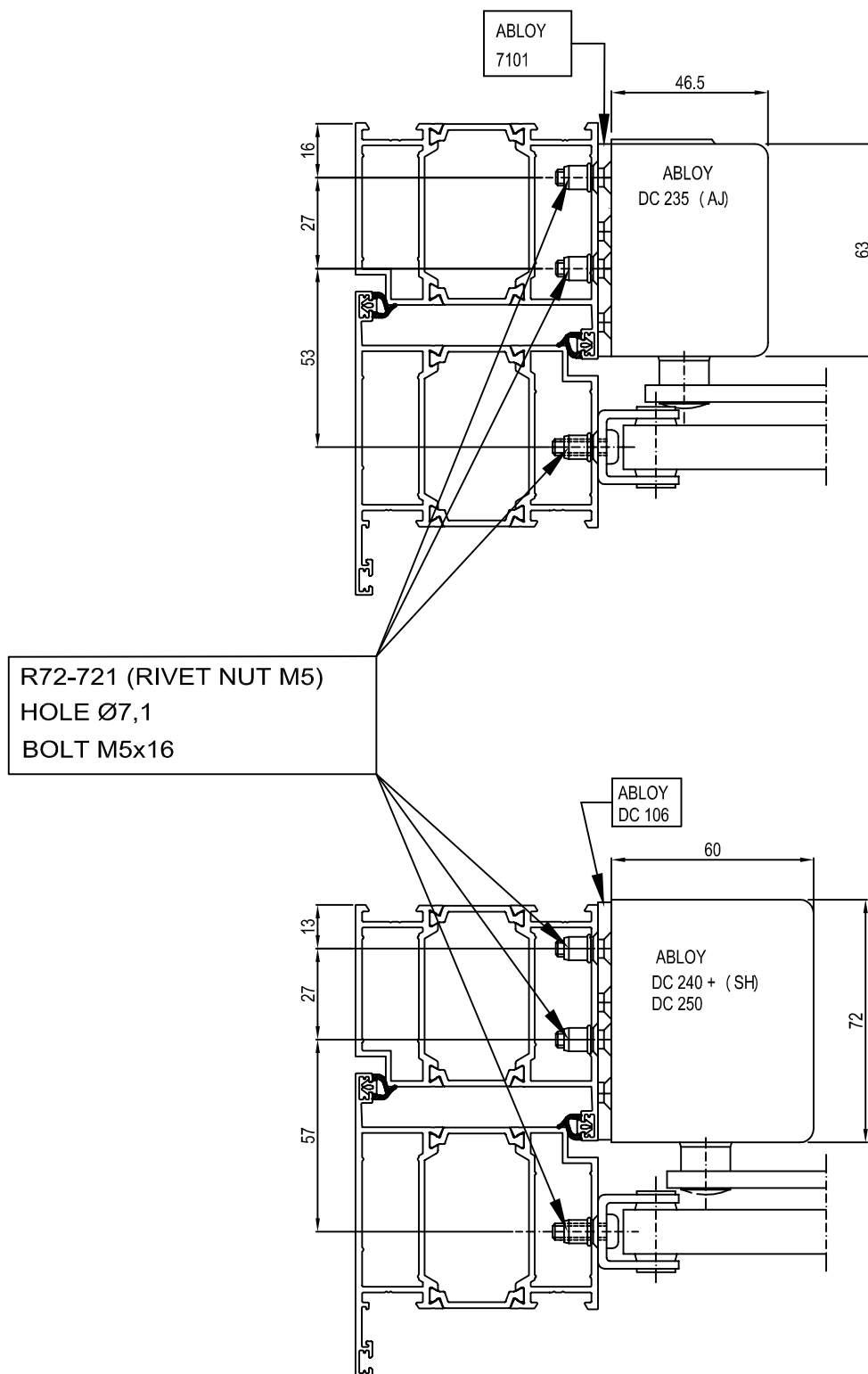
Counterplate on the threshold

01.07.2013

R72 2.32



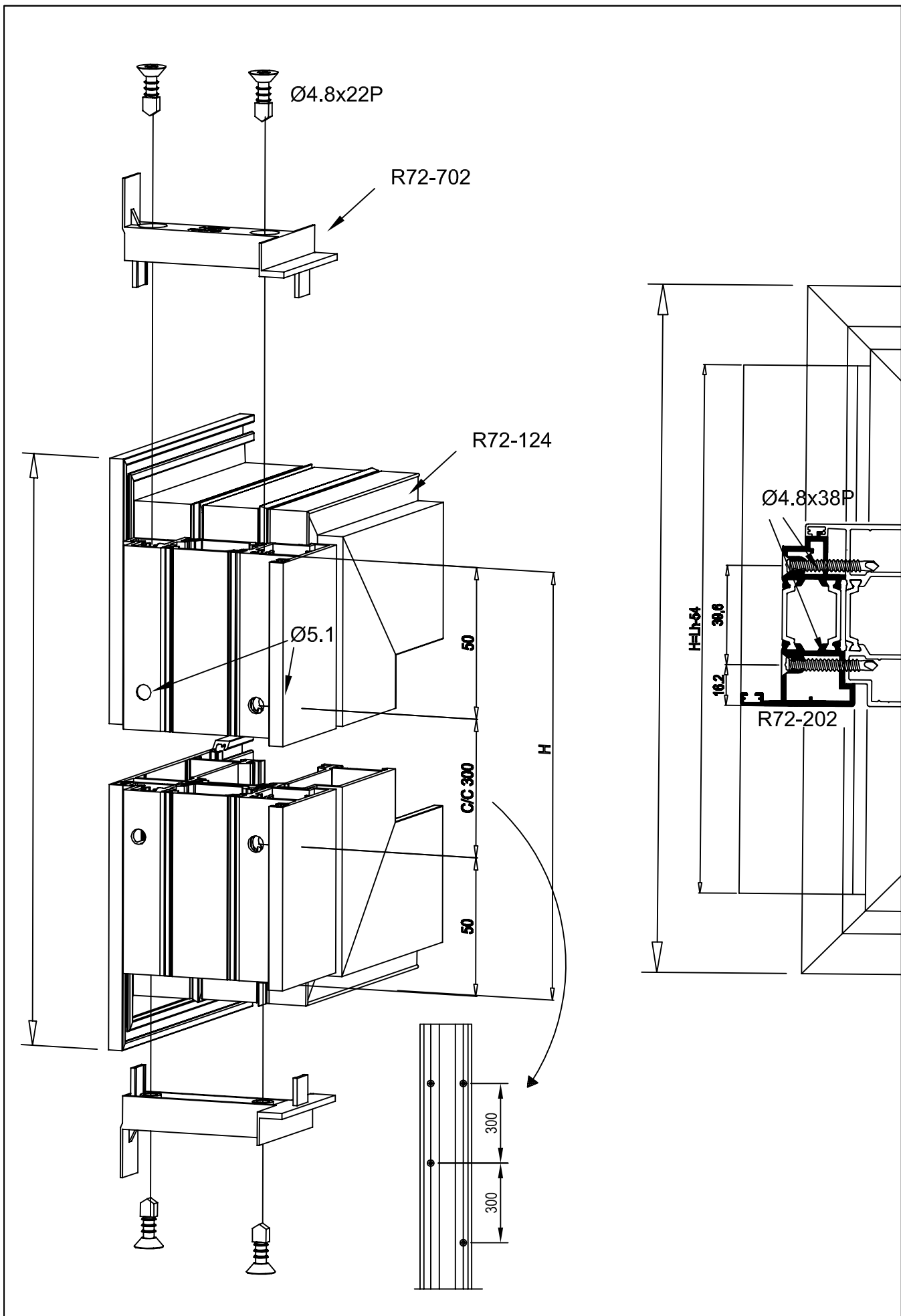
Lever bolt fastening in case of R72-125 profile



All OUTSIDE OPENABLE DOORS must be equipped with the door closers with a wind-brake function

Additional information in Abloy metal door manufacturing catalogue

01.07.2013

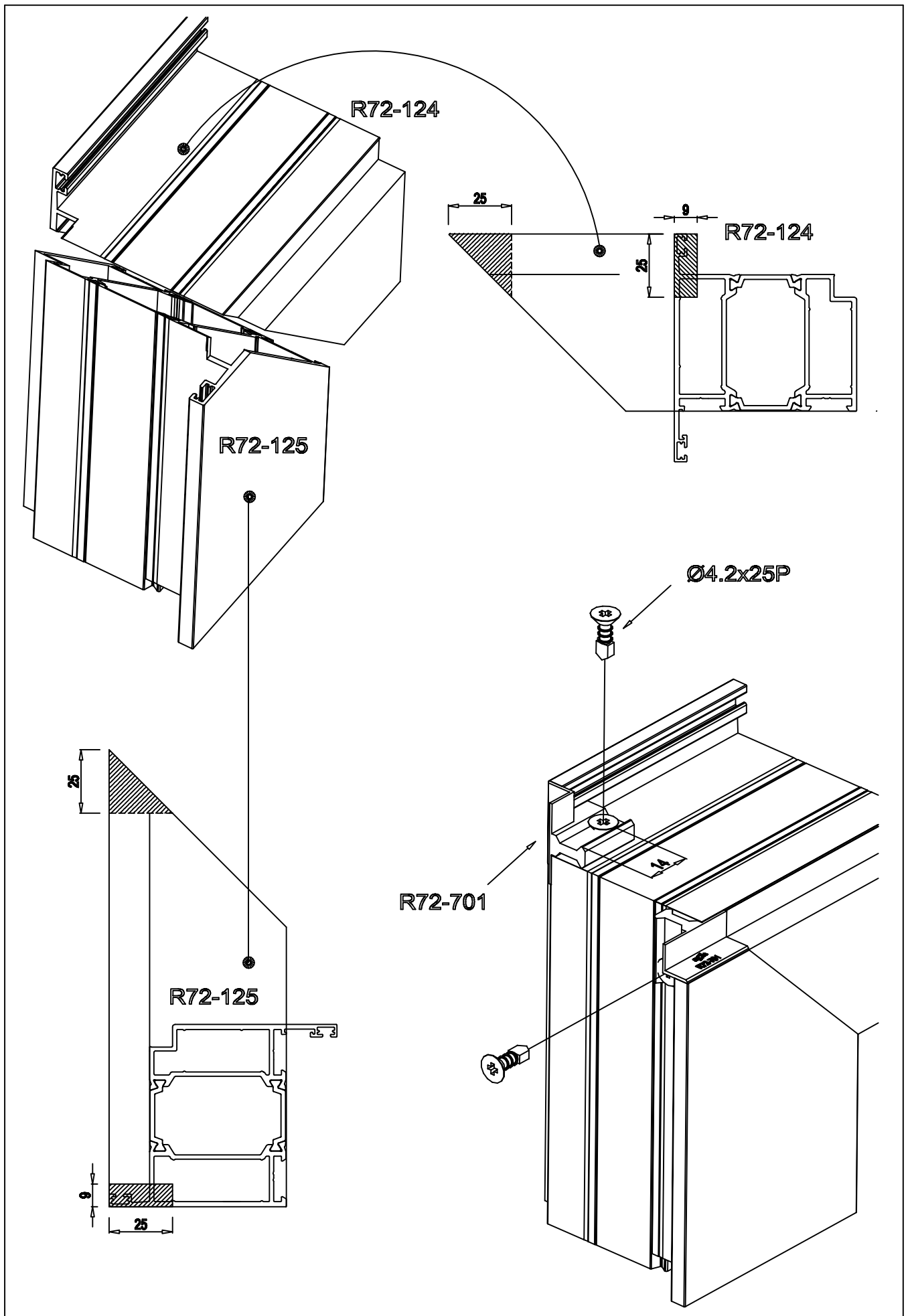


01.07.2013

R72 2.34

NOKIAN
PROFILES

Fastening of the double door
rebate profile R72-202

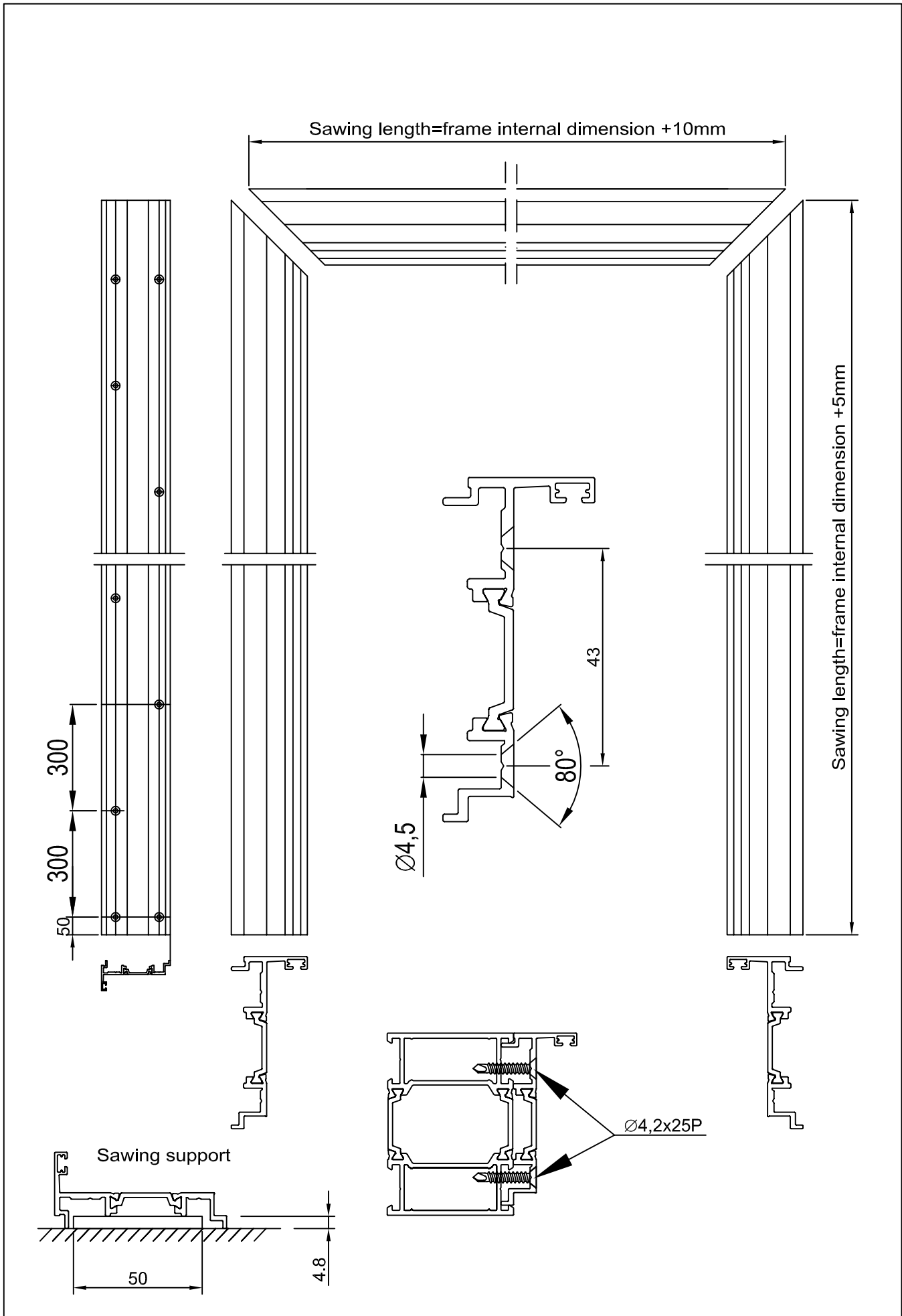


01.07.2013

R72-124/125 machinings
and installation of R72-701

NOKIAN
PROFILES

R72 2.35

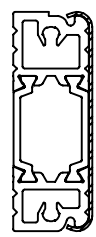
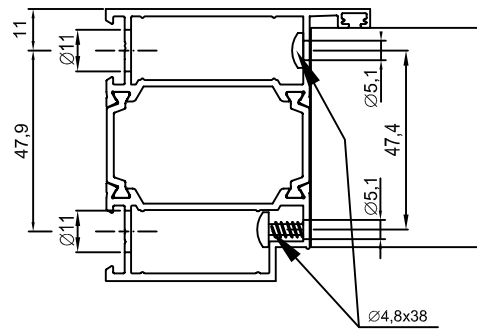
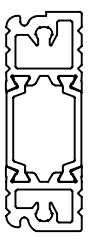
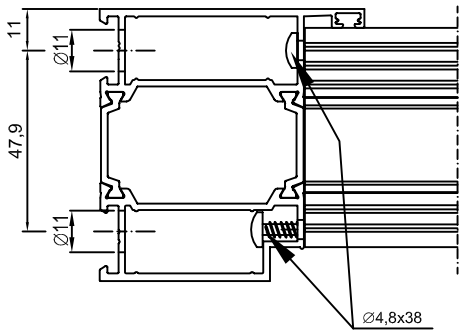
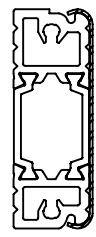
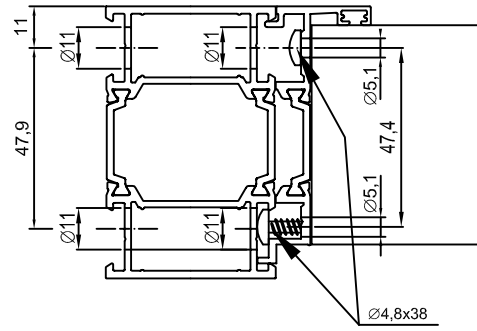
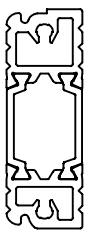
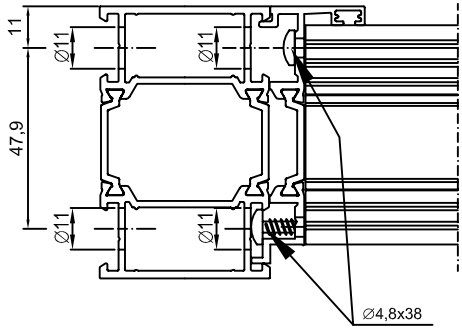


01.07.2013

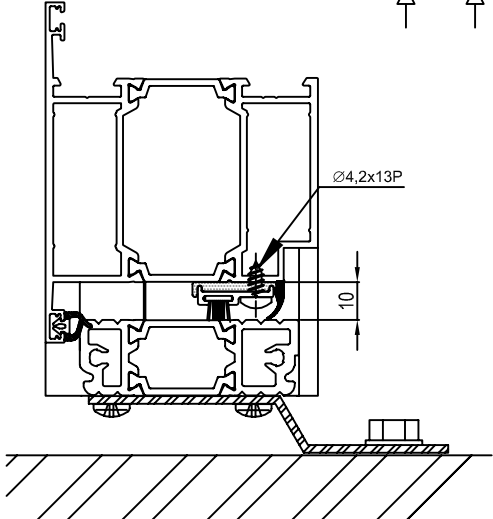
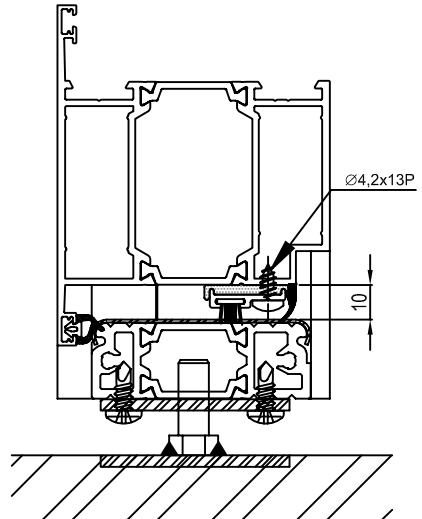
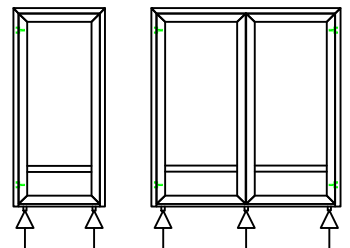
R72 2.36

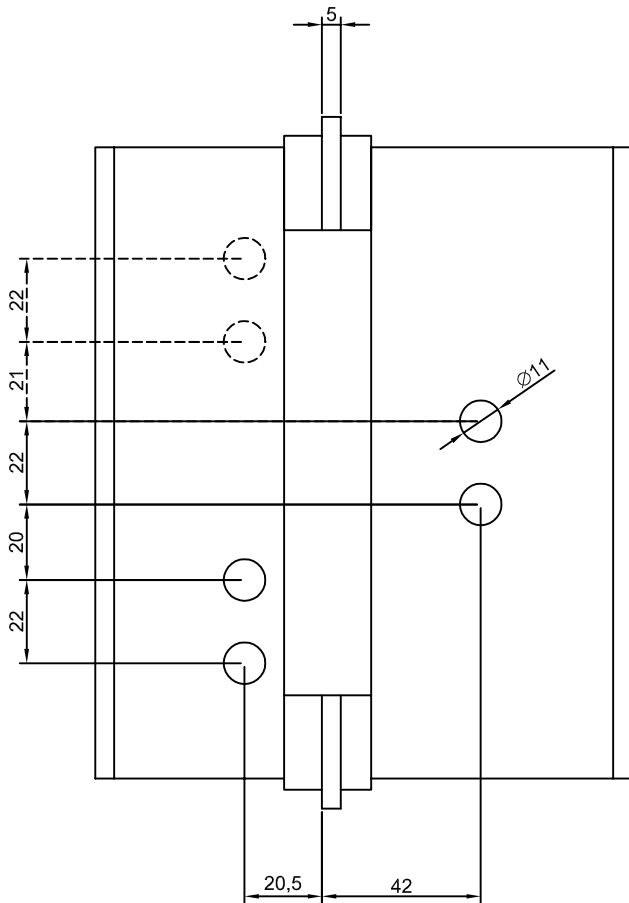
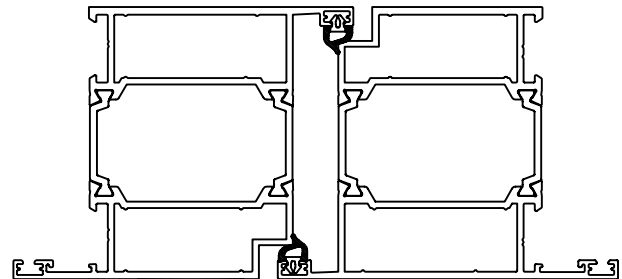
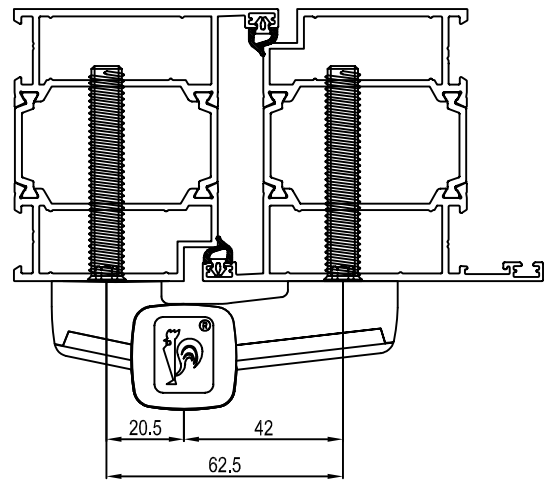
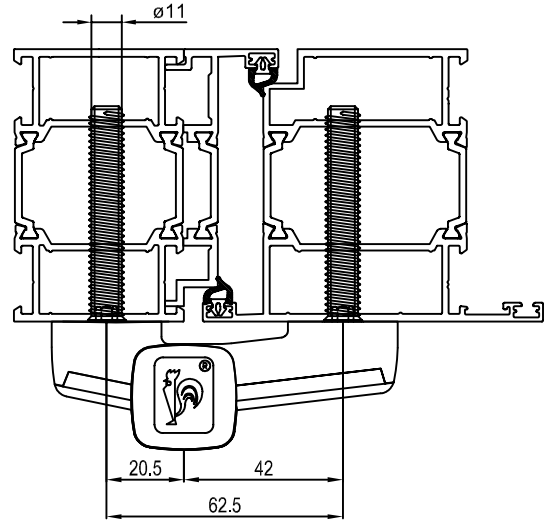
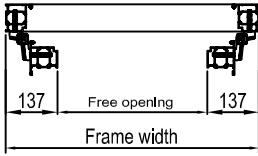
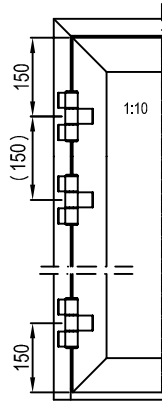
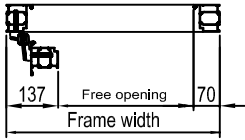
NOKIAN
PROFILES

Machining of rebate profile R72-701



Principles of treshold's fixing
Treshold must be supported on the floor





Drilling jigs T201A0000 for 2- leaf
T251A0000 for 3- leaf

Hinges	2 part	3 part
Serie 60 AT	120 kg	140 kg

Height of door leaf > 2,1m-- 3 hinges

NOTE! Hole has to be drilled through both profile walls

Drilling jigs are available

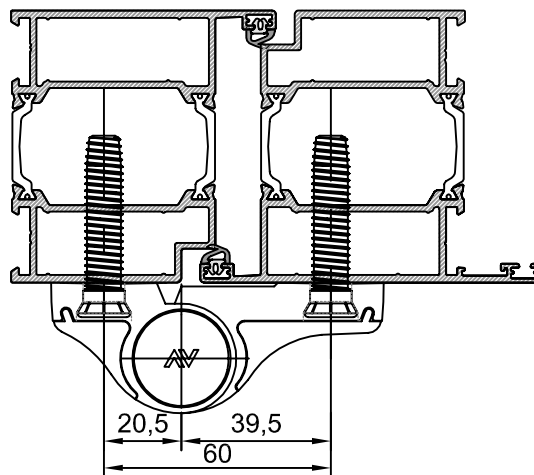
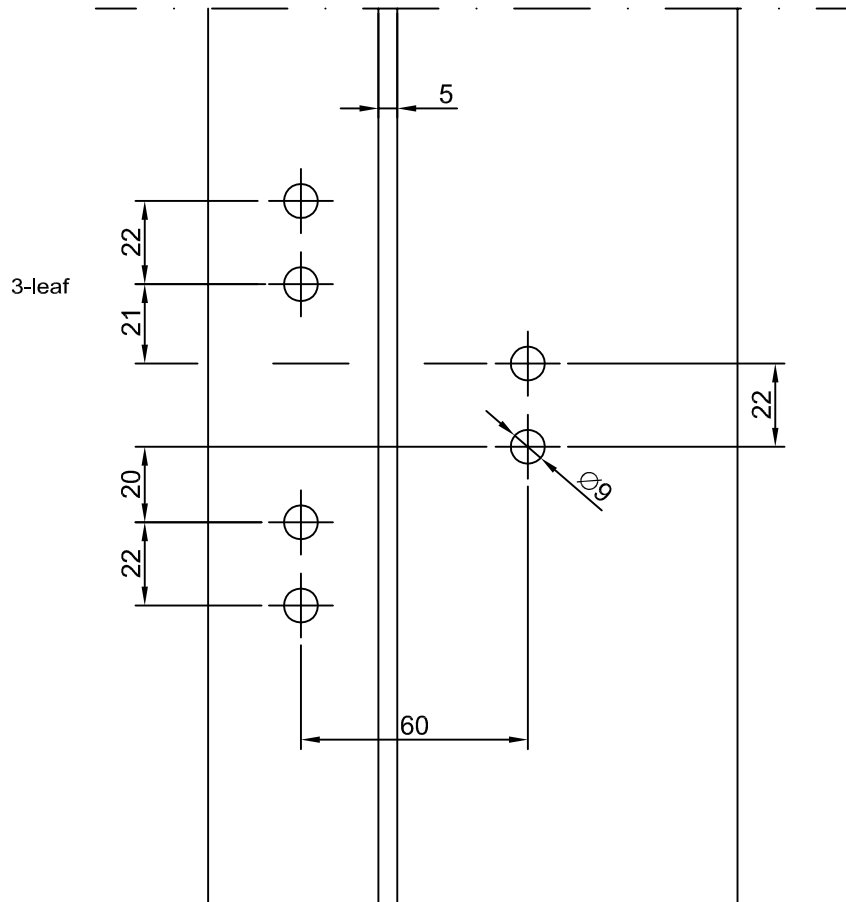
02.06.2014

R72 2.38

NOKIAN
PROFILES



Installation of dr.Hahn hinges

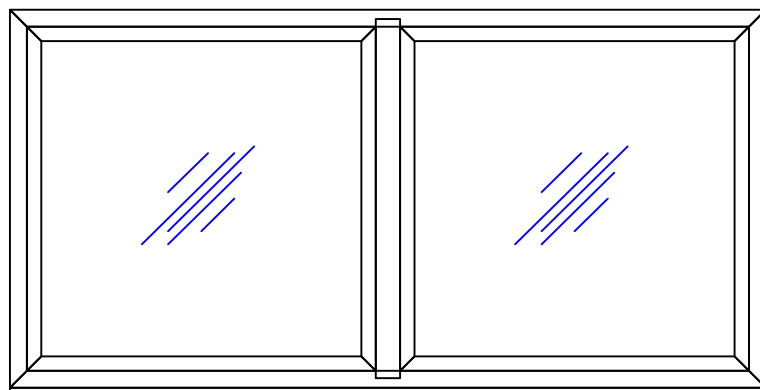
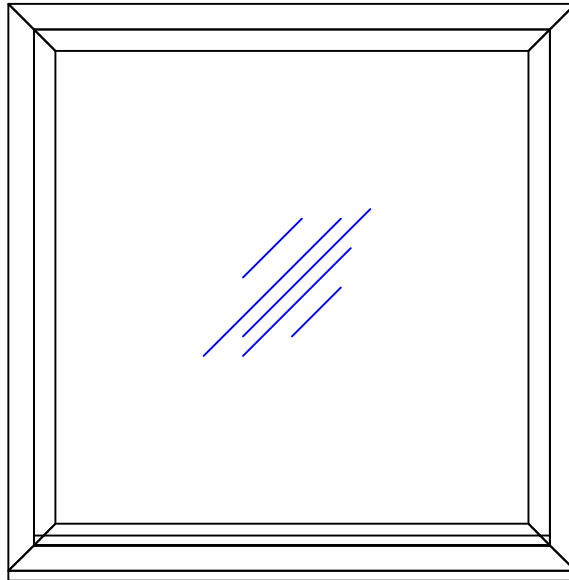


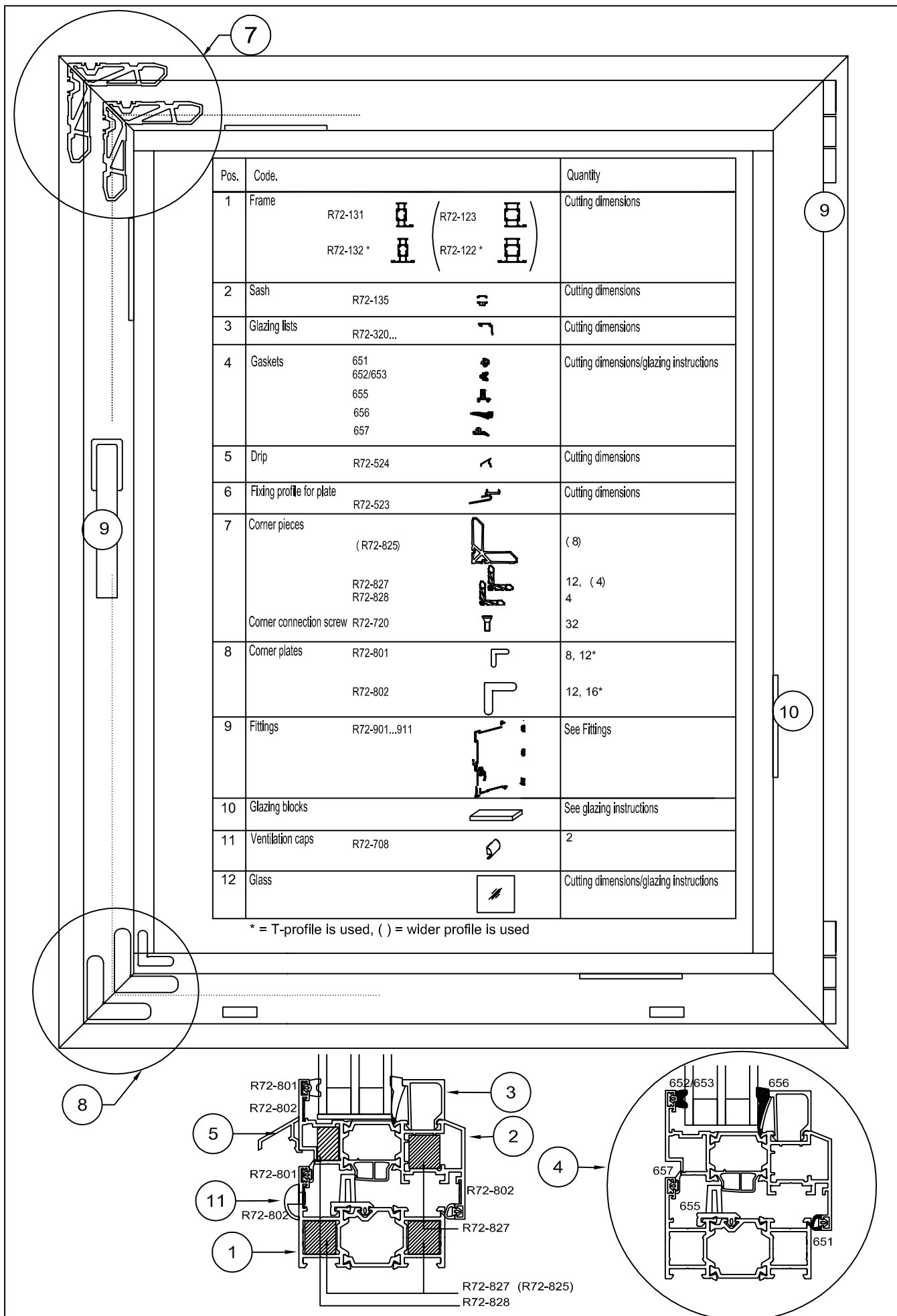
ATTENTION Drill the holes through the both walls

Drilling jigs are available

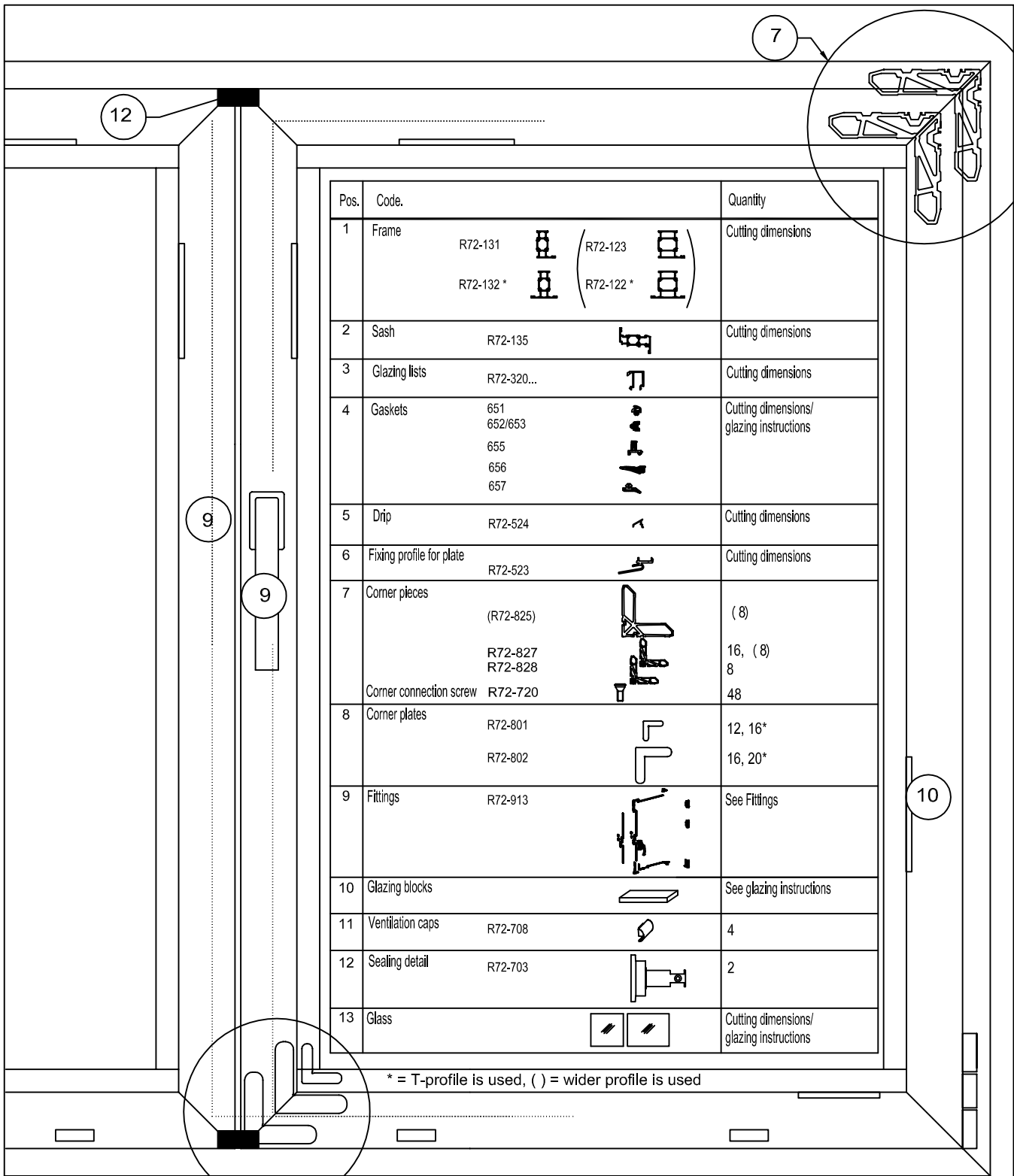
18.08.2014






















3. Windows



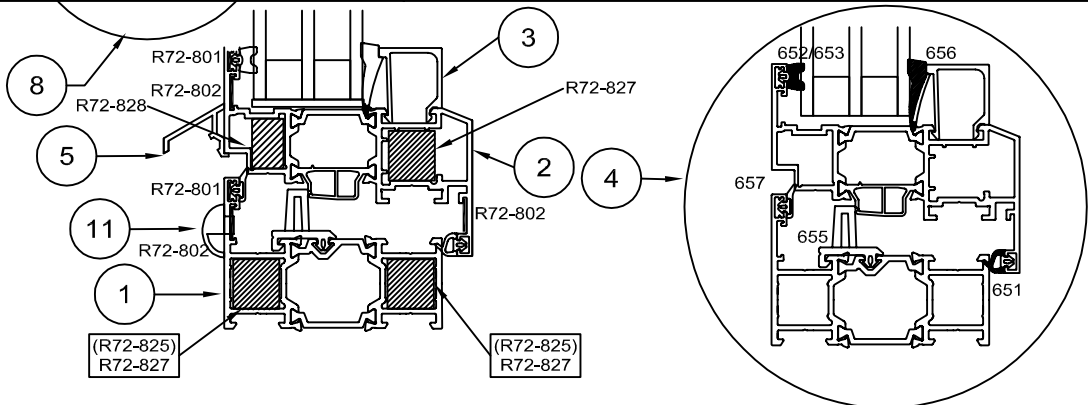


01.07.2013



Pos.	Code.		Quantity
1	Frame	R72-131  (R72-123  R72-132*  (R72-122* 	Cutting dimensions
2	Sash	R72-135 	Cutting dimensions
3	Glazing lists	R72-320... 	Cutting dimensions
4	Gaskets	651 652/653 655 656 657 	Cutting dimensions/ glazing instructions
5	Drip	R72-524 	Cutting dimensions
6	Fixing profile for plate	R72-523 	Cutting dimensions
7	Corner pieces	(R72-825)  R72-827  R72-828  Corner connection screw R72-720 	(8) 16, (8) 8 48
8	Corner plates	R72-801  R72-802 	12, 16* 16, 20*
9	Fittings	R72-913 	See Fittings
10	Glazing blocks		See glazing instructions
11	Ventilation caps	R72-708 	4
12	Sealing detail	R72-703 	2
13	Glass	 	Cutting dimensions/ glazing instructions

* = T-profile is used, () = wider profile is used

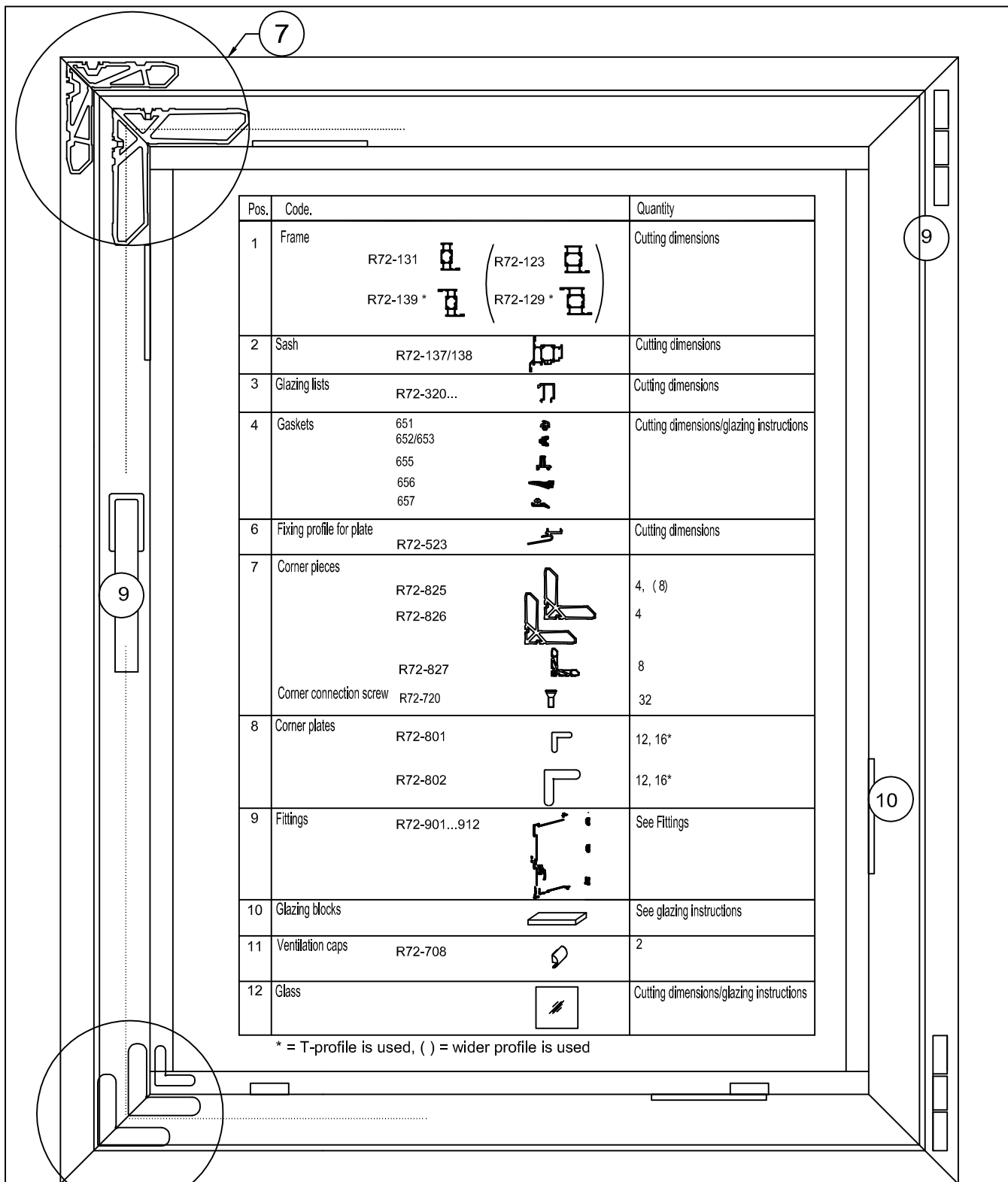











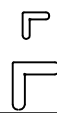




01.07.2013

R72 3.2

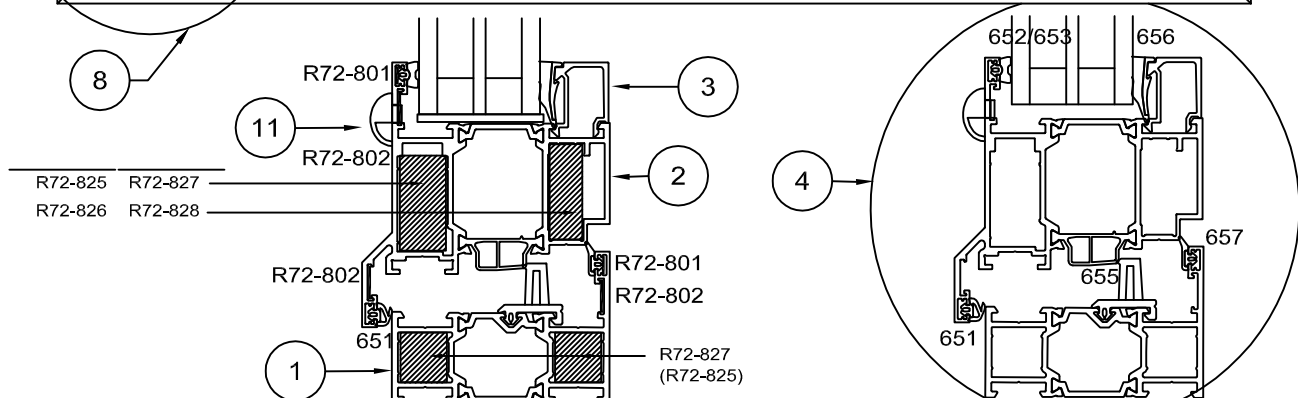
NOKIAN
PROFILES

Pair window parts list



Pos.	Code.	Quantity
1	Frame R72-131  (R72-123  R72-139 *  (R72-129 * 	Cutting dimensions
2	Sash R72-137/138 	Cutting dimensions
3	Glazing lists R72-320... 	Cutting dimensions
4	Gaskets 651 652/653 655 656 657 	Cutting dimensions/glazing instructions
6	Fixing profile for plate R72-523 	Cutting dimensions
7	Corner pieces R72-825 R72-826 R72-827 Corner connection screw R72-720 	4, (8) 4 8 32
8	Corner plates R72-801 R72-802 	12, 16* 12, 16*
9	Fittings R72-901...912 	See Fittings
10	Glazing blocks 	See glazing instructions
11	Ventilation caps R72-708 	2
12	Glass 	Cutting dimensions/glazing instructions

* = T-profile is used, () = wider profile is used

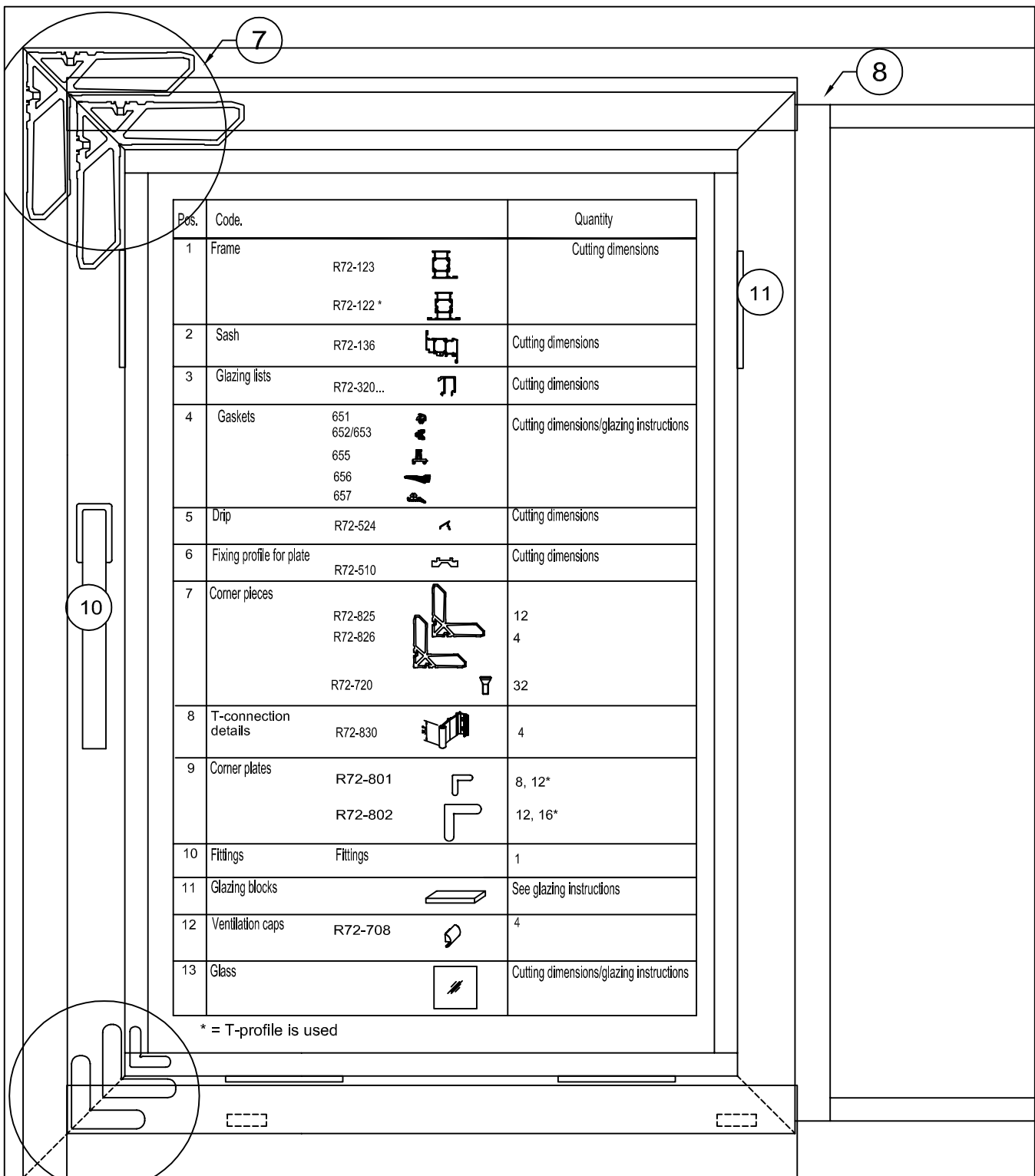


01.07.2013

Outside openable window parts list

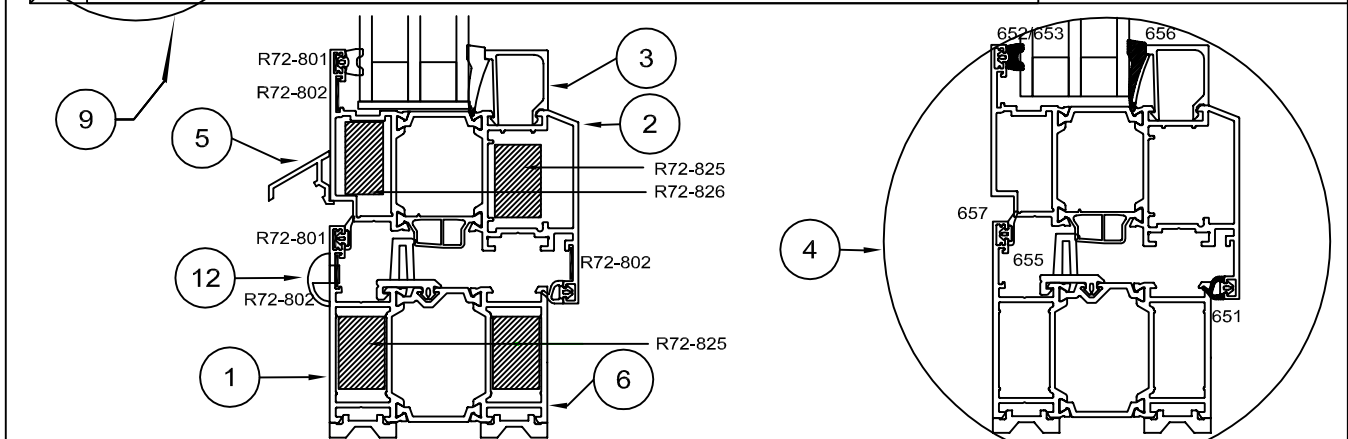


R72 3.3



Pos.	Code.	Quantity
1	Frame R72-123	Cutting dimensions
	R72-122 *	
2	Sash R72-136	Cutting dimensions
3	Glazing lists R72-320...	Cutting dimensions
4	Gaskets 651	Cutting dimensions/glazing instructions
	652/653	
	655	
	656	
	657	
5	Drip R72-524	Cutting dimensions
6	Fixing profile for plate R72-510	Cutting dimensions
7	Corner pieces R72-825	12
	R72-826	4
	R72-720	32
8	T-connection details R72-830	4
9	Corner plates R72-801	8, 12*
	R72-802	12, 16*
10	Fittings Fittings	1
11	Glazing blocks	See glazing instructions
12	Ventilation caps R72-708	4
13	Glass	Cutting dimensions/glazing instructions

* = T-profile is used



01.07.2013

1. GENERAL

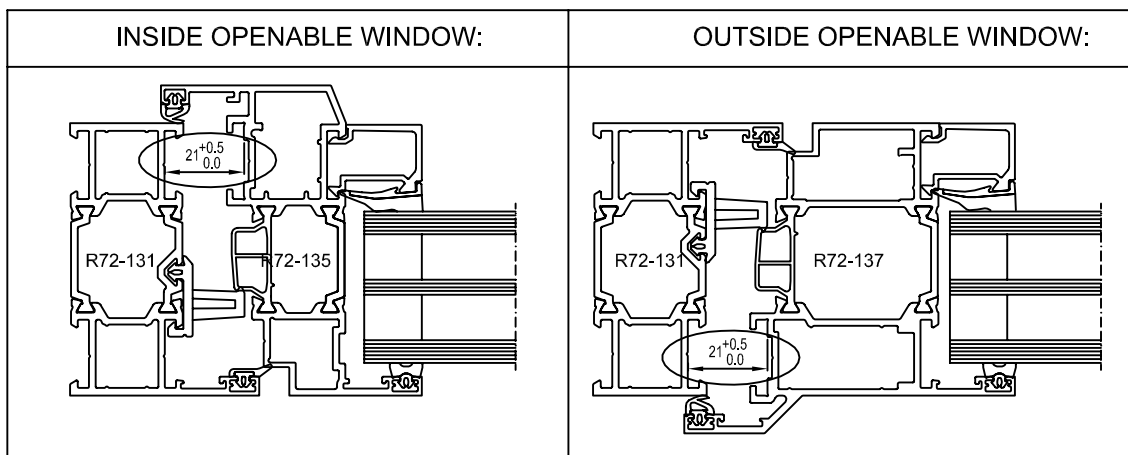
- these instructions are applicable for pages 3.6 / 3.7 / 3.8 (inside openable windows), page 3.13 (outside openable window) and page 4.1 (glass wall)
- all given lengths are nominal lengths
- all given measurements are given for anodized profile
- in case of painted profiles some measurements has to be reduced (see article 3)
- Cutting lengths could be also found from cross section drawings, which are applied to the table

2. GLAZING LISTS & GLASS DIMENSIONS

- horizontal glazing lists are "overlapping" vertical in all type of the structure
- see Glazing, page 6.0: adjustment of 656 gasket
- glazing lists cutting lengths and glass dimentions are given only for sash profile R72-135 (inside openable window) and R72-137 (outside openable window)
- dimensions of glazing lists and glasses for other type of sash profiles should be found from cross-section drawings

3. DIMENSIONS OF WINDOW SASH & FITTINGS

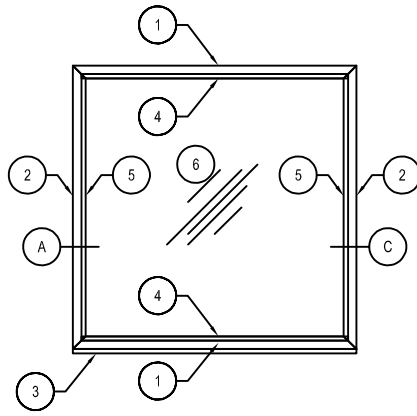
- in case of painted profiles all sash measurements, which are given in tables and cross-section drawings should be reduced 1...2 mm to ensure normal operation of fittings
- Window sash dimensioning should always take in account above given instructions for fittings (defines sash outside measurements)











4. GLASS WALLS

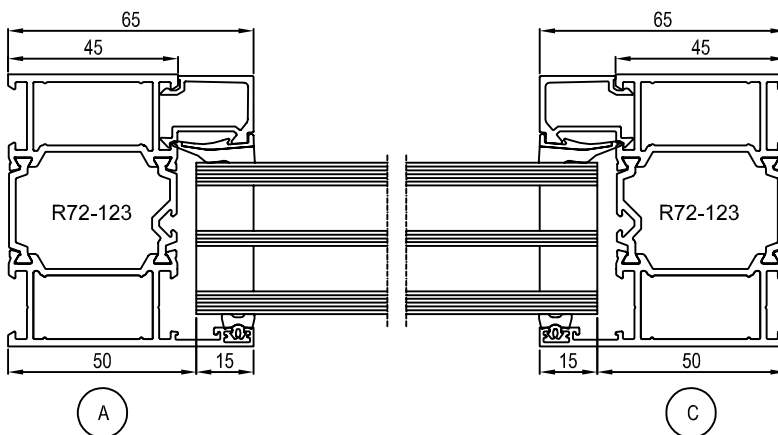
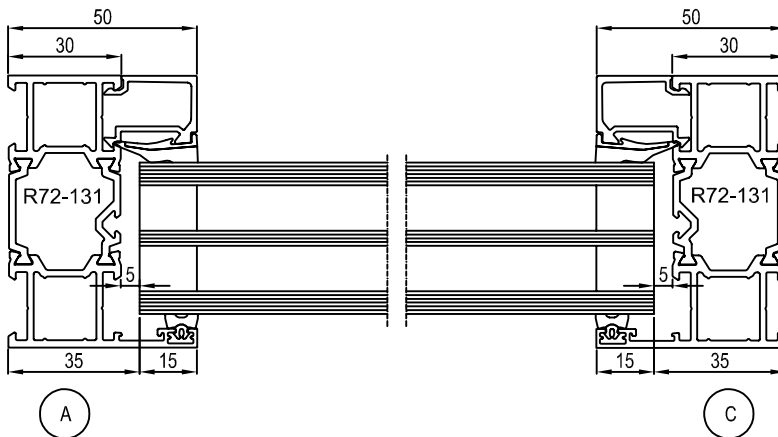
- when using corner profiles R72-126 (45°) and R72-127 (90°) cutting lengths should be defined from cross-section drawings (pages 4.2 & 4.3)

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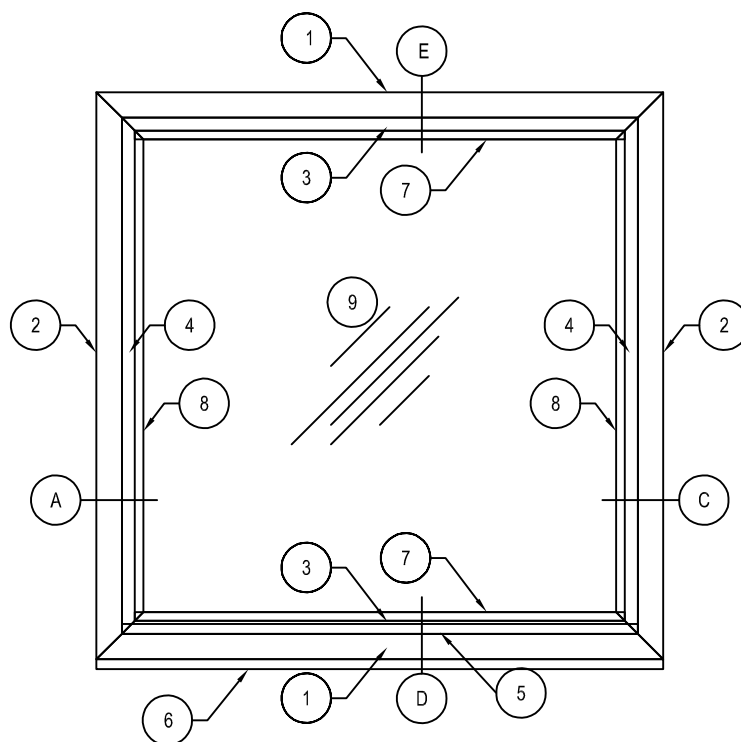


Cutting dimensions for different frame types:












No:	Part:	Profile/position:	R72-131 	R72-123 	R72-132 	R72-122 	Angles:
1	Horizontal frame		L	L	L	L	45° / 45°
2	Vertical frame		H	H	H	H	45° / 45°
3	Fixing profile for cover		L	L	L	L	90° / 90°
4	Horizontal glazing list		L-60	L-90	L-100	L-130	90° / 90°
5	Vertical glazing list		H-100	H-130	H-140	H-170	90° / 90°
6	Glass		L-70	L-100	L-110	L-140	
			H-70	H-100	H-110	H-140	



01.02.2013



Cutting dimensions for different frame types:

No:	Part:	Profile/position:	R72-131 	R72-123 	R72-132 	R72-122 	Angles:
1	Horizontal frame	-	L	L	L	L	45° / 45°
2	Vertical frame	-	H	H	H	H	45° / 45°
3	Horizontal sash	R72-135 	L-48	L-78	L-88	L-118	45° / 45°
4	Vertical sash	R72-135 	H-48	H-78	H-88	H-118	45° / 45°
5	Drip moulding	R72-524 	L-110	L-140	L-150	L-180	-
6	Fixing profile for cover	R72-523 	L	L	L	L	90° / 90°
7	Horizontal glazing list		L-146	L-176	L-186	L-216	90° / 90°
8	Vertical glazing list		H-186	H-216	H-226	H-256	90° / 90°
9	Glass		L-156	L-186	L-196	L-226	
			H-156	H-186	H-196	H-226	

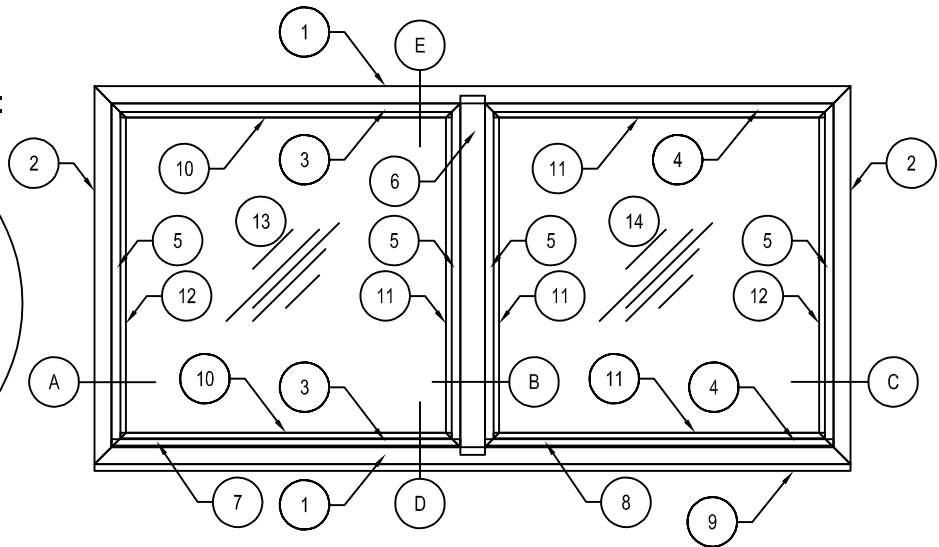
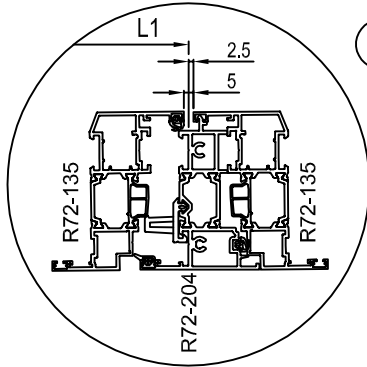
01.07.2013

Inside openable window
Cutting dimensions

NOKIAN 
PROFILES

R72 3.7

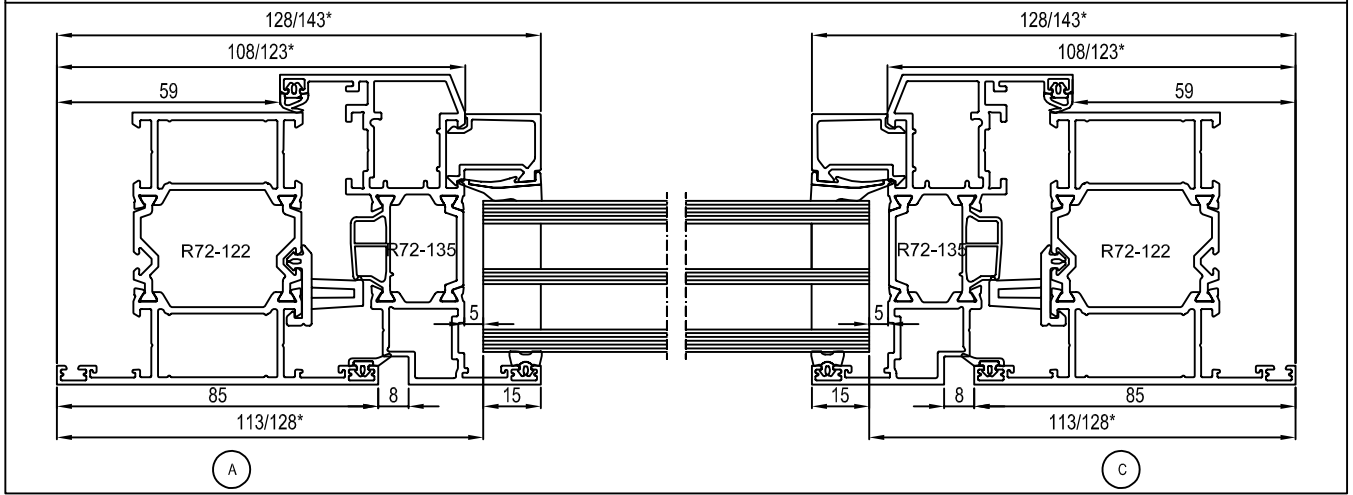
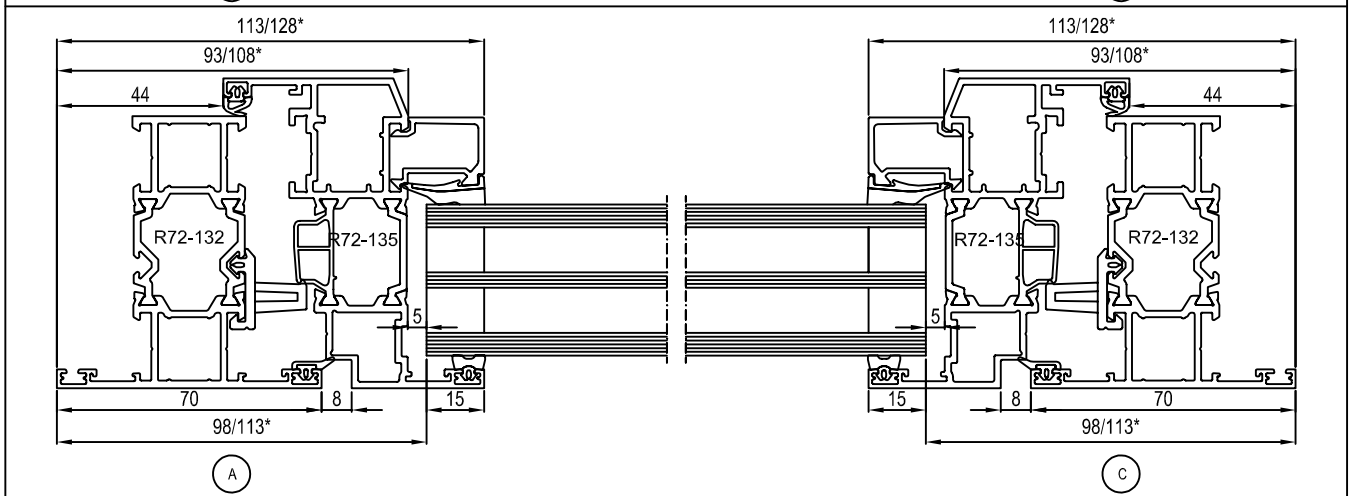
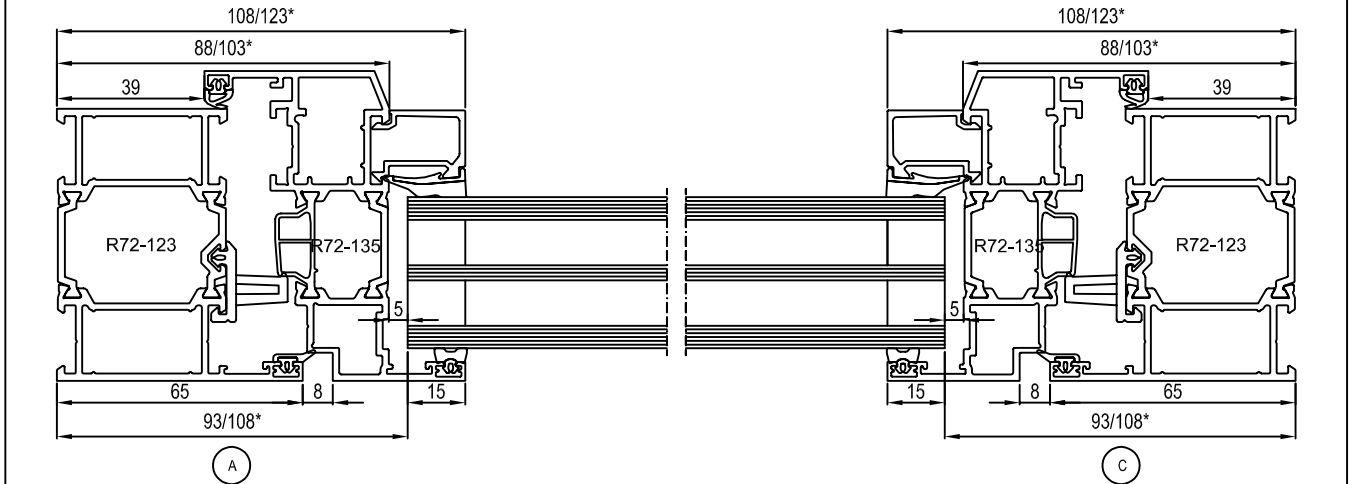
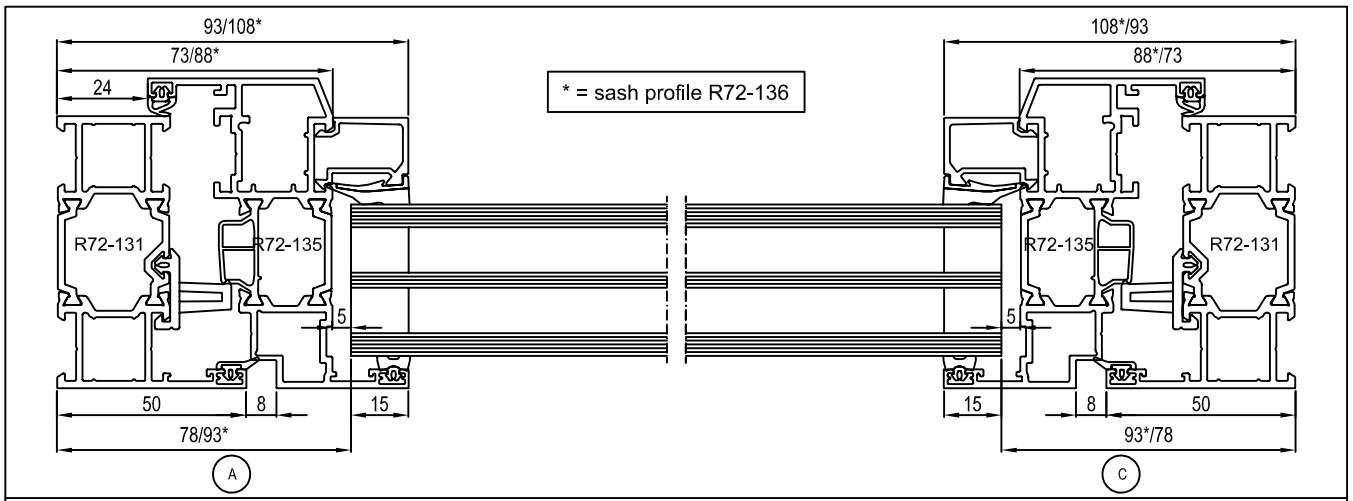
MEASUREMENT L1:



Cutting dimensions for different frame types:

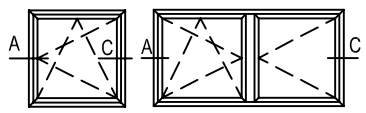
No:	Part:	Profile/position:	R72-131	R72-123	R72-132	R72-122	Angles:	
1	Horizontal frame	-	L	L	L	L	45° / 45°	
2	Vertical frame	-	H	H	H	H	45° / 45°	
3,4	Horizontal sash	R72-135	3	L1-26.5	L1-41.5	L1-46.5	L1-61.5	45° / 45°
			4	L-L1-26.5	L-L1-41.5	L-L1-46.5	L-L1-61.5	
5	Vertical sash	R72-135	H-48	H-78	H-88	H-118	45° / 45°	
6	Rebate profile	R72-204	H-119	H-149	H-159	H-189	90° / 90°	
7,8	Drip moulding	R72-524	7	L1-88	L1-103	L1-108	L1-123	-
			8	L-L1-27	L-L1-42	L-L1-47	L-L1-62	
9	Fixing profile for cover	R72-523	L	L	L	L	90° / 90°	
12	Horizontal glazing list		10	L1-124.5	L1-139.5	L1-144.5	L1-159.5	90° / 90°
			11	L-L1-124.5	L-L1-139.5	L-L1-144.5	L-L1-159.5	
12	Vertical glazing list		H-186	H-216	H-226	H-256	90° / 90°	
13	Glass		L1-134	L1-149	L1-154	L1-169		
			H-156	H-186	H-196	H-226		
14	Glass		L-L1-134	L-L1-149	L-L1-154	L-L1-169		
			H-156	H-186	H-196	H-226		

01.07.2013

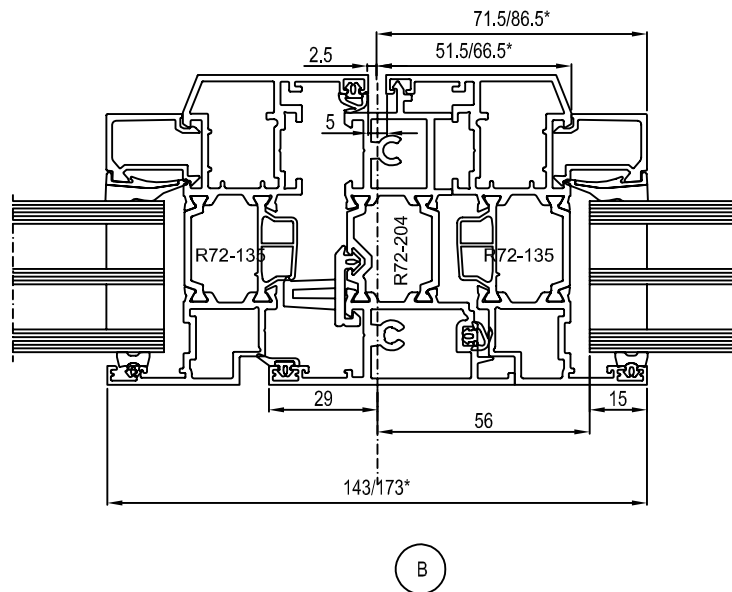
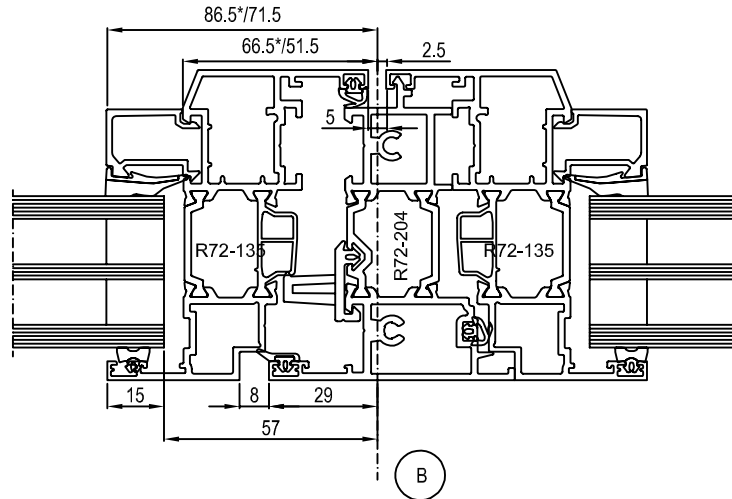


01.07.2013

Inside operable windows
Details A & C



R72 3.9



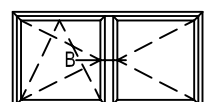
* = sash profile R72-136

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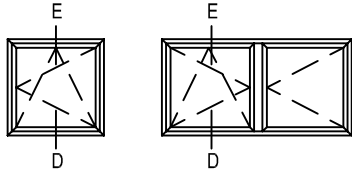
R72 3.10



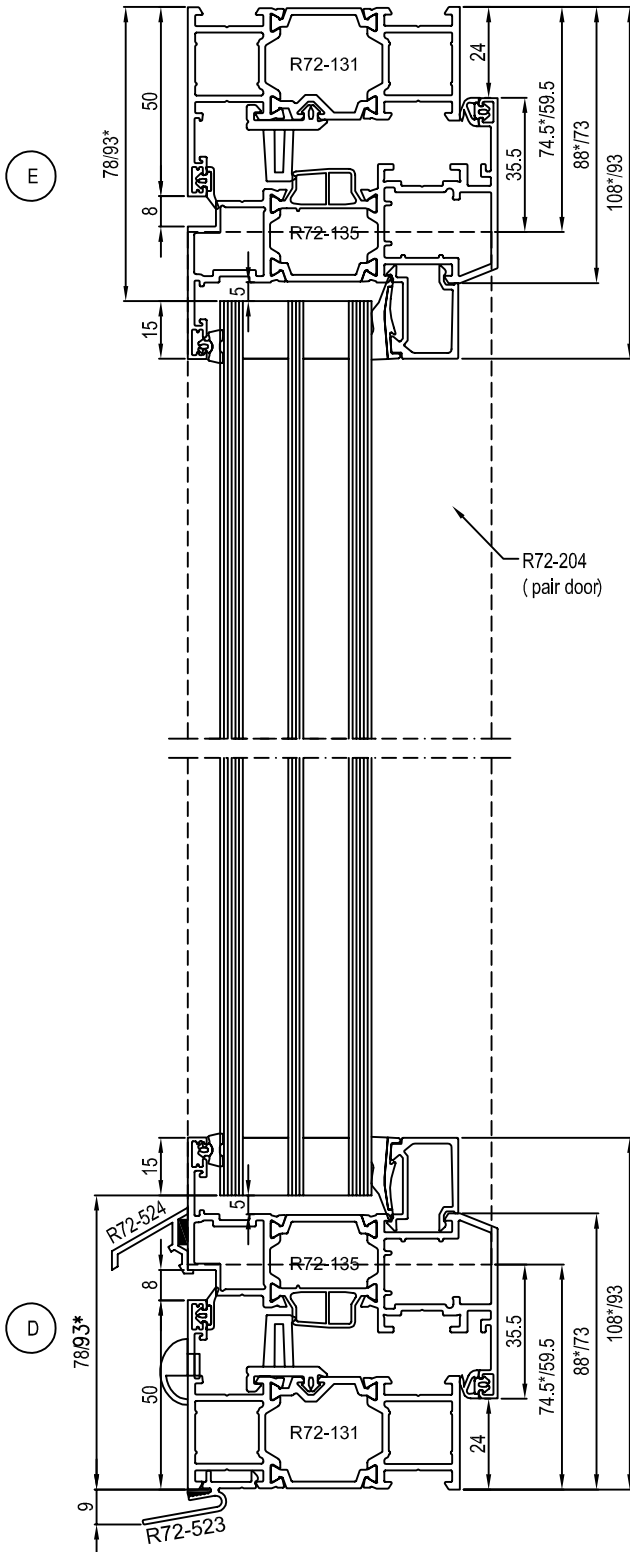
Inside operable pair window
Detail B



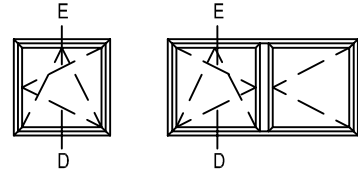
FRAME R72-131:



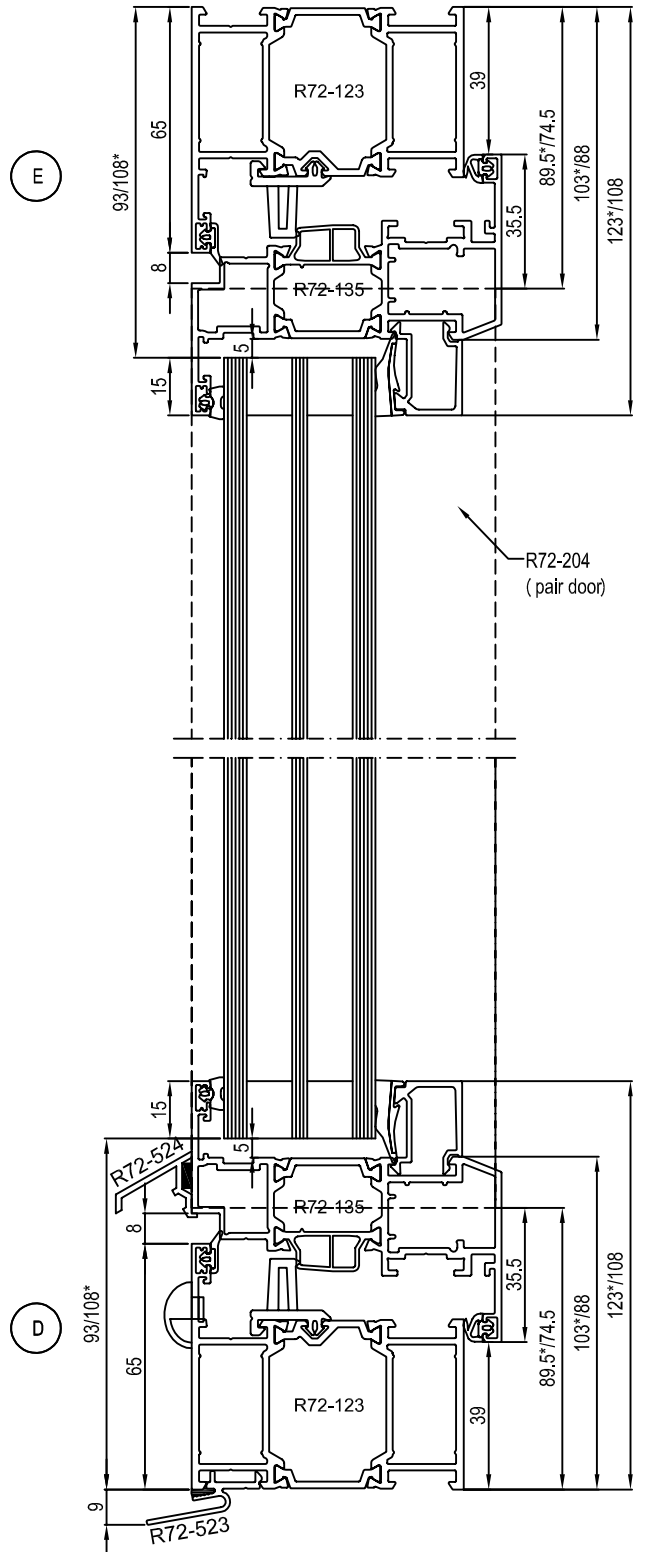
* = sash profile R72-136



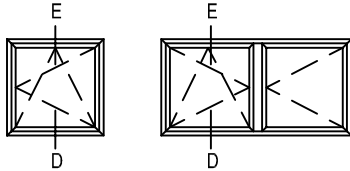
FRAME R72-123:



* = sash profile R72-136

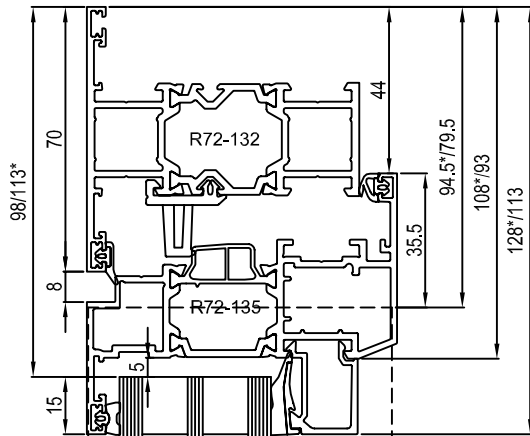


FRAME R72-131:



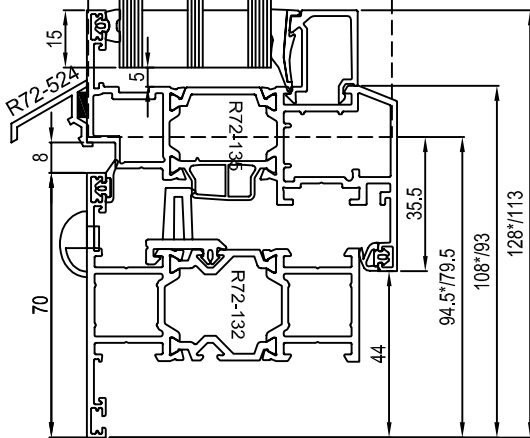
* = sash profile R72-136

E

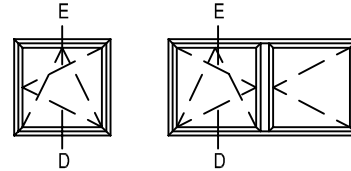


R72-204
(pair door)

D

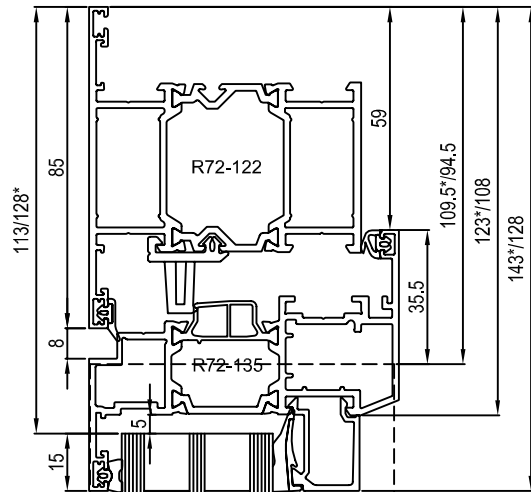


FRAME R72-123:



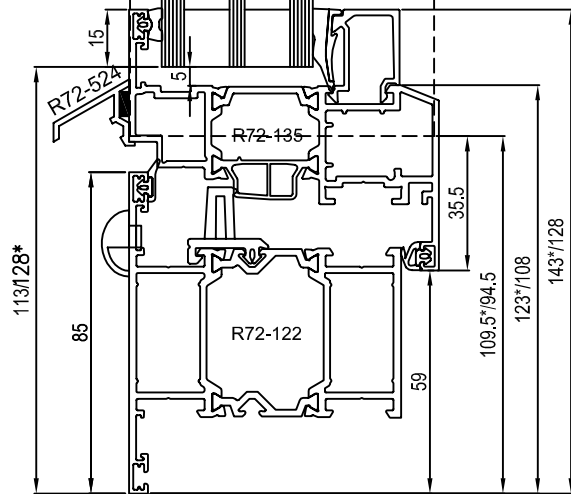
* = sash profile R72-136

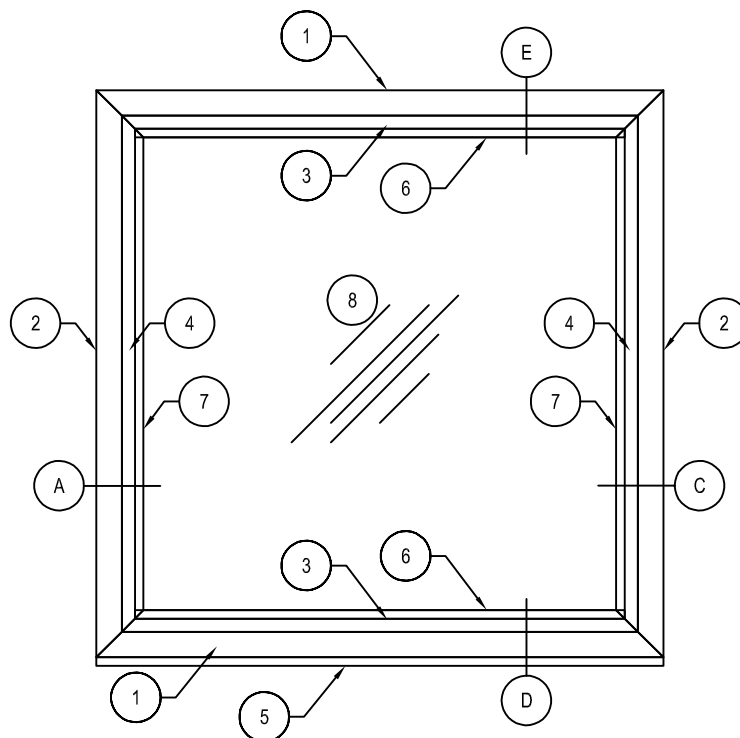
E













R72-204
(pair door)

D





Cutting dimensions for different frame types:

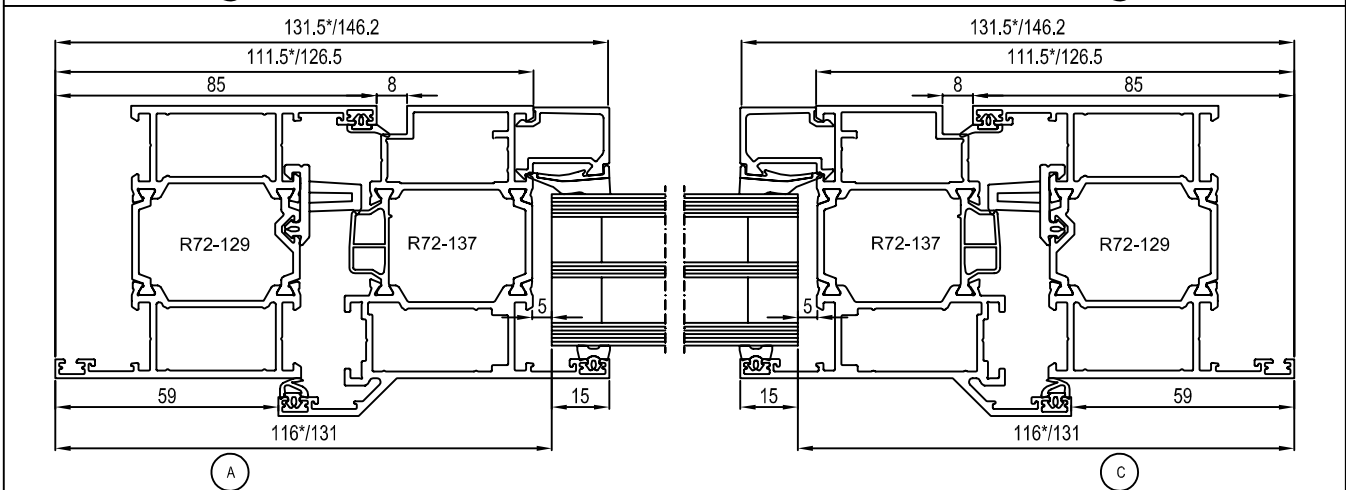
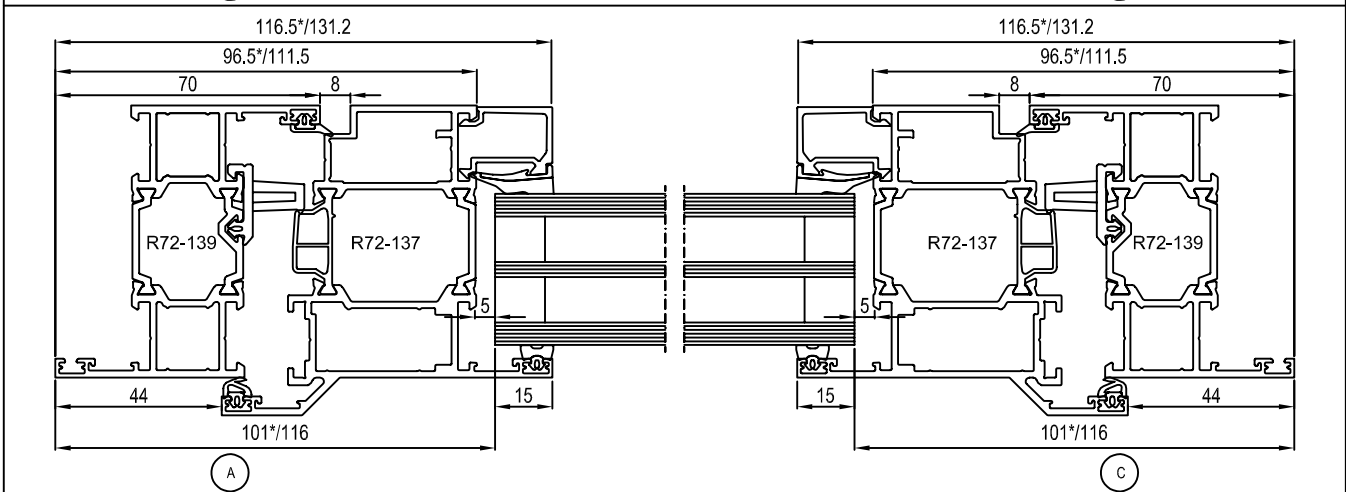
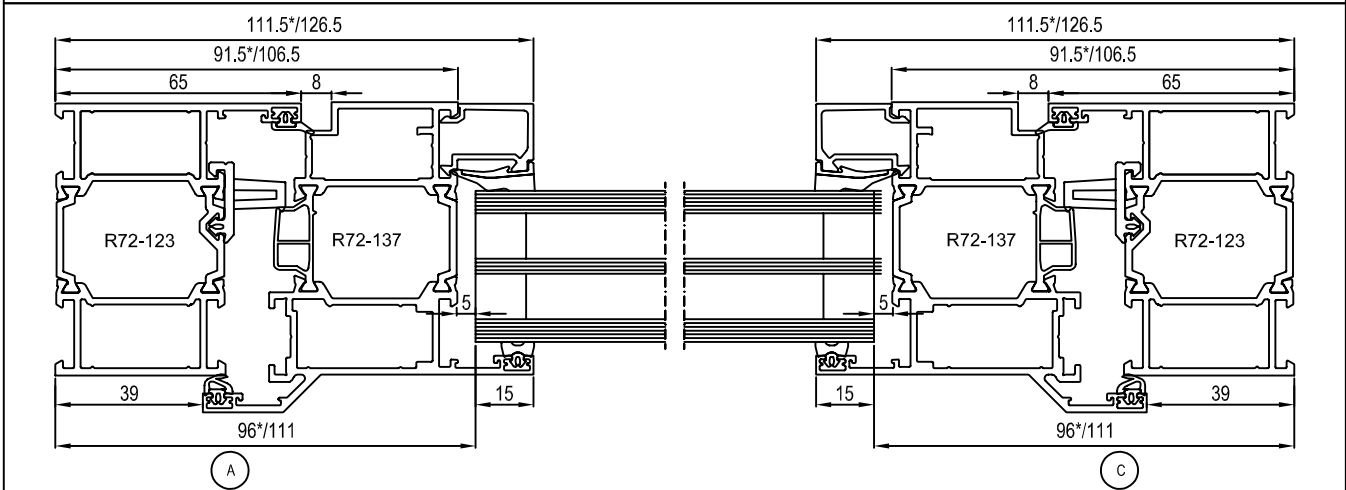
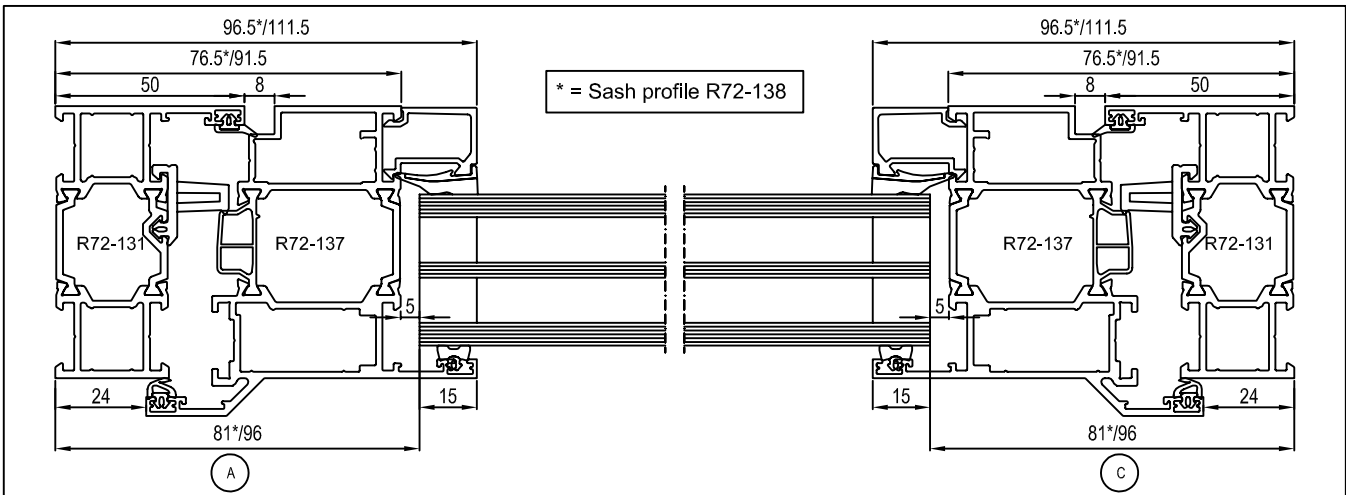
No:	Part:	Profile/position:	R72-131 	R72-123 	R72-139 	R72-129 	Angles:
1	Horizontal frame	-	L	L	L	L	45° / 45°
2	Vertical frame	-	H	H	H	H	45° / 45°
3	Horizontal sash	R72-137 	L-48	L-78	L-88	L-118	45° / 45°
4	Vertical sash	R72-137 	H-48	H-78	H-88	H-118	45° / 45°
5	Fixing profile for cover	R72-523 	L	L	L	L	90° / 90°
6	Horizontal glazing list		L-183	L-213	L-223	L-253	90° / 90°
7	Vertical glazing list		H-223	H-253	H-263	H-293	90° / 90°
8	Glass		L-192	L-222	L-232	L-262	
			H-192	H-222	H-232	H-262	

01.07.2013

Outside openable window
Cutting dimensions

NOKIAN
PROFILES 

R72 3.13

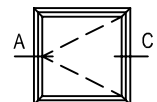


01.07.2013

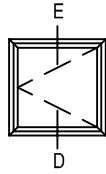
R72 3.14



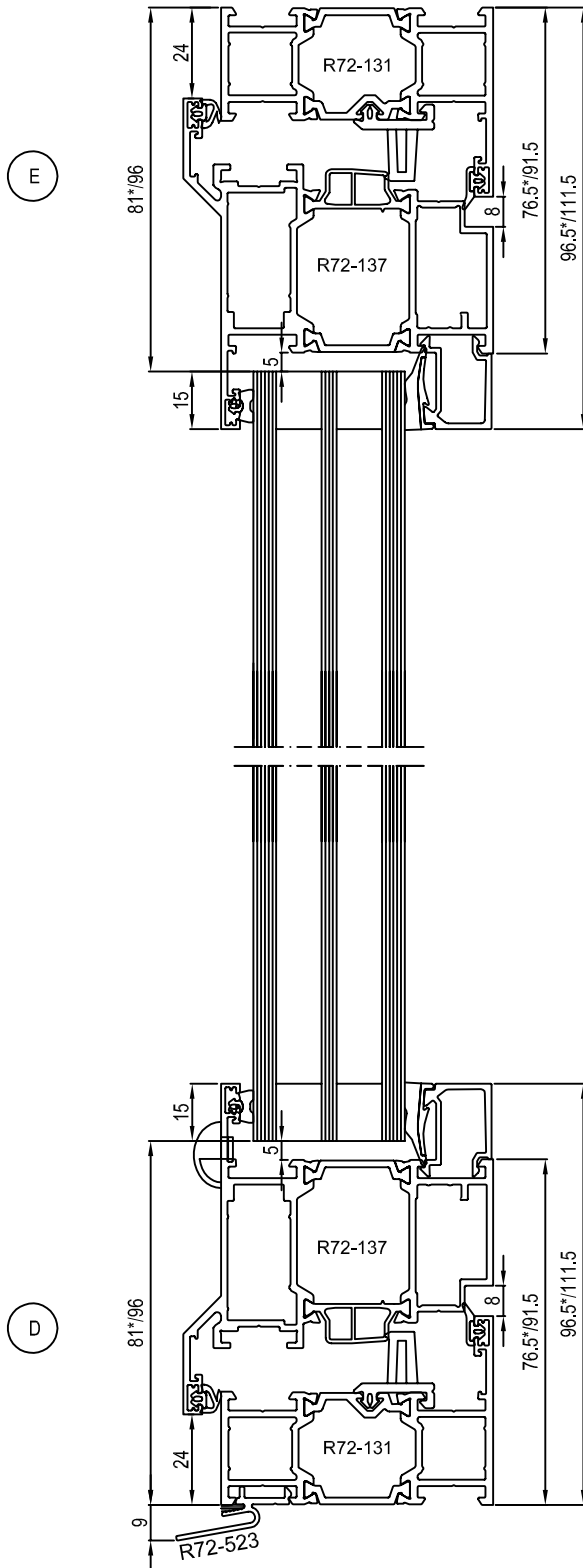
Outside openable windows
Details A & C



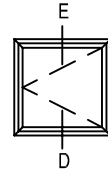
FRAME R72-131:



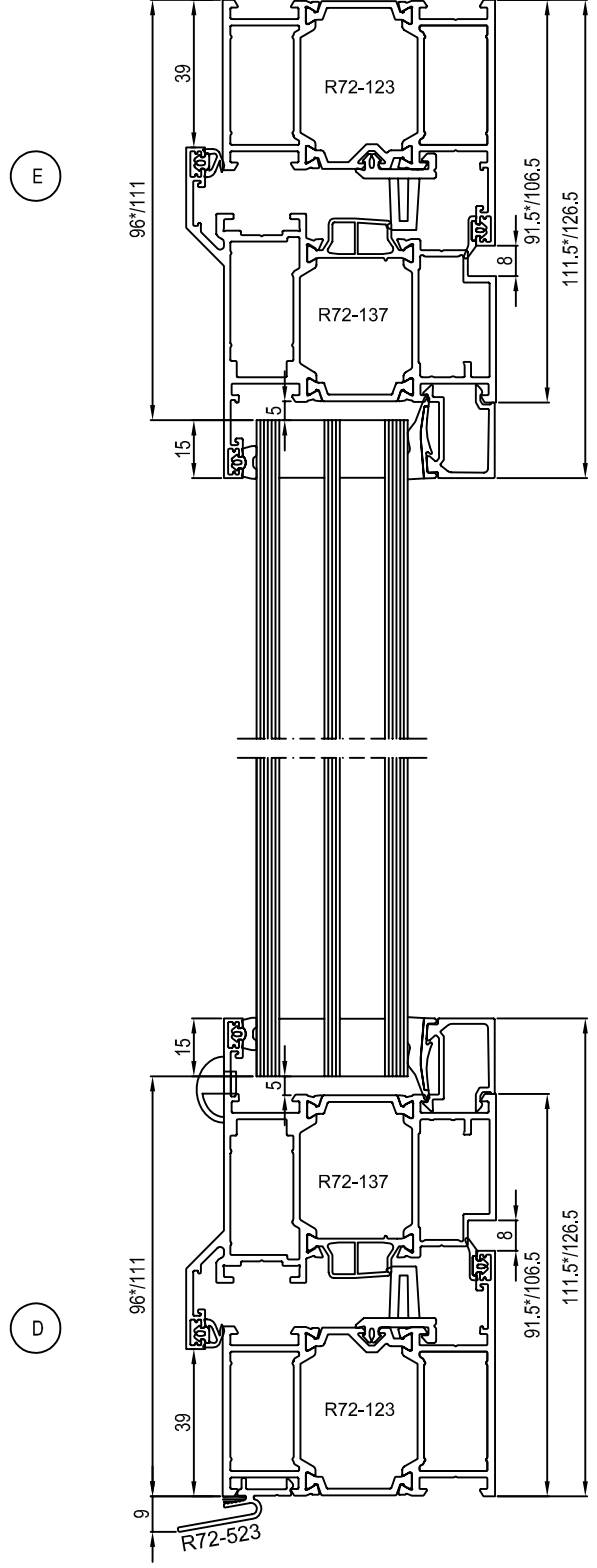
* = sash profile R72-138



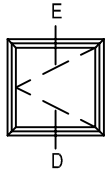
FRAME R72-123:



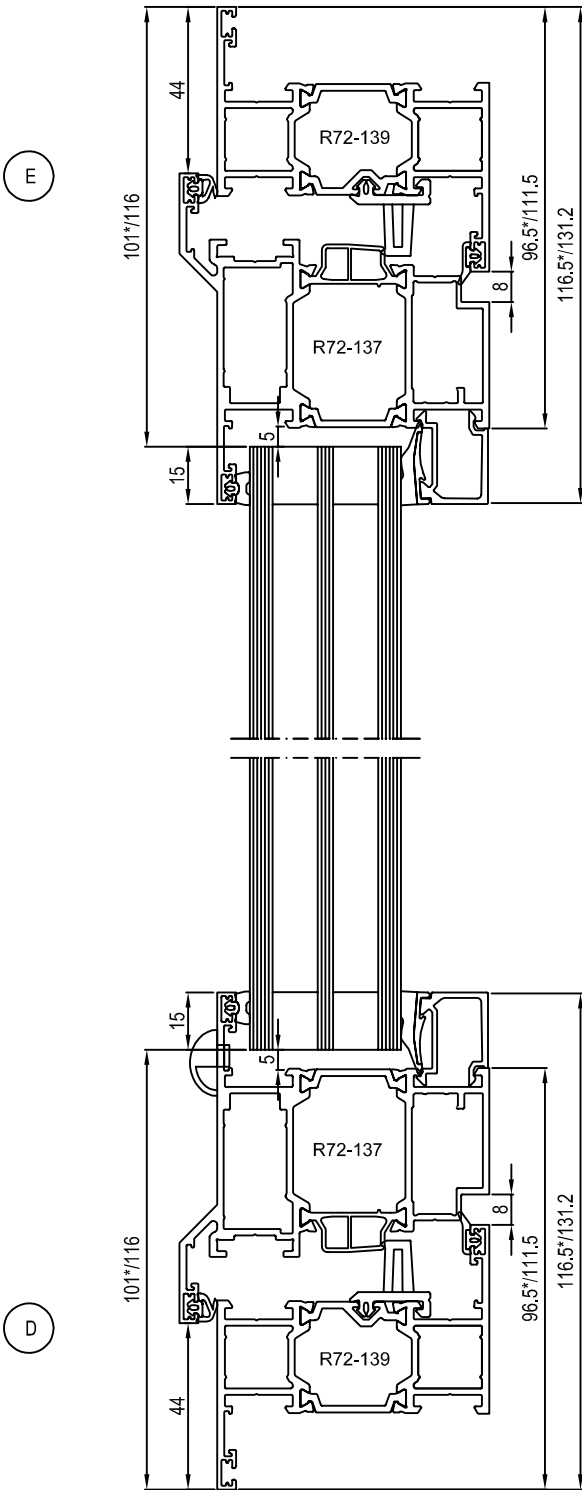
* = sash profile R72-138



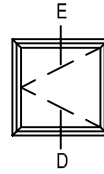
FRAME R72-139:



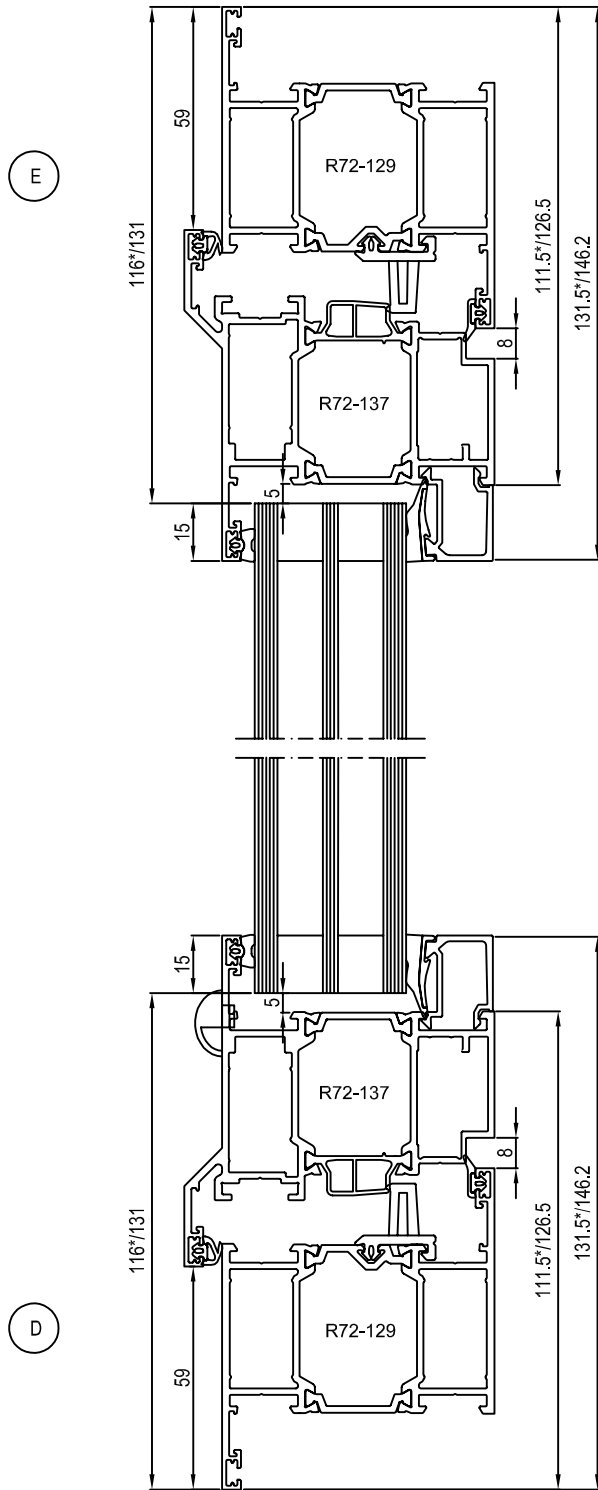
* = sash profile R72-138



FRAME R72-129:



* = sash profile R72-138

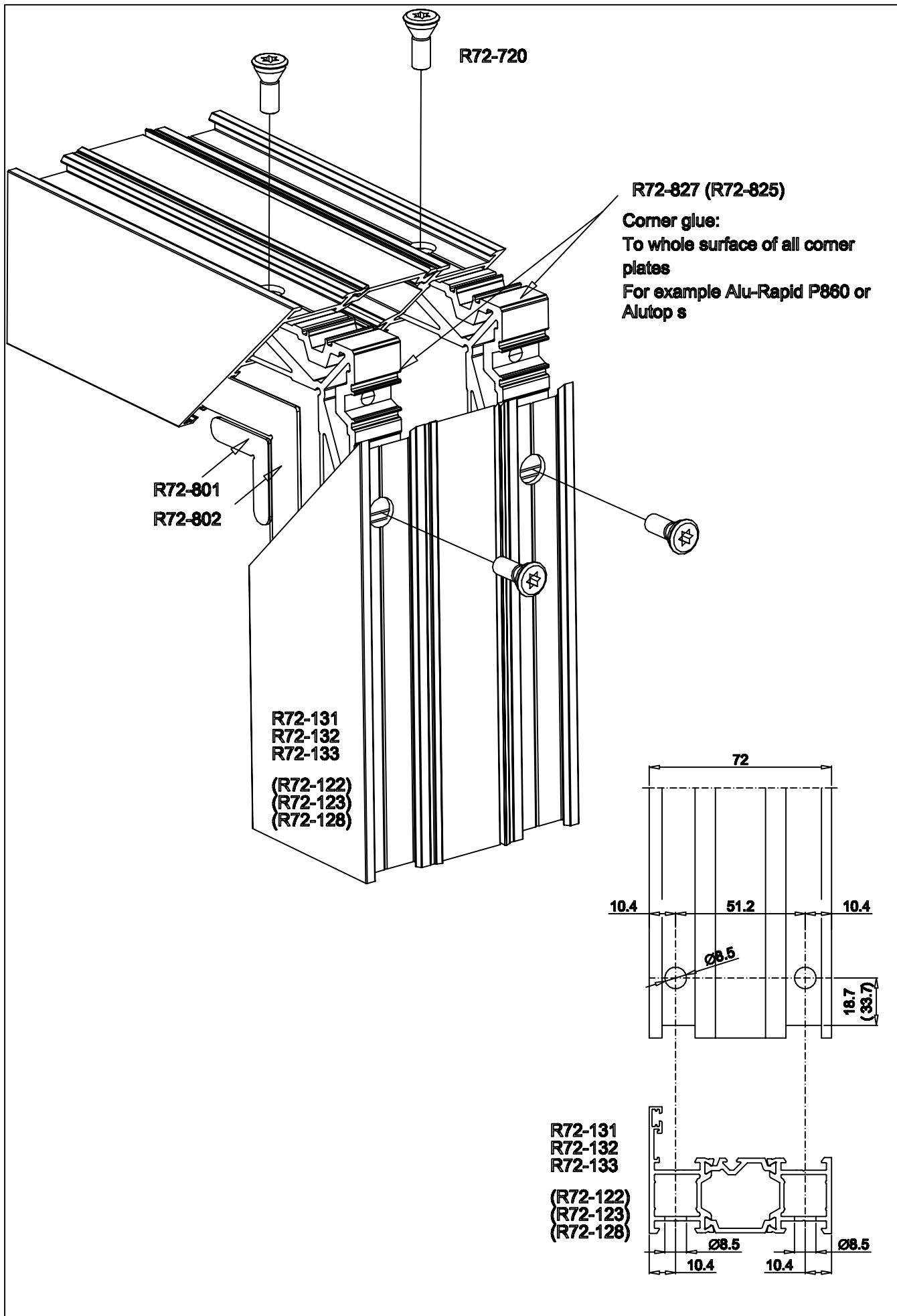


01.07.2013

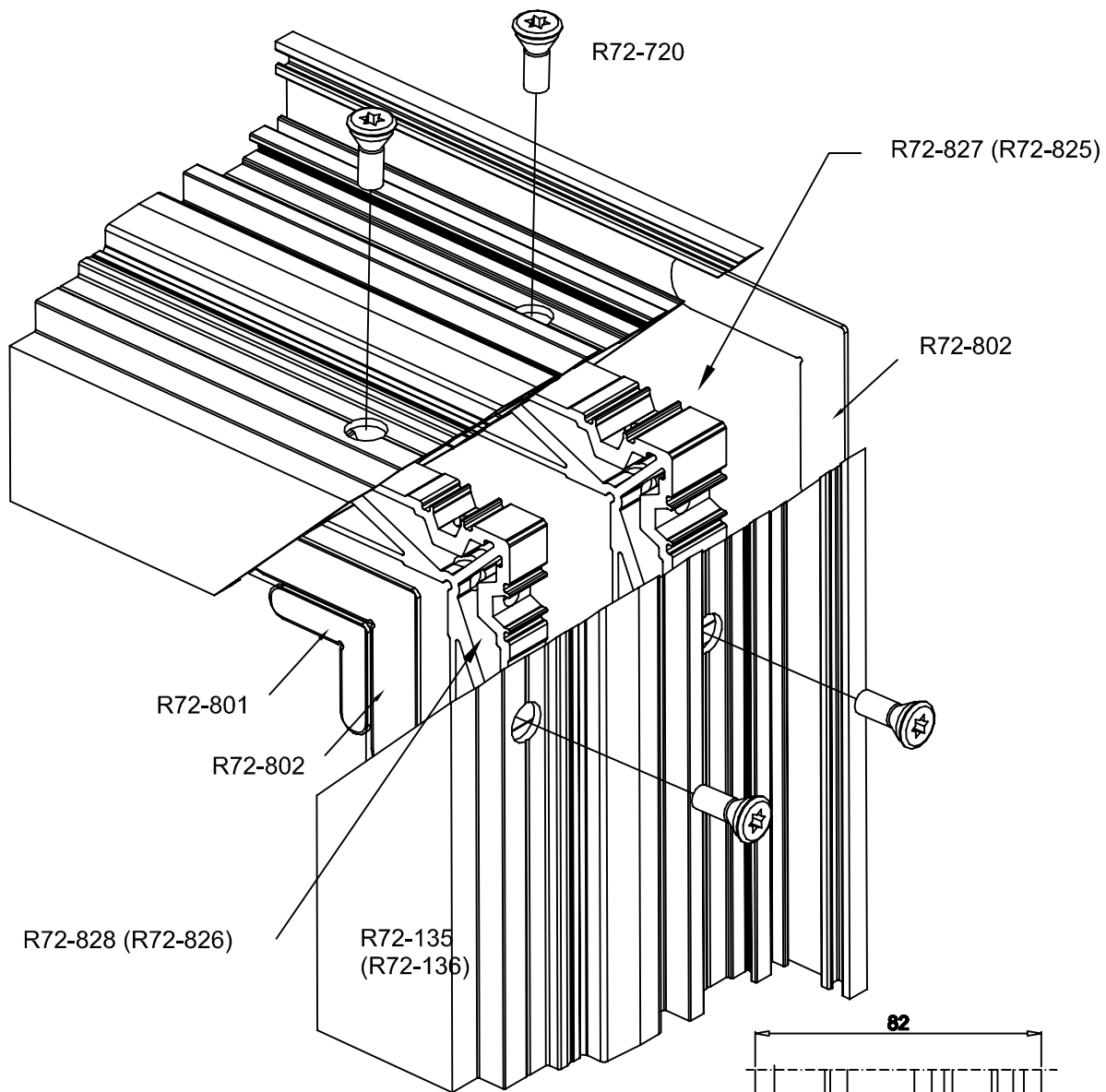
R72 3.16



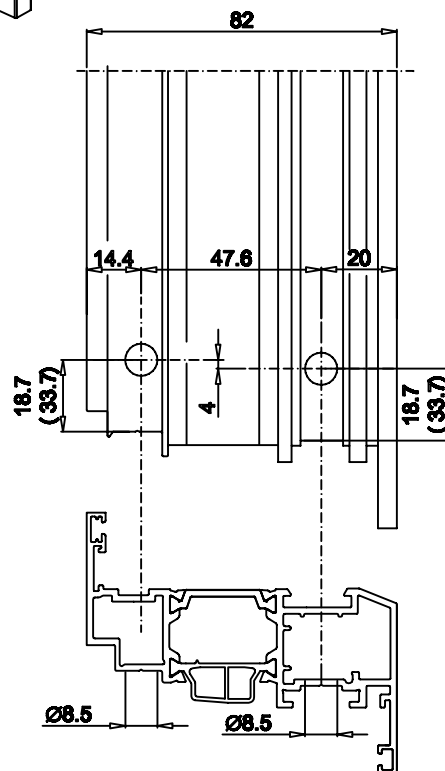
Outside openable windows. Details D & E
Frames R72-139 & R72-129



01.07.2013



Corner glue:
 To whole surface of all corner
 plates
 For example Alu-Rapid P860 or
 Alutop s



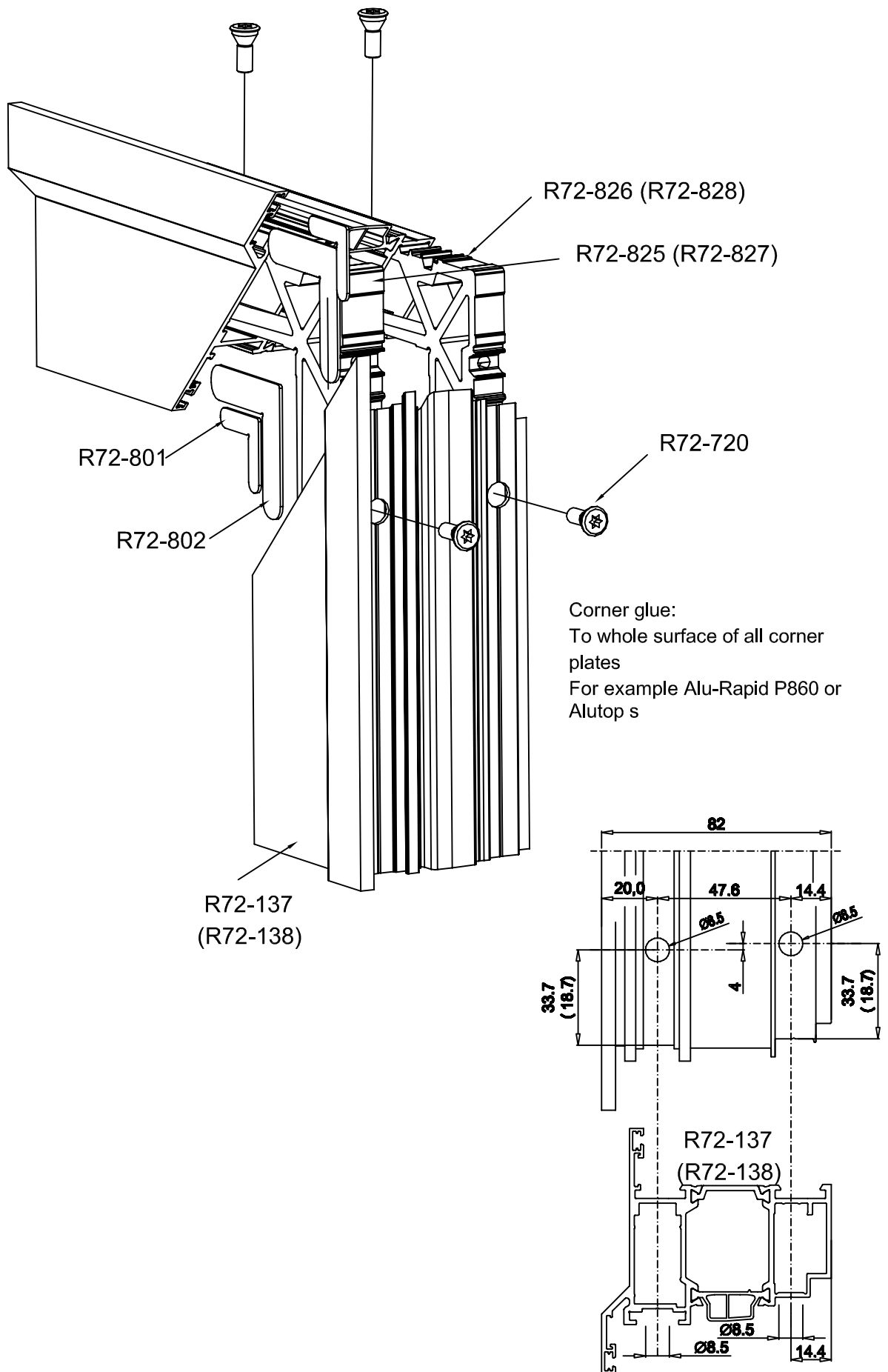
R72-135
 (R72-136)

01.07.2013

R72 3.18



Window sash corner screw connection

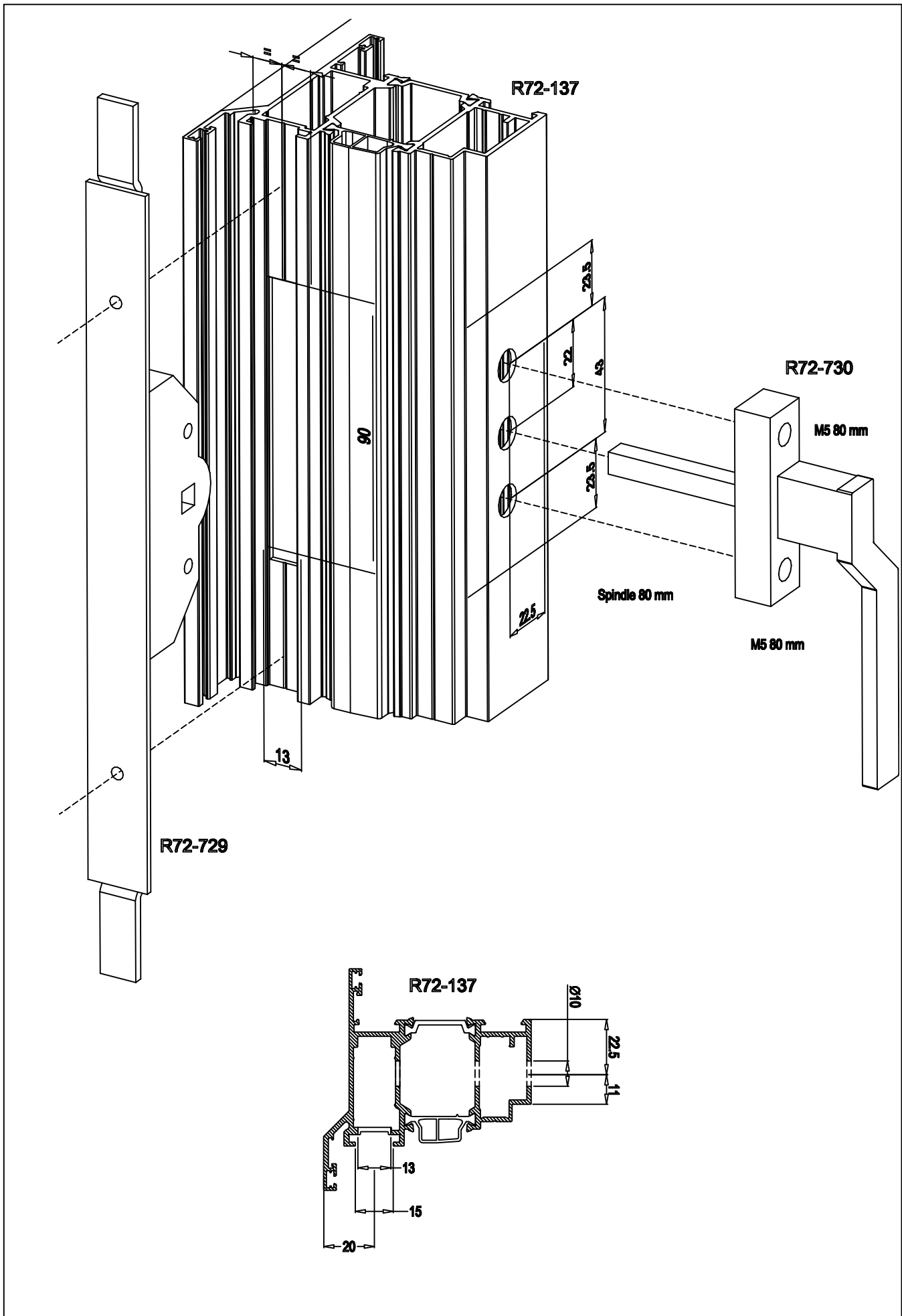


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Window sash corner screw connection
of outside operable window



R72 3.19

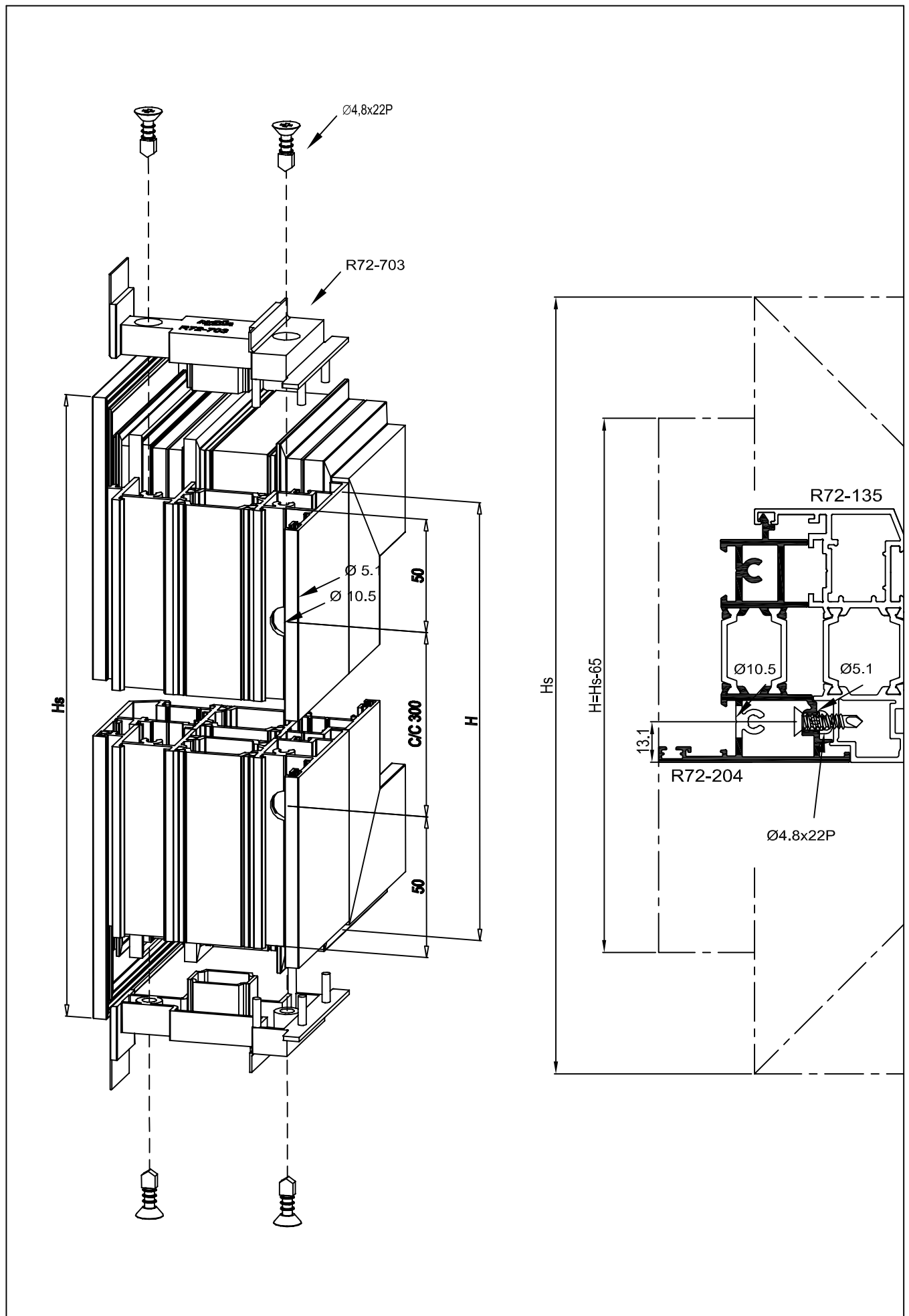


01.07.2013

R72 3.20

NOKIAN
PROFILES

Installing handle for outside openable window



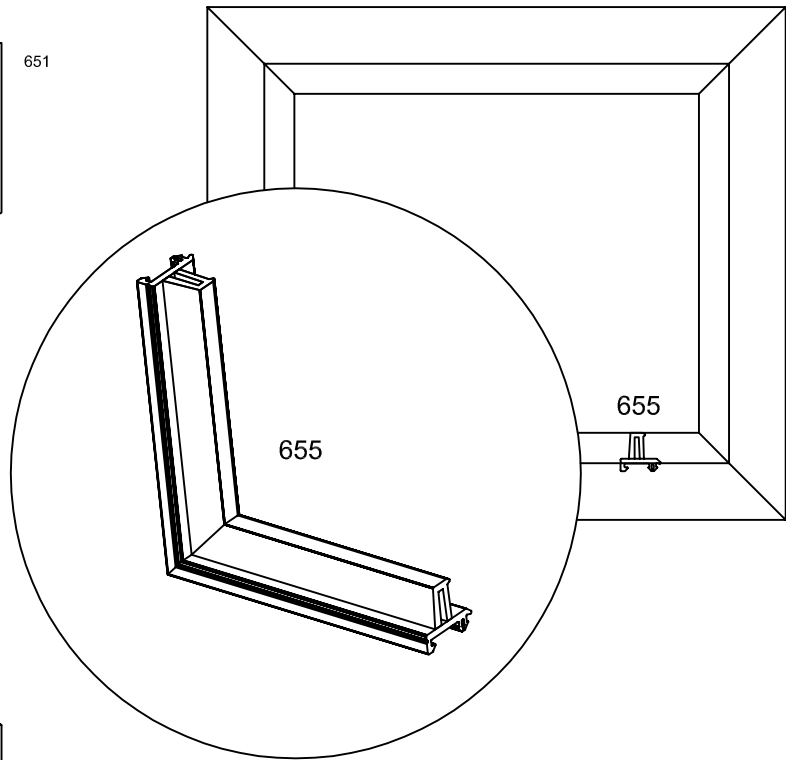
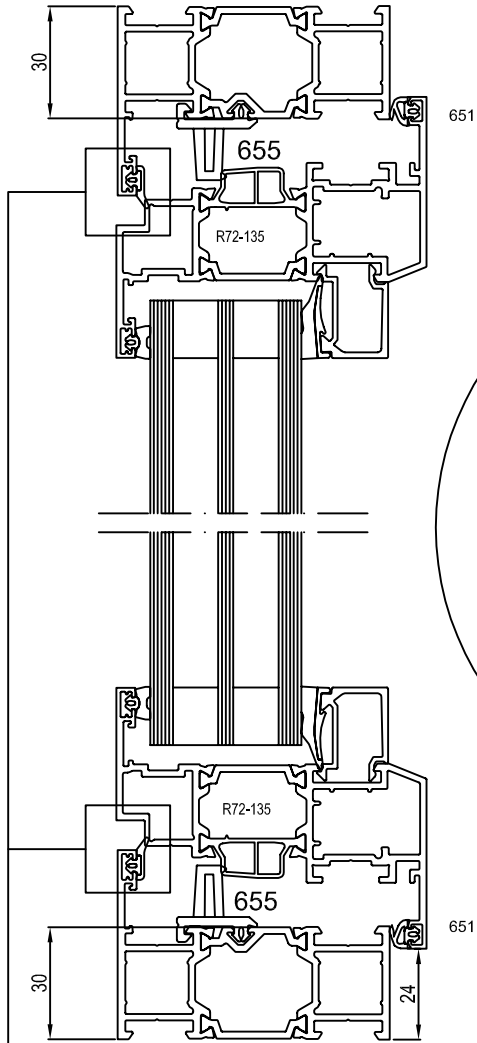
01.07.2013

Adjustment of R72-204 pair window
rebate profile

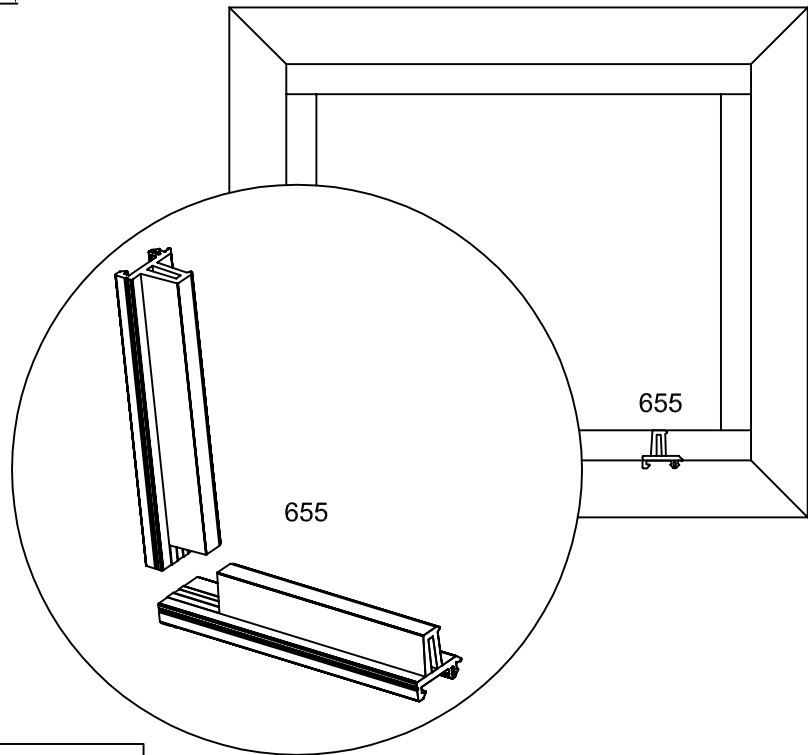
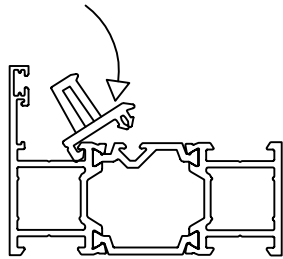
NOKIAN
PROFILES

R72 3.21

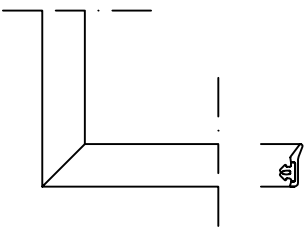
Variant 1



Variant 2 (mild conditions)



Cutting of 657 gasket



Shrinkage ~5mm/1m should be taken in account when cutting the gasket
 Joints of gaskets are secured with vulcanizing glue

See adjustment instructions of 651 gasket on a page 1.10

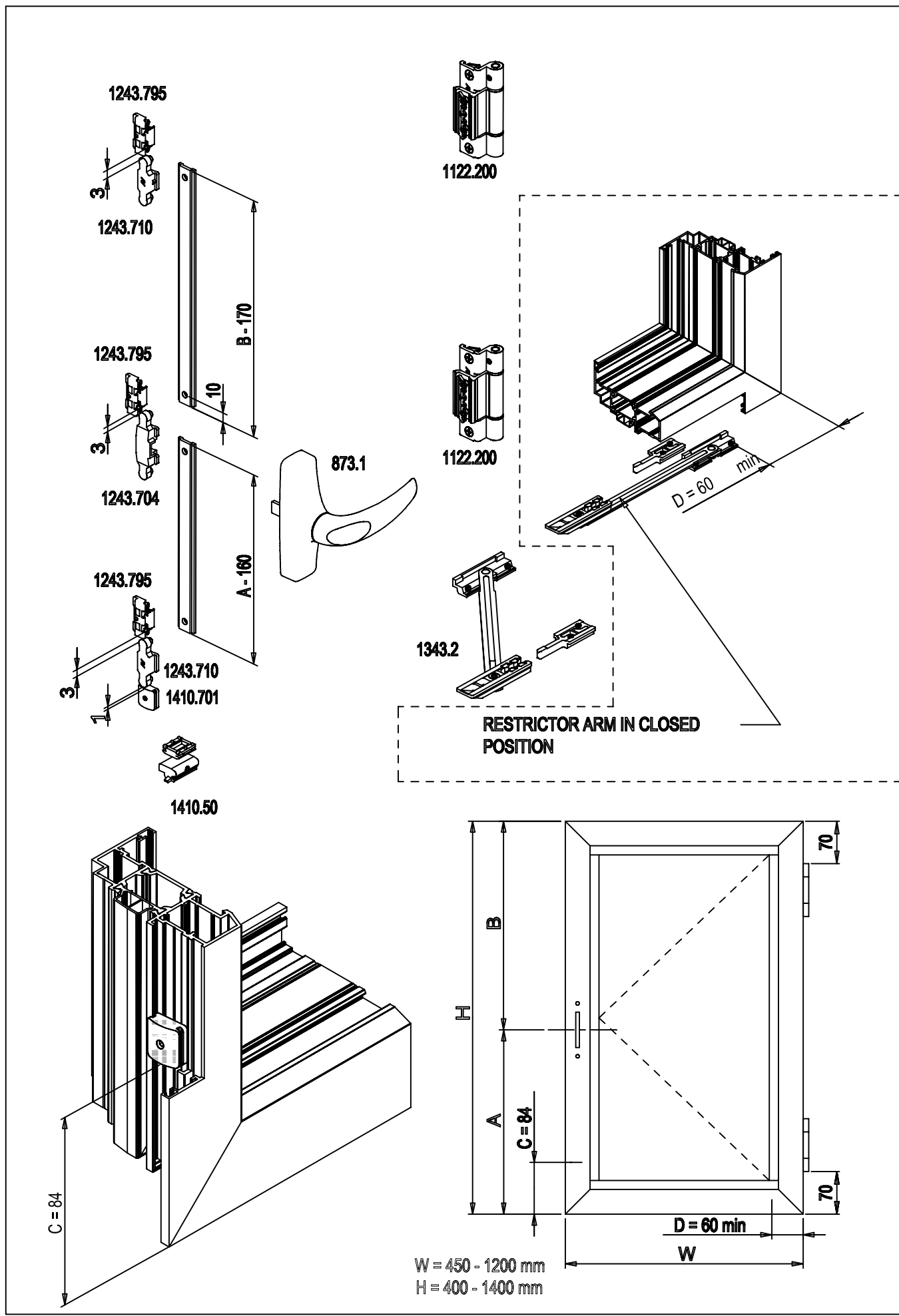
01.07.2013

R72 3.22

NOKIAN
 PROFILES



Adjustment of gaskets 655 and 657



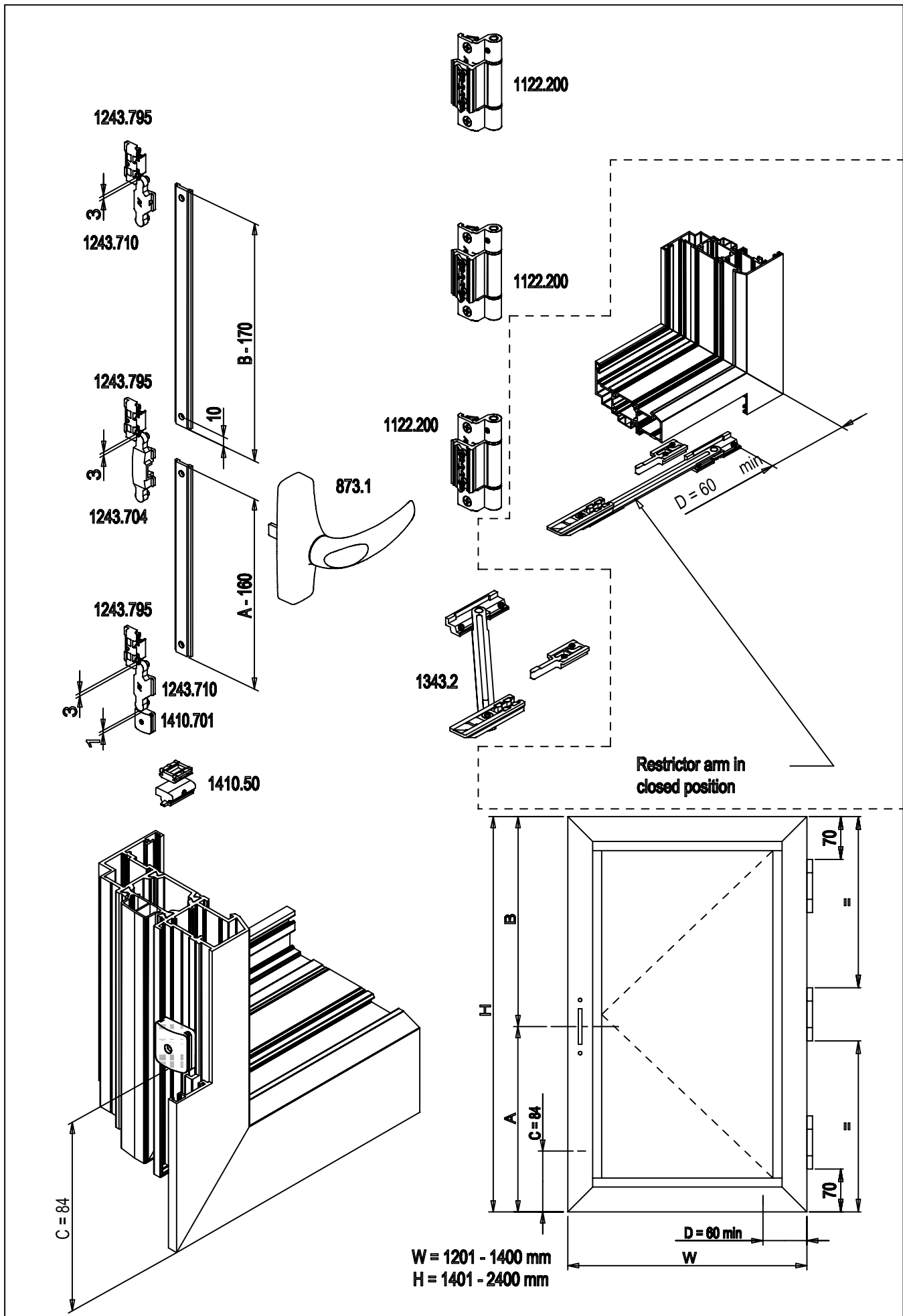
Fittings R72-901



W=450-1200 mm, H=400-1400 mm



R72 3.23



01.07.2013

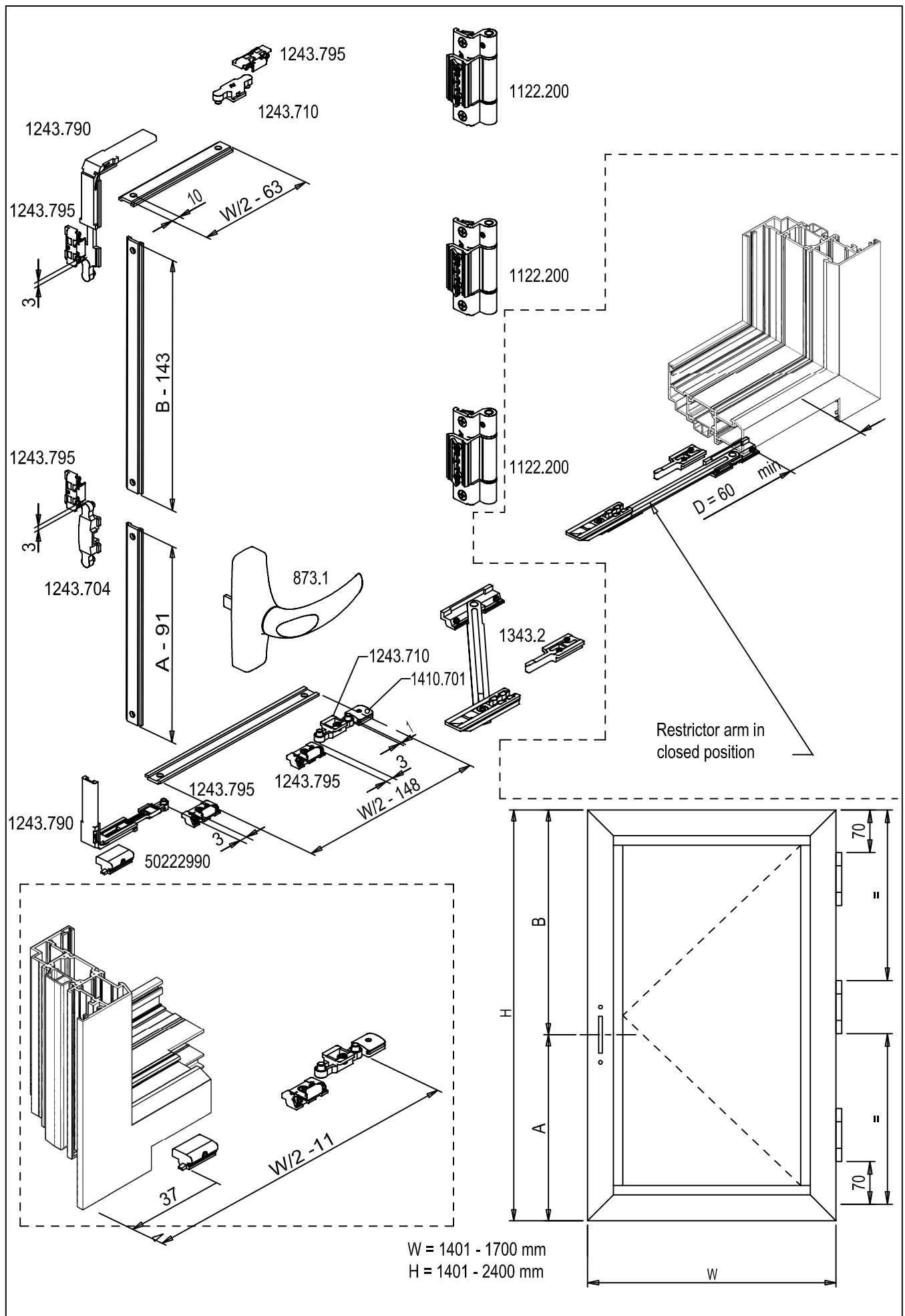
R72 3.24



Fittings pack R72-902



W=1201-1400 mm, H=1401-2400 mm

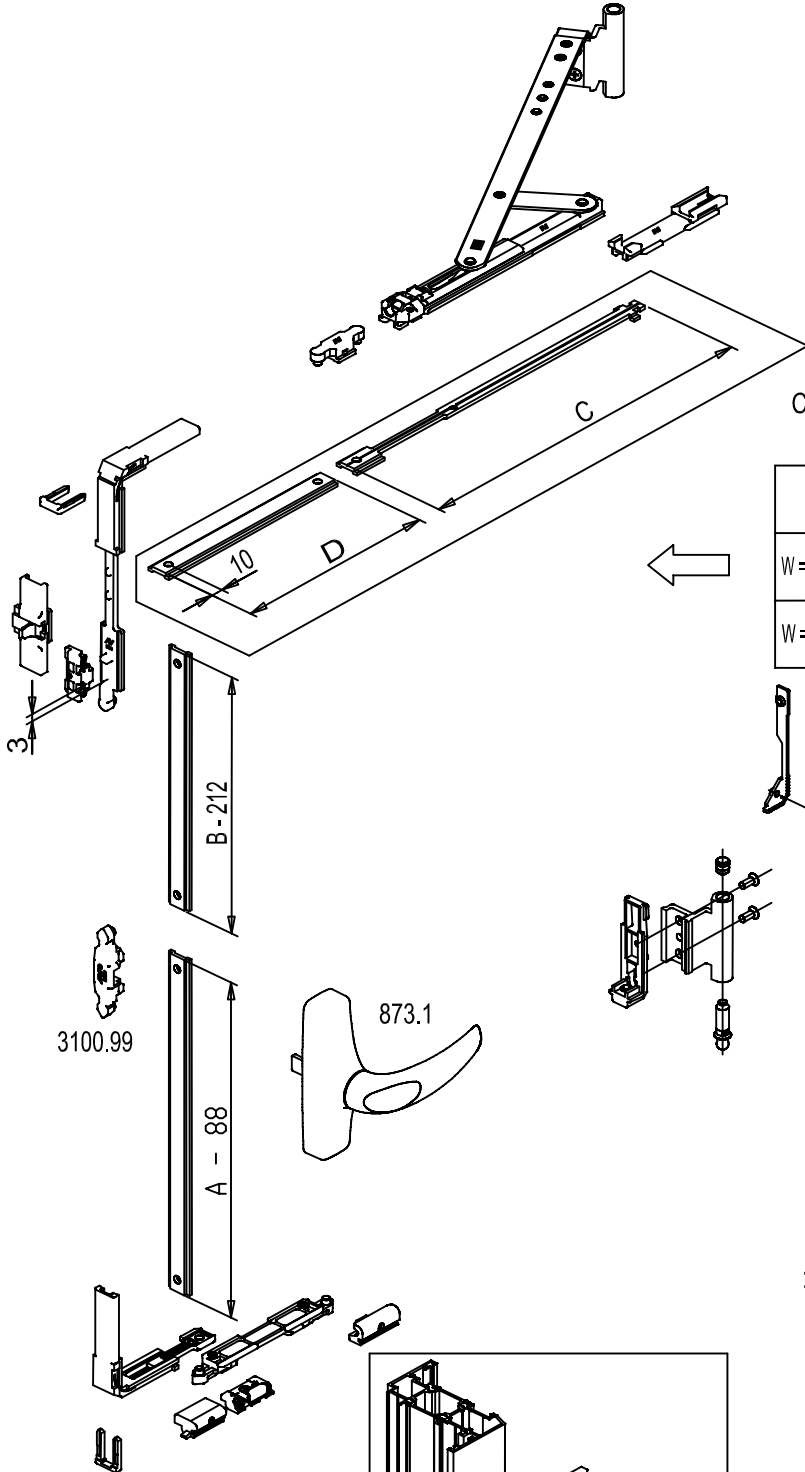
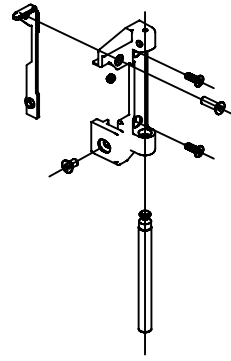


Fittings pack R72-903



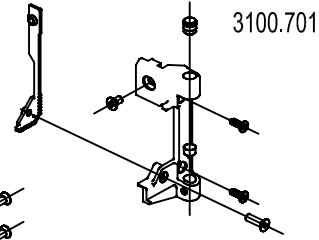
R72 3.25

C = CUT THE ROD IN CORRECT LENGTH
(SEE TABLE)

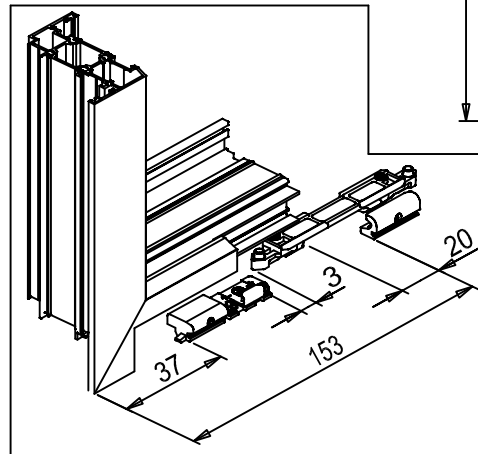
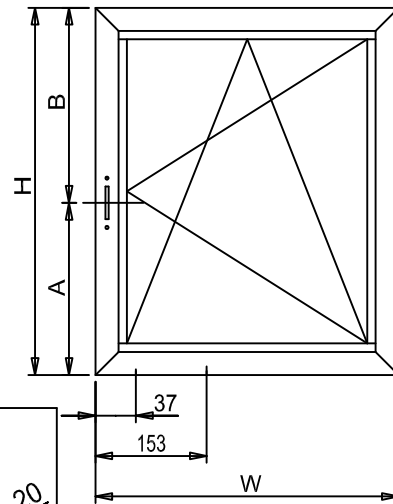


C = CUT THE ROD IN CORRECT LENGTH
(SEE TABLE)

WIDTH	C	D
W = 495 - 695	C = W - 207	/
W = 696 - 1200	C = 300	D = W - 527

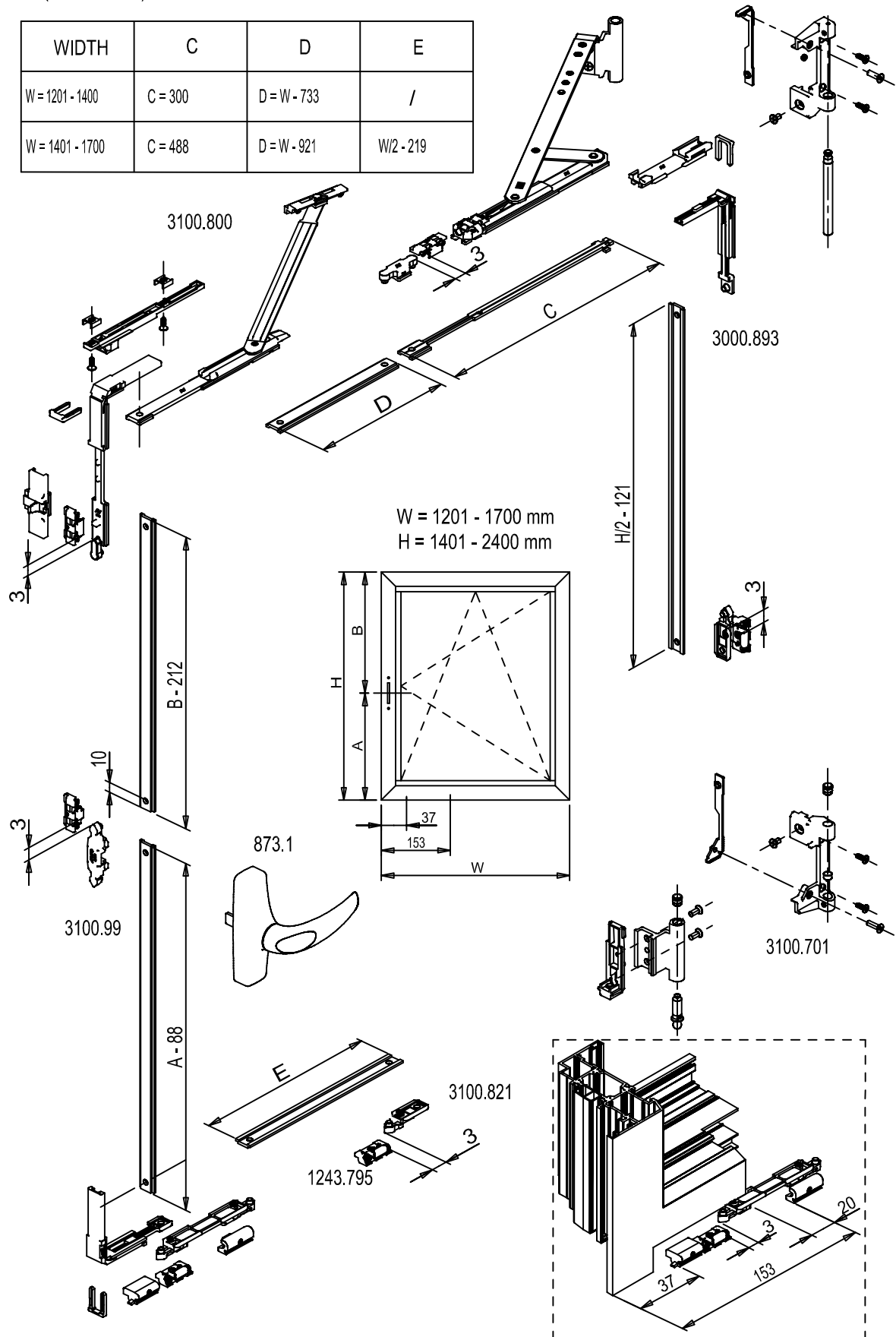


W = 495 - 1200 mm
H = 600 - 1400 mm



C = CUT THE ROD IN CORRECT LENGTH
(SEE TABLE)

WIDTH	C	D	E
W = 1201 - 1400	C = 300	D = W - 733	/
W = 1401 - 1700	C = 488	D = W - 921	W/2 - 219

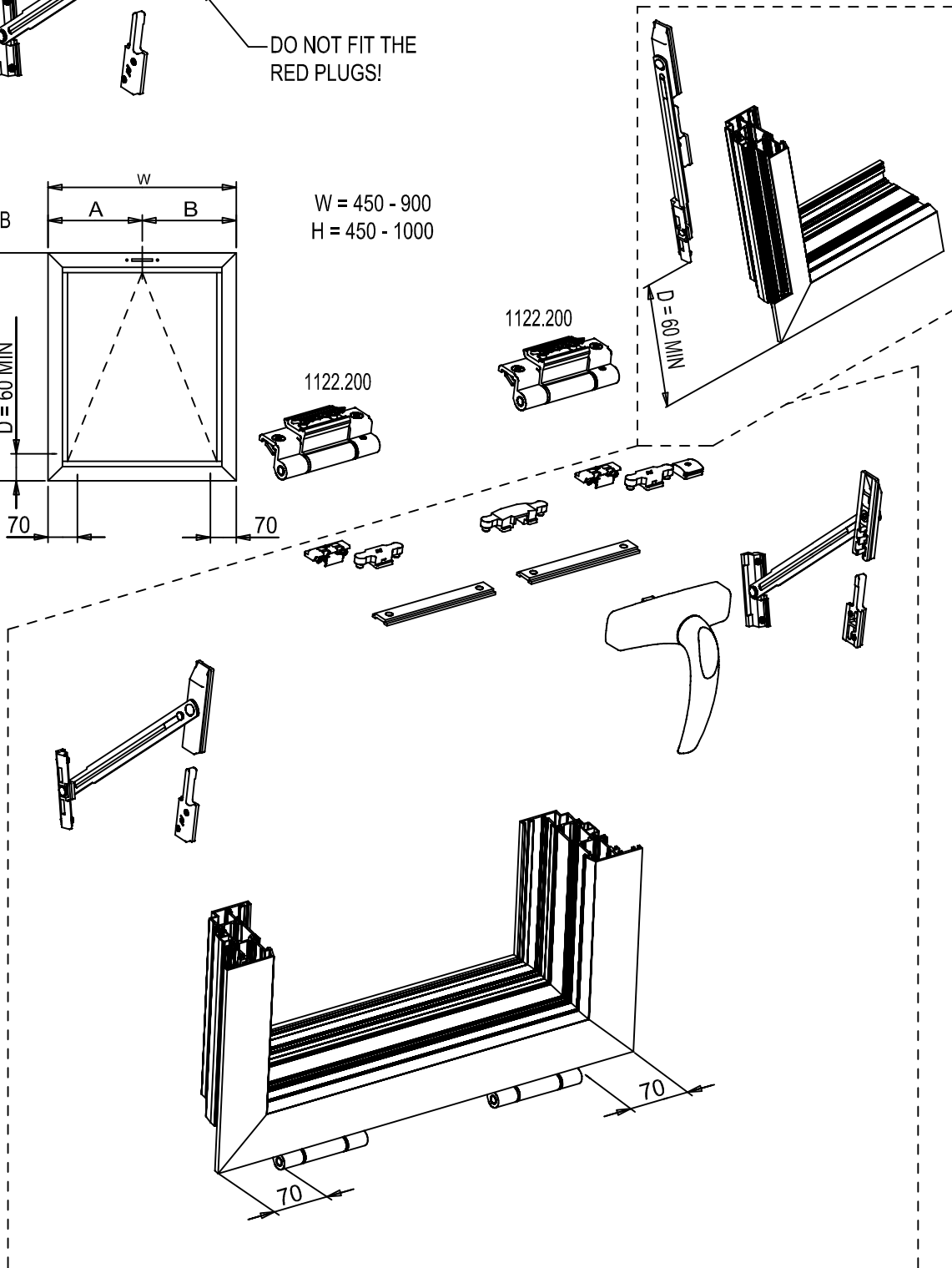
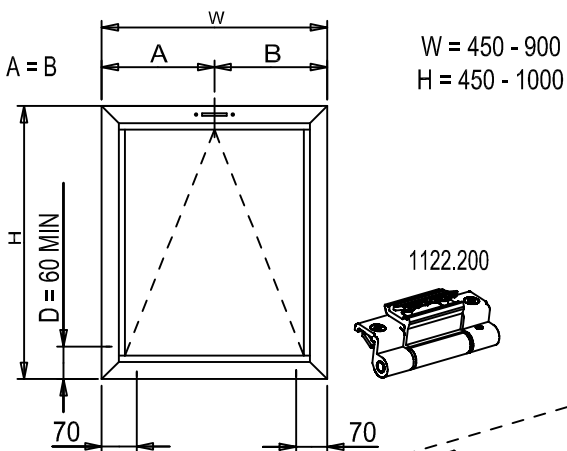
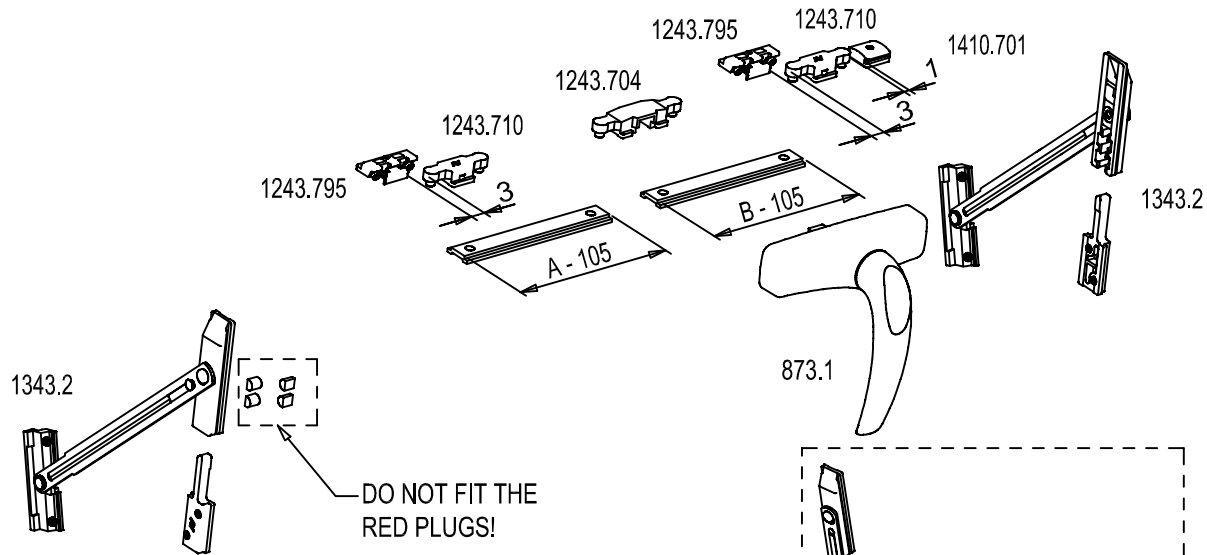


Fittings pack R72-906
W=1201-1700 mm,
H=1401-2400 mm



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R72 3.27



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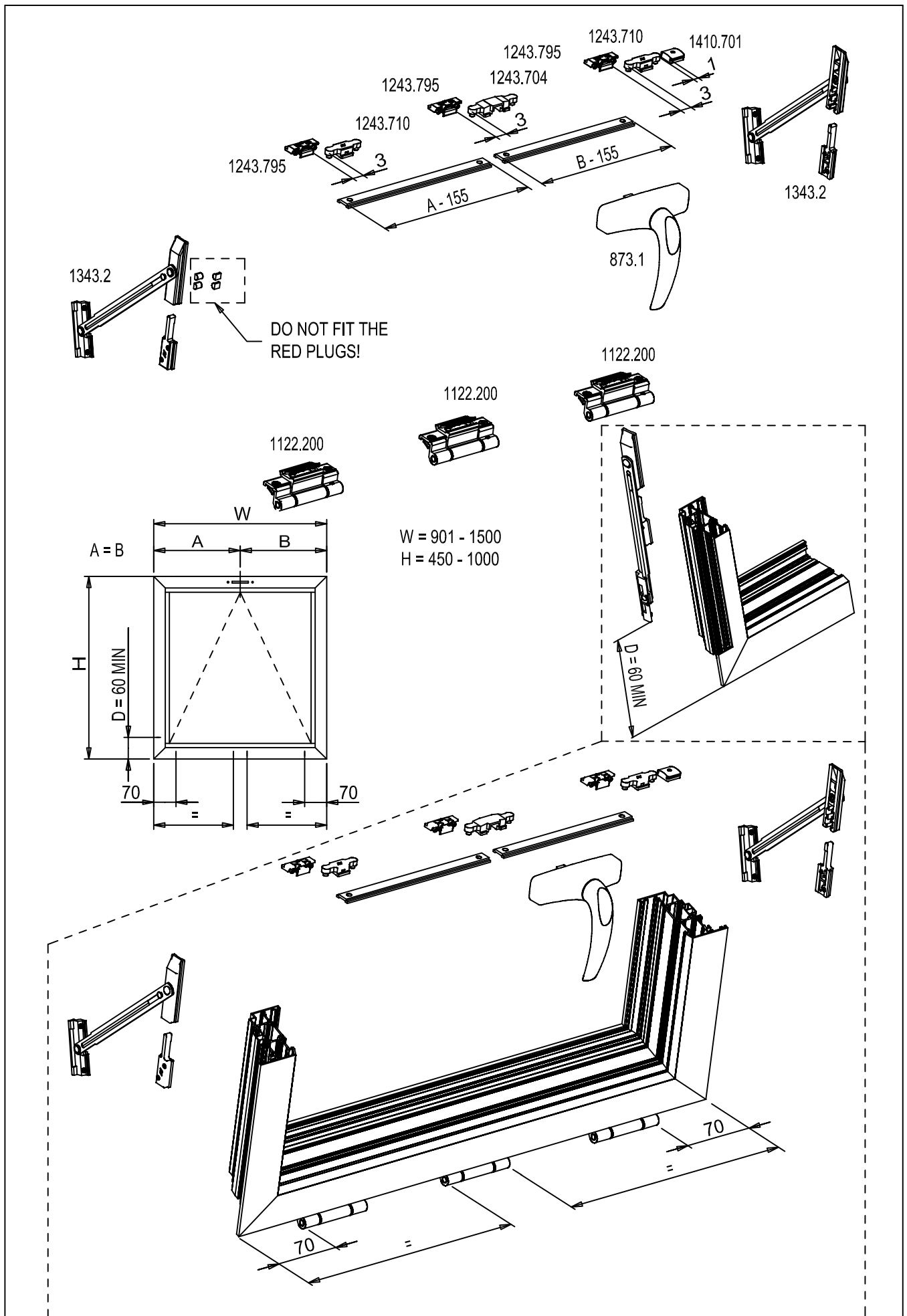
R72 3.28



Fittings pack R72-907



W=1450-900 mm, H=450-1000 mm



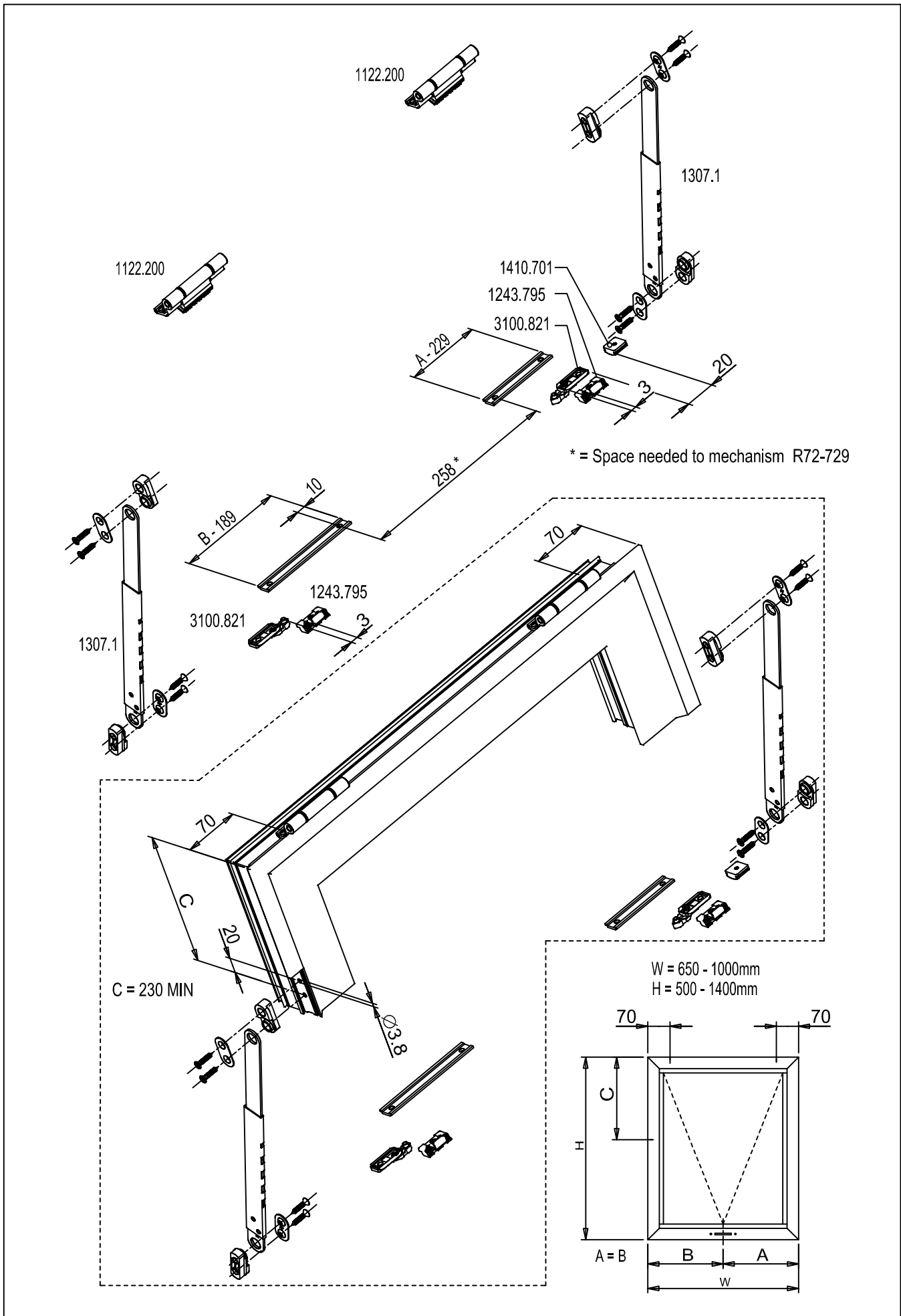
01.07.2013

Fittings pack R72-908
 W=901-1500 mm, H=450-1000 mm



NOKIAN
 PROFILES

R72 3.29

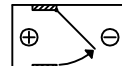


01.07.2013

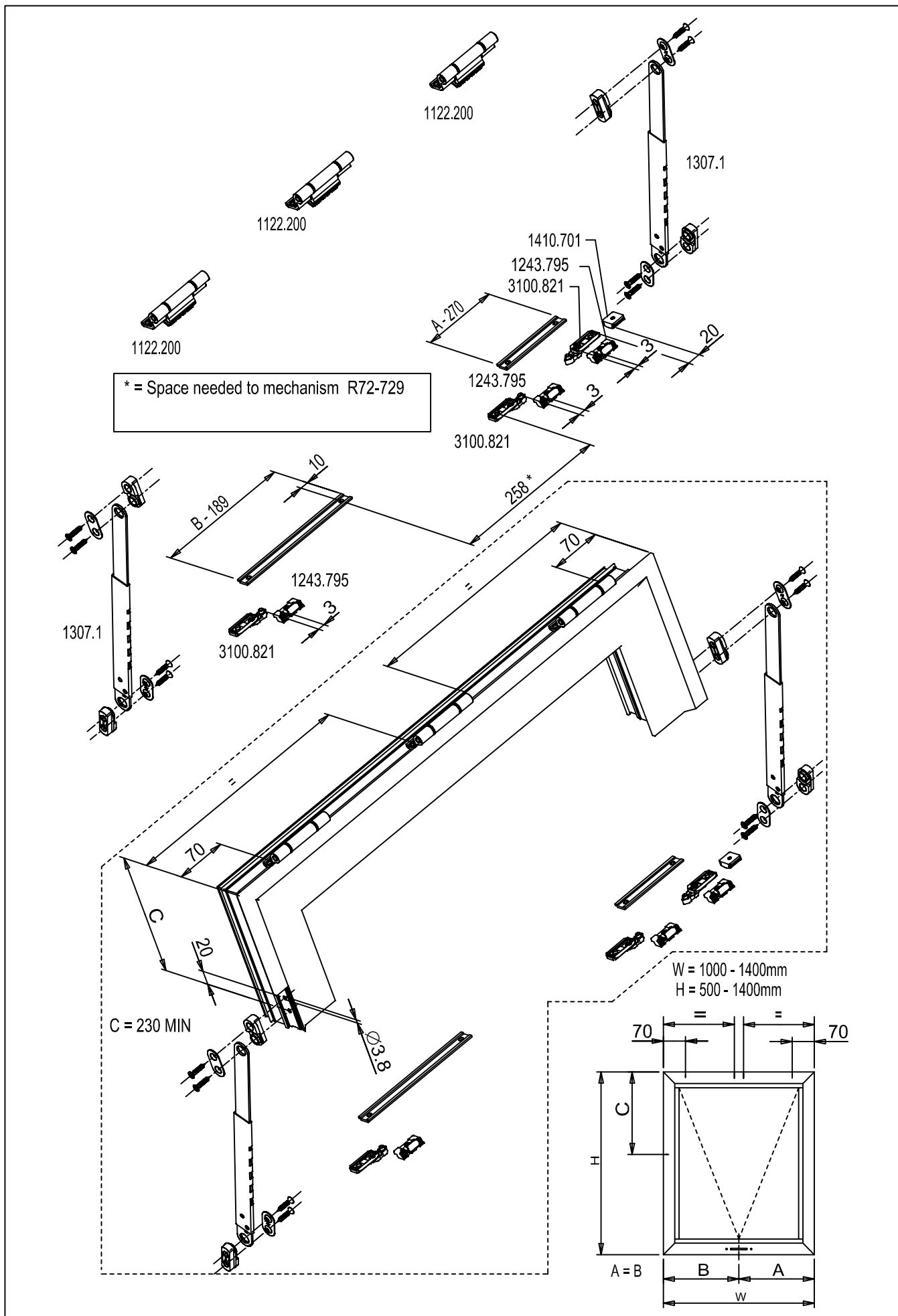
R72 3.30





Fittings pack R72-910



W=650-1000 mm, H=500-1400 mm



Fittings pack R72-911  
W=1000-1400 mm, H=500-1400 mm

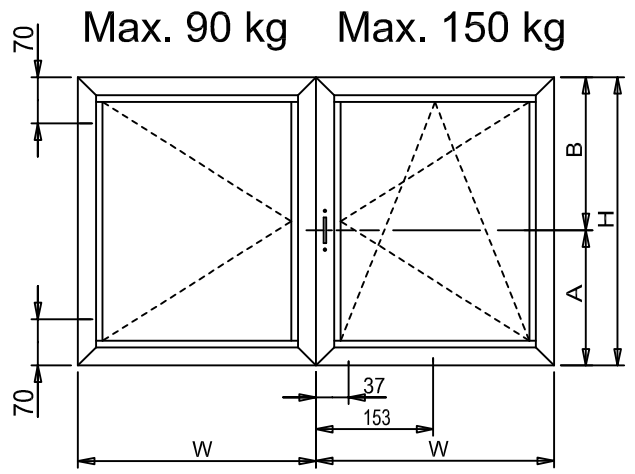
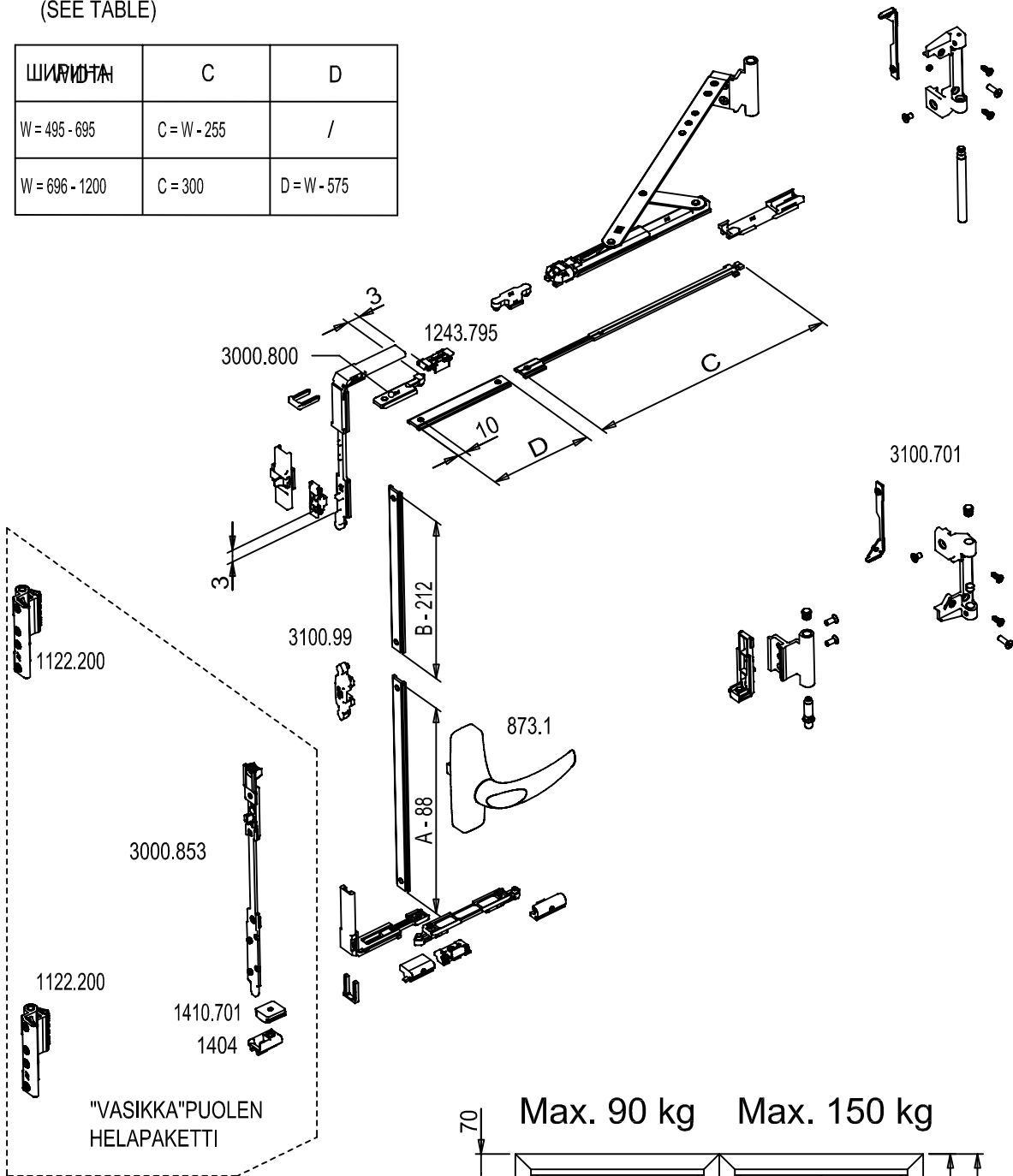
NOKIAN
PROFILES

R72 3.31

01.07.2013

C = CUT THE ROD IN CORRECT LENGTH
(SEE TABLE)

WÄRÄMÄTÄ	C	D
W = 495 - 695	C = W - 255	/
W = 696 - 1200	C = 300	D = W - 575



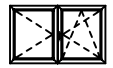
Amin = 350 mm

01.07.2013

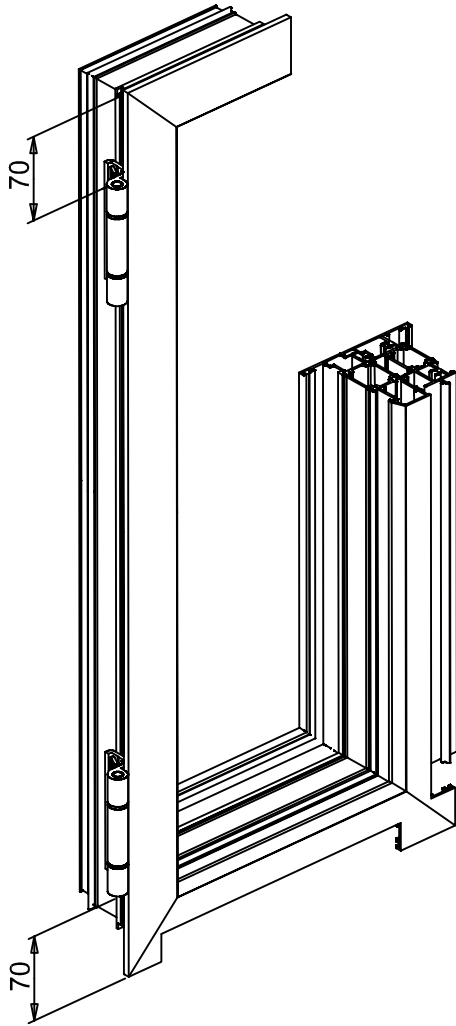
R72 3.32



Fittings pack R72-913
W=495-1200 mm, H=600-1400 mm

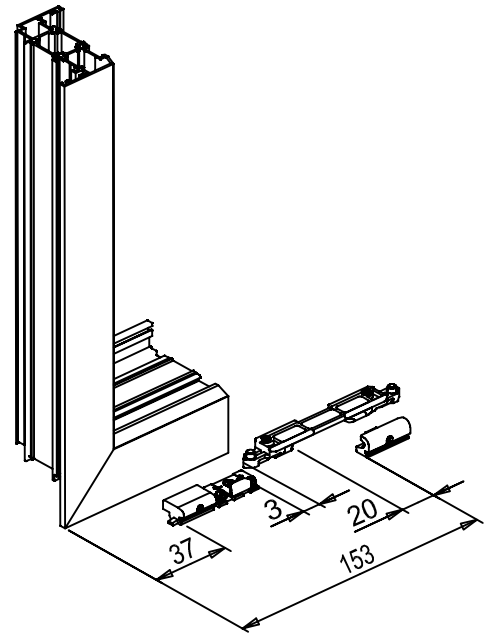


SECONDARY LEAF:



MEASURES FOR HINGES AND LOCKING POINTS

TILT-TURN SASH:



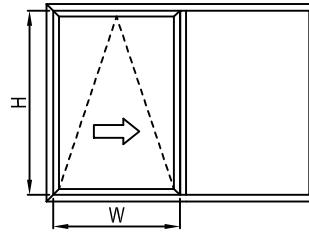
MEASURES FOR HINGES AND LOCKING POINTS

Max. dimensions

W = 900 - 1650 mm
H = 850 - 2400 mm

Max. weight of the sash 150 kg

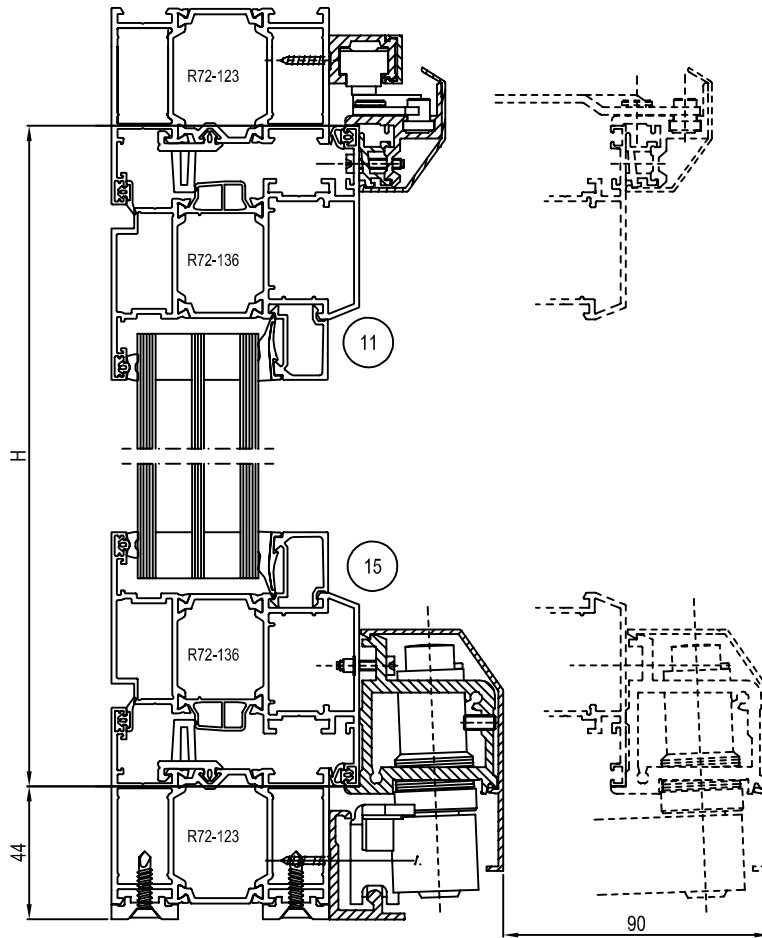
Items in Spazio-sliding window



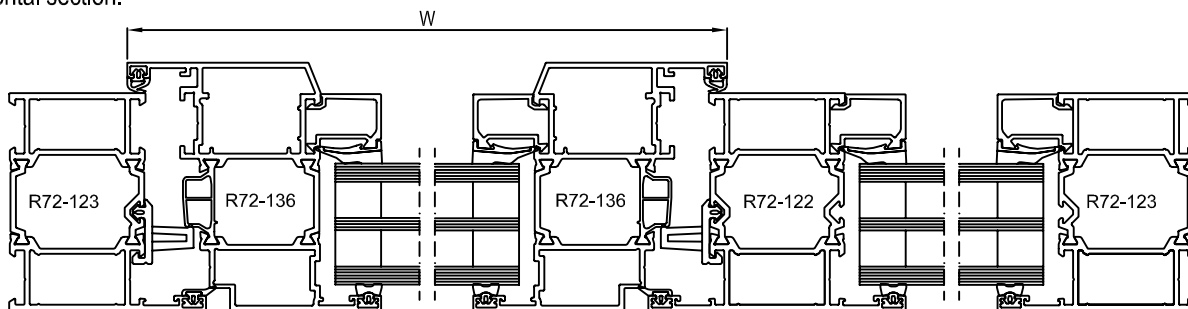
Code:	Item:	Amount / frame
2400.1	Rollers, left handed	Choose
2400.2	Rollers, right handed	
2405	Track (choose by width of the sash)	1 pc
2410	Spazio-basic fittings	1 pc
-	Additional fitting (choose by size of the sash)	*

* to be specified when ordering

Vertical section:



Horizontal section:



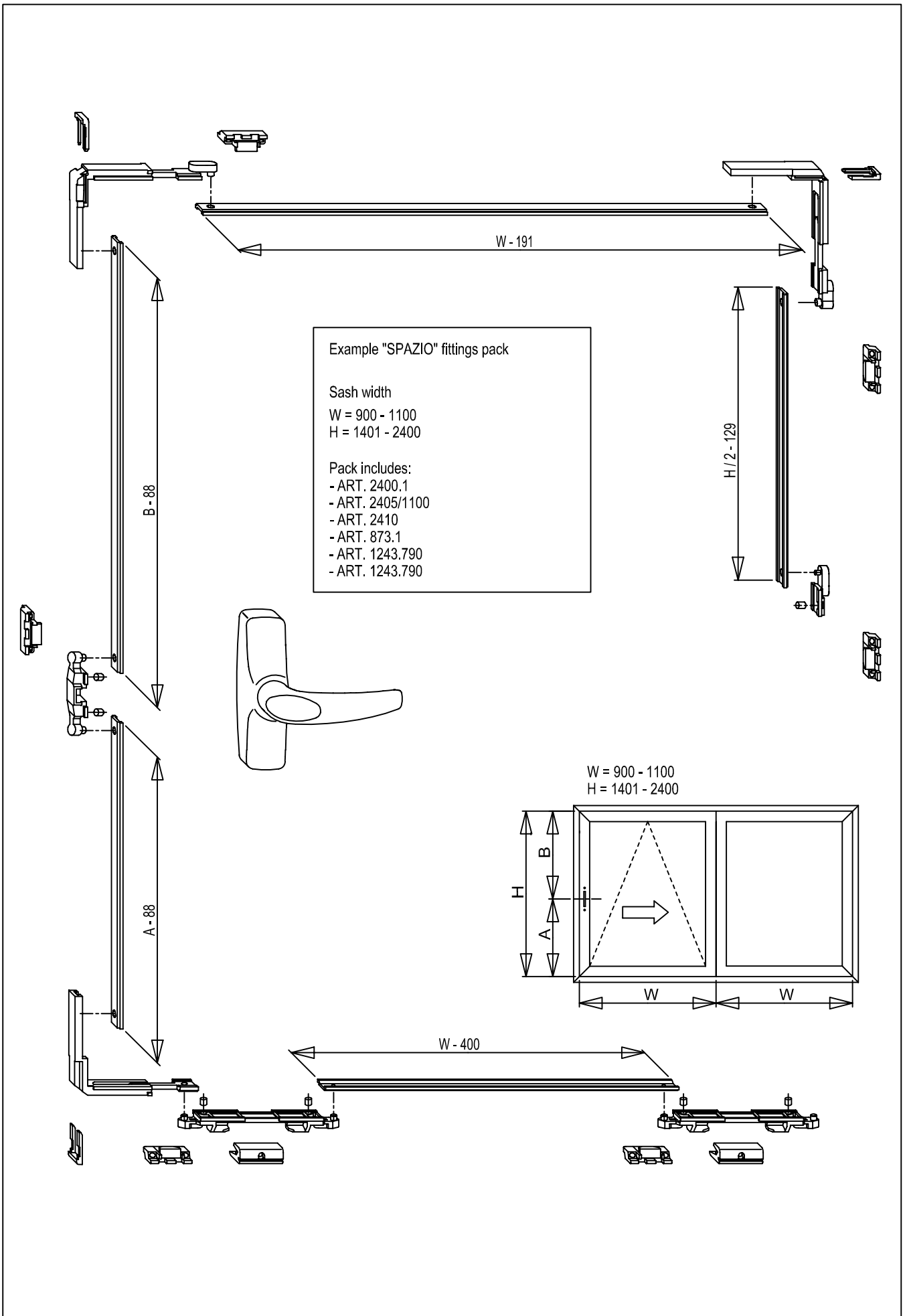
01.07.2013



Spazio-sliding window

W=900-1650 mm, H=850-2400 mm



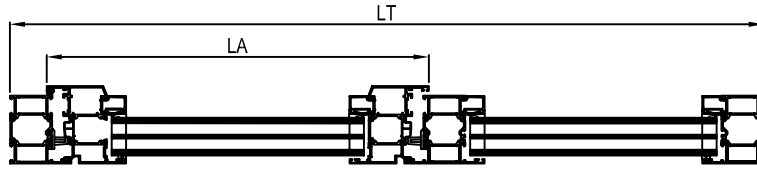


Spazio-sliding mechanism Example fittings

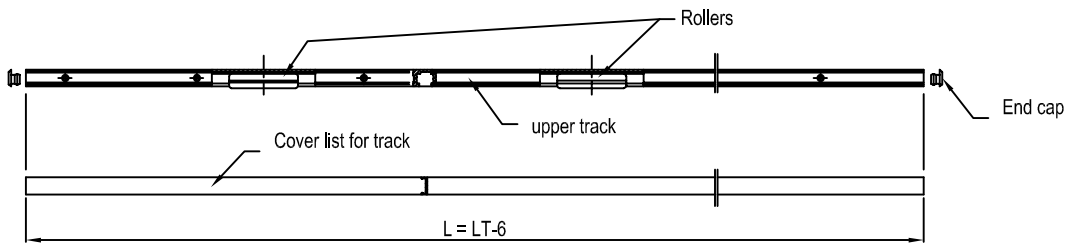


R72 3.35

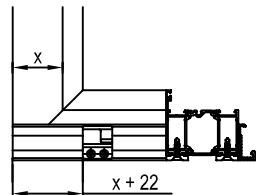
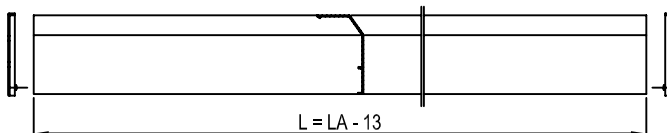
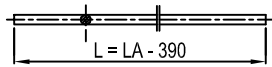
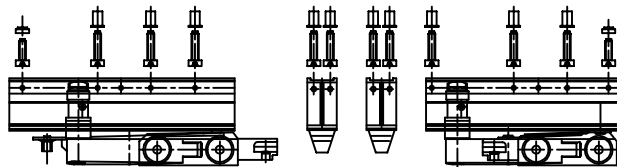
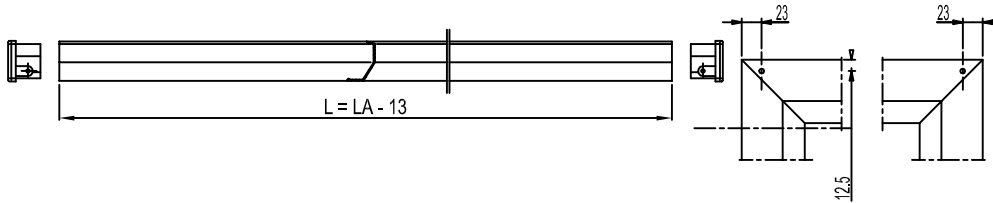
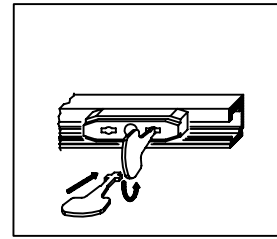
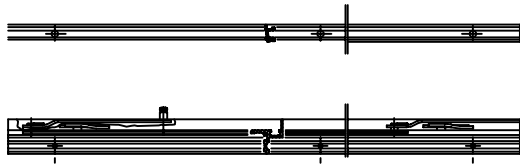
Measures of sliding window



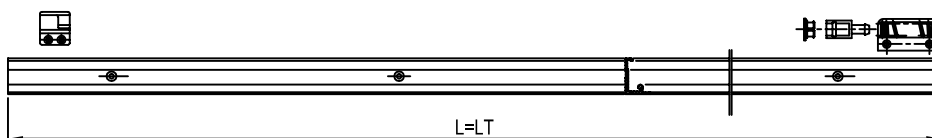
Upper track



Fittings in sash:



Lower track



01.07.2013

R72 3.36

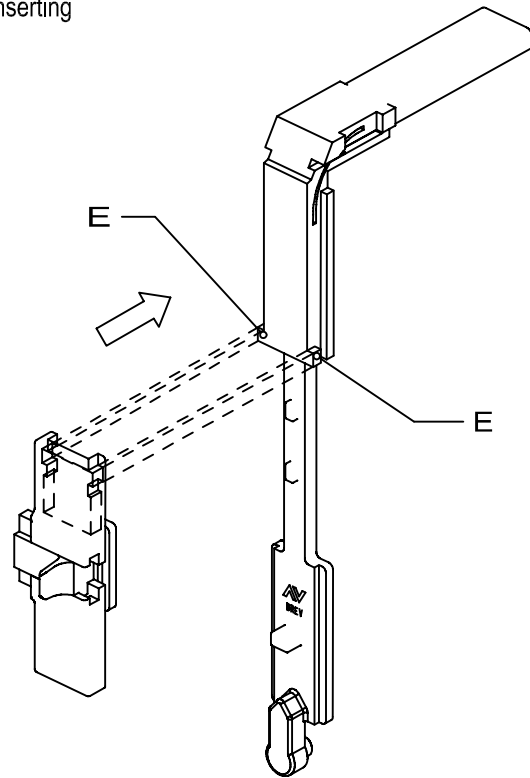


Spazio-fittings for sliding window
Installation of package 2405

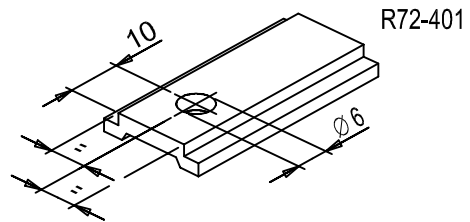


MOVING SASH (Right hand) :

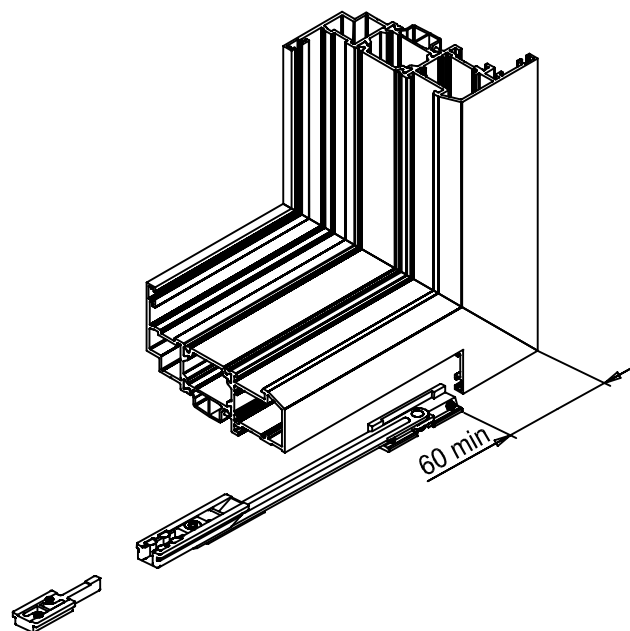
Connect the false manoeuvre device to the corner transmission, inserting lugs (E) into appropriate recesses of the safety device body.



MACHINING CONNECTION ROD R72-401 :



INSTALLATION OF STAY:

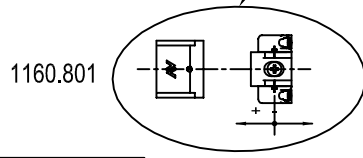
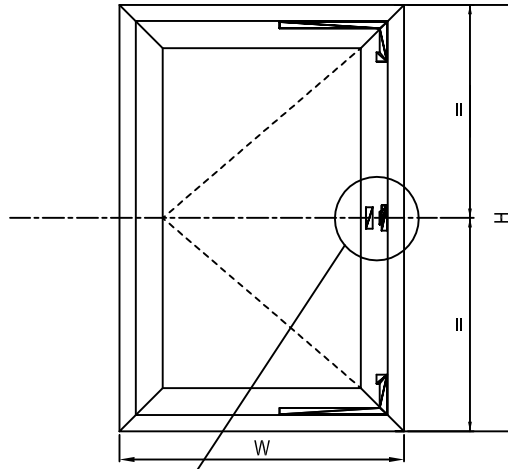


MAX SIZE & WEIGHT OF WINDOW SASH:

Volvo-concealed hinges can be used to replace normal hinges according to table of sizes and weight below

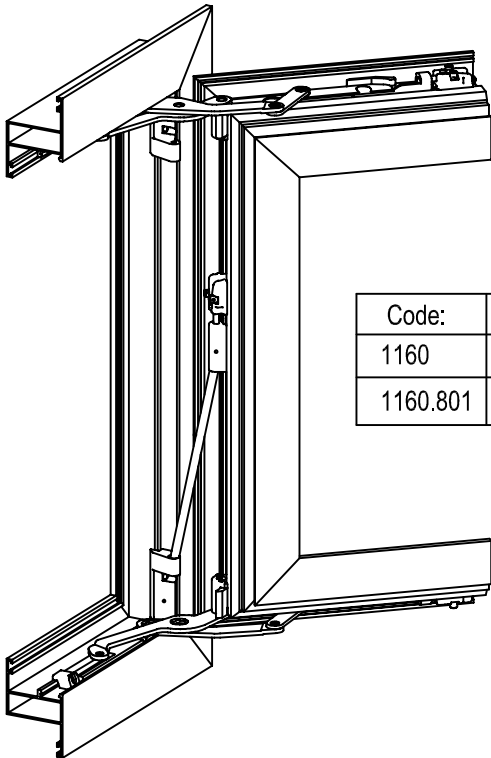
H	2400	●	41	31	24	20	15	11	9
	2300	●	43	32	25	21	15	11	9
	2200	●	45	34	27	21	15	11	9
	2100	●	48	36	28	21	15	11	9
	2000	●	●	38	30	21	15	11	9
	1900	●	●	40	30	21	15	11	9
	1800	●	●	43	30	21	15	11	9
	1700	●	●	45	30	21	15	11	9
	1600	●	●	47	30	21	15	11	9
	1500	●	●	47	30	21	15	11	9
	1400	●	●	47	30	21	15	11	9
	1300	●	●	47	31	21	15	11	9
	1200	●	●	47	31	21	15	11	9
	1100	●	●	48	31	21	15	11	8
	1000	●	●	48	31	21	15	11	8
	900	●	●	48	31	21	15	11	8
800	●	●	49	31	21	15	11	8	
700	●	●	●	32	22	15	11	5	
600	●	●	●	32	22	15	X	X	
500	●	●	●	33	17	X	X	X	
	300	400	500	600	700	800	900	1000	
	W								

W = 450 - 1000 mm
H = 600 - 2400 mm



●	Max glass thickness 50 mm
33	Max glass thickness marked (for example 33 mm)
X	Not possible

PRINCIPLE & INSTALLATION:



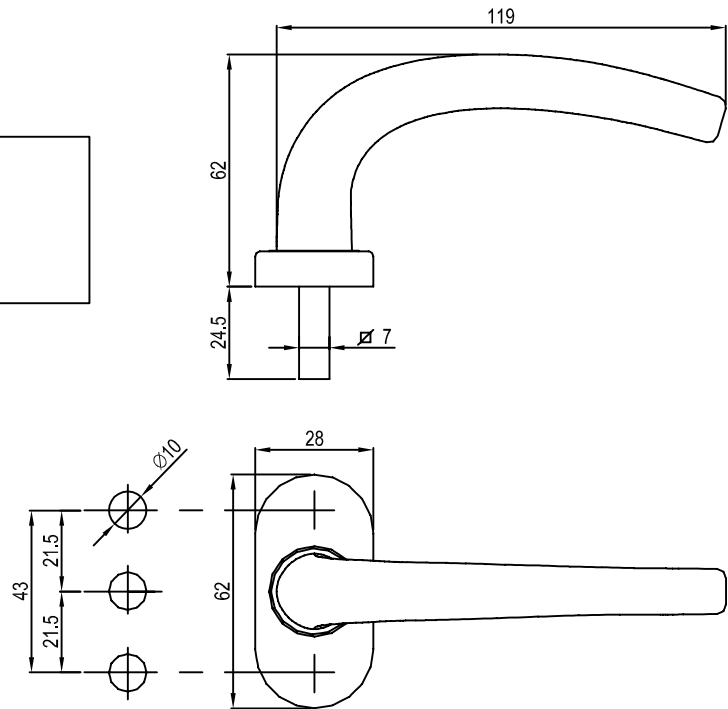
		Sash height	
Code:	Item:	600-1400	1401-2400
1160	Volvo-concealed hinge serie	X	X
1160.801	Extra support		X

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HANDLE 1604:

Gearbox to be used with the handle:
- 1200/7

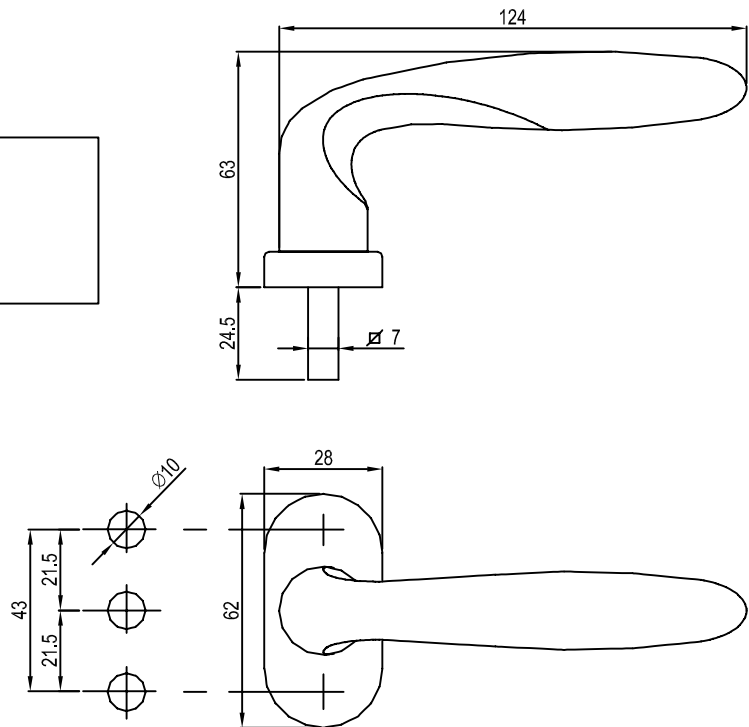
See Page 3.41



HANDLES 1605:

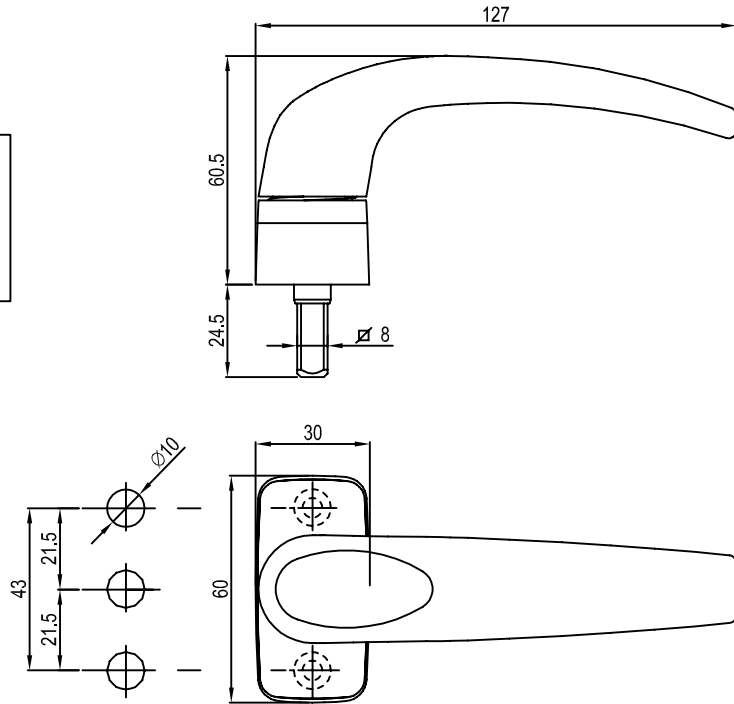
Gearbox to be used with the handle:
- 1200/7

See Page 3.41

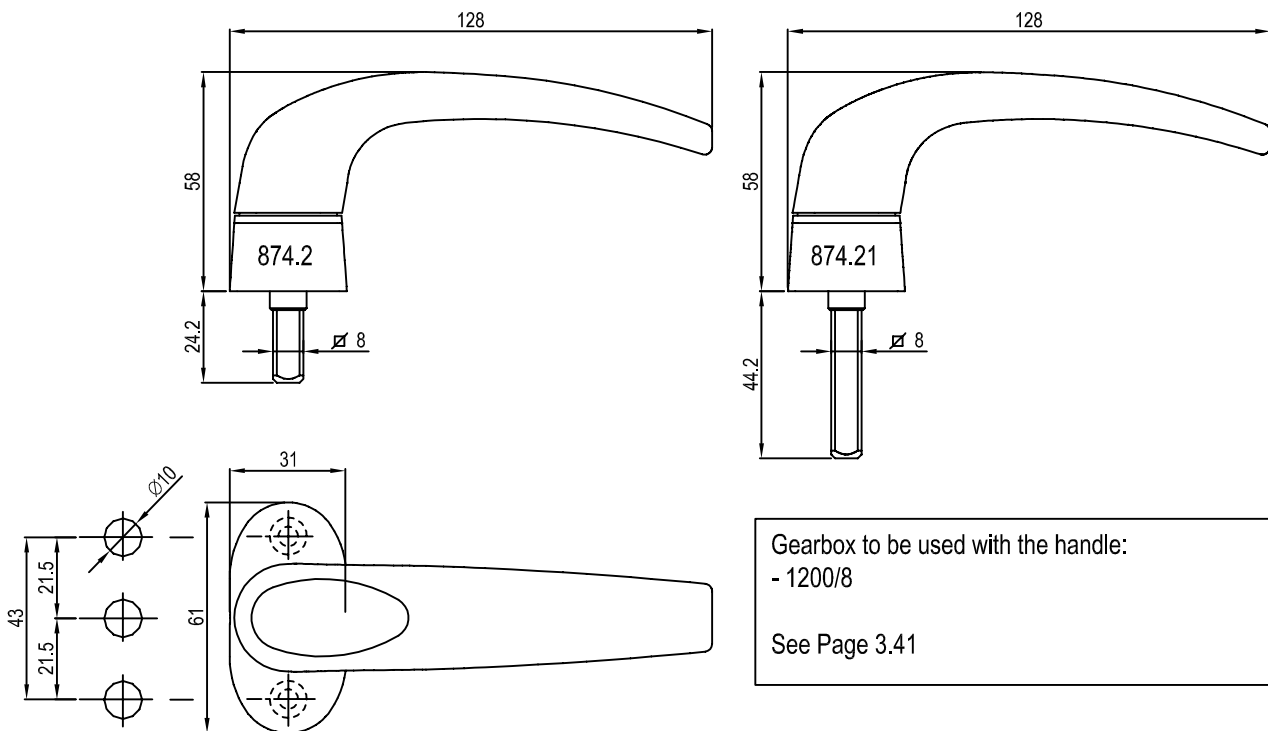


HANDLE 874.1:

Gearbox to be used with the handle:
- 1200/8
See Page 3.41



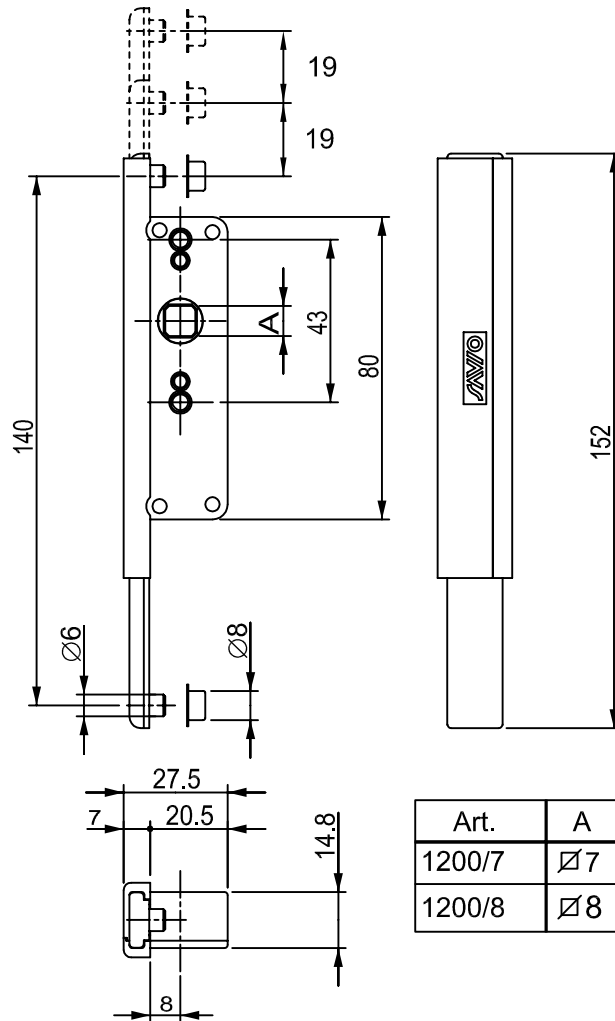
HANDLES 874.2 & 874.21:



Gearbox to be used with the handle:
- 1200/8
See Page 3.41

MECHANISMS 1200/7 & 1200/8:

1200/7,8



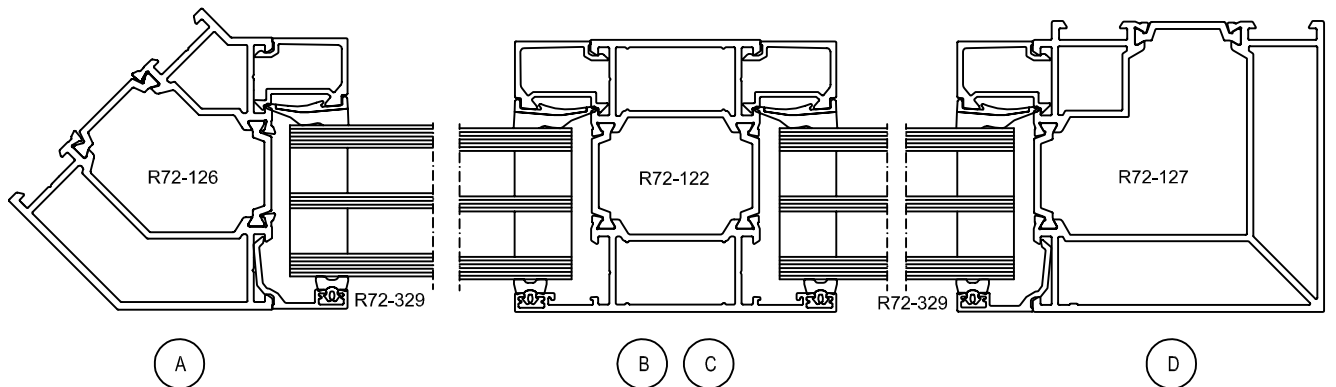
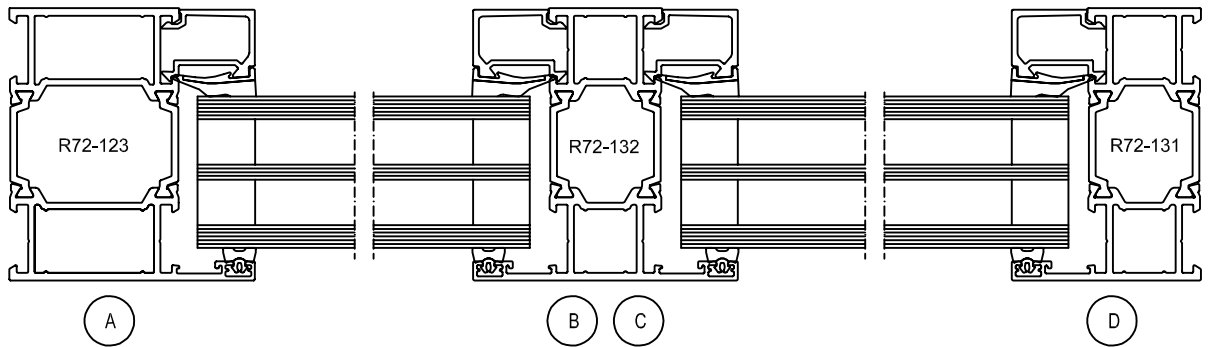
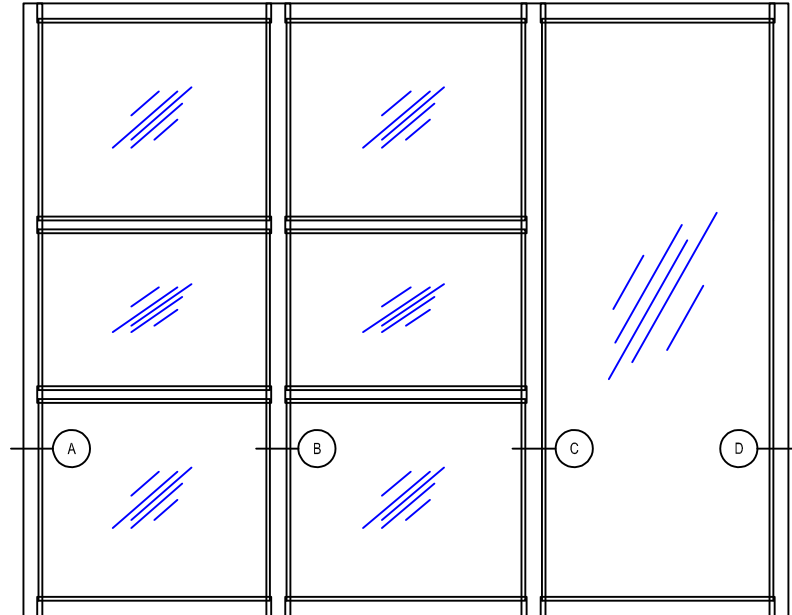
01.07.2013

Hidden mechanisms for handles
Spindle 7 & 8 mm

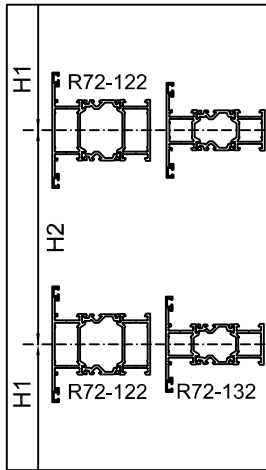
NOKIAN
PROFILES

R72 3.41

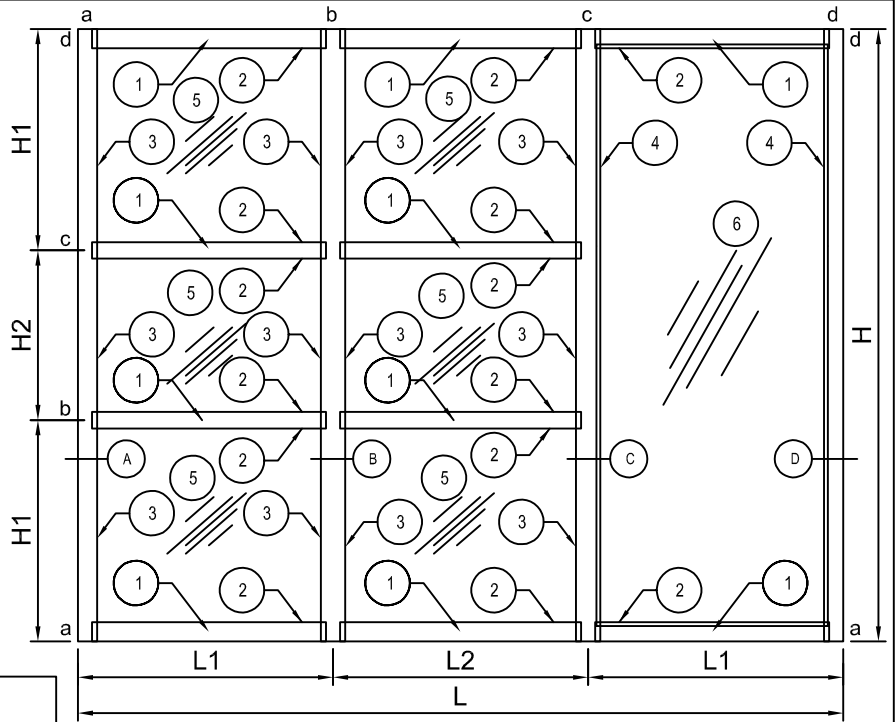
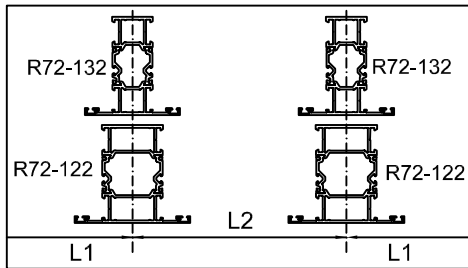
4. Walls



DIMENSIONS H1 & H2:



DIMENSIONS L1 & L2:



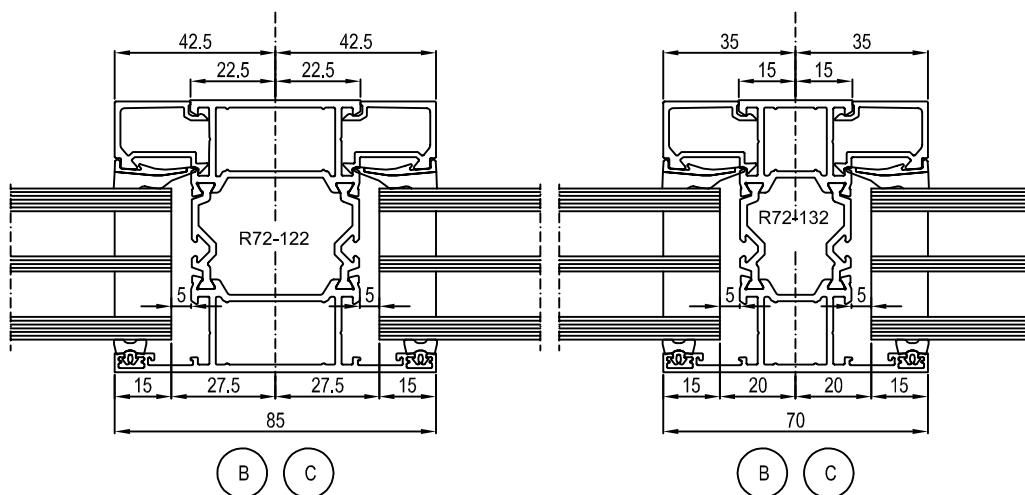
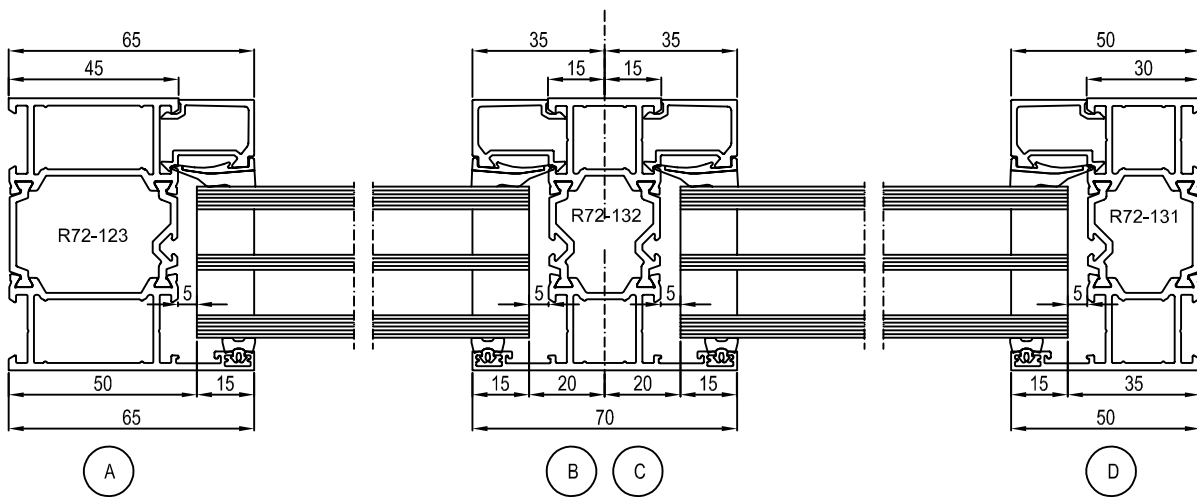
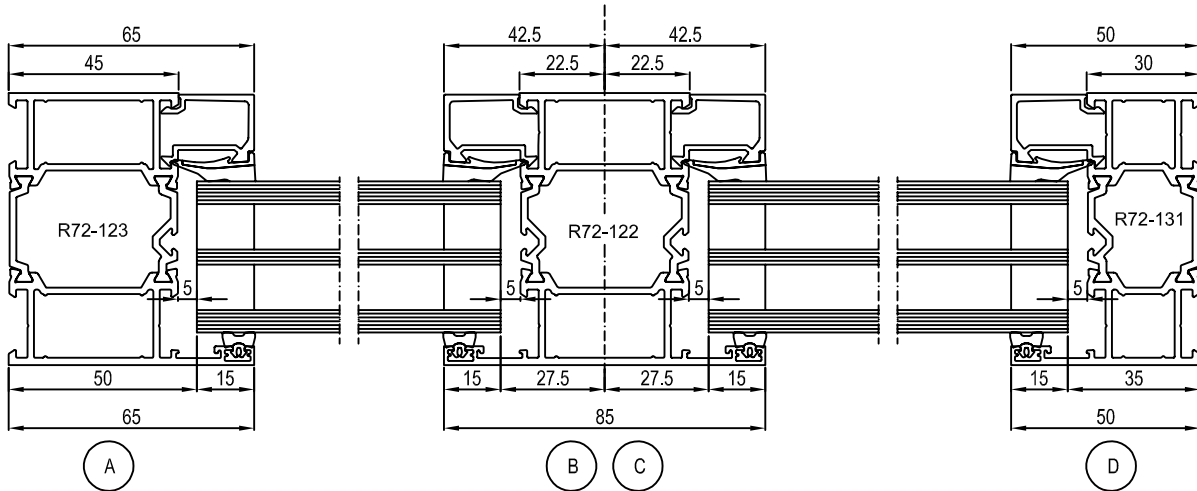
Horizontal and vertical cutting dimensions

No:	Part:	Horizontal and vertical cutting dimensions						Corners: Kulmat:	
		a, d		b		c			
		R72-123	R72-131	R72-122	R72-132	R72-122	R72-132		
1	Frame profiles: 	L1-67.5		L2-45				90 / 90°	
		H1-67.5		H2-45					
			L1-52.5		L2-37.5				
			H1-52.5		H2-37.5				
2,3	Glazing beads 	L1-60		L2-37.5				90 / 90°	
		H1-60		H2-37.5					
			L1-45		L2-30				
			H1-45		H2-30				
4	Glazing beads 	L1-67.5		L2-45				90 / 90°	
		H1-107.5		H2-85					
			L1-52.5		L2-37.5				
			H1-92.5		H2-77.5				
5	Glasses 	L1-60		L2-37.5				90 / 90°	
		H1-100		H2-77.5					
			L1-45		L2-30				
			H1-85		H2-70				
6	Glasses 	H-130	H-100					90 / 90°	
		H-115							
		L1-77.5		L2-55					
		H1-77.5		H2-55					
7	Glasses 		L1-62.5		L2-47.5			90 / 90°	
			H1-62.5		H2-47.5				
			L1-70		L2-47.5				
			H1-70		H2-47.5				
8	Glasses 		L1-55		L2-40			90 / 90°	
			H1-55		H2-40				
			L1-55		L2-40				
			H1-55		H2-40				
9	Glasses 	H-100	H-70					90 / 90°	
		H-85							

01.07.2013

Glass wall
Cutting dimensions



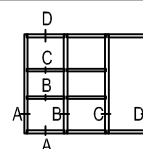


01.07.2013

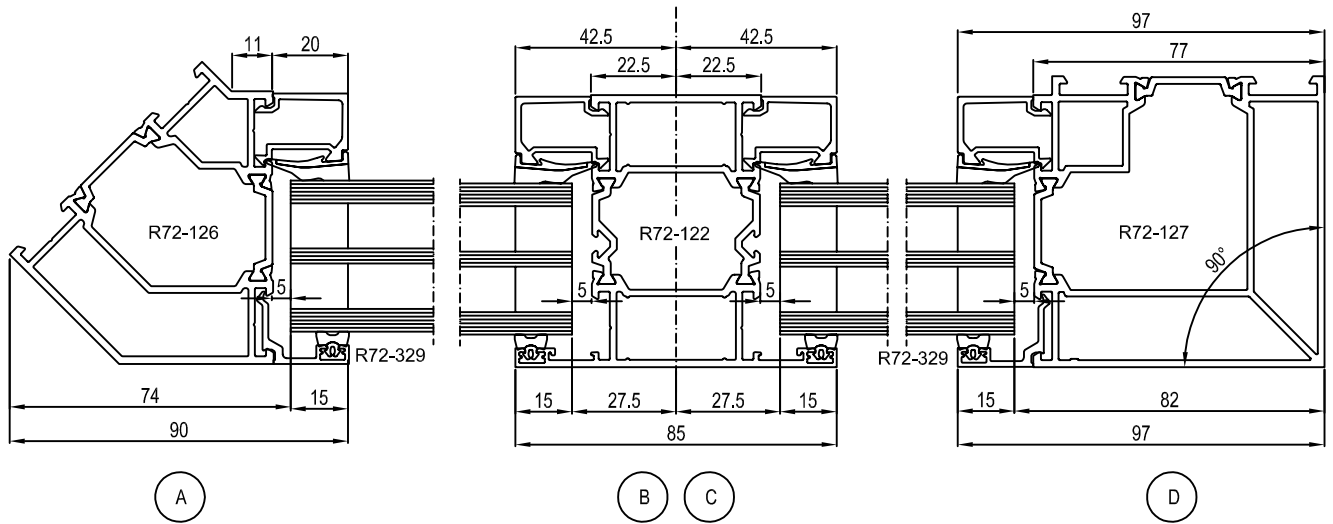
R72 4.2



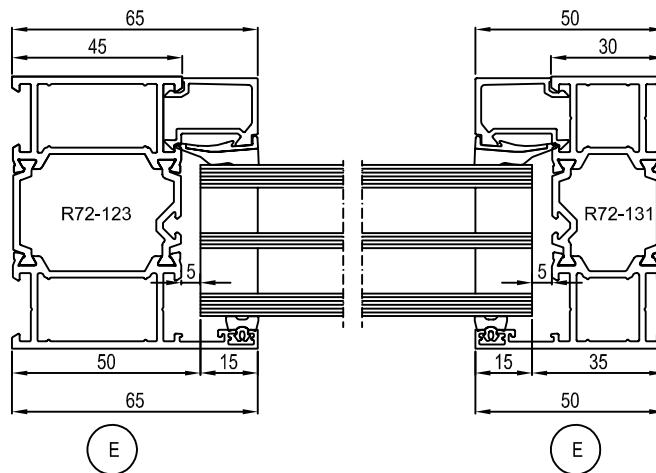
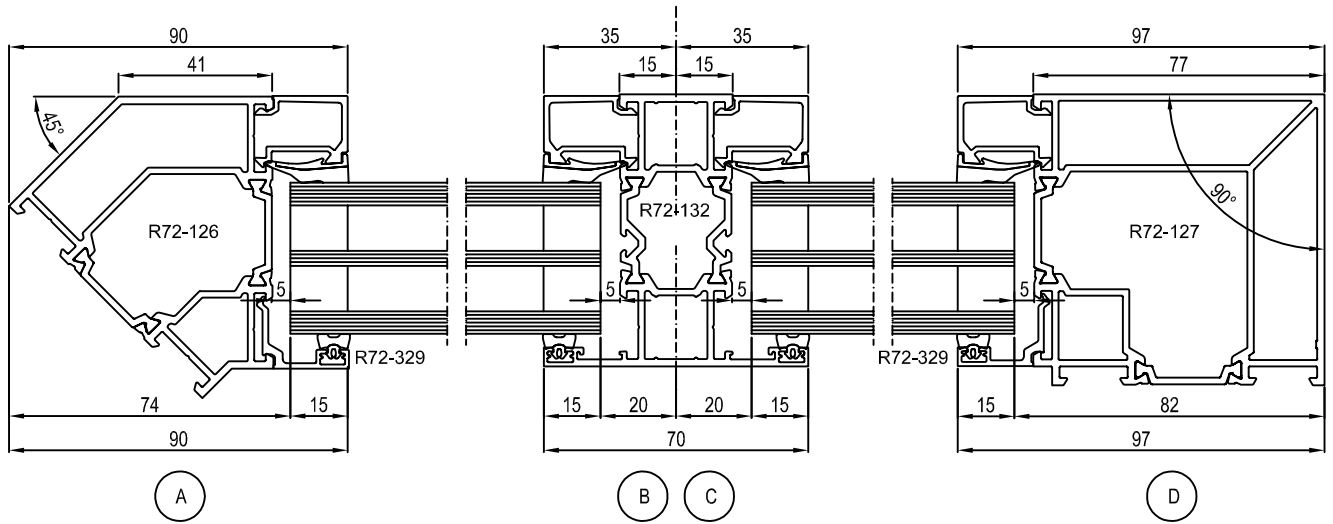
Glass wall
Details A...D



CORNER PROFILES R72-126 & R72-127 / OUTSIDE CORNERS:



CORNER PROFILES R72-126 & R72-127 / INSIDE CORNERS:

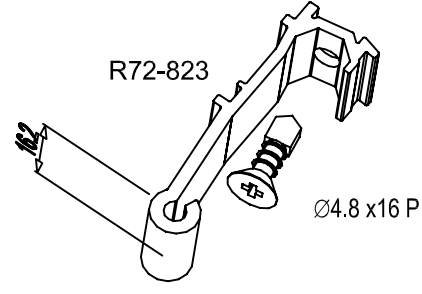
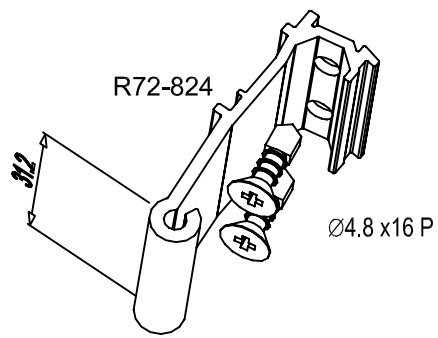


R72-122
R72-123
R72-128

→ R72-824

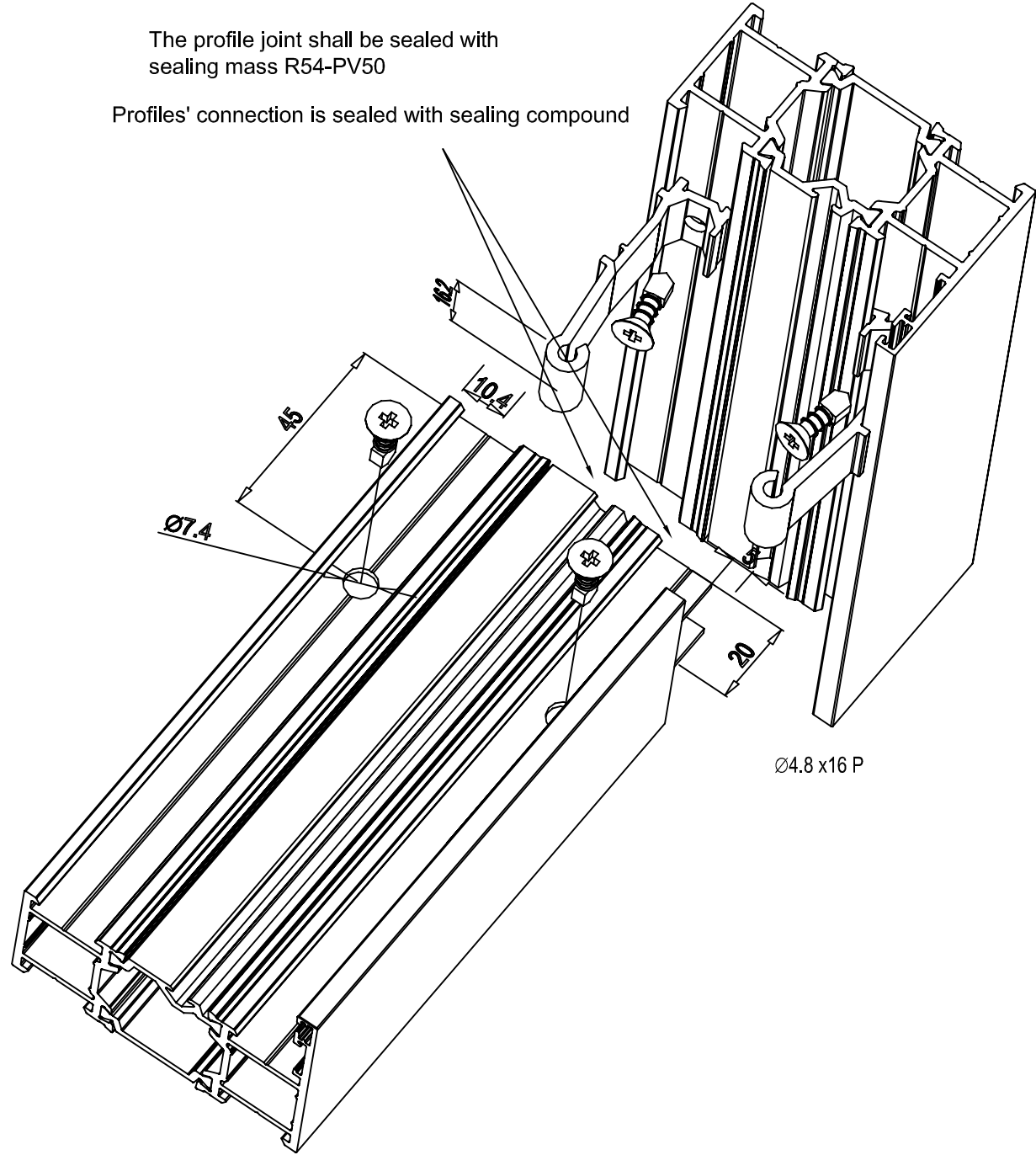
R72-131
R72-132
R72-133

→ R72-823



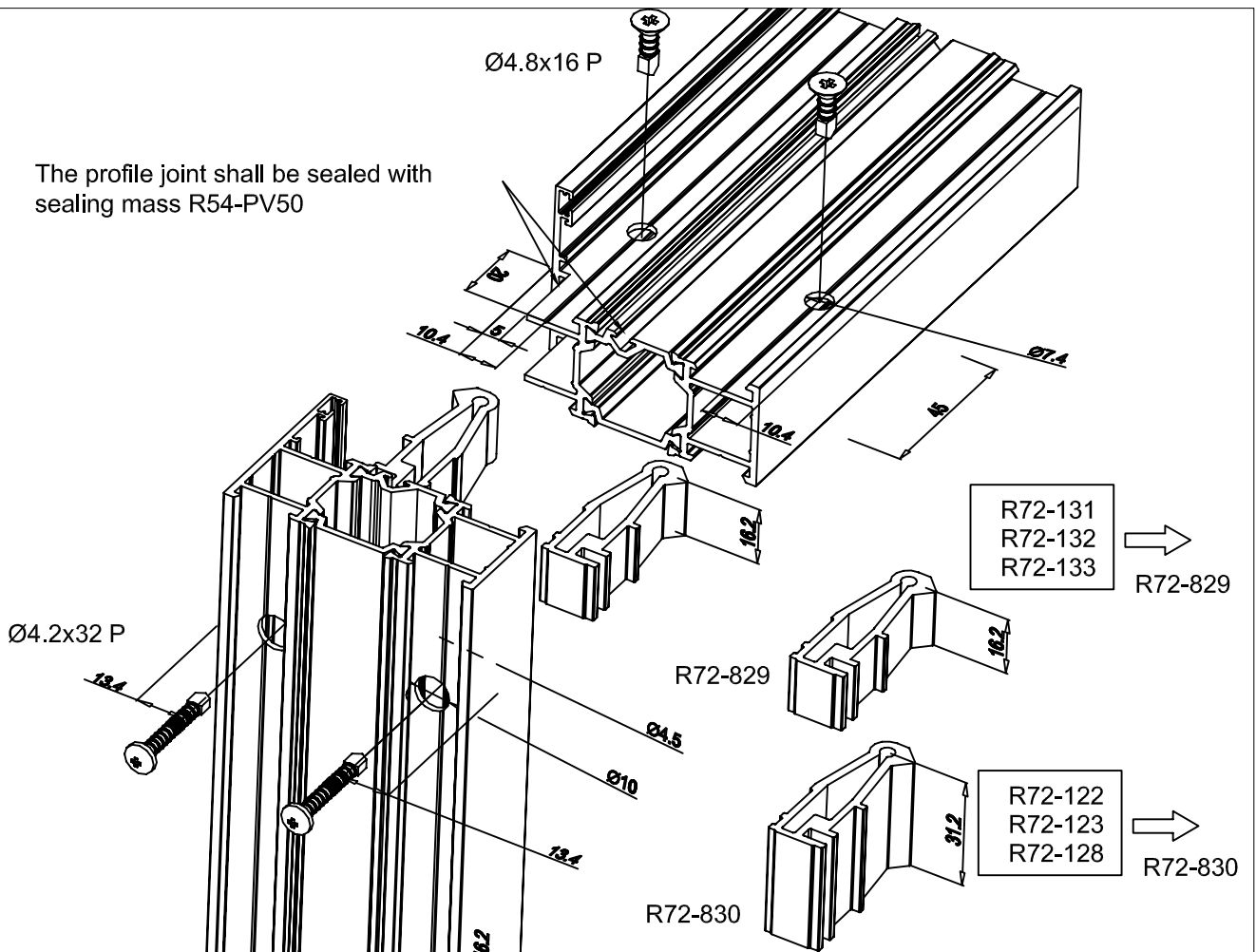
The profile joint shall be sealed with sealing mass R54-PV50

Profiles' connection is sealed with sealing compound

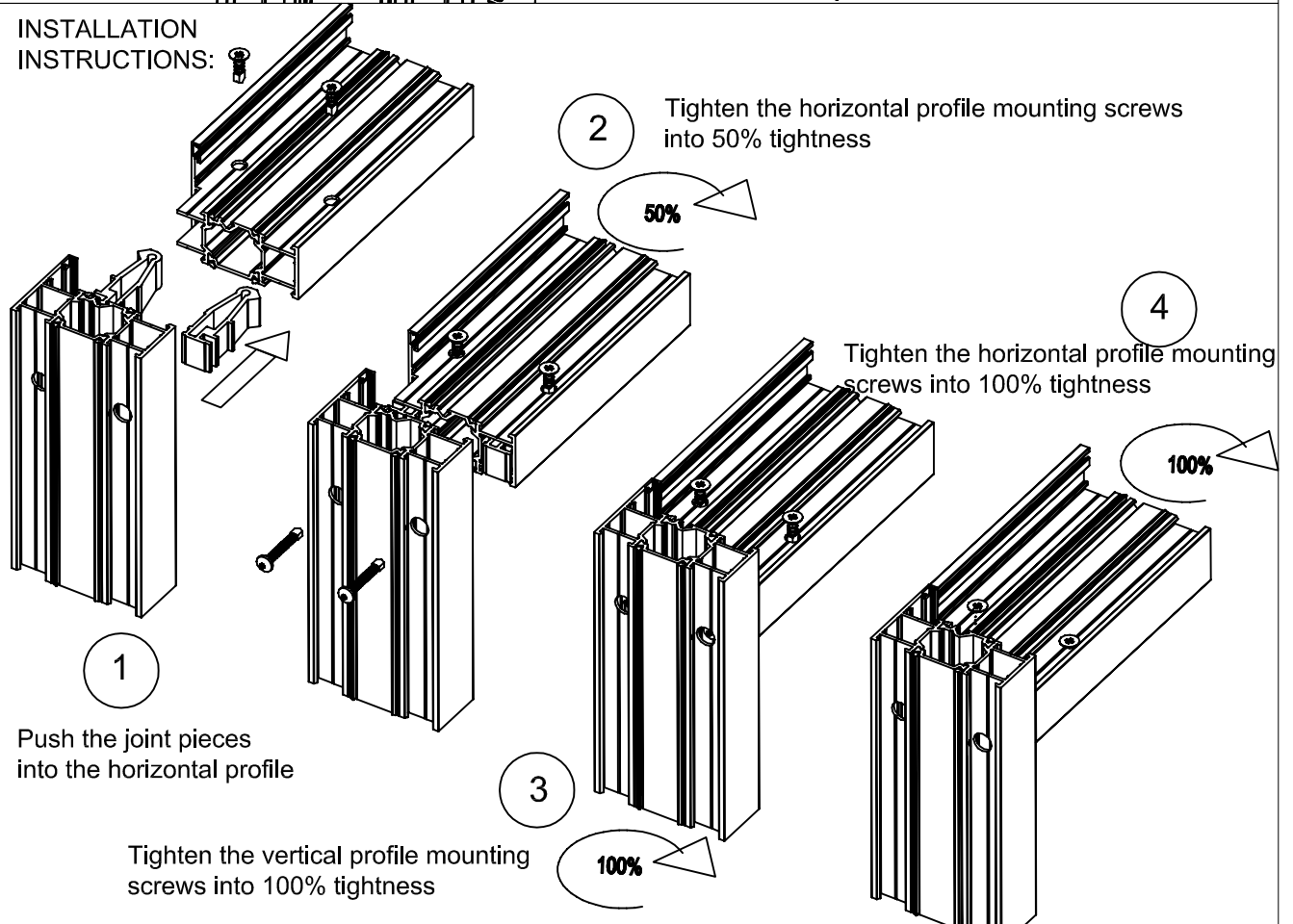


01.07.2013

The profile joint shall be sealed with sealing mass R54-PV50

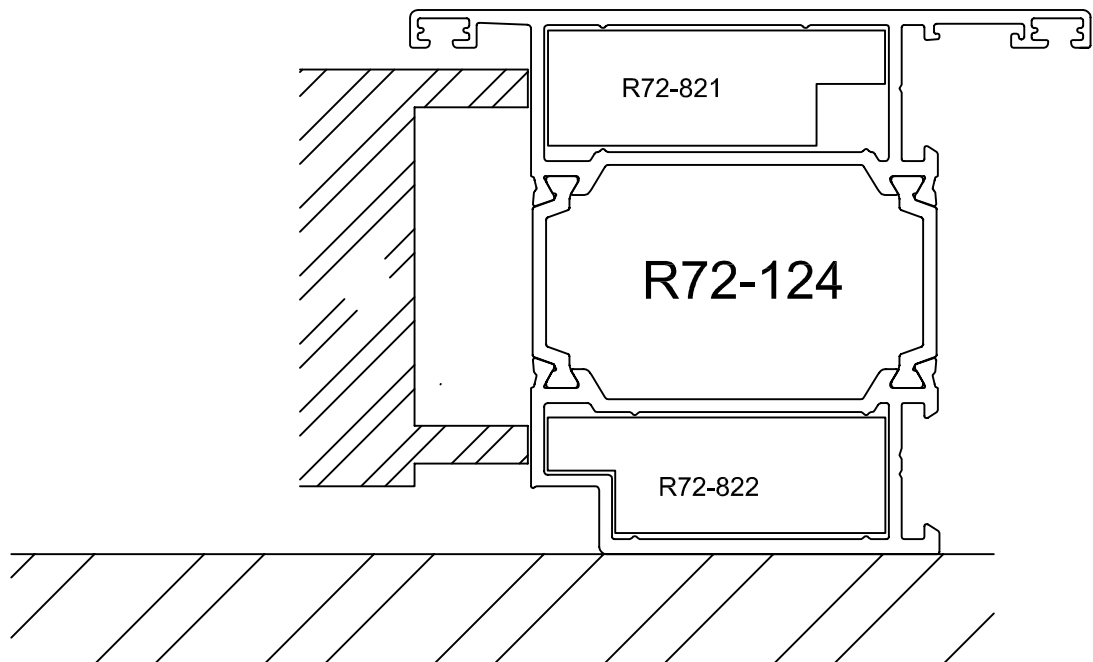
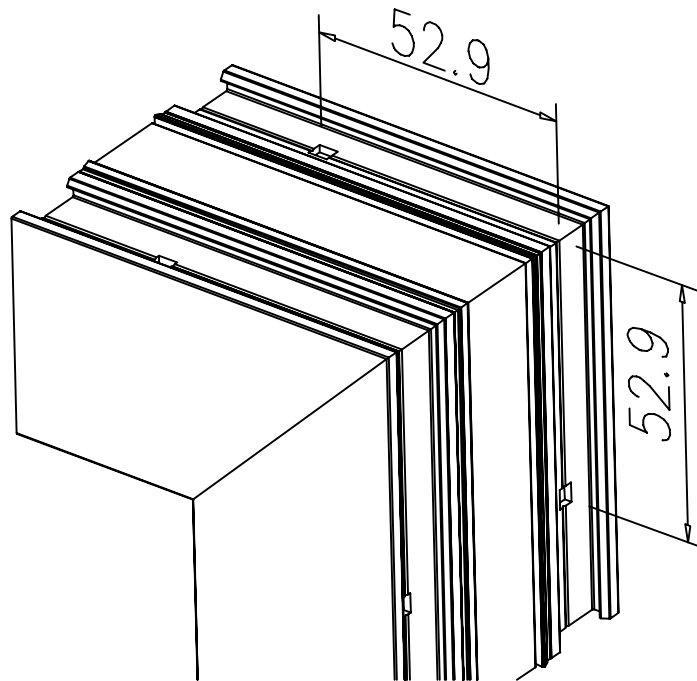


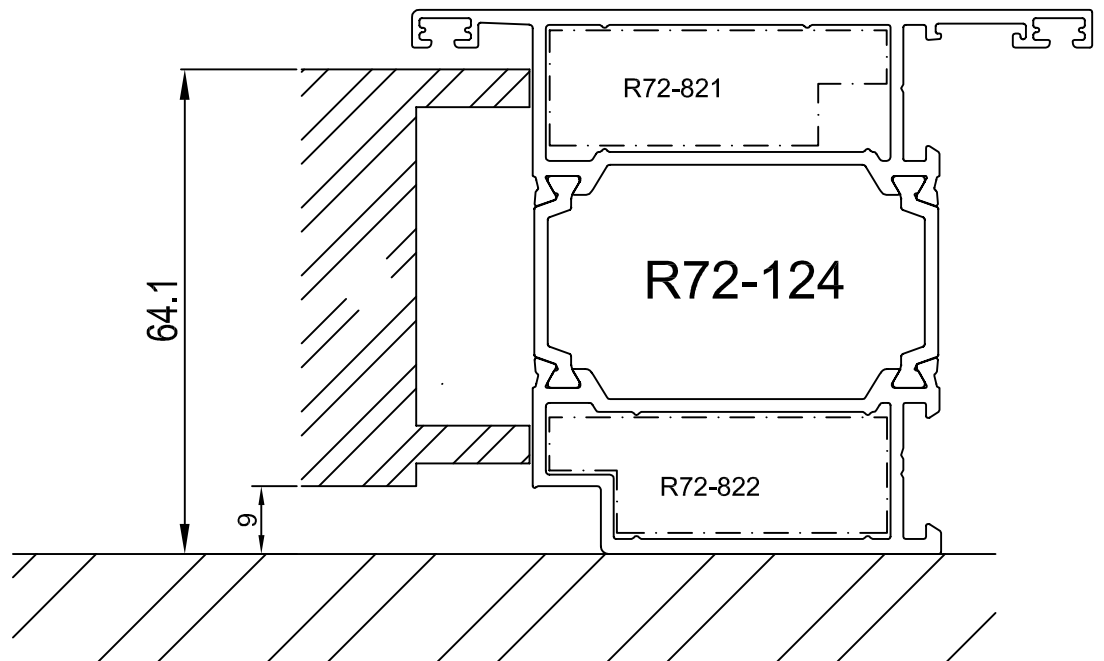
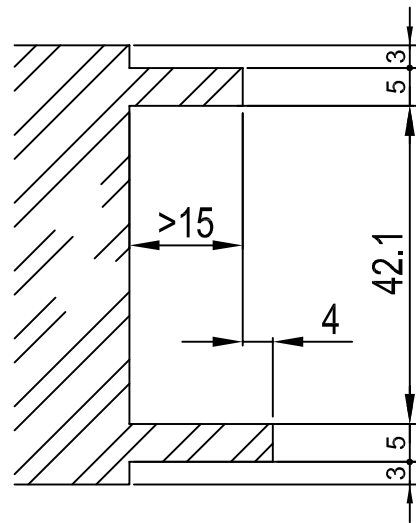
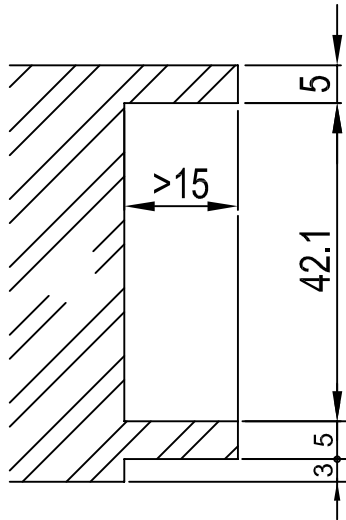
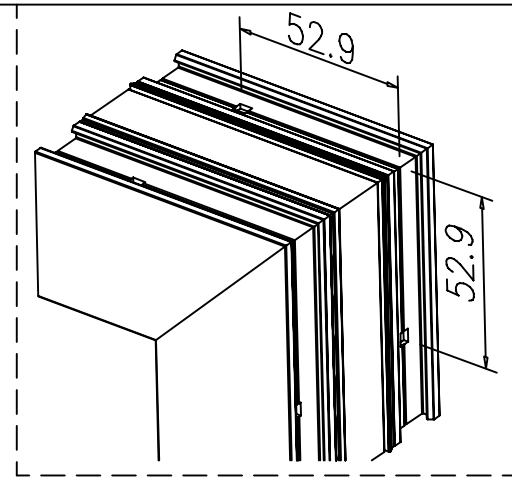
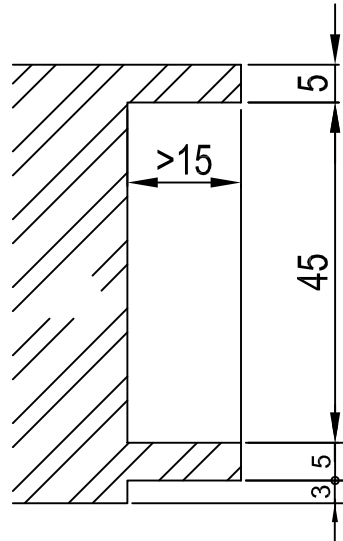
INSTALLATION INSTRUCTIONS:



01.07.2013

5. Corner pressing



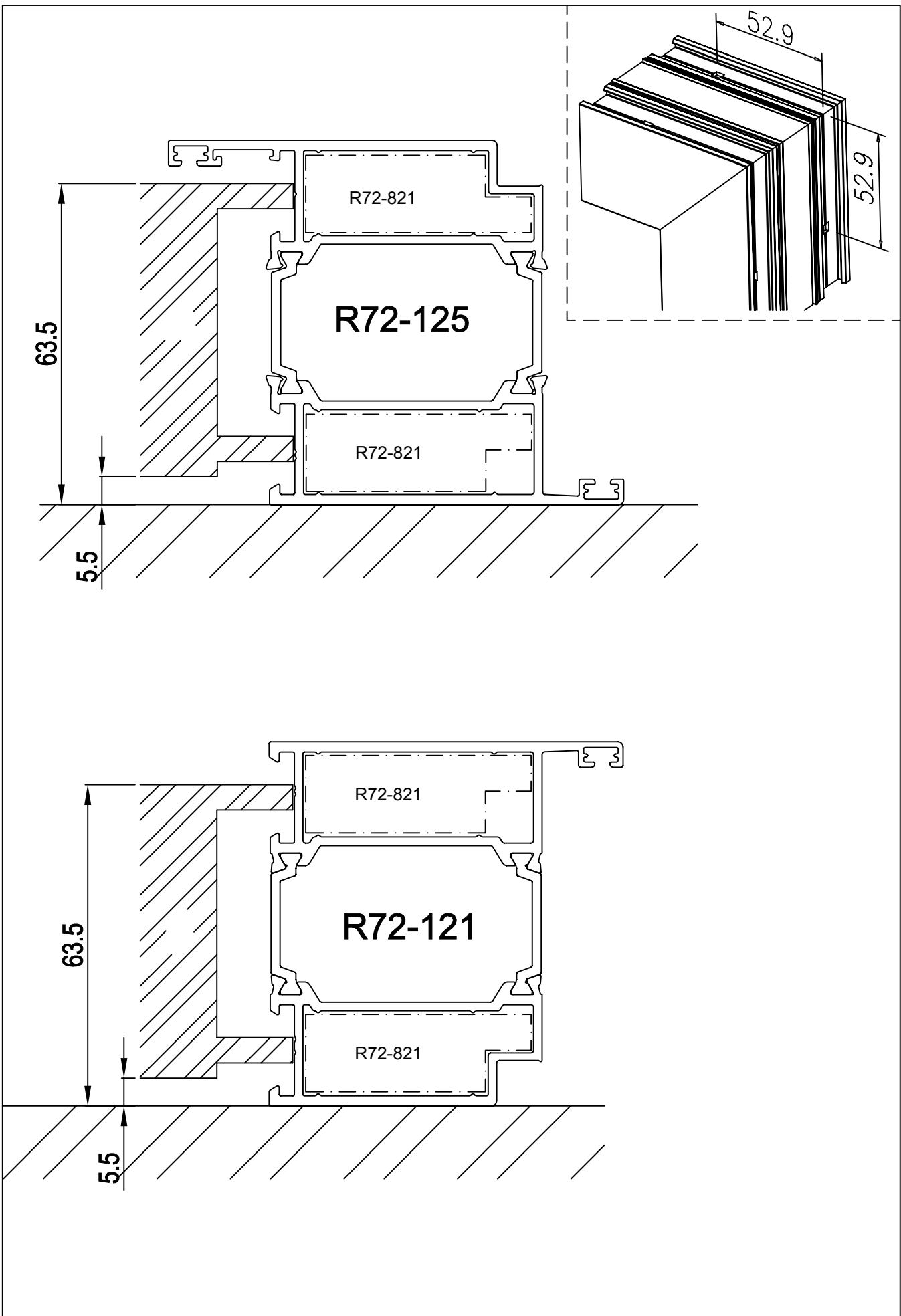


01.07.2013

Corner pressing tools



R72 5.1

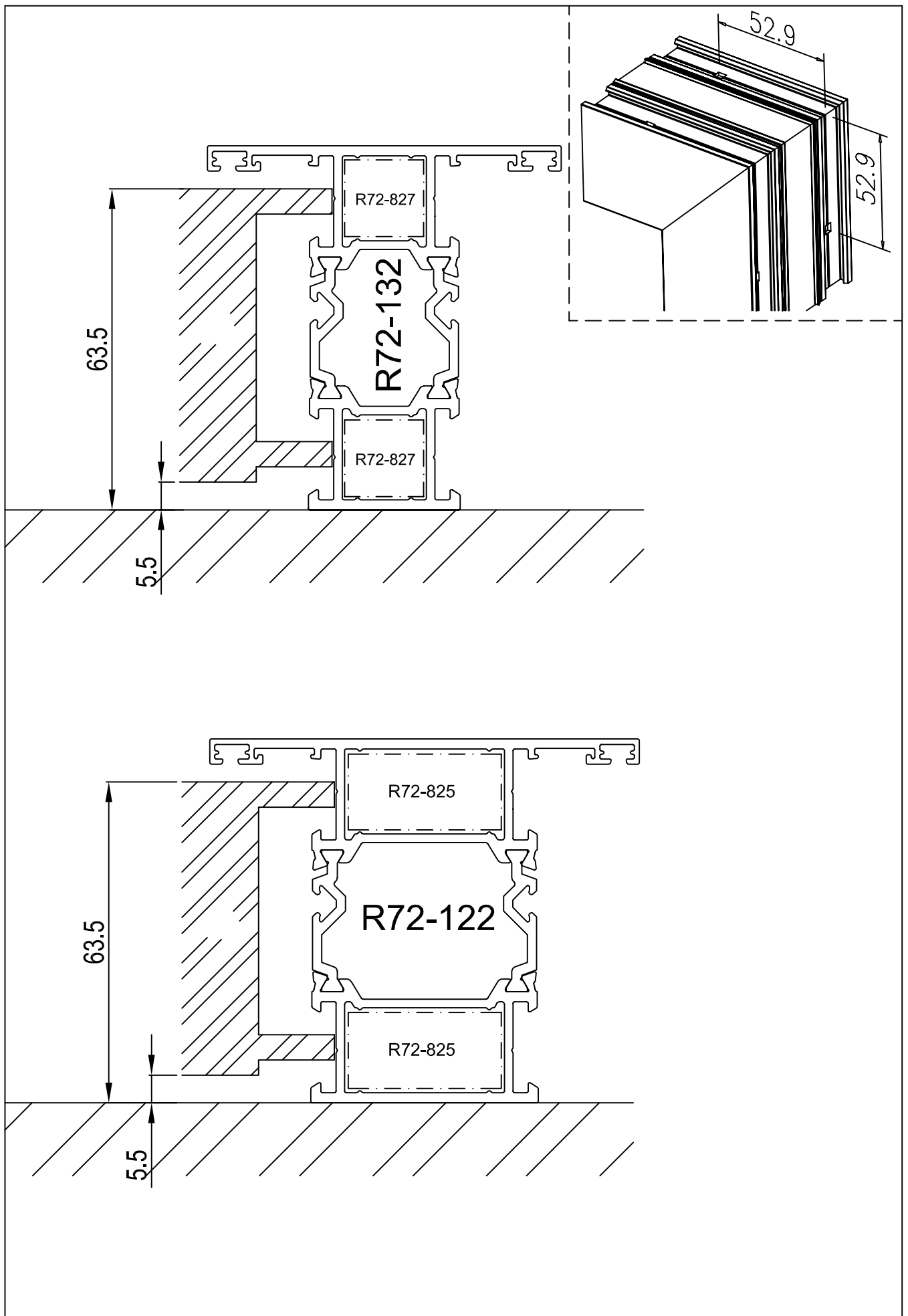


01.07.2013

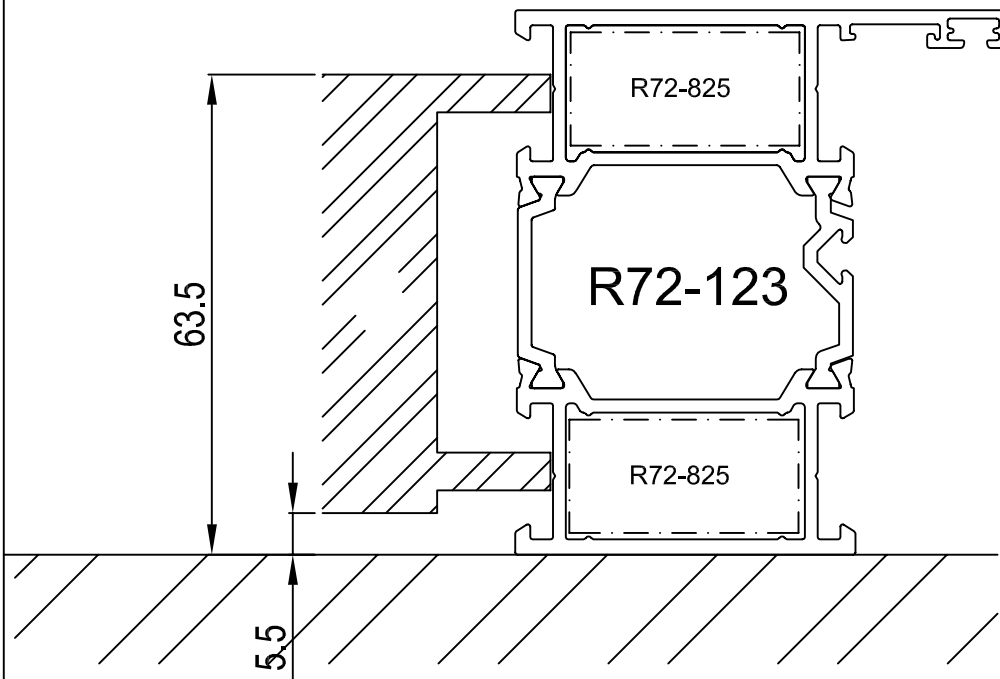
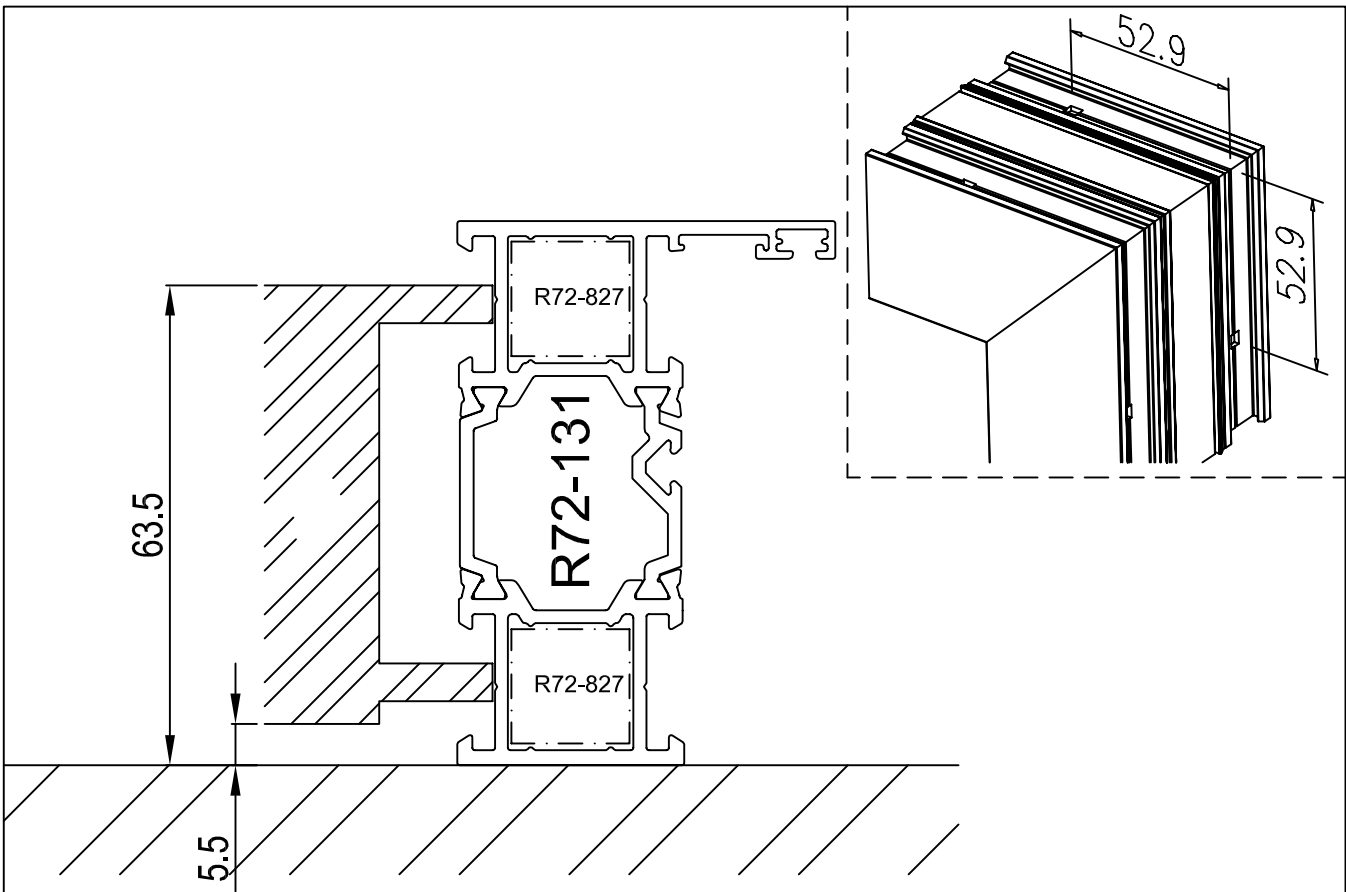
R72 5.2

NOKIAN
PROFILES

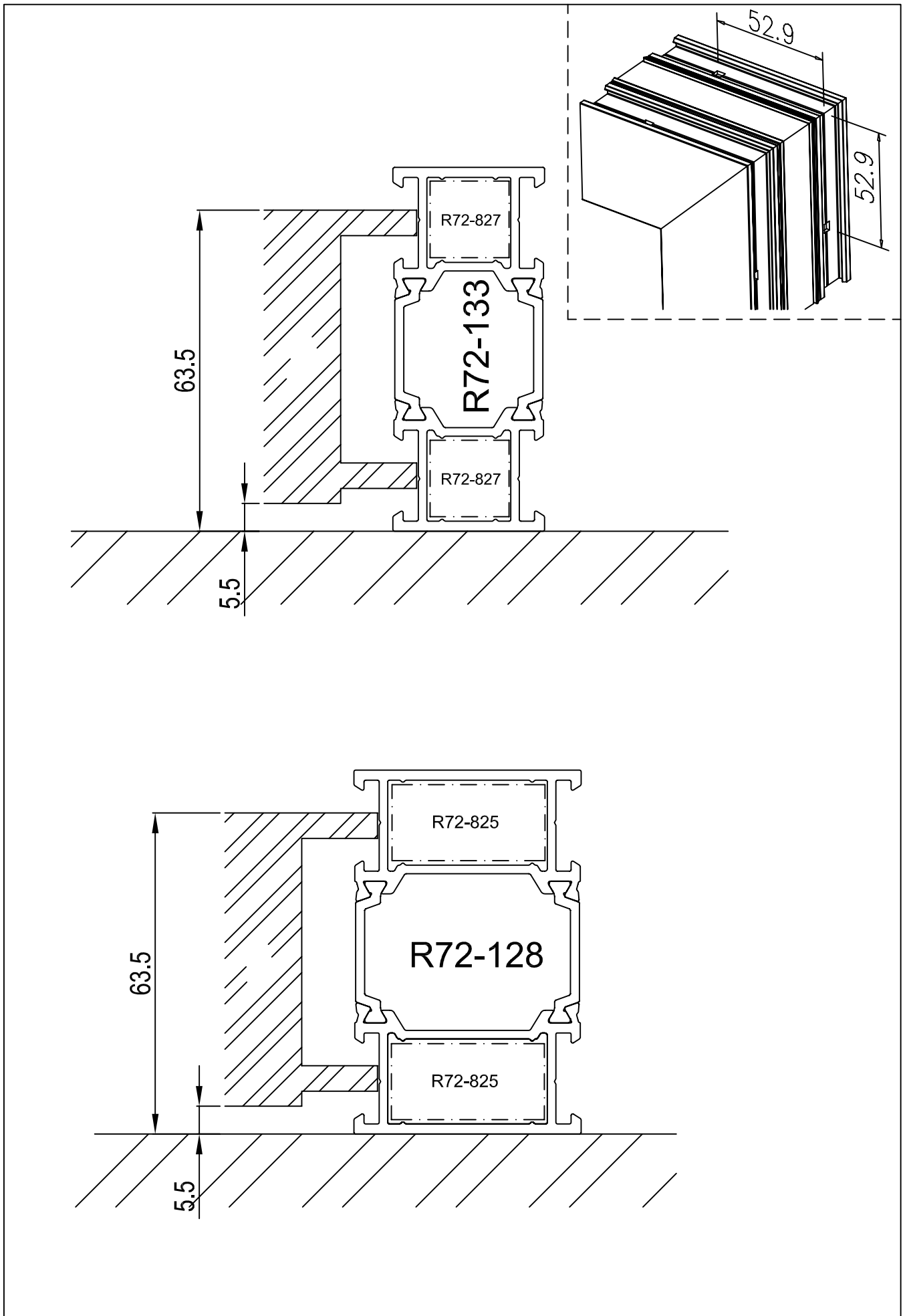
Corner pressing tools



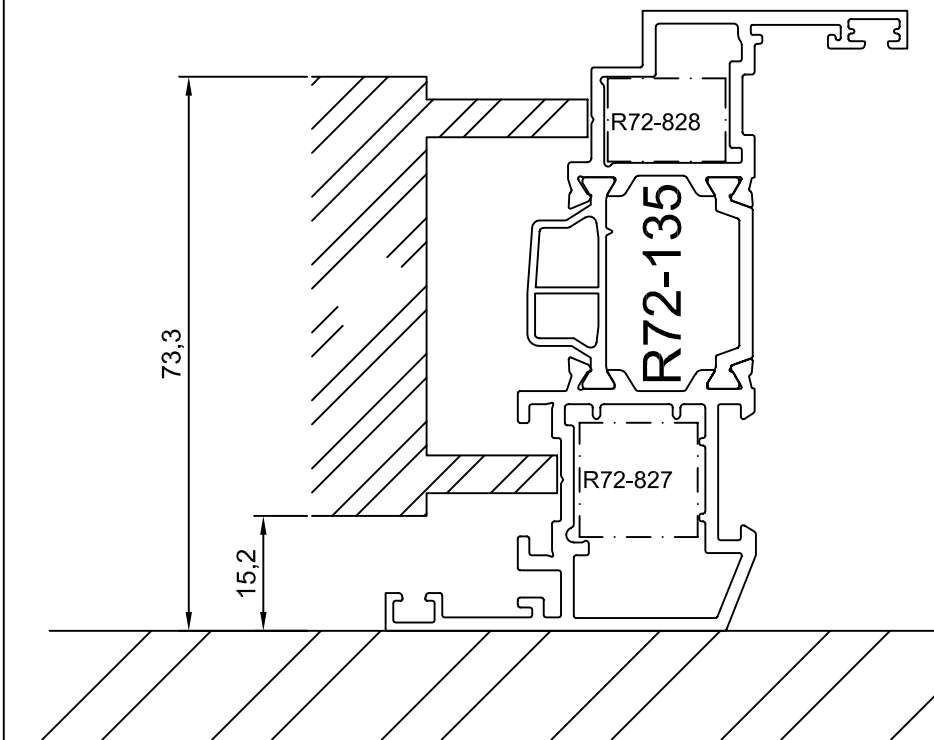
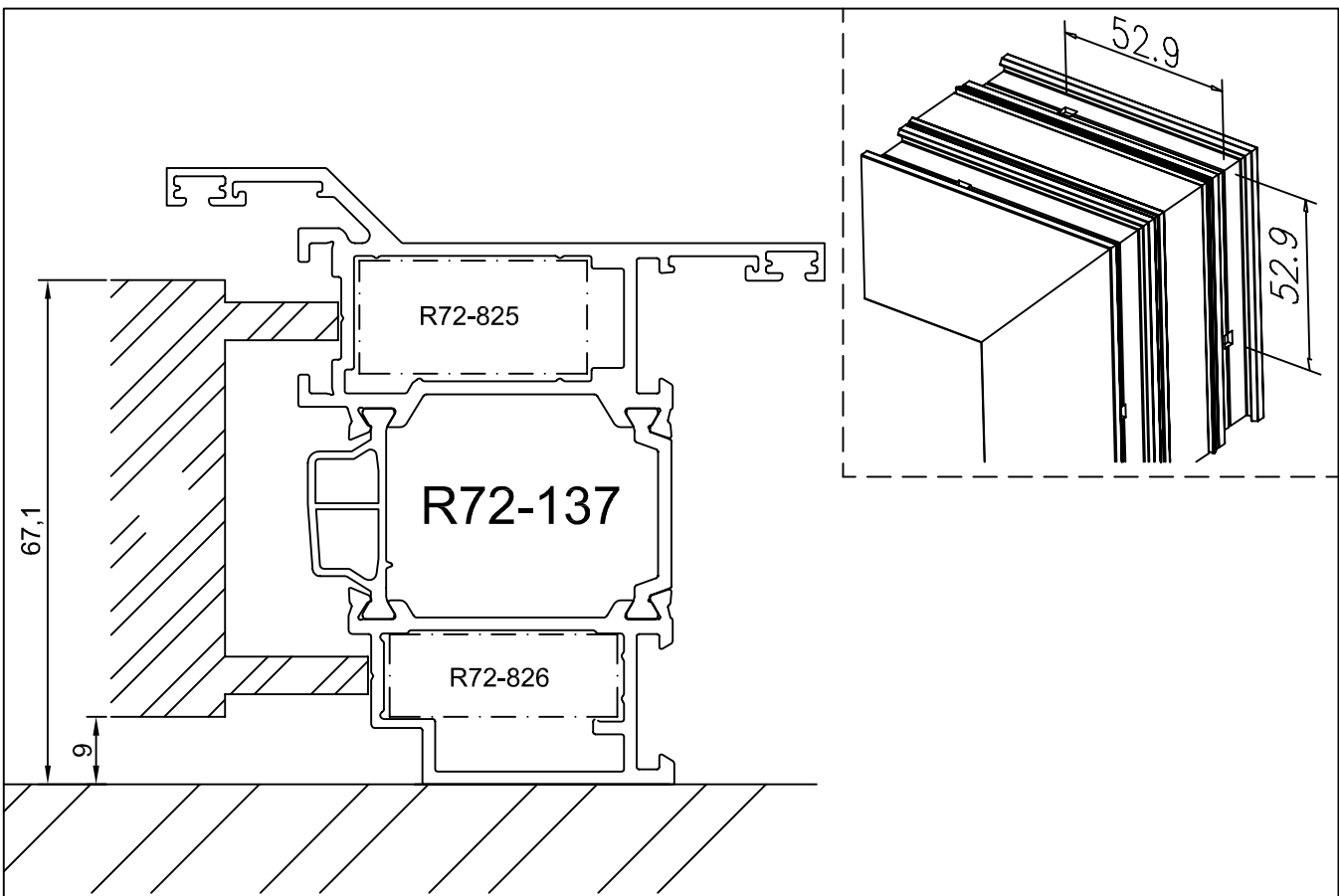
01.02.2013



01.07.2013



01.07.2013



01.07.2013

R72 5.6

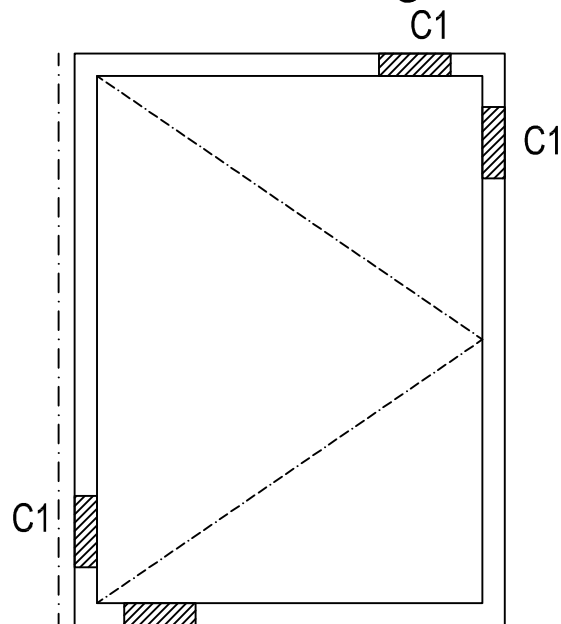
NOKIAN
PROFILES


Corner pressing tools






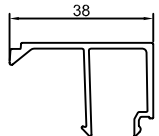









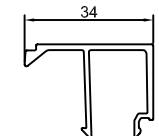









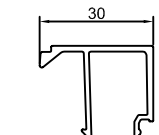




6. Glazing






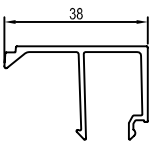









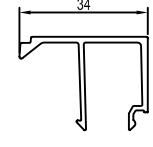









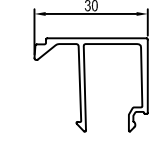









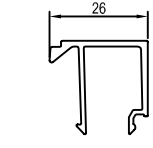









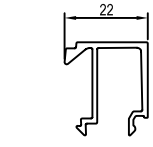









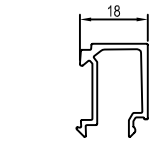









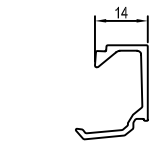









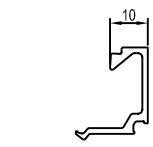









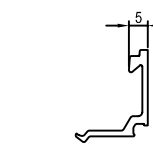




GLAZING PADS LOCATION

Side hung



-  C1 = Load bearing pad
-  C2 = Supporting pad

	Outer gasket:	Glass / Filling nominal thickness:	Finishing gasket:	Glazing list:
1.	653  7.5	 17  18  19 (+)	656  6.7	 38 R72-328
	652  5.5	 19  20  21 (+)		
2.	653 	 21  22  23 (+)	656 	 34 R72-327
	652 	 23  24  25 (+)		
3.	653 	 25  26  27 (+)	656 	 30 R72-326
	652 	 27  28  29 (+)		

	Ulkopuolen tiiviste:	Glass / filling nominal thickness:	Finishing gasket:	Glazing list:
1.	653 	 17  18  19 (+)	656 	 R72-328
	652 	 19  20  21 (+)		
2.	653 	 21  22  23 (+)	656 	 R72-327
	652 	 23  24  25 (+)		
3.	653 	 25  26  27 (+)	656 	 R72-326
	652 	 27  28  29 (+)		
4.	653 	 29  30  31 (+)	656 	 R72-325
	652 	 31  32  33 (+)		
5.	653 	 33  34  35 (+)	656 	 R72-324
	652 	 35  36  37 (+)		
6.	653 	 37  38  39 (+)	656 	 R72-323
	652 	 39  40  41 (+)		
7.	653 	 41  42  43 (+)	656 	 R72-322
	652 	 43  44  45 (+)		
8.	653 	 45  46  47 (+)	656 	 R72-321
	652 	 47  48  49 (+)		
9.	653 	 50  51  52 (+)	656 	 R72-320
	652 	 52  53  54		

For some glasses there are given few variants of glazinglist and gasket.
Sign (+) in the end of the glass thickness means preferable (=more tight) glazing variant.

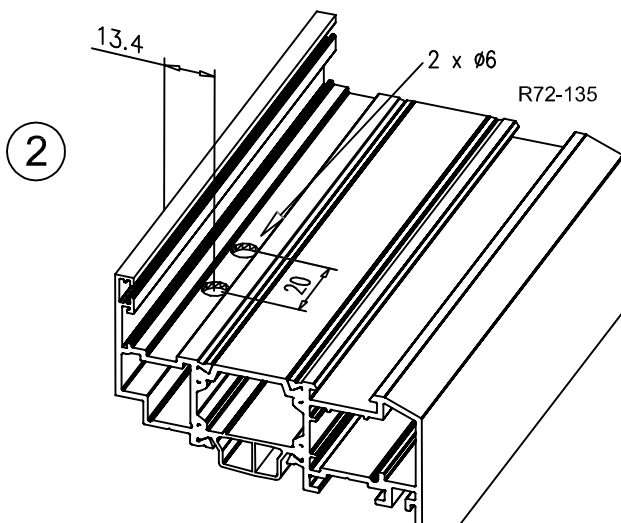
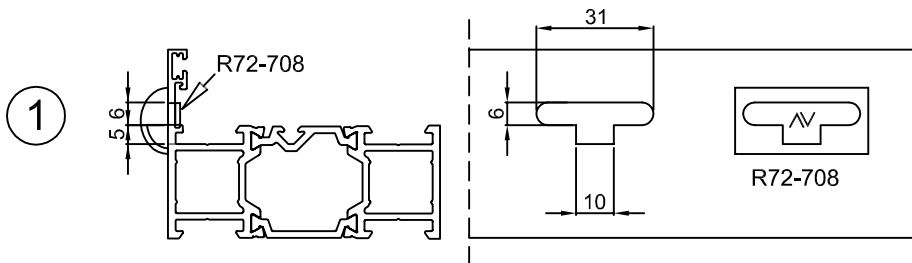
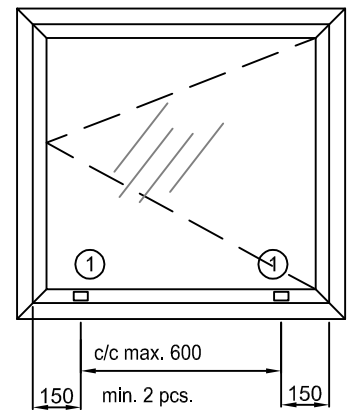
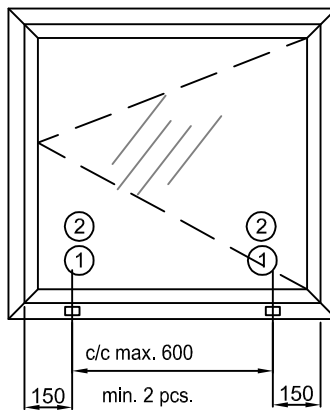
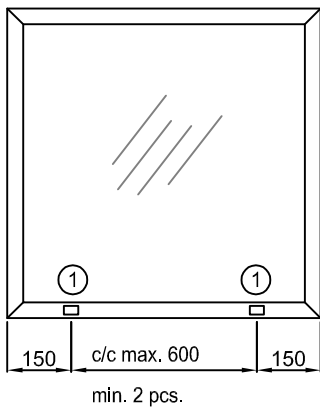
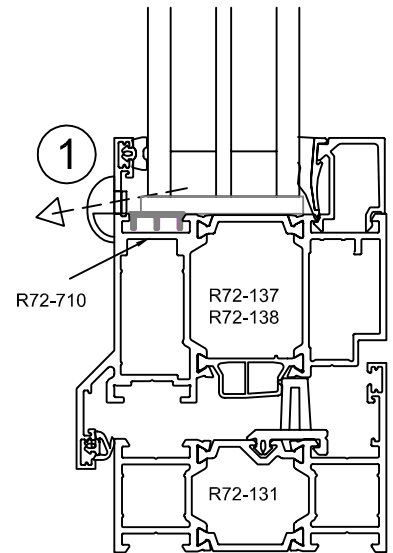
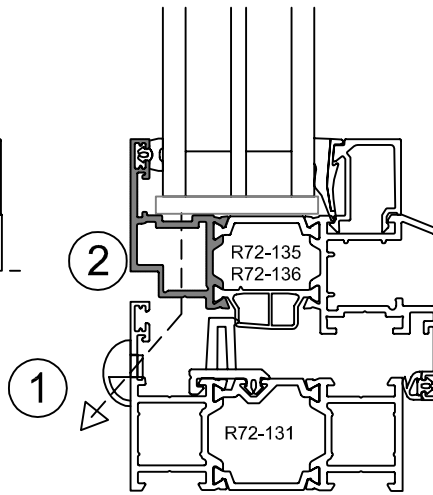
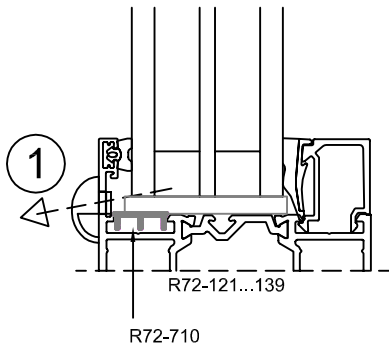
Glass dimension: Light opening + 30 mm

01.07.2013

Fixed window/door

Inward openable window

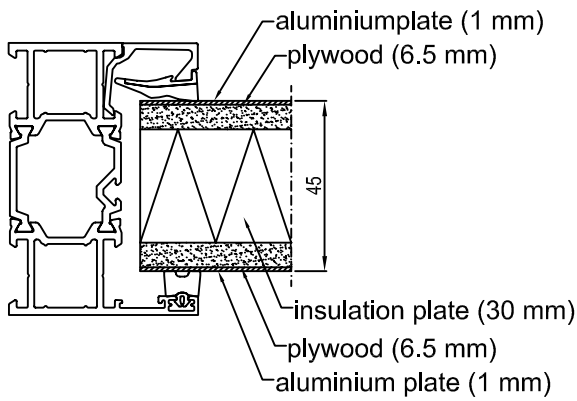
Outward openable window



01.07.2013

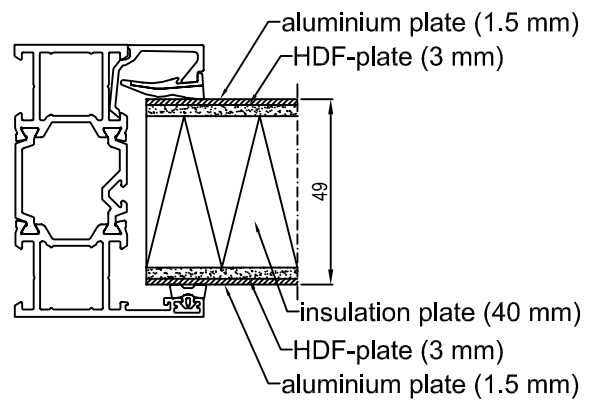
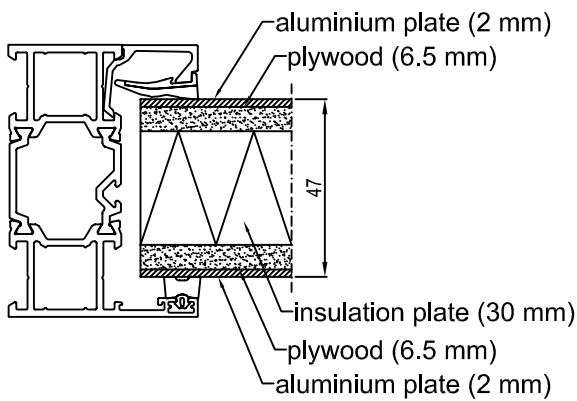
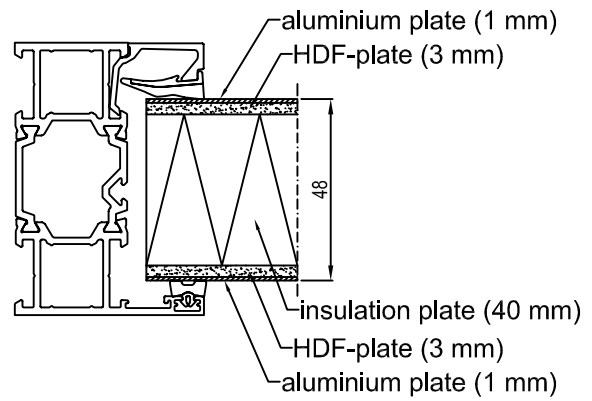
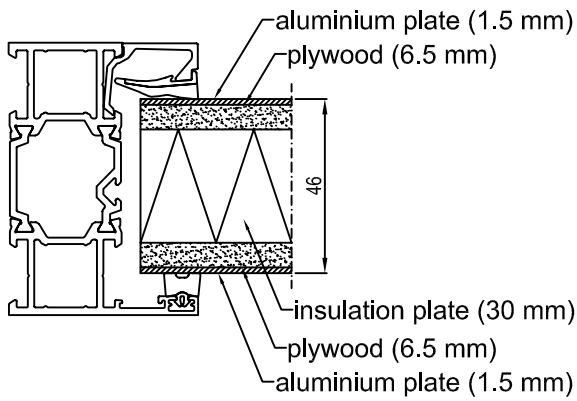
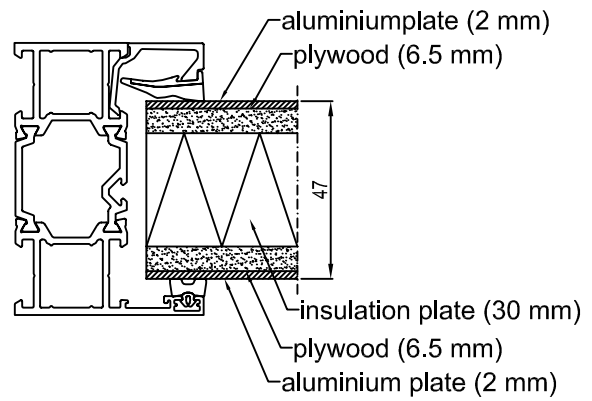
FILLING 45...47 MM

GLAZING LIST: R72-321 (10 mm)
GASKET: 653 + 656



FILLING 47...49 MM

GLAZING LIST: R72-321 (10 mm)
GASKET: 652 + 656



01.07.2013

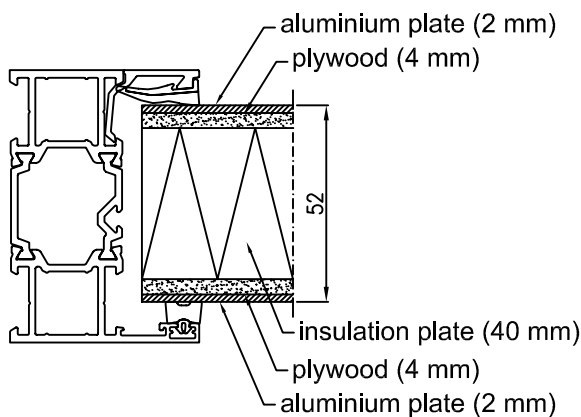
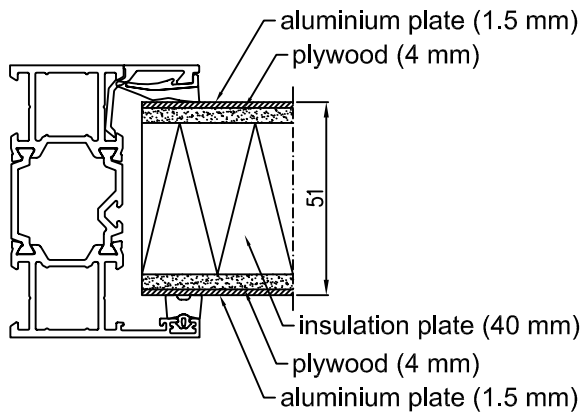
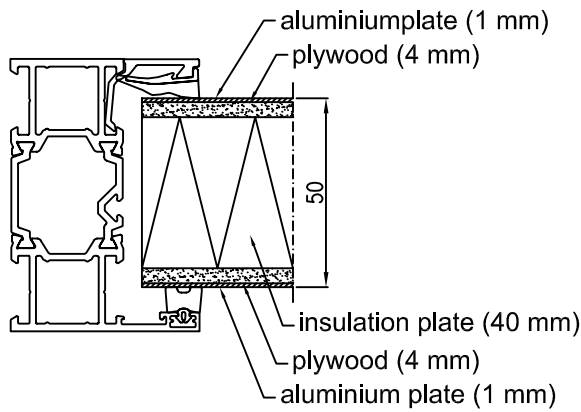
R72 6.3

NOKIAN
PROFILES

Glazing
Filling parts 45...49 mm

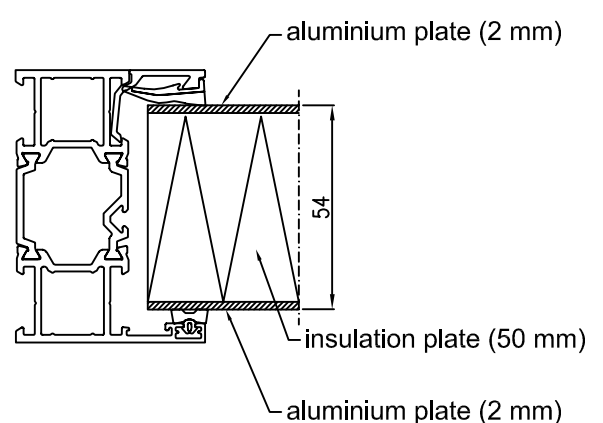
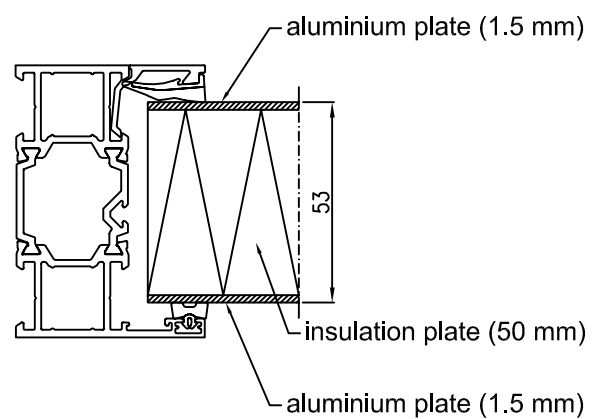
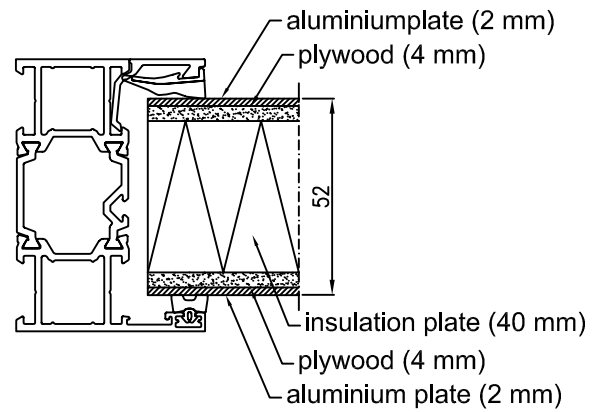
FILLING 50...52 MM

GLAZING LIST: R72-320 (5 mm)
GASKET: 653 + 656



FILLING 52...54 MM

GLAZING LIST: R72-320 (5 mm)
GASKET: 652 + 656



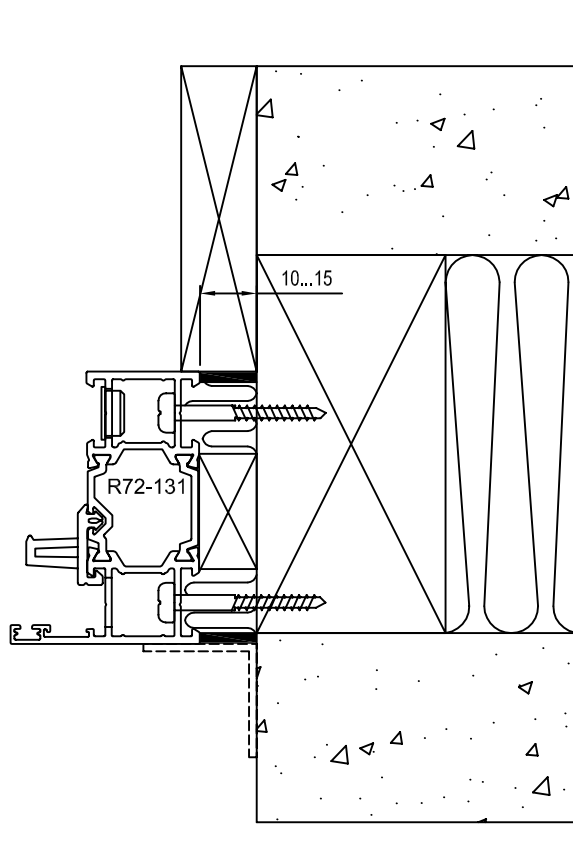
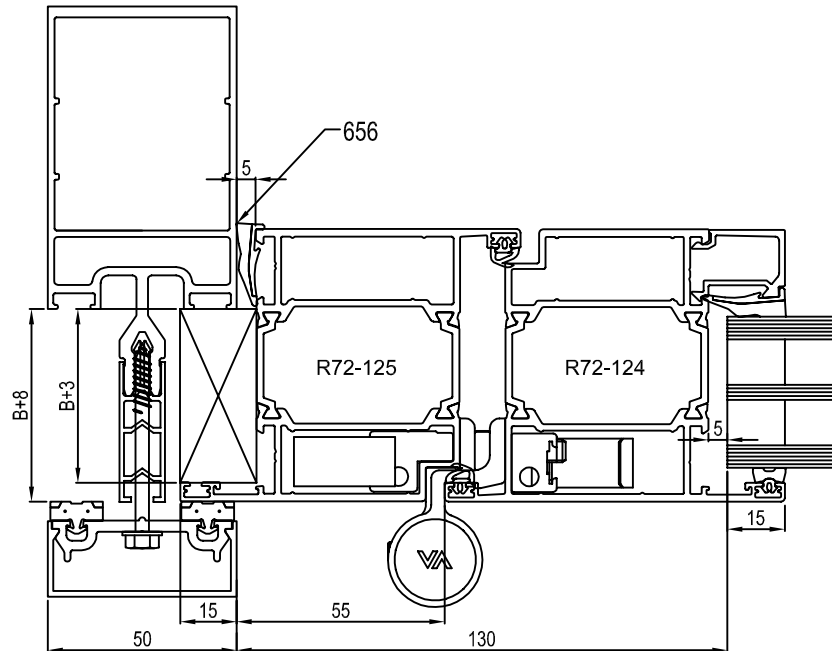
01.02.2013

Glazing
Filling parts 50...54 mm

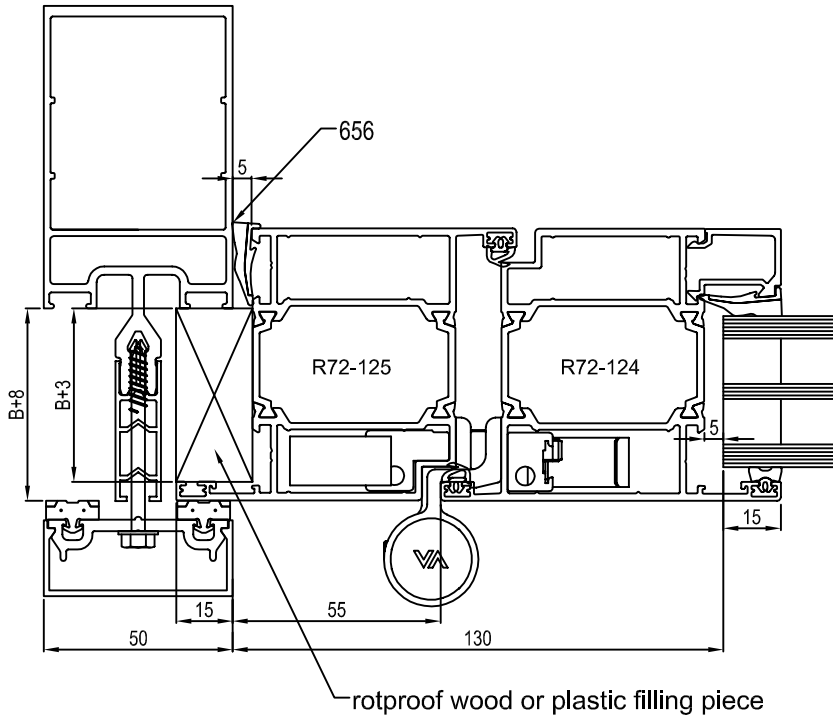
NOKIAN
PROFILES

R72 6.4

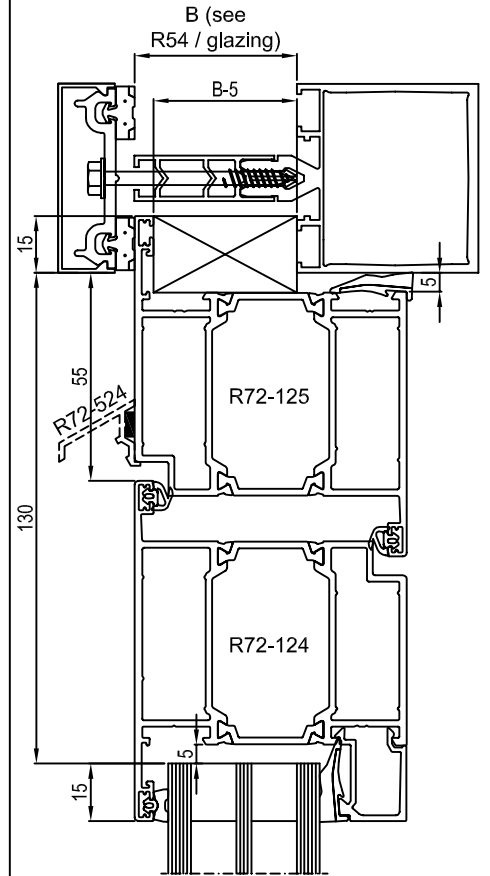
7. Installation



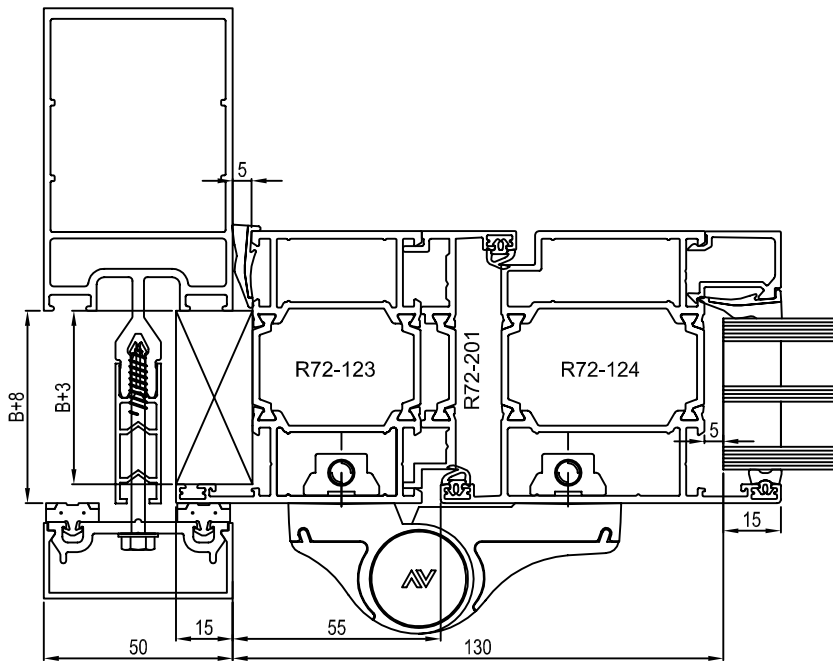
CONNECTION OF R54 VERTICAL FRAME / DOOR FRAME R72-125:



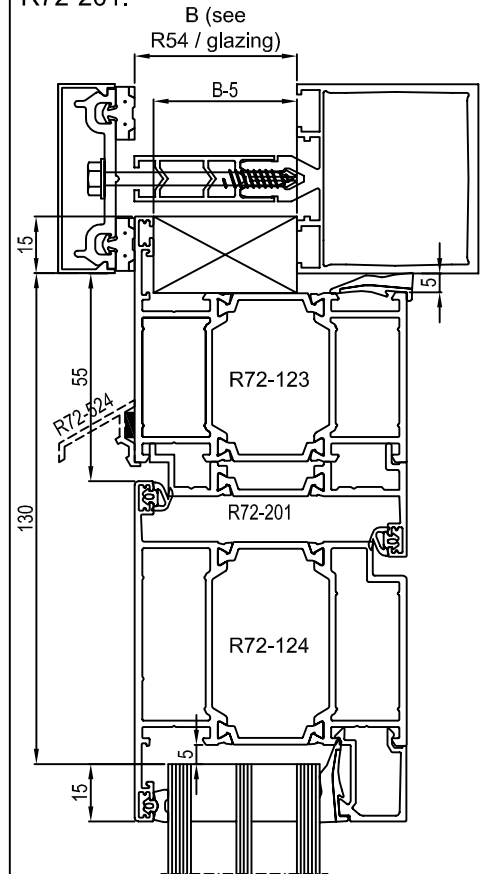
CONNECTION OF R54 HORIZONTAL FRAME / DOOR FRAME R72-125:



CONNECTION OF R54 VERTICAL FRAME / DOOR FRAME R72-123 + R72-201:



CONNECTION OF R54 HORIZONTAL FRAME / DOOR FRAME R72-123 + R72-201:

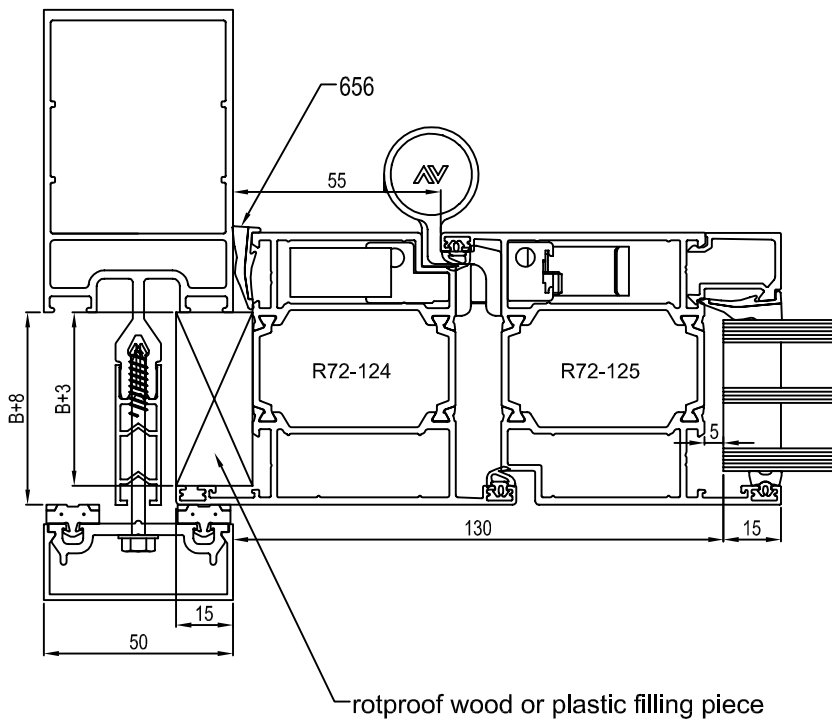


Door connections R72 / R54
Outside openable doors

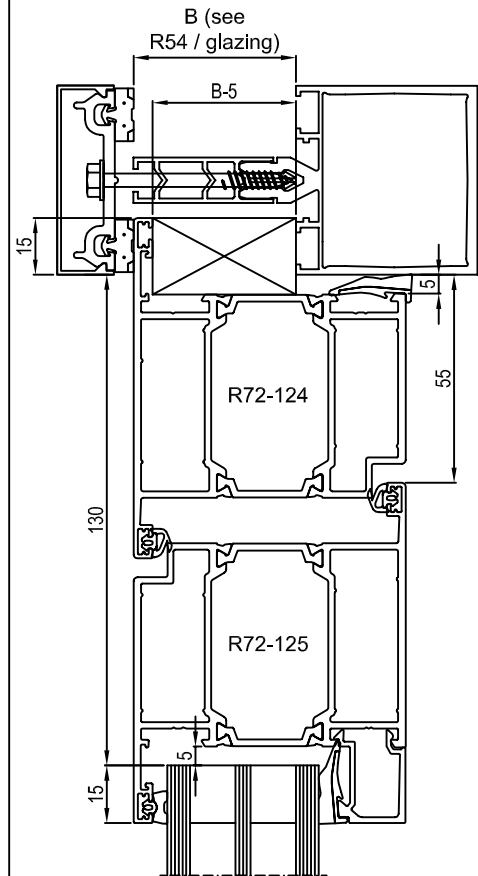
NOKIAN
PROFILES

R72 7.1

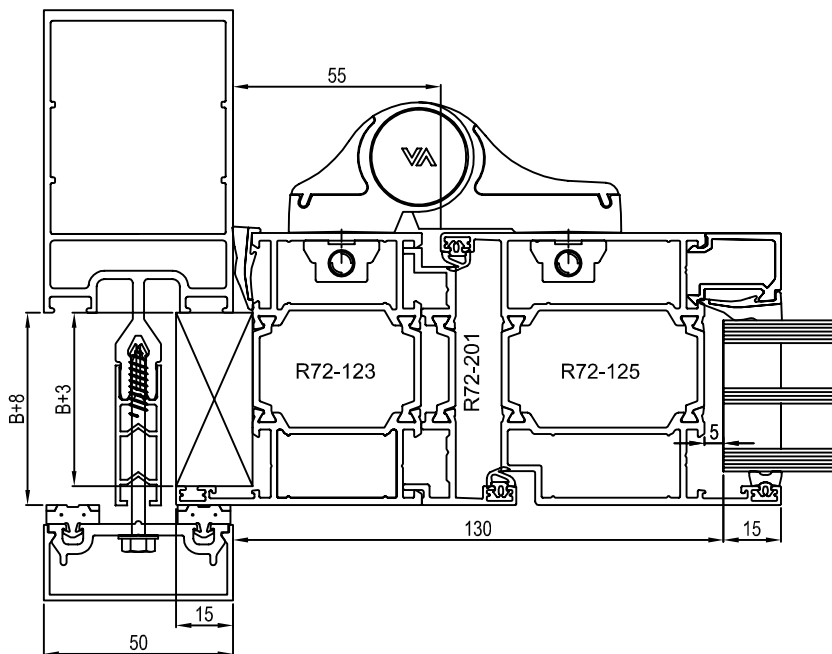
CONNECTION OF R54 VERTICAL FRAME / DOOR FRAME R72-124:



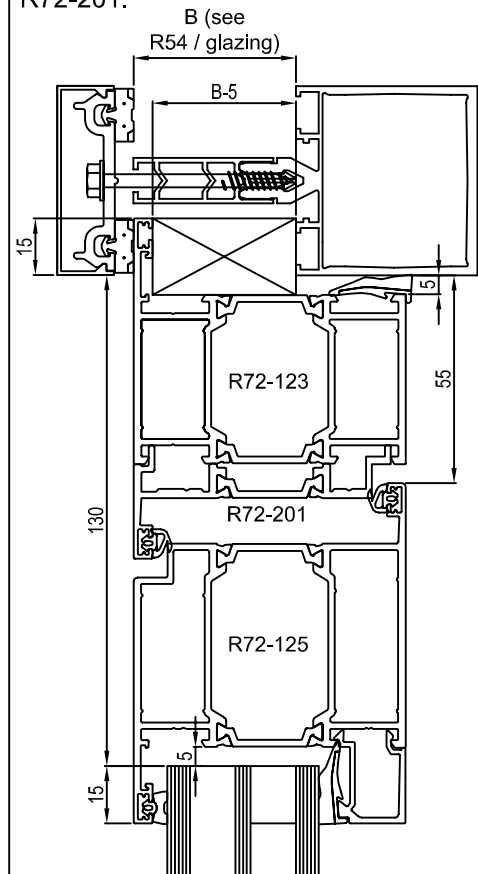
CONNECTION OF R54 HORIZONTAL FRAME / DOOR FRAME R72-124:



CONNECTION OF R54 VERTICAL FRAME / DOOR FRAME R72-123 + R72-201:



CONNECTION OF R54 HORIZONTAL FRAME / DOOR FRAME R72-123 + R72-201:

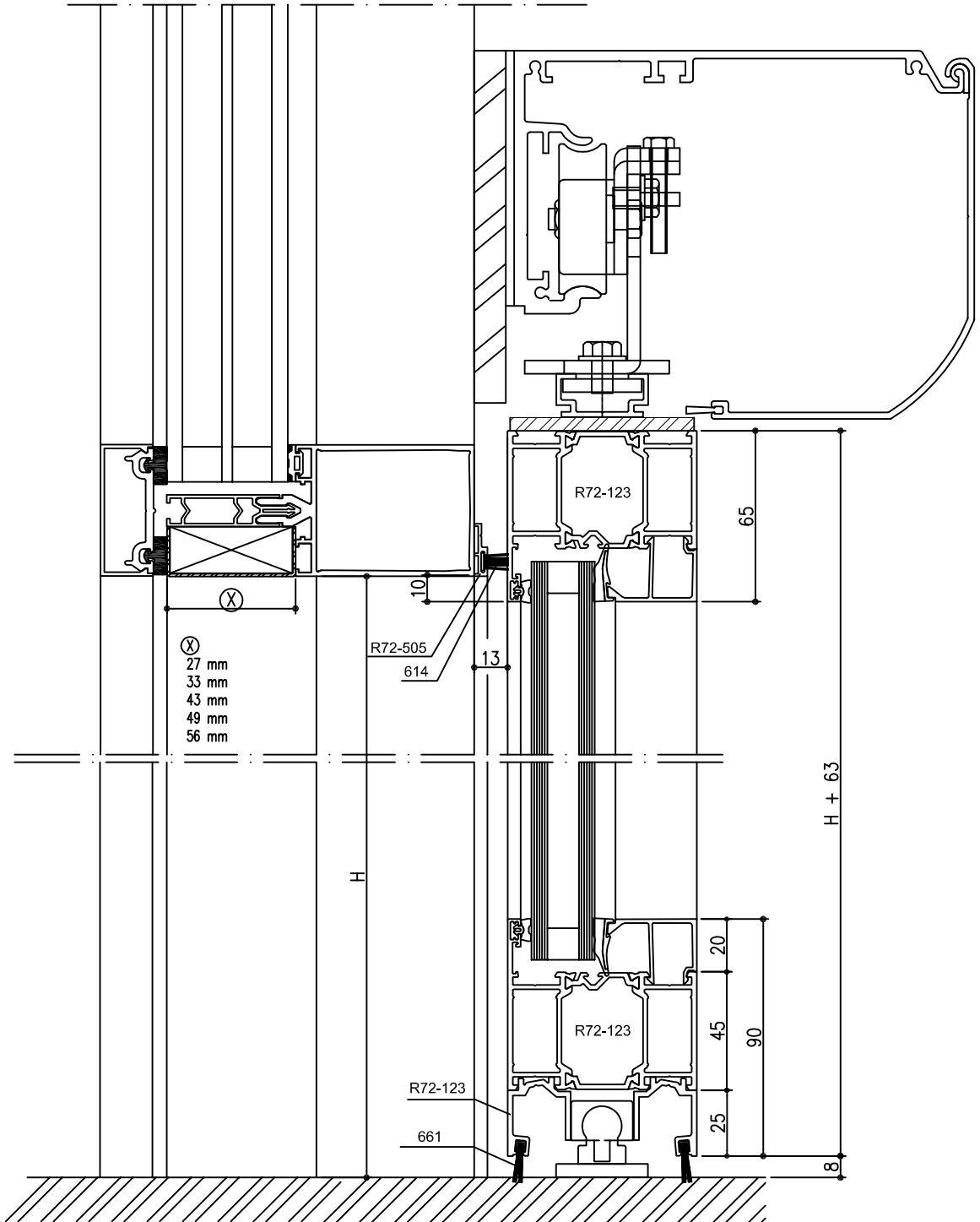
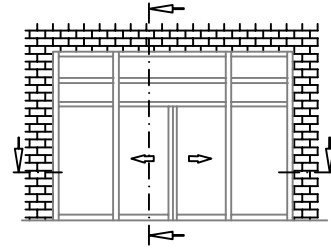


01.07.2013

R72 7.2

NOKIAN
PROFILES

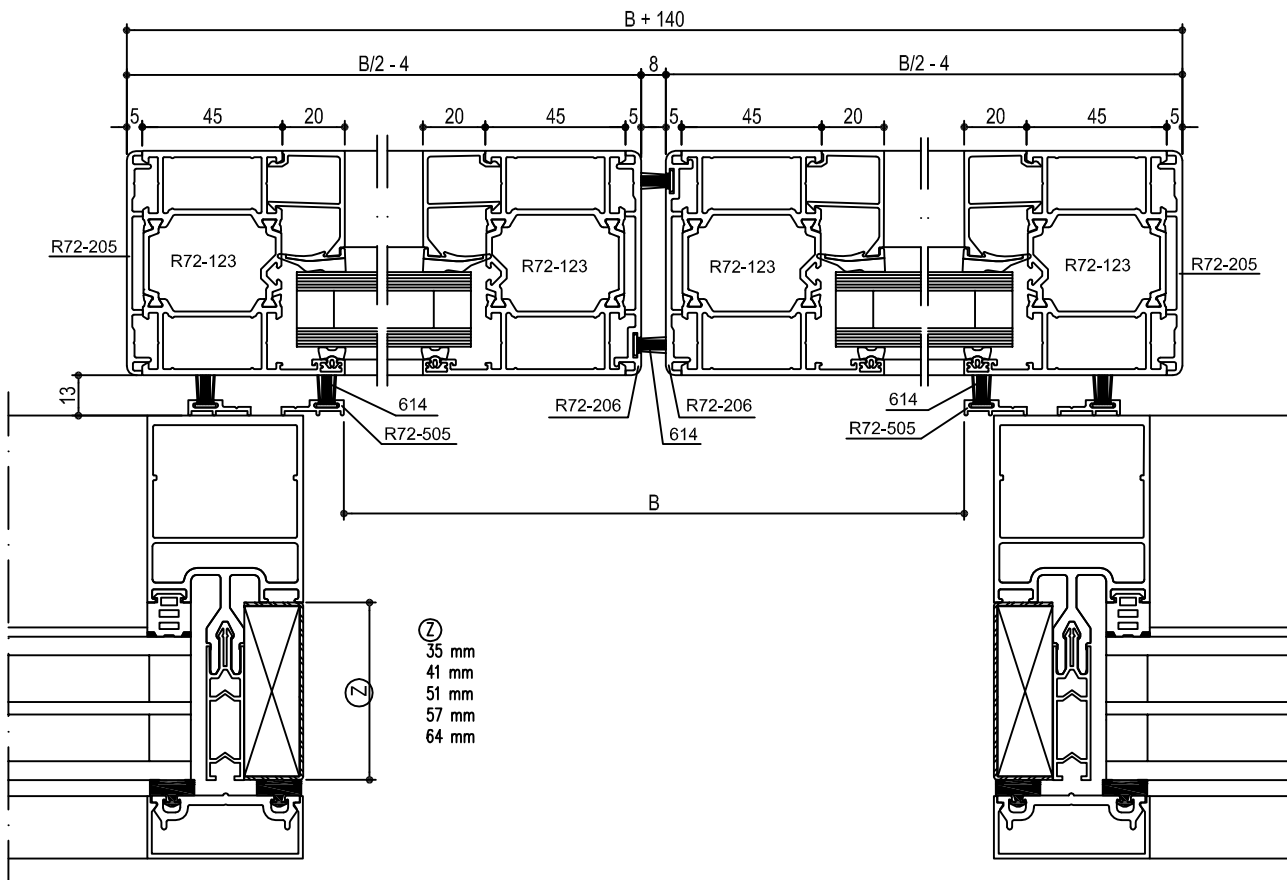
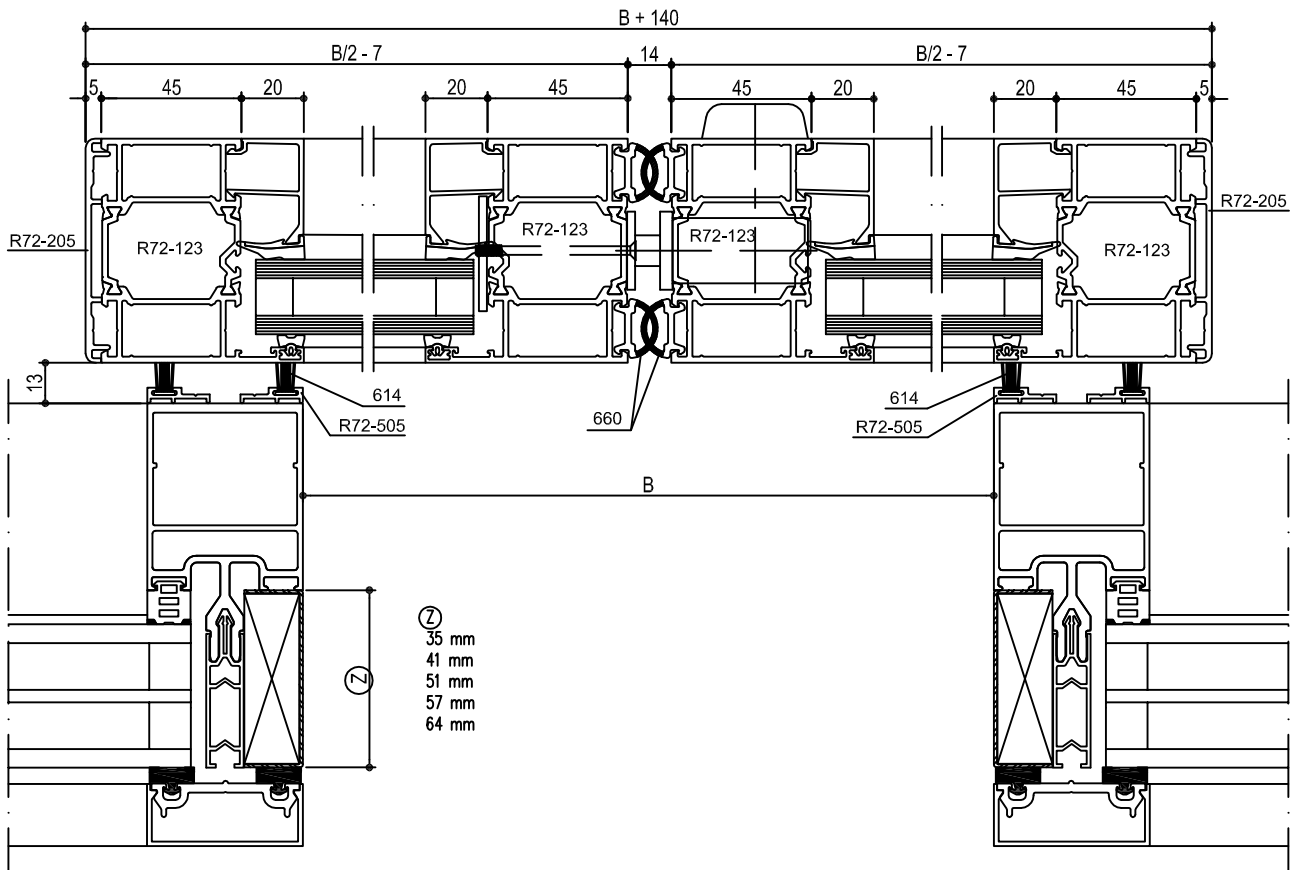
Door connections R72 / R54
Inside openable doors



15.01.2014

Sliding door R72 / R54
vertical section





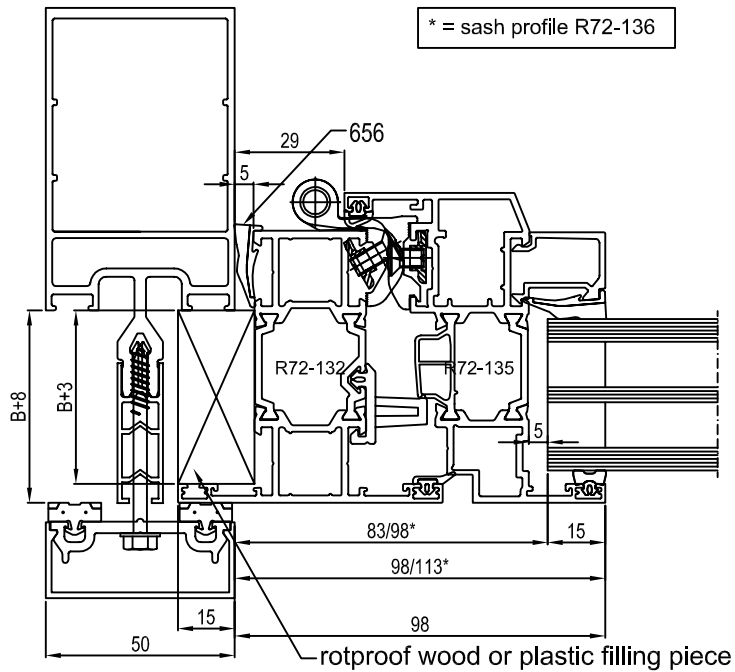
15.01.2014

R72 7.4

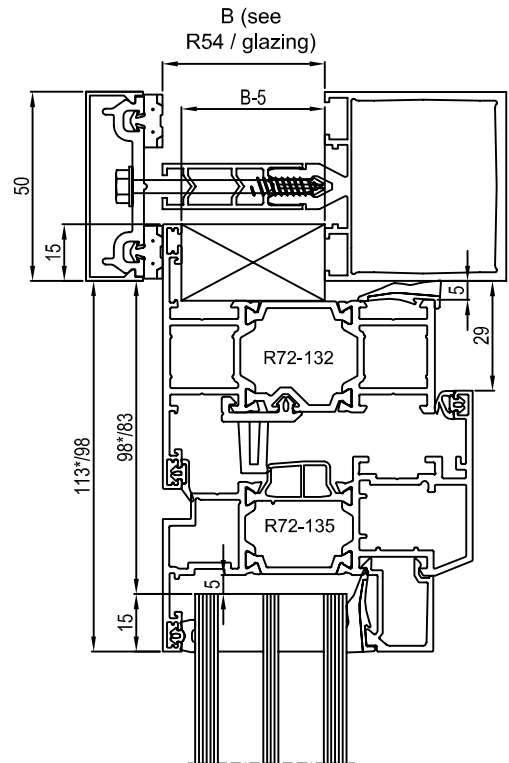
NOKIAN
PROFILES

Sliding door R72 / R54
horizontal section

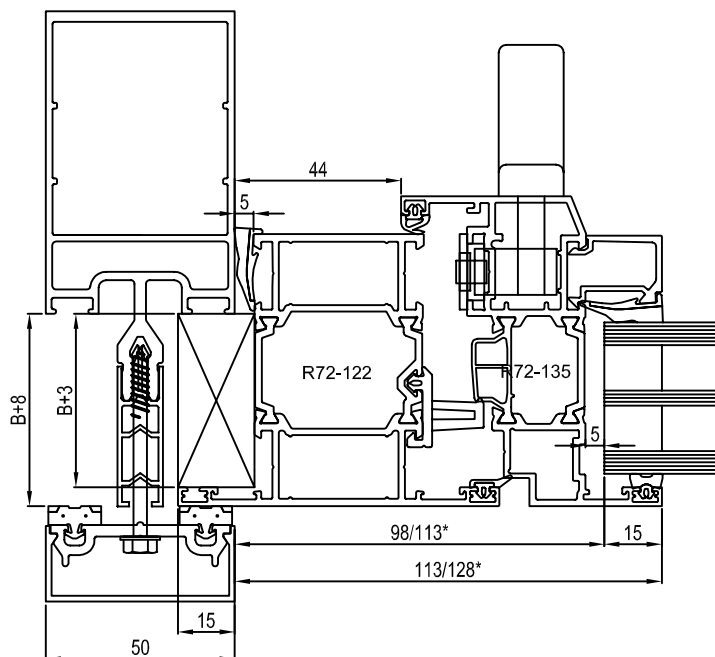
CONNECTION OF R54 VERTICAL FRAME / WINDOW FRAME R72-132:



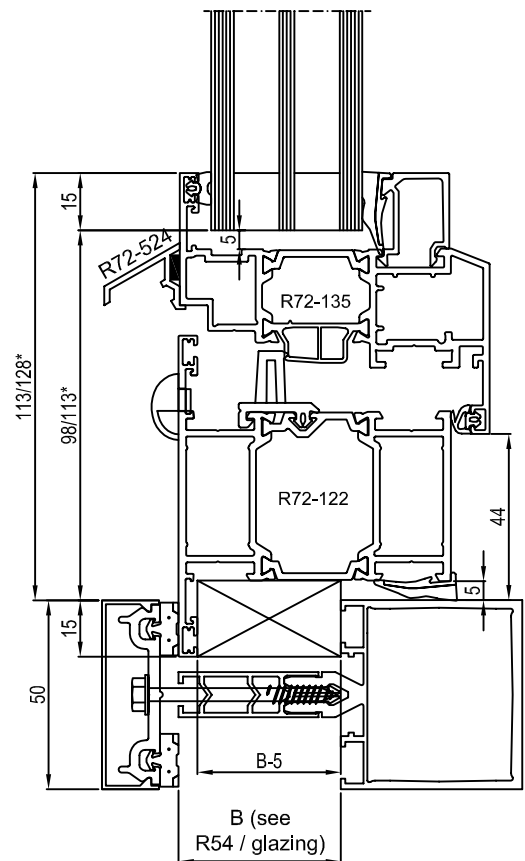
CONNECTION OF R54 HORIZONTAL FRAME / WINDOW FRAME R72-132:



CONNECTION OF R54 VERTICAL FRAME / WINDOW FRAME R72-122:



CONNECTION OF R54 HORIZONTAL FRAME / WINDOW FRAME R72-122:



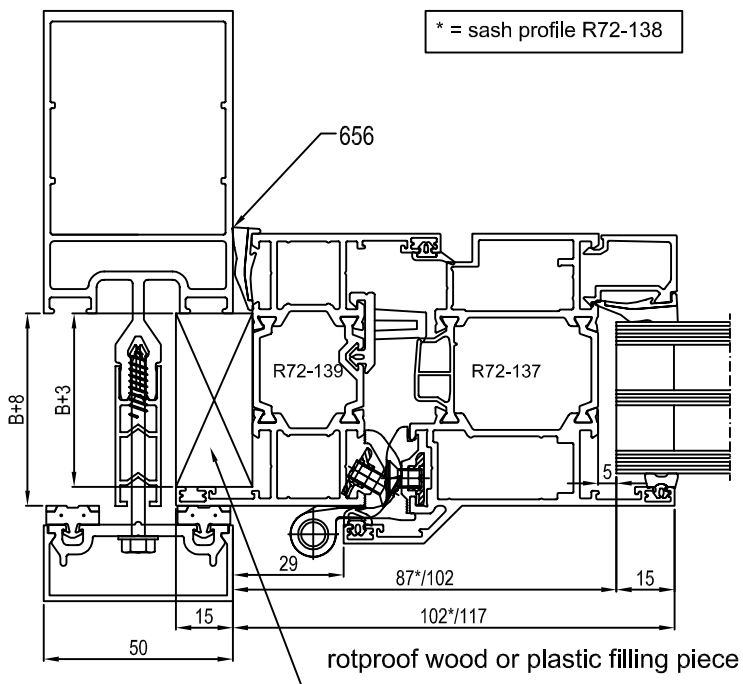
Door connections R72 / R54
Inside openable windows

NOKIAN
PROFILES

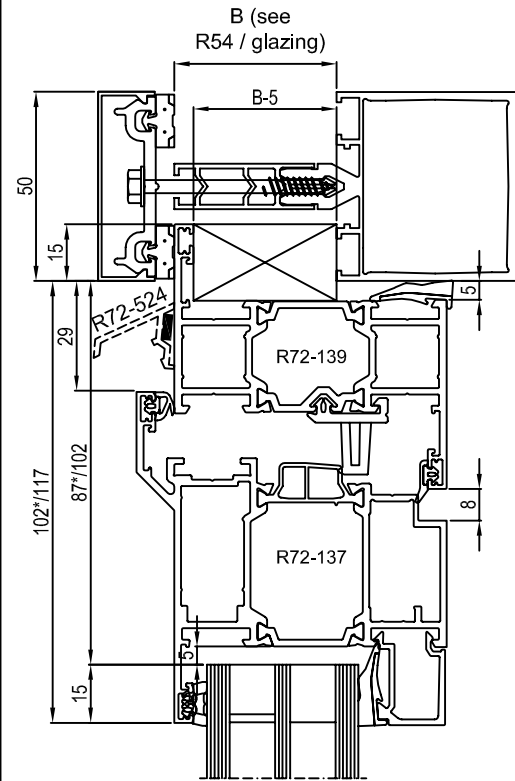
R72 7.5

01.07.2013

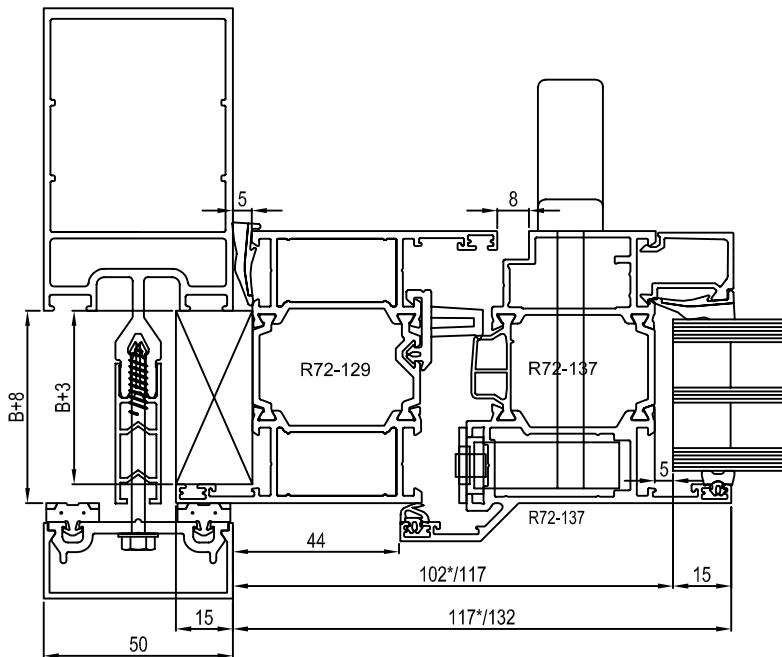
CONNECTION OF R54 VERTICAL FRAME / WINDOW FRAME R72-139:



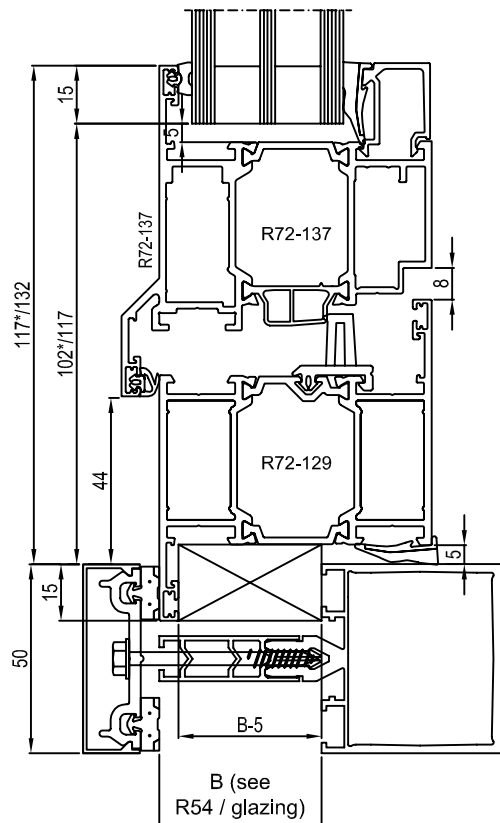
CONNECTION OF R54 HORIZONTAL FRAME / WINDOW FRAME R72-139:



CONNECTION OF R54 VERTICAL FRAME / WINDOW FRAME R72-129:



CONNECTION OF R54 HORIZONTAL FRAME / WINDOW FRAME R72-129:



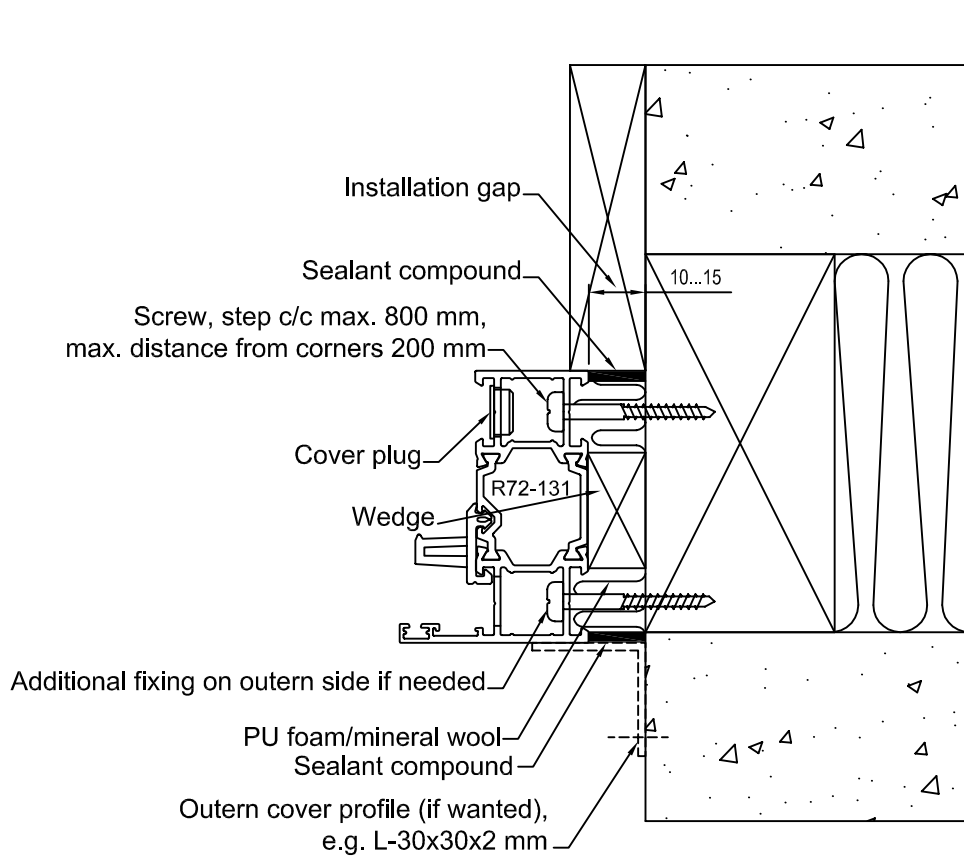
01.07.2013

R72 7.6

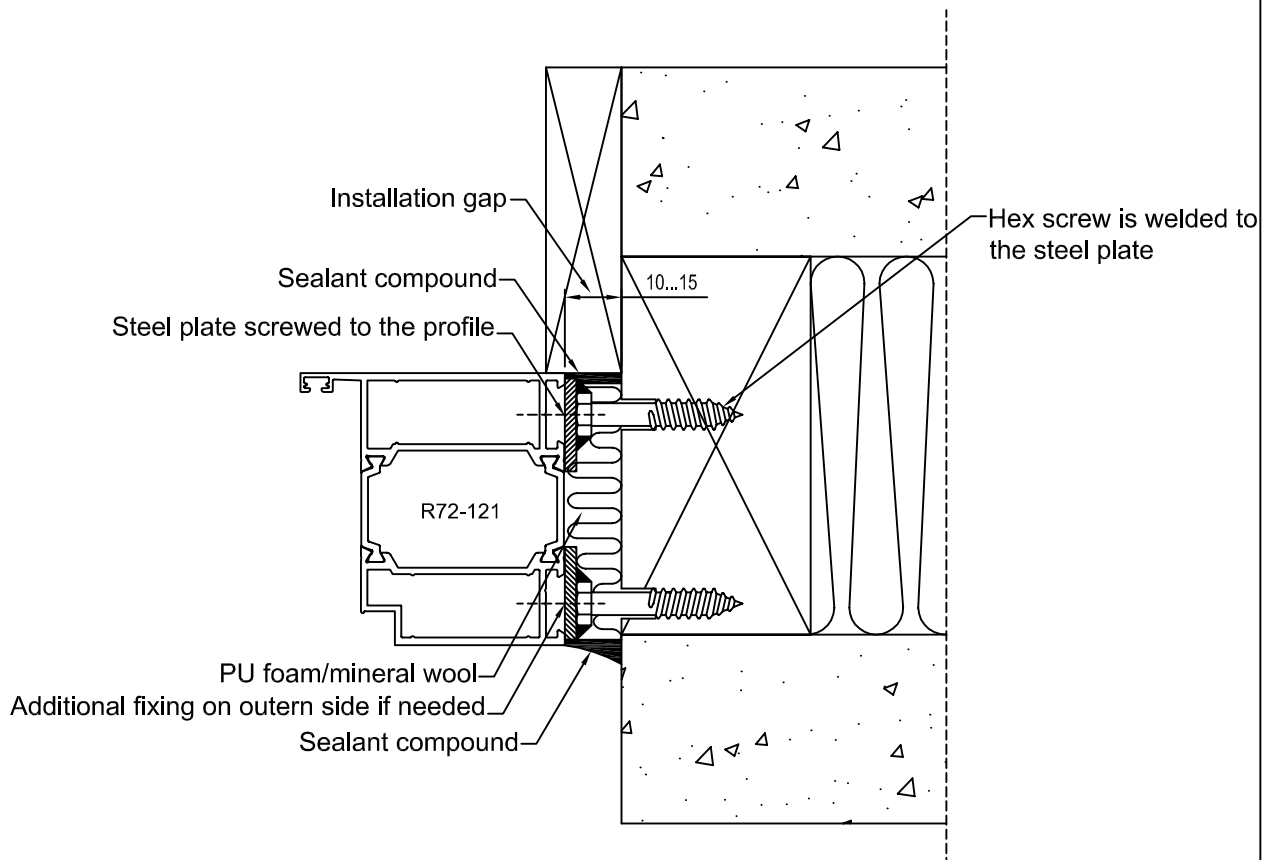
NOKIAN
PROFILES

Door connections R72 / R54
Outside openable windows

VARIANT 1 / SCREW FOR WOOD:



VARIANT 2 / HEXAGONAL HEAD SCREW + WELDING:



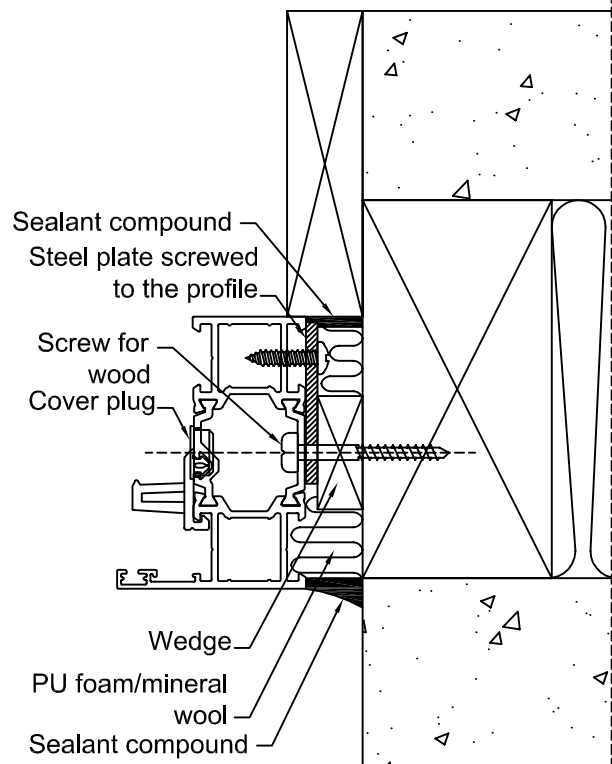
01.07.2013

Connections R72 / Building frame. Adjustment
from an interbnal/outern part of a profile

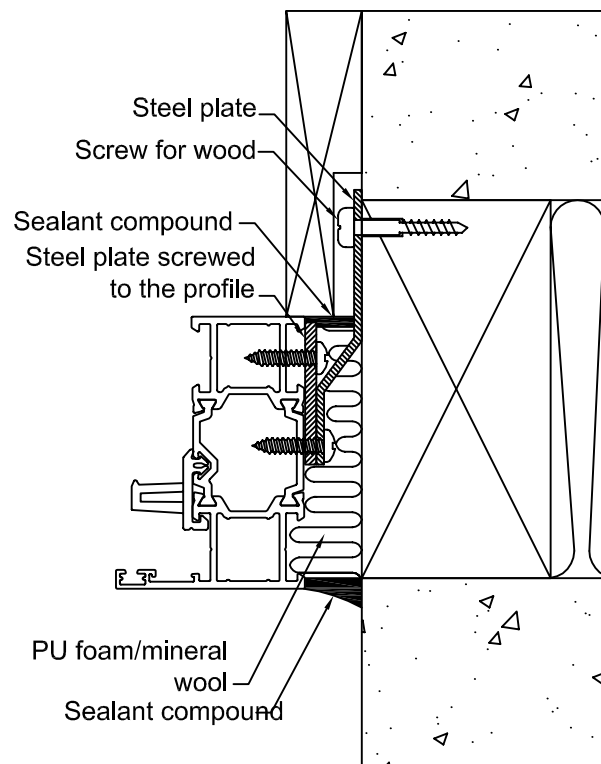


R72 7.7

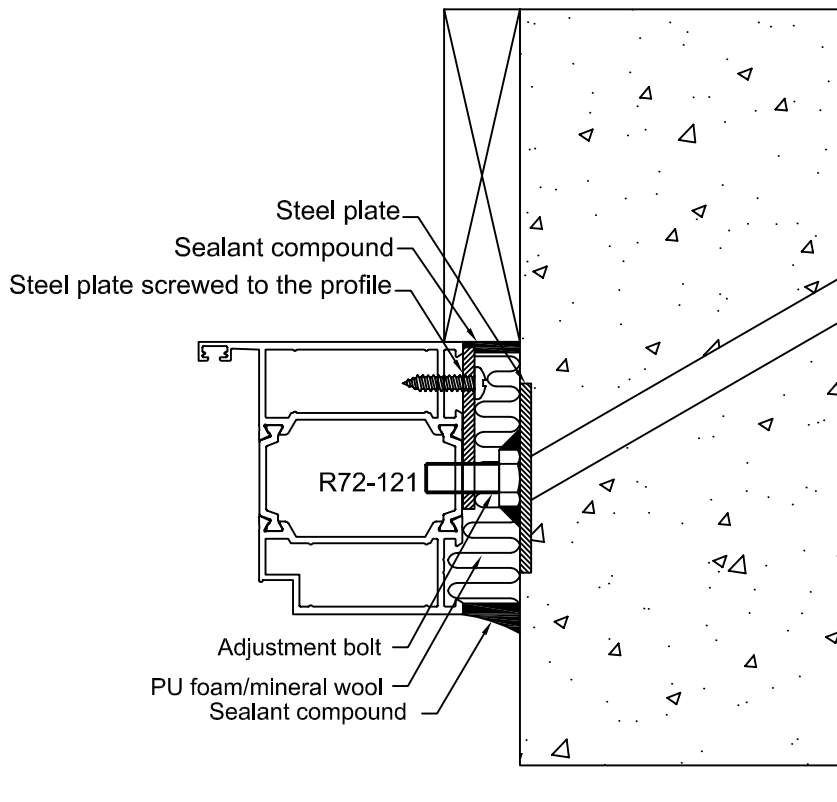
VARIANT 1: STEEL PLATE + WEDGE



VARIANT 2: STEEL PLATES



VARIANT 3: STEEL PLATE, ADJUSTABLE BOLT + WELDING

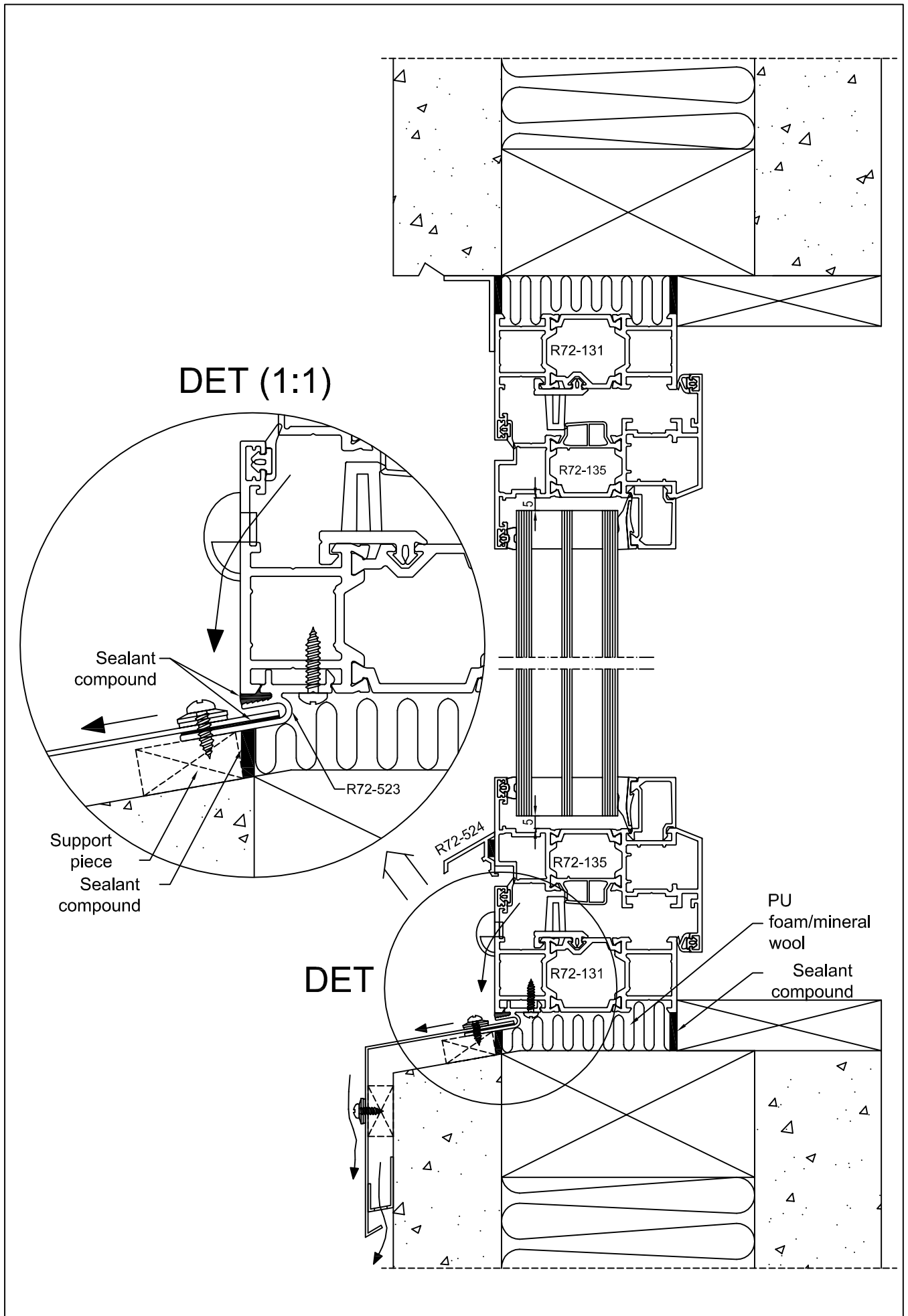


01.07.2013

R72 7.8

NOKIAN
PROFILES

Connections R72 / Building frame. Adjustment from a middle part of a profile



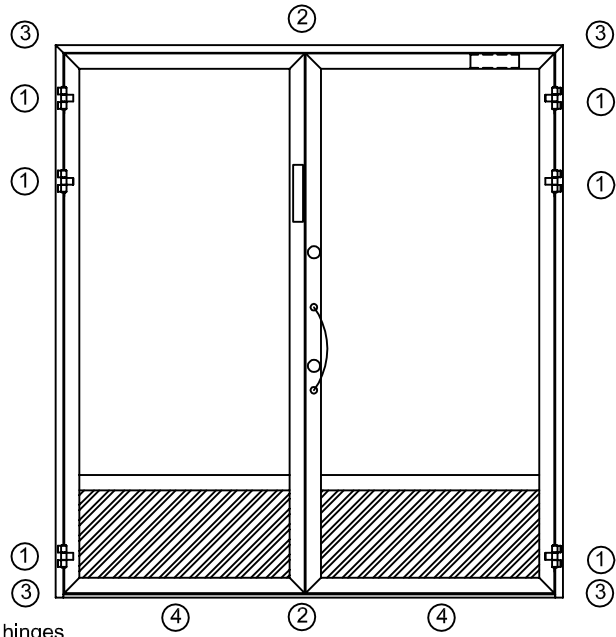
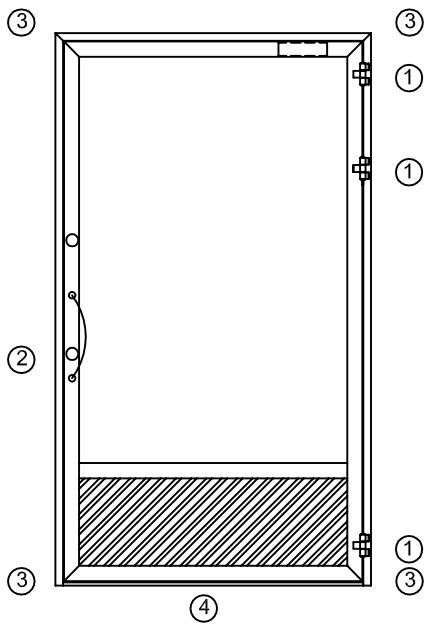
01.07.2013

Connections R72 / Building frame. Adjustment of a water sealing plate



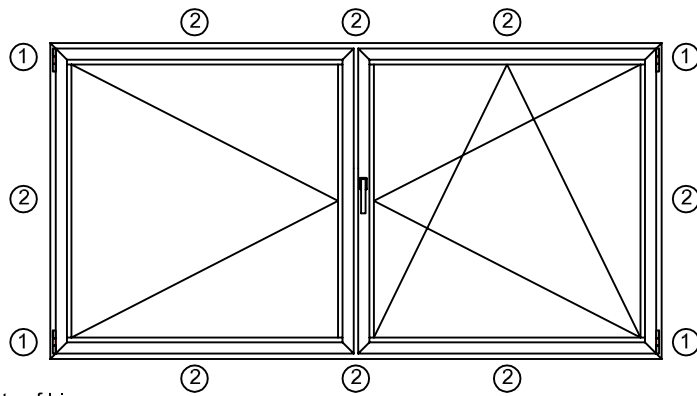
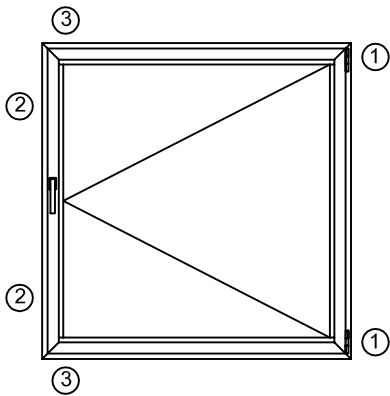
R72 7.9

Door fixation points



- ① Points of hinges
- ② Closing points
- ③ Corner points, if not fixed. Max 200 mm from the corner.
- ④ Fixation of treshold against bending (c/c max 400 mm)

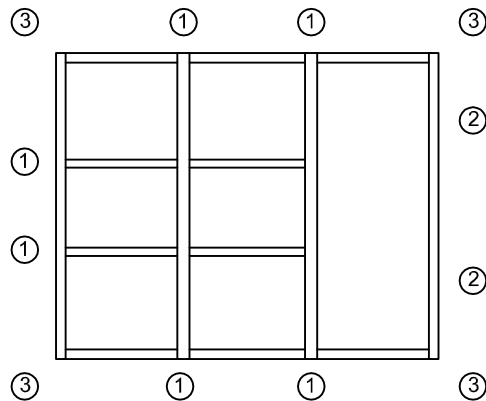
Window fixation points



- ① Points of hinges
- ② Closing points
- ③ Corner points, if not fixed. Max 200 mm from the corner.

Wall fixation points

- ① Edges of frame profiles
- ② Long profiles max. c/c 1500 mm (Check load capacity)
- ③ Corner points, if not fixed. Max 200 mm from the corner.



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R72 7.10



Fixation points Points of fixation

8. Maintenance

Työselitys / R72 Lämpöeristetty ovi ja Ikkuna

- 1. Tyyppi**
Lämpöeristetyt alumiinirunkot R72 ovet ja Ikkunat tehdään R72 ohjeiden mukaisesti, joko kulmapuristamalla tai ruuviliittoksin. (Liittoksinissa käytetään Ilmaa.)
- 2. Materiaalit**
 - Profiilit AW-6060 T6
 - Tiivisteet EPDM-kumi
 - Lämpökatkot Pa 6,6
 - Ruuvit DT-DS 600 DIN 50021 tai A2
- 3. Pintakäsittely**

Anodisointi
Alumiiniprofiilit pintakäsitellään valon ja sään kestäväällä anodisoinnilla.
Värisävy.....

Maalaus
Polyesteripulverimaalaus halutun väriseksi polttoaalattuna.
Värisävy.....
- 4. Lasitus**
Lasitus on tyypittään..... Lasitus ja siihen liittyvien tarvikkeiden valinnat tehdään R72 lasitusohjeen mukaisesti. Tiivistyksessä käytetään ainoastaan Nordic Alumiin hyväksynnän mukaisia tiivistelmiä.
- 5. Kokoonpano**
R72-rakenteet kootaan Nordic Alumiin antamien ohjeiden mukaan (Konepajakanslo)
- 6. Liittymien rakennusrunkoon**
Rakenteet kiinnitetään rakennusrunkoon siten, että niihin kohdistuvat kuormat siirtyvät luotettavasti kantavaan runkoon, eikä rakennusrungon muodonmuutokset eivätkä lämpöliikkeet vahingoita rakenteita. Kiinnitysosat ovat joko valmiita R72 kiinnityskappaleita tai ruostumatonta materiaalia. R72 rakenteen ja rakennusrungon välisen sauma tiivistetään tarkoituksenmukaisella tavalla.
- 7. Rakennusalkainen suojaus**
Alumiiniprofiilien pinnat on tarvittaessa suojattava valu-, rappaus- ja hitsausroiskeilta sekä työn alkaisilla mekaanisilla vaurioilta.
- 8. Toiminnalliset vaatimukset**
Rakenteen on kestävä kaikki määräysten mukaiset kuormitukset ja siirrettävä ne rakennusrunkoon. Rakenteen on toteutettava niin, että valmis rakenne toimii kalkilla osthalluusti.
- 9. Ovien ja ikkunoiden hoito**
Profielien pesu suoritetaan puhtaalla vedellä ja sienellä. Mietoa pesuainetta pH-arvoltaan neutraalia (5-7) voidaan kuitenkin käyttää.
Emäksisiä pesuaineita EI SAA KÄYTTÄÄ.
Ikkunoiden lukutangot ja liikkuvat osat on siirrettävä alka-ajoin.
Ovien saranat ja sulkimet säädetään ennen käyttöönottoa.
Sulkimien on oltava avautumisjarrulla varustettuja.



JÄRJESTELMÄ:	R72 Lämpöeristetty ovi- ja ikkunajärjestelmä
MATERIAALIT:	Seos EN AW-6060 [Al MgSi] EN 573 EN 755 ja DIN 1748
PROFIILIMITAT:	EN 755 tai DIN 1748 EN 12020 tai DIN 17615
PINTÄKÄSITTELYT:	Anodisointi Oksidikerrosten määrittäminen SFS-EN ISO 12373-1 Kerros-paksuuden mittaus SFS-EN ISO 2360 Tiivistys SFS-EN 12373-5 tai SFS-ISO 2932
	Pulverimaalaus polyesteripohjaisella pulverilla Kerros-paksuuden mittaus SFS-EN ISO 2360 Hiilaristikkokoe SFS-EN ISO 2409
LAATUJÄRJESTELMÄ:	Lloyds Register Quality Assurancen laatu-järjestelmän mukaisesti ISO 9001. Sertifikaattinumero LRQA no. 922165/B
YMPÄRISTÖJOHTAMIS- JÄRJESTELMÄ:	Lloyds Register Quality Assurancen ympäristöjohtamisjärjestelmän mukaisesti ISO 14001. Sertifikaattinumero LRQA no. 922165/B
	Nokian Profilitt Oy on valmistanut rakennusjärjestelmää 40 vuotta. Kokemuksemme perustuen materiaalin odotettu kestoalka säännöllisesti ja asiantmukaisesti hoidettuna on 50 vuotta.
	Nokian Profilitt Oy Rakennusjärjestelmät

Work description / R72 Thermally insulated doors and windows

1. Type

Thermally insulated aluminium doors and windows R72 should be made in accordance with instructions for screw or corner crimp connection, suitable aluminium glue should be used.

2. Materials

- Profiles AW-6060 T6
- Gaskets EPDM-rubber
- Thermal breaks Pa 6,6
- Screws DT-DS 600 DIN 50021 or A2

3. Surface treatment

Anodisation

Aluminium profiles are anodised in light and weather proof anodisation.

Colour.....

Painting

Powder coating in a needed colour code

Colour.....

4. Glazing

Type of glazing..... Glazing and appropriate selection of gaskets and glazing lists should be done in accordance with R72 glazing instructions. Only gaskets approved by Nokian Profiles has to be used.

5. Assembly

R72 structures has to be made in accordance with given instructions (Workshop manual).

6. Adjustment to the building frame

Elements are adjusted to the building frame so, that applied forces are reliably transferred to the supporting frame and not going to be damaged by deformation or thermal movements. Fixation parts to be used are standard Nokian Profiles parts or made of rostproof material. Joint between R72 structure and building frame should be tighten with appropriate materials.

7. Protection during construction works

Surfaces of aluminium profiles should be protected from drops of finishing materials, welding, mechanical damages and etc.

8. Functional requirements

Ready made structures should withstand all designed loads and transfer them to the building frame. Structures should be made to fulfill designed requirements in every aspect.

9. Care and maintenance

The cleaning of profiles is carried out with clean water and sponge. Mild detergent with neutral pH-value (5-7) can be used.

Alkaline detergents ARE FORBIDDEN.

Window moving parts of fittings should be time to time greased.

Door hinges and closers should be adjusted before start of exploitation.

Door closers should have function of opening brake.



SYSTEM:	R72 Thermally insulated door and window system	
MATERIALS:	Alloy EN AW-6060 [Al MgSi] EN 573 EN 755 or DIN 1748	
PROFIILIMITAT:	EN 755 or DIN 1748 EN 12020 or DIN 17615	
SURFACE TREATMENT:	Anodising	
	Measuring oksid thickness	SFS-EN ISO 12373-1
	Measuring thickness level	SFS-EN ISO 2360
	Sealing	SFS-EN 12373-5 tai SFS-ISO 2932
	Pulverimaalaus polyesteripohjaisella pulverilla	
	Kerrosaksuuden mittaus	SFS-EN ISO 2360
	Hilaristikkokoe	SFS-EN ISO 2409
LAATUJÄRJESTELMÄ:	According Lloyds Register Quality Assurance system ISO 9001. Certificate number LRQA no. 922165.	
YMPÄRISTÖJOHTAMIS- JÄRJESTELMÄ:	According Lloyds Register Quality Assurance environment quality system ISO 14001. Certificate number LRQA no. 922165.	

Nordic Aluminium plc
Architectural systems

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