



TECHNICAL MANUAL

EXTERNAL ROLLER SHUTTERS

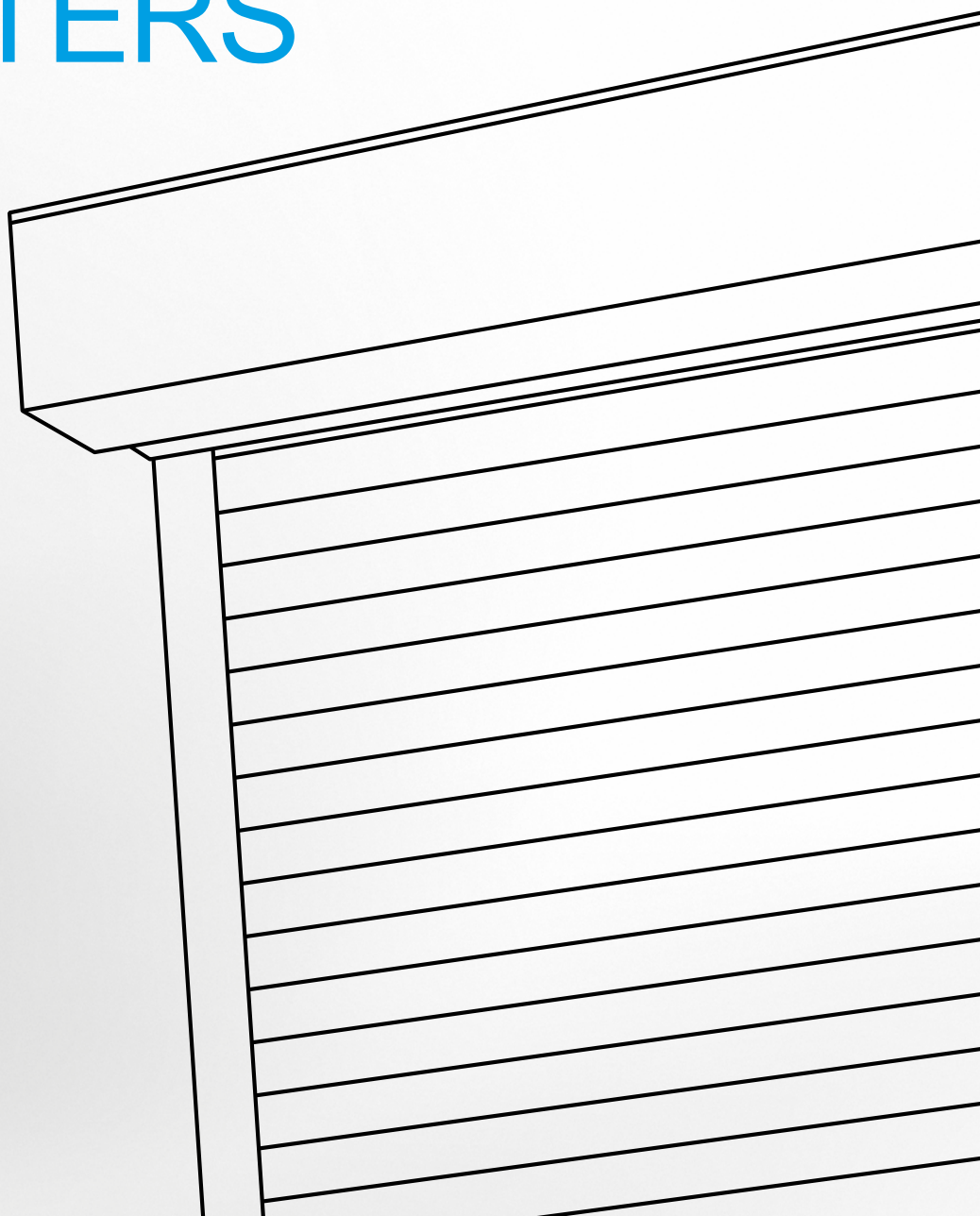


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ISOTRA*Quality*

A brand symbolizing years of tradition, innumerable investments into research and development, use of high-quality materials, technological advancement, reliable work of hundreds of employees and many more parameters, which together form one whole - the final product of the company ISOTRA.



CE Product Marking

All external roller shutters of ISOTRA a.s. comply with the standard ČSN EN 13659:2007

European Marking of CE Compliance – marking on products:



European Marking of CE Compliance – marking in the accompanying commercial documents:

	
ISOTRA a.s. Bílovecká 2411/1, 746 01 Opava 07	ISOTRA a.s. Bílovecká 2411/1, 746 01 Opava 07
EN 13659:2015 VIVERA CPR 020/2017 External sun visor Wind resistance: 0 - 6 Additional thermal resistance ΔR: 0,18 m ² .K/W Total transmittance Solar energy gtot: 0,026 - 0,08	EN 13659:2015 HELUZ CPR 021/2017 External sun visor Wind resistance: 0 - 6 Additional thermal resistance ΔR: 0,18 m ² .K/W Total transmittance Solar energy gtot: 0,026 - 0,08

Standard EN 13659 – Control Force Limitation for Manual Control

The roller shutter armoring weight depends on the slat weight values (kg per m²) and the total roller shutter area (m²).

Use of Slat	m ²	M 317; M 328; MY 442											M 317; MY 442		MY 442			
		0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	8,5
Slat Type	kg/m ²	roller shutter armoring weight (kg)*																
M 317	2,80	1	3	4	6	7	8	10	11	13	14	15	17	18				
M 328	2,60	1	3	4	5	7	8	9	10	12	13	14						
MY 442	2,85	2	3	5	7	9	10	12	14	16	17	19	21	22	24	26	28	29

* The roller shutter armoring weight is rounded!

Control	Maximum Armoring Weight (kg)
Cord	5
Tape	9
Winder with crank tape/cord	9
Crank	15
Crank	15
Motor	29

Selection of control type based on roller shutter armoring weight (kg)

	m ²	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	8,5
Slat Type	kg/m ²																	
M 317	2,80	6	6	6	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	4,5	4,5	4,5	4,5	4,5	5	5				
M 328	2,60	6	6	6	6	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	4,5	4,5	4,5	4,5						
MY 442	3,45	6	6	6	1,2,3,4,5	1,2,3,4,5	4,5	4,5	4,5	5	5	5	5	5	5	5	5	5

Explanatory Notes

Tape	1
Cord	2
Winder with tape/cord	3
Crank	4
Motor	5
All control types	6

PRODUCT TOLERANCES

Manufacturer: **ISOTRA a.s., Bílovecká 2411/1, 746 01 Opava, IČ: 47679191**

Product: **EXTERNAL ROLLER SHUTTERS**

The review should help you to recognize the permissible limits of compliance and incompliance. At the same time the sheet will help you with reasoning as regards any unjust claims of the clients.

External roller shutters comprise of many metal and textile elements with various material features and production tolerances. Despite the optimally selected products, deviations from ideal function may occur even in case of new installation due to the product tolerances.

The external roller shutters are permanently exposed to the effect of weather, particularly temperature, moisture content, wind, and contamination. They have a great effect on the function and appearance of external blinds.

The deviations from the table values can be corrected by our technicians within a specific scope.

Please, be aware:

The specified limit values are created based on the actual state of technology, respective technical standards, and based on many years of experience.

The table values are valid only for the external roller shutters within the permitted production dimensions available in our actual technical catalogue.

	Feature	Description of deviation	Tolerance
1	Roller shutter width	Roller Shutter up to 2000 mm	+0, -3mm
		Roller Shutter from 2000 mm to 4000 mm	+0, -4mm
		Roller Shutter over 4000 mm	+0, -5mm
2	Roller shutter height	Roller Shutter height up to 1500mm	+0, -4mm
		Roller Shutter height from 1500 mm to 2500 mm	+0, -6mm
		Roller Shutter height over 2500 mm	+0, -10mm
3	Slats curvature	Deviation form the balance	max. 15mm
4	Slats slope run	Deviation form the balance	+/- 10mm
5	Roller shutter run time	Permanent length of the motor	max. 4min
6	Light permeability – as per EN 14501	In closed state, there is no horizontal view from outside inside.	permissible
		In closed state, there is no horizontal view from inside outside.	permissible
7	Acoustics	The operation and disconnection sounds result from technical solutions.	permissible
		Noise as per the wind force.	permissible

Vivera



- ▲ High degree of shading and outside noise level reduction
- ▲ Electrical control option
- ▲ Suitable for additional installation on window frame or façade and for plastering under façade heat-insulating system too
- ▲ Aluminum profiles filled with PUR foam
- ▲ Optional design with integrated insect screen

ISOTRA *Quality*

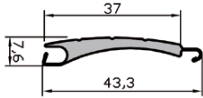
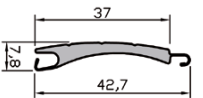
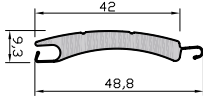
VIVERA (2-00330-0000)

Position	Item name	Business name	Drawing number
4-55	Covering boxes		2-00337-XXXX
4-55	Rivet Al 4x10 Din 7337 A	SC 136	6-002680-XXXX
60	Motors (SOMFY) EXTERNAL ROLLER SHUTTERS		2-00534-0000
60	Octoeasy suspension - single-cell, shaft 40 mm, box 125-165	PR0648/1	6-013917-0000
60	Octoeasy suspension - single-cell, shaft 60 mm, box 125-165	PR0648/2	6-013918-0000
60	Octoeasy suspension - double-cell, shaft 40 mm, box 180-205	PR0648/3	6-013919-0000
60	Octoeasy suspension - double-cell, shaft 60 mm, box 180-205	PR0648/4	6-013920-0000
61	Manual control		2-00790-0000
61	Tape 14 mm brown/grey	PR0143/XXXX	6-001916-XXXX
61	Tape roller - white / brown	PR0136/XXXX	6-001920-XXXX
61	OCTO spring 40 - 600 mm	PR0092/10	6-002684-0000
61	Spring holder MINI for max. 30 kg	PR0094	6-002693-0000
61	Reduction for VR30	PR0095	6-002694-0000
61	Rubber cable, plastic, black		6-017078-0000
62	Motors (GEIGER) EXTERNAL ROLLER SHUTTERS		2-00565-0000
63	Motors (BECKER) EXTERNAL ROLLER SHUTTERS		2-01297-0000
64	Motors (ELERO) EXTERNAL ROLLER SHUTTERS		2-01751-0000
70	Guiding channel A3	PR0109/XX	6-001786-XXXX
70	Rounded FAR-ES guiding channel cover	PR0329/XX	6-003880-XXXX
70	Screw 3,5x9,5 DIN 7504 M, Zn	A 67/4	6-003096-0000
80	Locking clip	PR0168/1	3-02239-0000
80	Slats		2-00616-0000
80	Aluminium slat M 317	PR0165/XX/B	6-002606-XXXX
80	Slats		see Slats
80	Ratchet 10x3 mm to the end slat 8 mm	PR0254	6-002685-0000
80	Rotary stop ABS - black - couple	RP0291/200	6-006288-0001
80	Lateral piece for SL-ES, black	PR0332/9004	6-012002-9004
80	End slat for the security shutter SL-ES	PR0331/XXXX	6-012001-XXXX
80	Sealing insert, round into end-slat	PR0288	6-003664-0000
80	End slat SL KU-N	PR0431/XX	6-010977-XXXX
80	Stopper VB rotative Poly, transparent - pair	PR0121	6-001866-0000
80	Cylinder round lock into KL white/brown/grey	PR0207/XX	6-002131-XXXX
80	Cylinder round lock into KL white/brown/grey	PR0208/XX	6-002133-XXXX
80	Weight down steel bar 18x3	PR0123	6-001869-0000
300	Accessories		2-00690-0000
300	Selve - cord coiler, without cord - white/brown	PR0131/XXXX	6-001908-XXXX
300	Selve - recessed cord coiler, without cord - white/brown	PR0133/XXXX	6-001913-XXXX
300	Selve - cord handle coiler without cord- white/brown	PR0138/XXXX	6-001914-XXXX
300	Selve - partially recessed tape coiler, without cord- white/brown	PR0286/XXXX	6-003640-XXXX
300	Selve - cor- handle coiler, without cord - white/brown	PR0140/XXXX	6-001954-XXXX
300	Selve - cord coiler, without cord - white/brown	PR0135/XXXX	6-001911-XXXX
300	Exterior aluminium handle white/brown	SC 209 XXXX	6-001387-XXXX
300	Cover caps 10 mm	ZP0013/XXXX	6-002066
300	Screw 2,9x6,5, DIN 7981 C,H, Zn	DZ 224	6-003135-0000
330	Engine holder MLP.2 125	PR0352-2	6-012064-01252
330	Engine holder MLP.2 138	PR0353-2	6-012064-01382
330	Engine holder MLP.2 150	PR0354-2	6-012064-01502
330	Engine holder MLP.2 165	PR0355-2	6-012064-01652
330	Engine holder MLP.2 180	PR0356-2	6-012064-01802
330	Engine holder MLP.2 205	PR0357-2	6-012064-02052

Electric Motor Technical Parameters

Shaft	Maximum Roller Shutter Area	Torque	RPM	Maximum Operation Time	Power Input	International Protection Rating	Cable Length
40	3.8 m ²	4 Nm	14 RPM	4 min.	65 W	IP44	3 m
40	5.8 m ²	9 Nm	14 RPM	4 min.	100 W	IP44	3 m
60	7.9 m ²	15 Nm	17 RPM	4 min.	140 W	IP44	1 m
60	7.8 m ²	20 Nm	17 RPM	4 min.	160 W	IP44	1 m
60	6.6 m ²	10 Nm	17 RPM	4 min.	120 W	IP44	1 m
60	5.3 m ²	8 Nm	17 RPM	4 min.	90 W	IP44	1 m
60	4.1 m ²	6 Nm	17 RPM	4 min.	90 W	IP44	1 m

Slats

	Standard		
	M317	M328	MY442
	Vivera, Heluz	Vivera, Heluz	Vivera, Heluz
	Al	Al	Al
			
Technical data (mm)	M317	M328	MY442
Covering height	37	37	42
Thickness	7,6	7,8	9,3
Material thickness	0,3	0,28	0,3
Weight	2,8 kg/m ²	2,6 kg/m ²	2,85 Kg/m ²
Maximum Width	2900	2700	4000
Maximum Area	6,5 m ²	5,8 m ²	8,5 m ²

Vivera

Winding table for 40 mm octagonal shaft.

Box size (mm)	Slat					
	M317		M328		MY442	
	Roller shutter height (mm)					
	manual control	motor	manual control	motor	manual control	motor
125	1270	1170	1390	1290	-	-
138	1600	1500	1720	1620	-	-
150	2090	1990	2160	2060	-	-
165	2720	2620	2640	2540	-	-
180	3260	3160	3260	3160	-	-
205	4350	4250	4360	4260	-	-

Winding table for 60 mm octagonal shaft.

Box size (mm)	Slat					
	M317		M328		MY442	
	Roller shutter height (mm)					
	manual control	motor	manual control	motor	manual control	motor
125	-	780	-	970	-	660
138	-	1220	-	1480	-	950
150	-	1700	-	1960	-	1240
165	-	2250	-	2430	-	1800
180	-	2960	-	2950	-	2260
205	-	4070	-	4010	-	2860

Vivera-Spectra

Winding table for 40 mm octagonal shaft

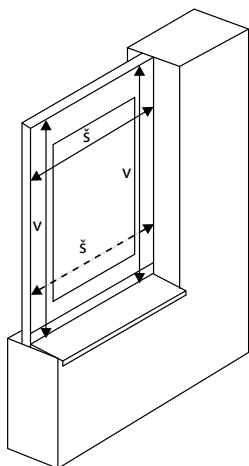
Box size (mm)	Slat					
	M317		M328		MY442	
	Roller shutter height (mm)					
	manual control	motor	manual control	motor	manual control	motor
138	1110	1010	1170	1070	-	-
150	1630	1530	1790	1690	-	-
165	2230	2130	2340	2240	-	-
180	2500	2400	2500	2400	-	-

Winding table for 60 mm octagonal shaft

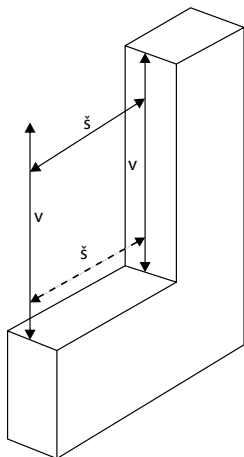
Box size (mm)	Slat					
	M317		M328		MY442	
	Roller shutter height (mm)					
	manual control	motor	manual control	motor	manual control	motor
138	-	720	-	960	-	-
150	-	1350	-	1470	-	-
165	-	1760	-	2060	-	-
180	-	2400	-	2400	-	-

Measuring

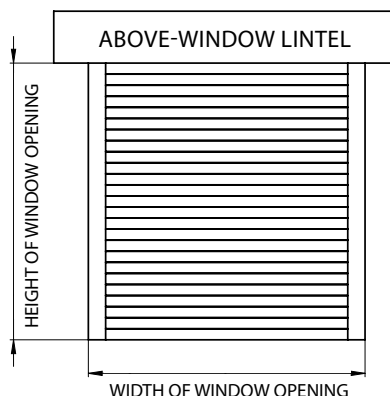
Front window roller shutter



Above-window roller shutter



Under plaster roller shutter



The ordering dimensions are the dimensions for the finished roller shutter.

Width of the roller shutter = X

Height of the roller shutter = Y

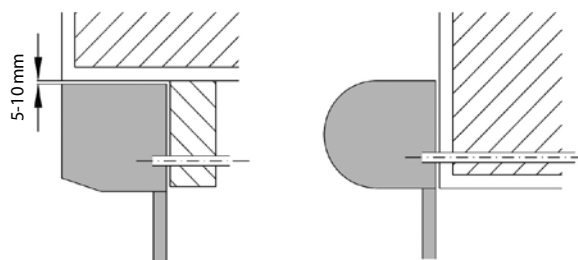
The height and the width are always measured in a minimum of three places. The manufacturing dimensions are always the minimum measured value. Measurements are taken after the frame or window is fitted into the construction hole after completion of the outside and inside reveals, including parapets. The method of measurement of external roller shutter is so specific that it is recommended to consult the technical plans at the construction site. Other specific solutions are possible.

ASSEMBLY

The assembly may only be performed by a qualified professional employee! Construction preparedness for the assembly: finished reveal, coloured façade, finished outside parapets

AREA FOR ASSEMBLY

- on the top 5 - 10 mm (closed with sealing substance)
- on sides also approximately 5 mm
- down: leave a maximum distance of 5 mm between the leading bar and the parapet



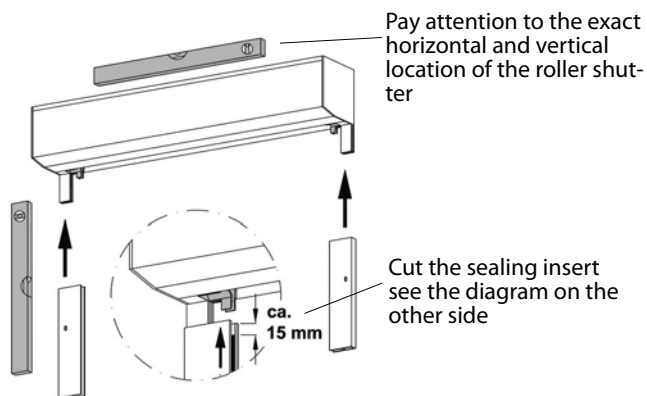
ASSEMBLY TOOLS:

1. Tape measure
2. Water gauge
3. Pencil
4. Hammer
5. Electric drill as per the source material
6. Cordless electric drill
7. Magnetic adapter
8. Bits PZ2, PH2, magnetic adapter on hexagonal head 8 and 10
9. Set of Allen wrenches
10. Assembly cable
11. Small ratchet wrench and 8 nut
12. Set of screwdrivers, insulated, electric

INSPECTION

Before assembly we recommend inspecting all the parts after delivery of the goods to prevent any problems. The manufacturer must be notified of any defects or comments concerning the assembly or roller shutter.

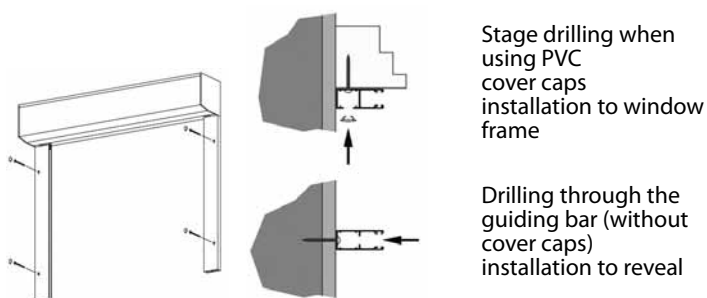
1. Check the dimensions of the roller shutter and the construction hole or the window
2. On the box cut the outlet for the strip, cable or lever of the conical gearbox and drill the passage on the wall or in the window. To prevent damage to the strip, it is necessary to drill the passage for the strip perpendicularly, if possible. Pay attention when drilling to the handle bar; the square must be located centrally in the drilled hole and must not be in contact with the walls in the hole and the scrub in them. (For the 14 mm strip, drill about 16 mm / for strip 23 mm strip, drill a hole of about 32 mm / for the cable, drill a hole about 10 mm / for the conical gearbox, follow the manual).



3. Insert the guiding bars into the leg of the side wall; check the guiding bars are the same height. (The insertion of the guiding bar into the side wall must not damage the starting point of the armour located in the side wall.)
4. Marking of drilling points in which the screws fix the blind (the size is according to the masonry and screws used).

CONTROL USING THE STRIP OR THE CORD

5. On the strip attach the penetration, plastic tube, tape roll, etc. (roll downward, brush upward).
6. Suspend the strip or the cord into the spring clamp so that during the movement of the armour the upward strip is automatically wound into the winding mechanism (according to the construction the winding mechanism must be open and the strip must be hooked and fixed to the spring mechanism). We advise that when shortening the strip, the blind armour must be lowered. When working with the strip, the spring mechanism must be secured against winding!
7. Fixation of the winding mechanism on the frame of the window or the wall.
8. Fixation of the strip penetration on the wall or the window frame (the roll simplifies the movement of the strip).



ENGINE CONTROL

9. Attach the cable from the engine to the connection box.

N.B. It is necessary to connect the cables according to the drawing of the engine supplier. The work with parts connected to the electricity current must be carried out by trained experts. During the connection all the electric lines must be without electric current. Engines are pre-adjusted, but in the place of the installation of the roller shutter they must be tested and the border settings must be adjusted.

CONTROL BY HANDLE:

10. Passing through the wall of the square joint bearing and fixation into the conical gearbox (in the box the square must be shortened according to the fixation).

11. Fixation of the joint bearing by the attached screws on the wall or the window frame.

12. Insert the handle (profiled tube) into the joint bearing and fix it with the fixation clamp (plastic ring).

13. Fixation of the handle holder on the window frame or the wall.

14. Version of the box under the plaster.

· Before starting plaster work it is necessary to cover the joints between the box and the wall and the large area joint. (Additional fixation and armouring prevents the origination of cracks from tension.)



The roller shutters must be assembled and serviced by trained specialists

NUMBER OF FIXATIONS FOR ONE GUIDING BAR:

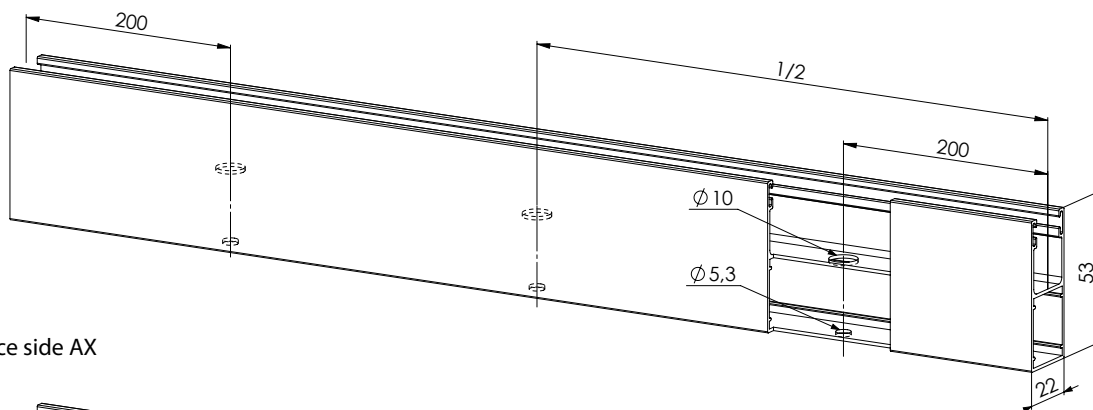
Height of the roller shutter up to **150 cm** > 2 fixation points in one guiding bar

Height of the roller shutter up to **250 cm** > 3 fixation points in one guiding bar

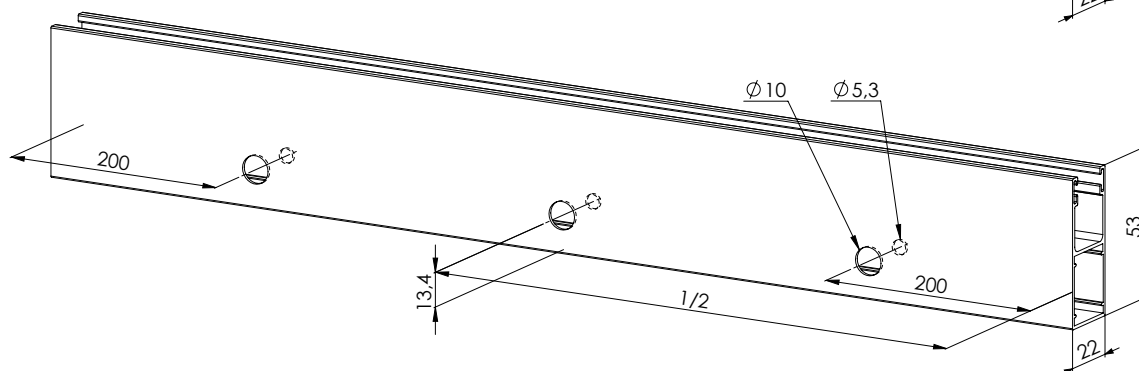
This data is valid during assembly into the masonry with a sufficient load-bearing capacity. The same is also valid for data for the attached joining material. The fixation material must be chosen according to the strength of the masonry and the static conditions of the particular case.

Guiding rails drilling

A) from the side AXb

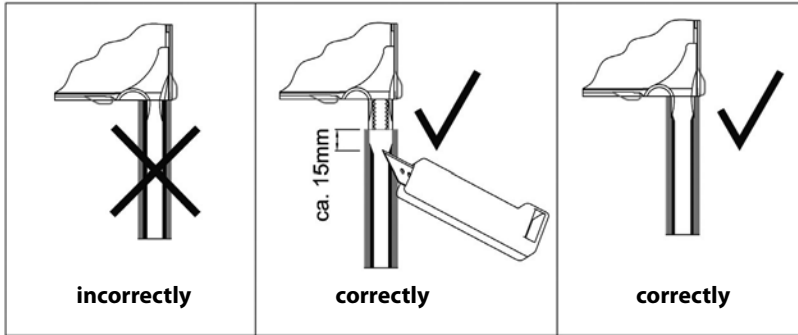


B) face side AX

**Guide rails - frontway/sideway drilling (200 mm on both sides from the edges)**

up to a height of 1500 mm	2 openings (on the edges)
more than 1500 mm up to 3000 mm	3 openings (2 openings on the edges + 1 centre opening)
from 3000 mm up to 4500 mm	4 openings (2 openings on the edges + 2 centre openings)
from 4500 mm	5 openings (2 openings on the edges + 3 centre openings)

Guiding Rail Gasket Cutout



To prevent hooking the blind armour when starting:

The sealing insert of the guiding bar in the upper part of the starting position about 15 mm from the upper edge must be cut. (Before assembly of the guiding bars!)

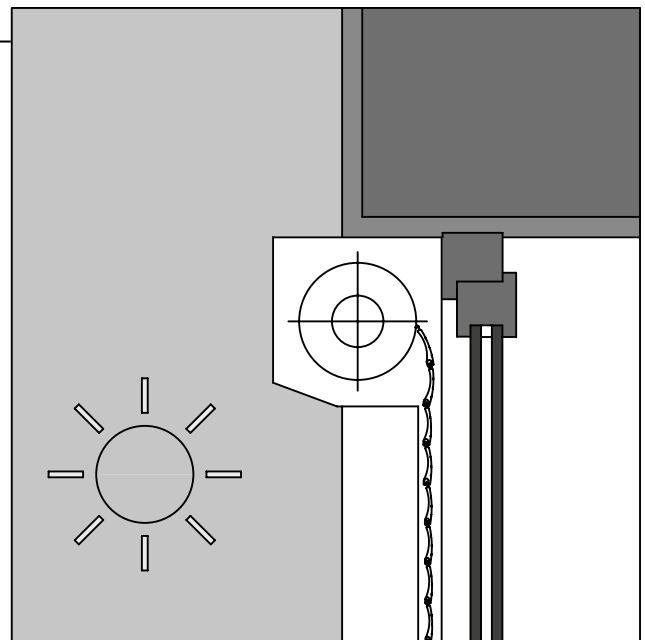
Dismantling of the revision cover of the box must always be enabled. Therefore, the revision cover cannot be plastered or fixed into the construction. For the installation of boxes under the plaster, the strip is prepared which is fixed to the side by the rivet which can be plastered.

Assembly Alternatives

Vivera and Sectra Roller Shutter Assembly

Assembly A

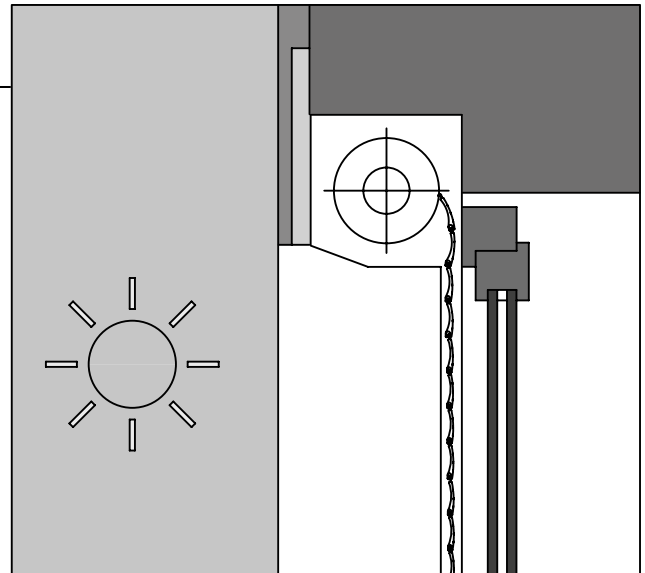
Assembly on window frame. Prepare the aperture for passage of the control mechanisms into interior, prepare the passage for cord, crank or electrical cable based on the control method and lower the rolling Shutter to the low position. Put the box onto the guiding rails and then screw the complete set onto the window frame. Cover the screws with covers. After checking the roller Shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person. In the case of absence of the expanding profile on the window, the disadvantage of the installation is the window clearance reduction.



Admira and Vivera Roller Shutters Assembly

Assembly A

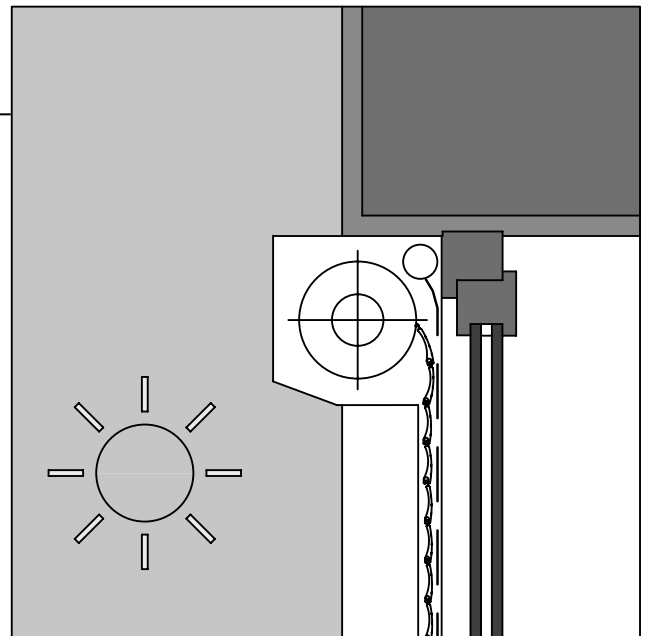
Assembly on window frame. An advantage of these roller shutter is that they are hidden under the façade or heat-insulating system that does not disturb the building aesthetics. Prepare the aperture for passage of the control mechanisms into interior, prepare the passage for cord, crank or electrical cable based on the control method and lower the roller shutter to the low position. Put the box onto the guiding rails and then screw the complete set onto the window frame. Cover the screws with covers. After checking the roller shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person.



Vivera-Sectra Roller Shutters Assembly

Assembly A

Assembly on window frame. Prepare the aperture for passage of the control mechanisms into interior, prepare the passage for cord, crank or electrical cable based on the control method and lower the roller shutter to the low position. Put the box onto the guiding rails and then screw the complete set onto the window frame. Cover the screws with covers. After checking the roller shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person. Drill apertures for the screen locking in the guiding rail. The SECTRA roller shutter can also be mounted in above-window pockets or lintels.



Vivera Roller Shutter Assembly

Assembly B

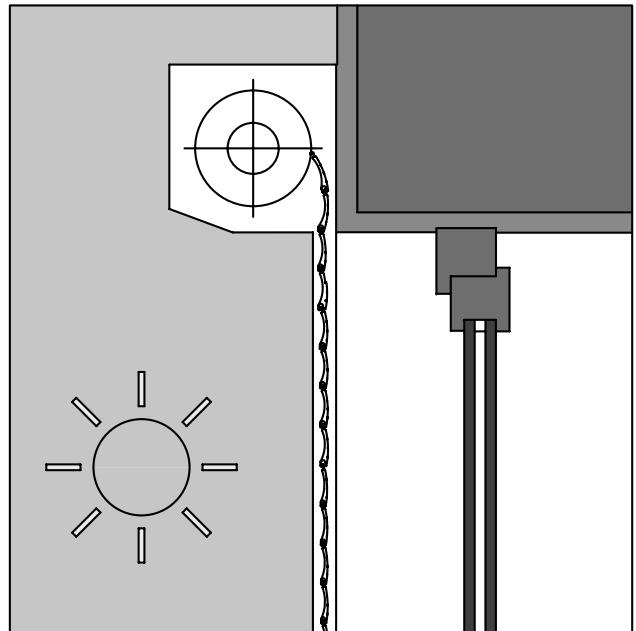
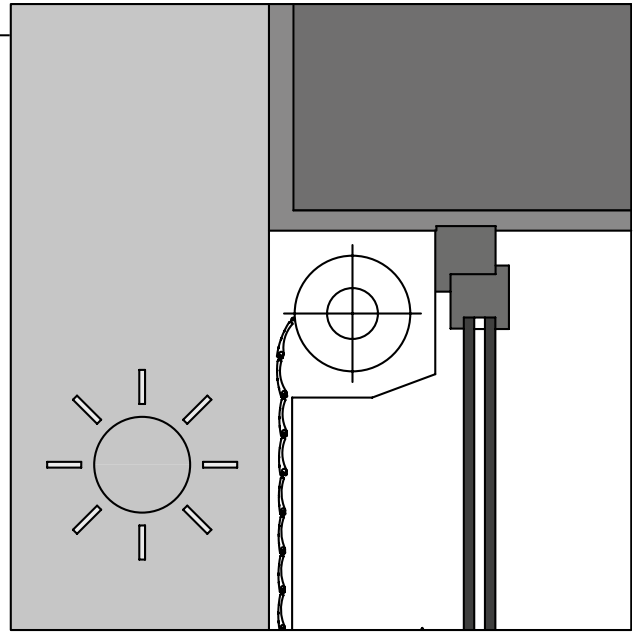
Reverse Assembly on window frame. The box is screwed onto the window frame en face and the distance between guides and window is based on the box size. Prepare the aperture for passage of the control mechanisms into interior, prepare the passage for cord, crank or electrical cable based on the control method and lower the roller shutter to the low position. Put the box onto the guiding rails and then screw the complete set onto the window frame. Cover the screws with covers. Screw the guiding rails onto the window lining. After checking the roller shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person.

Assembly D

Assembly on window frame from interior. This is practically Installation A with the only difference that the roller shutter and the roller shutter control are installed inside the room. Put the box onto the guiding rails and then screw the complete set onto the window frame. Cover the screws with covers. Complete the control system. After checking the roller shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person.

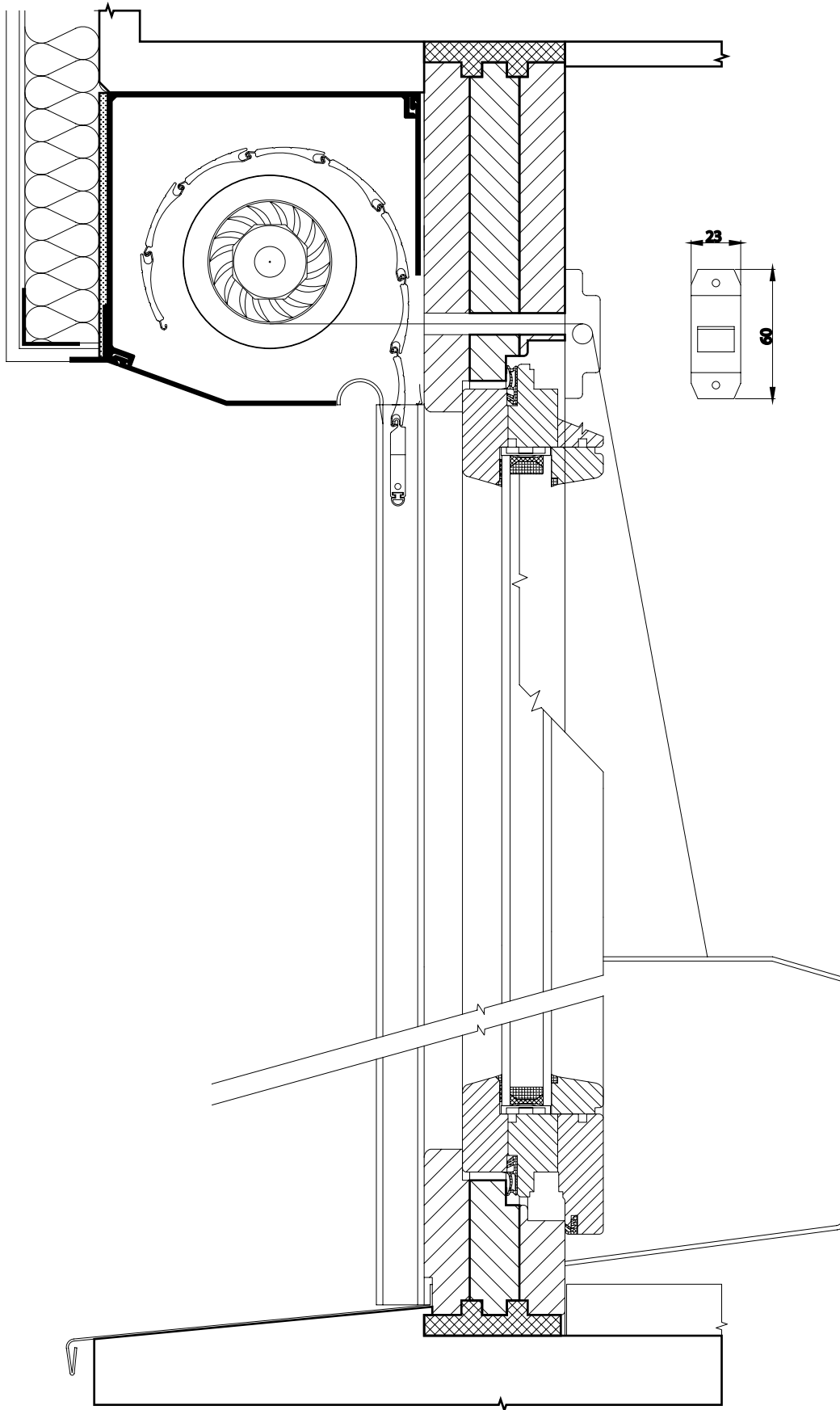
Assembly E

Assembly on facade. Prepare the aperture for passage of the control mechanisms into interior, prepare the passage for cord, crank or electrical cable based on the control method and lower the roller shutter to the low position. Put the box onto the guiding rails and then screw the complete set onto the facade. Cover the screws with covers. After checking the roller shutter function, attach the bushing for cord, tape or crank in the interior. In the case of electrical control, complete the wiring, which can only be done by a qualified person. The guiding rails should have end stops.



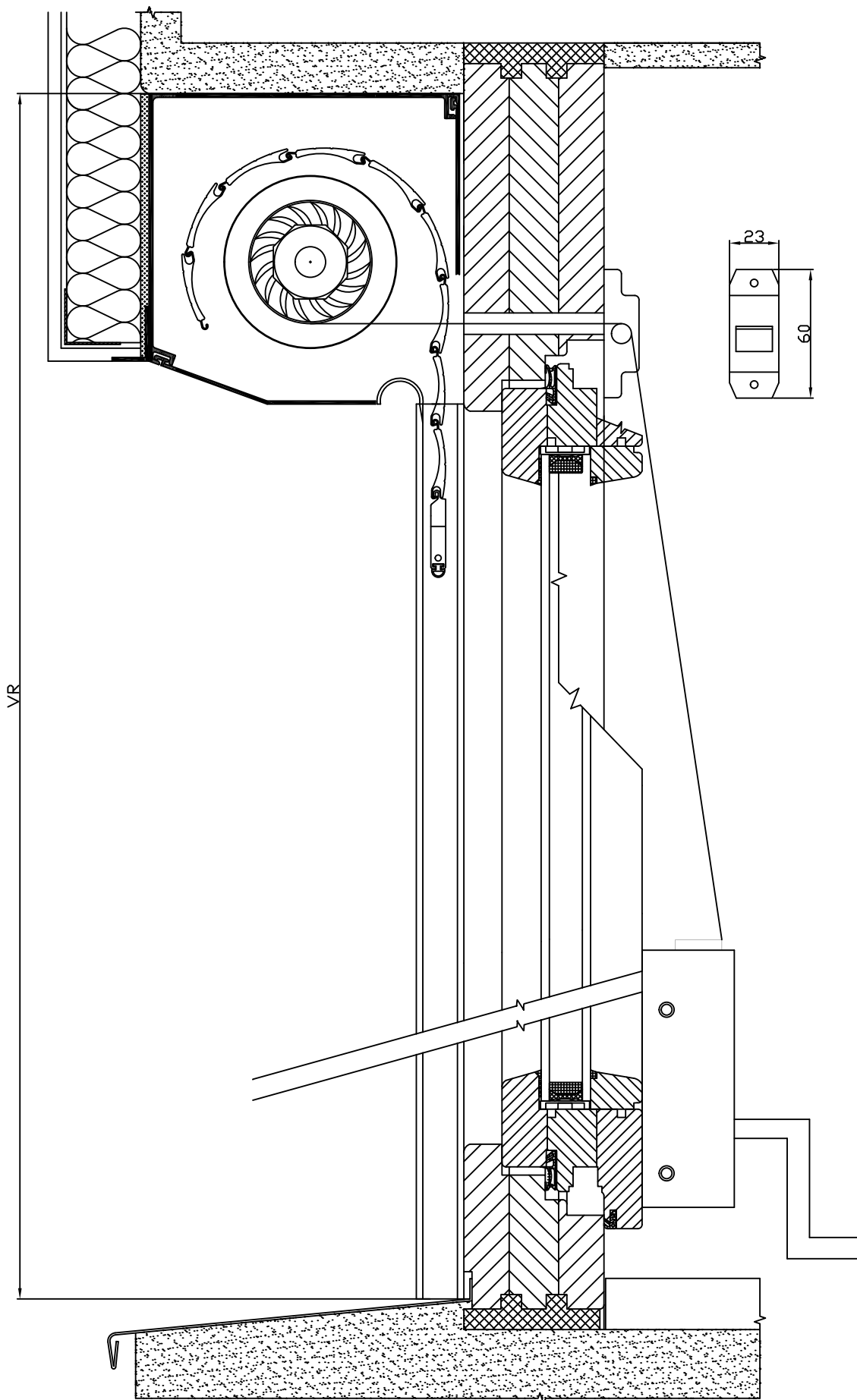
Schematic Sections for Individual Control Types

Tape Controlled Roller Shutter – vertical section



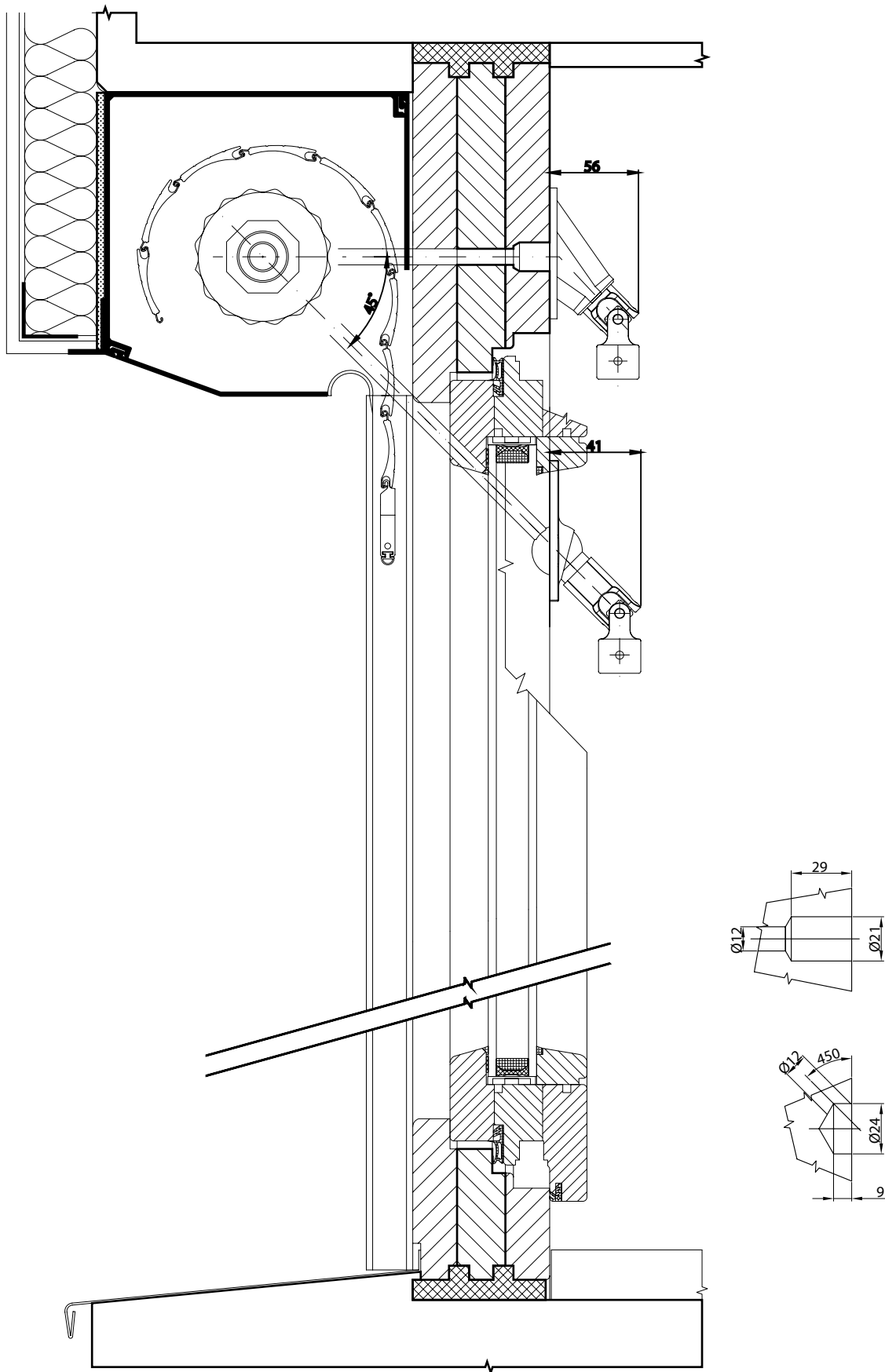
This is a schematic drawing whose shape varies according to the configuration of the product.

Crank Winder Controlled Roller Shutter – vertical section



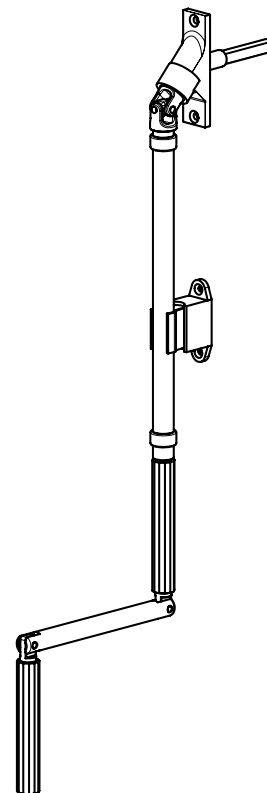
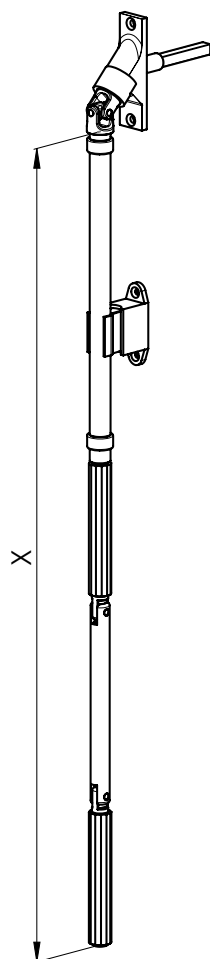
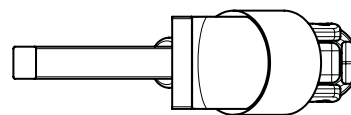
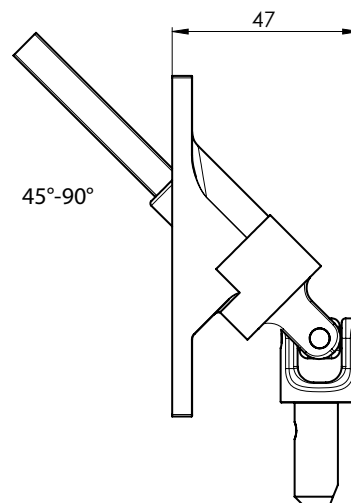
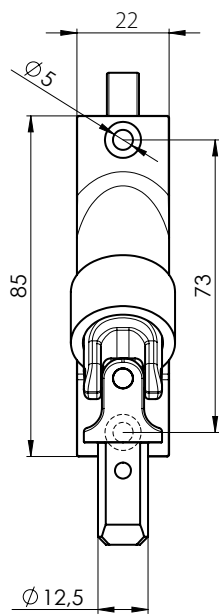
This is a schematic drawing whose shape varies according to the configuration of the product.

Crank Controlled Roller Shutter – vertical section

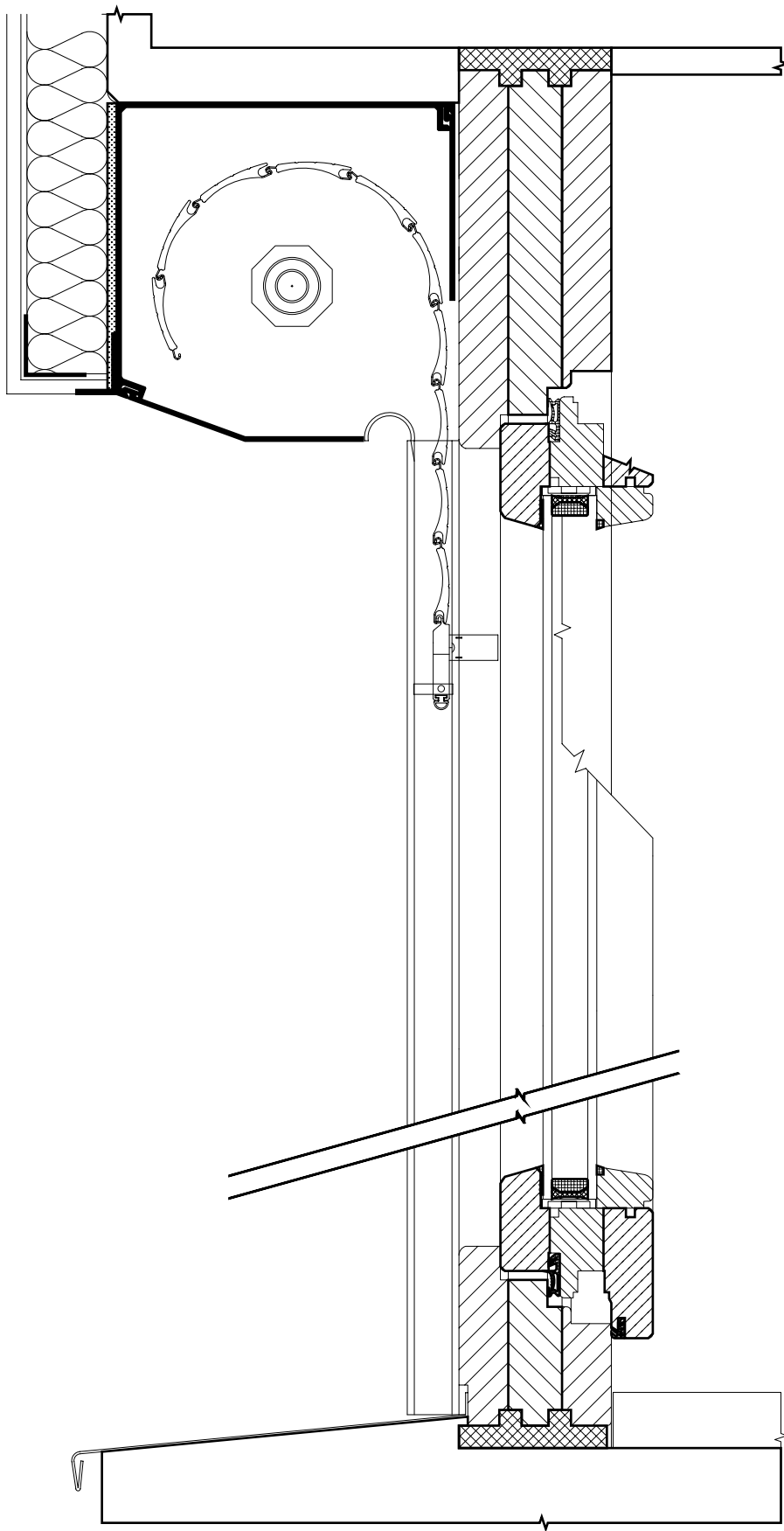


This is a schematic drawing whose shape varies according to the configuration of the product.

Articulated coupling 45-90°
PR0185
(6-002709-0000)



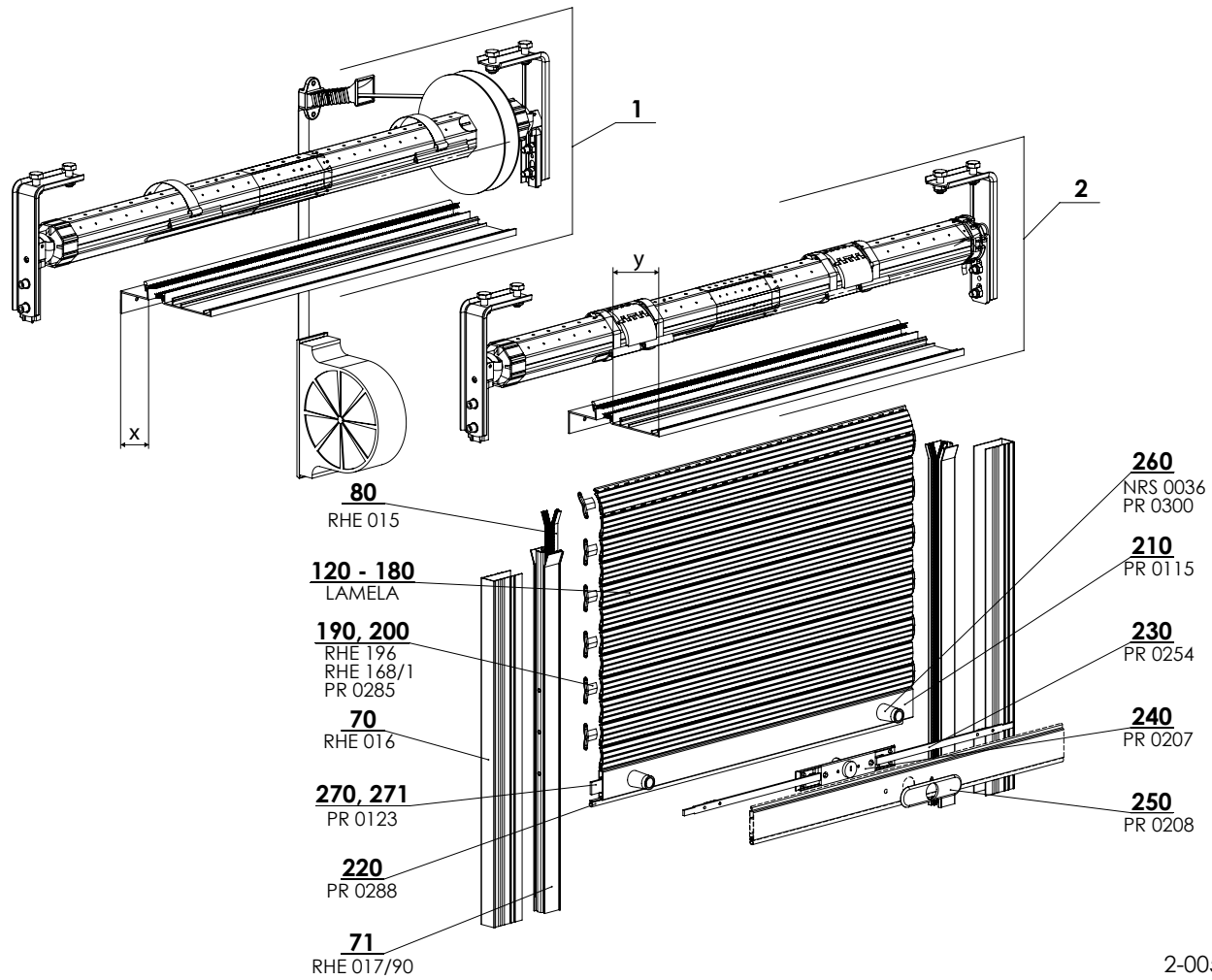
Spring or Motor Controlled Roller Shutter - vertical section



This is a schematic drawing whose shape varies according to the configuration of the product.

HELUZ Lintel External Roller Shutter

Basic Product Specification



2-00528-XXXX-E

Control

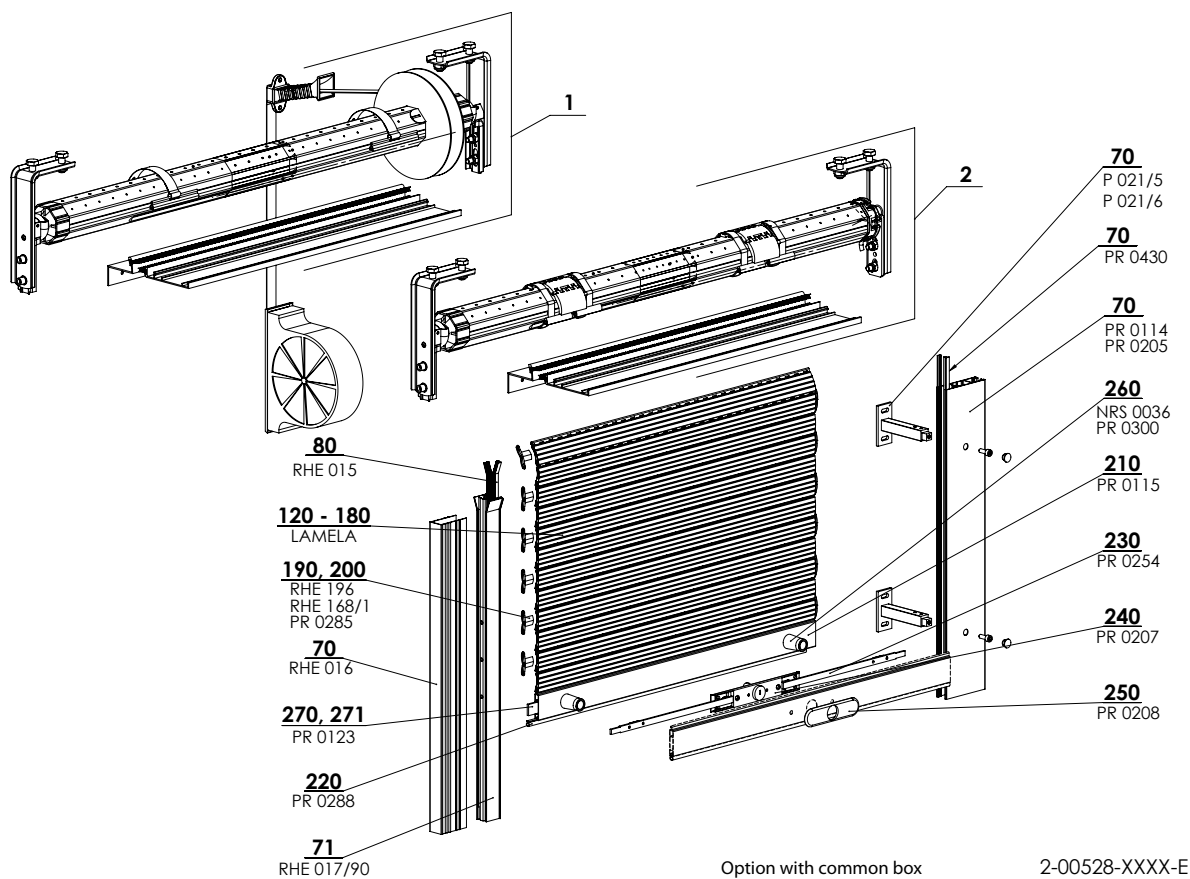
- Tape - used for pulling the roller blind up and down. White or grey 22 mm wide tape.
- Motor - with the torque of 4–20 Nm, mounted in the octagonal rod with diameter of 40 mm or 60 mm.

Standard Dimensions

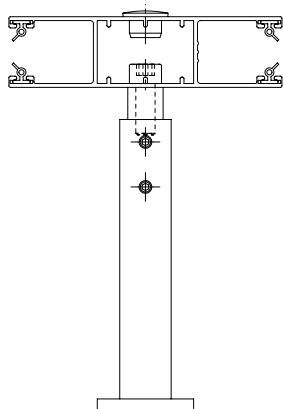
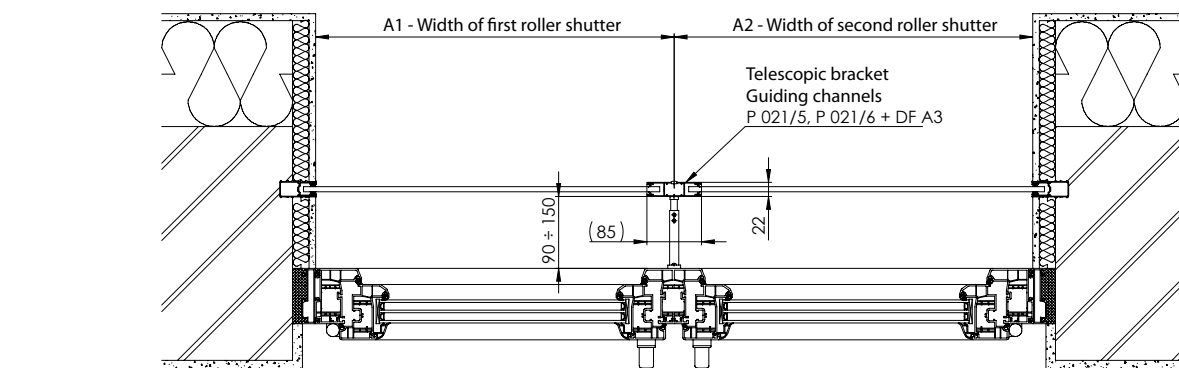
Slat	Control	Width (mm)		Height (mm)		Guaranteed area (m ²)
		min.	max.	min.	max.	max.
M328	tape	600	2700	600	2800	3,5
	motor	600	2700	600	2800	5,8
M317	tape	600	2900	600	2800	3,2
	motor	600	2900	600	2800	6,5
MY442	motor	600	4000	600	2300	8,5

Maximum width of underplaster common box for outside roller shutters is 4 m and 5,5 m for visible box.

Roller shutter for Heluz lintel - common guiding channel



Roller shutter for Heluz lintel - connected roller shutters



Telescopic bracket P 021/5, P 021/6

Recommended quantity of telescopic brackets for guide rail DF A3					
Height of roller shutter	0 - 75	76 - 125	126 - 175	176 - 225	226 - 290
Amount of brackets	2	3	4	5	6

Connected roller shutters for Heluz lintel

2-00528-XXXX-E

HELUZ 2-00330-0000

Position	Item name	Business name	Drawing number
1	Motor drive		2-00531-0000
2	Manual drive		2-00532-0000
70	Al pocket for guiding channel	RHE016	6-006565-0000
71	Al. guiding channel without brush	RHE017/90	6-006566-0090
80	Brush for guiding channel	RHE015	6-006564-0000
120-180	Slats		see page 36
190,200	Staple	PR0285	6-003139-0000
210	End cap	PR0115	6-001858-xxxx
220	Staple	PR0288	6-003139-0000
230	Ratchet 10x3mm into last slat	PR0254	6-002685-0000
240	Cylinder round lock into last slat	PR0207	6-002131-0000
250	Round end cap lock	PR0208	6-002133-xxxx
260	Dead stop 28 mm	NRS0036	6-005477-0000
260	PVC block for last slat	PR0300	6-009813-0004
270,271	Weight down steel bar	PR0123	6-001869-0000

Electric Motor Technical Parameters

Shaft	Maximum Roller Shutter Area	Torque	RPM	Maximum Operation Time	Power Input	International Protection Rating	Cable Length
60	4,1 m ²	6 Nm	17 RPM	4 min.	90 W	IP44	1 m
60	5,3 m ²	8 Nm	17 RPM	4 min.	90 W	IP44	1 m
60	6,6 m ²	10 Nm	17 RPM	4 min.	120 W	IP44	1 m
60	7,8 m ²	20 Nm	17 RPM	4 min.	160 W	IP44	1 m
60	7,9 m ²	15 Nm	17 RPM	4 min.	140 W	IP44	1 m

Heluz

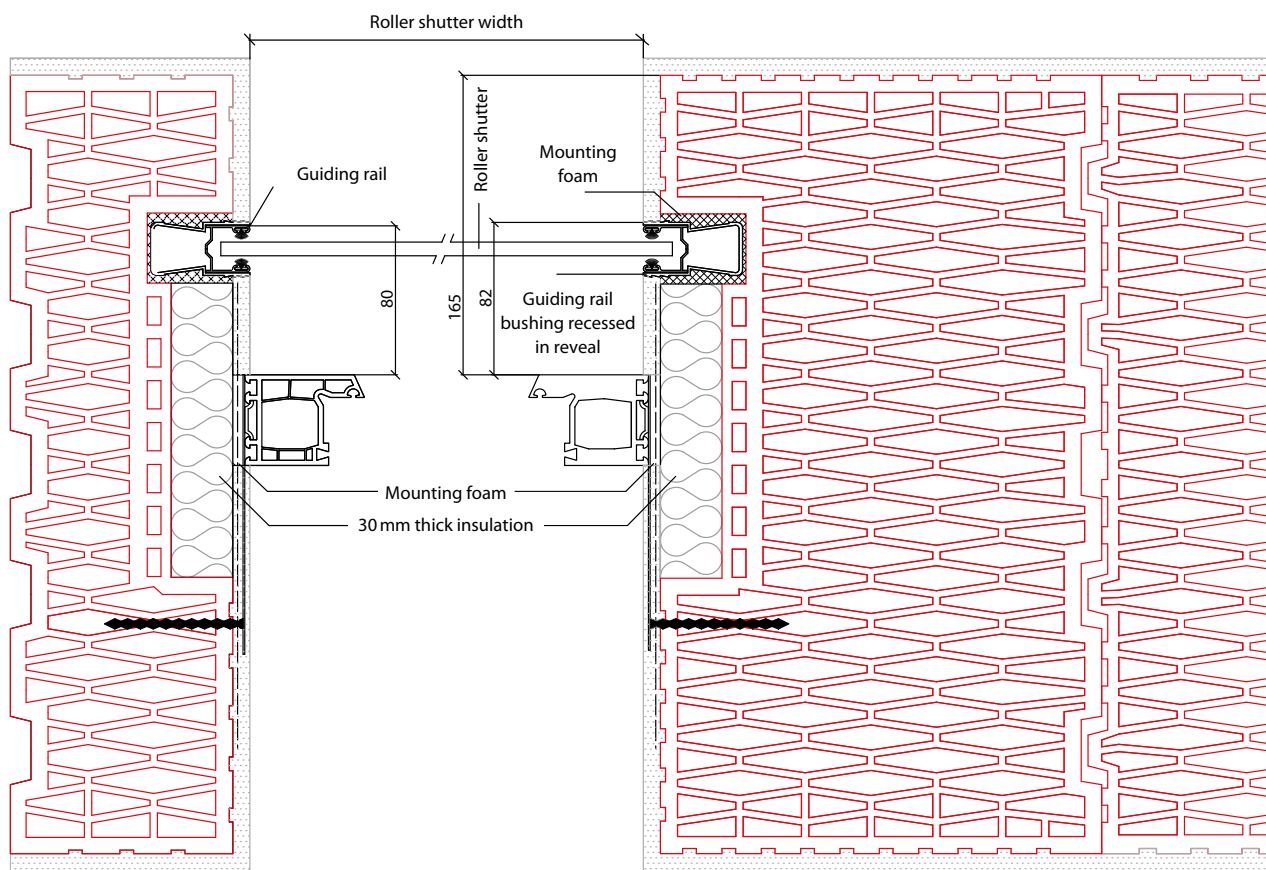
Winding table for 60 Octagonal Shaft

Box Size	Slat					
	M317		M328		MY442	
	manual control	motor	manual control	motor	manual control	motor
165	2300	2200	2480	2380	1850	1750
180	3000	2900	3000	2900	2300	2200

Measuring and Installation of HELUZ Lintel External Roller Shutter

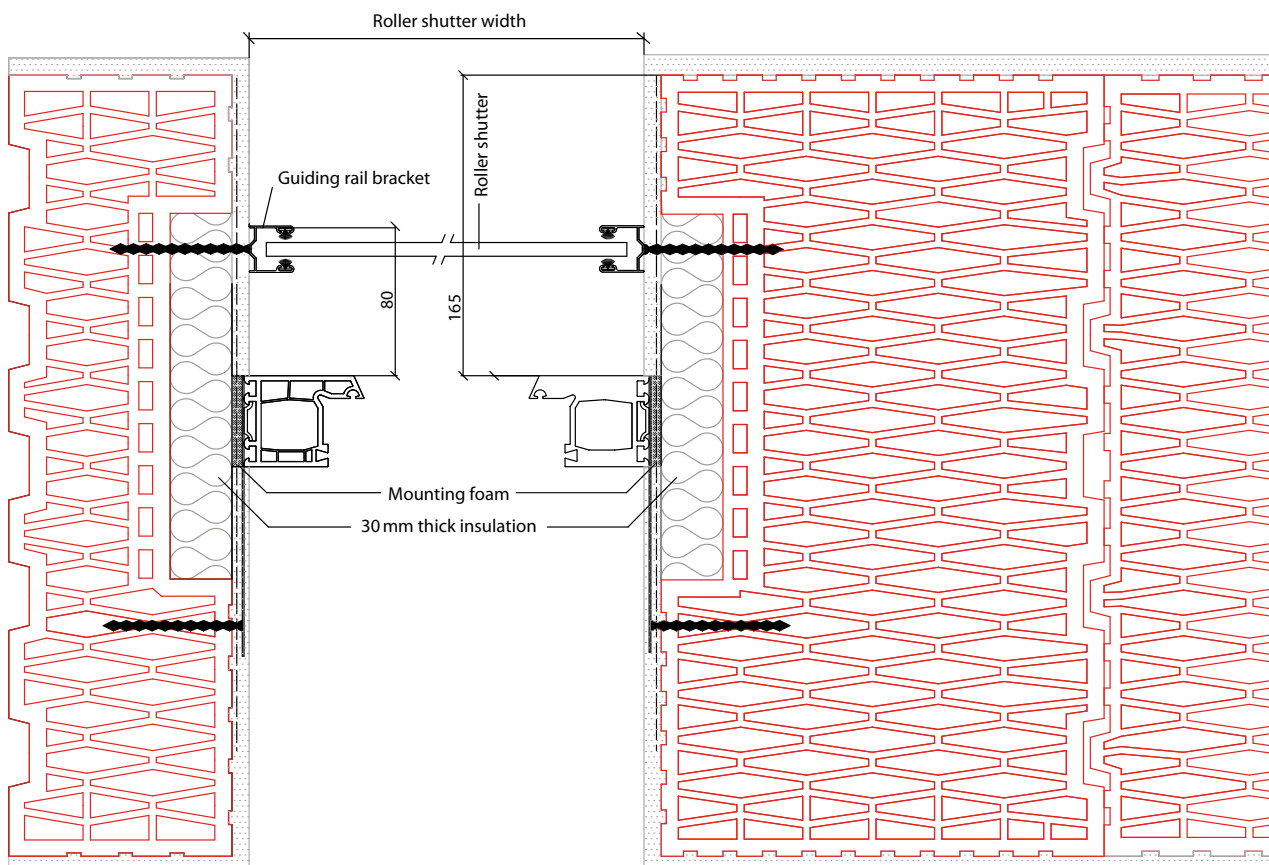
The guiding rail bushings can be recessed in an insulation sandwich. The roller shutter guiding rails can also be attached to the windows frame using attachments.

Fitting of roller shutter bushing with recessed guiding rail – standard Installation



Use the Fisher FFS or FFSZ screw for window frames or appropriate frame dowels with a minimum length of 80 mm.

Fitting of roller shutter guiding rail in reveal

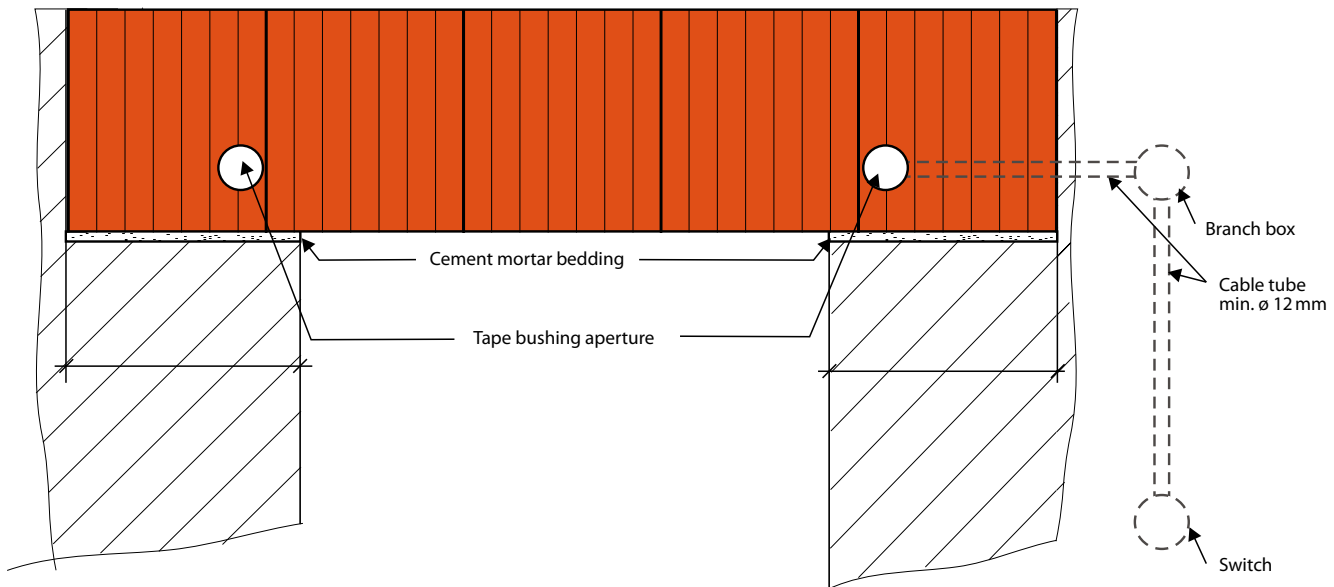


Use the Fisher FFS or FFSZ screw for window frames or appropriate frame dowels with a minimum length of 80 mm.

Recessing of components for motor control

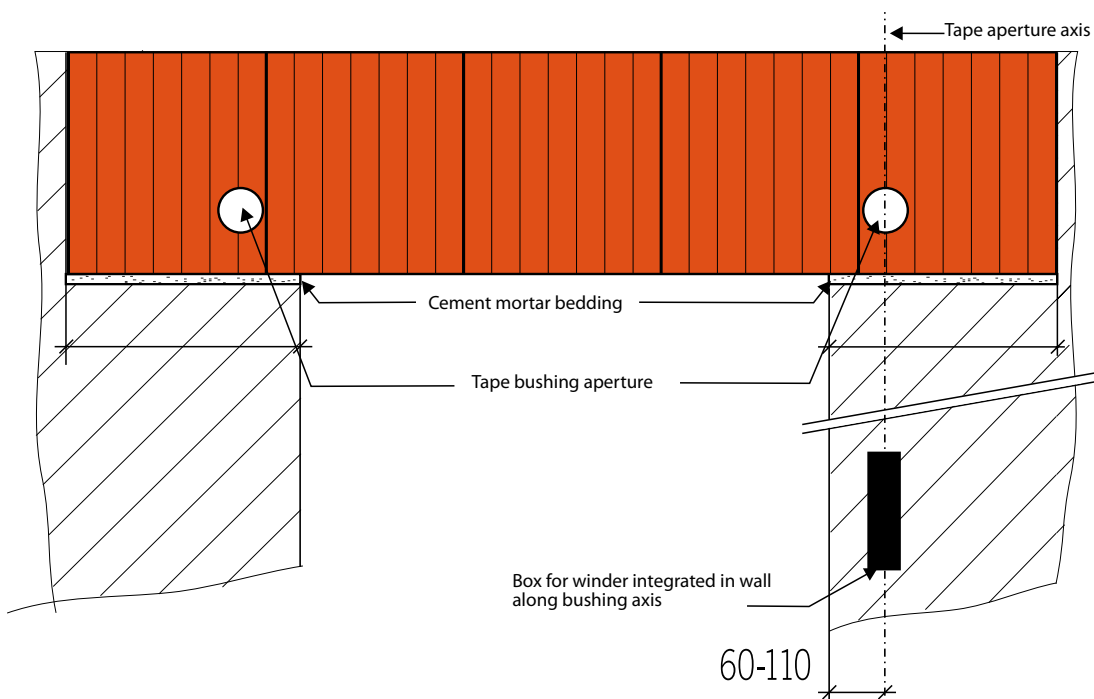
In the case of the motor control, the electric motor is installed in the roller shutter crank. We do not fit the winder box or tape bushing. In this case, we install a branch box, cable tube and eventually a switch box next to the lintel.

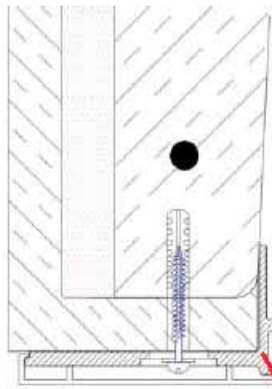
Do not cut out the polystyrene inside the lintel!



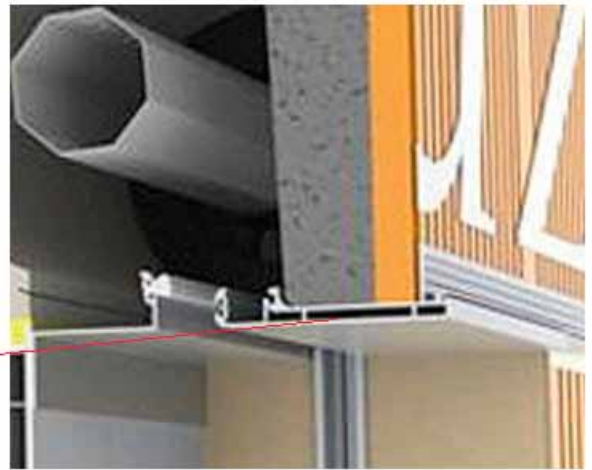
Recessing of components for manual control

The manual control is performed using a tape bushing, 22 mm tape and winder recessed in the masonry next to the window.

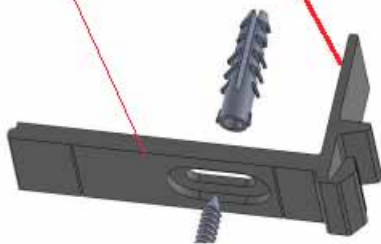




External aluminium flap.
Width 96.5 mm
Order number: 6-011038-0090



Front flap plastic brackets.
Order number: 6-012196-0000



Installation of the new version:

Recommended distance between brackets approx. 500 mm.



Motors

GEIGER MOTORS, 60 mm SHAFT – for MY442, M328 and M317 slats

item name	trade name	drawing number
Geiger TOUCH, 6 Nm (incl. adapter and carrier)	PR0629/06	6-012799-0006
Geiger TOUCH, 10 Nm (incl. adapter and carrier)	PR0629/10	6-012799-0010
Geiger TOUCH, 20 Nm (incl. adapter and carrier)	PR0629/20	6-012799-0020
Geiger EASY, 10 Nm (incl. adapter and carrier)	PR0630/10	6-012800-0010
Geiger EASY, 20 Nm (incl. adapter and carrier)	PR0630/20	6-012800-0020
Geiger VARIOUS WIRELESS, 10 Nm (incl. adapter and carrier)	PR0631/10	6-012801-0010
Geiger VARIOUS WIRELESS, 20 Nm (incl. adapter and carrier)	PR0631/20	6-012801-0020
Geiger AIR, 10 Nm	PR0787/10	6-015625-0010
Geiger AIR, 20 Nm	PR0787/20	6-015625-0020

BECKER MOTORS, 60 mm SHAFT – for MY442, M328 and M317 slats

item name	trade name	drawing number
Becker R8-17-C01 PLUS, radio-controlled	X.2010/1201580	6-017951-0008
Becker R12-17-C01 PLUS, radio-controlled	X.2010/1201590	6-017951-0012
Becker R20-17-C01 PLUS, radio-controlled	X.2020/1201280	6-017951-0020
Becker R30-17-C01 PLUS, radio-controlled	X.2030/1201580	6-017951-0030
Becker R40-17-C01 PLUS, radio-controlled	X.2040/1201170	6-017951-0040
Becker R4-17-M17, 4 Nm	X.2010/1100430	6-017871-0004
Becker R08/17 E03, mechanical	PR0900/08	6-017148-0008
Becker R12/17 E03, mechanical	PR0900/12	6-017148-0012
Becker R20/17 E03, mechanical	PR0900/20	6-017148-0020

S&S RS100 MOTORS

item name	trade name	drawing number
S&SO RS100 io 6/17	PR0880/06	6-014804-0006
S&SO RS100 io 10/17	PR0880/10	6-014804-0010
S&SO RS100 io 15/17	PR0880/15	6-014804-0015
S&SO RS100 io 20/17	PR0880/20	6-014804-0020
S&SO RS100 ioHybrid 6/17	MR 135/06	6-015565-0617
S&SO RS100 ioHybrid 10/17	MR 135/10	6-015565-1017
S&SO RS100 ioHybrid 15/17	MR 135/15	6-015565-1517
S&SO RS100 ioHybrid 20/17	MR 135/20	6-015565-2017

BECKER MOTORS, 40 mm SHAFT – for M328 and M317 slats

item name	trade name	drawing number
Becker P5-16-C01, pushbutton input (40 mm), radio-controlled	X.2009/1201200	6-017832-0005
Becker P9-16-C01, pushbutton input (40 mm), radio-controlled	X.2009/1201220	6-017832-0009
Becker P 5/16 PR+, (40 mm)	PR0903/05	6-017151-0005
Becker P 9/16 PR+, (40 mm)	PR0903/09	6-017151-0009
Becker SOLAR KIT SK460, 6 Nm (40 mm)	X.B/SK46006	6-017873-0006
Becker SOLAR KIT SK460, 10 Nm (40 mm)	X.B/SK46010	6-017873-0010

SOMFY MOTORS, SHAFT 40 mm – for M328 and M317 slats

item name	trade name	drawing number
Ilmo 2 40 WT 4/16	PR0406/4	6-017830-0004
Ilmo 2 40 WT 9/16	PR0406/9	6-017830-0009
Ilmo 2 40 WT 13/10	PR0406/13	6-017830-0013
40 iO 4/16	PR0652/4	6-014871-0004
40 iO 9/16	PR0652/9	6-014871-0009
40 iO 13/16	PR0652/13	6-014871-0013

SOLAR SET, 40 mm SHAFT – for M328 and M317 slats

item name	trade name	drawing number
Oximo 40 WireFree RTS 3/23, with integrated receiver*	PR0415	6-008256-WF03
Oximo 40 WireFree RTS 6/18, with integrated receiver*	PR0416	6-008256-WF06
SOLAR KIT "Oximo 40" 6/18 io*	PR0416io	6-008256-WF06io
SOLAR KIT "Oximo 40" 10/12 io*	PR0417io	6-008256-WF10io

* The Oximo 40 WireFree RTS und IO set contains a drive with integrated remote control receiver and an external solar panel.

LT 50 NHK MOTORS

item name	trade name	drawing number
LT 50 NHK – Jet 8/17	PR0400	6-002631-0008

SOMFY MOTORS, 60 mm SHAFT – for MY442, M328 and M317 slats

item name	trade name	drawing number
Ilmo WT 6/17	PR0409	6-006867-WT06
Ilmo WT 10/17	PR0410	6-006867-WT10
Ilmo WT 15/17	PR0411	6-006867-WT15
Ilmo S WT 6/17	PR0408	6-006867-S006
Oximo WT 6/17	PR0333	6-001532-0006
Oximo WT 10/17	PR0334	6-001532-0010
Oximo WT 15/17	PR0335	6-001532-0015
Oximo WT 40/17	PR0338	6-001532-0040
Oximo RTS 6 Nm for 60 mm shaft, with integrated receiver	PR0339	6-002615-0006
Oximo RTS 10 Nm for 60 mm shaft, with integrated receiver	PR0340	6-002615-0010
Oximo RTS 15 Nm for 60 mm shaft, with integrated receiver	PR0341	6-002615-0015
Oximo RTS 20 Nm for 60 mm shaft, with integrated receiver	PR0342	6-002615-0020
Oximo RTS 30 Nm for 60 mm shaft, with integrated receiver	PR0343	6-002615-0030
Oximo RTS 40 Nm for 60 mm shaft, with integrated receiver	PR0344	6-002615-0040
Oximo S auto RTS 6/17, with external remote control receiver	PR0414	6-008040-0000
Oximo 50 io 6/17, with integrated receiver	PR0636	6-012566-0617
Oximo 50 io 10/17, with integrated receiver	PR0637	6-012566-1017
Oximo 50 io 15/17, with integrated receiver	PR0638	6-012566-1517
Oximo 50 io 20/17, with integrated receiver	PR0639	6-012566-2017
Oximo 50 io 30/17, with integrated receiver	PR0640	6-012566-3017
Oximo 50 io 40/17, with integrated receiver	PR0641	6-012566-4017
Oximo S Auto io 6/17, with external remote control receiver	PR0642	6-013056-0000
RS100 SOLAR IO 10/12	PR0906/10	6-018869-0010
RS100 SOLAR IO 6/15	PR0906/06	6-018869-0006

Operating and Maintenance Instructions

Read this manual carefully, especially the safety precautions. Damages resulting from failure to comply with the conditions stated in these Operating and Maintenance Instructions **shall not be covered by the warranty**. Enforce implementation of recommendations stated herein, **hand this manual over upon sale of the product**, as it contains information regarding maintenance and commissioning of the product.

The shutter **has been made and installed by a professionally trained and competent company** in the area of sun protection. **Repairs and disassembly** may only be performed by **trained experts**. **Do not attempt to perform any changes to the product, otherwise proper use of the product cannot be ensured.**

Images shown herein apply to various versions of the shutters.

PRODUCT FEATURES

Simultaneous shutter movement

It is not possible to achieve perfect synchronous operation of several shutter due to different friction of the individual shutters and different speeds of their drives. This also applies to intermediate positions.

Translucence

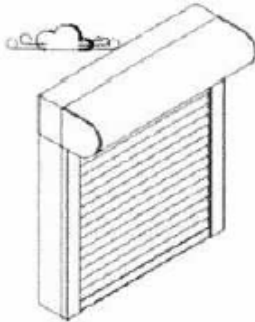
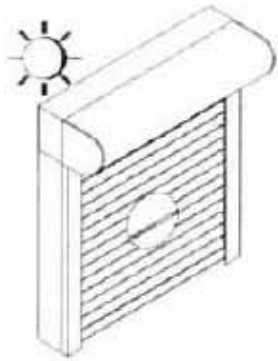
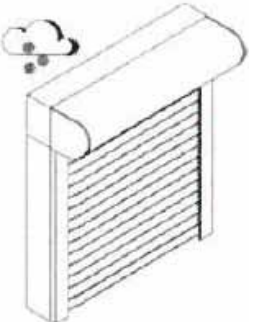

Due to their design, shutters cannot serve as blackout units. Penetration of diffuse light is allowed in the area of slat connections, lateral guides, and the upper and lower ends.

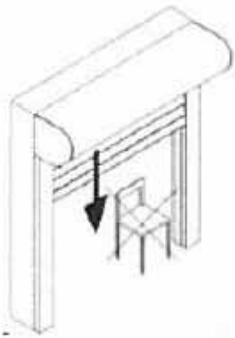
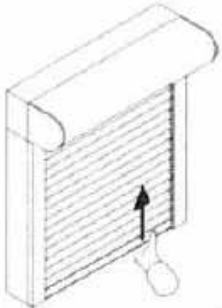
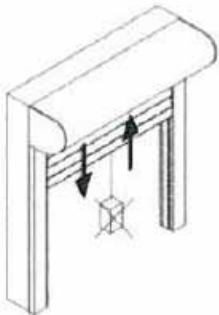
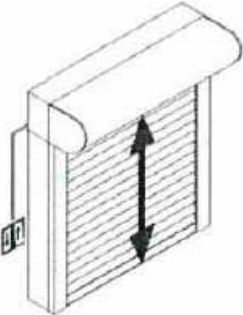
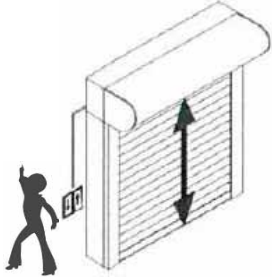
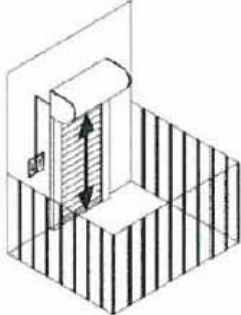
Noise emission

Structural parts of the shutters may be a source of noise due to their properties or movement (operation, wind, thermal expansion). If the shutter has been exposed to strong sunlight for longer period of time, "clicking" noise caused by the surface treatment or plastics may be heard when the shutter is activated. Both aluminium and plastic shutters expand due to heat. Such expansion, or shrinking, due to temperature changes may also be associated with various sounds.

Surface quality

When assessing the shutter's surface quality, it is necessary to observe the viewing distance specified in the respective standard. Said distance is 3 metres for exterior structural parts, and 2 metres for interior structural parts. It is only possible to complain about surface defects that visible to the naked eye the distances specified above and under normal conditions.

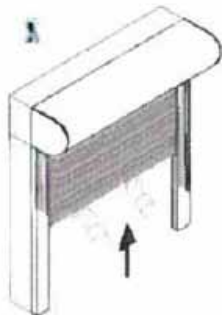
Operation in strong winds		Operating the shutter at high temperatures	
<p>Close the windows in strong wind conditions. Prevent draught, especially if you are not present.</p> <p>NOTE The shutters are designed to withstand the expected wind intensity without permanent damage. Both the window and the shutters must be completely closed in strong wind conditions, otherwise there is a risk of permanent damage to the shutters.</p>		<p>Sufficient ventilation of the curtain must be ensured if the shutter is used as sun protection. In this case, lighting openings of the shutter must be left open to prevent overheating, otherwise there is a risk of permanent damage, especially in case of plastic slats.</p>	
Operating the shutter at low temperatures		Operating the shutter in the winter	
<p>During cold seasons of the year and depending on current weather conditions, the curtain may freeze onto the lower end rail and/or lateral guide rails due to penetration of water during thawing or rain/snow at low temperatures.</p> <p>NOTE In such cases, do not attempt to move the shutter by force. This may lead to faulty function or permanent damage of the shutter.</p>		<p>If there is a risk of freezing onto surfaces, deactivate automatic controls of the shutter.</p> <p>EXCEPTION: There is no need to deactivate shutter drives equipped with overload sensors. If there is a risk of damage, they will deactivate automatically.</p>	

Shutter movement		Incorrect control	
<p>It is necessary to ensure the shutter area is free of any objects and other obstacles that would prevent free downward and upward movement of the shutter.</p>		<p>Do not control the shutter in a manner other than specified in this technical manual.</p> <p>NOTE: Never attempt operating the shutter manually by force. This is likely to cause permanent damage to the shutter.</p>	
Unsuitable use of the shutter		Duration of the motor run	
<p>Never use the shutter for a purpose other than for which it has been designed.</p> <p>NOTE: Do not hang any objects to the curtain. This is likely to cause irreversible damage to the shutter.</p>		<p>The motors used are not intended for long, uninterrupted operation. The integrated thermal protection will deactivate the motor after approx. 4 minutes.</p> <p>The motor will return to the stand-by mode in 10–15 minutes.</p>	
Accessibility of the control elements		Automatic operation of French door shutters	
<p>Prevent easy access by children to the shutter control elements. This precaution will prevent possible damage to the control elements as well as the whole shutter.</p>		<p>When staying at a balcony or terrace, deactivate automatic shutter controls. This will prevent being “trapped” at the balcony (terrace).</p>	

Electric motor control

Control using a push-button switch without the OFF position	Control using a push-button switch with the OFF position
<p>After pressing and holding the respective button (UP/DOWN) or rotating the switch (LEFT/RIGHT), the shutter will move in the required direction.</p> <p>The shutter movement will stop after releasing the button/switch.</p>	<p>After pressing and holding the respective button (UP/DOWN) or rotating the switch (LEFT/RIGHT), the shutter will move in the required direction.</p> <p>After pressing the button or rotating the switch in the OFF position (depending on the button/switch version), the shutter movement will stop.</p>

Operating the integrated insect screen

Operating the insect screen	
<p>When releasing the insect screen in the upward direction, hold the screen by both hands. This will prevent damage by fast movement of the screen or by hitting the stops.</p>	

Care and maintenance

Care	Maintenance
<p>Lifetime of the product can only be guaranteed by proper use, care and maintenance. Regular cleaning should only be performed by suitable means. Gently remove dirt and obstacles from the guide rails.</p> <p>RECOMMENDATION: Disconnect the unit from the mains when cleaning.</p>	<p>We recommend performing regular visual checks of the control elements (wear, damage, etc.) and check of rigidity of the whole unit.</p> <p>Call a specialist to replace worn-out and damaged parts by original spare parts as soon as possible.</p>

More information is given in the separate **Operating and Maintenance Instructions**.

Oximo 40 WireFree IO solar kit for Vivera and Vivera-Sectra blinds

The exterior roller shutter with external solar power is a unique and fully automated roller shutter that is wirelessly controlled and has zero electricity consumption. This roller shutter-works on the principle of the so-called photovoltaic phenomenon - i.e. the conversion of sunlight into electrical energy. This is the most ecological and energy-saving drive solution for roller shutters. The drive is powered by a long-life battery charged by a solar panel that works in all weather conditions.

Product parameters:

- for 40 mm shaft
- for slats M328 and M317
- battery life from 8 to 10 years
- the solar panel is always on the motor side
- installation in the facade is not possible

Set includes:

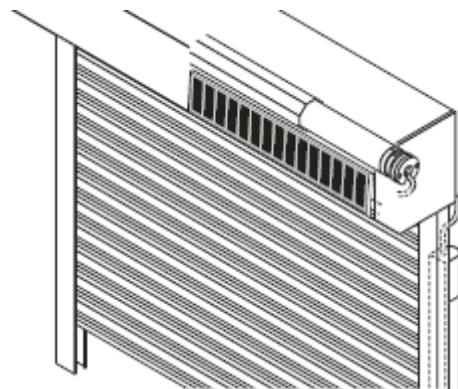
- Motor Oximo 40 WireFree 6/18 IO or 10/12 IO
- solar panel Oximo/Sunea WireFree resin 3.2 W
- battery WireFree NiMH, 12V, 2.2 Ah
- connecting cable

Accessories for the set:

- solar panel holder for wall mounting, (6-016468-0000)
- battery charger for the solar panel (for recharging from the electrical network), (6-016470-0000)
- extension cable to solar panel 5 m, (6-016471-0000)

Advantages for assembly companies:

- the fastest drive to install
- no wiring required
- it is not necessary to have access into the installation object
- mounting the battery on the exterior - in a box or a guide rail
- variable setting of end positions by remote control
- roller shutter protection against freezing
- working temperature range from -20 °C to +70 °C



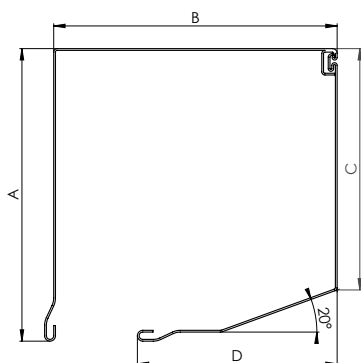
Technical data for motors

Name	Oximo 40 WireFree 6/18 IO	Oximo 40 WireFree 10/12 IO
Nominal torque	6 Nm	10 Nm
Nominal speed	18 rpm	12 rpm
Nominal voltage	11.8 – 15 V	11.8 – 15 V
Nominal power	26 W	29 W
Nominal current	2.20 A	2.40 A
Max. continuous run time	w/o min.	w/o min.
Degree of protection	IP44	IP44
Protection level	III.	III.
Weight	0.8 kg	0.68 kg
Dimension (length)	460 mm	460 mm
Cable colour	white	white
Cable length	0.18 m	0.18 m

Rolled Covering Boxes (Sectra, Vivera)

The dimensions given in the table correspond to the exact dimensions of the box. To place the box in a lintel, it is necessary to add 3 mm to dimension "A" and 6 mm to dimension "B".

Rolled box, 20° bevel



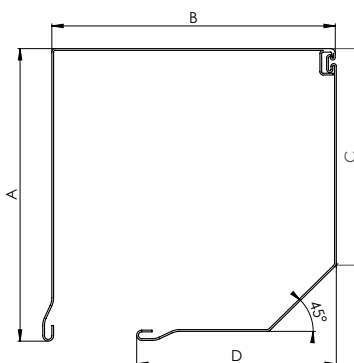
Vivera

Size	A	B	C	D
125	129	125	106	88
138	138	136	115	101
150	152	150	27	113
165	167	165	142	128
180	182	181	153	143
205	206	207	175	170

Sectra

Size	A	B	C	D
138	138	136	115	101
150	152	150	27	113
165	167	165	142	128
180	182	181	153	143

Rolled box, 45° bevel



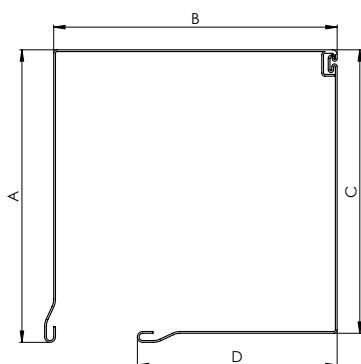
Vivera

Size	A	B	C	D
125	128	126	95	88
138	138	138	104	104
150	150	151	111	116
165	170	168	120	126
180	185	182	131	145
205	205	207	149	168

Sectra

Size	A	B	C	D
138	138	138	104	104
150	150	151	111	116
165	170	168	120	126
180	185	182	131	145

Rolled round box, straight design, 90°



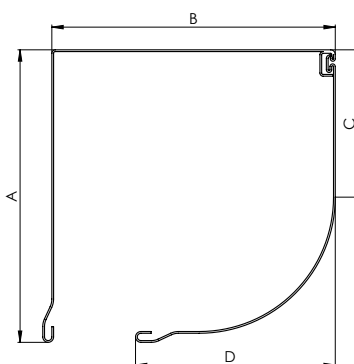
Vivera

Size	A	B	C	D
125	129	125	127	86
138	138	136	135	101
150	152	150	151	112
165	167	165	167	127
180	182	181	182	142
205	206	207	206	172

Sectra

Size	A	B	C	D
138	138	136	135	101
150	152	150	151	112
165	167	165	167	127
180	182	181	182	142

Rolled quarter-round box



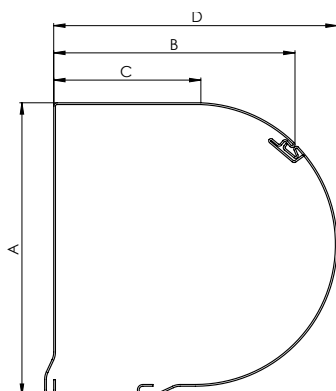
Vivera

Size	A	B	C	D
138	138	137	70	101
150	152	151	76	115
165	167	167	87	130
180	182	182	92	145
205	206	205	106	166

Sectra

Size	A	B	C	D
138	138	137	70	101
150	152	151	76	115
165	167	167	87	130
180	182	182	92	145

Rolled round box



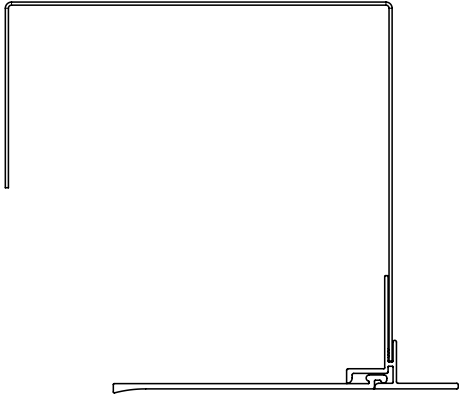
Vivera

Size	A	B	C	D
138	139	118	78	145
150	152	131	84	160
165	167	143	92	173
180	180	156	99	188
205	206	179	113	215

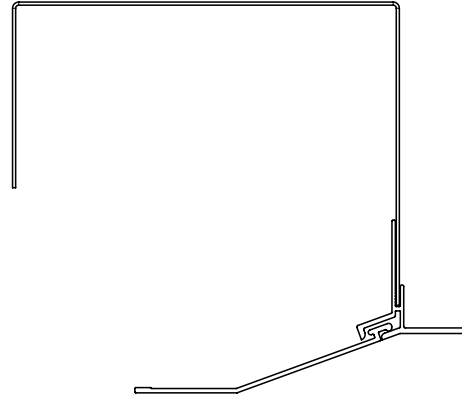
Sectra

Size	A	B	C	D
138	139	118	78	145
150	152	131	84	160
165	167	143	92	173
180	180	156	99	188

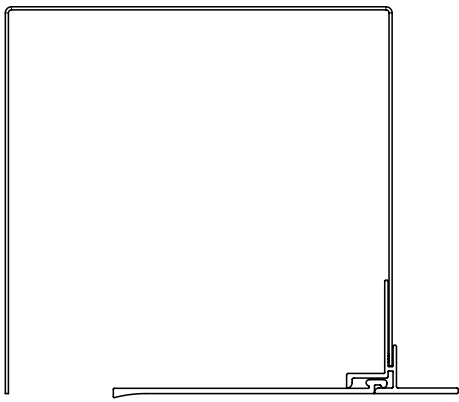
Abbreviation 2	Name
K020	For plastering, 20°
K020P	For plastering, 20°, (Plasterax extension)
K090	For plastering, 90°
K090P	For plastering, 90°, (Plasterax extension)



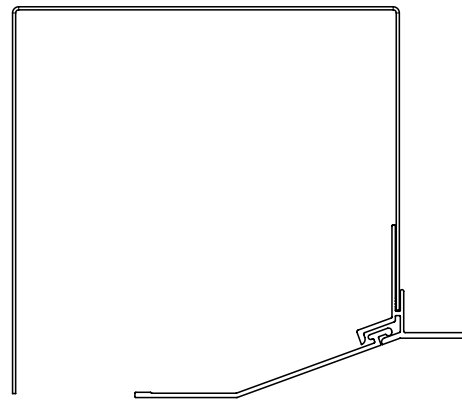
K090



K020



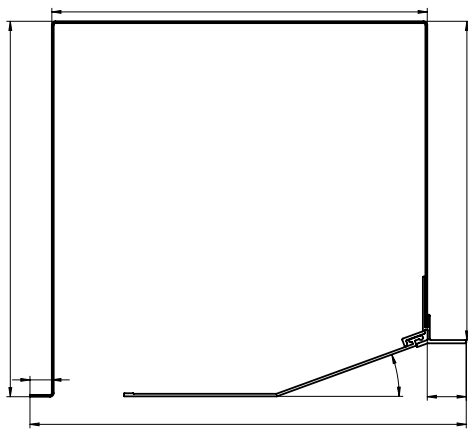
K090P



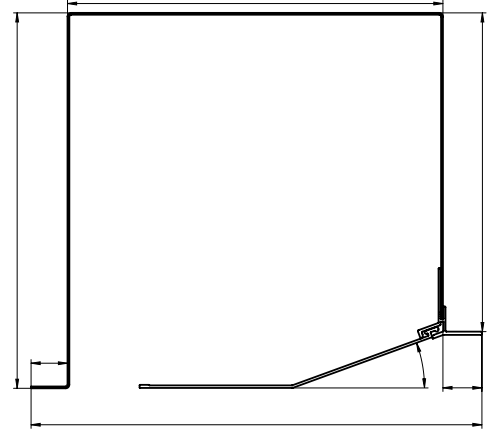
K020P

These values represent a situation where the back side of Plasterax will end alongside the check flap.

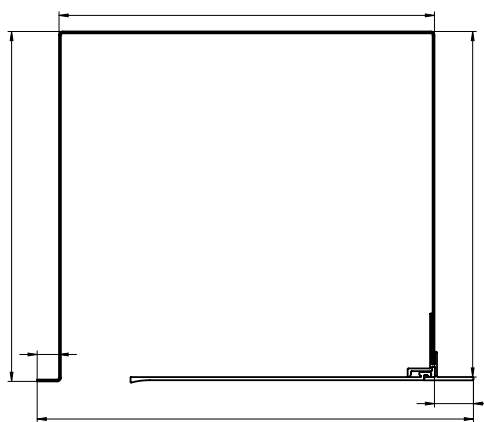
Abbreviation 2	Name
KO20PL12	For plastering, 20°, extension L12 (Plasterax)
KO20PL20	For plastering, 20°, extension L20 (Plasterax)
KO90PL12	For plastering, 90°, extension L12 (Plasterax)
KO90PL20	For plastering, 90°, extension L20 (Plasterax)



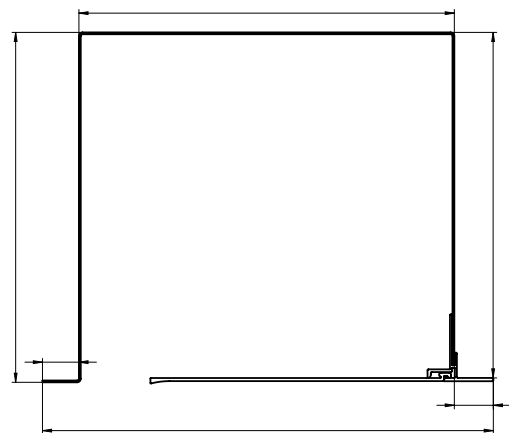
KO20PL12



KO90PL12



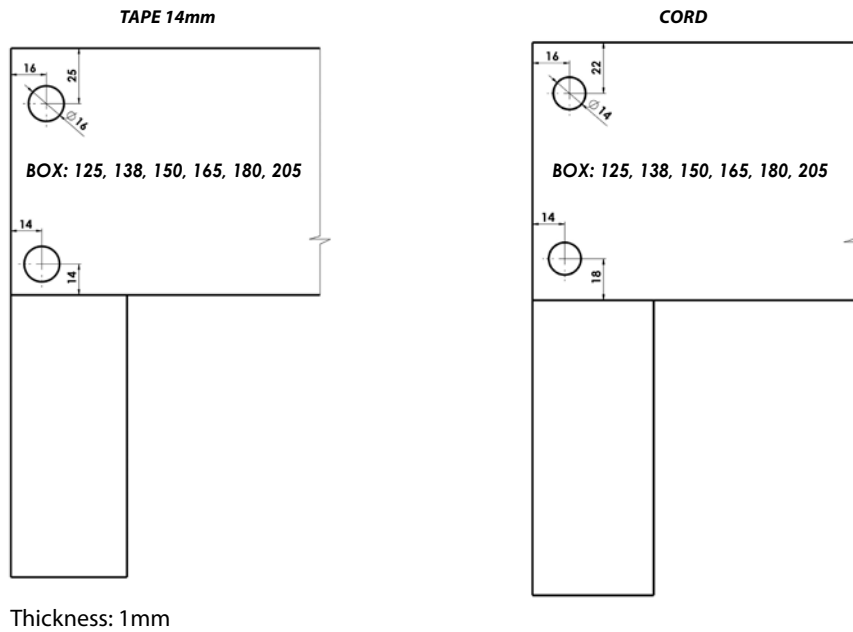
KO20PL20



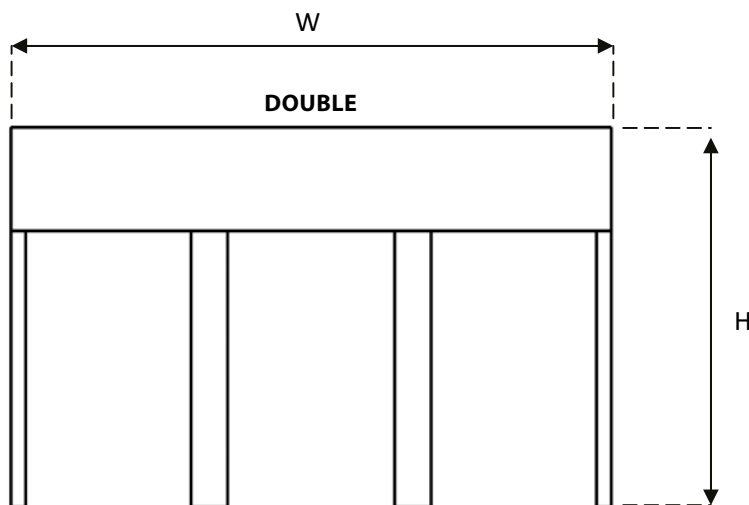
KO90PL20

These values represent a situation where the back side of the Plasterax will end at the same time as the revision flap and in the back part there is a nose of size 12 mm or a nose of size 20 mm.

Covering box



Continuous box - double guiding channel



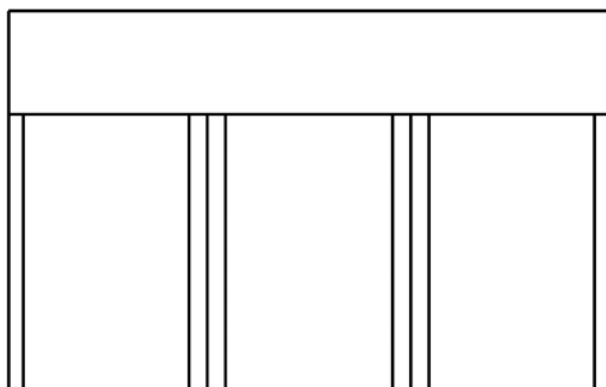
max. width* = 4500 mm

max. height = 4350 mm

*Max. width for Plasterax is 4000 mm.

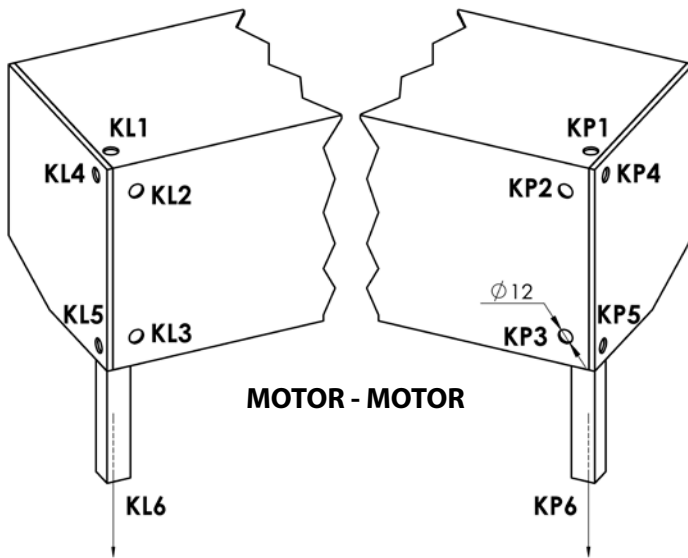
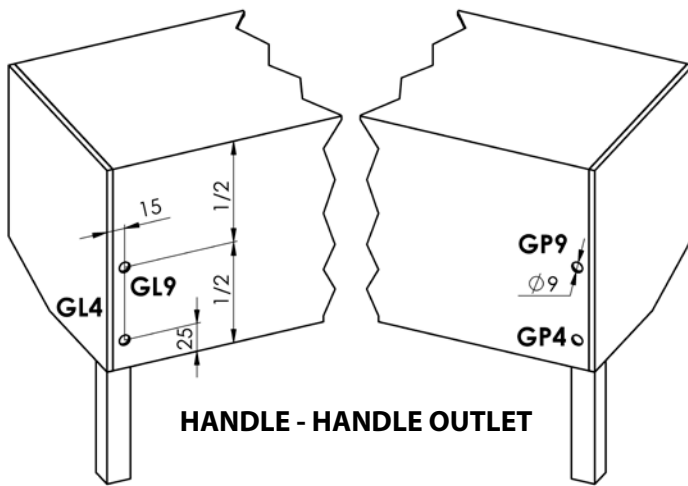
Note: In case of double rails, do not select a motor to both sides!

Continuous box – two guiding channels



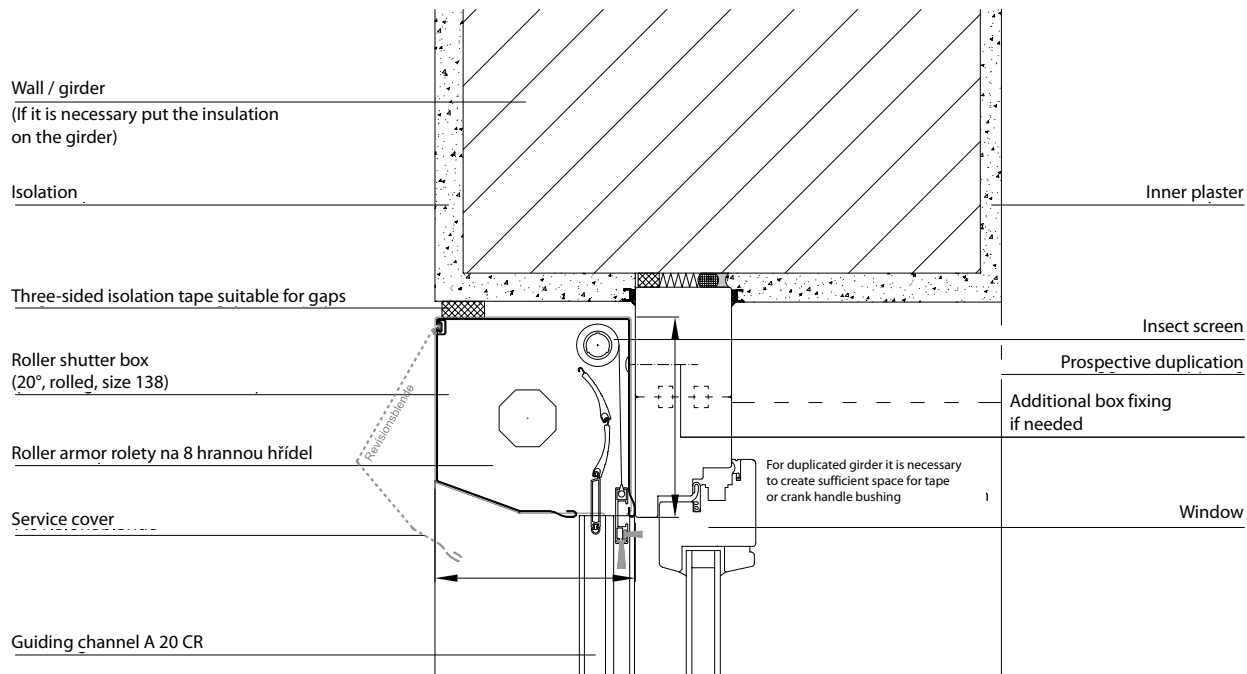
Note: Cables for roller shutters in a common box are led out of the box in the place of entry, they are not guided to a central location!

Control Placement

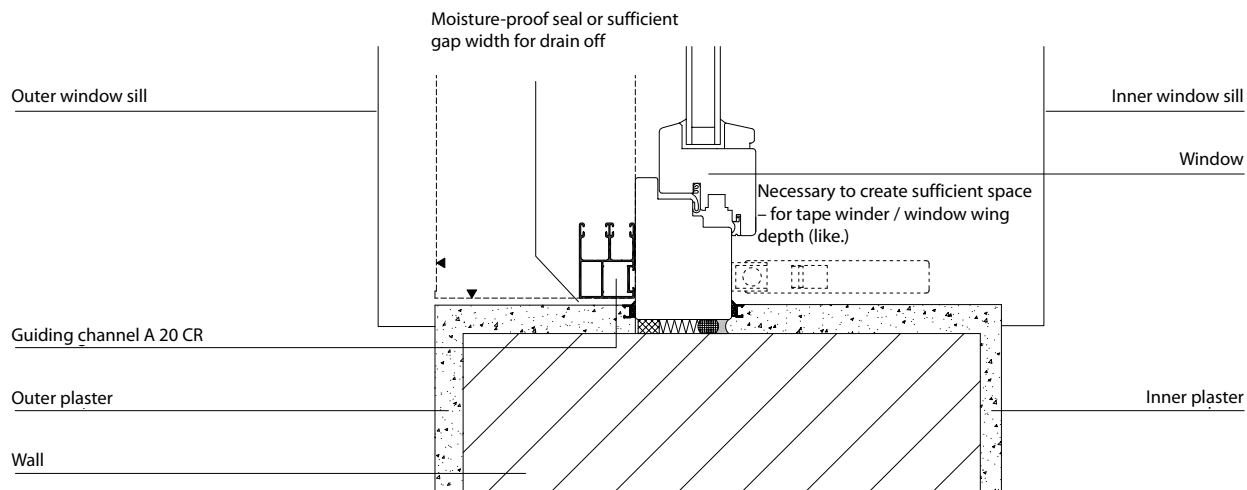


Roller shutters with integrated insect screen – visible box

**Detailed connection – side view
(upper part)**



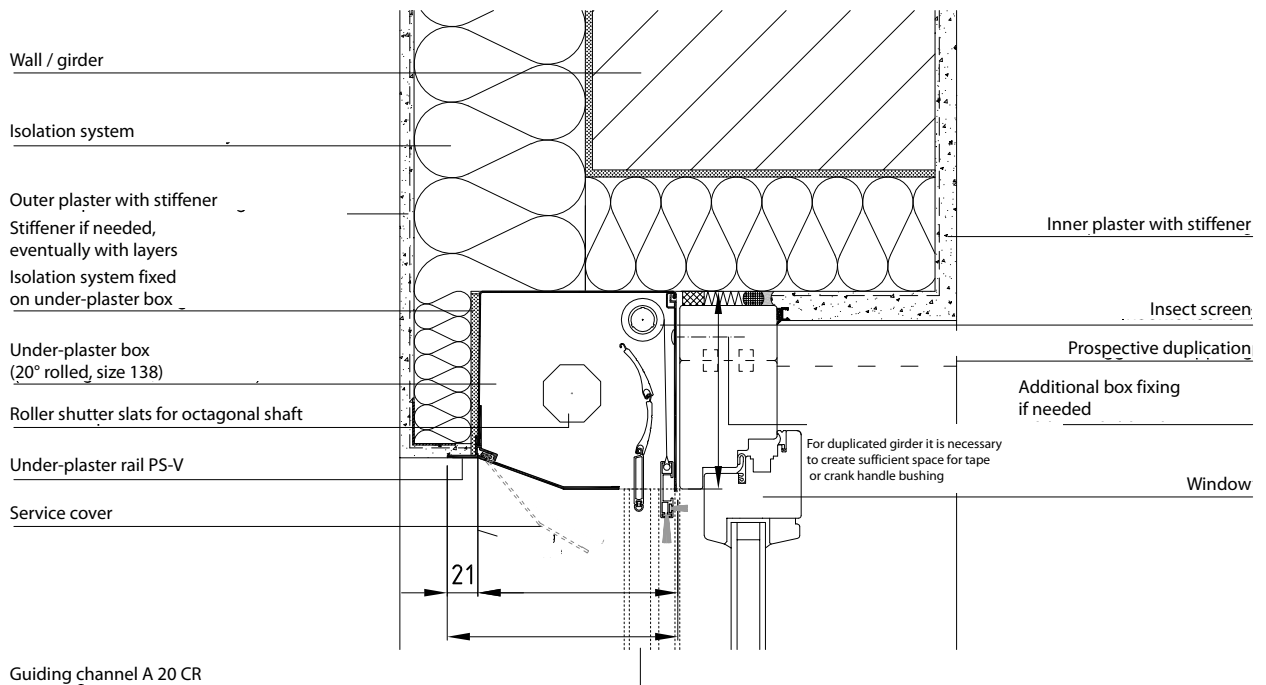
Necessary to create sufficient space for extended weatherboard placed by windows connection



**Detailed connection – side view
(lower part)**

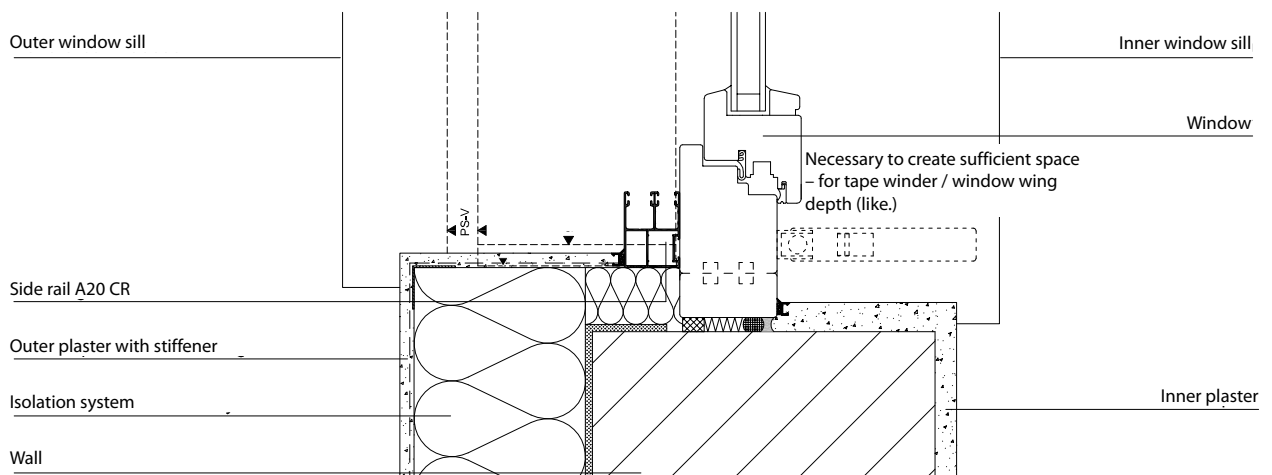
Roller shutters with integrated insect screen – under-plaster box

**Detailed connection – side view
(upper part)**



Box must not move and has to be fixed additionally

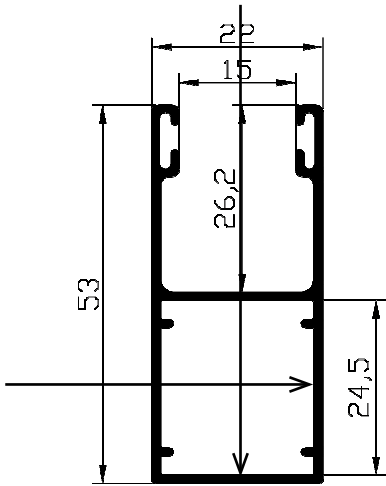
Necessary to create sufficient space for extended weatherboard placed by windows connection



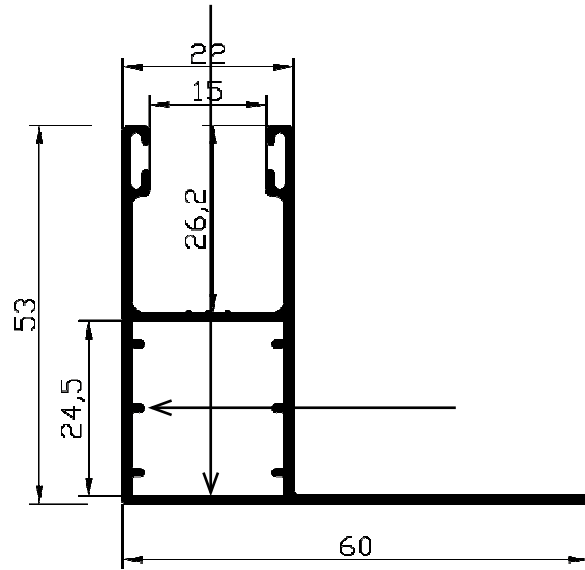
**Detailed connection – side view
(lower part)**

Guiding channels

Guiding rail A3 (6-001786-xxxx) - standard

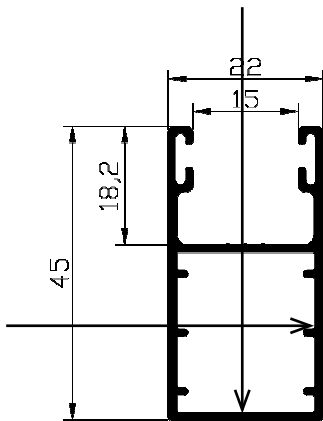


Guiding rail A4 (6-001788-xxxx)

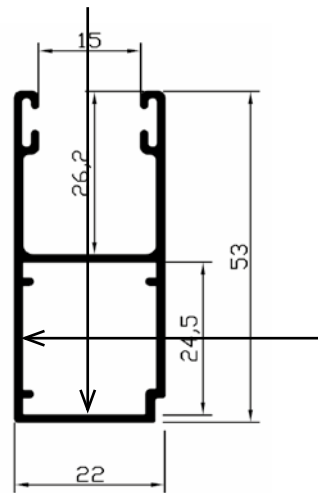


Note: Rail for the FAR or FAG safety cover

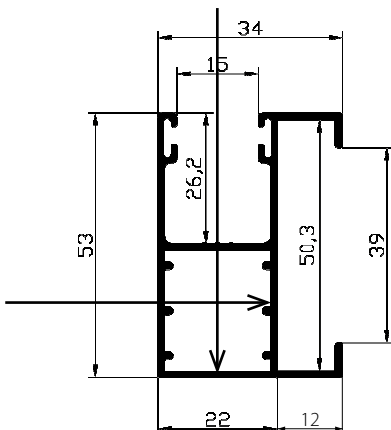
Guiding rail A5 (6-002595-xxxx)



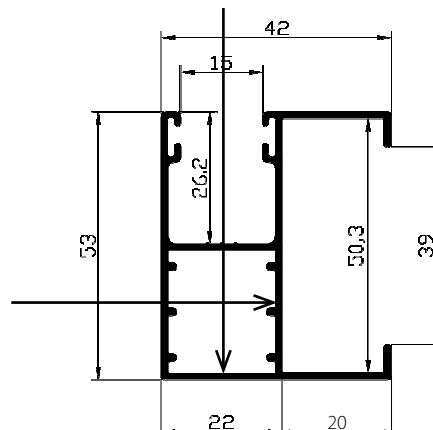
Guiding rail A3-ES V2 (6-003879-xxxx)



Guiding rail A8 - 12 (6-002599-xxxx)



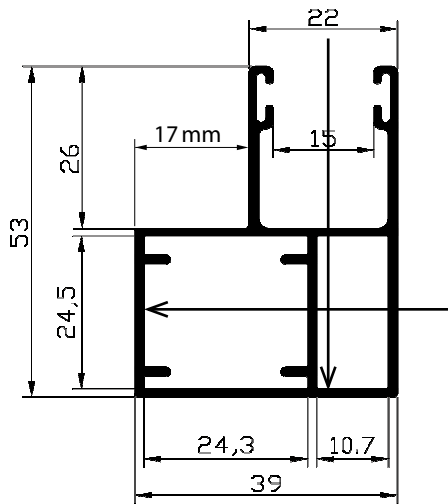
Guiding rail A8-20 (6-002600-xxxx)



It allows a 12 mm offset from the window. A gap will appear between the box and the window.

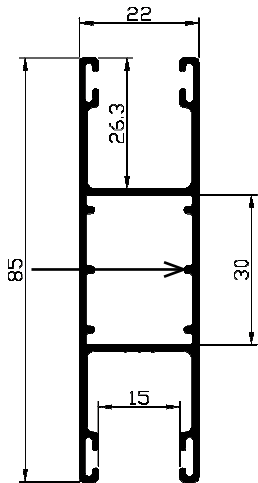
It allows a 20 mm offset from the window. A gap will appear between the box and the window.

Guiding rail A15 (6-001794-xxxx)

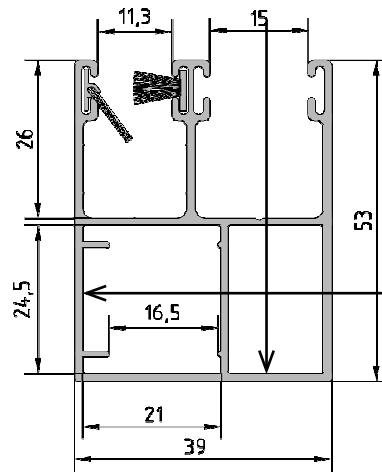


Note: Allows a 17 mm clearance from the window without creating a gap between the window and the roller shutter's backside.

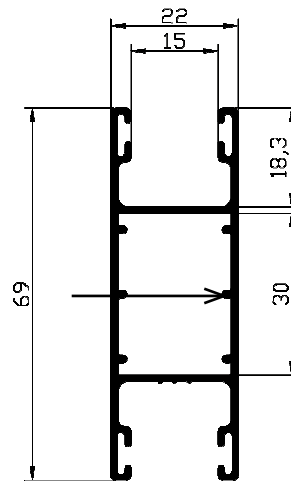
Guiding rail DF-A3 (6-002601-xxxx)



Guiding rail A20 (6-001926-xxxx) Sectra

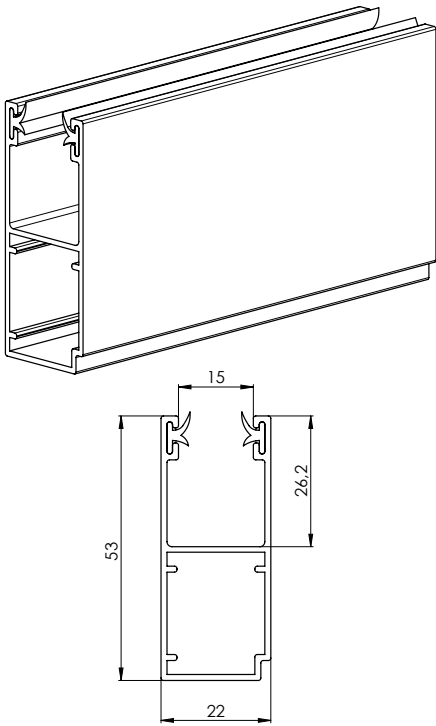


Guiding rail DF-A5 (6-001808-xxxx)

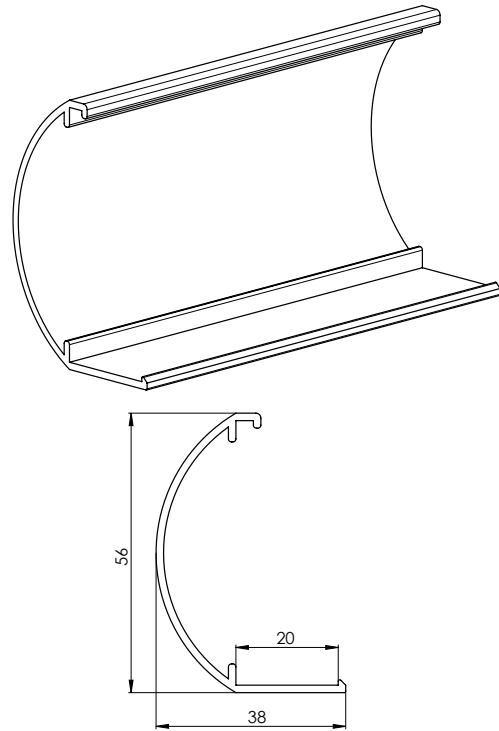


The elements to secure external roller shutter - safety components

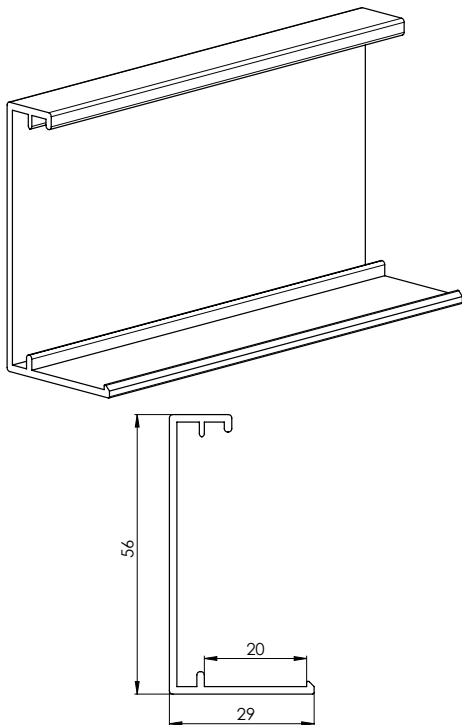
Guiding rail A3-ES V2 (6-003879)



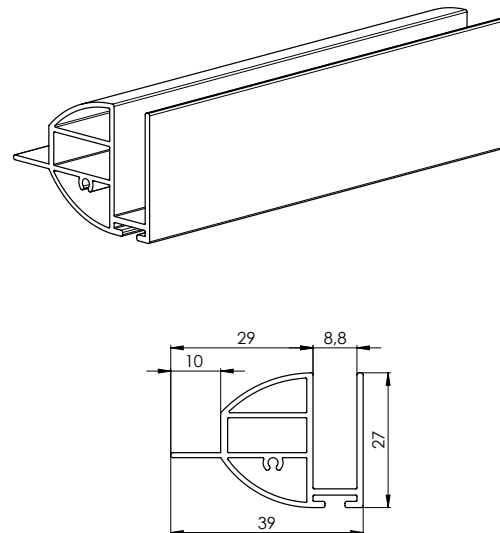
Guiding rail cover FAR-ES V2 (6-003880)



Guiding rail cover FAG-ES V2 (6-012000)



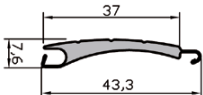
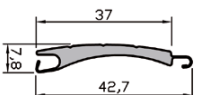
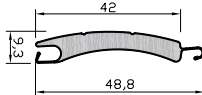
Special end rail (6-012001)



Note: Safety components for guide rails can only be selected within the MY442 slat, the special end rail is supplied automatically.

Slats

Standard

M317	M328	MY442
Vivera, Heluz	Vivera, Heluz	Vivera, Heluz
Al	Al	Al
		

Technical Data (mm)

	M317	M328	MY442
Covering height	37	37	42
Thickness	7,6	7,8	9,3
Material thickness	0,3	0,28	0,3
Weight	2,8 kg/m ²	2,6 kg/m ²	2,85 Kg/m ²
Maximum Width	2900	2700	4000
Maximum Area	6,5 m ²	5,8 m ²	8,5 m ²

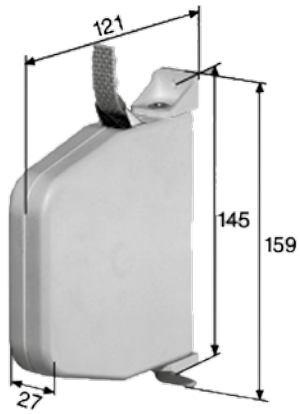
M317	M328	MY442
01 white	● 01 white	● 01 white
02 grey	●x 02 grey	●x 02 grey
03 velvet brown	● 03 velvet brown	● 03 velvet brown
04 beige	●x 04 beige	●x 04 beige
05 dark Begie	x 07 natural	● 07 natural
07 natural	● 13 moss Green	●x 22 golden oak
09 bronze	x 22 golden oak	● 23 lighter grey
11 oak	x 27 creamy white	●x 27 creamy white
12 teak	x 30 jamaica brown	●x 30 jamaica brown
13 moss Green	●x 35 sand-begie	●x 38 anthracite grey
14 purple red	x 38 anthracite grey	● 84 ivory
22 golden oak	● 84 ivory	●x 86 nut
23 lighter grey	●x 86 nut	●x other (consultation with SR)
27 creamy white	●x other (consultation with SR)	
37 velvet grey	x	
38 anthracite grey	●	
84 ivory	●x	
85 gray aluminum 9007	x	
other (consultation with SR)		

- standard price and standard delivery
- x standard price and delivery after consulting
- x extra charges and delivery must be consulted

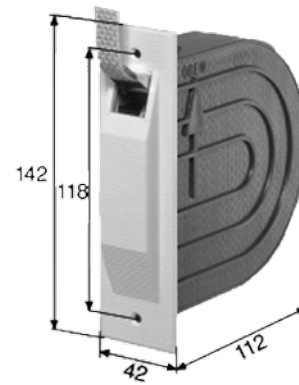


Accessories

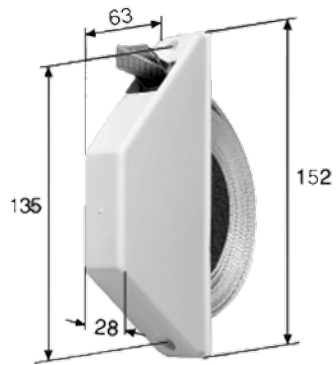
Tape coiler PR0131
6-001908-XXXX
Design: white, brown



Flush fitting cord coiler PR0133
6-001913-XXXX
Design: white, brown

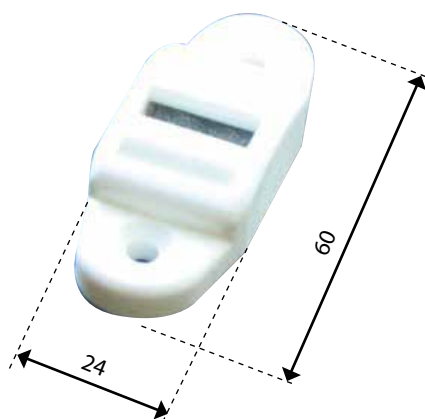


Semi-recess tape coiler PR0286
6-003640-XXXX
Design: white, brown



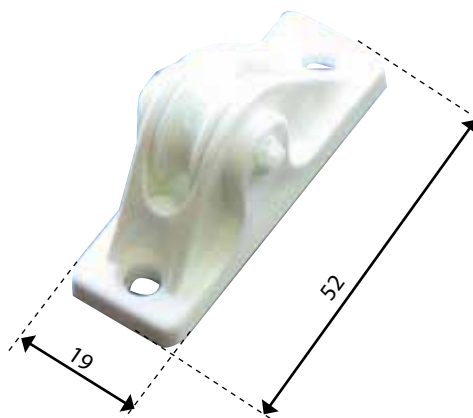
Guides

Tape guide PL0146
6-001918-XXXX



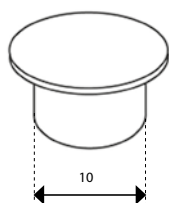
Cord colour: whitegrey, brown
Height 18 mm

Deflect roller for cord PR0148
6-001923-XXXX



Tape colour: grey, brown
Height 28 mm

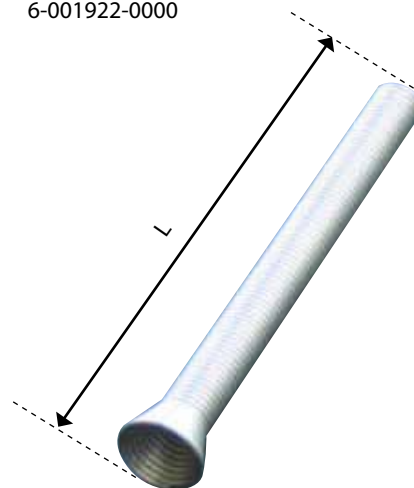
Plug 10 mm, ZP0013/1015, 3-03684-0000



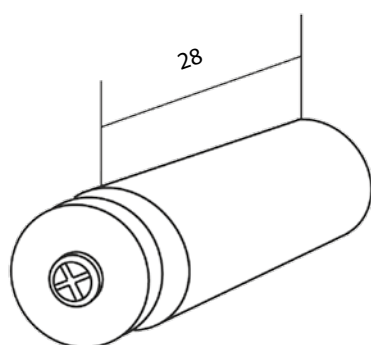
Design:

- Signal white (RAL 9003)
- Light ivory (RAL 1015)
- Clay brown (RAL 8003)
- Sepia brown (RAL 8014)
- Window grey (RAL 7040)
- Anthracite grey (RAL 7016)
- Signal black (RAL 9004)

Cord spring (100/200 mm) PR0149
6-001922-0000



Dead stop
6-005477-xxxx

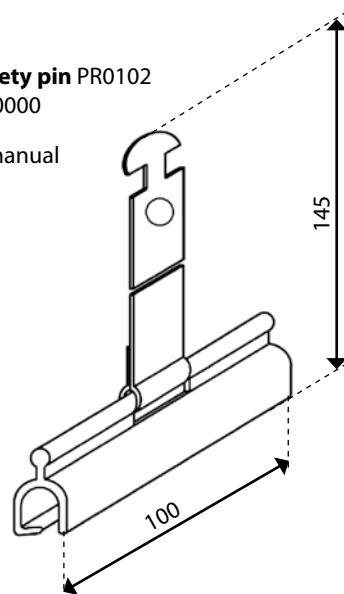


A = 28mm

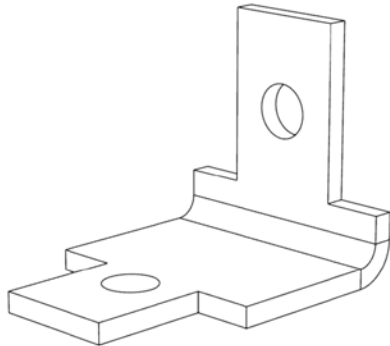
Design: white, brown, grey, black, beige

Spring safety pin PR0102
6-001871-0000

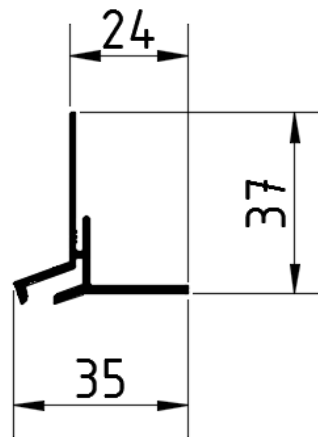
Note: for manual control



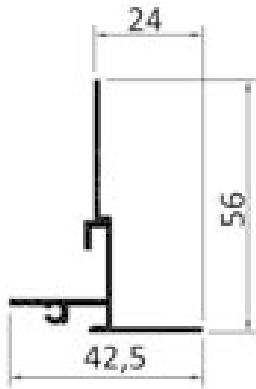
Guide channel end parts PR0432
6-011947-0000



Concealed rail for under-plaster box



Angles for concealed under-plaster box 90°



Octoeasy suspension

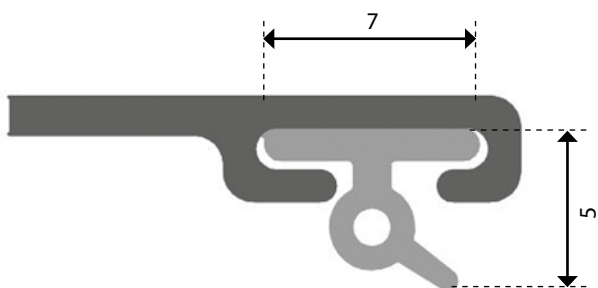
- Octoeasy suspension - single-cell, shaft 40mm, box 125-165
- Octoeasy suspension - single-cell, shaft 60 mm, box 125-165
- Octoeasy suspension - double-cell, shaft 40mm, box 180-205
- Octoeasy suspension - double-cell, shaft 60 mm, box 180-205

- | | |
|----------|-----------------|
| PR0648/1 | (6-013917-0000) |
| PR0648/2 | (6-013918-0000) |
| PR0648/3 | (6-013919-0000) |
| PR0648/4 | (6-013920-0000) |

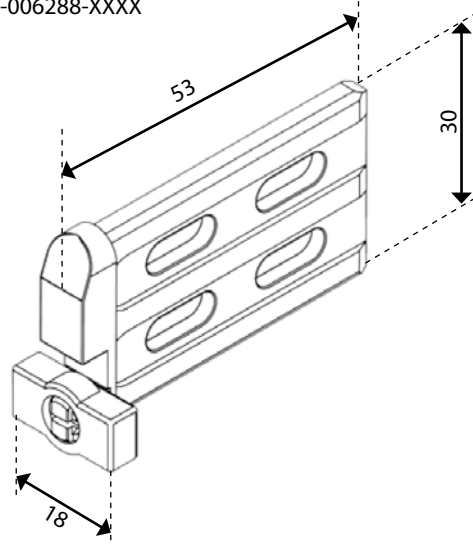


Note: for motor control

PVC insert PR0430
6-001796-0000



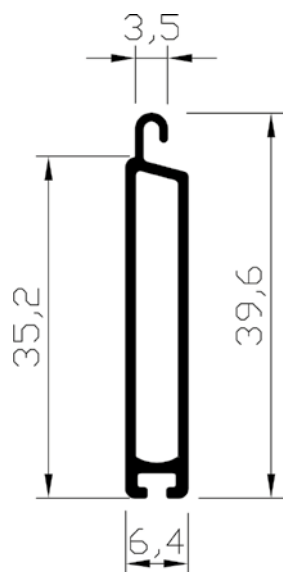
Connecting buffer swiveling RP0291
6-006288-XXXX



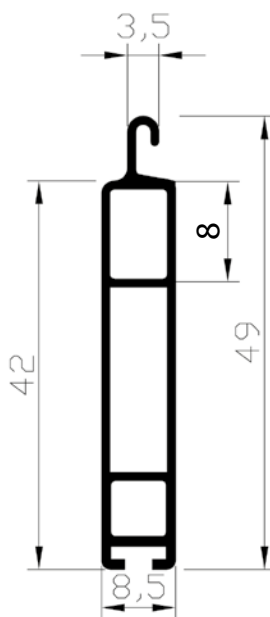
Design: white, black

End slat

End slat PR0431
6-010977-XXXX

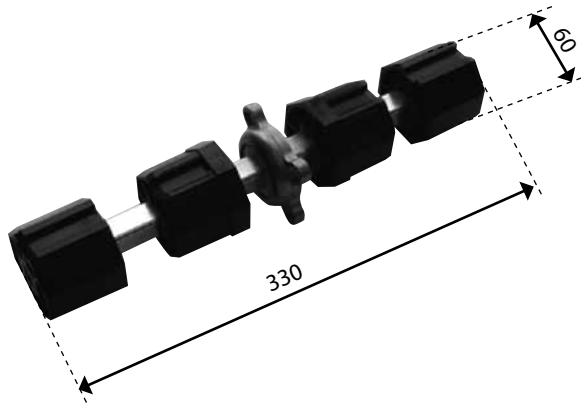


End slat for covered stops PR0115
6-001858-XXXX



Note: In case of roller shutter width smaller than 1000 mm, a galvanised steel weight 18x2 mm is inserted in the lower rail.

Double shaft bolt
6-010973-0000



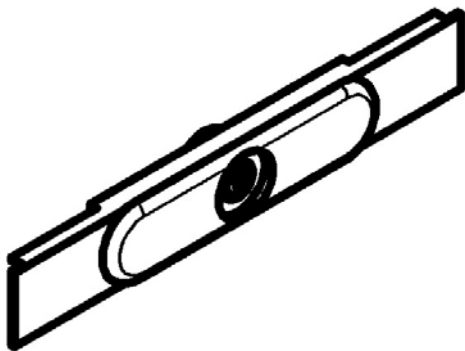
Linkage (120/130/140/150/160 mm)

- 6-001883-0000
- 6-002704-0000
- 6-002706-0000
- 6-002707-0000
- 6-002708-0000

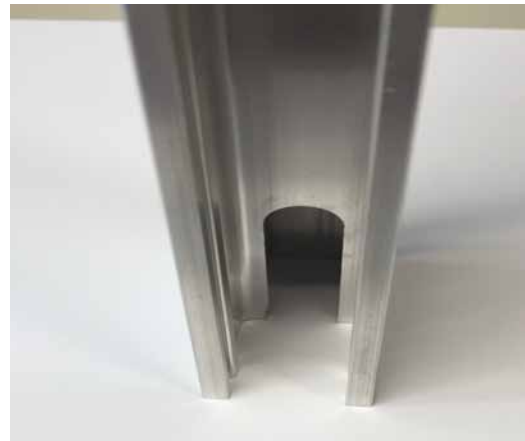


Design: white

Cylinder round lock PR0207
6-002131-xxxx



Groove in side guide rail for cylinder lock





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