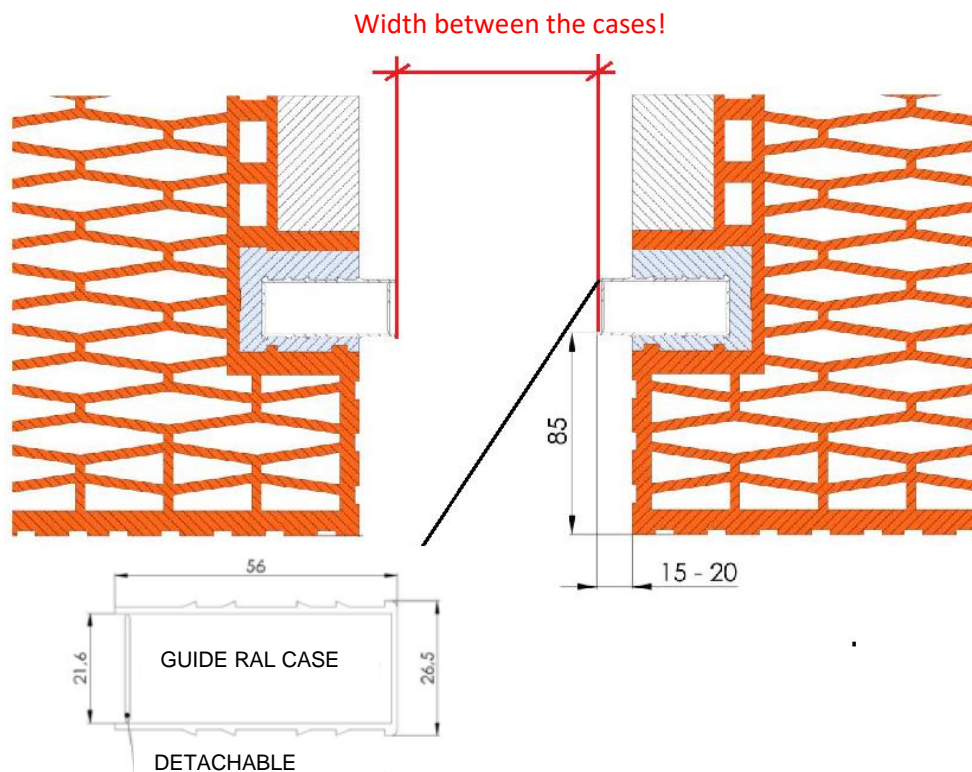


## PHASE I

### 1. FIRST MEASUREMENT OF ROLLER SHUTTER

Measuring production width of the roller shutter!

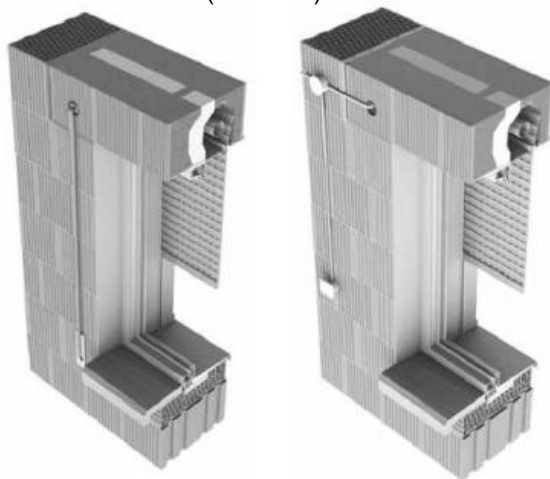


We measure the height - the clearance of the window opening and the width between the fitted guide rail housings

### 2. SELECTION OF CONTROL

#### 2.1 MANUAL (USING A STRAP)

#### 2.2 ELECTRICAL (MOTOR)



*Controlling roller shutter by a strap*

*Controlling roller shutter by electric motor*

Issued on: 19.10.2021

## 2.1 MANUAL CONTROL

The length of the blind lintel is determined by the width of the window opening as follows: add minimum laying 2 x 200 mm to the width of the window opening and select the closest higher lintel length that is fabricated. The design of the lintel should already include the manner of the future roller shutter control - whether manual (by a strap) or electrical.

Either control option can deal with the minimum position of 200 mm; however manual control, especially when controlling the roller shutter by a strap, the recommended length of the lintel position is on the side of the control: 220-250 mm, considering the fact that the axis of the manual control is always in the axis of the sleeve, which is usually placed in a 140 mm distance from the end of the lintel. It means that:

- if the lintel is positioned in a 200 mm length, the axis of the strap is in a minimum distance of 60 mm from the jamb face,
- if positioned in a 220 mm then in an ideal distance of 80 mm from the jamb face,
- if positioned in a 250 mm the distance is 110 mm.

On the opposite side (i.e. on the side of the lintel where the manual control is not located), the minimum positioning distance of 200 mm has to be kept; and more, depending on the width of the window opening and the selected length of the lintel, i.e.

that the position of the lintel above the opening need not be symmetrical.

## 2.2 ELECTRICAL CONTROL

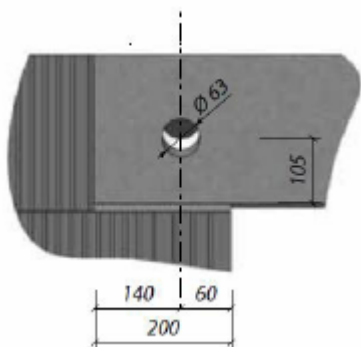
If control is electrical, lintel can be laid in 200 mm and more (depending on the clearance of the opening and the selected length of the lintel); the lintel is usually located symmetrically above the structural opening.

## 3. PREPARATION OF BRICKWORK BEFORE ASSEMBLY

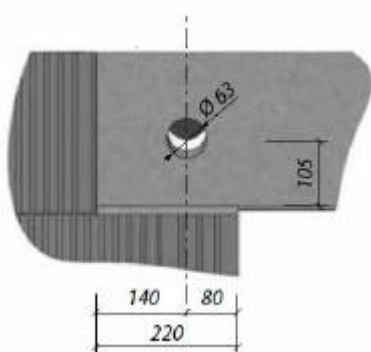
### 3.1 MANUAL CONTROL

#### 3.1.1 OPENING FOR SLEEVE

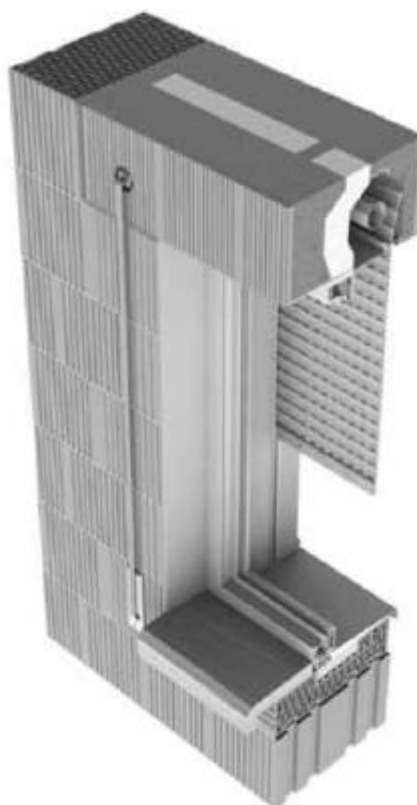
The axis of the opening for strap from the lintel margin is 140 mm on either side. If lintel is positioned in 200 mm, the distance of the strap axis from the brick jamb of the window opening is 60 mm, and if lintel is positioned in 250 mm, the distance is 110 mm. On the opposite side (i.e. on the side where location of the manual control is not considered), the minimum positioning length of 200 mm or more has to be kept; depending on the width of the window opening and the closest selected length of the lintel.



*Minimum positioning*



*Recommended positioning for manual operation of roller shutter by a strap*

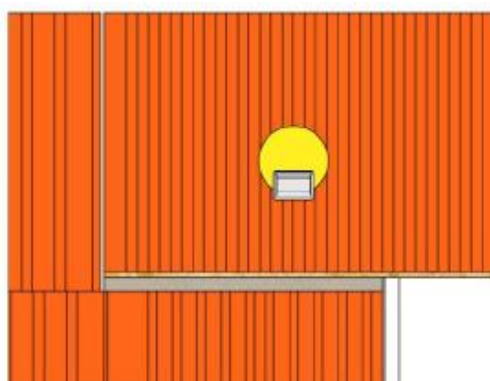
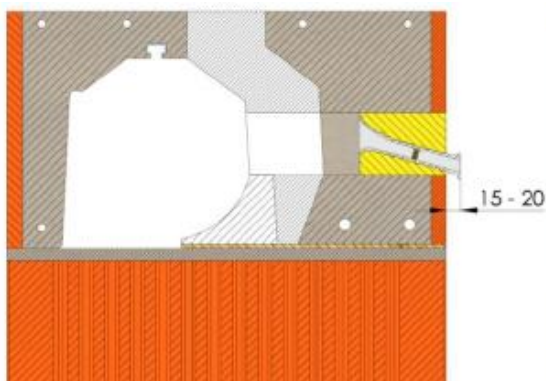


*Controlling roller shutter by a strap*

### 3.1.1.1 SLEEVE FOR STRAP

In a precast opening for a sleeve in lintel on the side of the control by means of circular saw, diameter 63 mm, cut a hole in the insulation section of the lintel.

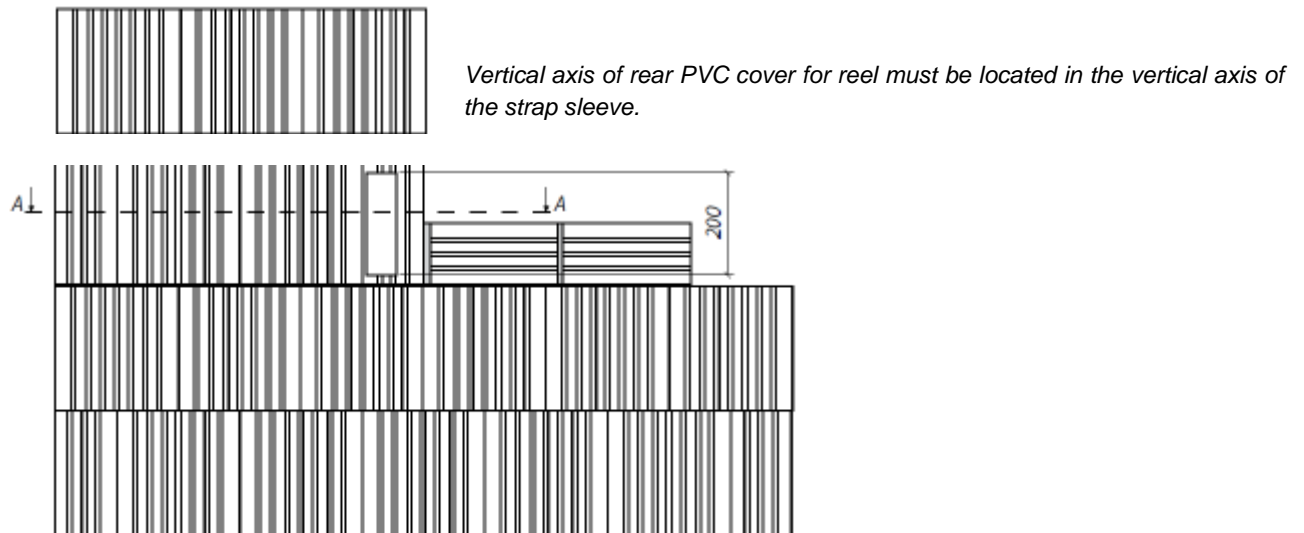
Place a plastic sleeve of the strap in the prepared hole, with the extended part inwards the lintel so that the distance of the outer part of the sleeve from the brickwork was about 15 to 20 mm, and the outer part of the sleeve pointed perpendicularly and horizontally. In the above position fix the sleeve using mounting foam.



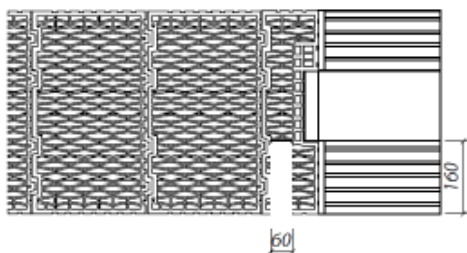
Issued on: 19.10.2021

## 3.1.2 OPENING FOR REEL

Make a pocket for placing the rear PVC cover **in the vertical axis of the opening for sleeve in the lintel, on the side of the control**, in the first jamb row or in the last brick layer under the jamb next to the window. The pocket shall be 60 mm wide, 200 mm high and 160 mm deep.



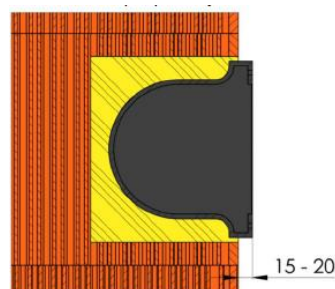
Section A-A



*Making a pocket of rear PVC cover*

### 3.1.2.1 RETRACTOR BOX

Put the rear PVC cover in the prepared pocket for the strap reel so that the front part of the cover from the brickwork was 15 to 20 mm, and the outer part of the sleeve pointed perpendicularly and horizontally. Fix the rear PVC cover in the above position using mounting foam.

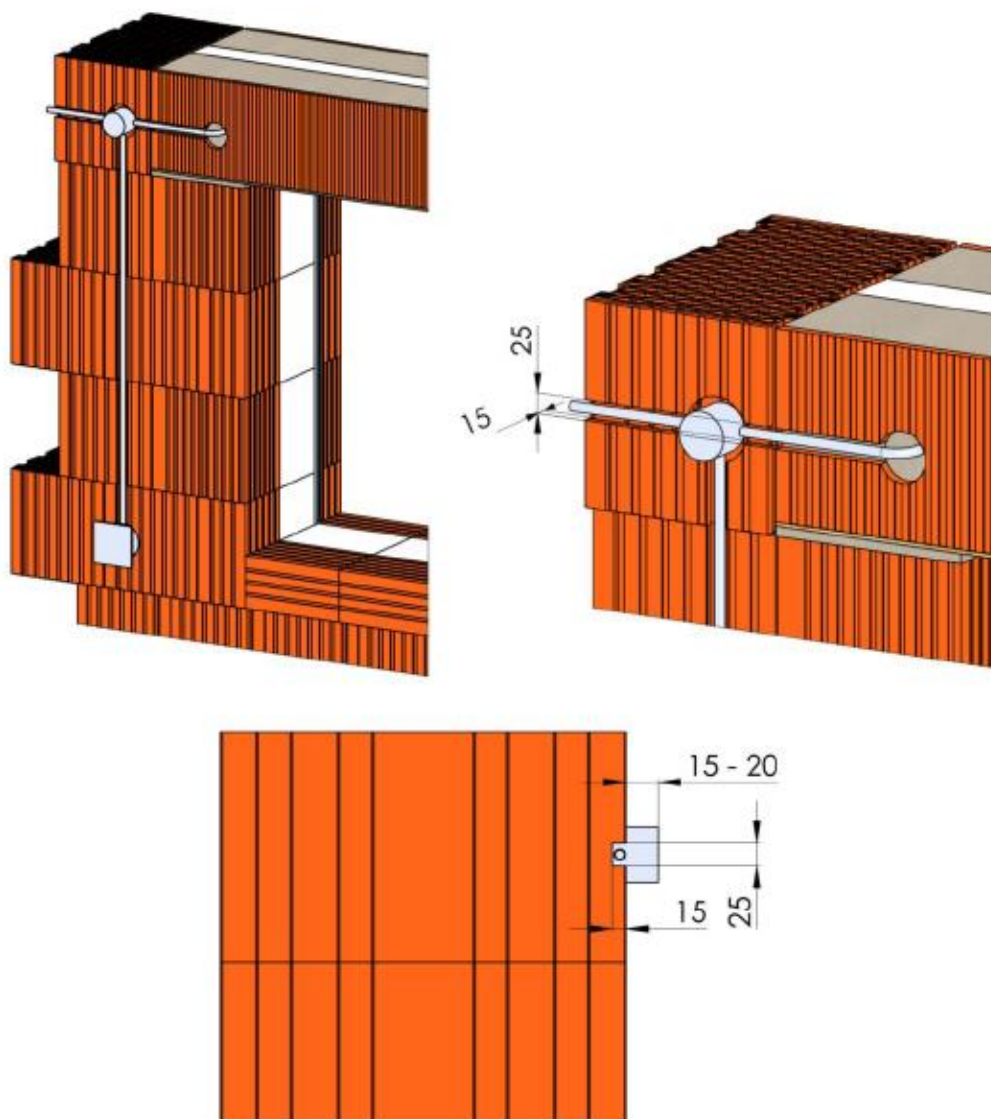


Issued on: 19.10.2021

## 3.2 ELECTRICAL CONTROL

### 3.2.1 CABLING

If the roller shutter is operated electrically by an electric motor (which is usually located in the roller shutter shaft), a distribution box of electrical wiring shall be placed next to the lintel on the side where the control will be installed. A groove for cable protector of 25 mm width and 15 mm depth is cut in the roller shutter lintel in the height of the opening axis in the brick lining. A pocket for distribution box is milled next to the lintel in the brickwork, intended for the distribution box of the wiring. The distribution box shall not be placed under the lintel. Using gypsum, the distribution box is placed in the prepared pocket in the brickwork so that it protrudes by 15-20 mm from the brickwork. In the opening for sleeve on the side of the control a hole for cable protector is prepared in the thermal insulation of minimum diameter 12 mm inside the roller shutter box in which the cable protector from the distribution box is placed and fixed by gypsum.



Issued on: 19.10.2021

## 4. SETTING UP JAMB IN FRONT OF WINDOW FITTING

Slide the insulation into the space prepared for the insulation filling in the bottom part on either side of the window opening. Use mounting foam to fix it. Cover the inserted insulation filling with a glass-fibre netting pushed into the sealant with about 50 mm (ideally 100 mm) insulation filling overlap on both sides in the bottom part, also on either side of the window opening.

## 5. MAKING GROOVES FOR GUIDE RAIL CASES

Grooves for guide rail cases can be embedded in the jamb, or fitted additionally.

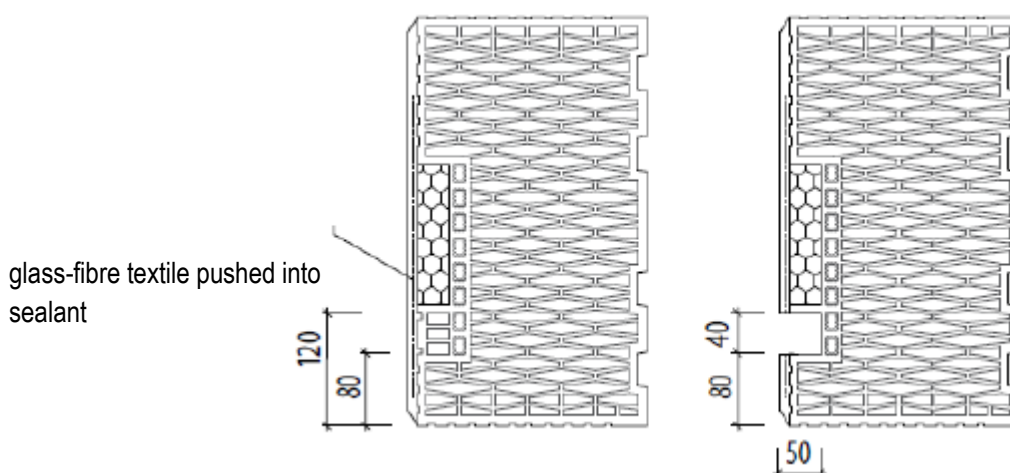
### 5.1 EMBEDDING A GUIDE RAIL

Grooves are made in jamb before fabricating plasters and, whilst making them in a single-layer brickwork (when the width of the lintel is identical with the width of the brickwork), the prepared groove in the marginal bricks with a pocket can be used. In the structural opening jamb, in a 80 - 120 mm distance from the exterior, the space for the future groove of a guide rail case has to be marked with vertical lines. From the space for groove, in a 40 mm width, use an angle grinder with a suitable cutting disc to remove the glass-fibre netting and cut out a 50 mm deep groove (only brick partitions to be cut out in marginal bricks). Plasters shall not be fabricated before a groove is made and a case placed.

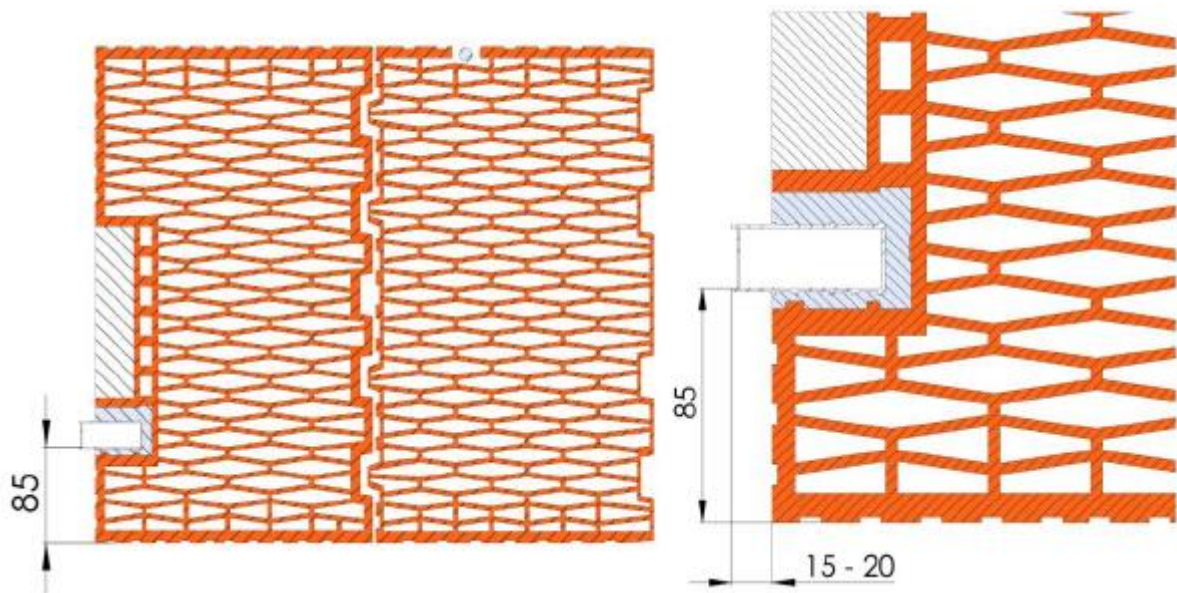
*Making an embedded groove for guide rail cases*

*Setting up jamb*

*Cutting out a groove*

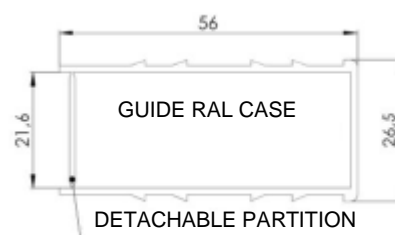


Issued on: 19.10.2021



Adjust the length of the guide rail case so that the height of the case from the brush of the lintel plaster moulding to the bottom part of the jamb was about 30 - 40 mm shorter. Place the guide rail case into the groove and fit it into gypsum in three points. Underlay the bottom part of the case so that a gap remained in about 30-40 mm distance from the bottom part of the jamb for a windowsill, and leave the case 15-20 mm protruding from the groove for plaster. The case must be in line with the plaster. The distance from the outer part of the brick lining of the lintel to the outer part of the case is 85 mm with 3 mm maximum plus tolerance. Align the case vertically in either direction. Once the cases are carefully positioned and aligned, and the gypsum hardened, fix the case using mounting foam. Embedding the guide rails will significantly improve the security of buildings against violent entry.

**Caution! When fitting the cases, make sure that the part for placing the guide rail can be torn off!!!**



## 5.2 VISIBLE GUIDE RAILS

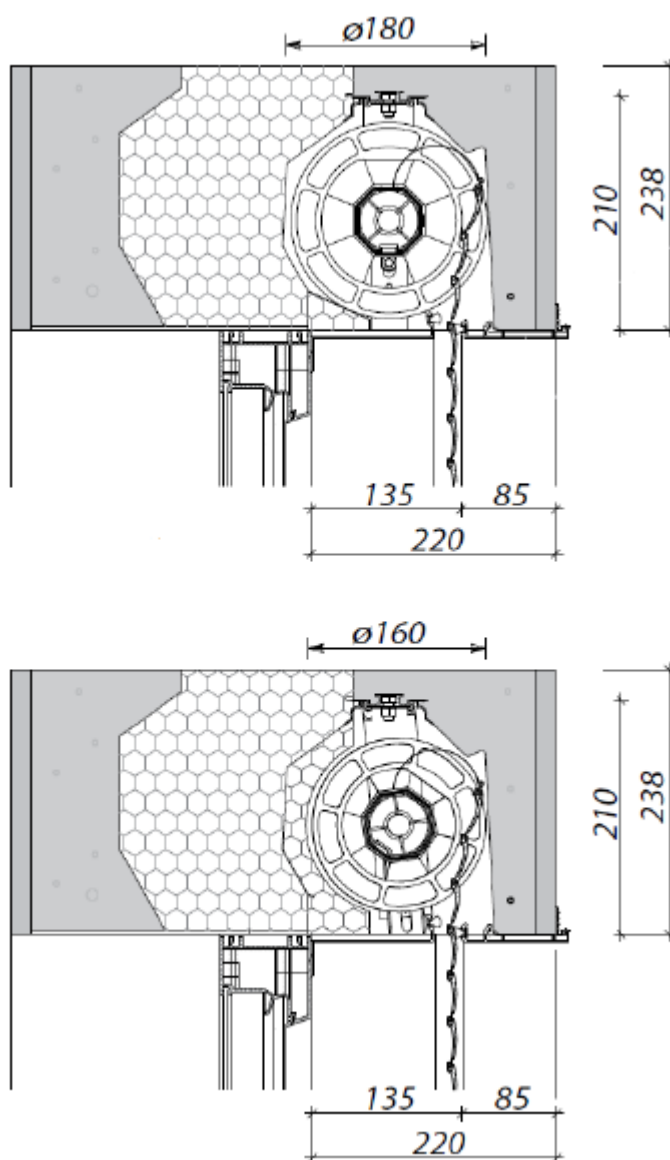
In case of additional mounting, when the cases were not embedded in the jamb, guide rails of roller shutters can be fixed to rendered masonry and at the same time to at least 3 points in the upper middle and bottom part on the window frame.

Issued on: 19.10.2021

## 6. FITTING A WINDOW FRAME

Is provided by company dealing with mounting the windows.

Window frame can be fixed in a roller shutter lintel and also in marginal bricks by means of metal fixtures and wall plugs in space, beyond the insulation filling. Holes for wall plugs are located about 50-60 mm from the inner edge of the lintel. The distance from the outer brick lining of the lintel towards the outer part of the window frame is about 165 mm. The stated distance must be kept with maximum plus tolerance of 3 mm.



NOW THE PREMOUNTING OF THE ROLLER SHUTTER IS COMPLETED.

## 7. FINISH THE FACADE

Issued on: 19.10.2021



## PHASE II

### 8. CHECKING PHASE I

Prior to Phase II mounting, keeping the horizontality of the lintel positioning has to be checked, as well as the dimensions of the lintel position on the bearing wall, the length of the inner part of the lintel for fitting the roller shutter holders, bearing holders, bearings and pulleys. When a lintel is placed for fitting manually operated roller shutters, the length of the position on the side of the control is 200 mm, and the length from the brick jamb towards the inner side insulation part is 130 mm. When a lintel is positioned in a 250 mm (for manual control), the distance is 180 mm.

Checking whether the dimensions are maintained, and whether the window frame is perpendicular.

The distance of the outer part of the window frame from the outer part of the lintel brick lining has always to be checked (for 165 + 3 mm roller shutters).

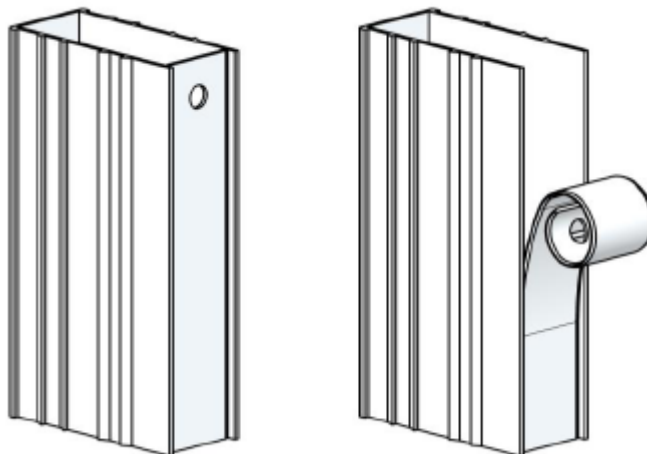
### 9. NEW MEASUREMENT OF ROLLER SHUTTER

Measure net width and height of window opening and use the smallest dimension measured.

### 10. PREPARATION - GENERAL INSTRUCTIONS

#### 10.1 PREPARATION OF GUIDE RAIL CASES

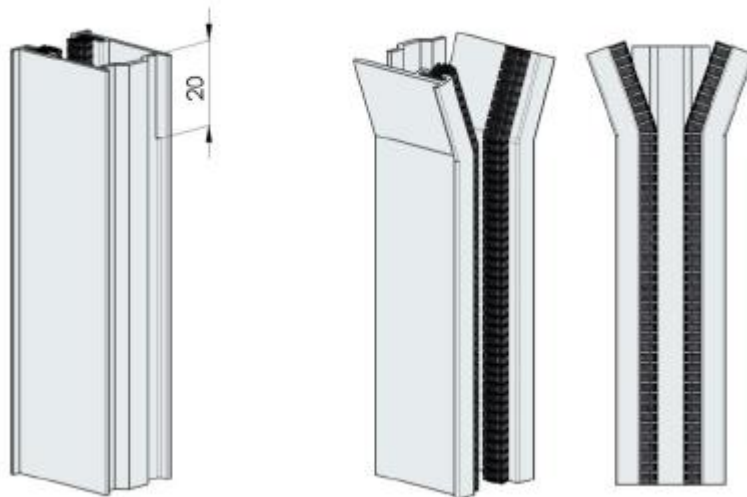
Drill a hole in the case cover and pull the cover up.



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## 10.2 PREPARATION OF GUIDE RAILS

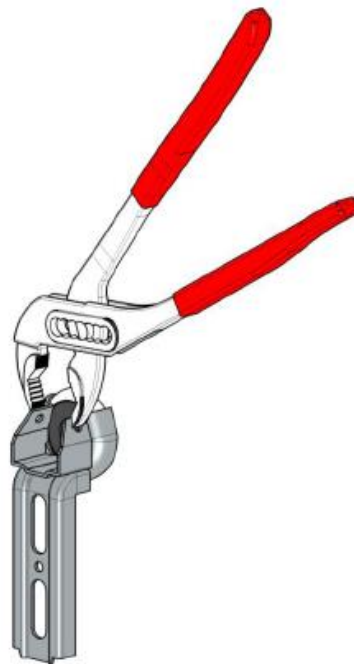
Incise the guide rails and bend them apart.



## 11. MOUNTING - MANUAL CONTROL

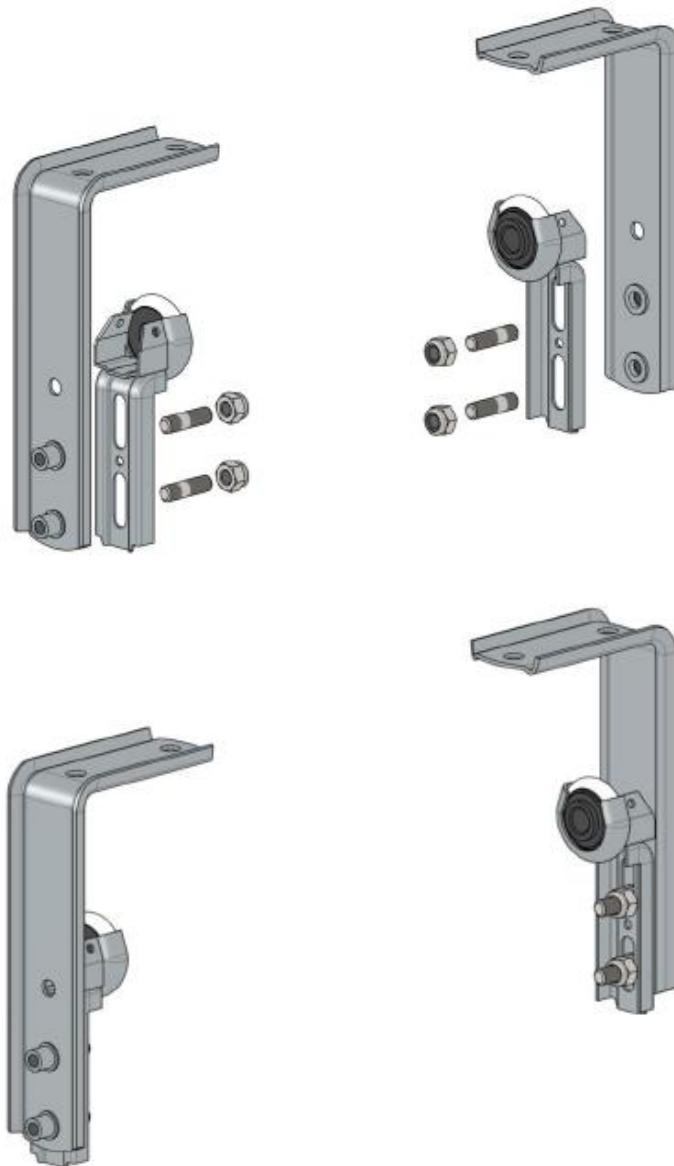
### 11.1 SHAFT HOLDER ASSEMBLY

Assemble shaft carriers with bearing. Place the bearing in the carrier and snap the carrier in.



Issued on: 19.10.2021

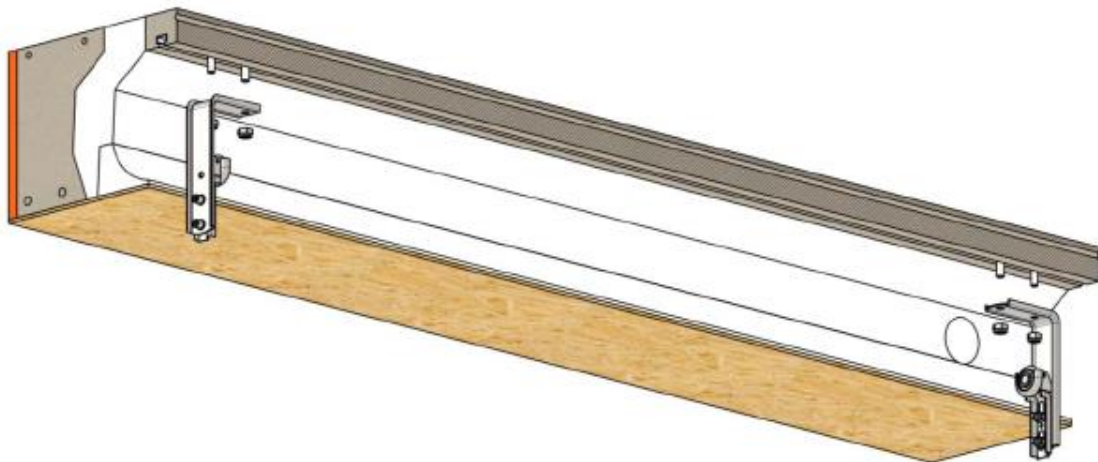
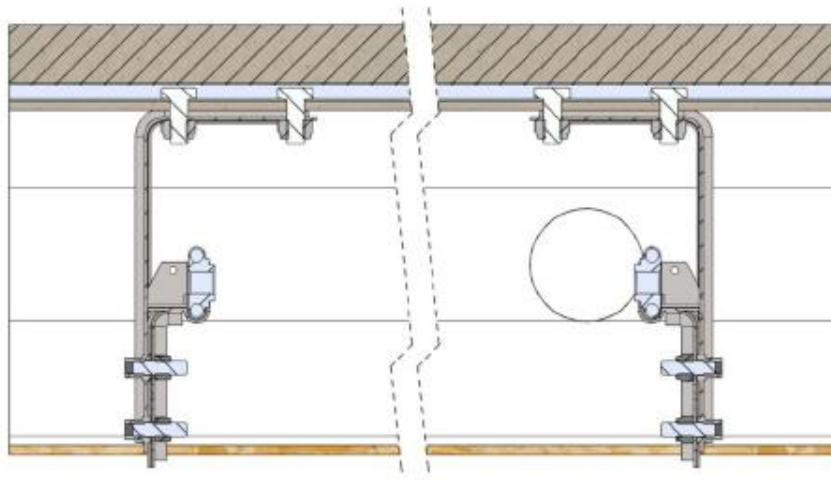
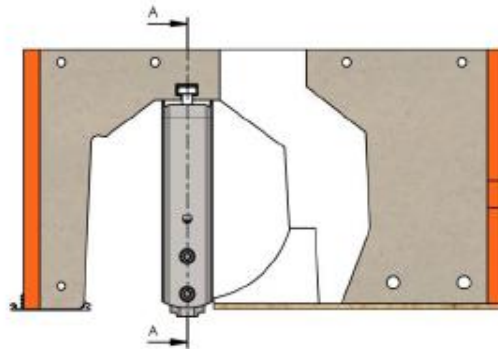
Assemble shaft holders as shown in the figure. Screw down pins with double-sided thread in L-shape holders; with the shorter side into the holder. Fit the pins with shaft carriers. Adjust the holders so that the bearing centre was the centre of the box, and tighten the nuts.



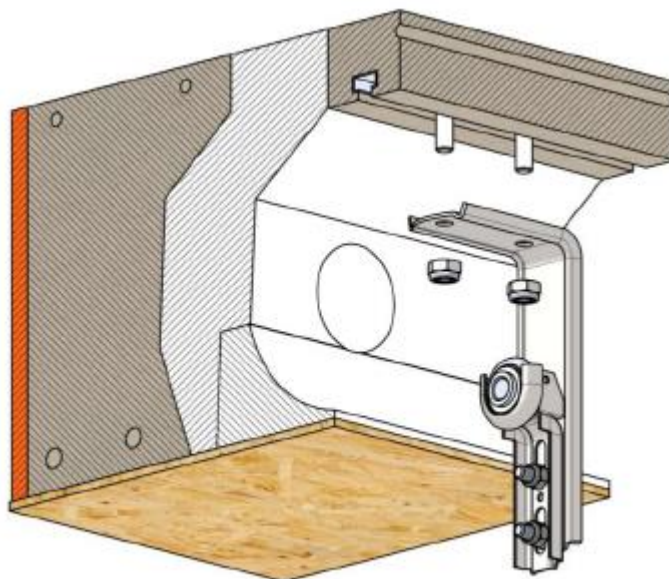
## 11.2 SHAFT HOLDER POSITIONING

In the upper part of the box there is a track fitted by the manufacturer to fasten the shaft holders. Slide the screws from the supplied kit into the track, placing them on the left and right side. Fit the holders, slide into the sides so that the screw of the holder (in the rail of the lintel) does not intervene with the track of slats. Retract the screws. Be particular about the fitting being symmetrical towards the box.

Issued on: 19.10.2021



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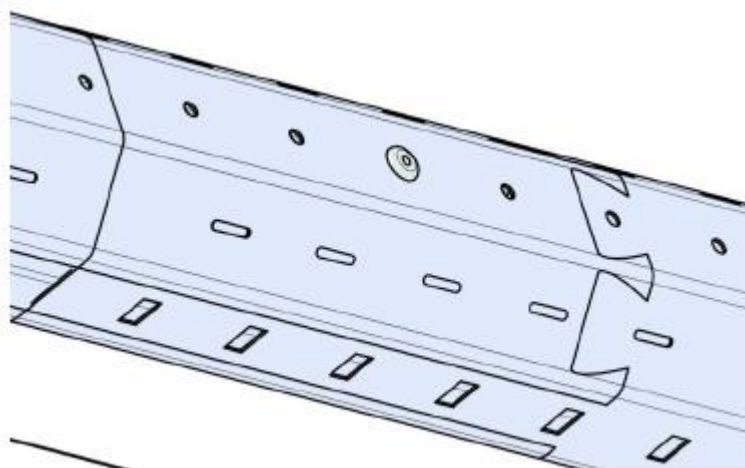
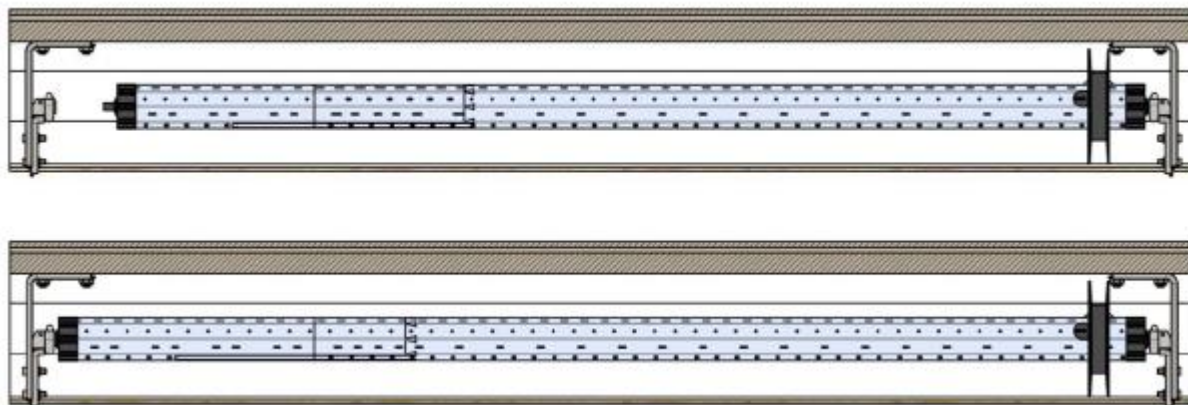


### 11.3 SHAFT POSITIONING

The Heluz roller shutter is supplied with a telescopic shaft that consists of two sections. A fixed part that is mounted with a reeling wheel, and a telescopic part to be pushed inside the fixed part of the shaft, which is fitted with a bearing carrier. Slip the reeling belt pulley with mounted strap over the fixed part (first place the reeling wheel in the box and then slip the shaft over) and put into the lintel, align the shaft in the box and fit it in the holder with a bearing. On the opposite side, push the telescopic part forward and put it in the holder with the bearing. Secure the telescope against moving (using a twist or rivet).



Issued on: 19.10.2021

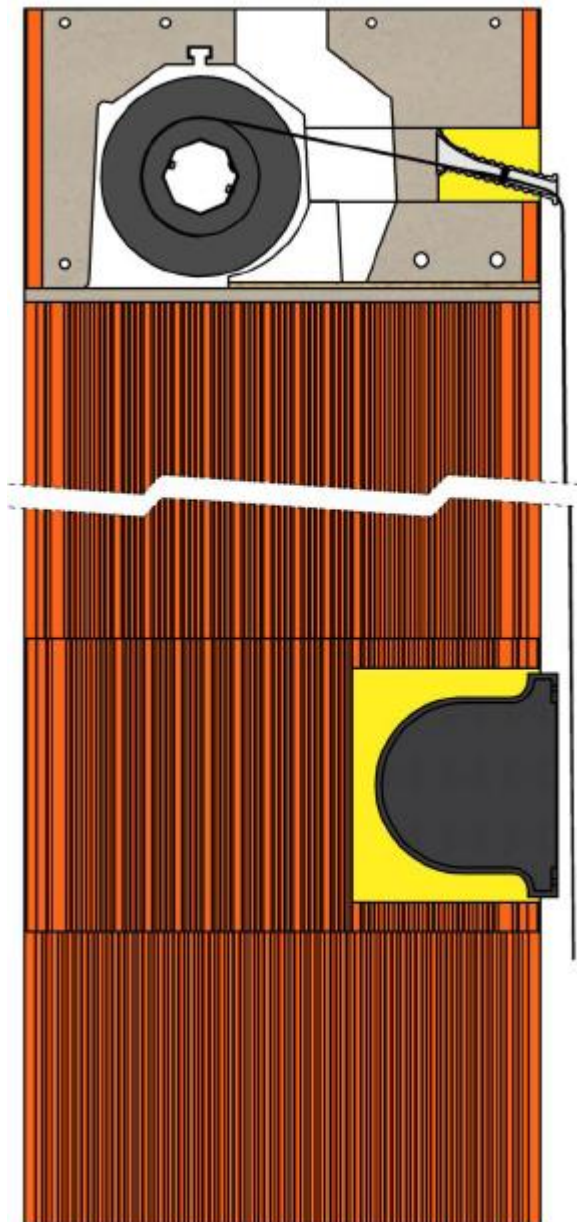


Issued on: 19.10.2021

#### 11.4 CONTROL COMPLETION

Run the tape from the reeling wheel through the tape sleeve inside the interior, screw down the pulley and assemble the retractor.

Reel the strap up the belt pulley, leaving the strap hanging in the interior in a length that equals the height of the window + 500mm.

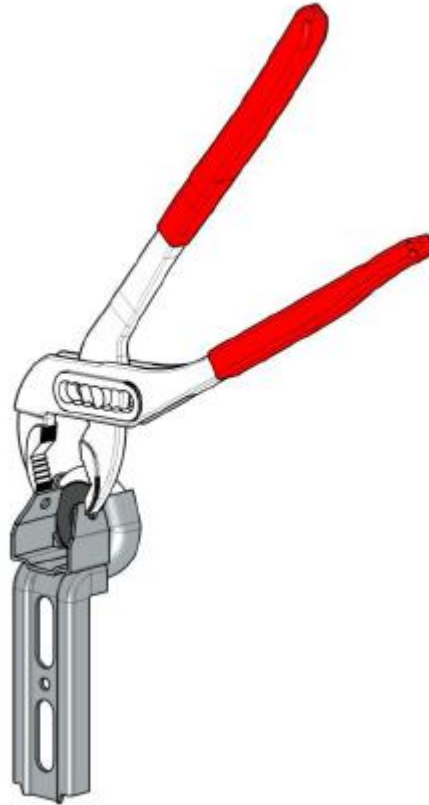


Issued on: 19.10.2021

## 12. MOUNTING - MOTOR CONTROL

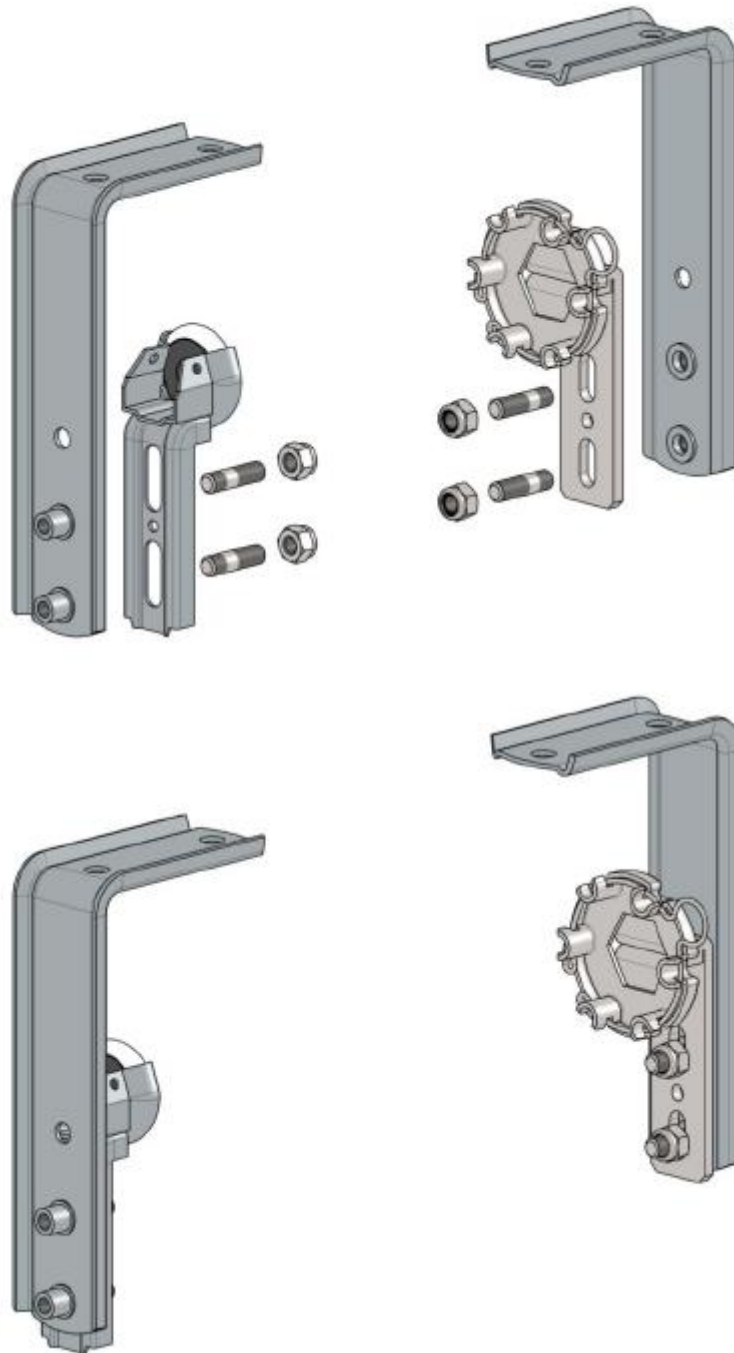
### 12.1 SHAFT HOLDER ASSEMBLY

Assemble shaft carriers with bearing. Place the bearing in the carrier and snap the carrier in.



Assemble shaft holders as shown in the figure. Screw down pins with double-sided thread in L-shape holders; with the shorter side into the holder. Fit the pins with shaft and motor carriers. Adjust the holders so that the bearing centre was the centre of the box, and tighten the nuts.

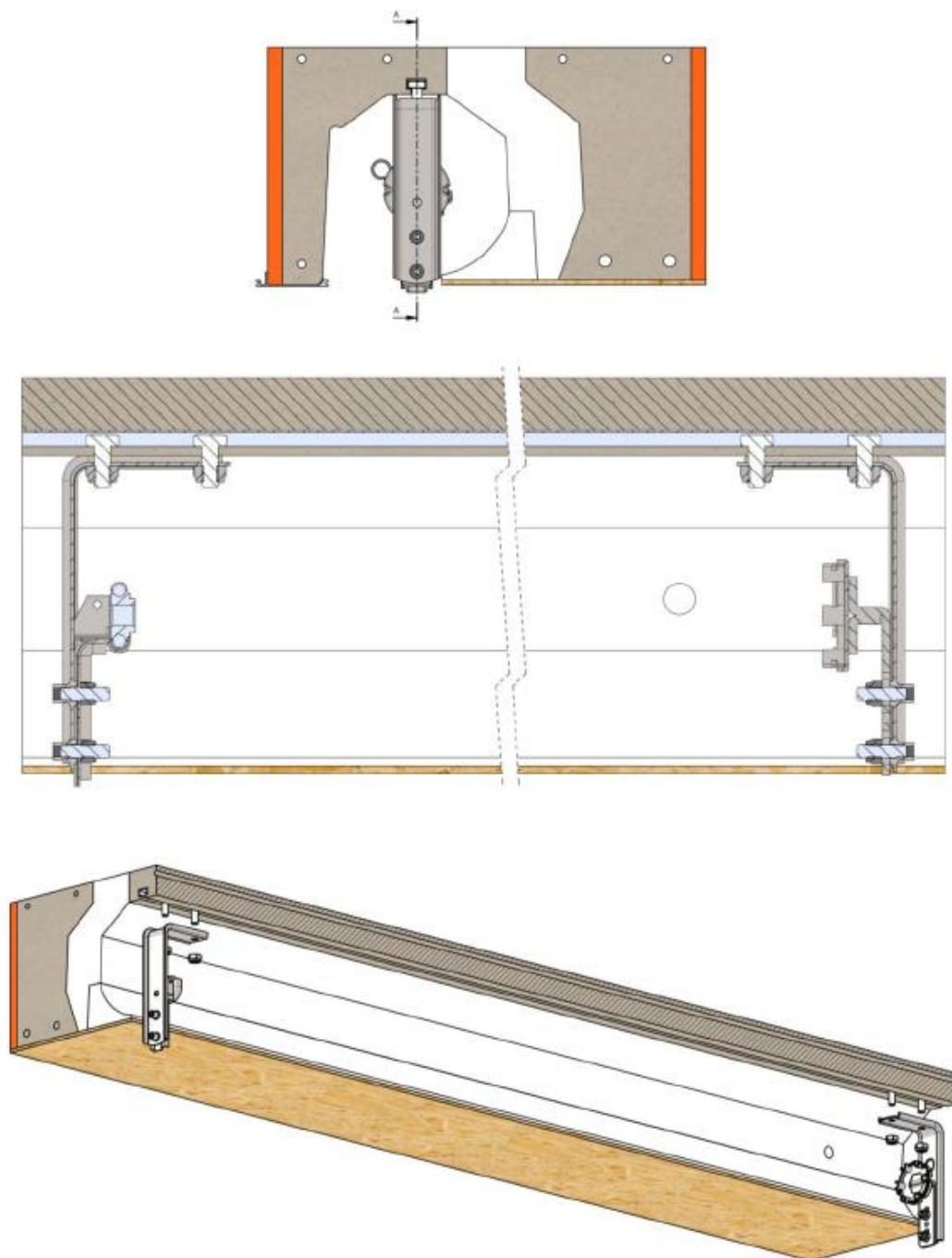




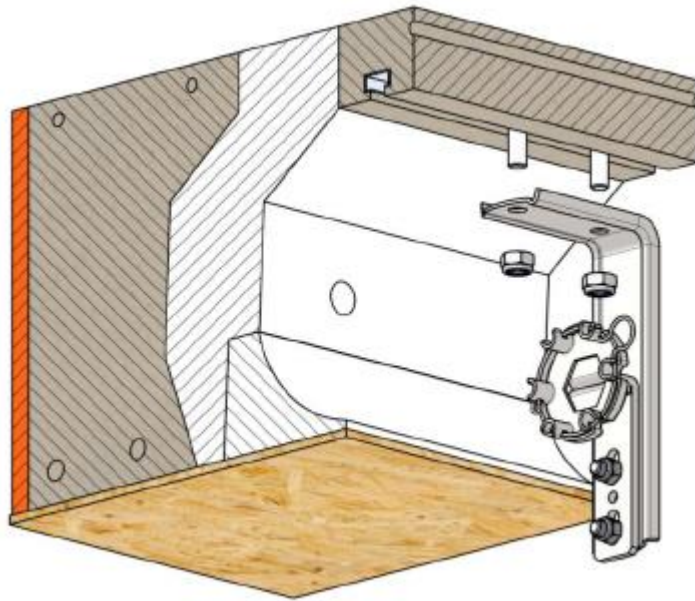
Issued on: 19.10.2021

## 12.2 SHAFT HOLDER POSITIONING

In the upper part of the box there is a track fitted by the manufacturer to fasten the shaft holders. Slide the screws from the supplied kit into the track, placing them on the left and right side. Fit the holders, slide into the sides so that the screw of the holder (in the rail of the lintel) does not intervene with the track of slats. Retract the screws. Be particular about the fitting being symmetrical towards the box.

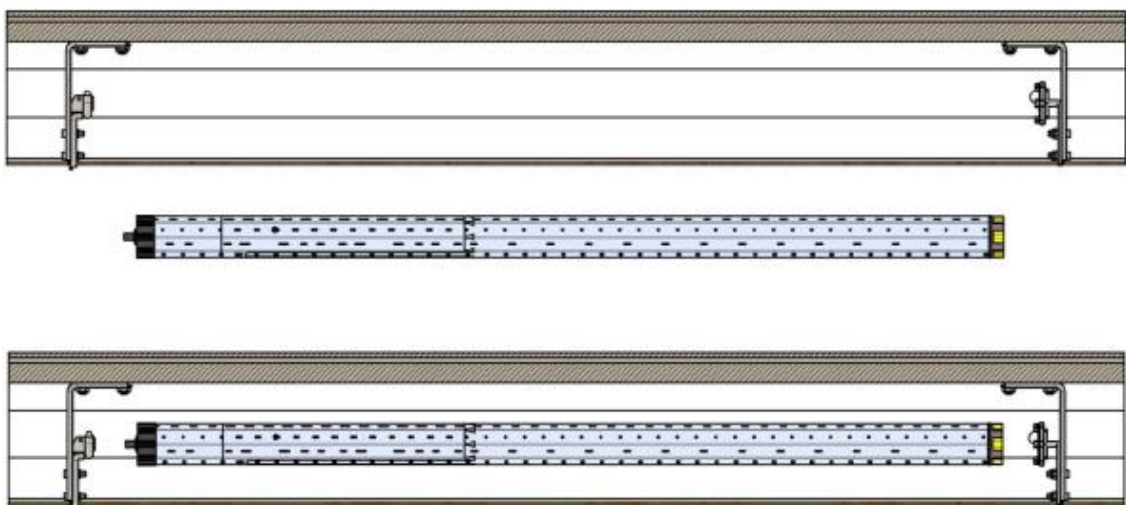


Issued on: 19.10.2021

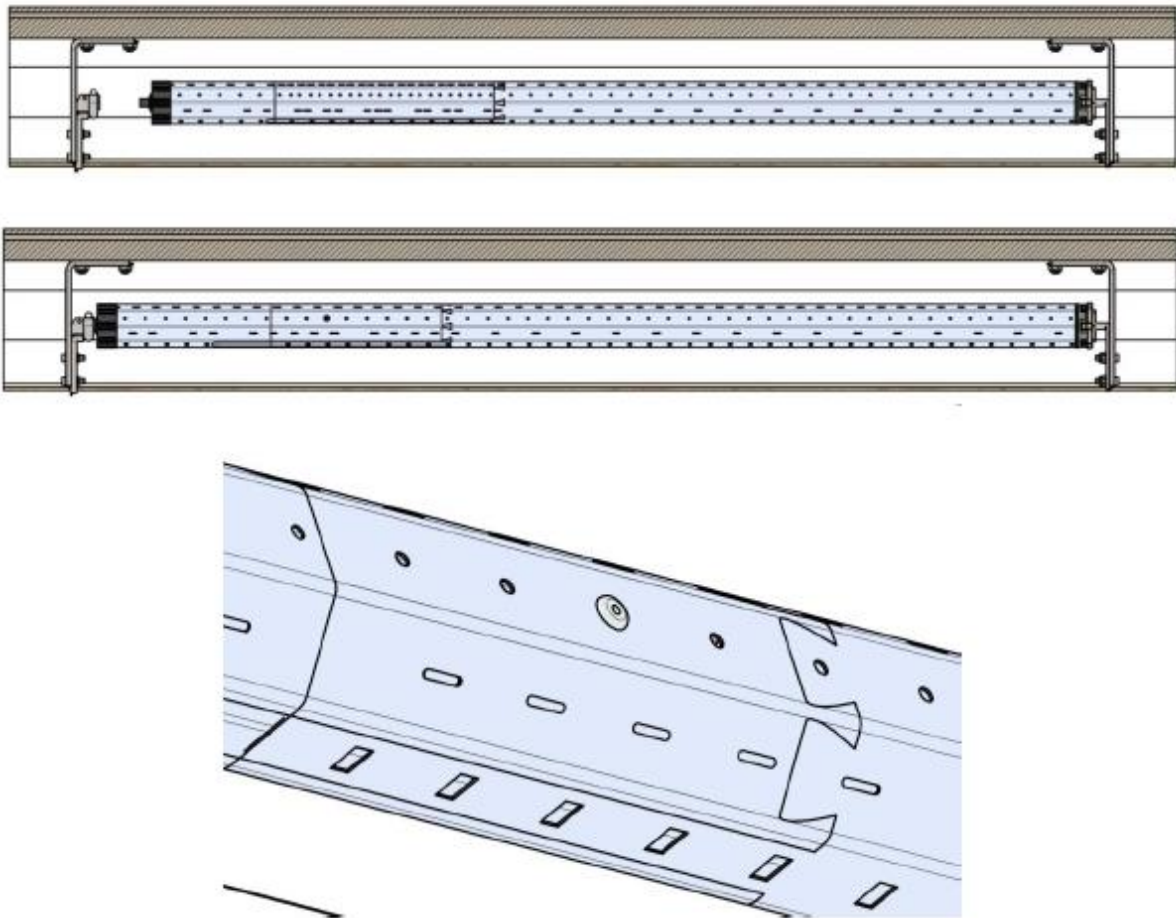


### 12.3 SHAFT POSITIONING

The Heluz roller shutter is supplied with a telescopic shaft that consists of two sections. A fixed part where the motor is installed, and a telescopic part to be pushed inside the fixed part of the shaft, which is fitted with a bearing carrier. Push the motor into the fixed part and insert in the lintel; align the shaft in the box and fit it on the motor holder. On the opposite side, push the telescopic part forward and put it in the holder with the bearing. On the opposite side, push the telescopic part forward and put it in the holder with the bearing. Secure the telescope against moving (using a twist or rivet).



Issued on: 19.10.2021



#### 12.4 CONTROL COMPLETION

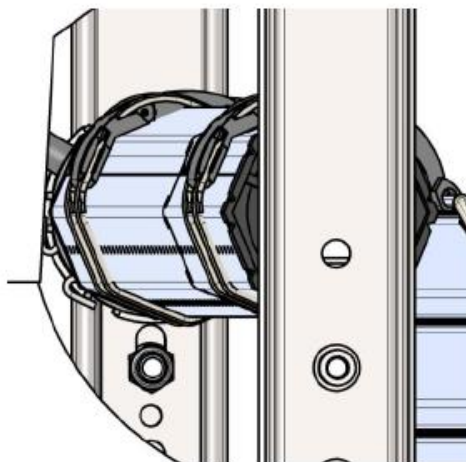
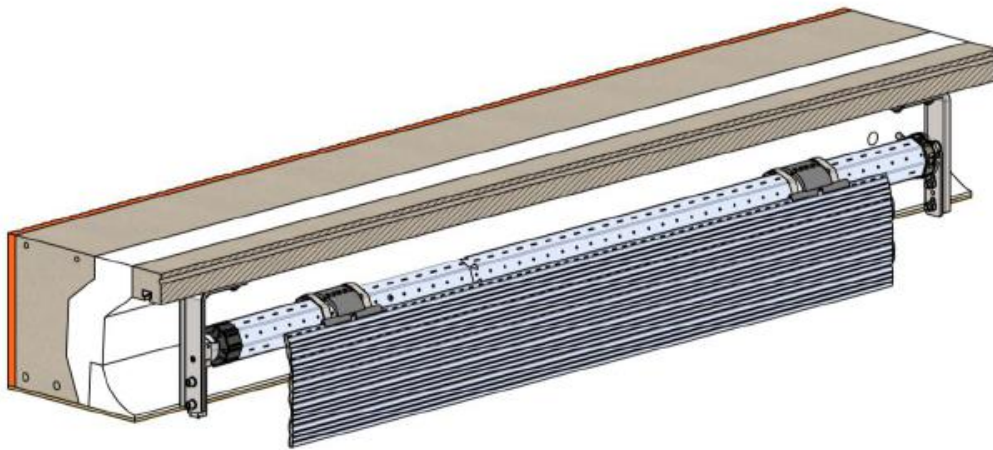
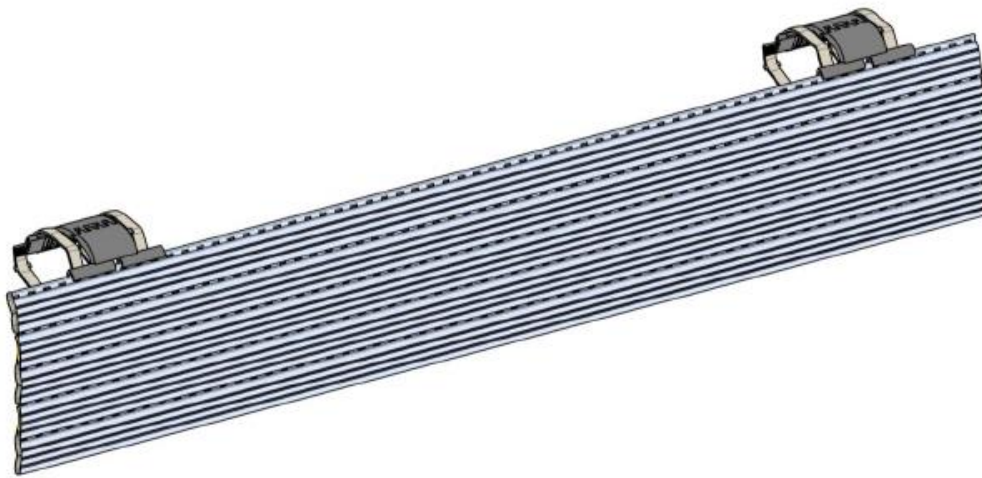
Connect the cable of the drive; test whether the shaft rotates.

#### 13. FITTING A ROLL-UP CASING

The casing is locking on its entire height but partially stapled. Therefore you need to inspect the casing and find out which locking devices can be taken out. Usually the eleventh slat from the terminal rail and the eleventh slat from the suspensions do not have locks stapled. Take the first part of the slats with fitted suspensions, put it into the casing and by means of suspensions fit it onto the shaft; centre it, fasten it and reel a little. Insert another part and reel a little. Continue until the entire casing is fitted.

Reel complete casing, the terminal rail included, into the lintel as much as you can.

Issued on: 19.10.2021



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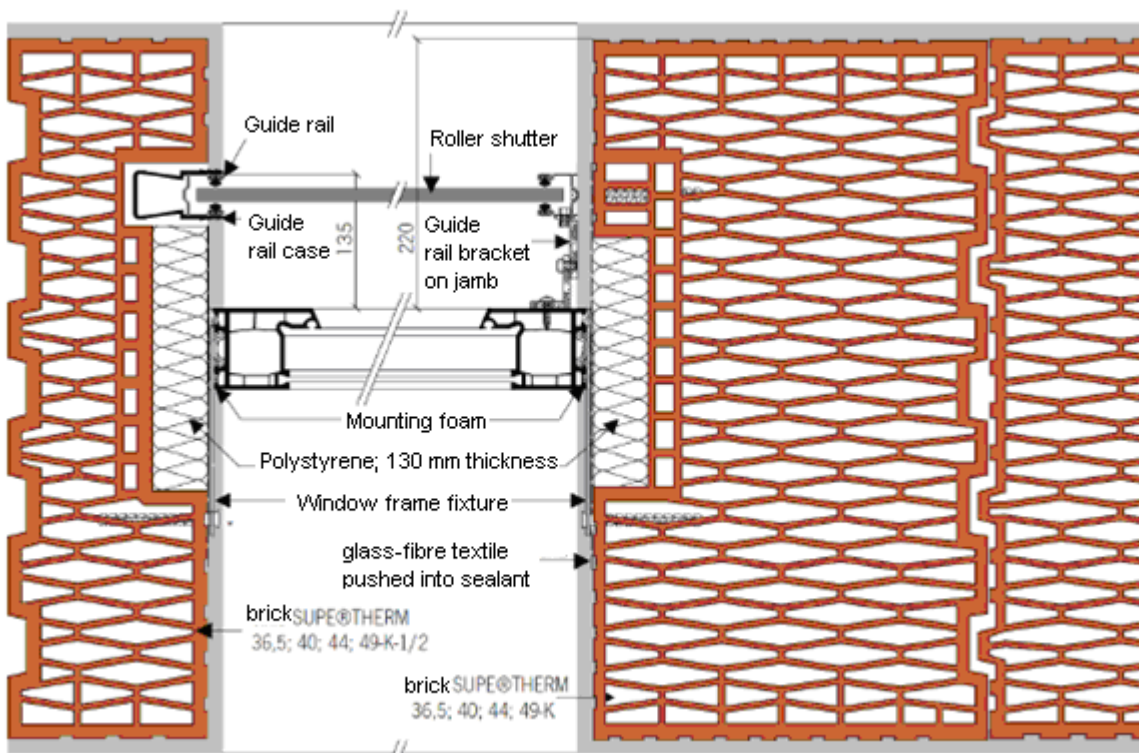
## 14. FASTENING THE GUIDE RAILS

### 14.1 EMBEDDED RAILS

Place prepared guide rails in cases and screw them down. Test the function of the roller shutter by lowering and pulling the casing.

### 14.2 VISIBLE RAILS

Use a console to fix the guide rails to the frame; align the rails and anchor them in the scuntions. Test the function of the roller shutter by lowering and pulling the casing.

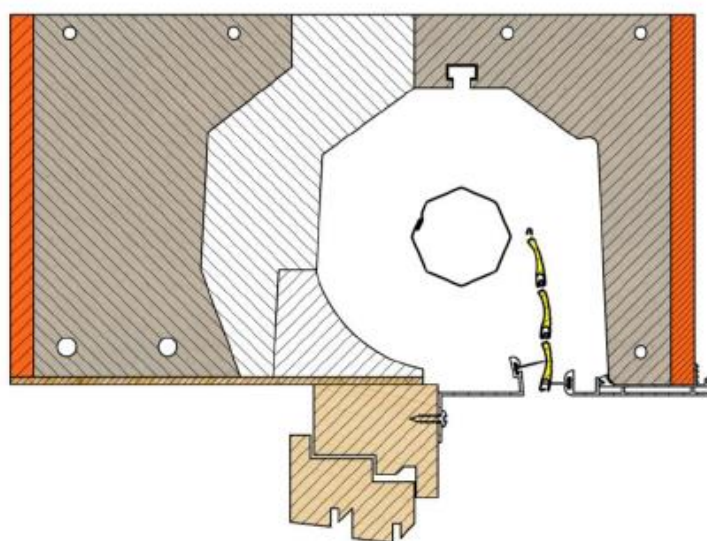
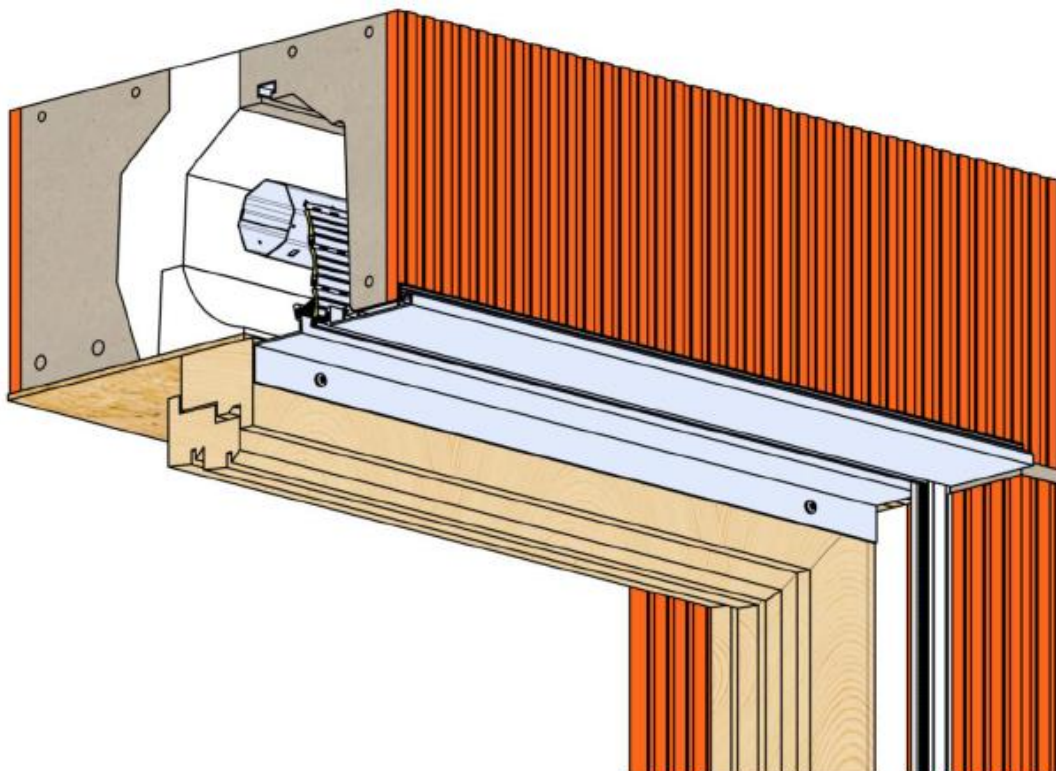


Issued on: 19.10.2021

## 15. FITTING A SERVICE FLAP

Reel the roller shutter into the lintel.

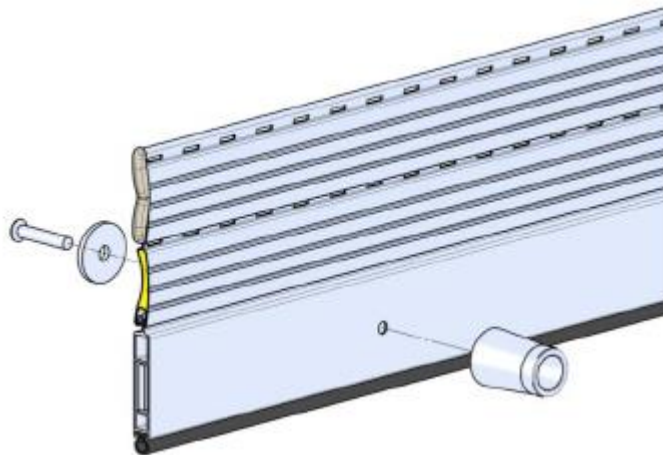
Fit it on an aluminium border on the external side of the lintel, and snap it on the lintel. From the window side, measure and drill holes on the service flap and, using a screw, fix in horizontal position to the external part.



Issued on: 19.10.2021

## 16. CASING FINISH

Screw down stops on the bottom rail of the roller shutter.

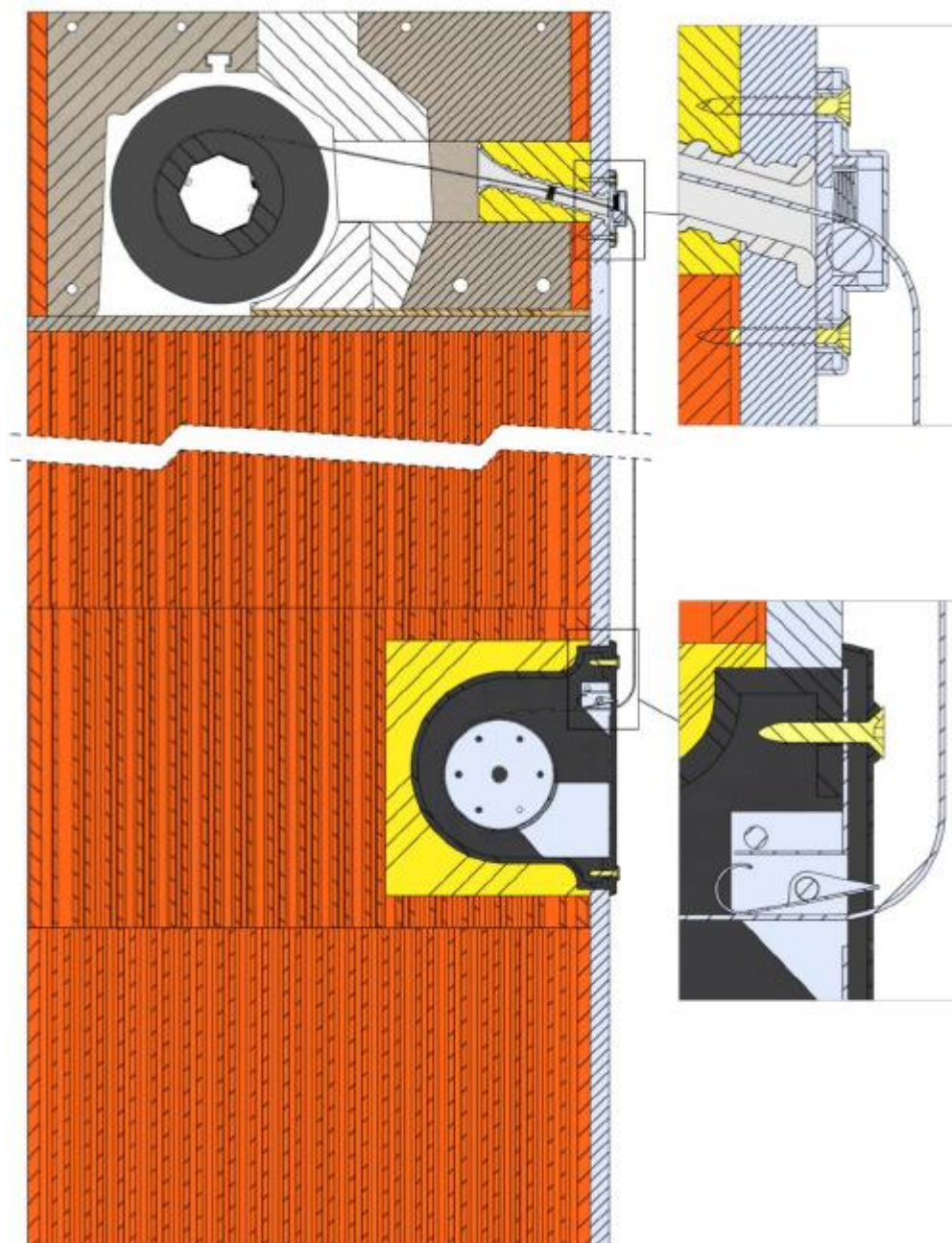


Issued on: 19.10.2021



## 17. STRAP OPERATION COMPLETION

Assemble the control whilst the roller shutter is pulled down. Remove the cover and spacer pins located inside the box - they prevent the box from falling down during foaming. Fit a tape sleeve with brush and front retractor cover on the strap. Fit the end of the strap into the retractor; release it and carefully reel the strap. Fit the retractor into the box and fix it. Then fit the front cover. Test the function.



Issued on: 19.10.2021

## 18. MAINTENANCE INSTRUCTIONS

Roller shutter are maintenance-free; we do not recommend any use of grease on the moving parts; on the contrary, they might act as glue for dirt.

On conditions of usual use the product is safe, and does not require any special maintenance.

Increased amount of impurities and dust act as an abrasive layer. If dirtied or dusted, wash the surface with water and regular detergent.

In winter, when the temperatures drops below zero, prior to reeling the roller shutter make sure that the terminal slat or even the entire roller coil is not frozen in the guide rails or to the window-sill. If the roller shutter freezes to the surface, do not use it; remove the frost carefully - you will avoid mechanical damage to the roller shutter.

If the temperature is around 0° C, leave the roller coil about 5 - 10 cm deployed; the terminal slat might slide into the box due low temperature which might cause damage to the roller shutter.

Any intervention with the product is inadmissible. Let an authorized firm deal with the repair.

In case of a failure, high noise level, jerking movement, etc., the supplier of the roller shutter needs to be contacted. By taking the cover off and intervening with the roller shutter mechanism you will lose your warranty claim.

If any unauthorized interventions with the product are revealed, the manufacturer and the mounting form shall not be held liable for any damages emerged in the warranty and post warranty term.