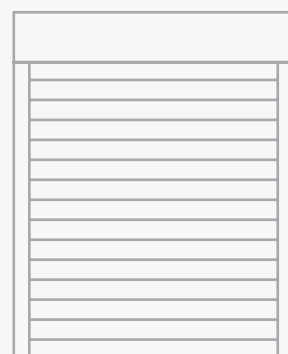




Instruction for montage of **outside roller shutters**



SK, SK+MKT

General recommendations

Roller shutter's assembly can be made only by trained assembly team. Current health and safety laws should be obeyed, particularly regarding safety of electrical equipment and working at heights.

Use the following during the assembly:

- a) If the assembly is done to gel-concrete lintel or full brick – then use rawlbolts $\text{Ø } 6 \div 8 \text{ mm}$
- b) If the assembly is done to the walls made of hollow blocks – then use the appropriate assembly systems, provided to such walls.
- c) If the assembly is done to the wall, made of crack bricks or gas-concrete, etc. - then use the appropriate dowels to crack bricks.

The assembly conditions:

- a) In the case of walls – the assembly should be done to even surface with adequate strength, constructed in accordance with the current regulations of the Construction Law.
- b) In the case of metal construction - the assembly should be done to the materials which wall thickness is appropriate and which are connected each other in accordance with current rules regarding to the metal processing.

NOTE: *The manners of the roller shutter's assembly which are showed in the instruction should be treated as the example*

1. Assembly tools [1].



2. The roller shutter's unpacking

Before the assembly, unpack the goods and check them with respect to the quantitative and qualitative terms.

- a) Shutter box [2], guide channels [3], PVC caps to hide the screws in guide channels [4].



- b) Types of applied, manual drives (options):



Outside strap box coiler, tabular strap guide, strap grip [5].



Outside rope box coiler, rope guide, rope grip [6].



Winch for strap, angle for winch, strap guide, handle [7].



Winch for rope, angle for winch, rope guide, handle [8].



Handle, Cardan joint 45° or 90° with hook [9].



Handle, Cardan joint 45° or 90° with eye [10].

I ADAPTING ROLLER SHUTTER SYSTEM SK – ASSEMBLY IN RECESS

The order of assembly

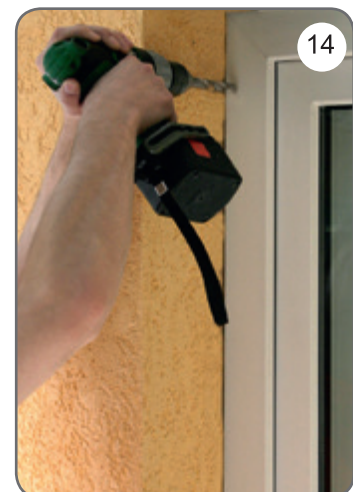
a) Check the dimensions of the construction's hole [11], [12].



b) Mark the position of the drilling hole for the strap or rope of manual drive (about 17mm above the edge of the guide channel) [13], then drill the hole [14].

- for strap – with the drill $\text{Ø } 20 \div 22 \text{ mm}$ (installation tube $\text{Ø } 20 \div 22 \text{ mm}$ should be inserted into this hole and the tube should be cut evenly with the window frame from both inside and outside of the room)
- for rope – with the drill $\text{Ø } 10 \div 13 \text{ mm}$ (spring of rope guide should be inserted into hole and its length should be adjusted to the thickness of window frame).

In the case of electric drive, the hole for the motor's wire should be drilled in the place where it is planned to carry out the wiring.



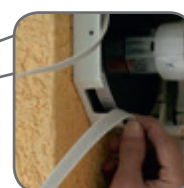
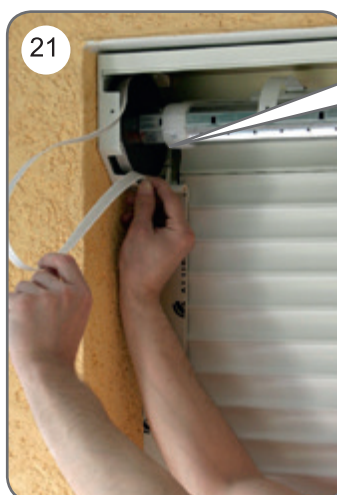
c) Put the roller shutter to the basis [15], place the guide channels vertically and screw them to the window frame [16].



d) Unscrew the screws [17], [18] and open the shutter box (base part) [19].



e) Lower the roller shutter's curtain to the windowsill and screw the shutter box to the basis (on either side) [20]. Pull the strap (rope) through the hole to the inside of a room [21]. In the case of the roller shutter with an electric drive, adjust additionally the endstops (by using the assembly wire) then connect the control elements in accordance with as sembly instruction (for the drive, control unit, driver, etc.). Take out the power cord in accordance with the plans of the wiring.



f) From the inside of the room, at the outlet of the hole [22] mount the strap (rope) guide to the window frame with the screws [23].



- g) Pull the joints out [24] and lever up one of the casing's side with the screwdriver – open the box coiler [25]. Screw the box to the coiler window frame using screws [26]. Hook strap (rope) to the fastener, and simultaneously keep firmly the spring's cover, then rotate and release the blockade [27]. When the box coiler is mounted and curtain is dropped, 2-3 coils of strap / rope should be wound up on the spring's drum [28]. Close the box coiler's casing [29].



- h) Check if the electric connections are made correctly.
i) Perform the attempt of roller shutter's operating.
j) Close [30] and screw the shutter box (base part) [31], [32].



- k) Remove the protective foil from the box [33] and guide channels [34] and from the other elements.
Cover the holes in the guide channels [35].



- l) Train the user in the scope of roller shutter's operating.
- m) Pass to the user the instruction of operating and maintenance, warranty and sign the protocol of receipt.

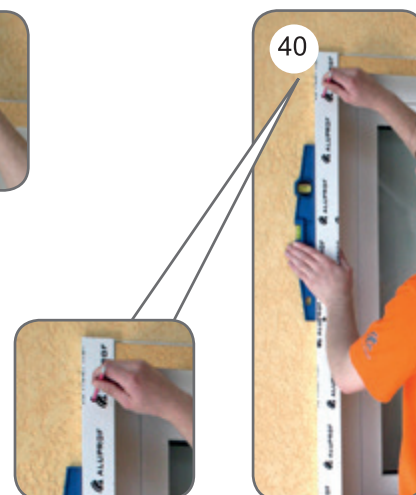
II ADAPTING ROLLER SHUTTER SYSTEM SK – ASSEMBLY ON THE BUILDING WALL

The order of assembly.

a) Check the dimensions of the construction's hole [36], [37].



b) Put the guide channel to the basis, vertically [38]. Mark the position of the drilling hole for the strap or rope of manual drive (about 17mm above the edge of the guide channel) [39], then mark the position of the drilling hole for guide channel [40].



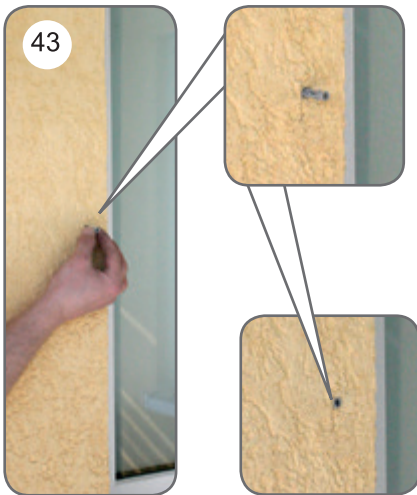
c) In marked positions drill the holes for the rawbolts (length and type adjust to the wall's construction) [41], and the hole for strap or rope of manual drive [42].

- for strap – with the drill $\varnothing 20 \div 22$ mm (installation tube $\varnothing 20 \div 22$ mm should be inserted into this hole and the tube should be cut evenly with the window frame from both inside and outside of the room)
- for rope – with the drill $\varnothing 10 \div 13$ mm (spring of rope guide should be inserted into hole and its length should be adjusted to the thickness of window frame).

In the case of electric drive, the hole for the motor's wire should be drilled in the place where it is planned to carry out the wiring.



d) Insert the rawbolts into drilled holes [43], next put the guide channel [44] and screw it to the basis [45].



e) the shutter box (together with the second guide channel) to the wall [46], place it as in the case of the first guide channel, mark the places of drilling, drill the holes, insert the rawbolts and screw the all to the basis. Then unscrew the screws [47] and open the shutter box (base part) [48].



f) Lower the roller shutter's curtain to the windowsill and screw the shutter box to the basis (on either side) [49]. Pull the strap (rope) through the hole to the inside of the room [50]. In the case of the roller shutter with an electric drive, adjust additionally the endstops (by using the assembly wire) then connect the control elements in accordance with assembly instruction (for the drive, control unit, driver, etc.). Take out the power cord in accordance with the plans of the wiring.



g) From the inside of the room, at the outlet of the hole [51] mount the strap (rope) guide [52] by using the screws [53].



h) Pull the joints out [54] and lever up one of the casing's side with the screwdriver – open the box coiler [55]. Screw the box to the window frame using screws [56]. Hook strap (rope) to the fastener, and simultaneously keep firmly the spring's cover, then rotate and release the blockade [57]. When the box coiler is mounted and curtain is dropped, 2-3 coils of strap / rope should be wound up on the spring's drum [58]. Close the box coiler's casing [59].



i) Check if the electric connections are made correctly.

j) Perform the attempt of roller shutter's operating.

- k) Close [60] and screw the shutter box (base part) [61].



- l) Remove the protective foil from the box [62] and guide channels [63] and from the other elements. Cover the holes in the guide channels [64].



- m) Train the user in the scope of roller shutter's operating.
n) Pass to the user the instruction of operating and maintenance, warranty and sign the protocol of receipt.

III ADAPTING ROLLER SHUTTER SYSTEM SK – ASSEMBLY IN RECESS

The order of assembly

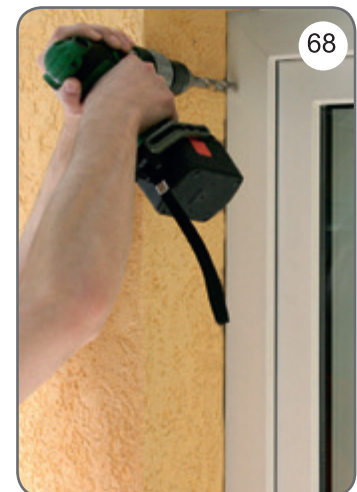
a) Check the dimensions of the hole construction [65], [66]



b) Mark the position of drilling hole for the strap or rope of manual drive (about 17mm above the edge of the guide channel) [67], then drill the hole [68].

- for strap – with the drill $\varnothing 20 \div 22$ mm (installation tube $\varnothing 20 \div 22$ mm should be inserted into this hole and the tube should be cut evenly with the window frame from both inside and outside of the room)
- for rope - with the drill $\varnothing 10 \div 13$ mm (spring of rope guide should be inserted into hole and its length should be adjusted to the thickness of window frame).

In the case of electric drive, the hole for the motor's wire should be drilled in the place where it is planned to carry out the wiring.



c) Put the roller shutter to the basis [69], place the guide channels vertically and screw them to the window frame [70].



d) Unscrew screws [71], [72] and open the shutter box (base part) [73]



e) Lower the roller shutter's curtain to the windowsill and screw the shutter box to basis (on either side) [74]. Pull the strap, (rope) through the hole to the inside of the room [75]. In case of roller shutter with electric drive, adjust additionally the endstop (by using the assembly wire), and then connect the control elements in accordance with assembly instruction (for the drive, control unit, driver etc.). Take out the power cord in accordance with plans of the wiring.



f) From the inside of the room, at the outlet of the hole [76] mount the strap (rope) guide to the window frame with the screws [77].



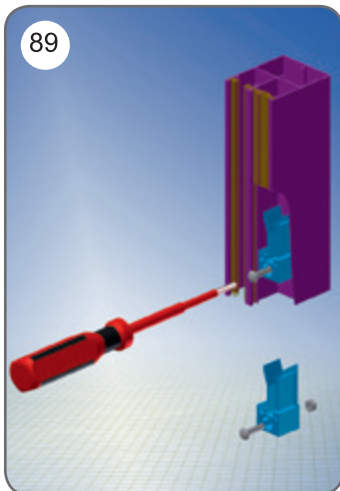
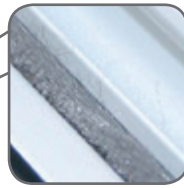
- g) Pull the joints out [78] and lever up one of the casing's side with the screwdriver – open the box coiler [79]. Screw the box to the window frame using screws [26]. Hook strap (rope) to the fastener, and simultaneously keep firmly the spring's cover, then rotate and release the blockade [27]. When the box coiler is mounted and curtain is dropped, 2-3 coils of strap / rope should be wound up on the spring's drum [28]. Close the box coiler's casing [83].



- h) Check if the electric connections are made correctly.
i) Perform the attempt of roller shutter's operating.
j) Close [84] and screw on the shutter box (base part) [85], [86].



- k) Close the mosquito net in such position which seal up the space between the endslat and window frame by the (side) brush [87]. Then (at the opposite side of the window) mark the position of mosquito net's endslat, [88]. Adjust the side lock's nest to an appropriate height (in each guide channel) and then screw tightly with suitable strength [89], [90]. Lower the mosquito net and check, if the surface between endslat and window frame is sealed up by the brush [91].



- l) Remove the protective foil from the box [92] and guide channels [93] and from the other elements. Cover the holes in the guide channels [94].



- m) Train the user in the scope of roller shutter's operating.
n) Pass to the user the instruction of operating and maintenance, warranty and sign the protocol of receipt.

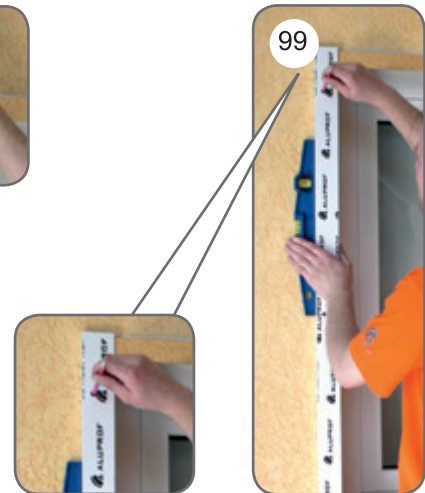
IV ADAPTING ROLLER SHUTTER SYSTEM SK – ASSEMBLY ON THE BUILDING WALL

The order of assembly.

a) Check the dimensions of the construction's hole [95], [96].



b) Put the guide channel to the basis, vertically [97]. Mark the position of the drilling hole for the strap or rope of manual drive (about 17mm above the edge of the guide channel) [98], then mark the position of the drilling hole for guide channel [99].



c) In marked positions drill the holes for the rawbolts (length and type adjust to the wall's construction) [100], and the hole for strap or rope of manual drive [101].

- for strap – with the drill $\varnothing 20 \div 22$ mm (installation tube $\varnothing 20 \div 22$ mm should be inserted into this hole and the tube should be cut evenly with the window frame from both inside and outside of the room)
- for rope - with the drill $\varnothing 10 \div 13$ mm (spring of rope guide should be inserted into hole and its length should be adjusted to the thickness of window frame.

In the case of electric drive, the hole for the motor's wire should be drilled in the place where it is planned to carry out the wiring.



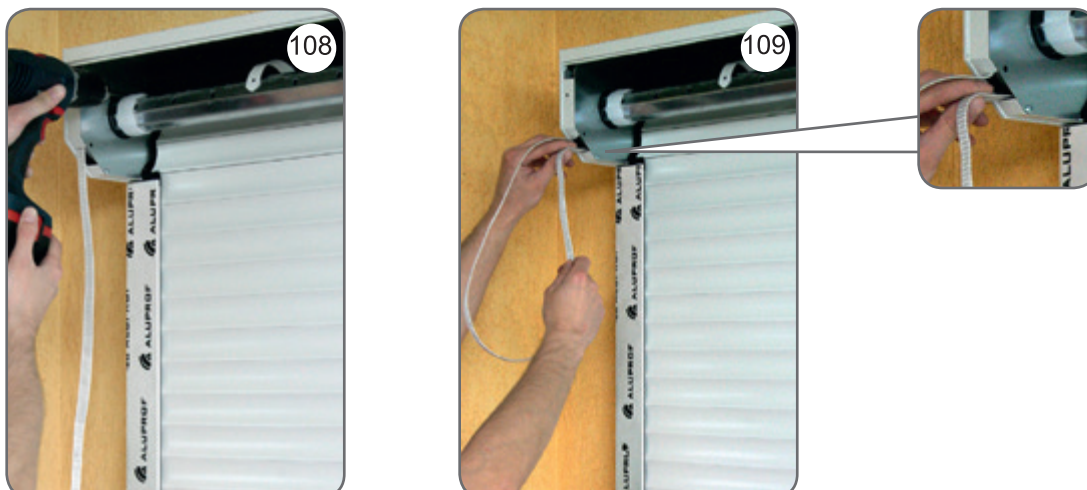
d) Insert the rawbolts into drilled holes [102], next put the guide channel [103] and screw it to the basis



e) the shutter box (together with the second guide channel) to the wall [105], place it as in the case of the first guide channel, mark the places of drilling, drill the holes, insert the rawbolts and screw the all to the basis. Then unscrew the screws [106] and open the shutter box (base part) [107].



f) Lower the roller shutter's curtain to the windowsill and screw the shutter box to the basis (on either side) [108]. Pull the strap (rope) through the hole to the inside of the room [109]. In the case of the roller shutter with an electric drive, adjust additionally the endstops (by using the assembly wire) then connect the control elements in accordance with assembly instruction (for the drive, control unit, driver, etc.). Take out the power cord in accordance with the plans of the wiring.



g) From the inside of the room, at the outlet of the hole [110] mount the strap (rope) guide [111] by using the screws [112].



h) Pull the joints out [113] and lever up one of the casing's side with the screwdriver – open the box coiler [114]. Screw the coiler to the window frame using screws [115]. Hook strap (rope) to the fastener, and simultaneously keep firmly the spring's cover, then rotate and release the blockade [116]. When the box coiler is mounted and curtain is dropped, 2-3 coils of strap / rope should be wound up on the spring's drum [117]. Close the box coiler's casing [118].



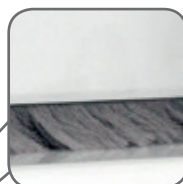
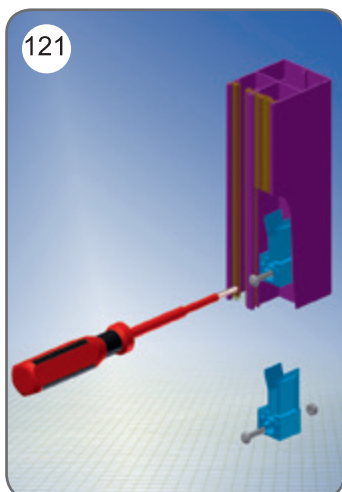
i) Check if the electric connections are made correctly

j) Perform the attempt of roller shutter's operating.

k) Close [119] and screw the shutter box (base part) [120].



l) Adjust the "location" of the mosquito net's endslat, by placing the side lock's nest on the appropriate height (in each guide channel) and then screw tightly with suitable strength [121], [122]. Lower the mosquito net and check, if the surface between endslat and window frame is sealed up by the brush [123].



- m) Remove the protective foil from the box [124] and guide channels [125] and from the other elements.
Cover the holes in the guide channels [126].



- n) Train the user in the scope of roller shutter's operating.
- o) Pass to the user the instruction of operating and maintenance, warranty and sign the protocol of receipt.