

ARTOSI PERGOLA

MEASUREMENT

In case of pergolas, the outer structure envelope is measured. The following is entered: overall **width [S]**, overall **length [L]**, and passing **height [H]** of each post.

The pergola's perimeter frame must be level and rectangular in all directions after the installation. When taking measurements, be careful about the heights and evenness of the individual anchoring points for the posts. The anchoring points for the posts must have sufficient load-bearing capacity in order to withstand all loads transferred to them by the post feet. Also pay attention to evenness and squareness of the individual neighbouring structures to which the pergola will be attached. If the pergola's perimeter frame is to be anchored to surrounding structures, said structures must have sufficient load-bearing capacity to withstand all loads transferred to them by the perimeter frame. When incorporating the pergola to or close to surrounding structures, it is necessary to consider the possibility of dimensional changes to the pergola due to the surrounding temperatures (see *Artosi Technical Manual*).

LINEAR EXPANSION

When the temperature of aluminium increases, the metal will expand; this phenomenon is called thermal expansion. The coefficient of thermal expansion of aluminium alloy is $23.5 \mu\text{m}/(\text{m}\cdot\text{K})$.

Example:

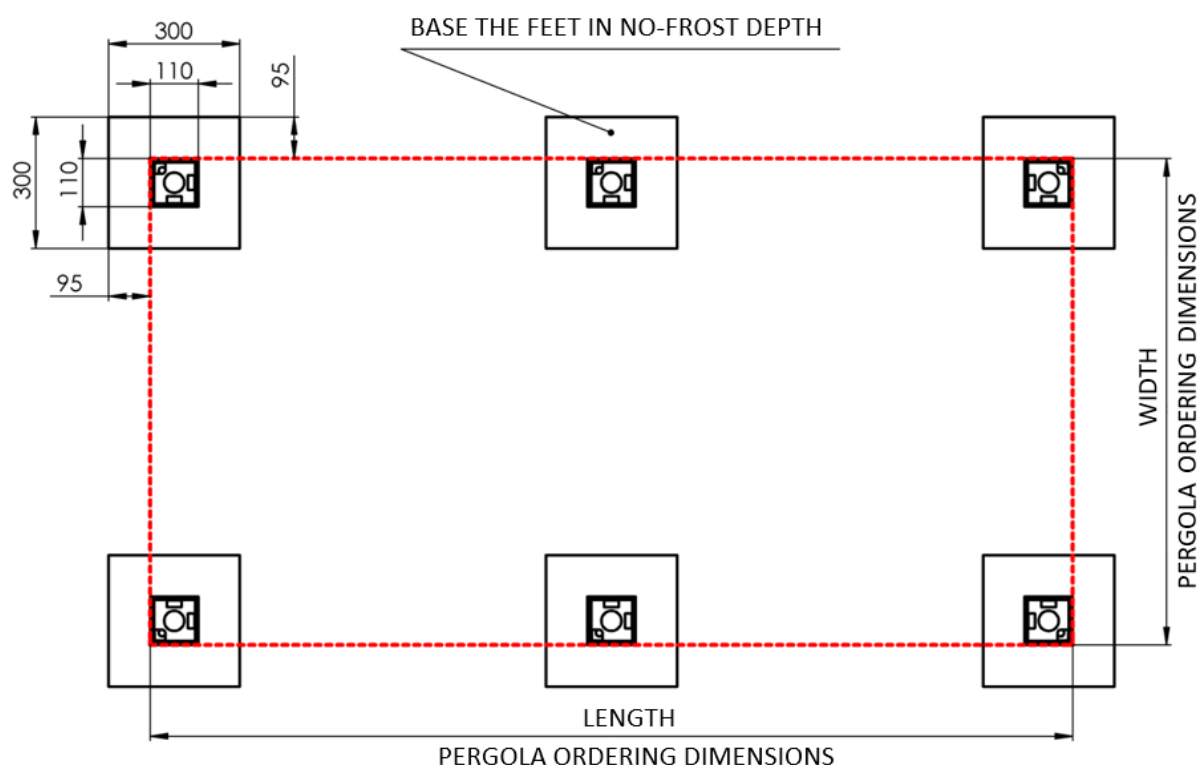
At 20°C , an aluminium profile measures 7000 mm. When heated to 50°C – during a sunny day – it will measure 7005 mm due to thermal expansion. The length will increase by +5 mm as a result of the change in aluminium temperature.

When incorporating the pergola to surrounding structures, it is important to consider change in the pergola dimensions due to ambient temperature.

When taking measurements of screen roller blinds and installing them in the pergola, it is necessary to consider thermal expansion of the aluminium profile in relation to ambient temperature. We recommend that measurements be taken at ambient temperatures of $23 \pm 5^\circ\text{C}$.

Foundation for anchoring the foot is part of neither the offer nor the delivery. The implementation of the foundation with regard to specific terrain conditions must be solved individually in cooperation with an authorized person (architect, construction company, etc...)


ISOTRA a. s. Bílovecká 2411/1, CZ-74601 Opava 19
EN 13561:2015 ARTOSI CPR 043/2019 Exterior Sun Shield Wind resistance: 6 Total solar transmittance factor g_{tot}: 0.03–0.6



ORDERING

The pergola ordered must meet the conditions specified in the ARTOSI Technical Manual. The ARTOSI Designer, available at Isotra's e-shop, must be used for ordering. This graphical interface will guide you through the selection of the individual elements, so that the pergola properly fulfils its function.

Each manufactured pergola has its own unique qr code containing information about the order, its technical specifications, and links to related documents available for download.

The qr code is always located in two places:

1. Under the cover, near the access point, for service purposes.
2. On the gutter corner cover.

LIST OF TOOLS

TOOLS NECESSARY FOR INSTALLATION

- Tape measure
- Spirit lever (Levelling laser)
- Socket spanner 4, 5, 6
- Ratchet spanner + 30 cm lever
- Sockets for ratchet spanner 5.5 mm, 17 mm, 19 mm
- Combination (ratchet) spanner 10, 15, 17
- Torx T15 screwdriver
- Flathead screwdriver
- Utility knife
- Gun applicator for sealants
- Sealant (we recommend Soudal Silirub 2)
- Spray with soap water

TOOLS RECOMMENDED FOR INSTALLATION

- Two ladders adjustable to the pergola height
- Hammer drill + drill bits
- Step drill bit
- Angle grinder + diamond disc
- Vacuum cleaner
- Garbage bags
- Compression bands
- Bolts with sealing rubbers

LIST OF SYMBOLS USED



Measure



Tighten – slightly



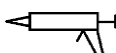
Tighten – fully



Level



Cut off



Seal


Smooth sealant
Remove excess sealant


Assembly



Disassembly



Prepare anchors to vertical structures. Anchor Ø.



Fix anchors to vertical structures



Prepare anchors to horizontal structures. Anchor Ø.



Fix anchors to horizontal anchor points



Water



Correct

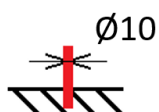
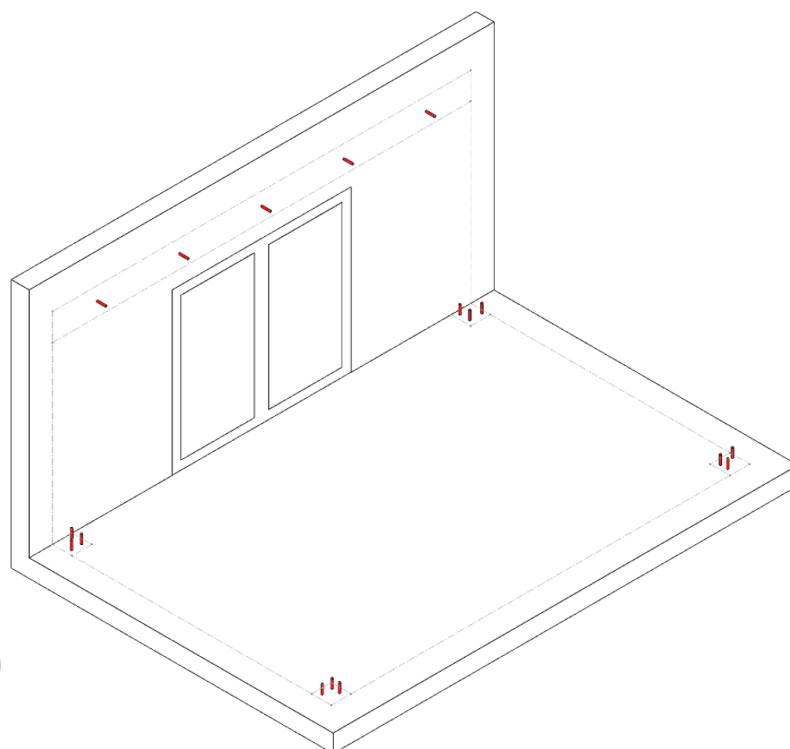
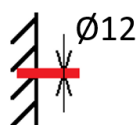
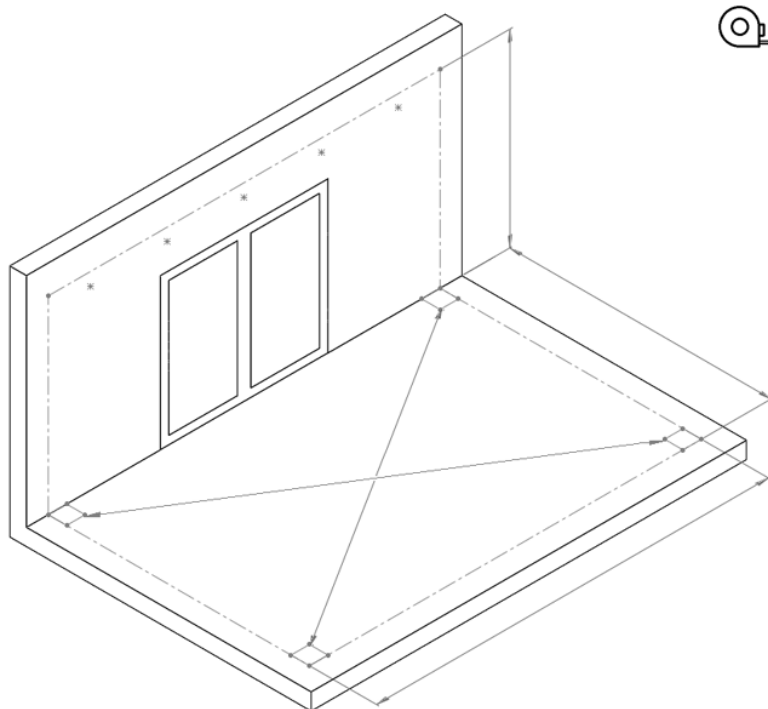
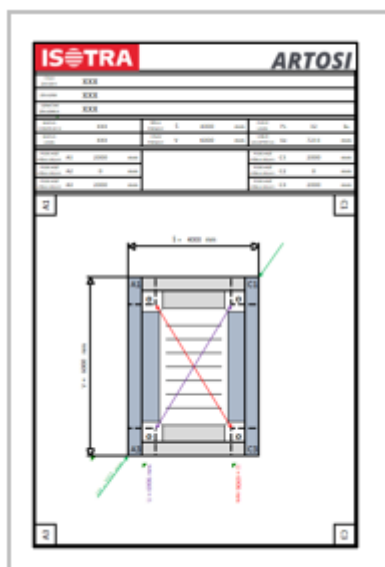


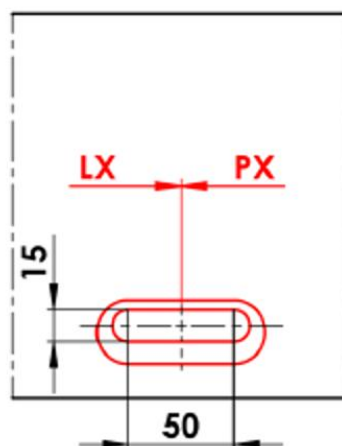
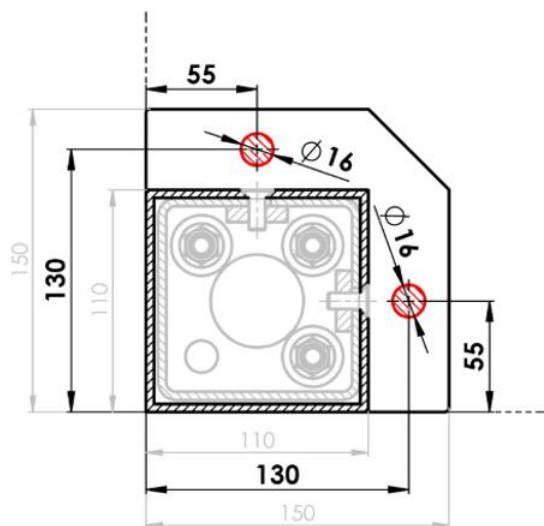
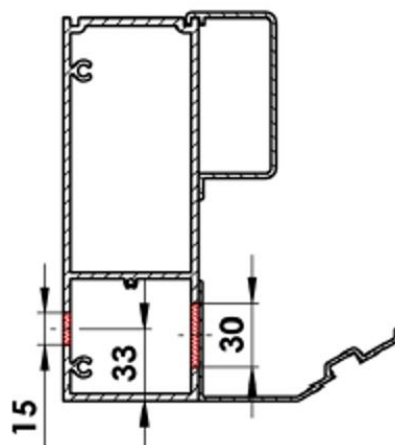
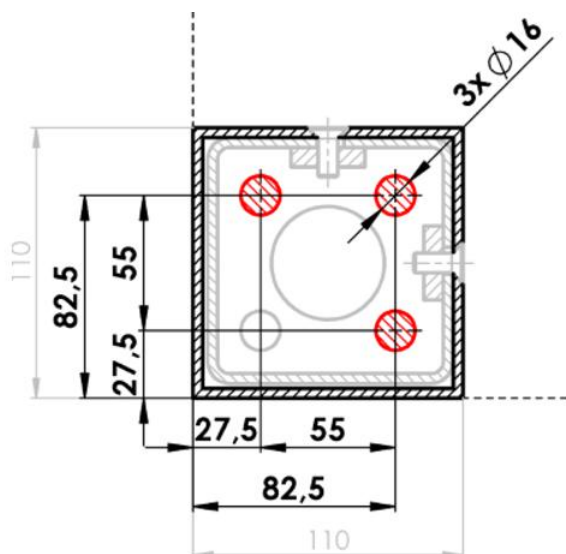
Incorrect



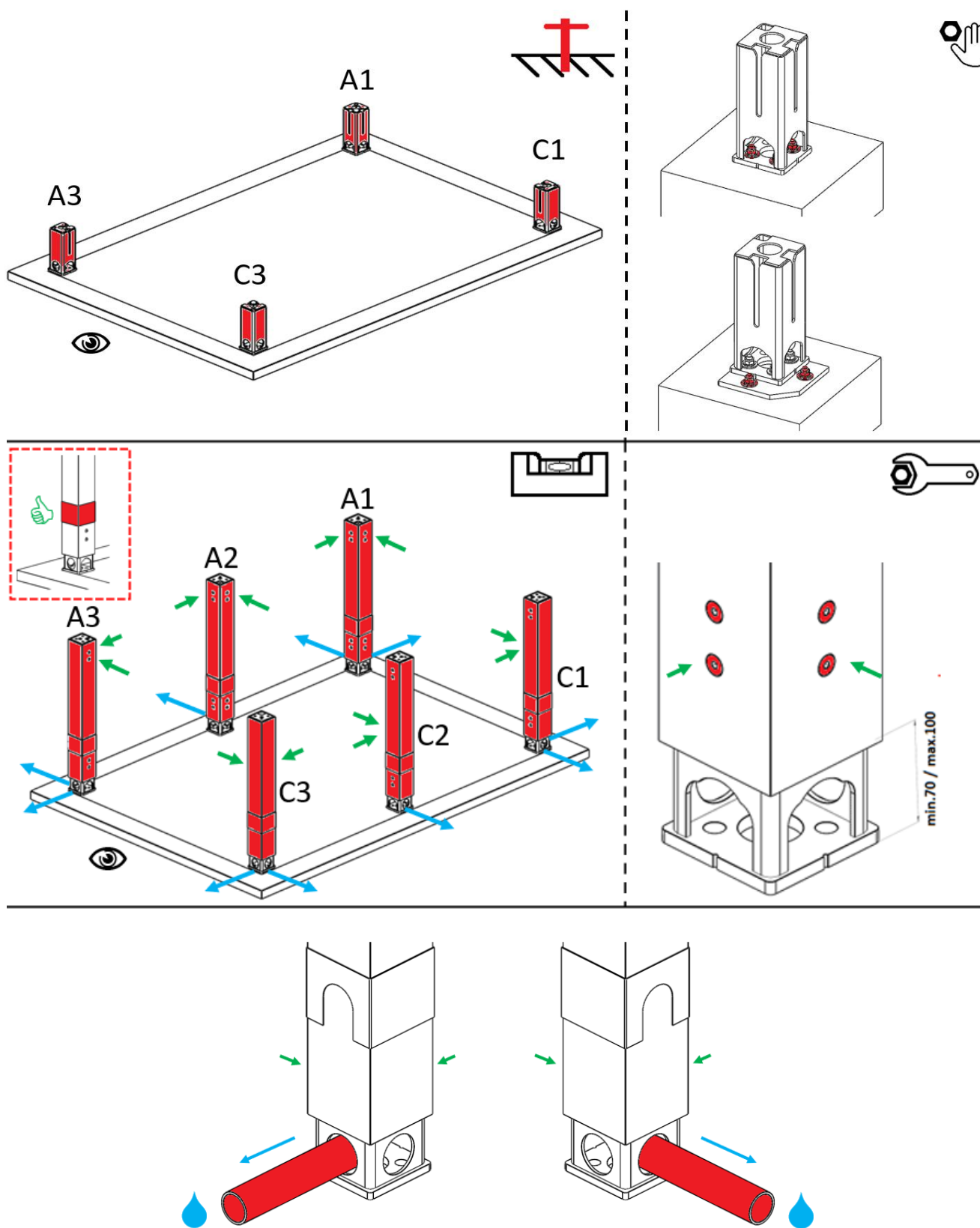
Note

MEASUREMENTS – Type A, Type B, Type D



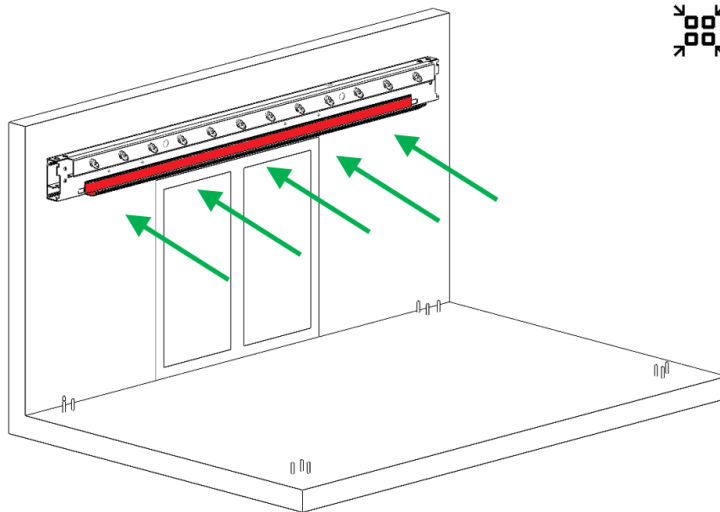
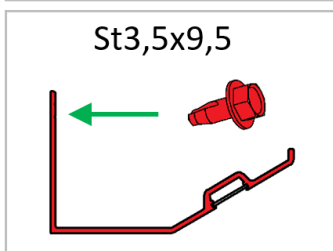
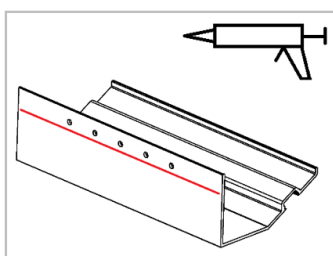
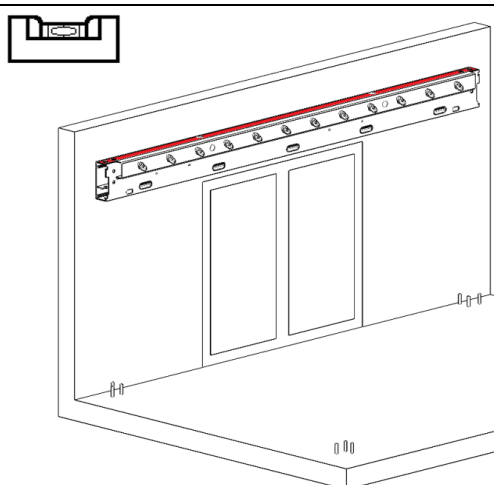
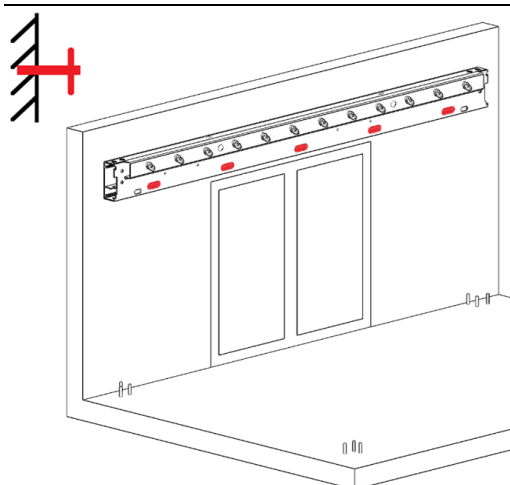
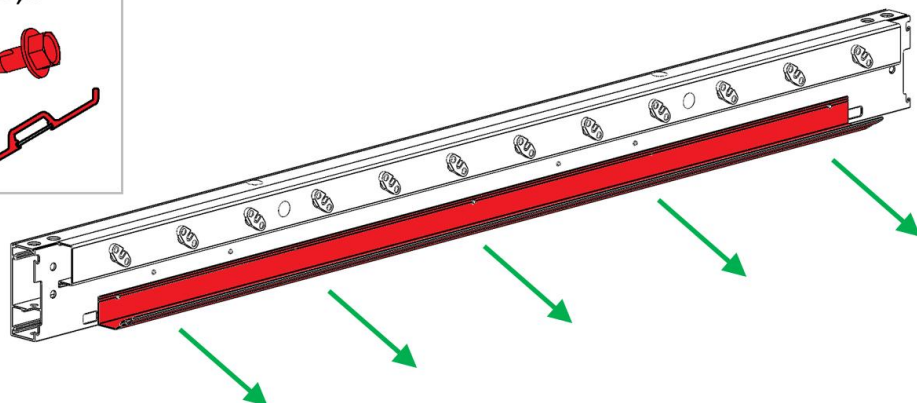
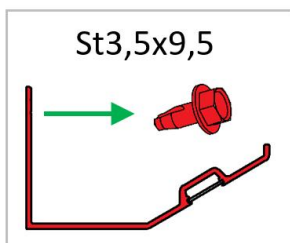
1:1  page 27-28


ASSEMBLY – POSTS – Type A, Type B, Type D

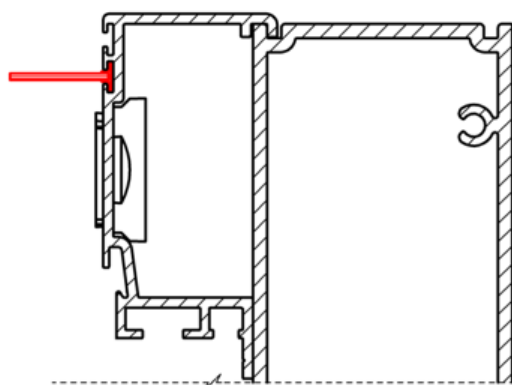
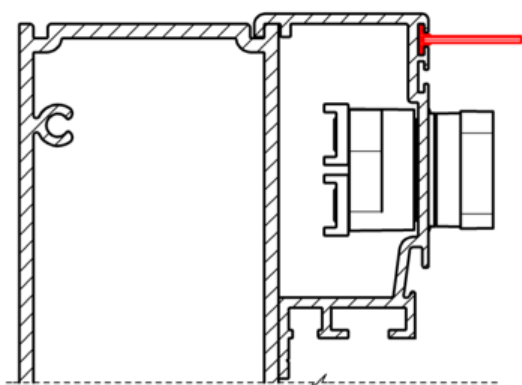
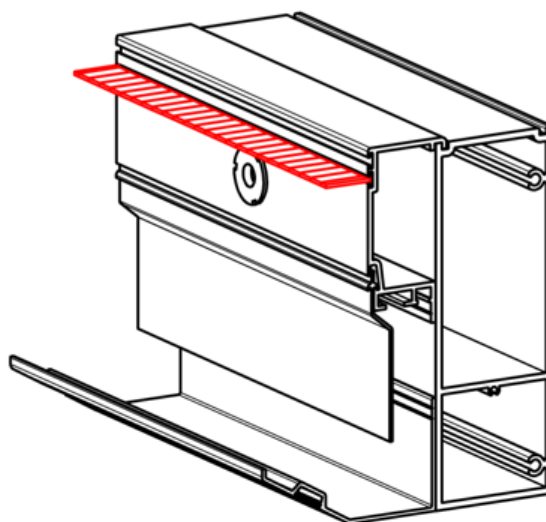
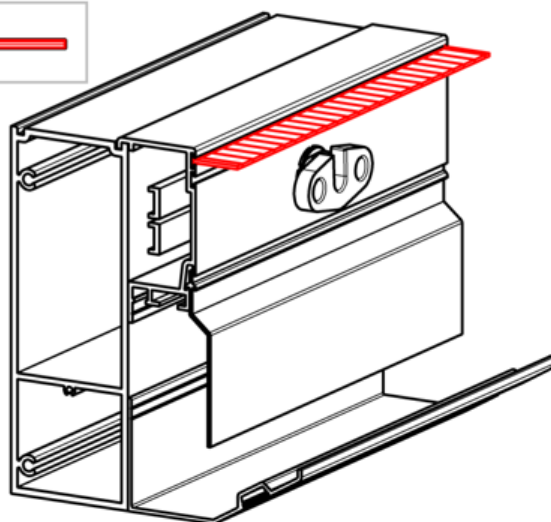


ASSEMBLY – WALL PROFILES – Type A, Type B, Type D

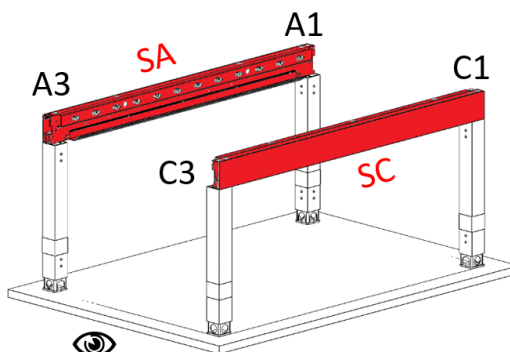
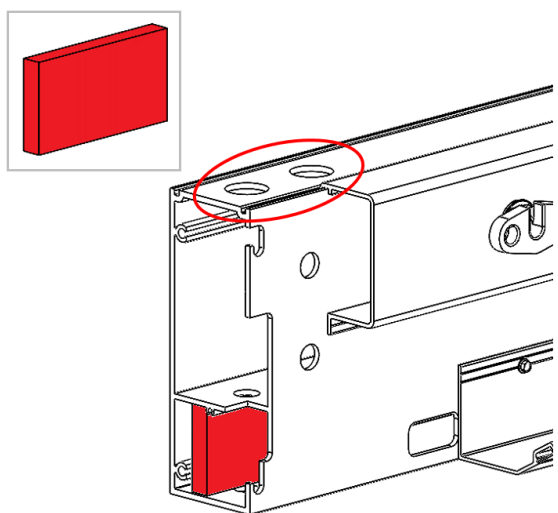
SA / SB / SC / SD



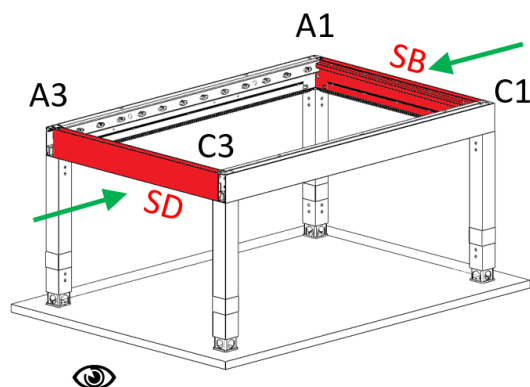
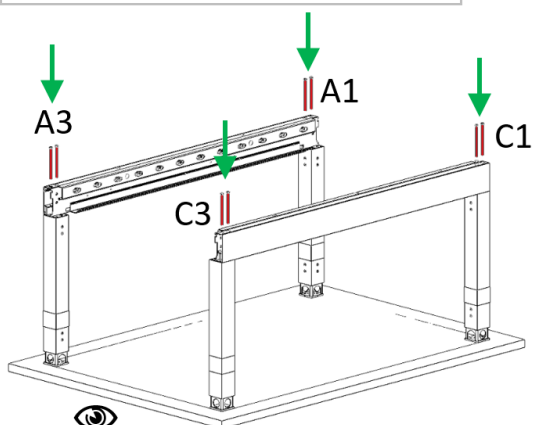
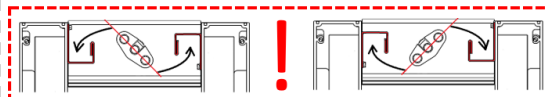
SA / SC



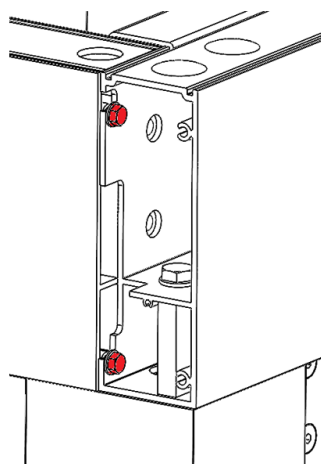
ASSEMBLY – FRAME – Type A



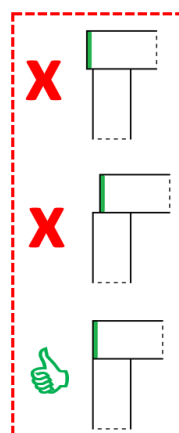
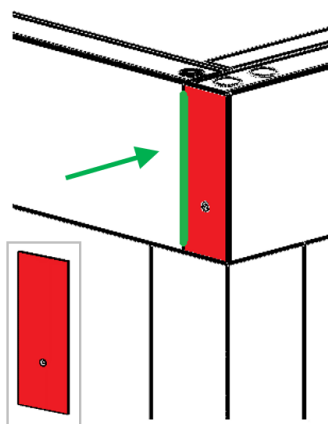
M10x200



A1 / A3 / C1 / C3



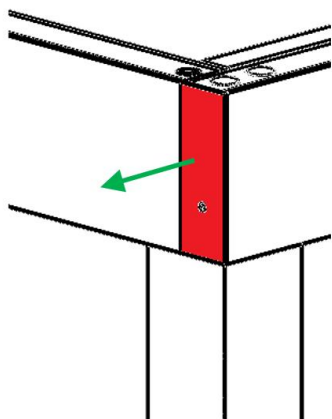
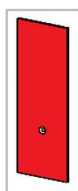
A1 / A3 / C1 / C3



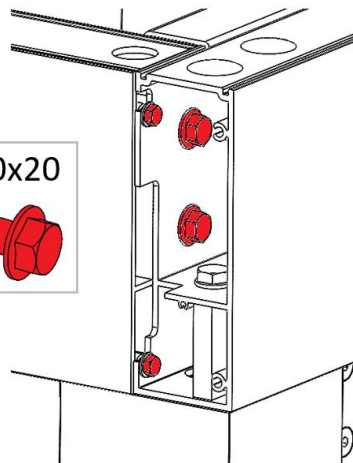
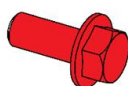
A1 / A3 / C1 / C3



A1 / A3 / C1 / C3



M10x20



M10x300



A3



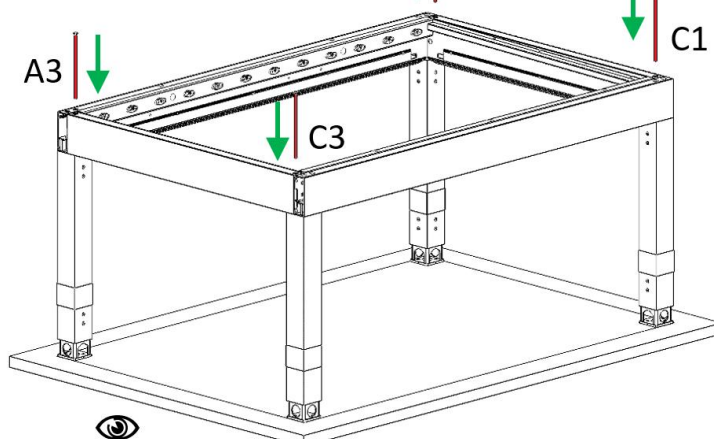
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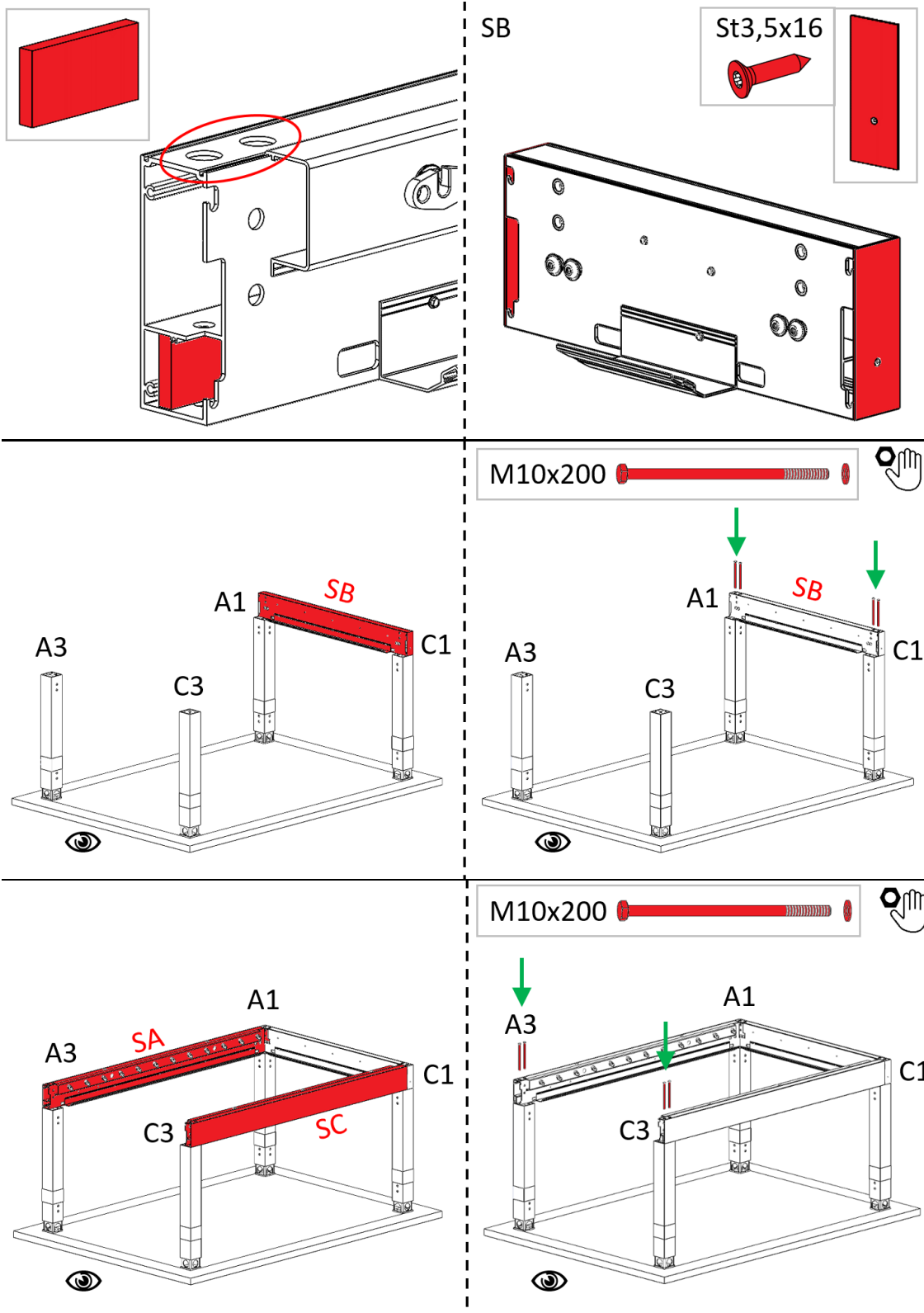
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C3

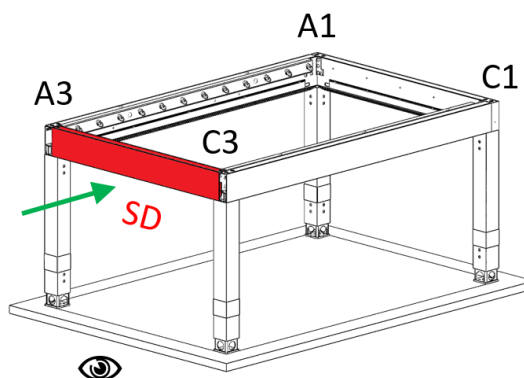
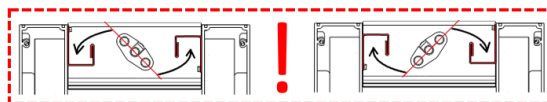
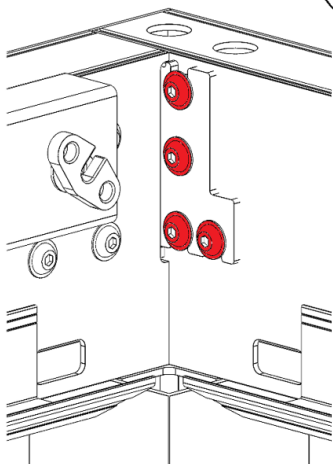
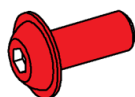


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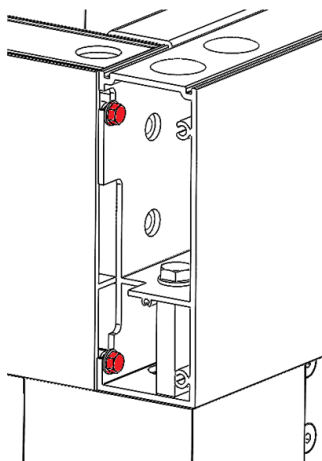


A1 / C1

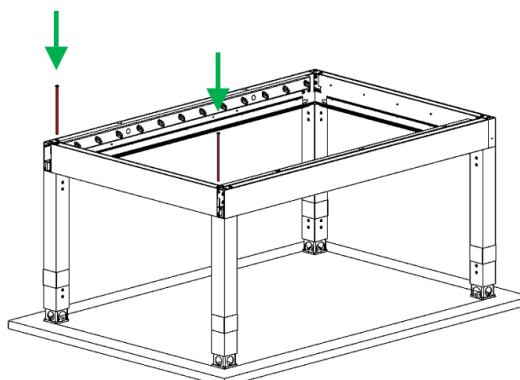
M10x25



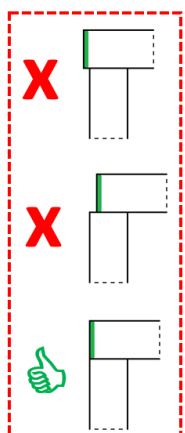
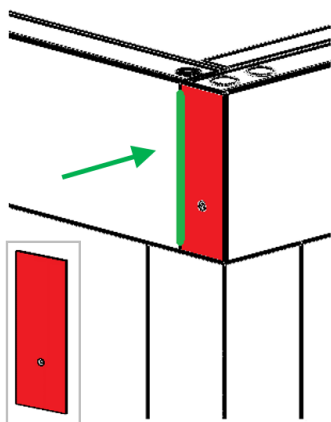
A3 / C3



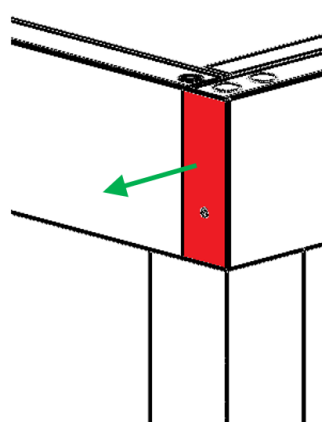
M10x300



A1 / A3 / C1 / C3

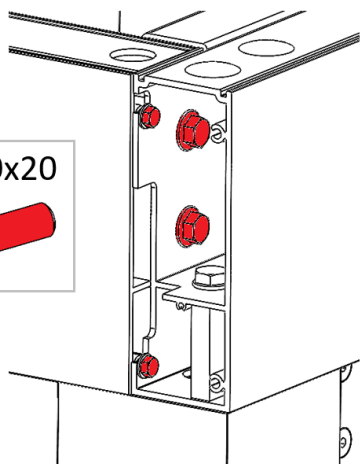
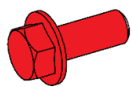


A1 / A3 / C1 / C3

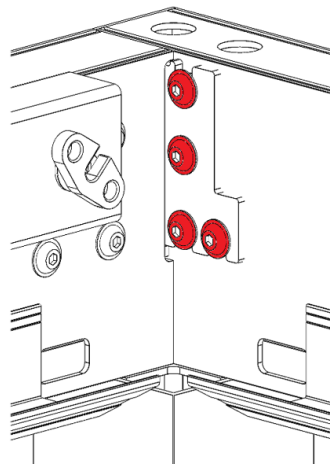


A3 / C3

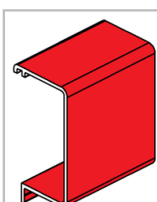
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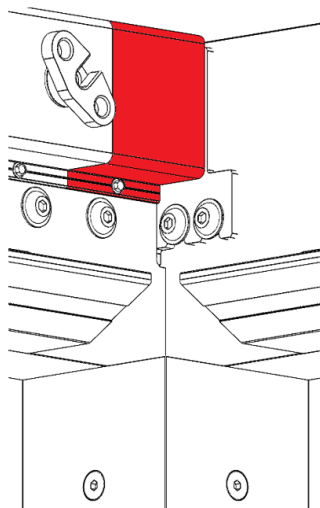
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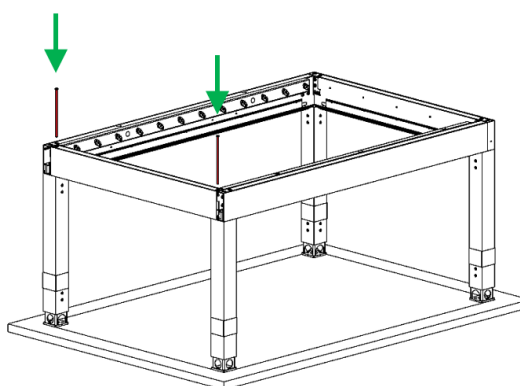
A1 / C1



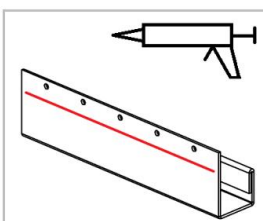
St3,5x9,5



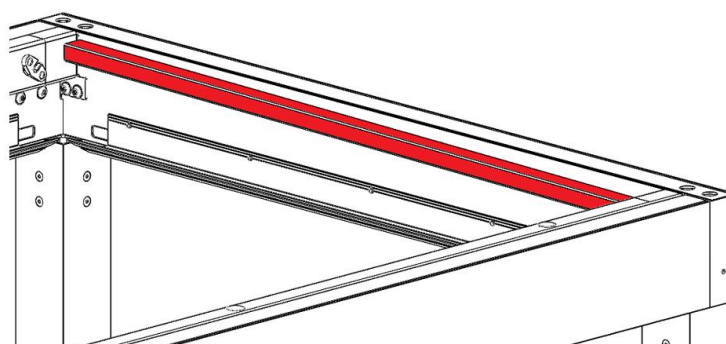
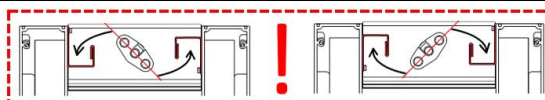
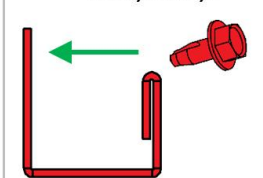
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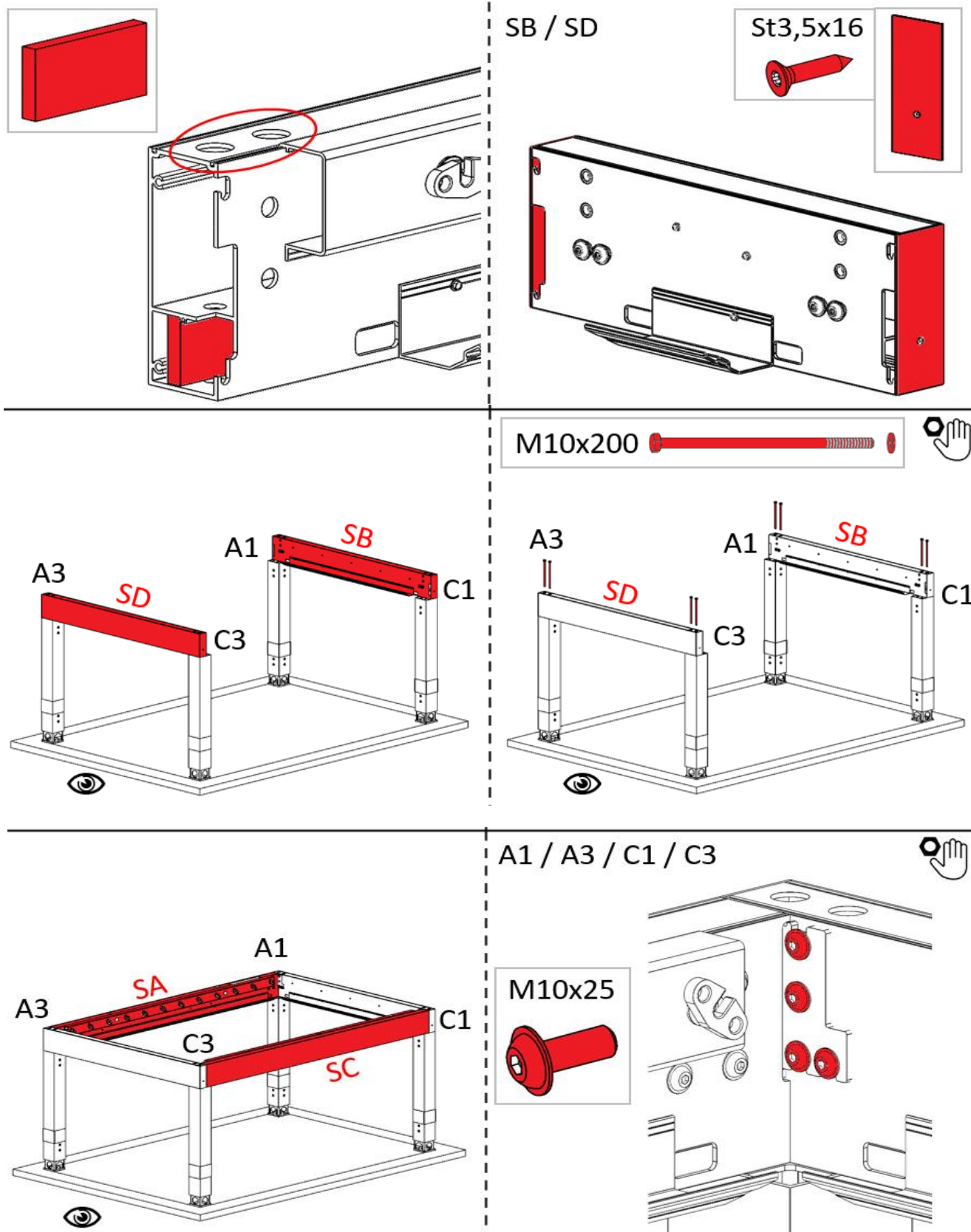
SB



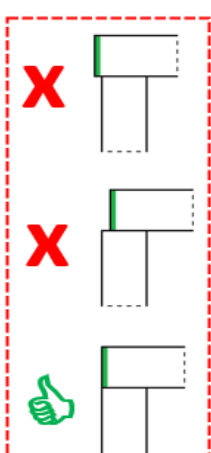
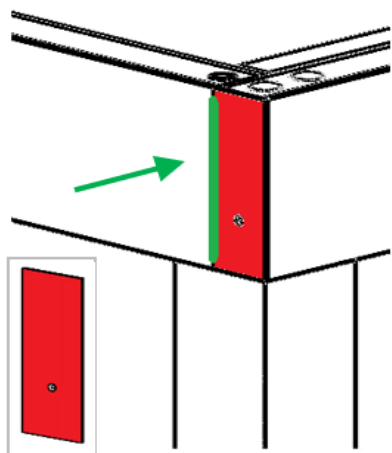
St3,5x9,5



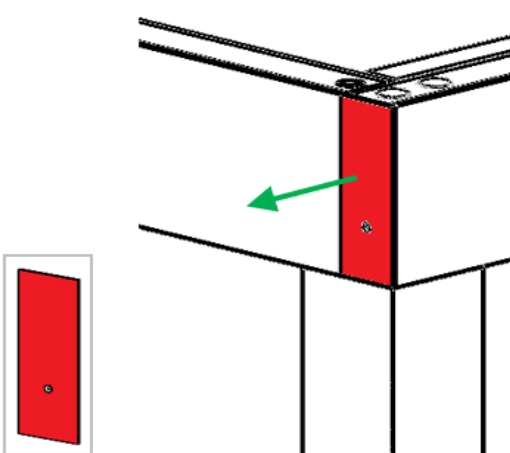
ASSEMBLY – FRAME – Type D



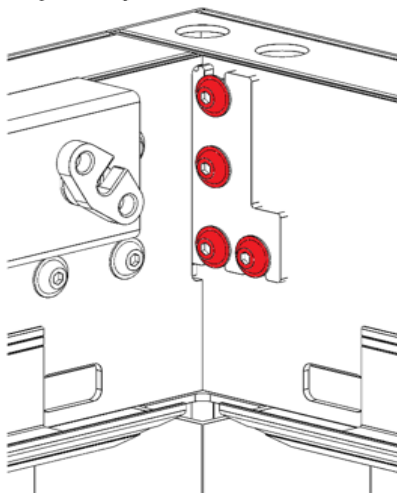
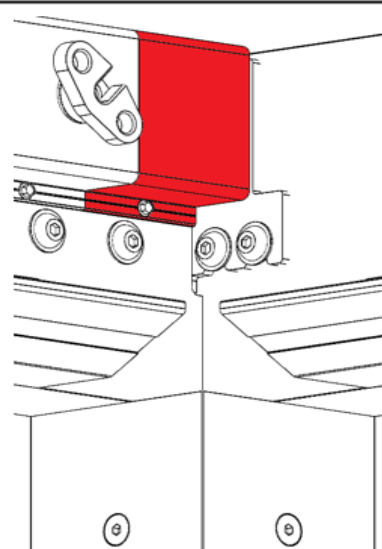
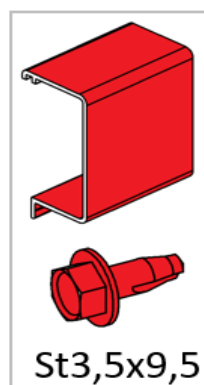
A1 / A3 / C1 / C3



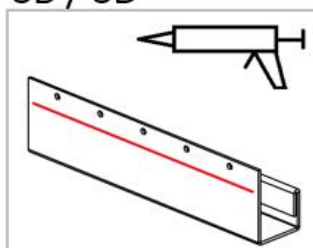
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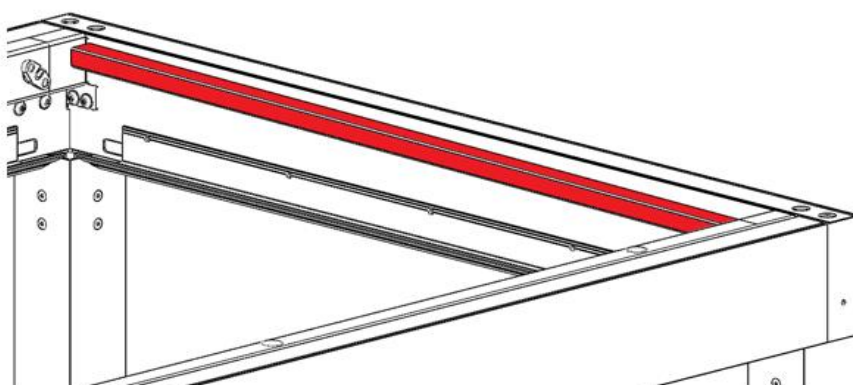
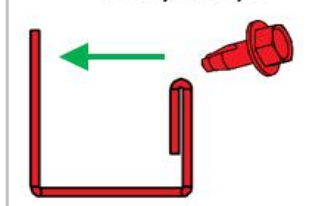
A1 / A3 / C1 / C3


A1 / A3
C1 / C3


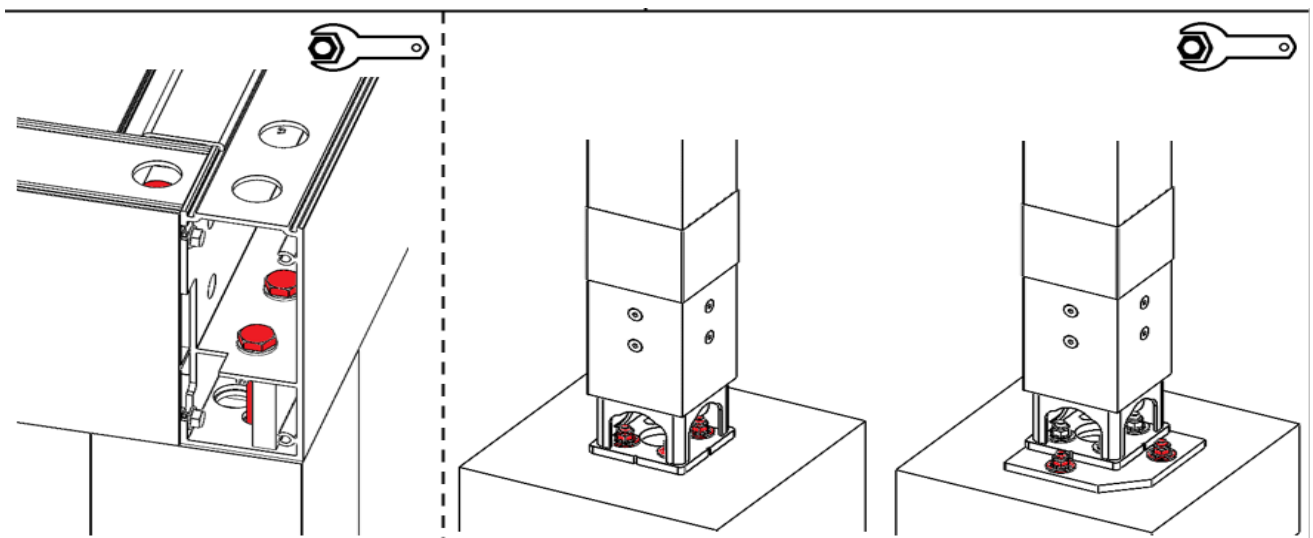
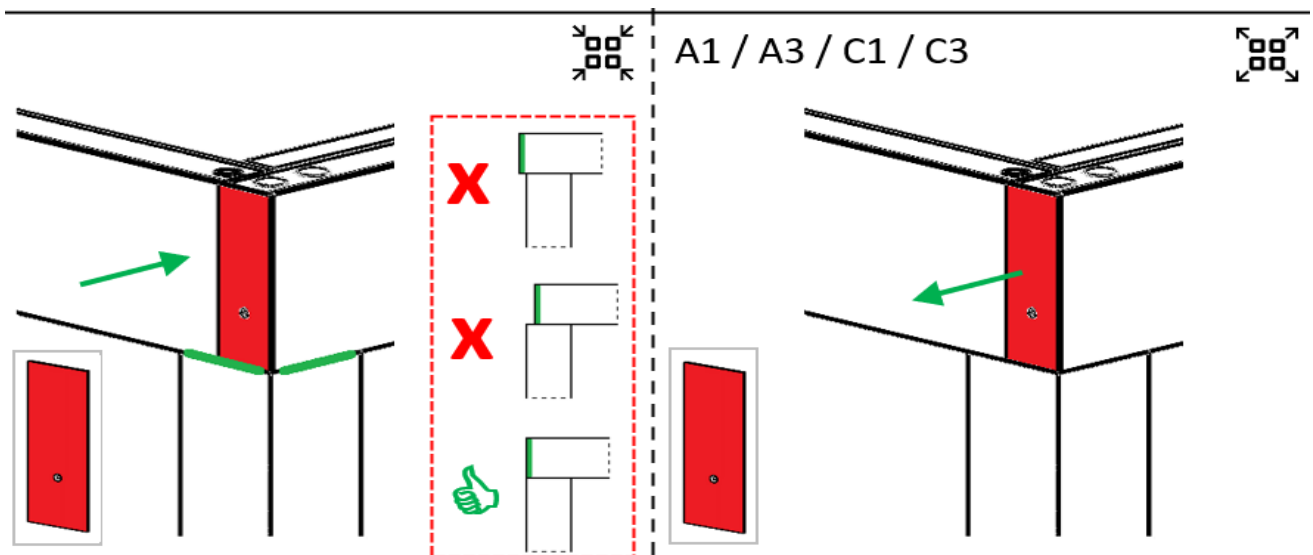
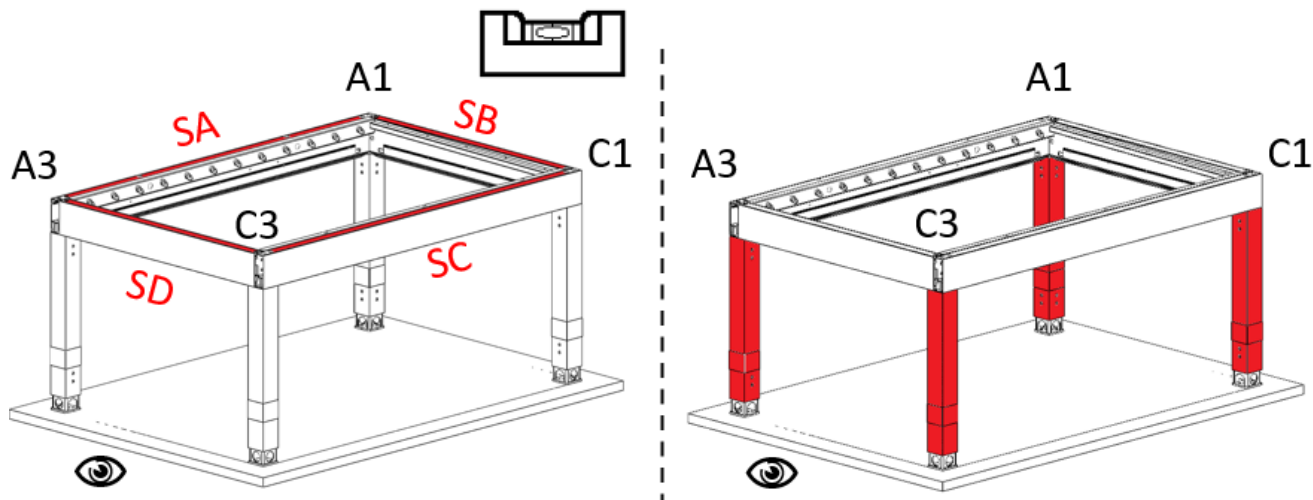
SB / SD



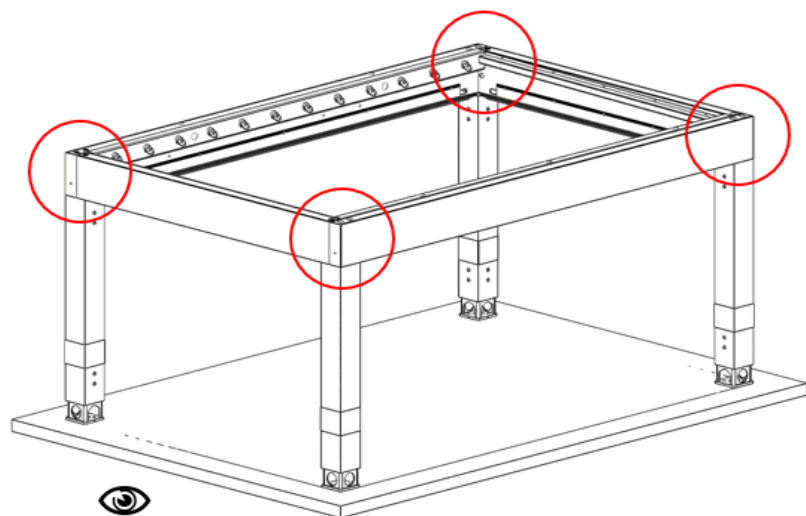
St3,5x9,5



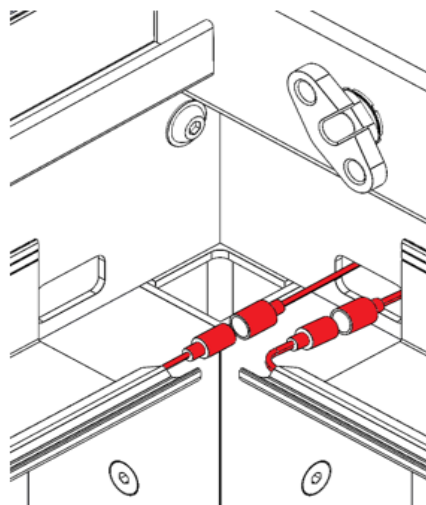
ASSEMBLY – STRUCTURE LEVELLING – Type A, Type B, Type D



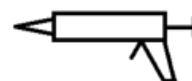
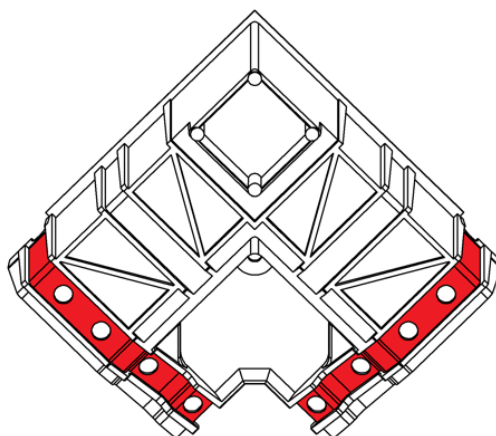
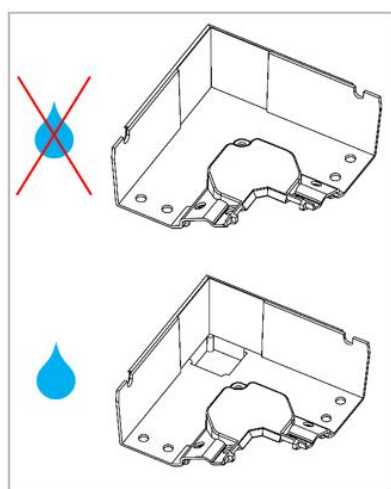
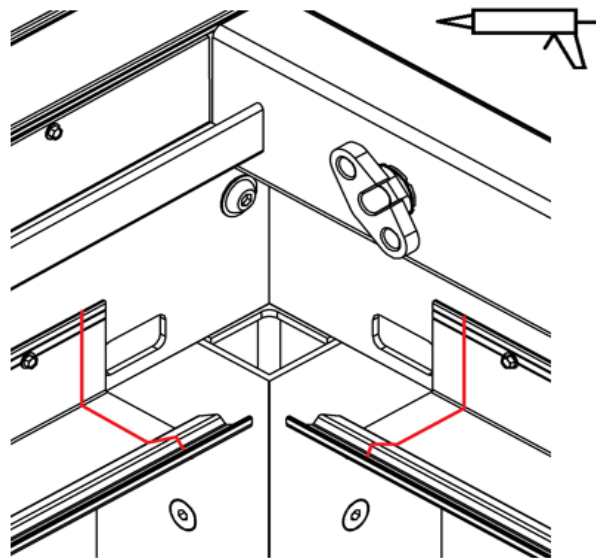
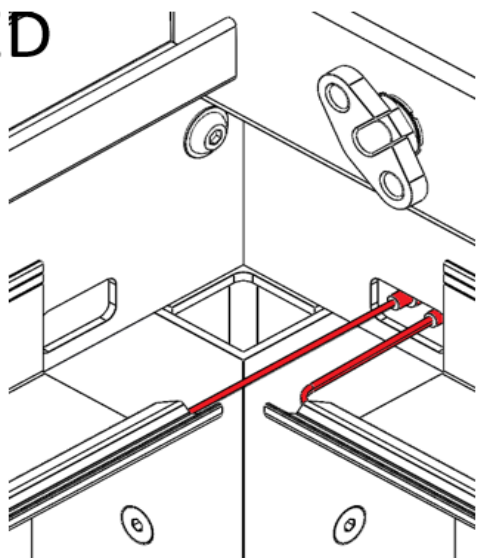
ASSEMBLY – CONNECTING EAVES – Type A, Type B, Type D

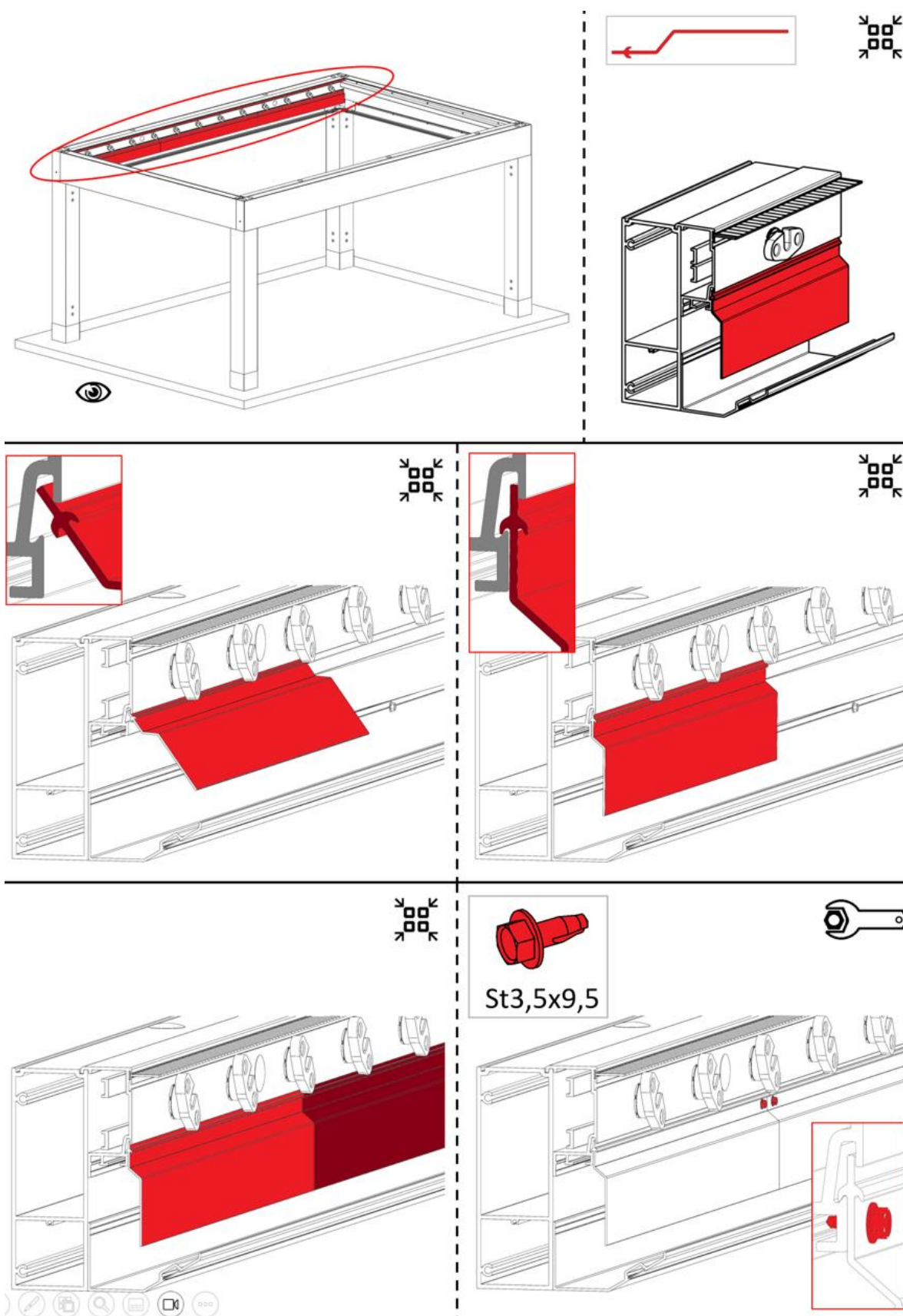


LED

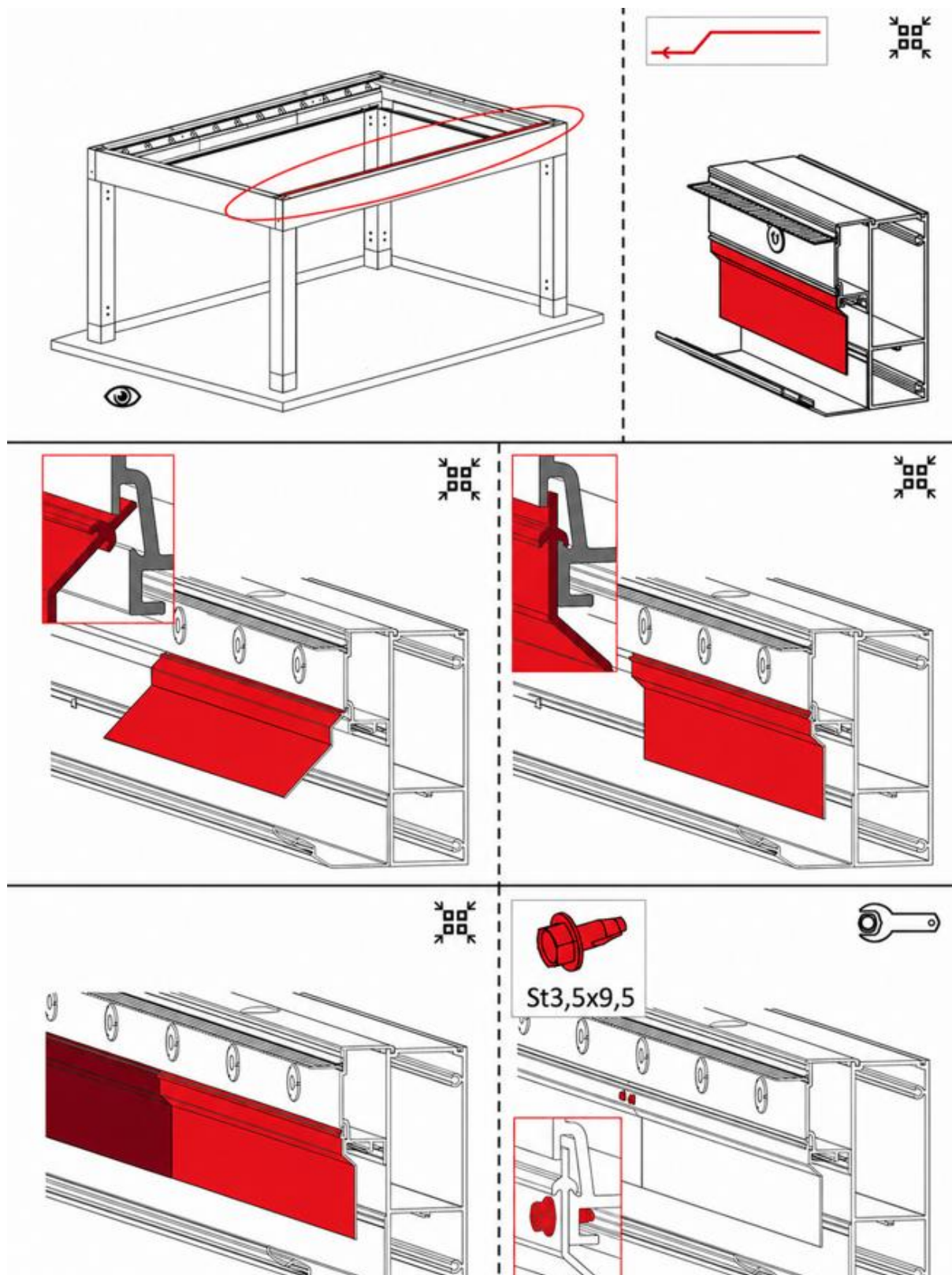


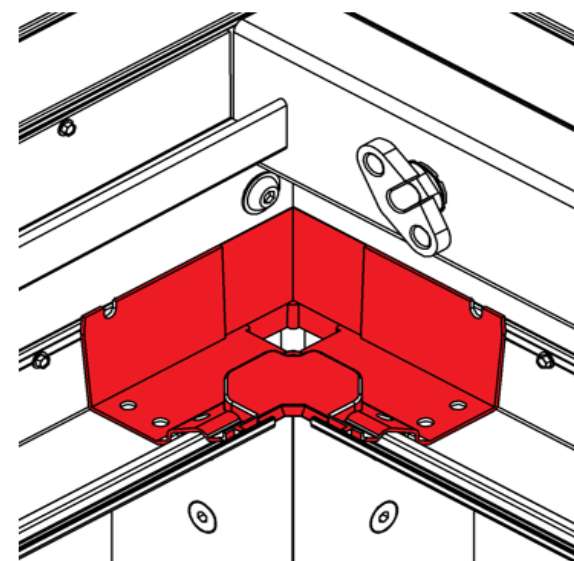
LED



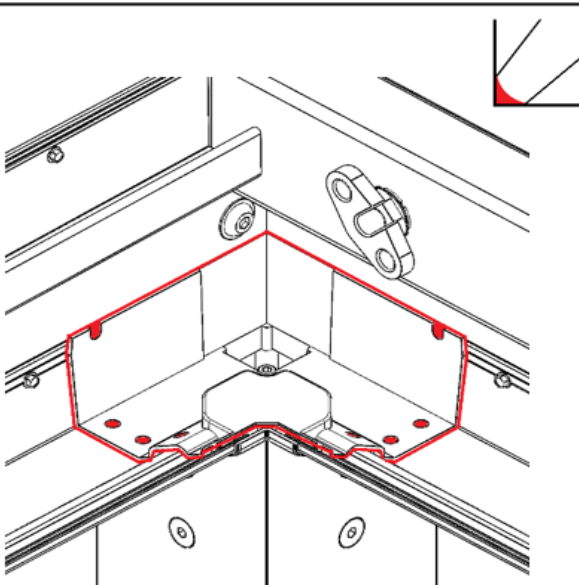
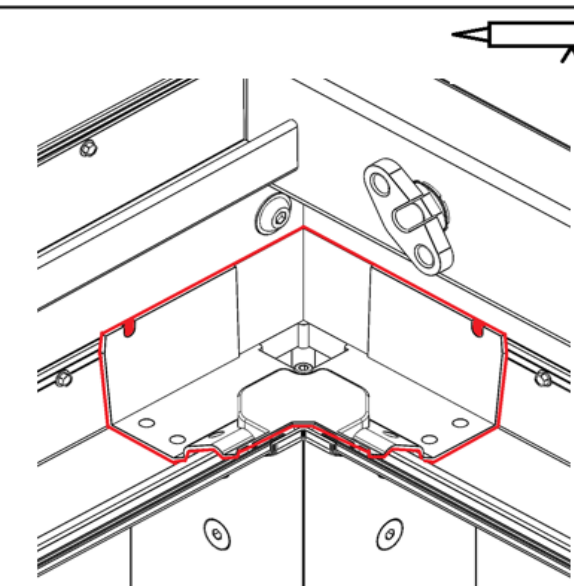
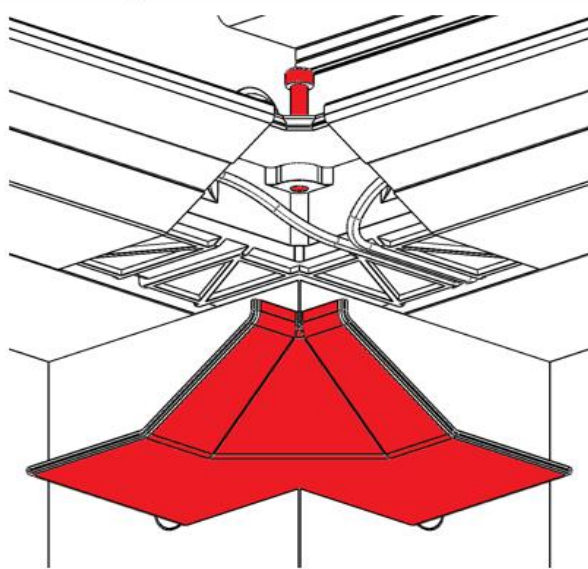
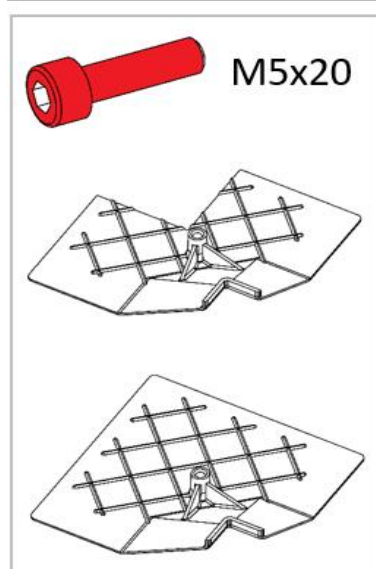
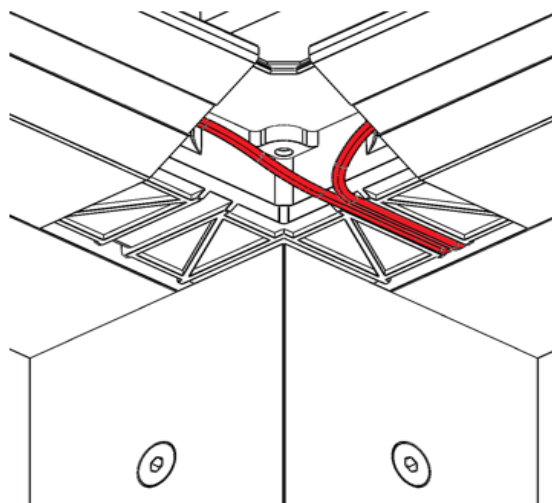


ASSEMBLY – COVER OF THE DROP SIDE – Type A, Type B, Type D

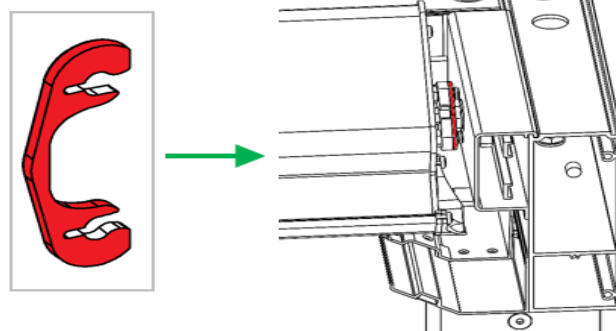
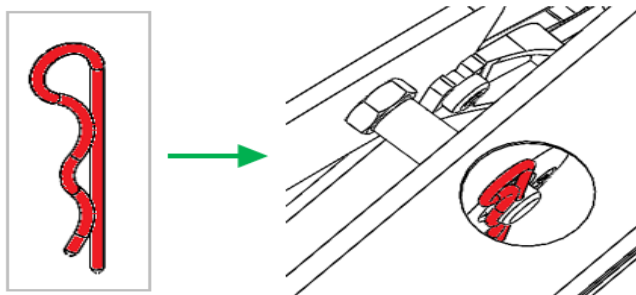
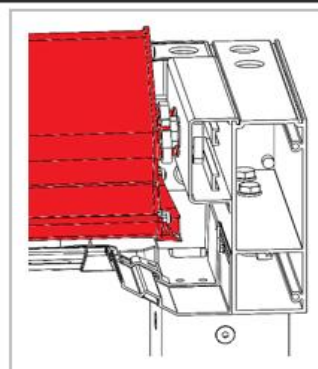
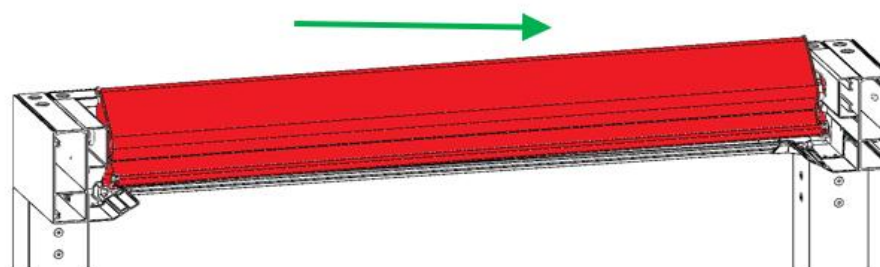
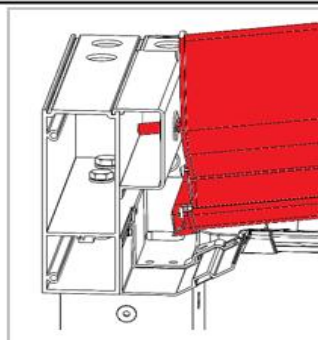
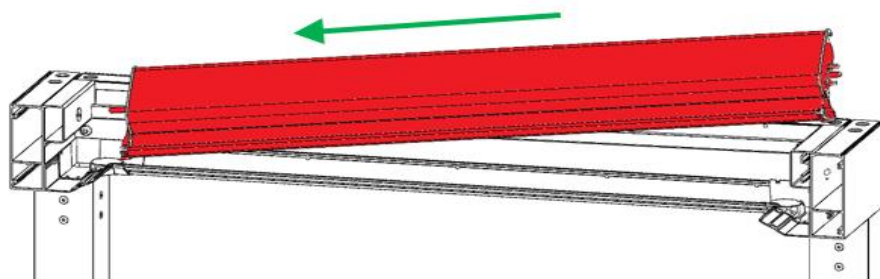
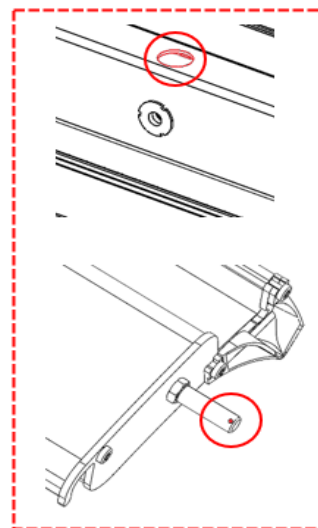
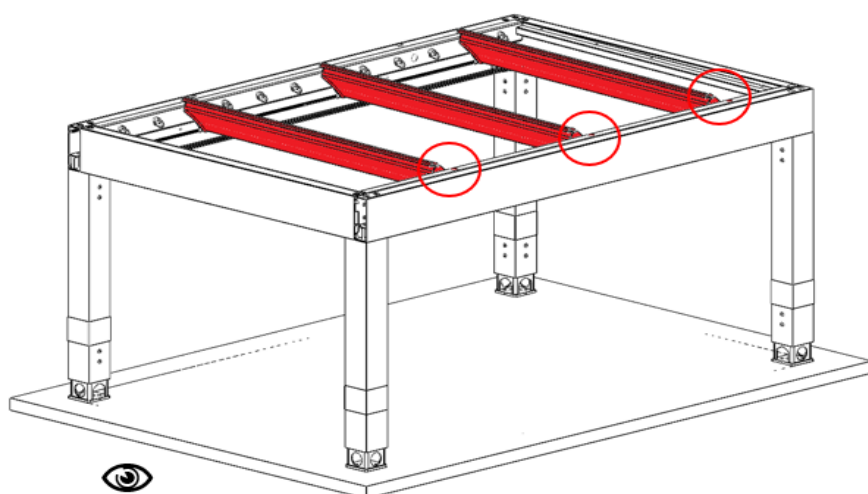




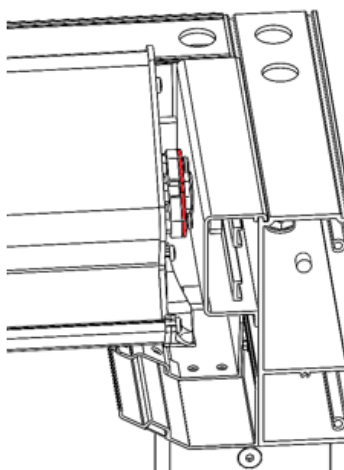
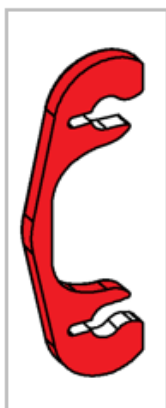
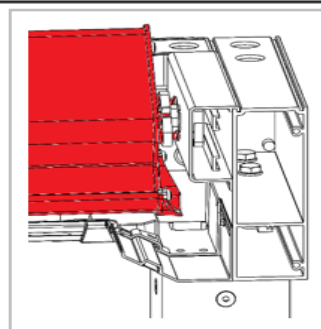
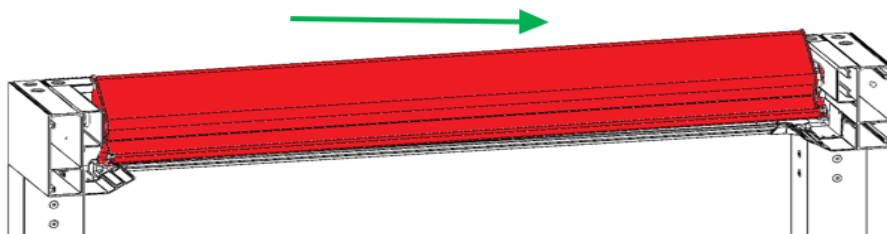
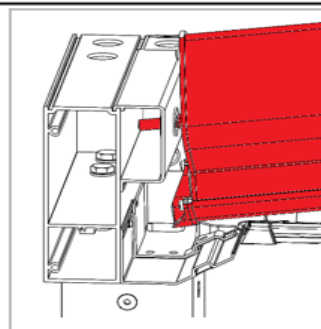
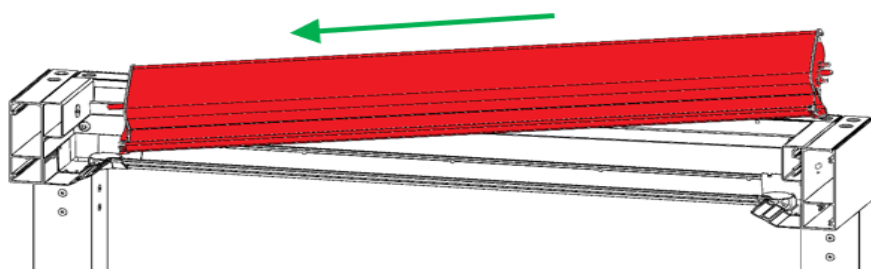
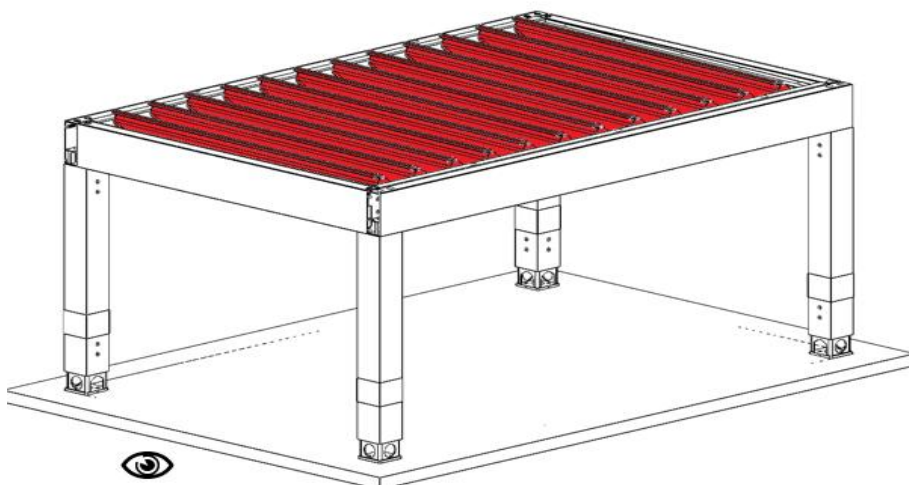
LED



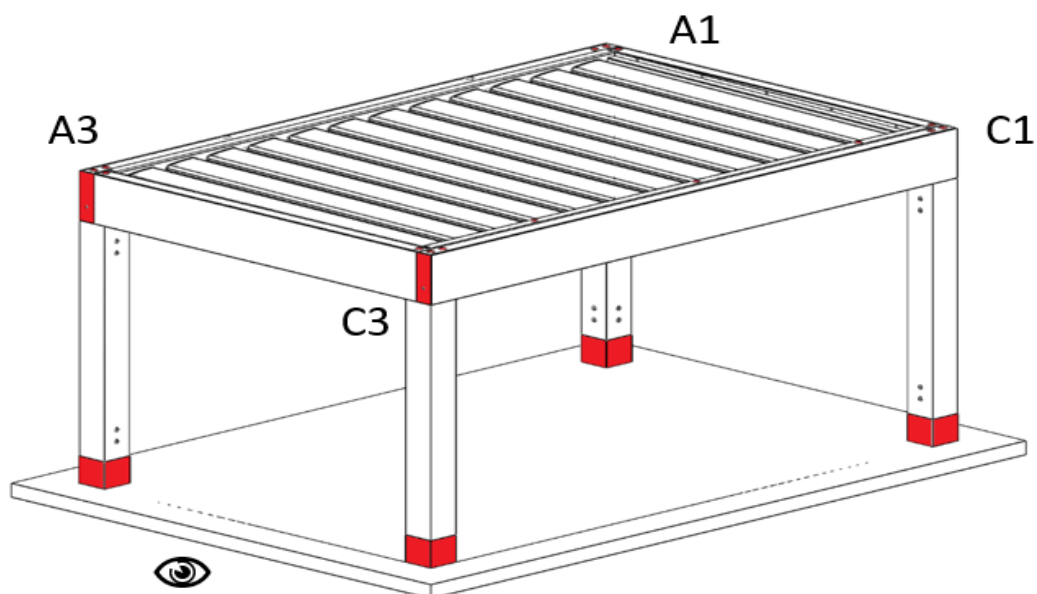
ASSEMBLY – SLATS WITH COTTERS – Type A, Type B, Type D



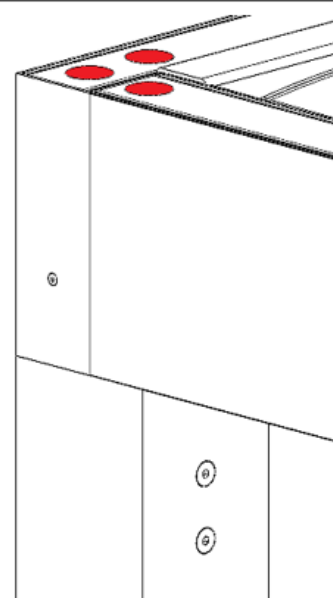
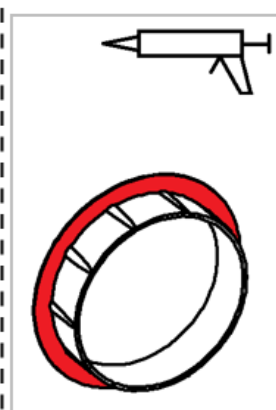
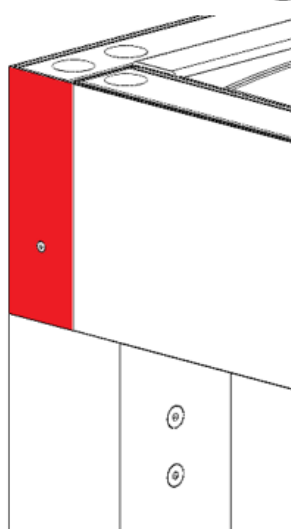
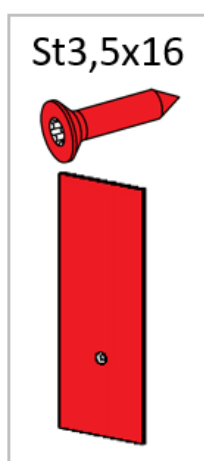
ASSEMBLY – SLATS – Type A, Type B, Type D



ASSEMBLY – COVERS – Type A, Type B, Type D



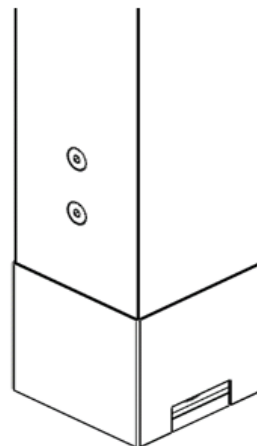
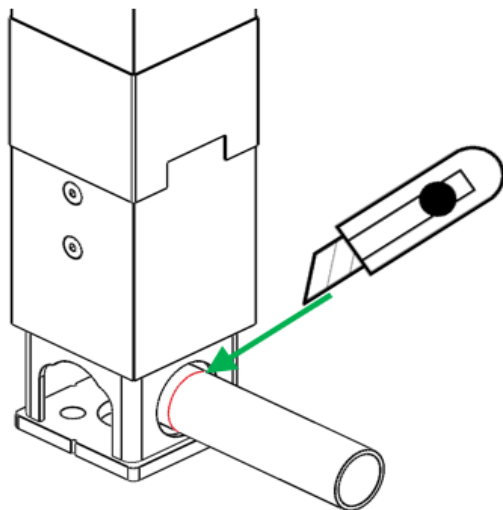
A1 / A3 / C1 / C3



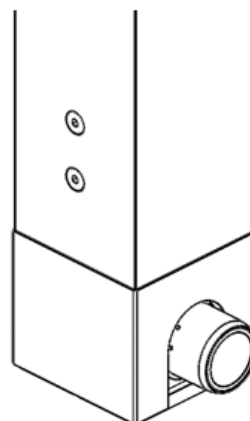
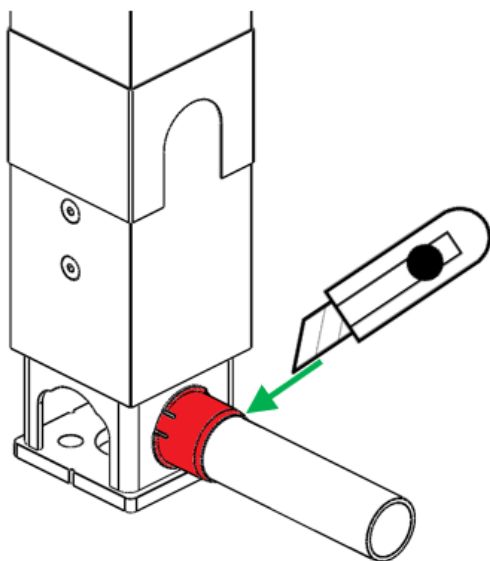
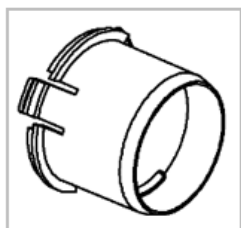
ASSEMBLY – TRIMS AND DRAINS – Type A, Type B, Type D



NO



RO



ASSEMBLY – WIRING

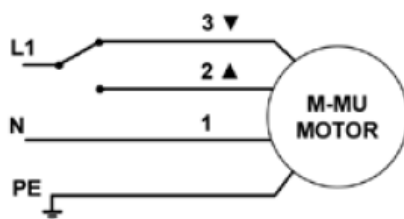
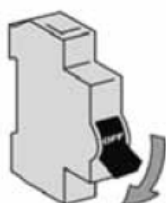
It is necessary to provide 230 V power supply to the pergola for electrical appliances within the pergola (motors, LED lighting). The power cable must be brought to the selected “access point”, provided with the supplied Hirschmann connector, and connect it according to the diagram attached to the respective Hirschmann connector for connecting the power supply.

CAUTION: Any and all wiring operations may only be performed by a technically competent person, in accordance with valid regulations.

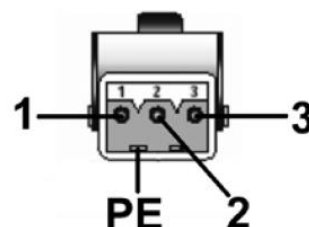
Recommendation:

As this is a metallic pergola, we recommend connecting it to an earthing system in accordance with the standard ČSN 33 2000-4-41 ed.3. You can use connecting bolts in the perimeter frame or the lower anchoring foot for this connection.

Control WT



1 – blue
2 – black
3 – brown
PE – yellow-green



1 – Neutral conductor (N)
2 – Phase conductor (up)
3 – Phase conductor (down)
PE – Protective conductor

WT + 1 motor

It is necessary to bring 1 pc of 4×1.5 CYKY power cable (1 motor). The connector for the motor connection is placed in the “access point”.

WT + 2 motors

It is necessary to bring 2 pcs of 4×1.5 CYKY power cables (2 motors). The connectors for the motor connection are placed in the “access point”.

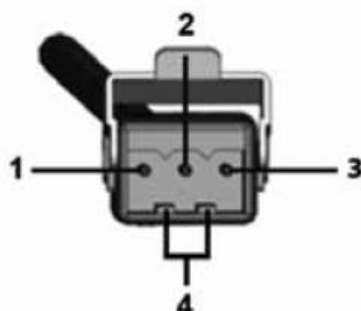
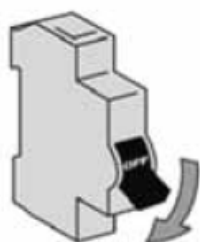
WT + 1 motor + LED

It is necessary to bring 2 pcs 4×1.5 CYKY power cables (1 motor, 1 LED lighting). The connector for the motor connection is placed in the “access point”, and there is also the “electric carrier” with the connector and transformer for the LED lighting.

WT + 2 motors + LED

It is necessary to bring 3 pcs 4×1.5 CYKY power cables (2 motors, 1 LED lighting). The connectors for the motor connection are placed in the “access point”, and there is also the “electric carrier” with the connector and transformer for the LED lighting.

Control IO



- 1 – Neutral conductor (N)
- 2 – Phase conductor (L)
- 3 – Not used
- 4 – Protective conductor (PE)

IO + 1 motor / IO + 2 motors

It is necessary to bring 1 pc of 3x1.5 CYKY power cable. The “access point” includes the “electric carrier” with the central power supply box with the Hirschmann connector for connecting the power cable; and IO receivers for the motors.

IO + 1 motor + LED / IO + 2 motors + LED

It is necessary to bring 1 pc of 4x1.5 CYKY power cable. The “access point” includes the “electric carrier” with the central power supply box with the Hirschmann connector for connecting the power cable; IO receivers for the motors; IO receivers for the LED lighting; and transformer for the LED lighting.

LED LIGHTING

The LED lighting is never paired with the controller. LED pairing should be performed according to the manual supplied with the LED receiver.

If the pergola is supplied with a remote controller, the individual motors are paired with this controller and the end positions of the motors are set (starting and end position of the slats).

If the pergola is supplied without a remote controller, only the end positions of the motors are set (starting and end position of the slats). It is therefore necessary to pair the motors with the controller according to the controller manual (chapter: Registration of a Lost Controller). Only one motor can be energised during the pairing. Prior pairing, it is therefore necessary to remove the central power supply box from the “access point”, open the box, and use the Wago clamps to de-energise the motor that will not be paired.

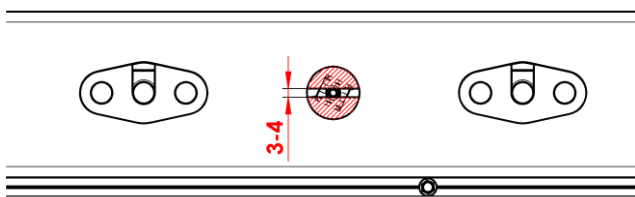
ASSEMBLY – CHECKING SLAT END POSITIONS (Applies to SOMFY drive versions.)

The motor end positions (starting and end position of the slats) are set during the pergola manufacture. However, the dimensions and weight of the slats directly affect the end position setting. It is therefore necessary to check and adjust, if necessary, the end positions after installing all the slats.

Shut the slats to the motor's pre-set end position.

Check the position of the drawbars.

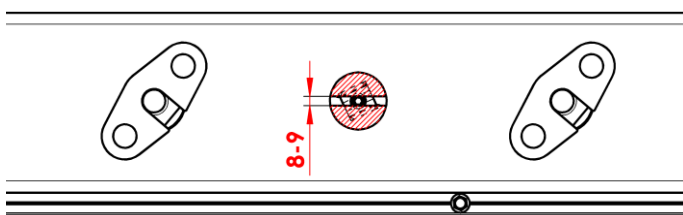
In case of a difference, adjust the motor's end position to the required position, according to the manual supplied.



Open the slats to the motor's pre-set end position.

Check the position of the drawbars.

In case of a difference, adjust the motor's end position to the required position, according to the manual supplied.



In case of a two-motor pergola, check possible collision of the central divider slats.

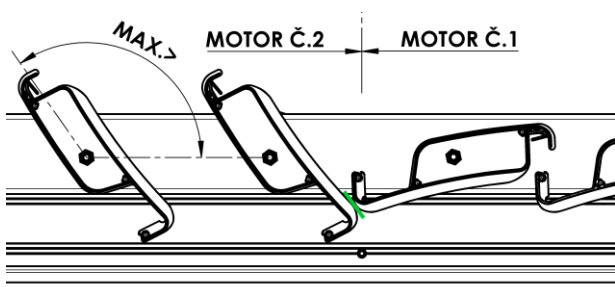
Shut all slats to the motor's pre-set end position.

Open the slats controlled by motor No. 2 to the motor's pre-set end position.

Use motor No. 1 to open the slats, and check the position of the slat side-piece on the non-motor side whether there is any collision of these slats in the division plane of both sections.

If a collision is imminent, it is necessary to adjust the end position of both motors, according to the manual supplied.

Decrease the new end position for the maximum opening, so that there is no collision.



WARNING: Failure to fulfil this step is likely to lead to a collision of the central divider slats and the consequent damage to the control mechanism of the pergola roof.

INSTALLATION OF SHADING ELEMENTS

We recommend installing the shading elements between the pergola posts (through-hole installation), in the form of visible mounting. Installation between the pergola post and a wall of the installed structure is more complicated, both for measurement and mounting – fitting the guide rail to the wall. We do not recommend anchoring the guide rails through the building's heat-insulation system. In this case, it is advisable to have the pergola post installed by the wall and anchor the guide rail of the screen roller shutter in this post. When installing our screen zip roller shutters, we recommend always using the guide rail type A838.

With respect to the dimensions of the Artosi Pergola posts (110 × 110 mm), we recommend using the roller shutter box size of 110 mm for the installation of the screen roller shutters. If larger boxes are used and the roller shutters are installed in the pergola corners, the box back sides will collide, and in such a case, it will be impossible to install both roller shutters aligned with the outer edge of the perimeter profiles!

If the pergola is installed within a structure and the screen roller shutters are ordered together with the pergola, we recommend measuring the slope away from the structure during the initial measurements. The values measured should be specified in the order form to enter the correct height of the screen roller shutter (varying length of the guide rails).

In case of an additional installation of shading elements (screen roller shutters), it is necessary to consider installation of cables after a certain period after the pergola supply. It is necessary to carefully choose drilling of the openings, so as not to damage the existing electrical installation or pergola tightness. If the situation so requires, cables may be installed to the upper part of the perimeter profile.

When taking measurements and installing the screen roller shutter in the pergola, it is necessary to take into account the thermal expansion of the aluminium frame due to ambient temperatures. We recommend taking the measurement at the ambient temperature of 23 ± 5 °C (see ARTOSI Technical Manual).

PERGOLA PACKAGING AND STORING

The pergola is supplied packed on a wooden pallet with a cover film, or in a wooden crate. We therefore recommend removing the packed pergola from the means of transportation using a fork-lift truck. If a fork-lift truck cannot be used, open the package, carefully remove the individual parts of the pergola, and place them on an even ground. If the pergola is not to be installed immediately after unloading, store the pergola in the original packaging in a dry place where solar radiation is prevented.

Prior to unpacking the pergola from the original packaging, check the packaging for damage caused by transportation. Immediately document any such damage.

Be careful when unpacking the pergola, do not use sharp implements (to avoid damaging the varnish). Immediately document any damage found after unpacking.

MAINTENANCE AND SAFETY INSTRUCTIONS

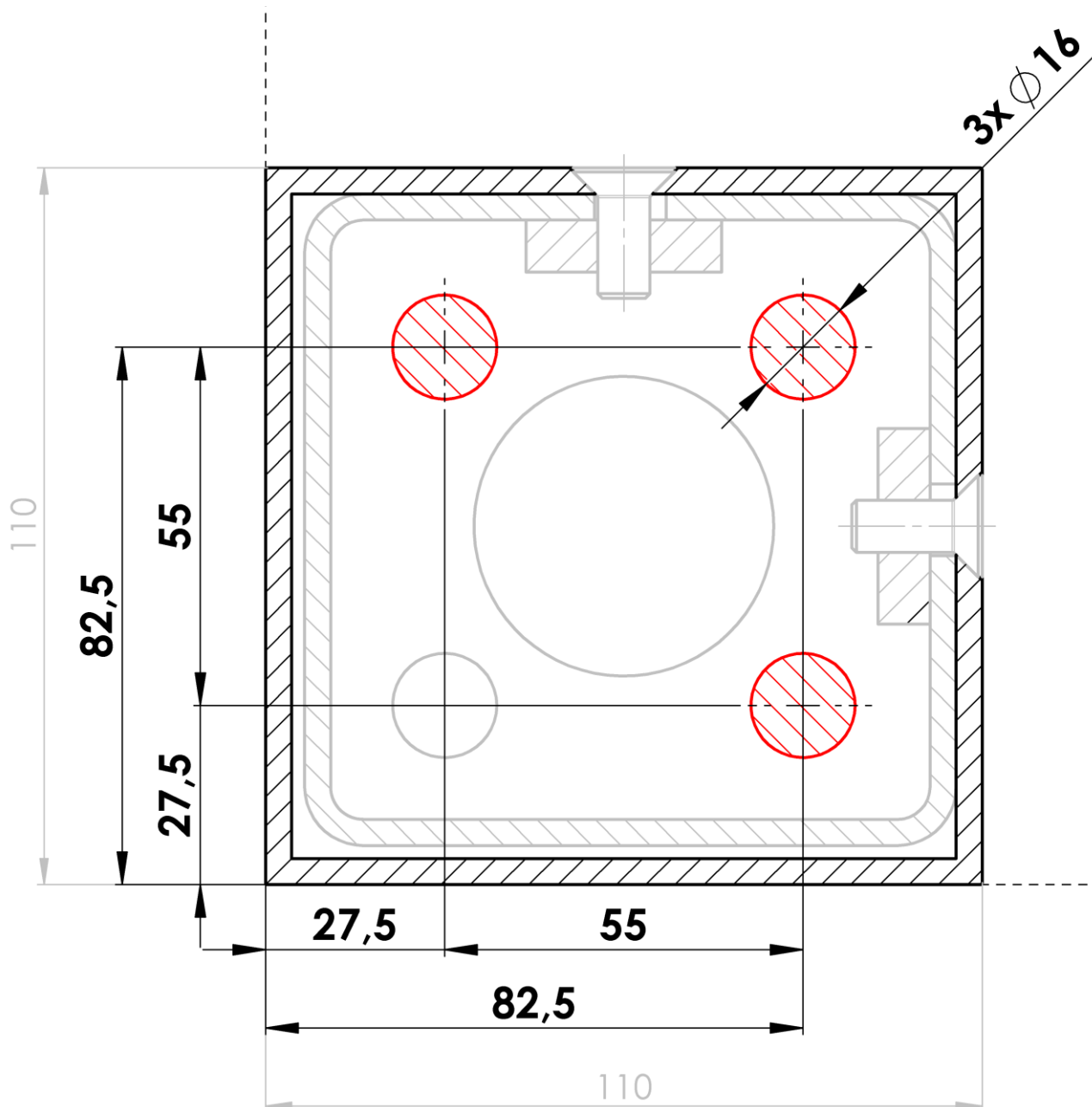
MAINTENANCE

- In the spring and before the winter – clean the slat seals by a soft cloth and soap water;
- Regularly remove coarse impurities (e.g., branches from the upper parts);
- Regularly clean the drain channels, especially remove leaves, to prevent clogging;
- Twice a year – apply WD40 to the pins and bearings of the slats;
- Do not use aggressive cleaning products, such as organic thinners, solvents, scouring pastes and powders, for the cleaning of the structural elements;
- In the winter – turn the slat to 90-degree angle;
- Do not clean by pressure water!

SAFETY INSTRUCTIONS

- Do not block the slats when they are moving, and never put hands or other objects between the slats;
- If the pergola is equipped with further shading elements, roll them up in case of adverse weather;
- Prevent children from accessing the control elements;
- Regularly check the pergola for any damage;
- If you find a failure or damage, contact your system supplier.

Due to continuous product improvements, technical information stated herein do not necessarily correspond to the actual condition of the pergola supplied.

FOOT HIDDEN [1:1]


FOOT EXTENDED [1:1]
