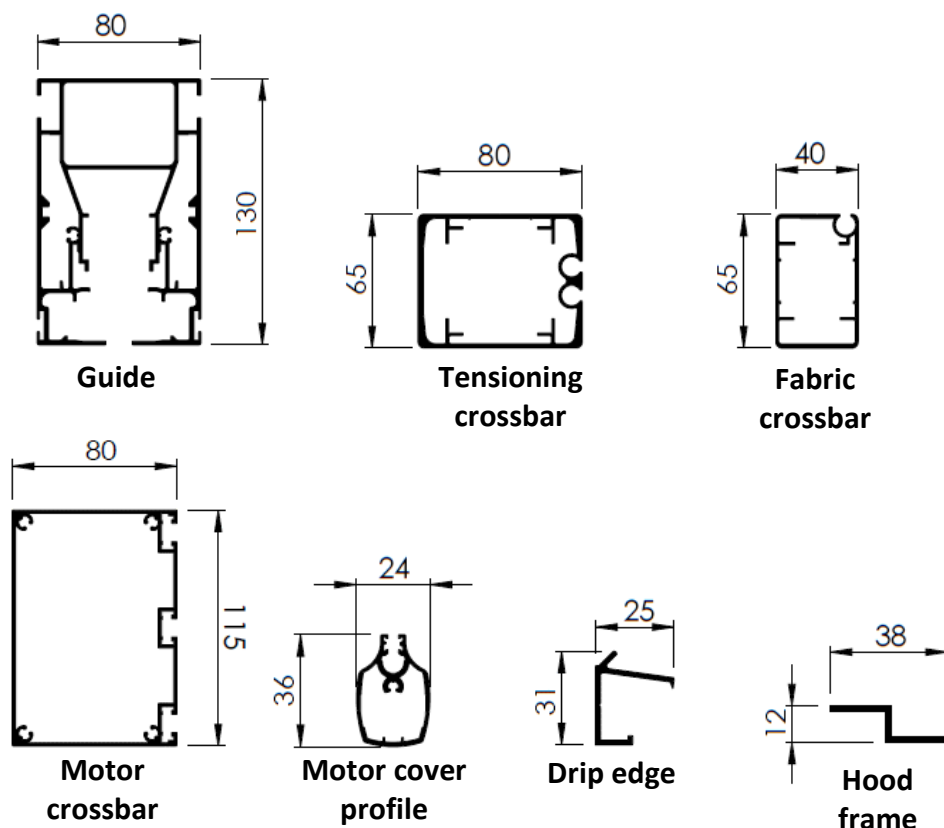




PERGOLA SQUARE ROOF INSTALLATION MANUAL

June 2023: Version 1.0

Structure Profiles:



Disclaimer

Due to the manufacturer's continuous improvements and developments, the product, its technical and design characteristics are subjected to change without prior notice

ATTENTION: Pergola assembled by manufacturer doesn't have programed limit switch for tubular motor. Installation crew must program limit switches after structure installation: i.e. after fabric installation and tightening of fixed crossbar. Perform programming according to supplied manual of selected motor.

1. Pergola is prepared for each order according to customer dimensional specification. Installation of pergola on site must be performed according to dimensions acquired during initial measurements. Each product is supplied with drawing called *dimensional chart*. Aim of this chart is to directly specify position of each structure elements which proper installation will ensure correct inclination angle necessary for sufficient water flow. Presented dimensions will make it easier to plan hole spacing for wall or other structures at installation site.

Characteristic dimensions of pergola are:

- **projection:** distance between two installation surfaces,
- **width:** distance between outer surfaces of the guides,
- **drop height:** vertical distance between positions of wall and frontal support brackets.

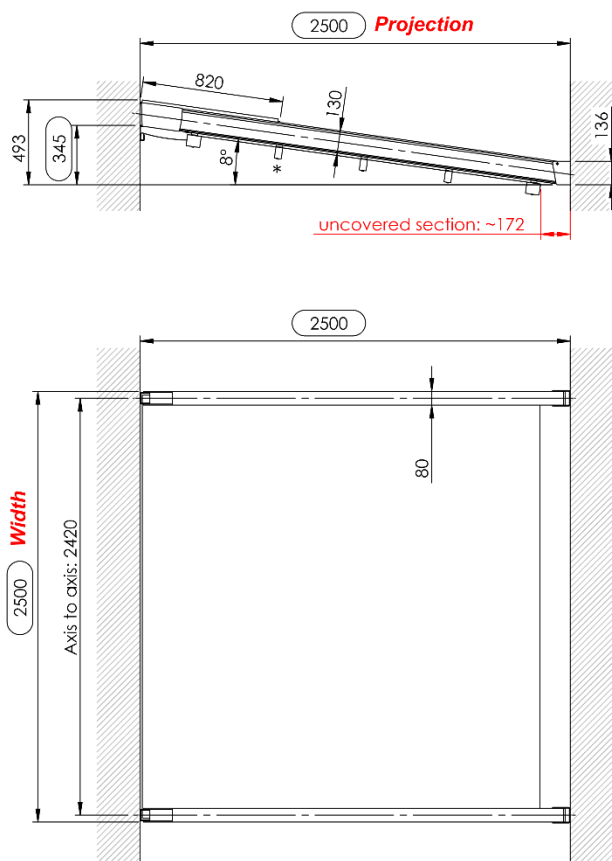
An example of dimensional chart for single (width ≤ 500 cm) and double ($500 < \text{width} \leq 900$ cm) module roof pergola is presented on following page.

example of single module pergola

Order no: **SHA-**
Customer: ...

| Number of modules | Width | Projection | Drop height | Inclination angle |
|-------------------|-------|------------|-------------|-------------------|
| 1 | 2500 | 2500 | 345 | 8,0° |

*drawing does not present actual number of fabric crossbars

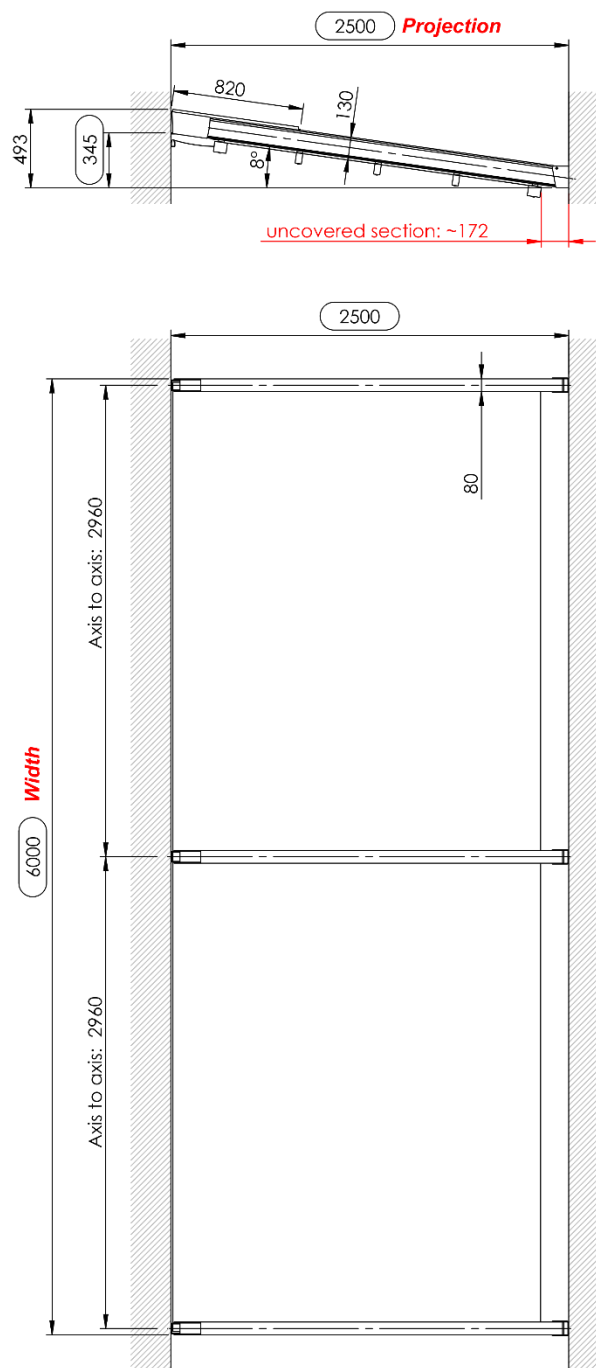


example of double module pergola

Order no: **SHA-**
Customer: ...

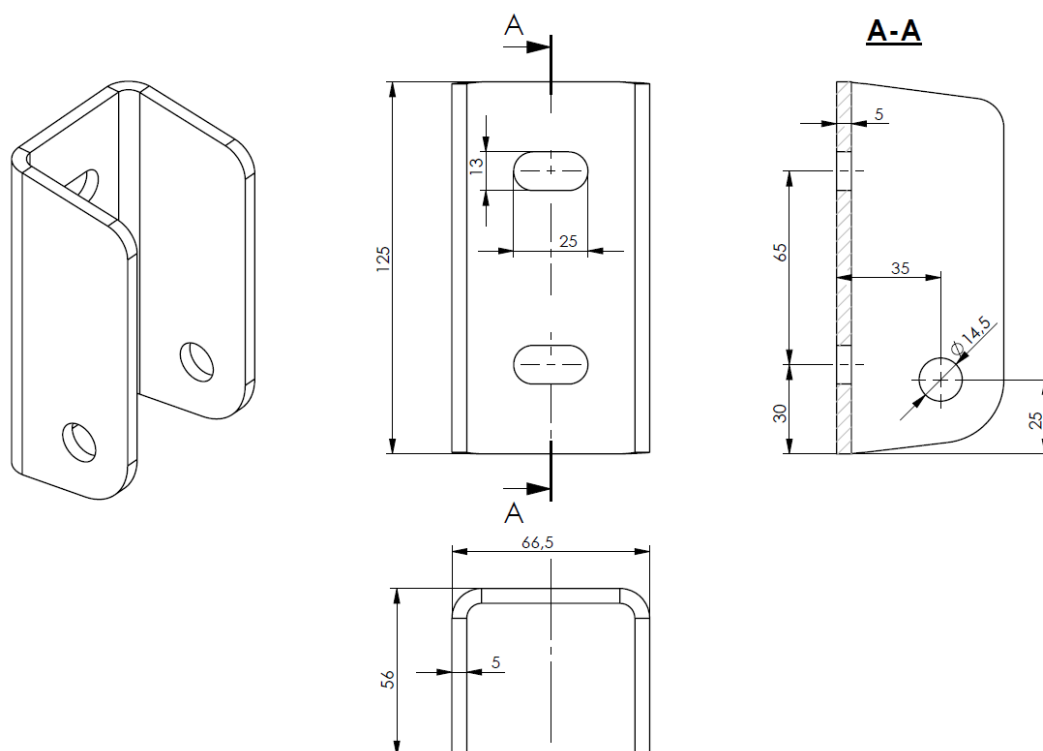
| Number of modules | Width | Projection | Drop height | Inclination angle |
|-------------------|-------|------------|-------------|-------------------|
| 2 | 6000 | 2500 | 345 | 8,0° |

*drawing does not present actual number of fabric crossbars

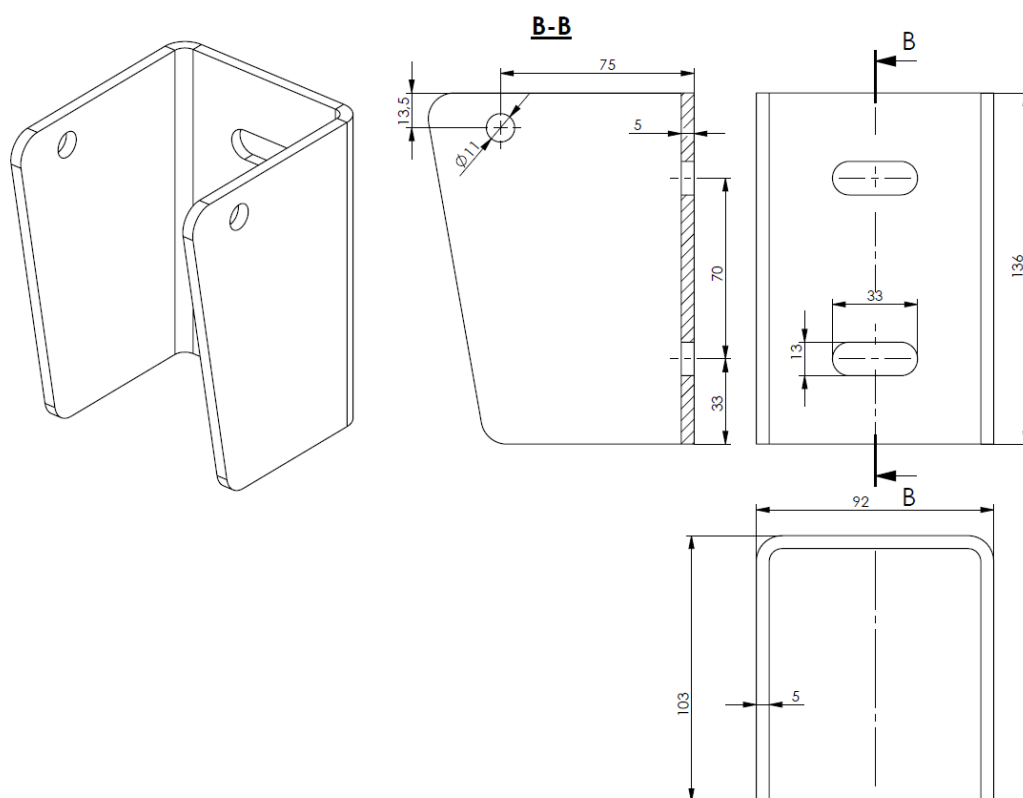


2. Installation of pergola requires preparation of mounting holes in the wall or other structure for guide support brackets. Dimension of support brackets are presented below.

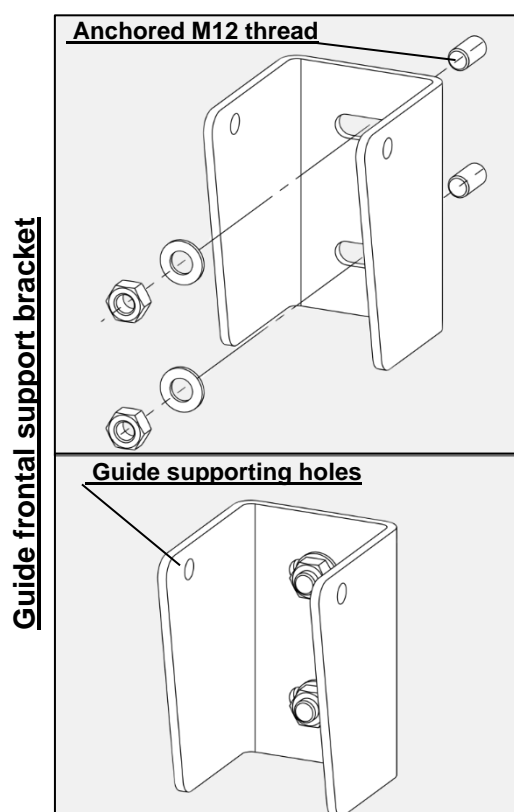
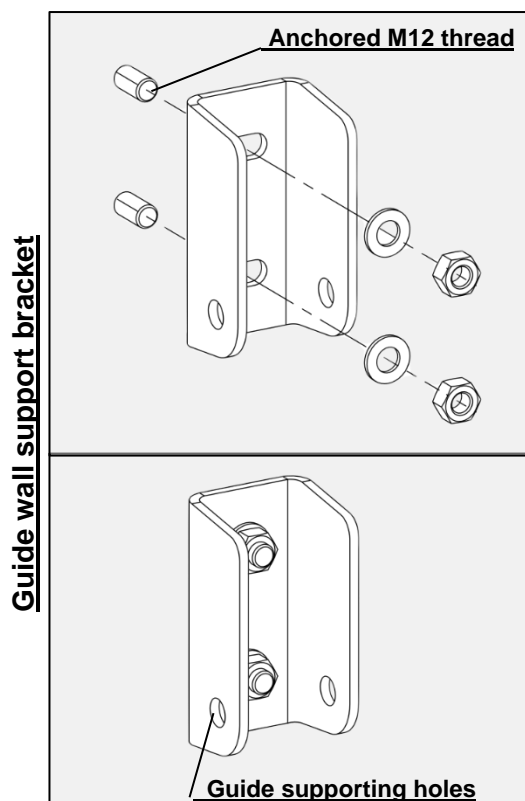
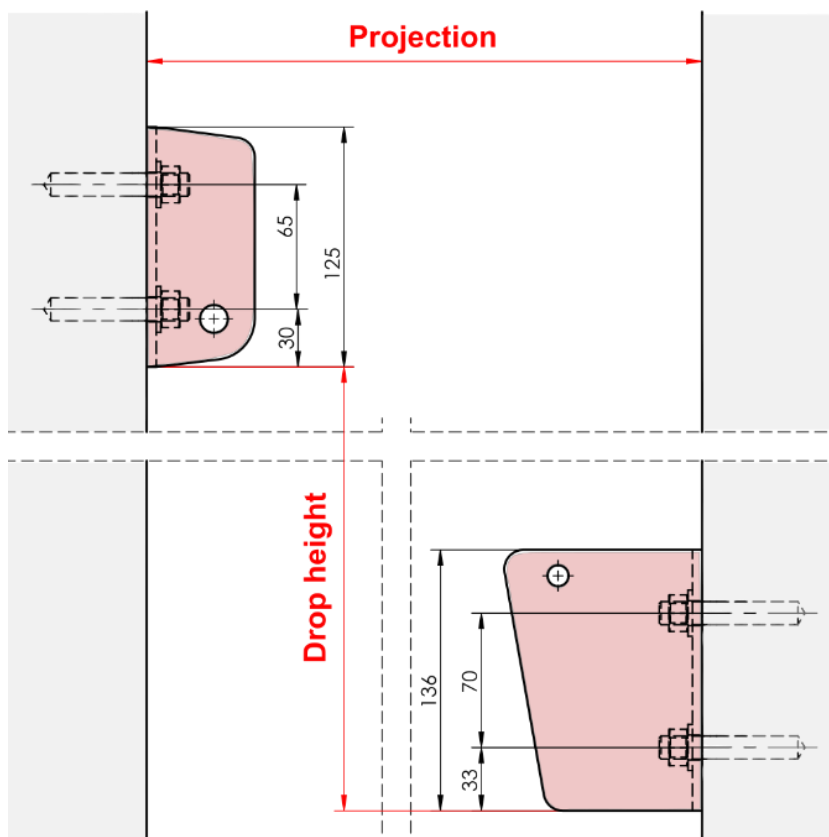
Guide wall support bracket (1 piece per guide)



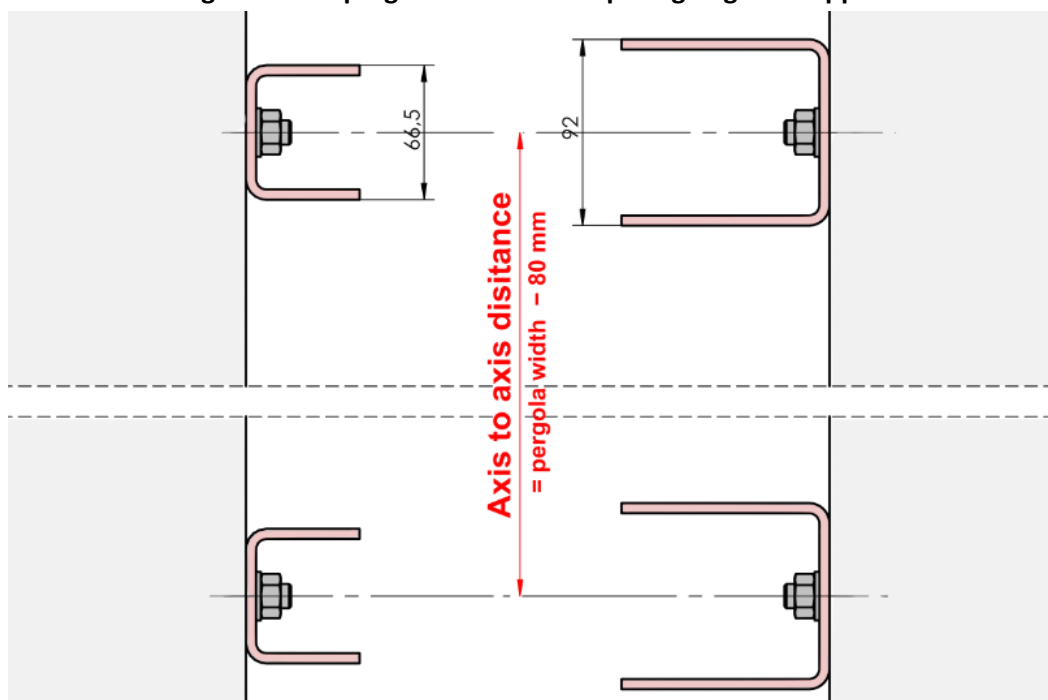
Guide frontal support bracket (1 piece per guide)



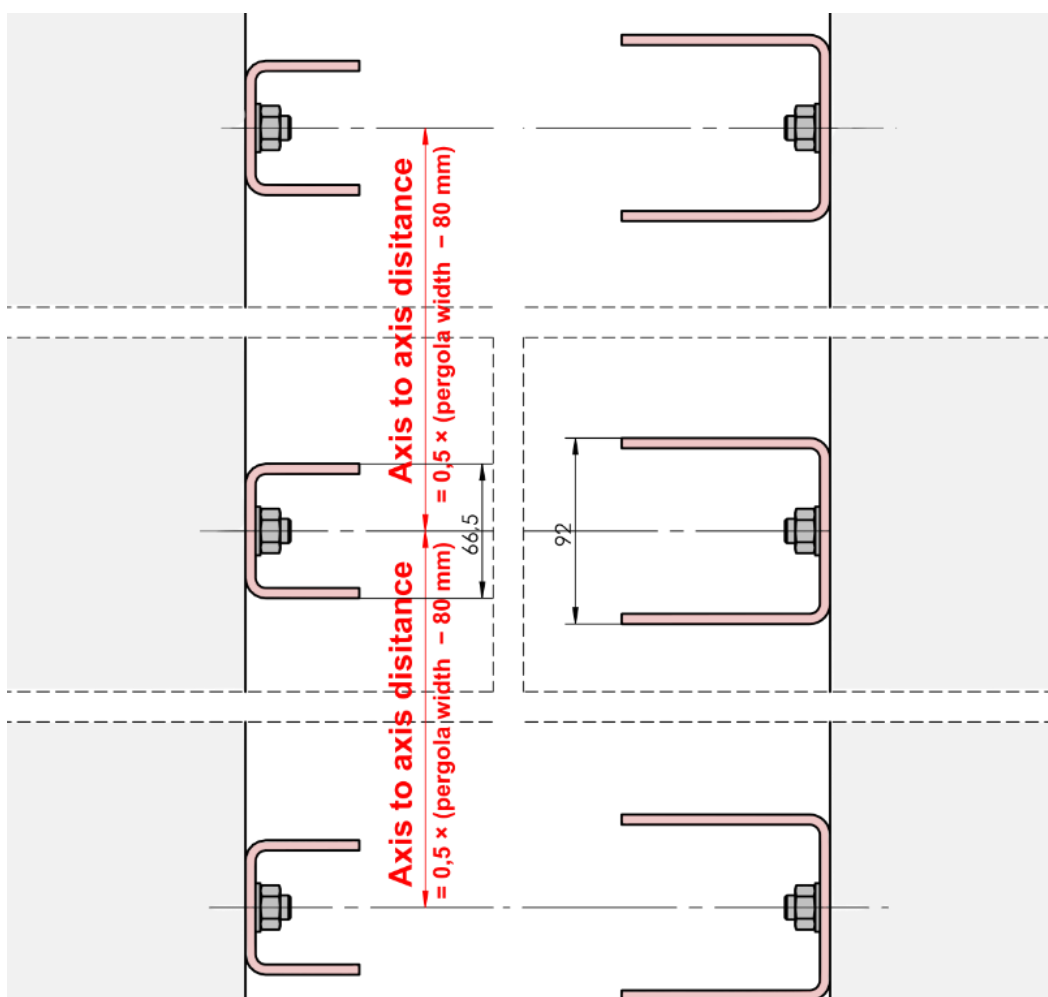
- First fix guide support brackets to the wall through slot holes. Notice that each type of guide support bracket has different set of holes for joining with guide: for wall bracket it's located at its bottom and for frontal bracket is located at its top. Support bracket must be fixed at specific installation height, accounting to the drop height and their horizontal spacing must correspond to pergola width (i.e. axis to axis distance).



Single module pergola – horizontal spacing of guide supports

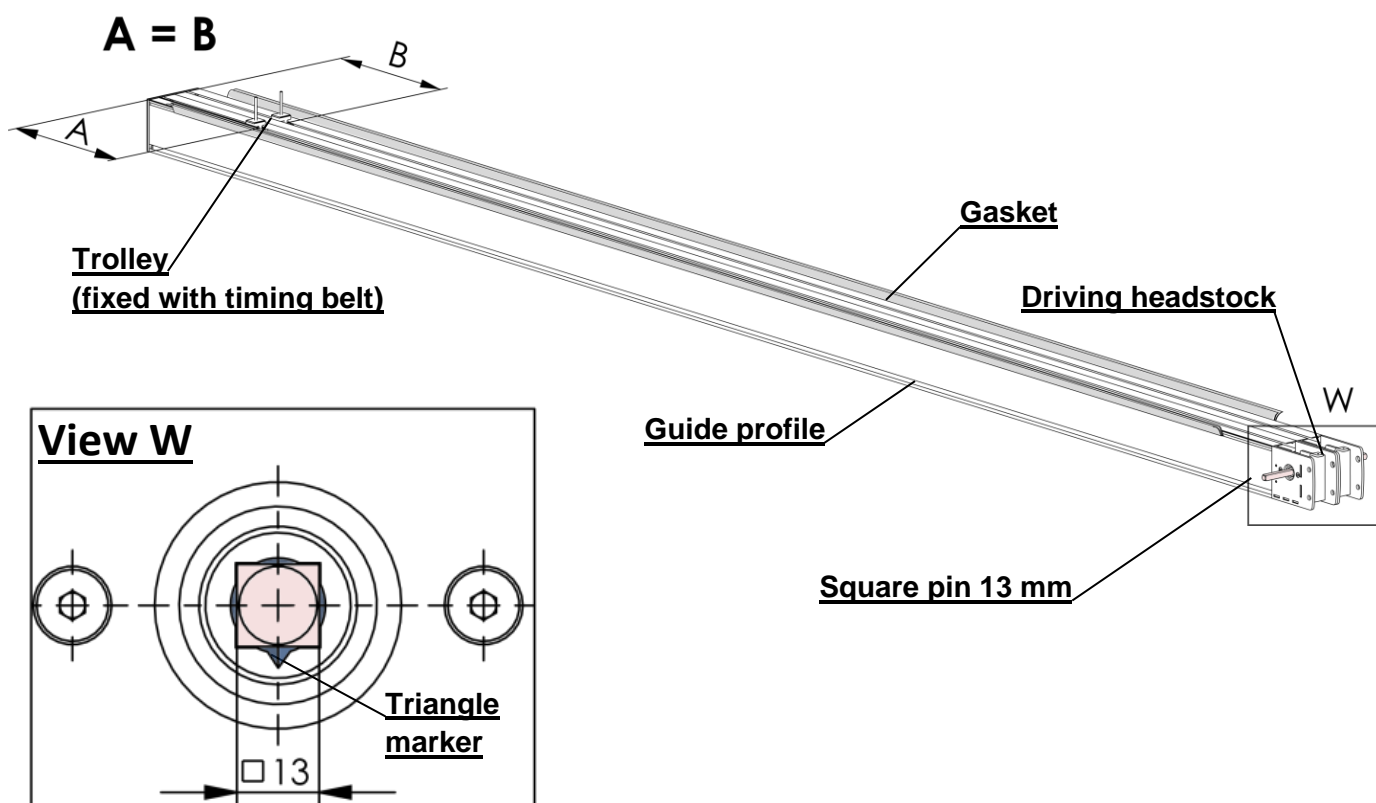


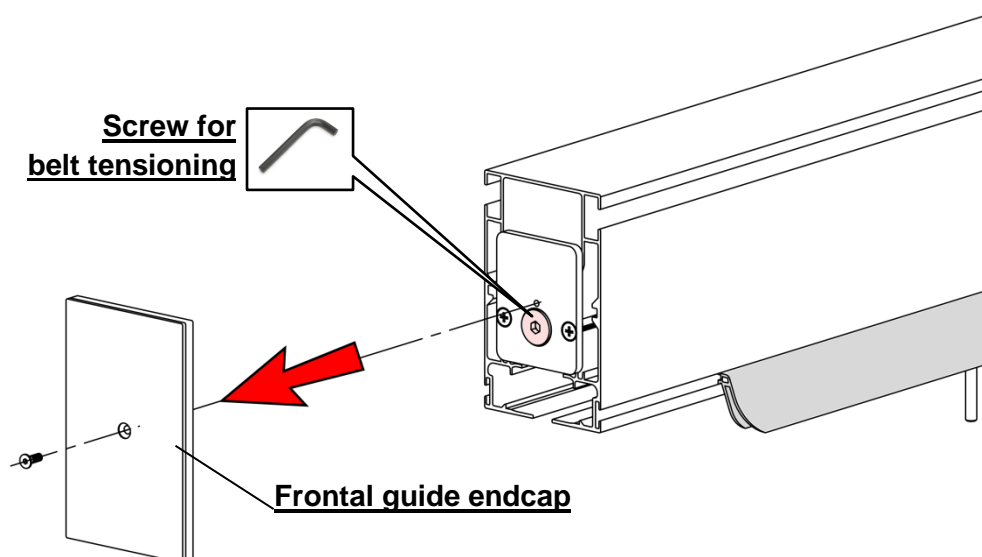
Double module pergola – horizontal spacing of guide supports



4. Before fixing the guide verify first if tensioning trolleys (i.e. trolleys that are fixed to the timing belt) are synchronized in all guides. **Manufacturer on default delivers all guides in synchronized state.** To check this place guides next to each other and move trolleys to identical position along the guide (dimension A=B). When guides are aligned it should be possible to put a square pin through square holes in both driving headstocks. While putting square pin through square holes check if triangle markers in both pulleys are at the same angular position. In case when trolleys are not synchronized:

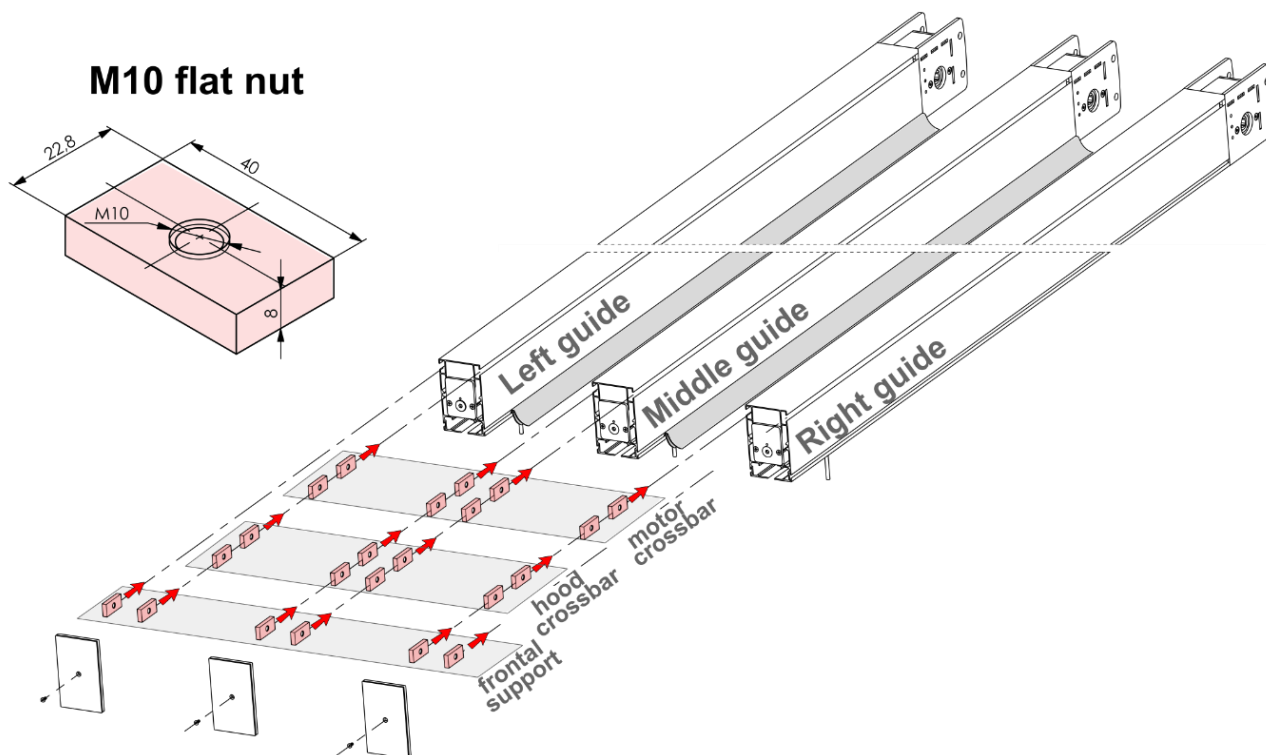
- leave square pin inside of the headstock of both guides,
- take off frontal guide endcap,
- loosen the timing belt by turning tensioning screw in one of the guides,
- align trolley to position of the other guide,
- tension the timing belt,
- check again the trolley alignment.

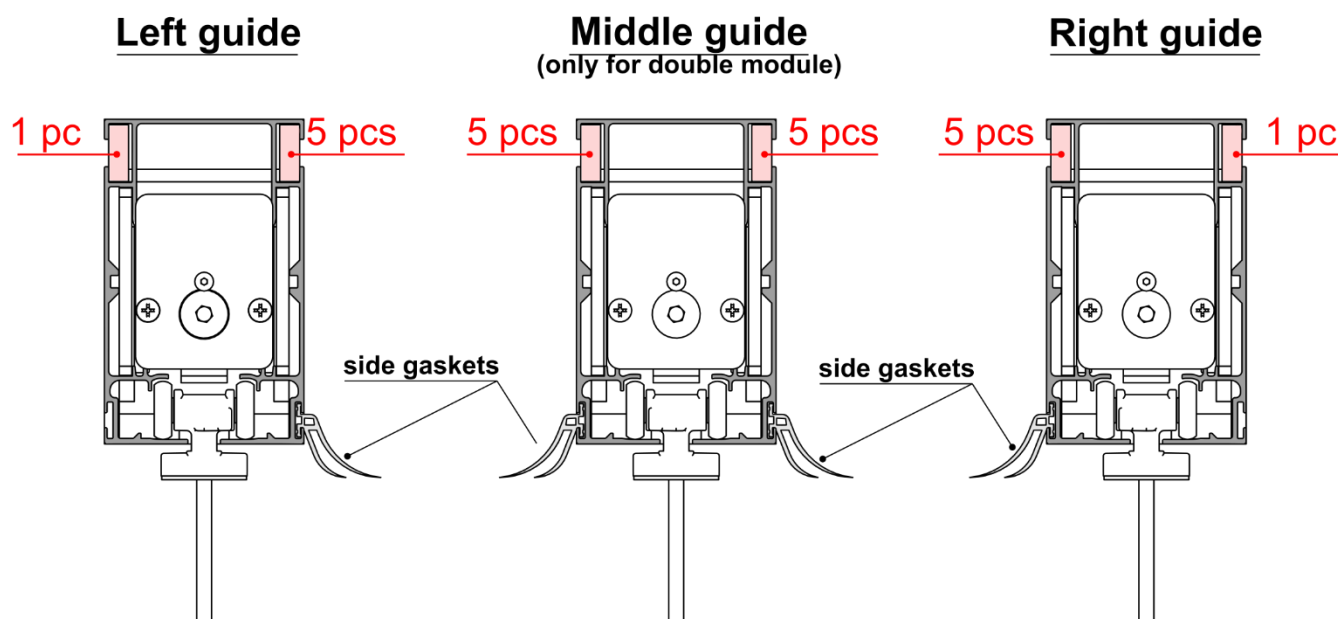




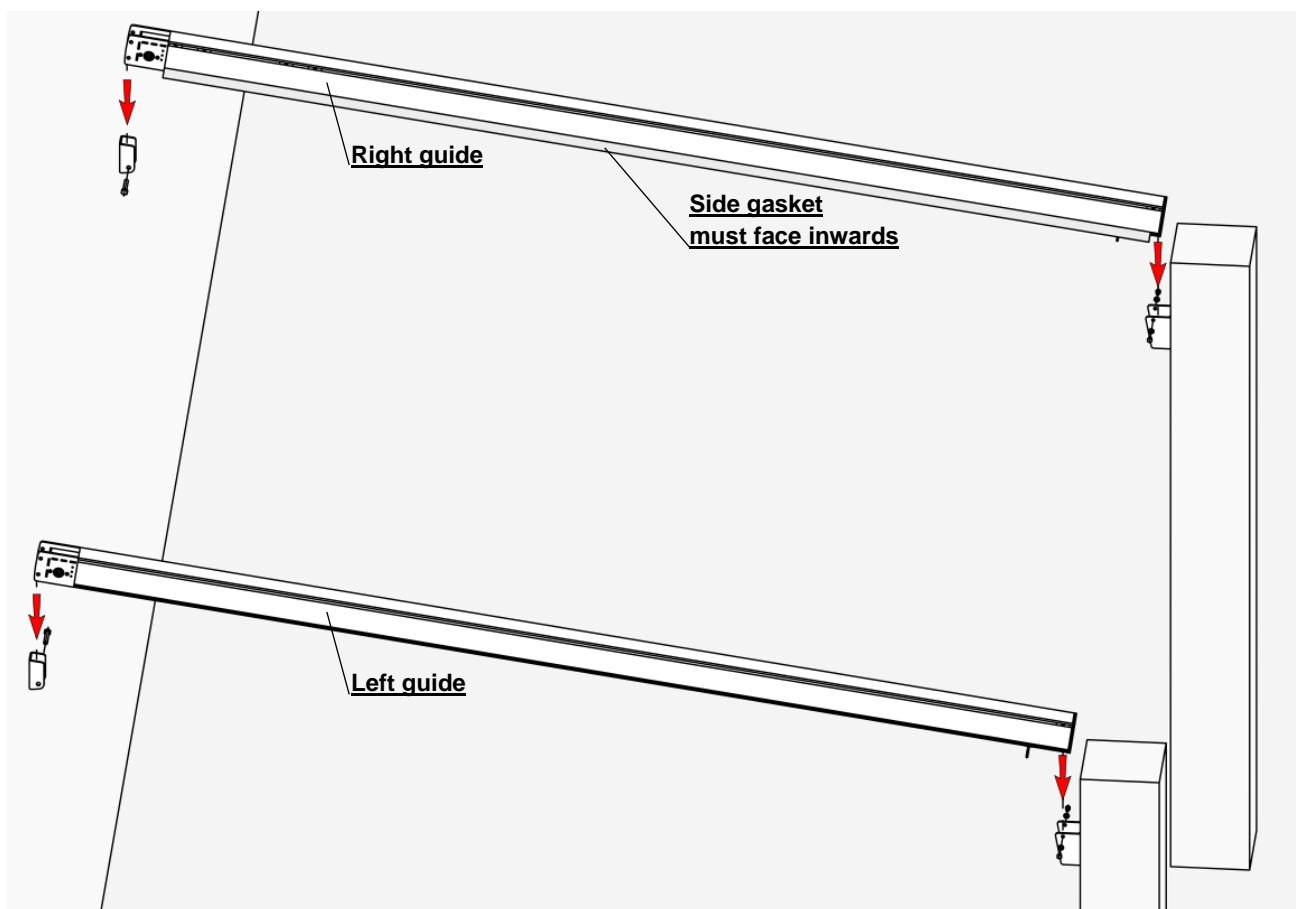
- Before fixing the guides to corresponding bracket verify first the number of M10 flat nuts placed in channels of each guide. Number of guides depends on the pergola width: single module pergola has two guides (left and right) and double module pergola has an additional third (middle) guide. Guide types can be distinguished by specific placement of side gasket – it should face inwards for left and right guide, and middle guide has side gaskets placed at both sides of the profile. M10 flat nuts are used to fix guide to the frontal support and to fix hood and motor supporting crossbars. To ensure smooth installation of pergola verify if the correct number of M10 flat nuts is placed into proper channel of the guides.

Manufacturer on default delivers all flat nuts placed within guides' channels, however in rare cases parts can be packed alongside with support brackets.

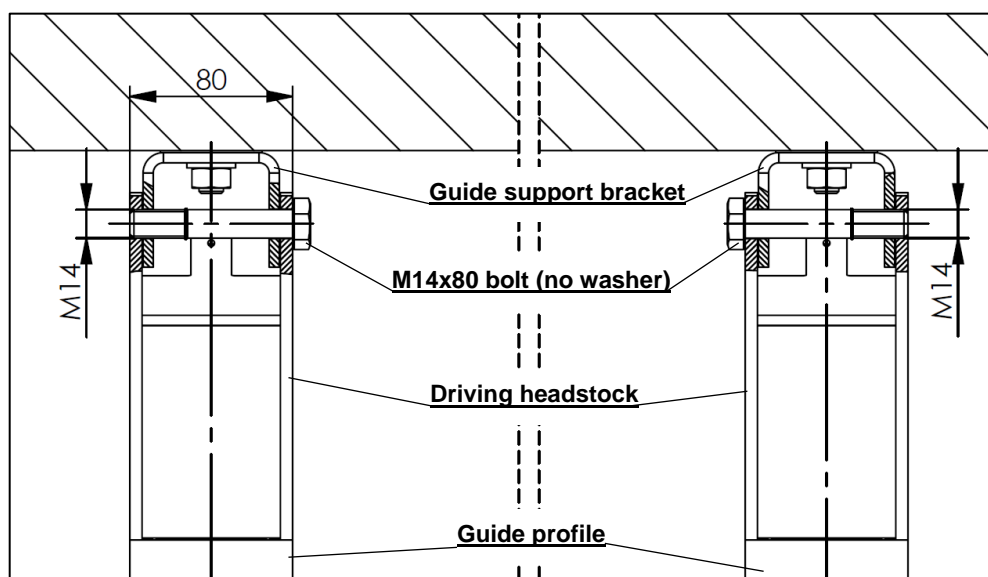
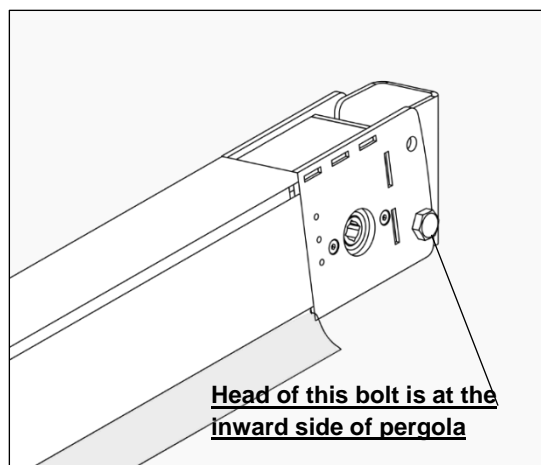
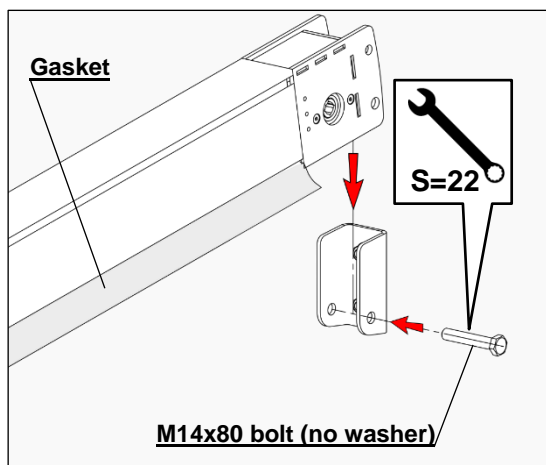




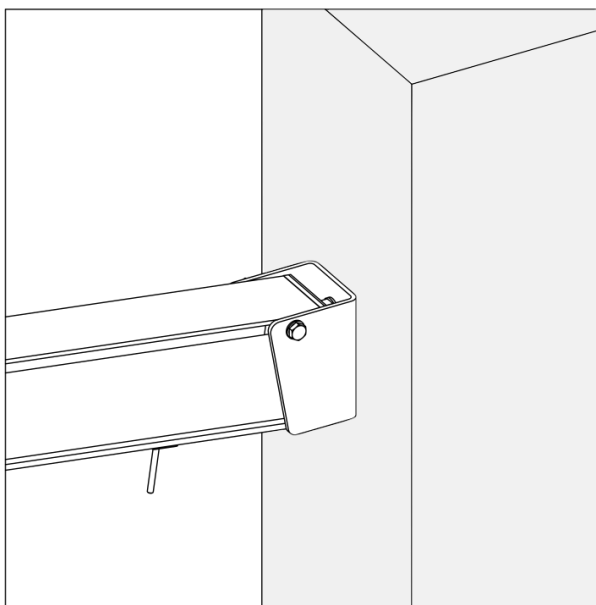
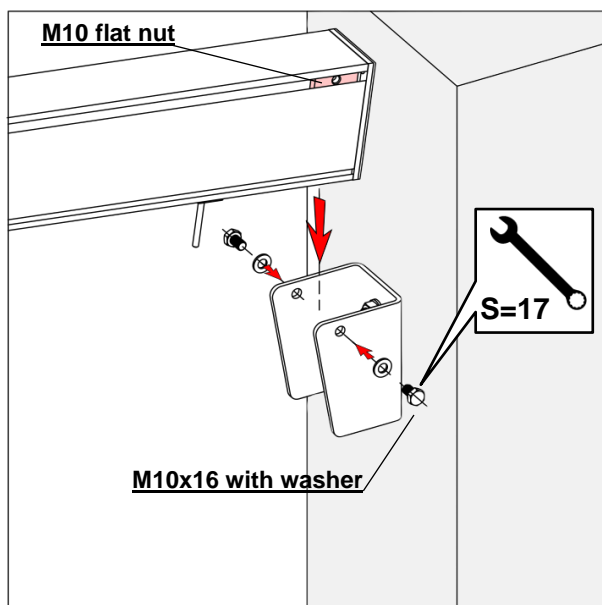
6. Connect guides with support brackets fixed to the wall and at the front of the structure. Note the difference between right, left and middle guide assembly which differ by position of side gaskets and aforementioned configurations of M10 flat nut. Notice that side gaskets must face inwards of pergola structure.

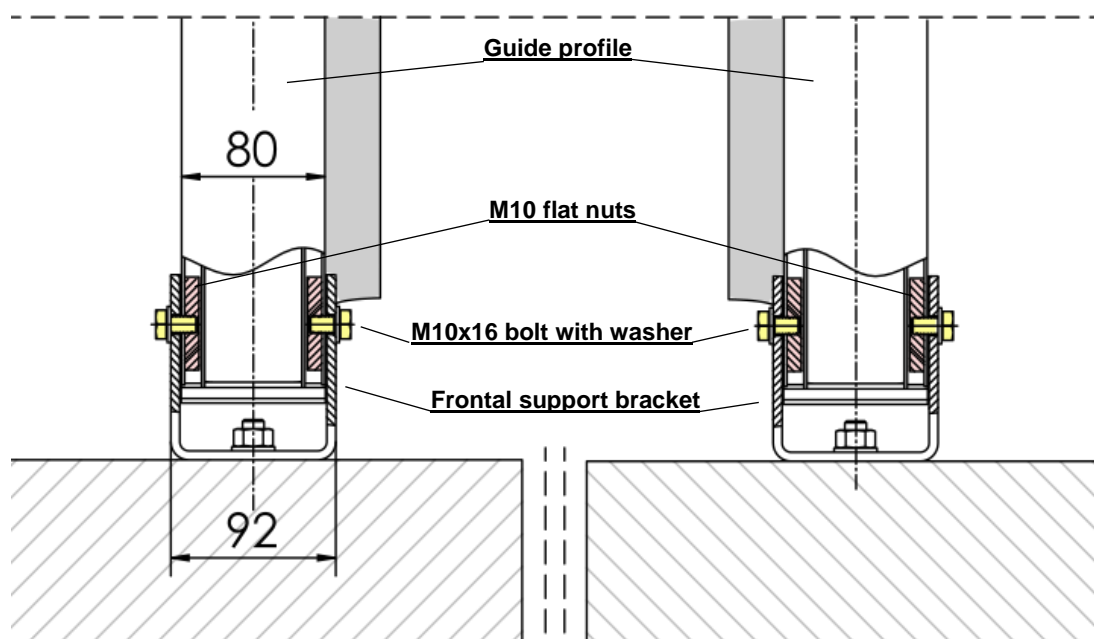


Slide the guide onto wall support bracket in such way that side plates of driving headstock encompass wall support bracket. Fix guide by screwing M14x80 bolt (with no washer) – head of this bolt will be inward of pergola structure (the same side as gasket).

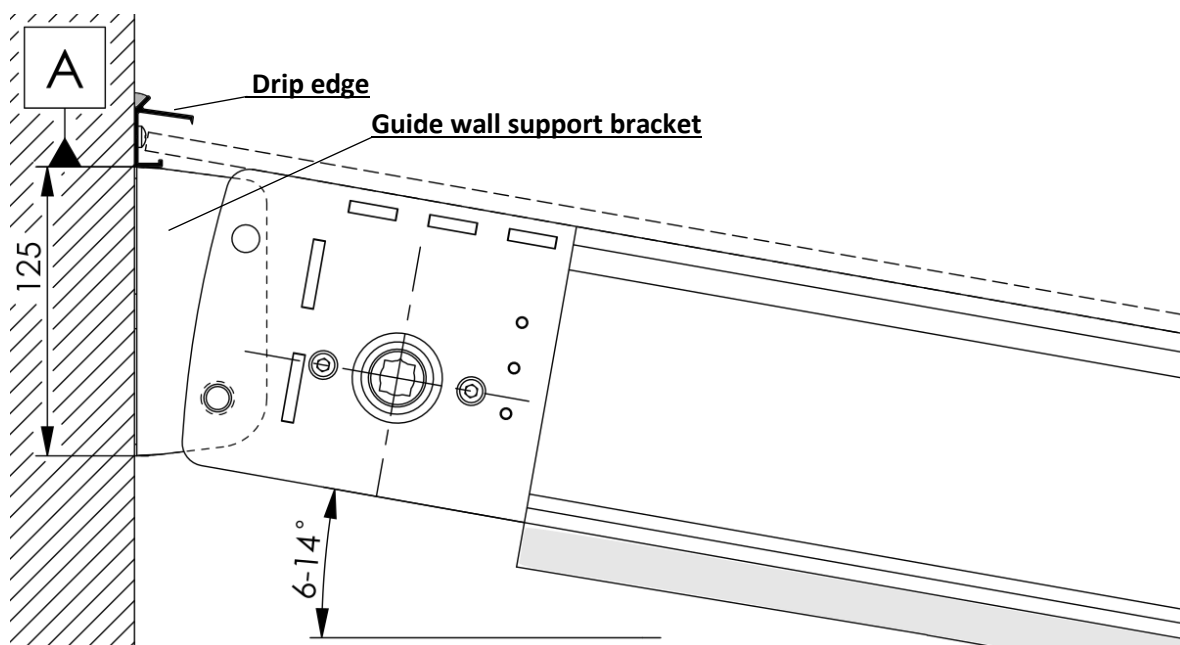


At the front slide each guide into frontal support bracket and fix guides from both sides by screwing M10x16 bolts into M10 flat nuts.



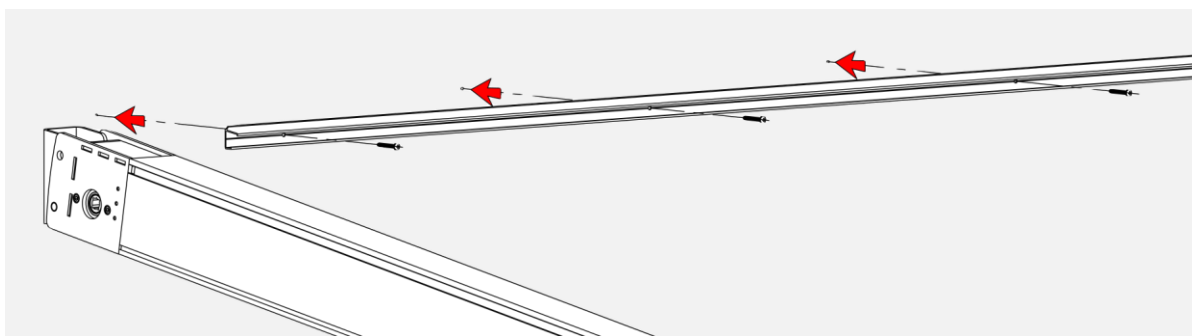


7. Proceed to fix drip edge profile to the wall. Drip edge profile's function is to provide basic seal between pergola and wall, which provides adequate comfort for most users, while its installation can be carried out by an averaged skilled awning installer. To ensure complete seal a comprehensive roof flashing work is required, including cutting in into existing building's facade. For standard pergola inclined at angle in range of 6° ÷ 14° the drip edge profile should be installed directly above guide wall support bracket – position denoted as [A].

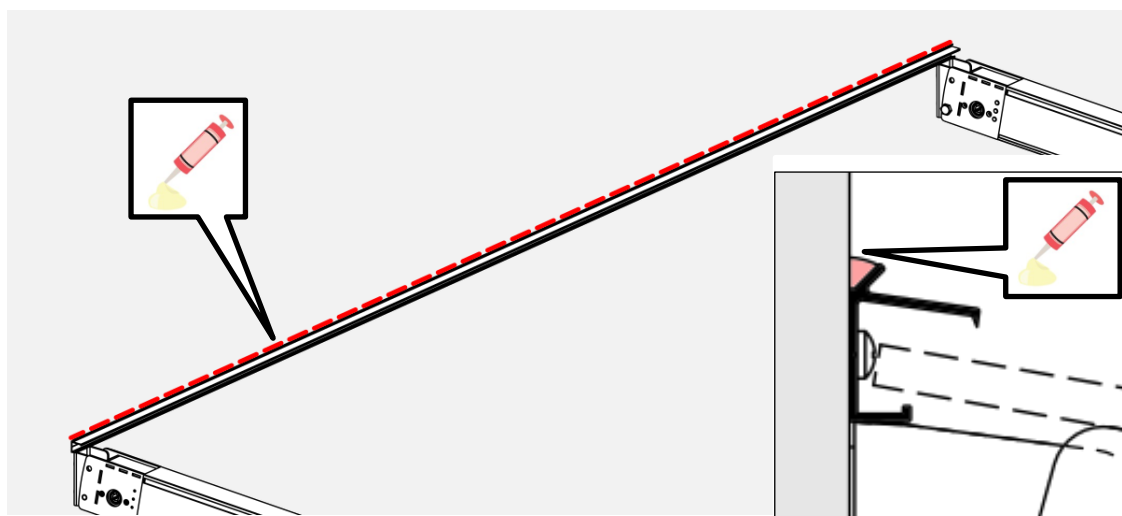


Drip edge profile should be fixed to the wall with fasteners sufficient for given substrate at the installation site. Typically, a plastic expansion anchors, drywall anchor, insulation anchor or installation glue.

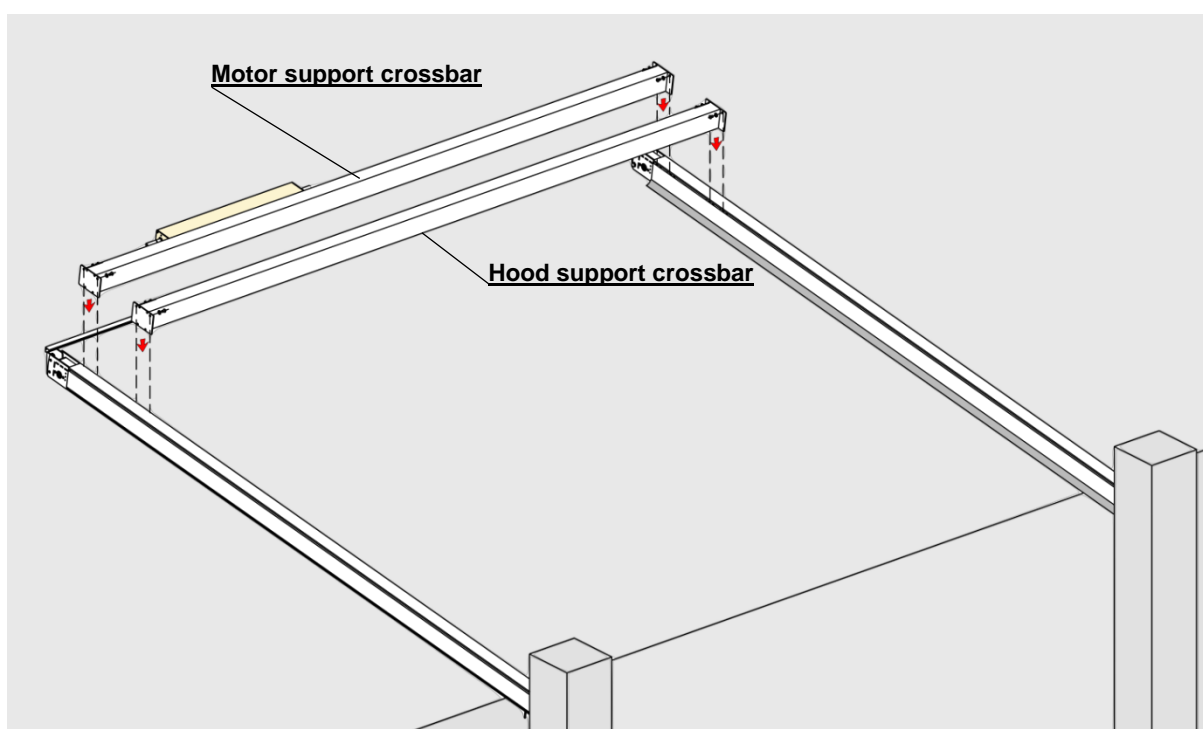
Fix drip edge along the width of pergola – distance between fasteners shouldn't exceed 100 cm.



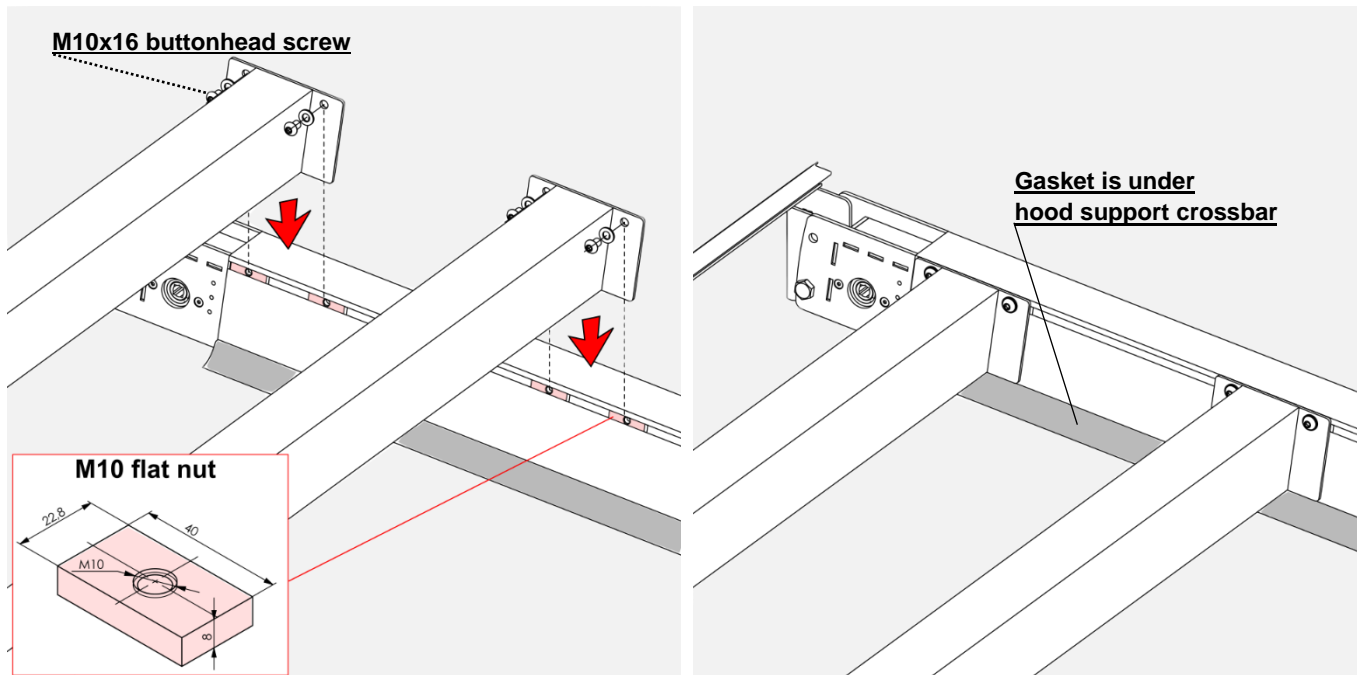
Seal the drip edge-wall connection by applying silicone glue into the groove at the top of the profile.



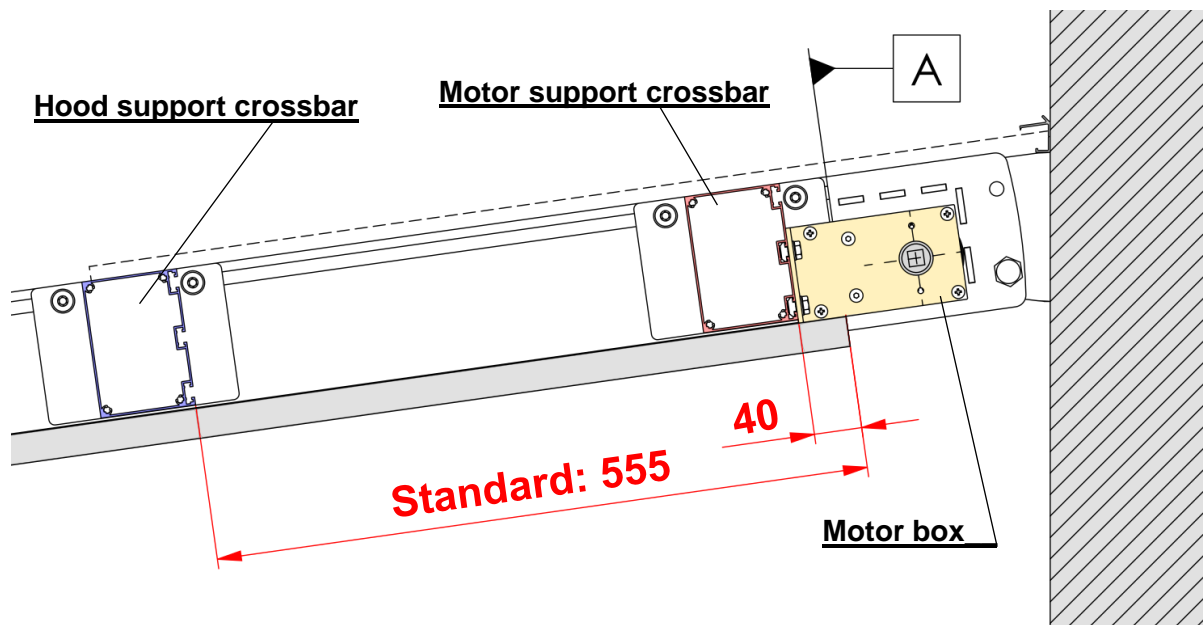
8. Fix the crossbars: motor and hood support.



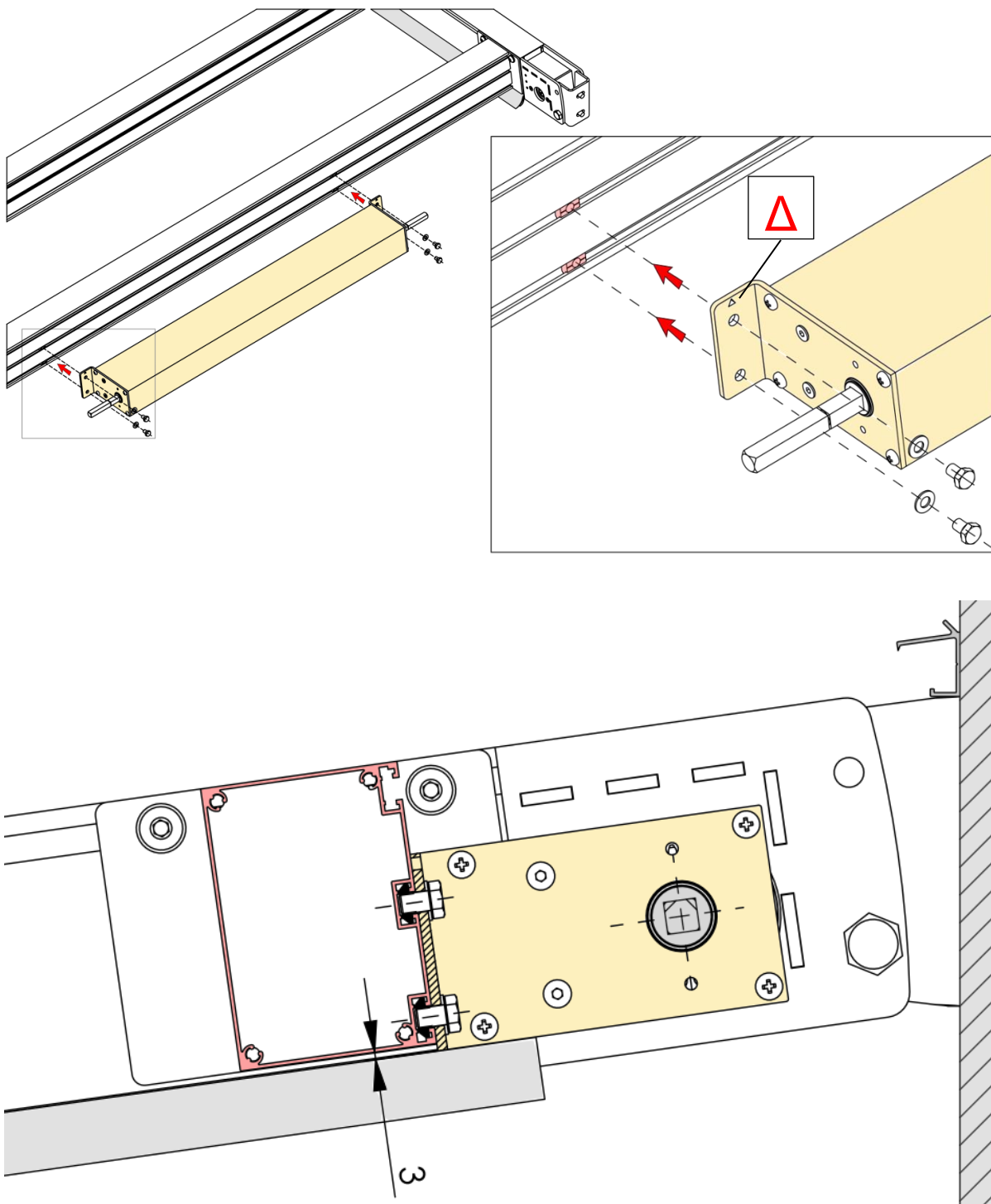
Crossbars are fixed to the M10 flat nuts located within guide profiles channels.



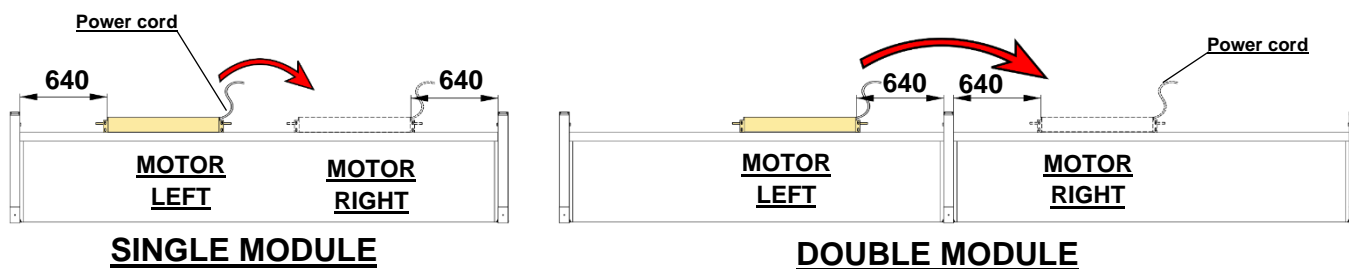
Crossbars need to be placed at the specific position along the guide. Position of motor support crossbar is universal for all pergola sizes: it should be positioned at the distance of 40 mm from guide profile face (measuring base A). Position of hood support crossbar will differ with hood projection. Standard pergola hood has projection of 82 cm and for such the support crossbar should be positioned at the distance of 555 mm from guide profile face (measuring base A).



9. (OPTIONAL STEP) Motor support crossbar is supplied on default with motor box (that is a gear box with tubular motor) already fixed to the crossbar. If necessary, it is possible to install motor support crossbar first and later motorbox separately. This step might be useful in very rare case of motor replacement. Motorbox is fixed to the M8 flat nuts installed in the crossbar. By loosening the screws it's possible to slide the motor box along the its support crossbar profile. While installing the motor box note that the small triangle marker (Δ), which is located on the brackets, must be pointing up.

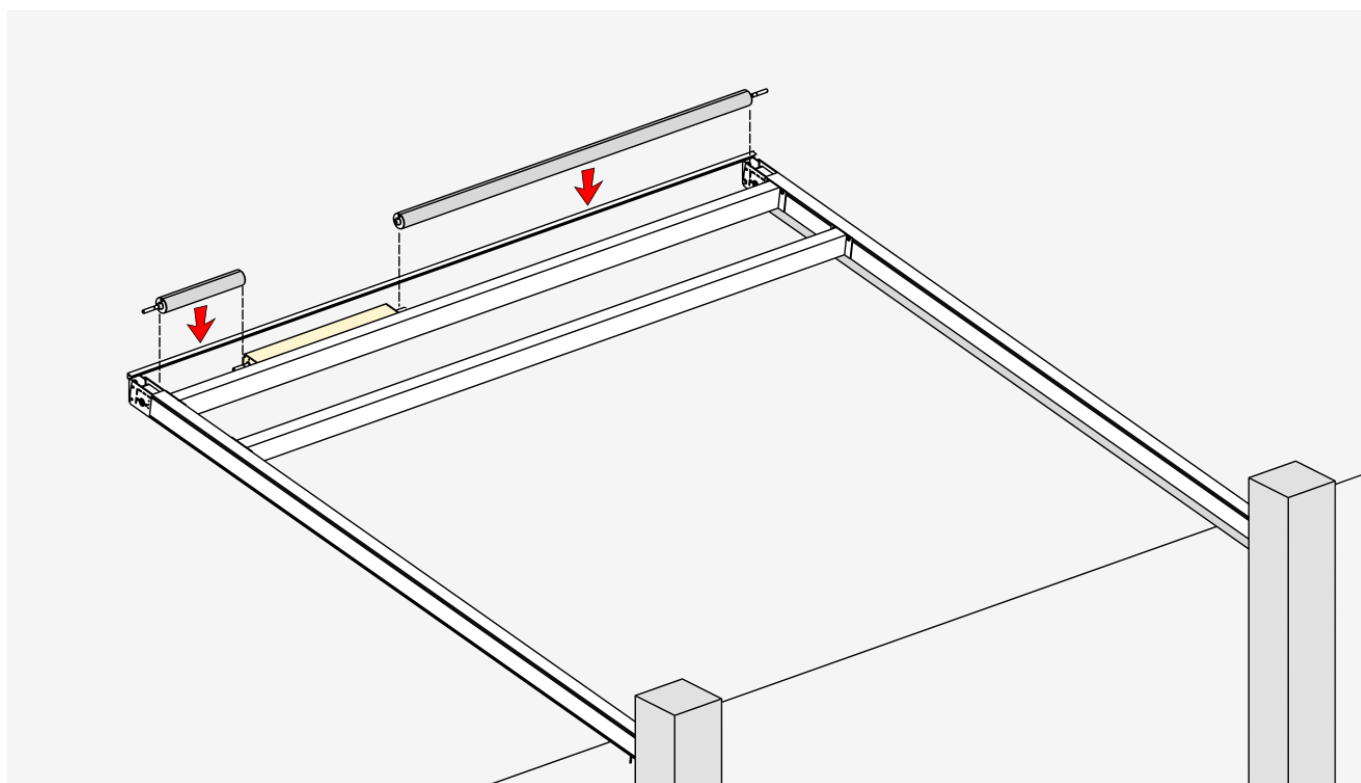


10. Motor box is installed according to customer specification on either right or left side of pergola. Position of motor box is 640 mm from the guide.

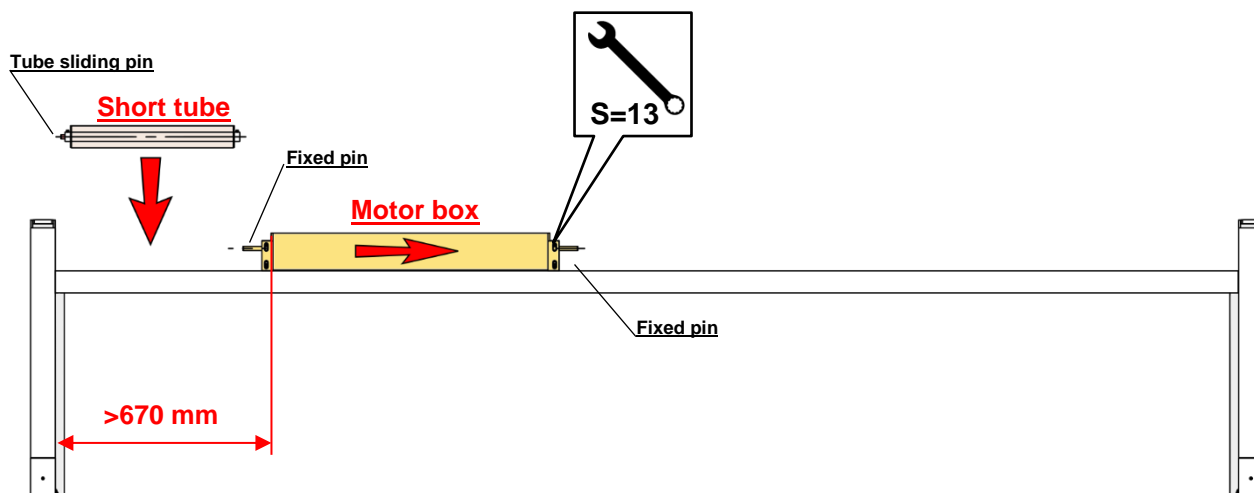


Torque is transmitted from motor box by steel tubes.

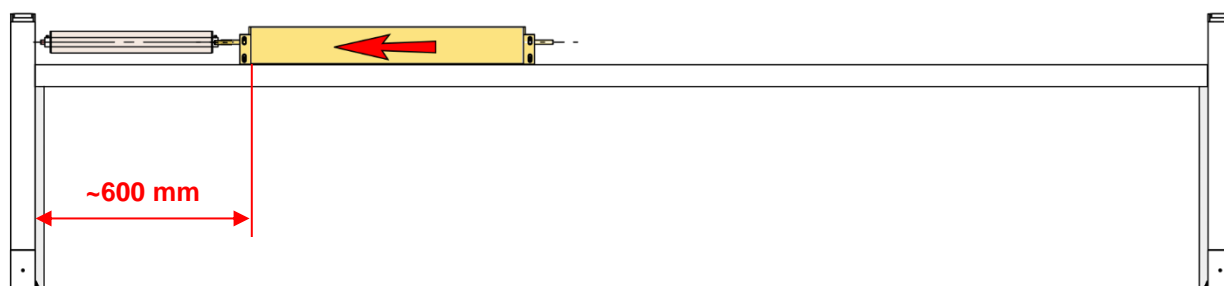
Attention: Before installation of steel tubes make sure that tensioning trolleys are in the same position along every guide!



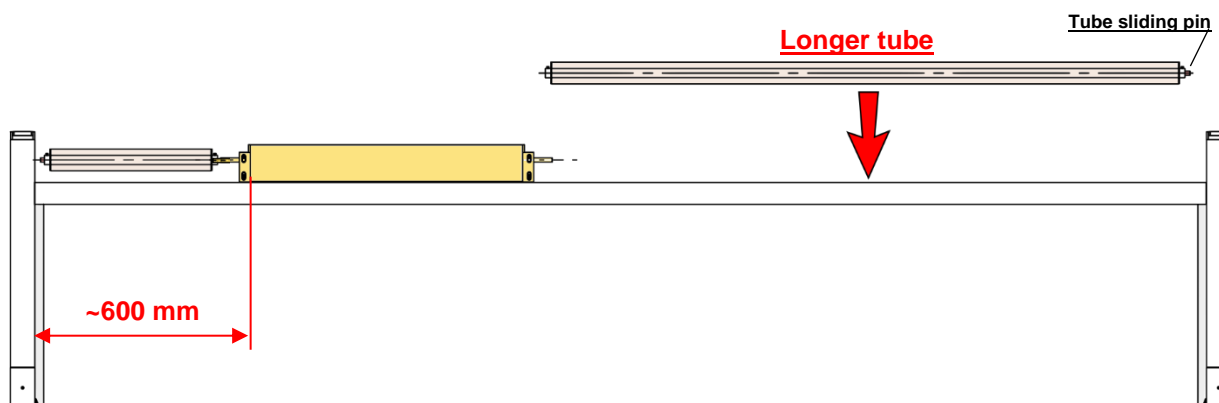
First loosen the screws holding the motor box to allow its sliding along the crossbar profile. Next slide the motor box and position it ca. 670 mm from the guide. Later move the short steel tube to the proximity of motor box. Each tube is equipped with sliding pin which should be pointed towards driving headstocks.



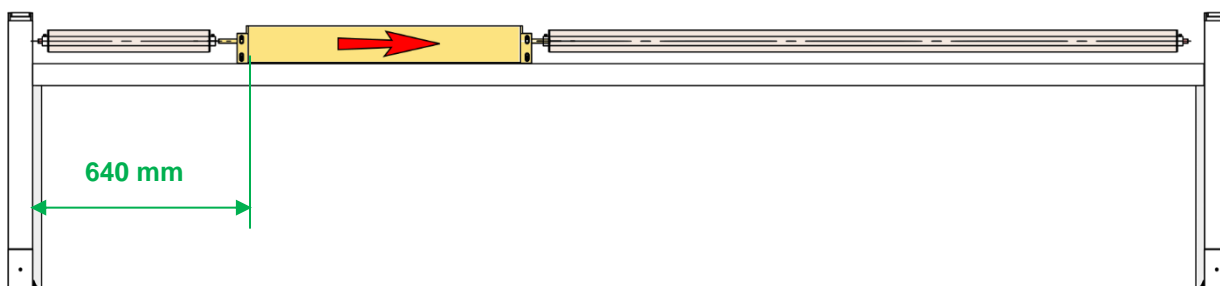
Next slide the motor box onto the short tube and couple them by inserting the fixed pin into the square hole inside of the tube's endcap. During the coupling the motor should be positioned ca. 600 mm from the guide.



Next move the longer steel tube to the proximity of motor box.

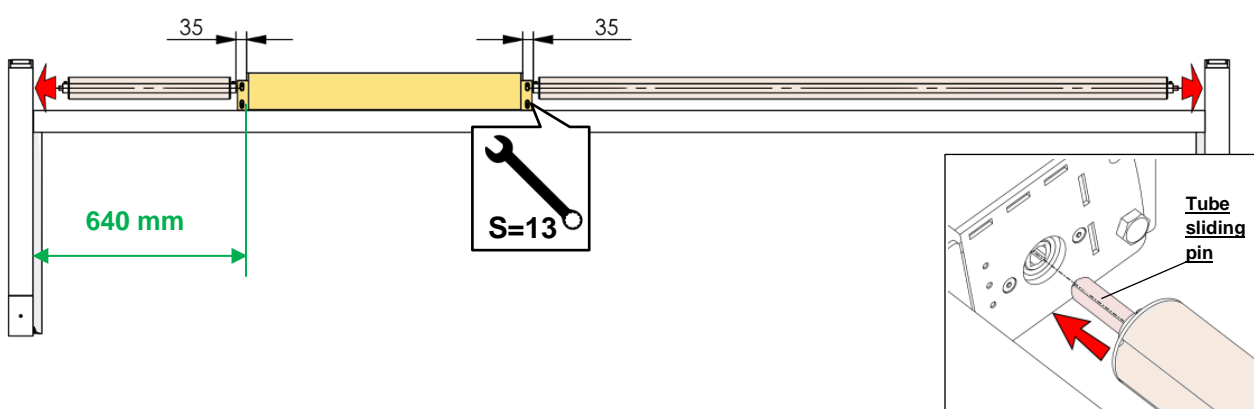


Next slide the motor box onto the longer tube and couple them by inserting the fixed pin into the square hole inside of the tube's endcap. During the coupling the motor should be positioned ca. 640 mm from the guide.

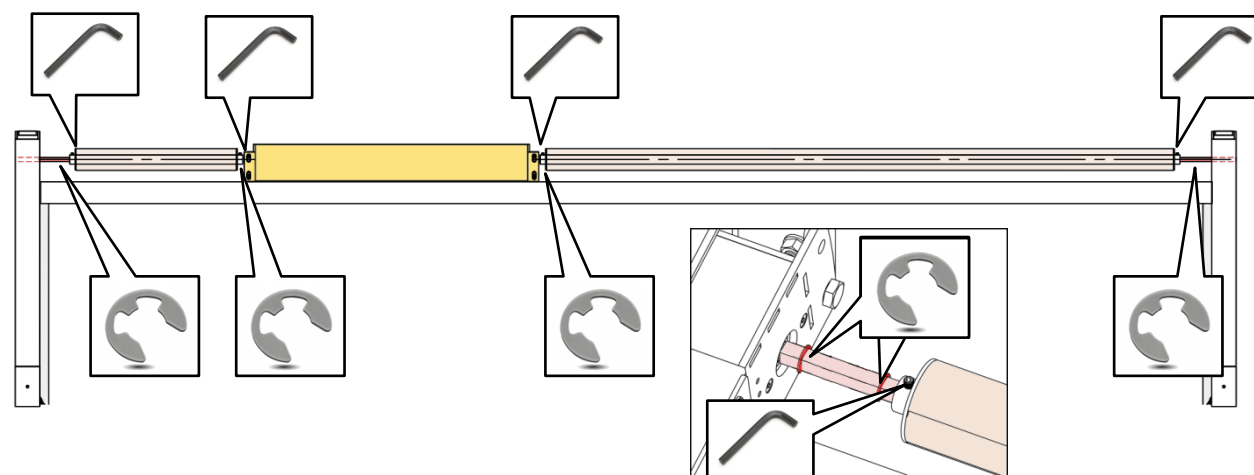


Insert the sliding pins into the pulleys inside of each driving headstocks. Adjust axial position of the tubes so tube's endcaps are around 35 mm from each side of motor box.

Attention: while putting square pin through pulleys limit any rotation of tubes to bare minimum. During the installation one needs to keep in mind that timing belts in both rails are synchronized!



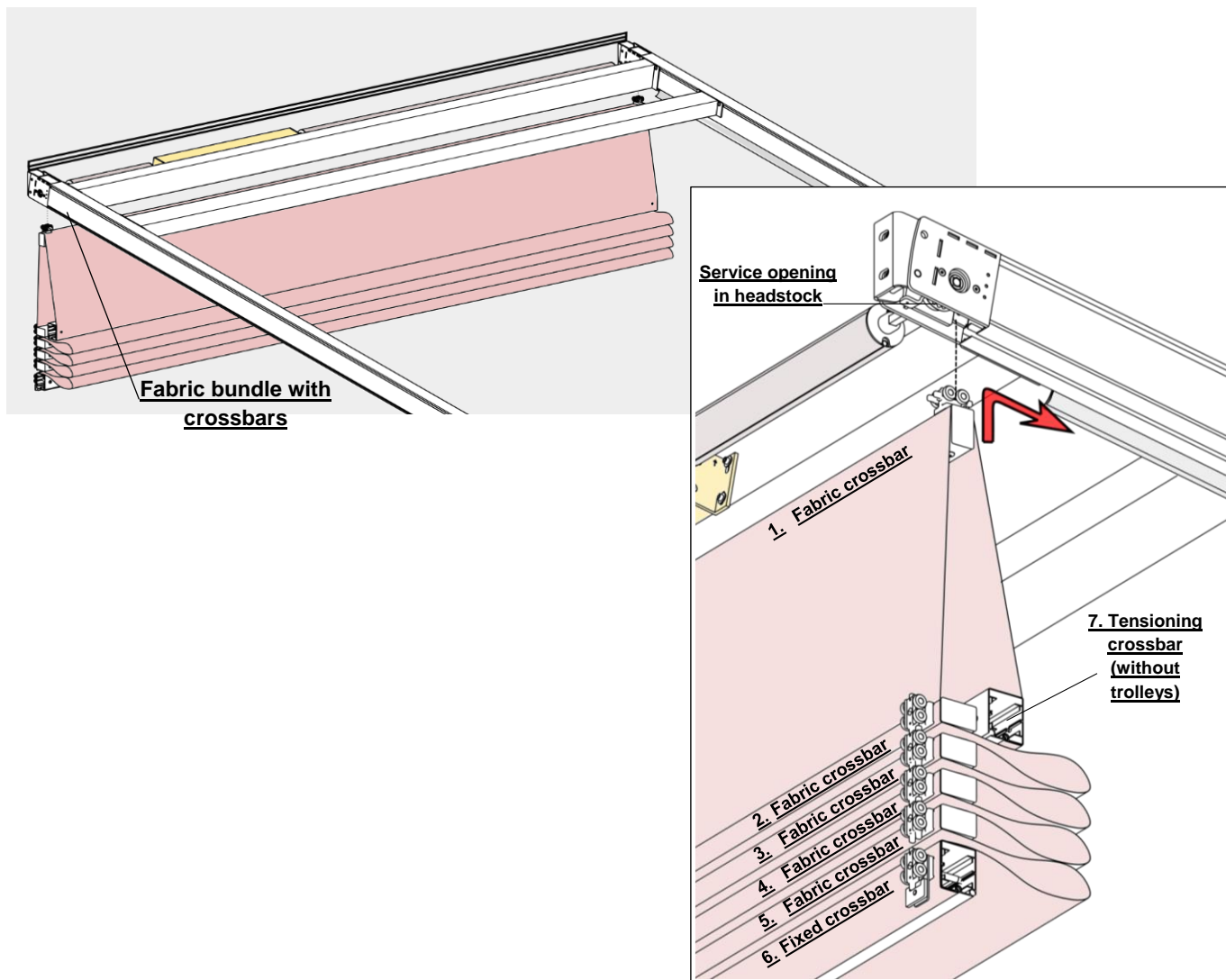
Secure tube position with grub screw and with retaining rings.



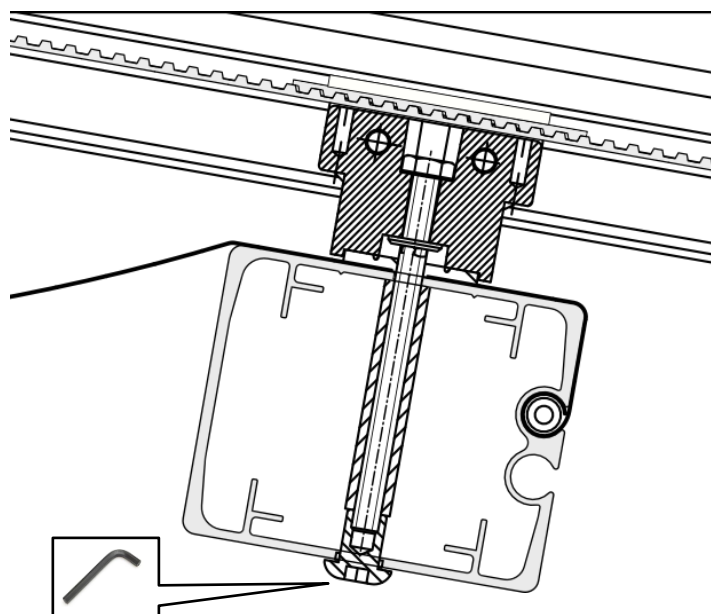
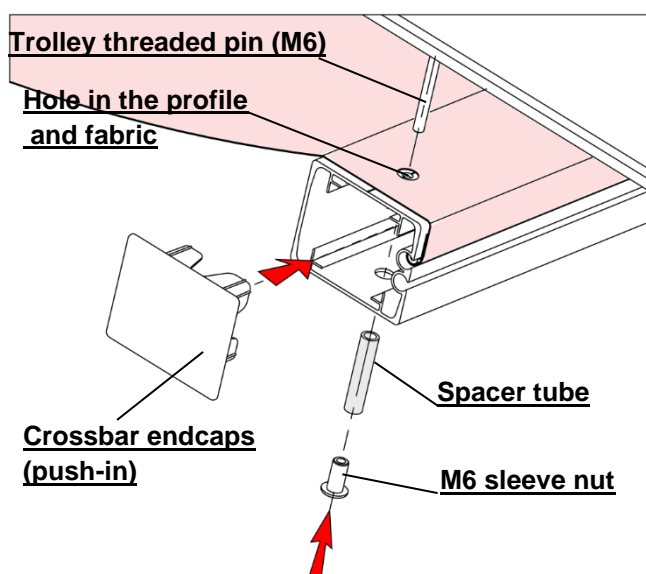
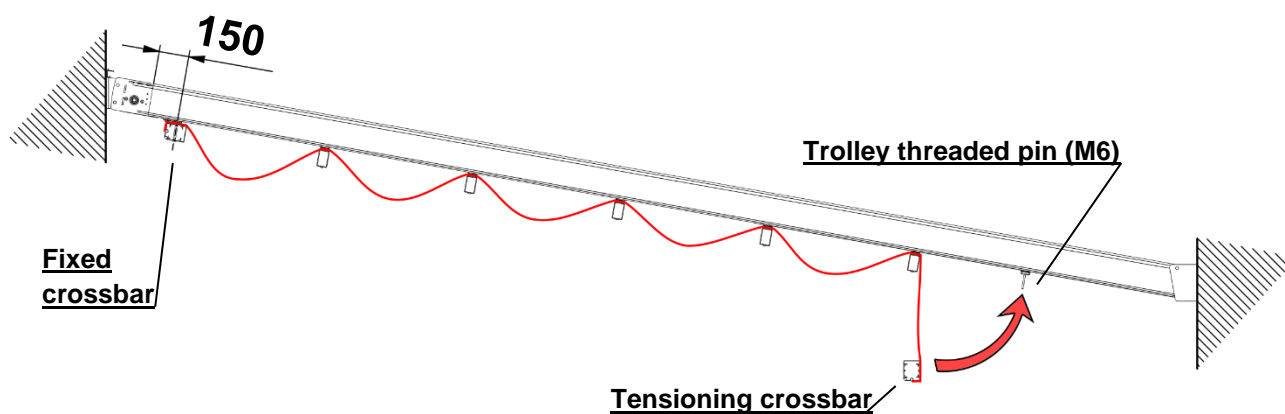
Attention: Retaining rings protect the driving unit from uncoupling. Make sure that all retaining rings are in place!

Attention: If the grub screws are tightened too much some unwanted noise might appear during pergola operation. If such noise occurs (e.g. squeaking or cracking) loosen a bit the grub screws.

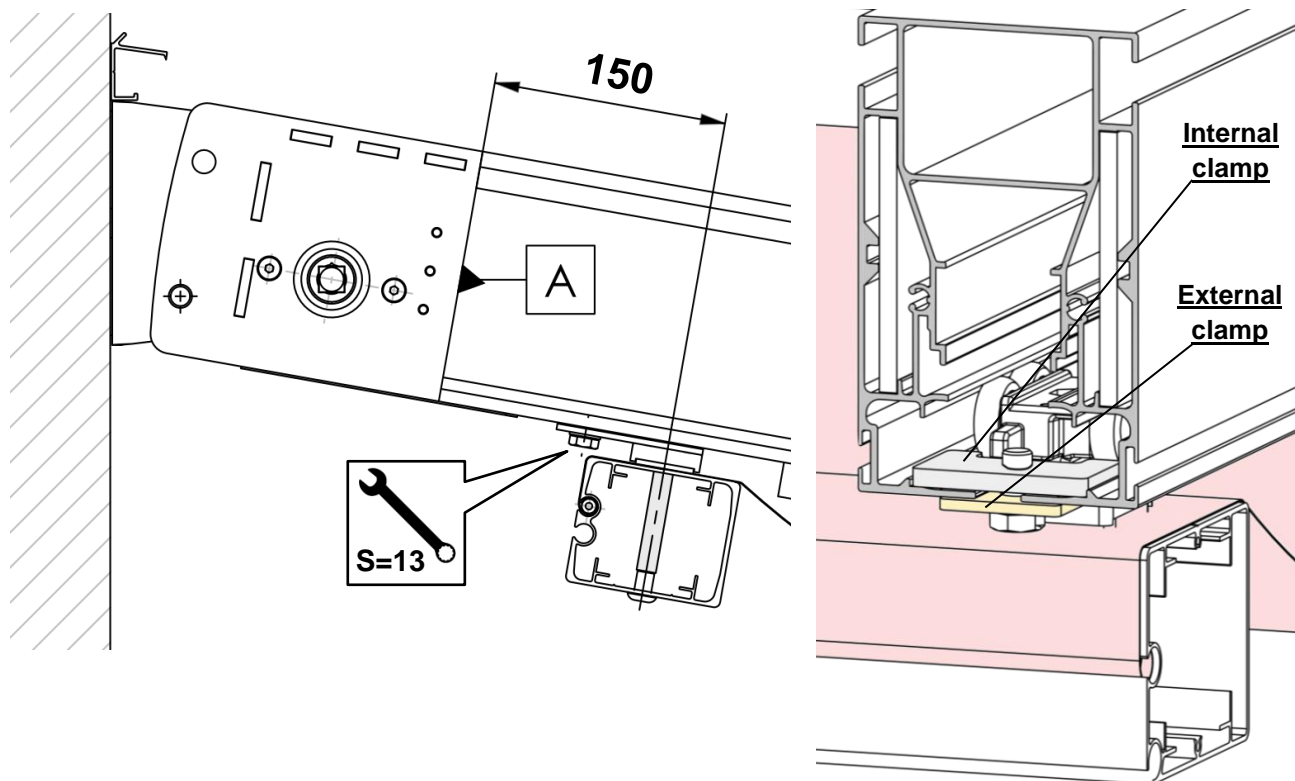
11. Proceed to install fabric bundle with crossbars into pergola guides. Installation consist of inserting trolleys into service opening inside of both driving headstock. Consecutively are inserted fabric crossbars 1÷5 (its number depends of pergola projection – in our example there are 7 crossbars in total of the bundle) and fixed crossbar 6 is inserted last. Tensioning crossbar 7 is the only one without trolleys because its trolleys are already fixed with timing belts within the guides.



Next proceed to fix the tensioning crossbar with tensioning trolley. This is done by putting tensioning crossbar onto threaded pin of driving trolley through holes in profile and fabric. Next put through bottom hole in tensioning crossbar a spacer tube and M6 sleeve nut onto threaded pin. After securely screwing in the nut, push in the tensioning crossbar's endcaps.

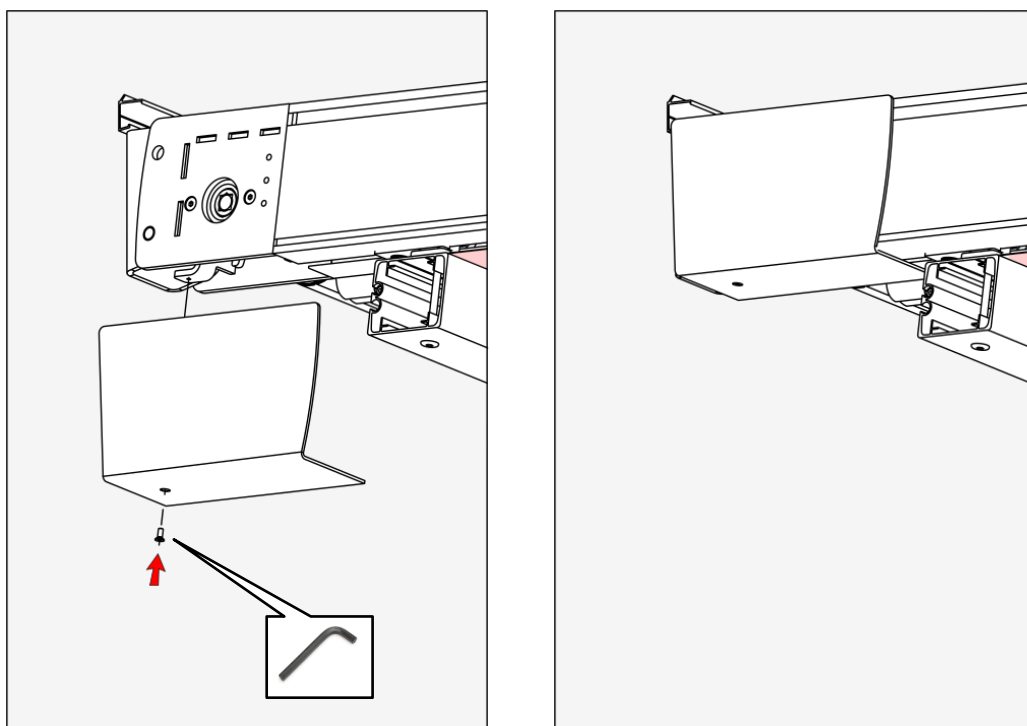


12. Lock fixed crossbar at 150 mm from face of the guide (measuring base A). Locking of this crossbar is done by tightening the screw of external clamp.

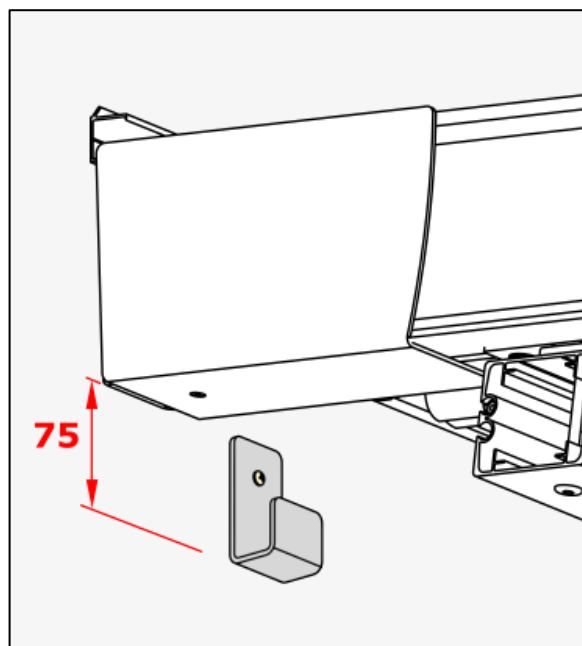
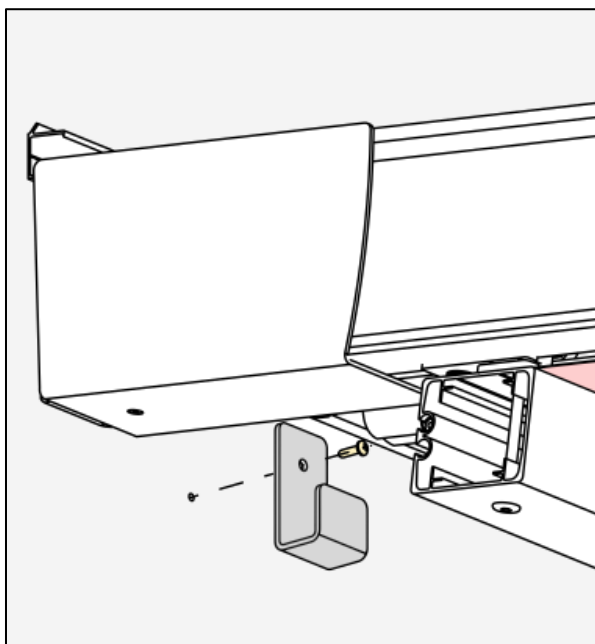


ATTENTION: Pergola assembled by manufacturer doesn't have programed limit switch for tubular motor. Installation crew must program limit switches after structure installation: i.e. after fabric installation and tightening of fixed crossbar. Perform programing according to supplied manual of selected motor.

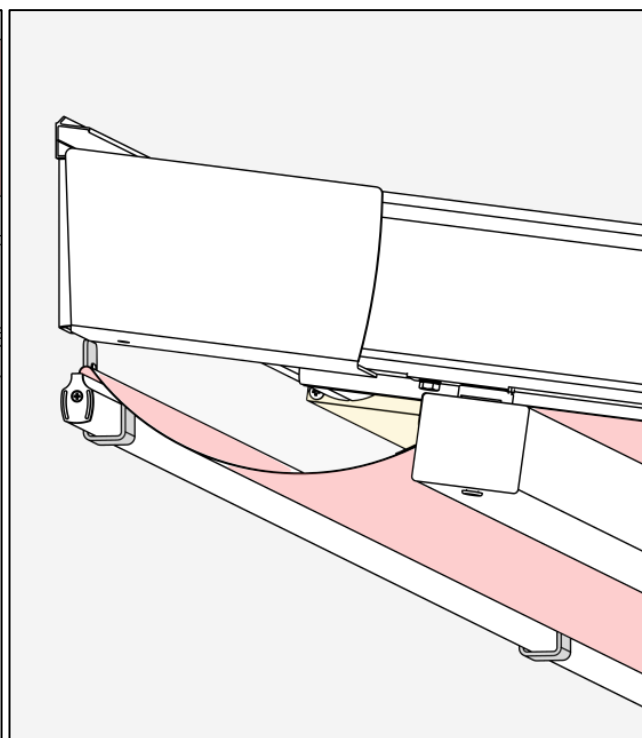
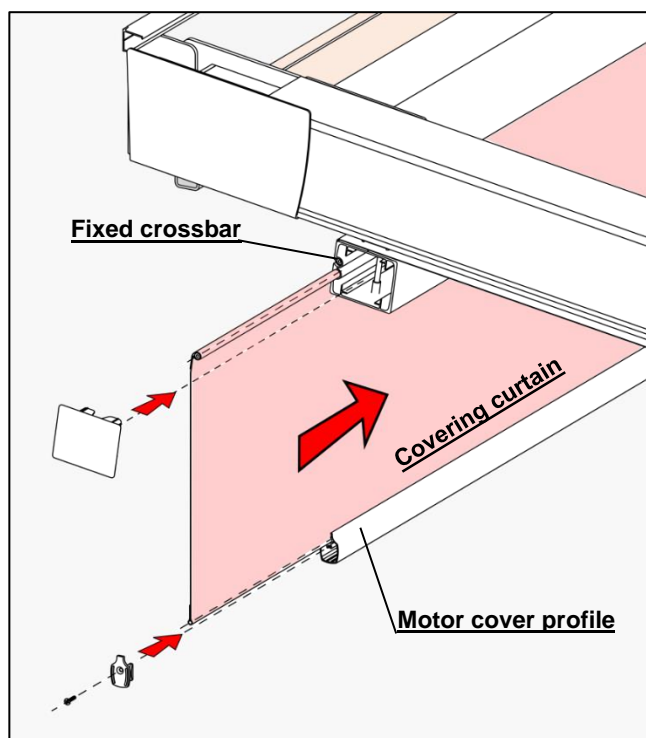
13. Fix headstock covers.



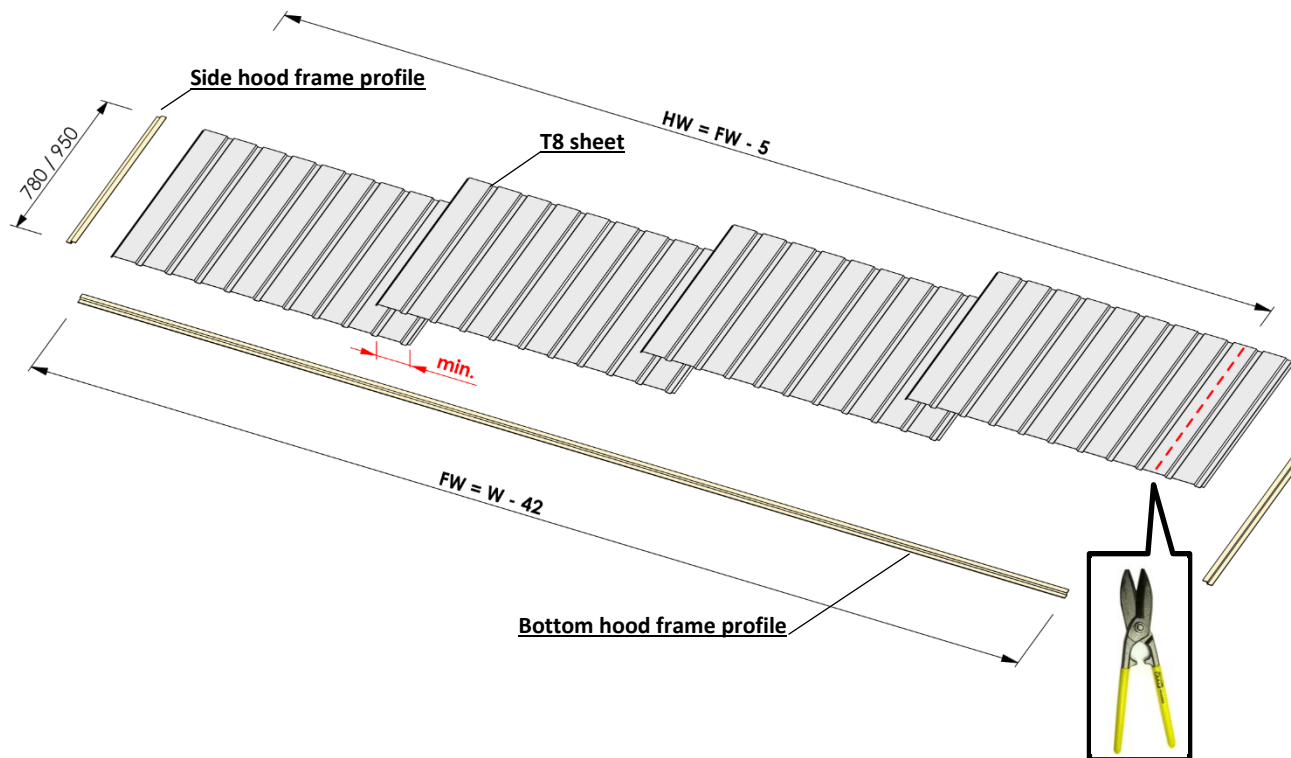
14. Whole driving unit is covered with curtain attached to the *motor cover profile* and brackets. Number of brackets depend on pergola width. Brackets should be fixed to the wall with suitable anchor.



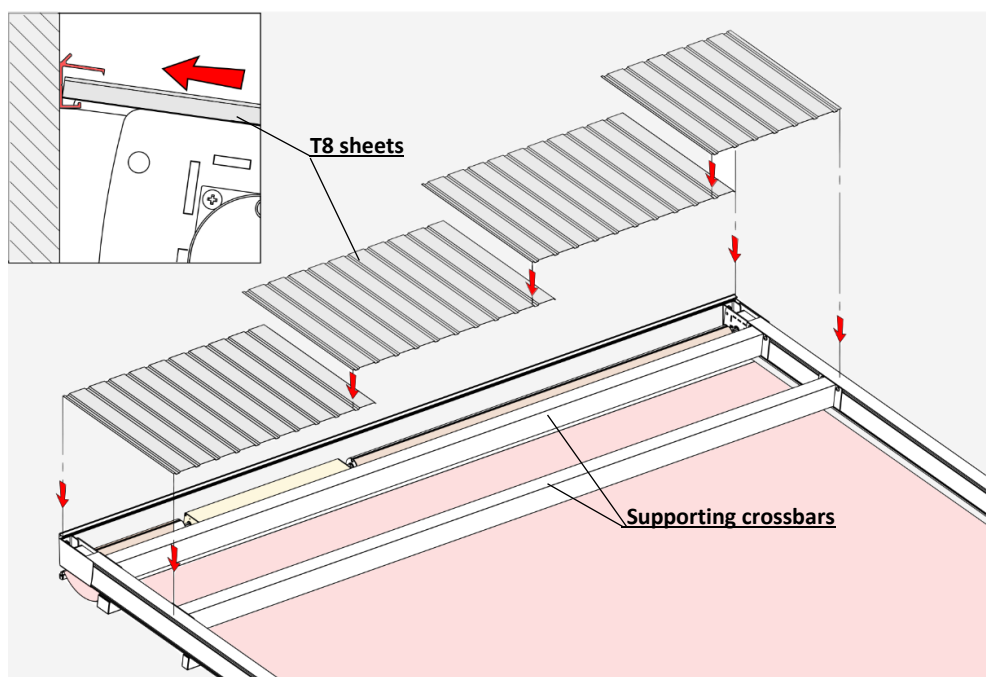
After installation of brackets insert the curtain into free groove inside of fixed crossbar and motor cover profile. After fabric insertion, cover the profiles with specific endcaps and hang motor cover profile onto brackets



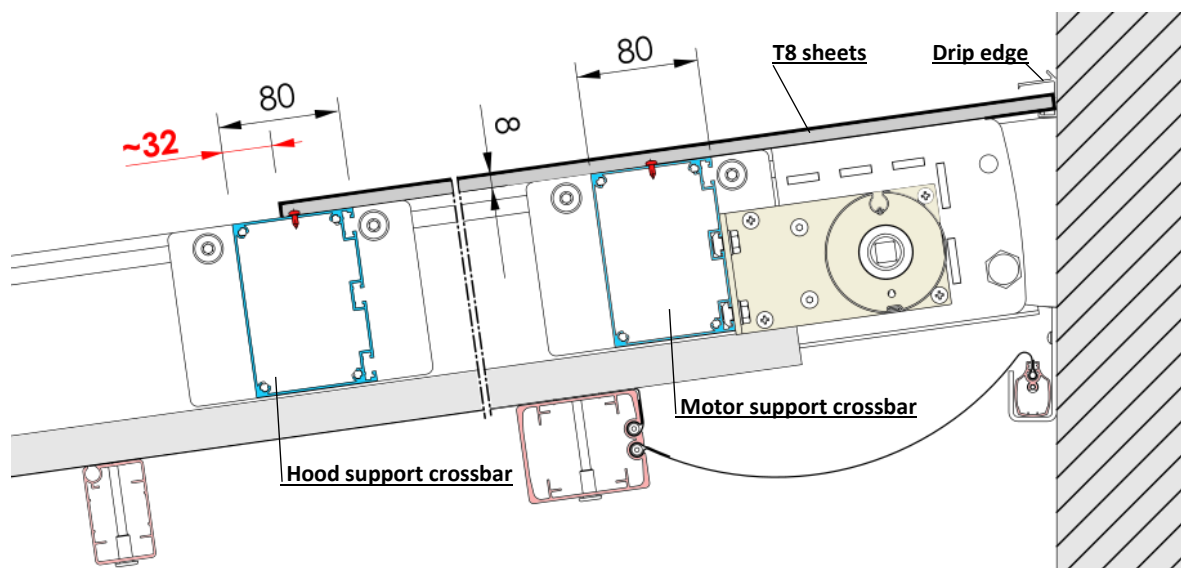
15. Pergola hood consists of trapezoidal T8 sheets and Z-shaped frame profiles. Bottom frame profile is supplied with maximum length of 5 m therefore for larger pergola widths it can consist of at least 2 profiles. Sheets of hood are assembled by overlapping embossing of consecutive sheets. Minimal recommended overlap is one trapezoidal embossing. Sheets are supplied in standard manufacturing width and the excess material can be removed with sheet metal shears.



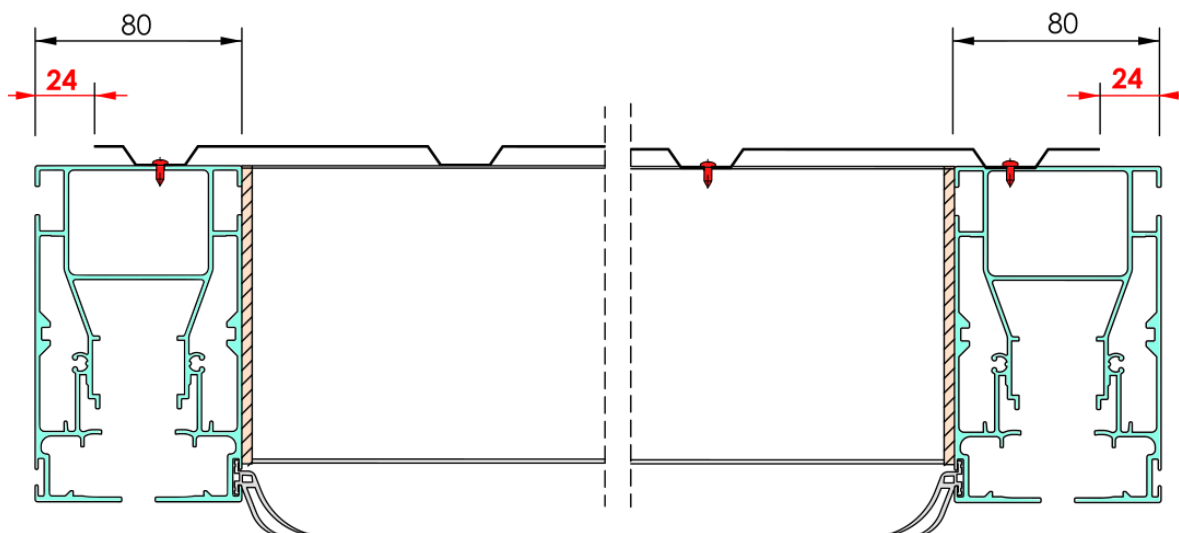
16. Assemble the T8 sheets onto the supporting crossbars. Make sure that T8 sheets are inserted into the drip edge profile.



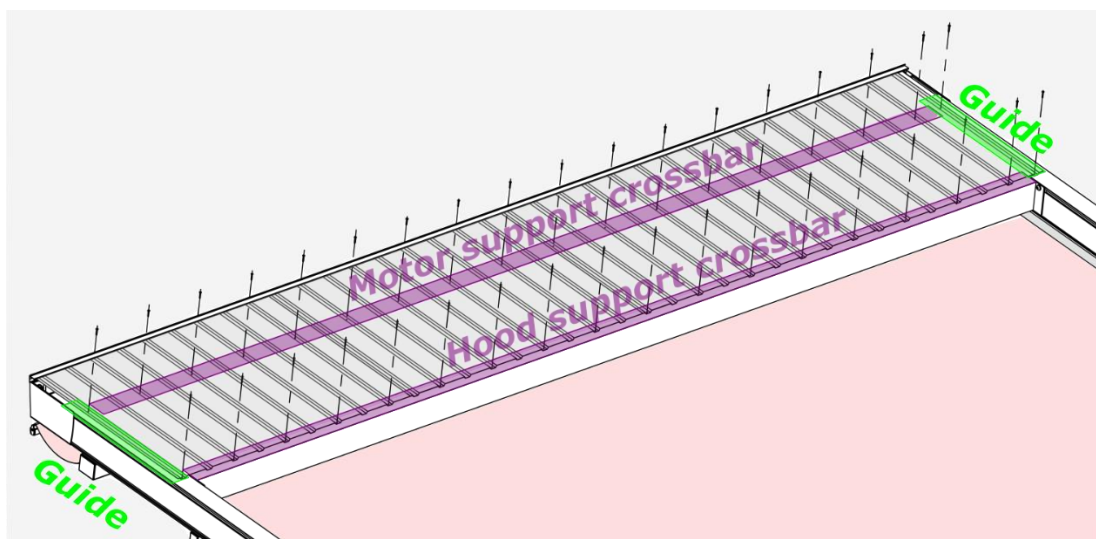
17. Position the sheets at the pergola structure. In regard to projection direction the T8 sheets must be inserted as much as possible into the drip edge profile and offsetted by circa 32 mm from the front of hood support crossbar. If needed, adjust the position of hood support crossbar to ensure the offset of 32 mm which is intended for installation of hood frame.



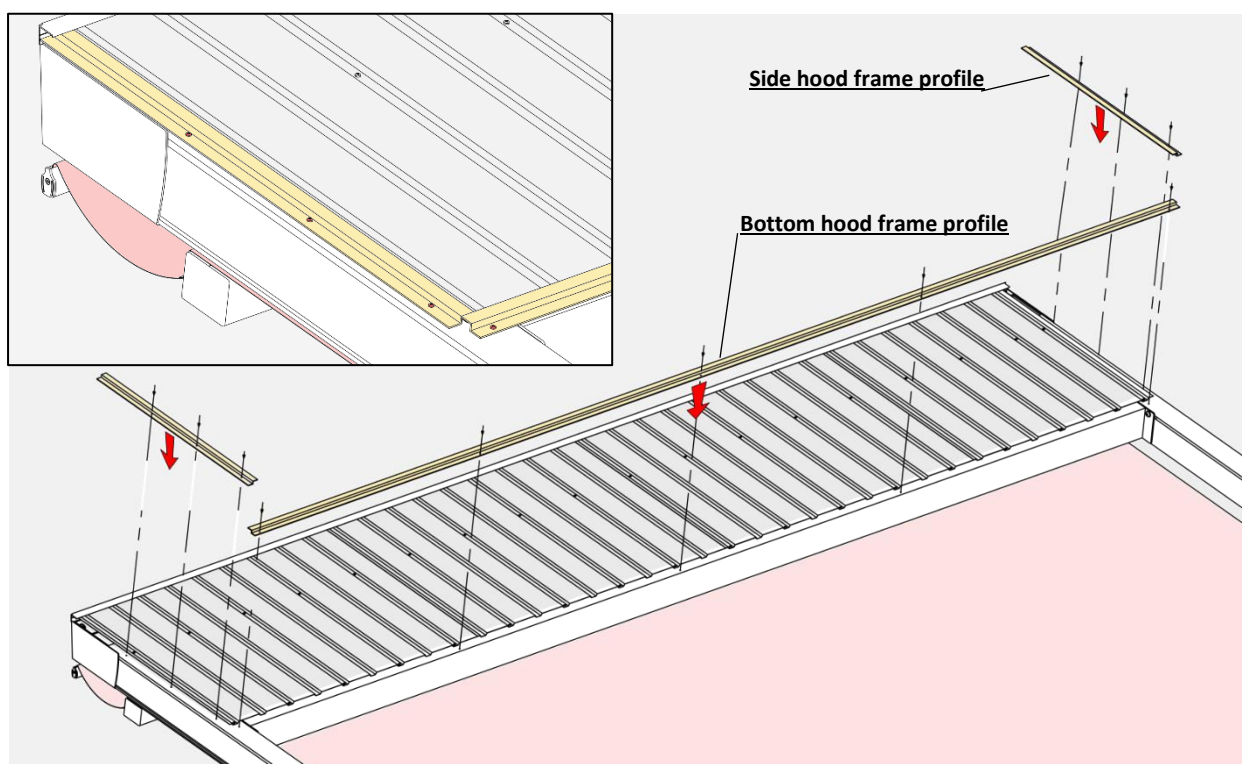
In regard to width direction the T8 sheets must be positioned with an offset of 24 mm measured from the outermost sides of guides. If necessary, use sheet metal shears to remove excess material.



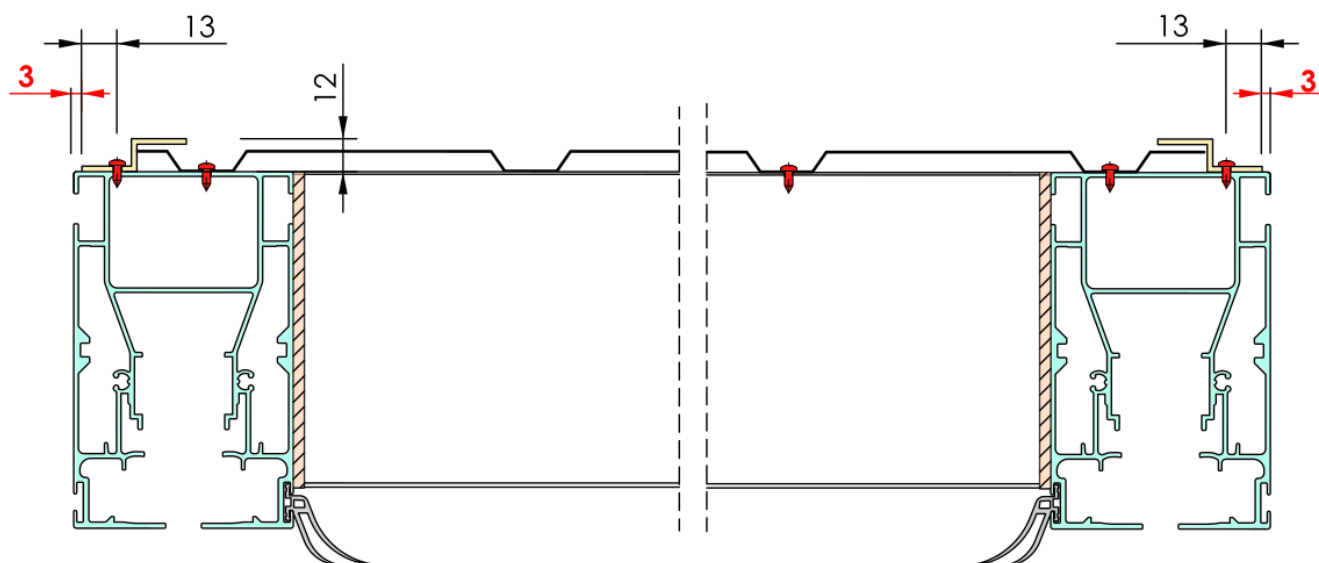
After finishing the positioning of the T8 sheets fix them to the underlying aluminum structure using self-tapping screws. Recommended spacing for screws is maximum of two trapezoidal embossings. Ensure that all sheets are fixed to both motor and hood supporting crossbars, and outermost sheets are fixed to the guides.



18. Finish the hood assembly by installing the hood frame profiles at its sides and bottom with self-tapping screws. Hood frame is assembled from Z-shaped aluminum profile which function is to cover sharp edges of T8 sheets and improve the esthetics of the assembly.



Begin by installing profiles at the sides of the hood. Profile should be offsetted by 3 mm from the outer guide surface. Top end of the profile should be inserted into drip edge profile.



Bottom hood frame profile should be aligned with the side frame. This should result in an offset of 5 mm from the front of the hood support profile. The 8-10 mm gap between bottom hood frame and the face of T8 sheet is intended for the lateral water outflow.

