

TECHNICAL AND OPERATIONAL DOCUMENTATION

INSTALLATION MANUAL,
OPERATING MANUAL AND INSTRUCTIONS FOR SAFE USE

(Translated from the original manual)

5. Steel and aluminium components and structural sets

5.14. Pergola SB400 PRO

PRODUCT NAME:

ALUMINIUM CONSTRUCTION
PERGOLA SB400 PRO

PRODUCT SAFETY MARKING:

The product meets the CE safety requirements.

THIS TECHNICAL AND OPERATIONAL DOCUMENTATION:

- Is valid from: 15 January 2024
- Is applicable to the above listed product versions.

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1 INTRODUCTION

1.1 SAFETY GUIDELINES FOR THE PRODUCT

The product has been manufactured in accordance with the latest technical knowledge in the field of construction and manufacturing and meets the safety requirements in accordance with the following standards.

No.	Subject	European Legal Basis	Polish Legal Basis
1	Execution of steel and aluminium structures Part 1: Requirements for conformity assessment of structural components	EN 1090-1:2009 +A1:2011	PN-EN 1090-1+A1:2012
2	Shutters and external venetian blinds. Performance requirements including safety.	EN 13659:2015	PN-EN 13659:2015
3	Construction Products Regulation (CPR)	Regulation No 305/2011 of the European Parliament and of the Council	Act of April 16, 2004 on building products (i.e. Journal of Laws 2021, item 1213) as amended
4	Essential requirements for the machinery	Directive 2006/42/EC of the European Parliament and the Council	Regulation of the Minister of Economy of October 21, 2008 on the essential requirements for machines (Journal of Laws 2008 No. 199, item 1228) as amended
5	Low Voltage Directive (LVD)	Directive 2014/35/EU of the European Parliament and the Council	Regulation of the Minister of Development of June 2, 2016 on the requirements for electrical equipment (Journal of Laws of 2016, item 806) Act of April 13, 2019 on the conformity assessment and market surveillance system (Journal of Laws of 2019, item 1854) as amended
6	Electromagnetic Compatibility Directive (EMC)	Directive 2014/30/EU of the European Parliament and the Council	Act of April 13, 2007 on electromagnetic compatibility (Journal of Laws of 2019, item 2388) Act of April 13, 2019 on the conformity assessment and market surveillance system (Journal of Laws of 2019, item 1854) as amended

Related documents: Declaration of performance for compliance with EN 1090-1:2009 +A1:2011,
Declaration of performance for compliance with EN 13659:2015 and installation instruction, user's manual for motors and control.

1.2 EXPLANATION OF SYMBOLS AND SIGNS

The following symbols (pictograms) indicate particularly important threats and safety information.

Pictogram	Pictogram meaning	Information
	INFORMATION	Prior to using the product, its operating manual should be read. Following the operating manual guarantees: - failure-free use of the product, - usage according to its intended use, - warranty coverage against product defects. Keep the operating manual for safety of people.
	INFORMATION	No harmful or dangerous consequences for people or facilities.

	NOTE!	A situation that could damage the product or require user's action. No threat for people.
	DANGER!	This symbol indicates all information concerning safety, which could pose a hazard to human health or life in case of non-observance. The health of life hazard. Risk: a hazard of serious personal injury or death. The hazardous operation which could cause injuries or damages to the product.
	WARNING!	Threat to human life or health due to electric shock.
	DANGER!	Hand crushing threat
	WARNING!	Head injury threat.
	ENVIRONMENT	Marking of electronic or electric equipment, which should be collected in the designated points.

1.3 TERMS AND DEFINITIONS

For the purposes of this documentation the following terms and definitions shall apply:

Product: PERGOLA SB400PRO

Pergola SB400PRO system is made of powder-coated aluminium profiles and stainless components. Roof framework made of movable aluminium blades. The angle of inclination of the blades can be changed. . Product design is offered in colour from RAL colour chart after confirmation of their availability by the manufacturer.

NOTE: the set includes: two lengthwise beams (drive and bearing), two cross beams (front and rear); gutters; posts, feet, hidden wall brackets, LED strips (depending on the configuration), a movable roof consisting of aluminium blades, a hidden rod with pins and motor built inside the beam.

Mobile roof:

It consists of blades attached to the cross guide rails with the possibility of adjusting the angle of the blades. Blades are moved by a control mechanism driven by an electric motor.

Blades: Part of the product, made of extruded aluminium profiles with an aesthetic appearance. The shape of the blade enables the drainage of rainwater from the roof surface within the design assumptions (see point 2.2), protection against sunlight and snow load up to a limited value (see point 2.2).

VERSIONS:

Free-standing – Self-supporting structure containing single mobile roof module supported on front and rear posts.

Modular - Self-supporting structure consisting of single stand-alone modules joined together using mechanical fasteners (screw connections).

Wall-mounted – Structure consisting of a mobile roof module supported partially on posts and fixed by a roof beam to a supporting wall (along the rear or side edge of the roof) using hidden pass-through wall fixings.

1.4 SUBJECT, INTENDED USE AND CONTENTS OF THE DOCUMENTATION

This documentation covers the products manufactured by **SELT Sp. z o.o.**

This documentation applies to all types of **PERGOLA SB400PRO**.



User's manual and instructions for safe use, with motor manual, should be handed over to the end user

IMPORTANT INSTRUCTION RELATED TO SAFETY
WARNING - IT IS VERY IMPORTANT TO PROCEED ACCORDING TO THIS MANUAL
TO ENSURE PEOPLE SAFETY.
KEEP THIS MANUAL

The documentation is part of product delivery and should be permanently kept nearby all the time.

This documentation contains:

- important guidelines for installation, use and maintenance of the product,
- important recommendations for storage and transport,
- guidelines, which observance would ensure operation of the product.

SELT Sp. z o.o. shall not be responsible for damages resulting from non-observance of the recommendations included in this documentation.

For further improvement of the product, SELT Sp. z o.o. reserves the right to introduce changes, which, while maintaining significant technical parameters, will be considered as appropriate for increasing the quality of product operation and safety of use.

Copyrights for this documentation remains with SELT Sp. z o.o. with its registered office in Opole. This documentation may not be used in any way, either in whole or in part, without the permission of SELT Sp. z o. o.

2 PRODUCT TECHNICAL INFORMATION

Technical specifications of the product are available after logging in on website www.selt.com

2.1 TECHNICAL PARAMETERS:

Pergola SB400PRO – free-standing

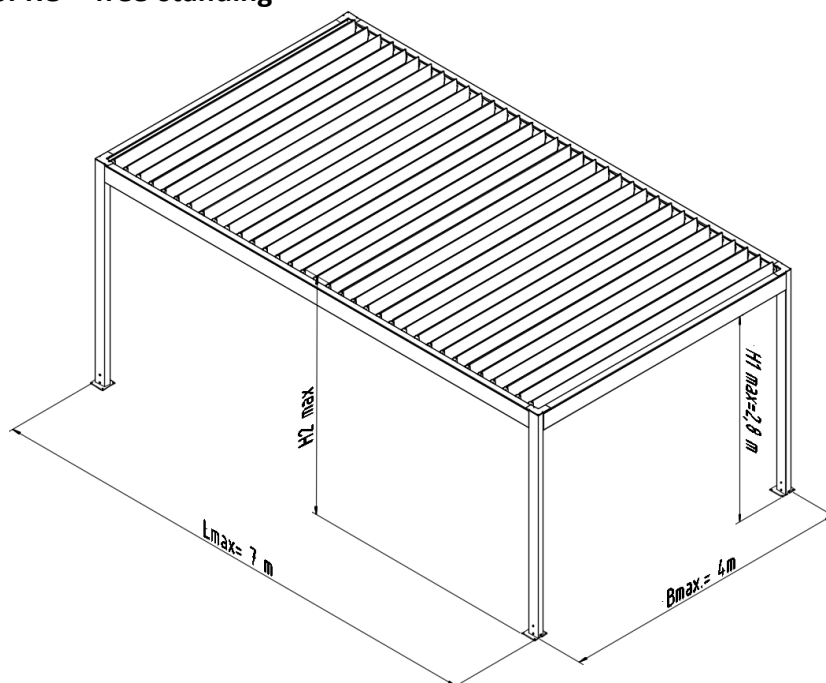


Fig. 1. Pergola SB400PRO free-standing – Overall dimensions: **B max** – maximum width, **L max** – maximum projection, **H max** – maximum frame height (3048 mm), **H1 max** – maximum height of the clearance, **H2 max** – maximum height of the blade angle change mechanism (~3095 mm).

Pergola SB400PRO – modular

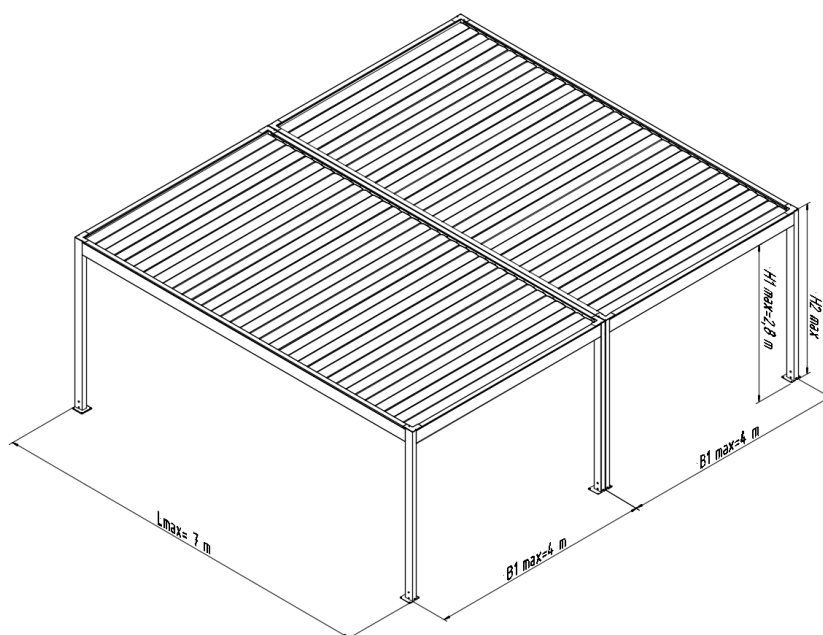


Fig. 2. Pergola SB400PRO modular – Overall dimensions: **B** – system width, **B1 max** – maximum width of a single module, **L max** – maximum projection, **H max** – maximum frame height (3048 mm), **H1 max** – height of the clearance, **H2 max** – maximum height of the blade angle change mechanism (~3095 mm).

System module dimensions:	Width*	Projection*	Height*	Height in the light*
Supporting structure	up to 4000 mm	up to 7000 mm	up to 3095 mm* (*-when the roof is open)	up to 2800mm
Axial spacing of roof blades	200 mm			
Difference in fastening of blade's ends (transverse slope – of blade axis)	Choice of: no slope or 15 mm difference (lowered on the beam without motor)			
Scope of use / exploitation				
Ambient temperature (min/max)	+5 do +40°C (opening / closing of the mobile roof)			
Humidity (max)	90% no steam condensation (opening / closing of the mobile roof)			
Drive (type of drives):	Linear drive. The drive can be started using an external radio control receiver.			
Connection to electrical installation	approximately 4,9 m power cord (after installation the cord should be properly secured).			
Electric drive - motor with the following parameters:				
Model of the motor	SOMFY Pergola Tilt 0 ⁰			
- supply voltage	24 V DC			
- power	35 W			
- power consumption	2,1 A			
- protection level	IP 66			
- continuous work time	up to 6 min (depending on the ambient temperature)			
- extension, axial force	max 300 mm, extension force 1500N			
- extension speed	approx. 6-8,5 mm/s			
- operating temperature (min/max)	-10°C to +60°C			
LED power supply data:				
LED lighting	Optional – LED gutters, LED points in blades. Power supply 24V DC, 150W, max. 6.25A, IP66 fixed in pergola's post			
Installation:				
Intended use	External			
Site installation	To the supporting base or to the wall (pass-through with hidden reinforcement inserts in the beam)			

*- tolerances of external dimensions are +/-10 mm.

Detailed data for parameters of the individual motors are available on the websites of motor manufacturers and on the website:

www.selt.com → OUR OFFER → ELECTRIC EQUIPMENT

2.2 PRODUCT SPECIFICATION

Products manufactured by SELT Sp. z o. o. have appropriate technical and operational parameters.

List of product types:

- Free-standing,
- Modular,
- Installed outside the building, started by electromechanical drive connected with the control system,

They have the following features:

- Roof (blades) electrically opened, designed to protect against the sun and rain (according to the parameters of the product and its location).
- Permissible outdoor use of the product in accordance with the product parameters.
- The location, finish, installation method and applied seals, as well as intense weather conditions, including heavy rain and/or snowfall, have a significant impact on the level of rain protection provided by the product.
- The movable roof blades allow to regulate the access of sunlight.
- Hidden motor and drive mechanism.
- The upper chamber of the beams closed with a revision enables the distribution of cables.
- The application and use of the product should take place within the limits set by the sixth wind class (according to EN 13659) and/or maximum snow load.
- It is forbidden to use the product during snowfall, in case of icing or when snow or ice remains on the roof, and outside the temperature range given in the manual since it may result in product damage or even personal injury or death.
- They do not release any toxic substances during operation.
- Noise emission by the product with the electro-mechanical drive (connected with the working movement of the mobile components, generated by the electric motor during operation) is not considered as a significant threat and is a matter of comfort.
- The motor have an IP66 protection degree.
- Product and drive design allows safe stop of the blades in any position in the working range.
- Rotational motion of the blades can be started by a manual switch or by remote control.
- The difference of angle of mobile roof's blades closing may differ by 2° and it is a natural feature of the system due to production and process tolerances of the components.
- Covers of movable components have been designed and executed in a way ensuring safety for the operating personnel provided that they are correctly operated.
- Water vapour may condense on the product, especially its lower part, and water may drip or run down.
- Water resistance, aesthetic water drainage through an integrated gutter and poles with drains.
- Two variants possible: two lengthwise gutters without drainage or four gutters around the perimeter connected by overflows in the corners, also without drainage.
- Optional LED lighting in LED gutters and/or blades.
- Maximum drainage efficiency – rain intensity up to 0,04 l/s/m² with a maximum duration of 5,3 min (depending on the configuration of the drainage holes). The intensity is given with no slope of the blades axis. In the case of a difference in inclination, the efficiency is reduced and, with prolonged rainfall, it may cause the gutter to overflow from the side of the lower blade attachment.
- It is possible to be used for protection against snowfall (up to 50 kg/m²)- as an even layer of the same height.
- For pergolas will full cover of the walls, with the length of the blades over 3 m, there may be light reflections and gaps at the junction of adjacent blades, resulting from technological standards.



It is unacceptable to use ordinary silicone to seal the product. Use only Crystal Fix or equivalent sealant with the parameters specified in point 4.4

3 TRANSPORT AND STORAGE OF THE PRODUCT

3.1 COMPLETENESS AND QUALITY CONDITION OF THE DELIVERY

Goods produced by SELT Sp. z o. o. are in accordance with their production technology. In the event of any reservations as to the product or damage to the product packaging, the reservations or comments should be reported to the driver /

warehouseman / assembly team and marked on the WZ document under pain of losing claims in this respect, and a protocol describing these reservations or comments should be drawn up with the driver's participation.

Upon receipt, first of all, mechanical damage, scratches, cracks, etc., as well as quantitative non-conformities should be reported, otherwise they will be considered non-existent. Hidden defects must be reported in accordance with the terms of the guarantee or warranty.

3.2 GENERAL CONDITIONS FOR TRANSPORT AND STORAGE OF THE PRODUCT

List:

- the product is factory packed in cardboard packaging protecting against damage during storage, during transport and during relocation to the final installation location,
- products for transport/storage should be set in accordance with the arrows indicated on the product packaging,
- do not stack the products in more than two (2) layers because the packing material can be crushed, what in turn may lead to permanent damage to the product,
- do not load the product packaging with other objects,
- products places on means of transport should be protected against relocation and damage during the transport (e.g. with distance pieces, protecting belts etc.),
- during transport the product should be protected against rain or snow,
- storage locations should be dry, well-ventilated and protected against harmful impact of the weather (sun, rain, etc.),
- if product weight exceeds 25 kg its relocation to the final installation location should be carried out by at least two persons (depending on the weight of the ordered product).

3.3 OBLIGATORY DESCRIPTIONS TO BE PLACED ON THE PRODUCT PACKAGING



Prior to installation and use of the product please read carefully the operation and maintenance manual available at the following website: <https://www.selt.com/dte-en>

4 PRODUCT INSTALLATION

This chapter contains general requirements concerning the product installation.

Correct assembly is a necessary condition for smooth operation of the product.

SELT Sp. o.o. recommends using only professional assembly crews, which guarantee the Purchaser that the conducted installation will be correct.

4.1 GENERAL REQUIREMENTS FOR SAFE INSTALLATION

- it is necessary to observe general rules of good building practice,
- it is necessary to comply with applicable Occupational Health and Safety regulations concerning in particular those applying to the safety of operation of electrical equipment and work on heights,
- product should be installed in a mechanical way, foams, adhesives or similar materials should be used in accordance with the recommendations of their manufacturers, taking into account the specificity of the product,
- base, to which the product brackets will be fixed, should be a reliable structure with appropriate parameters,
- before starting the assembly, remove all unnecessary objects from the assembly area, including electric wires (check the course of the installation in the area of the fixing places to exclude their damage), and also mark the place of assembly and apply appropriate measures to protect people.

Information table regarding the substrate to which the substructure is to be installed

The product should be mounted to a substrate with appropriate parameters or a substructure with appropriate parameters.

The above-mentioned requirements for the substrate and substructure require the assessment of a specialist and burden the investor and the contractor.

A different assembly method than suggested by SELT is possible, provided that the requirements of building knowledge and safety are observed. In any case, this requires specialist knowledge and is done at the risk of the investor or contractor.

It is recommended to make arrangements with an authorized designer.

4.2 REQUIREMENTS FOR SAFE INSTALLATION OF THE PRODUCT AT HEIGHTS



Product installation, due to a necessity of execution of works on heights, is classified to the particularly hazardous works because it causes high risk of occurrence of threats for human health and safety - in particular in case of fall from heights.

Obligation to ensure preparation of occupational health and safety plan during installation is the responsibility of the person performing the installation (hereinafter referred to as Installer) or ordering such works (hereinafter referred to as the Investor).

Installer/Investor should define the detailed health and safety requirements when performing work at heights, and especially ensure:

- direct supervision of execution by person appointed for this purpose (e.g. site manager, foreman),
- proper protection equipment, in particular equipment protecting against fall from heights,
- detailed guidance for employees working at heights.

Works performed at heights above 2m, requiring the use of personal protection equipment against falling from heights, should be carried out by at least two persons.

Works at height should be organised and performed in a manner that does not force an employee to lean beyond the handrail of railings or outline of the device on which he/she stands. Do not stand on the elements of the product.

The investor/installer is obliged to ensure access to location, where the works on heights are executed, only for authorized persons and persons, who were properly instructed. The Investor/installer should inform about the works carried out at heights and the necessary safety measures to be used during these works by persons staying or likely to stay in the area where such works are carried out or in the vicinity of this area.

4.3 PREPARATION FOR INSTALLATION

- unpack the product and check if there are all components necessary for assembling,
- prior to installation you should check whether the substrate has sufficient load capacity allowing safe assembly and operation.



Note: Purchase and selection of the screws, pins and bolts connecting the system with the facility structure should be done by installer or investor.

4.4 GENERAL GUIDELINES FOR PRODUCT INSTALLATION

- Pergola SB400PRO is an open external terrace covering. The equipment under the pergola must be intended for outdoor use.
- Four people are required for the safe installation of the support structure.
- Incorrect assembly or errors during assembly may have serious consequences during product operation.
- Before starting the installation, check whether the installation space is free of obstacles, including people and things, and ensure that the installation site and the adjacent area are properly marked and secured,
- Anchoring components intended for fixing the product to the wall or floor are not enclosed because they should be individually selected by the fitter depending on the material to which they are to be installed (it is recommended to make arrangements with an authorized designer),
- Walls or floor should be load-bearing and adapted for transferring of forces from product anchoring,
- SELT shall not be responsible for damages caused by use of too weak anchoring components or fixing in the floor with too small load bearing,
- The product should be protected against dirt (e.g. bricklaying mortar, caulking foam, silicone), which may cause its damage,
- If it is necessary to use polyurethane foam, silicone or other agents, it is absolutely necessary to follow the manufacturer's instructions on the packaging.



The incorrect assembly may cause hazardous situations for the user.

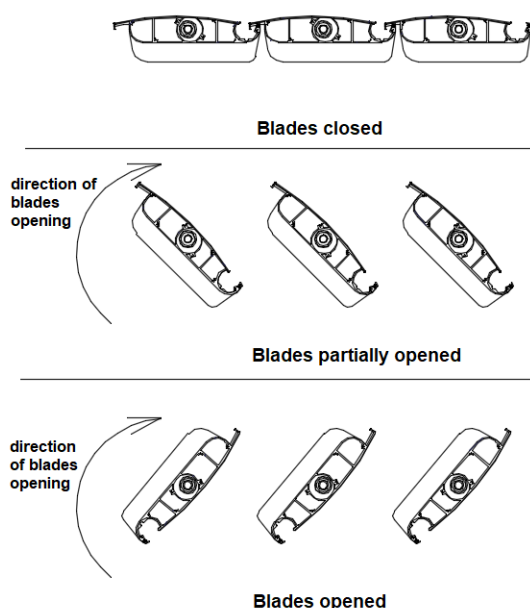


Fig. 3. Standard direction of blades opening for Pergola SB400PRO

The drawings are for illustrative purposes only and do not reflect all product features, e.g. related to the use of gaskets.

For sealing you should use only the following sealant: FIX ALL CRYSTAL by Soudal company or a product with equivalent parameters.

Technical data (according to the manufacturer of the sealant):



- consistency	Paste	Elongation at break	350% (ISO 37)
- skin forming time	ca. 4 min. (at 23°C/ 50% RH)	Allowed distortion	+/-20% (ISO 11600)
- curing speed	ca. 4 mm/24h (at 23°C/ 50% RH)	Thermal resistance (after curing)	from -40 °C to +90 °C
- relative density	1,05 g/cm ³	Elasticity modulus	0,6 N/mm ² (ISO 37)

- hardness (Shore A)	38 +/- 5	Max. tension	1,8 N/mm ² (ISO 37)
Elastic recovery	>75% (ISO 7389)	Application temperature	from +5 °C to +35 °C

4.5 INSTALLATION TOOLS

Installation instructions, operation and maintenance manual and instructions for safe use are available at www.selt.com after logging in.

List:

- drill bits for metal and concrete,
- hammer drill,
- ladder / scaffolding, crane, bucket truck, loader crane, hydraulic crane,
- screwdriver,
- measure,
- hammer,
- pencil/marker pen,
- spirit level,
- flat wrenches,
- wrench spanners (Allen keys),
- rope for protections / hoisting / removal of components,
- torque wrench.

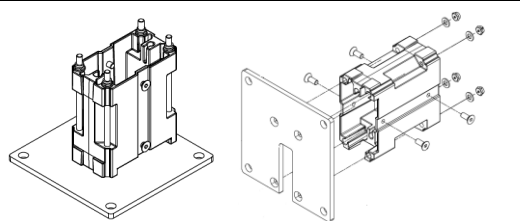
In addition, persons who assemble the product must be provided with appropriate personal protective equipment (such as protective clothing, gloves, helmet, protective glasses and other according to individual conditions, such as height protection).



The motor together with the motor's bracket and the drive mechanism is factory-tightened in the drive beam chamber.



Pergola feet as well as intermediate post attachment and feet have cast connectors that have from the metal sheet side factory-made outflow holes on wide and narrow side of the connector.



4.6 INSTALLATION

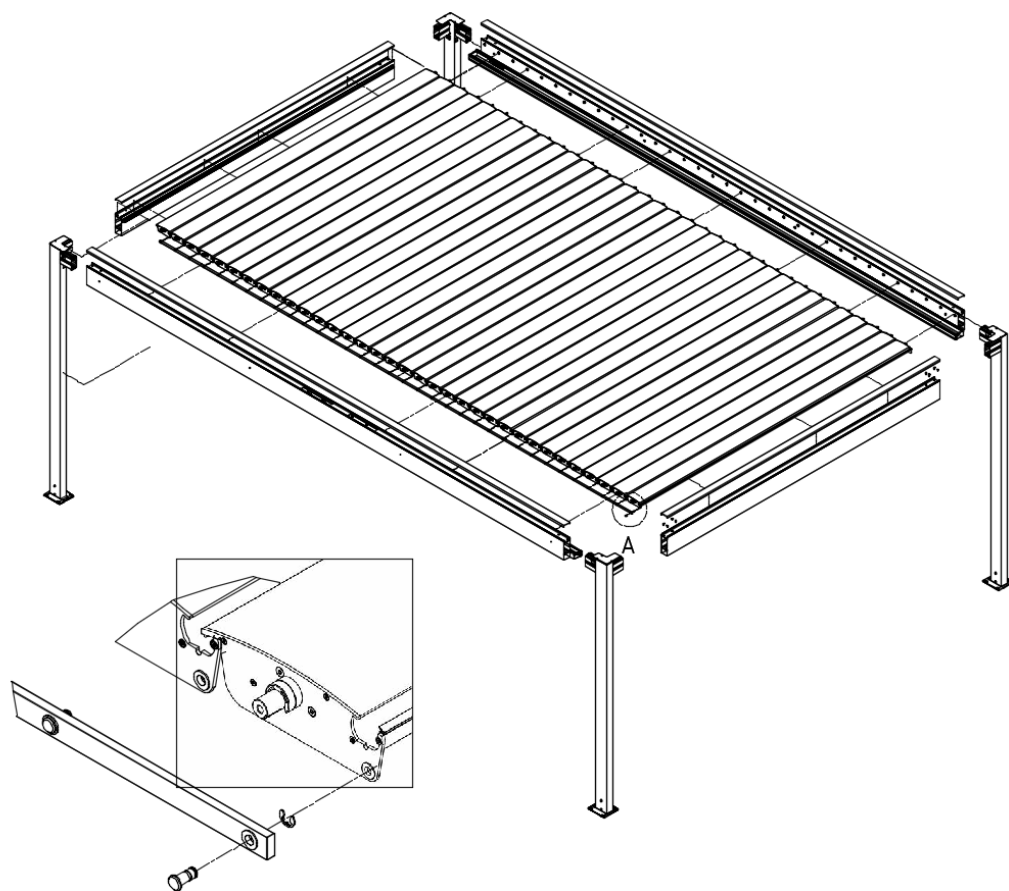


Fig. 4a View of the assembly of elements of the free-standing Pergola SB400PRO

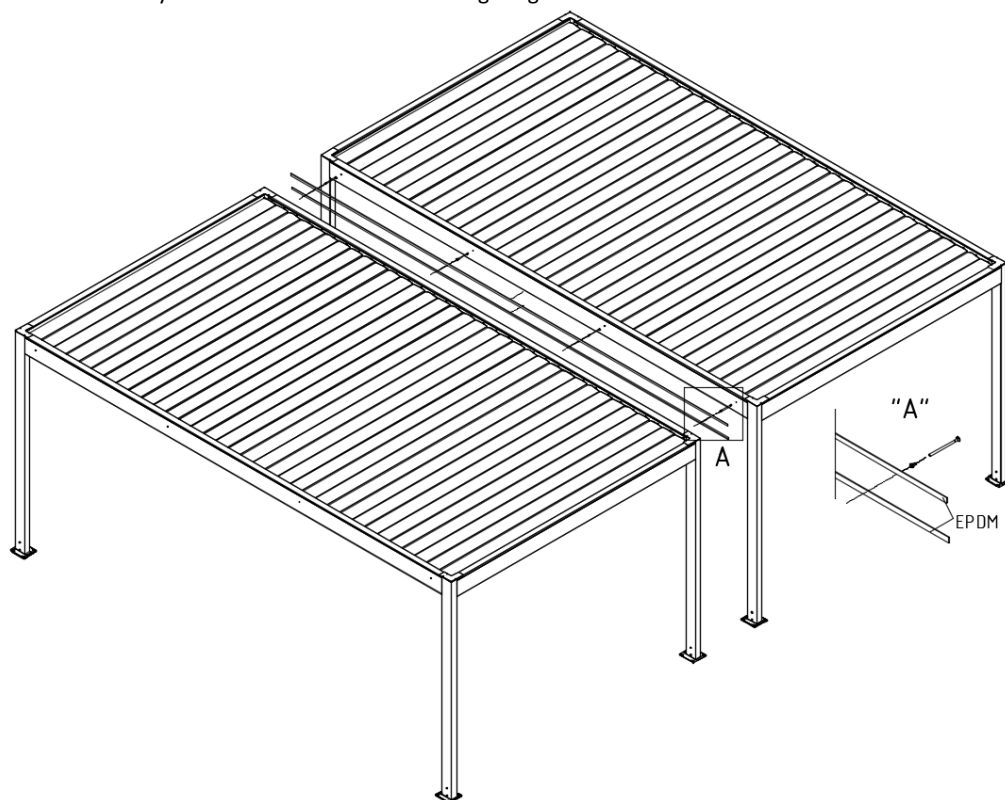


Fig. 4b. View of the assembly of Pergola SB400PRO modules

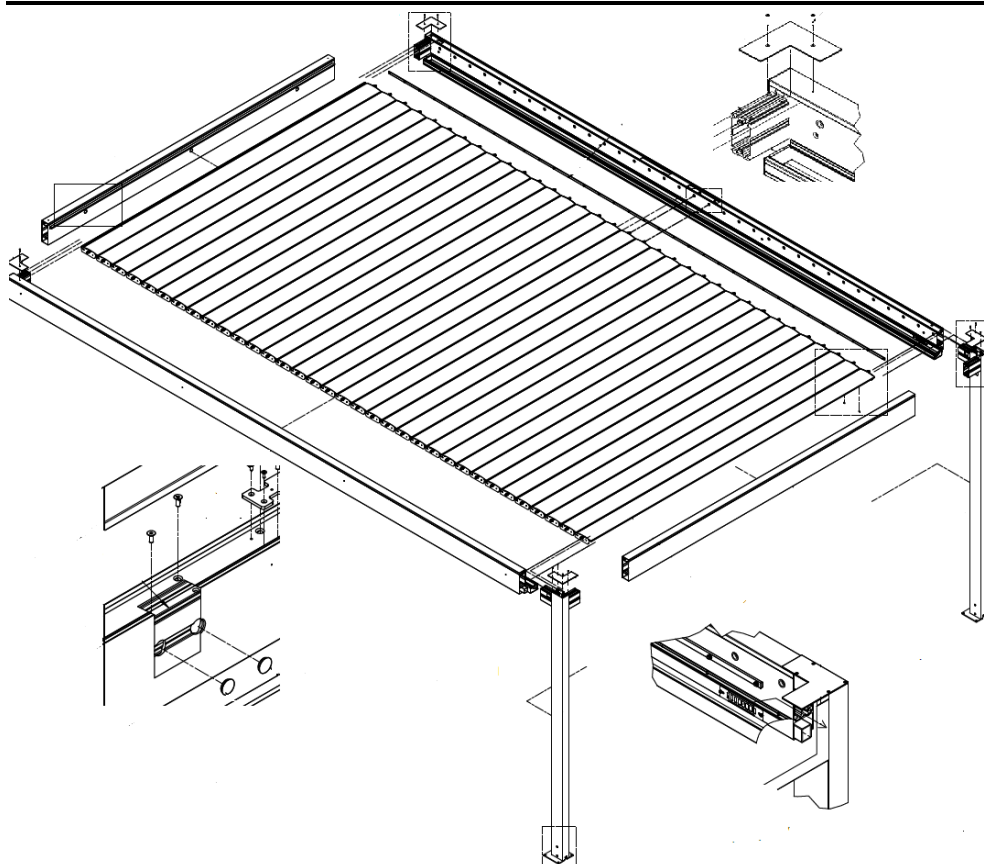


Fig. 5a. View of the assembly of Pergola SB400PRO- wall-mounted (transverse).

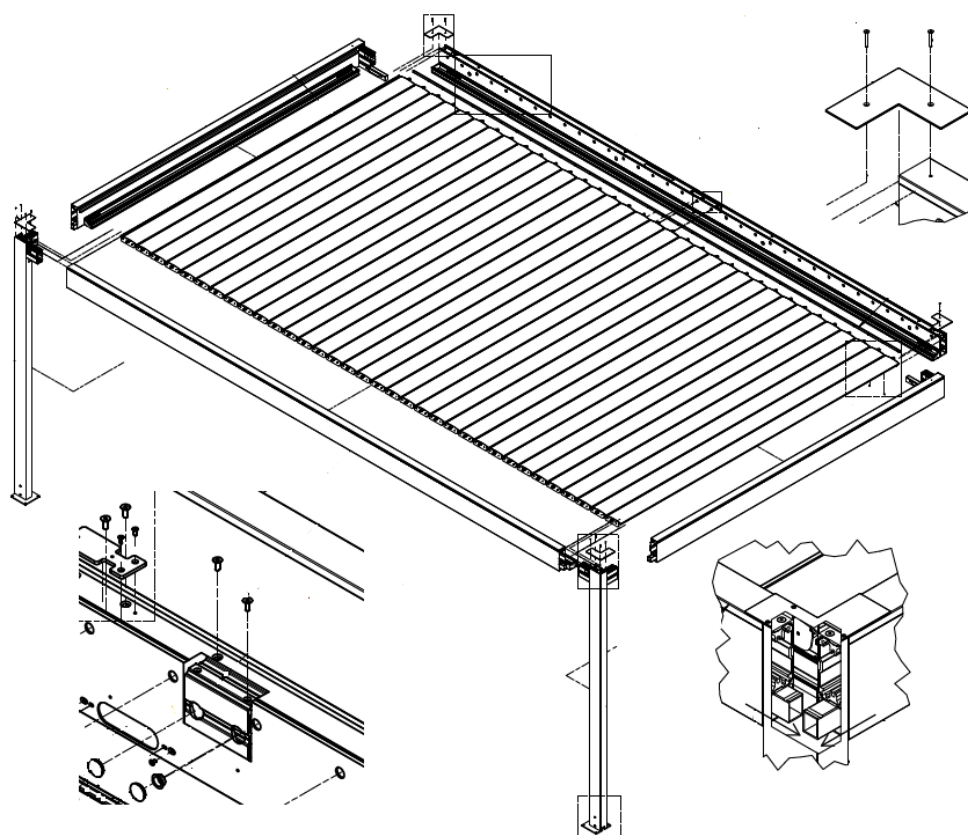


Fig. 5b. View of the assembly of Pergola SB400PRO- wall-mounted (lengthwise).

Note:


- Before proceeding with the assembly, it is necessary to verify the visual condition of the packaging of the elements delivered for assembly, the visual condition of the elements and their completeness. For damages arising after the delivery (transfer of risk) SELT Sp. z o.o. is not responsible.
- The elements are delivered in a package and a stretch cover for protection during assembly.
- Accessories (feet, bolts, screws, small circlips, clip plastic rings, small and large slip rings, blade pins, silicone, assembly instructions) are packed in cardboard boxes.

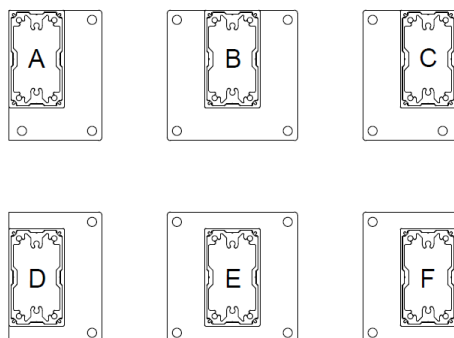


Fig. 6. Marking of the types of feet (view from above) of Pergola SB400PRO.

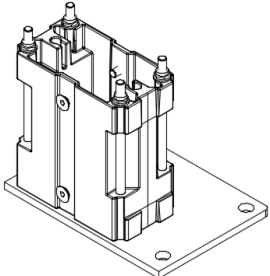
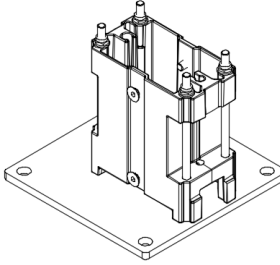
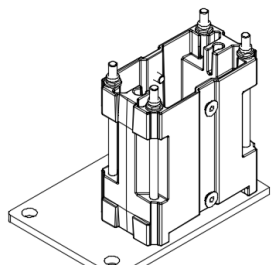
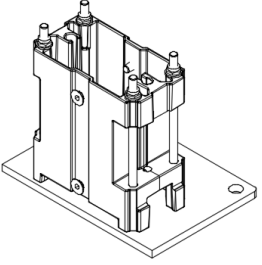
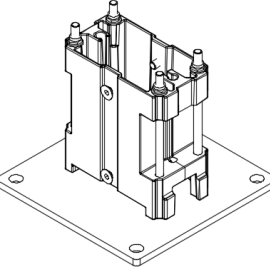
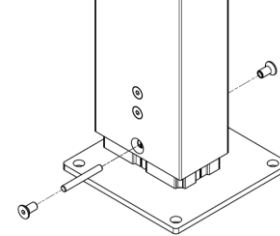
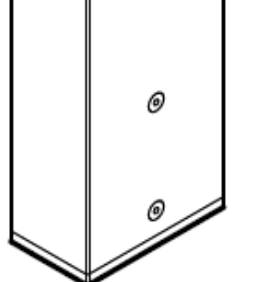
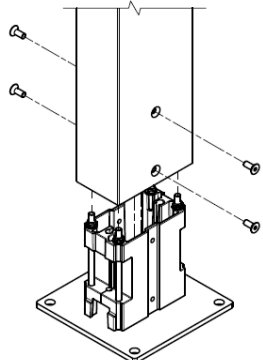
			
Foot A	Foot B	Foot C	Foot D/F
			
Foot E	Adjustable foot	Aligned foot	

Fig. 7. Type of foot for Pergola SB400PRO.

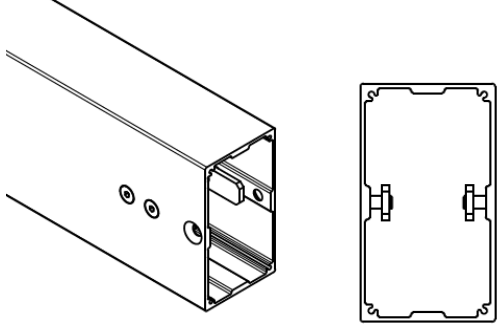
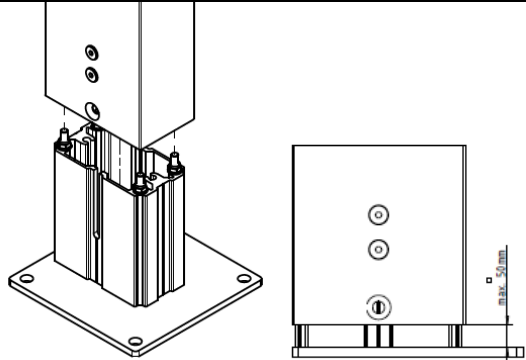
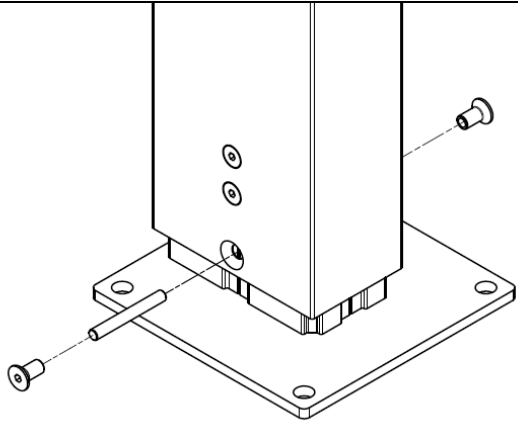
Note:


- Prior anchoring you should check installation correctness of the support structure by checking the diagonals between the posts and whole support structure and correct structure setting if necessary.
- Assembled supporting structure should be permanently fixed to the substrate in destination location by anchoring the feet, using anchors ensuring stable fixing. Anchoring should be selected by the licensed designer every time. We recommend using screws/anchors of 12 mm diameter for fixing the footing to the substrate.

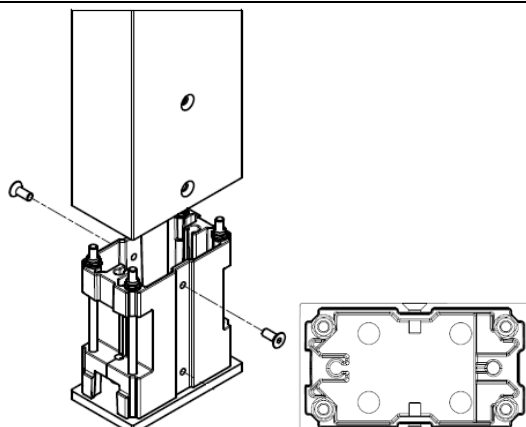
4.6.1 INSTALLATION OF STANDARD FEET

	1. Install all feet to the appropriate post types. Screw on both sides with conical screws with M8x20 Allen socket. 2. For feet with outflow set up the cutouts in the bottom of the sheet and the mouse hole accordingly for the drainage of water in the post and the foot. Figure 8
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4.6.2 INSTALLATION OF ADJUSTABLE FEET

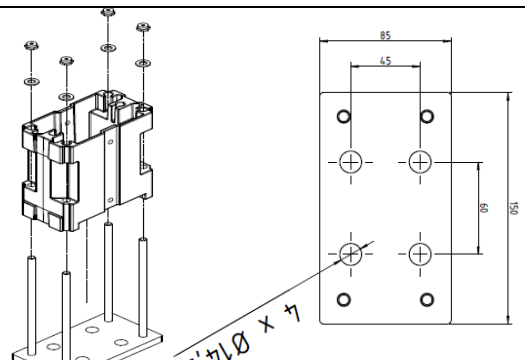
	1. Assembly is possible only for posts with adapted drilling (with an additional third hole at the bottom edge of the post)- fig. 9 left. Place all feet in the appropriate post types (according to the order form). 2. On the wider side of the post insert M8x20 conical screws with an Allen socket from the outside into the two holes located above. From the inside of the post they should be screwed into a common pressure stainless steel flat bar. Leave room for insertion of the foot into the bone (fig. 9). Repeat this action on the opposite wall of the post. Figure 9
	3. Slide the post profile with the pressure flat bars onto the bone so that the fastening screws enter the slots in the bone and the pressure flat bars slide from the inside of the bone (fig. 10). The extension adjustment range allows you to obtain a gap between the bottom of the post profile and the top of the sheet in the range of 0 to 50 mm. 4. Slide the post onto the bone while respecting the allowable range of the gap and tighten with torque of 17 Nm. Figure 10
	5. We recommend that the final stabilization of the foot extension be performed after the frame is fully assembled and the verticality of the posts, the levelling of the beams and the compliance of the diagonals are checked. For the location next to the wall, make the target drilling before moving it to the wall. 6. After determining the selected extension and tightening the M8 screws, and completing the assembly of the frame, drill through the bone with a fi 10.5 drill through the bottom hole of the post. 7. Fit M8 sleeve nuts with M8 threaded stud on both sides and tighten with a torque of 17 Nm (fig. 11). Figure 11

4.6.3 INSTALLATION OF ALIGNED FEET



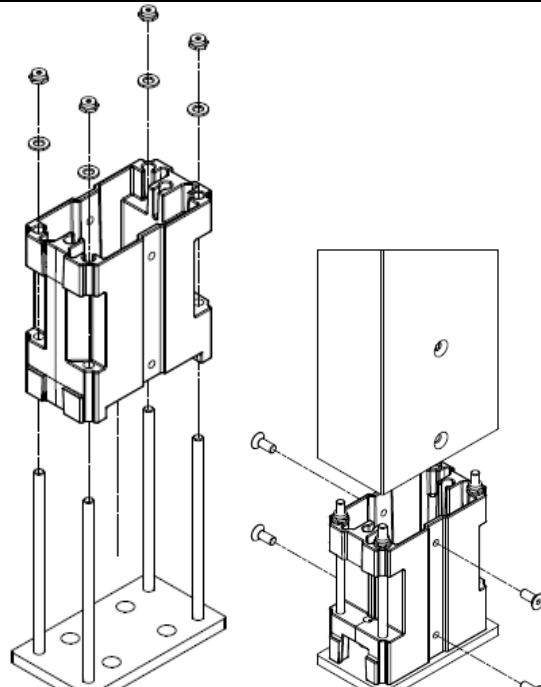
1. Insert the feet from the bottom of the posts (fig. 12) and temporarily tighten the feet from the sides with 1 screw on each side - see standard foot (point 4.6.1.). They are used to temporarily protect the bottom edges of the posts during the assembly of the frame.
2. Make the installation of the entire pergola frame. After determining the final position (checking the diagonals), the final anchorage of the feet should be carried out.
3. Trace the contours of the aligned feet on the ground.
4. The frame should be moved beyond the traced edges of the feet.
5. Unscrew the screws from point 1 and remove the bone together with the plate. **Trace the outline of the foot bone on the plate.**

Figure 12



6. Unscrew the bone from the foot plate (fig.13-left).
7. Apply the base plate in the outline. Mark out two holes fi 14 diagonally (from the available 4 holes). Rectangular layout – axially 45x60 mm (fig. 13 - right).
8. Remove the plate. Drill the substrate in the axes of the marked holes and embed M12 chemical anchors.

Figure 13



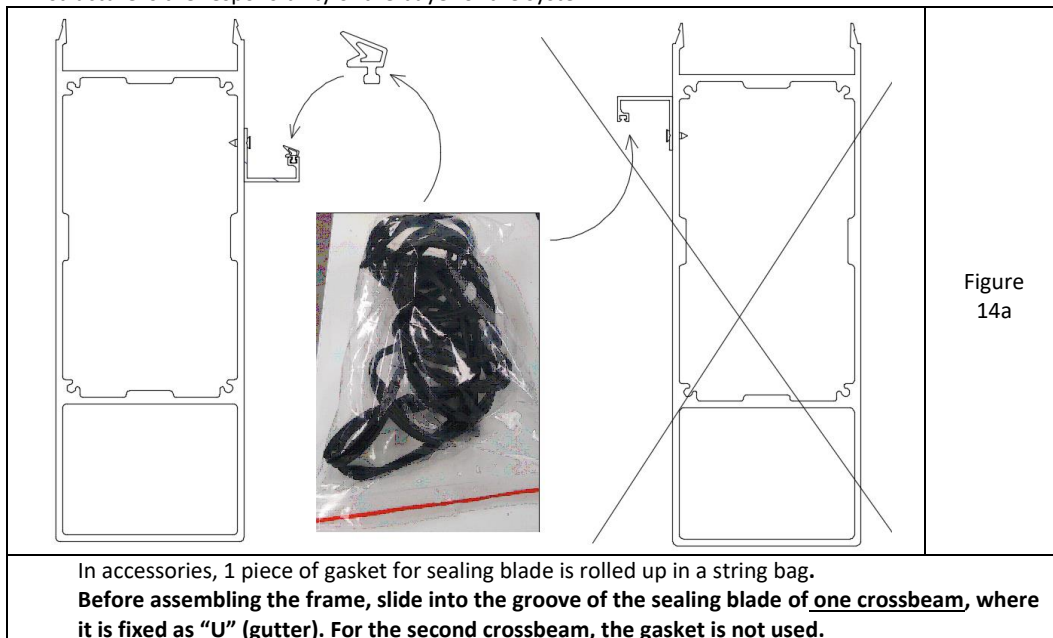
9. Screw the bone back together (insert the hexagonal heads of the screws from the bottom of the plate into the bean holes). Place the bone with the side cutouts to the plate and position it according to the outline on the top of the plate.
10. Place the foot on the tied anchors and tighten them with the anchor nuts .
11. Repeat the step for all feet. Place the entire frame (posts) over the bones of the anchored feet.
12. Screw the bones with the profile of the posts on both sides with conical screws with an Allen socket M8x20 (fig. 14).

Figure 14

4.6.4 INSTALLATION OF THE FRAME

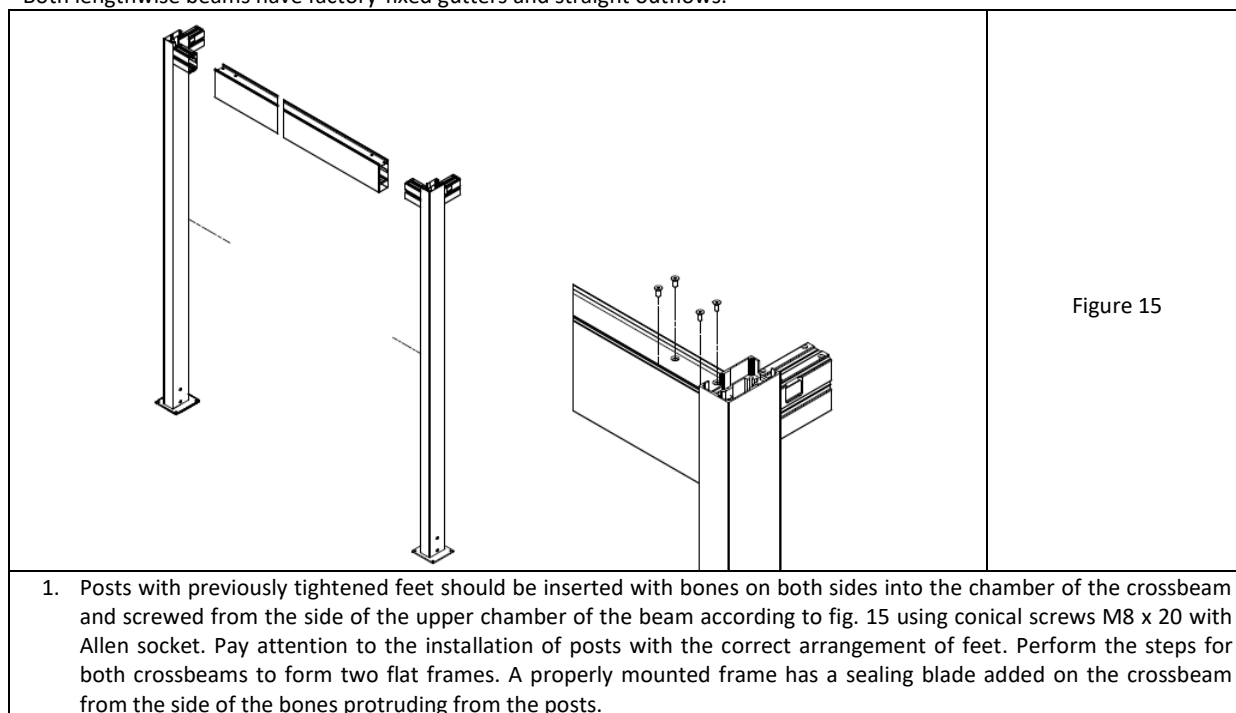


NOTE: Elements of the load-bearing structure during assembly should be secured against tipping over or falling onto the persons performing the assembly. The assembled supporting structure (frame) should be placed in the right place and **anchored to the ground with a suitable fastening product**. Suggested size of the anchors is M12. The purchase and selection of elements for anchoring the structure is the responsibility of the buyer of the system.



4.6.4.1 FREE-STANDING VERSION – 2 GUTTERS

Both lengthwise beams have factory-fixed gutters and straight outflows.



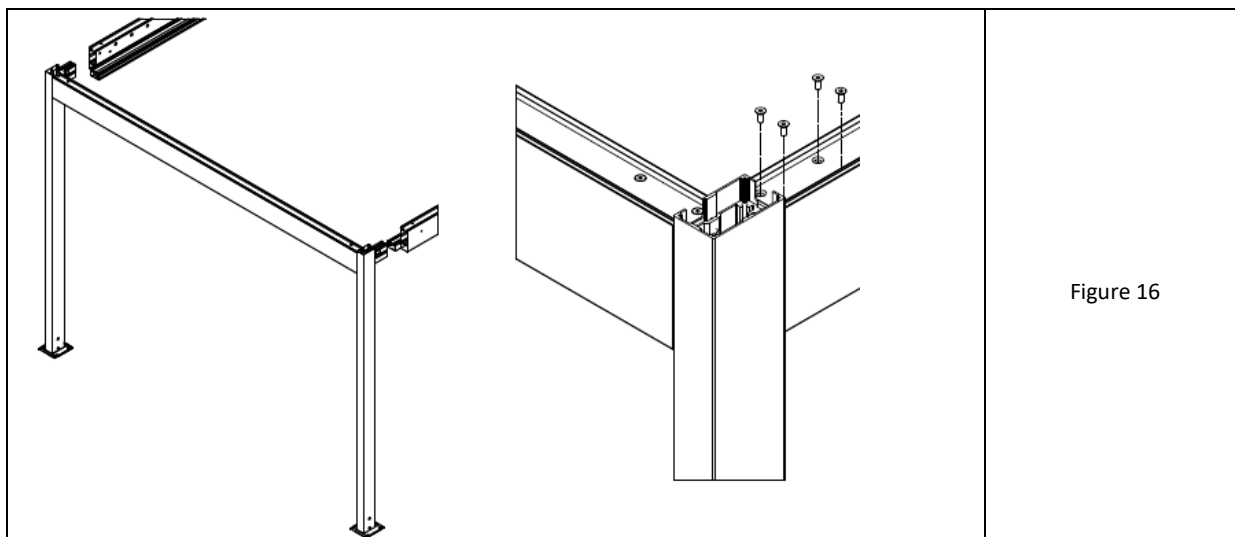


Figure 16

2. Set the cross-frame vertically on a load-bearing surface and insert the lengthwise beams one by one into its protruding bones. Provide safe and stable support for the cross-frame and the free end of the mounted lengthwise beam.
3. Screw the end of the lengthwise beam inserted into the bone of the cross-frame from the side of the upper chamber of the beam using 4 conical screws M8 x 20 with an Allen socket, according to fig. 16.
4. Repeat this step for the other lengthwise beam. Ensure that the free ends of both lengthwise beams are securely supported.

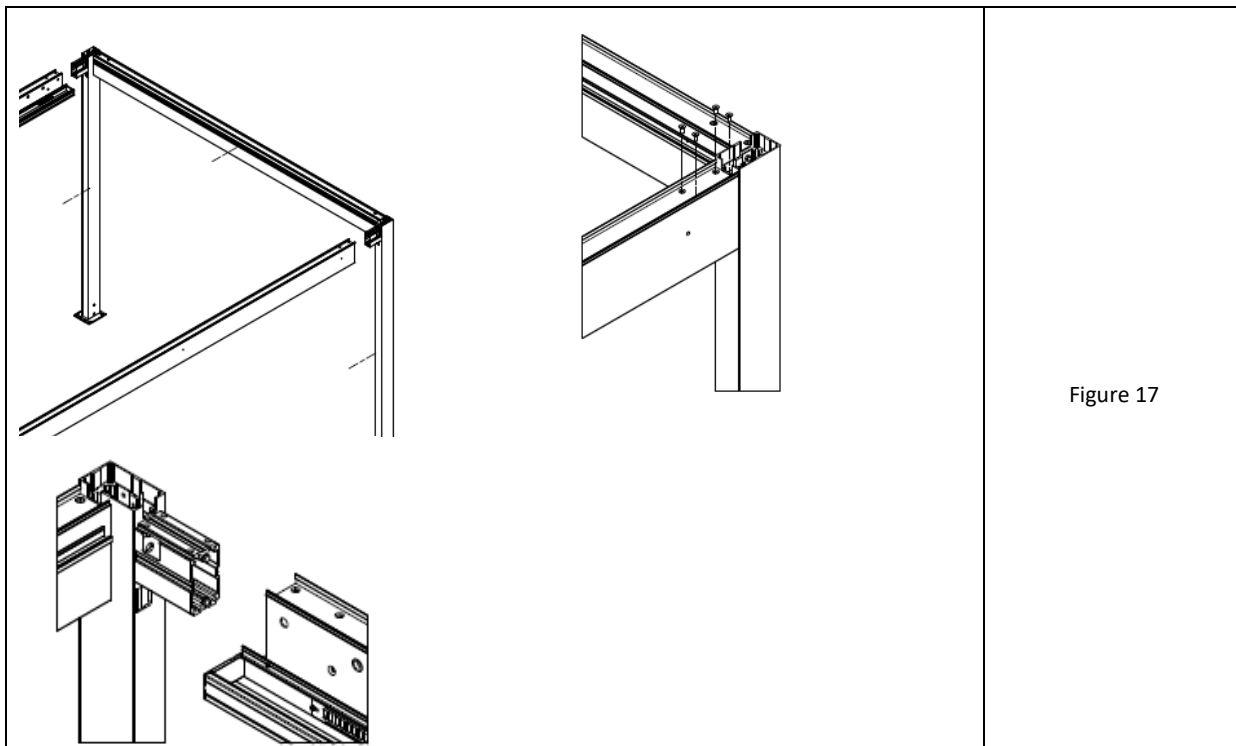
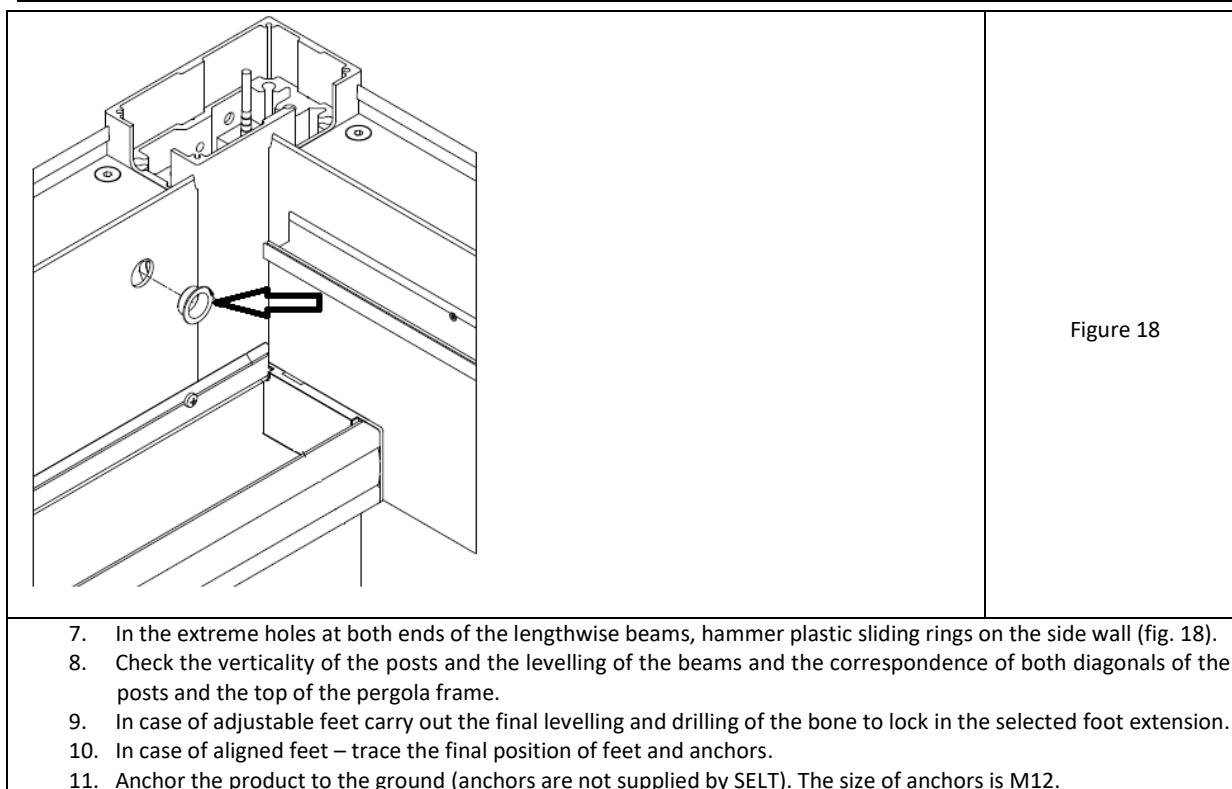


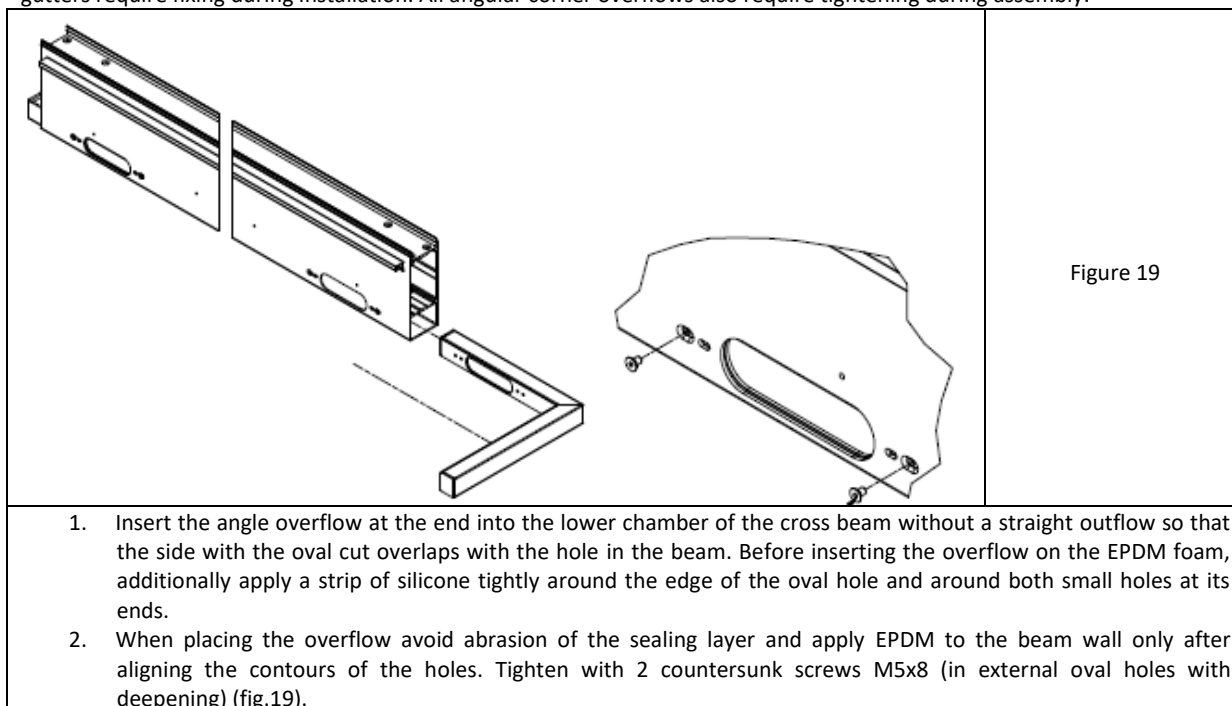
Figure 17

5. The second cross-frame must be inserted simultaneously into the free ends of both lengthwise beams.
 6. Screw the ends of the lengthwise beams inserted into the bones of the cross-frame from the side of the upper chamber of the beam using M8 x 20 conical screws with an Allen socket, according to fig. 17.
- Note:** posts with the outflow have a square hole under the bone (fig. 17 bottom). When the lengthwise beams are being inserted, rectangular drain profiles protrude from the beams at its ends. When embedding, they should be carefully inserted into the post profile.



4.6.4.2 FREE-STANDING VERSION – 4 GUTTERS

The lengthwise beam without angle overflows has a factory-fixed gutter and straight outflows. In case of other beams, the gutters require fixing during installation. All angular corner overflows also require tightening during assembly.



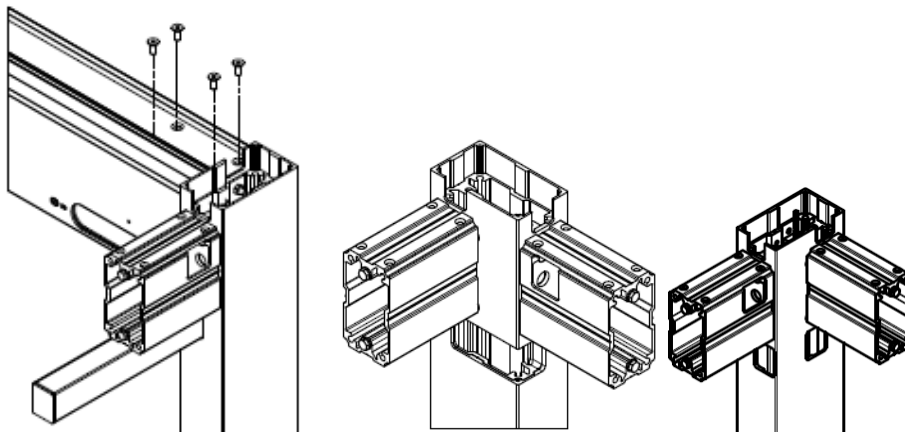


Figure 20

3. At both ends, slide the posts to the cross beam (with previously mounted feet) and screw from the side of the upper chamber of the beam using 4 countersunk screws M8 x 20 with an Allen socket (fig. 20-left).
4. On the side of the angular overflows the posts have corner cuts in both walls under the bone (fig. 20-middle), and in case of straight overflows the posts have separate rectangular windows (fig. 20-right).
5. Install both cross frames.
6. Insert the angle overflow into the chamber of the lengthwise beam from the side without the outflow post so that the side with the oval cut overlaps with the hole in the beam. Before sliding the profile with EPDM foam, additionally apply a strip of silicone tightly around the edge of the oval hole and the small M5 holes at its ends.
7. When inserting the profile avoid abrasion of the sealing layer and apply EPDM to the beam wall only after aligning the contours of the holes. Tighten with 2 countersunk screws M5x8 (in external oval holes with deepening) (fig.19).

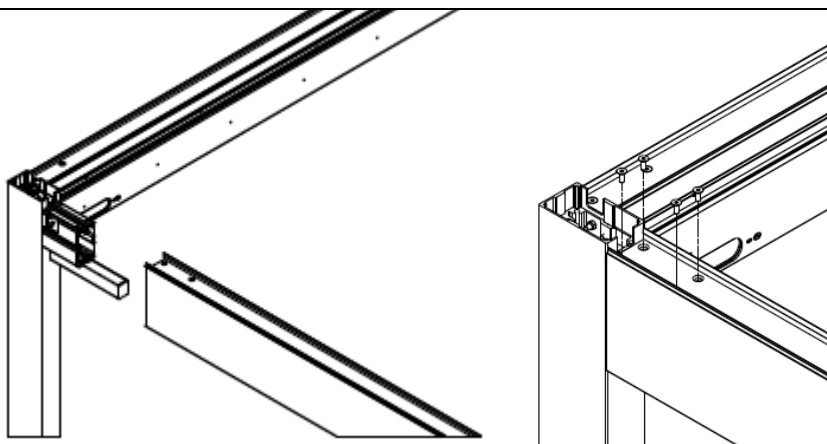


Figure 21

8. Slide the lengthwise beam on the bones of the cross frame posts from the side of the angular overflow (fig. 21-left).
9. Before sliding the overflow with EPDM foam, additionally apply a strip of silicone tightly around the edge of the oval hole and around both small holes at its ends.
10. When inserting the profile avoid abrasion of the sealing layer and apply EPDM to the beam wall only after aligning the contours of the holes. Tighten the overflow with 2 countersunk screws M5x8 (in external oval holes with deepening) (fig. 21-right).
11. Fasten the lengthwise beam to the post's bone from the side of the upper chamber using four countersunk screws M8 x 20 with Allen sockets (fig. 21-right).
12. Secure the stability of the frame and support the free end of the mounted lengthwise beam.
13. At the other end of the frame install the second lengthwise beam with a straight outflow. Fix with screws - p. 11.
14. Support the free end of the other lengthwise beam.

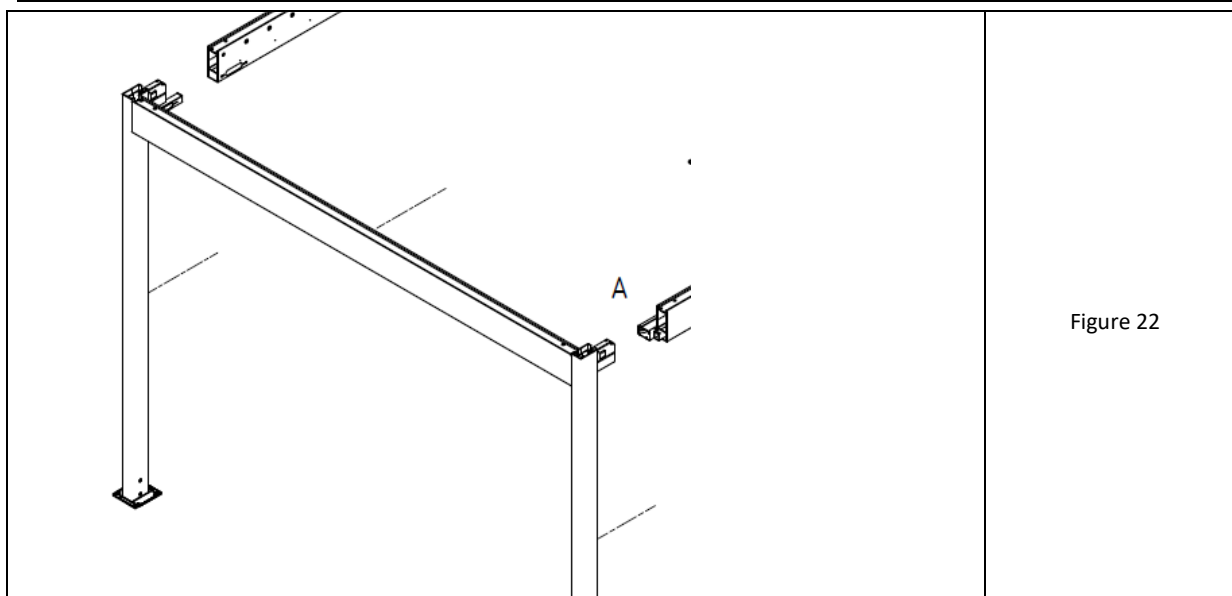


Figure 22

15. Slide the second cross frame over the free ends of the lengthwise beams (fig. 22).
16. Before sliding the overflow with EPDM foam, additionally apply a strip of silicone tightly around the edge of the oval hole and around both small holes at its ends.
17. When inserting the profile avoid abrasion of the sealing layer and apply EPDM to the beam wall only after aligning the contours of the holes. Tighten the overflow with 2 countersunk screws M5x8 (in external oval holes with deepening) (fig. 19-right).
18. At the same time, insert the second lengthwise beam by inserting the straight outflow into the window under the bone in the cross frame.
19. Fasten both lengthwise beams to the post's bone of the second cross frame from the side of the upper chamber of the beam, each using four countersunk screws M8 x 20 with Allen sockets.

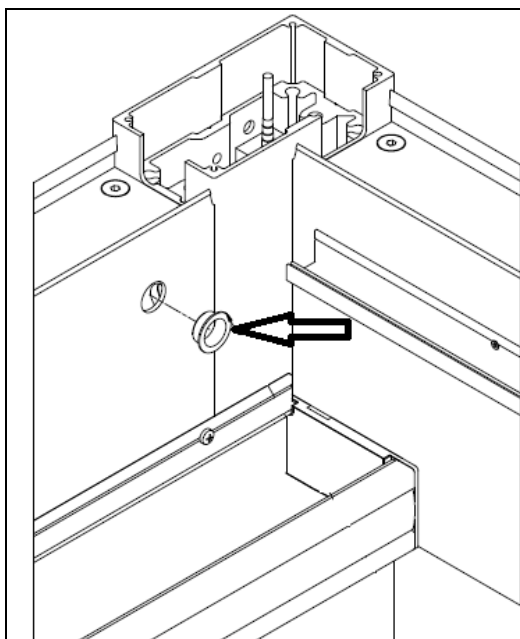
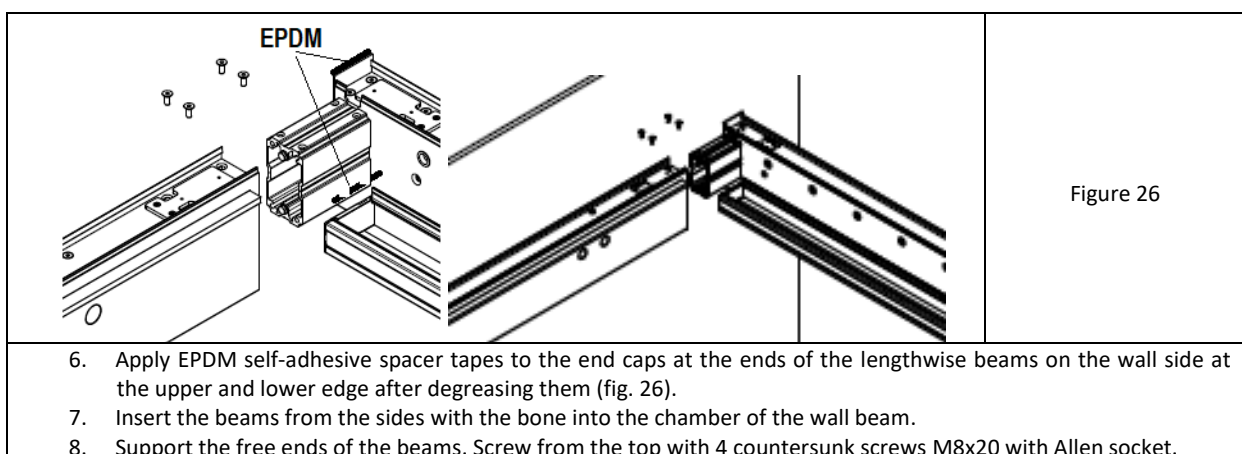
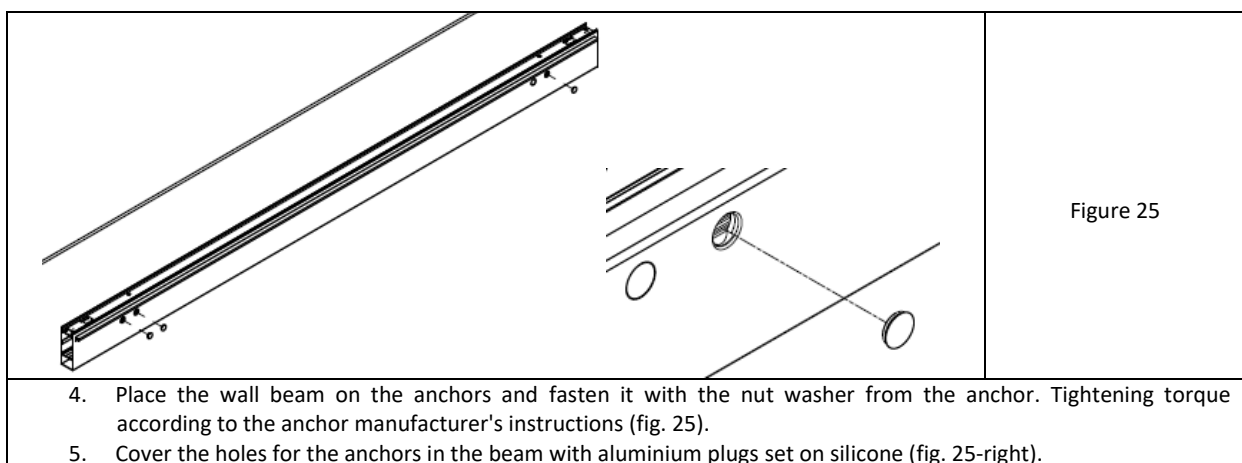
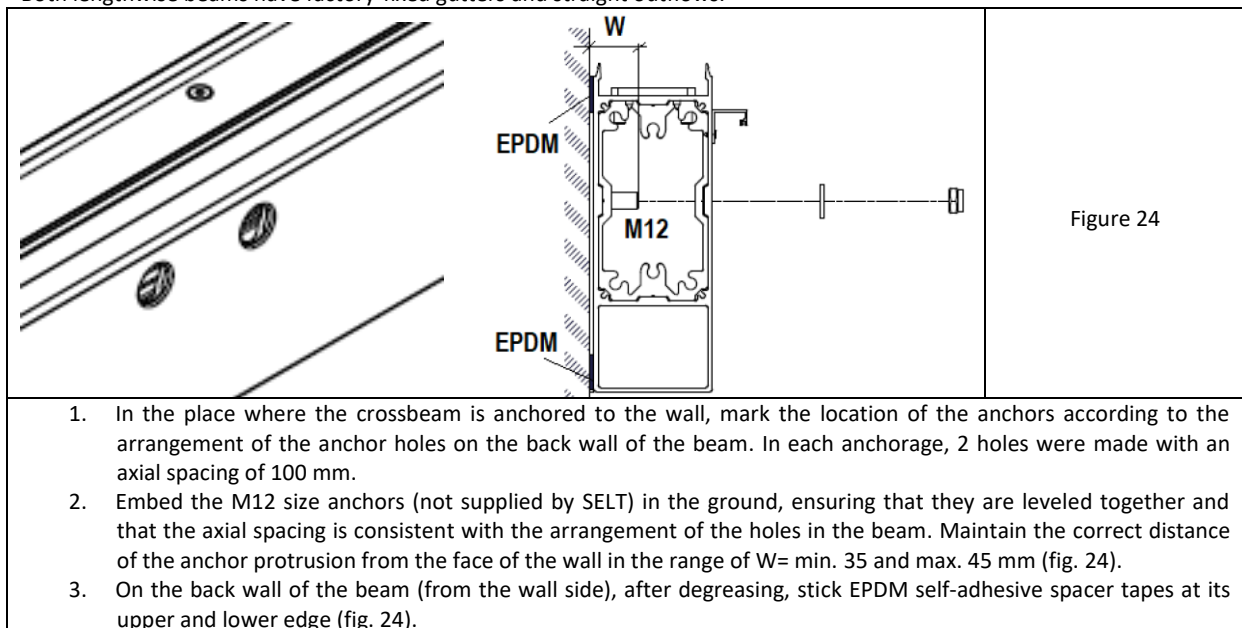


Figure 23

20. In the extreme holes at both ends of the lengthwise beams, hammer plastic sliding rings on the side wall (fig. 23).
21. Check the verticality of the posts and the leveling of the beams and the correspondence of both diagonals of the posts and the top of the pergola frame.
22. In case of adjustable feet carry out the final levelling and drilling of the bone to lock in the selected foot extension
23. In case of aligned feet – trace the final position of feet and anchors.
24. Anchor the product to the ground (anchors are not supplied by SELT). The size of anchors is M12.

4.6.4.3 WALL-MOUNTED VERSION – 2 GUTTERS

Both lengthwise beams have factory-fixed gutters and straight outflows.



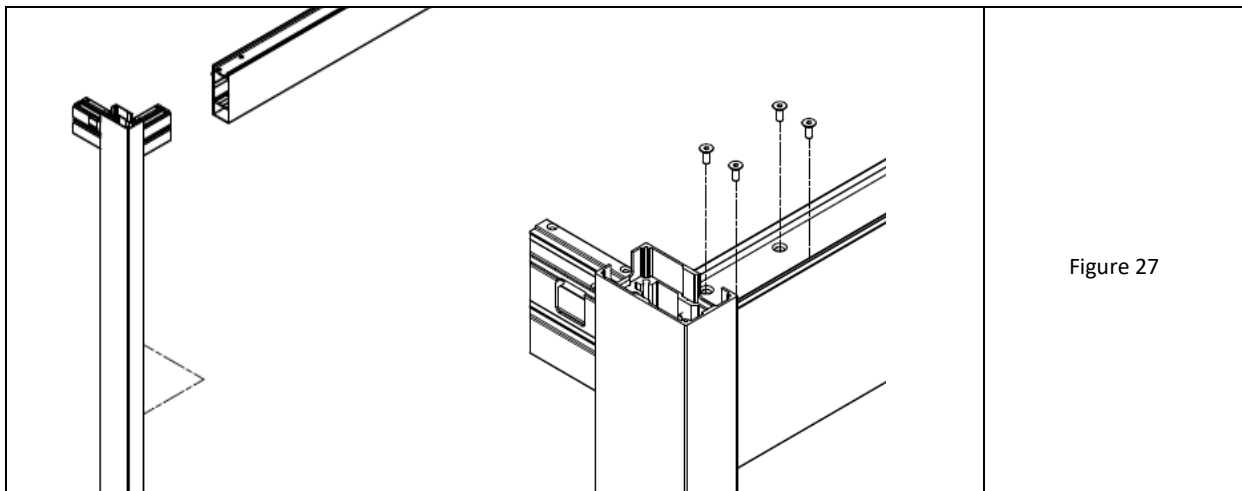


Figure 27

9. Integrate the cross frame by sliding it horizontally into the cross beam (without wall drillings) at both ends of the previously merged posts (fig. 27). Pay attention to the correct setting of outflows and foot types.
10. Screw the corners from the top with screws as in point 8.

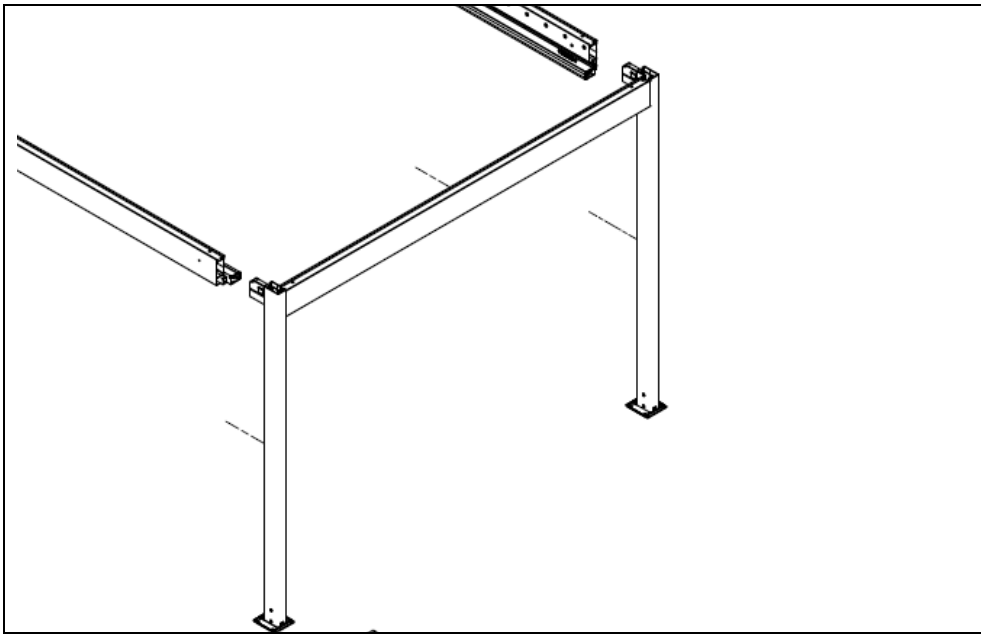


Figure 28

11. Slide the integrated gate with the bones into the chambers at the ends of the supported lengthwise beams (fig. 28). Pay attention to the insertion of the straight outflow pipe from the lengthwise beams into the cut-out window in the post below the bone.

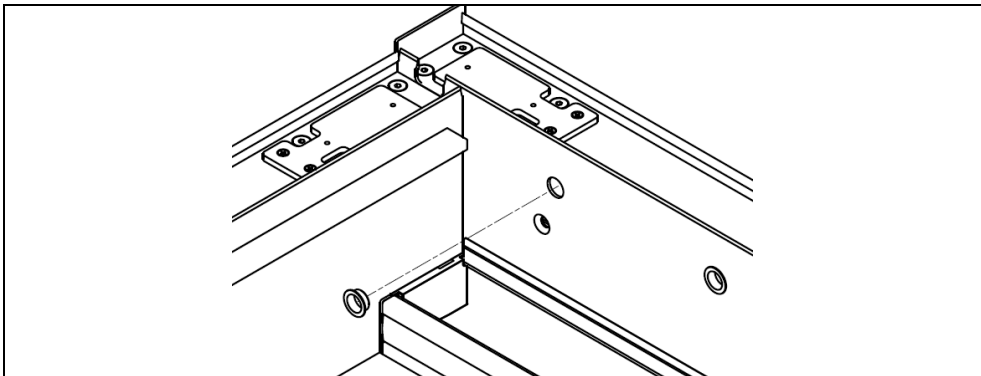


Figure 29

12. Stud the outer slip rings into the large holes for the blade's axis on the lengthwise beams (fig. 29).

4.6.4.4 WALL-MOUNTED VERSION – 4 GUTTERS

The lengthwise beam with outflows has a factory-fixed gutter and straight outflows. The other gutters and angular overflows are to be installed during assembly. Bones (inserts) for wall-through mounting are already installed in the beam.

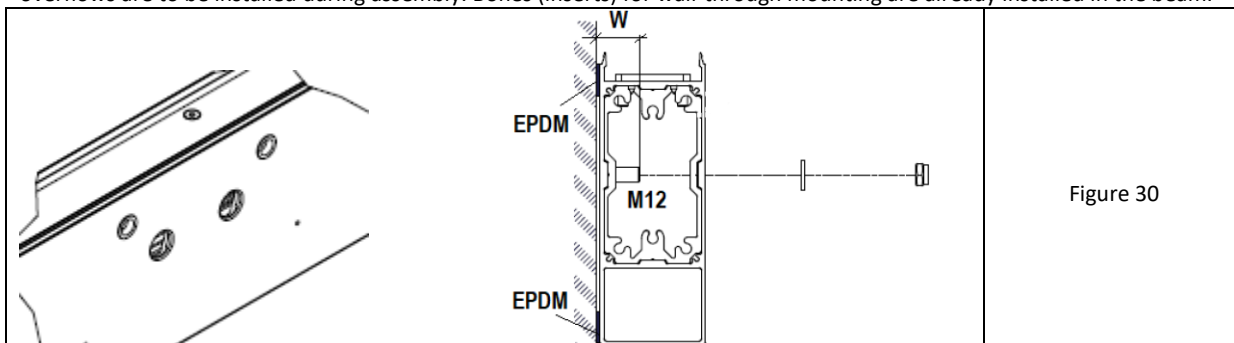


Figure 30

1. In the place of anchoring the lengthwise wall beam to the wall, mark the position of anchors according to the arrangement of anchor holes on the back wall of the beam. In each anchorage, 2 holes were made with an axial spacing of 100 mm.
2. Embed M12 size anchors (not supplied by SELT) in the ground, ensuring that they are leveled together and that the axial spacing is consistent with the arrangement of holes in the beam. Maintain the correct distance of the anchor protrusion from the face of the wall in the range of $W = \text{min. } 35 \text{ and max. } 45 \text{ mm}$ (fig. 30).
3. On the back wall of the beam (from the wall side), after degreasing, stick EPDM self-adhesive spacer tapes at its upper and lower edge (fig. 30).

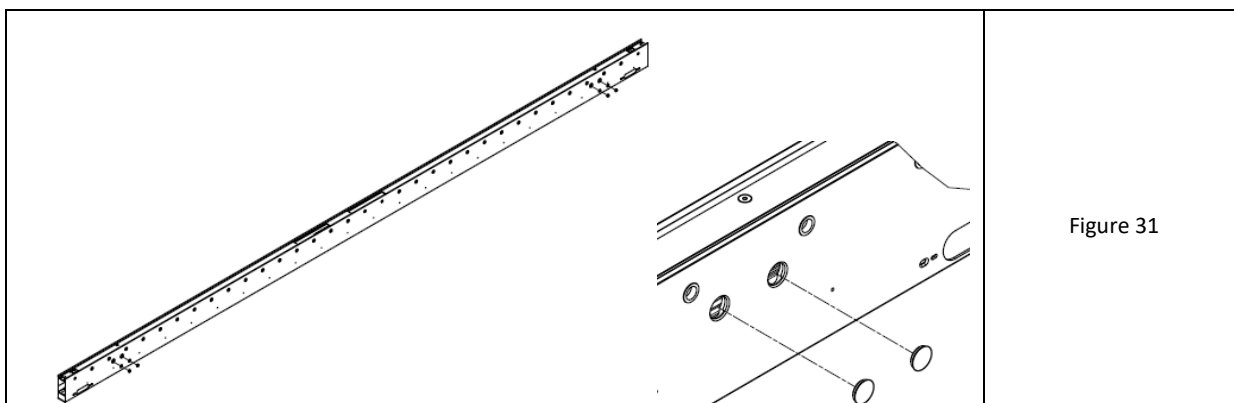


Figure 31

4. Place the wall beam on the anchors and fasten it with the nut washer from the anchor (size M12). Tightening torque according to the anchor manufacturer's instructions (fig. 31).
5. Cover the holes for the anchors in the beam with aluminium plugs set on silicone (fig. 31-right).

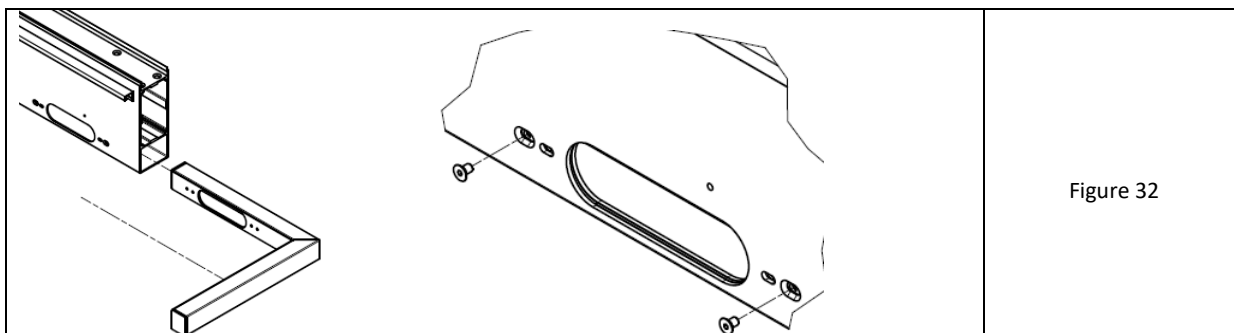
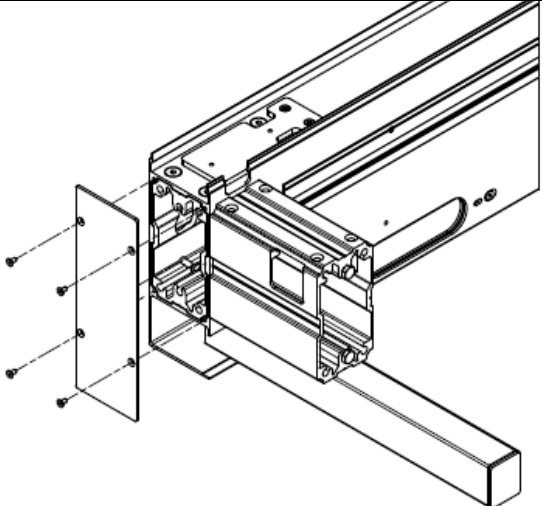
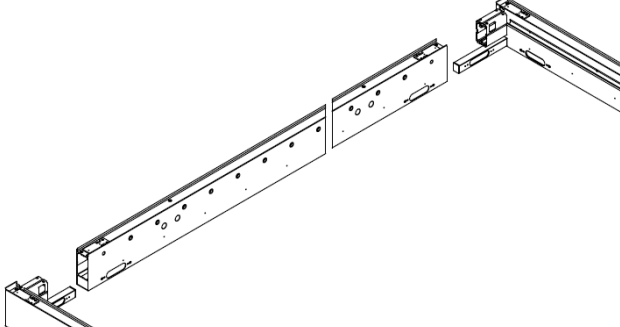
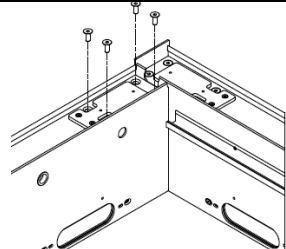


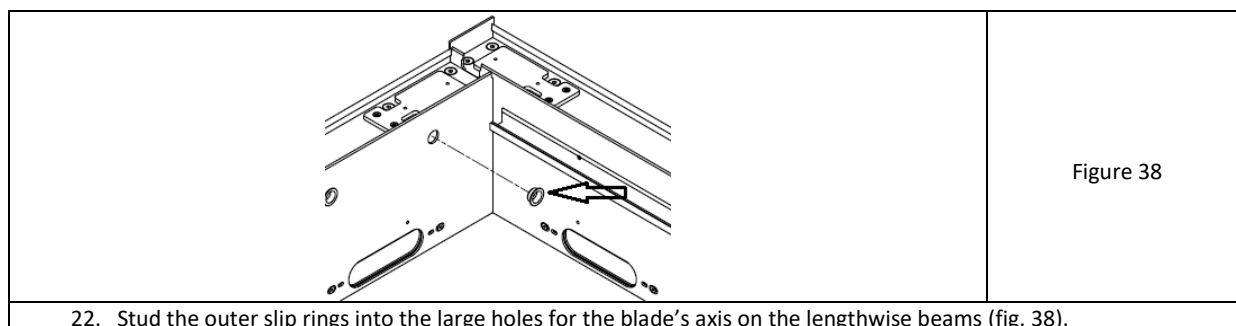
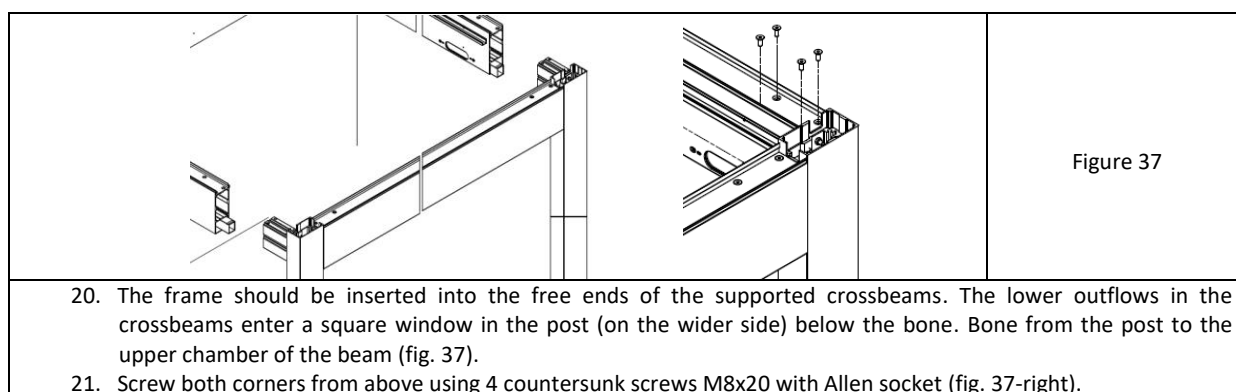
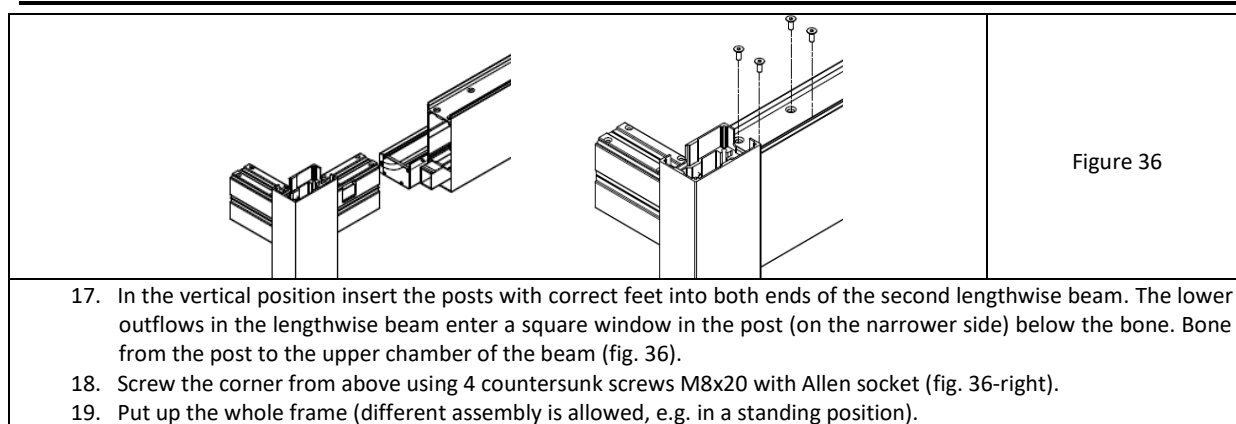
Figure 32

6. Install the angular overflow at one end of each cross beam on the side without the planned post (fig. 32).
7. Insert the angular overflow so that the side with the oval cut aligns with the hole in the beam. Before sliding the overflow with EPDM foam, additionally apply a strip of silicone tightly around the edge of the oval hole and around both small holes at its ends.
8. When inserting the profile avoid abrasion of the sealing layer and apply EPDM to the beam wall only after aligning the contours of the holes. Tighten the overflow with 2 countersunk screws M5x8 (in external oval holes with deepening) (fig.32-right).

	Figure 33
9. Tighten the end cap 85x245 at the end of the cross beam on the side with the angular overflow. Each for 4 screws M4x8 (fig. 33). 10. Repeat this step for the second cross beam. 11. It is recommended to stick horizontal strips of EPDM tape on the installed end cap at the upper and lower edges to protect it during assembly to the wall beam.	

	Figure 34
12. Insert both cross beams successively into the ends of the lengthwise beam fixed on the wall – bone to the upper chamber and the arm of the angular overflow to the lower chamber, the end cap adheres to the wall - fig.34. 13. Insert the angular overflow so that the side with the oval cut aligns with the hole in the beam. Before sliding the overflow with EPDM foam, additionally apply a strip of silicone tightly around the edge of the oval hole and around both small holes at its ends. 14. When inserting the profile avoid abrasion of the sealing layer and apply EPDM to the beam wall only after aligning the contours of the holes. Tighten the overflow with 2 countersunk screws M5x8 (in external oval holes with deepening) (see fig.32-right).	

	Figure 35
15. Support the free end of the crossbeam and when inserted into the lengthwise beam, screw from above using 4 countersunk screws M8x20 with Allen socket (fig. 35). 16. Repeat for the second crossbeam.	

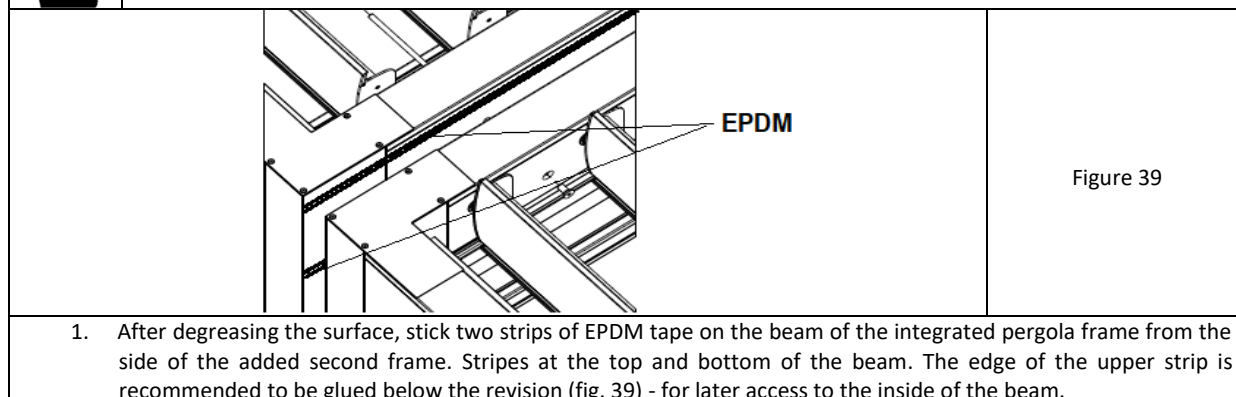


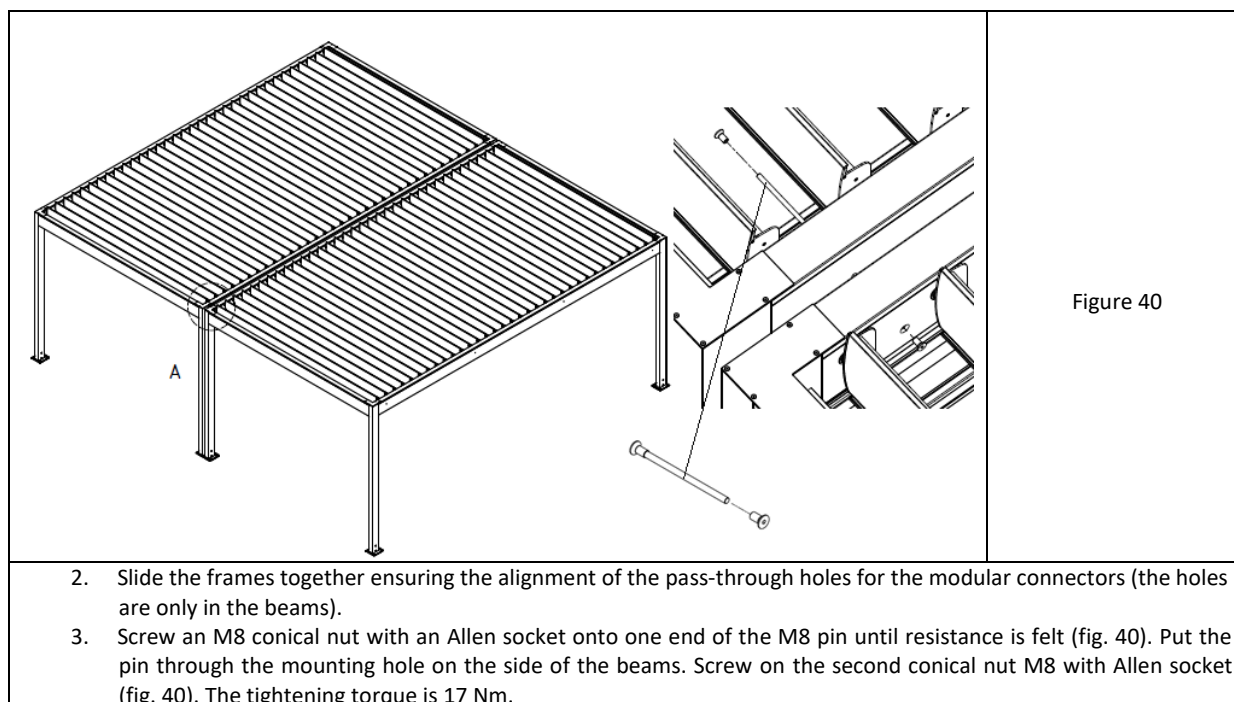
4.6.5 MODULAR INSTALLATION

Modular connection is made by joining individual frames together.



Note: Seal the contact of modular pergolas from the top with silicone (EPDM gaskets do not ensure full tightness against precipitation).





4.6.6 GUTTERS INSTALLATION

Gutters can be factory fixed to the beams depending on the ordered configuration. The other gutters should be tightened during the assembly. Pay attention to:

- correspondence and overlapping of the oval drain holes,
- compliance and alignment of the mounting holes in the beam and the top wall of the gutter,
- gutters for lengthwise beams have a total length equal to the lengthwise beam,
- transverse gutters are inserted between the lengthwise gutters and are shorter than the beams.



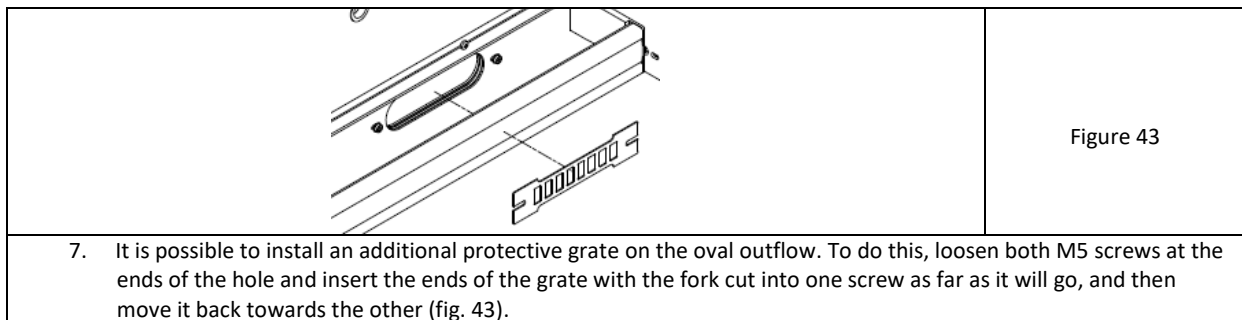
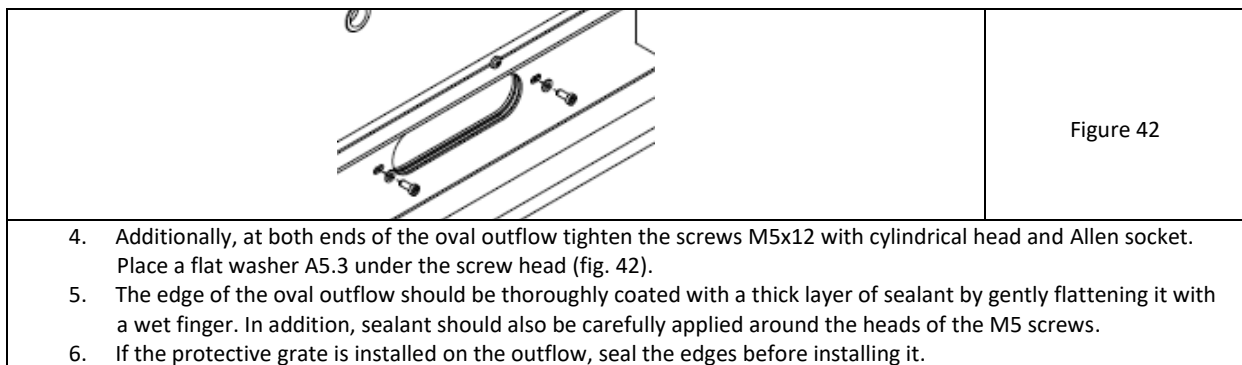
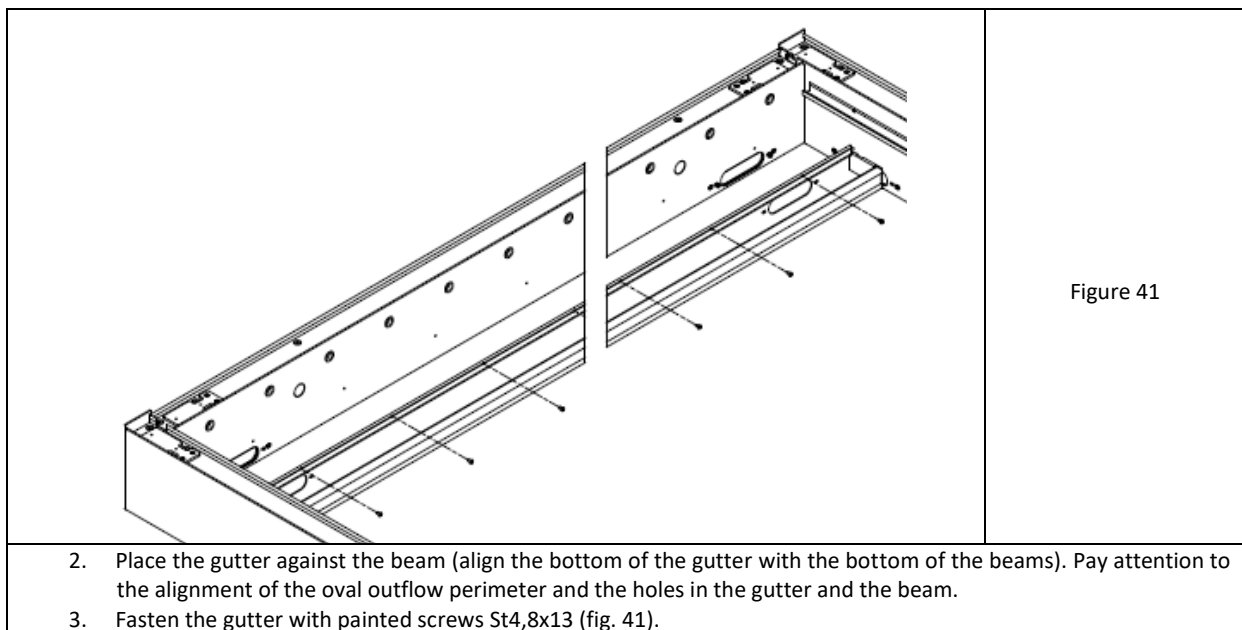
For pergolas with outflow to the front or back (2 gutters), the gutters are factory-fitted to the lengthwise beams.

For the version with outflows to the side (4 gutters), only the gutter from the side of the beam with outflows to the posts is factory-tightened.

Depending on the variant, there may be gutters without a side LED chamber and wider ones with an integrated chamber for the LED strip. The end caps of the gutters from the outside may have arched grooves for the cable exit of the LED strip.

Beams and gutters already have holes for screws. Each time before installation, the outer wall of the gutter screwed to the beam should be degreased.

- After degreasing, the rear surface of the gutter adjacent to the beams must be carefully sealed with a strip of silicone (included with the product). Sealing band continuity required. In addition, a closed loop around the perimeter of the oval hole should be made very carefully with the sealant. Also, apply an additional two loops of sealant around the holes at both ends of the oval overflow.



8. Thoroughly seal potential leak places with silicone. These are:
 - upper contact of the gutter with the beams (around the entire perimeter)
 - the inner edge of the contact between the end cap of the gutter and the gutter profile - along the entire perimeter of the contact
 - upper contacts of the transverse gutter with the lengthwise one
 - circumferential joint of the oval outflow from the gutter to the beam
 - side connection of beams with each other or with posts from the inside of the pergola



NOTE 1: During the first heavy rainfall, it is recommended to visually inspect the contact points which are sensitive to leakage and, in the event of noticed leaks, fill the seals with silicone. Such places are usually the joints of the gutters with the beams, the mutual contacts of the transverse gutters with the lengthwise ones, the joints along the circumference of the end caps of the gutters, the lower edges of the gutters under the side oval outlets, the insides of the joints of the oval overflows in the beams connected to the gutters, places of end caps and rear exits from beams of wall anchors, joints of beams with posts, joints of beams with the wall.

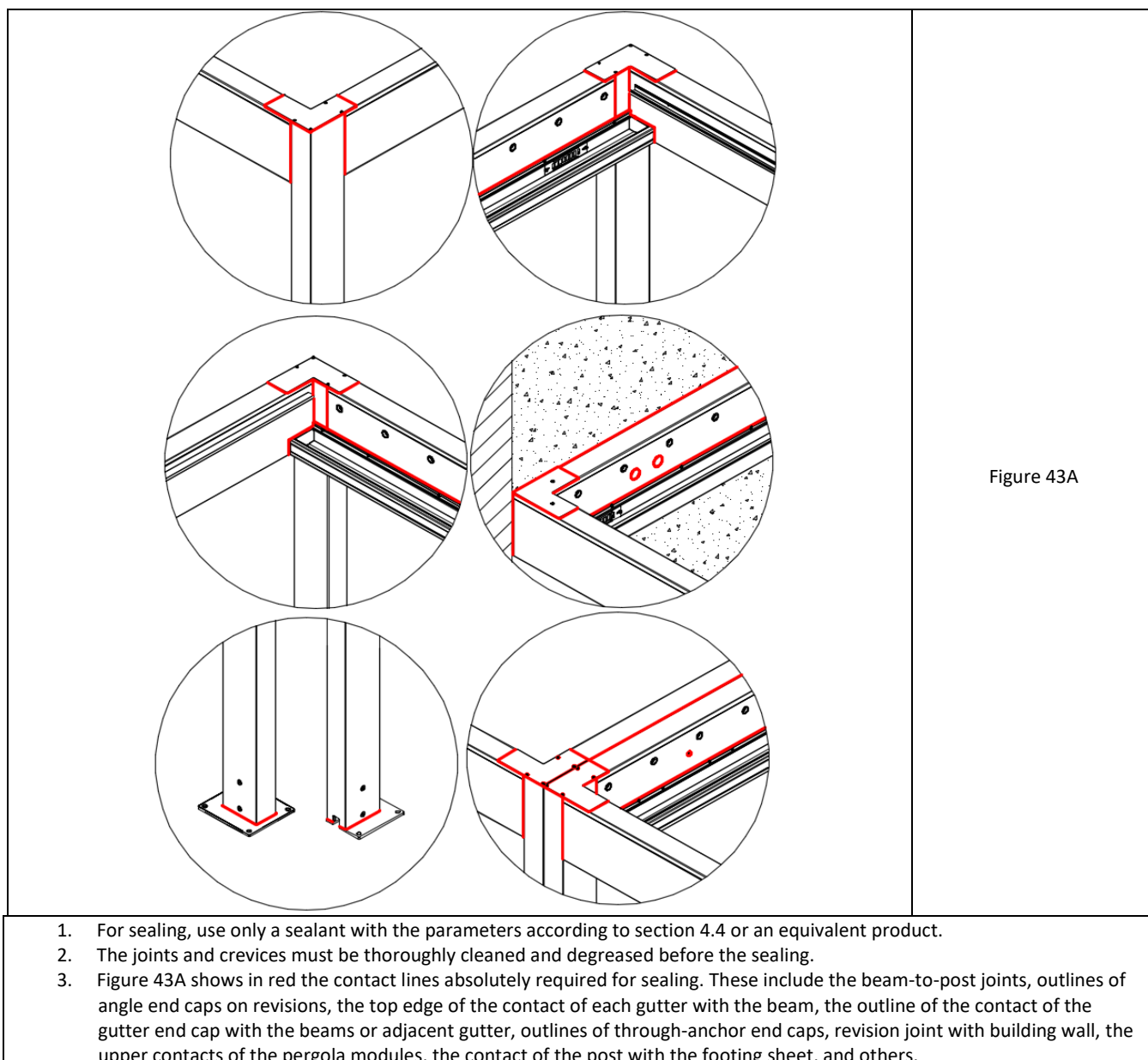
NOTE 2: Check regularly at intervals of max. every 6 months the condition of the silicone seals made and make sure to fill in any gaps (after prior degreasing and removal of the damaged or leaking section of the seals). If leaks or condensation are noticed, immediate action should be taken to repair the lack of leak tightness.

NOTE 3: The protective grate reduces the efficiency of draining water from the gutters.



NOTE: Sealing from the inside of the end cap with the gutter reduces the risk of bursting the bottom chamber of the gutter in the event of a leak.

4.6.7 CONSTRUCTION SEALING



4.6.8 BLADES INSTALLATION

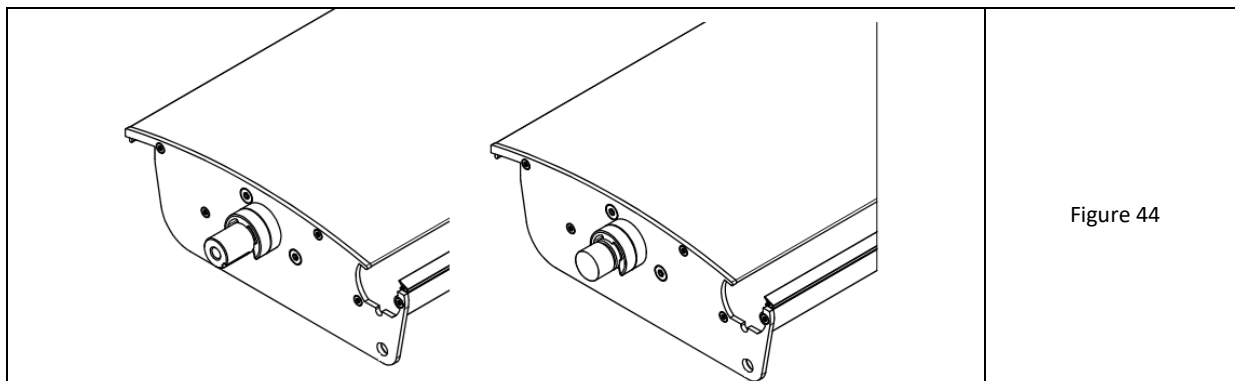


Figure 44

1. The blades on the drive side have a round hole in the lower corner of the end cap. It does not occur on the bearing side (note: the Clip plastic rings on the shafts are not installed at the factory - they must be installed later).
2. There are 2 types of pins on the side of the drive end cap (fig. 44):
 - 2 pcs of drive blades have an internal threaded hole and an external groove in the pin
 - other blades have a pin without an internal hole
3. In addition, for variants with light points in the blades, a cable with a plug protrudes from the pins on the side opposite to the drive.

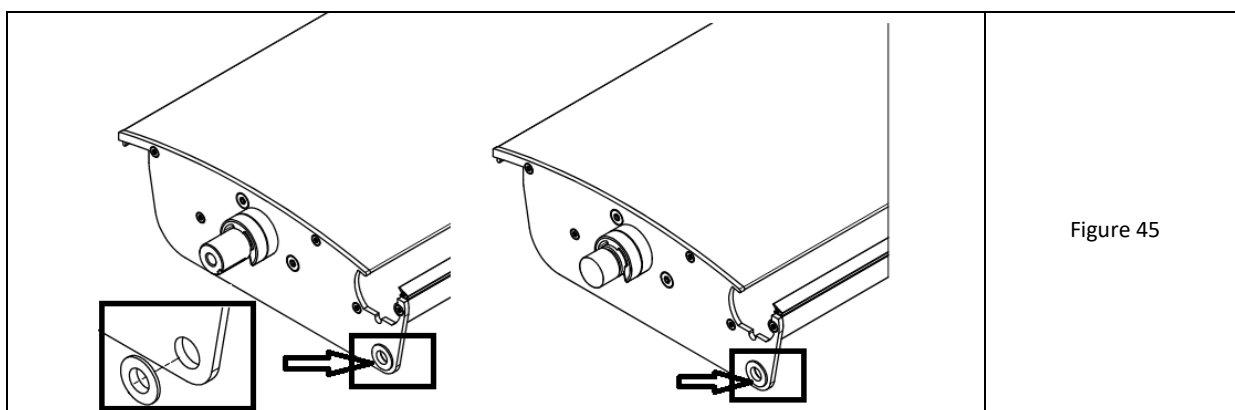


Figure 45

4. Install small plastic slip rings into the holes in the lower corner of the end caps from the outside (fig.45). Blade pins do not have pre-applied spacer rings Clip.



NOTE: Install the plastic rings in a way that eliminates excessive longitudinal play of the blade and prevents it from falling out.



NOTE: A dedicated ring setting tool is required for all steel snap-rings.

Installing snap-rings without the use of a dedicated tool can create micro-cracks in them and generate cracking and corrosion over time.

Clip rings are available in a plastic version (thickness 8 mm) pressed onto the shaft itself. There are 4 pieces per blade.

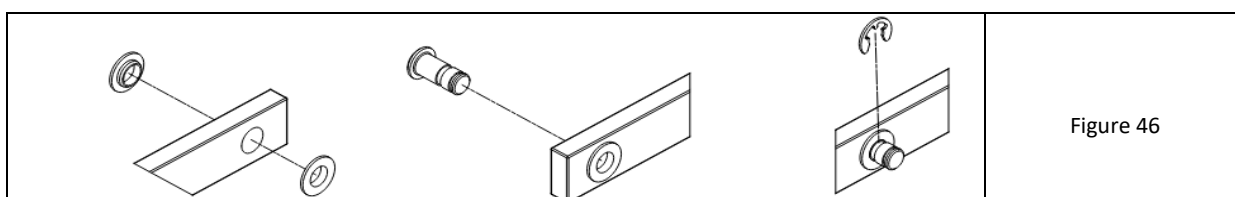


Figure 46

1. Install small slip rings in the drive rod - on both sides of each hole in the rod (fig. 46-left).
2. Then, in each hole with the rings installed, push the steel pin completely (fig. 46-middle) and from the side opposite to its head, use a dedicated tool to install a small snap ring in the groove farthest from the end (fig. 46-right).

3. Repeat steps 1 and 2 for the entire rod.

NOTE: Press the slip rings carefully into the holes - lack of a deep embedding may result in difficulty in connecting with the end caps of the blades.

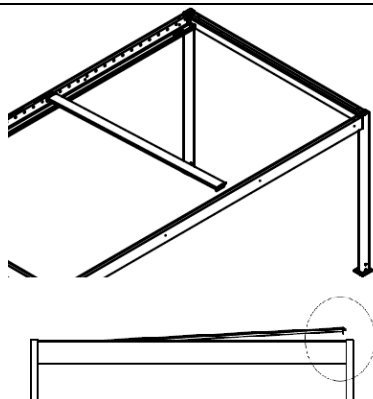


Figure 47

4. Start assembly by inserting 2 drive blades. The side of the drive end cap must be facing the motor. The drive holes of the blades can be located by the presence of plastic bands in 2 holes of the blades.
5. In the first step, cut and remove the bands securing the drive arms to the drive blade holes (mark or remember which holes).
6. Position the drive blade over the beam and insert the side with the drive shaft into the drive blade hole (fig. 47). Push it all the way in, then lower the opposite end horizontally and insert its shaft into the opposite hole in the beam. Push the entire blade so that the shaft on the opposite side to the drive is fully inside the beam.

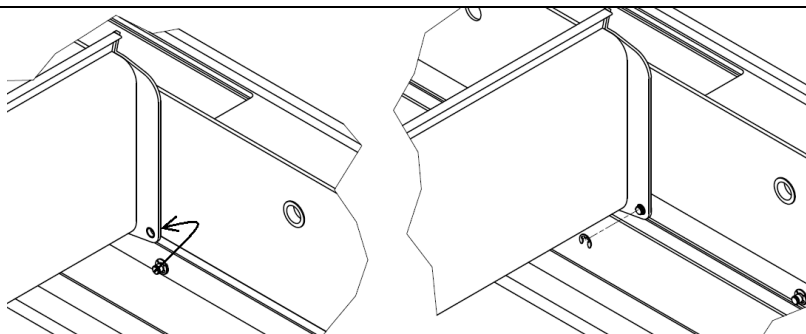


Figure 48

7. The drive rod equipped with all pins place in the gutter on the side of the drive beam.
8. Turn the blade vertically.
9. Lift the rod to the level of the lower hole in the blade drive end cap and apply it from the outside (between the end cap and the beam) to the side of the drive end cap (fig. 48-left).
10. Push the protruding end of the pin from the rod into the hole of the blade cap (fig. 48-right). When pressing in, be careful not to push the slip ring out of the end cap.
11. Secure the visible end of the pin with a small snap-ring exactly in the outermost groove of the pin (fig. 48) - use the dedicated tool (fig. 48-right).

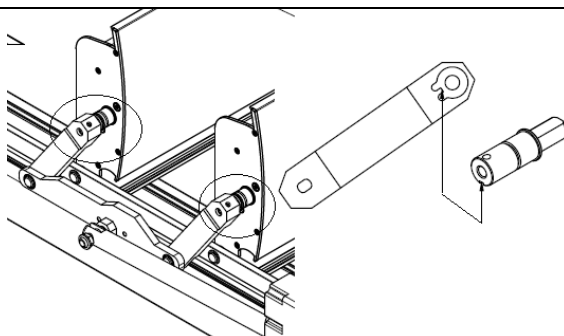


Figure 49

12. Slide one of the drive arms located inside the beam onto the blade drive pin inserted into the beam - using access from the inner window at the top of the drive beam (next to the motor). Pay attention to the exact fit of the grooves of the drive arms and shaft in the blade (fig. 49).

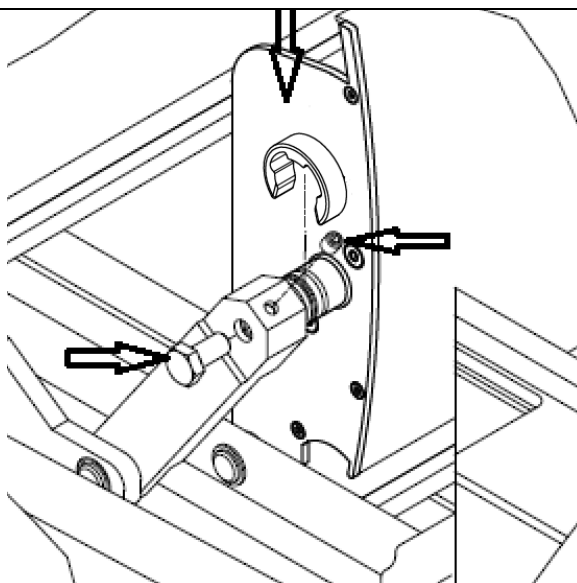


Figure 50

13. Set the blade upright and tighten the locks: - from the side of the arm into the shaft axis – hexagonal screw M8x16. Tighten with slack (fig. 50)
14. Put the securing Clip ring on the blade shaft from the beam side (so as not to leave slack).
15. At the opposite ends of both blades, also put clip rings on the shafts (so as not to leave slack).
16. Repeat the above steps for the second drive blade, paying attention to the existing already installed rod (it is possible that the blade plane must be rotated during installation).
17. Fully tighten the hexagonal bolts into the shaft axis of both blades (tightening torque 17 Nm) and at the upper ends of the arms screw in the pressure screws M6x8 with Allen socket (tightening torque 7 Nm) into the threaded hole (tightening torque 7 Nm) - fig.50.

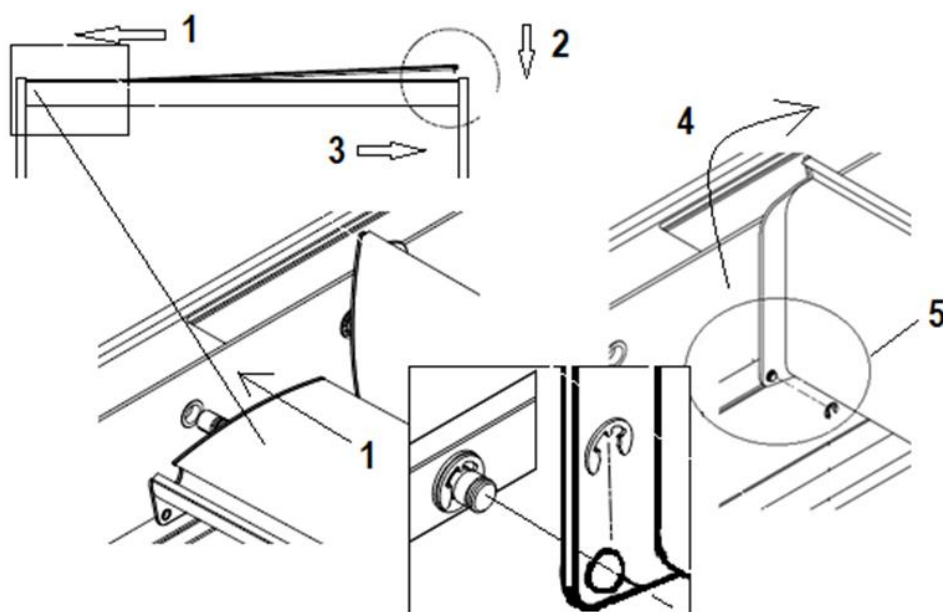
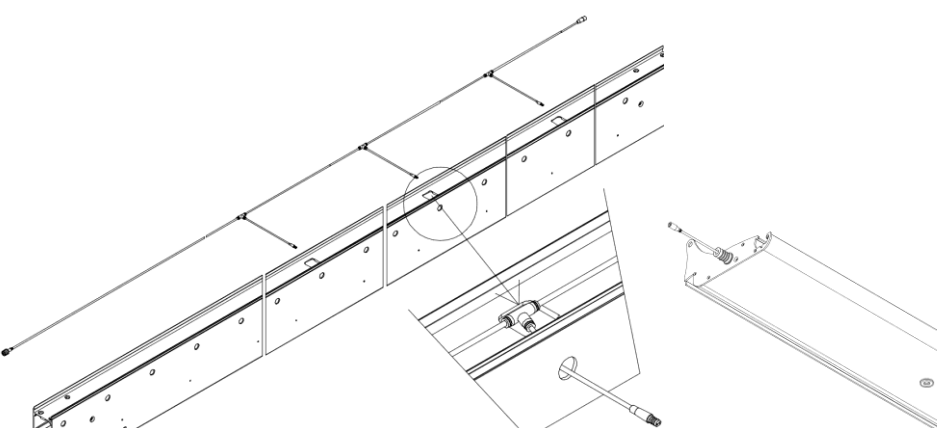
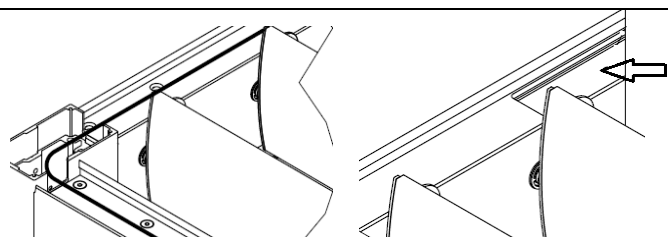


Figure 51

18. Install the next blades starting from the places already installed towards the ends of the pergola. Set the blade horizontally over the beam, tilt it and insert it with the shaft from the drive side into the hole in the beam. When pushed in as far as possible, lower the opposite end and insert it into the beam as well (steps 1 to 3 in Fig. 51).
19. Insert the pin in the rod from the beam side (fig. 51). When pressing in, be careful not to push out the slip rings.
20. Move the blade to the drive beam and turn it vertically to place the rod pin in the hole in the lower corner of the drive end cap. Check the presence of the slip ring in the end cap and do not push it out. Secure the visible end of the pin with a small snap-ring exactly in the groove of the pin (fig. 51) - use the dedicated tool.
21. Put the securing Clip ring on the blade shaft from the side of the drive beam (insert max. 2 pcs - tight).
22. At the opposite ends of both blades, also put the Clip rings on the shafts (as tight as possible).

	Figure 52
23. Repeat steps 18 to 22 (or up to 26 with blades with LED points) for other blades. 24. In the case of the presence of light points, perform the actions described in the separate Manual DTE No. 5.10. 25. In the case of blades with light points, before inserting the blade pin into the drive beam, connect the cable plugs protruding from the beam and the pin by pressing them (fig. 52). Push the connector inside the beam. Then install the blade as usual according to the steps above.	

4.6.9 REVISION AND MASKING COVER INSTALLATION

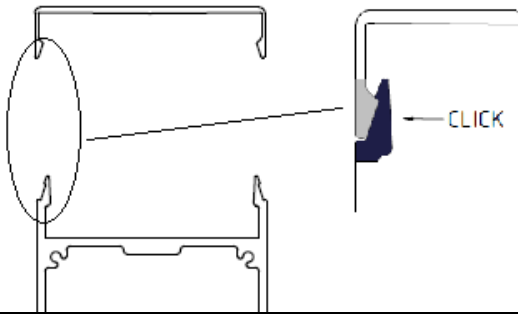
	Figure 53
1. Run the wiring in the top (open part of the beams) – fig. 53. The upper edges of the posts have open windows in the upper walls for cable routing. 2. Insert the Louver control unit into the window of the upper part of the drive beam above the motor (fig. 53-right-arrow). Place behind the motor inside the beam chamber. 3. Make and check the electrical connections and test the correct operation of the blade opening and closing mechanism.	



NOTE!

Electric wires should be properly protected. Do not damage the insulation by the sharp edges of the openings.

The motor TILT must be connected to the Louver control unit. The control unit should be connected to a 24V DC power supply and the power supply to a 230V AC. Connection without a power supply leads to damage to the control unit or motor and may cause electric shock.

	Figure 54
4. Click the revisions (covers) on the beams from above - Fig. 54. The wall beams have a side spacer made of EPDM tape in order to avoid damage to the revision coating during assembly or disassembly.	

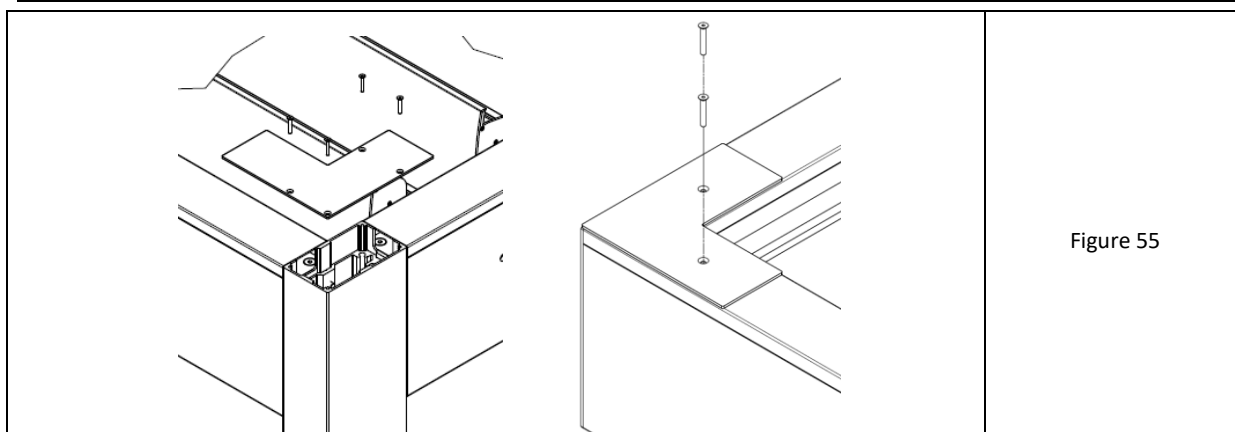


Figure 55

5. In the corners of the pergola, put corner end caps on the revision. For corners with posts, tighten the end cap through the existing system of holes for 4 countersunk screws with an Allen socket M4x25 (fig. 55-left).
6. For beam connections without posts, put a corner end cap on the revision and align it with the revision edges. Transfer the pattern of holes from the end cap to the revision. Drill through the revision with a 5.5 to 6.0 mm drill.
7. Before installing, it is recommended to degrease the bottom side of the end cap and apply sealing compound. Place the end cap on the revision and align the openings. Tighten from above with countersunk screws M5x35 and Allen socket (fig. 55-right). After tightening, secure the screw heads with sealant.



Note: Seal the revision joints with the wall from the top with silicone (EPDM gaskets do not ensure full tightness against precipitation).

The screws fixing the corner end caps above the post and at the beam connection without the presence of the post are of different diameters and lengths - pay attention to the correct use.



NOTE: If the drive arms are unscrewed from the blades, the roof will close rapidly, which poses a risk of cutting and crushing.

Before such action, the blades should be opened and permanent locking elements should be inserted between them to prevent spontaneous closing. The filling must not damage the paint coating.

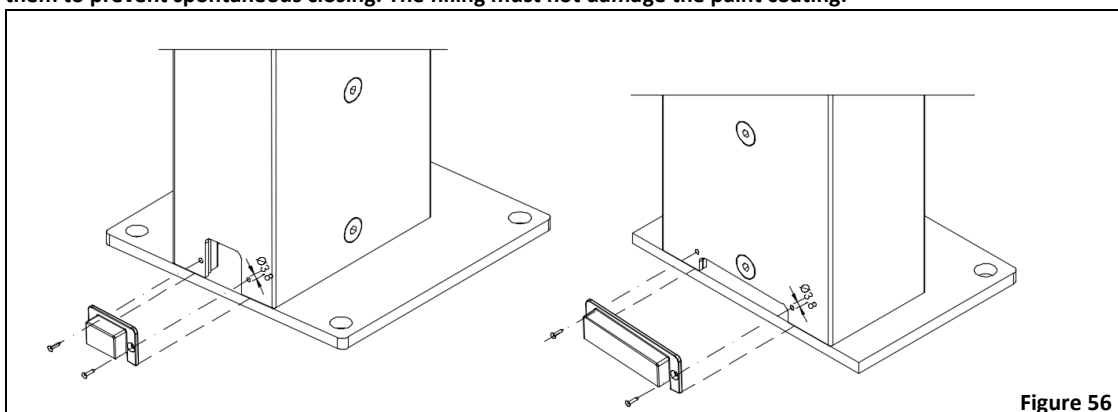
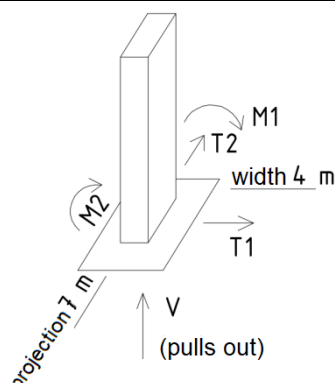


Figure 56

8. It is possible to attach plastic masking covers to the outflows at the bottom of the posts (issued as accessories together with ST4.2x19 stainless screws). There are 2 types: narrow (for the side 85 mm wide) and wide (for the side 150 mm wide).
9. Apply the masking cover as a template by aligning its bottom walls with the holes for the screws with the top of the foot plate. Set symmetrically in relation to the width of the drain hole.
10. Trace the axes of the openings from the cover plate onto the post wall with a felt-tip pen. Use a 3.8 mm drill to make holes for the installation of screws.
11. Apply the cover and fasten it with the supplied ST 4.2x19-A2 stainless screws.

4.7 FOUNDATION GUIDELINES

For a free-standing pergola with a maximum size of 4x7 m and in accordance with the location data (given in the table below), the maximum calculation reactions are*:

Reaction directions with a positive sign	V [kN]	T1 [kN]	T2 [kN]	M1 [kNm]	M2 [kNm]
	PERGOLA SUPPORT SB400 PRO 7,0x4,0 m				
	-11,23 (presses)	-0,51	2,68	-0,94	2,71
	6,64 (pulls out)	-1,40	-1,47	-1,70	-1,35
	-3,29	-1,47	-0,74	-2,08	-1,03
	-11,10	0,11	2,90	0,20	3,29
	-3,77	-1,47	-0,86	-2,10	-1,15

* The reactions were calculated for the pergola model with flow blockage ($\phi=1$) for both mutually perpendicular directions. A reduction was applied for the load recovery period $t=10$ years.

Location recommendations for pergola SB400 PRO:

- For the territory of Poland - location in the first and third wind load zone up to 300 m above sea level (basic wind speed $v_{b,0}=22$ m/s). For the second wind zone (coastal) and areas above 300 m above sea level in zones 1 and 3, the wind load should be compared to the recommended zones.
- Location adopted for areas of wind category III and IV (areas regularly covered with vegetation or buildings, or with single obstacles, separated by no more than 20 of their heights - villages, suburban areas and permanent forests, as well as areas where at least 15% of the area is covered with buildings with an average height exceeding 15 m - urban areas).
- It is not allowed to leave the roof blades opened or to cover the walls with wind exceeding wind class 3 according to EN 13659 ($45 \text{ km/h} \approx 12,6 \text{ m/s} = 10,2 \text{ kg/m}^2$) as this may damage the supporting structure of the pergola and the fastening elements of the blades
- possibility of snow load on the roof (up to a maximum of 50 kg/m^2)
- In special cases:
 - use of locations above ground level (i.e. over 1.2 m in zone III or over 6.2 m in zone IV),
 - applications of wall construction,
 - when using higher posts,
 - location outside the indicated wind zones and/or above the given height above sea level, an individual analysis should be performed by a person with building qualifications.

The maximum diameter of holes in post's feet is 14.2 mm. The maximum anchor size is M12. For anchoring in the ground, M12 class 8.8 anchors or A4 grade stainless steel anchors should be used.

For anchoring feet in concrete min. C20/25 we recommend mechanical or chemical anchors.

Recommended anchors (mechanical):

- Fischer FAZ II 12/10 anchor (if no additional leveling grout is made under the foot),
- Fischer FAZ II 12/30 anchor (in case of additional leveling grout under the foot).

Recommended anchors (chemical):

- Fischer anchor FIS A M12x120, class 5.8 + FIS V resin (in case of additional grouting, reduce the depth of anchoring).

It is not allowed to build the foundation on non-bearing soils (non-construction embankments, topsoil, peat, mud, plasticized clay, soil with inclusions of organic parts, wood, rubble, etc.) - then we recommend consulting a geotechnical engineer.

Due to the use of rainwater runoff in posts with water outflow, it is important to carefully compact and elastically seal the area around the feet in the ground due to possible mechanical impacts caused by the wind. For the location on the ground level, it is necessary to ensure anchoring and support on a stable load-bearing ground without layers exposed to washing out, loosening or crushing (bedding, thermal insulation).

Grounds for foundation may be heaped, which means that in the spring they may be raised/uplifted. For them, freezing zones were defined, below which the bottom of the foundation should be sunk in order not to expose it to unfavorable ground movement. These are mostly soils containing dusty particles (such as clays, silty clays, clays, clay sands, loess).

Selt recommends making foundations of reinforced concrete of min. C20/25 with a minimum size of 45x45 cm and a height:

- in the case of non-heavy soils, min. 70 cm,
- in the case of heaping soils, not less than the depth of frost zones for Poland - defined as 80, 100, 120 or 140 cm - depending on the region of the country,
- alternatively, in the case of heaping soils, it is allowed to reduce the depth of the bottom of the foundation to 70 cm below the ground, provided that the underlying soil is replaced, up to the freezing depth, with C8/10 lean concrete with an outline greater than 5 cm from the outline of the foundation footing, or with sand compacted to the degree $I_D > 0,67$.

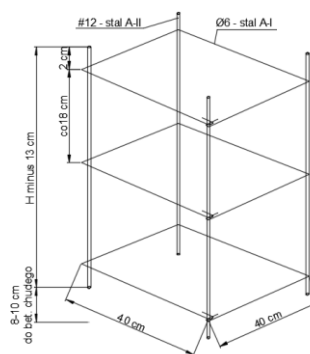
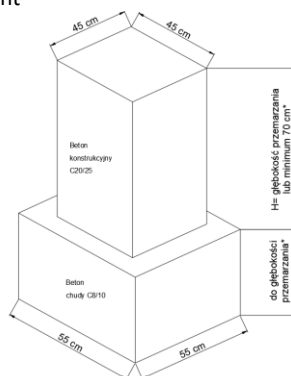
Moreover:

- the ground at the bottom of the foot pit must not be loosened,
- while making footings, do not allow the bottom of the excavation to be flooded with rainwater or the ground to freeze (during periods of lower temperatures),
- construction of foundations may require building permits.

Recommended foundational footing

Dimensions	Reinforcement
------------	---------------

Fig. 56 – Sample footing dimensions and reinforcement



When using ballast on a stable ground instead of foundations, the required weight of ballast under the post is 320 kg.

5 SYSTEM OPERATION AND PRODUCT SAFETY



The product can be used only if it is free from defects.



For ZiiiP systems installed to pergolas, the cassette should be additionally fastened to the pergola beams in order to eliminate the possible pressure of the beams on the cassettes and the risk of breaking the self-supporting side covers of the cassette. Self-supporting cassette assembly is not allowed in this case.

5.1 GENERAL REQUIREMENTS FOR OCCUPATIONAL HEALTH AND SAFETY

- To ensure correct operation of the product SELT Sp. z o.o. forbids making any structural changes; non-observance of the above condition releases the manufacturer from the liability for the product and the warranty will be invalidated.
- During transport, assembly and disassembly and during servicing and maintenance of the product you should observe applicable occupational health and safety regulations and environmental protection rules.
- The product should be maintained and repaired only by a trained person with proper authorizations (trained).
- Product purchaser should ensure that person, which are entrusted with the operations related to the routine operation, maintenance and hygiene have been familiarized with the user's manual and are observing all guidelines contained in this manual.
- It is forbidden to clean the product in the other way than described in the point "Technical inspections and repair."
- Maintenance works and repair of the product should be carried out only when the product is disconnected from the electrical power supply.
- Observe marking on the product (e.g. pictograms, arrows for movement direction).
- Pay attention not to cover the marking with a coat of paint or damaged in a way that prevents its reading.
- The electrical and control installation should be carried out and inspected by an authorized person.
- The switch should be installed on a height conforming the national regulations applying to disabled people - preferably at height min. 130 cm.
- In the event of snowfall, as well as at temperatures lower than or equal to 0 degrees the blade rotation mechanism must not be activated.
- If the drive arms are unscrewed from the blades, the roof will close violently, which poses a risk of cutting and crushing; before such an operation, open the blades and insert permanent blocking elements between them to prevent spontaneous closing. The filling must not damage the paint coating.
- Pergola SB400PRO should not be used, and you should not stay under it, during storm, hail, heavy snowfall, heavy rain (roof should be left opened).
- The working area of the blades should be free of any obstacles and objects (e.g. cables, twigs, leaves).
- It is forbidden to stand, climb or hang on pergola structure (in particular it applies to roof blades).
- It is forbidden to load the system by hanging the accessories not foreseen by SELT.
- It is forbidden to put a hand between moving blades and to insert fingers between the profiles.
- The product should be mounted at a height that prevents free access to the blades and mechanisms, and in the case of partial free access to these elements, other protections should be used to disable this access.
- In the event of unusual noises from the operation of the motor or other elements, immediately cut off the power supply until it is verified whether a fault has occurred and, if necessary, have it removed.
- Heat sources such as barbecues, the open flame should be not located under the pergola to avoid overheating of the product



5.2 SAFETY REQUIREMENTS RELATED TO SPECIAL CONDITIONS AND PLACES OF PRODUCT USE

Specific safety requirements relate to children up to 42 months. Essential requirements for use are applicable in all locations, to which children have access or where they could be present, such as e.g. houses, orphanages, hospitals, shops, schools, child care facility, public spaces and other places, which primary intended use have been changed and where the children may stay. If you change your usage to one of the above, you must implement the above considerations. Specific requirements for operation are applicable also in all locations where the disabled people stay.



Prior operation the Purchaser should carry out an individual risk assessment for the operation of the product with special attention paid to the safety of children and disabled people.

It is essential to take account of reasonably foreseeable conditions of operation and potential threats during defining performance requirements for the product.



Do not allow children to play with the roof controls. Remote control equipment should be kept away from children.



It is essential to ensure that children do not put their fingers in the roof moving parts and openings in the profiles. Do not let your children play near the moving parts of the roof.



Danger of head injury when standing in the area of the moving roof blades. It is forbidden to stay in the working area of blades and mechanisms. If the drive arms are disconnected from the drive blades, the blades will close spontaneously - there is a risk of cutting and crushing.



Often inspect the system with respect to the signs of wear and tear or cable damages. Do not use the product if repair is necessary.



Avoid contact of the product with hot objects (e.g. heaters, furnaces, irons, chimneys, etc.) or placing sources of convection heat (e.g. heaters, furnaces, barbecues, etc.) under a movable roof, as this can lead to damage.

5.3 SPECIAL SNOW LOAD REQUIREMENTS

The manufacturer allows the maximum snow load on the roof blades of up to 50 kg/m².

Snow can weigh down the roof as an even layer of uniform height.

Local accumulation and formation of snowdrifts as well as snow sliding from adjacent roofs and buildings onto the pergola must not be allowed.

Due to the different weight of snow due to the time of deposition and the influence of moisture, the weight of the snow changes in a large range.

Different snow weights according to standard PN-EN1991-1-3:

Table E.1: Average volumetric weight of snow

Type of snow	Volumetric weight [kN/m ³]
Fresh	1,0
Settled (several hours or days after fall)	2,0
Old (several weeks or months after fall)	2,5-3,5
Wet	4,0

Calculation of the allowable cover thickness

	Permissible thickness of the snow cover depending on the type [cm]			
Pergola	fresh	settled	old	wet
SB400PRO	50	25	14	12



When snow accumulates, there will be visible and excessive deflections of blades and beams and the possibility of local leaks from blades and gutters. In addition, for SB400PRO, the phenomenon of excessive deflection of the posts and horizontal floating of the roof may occur.

We warn you about the need for continuous monitoring and quick response to the increase in coating thickness, especially during additional wind action.

5.4 OPERATIONAL SAFETY

Recommendations and actions:

- the product is safe to use provided that the recommendations contained in the documentation are followed and its installation is correct,
- product should be used only as intended,
- it is forbidden to use the product not conforming to the requirements related to electric shock and fire safety,
- remote control equipment should be kept away from children, they are not a toy,
- it is forbidden to exceed certain operating parameters of the product specified in the technical and operational documentation,
- the working time of the electric motor is specified in point 2.1 "Technical parameters" (depending on the type of the motor and manufacturer, detailed data are available on the motor manufacturer's website or www.selt.com). Exceeding the specified run-time of the motor can lead to permanent damage,
- it is forbidden to use a faulty or incomplete product (e.g. without a switch, etc.), as well as to make makeshift repairs; the use of such a product may cause its destruction, pose a threat to the health and life of the user and may void the warranty,
- do not keep any sharp objects or protruding parts near the covers, which may catch on the movable roof and damage it,
- the system cannot be used (started), including turning the blades, in the event of heavy snowfall, rain, frost or hail (it should remain in the open position),
- you must not stay under the pergola during violent or intense weather phenomena (e.g. heavy rain, heavy snowfall, storm, hailstorm, strong wind, etc.),
- we strongly recommend using wind sensor,
- clean the system on regular basis and perform inspections within indicated time intervals,
- use only original spare parts,
- all works related to inspections and repair of the product should be carried out by a properly trained person, holding the necessary licenses,
- it is forbidden to use the product and electrical installation without valid and required inspections and measurements,
- product should be disconnected from electrical installation prior to any works related to maintenance or cleaning,
- in case of works on facade finish of the building, to which the pergola is anchored, you should disconnect it from the supply,
- pay attention to all signs of wear and tear or damage to the electrical cables,
- if you see any signs of wear and tear or damages of electrical cables, the product should be disconnected from supply and the defect should be immediately reported to a person with a valid electrical license,
- in the case of very loud operation of the motor or other elements, immediately turn off the power supply and order an inspection and possible removal of the fault,
- it is forbidden to use or leave sharp objects near the product
- if an automatic weather sensor (wind/sun) is used, it should be switched to manual mode in the period: when the product cannot be used (e.g. due to lower temperature, suspected fault, during the period of inspection and maintenance, when the installer is operating on blades and product mechanisms); it is also recommended to disable this sensor and open the roof in case of prolonged absence,
- the product should be cleaned regularly, at least once a year, and in conditions of increased pollution (e.g. urban environment) and in the coastal environment more often as needed,
- when performing activities related to cleaning the product, exercise extreme caution due to moving parts and the possibility of personal injury; disconnect the power supply, properly mark and secure the work area; before cleaning the product, remove loose dirt with a vacuum cleaner with a soft brush or broom, and then clean with water and delicate detergents using a soft cotton cloth, after cleaning, always rinse the surface of the blades with water (use cleaning agents in accordance with their manufacturer's instructions); it is forbidden to use abrasive agents or a pressure washer, which may damage the paint coating,
- moving or rotating parts of the product should be lubricated with a silicone spray every year,
- often check your product with respect to the possible presence of branches, leaves, birds nets – immediately removing the contaminations; when removing these impurities, care should be taken, bearing in mind that these objects may fall on a person in the vicinity of the product or on objects located under the product,
- the use of sharp objects in the product may damage the paint coating,
- roofing in urban and seaside environments is exposed to pollution (smoke, smog, acid rain, salty sea water), which results in soiling of the paint coating. The product should be cleaned regularly, at least once a year, and more often in conditions of increased pollution and in the coastal environment.



Do not use the product in the event of strong gusts of wind, during snowfall, freezing rain, as well as during very intense rain, because the product may be destroyed or damaged and may endanger people in the vicinity (applies to the product installed outside the building) . In such cases, the roof blades should be in the open position.

It is recommended to use wind automation to help meet safety conditions.

If any abnormalities in product operation are detected then you should immediately inform the SELT Sp. o.o. service. Using damaged product and self-repairs pose a hazard for health and life and could be a reason of warranty invalidation.

5.5 CONNECTION TO ELECTRICAL INSTALLATION

When the Pergola SB400 is assembled one should proceed to connection of drive and control system to the previously prepared systems: electrical supply installation and control system. The obligation to prepare the installation lies with the installer/investor.

Connection to electrical supply installation should be executed based on the previously prepared circuit diagram taking the fire-protection rules into account.

The connection should take them into account the environmental conditions in which the product will be used and recommendations contained in the motor operation and maintenance manual. Attachment at the end of this document.

Normal environmental conditions:

- such conditions are present in e.g. residential and office units, auditoriums and theatre rooms, school classrooms (except some laboratories), etc.

Environmental conditions with increased safety risks:

- environments with increased safety risks include: bathrooms, showers, kitchens, garages, basements, saunas, rooms for pet animals, operating suites in hospitals, pressure boosting stations, heat exchanger plants, spaces limited by conducting surfaces, campings, open areas, etc.

In rooms and spaces, where there are increased safety risks it is appropriate to use automatic devices shutting down the supply of damaged product, e.g. earth leakage circuit breakers.

Residual current device:

- it is recommended to use them in bathrooms, kitchens, garages and basements,
- it is obligatory to use them on swimming pools and shower basins, saunas, on construction sites, during the supply of the equipment in the open outdoor, in agricultural and horticultural farms, in campings and leisure vehicles and rooms where fire hazard is present.

Residual current device are only supplement for protection against direct touching and should not be the only protective measure. Their task is to supplement protection if the other protective measures against direct touching are not operable or in case of user carelessness.

It is necessary to take safety regulations into account, e.g. minimum height from the floor on which the electrical equipment may be installed.

General guidelines for safe connection:

- the connection should be carried out by the electrician holding electrical qualifications and professional experience,
- observe the Occupational Health and Safety regulations during connection,
- electrical connection and setting of motors should be made in accordance with the manual from the motor manufacturers enclosed to the product /available on the below website.

A detailed description of the conditions for anti-shock purposes to be met by the electrical installation that is to supply the product.

In accordance with the standards that apply in a given country. Depends on used receivers and control configuration.

Power class	What do we power supply	Installation type	Overcurrent protection	Protection against electric shock
Class I devices have basic insulation that provides protection against direct contact. In addition, in order to ensure protection against indirect contact (protection against faults or additional protection), a connection to the protective terminal of the device, a protective conductor (PE) or a protective-neutral conductor (PEN) is used. This achieves: 1. protection by automatic disconnection of the power supply by the use of appropriate devices 2. limitation of contact voltages to levels not exceeding the value of safe contact voltage (UL) established for given environmental conditions.	24V motor powered by a 230V/24V converter, class I device	It is necessary to use a 230V~3-wire installation (protective wire, neutral and phase wire)	Fuse matched to the power of the receiver	Residual current device
Class II devices are characterized by the use of reinforced insulation, which provides protection against both direct and indirect contact. Another way to ensure protection against electric shock in II class devices is to use basic and additional insulation. Because reinforced or additional insulation is used, it is not necessary to connect the device housing with a protective earth conductor, and devices of this class can be powered, e.g. through two-wire cables with IEC C7 connectors. Protection class II devices are marked, e.g. on the rating plate, with an appropriate symbol (so-called square within a square).	24V motor powered by a 230V/24V converter Class II devices	It is sufficient to use a 230V~2-wire installation (neutral and phase wire)	Fuse matched to the power of the receiver	Residual current device

The electrical connection and setting of the motors must be carried out in accordance with the instructions of the motor manufacturers. The instructions are attached to the product and are also available on the websites of motor manufacturers and on the website:

www.selt.com → OUR OFFER → ELECTRIC EQUIPMENT



Incorrect connection of the motor may damage the product or create a hazard.



The motor has a thermal switch that will turn off the drive after about 5 minutes of continuous operation to protect against overheating (depending on external conditions). After switching off by the thermal protection, wait until it cools down. The waiting time depends on the type of motor and the ambient temperature (usually after about 16 minutes the thermal protection should switch off).

	Important Cables passing through a metal wall should be protected and insulated with a sleeve or a cover. Secure cables to prevent them from touching any moving parts. If the receiver is used outdoors and the power cord is of the H05-WF type, install the cable in a UV-resistant tray, e.g. under a gutter. Provide access to the receiver's power cord: so that it can be easily replaced.
	Warning Always make a loop on the power cord to prevent water from entering the receiver!

5.6 CONTROL

Programming of control (assigning remote control devices, outside sensors and other control components) should be carried out in compliance with the manual from control system's manufacturer.

		Somfy io drive and control
LINEAR MOTOR		Somfy Pergola Tilt 24V io 300 mm 0° with Hall sensor
RADIO RECEIVER FOR THE MOTOR		Pergola io Louver
REMOTE CONTROL	Remote control	Situo 5 io PURE II
	Remote control* for the version with sun sensor	Situo 1 A/M io
	Remote control * for version with sun sensor, with a scroll function for ergonomic adjustment of the LED lighting brightness of the White LED Receiver io	Situo 1 Var A/M io Situo 5 Var A/M io
WEATHER SENSOR	Wind sensor *	Eolis io 230V
	Sun and wind sensor *	Soliris io 230V
	Sun sensor *	Sunis Wirefree sensor io
	Rain sensor *	Ondeis 24V
CONTROL UNIT	for LED *	WHITE LED RECEIVER io DIMMING
	for heaters *	Heating Slim Receiver io on/off
	control through the Internet*	Tahoma switch

* - for additional surcharge



The control unit can only be mounted inside the drive beam (through the window above the motor), or outside in a case with a protection degree of min. IP65. Failure to follow the manufacturer's instructions will void the warranty.

Connecting the SOMFY Pergola Tilt 0 motor wires inside the Louver control unit (fig. 57):

3] Pergola Tilt io wiring with or without encoder						
Pergola io LOUVER CONTROL	+Vdc (Drive M1)	0 Vdc (Drive M1)	+Vdc (Encoder M1)	0 Vdc (Encoder M1)	C1 (Encoder M1)	C2 (Encoder M1)
	Drive power supply + 24 Vdc	Drive power supply 0 Vdc	+24 Vdc Encoder	0 Vdc Encoder	'Open collector' input Encoder channel 1	'Open collector' input Encoder channel 2
Colored wires Pergola Tilt io	Brown	Yellow	Red	Black	Yellow	Green

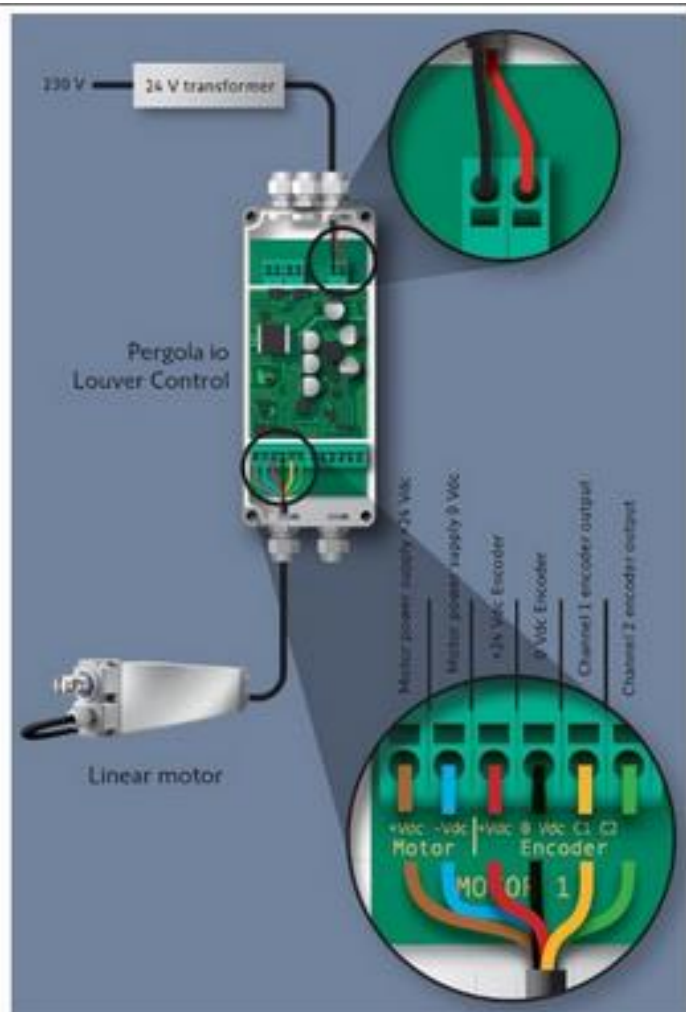


Fig. 57 Diagram of the connection areas inside the Pergola io Louver control

5.7 START-UP AND ADJUSTMENT

Recommendations and actions:

- it is necessary to adjust the limit switches of the blades during assembly (closed and open position,
- person adjusting the limit switches should have electric licenses, knowledge and experience,
- adjustment of the limit switches should be made in accordance with the motor's operation and maintenance manual; special care should be taken with each adjustment due to the need to operate in the area of operation of blades and mechanisms,
- before starting the product, electrical measurements should be made, primarily in order to check the effectiveness of zeroing the product and the electrical system by a person with appropriate qualifications,
- it is forbidden to start the driving motor without checking correct fixing of the system,
- when setting the limit switches, do not lean or hang on the product, do not leave tools on it.

When starting-up the mobile roof, particular attention should be paid to:

- correct and uniform rotation of blades of the mobile roof
- correct operation of the limit switches



Unauthorized adjustment of the limit switches by an untrained person may lead to personal injury or death, as well as to damage of the product.

Follow the programming diagram of the remote control in accordance with the manufacturer's instructions (Somfy) of the Louver control unit.

IO control troubleshooting

Symptoms	Possible causes	Solution
The powered product is not working.	The wiring is incorrect.	Check the wiring connected to the Louver receiver and modify if necessary.
	The drive is in thermal protection mode.	Wait until the drive has cooled down.
	The battery of the Somfy io transmitter is dead.	Check whether the battery is dead and replace it if necessary
	The control transmitter is not compatible.	Check compatibility and replace transmitter if necessary.
	Somfy io transmitter is not programmed with the receiver	Use a transmitter that has already been programmed or program a given transmitter.
The powered product stops too early or too late.	The end limit switches are set incorrectly.	Reset the end limit switches.
The 'my' position does not work.	The 'my' position has been removed.	Program 'my' position.
The 'my' position cannot be erased with the Easy Sun io transmitter.	The transmitter is outdated (index E or older).	Delete 'my' position with another assigned transmitter.
System is equipped with a wind sensor and the powered product moves to the upper end position every hour.	The sensor is assigned/set.	There is radio frequency interference or the sensor is out of range. Place the Louver receiver on the outside of the beam.
	The battery of the Somfy io wind sensor is dead.	Check whether the battery is dead and replace it if necessary.
	No power supply to the 230V sensor.	Check the sensor powering.

Despite the installed wind sensor, the powered product does not move to the upper position in strong winds.	The sensor is not assigned/set.	Refer to the relevant manual to assign/set up the sensor..
Setting the product in the end limit switches seems imprecise..	The linear motion path setting is incorrect.	Set the linear motion path again.
	The drive is on the verge of overheating.	Wait until the drive has cooled down.

5.8 MISUSE OF THE SYSTEM

DO NOT PERFORM THE FOLLOWING ACTIONS

- Use of the product in the event of a defect or suspected defect; it is recommended to discontinue further use of the product.
- Report the fault to the supplier / system installer / installer.
- Stop operation of the product in case of wear and tear symptoms or damages of electric cables and immediately report your remarks to direct supplier.
- Do not stay in working area of the mobile roof during system operation.
- Do not use inoperable or incomplete system. Use of such product may lead to its damage and cause health and life hazard for the user and be a reason for loss of the warranty.
- It is forbidden to use the product not conforming to the requirements related to electric shock and fire safety.
- It is forbidden to exceed specified parameters of product operation given in the operation and maintenance documentation.
- Do not leave any sharp objects or protruding parts near the system, which can catch and scratch it.
- Use not in accordance with the operation and maintenance documentation.
- Leaving the side screens open at wind speed above 49 km/

Persons authorized for operation

- Do not allow children playing with components intended for control of the system e.g. remote controller or switch.
- Remote control should be kept away from children.

The work area of the pergola SB400PRO: crushing, cutting and pulling threat

- Do not touch mobile components during closing or opening of the mobile roof. It can be a reason of crushing, cutting, pulling in, trapping between e.g. blades and the other structural components of the system.
- It is forbidden to disconnect the drive arms from the pins of the drive blades without first blocking the space between the blades - the blades will drop suddenly due to the eccentric mounting.
- No obstacles, which could interfere operation of the mobile roof or cause its damage, should be located within the area of operation of the mobile roof.
- If the blades hit an obstacle then you should first slightly open the roof and then remove the obstacle.
- Do not stay in the area of blades rotation during their operation.
- No obstacles (cables, branches etc.) can be located in the area of blades rotation.
- It is forbidden to put a hand between moving blades and to insert fingers between the profiles and driving mechanisms.

Automatically controlled products may start up on their own. During any work related to the product, the product must be permanently immobilized so that it cannot be accidentally started. Make sure that no dangerous situation arises.

6 SYSTEM USE AND MAINTENANCE

6.1 USING THE PRODUCT IN ACCORDANCE WITH ITS INTENDED USE

The system should be used in accordance with its intended use specified by the manufacturer. If the system is operated and modified in another way than described in this documentation the system manufacturer has a base to dismiss warranty claims.

Pergola SB400PRO manufactured by SELT Sp. z o.o. does not require special maintenance. Using the product in accordance with the manufacturer's instructions ensures proper functioning of the product to the user.

If the product is used in other way than described in this documentation or modified without the authorization of SELT Sp. z o.o. then this is considered as misuse.

Making arbitrary modifications influencing the safety of product operation is forbidden.



After rainfall, when the blades are opened, the rainwater remaining in the gutters flows under the pergola. This is due to the deflection of the blades, which leaves water in the middle part of the blade. The amount of water is greater when the blade ends are mounted horizontally and reduced when the blade has a difference in inclination between the ends.

To minimize the amount of remaining water, it is recommended to open the blades to the angle of 90 degrees and wait a few minutes for the remaining water to drain into the gutters. You can then continue to open the blades to their full extent.

The correct use of the product includes:

- normal use or foreseeable use, which do not include e.g. risk taken by the user intentionally or deliberately,
- use of allowable values of operation parameters,
- compliance with recommendations related to the operation,
- conducting periodical inspections and maintenance of the product,
- compliance with the requirements specified in this Documentation,
- compliance with the requirements specified in point "Technical specification."

In case of misuse:



- the product may endanger the operating personnel,
- the product will be exposed to damages,
- this may adversely affect its functionality,
- do not use the system during maintenance or repair work, as well as in other cases indicated by the manufacturer.



The gutters in the system are delivered by the manufacturer as leaktight components.

Sealing of joints between the gutters during assembly should be done by the buyer and is not covered under the warranty.

Perform periodic tightness checks and repairs of sealing defects in periods not longer than 6 months.

Additional sealing from the inside of the end cap with the gutter circumference reduces the risk of bursting the lower gutter chamber in the event of a leak (water may imperceptibly accumulate in the chamber at the bottom edge of the gutter and freeze during sub-zero temperatures).

SELT Sp. z o.o. shall not be responsible for damages caused by misuse.



Using system which is out of sight can cause heavy injuries and system damage. If the product is used with side screens, not closing them in the wind above 49 km/h (13.6 m/s) may result in deformation of the structure or damage to the system.

6.2 INSTRUCTION FOR NON-PROFESSIONALS

Non-professionals are persons who carry out activities related to the current use and current inspections of the product.

Read carefully this document before using the product.

In-depth knowledge of the documentation ensures failure-free operation of the product.

List of operations which can be carried out by non-professionals:

- current use of the product through a remote control,
- ongoing inspections of the product by opening and closing the roof blades with continuous observation of all elements of the product,
- commissioning technical inspections, repairs and cleaning of the product to a specialized installer.

6.3 INDICATIONS OF RISK, BREAKDOWN OR ACCIDENT

Description of the residual risk

Risk factor	Description of the correct procedure
Accident	- disconnect the product from the power supply - take first aid measures for the injured - call for help – tel. 112
Product failure (hazard)	- disconnect the product from the power supply, - remove users from the danger zone, - in case of fire use only class ABC fire extinguishers, - notify the fire brigade if necessary, - notify the service company - if the failure causes only blocking of the product without additional threats - check the section "Product failure (blocking)"
Product failure (blocking)	- disconnect the product from the power supply - perform an external inspection for the presence of foreign elements in the blades or drive, - check the visible parts of the wires for insulation damage or discontinuity, - in the absence of visible causes, check the "motor overheating" point - inform supplier to gain solution
Spontaneous closure of the blades (after disconnecting the drive arms)	- before disconnecting the arms from the pins of the blades, put the filling/protection between the blades in the open position to prevent them from falling
Strong wind (over 49 km/h)	- we recommend using a wind sensor that will close the blades, which is more beneficial from the point of view of the wind resistance of the entire structure. The wind speed value is determined in accordance with the wind class for a given structure.
Snowfall and icing	- in the event of snowfall, set the slats in the snow position (slightly opened) - the permissible snow load must not be exceeded - in winter, when there is a risk of snowfall and icing of the blades, we recommend opening the blades to the snow position. - it is possible to use an automatic control unit, which will automatically slightly open the blades (snow position) for temperature close to freezing and rainfall or snowfall. NOTE: If snow or ice accumulates on the blades, mechanical damage may occur. It is recommended to use a motor with an overload sensor.
Heavy rainfall	The system is adapted to protect against rain (for a certain rainfall intensity). Leave the blades open during heavy rainfall. Leave the blades open during heavy rainfall. - The drives have a protection class against external factors at least IP65 and are mounted under a cover (roof). Protection against drops falling from any angle is ensured, however, attention should be paid to the position of the power cord in such a way that raindrops do not flow down the cable towards the motor.
Electrocution	The electrical installation must be made in accordance with the standards that are in force in the given country. - electric wires with double insulation and with an additional cover protecting the wires mechanically and against UV radiation - residual current protection
Short circuit in the installation and fire	- wires with an appropriate cross-section suitable for the power of the receivers and for the selected overcurrent protection - overcurrent fuse according to the power of the receivers
Motor overheating	Motor is designed to work with breaks for cooling. For DC motors there is usually no thermal fuse, therefore the controller

	should provide a limitation of the working time.
Faulty control system (motor)	Risk resulting from the possibility of damage to the elements of the control system. Possibility of a short circuit at the input of the device – overcurrent protection of the supply line will activate Possibility of damage to the relay contacts, short circuit of both contacts of the control unit - short-circuit of the contacts of the DC motor relay or semiconductor switches, depending on the configuration of the switching elements, may cause a short-circuit of the power supply line and then the overcurrent protection will work - faulty motor control - electrical installation defect
Noise	Noise during drive operation does not exceed 70 dBA. Typically the value is between 50 and 60 dBA when measured at 1m. Noise is produced when the position of the blades of the product changes.
Important additional remarks	Technical data can be found on the motor nameplate. The moving parts of the motor must be mounted more than 2.5 m above the floor or other surface from which the motor is accessible

6.4. TECHNICAL INSPECTIONS AND REPAIRS

Current inspections

Performed by the customer on his own. SELT recommends that the inspection be performed at the intervals listed below.

Basic activities including current inspection:

- Inspection and ongoing removal of foreign objects that may interfere with the proper operation of the product and the movement of mechanisms (on an ongoing basis, at least once a day before the start of use and after violent weather phenomena),
- Checking the patency of drains (option in the case of gutters) - once a week and after heavy downpours,
- Removal of debris from gutters (option in the case of gutters) - once a week and after heavy downpours,
- Checking the thickness of the snow - in the case of snow on the product - daily and additionally after heavy rainfall or snowstorms and blizzards,
- Removal of an excessive layer of snow (above the permissible value) and possible snowdrifts and overhangs - each time when the snow load is exceeded and its uneven distribution,
- Inspection and ongoing removal of phytosanitary contamination (immediately after noticing),
- If a defect is observed, disconnect the product from the power supply and have it repaired immediately,
- Observing the opening and closing of the blades with continuous observation of all elements of the product - depending on the frequency of use - at least once a week,
- Before the current inspection in terms of approaching the movable and electrical elements of the product, disconnect the product from the power supply (in particular in a way that prevents the product from starting by the automation),
- If the product is placed at a height above 2.5 m, it is recommended that the above activities be performed by a specialized team.

Technical inspections

Performed on request for a fee by the SELT company or a specialized installer after the warranty period has expired. The scope is each time determined by a specialized assembly team, and the execution is confirmed by a service report.

Cleaning



Before cleaning, the product must be disconnected from the power supply.

Cleaning of metal/aluminium elements:

- It is recommended to clean light dirt on metal / aluminium surfaces with water and mild detergents, using a soft cotton cloth, always rinse after cleaning (if necessary).
- Removal of phytosanitary contamination (immediately after noticing).

Prohibited activities when cleaning the product:

- It is forbidden to use a pressure washer, as well as cleaning agents, sponges and solvents (e.g. alcohol, petrol).
- It is forbidden to use cleaning agents containing chlorine, ammonia, kerosene, acetone and bleach to clean the system or in its vicinity, as this will cause the risk of corrosion.
- It is forbidden to use sharp tools (e.g. wire brushes), cleaning agents that cause scratches (e.g. scouring powders, pastes).
- Do not hold or pull the system or its individual components firmly.
- Do not replace damaged elements with substitutes! Use original spare parts!
- Water must not be allowed to enter the motor
- Do not deform the blades.
- After cleaning is complete, connect the power (control) and test the operation of the system. Pay attention to the operation of the system, and in the event of unusual behavior and noises, report the problem to the direct supplier.

Repairs

Any incorrect/unusual operation of the system or abnormal noises of its operation require user intervention and notification to a specialized installer. Repairs are performed by SELT Sp. z o. o. or a specialized assembly team on the basis of a separate agreement.

7 COMPLAINT / TECHNICAL DEFECTS**7.1 COMPLAINTS (MANUFACTURER'S WARRANTY)**

Complaints can only be made by the entity that purchased the product from the manufacturer.

The terms and way of handling complaints are defined in the General Guarantee Terms and Conditions as well as the General Sales Terms and Conditions.

The General Guarantee Terms and Conditions and the General Sales Terms and Conditions are available on the website: www.selt.com.

The Customer submits a complaint on the Complaint form available on the manufacturer's B2B platform. The complaint notification should be full and complete.

A complaint submitted in a different way than via the B2B Platform, which is incomplete or partial, without given invoice number, order number or contract number, will not be considered.

7.2 TECHNICAL DEFECTS

In case of system defects you should:

- if possible, open the movable roof and decommission the device,
- immediately report the defect of the product to the appropriate specialized assembly team.

8 PRODUCT DISASSEMBLY / UTILISATION / DISPOSAL

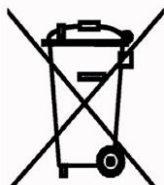


Improper disassembly of the system can cause serious personal injury and damage the system. Disassembly of the system should be entrusted to a properly specialized assembly team or a person with appropriate health and safety training and knowledge in the field of recovery.

a) Disposal of waste electrical and electronic equipment

After the end of the product's life, in order to dispose of it, it is necessary to dismantle it and segregate individual materials and elements in accordance with the Regulation of the Minister of Climate of January 2, 2020 on the waste catalog.

Important disposal information:



In compliance with the Act of 11 September, 2015 on waste electrical and electronic equipment it is forbidden to place the waste equipment marked with the crossed bin symbol with other waste to a container intended for the domestic waste. The user, wanting to dispose of electronic or electrical equipment, is obliged to return it to a waste equipment collection point.

The above statutory obligations were introduced in order to limit the amount of waste generated from waste electrical and electronic equipment and to ensure an appropriate level of collection, recovery and recycling. The equipment does not contain hazardous components which have a particularly adverse effect on the environment or human health

No.	Subject	European Legal Basis	Polish Legal Basis
1	Waste Electrical and Electronic Equipment	Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)	Act of September 11, 2015 on waste electrical and electronic equipment (Journal of Laws of 2022, item 1622, as amended)
2	Waste catalogue	Commission Regulation (EC) No. 574/2004 of 23 February 2004 amending Annexes I and III to Regulation (EC) No. 2150/2002 of the European Parliament and of the Council on waste statistics	Regulation of the Minister of Climate of January 2, 2020 on the catalog of waste (Journal of Laws 2020, item 10)

b) Utilization of used batteries

In compliance with provisions of the Act of 24 April 2009 on batteries and accumulators the **End User** is obliged to transfer used portable batteries, which are no longer used as a source of energy, to a **collector** or to collecting point. It is forbidden to place use batteries with the other waste in the same container.

To prevent environmental pollution and causing a possible hazard for human and animals health, the used battery should be discarded to the proper container in the designated collection points.

No.	Subject	European Legal Basis	Polish Legal Basis
1	Used batteries and accumulators	Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC	The Act of 24 April 2009 on batteries and accumulators (consolidated text, Journal of Laws of 2022, item 1113)

9 MARKING AND LABELLING THE PRODUCT WITH THE CE MARK

9.1 PRODUCT COMPLIANCE WITH THE CE STANDARD

The safe structure of the Pergola SB400PRO was made in accordance with EN 13659:2015 (roof) and EN-1090-1 (supporting structure in EXC2 class).

TO KEEP THIS CONDITION AND TO ENSURE SAFE USE AND MAINTENANCE OF THE SYSTEM, FOLLOW THE INSTALLATION AND OPERATING AND SAFE USE INSTRUCTIONS.

9.2 INFORMATION ACCOMPANYING THE CE MARKING

- a) Marking on the product:


 0408

 SELT SP. Z O.O.
 POLAND, 45-449 OPOLE, UL. WSCHODNIA 23A
 23
 0408-CPR-TA05704

 EN 1090-1:2009+A1:2011
 DWU Nr: 40A/P/2023



- b) Marking on accompanying documents:


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 23
Outdoor shutter pergola Pergola SB400PRO 24V/ DC Power 35 W 23 / DZ / 2023
EN 13659 External sun protection system Resistance to wind load: class 6 DWU 158 / S / 2017


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 23
EN 1090-1 Steel and aluminium constructional components and sets – Pergola SB400PRO DWU 40A/P/2023

10 WARRANTY EXCLUSIONS

General warranty conditions are available on www.selt.com. If the SELT Sp. z o.o. the website is inaccessible then warranty terms and conditions can be obtained from the sales representative of SELT Sp. z o.o.

10.1 WARRANTY EXCLUSIONS

SELT Sp. z o.o. shall not bear responsibility for the following cases and the warranty will not cover:

- Damages caused as a result of other transport than the SELT's transport.
- Damages resulting from storage, installation or maintenance incompatible with the operation and maintenance manual, user's manual or Supplier recommendations, unless they were executed by the Supplier.
- Damages resulting from system modification, unless the modification was performed by the Supplier, on his order or with his written consent.
- Secondary damage resulting from the use of the device despite the original defect being noticed, unless the Supplier has been notified and recommended further use. The assessment of the causes of damage shall be left to the reasonable discretion of the Supplier. Repair or replacement of the device due to damage referred to in this point may be carried out by the Supplier against payment.
- Defects resulting from normal wear and tear of product parts.
- Mechanical and electrical damage caused by the user.
- Damage caused by improper installation of the product by a company other than the manufacturer.
- The use of anchoring elements that are too weak or fastened to the ground (substructure) with insufficient load-bearing capacity (parameters).
- Damage caused by self-repair.
- Damage caused during the use of the system in inappropriate weather conditions (outside the scope provided for in the manual).
- Damage caused by abnormal weather conditions (lightning, storm, hail, water, fire).
- Damages resulting from accidents and unexpected events.
- Characteristic noises of the system operation, arising during the rotation of the blades (this is a feature of the product).
- Leakage due to incomplete closure of moving parts or heavy rainfall.
- Limitation of the degree of water tightness resulting from the location, method of finishing, installation and sealing as well as extreme weather conditions that have a significant impact on the water tightness of the product.
- Leaks or lack of tightness between the gutters and the substructure, as the sealing of the passages between the gutters is performed by the customer.
- Water resulting from condensation that may occur on the lower surface of the blades and the lower surface of the structure.
- The formation of water drops on beams, posts or blades, unless they result from a product defect, provided that consultations with the installer are made, who will assess whether it is due to an assembly defect or a product defect.
- Splashes of water in the areas of the outlets of the drain holes resulting from the specificity of their shape - they cannot be completely avoided.
- Damage resulting from improper cleaning with the use of inappropriate tools, corrosive and abrasive substances.
- Atmospheric and phytosanitary pollution and dirt caused by animals.
- Dirty paint coating in an urban environment exposed to pollution (smog, smoke, acid rain, dust).
- Damage caused by the impact of other products, objects or suspended accessories not provided for by SELT.
- Deformation and damage to the structure, in particular the blades, caused by the load caused by the User (standing, moving or hanging on the product).
- Differences in the colour of the parts that may occur during the production process.
- Discoloration of elements intensively exposed to weather conditions.
- Corrosion of components used in environments with high sea salt content in the air.
- Possible glazing cracks resulting from mechanical damage as a result of incorrect installation of the system or caused by uneven heating resulting from the location of the system installation.
- Differences in the closing angle of the movable roof blades, which can be about 2°, and are a natural feature of the system due to the production and technological tolerances of the elements.
- Damage caused by starting the system in freezing conditions and other natural factors.

- Damage caused by snow remaining on the blades above the permissible values and with uneven snow gust distribution - in the event of snowfall, the roof should be in the snow position.
- Damage caused by the use of equipment and flooring not intended for external use under the product.
- Damages resulting from activating the blade rotation mechanism in winds above wind class 3 (49 km/h) and leaving the blades open in winds above this class.
- The deflections of the structure beams not exceeding the values specified in the PN-EN 1090-1 and Eurocode 9 standards are a natural feature of the system.
- Damage or deformation caused by the side covers not being rolled up above wind speeds >49 km/h.
- Possible stagnation and outflow of water remaining in the gutters of the blades (including temporary dampness/wetting of the area under the pergola as a result of these outflows).
- For pergolas with full cover of the walls, with the length of the blades over 3 m, there may be light reflections and gaps at the junction of adjacent blades, resulting from technological standards.

Selt is also not responsible for:

- A product with the CE label removed or illegible,
- A product in which pictograms informing about particularly important information on hazards and safety have been removed,
- Misuse of the product or use contrary to its purpose,
- Damage due to mains voltage fluctuations if they exceed 5% or faulty control,
- To prevent overheating of the product, heat sources such as grills, open flames must not be located within the system,
- SELT Sp. z o. o. is also not responsible for any events resulting from non-compliance with this documentation, as well as the consequences of events that the installer, investor or specialized assembly team should take into account in the investment or work performed.

Notwithstanding the above, the scope of responsibility of SELT Sp. z o. o. is limited and results from the contract concluded with the buyer of the product.

APPENDIX NO 1 (SOMFY PERGOLA TILT 0 MOTOR OPERATING MANUAL)