

OPERATION AND MAINTENANCE MANUAL

**ASSEMBLY
AND SAFE OPERATION MANUAL**

- 5. Steel and aluminium components and structural sets
- 5.4 Pergola SB500

PRODUCT NAME:

**ALUMINIUM STRUCTURE
PERGOLA SB500**

MARKING OF PRODUCT MANUFACTURER:

- Manufacturer name:
SELT Sp. z o. o.
- Manufacturer registered office:
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- Contact details:
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PRODUCT SAFETY MARKING:

The product meets the CE safety requirements.

THIS OPERATION AND MAINTENANCE MANUAL:

- is valid from 15 APRIL 2020
- and 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 aluminum 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	Building products (CPR)	Regulation 305/2011 of the European Parliament and of the Council	Act of 16 April 2004 on building products (Journal of Laws No. 92 of 2019, item 881 as amended) (Journal of Laws of 2016, 1570; Journal of Laws of 2015, 1165; Journal of Laws of 2016, 542)
4	Essential requirements for the machinery	Directive of the European Parliament and of the Council 2006/42/WE	Regulation of the Minister of the Economy of 21 October 2008. Journal of Laws of 2008, No. 199, item 1228) 1228 as amended (Journal of Laws of 2011, item 124)

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 USED

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

Pictogram	Pictogram meaning	Information
	INFORMATION	Read and understand the user's manual before using the product. Observation of the user's manual is a condition for: - failure-free operation of the product, - enforcing claims for defects. Keep the manual for safety of the people.
	INFORMATION	No hazardous or harmful consequences for people or property.
	NOTE!	Situation, which can cause product or other damages. No hazard for people.
	WARNING!	Risk of danger.
	HAZARD!	This symbol indicates all information concerning safety, which could pose a hazard for human health or life in case of non-observance. Health of life hazard. Risk: hazard of serious personal injury or death. Hazardous operation which could cause injuries or damages of the product.

	WARNING!	Human life or health hazard caused by electric shock.
	HAZARD!	Hand crushing hazard.
	WARNING!	Head injury hazard.
	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 definitions shall apply:

Product: PERGOLA SB500

The Pergola SB500 system is made of powder-coated aluminum profiles and components made of stainless and galvanised steel. Roof framework made of movable aluminium blades. 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.

Mobile roof:

Part of the product consisting of blades fixed to cross bearing beams, with option to change inclination angle of the blades, which are moved by a control mechanism, which ensures that the product operates as intended.

Blades: Part of the product, made of aluminium extruded profiles, intended to cover horizontal or oblique surfaces being filling of mobile roof. Blade shape ensures drainage of storm water and aesthetic cover against sun rays.

EXECUTIONS:

Free-standing - self-supporting structure containing single mobile roof module supported on front and rear columns.

Modular - Self-supporting structure consisting of common beams and common posts constituting an interconnected structure.

Wall-standing - Structure including a movable roof module, partially supported on posts and fixed by a roof beam to the load-bearing wall (along the rear or side edge of the roof) with through anchors (Selt not included) and special nuts (included)

1.4 SUBJECT, INTENDED USE AND CONTENT OF THE DOCUMENTATION

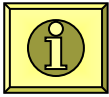
This documentation covers the products manufactured by **SELT Sp. z o.o.**

This documentation applies to all **PERGOLA SB500 types**.



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'S SAFETY
KEEP THIS MANUAL.



This documentation is valid only with the information applying to the given product available on the website www.selt.com

The documentation is part of product delivery and should be permanently kept nearby all the time. WARRANTY for the product is also an integral part of this documentation.

The documentation contains:

- important guidelines for assembly, use and maintenance of the product,
- important recommendations for storage and transport,
- guidelines, which observance would ensure many years of trouble-free 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 appropriate for increasing the quality of product operation and safety of use.

Copyrights for this documentation remain with SELT Sp. z o.o. with its registered office in Opole. The documentation may not be used, in whole or in part, for competitive purposes or made available to third parties without permission.

2 PRODUCT TECHNICAL INFORMATION

Technical specifications of the product is available at www.selt.com after logging in

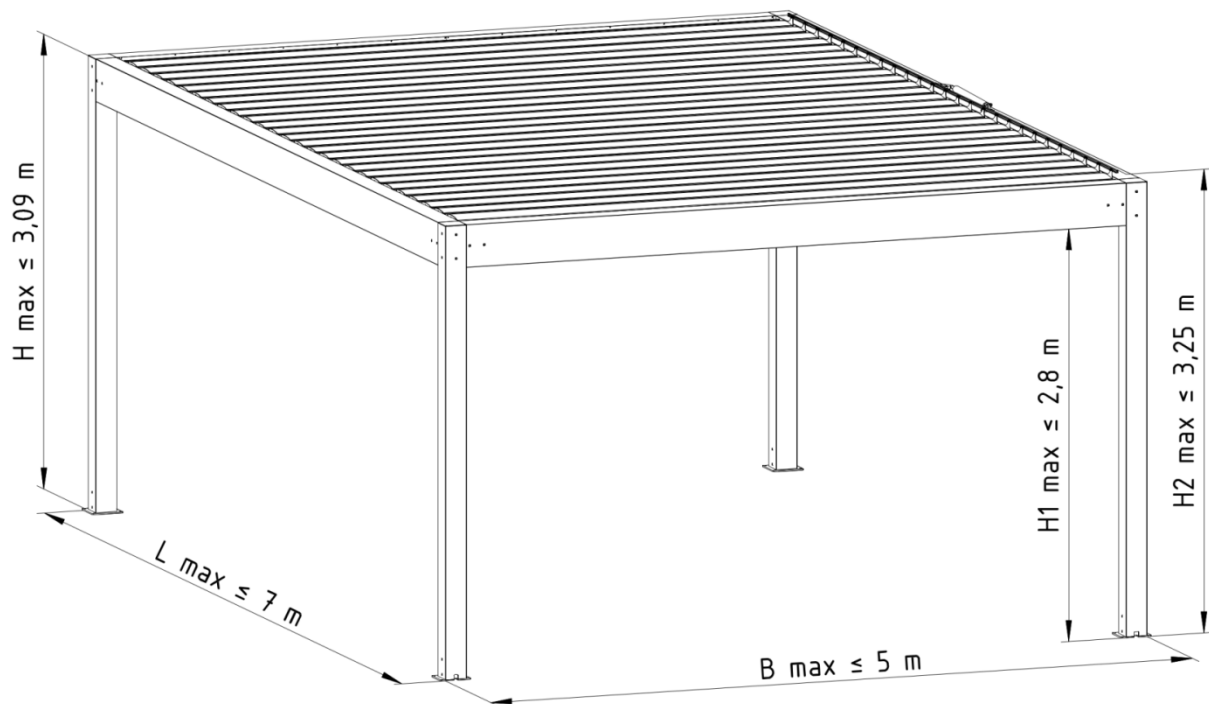
2.1 TECHNICAL PARAMETERS:**Pergola SB500 – Free-standing**

Fig. 1. Standalone Pergola SB500 - Dimensions: **B max** – maximum width, **L max** – maximum length, **H max** – frame maximum height, **H1 max** – free clearance of the frame, **H2 max** – maximum height of position of the mechanism intended to change angle of the blades.

System module dimensions:	width	length	height	height in the clearance
Supporting structure	to 5000 mm	to 7000 mm	to 3090 mm	to 2800mm
Range of use / operation				
Roof blade pitch	250 mm			
The difference of the fastenings blade's (transverse slope - of the blade axis)	5 mm			
Ambient temperature	+10 to +40°C (folding/unfolding of mobile roof) - 30 to +50°C (support structure)			
Humidity	90% without condensation (blades rotation) in whole range (support structure)			
Electric drive of the motor with the following parameters:				
- supply voltage	230V/50Hz			
- power	126 W			
- power consumption	0,55 A			
- ingress protection	IP 65			
- continuous operation time	5 min			
- cylinder advance force	max. 200 mm, dynamic/static force 1200N			
- cylinder retract force	6 mm/s			
- operating temperature	-20 to 80°C			
Technical data of electric motors				
Drives (drive types):	ELERO Piccolo XL linear drive. Electro-mechanical drive can be started manually with a switch or through external wireless or radio control panel.			
Connection to electrical installation	approx. 2 m power cord			
Assembly:				
Intended use	External			
Site installation	To the supporting base or to the wall (push-through installation with anchors through the beam)			

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 → AUTOMATION

2.2 PRODUCT SPECIFICATION

The products manufactured by SELT Sp. z o.o. have excellent technical and operational parameters.

List of product types:

- Free-standing single module or modular,
- Wall-mounted single module or modular
- Installed outside the building, started by a electro-mechanical drive connected to the control system,

They have the following features:

- Mobile roof opens electrically; it is possible to install systems by Selt Sp. z o.o. on walls
- Dedicated Slide wall system with fabric or blades
- Protects against sun and rain
- Waterproof thanks to water drainage through an integrated gutter and front columns to the extent provided by the manufacturer.
- Location, method of finishing, installation and seals as well as weather conditions have a considerable impact on the waterproofness of the product.
- They limit access of the daylight depending on the demands.
- They protect against rain and wind impact (to the values limited by a wind rating acc. to EN 13659).
- No protection against snow fall.
- It is forbidden to start the mobile roof during snow fall or ice build-up and outside the temperature range given in the manual.
- They protect against excessive penetration of sun rays.
- They do not limit external visibility (outside the roof area).
- They do not release any toxic substances during operation.
- Noise emission by the product with electro-mechanical drive (connected with working movement of the mobile components, generated by electric motor during operation) is not considered as significant hazard and is a matter of comfort.
- The motors ensure IP 65 ingress protection of the enclosure.
- Product and drive design allows the blades to be stopped in the designated position in the working range safely and to stay there when unused.
- Rotational motion of the blades can be started by manual switch or by remote control.
- 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.
- Optional LED lighting in horizontal bars along the edge of the gutters
- Maximum drainage capacity removes rain with an intensity of up to 0.05 l/s/m² with a maximum duration of 5.3 minutes (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.
- For pergolas will full cover of the walls, with the length of the blades over 3,5 m, there may be light reflections and gaps at the junction of adjacent blades, resulting from technological standards.

3 TRANSPORT AND STORAGE OF THE PRODUCTS

3.1 COMPLETENESS AND QUALITY CONDITION OF THE DELIVERY

SELT Sp. z o.o. makes every effort to ensure that the product matches your order. However, checking of product completeness should be done by the Purchaser and take place when it is received.

The driver/warehouse keeper/assembly crew should be immediately notified about the non-conformities and they should be marked on the Stock Issue Confirmation on pain of loss of claims arising from it.

Checking of quality within the scope of apparent defect should be done by the Purchaser and should take place when the goods are received.

Mechanical damages, scratches, cracks etc. should be considered as apparent defects.

SELT Sp. z o.o. undertakes to rectify the non-conformities in quantities and possible replacement of parts with apparent defects in the shortest possible period of time.

3.2 GENERAL CONDITIONS FOR TRANSPORTING AND STORING THE PRODUCT.

List:

- the product is factory packed in cardboard packaging protecting against damage during storage, during transport and during relocation to the final assembly 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 of the product,
- products placed on means of transport should be protected against relocation and damage during the transport (e.g. with distance pieces, protecting belts etc.).
- the product during transport 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 the product weight exceeds 25 kg, its relocation to the final assembly location should be carried out by an adequate number of people so that each person does not carry more than 25 kg.

3.3 DESCRIPTIONS, WHICH SHOULD BE OBLIGATORY PLACED ON THE PRODUCT PACKAGING.



Please read carefully the operation and maintenance manual available at the following website prior to the assembly and use of the product: <http://www.selt.com/doc-pl>

4 PRODUCT ASSEMBLY

This chapter contains general requirements concerning the product assembly. Correct assembly is a necessary condition for smooth operation of the product. SELT Sp. z 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 ASSEMBLY

- 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 these applying to safety of operation of electrical equipment and work at heights,
- the product should be installed in mechanical way (foams, adhesives or similar materials are not permitted as fixing materials),
- base, to which the product handles will be fixed, should be a reliable structure (concrete, brick, etc.)
- in case of metal structures connected with each other in accordance with the applicable rules for metal joining, the assembly should be executed to the materials with proper thickness of the walls,
- prior to assembly move away all unnecessary electrical cables and check route of installation in the fixing locations to avoid their damages.

The manufacturer allows the product to be assembled on the following types of substrates (wall load bearing):

- reinforced or unreinforced concrete, class at least C20/25, non-cracked,
- concrete specified above having a layer of insulation with a thickness of up to 25 cm,
- wall at least 24 cm, of Mz solid bricks, NF format, with a strength of at least 20 MPa and a density of $>1.8 \text{ kg/dm}^3$ based on M2.5 - M9 mortar
- wall at least 24 cm, of silicate blocks with a strength of at least 10 MPa and a density of $>2 \text{ kg/dm}^3$ based on M2.5 - M9 mortar
- wall at least 17.5 cm, of silicate perforated blocks with a strength of at least 20 MPa and a density of $>1.8 \text{ kg/dm}^3$ based on M2.5 - M9 mortar
- wooden (wall/ceiling) beams, class of at least C24, without cracks, with a thickness of at least 100 mm
- wooden rafters, class of at least C24, without cracks, with a thickness of at least 70 mm
- walls made of silicate blocks (full or hollow) with a layer of insulation – to be consulted with an authorised designer,
- solid brick walls with a layer of insulation - to be consulted with an authorised designer,
- wall made of cavity ceramic hollow bricks without insulation or with a layer of insulation - to be consulted with an authorised designer,
- autoclaved aerated concrete blocks - this substrate is not recommended.

4.2 REQUIREMENTS FOR SAFE ASSEMBLY OF THE PRODUCT AT HEIGHTS



Product assembly, 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 hazards for human health and safety - in particular in case of fall from heights.

Obligation to ensure preparation of occupational health and safety plan during assembly should be fulfilled by the Purchaser.

The Purchaser should specify in the occupational health and safety requirements in details during works at heights, and ensure:

- direct supervision of execution by person appointed for this purpose (e.g. lead discipline engineer, charge-hand),
- 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.

Work at height should be organized 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.

The purchaser is obliged to ensure access to location, where the works on heights are executed, only for authorized persons and persons, who were properly instructed. OHS services personnel should inform the employees staying, or who could be staying on the area where the works are conducted or in the area adjacent thereto, about performed works on heights and necessary security measures, which should be applied during these works.

4.3 PREPARATION FOR ASSEMBLY

- unpack the product and check if there are all components necessary for assembling,
- prior to assembly 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 system Purchaser.

4.4 GENERAL GUIDELINES FOR PRODUCT ASSEMBLY

- incorrect assembly or errors during assembly may have serious consequences during product operation,
- Pergola SB500 is an open, external covering for terrace. Equipment under the pergola should be intended for outdoor use,
- prior to assembly you should check whether the space for assembly is free from obstructions,
- 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,
- 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 capacity (the purchaser is responsible for the proper installation or fixing of the system),
- installation or anchoring should be consulted with an authorized designer,
- the product should be protected against dirt (e.g. using bricklaying mortar, caulking foam, silicone), which may cause its damage,
- if it is necessary to use polyurethane foam, silicone or other agents, you should rigorously observe the recommendations of the manufacturers available on the packing materials



Incorrect assembly may cause hazardous situations for the user.

Incorrect installation and anchoring of the system (product) may lead to serious injuries and cause damage to the system. The system (product) should be installed and anchored by a team of assemblers with sufficient qualifications or by a person having undergone appropriate OHS training and having technical skills and expertise.

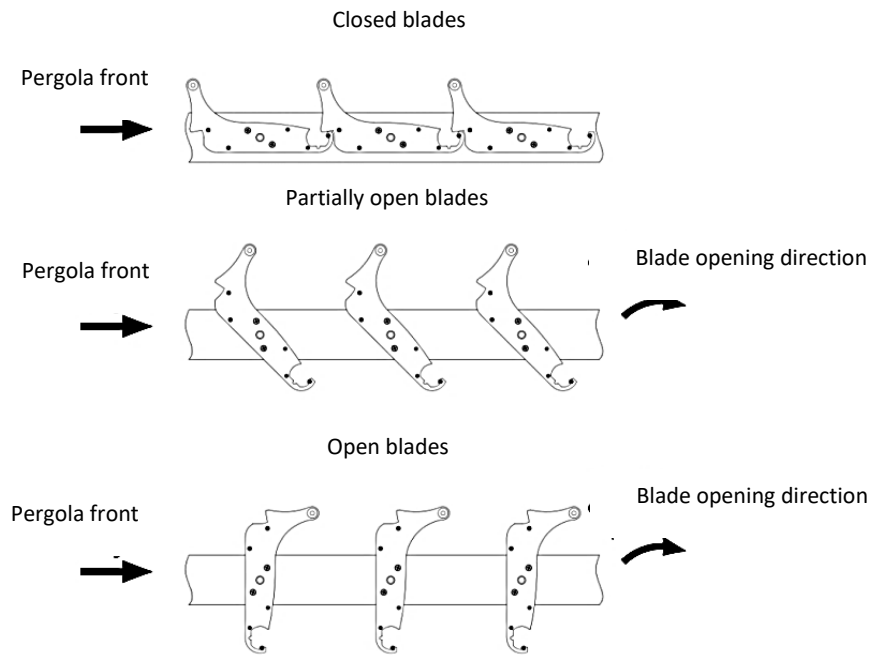


Fig. 2. Standard blade opening direction setting for Pergola SB500.

4.5 ASSEMBLY TOOLS

Assembly 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,
- screwdriver.
- measure,
- hammer
- pencil/felt tip,
- bubble level,
- flat wrenches,
- wrench spanners (Allen keys),
- rope for protections / hoisting / removal of components,
- torque wrench.

Note:

- Prior to the assembly you should check the visual condition of the components packaging delivered for assembly, the visual condition of the components and their completeness. The carrier shall be responsible for damages occurring during transport.
- Components are delivered in the packaging and wrapped with stretch foil to protected them during assembly.
- Accessories (feet, screws, screws, small and large snap rings, small and large slip rings, blade pins, silicone, assembly instructions) are packed in cardboard boxes



Sample of the box with accessories:

	<p>Content (depending on variant):</p> <ul style="list-style-type: none"> - feet with assembly bones - stainless steel M8x20 tapered screws with Allen - stainless steel M8x80 tapered screws with Allen - lacquered (black) St4.2 screws with a lenticular head - stainless steel screws M5x20 with cylindrical head and hexagon socket + washers - stainless steel guide handle pins - large plastic slip rings - small plastic slip rings - large stainless steel snap rings (Segera) - small stainless steel snap rings (Segera) - silicone (tube) - roofing sealant - controller + remote control (in the manufacturer's packaging) - longitudinal nuts (stainless sleeve) - option - special washers (aluminum with a cut corner) - optional
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Screw / nut	M3	M4	M5	M6	M8	M10	M14
Maximum tightening torque [Nm]	0.9	2	4	7	17	33	57

4.6 ASSEMBLY

4.6.1 PERGOLA ASSEMBLY

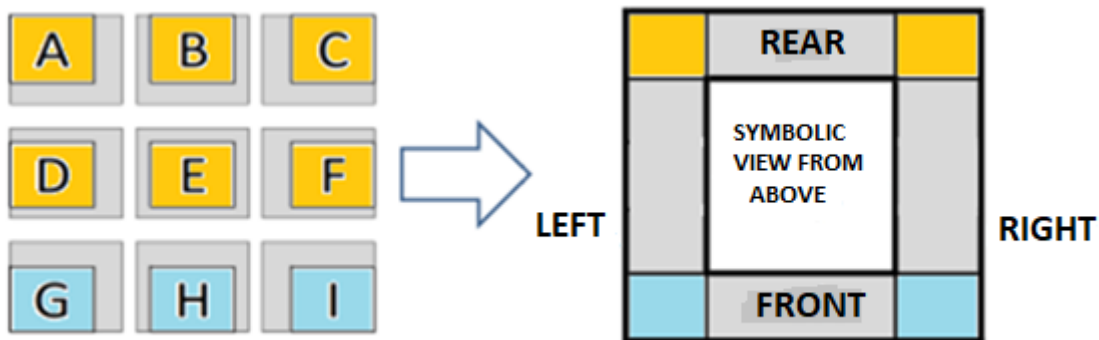
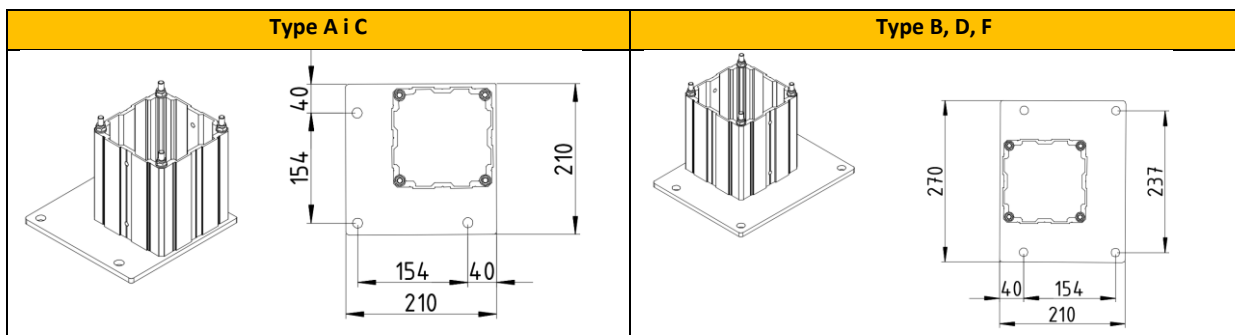


Fig. 4. Marking the types of feet (top view) of the Pergola SB500



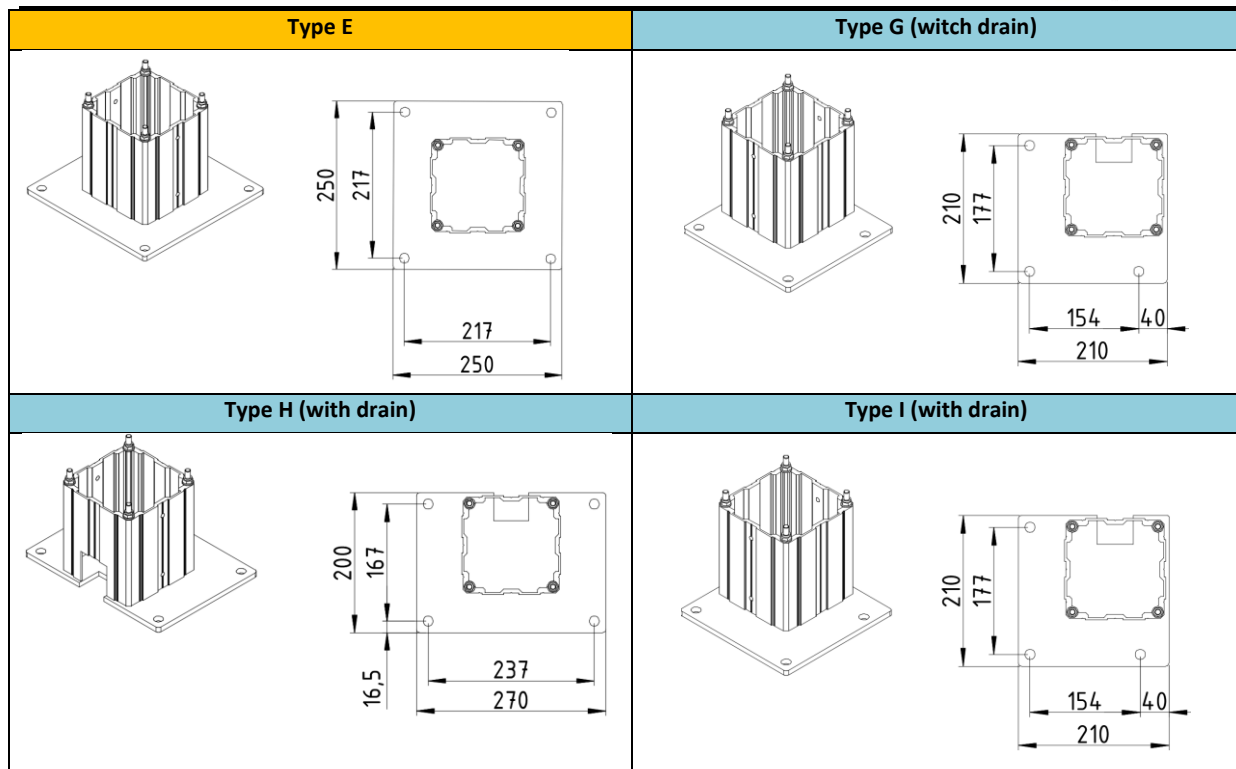


Fig. 5 Types of SB500 pergola feet

4.6.1.1 GUIDELINES FOR SETTING AND ANCHORING THE PERGOLA SUPPORT STRUCTURE

Before the support structure is set, places in which the Pergola SB500 posts have to be determined.

To perform the above-mentioned task properly, follow these guidelines and good building practices.

- The system dimensions are always measured to the outer corners of Pergola posts / outer post surface.
- Both diagonals, C and D, marked in Fig. 5 must be equal. If they are not, the place of installation of the support structure has been determined incorrectly.
- There should be places for anchors where the Pergola SB500 support structure is installed. Hole spacings and locations for the structure to be anchored are shown in Figure 4.
- The support structure should be installed only in a level and load-bearing substrate with permanent ground coordinates over the entire installation surface or variable ground coordinates over the installation surface under selected column footings if the support structure design has provided for it.
- In case of incorrect ground coordinates for the installation surface under support structure footings, they should be corrected with washers for the entire footing surface or solutions that following good building practices. The surface of washers to be put under footings should be flat and incompressible.
- Anchors may be permanently fixed to a foundation or surface having sufficient strength and load-bearing capacity for the Pergola SB500 system. The anchoring method should always be selected by a licensed designer.
- Before anchoring structural components, they should be checked whether they are level and vertical and whether the right angles between beams are correct. Their settings should be adjusted if necessary.
- Improper installation of structural components prevents the support structure of the Pergola SB500 to be installed and the screws in the support structure components to be fixed.

System width

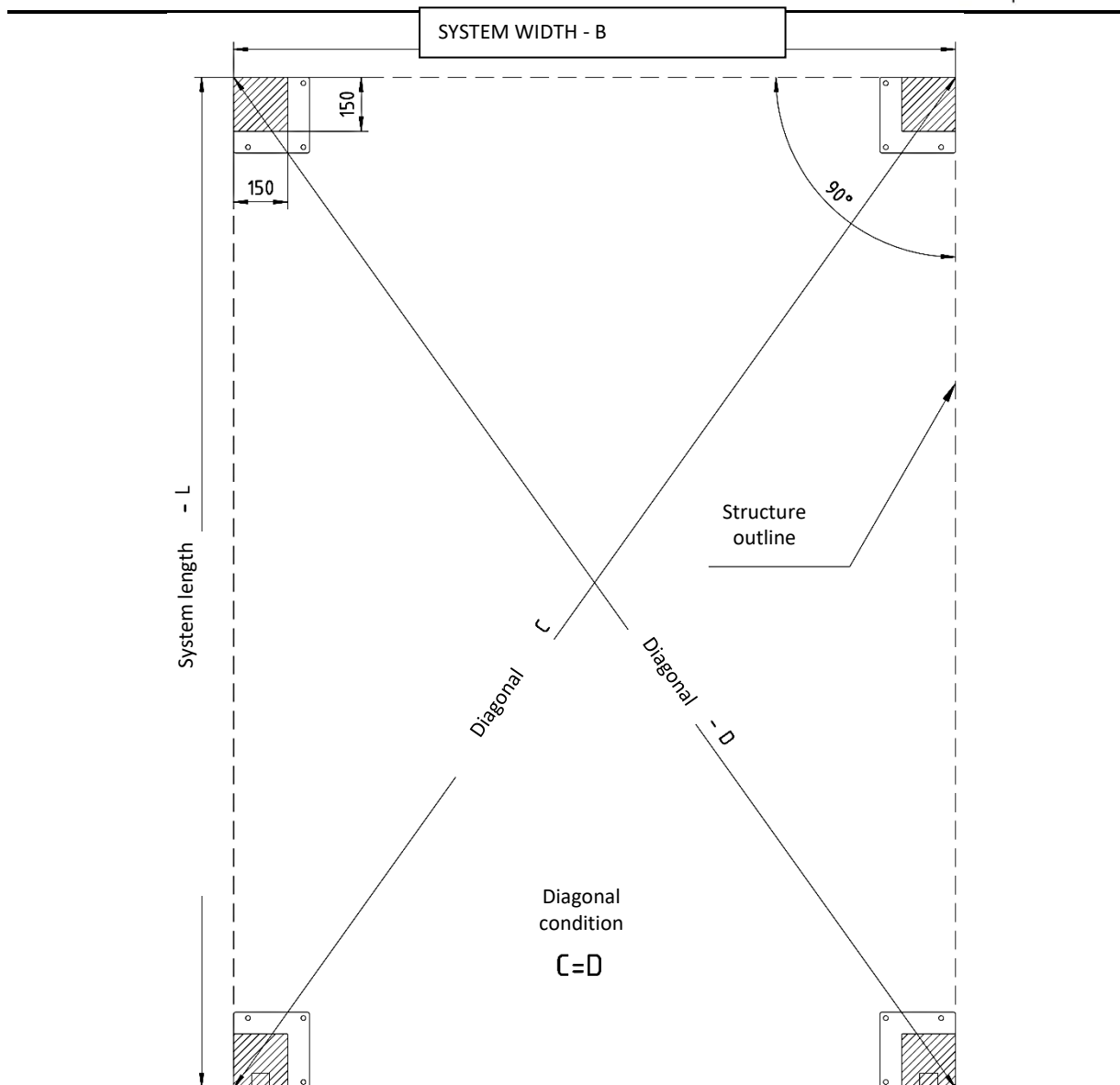


Fig. 5. Example of the determination of the Pergola SB500 structure setting in a corner design.

Note:



- Prior anchoring you should check installation correctness of the support structure by checking the diagonals between the columns 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 footing, using anchors ensuring stable fixing. Anchoring should be selected by the licensed designer every time. Appropriate screws/anchors should be used to screw the footing to the substrate. It is recommended to use screws/anchors with a diameter of 12 mm. Screws/anchors do not come with the product so the customer is responsible for buying them.

Correct anchoring methods

Incorrect anchoring methods

LEGEND

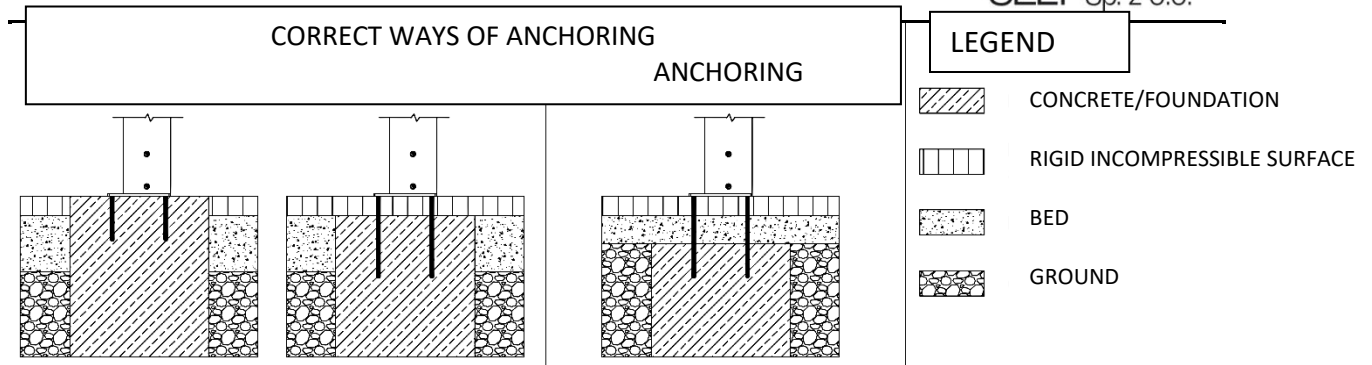


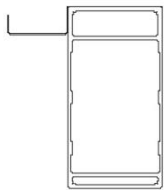
Fig. 6. Guidelines for anchoring the Pergola SB500 support structure. Foundation

4.6.1.2 PERGOLA SUPPORT STRUCTURE INSTALLATION



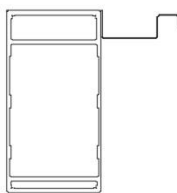
1. Place all beam elements on their correct sides and post in their correct corners.
2. The front beam (Fig. 1) has a side-mounted sheet metal gutter. Place it with the gutter facing the inside of the pergola.
3. The rear beam (fig.2) has a metal sealing tongue (gutter with a roof) attached to the side. Place it with the roof towards the inside of the pergola

Attention:
Pay attention to the correct positioning of the posts in the corners



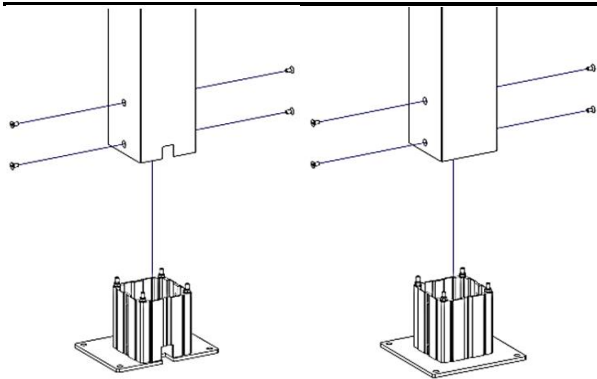
FRONT

Fig. 1



REAR

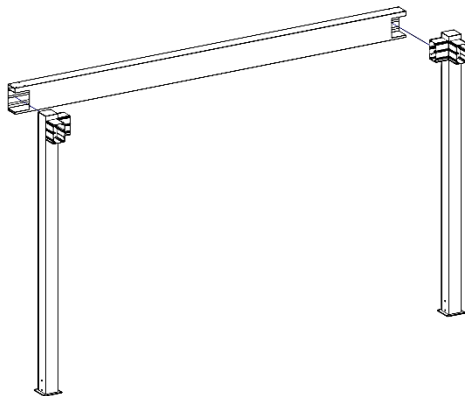
Fig. 2



4. Install all foot's into the right posts. Screw on both sides with bolts

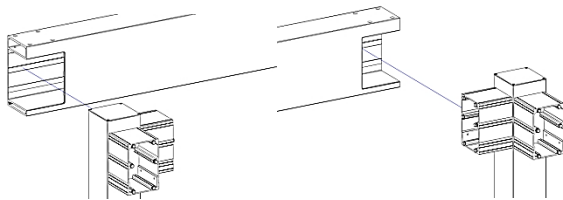
Fig. 3 Attach all the feet to the appropriate types of posts. Screw on both sides with conical bolts with an allen socket M8x20.

For G, H and I types of feet, set appropriate slots for water outflow in the post and the foot (fig. 3).



5. Slide the rear beam horizontally from the outside over the bones in the rear posts (fig. 4).

Fig. 4



6. Srew the rear beam by the top ends of the beam with countersunk screws with M8x20 Allen socket (fig. 5).
7. Attach the rear beam end cap to the bones in the rear post from the inside side of the rear beam using conical screws with allen M8x20 socket (fig. 5).

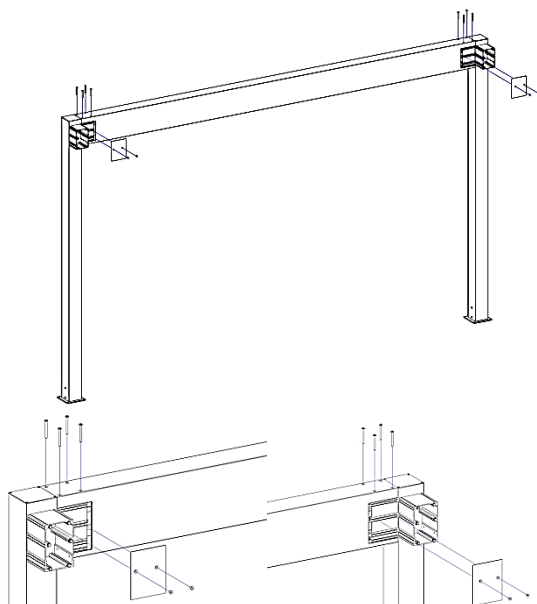
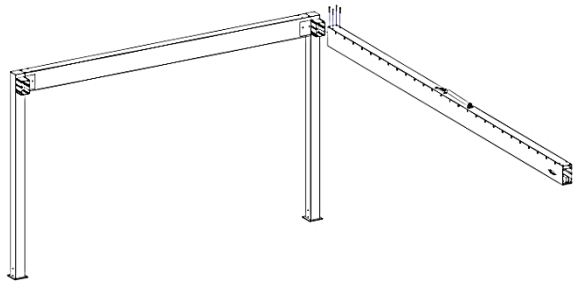


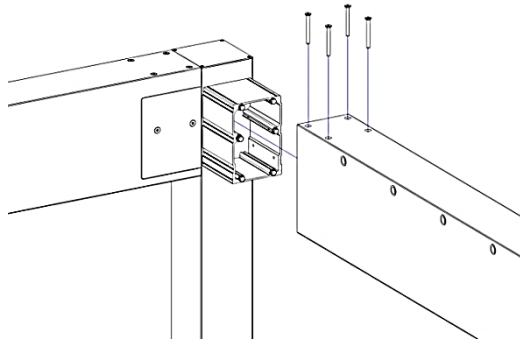
Fig. 5



8. Anchor the rear frame to the ground with appropriate anchors (max. Size M12).
9. Slide the side drive beam over the bone in the rear post from the front (fig. 6).

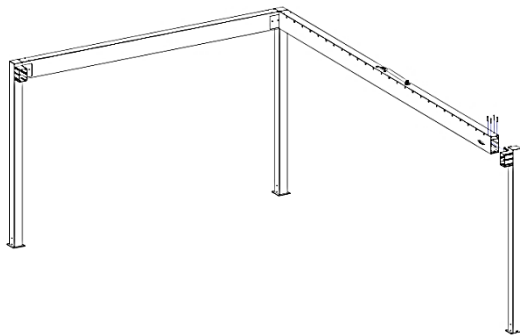
NOTE: Remember to support the side beam so as not to overturn the structure. Selt recommends manual forklifts for lifting elements during consolidation.

Figure 6



10. Rear beam screw by at the top ends of the beam with countersunk screws with M8x20 Allen socket (fig. 7).
- NOTE:** secure the motor against relocation during the time of installation.

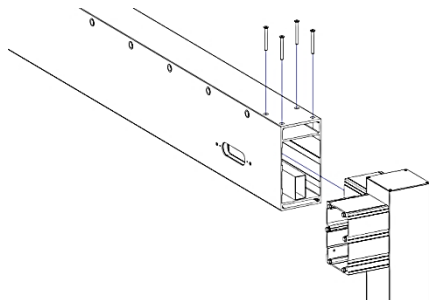
Fig. 7



11. Slide the bone of the front post on the side driving beam from the front (fig. 8).

NOTE: Pay attention not to damage the water outflow from the gutter during assembly of the elements and to place it correctly in the front post.

Fig. 8



12. Screw the side beam from the top to the bone using conical screws with allen socket M8x80 in the front post (fig. 9).

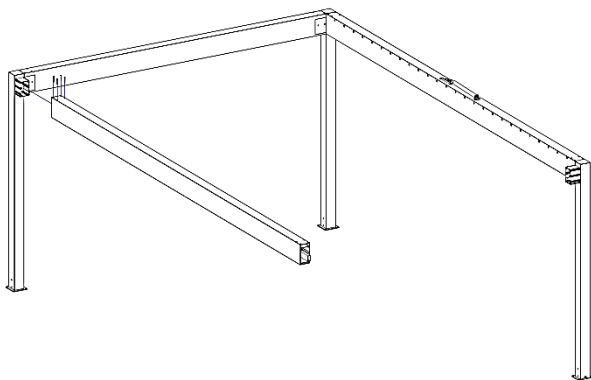
Fig. 9



NOTE: In case of visible unevenness of the beam and post edges (fig. 9a) it can be corrected by:

- checking if the diagonals of pergola are identical and, if needed, correcting the position of the base of the foot
- removing the beam from the socket/bone, loosening M8 screws securing the socket/bone in the post and using a hammer to move the protruding end of the socket in the correct direction. Tighten the socket again. Place the beam so that its plane is aligned with the post.

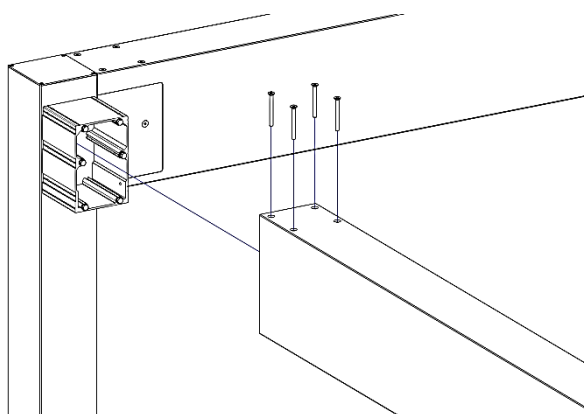
Fig. 9a



13. Slide the second side beam from the front over the bone in the rear post (fig. 10).

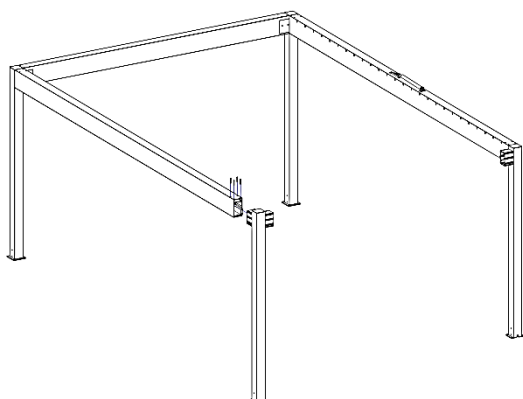
NOTE: Remember to support the side beam so as not to overturn the structure.

Fig. 10



14. Tight the second side beam from the top using conical screws with an M8x80 Allen socket to the bone in the rear post (fig. 11).

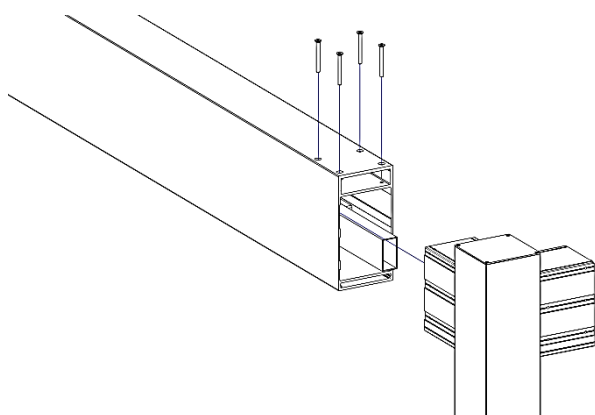
Fig. 11



15. Slide the front pillar over the second side beam.

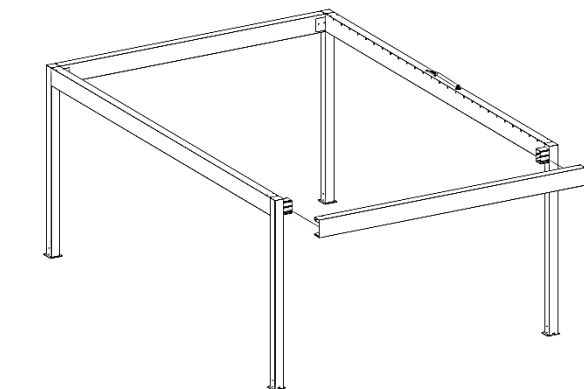
NOTE: Pay attention not to damage the water outflow from the gutter during assembly of the elements and to place it correctly in the front post.

Fig. 12



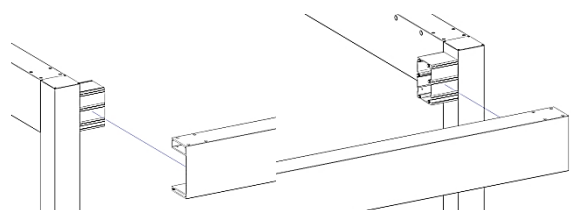
16. Tight the side beam from the top using conical screws with an M8x80 Allen socket to the bone in the front post (fig. 13).

Fig. 13

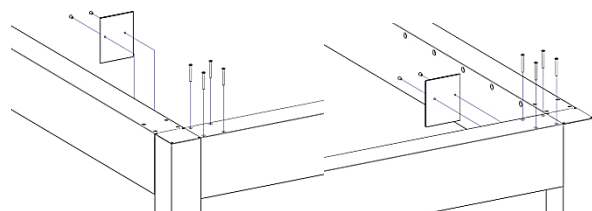


17. Slide the front beam from the outside over the bones in the front posts (fig. 14).

Fig. 14



18. Screw the front beam from the top to the bone using conical screws with an M8x80 allen socket in the front post (fig. 15).



19. Attach the plugs of the front beams using conical screws with an M8x80 allen socket in the front post (fig. 15).

Fig. 15

Uwaga:

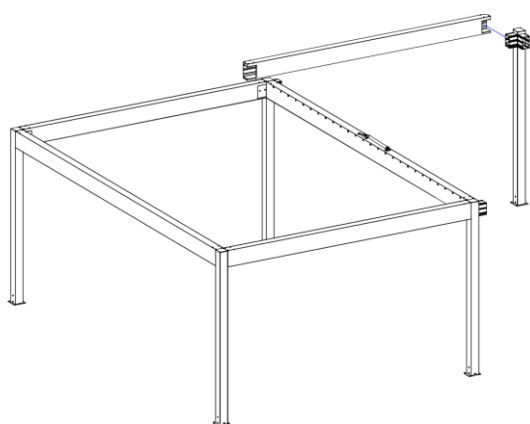


A different order of installation is allowed. Due to the considerable mass of the installed elements, it is recommended to use a manual forklift (required lifting capacity of 150 kg).

- After assembling the entire frame, **check the compliance of diagonals and parallelism as well as perpendicularity of the sides and alignment of the posts.**



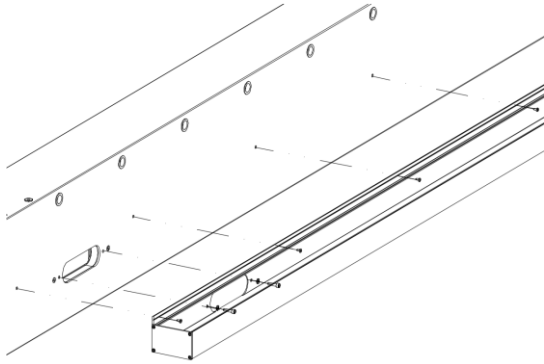
NOTE: The assembled load-bearing structure should be placed in the right place **and anchored to the ground suitable fastening device.** Suggested anchors in size M12. The purchase and selection of elements for anchoring the structure is the responsibility of the buyer of the system.



20. For the modular version: after assembling and anchoring the end module, repeat steps 5 to 19 for the next module (fig. 20).

Fig. 20

4.6.1.3 GUTTER ASSEMBLY



1. Determine the position of individual gutters in accordance with the layout of overflow openings in the beams. Start the installation of gutters on both side beams (with openings for blades).
2. The back surface of the gutter adjacent to the beams should be carefully sealed with silicone (delivered with the product). Screw the gutter with st4.2 screws along its upper edge (fig.17).

Fig. 17



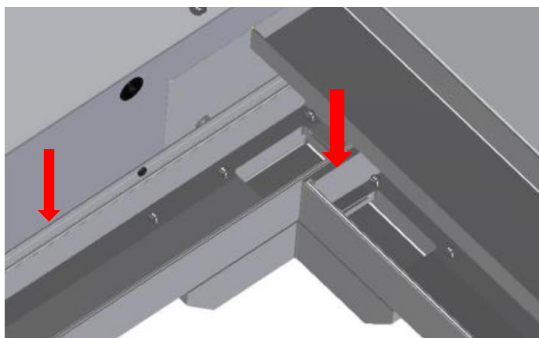
3. At the slotted holes of the overflow tighten at both ends the M5x20 stainless screws with cylindrical head and Allen sockets and a washer (fig. 18).

Fig. 18



4. In all the side oval overflow and drain holes of the gutters secure with silicone sealant the bottom and circular edges of the gutter connection with beams (fig. 19).

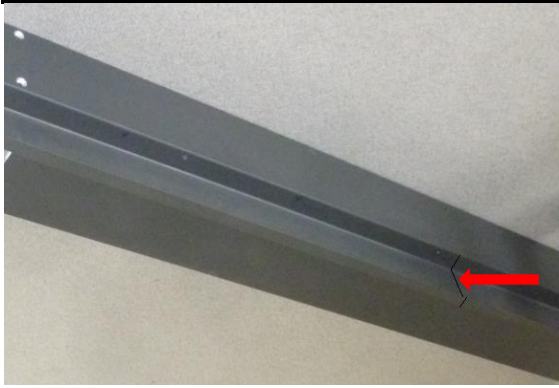
Fig. 19



5. Install gutters to the front and rear beam (depending on pergola variant) – by sliding them between the side beam gutters. Remember to seal beforehand (see p. 1). Screw according to point 2 and 3. Seal with silicone the upper joint of the gutter with adjacent gutters (fig. 20) and the side oval overflow holes (fig. 20).

NOTE: After screwing all the gutters put an additional silicone layer on the joint of the upper edge of the gutter adjacent to the beams (arrows).

Fig. 20



- Use silicone to seal the joint (point of contact) of the bent gutter in the middle of the front beam (fig.21).

NOTE: Sectional joining of the sealing tongues may occur with pergola widths close to the maximum size.

Fig. 21



NOTE: 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 include: the joints of the gutters with the beams, contact points of the side beam gutters with front/rear beam gutters, the lower edges of the gutters under the side oval drains, places for fixing screws of wall brackets with beams, the connection of the bent gutters in the rear beam.

4.6.1.4 INSTALLATION OF THE BLADES



NOTE: For convenience, it is recommended to start blades assembly from the extreme left module (when the system is viewed from the front while the motor is located on the right side beam). Then, start assembly of the blades in the module on the right side and proceed with blades assembly in the modules to the right side.



Picture of blade, motor side (fig. 19).

NOTE: Pin has 4 small grooves for mounting the snap-ring.

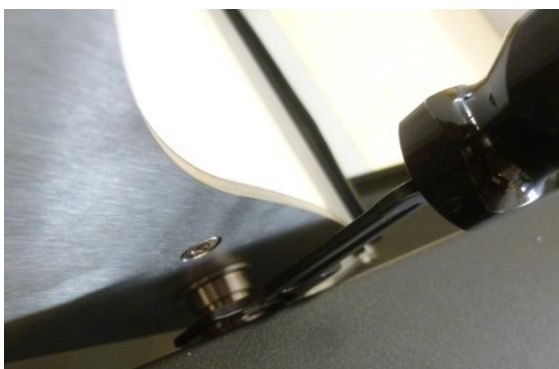
Fig. 22



Picture of blade, bearing side (fig. 23).

NOTE: Pin has 4 small grooves for mounting the snap-ring.

Fig. 23



- In the pins of blades from the side of the drive end cap place large snap-rings in the second groove from the surface of the end cap – repeat for all blades on the same side and in the same groove (fig.. 24).

NOTE: A dedicated ring insertion tool is recommended.

Fig. 24



2. At the upper end of the drive end cap insert small slip rings one-sidedly into the hole from the blade side (rys. 25).
3. Repeat this step for all blades.

NOTE: Press the slip rings carefully into the holes – lack of deep mounting may result in difficult connection with drive rod.

Fig. 25



4. Insert sequentially blades to the beams: place them horizontally above pergola (drive side of the beam with motor), insert the end without the snap-ring into the hole in the beam until it stops, then lower and insert the other end of the blade (with the ring) until the snap-ring rests against the beam. Place the missing large snap-ring into the groove of the pin closest to the beam (fig. 26).
5. Repeat the above procedure for all blades.

NOTE: Blades have longitudinal slope. The difference in mounting levels of both ends of the blade is 20 mm and the blade is mounted higher on the motor side.

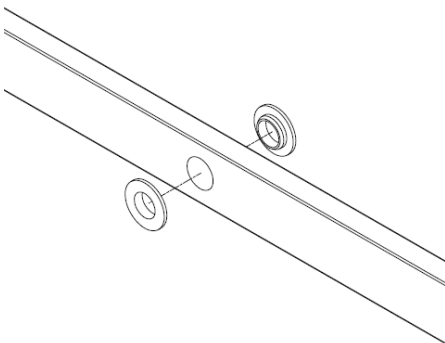
If the insertion of the ring in the groove causes the blade to fall out, the ring on the opposite end should be put into the adjacent groove to make sure the fastening is secure.

Fig. 26



NOTE: Placing the snap-rings in wrong grooves may cause excessive looseness of the longitudinal blade which in turn may lead to the blade falling out thus creating a threat.

4.6.1.5 DRIVE ASSEMBLY



1. Install the small slip rings in the drive rod – on both sides of the drive rod's hole (fig. 24).

NOTE: Press the slip rings carefully into the holes – lack of deep mounting may result in difficult connection with blades end caps.

Fig. 27



2. Place two small slip rings on one side of the motor guiding bracket on the side opposite to blades (fig. 28).

Fig. 28



- To connect the drive rod with blades end caps and motor bracket use guiding bracket pins and small snap-rings. Pin has 2 grooves: use the groove at the very end only for mounting with the motor bracket. Use the groove farther from the end for the remaining drive end caps (without motor bracket) – fig. 29.

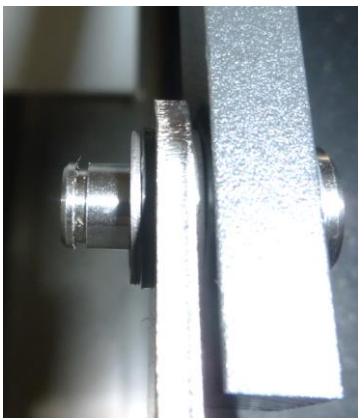
Figure 29



- Install the drive rod to the blades. Start the installation with the motor bracket. Place it against the side of the motor guiding bracket. On the opposite side, place the hole of the drive end cap by rotation movement. Press in the bracket's pin from the motor side (reverse direction is also allowed) until the extreme groove is visible. Place the small snap-ring (fig.27). Repeat this procedure for the second pin of the motor bracket.

NOTE: Before installing the rod, motor should have the piston completely hidden (it is delivered like this by SELT). When inserting the pin, there is a risk of the slip ring being forced out. A dedicated ring insertion tool is recommended

Figure 30



- Install the drive rod to other blades. Place the hole of the blade's drive end cap to the hole in the rod by rotation movement. Press the bracket's pin into the joint from the blade side (reverse direction is also allowed), until the second groove appears on the other side (farther from the end). Place the small snap-ring (fig. 28).

NOTE: When inserting the pin, there is a risk of the slip rings being forced out.. A dedicated ring insertion tool is recommended

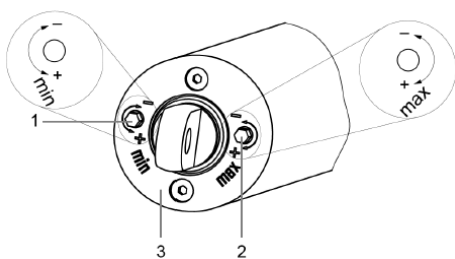
Figure 31

- Repeat this procedure for all blades.

- Carry out the electrical connection of the motor. Use the programming cable to open and close the blades twice.
- If necessary, adjust the closing of the blades by adjusting the limit switches at the end of the motor piston (fig. 29). **In the closed position of the blades the rod cannot be bent.** The "max" knob means the piston's extension end limit switch. The "min" knob means the piston's retracting end limit switch. One turn results in an extension of 0.7 mm (the full range allows a regulation up to 50 mm). Use a size "4" socket wrench for rotation. A minimum stroke of 30 mm should be left.

NOTE: The limit switches adjustment should only be made manually with a wrench. **Using a screwdriver/drill may destroy the limit switch's gear rack.** In practice, only make adjustments on the "max" knob.

Figure 32





NOTE: The limit switches adjustment should only be made manually with a wrench. **Using a screwdriver/drill may destroy the limit switch's gear rack.** In practice, only make adjustments on the "max" knob. (rys. 33).

Figure 33

Permitted adjustment range of the limit switches



NOTE: There is a risk of damage to the device as a result of exceeding the permitted adjustment range

- The "min-hidden" and "max-extended" limit switches can be adjusted up to 50 mm in the direction of stroke reduction.
- A minimum stroke of 30 mm must be maintained.

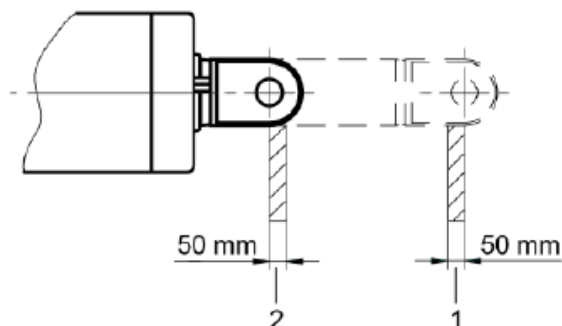
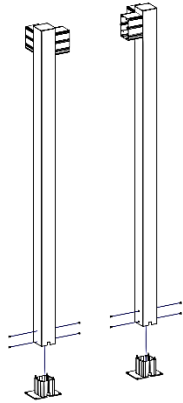


Figure 34 Possible reduction in motor stroke

- 1 – Stroke reduction "extension"
- 2 - Stroke reduction "retraction"



1. Install the front footing to the front post in accordance with Figure 1 and 2. Repeat for the other front post.

NOTE: The front post is available in left and right version.

Figure 1

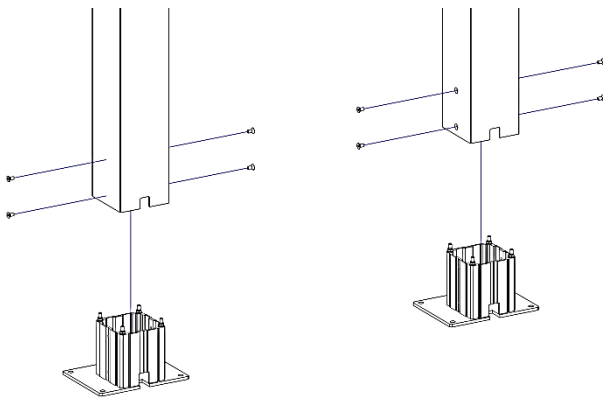


Figure 2

NOTE: The front footing may be of type G, H, or I.

G H I

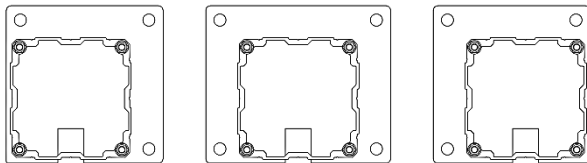
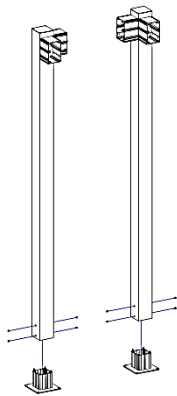


Figure 3



2. Install the rear footing to the rear column in accordance with Figure 4 and 6. Repeat for the other rear posts.

Figure 4

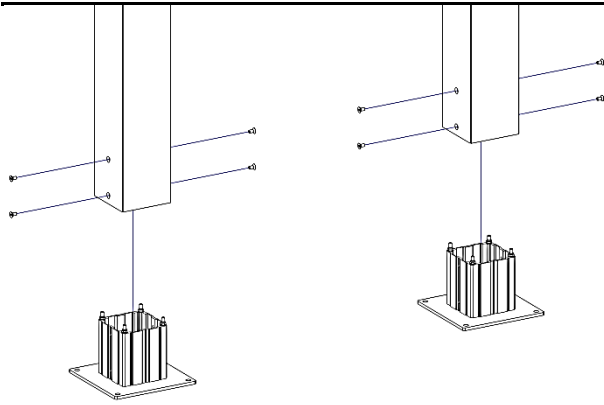
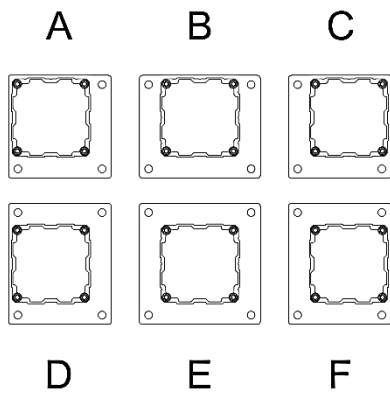
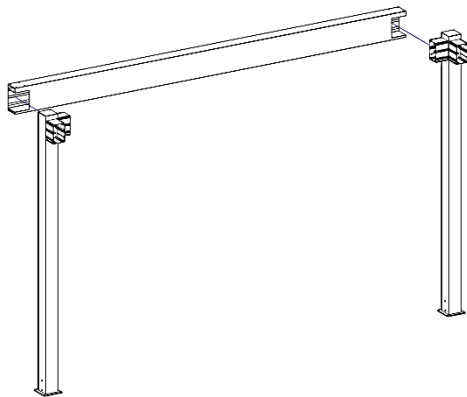


Figure 5



NOTE: The rear footing may be of type A, B, C, D, E, or F.

Figure 6



3. Anchor the rear columns in the place of installation.
4. Put the rear beam into the sockets in the rear posts According to Figures 7, 8, and 9.

See notes on pages 13-16.

Figure 7

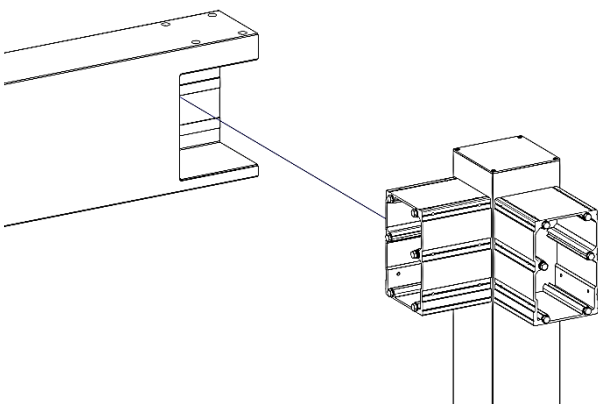


Figure 8

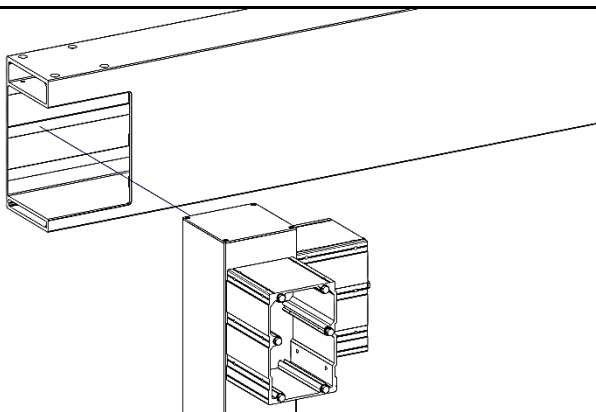


Figure 9

5. Screw the rear beam to the sockets in the rear posts.

6. Screw the rear beam plugs to the sockets in the rear posts. According to Figures 10, 11, and 12.

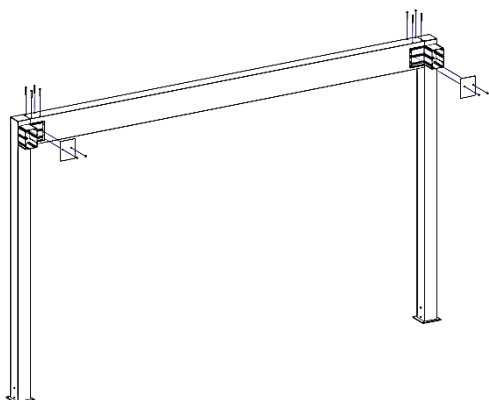


Figure 10

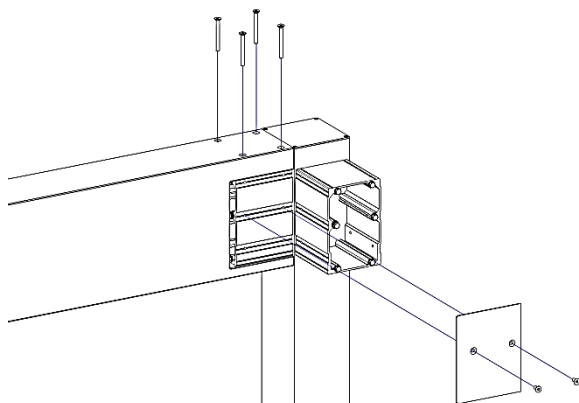


Figure 11

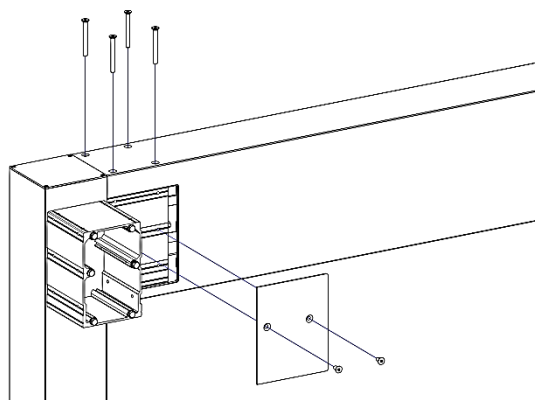
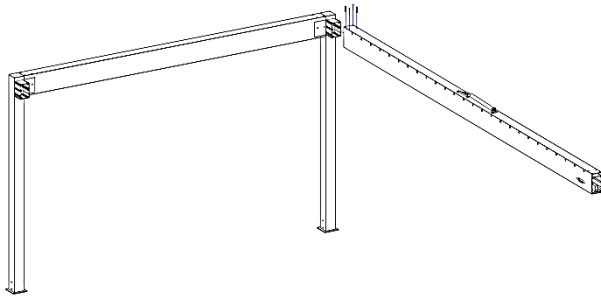


Figure 12



7. Put the side drive beam into the socket in the rear post.
8. Screw the side beam to the sockets in the rear post. According to Figures 13 and 14.

NOTE: Remember to support the side beam in order to prevent the structure from falling down.

Figure 13

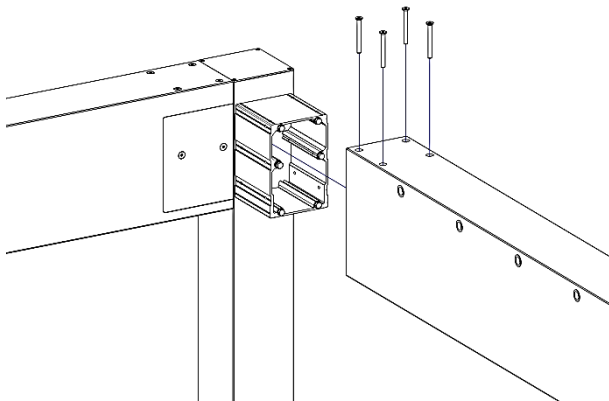
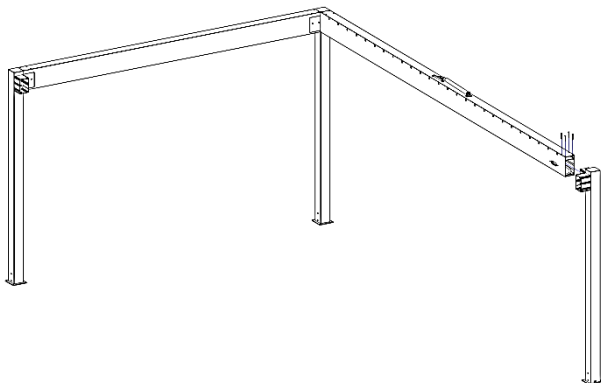


Figure 14



9. Put the front column into the side drive beam.
10. Screw the side beam to the sockets in the front post. According to Figures 15 and 16.

NOTE: Make sure that you do not damage the outlet for draining water from the gutter and place it in the front post correctly when installing components.

Figure 15

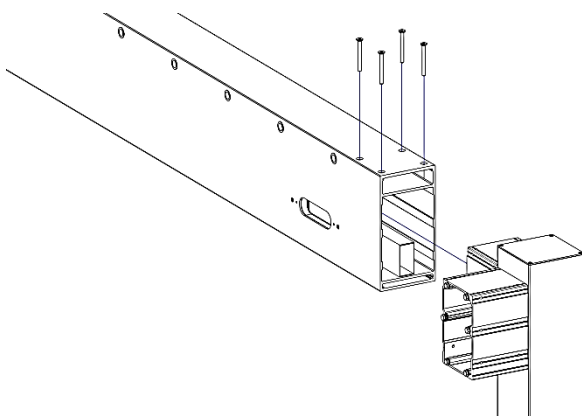
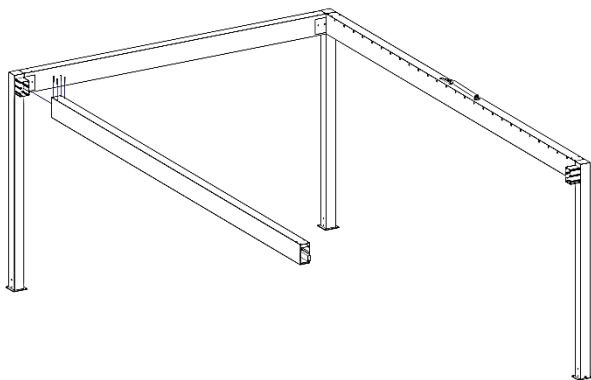


Figure 16



11. Put the side beam into the socket in the rear post.
12. Screw the side beam to the sockets in the rear post. According to Figures 17 and 18.

NOTE: Remember to support the side beam in order to prevent the structure from falling down.

Figure 17

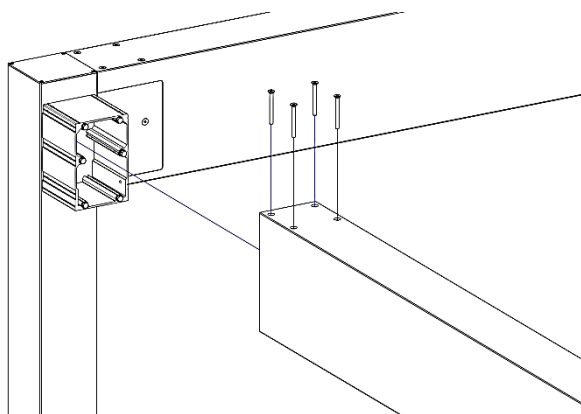
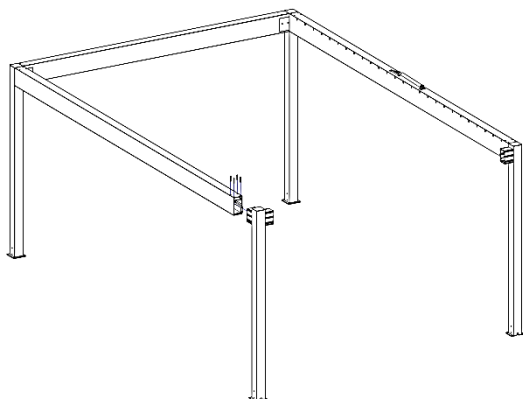


Figure 18



13. Put the front post into the side drive beam.
14. Screw the side beam to the sockets in the front post. According to Figures 19 and 20.

NOTE: Make sure that you do not damage the outlet for draining water from the gutter and place it in the front post correctly when installing components.

Figure 19

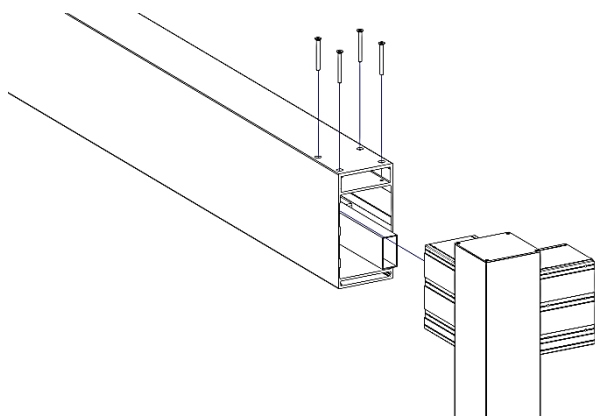
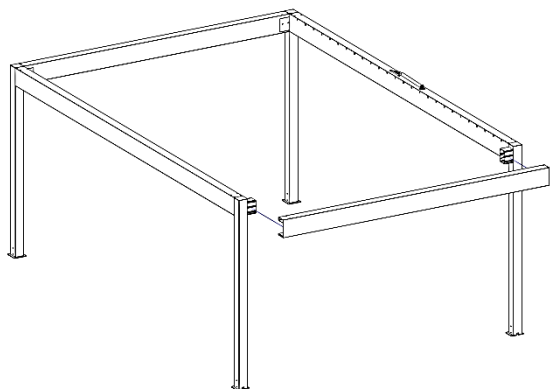


Figure 20



15. Put the front beam into the sockets in the front posts.
According to Figures 21, 22, and 23.

Figure 21

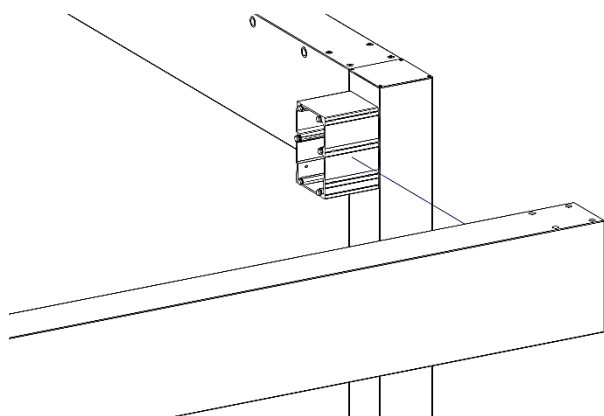


Figure 22

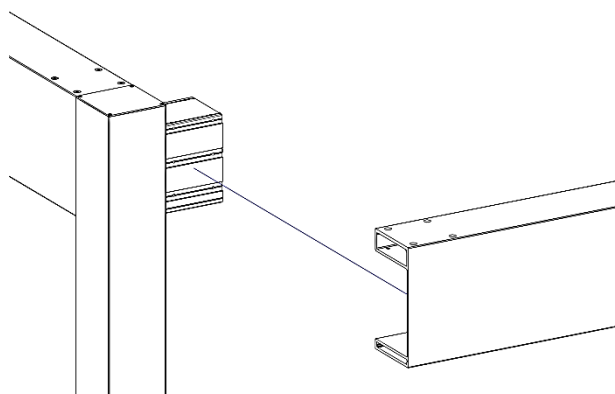
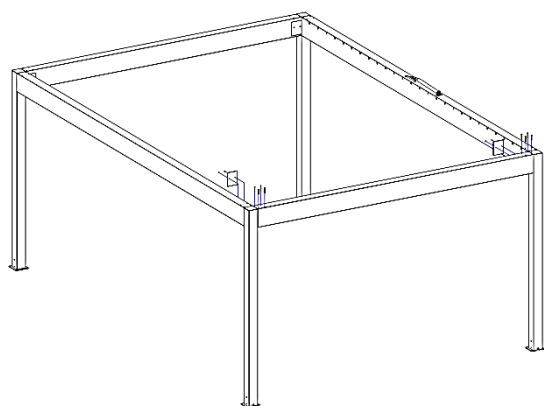


Figure 23



16. Screw the front beam to the sockets in the front posts.

17. Screw the front beam plugs to the sockets in the front posts. According to Figures 24, 25, and 26.

Figure 24

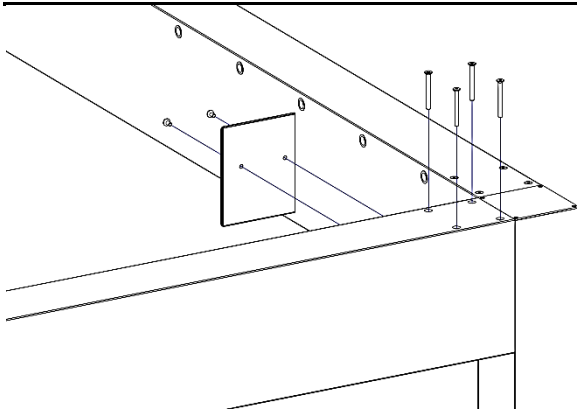


Figure 25

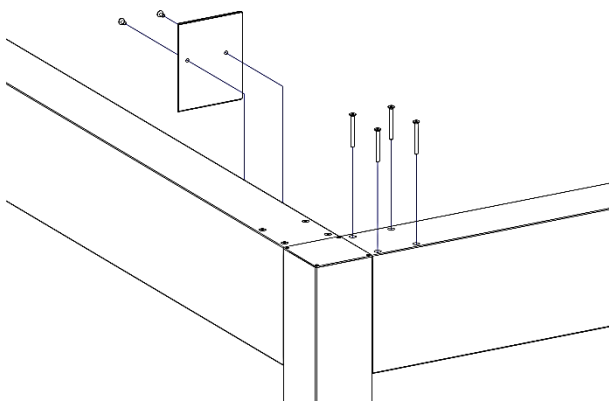
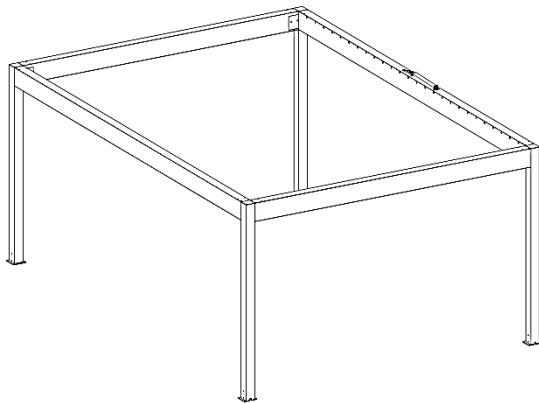


Figure 26



NOTE: The assembled support structure should be placed in the given place and anchored to the ground using an appropriate fixing product. Purchase and selection of the components for structure anchoring is the responsibility of the system purchaser.

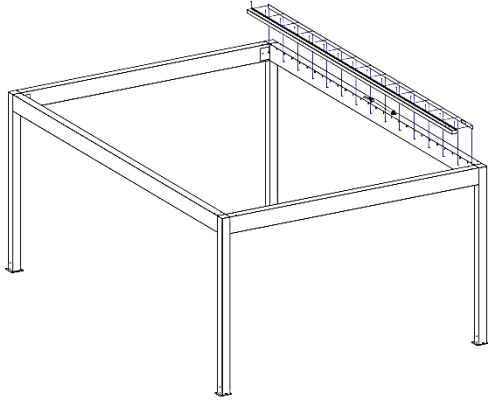


18. Prior anchoring the front columns to the floor it is necessary to check the correctness of diagonals of the structure and vertical and horizontal trueness of structure components - make corrections of structure settings if necessary.

19. Anchor the front posts to the ground after checking the setting.

See notes on pages 13-16.

Figure 27



20. Place right gutter with respect to openings in the side drive beam. According to Figures 28-31.

NOTE: Remember to install the seal between the gutter and beam.

Figure 28

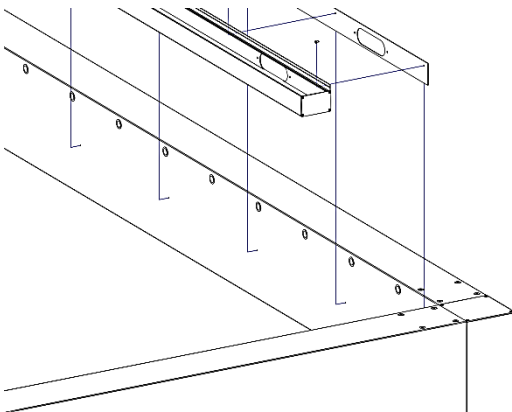


Figure 29

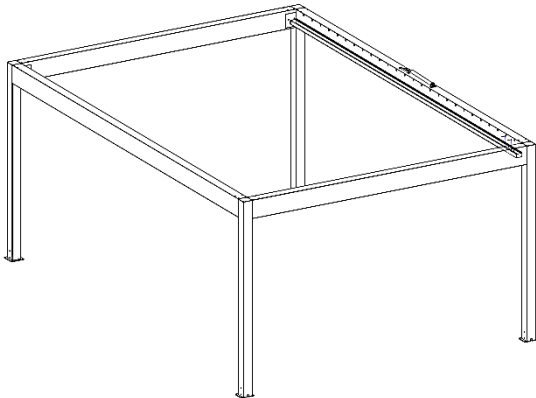


Figure 30

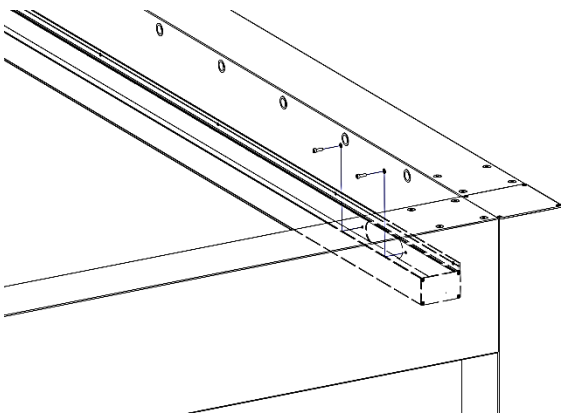


Figure 31

21. Place left gutter with respect to openings in the side beam. According to Figures 32-35.

NOTE: Remember to install the seal between the gutter and beam.

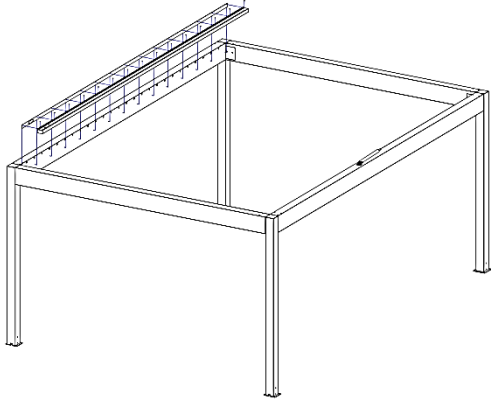


Figure 32

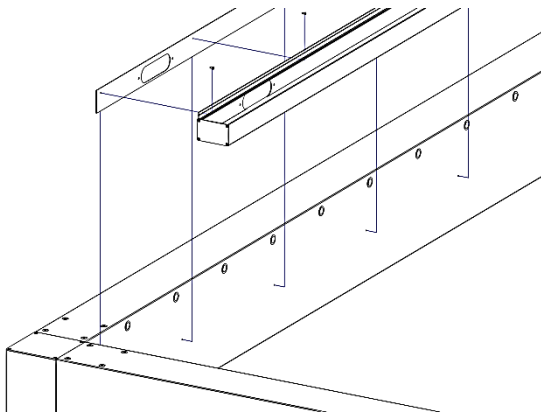


Figure 33

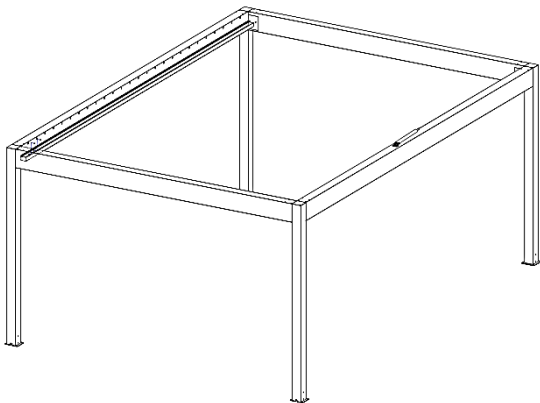


Figure 34

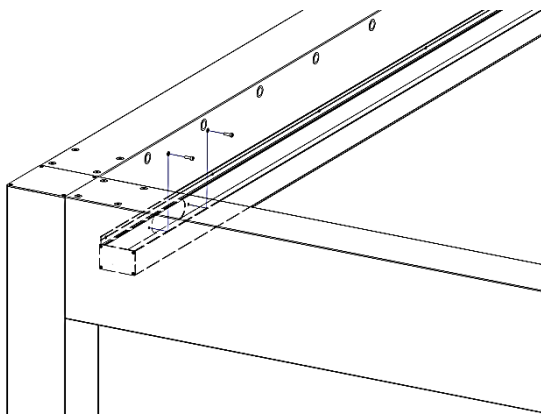
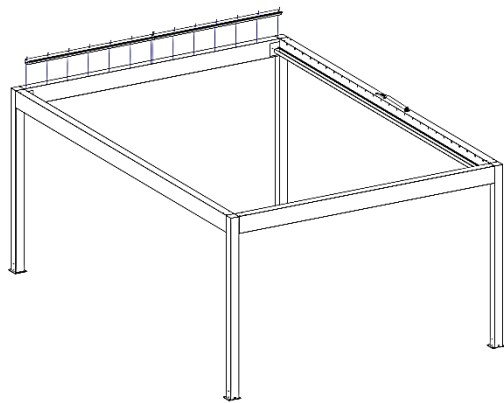


Figure 35



22. Fasten the extra rear blade to the rear beam with the screws supplied with the set. According to Figures 36 and 37.

NOTE: The extra rear blade consists of two identical components installed next to each other.

Figure 36

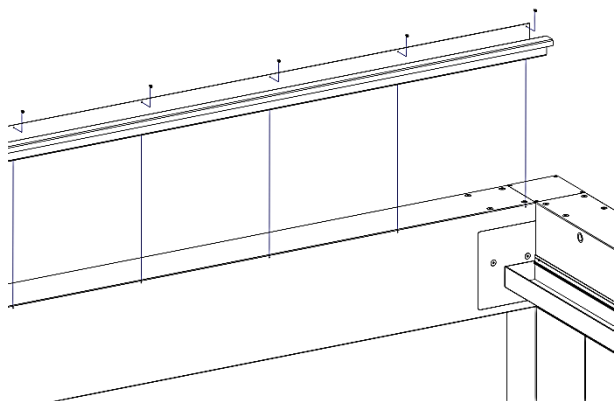
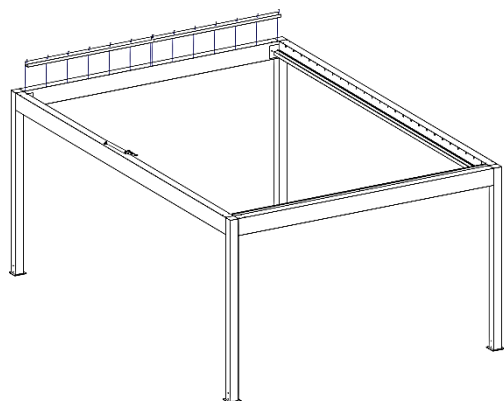


Figure 37



23. Fasten the extra front blade to the front beam with the screws supplied with the set. According to Figures 38 and 39.

NOTE: The extra rear blade consists of two identical components installed next to each other.

Figure 38

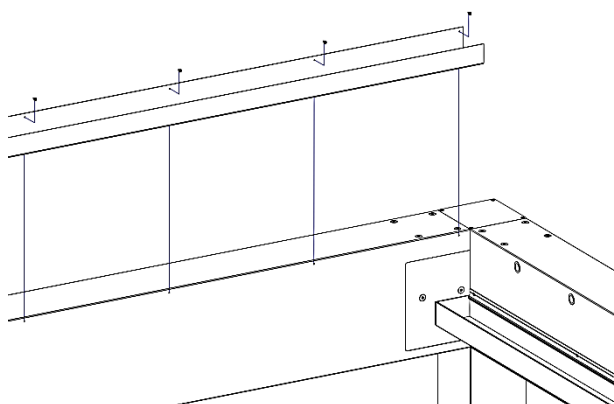
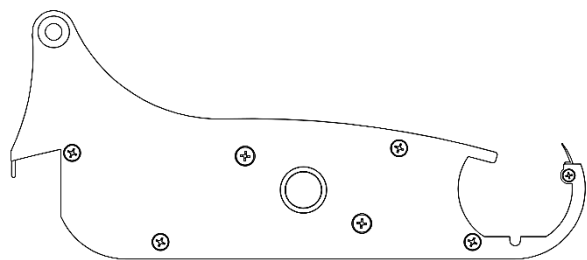
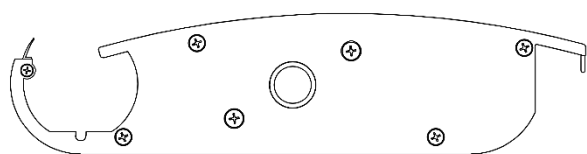


Figure 39



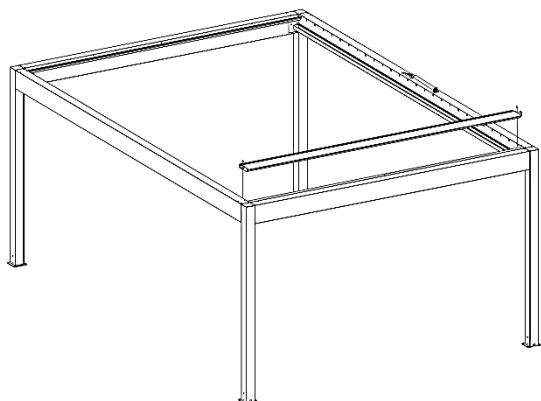
Blade view, drive side.

Figure 40



Blade view, bearing side.

Figure 41



24. Fasten the blade to the structure and secure it on both ends with a retaining ring according to Figures 42-47.
25. Repeat the procedure for the remaining blades.

Figure 42

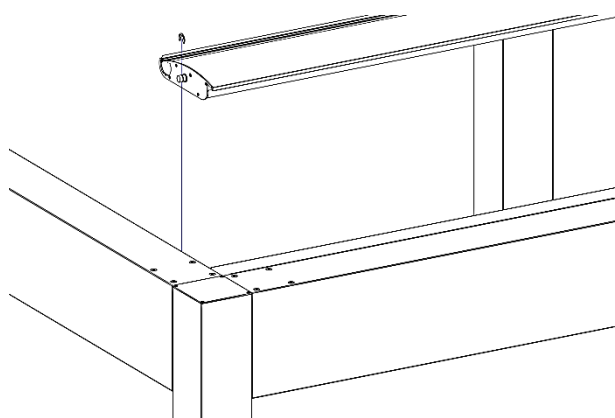


Figure 43

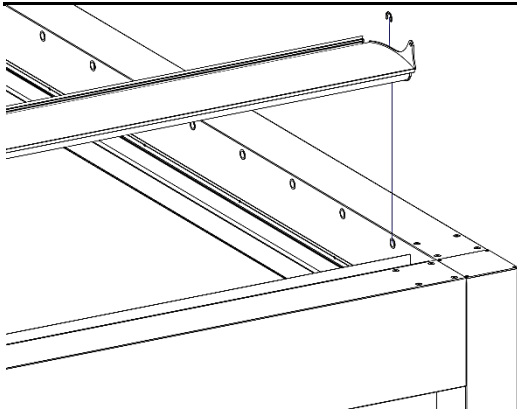


Figure 44

NOTE: Insert the pin into the bearing in the left beam from the drive side of the blade.

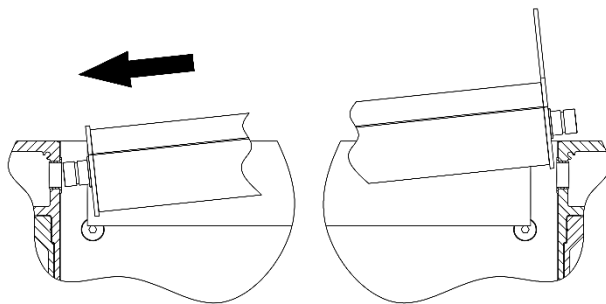


Figure 33

NOTE: Put the blade as far the left beam as possible and make sure that the pin on the drive side of the blade does not damage the coat of paint.

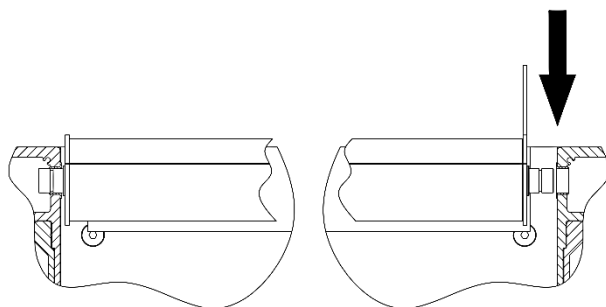


Figure 45

NOTE: Put the blade as far the right beam as possible so that there are visible grooves on the pins on the drive and bearing side for retaining rings.

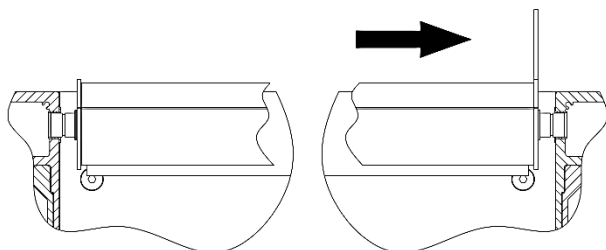
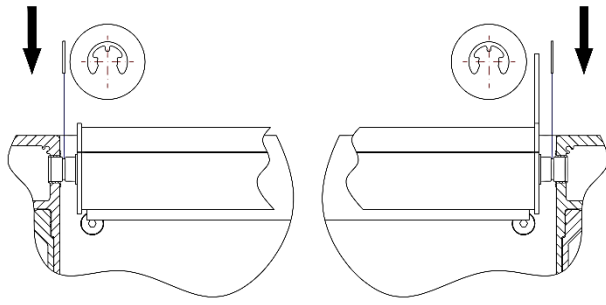


Figure 46



NOTE: Install retaining rings for the pins on the drive and bearing sides of the blade. Make sure the pin does not damage the coat of paint.

Figure 47

4.6.1.6 DRIVE ASSEMBLY



1. Disassemble screws from handle of wrapping connector.

Picture 1



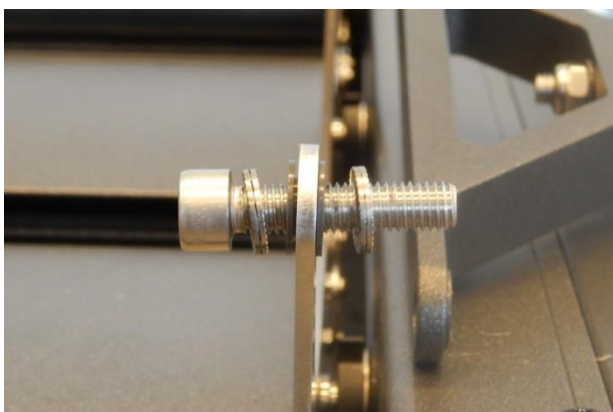
2. Install sleeves on drive plug of the blade, repeat operation for all blades.

Picture 2



3. Insert two threaded plates 13x13 to wrapping connector and set it opposite to the opening in connector.

Picture 3



4. Screw disassembled from handle of wrapping connector should be installed to drive plug of the blade with NORD-LOCK washers, as on the picture 12.

Picture 2



- Screw down the blade to wrapping connector.

NOTE: Tighten the screw until there is noticeable resistance.

Picture 5



- Install handle of wrapping connector to the wrapping connector and screw together both components using washer and self-locking screw M8.

Picture 6



- Tighten self-locking nut M8 to handle of the wrapping connector.

NOTE: Pay attention to avoid changing clearance between wrapping connector and blade during tightening.

Picture 7



- Connect supply-control cable to the motor.
- Adjust maximum range of cylinder operation correspondingly. Check vertical position of the blades (blades opened) using bubble level and check horizontal setting of blades (closed blades) using bubble blade.
- Set blades to vertical position using the motor

Picture 8



11. Insert threaded plates 13x13 (for the remaining blades) to wrapping connector and set it opposite to the given blade.

Picture 9



NOTE: Blades should be installed to the guide individually, from center of the system to outside. Incorrect setting of the blades can result in incorrect operation of the system or its damage.



12. Screw with NORD-LOCK should be assembled to the blade as presented in Picture 10.

Picture 10



13. Install second NORD-LOCK washer on the opposite side.

Picture 11



14. Catch the blade with screw to threaded plate 13x13 in wrapping connector.

NOTE: The plate should move freely in the guide.

Picture 12



15. Set the blade in vertical position (open position) using bubble level.

NOTE: inaccuracy during blade settings should not exceed $\pm 0.2^\circ$.

Picture 13



16. Screw down the blade clamping screw to wrapping connector.

Repeat steps 12 to 16 for the remaining blades.

NOTE: Tighten the screw until there is noticeable resistance. Threaded plates 13x13 should not move spontaneously in the guide.

Picture 14



17. Check correctness of system operation and adjust motor limit switches if necessary.

18. Proceed to assembly of the gutters in the individual modules when all blades are installed.

Picture 15

4.6.2 WALL INSTALLATION

The product is installed on a wall through the roof beam using special aluminum washers M12 and longitudinal nuts M12 that fasten the product to selected wall anchors (not supplied by Selt).

The installation requires beams to be mounted before the entire structure is merged.

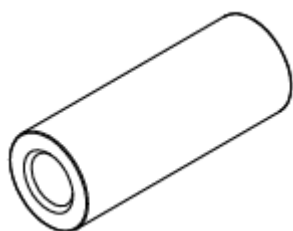


Fig. 48 Longitudinal nut M12

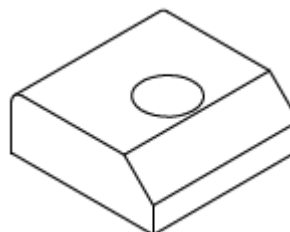
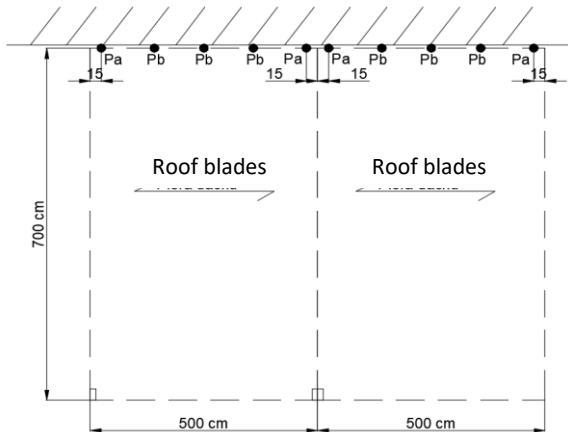


Fig. 49 Aluminum washer M12

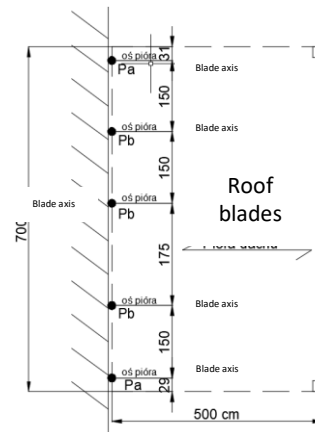
The fasteners are located at the points specified by the Manufacturer. The Pergola may be installed in:

- the rear beam of the roof.
- the side beam of the roof.



Pa – Anchors with a longitudinal nut M12 and an aluminum washer M12 (reinforced wall installation).
 Pb – Anchors with a longitudinal nut M12.

Figure 50 - Wall installation to the rear beam.



Pa – Anchors with a longitudinal nut M12 and an aluminum washer M12 (reinforced wall installation).
 Pb – Anchors with a longitudinal nut M12.

Figure 51 - Wall installation to the side beam.



Given the design of the longitudinal nut and the aluminum washer, it is absolutely necessary to install the anchors according to the maximum dimensions of the protruding anchor and thread parts acc. to Figures 52 and 53.

If these distances are not respected, the installation may be dangerous or the load capacity of the installation may be insufficient.

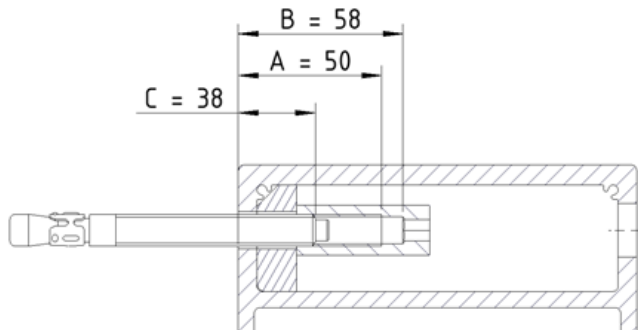


Figure 52 – Dimensions required for the wall installation anchor with an aluminum washer

- Maximum length of the threaded part of the anchor that can protrude from the ground
- Maximum total length of the anchor that can protrude from the ground
- Minimum length of the threaded part of the anchor that can protrude from the ground

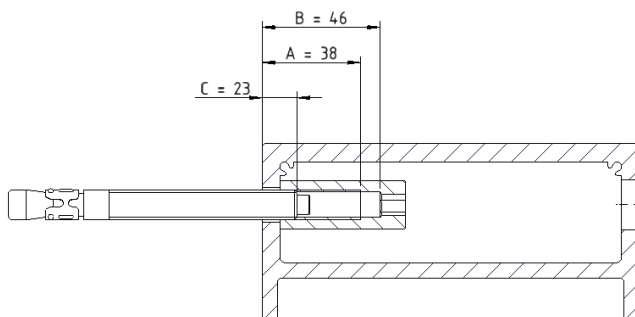


Figure 53 – Dimensions required for the wall installation anchor without an aluminum washer

- Maximum length of the threaded part of the anchor that can protrude from the ground
- Maximum total length of the anchor that can protrude from the ground
- Minimum length of the threaded part of the anchor that can protrude from the ground

4.6.2.1 WALL INSTALLATION REAR BEAM (WITHOUT BLADE AXIS)

NOTE: Anchors to be used for walls made of concrete/reinforced concrete of a class of at least C20/25 (non-cracked concrete): **Bolt anchor FISCHER FAZ II 12/10 A4** (stainless steel) or its equivalent. Anchoring depth of at least 50 mm. Minimum distance between the anchor axis and the top edge of concrete - 75 mm, and the bottom edge of concrete - 265 mm, and minimum substrate thickness - 120 mm.

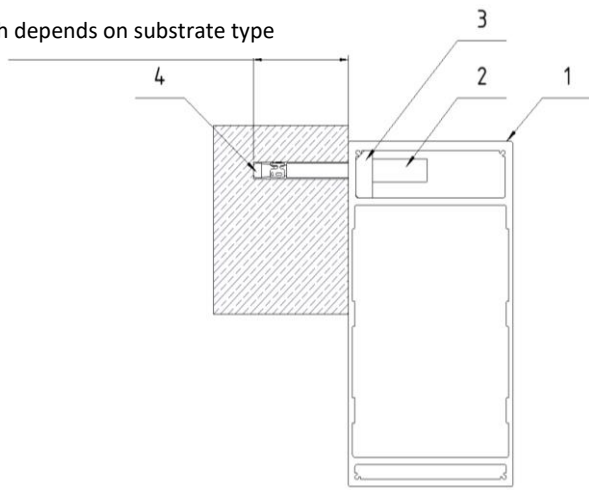
- In case of anchoring to the substrate with a lower load-bearing capacity that concrete class C20/25, a separate anchor design according to the forces given in Table 1 should be made.
- In case of anchoring to the substrate with insulation, a separate anchor design according to the forces given in Table 1 and bending moment caused by distance installation should be made.

Table 1

	Maximum forces *
Along the beam (horizontal shear resistance)	1.78 kN
Vertically (vertical shear resistance)	7.78 kN
Pulling	8.38 kN
Pressing	0.98 kN

* - Forces per anchor in the plane of beam external surface

Depth depends on substrate type



1. SB500 beam
2. Longitudinal nut M12
3. Aluminum washer M12 (only for outermost anchors in a module)
4. Anchor M12

1. Determine the location of openings for anchors according to the existing drilled holes in the external Pergola beam wall. Make sure that the planes of the anchor axes are horizontal.
2. Insert the anchors in the substrate according to the selected anchoring system.
NOTE: Always follow the dimensions of the protruding part of the anchor acc. to Figures 52-53.
3. Put the beam onto the anchors. For outermost anchors (Pa- points, Fig. 50) insert aluminum washers M12 (Fig. 49) to the top chamber from the beam ends. Longitudinal nuts M12 (Fig. 48) are inserted onto the anchor thread from the inside of the beam through the opening. Tightening torque according to the anchor manufacturer's recommendations.

Fig. 52

4.6.2.2 WALL INSTALLATION SIDE BEAM (WITH BLADE AXIS)



NOTE: Anchors to be used for walls made of concrete/reinforced concrete of a class of at least C20/25 (non-cracked concrete): **Bolt anchor FISCHER FAZ II 12/10 A4** (stainless steel) or its equivalent. Anchoring depth of at least 50 mm. Minimum distance between the anchor axis and the top edge of concrete - 75 mm, and the bottom edge of concrete - 265 mm, and minimum substrate thickness - 120 mm.

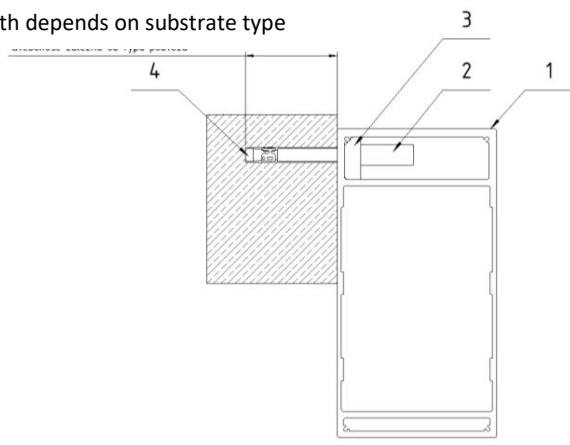
- In case of anchoring to the substrate with a lower load-bearing capacity than concrete class C20/25, a separate anchor design according to the forces given in Table 2 should be made.
- In case of anchoring to the substrate with insulation, a separate anchor design according to the forces given in Table 2 and bending moment caused by distance installation should be made.

Table 2

	Maximum forces *
Along the beam (horizontal shear resistance)	0.88 kN
Vertically (vertical shear resistance)	4.51 kN
Pulling	1.68 kN
Pressing	0.03 kN

* - Forces per anchor in the plane of beam external surface

Depth depends on substrate type



1. Determine the location of openings for anchors according to the existing drilled holes in the external Pergola beam wall (located on the extension of the blade axis). Make sure that the planes of the anchor axes are horizontal.
2. Insert the anchors in the substrate according to the selected anchoring system.
NOTE: Always follow the dimensions of the protruding part of the anchor acc. to Figures 52-53.
3. Put the beam onto the anchors. For outermost anchors (Pa- points, Fig. 51) insert aluminum washers M12 (Fig. 49) to the top chamber from the beam ends. Longitudinal nuts M12 (Fig. 48) are inserted onto the anchor thread from the inside of the beam through the blade opening. Tightening torque according to the anchor manufacturer's recommendations.

Fig. 53

5 SYSTEM OPERATION AND PRODUCT SAFETY



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

5.1 GENERAL REQUIREMENTS FOR OCCUPATIONAL HEALTH AND SAFETY

- To ensure correct operation of the product SELT Sp. z o.o. does not allow to make 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 trained person with proper authorizations.
- Product purchaser should ensure that person, which are entrusted with the operations related to 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, maintenance and repair".
- All works should be carried out with due care and taking the safety requirements into account.
- 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.
- It is recommended to consult the modifications of the electrical design or change of equipment configuration with SELT Sp. z o.o.
- Switch should be installed on a height conforming the national regulations applying to disabled people - preferably at height min. 130 cm.
- The roof should be open in case of snow fall.
- Pergola SB500 should not be used, and you should not stay under it, during storm, hail, heavy snow fall, heavy rain (roof should be left opened).
- No obstacles (e.g. cables, branches, leaves) should be present in blades area during their rotation.
- 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.
- In case of abnormal sounds or motor operation you should immediately cut off the supply until the cause of the defect is removed.
- Heat sources such are barbecues, open flame should be not located under the pergola to avoid overheating of the product.

5.2 SAFETY REQUIREMENTS RELATED TO SPECIAL CONDITIONS AND PRODUCT USE LOCATIONS.

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.

Specific requirements for operation are applicable also in all locations where the disabled people stay.



Prior operation the Purchaser should carry out individual risk assessment for 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 hazards 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.



Risk of head injury during stay in the area of the mobile blades of the roof.



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 OPERATIONAL SAFETY

Recommendations and operations:

- the product is safe providing use in accordance with the recommendations included in the documentation,
- the product should be used only as intended,
- it is forbidden to use the product not conforming the requirements related to electric shock and fire safety,
- remote control equipment should be kept away from children,
- it is forbidden to use inoperable equipment and making make-do repair,
- it is forbidden to exceed specified operation parameters of the product given in the operation and technical manual, run-time of the electric motor is strictly specified in point 2.1 "Technical parameters" (depending on 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 inoperable equipment or incomplete product (e.g. without switch, tensioners etc.), use of such product may lead to its destruction, cause health and life hazard for the user and be a reason of loss of the warranty,
- it is forbidden to remove covers of the drive system and electric motor,
- do not leave any sharp objects or protruding parts, which can catch the mobile roof and destroy it, near the covers,
- do not start the product in case of frost or ice build-up,
- the roof should be open in case of snow fall,
- system should not be used in case of heavy snow fall, rainstorm or hail (it should be left opened),
- it is forbidden to stay under the pergola during violent weather phenomena (e.g. heavy rain, intensive snow fall, storm, hail, strong wind etc.),
- blades rotation is not allowed during strong wind,
- we strongly recommend using wind sensor,
- clean the system on regular basis and perform inspections within the 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,
- if the blades rotation drive is started from a place out of sight, then the user should take organisational measures/measures preventing starting of the screen during maintenance-repair works performed nearby (e.g. by placing a sign on the switch "Caution, maintenance-repair works. Do not start", removal of battery from remote control equipment),
- pay attention to all signs of wear and tear or damage of the electrical cables,
- if you see signs or wear and tear or damages of electrical cables the product should be disconnected from supply and the defect should be immediately reported to person with valid electrical license or to the SELT service,
- during work of the mobile roof in the space between rotating blades and blades and the other structural and driving components there should be no other obstacles (e.g. cables, branches, leaves),
- if you are using sharp objects - avoid damage to paint coat,
- check whether the electrical connections are in good working order or the supply cables are not tangled,

- immediately shutdown the supply if motor operates very loudly, if you are not able to determine cause of the fault on your own please contact the fitter,
- if your product is equipped with automatic outside sensor (wind/sun) then in the following cases you should switch it into manual mode: winter during ice build-up, when start-up can lead to damages or, if you are expecting longer absence,
- roof covering in urban environment is exposed to action of pollutants (smoke, smog, acid rains) what causes contamination of paint coating. The product should be cleaned on regular basis, at least once a year, and more frequently in seaside environment and the places where increases amounts of pollutants are present,
- remove loose contaminations with vacuum cleaner or broom, clean with water with mild detergents, always rinse after cleaning, do not use abrasives, do not use pressure washer,
- mobile or rotating parts should be lubricated with silicone spray every year,
- often check your product with respect to possible presence of branches, leaves, birds nets - immediately removing the contaminations



Do not use the product in case of strong wind blows, during snow fall, freezing rain, because the product can be destroyed or damaged and it can endanger persons staying nearby (applies to products installed outside the building).

It is recommended to use wind control system helping to meet the safety conditions.

You should open side wall covers when the wind speed is over 49 km/h for fabric covers or over 90 km/h for Slide walls. Closed covers may cause the structure to deform.

In case of any irregularities in the operation of the product, contact the SELT Sp. z o.o. service immediately. The use of a damaged product and making self-repairs pose a risk to health and life and may cause the warranty to be void.

5.4 CONNECTION TO ELECTRICAL INSTALLATION

When the Pergola SB500 is assembled, you can proceed to connect the drive and control system to the previously prepared systems: electrical supply installation and control system.

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 into account the environmental conditions in which the product will be used and recommendations contained in the motor operation and maintenance manual.

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 includes: 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.

Earth leakage circuit breakers:

- it is recommended to use them in bathrooms, kitchens, garages and basements.
- it is obligatory to use on swimming pools and shower basins, saunas, on construction sites, during 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.

Earth leakage circuit breakers 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 floor, on which the electrical equipment may be installed.

General guidelines for safe connection:

- connection should be carried out by the electrician holding a 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.

Electrical connections and setting of the motors should be made in accordance with the manuals provided by motors manufacturers.

The manuals are enclosed to the product and they are also available on the websites of the motors manufacturers and on the website:

www.selt.com → OUR OFFER → AUTOMATION



Erroneous connection of the motor can lead to damage of the product or pose a threat.

5.5 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.

Programming manuals, depending on control system used, are available on the websites of the motors manufacturers and the website:

www.selt.com → OUR OFFER → AUTOMATION

5.6 START-UP AND ADJUSTMENT

Recommendations and operations:

- limit positions (blades movement, close or open position) are secured with limit switches, which should be adjusted during assembly,
- person adjusting the limit switches should have electric licenses, knowledge and experience,
- adjustments of limit switches should be made in accordance with the motor operation and maintenance manual,
- electrical measurements should be executed prior to start-up of the product, which should be executed by the person with proper licenses,
- it is forbidden to start the driving motor without checking correct fixing of the system,
- do not lean on the product, leave the tools on it, after start of operation,
- it is necessary to check efficiency of the product zeroing and electrical system on each new location of installation.

Particular account should be paid during mobile roof start-up to:

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



Adjustment of limit switches without permission, by untrained person, may lead to damage of the product.

5.7 SYSTEM MISUSE**System control - forbidden operation**

- In case of defect it is recommended stop further operation of the product.
- Defect should be reported to the supplier / fitter of the system.
- 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 mobile roof during system operation.
- Do not use inoperable or incomplete equipment. Use of such product may lead to its damage and cause health and life hazard for the user and be a reason of loss of the warranty.
- It is forbidden to use the product not conforming 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.

Person 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.

Work area of the Pergola SB500: crushing, cutting and pulling in hazard

- Do not touch mobile components during closing or opening of 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.
- 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 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 can start automatically. Please make sure, that no hazardous situation will occur.

6 USE AND MAINTENANCE OF THE SYSTEM

6.1 INTENDED USE OF THE SYSTEM

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

Pergolas SB500 manufactured by SELT Sp. z o.o. do not require special maintenance. Use of the product in accordance with the manufacturer recommendations ensure long term and trouble-free operation of the system.

If the product is not used as described in this documentation or modified without the authorisation of SELT Sp. z o.o., then this is considered as misuse.

Making arbitrary modifications influencing safety of product operation is forbidden.

Use as intended 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,
- observance of recommendations related to operation,
- conducting periodical inspections and maintenance of the product,
- adherence to the requirements specified in the “Inspection of safe operation of the ”,
- data included in “Technical specification” item.



In case of misuse:

- the product may be hazardous for servicing personnel,
- product will be exposed to damages,
- it may have adverse influence on its operation,
- do not use the system during maintenance works

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



Servicing of the system which is out of sight can cause heavy injuries and system damage

6.2 INSTRUCTION FOR NON-PROFFESIONALS

Persons, who are not professionals, include persons, who were entrusted by the Purchaser with operations related with routine operation, hygiene and maintenance of the product.

Read this documentation 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:

- routine servicing:
 - carrying out operations, which do not have influence on change of operation parameters of the product,
 - switching on & off by pressing the control buttons,
- maintenance and hygiene of the product described in further part of the documentation.

6.3 TECHNICAL INSPECTIONS, MAINTENANCE AND REPAIR

To ensure safety of users and maximally long, correct operation of all mechanism the product should be subject to periodic inspections at least every 12 months.

- It is recommended to carry out periodic inspection of the product by the SELT Sp. z o.o. service.
- The inspections are carried out as pay service.
- Inspections are based on checking of product operation, adjustment of mechanisms and replacement of consumables.

6.3.1 BASIC OPERATIONS CARRIED OUT DURING PERIODIC INSPECTION.

List:

- checking of fixing of the product to the ground / wall,
- checking the condition of mobile components of the product,
- lubrication of driving elements,
- checking the condition of electrical cables of the product and inspection of their connection to electrical installation,
- checking operation of the limit switch of the motor and possible correction,
- checking of screw and rivet joints,
- checking of condition of mobile roof and gaskets,
- checking of fixing of product driving mechanism (motor),
- possible adjustment and rectification of fixing of listed components,
- checking of effectiveness of operation of the earth leakage circuit breaker,
- checking of flow capacity of drainage components.

6.3.2 REMARKS CONCERNING ROUTINE MAINTENANCE.

Routine maintenance of the system should be carried out by the user by own means. Maintenance should be carried out at least once per year. Maintaining flow capacity of roof drainage components should be carried out once a week and each time after heavy precipitation.

If the pergola is located in wooded area and areas with increased content of contaminants then checking for blockages of drainage and cleanness of guides and pins of blades of the mobile roof should be carried out every day.

Maintenance of visible (available) components of the product is based mainly on maintenance of their cleanness, what considerably extends their service life. These operations the user should ensure on its own.

System damage by improper routine maintenance.

- It is forbidden to use pressure washer, cleaning agents, sponges, or solvents such as alcohol or petrol!
- It is forbidden to use cleaning agents with addition of chlorine, ammonium, kerosene, acetone, and bleaches to clean the system and in its vicinity because this may cause corrosion.
- It is forbidden to use sharp tools (e.g. wire brushes), cleaning agents causing scratches (e.g. powders for scrubbing, pastes).
- Do not hold or pull the system strongly; it applies also to its individual components
- Do not impose a load on blades.
- Avoid snow load of the mobile part of the roof.
- Do not start the roof mechanism in case of frost or ice build-up - it can damage drive of the blades
- No routine removal of blockages from rain water drainages on front columns at subzero temperatures can lead to burst of the columns caused by freezing of water deposited inside.
- Do not replace the individual components on your own! Spare parts should be original!
- The system must be tested for function! Pay attention to the operation of the system. In the event of abnormal operation or noise, inform your direct supplier of the problem.
- Routine maintenance works should be carried out on maximally open system.
- If side covers are not open, i.e. fabric covers for a speed of over 49 km/h or Slide covers for a speed of over 90 km/h, this may cause the deformation of the structure.



Basic operations including maintenance of the product are:

- checking correctness of opening and closing of the mobile roof,
- checking correctness of operation of the limit switches,
- cleaning of visible, available components of the product (in particular, gutters on beams, mobile roof surface and rain water effluents in footing of the front columns).

Cleaning of metal/aluminum components:

- It is recommended to clean light contaminations of metal/aluminium surfaces using water with mild cleaning agents.

To check or maintain electrical equipment the sunshade should be disconnected safely from power source.

6.4 MAINTENANCE OPERATIONS

To ensure correct operation of the Pergola SB500 system, it is appropriate to maintain components of drive system (sleeves, screws, bearings) using grease or other preservation agents every 12 months.

7 GENERAL TERMS AND CONDITIONS OF WARRANTY

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.

7.1 WARRANTY EXCLUSIONS

Warranty does not cover:

- Damage of the equipment caused as a result of other transport than the SELT's transport.
- Damage of the equipment resulting from storage, installation or maintenance incompatible with the operation and maintenance manual, user's manual or Supplier recommendations, unless they are executed by the Supplier or at the Supplier's risk.
- Damage caused as a result of use not in accordance with the operation and maintenance manual, user's manual or Supplier's recommendations.
- Mechanical damage.
- Damage resulting from system modifications or modifications to product components unless such modifications are performed by the Supplier on their order or at their 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, such as: seals, lubricants, etc.
- Electrical damages caused by the user.
- Damage caused by incorrect installation of the product by a company other than the Supplier.
- Damages caused as a result of repairs carried out without permission.
- Damages caused during use of the system in inappropriate weather conditions (outside the expected range).
- Damages caused by abnormal weather conditions, lightning.
- Characteristic system noises during blades rotation.
- Water streams flowing out of the guide beam resulting from the natural inclination of the water.
- Leaks resulting from not full closure of movable components.
- Damages caused as a result of damages and unexpected events.
- Damages as a consequence of incorrect cleaning using inadequate tools, corrosive substances and abrasives.
- Atmospheric and phytosanitary pollution and contamination caused by the animals.
- Damages caused by influence of the other products, objects or suspended accessories not foreseen by SELT.
- Lack of water resistance resulting from location, type of finishing, installation and sealing as well as extreme weather have essential influence on waterproofness of the product.
- The right to any claims in the event of self-repairs or the use of non-original spare parts,
- Differences in the colour of the parts that may occur during the production process.
- Colour changes of elements intensively exposed to harmful weather conditions.
- Corrosion of components used in environments with high sea salt content in the air.
- Difference of angle of mobile roof's blades closing may differ by 5° and are natural feature of the system due to production and process tolerances of the components.
- Water formed by condensation, which can occur on bottom surface of the blades.
- Deflections of beams of the structure not exceeding values specified in the standard PN-EN 1090-1 and Eurocode 9, are natural constructional feature of the system.

Selt shall not be responsible for:

- The product, where the CE label was removed or it is illegible,
- The product, where the pictograms informing about particularly important information on hazards and safety.
- Misuse of the product or use contrary to its purpose,
- Damages caused by voltage fluctuations in the grid, if they exceed 5%
- Heat sources such as barbecues, open flame should be not located near the pergola to avoid overheating of the product.
- Deflections of structure beams and tilts of posts exceeding the values specified in PN-EN 1090-1 and Eurocode 9, when provided in warranty exclusions

8 COMPLAINT / TECHNICAL DEFECTS

8.1 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.

8.2 TECHNICAL DEFECTS

In case of system defects, you should:

- If possible, open the mobile roof and turn off the system,
- immediately report the defect to SELT Sp. z o.o in Opole.
- complaints can be sent to reklamacje@selt.com or directly to the sales representative.

Notifications of technical defects / complaints shall be filed in writing using a form "Complaint" available at www.selt.com/doc-pl or directly to the sales representative.

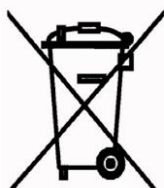


Incorrect disassembly of the system may lead to heavy bodily injuries and lead to system damages. System disassembly should be commissioned to properly qualified installers team with adequate training within the scope of Occupational Health and Safety and knowledge within the scope of recycling.

a) Disposal of Waste Electrical and Electronic Equipment

When the service life of the product is over it is necessary to disassemble it for disposal and to sort the individual materials and components in compliance with the Regulation of the Minister of the Environment of 9 December 2014 on waste catalogue - Journal of Laws of 2014, item 1923.

Important disposal information:



In compliance with the Act of 11 September 2015 on waste electrical and electronic equipment, it is forbidden to place waste equipment marked with the crossed bin symbol with other waste to 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 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 of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)	Act 11 September 2015 on waste electrical and electronic equipment (Journal of Laws of 2015, item 1688)
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 Environment of 9 December 2014 on waste catalogue (Journal of Laws of 2014, item 1923)

b) Utilization of used batteries

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

To prevent environmental pollution and causing 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/WE 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/EWG	Act of 24 April 2009 on batteries and accumulators (Journal of Laws of 2009, No. 79, item 666)

10 MARKING AND LABELLING OF THE PRODUCT WITH CE MARK


10.1 CONFORMITY OF PRODUCT WITH THE CE STANDARD


The Pergola SB500 manufactured by SELT Sp. z o.o. meets the essential requirements of the standard introduced for steel and aluminium structures by the Polish Committee for Standardisation (PKN) as PN-EN 1090-1 to PN-EN 1090-3, which is confirmed in the manufacturers declaration of performance and marking the product with a CE mark.
 - Pergola structure is made in EXC2 class.

TO MAINTAIN THIS CONDITION AND TO ENSURE SAFE OPERATION AND MAINTENANCE OF THE SYSTEM YOU SHOULD OBSERVE ASSEMBLY INSTRUCTIONS AND USER'S MANUAL AND SAFE USE INSTRUCTIONS.


10.2 INFORMATION ACCOMPANYING THE CE MARKING


a) marking on the product:


SELT Sp. z o. o. Opole, ul. Wschodnia 23A
EN 1090-1


SELT Sp. z o. o. Opole, ul. Wschodnia 23A
2006/42/WE

b) marking on accompanying documents


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 18
External Pergola Pergola SB500 230V/ 50 Hz Power 126 W 12 / DZ / 2018
EN 13659 Sunshade for external uses. Resistance to wind load: class 6 DWU 159 / S / 2018


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 18
EN 1090-1 Steel and aluminium components and structural sets – Pergola SB500 DWU 44/P/2018