

## **OPERATION AND MAINTENANCE MANUAL**

### **ASSEMBLY INSTRUCTIONS, OPERATION AND MAINTENANCE MANUAL**

- 5. Steel and aluminium components and structural sets
- 5.3. Pergola Solid Sunbreaker

**PRODUCT NAME:**

ALUMINIUM STRUCTURE  
PERGOLA SOLID SUNBREAKER

**MARKING OF PRODUCT MANUFACTURER:**

- Manufacturer name:  
SELT Sp. z o. o.
- Manufacturer's registered office:  
45- 449 Opole, ul. Wschodnia 23A
- Factory address:  
Department: Pergola – Sunbreaker - Structures  
45-272 Opole, ul. Pużaka 43
- Contact details:  
Tel: +48 77 553 21 00 (secretary's office)  
Fax: +48 77 553 22 00
- website  
[www.selt.com](http://www.selt.com)
- Email:  
selt@selt.com

**PRODUCT SAFETY MARKING:**

The product meets the CE safety requirements.

**THIS OPERATION AND MAINTENANCE MANUAL:**

- is valid from: 01 March 2018
- 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 aluminium structures Part 1: Requirements for conformity assessment of structural components	EN 1090-1:2009 +A1:2011	PN-EN 1090-1+A1:2012
2	Shutters and external venetian blinds. Performance requirements including safety.	EN 13659:2015	PN-EN 13659:2015
3	building products (CPR)	The Regulation 305/2011 of the European Parliament and the Council	The act of 16.04.2004 on building products (Journal of Laws of 2004 no. 92 item 881) as amended (Journal of Laws of 2016, item 1570; Journal of Laws of 2015, item 1165; Journal of Laws of 2016, item 542)
4	Essential requirements for the machinery	Directive of the European Parliament and of the Council 2006/42/EU	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 the safety of the people.
	INFORMATION	No hazardous or harmful consequences for people or property.
	NOTE!	The 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 to human health or life in case of non-observance. The health of life hazard. Risk: a hazard of serious personal injury or death. The hazardous operation which could cause injuries or damages to the product.

	WARNING!	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 SOLID SUNBREAKER**

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

**Mobile roof:**

Part of the product consisting of blades fixed to cross bearing beams, with the option to change the 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 the mobile roof. Blade shape ensures drainage of stormwater and aesthetic cover against sun rays.

**EXECUTIONS:**

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

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

### 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 types of **SOLID SUNBREAKER PERGOLA**.



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

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



This documentation is valid only with the information applying to the given product available on the website [www.selt.com](http://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 as appropriate for increasing the quality of product operation and safety of use.

Copyrights for this documentation remains with SELT Sp. z o.o. with its registered office in Opole. 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 are available on the website [www.selt.com](http://www.selt.com) after logging in

### 2.1 TECHNICAL PARAMETERS:

#### SOLID SUNBREAKER Pergola - standalone

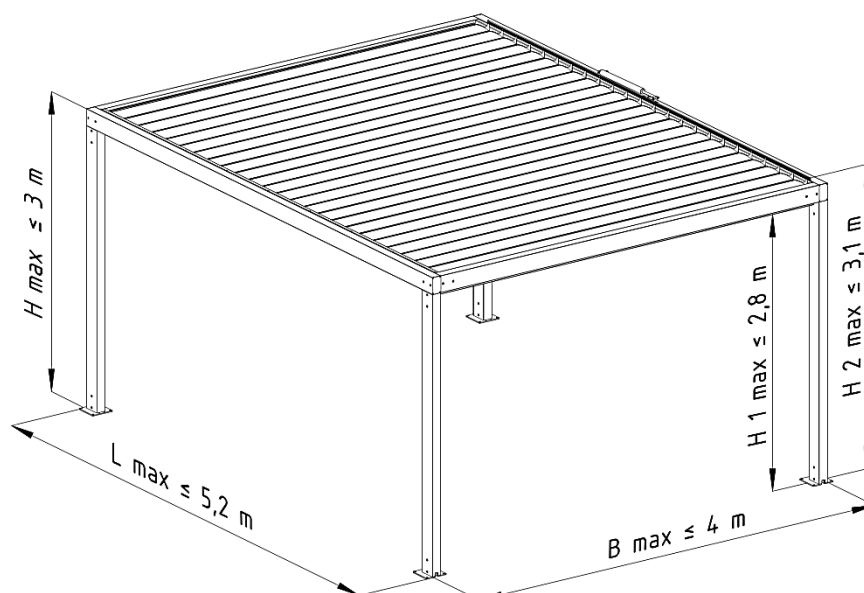


Fig. 1. Standalone SOLID SUNBREAKER Pergola - Overall dimensions: **B max** – maximum width, **L max** – maximum length, **H max** – frame maximum height, **H1 max** – free clearance of the frame, **H2 max** – maximum height of position of the mechanism intended to change the angle of the blades.

#### SOLID SUNBREAKER Pergola - standalone with intermediate column

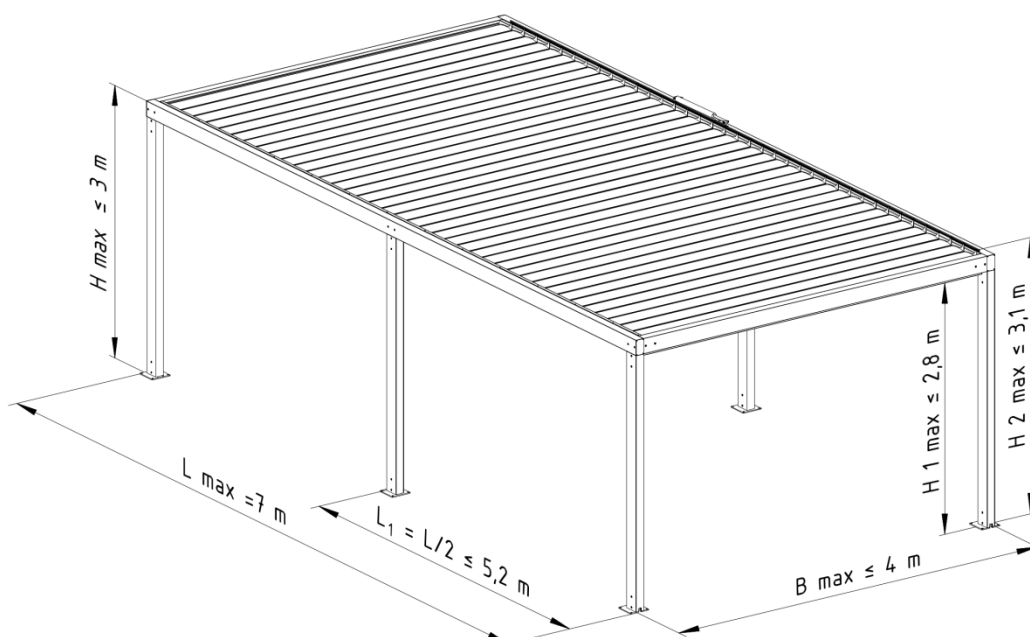


Fig. 2. Standalone SOLID SUNBREAKER Pergola with intermediate column - Overall dimensions: **B max** – maximum width, **L** – maximum length, **L<sub>1</sub>** – a distance of intermediate column, **H max** – maximum height of the frame, **H1 max** – free clearance of the frame, **H2 max** – maximum height of position of the mechanism intended to change the angle of the blades.

The intermediate column can be placed in other distance, but it should not be larger than 5.2 m from the front or rear column.

### SOLID SUNBREAKER Pergola – modular

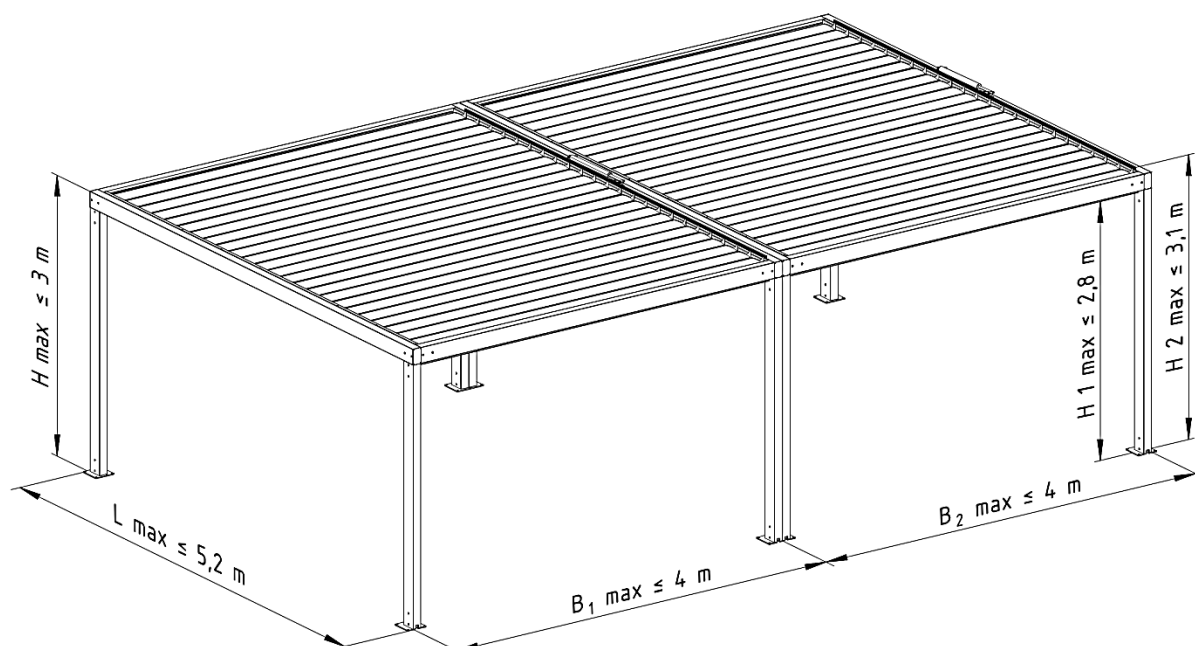


Fig. 3. Modular SOLID SUNBREAKER Pergola - Overall dimensions: **B** – system width, **B1 max** - maximum width of single module, **L max** – maximum length, **H max** – frame maximum height, **H1 max** – free clearance of the frame, **H2 max** – maximum height of position of the mechanism intended to change angle of the blades.

### SOLID SUNBREAKER Pergola – modular with intermediate column

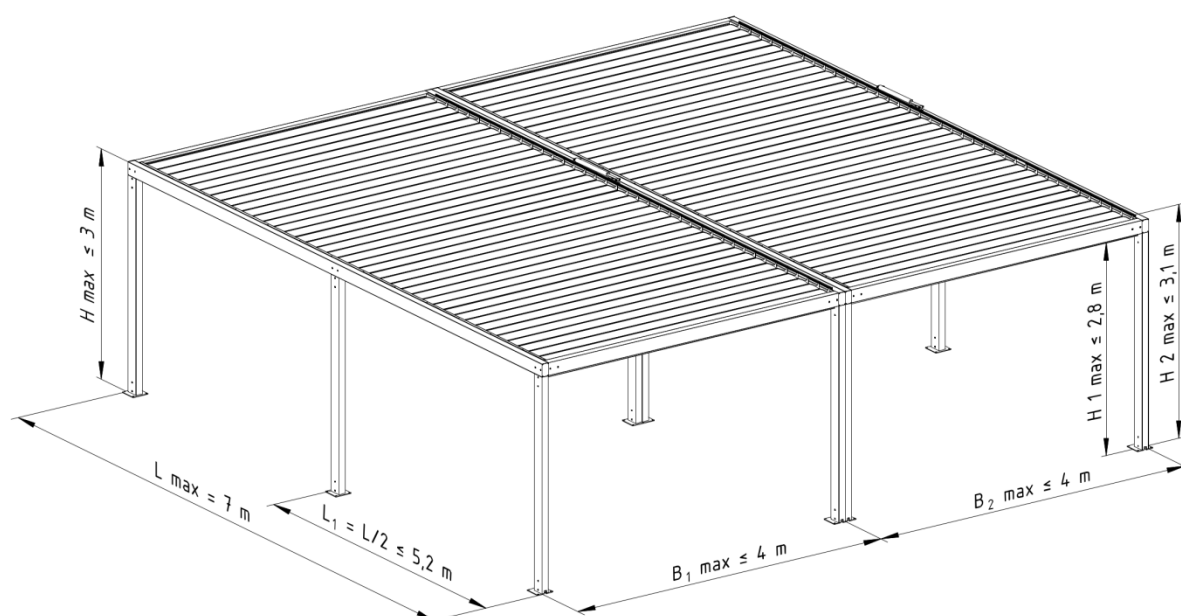


Fig. 4. Standalone SOLID SUNBREAKER Pergola with intermediate column - Overall dimensions: **B** – system width, **B1 max** – maximum width of single module, **L** – maximum length, **L<sub>1</sub>** – distance of intermediate column, **H max** – frame maximum height, **H1 max** – free clearance of the frame, **H2 max** – maximum height of position of the mechanism intended to change angle of the blades.

The intermediate column can be placed in other distance, but it should not be larger than 5.2 m from the front or rear column.



System module dimensions:	width	length	height	clear height
Supporting structure	to 4000 mm	to 5200 mm	to 3100 mm	to 2800mm
Support structure with intermediate column	to 4000 mm	to 7000 mm	to 3100 mm	to 2800mm
Range of use / operation				
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			
- torque	max. 200 mm, dynamic/static force 1200N			
- rotational speed	6 mm/s			
- operating temperature	-20 to 80°C			
Technical data of electric motors				
Drives (drive types):	Linear drive ELERO Piccolo XL-P, version P allows direct, the parallel connection of the drives to one switch, taking into account summation current-carrying capacity - details are available in motor installation instruction. 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	Outdoor			
Site installation	To firm subgrade			

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

[www.selt.com](http://www.selt.com) → PRODUCTS → CONTROL ENGINEERING

## 2.2 PRODUCT SPECIFICATION

Products manufactured by SELT Sp. z o.o. distinguish with great technical and utility parameters.

### List of product types:

- standalone or standalone with the intermediate column,
- modular or modular with the intermediate column,
- installed outside the building, started by electro-mechanical drive connected with the control system,

### They have the following features:

- Mobile roof with an electrical opening, the option to case the walls.
- Protects against sun and rain.
- Water resistance, neat-looking water drainage through the integrated gutter and front columns.
- Location, a method of finishing, installation and seals as well as extreme weather conditions have an essential influence on 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).
- They do not protect against the snowfall.
- It is forbidden to start the product during snowfall or ice build-up and outside the temperature range given in the manual.
- They protect against excessive penetration of sun rays in their contour.
- 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 the electro-mechanical drive (connected with the working movement of the mobile components, generated by the electric motor during operation) is not considered as a significant hazard and is a matter of comfort.
- The motors ensure IP 65 ingress protection of the enclosure.
- Product and drive design allows safe stop of the blades in any position in the working range and staying there in the rest position.
- Rotational motion of the blades can be started by a manual switch or by remote control.
- The difference of angle of mobile roof's blades closing may differ by 5° 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.

### 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 the conformity of the goods with the 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 the 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 to 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 product weight exceeds 25 kg its relocation to the final assembly location should be carried out by at least two persons.

#### 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 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. o.o. recommend 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, those applying to the safety of operation of electrical equipment and work on heights,
- the product should be installed in a 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 a proper thickness of the walls,
- prior to assembly move away from all unnecessary electrical cables and check the route of installation in the fixing locations to avoid their damages.

### 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 a high risk of occurrence of hazards for human health and safety - in particular in case of fall from heights.

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

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

- direct supervision of execution by a 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 protective 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,

- SOLID SUNBREAKER pergola is open, external covering for the 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 the use of too weak anchoring components or fixing in the floor with too small load-bearing capacity,
- in case of doubts please consult with the licensed designer,
- the product should be protected against dirt (e.g. bricklaying mortar, caulking foam, silicone), which may cause its damage,
- if it is necessary to use polyurethane foam, silicone or other agents, you should rigorously observe the recommendations of the manufacturers available on the packing materials



The incorrect assembly may cause hazardous situations for the user.

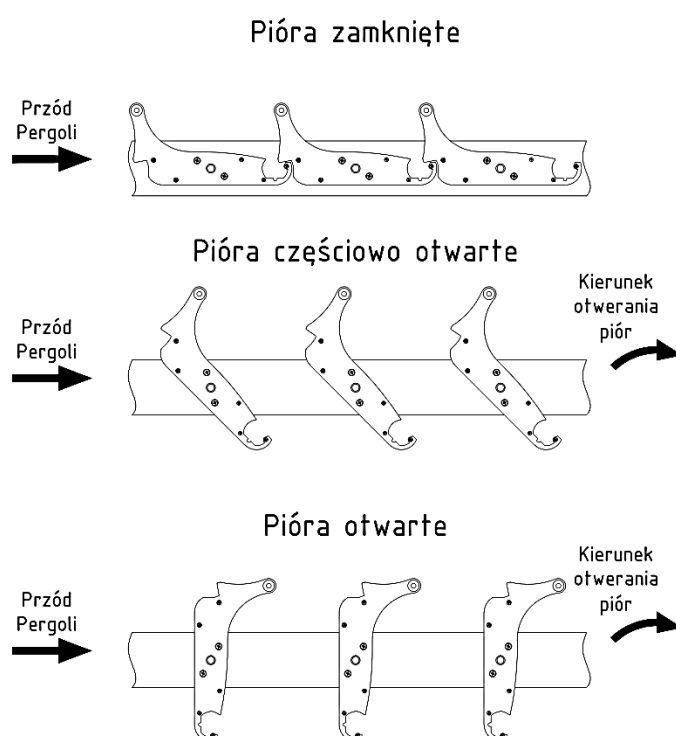


Fig. 5. Standard setting of blades opening direction in SOLID SUNBREAKER pergola

#### 4.5 ASSEMBLY TOOLS

Assembly instructions, operation and maintenance manual and instructions for safe use are available on the website after logging in [www.selt.com](http://www.selt.com)

##### 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.

#### 4.6 ASSEMBLY

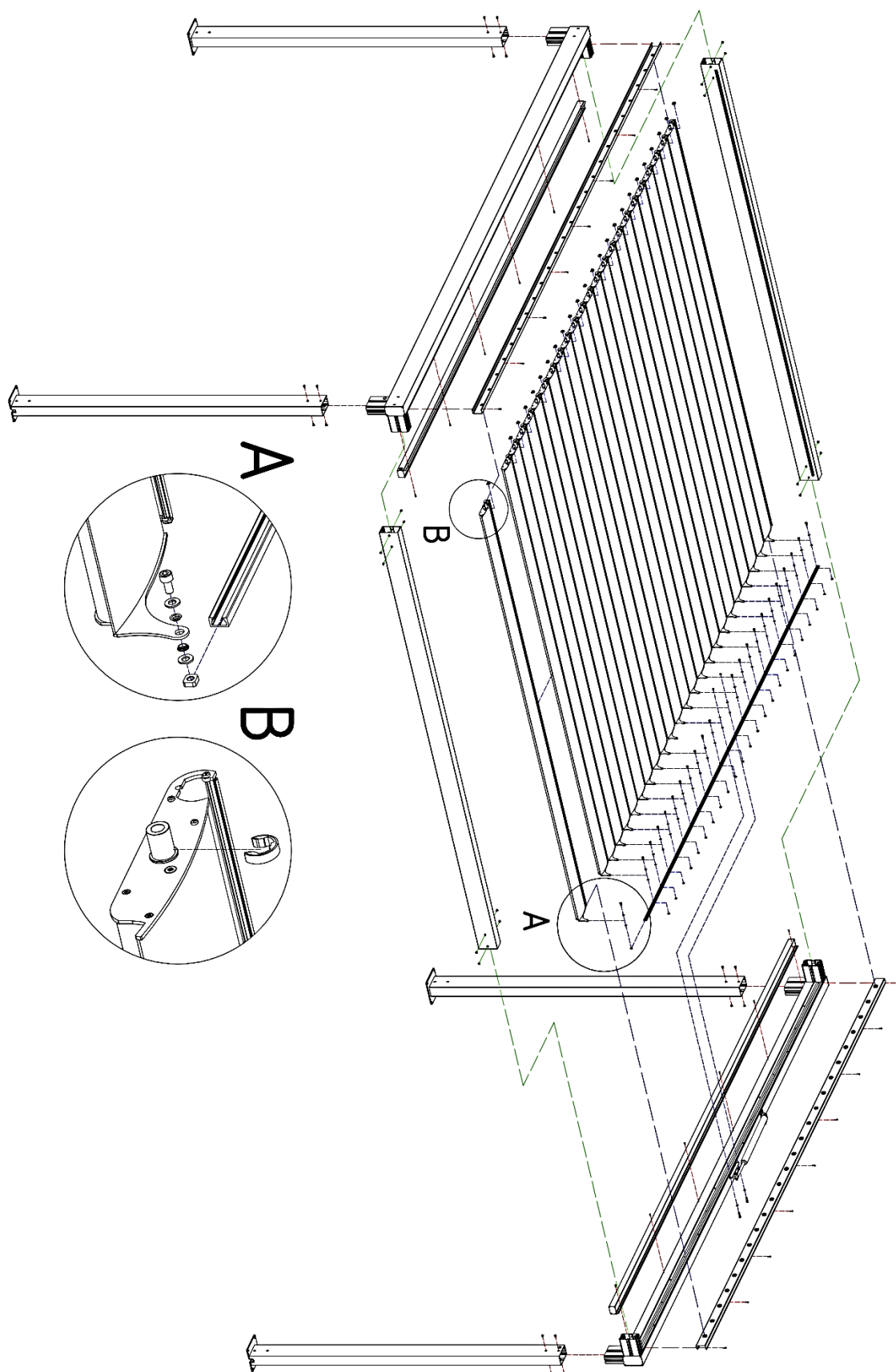


Fig. 6. View of assembly of the SOLID SUNBREAKER Pergola components.

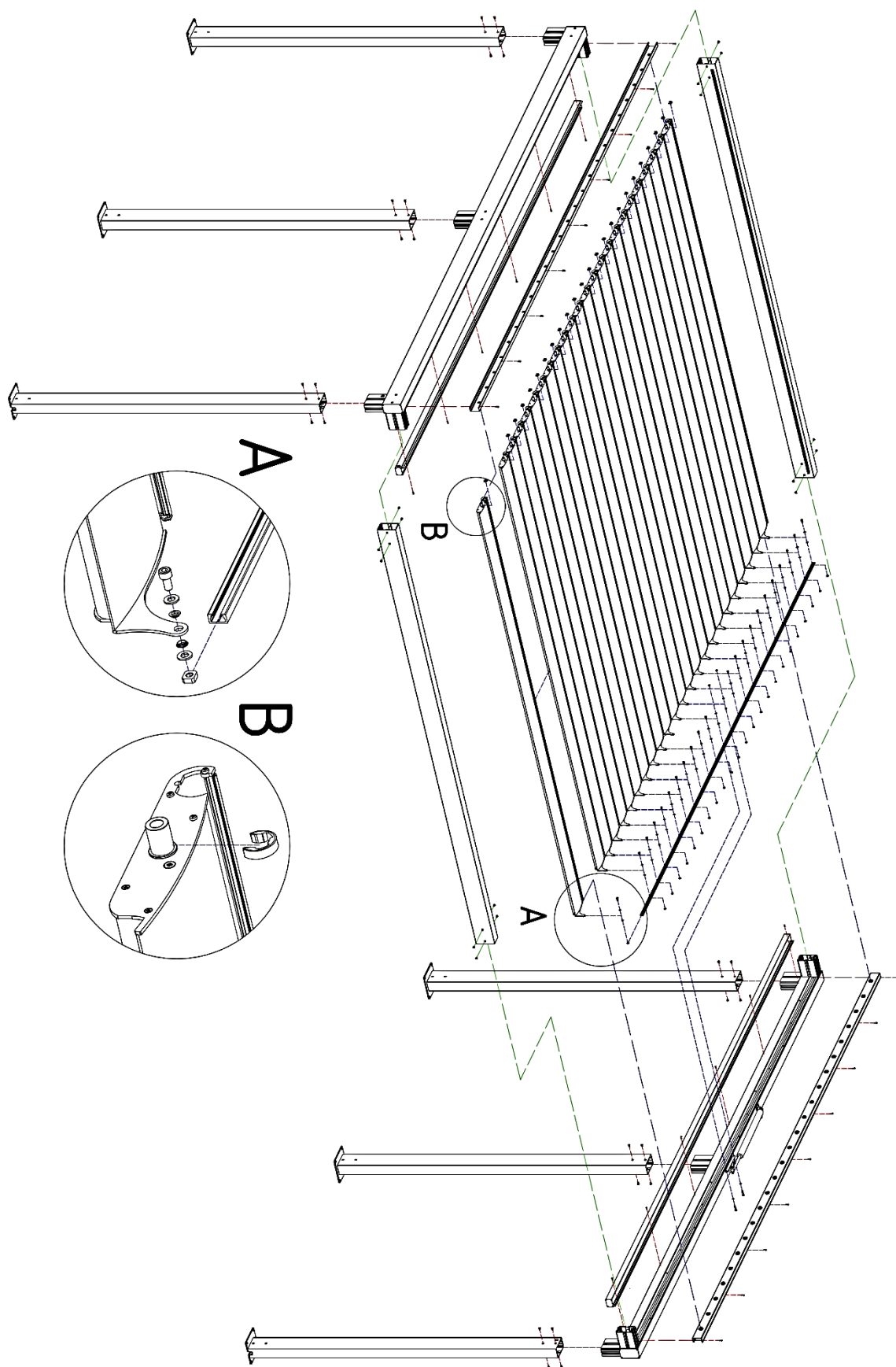


Fig. 7. View of assembly of the components of SOLID SUNBREAKER Pergola with intermediate column.

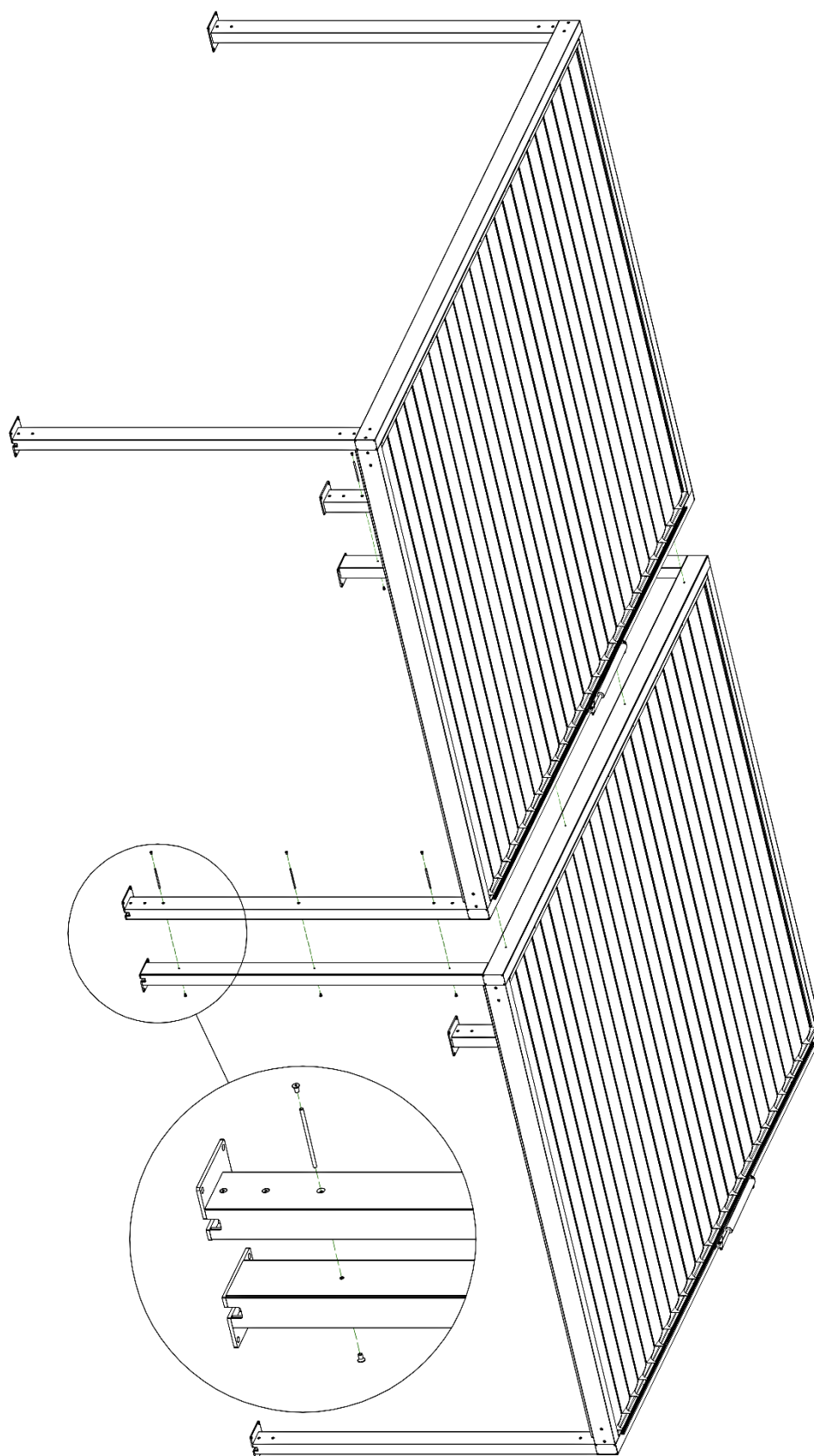




Fig. 8. View of assembly of the SOLID SUNBREAKER Pergola modules.

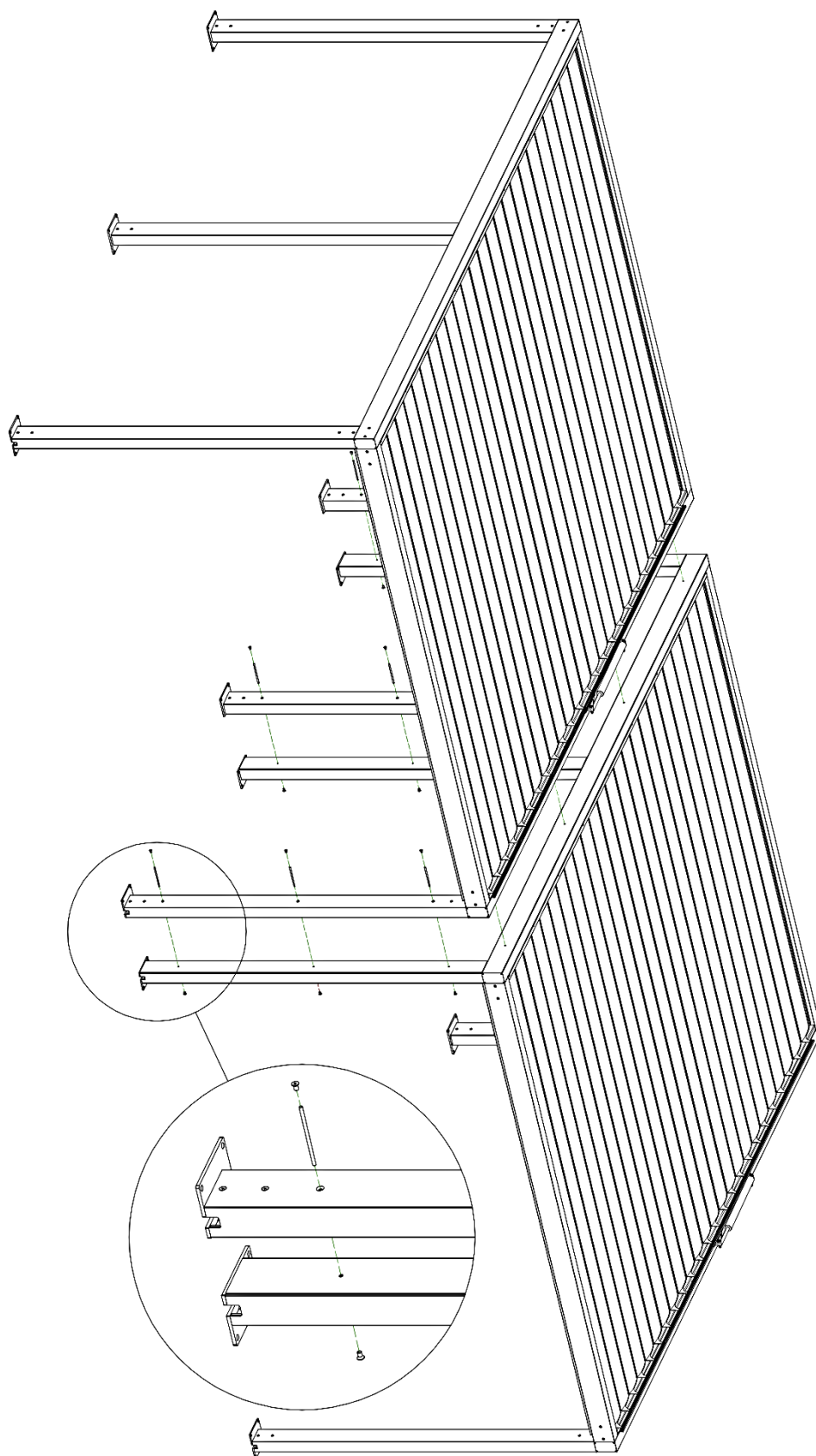


Fig. 9. View of the assembly of the modules of SOLID SUNBREAKER Pergola with the intermediate column.

**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 protect them during assembly.

Screw / nut	M3	M4	M5	M6	M8	M10	M14
Maximum tightening torque [Nm]	0.9	2	4	7	17	33	57

#### 4.6.1 PERGOLA ASSEMBLY

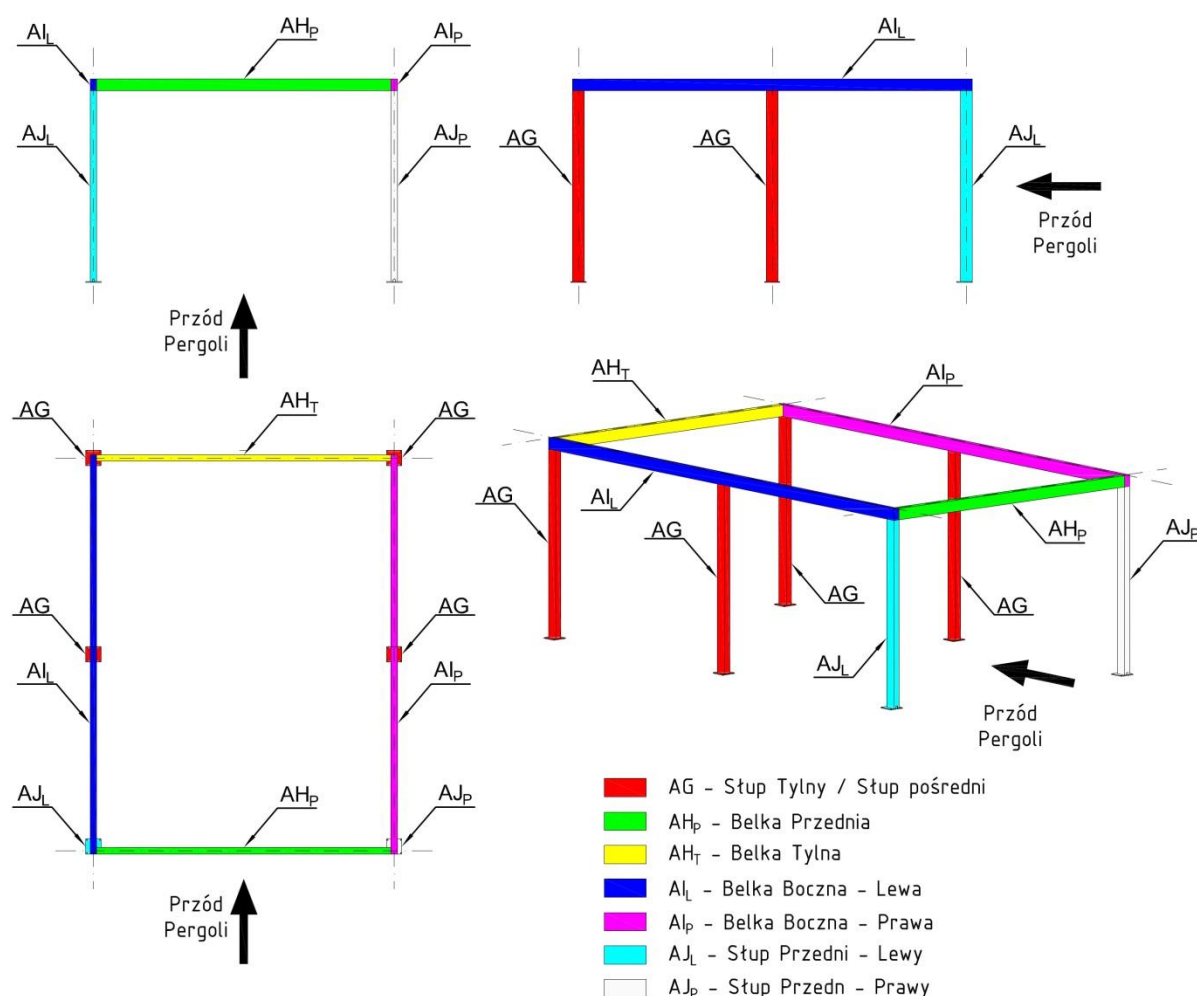


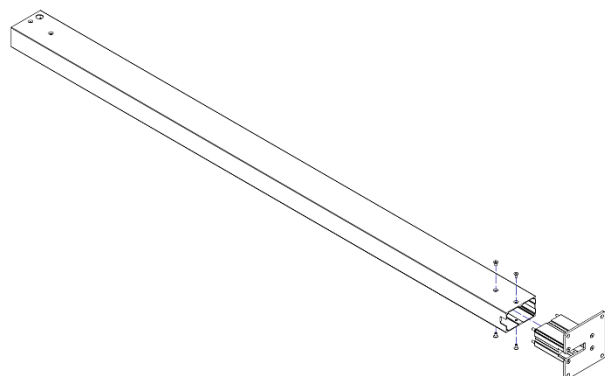
Fig. 10. Marking of components of the support structure for the SOLID SUNBREAKER Pergola.

**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. We recommend using screws/anchors of 12 mm diameter for fixing the footing to the substrate.

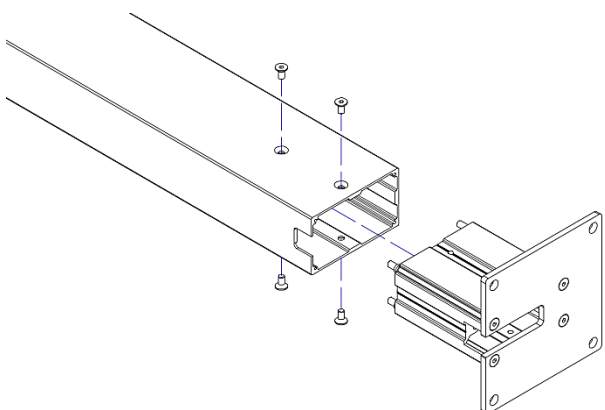
#### 4.6.1.1 ASSEMBLY OF SUPPORT STRUCTURE FOR SINGLE VERSION



1. Install front footing to a front column in accordance with the figure 1 and 2).

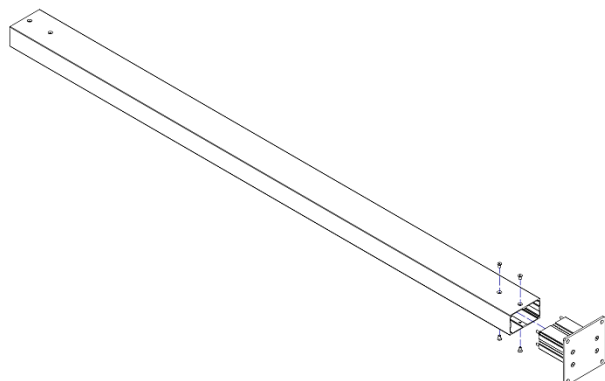
**NOTE:** Front column is available in left and right version. Figure 1 and 2 presents column in left version. In case of assembly in the corner, you should use front modular footing as presented on figure 27, but you should use footing in R or L execution, depending on the setting of the column in the corner.

Figure 1



**NOTE:** Front footing is versatile and can be used for columns in left or right version.

Figure 2



2. Install rear footing to rear column and intermediate columns (if available) in accordance with the figure 3 and 4.

**NOTE:** In case of assembly of the rear column in the corner you should use rear modular footing Type B as presented on figure 33, but you should use footing in R or L execution, depending on the setting of the column in the corner.

Figure 3

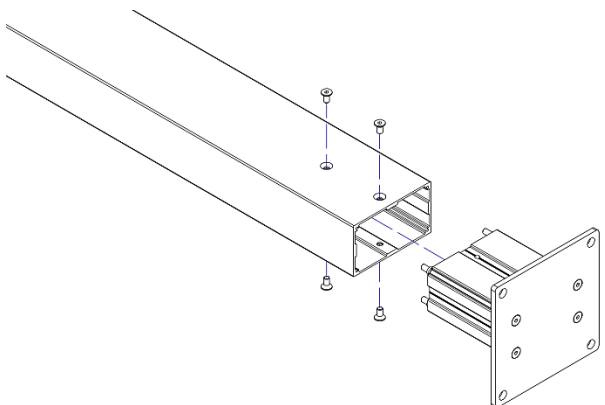
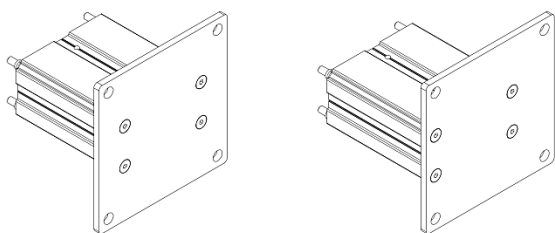


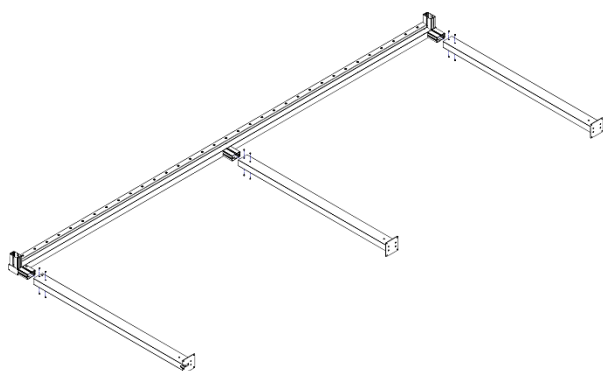
Figure 4

**A** **B**



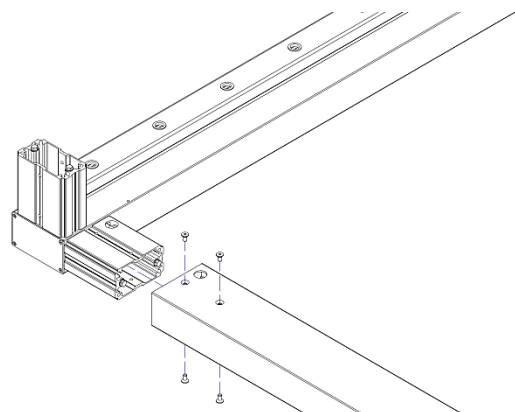
**NOTE:** Footing of the rear and intermediate column can be available in A and B type.

Figure 5



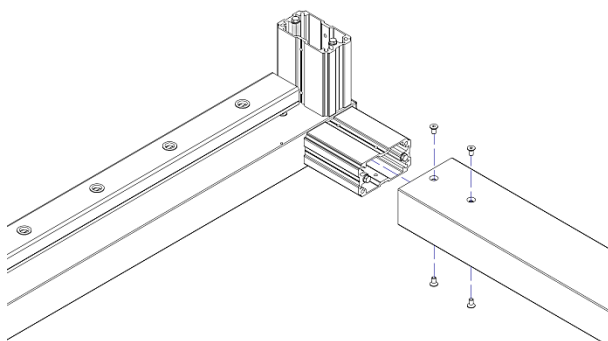
3. Assemble left front column, rear column and intermediate column (if available) to left side beam. In accordance with the figures 7, 8 and 9.

Figure 6



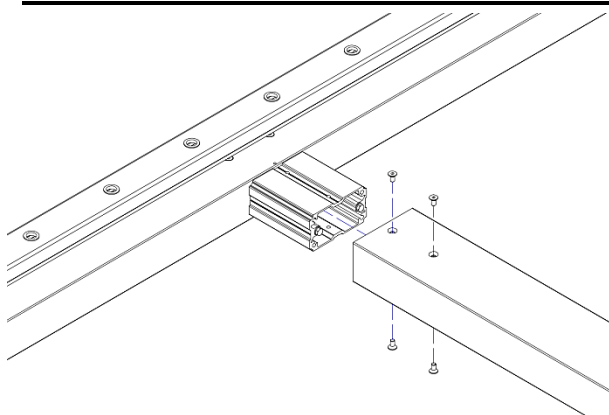
4. Place left front column on fastener of left side beam and then screw the column down to the fastener.

Figure 7



5. Place rear column of the fastener of left side beam, and then screw the column down to the fastener.

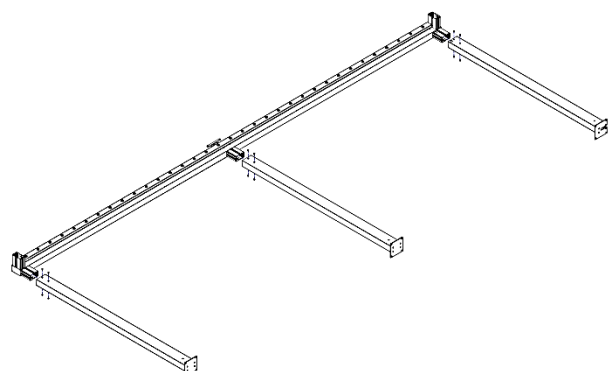
Figure 8



6. Place intermediate column of the fastener of left side beam,  
and then screw the column down to the fastener.

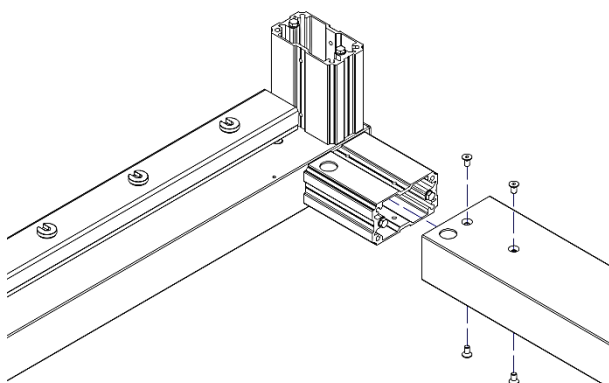
**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 9



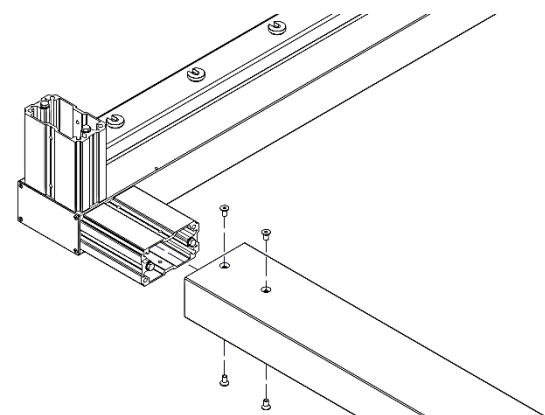
7. Assemble right front column, rear column and intermediate column (if available) to right side beam. In accordance with the figures 11, 12 and 13.

Figure 10



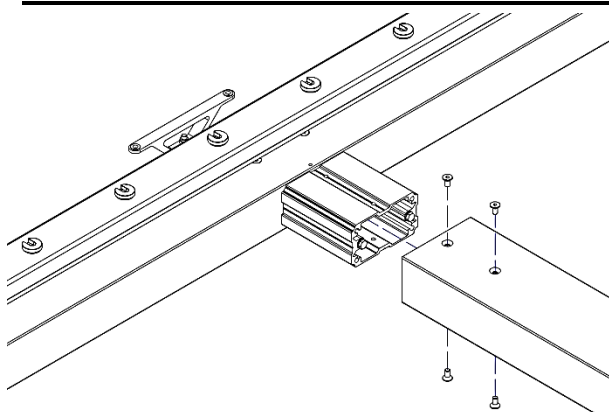
8. Place right front column on fastener of right side beam  
and then screw the column down to the fastener.

Figure 11



9. Place rear column on fastener of right side beam,  
and then screw the column down to the fastener.

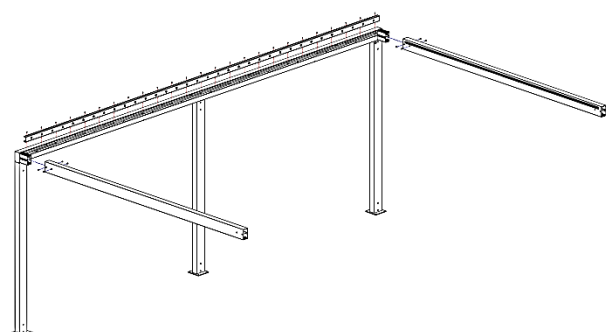
Figure 12



10. Place intermediate column on fastener of right side beam,  
and then screw the column down to the fastener.

**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 13



11. Place complete left side of the structure in foundation location and protect against turning over and then proceed to the assembly of the front and rear beam to the left side of the structure in accordance with the figures 18 and 19.

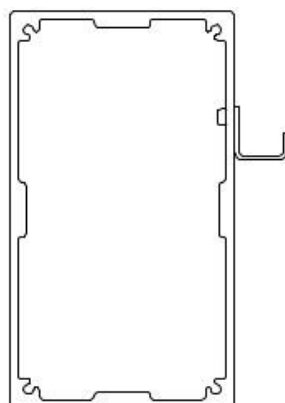
**NOTE:** Before assembly of the front and rear beam it is necessary to dismantle the guide from side beam because it is impossible to screw the beam fixing screws through the guide covering the opening.

Figure 14



**NOTE:** Components of support structure should be protected during assembly against turning over or falling onto persons performing the assembly.

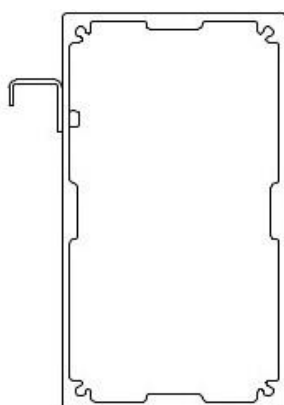
Przód



View of front beam.

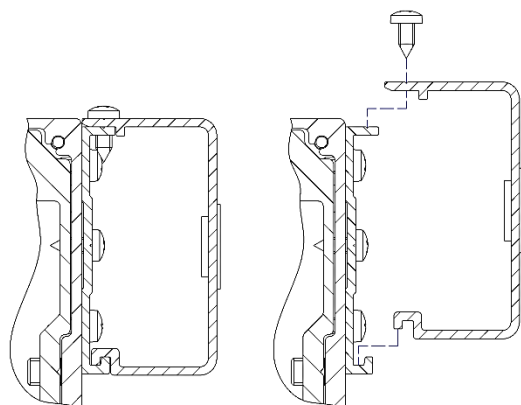
Figure 15

Przód



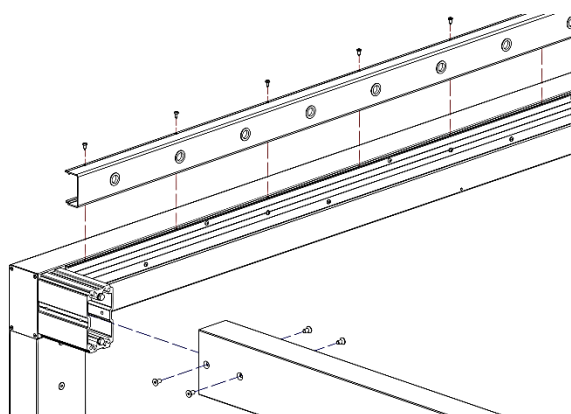
View of rear beam.

Figure 16



Disassembly and assembly of guide for left side beam.

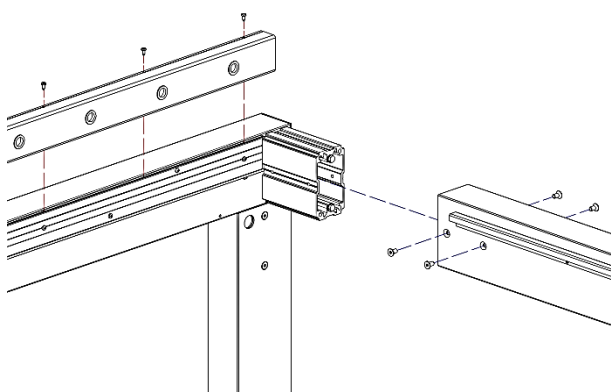
Figure 17



12. Disassemble guide of left side beam by unscrewing screws fixing the guide prior starting the assembly of front beam.

13. Place front beam on fastener of left side beam and then screw the front beam to the fastener.

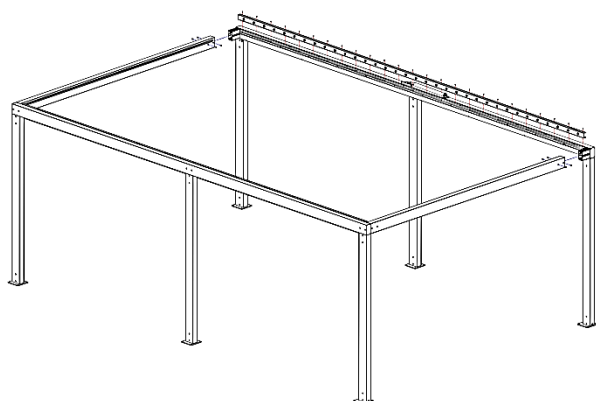
Figure 18



14. Place rear beam on fastener of the left side beam and then screw the rear beam to the fastener.

15. Then assemble the guide to left side beam by screwing the guide fixing screws.

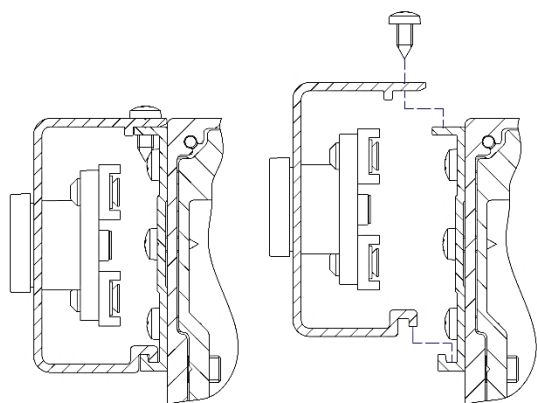
Figure 19



16. The complete right side of the structure should be placed next to the remaining part of the structure and then you should assemble a right side of the structure to front and side beam in accordance with the figures 22 and 23.

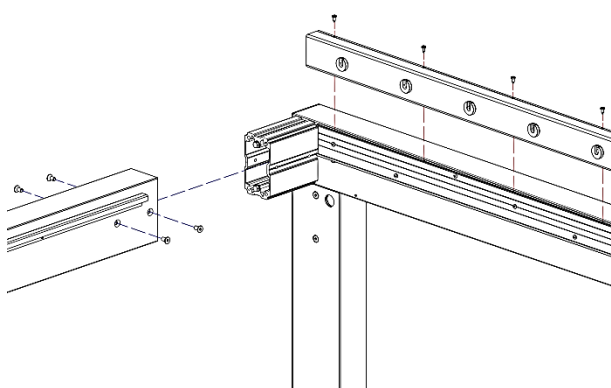
**NOTE:** Before assembly of the right side of the structure it is necessary to dismantle the guide from side beam because it is impossible to screw the beam fixing screws through the guide covering the opening.

Figure 20



Disassembly and assembly of guide for right side beam.

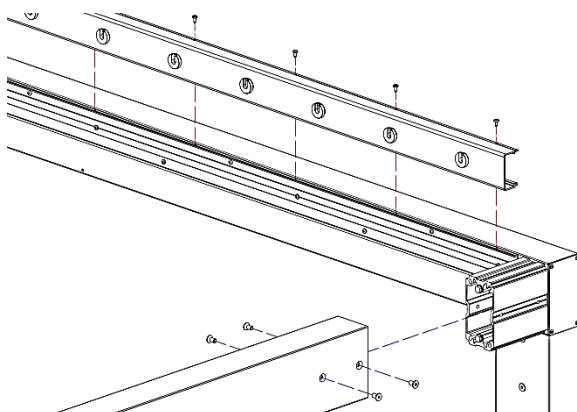
Figure 21



17. Disassemble guide from the right beam by unscrewing screws fixing the guide prior starting the assembly of the right side of the structure.

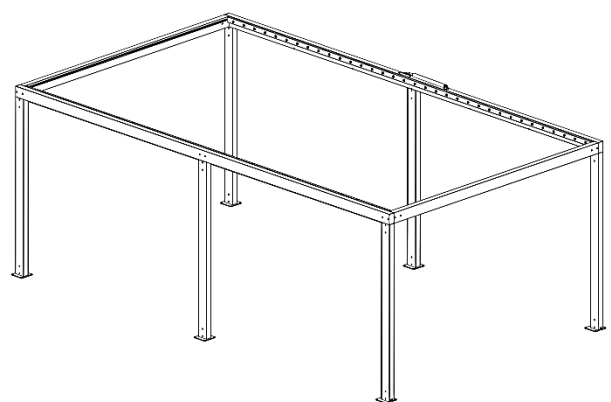
18. At the same time, place front and rear beam on fasteners of right side beam and then screw the front and rear beam to these fasteners as presented on the figures 26 and 27.

Figure 22



19. Then assemble the guide to right side beam by screwing the guide fixing screws.

Figure 23



20. Prior anchoring the structure 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.

21. Anchor the structure to the ground after checking the setting.

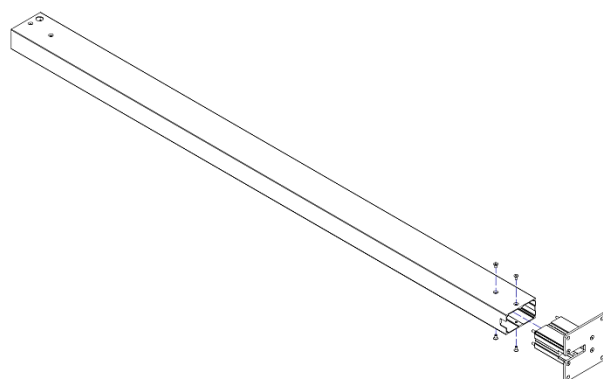
Figure 24



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



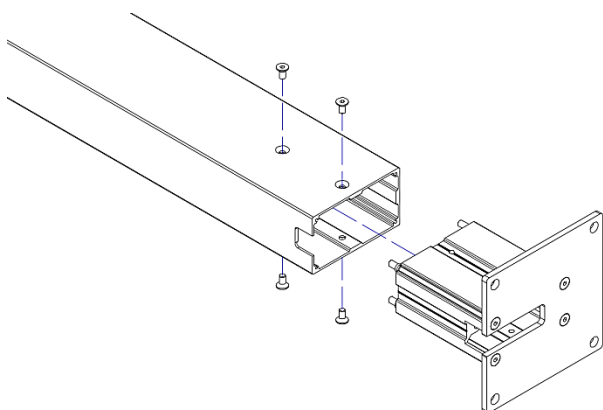
#### 4.6.1.2 ASSEMBLY OF SUPPORT STRUCTURE FOR MODULAR VERSION



1. Install front footing to a front column in accordance with the figure 25 and 26).

**NOTE:** Front column is available in left and right version. Figure 25 and 26 presents column in left version.

Figure 25



**NOTE:** Front footing is versatile and can be used for columns in left or right version.

In case of assembly in the corner, you should use front modular footing as presented on figure 27, but you should use footing in R or L execution, depending on the setting of the column in the corner.

Figure 26



**NOTE:** Modular components are usually made as left or right components; they should be joined in units maintaining the same execution (left or right). Unless otherwise stated in this manual.

**L**

**P**

**NOTE:** Front modular footing is available in version L - left and R - right.

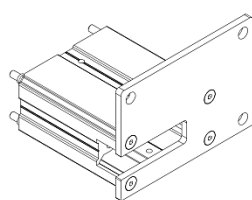
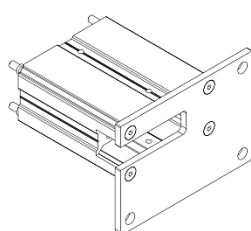
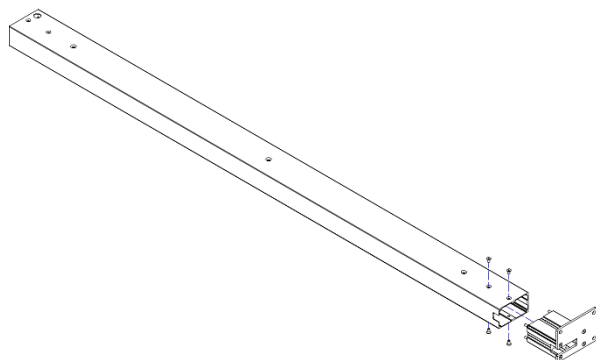


Figure 27



2. Install modular front footing to a front modular column in accordance with the figure 28 and 29 and 33).

**NOTE:** Front column is available in left and right version. Figure 28 and 29 presents column in left version.

Figure 28

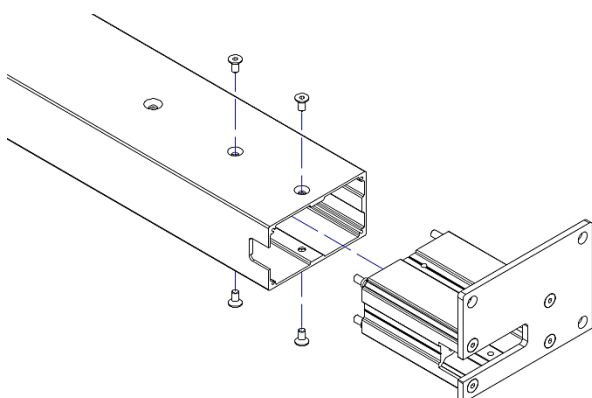
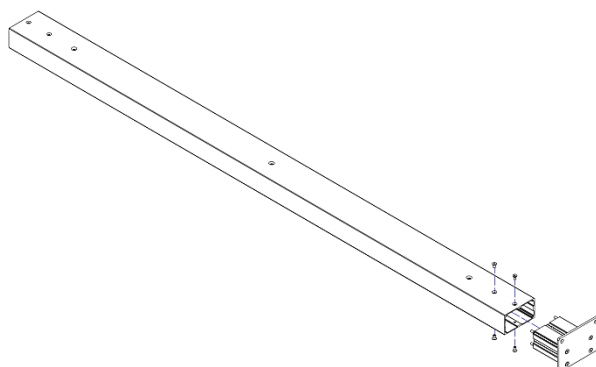


Figure 29

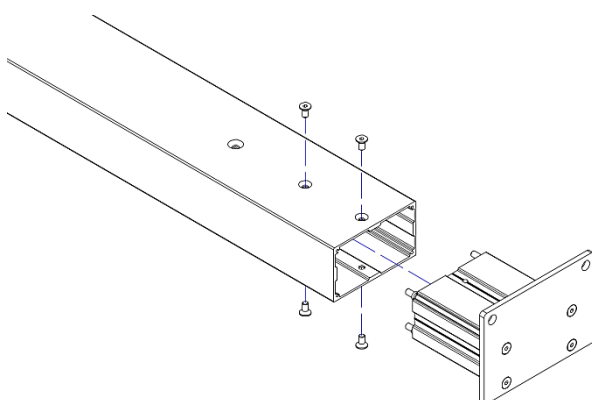


3. Install modular rear footing to the modular rear column and intermediate columns (if available) in accordance with the figure 30 and 31.

**NOTE:** Modular rear and intermediate columns are available in left and right version. Modular rear footing can be available in A and B type.

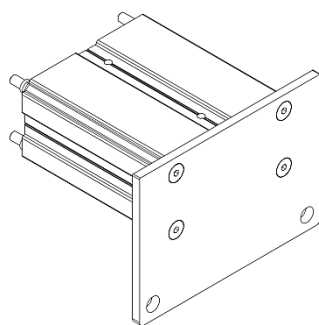
Figure 30 and 31 present the modular column in a left version with modular rear footing in type A.

Figure 30



**NOTE:** In case of assembly of the rear column in the corner you should use rear modular footing Type B as presented on figure 33, but you should use footing in R or L execution, depending on the setting of the column in the corner.

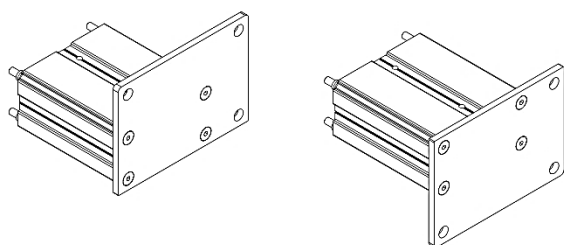
Figure 31



**NOTE:** Modular footing, rear, type A is versatile and can be used for columns in left or right version.

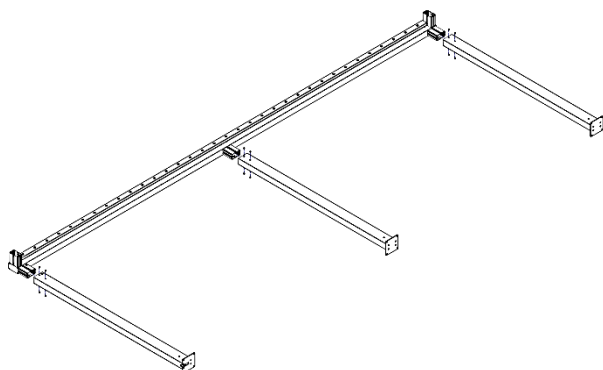
Figure 32

**L P**



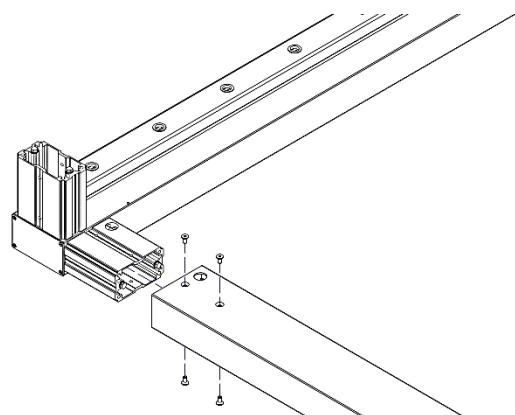
**NOTE:** Modular footing, rear, type B is available in version L - left and R - right.

Figure 33



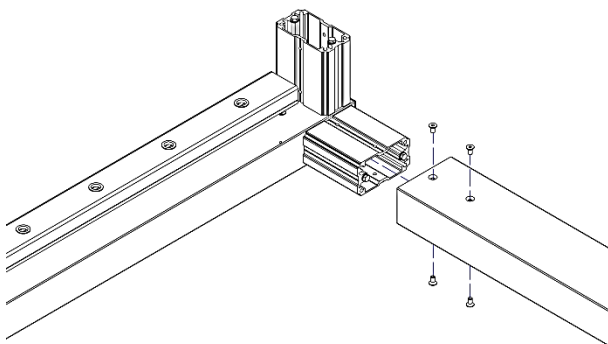
4. Assemble left front column, rear column and intermediate column (if available) to left side beam. In accordance with the figures 35, 36 and 37.

Figure 34



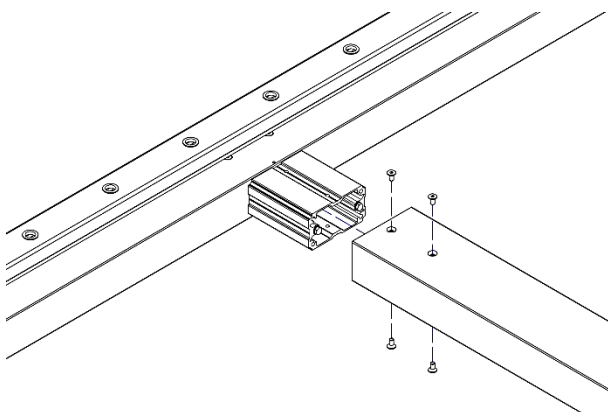
5. Place left front column on fastener of left side beam and then screw the column down to the fastener.

Figure 35



6. Place rear column of the fastener of left side beam, and then screw the column down to the fastener.

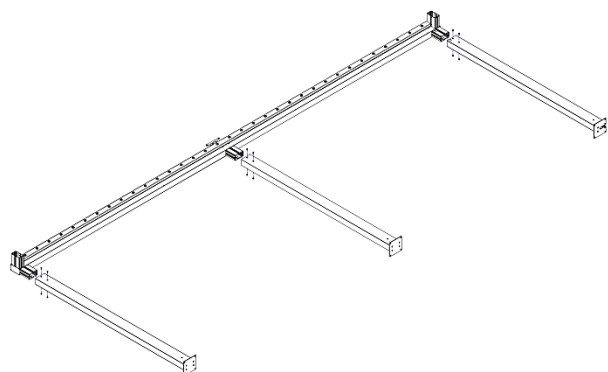
Figure 36



7. Place intermediate column of the fastener of the left side beam and then screw the column down to the fastener.

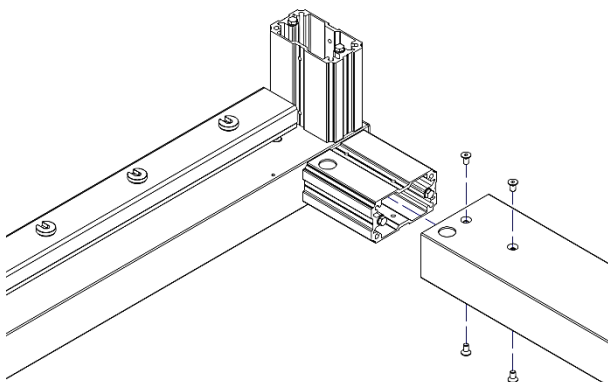
**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 37



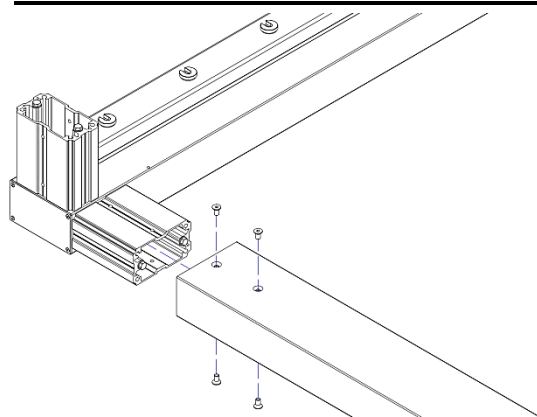
8. Assemble right front column, rear column and intermediate column (if available) to right side beam. In accordance with the figures 39, 40 and 41.

Figure 38



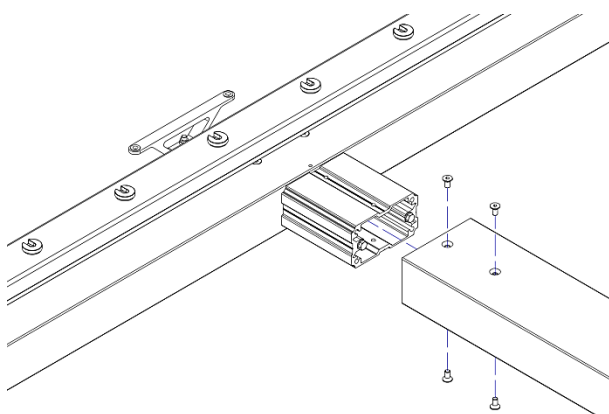
9. Place right front column on fastener of right side beam and then screw the column down to the fastener.

Figure 39



10. Place rear column of the fastener of right side beam, and then screw the column down to the fastener.

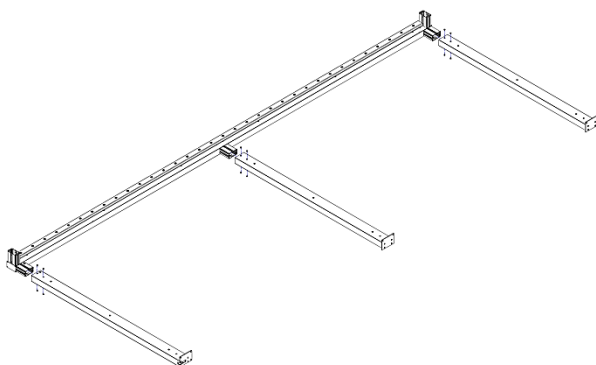
Figure 40



11. Place intermediate column on fastener of right side beam, and then screw the column down to the fastener.

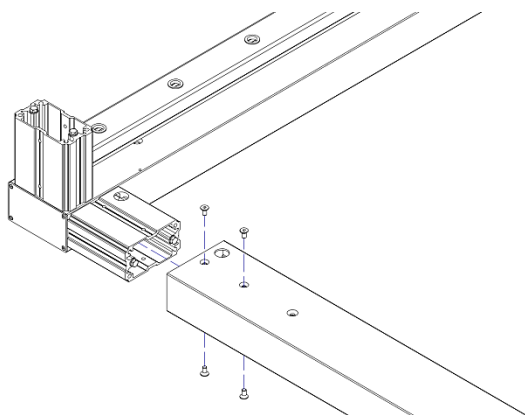
**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 41



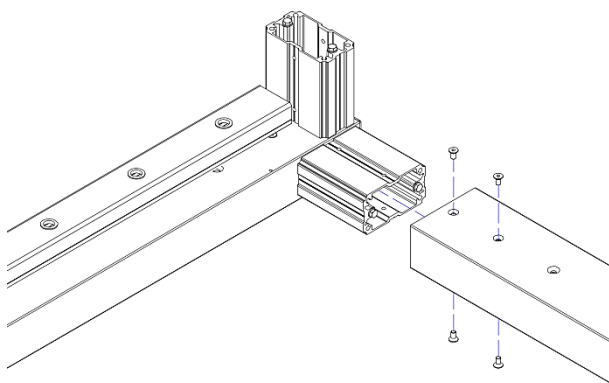
12. Assemble modular left front column, modular left rear column and modular intermediate column (if available) to left side beam. In accordance with the figures 43, 44 and 45.

Figure 42



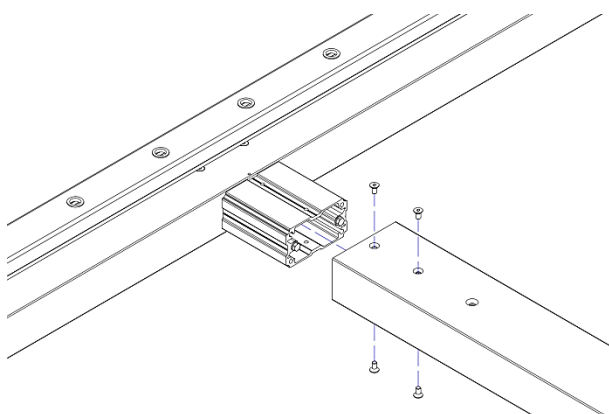
13. Place left front modular column on fastener of the left side modular beam and then screw the column down to the fastener.

Figure 43



14. Place left rear modular column on fastener of the left side modular beam and then screw the column down to the fastener.

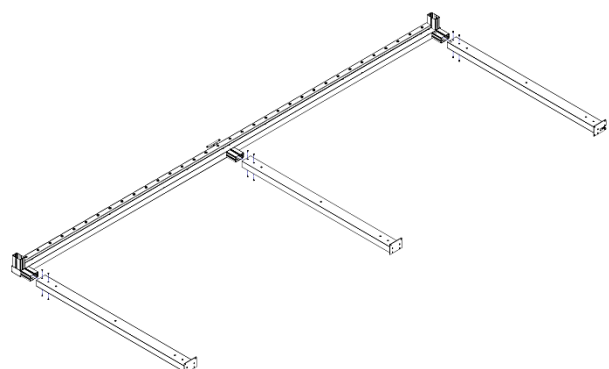
Figure 44



15. Place left intermediate modular column on fastener of the left side modular beam and then screw the column down to the fastener.

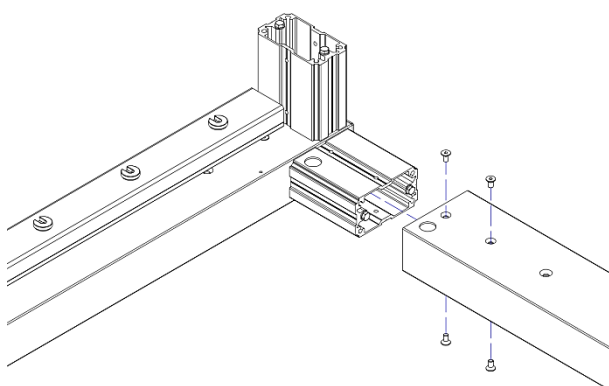
**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 45



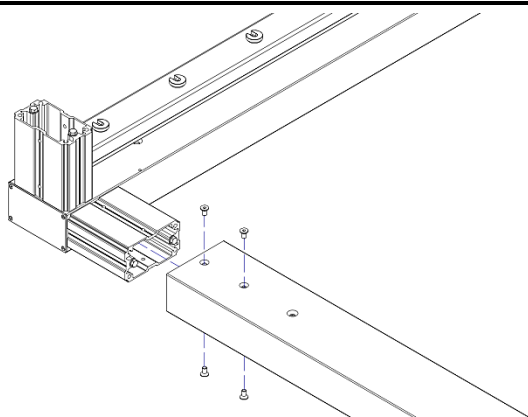
16. Assemble modular right front column, modular rear right column and right intermediate modular column (if available) to the modular right side beam. In accordance with the figures 47, 48 and 49.

Figure 46



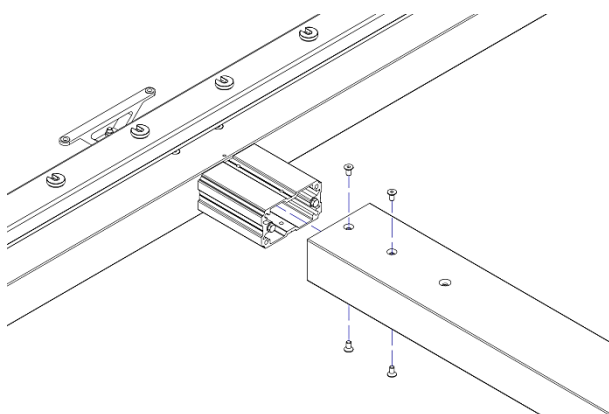
17. Place right front modular column on fastener of the right side modular beam and then screw the column down to the fastener.

Figure 47



18. Place rear right modular column on fastener of the right side modular beam and then screw the column down to the fastener.

Figure 48



19. Place right intermediate column on fastener of the right side modular beam and then screw the column down to the fastener.

**NOTE:** This operation should be executed when there is an intermediate column in the system, if not - the operation should be omitted.

Figure 49

**NOTE:** Modules for modular version are available in three versions.

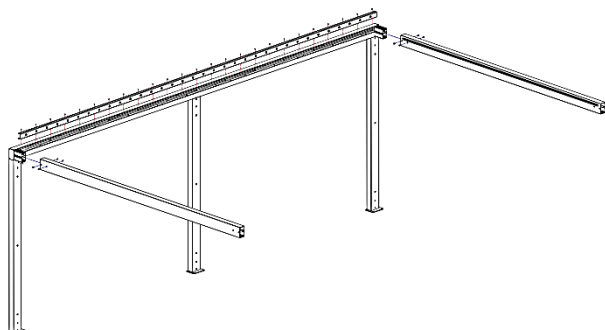
- **Left extreme module** - consisting of left side beam with columns and right side modular beam with beams and front and rear beam.
- **Right extreme module** - consisting of the left side modular beam with columns and right side beam with beams and front and rear beam.
- **Intermediate module** - consisting of the left side modular beam with columns and right side modular beam with beams and front and rear beam.



Two-modules version consists exclusively of extreme modules (left and right).

Version with three or more modules consists of extreme modules (left and right) and a corresponding number of intermediate modules.

**NOTE:** It is recommended to start assembly of multi-modules structure from the extreme left module.



20. The complete left side of the structure should be placed in place of foundation (use a version of the component in accordance with the version of the assembled module) and protect against turning over and then proceed to the assembly of the front and rear beam to the left side of the structure in accordance with the figures 54 and 55.

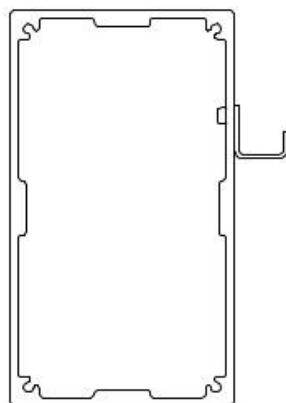
**NOTE:** Before assembly of the front and rear beam it is necessary to dismantle the guide from side beam because it is impossible to screw the beam fixing screws through the guide covering the opening.

Figure 50



**NOTE:** Components of support structure should be protected during assembly against turning over or falling onto persons performing the assembly.

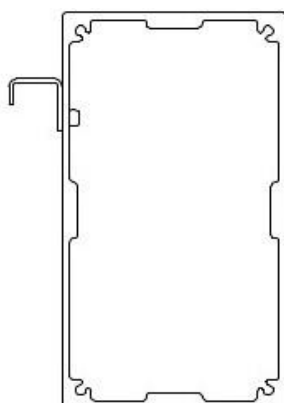
Przód



View of front beam.

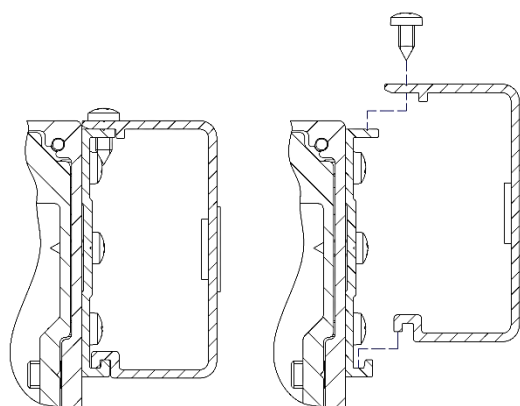
Figure 51

Przód



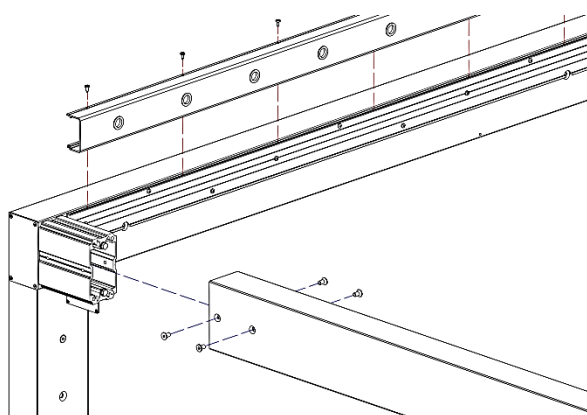
View of rear beam.

Figure 52



Disassembly of guide for left side beam.

Figure 53



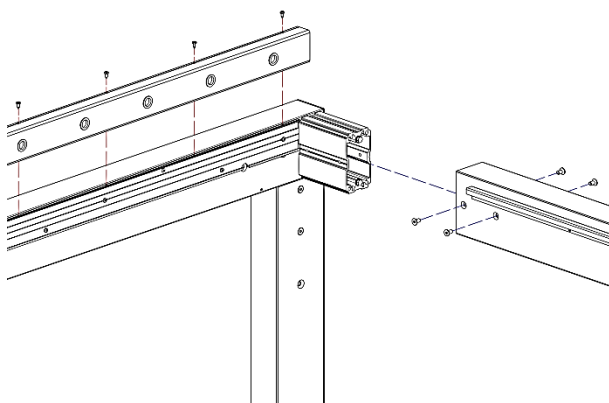
21. Disassemble guide of left side beam by unscrewing screws fixing the guide prior starting the assembly of front beam.

**NOTE:** Disassembled guide should be put aside and marked, to avoid changing of guides on beams.

22. Place front beam on fastener of left side beam and then screw the front beam to the fastener.

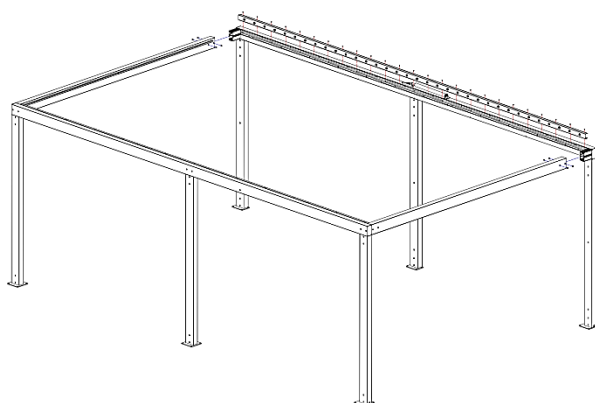
Figure 54





23. Place rear beam on fastener of the left side beam and then screw the rear beam to the fastener.

Figure 55



24. The complete right side of the structure should be placed next to the remaining part of the structure (use version of the component in accordance with the variant of the assembled module) and then you should assemble a right side of the structure to front and side beam in accordance with the figures 58 and 59.

**NOTE:** Before assembly of the right side of the structure it is necessary to dismantle the guide from side beam because it is impossible to screw the beam fixing screws through the guide.

Figure 56

Disassembly of guide for right side beam.

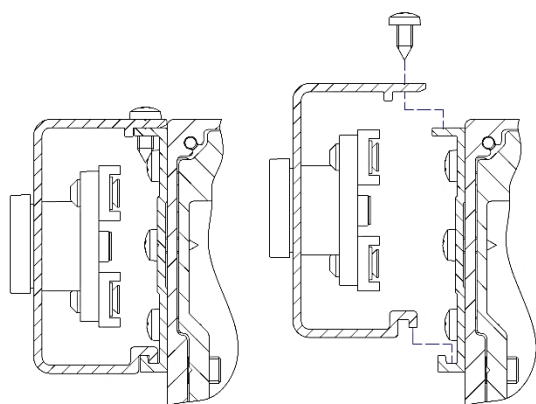
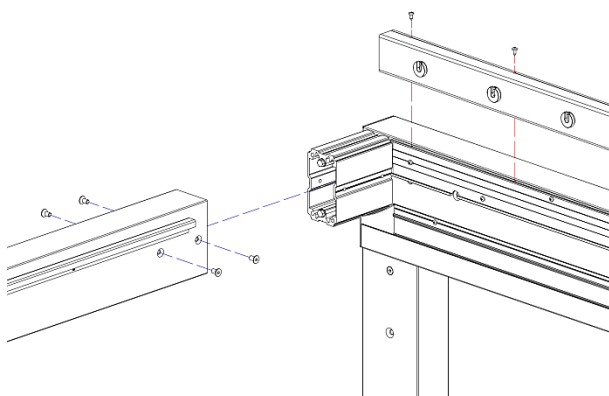


Figure 57



25. Disassemble guide from the right beam by unscrewing screws fixing the guide prior starting the assembly of the right side of the structure.

**NOTE:** Disassembled guide should be put aside and marked, to avoid changing of guides on beams.

26. At the same time, place front and rear beam on fasteners of right side beam and then screw the front and rear beam to these fasteners as presented on the figures 58 and 59.

Figure 58

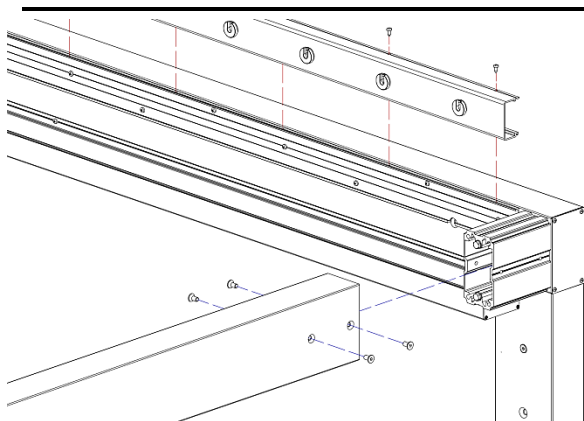
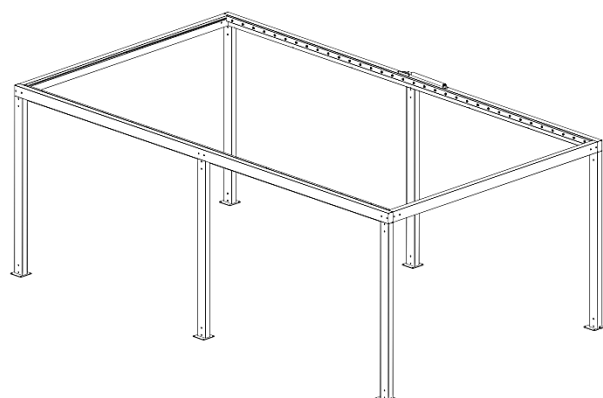


Figure 59



27. Prior anchoring the module 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.

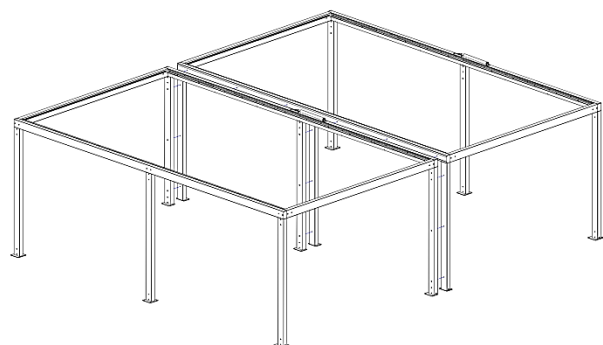
28. Anchor the structure to the ground after checking the setting of the module.

29. Successive modules should be assembled by repeating the following steps. from 4 to 29.

Figure 60



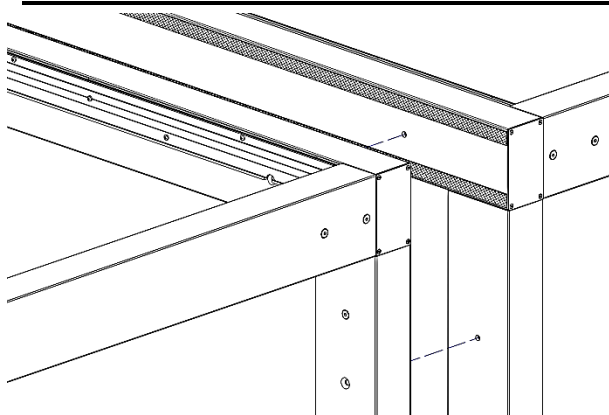
**NOTE:** Assembled support structure should be placed in the given place and anchored to the ground using the appropriate fixing product. Purchase and selection of the components for structure anchoring is the responsibility of the system purchaser.



30. Add a new module to the module/modules already anchored to the floor in accordance with the figure.

31. Prior assembling the structure modules to the each other it is necessary to check the correctness of diagonals of the structure and vertical and horizontal trueness of structural components in the newly assembled module - make corrections of structure settings if necessary.

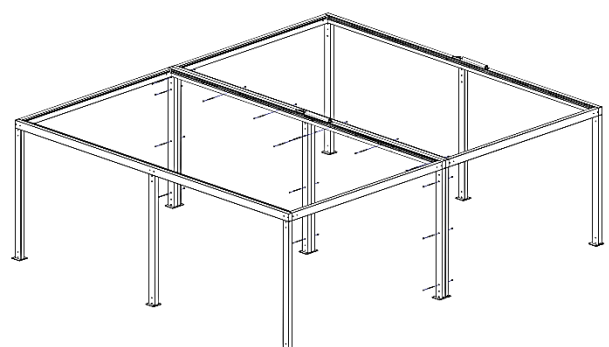
Figure 61



**NOTE:** Pay special attention to the alignment of the beams and columns of joined modules and concentricity of opening intended for structure screwing.

**NOTE:** Pay attention to strips of EPDM foam glued to the lengthwise modular beam, to avoid its damage during assembly. If the damage is identified, replace them with new ones. Purchase of new foam and its replacement should be ensured by the Purchaser.

Figure 62



32. Modules set should be screws with each other using countersunk nuts and pins delivered with construction kit - as presented on figure 63 and 64.

**NOTE:** Countersunk nuts and pins should be protected with thread-locking adhesive during screwing. Thread-locking adhesive is not part of the construction kit and it should be bought by the Purchaser on his own.

33. Modules set and screwed with each other should be permanently anchored to the floor.

Figure 63

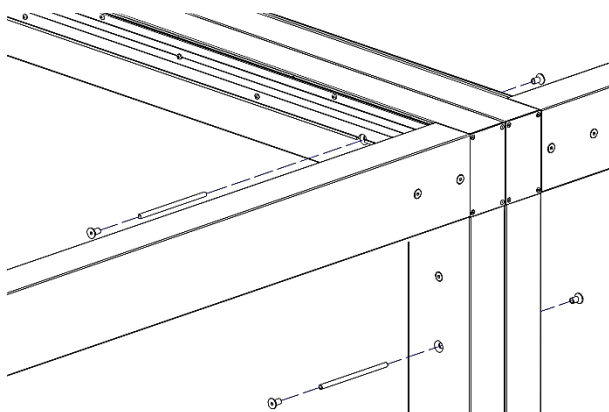
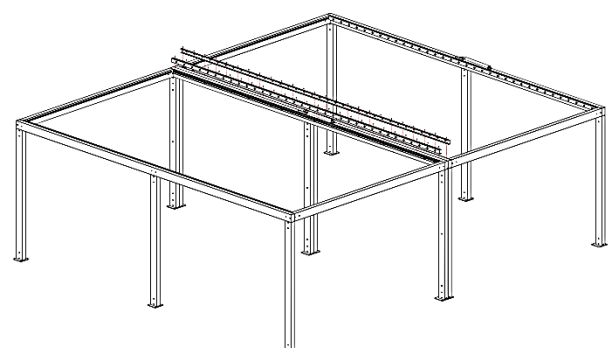


Figure 64



34. Assemble and screw down previously disassembled bearing and driving guides, in accordance with the figures 76-79, to the side beams.

Figure 76

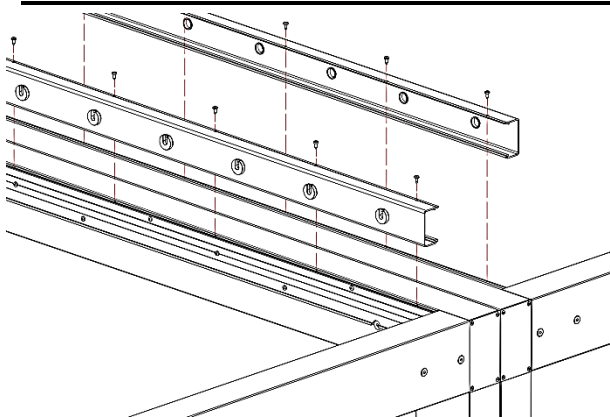


Figure 77

Assembly of driving guide of side beam.

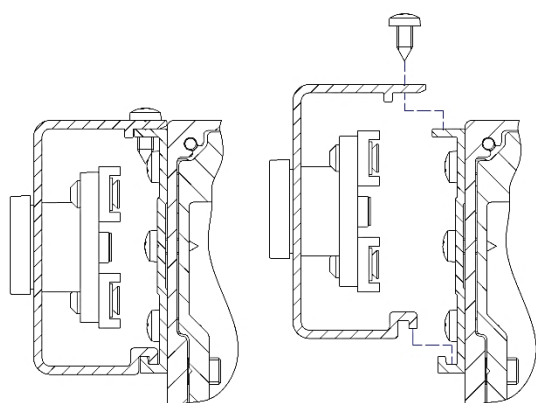


Figure 78

Assembly of driving guide of side beam.

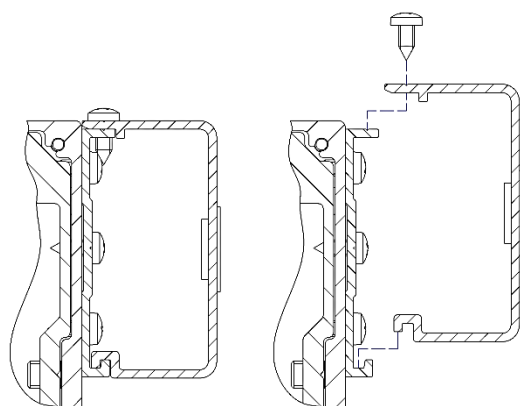


Figure 79

35. Successive modules should be installed to the already assembled structure by repeating operations from 30 to 34.

36. Install the blades when the assembly of all modules is completed.

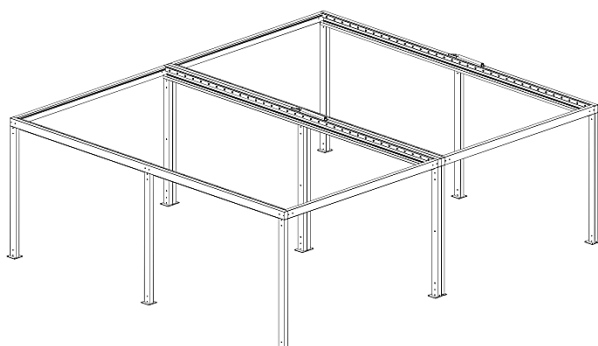


Figure 80

#### 4.6.1.3 BLADES ASSEMBLY



**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.



Blade view, drive side.

Picture 1



Blade view, bearing side.

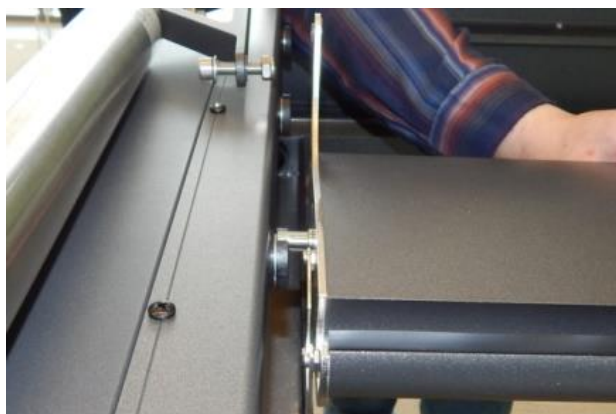
Picture 2



1. Insert pin of the bearing side of the blade to bearing in bearing guide, the blade should be maximally inserted into the bearing guide.

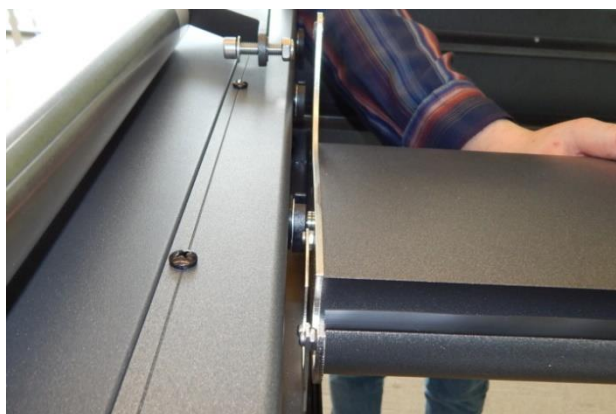
**NOTE:** During blades assembly, one should pay attention to avoid scratching of structure components by protruding screws.

Picture 3



2. Install pin of the blade driving side in the groove of the driving guide.

Picture 4



3. Move the blade maximally closer on side of the driving guide.

Picture 5



4. Click spacing clip on the pin of bearing side of the blade.
- Repeat steps 1 to 4 for the other blades.

Picture 6



5. Set the blades in vertical (open) position and start assembly of the drive.

Picture 7

#### 4.6.1.4 DRIVE ASSEMBLY





1. Disassemble screws from the handle of wrapping connector.

Picture 8



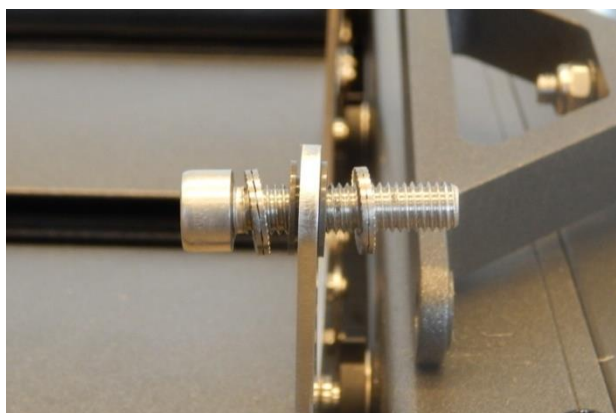
2. Install sleeves on drive plug of the blade, repeat operation for all blades.

Picture 9



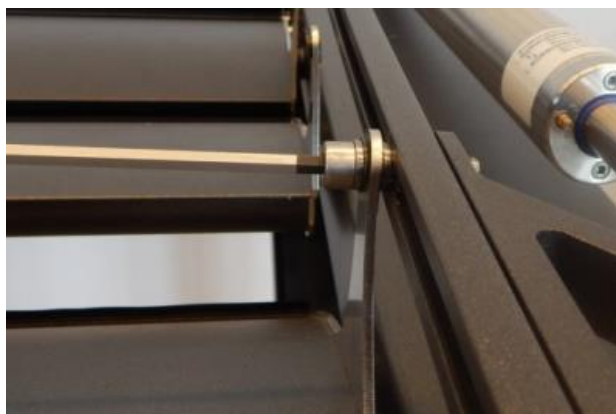
3. Insert two threaded plates 13x13 to wrapping connector and set it opposite to the opening in the connector.

Picture 10



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

Picture 11



5. Screw down the blade to wrapping connector.

**NOTE:** Tighten the screw until there is noticeable resistance.

Picture 12



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

Picture 13



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

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

Picture 14



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

Picture 15





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

Picture 16



**NOTE:** Blades should be installed to the guide individually, from centre 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 on figure 17.

Picture 17



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

Picture 18



14. Catch the blade with a screw to threaded plate 13x13 in wrapping connector.  
**NOTE:** Plate should move freely in the guide.

Picture 19



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

**NOTE:** inaccuracy during blades setting should not exceed  $\pm 0.2^\circ$ .

Picture 20



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

Repeat steps 12 to 16 for the other blades.

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

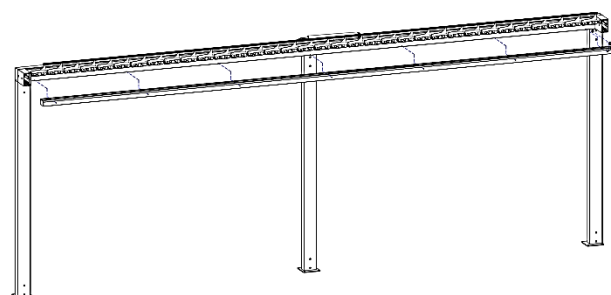
Picture 21



17. Check correctness of system operation and adjust motor limit switches if necessary.
18. Proceed to the assembly of the gutters in the individual modules when all blades are installed.

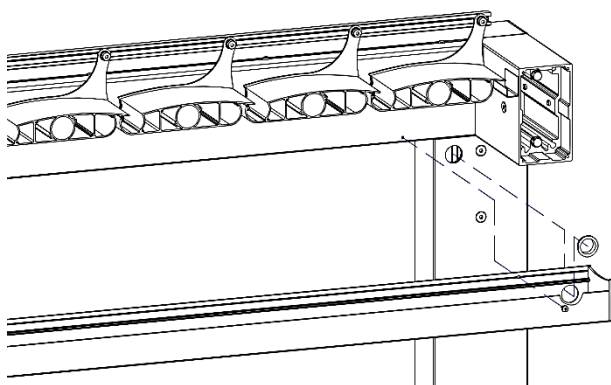
Picture 22

#### 4.6.1.5 GUTTERS ASSEMBLY



1. Place right gutter with respect to openings in the right side beam.

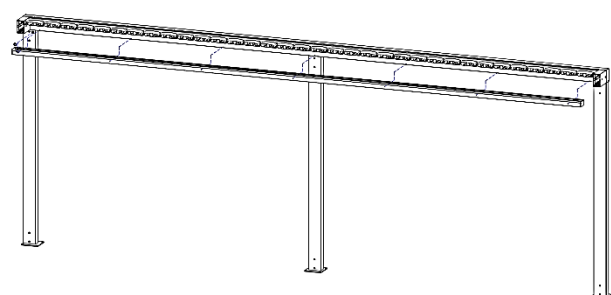
Figure 81



2. Screw left gutter to left side beam using delivered sheet metal screws ST4.8.
3. Install overflow drain from gutter to front column after installation of the gutter to side beam.

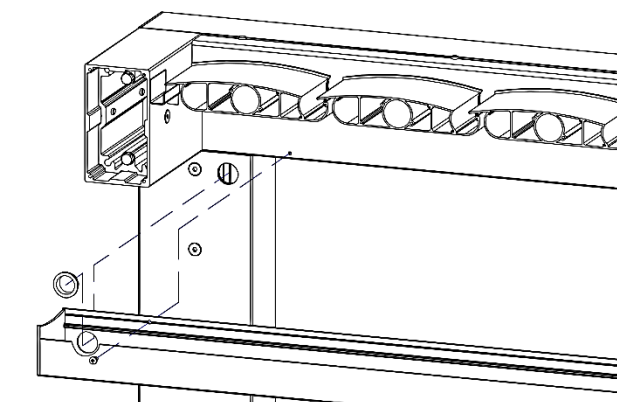
**NOTE:** Overflow should be placed in the opening of gutter and column using silicone sealant and sealant excess should be removed. The sealant is not part of the set and it should be bought by oneself.

Figure 82



4. Place left gutter with respect to openings in the left side beam.

Figure 83



5. Screw left gutter to left side beam using delivered sheet metal screws ST4.8.
6. Install overflow drain from gutter to front column after installation of the gutter to side beam.

**NOTE:** Overflow should be placed in the opening of gutter and column using silicone sealant and sealant excess should be removed. The sealant is not part of the set and it should be bought by oneself.

Figure 84

## 4.7 ELECTRIC DRIVE

### 4.7.1 CONNECTION TO ELECTRICAL INSTALLATION

When the product is fixed one should proceed to connection of 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 (by a person with appropriate qualifications/licenses) taking the fire-protection rules into account.

The connection should be carried out by the electrician holding electrical licenses.

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:

**Environmental conditions with increased safety risks:**

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

In rooms and spaces, where there are increased safety risks it is appropriate to use automatic devices shutting down the supply of damaged product, e.g. earth leakage circuit breakers. 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 the supply of the equipment in the open outdoor, in agricultural and horticultural farms, in campings and leisure vehicles and rooms where fire hazard is present.

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**4.7.2 START-UP AND ADJUSTMENT**

- Limit positions (blades rotation, close or open position) are secured with limit switches, which should be adjusted during assembly.
- Adjustments of limit switches should be made in accordance with the motor user's manual.
- Electrical measurements required by the regulations should be executed prior to start-up.
- It is forbidden to start the motor without checking correct fixing of the system.

**Particular account should be paid during product start-up to:**

- correct opening and closing of the blades,
- correct triggering of limit switches.



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



The motor is equipped with a thermal cut-off switch, which will shutdown the drive after approx. 4 minutes of continuous operation to protect it against overheating (depending on the external conditions). After the motor has been switched off by the thermal protection, you should wait an adequate period of time, depending on the motor type and the ambient temperature (approx. 16 minutes), to be able to restart it.

## 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. forbids making any structural changes; non-observance of the above condition releases the manufacturer from the liability for the product and the warranty will be invalidated.
- During transport, assembly and disassembly and during servicing and maintenance of the product you should observe applicable occupational health and safety regulations and environmental protection rules.
- The product should be maintained and repaired only by a trained person with proper authorizations.
- Product purchaser should ensure that person, which are entrusted with the operations related to the routine operation, maintenance and hygiene have been familiarized with the user's manual and are observing all guidelines contained in this manual.
- It is forbidden to clean the product in the other way than described in the point "Technical inspections, 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.
- The 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 snowfall.
- SOLID SUNBREAKER PERGOLA should not be used, and you should not stay under it, during storm, hail, heavy snowfall, 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 as barbecues, the open flame should be not located under the pergola to avoid overheating of the product.

### 5.2 SAFETY REQUIREMENTS RELATED TO SPECIAL CONDITIONS AND 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 an individual risk assessment for the operation of the product with special attention paid to the safety of children and disabled people.

It is essential to take account of reasonably foreseeable conditions of operation and potential 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 a 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 to 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 operating parameters of the product given in the operation and technical manual, the run-time of the electric motor is strictly specified in the point 2.1 "Technical parameters" (depending on the type of the motor and manufacturer, detailed data are available on the motor manufacturer's website or [www.selt.com](http://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 a 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 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 snowfall,
- the system should not be used in case of heavy snowfall, 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 snowfall, storm, hail, strong wind etc.),
- blades rotation is not allowed during a 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 licences,
- it is forbidden to use the product and electrical installation without valid and required inspections and measurements,
- the 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 to 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 a person with a valid electrical license or to the SELT service,



- during work on 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 shut down the supply if motor operates very loudly, if you are not able to determine the 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 an urban environment is exposed to the 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 and 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 a pressure washer,
- mobile or rotating parts should be lubricated with silicone spray every year,
- often check your product with respect to the possible presence of branches, leaves, birds nets - immediately removing the contaminations



Do not use the product in case of strong wind blows, during snowfall, 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.

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

#### 5.4 CONNECTION TO ELECTRICAL INSTALLATION

When the SOLID SUNBREAKER Pergola is assembled one should proceed to connection of 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 them 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 include: bathrooms, showers, kitchens, garages, basements, saunas, rooms for pet animals, operating suites in hospitals, pressure boosting stations, heat exchanger plants, spaces limited by conducting surfaces, campings, open areas etc.

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

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 the supply of the equipment in the open outdoor, in agricultural and horticultural farms, in campings and leisure vehicles and rooms where fire hazard is present.

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 the floor, on which the electrical equipment may be installed.

General guidelines for safe connection:

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

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](http://www.selt.com) → PRODUCTS → CONTROL ENGINEERING



The erroneous connection of the motor can lead to damage to 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](http://www.selt.com) → PRODUCTS → CONTROL ENGINEERING

## 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 the start of operation,
- it is necessary to check the 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 an untrained person, may lead to damage to the product.

## 5.7 SYSTEM MISUSE

### System control - forbidden operation



- In case of defect, it is recommended stop further operation of the product.
- The 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 the mobile roof during system operation.
- Do not use the 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 for loss of the warranty.
- It is forbidden to use the product not conforming to the requirements related to electric shock and fire safety,
- It is forbidden to exceed specified parameters of product operation given in the operation and maintenance documentation.
- Do not leave any sharp objects or protruding parts near the system, which can catch and scratch it.

**A 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.

**The work area of the SOLID SUNBREAKER pergola: crushing, cutting and pulling in hazard**

- Do not touch mobile components during closing or opening of the mobile roof. It can be a reason of crushing, cutting, pulling in, trapping between e.g. blades and the other structural components of the system.
- No obstacles, which could interfere operation of the mobile roof or cause its damage, should be located within the area of operation of the mobile roof.
- If the blades hit an obstacle then you should first slightly open the roof and then remove the obstacle.
- Do not stay in the area of blades rotation during their operation.
- No obstacles (cables, branches etc.) can be located in the area of blades rotation.
- It is forbidden to put a hand between moving blades and to insert fingers between the profiles and driving mechanisms.

Automatically controlled products 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

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

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

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

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

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



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

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

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



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

### 6.2 INSTRUCTION FOR NON-PROFESSIONALS

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

Read this document before using the product.

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

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

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

### 6.3 TECHNICAL INSPECTIONS, MAINTENANCE AND REPAIR

To ensure the 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 the operation of the limit switch of the motor and possible correction,
- checking of screw and rivet joints,
- checking of the 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 the 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 a pressure washer, cleaning agents, sponges and solvents, e.g. alcohol and petrol!
- It is forbidden to use cleaning agents with the addition of chlorine, ammonium, kerosene, acetone and bleaches to clean the system and in its vicinity, because it may cause a 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 rainwater drainages on front columns at subzero temperatures can lead to a 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, and in case of abnormal behaviour and noises, you should notify the problem to the direct supplier.
- Routine maintenance works should be carried out on the maximally open system.



**Basic operations including maintenance of the product are:**

- checking correctness of opening and closing of the mobile roof,

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

**Cleaning of metal/aluminium 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 the power source.

**6.4 MAINTENANCE OPERATIONS**

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

## 7 GENERAL WARRANTY CONDITIONS

General warranty conditions are available on [www.selt.com](http://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:

- Damages of the equipment caused as a result of other transport than the SELT's transport.
- Damages 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.
- Damages caused as a result of use not in accordance with the operation and maintenance manual, user's manual or Supplier's recommendations.
- Mechanical damages.
- Damages resulting from system modification, unless the modification was performed by the Supplier, on his order or with his written consent.
- Secondary damage resulting from the use of the device despite the original defect being noticed, unless the Supplier has been notified and recommended further use. The assessment of the causes of damage shall be left to the reasonable discretion of the Supplier. Repair or replacement of the device due to damage referred to in this point may be carried out by the Supplier against payment.
- Defects resulting from normal wear and tear of product parts, 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 the 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 the 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 an 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.
- Possible cracks in the glazing due to mechanical damages caused by incorrect pergola assembly or due to uneven heating due to the location of the pergola assembly.
- Leaks or leakages between gutter modules, sealing of penetrations between the gutter are executed by the customer.
- The difference of angle of mobile roof's blades closing may differ by 5° and are a natural feature of the system due to production and process tolerances of the components.
- Water formed by condensation, which can occur on the 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 a 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, the open flame should be not located near the pergola to avoid overheating of the product.

- Deflections of beams of the structure exceeding values specified in the standard PN-EN 1090-1 and Eurocode 9 if the intermediate column had not been installed for structures longer than 5.2m.

## 8 COMPLAINT / TECHNICAL DEFECTS

### 8.1 COMPLAINTS

Complaints procedure:

- The complaint should be made in writing at the point of sale where the product was purchased,
- the condition of accepting the complaint is to provide the contract number, order number or invoice number and to submit a complaint in writing. It shall contain a detailed description of the defect, the name of the company which installed the product and the date when the defect was discovered.
- The notification shall contain a detailed description of the defect, the name of the company which installed the product and the date when the defect was discovered.

**Goods without an invoice number, order number or contract number shall be considered are a post-warranty product.**

### 8.2 TECHNICAL DAMAGES

In case of system defects you should:

- fold the mobile roof and disuse the product,
- immediately report the defect to SELT Sp. z o.o. in Opole.
- complaints can be sent to electronic mail [reklamacje@selt.com](mailto:reklamacje@selt.com) or directly to the sales representative.

Notifications of technical defects / complaints shall be filed in writing using a form “zgłoszenie reklamacyjne/complaints” available on the website [www.selt.com/doc-pl](http://www.selt.com/doc-pl) or directly to account manager.

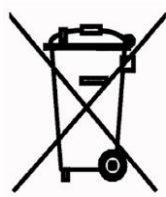


Incorrect disassembly of the system may lead to heavy bodily injuries and lead to system damages. System disassembly should be commissioned to properly qualified fitters team with adequate training within the scope of Occupational Health and Safety and knowledge within the scope of recycling.

#### 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 wastes 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 the waste equipment marked with the crossed bin symbol with other waste to a container intended for the domestic waste. The user, wanting to dispose of electronic or electrical equipment, is obliged to return it to a waste equipment collection point.

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

No.	Subject	European Legal Basis	Polish Legal Basis
1	Waste Electrical and Electronic Equipment	Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)	The Act of 11 September 2015 on waste electrical and electronic equipment (Journal of Laws of 2015, item 1688)
2	Wastes 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	The Regulation of the Minister of the Environment of 9 December 2014 on wastes catalogue (Journal of Laws of 2014, item 1923)

#### b) Utilization of used batteries

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

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

No.	Subject	European Legal Basis	Polish Legal Basis
1	Used batteries and accumulators	Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC	The Act of 24 April 2009 on batteries and accumulators (Journal Of Laws, No. 79, item 666)

## 10 MARKING AND LABELLING OF THE PRODUCT WITH CE MARK

### 10.1 CONFORMITY OF PRODUCT WITH THE CE STANDARD


SOLID SUNBREAKER pergola 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 Standardization (PKN) as PN-EN 1090-1 to PN-EN 1090-3, what is confirmed in the manufacturer declaration of performance and marking the product with CE mark. Pergola structure is made in EXC2 class.


Safe structure of the mobile roof of SOLID SUNBREAKER Pergola was executed with conformity to EN 13659:2015.

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:


<b>SELT Sp. z o. o.</b> <b>Opole, ul. Wschodnia 23A</b>
<b>EN 1090-1</b>
<b>EN 13659</b>


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

b) marking on accompanying documents


<b>SELT Sp. z o. o.</b> <b>Opole, ul. Wschodnia 23A</b> <b>POLAND</b> <b>17</b>
<b>Outdoor shutter pergola</b> <b>Pergola SOLID SUNBREAKER</b> <b>230V/ 50 Hz</b> <b>Power 126 W</b> <b>12 / DZ / 2018</b>
<b>EN 13659</b> <b>Sunshade</b> <b>for outdoor uses.</b> <b>Resistance to wind load: class 6</b> <b>DWU 158 / S / 2017</b>


<b>SELT Sp. z o. o.</b> <b>Opole, ul. Wschodnia 23A</b> <b>POLAND</b> <b>17</b>
<b>EN 1090-1</b> <b>Steel and aluminium components and structural sets</b> <b>– SOLID SUNBREAKER Pergola</b> <b>DWU 42/P/2018</b>