

TECHNICAL AND OPERATIONAL DOCUMENTATION

INSTALLATION MANUAL OPERATING MANUAL AND INSTRUCTIONS FOR SAFE USE

- 5. Steel and aluminium components and structural sets
- 5.8. Pergola SB400 (2020)

PRODUCT NAME:

**ALUMINIUM CONSTRUCTION
PERGOLA SB400 (2020)**

MARKING OF PRODUCT MANUFACTURER:

- Manufacturer name:
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PRODUCT SAFETY MARKING:

The product meets the CE safety requirements.

THIS TECHNICAL AND OPERATIONAL DOCUMENTATION:

- is valid from: 01 June 2020
- is applicable to the above-listed product versions.

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1 INTRODUCTION

1.1 SAFETY GUIDELINES FOR THE PRODUCT.






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





No.	Subject	European Legal Basis	Polish Legal Basis
1	Execution of steel and aluminium structures Part 1: Requirements for conformity assessment of structural components	EN 1090-1:2009 +A1:2011	PN-EN 1090-1+A1:2012
2	Shutters and external venetian blinds. Performance requirements including safety.	EN 13659:2015	PN-EN 13659:2015
3	Construction Products Regulation (CPR)	Regulation (EU) no 305/2011 of the European Parliament and of the Council	The act of 16.04.2004 on building products (Journal of Laws of 2019 item 266) as amended (Journal of Laws of 2019 item 730)
4	Essential requirements for the machinery	Directive 2006/42/WE of the European Parliament and the Council	Regulation of The Minister Of The Economy of 21 October 2008. Journal of Laws of 2008, No. 199, item 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

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

Pictogram	Pictogram meaning	Information
	INFORMATION	Prior to using the product, its operating manual should be read. Following the operating manual guarantees: - failure-free use of the product, - warranty coverage against product defects. Keep the operating manual for safety of people.
	INFORMATION	No harmful or dangerous consequences for people or facilities.
	NOTE!	A situation likely to cause product damage or other damage. No threat for people.
	WARNING!	Threat of danger.
	DANGER!	This symbol indicates all information concerning safety, which could pose a hazard to human health or life in case of non-observance. The health of life hazard. Risk: a hazard of serious personal injury or death. The hazardous operation which could cause injuries or damages to the product.

	WARNING!	Threat to human life or health due to electric shock.
	DANGER!	Hand crushing threat.
	WARNING!	Head injury threat.
	ENVIRONMENT	Marking of electronic or electric equipment, which should be collected in the designated points.

1.3 TERMS AND DEFINITIONS

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

Product: PERGOLA SB400

Pergola SB400 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 surfaces filling the mobile roof. Blade shape ensures drainage of rainwater and aesthetic cover against sun rays.

VERSIONS:

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

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

Wall-mounted – Structure consisting of a mobile roof module supported partially on posts and fixed by a roof beam to a supporting wall (along the rear or side edge of the roof) with the use of wall brackets.

1.4 SUBJECT, INTENDED USE AND CONTENTS OF THE DOCUMENTATION

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

This documentation applies to all types of **PERGOLA SB400.**



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

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.

This documentation contains:

- important guidelines for installation, 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 cannot 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 after logging in on website www.selt.com

2.1 TECHNICAL PARAMETERS:

Pergola SB400 – free-standing

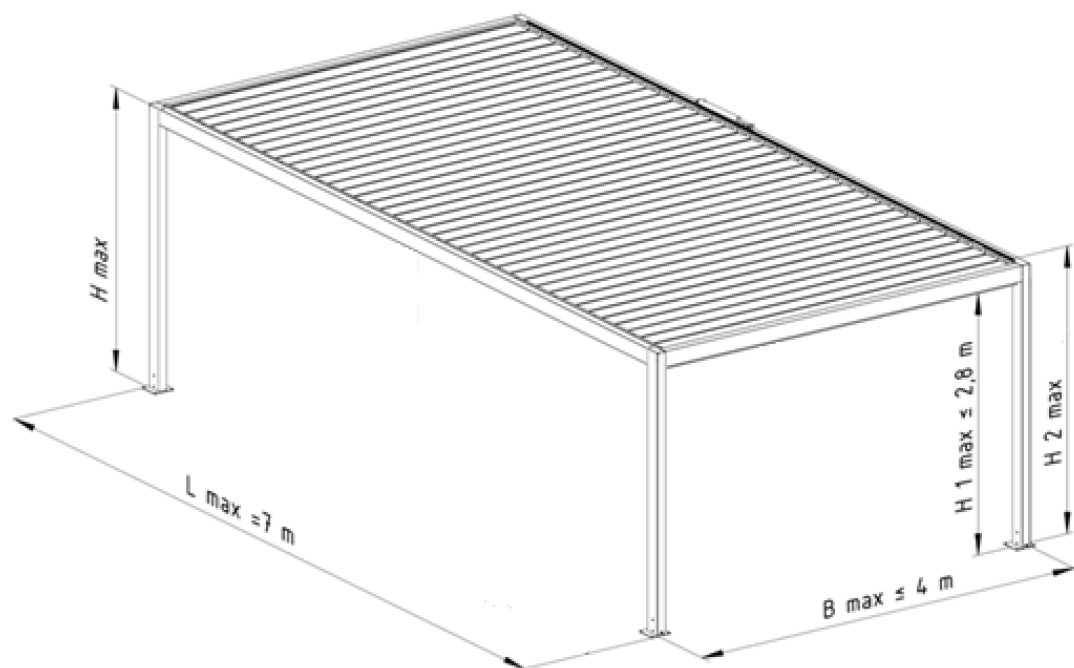


Fig. 1. Pergola SB400 free-standing – Overall dimensions: **B max** – maximum width, **L max** – maximum projection, **H max** – maximum frame height (3012 mm), **H1 max** – maximum height of the clearance, **H2 max** – maximum height of position of the mechanism intended to change the angle of the blades (~3140 mm).

Pergola SB400– modular

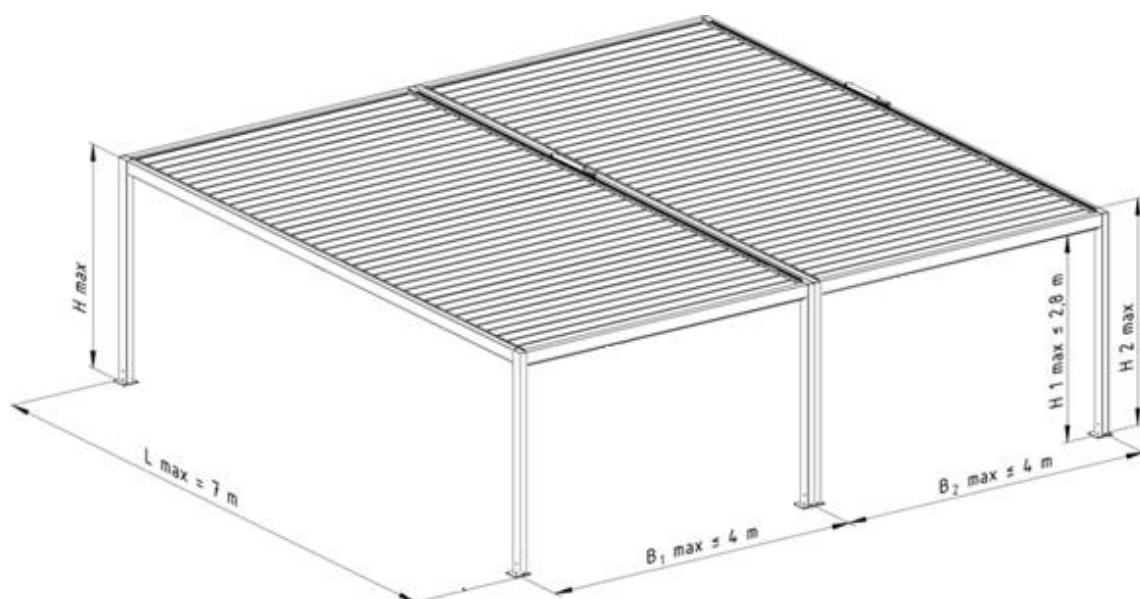


Fig. 2. Pergola SB400 modular - Overall dimensions: **B** – system width, **B1 max** – maximum width of a single module, **L max** – maximum projection, **H max** – maximum frame height (3012 mm), **H1 max** – maximum height of the clearance, **H2 max** – maximum height of position of the mechanism intended to change the angle of the blades (~3140 mm).

System module dimensions:	width	projection	height	height in the clearance
Supporting structure	up to 4000 mm	up to 7000 mm	up to 3140 mm* (*-when the roof is open)	up to 2800 mm
Range of use / operation				
Intervals of roof blades	200 mm			
Difference in fastening of blade's ends (transverse slope – of blade axis)	20 mm			
Ambient temperature	+10 do +40°C (opening / closing of the mobile roof) - 30 do +50°C (supporting structure)			
Humidity	90% without condensation (blades rotation) in whole range (support structure)			
Electric drive - motor with the following parameters:				
- supply voltage	230V/50Hz			
- power	126 W			
- power consumption	0,55 A			
- protection level	IP 65			
- continuous work time	5 min			
- torque	max 200 mm, dynamic/static force 1200N			
- rotational speed	6 mm/s			
- operating temperature	-20 do 80°C			
Technical data of electric motors				
Drives (types of drive):	Linear drive ELERO Piccolo XL– details are available in motor installation instruction. Electromechanical drive can be started manually with a switch or through an external wired or radio control receiver.			
Connection to electrical installation	approximately 1,5 m power cord			
LED lighting	Optional - LED strips with cover attached to the side of the gutter, power supply 24V DC, 150W, max. 6.25A, IP66 fixed in pergola's post			
Installation:				
Intended use	External			
Site installation	To the supporting base or to the wall (with wall brackets: short or long type)			

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

www.selt.com → PRODUCTS → MOTOR, ELECTRIC, EQUIPMENT

2.2 PRODUCT SPECIFICATION

Products manufactured by SELT Sp. z o.o. have excellent technical and functional parameters.

List of product types:

- free-standing,
- modular,
- installed outside the building, started by electromechanical drive connected with the control system.

They have the following features:

- Mobile roof which is opened with electric motor, there is an option to cover the walls.
- Protects against sun and rain.
- Water resistance, neat-looking water drainage through the integrated gutter and posts.
- 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 use 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 outline.
- 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 threat and is a matter of comfort.
- The motors have an IP65 protection degree.
- 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 2° and it is a natural feature of the system due to production and process tolerances of the components.
- Covers of movable components have been designed and executed in a way ensuring safety for the operating personnel provided that they are correctly operated.
- Optional LED lighting in horizontal strips along the edges of the gutters.
- Maximum drainage efficiency – rain intensity up to 0.05 l/s/m² with a maximum duration of 5.3 min (depending on the configuration of the drainage holes).

3 TRANSPORT AND STORAGE OF THE PRODUCT

3.1 COMPLETENESS AND QUALITY CONDITION OF 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 should take place when it is received.

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

Checking of quality within the scope of apparent defects 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 TRANSPORT AND STORAGE OF THE PRODUCT

List:

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

3.3 OBLIGATORY DESCRIPTIONS TO BE PLACED ON THE PRODUCT PACKAGING



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

4 PRODUCT INSTALLATION

This chapter contains general requirements concerning the product installation. Correct assembly is a necessary condition for smooth operation of the product.

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

4.1 GENERAL REQUIREMENTS FOR SAFE INSTALLATION

- it is necessary to observe general rules of good building practice,
- it is necessary to comply with applicable Occupational Health and Safety regulations concerning in particular those applying to the safety of operation of electrical equipment and work on heights,
- product should be installed in a mechanical way (foams, adhesives or similar materials are not permitted as fixing materials),
- base, to which the product brackets 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 aside all unnecessary electrical cables from the installation site and check the route of installation in the fixing locations to avoid their damages.

Informative table

The manufacturer allows the installation of the product in the following types of substrate (wall bearing layer):

- reinforced or unreinforced concrete, class at least C20/25, non-cracked,
- concrete specified above having a layer of insulation with a thickness of up to 25 cm,
- wall at least 24 cm, of Mz solid bricks, NF format, with a strength of at least 20 MPa and a density of >1.8 kg/dm³ based on M2.5 - M9 mortar,
- wall at least 24 cm, of silicate blocks with a strength of at least 10 MPa and a density of >2 kg/dm³ based on M2.5 - M9 mortar
- wall at least 17.5 cm, of silicate perforated blocks with a strength of at least 20 MPa and a density of >1.8 kg/dm³ based on M2.5 - M9 mortar
- wooden (wall/ceiling) beams, class of at least C24, without cracks, with a thickness of at least 100 mm
- wooden rafters, class of at least C24, without cracks, with a thickness of at least 70 mm
- walls made of silicate blocks (full or hollow) with a layer of insulation – to be consulted with an authorised designer,
- solid brick walls with a layer of insulation - to be consulted with an authorised designer,
- wall made of cavity ceramic hollow bricks without insulation or with a layer of insulation - to be consulted with an authorised designer
- autoclaved aerated concrete blocks - this substrate is not recommended.

The above list of substrates is only indicative. Each substrate suitability depends on the specific location and size of the product, and must be selected by an authorized constructor.

4.2 REQUIREMENTS FOR SAFE INSTALLATION OF THE PRODUCT AT HEIGHTS



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

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

The Purchaser should define the detailed health and safety requirements when performing work at heights, and especially ensure:

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

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

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

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 INSTALLATION

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



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

4.4 GENERAL GUIDELINES FOR PRODUCT INSTALLATION

- Four people are required for the safe installation of the support structure.
- Incorrect assembly or errors during assembly may have serious consequences during product operation.
- Pergola SB400 is an open, external covering for terrace. Equipment under the pergola should be intended for outdoor use.
- Prior to assembly you should check whether the space for assembly is free from obstructions.
- Anchoring components intended for fixing the product to the wall or floor are not enclosed because they should be individually selected by the fitter depending on the material to which they are to be installed.
- Walls or floor should be load-bearing and adapted for transferring of forces from product anchoring.
- SELT shall not be responsible for damages caused by use of too weak anchoring components or fixing in the floor with too small load bearing.
- 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.
- 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.

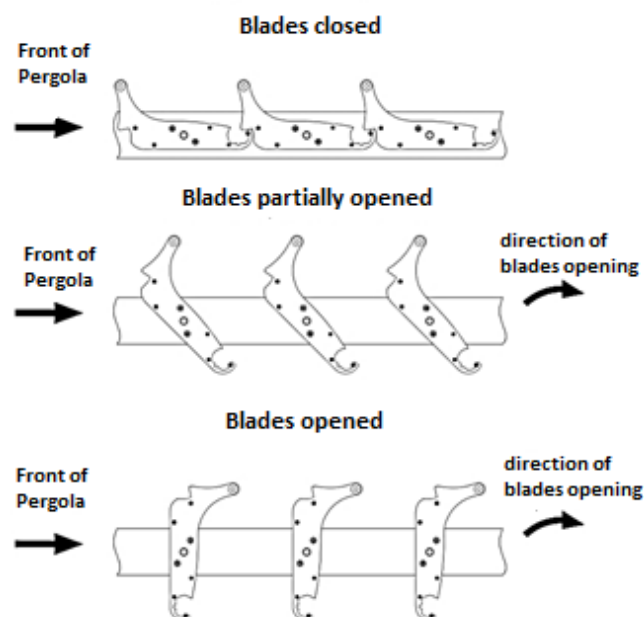


Fig. 3. Standard direction of blades opening for Pergola SB400.

4.5 INSTALLATION TOOLS

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

List:

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

Note:



- Prior to installation 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 occurred during transport.
- Components are delivered in the packaging and wrapped with stretch foil to protect them during assembly.
- Accessories (feet, bolts, screws, small and large snap-rings, small and large slip rings, blades pins, silicone, assembly manual) are packed in cardboard boxes.

Sample content of the box with accessories:

	<p>Content (depending on type):</p> <ul style="list-style-type: none"> - feet with assembly bones - M8x20 stainless steel tapered screws with hexagonal thread - lacquered (black) St4,2 screws with raised head - stainless steel screws M5x20 with cylinder head and recess hexagon socket + washers - stainless steel bracket's pins - large plastic slip rings - small plastic slip rings - large stainless snap-rings (Seger) - small stainless snap-rings (Seger) - silicone (tube) – roofing sealant - control unit + remote control (in manufacturer's packaging) - countersunk stainless tapered M8 nuts - stainless steel threaded studs M8
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Screw / nut	M3	M4	M5	M6	M8	M10	M14
Maximum tightening torque (Nm)	0,9	2	4	7	17	33	57

4.6 INSTALLATION

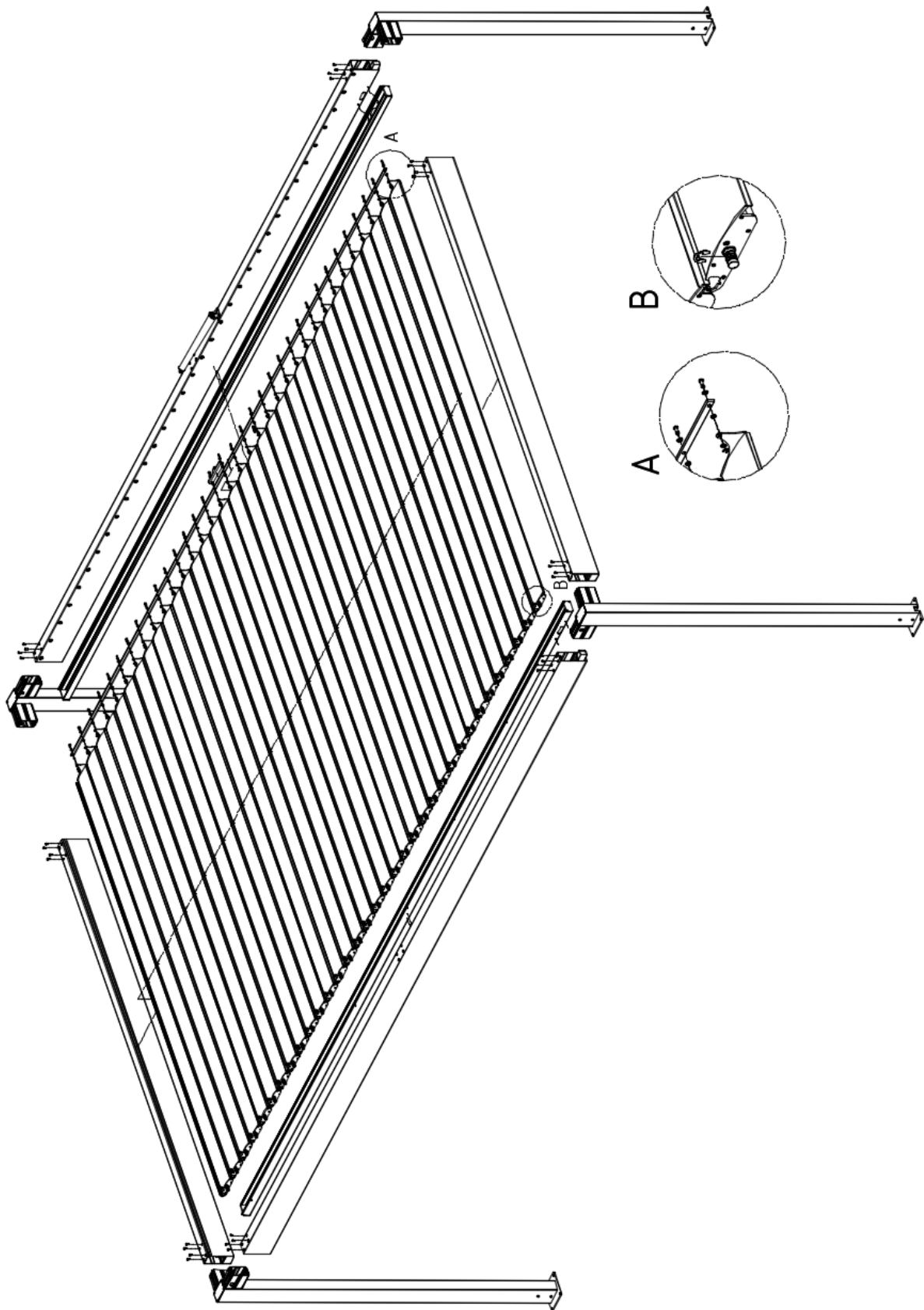


Fig. 4a. View of the assembly of elements of free-standing Pergola SB400

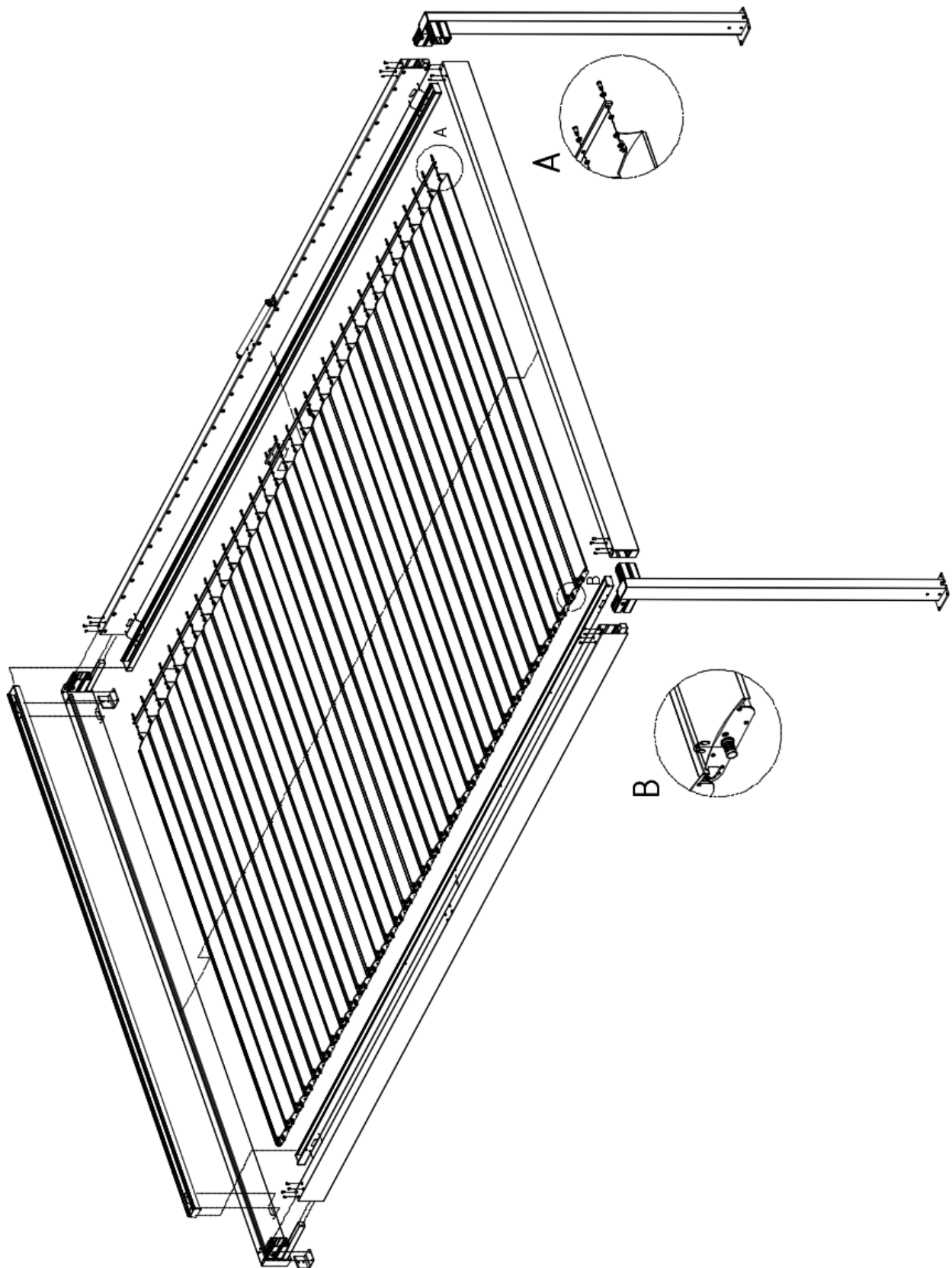


Fig. 4b. View of the assembly of elements of wall-mounted Pergola SB400.

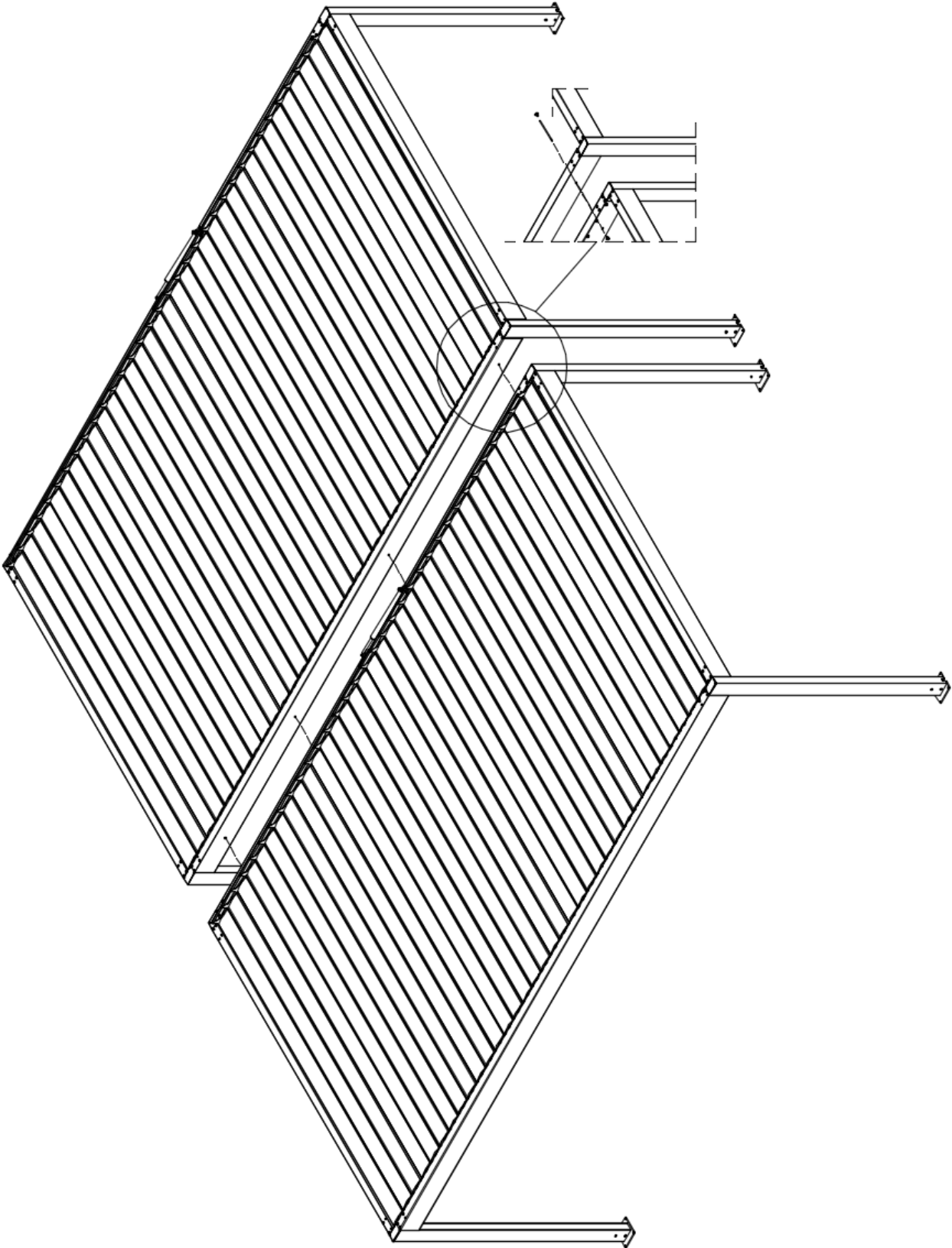


Fig. 5. View of the assembly of modular Pergola SB400.

4.6.1 PERGOLA INSTALLATION

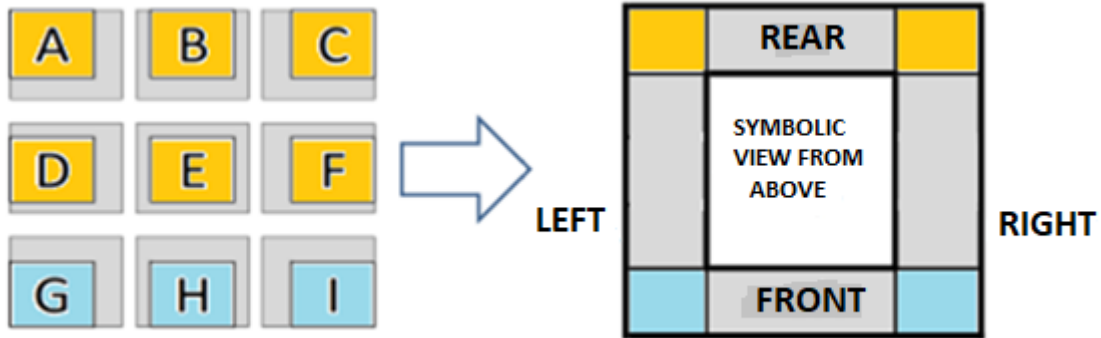


Fig. 6. Marking of the types of feet (view from above) of Pergola SB400.

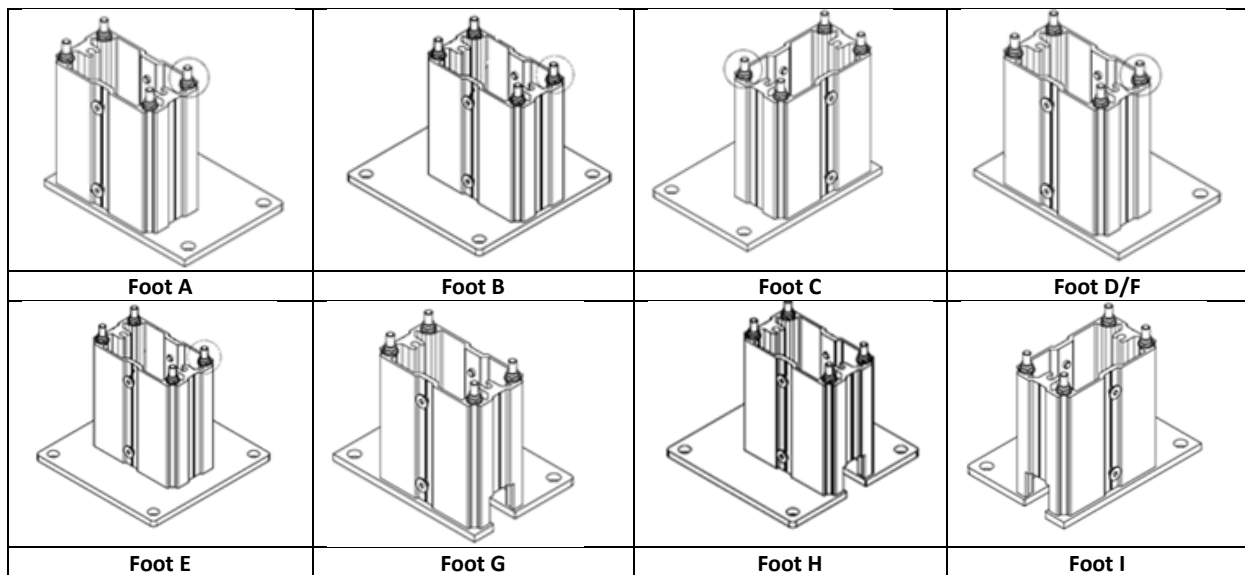


Fig. 7. Type of foot for Pergola SB400.

Note:



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

4.6.1.1 INSTALLATION OF THE SUPPORT STRUCTURE



1. Place all beam elements on their correct sides and posts in their correct corners.
2. Front beam (fig. 2) has a side-mounted sheet metal gutter. Place it with the gutter facing the inside of the pergola.
3. Rear beam (fig. 3) has a metal sealing blade (roof) attached to the side. Place it with the roof towards the inside of the pergola.

NOTE: Posts may have in the top ends below screwed sockets horizontal undercuts - for inserting angular corner overflows, or square cuts - to insert water drains into posts (fig. 1). Please pay attention to the correct positioning of the posts in the corners.

Fig. 1

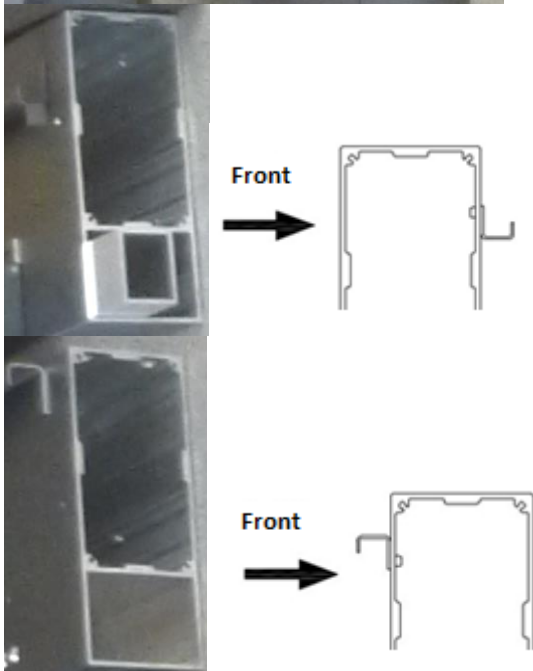
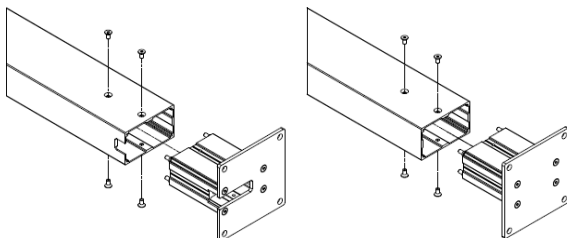


Fig. 2

Fig. 3



4. Install all feet to the appropriate types of posts. Screw on both sides with countersunk screws with M8x20 Allen sockets.

For G, H, I types of feet position the slots for water outflow properly in the post and foot.

Figure 4



5. Assemble selected side beam (with holes for blades) with two fitting posts by inserting the sockets of the posts into the ends of the beam (large chamber). Fix it at the top ends of the beam with countersunk screws with M8x20 Allen socket (fig. 5).
6. Secure the assembled frame against falling down.

NOTE: Angular corner overflows or water drains may be installed in the beam. They should be inserted into the appropriate cuts/windows in the post during integration.

The side beam has no slip rings on the end holes of the blades. They must not be fastened before the posts are installed due to the possibility of damage.

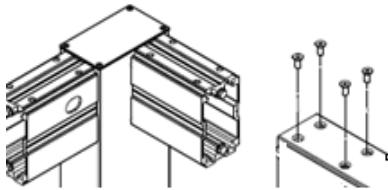
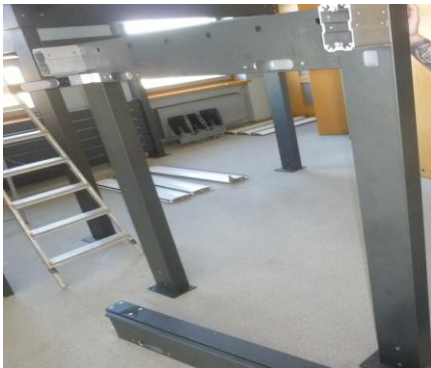


Fig. 5



7. Assemble the second side beam together with the posts and screw them in the same way as in point 5. Secure against falling down (fig. 6).

NOTE: In case of the beam with motor, secure the motor against relocation during the time of installation.

Fig. 6



NOTE: During assembly, elements of the supporting structure should be secured against falling down or falling on people performing the installation.



8. In the assembled frame slide the front beam and rear beam into the sockets of the posts. Screw them from the top – as in fig. 5.
9. Secure the free ends of the front and rear beam against tipping over.
10. Slide the second frame into the previously assembled structure. Screw from the top the connections with the posts (fig. 7).

Figure 7



NOTE: In case of visible unevenness of the beam and post edges (fig. 7a) it can be corrected by:

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

Figure 7a

11. Install the missing blade axis end slip rings in the side beams (fig. 8).



Figure 8

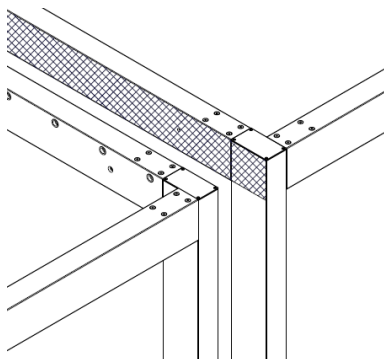
Note:



- **A different order of installation is allowed.** You can assemble and screw the front beam with posts and the rear beam with posts in the form of two frames. Then, install and screw in the rear frame two side beams and support their ends. Insert the front frame into this construction and screw it together.
- After assembling the entire frame, check the compliance of the diagonals and parallelism as well as the perpendicularity of the sides and vertical alignment of the posts.

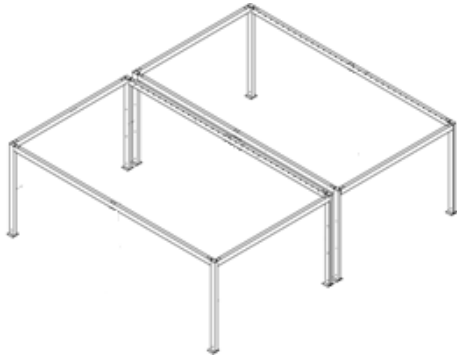


NOTE: The assembled supporting structure should be placed in the right place and **anchored to the base with a suitable fastening product**. Suggested anchors in size M12. The purchase and selection of elements for anchoring the structure is the responsibility of the buyer of the system.



12. For modular version, on one of the sides of the beams which are adjacent apply EPDM foam strips (added loosely to the accessories) – fig. 9.

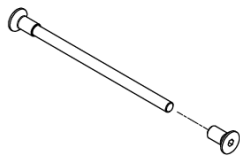
Figure 9



13. Add new module to the module(s) already anchored to the ground according to the planned modular structure. Before the assembly of modular construction check the correctness of the diagonals and verticality and horizontalness of the construction elements in the newly assembled module – make corrections of structure settings if necessary (fig. 10).

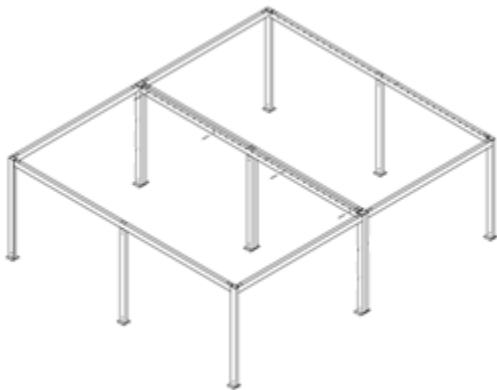
NOTE: Pay special attention to the alignment of the beams and posts of the connected modules as well as the coaxiality of the holes intended for bolting the structure.

Figure 10



14. To connect pergola SB400 modules with each other, countersunk nuts and threaded studs are used (fig. 11), and in the beams coaxial through holes with deepening are made.

Figure 11



15. Modules set should be screwed with each other using countersunk nuts and studs delivered with construction kit – as presented on fig. 12 and 13.

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.

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

Figure 12

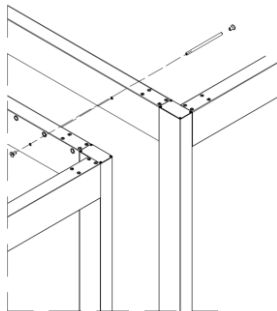


Figure 13

17. Successive modules should be installed to the already assembled structure by repeating steps from 12 to 16.

18. After completing the assembly of all modules, proceed with the gutters installation.

4.6.1.2 INSTALLATION OF THE GUTTERS



1. Determine the position of individual gutters in accordance with the layout of overflow openings in the beams. Start the installation of gutters on both side beams (with openings for blades).
2. The back surface of the gutter adjacent to the beams should be carefully sealed with silicone (delivered with the product). Screw the gutter with ST4.2 screws along its upper edge (fig.14).

Figure 14



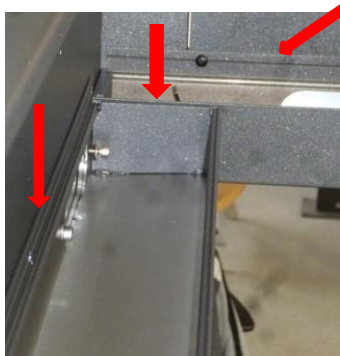
3. At the slotted holes of the overflow tighten at both ends the M5x20 stainless screws with cylindrical head and Allen sockets and a washer (fig. 15).

Figure 15



4. In all the side oval overflow and drain holes of the gutters secure with silicone sealant the bottom and circular edges of the gutter connection with beams (fig. 16).

Figure 16



5. Install gutters to the front and rear beam (depending on pergola variant) – by sliding them between the side beam gutters. Remember to seal beforehand (see p. 1). Screw according to point 2 and 3. Seal with silicone the upper joint of the gutter with adjacent gutters (fig. 17) and the side oval overflow holes (fig. 16).

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

Figure 17



6. Use silicone to seal the joint (point of contact) of the bent gutter in the middle of the front beam (fig. 18).

Figure 18



NOTE: During the first heavy rainfall, it is recommended to visually inspect the contact points which are sensitive to leakage and, in the event of noticed leaks, fill the seals with silicone. Such places include: the joints of the gutters with the beams, contact points of the side beam gutters with front/rear beam gutters, the lower edges of the gutters under the side oval drains, places for fixing screws of wall brackets with beams, the connection of the bent gutters in the rear beam.

4.6.1.3 INSTALLATION OF THE BLADES



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



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

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

Figure 19



Picture of blade, bearing side (fig. 20).

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

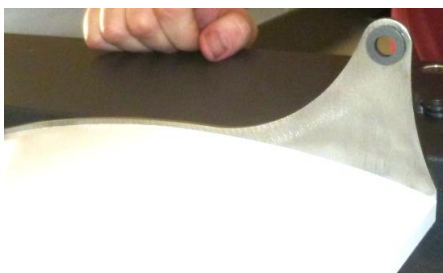
Figure 20



1. In the pins of blades from the side of the drive end cap place large snap-rings in the second groove from the surface of the end cap – repeat for all blades on the same side and in the same groove (fig. 21).

NOTE: A dedicated ring insertion tool is recommended.

Figure 21



2. At the upper end of the drive end cap insert small slip rings one-sidedly into the hole from the blade side (fig. 22).
3. Repeat this step for all blades.

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

Figure 22



4. Insert sequentially blades to the beams: place them horizontally above pergola (drive side of the beam with motor), insert the end without the snap-ring into the hole in the beam until it stops, then lower and insert the other end of the blade (with the ring) until the snap-ring rests against the beam. Place the missing large snap-ring into the groove of the pin closest to the beam (fig. 23).
5. Repeat the above procedure for all blades.

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

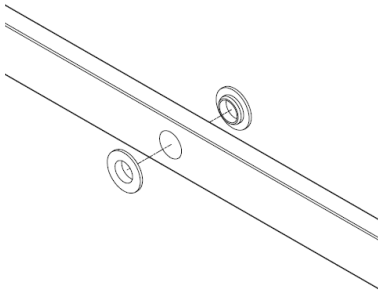
If the insertion of the ring in the groove causes the blade to fall out, the ring on the opposite end should be put into the adjacent groove to make sure the fastening is secure.

Figure 23



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

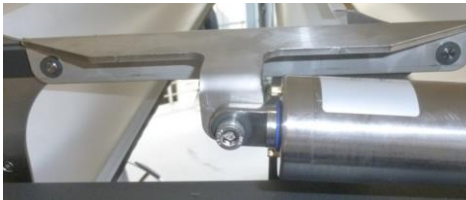
4.6.1.4 INSTALLATION OF THE DRIVE



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

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

Figure 24



2. Place two small slip rings on one side of the motor guiding bracket on the side opposite to blades (fig. 25).

Figure 25



3. To connect the drive rod with blades end caps and motor bracket use guiding bracket pins and small snap-rings. Pin has 2 grooves: use the groove at the very end only for mounting with the motor bracket. Use the groove farther from the end for the remaining drive end caps (without motor bracket) – fig. 26.

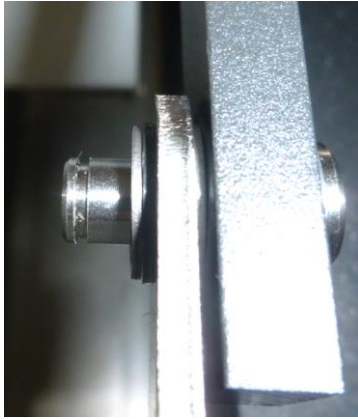
Figure 26



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

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

Figure 27

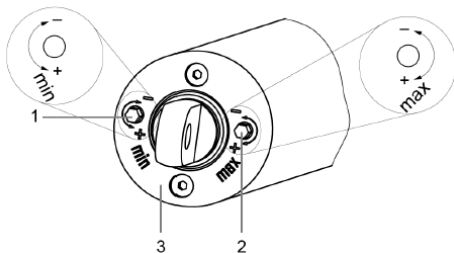


5. Install the drive rod to other blades. Place the hole of the blade's drive end cap to the hole in the rod by rotation movement. Press the bracket's pin into the joint from the blade side (reverse direction is also allowed), until the second groove appears on the other side (farther from the end).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

NOTE: When inserting the pin, there is a risk of the slip rings being forced out.

A dedicated ring insertion tool is recommended.

Figure 28



6. Repeat this procedure for all blades.
7. Carry out the electrical connection of the motor. Use the programming cable to open and close the blades twice.

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

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

Figure 29

Permitted adjustment range of the limit switches



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

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

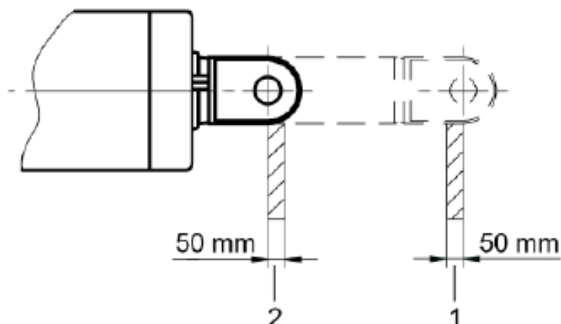


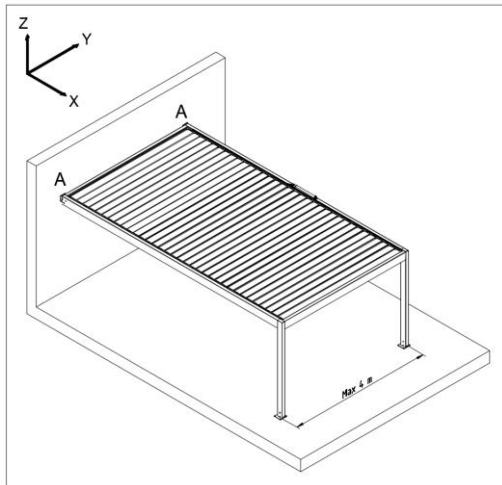
Figure 30 Possible reduction in motor stroke

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

4.6.2 WALL INSTALLATION

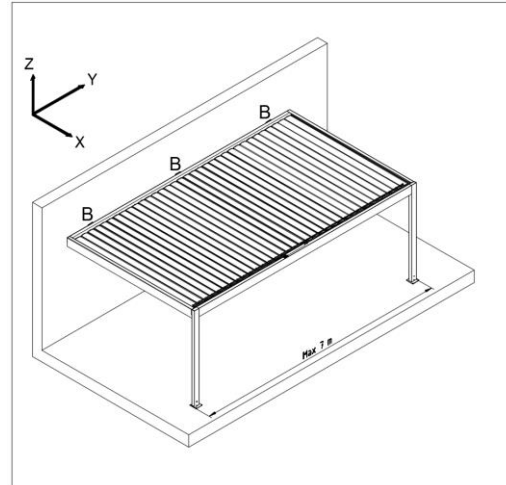
Wall installation is carried out with the use of wall brackets located at the points specified by the Manufacturer. The fastening element of pergola can be:

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



A – Wall brackets mounted to the beam joint.

Figure 31 – Wall installation to the rear beam.



B – Wall bracket mounted to the beam.

Figure 32 – Wall installation to the side beam.

According to fig. 32 for side installation we offer two versions:

- For a side beam up to 5.2 m long there will be two wall brackets (B) mounted to the side beam in between the 3rd and 4th blade opening i.e. 700 mm from the edge of the pergola
- For a side beam of length between 5.2 m and 7 m there will be two wall brackets (B) mounted to the side beam in between the 3rd and 4th blade opening i.e. 700 mm from the edge of the pergola and one wall bracket mounted in the middle of the beam (B).

Wall brackets in the form of angle brackets are available in two types: standard (with the roof beam clearance from the wall) and shortened (roof beam is adjacent to the wall). Additionally, there is an option to choose a suspended mounting (brackets screwed from the top) or supported mounting (beam rests on the angle bracket).

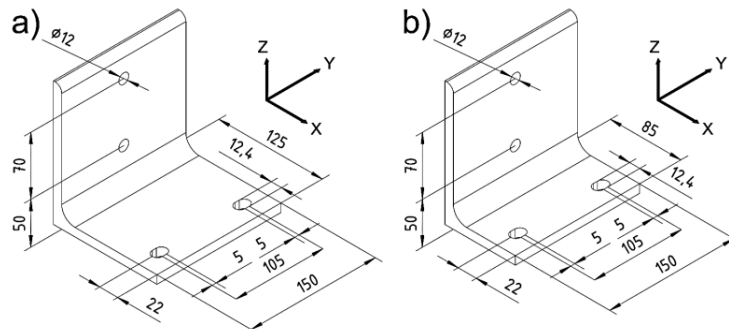


Figure 33 – Wall brackets - types. a) standard version, b) shortened version.

4.6.2.1 WALL INSTALLATION REAR BEAM

NOTE: Wall brackets are meant to be used for walls of concrete/reinforced concrete of a class of at least C20/25 (non-cracked concrete). Intended anchors for anchoring the wall bracket: **Bolt anchor FISCHER FAZ II 10/10** (galvanized steel) or its equivalent. Anchoring depth of at least 51 mm. The minimum distance of the anchor axis from the edge of the concrete in the direction of the load is 100 mm and the minimum thickness of the substrate 100 mm.

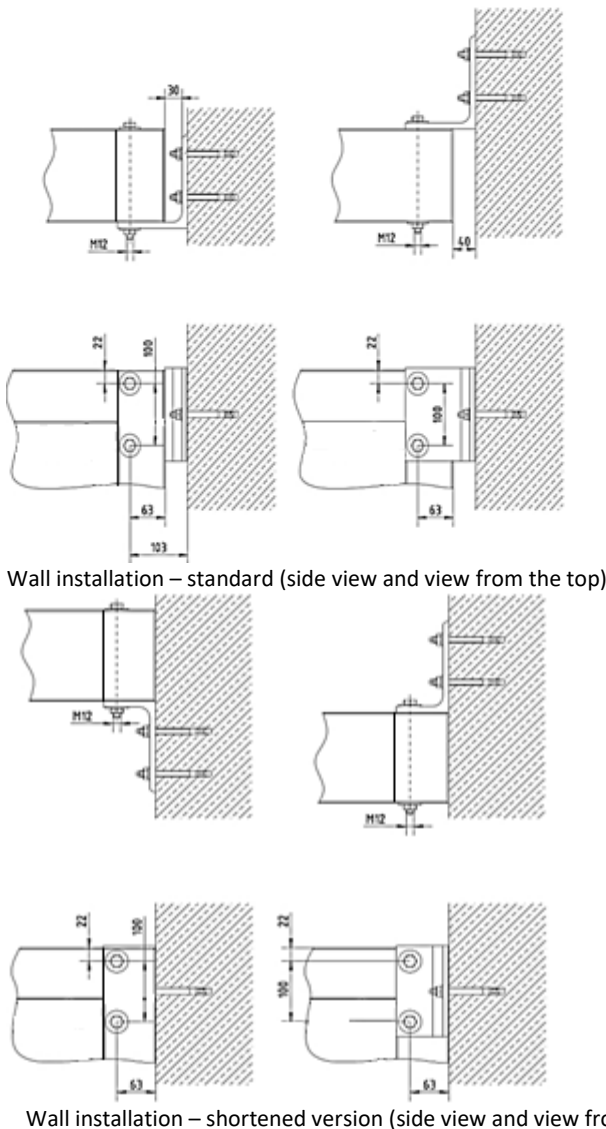


- In case of anchoring to the substrate with a lower load-bearing capacity than concrete class C20/25, a separate anchor design according to the forces given in Table 1 should be made.
- In case of anchoring to the substrate with insulation, a separate anchor design according to the forces given in Table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

Table 1

	Maximum forces *
Along axis X	0,48 kN
Along axis Y	0,63 kN
Along axis Z	5,3 kN

* - Forces in the plane of the holes 12.4 mm (see fig. 33).
Given force values in Table 1 refer to forces for a single wall bracket.



1. Determine the position of the wall bracket (corners – acc. fig. 31, 33 and 34) according to the external size of the pergola. Mark the places of the axis of anchors on the wall (fig. 33 and 34). Pay attention to the alignment of the holes in the mounting bracket with the mounting holes in pergola. Repeat this step for the second corner. Pay special attention to maintaining the horizontal plane of the roof beam.
2. Insert the anchors in the substrate according to the selected anchoring system. Install both wall brackets, applying the tightening torques for the anchors according to the manufacturer's recommendations.
3. Join the pergola roof beam with the tightened wall brackets using attached bolt kit. Insert M12 screw with the washer from the top and tighten the nut with the second washer from the bottom. Tightening torque according to the table in point 4.5.

Fig. 34

NOTE: When determining the holes for the wall bracket, take into account the selected positioning of the wall bracket (suspended or supported). The embedding must be carried out in the bearing substrate.

4.6.2.2 WALL INSTALLATION LENGTHWISE BEAM



NOTE: Wall brackets are meant to be used for walls of concrete/reinforced concrete of a class of at least C20/25 (non-cracked concrete). Intended anchors for anchoring the wall bracket: **Bolt anchor FISCHER FAZ II 10/10** (galvanized steel) or its equivalent. Anchoring depth of at least 51 mm. The minimum distance of the anchor axis from the edge of the concrete in the direction of the load is 100 mm and the minimum thickness of the substrate 100 mm.

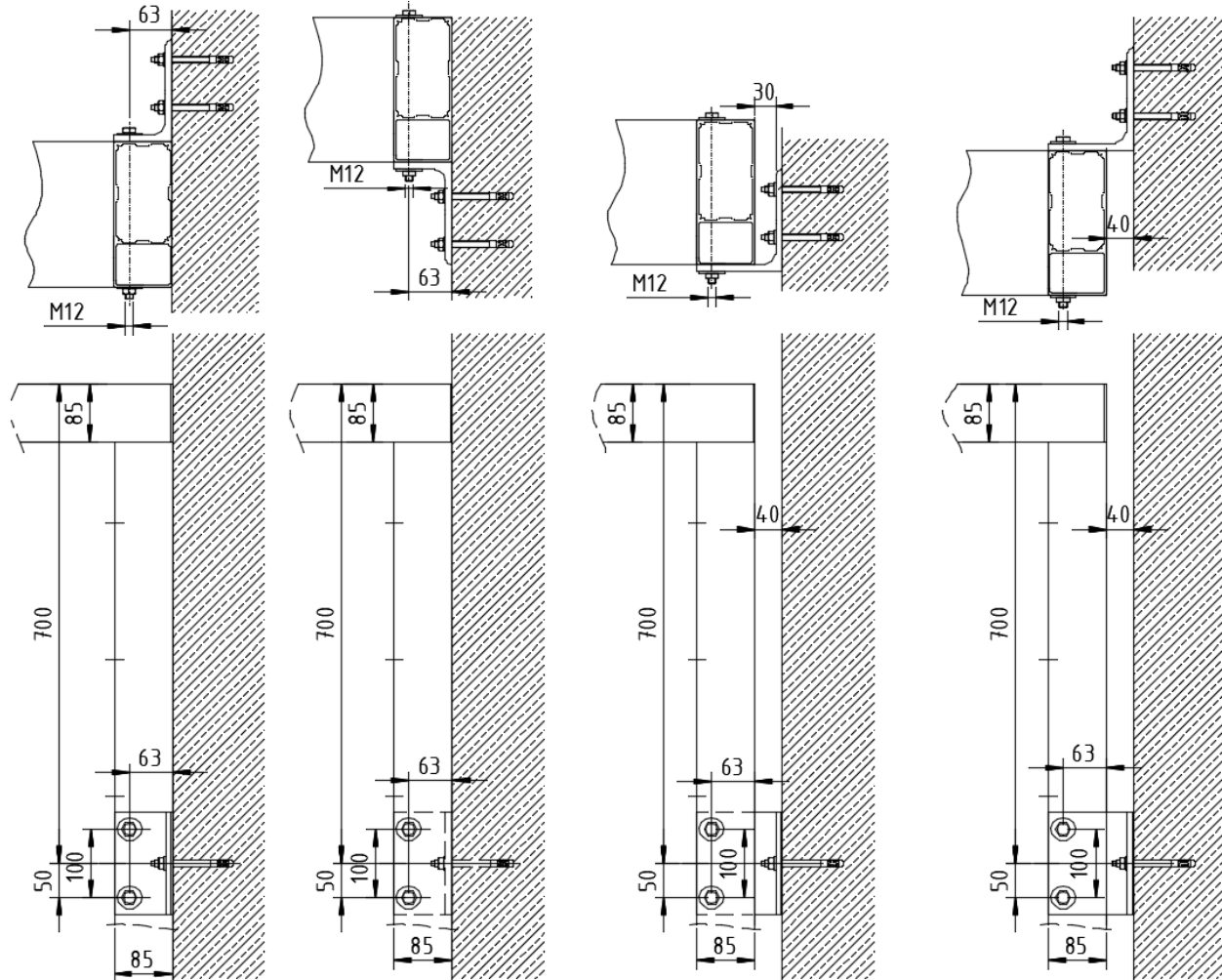
- In case of anchoring to the substrate with a lower load-bearing capacity than concrete class C20/25, a separate anchor design according to the forces given in Table 2 should be made.
- In case of anchoring to the substrate with insulation, a separate anchor design according to the forces given in Table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

Table 2

	Maximum forces*
Along axis X	0,86 kN
Along axis Y	0,17 kN
Along axis Z	6.84 kN

* - Forces in the plane of the holes 12.4 mm (see fig. 33).

Given force values in Table 2 refer to forces for a single wall bracket.



Wall installation – shortened type (side view and top view)

Wall installation – standard (side view and top view)

Fig. 35

1. Determine the position of the wall bracket (corners and intermediate bracket – acc. fig. 32, 33 and 34) according to the external size of the pergola. Mark the places of the axis of anchors on the wall (fig. 35 and 33). Pay attention to the alignment of the holes in the mounting bracket with the mounting holes in pergola. Repeat this procedure for all brackets. Pay special attention to maintaining the horizontal plane of the roof beam.
2. Insert the anchors in the substrate according to the selected anchoring system. Install both wall brackets, applying the tightening torques for the anchors according to the manufacturer's recommendations.
3. Join the pergola roof beam with the tightened wall brackets using attached bolt kit. Insert M12 screw with the washer from the top and tighten the nut with the second washer from the bottom. Tightening torque according to table in point 4.5.

NOTE: When determining the holes for the wall bracket, take into account the selected positioning of the wall bracket (suspended or supported). The embedding must be carried out in the bearing substrate.

4.7 ELECTRIC DRIVE

4.7.1 CONNECTION TO ELECTRICAL INSTALLATION

When the Pergola is assembled, you can proceed to connect the drive and control system to the previously prepared systems: electrical supply installation and control system. Connection to electrical supply installation should be executed based on the previously prepared circuit diagram taking the fire-protection rules into account. The connection must be made by an electrician with valid electrical qualifications.

The electrical connection and setting of the motors must be carried out in accordance with the instructions of the motor manufacturers. These instructions are added with the product; they are also available on the website of motor manufacturers and on website:

www.selt.com → PRODUCTS → MOTOR, ELECTRIC, EQUIPMENT



NOTE: Risk of damaging the limit switches due to exceeding the permitted adjustment range. See point 4.6.1.4.

- The limit switches can only be adjusted manually with a size 4 socket wrench.
- Follow the warnings in the motor manual “Piccolo XL linear drive. Quick Installation Guide”
- Before adjusting the limit switches, the piston must be moved a few centimeters from the set position.

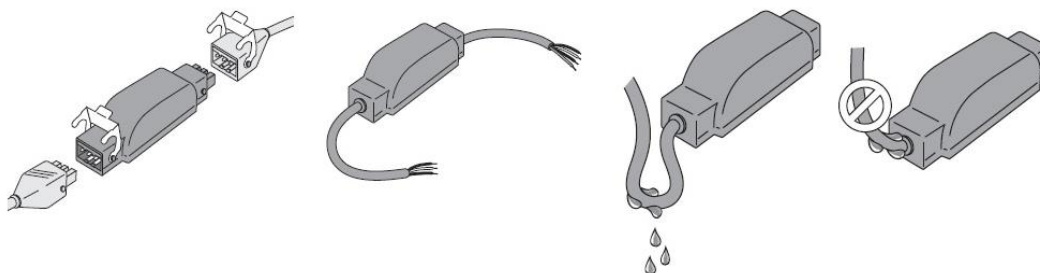
Marking of the motor power wires (black marked with a number):

1. N neutral
 2. R phase, movement towards retraction
 3. V phase, movement towards extension
- PE protective conductor

Ensuring the leak tightness of the control unit

When fixing the Hirschmann plug and socket follow the rules below:

1. The cable gland must be fitted correctly to the round wire and tightened well (do not use adhesive tape instead of the cable gland).
2. Gasket between Hirschmann and control unit must be placed and the clamp must be properly tightened.
3. Control unit should be placed horizontally, to the extent possible, so that the water dripping down the cable does not stay permanently on the gland gasket.
4. Since the motor's cable is 2m long, the control unit is usually mounted at the end of the cable and is connected to the power cable, so the cables and the control unit lie on the profile and are exposed to large temperature differences (the profile and control unit are black), UV and in the event of rain and snowfall, they lie in the water.



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

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 them on swimming pools and shower basins, saunas, on construction sites, during the supply of the equipment in the open outdoor, in agricultural and horticultural farms, in campings and leisure vehicles and rooms where fire hazard is present.

4.7.2 START-UP AND ADJUSTMENT

- Limit positions (blades movement, 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 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.

When starting the product, pay particular attention to:

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



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



The motor has a thermal switch that will turn off the drive after about 5 minutes of continuous operation to protect it against overheating (depending on 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.

Motor's factory settings:

If other end limit switches are required, proceed as described below.

The two limit switch adjustment screws are located on the cover on the piston side of the motor.

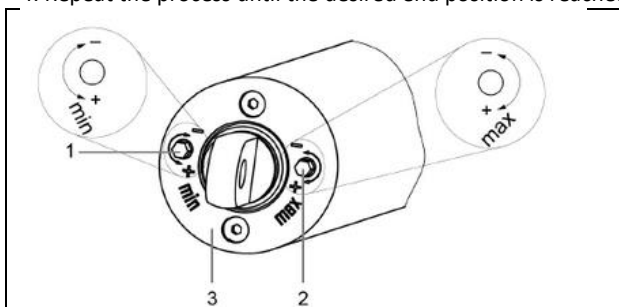
1. Move the piston a few centimeters away from the set end position.
2. Set the limit switch by turning the appropriate knob in the (+/-) direction.

NOTE: one turn of the knob changes the extension slide by about 0.7 mm

min – is the knob of the limit switch that cuts off the retraction
 max – is the knob of the limit switch that cuts off the extension

should be turned towards
 (+) to increase the range of motion or
 (-) to reduce the range of motion

3. Move the drive back to end position.
4. Repeat the process until the desired end position is reached.



View of the cover with set screws:

1. Min adjusting screw (end position "piston retract direction").
2. Max adjusting screw (end position "piston extension direction").
3. Cover of the case.

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.
- Pergola SB400 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 are barbecues, the open flame should be not located under the pergola to avoid overheating of the product.

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

Specific safety requirements relate to children up to 42 months. Essential requirements for use are applicable in all locations, to which children have access or where they could be present, such as e.g. houses, orphanages, hospitals, shops, schools, child care facility, public spaces and other places, which primary intended use have been changed and where the children may stay.

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



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

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



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



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



Risk of head injury when staying in the area of the movable roof blades.



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 actions:

- product is safe providing use in accordance with the recommendations included in this documentation,
- 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). 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) 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 near the covers which can catch mobile roof and destroy it,
- do not start the product in case of frost or ice build-up,
- the roof should be open in case of snowfall,
- 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 indicated time intervals,
- use only original spare parts,
- all works related to inspections and repair of the product should be carried out by a properly trained person, holding the necessary licenses,
- it is forbidden to use the product and electrical installation without valid and required inspections and measurements,
- product should be disconnected from electrical installation prior to any works related to maintenance or cleaning,
- in case of works on facade finish of the building, to which the pergola is anchored, you should disconnect it from the supply,
- if the blades rotation drive is started from a place out of sight, then the user should take organisational measures/ measures preventing starting of the system 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 any signs of wear and tear or damages of electrical cables, the product should be disconnected from supply and the defect should be immediately reported to a person with a valid electrical license 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 installer,

- 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 even more frequently in case of seaside environment and the places where increased amounts of pollutants are present,
- remove loose contaminations with a 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 Pergola SB400 is assembled one should proceed to connection of drive and control system to the previously prepared systems: electrical supply installation and control system.

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 them on swimming pools and shower basins, saunas, on construction sites, during the supply of the equipment in the open outdoor, in agricultural and horticultural farms, in campings and leisure vehicles and rooms where fire hazard is present.

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 → PRODUCTS → MOTOR, ELECTRIC, EQUIPMENT



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 → PRODUCTS → MOTOR, ELECTRIC, EQUIPMENT

5.6 START-UP AND ADJUSTMENT

Recommendations and actions:

- 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.

When starting-up the mobile roof, particular attention should be paid 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. The use of power tools (drill, screwdriver) to adjust the limit switches may cause irreversible damage to the gear rack in the limit switch mechanism.

5.7 MISUSE OF THE SYSTEM

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 / installer 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 inoperable or incomplete system. Use of such product may lead to its damage and cause health and life hazard for the user and be a reason for loss of the warranty.

-
- It is forbidden to use the product not conforming to the requirements related to electric shock and fire safety.
 - It is forbidden to exceed specified parameters of product operation given in the operation and maintenance documentation.
 - Do not leave any sharp objects or protruding parts near the system, which can catch and scratch it.
 - Leaving the side screens open at wind speed above 49 km/h.

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 pergola SB400: 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 SYSTEM USE AND MAINTENANCE

6.1 USING THE PRODUCT IN ACCORDANCE WITH ITS INTENDED USE

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

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

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

The correct use of the product includes:

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



In case of misuse:

- the product may be hazardous for servicing personnel,
- the product will be exposed to damages,
- 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 leaktight components.

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

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



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

6.2 INSTRUCTION FOR NON-PROFESSIONALS

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 carefully this document before using the product.

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

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

- 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 switches 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 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 Pergola SB400 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. 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 according to Technical and Operational Documentation).

- 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.
- Damage or deformation caused by failure to close the side screens above wind speed > 49 km/h.
- Possible stagnation and outflow of water remaining in the blades.

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 structure beams and tilts of posts exceeding the values specified in PN-EN 1090-1 and Eurocode 9, when provided in warranty exclusions.

8 COMPLAINT / TECHNICAL DEFECTS

8.1 COMPLAINTS

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 as a post-warranty product.

8.2 TECHNICAL DEFECTS

In case of system defects you should:

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

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

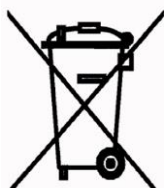


Incorrect disassembly of the system may lead to heavy bodily injuries and lead to system damages. System disassembly should be commissioned to properly qualified installers team with adequate training within the scope of Occupational Health and Safety and knowledge within the scope of recycling .

a) Disposal of Waste Electrical and Electronic Equipment

When the service life of the product is over it is necessary to disassemble it for disposal and to sort the individual materials and components in compliance with the Regulation of the Minister of the Environment of 9 December 2014 on 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)

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 THE PRODUCT WITH THE CE MARK

10.1 PRODUCT COMPLIANCE WITH THE CE STANDARD


Pergola SB400 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:


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


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

b) marking on accompanying documents


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 20
Outdoor shutter pergola Pergola SB400 230V/ 50 Hz Power 126 W
EN 13659 External sun protection system. Resistance to wind load: class 6 DWU 158 / S / 2017


SELT Sp. z o. o. Opole, ul. Wschodnia 23A POLAND 20
EN 1090-1 Steel and aluminium constructional components and sets – Pergola SB400 DWU 42/P/2020