5.4
DT-E

TECHNICAL AND OPERATIONAL DOCUMENTATION

INSTALLATION INSTRUCTIONS,
OPERATION AND SAFE USE
(Translated from the original manual)

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

PRODUCT NAME:

ALUMINIUM
STRUCTURE PERGOLA
SB500

THE PRODUCT MANUFACTURER'S DESIGNATION:

- Manufacturer
  Name:
  SELT Sp. z o. o.

- Headquarters of the
  manufacturer: 45- 449 Opole, 23A
  Wschodnia St.

- Contact details:
  Tel: +48 77 553 21 00 (secretariat)
  Fax: +48 77 553 22 00

- Website
  www.selt.com

- E-mailaddress:
  selt@selt.com

PRODUCT SAFETY MARKING:

The product meets CE safety requirements.

THIS TECHNICAL AND OPERATIONAL DOCUMENTATION:

- is valid as of: 01 February 2023.

- is valid for the product versions marked above.

TABLE OF CONTENTS

1 INTRODUCTION

1.1 PRODUCT SAFETY GUIDELINES

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

No.	Subject	European Legal Basis	Polish Legal Basis
1	Construction of steel and aluminium structures Part 1: Principles of conformity assessment structural elements	EN 1090-1:2009 +A1:2011	PN-EN 1090-1+A1:2012
2	Blinds including exterior slatted blinds. Operational requirements including safety	EN 13659:2015	PN-EN 13659:2015
3	Construction Products Regulation (CPR)	Regulation 305/2011 of the European Parliament and of the Council	Act of 16.04.2004 on construction products (i.e. Journal of Laws 2020, item 215) with as amended
4	Essential requirements for machinery	Directive 2006/42/EC of the European Parliament and of the Council	Regulation of the Minister of Economy of 21.10.2008 on essential requirements for machines (Journal of Laws 2008 No. 199 item 1228) with as amended (Dz.U.2011.124)
5	Low Voltage Directive (LVD)	Directive 2014/35/EU of the European Parliament and of the Council	Ordinance of the Minister of Development dated 2.06.2016 on requirements for Electrical equipment (i.e., Journal of Laws 2016 item 806) Act of 13.06.2019 on the system of conformity assessment and market surveillance (Journal of Laws 2019 item 544) as amended (Journal of Laws. 2020 pos.1086)
6	Electromagnetic compatibility (EMC) directive	Directive 2014/30/EU of the European Parliament and of the Council	Act of 13.04.2007 on electromagnetic compatibility (i.e. Journal of Laws 2019 item 2388) Act of 13.06.2019 on the system of conformity assessment and market surveillance (Journal of Laws 2019 item 544) as amended (Journal of Laws. 2020 pos.1086)

Related documents: Declaration of Performance for compliance with EN 1090-1:2009 +A1:2011, Declaration of Performance for compliance with EN 13659:2015 and instructions for installation, use of motors and control.

1.2 EXPLANATION OF SYMBOLS AND SIGNS

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

Pictogram	Meaning of the pictogram	Information

	INFO	Read the operating instructions before using the product. Compliance with the operating instructions is a condition: - failure-free operation of the product, - use as intended, - to retain rights under the warranty, among other things. For the safety of people, keep the instructions.
	INFO	No harmful or dangerous consequences for people or objects.
	NOTE!	A situation that may cause damage to the product or requires action by the user. No danger to humans.
	DANGER!	This symbol denotes all safety information, the non-observance of which poses a danger to life or health of persons. Threat to health or life. Risk: danger of serious injury or death. Dangerous operation that may cause injury or damage to the product.
	WARNING!	Risk to health or life by electrocution.
	DANGER!	Danger of crushing hands.
	WARNING!	Danger of head injury.
	ENVIRONMENT	Marking of electrical or electronic equipment subject to collection at designated points.

1.3 TERMS AND DEFINITIONS

The terms and definitions used in this documentation mean:

Product (Goods): PERGOLA SB500
Pergola SB500 system is made of powder-coated aluminium profiles and stainless and galvanized steel elements. The roof structure is made of movable aluminium blades. The blades have the possibility to change the angle of inclination. The structure of the product is offered as standard in RAL colors after confirmation of their availability by the manufacturer.
NOTE: the set includes: two longitudinal beams (drive and bearing), two cross beams (front and rear); gutters; posts, feet, wall brackets, LED strips (debladeding on the configuration), moving roof consisting of aluminium blades, linkage with pins and motor.

Movable roof:
It consists of blades attached to transverse guides with adjustable blade angle. The blades are moved using a mechanism driven by an electric motor.

Blade: part of the product, made of extruded aluminium profiles with an aesthetic appearance. The shape of the blade allows rainwater to be drained from the roof surface within the limits of the design assumptions (cf. Section 2.2), and protection from sunlight and snow load up to a limited value (cf. Section 2.2).

VERSIONS:

Free-standing - A self-supporting structure containing a single movable roof module supported by front and rear posts.

Modular - A self-supporting structure consisting of common beams and common posts that form an interconnected structure.

Wall-mounted - A structure containing a movable roof module supported partially on posts and attached by a roof beam to a load-bearing wall (along the back or side edge of the roof) using through-mounted anchors (out of Selt supply) and special nuts (supplied).

1.4 SUBJECT, INTENDED USE AND CONTENT OF THE DOCUMENTATION

The subject of this documentation are products manufactured by **SELT Sp. z o.o.**
The documentation applies to all types of **PERGOLA SB500.**

Instructions for operation and safe use together with the motor manual, should be given to the end user.

IMPORTANT SAFETY INSTRUCTIONS
WARNING - FOLLOWING THIS MANUAL IS IMPORTANT FOR THE SAFETY OF PEOPLE
KEEP THIS INSTRUCTION

Documentation is part of the delivery of the product and should be kept near the product at all times.

The documentation includes:

- important recommendations for the installation, use and maintenance of the product,
- important recommendations for transportation and storage,
- guidelines, the observance of which will allow the operation of the product.

SELT Sp. z o.o. will not be liable for damages resulting from failure to follow the recommendations contained in this documentation.
In order to further improve the product, SELT Sp. z o.o. reserves the right to make such changes as, while maintaining the essential technical parameters, are deemed advisable to increase, the quality of the product's service and safety of use.

2 PRODUCT TECHNICAL INFORMATION

The technical specification of the product is available after logging on to the website www.selt.com

2.1 TECHNICAL PAREMETERS:

Pergola SB500 – free-standing

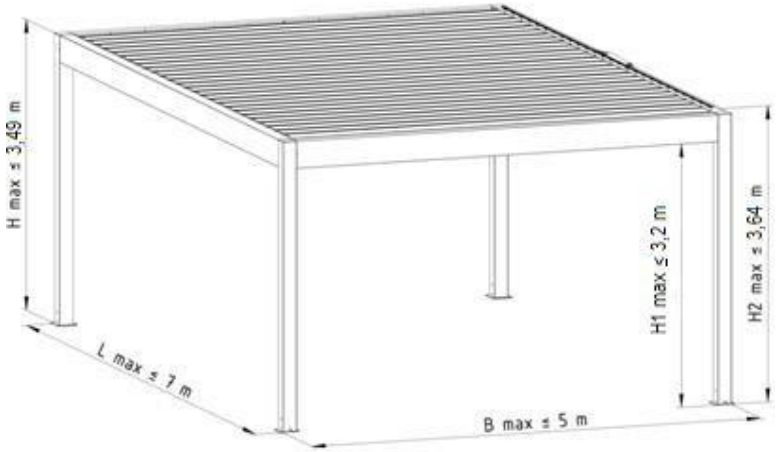


Fig. 1 Pergola SB500 free-standing - Overall dimensions: **B max** - maximum width, **L max** - maximum projection, **H max - maximum** height of the frame (3490 mm), **H1 max** – height of the clearance clearance (3200 mm), **H2 max -** maximum height of the position of the blade angle change mechanism (~3640 mm).

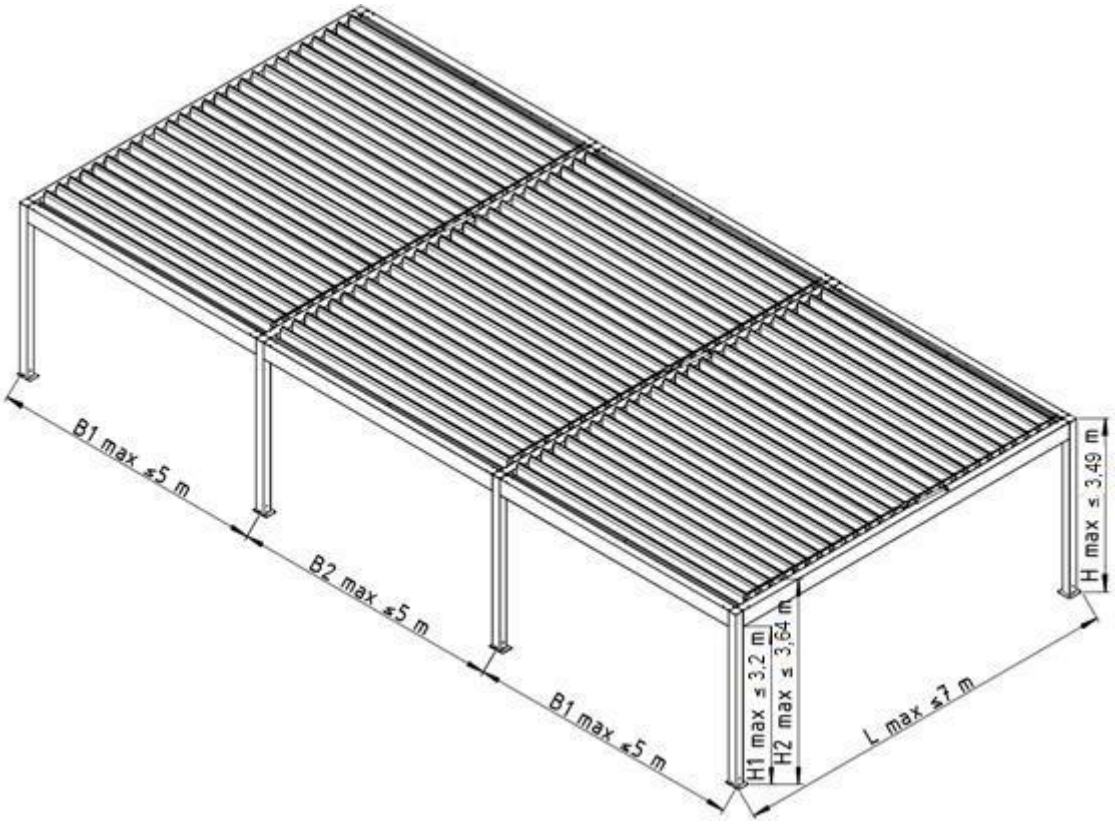


Fig. 2 SB500 free-standing modular pergola - Overall dimensions: **B2 max** - maximum width of the outermost module, **B2 max** - maximum width of the middle module, **L max** - maximum projection, **H max** - maximum height of the frame (3490 mm), **H1 max** – height of the clearance (3200 mm), **H2 max** - maximum height of the position of the blade angle change mechanism (~3640 mm).

Pergola SB500 - wall-mounted

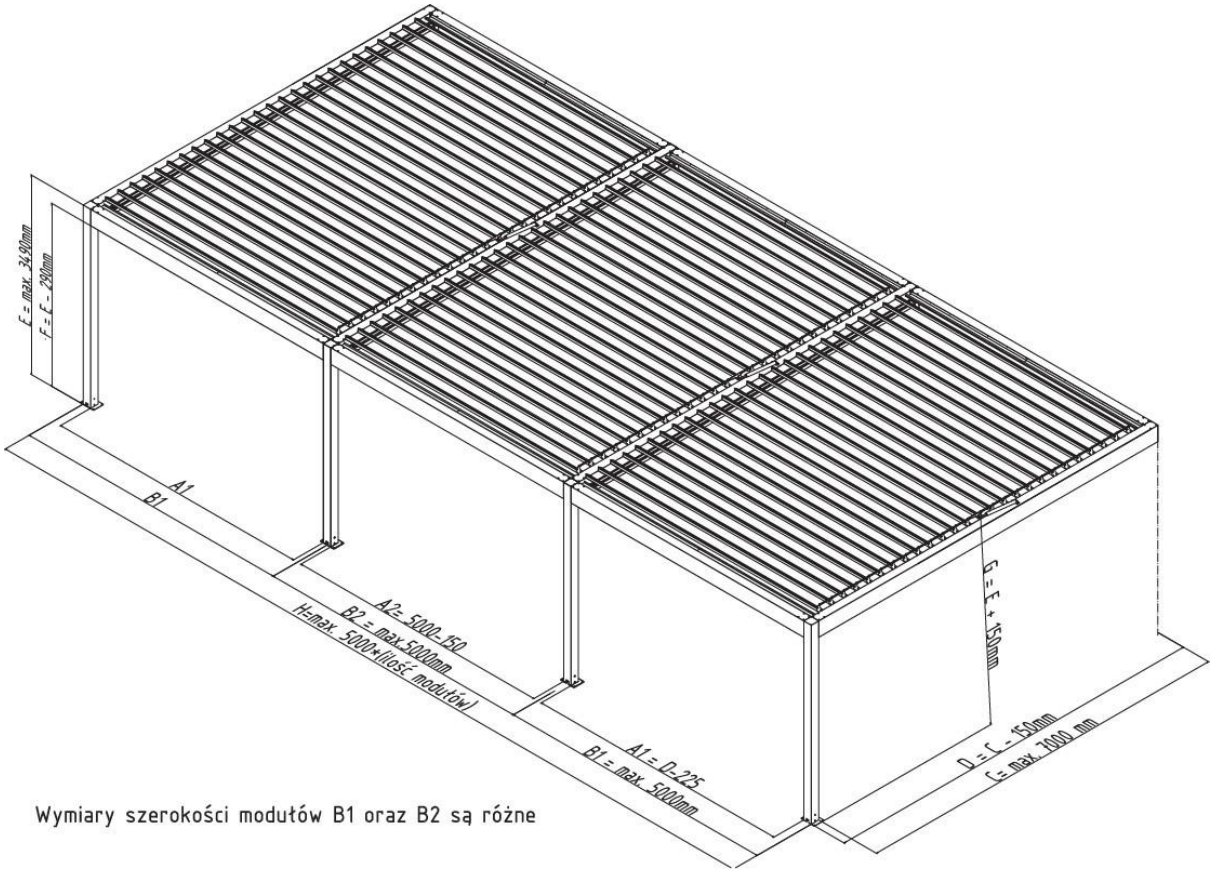


Fig. 2a. Pergola SB500 modular transverse wall-mounted (pass through wall fixing through the beam).

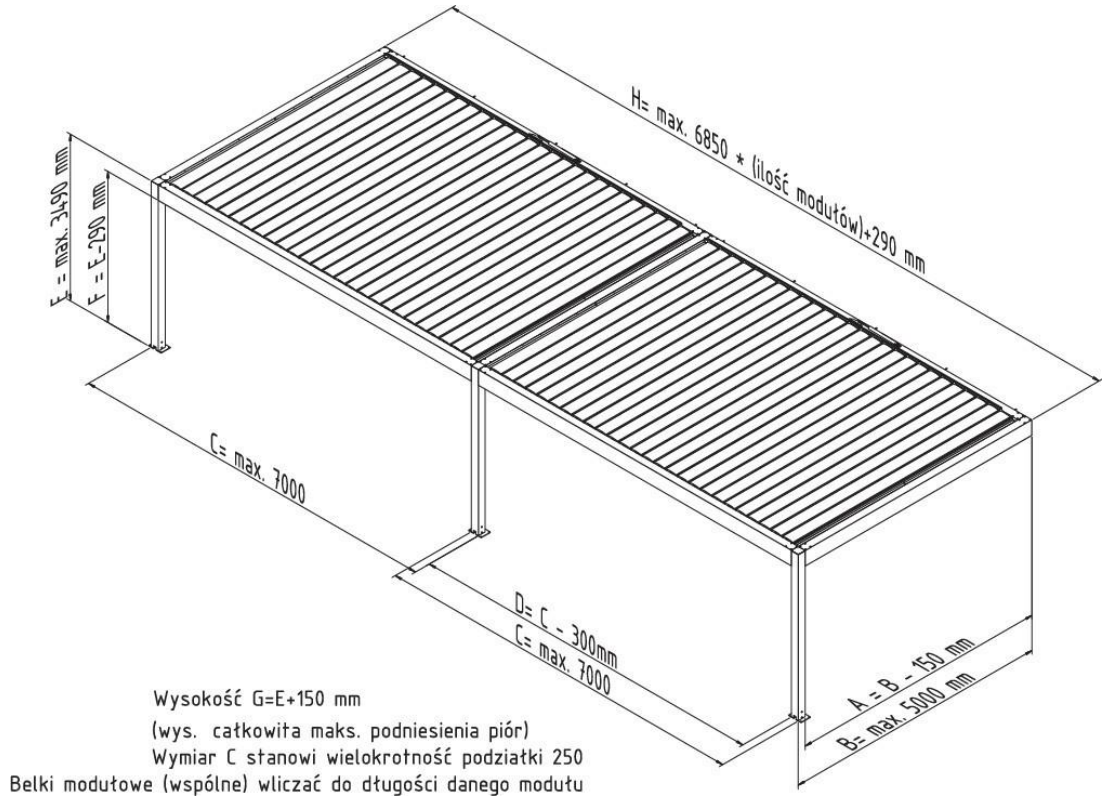


Fig. 2b. Pergola SB500 modular longitudinal wall-mounted (pass through wall fixing through the beam).

System module dimensions:	Width*	Projection*	Height*.	clear height*
Load-bearing structure	up to 5000 mm	up to 7000 mm	up to 3490 mm	up to 3200mm
Axial spacing of roof blades	250 mm			
The difference in the attachment of the blade ends (transverse slope - blade axis)	5 mm			
Scope of use / operation				
Ambient temperature (min/max)	+5 to +40°C (opening / closing of the moving roof)			
Air humidity (max)	90% non-condensing (opening/closing the movable roof)			
Drives (drive types):	Linear motor. The motor can be started manually with a switch or through an external control panel of wired or radio control.			
Connection to the electrical system	power cord with a length of about 4 m			
Drive electric motor with parameters:				
Motor model	ELERO Picolo XL		SITO ANT-38S	
- supply voltage	230V/50Hz		24V DC	
- power	126 W		24 W	
- current consumption	0,55 A		1,8 A	
- degree of protection	IP 65		IP 67	
- continuous operation time	Up to 5 min (depending on ambient temperature)		Up to 2 min, cooling 18 min (depending on ambient temperature)	
- extension, axial force	max 200mm, extension force 1200N		max. 300 mm, extension force 600N	
- piston travel speed	approx. 6 mm/sec.		10.5 mm/s	
- operating temperature (min/max)	-20 to +80°C		-20°C to +60°C	
LED lighting	Optional - LED gutters, LED points in blades. Power supply 24V DC, 150W, max. 6.25A, IP66 mounted in the pole of the pergola			
Installation:				
Application	External			
On-site installation	For load-bearing or wall-mounted substrate (through-beam anchor installation, SELT issues only special nuts-without anchors)			

*-Tolerances on external dimensions are +/-10 mm.

Detailed motor performance data is available on the motor manufacturers' websites and on the website:

www.selt.com→ OUR OFFER → ELECTRIC EQUIPMENT

2.2 PRODUCT SPECIFICATION

The products manufactured by SELT Sp. z o.o. have appropriate technical and performance parameters.

They are characterized by the following properties:

- The roof (blades) electrically opened, designed to protect from the sun as well as rain (according to the parameters of the product, as well as its location).
- Possibility of covering the walls with systems manufactured by Selt Sp. z o.o.
- Dedicated Slide sliding wall system with fabric or blade filling.
- Permissible use of the product outdoors in accordance with the parameters of the product.
- Location, finish, installation and sealing as well as intense weather conditions, including heavy rain and/or snow, have a major impact on the level of rain protection the product provides.
- Movable roof blades allow adjustment of sunlight access.
- The application and use of the product should take place within the limits of the size limited by the sixth wind class according to EN 13659) and/or the maximum snow load.
- Blade closure required above the third wind class according to EN13659.
- Operation of the blades during snowfall, in icy conditions or when snow or ice is deposited on the roof, as well as use outside the temperature ranges specified in the instructions is not permitted and may lead to damage to the product and even personal injury or death.
- It does not emit toxic substances during its lifetime.
- Noise emissions from an electromechanically driven product (related to the working movement of moving parts, produced by the electric motor, mechanism and blades during operation) are not considered a significant hazard and are a matter of comfort.
- The product's motor has an IP 65 enclosure protection rating.
- The design of the product and the drive allows the blades to be stopped at a selected angle in their working area
- The rotary motion of the blades, can be activated by a manual switch or by remote control.
- Variations in the angle of closure of the movable roof blades can be about 2° and are a natural feature of the system due to tolerances in the manufacture of the components and their adjustment during installation.
- Moving parts covers are designed and manufactured to ensure operator safety, assuming they are operated properly.
- Optional LED lighting in horizontal strips along gutter edges
- The maximum capacity of the drainage drains rain with an intensity of up to 0.04 $^{l/s/m2}$ with a maximum duration of 5.3 min (dependent on the configuration of the drainage holes). Intensity is given with no slope of the blade axis. In the case of a difference in slope, the capacity is reduced and, in the case of prolonged rainfall, may cause the gutter to overflow on the side of the lower blade attachment.
- Steam may condense on the product and especially the bottom part of the product and water may run off or drip.
- Permitted use for protection against snowfall (up to a level of 75 $^{kg/m2}$)-as an even layer of uniform height.
- For pergolas with full wall shading at blade lengths over 3.5 m, there may be light reflections and clearances at the junction of adjacent blades due to technological standards.

3 TRANSPORT AND STORAGE OF GOODS

3.1 THE COMPLETENESS AND QUALITY CONDITION OF THE DELIVERY

The goods of SELT Sp. z o.o. are in accordance with the technology of their production. In case of any objections to the product or damage to the packaging of the product, the objections or comments should be reported to the driver / warehouseman / assembly brigade and marked on the WZ document under pain of loss of claims on this account, and a protocol describing these objections or comments should be drawn up with the participation of the driver.
At acceptance, mechanical defects, scratches, cracks, etc., as well as quantitative objections must be reported first and foremost, under penalty of being considered non-existent. Hidden defects must be reported in accordance with the terms of the warranty or guarantee.

3.2 GENERAL CONDITIONS FOR TRANSPORT AND STORAGE OF THE PRODUCT

List:

- The product is packed at the factory in a cardboard box, which protects it from damage during storage, during transport and during its movement to the place of final installation,
- Transport/storage products should be arranged according to the arrows on the product packaging,
- do not store products in more than 2 layers due to the possibility of crushing the packaging, which may result in permanent damage to the product,
- Do not load the product packaging with other objects,
- products placed on the means of transport should be protected against displacement and damage during transport (e.g., spacers, safety belts, etc.),
- during transport, products should be protected from rain or snow,
- storage areas should be dry, ventilated and protected from the harmful effects of the weather (sun, rain, etc.),
- if the weight of the product exceeds 25 kg its movement to the place of final assembly, must be carried out by at least two people (depending on the weight of the ordered product).

3.3 DESCRIPTIONS, WHICH OBLIGATORILY MUST BE PLACED ON THE PRODUCT PACKAGING.

Before installing and using the product, carefully read the technical and operating documentation available by logging on to http://www.selt.com/dte-en

4 PRODUCT INSTALLATION

This chapter contains general requirements for the installation of the product.
Proper installation is a prerequisite for the proper functioning of the product.
SELT Sp. z o.o. recommends using qualified installers who will have the skills to properly install the product.

4.1 GENERAL REQUIREMENTS FOR SAFE INSTALLATION

- The rules of the art of construction must be observed,
- comply with applicable health and safety regulations, especially those concerning the safety of working with electrical equipment and working at heights,
- the product must be fixed mechanically; foams, adhesives or similar materials must be used in accordance with the recommendations of their manufacturers, taking into account the specifics of the product,
- the substrate to which the product will be attached should be a structure with appropriate parameters,
- Before installation, move all unnecessary objects, including electrical wires, out of the installation zone (check the course of the installation within the fixing points to exclude damage to them), as well as mark the installation site and use appropriate safeguards to protect people.

Information table for the substrate to which the product is to be mounted

The product should be mounted to a substrate or metal substructure with the right parameters. Also, the substrate to which the substructure is mounted must have the right parameters.
The aforementioned requirements for the substructure and subfloor require the assessment of a specialist and are the responsibility of the investor and contractor.
Other installation methods than those suggested by SELT are possible, as long as the requirements of construction knowledge and safety are observed. In any case, this requires expertise and is done at the risk of the investor or contractor.
It is recommended to make arrangements in the above-mentioned area with an authorized designer.

4.2 REQUIREMENTS FOR SAFE INSTALLATION OF THE PRODUCT AT HEIGHT

The installation of the product, through the need to work at heights, is one of the particularly dangerous works, as it poses a particularly high risk of danger to the safety and health of people, especially falls from heights.

The obligation to ensure the development of a safety and health plan during installation is the responsibility of the installer (hereinafter Installer) or the party commissioning such work (hereinafter Investor).
The developer/installer should specify the specific health and safety requirements when performing work at height, and in particular provide:

- Direct supervision of their performance by persons designated for this purpose (e.g., works manager, foreman),
- appropriate safety measures, primarily fall protection equipment,
- Detailed instruction of employees performing work at heights.

Work at a height of more than 2 m, where the use of personal protective equipment against falls from height is required, must be performed, at least by 2 people.
Work at height should be organized and performed in a way that does not force workers to lean beyond the railing of the railing or the outline of the device on which they are standing. It is not allowed to stand on elements of the product.
The Installer/Installer shall ensure that only authorized and properly trained and informed persons have access to the sites of works at height. The Investor/Installer shall inform about the works at height being carried out and the necessary safety precautions to be taken during such works by persons who are or may be in the area of such works or in the vicinity of such area.

4.3 PREPARATION FOR INSTALLATION

- Unpack the product and check that all the components necessary for its installation are present,
- Before installation, check that the substrate/substructure has sufficient load-bearing capacity for safe installation and operation.

Note: It is up to the Installer/Investor to purchase and select the screws, pins and bolts that connect the system to the structure of the building

4.4 GENERAL GUIDELINES FOR INSTALLATION OF THE PRODUCT

- SB500 pergola is an open external terrace cover. The equipment under the pergola must be designed for outdoor use.
- 4 people are required to safely perform the assembly of the supporting frame.
- Improper installation or errors during installation can have serious consequences in the operation of the product.
- Before installation, check that the installation space is free of obstructions, including people and things, and ensure that the installation site and the adjacent area are properly marked and secured,
- anchoring elements for mounting the product to the substructure are not included, as they should be selected individually by the installer depending on the material to which they are to be attached (it is recommended to make arrangements with an authorized designer),
- The substrate/substructure must have load-bearing capacity and be capable of transferring the forces generated from anchoring the product and during its use,
- Selt shall not be liable for damage or loss caused by the use of anchoring elements that are too weak or by fixing in a substrate with insufficient load-bearing capacity,
- protect the product from contamination (e.g., mortar , installation foam, silicone), which can cause damage to the product,
- if it is necessary to use polyurethane foam, silicone or other agents, it is essential to follow the manufacturers' recommendations on the packaging

Improper installation can contribute to dangerous situations for the user.

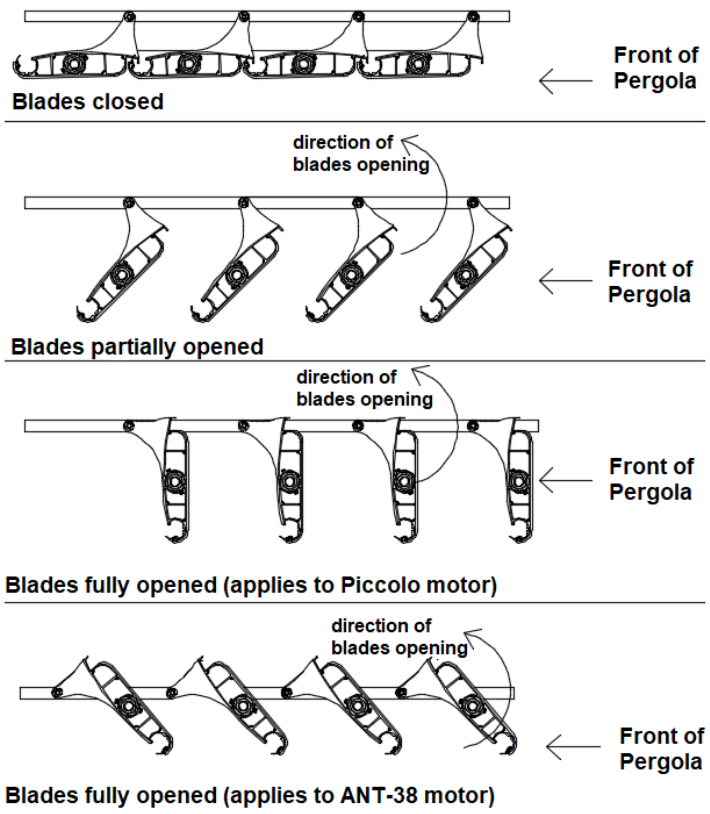


Fig. 3. Standard setting of blade opening direction in Pergola SB500.

The drawings are for illustrative purposes and do not write off all product features, including those related to the use of gaskets.

4.5 ASSEMBLY TOOLS

Instructions for installation, operation and safe use after logging in are available at www.selt.com

List:

- drills for metal and concrete,
- impact drill,
- Ladder / scaffolding, crane, aerial lift, HDS,
- screwdriver,
- measure,
- hammer
- pencil/writer,
- level,
- wrenches,
- pin (allen) wrenches,
- Rope for securing / retracting / removing components,
- torque wrench,
- A forklift with a lifting capacity of 150 kg (2 pcs recommended) (e.g. Faraone HW415S).

In addition, persons performing the assembly of the product must be provided with appropriate personal protective equipment (such as, but not limited to, protective clothing, gloves, helmet, safety glasses and others according to individual conditions, such as, but not limited to, height protection).

Example of the contents of a carton of accessories:

Contents (depending on the variant):

- feet with mounting bones
- stainless screws M8x20 conical with Allen socket
- stainless steel screws M8x80 conical with Allen socket
- screws St4.2 with lacquered head (black)
- M5x20 stainless screws with Allen heads and threads + washers
- stainless steel pins for guiding bracket
- plastic sliding sleeves large
- plastic sliding sleeves small
- stainless steel (Seger) circlips large
- stainless steel (Seger) circlips small
- Silicone (tube) - Crystal Fix
- controller + remote control (in the manufacturer's packaging)
- longitudinal nuts (stainless steel sleeves) - optional
- special washers (aluminium with cut corner) - optional
- case with remote control AND leaflet
- screws for fixing the motor mount (depending on the model)

The motor, together with the motor bracket and the guide bracket (right or left version), is not tightened to the beam with the attention to eliminate the risk of damage to the power cable (depending on the motor model). It should be fixed to the made holes on the longitudinal beam, taking into account the direction of the opening of the blades (consistent or opposite) and modified piston movement of the motor-retracting when closing the blades.

4.6 INSTALLATION

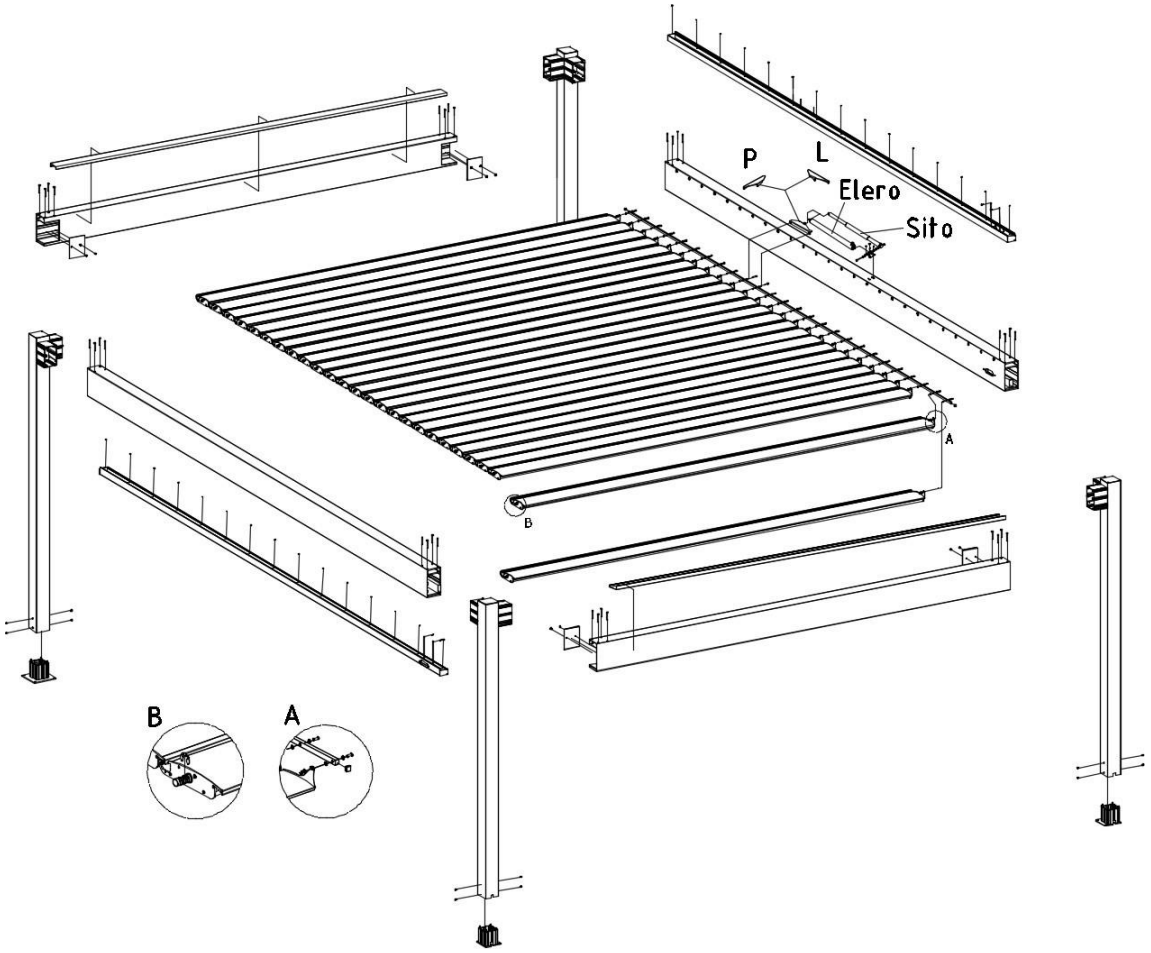


Figure 4a. View of the installation of the SB500 free-standing pergola elements.

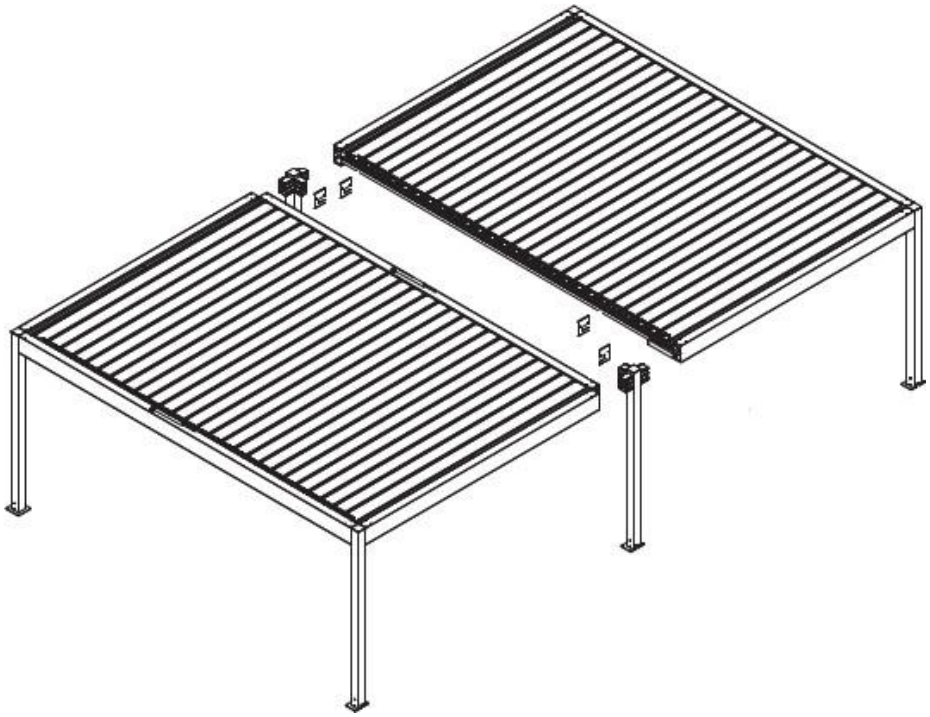


Fig. 4b. View of the installation of modular Pergola SB500.

Attention:

- Verify the visual condition of the packaging of the components before installation delivered for installation, the visual condition of the elements and their completeness. SELT Sp. z o.o. shall not be liable for any damage caused after acceptance (passing of risk).
- The components are delivered in a package and cover with a rudder for protection during installation.
- Accessories (feet, screws, bolts, screws, small and large circlips, small and large slip rings, blade pins, silicone, installation instructions) are packaged in cartons.

4.6.1 INSTALLATION OF PERGOLAS

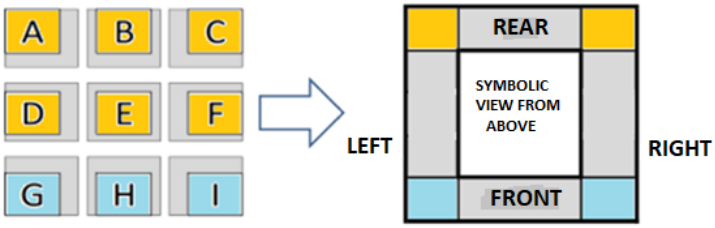


Fig. 4c. Designation of footing types (top view) of SB500 pergola.

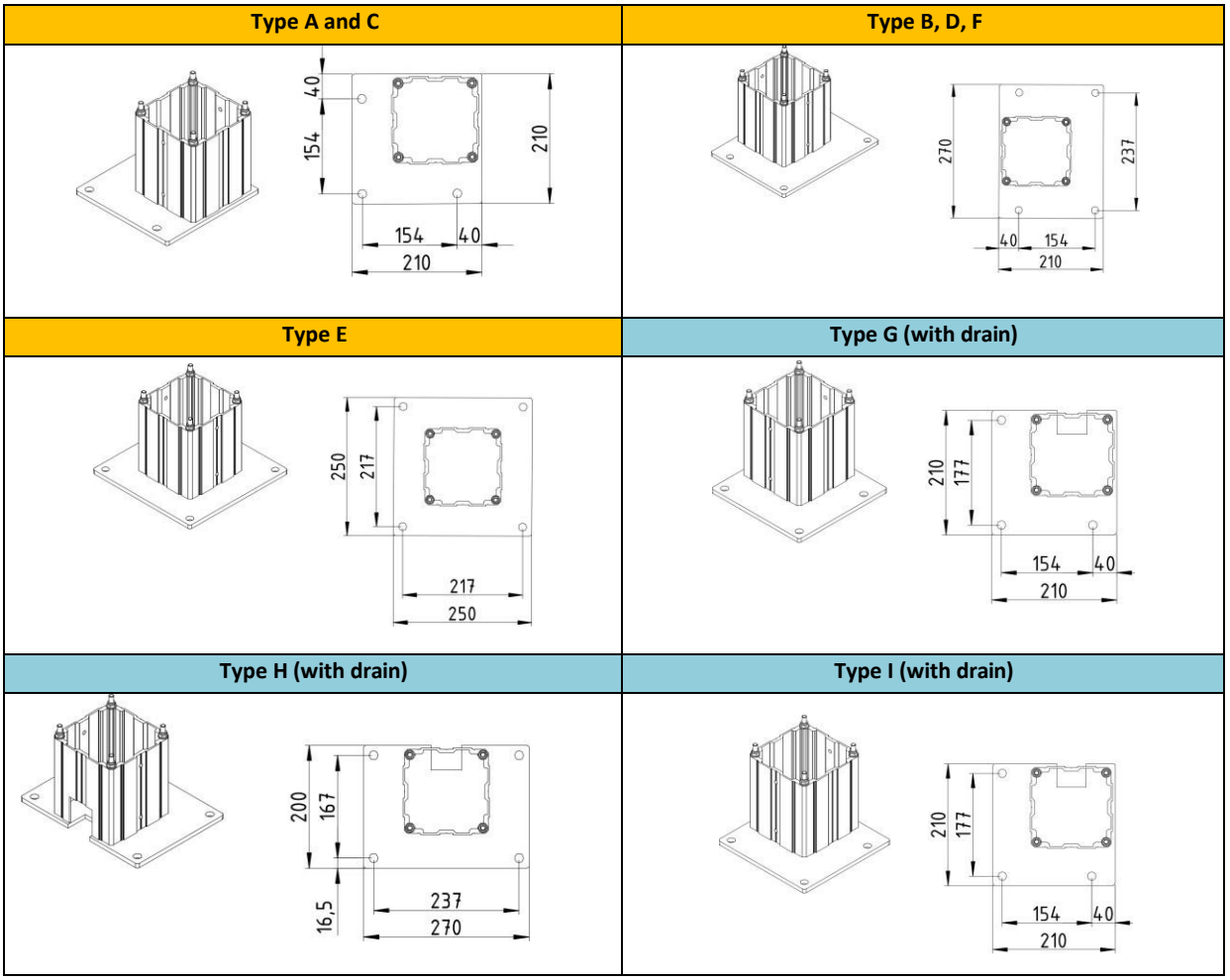


Figure 5: SB500 pergola foot types.

4.6.1.1 GUIDELINES FOR SETTING AND ANCHORING THE PERGOLA SUPPORT STRUCTURE

Before setting up the supporting structure, you need to determine the places where the SB500 Pergola poles will stand.

Follow the guidelines below in this section and using good construction practice.

- The dimensions of the system are measured to the outer corners of the pergola poles / outer surface of the poles.
- The diagonals C and D marked in Fig.6 must be equal to each other, the lack of correspondence means that the location of the foundation of the superstructure is not correctly determined.
- At the location of the foundation of the Pergola SB500 support structure, determine the places for anchoring elements. The spacing and location of holes for anchoring the structure are given in Figure 5.
- Perform the foundation of the support structure only on a leveled and load-bearing surface
- If there is a lack of levelness for the foundation surfaces under the footings of the supporting structure, they must be brought to the correct state with a pad over the entire footing surface or equivalent solutions in accordance with good construction practice. The surface of the pad under the feet must be flat and incompressible.
- Permanent anchoring can only be done to a foundation or surface of adequate strength and load-bearing capacity for the SB500 Pergola structure; the choice of anchoring method should be entrusted to an authorized designer in each case.
- Before anchoring the structural elements, check their leveling and vertical alignment, as well as the correctness of the right angles between the beams, correct their alignment if necessary.

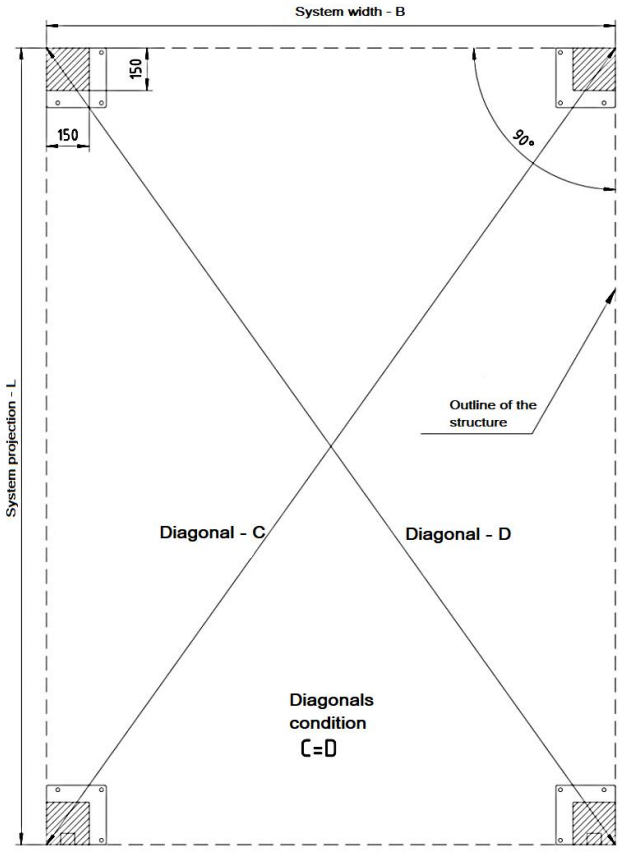


Fig. 6. Example determination of the foundation of the Pergola SB500 structure in the corner version.

Attention:

- Improper alignment of the structural components will prevent the pergola support structure from being properly assembled and the bolts from being properly fastened to the support structure components.

Attention:

- Before anchoring, check the correctness of the assembled support structure by verifying the diagonals between the posts and the entire support structure, and correct the alignment of the structure if necessary.

- The assembled substructure should be permanently fixed to the ground at the destination by anchoring the footings, using anchors that ensure stable attachment. The selection of anchorage should be entrusted to an authorized designer in each case. Suitable bolts / anchors should be used to bolt the footing to the ground. It is recommended to use screws / anchors with a diameter of 12 mm. Fastening bolts / anchors are not included with the product, their purchase is on the customer's side.

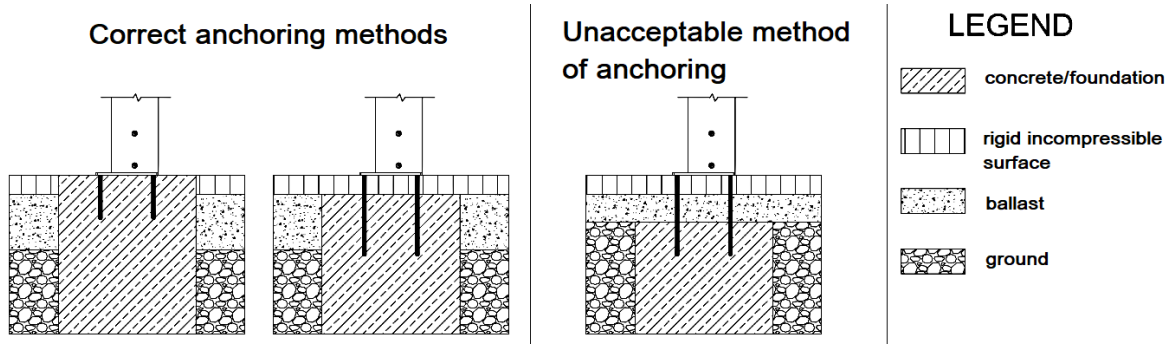


Figure 7: Guidelines for anchoring the SB500 Pergola support structure. Foundation

4.6.1.2 INSTALLATION OF THE SUPPORTING STRUCTURE OF THE PERGOLA

1. Arrange all beam elements on the correct sides and posts in the correct corners (Figures 1 and 2), taking into account the direction of the opening of the blades adopted in the order form.
2. The front beam (fig.2) has a wide gutter attached to the side. Position it with the gutter towards the inside of the pergola
3. The back beam (fig.2) has a wide gutter attached to the side. Position it with the peak towards the inside of the pergola.

NOTE: Pay attention to the proper alignment of the poles at the corners.

Fig.1

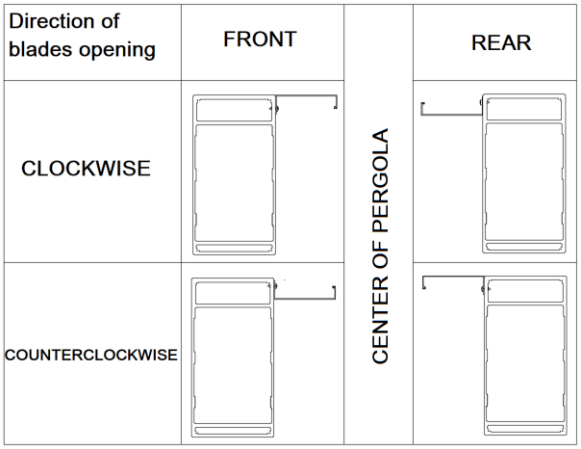
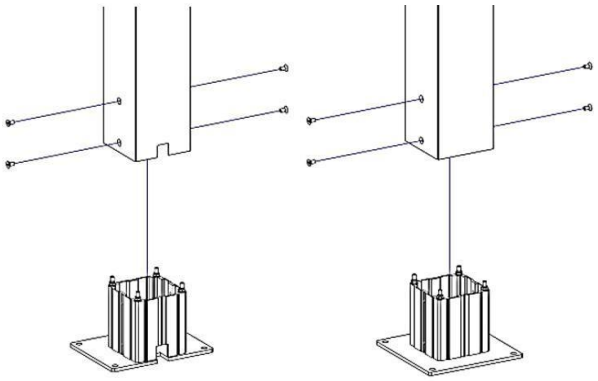


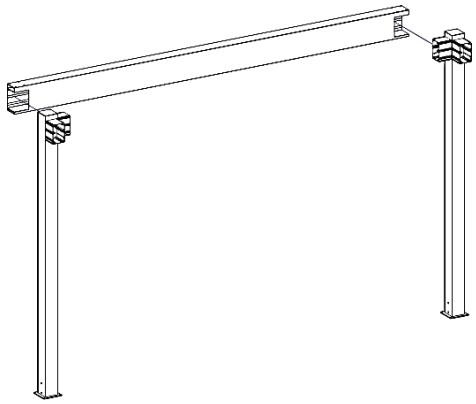
Fig. 2



4 Mount all the feet to the corresponding types of poles. Screw together with M8x20 allen socket conical screws on both sides.

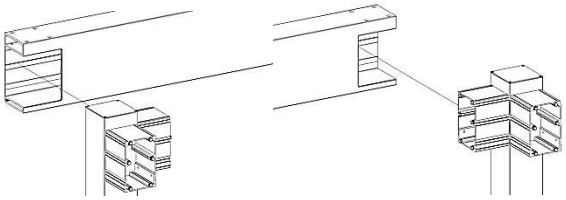
For feet of types G, H, I, set the cutouts for water drainage in the post and foot respectively (Figure 3).

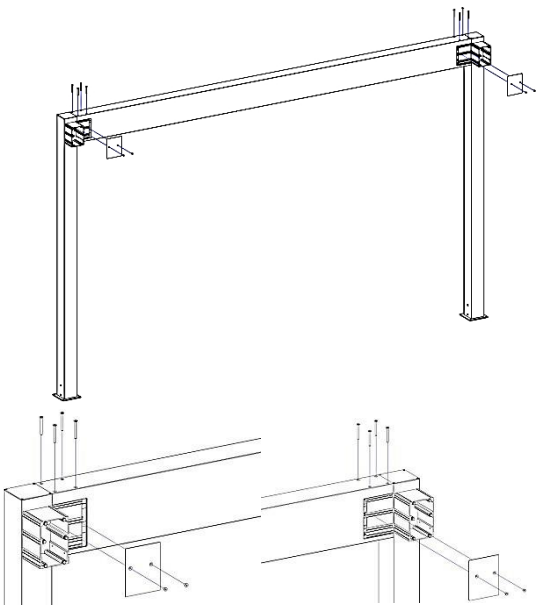
Figure 3



5. Slide horizontally from the outside side of the rear beam onto the bones in the rear posts (Figure 4).

Figure 4



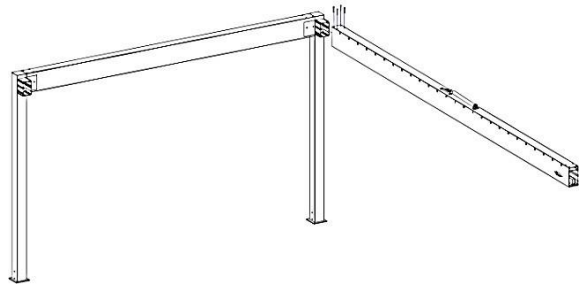


6. Bolt the rear beam from the top with M8x80 tapered socket screws to the bones in the rear posts (Figure 5).

7. Fasten from the inner side of the rear beam caps with M8x20 allen socket screws to the bones in the rear posts (Figure 5).

NOTE: Before fixing the beam caps, carefully seal around the perimeter of their contact with the beam with the included sealant.

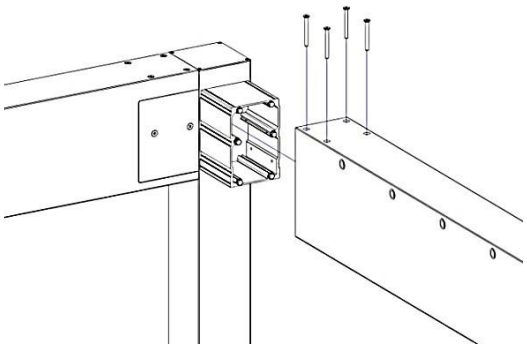
Figure 5



8. Anchor the rear frame to the ground with suitable anchors (max. size M12).
9. Slide the drive side beam from the front onto the bone in the rear post (Figure 6).

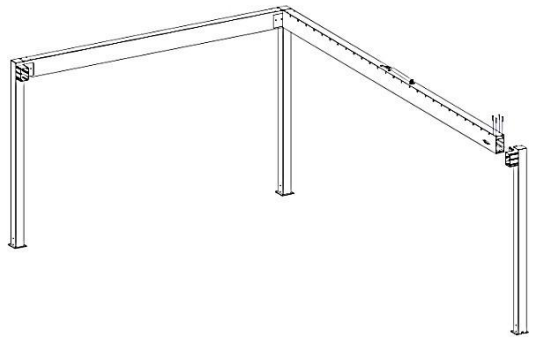
   NOTE: Be sure to support the side beam so that the structure does not fall over. Selt recommends manual forklifts to lift the elements during fusion.

   Figure 6



10. Side beam screwed from the top with M8x80 tapered socket screws to the bones in the rear post (Figure 7). **NOTE:** secure the movement of the motor body during installation.

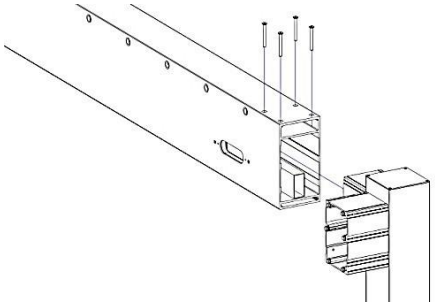
    Figure 7



11. Slide the front post bone from the front onto the drive side beam (fig.8).

    NOTE: Take care not to damage the gutter drain when installing the components, and place it correctly in the front post.

    Figure 8

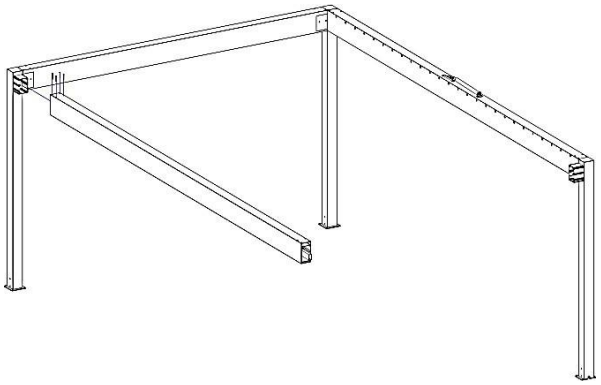


12. The side beam is bolted from the top with M8x80 tapered socket screws to the bones in the front post (Figure 9).

    Figure 9

NOTE: If there is an apparent irregularity between the edges of the beam and the post (Figure 9a), it can be corrected:
- Check the equality of diagonals in the pergola and, if necessary, correct the alignment of the bottom of the pole
- Remove the bar from the insert/bone, loosen the M8 bolts securing the insert/bone to the post and, with a hammer blow, move the protruding end of the insert in the right direction. Tighten the insert again. Apply the beam so that its plane is aligned with the pole.

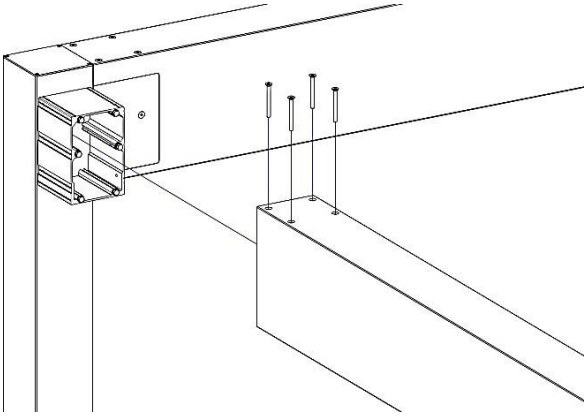
Figure 9a



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

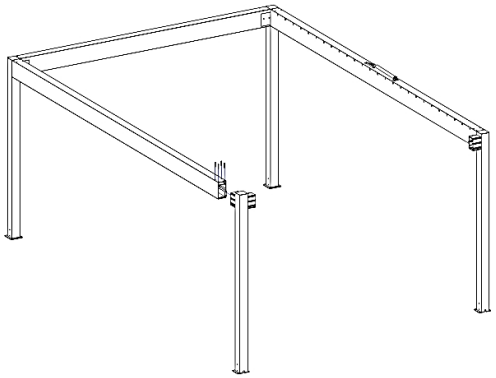
    NOTE: Be sure to support the side beam so that the structure does not fall over.

Figure 10



14. The second side beam is bolted from the top with M8x80 allen socket taper screws to the bones in the rear post (Figure 11).

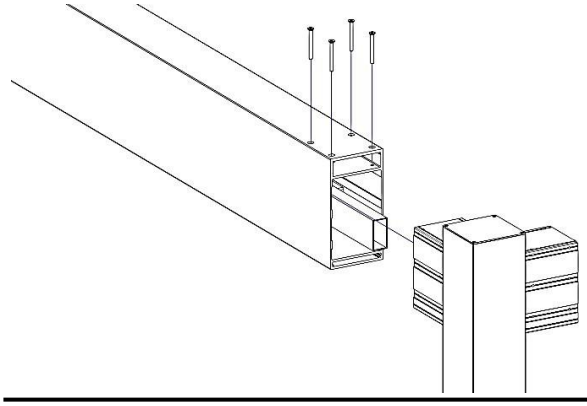
Figure 11



15. Slide the front post onto the other side beam.

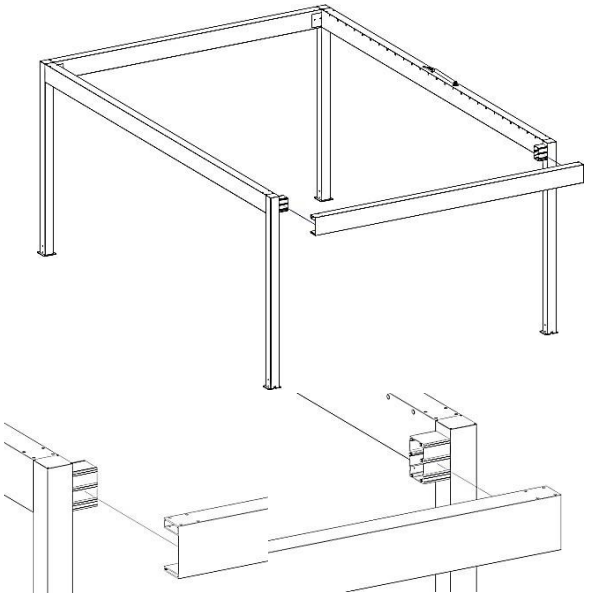
    NOTE: Take care not to damage the gutter drain when installing the components, and place it correctly in the front post.

Figure 1



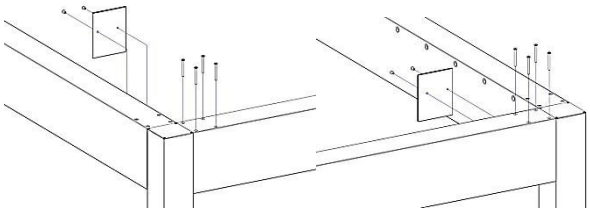
16. Side beam screwed from the top with M8x80 tapered socket screws to the bones in the front post (Figure 13).

Figure 13



17. Slide the front bar from the outside onto the bones in the front posts from the side (Figure 14).

Figure 14



18. Fasten the front beam from the top with M8x80 Allen socket taper screws to the bones of the front posts (Figure 15).

19. Fix the front beam caps on the side from the inside with M8x20 tapered socket screws to the bones in the front posts (Figure 15).
NOTE: before fixing the beam caps, carefully seal around the perimeter of their contact with the beam with the included sealant.

Figure 15

Attention:

- **<u>A different order of assembly is allowed</u>**. Due to the considerable weight of the elements to be assembled, it is recommended to use a manual forklift (required lifting capacity of 150 kg).
- After assembling the entire framework, **check the diagonal and parallelism compatibility and perpendicularity of the sides and the verticality of the posts**

NOTE: The assembled support structure should be set in the right place **and anchored to the ground with a suitable anchoring product**. Suggested anchors size M12.
The purchase and selection of components to anchor the structure is up to the buyer of the system.

20. For the modular version: after assembling and anchoring the outermost module, repeat steps 5 to 19 for the next module (Figure 16).

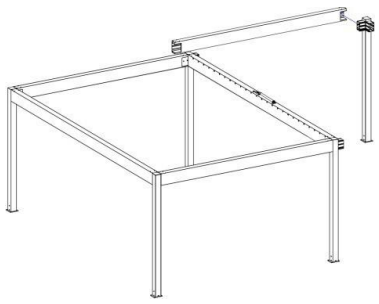
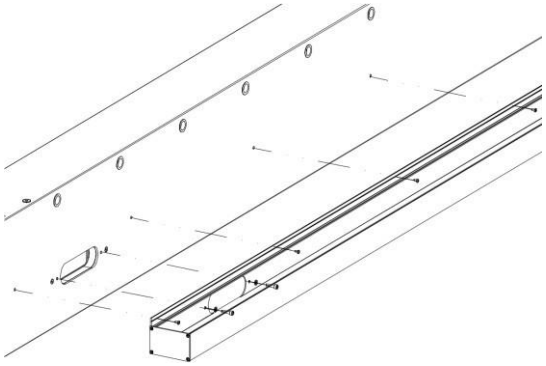


Figure 16

4.6.1.3 INSTALLATION OF GUTTERS



1. Determine the position of the individual gutters with matching the layout of the overflow holes in the beams. Start installing the gutters from both side beams (with blade holes).

2. Seal the rear surface of the gutter adjacent to the beams thoroughly with a strip of silicone (included with the product) . Tighten the gutter with St4.2 screws along its top edge (fig.17).

   NOTE: For some configurations of drain types, the gutters may be factory-tightened to the beams.

   Figure 17

3. At the bean holes of the overflow, tighten from both ends of the stainless steel screws M5x20 with Allen head and socket and washer (fig.18).

   Figure 18

4. In all lateral oval openings for overflow and drainage of gutters, secure the lower and lateral circular edges of the connection of gutters with overflow beams with silicone (Figure 19).

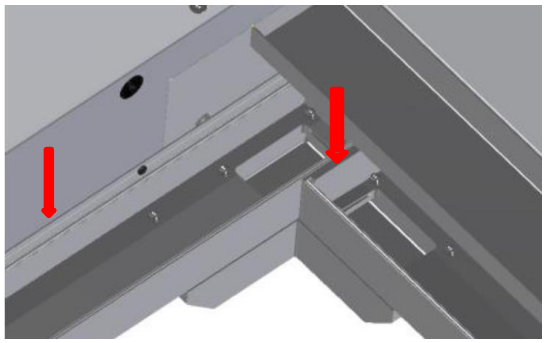
   Figure 19

5. On the oval drain hole from the gutter to the beam, it is possible to install a drain grate.
   To do this, loosen the M5x20 allen head screws on the sides of the hole for a gap to allow the insertion of the protective grille (Figure 20).

Figure 20

6. Slide the horizontal slot under the head of the loosened bolt to the end of the hole (Figure 21), and then move back along the gutter wall so that the opposite end of the slot also slides under the head of the bolt. Tighten both screws to a perceptible resistance and seal the area around the screw heads with silicone.

Figure 21



7. Attach additional gutters to the front and rear beams (occurrence depends on the variant of the pergola) - inserting them between the gutters of the side beams. Remember to seal them beforehand (see point 2). Tighten to the beams according to the instructions of point 2. From the bottom of the overflow holes in the bottoms of the gutters, add an overflow connector. It has an EPDM cap on the top surface. Tighten it from the inside of the gutters with M5x20 stainless steel screws with Allen head and socket and washer (fig.22). **NOTE:** After tightening all the gutters, perform additional sealing by carefully spreading silicone on the junction of the upper edge of the gutter adjacent to the beams and the junction of the gutters with each other (arrows).

Figure 22

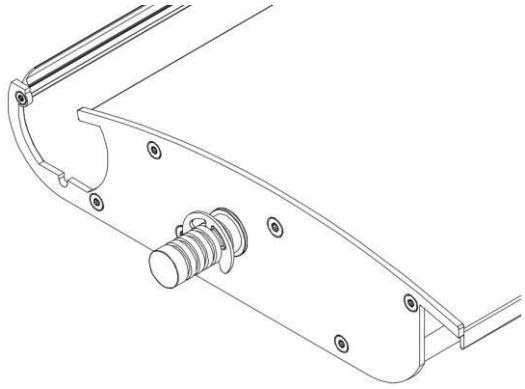
NOTE 1: It is advisable during the first heavy rainfall to visually inspect the leak-sensitive contact points and, in the case of any leaks noted, to supplement the seals with silicone. Such places are usually the junctions of gutters with beams, the mutual junctions of transverse gutters with longitudinal gutters, the lower edges of gutters under lateral oval drains, the outline of pocket end caps on transverse beams.

NOTE2 : It is necessary to regularly inspect the condition of the completed silicone seals at intervals of up to every 6 months, and it is imperative to replenish defects (after degreasing and removing the damaged or leaking section of the seals). If you notice leaks or drips, take immediate action to repair the lack of tightness.

4.6.1.4 INSTALLATION OF BLADES AND THE DRIVE UNIT

NOTE: For the convenience of blade installation in modular systems, it is recommended that the installation of blades begin with the far left module (looking at the system from the front so that the motor is on the right side beam). Then proceed to install the blades in the module on the right side and move with blade mounting in modules to the right.

Blade view, bearing side (Figure 23).



NOTE: The pin has 6 grooves for inserting the circlip .
The blade already has a pre-fitted circlip.

Figure 23

Blade view, drive side (Figure 24).

NOTE: The pin has 4 grooves for inserting the circlip.

Figure 24

1. On the upper end of the drive cap, insert small slip rings on one side into the hole from the blade side (Figure 25).
2. Repeat the activity for all blades.
   NOTE: Press the slip rings precisely in the holes - lack of deep seating may result in difficulty in connecting with the drive linkage.

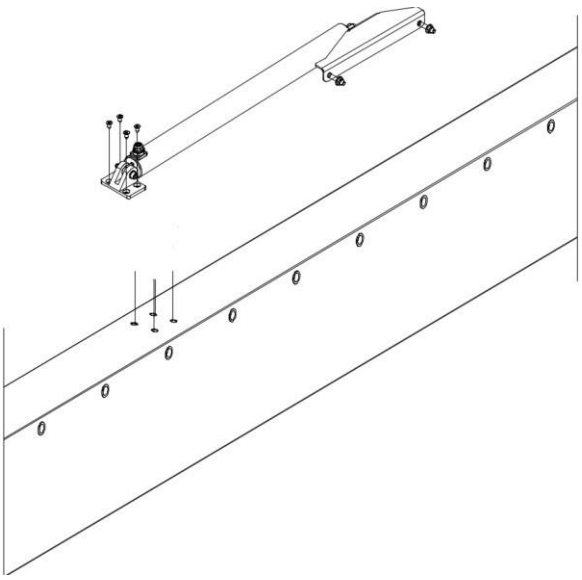
Figure 25

3. Attach the blades to the pergola beams one by one (in the order listed below): place horizontally above the pergola (drive side from the beam with holes for the motor), insert the end without the circlip into the hole in the beam until it stops, then lower and insert the other end of the blade (with the circlip) until the circlip rests against the beam. Insert the missing large circlip into the groove of the blade pin closest to the beam (Figure 26).

   NOTE 1: Required to use a dedicated ring seating tool so as not to cause microcracking of the circlip
   NOTE 2: The blades have a longitudinal slope. The difference in the mounting level of the two ends of the blade is 5 mm, and on the motor side the blade is mounted higher.

Figure 26

NOTE: If the insertion of the ring in the groove poses a risk of the blade falling out, it is necessary to put the ring at the opposite end (drive side) in the adjacent groove - closer to the beam to make the attachment secure. The surfaces of the blade caps on the drive side must after correction of the ring ratio be in line.



4. For Picolo motor - tighten the motor assembly through the motor bracket with 4 ST6.3x16-C-H countersunk screws (added in accessories) to the existing four-hole assembly from the top of the drive beam. Exit the cable from the motor from the top of the body, the guiding bracket- ridge up and the side with two holes for tightening the linkage in line with the side of the beam with holes for opening (Figure 27).
5. Install the first and last blades and the two middle blades to determine the correct position for the motor. The motor piston should be extended and the pergola blades should be in the open position. After installing the ELERO motor (Section 4.6.1.5), check that the blades close freely when the piston is retracted. The SITO motor is factory-tightened to the beam. It has overload detection and will automatically stop when resistance is detected.
6. Repeat assembly for all blades.

Figure 27

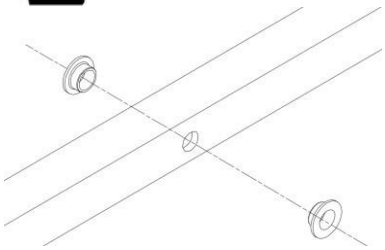
CAUTION: Inserting circlips into the wrong grooves can cause too much longitudinal play in the blade and, consequently, the blade can fall out, which can create a hazard.

Inserting circlips without using a dedicated tool can create microcracks in them and generate cracking and corrosion over time.

NOTE: ELERO motor is powered by 230V AC mains voltage.
It is imperative that the SITO motor be connected via the included 24-volt DC power supply. If connected without the power supply, there is a risk of shock and damage to the SITO motor.

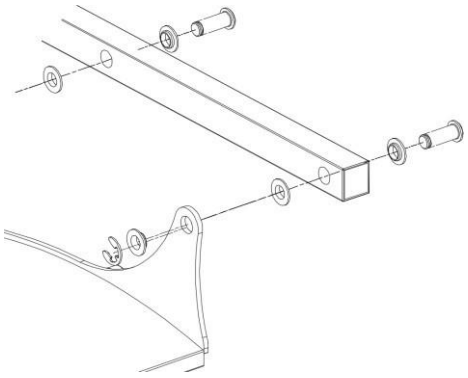
4.6.1.5 DRIVE ASSEMBLY

NOTE: The movement of the motor has been changed. Extending the piston opens the blades, while retracting it closes them.



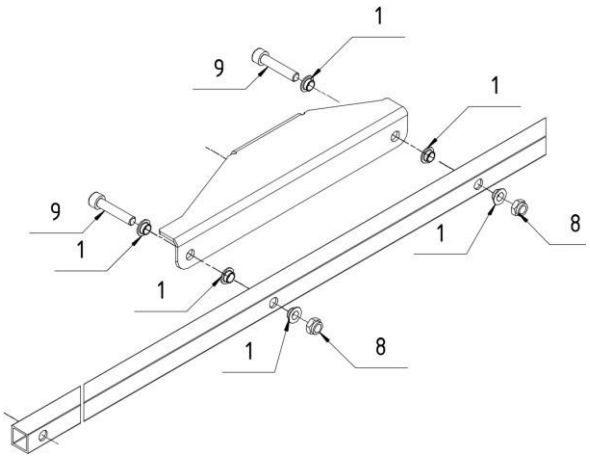
1 In the drive rod (20x20 square profile) fix small sliding sleeves - on both sides of each hole of the rod (Figure 28).
NOTE: Press the sliding sleeves precisely in the holes - lack of deep mounting may result in difficulty in connecting with the blade caps.

Figure 28



2. Apply the drive rod from the outside to the side of the blade drive caps. Starting from either end by rotating the individual blades, supply the hole of the blade drive cap to the hole in the rod. Push the bracket's pin from the side opposite the blade drive cap into the rod (the opposite direction is also allowed) until a mounting groove appears under the other side. Insert the small circlip (fig.29).
NOTE: When inserting the pin, there is a risk of pushing out the sliding sleeves.
It is recommended to use a dedicated tool for setting rings.
3. Repeat the operation for all blades. Skip the 2 blades that connect to the motor guiding bracket.

Figure 29



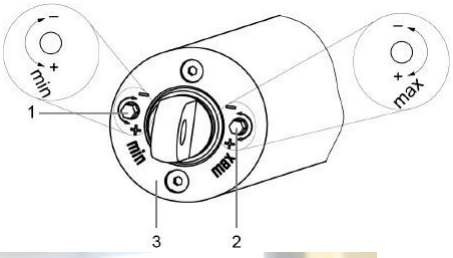
4. Finally, mount the remaining 2 blades connected to the motor guiding bracket with M8x45 screws according to Figure 30.

Figure 30

5. Fasteners of the motor guiding bracket to the rod: 1- sliding sleeve with Igus flange; 8- self-locking nut M8; 9- bolt M8x40.

NOTE: The motor in the current configuration closes the blades by retracting the piston. When inserting M8x40 screws, there is a risk of pushing out the sliding sleeves (be careful and check their presence).

6. Make the electrical connection of the motor. For SITO motor absolutely required connection through the included power supply (24 V DC). Use the control cable to make the blades open and close twice.



7. For the Picolo motor, if necessary, perform closing adjustment by adjusting the limit switches at the end of the motor piston (Figures 31, 32). **In the closed blade position, the rod must not be bent**.
Knob "max" indicates the piston extension stop. The "min" knob indicates the piston insertion stop. One turn changes the extension by 0.7 mm (the entire range allows adjustment up to 50 mm). To turn, use a socket wrench of the size"4". Leave a minimum stroke of 30 mm.
Figure 31

NOTE: Adjust the limit switches only manually with a wrench. **Using a screwdriver/driver risks destroying the limit switch's gear rack.** In practice, perform adjustment only on the "max" knob (fig. 32).

Figure 32

Permissible adjustment range of limit switches

CAUTION: There is a risk of damage to the device due to exceeding the permissible adjustment range.

- The "min-hidden" and "max-extended" limit switches can be adjusted by a maximum of 50 mm in the direction of stroke reduction.
- A minimum stroke of 30 mm should be maintained.

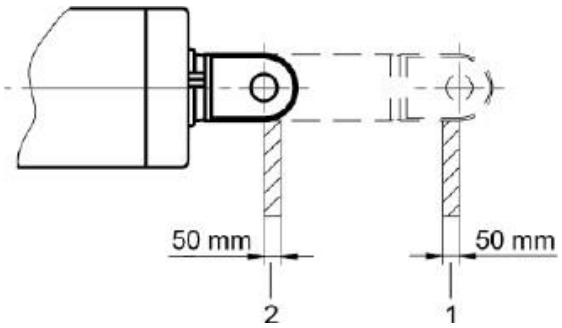


Figure 34 Permissible reduction in motor stroke

NOTE!
Electrical wires should be properly protected.

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

4.6.2 WALL INSTALLATION

Wall installation is done through the roof beam with special M12 aluminium washers and M12 longitudinal nuts securing the product to selected wall anchors (outside Selt supply).
Assembly requires fixing the beams before integrating the entire structure.

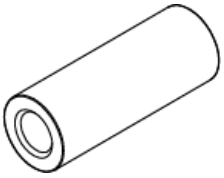


Fig. 35 M12 longitudinal nut

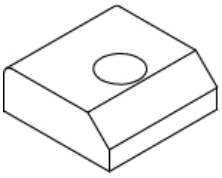


Fig. 36 M12 aluminium washer

Fixings are located at points specified by the Manufacturer. The place of fixing the pergola can be:

- rear/front roof beam.
- Roof lengthwise beam (drive or bearing beam).

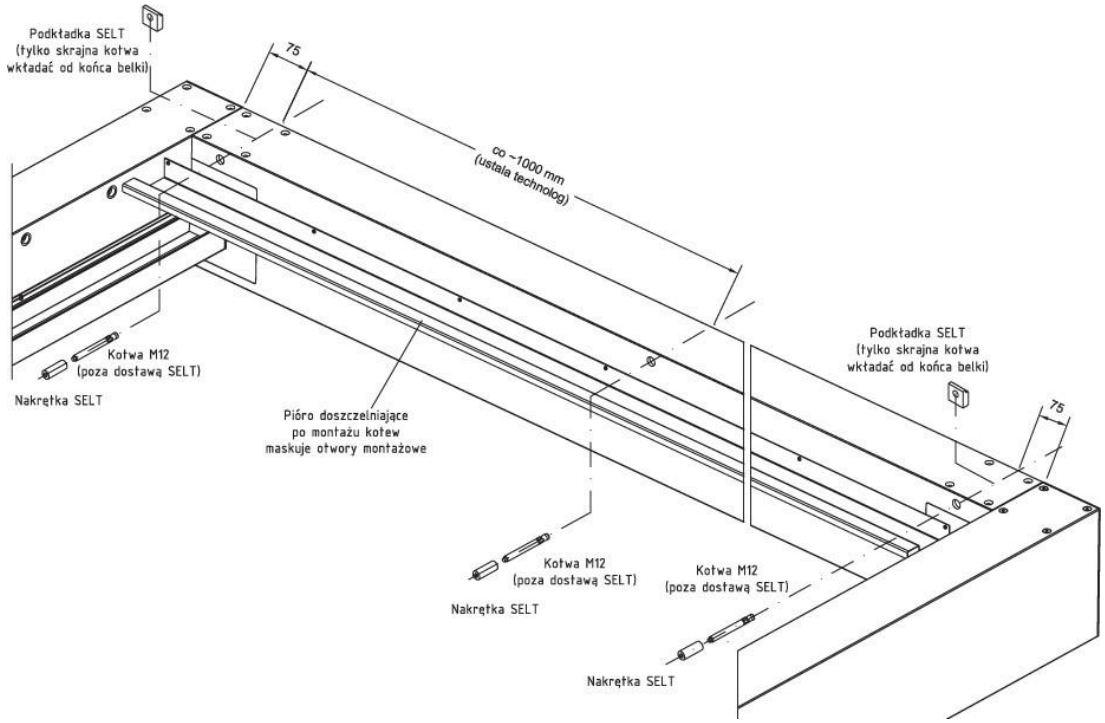


Figure 37 - Wall mounting to rear/front beam.

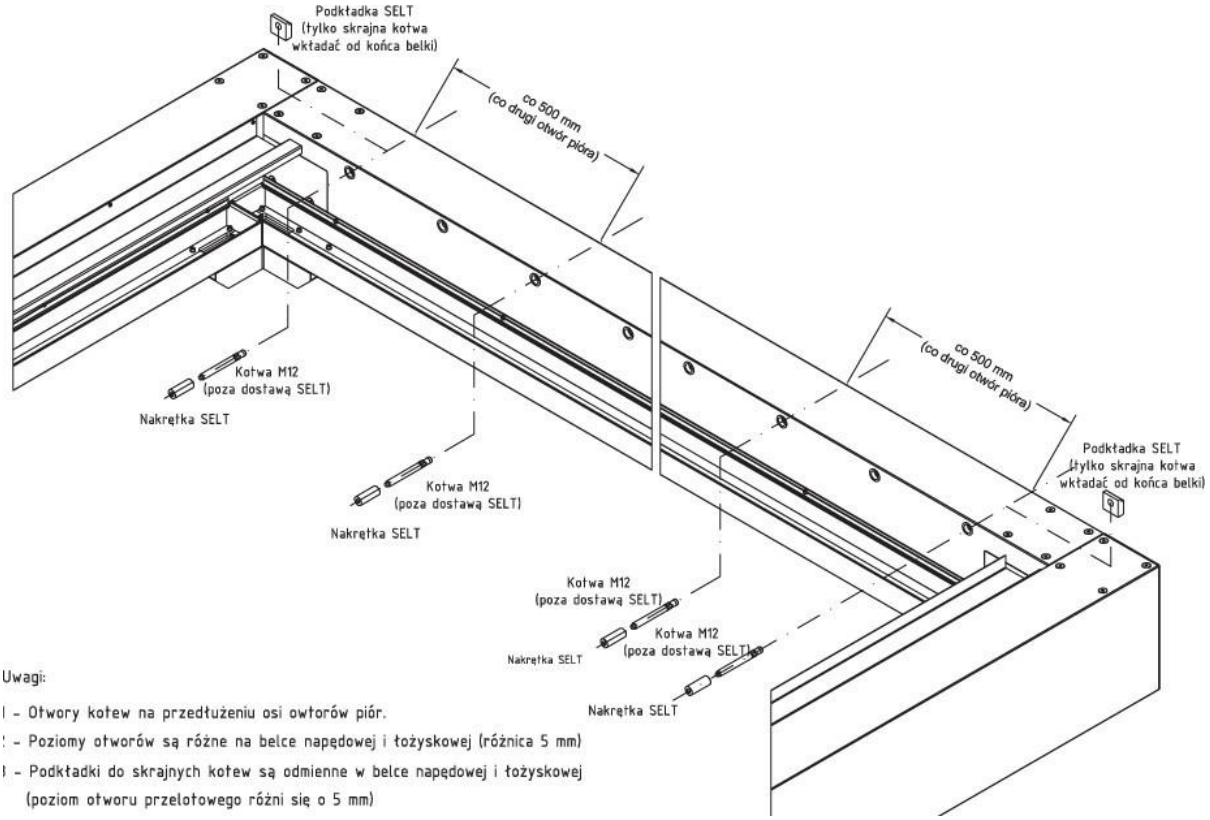


Figure 38 - Wall mounting to the lengthwise beam.

Due to the design of the longitudinal nut together with the aluminium washer, it is absolutely required embedding the anchors, observing the maximum dimensions of the protruding part of the anchor and thread according to Figure 39 and Figure 40.

Failure to observe the distance will result in unsafe installation or insufficient load-bearing capacity of the attachment.

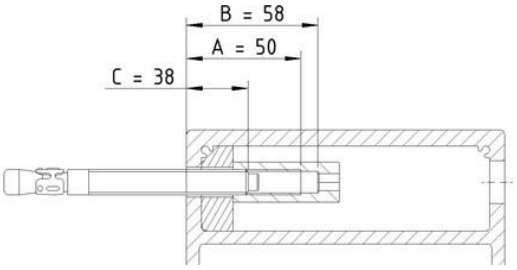


Figure 39 - Dimensions required for wall bracket anchor with aluminium washer

A. Maximum length of the threaded part of the anchor protruding from the ground
B. Maximum total length of the anchor protruding from the ground
C. Minimum length of the threaded part of the anchor protruding from the substrate

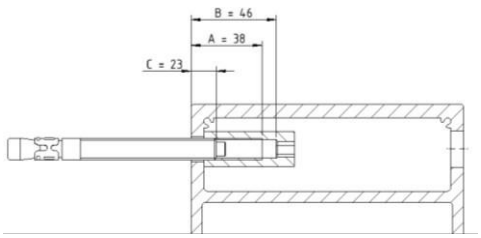


Figure 40 - Dimensions required for wall bracket anchor without aluminium washer

A. Maximum length of the threaded part of the anchor protruding from the ground
B. Maximum total length of the anchor protruding from the ground
D. Minimum length of the threaded part anchors rising from the ground

4.6.2.1 WALL INSTALLATION - REAR BEAM (WITHOUT BLADE AXIS)

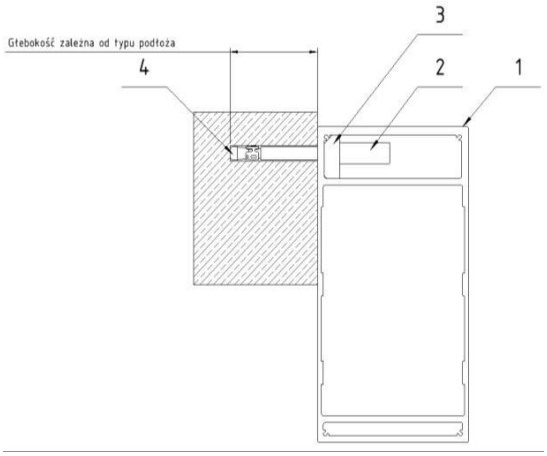
NOTE: Anchors to be provided for anchoring in concrete/reinforced concrete wall with a minimum concrete grade of C20/25 (non-cracked) without insulation: **FISCHER FAZ II 12/10 A4 pin anchor** (stainless steel) or equivalent anchor. Anchor depth min 50 mm. Minimum anchor axis distance from the top edge of the concrete 75 mm, from the bottom edge 265 mm and minimum substrate thickness 120 mm.

- In the case of anchoring to a substrate with a lower bearing capacity than concrete of grade C20/25, it is necessary to make an individual anchoring design taking into account the forces in Table 1.
- In the case of anchoring to a substrate with insulation, an individual anchoring design must be made taking into account the design forces in Table 1 and the bending moment induced by the spacer attachment.

Table 1

	Maximum forces *.
Along the beam (horizontal shear)	1.78 kN
Vertical (vertical shear)	7.78 kN
Pulling out	8.38 kN
Pressing	0.98 kN

* - Forces on a single anchor in the plane of the outer surface of the beam.



1. SB500 beam
2. M12 longitudinal nut
3. M12 aluminium washer (only under the end anchors in the module)
4. M12 anchor

1. Determine the location of the holes for the anchors according to the existing drilling of the outer wall of the pergola beam. Take care to maintain the horizontal plane of the designated anchor axes.

2. Embed the anchors in the ground according to the selected anchoring system.
   NOTE: It is imperative to maintain the dimensions of the protruding part of the anchor according to Figure 39-40.

3. Put the beam on the anchors. In the extreme anchors (closest to the corners) insert M12 aluminium washers from the ends of the beam to the upper chamber (fig.41). Pay attention to the level of the through holes in them - different for the drive and bearing beam. Insert the M12 thrust nuts (fig.35) on the anchor thread through the through hole from the inside of the beam (fig.41). Tightening torque according to the recommendations of the anchor manufacturer.

Fig. 41

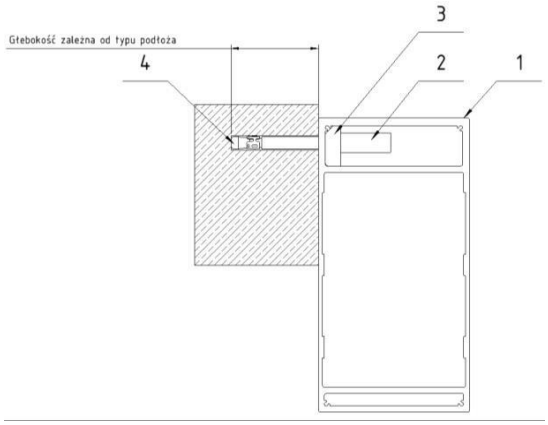
4.6.2.2 WALL INSTALLATION - LENGHTWISE BEAM (WITH BLADE AXES)

NOTE: Anchors to be provided for anchoring in concrete/reinforced concrete wall with a minimum concrete grade of C20/25 (non-cracked) without insulation: **FISCHER FAZ II 12/10 A4 pin anchor** (stainless steel) or equivalent anchor. Anchor depth min 50 mm. Minimum anchor axis distance from the top edge of the concrete 75 mm, from the bottom edge 265 mm and minimum substrate thickness 120 mm.

- In the case of anchoring to a substrate with a lower bearing capacity than concrete of grade C20/25, it is necessary to make an individual anchoring design taking into account the forces in Table 2.
- In the case of anchoring to the substrate with insulation, an individual anchoring design should be made taking into account the design forces in Table 2 and the bending moment induced by the spacer attachment.

Table 2

	Maximum forces *.
Along the beam (horizontal shear)	0.88 kN
Vertical (vertical shear)	4.51 kN
Ripping out	1.68 kN
Pressing	0.03 kN
*forces on a single anchor in the plane of the outer surface of the beam	



1. Determine the location of the holes for the anchors according to the existing drilling of the outer wall of the pergola beam (occurs at the extension of the axis of the blades). Take care to maintain the horizontal plane of the designated anchor axes.

2. Embed the anchors in the ground according to the selected anchoring system.
   NOTE: It is imperative to maintain the dimensions of the protruding part of the anchor according to Figure 39-40.

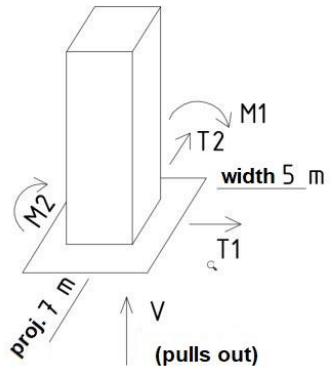
3. Put the beam on the anchors. In the extreme anchors (closest to the corners) insert M12 aluminium washers (fig. 42) from the ends of the beam to the upper chamber. Pay attention to the level of the through holes in them - different for the drive and bearing beams. Thrust nuts M12 (fig. 35) are introduced on the thread of the anchor through the blade hole from the inside of the beam (fig. 42). Tightening torque according to the recommendations of the anchor manufacturer.

Fig. 42

4.7 FOUNDATION GUIDELINES

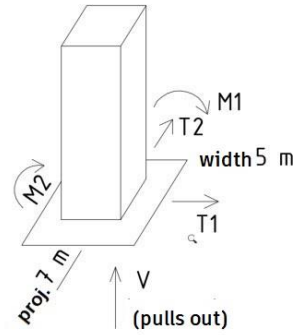
For a free-standing pergola with a maximum size of 5x7 m for the version without wall covers (table a) or with Slide walls (table b) according to the location data (given under the tables below), the maximum design reactions are*:

Table a)

Response directions of positive sign	V [kN].	T1 [kN].	T2 [kN].	M1 [kNm].	M2 [kNm].
	**PERGOLA <u>OUTER</u> SUPPORT 7x5 m (WITHOUT COVERING WALLS)**				
	-5.92 (presses)	-1,75	1,06	-2,59	1,09
	7.65 (pulls out)	-1,67	1,58	-2,21	1,49
	-4,87	1,23	3,02	1,98	**4,28**
	-5,32	**-3,05**	-1,90	**-4,70**	-2,77
	-4,86	-1,25	**3,02**	-2,01	4,27
	CENTRAL SUPPORT OF MODULAR PERGOLA n*7x5 m (WITHOUT COVERING WALLS)				
	-10.72 (presses)	-0,03	0,02	0,18	1,06
	14.12 (pulls out)	-0,04	3,02	0,23	2,87
	-6,44	0,01	4,07	-0,11	**5,74**
	-10,60	-1,84	1,82	**-2,77**	1,88
	9,13	**-1,88**	1,09	-2,39	0,52
	-6,44	0,01	**4,07**	-0,11	5,74

*Reactions were calculated for a pergola model with flow blocking (ϕ=1) for both mutually perpendicular directions. A reduction was applied for a load return period of t=10 years.

Table b)

Response directions of positive sign	V [kN].	T1 [kN].	T2 [kN].	M1 [kNm].	M2 [kNm].
	**PERGOLI <u>OUTER</u> SUPPORT 7x5 m (WITH WALL-SLIDE PANELS).**				
	-12.29 (press)	-0,35	2,23	-0,73	2,23
	8.03 (pulls out)	-2,54	1,57	-3,52	1,47
	-7,60	1,35	**4,55**	2,15	**6,45**
	-8,11	**-3,91**	-1,95	**-5,94**	-2,55
	CENTRAL SUPPORT OF MODULAR PERGOLA n*7x5 m (WITH WALL-SLIDE PANELS).				
	-22.41 (presses)	0,05	3,73	-0,37	4,45
	15.14 (pulls out)	**-3,88**	-5,26	**-4,29**	-2,40
	-11,96	0,02	6,37	-0,2	**-9,47**
	14,01	0,04	**5,75**	-0,23	7,16

*Reactions were calculated for a pergola model with flow blocking (ϕ=1) for both mutually perpendicular directions. A reduction was applied for a load return period of t=10 years.

Location recommendations for SB500 pergolas:

- For the territory of Poland - location in the first and third wind load zones up to 300 m above sea level (base wind speed $vb_{,0=22}$ m/s) . For the second wind zone (coastal) and areas above 300 m above sea level in zones 1 and 3, a comparison of wind load to the recommended zones should be made
- Location adopted for wind category III and IV areas (areas regularly covered with vegetation or buildings or with single obstacles, distant from each other at most a distance equal to their 20 heights - villages, suburban areas and permanent forests, as well as areas with at least 15% of the surface covered with buildings with an average height of more than 15 m - urban areas)
- <u>It is not allowed to</u> leave open the roof blades or the possibility of shading the walls (Slide system should be slid to the poles up to 1 panel) in winds exceeding: for fabric covers 3 wind class according to EN 13659 (45 km/h =12.6 m/s=10.2 $^{kg/m2}$) and for Slide systems 6 wind class according to EN 13659 (90 km/h =26 m/s=40.8 $^{kg/m2}$) as <u>this risks damaging the</u> <u>supporting structure of the pergola and blade fixing elements</u>.
- The possibility of snow load on the roof (up to a maximum of 75 $^{kg/m2}$),
- In special cases:

- use of locations above ground level (i.e., more than 1.2 m in Zone III or more than 6.2 m in Zone IV),
- applications of wall development,
- when using taller poles,
- locations outside the indicated wind zones and/or above the specified height above sea level, an individual analysis should be carried out by a person with building qualifications.

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

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

- Fischer FAZ II 12/10 anchor (if no additional levelling subfloor is made under the footing),
- Fischer FAZ II 12/30 anchor (when performing additional levelling underfoot)

Recommended anchors (chemical):

- Fischer FIS A M12x120 class 5.8 anchor + FIS V resin (if additional subflooring is performed, reduce the depth of anchor insertion).

Do not perform the foundation on non-bearing soils (non-construction embankments, humus, peat, silt, plasticized clay, soils with inclusions of organic parts, wood, rubble, etc.). - then we recommend consulting a geotechnical engineer.

Due to the use of rainwater runoff in posts with water outflow, it is important to carefully densify and elastically seal the area around the footings in the ground due to possible mechanical impacts caused from wind. For the location at ground level, it is necessary to ensure anchorage and support on a stable load-bearing substrate without layers subject to leaching, loosening or crushing (ballasts, thermal insulation).

The soils for the foundation may be friable, which means that in the spring period they may be subject to lifting/uplifting. For them, frost zones have been defined below which the bottom of the foundation should be sunk so as not to expose it to unfavourable soil movement. These are mostly soils containing dusty particles (such as clay, silty clay, loam, clay sand, loess).

Frost depths in the zones marked next:

ZONE I - 0.8 m

ZONE II - 1.0 m

ZONE III - 1.2 m

ZONE IV - 1.4 m

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

a) With non-friable soils min. 70 cm,

b) with friable soils not less than the depth of frost zones for Poland - defined as 80 or 100 or 120 or 140 cm - depending on the region of the country,

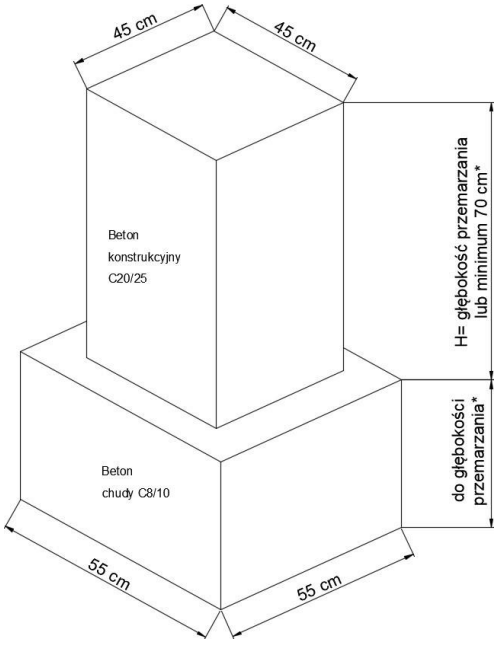
c) Alternatively, in the case of friable soils, it is permissible to reduce the depth of the bottom of the foundation to 70 cm below the ground, provided that the soil below is replaced up to the frost depth with skim concrete C8/10 with a contour of 5 cm more than the contour of the footing, or with bedrock compacted to $I_{D>0}$.67.

In addition:

- The soil at the bottom of the footing trench must not be loosened,
- during the execution of the footings, do not allow the bottom of the excavation to be flooded by precipitation or the ground to freeze (during the period of reduced temperatures),
- Construction of foundations may require building permits.

Recommended footing

Dimensions	Reinforcement



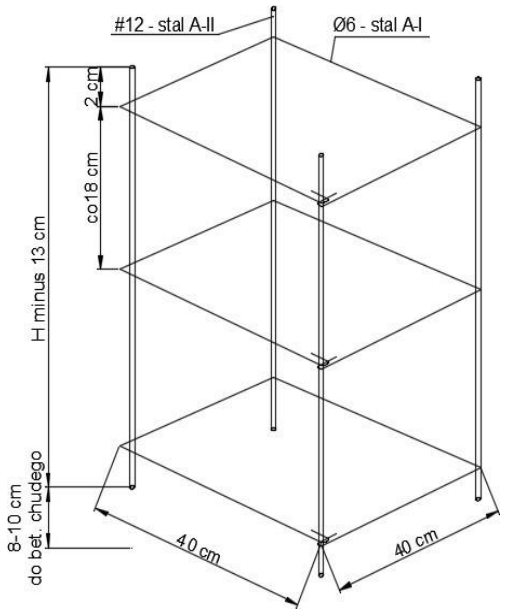


Figure 43 Formwork and reinforcement of the foundation footing

If ballasts are used instead of foundations on stable ground, the required weight of ballast under the post is 320 kg.

5 SYSTEM OPERATION AND PRODUCT SAFETY

The product can only be used if there are no defects.

5.1 GENERAL HEALTH AND SAFETY REQUIREMENTS

- In order to ensure the proper functioning of the product, SELT Sp. z o.o. forbids making any design changes, failure to comply with the above condition relieves the manufacturer from liability for the product, from liability for any damage or loss, and the customer loses warranty or guarantee rights on it.
- During transportation, assembly and disassembly, as well as in the handling, care and maintenance of the product, it is necessary to comply with health and safety and environmental protection regulations.
- The product should be maintained and repaired only by authorized and qualified (trained) persons.
- Persons entrusted with activities related to its day-to-day use, hygiene and maintenance of the product are obliged to familiarize themselves with the instruction manual and observe it in its entirety.
- It is not permissible to clean the product in any way other than that described under "Maintenance and repair".
- Maintenance work and repair of the product should be done only when the product is disconnected from the electricity supply.
- Observe the markings on the product (e.g., pictograms, arrows indicating the direction of movement).
- Care should be taken to ensure that the markings are not covered by a layer of paint or damaged in such a way that they cannot be read.
- The electrical and control installation should be made and inspected by an authorized person
- The switch for controlling the device should be mounted at a height that complies with national regulations for people with disabilities, preferably at a height of less than 130 cm.
- In the event of snowfall, as well as at temperatures below or equal to 0 degrees, do not operate the blade rotation mechanism.
- Pergola SB500 must not be used, including not being under it in case of storm, hailstorm, heavy snowfall, heavy rain (the roof should remain in the open position).
- The working area of the blades should be free of all obstacles and objects (e.g. cables, twigs, leaves).
- It is forbidden to stand, climb, load or hang on the pergola structure of persons or things (especially on the roof blades).
- It is prohibited to attach any objects to the product without the express written consent of the manufacturer.
- It is forbidden to put one's hand between moving blades and other moving parts and to put fingers between profiles.
- The product should be mounted at a height that prevents free access to the blades and mechanisms, and in the case of partial free access to these elements, other safeguards should be used to exclude this access.
- If there are unusual noises from the motor or other components, immediately cut power until it is verified that a malfunction has occurred and, if necessary, have it corrected.
- Heat sources such as grills, open fires must not be under the pergola




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

Special safety requirements apply to children up to 42 months of age. The special use requirements apply to all places where young children have access to or may find themselves, such as homes, orphanages, hospitals, churches, stores, schools, nurseries, public places and other places where children may be present. In the event of a change of use to one of the above, the above comments should be implemented.
Special use requirements also apply in all areas where people with disabilities are present.

Before using the product, it is up to the Purchaser to carry out an individual risk assessment of its use, with particular attention to the safety of children and people with disabilities.

When determining the performance requirements of a product, it is important to consider reasonably foreseeable conditions of use and potential hazards.

Do not allow children to use the roof control device. Keep the remote control device away from children.

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

Danger of head injury if staying in the area of moving roof blades. It is prohibited to stay in the area of working blades and mechanisms

Frequently inspect the installation for signs of wear or damage to the wires. Do not use if repair is necessary.

Avoid contact of the product with hot objects (e.g., heaters, stoves, irons, chimneys, etc.) or placing sources of convective heat (e.g., stoves, stoves, grills, etc.) under the movable roof, as this may lead to damage to the product.

5.3 SPECIAL SNOW LOAD REQUIREMENTS

The manufacturer allows a maximum snow load of up to 75 $^{kg/m2}$ on the roof blades.
Snow can load the roof as an even layer of uniform height.
Do not allow local accumulation and formation of snowdrifts, as well as the sliding of snow from adjacent roofs and buildings onto the pergola.
Due to the different weight of snow due to the time of deposition and the effect of moisture, the weight of snow varies over a wide range. Different snow weights according to EN1991-1-3:

Table E.1: Average volumetric weight of snow

Type of snow	Volumetric weight [kN/m3]
Fresh	1,0
Settled (several hours or days after fall)	2,0
Old (several weeks or months after fall)	2,5-3,5
Wet	4,0

Conversion of the permissible thickness of the cover

	Permissible thickness of snow cover depending on the type [cm].			
Pergola	fresh	settled	old	wet
SB500/SB500R	**75**	**37**	**21**	**18**

With snow accumulation, there may be visible and excessive blade deflection and the possibility of localized blade leaks and gutters.
We warn of the need for continuous monitoring and rapid response to coating thickness increments, particularly during additional wind exposure.

5.4 OPERATIONAL SAFETY

Recommendations and activities:

- The product is safe to use provided that the recommendations contained in the documentation are followed and its installation is correct,
- Use the product only as intended,

- It is forbidden to use a product that does not comply with the requirements of shock and fire safety,
- Keep remote control devices away from children, they are not a toy,
- It is forbidden to exceed the specified operating parameters of the product specified in the technical and operating documentation,
- the operating time of the electric motor is specified in section 2.1 "Technical parameters" (it depends on the type of motor and manufacturer, detailed data are available on the motor manufacturer's website or www.selt.com). Exceeding the specified operating time of the motor can lead to permanent damage to the motor,
- It is forbidden to use an inoperative or decomposed product (e.g., without a switch, etc.), as well as to make makeshift repairs, the use of such a product may cause its destruction, pose a threat to the health and life of the user, and may void the warranty,
- Do not keep any sharp objects or protruding parts near the product, which may snag on the moving roof and damage it,
- The system must not be used (actuated), including the rotation of the blades, in case of heavy snow, rain, in frost or during hailstorms (it should remain in the open position),
- Do not run in frost or icy conditions,
- Do not stay under the product during violent or intense weather phenomena (e.g., heavy rain, intense snowfall, thunderstorm, hailstorm, strong wind, etc.),
- A wind sensor is strongly recommended,
- clean the system regularly and perform inspections at the indicated intervals,
- Use only original spare parts,
- all work related to the inspection and repair of the product should be carried out by a properly trained person with the required authorizations and qualifications,
- It is forbidden to use the product and electrical installation without valid and required inspections and measurements,
- Before performing any maintenance or cleaning work on the product, it is essential to disconnect it from the electrical system,
- in the case of work on the facade of the building to which the product is anchored, it should be disconnected from the power supply,
- watch for any signs of wear or damage to electrical wires,
- if you notice signs of wear or damage to the electrical wires, the product should be disconnected from the power supply, and the defect should be removed with the help of an authorized person,
- It is prohibited to use or leave sharp objects on the product,
- in the event of very noisy operation of the motor or other components, immediately turn off the power supply and have the fault inspected and, if necessary, corrected,
- if an automatic weather sensor (wind/sun) is used, it is necessary to switch to manual mode during the period: when the product cannot be used (among other things, due to lower temperatures, suspected malfunctions, during the period of inspection and maintenance, when the installer operates on the blades and mechanisms of the product); it is also recommended to turn off this sensor and open the roof in case of prolonged absence,
- when performing cleaning of the product, take special care due to moving parts and the possibility of injury; disconnect the power supply, properly mark and secure the work area; before cleaning the product, remove loose dirt with a vacuum cleaner with a soft brush or broom, and then clean with water and mild detergents using a soft cotton cloth, after cleaning always rinse the surface of the blades with water (use cleaning agents in accordance with the recommendations of their manufacturer); It is forbidden to use abrasive agents or pressure washer, which can lead to damage to the paint coating;
- moving or rotating parts of the product should be lubricated with silicone spray every year,
- inspect the product on an ongoing basis and remove contaminants such as branches, leaves, birds' nests and other objects on an ongoing basis; when removing these contaminants, be careful, bearing in mind that these objects may fall on a person in the vicinity of the product or on objects under the product....
- The use of sharp objects with the product can lead to damage to the paint finish,
- Roofing in urban environments is exposed to pollution (smoke, smog, acid rain), which causes the paint coating to become dirty. The product should be cleaned regularly, at least once a year and in conditions of increased pollution and in coastal environments more frequently

Do not run the product in strong gusts of wind, during snowfall, freezing rain, as well as during very heavy rains, as the product may be damaged or destroyed and may endanger people in the vicinity (applies to product installed outside the building). In such cases, the roof blades should be in the closed position.
It is recommended to use wind automation to help meet safety conditions.
You must open the side wall covers above a wind speed of 45 km/h for fabric covers or above 90 km/h for Slide panels. Leaving the curtains closed may result in deformation of the constructions.

If you find any irregularities in the operation of the product, immediately notify the appropriate SELT Sp. z o.o. service. Using a damaged product and attempting to repair it yourself poses a risk to health and life and may void the warranty.

5.5 CONNECTION TO THE ELECTRICAL SYSTEM

After assembling the Pergola SB500, you can proceed to connect the drive and control system to the previously prepared installations: power supply and control. The obligation to prepare the installation lies with the installer/investor.

The connection to the power supply electrical system should be made on the basis of a previously developed individual electrical diagram, taking into account the principles of electric shock protection.
The connection must take into account the environmental conditions in which the product will be used and the recommendations contained in the DTR of the motor. Apbladedix at the end of this document.
Normal environmental conditions:

- Such conditions are found, for example, in residential and office premises, auditoriums and theaters, classrooms (except for some laboratories), etc.

Environmental conditions with increased risk:

- Environments with increased risk include bathrooms and showers, kitchens, garages, basements, saunas, pet rooms, hospital operating blocks, hydrothermal plants, heat exchangers, spaces enclosed by conductive surfaces, campgrounds, oblade areas, etc.

In rooms and spaces where there are conditions of increased danger, it is necessary to use automatic devices to switch off the power supply to the damaged product, such as residual current circuit breakers.

Residual current circuit breakers:

- recommended for use in bathrooms, kitchens, garages and basements,
- It is mandatory to use at swimming and spray pools, saunas, construction sites, powering outdoor equipment, agricultural and horticultural farms, camping sites and recreational vehicles, as well as in fire-prone areas.

Residual current circuit breakers are only a supplement to direct contact protection, they cannot be the only means of protection. Their function is to supplement protection when other means of protection against direct contact are ineffective or when the user is careless.
When connecting, it is necessary to take into account the safety regulations for use, for example, the minimum height, from the floor, on which electrical accessories can be installed.

General guidelines for safe connection:

- The connection must be made by an electrician with electrical licenses and professional experience,
- Observe health and safety regulations when connecting,
- The electrical connection and setting of the motors should be made in accordance with the motor manufacturer's instructions included with the product / available on the website listed below.

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

In accordance with the standards that apply in your country. Debladeds on the receivers used and the control configuration.

Power class	What we power	Installation type	Security overcurrent	Security anti-shock
Class I devices have insulation basic, which provides protection against direct contact. In addition, in order to provide protection against contact Indirect (interference protection or supplementary protection) is used to connect to the protective terminal of the device, the protective conductor (PE) or the protective-neutral conductor (BLADE). This achieves:	230V~ motor with controller Class I equipment	It is necessary to use 230V~3 conductor installation (protective conductor, cable zero and phase)	Fuse matched to the power of the receiver	Residual current circuit breaker

1. protection by automatic shutdown of power supply by using appropriate devices 2. limit touch voltages to levels that do not exceed the values of	24V motor powered by a 230V/24V inverter class device	It is necessary Use of 230V~3 conductor installation (protective conductor, cable	Fuse matched to the power of the receiver	Differential breaker current

the safety touch voltage (UL) established for the given conditions Environmental.	I	zero and phase)		
Class II equipment is characterized by the use of reinforced insulation, which provides both direct and indirect contact protection. Another way of providing protection of electric shock protection in class II equipment is the use of insulation primary and secondary. Since reinforced or additional insulation is used, it is not necessary to connect the device housing to the protective grounding conductor, and you can power devices of this class, for example, through cables Two-wire with IEC C7 connectors. Class II equipment is marked, for example on the nameplate, with the appropriate symbol (the so-called square within a square).	24V motor powered by 230V/24V inverter class II equipment	It is sufficient to use the installation 230V~2 conductors (neutral and phase wire)	Fuse matched to the power of the receiver	Residual current circuit breaker

The electrical connection and alignment of the motors must be made in accordance with the m o t o r manufacturer's instructions. The instructions are included with the product as well as available on the motor manufacturers' websites and on the website:
www.selt.com → OUR OFFER → AUTOMATION

Incorrect connection of the motor can lead to damage to the product or create a hazard.

The motor has a thermal switch that will shut down the drive after about 5 minutes of continuous operation to protect it from overheating (debladeding on external conditions). After being turned off by the thermal protection, wait until it has cooled down. The waiting time debladeds on the type of motor and the ambient temperature
(Typically, after about 16 minutes, the thermal protection should turn off).

NOTE: For the Picolo motor, the risk of damage to the limit switches due to exceeding the
The permissible range of adjustment. See Section 4.6.1.5.

- Adjust the Piccolo motor ends only manually with a size 4 socket wrench.
- Respect the warnings given in the motor manual "Picolo XL linear drive. Quick Installation Guide"
- Before adjusting the limit switches, the plunger should be moved a few centimeters from the set position.

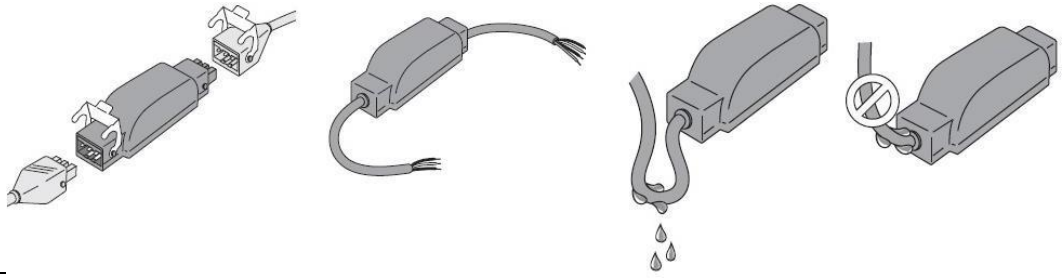
Marking of the motor supply wires (black marked with a number):

1. N neutral
2. R phase, movement in the retracting direction
3. V phase, movement in ejection
   direction PE protective conductor

Ensuring the tightness of the control panels

Observe the following rules when installing the Hirschmann socket and plug:

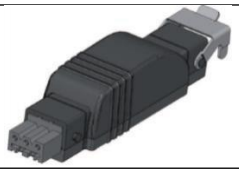
- The gland must be well-fitted to the round wire and well crimped (do not use self-adhesive tape instead of the gland).
- The gasket between the Hirschmann and the control panel must be in place and the clamp properly tightened.
- The control panel should be laid as horizontally as possible, so that water running down the cable does not constantly pile up on the gland seal.
- Since the motor power cable is 2m long, it is probably usual that the control panel is mounted at the end of the cable and is connected to the power cable, so the wires and the control panel lie on the profile and are exposed to large temperature differences (the profile and the control panel is black), UV effects and in case of rain and snow lie in the water.



	Important Wires passing through a metal wall should be protected and insulated with a sleeve or shield. Fix the wires to prevent them from coming into contact with moving parts. If the receiver is used outdoors and the power cable is H05-WF, install the cable in a UV-resistant gutter, such as under a gutter Provide access to the power cord of the receiver: so that it can be easily replaced.
	Warning Always make a loop on the supply line to prevent water bladeetration into the receiver !

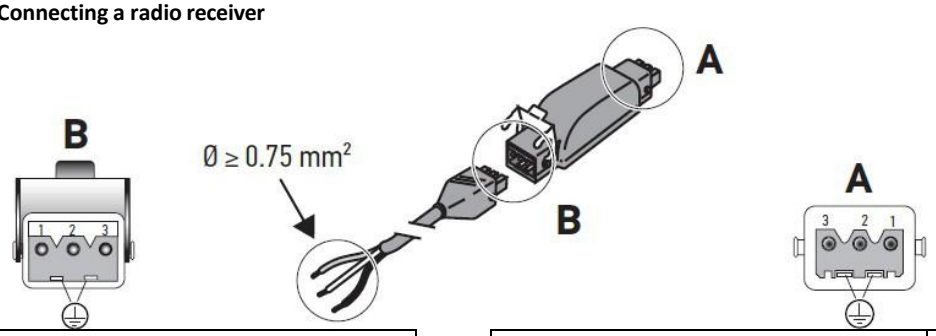
5.6 CONTROLS

Programming of the control (assignment of remote controls, weather sensors and other controls) should be done according to the control manufacturer's instructions.

A typical switchboard in use today is equipped with a Hirschmann socket and plug	

	Sterowniki systemu Pergola	RTS Somfy	IO Somfy		Elero
ODBIORNIK RADIOWY DO SILNIKA (ma instrukcję producenta)	Odbiornik radiowy do silnika **Elero Picolo XL 230VAC**	Uniwersał Slim Receiver RTS	Pergola Slim receiver io + plug		COMBIO 868 RM
	Centralka sterująca do silnika **Sito ANT-38 24VDC bez czujnika Halla**			Pergola io Louver	
	Centralka sterująca do silnika **Sito ANT-38 24VDC z czujnikiem Halla**				
	Somfy Pergola Tilt 300 z czujnikiem Halla				
PILOT (ma instrukcję producenta)	Pilot	Situo 5 RTS	Situo 5 io PURE II		VARIOTEL 5
	Pilot * dla wersji z czujnikiem słońca	Situo 1 Soliris RTS Situo 5 Soliris RTS	Situo 1 A/M io		
	Pilot * dla wersji z czujnikiem słońca, z kółkiem dla ergonomicznej regulacji jasności oświetlenia LED centralki White LED Receiver io		Situo 1 Var A/M io Situo 5 Var A/M io		
CZUJNIK POGODOWY (ma instrukcję producenta)	Czujnik wiatru *	Eolis Sensor RTS	Eolis io 230V		
	Czujnik wiatru i słońca *	Soliris Sensor RTS	Soliris io 230V		SENSERO 868 AC
	Czujnik słońca *	Sunis Wirefree Sensor RTS	Sunis Wirefree sensor io		
	Czujnik deszczu *		Ondeis 230V	Ondeis 24V	
STEROWNIK (ma instrukcję dostępną na stronie www)	do LED *	Outdol Lighting Receiver RTS on/off	WHITE LED RECEIVER io DIMMING		Combio-868 Li
	do promienników *	Slim Receiver RTS 2kW on/off	Heating Slim Receiver io on/off		Combio-868 HE
	Sterowanie przez internet*	Tahoma switch			

Connecting a radio receiver



Power supply Hirschmann STAK3+PE socket		
1	Blue	Neutral
2	Black	Phase
3	-	-
⏚	Green and yellow	Grounding

Motor Hirschman STAS3+PE connector			Wire designation Picolo XL motor
1	Blue	Neutral	1
2	Black	Top	2
3	Brown	Bottom	3
⏚	Green and yellow	Grounding	Green and yellow

The control panel can only be mounted inside the pole, or outside in an enclosure with a minimum of IP65. Proceeding contrary to the instructions of the control panel manufacturer will void the warranty.

For SITO 24 V motor=:
24V= motor wiring harness marking with Hall sensor (six wire version): Power wire:
Connecting (+) to the brown wire and (-) to the blue wire, we get piston ejection. Connecting (-) to the brown wire and (+) to the blue wire, we get piston retraction. black - Hall sensor power supply red + Hall sensor power supply green
- Hall sensor A output white - Hall
sensor B output

Connecting the motor wires inside the Louver controller:

MOTOR CONNECTION WITH HALL SENSOR for the Pergola Louver control unit	MOTOR + **Motor +Vdc**	MOTOR -. **Motor - Vdc**	HALL + **Encoder +Vdc**	HALL -. **Encoder 0Vdc**	HALL1 out **Encoder C1**	HALL2 out **Encoder C1**
SITO 24V=	brown	blue	red	black	green	white

Note: bold font indicates the description as it is on the circuit board in the Pergola io Louver control panel next to the Wago terminals (see Figure 44).

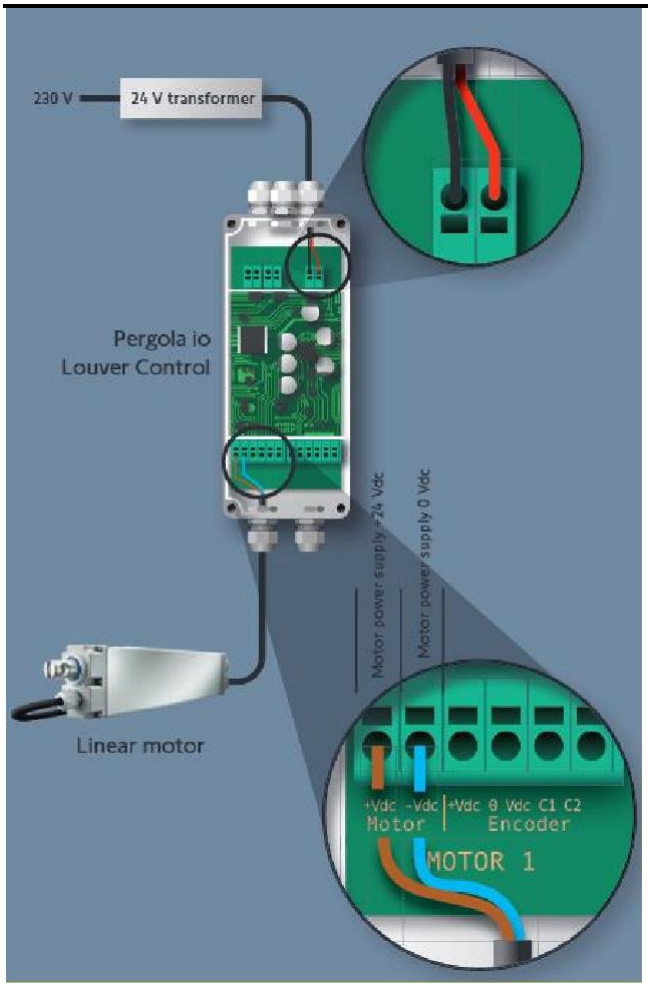


Fig. 44 Diagram of the connection areas inside the Pergola io Louver control panel (descriptions on the lower enlargement are given as bold in the table above)

5.7 COMMISSIONING AND ADJUSTMENT

Recommendations and activities:

- adjust the end positions of the blades (closed and oblade position) during installation ,
- The person adjusting the limit switches should have knowledge and experience in this area,
- Adjustment of limit switches should be carried out in accordance with the DTR of the motor; special care should be taken in any adjustment due to the need to operate in the working area of the blades and mechanisms,
- Before putting the product into operation, electrical measurements should be carried out, primarily to check the effectiveness of the zeroing of the product and the electrical system by a certified person,
- Do not start the drive motor without checking the proper attachment of the product,
- When setting the stops, do not lean or hang on the product, w do not leave tools on the product,

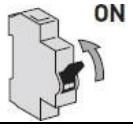
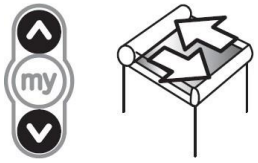
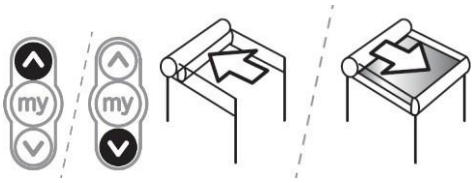
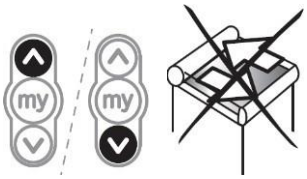
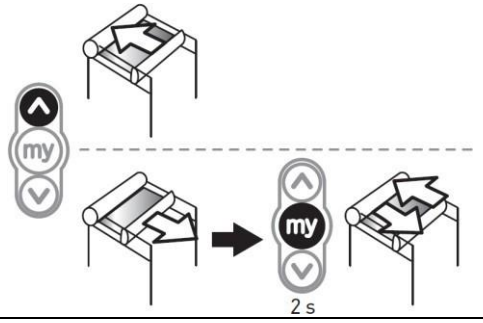
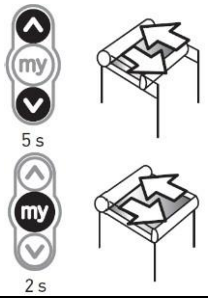
When commissioning a mobile roof, pay special attention to:

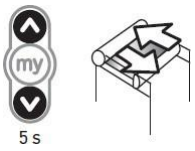
- Correct and equal rotation of the moving roof blades.
- correct tripping of limit switches

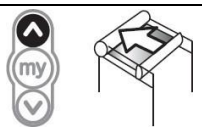
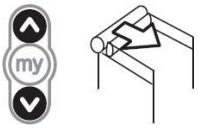
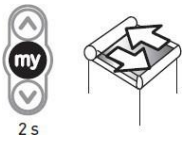
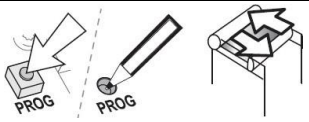
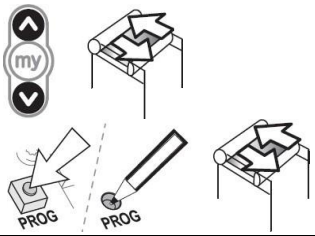
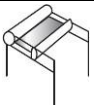
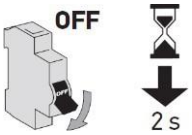
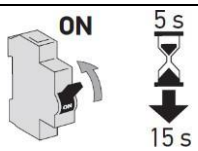
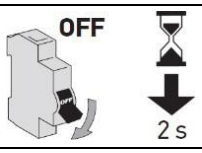
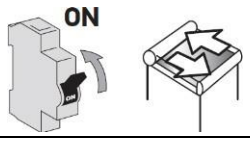
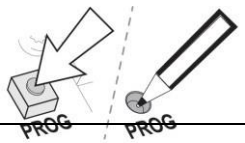
Arbitrary adjustment of end positions, by an untrained person, can lead to injury or death, as well as the product.

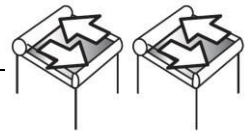
Remote control programming diagram

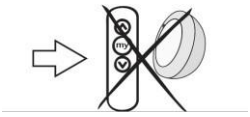
The procedure for assigning the remote control to the PERGOLA SLIM RECEIVER IO and *UNIVERSAL SLIM RECEIVER RTS* radio receiver.

Lp.	Procedure	Illustration	Comments
1	Turn on the power		
2	**The driven product makes a short movement** The linear trajectory of the product has been set up and no Somfy transmitter is programmed. No movement after power on, go to step 3.		***Not applicable to RTS control panel*** Universal Slim Receiver RTS Go to point 3 and then 8
3	**Pilot pre-assignment** Press the **Up** and **Down** buttons simultaneously. The driven product makes a short movement. If it doesn't make a move go to 4.		Go to point 5
4	**Check if the remote is already assigned** Short presses of the up or down button cause continuous movement in the right direction?		The remote control is assigned
	Short presses of the up or down button do not cause movement. **Driven product does not move**		Probably another remote control is assigned to the control panel. Perform a percent deletion according to p. 9
5	**Changing the direction of rotation**		If an io radio receiver, go to 7 (or 6); ***If an RTS radio receiver, go to 8.***
6	**Setting the operating time to 4 minutes**, for remotes with unidirectional radio transmission. Not recommended for Nina, Connexoon and Tahoma		Go to p. 8

7	**Manual, accurate timing** necessary for remote controls with two-way radio transmission. Press the **Up** and **Bottom**, holding it for at least 5		

	seconds. The driven product makes a short movement		
	Press the Up button until the driven product moves to the upper end position.		
	Press briefly, simultaneously on the **Up** and **Down** buttons. The drive causes the product to leave and calculates its running time T(f).		
	When the drive is in the lower end position, press the "**my**" button while holding it down for at least 2 seconds. The driven product makes a short movement. Running time = T(f) (max = 4 min).		Go to p. 8
8	**Assigning a transmitter in user mode** Press the **PROG** button of this transmitter briefly. The driven product makes a short movement.		The transmitter is programmed
	or when the power is turned off		The transmitter is programmed
9	**Delete** Place the driven product in the middle position.		
	Turn off the mains power for 2 s.		
	Turn on the mains power for 5 to 15 s.		
	Turn off the mains power for 2 s.		
	Reconnect the power supply. The driven product moves for a few seconds (7s).		
	If you want to **delete a previously loaded remote control and upload a new one** - Press PROG for 1s until the motor confirms the movement.		Deleted a previously loaded remote control and assigned a new one





	If we want to **restore the factory state** - press the **PROG** button of the local io-homecontrol® Somfy transmitter holding it for ≈ 7 s, until the driven product makes a double movement in one direction and back.		The initial configuration of the receiver has been restored. Turn off the power and then do 1, 3, 5, 7 and 8

Troubleshooting io control

Symptoms	Possible causes	Solutions
The driven product does not work.	The wiring is incorrect.	Check the wiring of Slim io Receiver Pergola + Plug and modify if necessary.
	The drive is in thermal protection mode.	Wait until the drive has cooled down.
	The battery of the Somfy io transmitter is discharged.	Check if the battery is discharged and if necessary replace it.
	The control transmitter is not compatible.	Check compatibility and w Replace the transmitter if necessary.
	The Somfy io transmitter used is not programmed into the receiver.	Use a transmitter already programmed or program the given transmitter.
The driven product stops too early or too late.	The end positions are incorrectly set.	Readjust the end positions.
The "we" position does not work.	The item "we" has been removed.	Program the "we" position.
The "we" position cannot be deleted with the Easy Sun io transmitter.	The transmitter you have is obsolete (index E or earlier).	Delete the "we" position with another assigned transmitter.
The system is equipped with a wind sensor and the driven product moves to the upper end position every hour.	The sensor is assigned/set.	There is radio frequency interference or the sensor is out of operating range. Place the Slim io Receiver Pergola + Plug outside the enclosure.
	Somfy io wind sensor battery is discharged.	Check if the battery is discharged and if necessary replace it.
	No power supply to the sensor supplied with 230V voltage	Check the power supply to the sensor.
Despite the installed wind sensor, in strong winds the driven product does not move to the upper position.	The sensor is not assigned/set.	Refer to the relevant instructions to assign/set the sensor.
The positioning of the product in the end positions seems inaccurate.	The linear track setting is incorrect.	Set the linear track once again.
	The drive is on the verge of overheating.	Wait until the drive has cooled down.

5.8 MISUSE OF THE SYSTEM

Operation of the system - prohibited activities

THE FOLLOWING ACTIVITIES ARE NOT ALLOWED

- Use of the product in the event of a defect or suspected defect; it is recommended to stop further use of the product.
- Report the fault to the supplier / system installer / installer.
- Discontinue use of the product if there are signs of wear or damage to the electrical wiring and immediately report concerns to the direct supplier.
- Do not stay in the working area of the mobile roof while the system is in operation.
- Do not use an inoperative or decomposed system. Use of such a product may damage it and create a danger to the health and life of the user and may void the warranty.
- It is forbidden to use a product that does not comply with the requirements of shock and fire safety.
- It is forbidden to exceed the operating parameters of the product specified in the technical and operating documentation.
- Do not keep any sharp objects or protruding parts near the system, which may snag and scratch it,
- Use not in accordance with DTE.
- Leaving the side curtains unrolled at wind speeds above 49 km/h

Persons assigned to operate

- Do not allow children to play with components used to operate the system, such as a remote control or switch.
- Keep the remote control away from children.

SB500 pergola workspace: risk of crushing, clipping and pulling in

- Do not touch moving parts when closing or opening the moving roof. This may cause crushing, cutting, pulling, wedging between, for example, blades and other parts of the system.
- Within the working area of the mobile roof, there must be no obstacles that can interfere with its operation or cause damage to it.
- In the event of a blade raid on an obstacle, first open the roof slightly and then remove the obstacle.
- It is not allowed to stay in the rotation zone of the blades while they are working.
- No obstacles (cables, branches, etc.) may be in the area of the blades when they are rotated.
- It is forbidden to put one's hand between the moving blades and to put one's fingers in the area of profiles and drive mechanisms.

Automatically controlled products may start automatically . When doing any work on the product, permanently immobilize the product so that it does not start accidentally. Make sure that no dangerous situation occurs.

6 SYSTEM USE AND MAINTENANCE

6.1 USE OF THE SYSTEM AS INTENDED

The system must be operated in accordance with its intended use as specified by the manufacturer. If the system is operated and modified in a manner different from that described in this documentation, the system manufacturer has grounds to disallow warranty or guarantee claims.

SB500 pergolas manufactured by SELT Sp. z o.o. do not require special maintenance. Using the product in accordance with the manufacturer's recommendations provides the user with the correct functioning of the product.

If the product is used in a manner other than that described in this documentation or modified without authorization from SELT L t d . then it is used improperly.
Making arbitrary changes that affect the safe operation of the product is not allowed.

Proper use of the product includes:

- normal use or foreseeable use that does not include, for example, risks taken by the user intentionally or knowingly,
- Application of permissible values of operating parameters,
- compliance with operating recommendations,
- Performing periodic inspection and maintenance of the product,
- comply with the requirements set forth in this documentation,
- adhere to the requirements of the "Technical Specifications" section.

In case of improper use:

- The product may endanger operators,
- The product will be exposed to damage,
- This may adversely affect its functionality,
- do not use the system during maintenance or repair work, and in other cases indicated by the manufacturer.

The gutters in the system are supplied by the manufacturer, as sealed components.
Sealing of joints between gutters during installation is the responsibility of the investor/installer and is not subject to warranty.

SELT Ltd. assumes no responsibility for damage caused by improper use.

Operating the system out of sight can cause serious injury, as
Also damage to the product.
If side curtains are used in the product, they are not rolled up in winds above 49 km/h (13.6 m/s) may result in structural deformation or damage to the system

6.2 INSTRUCTIONS FOR NON-EXPERTS

Non-professionals are those who perform activities related to the day-to-day use and ongoing maintenance of the product.

Before using the product, read this documentation carefully. Thorough knowledge of the

documentation allows for trouble-free and safe operation of the product.

List of activities that can be performed by non-experts:

- Current use of the product through a traditional switch or remote control.
- ongoing inspection of the product by opening and closing the roof blades with continuous observation of all components of the product;
- Have the product serviced, maintained, repaired and cleaned by a specialized installer.

6.3 INDICATIONS OF RISK, FAILURE OR ACCIDENT

Description of residual risk

Risk factor	Description of the correct procedure
Accident	- Disconnect the product from the power supply, - take first aid measures on the injured - call for help tel. 112
Product failure (hazard)	- Disconnect the product from the power supply, - Remove users from the danger zone, - In case of fire, use only ABC-class fire extinguishers, - If necessary, notify the fire department, - notify the service company - if the failure only causes the blocking of the product without additional Threats - check the item "Product failure (blockage)".
Product failure (blockage)	- Disconnect the product from the power supply. - perform an external visual inspection for the presence of foreign elements in the blades or drive, - check visible parts of the wires for insulation damage or discontinuity, - in the absence of apparent causes, check the point "motor overheating" - inform the supplier in order to obtain a solution
Strong wind (above 49 km/h)	- We recommend the use of a wind sensor to close the laths, which is more advantageous in terms of wind resistance of the entire structure. The value of wind speed shall be determined in accordance with the wind class for a given constructions.
Snowfall and icy conditions	- in case of snowfall, set the laths in the snow position (slightly open) - the permissible snow load must not be exceeded - In winter when there is a risk of snowfall and icing of the slats, we recommend opening the slats to the snow position. - It is possible to use an automatic controller that for temperatures close to freezing and rain or snowfall will automatically open the blades slightly (snow position). **CAUTION** If snow or ice builds up on the fins when attempting to start, mechanical damage may occur. It is recommended to use the motor with overload sensor.
Intense rainfall	The system is adjusted for rain protection (for a certain intensity of rainfall). For heavy rainfall, leave the blades in the open position. - The drives have a protection class of at least IP65, and are mounted under a cover (roof). Thus, protection against drops falling from any angle is ensured, but attention should be paid to the position of the power cable in such a way that it raindrops did not run down the cable towards the motor
Electrocution,	The electrical installation must be carried out in accordance with the standards and requirements that apply in the country. - electrical conductors with double insulation and with additional shielding to protect the conductors mechanically and against UV radiation - residual current protection
Short circuit in the installation and fire	- conductors with the appropriate cross-section suitable for the power of the consumers and for the selected overcurrent protection - overcurrent fuse according to the power of the consumers
Motor overheating	The motor is designed for intermittent cooling operation. The motor is equipped with a thermal switch. NOTE: This applies to the Picolo XL 230V motor, for DC motors there is usually no thermal fuse, so the controller should ensure that working hours are limited.

Malfunctioning control system (motor)	– Risks arising from the possibility of damage to control system components. Possibility of a short circuit at the device input. – overcurrent protection of the supply line will be triggered. Possible failure of relay contacts, shorting both contacts of the controller – AC motor receives voltage simultaneously for upward and downward movement, resulting in: more than rated power is supplied to the motor; the motor does not advance/retract the shaft but "hums"; there is a motor overheating and thermal protection will trigger. This has the effect of reducing the life of the motor. The fault described above can occur with typical controllers. It is possible Connections of contacts in the system that prevents the above phenomenon from occurring. - short-circuit of DC motor relay or solid state contacts switches depending on the configuration of the switching elements can short-circuit the supply line and then the overcurrent protection will trip. - faulty motor control - defect in the electrical system
Noise	Noise during drive operation does not exceed 70dBA. Typically, it is between 50 and 60 dBA when measured from a distance of 1m. Noise is generated when the fins are repositioned for the product.
Important additional notes	Technical data can be found on the motor nameplate. The moving parts of the motor should be mounted at a height of more than 2.5 m above the floor level or other surface from which there is access to the motor.

6.4 TECHNICAL INSPECTIONS AND REPAIRS

Current inspections

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

Basic activities including current review:

- Visual inspection and ongoing removal of foreign bodies that may interfere with the proper operation of the product and movement of mechanisms (on an ongoing basis no less than once a day before use and after violent weather events),
- Checking the patency of drains - on an ongoing basis and after heavy downpours,
- Removal of debris from gutters (optional for downspouts) - on a regular basis and after heavy downpours,
- Inspection of the thickness of the snow accumulation - in the case of snow accumulation on the product - daily, and additionally after heavy rainfall or blizzards and blizzards,
- Removal of excessive snow layer (above the permissible value) and possible snowdrifts and overhangs - each time the snow load is found to be exceeded and with uneven distribution,
- Visual inspection and ongoing removal of phytosanitary contamination (as soon as noticed),
- When observing a defect, disconnect the product from the power supply and have it repaired immediately,
- Observation of the opening and closing of the blades with continuous observation of all elements of the product - depending on the frequency of use - not less than once a week
- Before the current inspection for approaching the moving and electrical components of the product, disconnect the product from the power supply (in particular, in such a way that the product cannot be started by automation),
- If the product is placed at a height of more than 2.5 m, it is recommended that the above activities be carried out by a specialized team.

Technical reviews

Performed on commission for a fee by SELT or a specialized installer after the warranty period. The scope is determined in each case by the specialized installation team, and the performance is confirmed by a service protocol.

Cleaning

 It is imperative to disconnect the product from the power supply before cleaning.

Cleaning of metal / aluminium components:

- It is recommended to clean light dirt of accessible metal / aluminium surfaces with water with mild detergents using a soft cotton cloth, always rinse (as needed) after cleaning.
- Remove phytosanitary contamination (as soon as noticed)

Prohibited activities during maintenance of the product:

- It is forbidden to use pressure washers, as well as cleaning agents and sponges and solvents (such as alcohol, gasoline).
- It is forbidden to use cleaning agents with chlorine, ammonia, kerosene, acetone and bleach to clean the system as well as in its vicinity, as this will cause the risk of corrosion.
- It is forbidden to use sharp tools (e.g. wire brushes), cleaning agents that cause scratches (e.g. scouring powders, pastes).
- Do not firmly hold or pull the system or its individual components.
- Do not replace damaged parts with replacements! Use original replacement parts!
- Water must not be allowed to enter the motor.
- Do not deform the blades
- A test of system operation should be carried out. Pay attention to the operation of the system, and if there are any unusual behaviours or noises, report the problem to the direct supplier.

Repairs

Any abnormal/abnormal operation of the system or abnormal noises of its operation, require the user's intervention and reporting to a specialized installer. Repairs are performed by SELT Sp. z o.o. or a specialized installation team under a separate agreement.

7 COMPLAINT / TECHNICAL DEFECTS

7.1 COMPLAINTS (MANUFACTURER'S WARRANTY)

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

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

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

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

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

7.2 TECHNICAL DEFECTS

In case of system defects, you should:

- if possible, open the movable roof and take the device out of service,
- immediately report a product defect to the appropriate specialized installation team.

8 DISASSEMBLY / UTILISATION / DISPOSAL OF THE PRODUCT

Improper disassembly of the system can cause severe personal injury and damage to the system.
Have the system dismantled by a suitably specialized installation team or person with appropriate health and safety training and recovery expertise.

a) Disposal of waste electrical and electronic equipment

At the end of the product's useful life, it is necessary to dismantle it and segregate the various materials and components in accordance with the Decree of the Minister of Climate of January 2, 2020 on the waste catalog for disposal.

Important information on disposal:

In accordance with the provisions of the Law of September 11, 2015 on waste electrical equipment or It is forbidden to place together with other waste used equipment marked with the symbol of a crossed-out municipal waste container. The user, wishing to dispose of electronic or electrical equipment, is obliged to return it to a waste equipment collection point.
The above-mentioned statutory obligations were introduced to reduce the amount of waste generated from waste electrical and electronic equipment and to ensure an adequate level of collection, recovery and recycling. There are no hazardous components in the equipment, which have particularly negative impact on the environment and human health.

Lp.	Subject	European Legal Basis	Polish Legal Basis
1	Waste electrical equipment i electronic	European Parliament and Council Directive 2012/19 EU of July 4, 2012 on waste electrical and electronic equipment (WEEE)	Law of September 11, 2015 on waste electrical and electronic equipment (Journal of Laws 2020, item 1893, as amended).
2	Waste catalog	Commission Regulation (EC) No. 574/2004 of February 23, 2004 amending Annexes I and III to Regulation (EC) No. 2150/2002 of Parliament European Council on waste statistics	Regulation of the Minister of Climate of January 2, 2020 on the waste catalog (Journal of Laws 2020, item 10).

b) Disposal of used batteries

In accordance with the provisions of the Act on Batteries and Accumulators of April 24, 2009, the **end user** is obliged to hand over used portable batteries, which are no longer a source of energy, to a **collector of** used batteries or to a collection site. It is prohibited to place used batteries together with other waste in the same container.

In order to prevent pollution of the environment and causing possible health risks to humans and animals, the used battery should be disposed of in a suitable container at designated collection points.

No.	Subject	European Legal Basis	Polish Legal Basis
1	Used batteries and accumulato rs	Directive 2006/66/EC of the European Parliament and of the Council of September 6, 2006 on batteries and accumulators and waste batteries and accumulators and repealing the directive 91 / 157 / EEC	Act of April 24, 2009 on batteries and accumulators (Journal of Laws of 2020, item 1850)

9 MARKING AND LABELLING OF THE PRODUCT WITH THE CE MARK

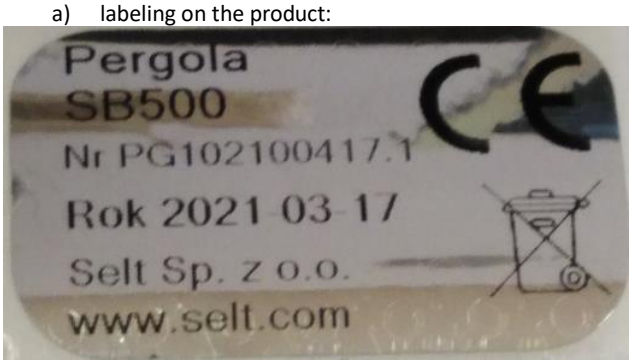
9.1 CONFORMITY OF THE PRODUCT WITH CE

The SB500 Pergola's safe construction is made to comply with EN 13659:2015 (roof) and EN1090-1 (EXC2 class support structure).

TO MAINTAIN THIS CONDITION AND TO ENSURE SAFE USE AND MAINTENANCE OF THE SYSTEM, FOLLOW THE INSTALLATION INSTRUCTIONS AND INSTRUCTIONS FOR OPERATION AND SAFE USE.

9.2 INFORMATION ACCOMPANYING THE CE MARKING

a) labeling on the product:



b) marking on accompanying documents

CE
SELT Sp. z o. o. **ul. Wschodnia 23A, Opole** **POLAND** **18**
Pergola SB500 outdoor louvered pergola **230V/ 50 Hz** **126 Watt Power** **17 / DZ / 2020**
EN 13659 **Sunshade** **For external use.** **Wind load resistance: class 6** **DWU 159 / S / 2018**

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

DEKLARACJA ZGODNOŚCI WE
nr 16/DZ/2020

w myśl dyrektywy maszynowej 2006/42/WE, załącznik II, 1.A

Producent: **SELT Sp. z o.o.**

Nazwa

Ul. Wschodnia 23A, 45-449 Opole

Adres

deklarujemy, że :

Urządzenia: Pergole SB400; SB400H; SB 400 MD; SB500

pod warunkiem zainstalowania, utrzymywania i użytkowania zgodnie z jej przeznaczeniem, obowiązującymi przepisami, normami, instrukcją producenta i dobrą praktyką inżynierską, spełnia wszystkie odpowiednie wymagania następujących dyrektyw UE:

- Dyrektywy 2006/42/WE Parlamentu Europejskiego i Rady z dnia 17 maja 2006 r. w sprawie maszyn, zmieniającej dyrektywę 95/16/WE (Dz. Urz. UE L 157 z 09.06.2006, str. 24)

i jest zgodny z następującymi normami:

- PN-EN ISO 12100:2012P, Bezpieczeństwo maszyn. Ogólne zasady projektowania. Ocena ryzyka i zmniejszenie ryzyka.

- PN-EN 13561:2015-07E, Zasłony zewnętrzne i markizy. Wymagania eksploatacyjne łącznie z bezpieczeństwem.

- PN-EN 13659:2015-07E, Żaluzje łącznie z żaluzjami listewkowymi zewnętrznymi. Wymagania eksploatacyjne łącznie z bezpieczeństwem.

Osoba upoważniona do przygotowania dokumentacji technicznej:

Opole, 11.12.2020

(Miejsce i data wydania)

T. Selzer, prezes zarządu

(Nazwisko, stanowisko)

(Podpis i pieczęć)

selt
sun protection systems

SELT Sp. z o.o.
ul. Wschodnia 23a, 45-449 Opole
tel. 77 55 32 100 fax 77 55 32 200
NIP 7543103311 REGON 363154414

E-STOP Grażyna Wieczorek
ul. Opolska 63, 46-023 Węgry k/Opola, www.e-stop.pl
tel.: +48 784 748 513, kontakt@e-stop.pl

KOMPLEKSOWE BEZPIECZEŃSTWO W PRZEMYŚLE

PROTOKÓŁ

z dnia 10-12-2020r.

z przeprowadzonej procedury oceny zgodności z wymaganiami zasadniczymi WE **PERGOLI SB400/400H/400MD/500** dla SELT Sp. z o.o. w Opolu

ORZECZENIE

Po przeprowadzeniu oceny ryzyka i zgodności, zawartej w dokumentacji oceny zgodności z wymaganiami zasadniczymi WE nr DOZ-20-052, wyd. 3 stwierdza się, że:

PERGOLE SB400/400H/400MD/500

wyprodukowane przez:

SELT SP. Z O.O.
ul. Wschodnia 23a
45-449 Opole

spełniają wymagania zasadnicze WE i mogą być dopuszczone do eksploatacji na terenie Wspólnoty Europejskiej.

Sporządził:
mgr inż. Marek Wieczorek
Specjalista Automatyk
ds. Bezpieczeństwa Maszyn
Certyfikowany Specjalista
Bezpieczeństwa Funkcjonalnego
UDT-CERT / B FUNK / 1 / 180 / 19
.....

E-STOP *Grażyna Wieczorek*
46-023 Węgry, ul. Opolska 63
tel. kom. 784 748 513
NIP 754-204-64-04, Regon 362343745

WĘGRY k/OPOLA, grudzień 2020 r.

10 EXCLUSIONS FROM LIABILITY

The General Warranty Terms and Conditions are available at www.selt.com. If you do not have access to the SELT Sp. z o.o. website, the warranty terms and conditions can be obtained from your SELT Sp. z o.o. sales representative.

10.1 EXCLUSIONS FROM LIABILITY

SELT Sp. z o.o. shall not be liable and shall not indemnify the warranty or guarantee in the event of:

- Damage caused by transportation other than SELT transportation.
- Damage caused by storage, installation, use of the product and maintenance not in accordance with the technical and operating documentation, operating instructions or manufacturer's recommendations, unless these activities were performed by the manufacturer.
- Damage resulting from the alteration of the system, unless the alteration was performed by the manufacturer, on his order or with his written consent.
- Secondary damage, resulting from the use of the device despite the perception of the original defect, unless the manufacturer has been notified and recommended further use. Assessment of the causes of damage is left to the reasonable discretion of the manufacturer. Repair or replacement of the device due to damages referred to in this section may be performed by the manufacturer for a fee.
- Defects due to age and normal wear and tear of product parts.
- Mechanical and electrical damage caused by the user.
- Damage caused by improper installation of the product, performed by a company other than the manufacturer.
- Use of anchoring elements that are too weak or attachment to a substrate (substructure) with insufficient bearing capacity (parameters).
- Damage caused by self-repair.
- Damage caused when the system is used in inappropriate weather conditions (outside of the intended scope of the instructions).
- Damage caused by abnormal weather conditions (lightning, storm, hail, water, fire).
- Damage resulting from accidents and unexpected events.
- Characteristic noises of the system's operation, produced when the blades rotate (this is a product feature).
- Leaks resulting from incomplete closure of moving parts or heavy rainfall.
- Limitation of the degree of water tightness resulting from location, finishing, installation and sealing as well as extreme weather conditions that have a major impact on the water tightness of the product.
- Leaks or leaks between the gutters and the substructure, as the sealing of gutter is performed by the customer.
- Water formed from condensation that may appear on the lower surface of the blades and the lower surface of the structure.
- Formation of water droplets on beams, posts or blades, unless due to a product defect, subject to consultation with the installer, who will assess whether this is due to an installation defect or product defect.
- Splashes of water in the areas of the outlets of the drain holes resulting from the peculiarities of their shape - they cannot be completely avoided.
- Damage resulting from inadequate cleaning with improper instruments, corrosive substances and abrasive substances.
- Atmospheric and phytosanitary pollutants and dirt caused by animals.
- Paint film contamination in urban environments exposed to pollution (smog, smoke, acid rain, dust).
- Damage caused by the influence of other products, objects or suspended accessories not foreseen by SELT.
- Deformation and damage to the structure, especially blades, caused by the load induced by the User (standing, moving or hanging on the product).
- Colour differences in parts that may occur during the manufacturing process.
- Discoloration of elements intensively exposed to weather conditions.
- Corrosion of components operated in an environment with high sea salt content in the air.
- Possible cracks in the glazing due to mechanical damage as a result of improper installation of the system or caused by uneven heating due to the location of installation of the system.

- Differences in the angle of closure of the moving roof blades, which can be about 2°, and are a natural feature of the system due to manufacturing and technological tolerances of the components.
- Damage caused by commissioning in frost and other natural conditions.
- Damage caused by snow accumulation on the blades above the permissible values and with uneven distribution of snow gusts- in case of snowfall, the roof should be in the snow position.
- Damage caused by the use of equipment and flooring not intended for outdoor use under the product.
- Damage resulting from activating the blade rotation mechanism in winds above wind class 3 (49 km/h) and leaving the blades open in winds above the mentioned class.
- Deflections of the beams of the structure not exceeding the values specified in EN 1090-1 and Eurocode 9, are a natural feature of the system
- Damage or deformation caused by non-winding of the side curtains above wind speeds of >49 km/h or for Slide above 90 km/h.
- Possible stagnation and outflow of water remaining in blade gutters
- Remaining water in traps at the connection of gutters (for systems with 4 gutters).
- For pergolas with full wall shading at blade lengths over 3.5 m, there may be light reflections and clearances at the junction of adjacent blades due to technological standards.

Selt is also not responsible for:

- A product in which the CE sticker has been removed or is illegible,
- A product in which pictograms informing about particularly important hazard and safety information have been removed,
- Improper use of the product or not in accordance with its intended use,
- Damage caused by voltage fluctuations in the network if they exceed 5% or faulty control,
- To prevent overheating of the product, heat sources such as grills, open flames must not be within the system.
- SELT Sp. z o.o. is also not responsible for any events resulting from non-compliance with this documentation, as well as the consequences of events that the installer, investor or specialized installation team should take into account when conducting the investment or work performed.

Notwithstanding the above, the scope of SELT Sp. z o.o. liability is limited and results from the agreement concluded with the purchaser of the

APPENDIX 1 (PICOLO XL MOTOR MANUAL)

APPENDIX NO. 2 (SITO MOTOR INSTRUCTION) MANUAL)