

# 7.2 DT-E

# **TECHNICAL AND OPERATIONAL DOCUMENTATION**

# ASSEMBLY INSTRUCTIONS,

**OPERATION AND SAFE USE** 

(original instructions)

7.Sunbreaker cover

7.2. Sunbreaker 210 movable type A and B

## PRODUCT NAME:

SUNBREAKER 210 MOVABLE TYPES A
 AND B

# THE PRODUCT MANUFACTURER'S DESIGNATION:

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# **PRODUCT SAFETY MARKING:**

The product meets CE safety requirements.

# THIS TECHNICAL AND OPERATIONAL DOCUMENTATION:

- is valid from: 01 August 2023.
- applies to the product versions marked above.

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# 1. INTRODUCTION

# 1.1. PRODUCT SAFETY NOTES

The product has been manufactured in accordance with the latest technical knowledge in design and manufacturing technology and is supplied in a condition for safe use.

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Lp.	Subject	European legal basis	Polish Legal Basis
1	Blinds including external slatted blinds. Total operational requirements with security	EN 13659:2015	PN-EN 13659:2015
2	Construction products (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), as amended.
3	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. (Dz.U.2008 nr 199 poz.1228) with as amended
4	Low Voltage Directive (LVD)	Directive 2014/35/EU of the European Parliament and of the Council	Ordinance of the Minister of Development of 2.06.2016 on requirements for electrical equipment (i.e. Journal of Laws 2016 item 806) Act of 13.06.2019 on the conformity assessment and market surveillance system (Journal of Laws 2019 item 544) with as amended
5	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 conformity assessment and market surveillance system (Journal of Laws 2019 item 544) of as amended

Related documents: Declaration of Performance (external products), Declaration of Conformity (products with motor) 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
Ĩ	INFORMATION	Read the operating instructions before using the product Observance of the operating instructions is a prerequisite: - failure-free operation of the product, - intended use, - the retention of rights under, inter alia, the guarantee For the safety of persons, keep the instructions.
I	INFORMATION	No harmful or hazardous consequences for people or objects.

	NOTE !	Situation likely to cause damage to the product or requiring action by the user. No risk to humans.
	DANGER !	This symbol indicates all safety information, the non-observance of which poses a risk to life or health of persons. Danger to life or health. Risk: danger of serious injury or death. Dangerous operation likely to cause injury or product damage.
4	WARNING !	Risk to health or life through electric shock.
X	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): Sunbreaker 210 mobile type A and B

Sunbreaker: an external, movable sunshade with slats mounted horizontally or vertically in front of or on a window or anywhere within the external surface of a building containing rigid infill. Cannot be a stand-alone partition in an empty opening.

Blade: Part of the product, made from extruded aluminium profiles, designed to shade horizontal or vertical surfaces (building facades, pergola walls). The shape of the blade provides an aesthetically pleasing shield from the sun's rays.

**HORIZONTAL ASSEMBLY (ROOF OR WALL HORIZONTAL)** - The axis of rotation of the blade is in the horizontal plane, the system guide is located on the left and right side of the system.

**VERTICAL INSTALLATION (WALL VERTICAL)**- The axis of rotation of the blade is in the vertical plane, the guide of the system is located at the bottom and top of the system. The drive is always located at the bottom of the system.

### 1.4. PURPOSE AND CONTENT OF THE DOSSIER

The products manufactured by **SELT Sp. z o. o.** are the subject of this documentation.



The operating and safety instructions, together with the engine manual, must be handed over to the end user.

# IMPORTANT SAFETY INSTRUCTIONS WARNING - FOLLOWING THESE INSTRUCTIONS IS IMPORTANT FOR THE SAFETY OF PERSONS KEEP THIS INSTRUCTION



The documentation is valid together with the product-specific information available at <u>www.selt.com</u>.

The documentation includes:

- important recommendations for the installation, use and maintenance of the product,
- important recommendations for transport and storage,
- guidelines, the observance of which will allow for many years of trouble-free operation of the product.

# SELT Sp. z o.o. will not be held liable for damages resulting from non-compliance with 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 in order to improve the quality of the product handling and safety of use.

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

# 2. TECHNICAL PRODUCT INFORMATION

The technical product specification is available by logging on to <u>www.selt.com</u>.

# 2.1. TECHNICAL SPECIFICATIONS

Dimensions:			
Maximum width	4000 mm		
Maximum height	6020 mm		
Minimum number of blades:	5 blades - motor; 3 blades - manual drive		
Blade spacing (module)	200 mm		
Electric drive linear motor with parameters:			
- supply voltage	230V/50Hz		
- power consumption	35 W		
- degree of protection	IP 55		
- working time	max. 4 min.		
- feed force	450 N		
- feed rate	12 mm/s		
- leap	200 mm (end stops preset at 150 mm for Sunbreaker system)		
- radio frequency for remote control by remote control:	433.92 MHz		
Assembly:			
On-site assembly	For external support structure or window recess As horizontal cover over glass gardens*		
Blade rotation range	Up to 90° from the blade start position. There can be a 10° difference in the limiting marking of blade rotation.		
Mounting options	Vertical, horizontal, with horizontal or vertical blade arrangements		

\*with special snow clearing requirements in winter conditions

Detailed data on the performance of individual engines is available on the engine manufacturers' websites and on the website:

<u>www.selt.com</u>  $\rightarrow$  OUR OFFER  $\rightarrow$  AUTOMATION

Connection to electrical installation: Electrical cable approx. 1 m long

### 2.2. PRODUCT CHARACTERISTICS

**The Sunbreaker 210 movable** is a highly efficient external solar shading system that can also serve as a decorative architectural element of a building. The blades and guides made of extruded aluminium ensure the lightness of the structure while offering great strength. Sunbreaker 210 is a movable system, w h i c h, due to its construction and purpose, does not allow the full shading effect of the room to be achieved, with a blade rotation range of up to 90° from the starting position of the blades, with the proviso that, due to the c o n s t r u c t i o n characteristics of the system, the difference in the limit mark of the blade rotation may be 10°, and the manufacturer is not responsible for technical deviations resulting from this condition . Sunbreaker is an excellent way of enhancing the architectural form of a building and significantly reducing the energy used to air condition rooms.

### They are characterised by the following features:

- are designed for mounting on window openings or external supporting structures,
- as a horizontal sunshade over the conservatory canopy (subject to a snow clearance regime),
- restrict sunlight from entering the room,
- increase the proportion of diffused light in a room,
- protect the room from overheating and thus contribute to improving the thermal comfort in the room,
- reduce the costs associated with room air conditioning,
- reduce noise penetration into the building,
- do not emit toxic substances during operation,
- Noise emissions from an electromechanically driven product (related to the working movement of moving parts, produced by the electric motor during operation) are not considered a significant hazard and are a matter of comfort, the sound pressure emission level being less than or equal to 58 dBA,
- motors have enclosure protection level IP 55,
- guards for moving parts are designed and constructed to ensure operator safety when properly operated.

### The following specific features should be noted when ordering the product.

1) Type of blades and plugs

2 blade models with cap combinations possible



The blade has on one side two linear tabs along the axis (strobes above). These are located on the façade side or the underside of the blade (for the roof system).

2) Direction of blade rotation



CLOCKWISE

COUNTERCLOCKWISE

When closing in the opposite direction, the blades tilt outwards from the façade in a horizontal wall position and block the sun's rays. In the compliant direction, the blades drop towards the façade and the sun's rays reach the façade. Motor

3) Drive lever location (counting blade number from the bottom of the system)



The outermost blades are excluded. If the motor and drive are selected on the top two blades in a vertical runner arrangement, the motor piston must point upwards (not recommended).

The drive is located on the guide on the <u>facade side or underside</u> (for the roof position). The drive lever is not symmetrical; its positioning is important in order not to damage the motor piston - the installation method is default and may need to be adjusted.

The drive side (on the chosen track) is understood to be left or right as seen from outside the façade or from above in the case of a roof system.



Pay particular attention to the dimension marked as width in the drawing (relevant in vertical wall positioning). Width always means length along the blade.

5) <u>Size of light when blades are closed</u>

Refers to the clearance when the blades are fully closed from the outline of the outermost blade to the end of the guide length including the cap.



The default assumption is that the blades do not protrude beyond the ends of the guide outline. The optimum length of the guide (including the end caps on both sides) is 420mm +n\*200mm. This gives, when the blades are closed, a clearance of 5 mm between the edge of the blade and the end of the guide cap.

# 6) <u>Guide hole</u>

The system guide has pre-drilled 23.3 mm diameter holes every 200 mm. These cannot be plugged. The adoption of any guide length may result in chunks of cut ovality being left at the ends. The length of the guide is reduced by the thickness of the end caps (3 mm each).



# 3. TRANSPORT AND STORAGE OF GOODS

### 3.1. THE COMPLETENESS AND QUALITY CONDITION OF THE DELIVERY

SELT Sp. z o. o. makes every effort to ensure that the goods conform to the order. However, it is up to the Purchaser to check the completeness of the product and this should be done at the time of receipt.

Any discrepancies should be reported immediately to the driver/warehouseman/assembly team and noted on the delivery note under pain of losing any claims.

Quality checking for overt defects is the responsibility of the Purchaser and should take place at the time of acceptance of the goods. Overt defects are considered to be mechanical damage, scratches, cracks, etc.

SELT Sp. z o.o. undertakes to replenish or replace any parts with obvious defects as quickly as possible.

### 3.2. GENERAL CONDITIONS FOR TRANSPORT AND STORAGE OF THE PRODUCT

List:

- the product is pre-packed in a cardboard box to prevent damage during storage, in transit and during movement to the final installation site,
- the products to be transported/stored must be positioned in accordance with the arrows on the product packaging,
- products should not be stored in more than two layers because of the possibility of crushing the packaging, which may result in permanent damage to the product,
- products placed on the means of transport must be secured against displacement and damage during transport (e.g. spacers, safety belts, etc.).
- during transport the products must be protected from rain or snow,
- storage areas should be dry, ventilated and protected from the harmful effects of the weather (sun, rain, etc.),
- when the weight of the product exceeds 25 kg, its handling to the place of final assembly must be carried out by at least two persons.

3.3. DESCRIPTIONS WHICH MUST MANDATORILY APPEAR ON THE PRODUCT PACKAGING.



Before installing and using the product, carefully read the technical and user documentation available by logging on to <u>www.selt.com/dte-pl.</u>

# 4. ASSEMBLING THE PRODUCT

This chapter contains the general requirements for the installation of the product.

Correct installation is a prerequisite for the smooth functioning of the product.

SELT Sp. z o.o. recommends the use of qualified fitters who are skilled in the proper installation of the product.

### General requirements for safe installation

- The general rules of the art of construction must be observed.
- Observe the 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 are not permitted as fixing materials).
- The product should be fixed to permanent building elements (walls, lintels, steel structure, aluminium structure, window joinery).
- The base to which the slides of the product are to be attached should be a structure with suitable parameters.
- The product must not be fixed to elements that do not provide adequate load-bearing capacity.
- Installation shall be carried out to even, dry masonry surfaces of adequate strength, executed in accordance with the general rules of the building trade.
- In the case of metal structures joined together in accordance with the current rules for joining metals, assembly is carried out to materials with the appropriate wall thickness.
- Prior to installation, all unnecessary objects, including electrical cables, must be removed from the installation area (check the course of the installation in the area of the fixing points to ensure that they are not damaged), the installation area must be marked and appropriate safeguards provided to protect people.

• Before installation, all mechanisms not necessary for the operation of the drive should be disabled.

# Information table for the substrate to be used for the installation of the product

The product should be mounted to a substrate with the right parameters or a substructure with the right parameters. The aforementioned requirements for the substrate and substructure require the assessment of a specialist and are the responsibility of the developer and contractor.

Other installation methods than those suggested by SELT are possible, provided that the requirements of building and safety knowledge are observed. In any case, this requires specialist knowledge and is done at the risk of the builder or contractor.

It is recommended that arrangements be made in this regard with an authorised designer.

### 4.1. REQUIREMENTS FOR SAFE INSTALLATION OF THE PRODUCT AT HEIGHT



The installation of the product is particularly dangerous as it involves work at height and poses a particularly high risk to human health and safety, in particular falls from height.

It is the responsibility of the installer (hereinafter referred to as the Installer) or the party commissioning such work (hereinafter referred to as the Investor) to ensure that a health and safety plan is drawn up during installation. The developer/installer should specify specific health and safety requirements when carrying out work at height, and in particular ensure:

- direct supervision of their execution by persons designated for this purpose (e.g. works manager, f o r e m a n ),
- appropriate safety measures, primarily fall protection equipment,
- detailed instruction of workers performing work at height.

Work at a height of more than 2 m where personal protective equipment against falls from height is required must be carried out by at least 2 persons.

Work at height should be organised and carried out in a way that does not force workers to lean beyond the handrail of the railing or the outline of the device on which they are standing. It is not permitted to stand on parts of the product.

The Installer/Installer must ensure that only authorised and appropriately trained and informed persons have access to sites where works at height are being carried out. The Investor/Installer shall inform of the works at height being carried out and of the necessary safety measures to be observed during such works by persons present or likely to be present in or adjacent to the area where such works are being carried out.

### 4.2. PREPARATION FOR ASSEMBLY

- Unpack the product and check that all the components necessary for installation are present.
- Before installation, check the dimensions of the window opening or substructure against the product specifications on the packaging.
- Before installation, check that the substrate has sufficient load-bearing capacity for safe installation and operation.



Please note that the pins, screws or bolts securing the product to the structure depend on the type of substrate and are therefore not included with the product and are to be purchased by the purchaser or installer.

### 4.3. GENERAL PRODUCT ASSEMBLY GUIDELINES

- The attachment of the guards/handles to the structure is carried out with dowels and screws (not included in the product).
- In the case of a reinforced concrete or solid brick lintel, wall plugs sized to the load-bearing capacity of the component to be installed are used for installation.
- In the case of walls made of hollow-core materials, the appropriate mounting systems designed for this type of material are used for installation.
- The substrate or substructure for the installation of the system slides, must ensure a flat and even structure and be parallel to each other for the correct installation of the system. Exceeding the permissible deviation in parallelism of the guides results in:

- for a width error of up to 5 mm, there will be a loss of contact between the blade and the drive (the blade will rotate inertly)

- for an error of >5 to 7 mm the blade will fall out of the stopper rings - the blade will not be parallel and one end will only rest on the mandrel - failure,

- for an error >15 mm the leaf falls out of the guide failure posing a hazard
- The product must be protected from contamination (e.g. m ortar, installation foam, silicone) as this can damage it.
- The use of chemicals for installation which contain bituminous or other components that react with the product components is not permitted.



Incorrect installation can contribute to dangerous situations for the user.

### 4.4. ASSEMBLY TOOLS

### List of installation tools:

- drills for metal and concrete,
- impact drill,
- ladder/scaffolding,
- screwdriver,
- hammer,
- measure,
- pencil/writer,
- spirit level,
- pin spanners (Allen keys),

### 4.5. MOUNTING

• cutter

Instructions for assembly, operation and safe use available at <u>www.selt.com</u>.

Before installation, measure the length of the aluminium section of the blade (1) and the distance between the outer surfaces of the profiles/the width of the installation recess (2). Subtract the measured values from each other.



If:

- the difference in dimensions is less than 110 mm the installation of the system is not possible
- the difference in dimensions is between 110 and 115 mm, the blades can be fitted
- a difference in dimension between 115 and 122 mm is only permissible in accordance with the guidelines set out in section 4.5.2. 4.5.2. 8
- the difference in dimensions exceeds 122 mm there is a very high probability that the blade will fall out and cause a danger to life and health, in this situation it is <u>forbidden to install</u> blade<u>s</u>, the width of the blade must be correctly adjusted to the width of the profile.

4.5.1. INSTALLATION OF SLIDES





Unscrew the "Guide bar - fixed part" from the slide assembly and apply it to the substructure. Measure and drill holes and fix the "Guide rail - fixed part" to the external support structure

Fit the guide on the movable part of the drive side and the non-drive side and fix with ST 4.8x9.5mm sheet metal screws. Fig. 4 Fit the guide caps.



retighten the nuts.



#### 4.5.2. INSTALLATION OF BLADES

1. The installation of the blades should start by determining the direction of the opening of the blade in the Sunbreaker unit and the side of the drive (motor) mounting. The smooth side of the blade (without the moustache) is the outer side, the side with the moustache should face t h e façade. Fig. 5 and Fig. 6 show the arrangement of the blades in the closed and semi-open assembly



NOTE: For a vertical installation with a vertical blade system, the blade rotation mechanism should be located in the bottom guide. For a system over 4 m, it is required to locate the drive lever in the middle of the runner length to achieve optimum system operation.

NOTE: For the motor drive, the drive lever must face the notch (pos.1) towards the motor piston. If the orientation is the other way round, unscrew the self-locking nuts (pos. 2) securing the drive lever in



Fig. 6 Type B blade

Fig. 7 shows how the drive plugs are fitted. In a properly fitted blade, the tab on the drive plug should operate 2. (along with the rotating blade) in the 9 a.m. to 12 p.m. or 12 p.m. to 3 p.m. If the rotates within the range of the lower quadrant, mounting is not permitted.





3

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 Determine the position of the adapter groove and slide the driven side of the blade into it. The visible tab on the cap, and the mounting slot in the adaptors should move in quarters between 9-12 or 12-15

Fig. 11

 Move the blade towards the drive so that the adapter is against the driven part of the blade

Fig. 12

8. It is necessary to press the adaptor carefully to the full depth into the slot with the tongue plug.



ATTENTION: in the event that the metal pin of a blade cannot be fully pressed into the socket in the guide, it is permissible to

adjustment by gently driving the pins at the ends of the blade with a plastic hammer into the plug (the plug has a through hole for the pin).



If the difference in dimensions described in paragraph 3.6.1 is in the range 115 - 122 mm, the resulting play on the bearing side should be compensated by fitting retaining clips.
 3.6.1 is in the range 115 - 122 mm, the resulting play on the bearing side must be compensated by fitting retaining clips.



Fig. 15

8-12 mm one clip should be used

If there is play in the area marked on the drawing:





10. Connect power and control, check end positions and adjust if necessary.

# 4.5.3. MOTOR INSTALLATION



**NOTE1:** On the SB210 system slide, there are no pre-drilled fastening bores. engine mount.

**NOTE2:** The motor must be mounted so that the notch in the motor drive lever faces the motor side (the motor lever can be unscrewed and rotated if necessary).

To ensure proper operation, the engine should not be exposed to intensive contact with water. **NOTE3:** The drive must not be mounted on extreme blades.



- 1. The indentation of the lever (item 1) should be directed in the direction of the engine piston (fig. 17). If the cut-out is reversed-unscrew the drive guide and rotate the lever and reassemble- section 4.5.1.
- 2. We recommend that the engine piston extends downwards with the aim of minimising the flow of condensate through the piston into the engine.

Fig. 17

3.Tighten the jaw chuck in the middle of the motor housing (jaw opening side towards the piston) to the motor housing (factory grooves on the narrower housing side). the fasteners included in the motor package (fig. 18).



Fig. 18

Original instructions DT-E 7.2: SUNBREAKER SYSTEM 210 MOVABLE TYPE A & B. Edition 8 / August 2023 / EN





- Using the assembly cable, carry out a complete retraction of the piston of the pièce de résistance. Close the blades in the product.
- 5. Connect the fork at the end of the motor piston to the motor arm lever protruding from the guide with the supplied M8x30 screw and accessories (fig. 18).

**Note**: some accessories are included in the package with the motor.

## Fig. 18

Positions according to fig.18: 1-motor; 2-bearing washer fi15x6; steel washer fi6; 5-self-locking nut M6; 6-bolt M6x30

- 6. Place the foot of the motor mounting jaw against the side of the guides in such a way that there is no collision between the motor body and the blades of their opening and that the motor piston is pressed axially against the lever and can rotate freely.
- 7. Mark two hole locations on the guide through the holes in the chuck jaw foot. Push back the motor body.
- 8. Drill through the guide with a fi4.2 drill bit at the point of intrusion. Remove swarf.
- Tighten the motor foot with screws St4.8x9.5-C-H (standard ISO7049) - SELT does not include these in the scope of delivery. Alternatively, screws St4.8x13-C-H (DIN7981 standard)-fig.

19 Horizontal bean holes are provided for the foot screws to allow minor alignment correction of the motor body.

**Note:** To simplify tightening, if necessary, the two motor retaining jaws can be disconnected by removing the pin and circlip (and reassembled after tightening).

### Fig. 19

10. use the control cable to check the correctness and extent of blade opening/closing. Any errors can be adjusted either with the motor end or by loosening and moving the chuck jaws on the body (and then re-tightening).



ATTENTION: Before final mounting of the motor and commissioning of the system, ensure that the end positions are set for a 150 mm stroke, and that within this stroke there is no collision between the motor arm and another system component (guide). If this is not the case, the motor end positions must be adjusted in accordance with the operating instructions provided. Incorrect adjustment of the end positions may result in damage to the motor or the light breaker.





keep it in this position during the next operation. Switch on the drive so that the pin first retracts completely and then extends to the expected position (B). Tighten dowel pos.32 and safety pos.31 (including gasket). Check correct operation.

### 4.5.4. MODULAR ASSEMBLY

The 'Sunbreaker' system can be assembled modularly longitudinally on the extension of the guides. In order to achieve a tight connection between the assemblies, it is necessary to cut the guides accordingly. The runners should be cut so that, at the joining point, the distance from the end of the runner to the axis of the nearest hole equals half of the module (distance between the blades) - Fig.21







NOTE: The extreme bladeing of the modules to be joined may be characterised by increased clearance in the closed position. As the length of the guides of the modules to be joined increases, the effect may intensify. This is a natural characteristic of the system and is not subject to complaint.

### 4.5.5. CHANGING THE DIRECTION OF BLADE OPENING





3.With the motor drive unscrew the M10 screw connecting the motor piston to the drive lever (pos. 1 on fig. 24 left), and with the manual drive unscrew the rotation knob (pos. 1 on fig. 24 right).

Fig. 24

4.Unbolt the drive guide and remove the flat fixed part to gain access to the inside. Remove the crosshead screw in the centre of the carrier (pos. 1 - fig. 25).

Fig. 25



**Note: The** white plastic spacer should be fitted between the drive lever coming out of the guide and the piston fork of the engine

5. slide out the blade adapter with the steel washer from the opposite side (fig. 26 left) and rotate it 90 degrees to the desired position and push into the socket again (fig. 26 right). Screw in the screw from point 4 again.

Fig. 26

6. In the area of the drive lever, loosen both nuts of the M8 bolts (fig. 27) securing the lever to the aluminium drive linkages (lock spanner required from the rear). Remove the lever.

Fig. 27

- 7. After dismantling the lever, unscrew the Phillips screw in the middle of the carrier (fig. 25-item 1) and repeat point 5.
- 8. For the motor drive:
- turn the drive lever (fig. 17) notch in the opposite direction,
- put the plastic spacers in the fixing holes (M8 screws) to the opposite side,
- twist with the ties (reverse order to point 6).



- For the manual drive, it is necessary to purchase a new lever in the reversed due to the non-removable rivet nut attached to the end of the lever (Figure 28).
- insert the plastic inserts from the old lever into the new lever's fixing holes
- Fit the new lever (notch in the opposite direction)
- twist the lever with the linkages (reverse order to point 6).

Fig. 28

- 10. Check operation of locking mechanism if necessary, lubricate with dry grease.
- 11) Close the drive track and screw both parts together
- 12. For the motor drive, unscrew the motor from the guide rail and insert it in the opposite direction (always piston motor side of the lever notch) fasten according to 4.5.3.
- 13. For manual drive screw in the drive knob (fig. 29).

Fig. 29

# 4.6. ELECTRIC DRIVE

### 4.6.1. CONNECTION TO THE ELECTRICAL SYSTEM

Once the product has been installed, the drive and control system should be connected to the previously prepared power and control wiring. The connection to the electric supply system should be made on the basis of a previously prepared individual wiring diagram, taking into account the principles of anti-shock protection. The connection must be made by an electrician with electrical qualifications.

The connection must take into account the environmental conditions in which the product will be used and the recommendations contained in the engine manual. Annex at the end of this document.

Normal environmental conditions:

• Such conditions exist, for example, in living quarters and offices, auditoriums and theatres, classrooms (with the exception of some laboratories), etc.

Environmental conditions with increased risk:

• Hazardous environments include bathrooms and showers, kitchens, garages, cellars, saunas, pet rooms, hospital operating theatres, hydrothermal pumps, heat exchangers, spaces enclosed by conductive surfaces, campsites, open areas, etc.

In rooms and spaces where there are conditions of increased risk, automatic devices should be used to switch off the power supply to the faulty product, e.g. residual current circuit breakers.

- Residual current circuit breakers:
  - recommended for use in bathrooms, kitchens, garages and cellars,
  - mandatory for swimming and showering pools, saunas, construction sites, the power supply of outdoor equipment, agricultural and horticultural farms, camping sites and recreational vehicles, as well as rooms at risk of fire.

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 in the event of carelessness on the part of the user.

When connecting, the safety regulations for use must be taken into account, e.g. the minimum height, from the floor, at which electrical equipment can be installed.

General guidelines for safe connection:

- The connection must be made by an electrician with electrical qualifications and professional experience,
- Health and safety regulations must be observed when connecting,
- The electrical connection and adjustment of the motors must be carried out in accordance with the motor manufacturer's instructions enclosed with the product / available on the website below.

# <u>A detailed description of the conditions for anti-shock purposes to be met by the electrical installation which is to supply the product.</u>

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

Power class	What we feed	Type of installation	Security overcurrent	Security anti-shock
Class I equipment is insulated	Motor 230V~	It is necessary	Fuse matched to	Residual current
basic, which provides protection against	with controller	to use a	the power of the	circuit breaker
direct contact. In addition, to provide		230V~3-core	consumer	
protection against contact	Class I	installation		
indirect protection (interference protection	equipment	(protective		
or supplementary protection) uses the		conductor,		
connection to the protective terminal of the		zero		
appliance, the protective conductor (PE) or		conduct		
the protective-neutral conductor (PEN). This		or and		
achieves:		phase)		
1. protection by automatic circuit breaker	24V motor	It is necessary	Fuse matched to	Residual current
by means of appropriate devices	powered by a	to use a	the power of the	circuit breaker
2. limitation of touch voltages to levels	230V/24V	230V~3-core	consumer	
not exceeding the UL value established	inverter	installation		
for the given conditions	class I device	(protective		
Environment.		conductor,		
		neutral		
		and		
		pnase		
	2414 mater	wires)	Fues metals ad to	Desidual summers
class if equipment is characterised by the use	24V motor	It is sufficient to	Fuse matched to	Residual current
direct and indirect context provides both		use the	the power of the	circuit breaker
Another way of providing protection.	230V/24V		consumer	
The use of insulation against electric check in		230V 2 wires		
class II aquinment is	ciass ii	(ileutral allu		
primary and socondary insulation. As	equipment	phase wire)		
reinforced or additional insulation is used it				
is not necessary to connect the device				
housing to the protective earth conductor				
and it is possible to power devices of this				
class via e.g. cables				
two-wire with IEC C7 connectors Class II				
equipment is marked e.g. on the rating plate				
with the appropriate				
symbol (the so-called square within a square)				

The electrical connection and adjustment of the motors must be carried out in accordance with the motor manufacturers' instructions. The instructions are enclosed with the product and are also available on the motor manufacturers' websites: <u>www.selt.com</u>  $\rightarrow$  OUR OFFER  $\rightarrow$  AUTOMATION

- The end positions (blade rotation, closed or open position) are protected by limit switches that must be adjusted during installation.
- Adjustments to the limit switches must be made in accordance with the motor instructions.
- Electrical measurements must be taken before commissioning the product.
- Do not start the engine without checking that the system is fitted correctly.

### When commissioning the product, particular attention should be paid to:

- correct opening and closing of blades,
- correct tripping of limit switches.



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



The motor is fitted with a thermal cut-out that will switch off the drive after approximately 4 minutes of continuous operation to protect it from overheating (depending on external conditions). After being switched off by the thermal protection, an appropriate period of time must be waited, depending on the type of motor and the ambient temperature (approximately 16 minutes), before it can be restarted.

4.7. NAPE D MANUAL

Changing the blade angle using the hand drive requires loosening the lock nut. After loosening the nut, use the drive lever to set the desired blade angle and tighten the lock nut as shown in Fig. 30.



Locking nut
 Drive lever

Fig. 30

### 5. SYSTEM OPERATION AND PRODUCT SAFETY

### 5.1. GENERAL HEALTH AND SAFETY REQUIREMENTS

- In order to ensure the proper functioning of the product, SELT Sp. z o.o. forbids any structural modifications, failure to comply with the above condition releases the manufacturer from responsibility for the product, from liability for any damage or loss and the customer loses any warranty or guarantee rights on it.
- During transport, assembly and disassembly, as well as during handling, care and maintenance of the product, the relevant health and safety and environmental regulations must be observed.
- The product should only be maintained and repaired by authorised and qualified (trained) persons.
- The purchaser of the product should ensure that persons entrusted with the day-to-day use, hygiene and maintenance of the product are familiar with the operating instructions and observe the instructions in all points.
- It is not permissible to clean the product in any way other than that described under "Inspection, maintenance and repair".
- All work must be carried out with due care taking into account safety requirements.
- Maintenance work and product repair should only be carried out when the product is disconnected from the electricity supply.

- The electrical and control installation should be carried out and inspected by an authorised person.
- Observe the markings on the product (e.g. pictograms, arrows indicating the direction of movement).
- Care must 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.
- It is recommended that modifications to the electrical design or changes to the fixture configuration be consulted with SELT.
- The switch should be mounted at a height that complies with national regulations for people with disabilities, preferably at a height of less than 130 cm.



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

The special safety requirements apply, for children up to the age of 42 months. The specific requirements for use apply in all places where young children have access to or are likely to be present, such as, for example, homes, children's homes, hospitals, churches, shops, schools, nurseries, public places and other places whose original purpose has been changed and where children may be present.

The 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 regard to the safety of children and persons disabled.

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 play with the guard controls. The remote keep controls out of the reach of children.

For use as a horizontal sunshade over conservatory glazing, it requires the snow to be removed on a regular basis to prevent it being deposited on the **blades** or blocking their ability to rotate, do not operate in frost or icy conditions.



Inspect the installation frequently for signs of wear or damage to the cables. Do not use if repair is necessary.

### 5.3. OPERATING SAFETY



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

### **Recommendations and actions:**

- The product is safe to use provided that the recommendations in the documentation are followed and that it is installed correctly.
- use the product only for its intended purpose.
- It is forbidden to use a product which does not comply with shock and fire safety requirements.
- before carrying out any maintenance or hygiene work on the product, it is essential to disconnect it from the electrical system,
- disconnect the product from the power supply before carrying out any work, not related to the maintenance and hygiene of the product, on the façade of the building,
- all work relating to the inspection and repair of the product should be carried out by a suitably trained person with the required authorisations and qualifications,
- look out for any signs of wear or damage to electrical cables,

- if you notice signs of wear or damage to the electrical cables, disconnect the product from the power supply and have the fault rectified by an authorised person.
- keep remote control devices out of the reach of children, they are not a toy,
- it is forbidden to enter or stay in the working area of the system (blade rotation),
- when the system is in operation, pay particular attention that no object or person is in the system's working area (in the space between the blades and in the area of blade rotation and movement of the motor and drive lever),
- It is forbidden to use an inoperative or decomposed product (e.g. without safety clips, etc.), use of such a product may cause damage to the product, endanger the health and life of the user and may invalidate the guarantee,
- makeshift repairs are prohibited,
- it is forbidden to exceed the product operating parameters set out in the technical and user documentation,
- it is forbidden to use the product and the electrical installation without valid and required inspections and measurements,
- it is forbidden to remove the covers of the drive train and the electric motor,
- It is forbidden to use a technically inoperative product,
- snow must not be allowed to build up on the canopy over the conservatory roof
- it is forbidden to start the drive in frosty or icy conditions or when there is an impediment to rotation due to a layer of snow or ice
- do not keep any sharp objects or protruding parts near the covers, which may catch on the blades and damage them,
- The operating time of the electric motor is strictly defined and must not be exceeded. Please refer to the technical and operating documentation of the installed motor for exact details of the motor operating time.
- avoid contact of system components with hot objects (e.g. heaters, cookers, irons, etc.) or sources of heat radiation that may directly or indirectly affect system components.

If any malfunctions of the product are found, the product supplier must be informed immediately. Using a defective product and attempting repairs yourself poses a risk to health and life and may invalidate the warranty.

# 5.4. CONTROL OF THE SAFE USE OF THE PRODUCT

### The purchaser should:

- a) where the safe use of the product depends on the conditions under which it is installed, subject the product to:
- initial inspection (after it has been installed and before it is put into service for the first time),
- control when installed elsewhere.
- b) ensure that a product exposed to conditions causing deterioration of its technical condition, which may result in dangerous situations, is subjected to:
- periodic inspections as well as examinations,
- special checks in the event of possible deterioration of product-related safety as a result:
  - modification work,
  - natural phenomena,
  - extended standstill time,
  - dangerous injuries and accidents at work.

The aforementioned inspections may be carried out by persons authorised by the Purchaser and having the necessary qualifications.

### 5.5. MISUSE OF THE SYSTEM

### **Operation of the system - prohibited activities**

- Do not forcibly rotate the **blades** in the system! This can cause damage to the system!
- Do not bend the blades in the system or lean objects against the blades! This can cause damage to the system!
- In the event of a malfunction, it is advisable to discontinue further use of the system.
- Report the fault to the system supplier/installer.
- Discontinue use of the product if there are signs of wear or damage to the electrical wiring and report concerns immediately to the direct supplier.

- Do not stay in the working area of the air curtain while the system is in operation.
- Do not use a faulty or decomposed system. Use of such a product may damage it and create a risk 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 shock and fire safety requirements.
- It is forbidden to exceed the product operating parameters specified in the technical and operating documentation.
- Do not keep any sharp objects or protruding parts near the system
- Do not operate the drive in frosty or icy conditions

### Persons assigned to handle

Do not allow children to play with the components used to operate the system, e.g. the remote control or the switch.

### Blade working space: risk of crushing, cutting and retraction

- Do not touch moving parts while the system is operating.
- There should be no obstacles within the working area of the product which could interfere with its operation (blocking of the movement of the blades, blocking of the actuator or the drive lever) or cause damage to system components.
- Do not stay in the movement zone of the system while it is in operation.

Automatically controlled products may start up on their own. Make sure that n o dangerous situation arises.

# 6. USE AND MAINTENANCE OF THE SYSTEM

### 6.1. USE OF THE SYSTEM FOR ITS INTENDED PURPOSE

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

If the product is used in a manner other than that described in this documentation or is modified without the authorisation of SELT Sp. z o.o. then it is used incorrectly.

Making unauthorised changes affecting the safe operation of the product is not permitted. 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 operating values.
- Adherence to operating recommendations.
- Carry out periodic inspection and maintenance of the product.
- Compliance with the requirements set out in this Documentation
- To comply with the requirements of the 'Technical Specification' section.

#### In case of misuse:

- The product may endanger operators.
- The product will be exposed to damage.
- This can have a negative impact on its functionality.
- Do not use the product during maintenance work (e.g. window cleaning).

### SELT Sp. z o.o. is not responsible for damage caused by improper use.



Operating the system out of sight can cause serious injury as well as damage to the system

### 6.2. INSTRUCTIONS FOR NON-EXPERTS

Before using the product, read this documentation carefully.

Non-professionals are those who carry out activities related to the day-to-day use and ongoing maintenance of the product. A thorough knowledge of the documentation guarantees fault-free operation of the product.

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

- ongoing service:
  - carrying out activities that do not alter the performance of the product,
  - switching on and off by pressing the control buttons,
- maintenance of the product is described in the following section.

### 6.3. TECHNICAL INSPECTIONS, MAINTENANCE AND REPAIRS

Periodic inspection of the products by specialised installation teams is recommended.

Maintenance consists of checking the operation of the product, adjusting the mechanisms and replacing components that wear out during operation. Ongoing maintenance of the system is carried out by the user himself. Maintenance of the product should be carried out at least once a year by specialised installation teams. Reviews are carried out against payment.

### Basic activities performed during the review:

- Check:
  - fixing the product to structural elements,
  - the technical condition of the moving parts of the product,

- the condition of the product's electrical wiring and checking its connection to the electrical system,
- bolted and riveted connections,
- the technical condition of the system (components, mechanisms, engine seals),
- fixing of the product's drive mechanism (motor, drive lever, motor limit switches),
- the effectiveness of the residual current circuit breaker (if any).
- Possible adjustment and improvement of the fixing of listed components.

The products manufactured by SELT require no special maintenance. Using the product in accordance with the manufacturer's recommendations ensures that the system user will have a long and trouble-free operation.

### Basic operations including maintenance of the product:

- Checking for correct blades movement,
- Check for correct operation of limit switches,
- Cleaning of visible, accessible parts of the product,
- During periods of expected snowfall, for horizontally mounted systems (roof-mounted), the blades should be set in the maximum open position to prevent snow piles from forming,
- Lubrication, with dry grease, of the blade rotation mechanisms.

### Cleaning of metal / aluminium components:

• It is recommended to clean light soiling of metal / aluminium surfaces with water and mild detergents.

### Damage to the system through inadequate ongoing maintenance.

- The use of pressure washers as well as cleaning agents and solvents, e.g. alcohol, and petrol is not permitted!
- It is forbidden to use cleaning agents with chlorine, ammonia, paraffin, acetone and bleach to clean the system as well as in its vicinity, as this will result in the risk of corrosion.
- The use of sharp tools (e.g. wire brushes), cleaning agents that cause scratches (e.g. scouring powders, pastes) is prohibited.
- Do not firmly hold or pull the system or its individual components.
- Do not deform the blades.
  - Do not replace individual components yourself! Spare parts should be original!
- Carry out a functional test of the system! Keep an eye on the operation of the system, and if unusual behaviour or noises occur, report the problem to the direct supplier.

# 7. GENERAL WARRANTY CONDITIONS

The general terms and conditions of guarantee are available at <u>www.selt.com</u>. In the absence of access to the SELT Sp. z o. o. website, the warranty conditions can be obtained from your SELT Sp. z o. o. sales representative.

# 7.1. EXCLUSIONS FROM LIABILITY:

### SELT Sp. z o.o. is not liable and does not discharge any warranty or guarantee in the event of:

- Damage to equipment caused by transport other than SELT transport.
- Damage to equipment as a result of storage, installation, use of the product and maintenance not in accordance with the technical and operating documents, operating instructions or manufacturer's recommendations, unless these activities were carried out by and at the risk of the manufacturer.
- Mechanical and electrical defects caused by the user
- Damage resulting from the alteration of the equipment, unless the alteration was carried out by the manufacturer, on his instructions or with his written consent.
- Secondary damage resulting from the use of the appliance despite the perception of the original defect, unless the manufacturer has been notified and recommended further use. The assessment of the causes of the damage is left to the reasonable discretion of the manufacturer. Repair or replacement of the device due to the damage referred to in this section may be carried out by the manufacturer against payment.
- Defects due to age, normal wear and tear of product parts.
- Repairs involving adjustments, cleaning and lubrication.
- Electrical equipment that has been handed over to the manufacturer in a way that makes it impossible to check its operation (e.g. cut motor cable, receiver disassembled).
- Damage caused by unauthorised repair or adjustment.
- Damage caused by using the system in inappropriate weather conditions.
- Operating the system despite component damage.
- The system may experience incomplete closure of the module's end blades, which does not affect the correct operation of the system.
- For a system with a module length of more than 4 m, it is required to locate the drive lever in the middle of the length of the guides; if it is not possible to install the lever at this point, incomplete closure of the blades at the end of the system is an aggravating phenomenon in such a case, but normal and due to the operating characteristics of the system.
- Incomplete closure of the blades (there may be a minimal gap between the blades)
- Damage caused by an electrical connection made by unauthorised persons.
- Damage to the system or motor caused by incorrect adjustment of the motor end positions or incorrect installation by unauthorised persons.
- Problems with closing and opening the system when using a manual drive (need to use quite a lot of manual force)
- Damage caused by running an icy or snowy system.

# 8. COMPLAINTS/TECHNICAL DEFECTS

### 8.1. COMPLAINTS (MANUFACTURER'S WARRANTY)

A claim for a product can only be made by the entity that purchased the product from the manufacturer. The conditions and the manner of handling complaints are specified in the General Terms of Guarantee and General Terms of Sale. The General Guarantee Terms and Conditions and the General Terms and Conditions of Sale are available on the website: <u>selt.com</u>

The Customer shall submit a complaint on the Complaint Form available on the manufacturer's B2B Platform. The complaint notification should be complete and full.

A claim submitted otherwise than via the B2B Platform, incomplete or incomplete, including without an invoice, order or contract number, will not be processed.

# 8.2. TECHNICAL DEFECTS

In the event of system defects, you should:

- if possible, open the blades and take the unit out of service,
- immediately report the defect of the product to the competent specialized assembly team.

# 9. DISMANTLING / DISPOSAL / DECOMMISSIONING OF THE PRODUCT



Improper disassembly of the system can cause serious injury and damage to the system. Have the system dismantled by a suitably qualified 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 life of the product, it is necessary to dismantle it and segregate the individual materials and components in accordance with the Decree of the Minister of Climate of 2 January 2020 on the waste catalogue in order to dispose of it.

### Important information on disposal:



In accordance with the provisions of the Act of 11 September 2015 on waste electrical or It is forbidden to place waste equipment marked with the crossed-out wheeled bin symbol together with other waste. A user wishing to dispose of electronic or electrical equipment is obliged to take it to a waste equipment collection point.

These statutory obligations have been introduced in order to limit the amount of waste produced from waste electrical and electronic equipment and to ensure an adequate level of collection, recovery and recycling. The equipment does not contain hazardous components, which have particularly negative impact on the environment and human health.

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

### b) Disposal of used batteries

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

In order to prevent contamination of the environment and the possible risk to human and animal health, the used battery should be disposed of in a suitable container at designated collection points.

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

# 10. CE LABELLING AND MARKING OF THE PRODUCT

### 10.1. CONFORMITY OF THE PRODUCT WITH THE CE STANDARD

The safe design of the product was made to comply with EN 13659:2015. IN ORDER TO MAINTAIN THIS CONDITION AND TO ENSURE SAFE OPERATION AND MAINTENANCE OF THE SYSTEM, THE INSTALLATION INSTRUCTIONS AND INSTRUCTIONS FOR SAFE USE MUST BE FOLLOWED.

# 10.2. INFORMATION ACCOMPANYING THE CELABELLING

a) Labelling on the product:





b) Labelling on accompanying documents:

