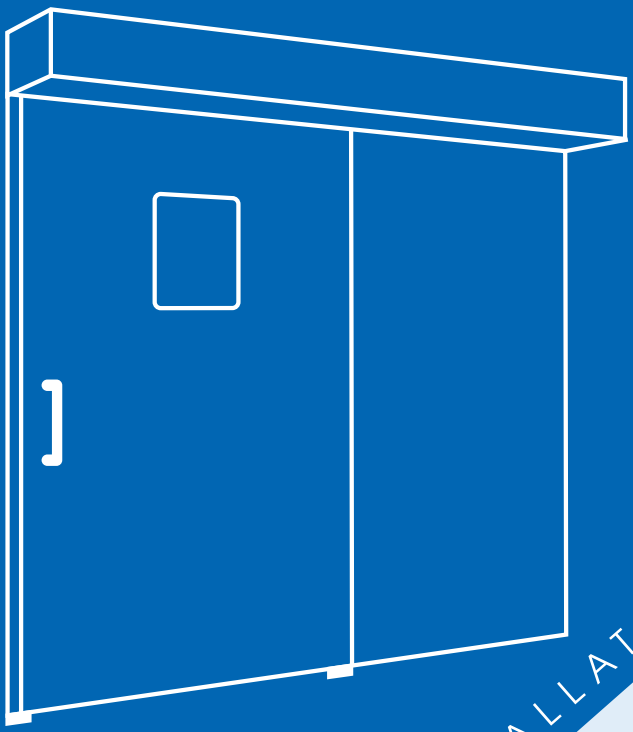
GRAFCET by SESAMO

Porte automatique



MANUEL D'INSTALLATION

Porte Étanche ERMETIKA

www.grafcet.net • contact@grafcet.net • +33 (0)1 88 31 14 18

Thank you for choosing this product. In order to achieve the best performance from this automatic product, Sesamo recommends to read and carefully follow the installation and use instructions present in this manual. The installation of this automatic system must be carried out only by professionally skilled people, to whom this manual is addressed. Any errors during installation may be a source of danger for people or things. The packaging material (wood, plastic, cardboard, etc.) must not be dispersed in the environment or left within children's reach, as they may be a potential source of danger. Every single installation stage must be carried out in compliance with the applicable rules and, in any case, according to good practice. Make sure, before starting installation, that the product is intact and that it has not undergone any damage resulting from transport or poor storage conditions. Before installing the product, make sure that every architectural and structural element of the entrance (automatic system fixing surface, fixtures, etc.) is suitable and sufficiently steady to be automated. The door to automate must have an even opening and closing movement and must not have any frictions. Perform a careful analysis of the risks and make any necessary changes to remove conveyance, crushing, shearing and danger areas in general. Do not absolutely install the product in environments, where gases, vapours or flammable fumes are present. The manufacturer of the automatic system shall not be held responsible for the non-compliance with "good practice" rules or with specific regulations in the construction of the door to motorise and of any caving in of the same. All the safety devices protecting the automatic door (e.g. active infrared sensors) must be installed in compliance with applicable regulations and directives, with the risk analysis performed, with the type of system, use, traffic, pertaining forces and inertia. Always pay special attention to the areas, where the following may occur: crushing, shearing, conveyance and any type of danger in general, appropriately reporting, if required. Place the identification information of the motorised door on each installation. Check that the upstream electric motor is correctly sized and has all the suitable protections (differential switch and protection from overcurrents). In maintenance or repair interventions, use only original spare parts. Do not tamper with or alter for any reason the internal equipment of the automatic system and all the safety devices provided in the control unit. The manufacturer shall not be held responsible, shall internal parts of the automatic system are altered or tampered with or in case of use of safety devices in the system, other than those indicated by the same manufacturer. The installation technician of the automatic system must provide the person in charge of the automatic door with the manual use as well as with all the information necessary for a correct use during automatic operation and in cases of emergencies. Pay special attention to the messages of this manual, marked with a danger sign. They may be either warnings aiming at avoiding potential damages to the equipment or specific danger sings for the safety of the installation technician or other people involved. This device has been conceived for the automation of sliding doors for pedestrian passage. Any other use shall be considered contrary to the use provided by the manufacturer, which, therefore, cannot be held responsible.

Before performing any operation, it is necessary to carefully read this manual and follow all the instructions, with special attention to those marked with the following warnings:

DANGER:	warnings, which, if not carefully followed, could cause danger or death sources
ATTENTION:	warnings, which, if not carefully followed, could cause malfunctions

CONTENTS

MACHINE DIRECTIVE

The installation technician, motorising a door, in accordance with the Directive 2006/42/EC, becomes the builder
of the automatic door and must:

- Arrange the Technical File with the documents, shown in annex VII of the Machinery Directive and keep it for at least 10 years.
- Issue the CE declaration of conformity according to annex II-A of the machinery directive and hand over a copy to the user.
- Place the CE marking on the motorised door according to point 1.7.3. of annex I of the Machinery Directive.
- In particular, but not exclusively, shall it be necessary to install the monitored sensor(s), in accordance with EN 16005 standard, it is necessary to perform the connection and the setting as shown in this manual (see page 16/17) and check the correct functionality as per instructions of the manual of the used sensor(s).

For further information and to facilitate the installation technician in the application of the prescriptions of the Directive and of the European Regulations, relating to a safe use of the motorised doors, consult the guidelines available on Internet at the address www.sesamo.eu

DECLARATION OF INCORPORATION (DIRECTIVE 2006/42/EC, ANNEX II, PART B)

Manufacturer: SESAMO S.R.L.
Address: Str. Gabannone 8/10 - 15030 Terruggia - AL
Declares that:
The product **ERMETIKA DUALCORE**
- has been built to be incorporated in a machine to build a machine taken into account by Directive 2006/42/EC
- is compliant with the essential safety requirements, as shown in annex I of the directive excluding the following points: 1.2.4.3, 1.2.4.4, 1.3.4, 1.3.5, 1.3.7, 1.3.8.2, 1.4, 1.5.3, 1.5.7, 1.5.14, 1.5.15, 1.5.16
- is compliant with the conditions of the following other EC Directives: 2014/30/EU Electromagnetic Compatibility , 2014/35/EU Low Voltage
and that
- the following (parts/clauses of) harmonised standards have been applied:
EN 60335-1 EN 61000-6-2 EN 50366 EN 61000 -6–3 EN16005
and, moreover, declares that:
- the pertaining technical documentation has been filled out in compliance with part B of the annex VII; such documentation, or parts of it, shall be conveyed via mail or e-mail, in reply to a justified request on behalf of competent national authorities
- the subject in charge of arranging the pertaining technical documentation is: SESAMO SRL, Strada Gabannone, 8/10 - 15030 Terruggia (AL) - Italy
- it is not allowed to commission the product, until the machine, in which it will be incorporated or of which it will become a component, has been identified and its compliance has been declared under the conditions of the Directive 2006//EC and the national laws, which transposes it, that is until the machinery, mentioned in this declaration, does not form a unique system with the machine.

SESAMO S.R.L.
November 2019

Aldo Amerio
(Administrator)

TECHNICAL FEATURES

DIMENSIONS	See Fig. 1
POWER	230V
NOMINAL POWER	200 W
EXTERNAL DEVICES POWER	12 V DC – 6W MAX.
EMERGENCY BATTERY POWER	36V-2Ah
MAX OPENING SPEED - CLOSING	OP= 20 cm/s–70 cm/s – CL= 10 cm/s–40 cm/s
CAPACITY	220 kg
OPERATION TEMPERATURE	0°÷50°C
CRUSHING PREVENTION	Automatic limitation of pull-off force in presence of obstacles
WEIGHT	about 14 kg/m
SERVICE	Continuous
PROTECTION	IP20

WARNINGS FOR THE INSTALLER (GENERAL SAFETY OBLIGATIONS)

1) ⚠ It is important for the safety of people to install the automation in accordance with the instructions. Incorrect installation or incorrect use of the product can cause serious harm to people.
2) Read the instructions carefully before starting the installation of the product.
3) Keep the instructions for future reference.
4) This product was designed and built exclusively for the use indicated in this documentation. Any other use not expressly indicated could compromise the integrity of the product and / or represent a source of danger.
5) SESAMO disclaims any liability arising from improper use or use other than that for which the automation is intended.
6) Do not install the device in an explosive atmosphere: the presence of flammable gas or fumes is a serious safety hazard.
7) SESAMO is not responsible for the non-observance of Good Technique in the construction of the closures to be motorized, as well as for any deformations that may occur during use.
8) Before carrying out any work on the system, disconnect the power supply.
9) Check that there is a differential switch upstream of the system.
10) Verify that the earthing system is built in a workmanlike manner
11) The safety devices (EN 12978 standard) protect any danger areas from mechanical movement risks, such as crushing, conveying, shearing.
12) For maintenance, use only original SESAMO parts.
13) Do not make any changes to the components that are part of the automation system.
14) The installer must provide all information relating to the manual operation of the system in an emergency.
15) The user user must refrain from any attempt to repair or direct intervention and contact only qualified personnel

16) ⚠ Installation must only be done by qualified and experienced personnel and in full compliance with current regulations.
17) Anything that is not expressly provided for in these instructions is not permitted.
18) ⚠ This manual is intended exclusively for professional installers or competent persons.

RECYCLING AND DISPOSAL

⚠ ATTENTION! This product falls within the scope of Directive 2012/19 / EU concerning the management of waste electrical and electronic equipment (WEEE). The appliance must not be disposed of with household waste as it is made up of different materials that can be recycled at suitable facilities. Inquire through the municipal authority regarding the location of ecological platforms suitable for receiving the product for disposal and its subsequent proper recycling. Furthermore, we remind you that when purchasing an equivalent device, the distributor is required to collect the product to be disposed of free of charge. The product is not potentially dangerous for the
human health and the environment, as it does not contain harmful substances as per Directive 2011/65 / EU (RoHS), but if abandoned in the environment it has a negative impact on the ecosystem.

The crossed-out bin symbol indicates that this product complies with the legislation on waste electrical and electronic equipment. The abandonment of the equipment in the environment or its illegal disposal are punishable by law.

PREPARATION FOR INSTALLATION

The automatic system is arranged to work with the configurations of different accessories and peripheral devices. Fig. A represents an example of complete installation, where the possible points of access in the automatic system box for the connection of the following peripheral devices are highlighted:

- Automatic system operation logic selector
- External door opening pushbutton
- Internal door opening pushbutton
- External safety sensor
- Internal safety sensor

Arrange for the access points inside the automatic system to allow the connection with the external peripheral devices (Fig. 1 - X). For the feed through of the mains power cable of the network, use the free space (Fig.A-6) between the components without making any holes on the aluminium (Fig.1 - X).

⚠ **DANGER: do not damages the cable during the fixing activities described.**

DESCRIPTION OF COMPONENTS (FIG. 1 . 2)

A. extruded aluminium case profile
B. extruded aluminium sliding guide
C. aluminium cover
D. electronic control unit
E. gear motor with encoder
F. support device and belt tensioning
G. emergency batteries module (Optional)
H. doors end stops
I. adjustable trolleys including wheels and anti-derailment wheel
J. belt coupling with pull toothed belt
K. Hermetic door
L. Door sliding runner
M. Door sliding head runner
N. (Simple or embracing) Door jamb
O. Arrow reduction bracket

PREPARATION FOR MASONRY WORKS

For a correct installation of the door, the preparation of masonry works must be suitably carried out.

- At the contour of the doors, the floor surface must be flat. The planarity and level error allowed must be max. 3mm.
- At the contour of the doors, the connection between the vertical wall and the flooring surface must be a corner, this to avoid interferences during the sliding of the door.
- The doorway where the door will be installed must be framed with a sub-frame well anchored and suitable to support loads.
- The doorway, where the door will be installed, must be sized with a max. tolerance +/-5mm.
- The vertical and upper horizontal sides must be even and straight with a max. error of +/-5mm.
- The door installation surface, both of the beam and the jamb, must be flat and straight.
- The beam application area must be stiff and steady. It must allow fixing by means of dowels, along the whole dimension of the same entire beam.
- A load applied in that area, equal to 220kg, must be considered.
- If the door application wall does not assure a correct application of these loads, a suitable reinforcement structure must be provided.

ATTENTION: to achieve a good result, the installation of the door must take place after the completion of the flooring and of the wall coverings.

MAIN OPERATION RULES

The operation of Sesamo hermetic automation is based on the following points:

A. The runner has a gradient of 45°, which allows the door, during opening, to raise by 12 mm and to move away by 12 mm from the door jamb and during closing, to lower by 12 mm and to move close by 12mm (fig.1).
B. The seals must be pressed against the door jamb for a theoretical size of 3.5mm (fig.23).
C. The crushing of the seals against the door jamb creates the sealing of the door.

WALL FRAME COMPONENTS DESCRIPTION

Wall frame material composition (fig.4):

1. N. 3 aluminium perimeter profiles with a 45° **cut only on one side.**
2. Fixing dowels.
3. Slot cover silicone seal.
4. Alignment brackets.
5. Increased alignment brackets with fixing screws.

WALL FRAME PROFILES CUTTING POSITIONS

ATTENTION: before starting any profile cutting or processing, check the specifications under paragraph "PREPARATION OF MASONRY WORKS" are respected and that the sizes of the doorway are correct as per project (fig.5).

Calculate the semi-finished profiles cutting length as shown in the chart and in fig.6.

SIZE	DESCRIPTION
L	Doorway width
LUP	Door clear width
LI	Door jamb profile cutting length
H	Doorway height
HUP	Door clear height
HI	Door jamb profile cutting height

SIZE	CALCULATION FORMULA SIMPLE AND EMBRACING DOOR FRAME WID.100 MM	CALCULATION FORMULA MODULAR EMBRACING DOOR FRAME
LUP	= L – 15 mm	= L – (15 mm – 2 x wid. Panel)
LI	= LUP + 120 mm	= LUP + 120 mm
HUP	= H – 7.5 mm	= H – (7,5 mm –wid. Panel)
HI	= HUP + 60 mm	= HUP + 60 mm

Once the masonry works have been correctly carried out and the cutting lengths have been calculated, perform the cutting of the profiles (fig.4).

WALL FRAME ASSEMBLY ON THE WALL

Assemble in advance the door jamb on the ground fixing the angles with the two alignment brackets (simple + increased with fixing screws) see fig.7.
Provide the profiles with dowels on the wall and close the slot of the screws with the appropriate silicone seal supplied. Finally, apply silicone on the perimeter (fig.8).

ATTENTION: use the dowels supplied only in presence of a brickwork doorway. In case of iron/aluminium tubular parts or counterframes, use Ø5 self-tapping screws.

ATTENTION: if the wall is not properly levelled and the profile is not perfectly coupled along the whole length, insert some spacers in the joints to screw down with the dowel/screw, then, apply silicone (fig.9).

ATTENTION: always cut the slot cover 5/7mm longer than the measurement, so that in case of shrinkage of the material, no joints appear.

NOTE: the door jamb may be mounted in simple mode (as represented in the manual) but also as embracing on a wall wid.100mm and embracing with a modular panel (Fir, Ox Aluminium, Stainless Steel finishing) in case of wall wider than 100mm see fig.10.

OPERATOR FIXING

DANGER: the automation installation and fixing operations require the movement of heavy parts and tools, with a height exceeding 2 or 3 metres. The accidental fall of heavy parts of tools represents a serious risk source for people or things nearby. To reduce such risk, before any installation or maintenance intervention, it is necessary to fence a sufficiently wide area around the working area and impede access to all non-authorised people, apart from removing any objects, which may be damaged. To reduce the risk of workers, it is necessary to wear the personal protective equipment and, in particular, safety helmet, safety shoes and cut prevention gloves.

After assembling the door jamb on the doorway, remove the cover from the automation system and inspect the surface, where the box is to be installed. If the surface is not sufficiently smooth, level it by interposing some spacers. If the beam of the automation is fixed on an excessively irregular surface, it may be subject to deformations apart from malfunction of the door.
Make sure, shall it not anchor to the wall, that the structure, to which the box is to be fixed and then the hermetic door is sufficiently steady and is suitably anchored to the building.
Fix the case to the arranged support or to the wall by using M8 hexagon head screws, with a suitable length, inserted in the appropriate eyelets present (fig.11). Make sure that the screws used or any dowels are suitable to be used with the material, constituting the structure or the wall, to which the case is fixed.

DANGER: the non-compliance with the instruction relating to the fixing of the case may compromise the stability of the same fixing with consequent detachment of fall of parts. It is necessary to carry out a careful check on the support structure, on the tightness

of the fixing screws or of the dowels and, in case of doubts, stop installation and perform more detailed investigations.

ATTENTION: the box must be fixed using all the eyelets/holes arranged in the aluminium box.

DANGER: before tightening the fixing screws of the box, make sure that the beam is levelled lengthwise and widthwise as shown in fig.11. Upper positioning errors compared to those shown in fig.11 may compromise the correct operation of the automation system and constitute a source of danger.

FORMULAS FOR OPERATOR FIXING

For the operator's fixing positions, follow the following charts:
Height fixing positions - fig.12

SIZE	LEGEND	FORMULA
HC	Height under case	= HUP + 91.5
HF	Fixing holes height	= HC + 80.5

Front fixing positions - fig.13

ATTENTION: the door/door jamb overlap on the three sides is ALWAYS 50 mm.

ATTENTION: the head and tail machine quotient is ALWAYS QMX=53mm

ATTENTION: use ALWAYS the head junction as starting reference for the fixing of the case.

ATTENTION: the position or the formula shown in the chart is ALWAYS referred to the inside part of the pre-assembled door jamb (fig.13).

ATTENTION: in case of empty case, measure with the measuring tape the X position shown in fig. 14.

SIZE	LEGEND	NO EMPTY CASE	WITH EMPTY CASE
PT	Crosspiece position	=103mm (QMX+overlap)	= X+48

NOTE: the manual contains a representation of an entrance with the doors opening on the right, in case of entrance with door opening on the left, it will be necessary to apply the same method in a specular manner.

FIXING OF SLIDING GUIDES

Fasten the sliding guides with dowels to the **FINISHED** floor in sequence as represented in fig. 15.

ATTENTION: the head and the tail guides are different. The head one (it opens to the R or to the L) is processed so to help the door along its descent and crushing movement (fig.15).

During assembly of the guides, consider the following points:

- the heights (interaxle spacing and positions) always take as reference door jamb.
- Use M6 dowels.
- The diameter of the hole ranges according to the type of dowel braid used.
- The dowel screw head must be countersunk or MAX 6mm HIGH.
- the guides are provided with an adjustment system as shown in fig. 15.
- The holes shown with "A" in fig. 15 must be used once the door has been definitively adjusted (see paragraph HERMETIC DOOR ADJUSTMENT)

Fig. 15 shows the "guides configuration" images both for right opening and left opening doors.

FORMULAS TO CALCULATE DOOR SIZES

The chart shows the formulas to calculate the door sizes (fig.16):

SIZE	LEGEND	CALCULATION FORMULA
HA	Door height	= HUP+40mm
A	Door width	= LUP+100mm

HERMETIC DOOR ASSEMBLY

DANGER: carefully verify the door weight, so that it is included in the range of maximum capacities, allowed by the automatic system; in case of doubts, do not proceed further with installation operations; if weights are installed at the system's limit capacity, it is necessary to provide for shorter maintenance intervals and periodic checks to assess the wear status of the system components; always replace the parts, featuring even light wear signs.

Fasten the trolleys on the door following the operations shown in fig.17 and the configurations (according to the opening direction) with the positions in fig.18.
To fasten, use M8 hexagon nuts (fig.17) with the proper flat and toothed lock washers.

DANGER: an incorrect fixing could compromise the correct operation of the automatism and constitute a source of danger.

Make sure that the anti-derailment wheels (fig.18 - K) are completely lowered. Lift the door and delicately place the wheels of the trolleys on the sliding runner, paying attention not to damage the parts with violent impacts (fig.19).
ALWAYS fix the belt holder to the left trolley, both for left opening entrances and right opening entrance (fig.18) by means of M6x10 hexagon socket head screws (fig.20).

DANGER: trolley screws not sufficiently tightened may unscrew, thus causing the detachment of components, the fall of the doors or the detachment of the belt with the possibility that the door results out of control when it is moving and may constitute a serious source of danger.

Once the belt holder has been fastened, slide the door inserting the runners in the arranged channel (fig.21).

Adjust the holding bracket so that the anti-derailment wheel remains maximum 0.5-1 mm from the sub-case (fig.22).

ATTENTION: an incorrect adjustment of the anti-derailment device, thus conveying the wheel in contact with the aluminium profile, causes an excessive wear and noise during operation.

HERMETIC DOOR ADJUSTMENT

ATTENTION: the adjustment of the hermetic door is an essential operation for a correct sliding and for the correct compression of the seals, which, crushing against the door jamb, create the entrance sealing capacity. An incorrect compression could even compromise the same operation of the automatic system. The theoretical compression positions of the seals are contained in fig.23.

The adjustment must be carried out together with the "trolleys adjustment" and the "runners adjustment" following the points here below:

- *Trolleys adjustment* - the trolleys must be adjusted only:
  - vertically (Y axis): loosening the "A" nuts and operating on the "V" screw - fig.24.a
  - crosswise (Z axis): loosening the "B" nuts and shifting the trolley. ALWAYS make sure that the positions K1-K2-K3-K4-K5-K6 always match - fig.24.b

DANGER: do not completely unscrew the A nuts to avoid the complete fall of the door.

ATTENTION: the rotation of the B nuts during tightening may cause the misalignment of the trolley. To avoid such situation, gradually and alternatively tighten the same nuts.

ATTENTION: misalignments between the trolleys and the sliding runners may cause wear, excessive noise and malfunctions to the automatism.

ATTENTION: the horizontal adjustment IS NOT POSSIBLE, because the trolleys and the descending components are bonded elements (the configurations contained in fig.18 are fixed).

- *Runners adjustment* - the runners have the possibility to be adjusted using the eyelets, placed on the fixing bracket. Once the correct adjustment has been identified, secure the runner by adding a screw in the arranged hole shown with the letter "A" (fig.25).

ATTENTION: once the runners are adjusted permanently, tighten in a vigorous manner the screws, so that, with the push of the closing doors, they are not able to move. The shift may cause door jamming or an incorrect compression of the seals, thus altering the seal of the same

COVER FIXING

With reference to fig.26, fix the cover using the A screws in the appropriate seats present in the heads.

MECHANICAL ASSEMBLY CHECK

Before starting the automatism, check and perform the following operations:

- accurately remove dust residues or chips from the runway and from the trolley wheels
- check the correct tightening of the screws and nuts of all the automatism components
- check that the cables are fastened and that there are no cables, passing near the trolley or belt sliding area
- check that the end stops are correctly placed and that the terminals of the belt do not impact the toothed pulleys
- apply a light layer of common grease for bearings on the runway and on the drive belt

ATTENTION: The runway and the drive belt may operate without lubrication without featuring wear issues. Yet, a light lubrication prevents the onset of noise in case there is not a perfect alignment among the components.

ATTENTION: for a correct operation, it is very important that for the whole sliding area of the doors, there are no mechanical obstructions or frictions, which block movement: in case of doubts, perform a manual pulling test, with a dynamometer to identify any points featuring an excessive friction.

DUALCORE CONTROL UNIT: OPERATION AND WARNINGS

The Dualcore electronic control unit is designed to manage automatisms produced by Sesamo, it is compliant with the specifications of the EN16005 standard and arranged to operate with peripheral devices compliant with the same standard in order to allow the implementation of automatic and complete entrances, according to the highest safety standards.
The Dualcore control unit must only be used for automatisms produced by Sesamo of the Dualcore series and must be configured and commissioned by professionally qualified personnel, following the instructions of this manual with special attention to the references: **danger, attention, note.**
The Dualcore control unit is arranged so to configure one's own operation parameters in a self-learning mode to assure fast and simple installations.

DANGER: do not wash, disassemble, change, repair, remove for any reason the protection covers of the electronic components and of the Dualcore control unit; otherwise, fatal electric shocks or the irreversible damage of the product could occur.

DANGER: do not perform any operation on the Dualcore control unit, except for adjustments via the appropriate pushbuttons, without having disconnected in advance the power cord of the main (fig.27 par.L), otherwise fatal electric shocks or the irreversible damage of the product could occur.

DANGER: the Dualcore electronic control unit is designed to operate inside the products manufactured by Sesamo according to accurate instructions of the manufacturer. Any other use not explicitly provided by the manufacturer shall expose people and/or things to fatal risks and/or different damages not predictable by the same manufacturer and therefore it must be absolutely avoided.

DANGER: the Dualcore control unit is designed to operate in a dry environment, away from any atmospheric agent and from any infiltrations of water or other liquids. Otherwise, fatal electric shocks or the irreversible damage of the product could occur.

DANGER: inside the control unit, there are parts, with voltage levels, exceeding 600V, which constitute a fatal electric risk for man. To avoid such risk, the protection guards must not be removed and disassembled for any reason and no liquids of any kind must be poured, which may cause fatal electric shocks or damage the product irreversibly.

ELECTRONIC CONTROL UNIT DESCRIPTION

The Dualcore control unit consists of the following main elements, to be aware of during installation (fig.27 and 28):

A- input for connection with PC via the appropriate optional signal converter implemented by Sesamo;
B- terminal board arranged for connections to peripheral devices and additional accessories;
C- connector for connection with motor encoder;
D- connector for connection with motor power;
E- connector for batteries connection;

ATTENTION: verify the correct input direction of the batteries connector, use only batteries supplied by Sesamo, use only the board/batteries cabling wires provided with a fuse protection with value 6.3AT. Otherwise, electric shocks may occur, the protection of the circuit may be compromised with consequent fire risk and irreversible damage of the product.

F- connector for the introduction of the optional board for batteries recharge;
G- switch mode power supply: it transforms the power supply of the main cable (230Vac - part.L) in 40V output voltage for the control unit;

DANGER: the switch mode power supply at point G has inside points with voltages of about 600V, which constitute a fatal risk. Do not remove for any reason the base and the protection cover G, do not pour liquids on such parts, do not insert any type of object, especially metal, between the cover vent slots. Otherwise, fatal electric shocks or the irreversible damage of the product could occur.

H- protection fuse with value 1AT placed at the input of the switch mode power supply;

I- display with adjustment keys for the operation parameters and operation modes selection;

J- main key: removable memory key for programming of internal data of the control unit;

WARNING: carefully verify the correct and deep introduction of the main key (ref. J) before commissioning of the electronic control unit. Otherwise, unexpected malfunctions of the product may occur.

K- terminal board for sensors and accessories;

L- 90° connector of the main power cord (230VAC);

M- connection screw of the grounding protection (fig.28 part. M).

Ground protection: the Dualcore control unit via the ground connection of the main offers an additional protection for the aluminium box and the metal parts connected to it. To make the protection efficient, tighten the M screw (fig.28) and the nut of the O screw (fig.28) so that the aluminium box is electrically connected to the grounding pole L1 (fig.28).

WARNING: check the correct tightening of the M screw and of the O screw (fig.28) and check the presence of the perfect electric continuity between the L1 grounding pole (fig.28) and the surface of the beam of the automatism. Otherwise, an important safety function of the whole system may be compromised and fatal electric shocks or malfunctions of the product could occur.

CONTROL UNIT/SENSORS COMPLIANT WITH EN16005 STANDARD

ATTENTION: the P56001 control unit CANNOT WORK with photocells connected directly to the terminal board. In case of direct connection and switching on of the ELECTRONIC BOARD, IT IS IRREPARABLY DAMAGED.
The use of photocells can ONLY be done with the purchase of the photocell kit and the dedicated firmware.

Fig. B shows the sensors, which can be connected to the Dualcore control unit

4- opening/safety internal sensor
5-opening/safety external sensor

"4" and "5" opening sensors perform the following 3 functions:

1. *Opening command*:
   they identify movement in area M1 or M2 and command the opening of the doors.
2. *Closing safety device*:
   they identify the presence in area A1 and A2 and in case of obstacle impede the closing of the doors.
3. *Test*:
   check that the closing safety device (function 2) is working correctly and, in case of failure, impede the doors closing operation (ref. EN16005 performance level C).

The chart below contains the connections of the sensors "4", "5" with the terminals provided in the control unit. The 2 cables of the power function are the power cables.
The default column contains the manufacturer's setting values of the contacts (NO/NC).

internal	function	Terminal board fig.27.a	default
5	Power	6 (-)	
		7 (+)	
	1. (opening command)	2	NO
		1	
	2. (closing safety device)	10	NC
		13	
	3. (test)	8	NO
		9	
4	Power	6 (-)	
		7 (+)	
	1. (opening command)	5	NO
		2	
	2. (closing safety device)	10	NC
		12	
	3. (test)	8	NO
		9	
		15	

NOTE: for more detailed information on colours of cables and terminal boards, refer to the enclosed images at the end of the manual or to the specific manual supplied along with the sensor relating to the chosen model.

DANGER: choose and install the sensors according to the architectural structure of the entrance according to a careful risk analysis in compliance with EN16005 standard. Otherwise, the automatic movement of the door could cause serious damages to things or people with the risk of fatal injuries.

TERMINAL BOARD CONNECTIONS

Connect all the components of the automatic entrance to the Dualcore control unit with suitably sized electric wires in compliance with the instructions of the following chart:

N	Ref.	Default	Description	Figure
1	START1	NO	opening command external sensor	Fig.29 + Fig.30
2	COM		common input signal: 1.5	
3	OPTOREF		set up	
4	-OO-		set up	
5	START2	NO	opening command internal sensor	

6	OUT 15VDC	(-)	negative power supply for internal external opening command sensors: 15Vdc - max. 0.25A	
7	OUT 15VDC	(+)	positive power supply for internal external opening command sensors: 15Vdc - max. 0.25A	
8	TEST CLOSE	(-)	negative circuit int/ext sensor test	Fig.29 + Fig.30
9	TEST CLOSE	(+)	positive circuit internal/external sensor test	
10	COM		common input signal: 12, 13	
11	SAFE CLOSE 1	NC	Safety device enabled external presence sensor area A2	
12	PHOTO COM		common	
13	SAFE CLOSE 2	NC	Safety device enabled external presence sensor area A1	
14	TEST OPEN	(-)	negative circuit sensor right/left side opening safety device test	
15	TEST OPEN	(+)	positive circuit sensor right/left side opening safety device test	
16	SAFE OPEN 1	NC	sensor safety device right side opening area A3	
17	COM		common input: 16, 18	
18	SAFE OPEN 2	NC	sensor safety device left side opening area A4	
19	OUT 15VDC	(-)	positive power supply sensor safety device right/left side opening: 15Vdc - max. 0.25A	
20	OUT 15VDC	(+)	negative power supply sensors safety device right/left side opening: 15Vdc - max. 0.25A	
21	OUT 15VDC	(-)	negative peripheral devices power supply: 15Vdc - max. 0.25A	
22	OUT 15VDC COM	(+)	positive power supply peripheral devices: 15Vdc - max. 0.25A; common additional signal	
23	KEY	NC	night closing control	
24	AUX OUT		auxiliary output	-
25	AUX IN 1		auxiliary input	-
26	AUX IN 2		auxiliary input	-
27	LOCK	(+)	electric lock	-
28	LOCK	L	electric lock	
29	-	(-)	set up	-
30	GND		logic selector gnd cable	Fig.31
31	DATE		logic selector data cable	
32	PWF		logic selector pwf cable	
33	RST		logic selector rst cable	

34	AUX SEL		auxiliary output	-

DANGER: respect the connections in the chart, respect the polarity where necessary, do not connect utilities with absorptions exceeding the limits in the chart. Remove the jumpers between all the terminals used. Otherwise, an important safety function could be compromised and the automatic movement of the doors could cause serious damages to things or people with the risk of fatal injuries.

COMMISSIONING OF THE OPERATOR

The commissioning of the automatism includes the implementation of the sequence mentioned below:

1- battery and mains power source connection (230Vac); (optional battery back up)
2- Learn Sensors (LS) procedure;
3- Learn Parameters (LP) procedure;
4- any parameters adjustment;
5- check of the correct tightening of all the screws, of the trolleys anti-derailment mechanism, of the box and of all the elements subject to stress and vibrations during operation;
6- final check of the correct operation of all the safety devices installed with the use of specific tools provided by EN16005 standard;

DANGER: all the activities from 1. to 6. mentioned above are essential for safety purposes; make sure to have the required skills to perform them correctly, do not omit any step or check. Otherwise, an important safety function could be compromised and the automatic movement of the doors could cause serious damages to things or people with the risk of fatal injuries.

Connect the batteries (if present) and afterwards the mains cable (230VAC) to the control unit then proceed to sensor self-learning: LS.

ATTENTION: if no optional device is installed for the night closing control, make sure that the KEY input is short-circuited with the suitable COM input (terminals 22 and 23); otherwise, it is not possible to start the automatism; if a sensor compliant with EN 13849-1 standard performance level "d" is not installed to the proper 3-4 terminals, short-circuit the two terminals, otherwise it is not possible to start the automatism.

LEARN SENSOR PROCEDURE (LS)

The learn sensor (LS) procedure allows the Dualcore control unit to automatically identify the sensors connected with special reference to the presence and quantity of monitored sensors. Upon identification, the control unit shows on the display the configuration and the type of sensors identified: the installation technician has the responsibility to check via the display that the identified configuration matches with the installed one, to check that it is the correct one and then, ultimately, confirm the configuration. From this moment on, the control unit will use the confirmed configuration.

DANGER: before confirming the acquisition, carefully check that the configuration identified by the control unit is adequate to the system and check that all the safety devices

are correctly identified. Otherwise, the safety devices could not operate and the automatic movement of the doors could cause serious damages to things or people with the risk of fatal injuries.

DANGER: to correctly perform the LS, it is necessary that all the inputs of the sensors and of the control unit mutually have the correct NO and NC values. Check the default values of the control unit inputs in the appropriate previous chart and of the sensor inputs on the manual of the same sensor. In case of incompatibility, reprogramme the specific input in the control unit following the procedure in this manual. Otherwise, the safety devices could not operate and the automatic movement of the doors could cause serious damages to things or people with the risk of fatal injuries.

Enable the procedure (LS) as here below using the keys and the display (fig 27.a):

1- press the +/- keys of the screen until the LS code appears then press ENT: the screen will display the code --;
2- press and hold for 5 seconds the ENT key until the counter appears from 30, 29, 28, ...seconds to 0: the procedure has been started correctly.
3- about 30 seconds are available to: close the cover of the automatism, check that the sensors are in the correct position, free the detection area removing any obstacles under the sensors;
4- after about 30 sec. the control unit resets the sensors and acquires their configuration in about 10 sec.; the LS procedure lasts in total about 40 sec.; it is possible to identify the completion of the LS procedure when the sensors remain in standby mode;
5- after 40 sec. open the cover of the automatism and read the code on the display; if the code starts with an S, follow the instructions at point 6. if the code starts with F, follow the instructions at point 7;
6- the code S...means that the sensors have been identified correctly according to the correspondence of the chart below; check that the indication on the screen matches with the sensors actually installed and if yes, press ENT to confirm and save the configuration (the screen will show E1 flashing - waiting for LP procedure); otherwise, press ESC, check the cabling of the sensors and repeat the LS procedure from point 1;

!!!! for Sensors' wiring please refer to page 93 and following.

Alert	Safe Open 2	Safe Open 1	Safe Close 2	Safe Close 1
S0	NO	NO	NO	NO
S1	NO	NO	NO	YES
S2	NO	NO	YES	NO
S3	NO	NO	YES	YES

NOTE: the YES/NO indication indicates whether in the input shown at the beginning of the column an active safety device provided with the test function according to EN16005 has been detected.

7- the flashing code F...indicates that the LS procedure cannot be completed because one or more inputs of the safety devices are active, instead of being at rest; use the chart below to identify the inputs from the screen code;

Alert	Safe Open 2	Safe Open 1	Safe Close 2	Safe Close 1
F1	At rest	At rest	At rest	Active
F2	At rest	At rest	Active	At rest
F3	At rest	At rest	Active	Active
F4	At rest	Active	At rest	At rest

write down the error code, press ESC to exit the LS procedure and search for the causes on the individual input among the following possible ones:

- setting error of the monitored inputs/outputs polarity
- setting error of the NO/NC logic values of the inputs and outputs of the sensors safety circuit
- presence of things or people in the detection field of one of the sensors safety devices
- hardware failure of one of the components.

Remove the causes, determining the error and repeat the LS procedure from point 1.
NOTE: it is possible to exit from the LS procedure in any moment pressing the ESC key.

DANGER: once the LS procedure is completed no changes must be performed to the system, to the connection and to the configuration of the sensors. In case of change, it is necessary to repeat the LS procedure completely. Otherwise, the safety devices could not operate and the automatic movement of the doors could cause serious damages to things or people with the risk of fatal injuries.

LEARN PARAMETERS (LP) PROCEDURE

The parameter acquisition procedure (LP = learn parameters) allows the control unit to acquire essential data for operation such as the size of the sliding compartment, the weight of the leaves and the opening direction.

IMPORTANT: before carrying out the LP, make sure that there are no obstacles or excessive frictions that hinder the sliding of the leaves. Carefully check all the mechanical parts inside the automated system that interact with the sliding (wheels, carriages, anti-derailment devices, belt, etc.) and all fixtures in the mobile and fixed parts with particular reference to the floor guides and the air tightness gaskets or brushes which can be a brake on the sliding of the leaves. Otherwise, the procedure may not end and could lead to product malfunctions or excessive wear of some parts..

DANGER: during the LP procedure the safety sensors - Fig.4 ref A/B/C/D of the manual - are not connected. Make sure people are not passing. If not, the automatic movement of the doors can cause serious injury or damage to persons or objects with the risk of fatal lesions.

Make sure that the factory jumpers are present between terminal boards 3/4, between terminal boards 16/17/18, and between terminal boards 22/23.

IMPORTANT: slide the leaves to the closed doors position making sure that the limit switch is in contact with the carriage (see paragraph on leaf limit switch adjustment in the manual).

Activate the (LS) procedure as described below using the keys and display (fig 23.1)):

1- connect the control unit to the 230 V ac mains power supply
2- after a few seconds, the display shows E1 flashing
3- press the - key several times until the display shows LP
4- press the ENT key: the display shows –
5- press again and hold the ENT key (about 5 sec.) until the segments of the display start to rotate, then release the ENT key
6- after a few seconds, the display shows St and the control unit waits for about 15 seconds before starting the Lp procedure
7- the Lp procedure is enabled and the automated system performs some openings and closings (max. 5) useful for measuring the parameters; at the end the leaves are positioned completely open and the display shows Op.
8- proceed with the connection of the safety sensors and the subsequent LS procedure.

PARAMETERS SETTING MODE

After completing the LS and LP procedures, the Dualcore control unit is ready to work with the factory parameters or with the last parameters set by the installation technician. It is possible to edit the settings, using the keys on the control unit and the relating screen.

NOTE: it is always possible to return all the values of the control unit to the factory settings performing a default reset as described here below:

1- press the keys +/- until the Sd code appears
2- press ENT: the value -- is displayed;
3- press ENT again and hold down for 5 seconds;
4- the screen segments start rotating and, then, the E6 message appears;
5- the parameters of the control unit return to the factory settings;
6- repeat the LS and LS procedures for the data acquisition of the input, essential for operation

To edit the adjustments of the chart below, proceed as follows:

1- press the +/- keys to display the number of the parameter to edit: 01 opening speed, 02 closing speed, etc.;
2- press ENT: the value of the parameter present is displayed;
3- select the desired value with the +/- keys then press ENT to confirm the selected value: the value is saved by the control unit;
4- press ESC to end the procedure

NOTE: if during adjustment, the keys are not pressed for 10 seconds, the control unit exits the procedure and returns to normal operation status.

ATTENTION: check the self-acquired weight after the LP procedure in the DIAGNOSTICS section (see page 23) under parameter 3. Then, set the value matching with the weight of the door for the correct operation of the automatism.

The following chart shows the parameters and the relating display code:

ID	Description	Adjustment	Default
01	Opening Speed	20cm/s ÷ 70cm/s adjustment step 5cm/s.	60
02	Closing speed	10cm/s ÷ 40cm/s , adjustment step 5cm/s.	20
03	Stop time	0 - 60 seconds adjustment step 1 second	0
04	Anti-crushing Opening	1 – 9 (1 minimum, 9 maximum)	9
05	Anti-crushing Closing	1 – 9 (1 minimum, 9 maximum)	7
06	Partial percentage	30 - 90 percentage of opening compared to the total	50
07	Approach speed	3cm/s ÷ 10cm/s adjustment step 1cm/s.	5
08	Accelerations	10 – 30 adjustment step 1	24
09	Deceleration	5 – 20 adjustment step 1	16
10	Approach	4 cm - 40cm adjustment step 1cm modification of both values (opening equal to 1/2 closing)	20
11	Opening Limits	0% - 50% adjustment step 1%. Movement limitation compared to the leaf stroke	2
12	Keeping leaves closed force	0 - 9 adjustment steps 1, 0 disabled, 9 maximum	0
13	Type of electric lock	0 Not used 1 Normal - fail secure 2 Reverse - fail safe 3 Bistable 4 Safety bistable with door lock only with motor if KEY active	1
14	Door locking logic with electric lock or motor	0 Lock Disabled 1 Lock active in One Radar 2 Lock active in Two Radar 3 Lock active in One Radar and Two Radar If no electric lock is selected, the door is locked with the motor	1
15	Auxiliary input 1 configuration	0 Emergency opening 1 Master interlock 2 Slave interlock 3 Pharmacy opening 4 Repeat Start control 2 5 Semi-automatic 6 Stop movement 7 Single control for partial opening 8 Set partial opening on all inputs	1

		9 Semi-automatic with automatic closing	
16	Auxiliary input 2 configuration	0 Emergency opening 1 Master interlock 2 Slave interlock 3 Pharmacy opening 4 Repeat Start control 2 5 Semi-automatic 6 Stop movement 7 Single control for partial opening 8 Set partial opening on all inputs 9 Semi-automatic with automatic closing	0
17	Auxiliary output configuration	0 Not used 1 Interlock 2 Status Door open 3 Status Door closed 4 Failure 5 Ringer 6 Start 2 activated 7 Start 1 activated 8 Logic only output active 9 Electric lock activated	1
18	Multi Master address	0 No Multi Master management, 1–15 Unique address for Multi Master connections	0
19	Leaves weight selection	0 Automatic learning 1 <50kg per leaf 2 50kg-100kg per leaf 3 >100kg per leaf	0
20	Input polarity Start 1	0 NA 1NC	0
21	Input polarity Start 2	0 NA 1NC	0
22	Input polarity Safe Open	0 NA 1NC	1
23	Input polarity Safe Open 2	0 NA 1NC	1
24	Input polarity Safe Close 1	0 NA 1NC	1
25	Input polarity Safe Close 2	0 NA 1NC	1
26	Input polarity Aux In1	0 NA 1NC	0
27	Input polarity Aux In2	0 NA 1NC	0
28	Input polarity Key	0 NA 1NC	1

29	Output polarity Aux Out	0 NA 1NC	0
30	Output polarity Test Safe Close	0 NA 1NC	1
31	Output polarity Test Safe	0 NA 1NC	0
32	Key	0 Bistable 1 Monostable 2 Bistable - no movement on reactivation 3 Monostable - no movement on reactivation	0
33	Battery Management	0 Battery Not used 1 Battery Normal operation present 2 Battery Emergency operation present 3 Battery Safety operation with battery capacity control present - only for RD100	0
34	Not managed		
35	Safe Open (slow motion)	0 Not active 1 Active	0
36	Not managed		
37	Elastic management	0 Not present 1 Present	0
38	Reset speed	5cm/s ÷ 15cm/s adjustment step 5cm/s.	10
39	Emergency opening stop time	0 - 60 seconds adjustment step 1 second	5
40	Not managed		
41	Opening delay	0 - 99 adjustment step 0.1 second	0
42	Start = Safe close	0 Safe close does not activate opening with door closed 1 Safe close activates opening with door closed	0

DANGER: parameter 34 must be set to 0 as the default for the correct operation of the board. Otherwise it may cause damage to the control unit.

NOTE: With parameter 33 set to 0, the selector does not signal when the battery is low. If you want to have a low battery signal on the selector, select a value other than 0 according to the desired behavior in the absence of mains power. For RD100 versions the value is set at level 3 by the Main Key SM

NOTE: With AUX IN set to Semiautomatic mode, the opening control can be given via Start1 or Start2 while the closing control must be given via AUX IN (not usable on RD100)

NOTE: With AUX OUT set to Ringer mode, the AUX OUT output will be activated for about 2 seconds following the activation in succession of the Start1 and Safe Close 1 control. This function is disabled in the Stop Closed and 1 Radar logic.

NOTE: With Key set as monostable, use NO contact between terminal boards 22/23 and parameter 28 at level 1

PARAMETERS FACTORY SETTING

It is possible to restore all the values of the control unit to the factory settings by executing a default **Sd** set as described below:

1- press the - key on the display until **Sd** appears then press ENT: the display will show code --;
2- press again and hold the ENT (about 5 seconds) until the display turns off for a moment, then release the ENT key.
3- the display shows information on: type of firmware User controller, main key, firmware safety controller, sensor configuration and finally displays E1 flashing;
4- the control unit parameters have returned to the factory settings except for the LS setting which remains the one previously stored;
5- repeat the LP and/or LS procedures

CONTROL UNIT PASSWORD

You can enter a password that prevents modification of the Dualcore control unit settings.

To insert password proceed as follows:

1- press the - key on the display until the **Sp** (set password) code appears then press ENT: the display will show 0 flashing
2- press + the display will show 1 flashing
3- press and hold ENT (about 5 sec.) until the display shows 0 flashing
4- enter a 4-digit code **WARNING:** pay attention when choosing the code and save it separately - to enter the code press + or - to select the numbers from 0 to 9 and press ENT. E.g.: to enter the code 5392: select 5 and press ENT, select 3 and press ENT, select 9 and press ENT, select 2 and press ENT
5- the display shows – for about 2 seconds
6- the segments of the display rotate for a few seconds after which the control unit exits the password entry mode. The door works with the previously set parameters. Each time the + or - button is pressed, the display shows Ps. In order to change the parameters or carry out the LP/LS/Sd procedures, the board must be unlocked with the following procedure.

To unlock the board, proceed as follows.

1- press the – key and the display will show Ps flashing and after 2 seconds it will show 0 flashing
2- enter the password. E.g.: to enter the code 5392: select 5 and press ENT, select 3 and press ENT, select 9 and press ENT, select 2 and press ENT
3- the display shows – for about 2 seconds and then it will show 1
4- press – the display shows Sp
5- press ENT, the display shows 1 flashing
6- press - the display will show 0 flashing
7- press ENT
8- press ESC, the display segments rotate for a few seconds after which the control unit is unlocked. The door works with the previously set parameters

NOTE: it is possible to request an unlock password from Sesamo with the following procedure.

1- press "-" Ps flashes, after 2 seconds 0 flashes
2- press and hold ESC; after about 5 seconds the display shows a two-digit code, e.g. 00

Send the request for the unlock code to info@sesamo.eu indicating the two-digit code referred to in the previous paragraph together with the serial number of the S/N board shown on the label

DIAGNOSTICS

Memory data display
the display of the Dualcore control unit allows to display the system's saved values during operation or programming, such as, for example: firmware version loaded, number of operations performed, etc.
To display the desired parameter, proceed as follows:

- press the +/- keys of the screen until the "In" code appears then press ENT: the screen will display the code 0;
- press the keys +/- to scroll the codes (0, 1, 2,...) until reaching the desired one, then press ENT: for the meaning of the individual codes, consult the chart below;
- the display will show for about 20 seconds the value of the parameter consulted using a variable type of display according to the length of the value to show;
- pressing ESC or after 20 seconds, the previous menu is displayed again, at this point it is possible to consult another parameter with a similar previous sequence or exit consultation pressing again the ESC key;

Parameter	Description
0	firmware version of the user controller
1	firmware version of the safety controller
2	automatism type saved: C4 (hermetic automation)
3	total weight of the moving mass: P0 (0-100kg); P1 (100-200kg); P2 (200-300kg)
4	total number of operations performed by the control unit

5	sensors installed configuration: refer to the S codes chart in the LS procedure description paragraph

Note: each time the Dualcore control unit is powered or the reset button is pressed, the display shows the information 0/2/1/ and type of sensors used in order e.g. S3

DANGER: the total weight of the moving mass refers to the weight of a single door in case of one-door installation and to the weight of the sum of the two doors in case of double-door installation

DANGER: check that the indications of the parameters saved in the control unit are compliant with all the actual features of the system installed with special reference to the saved weight of the doors, to the type of automatism and to the configuration present of the sensors. Otherwise, correct the values before starting the system.

DANGER: the total weight of the mass in movement refers to the weight of a single leaf for single leaf installations and the combined weight of the two leaves for double leaf installations

DANGER: check that the indications of the parameters stored in the processor comply with the actual characteristics of the system, with particular reference to the weight of the leaves saves, the type of automated system and the configuration of the sensors present. If necessary, correct the values before activating the system.

the Dualcore processor display gives information on the operating status of the system to make it easier to identify errors or malfunctions.
During normal operation the display shows the following information

Warning	Description
OP Steady	Door in a fixed open position
OP Flashing	Door in opening phase
CL Steady	Door in a fixed closed position
CL Flashing	Door in closing phase
St Steady	The door enters a stop state following the detection of an anti-crushing device, safety sensors enabled during opening or the Key contact activated

Note: with RD100 automated system, the opening operating mode is managed alternately by the Master control unit and the Slave control unit. Closing is always managed by the Master control unit

Faulty operation, causes/solutions

Description	Warning on the display	Cause/solution
The door remains open	Op Steady	The logic selector is on the stop open-change logic position An opening control is inserted, e.g. start1/start2/photocell/emergency opening - check the respective inputs
The door does not open/start the acquisition of Lp parameters	St steady	Key contact inserted - check contact key
The door reverses during the closing phase	Op flashing	The movement of the door activates the opening control of the sensor or the safety of the sensor B/C - check and/or calibrate the sensor Friction activates the reversal of the movement - eliminate friction
During opening the door stops at about 15 centimeters from total opening and closes	Op flashing followed by Cl flashing	The A/D opening safety sensors are activated - check and/or calibrate the sensors
The door stops during the opening phase and then closes again	Op flashing followed by Cl flashing	Friction activates the stop and the subsequent reversal of the movement - eliminate friction

Errors on inputs of active safety devices

Before each opening/closing maneuver, the processor checks the active safety devices (sensors) via the test circuit and if a fault is detected does not carry out the maneuver. In this case, the display will show an F code error (ref. table below) which refers to the pending test (awaiting completion) of one of the safety devices installed:

Warning	Description
F1 Flashing	Safe Close 1 supervision failed
F2 Flashing	Safe Close 2 supervision failed
F3 Flashing	Safe Open 1 supervision failed
F4 Flashing	Safe Open 2 supervision failed

The signal code indicates that the test on the safety device cannot be completed: this situation arises due to a fault with the sensor or if there is something activating the sensor (e.g. person or object in the field of action). Find the cause of the problem, first checking that the sensor's field of action is clear of persons or objects and that the wiring is intact and connected correctly.

Protection circuit errors

Warning	Description
F8 Flashing	Communication error with Safety Controller, active warning only when the door is stationary
F9 Flashing	Error in safety device output function test

Errors F8 and F9, if it not resolved automatically after a brief period, indicate a possible internal fault with the processor in the communication system between the two microprocessors or in the system installed for the emergency cut-off of the motor. If the problem persists, replace the processor.

Faulty states on start-up

The error message below indicates a fault detected when the system was started up:

Warning	Description	Solution
E1 Flashing	Failure to acquire door parameters	Perform LP procedure
E5 Flashing	Main key not inserted or not configured	Check the correct insertion of the main key or replace the main key with a functioning one.
E6 Flashing	Failure to acquire monitored sensors, continue with LS procedure	Perform LS procedure
E8-1 Flashing	Motor-Encoder connection error	Check encoder wiring - if the wiring is correct replace motor/encoder unit
E8-8 Flashing	Encoder diagnostic error	Replace motor/encoder unit

The following errors:
E3 / E4 / E7-2 / E7-3 / E7-4 / E7-5 / E7-6 /E7-7/ E7-8 / E7-9 / E7-A/ E7-b / E7-C / E7 -F / E8-2 / E8-3 / E8-4 / E8-5 / E8-6 / E8-7 / E8-9 /E8-A/ E8-b/E9

They are related to transient anomalies. If they persist, replace the board and send it to Sesamo with the indication of the error code reported.

Error messages for RD100

The error codes listed in the following table appear exclusively on the RD100 automated system:

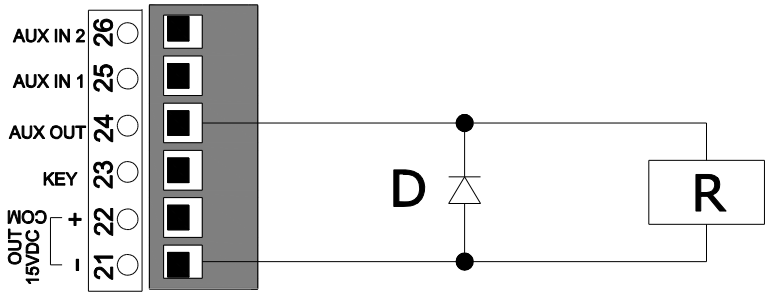
Warning	Description
A1 Flashing	Communication error (between Master and Slave)
A2 Flashing	Slave board error (warning active only on Master)

A3 Flashing	Master board error (warning active only on Slave)
A4 Flashing	Battery management error
A5 Flashing	Mains power failure error
A6 Flashing	Master/Slave opening sensor signal synchronization error
A7 Flashing	Dead battery error

A1 check the wiring between MASTER and SLAVE and make sure that both boards work with the same firmware version.
A2 indicates that a problem has been found on the SLAVE board - make sure that all the connections are correct and that there is power.
A3 indicates that a problem has been found on the MASTER board - make sure that all the connections are correct and that there is power.
A4 check the battery charge, make sure that the battery charger board is installed inside the Master control unit, check the connections, check the fuse Fig. 21.
A5 check for mains power supply
A6 check the connection to the MASTER and to the SLAVE of the opening sensor B fig. 4
A7 emergency batteries low, replace the batteries

RELAY BOARD CONNECTION (OPTIONAL)

Install the optional relay board to use the auxiliary output for obtaining a signal according to parameter settings no.17 - connect as follows:



R = Relay 12V DC - 100mA MAX **D** = Protection diode
Note: relay board art.PF11.52 is available on request

START - RESET - DELIVERY

When powering on the Dualcore control unit or after reset, the display shows the following information:
- Firmware version of the User Controller (useful information in case of assistance)
- Type of control Used C4 (ref. chart below)
- Firmware version of the Safety Controller (useful information in case of assistance)
- Coding of the monitored sensors managed S0..S3 (ref. LS procedures chart)

Alert	Description
C4	Automatism with doors up to 220 kg (Ermetika)

Upon completion of installation and, in any case, after a reset procedure, the automatism is ready to operate with a double sensor logic (input/output) if no selectors are installed or in the selected logic by the selector if this is installed.

Close the cover of the automatism following the reverse procedure used to remove it.
Make sure that the two fixing screws of the cover are well tightened.
Deliver to the customer the technical documentation of the product.

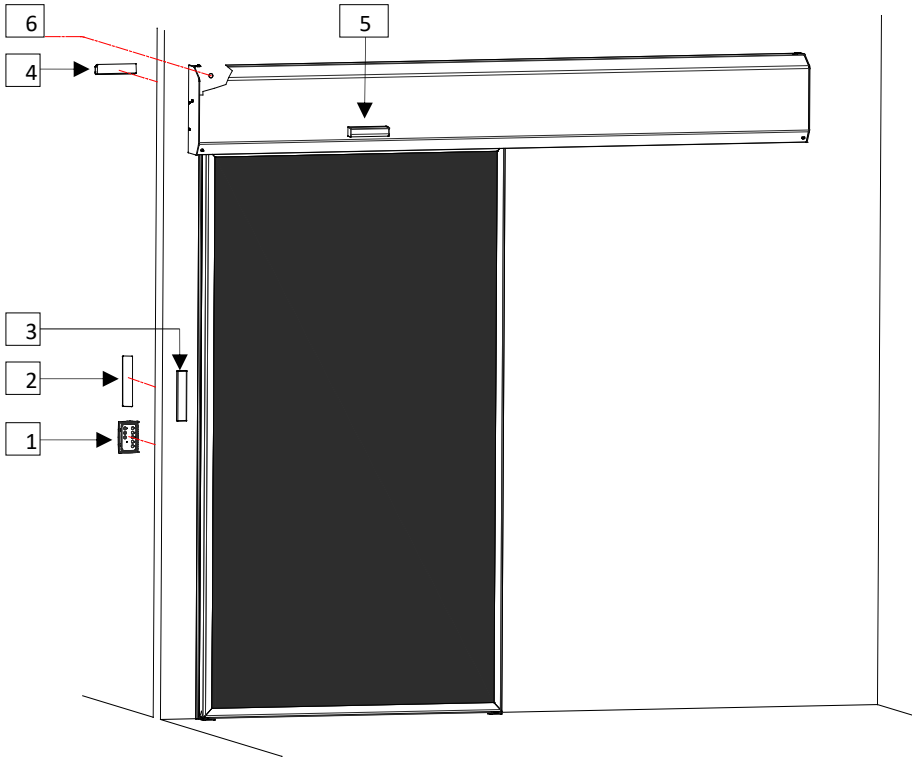


Fig. A

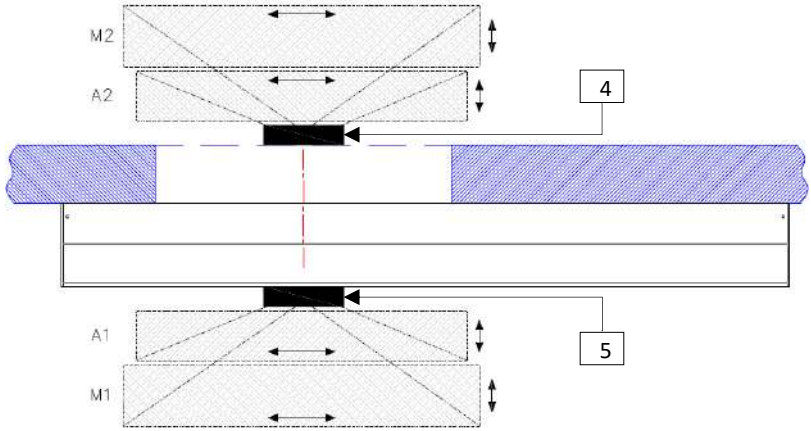

M2
A2
4
A1
5
M1

Fig. B

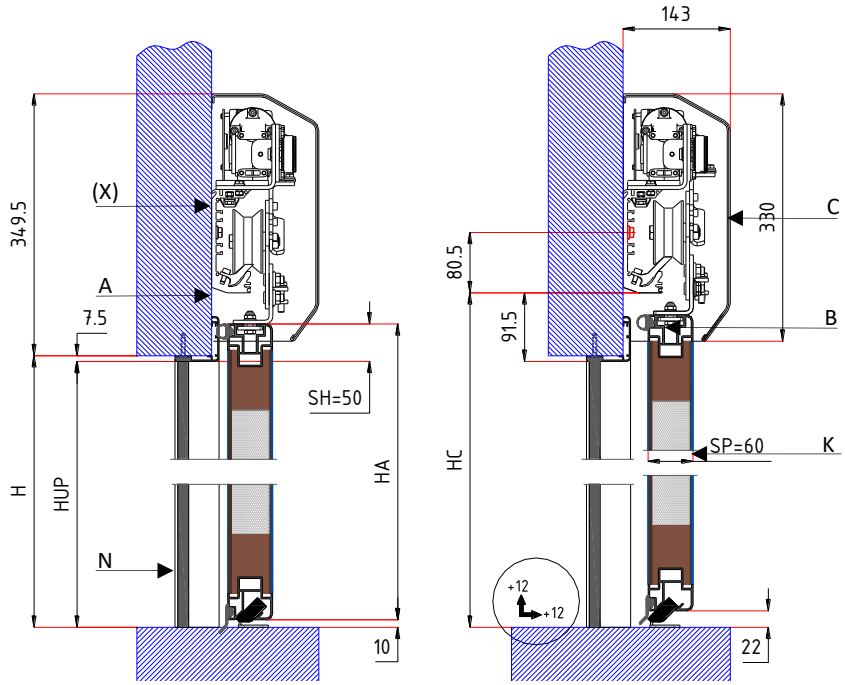
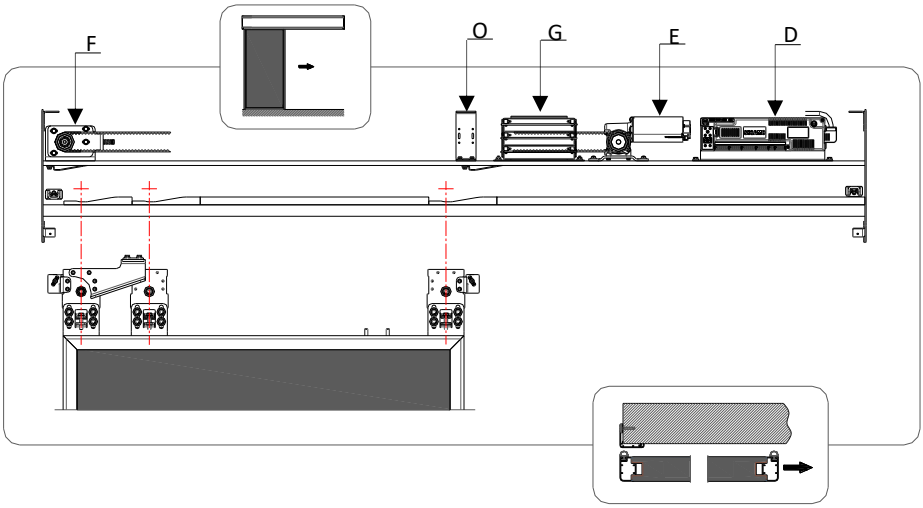
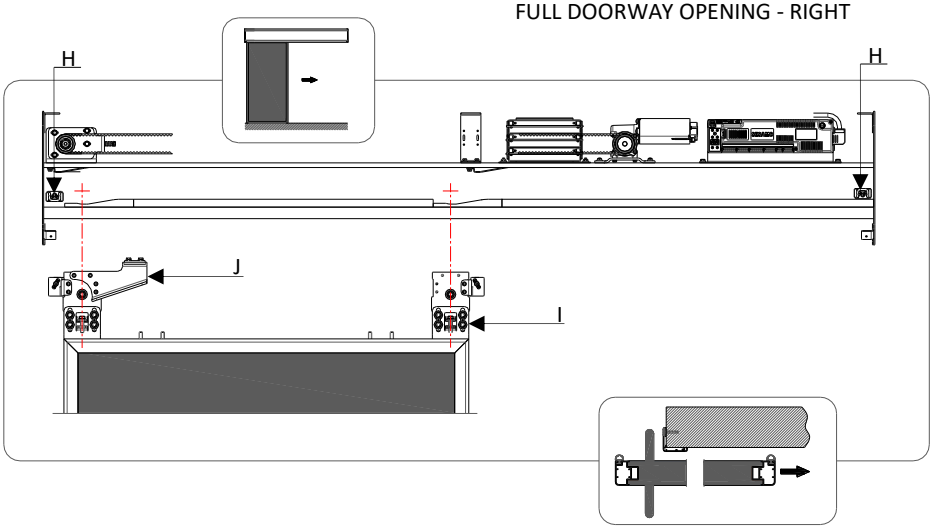

143
(X)
349.5
A
7.5
SH=50
H
HUP
HA
N
10
80.5
91.5
330
C
B
HC
SP=60
K
+12
+12
22

Fig.1



FULL DOORWAY OPENING - RIGHT



PARTIAL DOORWAY OPENING - RIGHT

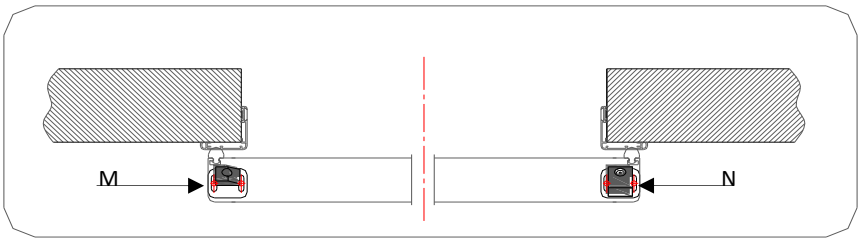
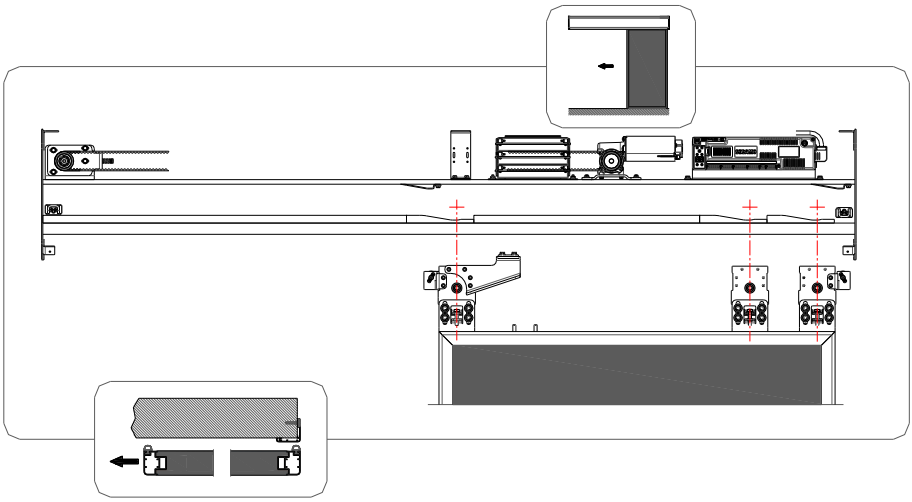
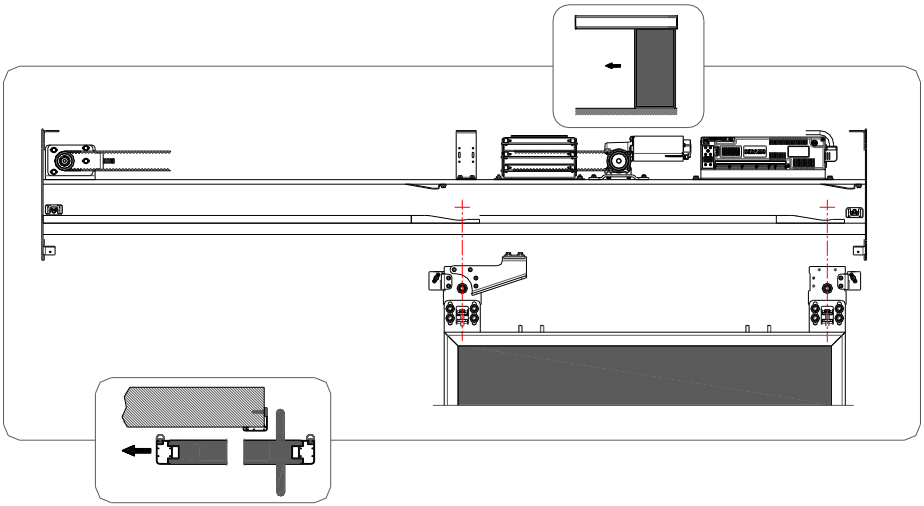


Fig.2



FULL DOORWAY OPENING - LEFT



PARTIAL DOORWAY OPENING - LEFT

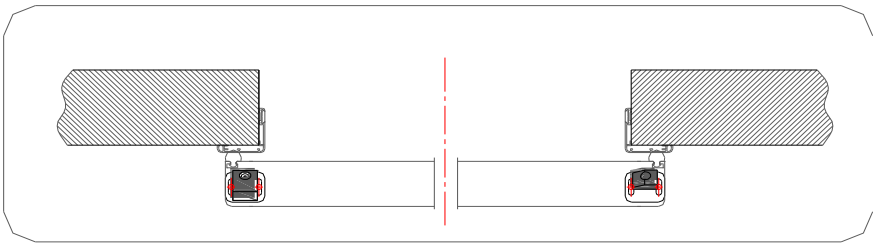


Fig.3

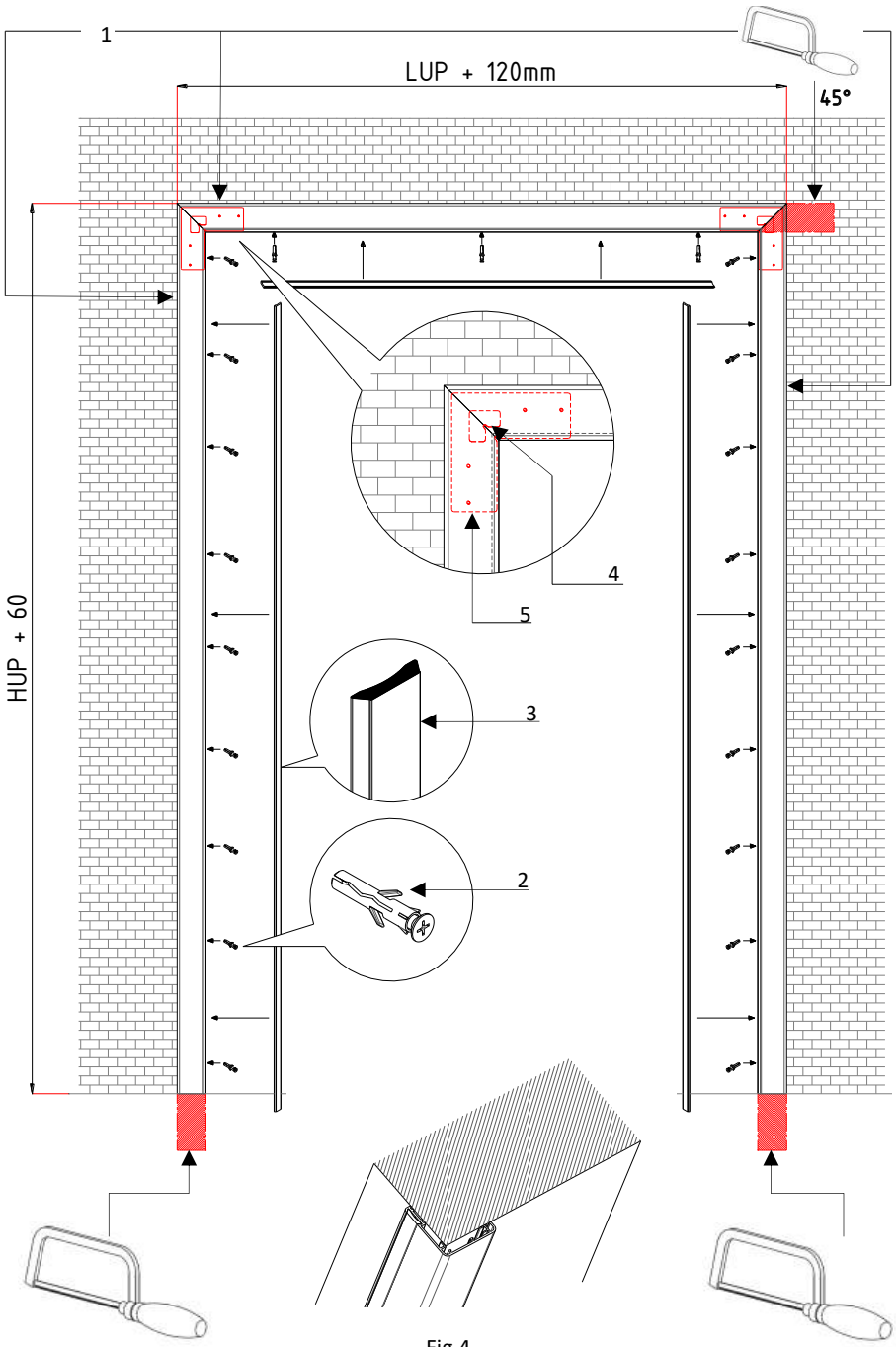


Fig.4

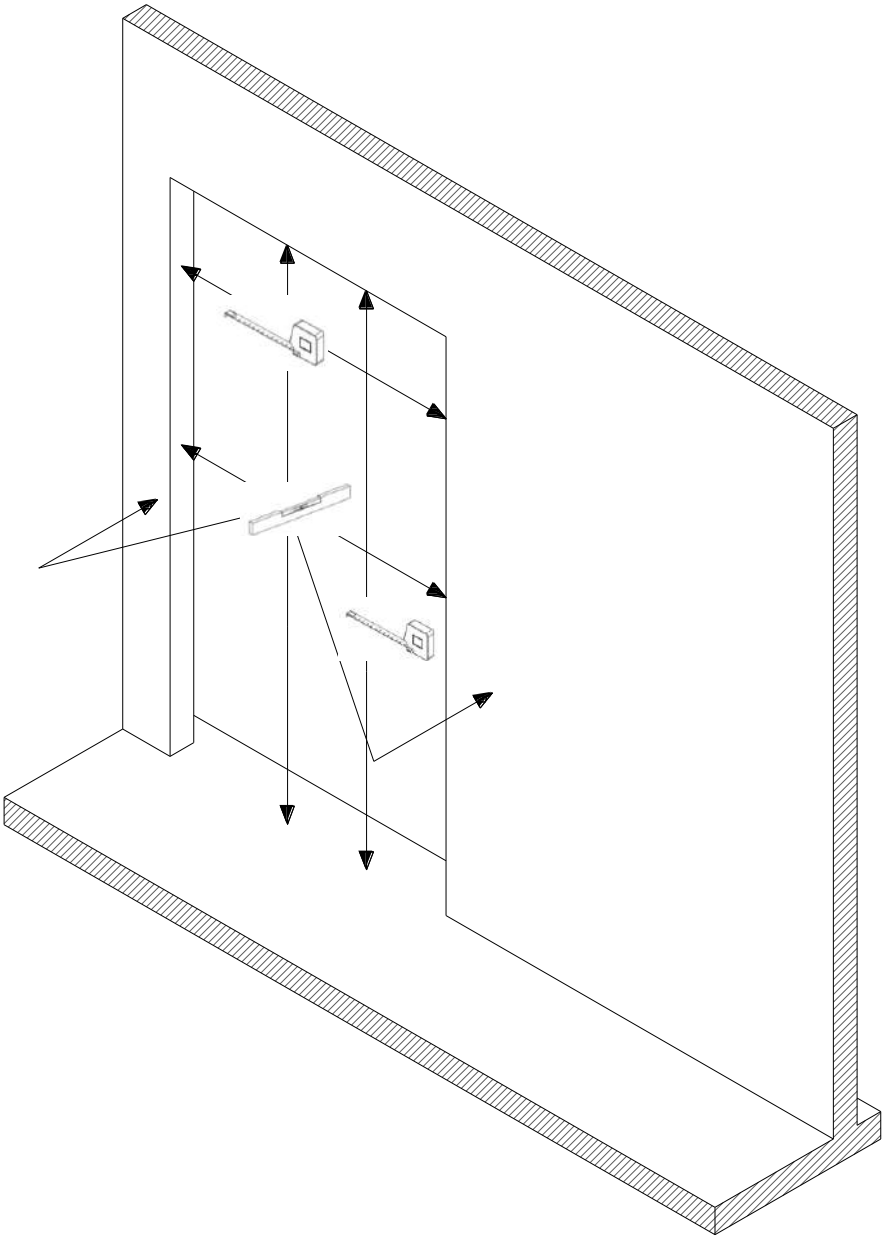


Fig.5

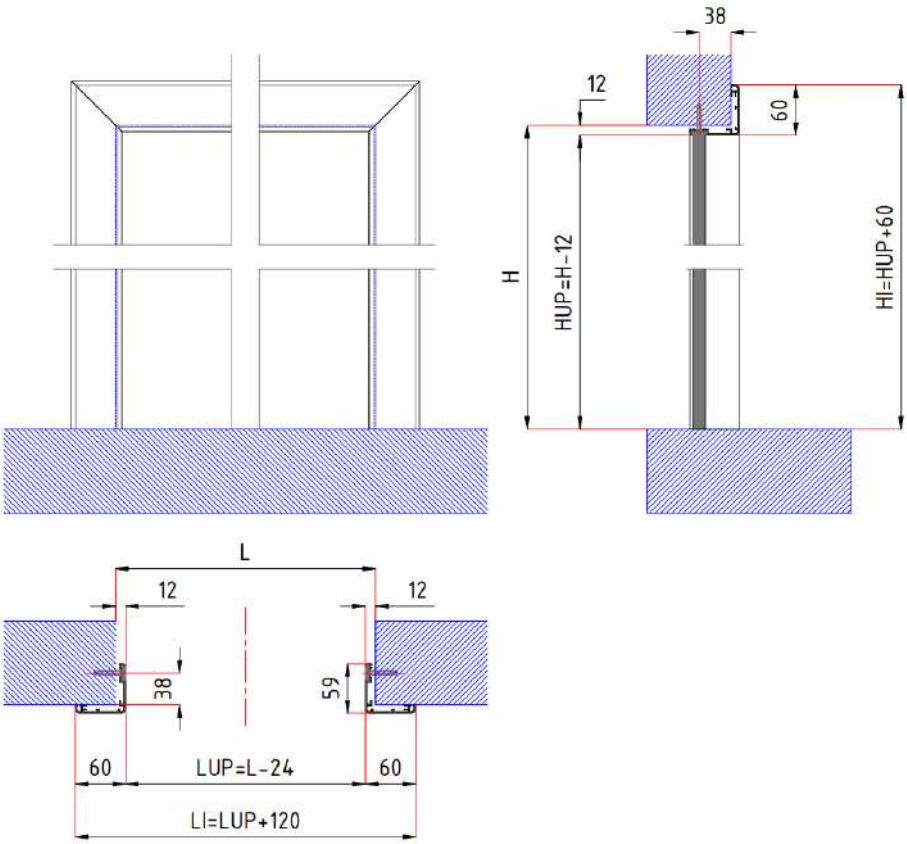

38
12
60
H
HUP=H-12
HI=HUP+60
L
12
12
38
59
60
LUP=L-24
60
LI=LUP+120

Fig.6

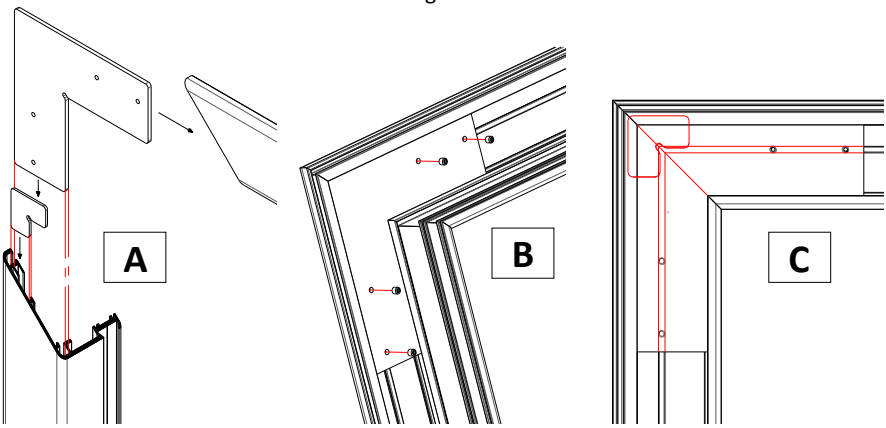

A
B
C

Fig.7

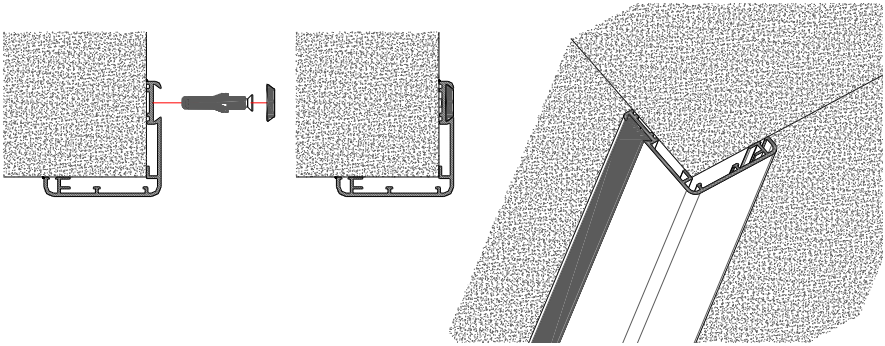


Fig.8

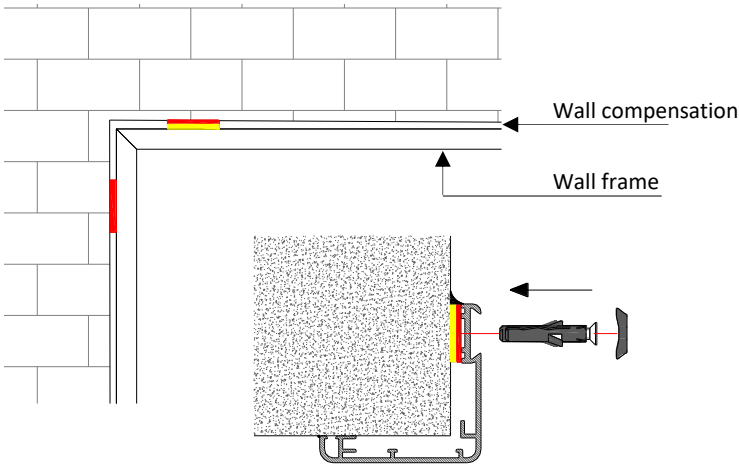


Fig.9

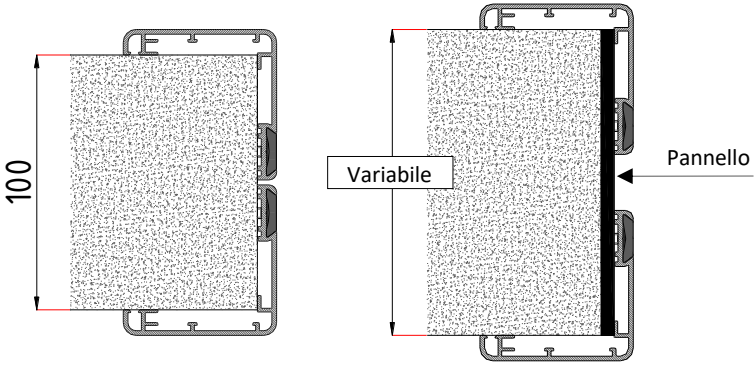
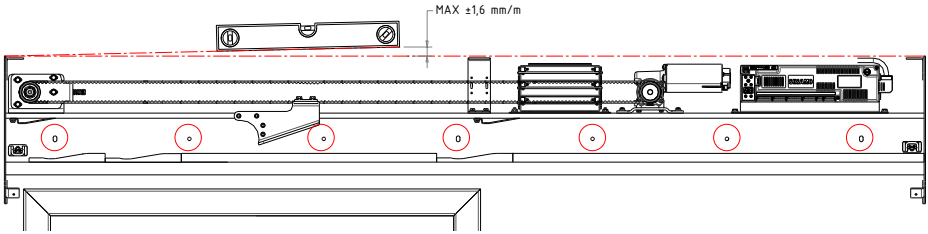


Fig.10


MAX ±1,6 mm/m

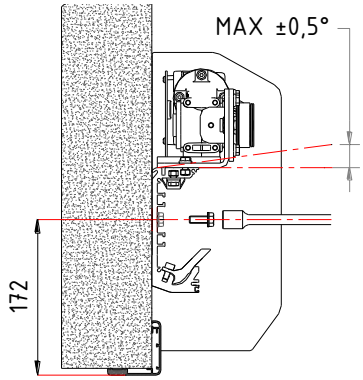

MAX ±0,5°
172

Fig.11

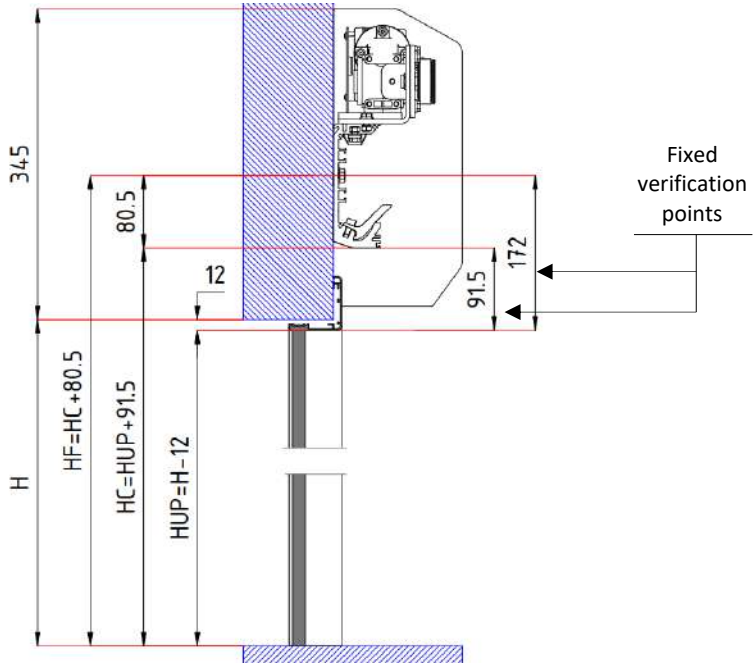
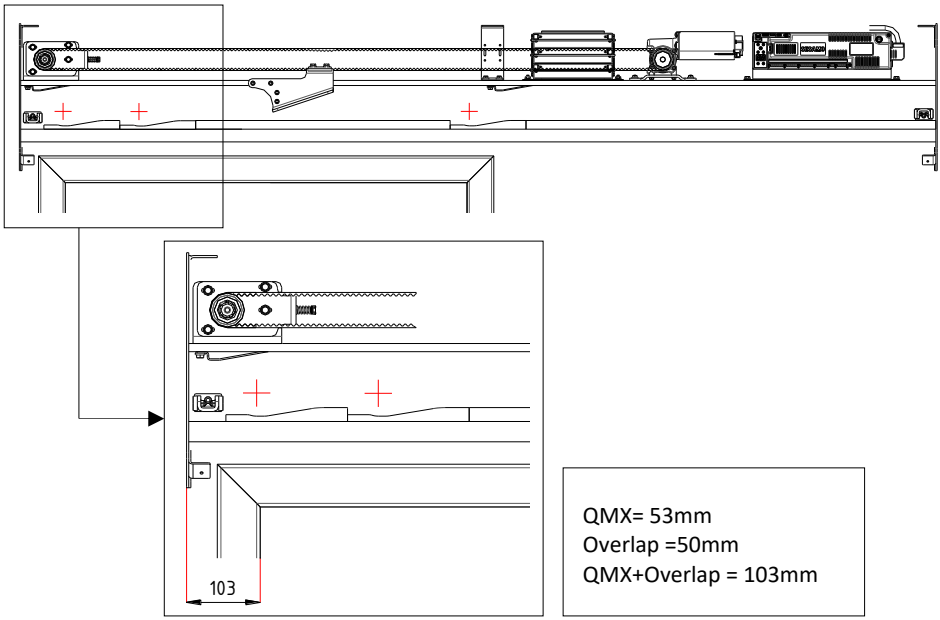
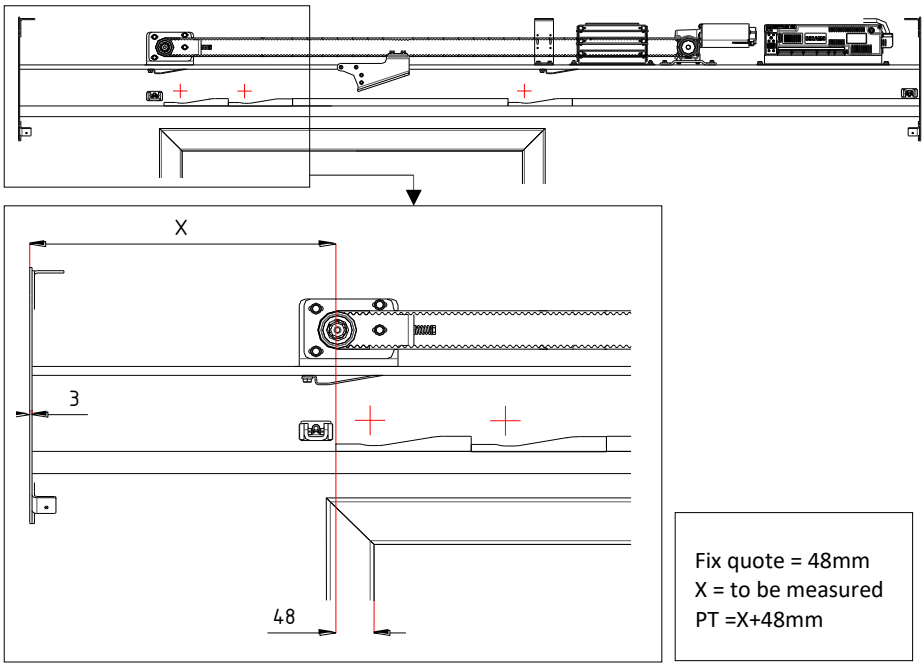

345
80.5
12
91.5
172
Fixed
verification
points
H
HF=HC+80.5
HC=HUP+91.5
HUP=H-12

Fig.12



QMX= 53mm
Overlap =50mm
QMX+Overlap = 103mm

Fig.13



Fix quote = 48mm
X = to be measured
PT =X+48mm

Fig.14

40

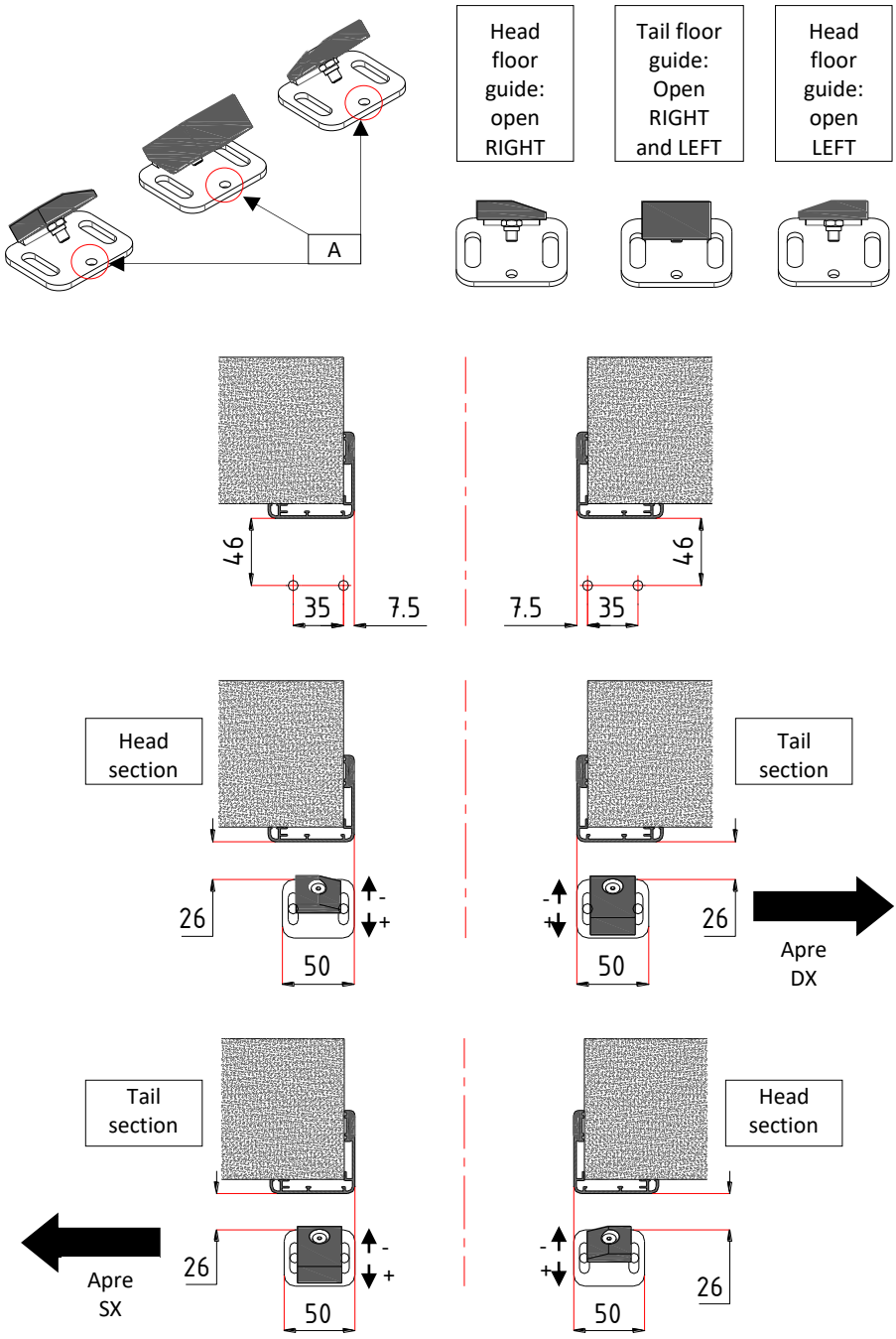

A
Head floor guide: open RIGHT
Tail floor guide: Open RIGHT and LEFT
Head floor guide: open LEFT
46
35
7.5
7.5
35
46
Head section
Tail section
26
50
-
+
26
50
Apre DX
Tail section
Head section
Apre SX
26
50
26
50

Fig.15

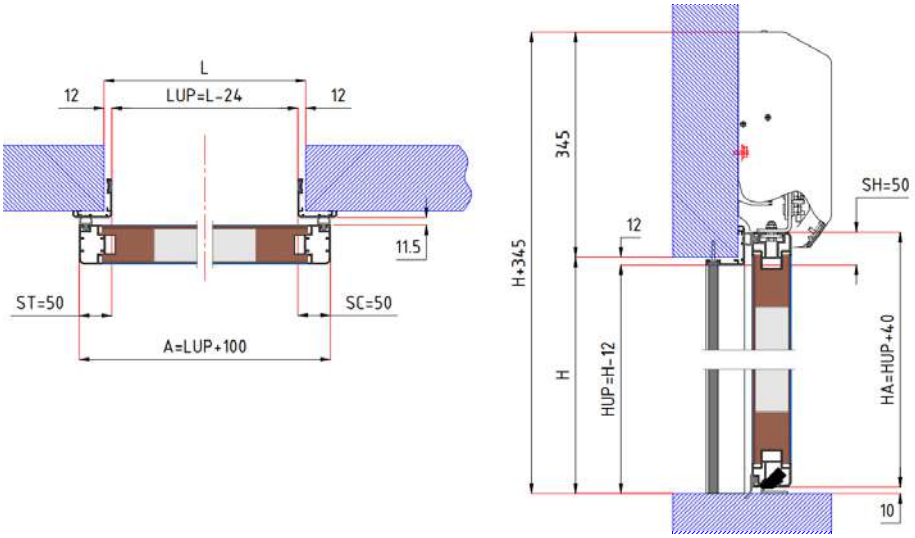

L
12
LUP=L-24
12
11.5
ST=50
SC=50
A=LUP+100
345
H+345
12
SH=50
H
HUP=H-12
HA=HUP+40
10

Fig.16

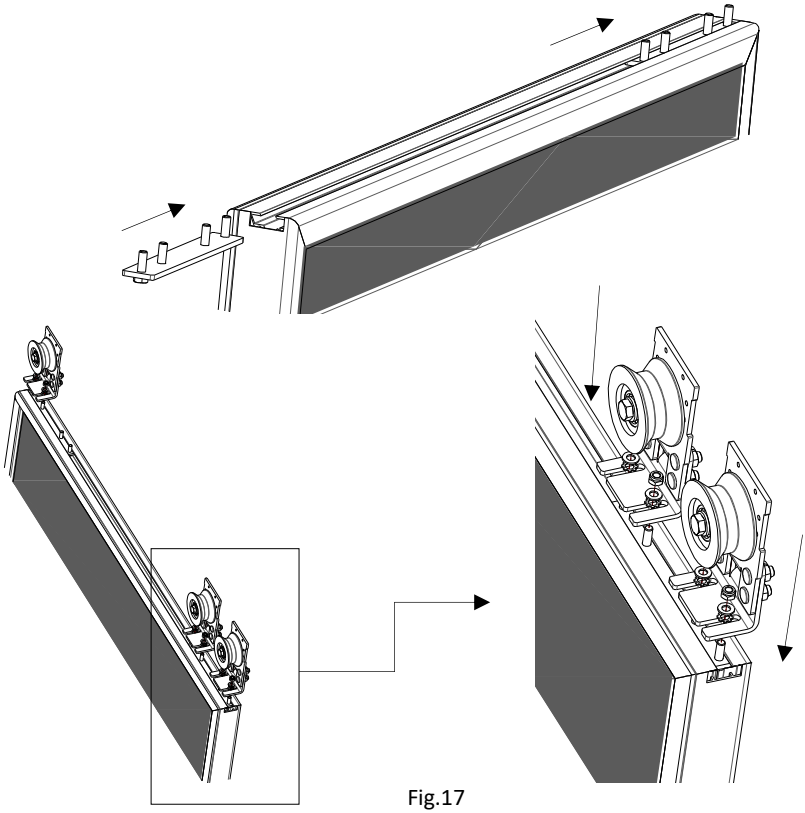


Fig.17

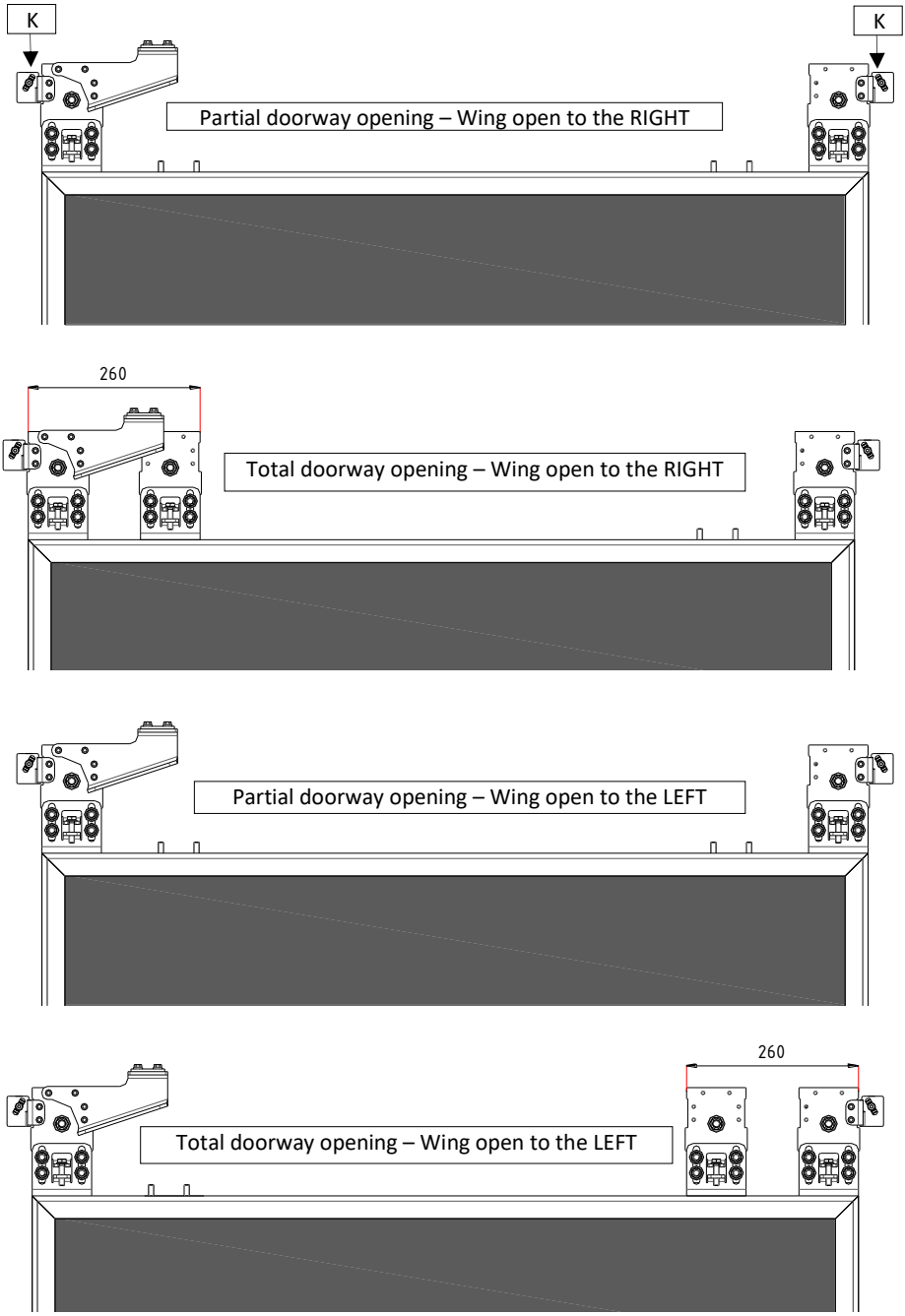

K
K
Partial doorway opening – Wing open to the RIGHT
260
Total doorway opening – Wing open to the RIGHT
Partial doorway opening – Wing open to the LEFT
260
Total doorway opening – Wing open to the LEFT

Fig.18

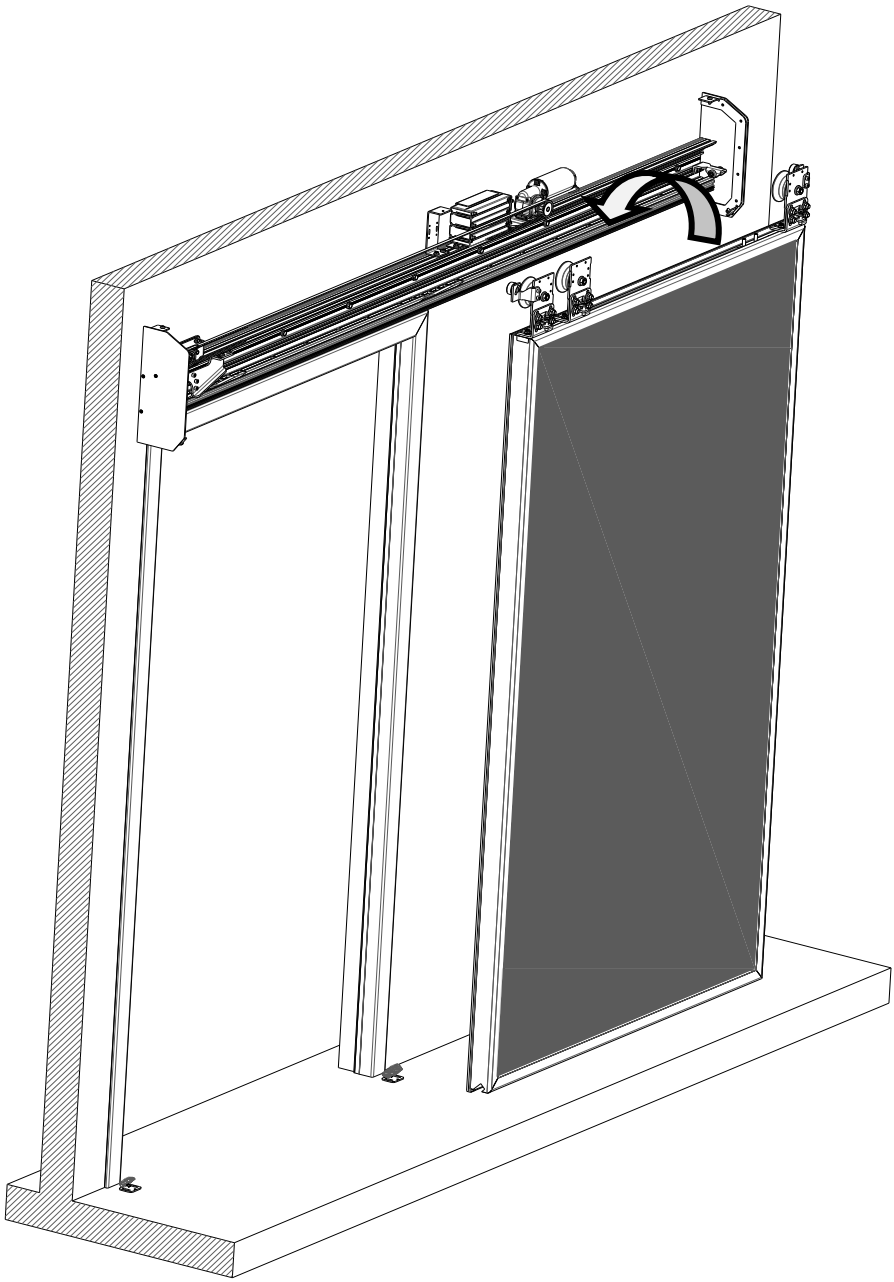


Fig.19

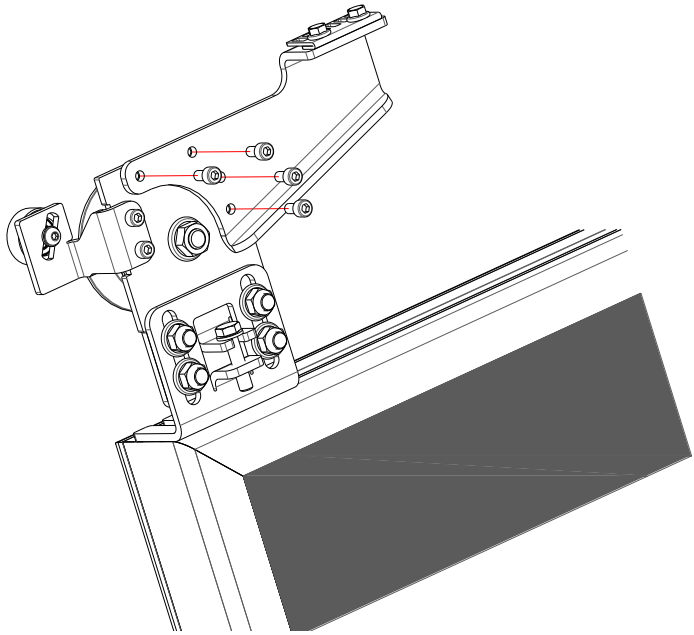


Fig.20

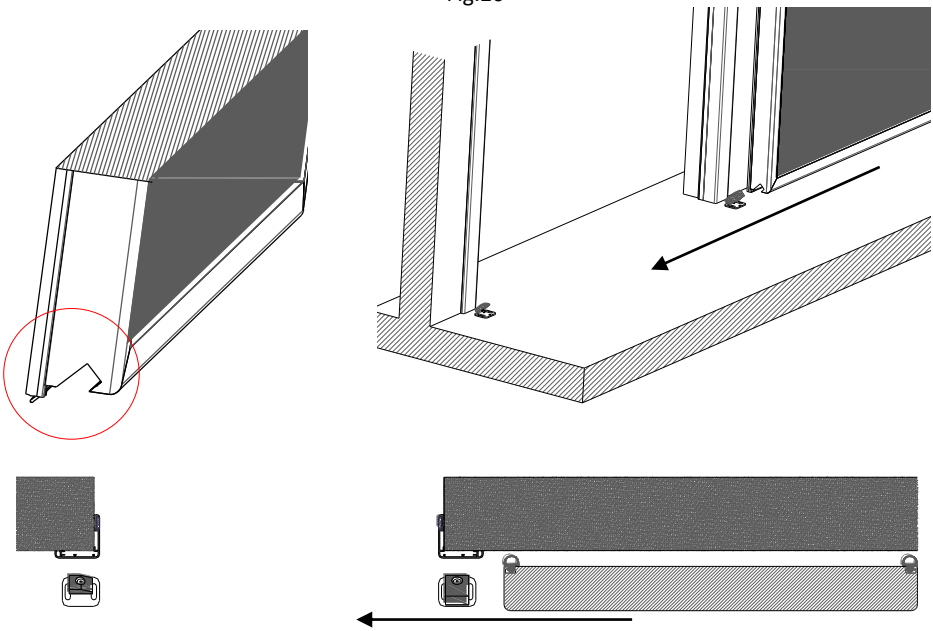


Fig.21

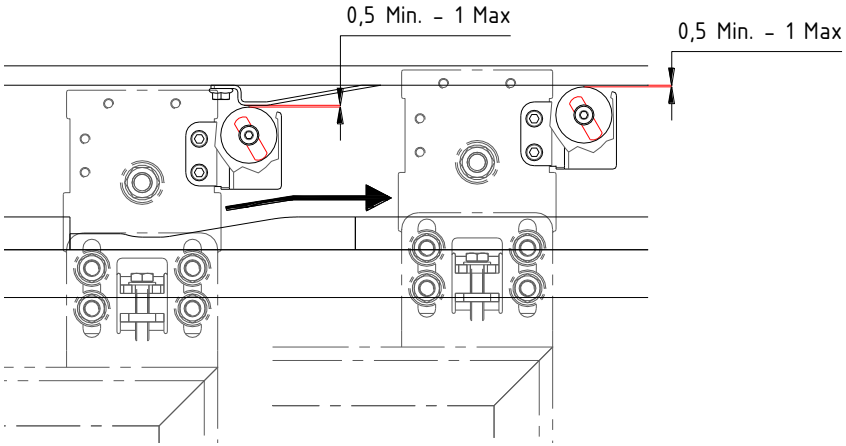
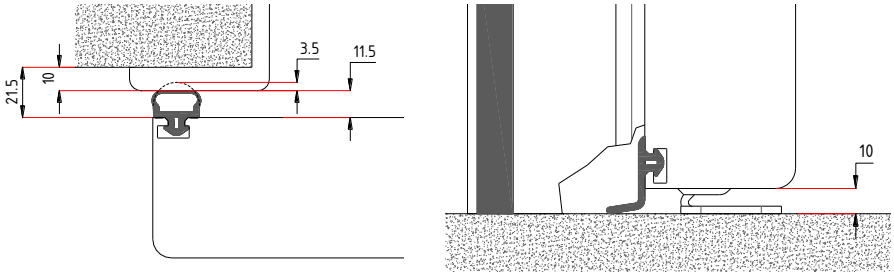


Fig.22



Horizontal section

Vertical section

Fig.23

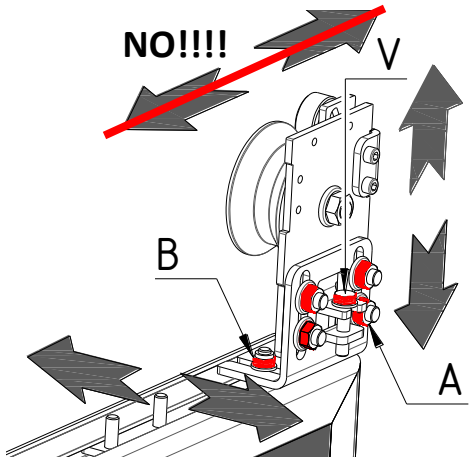
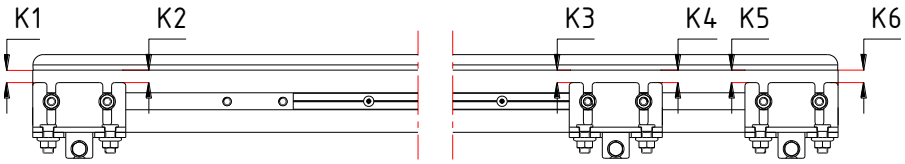
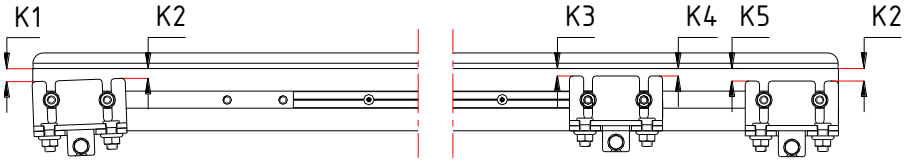


Fig.24.a



K1=K2=K3=K4=K5=K6

OK



K1≠K2≠K3≠K4≠K5≠K6

NO

Fig.24.b

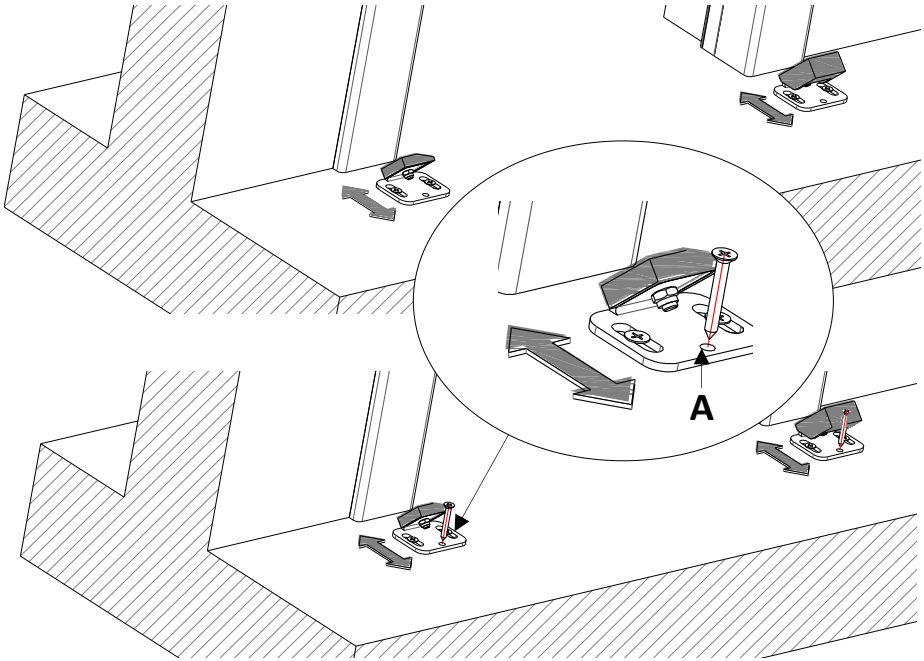


Fig.25

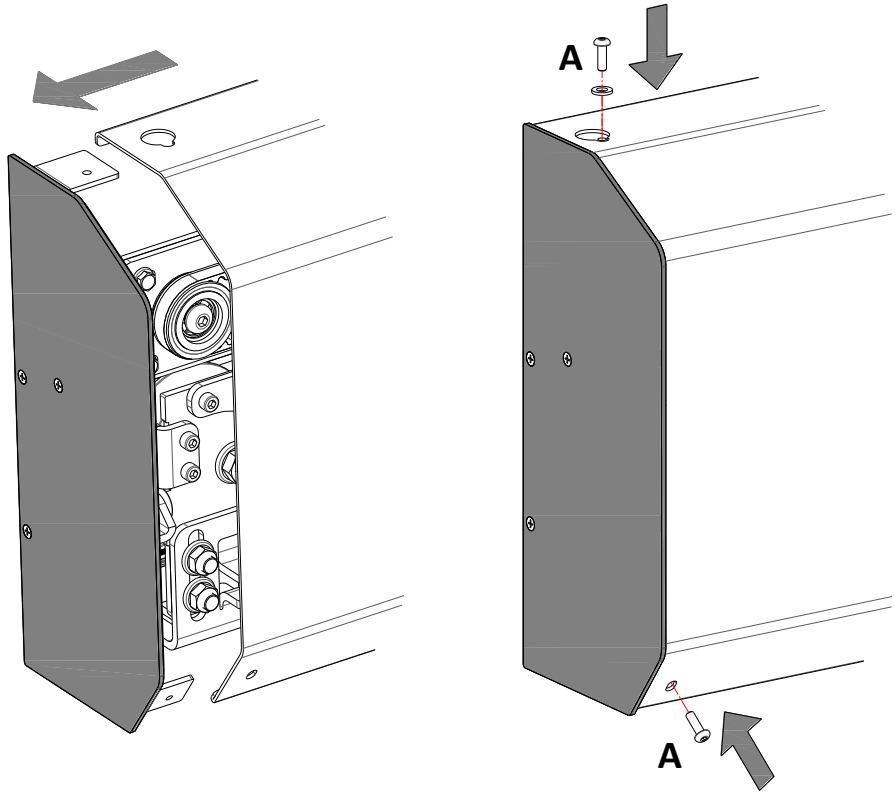


Fig.26

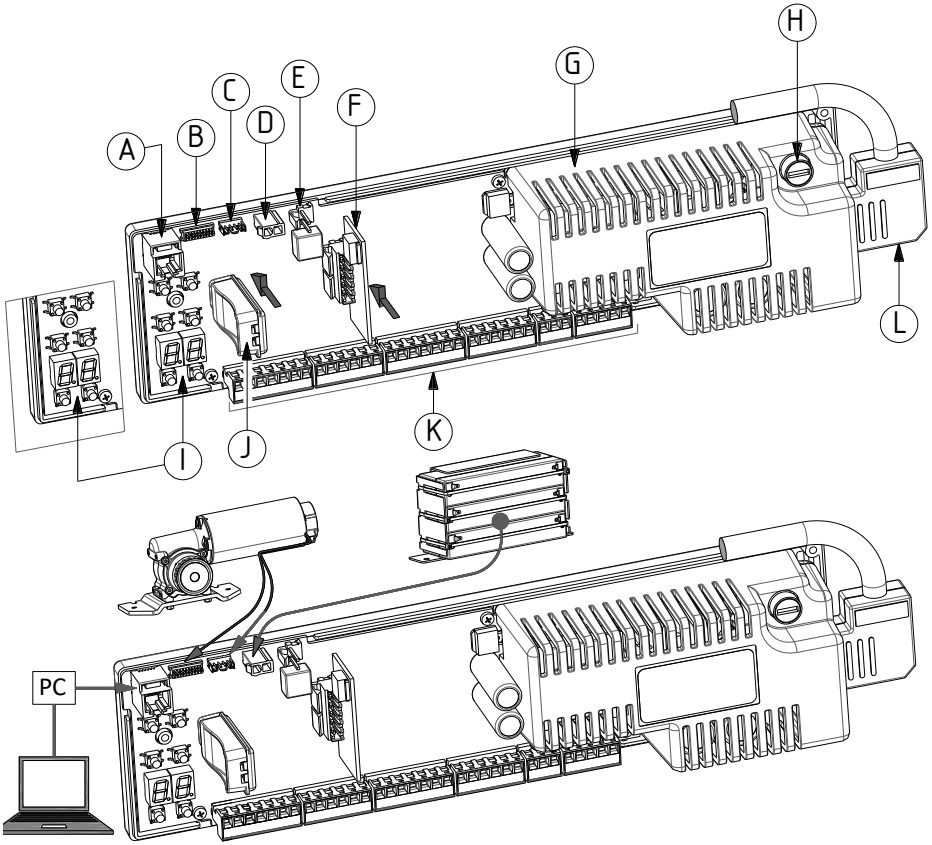


Fig.27

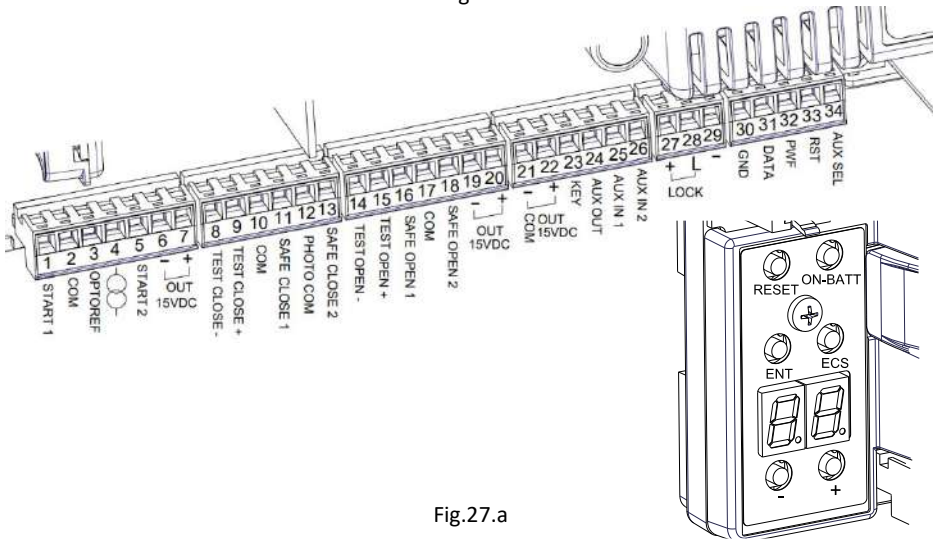


Fig.27.a

49

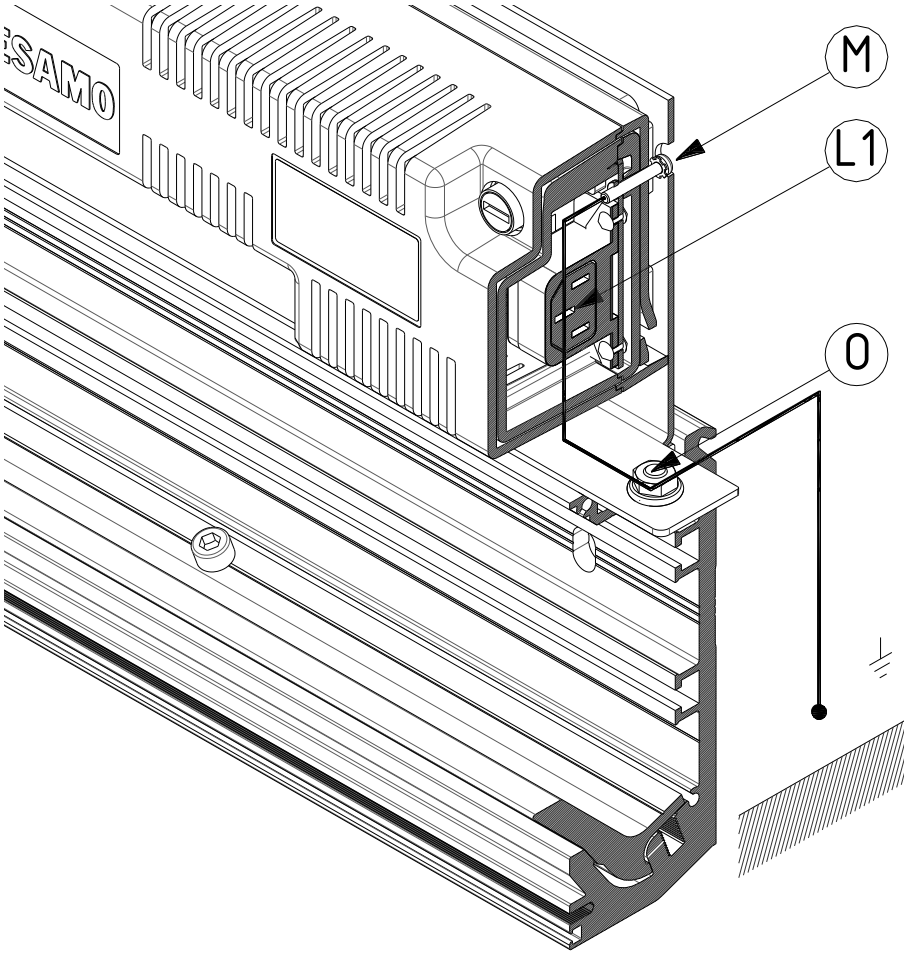
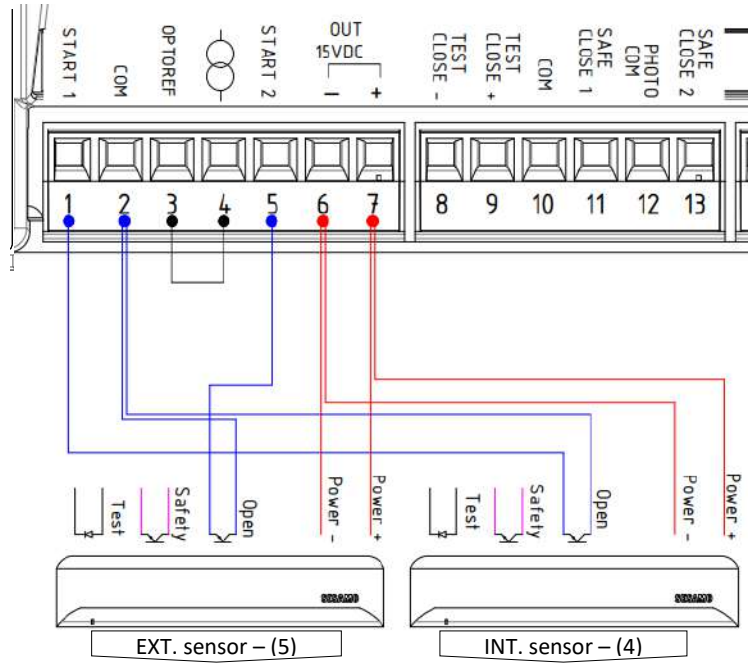
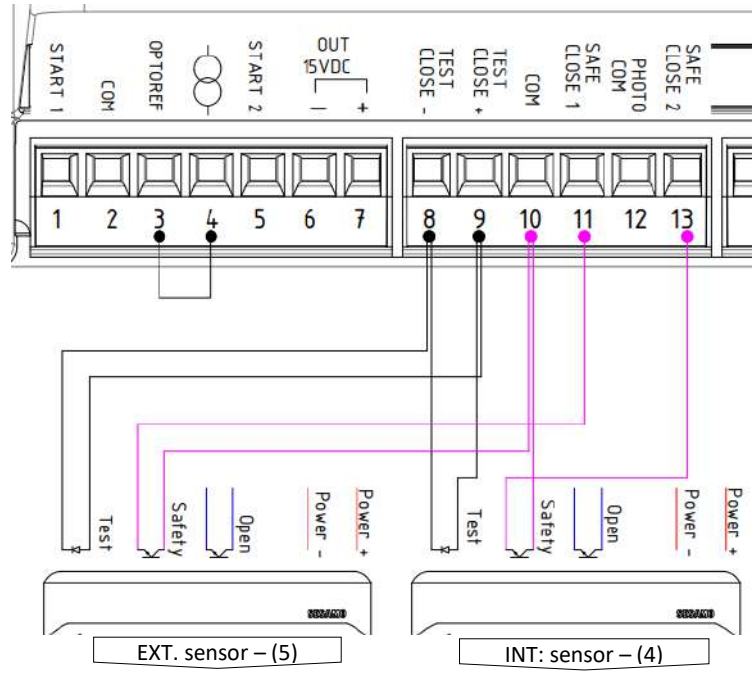


Fig.28

Wiring - Opening



Wiring – Safety - Test



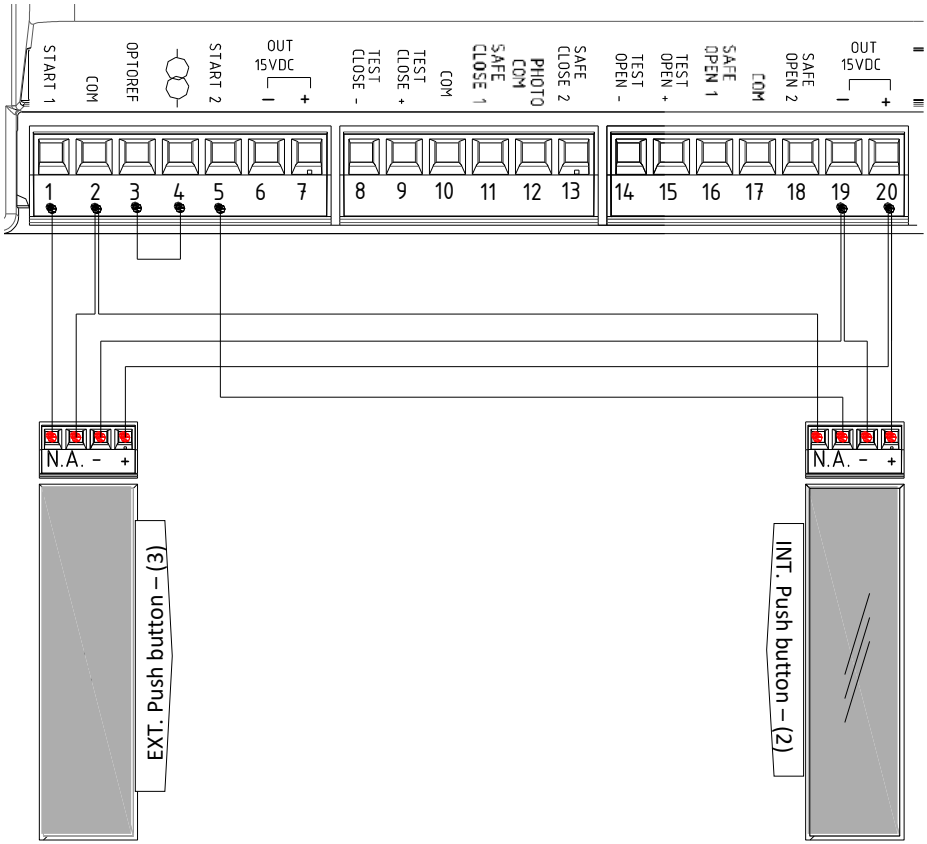

START 1
COM
OPTOREF
START 2
OUT 15VDC
TEST CLOSE -
TEST CLOSE +
COM
SAFE CLOSE 1
PHOTO COM
SAFE CLOSE 2
TEST OPEN -
TEST OPEN +
SAFE OPEN 1
COM
SAFE OPEN 2
OUT 15VDC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
N.A.
N.A.
EXT. Push button – (3)
INT. Push button – (2)

Fig.30

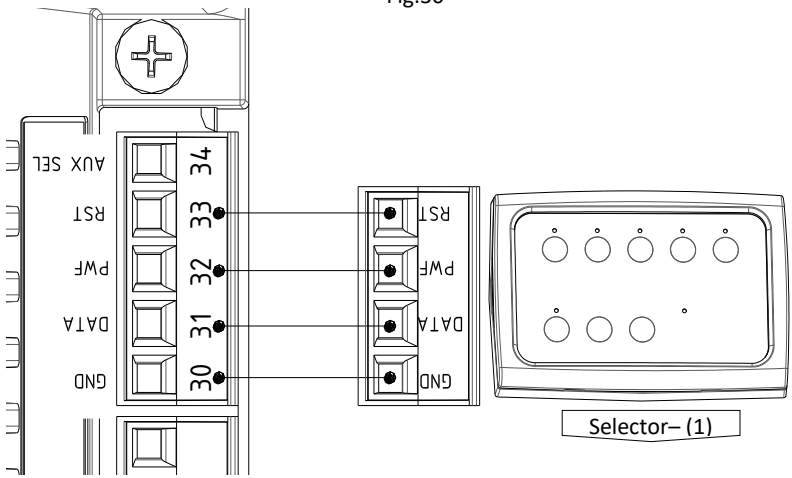

AUX SEL
RST
PWF
DATA
GND
34
33
32
31
30
Selector– (1)

Fig.31

GRAFCET by SESAMO
Porte automatique

Manuel de montage

SOMMARIO

COMPONENTS KIT SUPPLIED

The supply consists of four types of kits, consisting of the following components (fig.32):

1. Automation kit for door opening to the right - total opening (fig.2-3):
   - N.2 side heads -(1)
   - N.3 door trolleys -(2)
   - N.2 Holding bracket (already assembled on the trolleys) -(3)(4)
   - N.1 ERMETIKA motor -(5)
   - N.1 idler module -(6)
   - N.1 electronic control unit module -(7)
   - N.3 right opening guide slides -(8D)
   - N.1 belt holder clamp -(9)
   - N.2 end stops -(10)
   - N.2 holding bracket slides -(11)
   - N.1 kit assembly screws bag - - - -
   - N.1 door screws bag + 10 cable glands - - - -
   - N.1 board power cable -(12)

2. Automation kit for door opening to the left - total opening (fig.2-3):
   - N.2 side heads -(1)
   - N.3 door trolleys -(2)
   - N.2 Holding bracket (already assembled on the trolleys) -(3)(4)
   - N.1 ERMETIKA motor -(5)
   - N.1 idler module -(6)
   - N.1 electronic control unit module -(7)
   - N.3 left opening guide slides -(8S)
   - N.1 belt holder clamp -(9)
   - N.2 end stops -(10)
   - N.2 holding bracket slides -(11)
   - N.1 kit assembly screws bag - - - -
   - N.1 door screws bag + 10 cable glands - - - -
   - N.1 board power cable -(12)

3. Automation kit for door opening to the right - partial opening (fig.2-3):
   - N.2 side heads -(1)
   - N.2 door trolleys -(2)
   - N.2 Holding bracket (already assembled on the trolleys) -(3)(4)
   - N.1 ERMETIKA motor -(5)
   - N.1 idler module -(6)
   - N.1 electronic control unit module -(7)
   - N.2 right opening guide slides -(8D)
   - N.1 belt holder clamp -(9)
   - N.2 end stops -(10)
   - N.2 holding bracket slides -(11)

- N.1 kit assembly screws bag - - - -
- N.1 door screws bag + 10 cable glands - - - -
- N.1 board power cable -(12)

4. Automation kit for door opening to the left - partial opening (fig.2-3):
   - N.2 side heads -(1)
   - N.2 door trolleys -(2)
   - N.2 Holding bracket (already assembled on the trolleys) -(3)(4)
   - N.1 ERMETIKA motor -(5)
   - N.1 idler module -(6)
   - N.1 electronic control unit module -(7)
   - N.2 left opening guide slides -(8S)
   - N.1 belt holder clamp -(9)
   - N.2 end stops -(10)
   - N.2 holding bracket slides -(11)
   - N.1 kit assembly screws bag - - - -
   - N.1 door screws bag + 10 cable glands - - - -
   - N.1 board power cable -(12)

Along with one of the possible kit combinations, the following will be provided (fig.33):

- Raw extruded case profile
- Anodised, extruded guide profile
- drive belt roll

Optional: batteries kit box (batteries module, battery charger board, wiring and screws)

ATTENTION

For door with weight > 150kg add an additional power switch (optional)
And low sliding indentations (already supplied with KIT).
See Fig.A and manual:
“ASSEMBLING EXTRA POWER SWITCH ERMETIKA do doors >150KG” (pag.81)

FORMULAS TO CALCULATE THE SIZES OF THE TRACK

Prior to starting to cut the profiles, calculate the length of the crosspiece via the following formulas (fig.34.a + fig.34.b):

SIZE	DESCRIPTION
T	Automation length
QMT	Head machine quotient
QMC	Tail machine quotient
L	Doorway width
LUP	Door clear width
LIMB	Width between the door jambs (valid only for door freeway)
ST	Head overlap
SC	Tail overlap
SH	Overlap height
A	Door
H	Doorway height
HUP	Door clear height
HC	Case height

SIZE	CALCULATION FORMULA TOTAL OPENING	CALCULATION FORMULA PARTIAL OPENING
T	= (QMC+QMT+(Ax2))-50	= (QMC+QMT+(Ax2))-200
QMC	= 53mm	= 53mm
QMT	= 53mm	= 53mm
SC	= 50mm	= 50mm
ST	= 50mm	= 50mm
A	= LUP+100mm	= LIMB+100mm
LUP	= L-15mm	= LIMB -150mm
LIMB	-	= L-15mm

ATTENTION: for the calculation of the crosspiece, the opening direction of the door is irrelevant, but it is necessary to know whether the door frees totally or partially the doorway to use the correct formula shown in the upper chart and in fig.34.

ATTENTION: in case of empty case in tail, algebraically add its value in the T formula. Formula = T+value in mm of the either head or tail extension including the head (fig.34.c).

EXTRUDED PROFILES CUT

Cut the two types of profiles (case and guide) following the chart here below to retrieve the cutting sizes (FIg.35).

SIZE	DESCRIPTION
LC	Extruded case length
G1	Guide length between the descents
G2	Tail guide length
PT	Head empty case
PC	Tail empty case

SIZE CHART - A	CALCULATION FORMULA TOTAL OPENING (N. 3 INDENTATIONS)	CALCULATION FORMULA PARTIAL OPENING (N.2 INDENTATIONS)
LC	= T-6	= T-6
G1	= A-460mm	= A-260mm
G2	= LC-(A+132mm)	= LC-(A+132mm)

In case of head empty case (PT - fig.35)

SIZE CHART - B	CALCULATION FORMULA TOTAL OPENING (N. 3 DESCENTS)	CALCULATION FORMULA PARTIAL OPENING (N.2 DESCENTS)
LC	= T-6	= T-6
PT	= value in mm empty case–3mm	= value in mm empty case–3mm
G1	= A-460mm	= A-260mm
G2	= (LC-PT)-(A+132mm)	= (LC-PT)-(A+132mm)

In case of tail empty case, the formulas remain the same to the chart "A" since the additional length is already considered in the LC size (PC - fig.35).

ATTENTION: the numeric positions reported in fig.35 are fixed value for each crosspiece.

ATTENTION: verify that there are no trims in the cutting area, in case, trim with the file.

INDENTATION AND SLIDING GUIDE ASSEMBLY

ATTENTION: always assemble the correct indentations according to the opening direction (R-L).

ATTENTION: the number of indentations to assemble on the crosspiece ranges from 2 to 3 according to the opening of the door. Total opening: n. 3 descents Partial opening: n.2 descents (fig.2-3).

Assemble the edges of the sliding guide and the indentations correctly:

- For door with right (partial or total) opening, assemble the right head with self-threading countersunk head screw 4.2x16, to be used as end stop, then fix the sliding guides and the indentations via countersunk hex screws M6x12 as per fig.36 and example of fig.37.

- For door with left (partial or total) opening, assemble the left head with self-threading countersunk head screw 4.2x16, to be used as end stop, then fix the sliding guides and the indentations via socket head hex screws M6x12 as per fig.36 and example of fig.37.

PREPARATION OF SEMI-FINISHED PRODUCTS

Prepare all the semi-finished products required for assembly inserting in the fixing brackets the hammer bolt M6x14 and the flanged nut M6 (fig.38).
The semi-finished products are (fig.32-38): electronic board module (7) - motor module (5) - return module (6) - holding bracket slides (11) - end stop (9) – battery back up KIT (OPTIONAL) - belt holder (9).

CROSSPIECE COMPONENTS ASSEMBLY

First components to assemble (fig.39):

- Closing end stop - assembly position 46mm (fig.39)
- Opening end stop - assembly position 46mm (fig.39)
- Holding bracket head trolley slide - assembly position 10mm (fig.39)
- Holding bracket tail trolley slide - assembly position (fig.39):
    - total opening : 52+170+170+G1+84
    - partial opening : 52+170+G1+84

ATTENTION: in case of right or left or both empty case, add the value algebraically to the positions or to the formulas (fig.39-valid for total or partial openings).

Then, assemble all the semi-finished products prepared previously following the positions and the formulas contained in the following charts and in fig.40-41.
For both right and left total opening, see following chart (fig.41):

SEMI-FINISHED PRODUCT	PARTIAL OPENING (N.2 INDENTATIONS) TO THE RIGHT	PARTIAL OPENING (N.2 INDENTATIONS) TO THE LEFT
Mod. return	= 130mm**	= 130mm**
Mod. motor	= 52+170+170+G1+548mm**	= (52+170+170+G1)-273mm***
Electronic board	= 110mm *	= 110mm*

**Position referred from motor bracket*
*** Position referred from the outside of case right side.* **** Position referred from the outside of case left side.*

For both right and left partial opening, see following chart (fig.41):

SEMI-FINISHED PRODUCT	PARTIAL OPENING (N.2 INDENTATIONS) TO THE RIGHT	PARTIAL OPENING (N.2 INDENTATIONS) TO THE LEFT
Mod. return	= 130mm**	= 130mm**
Mod. motor	= 52+170+G1+548mm**	= (52+170+G1)-273mm***
Electronic board	= 110mm *	= 110mm*

**Position referred from motor bracket*
*** Position referred from the outside of case right side.* **** Position referred from the outside of case left side.*

ATTENTION: in case of right or left or both empty case, add the value algebraically to the positions or to the formulas (fig.42).

ATTENTION: for the connection of the motor to the electronic board, see fig.27 of the previous part of the manual.

OPTIONAL COMPONENTS ASSEMBLY IN THE OPERATOR

The optional components are the following:

- Batteries back up KIT.
- Cover support bracket.

The batteries module is supplied with the following material:

- Batteries recharger board.
- Batteries module.
- Wiring.
- Screws bag for crosspiece assembly.

The batteries module must be assembled crosswise at a height of 160mm from the motor bracket as shown in fig.43, while for the assembly of the batteries recharger board and the wiring follow fig.44.

The support brackets, instead, must be assembled on the lengths and in the quantities shown in the below chart (fig.45):

LENGTH	QUANTITY OF BRACKETS TO ASSEMBLE
From 3,000mm to 4,000mm	1 pc
5,000mm	2pcs.
6,000mm	3pcs.

Note: the general rule will be to divide the length of the cover/crosspiece in spaces, ranging from 1,500mm to 2,000**.**

ASSEMBLY AND TENSIONING OF THE DRIVE BELT

ATTENTION: always make sure that the screws shown with the letter "V" on the return module are not tightened and, accordingly, the slide is free to move (fig.46).

Calculate the belt cutting length passing around the drive pulley and the return pulley of the same belt, until the two ends meet. Using scissors or pincers, cut the belt in the calculated point. The cut of the belt must always be left on the lower branch (fig.47).
Block the two belt edges assembling the belt stopper clamp inserting the teeth in the appropriate slots (fig.48). Pull the belt screwing the screw **A** and, accordingly, pressing the spring **B** until the spring coil touch each other for a final spring length of 11mm .
Once the correct tensioning is achieved, tighten the screws **V** (fig.49).

FINAL ASSEMBLY OPERATIONS

Screw the missing head as previously made via three self-threading countersunk screws TPS+4.2x16 (burnished) as represented in fig.36.
Place the cable glands where required screwing them by means of self-threading screws 3.5x13 as shown in fig.50.

COVER CONSTRUCTION AND ASSEMBLY

The cover must be ordered separately communicating its length and the type of material or it may be produced directly by the customer, obtaining the information listed in the following chapter and with the aid of a woodwork supplier.

Formula for calculation of cover:

CL (cover length)= T-7

NOTE: the "T" value is intended as the total length (including the heads) of the automation see chart at page 52.

The cover may be implemented with the following materials:

- Silver-Oxide Aluminium wid.15/10.
- Painted Raw Aluminium RAL (to be chosen) wid.15/10.
- Stainless Steel AISI 304 (for common use) Scotch-Brite wid.15/10.
- Stainless Steel AISI 316 (for pharmaceutical/food uses) Scotch-Brite wid.15/10.

The shape of the cover must couple the stop created on the heads (see fig.51) and must have the positions shown in fig.51.
For the fixing of the cover, create some holes on the metal sheet (see fig. 52) in order to be able to use the M5 threaded holes on the wings of the heads.

The screws to use for the fixing of the cover, both the upper and the lower part, are raised countersunk head screws M5x16 with M5 flat washers (fig.52).

TESTING

Use the pushbuttons + or - around the screen of the electronic board to
select the parameters, press ENT to confirm and press ESC to exit.
The ON-BAT and RESET pushbuttons during testing must not be used (fig.53).
Power the board via the power cord and check that the Main Key is inserted.
The screen will show (fig.53):

- The latest firmware version (E.g. 1-29)
- The type of automatism (C4 = Ermetika)
- The latest Safety control version (e.g. 1-05)
- E6 flashing

ATTENTION: Make sure the main key matches with the type of automatism.

ATTENTION: The firmware and safety versions shown in fig.53 are purely indicative and may be modified.

Create a jumper on the terminals between: COM –SAFE CLOSE 1 and SAFE CLOSE 2 (10-12-13).
With +/-, display on the screen L.S., press enter once, press again ENTER holding it down for some seconds until the 30" count appears on the screen.
Once the counting is over, on the board, the wording S0 will appear, press ENTER again, after a few

seconds, E1 starts flashing on the screen, that is the L.P. parameters acquisition request. (fig.54).
The parameters to acquire are: the run, the weight and the doors or door opening direction.

ATTENTION: before performing L.P. assemble a trolley on the belt terminal and place two stops so that the trolley has a limited run, considering position A as closed door and position B as open door (fig.55).

With +/-, display L.P. on the screen, press ENTER once, press again ENTER holding it down for a few seconds until the segments of the screen start rotating, release ENTER, after a few seconds the wording St appears (fig.56).
After about 10", the trolley start performing an opening and closing movement, this for three time so to acquire the run, weight and opening direction parameters.
Upon completion of acquisition, the trolley stops in closing position and the screen displays the wording CL (fig.57).
Command a door opening pressing ENTER 3-4 times and check that:

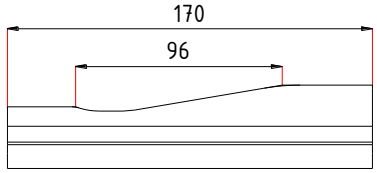
- the trolley moves in the opening direction (on the board, OP must appear) - fig. 58
- the trolley moves in the closing direction (on the board, CL must appear) - fig.57.

The last step consists in refreshing the initial parameters of the board, performing a SET on DEFAULT as follows:

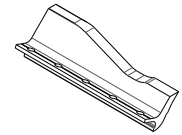
- press the keys +/- until the Sd code appears
- press ENT: the value -- is displayed;
- press ENT again and hold down for 5 seconds;
- the screen segments start rotating and, then, the E6 message appears;
- the parameters of the control unit return to the factory settings.

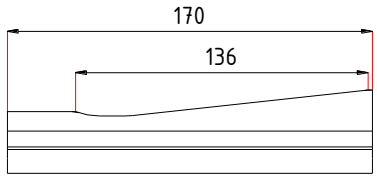
Remove the jumpers between 10/12/13.

ATTENZIONE
Always check that the indentations are mounted according to the weight of the door



Discesa standard





Discesa per ante >150kg

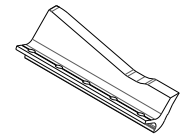
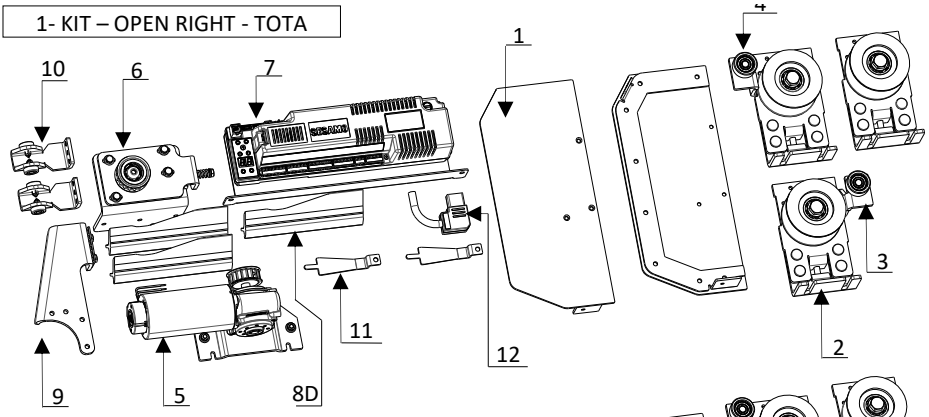
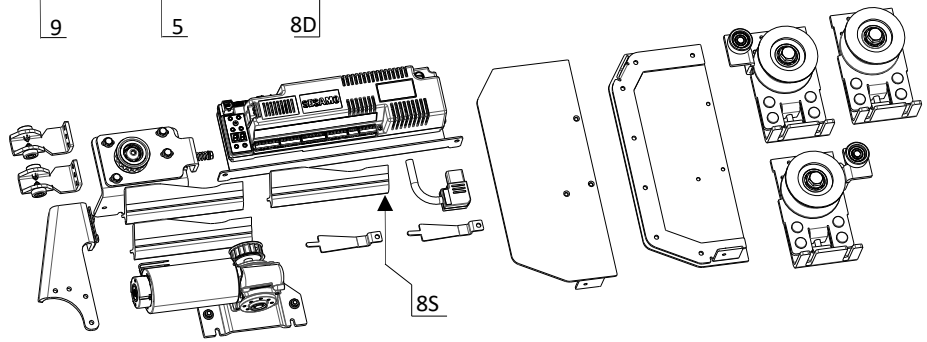


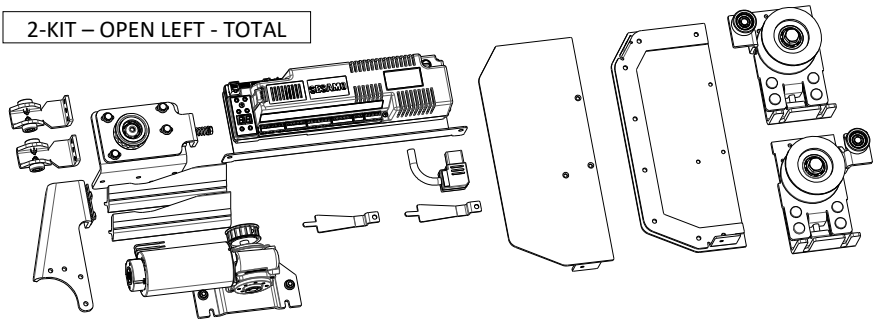
Fig.A

1- KIT – OPEN RIGHT - TOTA

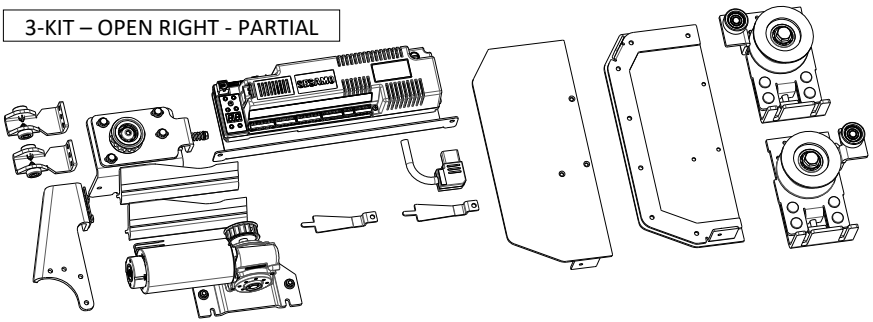




2-KIT – OPEN LEFT - TOTAL



3-KIT – OPEN RIGHT - PARTIAL



4-KIT – OPEN LEFT - PARTIAL

Fig.32

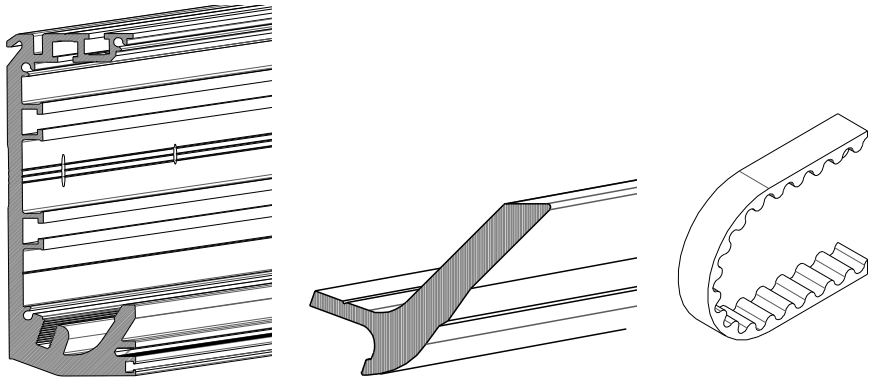


Fig.33

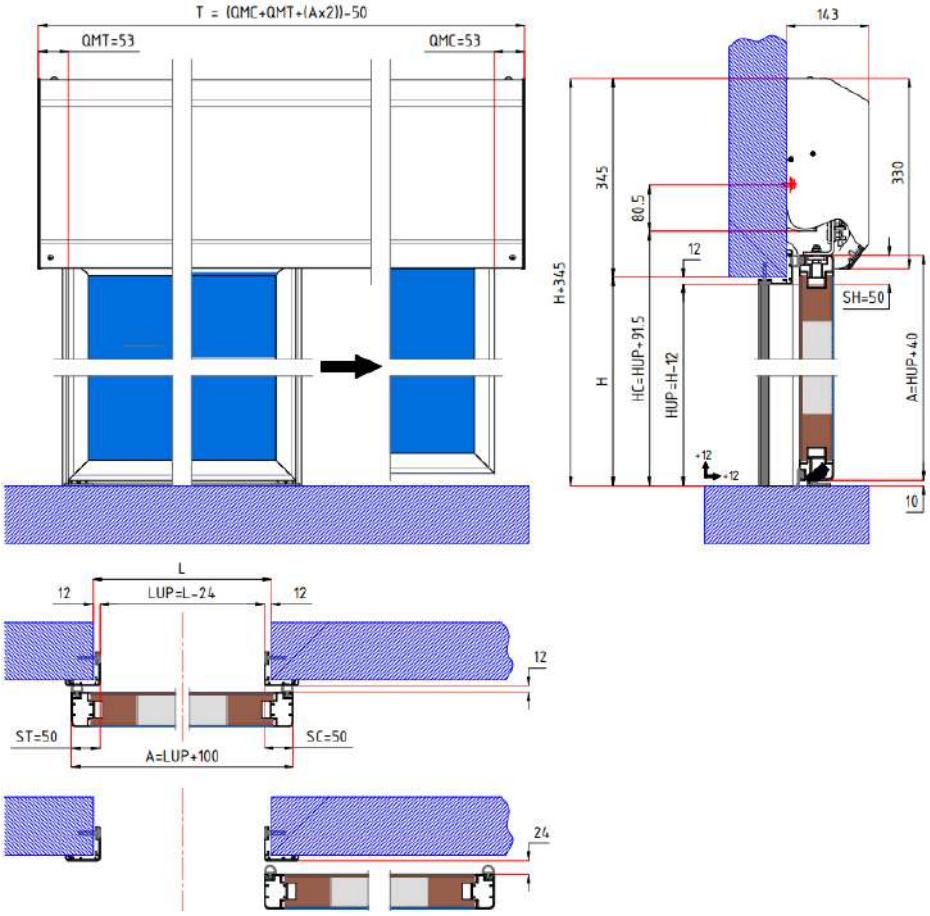


Fig.34.a

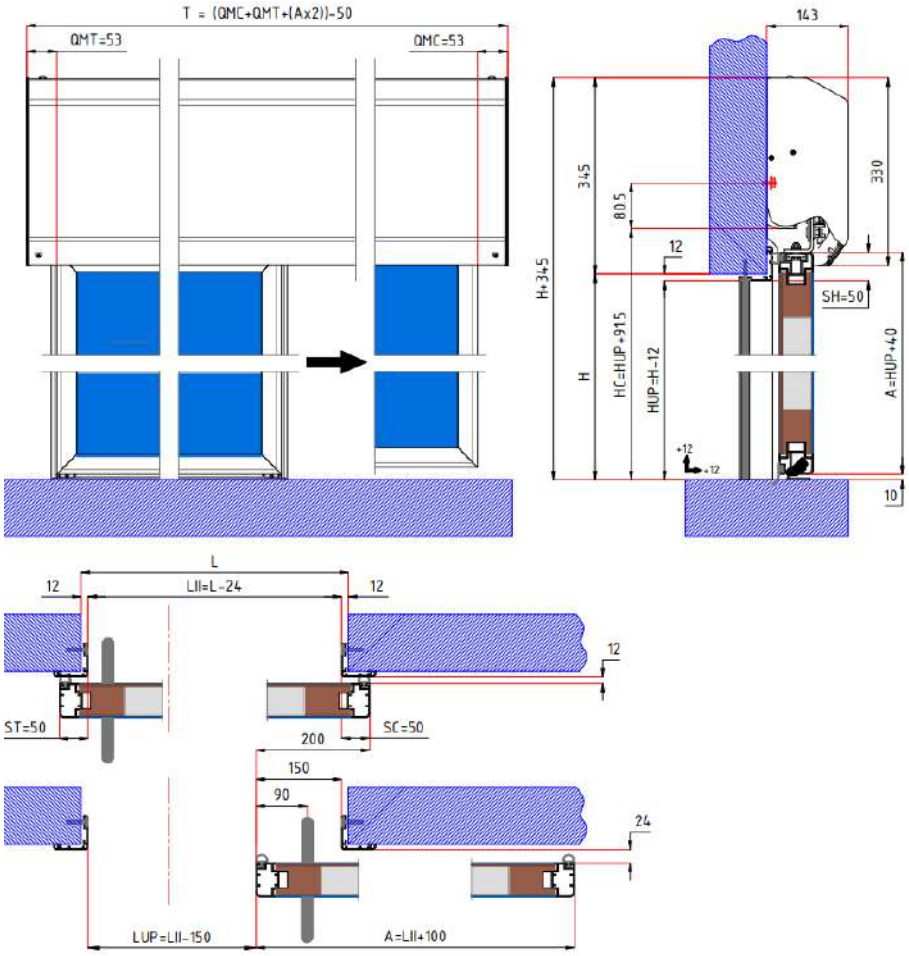


Fig.34.b

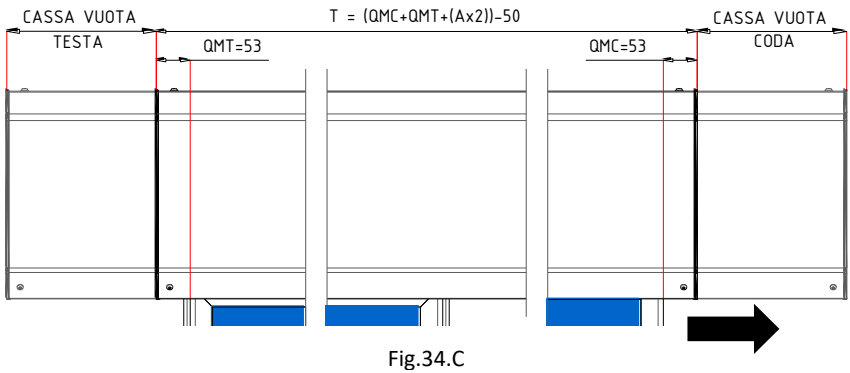
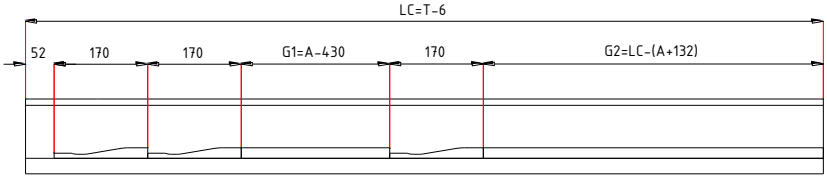
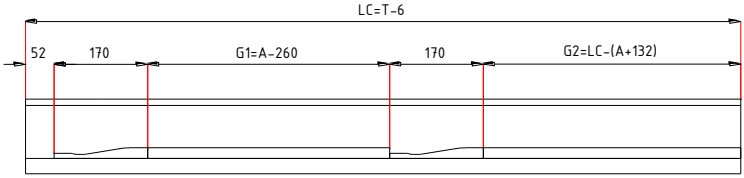
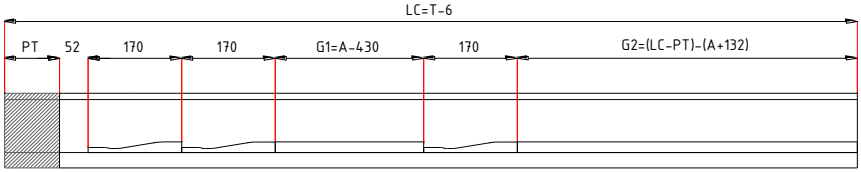


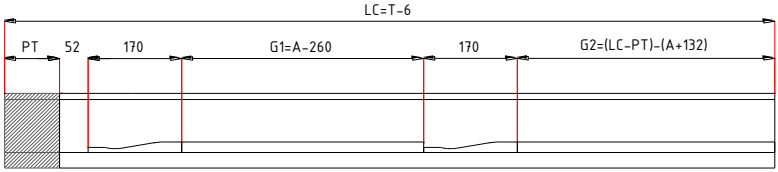
Fig.34.C



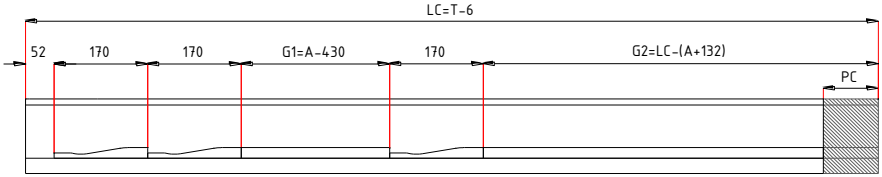


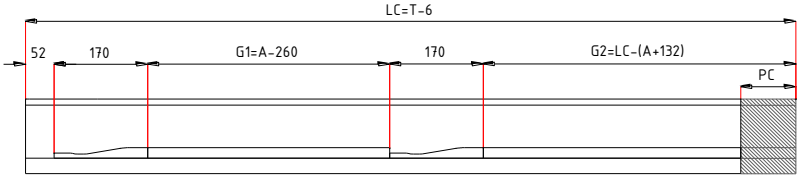
Traversa ottimizzata





Operator with head empty case





Operator with tail empty case

Fig.35

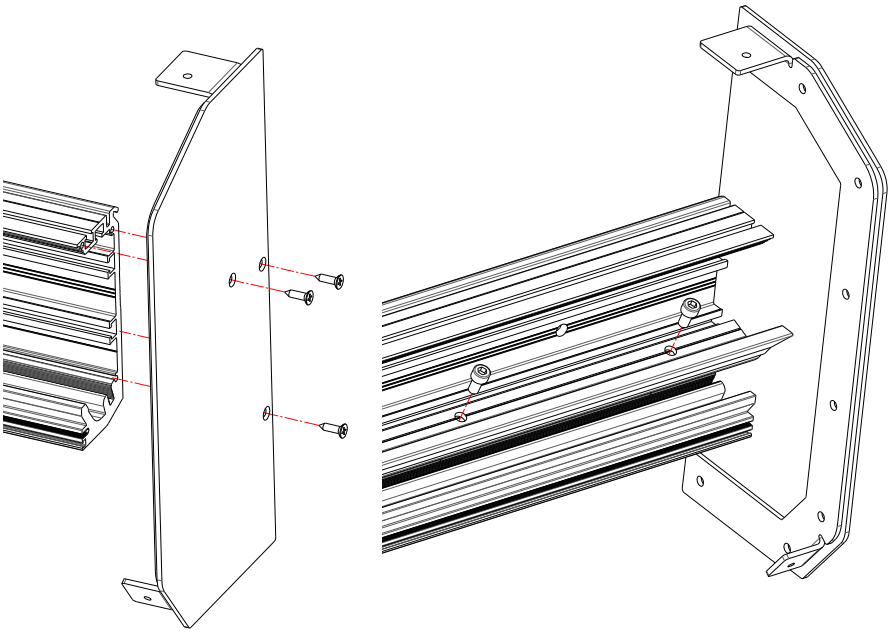


Fig.36

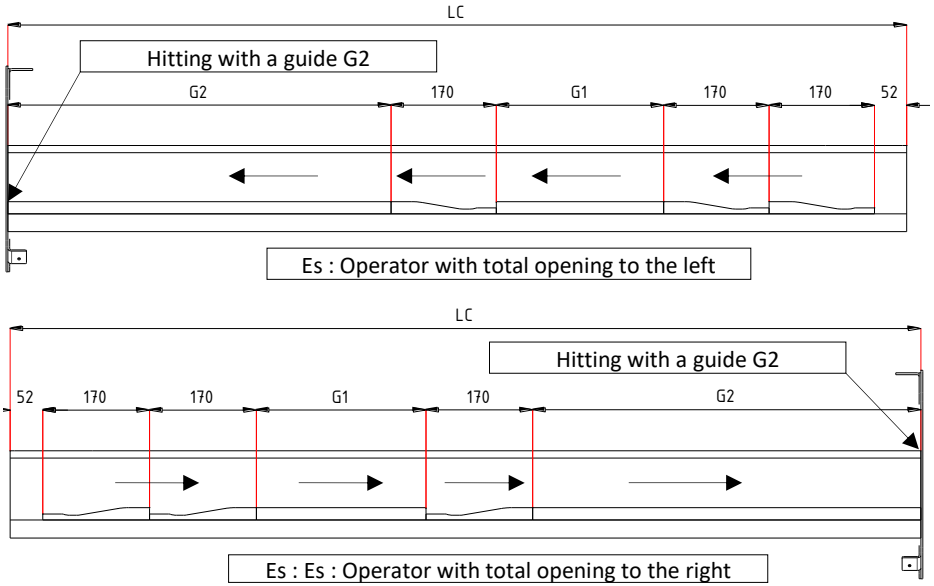

LC
Hitting with a guide G2
G2
170
G1
170
170
52
Es : Operator with total opening to the left
LC
Hitting with a guide G2
52
170
170
G1
170
G2
Es : Es : Operator with total opening to the right

Fig.37

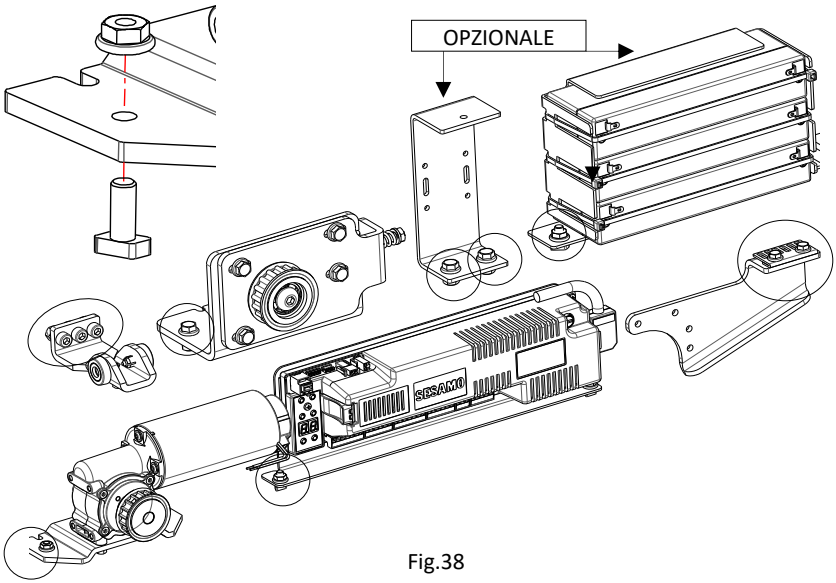
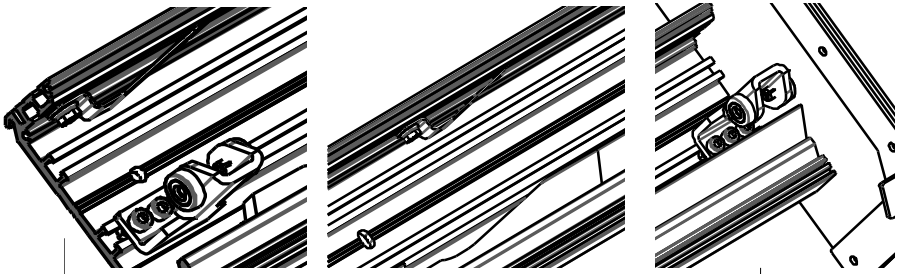
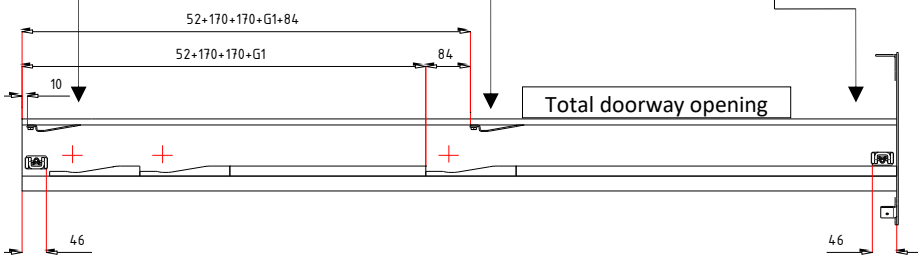
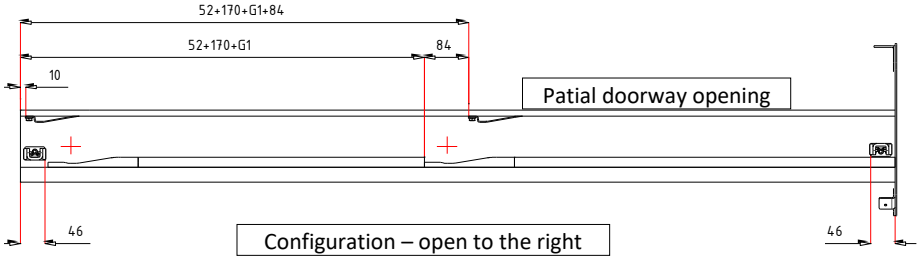


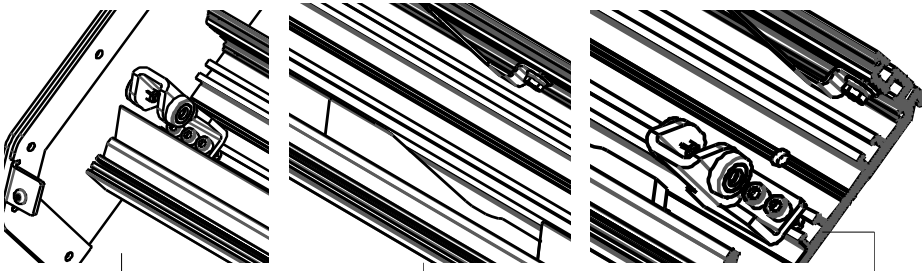
Fig.38

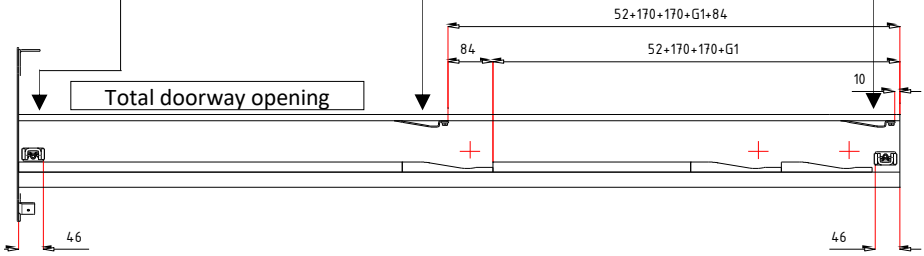


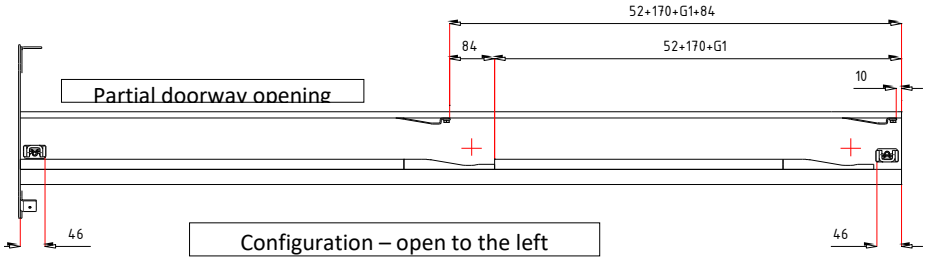




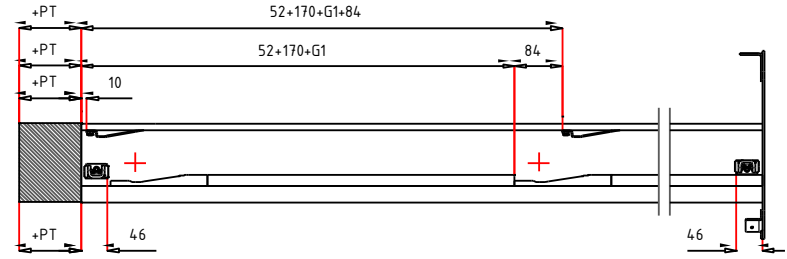
Configuration – open to the right

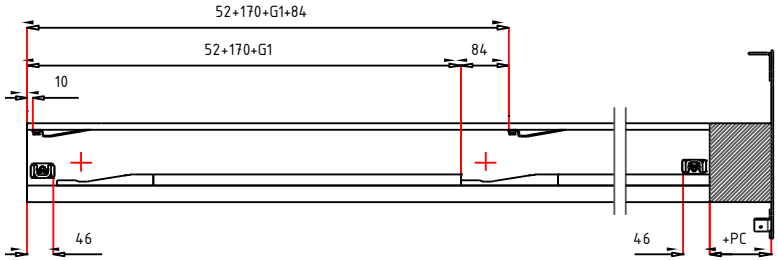




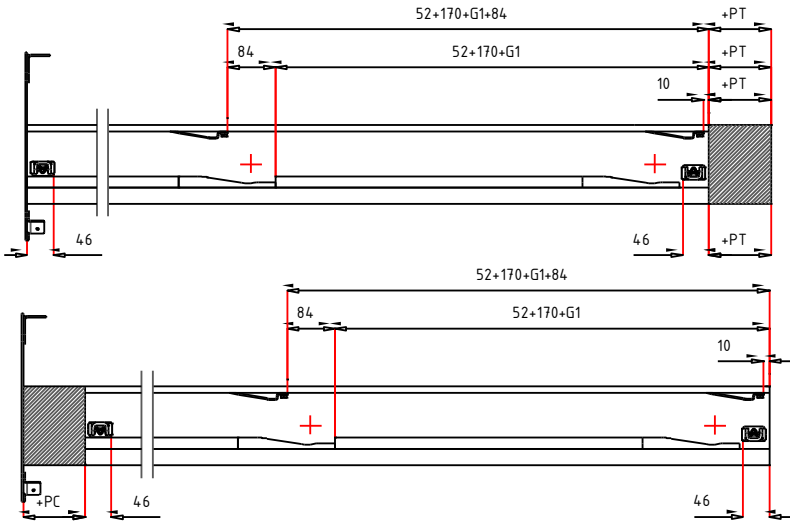


Configuration – open to the left





Configuration – open to the right – head empty case – tail empty case



Configuration – open left – head empty case –tail empty case

Fig. 39

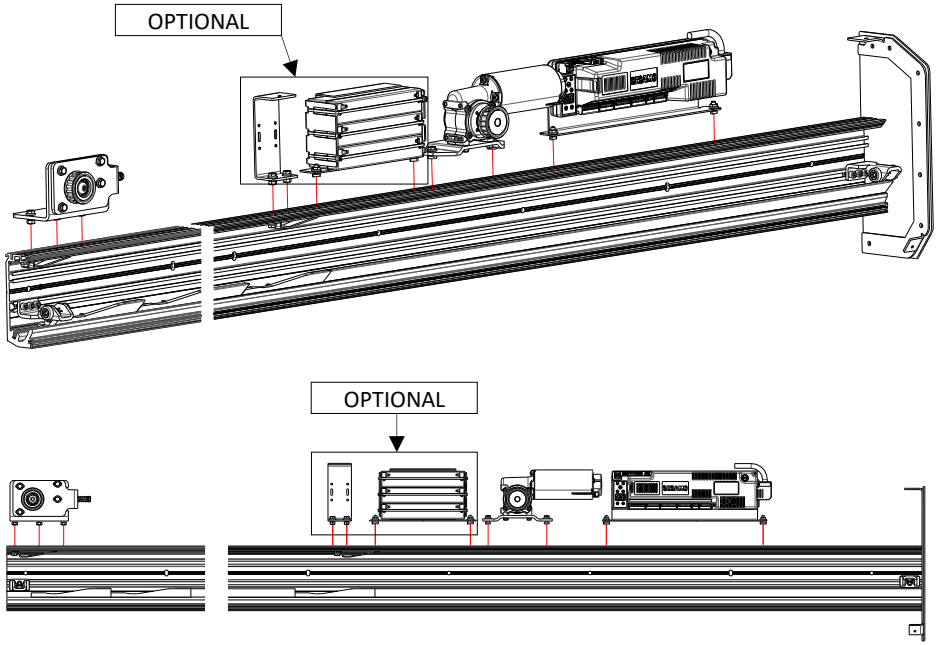
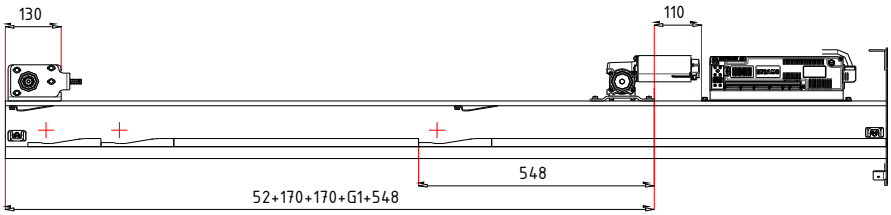
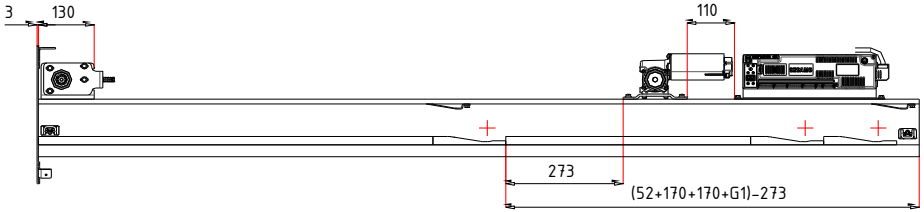


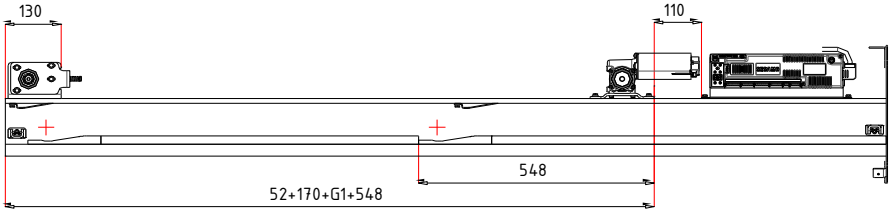
Fig. 40



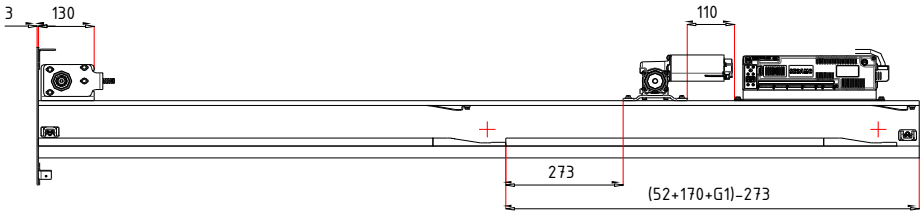
Configuration – open right – total doorway opening



Configuration – open left – total doorway opening

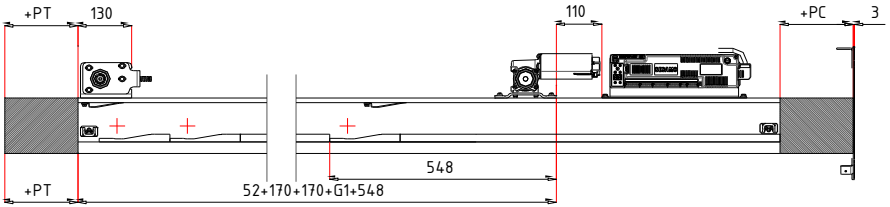


Configuration – open right – partial doorway opening

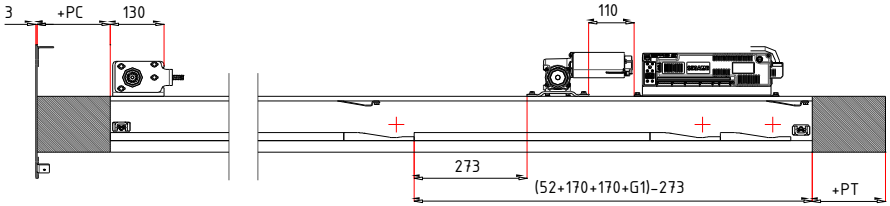


Configuration – open left – partial doorway opening

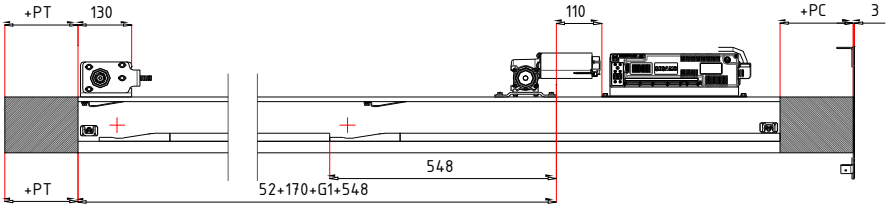
Fig. 41



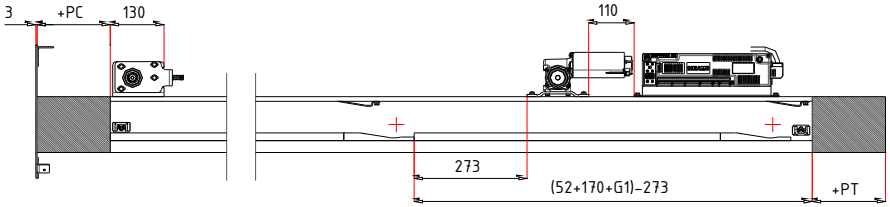
Configuration empty case (PT+PC) – open right – total opening



Configuration empty case (PT+PC) – open left – total opening



Configuration empty case (PT+PC) – open right – partial opening



Configuration empty case (PT+PC) – open left – partial opening

Fig. 42

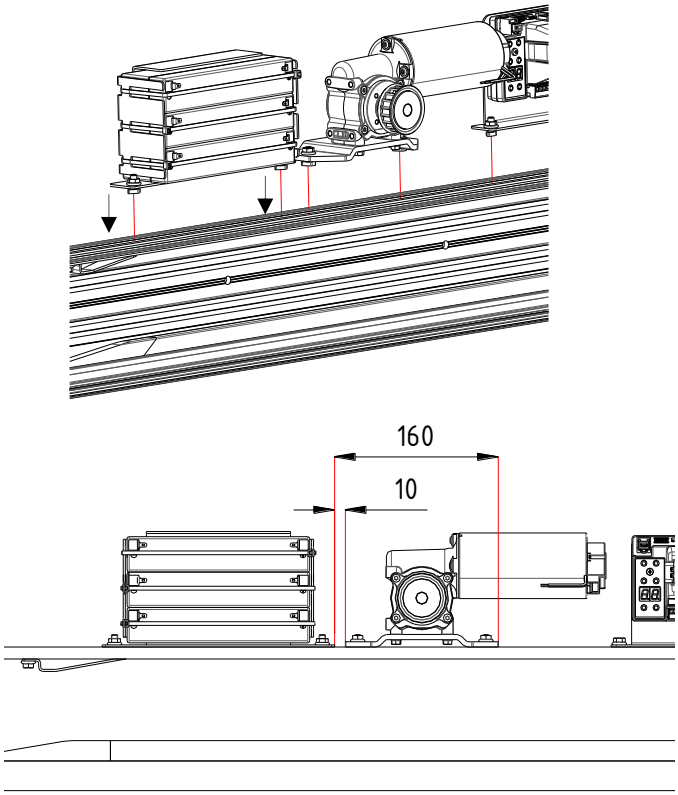


Fig. 43

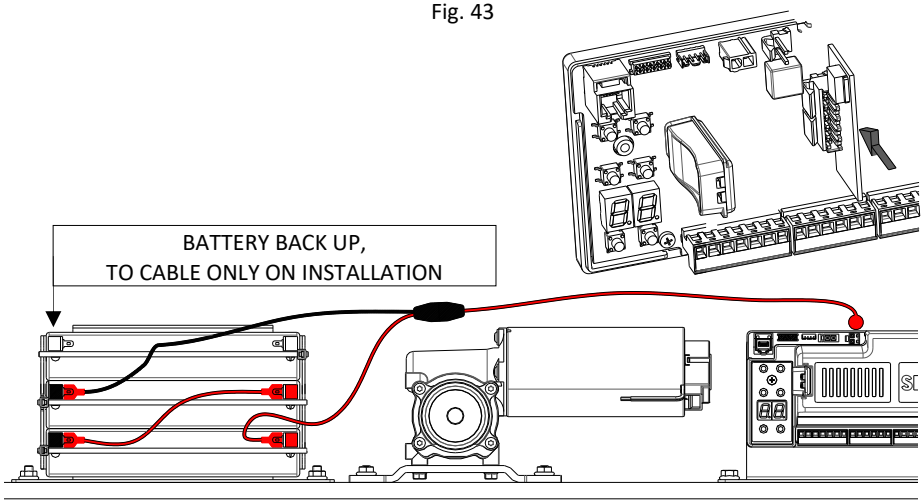


Fig. 44

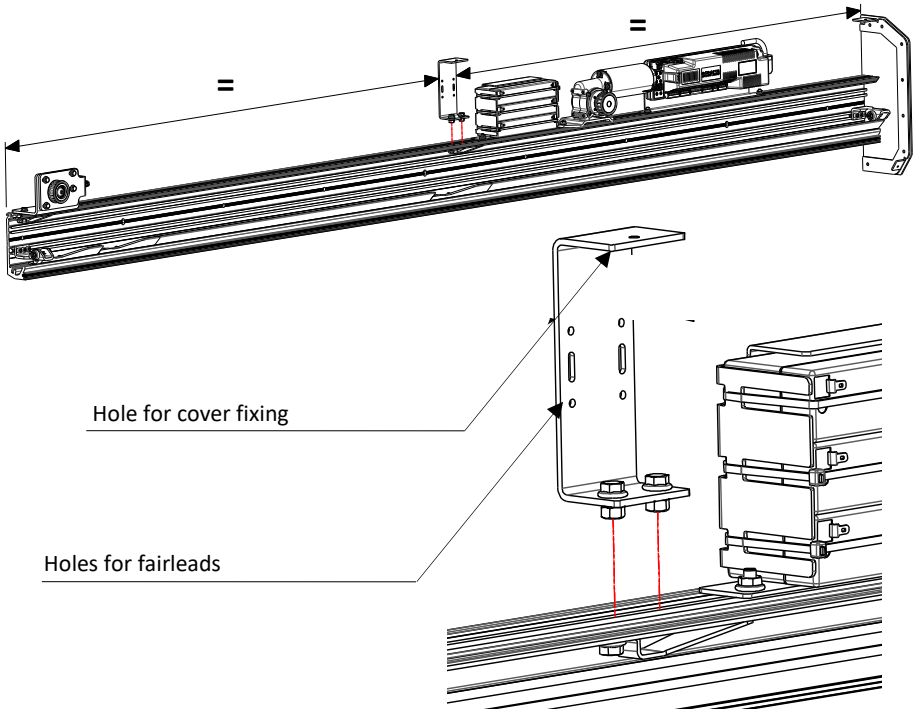


Fig. 45

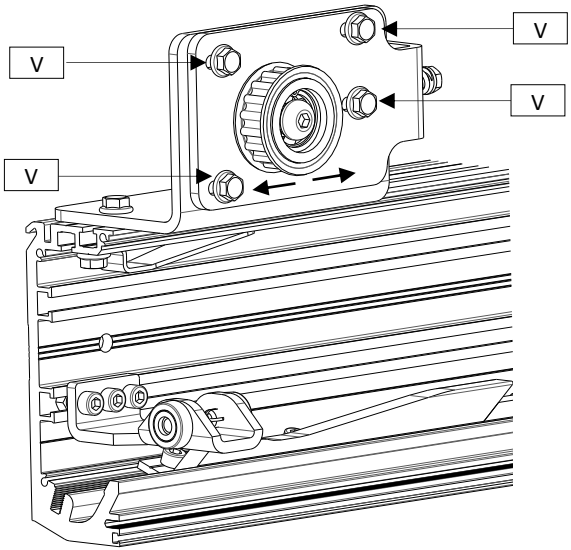


Fig. 46

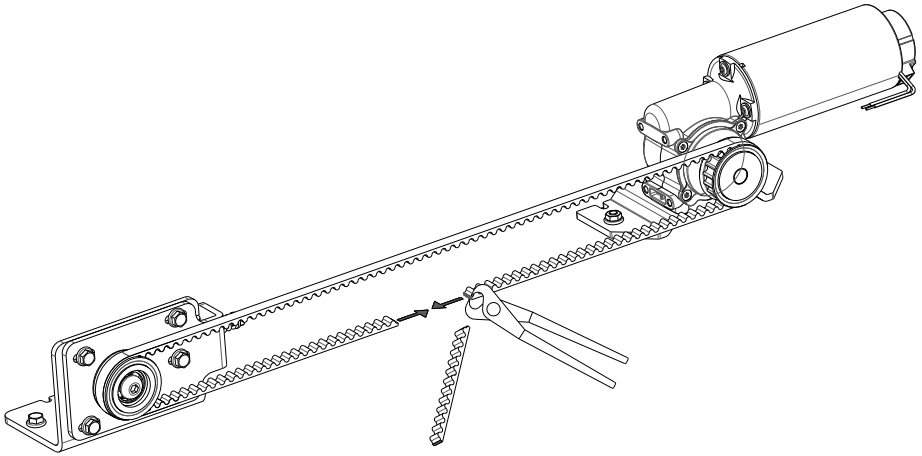


Fig. 47

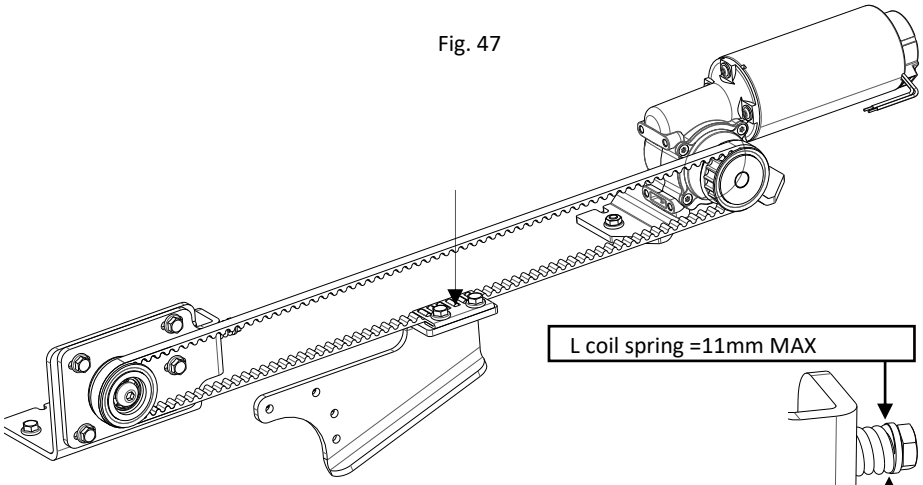


Fig. 48

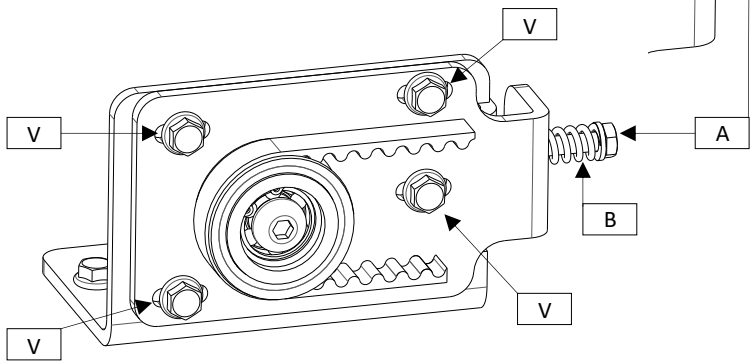


Fig. 49

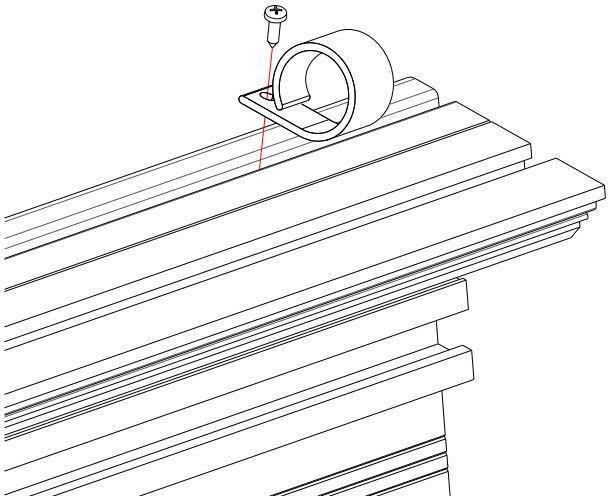


Fig. 50

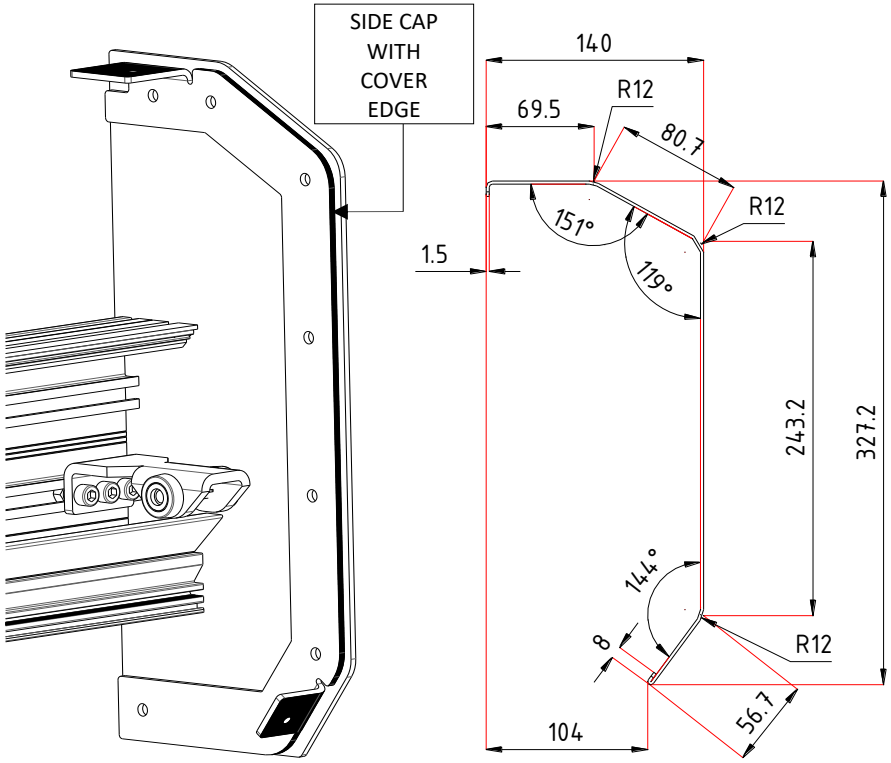

SIDE CAP
WITH
COVER
EDGE
140
69.5
R12
80.7
R12
151°
119°
1.5
243.2
327.2
144°
8
R12
56.7
104

Fig. 51

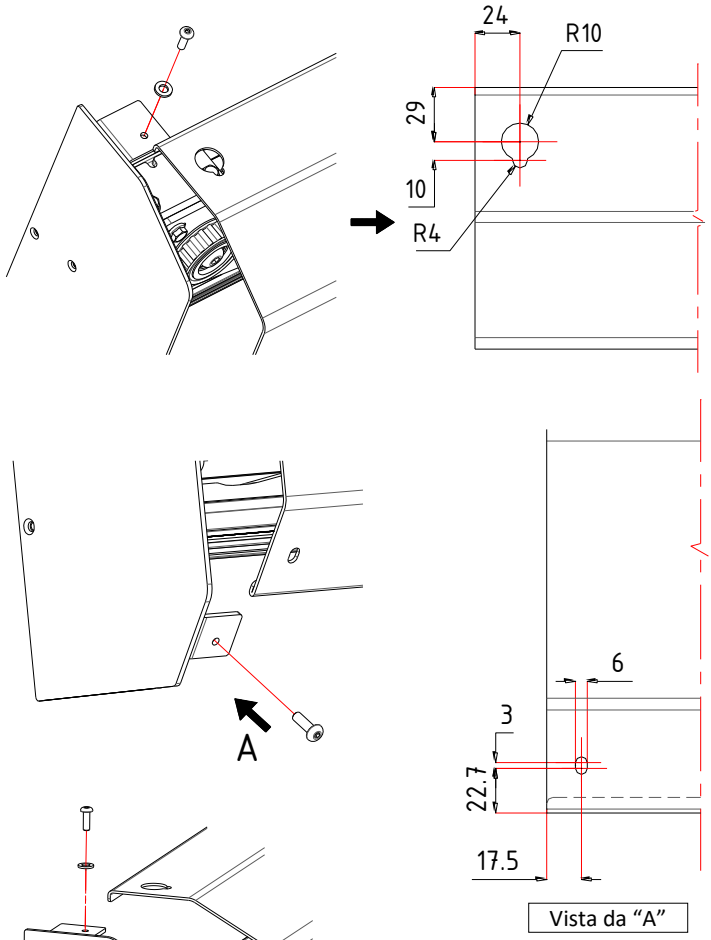


Fig. 52

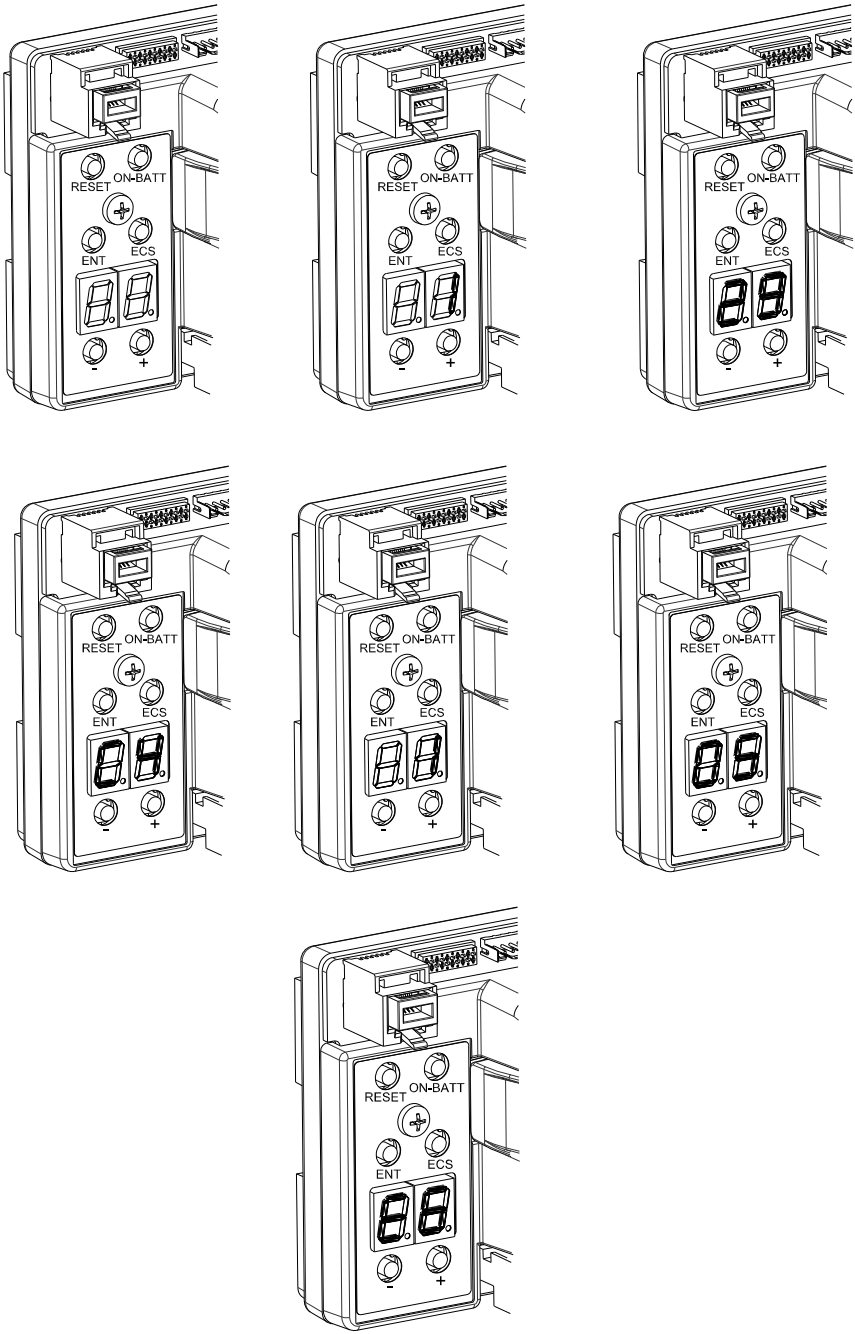


Fig. 53

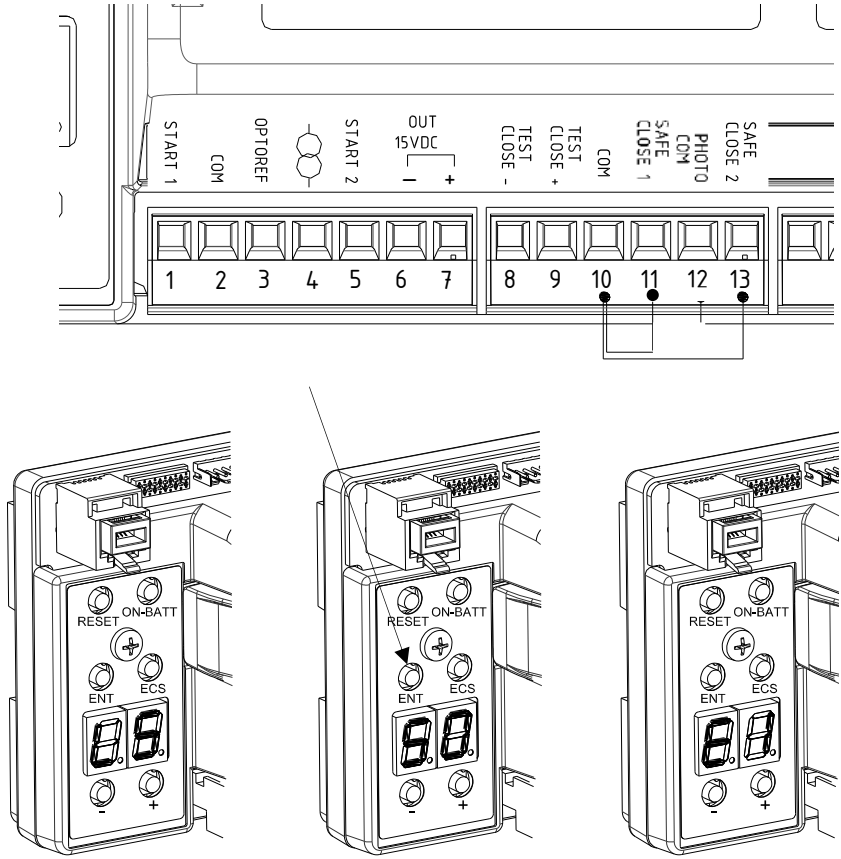

START 1
COM
OPTOREF
START 2
OUT 15VDC
TEST CLOSE -
TEST CLOSE +
COM
SAFE CLOSE 1
PHOTO COM
SAFE CLOSE 2
1 2 3 4 5 6 7 8 9 10 11 12 13
RESET
ON-BATT
ENT
ECS

Fig. 54

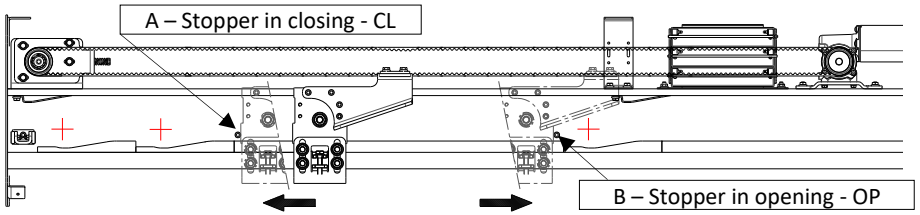

A – Stopper in closing - CL
B – Stopper in opening - OP

Fig. 55

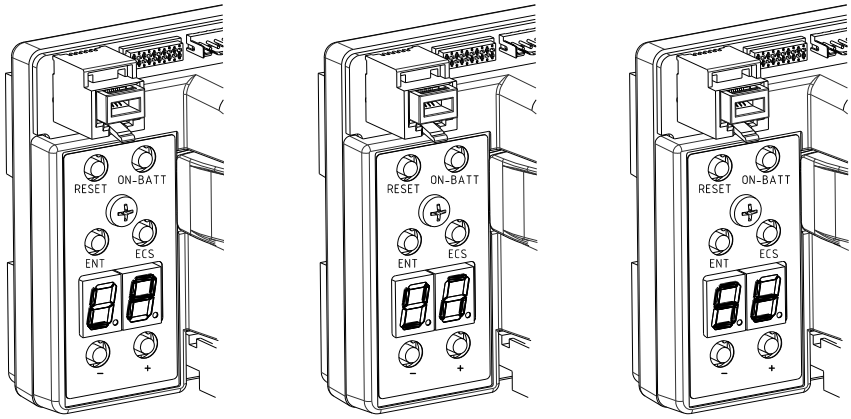


Fig. 56

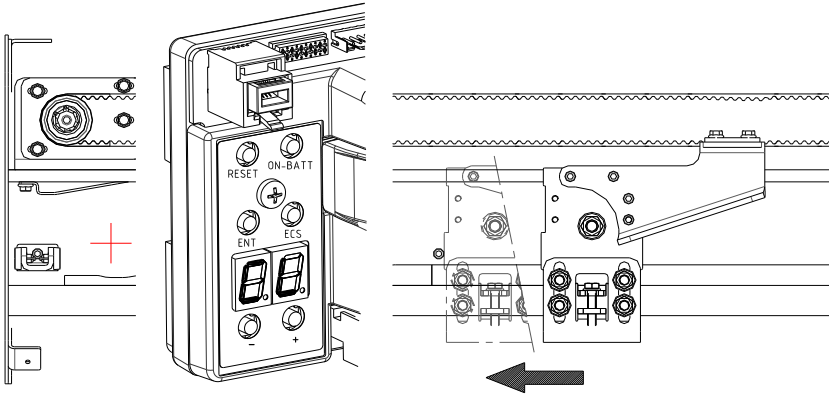


Fig. 57

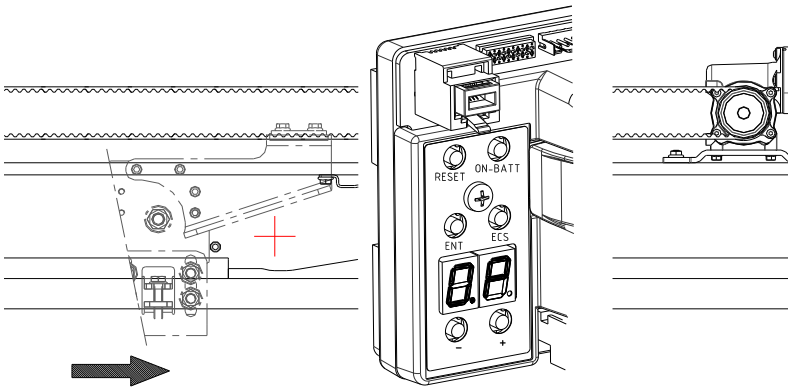


Fig. 58

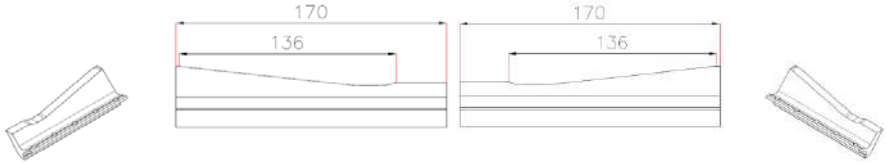
GRAFCET by SESAMO
Porte automatique

Instructions d'installation

POWER SUPPLY SWITCH ASSEMBLING

ATTENTION

Always check that the slopes are those shown in the following figure



DANGER: carefully check the weight of the door so that it falls within the maximum capacities allowed by the automation; in case of doubt, do not proceed further in the installation phases; if Wweight is close to the system capacity limits, shorter maintenance intervals and periodic checks must be provided to assess the state of the system parts; always replace parts showing even slight signs of wear

The assembly of the additional power supply is necessary in the event that the door exceeds the maximum weight allowed by the automation in the standard version (leaves up to 150kg).

Place the component, consisting of power supply and bracket, on the crosspiece and secure it with the special bag of screws provided, fixing dimensions and position on the operator's track are indifferent (fig.1).

Wiring:

Take the supplied power cable and cut off the connector for the electronic board, following this operation, engrave the black sheath to reveal the 3 cables inside. Remove the excess sheath. Strip the 3 cables just discovered and connect them to the terminal block of the additional power supply as fig.2.

Finally, connect the additional power supply to the electronic board.
The connection, Fig. 3 + diagram, will be made with 2 cables (the length of the cables will be dictated by the position of the additional power supply with respect to the electronic board). Follow the links below:

- control board **27(+)** **V+** additional power supply
- control board **29(-)** **V-** additional power supply

ATTENTION: Make sure that the wiring just made is not within the moving space of the door, the trolleys or the transmission belt.

DANGER: check very carefully that all cables are connected to their respective terminals. Incorrect connection could compromise the regular operation of the automation and constitute a source of danger.

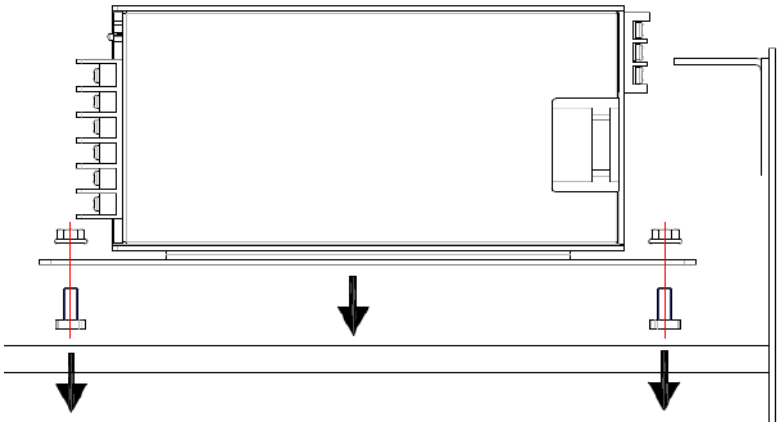


Fig. 1

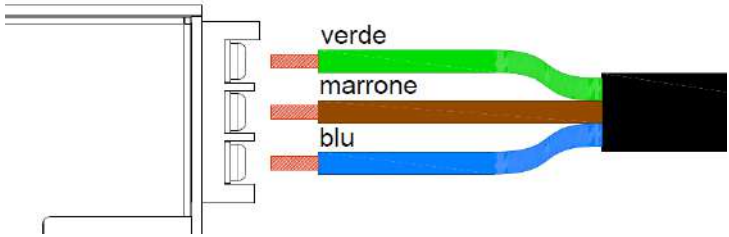


Fig. 2

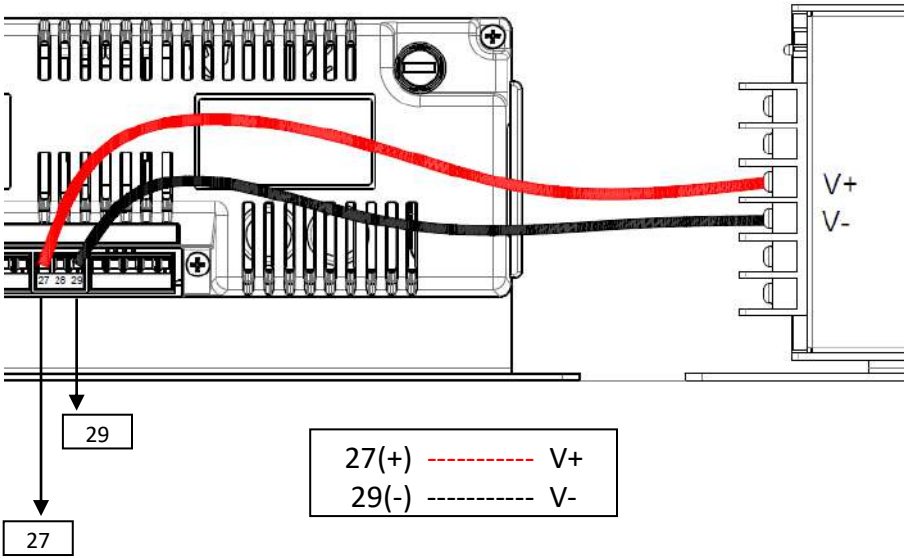


Fig. 3

USE MANUAL
FOR ERMETIKA SERIES AUTOMATION
FOR SLIDING DOORS

AUTOMATISM TYPE	SERIAL NUMBER	DATE
❑ Ermetika		

MANUAL AND USE

These instructions are addressed to the operator or to the user of a system for *SESAMO ERMETIKA SERIES* automatic doors. In order to achieve the best performance from this automatic product, Sesamo recommends to read and carefully follow the use instructions present in this manual. This device has been conceived for the automation of sliding doors. Any other use shall be considered contrary to the use provided by the manufacturer, which, therefore, cannot be held responsible. Do not tamper with or alter for any reason the internal equipment of the automatic system and all the safety devices provided in the control unit. The manufacturer shall not be held responsible, shall internal parts of the automatic system are altered or tampered with or in case of use of safety devices in the system, other than those indicated by the same manufacturer.

DESCRIPTION OF THE OPERATION OF ERMETIKA SERIES AUTOMATISMS

Power the automatism with 230V main voltage.
After commissioning and after a few seconds, the automatism is ready to operate, according to modes, depending on the type of the peripheral devices and accessories installed and on the logic selected by means of the selector; it will perform automatic door opening and closing operations so to allow the transit of people in complete safe conditions and in a continuous way.
Door opening may be controlled by the detection sensors or by the pushbuttons for manual control; the opening operation is following by a stop with a following automatic re-closing.
The door stop in the open position facilitates the transit of people according to the customer's needs; the stop time may be adjusted at installation.
The door closing occurs automatically at the end of the stop time, with a lower speed compared to opening.
The automatism safety is controlled by photocells and active safety sensors, which detect the presence of obstacles in the sliding area and, in case, impede the re-closing of the doors.
As an additional safety, the automatism is provided with a sophisticated microprocessor device, which, in case of danger, limits the push force of the doors, so not to represent a source of danger for transiting people.
For safety reasons, the automatism has been conceived so that it is always possible, even with no power and battery, to manually move the doors.

CLEANING AND MAINTENANCE

Cleaning:

COMPONENT	MODE
Painted parts	Cleaning with water and soap
Anodised surfaces	Cleaning with water and non-alkaline soap (ph5.5/7)
Photocells/sensors	Cleaning with a damp cloth
Hermetic door	Cleaning with a damp cloth NO DIRECT WATER JETS ON THE DOOR
Door seals	Cleaning with a damp cloth NO DIRECT WATER JETS ON THE DOOR

Maintenance :

The maintenance interval on the automatisms is determined according to the intensity of the automatism and to the use conditions.

In high traffic systems (airports entrances, supermarkets, shopping centres, restaurants in motorway rest areas, etc.) or operating in particularly heavy conditions (exposure to corrosive agents, near the sea, very windy areas, doors subject to frequent impacts with moving objects, such as supermarket carts, etc.), it is recommended to perform a programmed maintenance every six months, agreed with a *specialised technician*.

In low traffic systems (small shops, private offices, houses, operating rooms, etc.) it is recommended to perform a programmed maintenance every year agreed with a *specialised technician*.

MAINTENANCE MANUAL FOR ERMETIKA SERIES AUTOMATION FOR SLIDING DOORS

AUTOMATISM TYPE	SERIAL NUMBER	DATE	TYPE OF INTERVENTION
❑ Ermetika			❑ Programmed maintenance ❑ Intervention upon request

During a programmed maintenance intervention, performed by an authorised technician, it is recommended to accurately perform the checks and the procedures mentioned below:

- ❑ Disconnect the main power using the upstream bipolar switch of the automatism.
- ❑ Open the automatism disassembling the cover.
- ❑ Disconnect the batteries
- ❑ Check the tightening of the screws of the trolley and of the components installed inside the box.
- ❑ Check the connections of the wiring between the accessories, the sensors and the electronic control unit.
- ❑ Clean the runway with a cloth (No detergents) and check its integrity.
- ❑ Check the sliding of the door, its general conditions (check any misalignments caused by impacts) and, above all, that between the floor and the door there is a minimum space of 10 mm. so to assure a correct sliding even in case of heavy thermal expansions of the door.
- ❑ Clean the pulleys of the carts and check their wear, in case, replace them.
- ❑ Grease the runway with a layer of grease for bearings.
- ❑ Check the wear status of the belt and proceed with its greasing.
- ❑ Reconnect the automatism to the power main and to the batteries.
- ❑ Check wear status and the correct operation of the floor guide and, in case, proceed with greasing or replacement.
- ❑ Check the wear of the rubber end stops and, in case, replace or adjust them.
- ❑ Check the safety sensors (operation and adjustment).
- ❑ Check the detection sensors (operation and adjustment).
- ❑ Check the movement of the doors during braking and approaching.
- ❑ Check the correct selection of the operation logics.
- ❑ Check the efficiency status of the batteries, having the system perform an operation period without main power.

Notes:

DIAGNOSTICS FOR THE IDENTIFICATION OF THE AUTOMATISM FAULT

Errors on the inputs of the active safety devices

Before each opening/closing, the control unit checks the active safety devices (sensors) via the appropriate test circuit and in case of irregularity, does not perform the provided operation. In such case, the display shows an F code error (ref. chart below), which obviously refers to a pending test (waiting to be completed) of one of the installed safety devices:

Alert	Description
F1 Flashing	Supervision on Safe Close 1 failed
F2 Flashing	Supervision on Safe Close 2 failed
F3 Flashing	Supervision on Safe Open 1 failed
F4 Flashing	Supervision on Safe Open 2 failed

The alert code shows that the relating safety test cannot be completed: such condition is caused both by a sensor failure and by something, enabling the sensor (e.g. person or thing in the operating range). Identify the problem, first checking that the operating range of the sensor is free from people and/or objects and that the wiring is correct and intact.

Protection circuits errors

Alert	Description
F8 Flashing	Communication error with the Safety Controller, active alert in the stopped door status
F9 Flashing	Safety function output Test Error

The F8 and F9 errors, if not automatically solved after a short transitional period, show a possible internal failure of the control unit in the communication system between the two microprocessors or in the system arranged for the motor emergency disconnection. If the problem persists, replace the control unit.

Fault status during system start

The error messages below show a fault present at the system start:

Alert	Description
E1 Flashing	Error door parameters acquisition missing, proceed with LP procedure
E5 Flashing	Error main key not inserted or not configured
E6 Flashing	Error monitored sensors acquisition missing, proceed with LS procedure

To solve errors E1 and E6, perform the manual procedures under section Learn Parameters and Learn Sensors For E5, verify the correct introduction of the main key or replace the main key with a fully functioning one.

Alert	Description
E7 Flashing	Error safety function intervention see following detail
E8 Flashing	Error motor or encoder connection, verify wiring
E9 Flashing	Communication error with the Safety Controller during door movement

The E7 code indicates a persistent fault in the internal safety circuit of the control unit, which leads to the operation block for safety reasons. The code flashes alternating with the numeric code in the chart below, which indicates the origin of the fault:

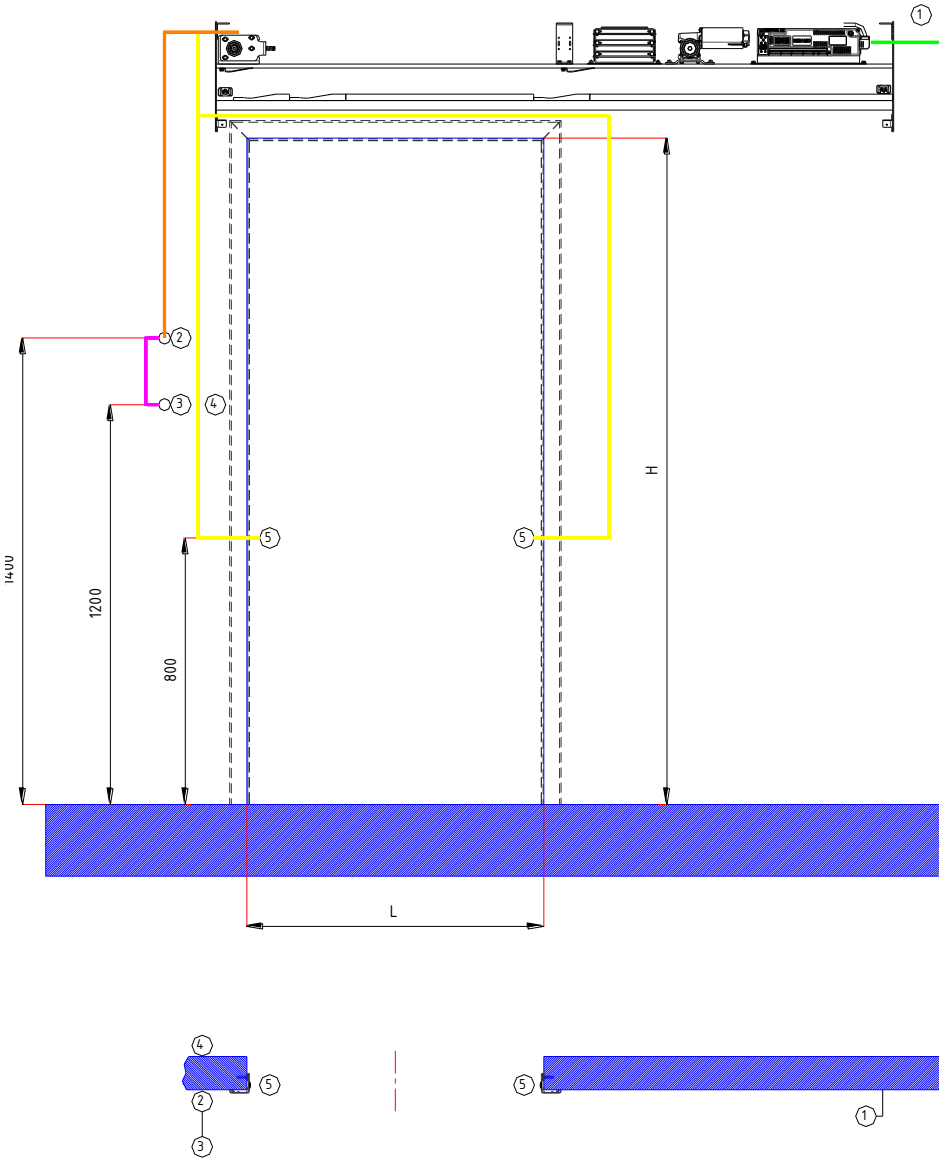
Alert	Description
-2 Flashing	Communication error with the User controller
-3 Flashing	Error no inversion further to Safe Close enabling
-4 Flashing	Error no stop further to Safe Open enabling
-5 Flashing	Error motor control overcurrent
-6 Flashing	Error motor control watchdog
-7 Flashing	Error CRC safety function management data

If the problem persists, replace the control unit.
The E9 indicates a permanent error condition caused by the F8 transitory cause. If the problem persists, replace the control unit.

GRAFCET Porte automatique by SESAMO

Configuration électrique

ELECTRICAL CONFIGURATIONS



1) Exit on door beam
2) Sheath for selector
3) Box for ext. pushbutton
4) Box for int. pushbutton
5) Photocells

Excluded from the supply and installation by SESAMO srl:

- Power lines
- Set-up for corrugated materials
- Installation of the cables for impulse components

Electrical configurations:

Point 1 : Power supply

- n.1 cable 3x1.5mm; 5m excess cable
- n. 1 corrugated tube Ø14 connected to point 2
- n.1 corrugated tube Ø14 connected to point 4
- n. 1 corrugated tube Ø14 connected to point 5

Point 2 : Programming selector

- n. 1 corrugated tube Ø connected to point 3
- n. 1 shielded cable 4x0.25mm

Point 3: Door application side opening pushbutton

- n. 1 corrugated tube outlet Ø for pushbutton application flush with the wall + connection to point 2
- n. 1 shielded cable 4x0.25mm

Point 4 : Safety photocells

- n. 1 corrugated tube outlet Ø 14

NOTES:

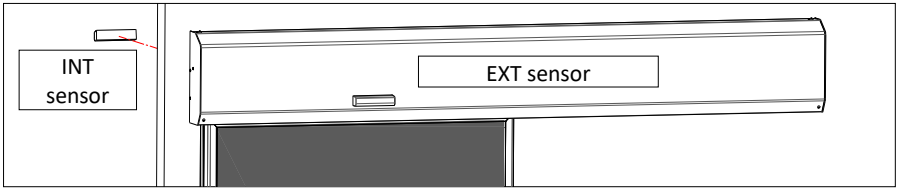
- all the points must be connected to point 1 by means of heavy-duty flexible mounted corrugated tube Ø 14mm, for the feedthrough of low voltage wires of the pushbuttons, selector and photocells;
- the path of the corrugated tubes is not binding, but it must compulsorily avoid the application area of the beam, in order for them not to be damaged by the fixing screws:
- all the curves of the corrugated tubes must be softened to allow an easy feedthrough of the wires;

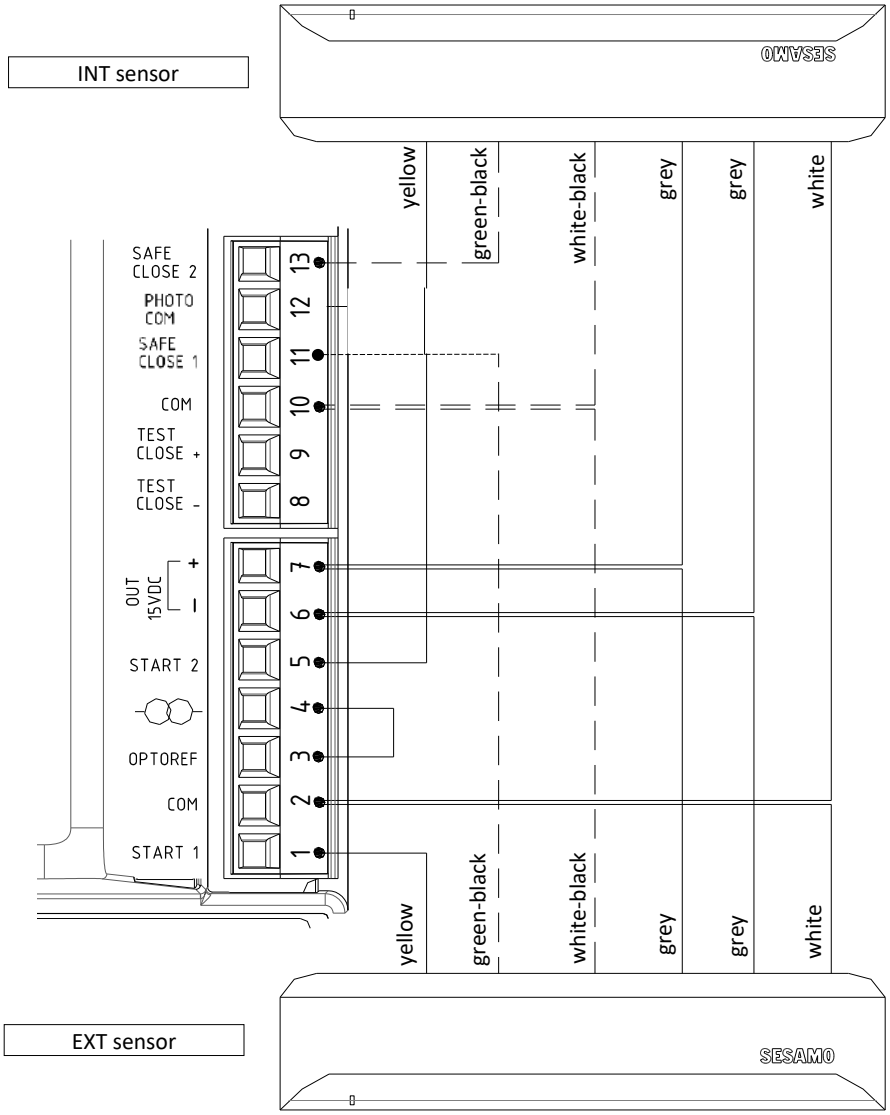
during normal operation, the door must always remain energised, otherwise the emergency batteries start to operate and may wear out.

GRAFCET by SESAMO
Porte automatique

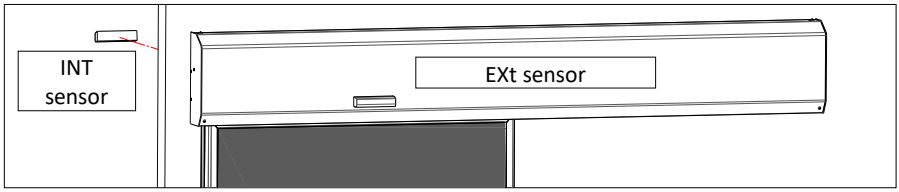
Schémas de câblage

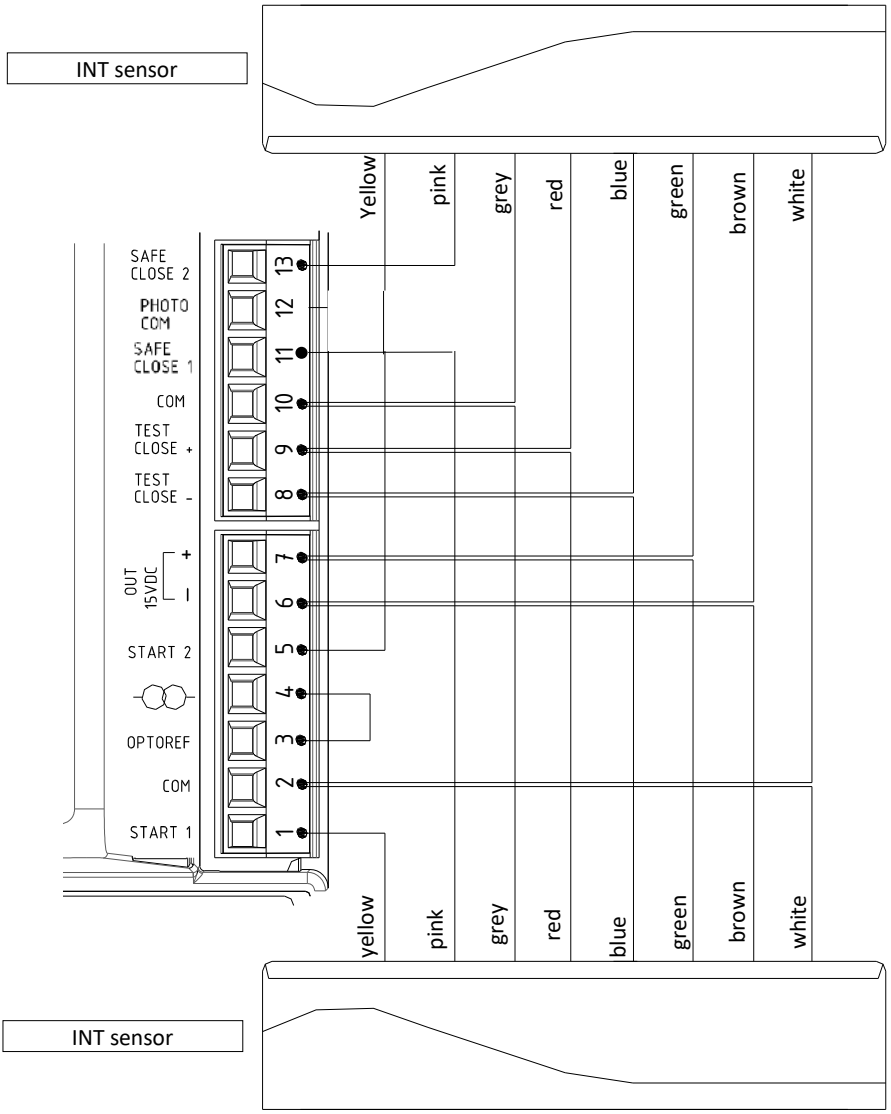
SENSOR AXIS II – NOT IN COMPLIANCE WITH REGULATIONS EN16005



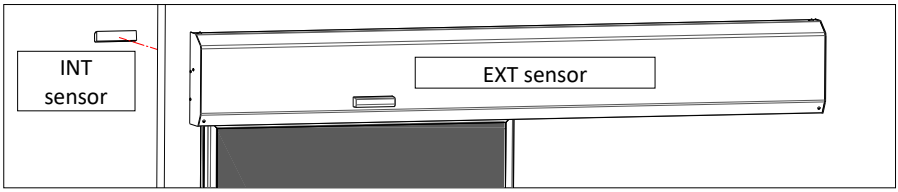


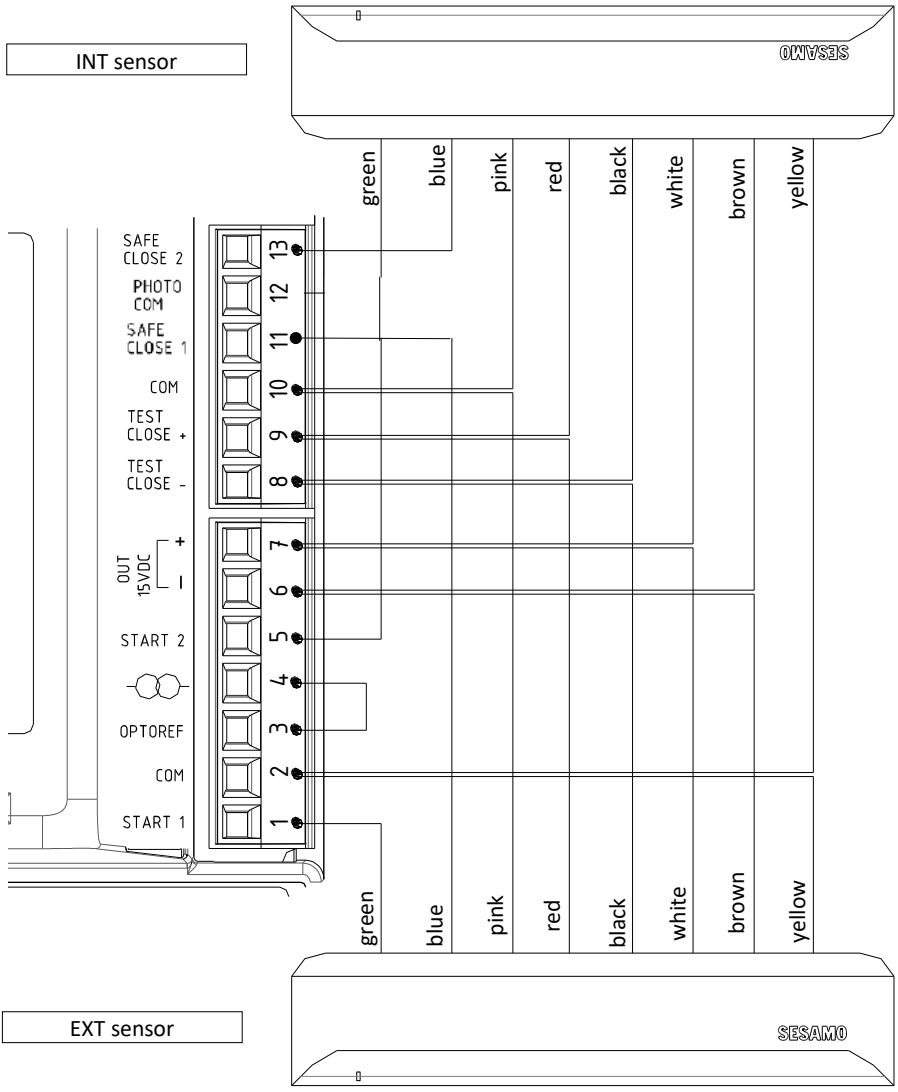
SENSOR VIO DT1 – VIO DT2 – COMPLIES WITH REGULATIONS EN16005



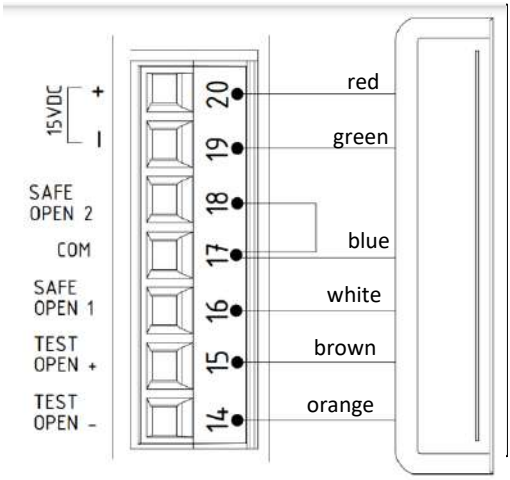


SENSOR AXIS T– COMPLIES WITH REGULATIONS EN16005

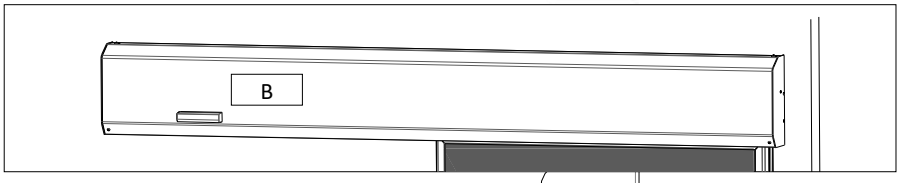


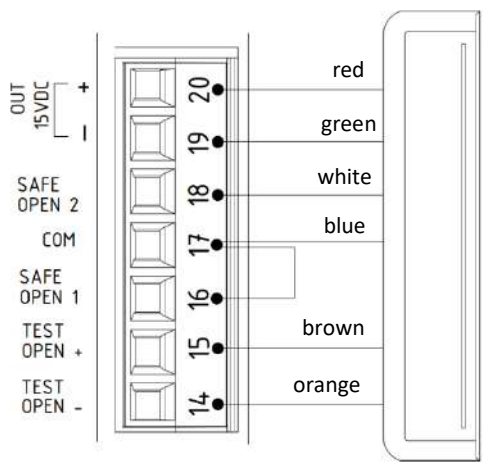


SENSOR PRESENCE T – COMPLIES WITH REGULATIONS EN16005



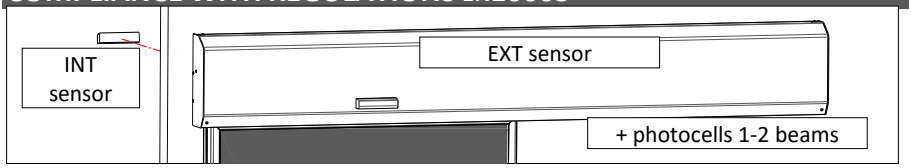
Sensor - A

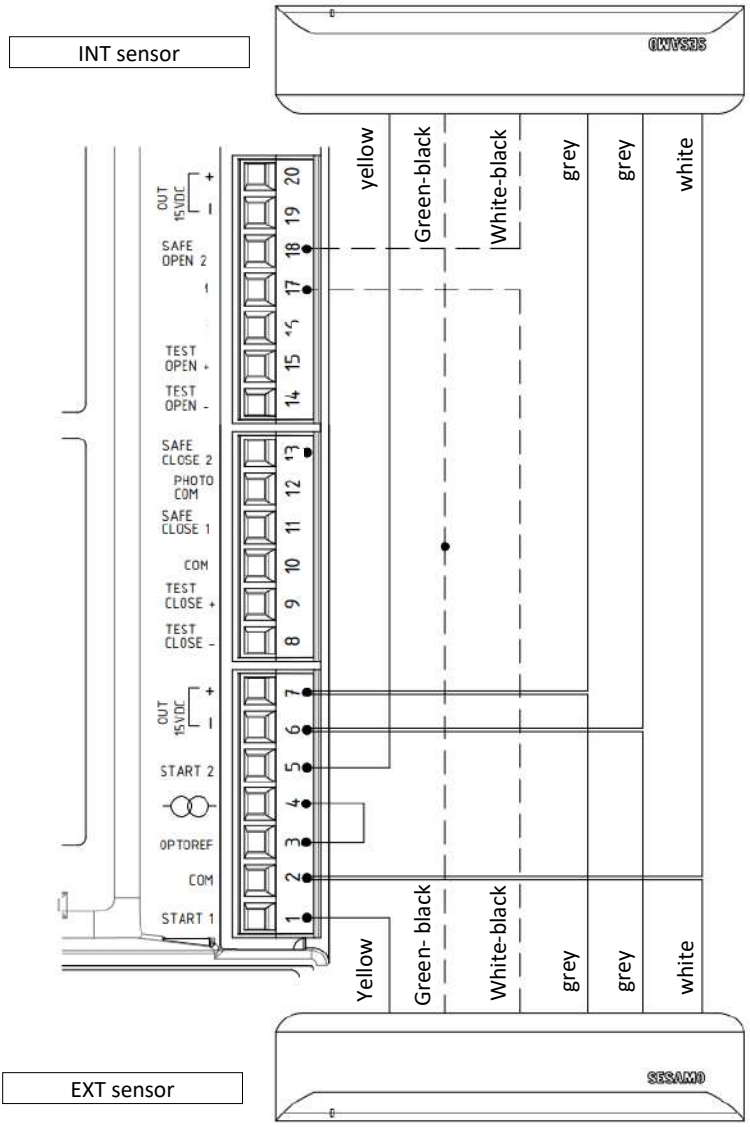


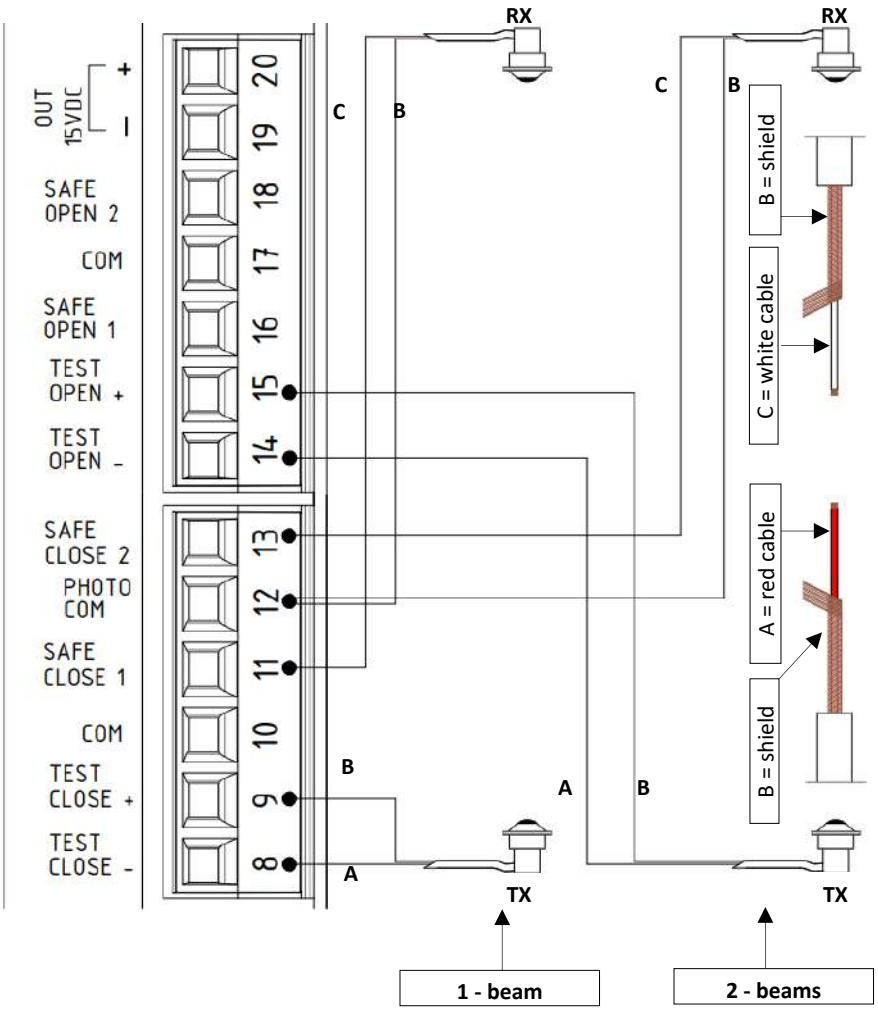


Sensor - B

SENSOR AXIS II WITH SAFETY BEAM PHOTOCELLS – NOT IN COMPLIANCE WITH REGULATIONS EN16005







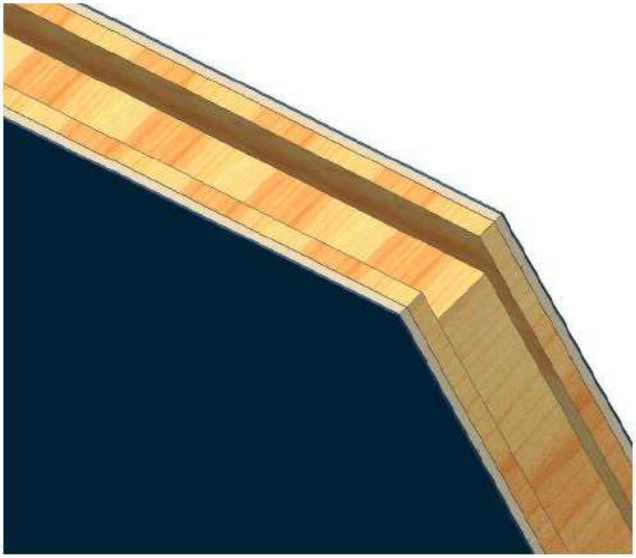
ATTENTION: in the case of a single beam, only wire the photocells marked 1 - Beam and leave the other terminals free.

The parameters will be configured as follows:

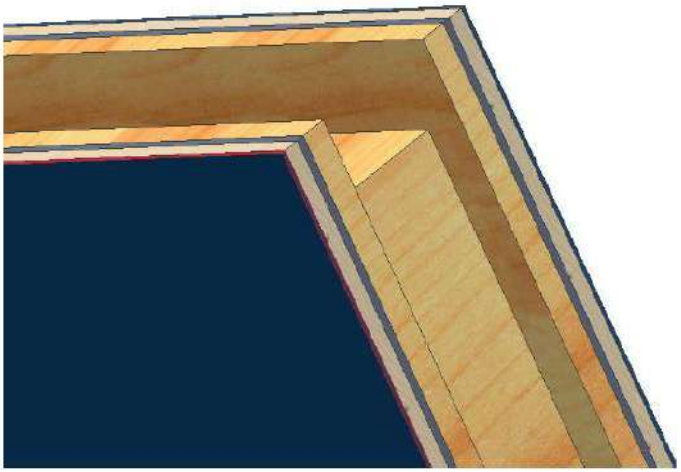
- Parameter 34 – 1 beam = 1
- Parameter 34 – 2 beams = 2

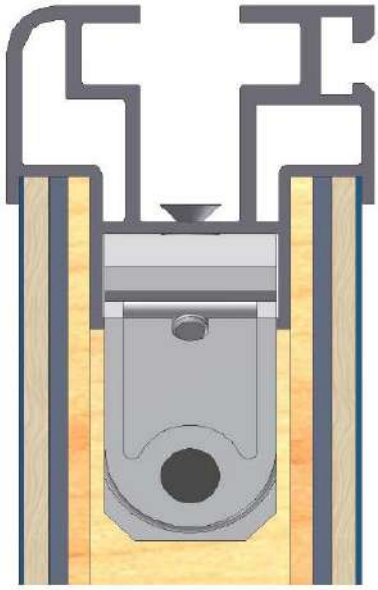
GRAFCET by SESAMO
Porte automatique

Porte Étanche Photo 3D

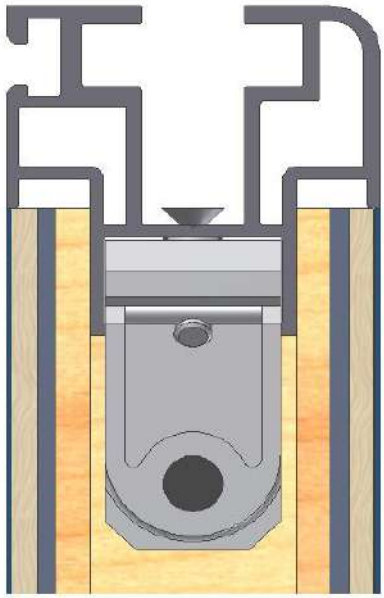


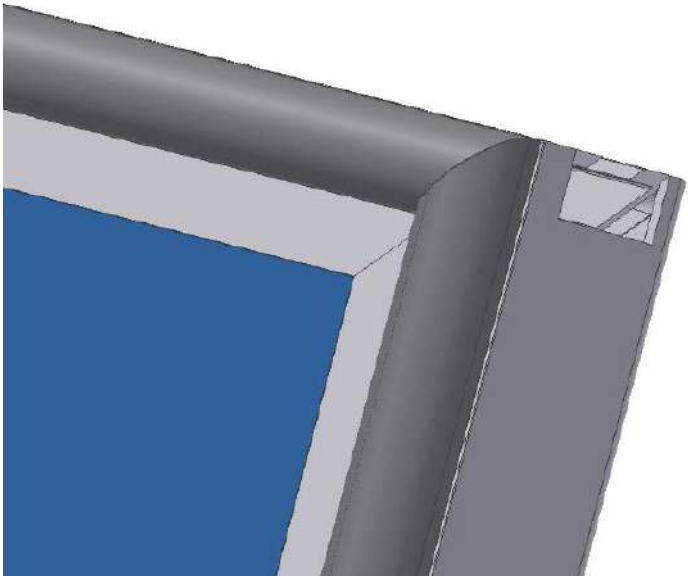
PANNEAU DE LA PORTE :
(gauche) pas de plomb - (droit) avec plomb



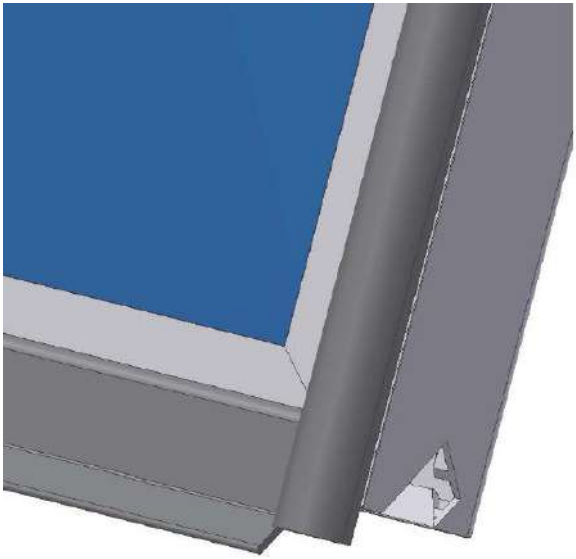


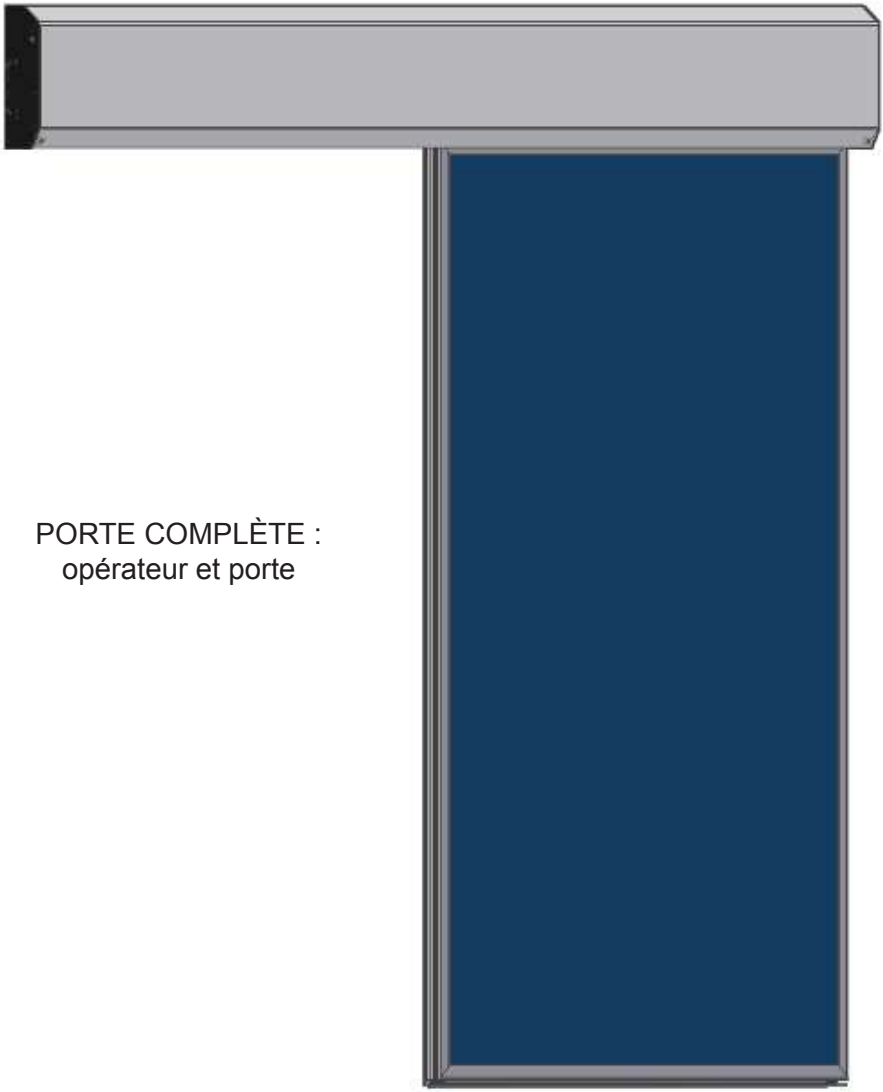
PANNEAU ENCADRÉ
AVEC SÉRIE PROFILES SESAMO EN ALUMINIUM :
(gauche) panneau à insérer - (droite) panneau enrasé



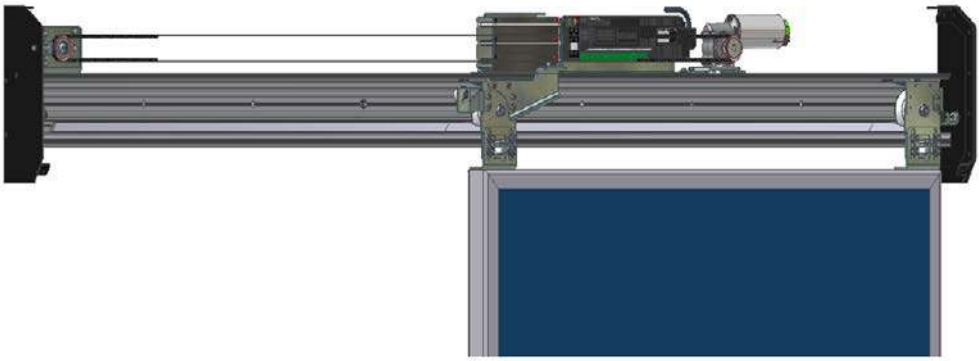


DÉTAIL DU JOINT SILICONE, AVEC UNE MISCÈLE SPÉCIALE :
(gauche) section supérieure, (droite) section inférieure

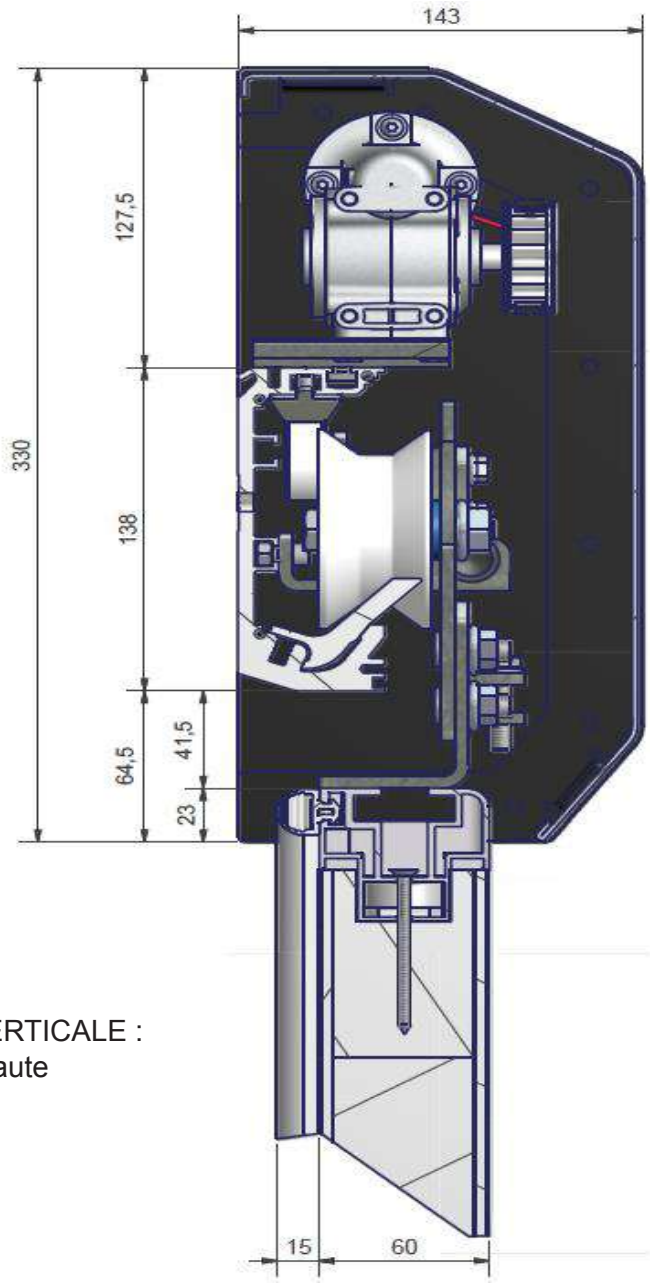




PORTE COMPLÈTE :
opérateur et porte



COMPOSANTES DE L'AUTOMATISME :
moteur avec puissance et couple élevé, platine Dualcore
certifiée par le TÜV, conforme à la norme EN16005



SECTION VERTICALE :
vue haute

SECTION VERTICALE :

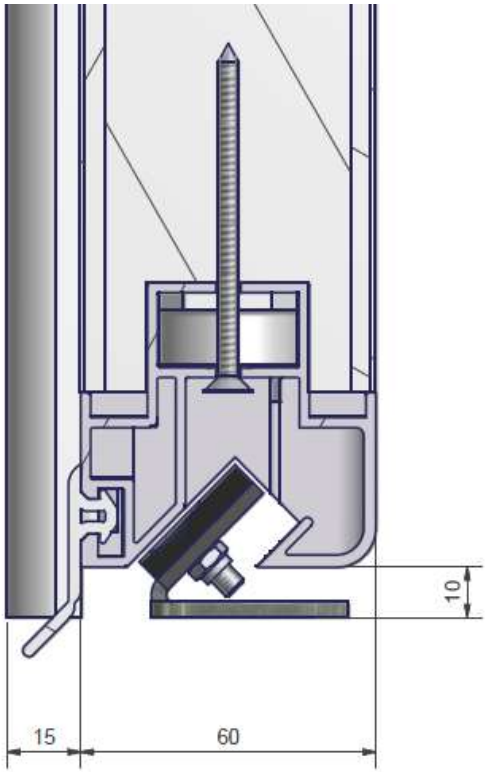
Vue dun bas

Patin au sol partie antérieure du vantail

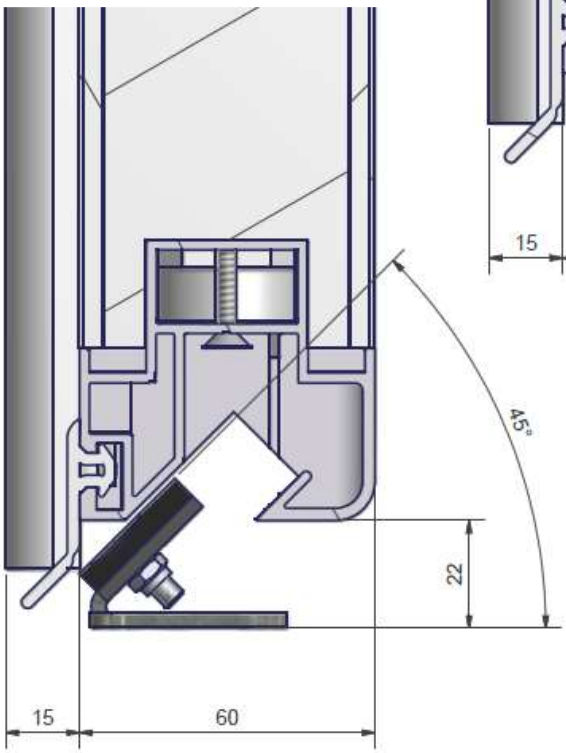
Vantail en position porte fermée (1)

Vantail en position porte ouverte (2)

(1)



(2)



SECTION AVEC DIMENSIONS :

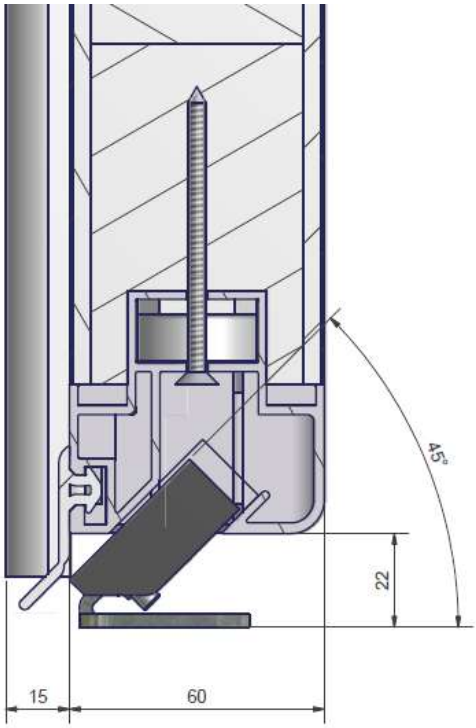
Vue inférieur

Patin postérieur

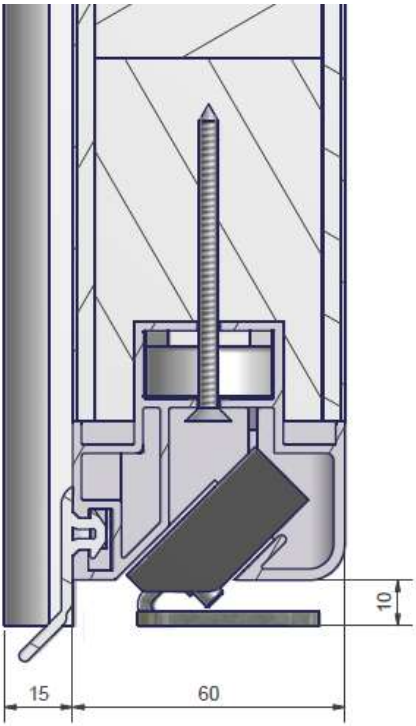
Vantal fermé (1)

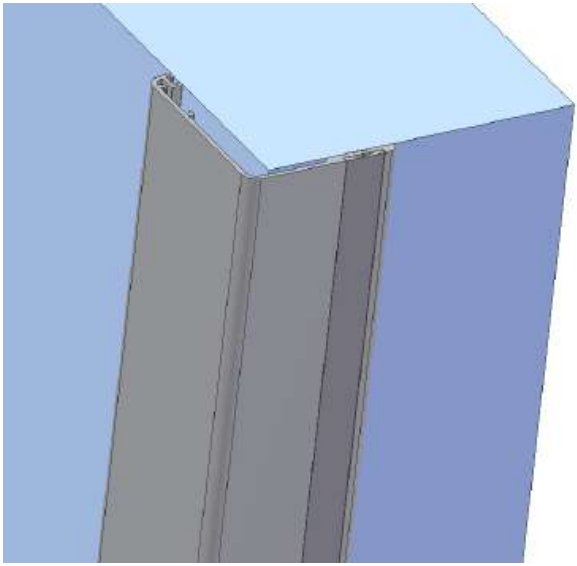
Vantail ouvert (2)

(2)

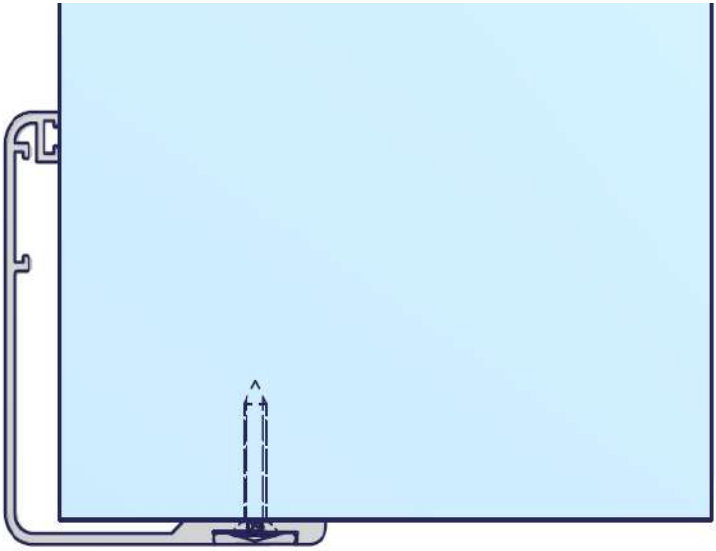


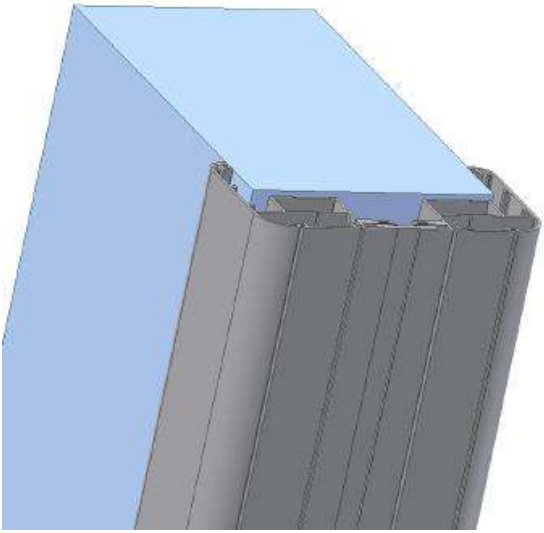
(1)



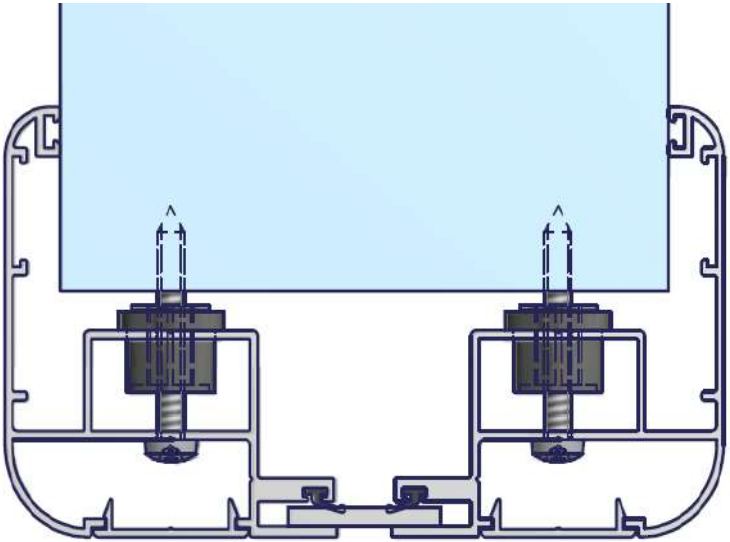


ENCADREMENT CÔTÉ STANDART





ENCADREMENT DOUBLE CÔTÉ



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NOTES:

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