Pergotenda® Flux

Installation manual | EN

1 - 04.2014 Cod. 04838-ING

Corradi
OUTDOOR LIVING SPACE

Dear Installer
This manual contains advice for a rapid and precise installation of the various components.
Although we are sure that you know how to use our products we still recommend that you read our indications carefully.
We always welcome any suggestions or indications on possible improvements to the installation techniques or the layout of the manual.
We would also remind you that during installation you should always use materials that are in full respect of the environment.
It is also good practice to release, in addition to the declaration of conformity as required by law, a final declaration of correct installation according to the specifications in the manual.

PERGOTENDA®FLUX is a CORRADI S.p.A. product.
All technical interventions necessary for the installation must be carried out by authorised and specialised technicians.

All unauthorised interventions (tampering, technical modification etc.) during the warranty period will invalidate said warranty.

CORRADI S.p.A. reserves the right to make technical modifications to the components or products, except for the main features, at any time and without prior notice.

INDEX

SYMBOLS

SYMBOLS
The symbols indicated are used to draw the attention of the installer to arguments of particular importance for the safety of persons, the product or to indicate particular operating conditions.


Attention: general operating note


Attention: greater attention to what you are reading


Attention: general hazard; possible risk for persons, property components


Attention: electrical hazard


Attention: risk of crushing hands


Contact: CORRADI S.p.A. or the authorised retailer

GENERAL PRECAUTIONS


Before undertaking any assembly, maintenance or cleaning operations, make sure that you have fully understood the indications in this manual.
Failure to respect the regulations contained herein relieves CORRADI S.p.A. of all responsibility for damage caused to persons, animals, property or components.

The installation personnel must scrupulously respect the local accident prevention regulations in force.


All electrical connections for pergotenda®fluxment, installation of automation accessories etc must only be made by qualified personnel.

If the structure is motorised and installed at a height of less than 250 cm from the ground, the control button must be of the 'dead-man' type and the opening and closing operations must be clearly visible.


In the case of any incompatibility, contact CORRADI S.p.A.

GENERAL SAFETY PRECAUTIONS

Destination of use
The PERGOTENDA®FLUX is designed for a specific use (as outlined in this manual); any use other than that envisaged shall relieve CORRADI S.p.A. of any responsibility.

When using the canvas it is good practice to remember that all moving parts can be a source of danger.


Do not repergotenda®flux any coverings after the installation and, if they are repergotenda®fluxd for maintenance, make sure that before removal the power supply is cut off (in case of motorised pergotenda®fluxment).

It is recommended never to intervene on moving parts and to ensure that no operator is near to the canvas before reactivating it after a technical or maintenance intervention.


It is compulsory to cut off the power supply (if present) when carrying out an installation, repair or adjustment intervention.


It is recommended that a caution sign be placed on the electrical master switch with the following indications:
"Attention! Do not touch. Service personnel at work"

PRECAUTIONS AND WARNINGS
The maintenance and installation personnel (assemblers, electricians…) must have sufficient expertise and psychophysical and attitudinal requirements for undertaking the tasks at hand.
Always check the correct mounting and working efficiency of the electrical and manual drives during the assembly.


In case of anomalies, immediately stop the work and contact the service department of CORRADI S.p.A.

The use of non-original spare parts, or unauthorised interventions or modifications shall relieve CORRADI S.p.A. of any responsibility for damage caused to persons animals or property.
It is absolutely forbidden to tamper with the fixings, the supports, the guides, the fixtures, the command and idler units and any other component of the PERGOTENDA®FLUX.

ATTENTION
All values indicated are expressed in centimetres (unless otherwise specified).

PRELIMINARY CHECKS
On receipt of the packed goods and before starting their assembly, check the integrity of the material and the presence of all the components necessary for the installation.
Carefully follow the information contained in the "Material check, unpacking and preparation" section.

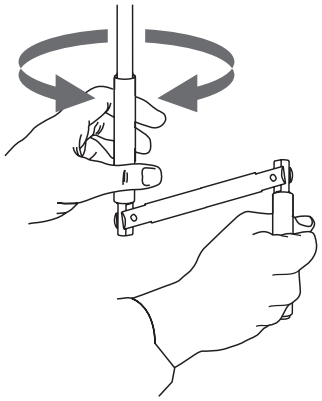
In case of anomalies immediately contact the authorised retailer or CORRADI S.p.A.

DISPOSAL OF PACKAGING MATERIALS
Divide the various packaging according to the material used (cardboard, nylon, polystyrene etc.) and dispose of them separately in compliance with the regulations in force.

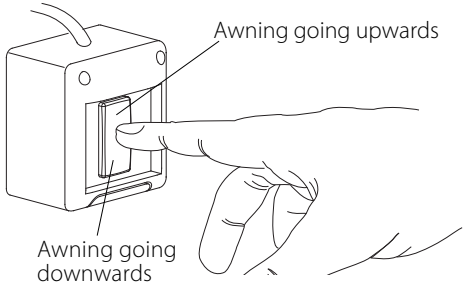
CONTROLS AND VERSIONS

FLUX
It is custom designed and built for the client to protect from the sun and inclement weather, with the exception of snow; The structure is fully self-supporting and may be used in winds of up to class 8 on the Beaufort scale as shown in table 2.
On the anchored canvas version, the canvas must be removed if the wind exceeds the values indicated in table 2.

MANUAL CONTROL
If the **FLUX** is fitted with manual drive, to open and close the canvas, insert the winding handle in the seat of the gearbox and turn clockwise (to raise the canvas) or anti-clockwise (to lower the canvas).



ELECTRIC COMMAND
In case of **FLUX** with a wall-switch, push the switch in the low area in order to move the awning downwards, push it in the up area to move the awning upwards. Once you release the switch the awning will stop.
The drive must be installed between 90 and 120 cm off the ground.



RADIO CONTROL
If **FLUX** is equipped with radio control, the canvas lift, lower and stop movements are explained in the "motor and automatism" manual.

WALL MOUNTED CONTROLS (CUSTOMER RESPONSIBILITY)
To open the canvas, press the lower zone of the button, to close the canvas, press the upper part. When the button is released the canvas will stop its pergotenda®fluxment immediately.

FACSIMILE PLATE

PRELIMINARY CHECKS
The PERGOTENDA®FLUX is delivered in a strong package that protects it from knocks or scratches. There is a label on the package that indicates:

- **Manufacturer data**
- **The order number**
- **Name of addressee**
- **Customer reference number**
- **Package number**

Before opening the package, check that the data corresponds with that in your possession.

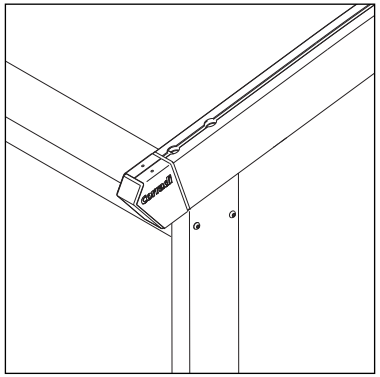
All the elements necessary for mounting the structure, the accessories needed for mounting and the installation, the use and maintenance manual are inside the package.

N.B.:
Fixing elements such as screws, stoppers etc. are not included and must be chosen by the installer based on the type of fixture foreseen (wall, wood, metal etc.)

Proceed as follows:
- Repergotenda®flux the elements from the packaging.

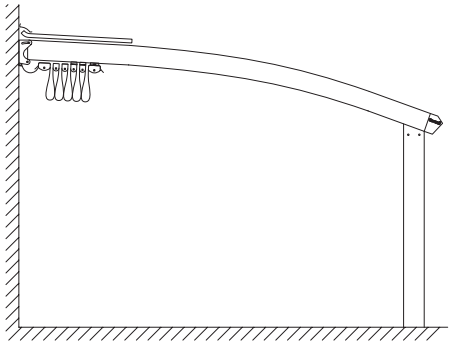
Attention:
do not use a knife to avoid the risk of ruining the paint or metal elements.

FEATURES



PERGOTENDA® FLUX is a retractable covering system custom made with curved runners to protect against sun and rain (not suitable to support snow), fixed to a supporting wall. It consists of an aluminium structure and a stacking canvas.
Wind resistance is guaranteed up to class 6 on the Beaufort scale.
The canvas, made from exclusive Corradi Eclissi* fabric, available in white, grey and ivory, with internal concealed obscuration layer and embossed side with weft effect, is supported by intermediate tubes (section: 4x5 cm) and terminals (section: 8x5 cm) set parallel to one another approximately every 45 cm.
It slides on runners with built-in splashguard (section 6x12 cm) on sliders with 6 misaligned wheels with maximum capacity of 450 kg each.
The toothed drive belt inserted in each runner, with strands completely covered to withstand salinity, is driven by a pulley and a single drive shaft to ensure even canvas movement. The tensile strength at break of each belt is 894 kg.
The PERGOTENDA® FLUX system is operated by a motor-reducer (electric drive) with the possibility of radio control.
Aluminium tubular structure 6x12 cm, available in colours: brown, anthracite, white, grey, ivory in glossy or matt finish; titanium and cor10 with matt finish. Runners available in colours: brown, anthracite, white, grey, ivory in glossy or matt finish; titanium and cor10 with matt finish. Support tubes available in colours: white, grey, ivory in glossy or matt finish. Painted with certified Qualicoat cycle epoxy powders. AISI 304 stainless steel accessories and 10/10 aluminium protection covers matching the structure.

** See Corradi sample kit for other fabrics.*

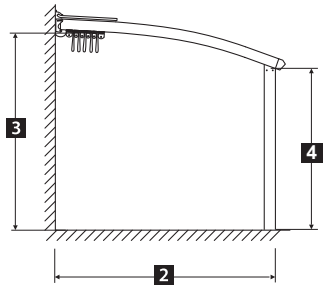


MAXIMUM DIMENSIONS cm

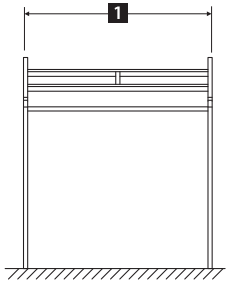
	Width	***Projection***
2 guides	500	650
3 guides	900	650
4 guides	1300	650

1 WIDTH
2 PROJECTION
3 HEIGHT OF WALL SUPPORTS
4 HEIGHT OF PILLARS

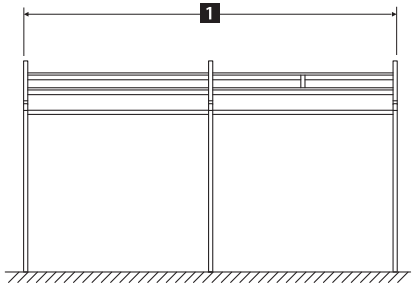
PERGOTENDA®FLUX



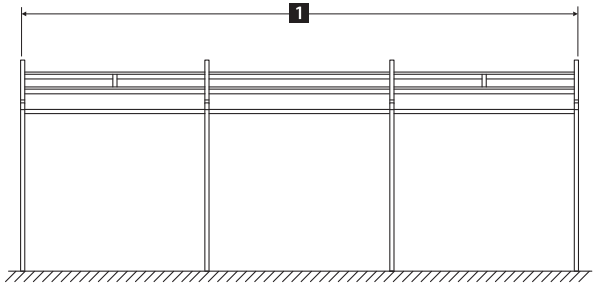
PERGOTENDA®FLUX 2 GUIDES



PERGOTENDA®FLUX 3 GUIDES



PERGOTENDA®FLUX 4 GUIDES

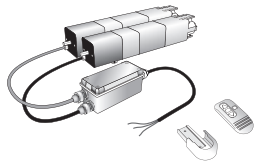


ELECTRICAL TYPE 1
PLAN motor

A 220 volt - 218 W motor reducer complete with button limit switch for ascent and descent. Ideal for flat awnings with 2, 3 or 4 guides because the canvas is never stretched; or for tilted awnings up to 3 guides with a maximum projection of 350 cm.

ELECTRICAL TYPE 2
SLOPE motor
remote computing system
exchange MONO

A 220 volt - 218 W motor reducer with control unit fitted with microprocessor to control the voltage and a receiver for the radio-controlled (433.92 MHz) remote control with a two channel transmitter. Ideal for TILTED AWNINGS with 2 or 3 guides to guarantee with every manoeuvre the correct canvas tension, which could change due to the dilatations of the fabric or the guides caused by thermal excursions.



ELECTRICAL TYPE 3
1 SLOPE motor (control)
2 PLUS motor
remote computing system
exchange TANDEM

A 220 volt- 218+218 W motor reducer with control unit fitted with microprocessor to control the voltage and for controlling the operation of two motors in series on the same axis, a radio receiver for the radio-controlled (433.92 MHz) remote control with a two channel transmitter. Ideal for TILTED AWNINGS with 4 guides to guarantee with every manoeuvre the correct canvas tension, which could change due to the dilatations of the fabric or the guides caused by thermal excursions.

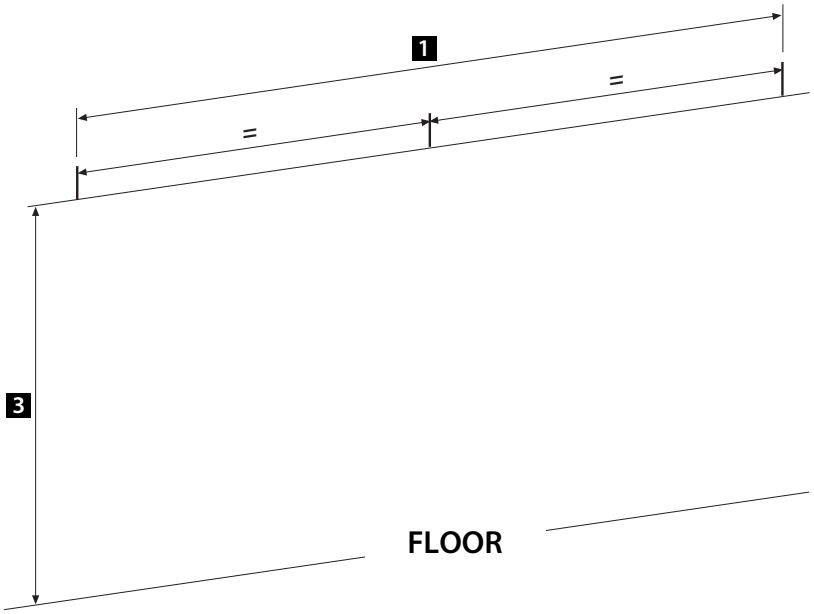


fig. 1 - Trace on the wall

- the fixing line of the brackets at the height indicated in the project drawing (**3**);
- the external line of the brackets (**1**).
- the intermediate dimensions for fastening the central brackets (with 3-guide structure and equal runner centres).

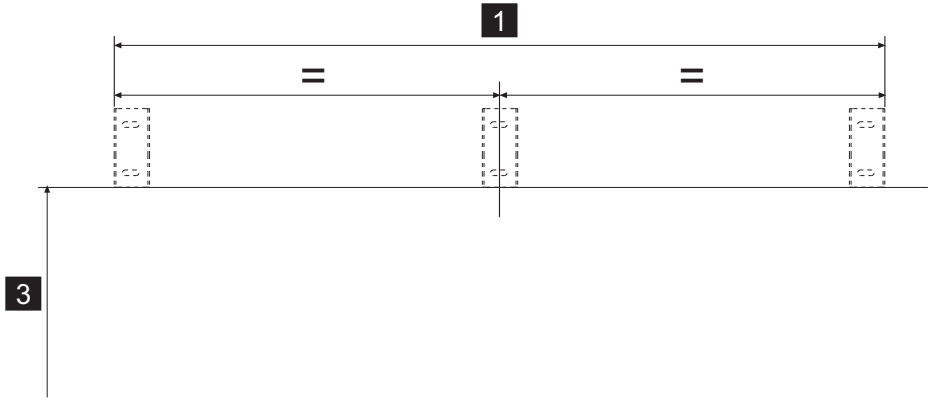


fig. 2 - For 3-guide structures.

The intermediate bracket must be positioned with the central hole in correspondence with the line marked on the wall.

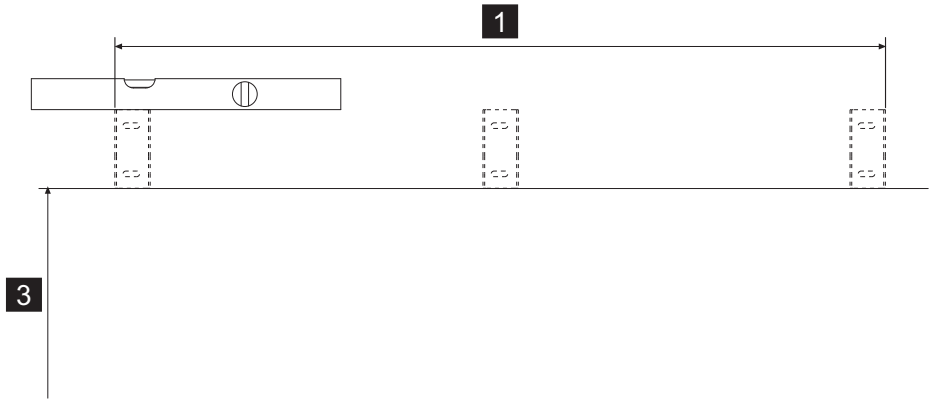


fig. 3
Check the linearity of the tracing made with a spirit level.

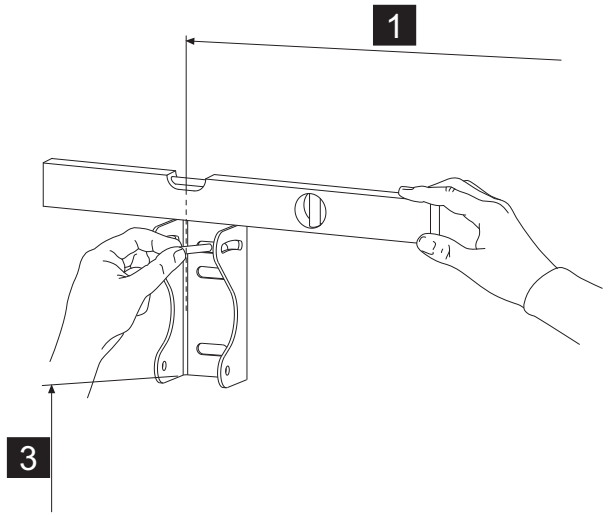


fig. 4
Position the outside brackets on the line traced on the wall and mark the fixing holes.

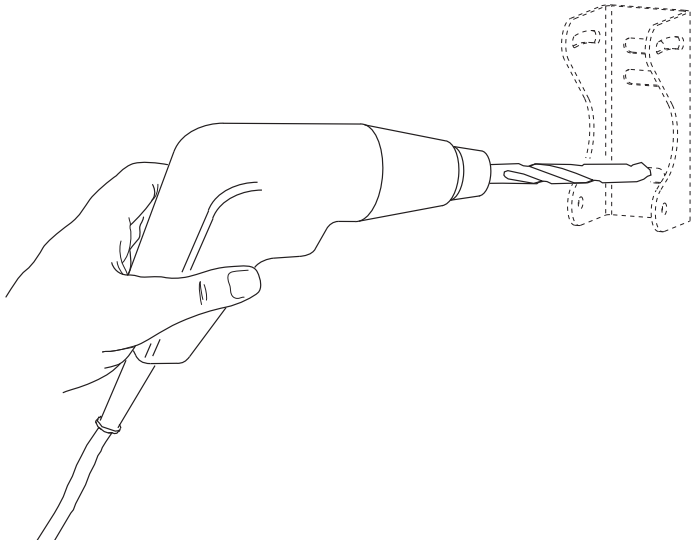


fig. 5
Drill the bracket fixing holes on the wall with a suitable drill bit.

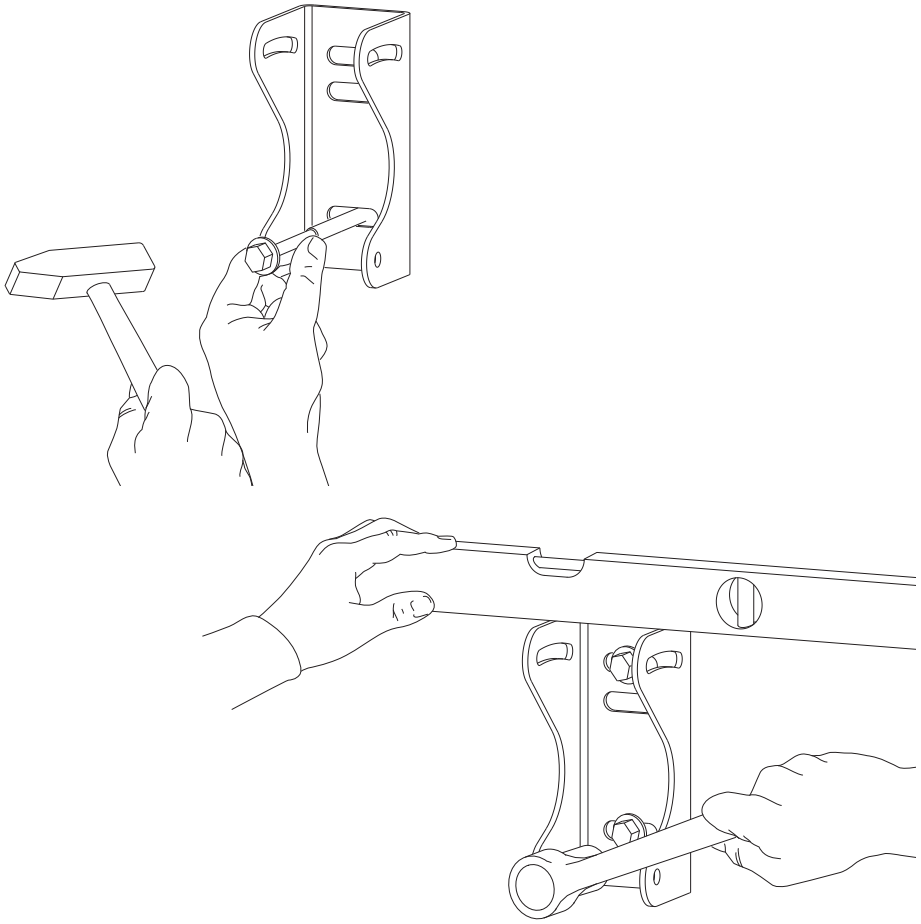


fig. 6
- Insert the plugs (suitable for the type of wall and load, see table).
- tighten the screws;
- check the planarity of each bracket.

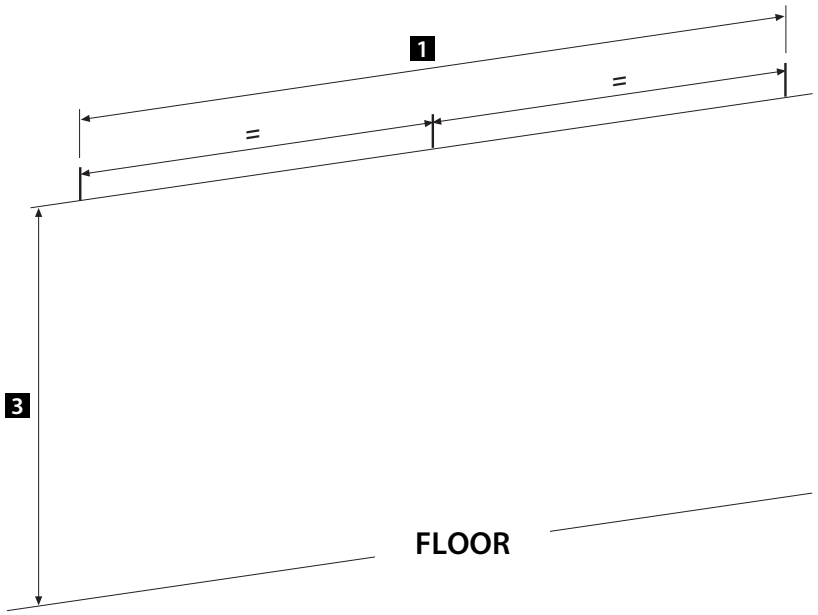


fig. 7 – Trace on the wall

- the fixing line of the brackets at the height indicated in the project drawing (**3**).
- the external line of the brackets (**1**).
- the intermediate dimensions for fastening the central brackets (with 3-guide structure and equal runner centres).

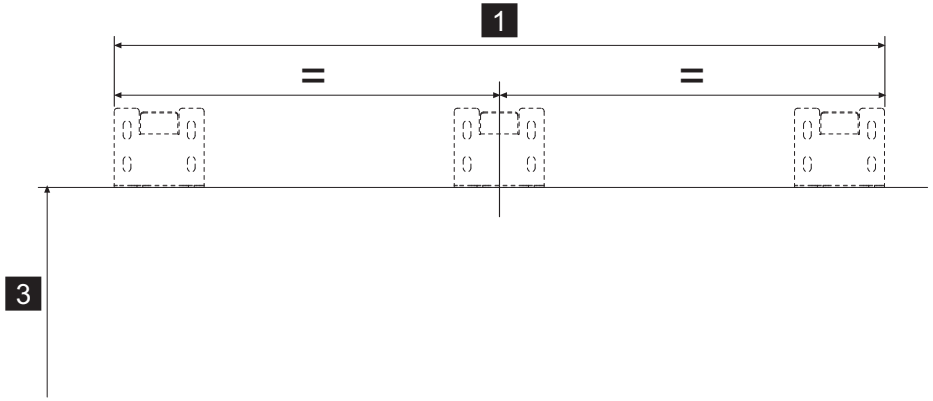


fig. 8 - For 3-guide structures.

The intermediate bracket must be positioned in correspondence with the line marked on the wall.

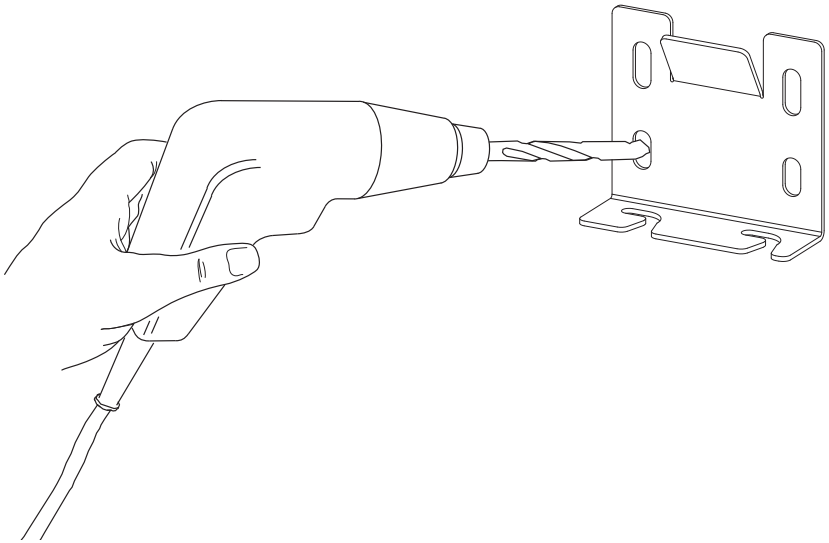


fig. 9
Drill the bracket fixing holes on the wall with a suitable drill bit.

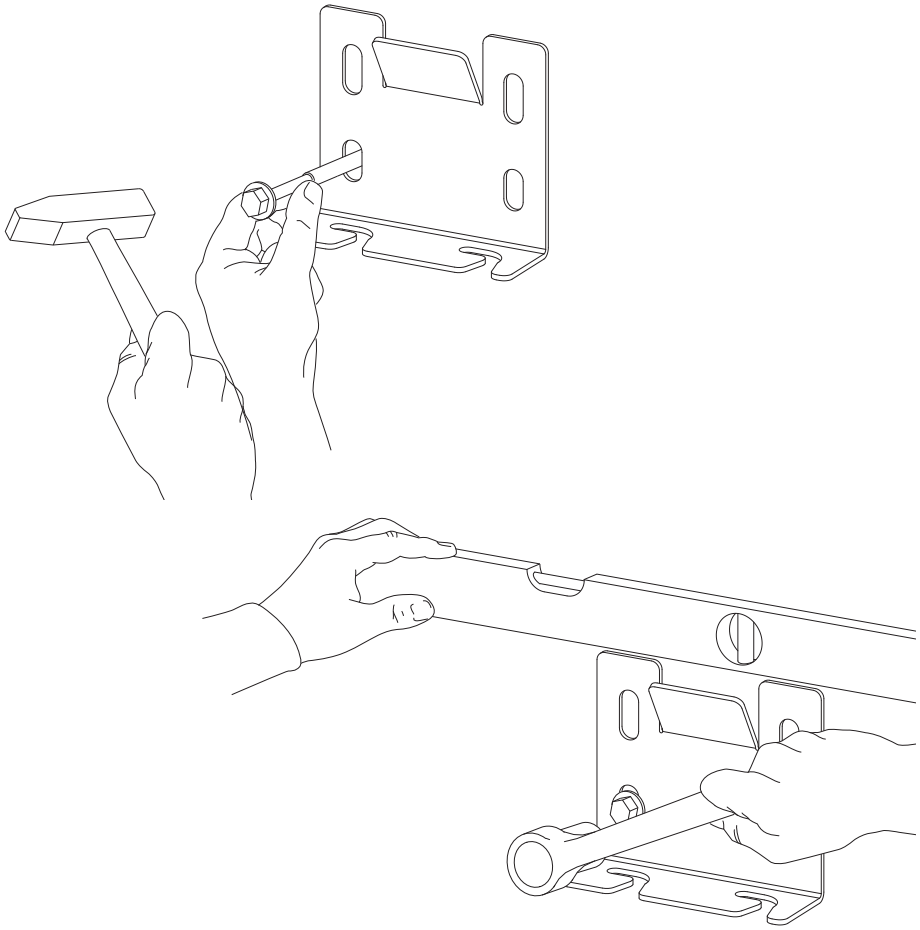


fig. 10
- Insert the plugs (suitable for the type of wall and load, see table).
- tighten the screws;
- check the planarity of each bracket.

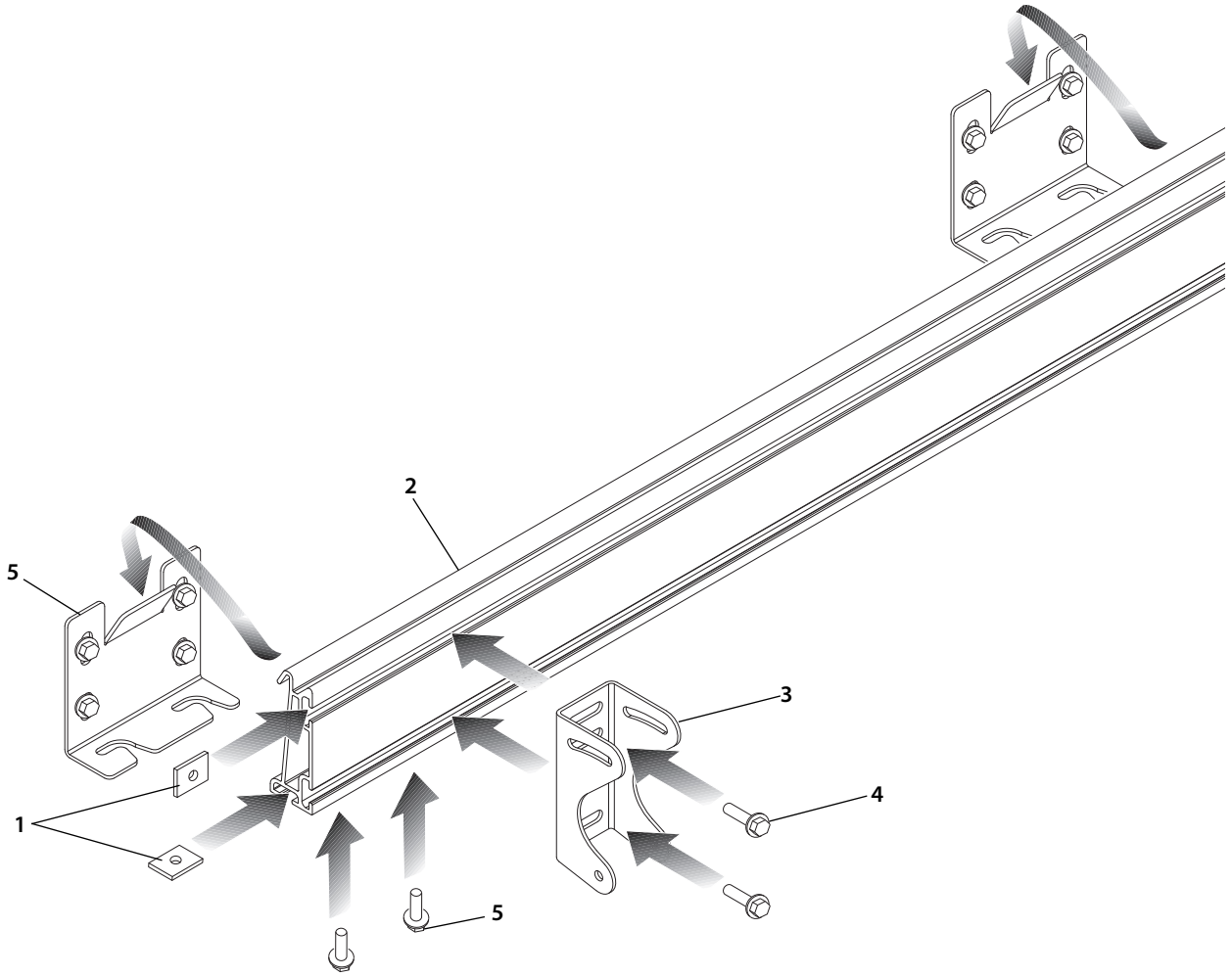


fig. 11

- Insert the threaded plates (**1**) in the indicated seats on the beam (**2**).
- Screw in the bracket (**3**) using bolts and washers (**4**).
- Insert the top corner profile of the beam (**2**) into the folded end of the bracket (**5**) and tighten using bolts and washers (**5**).

MOUNTING WALL BEAM (OPTIONAL) 2

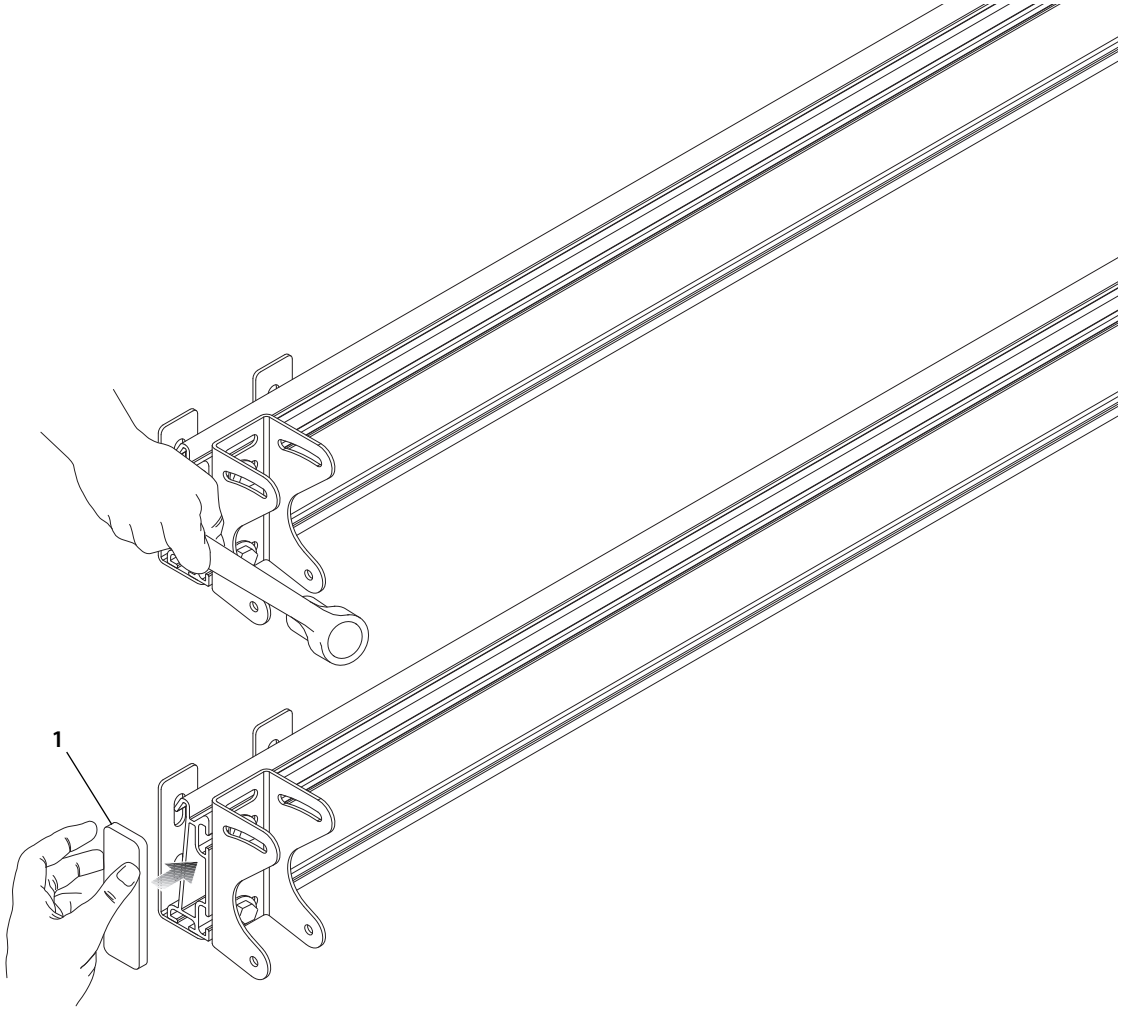


fig. 12

- Tighten the bolts.
- Insert the caps (**1**) in both ends of the beam.

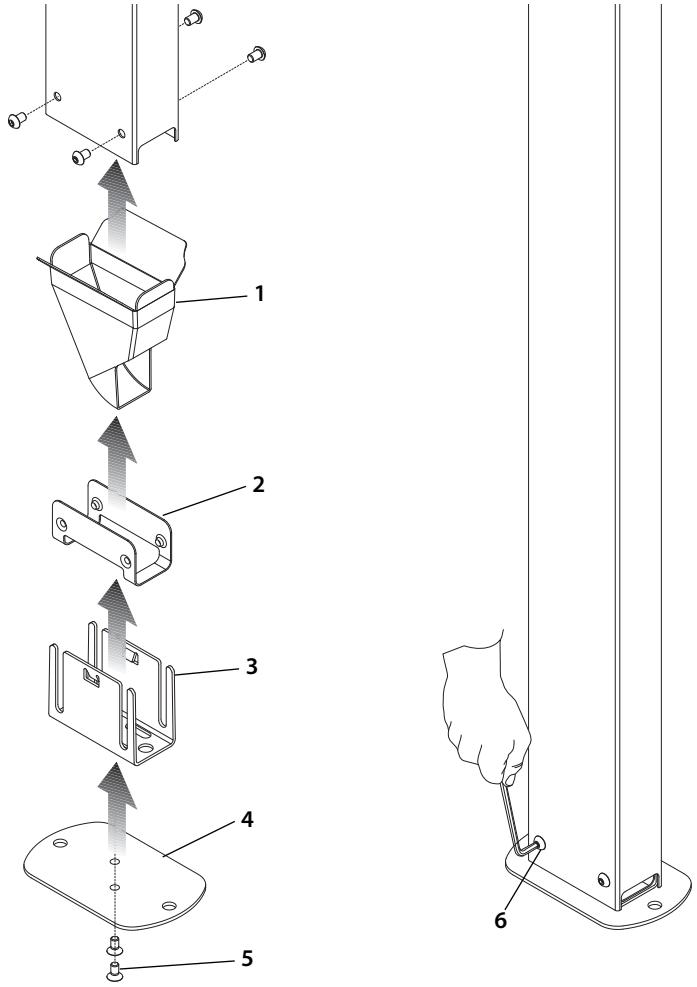


fig. 13

- Insert the water drain flap (**1**), the bracket (**2**) and the foot (**3**) in this order at the bottom of the upright.
- Screw in the plate (**4**) using the two screws (**5**).
- Fasten it to the upright using the four screws (**6**).
- Repeat the operation on all the uprights.

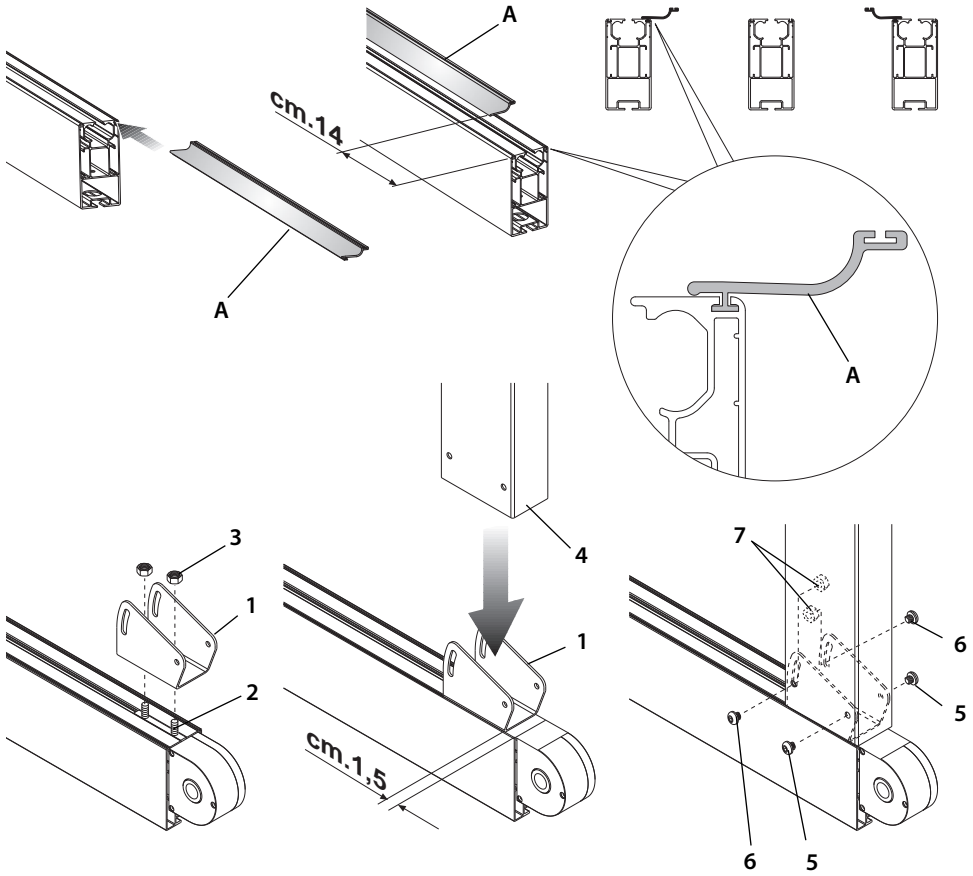


fig. 14

- Insert the splash profile (**A**) in the inner seats of the lateral guides up to about 14 cm. from the front end.
- Mount the bracket (**1**) on the studs (**2**) present on the guide (front part), then use the nuts provided (**3**) to position the bracket at 1.5 cm. from the end of the profile.
- Insert the upright (**4**) into the bracket (**1**) on the guide and lock it using the two front screws (**5**).
- Pre-tighten the two rear screws (**6**) to the self-locking nuts (**7**) but do not over-tighten.
- Repeat the operation on all guides.

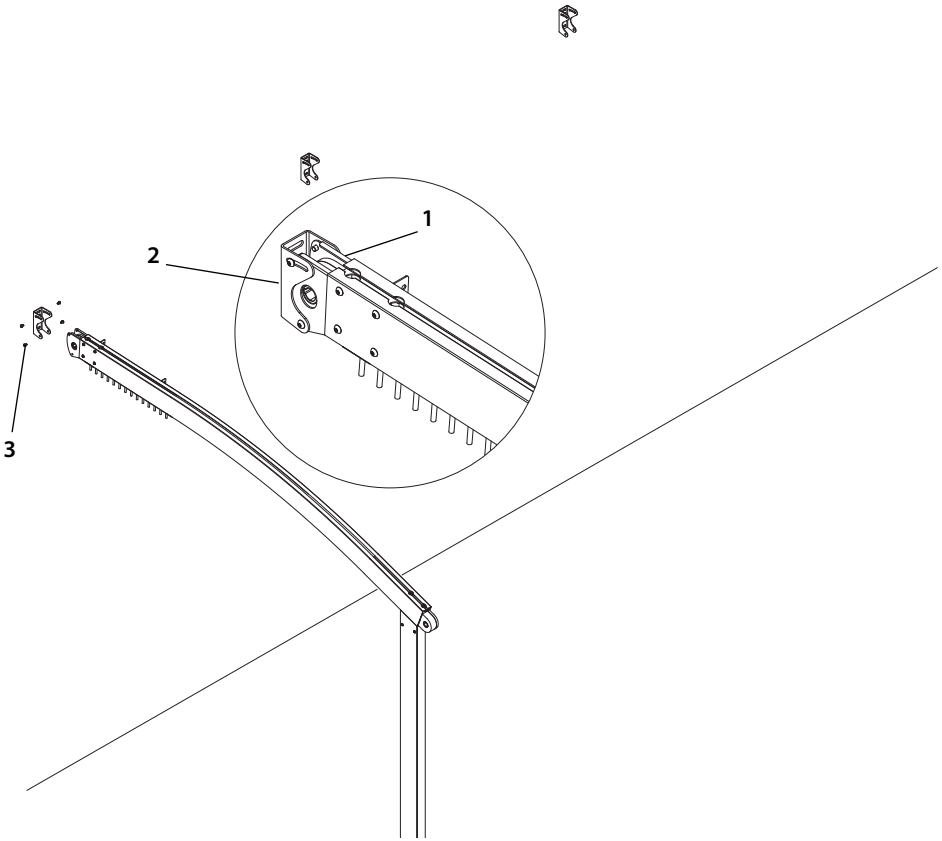


fig. 15 - Mounting the guides/uprights
Remove the screws (**3**) pre-mounted on the bracket (**1**), insert the guide into the rear bracket (**2**) using the screws (**3**) without tightening them fully.

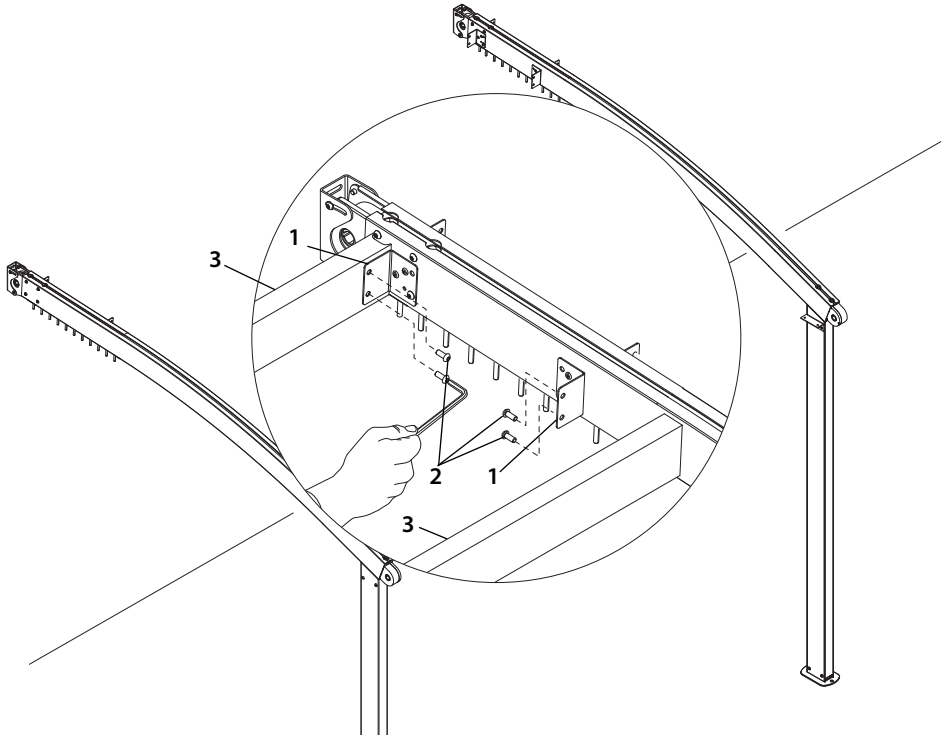


fig. 16 - Mounting motor support
The motor runner cross-bar with the four holes for anchoring the motor must be mounted in the runner centre indicated on the project drawing (for 3 guides right - left).
For 4-guide structures, there are two motor runner cross-bars and they must be installed in the outer clear openings.
Use the corner brackets (**1**) and the screws provided (**2**) to fit the runner cross-bars (**3**) to the beams.

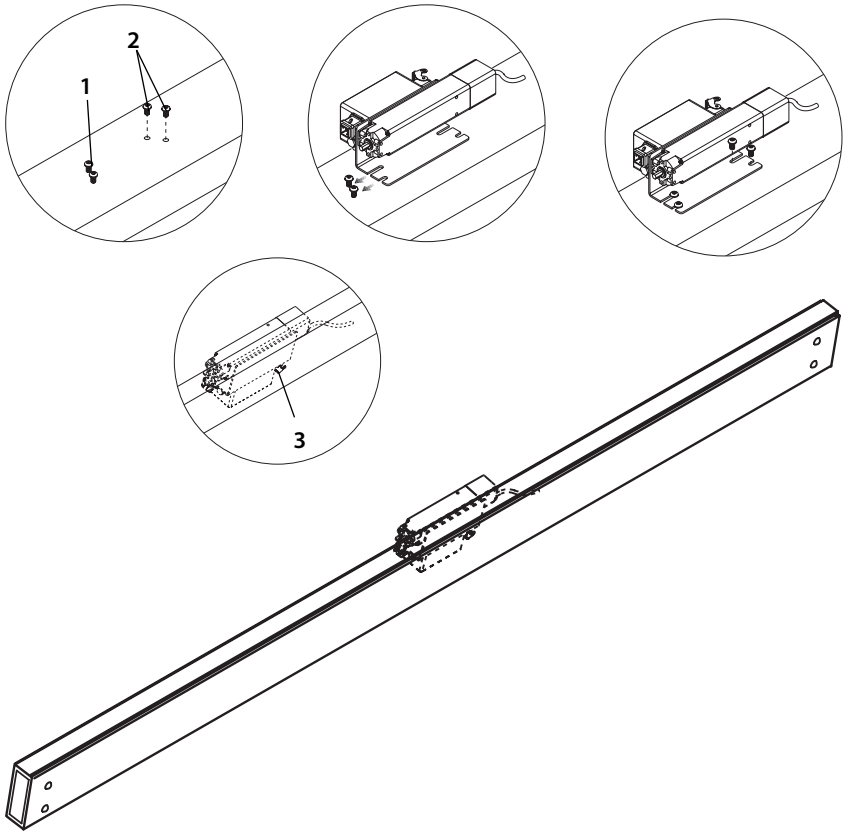


fig. 17 - Assembling motor on runner cross-bar

The motor must be mounted on the runner cross-bar, where there are four screws, before the cross-bar is positioned on the structure.

- partially unscrew two screws (**1**).
- completely unscrew the remaining screws (**2**).
- slide the motor plate until it is flush with the two screws on the runner cross-bar.
- tighten the remaining two screws to completely lock the motor.

Remove the screws on the runner cross-bar, fit the runner cross-bar with the motor facing the wall to the beams with the screws previously loosened, positioning it so that the motor drive control unit (**3**) is facing downwards.

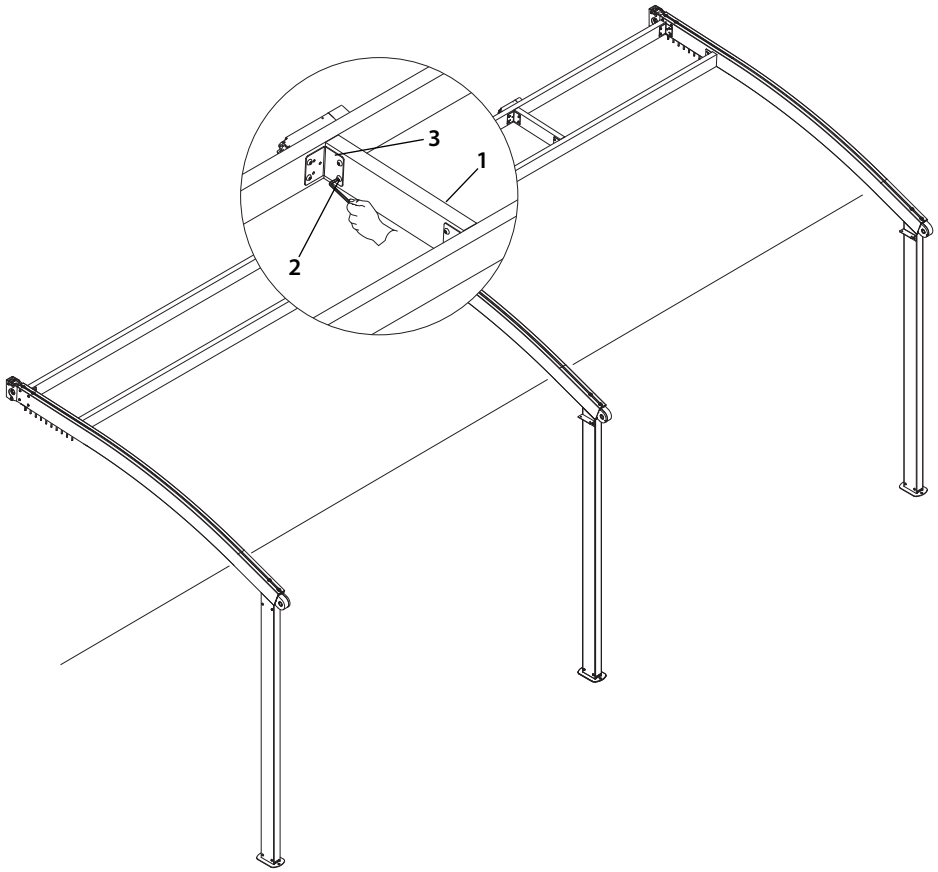


fig. 18 - Mounting anti-torsion beam

Mount the anti-torsion beam (**1**), in correspondence with the motor, removing the screws provided (**2**) and fasten it to the angle bars (**3**) with the screws (**2**) previously loosened.

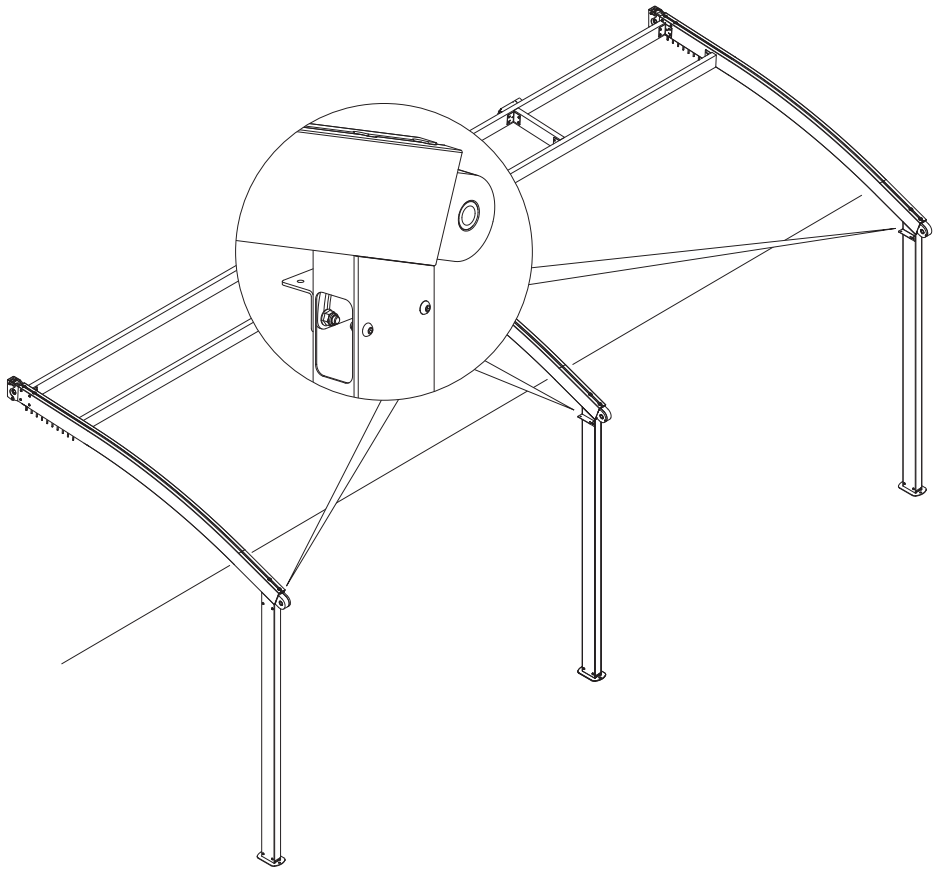


fig. 19 - Guide fixing

- Fully tighten all the guide/upright fastening screws.

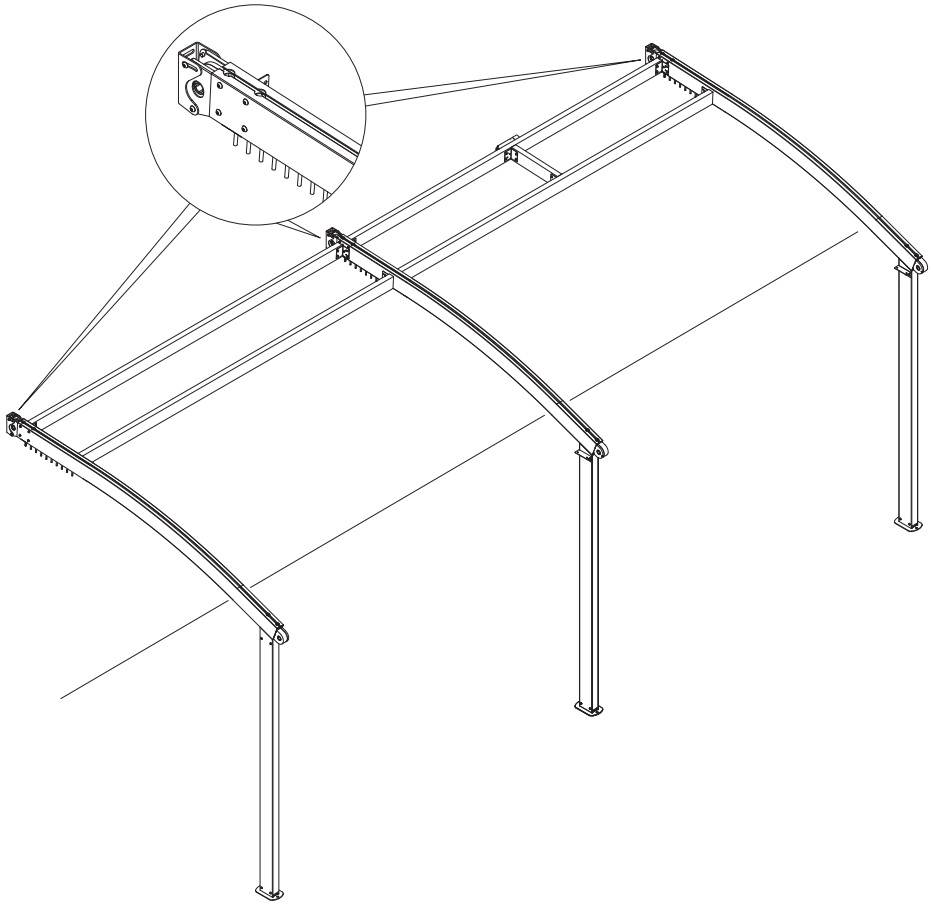


fig. 20 - Guide fixing

- Fully tighten all the screws fastening the guide with the wall bracket.

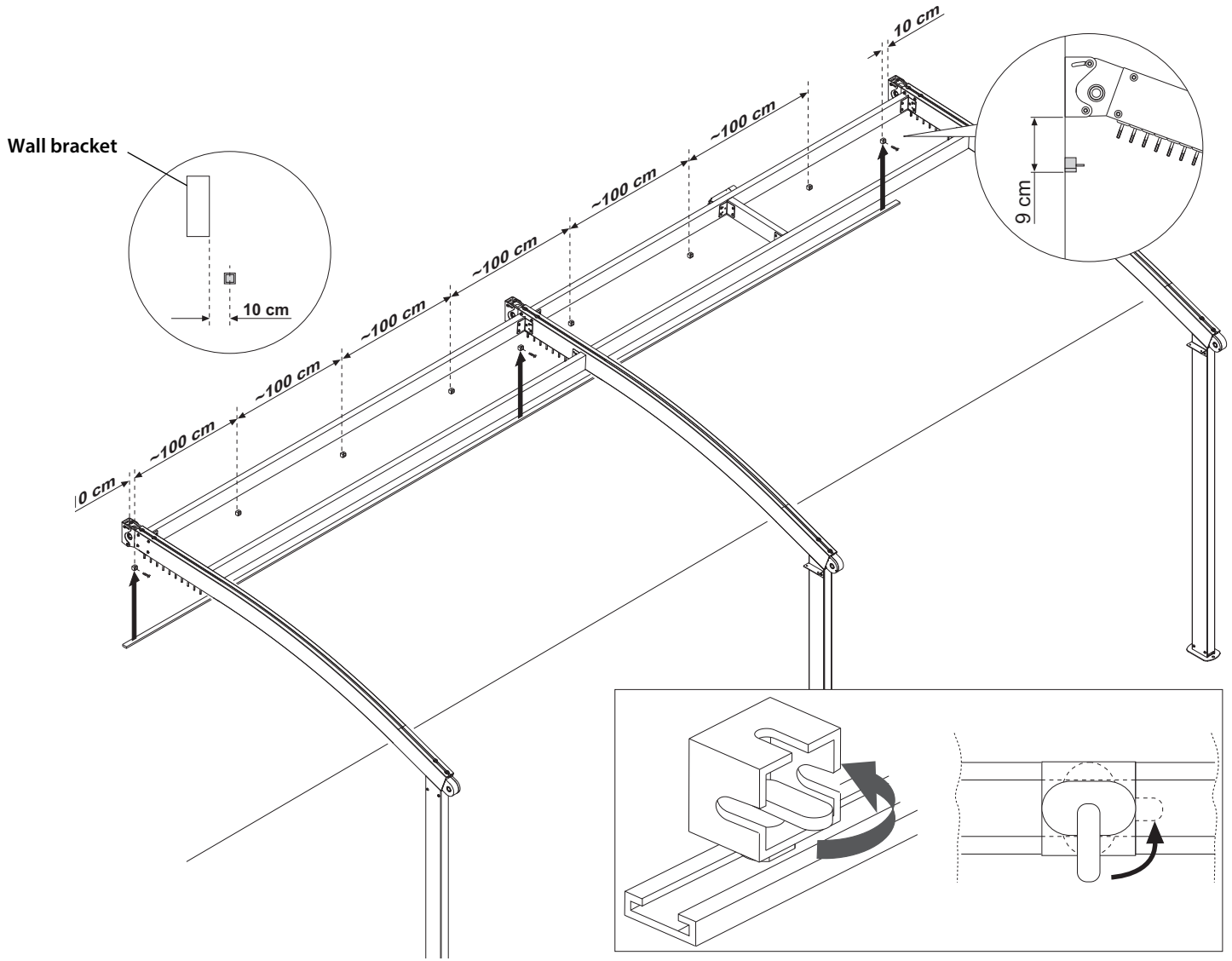


fig. 21

Mount the outer supports of the profile with Velcro 10 cm from the inside of the wall bracket aligned at a distance of approximately 9 cm from the lower edge of the wall bracket.
The inner supports must be approximately 100 cm apart.
Fix the profile with Velcro to the supports by turning the lever of each support.

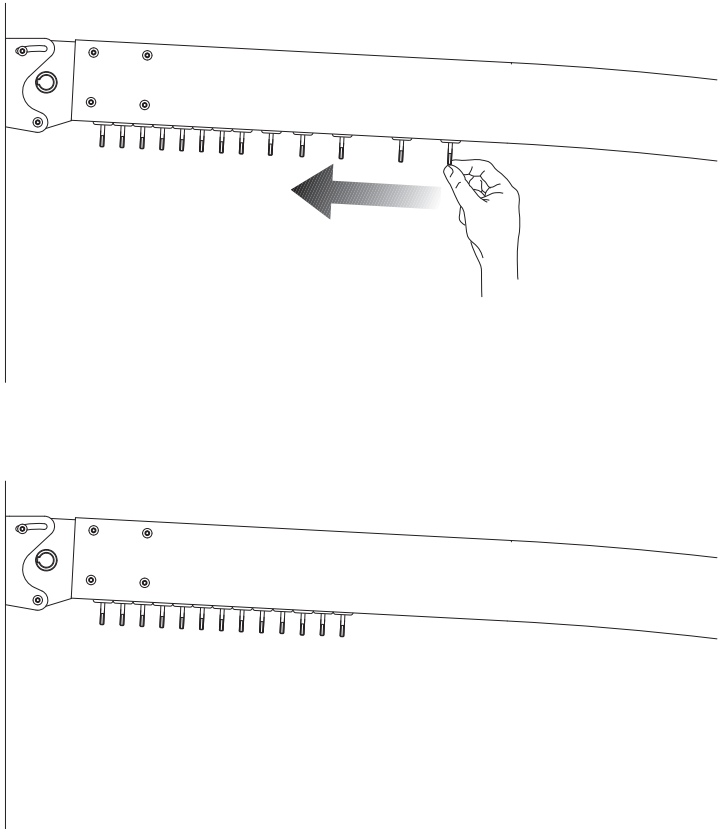


fig. 22 - Aligning slides

Move to the limit switch (towards the wall) the drive slider of the runners so that all the intermediate sliders are grouped together.

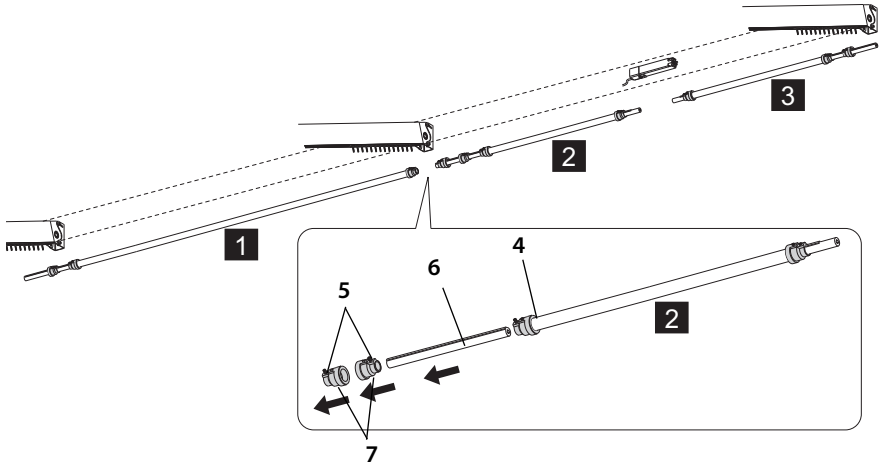


fig. 23 - Mounting transmission shaft

The transmission unit is made up of pre-assembled shafts: secondary transmission shaft (**1**) left primary transmission shaft (**2**) right primary transmission shaft (**3**).

Take the shaft (**2**) and loosen the screws (**4**) and (**5**). Remove the drive shaft (**6**) and the two bushes (**7**).

ATTENTION:

DO NOT DISMOUNT THE PRE-ASSEMBLED SHAFTS.

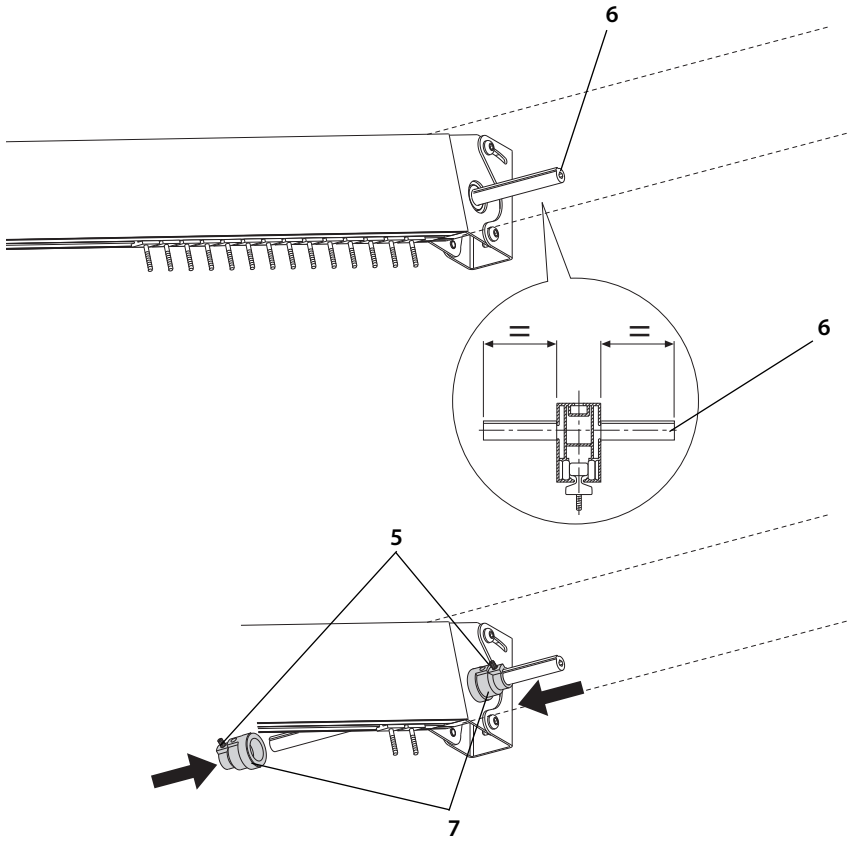


fig. 24 – Shaft installation
Insert the shaft (**6**) in the central guide and position it so that the two protrusions on each side are of the same length.
Insert the two bushes (**7**) on both sides and lock them with the screws (**5**).

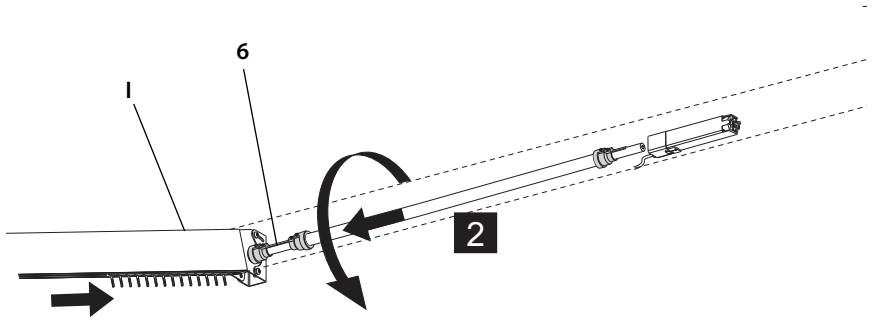


fig. 25 – Shaft installation
Slide the shaft (**2**) on the drive shaft (**6**), rotating it to compact the sliders in the runner (**I**).

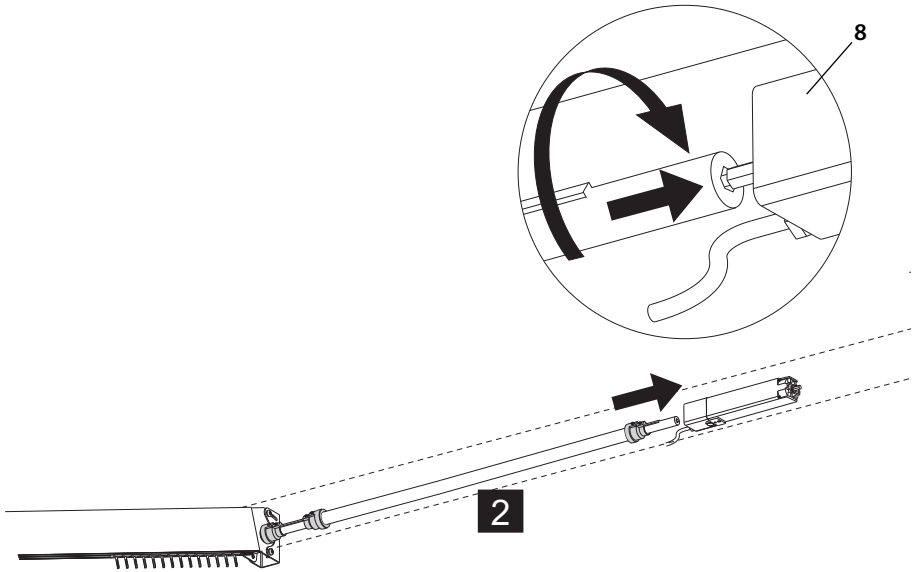


fig. 26 – Shaft installation
Run the shaft (**2**) into the hexagonal motor shaft (**8**).
If the two hexagons do not couple during the insertion (male and female), turn the shaft (**2**) slightly, always keeping it pushed towards the motor until reaching the first coupling point.

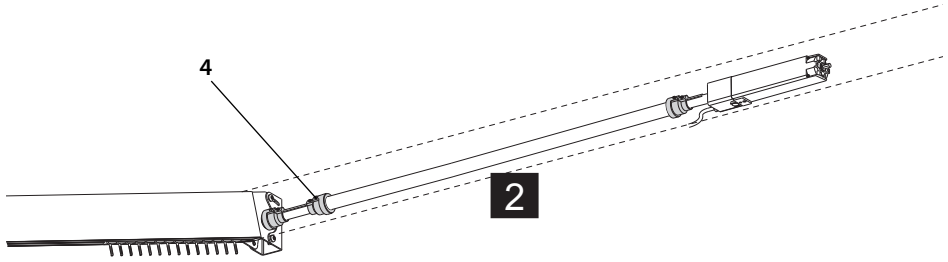


fig. 27 – Shaft installation
Tighten the screw (**4**).

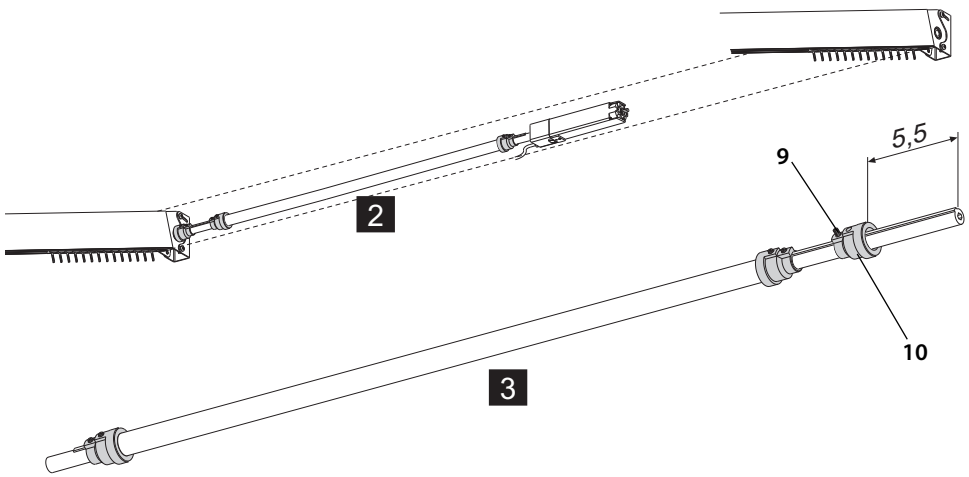


fig. 28 – Shaft installation
Take the transmission shaft (**3**) and loosen the screw (**9**).
Position the bush (**10**) at 5.5 cm and lock it with the screw (**9**).

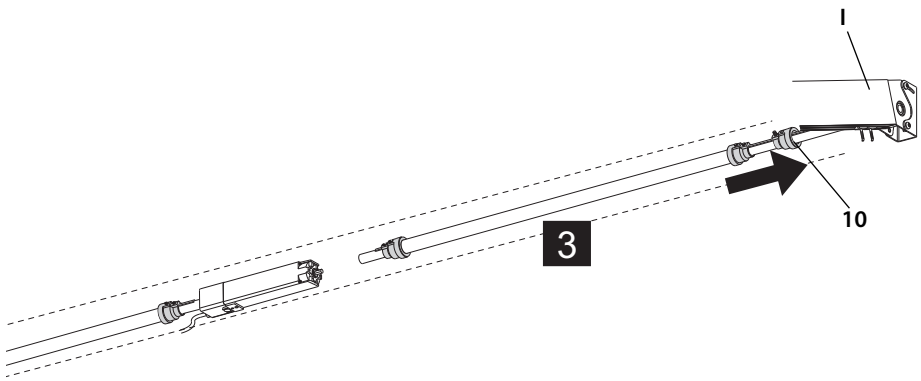


fig. 29 – Shaft installation
Insert into the runner (**I**) until up against the bush (**10**).

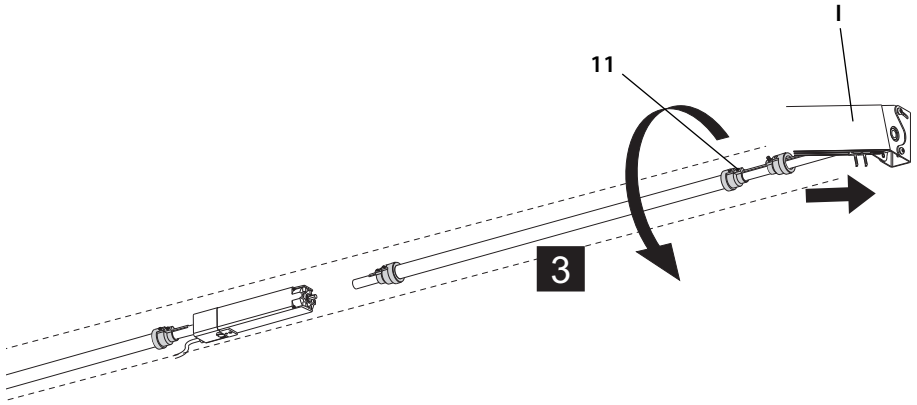


fig. 30 - Shaft installation
Loosen the screw (**11**) and rotate the shaft (**3**) to compact the sliders in the runner (**I**).

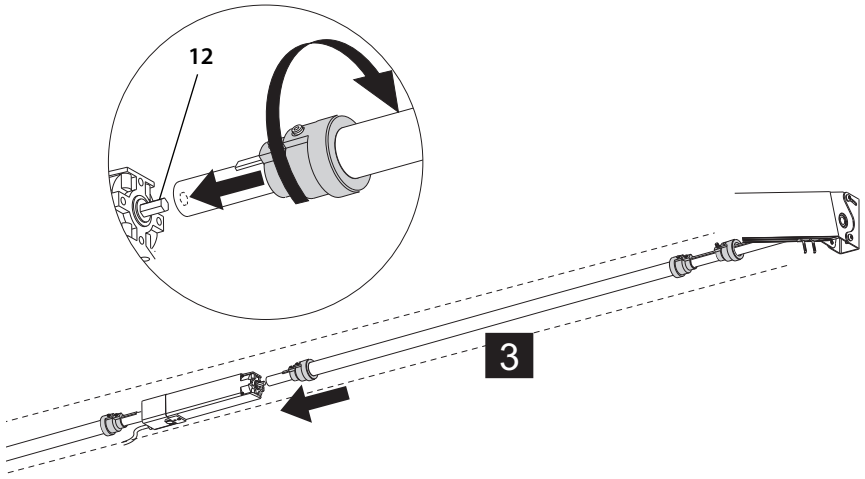


fig. 31 - Shaft installation
Run the shaft (**3**) until it inserts in the hexagonal pin of the motor (**12**).
If the two hexagons do not couple during the insertion (male and female), turn the shaft (**3**) slightly, always keeping it pushed towards the motor until reaching the first coupling point.

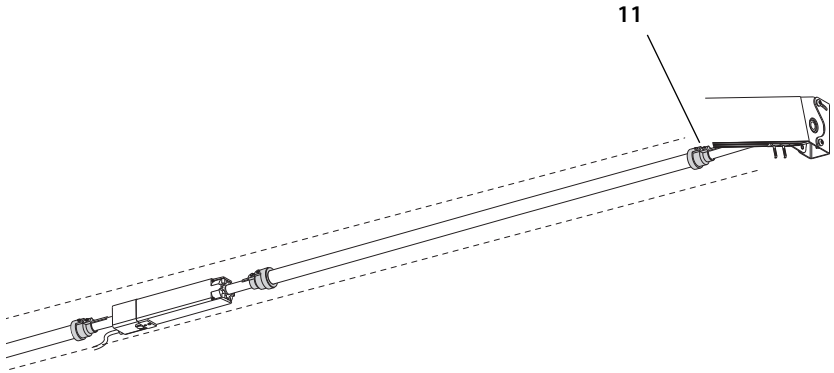


fig. 32 - Shaft installation
Tighten the screw (**11**).

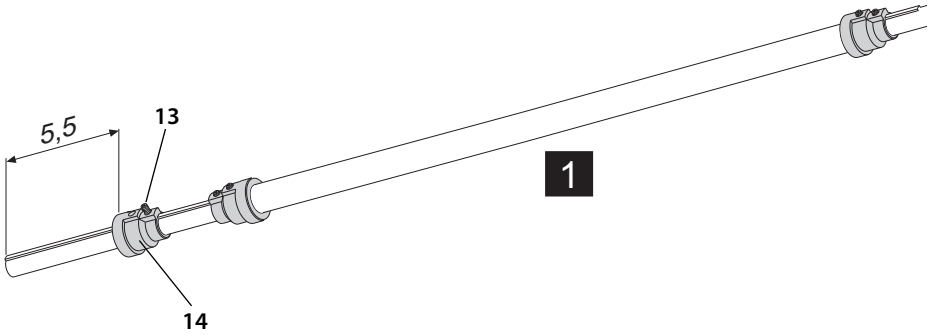


fig. 33 - Shaft installation
Take the shaft (**1**) and loosen the screw (**13**).
Position the bush (**14**) at 5.5 cm and lock with the screw (**13**).

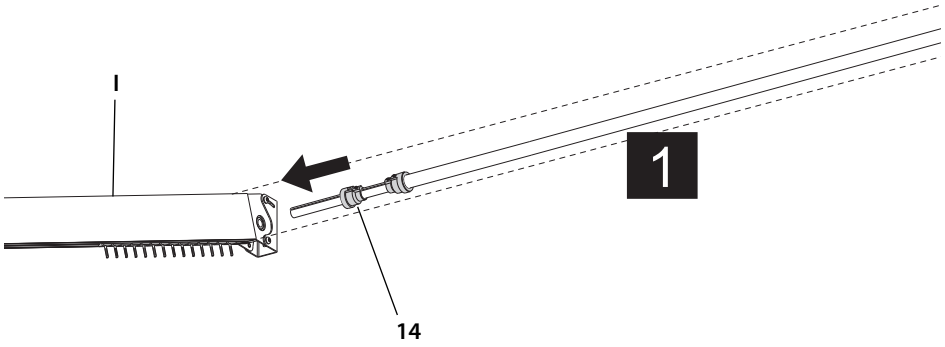


fig. 34 - Shaft installation
Insert the shaft into the runner (**I**) until up against the bush (**14**).

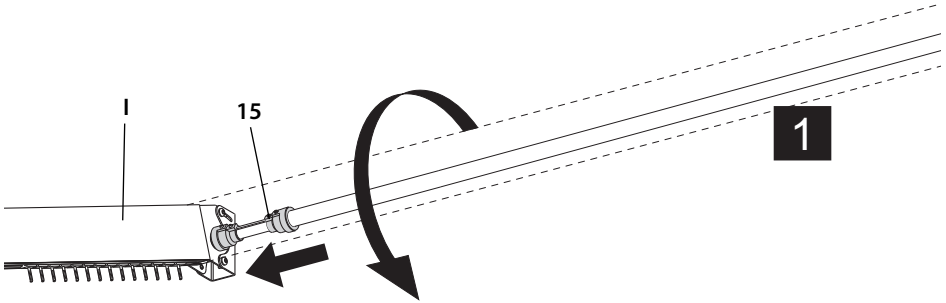


fig. 35 - Shaft installation
Loosen the screw (**15**), run the shaft (1) rotating it (see fig. 30) to compact the sliders in the runner (**I**).

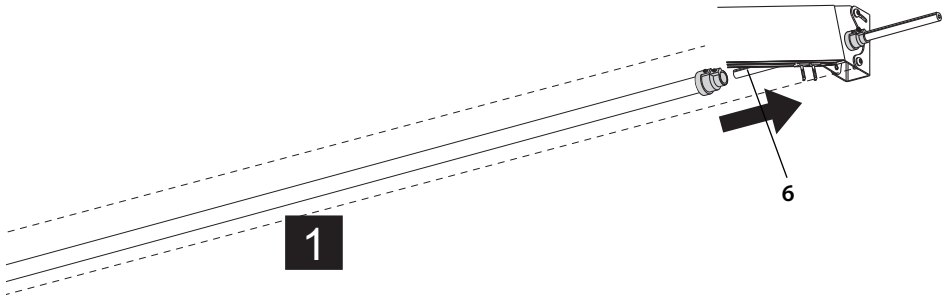


fig. 36 - Shaft installation
Slide the shaft (**1**) on the drive shaft(6) that was previously positioned.

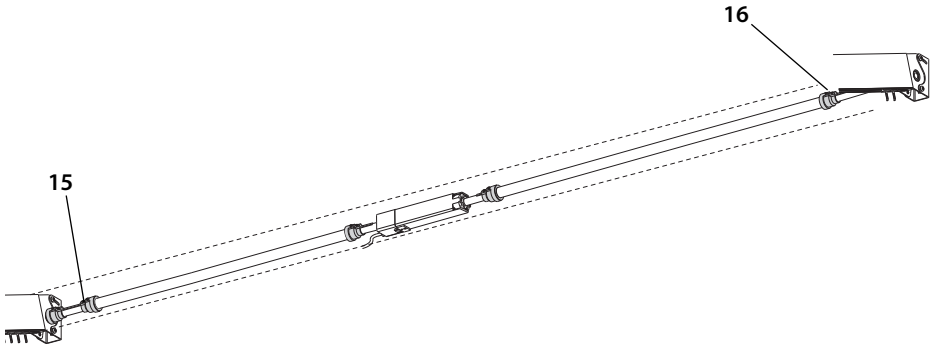


fig. 37 - Shaft installation
When the shaft is fitted snug against the motor, tighten screw (**15**) and screw (**16**), and make a general check on all the other screws to see that they are perfectly tightened.

Check the correct working efficiency of the movement by moving the winding handle if the movement is manual, or else by temporarily connecting the electric motor.

N.B.: At this point, fully tighten the fixing screws on each guide.

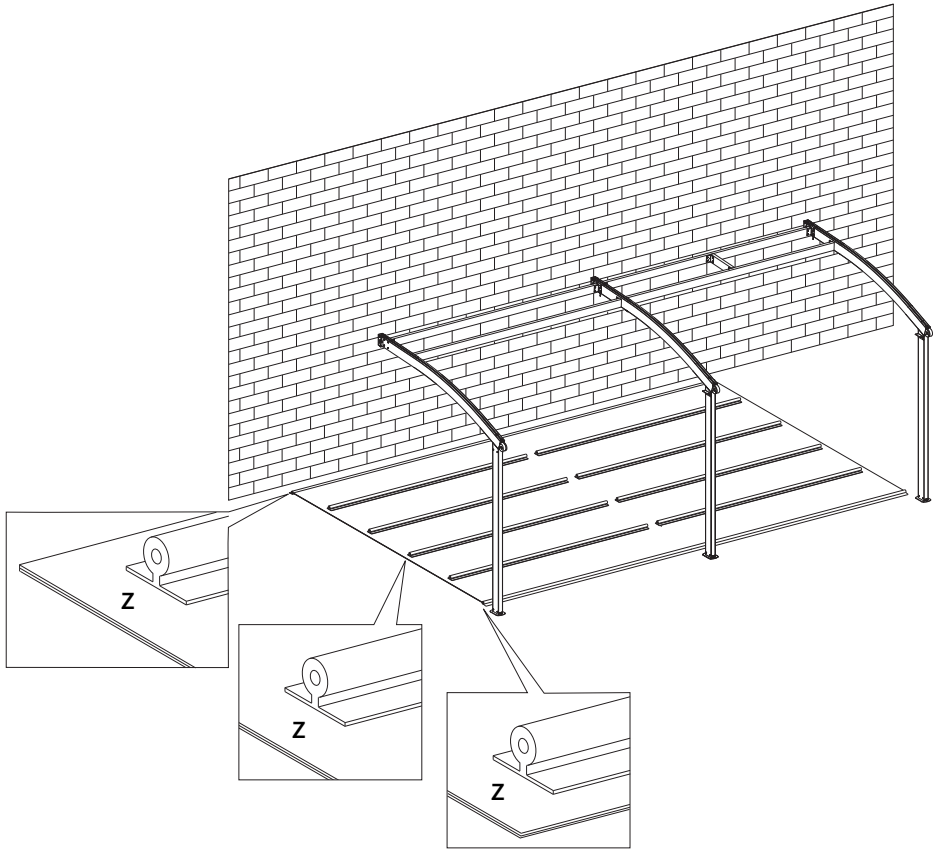


fig. 38 - Positioning canvas awning on the ground

Stretch out the canvas on the ground as show in the figure, with the rubber cords (**Z**) facing upwards.

N.B.: For structures above 600 cm, the canvas is not supplied mounted.

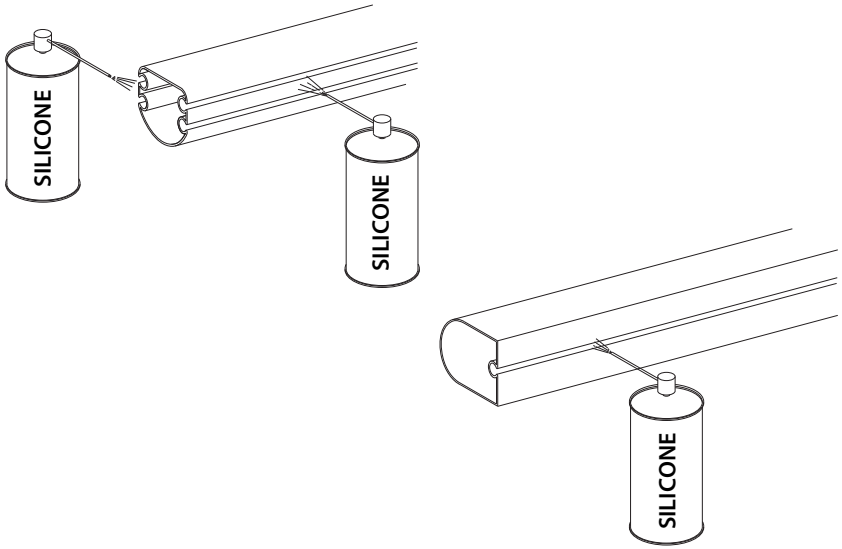


fig. 39 - Lubrication of windbreak tubes

Prepare the windbreak tubes, taking care to spray the silicon for the entire length of the slots to facilitate the insertion of the canvas as shown in the figure.

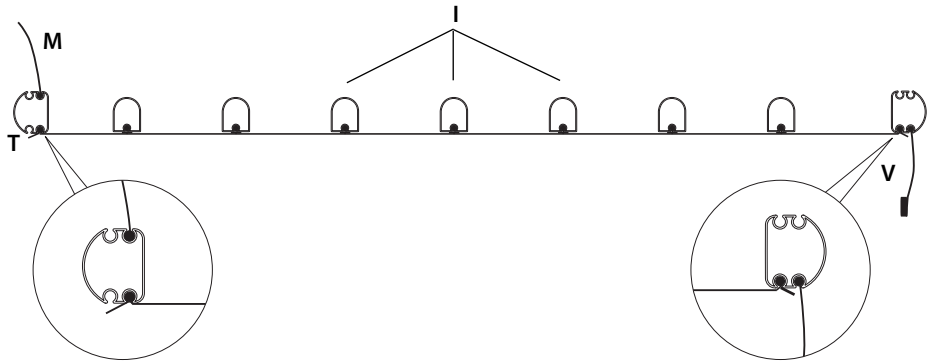


fig. 40 - Canvas awning final composition
The figure shows the final composition of a canvas awning complete with front pelmet (**M**), pelmet with Velcro (**V**), intermediate tubes (**I**) and terminal tubes (**T**).

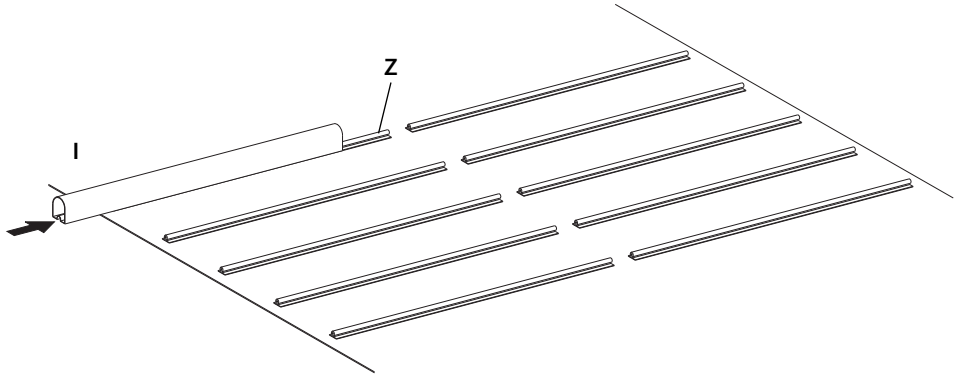


fig. 41 – Assembling canvas awning
Insert the windbreak tubes (**I**) in the respective rubber cords of the canvas awning (**Z**) as shown in the figure.

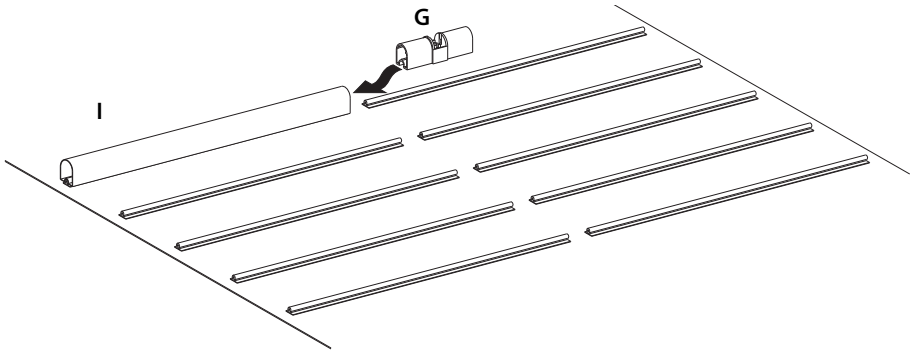


fig. 42 – Assembling canvas awning
Insert the supports of the central sliders (**G**) in the respective windbreaker tubes (**I**).

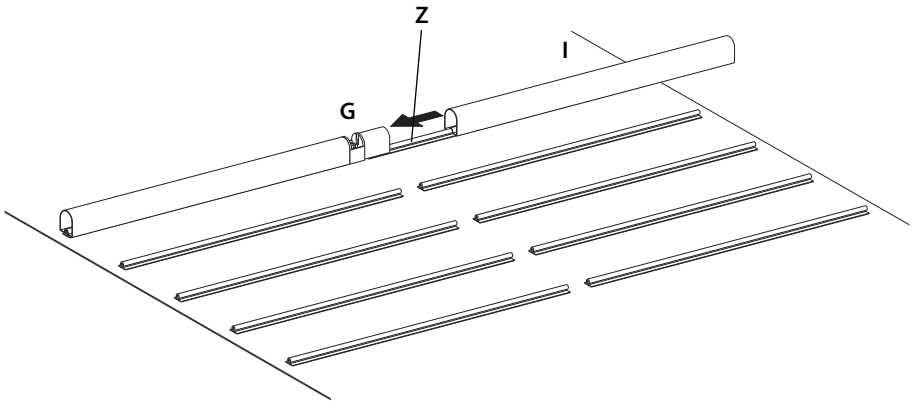


fig. 43 – Assembling canvas awning
Fit the successive windbreaker tubes (**I**) on the canvas awning rubber cords (**Z**) and snug against the central slider supports (**G**).

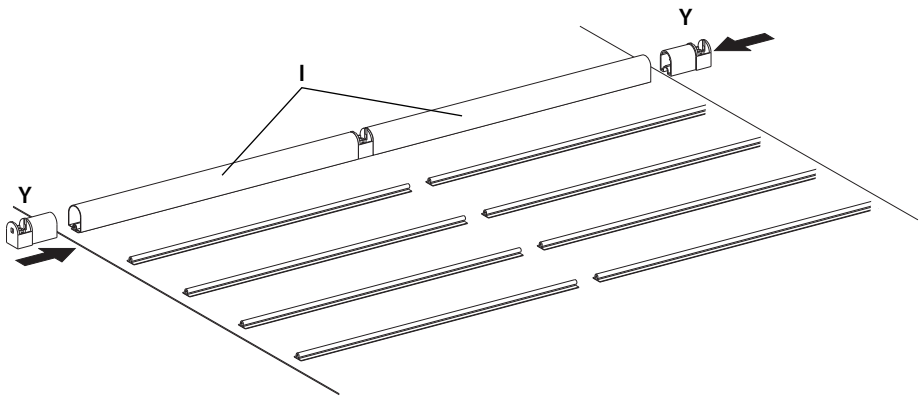


fig. 44 – Assembling canvas awning
Insert the lateral stoppers (**Y**) in the respective windbreak tubes (**I**) on both sides.

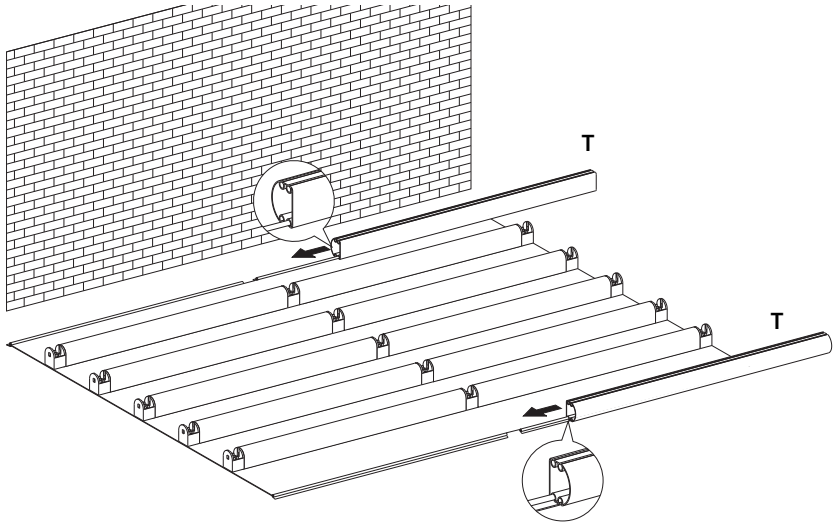


fig. 45 – Assembling canvas awning
Insert the terminal tubes (**T**) as illustrated.

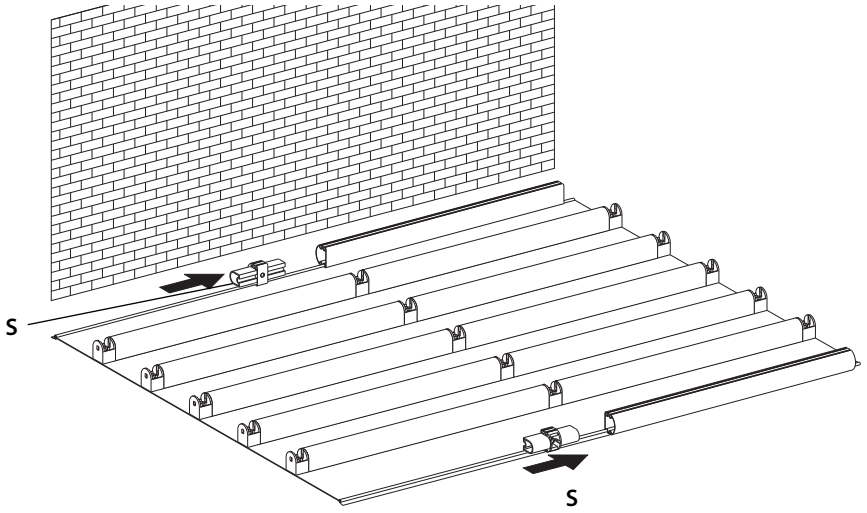


fig. 46 – Assembling canvas awning
Insert the slider supports of the terminal tubes (**S**) as illustrated.

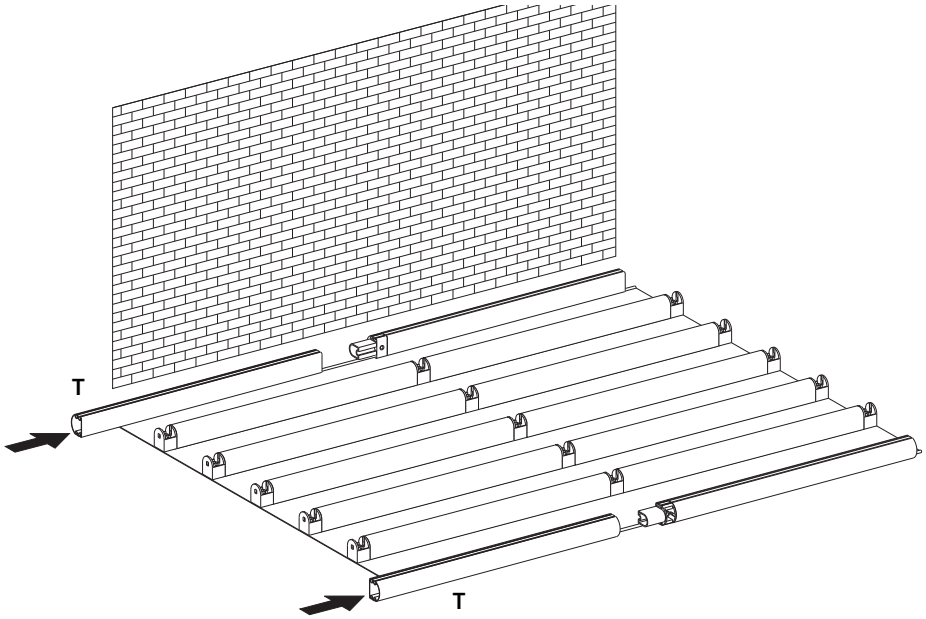


fig. 47 – Assembling canvas awning
Insert the terminal tubes (**T**) as illustrated.

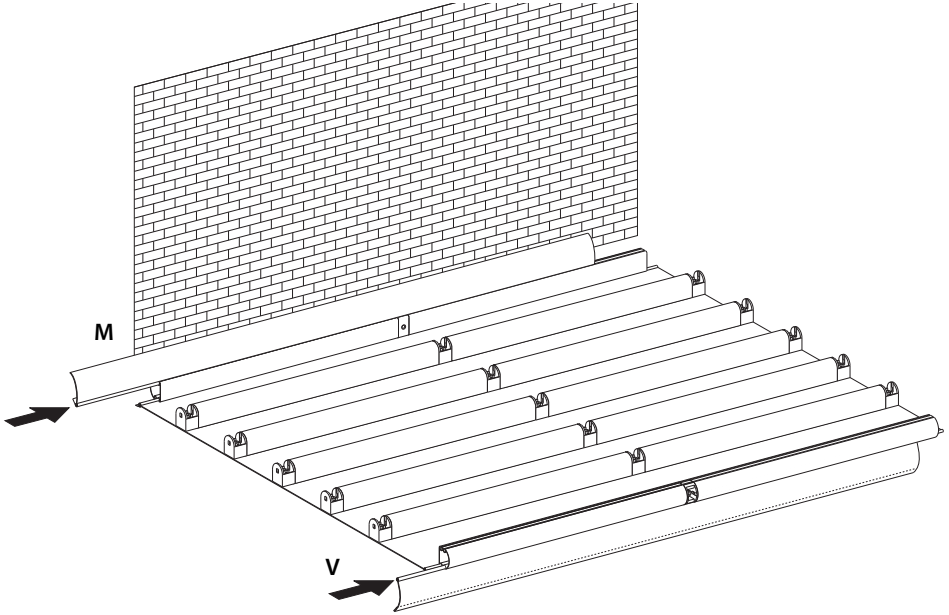


fig. 48 – Assembling canvas awning
Fit the front pelmet (**M**) on the wall side terminal tube, and the pelmet with Velcro (**V**) on the outer side terminal tube.

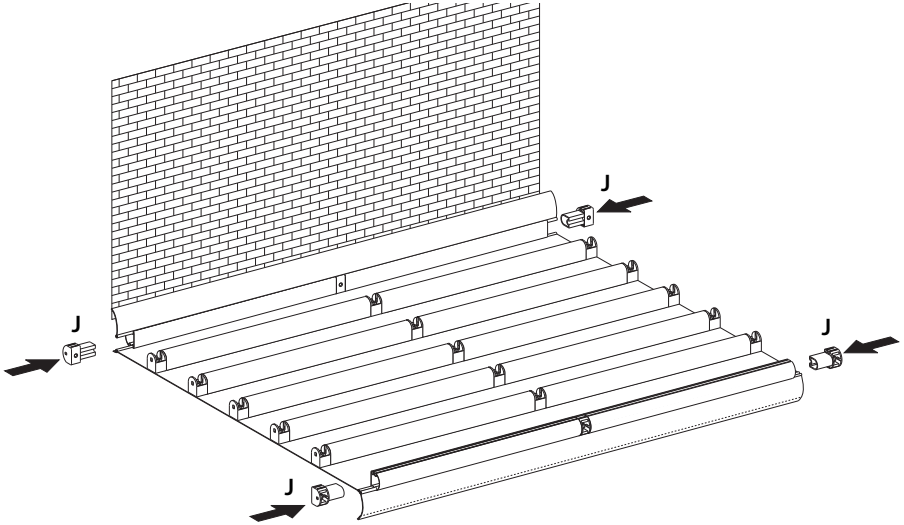


fig. 49 – Assembling canvas awning
Insert the outside stoppers (**J**) in the respective terminal tubes on both sides.

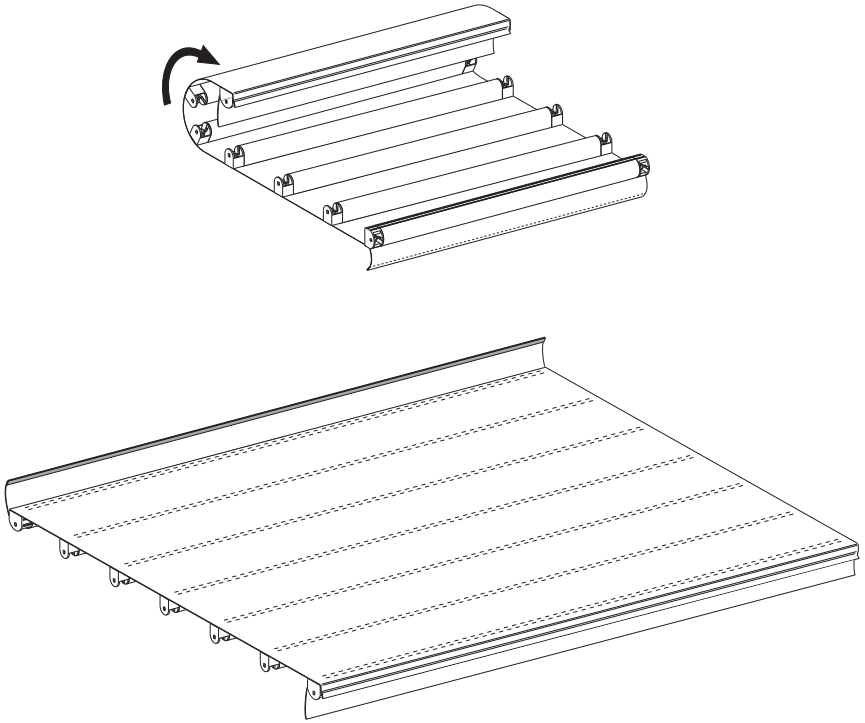


fig. 50 – Rotation of canvas awning
Rotate the canvas awning, bringing the tubes to rest on the floor as shown in the figure, and then start stretching the canvas.

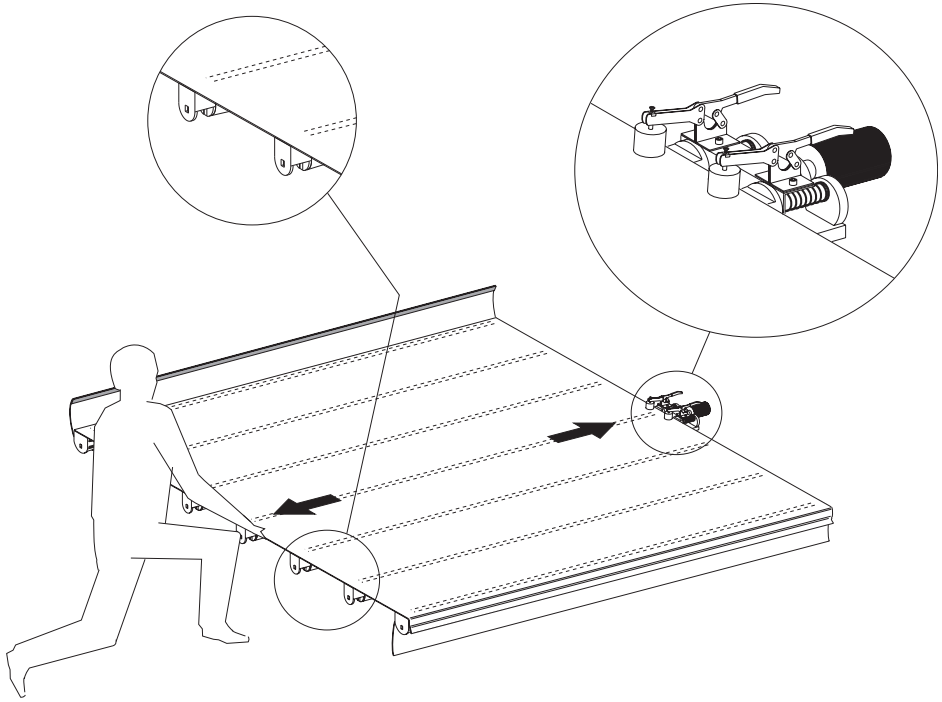


fig. 51 – Canvas stretching
Move one side of the canvas flush with the lateral stoppers and lock in this position with the canvas tightener.
On the opposite extremity of the windbreak tube on which the tightener is applied, tighten the canvas by placing the knee on the end stopper of the tube.

fig. 52 – Canvas stretching
With the canvas tightened, measure the difference (**X**) in length between tube and canvas.

If the completely tightened canvas is longer or shorter than the tubes, divide the measure equally (**X/2**) on both sides and proceed with the canvas fixing.

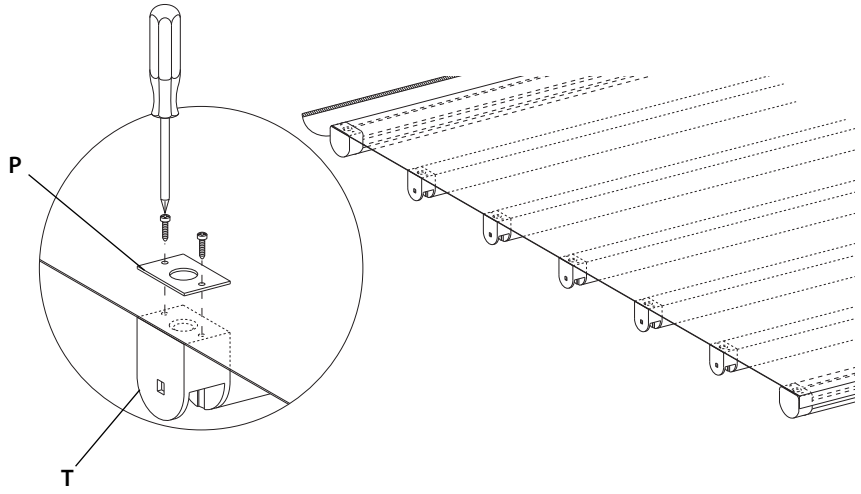


fig. 53 - Canvas fixing on one side
Fix the canvas to the stoppers (**T**), placing the plates (**P**) on each one, with the special supplied screws.
Fix all the screws from one side of the canvas.

NOTE: NEVER FASTEN the plates (**P**), with the relative screws, to the intermediate joints (if present).

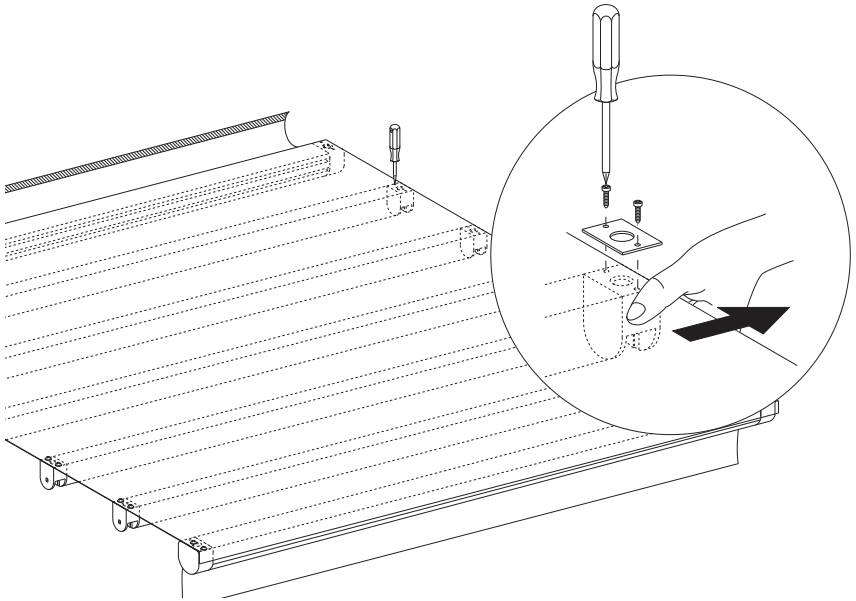


fig. 54 - Canvas fixing on opposite side

When the fixing is terminated on the first side, perform the same operation on the opposite side, taking care to stretch the canvas perfectly.
It is recommended to use the special tool contained in the LAYING KIT (optional on request).

NOTE: Tighten the canvas as much as possible.
The perfect aesthetic and functional result is directly proportional to the tension of the canvas.

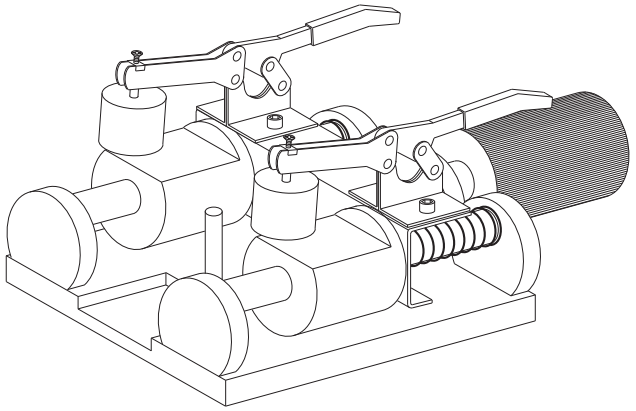


fig. 55 - Optional canvas tightener

For an easy and efficient mounting of the canvas, it is recommended to use the tightener contained in the LAYING KIT (optional on request).

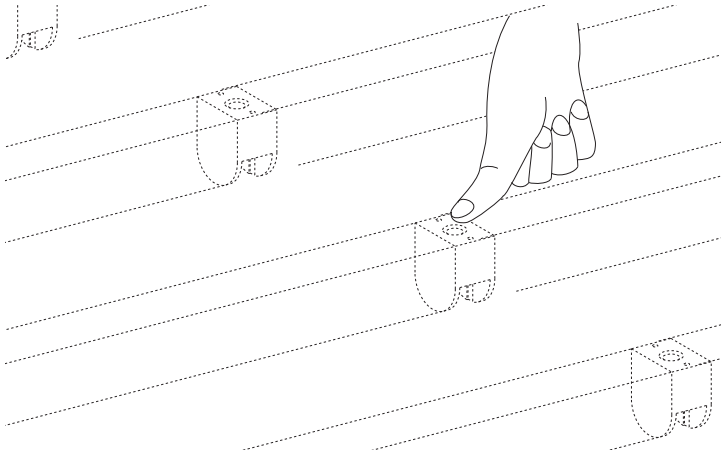


fig. 56 - Manual search for central stopper holes
For the intermediate joints which do not require a plate, drill the canvas after having identified the hole for the stopper, by pressing with a finger on the canvas in correspondence with the stopper.

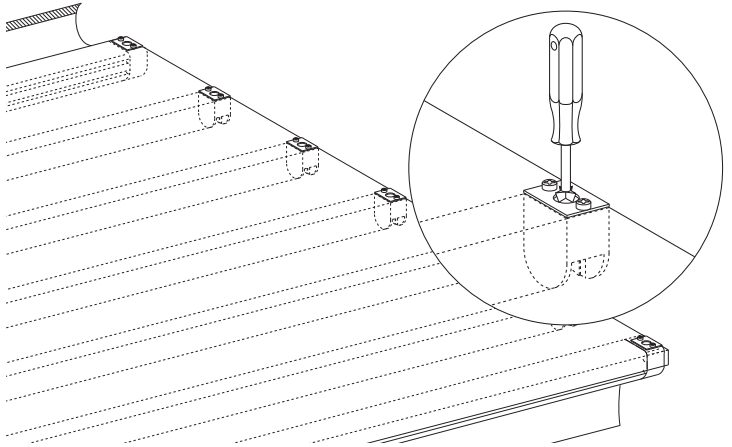


fig. 57 – Drilling the canvas
When the canvas has been fixed to the stoppers with all the relative screws, use the special tool (**A**) to make a cut in correspondence with the hole for the passage of the slider pin (look for the position half way between the two screws fixing the canvas).

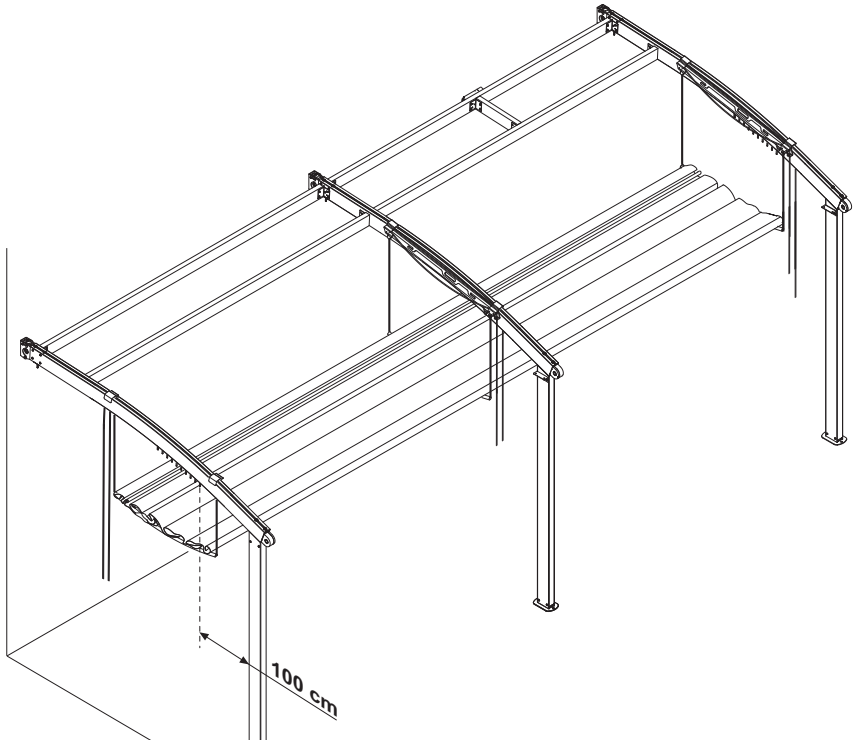


fig. 58 - Mounting canvas awning to the guides

Power up the motor with a temporary connection this operation should be carried out by a specialised technician, see in the "motor and automatism" manual.

Using the remote control provided, move the guide sliders down by approximately 80-90 cm (on flat awning); up to 100 cm from the end of the lower guide (on tilted awning).

Cut off the power to the motor.

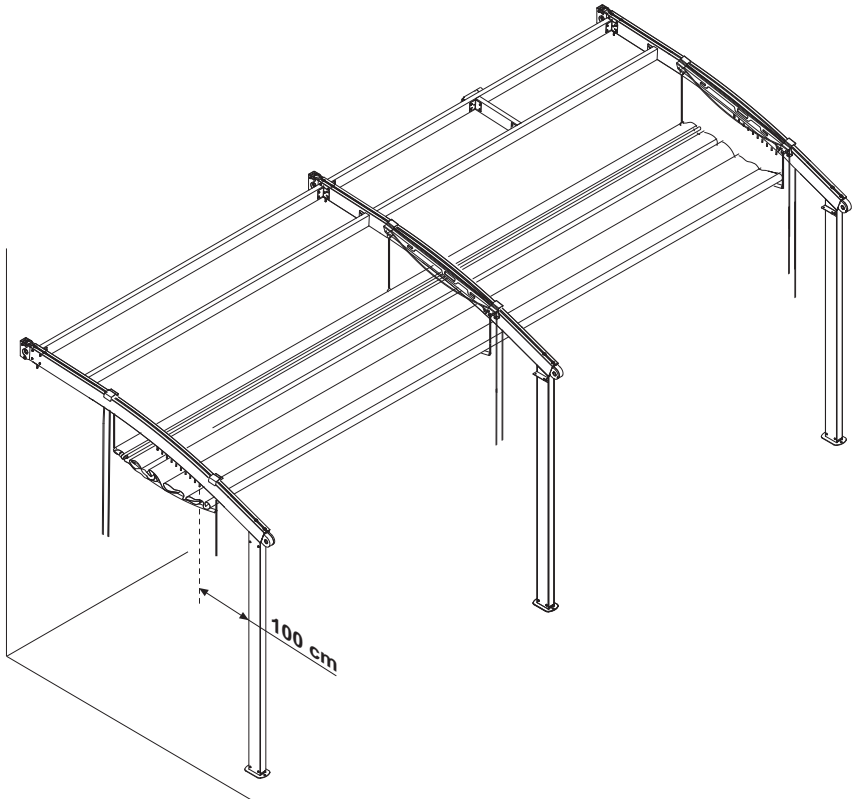
Loosen the nuts on each pin of the sliders in the runners.

Hook up the lifting kits (optional) in correspondence with the position of the sliders.

Lower the bar of each lifting kit to the ground.

Rest the canvas on the bars.

Simultaneously actuate the lifting kits to bring the canvas awning up to the pins on the runners.



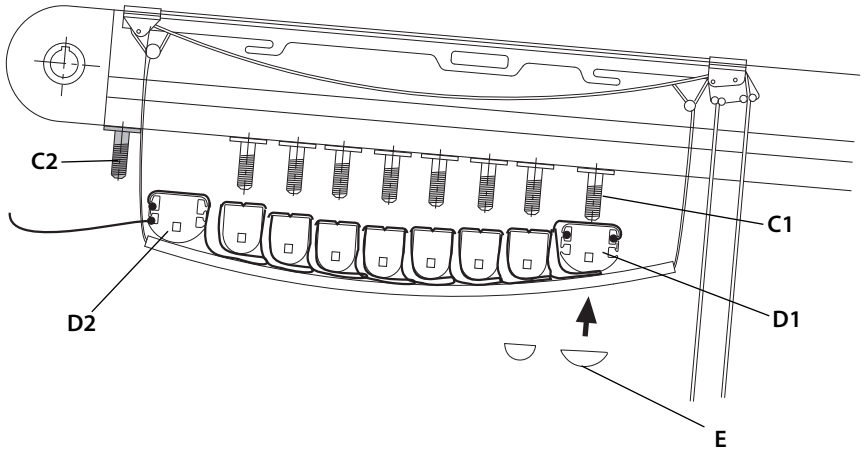


fig. 59 – Mounting canvas on beams

Start by inserting the front terminal tube (**D1**) on the first slider (**C1**), then proceeding with all the other tubes excluding the last terminal on the motor side (**D2**).
Close the awning by moving the sliders already inserted nearer to the last fixed one (**C2**), only then mount the terminal tube (**D2**) on the slider (**C2**) and tighten the locking nut. Adjust the limit switches (see chapter) and fit the closure covers (**E**).

NOTE: The drive slider nuts (**C1**) and the fixed slider nut (**C2**) should be tightened until the terminal cap is against the slider.
The intermediate sliders should be hand-tightened to the end of the thread.

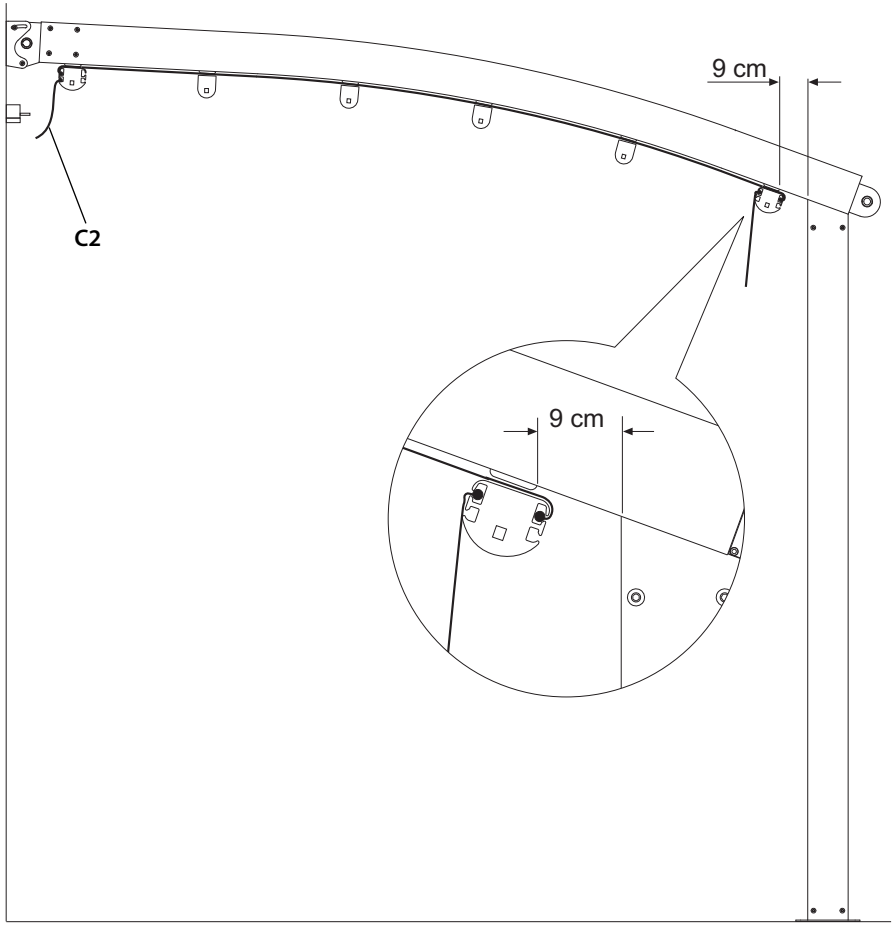


fig. 60 - Canvas awning position

If the mounting of a mobile gutter is envisaged, the distance between the slider and the upright pillar must be 9 cm.

To reduce the distance between the tight canvas and the upright pillar, re-programme the limit switch in opening after having moved the first slider (**C2**) forward, checking that there is a distance of at least 2 cm between the taught canvas (terminal tube) and the upright pillar.

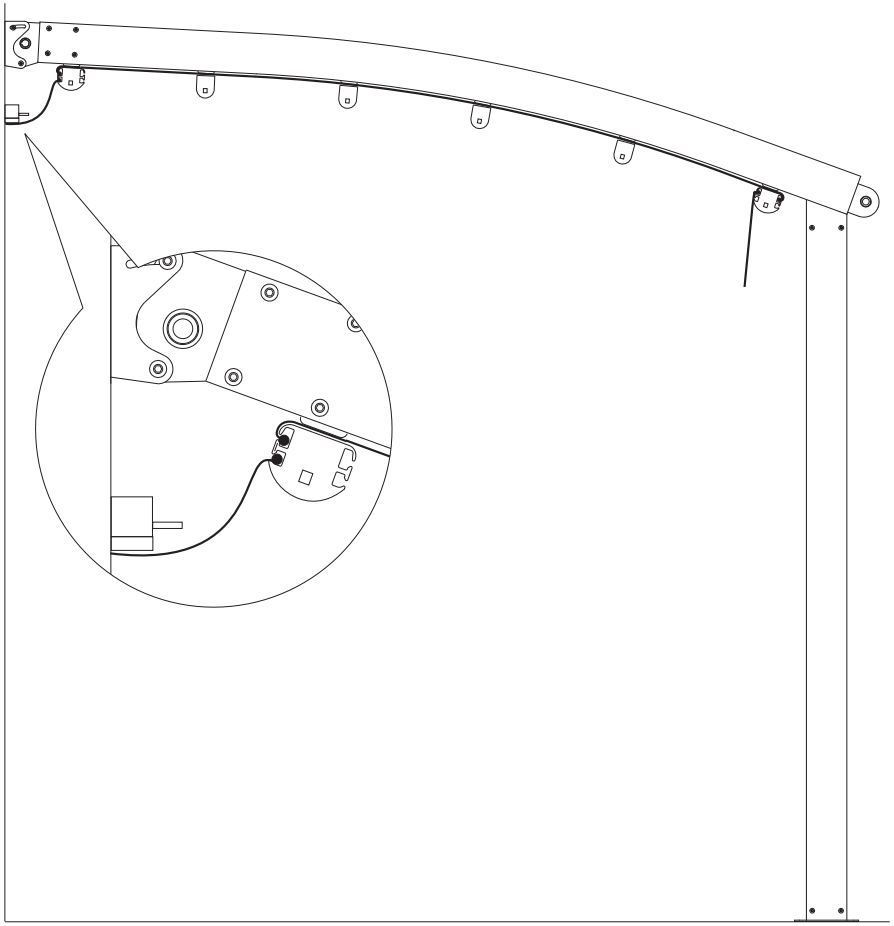


fig. 61 - Velcro pelmet

Fix the Velcro pelmet to the previously installed profile.

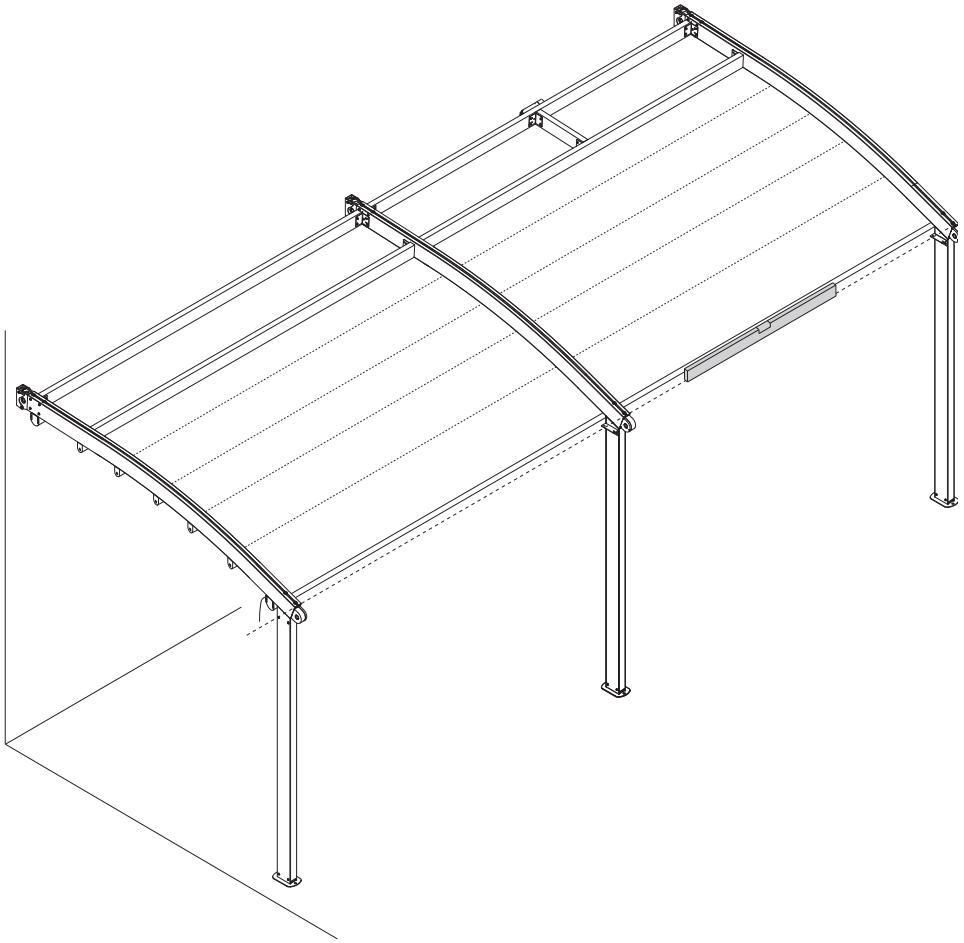


fig. 62 - Structure inspections and checks

- Check the structure is level and adjust the support feet if necessary.

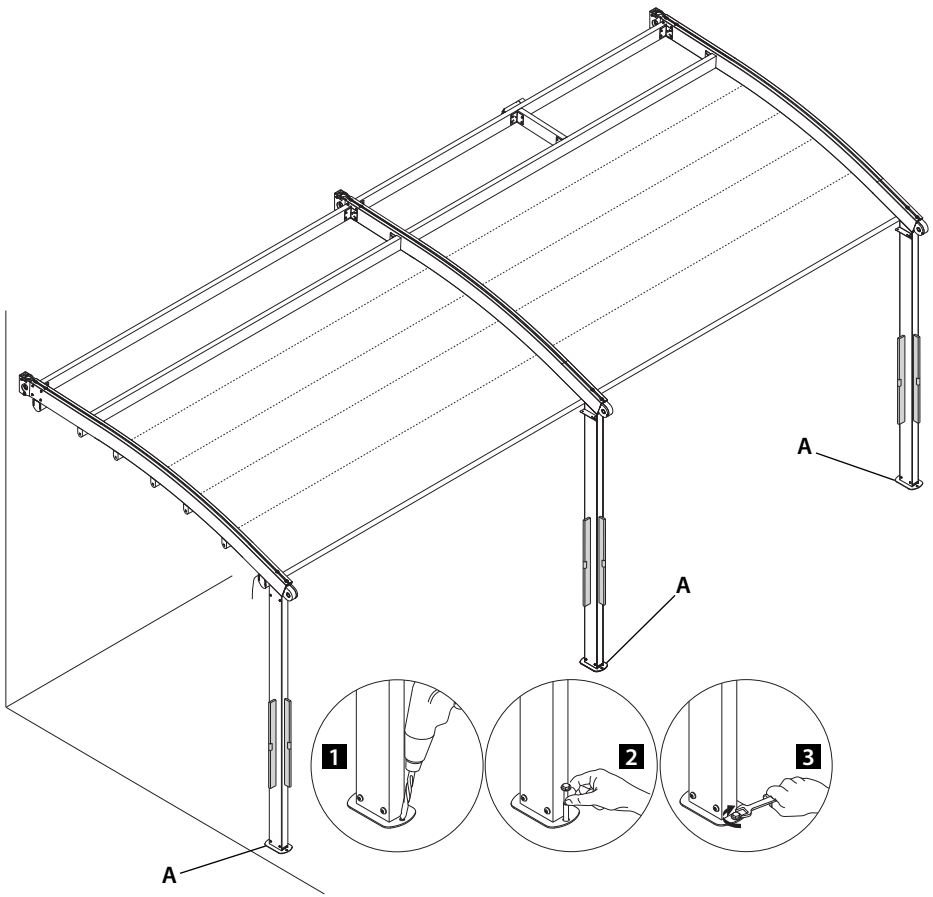


fig. 63

Check each pillar is perpendicular.
Fix the plates (**A**) by drilling through the floor, with an appropriate tip, in correspondence with the holes of each plate (**1**).
Fix, using the plugs (**2**).
Completely fix the plates (**3**).

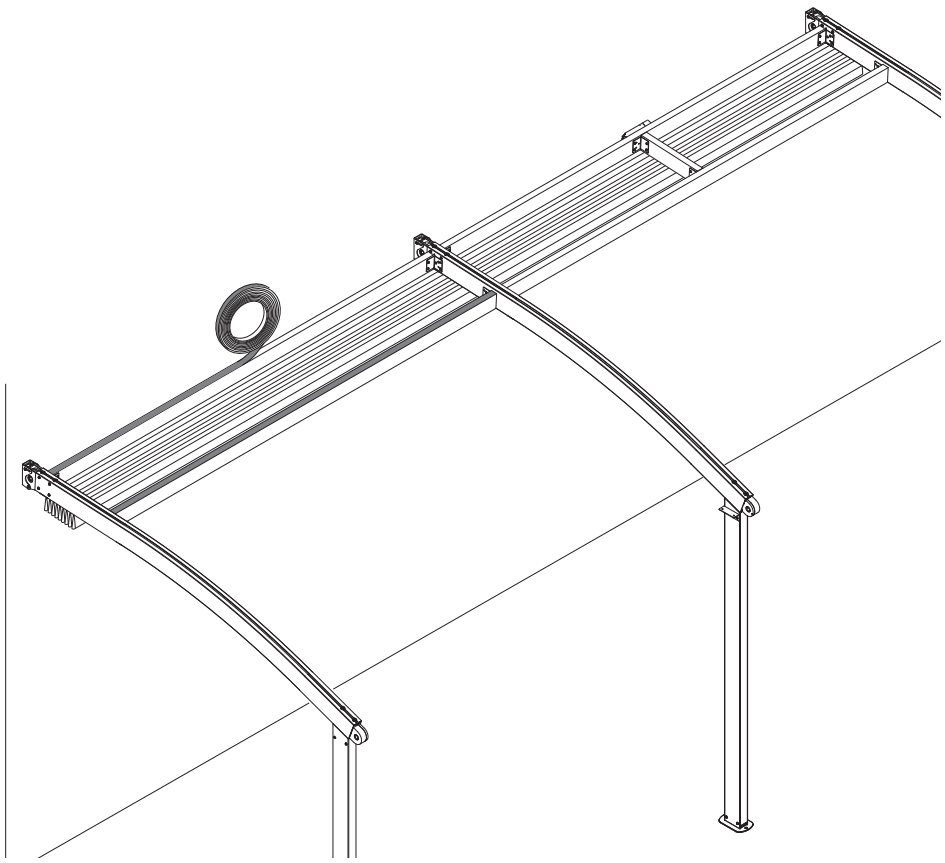


fig. 64
Spread the adhesive noise-reducing gasket on all the beam union bars.

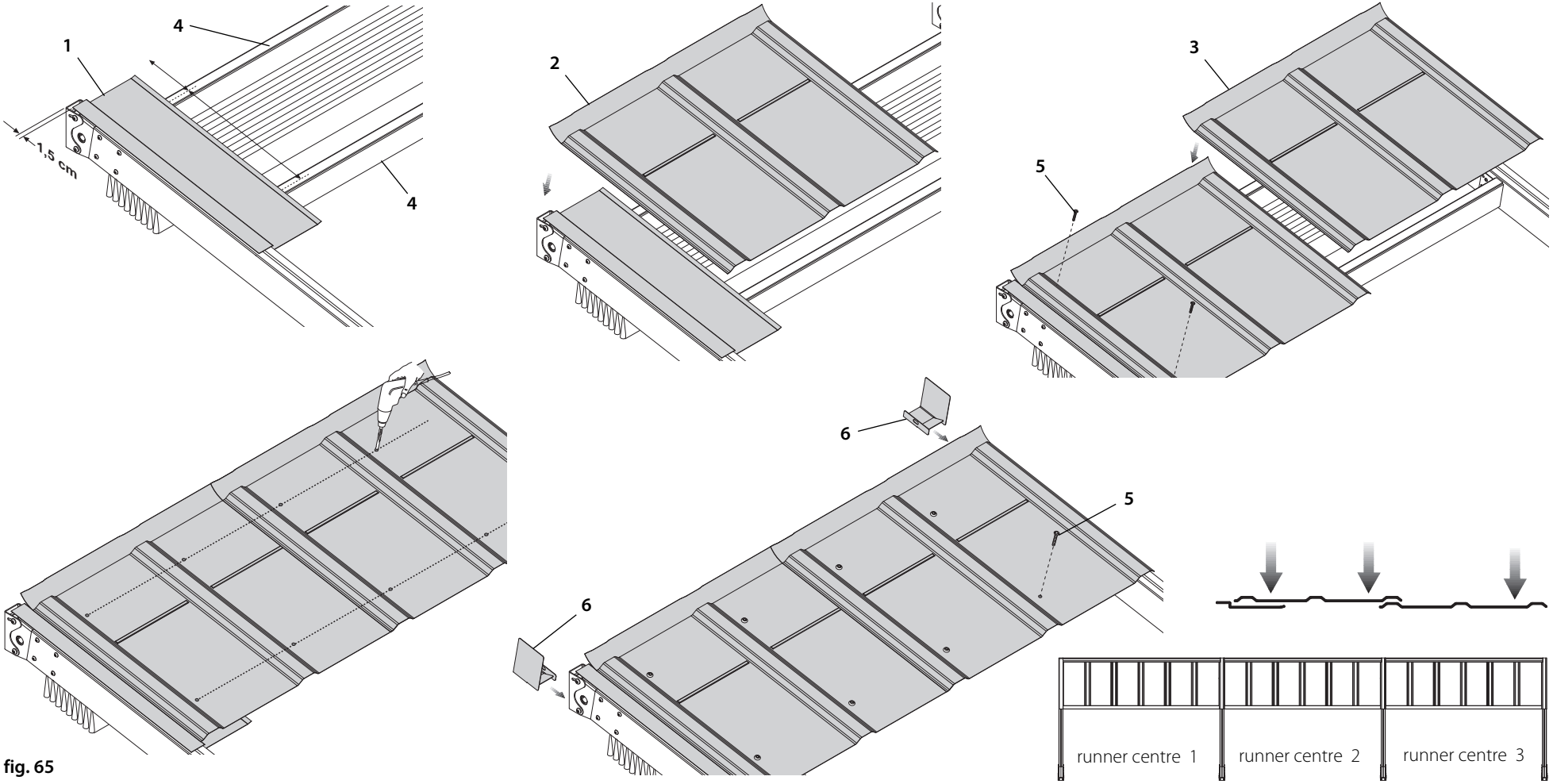


fig. 65

- Rest the first terminal component on top of the structure (**1**) 1.5 cm from the wall.
- Measure the distance from the wall to the centre line of the beam joining bars to facilitate subsequent tin hardware drilling operations.
- Rest the first of the protection cover modules on top (**2**) and secure it with two self-drilling screws (**5**).
- Place the second buffer element (**3**).
- Drill the tin hardware in correspondence with the centre line of the beam joining bars (**4**).
- Fasten with the self-drilling screws (**5**).
- Insert and tighten the bracket cover protections (**6**) right (cod. 03907) and left (cod. 03906).

The protection cover modules for version 3 - 4 guides are identified by a label with the relative runner centres (runner centre 1 - runner centre 2 - runner centre 3).
Start with the whole protection cover and end with the trimmed one (valid for all versions).

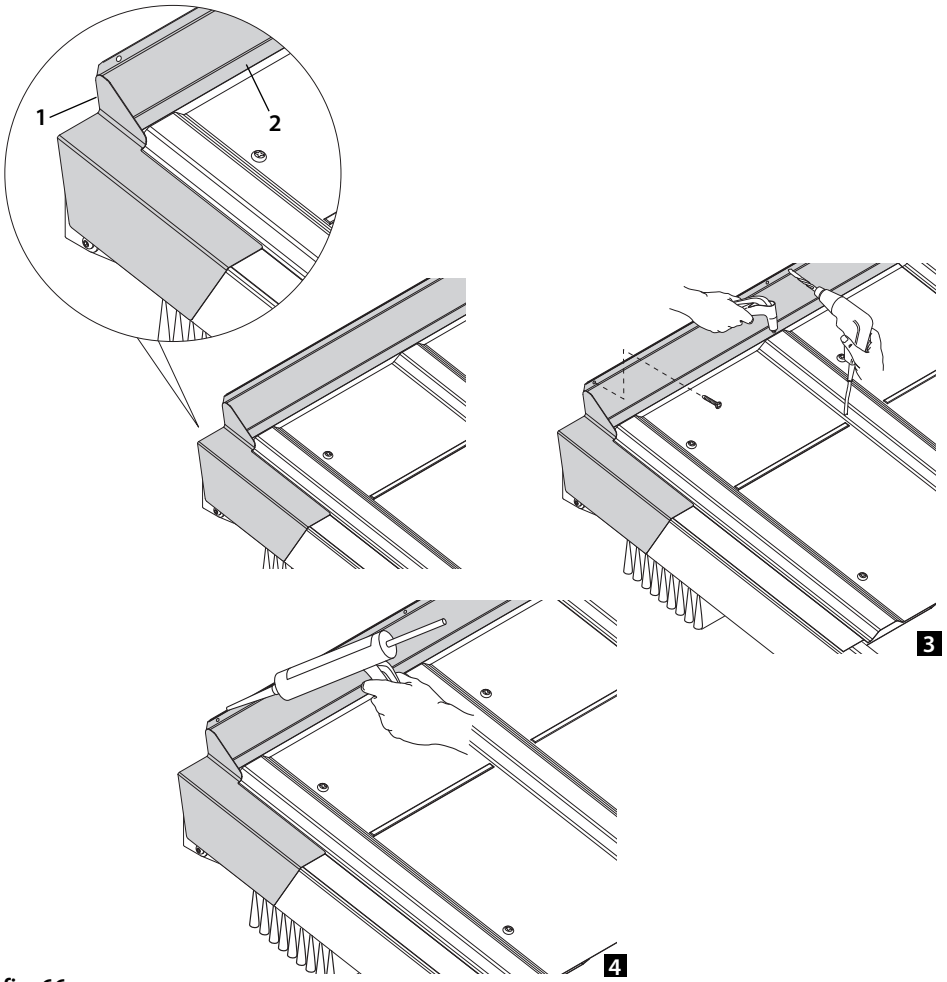


fig. 66

- Rest the wall protection cover (**2**) flush with the fin of component (**1**).
- Pre-drill the protection cover and wall with a 4.5 bit at a distance between centres of 100 cm over the entire length.
- Drill the wall in correspondence with the holes on the protection cover (**3**) and insert suitable wall plugs, then fasten with the screws and rivet.
- Spread a line of silicon between the roof protective cover and the wall (**4**).

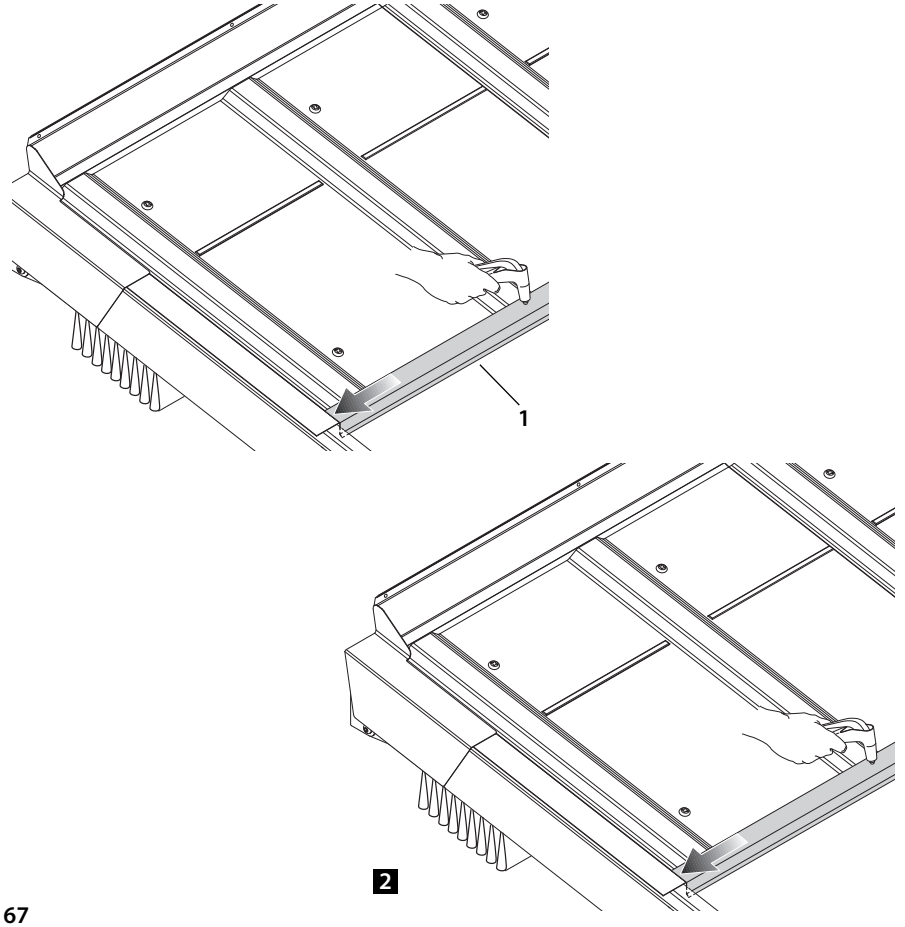


fig. 67

- Rest the front profile (**1**) flush against the inside of the guide.
- Drill the buffer in correspondence with the ridgecaps on the covering buffers, with a ø 4 drill bit and fix with the supplied rivets (**2**).

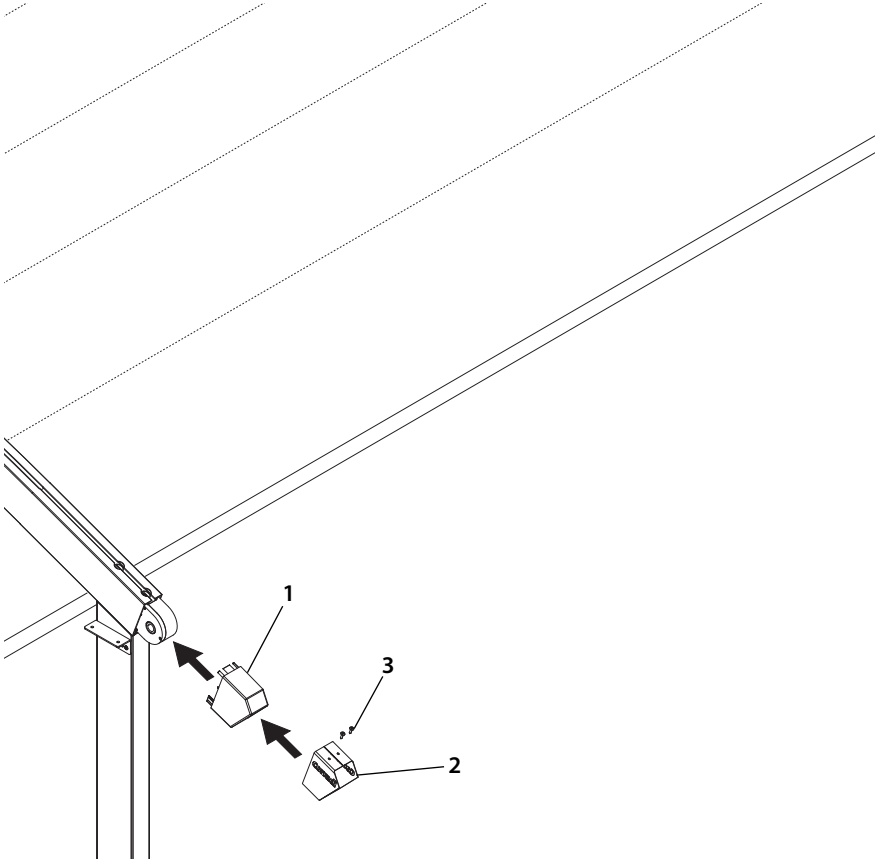


fig. 68 - Idler covering

- Push the idler covering (**1**) and the covering element (**2**) onto the guide and fasten them with the screws provided (**3**).

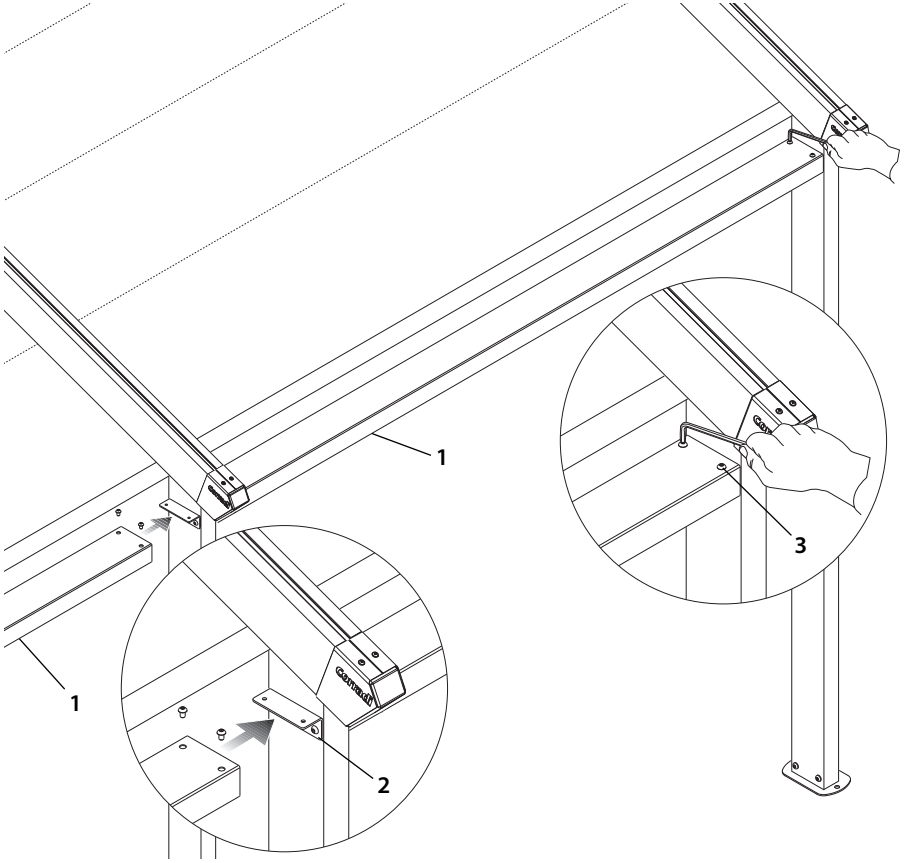


fig. 69 - Front beam

- Place the front beam (**1**) between the two uprights and fasten it on the angle bars (**2**) with the screws (**3**).

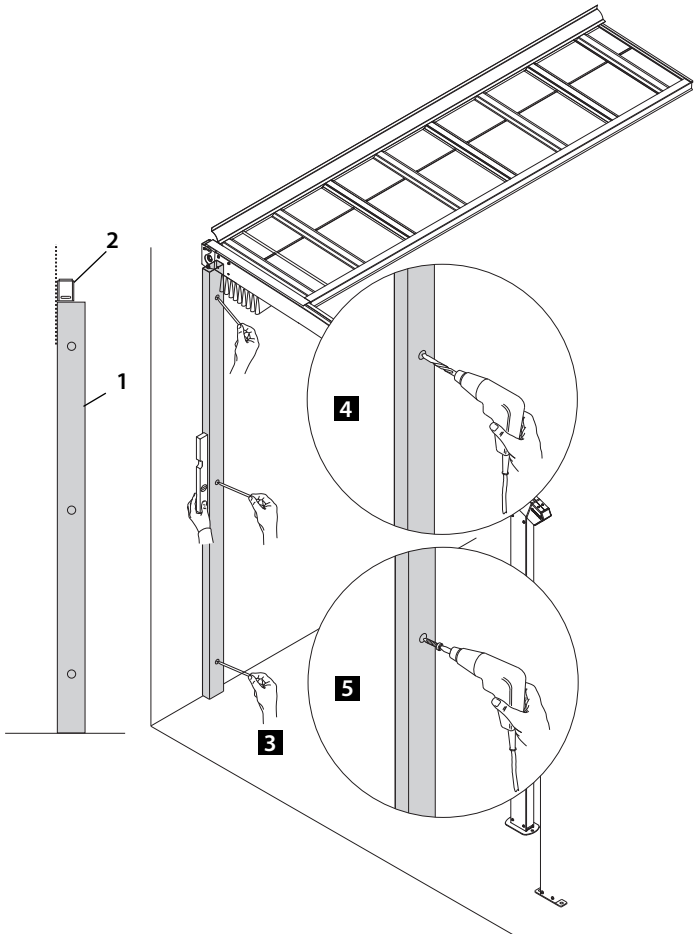


fig. 70 - wall-mounted upright pillar

- Position the wall upright (**1**) flush with the outside beam (**2**)
- Trace the holes (**3**)
- Drill the holes with a drill bit suitable for the type of wall (**4**)
- Insert suitable anchors to fix the upright pillar (**5**)

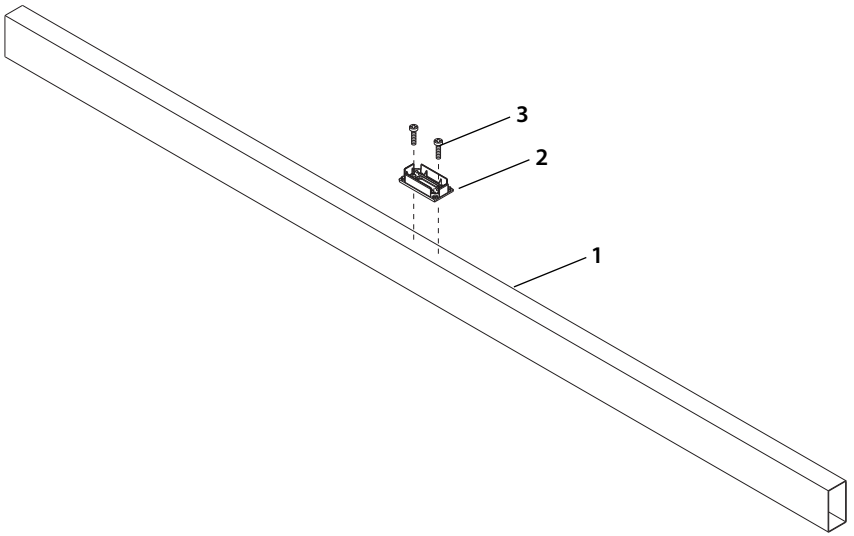


fig. 71 - Union cross-bar

Mount on the union cross-bar (**1**) the central upright pillar fixing bracket (**2**) with the supplied screws (**3**).

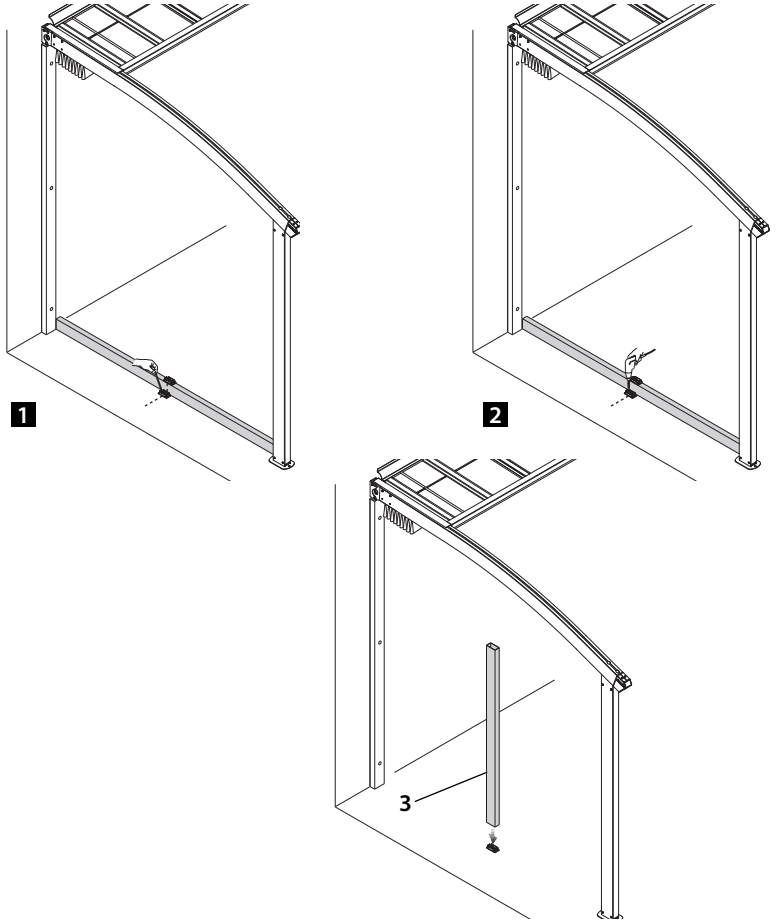


fig. 72

- Position the union cross-bar on the ground flush with the two uprights (**1**) and on the floor trace the position corresponding with the lower central upright pillar fixing bracket (**1**);
- Drill the holes in the floor with a suitable drill (**2**);
- Fix the lower bracket with an anchor suitable for the floor in question and insert the central upright pillar (**3**).

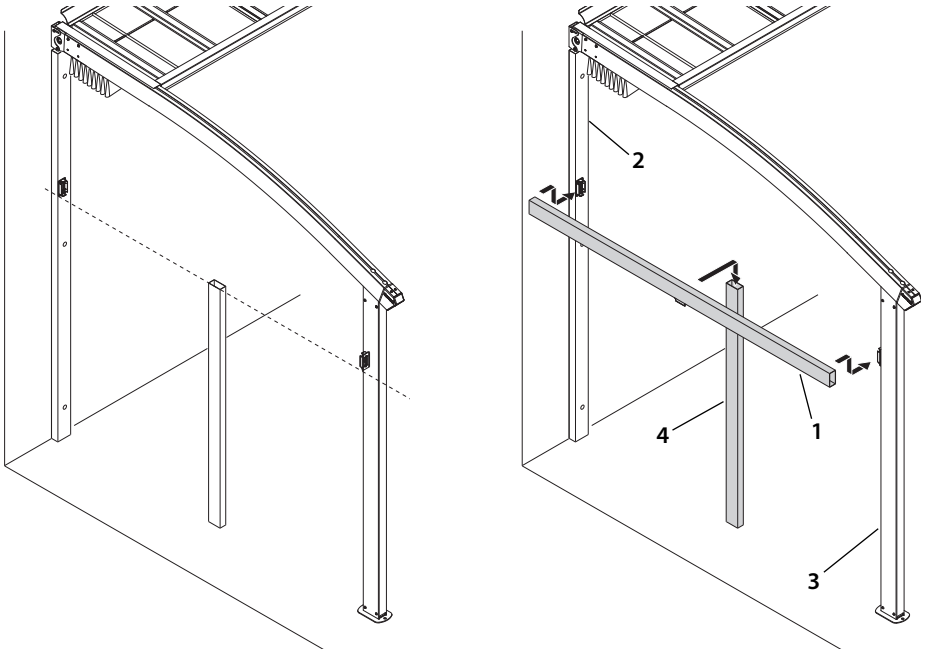


fig. 73

- Mount the union cross bar (**1**) on the two pins on the wall upright pillar (**2**) and on those of the structure upright pillar (**3**), also inserting the central bracket in the upright pillar (**4**).
- Block everything by tightening the side screws on the inner side of the union cross-bar.

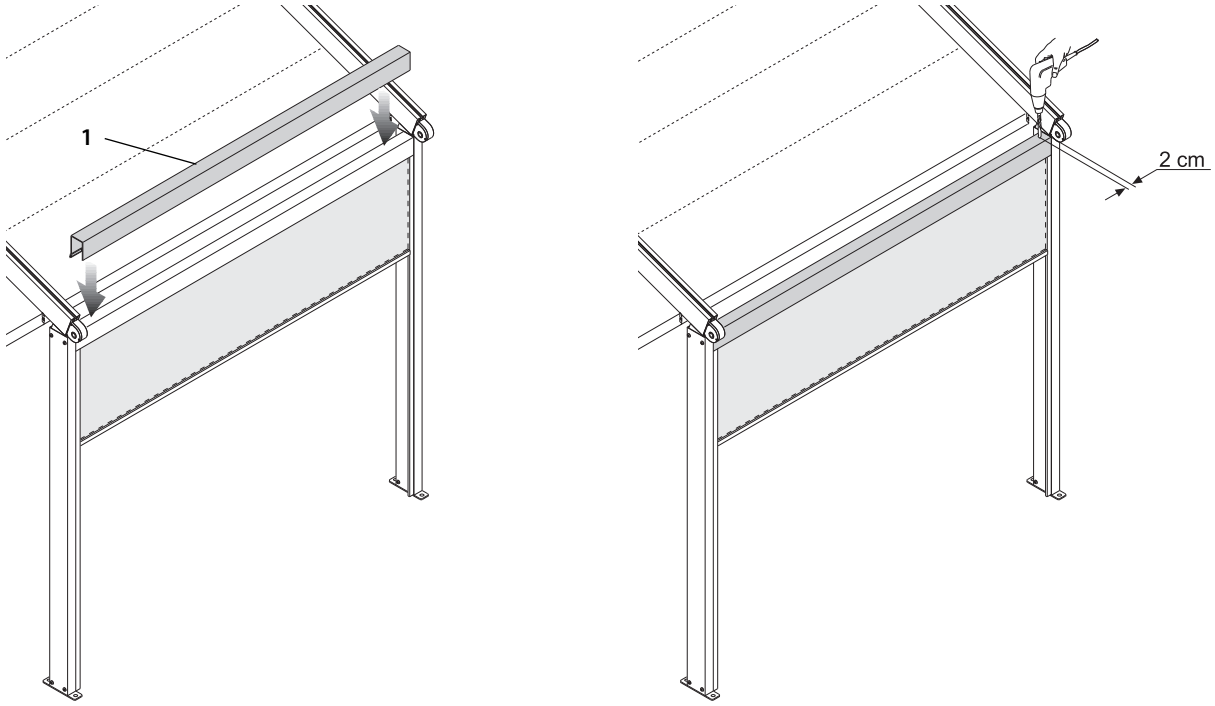
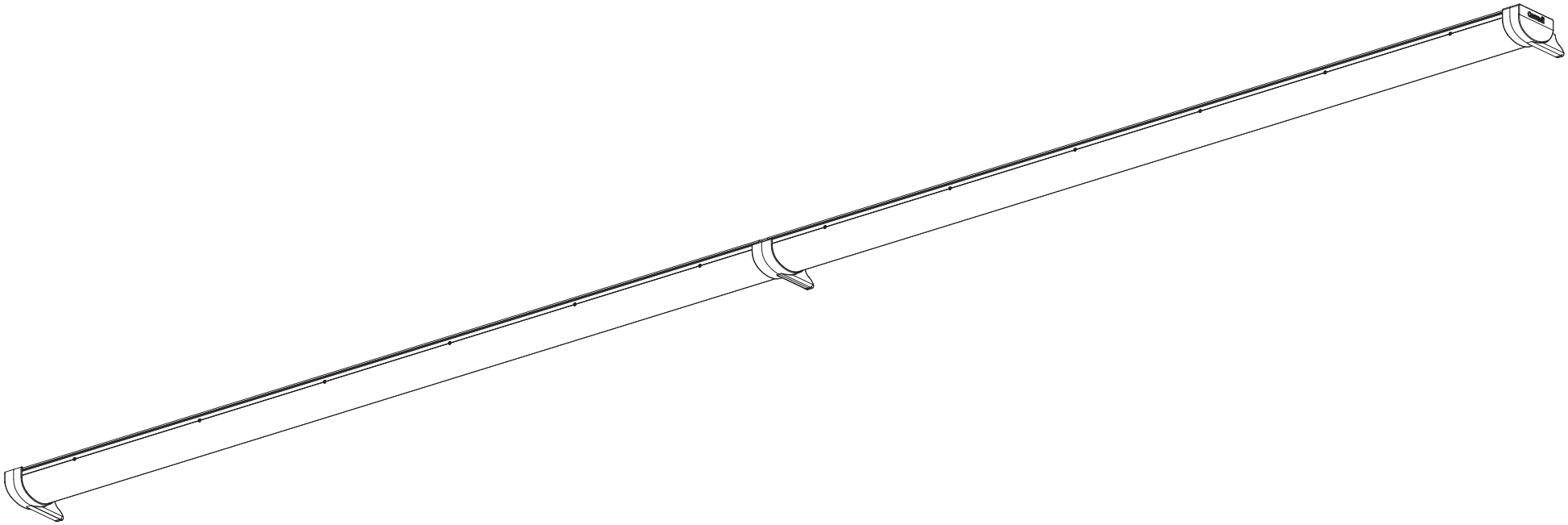


fig. 76 - Front Ermetika cover

If the Ermetika canvas is to be mounted on the front of the Millenium structure, follow the mounting instructions in the specific manual.

- A covering is envisaged (**1**) to rest on the box for the Ermetika canvas.
- drill at about 2 cm from the extreme edge from both sides with a ø 4 drill bit and fix with the supplied screws.



N.B.: refer to the product's specific laying manual for the (Retractable gutter) installation procedures.

TABLES

TABLE 1 - STRENGTH AND EFFECTS OF WIND ON BEAUFORT SCALE

Degree	*Class**	*Load (N/mq)*	*Knots*	*Km/h*	*m/s*	*Envir. conditions*	*Effects of wind*
0	0	< 40	0-1	0-1	< 0,3	Calm	Smoke rises vertically
1	0	< 40	1-3	1-5	0,3-1,5	Light air	Direction of wind shown by smoke drift, but not by weather vanes
2	0	< 40	4-6	6-11	1,6-3,3	Light breeze	Wind felt on face, ordinary vanes moved by wind
3	0	< 40	7-10	12-19	3,4-5,4	Gentle breeze	Leaves and small twigs in constant motion
4	1	40	11-16	20-28	5,5-7,9	Moderate breeze	Raises dust and loose paper; small branches are moved
5	2	70	17-21	29-38	8-10,7	Fresh breeze	Small trees begin to sway
6	3	110	22-27	39-49	10,8-13,8	Strong breeze	Large branches in motion; umbrellas used with difficulty
7	> 3	> 110	28-33	50-61	13,9-17,1	Strong wind	Whole trees in motion; inconvenience felt when walking against wind
8	> 3	> 110	34-40	62-74	17,2-20,7	Fresh gale	Branches break off trees; generally impedes progress
9	> 3	> 110	41-47	75-88	20,8-24,4	Strong gale	Tiles come off roofs
10	> 3	> 110	48-55	89-102	24,5-28,4	Whole gale	Trees uprooted
11	> 3	> 110	56-63	103-117	28,5-32,6	Storm	Serious damage to buildings
12	> 3	> 110	>64	>118	> 32,7	Hurricane	Immense damage

** According to the UNI EN 13561 standard*

TABLE 2 - MAXIMUM DIMENSIONS cm

	Width	*Projection*
2 runners	500	650
3 runners	900	650
4 runners	1300	650

TABLE 4 – Maximum tensile and shear load (not combined) in daN (1 daN ≈ 1 kg) on each bolt (considering 2 bolts for each support) for a maximum wind speed of 49km/h (Beaufort scale 6 - Class 3 according to EN 13561)

Projection (cm) \ *Width (cm)*	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**	**700**	**750**	**800**	**850**	**900**	**950**	**1000**	**1050**	**1100**	**1150**	**1200**	**1250**	**1300**
300	28	32	35	39	43	47	56	60	64	68	72	76	80	83	87	64	67	69	72	75	77	80	82
350	31	35	40	44	48	53	63	67	72	76	80	85	89	93	98	72	75	78	81	84	86	89	92
400	34	39	44	49	53	58	70	74	79	84	89	94	99	103	108	80	83	86	89	93	96	99	102
450	37	42	48	53	58	64	76	81	87	92	97	103	108	113	119	87	91	94	98	102	105	109	112
500	40	46	52	58	63	69	83	89	94	100	106	112	118	123	129	95	99	103	107	111	114	118	122
550	43	50	56	62	69	75	89	96	102	108	115	121	127	133	140	103	107	111	115	120	124	128	132
600	47	53	60	67	74	80	96	103	110	116	123	130	137	143	150	111	115	120	124	129	133	138	142
650	50	57	64	71	79	86	103	110	117	124	132	139	146	153	161	118	123	128	133	138	142	147	152
	2 RUNNERS						**3 RUNNERS**									**4 RUNNERS**							

TABLE 5 Maximum tensile and shear load (not combined) in daN (1 daN ≈ 1 kg) on each bolt (considering 2 bolts for each support) for a maximum wind speed of 74km/h (Beaufort scale 8 -over Class 3 according to EN 13561)

Projection (cm)	*Width (cm)*																					
	200	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**	**700**	**750**	**800**	**850**	**900**	**950**	**1000**	**1050**	**1100**	**1150**	**1200**	**1250**	**1300**
300	40	47	54	61	68	75	88	95	102	109	116	123	130	137	144	104	109	114	118	123	128	132	137
350	46	54	62	70	78	86	100	108	116	124	132	140	148	156	164	119	124	129	135	140	145	151	156
400	51	60	69	78	87	96	112	121	130	139	148	157	166	175	184	133	139	145	151	157	163	169	175
450	56	66	76	86	96	106	123	133	144	154	164	174	184	194	204	147	154	161	167	174	181	187	194
500	61	72	83	94	105	117	135	146	157	168	179	191	202	213	224	162	169	176	184	191	198	206	213
550	67	79	91	103	115	127	147	159	171	183	195	207	219	232	244	176	184	192	200	208	216	224	232
600	72	85	98	111	124	137	159	172	185	198	211	224	237	250	263	190	199	208	216	225	234	243	251
650	77	91	105	119	133	147	171	185	199	213	227	241	255	269	283	205	214	223	233	242	252	261	270
	2 RUNNERS						**3 RUNNERS**									**4 RUNNERS**							

EXAMPLE - CALCULATION OF WIND RESISTANCE BASED ON THE LOADS AND THE ANCHORS

Calculation of maximum load on the anchor.
Based on the size of the structure and the number of runners, consult the load data sheets 3, 4, 5 or 6 (depending on the desired wind speed resistance) and identify the maximum load on each anchor. The value obtained is expressed in espresso in daN (1daN ≈ 1kg).

In the example below, the input data is:
- Width: 600 cm
- Projection: 400 cm
- Number of guides: 3
- Desired maximum wind speed: 74 km/h

DATA SHEET 5 – Maximum load in daN (1 daN ≈ 1 kg) on the single tensile or shear anchor (considering 2 anchors fo
of 74 km/h (Beaufort scale 6 Class 3 n accordance with EN 13

Projection (cm) \ WIDTH	200	250	300	350	400	450	500	550	600	650	700	750	800	850
250	35	41	47	53	59	65	76	82	88	94	100	106	112	118
300	40	47	54	61	68	75	88	95	102	109	116	123	130	137
350	46	54	62	70	78	86	100	108	116	124	132	140	148	156
400	51	60	69	78	87	96	112	121	130	139	148	157	166	175
450	56	66	76	86	96	106	123	133	144	154	164	174	184	194
500	61	72	83	94	105	117	135	146	157	168	179	191	202	213
550	67	79	91	103	115	127	147	159	171	183	195	207	219	232
600	72	85	98	111	124	137	159	172	185	198	211	224	237	250
650	77	91	105	119	133	147	171	185	199	213	227	241	255	269
700	82	97	112	127	143	158	183	198	213	228	243	258	273	288
750	88	104	120	136	152	168	195	211	227	243	259	275	291	307
800	93	110	127	144	161	178	207	224	241	258	275	292	309	326
	2 GUIDES						3 GUIDES							

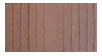
fig.74 - Extract from data sheet 5

Therefore:
- Maximum load on each anchor: 130 daN

For the determination of the fixing system see the paragraph alongside.

Attention
The load calculated from the data sheets is the maximum load in daN on each tensile and shear anchor (not combined) (considering 2 bolts for each support).

Determination of the anchors
Based on the type of wall/floor on which the bolts will be fixed and using the manual of the fixing systems manufacturer to determine which is most suitable.
Below we have indicated, **purely as an indication**, three examples referring to some extracts of HILTI **technical sheets which should be consulted for the correct choice and use of the bolts**.

	Type of wall/floor*	Type of anchor*	Recommended tensile load (N_{rec})*	Recommended shear load (V_{rec})*
CONC	**Concrete without slots** fck, cube = = 25 N/mm²	HSL-3 M8	1110 daN	1780 daN
	**Full masonry bricks** DIN 105/EN 771-1, $f_b \geq 12$ N/mm²	HIT-HY 70 with HIT-AC/ M8 threaded bars Installation depth 80 mm	100 daN	100 daN
	**Double brick** EN 771-1 $f_b \geq 27$ N/mm²	HIT-HY 70 with HIT-SC 16x and HIT-AC/ M8 threaded bars Installation depth 80 mm	100 daN	190 daN

Comparison of loads
The recommended load to be used as a comparison is the **lowest** between the tensile and shear load.
The **lower** between the maximum recommended tensile and shear load must be more than or equal to the maximum load on each anchor taken from the loads data sheet relative to the desired wind speed. Vice-versa, if the recommended load is less than the maximum load on the anchor, evaluate the following options:
A) Change type of anchor
B) Suitably reinforce the wall or the floor
C) Use a loads data sheet for a lower wind speed and assign the consequent wind resistance to the product installed.

Attention
For the correct choice and use of the bolts **refer exclusively to the manual of the fixing system manufacturer**

* data taken from the HILTI technical sheets (ST_HY 70_2008.PDF page 259-261 and hsl-3.PDF page62-63)

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