

TRS BIKE

Security turnstile

TECHNICAL MANUAL

(Translated from the original French version)

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1. PRESENTATION

Thank you for choosing the **TRS BIKE** Security Turnstile with bicycle access, designed and manufactured by Automatic Systems.

TRS BIKE security turnstiles are designed to ensure access control for both pedestrians and cyclists.

Totally autonomous and robust, they are particularly designed for the outdoor security of sensitive, high-traffic sites, such as industrial, sports and commercial complexes, offices, airports, power stations, amusement parks, military bases, car parks, etc.

TRS BIKE turnstiles consist of a single-lane three-arm TRS 370 turnstile for pedestrian management and a motorised bi-directional gate for the passage of a bicycle or any other micro-mobility device.

The moving barrier comes in steel or brushed stainless steel (*optional*) and several RAL colours are available.

The main advantages are:

- Entry, exit or bidirectional access control
- Unguarded automatic access control allowing single passage
- Locking of an inner or outer perimeter
- Simple and efficient equipment ensuring prolonged operation under the most severe conditions
- Long-term investment based on exceptional sustainability

Its design makes it a perfect match for the TRS 37x turnstile range for side-by-side or remote installation. Since it is completely autonomous, the TRS BIKE turnstile can be installed at the right or left end of an existing TRS 37x turnstile array or inserted in the middle of an array. The operating mode of the equipment does not make it possible to guarantee a single passage after opening the bicycle gate.

The rotation control mechanism for the TRS 37x part and for the control of the bike gate are the result of many years' experience in the development and manufacture of access control equipment and the marketing of tens of thousands of units worldwide. The mechanical and electronic assemblies are located in the upper part of the gate (in the casing, equipped with several access panels fitted with a lock) and is therefore out of reach of users; the connection and floor anchoring require some civil engineering works, which are described in this document.

A large number of options are available to cover all cases likely to be encountered in pedestrian access control: Twilight switch to operate the lighting, heating element, functional pictograms coupled with reader operation, canopies, reader box.

We are sure that your purchase will fully meet your requirements for many years and, to that end, would strongly advise you to read this manual carefully.

It will assist you when unpacking, installing, commissioning and maintaining your product.

Proper installation and regular maintenance will ensure effective operation of the product and will significantly increase the life-span of its components.

Despite the care taken when preparing this manual, some points may seem incorrect or unclear. If this is the case, please do not hesitate to contact us with your comments or questions.

2. SAFETY WARNINGS



Read this document carefully and in full before using the device and keep it in a safe place for future reference. Failure to comply with the instructions in this document may lead to damage to the device, as well as potentially serious physical injuries.

- This manual must be available to all persons working on the equipment: installers, maintenance operators, end users, etc.
- This equipment is designed for access control for pedestrians, with or without a bicycle, and is not to be used for any other purpose without risk to the user and to the integrity of the equipment.
- Employees working on the premises must be trained in the use of these gates beforehand. Failure to provide such training to users may result in serious accidents or injuries.
- For safety reasons, children (users less than one (1) meter in height) must be supervised by an adult at all times when in the vicinity of the unit and when passing through the gate. When the gate is used by a child accompanied by an adult, the child must precede the accompanying adult. If regular use by children is anticipated, Automatic Systems recommends installing all the specific options provided to optimise the level of protection.
- Extreme care must also be taken with animals, which must be leashed and kept under the control of their master at all times.
- Do not install this equipment in an explosive area.
- The contractor must ensure that local standards are observed when installing the equipment.
- All work on the equipment must be carried out by qualified personnel. Any work on this product that is unauthorised or carried out by an unqualified technician will automatically void the manufacturer's warranty.
- It is mandatory to wear personal protective equipment (PPE) when performing any work:



- Cut-resistant gloves must be worn when performing mechanical actions and/or actions involving intentional or inadvertent touching of sheet metal parts or the frame.
- Access to the mechanism should be limited to personnel who are aware of the electrical and mechanical risks associated with careless handling.
- For all operations that do not require the equipment to be powered up, turn off the power at the distribution panel or at the circuit breaker (⇒ Ref. 4, Chap. 5.4.3.2, page 15).
- All internal components that are likely to be powered or in movement must be handled with caution.
- The use of gloves or antistatic wristbands (Electronic Static Discharge) is essential when handling electronic circuit boards, otherwise the warranty may be voided.
- The equipment is configured in a mode that minimises risks for its users. All modifications of parameters must be carried out knowingly by qualified personnel, and Automatic Systems accepts no liability for such modifications.
- In the event of resale of the product, it is the responsibility of the reseller to ensure, when offering, selling and installing each piece of equipment, that the environment and foreseeable use of the equipment take into account the technical characteristics of the equipment and respect these instructions.
- The seller must defend and indemnify Automatic Systems from any claims against Automatic Systems due to the seller's failure to comply with the above obligations.
- If an operation does not require the motor or logic to be powered up, cut the power supply before opening the housing (⇒ Ref. 4, Chap. 5.4.3.2, page 15). Otherwise, disconnect the power supply using the circuit breaker.
- Besides maintenance activities, it is forbidden to use the equipment without one or more parts of the housing.

3. GENERAL SYMBOLS

The following symbols are used in this manual or as labels on the equipment:



This symbol is used to highlight **a tip** that may help you better understand the product.



Reminder or **quick tip** useful for understanding how the product works.



This symbol is used to highlight **an important instruction** for the correct use and/or maintenance of the product.



Important! : This symbol is used to highlight a **risk of injury or material damage**.



This symbol is used to highlight a **risk of electric shock or electrocution**.



This symbol is used to highlight a **risk of cutting yourself**.



This symbol is used to identify the **principal ground connection point**.
(Either in the form of an affixed label or directly engraved on a mechanical part).



This symbol is used to indicate the **tools** required for the relevant operation.



This symbol indicates that the equipment **conforms to European standards and directives**.



This symbol indicates that the equipment must **be disposed of in accordance with the applicable European Directives** (DEEE 2012/19/EU).



Equipment identification label.

4. TERMINOLOGY

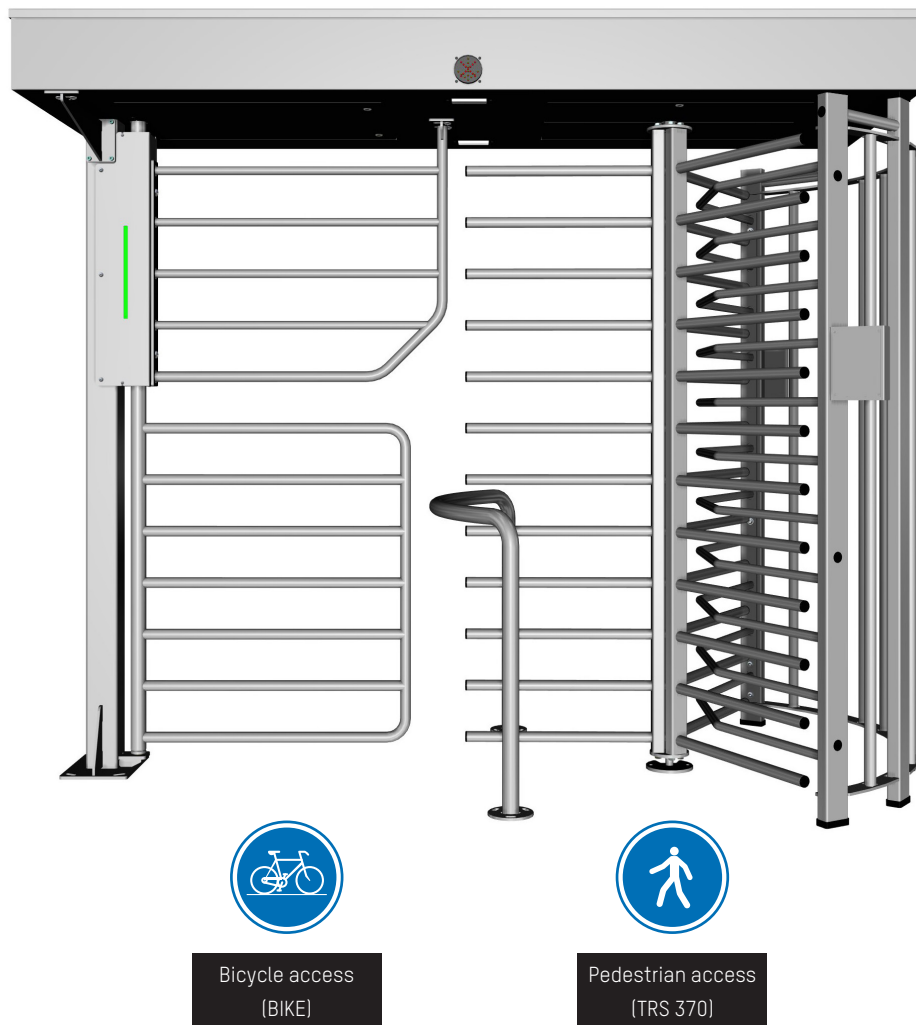
AS	Automatic Systems
TRS	Full-Height Security Turnstile
BIKE	Bike refers to a bicycle.
CTL	Control
DI	Digital input
DO	Digital output
I/O	Input/Output
O/S	Out of Service
MMI	Man-Machine Interface
RDA	Reader direction A
RDB	Reader direction B
NC	Normally closed (contact)
NO	Normally open (contact)
Direction A	By convention, this is the direction of flow for which the TRS 370 turnstile is located to the right of the flow.
Direction B	Direction of flow opposite to direction A. Direction B is the direction of flow for which the TRS 370 turnstile is located to the left of the flow.

5. DESCRIPTION

The **TRS BIKE** is composed of a **TRS 370** turnstile coupled to an automated gate.

A large number of options are available to cover all cases likely to be encountered in pedestrian access control:

- Twilight switch for lighting control
- Heating element, function pictograms coupled with reader operation
- Canopies
- Reader housing



5.1. GENERAL DIMENSIONS

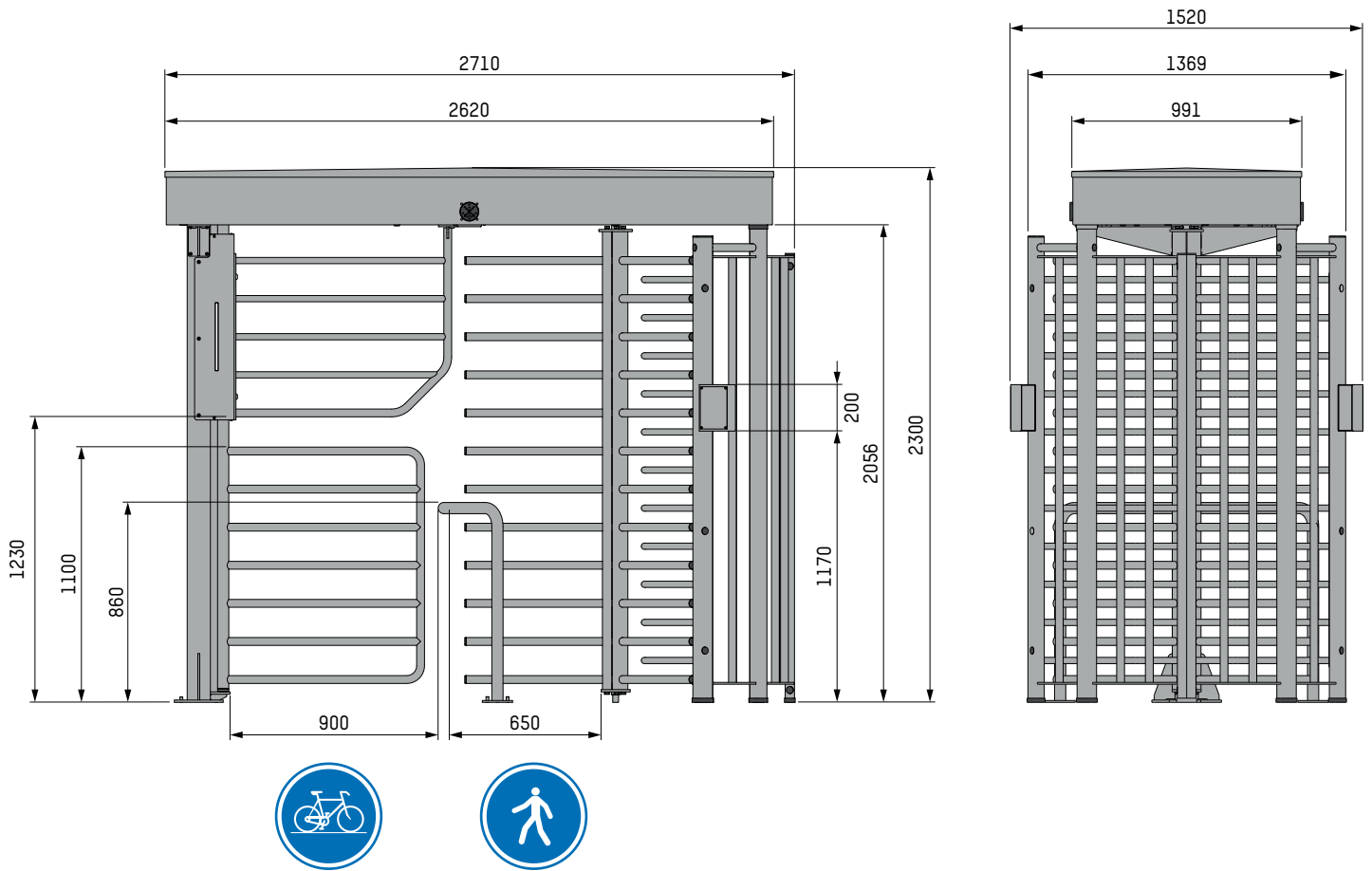


Fig. 1 - General dimensions

5.2. CONVENTIONS

The figure below illustrates the positioning of the readers in direction A and direction B. Any readers will be mounted on the curved section of the TRS 37x. However, other layouts are possible on request.



IMPORTANT! ENSURE THE CONSISTENCY OF THE OPERATING MODE IN DIRECTION A AND B IF THE TRS BIKE IS BATTERY-POWERED WITH ONE OR MORE TRS 37X.

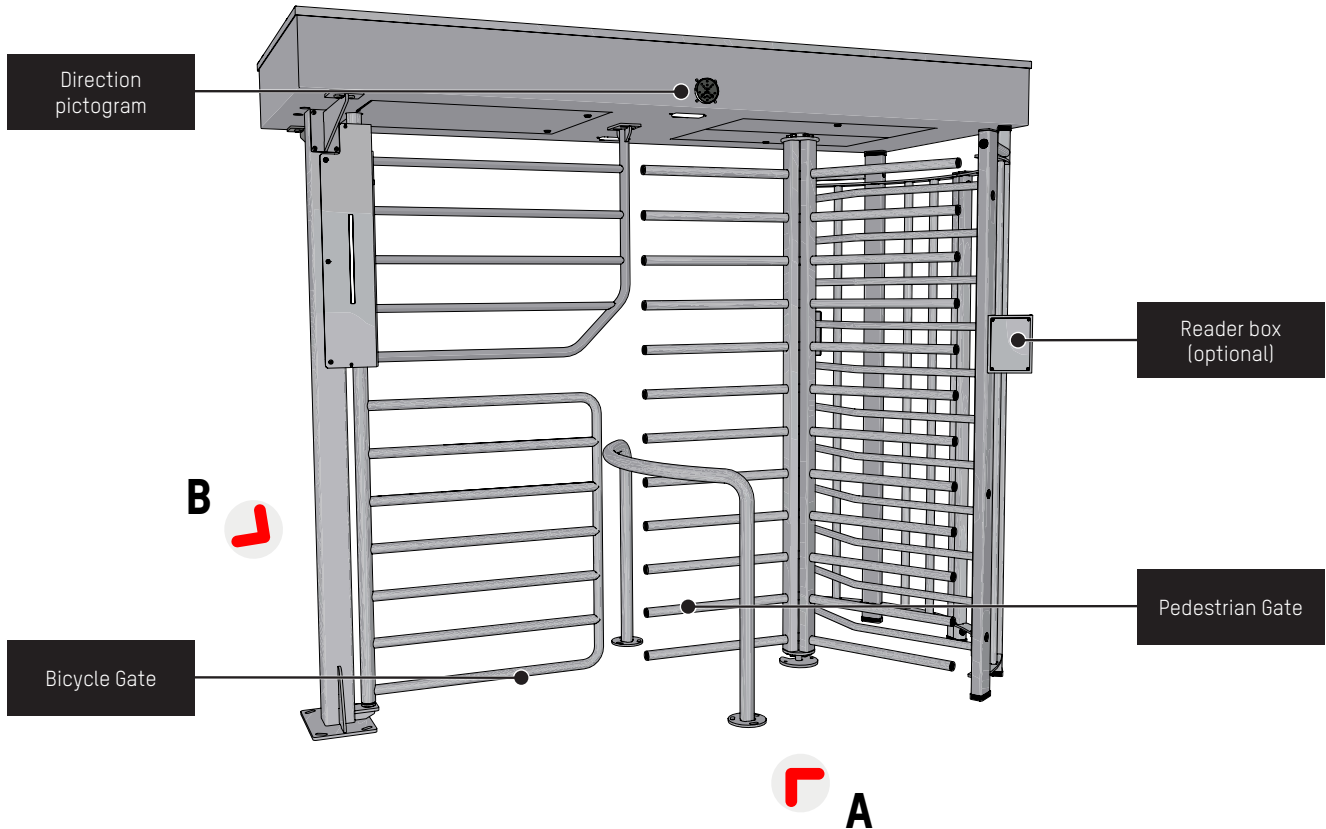


Fig. 2 - Conventions for direction A and direction B

The TRS 37X gates can be configured in **five operating modes, for each direction of passage.**

Some modes have an impact on the assembly of the factory kinematic unit and the desired configuration should therefore be specified when ordering the equipment.

MODE	DESCRIPTION	COMMENT
1	Always free (barrier rotating freely)	No lock, electromagnet and control logic
2	Always locked (barrier mechanically blocked)	There is a lock but no electromagnet or control logic
3	Access permanently locked when power is off	There is a lock and an electromagnet
4	Access controlled electrically and blocked when power is off	There is a lock and an electromagnet
5	Access controlled electrically and free when power is off	There is a lock and an electromagnet

For example, A5/B5 equipment will be electrically controlled in both directions of passage. This is the ex-factory configuration if nothing else is specified in the customer's order.

For bicycle access, no basic detection system is provided. Once the moving barrier is open, there is no way to guarantee single passage. The barrier closes automatically after a time delay.

5.3. TECHNICAL DATA

TYPE	CHARACTERISTICS	VALUE	
Electrical	Power supply	110 - 240 V single-phase 50/60 Hz	
	Control circuit	24 VDC	
Consumption	At rest, without heating	54 W	
	In operation, without heating	111 W	
		USE OF THE TRS 370 ALONE	USE WITH THE BICYCLE PART
Flow per lane	Depending on the reader's reaction time	15 to 20 passages per minute	5 passages per minute
Environmental	Operating temperature	From -10° to + 50° C	
	IP rating	IP43	
	Maximum relative humidity	95%, without condensation	
Weight	Net weight without the canopies	370 kg	
MCBF	Mean number of Cycles Between Failures	500,000 cycles, in compliance with recommended maintenance	
MTTR	Mean Time To Repair	20 minutes	
CE	Complies with EC standards.		

5.4. LOCATION OF COMPONENTS

5.4.1. EXTERNAL COMPONENTS

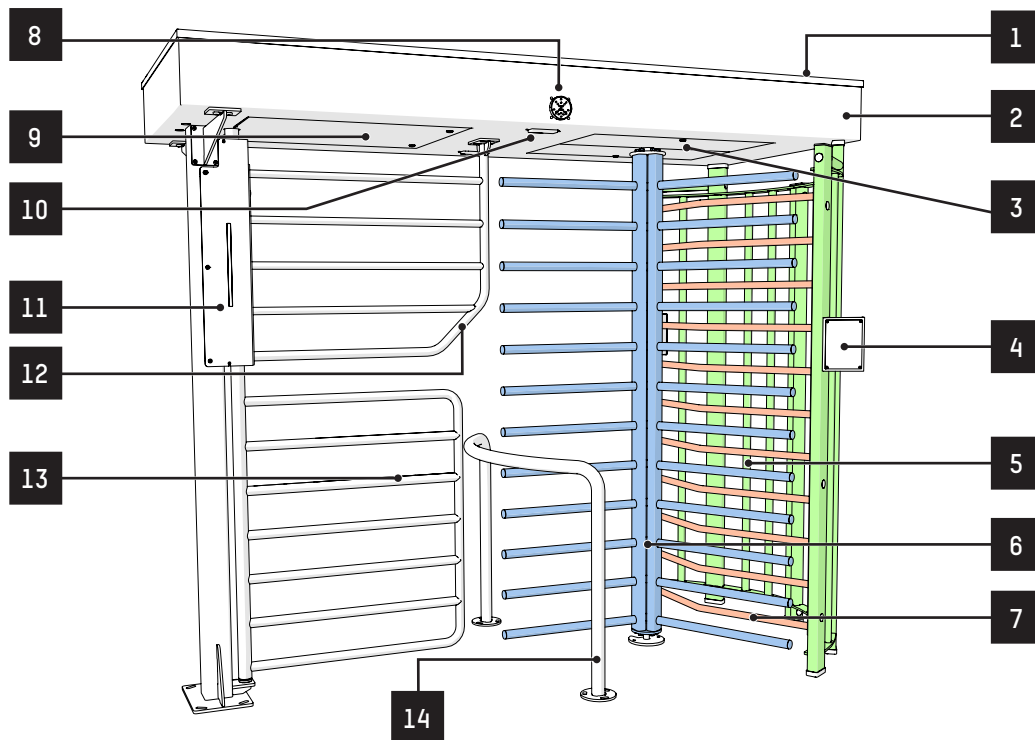


Fig. 3 - External components

REF.	DESIGNATION
1	Top casing canopy
2	Upper casing containing mechanics and the control logic
3	Access panels to the mechanism and the control logic of the 37x TRS part
4	Housing for reader integration (optional)
5	Curved section
6	Moving barrier (pedestrian passage)
7	Fixed comb
8	Directional pictogram
9	LED lighting
10	Access panel to the mechanism and the control logic of the TRS BIKE part
11	Function pictogram
12	Fixed upper barrier (bike passage)
13	Moving barrier (bike passage)
14	Handrail (separation between pedestrian and bicycle access)

5.4.2. INTERNAL COMPONENTS

5.4.2.1. TRS 37X PART

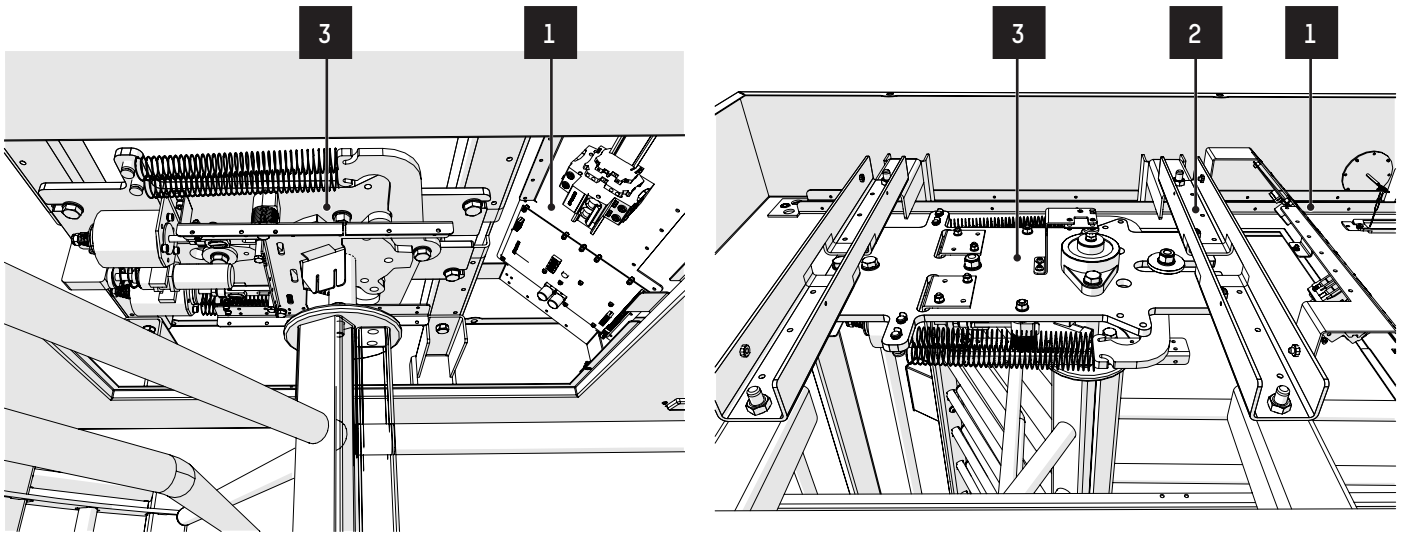


Fig. 4 - Internal components, TRS 37x version

5.4.2.2. TRS BIKE PART

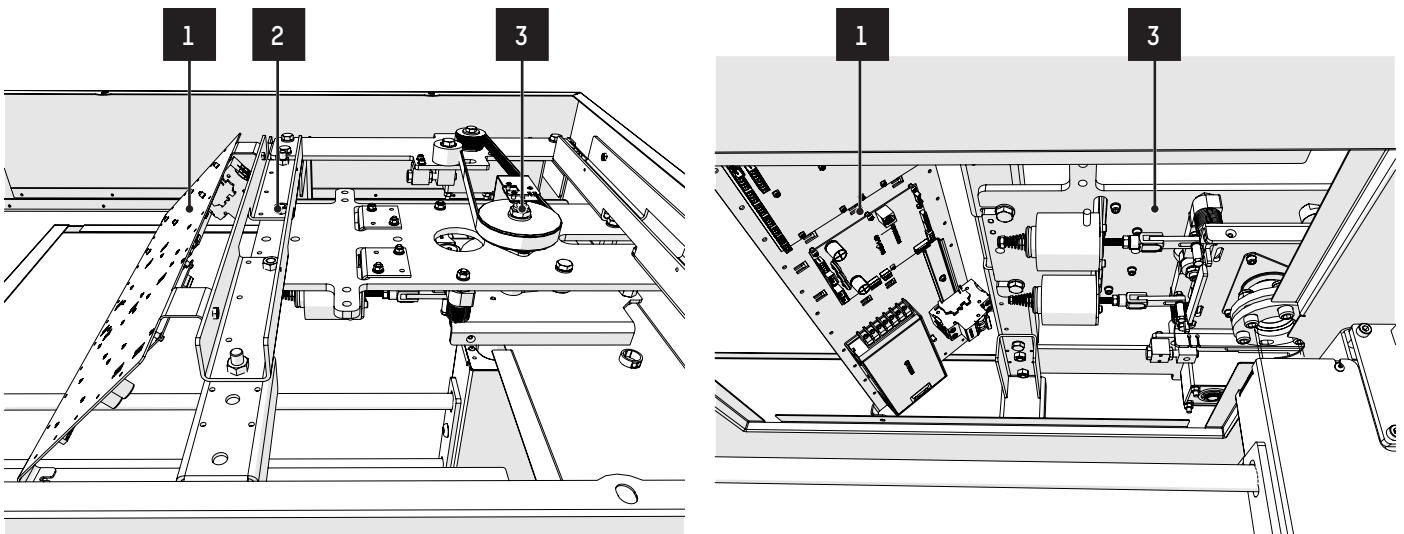


Fig. 5 - Internal components, TRS BIKE version

REF.	DESIGNATION
1	Electronic logic board
2	Mechanical frame
3	Mechanical

5.4.3. ELECTRICAL/ELECTRONIC COMPONENTS

5.4.3.1. TRS 37X PART

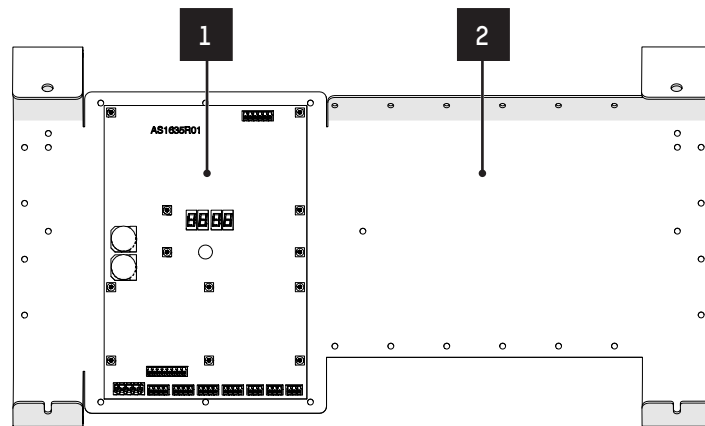


Fig. 6 - TRS37x electronic logic board detail

REF.	DESIGNATION
1	Electronic logic board
2	Electronic control board AS1635

5.4.3.2. TRS BIKE PART

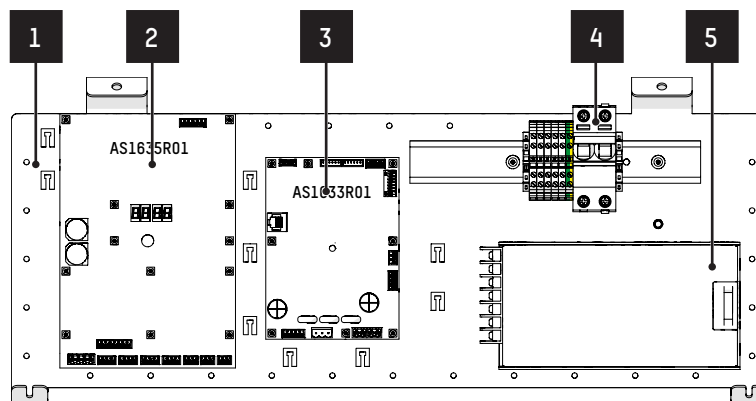


Fig. 7 - TRS BIKE electronic logic board detail

REF.	DESIGNATION
1	Electronic logic board
2	Electronic control board AS1635
3	AS1633 motorisation board
4	Magneto-thermal circuit breaker
5	Power supply 100 -240 V 24 VDC

6. OPERATION

6.1. OPERATING PRINCIPLE (MODE 5)

In this operating mode, the barrier is unlocked in the event of a power failure, allowing the site to be evacuated.

- At rest, the electromagnet (A) is powered and its connecting rod (B) compresses the spring (C) to push the bolt (D) into the roller locking position (F).
- When passage is authorised (by a validator not supplied: badge reader, remote control console, etc.), the power supply to the electro-magnet is cut off by the control logic, allowing the return spring (C) to pull the bolt (D) backwards via the connecting rod (B), which unlocks the movement of the rotating gate in one direction. In controlled mode, the second lock prevents rotation in the opposite direction.

6.1.1. FOR PEDESTRIAN TRS MECHANISM

- The user applies a push to the rotating barrier, which activates the rotor (E) (clockwise in this example), but the principle is the same in the other direction due to the symmetry of the mechanism.
- During this movement, the roller located at 90° to the roller (F) pushes on the compensator arm (G) and thus powers the four (4) return springs (H) attached to it.
- When there is no more pressure on the rotating barrier, it returns to its rest position as a result of the action of the 4 return springs (H). This closing movement is slowed by the action of the damper (N) and the pin visible below the damper, which comes into contact with the roller (F) during rotation of the shaft.
- The proximity sensor (J) detects that the damper has returned to its rest position (which corresponds to the gate closing completely); it sends the information to the control logic, which powers the electromagnet, locking the gate again.

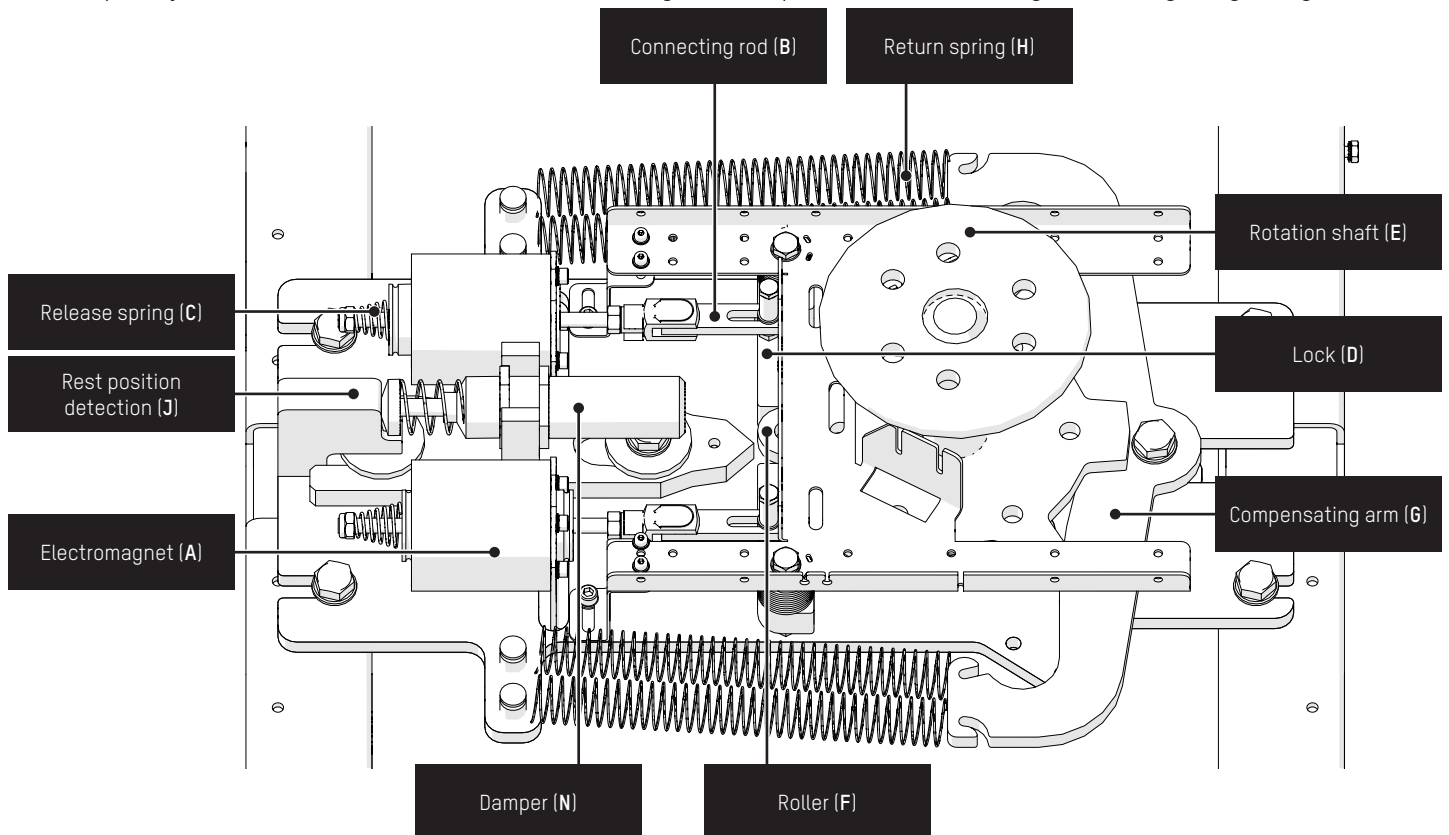


Fig. 8 - Mechanical assembly of the manual turnstile for pedestrians (TRS)

6.1.2. FOR THE MOTORISED MECHANISM ON THE BICYCLE SIDE (BIKE)

- Once the first steps in the chapter Chap. 6.1 have been completed, the control logic sends the command to open the gate to the AS1633 motorisation board, which activates the motor (G).
- Movement is transmitted from the motor (G) to the rotation shaft (E) by means of a pulley/belt system.
- The tensioner (H) ensures the correct tension on the belt and stops it from slipping.
- The position sensor (I) keeps track of the position of the barrier at all times, allowing optimal and safe management.
- The gate closes automatically after the passage time has elapsed.

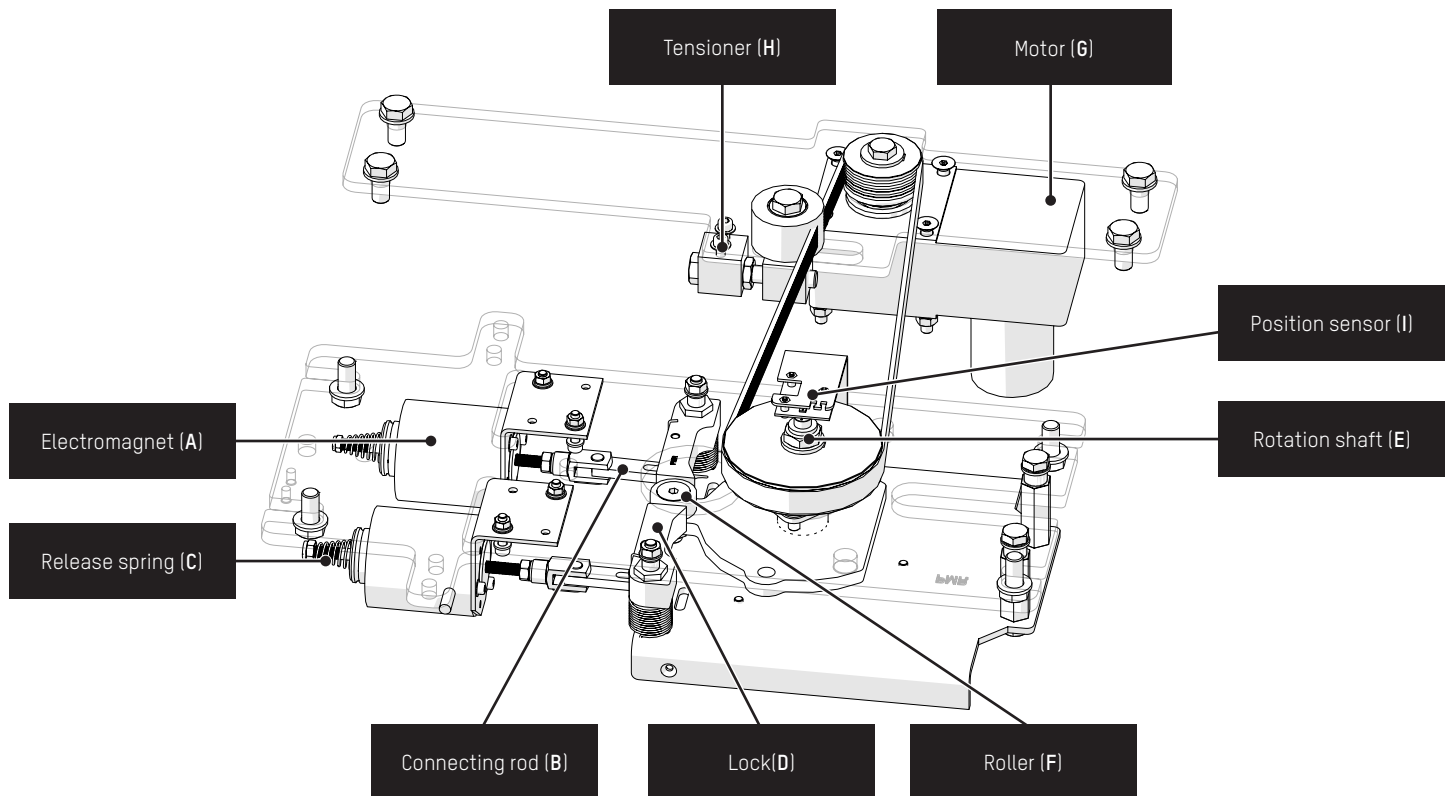


Fig. 9 - Motorised assembly of the bicycle barrier (BIKE)

6.2. OPERATING PRINCIPLE MODE 4

In this operating mode, the barrier is locked in the event of a power cut.

- The operating logic of the electromagnet is therefore reversed (this setting is accessible in the control logic management). With the TRS BIKE powered up and in the rest position, the electromagnet is not powered. In this configuration, the spring (C) is placed on the side of the connecting rod (B). When switched off, it applies pressure to the lock, which prevents the shaft from rotating.
- In the case of a passage authorisation, the control logic powers the electro-magnet, which unlocks the passage in the corresponding passage direction.
- The other features are identical to the previous mode.

6.3. OFF MODE

With the power off, the device can be set to unlocked mode (allowing evacuation of the site) or locked. These are Modes 3, 4 and 5 as described in section chapter 5.2, page 11. This setting depends on the physical orientation of the electromagnet coil, as a return spring is attached to its axle. Control of the electromagnets will therefore be different in each case and a configuration setting is provided in the control logic memory. Switching from one operating mode to the other is described in chapter 8.1, page 52.

6.4. OPERATING MODE FOR FLOW DIRECTIONS

Except in the event of a technical fault or evacuation, the operating mode can be configured independently for the two directions of flow:

- **Free:** any pedestrian may pass through in the corresponding direction.
- **Controlled:** only pedestrians authorised to pass (using a reader or an external contact) may pass in the corresponding direction. Breaches are detected in this mode.
- **Prohibited:** pedestrians cannot pass through the lane in the corresponding direction.

6.5. ILLUMINATED SIGNAGE

6.5.1. DIRECTION AND FUNCTION PICTOGRAMS

The direction pictogram is built into the top casing. It indicates the status of the lane and provides good visibility from a distance to ensure high throughput.

The function pictogram is built into the upper part of the bicycle gate. It indicates the user's access authorisation and operates independently in both directions.

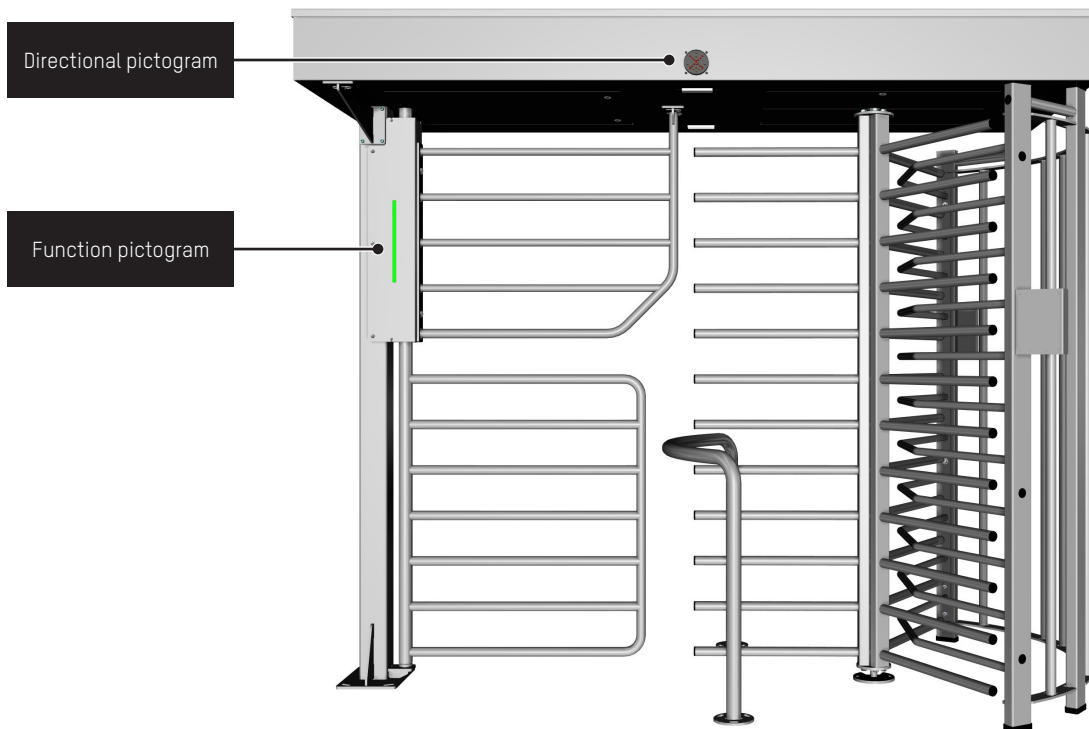
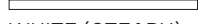
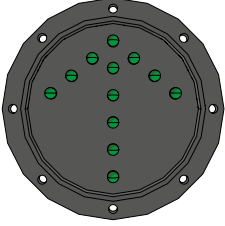

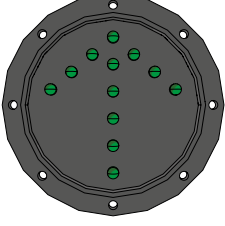



Fig. 10 - Direction pictograms

In the factory configuration, the following colour conventions apply to the status of TRS BIKE:

DIRECTION PICTOGRAMS	FUNCTION PICTOGRAMS	MEANING
OFF	OFF	⇒ Power off ⇒ Start-up
 Green arrow	 RED (STEADY)	⇒ Evacuation
 Red cross	 RED (FLASHING)	⇒ Maintenance or out of service
 Green arrow	 WHITE (STEADY)	⇒ Free Mode (for each direction)
 Red cross	 RED (STEADY)	⇒ Prohibited (for each direction)
 Green arrow	 BLUE (STEADY)	⇒ Controlled pending validation (for each direction)

DIRECTION PICTOGRAMS	FUNCTION PICTOGRAMS	MEANING
 <p data-bbox="177 546 317 573">Green arrow</p>	 <p data-bbox="411 338 592 367">GREEN (STEADY)</p>	<p data-bbox="708 309 1362 338">⇒ Controlled with authorised passage(for each direction)</p>
 <p data-bbox="177 837 317 864">Green arrow</p>	 <p data-bbox="411 629 592 658">GREEN (STEADY)</p>	<p data-bbox="708 600 1458 629">⇒ Controlled without right of passage request (for each direction)</p>

6.6. HOUSING TO HOLD THE READER (OPTIONAL)

A painted steel reader box mounted on the upright is available as an option. The front panel is made of stainless steel 304 and the assembly is sealed tight.

If the opening of the barrier is controlled in both directions, this type of housing can be mounted in both directions A and B. Three holes are provided on each side of the vertical upright to mount the housing and routing the cables. If no housings are attached, plugs are fitted to ensure that the assembly is watertight.

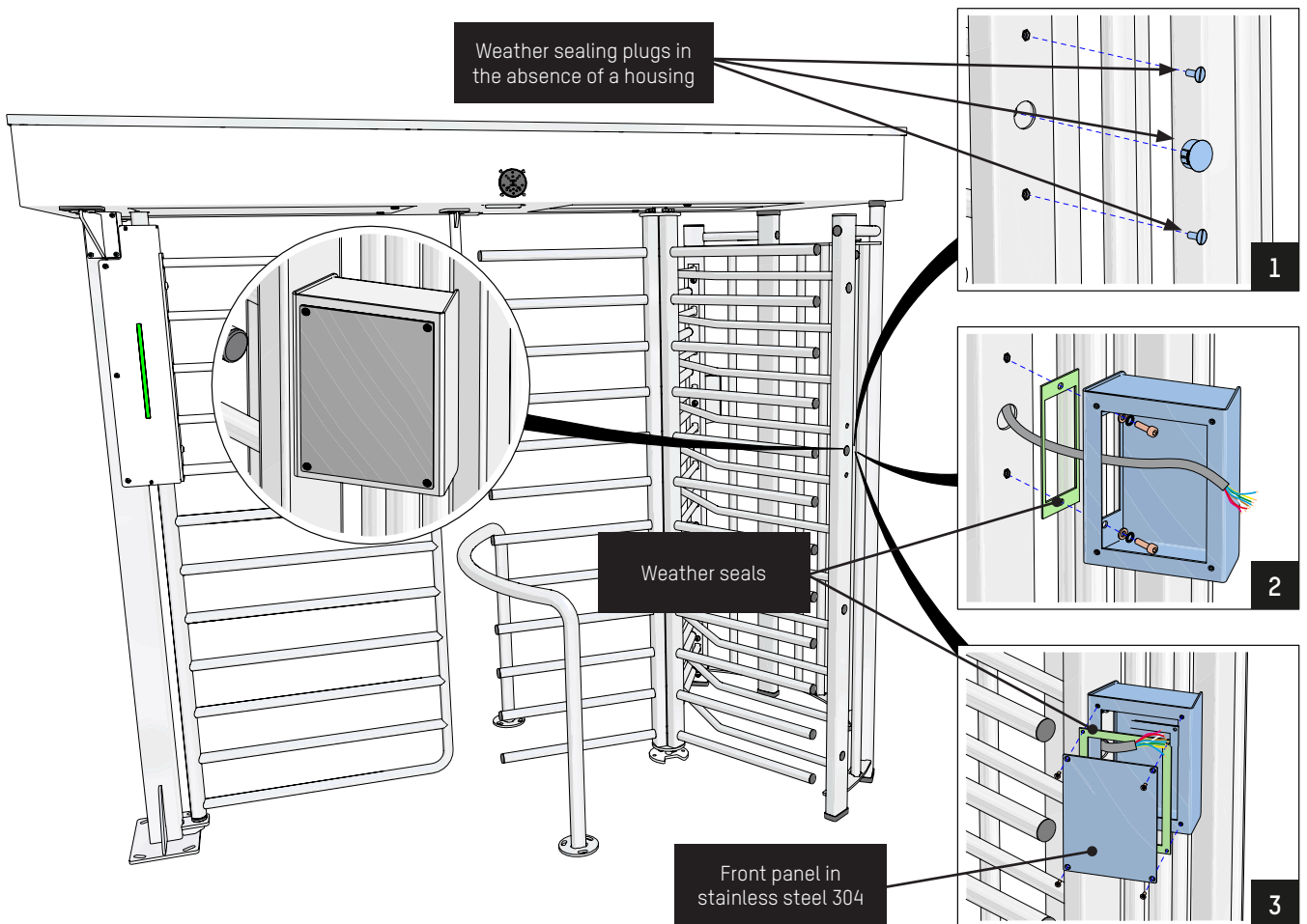


Fig. 11 - Housing to hold the reader

Two sizes of housing are available, allowing most existing proximity readers to be installed:

<p>Fig. 12 - Small housing dimensions</p>	<p>Fig. 13 - Large housing dimensions</p>
<p>Useful internal dimensions: 160 x 100 x 45 mm (H x W x D).</p>	<p>Useful internal dimensions: 390 x 175 x 45 mm (H x W x D).</p>

7. INSTALLATION

7.1. PACKAGING

For obvious space-saving reasons, the gate is delivered disassembled into several sub-assemblies:

- Left-hand curved section
- Fixed comb
- Moving combs
- Top casing with canopy and access panel containing the mechanical assemblies, power supply and control logic
- The upright for the bicycle access gate
- The fixed upper barrier + LED housing + housing support
- Moving barrier
- Railing separating pedestrian and bicycle access
- Connecting brackets between the uprights and the top housing
- Possible options such as reader boxes and/or canopies
- Drilling template or anchoring frame (to be specified when ordering)
- Screws and technical documentation

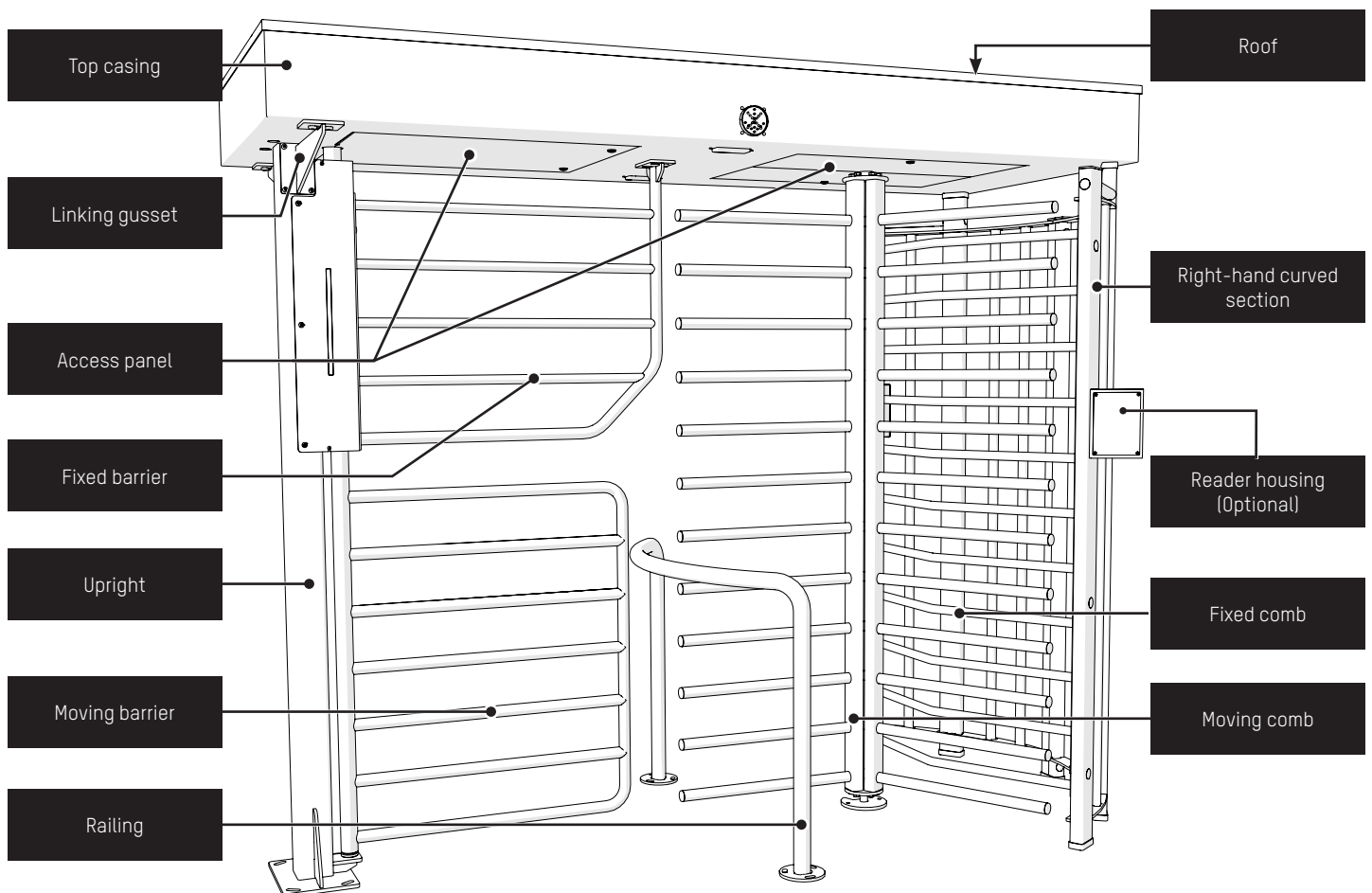





Fig. 14 - Sub-assemblies included in the packaging of the TRS BIKE

7.2. UNPACKING

When the equipment arrives on-site, please check that each element is complete and in good condition.

If damage has occurred during transport for any reason, please ensure that this is recorded on the transport document and, if necessary, report the incident to **Automatic Systems**.

7.3. RECOMMENDED TOOLS FOR INSTALLATION

 <ul style="list-style-type: none"> • Forklift truck • Ratchet wrench + extension + socket set • Set of Allen keys • Electrician's tools (screwdrivers, pliers, etc.) • Set of flat spanners • Spirit level • Hammer drill + concrete drill bits - Ø 15 x 100 • Standard protective equipment: gloves, goggles, hard hat and safety shoes • Straps / slings • Protective items (blankets, packaging boxes, etc.) • Rubber mallet 	 
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7.4. SWITCHING EQUIPMENT ON AND OFF

 **AS SOON AS YOU OPEN THE CASING, SWITCH OFF THE EQUIPMENT BY DISCONNECTING THE MAIN CIRCUIT BREAKER LOCATED ON THE POWER BOARD ON THE BIKE SIDE.**

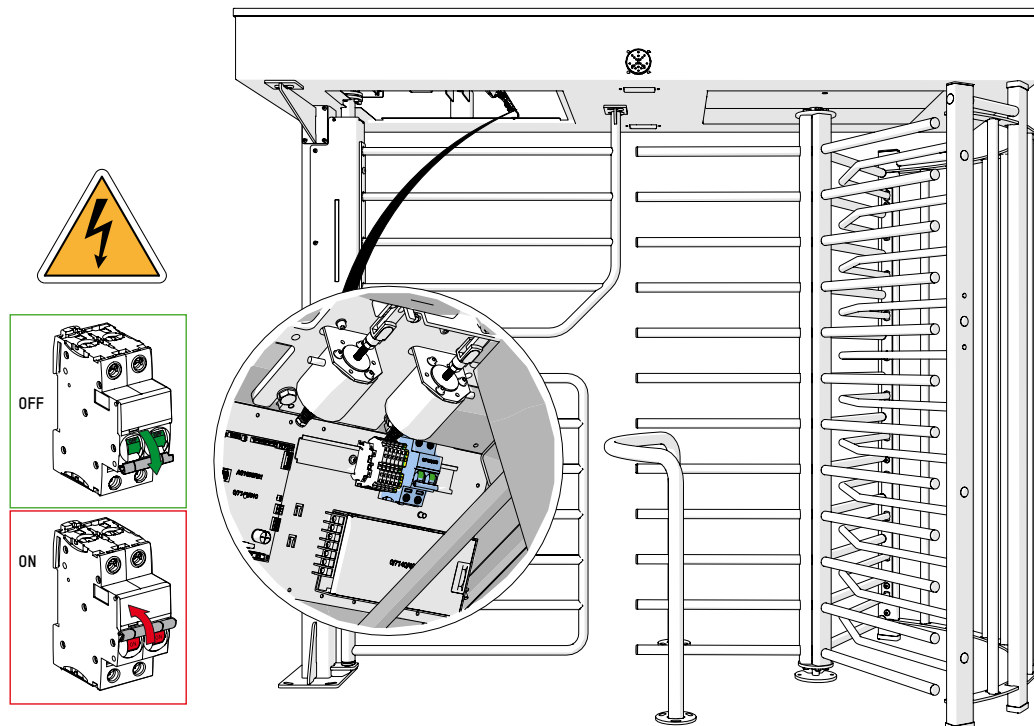


Fig. 15 - Location of magneto-thermal switch



7.5. INSTALLATION PLANS

The power and data cables must be routed through the upright on the bike access side in accordance with the installation diagrams in page 25 and page 26.

We recommend using a 3G2.5 mm² 230 V Mono + earth power cable (Type XFVB recommended) and possibly control cables type TPVF or LiYCY.

To avoid interference problems, we also recommend running the power and control cables in separate 25 mm diameter PVC conduits.

To reach the connectors provided in the canopy section, all cables must protrude at least 3 m above the floor.

7.5.1. FIXING TO A FINISHED FLOOR

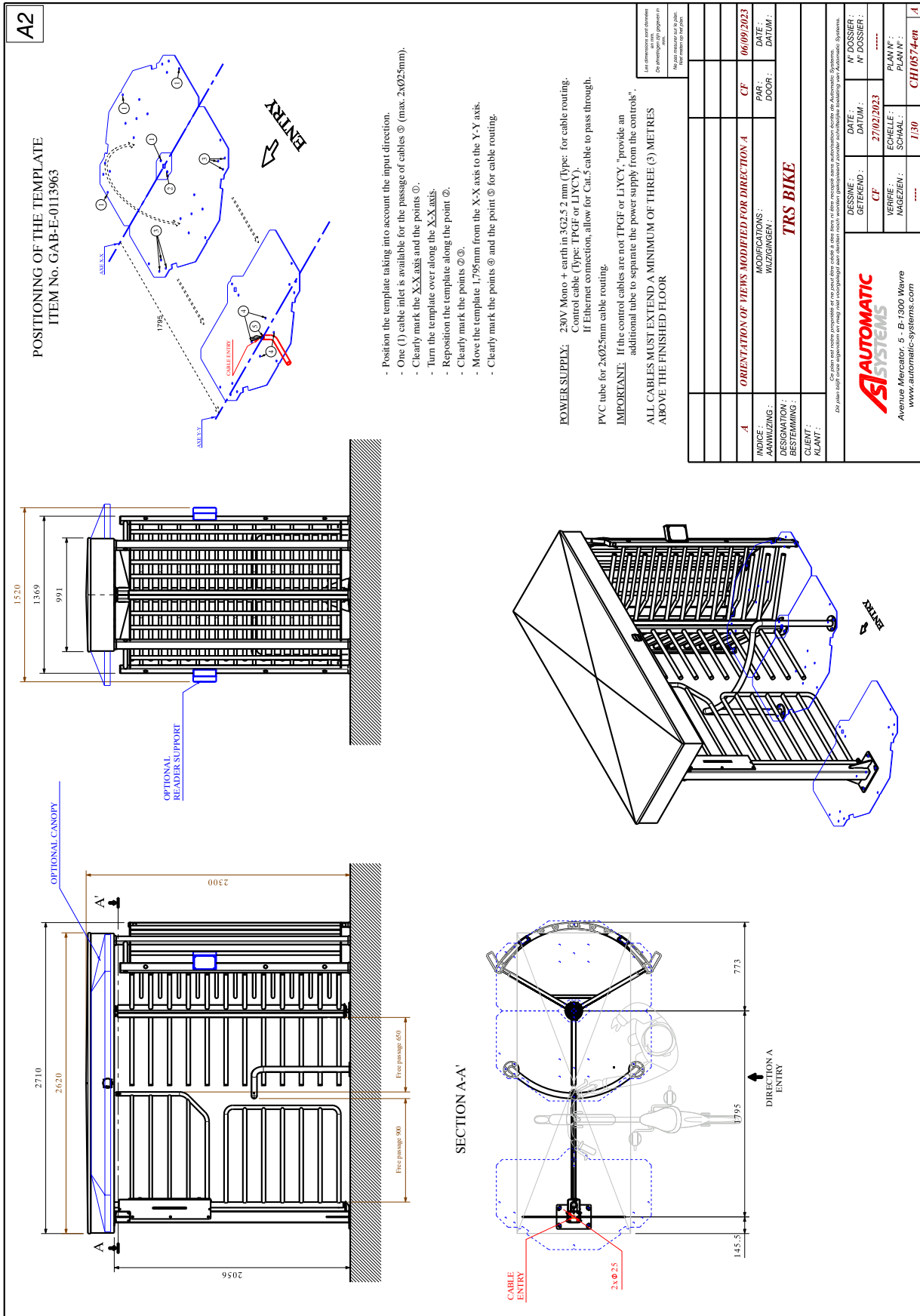


Fig. 16 - TRS BIKE installation plan - Fixing to finished floor

7.5.2. FIXING TO AN ANCHORING FRAME

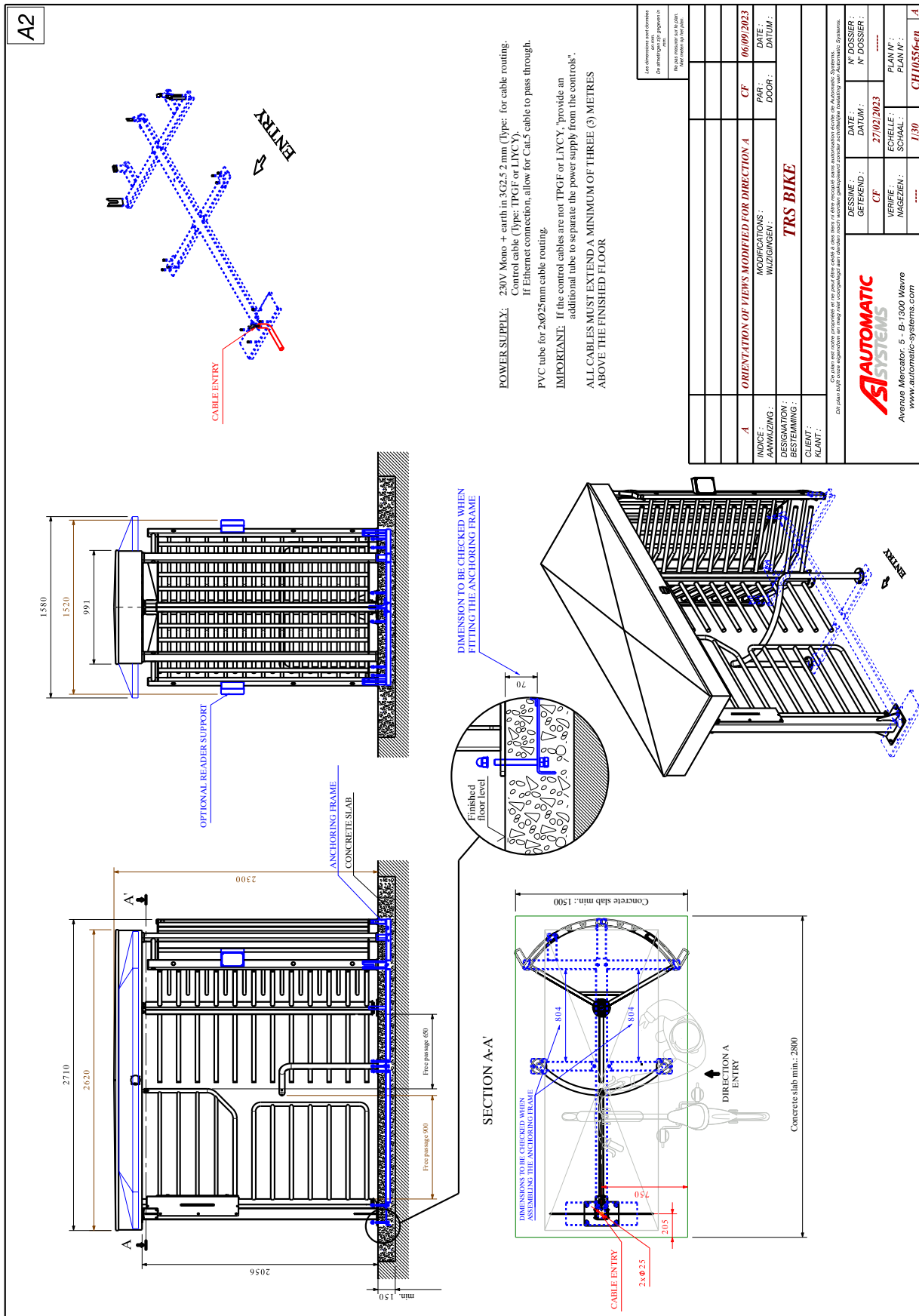


Fig. 17 - TRS BIKE Installation plan - Fixing to an anchoring frame

7.6. DRILLING TEMPLATE (STANDARD) OR ANCHORING FRAME (OPTION)

Two situations may arise on site:

- a. **Installation of the equipment by drilling into a finished floor:** In this case, the use of a drilling template allows you to work accurately.

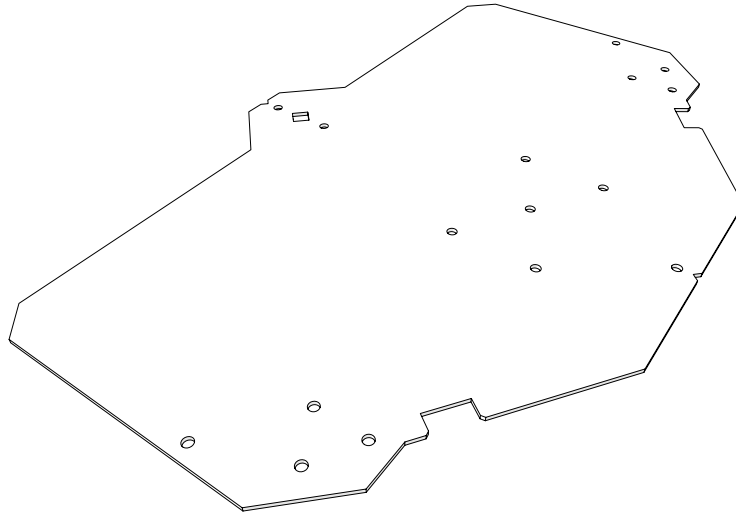


Fig. 18 - Drilling template for finished floor (GAB-E-0113963)



A finished floor mounting kit is supplied as standard / available as an option.

- b. **Use of an anchoring frame (optional) cast in the concrete:**

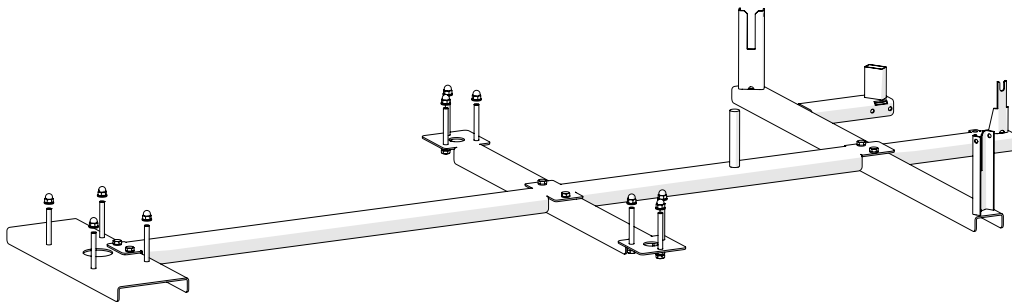


Fig. 19 - Optional anchoring frame

7.7. PROCEDURE FOR INSTALLATION ON A FINISHED FLOOR

7.7.1. PREPARING FOR INSTALLATION ON A FINISHED FLOOR

1. Provide sheathing for the power supply cables (not supplied) and any remote controls at the locations shown on the installation plan (CH10574). Allow for 3m of spare cable above the floor, with connections to the control and command circuit made in the top casing.
2. Make sure that the floor on which equipment will be installed is flat (smooth), perfectly horizontal, and made of standard concrete or another non-combustible material (strong enough to add stability).
3. Mark out the main axes in the space provided for installing the TRS BIKE:

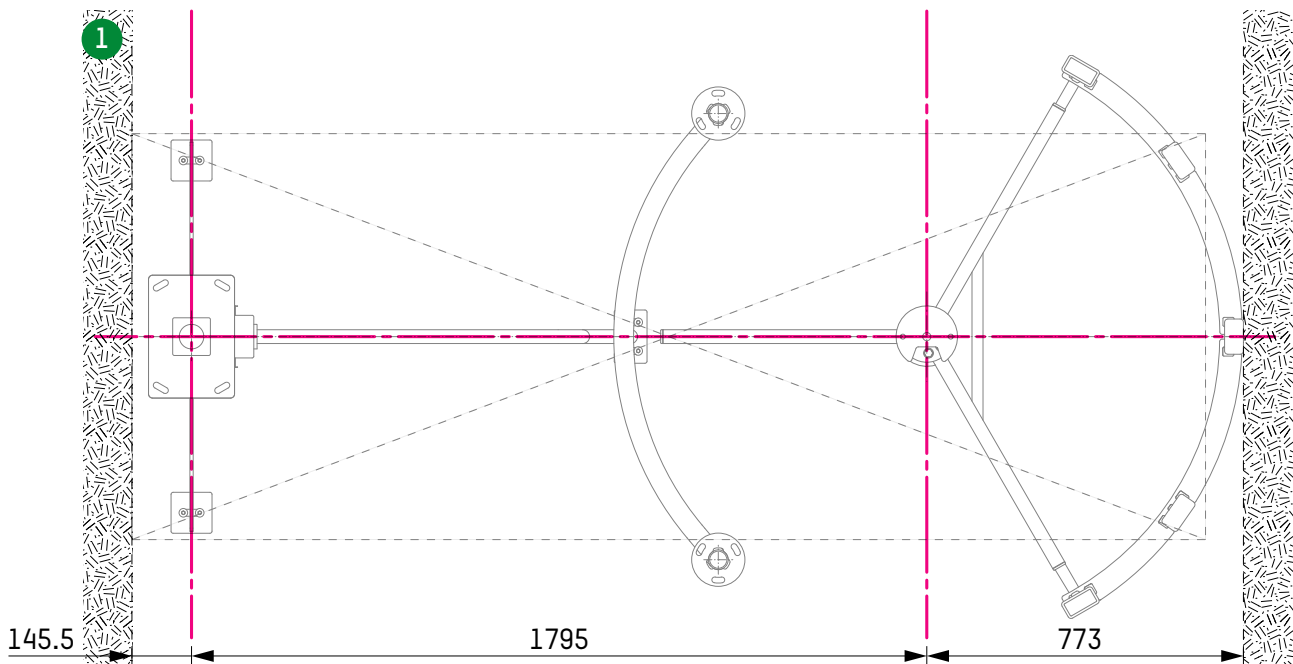


Fig. 20 - Drilling template (GAB-E-0113963) - Drawing the main axes (Step 1)

4. Position the drilling template to determine the fixing points of the central axis and the curved sections of the TRS:

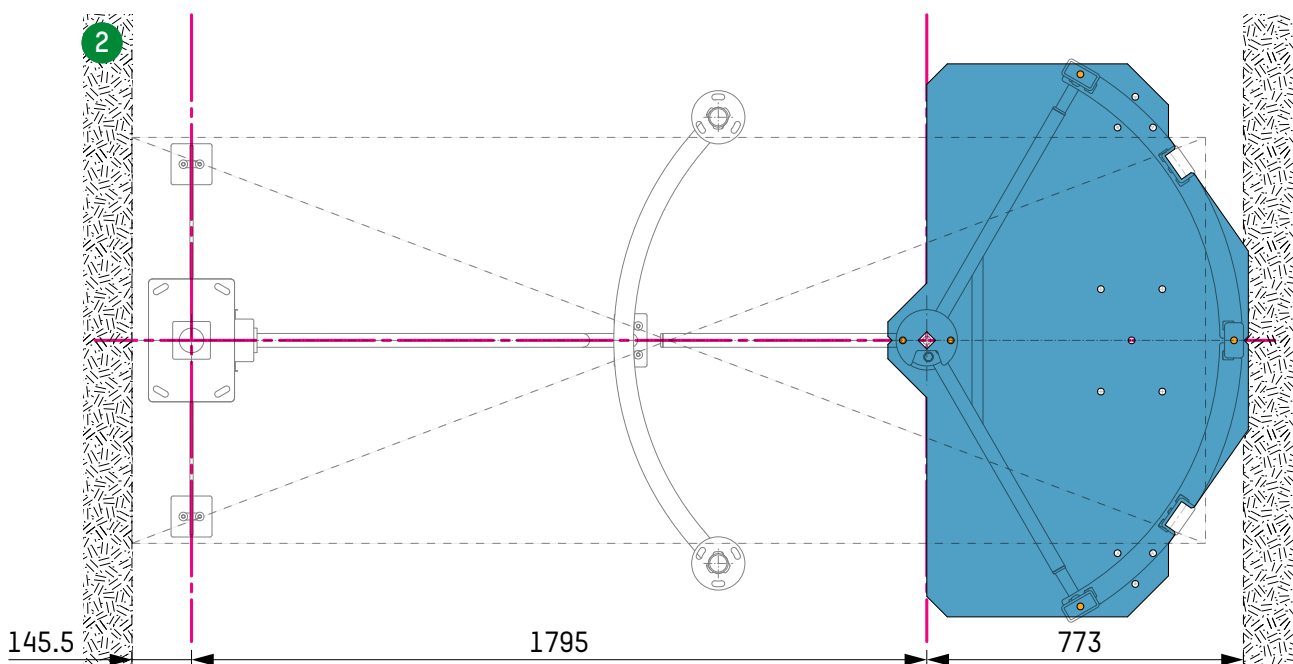


Fig. 21 - Drilling template (GAB-E-0113963) - Drawing TRS fixing points (Step 2)

- Using the main axes and the fixing points of the central axis of the TRS part, position the drilling template to determine the fixing points of the handrail:

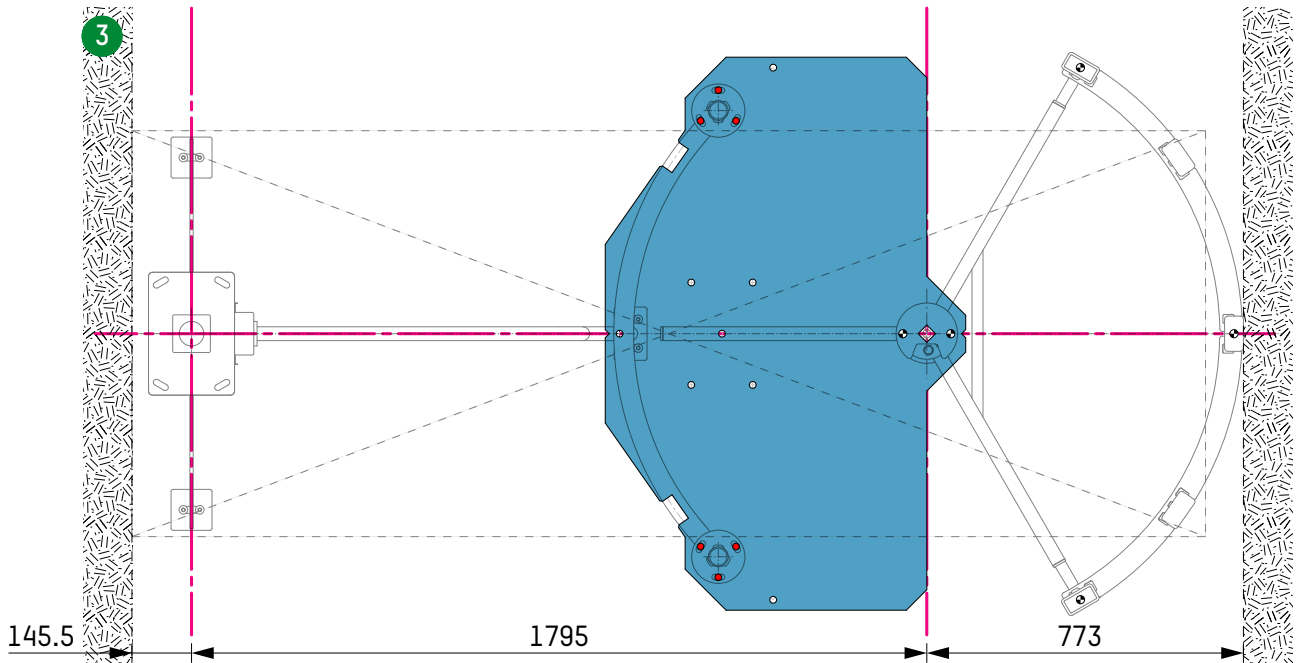


Fig. 22 - Drilling template (GAB-E-0113963) - Drawing the fixing points of the handrail (Step 3)

- Still using the main axes, now place the drilling template to determine the fixing points of the BIKE side upright:

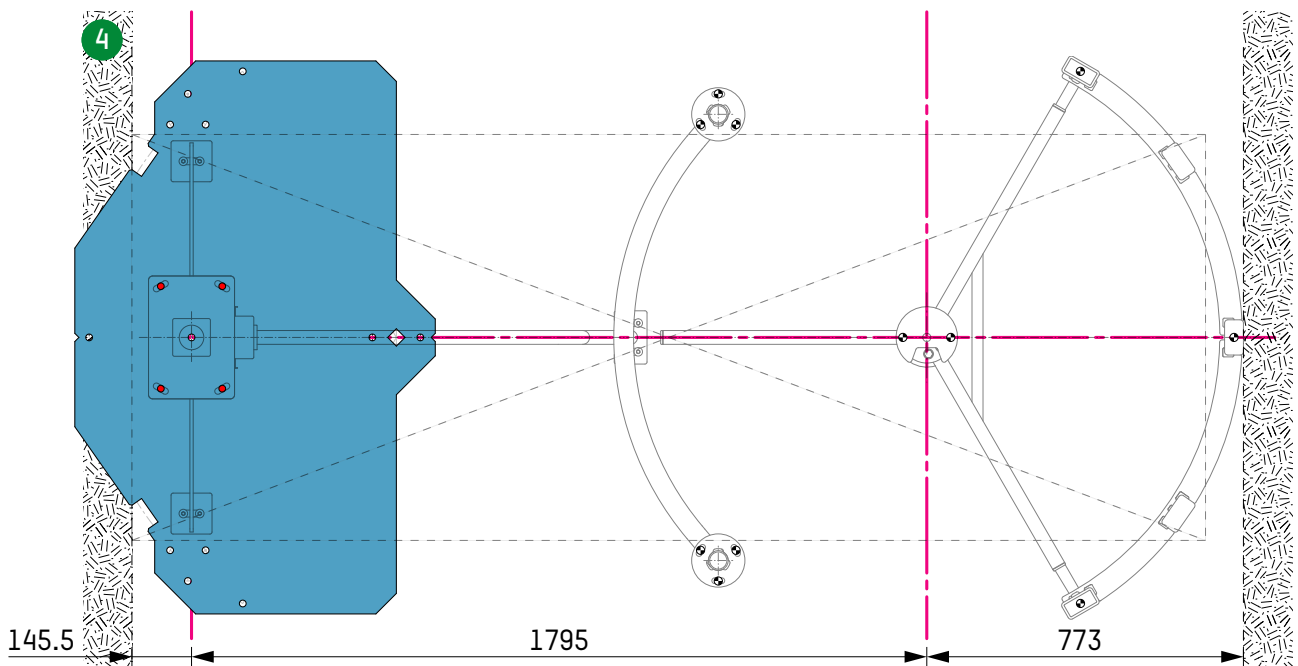


Fig. 23 - Drilling template (GAB-E-0113963) - Drawing the BIKE fixing points (Step 4)

7. When using anchor bolts (expandable (recommended type: model B15/30, ref. -/3413/000) or chemical) supplied by Automatic Systems, drill holes \varnothing 15 mm and 85 mm deep.

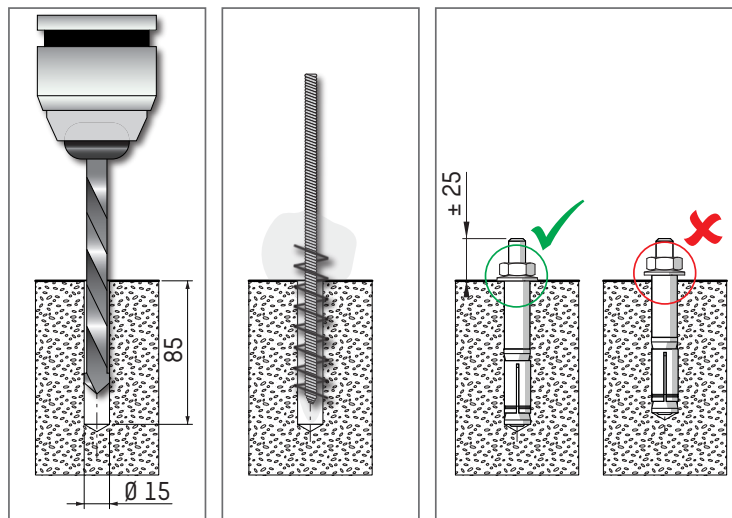


Fig. 24 - Recommended drilling for expanding bolt model B15/13 supplied by Automatic Systems



ALTHOUGH THE ANCHOR BOLTS SUPPLIED BY AUTOMATIC SYSTEMS ARE SUITABLE FOR MOST CONFIGURATIONS, IT IS ESSENTIAL TO ADAPT THE FIXING METHODS AND PROCEDURE TO THE ENVIRONMENT AND THE NATURE OF THE FLOOR ON WHICH THE EQUIPMENT WILL BE PLACED AND TO HAVE THE WORK VALIDATED BY A COMPETENT ENGINEER.



CAUTION!

THE EQUIPMENT MUST BE ANCHORED TO THE FLOOR BEFORE MAKING IT ACCESSIBLE TO USERS! AUTOMATIC SYSTEMS CANNOT BE HELD RESPONSIBLE FOR ACCIDENTS OR DAMAGE CAUSED BY INADEQUATE ANCHORING TO THE GROUND.



FOR EACH OF THE FOLLOWING STEPS, IT IS VERY IMPORTANT TO CHECK THAT THE VARIOUS ELEMENTS OF THE EQUIPMENT ARE LEVEL. THE EQUIPMENT'S CORRECT FUNCTIONING DEPENDS ON IT!



To allow the correct adjustment of the different elements when assembling the equipment, we advise you not to tighten the fixing screws.

Properly re-tighten all fasteners once the assembly has been completed and tested.

7.7.2. ASSEMBLY OF THE CURVED SECTIONS

Assemble the curved sections, right and left, using the following fasteners:

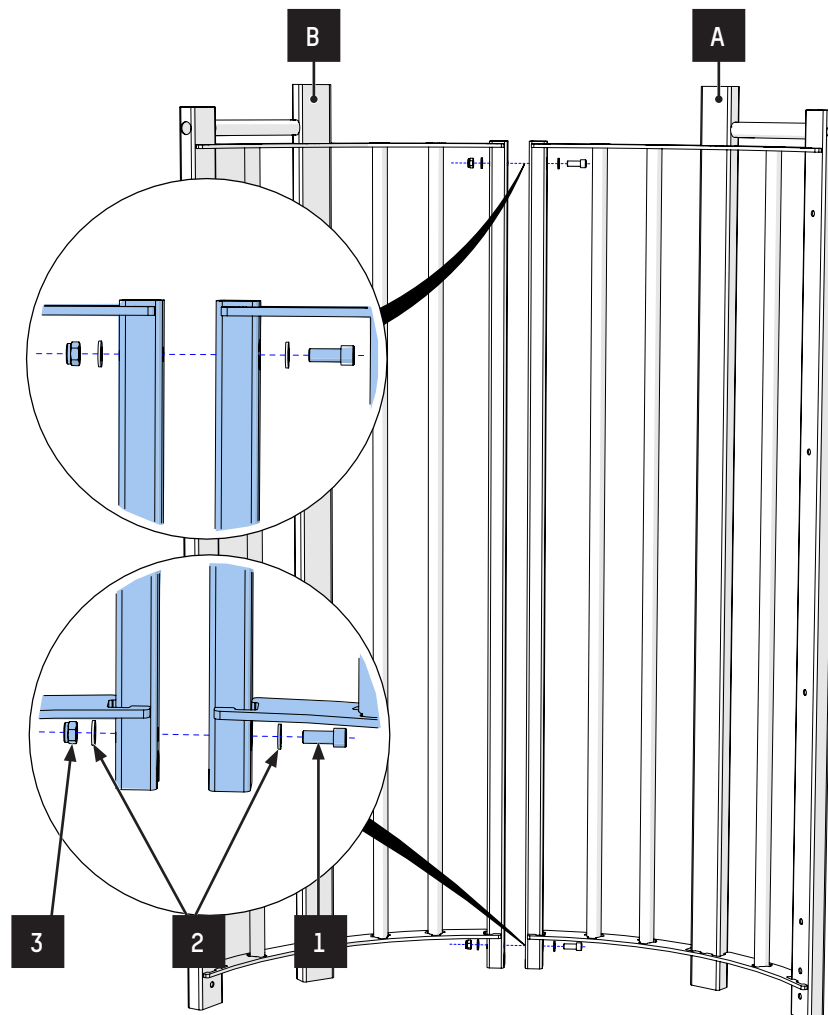


Fig. 25 - Assembly of curved sections

REF.	DESIGNATION	QTY.
A	Right-hand curved section CRA-E-0105208	1
B	Left curved section PAN-E-0114163	1
1	DIN 912 M12 x 30 I/1230/912 stainless steel screw	2
2	Stainless steel washer DIN 125 M12 I/1200/125	4
3	Zinc plated nut DIN 985 M12 I/1200/985	2

7.7.3. INSTALLING THE UPRIGHT GUARDS

The upright guards prevent the uprights from coming into contact with the ground and the top casing.

Five (5) upright guards (1) will be placed at the bottom of each of the uprights of the curved sections in contact with the ground and two (2) upright guards will be placed at the top so as not to damage the top casing.

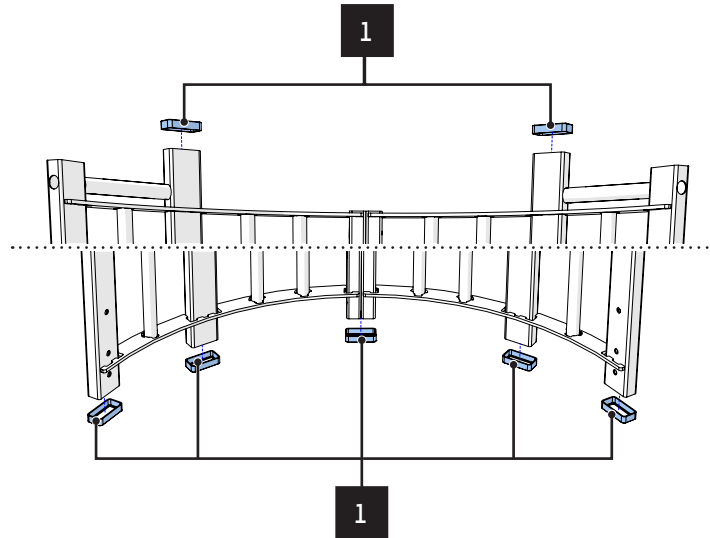


Fig. 26 - Installing the upright guards

REF.	DESIGNATION	QTY.
1	Upright guard BCH-E-0114169	7

7.7.4. FITTING THE CURVED SECTIONS USING THE FINISHED FLOOR FIXING KIT

The curved sections (A) are fixed to the floor at three points using the finished floor fixing kit (C).

1. Pre-install the clamps (1) in the uprights (1) and (3) using the screws provided (2).
2. Loosen the screw of the central lower part of the curved parts (where the two curved parts are held together (2)).
3. Align the uprights (1, 2) of the curved parts (3) (A) with the fixing rails (B) or (C).
4. Tighten the screws loosely.

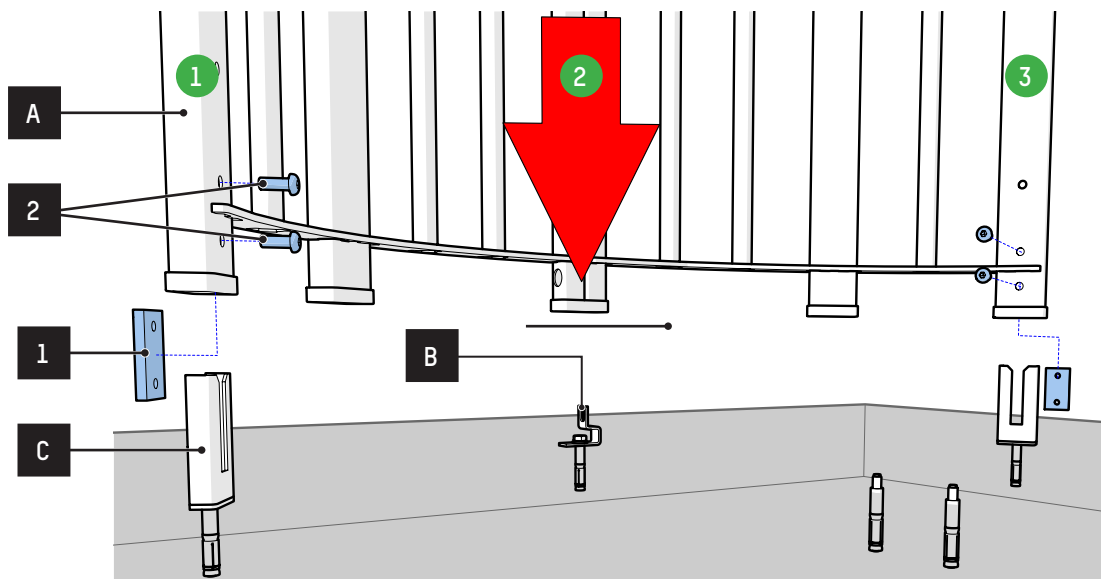


Fig. 27 - Installation with a finished floor fixing kit

7.7.5. INSTALLING THE FIXED COMB ON THE CURVED SECTION

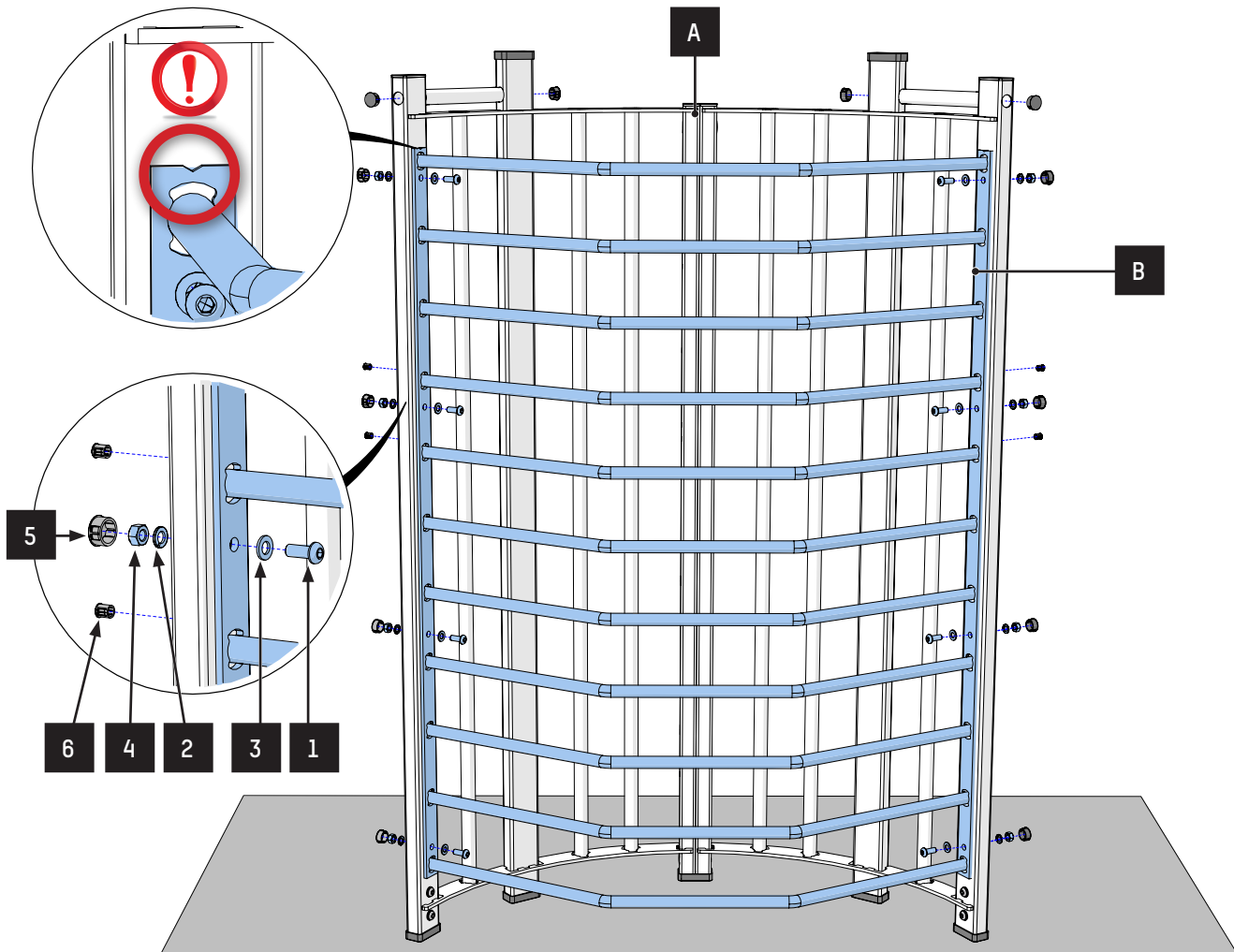


Fig. 28 - Fitting the fixed comb



THE 'V' SHAPED NOTCHES ON THE VERTICAL PLATES OF THE FIXED COMB MUST BE POSITIONED AT THE TOP OF THE TRS BIKE (UNDER THE TOP CASING).

REF.	DESCRIPTION	QTY.	REF.	DESCRIPTION	QTY.
A	Curved parts	1	3	Zinc-plated flat washer DIN 125 M12 Z/1200/125	8
B	Fixed comb OBA-E-0103683	1	4	Zinc-plated nut DIN 934 M12 Z/1200/934	8
1	ISO 7380 M12 x 30 stainless steel screw I/1230/7380	8	5	Black plug (Ø EXT. 30.9)	8
2	Grower Zinc-plated Washer DIN 127 M12 Z/1200/127	8	6	Black slotted mushroom-head plug M6 x 16	2

The fixed comb (B) is assembled on the curved sections (A) using the fixing components (1), (2), (3), (4) and (5) shown in the diagram above.

Refer to the Fig. 28 for the positioning of the fixing components.



The plugs (5) and (6) should only be fitted if the reader box option has not been selected.

7.7.6. INSTALLING THE TURNSTILE

1. Fix the upright to the floor, checking that it is vertical. Do not forget to insert the power and control cables into the upright.

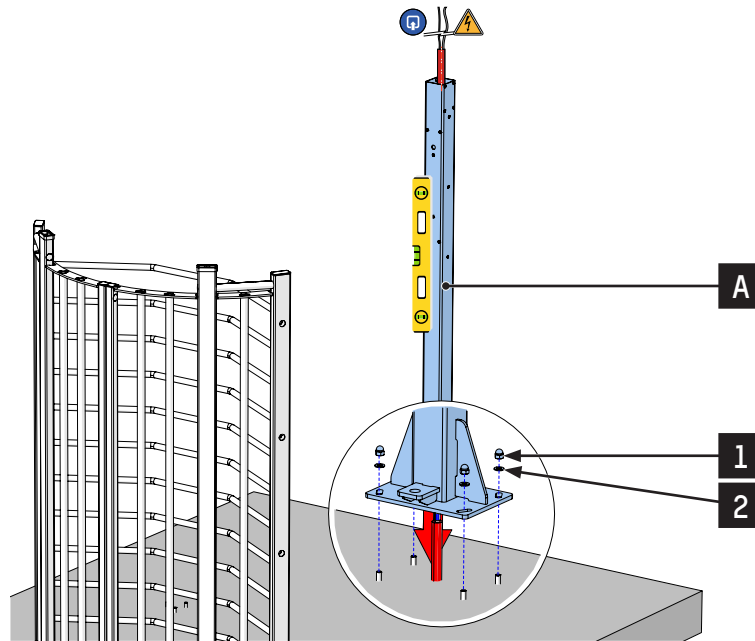


Fig. 29 - Fitting the upright

REF.	DESIGNATION	QTY.
A	Upright	1
1	Stainless steel cap nut DIN 1587 M12 I/1200/1587	4
2	Flat stainless steel washer DIN 125 M12 I/1200/125	4

2. Attach the two gusset plates (A) to the upright using the screws provided (1). Do not tighten fully to make it easier to adjust the components.

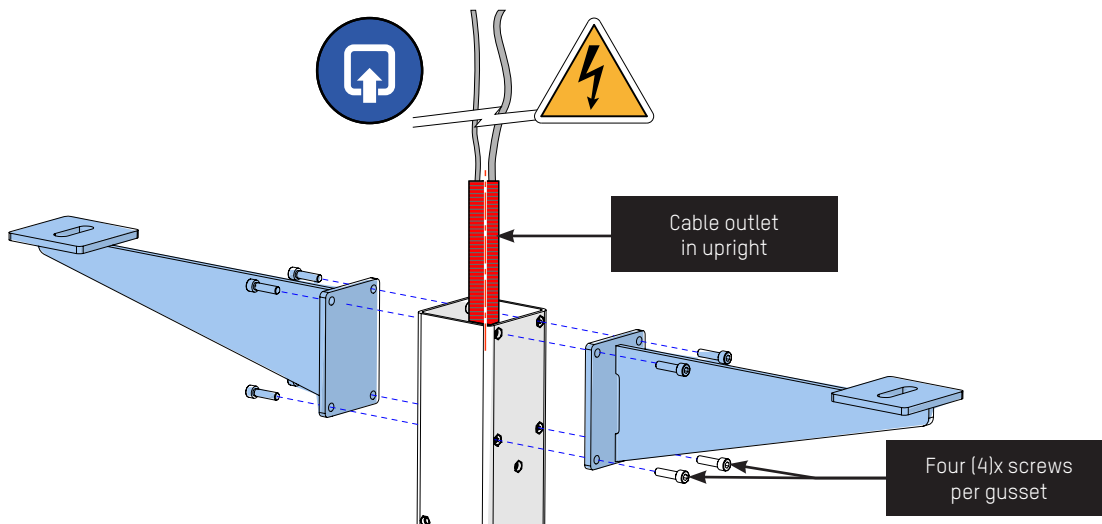


Fig. 30 - Fixing the gusset plates to the upright

REF.	DESIGNATION	QTY.
A	Gusset plate for connecting upright to top housing	2
1	Stainless steel screw DIN 912 M8 x 30 I/1230/912	8

7.7.7. ATTACHING THE TOP CASING



The top casing is delivered on a pallet and must be turned over before it can be fitted.

Use appropriate protective equipment to avoid damaging the housing during this operation.



DO NOT OVERTIGHTEN THE TOP CASING SCREWS! THESE WILL BE TIGHTENED ONCE THE GATE AND SHAFTS HAVE BEEN FITTED.

1. Using a forklift truck with protected forks, place the top casing (A), without the canopy, on the curved parts (B) and the gusset plates (C). Do not forget to insert the power and control cables into the housing.
 - The frame of the top casing is connected:
 - to each of the gusset plates using screws (1), washers (2) and nuts (3)
 - to the curved parts, using screws (4), Grower washers (5) and flat washers (6)

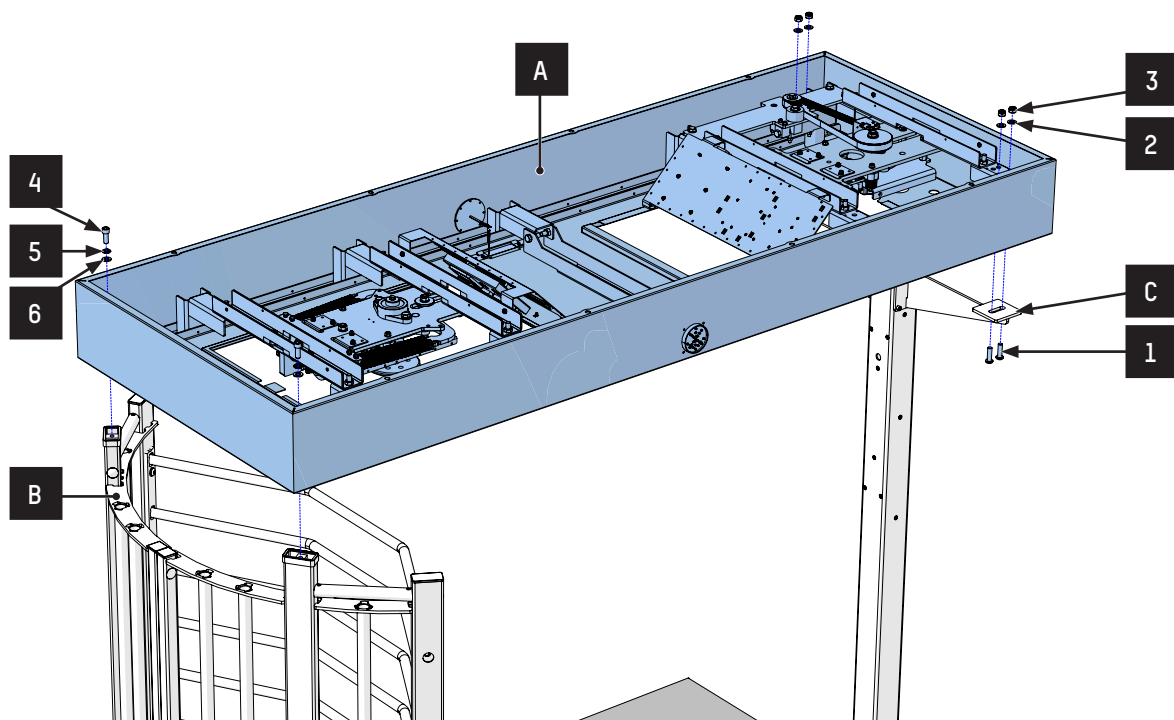


Fig. 31 - Attaching the top casing

REF.	DESIGNATION	QTY.
A	Top casing	1
B	The curved parts	1
C	Gusset plates	2
1	ISO 7380 stainless steel screw – M12 x 30	4
2	Flat stainless steel washer DIN 125 M12	4
3	Stainless steel lock nut M12 DIN 985	4
4	Stainless steel screw DIN 912 – M12 x 30	2
5	Grower zinc plated washer DIN 127 M12	2
6	Flat stainless steel washer DIN 125 M12	2

2. Check that the curved parts and the upright are vertical and that the top casing is horizontal.
3. Pass the function pictogram management cable through the upright.

7.7.8. FITTING THE LED SUPPORT ON THE UPRIGHT OF THE MOVABLE BARRIER 900 (BIKE)

1. First, attach the 2 LED brackets (B) to the upright (A) using the screws (1) and the washers (2).

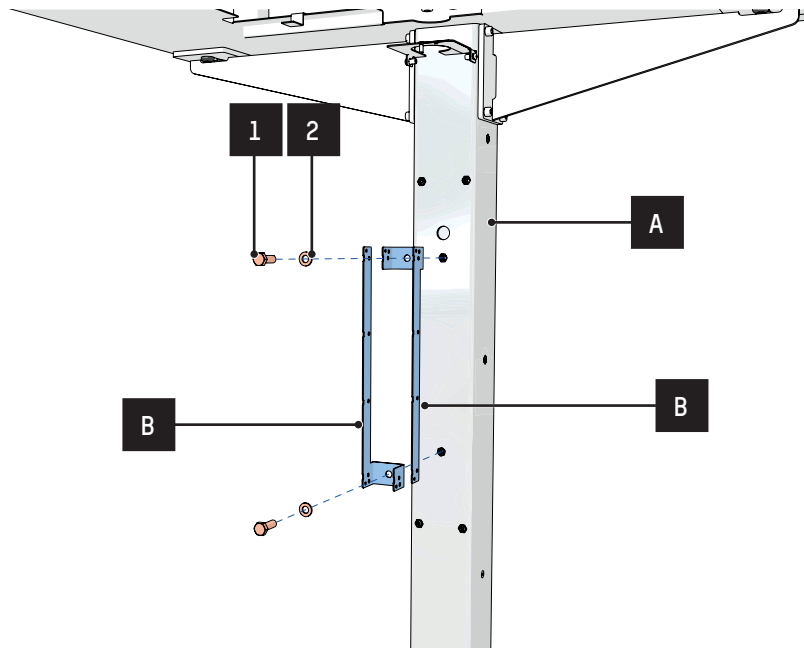


Fig. 32 - Fitting the LED brackets

2. Then insert the two (2) aluminium blind rivets (3) through the two (2) LED brackets (B) to secure them.
3. Using double-sided tape, stick the 2 LED strip assemblies (C) onto their respective brackets (B). You may also want to use ties to hold the LED strips in place.

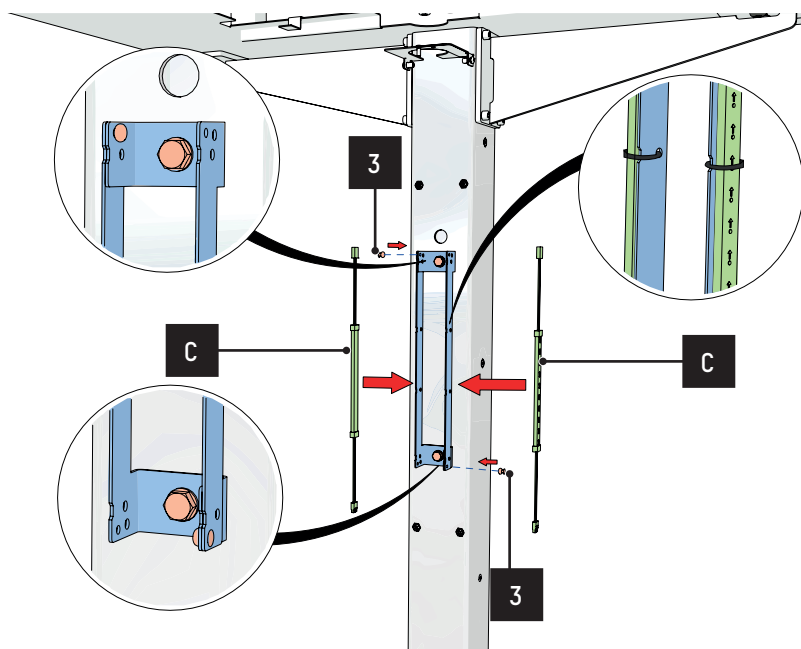
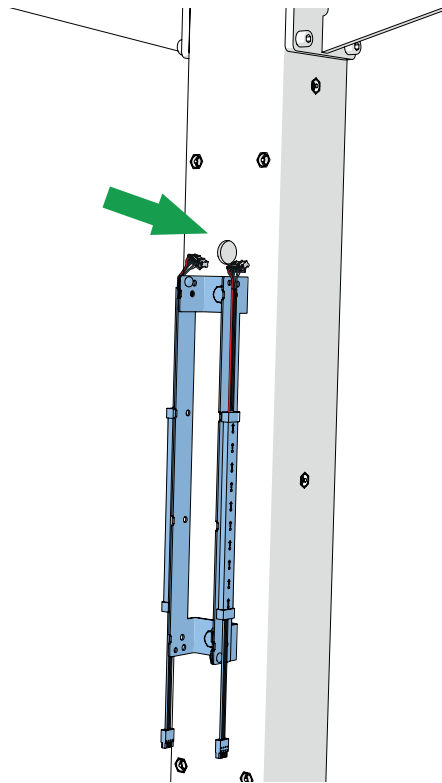


Fig. 33 - Attaching the LED strips

- Run the connecting cables of the pictograms through the hole provided in the upright. Run the cables up into the top casing.



- Connect the pictogram cables to their respective connectors (**CN10** & **CN11**) on the AS1635 board.



Refer to the Electrical Technical File (ETF) for the correct connection of the cables.

REF.	DESIGNATION	QTY.
A	Upright	1
B	LED support SUP-E-0111881	2
C	Function pictogram LED strip set PCT-E-0101932	2
1	Hexagon head screw fully threaded DIN 933 M08	2
2	Flat washer DIN 125 M08	2
3	Aluminium blind rivet 4x10	2

7.7.9. INSTALLING THE MOVING BARRIER PASSAGE 900 (BIKE)

1. Taking into account the weight of the moving barrier, check the rigidity of the assembly formed by the top casing and the two uprights.
2. Insert the lower part of the moving barrier (A) into the bronze ring (C) located at the base of the upright (D).
3. Keeping the moving barrier in the closed position, fit the flange securing the moving barrier (E) under the coupling flange of the mechanism (B). **Check that it is level in all directions!**

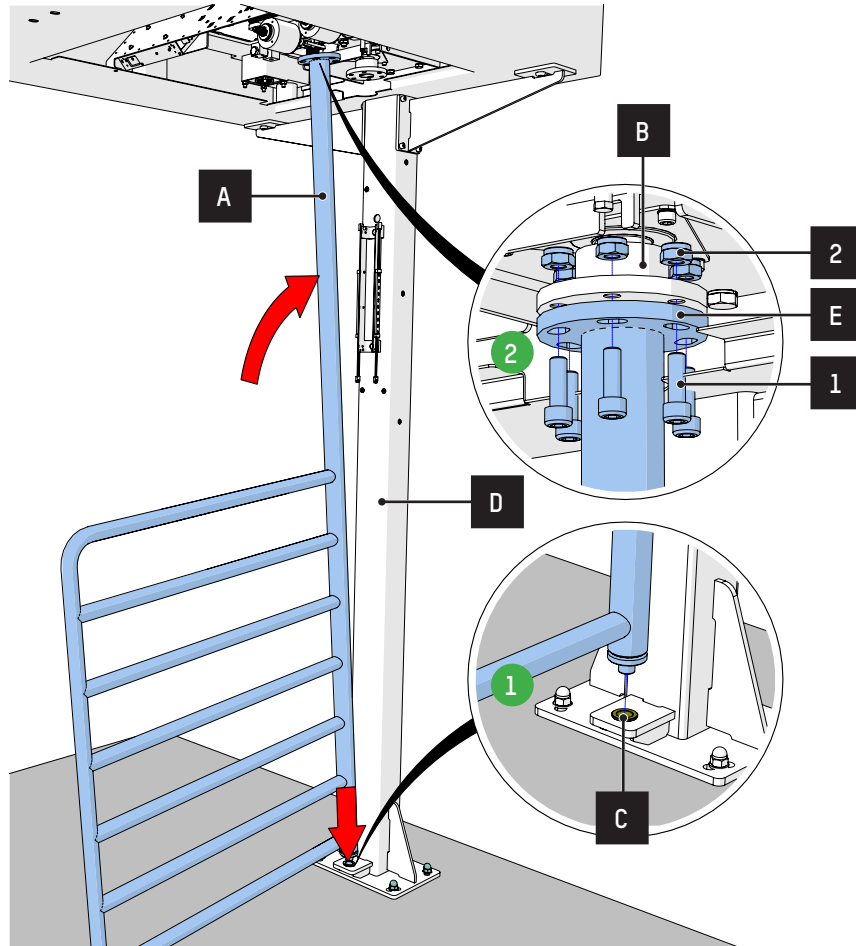


Fig. 34 - Installing the moving barrier (bike)

REF.	DESIGNATION	QTY.
A	Moving barrier	1
B	Mechanical coupling flange	1
C	Bronze ring	1
D	Upright	1
E	Mounting flange for moving barrier	1
1	Zinc-plated screw DIN 912 M10 x 30 (Class 12.9)	6
2	Stainless steel lock nut M10 DIN 985	6

4. Assemble the flanges (B) and (E) using screws (1) and nuts (2).



The coupling flange can be fitted loosely. It can then be adjusted up and down to position the moving barrier correctly.

5. Make a few movements with the moving barrier to check that everything is working properly.

7.7.10. INSTALLING THE LOWER SHAFT FOR THE TRS MOVING BARRIER (PEDESTRIANS)

Fit the lower shaft (1) on the central fixing points, as defined in chapter 7.7, page 28, and secure it with the nuts (2) and washers (3) provided.

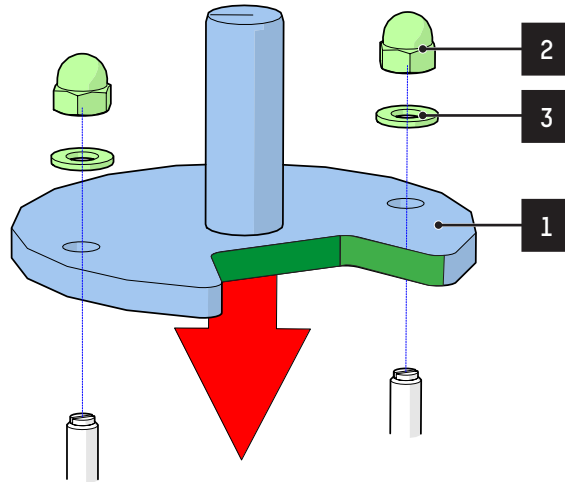


Fig. 35 - Fitting the lower axle of the TRS moving barrier

REF.	DESIGNATION	QTY.
1	Lower shaft pivot for TRS moving combs	1
2	Stainless steel cap nut DIN 1587 M12	2
3	Flat stainless steel washer DIN 125 M12	2



The cut-out in the base plate of the lower shaft, shown in green in the figure above, allows the screws to pass through when fitting the moving combs.

7.7.11. FITTING THE LOWER FLANGE



The lower flange (1) should be fitted loosely on the shaft (2). It can then be adjusted up and down to position the moving barrier correctly.

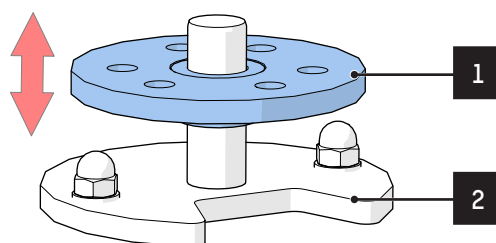


Fig. 36 - Fitting the lower flange of the TRS moving barrier

REF.	DESIGNATION	QTY.
1	3-arm lower flange	1
2	Lower shaft pivot for TRS moving combs	1

7.7.12. INSTALLING THE MOVING BARRIER

1. After placing the lower flange (3) on the lower shaft (4), orient it so that the fixing holes of the moving comb are positioned above the cut-out in the lower shaft (red area in the images below).
2. In the upper part, position the first movable comb (1) level with the rotor (2) and insert 2 screws (5) through the washers (6) over the plate of the upper shaft into the holes in the moving comb. Tighten the screws.
3. In the lower part, position the mobile comb above the lower flange (3) previously positioned on the lower shaft (4).
4. Align the mounting holes in the flange with the cut-out in the lower shaft, and insert the screws (5) through the washers (6) into the corresponding holes in the mobile comb. Tighten the screws.
5. Rotate the installed moving comb by $\pm 120^\circ$, then fit the second and third combs as described above.

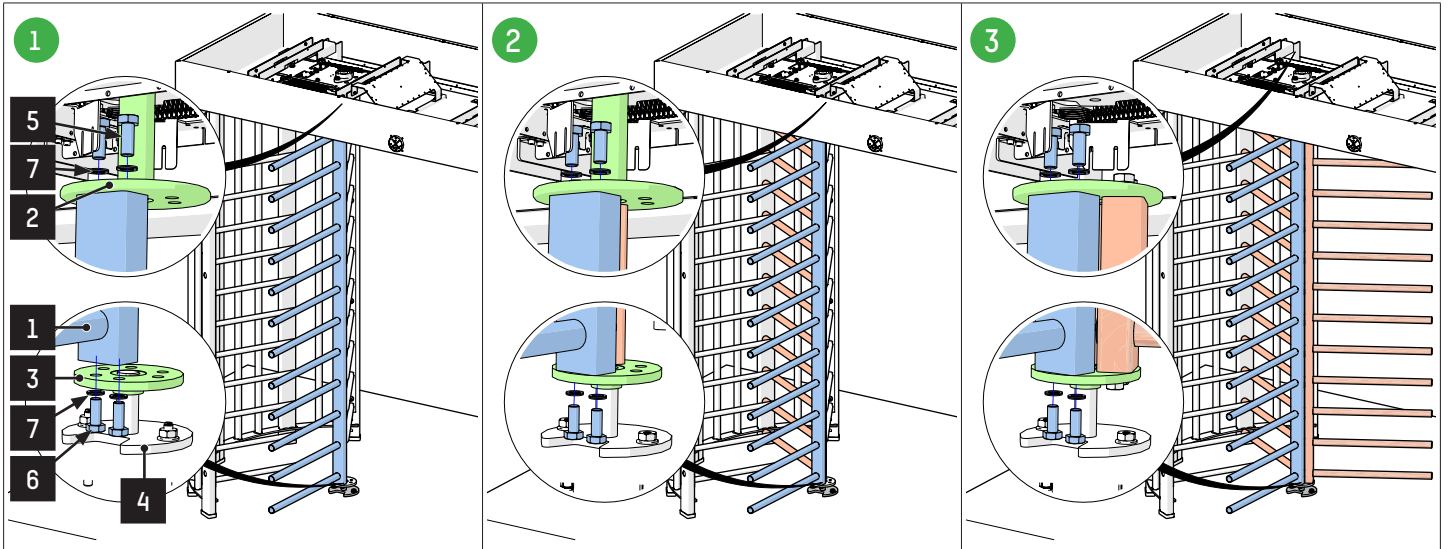


Fig. 37 - Fitting the moving combs

REF.	DESIGNATION	QTY.
1	Moving comb OBA-E-0103739	1
2	3-arm rotor AEM-E00735	1
3	3-Arm lower flange OIA-E-0000035	1
4	Lower shaft pivot for TRS movable combs OIA-E04726	1
5	DIN 933 M12 x 30 thread lock stainless steel screw L/1230/933	8*
6	DIN 933 M12 x 25 full thread stainless steel screw L/1225/933	8*
7	Nordlock stainless steel washer M12 E/7001/901	13*
8	Black plug 32mm Ø/7000/353	36

* The quantity supplied is greater than required in the event of loss or error during assembly.



A screw with thread lock (pre-coated) is a screw whose thread is coated with a special nylon or highly reactive sealant to add excellent locking and sealing properties.



SCREWS WITH THREAD LOCK (PRE-COATED) ARE FOR SINGLE USE ONLY. ONCE REMOVED, THEY MUST BE REPLACED BY NEW SCREWS!

6. Fit the plugs (8) on each of the moving comb tubes.

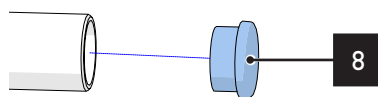


Fig. 38 - Fitting the plugs onto the moving combs

7.7.13. FITTING THE HOUSING ON THE SHAFT OF THE MOVING BARRIER PASSAGE 900 (BIKE)

1. First, attach the two brackets (B) to the upright using the screws (1) and washers (2).
2. Then attach the casing (A) to the upright using the six (6) screws (3).

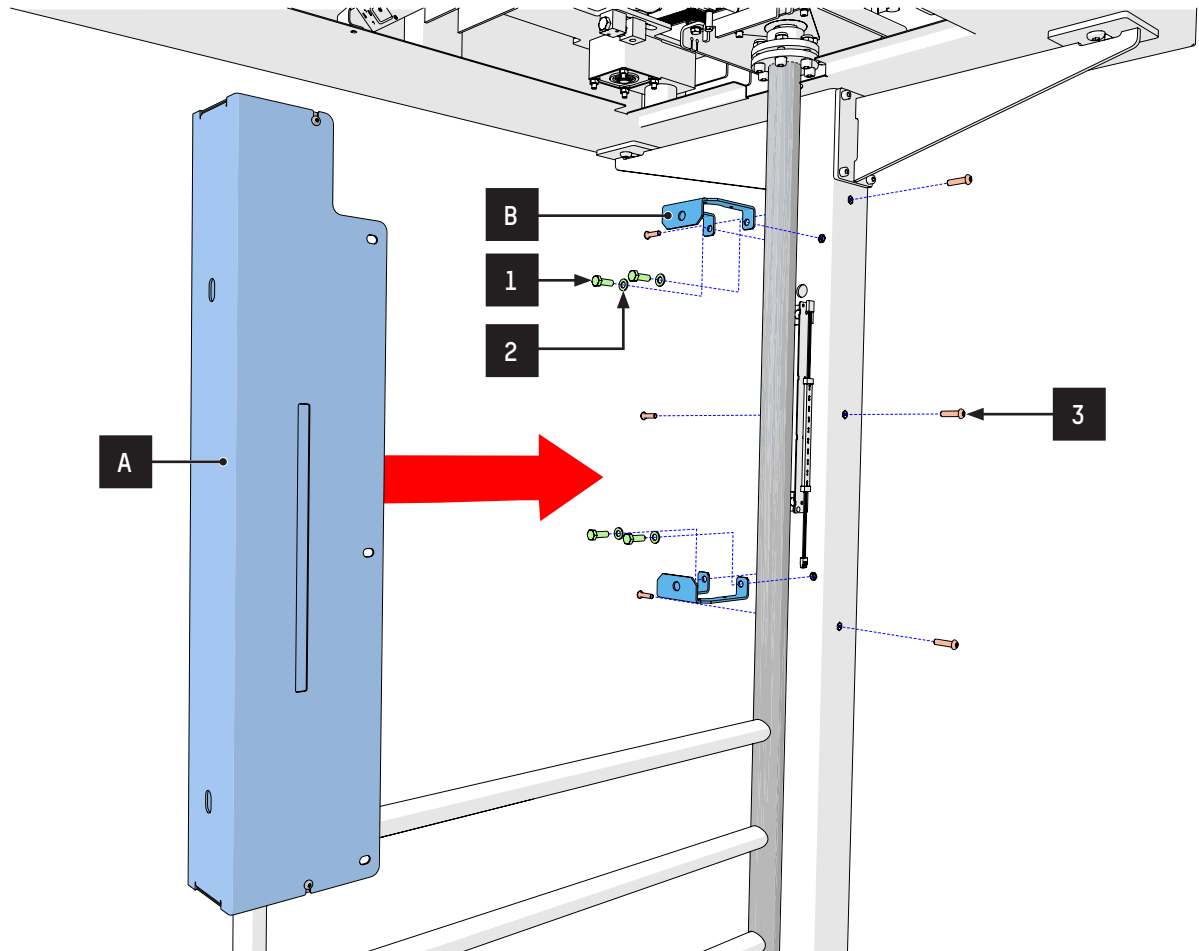


Fig. 39 - Fitting the housing

REF.	DESIGNATION	QTY.
A	CPA-E-0103818 Gate shaft housing	1
B	Housing bracket SPT-E-0103823	2
1	Stainless steel screw A4 DIN 933 M8 x 25 I/0825/933	4
2	Stainless steel washer DIN 125 M8 I/0800/125	4
3	ISO 7380 M8 x 20 stainless steel screw I/0820/7380	6

7.7.14. INSTALLING THE FIXED BARRIER PASSAGE 900 (BIKE)

1. Once the shaft housing has been fitted, install the fixed upper barrier.
2. Use the long screws (1) to secure the upper part of the barrier (A) to the top casing.
3. Use the short screws (2) to secure the barrier to the housing.

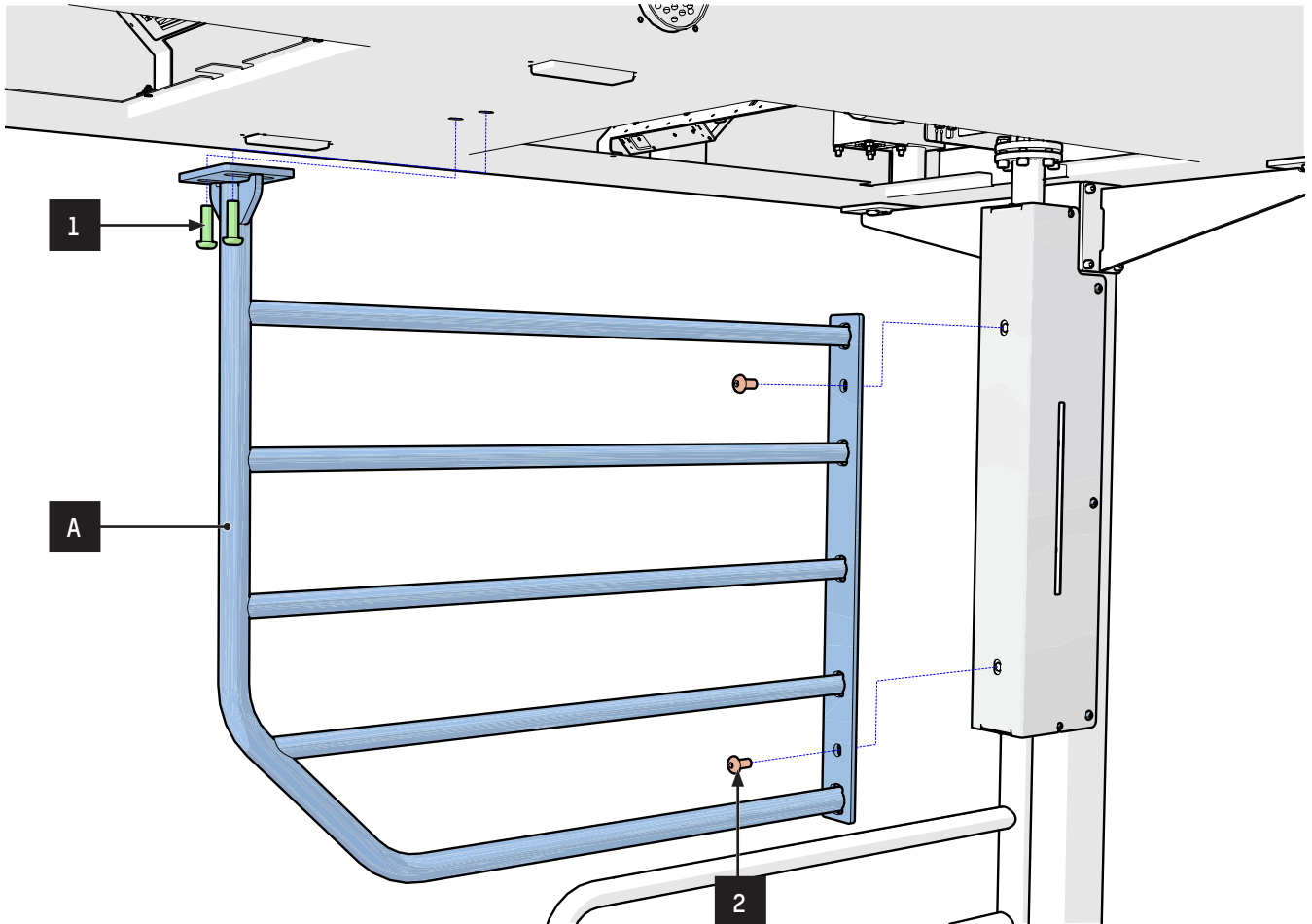


Fig. 40 - Installing the fixed barrier (bike)

REF.	DESIGNATION	QTY.
A	Upper fixed barrier passage 900 OBA-E-0104111	1
1	ISO 7380 M12 x 40 stainless steel screw I/1240/7380	2
2	ISO 7380 M12 x 25 stainless steel screw I/1225/7380	2


ONCE THE FIXED BARRIER HAS BEEN FITTED:

- **ADJUST THE ALIGNMENT OF THE MOVING BARRIER IN RELATION TO THE FIXED BARRIER AND THE MOBILE COMBS BY ADJUSTING THE SIX (6) SCREWS (⇒REF. 1, FIG. 34, PAGE 38).**
- **CHECK THE LEVELLING ONE LAST TIME AND TIGHTEN ALL THE FASTENERS (MECHANISM - CASING - BARRIER) CORRECTLY.**

7.7.15. FITTING THE HANDRAIL

1. Place the handrail (A) on the floor, with the upper arch pointing towards the bicycle lane, aligning the three (3) fixing holes in each of its base plates with the fixing points on the floor.
2. Attach the railing using washers (2) and cap nuts (1).

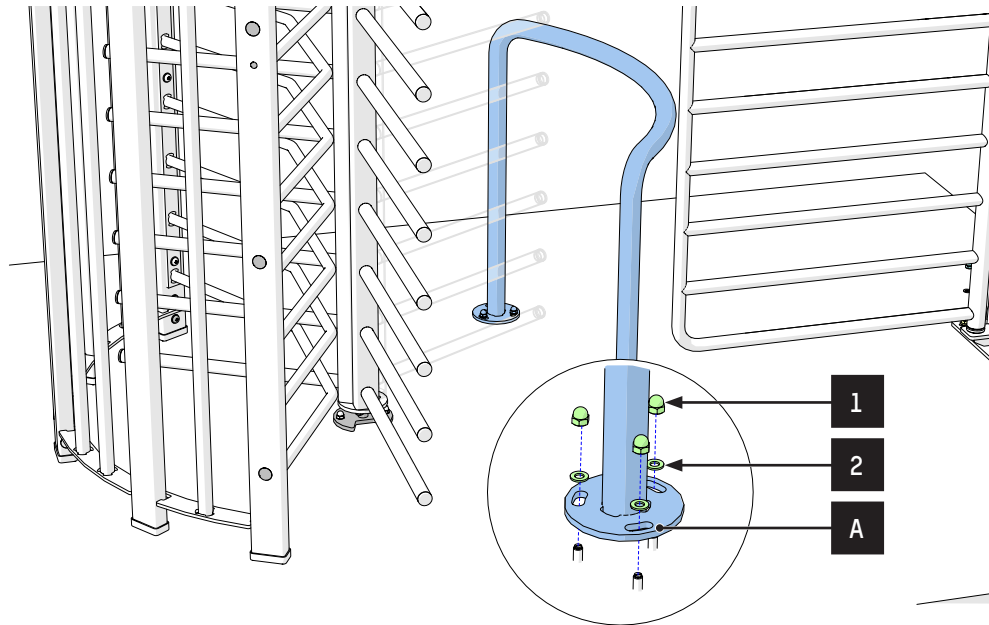


Fig. 41 - Fitting the handrail

REF.	DESIGNATION	QTY.
A	Handrail OBA-E-0103682	1
1	DIN 1587 cap nut M10 I/1000/587	2
2	Stainless steel washer DIN 125 M10 I/1000/125	2

7.7.16. ATTACHING THE CANOPY

The canopy (A) is secured using nuts (1) and washers (2).

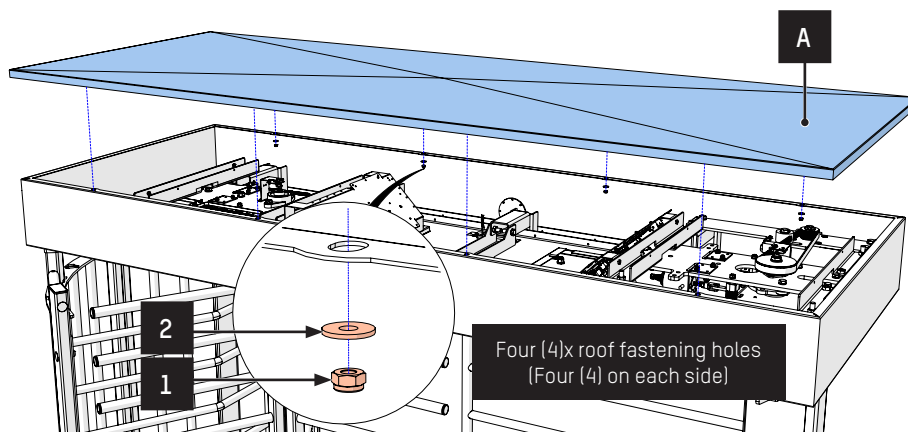



Fig. 42 - Attaching the canopy

REF.	DESIGNATION	QTY.
A	Top casing canopy CSA-E-0104155	1
1	Lock nut DIN 985 M6 I/0600/985	8
2	Wide flat washer DIN 9021 M6 Z/0600/021	8

7.7.17. FITTING/REMOVING THE GATE ON THE TRS SIDE

<p>Fitting the gate:</p> <ol style="list-style-type: none"> 1. Insert the gate into the cut-out in the casing and overlap the fold of the gate with the fold of the casing. 2. While pushing the gate, tilt it towards the casing so that it fits into the cut-out. 3. Once correctly positioned, turn the key 180° clockwise to lock the gate. <p>Fig. 43 - Installing the gate (Bicycle side)</p>	<p>Removing the gate:</p> <ol style="list-style-type: none"> 1. Turn the key 180° anti-clockwise while supporting the gate. 2. Then let the gate swing down on its own. 3. While supporting the gate, pull it towards you to release it from its position in the casing and remove it. <p>Fig. 44 - Removing the gate (Bicycle side)</p>
---	--

7.7.18. FITTING/REMOVING THE GATE ON THE BIKE SIDE

 Compared with the TRS-side gates, this gate has two locks. However, it is possible to carry out the fitting/removal operation using a single key, by operating one lock and then the other.

<p>Fitting the gate:</p> <ol style="list-style-type: none"> 1. Making sure that the rounded cut-out in the gate is aligned with the shaft of the passage 900 barrier, fit the gate into the cut-out in the casing and overlap the fold in the gate with the fold in the casing. 2. While pushing the gate, tilt it towards the casing so that it fits into the cut-out. 3. Once correctly positioned, turn the keys 180° clockwise to lock the gate. <p>Fig. 45 - Installing the gate (Bicycle side)</p>	<p>Removing the gate:</p> <ol style="list-style-type: none"> 1. Turn the key 180° anti-clockwise while supporting the gate. 2. Then let the gate swing down on its own. 3. While supporting the gate, pull it towards you to release it from its position in the casing and remove it. <p>Fig. 46 - Removing the gate (Bicycle side)</p>
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7.8. INSTALLATION PROCEDURE USING ANCHORING FRAME (OPTIONAL)

7.8.1. PREPARING FOR INSTALLATION WITH AN ANCHORING FRAME

1. Provide sheathing (not supplied by AS) for the power supply cables and any remote controls at the locations shown on the installation plan (CH10574). Provide 3 m of spare cable above the floor, with connections made in the top casing.
2. Prepare the pit or formwork for the concrete slab.

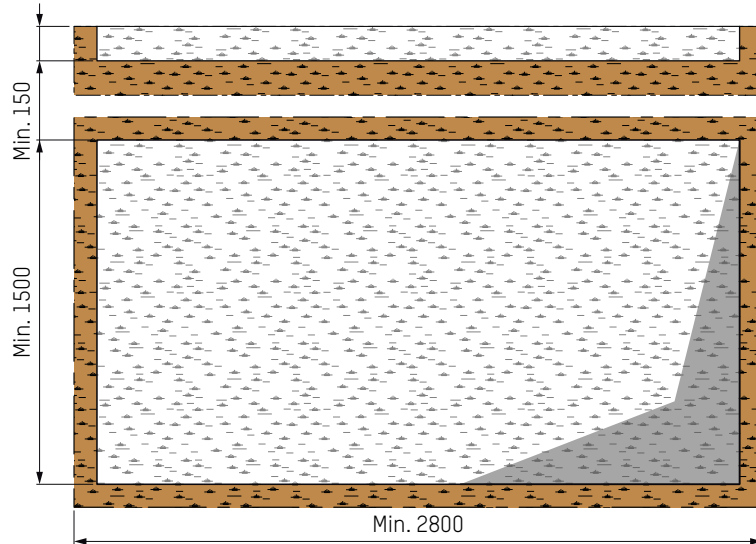


Fig. 47 - Pit dimensions

3. Assemble the different parts of the anchoring frame using screws and washers provided

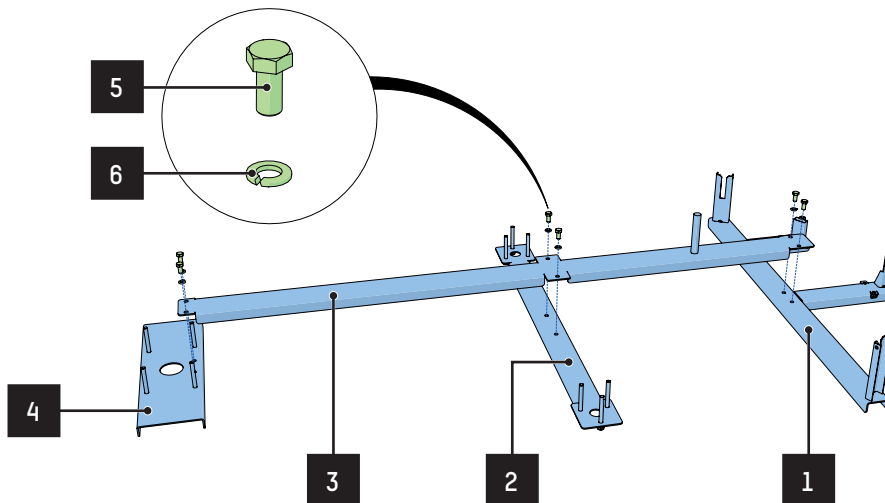


Fig. 48 - Anchoring frame assembly (GBR-E-0105190)

REF.	DESIGNATION	QTY
1	ANCHORING FRAME (2) TRS370 GBR-E-0105187	1
2	TRSBK ANCHORING FRAME (3) GAB-E-0114122	1
3	TRSBK ANCHORING FRAME (4) GBR-E-0105188	1
4	TRSBK ANCHORING FRAME (2) GAB-E-0114118	1
5	DIN 933 M12 x 25 I/1225/933 STAINLESS STEEL SCREW	6
6	ZINC-PLATED GROWER WASHER DIN 127 M12 Z/1200/127	6

4. Check that the elements of the anchoring frame are perpendicular to centre-to-centre distance between the moving barrier and the upright:

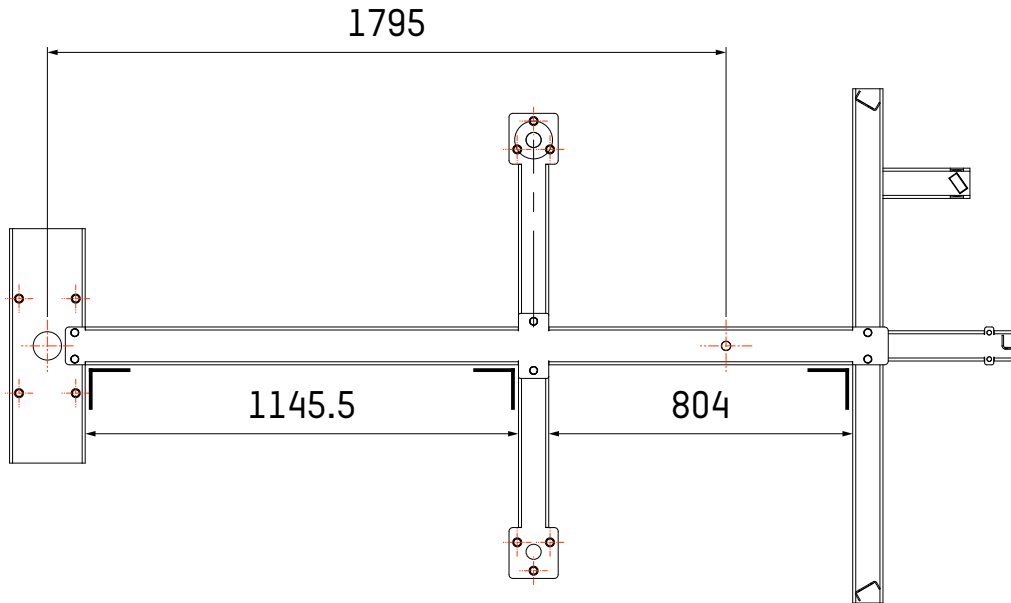


Fig. 49 - Centre-to-centre distances for anchoring frame

5. Place the anchoring frame in the pit:
- Checking that its orientation is correct according to the direction of flow.
 - Passing the sheaths of the power supply and remote control cables through the uprights.
 - Ensuring that the anchoring rails are sunk in relation to the finished floor level as shown on the installation plan (the painted part of the rails must remain out of the concrete).

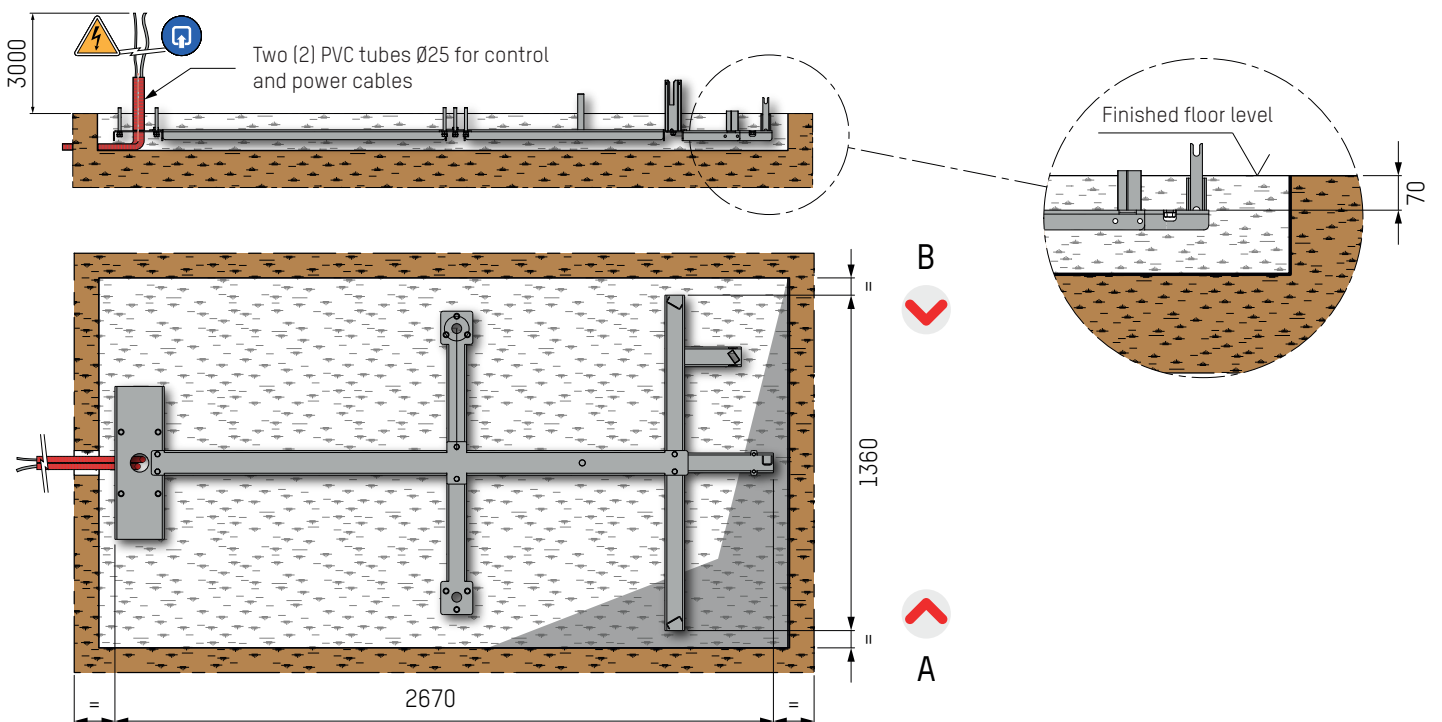


Fig. 50 - Placing the anchoring frame in the pit

6. Taking care to protect the threaded rods, the central shaft and the anchoring rails, pour standard concrete.

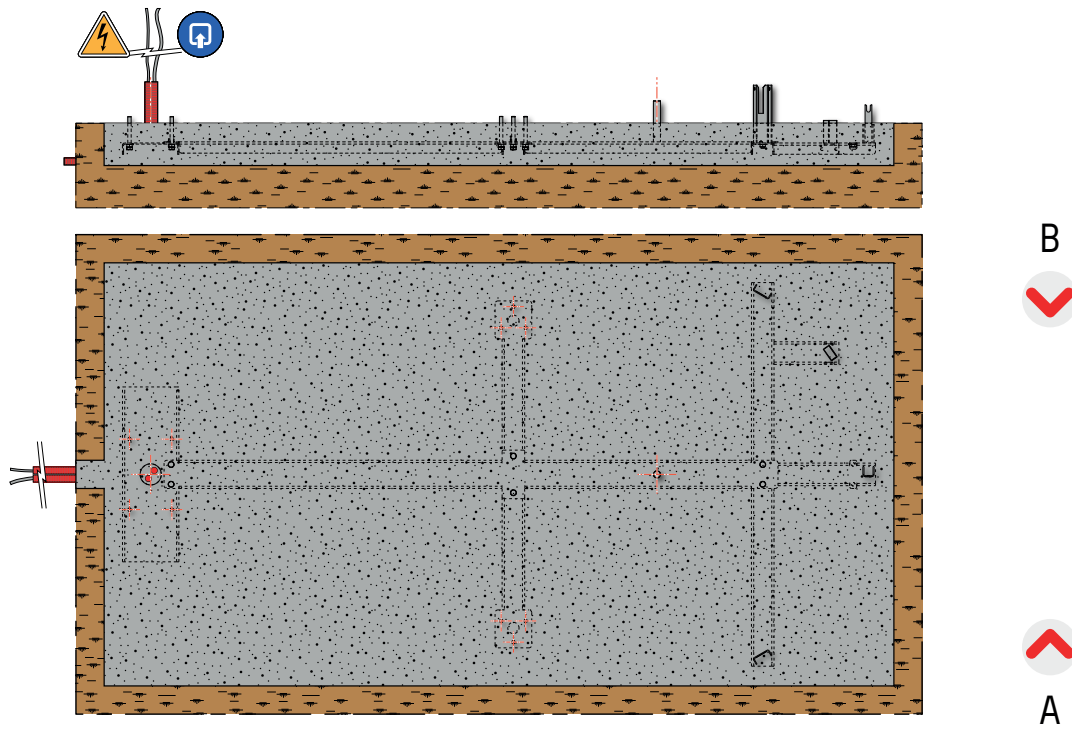


Fig. 51 - Laying the anchoring frame - Concrete

7. Smooth the concrete and leave to dry for about a week.

7.8.2. INSTALLATION ON OPTIONAL ANCHORING FRAME



FOR EACH OF THE FOLLOWING STEPS, IT IS VERY IMPORTANT TO CHECK THAT THE VARIOUS ELEMENTS OF THE EQUIPMENT ARE LEVEL. THE EQUIPMENT'S CORRECT FUNCTIONING DEPENDS ON IT!



To allow the correct adjustment of the different elements when assembling the equipment, we advise you not to tighten the fixing screws.

Properly re-tighten all fasteners once the assembly has been completed and tested.

The following steps are identical to the procedure for installation on a finished floor:

1. ⇒ Chap. 7.7.2. Assembly of the curved sections, page 31.
2. ⇒ Chap. 7.7.3. Installing the upright guards, page 32.
3. ⇒ Chap. 7.7.4. Fitting the curved sections using the finished floor fixing kit, page 32.
4. ⇒ Chap. 7.7.5. Installing the fixed comb on the curved section, page 33.
5. ⇒ Chap. 7.7.6. Installing the turnstile, page 34.
6. ⇒ Chap. 7.7.7. Attaching the top casing, page 35.
7. ⇒ Chap. 7.7.9. Installing the moving barrier passage 900 (bike), page 38.
8. Fitting the lower flange.



The lower flange (1) should be fitted loosely onto the frame pin (2). It can then be adjusted up and down to position the moving barrier correctly.

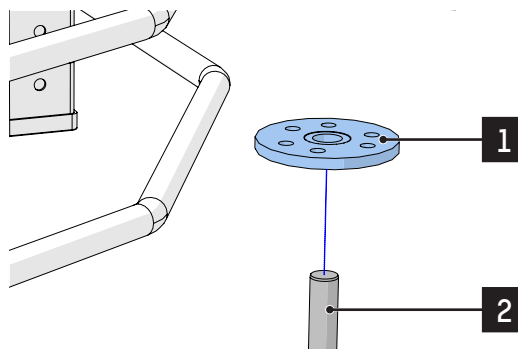


Fig. 52 - Fitting the lower flange of the TRS moving barrier

REF.	DESIGNATION	QTY.
1	Three-arm lower flange	1
2	Anchoring frame pin	1

9. ⇒ Chap. 7.7.12. Installing the moving barrier, page 40.
10. ⇒ Chap. 7.7.13. Fitting the housing on the shaft of the moving barrier passage 900 (bike), page 41.
11. ⇒ Chap. 7.7.14. Installing the fixed barrier Passage 900 (Bike), page 42.
12. ⇒ Chap. 7.7.15. Fitting the handrail, page 43.
13. ⇒ Chap. 7.7.16. Attaching the canopy, page 43.
14. ⇒ Chap. 7.7.17. Fitting/removing the gate on the TRS side, page 44.
15. ⇒ Chap. 7.7.18. Fitting/removing the gate on the bike side, page 44.

7.9. INSTALLATION OF OPTIONAL EQUIPMENT

7.9.1. MOUNTING THE CANOPIES (OPTIONAL)

Drill five (5) holes $\varnothing 8$ mm on each side of the top casing, as shown in to the drawing below:

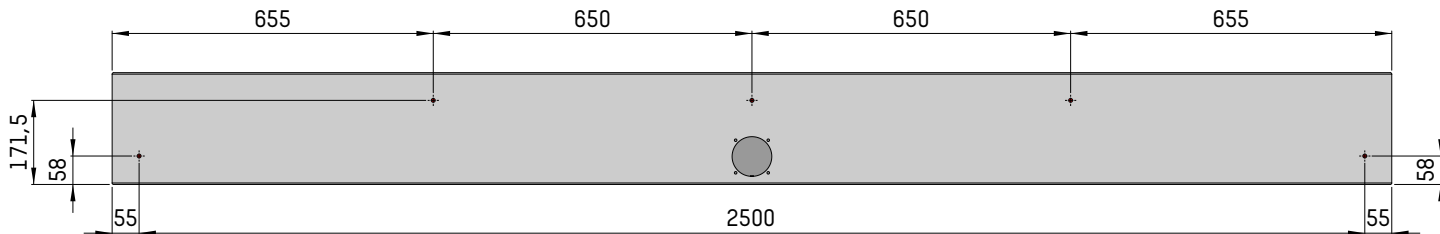
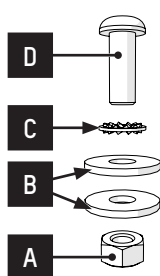
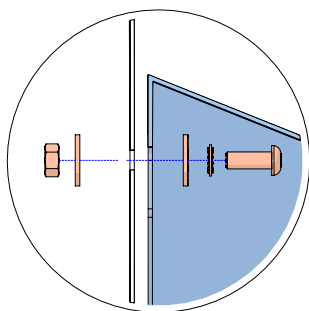


Fig. 53 - Drilling the casing to mount the canopies



A	Stainless steel cap nut A4 DIN 934 M6	10x
B	Flat stainless steel washer DIN 125 M6	20x
C	Stainless steel fan washer DIN 6798 JZ	10x
D	Stainless steel hexagon socket head cap screw M6 x 16	10x



The screws shown above are suitable for mounting two canopies.

To prevent rust, we recommend sealing the contact surface between the casing and the canopy.

- First solution: Apply a bead of silicone to the side of the canopies in contact with the casing before fixing and then attach the canopies using the screws shown in the diagram below.
- Second solution: First secure the canopies with the screws shown in the diagram below and then apply a bead of silicone around the connection between the canopy and the casing.

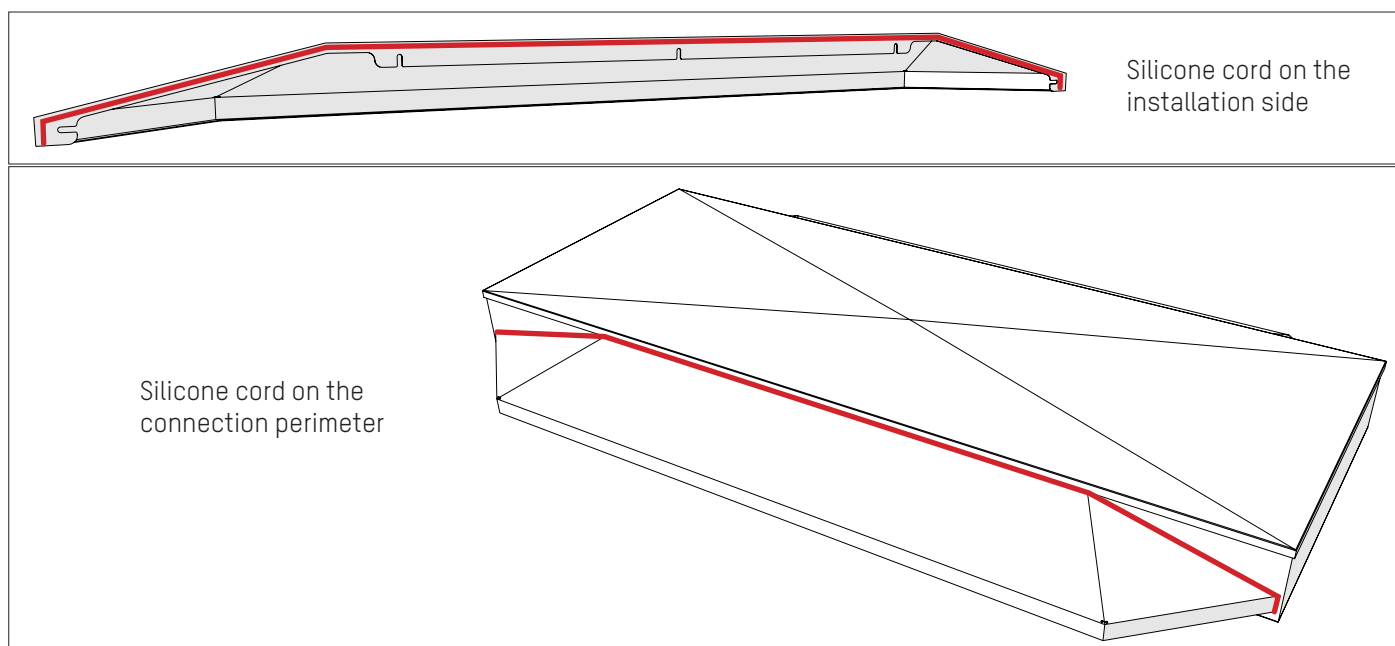


Fig. 54 - Canopy mounting and sealing cord

7.9.2. FITTING THE READER BOX(ES) (OPTIONAL) AME-E-0004603

1. If you have not already done so, remove the sealing plugs from the fixing and cable entry holes on the upright of the curved section.
2. If you have not already done so, pass the reader connection cable into the upright. The cable must connect the reader to the electronics located in the top casing.



REFER TO THE WIRING DIAGRAM(S) SUPPLIED WITH THE EQUIPMENT TO CONNECT THE READER(S).

3. Position the intermediate seal (2) on the upright (A) and fix the reader box (1) using the screws and washers provided (5) + (6) + (7).
4. Position the seal (4) on the reader box and secure the front panel (3) using the stainless steel screws (8).

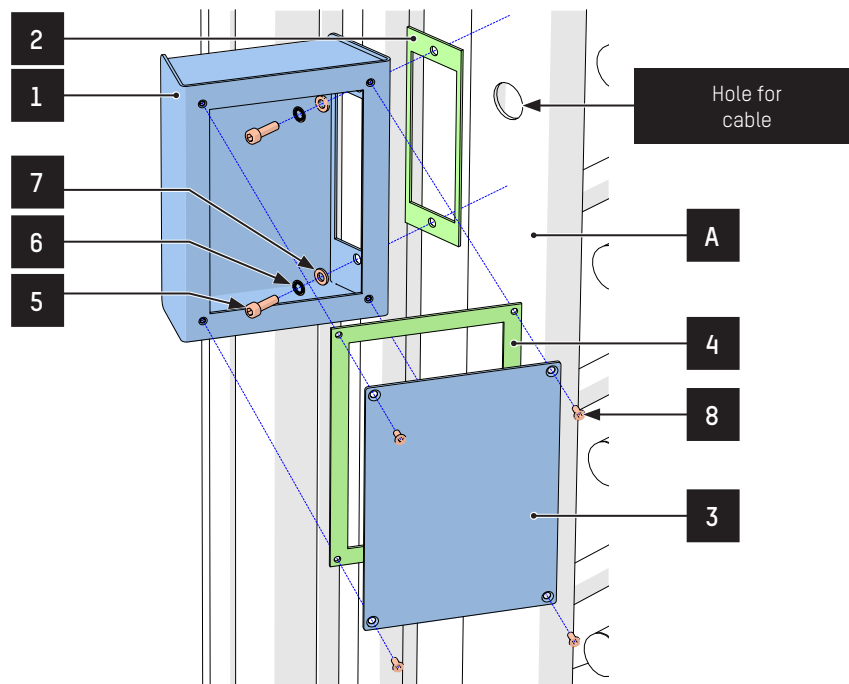


Fig. 55 - Fitting the reader box

REF.	DESIGNATION	QTY
1	Reader box SPT-E-0004372	1
2	Intermediate seal for upright JNT-E-0020093	1
3	Front panel for reader box TOL-E-0008163 ₁	1
4	Sealing joint for reader box JNT-E-0020064	1
5	Screw DIN 912 M6 x 20 Z/0620/912	2
6	Fan washer DIN 6798 M6 Z/0600/798	2
7	Flat washer DIN 125 M6 Z/0600/125	2
8	TORX stainless steel screw DIN 965C - ISO14581 M4 x 10 I/0410/14581	4



See also Chapter 6.6. Housing to hold the reader (optional), page 21.

¹ The front panel of the reader box can be customised to suit the type of reader required. Please contact your local sales representative for more information.

7.10. ELECTRICAL CONNECTIONS



Electrician's toolkit: screwdriver, cutting pliers, stripping pliers, etc.

The connections must be made in accordance with the installation plans (⇒ Chap. 7.5) and electrical diagrams, which remain the reference.

The power and control cables shown on the installation plan are the responsibility of the user.

Control cables must be separate from power cables to avoid interference, and must therefore be routed through separate uprights

- Connect the two (2) phases of the power supply and the earth connection (single-phase 110/240 VAC - 50/60 Hz) to the circuit-breaker; if necessary, cut off the excess cable length. Protect the upstream line with a 16 A circuit breaker.

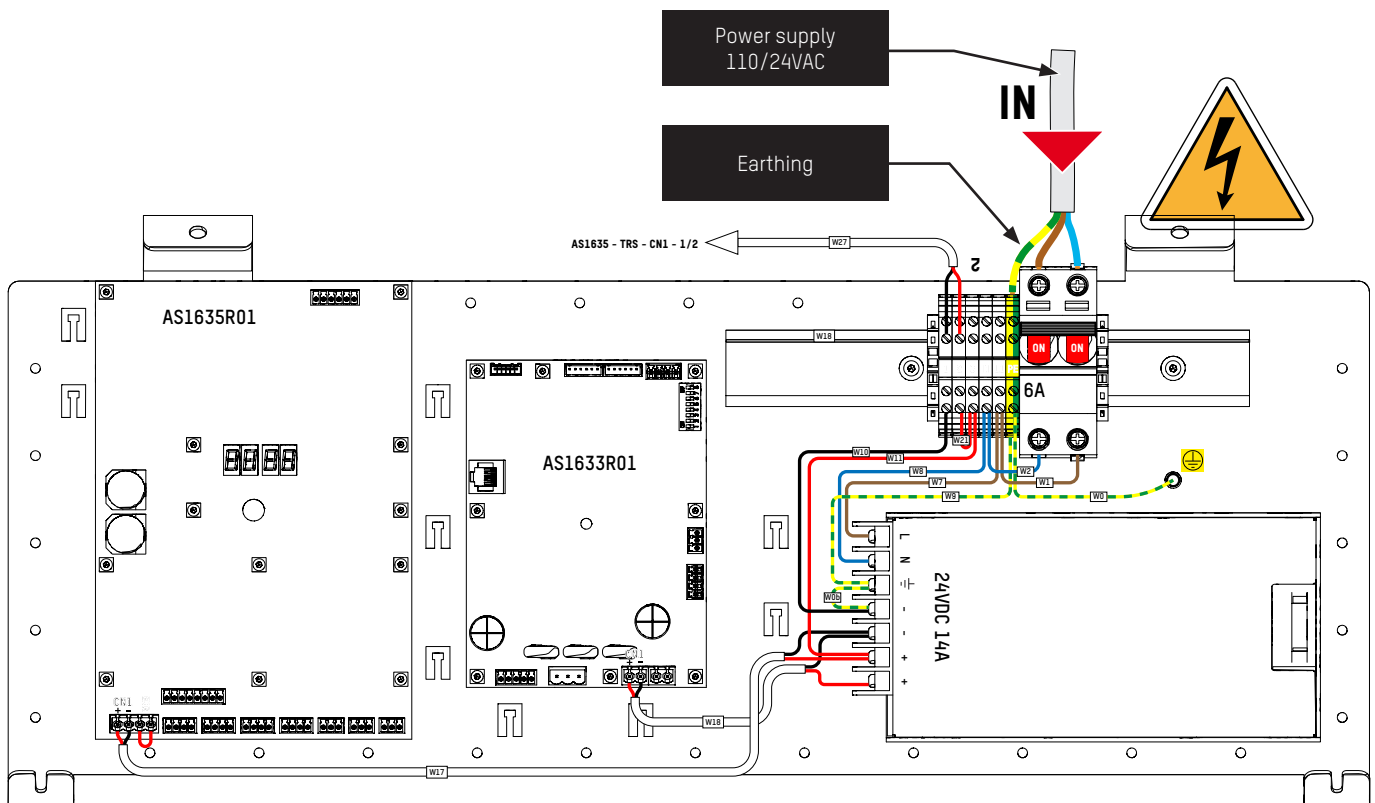


Fig. 56 - Electrical connections (TRS BIKE)

- Make sure that the incoming cables are not live. All the internal connections have been made at the factory (pictograms, operation of locks, position detector, etc.).
- Make sure that the metal parts of the equipment are well connected to the main earth (vertical uprights, casing, etc.).
- Make any other connections according to the specifications of the installation (control cables, reader connection, etc.).
- Switch on the power supply and reposition the control logic access panel.

8. MAINTENANCE

8.1. REPLACING OR INVERTING THE DIRECTION OF AN ELECTRO-MAGNET

The electro-magnet is mounted onto an L-shaped support using three (3) screws.

Unless otherwise specified, the gate is factory set to operating Mode 5 (unlocked in the event of a power failure (⇒ Chap. 6.1, page 16)).

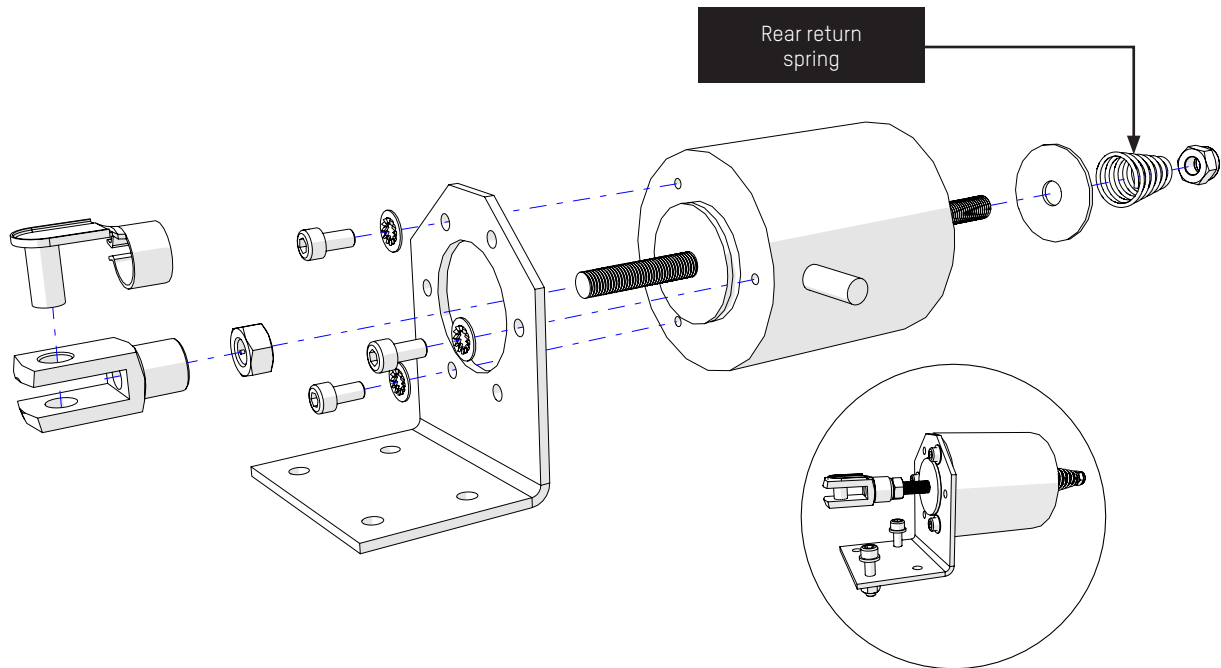


Fig. 57 - Operating Mode 5

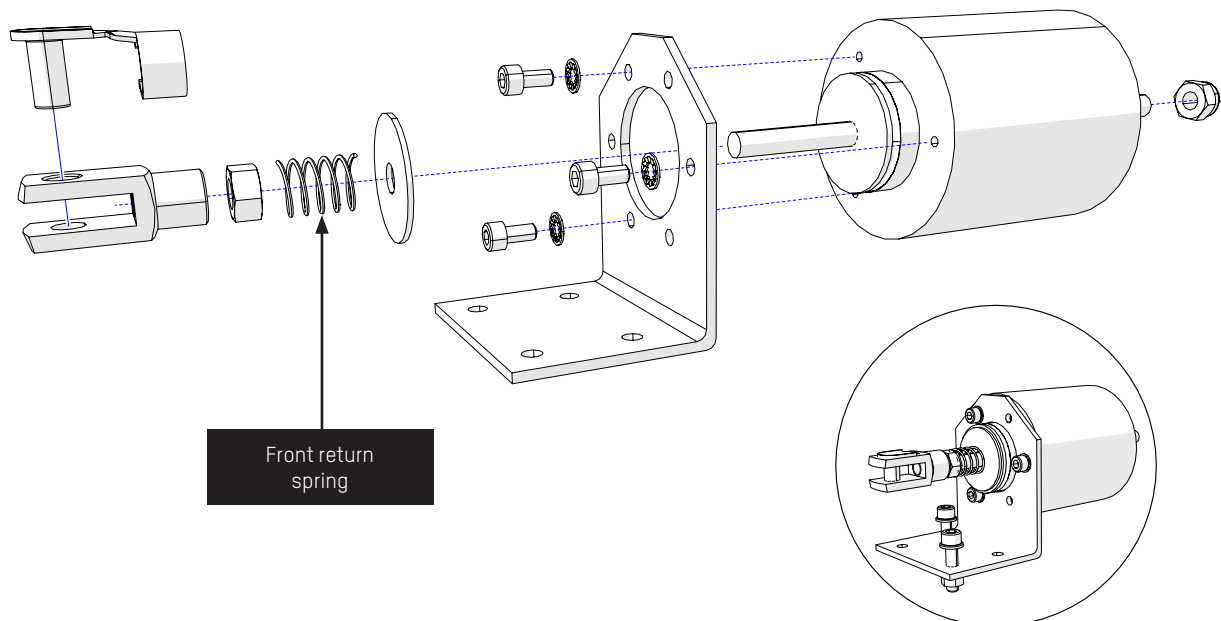


Fig. 58 - Operating Mode 4

The procedure below gives the information necessary to change the operating mode from 5 to 4. The first steps of the procedure are to be followed to replace a defective electro-magnet:

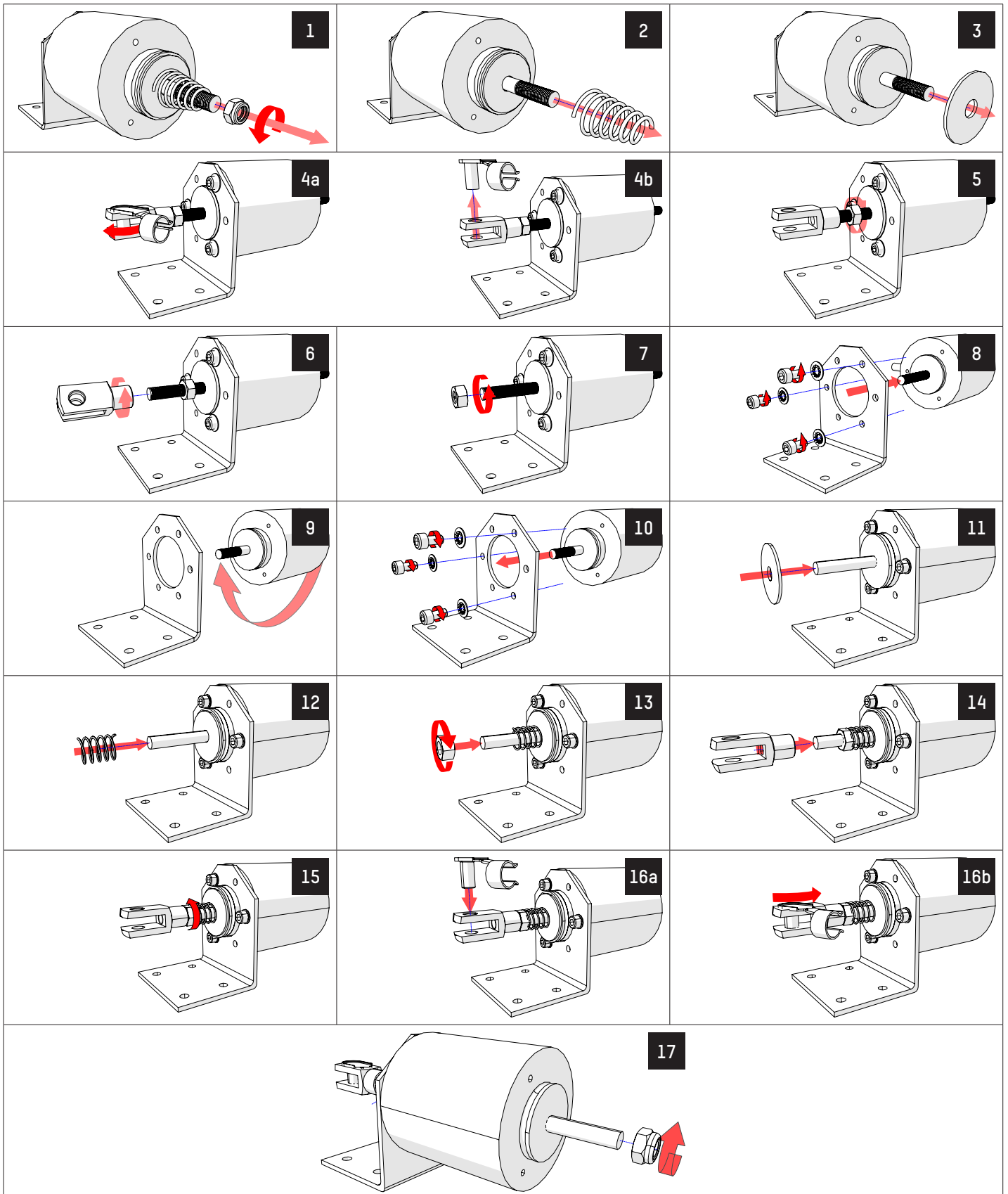


Fig. 59 - Change of mode / electromagnet replacement

8.2. REPLACING THE DAMPER

The damper is attached to its support using two nuts (see figure below). Note the position of the damper and the pressure exerted on the return spring before replacing it.

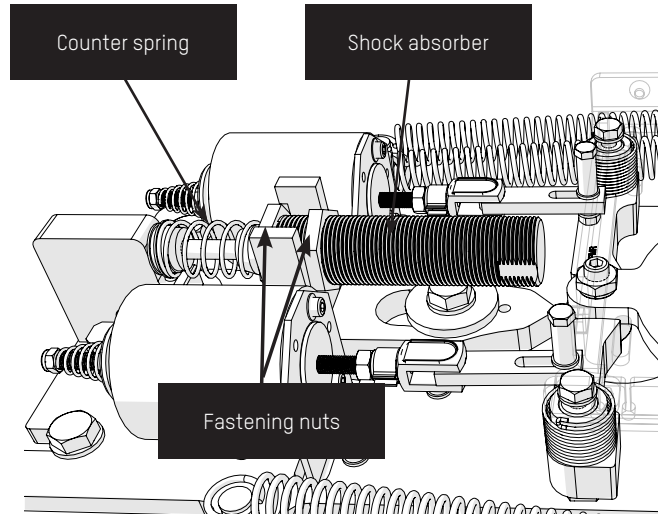


Fig. 60 - Fitting the damper

8.3. REPLACEMENT OF RINGS, SPRINGS AND OTHER WEARING PARTS

After a few million operations, some rings, washers and springs may show signs of wear; their replacement does not pose any particular problem. In the event of wear, **Automatic Systems** suggests replacing certain sub-assemblies containing several wearing parts at the same time.

For example:

REF.	DESCRIPTION	COMMENT
1	Damper assembly	Contains the damper, the movement transmission system and its support.
2	Compensator arm unit	Contains the compensator arm, fastening elements and spring(s).
3	Lock assembly (D or G)	Contains the lock, pivot, torsion spring and fastening elements.
4	Electro-magnet assembly	Electro-magnet with its support and fastening elements.

8.4. REPLACING A DIRECTION PICTOGRAM

The direction pictograms are mounted to the sides of the top casing with four (4) M6 screws and the cable is connected to the logic circuit.

They are easy to replace provided the roof is removed; access is also possible after removing the panel giving access to the mechanical unit and the logic.

1. Disconnect the functional pictogram cable from the control logic.
2. Remove the four (4) fixing screws securing the pictogram.
3. Replace the faulty pictogram and reassemble it by performing the steps described above in reverse order.

8.5. CALIBRATION (MOTORISED VERSION)



Refer to the technical manual of the AS1635 control logic to connect to the TRS BIKE gate and start the calibration.

1. Connect to the TRS BIKE gate via the maintenance interface
2. Set the gate to the closed position;
3. In the maintenance interface, **Individual tests > Calibration**, click on "Lock" ⇒ the locks close.
4. Clicking on "Calibrate" ⇒ the closed position is then stored.

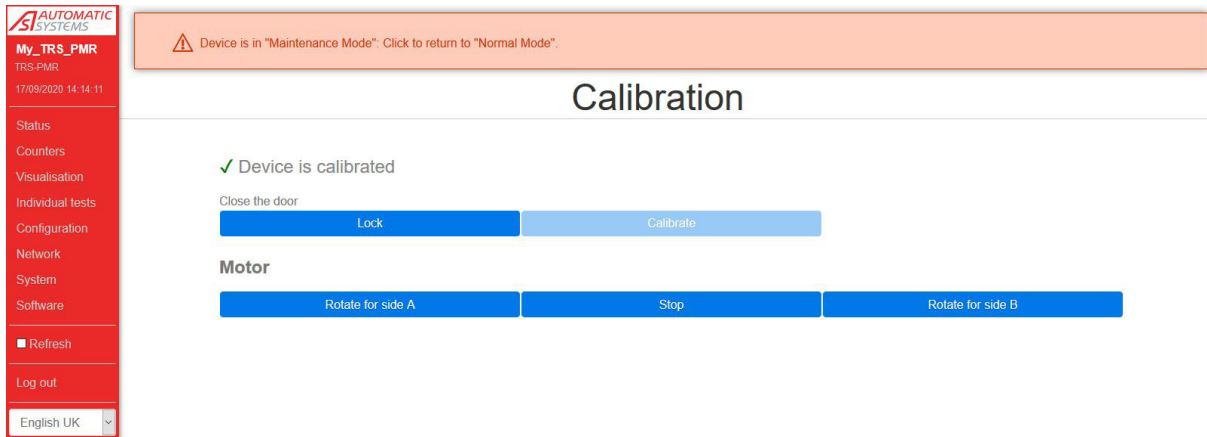


Fig. 61 - HMI > Calibration

Once the calibration has been carried out, you can perform A & B opening/closing tests via the "Visualisation" page:

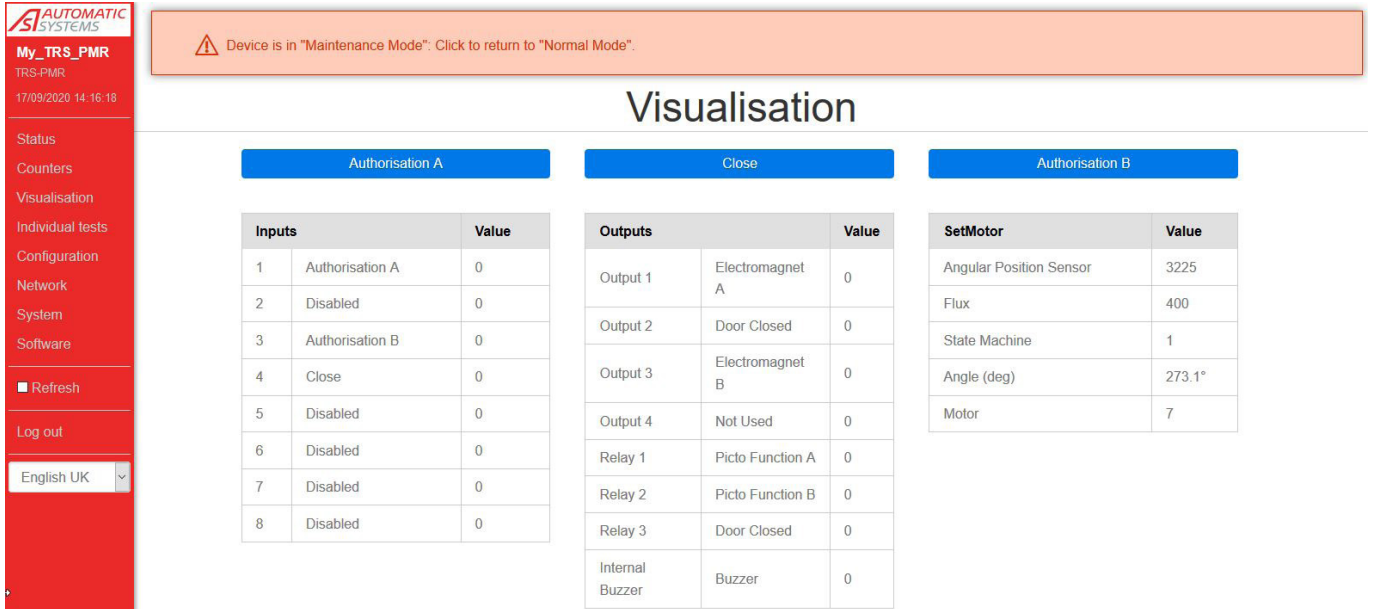

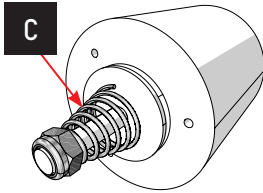
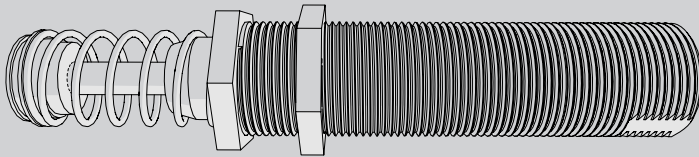
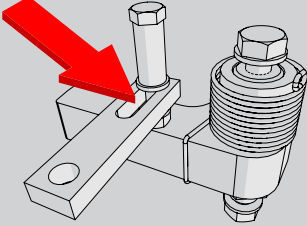


Fig. 62 - HMI > Visualisation

8.6. MAINTENANCE

<p>Every month (See note opposite)</p>	<p>Check the stability of the gate (floor anchoring). If motorised: check the tension of the belt. Clean the top casing, vertical uprights and rotating barrier with water and a non-aggressive detergent (especially chlorine-free). If the AISI 304 stainless steel option is chosen for the moving barrier, clean with a product for stainless steel. Automatic Systems can provide an approved product under reference 0/6031/000. Repair any splinter, blow or scratch on the painted surfaces of the equipment.</p> <div data-bbox="395 600 1497 734" style="border: 1px solid black; padding: 5px;">  <p>The frequency of maintenance must be adapted to conditions of use of the gate, especially when placed in an oxidising atmosphere: at the entrance to a swimming pool (heated and chlorinated atmosphere), by the sea, in an industrial environment, etc.</p> </div>
<p>300,000 cycles</p>	<p>Replace the springs (0/0208/042) (C) of the two (2) electromagnets of the TRS BIKE which may break due to wear.</p> 
<p>1,000,000 cycles</p>	<p>Replace the damper (Ref. N, Fig. 8, page 16), the effect of which diminishes with wear.</p>  <p>If motorised: check the condition and tension of the belt.</p> <p>Check that all the bolts of the entire mechanism and the bearing structure are screwed tight.</p> <p>Spray a silicone spray (ref. 0/7508/284) on the locking bolts.</p> 
<p>Five (5) years</p>	<p>Replace the control logic battery: 3 V/48 mA lithium battery. Automatic Systems can provide an approved product under reference 0/7111/010. To access the battery, remove the access panel inside the casing and remove the cover from the front panel of the logic by unscrewing its four (4) screws.</p>

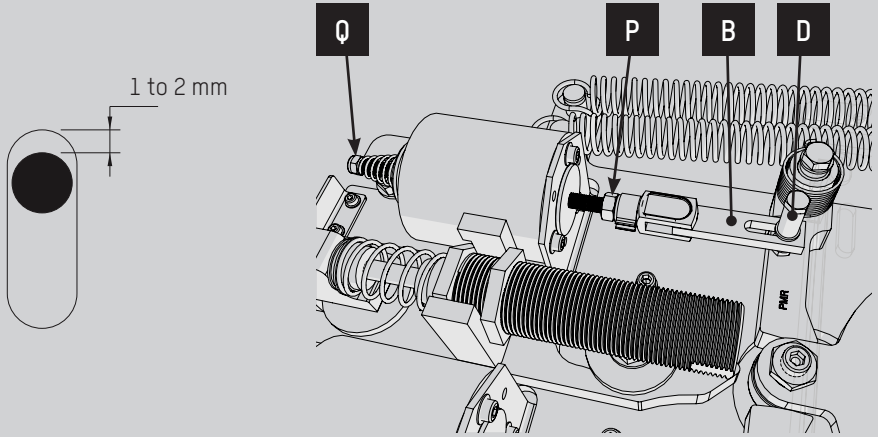
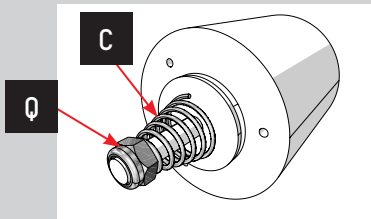
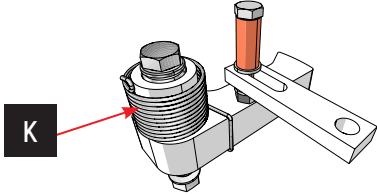
8.7. SPARE PARTS

⇒ Refer to separate catalogue, available on Partner Portal.

For all orders, indicate the information on the nameplate of the equipment for which the spare parts will be used:

- Serial number
- Model (TRS BIKE)

9. TROUBLESHOOTING

<p>Gate not working.</p>	<p>Check the 230 power supply and 24 VDC voltage. See the messages on the control logic display (group OPERATION, setting STATUS).</p>
<p>Friction is noticeable when the barrier rotates.</p>	<p>The bolts and/or the rollers can be seized up, especially in corrosive conditions (e.g. in a marine environment). Spray some silicon on the parts to be unseized.</p>
<p>The rotating barrier no longer unlocks.</p>	<p>Leave a gap between the electromagnet link (B) and the lock rod (D) (adjusting the length of the link using nuts P and Q) so as to cause an impact on the lock when the electromagnet is activated.</p>  <p>Overtightening can cause the electromagnets to stick. Slightly loosen nut (Q) to relieve pressure on the spring (C).</p>  <p>The spring (C) does not have enough energy to pull the lock: compress it by tightening the nut (Q) or replace it.</p>
<p>The barrier no longer locks.</p>	<p>The lock return spring (K) is slack. Retighten it by making a few turns.</p> 
<p>The barrier does not open fully</p>	<p>Check belt tension and recalibrate.</p>

10. PROLONGED STOP/DISPOSAL/DESTRUCTION

If the equipment is not going to be used for a long period of time, it is advisable to:

- Store it in the same conditions as before installation .
- Leave it powered on, so that the battery of the CPU board (AS1635) remains charged.



If the equipment was stored with power off and ambient temperature below 15°C (5°F), it is important to allow it to warm up for 30 minutes to one (1) hour before switching it on.

- Ensure that the equipment is protected from bumps and knocks.
- Before starting up, carry out a few runs to check that it is working properly.
- When the equipment is taken out of service, dispose of the various machine components in the appropriate manner (metal parts, electronic components, etc.) according to the applicable regulations.

When the equipment is taken out of service, dispose of the various machine components in the appropriate manner (metal parts, electronic components, etc.) according to the applicable regulations.

11. DESCRIPTION OF THE ELECTRONIC ASSEMBLY

11.1. MOTHERBOARD AS1635

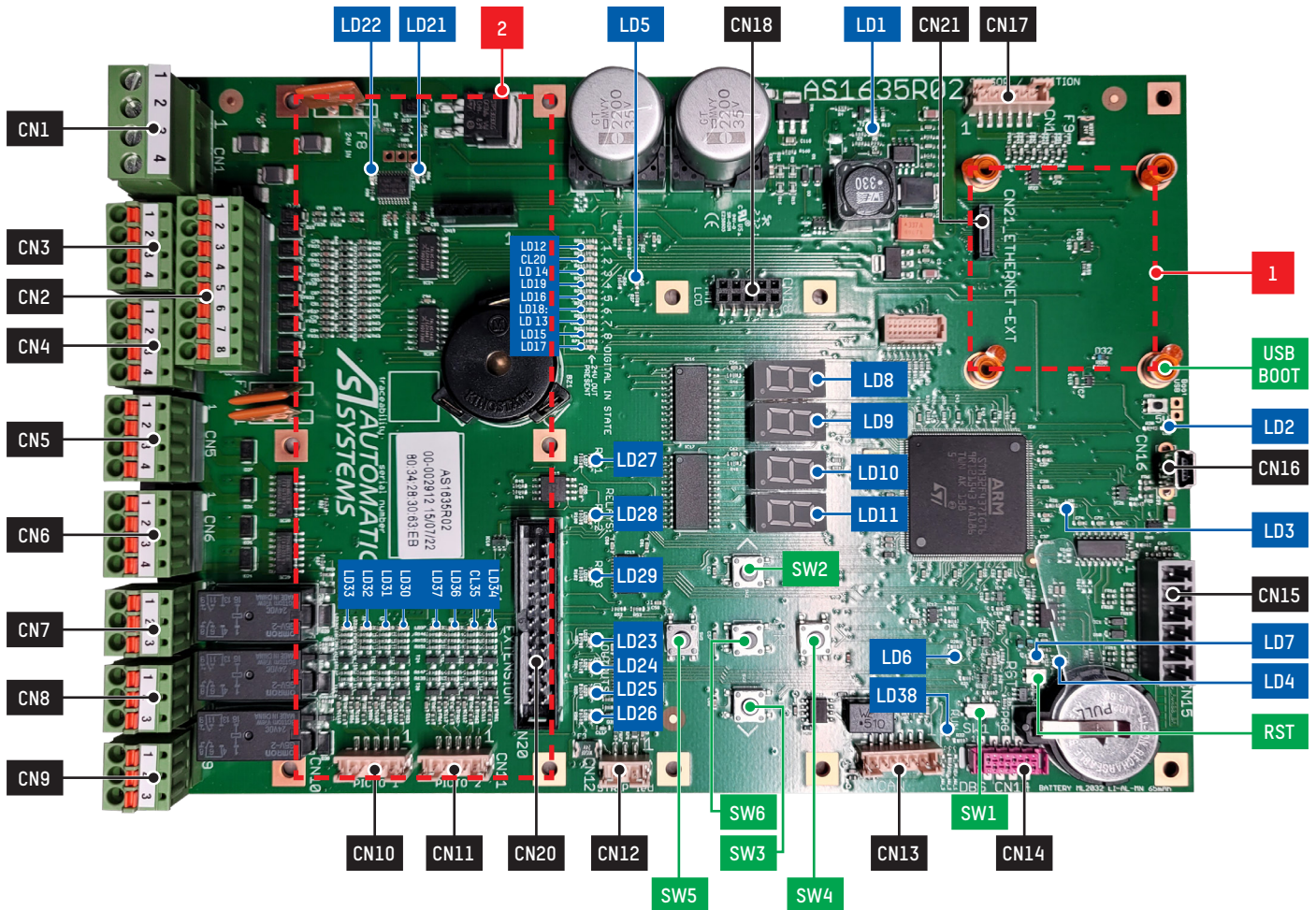


Fig. 63 - Motherboard AS1635

CN1	Main power supply (24 VDC) and emergency opening. Remove the jumper between CN1-3 and 4 to activate Emergency.
CN2	Digital inputs (eight (8) inputs from In1 to In8)
CN3	0-24V terminal (for powering any presence sensors)
CN4	0-24V terminal (for powering any presence sensors)
CN5	Digital outputs Out1 and Out2
CN6	Digital outputs Out3 and Out4
CN7	Relay R1 (with potential-free NO and NC contacts)
CN8	Relay R2 (with NO and NC volt free contacts)
CN9	Relay R3 (with volt free NO and NC contacts)
CN10	Pictogram, direction A
CN11	Pictogram, direction B
CN12	Not used
CN13	CAN bus (to optional motor card)
CN14	Programming debug (developers only)
CN15	RS232 and RS485 serial communication
CN16	USB port to configuration interface
CN17	Position sensor

SW1	RUN or Programming mode (for developers)
SW2	LEFT HMI button
SW3	RIGHT HMI button
SW4	UP HMI button
SW5	DOWN HMI button
SW6	OK HMI button
RST	Reset button
USB BOOT	Restart the processor via the USB connection

1	Slot for AS1622 Ethernet card (optional).
2	Slot for card expansion (optional).

LD1	●	Green	Steady	Voltage presence indicator
LD2	●	Red	Steady	MAJOR error
LD3	●	Yellow	Steady	Minor error
LD6	●	Green	Flashing	Program running indicator
LD8	●	Red		7-segment HMI display left
LD9	●	Red		7-segment HMI display middle left
LD10	●	Red		7-segment HMI display middle right
LD11	●	Red		7-segment HMI display right
LD12	●	Green	Steady	Digital input 1 indicator
LD 13	●	Green	Steady	Digital input 7 indicator
LD 14	●	Green	Steady	Digital input 3 indicator
LD15	●	Green	Steady	Digital input 8 indicator
LD16	●	Green	Steady	Digital input 5 indicator
LD17	●	Green	Steady	24V presence indicator
LD18:	●	Green	Steady	Digital input 6 indicator
LD19	●	Green	Steady	Digital input 4 indicator
LD20	●	Green	Steady	Digital input 2 indicator
LD21	●	Green	Flashing	Watchdog processor activity indicator
LD23	●	Yellow	Steady	Digital output 1 activity indicator
LD24	●	Yellow	Steady	Digital output 2 activity indicator
LD25	●	Yellow	Steady	Digital output 3 activity indicator
LD26	●	Yellow	Steady	Digital output 4 activity indicator
LD27	●	Yellow	Steady	Relay output 1 activity indicator
LD28	●	Yellow	Steady	Relay output 2 activity indicator
LD29	●	Yellow	Steady	Relay output 3 activity indicator
LD30	●	Green	Steady	Red function pictogram, direction A
LD31	●	Green	Steady	Green function pictogram, direction A
LD32	●	Green	Steady	Blue function pictogram, direction A
LD33	●	Green	Steady	White function pictogram, direction A
LD34	●	Green	Steady	Red function pictogram, direction B
LD35	●	Green	Steady	Green function pictogram, direction B
LD36	●	Green	Steady	Blue function pictogram, direction B
LD37	●	Green	Steady	White function pictogram, direction B
LD38	●	Green	Flashing	CAN bus activity indicator



For further information, refer to the AS1635 Logic Manual.

11.2. AS1633 MOTORISATION BOARD

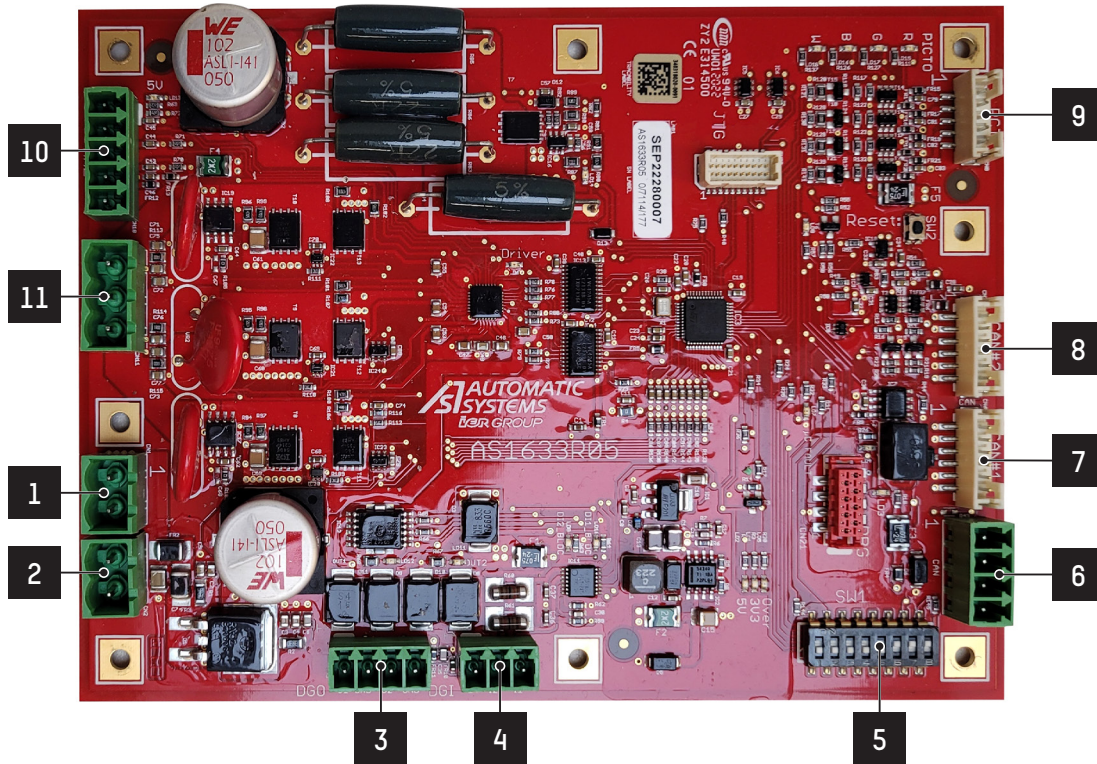


Fig. 64 - AS1633 motorisation board

CN1	POWER INPUT 24VDC
1	+24 VDC
2	GND

CN2	POWER OUTPUT 24VDC
1	+24 VDC
2	GND

CN3	DIGITAL OUTPUTS
1	OUT 1
2	GND
3	OUT 2
4	GND

CN4	DIGITAL INPUT
1	+24 VDC
2	IN 2
3	IN 1

CN5	INTER-UNIT CAN BUS
1	GND
2	CAN +
3	CAN -
4	GND

CN6	CAN BUS LOCAL ⁽²⁾
1	+24 VDC
2	GND
3	CAN +
4	CAN -
5	GND
6	+24 VDC

CN7	LOCAL CAN BUS (CPU)
1	+24 VDC
2	GND
3	CAN +
4	CAN -
5	GND
6	+24 VDC

CN8	PICTOGRAM ⁽²⁾
1	Red
2	Green
3	Blue
4	White
5	GND

CN9	PROGRAMMING AS ⁽¹⁾
-----	-------------------------------

CN10	MOTOR ENCODER
1	Hall A
2	Hall B
3	Hall C
4	+ 12VDC
5	GND

CN11	MOTOR POWER SUPPLY
1	Phase C
2	Phase B
3	Phase A

⁽¹⁾ Reserved for factory programming by Automatic Systems.

⁽²⁾ Not used.

LD1	●	Green	3.3 VDC indicator light
LD 2	●	Green	5 VDC indicator light
LD 3	●	Green	CAN BUS power supply indicator light
LD 4	●	Yellow	CAN activity indicator light
LD 5	●	Red	OVER indicator light
LD 6	●	Red	DRIVE status indicator light
LD 7	●	Red	Microprocessor FAULT indicator light
LD 8	●	Green	Activity indicator light - Watchdog
LD 9	●	Green	Digital input 2 activity indicator light
LD 10	●	Green	Digital input 1 activity indicator light
LD 11	●	Yellow	Digital output 2 activity indicator light

LD 12	●	Yellow	Digital output 1 activity indicator light
LD 13	●	Green	5 VDC ENCODER indicator light
LD 14	●	Yellow	Brake system indicator light
LD15	●	Green	Dynamic lights managed by AS1656. ^[1]
LD16	●	Green	Dynamic lights managed by AS1656. ^[1]
LD17	●	Green	Dynamic lights managed by AS1656. ^[1]
LD18:	●	Green	Dynamic lights managed by AS1656. ^[1]

SW4	CAN address DIP switches.
RST	Motorisation board reset button.

^[1] Not used.



IMPORTANT:

INVERTING THE MOTOR AND ENCODER POWER SUPPLY CONNECTORS, CN1 & CN2, WILL DESTROY THE MOTORISATION BOARD! CHECK THE CONNECTIONS AFTER ANY WORK ON THIS BOARD!

12. ELECTRICAL DIAGRAMS

See the **Electrical Technical File** provided with the device or accessible via the links below:



13. DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY

We, undersigned,

AUTOMATIC SYSTEMS SAS
 22 rue du 8 mai 1945
 95340 PERSAN
 FRANCE

Herewith declare that the following machine:

Full-height security turnstile
TRS 370 / TRS 371 / TRS 372 / TRS 373
Full-height security turnstile / People with Reduced Mobility
TRS BIKE
Full-height security turnstile / Bike gate
TRS PMR

is in accordance with the conditions of the following Directives, standards and other specifications:

- Machinery Directive 2006/42/EC.
- Low-voltage Directive 2014/35/EU.
- Electromagnetic compatibility Directive 2014/30/EU.
- Directive RoHS (Restriction of Hazardous Substances) 2011/65/EU.
- EN 12100:2010: Safety of machinery – General principles for design - Risk assessment and risk reduction (ISO 12100:2010).
- IEC 60204-1 / A1 : 2016: Safety of machinery – Electrical equipment of machines - Part 1: General requirements.
- EN 61000-6-3 / A1 : 2011: Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- IEC 61000-6-2 : 2016: Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

Made in PERSAN,
 Date: 2023.11.06

Guillaume SLIWA | Managing Director France



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Fig. 65 - CE Declaration



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