

TRIPOD TURNSTILE



TR 490



TR 490R

INSTALLATION MANUAL

(Translated from the French original version)

Rev. **06**

DOCUMENT REVISION

Rev	Date	Written	Checked by	Nature
02	2009-05-29	MFy		Replacement of AS1025 r02 board illustrations by AS1025 r08 (included F1 fuse modification => 2,5 A slow).
03	2009-08-27	MFy		Ambient operating t° modification.
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05	2011-03-24	MFy		Electric diagram 2TR604.006 ⇒ rev B.
06	2016-02-23	SLu	ABA-KHBO-MDE	General review of the document.

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1. INTRODUCTION

We thank you for choosing the **TR 490** electrical tripod turnstile designed and manufactured by **Automatic Systems**. We are confident that your purchase will fully meet your requirements. However, in order to obtain maximum satisfaction from this equipment for a maximum period of time, we strongly advise you to read this manual carefully before installing the equipment.

2. SAFETY WARNINGS

- This manual must be made available to all persons working on the equipment: installers, maintenance technicians, end users, etc.
- The tripod turnstile is designed to control access for persons to a given area and cannot be used for another purpose without risk to the user and the integrity of the equipment.
Automatic Systems cannot be held liable for damage resulting from improper use of the equipment.
- Employees working in the area must have been trained in the use of the automatic gates. Failure to provide such user training can result in serious accidents or injuries.
- Do not install this equipment in an explosive area.
- Do not add non-approved accessories (contact between different metals causes a battery effect that decreases the equipment's corrosion resistance).
- The contractor shall comply with local regulations when installing the equipment.
- All operations on the equipment must be carried out by qualified personnel. Any unauthorized work or work performed by an unqualified technician on this product shall automatically void the manufacturer's warranty.
- Access to the mechanism must be reserved for staff who are aware of the electrical and mechanical risks incurred in case of negligent handling.
- For any operation that does not require the equipment to be powered up, turn off the power at the distribution panel or at the switch (⇒ Ch.4.3. , landmark 2:1).
- Any internal component likely to be energized or in movement must be handled with caution.
- Use of antistatic gloves or bracelets (ElectroStatic Discharge) is essential when handling electronic printed circuit boards, at the risk of the warranty being voided.
- The equipment is configured in "minimal risk" mode for users. Parameters should only be changed by qualified personnel with full knowledge of the consequences, and any such changes shall in no way entail any liability on the part of **Automatic Systems**.
- If the product is resold, it is the responsibility of the seller to ensure, for each piece of equipment that is offered, sold and installed, that its foreseeable environment and use take into account the technical characteristics of the equipment and comply with these requirements.
The seller shall defend and indemnify **Automatic Systems** from any claims against **Automatic Systems** due to the seller's failure to comply with the above obligations.



Although this manual has been prepared with great care, some information may seem erroneous or unclear to you. In this case, please do not hesitate to contact us with your remarks or questions.

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 to better understand the product.



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



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



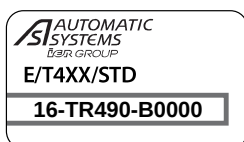
This symbol is used to highlight a risk of cutting yourself.



This symbol is used to identify a ground connection point.



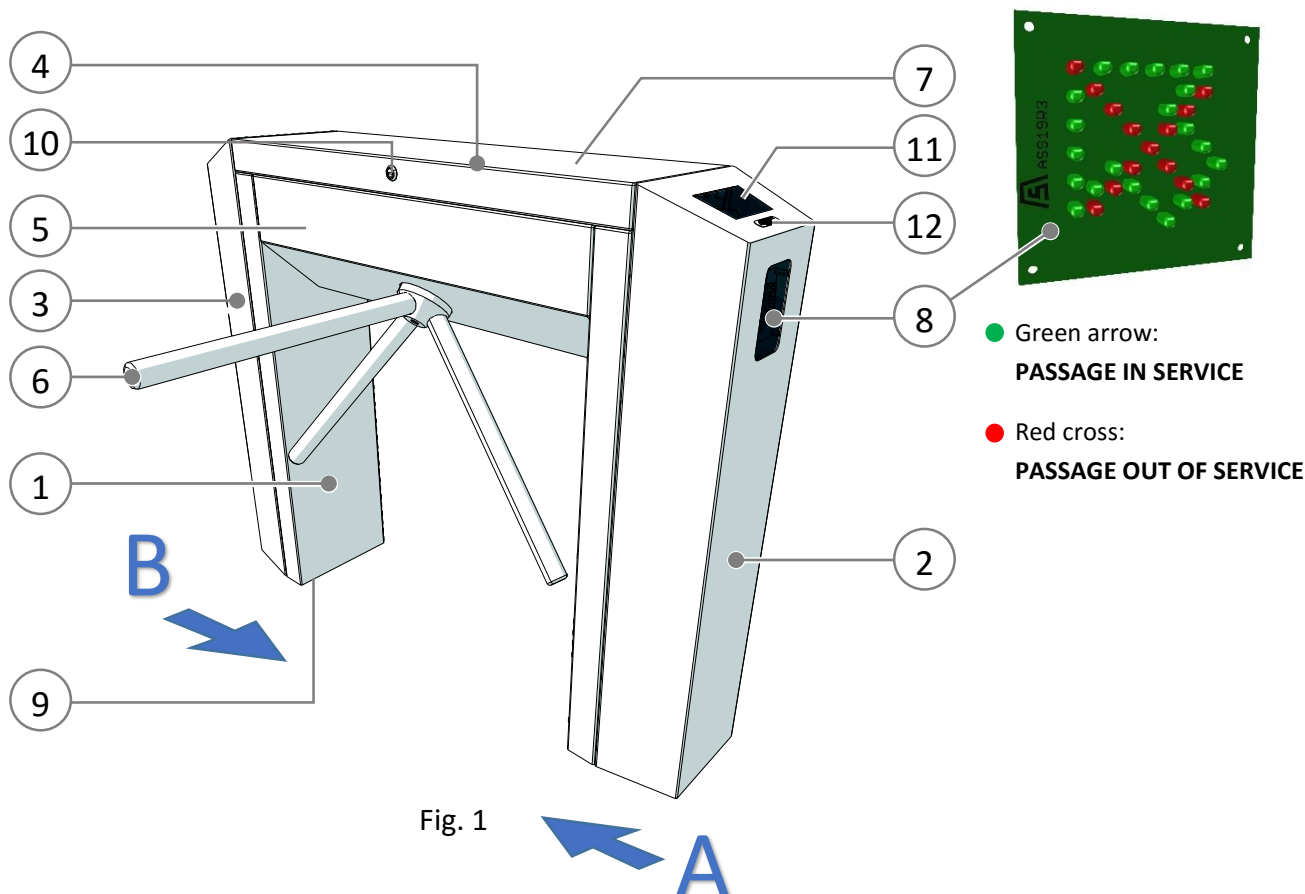
Product identification label.



Component identification label.

4. GENERAL

4.1. GENERAL VIEW



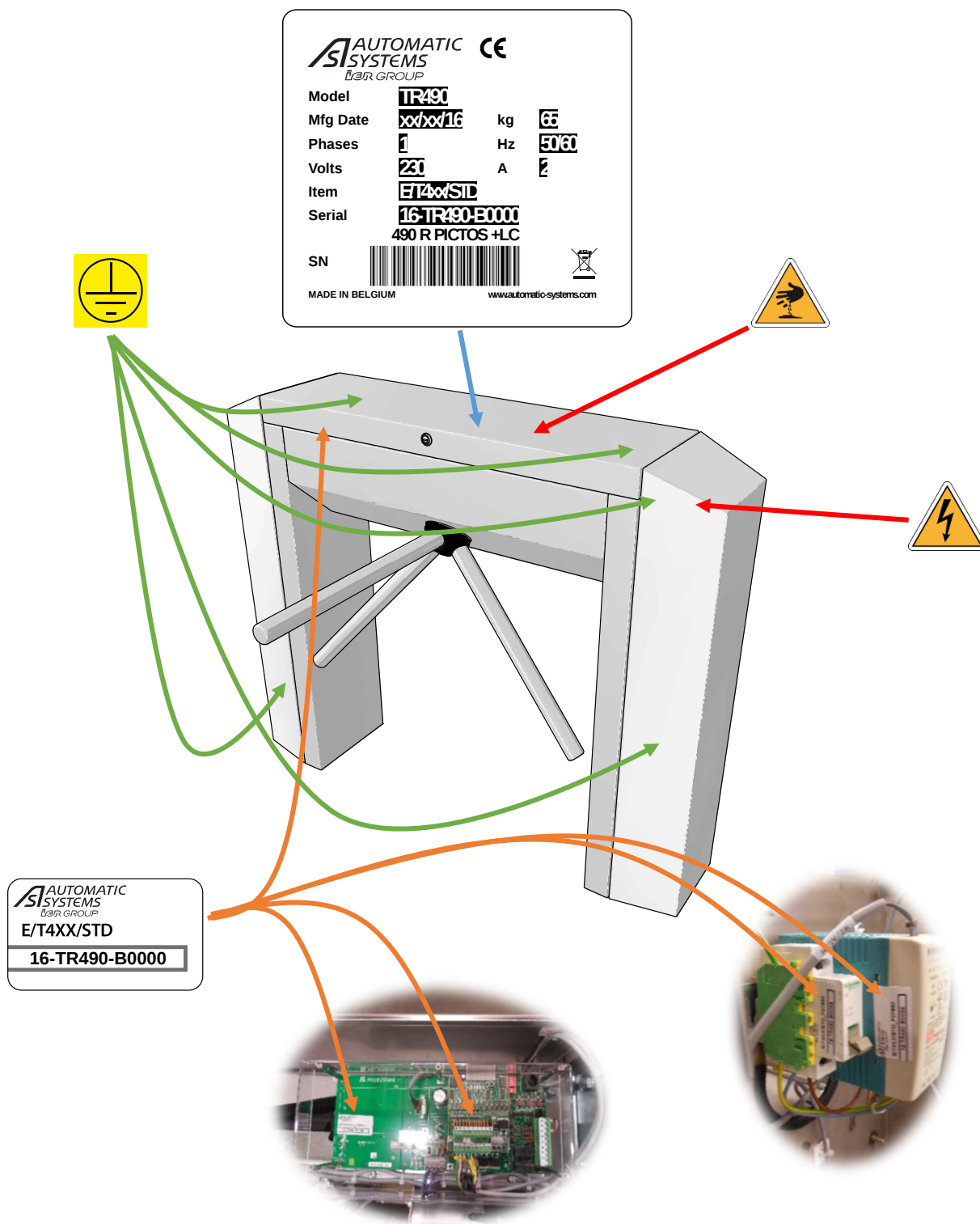
Ref.:	Designation:
1	Stainless steel housing.
2	Front end section (A).
3	Rear end section (B).
4	Hood.
5	Tripod turnstile mechanism.
6	Stainless steel arm.

Ref.:	Designation:
7	Electrical control logic.
8	Approach pictogram (Optional).
9	Floor fixing.
10	Lock.
11	Integration of a contactless reader under a protection screen (Optional).
12	Commercial identification plate.



Conventionally and as a general rule, the user will be considered in direction "A" when the turnstile is at his right-hand side, in direction "B" when the turnstile is at his left-hand side.

4.2. LABELS LOCATION



4.3. SWITCHING OFF THE EQUIPMENT

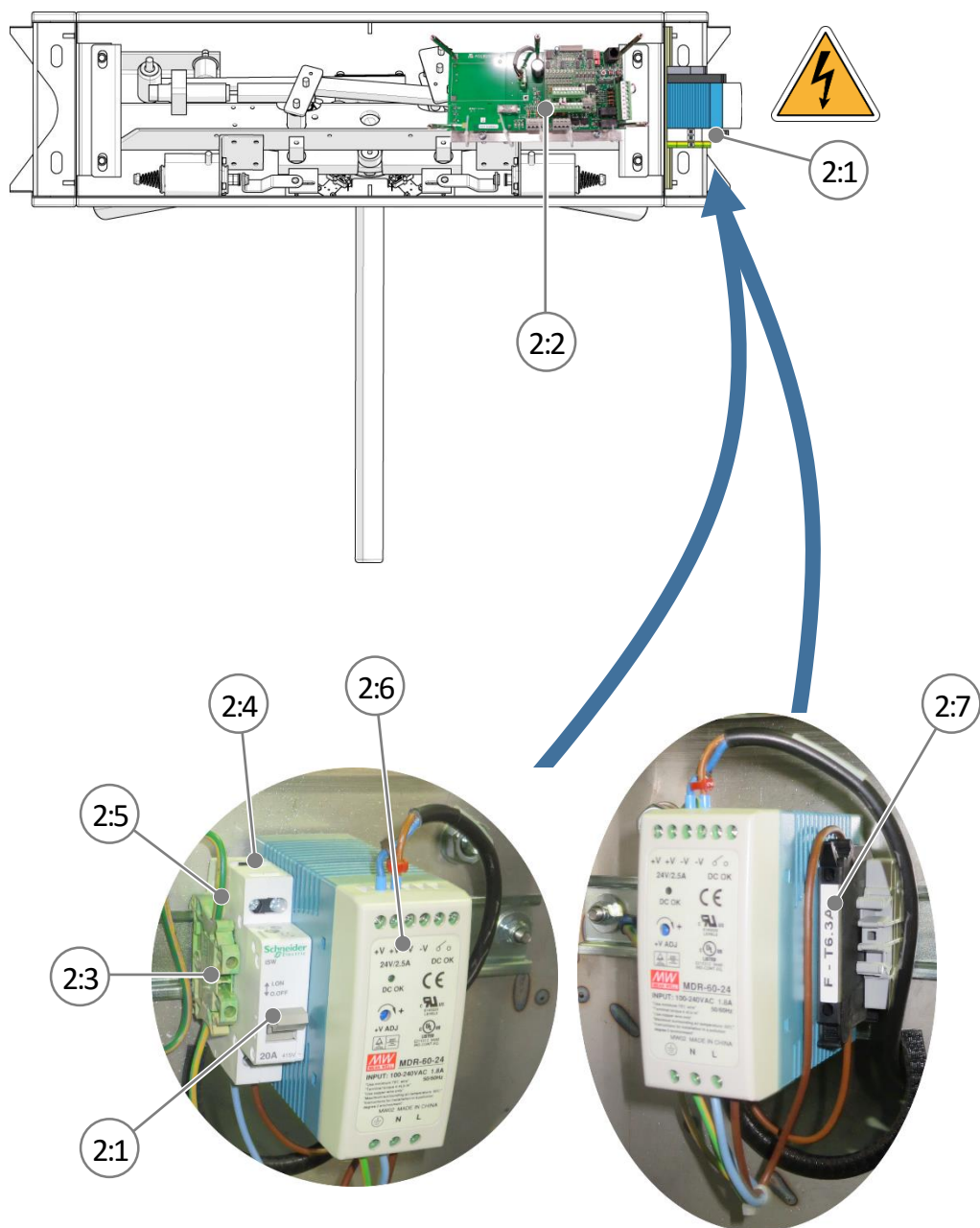


Fig. 1

Ref. :	Description:
2:1	Main switch.
2:2	Control logic.
2:3	Ground connector.
2:4	Customer power supply cables.
2:5	Customer ground cable.
2:6	Power supply 24VDC – 2,5A.
2:7	Protection fuse 3A.



As soon as you open the housing, put off the main switch (2:1) near the electrical control logic (2:2), located under the hood.

4.4. GENERAL CONDITIONS OF USE

- Your TR490 tripod turnstile has been designed to operate in any climatic environment, from -10°C to +50°C, with up to 90% of relative humidity.

4.5. IN CASE OF POWER FAILURE

- Depending on which control mode the tripod is set up for, the TR490 tripod turnstile can release the mechanism in either direction or in both, when the electrical power supply is interrupted. This unlocking principle in an emergency situation is called the "anti-panic" device.

4.6. OVERALL DIMENSIONS AND INSTALLATION DRAWING

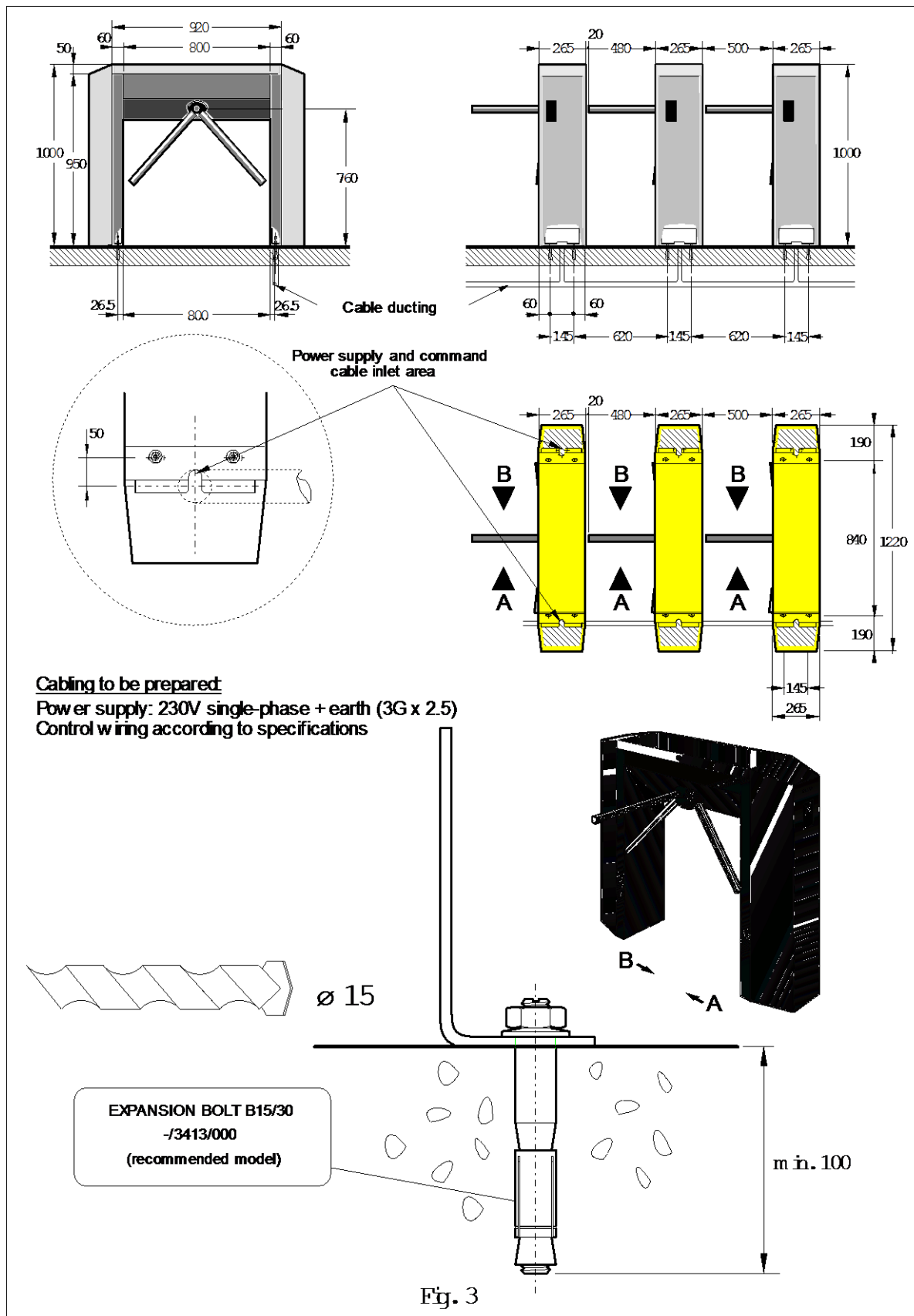
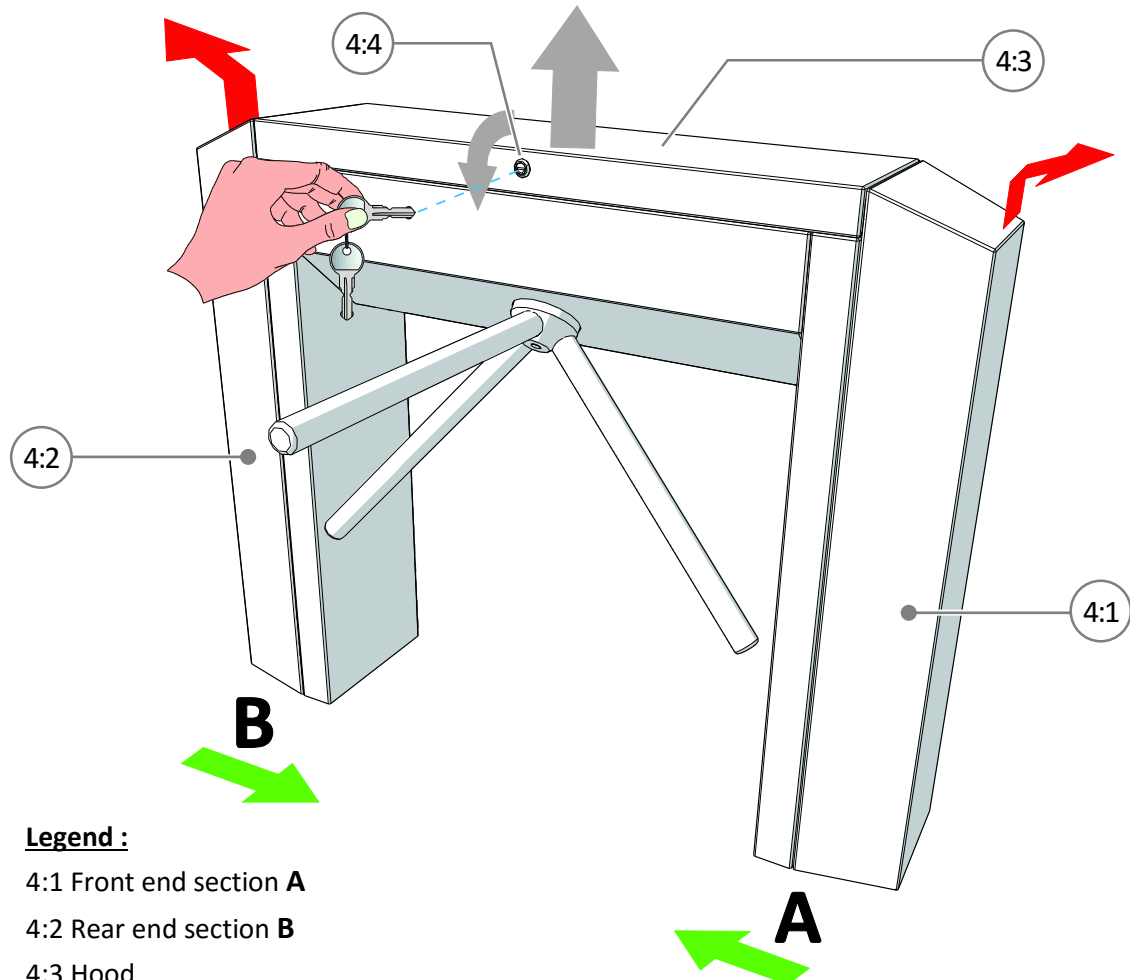


Fig. 3

5. INSTALLATION

5.1. FIRST STEP



Legend :

4:1 Front end section **A**

4:2 Rear end section **B**

4:3 Hood

4:4 Lock

Fig. 4

- The tripod turnstile has been packaged suitable for transport. Move the material to the installation site with the assistance of a fork-lift, or manual hand truck and remove the packing material.
- Unlock (4:4) and open the hood (4:3). Keys are supplied as accessories in a separate bag.
- Raise and remove the front columns (4:1) and (4:2).
- Check the state of the material. Though it has been carefully packed, damage may have occurred during transport. Any transportation damage should be repaired, or components replaced.

5.2. PRELIMINARY WORK ON SITE

- This is basically the following:
 - Check the positioning and location of the equipment according to the site's general lay-out.
 - Drill holes in the ground as in Fig. 3 (page 9/18). Make sure to drill holes with the diameter adapted to the expansion bolts that will be used (recommended type: model B15/30, ref. /3413/000).
 - Make sure that cables come out at a distance of 50 mm of the fixing holes (See Fig. 3).
 - Prepare power supply wiring (230V single-phase + earth, 3Gx2.5) and control cabling (not supplied). All cables must have a 2 meter tail.



If you add any flammable elements (see EN60950, paragraph 4.4.5. standard) into the end sections of the turnstile, make sure that the floor is fireproof.

5.3. INSTALLING THE TRIPOD TURNSTILE

- Position the turnstile on site precisely.
- Tighten the expansible bolts in order to fix the turnstile on the ground. Make sure that cables are not trapped.
- When the turnstiles are fitted in rows of more than 1 unit, attention should be given to the linear, vertical and horizontal alignment. Packing shims can be used.

5.4. MOUNTING THE TRIPOD ARMS

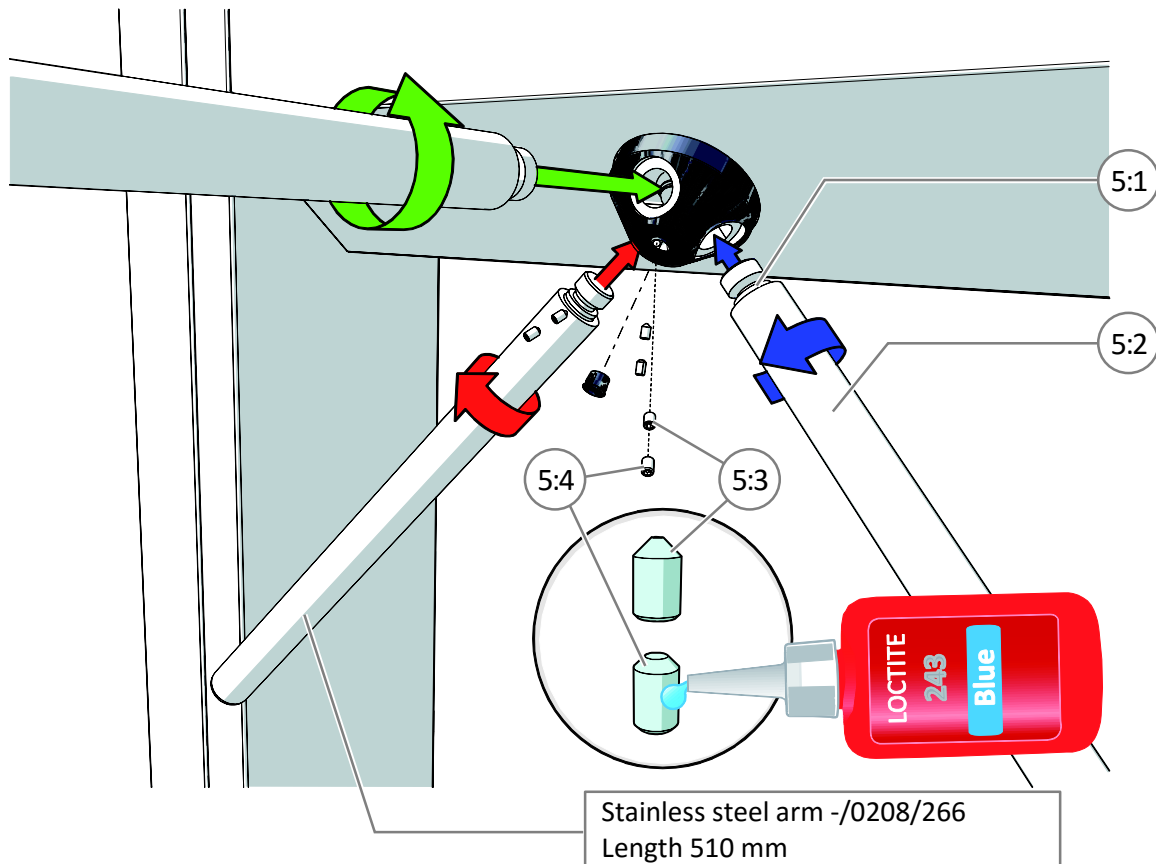


Fig. 5

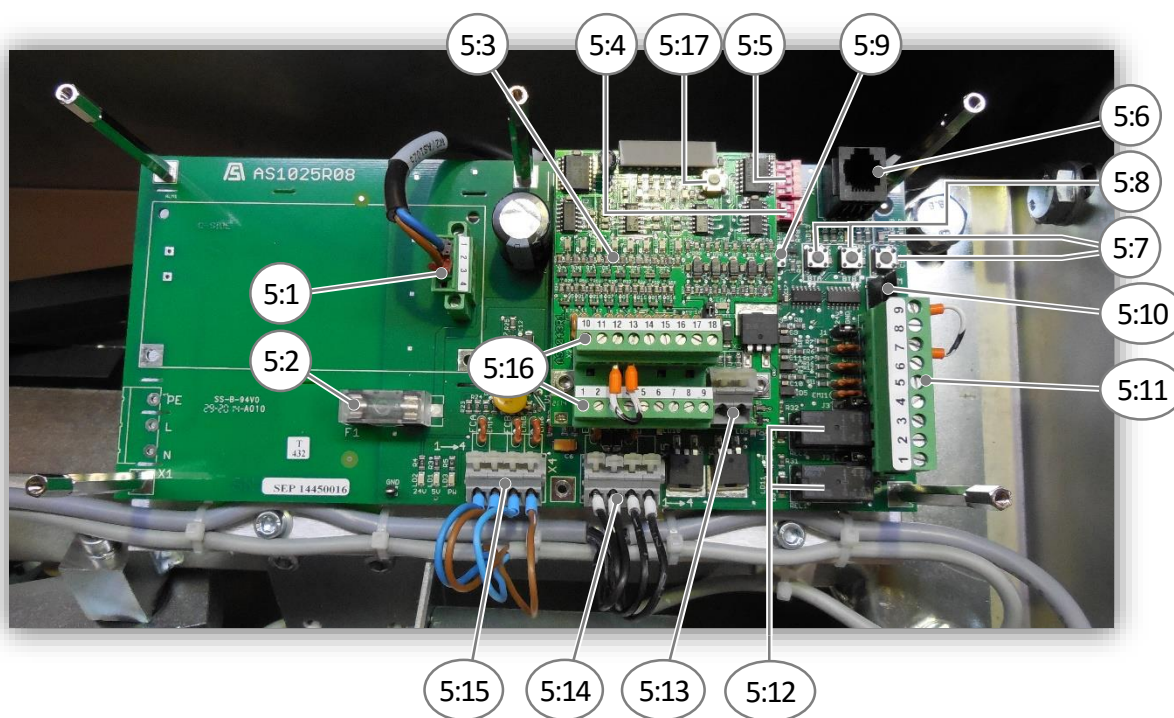
- Remove the grease from the thread (5:1) of the arms (5:2) with trichloroethylene (care must be taken when using any substance or chemical that can be harmful, refer to the manufacturer's information and/or a Health & Safety "Risk Assessment") and apply some Loctite® 243 (blue) or an equivalent industrial bonding adhesive on the thread.
- Screw the arms into the central hub, turn them clockwise and tighten them firmly with the help of a strap tube-wrench.
- For each of the arms, fix the conic-end screw (5:3) and tighten it firmly. The screws are supplied as accessories in a separate bag.
- Apply a drop of Loctite® 243 (blue) on the thread of the flat-end screw (5:4) and tighten this firmly to lock the conic-end screw (5:3).

5.5. ELECTRICAL CONNECTIONS AND INITIAL POWER-UP

- The electrical connections must be made according to the diagram affixed inside the housing.
 - ⇒ Make sure that the power supply cables are not live. All internal connections are factory-made.
 - ⇒ If necessary, cut off the excess cable length. Connect the 230V single-phase power supply wires (2:4) to the terminals on the main switch (2:1), and the earth wire (2:5) to the adjoining terminal (2:3). Make sure the equipment is correctly earth bonded (housing & associated metalwork).
 - ⇒ Proceed with all other electrical connections depending on the equipment specifications (control wiring, etc.).
 - ⇒ Route all cables via the cable entry holes and secure in the cable fastenings provided, ensuring that they are held clear of the turnstile mechanism's moving parts.
 - ⇒ After the power supply from the remote isolator has been energised, test for correct polarity, supply voltage and earthing, power up the equipment by putting the main switch (2:1) to the ON position.



When the turnstile is connected to an IT power system, a 2A two pole circuit breaker must protect the 230V power supply.



Ref. :	Description:
5:1	24VDC power supply connector.
5:2	Fuse F1: T2.5AL 250V (230V power supply).
5:3	Input/output extension card.
5:4	DIP switches for selecting operation mode and programming parameters.

Ref. :	Description:
5:9	Microcontroller RESET button.
5:10	RS232 line TTL 5V level.
5:11	Customer Input/output connector.
5:12	Signal relays.

Ref. :	Description:
5:5	Parameter programming DIP switches.
5:6	AS-LINK connector for programming console.
5:7	Programming push button and LED.
5:8	Direction A and B simulation buttons.

Ref. :	Description:
5:13	AS1052 board connector (<i>dropping-arm</i>).
5:14	Direction A and B electromagnets connector.
5:15	Direction A and B limit switches connector.
5:16	Additional Input/output connector.
5:17	TEST button for dropping-arm function.

5.6. CHECK-LIST

- ☐ Before commissioning the tripod turnstile, proceed with the various mechanical tests as described in the Field manual *paragraph [2.1. First service at 50,000 cycles]*, then the electrical ones (proper operation of the optional readers, pictograms, etc.). In case of a mechanical problem, please refer to the corresponding paragraph.
- ☐ Check if all wires are firmly connected to their respective terminal blocks.
- ☐ Check if the tripod arms can be pushed freely if the equipment is powered off, in case a mechanism type 3 or type 5 is installed (anti-panic device).
- ☐ Check if all screws and nuts have been tightened firmly.
- ☐ Inspect the inside of the turnstile to ensure no tools remain, to cause equipment failures.
- ☐ Remove any foreign body from the inside of the gate (packing, debris, etc.), and clean it.
- ☐ Replace both end sections (**4:1**) and (**4:2**).
- ☐ Replace and lock the hood (**4:3**).

The tripod turnstile is now operational. Although all adjustments have been carried out in our factory, a final adjustment may be required, following transportation and installation of the equipment. In this case, refer to the Field manual.

5.7. MAINTENANCE OF SURFACES

INSTRUCTIONS D'ENTRETIEN DES SURFACES EXTÉRIEURES EN ACIER INOXYDABLE



Pour conserver un aspect de surface correct et éviter les dépôts et taches d'oxydation, il est vivement recommandé d'entretenir régulièrement les tôles avec un produit spécialement conçu à cet effet.

Automatic Systems peut vous fournir un produit approuvé sous la référence -/6031/000.

Automatic Systems se réserve le droit de refuser l'application des clauses de garantie en cas de manquement évident à l'entretien.

ONDERHOUDSINSTRUCTIES VOOR OPPERVLAKTEN ROESTVRIJ STAAL



Om het uiterlijk te beschermen en afzetting of oxydatievlekken te vermijden, dient men de staalplaat regelmatig te onderhouden met een speciaal produkt.

Automatic Systems kan u een goedgekeurd produkt leveren onder referentienummer -/6031/000.

Automatic Systems behoudt zich het recht voor de toepassing van de waarborgbepalingen te weigeren indien het onderhoud verwaarloosd werd.

GEHÄUSEPFLEGE



Zur Erhaltung eines positiven Erscheinungsbildes ist es ratsam, die Oberflächen der Geräte ständig zu pflegen. Umweltablagerungen und Rostflecken werden verhindert, wenn Lackierung und Edelstahlteile regelmässig mit bewährten Pflegemitteln behandelt werden, wie sie z.B.

Automatic Systems unter der Teilenummer -/6031/000 anbietet.

Bei offensichtlicher Nichteinhaltung der Gerätepflege behält sich Automatic Systems das Recht vor Garantieersuchen abzulehnen.

INSTRUCTIONS FOR MAINTAINING EXTERNAL STAINLESS STEEL SURFACES



For maintaining a good surface appearance and preventing the formation of deposits and rust spots, it is highly advisable to periodically service the outer surfaces of the housing with a stainless steel cleaner and polisher.

Automatic Systems can provide you with an approved product, under the reference -/6031/000.

Automatic Systems reserves the right to deny application of the warranty clauses in cases of obvious maintenance neglect.

INSTRUCCIONES DE MANTENIMIENTO DE SUPERFICIES DE ACERO INOXIDABLE



Para mantener el aspecto correcto de las superficies y evitar depósitos y manchas de óxido, es necesario limpiar periódicamente la chapa con un producto especial. Si Vd. lo desea, Automatic Systems puede suministrarle un producto homologado, bajo la referencia -/6031/000.

En caso de una evidente falta de mantenimiento del producto, Automatic Systems se reserva el derecho de rechazar reclamaciones basadas en las cláusulas de la garantía.

ISTRUZIONI PER LA MANUTENZIONE DELLE SUPERFICI IN ACCIAIO INOSSIDABILE



Per mantenere inalterato l'aspetto delle superfici in acciaio inossidabile ed evitare il formarsi di depositi e macchie di ossido si raccomanda di effettuare regolarmente la manutenzione delle lamiere utilizzando un prodotto appropriato.

Automatic Systems può fornirvi un prodotto specifico per le superfici in acciaio che è contraddistinto dal codice -/6031/000.

In caso di evidente inosservanza delle norme per l'ordinaria manutenzione Automatic Systems si riserva il diritto di rifiutare l'applicazione delle clausole di garanzia.

5.8. TEMPORARY DISMANTLING

- If the equipment has to be temporarily dismantled, e.g. if you need to change its location, follow the procedure below.

5.8.1. Disconnecting the equipment

- Unlock and remove the hood **(4:3)**.
- Remove both end sections **(4:1)** and **(4:2)**.
- Make sure that the power supply cables are not live.
- Put off the main switch **(2:1)** on the electrical control logic.
- Disconnect the power supply wires **(2:4)** from the main switch **(2:1)** as well as the ground cable **(2:5)**.
- Disconnect any other cabling (control wires, etc.).

5.8.2. Dismounting the tripod arms (if required)

- Remove the flat-end screw **(5:4)** and the conic-end screw **(5:3)** from the arms **(5:2)**.
- With the help of a strap tube-wrench, turn the arms counter-clockwise to unscrew them.

5.8.3. Removing the unit

- Loosen the four fixing screws.
- Free the turnstile.
- Loosen the four expansion bolts.
- Using manual handling or fork-lift truck, remove the tripod turnstile.

5.9. SCRAPPING THE EQUIPEMENT

- When the equipment is withdrawn from use, proceed with the dismantling procedure as described in *paragraph [5.8. Temporary dismantling]*. Ensure that the various components of the equipment (metals, electrical components, plastics, etc.) are handled, recycled, or disposed of in the appropriate method, to comply with regulations and codes of practice in the country where the unit is to be scrapped.

6. ANNEXE(S)

Electrical diagrams: those are inside the equipment.

7. EC CERTIFICATE



EC declaration of conformity



We, undersigned,

AUTOMATIC SYSTEMS s.a.
Avenue Mercator, 5
B-1300 WAVRE
BELGIUM

Herewith declare that the following machine

Tripod turnstile

TR 490, TR 491
TR 490R, TR 491R
TR 492
TR 492R

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

- Machinery Directive 2006/42/CE.
- Low-voltage Directive 2014/35/UE.
- Electromagnetic compatibility Directive 2014/30/UE.
- EN 12100-1 (2003): Machinery – Basic terminology and methodology.
- EN 12100-2 (2003): Machinery – Technical principles and specifications.
- EN 60204-1 (2009): Safety of machinery. Electrical equipment of machines. General requirements.
- EN 61000-6-3 (2007): Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-2 (2005): Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

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