TR490 Tripod Turnstile

INSTALLATION MANUAL

Rev 05

Automatic Systems s.a.

Head office & factory:

Avenue Mercator 5, 1300 Wavre, Belgium

Tél.: 32-10-23.02.11 Fax: 32-10-23.02.02

Automatic Systems reserves the right to change the characteristics of its products without notice.

Document revisions

Rev	Date	Written by	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.
04	2010-01-05	MFy		EC certificate update.
05	2011-03-24	MFy		Electric diagram 2TR604.006 ⇨ rev B.

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1. INTRODUCTION

We thank you for choosing the TR490 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.

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.

WARNING:

YOUR TR490 TRIPOD TURNSTILE COMPRISES A MECHANISM AND VARIOUS ELECTRICAL COMPONENTS. ANY NEGLIGENCE DURING AN INTERVENTION IN THE MACHINE MAY SERIOUSLY ENDANGER YOUR SAFETY. AS SOON AS YOU OPEN THE HOUSING, PUT OFF THE MAIN SWITCH (**2:1**) ON THE ELECTRICAL CONTROL LOGIC (**2:2**), LOCATED UNDER THE HOOD. BE CAREFUL IN HANDLING ANY INTERNAL ELEMENT WHICH MIGHT BE UNDER POWER OR COULD BE SET IN MOTION.

WHEN WORKING ON THE CIRCUITS, IT IS RECOMMENDED:

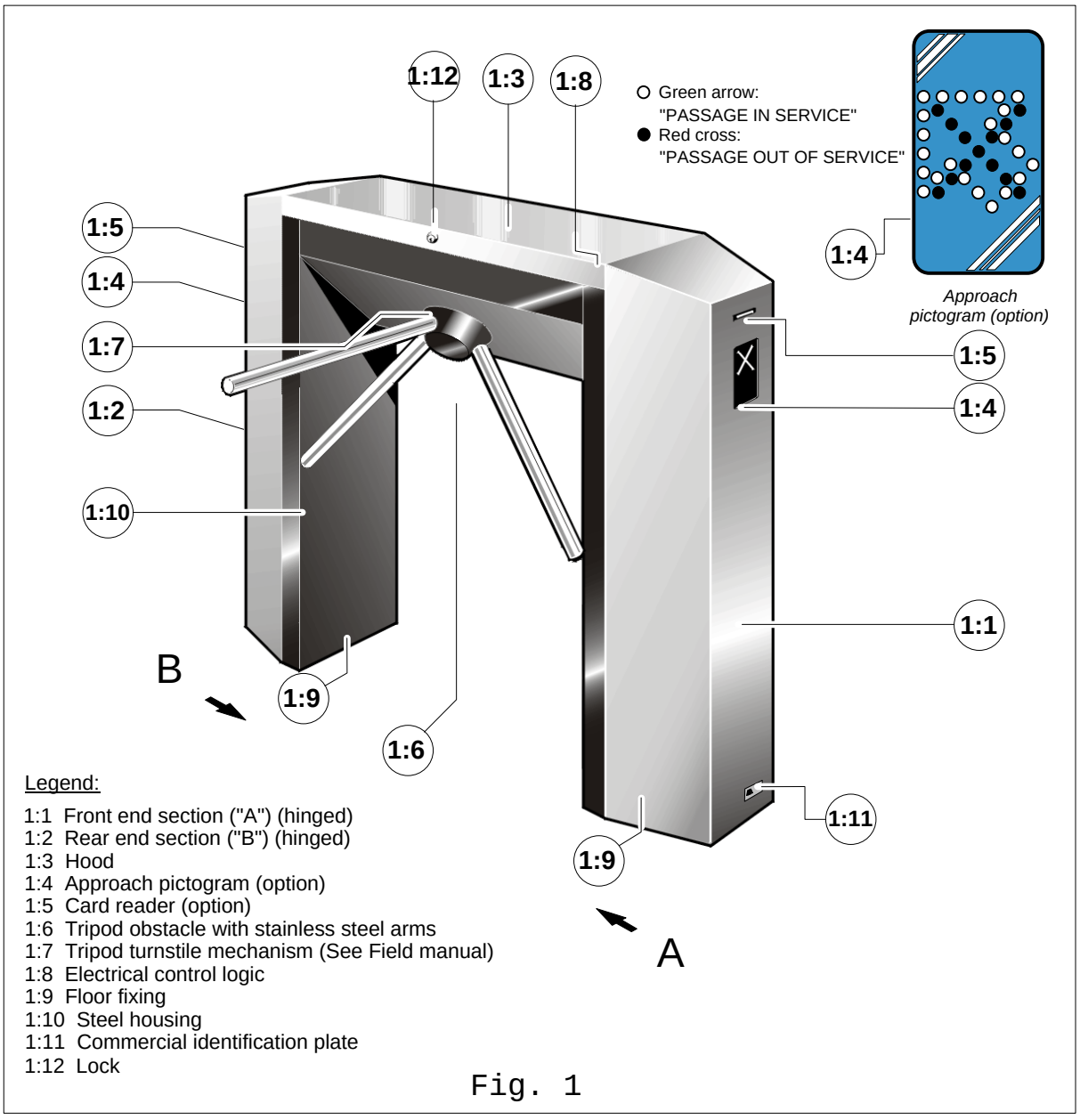
- NOT TO DISCONNECT WIRES WITHOUT MARKING THEIR TERMINALS;
- NOT TO REMOVE THE CONNECTOR WITHOUT MARKING ITS PRECISE POSITION

IMPORTANT

BECAUSE OF THE SHOCKS THE TURNSTILE COULD CAUSE, WE ADVISE YOU TO PROHIBIT THE ACCESS TO UNACCOMPANIED YOUNG CHILDREN AS WELL AS TO ANIMALS.

2. GENERAL

2.1. General view



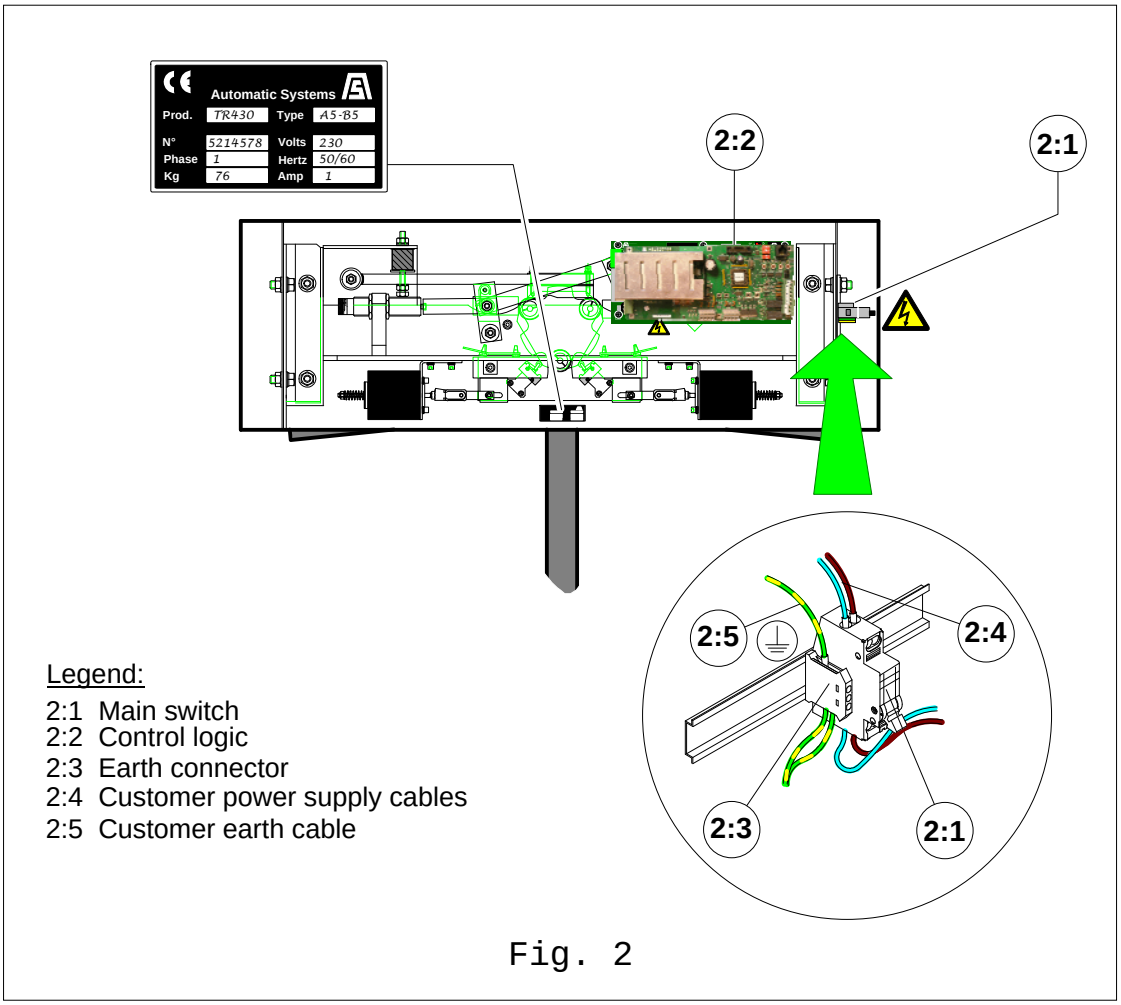
Legend:

1:1 Front end section ("A") (hinged)
1:2 Rear end section ("B") (hinged)
1:3 Hood
1:4 Approach pictogram (option)
1:5 Card reader (option)
1:6 Tripod obstacle with stainless steel arms
1:7 Tripod turnstile mechanism (See Field manual)
1:8 Electrical control logic
1:9 Floor fixing
1:10 Steel housing
1:11 Commercial identification plate
1:12 Lock

Fig. 1

Note:	*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.*

2.2. Switching off the equipment



Legend:

2:1 Main switch
2:2 Control logic
2:3 Earth connector
2:4 Customer power supply cables
2:5 Customer earth cable

Fig. 2

- 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.

2.3. 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

2.4. 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.

2.5. Overall dimensions and installation plan

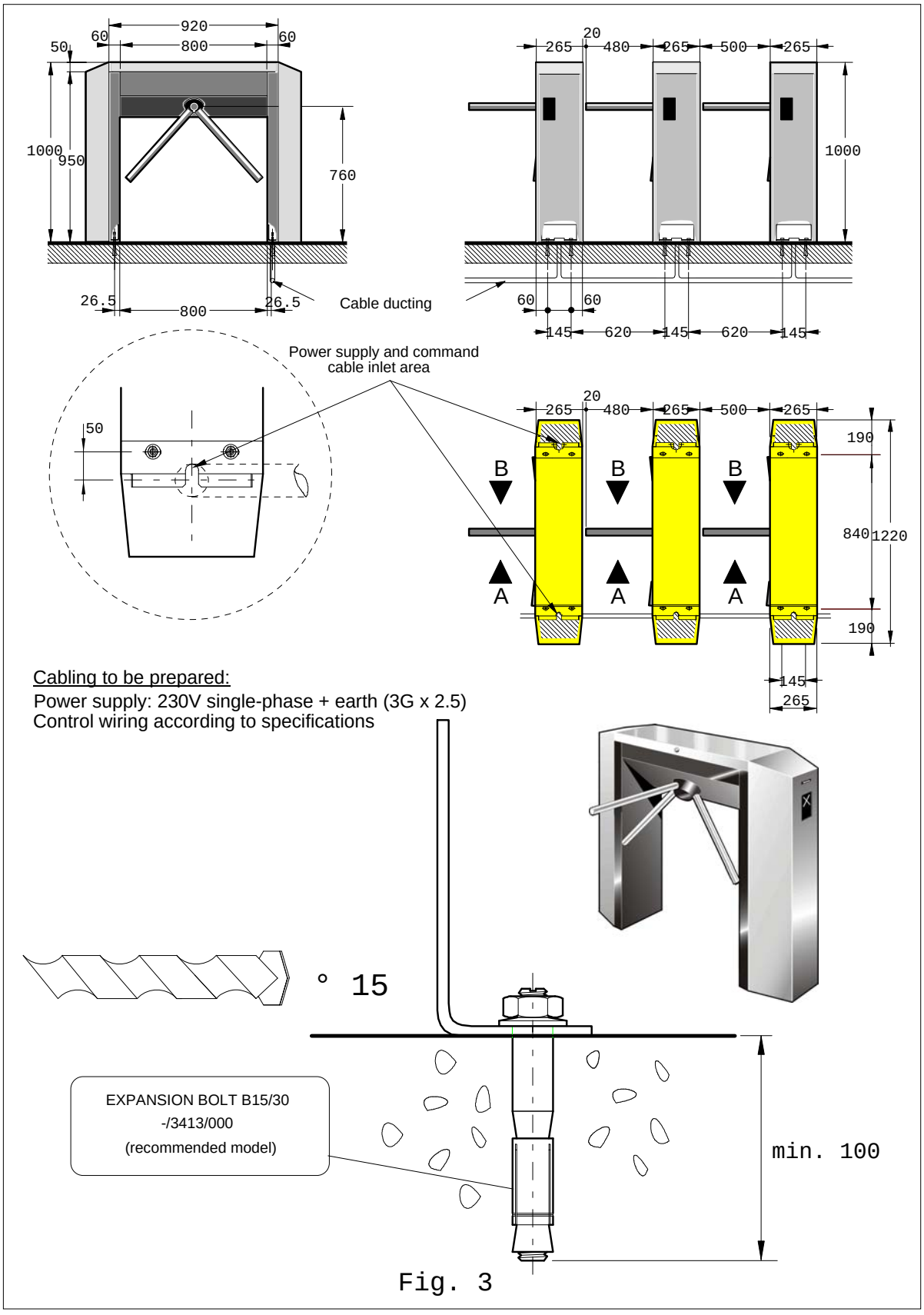


Fig. 3

3. INSTALLATION

3.1. First step

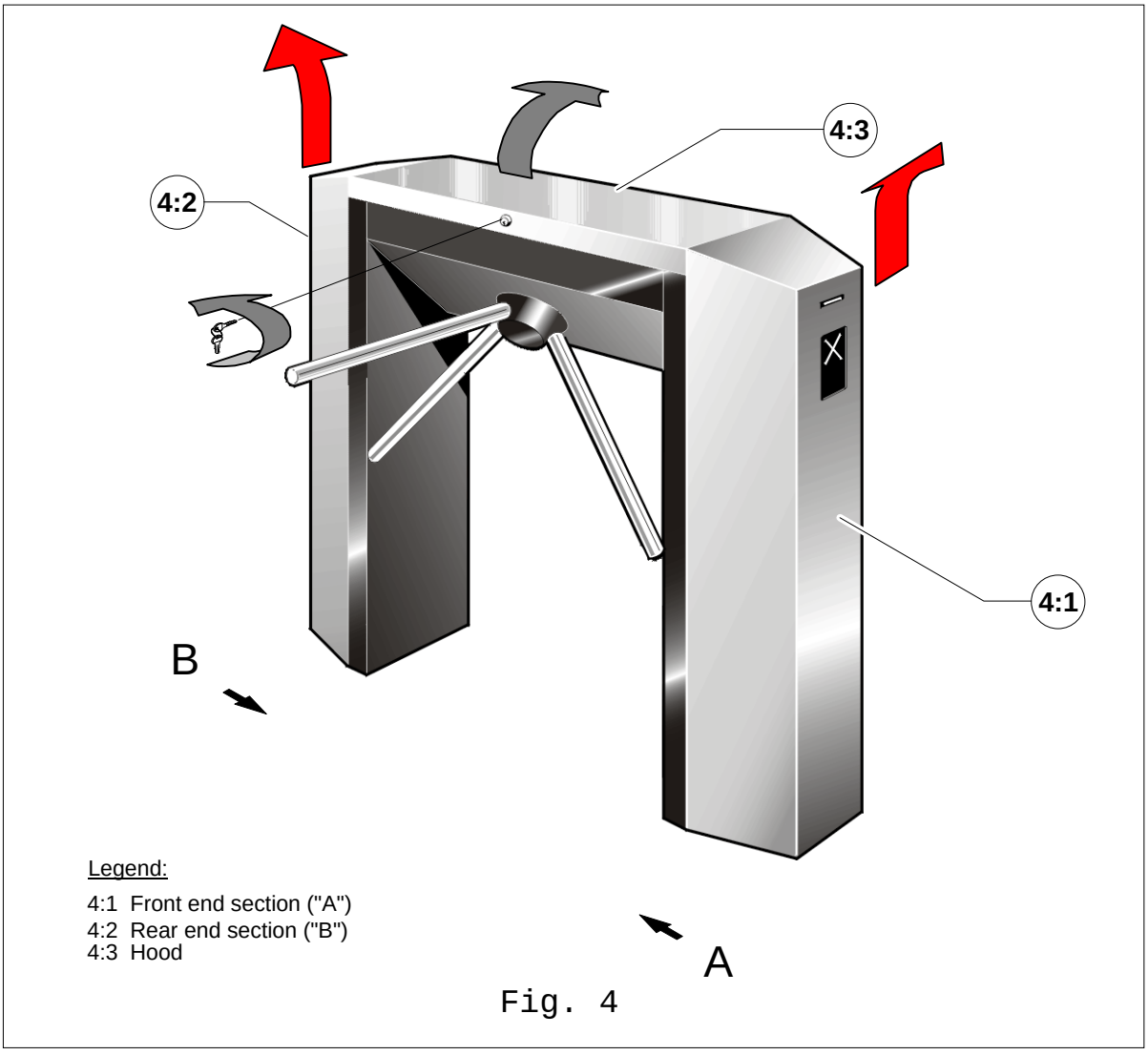


Fig. 4

- 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**) et (**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.

3.2. 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 6/11). 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.
  - ◆ Prepare power supply wiring (230V single-phase + earth, 3Gx2.5) and control cabling (not supplied). All cables must have a 2 meter tail.

Note:	*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.*

3.3. 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.

3.4. Mounting the tripod arms

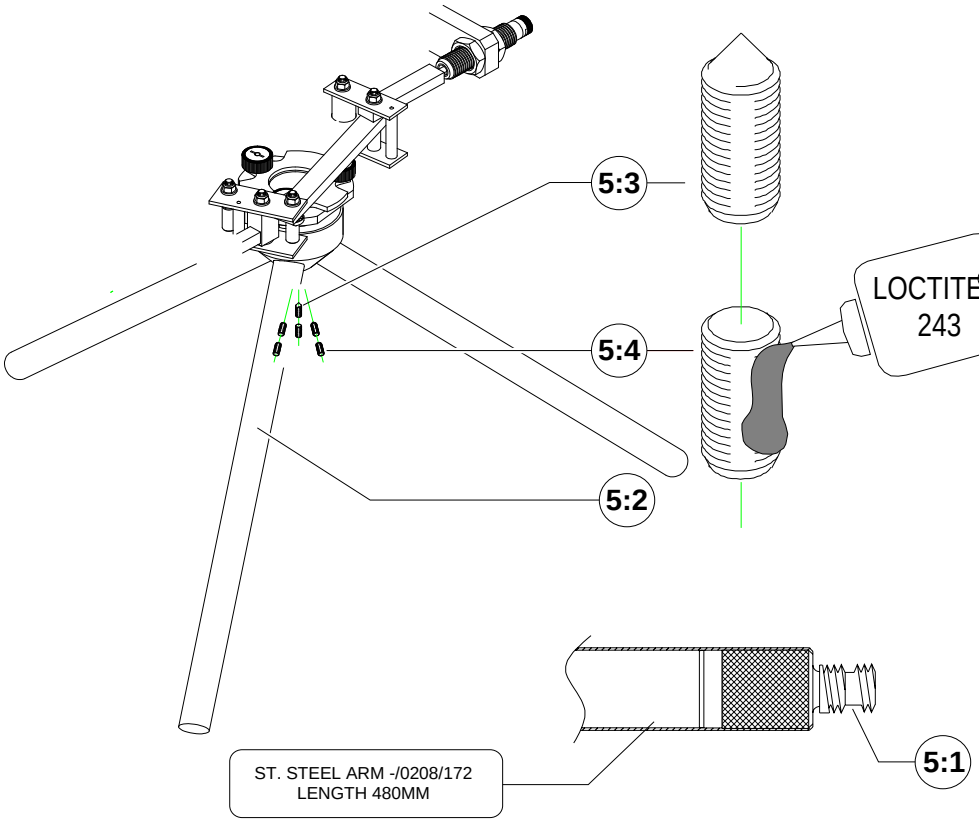


Fig. 5

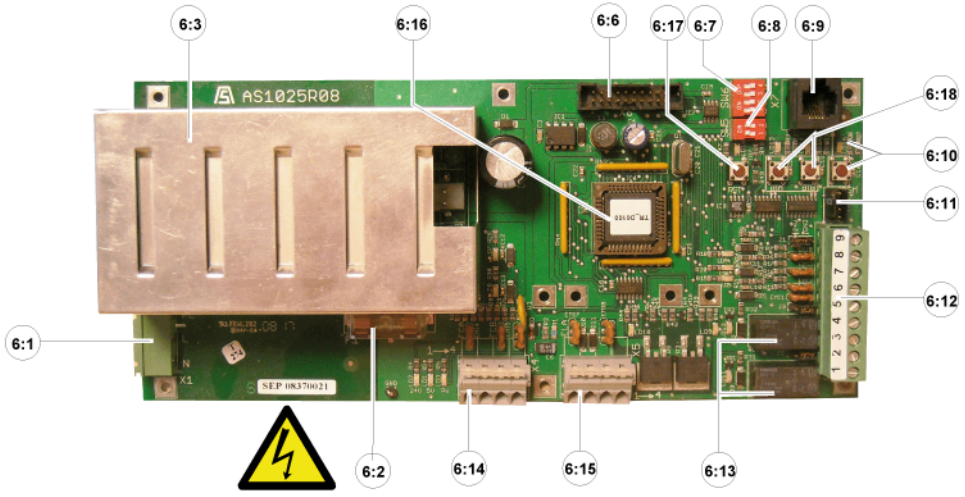
- Remove the grease from the thread (**5:1**) of the arms (**5:2**) with trichlorethylene (care must be taken when using any substance or chemical that can be harmful, refer to the manufacturer's information and/or a Health & Safety "Risk Assessment") and apply some Loctite® 243 (blue) or an equivalent 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**).

3.5. 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.

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

TR6 CONTROL LOGIC



AS1025 board

1. 230V main power supply connector
2. Fuse 1: T2.5AL 250V (230V power supply)
3. 60VA multivoltage transformer
6. I2C expansion connector
7. Parameter programming DIP switches
8. DIP switches for selecting operation mode and programming parameters
9. "AS-LINK" connector for programming console
10. Programming push button and LED
11. RS232 line TTL 5V level
12. Customer input/output connector
13. Signal relay
14. Direction A and B limit switches connector
15. Direction A and B electromagnets connector
16. Application microcontroller
17. Microcontroller reset button
18. Direction A and B simulation buttons

Fig. 6

3.6. 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 and lock the hood (**4:1**).

-- 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.

3.7. Temporary dismantling

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

3.7.1. Disconnecting the equipment

-- Unlock and remove the hood (**4:1**).

-- 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 earth cable (**2:5**).

-- Disconnect any other cabling (control wires, etc.).

3.7.2. 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.

3.7.3. Removing the unit

-- Loosen the four fixing screws.

-- Free the turnstile.

-- Loosen the four expansion bolts.

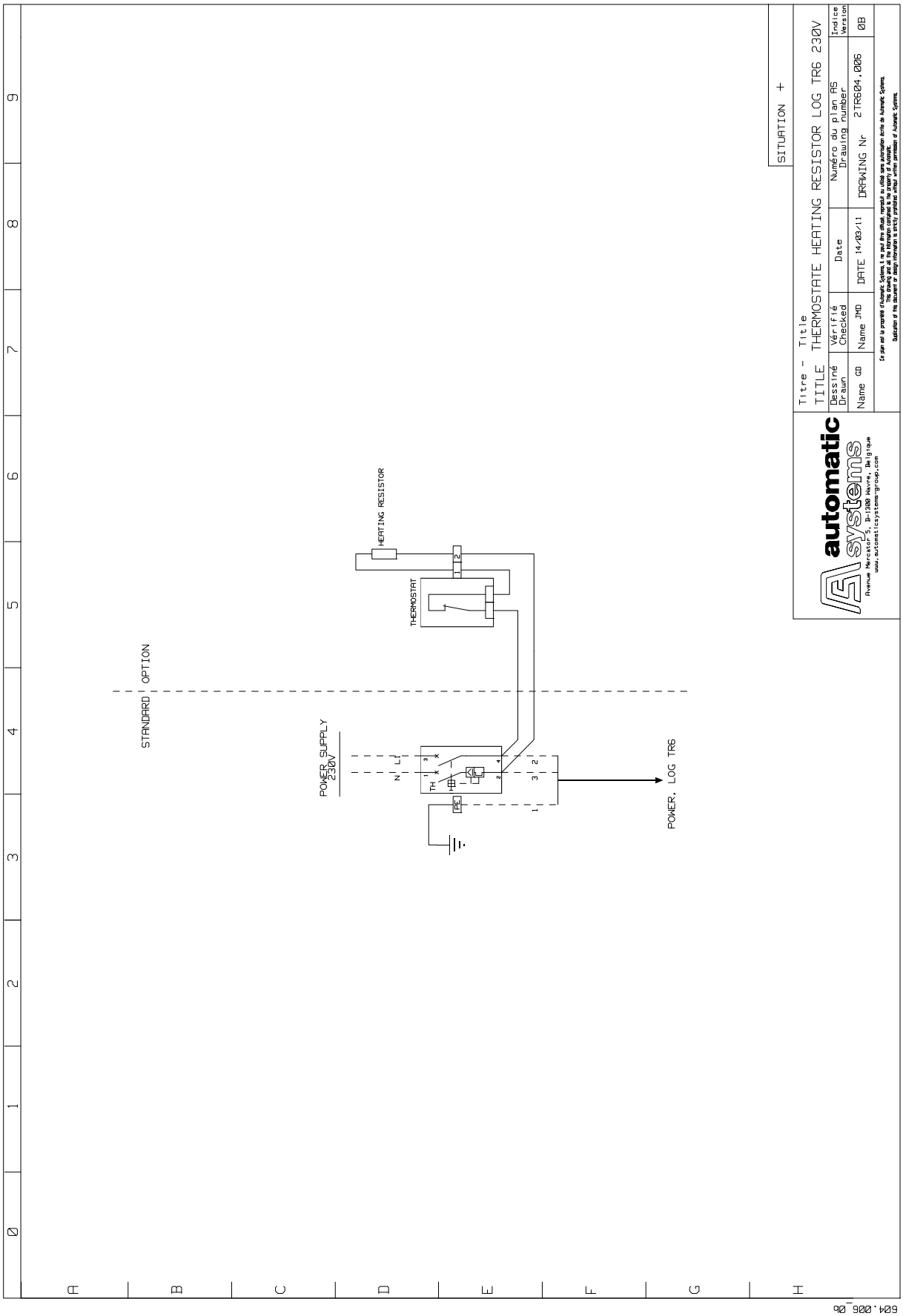
-- Using manual handling or fork-lift truck, remove the tripod turnstile.

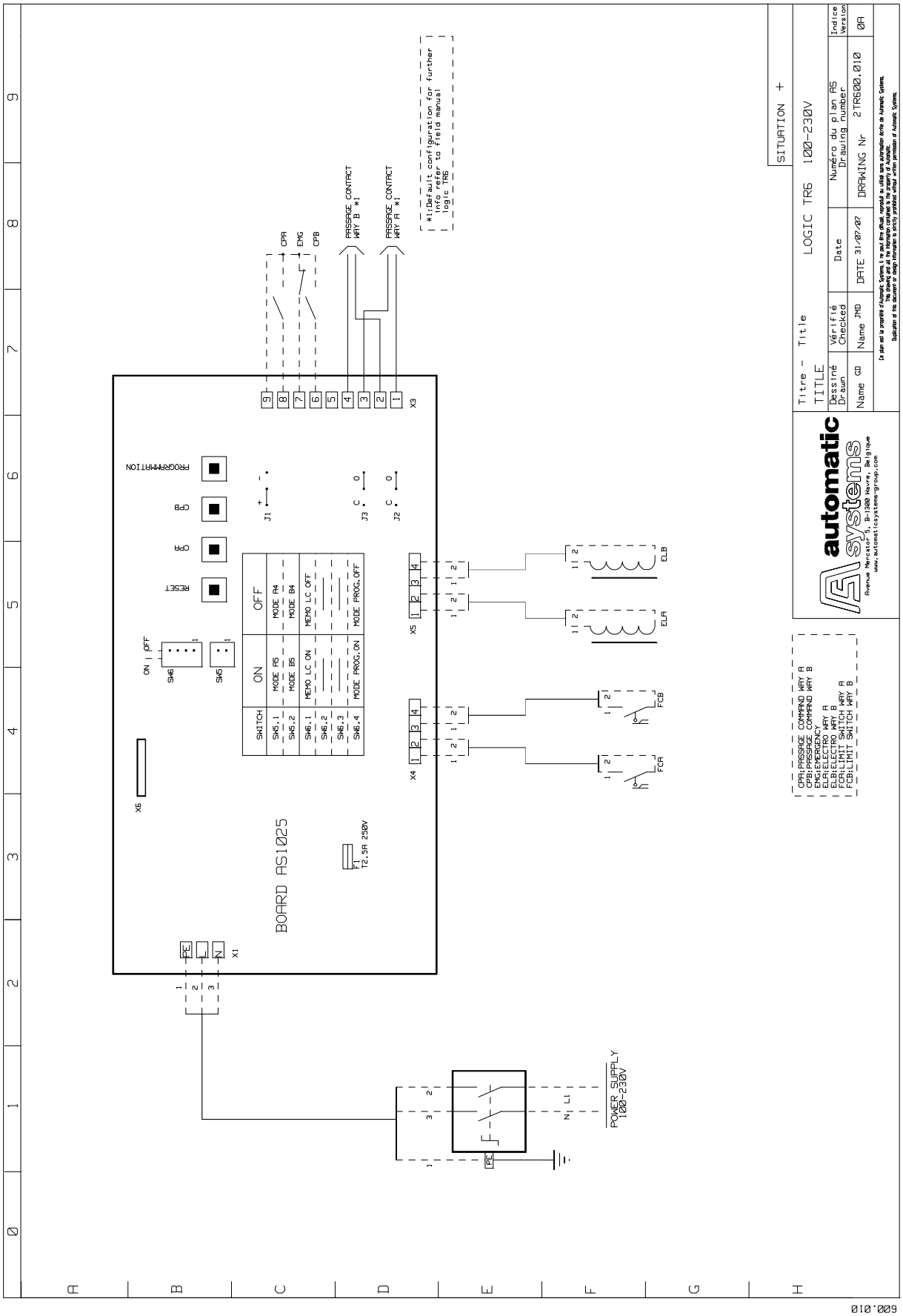
3.8. Scrapping the equipment

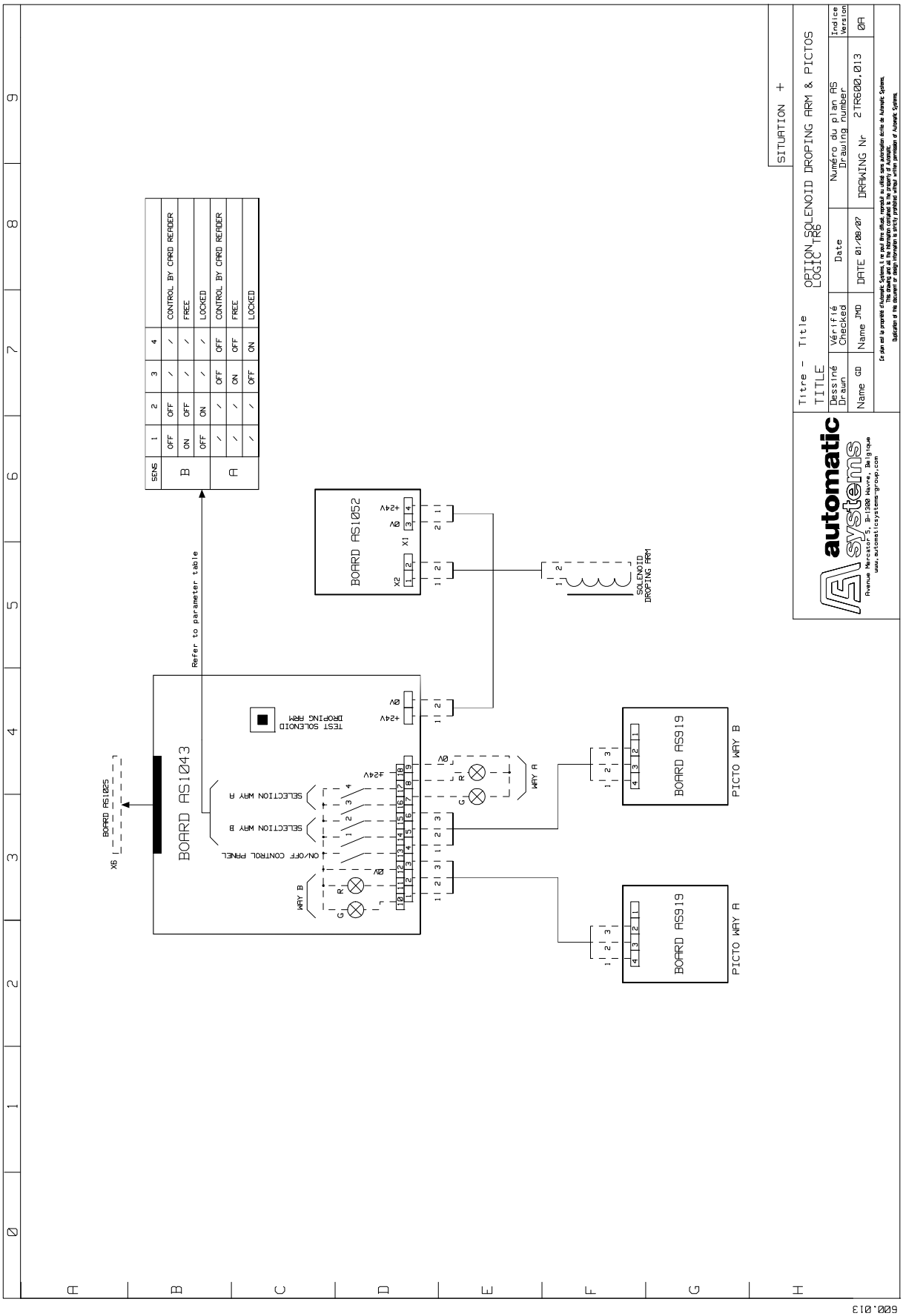
- When the equipment is withdrawn from use, proceed with the dismantling procedure as described in *paragraph [3.7. Temporary dismantling]*. Ensure that the various components of the equipment (metals, electrical components, plastics, etc.) are handled, recycled, or disposed of in the appropriate method, to comply with regulations and codes of practice in the country where the unit is to be scrapped.

4. Electric diagrams

For information only. The reference diagrams are inside the equipment.




BOARD AS1025
SITUATION +
LOGIC TR6 100-230V
DRAWING Nr 2TR600.010
DATE 31/07/07
automatic systems
Avenue Mercator 5, B-1300 Havre, Belgique
www.automaticsystems-group.com
CPA:PASSAGE COMMAND WAY A
CPB:PASSAGE COMMAND WAY B
EMG:EMERGENCY
ELA:ELECTRO WAY A
ELB:ELECTRO WAY B
FCA:LIMIT SWITCH WAY A
FCB:LIMIT SWITCH WAY B
POWER SUPPLY 100-230V
PASSAGE CONTACT WAY A *1
PASSAGE CONTACT WAY B *1
*1:Default configuration for further configuration refer to field manual logic TR6
PROGRAMMATION
RESET
SW5
SW6
SWITCH
SW5.1
SW5.2
SW6.1
SW6.2
SW6.3
SW6.4
MODE A5
MODE B5
MEMO LC ON
MODE PROG,ON
MODE A4
MODE B4
MEMO LC OFF
MODE PROG,OFF
F1 T2,5A 250V
X1
X3
X4
X5
X6
J1
J2
J3
ELA
ELB
FCA
FCB


SITUATION +
Titre - Title OPTION SOLENOID DROPING ARM & PICTOS
LOGIC TR6
TITLE
Dessiné Drawn Name GD
Vérifié Checked Name JMD
Date DATE 01/08/07
Numéro du plan AS Drawing number DRAWING Nr 2TR600,013
Indice Version 0A
automatic systems
Avenue Mercator 5 B-1300 Wavre Belgique
www.automaticsystems-group.com
BOARD AS1043
BOARD AS1025
BOARD AS1052
BOARD AS919
BOARD AS919
PICTO WAY B
PICTO WAY A
SOLENOID DROPING ARM
TEST SOLENOID DROPING ARM
SELECTION WAY A
SELECTION WAY B
ON/OFF CONTROL PANEL
WAY A
WAY B
Refer to parameter table
SENS
B
A
CONTROL BY CARD READER
FREE
LOCKED
CONTROL BY CARD READER
FREE
LOCKED
600.013

5. EC certificate

Déclaration CE de conformité

Nous, soussignés,

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

Déclarons que la machine

Tourniquet tripode

TR490

TR491

est conforme aux dispositions des Directives, normes et autres spécifications suivantes:

- Directive Sécurité des Machine 2006/42/CE.
- Directive Basse Tension 2006/95/CE.
- Directive Compatibilité électromagnétique 2004/108/CE.
- EN 12100-1: 2003 Sécurité des machines- Terminologie de base et méthodologie.
- EN 12100-2: 2003 Sécurité des machines- Principes techniques et spécifications.
- EN 60204-1: 2006 Sécurité des machines, Equipement des machines- Règles générales.
- EN 61000-6-3: 2001 Compatibilité électromagnétique- Norme générique émission- Résidentiel, commercial, industrie légère.
- EN 61000-6-2: 2001 Compatibilité électromagnétique- Norme générique immunité- Résidentiel, commercial, industrie lourde.

Fait à WAVRE,
le : 2009-12-03
Nom du signataire : Denis VANMOL
Fonction : Directeur du développement
Signature :

EC declaration of conformity

We, undersigned,

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

Herewith declare that the machinery

Tripod turnstile

TR490

TR491

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

- Machinery Directive 2006/42/CE
- Low-voltage Directive 2006/95/CE
- Electromagnetic compatibility Directive 2004/108/EC
- EN 12100-1: 2003 Machinery – Basic terminology and methodology.
- EN 12100-2: 2003 Machinery – Technical principles and specifications.
- EN 60204-1: 2006 Safety of machinery. Electrical equipment of machines. General requirements.
- EN 61000-6-3: 2001 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-2: 2001 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

Made in WAVRE
Date: 2009-12-03
Name : Denis VANMOL
Function : Director of Development
Signature :