

# MAGIC

ACCIONADOR ELECTROMECÁNICO INTEGRADO PARA PUERTAS BATIENTES  
MANUAL DEL INSTALADOR

INTEGRATED IN-POST ELECTROMECHANICAL OPERATOR FOR SWING GATES  
INSTALLER'S MANUAL

ACTIONNEUR ÉLECTROMÉCANIQUE INTÉGRÉ POUR PORTES BATTANTES  
MANUEL DE L'INSTALLATEUR

ACCIONADOR ELECTROMECÂNICO INTEGRADO PARA PORTAS BATENTE  
MANUAL DO INSTALADOR

EINGEBAUTER ELEKTROMECHANISCHER ANTRIEB FÜR FLÜGELTORE  
INSTALLATEUR-BEDIENUNGSANLEITUNG

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## 1 SYMBOLS USED IN THIS MANUAL

This manual uses symbols to highlight specific texts. The functions of each symbol are explained below:

**⚠ Failure to respect the safety warnings could lead to accident or injury.**

⌚ Work sequences or procedures.

📖 Important details which must be respected for correct assembly and operation.

ℹ Additional information to help the installer.

♻ Information on care for the environment.

## 2 IMPORTANCE OF THIS GUIDE

**⚠ Read this guide in its entirety before carrying out the installation, and obey all instructions. Failure to do so may result in a defective installation, leading to accidents and failures.**

ℹ Moreover, this guide provides valuable information which will help you to carry out installation more efficiently.

📖 This guide is an integral part of the product. Keep for future reference.

## 3 ENVISAGED USE

This device has been designed for installation as part of an automatic opening and closing system for swing doors and gates.

**⚠ This device is not suitable for installation in inflammable or explosive environments.**

**⚠ Failure to install or use as indicated in this manual is inappropriate and hazardous, and could lead to accidents or failures.**

**⚠ The installer shall be responsible for ensuring the facility is set up for its envisaged use.**

## 4 INSTALLER'S QUALIFICATIONS

**⚠ Installation should be completed by a professional installer, complying with the following requirements:**

- He/she must be capable of carrying out mechanical assemblies in doors and gates, choosing and implementing attachment systems in line with the assembly surface (metal, wood, brick, etc) and the weight and effort of the mechanism.

- He/she must be capable of carrying out simple electrical installations in line with the low voltage regulations and applicable standards.

**⚠ Installation should be carried out bearing in mind standards EN 13241-1 and EN 12453.**

## 5 AUTOMAT SAFETY ELEMENTS

This device complies with all current safety regulations. However, the complete system comprises, apart from the operator referred to in these instructions, other elements which should be acquired separately.

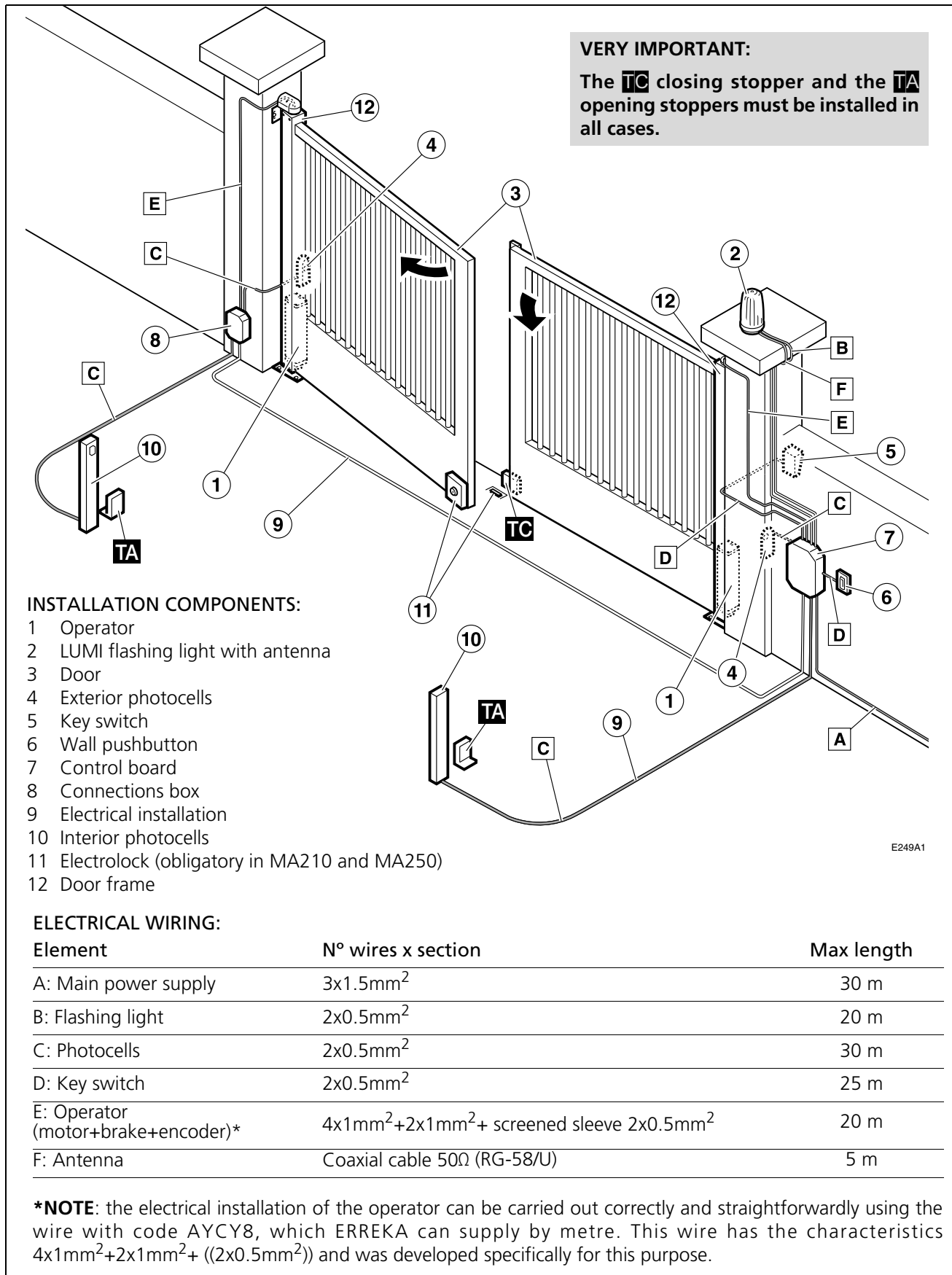
📖 The safety of the complete installation depends on all the elements installed. Install only Erreka components in order to guarantee proper operation.

**⚠ Respect the instructions for all the elements positioned in the installation.**

**⚠ Installing safety elements is recommended.**

ℹ For further details, see "Fig. 1 Elements of the complete installation" on page 23.

# 1 ELEMENTS OF THE COMPLETE INSTALLATION



**Fig. 1** Elements of the complete installation

▲ **The safe and correct operation of the installation is the responsibility of the installer.**

■ For greater safety, Erreka recommends installing the photocells (4) and (10).

## 2 GENERAL CHARACTERISTICS OF THE OPERATOR

The MAGIC operator is made to form part of an automated system, integrated in the frame of iron or aluminium swing doors.

It comprises a metal body, which contains the motor and a planetary gearbox.

The MAGIC operator allows opening of 180°.

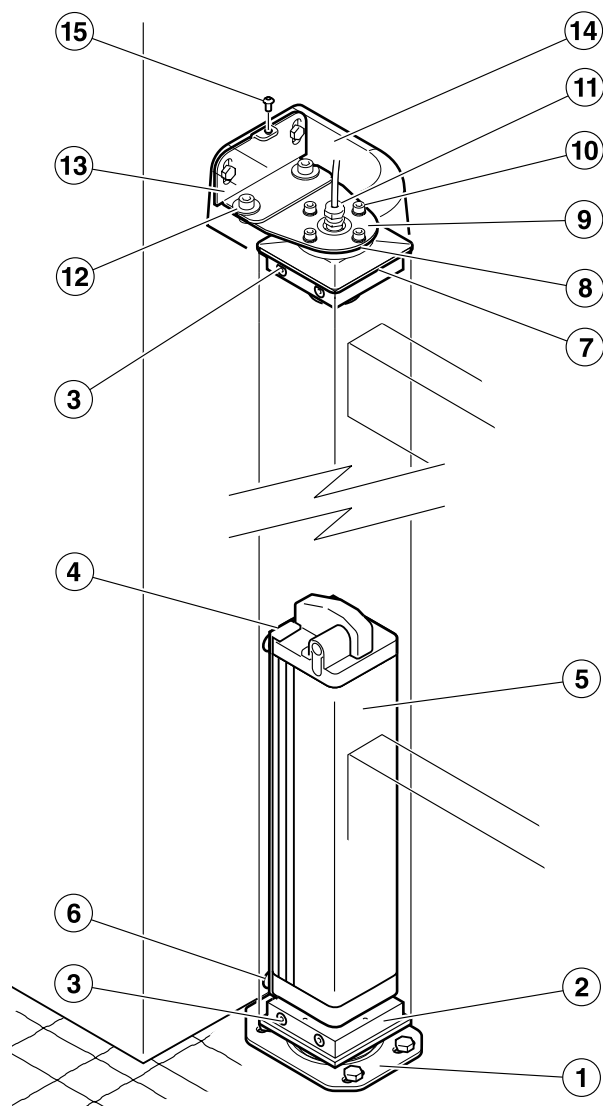
This operator, along with its corresponding Erreka control board, allow the implementation of a gentle halt system, with the speed slowing down at the end of the closing and opening operations.

The MA210 and MA250 models are reversible, meaning the installation must be fitted with an electrolock.

The MA210F/MAS210F and MA250F/MAS250F are fitted with a brake. An electrolock is only required for leaf lengths of over 1.8 m.

The MAS210F and MAS250F models, apart from a brake, are fitted with an encoder.

## 3 MAIN OPERATOR PARTS



D249A1

### Components

- 1 Base plate and traction wheel
- 2 Bottom cover
- 3 M6x16 countersunk bolts (6)
- 4 Adaptation plate (for iron profile)
- 5 Operator (MA210F/MAS210F)
- 6 M10x20 countersunk bolts (4)
- 7 Top cover with sealing joint
- 8 Top pin with O-rings (2)
- 9 Bracket plate
- 10 M6x14 bolts (4) with lock washers
- 11 Packing glands
- 12 M8x20 bolts (2) with washers and nuts
- 13 Angle piece
- 14 Water guard
- 15 M5x10 bolt

### Wiring

- Grey wire: motor (common)
- Brown wire: motor (turning 1)
- Black wire: motor (turning 2)
- Yellow/green wire: earth
- Orange wire:
  - no encoder: not included
  - with encoder: brake
- Purple wire:
  - no encoder: not included
  - with encoder: brake
- Blue wire:
  - no encoder: not included
  - with encoder: encoder signal
- White wire:
  - no encoder: brake
  - with encoder: common (-) of the encoder
- Red wire:
  - no encoder: brake
  - with encoder: power supply (+) of the encoder

Fig. 2 Main parts

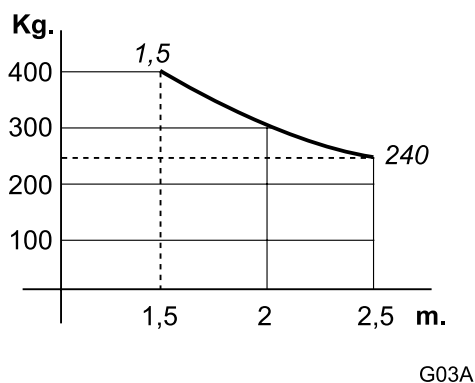
## 4 TECHNICAL CHARACTERISTICS OF THE OPERATOR

Model	MA210	MA210F	MAS210F	MA250	MA250F	MAS250F
Power supply (V/Hz)	230/50	230/50	230/50	230/50	230/50	230/50
Absorbed current (A)	1	1	1	1,7	1,7	1,7
Power consumed (W)	230	230	230	375	375	375
Capacitor ( $\mu$ F)	5	5	5	8	8	8
Protection grade (IP)	54	54	54	54	54	54
Available torque (Nm)	220	220	220	500	500	500
Output speed (rpm)	1,33	1,33	1,33	1,33	1,33	1,33
Opening time 90° (s)	12	12	12	12	12	12
Lock	No	Yes	Yes	No	Yes	Yes
Encoder	No	No	Yes	No	No	Yes
Service temperature (°C)	-20/+60	-20/+60	-20/+60	-20/+60	-20/+60	-20/+60
Duty cycle (operations/hour)	20	20	20	20	20	20
Exterior frame size (mm)	100 x 100	100 x 100	100 x 100	100 x 100	100 x 100	100 x 100
Weight (Kg)	13	13	13	13	13	13
Size and weight of the door	See chart	See chart	See chart	See chart	See chart	See chart

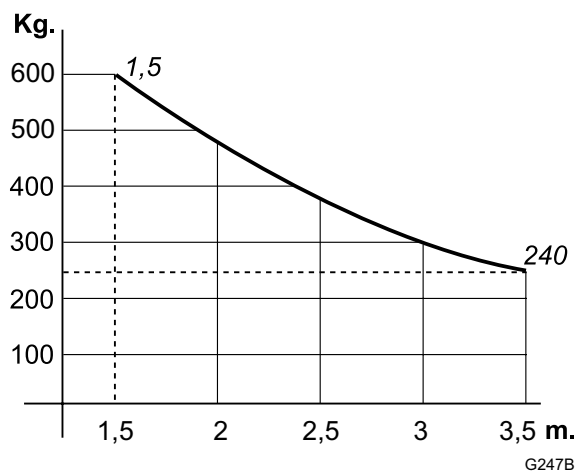


### Limits on use

MA210, MA210F, MAS210F



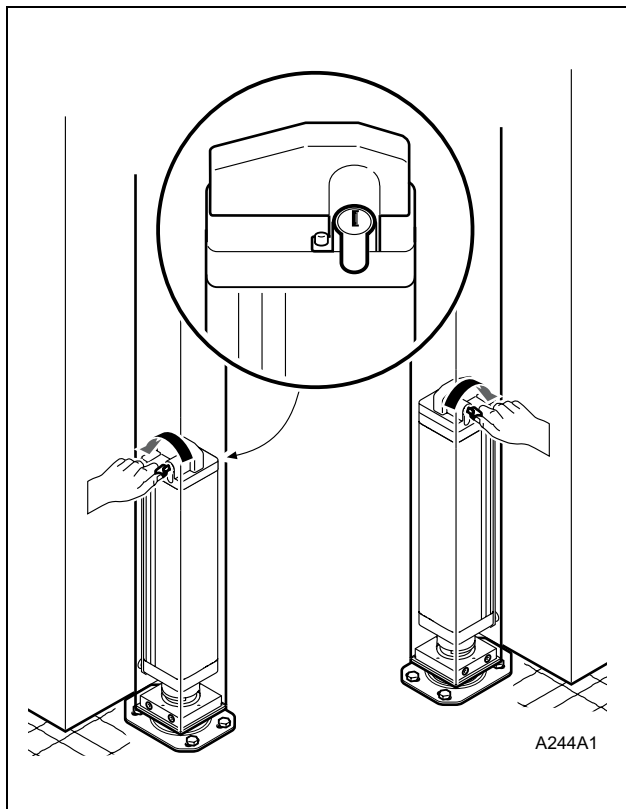
MA250, MA250F, MAS250F



- ☞ Using the VIVO-M203 board is recommended.
- ☞ Using an electrolock for leaf lengths of over 1.8 m is recommended.
- ☞ Values for illustration purposes. The shape of the leaf and the presence of strong wind may bring notable differences in the values of the chart.

## 5 MANUAL OPERATION

☞ In the event of need, the door may be operated manually. In models MA210F, MAS210F, MA250F and MAS250F it is necessary to first run the unlocking mechanism.



### Unlocking

- Insert the key in the release lock and turn approximately 120° towards the wall.
  - ⓘ The key cannot be removed in unlock position. This feature ensures the key can only be removed with the operator locked, thus preventing it from being accidentally unlocked.

### Lock

- Locking is by turning the key again 120° anti-clockwise to the wall.

## 6 DECLARATION OF CONFORMITY

Erreka Automatismos declares that the MAGIC electromechanical operator has been designed for use in a machine or for assembly along with other elements in order to form a machine in line with Directive 2006/42/EC and successive modifications.

The MAGIC electromechanical operator can be used to carry out installations in line with standards EN 13241-1 and EN 12453, provided it is correctly and suitably installed. The installer shall be responsible for proper installation.

The MAGIC electromechanical operator complies with safety legislation in line with the following directives and standards:

- 2006/95/EC (low voltage materials)
- 2004/108/EC (electromagnetic compatibility)
- UNE-EN 60335-1



## 1 UNPACKING

1 Open the package and remove the contents from within.

♻️ Discard the packaging in an environmentally friendly manner, using recycling containers.

⚠️ **Do not leave the packaging within the reach of children or handicapped people, as it may cause injury.**

2 Check the content of the packages (see figure below).

✋ Should it be noticed that a piece is missing or deteriorated, contact the nearest technical service.

## 2 CONTENTS

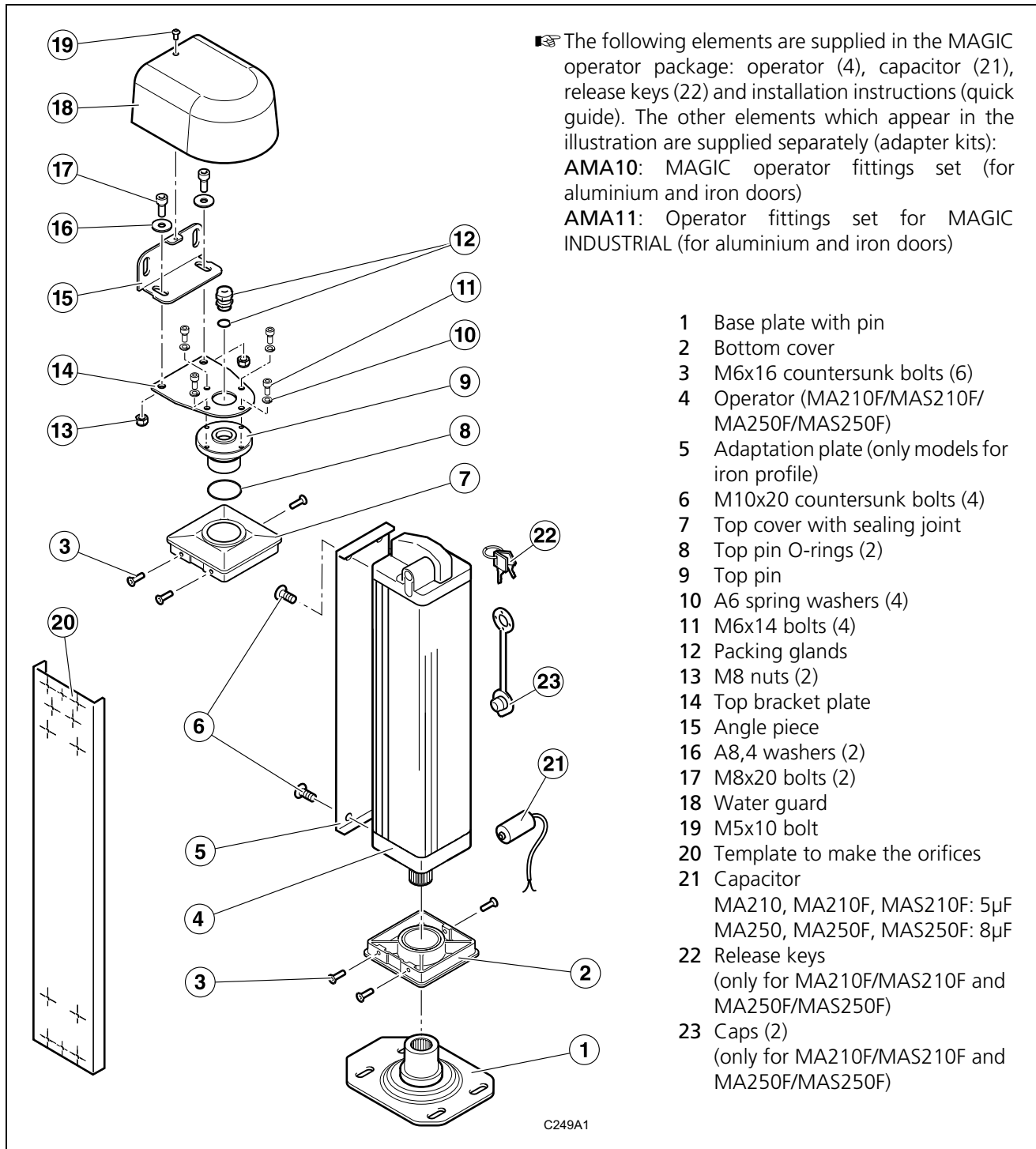


Fig. 3 MAGIC operator and metal fittings (AMA10 / AMA11)

## 1 REQUIRED TOOLS



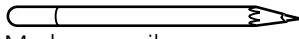
Set of screwdrivers



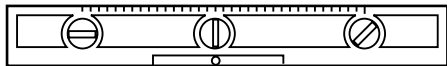
Fixed wrenches (13 mm and 17 mm)



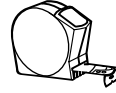
Allen key (5mm)



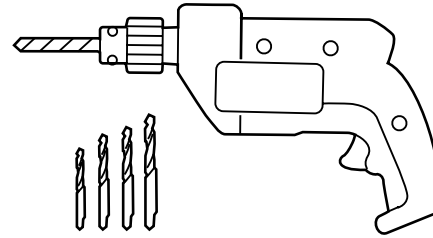
Marker pencil



Spirit level



Tape measure



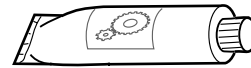
Electrical drill and broaches

**▲ Use the electrical drill in line with the user instructions.**

## 2 REQUIRED MATERIALS



Screws for attachment to the base plate and the wall angle



Lubrication grease (graphite or lithium grease).

## 3 INITIAL CONDITIONS AND CHECKS

### Initial conditions of the door

**▲ Check that the size of the door is within the admissible range of the operator (see the technical characteristics of the operator).**

**▲ If the door to be automated has a pedestrian door, use a safety device to prevent the operator from operating with the pedestrian door open.**

☞ The door must have a closing stopper.

☞ The door must be easy to handle manually, namely:

- It must be balanced, in order to ensure the effort made by the motor is minimum.
- There should be no stiffness throughout its open/close.

**▲ Do not install the operator in a door which does not work correctly in manual operation, as this may lead to accidents. Repair the door before installing.**

### Environmental conditions

**▲ This device is not suitable for installation in inflammable or explosive environments.**

**▲ Check that the admissible environmental temperature range for the operator is suitable for the location.**

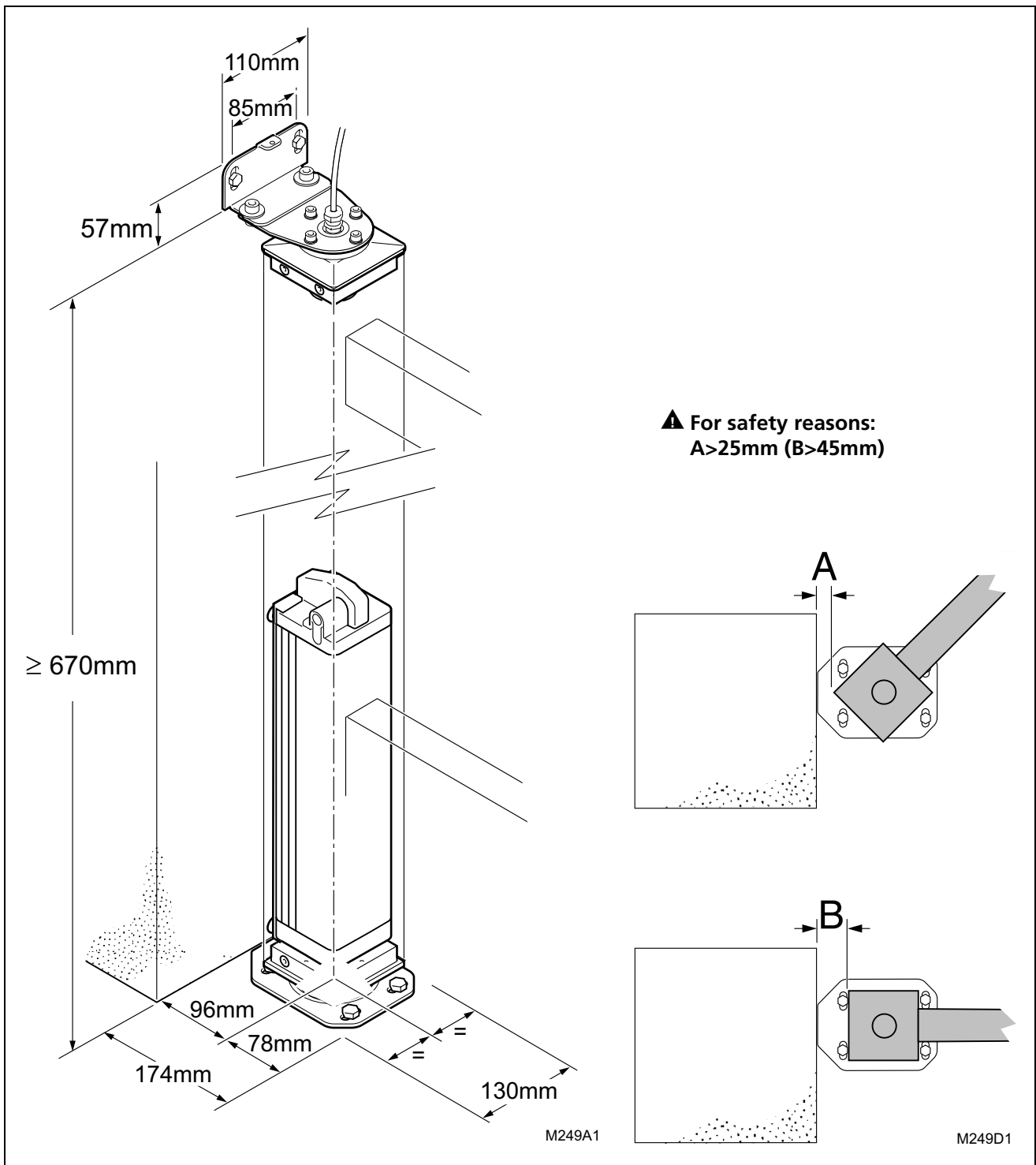
### Electrical power supply installation

**▲ The electrical connections shall be made in line with the instructions in the control board manual.**

☞ The electrical wire section is indicated in: "Fig. 1 Elements of the complete installation" on page 23.

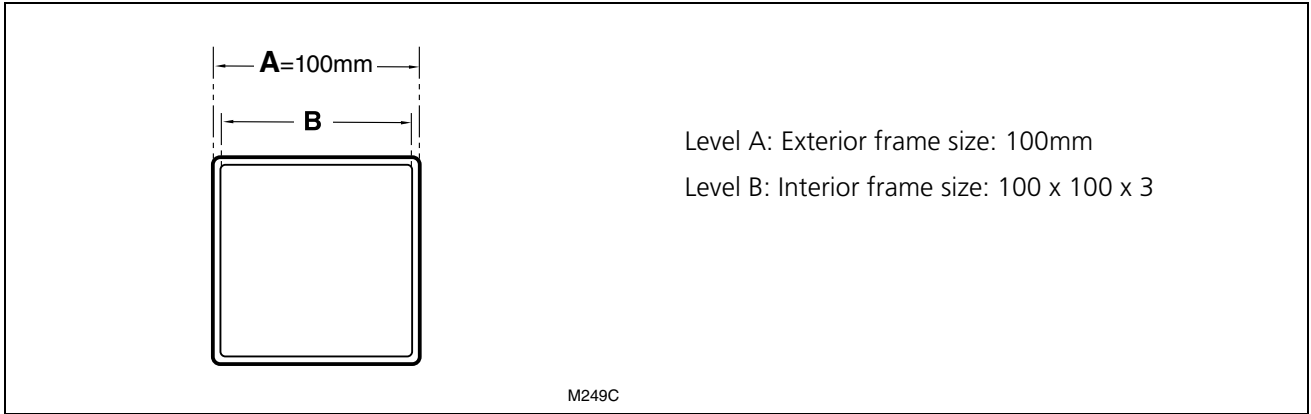
**4** INSTALLING THE OPERATOR

**Assembly positions and levels**

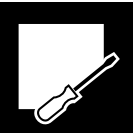
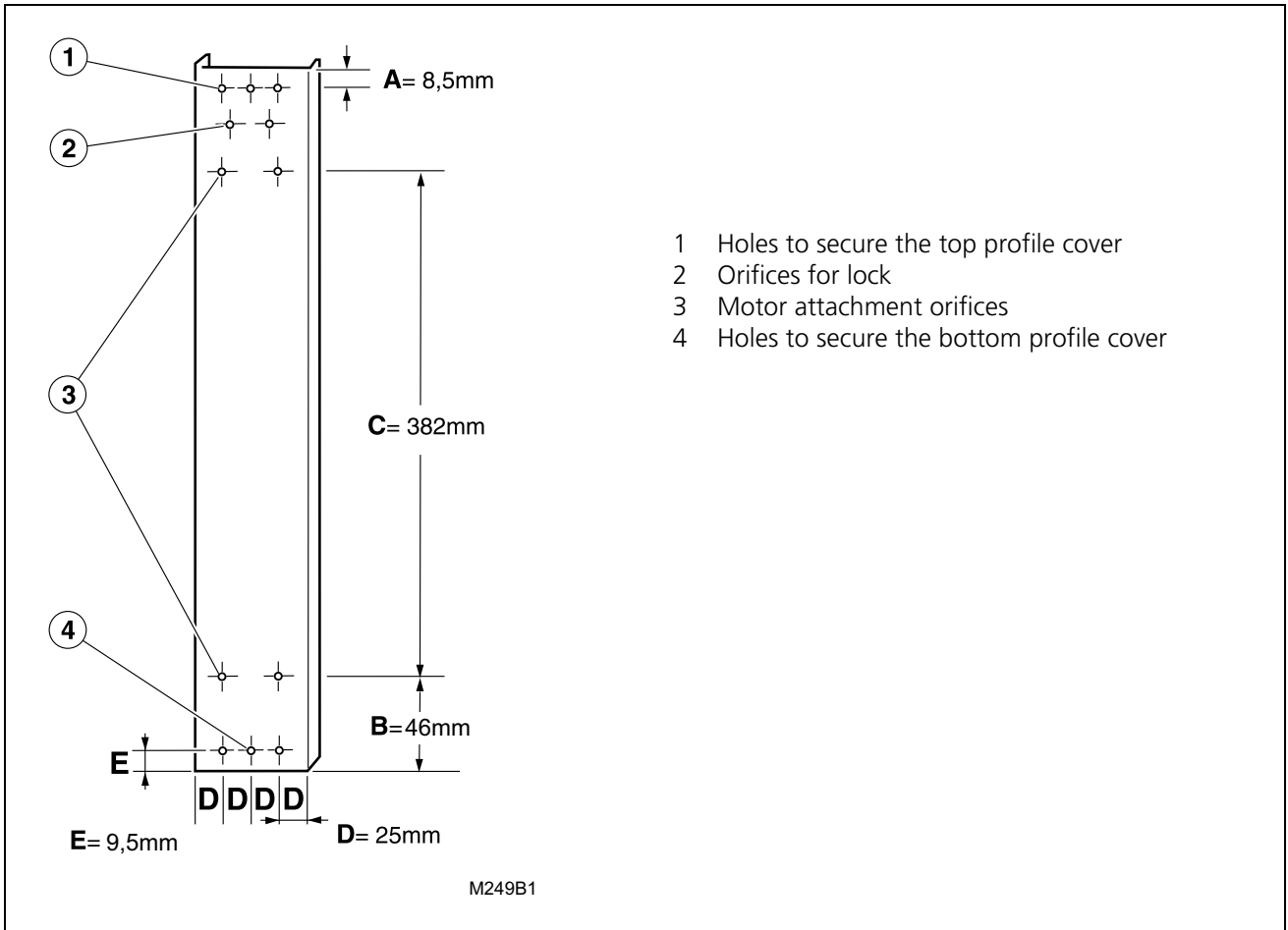


**Fig. 4** Assembly position for the frame and the integrated operator

Frame size



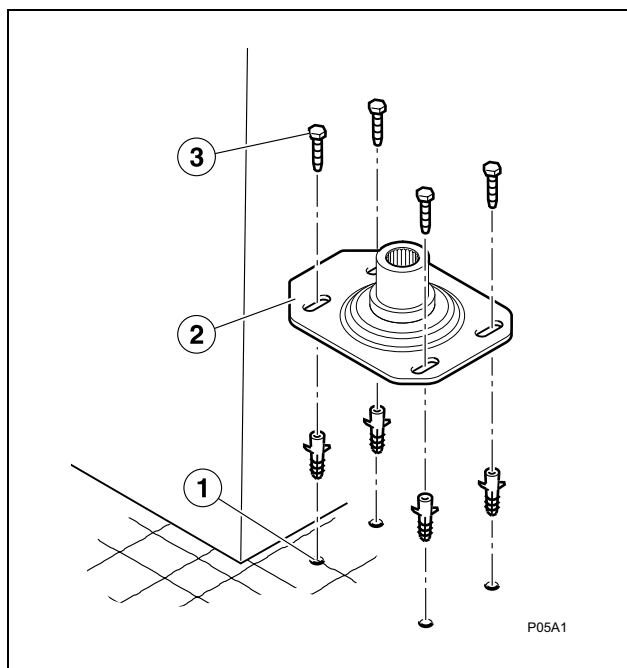
Template to make the orifices





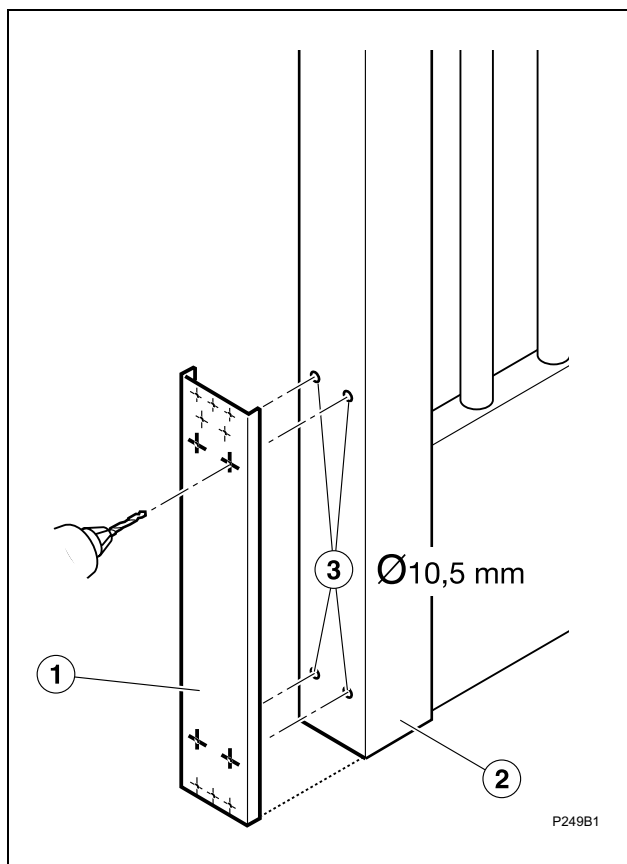
**Procedure**

**Position the base plate**



- 1 Mark the points (1) to drill.
  - ✎ Before marking the position of the holes, ensure the assembly positions are respected (see “Fig. 4 Assembly position for the frame and the integrated operator”).
- 2 Drill the points marked.
- 3 Position the base plate (2) and secure it using appropriate screws (3).

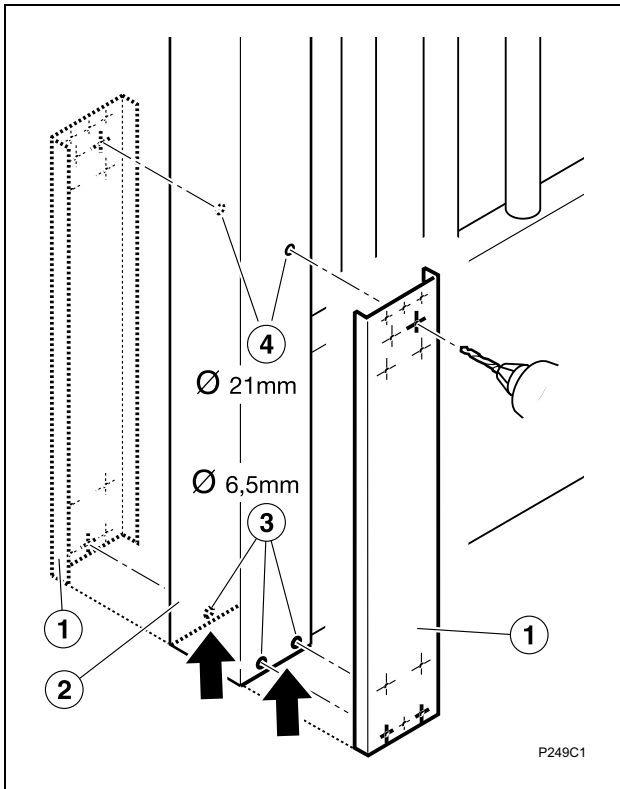
**Make the orifices for the attachment of the motor**



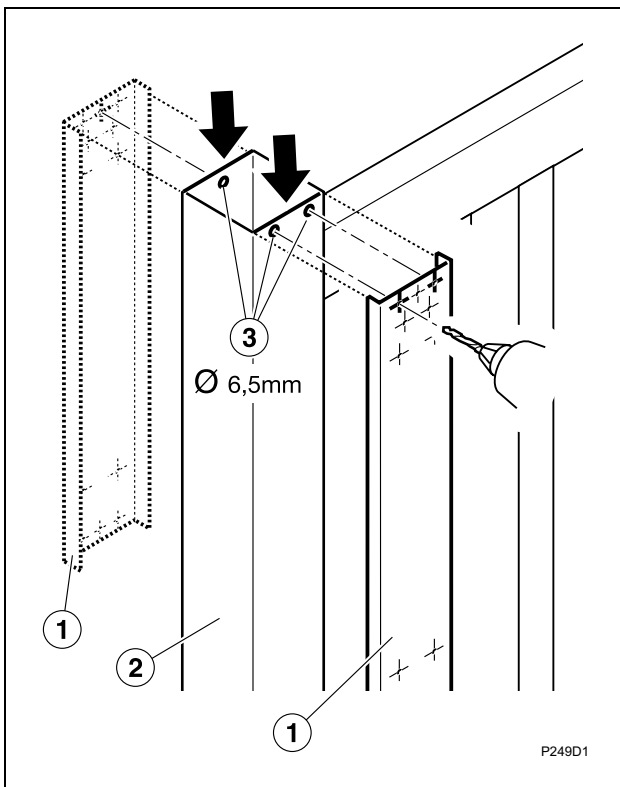
- 1 Position the template (1) supplied with the operator, ensuring the lower edge of the template coincides with the base of the frame (2).
- 2 Drill the four orifices (3) where the motor will be attached.
  - ✎ Use 10.5 mm broach.



## Make the orifices for the attachment of the metal fittings

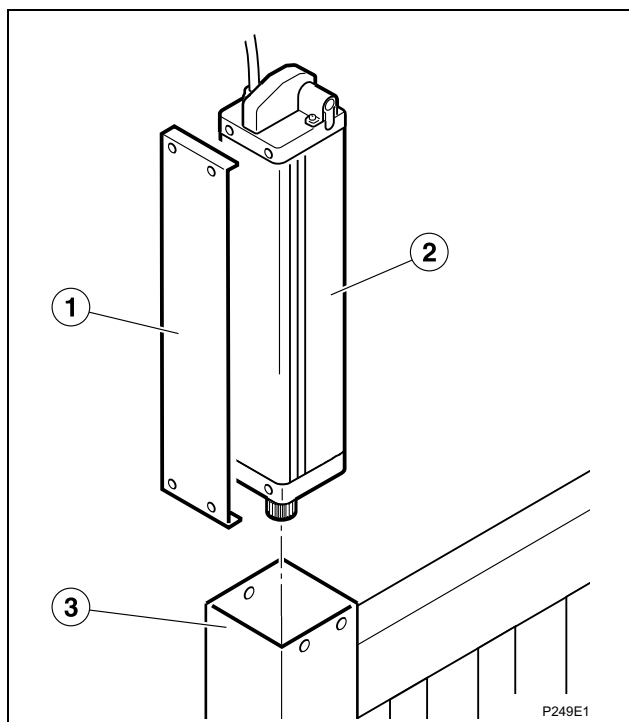


- 1 Position the template (1) supplied with the operator, ensuring the lower edge of the template coincides with the base of the frame (2) on the interior side of the door.
- 2 Drill the holes (3) where the profile's bottom cover will be attached.  
 ■ Use 6.5 mm broach.
- 3 Make an orifice (4) of 21 mm in diameter in order to make the cylinder key accessible (only in models MA210F/MAS210F and MA250F/MAS250F).
- 4 Repeat points 1, 2 and 3 on the outside of the door.

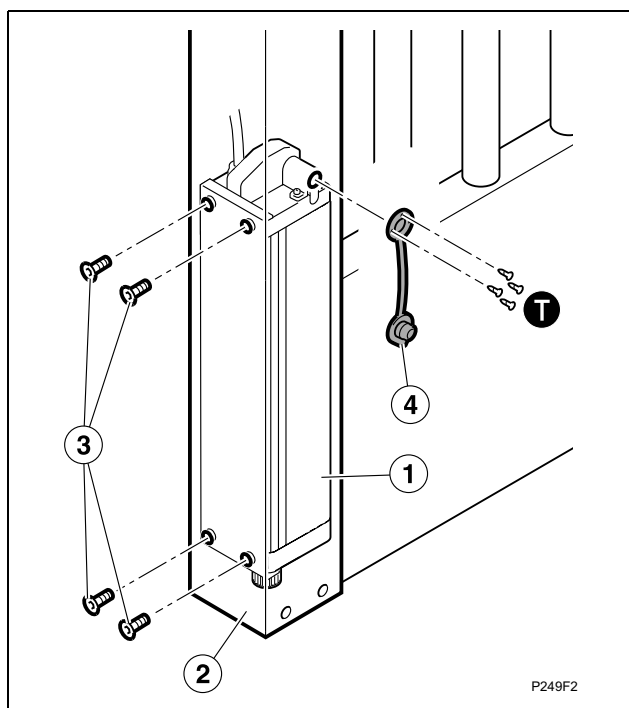


- 5 Position the template (1) supplied with the operator, ensuring the upper edge of the template coincides with the top of the frame (2) on the interior side of the door.
- 6 Drill the holes (3) where the profile's top cover will be attached.  
 ■ Use 6.5 mm broach.
- 7 Repeat points 5 and 6 on the outside of the door.

## Position the operator



- 1 Position the adaptation plate (1) (only in the case of an iron door) in the operator (2).
- 2 Introduce the operator (2) in the gap in the frame (3).

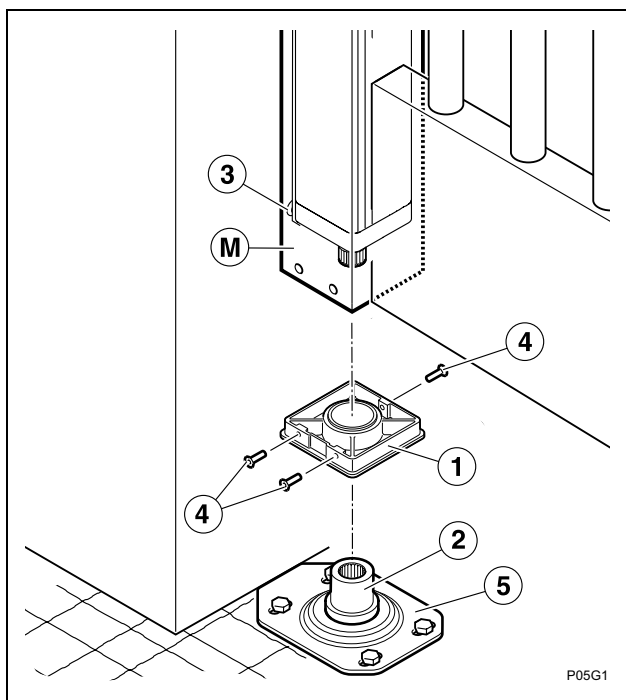


- 3 Secure the operator (1) to the frame (2) using the bolts (3), **but without tightening**.
- 4 Only models MA210F/MAS210F and MA250F/MAS250F: position the two caps (4), one on each side.

☞ Take care to correctly position the two caps (4) (one on each side), using the four screws (T), to prevent the ingress of water.

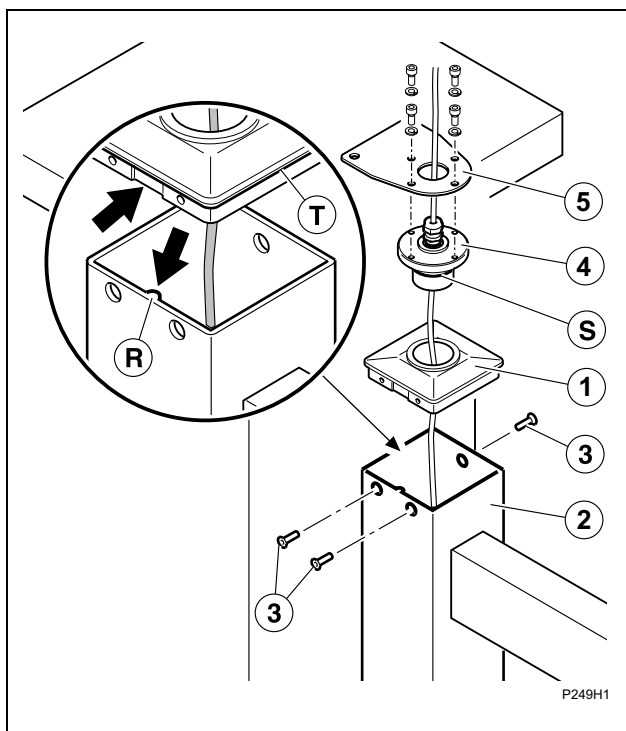


### Position the base of the profile



- 1 Mount the lower cover (1) on the frame of the door.
- 2 Tighten the screws (3) and (4).
- 3 Position the assembly (M) on the base plate (5), ensuring the traction wheel (2) is correctly coupled.

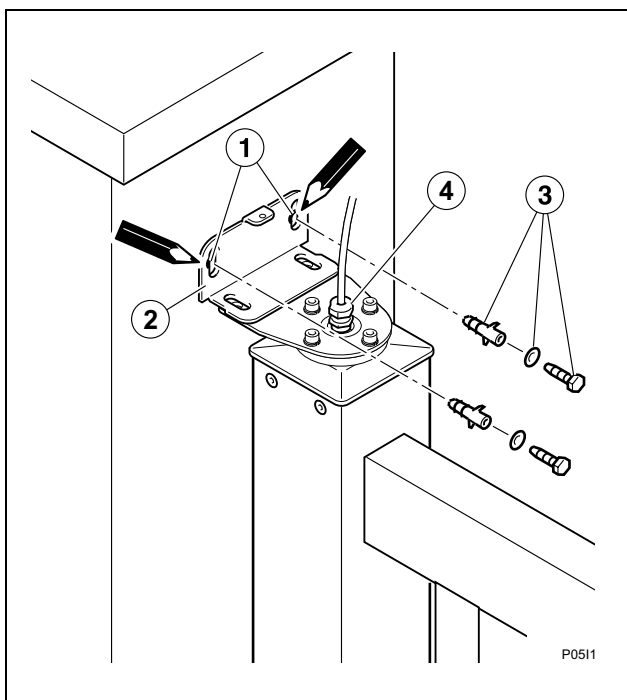
### Position the upper profile support



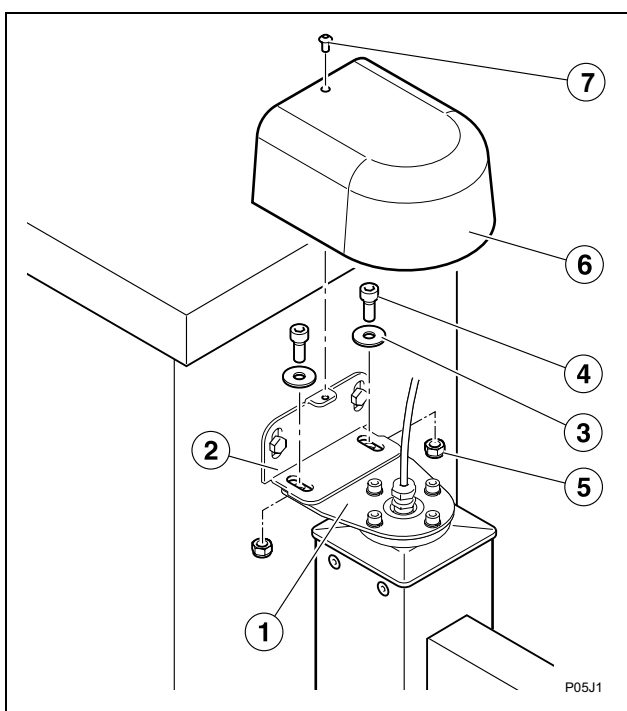
- 1 With the sealing joint (T) correctly in place, secure the top cover (1) to the frame of the door (2) using the bolts (3).
  - ☛ The frame in iron doors has a rim (R). Check the position of the rim in order to fit the top cover (1) correctly (the groove of the bracket must match the rim of the frame).
- 2 Check that the two O-rings (S) are correctly in place on the top pin (4).
- 3 Fit the top pin (4) and secure the bracket plate (5) using its washers and bolts.



### Position the angle on the wall



- 1 Mark the points (1) to drill in the pillar.  
 ■ Before marking the position of the holes, ensure the assembly positions are respected (see "Fig. 4 Assembly position for the frame and the integrated operator").
- 2 Drill the points marked.
- 3 Position the angle (2) and secure it to the material upon which the angle is attached, using appropriate screws (3).
- 4 Packing gland adjustment (4).



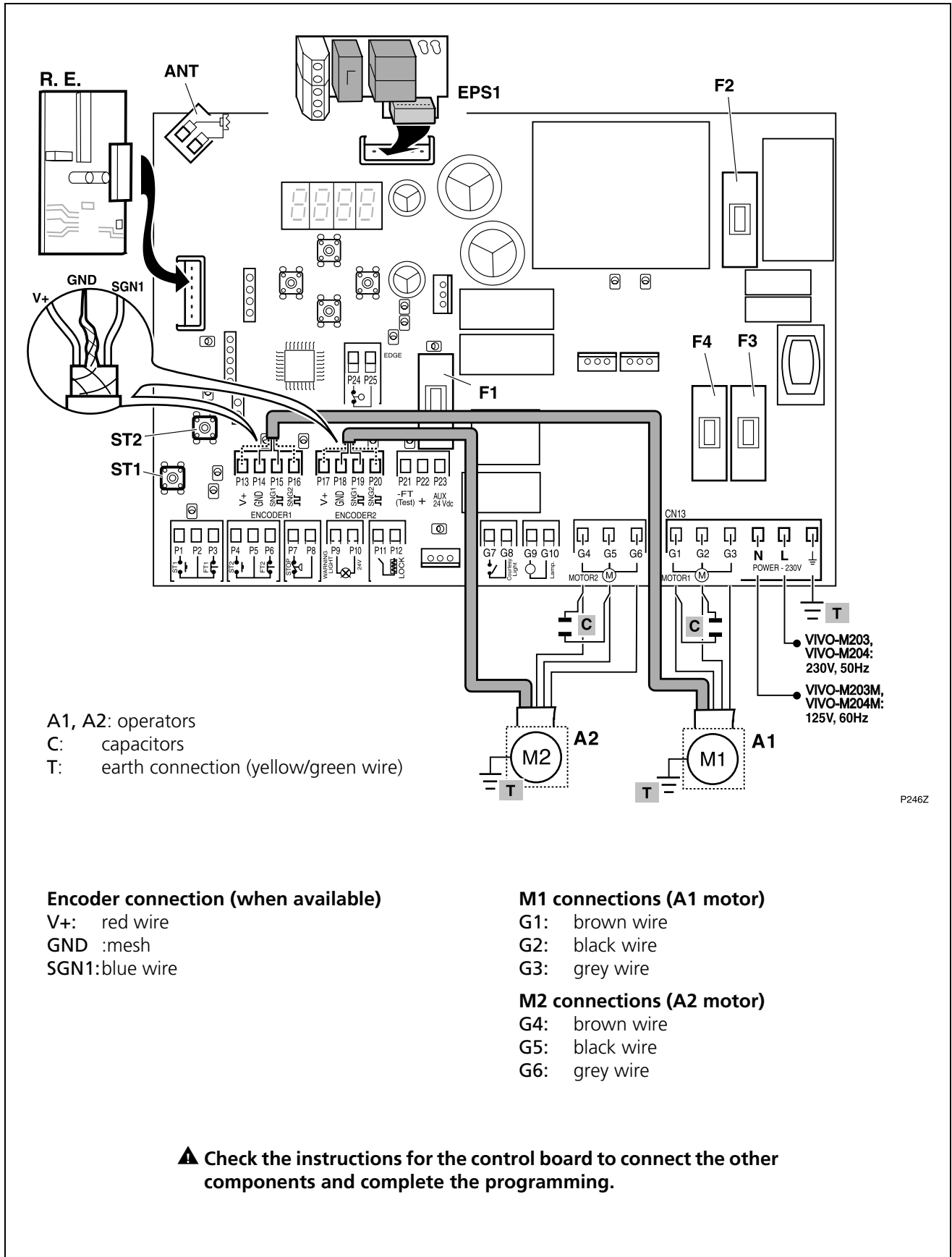
- 5 Attach the top plate (1) to the angle piece (2) using the washers (3), bolts (4) and nuts (5).
- 6 Fit the water guard (6) with its bolt (7).



### Connect the operator to the control board (VIVO-M203, VIVO-M204)

- ▲ Before making any electrical connections, check the control board instructions manual.
- ▲ Before carrying out any door movement, ensure there is no person or object in the radius of action of the door and the drive mechanisms.
- ▲ Ensure the earth wire of the motors is connected to the control board earth terminal.

General connections, using the VIVO-M203 or VIVO-M204 board



P246Z

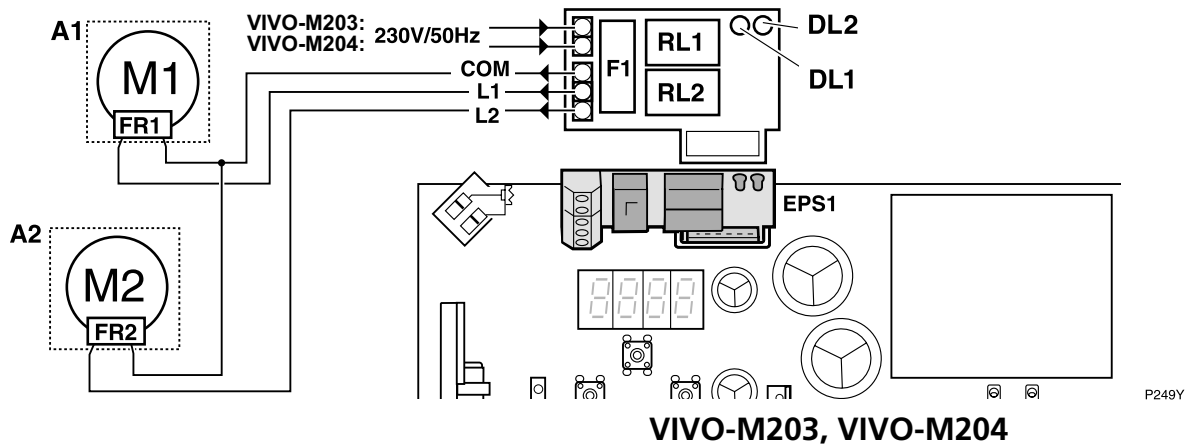
Fig. 5 Power supply and operator connections

### EPS1 card brake connection

**i** If the operator to be installed has a brake, the EPS1 plate must be used to connect it to the VIVO-M203 or VIVO-M204 board, carrying out the connections indicated below.

A1, A2: operators

DL1 Red LED, FR1 activation  
DL2 Green LED, FR2 activation



#### FR1 connections (A1 brake)

- If the operator DOES NOT have an encoder:  
COM white wire  
L1 red wire
- If the operator HAS an encoder:  
COM orange wire  
L1 purple wire

#### FR2 connections (A2 brake)

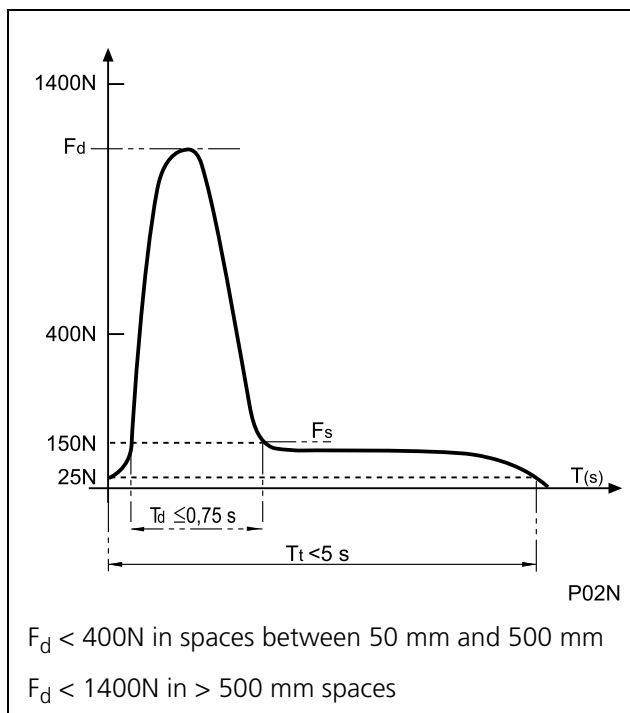
- If the operator DOES NOT have an encoder:  
COM white wire  
L2 red wire
- If the operator HAS an encoder:  
COM orange wire  
L2 purple wire

Fig. 6 EPS1 plate brake connection



## 5 FINAL PREPARATION

### Connections and checks



- 1 Install an electrolock to lock the door in closing position. This is necessary for models MAS210 and MAS250, along with the other models, if the length of the leaf is over 1.8 m.
  - ☞ See the electrolock instructions.
- 2 Carry out the installation and the connections for all the elements of the facility, in line with the control board instructions.
- 3 Check that the mechanism is correctly regulated.
  - ⚠ **The torque regulator of the control board must be adjusted in a manner which respects the values indicated in standard EN 12453:2000, as shown in the attached chart. The measurements must be made in line with the method described in standard EN 12445:2000.**
- 4 Check the operation of all the installation elements, especially the protection systems and the manual operation unlocking system.



### Programming the operations

- ☞ In dual leaf facilities without brake or encoder, the following should be taken into account when programming the operations: when programming closing for leaf 2, once the leaf reaches the closing stopper wait for a time equal to the lapse between leaves before pressing ST1 to finish programming. This ensures that during the closing operation, leaf 2 remains at the closing stopper during the lapse, until leaf 1 closes completely.

### User instruction

- 1 Instruct the user with regards to the use and maintenance of the installation and provide him/her with the user manual.
- 2 Signpost the door, showing that it opens automatically and indicating how to operate it manually. Where appropriate, indicate that operation is using the remote control.

**1 MAINTENANCE**

**▲ Before carrying out any maintenance operation, disconnect the device from the power supply.**

**1** Frequently check the installation in order to discover any imbalance or sign of deterioration or wear. Do not use the device if any repair or adjustment is necessary.

**2** Clean and lubricate the joints of the door, so as not to increase the effort of the operator.

**3** Check that the controls and photocells, as well as their installation, have not suffered any damage from the weather or external agents.

**2 TROUBLESHOOTING**

Problem	Cause	Solution
The operator does not make any movement when the opening or closing controls are activated	Absence of system power supply voltage	Restore the power supply
	Electrical installation defective	Check that the installation does not present any short-circuits or cut-off points
	Defective control board or control devices	Check these elements in their respective manuals
By activating the opening or closing controls, the operator is enabled but the door does not move	Pins stuck in the bushing	Unlock and adjust the door pins
The door moves in an irregular manner	De-aligned pins	Align the pins
The door cannot completely close (or open)	The photocell detects an obstacle	Remove the obstacle and try again
	The resistance of the door has increased when closing (or when opening)	Check the moving parts of the door and remove the resistance
	The force of the operator during closing (or opening) is too low	Increase the closing or opening force using the control board programming.
	The mechanical stoppers of the door are poorly adjusted	Adjust the stoppers



**3 SCRAP**

**▲ The operator, up until the end of its useful life, must be dismantled at its location by an installer who is as well qualified as the person who completed the assembly, observing the same precautions and safety measures. This will avoid possible accidents and damage to adjacent facilities.**

**♻️** The operator must be deposited in the appropriate containers for subsequent recycling, separating and classifying of the different materials in line with their nature. NEVER deposit it in domestic rubbish or in landfills which are not controlled, as this will cause environmental damage.

**4 SPARE PARTS**

**▲ If the operator needs repairing, go to an authorised assistance centre or manufacturer; never try to repair it yourself.**

**▲ Use only original spare parts. See the figure "MAGIC operator and metal fittings (AMA10 / AMA11)" on page 27.**

