








Automatismos

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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 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 MANUAL

**⚠ Read this manual 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 manual provides valuable information which will help you to carry out installation more efficiently.

📖 This manual 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 hinged 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.**

## 4 INSTALLER'S QUALIFICATIONS

**⚠ The 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 tension regulations and applicable standards.

**⚠ The 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 actuator 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

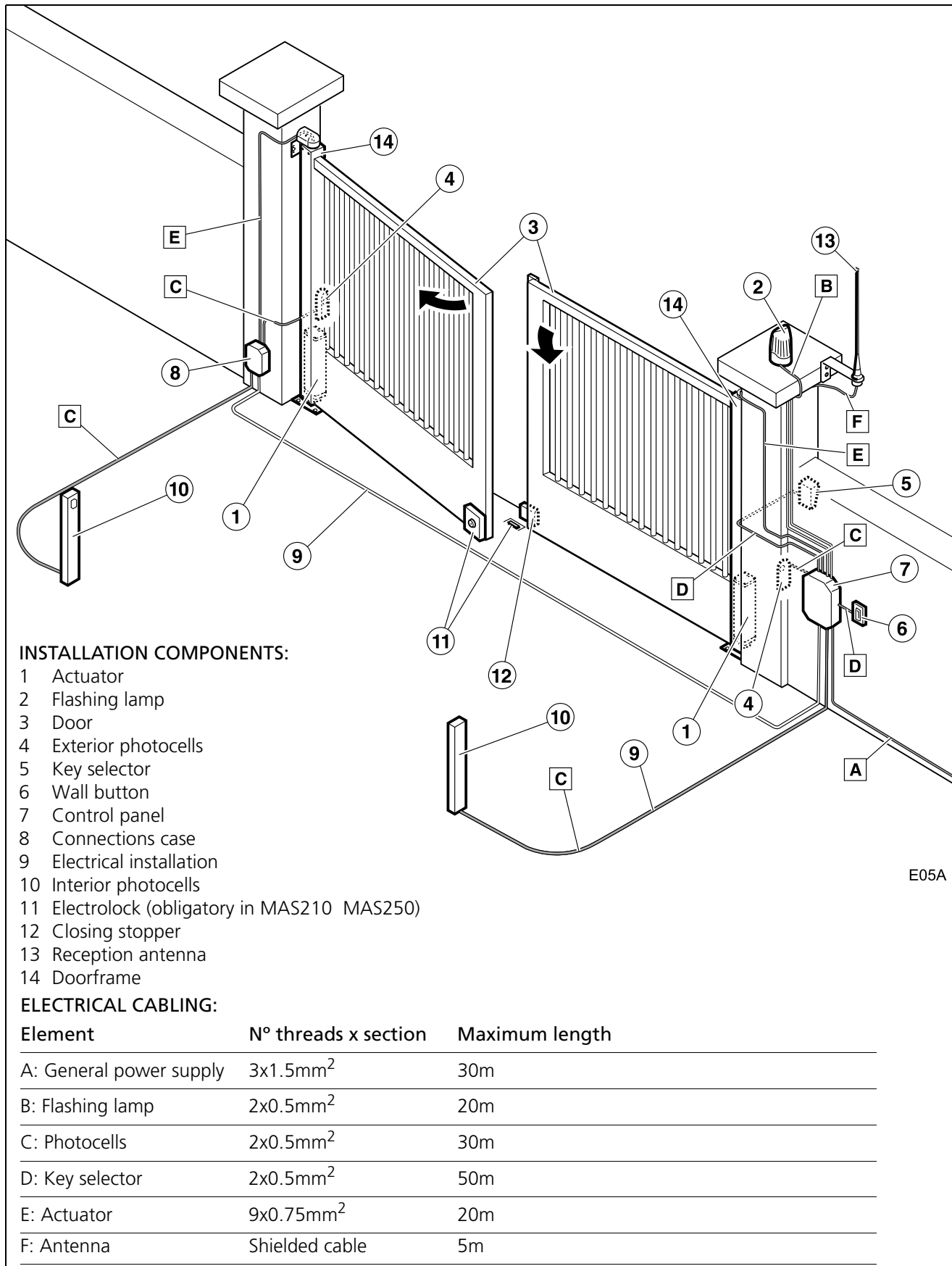
components in order to guarantee proper operation.

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

**⚠ We recommend installing safety elements.**

ℹ For further details, see "Elements of the complete installation" on page 39.

# 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 ACTUATOR

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

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

Models MAS210 and MAS250 are reversible, with encoder, meaning the installation should have an electrolock.

Models MAS210F and MAS250F have an encoder and a brake. An electrolock is only required for leaf lengths of over 1.8m.

The MAGIC actuator allows opening of 180°.

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

This actuator allows us to fulfil the requirements of standard EN 12453 without the use of peripheral elements.

## 3 MAIN ACTUATOR PARTS

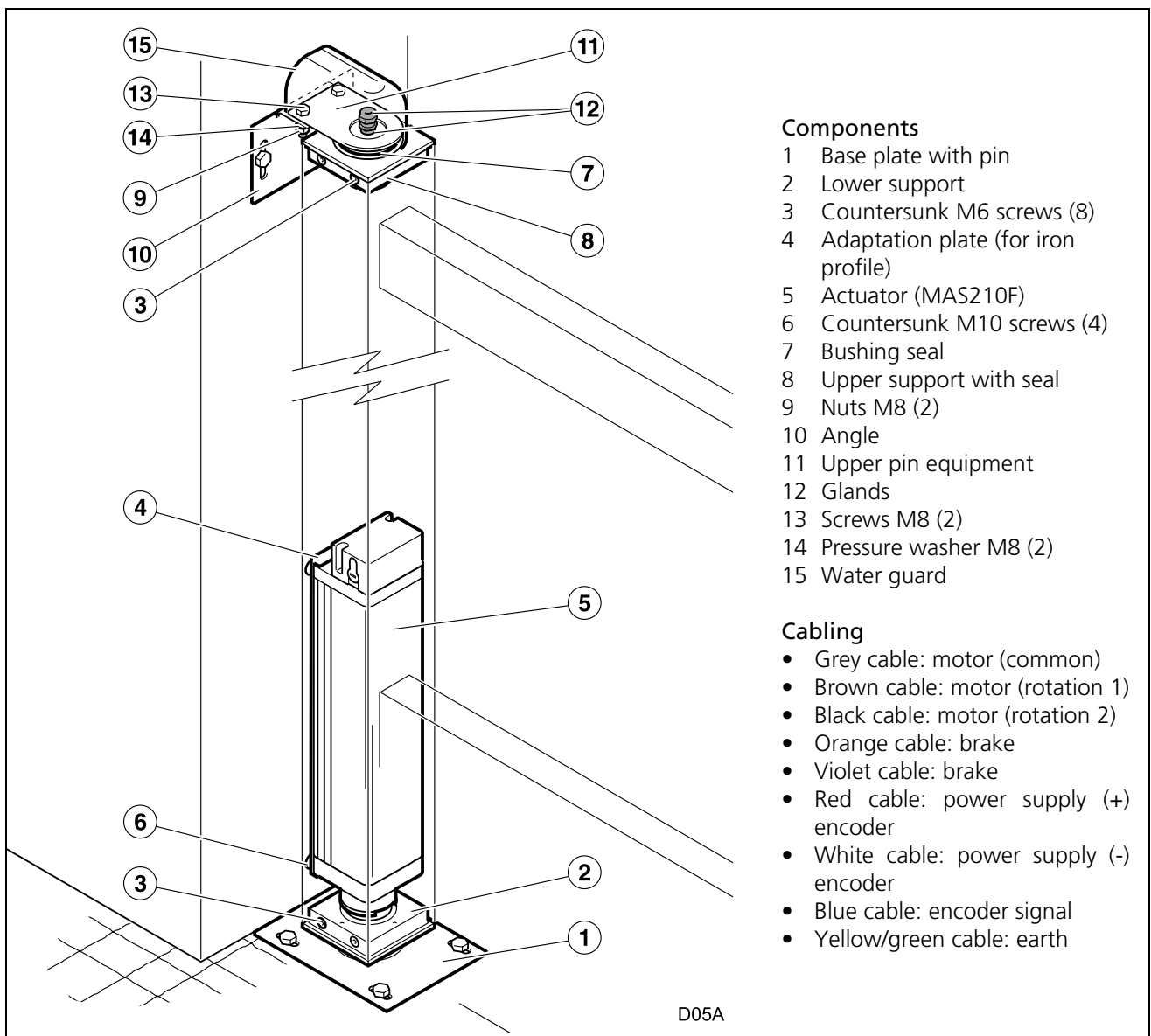


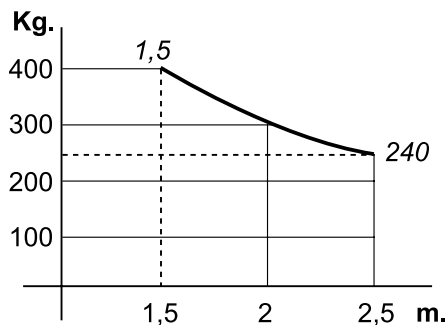
Fig. 2 Main parts

## 4 GENERAL CHARACTERISTICS OF THE ACTUATOR

Model	MAS210	MAS210F	MAS250	MAS250F
Power supply (V/Hz)	230/50	230/50	230/50	230/50
Intensity (A)	1	1	1,3	1,3
Power consumed (W)	230	230	300	300
Condenser ( $\mu$ F)	5	5	8	8
Protection grade (IP)	54	54	50	50
Available torque (Nm)	220	220	450	450
Output speed (rpm)	1,33	1,33	1,33	1,33
Opening time 90° (s)	12	12	12	12
Lock	No	Yes	No	Yes
Service temperature (°C)	-20/+60	-20/+60	-20/+60	-20/+60
Use factor (operations/hour)	20	20	20	20
Exterior frame dimensions (mm)	100 x 100	100 x 100	100 x 100	100 x 100
Weight (Kg).	13	13	13	13
Size and weight of the door	See chart	See chart	See chart	See chart



### Limits on use

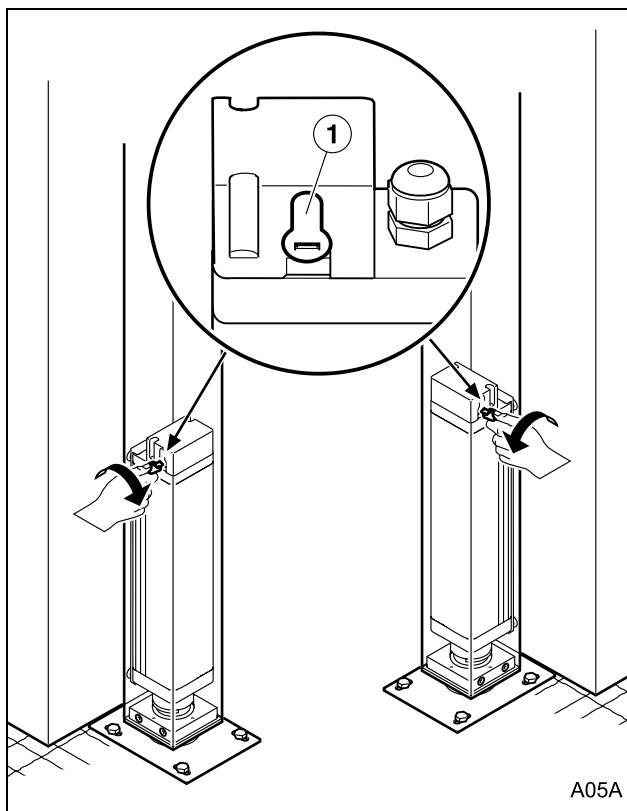


G03A

- ☞ We recommend using the chart 65-AEP20PIL9.
- ☞ We recommend using an electrolock for leaf lengths of over 1.8m.
- ☞ Values for orientation purposes. The form 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 MAS210F and MAS250F it is necessary to first run the unlocking mechanism.



- 1 Introduce the key in the unlocking system lock (1) and rotate the unlocking key towards the wall.
  - ⓘ Locking will be made automatically when automatic operation returns.

## 6 DECLARATION OF CONFORMITY

Erreka Automatismos declares that the electromechanical actuator MAGIC has been drawn up for use in a machine or for assembly along with other elements in order to form a machine in line with Directive 89/392 EEC and successive modifications.

The MAGIC electromechanical actuator allows us to carry out installations which comply with standards EN 13241-1 and EN 12453.

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

- 73/23 EEC and successive modification 93/68 EEC
- 89/366 EEC and successive modifications 92/31 EEC and 93/68 EEC
- UNE-EN 60335-1

## 1 UNPACKING

1 Open the package and carefully remove the contents from within.

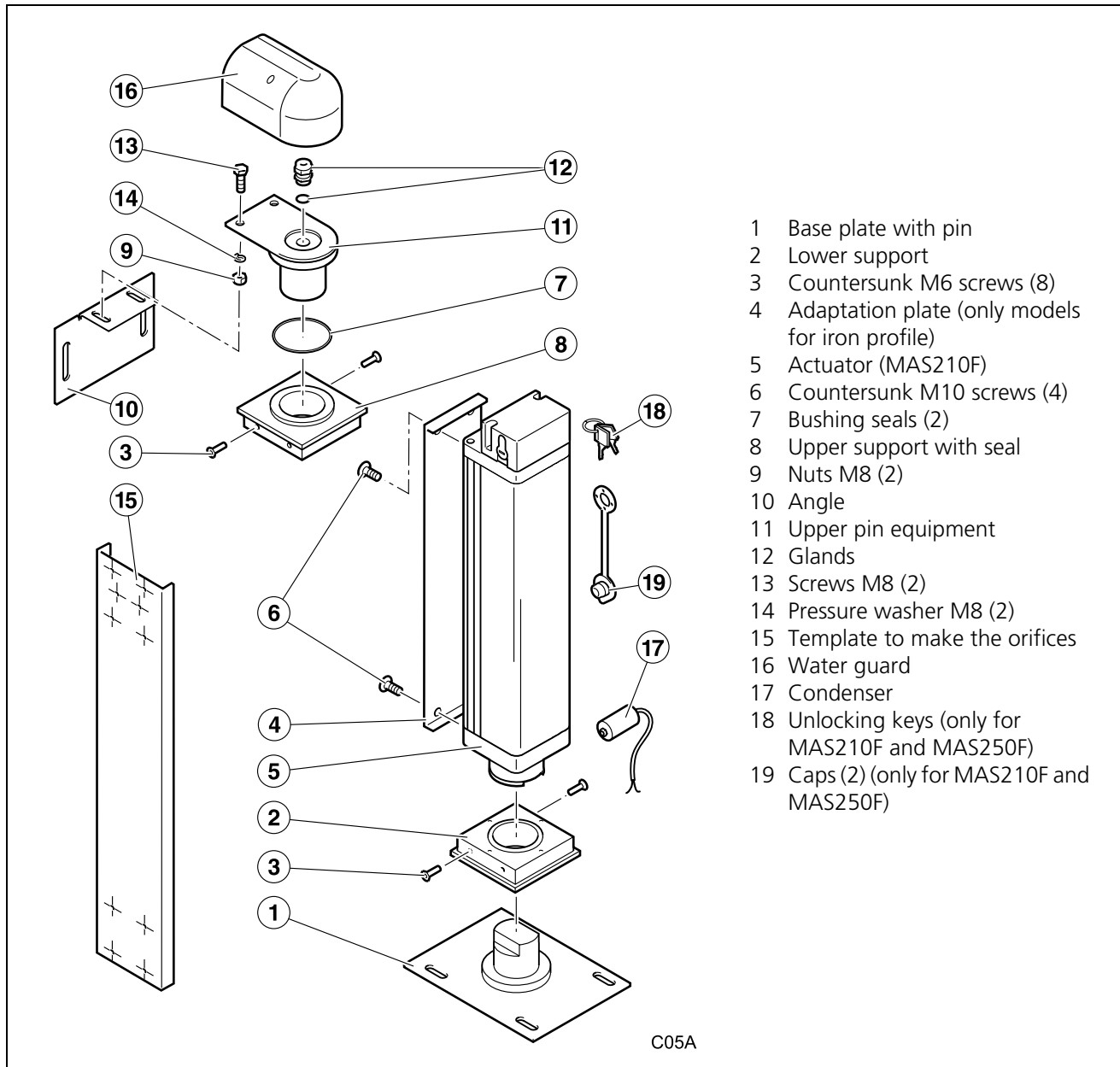
♻️ Eliminate the packaging in an environmentally friendly manner, using recycling containers.

⚠️ **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 closest technical service.

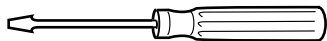
## 2 CONTENT



- 1 Base plate with pin
- 2 Lower support
- 3 Countersunk M6 screws (8)
- 4 Adaptation plate (only models for iron profile)
- 5 Actuator (MAS210F)
- 6 Countersunk M10 screws (4)
- 7 Bushing seals (2)
- 8 Upper support with seal
- 9 Nuts M8 (2)
- 10 Angle
- 11 Upper pin equipment
- 12 Glands
- 13 Screws M8 (2)
- 14 Pressure washer M8 (2)
- 15 Template to make the orifices
- 16 Water guard
- 17 Condenser
- 18 Unlocking keys (only for MAS210F and MAS250F)
- 19 Caps (2) (only for MAS210F and MAS250F)

Fig. 3 Content and spare parts

## 1 NECESSARY TOOLS



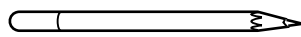
Set of screwdrivers



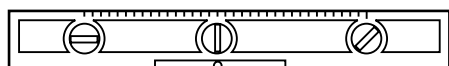
Fixed wrenches (13 mm and 17 mm)



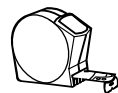
Allen key (5mm)



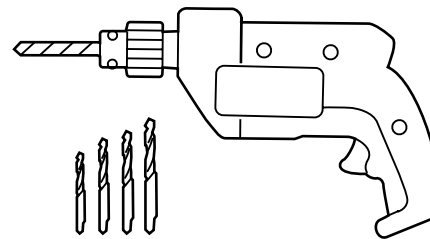
Marker pencil



Level



Tape measure



Electric drill and broaches

▲ Use the electrical drill in line with the use instructions.

## 2 NECESSARY 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 actuator (see the technical characteristics of the actuator).

▲ If the door to be automated has a passage door, use a safety device to prevent the actuator from operating with the passage door open.

☞ The door must have a closing stopper.

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

- This must be balanced, in order to ensure the effort made by the motor is minimum.
- There should be no stiffness throughout its travel.

▲ Do not install the actuator 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 actuator is suitable for the location.

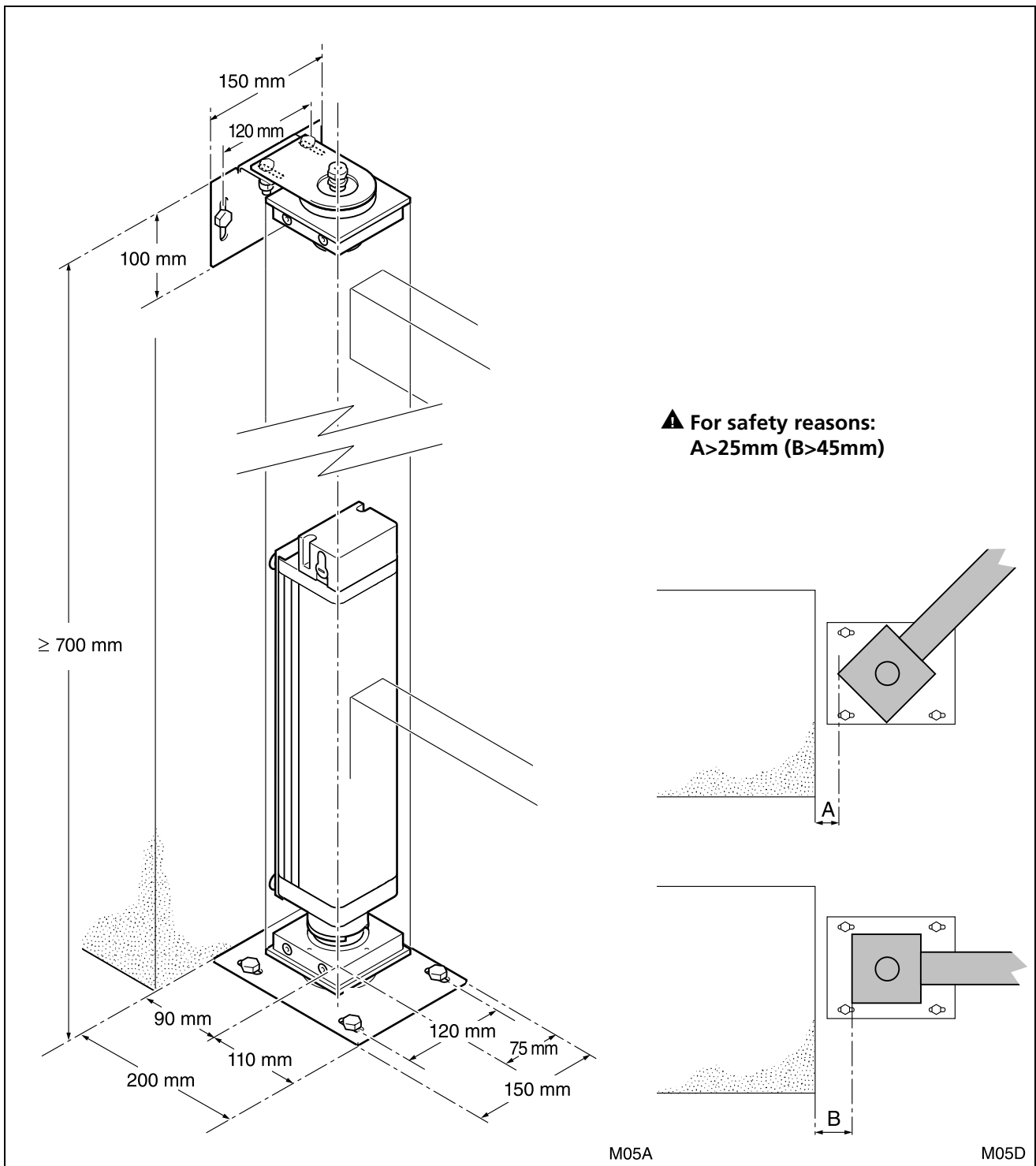
### Electrical power supply installation

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

☞ The electrical cable section is indicated in: "Fig. 1 Elements of the complete installation" on page 39.

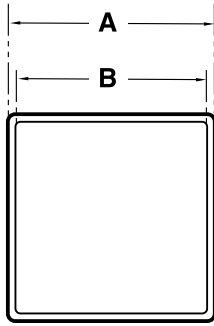
**4** INSTALLING THE ACTUATOR

**Assembly positions and dimensions**



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

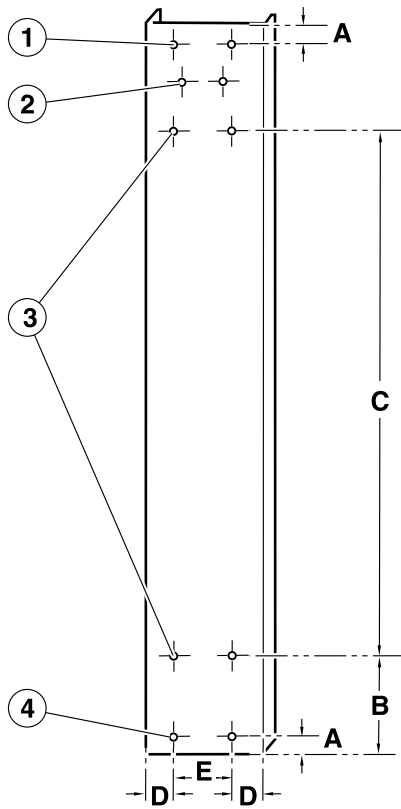
Frame dimensions



Dimension A: Exterior frame dimension (100mm)  
 Dimension B: Interior frame dimension  
 (aluminium doors: ERREKA profile 100 x 100 x 5;  
 iron doors: profile 100 x 100 x 4)

M05C

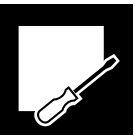
Template to make the orifices



- 1 Orifices for upper profile support attachment
- 2 Orifices for lock
- 3 Motor attachment orifices
- 4 Orifices for profile base attachment

Dimension A: 8.5 mm  
 Dimension B: 80 mm  
 Dimension C: 382 mm  
 Dimension D: 25 mm  
 Dimension E: 50 mm

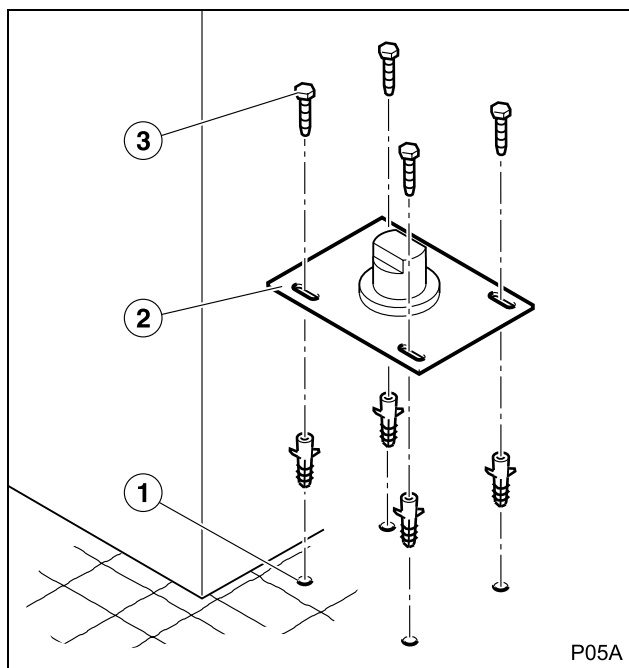
M05B





**Procedure**

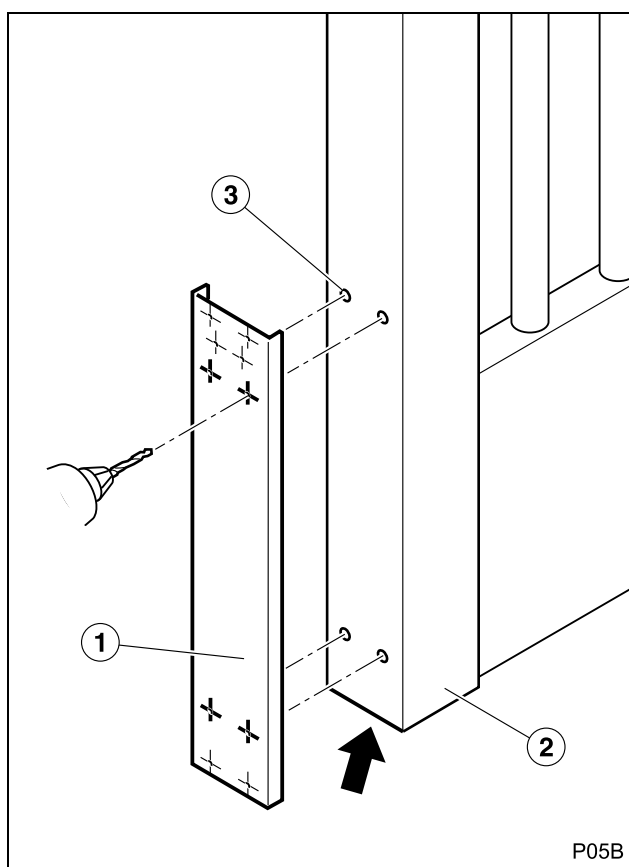
**Position the base plate**



P05A

- 1 Mark the points (1) to bore.
  - ✎ Before marking the position of the needles, ensure the assembly positions are respected (see "Fig. 4 Assembly position for the frame and the integrated actuator").
- 2 Bore the points marked.
- 3 Position the plate (2) and secure it using appropriate screws (3).

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

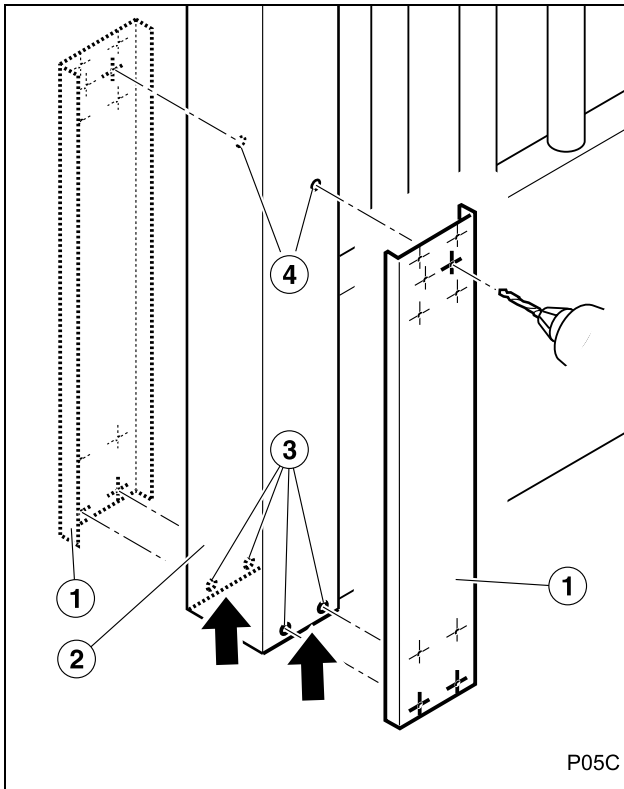


P05B

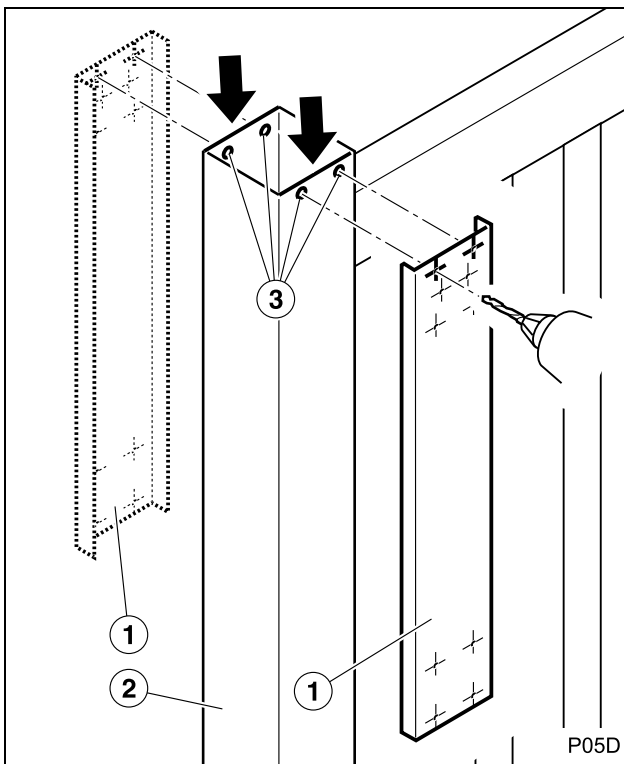
- 1 Position the template (1) supplied with the actuator, ensuring the lower edge of the template coincides with the base of the frame (2).
- 2 Bore the four orifices (3) where the motor will be attached.
  - ✎ Use 10.5 mm broach.



**Make the orifices for the attachment of the metal fixtures**

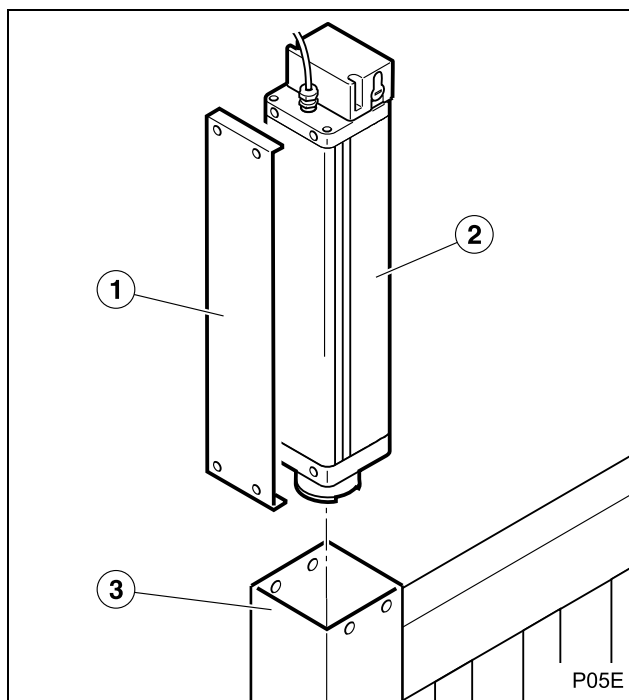


- 1 Position the template (1) supplied with the actuator, ensuring the lower edge of the template coincides with the base of the frame (2) on the interior side of the door.
- 2 Bore the orifices (3) where the profile base will be attached.  
 ■ Use 6.5 mm broach.
- 3 Make an orifice (4) of 21 mm in diameter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

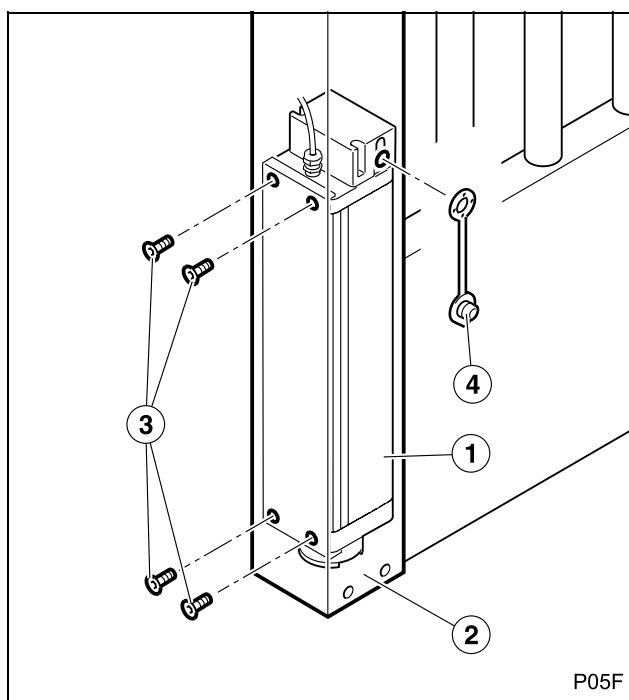


- 5 Position the template (1) supplied with the actuator, ensuring the upper edge of the template coincides with the top of the frame (2) on the interior side of the door.
- 6 Bore the orifices (3) where the upper profile support will be attached.  
 ■ Use 6.5 mm broach.
- 7 Repeat points 5 and 6 on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

Position the actuator



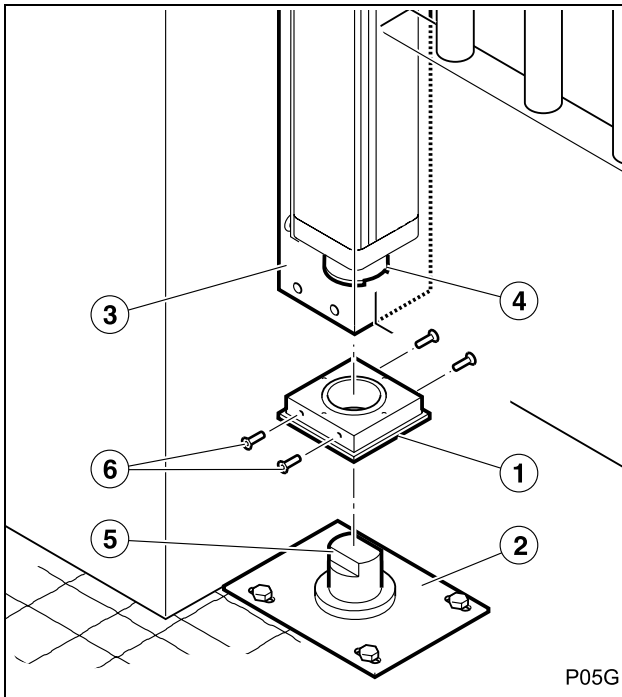
- 1 Position the adaptation plate (1) (only in the case of an iron door) in the actuator (2).
- 2 Introduce the actuator (2) in the gap in the frame (3).



- 3 Attach the actuator (1) to the frame (2) using the screws (3).
- 4 Only models MAS210F and MAS250F: position the two caps (4), one on each side.

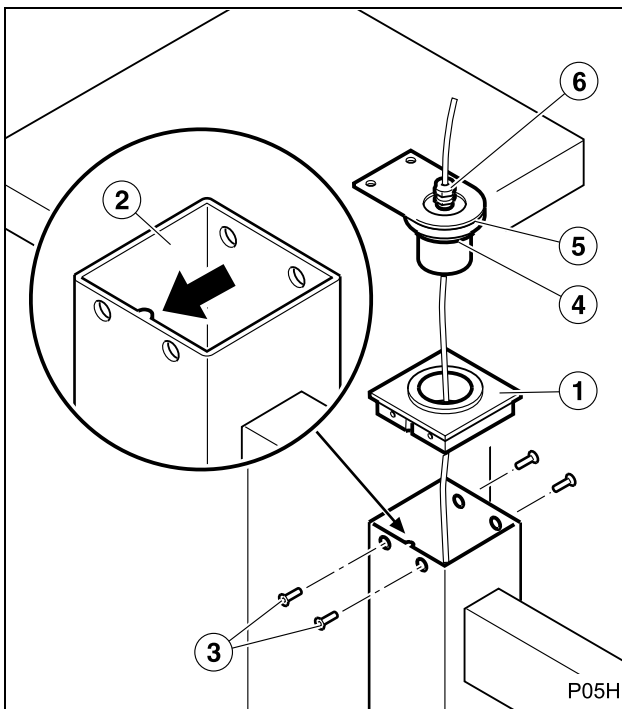


### Position the base of the profile



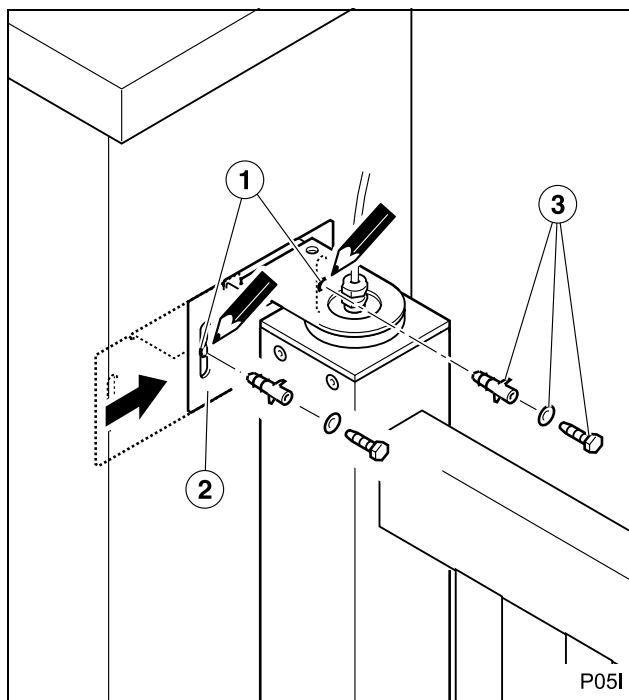
- 1 Position the base of the profile (1) on the base plate (2).
- 2 Position in the frame (3) on the base of the profile (1), ensuring that the drag wheel (4) of the actuator fits correctly on the pin (5) of the base plate.
- 3 Attach the base of the profile (1) to the frame of the door (3) using the screws (6).

### Position the upper profile support

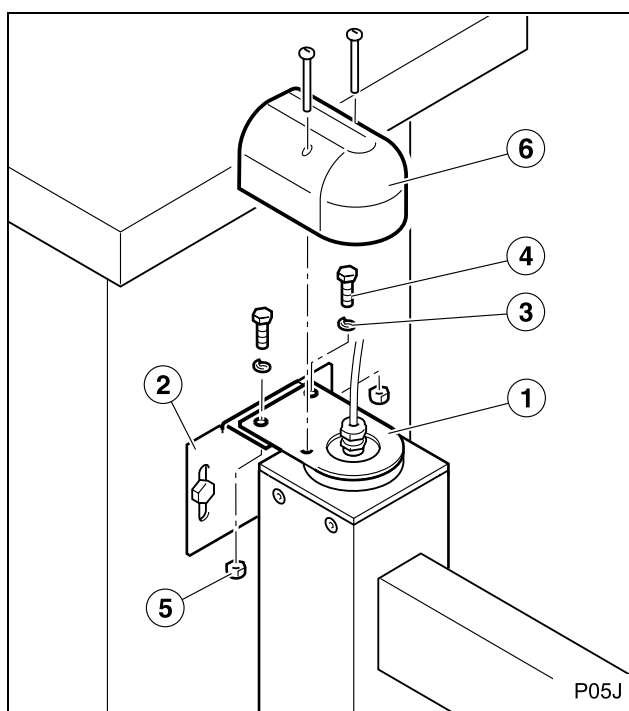


- 1 Attach the upper support of the profile (1) to the frame of the door (2) using the screws (3).  
 ⚠ The frame in iron doors has a ridge. Check the position of the ridge in order to correctly position the upper profile support (the groove of the support should coincide with the ridge of the frame).
- 2 Check that the two O-ring seals (4) are positioned on the pin (5).
- 3 Position the upper pin equipment (5).
- 4 Gland adjustment (6).

Position the angle on the wall



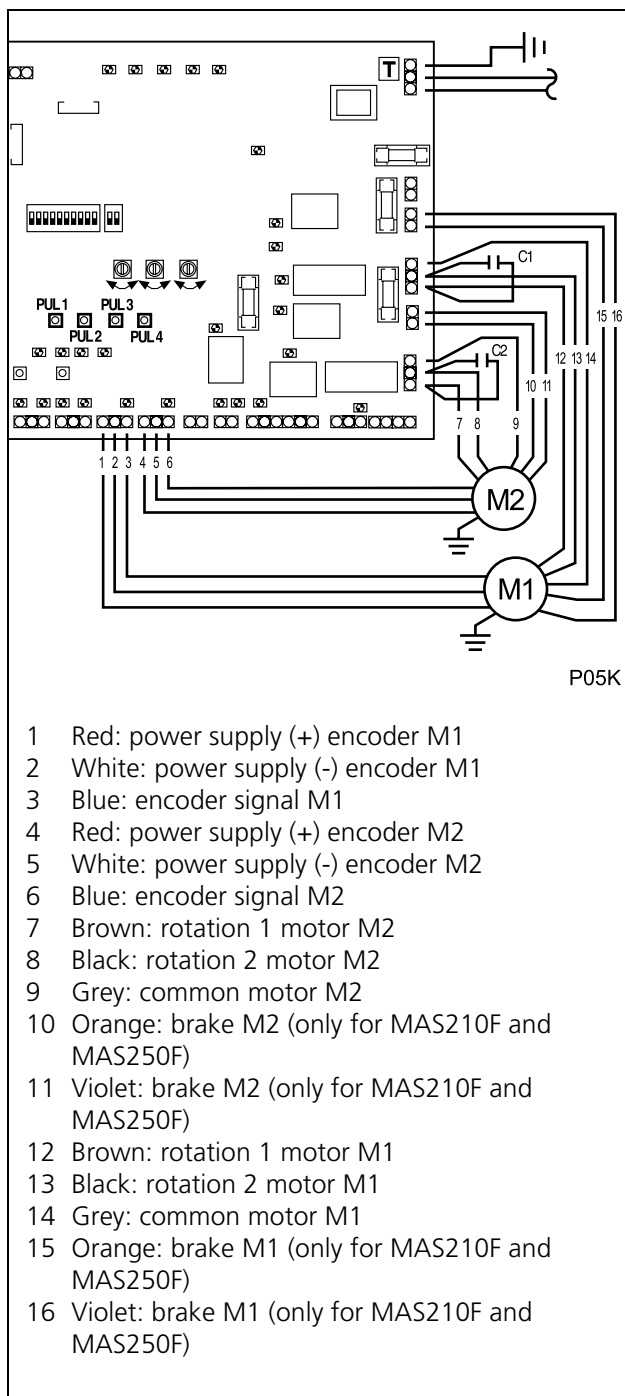
- 1 Mark the points (1) to bore in the pillar.
  - ✎ Before marking the position of the needles, ensure the assembly positions are respected (see "Fig. 4 Assembly position for the frame and the integrated actuator").
- 2 Bore the points marked.
- 3 Position the angle (2) and secure it to the material upon which the angle is attached, using appropriate screws (3).



- 4 Attach the upper pin (1) to the angle (2) using the pressure washers (3), screws (4) and nuts (5).
- 5 Position the water cover (6) using the corresponding screws.



### Connect the motor to the control panel (65-AEP20PIL)



**▲ Before making any electrical connections, check the control panel instructions manual.**

**1** Connect the motor (M1, M2) and the condenser (C1, C2) to the control panel.

**▲ Connect the motor's earth cable to the earth terminal (T) on the control panel.**

**2** Connect the control panel to the electrical grid.

**3** Activate the power supply switch.

**▲ Before carrying out any door movement, ensure there is no person or object in the radius of action of the door and the operation mechanisms.**

**4** Using the control panel controls (PUL1, PUL2, PUL3, PUL4), check the motor connections are correct (rotation direction).

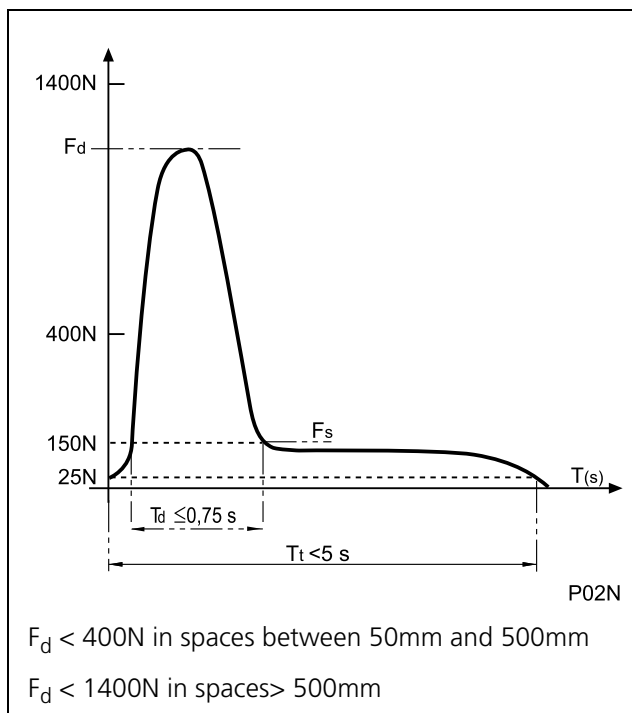
☞ If the rotation direction is not correct, interchange the cables 12 and 13 of M1 or 7 and 8 of M2, as appropriate.

**▲ Ensure the earth cable of the motors is connected to the control panel earth terminal.**



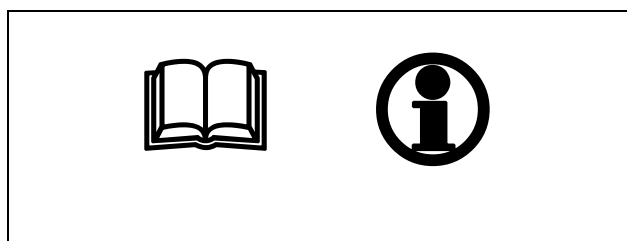
**5 FINAL PREPARATION**

**Connections and checks**



- 1 Install an eletrolock to lock the door in closing position. This is necessary for models MAS210 and MAS250, along with models MAS210F and MAS250F, if the length of the leaf is over 1.8m.
  - ▣ See the electrolock instructions.
- 2 Carry out the installation and the connections for all the elements of the facility, in line with the control panel instructions.
- 3 Check that the mechanism is correctly regulated.
  - ▲ **The torque regulator of the control panel 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.

**User instruction**



- 1 Instruct the user with regards to the use and maintenance of the facility and provide him/her with the use manual.
- 2 Point to 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 electrical grid.**
- 1 Frequently check installation in order to discover any imbalance or signs of deterioration or wear. Do not use the device if any repair or adjustment is necessary.
  - 2 Clean and lubricate the articulations and rails of the garage door, so as not to increase the effort of the actuator.
  - 3 Check that the controls and photocells, as well as their installation, have not suffered any damage from the weather or external agents.

## 2 FAILURE DIAGNOSIS

Problem	Cause	Solution
The actuator does not make any movement when the opening or closing controls are activated	Absence of system power voltage	Re-establish the power supply voltage
	Defective electrical installation	Check that the installation does not present any short-circuits or cut-off points
By activating the opening or closing controls, the actuator is enabled but the door does not move	Defective control panel or control devices	Check these elements, seeing their respective manuals
	Pins stuck in the bushing	Unblock 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	Eliminate 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 eliminate the resistance
	The force of the actuator during closing (or opening) is too low	Using the control panel programme, increase the closing or opening force
	The mechanical stoppers of the door are maladjusted	Adjust the stoppers

## 3 SCRAP

- ▲ The actuator, 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. In this manner we will avoid possible accidents and damage to adjacent facilities.**
-  The actuator must be deposited in the appropriate containers for subsequent recycling, separating and classifying 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 actuator needs repairing, go to an authorised assistance centre or manufacturer; never try to repair it yourself.**
- ▲ Use only original spare parts. See the figure "Content and spare parts" on page 43.**