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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 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 swing 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 AUTOMATIC GATE 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

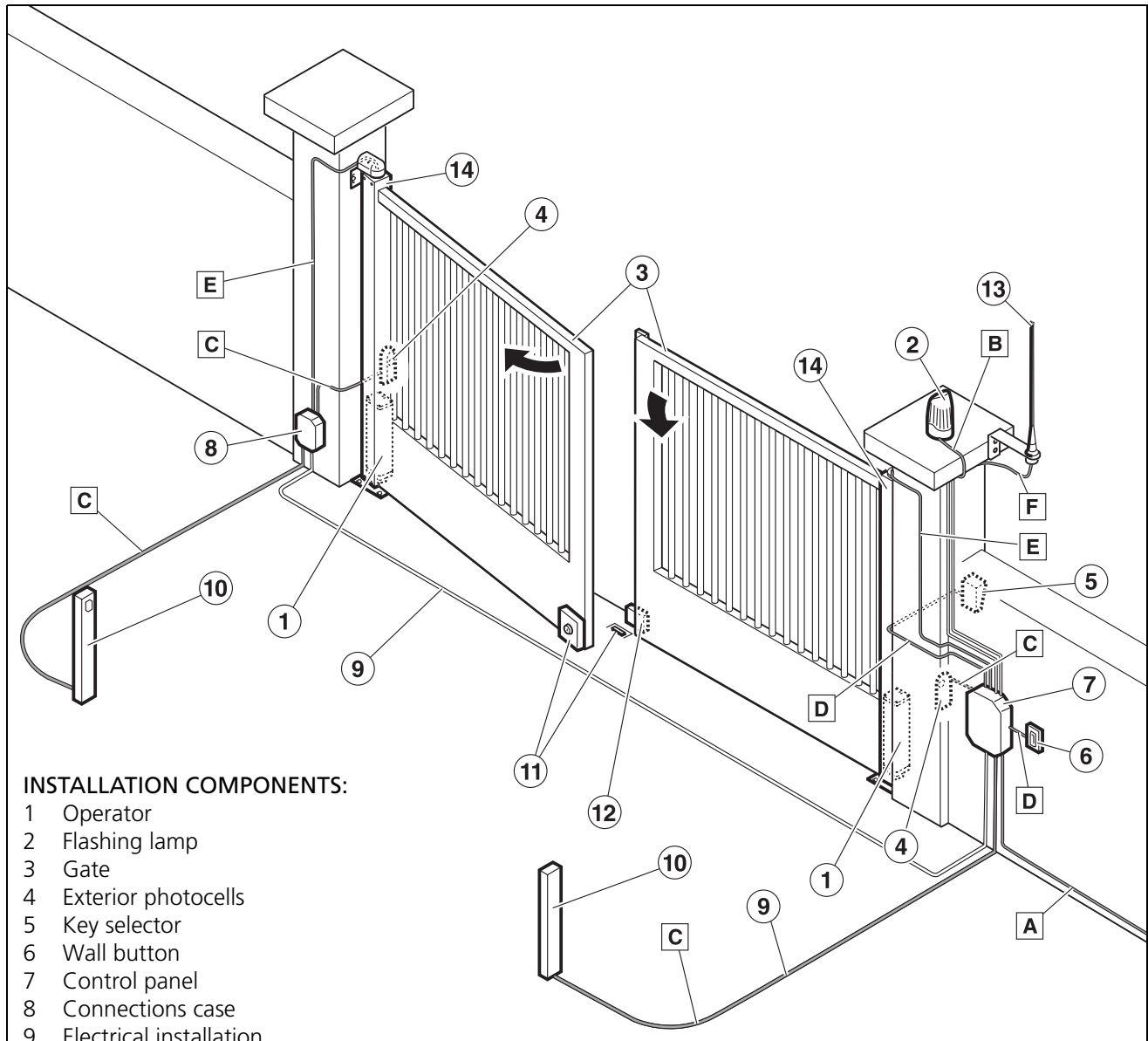
components in order to guarantee proper operation.

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

⚠ We recommend installing safety elements.

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

1 ELEMENTS OF THE COMPLETE INSTALLATION



INSTALLATION COMPONENTS:

- 1 Operator
- 2 Flashing lamp
- 3 Gate
- 4 Exterior photocells
- 5 Key selector
- 6 Wall button
- 7 Control panel
- 8 Connections case
- 9 Electrical installation
- 10 Interior photocells
- 11 Electrolock (obligatory in MAS210 MAS250)
- 12 In-ground central stop
- 13 Reception antenna
- 14 Hanging style 100x100mm

ELECTRICAL CABLING:

Element	N° threads x section	Maximum length
A: General power supply	3x1.5mm ²	30m
B: Flashing lamp	2x0.5mm ²	20m
C: Photocells	2x0.5mm ²	30m
D: Key selector	2x0.5mm ²	25m
E: Operator	9x0.75mm ²	20m
F: Antenna	Shielded cable	5m

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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 hanging style of iron or aluminium swing gates.

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

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 operator allows opening of 180°.

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

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

3 MAIN OPERATOR PARTS

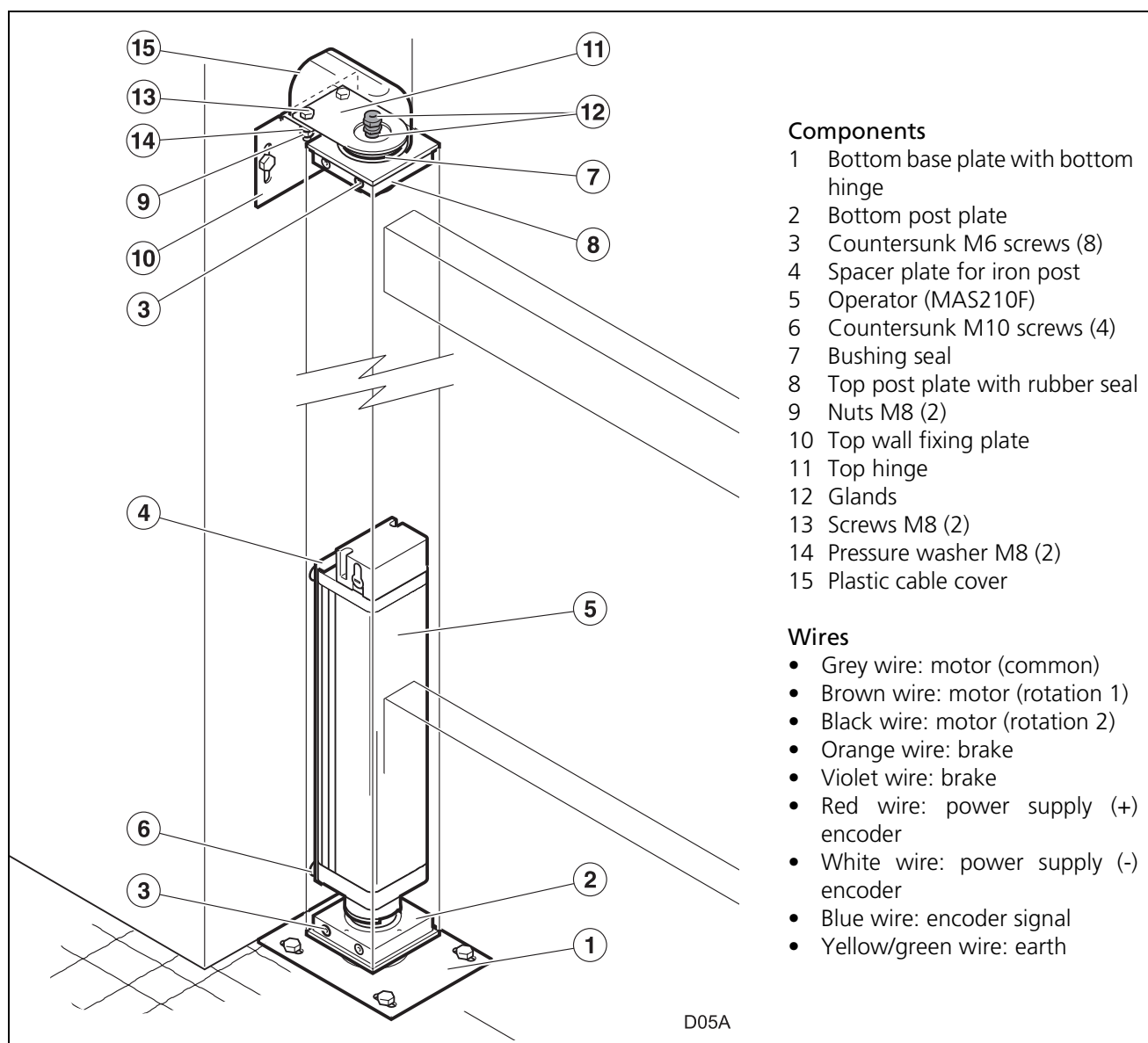


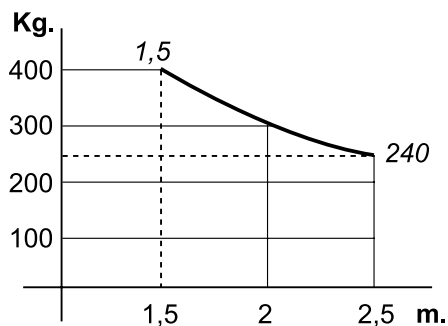
Fig. 2 Main parts

4 GENERAL CHARACTERISTICS OF THE OPERATOR

Model	MAS210F	MAS250F
Power supply (V/Hz)	230/50	230/50
Intensity (A)	1	1,3
Power consumed (W)	230	300
Capacitor (μ F)	5	8
Protection grade (IP)	54	50
Available torque (Nm)	220	450
Output speed (rpm)	1,33	1,33
Opening time 90° (s)	12	12
Self locking	Yes	Yes
Service temperature (°C)	-20/+60	-20/+60
Duty cycles (operations/hour)	20	20
Exterior hanging style dimension (mm)	100 x 100	100 x 100
Weight (Kg).	13	13
Gate size and weight	See chart	See chart



Limits on use

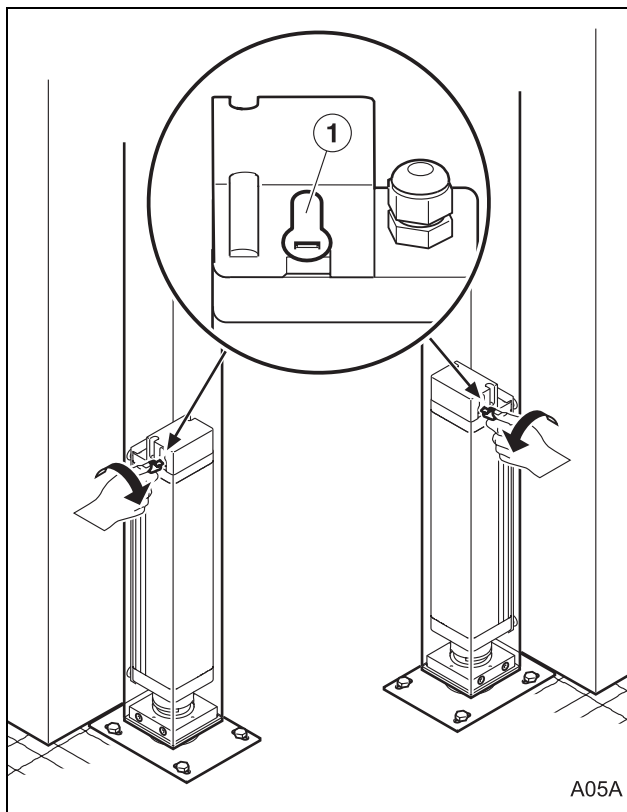


G03A

- ☞ We recommend using the chart 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 gate 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 operator 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 operator allows us to carry out installations which comply with standards EN 13241-1 and EN 12453.

The MAGIC electromechanical operator 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.

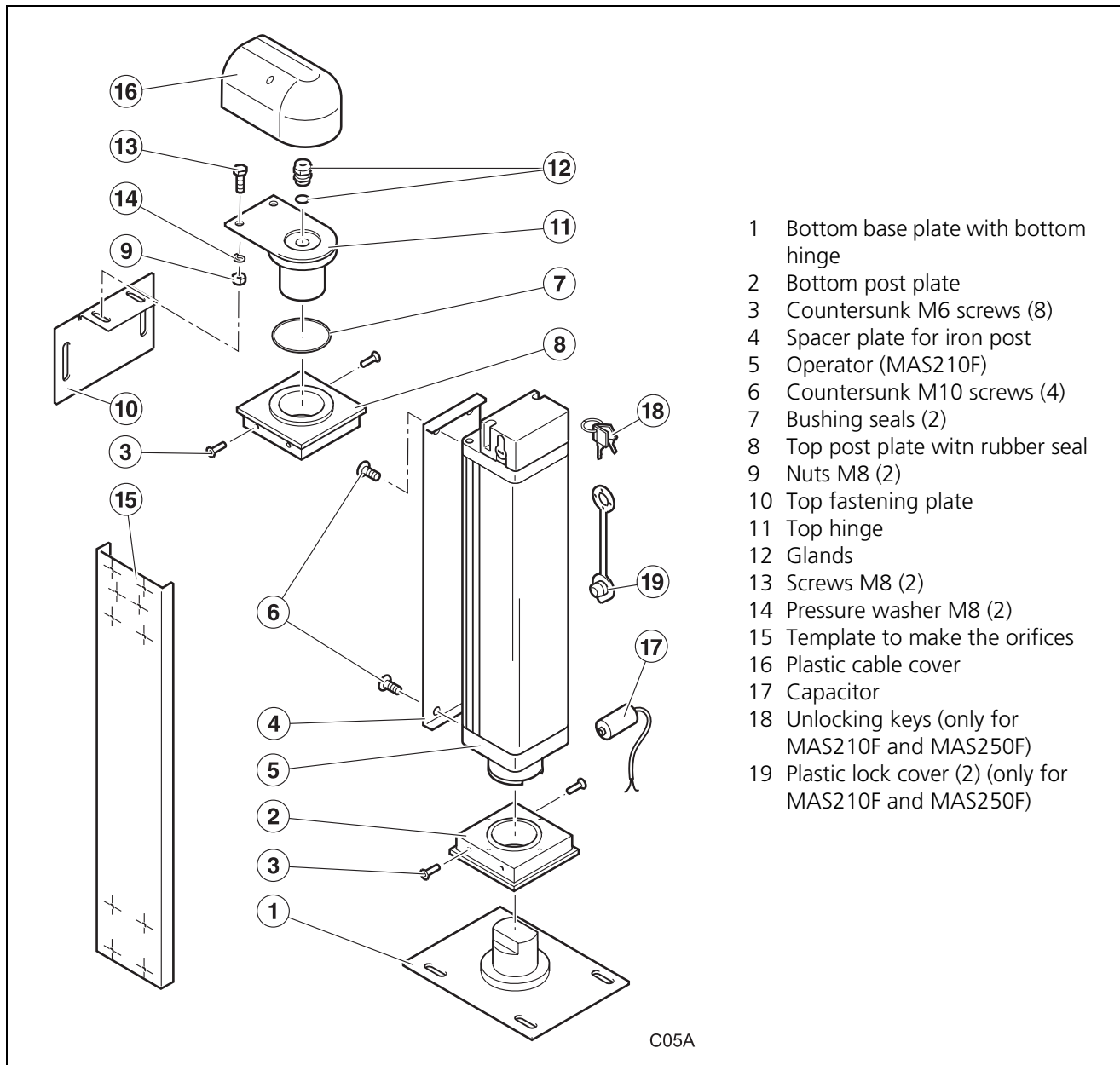
♻️ Eliminate the packaging in an environmentally friendly manner, using recycling containers.

⚠️ **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 Bottom base plate with bottom hinge
- 2 Bottom post plate
- 3 Countersunk M6 screws (8)
- 4 Spacer plate for iron post
- 5 Operator (MAS210F)
- 6 Countersunk M10 screws (4)
- 7 Bushing seals (2)
- 8 Top post plate with rubber seal
- 9 Nuts M8 (2)
- 10 Top fastening plate
- 11 Top hinge
- 12 Glands
- 13 Screws M8 (2)
- 14 Pressure washer M8 (2)
- 15 Template to make the orifices
- 16 Plastic cable cover
- 17 Capacitor
- 18 Unlocking keys (only for MAS210F and MAS250F)
- 19 Plastic lock cover (2) (only for MAS210F and MAS250F)

Fig. 3 Content and spare parts

1 NECESSARY TOOLS



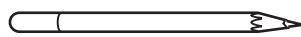
Set of screwdrivers



Fixed wrenches (13 mm and 17 mm)



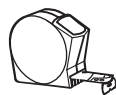
Allen key (5mm)



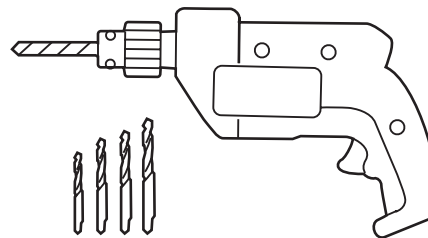
Marker pencil



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 gate

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

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

☞ The gate must have an in-ground central stop.

☞ The gate 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 operator in a gate which does not work correctly in manual operation, as this may lead to accidents. Repair the gate 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 panel manual.

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

4 INSTALLING THE OPERATOR

Assembly positions and dimensions

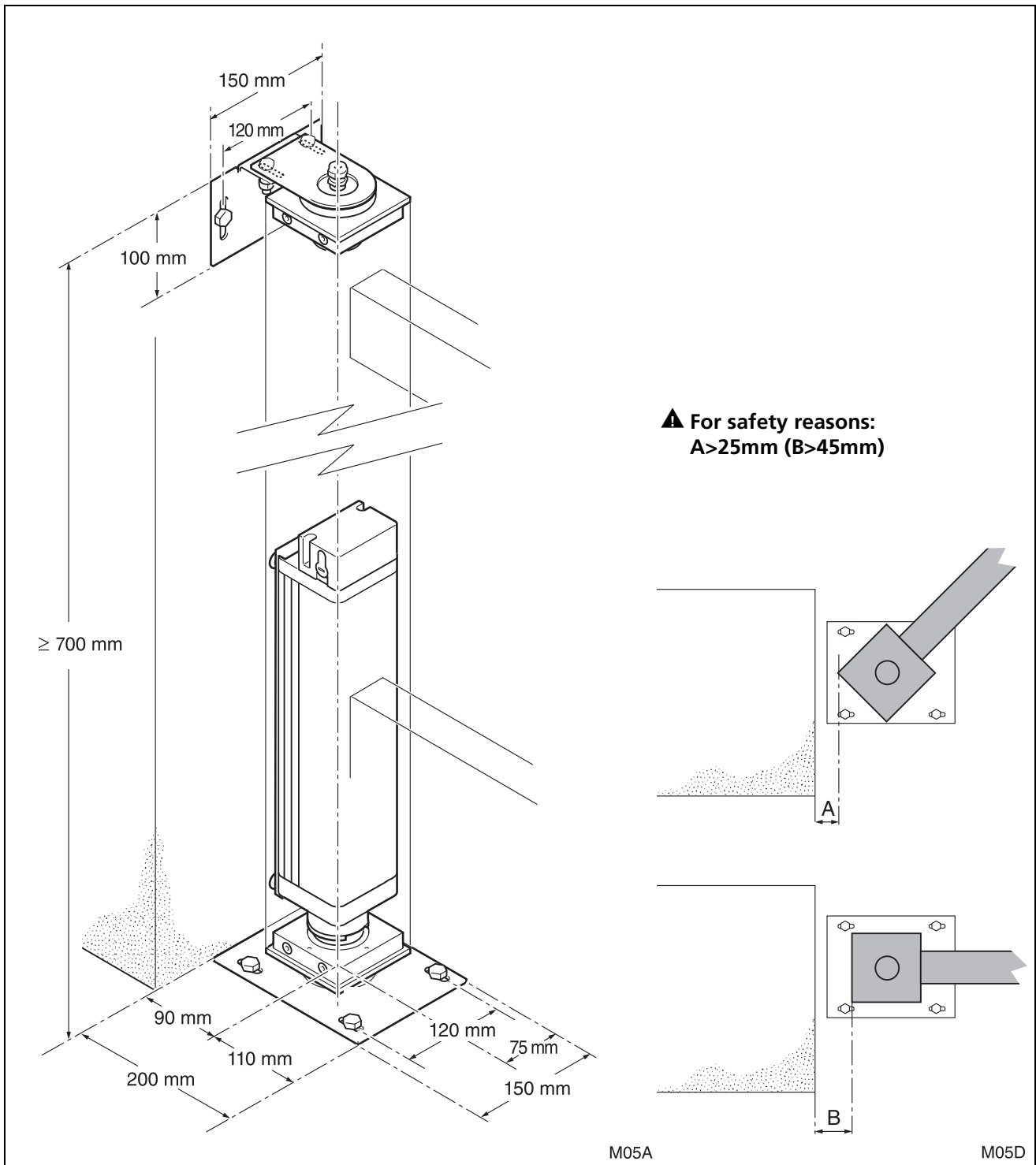
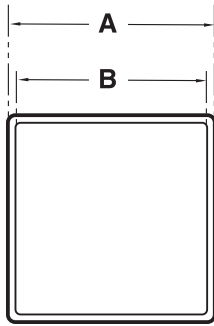


Fig. 4 Assembly position for the hanging style and the integrated operator

Hanging style dimensions

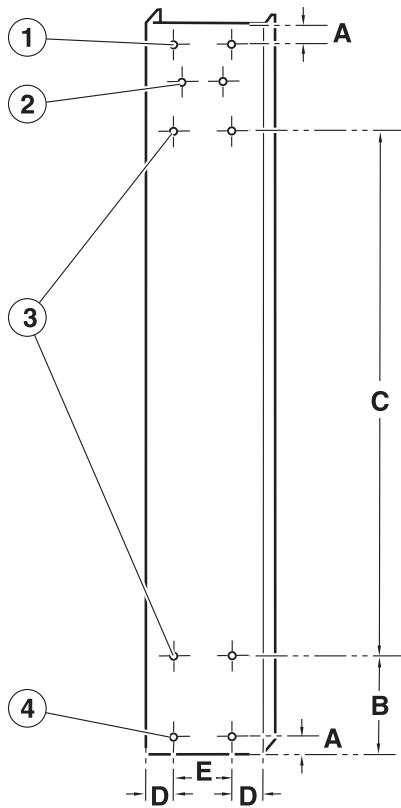


Dimension A: Exterior hanging style dimension (100mm)

Dimension B: Interior hanging style dimension (aluminium gates: ERREKA profile 100 x 100 x 5; iron gates: profile 100 x 100 x 4)

M05C

Template to make the orifices



- 1 Orifices for top post plate with rubber seal attachment
- 2 Orifices for lock
- 3 Motor attachment orifices
- 4 Orifices for bottom post plate attachment

Dimension A: 8.5 mm

Dimension B: 80 mm

Dimension C: 382 mm

Dimension D: 25 mm

Dimension E: 50 mm

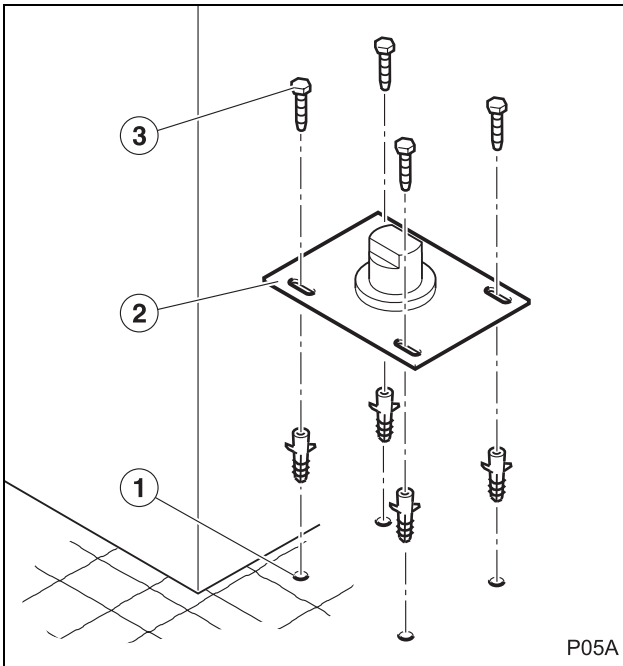
M05B





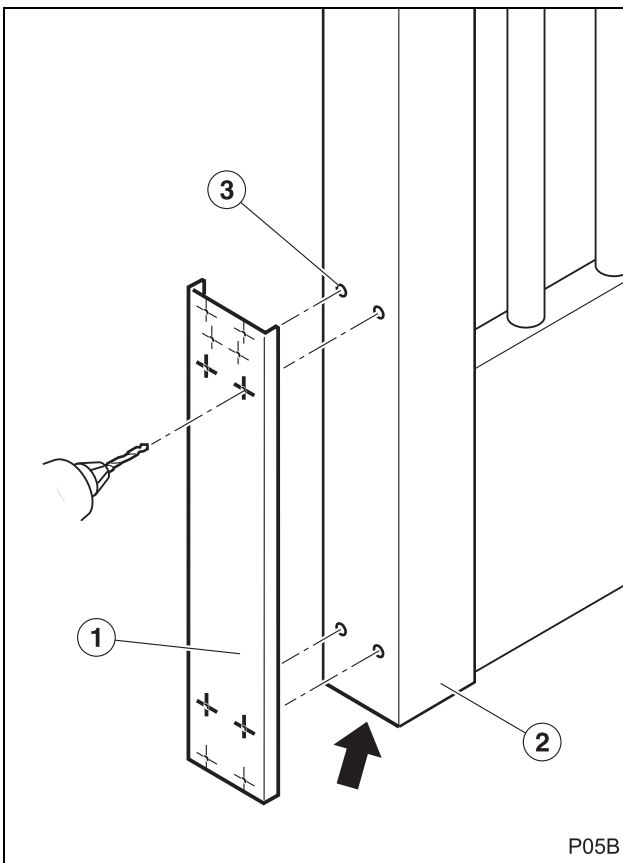
Procedure

Position the base plate



- 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 hanging style and the integrated operator").
- 2 Bore the points marked.
- 3 Position the plate (2) and secure it using appropriate screws (3).

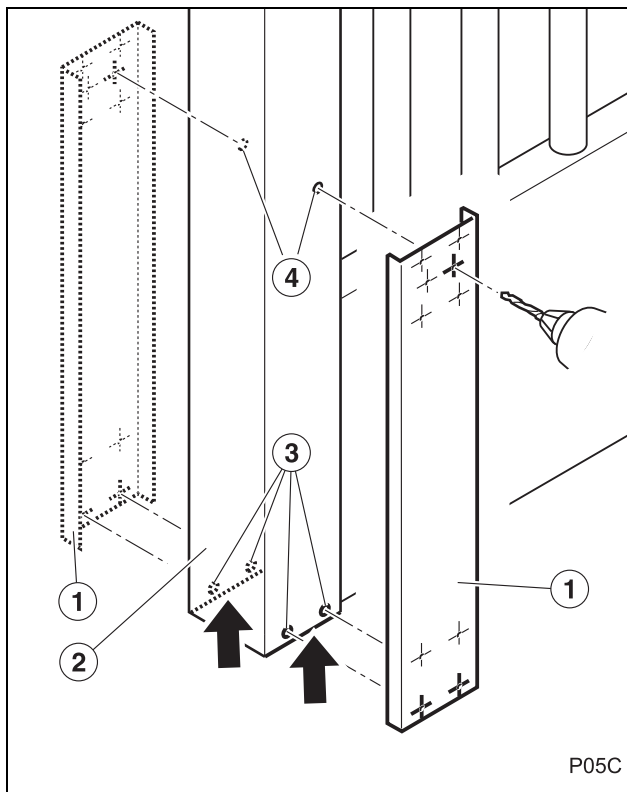
Drill the holes for the attachment of the motor



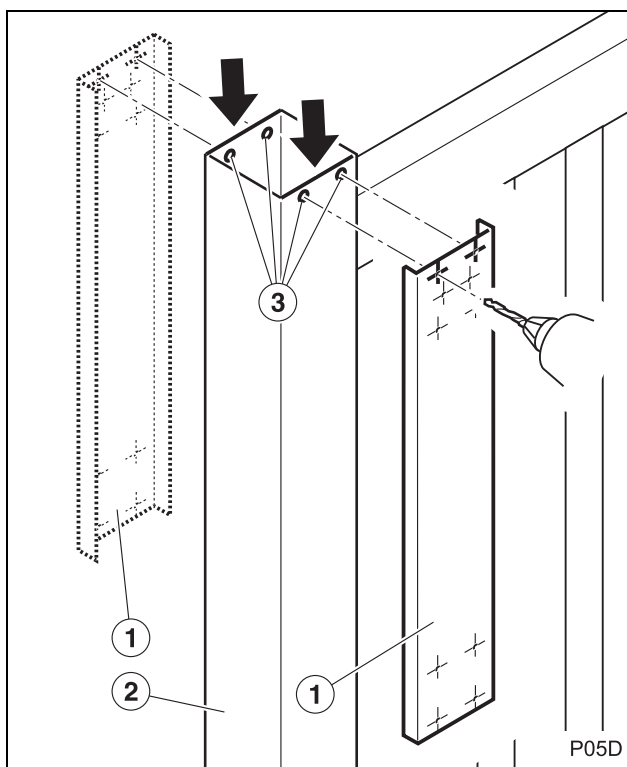
- 1 Position the template (1) supplied with the operator, ensuring the lower edge of the template coincides with the base of the hanging style (2).
- 2 Bore the four orifices (3) where the motor will be attached.
 - ✎ Use 10.5 mm broach.



Drill the holes for the attachment of the metal fixtures

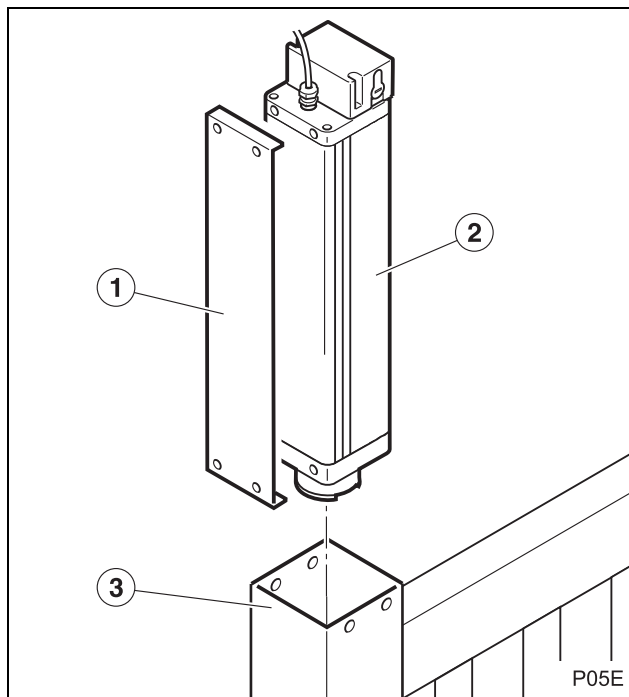


- 1 Position the template (1) supplied with the operator, ensuring the lower edge of the template coincides with the base of the hanging style (2) on the interior side of the gate.
- 2 Bore the orifices (3) where the bottom post plate will be attached.
 ■ Use 6.5 mm broach.
- 3 Make an orifice (4) of 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 gate.

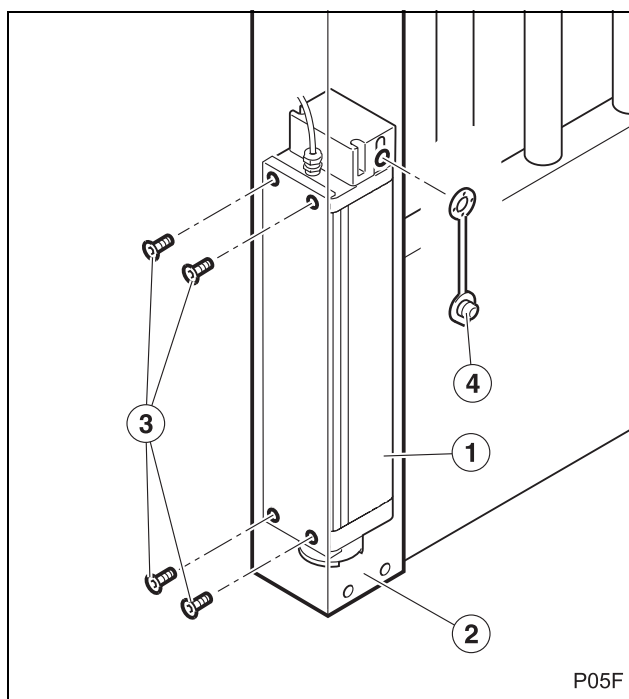


- 5 Position the template (1) supplied with the operator, ensuring the upper edge of the template coincides with the top of the hanging style (2) on the interior side of the gate.
- 6 Bore the orifices (3) where the upper profile support will be attached.
 ■ Use 6.5 mm broach.
- 7 Repeat points 5 and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

Position the operator



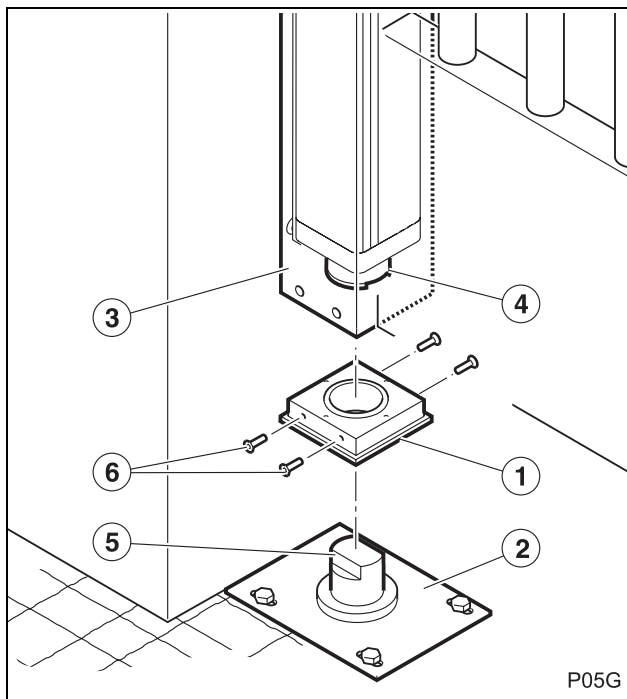
- 1 Position the spacer plate (1) (only in the case of an iron gate) in the operator (2).
- 2 Introduce the operator (2) in the gap in the hanging style (3).



- 3 Attach the operator (1) to the hanging style (2) using the screws (3).
- 4 Only models MAS210F and MAS250F: position the two plastic lock cover (4), one on each side.

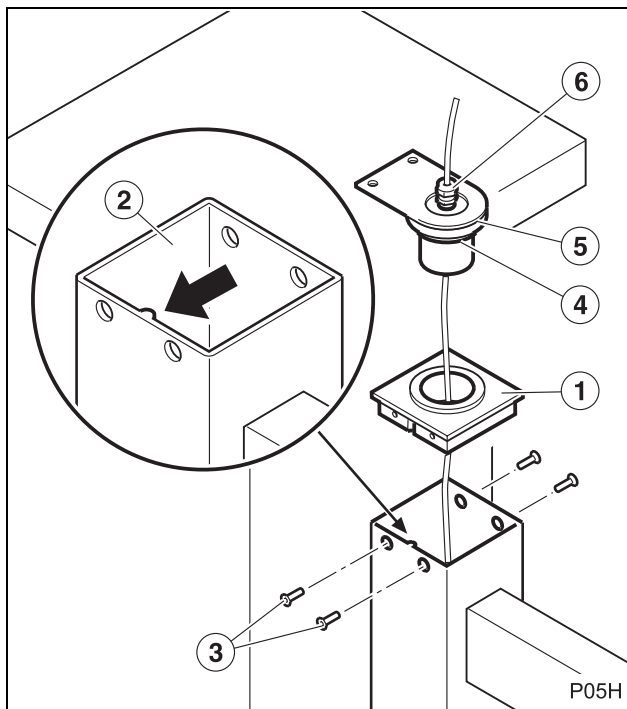


Position the base of the box section



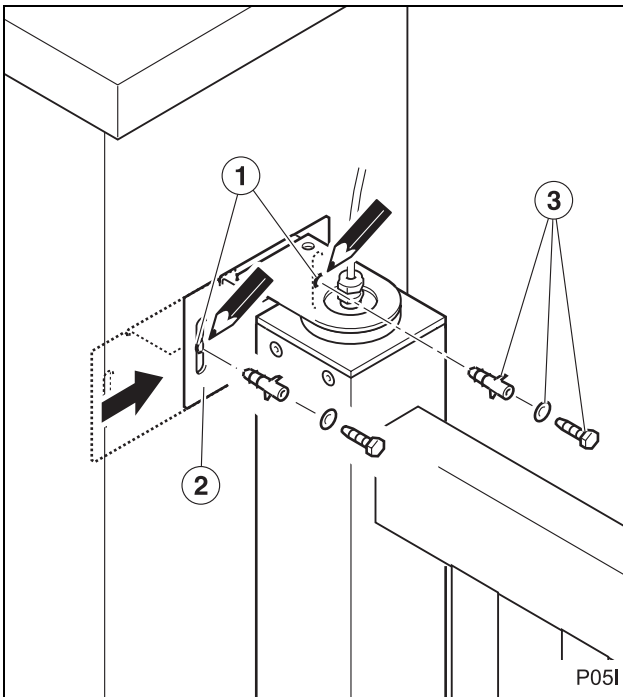
- 1 Position the base of the box section (1) on the base plate (2).
- 2 Position in the hanging style (3) on the base of the profile (1), ensuring that the drag wheel (4) of the operator fits correctly on the bottom hinge (5) of the base plate.
- 3 Attach the base of the profile (1) to the hanging style of the gate (3) using the screws (6).

Position the top post plate with rubber seal

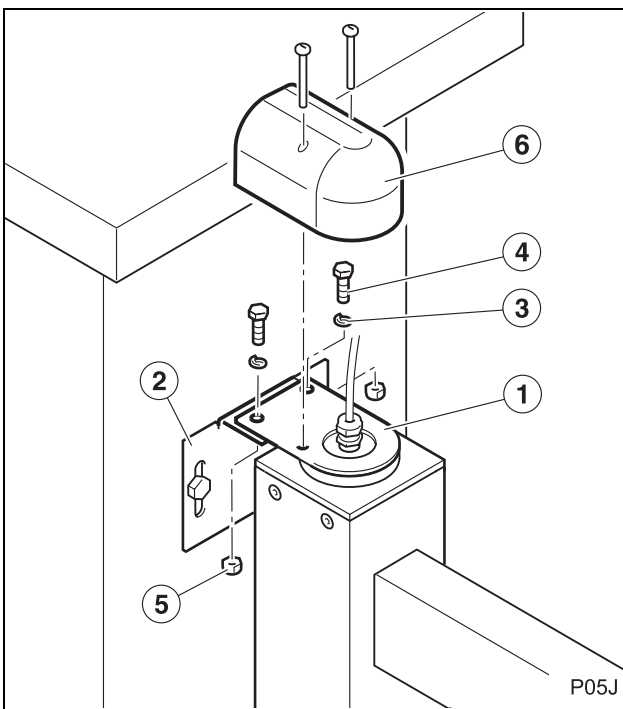


- 1 Attach the top post plate with rubber seal (1) to the hanging style of the gate (2) using the screws (3).
 - ✎ The hanging style in iron gates has a ridge. Check the position of the ridge in order to correctly position the top post plate with rubber seal (the groove of the support should coincide with the ridge of the hanging style).
- 2 Check that the two O-ring seals (4) are positioned on the bottom hinge (5).
- 3 Position the top hinge (5).
- 4 Gland adjustment (6).

Position the top wall fixing plate 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 hanging style and the integrated operator").
- 2 Bore the points marked.
- 3 Position the top wall fixing plate (2) and secure it to the material upon which the top wall fixing plate is attached, using appropriate screws (3).



- 4 Attach the top hinge (1) to the top wall fixing plate (2) using the pressure washers (3), screws (4) and nuts (5).
- 5 Position the plastic cable cover (6) using the corresponding screws.



Connect the motor to the control panel (AEP20PIL)

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

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

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

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

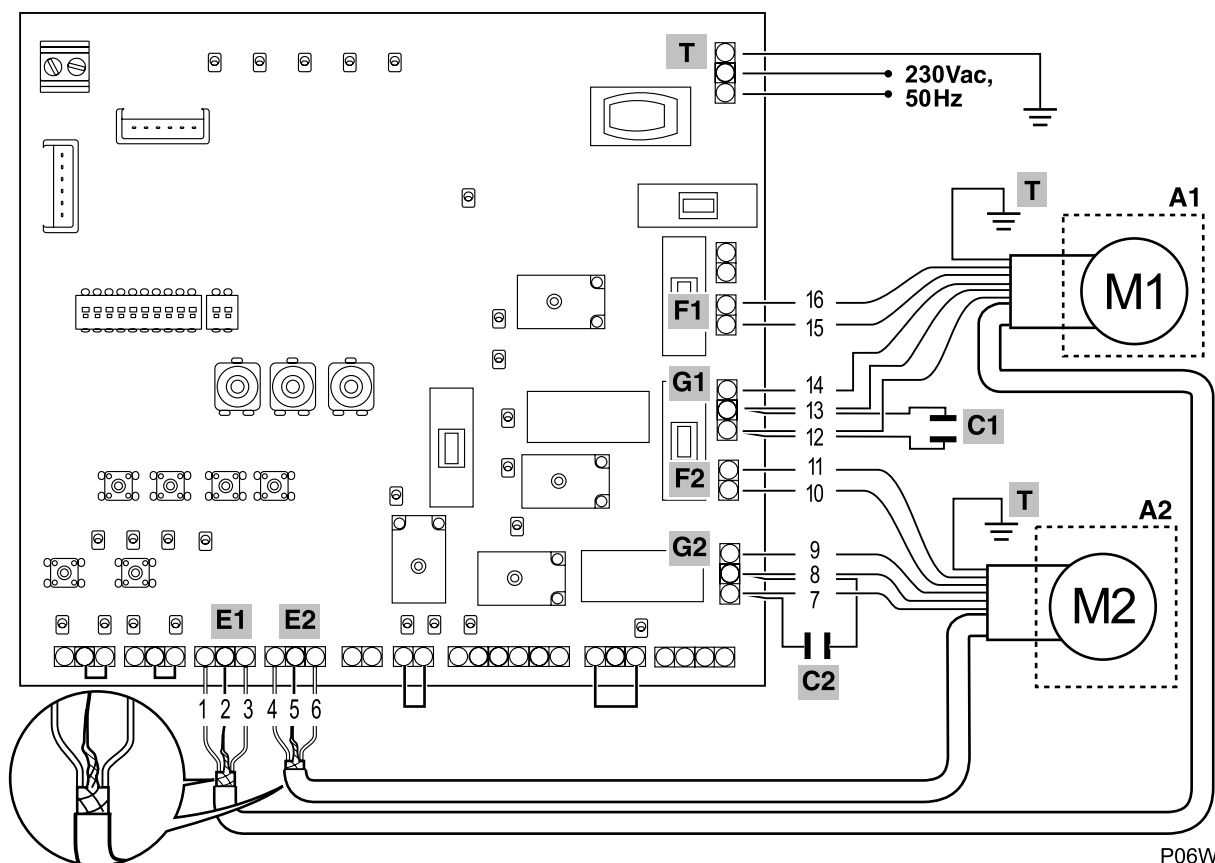
2 Connect the control panel to the power supply.

3 Activate the power supply switch.

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

☞ If the rotation direction is not correct, interchange the wires 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.



P06W

C1, C2: capacitors

E1: encoder A1

- 1 Red: (+)
- 2 Copper shield: (-)
- 3 Blue: signal

E2: encoder A2

- 4 Red: (+)
- 5 Copper shield: (-)
- 6 Blue: signal

G2: motor A2

- 7 Brown: turn 1
- 8 Black: turn 2
- 9 Grey: common

F2: brake A2

- 10 Orange
- 11 Violet

T Yellow-green: earth

G1: motor A1

- 12 Brown: turn 1
- 13 Black: turn 2
- 14 Grey: common

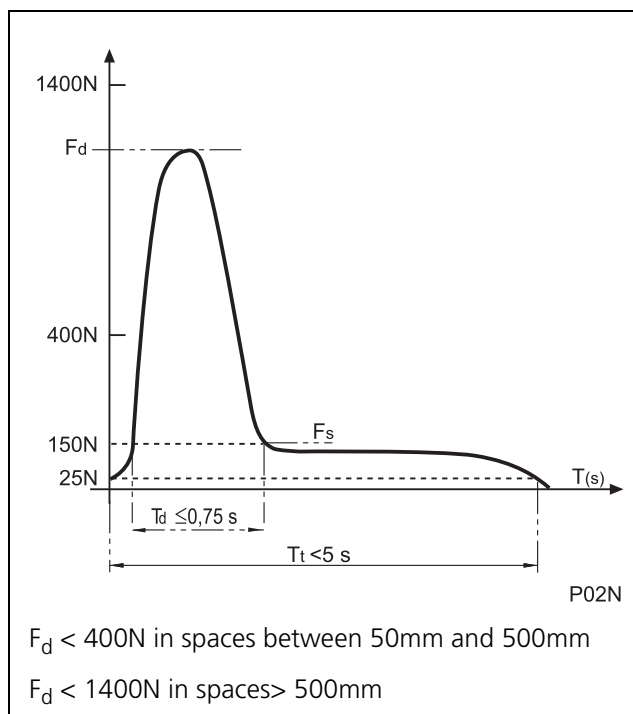
F1: brake A1

- 15 Orange
- 16 Violet

T Yellow-green: earth

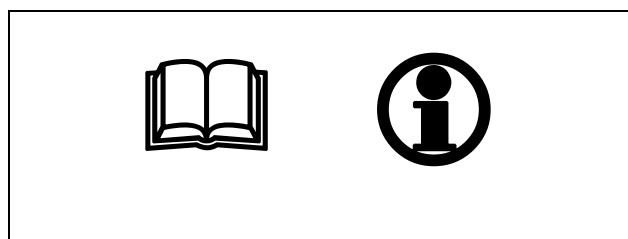
5 FINAL PREPARATION

Connections and checks



- 1 Install an eletrolock to lock the gate 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 gate, 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 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 gate, 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 FAILURE DIAGNOSIS

Problem	Cause	Solution
The operator does not make any movement when the opening or closing transmitters 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
	Defective control panel or control devices	Check these elements, seeing their respective manuals
By activating the opening or closing transmitters, the operator is enabled but the gate does not move	Pins stuck in the bushing	Unblock and adjust the gate pins
The gate moves in an irregular manner	De-aligned pins	Align the pins
The gate cannot completely close (or open)	The photocell detects an obstacle	Eliminate the obstacle and try again
	The resistance of the gate has increased when closing (or when opening)	Check the moving parts of the gate and eliminate the resistance
	The force of the operator during closing (or opening) is too low	Using the control panel programme, increase the closing or opening force
	The mechanical stoppers of the gate are maladjusted	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. In this manner we will avoid possible accidents and damage to adjacent facilities.

 The operator 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 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 "Content and spare parts" on page 43.