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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.

📄 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.**

📄 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.

**⚠ 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.

- He/she must be capable of carrying out simple masonry work (digging of pits, channels, preparation of cement).

**⚠ 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.**

📄 For further details, see "Elements of the complete installation" on page 43.

## 1 ELEMENTS OF THE COMPLETE INSTALLATION

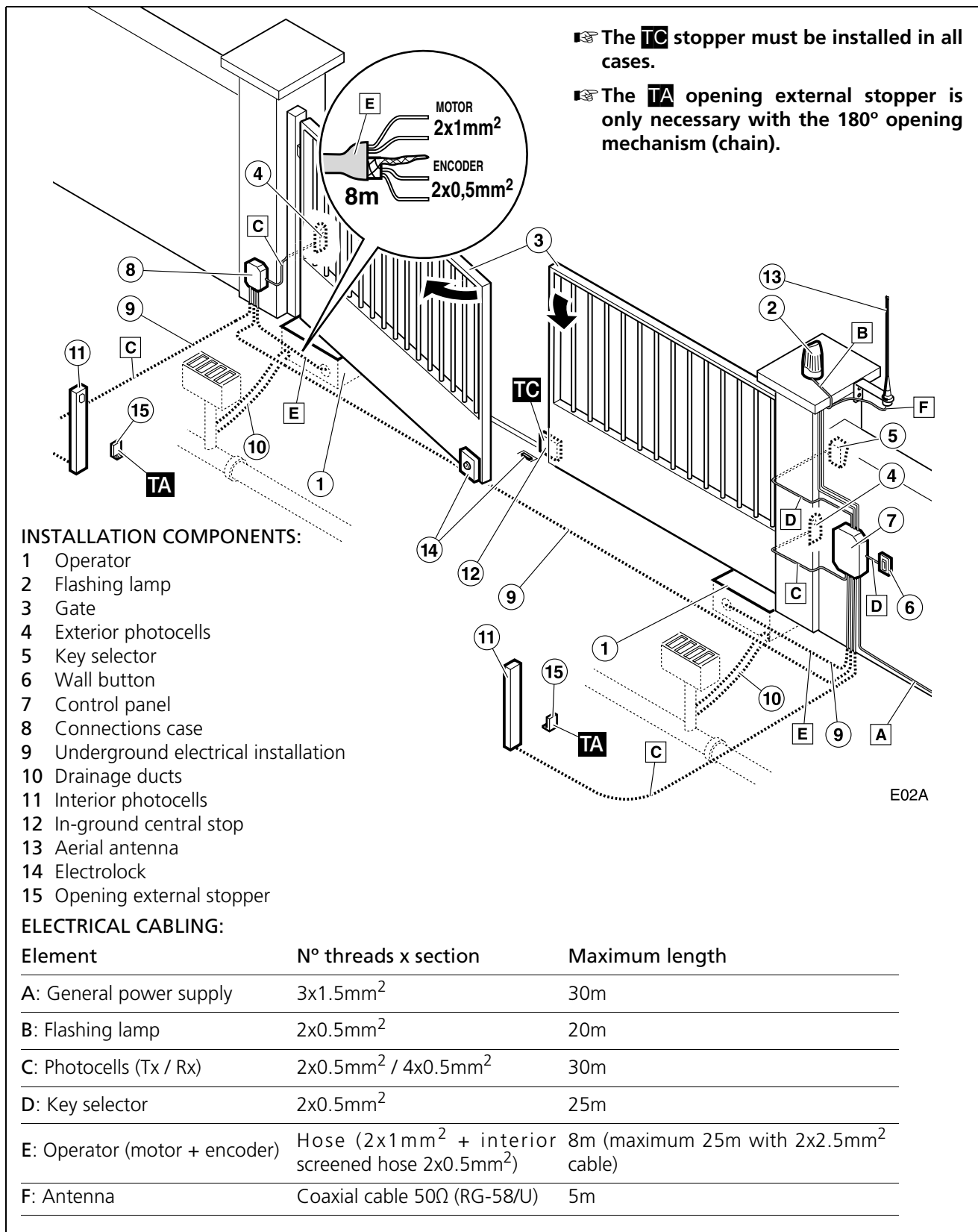


Fig. 1 Elements of the complete installation

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

▲ Only use control panel VIVO-D201(M). We do not recommend using this operator with control panels which are not produced by Erreka.

▲ The in-ground central stop (12) is an essential element.

☞ For greater safety, Erreka recommends installing the photocells (4) and (11).

## 2 GENERAL CHARACTERISTICS OF THE OPERATOR

The TOPO operator is constructed to form part of a swing gate automation system, also replacing the lower hinge of the gate.

It comprises a galvanised steel base box, buried underneath the gate, which contains the motor and the operation mechanism. Allows a maximum opening of 110° (or 180° with the NBKIT-180 kit).

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.

The motor is irreversible, thus guaranteeing the mechanical locking of the gate. However, for leaf lengths of over 2.5m we recommend using an electrolock.

The operator has an unlocking mechanism in order to operate the gate manually in the event of failure of the electricity supply.

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

## 3 MAIN OPERATOR PARTS

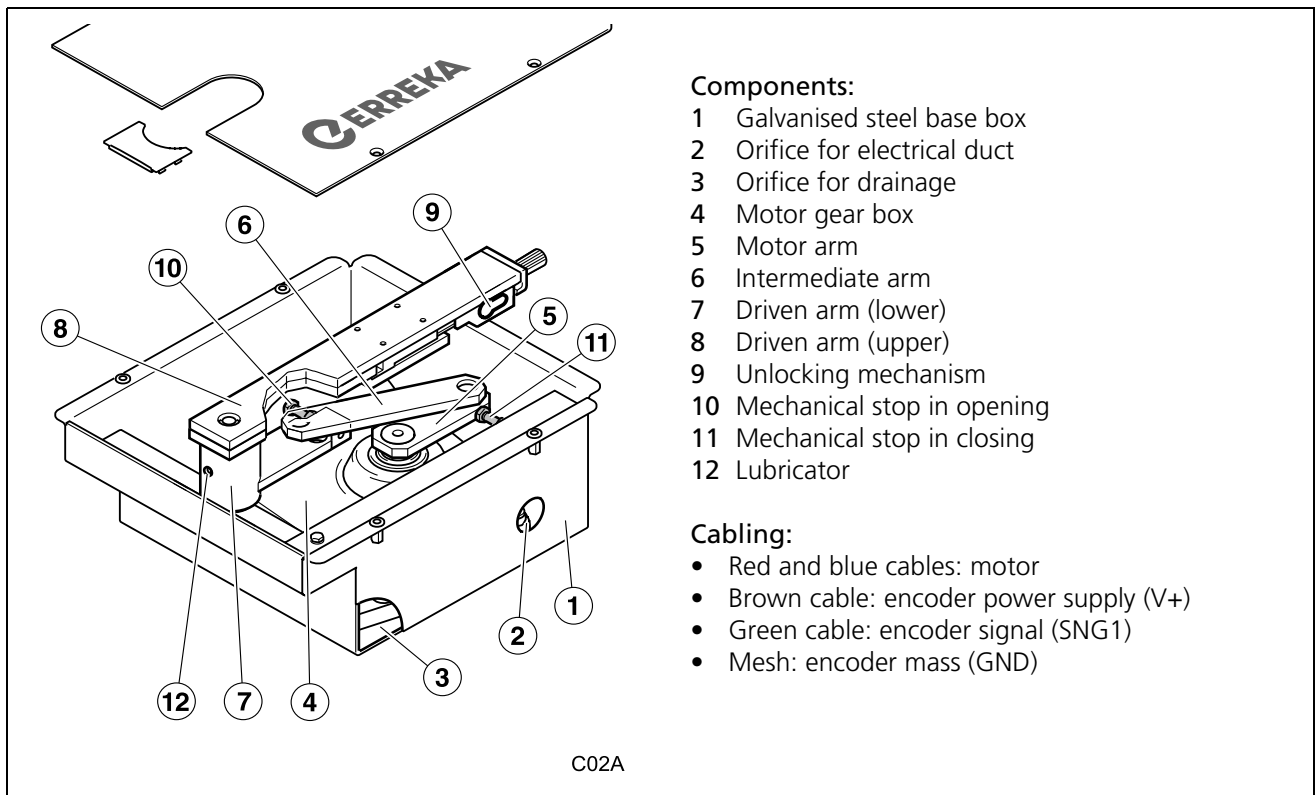
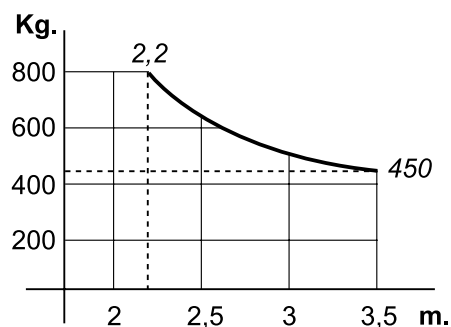


Fig. 2 Main parts

## 4 GENERAL CHARACTERISTICS OF THE OPERATOR

Model	TOPO
Power supply (Vdc)	24
Intensity (A)	6
Power consumed (W)	144
Protection class (IP)	67
Available torque (Nm)	380
Output speed (rpm)	adjustable
Opening time 90° (s)	16-30
Self locking	Yes
Service temperature (°C)	-25/+70
Duty cycles (%)	80
Base box dimension (mm)	381x336x152
Motor weight (kg)	9,5
Size and weight of the gate	See chart
Use	Intensive

### Limits on use



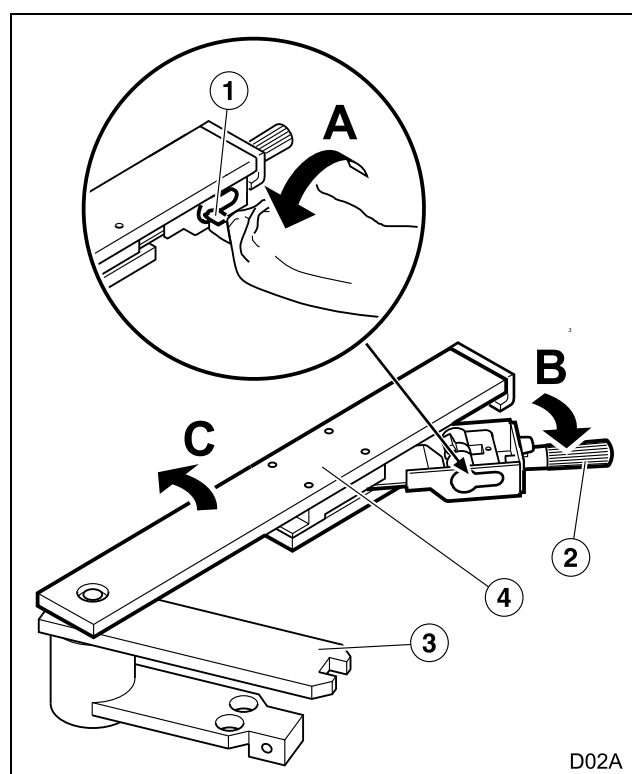
G02A

- ☞ Only use the chart VIVO-D201(M).
- ☞ We recommend using an electrolock for leaf lengths of over 2.5m.
- ☞ Values for orientation purposes. The form of the leaf and the presence of wind may bring notable differences in the values of the chart.

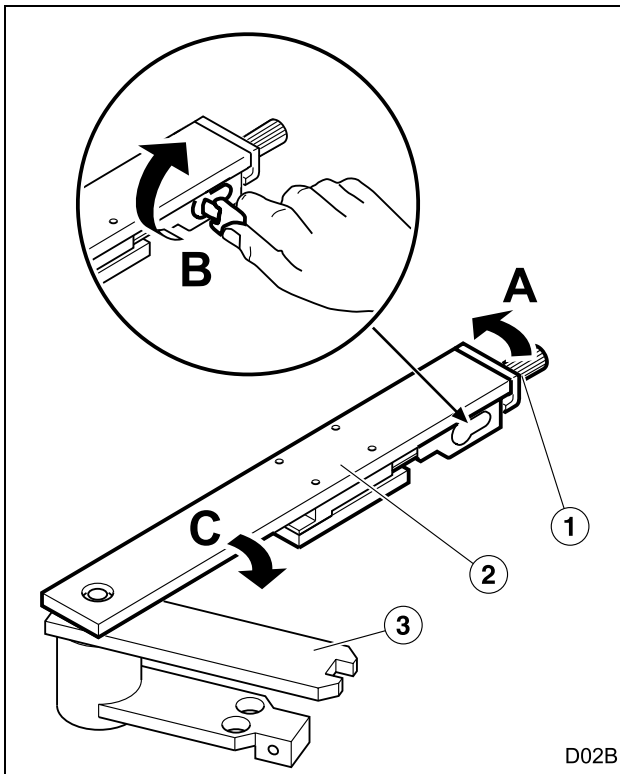
## 5 MANUAL OPERATION

☞ In the event of need, the gate may be operated manually, acting first on the unlocking mechanism.

### Unlock



- 1 Introduce the key in the lock (1) of the unlocking system and turn the key towards the axle of the gate (A).
- 2 Pull on the unlocking lever (2), making it rotate 90° (B).
  - ⓘ The arm (3) is unlocked from the base (4).
- 3 Move the gate manually (C).

**Lock**

☞ In order to restart automatic operation of the system, carry out the following operations:

- 1 Rotate the unlocking lever (1) until it is located underneath the base (2) (A).
- 2 Rotate the key as shown in figure (B).
- 3 Move the gate until its base (2) is aligned with the arm (3) (C).

## 6 DECLARATION OF CONFORMITY

Erreka Automatismos declares that the TOPO 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.

The TOPO electromechanical operator allows installations in line with Standards EN13241-1 and EN12453.

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

- 2006/95/EC (low voltage)
- 2004/108/EC (electromagnetic compatibility)
- UNE-EN 60335-1 and UNE-EN 60335-2-103

**1 UNPACKING**

- 1 Open the two packages 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**

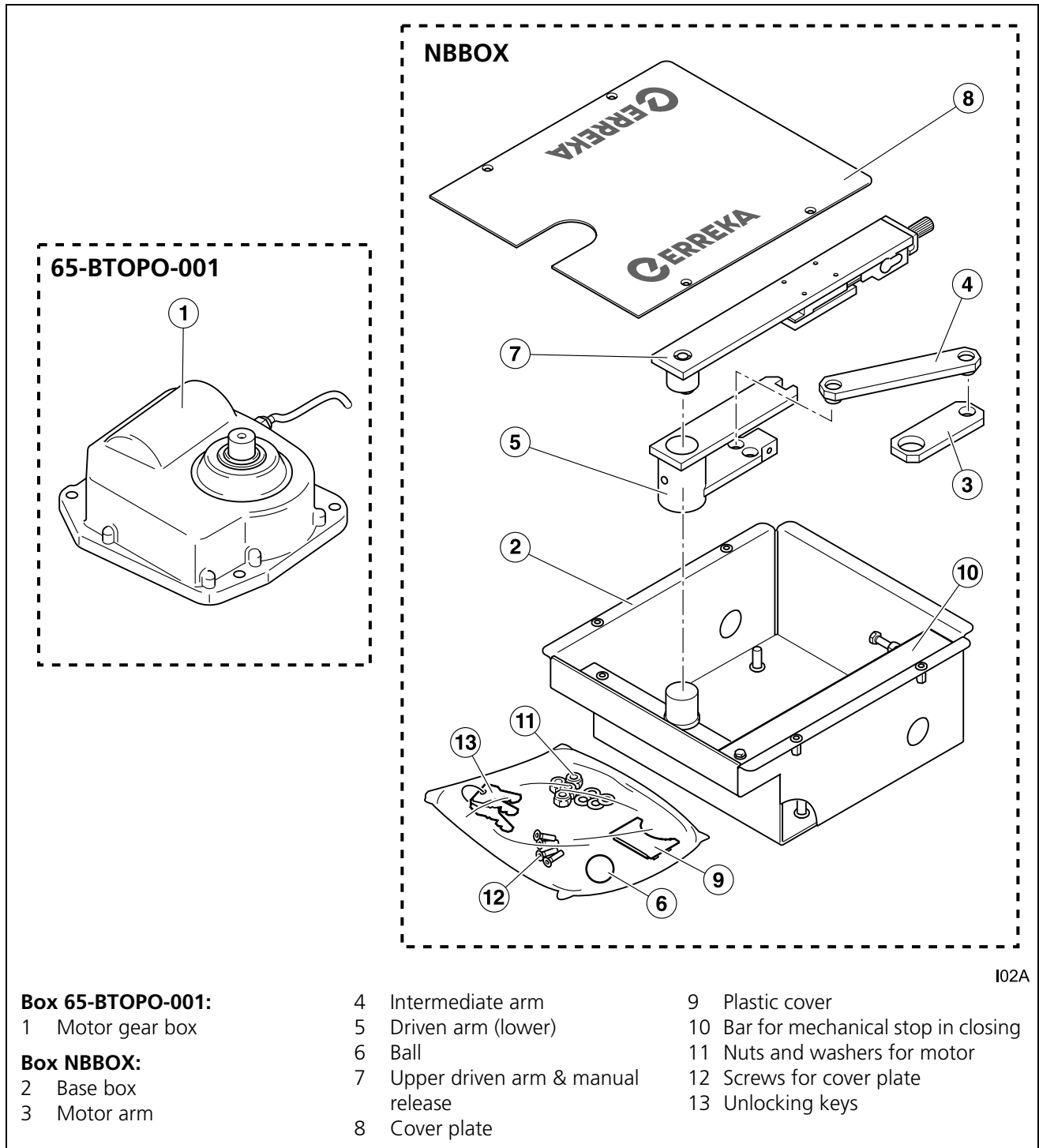


Fig. 3 Content (Option A: 110° mechanism)

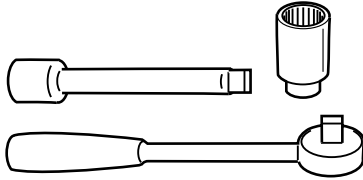
## 1 NECESSARY TOOLS



Set of screwdrivers



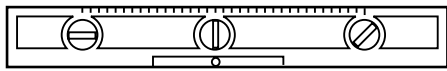
Fixed wrenches (one of 10 mm and two of 13 mm)



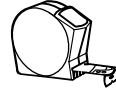
Drive socket wrench (17 mm) with extension



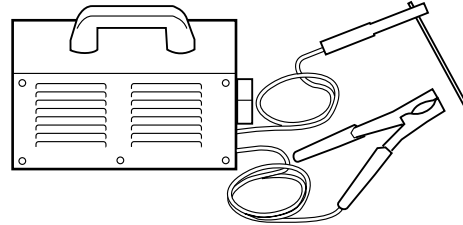
Allen key 4mm



Level

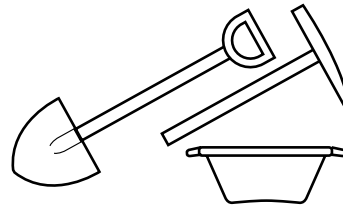


Tape measure



Welding machine

**▲ Use the welding machine in line with the use instructions.**

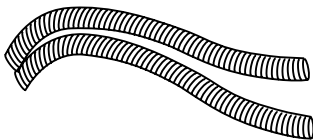


Masonry equipment (pick, shovel, trowel, containers...)

## 2 NECESSARY MATERIALS



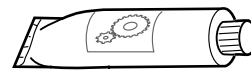
Gravel, cement, sand, water



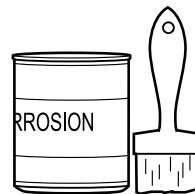
Underground electrical cable ducts



Rainwater drainage ducts



Lubrication grease (graphite or lithium grease).



Anti-corrosion paint



### 3 INITIAL CONDITIONS AND CHECKS

#### Initial conditions of the gate

▲ **Check that the size and weight 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 also have a mechanical stop in opening when the NBKIT-180 kit is installed (maximum opening 180°).

☞ The operator will replace the lower hinge of the gate, for which reason this hinge should be eliminated in the installation process.

☞ Due to the dimensions of the operator base box, the rotation axle of the gate shall remain at a minimum distance from the pillar of 60 mm. It may be

necessary to move the upper hinge of the gate in order to achieve this distance.

☞ 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.**

☞ During the installation process, it will be necessary to modify the hinges of the gate, for which reason the correct manual operation of the gate should also be checked during the installation process.

#### 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 43.

#### Drainage

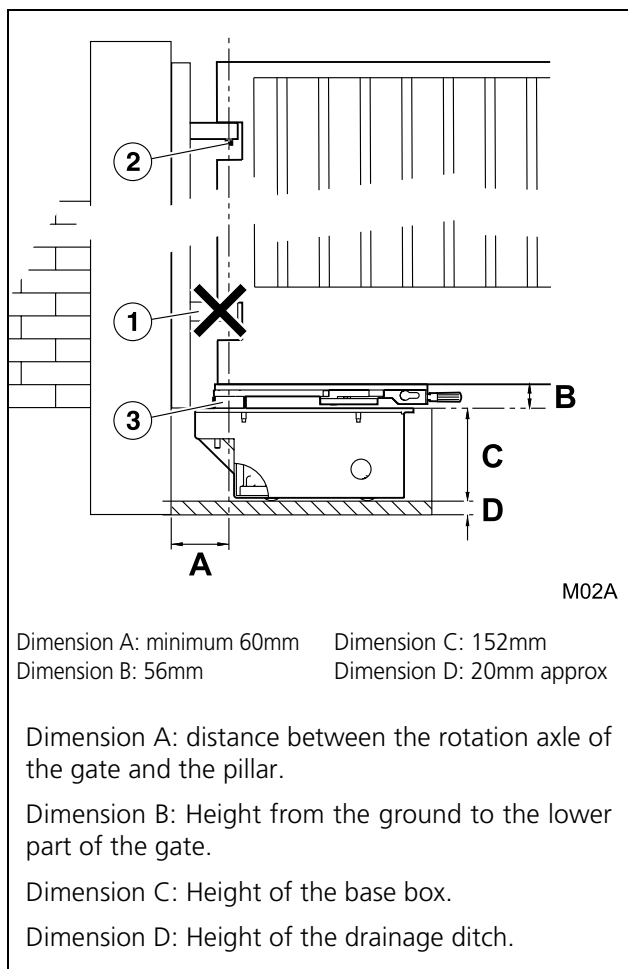
☞ The operator will be located in a pit to be dug in the ground. In consequence, in order to prevent the accumulation of water, it is necessary to set out

drainage and waste water ducts, sloping in order to guarantee the correct evacuation of the water.



**4** INSTALLING THE BASE BOX

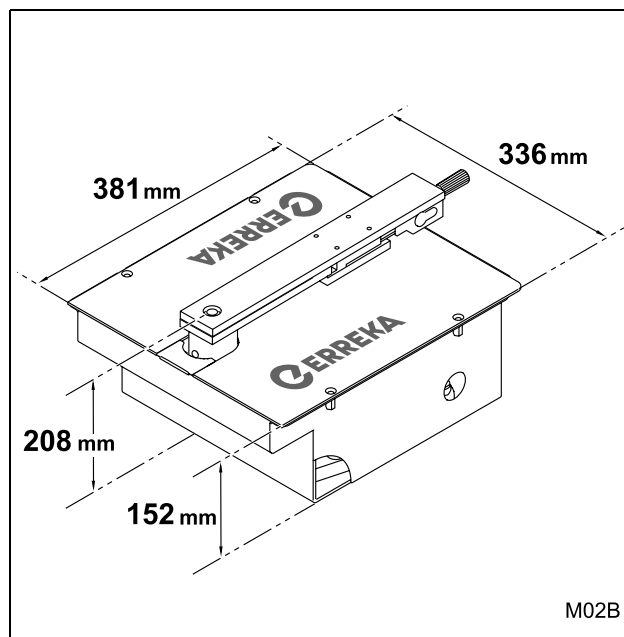
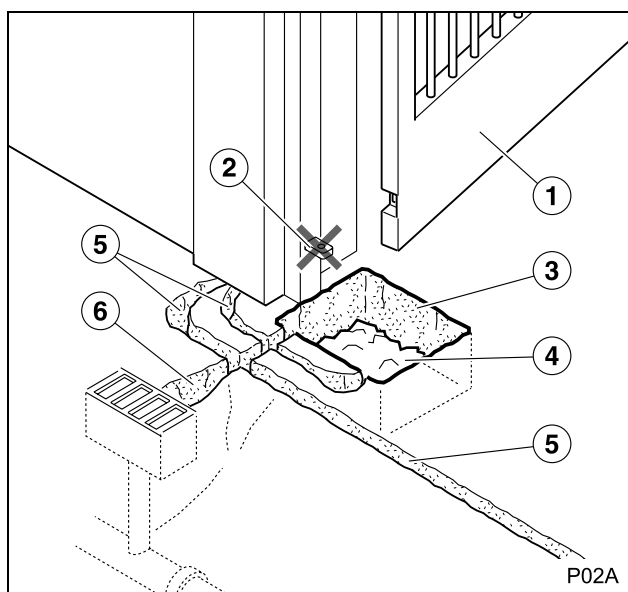
**Assembly positions and dimensions**



**Fig. 4** Installation dimensions

**Procedure**

**Dismount the gate and prepare the pit**

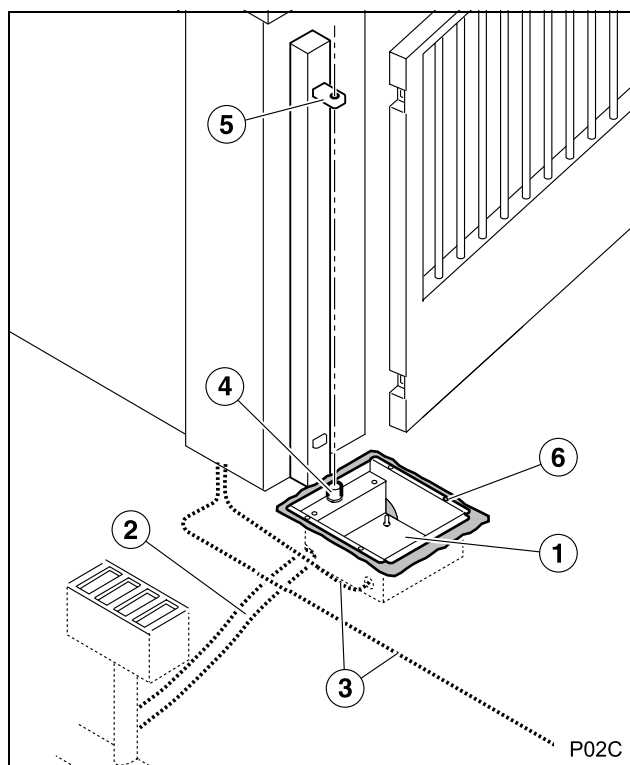


**Fig. 5** Base box dimensions

- ✎ The lower hinge (1) shall be eliminated during installation, in order to prevent misalignment.
- ✎ Bear in mind that the upper hinge (2) must be on the upright of the pivot (3) of the base box.

- 1 Dismount the gate (1).  
 ▲ Use appropriate means to raise the gate safely.
- 2 Eliminate the lower hinge (2).
- 3 Dig the pit, (3) respecting the dimensions indicated.
- 4 Place stones and gravel at the bottom (4) in order to achieve a permeable base which facilitates drainage.
- 5 Dig the clearances for the electrical ducts (5).
- 6 Dig the clearances for the drainage ducts (6).  
 ▲ The drainage ducts must slope downwards.

### Position the base box and the ducts

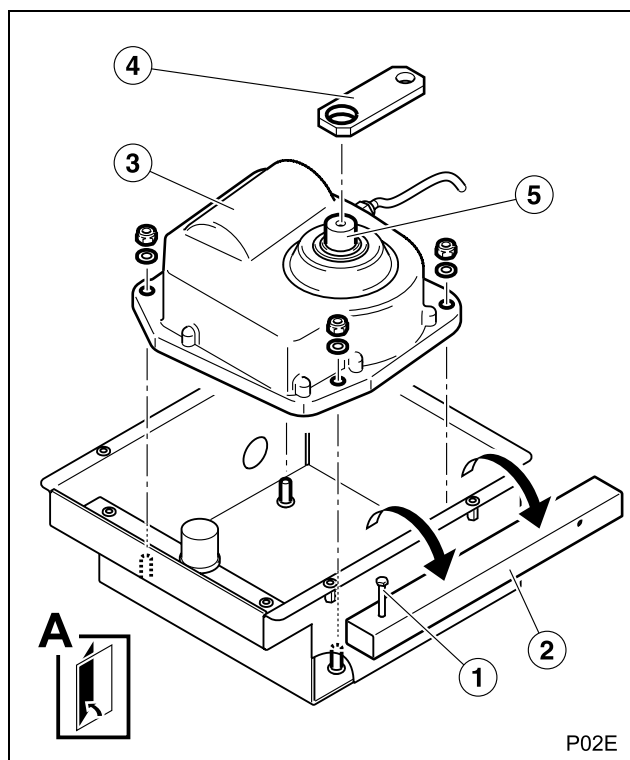


- 1 Position the base box (1) in the pit, ensuring it is levelled.
- 2 Position the drainage ducts (2) from the base box through to a water outlet, forming a downpipe which allows correct drainage.  
**▲ CHECK THAT DRAINAGE IS CORRECT. The accumulation of water in the base box could lead to failures and accidents.**
- 3 Position the electrical ducts (3).
- 4 Check that the pivot (4) is upright and aligned with the upper hinge (5).  
 ☞ Where appropriate, move the hinge (5) until it is on the upright.
- 5 Cement the base box with quick setting cement.  
 ☞ Position caps on the top attachment orifices (6) in order to preserve them from the cement.

## 5 INSTALLATION AND ADJUSTMENT OF THE MECHANISM AND OF THE GATE

### Option A: opening mechanism up to 110°

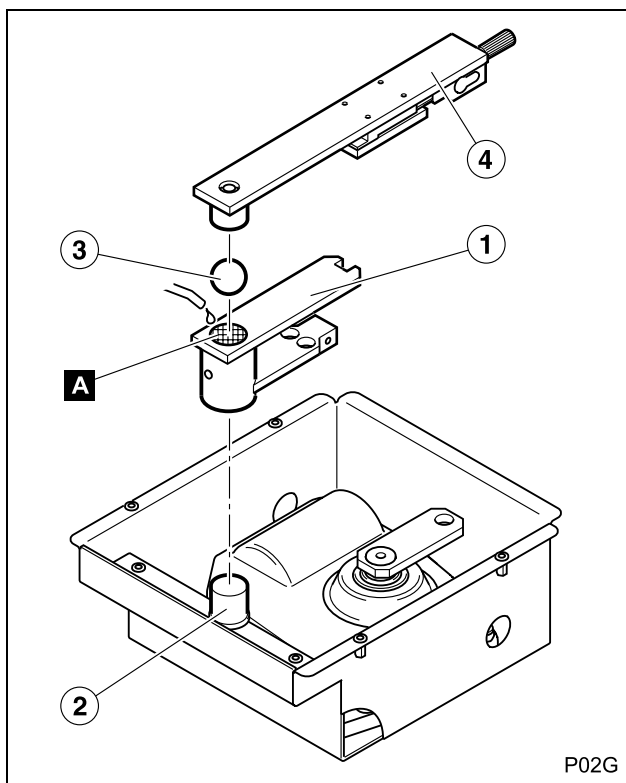
#### Position the motor and the motor arm



- 1 Release the screw (1) and remove the bar (2).
- 2 Position the motor (3) at the rear of the base box, ensuring the screws located in the base box coincide with the holes in the frame of the motor.  
 ☞ The figure shows the position of the motor for a gate which opens in the direction shown in (A). If the gate opens in the other direction, the motor would be mounted rotated 180° with regards to the position drawn.
- 3 Position the nuts and tighten firmly using a 17 mm wrench.
- 4 Position the motor arm (4) on the motor axle (5).  
 ☞ Respect the position shown in the figure.

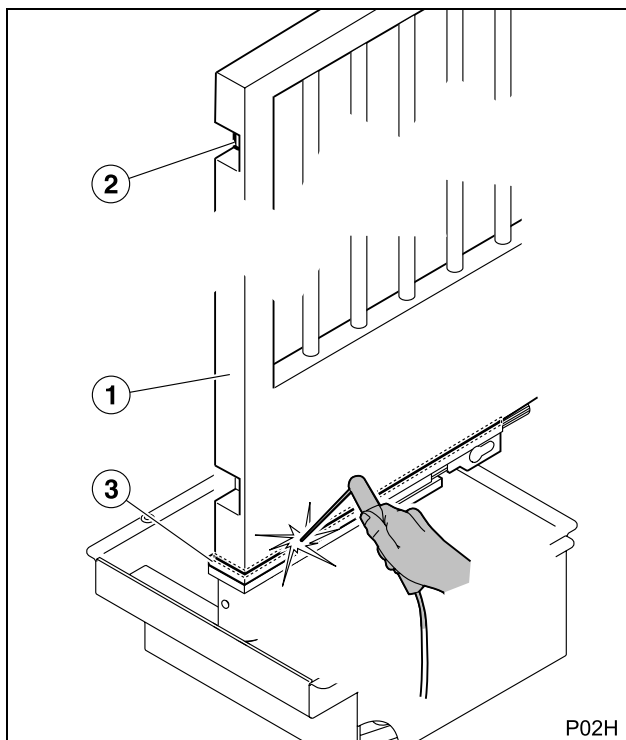


### Position the driven arm (lower) and the unlocking device



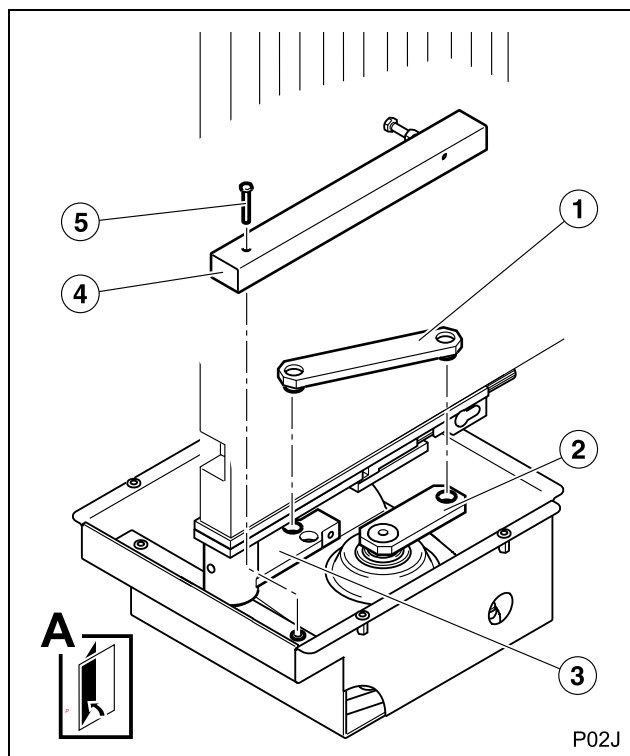
- 1 Position the driven arm (lower) (1) in the pivot (2).
- 2 Introduce lubrication grease inside the axle-tube (A).
- 3 Introduce the ball (3) in the axle-tube (A).
- 4 Position the unlocking device (4).

### Position the upper hinge and the gate



- 1 Attach the gate (1) on the upper hinge (2) and support it on the upper driven arm (3).
  - ☞ Control the alignment of the upper hinge and the operator pivot.
  - ☞ Control the verticality of the gate.
- 2 Weld the gate (1) to the upper driven arm (3).
- 3 Move the gate throughout its travel, checking it moves smoothly, without any contact or stiffness.
  - ⚠ **Should manual operation be difficult, solve the problem before proceeding with the installation.**
- 4 Apply anti-corrosion protection in the un-painted areas.

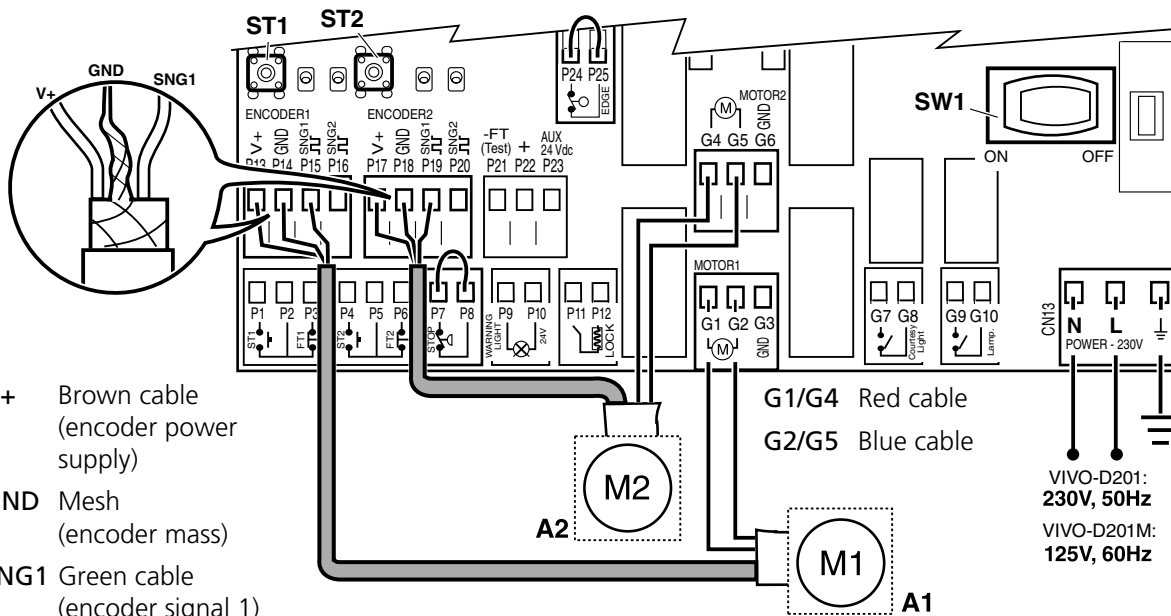
Position the intermediate arm and the bar



- 1 Position the intermediate arm (1) in the orifices of the motor arm (2) and of the driven arm (3).
  - The driven arm (3) has two orifices: the drawing shows the orifice to be used when the opening direction is in line with direction (A). If the opening direction is the opposite, mount on the other hole (always use the hole furthest from the motor axle).
- 2 Position the bar (4) and attach it using the screw (5).
  - The drawing shows the position of the support assembly when the opening direction is in line with direction (A). If the opening direction is the opposite, mount on the other side.

Connect the operator to the control board VIVO-D201(M)

- ▲ Before carrying out any gate movement, ensure there is no person or object in the radius of action of the gate and the drive mechanisms.
- ▲ See the control board instructions manual for further information.

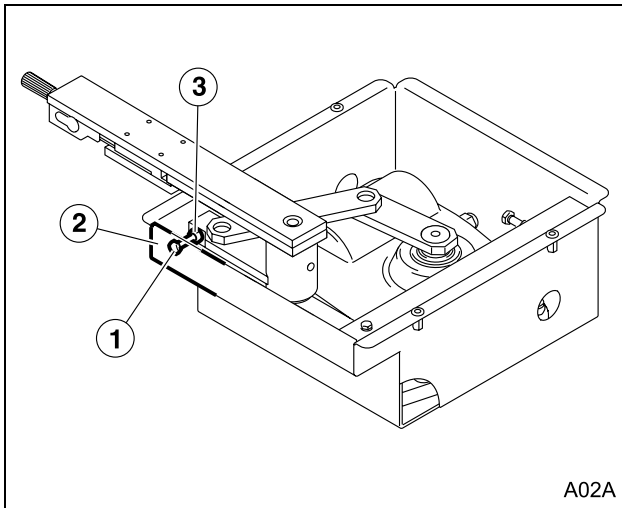


- V+ Brown cable (encoder power supply)
- GND Mesh (encoder mass)
- SNG1 Green cable (encoder signal 1)

VIVO-D201: 230V, 50Hz  
 VIVO-D201M: 125V, 60Hz

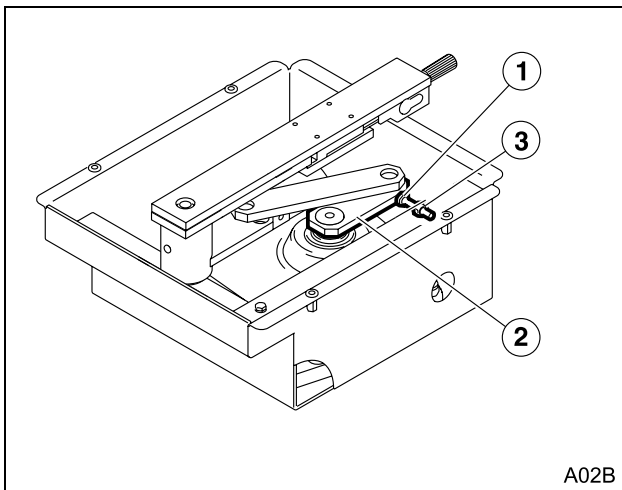
- Use [0] to select the number of operators: ([00] 1: one operator, [002]: two operators).
- Programme the parameter [7] for operation with encoder: [70] 1.
- Programme the parameter [3] for the operator model (TOPO: [302]).
- Check turning direction by connecting the power supply (SW1 = ON). The operators close the gate (reset). If the gate opens instead of closing, change the turning directions ([10] 1 or [102] for A1 and [20] 1 or [202] for A2).

### Mechanical stop in opening adjustment



- 1 Programme the control panel in "dead man mode": F 103.
- 2 Use ST1 and ST2 to open the gate up to the required point.  
 ▲ See the control board instructions for detailed information.
- 3 Adjust the screw-stopper (1) until it comes into contact with the metal base box (2).
- 4 Lock the screw (1) by fastening the counter nut (3).

### Mechanical stop in closing adjustment

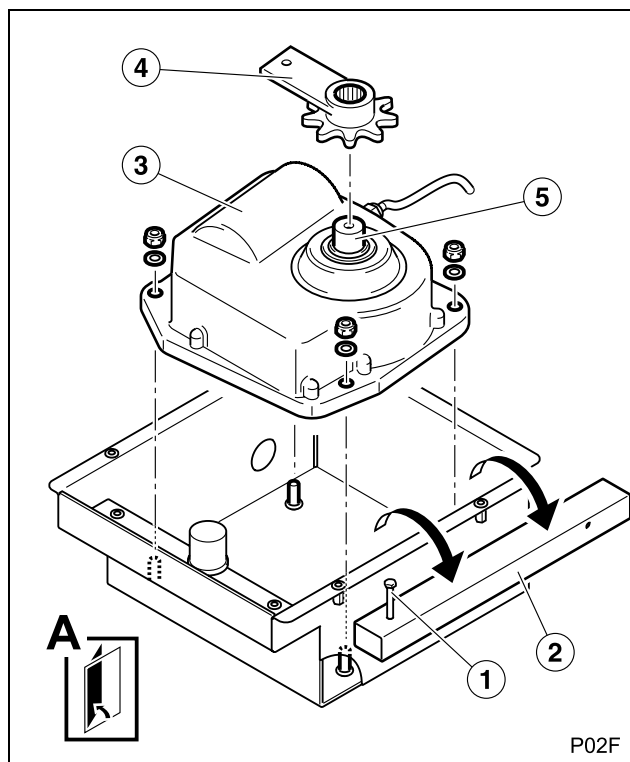


- ▲ The gate must have an external in-ground central stop (see "Fig. 1 Elements of the complete installation" on page 43).
- 1 Use ST1 and ST2 to close the gate up to the required point.  
 ▲ See the control board instructions for detailed information.
  - 2 Adjust the screw-stopper (1) until it comes into contact with the motor arm (2).
  - 3 Lock the screw (1) by fastening the counter nut (3).



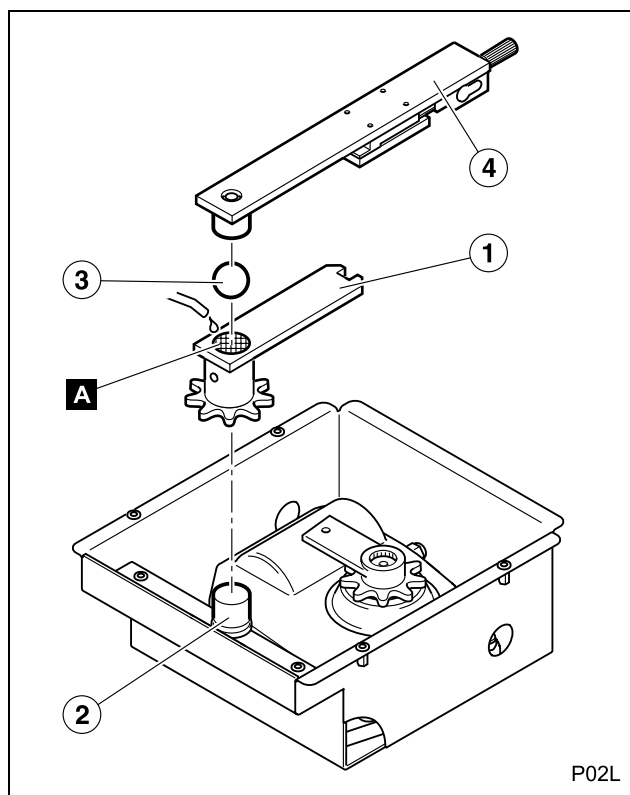
**Option B: opening mechanism up to 180° (ref. NBKIT-180)**

**Position the motor**



- 1 Release the screw (1) and remove the bar (2).
- 2 Position the motor (3) at the rear of the base box, ensuring the screws located in the base box coincide with the holes in the frame of the motor.  
 ■ The figure shows the position of the motor for a gate which opens in the direction shown in (A). If the gate opens in the other direction, the motor would be mounted rotated 180° with regards to the position drawn.
- 3 Position the nuts using a 17 mm wrench, without tightening them.
- 4 Position the sprocket motor arm (4) on the motor axle (5).  
 ■ Respect the position shown in the figure.

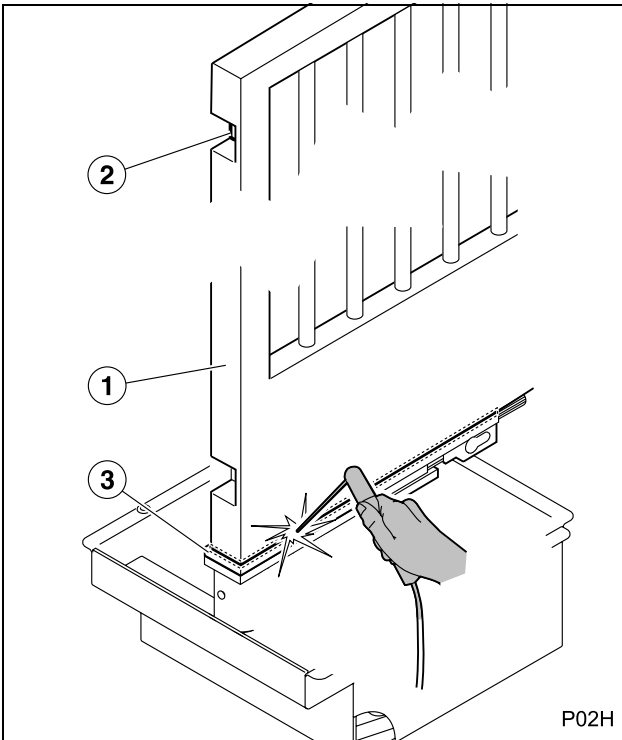
**Position the driven arm (lower) and unlocking device**



- 1 Position the driven arm (lower) (1) in the pivot (2).
- 2 Introduce lubrication grease inside the axle-tube (A).
- 3 Introduce the ball (3) in the axle-tube (A).
- 4 Position the unlocking device (4).



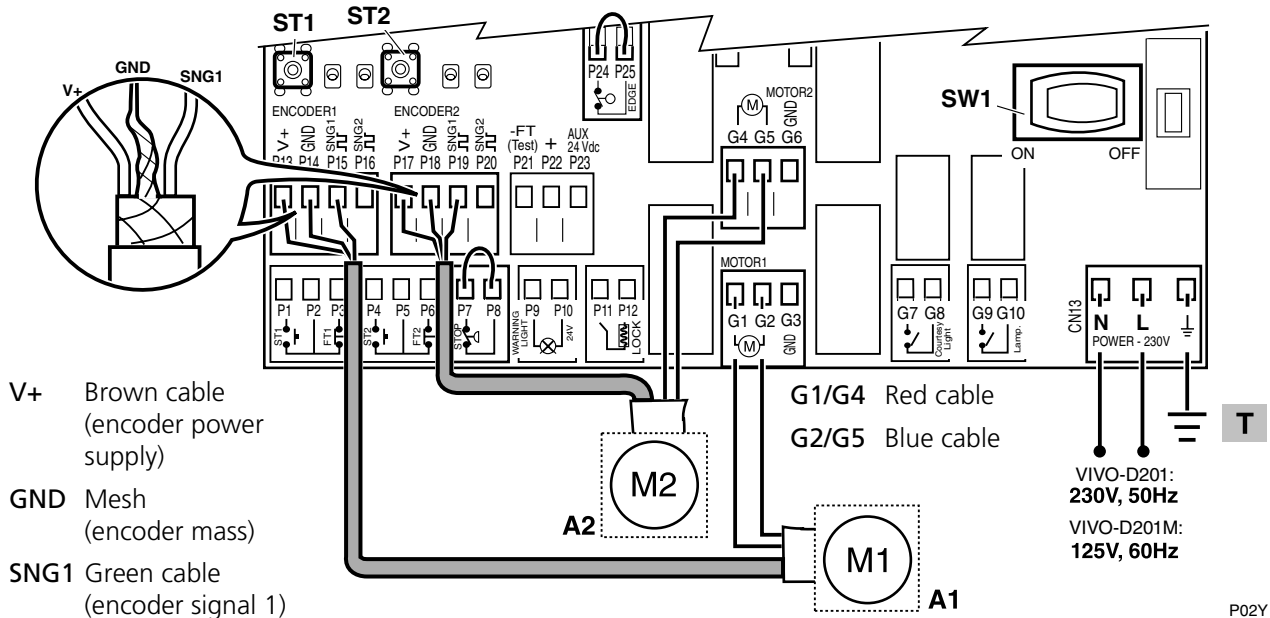
Position the upper hinge and the gate



- 1 Attach the gate (1) on the upper hinge (2) and support it on the upper driven arm (3).
  - ☞ Control the alignment of the upper hinge (2) and the operator pivot.
  - ☞ Control the verticality of the gate.
- 2 Weld the gate (1) to the upper driven arm (3).
- 3 Move the gate throughout its travel, checking it moves smoothly, without any contact or stiffness.
  - ⚠ **Should manual operation be difficult, solve the problem before proceeding with the installation.**
- 4 Apply anti-corrosion protection in the un-painted areas.

Connect the operator to the control board VIVO-D201(M)

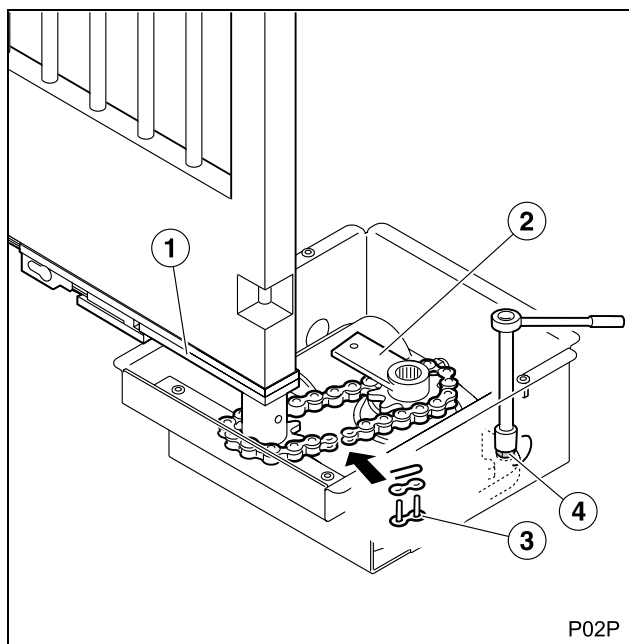
- ⚠ Before carrying out any gate movement, ensure there is no person or object in the radius of action of the gate and the drive mechanisms.
- ⚠ See the control board instructions manual for further information.



- Use [ 0 ] to select the number of operators: ([ 00 ]: one operator, [ 002 ]: two operators).
- Programme the parameter [ 7 ] for operation with encoder: [ 70 ].
- Programme the parameter [ 3 ] for the operator model (TOPO: [ 302 ]).
- Check turning direction by connecting the power supply (SW1 = ON). The operators close the gate (reset). If the gate opens instead of closing, change the turning directions ([ 10 ] or [ 102 ] for A1 and [ 20 ] or [ 202 ] for A2).

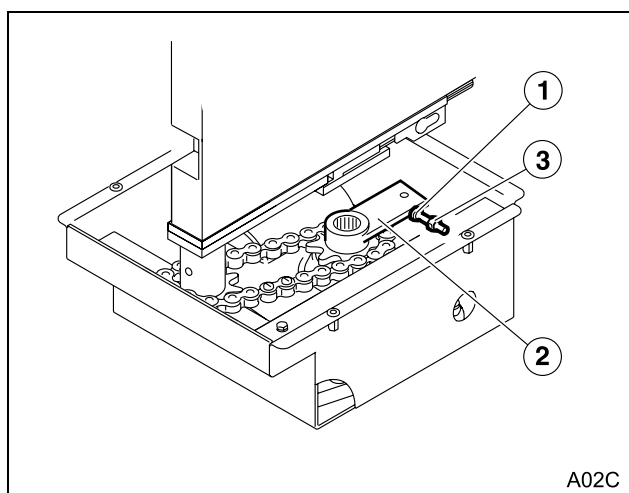


### Position the stopper bar and chain



- 1 Programme the control panel in "dead man mode": F103.
- 2 Using ST1 and ST2, run the operator until the lever (2) is parallel to the arm (1).
  - ▣ Respect the positions in the figure.
- 3 Position the chain and close it with the hook (3)
- 4 Firmly tighten the four nuts (4) with a 17 mm wrench.

### Mechanical stop in closing adjustment



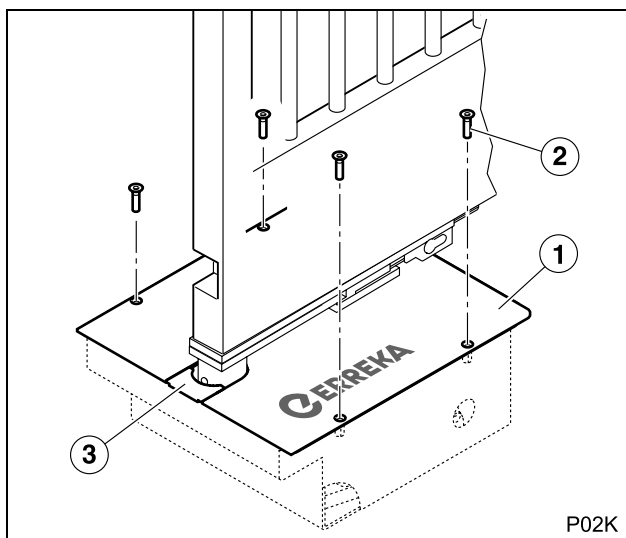
**▲ The gate must have an external mechanical stop in closing and mechanical stop in opening (see "Fig. 1 Elements of the complete installation" on page 43).**

- 1 Use ST1 and ST2 to close the gate up to the required point.
  - ▲ See the control panel instructions.**
- 2 Adjust the screw-stopper (1) until it comes into contact with the operation motor arm (2).
- 3 Lock the screw (1) by fastening the counter nut (3).



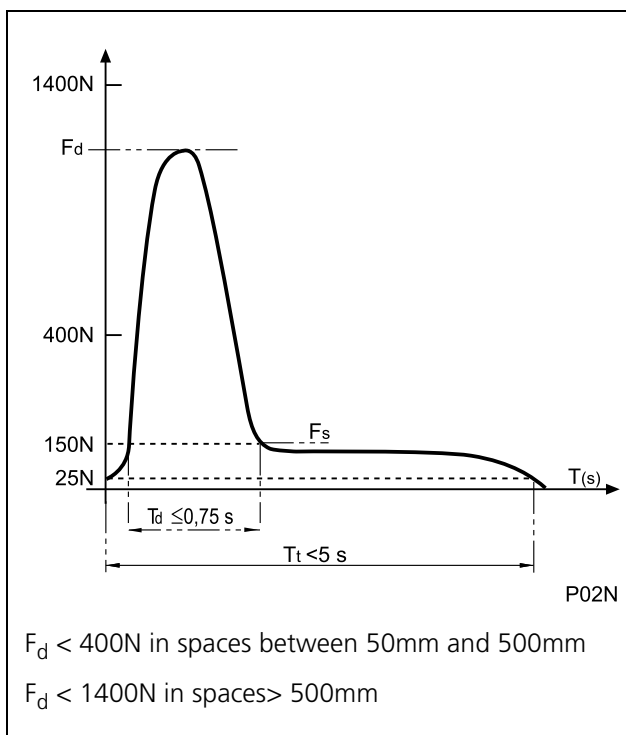
## 6 FINAL CHECKS

### Position the cover plate



- 1 Position the cover plate (1) on the base box and attach it using the four screws (2).
- 2 Position the plastic cover using pressure (3).

### Connections and checks



- 1 Carry out the installation and the connections for all the elements of the facility, in line with the control panel instructions.
- 2 Check that the mechanism is correctly regulated.
  - ▲ **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. For further details on the adjustment of the control panel, see the corresponding instructions manual.**
- 3 Check the operation of all the installation elements, especially the protection systems and the manual operation unlocking system.

### User instruction

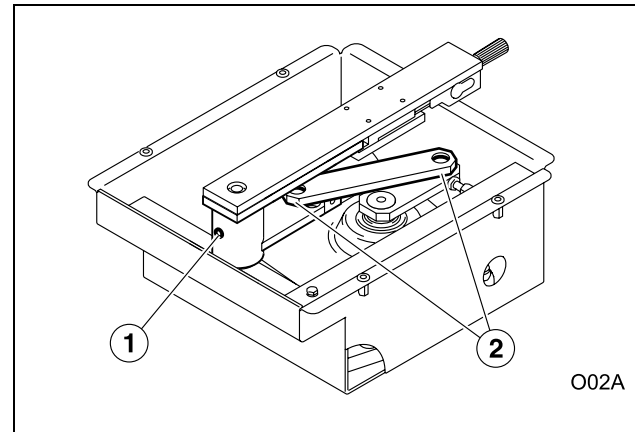
- 1 Instruct the user with regards to the use and maintenance of the facility and provide him/her with the use manual.
- 2 Point to the gate, showing that it opens automatically, and indicating how to operate it manually. Where appropriate, indicate that operation is using the remote control.

**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 key and safety devices (photocells or strips), as well as their installation, have not suffered any damage from the weather or external agents..
- 4 Check that drainage is completed correctly, without any water becoming accumulated inside the base box. Where appropriate, unblock the drainage ducts.

- 5 Apply grease to the pivot using the greaser (1).
- 6 Lubricate the articulations (2).



**2 FAILURE DIAGNOSIS**

Problem	Cause	Solution
	Absence of system power voltage	Re-establish the power supply voltage
The operator does not make any movement when the opening or closing key devices are activated	Defective electrical installation	Check that the installation does not present any short-circuits or cut-off points
	Control board or key commands defective	Check these elements, seeing their respective manuals
When using the opening or closing key devices, the operator is activated but the gate does not move	Gate obstructed or blocked	Unblock, adjust and lubricate the gate articulations
The gate moves in an irregular manner	Gate partially obstructed or blocked	Unblock, adjust and lubricate the gate articulations
	The gate pivot is not on the upright of the operator pivot	Align the pivots (see "Position the base box and the ducts" on page 51)
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 or the operator are maladjusted	Adjust the stoppers



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### 3 SPARE PARTS

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

⚠ Use only original spare parts.

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### 4 SCRAP

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⚠ 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.

