

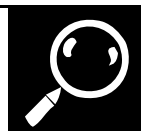
General safety instructions 42

Symbols used in this manual _____ 42
 Importance of this manual _____ 42
 Envisaged use _____ 42
 Installer's qualifications _____ 42
 Automatic safety elements _____ 42



Description of the product 43

Elements of the complete installation _____ 43
 General features of the operator _____ 44
 Main operator parts _____ 44
 Technical features of the operator _____ 45
 Manual operation _____ 46
 Declaration of conformity _____ 46



Unpacking and contents 47

Unpacking _____ 47
 Content _____ 47



Installation 48

Required tools _____ 48
 Initial conditions and checks _____ 48
 Installing the operator _____ 49
 Final preparation _____ 57



Maintenance and diagnosis of failures 58

Maintenance _____ 58
 Failure diagnosis _____ 58
 Spare parts _____ 59
 Scrap _____ 59



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 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.

📄 Moreover, this guide 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 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

⚠ 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.

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

⚠ Installation should be carried out bearing in mind standards EN 13241-1 and EN12453.

5 AUTOMATIC 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.

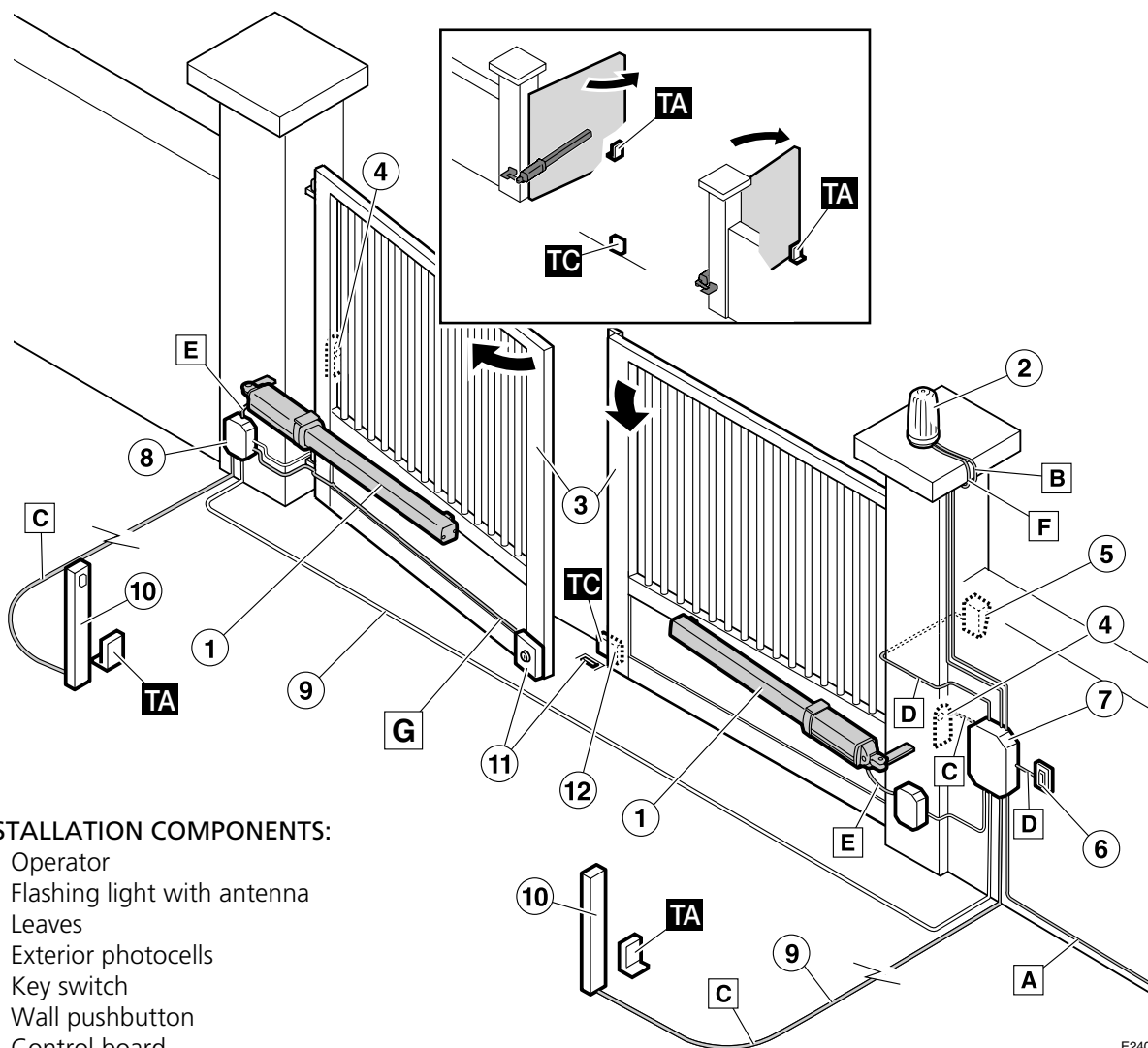
📖 The safety of the complete installation depends on all the elements installed. Install only Erreka components in order to guarantee proper operation.

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

⚠ Safety elements must be installed in order to comply with Standard EN 12453:2000.

📄 For further details, see "Fig. 1 Elements of the complete installation" on page 43.

1 ELEMENTS OF THE COMPLETE INSTALLATION



INSTALLATION COMPONENTS:

- 1 Operator
- 2 Flashing light with antenna
- 3 Leaves
- 4 Exterior photocells
- 5 Key switch
- 6 Wall pushbutton
- 7 Control board
- 8 Connections box
- 9 Electrical installation
- 10 Interior photocells
- 11 Electrolock
- 12 Stop on closing

☞ The electrolock is obligatory in unlocked models, and also in locked models when the leaves are over 1.80 m long.

VERY IMPORTANT: The TC closing stopper and the TA opening stoppers must be installed in all cases.

ELECTRICAL WIRING:

Element	N° wires x section	Maximum length
A: Main power supply	3x1.5mm ²	30 m
B/F: Flashing light with antenna	2x0.5mm ² / coaxial cable 50Ω (RG-58/U)	10 m
C: Photocells (Tx/Rx)	2x0.5mm ² / 4x0.5mm ²	30 m
D: Key switch	2x0.5mm ²	25 m
E: Operator	4x0.75mm ²	20 m
G: Electrolock	2x0.75mm ²	20 m

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 FEATURES OF THE OPERATOR

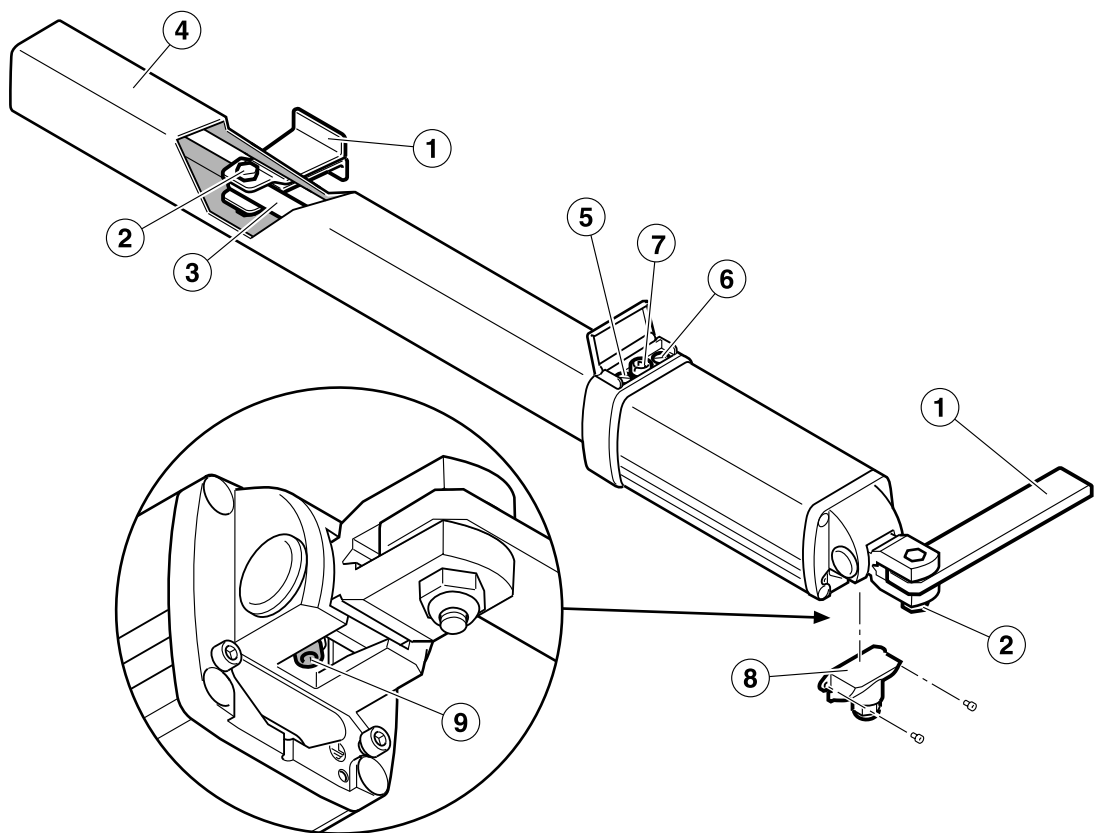
The VULCAN D (residential) operator is constructed to form part of a swing gate automation system. The requirements set out in Standard EN 12453 can be complied with by installing the corresponding safety items.

It comprises a metal body, which contains a hydraulic pump and a drive piston.

VUA Models (with slow down)

The VUA models have a slow-down system in the spindle, meaning the speed slows down when approaching the end of the extension run (closing run when the operator is installed for inward opening), ending in a soft stop.

3 MAIN OPERATOR PARTS



C240A

- 1 Supports
- 2 Support shafts
- 3 Spindle
- 4 Spindle cover
- 5 Closing pressure adjustment screw
- 6 Opening pressure adjustment screw
- 7 Unlocking screw
- 8 Electrical connections cover
- 9 Discharge screw

Fig. 2 VULCAN D Operator main parts

4 TECHNICAL FEATURES OF THE OPERATOR

Features common to all models

Model	General	M Models
Power supply (V/Hz)	230/50	125/60
Absorbed current (A)	0,7	1,3
Power consumed (W)	160	160
Capacitor (µF)	10	20
Protection factor (IP)		65
Maximum thrust (N)		3.000
Spindle speed (mm/s)		13
Operating temperature (°C)	-10/+60 (-30/+60 -F- models)	
Duty cycle (%)		75
Weight (Kg)		7,5
Use		Residential
Maximum length of the leaf (m)		2,5
Maximum weight of the leaf (kg)		300



Features specific to each model

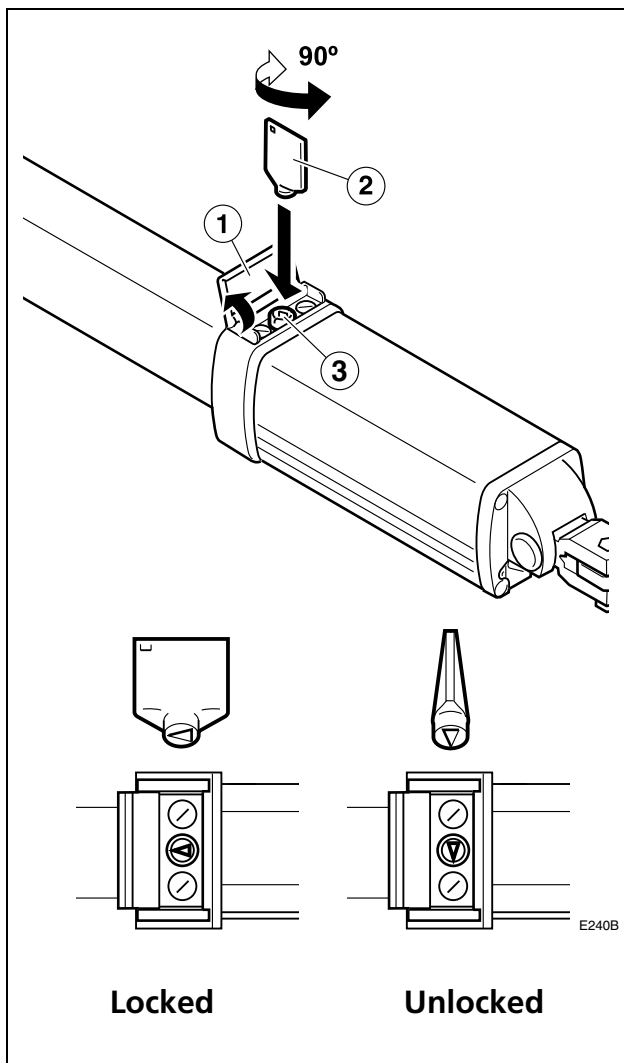
Model	Slow-down	Open/close spindle (mm)	Lock	Particularities
	A: slow-down	1: 265 mm	2: not locked 3: dual lock	F: cold M: 125V, 60Hz LB: lobe pump
VUA12	In closing	265	Not locked	
VUA13	In closing	265	Dual lock	

i With unlocked operators the gate can be moved without unlocking the operator, at a speed similar to the operator speed. When unlocking, the gate remains free and can be moved more quickly.

5 MANUAL OPERATION

☞ In the case of need, the gate may be operated manually:

- In locked models, it is necessary to first run the unlocking mechanism.
- In unlocked models, the gate can be moved manually without unlocking them, but at a speed similar to the operator speed. To move it more quickly, first unlock the operator in order to free the gate.



Unlocking for manual operation

- 1 Lift the cover and introduce the key (1) in the unlocking screw (2).
- 2 Turn the unlocking key 90° until it is perpendicular to the operator spindle. The operator is unlocked.
 - ☞ The gate can now be moved manually.

- 3 Close the cover (1).

☞ **THE COVER (1) MUST BE CLOSED.**

Locking for automatic operation

- 1 Lift the cover and introduce the key (1) in the unlocking screw (2).
- 2 Turn the unlocking key in any direction until it is parallel to the operator spindle. The operator is locked.

☞ Remove the key.

- 3 Close the cover (1).

☞ **THE COVER (1) MUST BE CLOSED.**

6 DECLARATION OF CONFORMITY

Erreka Automatismos declares that the VULCAN D 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.

The VULCAN D electromechanical operator allows installation in line with Standards EN 13241-1 and EN 12453, provided it is correctly installed. The installer shall be responsible for proper installation.

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

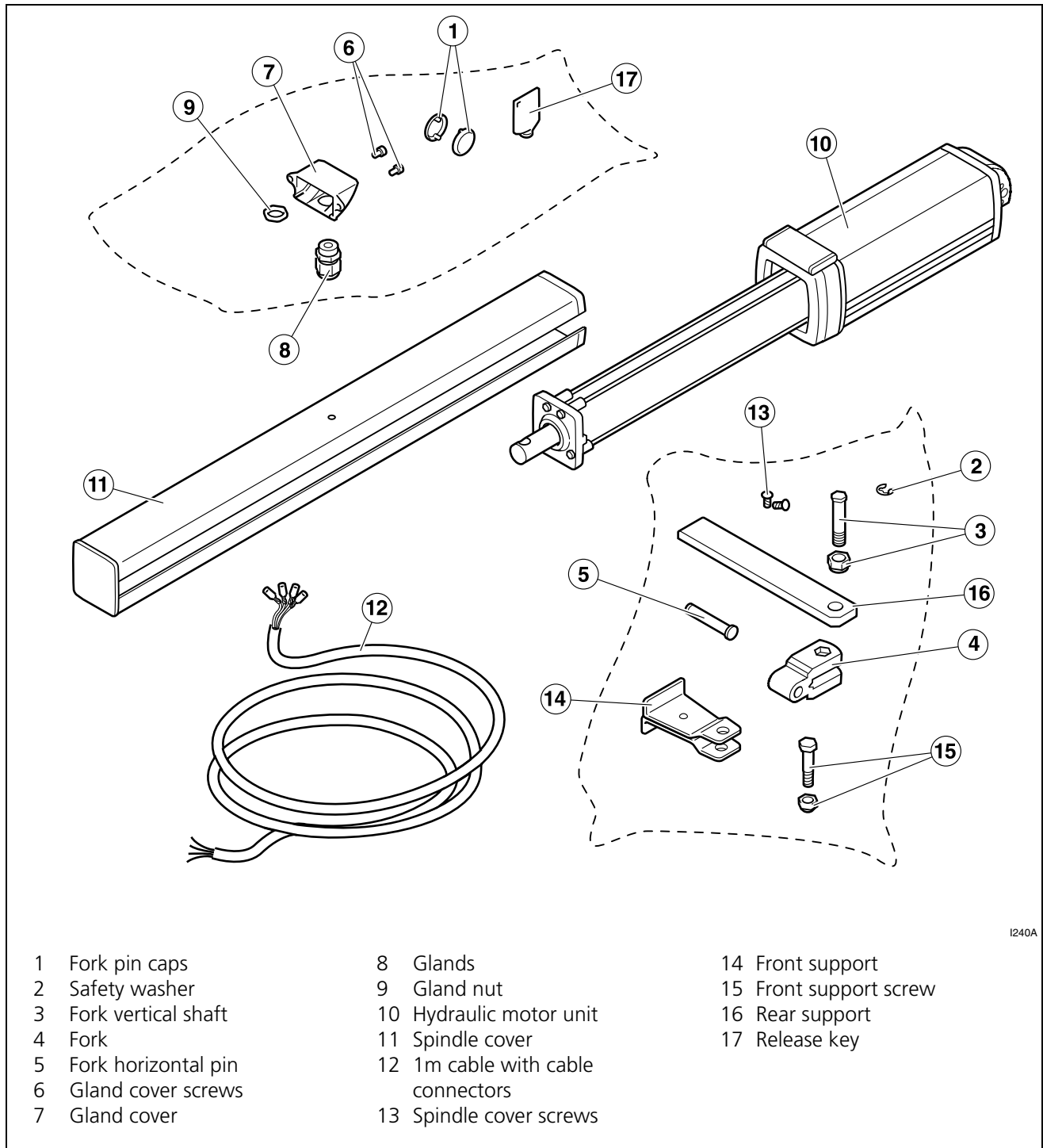
- 2006/95/EC (low voltage materials)
- 2004/108/EC (electromagnetic compatibility)
- UNE-EN 60335-1

1 UNPACKING

- 1 Open the package and remove the contents from inside.
 - ♻️ 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 package (see figure below).
 - 🔧 Should it be noticed that a piece is missing or deteriorated, contact the nearest technical service.

2 CONTENT



I240A

Fig. 3 VULCAN D operator content

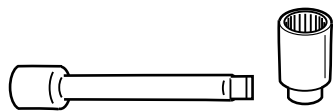
1 REQUIRED TOOLS



Set of screwdrivers



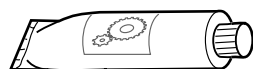
Fixed wrenches



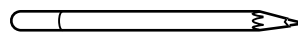
Socket wrench (8 mm)



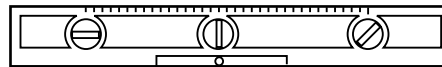
Set of Allen keys



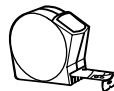
Lubrication grease (graphite or lithium grease)



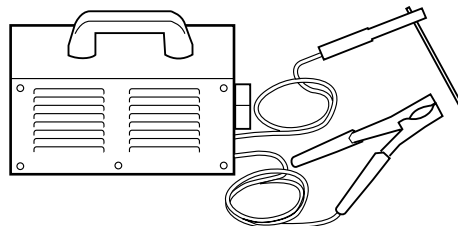
Marker pencil



Spirit level



Tape measure



Welding machine

▲ Use the welding machine in line with the user manual.

2 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 features of the operator).

▲ If the gate to be automated has a personnel door, use a safety device to prevent the operator from running with the personnel door open.

☞ The gate must have an opening and a closing stopper.

☞ The gate 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 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 must be made in line with the instructions in the control board manual.

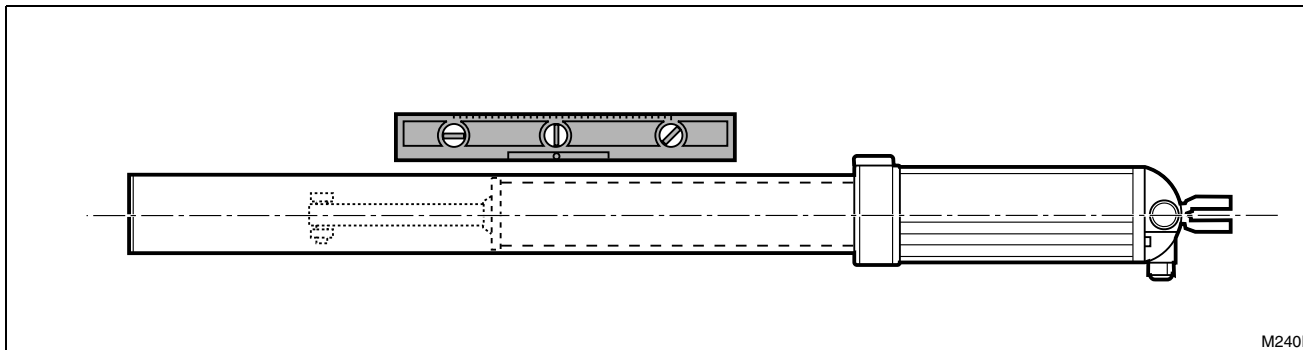
☞ The electrical cable section is indicated in: "Fig. 1 Elements of the complete installation" on page 43.

3 INSTALLING THE OPERATOR

☞ Horizontality of the operator

❗ The operator must work horizontally: to do this, the supports must be positioned at the same height.

☞ Check horizontality using a spirit level.



☞ Assembly positions and levels

☞ For the correct working of the operator, it is essential that the supports are positioned respecting the levels calculated, with regards to the gate and its turning axis.

❗ **IT IS VERY IMPORTANT TO RESPECT THE LEVELS:** If the levels are not respected exactly, the spindle will not make the whole open/close, meaning the slow down system will not work.

ℹ The levels are selected using either the attached chart or table. The table indicates some specific cases, whilst the chart shows all cases possible.

The assembly levels depend on the opening angle of the gate and the following factors:

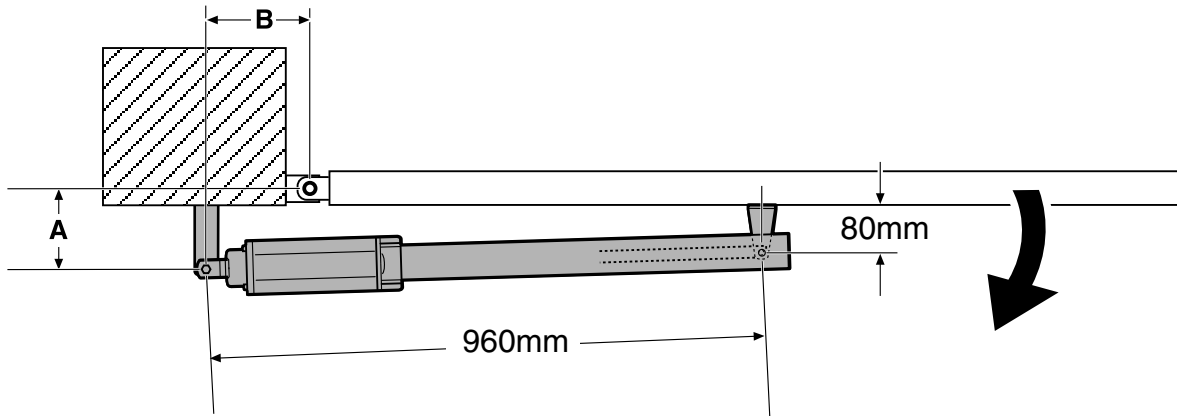
- Inward or outward opening of the gate.

There are therefore two different cases, as explained below (each case is represented by way of its corresponding diagram, table and chart).



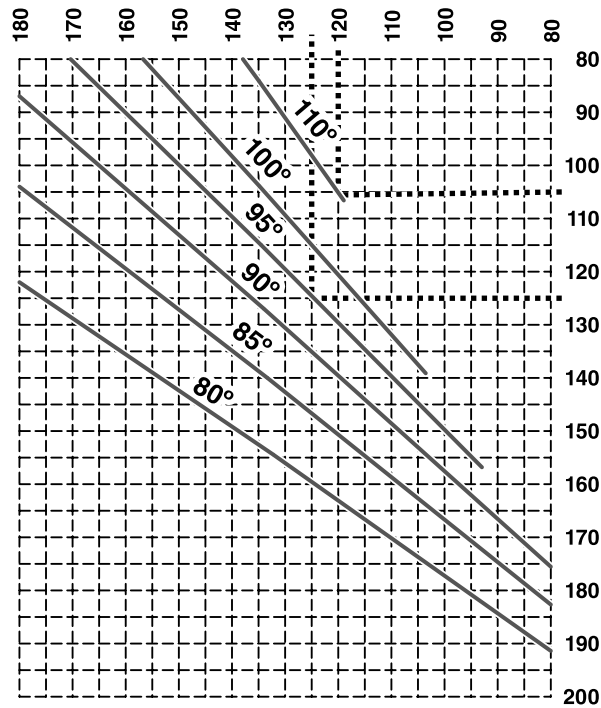
Inward opening

✎ The installation levels must be respected in order for the operator to work correctly.



M240C

B (mm)



M10F

Opening angle	Level A	Level B
80°	155	130
85°	140	130
90°	140	120
90°	115	145
95°	125	125
100°	120	120
110°	105	120

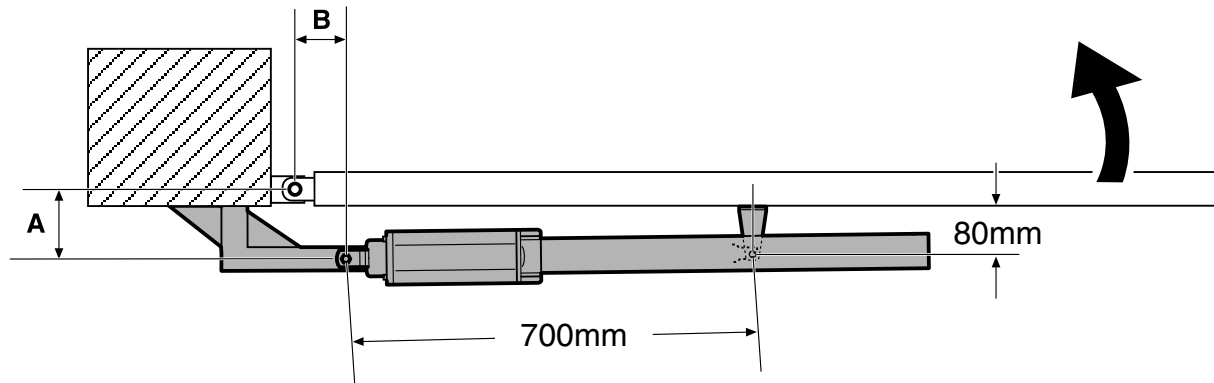
📄 Use of the chart:

Multiple A-B pairs can be chosen for a specific opening angle. Generally, one of them will be determined by the features of the installation (size of the pillar, presence of walls, etc).

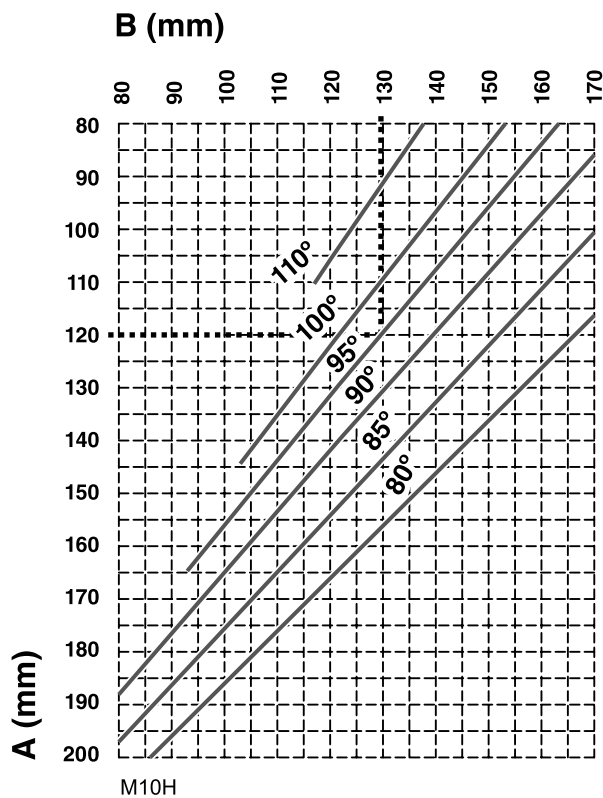
- 1 Use the chart to select the specific level for the installation.
- 2 Following the grid, move from the level to the line corresponding to the required opening angle.
- 3 Following the grid, move to the other level.

Outward opening

⚠ The installation levels must be respected in order for the operator to work correctly.



M240D



Opening angle	Level A	Level B
80°	150	135
85°	150	125
90°	100	155
90°	130	130
95°	120	130
100°	100	135
110°	95	125

i Using the chart:

Multiple A-B pairs can be chosen for a specific opening angle. Generally, one of them will be determined by the features of the installation (size of the pillar, presence of walls, etc).

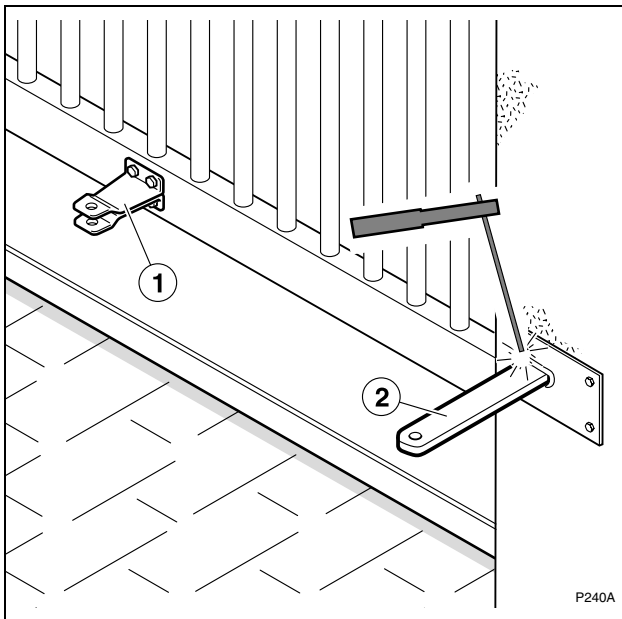
- 1 Use the chart to select the specific level for the installation.
- 2 Following the grid, move from the level to the line corresponding to the required opening angle.
- 3 Following the grid, move to the other level.





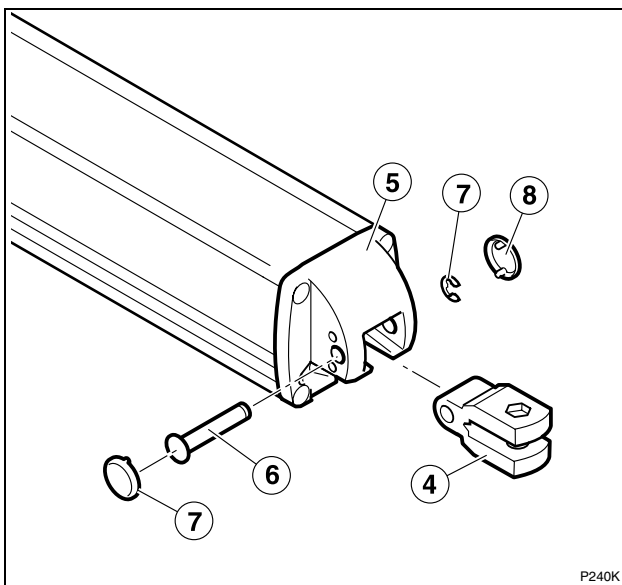
Procedure

Position the front and rear supports



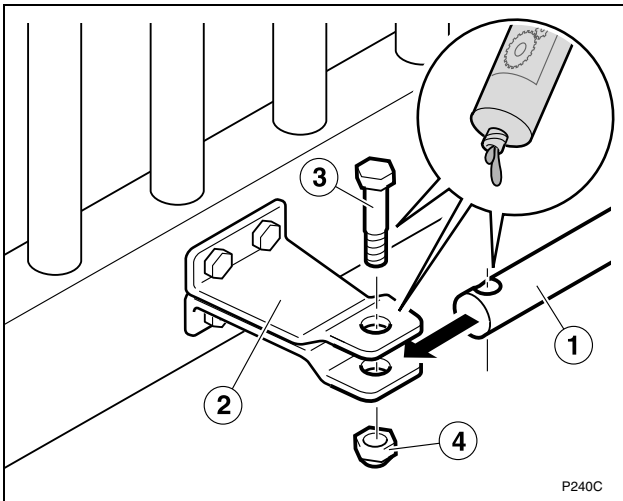
- 1 Attach the front (1) and rear (2) supports, keeping strictly to the levels shown in the previous section.
 - ☞ The installer should choose the support attachment system (welding, screwing, molding, etc) in accordance with the composition of the material to which the supports are attached (metal, concrete, etc).
 - ☞ Attach the supports on sufficiently robust structural elements.
- ❗ IT IS VERY IMPORTANT TO RESPECT THE LEVELS: If the levels are not respected, the spindle will not make the whole open/close, meaning the slow down system will not work.
- ❗ Carry out the welding with the operator withdrawn and at a distance. If not, the spindle may become damaged from welding splatter, which could lead to failures and oil leaks.

Mount the fork



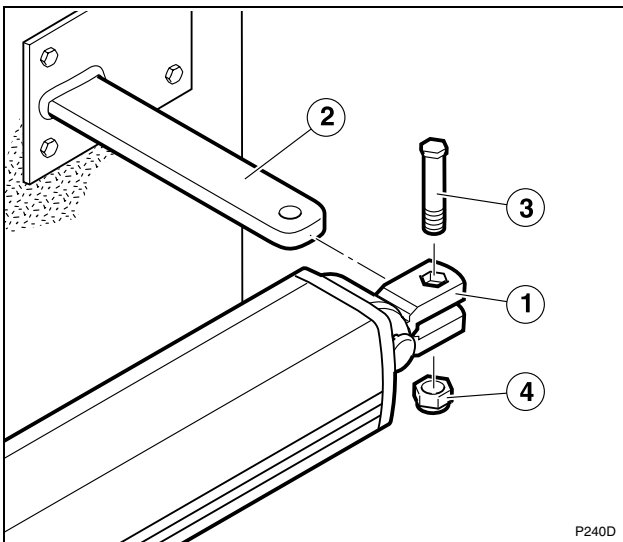
- 1 Position the fork (4) in its housing in the rear cover (5).
- 2 Introduce the horizontal pin (6), crossing the fork and the cover.
- 3 Secure the pin using the safety washer (7).
- 4 Position the caps (8) to close the housing.

Mount the operator on the front support



- 1 Mount the spindle (1) in the front support (2).
- 2 Lubricate the tip of the spindle (1) and the housing orifices with grease.
- 3 Position the screw (3) with its corresponding nut (4).

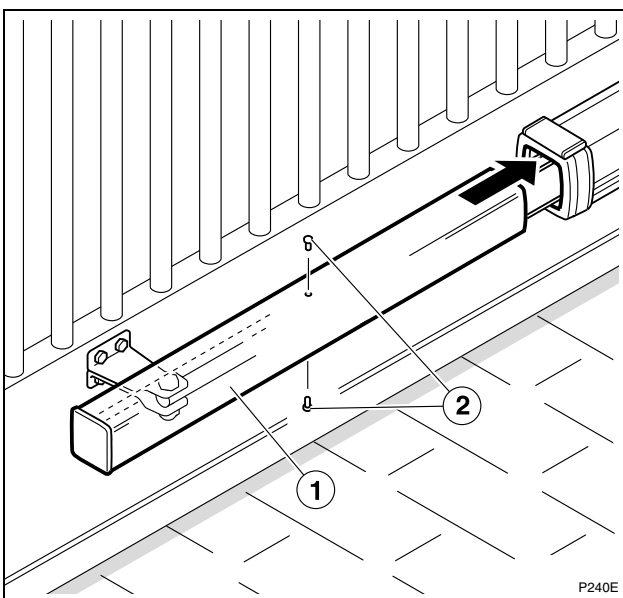
Mount the operator on the rear support



- 1 Introduce the fork (1) in the support (2).
- 2 Position the vertical shaft (3) and secure with the nut (4).

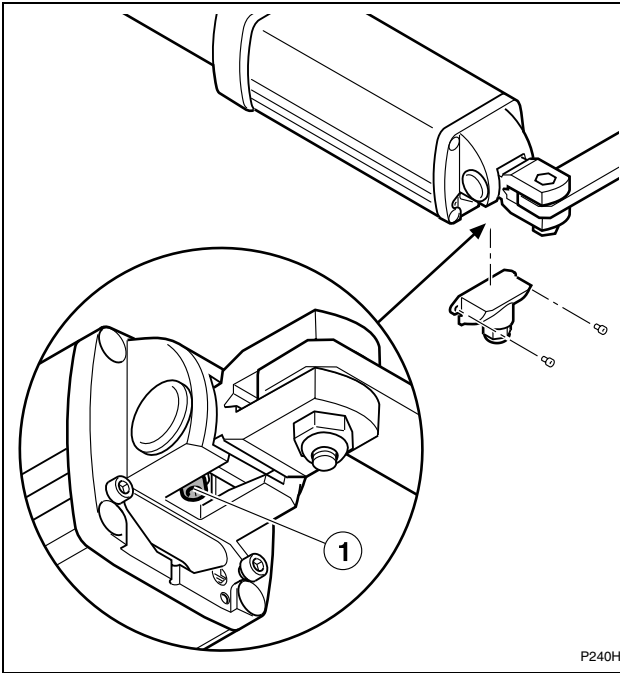


Mount the cover and the top



- 1 Mount the cover (1), ensuring it fits in the body of the operator.
- 2 Secure the cover using the locking screws (2).

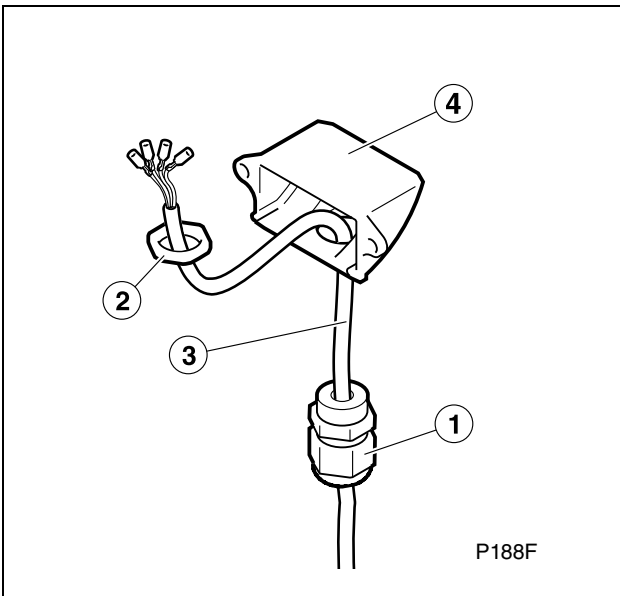
Loosen the discharge screw



CAUTION. VERY IMPORTANT:

- ☞ Once the operator is mounted on the supports, turn the discharge screw (1) once to allow the correct operation of the hydraulic system.
- ❗ If you have to dismount the operator from its supports, first tighten the discharge screw in order to prevent the hydraulic fluid from leaking.

Mount the gland and introduce the cable



- 1 Introduce the cable (3) through the gland PG11 (1).
- 2 Position the gland in the cover (4) and attach using the PG11 nut (2).

Connect the operator to the control board

VIVO- M201(M)

PUL2

PUL1

A1

VIVO- M201:
230Vac/ 50Hz
VIVO- M201M:
125Vac/ 60Hz

1 Motor connection (common)
2 Motor connection (Turn 1)
3 Motor connection (Turn 2)
4 Earth

⚠ Since this is a stationary unit for permanent connection, an external cut-off must be fitted.

P240W

⚠ Before making any electrical connections, check the control board instructions manual.

✎ We recommend using the VIVO-M101(M) or VIVO-M201(M) control boards.

✎ The connection of an operator in the VIVO-M201(M) control board is shown as an example. If a single operator is used, use cable connectors G1, G2 and G3.

- 1 Connect the operator to the control board using cable connectors G1, G2 and G3.
- 2 Connect the capacitor (C) to cable connectors G1 and G2.
- 3 Connect the control board to the electricity supply.
- 4 Activate the power supply switch.

⚠ 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.

5 Use the PUL1-PUL2 control board mini-pushbuttons (CLOSE-OPEN) to check the motor connections are correct (turning direction).

✎ If the turning direction is not correct, interchange cables 2 and 3.

⚠ Ensure the earth cable is properly connected.



Position the cover and tighten the gland

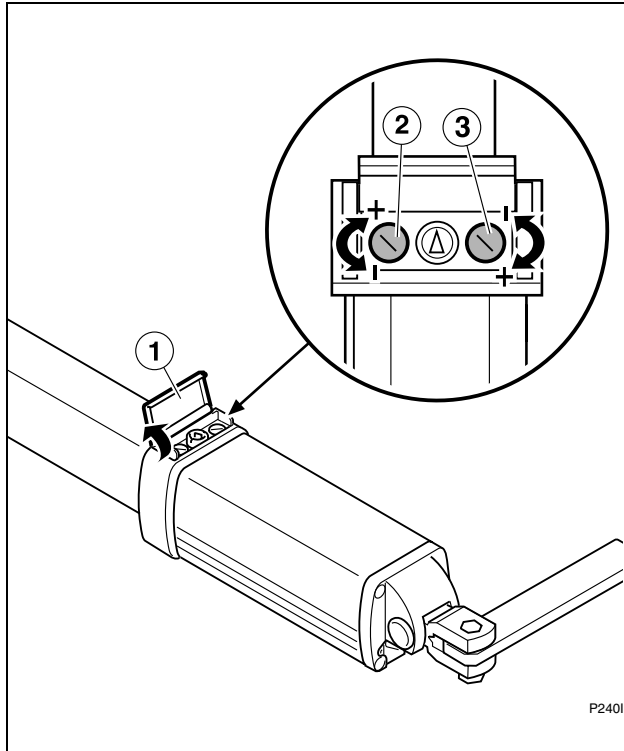
1 Position the cover (1) in its housing (2) and secure with the screws (3).

2 Tighten the gland (4) to ensure the electrical cable input (5) is seal tight.

P240U

Adjust the opening and closing pressure

▲ The opening and closing pressures must be adjusted in line with the size and weight of the gate.



☞ Clockwork turning increases the pressure for both screws. Anti-clockwork turning reduces the pressure.

1 Open the cover (1).

2 OPENING PRESSURE: screw (2).

☞ The "Opening Pressure" is, more exactly, the pressure during the retraction of the spindle. In inward opening facilities, it corresponds to the opening operation.

In outward opening facilities, it corresponds to the closing operation.

3 CLOSING PRESSURE: screw (3).

☞ The "Closing Pressure" is, more exactly, the pressure during the extension of the spindle. In inward opening facilities, it corresponds to the closing operation.

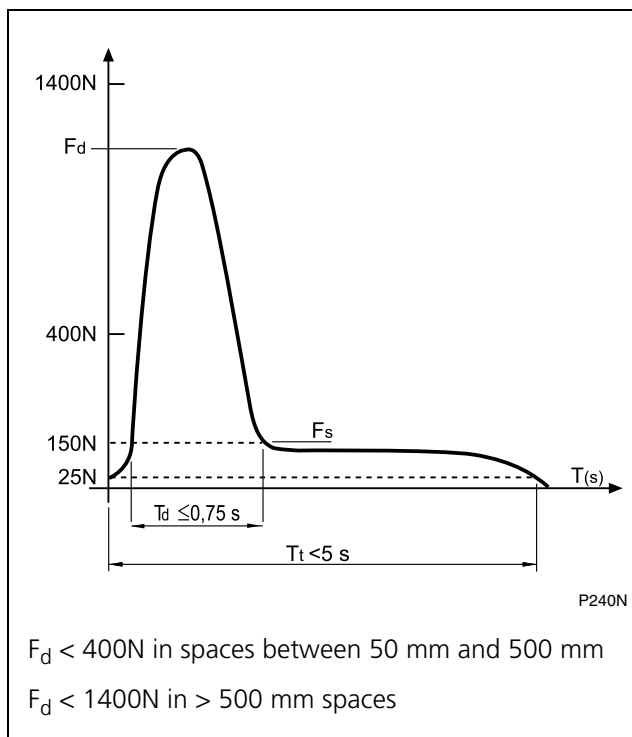
In outward opening facilities, it corresponds to the opening operation.

4 Close the cover (1).

☞ **THE COVER (1) MUST BE CLOSED FOR THE OPERATOR TO WORK PROPERLY.**

4 FINAL PREPARATION

Connections and checks



- 1 Carry out the installation and the connections for all the elements of the facility in line with the control board instructions.
 - ⚠ **Additional protection devices must be installed in order to comply with the requirements of Standard EN 12453:2000.**
- 2 Check that the mechanism is correctly regulated.
 - ⚠ **The opening and closing pressures must be adjusted to respect 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. The gate must not exercise force greater than 150N (15 kg).**
- 3 Check the operation of all the installation elements, especially the protection systems and the manual operation unlocking system.

User instructions

- 1 Instruct the user on the use and maintenance of the installation.
- 2 Signpost the gate, showing that it opens automatically and indicating how to operate it manually. Where appropriate, indicate that operation is using the remote control.

⚠ SAFETY WARNINGS TO USERS:

- This device can be used by children aged 8 and over and by persons with impaired physical, sensorial or mental capacities, or people who have insufficient experience or knowledge, provided they have been suitably supervised and trained with regards to the safe use of the device and they fully understand the risks involved.
- Children must not be allowed to play with the device.
- Cleaning and maintenance must not be carried out by children unless supervised.



1 MAINTENANCE

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

❗ If you have to dismount the operator from its supports, first tighten the discharge screw in order to prevent the hydraulic fluid from leaking.

- 1** Regularly check the 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 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 key devices 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, using their respective manuals
	Defective capacitor	Check the state of the capacitor
When using the opening or closing key devices, the operator is activated but the gate does not move	The assembly levels of the supports have not been respected.	Dismount the supports and then put them back in place, respecting the assembly levels
	The screw for manual operation is in unlock position	Using the corresponding wrench, position the screw in "automatic operation lock" position.
The gate moves in an irregular manner	The operator is not horizontal	Remove the support pieces and mount them again, ensuring the operator is horizontal
The operator does not make a soft stop (no slow down)	The spindle does not reach the limit switch	Move the front support
	The photocell detects an obstacle	Remove 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 remove the resistance
The gate cannot completely close (or open)	The thrust of the operator during closing (or opening) is too low	Use the opening and closing pressure adjustment screws to increase the thrust when opening or closing
	The assembly levels of the supports have not been respected.	Dismount the supports and then put them back in place, respecting the assembly levels



3 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.

4 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 possible accidents and damage to adjacent facilities will be avoided.

♻ 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 suitably controlled, as this will cause environmental contamination.

