

AUTOMATION FOR SWING GATES

AXO SERIES



INSTALLATION MANUAL
AX3024 / AX5024

English

EN



WARNING!

Important instructions for the safety of people:

READ CAREFULLY!



Foreword

• Use of the products must be restricted to its intended use (i.e. that for which it was expressly built for). Any other use is to be considered dangerous. Came Cancelli Automatici S.p.A. is not liable for any damage resulting from improper, wrongful or unreasonable use • Keep these warnings with the installation and use manuals issued with the automated system.

Before installing

(preliminary check: in case of a negative outcome, do not proceed before having complied with the safety obligations)

• Make sure that the parts you intend to automate are in good working order, and that they are properly balanced and aligned. Also, make sure that proper mechanical stops are already in place • If the operator will be installed at a height of less than 2.5 m from the ground or other access level, check whether you will need any protections and/or warnings • Any gate leaves, fitted with pedestrian entrances, onto which you will install an operator, must have a blocking mechanism when the gate is in motion • Make sure that the opening of the automated gate is not an entrapment hazard as regards any surrounding fixed parts • Do not mount the operator upside down or onto any elements that may fold under its weight. If needed, add suitable reinforcements at the points where it is secured • Do not install onto gates on either an upward or downward slope (i.e. that are not on flat, level ground) • Check that any lawn watering devices will not wet the gearmotor from the bottom up.

Installation

• Carefully section off the entire site to prevent unauthorised access, especially by minors and children • Be careful when handling operators that weigh more than 20 Kg (see installation manual). In such cases, employ proper weight handling safety equipment • All opening commands (e.g. buttons, key selectors, magnetic detectors, etc.) must be installed at least 1.85 m from the gate's area of operation perimeter - or where they cannot be reached from the outside of the gate. Also, the direct commands (e.g. push button, or proximity devices, etc.) must be installed at a height of at least 1.5 m and must not be accessible to the public • All 'maintained action' commands, must be placed where the moving gate leaves, transit areas and driveways are completely visible • If missing, apply a permanent label that shows the position of the release mechanism • Before delivering to the client, verify that the system is EN 12453 (impact test) standard compliant. Make sure that the operator has been properly adjusted and that the safety and protection devices, as well as the manual release

are working properly • Where necessary and in plain sight, apply the Warning Signs (e.g. gate plate).

Special instructions and advice for users

• Keep the gate's area of operation clean and clear of any obstacles. Trim any vegetation that may interfere with the photocells • Do not allow children to play with the fixed command devices, or in the gate's area of operation. Keep any remote control devices (i.e. transmitters) away from the children as well • Frequently check the system, to see whether any anomalies or signs of wear and tear appear on the moving parts, on the component parts, on the securing points, on the cables and any accessible connections. Keep any joints (i.e. hinges) lubricated and clean, and do the same where friction may occur (i.e. slide rails) • Perform functional tests on photocells and sensitive edges, every six months. Keep glass panels constantly clean (use a slightly water-moistened cloth; do not use solvents or any other chemical products) • If the system requires repairs or modifications, release the operator and do not use it until safety conditions have been restored • Cut off the power supply before releasing the operator for manual openings. See instructions • Users are FORBIDDEN to carry out ANY ACTIONS THAT THEY HAVE NOT BEEN EXPRESSLY ASKED TO DO OR SO INDICATED in the manuals. Any repairs, modifications to the settings and extraordinary maintenance MUST BE DONE BY THE TECHNICAL ASSISTANCE STAFF • On the periodic maintenance log, note down the checks you have done.

Special instructions and advice for all

• Avoid working near the hinges or moving mechanical parts • Stay clear of the gate's area of operation when in motion • Do not resist the direction of movement of the gate; this may present a safety hazard • At all times be extremely careful about dangerous points that must be indicated by proper pictograms and/or black and yellow stripes • When using a selector or command in 'maintained action' mode, keep checking that there are no people in the area of operation of the moving parts. Do this until you release the command • The gate may move at any time without warning • Always cut the power when cleaning performing maintenance.

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“IMPORTANT INSTALLATION, SAFETY INSTRUCTIONS”

“CAUTION: IMPROPER INSTALLATION MAY CAUSE SERIOUS DAMAGE, FOLLOW ALL INSTALLATION INSTRUCTIONS CAREFULLY”

“THIS MANUAL IS ONLY FOR PROFESSIONAL OR QUALIFIED INSTALLERS”



1 Legend of symbols



This symbol tells you to read the section with particular care.



This symbol tells you that the sections concern safety issues.



This symbol tells you what to say to the end-users.

2 Intended use and application

2.1 Intended use

The AXO operator is designed to automate swing gates used in residential or condominium settings..



The use of this product for purposes other than those described above and installation executed in a manner other than as instructed in this technical manual are prohibited.

2.2 Application

Type	AX3024		
Length of gate leaf (m)	2	2.5	3
Weight of gate leaf (kg)	800	600	500

Type	AX5024				
Length of gate leaf (m)	2	2.5	3	4*	5*
Weight of gate leaf (kg)	1000	800	700	500	400

* The electrolock must be installed onto the door-leaf.

3 Reference Standards

The company CAME cancelli automatici is ISO 9001:2000 quality certified; it has also obtained the ISO 14001 environmental safeguarding certification. CAME engineers and manufactures all of its products in Italy.

This product complies with the following legislation: see declaration of compliance.

4 Description

4.1 Gate Operator

This product is engineered and manufactured by CAME cancelli automatici s.p.a. and complies with current safety regulations. Guaranteed 24 months if not tampered with.

The gearmotor is made up of two aluminium alloy half shells housing the Encoder gearmotor – which features an electric blocking mechanism – and an epicyclic reduction system with endless screw.

24V D.C. surface gearmotors:

001AX3024 – irreversible gearmotor with encoder for gate leaves of up to 3 m.

001AX5024 – irreversible gearmotor with encoder for gate leaves of up to 5 m.

Control panel:

002ZLJ24 – Multifunction control panel for gates with two swing-leaves with built-in radio decoder

Accessories:

002LB180 – Board to link up two 12V – 1.2Ah emergency batteries with battery holding bracket

001LOCK81 – Blocking electro-lock – single cylinder

001LOCK82 – Blocking electro-lock – double cylinder

4.2 Technical features

GEARMOTOR AX3024 / AX5024

Control board power supply: 230V A.C. 50/60Hz

Motor power supply: 24V D.C.

Max draw.: 10A

Power: 240W

Adjustable thrust: 500÷4500N

Opening time(90°): adjustable

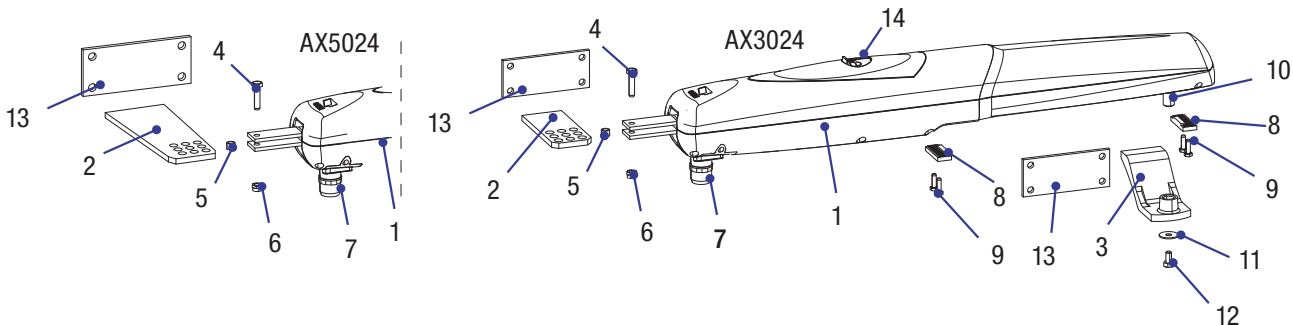
Duty cycle: intensive user

Protection rating: IP44

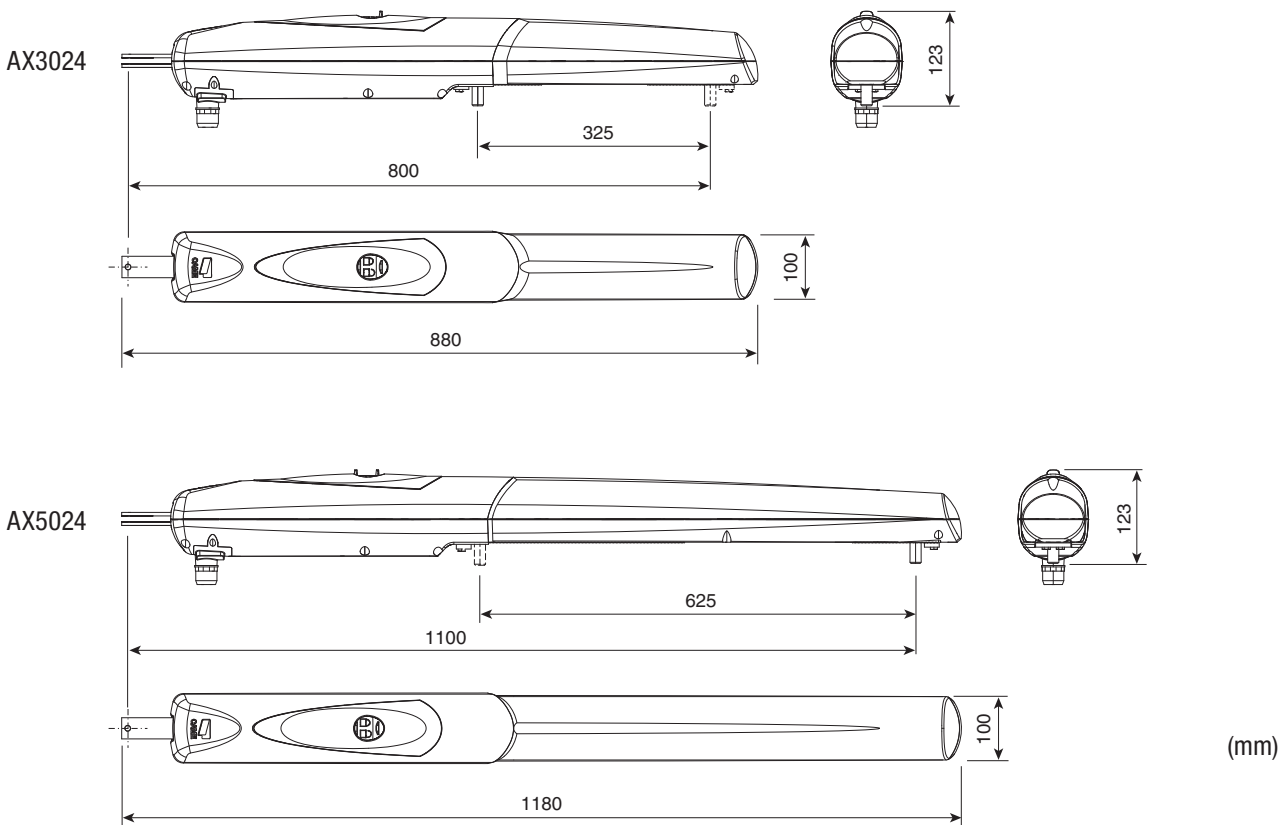


4.3 Description of parts


- | | |
|--|--|
| 1) Operator | 8) Mechanical stop |
| 2) Pilaster bracket | 9) M6X20 UNI5739 screws for mechanical stop |
| 3) Gate bracket | 10) Endless screw pin |
| 4) M8x35 UNI5737 screw for securing pillar bracket | 11) Ø8x24 UNI6593 washer |
| 5) Bushing | 12) Gate bracket screw for securing to M8x10 UNI5739 pin |
| 6) M8 UNI5588 nut for securing pillar bracket | 13) Securing bracket |
| 7) Sheath holder | 14) Small release door |



4.4 Dimensions




5 Installation

 Installation must be carried out by expert qualified personnel and in full compliance with current regulations.

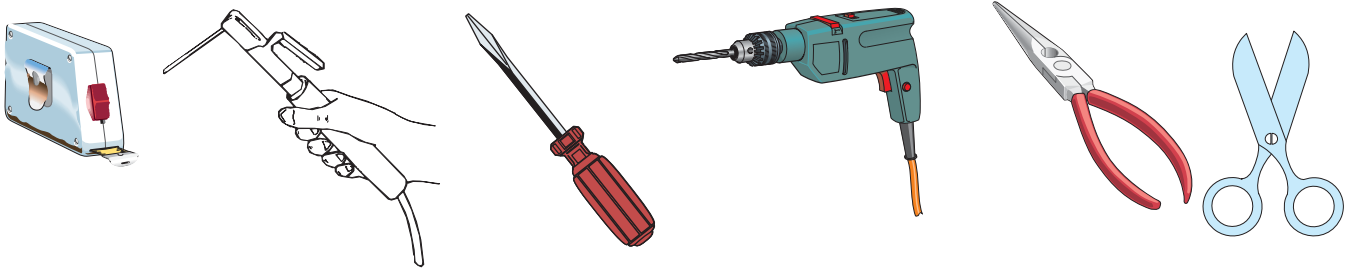
5.1 Preliminary checks

 Before installing, do the following:

- Make sure you have suitable tubing and conduits for the electrical cables to pass through and be protected against mechanical damage;
- Fit tubing to drain away any water leaks which may cause oxidation;
-  Make sure that any connections inside the case (that provide continuance to the protective circuit) be fitted with extra insulation as compared to the other conductive parts inside;
- Make sure the structure of the gate is sturdy, the hinges work and that there is no friction between moving and non-moving parts;
- Make sure there is a mechanical stop for opening and closing.

5.2 Tools and materials

Make sure you have all the tools and materials you will need for the installation at hand to work in total safety and compliance with the current standards and regulations. The following figure illustrates the minimum equipment needed by the installer.



5.3 Cable list and minimum thickness

Connections	Type of cable	Type of cable	Length of cable 10 < 20 m	Length of cable 20 < 30 m
Control panel power supply 230V	FROR CEI 20-22 CEI EN 50267-2-1	3G x 1,5 mm ²	3G x 2,5 mm ²	3G x 4 mm ²
Motor power supply 24V		3G x 1,5 mm ²	3G x 1,5 mm ²	3G x 2,5 mm ²
Flashing light		2 x 0,5 mm ²	2 x 1 mm ²	2 x 1,5 mm ²
Photocell transmitters		2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Photocell receivers		4 x 0,5 mm ²	4 x 0,5 mm ²	4 x 0,5 mm ²
Accessories power supply		2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 1 mm ²
Control and safety devices		2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Antenna	RG58	max. 10 m		

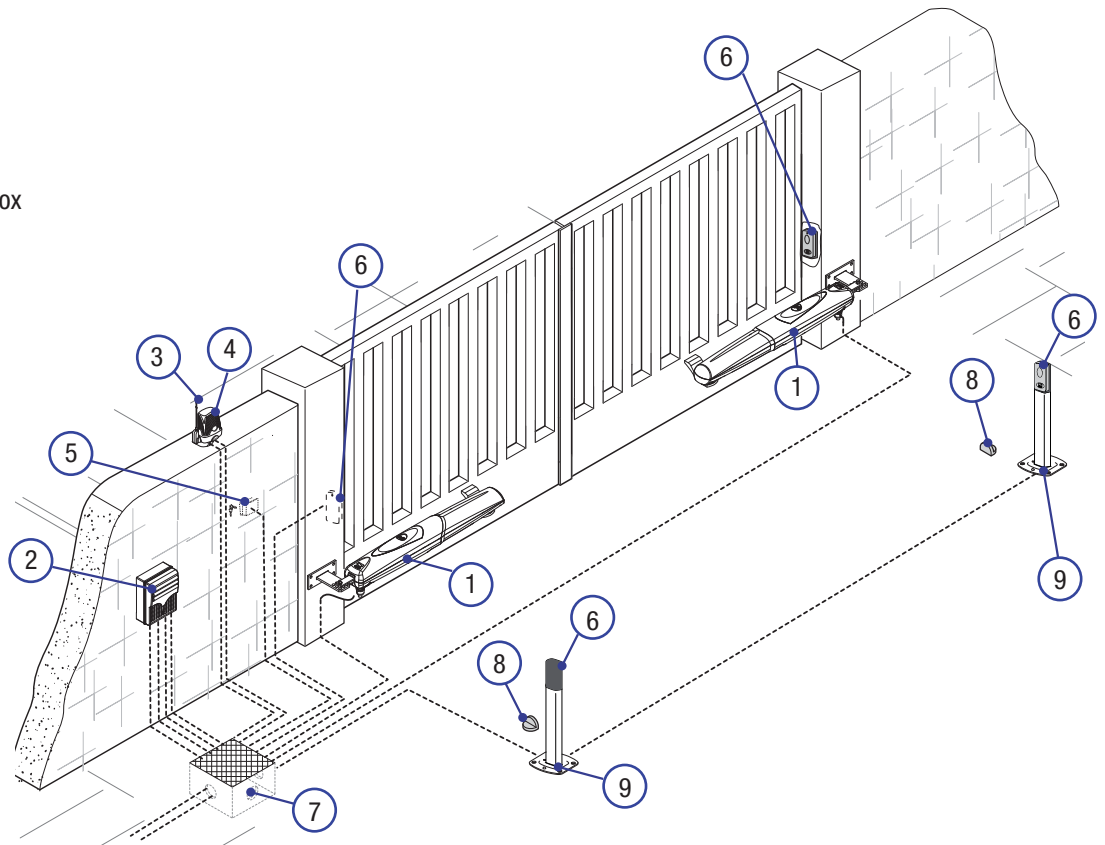
N.B.: If the cable length differs from that specified in the table, then you must determine the proper cable diameter in the basis of the actual power draw by the connected devices and depending on the standards specified in CEI EN 60204-1.

For connections that require several, sequential loads, the sizes given on the table must be re-evaluated based on actual power draw and distances.

When connecting products that are not specified in this manual, please follow the documentation provided with said products.

5.4 Standard installation

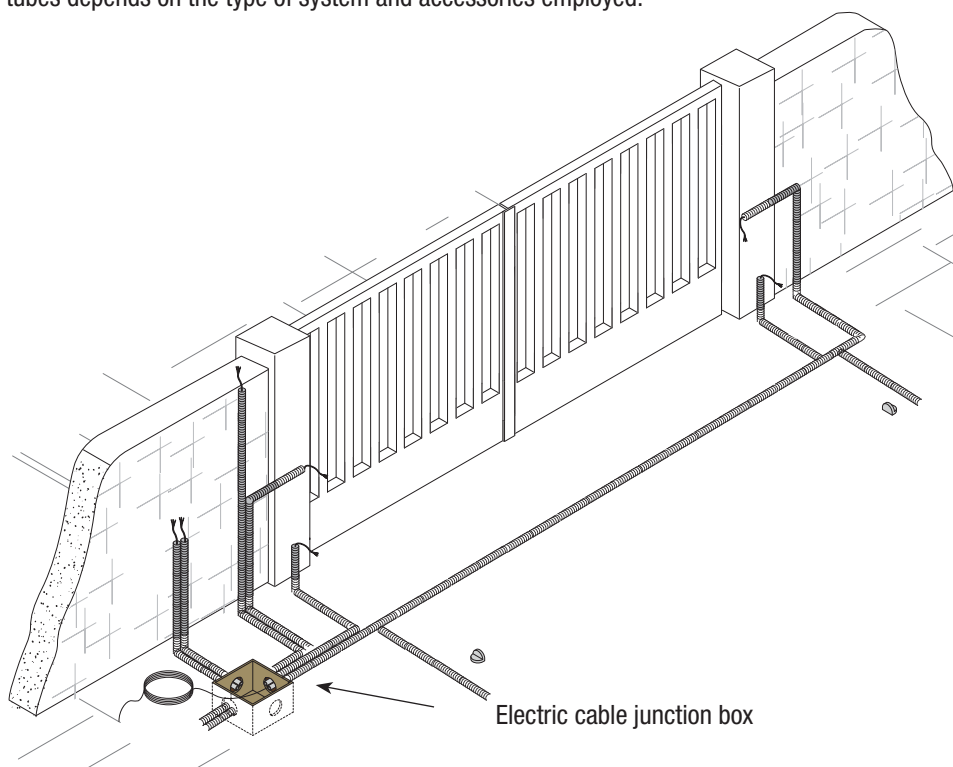
- 1) AXO operator
- 2) Control panel
- 3) Reception antenna
- 4) Flashing light
- 5) Selector switch
- 6) Photocells
- 7) Electric cable junction box
- 8) Mechanical gate stops
- 9) Photocell column



5.5 Installing the operator

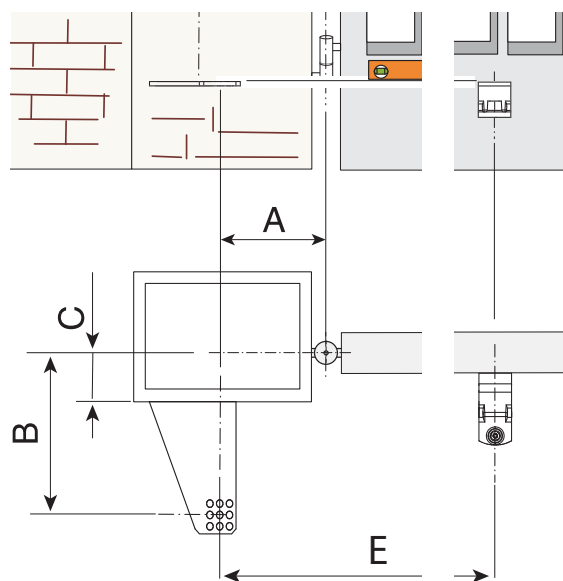
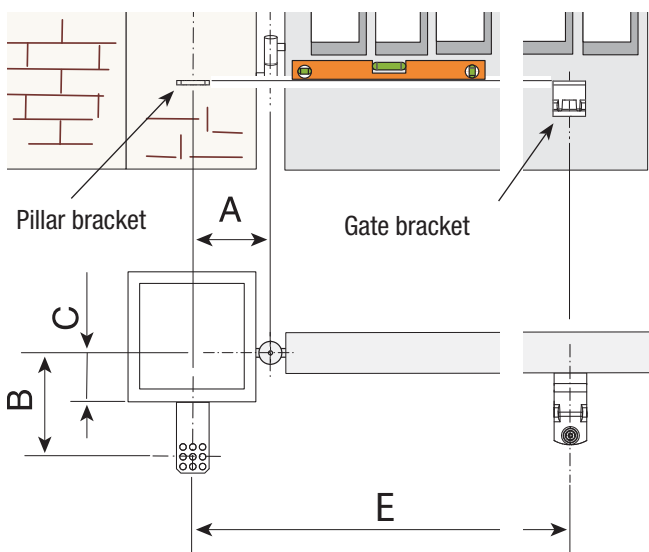
⚠ The following illustrations are only examples, given that the space available for anchoring the operator and accessories may vary from gate to gate. It is up to the installer, thus, to choose the most suitable solution.

Lay the corrugated tubing needed for the connections deriving from the junction box.
N.B. the number of tubes depends on the type of system and accessories employed.



Warning: after establishing the best point to which you will secure the gate bracket, secure the bracket to the pillar and make sure the quotas shown in the table below are met.

Note: by increasing measure B, the opening angle and gate speed are reduced, while the gearmotor thrust is increased. By increasing the measure A, the opening angle and gate speed are increases, while the gearmotor thrust is decreased.



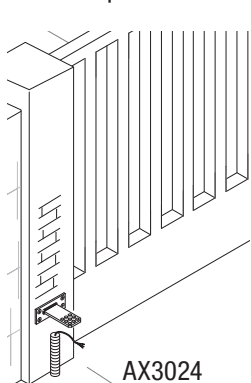
AX3024

AX5024

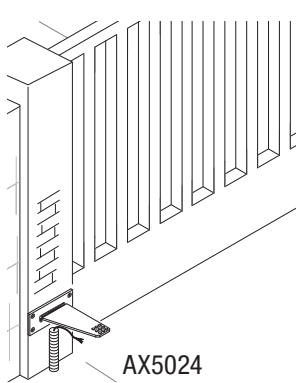
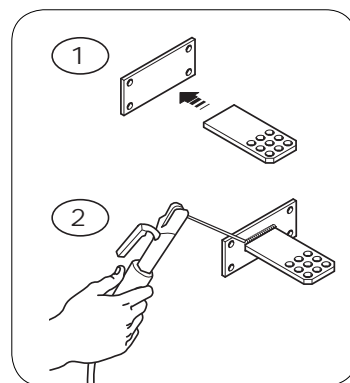
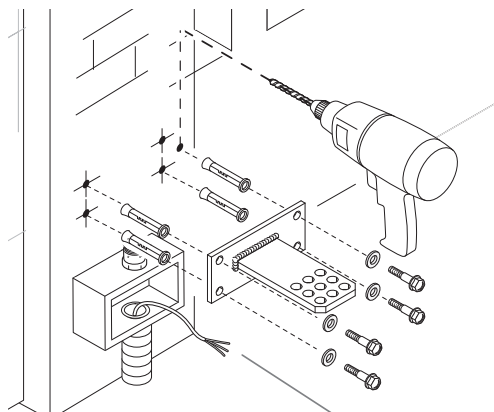
Gate leaves of up to 3m				
Opening angle	A mm	B mm	C max mm	E mm
90°	130	130	70	800
120°	150	80	0	800
120°	140	100	50	800

Gate leaves of up to 5 m				
Opening angle	A mm	B mm	C max mm	E mm
90°	200	220	150	1100
120°	220	220	100	1100

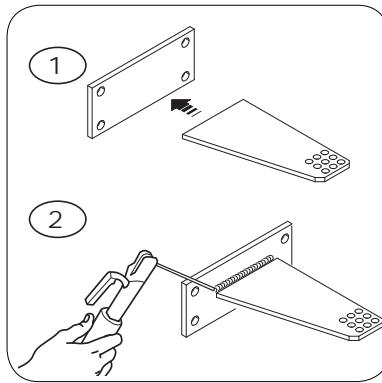
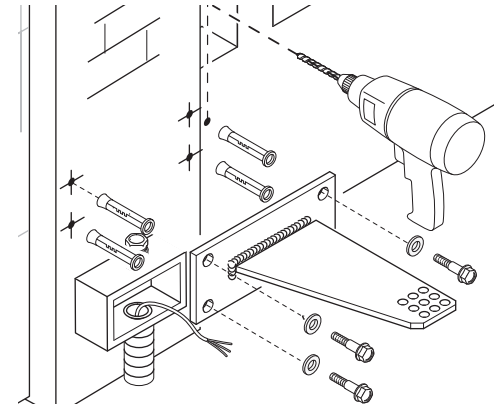
Assemble and weld the two parts of the pillar bracket. Secure the bracket to the point you have chosen with proper plugs and screws or - if the pillar is made of metal - weld it on.



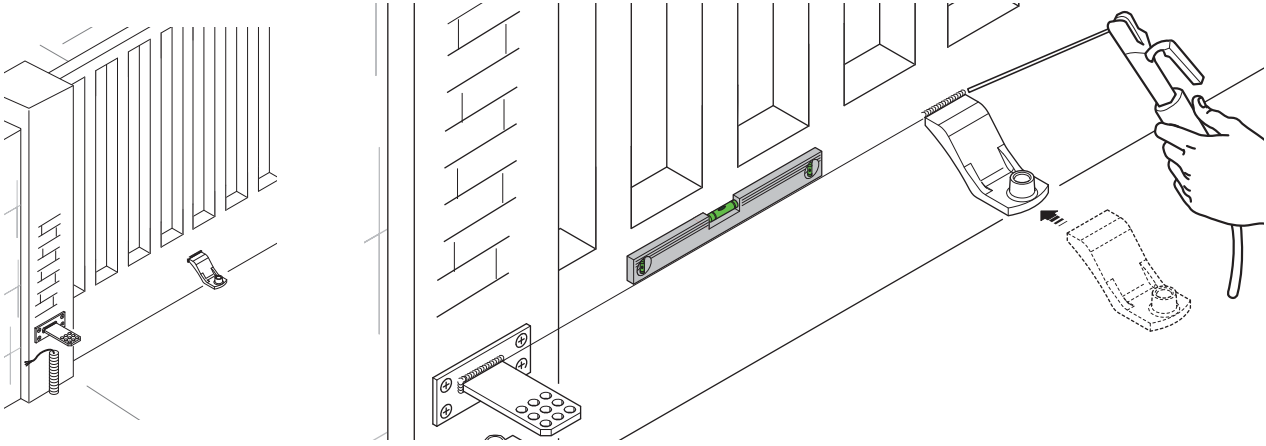
AX3024



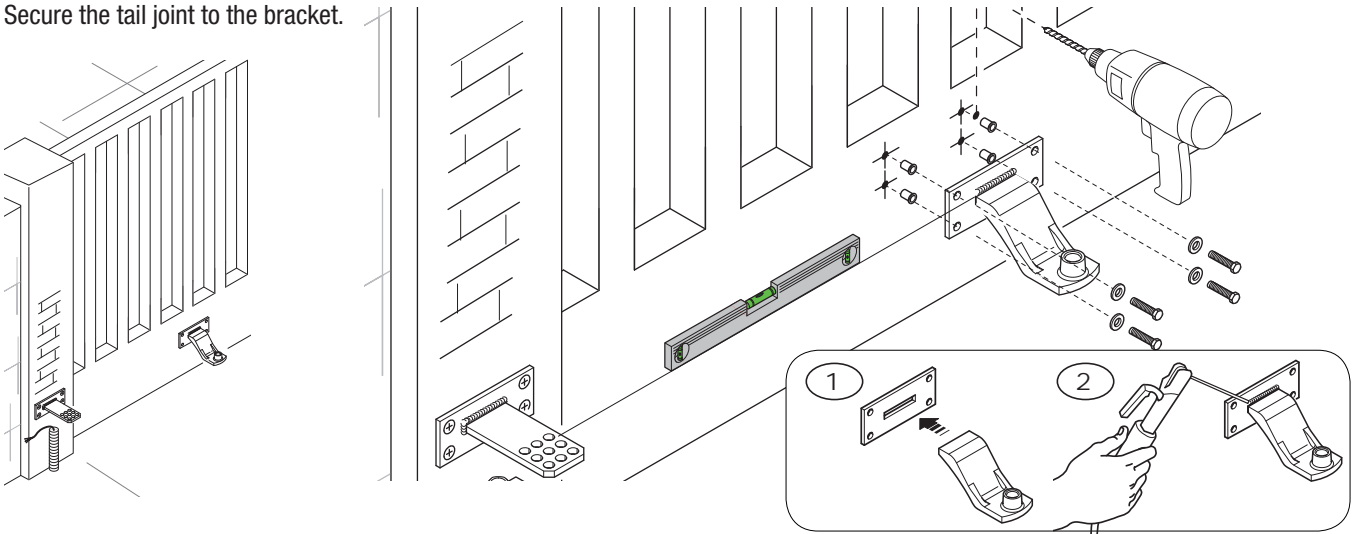
AX5024



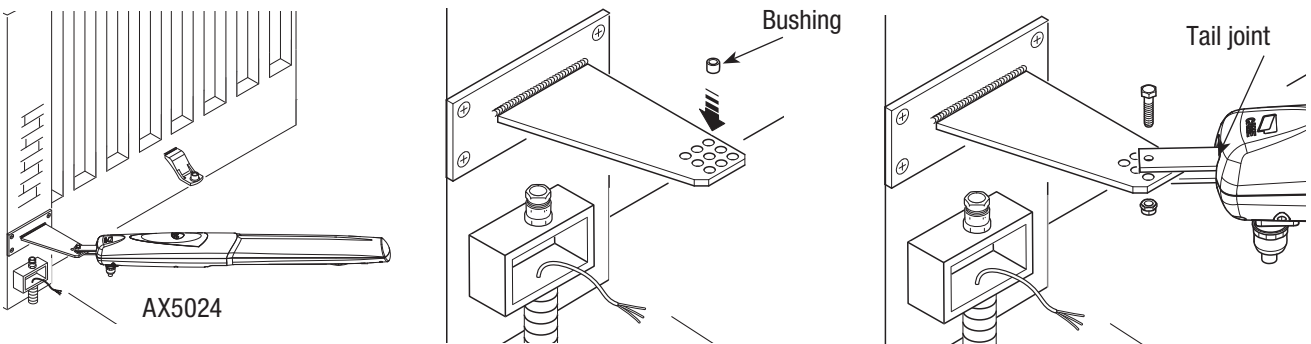
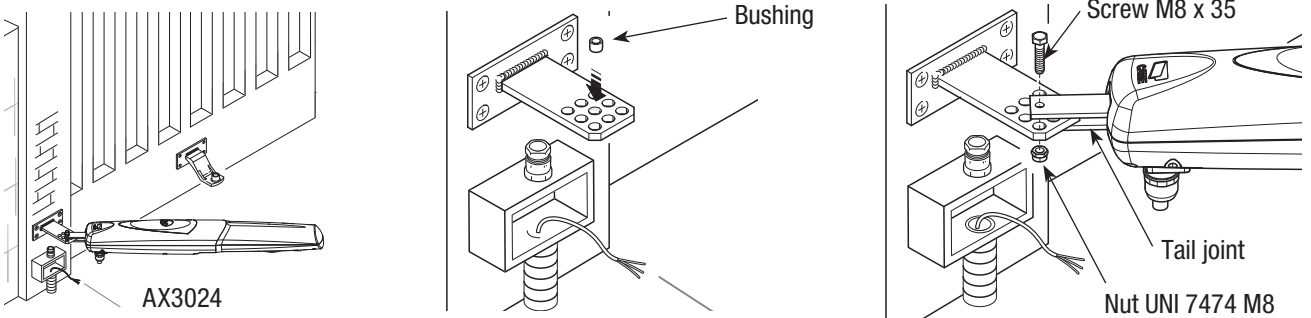
Weld the gate bracket to the gate leaf making sure the quotas shown in the table are met.
 Note: for AX5024 gearmotors, require an additional 10 mm shim between the gate and the bracket.



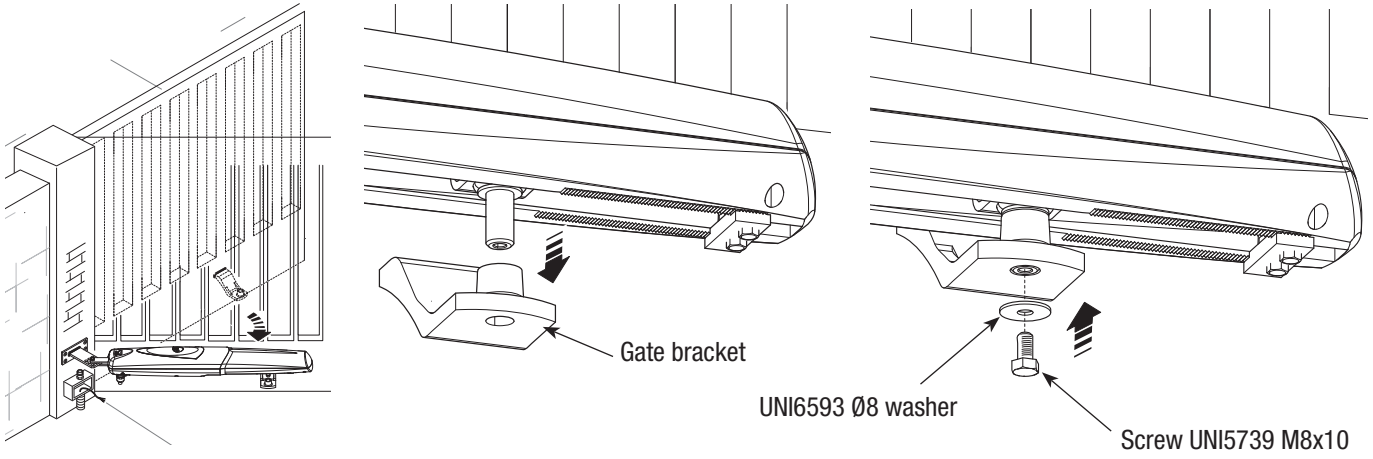
Note: on non-metal gate leaves assemble and weld the two parts of the bracket and secure them with proper screws.
 Secure the tail joint to the bracket.



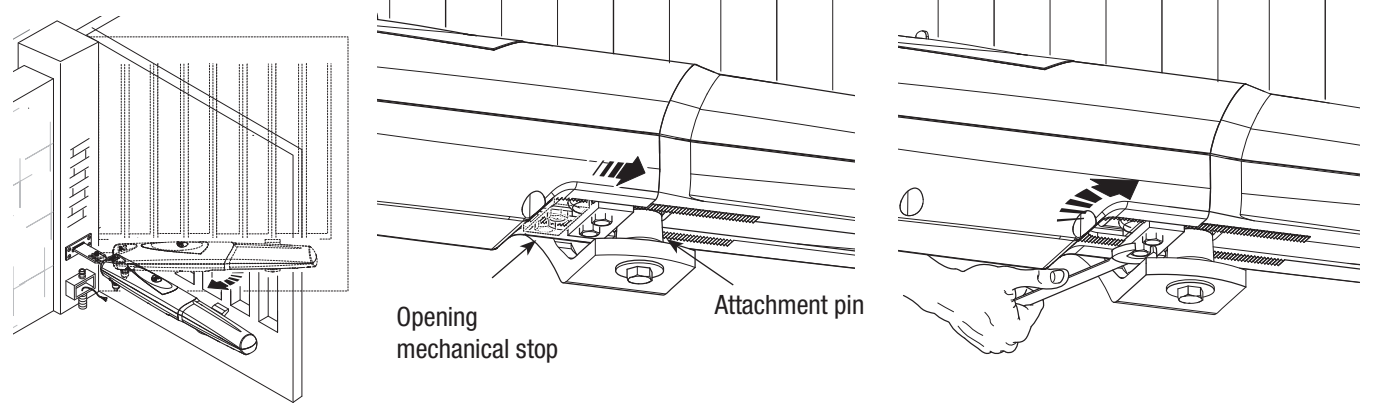
Insert the bushing (lubricated) into the pillar bracket's hole. The bracket has holes that allow the opening angle to be changed. Secure the tail joint to the bracket.



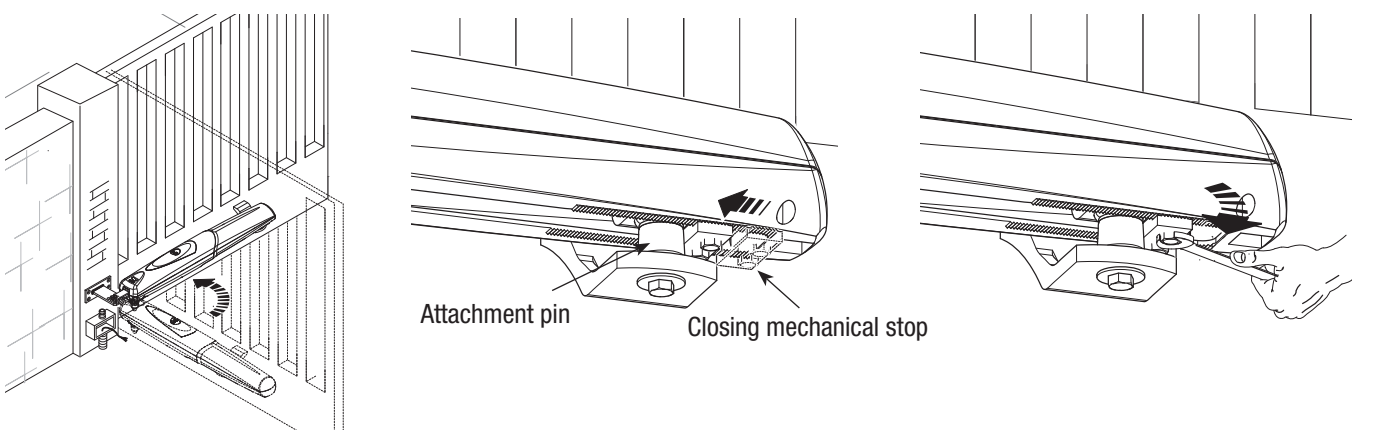
Open the gate leaf and insert the pin into the gate bracket and secure it using a washer and nut.



Release the gearmotor (see paragraph on manual release), completely open the gate leaf, loosen the nuts of the opening mechanical stop and position it up against the attachment pin, then secure it.

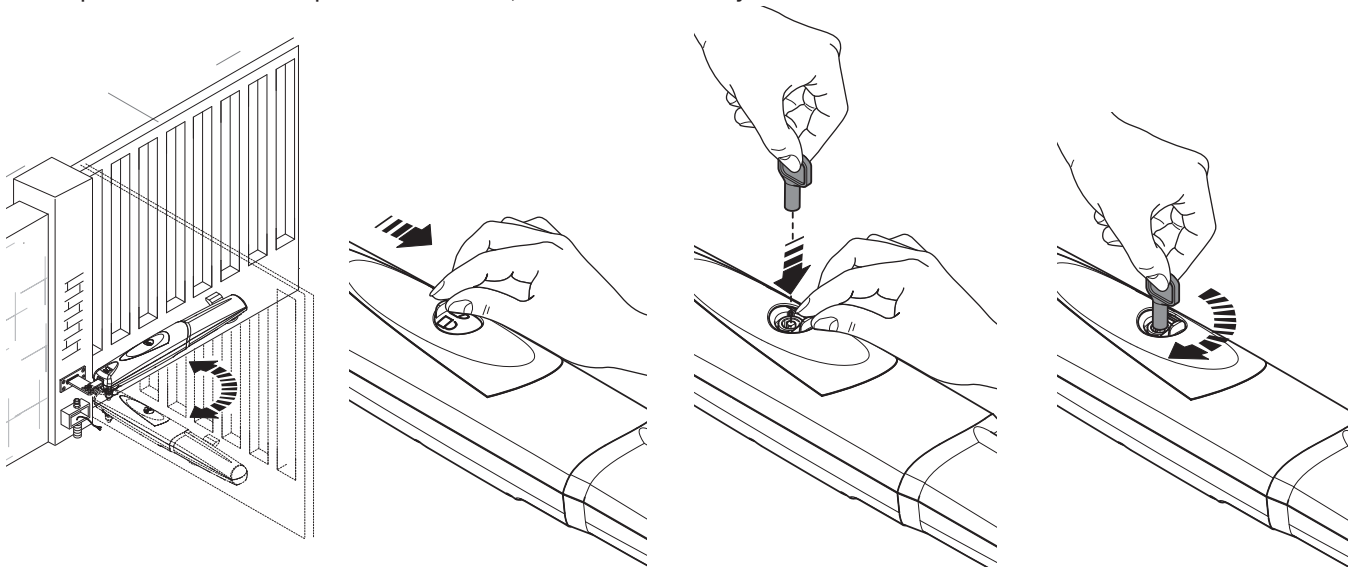


Close the gate leaf, loosen the nuts on the closing mechanical stop, place it up against the attachment pin, then secure it.



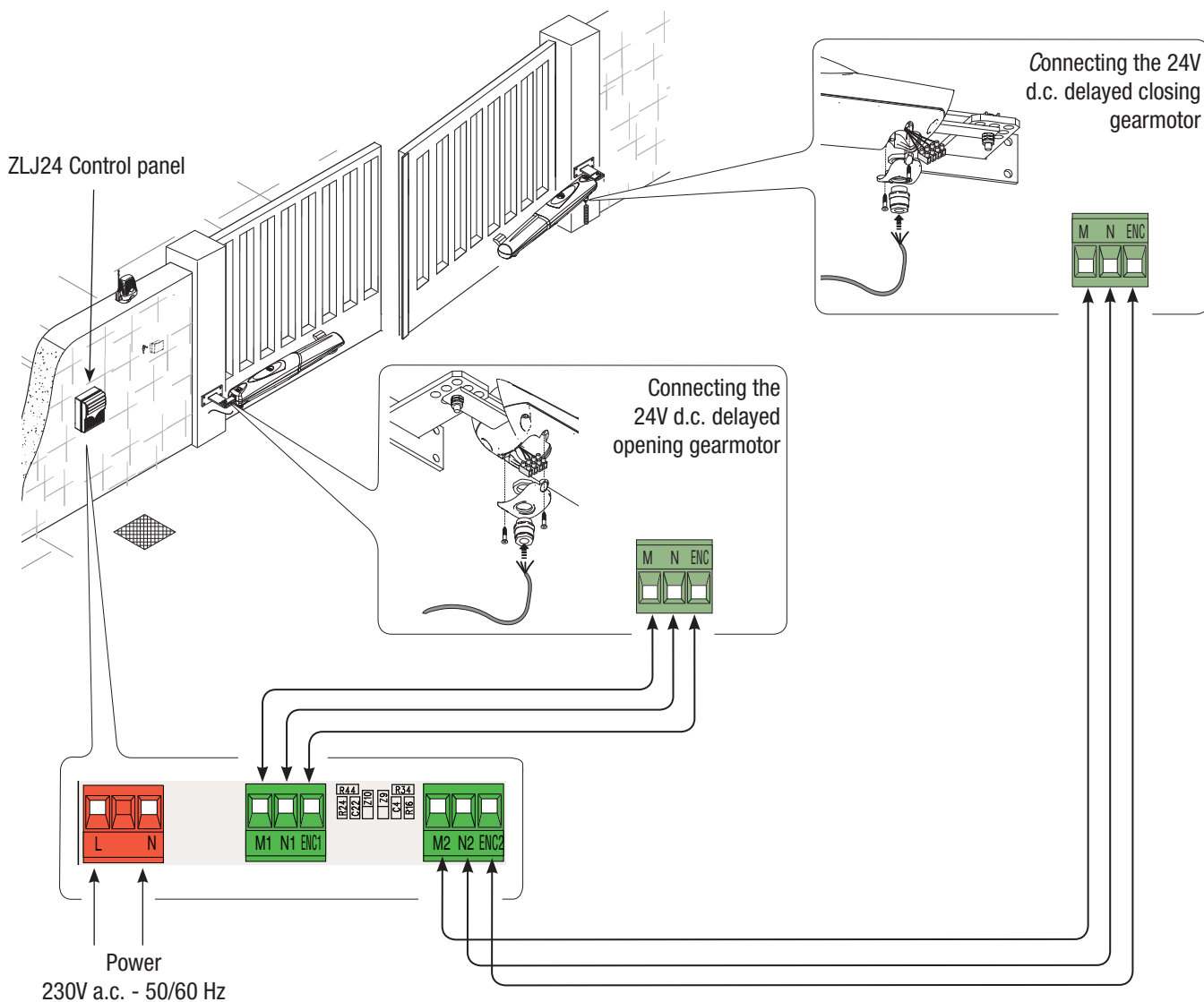
5.6 Manual release of the gearmotor

Slide open the small door that protects the release, insert the tri-lobed key and turn it.



5.7 Connecting to the control panel

For the electrical connection procedures, use the junction box and branching boxes.



5.8 Outward opening installation

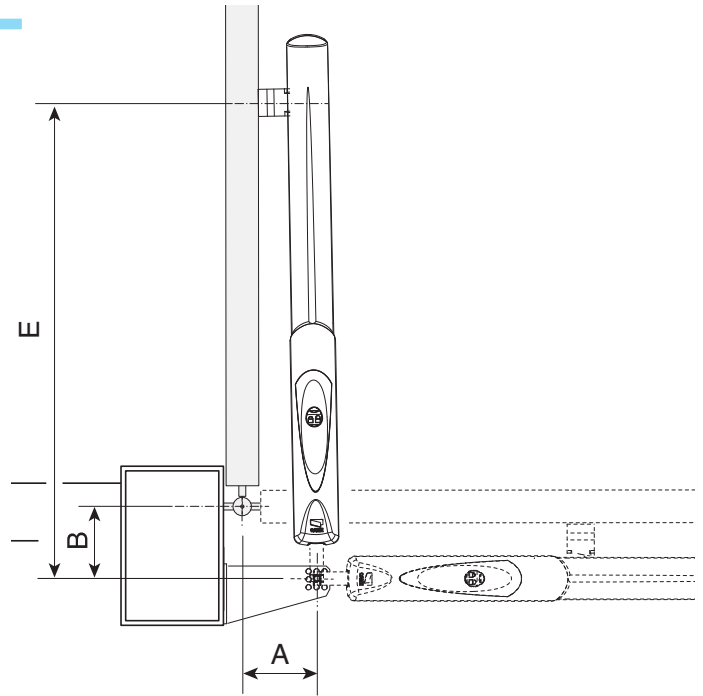
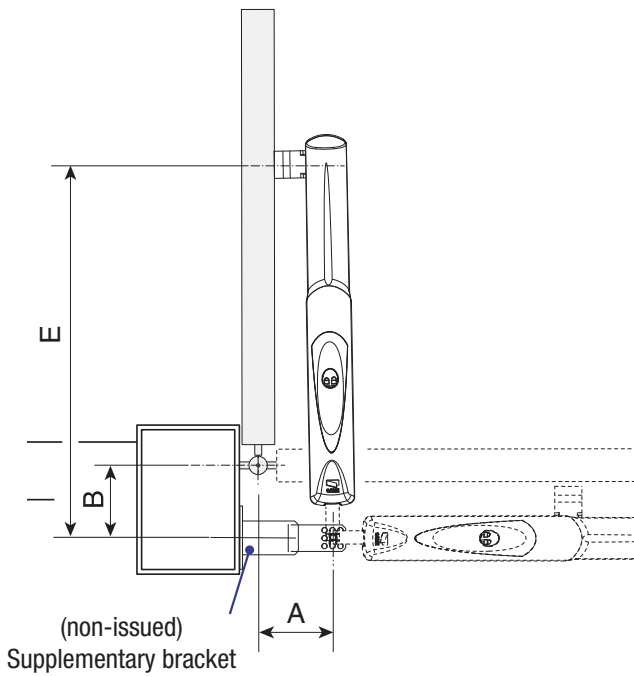


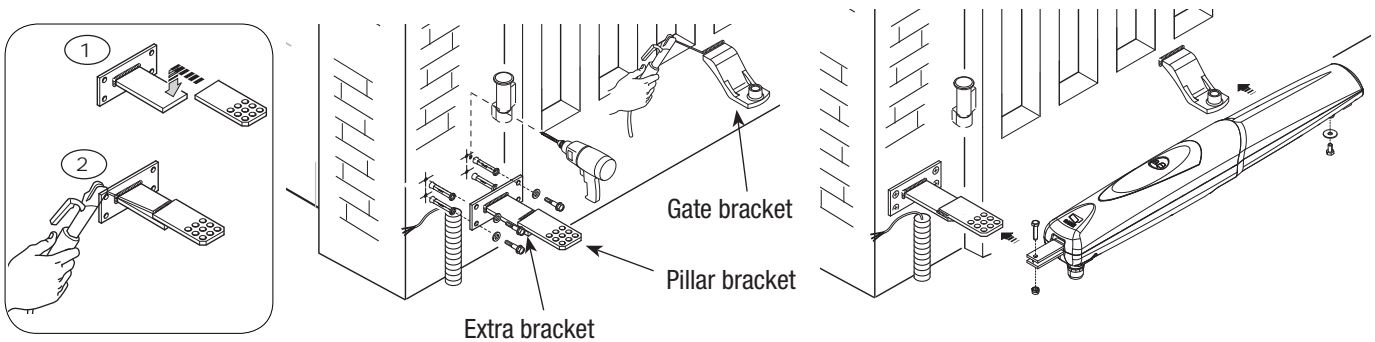
TABLE 1

Opening	A (mm)	B (mm)	E (mm)
90°	130	130	800

TABLE 2

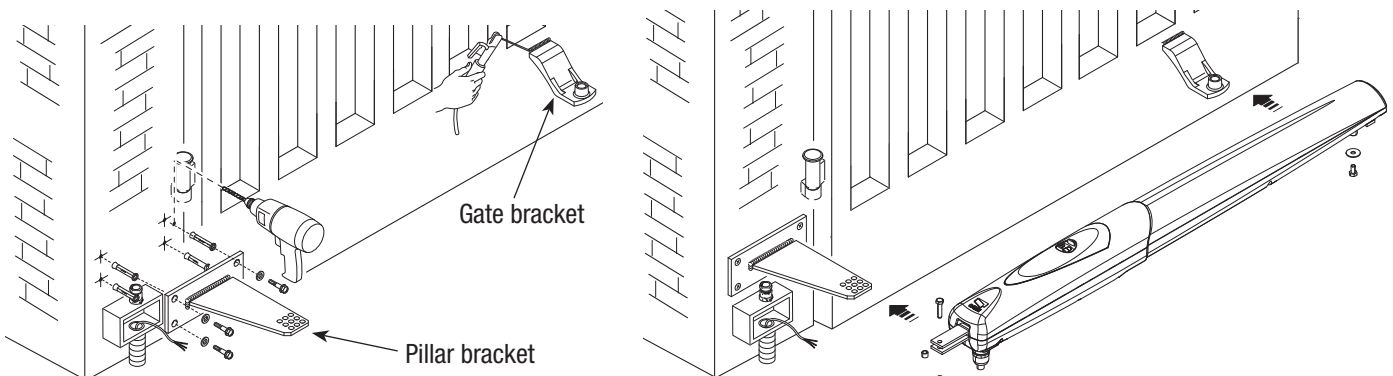
Opening	A (mm)	B (mm)	E (mm)
90°	200	220	1100

Weld pillar bracket to the non-issued supplementary bracket, while gate is open, then secure the brackets to the pillar, making sure the "A" and "B" quotas shown in table 1 are met. Weld, or secure with proper screws, the gate bracket, making sure the "E" quota is met, as shown in table 1. Finally, secure the gearmotor to the brackets with the issued screws and washers.

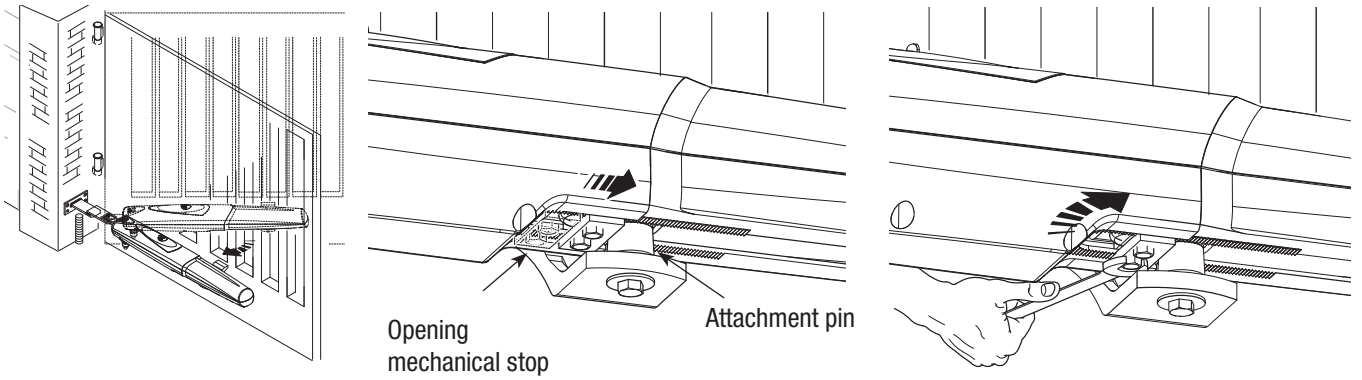


For AX5024 gearmotors, directly secure the standard issue bracket to the pillar without using the supplementary bracket, while taking into account the measurements shown in table 2.

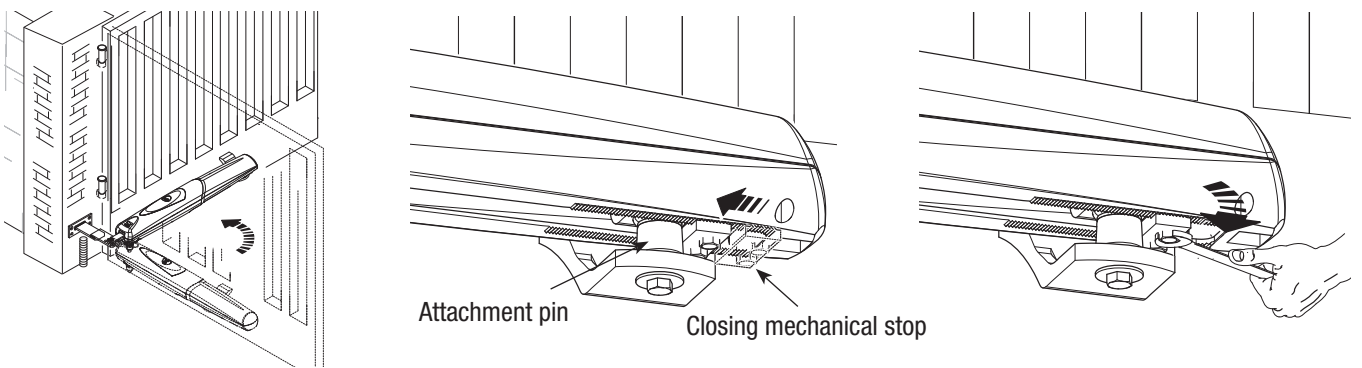
Finally, secure the gearmotor to the brackets with the issued screws and washers.



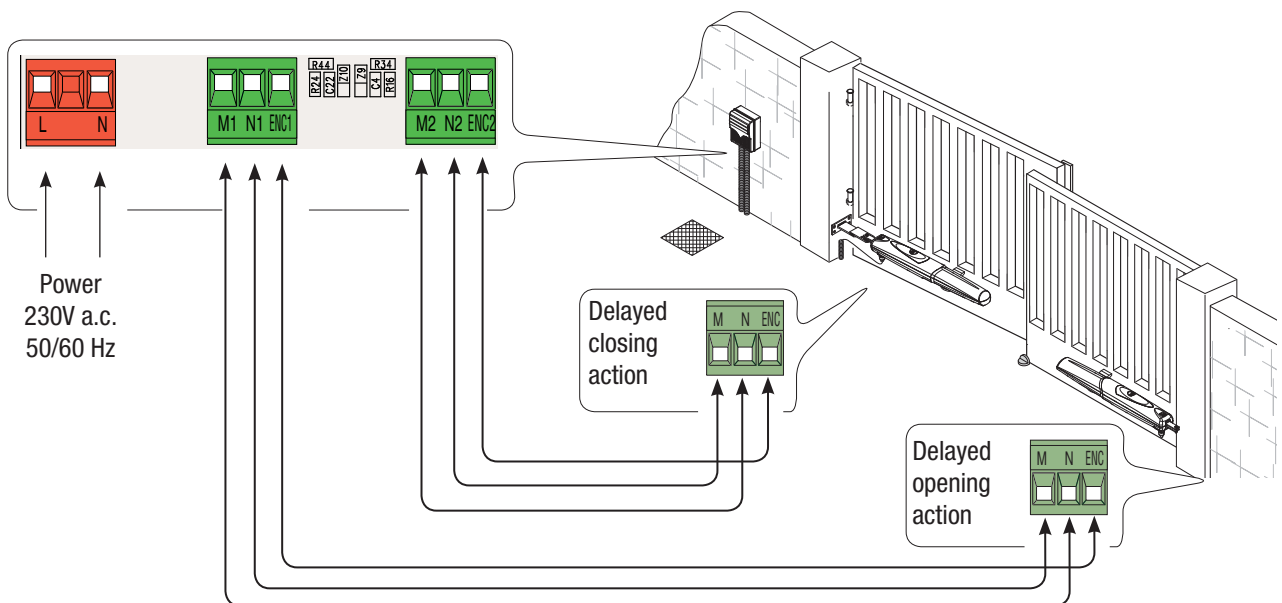
Fully close the gate-leaf, place the mechanical stop against it with the pin attachment and fix it in place.



Fully open the gate-leaf, place the mechanical stop against it with the pin attachment and fix it in place.



Connect the gearmotors to the panel as shown in the diagram.

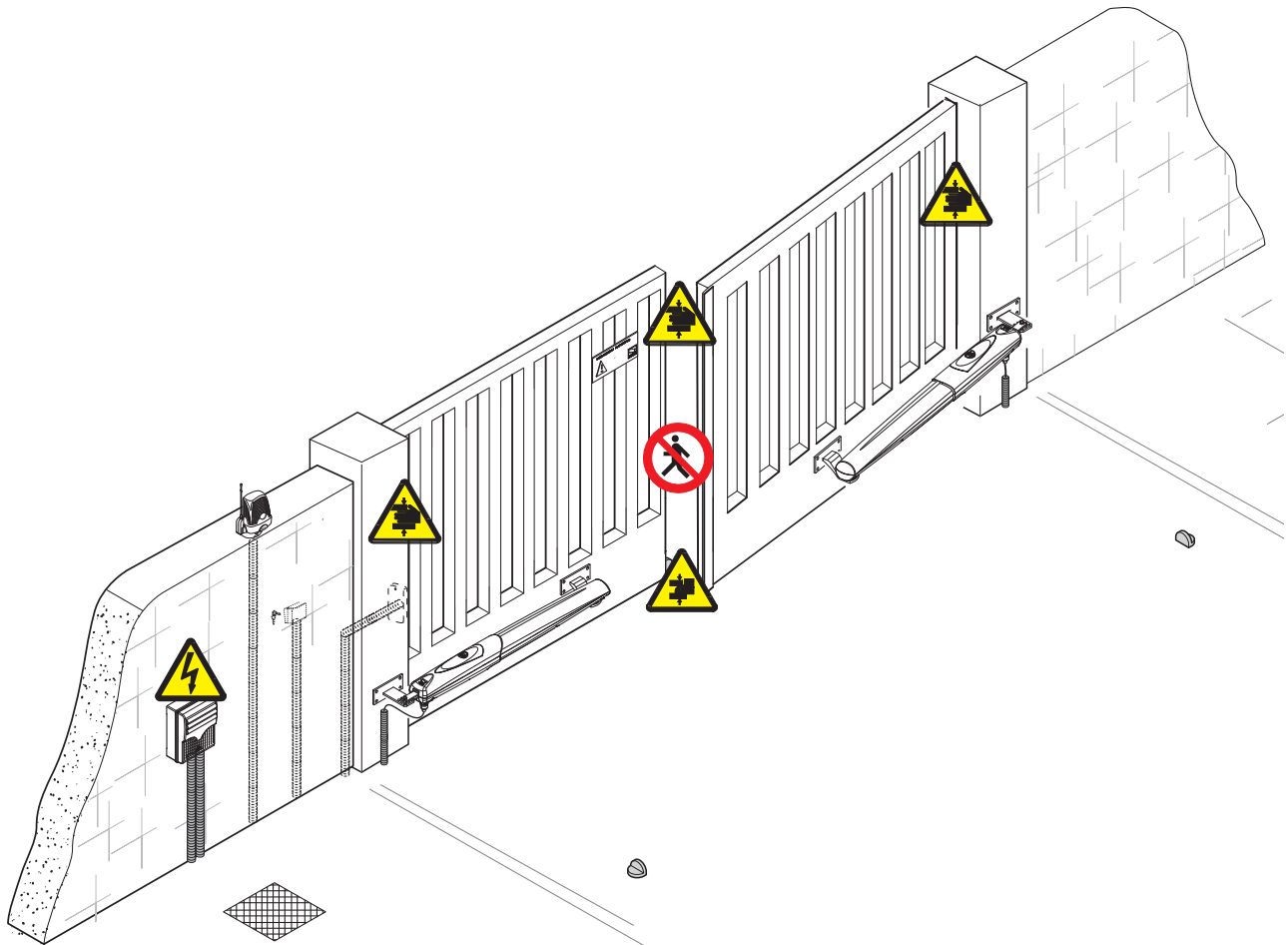


6 Safety instructions

Important safety instructions

This product must only be employed for its originally intended use. The automation installation using these gearmotors requires adequate safety systems on the gate leaves to detect any obstacles (e.g. sensitive edges), in compliance with EN12445 and EN12453 Technical Standards relative to the impact force generated by the moving gate. Any other use is wrong and potentially dangerous. The manufacturer cannot be held liable for any damages resulting from wrongful, erroneous or negligent uses.

Avoid working close to the hinges or other moving mechanical parts. Stay out of the opening/closing arc when operator is in motion. Do not exercise force against the motion of the operator as this could result in potentially dangerous situations.



Do not allow children to play or loiter within the opening/closing arc of the operator.

Keep remote controls and any other command device out the reach of children, to prevent operator from being activated by accident. In the event of anomalous behaviour, stop using the operator immediately.



Danger of crushing hands



Danger! High voltage




Danger of crushing feet



No transit during operation

7 Maintenance

7.1 Periodic maintenance

 Periodic maintenance to be carried out by the end-user is as follows: wipe clean the glass surface of the photocells; check that the safety devices work properly; remove any obstructions.

We suggest checking the state of lubrication and tightness of the anchoring screws on the operator.

To check the efficiency of the safety devices, move an object in front of the photocells when gate is closing. If the operator inverts the motion or stops, the photocells are working properly.

This is the only maintenance procedure to be carried out with the power source connected.

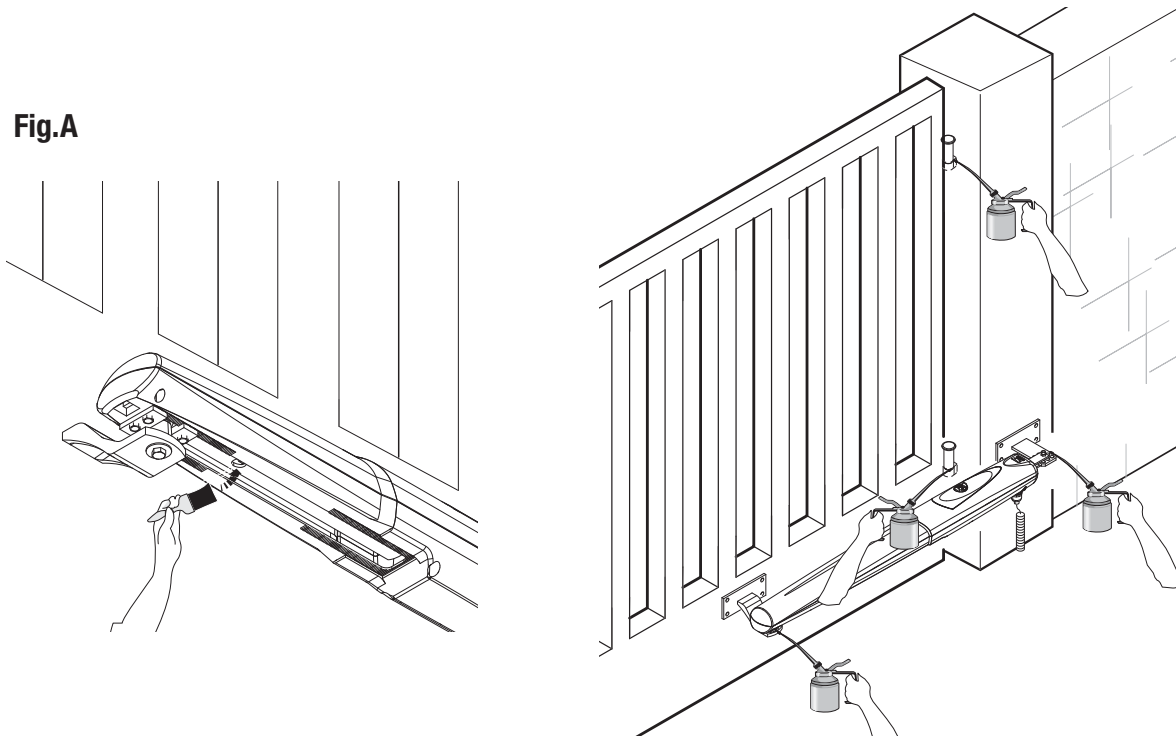
Before performing any maintenance procedures, cut off the main power, to prevent possible accidents due to gate movement.

To clean the photocells use a water dampened cloth. Do not use solvents or other chemical products which may ruin the devices.

In the event of any strange vibrations or squeaking, lubricate the joints with grease, as shown in the diagram.

Lubricate the endless screw via the hole located under the die-casting of the motor (fig. A)

Fig.A



Make sure there are no plants within the photocell's beam, and that the gate motion is free of any obstacles.

7.2 Trouble shooting

MALFUNCTIONS	POSSIBLE CAUSES	CHECK AND REMEDIES
The gate will not open nor close	<ul style="list-style-type: none">• There is no power• The gearmotor is released• The transmitter's batteries are run down• The transmitter is broken• The stop button is either stuck or broken• The opening/closing button or the selector switch are stuck	<ul style="list-style-type: none">• Check that the power is up• Call assistance• Replace batteries• Call assistance• Call assistance• Call assistance
The gate opens but will not close	<ul style="list-style-type: none">• The photocells are engaged	<ul style="list-style-type: none">• Check that photocells are clean and in good working order• Call assistance
The Flashing light does not work	<ul style="list-style-type: none">• The bulb is burnt	<ul style="list-style-type: none">• Call assistance

Periodic maintenance log for end-user (every 6 months).

Date	Notes	Signature

7.3 Extra-ordinary maintenance

 The following table serves to note down any extraordinary maintenance, repairs or improvements performed by specialised firms.

N.B.: Any extraordinary maintenance must be performed by specialised technicians.


Extra-ordinary maintenance log

Installer's stamp	Operator name
	Date of job
	Technician's signature
	Requester's signature
Job performed _____ _____ _____	
Installer's stamp	Operator name
	Date of job
	Technician's signature
	Requester's signature
Job performed _____ _____ _____	
Installer's stamp	Operator name
	Date of job
	Technician's signature
	Requester's signature
Job performed _____ _____ _____	

Installer's stamp	Operator name
	Date of job
	Technician's signature
	Requester's signature
Job performed _____	

Installer's stamp	Operator name
	Date of job
	Technician's signature
	Requester's signature
Job performed _____	

8 Phasing out and disposal

 CAME cancelli automatici s.p.a. employs a UNI EN ISO 14001 certified and compliant environmental protection system at its plants, to ensure that environmental safeguarding. We ask you to keep protecting the environment, as CAME deems it to be one of the fundamental points of its market operations strategies, by simply following these brief guidelines when disposing.

DISPOSING THE PACKING MATERIALS

The packing components (cardboard, plastic, etc.) are solid urban waste and may be disposed of without any particular difficulty, by simply separating them so that they can be recycled. Before actions it is always advisable to check the pertinent legislation where installation will take place. **DO NOT DISPOSE OF IN NATURE!**

DISPOSING OF THE PRODUCT

Our products are made using different types of materials. The majority of them (aluminium, plastic, iron, electric cables) can be considered to be solid urban waste. They may be recycled at authorised firms. Other components (electrical circuit board, remote control batteries etc.) may contain hazardous waste. They must, thus, be removed and turned in to licensed firms for their disposal. Before acting always check the local laws on the matter. **DO NOT DISPOSE OF IN NATURE!**

9 Conformity declaration



MANUFACTURER'S DECLARATION OF CONFORMITY

Pursuant to annex II B of the Machinery Directive 98/37/EC



CAME Cancelli Automatici S.p.A.
via Martiri della Libertà, 15
31030 Dosson di Casier - Treviso - ITALY
tel (+39) 0422 4940 - fax (+39) 0422 4941
internet: www.came.it - e-mail: info@came.it

--- STANDARDS ---

EN 13241-1	EN 12635	EN 61000-6-2
EN 12453	EN 12978	EN 61000-6-3
EN 12445	EN 60335-1	

Declares under its own responsibility that the equipments for automatic garage doors and gates listed below:

AX3024 / AX5024

... comply with the National Law related to the following European Directives and to the applicable parts of the following Standards.

--- DIRECTIVES ---

98/37/CE - 98/79/CE	MACHINERY DIRECTIVE
98/336/CEE - 92/31/CEE	ELECTROMAGNETIC COMPATIBILITY DIRECTIVE
73/23/CEE - 93/68/CE	LOW VOLTAGE DIRECTIVE
89/106/CEE	CONSTRUCTION PRODUCTS DIRECTIVE

IMPORTANT WARNING!

Do not use the equipment specified here above, before completing the full installation. In full compliance with the Machinery Directive 98/37/EC

MANAGING DIRECTOR
Mr. Gianni Michielan

Reference code to request a true copy of the original: **DDF B IT A001i**

CAME France S.a.
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Z.i. Des Hautes Patures
92737 Nanterre Cedex - FRANCE
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☎ (+33) 4 91 60 69 05

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English - Manual code: 119DU86 ver. 0.1 01/2009 © CAME cancelli automatici s.p.a.
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