COMUNELLO
AUTOMATION

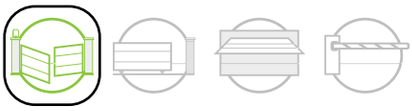
SKY 220 / 300 / 500

IT Attuatore elettromeccanico con pistone per anta battente

EN Electromecanical actuator with rod for swing gates

CE

MADE IN ITALY



ISTRUZIONI D'USO E DI INSTALLAZIONE
INSTALLATION AND USER'S MANUAL

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IT EN FR ES
PT DE RU

91300621 - Rev. 00 - 20.04.23

COMUNELLO

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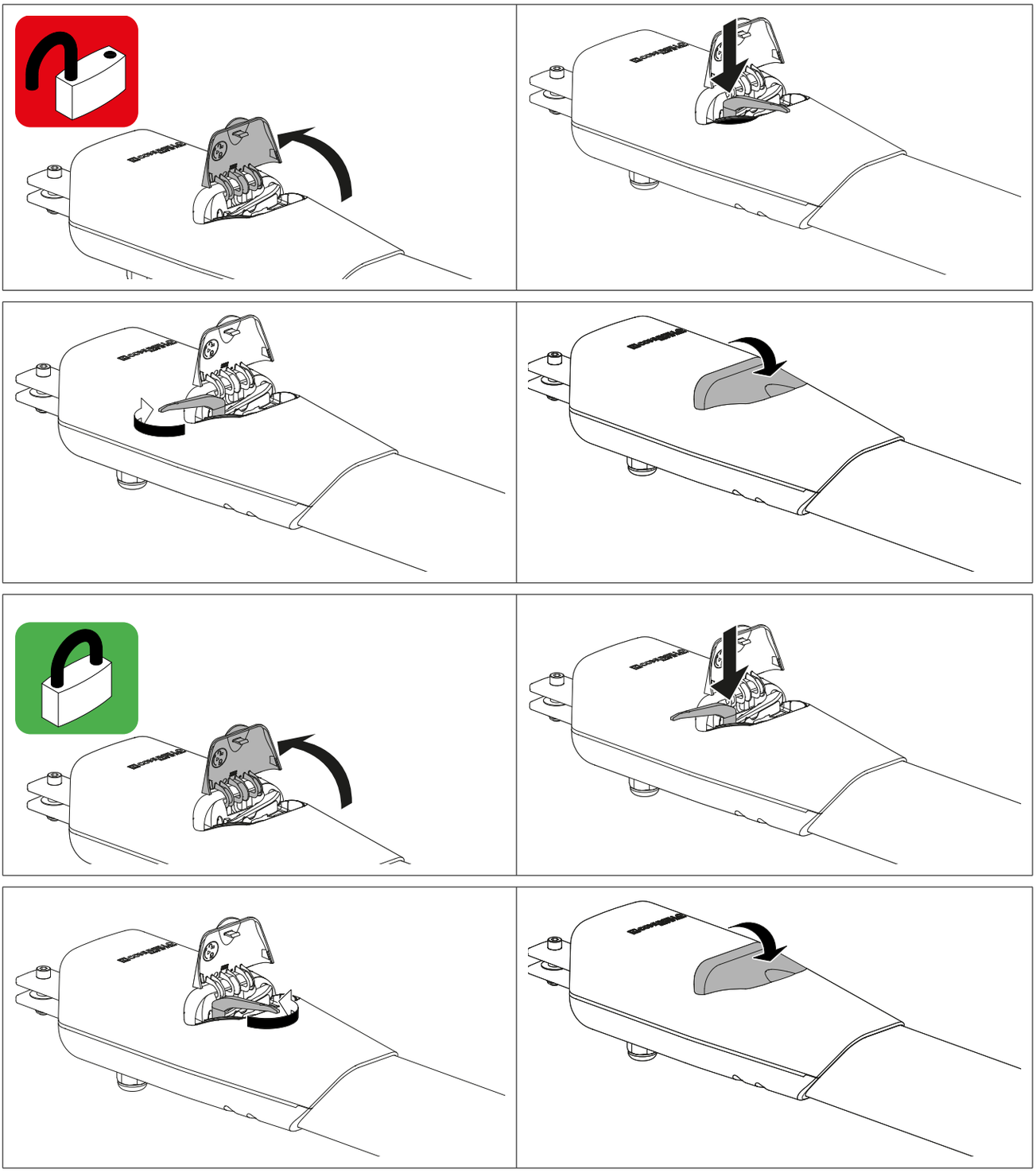


1 PRESCRIPTIONS

1.1 SAFETY WARNINGS

This installation manual is intended exclusively for professionally qualified and competent personnel. All the instructions must be read before proceeding with installation. All that not expressly stated in these instructions is not allowed; uses other than those intended may be a source of damage to the product and endanger persons or property. The manufacturer denies all liability for failure to observe good practices in the construction of gates, as well as any deformations that may occur during use. The product covered by this manual is defined in accordance with the Machinery Directive 2006/42/EC as a partly-completed machine intended to be incorporated or assembled with other machines, partly-completed machinery or equipment to build a machine. The final connection of the automation to the power grid, the testing of the system, its commissioning and periodic maintenance must be performed by qualified and experienced personnel, respecting what is specified in the manual.
In addition, the person who will put the machine into service must also establish the tests required according to the risks present and must verify compliance with the provisions of laws, regulations and rules: in particular, ensure compliance with all the requirements of standard EN 12445 which establishes the test methods for the verification of automatic systems for doors and gates. Keep this manual for future reference. The design and manufacture of the devices making up the **SKY** and this manual fully comply with regulations in force. Considering the risk situations that may occur during the installation and use of **SKY**, the installation must also take place in full compliance with the laws, rules and regulations; before delivery to the user, check the conformity of the system with the harmonised standards and with the essential requirements of the Machinery Directive 2006/42/EC.
Any residual risks must be reported using appropriate pictograms positioned clearly visible and duly explained to the end user.
SKY is a CE-marked product. Fratelli COMUNELLO SPA ensures product compliance with the European Directives 2006/42/EC machine safety, 2004/108/EC electromagnetic compatibility and 2014/35/EU, low voltage electrical appliances. Fratelli COMUNELLO SPA annexes to these instructions the Declaration of Incorporation (See Directive 2006/42/EC Art.4 paragraph 2).

1.2 INSTALLATION WARNINGS

- Before starting the installation, check the need for additional devices and materials that can be used to complete the automation with **SKY** according to the specific situation of use.
- The automation system must not be used before commissioning as specified in paragraph.
- The packaging material must be disposed of in full compliance with the local regulations.

1.3 WARNINGS FOR USE

- Do not make any changes to any parts unless provided for by this manual. Operations of this type will only cause malfunctions. The manufacturer denies all liability for damage resulting from modified products.
- Do not submerge parts of the automation in water or in any other liquid substance. Also during installation, make sure no liquids infiltrate the control unit and other open devices.
- If liquids penetrate any parts of the automation system, disconnect the electrical power supply immediately and consult technical service; the use of **SKY** in such conditions may generate potentially hazardous situations.
- Keep all parts of the **SKY** barrier system away from heat sources and naked flames; exposure to heat or flames may damage the devices and cause faults, fire or hazardous situations.
- Only connect the control unit to a power supply line equipped with safety earthing.
- All the **SKY** product maintenance operations must take place with the control unit disconnected from the power supply; if the disconnection device is not visible, place a sign on it: "ATTENTION MAINTENANCE IN PROGRESS".
- If automatic switches or fuses are tripped, the fault must be identified and eliminated before they can be reset.
- In case of a fault that cannot be resolved using the information in this manual, contact the help service.

DECLARATION OF INCORPORATION

The undersigned, Mr. **COMUNELLO LUCA** representing the following manufacturer
F.lli COMUNELLO spa - Via Cassola 64, 36027 Rosà (VI) Italy
DECLARES that with regard to the device hereinafter described:
Description **Electromechanical automation for swing gates.**
Model **SKY 220; SKY 300; SKY 500**
It complies with the legislative provisions transposing the following directives:
- Directive 2014/30/EU (EMC Directive)

and that all the following standards and/or technical specifications have been applied
EN 61000-6-2:2005; EN 61000-6-3:2007+A1:2001; EN 62233:2008; EN 60335-1:2012+A11:2014; EN 60335-2-103:2015

and subsequent amendments
Last two digits of the year in which the CE marking was affixed **22**

Rosà (VI) – Italy - 01-09-2014
He declares that the technical documentation relevant to the product has been drawn up in accordance with the provisions of Directive 2006/42/EC Annex VII Part B and will be provided in response to an adequately reasoned request by the national authorities.

He also declares that commissioning of the product is not permitted until the machine, into which the product is incorporated, has been declared compliant with Directive 2006/42/EC.

Mr LUCA COMUNELLO
Legal Representative of FRATELLI COMUNELLO s.p.a.

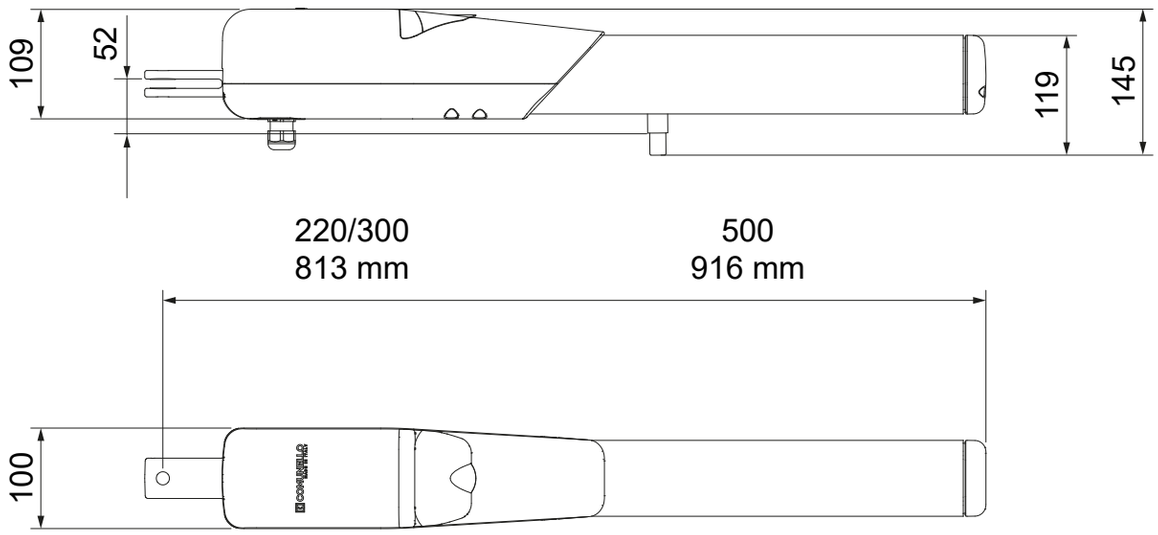
2 PRODUCT DESCRIPTION AND INTENDED USE

2.1 DESCRIPTION

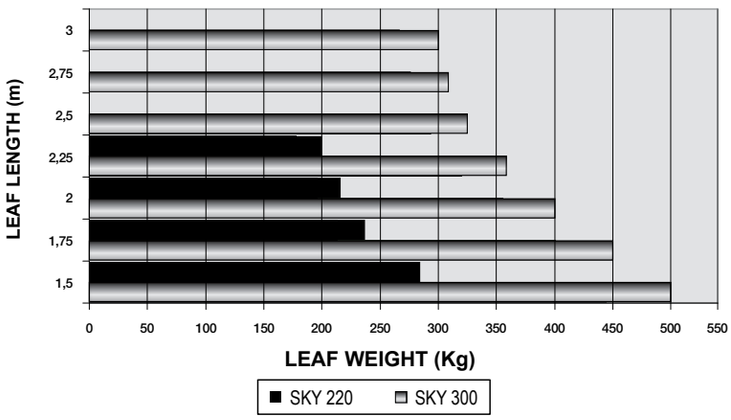
Ambidextrous irreversible electromechanical actuator for swing-leaf gates. **SKY** automation transmits the motion to the door via a trapezoidal screw system. The practical built-in release device is used to manually move the gate in the event of a power failure.
SKY identifies a family of actuators with different characteristics based on the power supply voltage, size and on the presence or absence of electronic limit switches.

All the **SKY** models in production are listed in **"TAB.1" on page 27**.

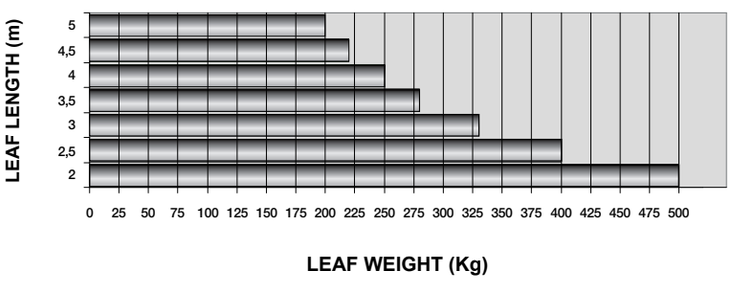
2.2 DIMENSIONS AND LIMITS OF USE



2.2.1 LIMITS OF USE - SKY 220 - SKY 300

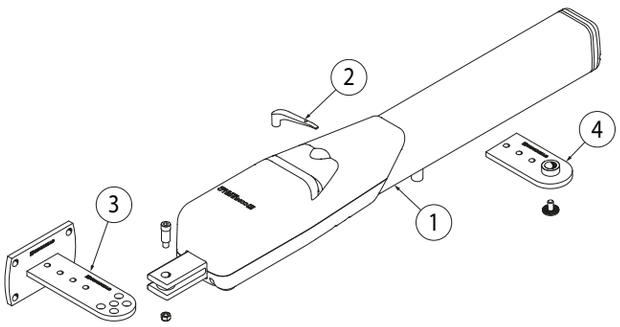


2.2.2 LIMITS OF USE - SKY 500



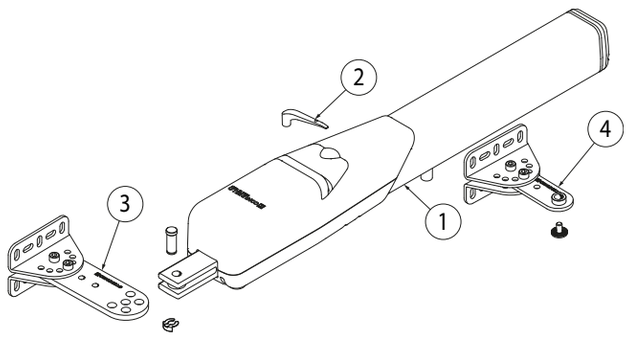
2.3 ACCESSORIES INCLUDED IN SUPPLY

SKY WITH FIXED BRACKETS



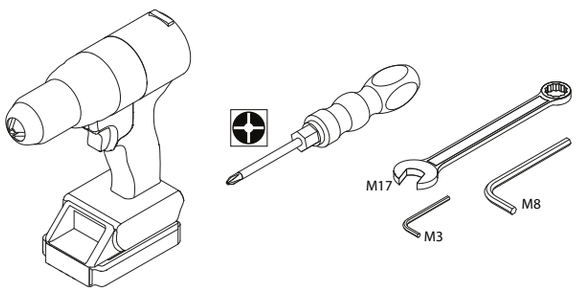
1. **SKY** ACTUATOR
2. RELEASE KEY
3. PILLAR FIXING BRACKET
4. GATE FIXING BRACKET

SKY WITH ADJUSTABLE BRACKETS (ACCESSORY)

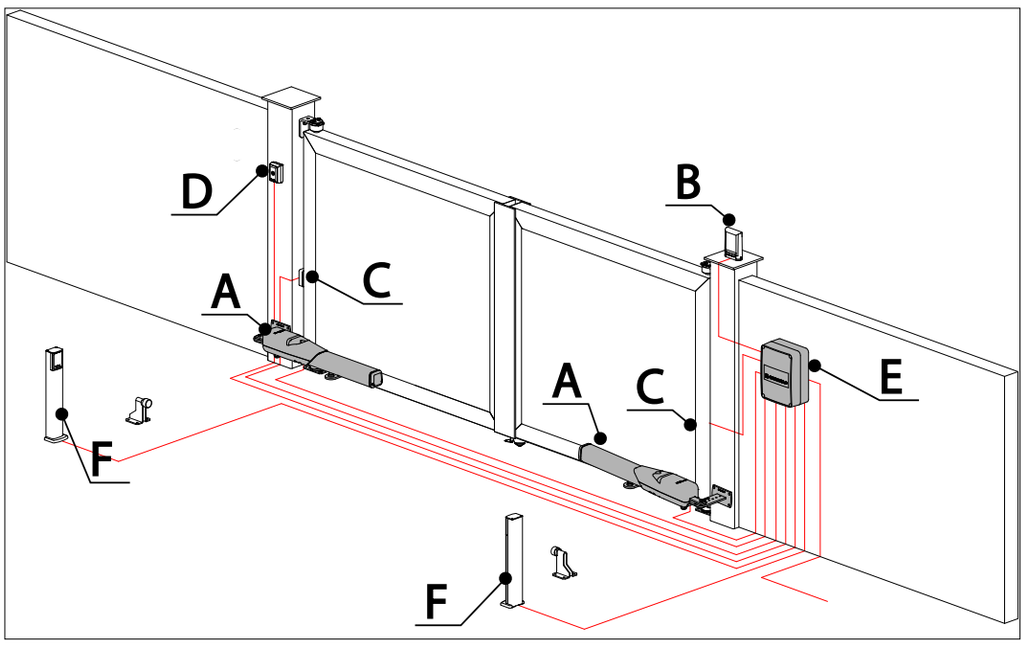


1. **SKY** ACTUATOR
2. RELEASE KEY
3. ADJUSTABLE PILLAR FIXING BRACKET
4. ADJUSTABLE GATE FIXING BRACKET

2.4 TOOLS REQUIRED FOR INSTALLATION



2.5 TYPICAL INSTALLATION



KEY

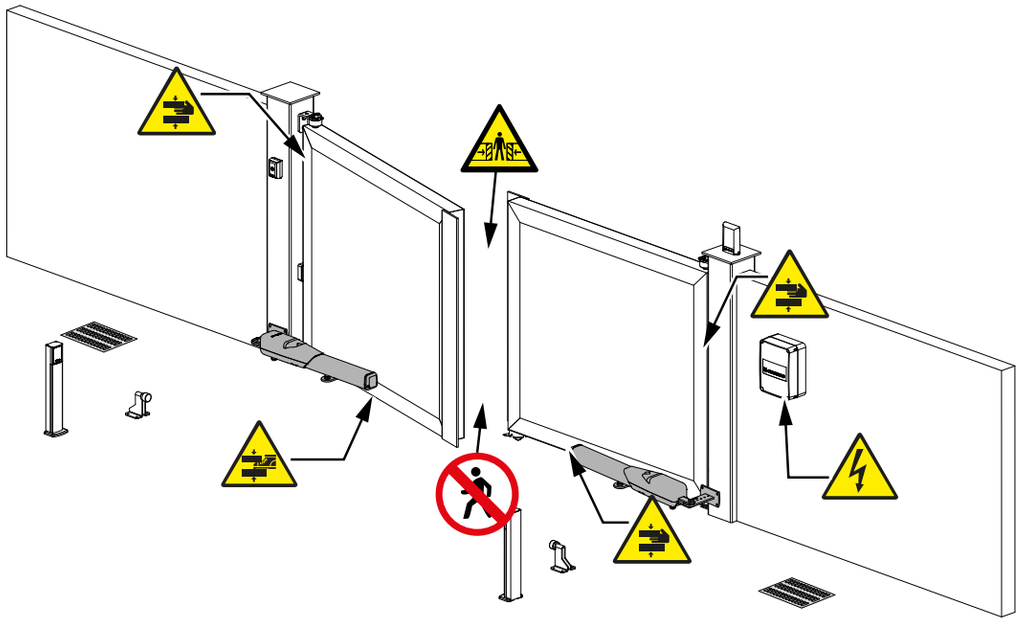
A Actuator
B Flashing light
C Photocell
D Key selector
E Command control unit
F Photocell columns

NOTE

For the type and section of electrical cables to be used, refer to the manual of the Command Control Panel.

3 TECHNICAL CHARACTERISTICS OF THE PRODUCT

3.1 POINTS OF POTENTIAL DANGER TO PERSONS



Voltage risk; Crushing risk; Foot crushing risk; Hand crushing risk; No transit during manoeuvre.

TAB.1

	SKY 220	SKY 300		SKY 500	
Operating power supply	24V ⎓	24V ⎓	230V ~ 50Hz	24V ⎓	230V ~ 50Hz
Power consumption	70 W	110 W	280 W	110 W	280 W
Absorption	3 A	5 A	1.2 A	5 A	1.2 A
Electric motor	Permanent magnets	Permanent magnets	Two-phase asynchronous	Permanent magnets	Two-phase asynchronous
Max Thrust	1500 N	2000 N	1800 N	2000 N	1800 N
Nominal Thrust	500 N	600 N	700 N	600 N	700 N
Starting capacitor	–	–	8 µF	–	8 µF
Stroke	360 mm	360 mm	360 mm	460 mm	460 mm
Speed	15mm/s	22 mm/s	15mm/s	22mm/s	15mm/s
Duty cycle	30%	Intensive	40%	Intensive	30%
Protection rating	IP 44				
Insulation class	II	II	I	II	I
Operating temp.	from -20°C to + 50°C				
Max gate weight	SEE GRAPH				
Mass	7 Kg	7.8 Kg	8.3 Kg	8.8 Kg	9.3 Kg

4 INSTALLATION

4.1 PRELIMINARY CHECKS

Before proceeding with installation, it is necessary to check the integrity of the product components, the suitability of the model chosen and the suitability of the environment intended for installation:

- Check that all the material to be used is in an excellent condition and suitable for the intended use.
- Check that the mechanical structure of the gate is suitable for automation. This product cannot automate a gate that is not already efficient and safe; moreover, it cannot resolve defects caused by incorrect installation of the gate or by insufficient maintenance on it.
- Check that the operating conditions of the devices are compatible with the declared limits of use.
- Manually move the gate doors in both directions and make sure that the force is constant.
- Manually move the gate doors to any position; then leave them still and make sure they do not move.
- Check that the fixing area of the gearmotor is compatible with the overall dimensions of the latter and make sure that there is sufficient space for the complete rotation of its arm.
- Near the gearmotor, make sure that there is sufficient space to perform manual release of the gearmotor.
- Make sure that the surfaces chosen to install the various devices are solid and can guarantee stable fixing.
- Make sure all the devices to be installed are in a protected location in order to minimise the risk of accidental impact.

4.2 LIMITS OF USE

Before installation, check that the motor is correctly sized to the weight and length of the doors and is within the limits of the values provided in chapter **"3 TECHNICAL CHARACTERISTICS OF THE PRODUCT"**, **"2.2.1 LIMITS OF USE - SKY 220 - SKY 300"** and **"2.2.2 LIMITS OF USE - SKY 500"**.

4.3 PREPARATORY WORK FOR INSTALLATION

Referring to FIG.1A and Fig.1B, establish the approximate location where each component provided in the system will be installed and the most appropriate connection layout. Below is a list of the necessary components:

- Electromechanical gearmotors.
- Pair of photocells.
- Pair of opening and closing abutments (for closures greater than 2.5 m).
- Photocell columns.
- Flashing beacon.
- Key selector or digital keyboard.
- Vertical electric lock (recommended for closures exceeding 2.5 m).
- Command unit.

4.4 INWARD OPENING

FIG. 1 A

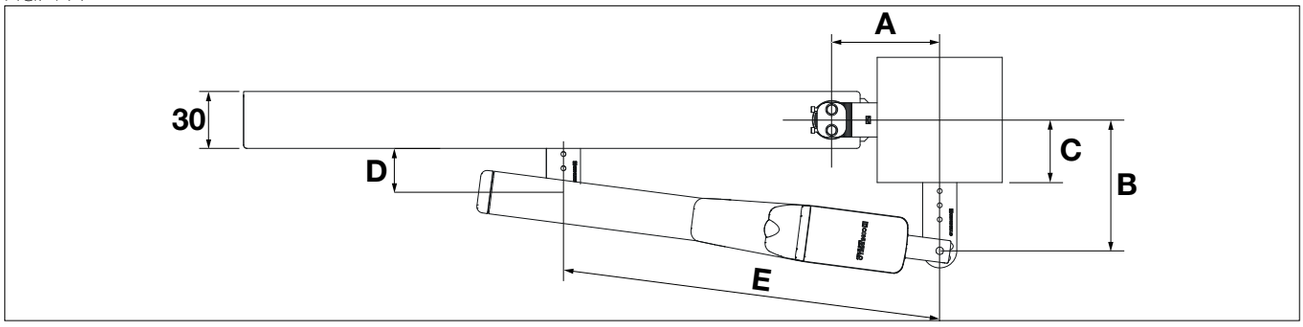
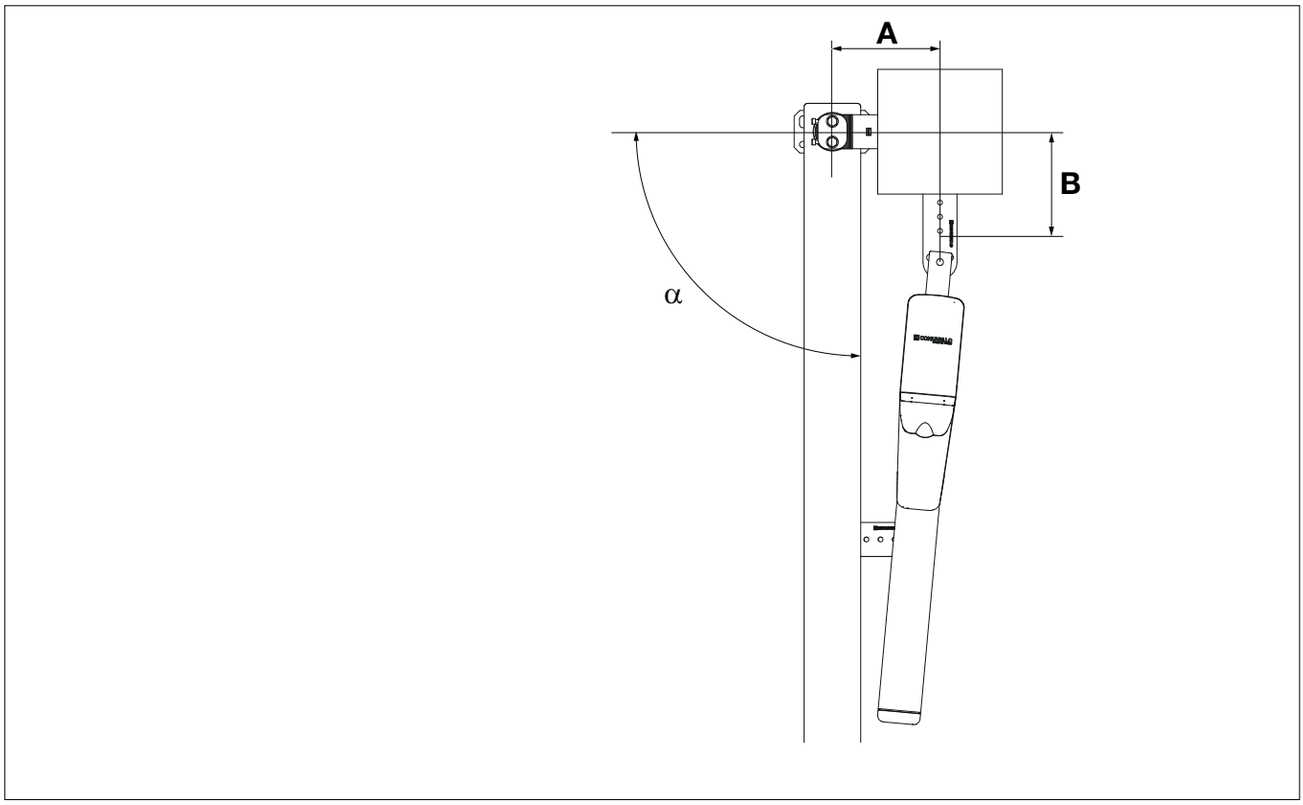


FIG. 1B



TAB.2

INSTALLATION DIMENSIONS BASED ON THE INWARD OPENING ANGLE					
SKY 220 / 300					
Door opening (α)	A	B	E	C	D
90°	100	170	745	25	80
	110	110	745	50	80
	120	120	745	40	80
	130	130	740	20	100
	130	200	745	100	100
	150	200	745	50	100
	130	220	745	75	100
	130	220	745	150	100
100°	120	120	745	25	80
	170	150	740	50	100
	190	130	745	120	90
110°	150	130	745	35	85
	150	150	745	60	90
	170	130	745	35	90

TAB.3

INSTALLATION DIMENSIONS BASED ON THE INWARD OPENING ANGLE						
SKY 500						
Door opening (α)	A	B	E	C	D	Accessory
90°	150	200	845	50	100	
	150	250	845	150	100	
	100	150	840	0	75	
	130	200	840	50	95	
	150	250	845	170	125	AC 85
	150	300	845	200	125	AC 85
	120	200	845	100	100	
115°	150	150	845	0	100	
	180	180	845	100	100	

4.5 INSTALLATION OF THE ACTUATOR MOD. SKY

4.5.1 INSTALLATION

- Manually open the gate as described in chapter **“END USER MANUAL” on page 23**.
- Establish the position of the automatism at a solid crossbar.
- Temporarily attach the Z1 plate to the pillar, which must have a minimum width of 100 mm (FIG. 3)
- Cut and temporarily fix the perforated plate (FIG. 2) considering the dimensions in FIG. 1A and FIG.1B.

FIG. 2

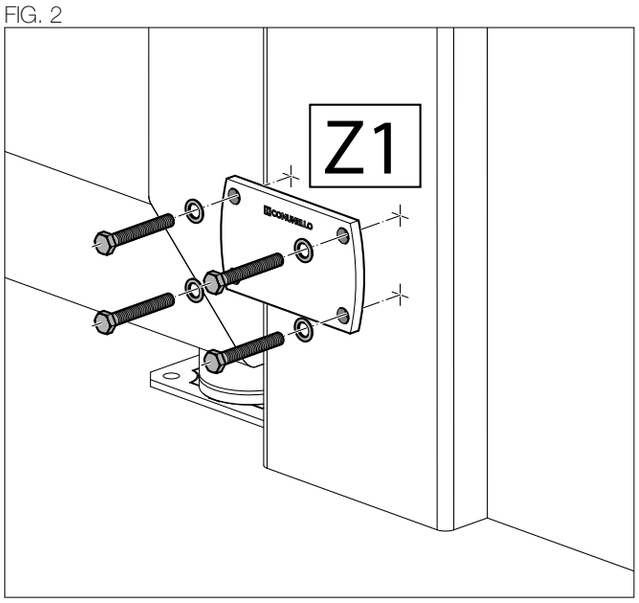
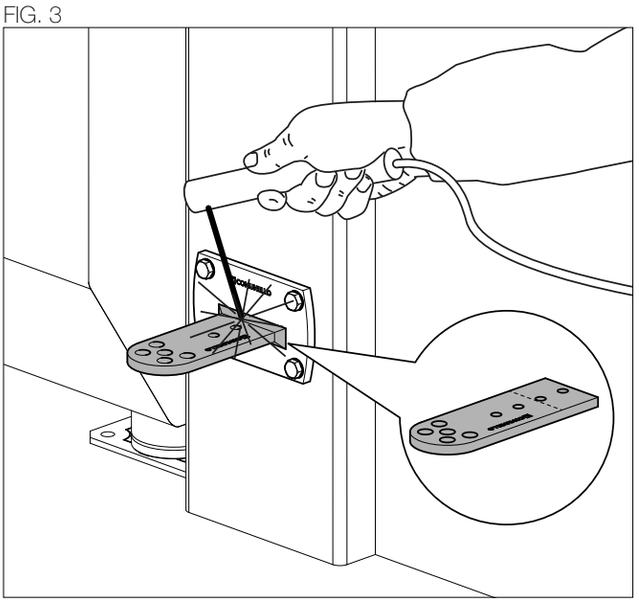


FIG. 3



- When the gate is completely closed, attach the front plate to the door (FIG. 4).
- Weld the perforated plate (FIG. 5) respecting the dimensions in FIG. 1A and FIG. 1B

FIG. 4

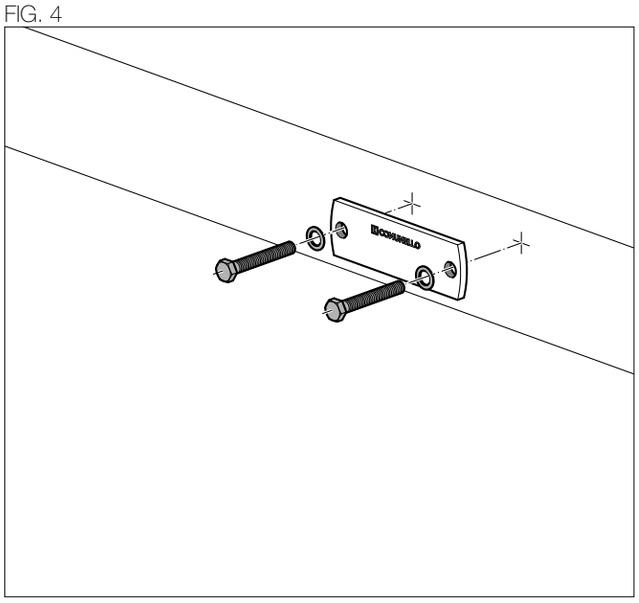
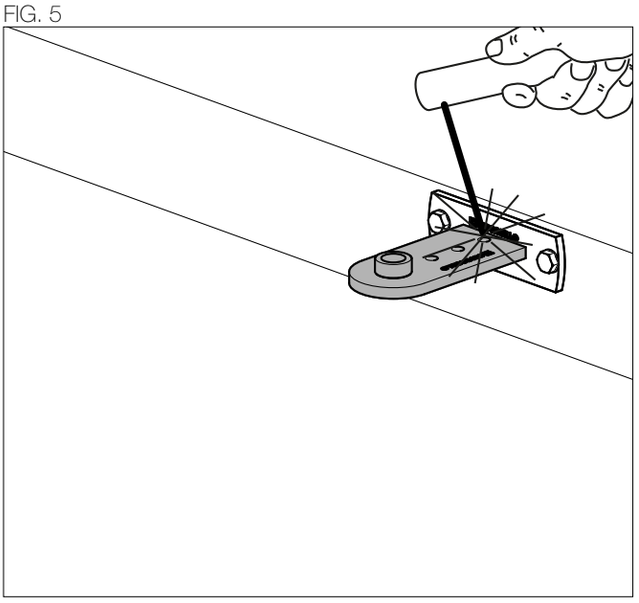
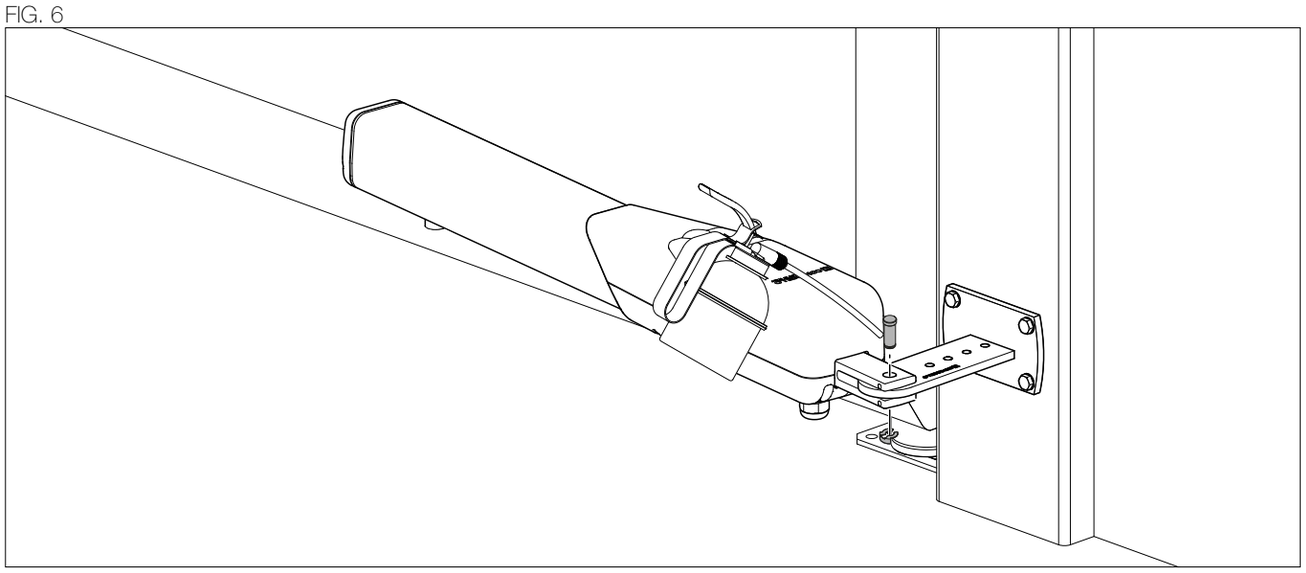


FIG. 5



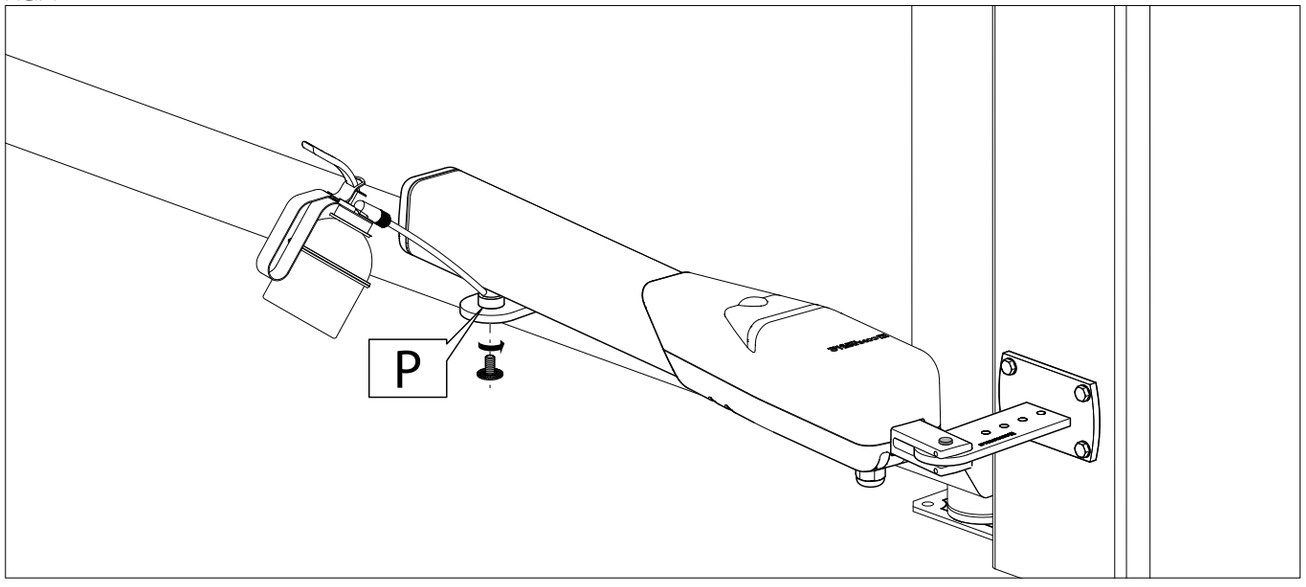
- Attach the motor to the rear bracket by means of the pin and snap ring supplied, lubricating the rotation points (FIG. 6).
- Insert the movable pin P into the hole of the front bracket and fix it with the supplied screw (FIG. 7).

FIG. 6



- With the motor unlocked, manually check that the door reaches the predetermined opening and closing positions and that the actuator does not interfere with the door or the pillar.
- Proceed with the electrical connections as specified in Figure 13.
- Lock the motor as specified in **“4.5.4 MANUAL MOTOR RELEASE” on page 35**.
- Perform a number of subsequent manoeuvres to verify that the installation is performed to a professional standard.

FIG. 7



- The holes on the bracket fixing plate allow a further variation of the opening angle of the door.

NOTES

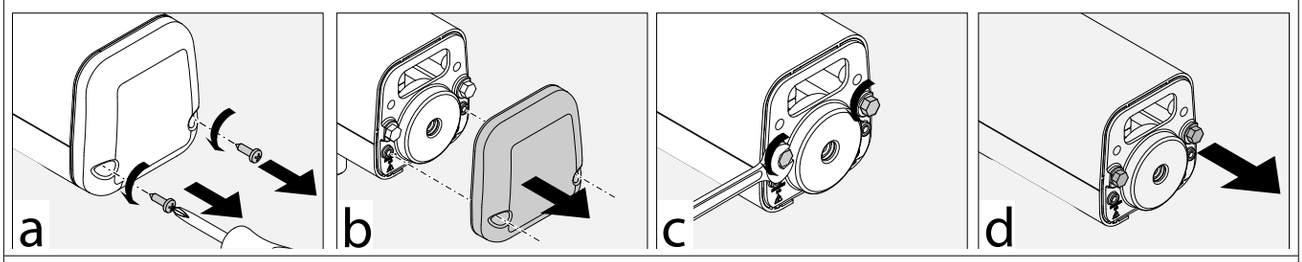
In the case of outward openings, fix the rear bracket by fastening it to the pillar (in “TAB.5” on page 10 dimensions indicated using the AC 85 bracket, plate not included).

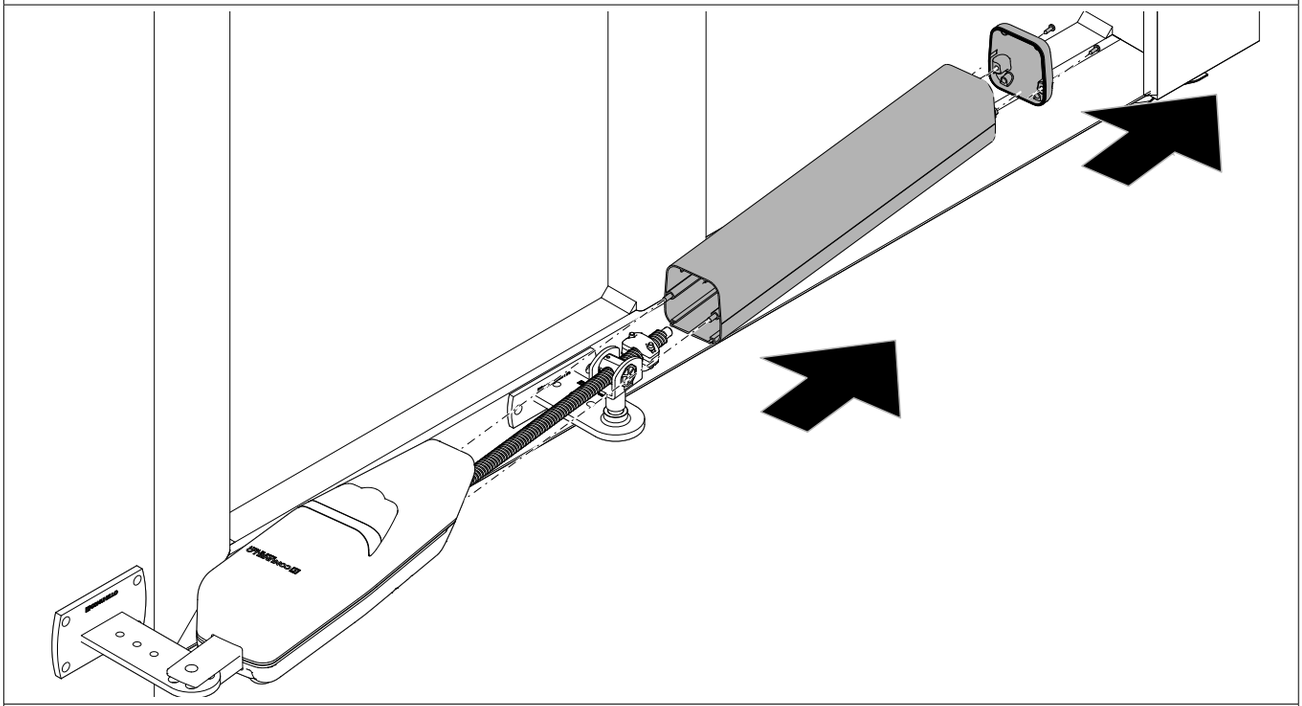
For models without electric limit switches, it is essential to always provide a mechanical opening and closing abutment that is securely fixed to the ground, equipped with an elastic element (e.g. rubber) that cushions the door when it touches the abutment. The installation of ground limit switches is in any case highly recommended.

The manufacturer cannot be held responsible in any way for damage caused by failure to comply with the dimensions indicated in “TAB.5”.

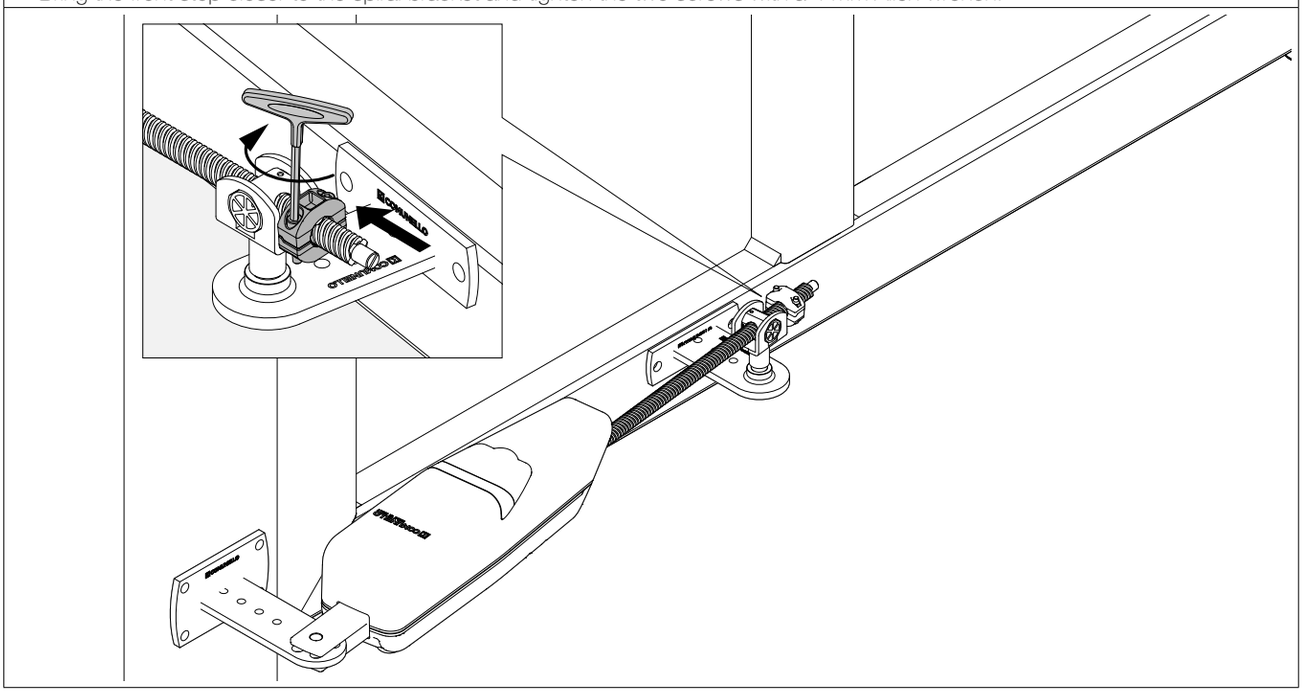
4.5.2 MECHANICAL STOP ADJUSTMENT

a) Loosen the two screws with a Phillips screwdriver
b) Remove the aluminium cover head
c) Unscrew the two tie rods
d) Remove the extrudate with flange and tie rods

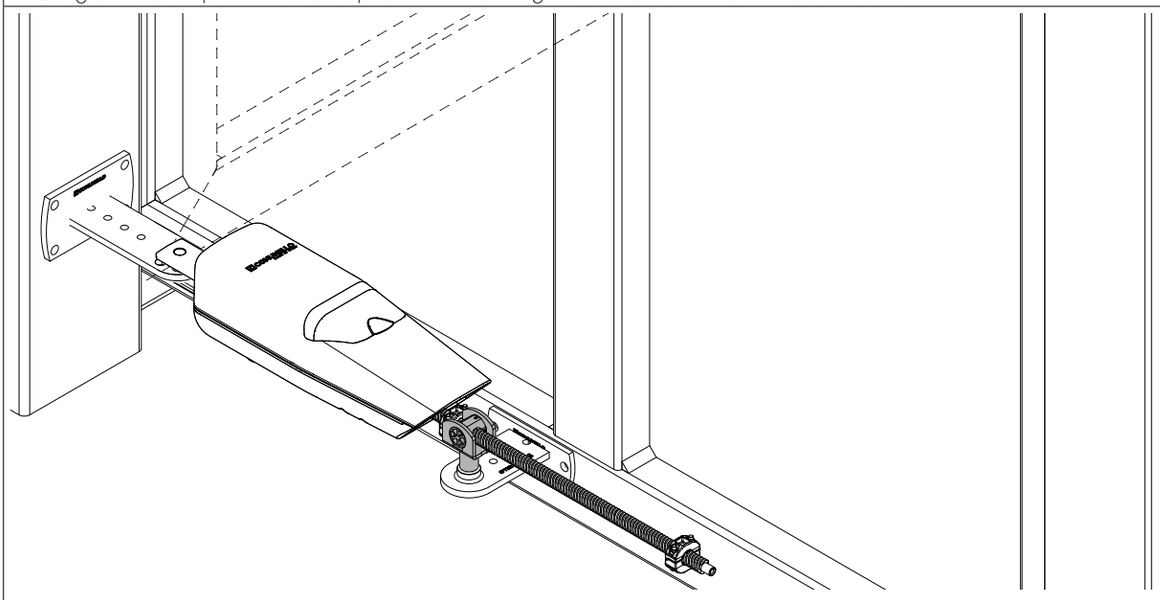


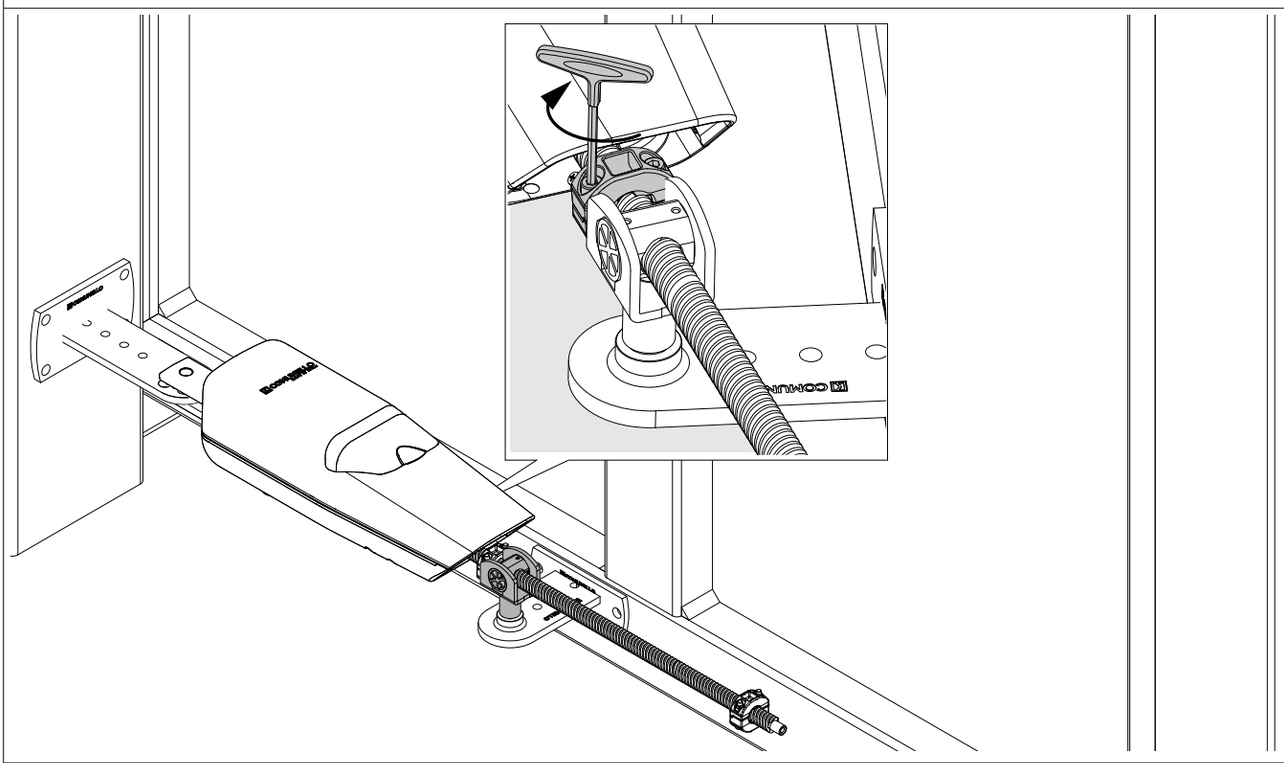


- After releasing the motor, manually turn the gate leaf to the closed position.
- Bring the front stop closer to the spiral bracket and tighten the two screws with a 4 mm Allen wrench.

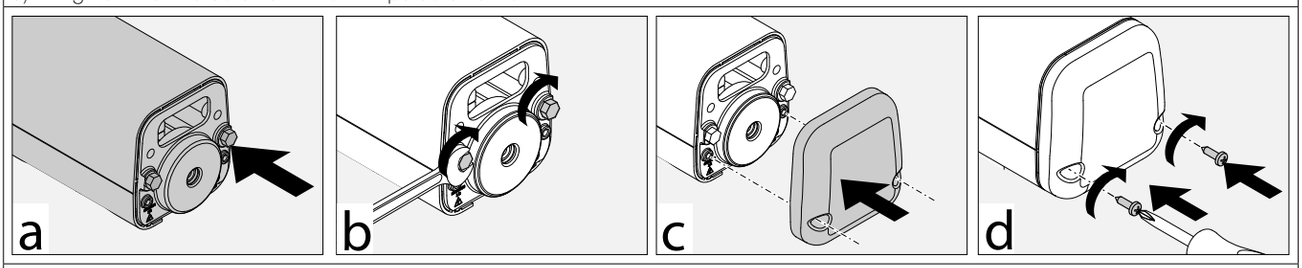


- Manually move the gate door to the open position.
- Bring the rear stop closer to the spiral bracket and tighten the two screws with a 4 mm Allen wrench.





a) Introduce the extrudate with flange and tie rods
b) Screw the two tie rods
c) Reposition the cover aluminium head
d) Tighten the two screws with a Phillips screwdriver



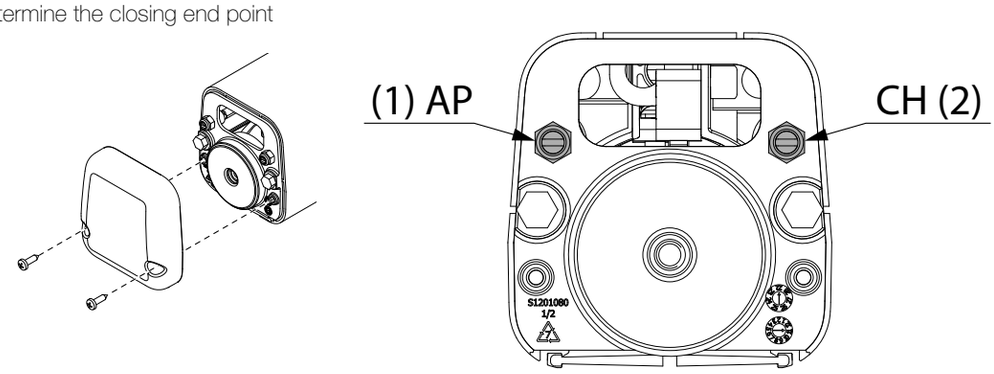
- Remove the manual mode and lock the motor

4.5.3 ELECTRONIC LIMIT SWITCHES

The **SKY** actuator can be provided with electronic limit switches.

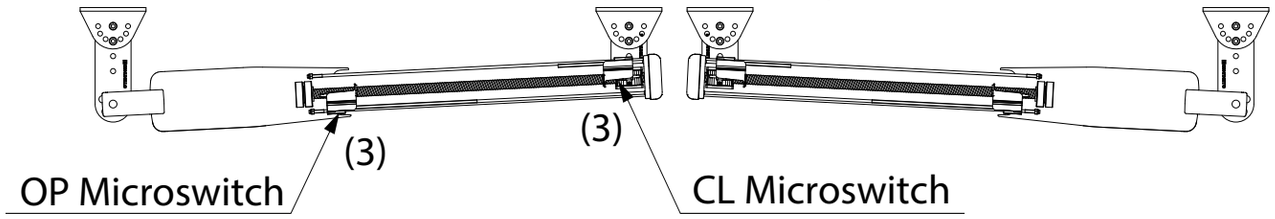
Determination of limit switch points with limit switch micro

5) Rod to determine the opening end point
6) Rod to determine the closing end point



7) Limit switch microswitches

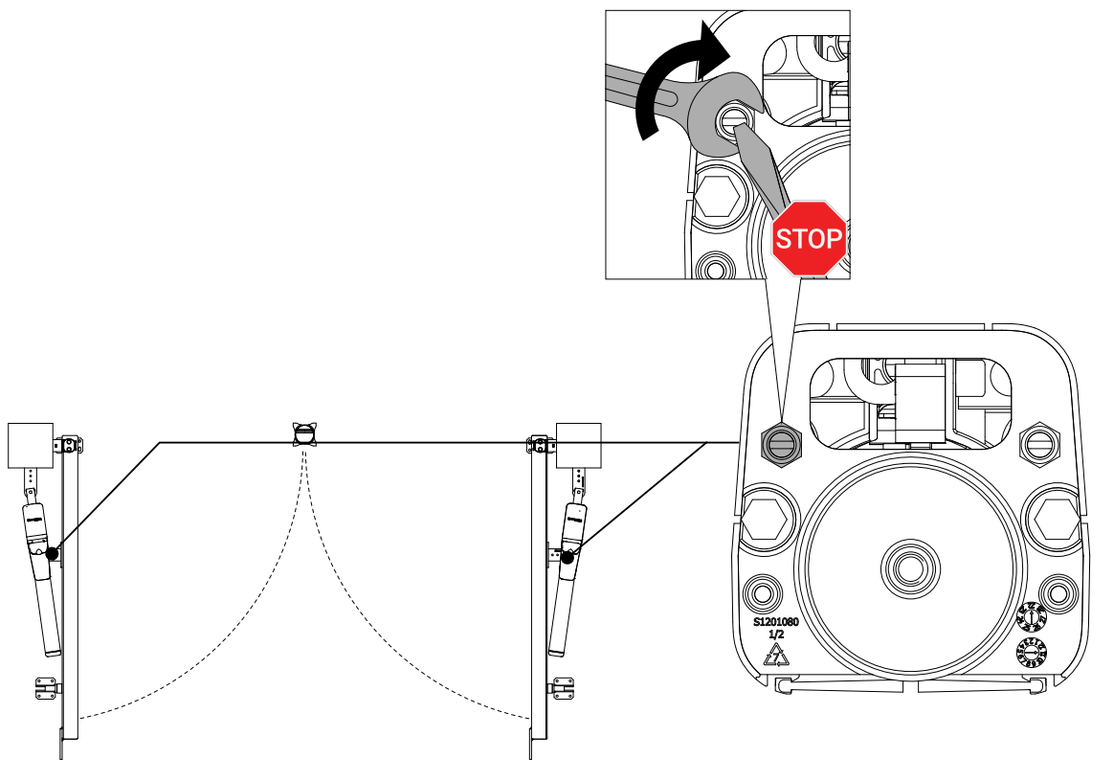
The microswitches are positioned at the ends of their stroke.
To move the microswitch in one direction or the other by 10 mm, it is necessary to screw the rod 20 times.



Determination of the opening limit switch points

Release the gearmotor.
Open the gate manually.
Turn the rod CLOCKWISE to determine the opening limit switch point until the micro switch clicks.

After adjustment, tighten the nut.



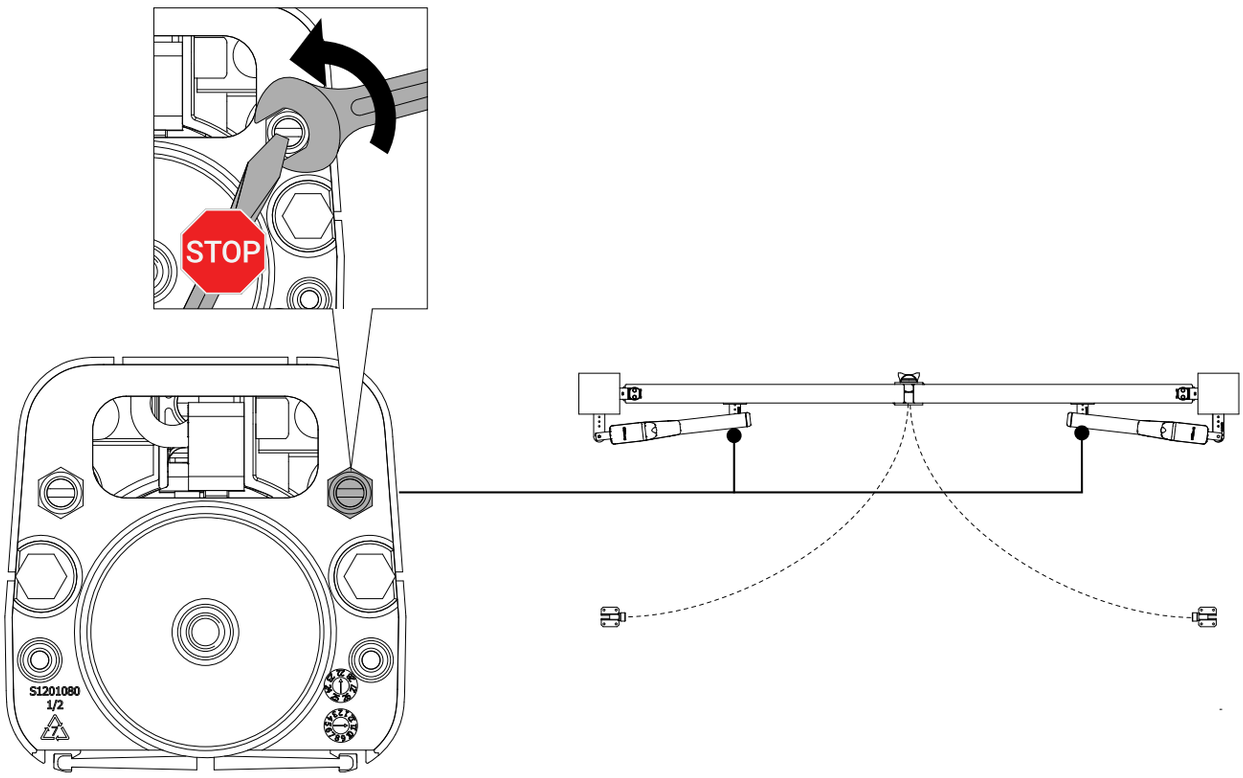
Determination of the closure limit switch points

Release the gearmotor.

Close the gate manually.

Turn the rod ANTI-CLOCKWISE to determine the closure limit switch point until the micro switch clicks.

After adjustment, tighten the nut.



4.5.4 MANUAL MOTOR RELEASE

The manual unlock procedure is activated when the gate needs to be manually opened. Activation of the unlock procedure may cause uncontrolled gate movements in the case of imbalances or mechanical faults.

To unlock the motor proceed as follows:

- Open the plastic door, extract the release lever from the appropriate compartment and insert it into the release pin (FIG. 8).
- Turn the handle clockwise (FIG. 9).

FIG. 8

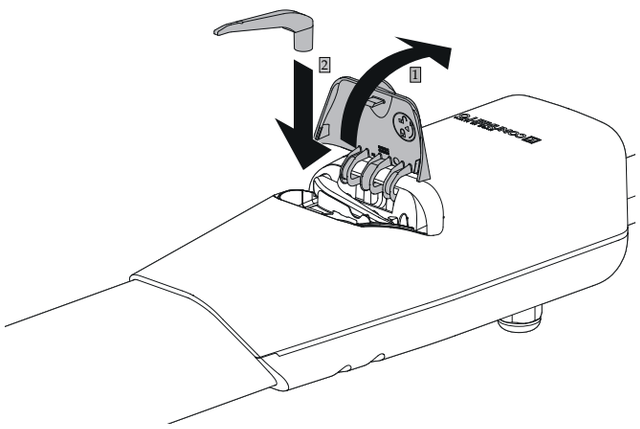
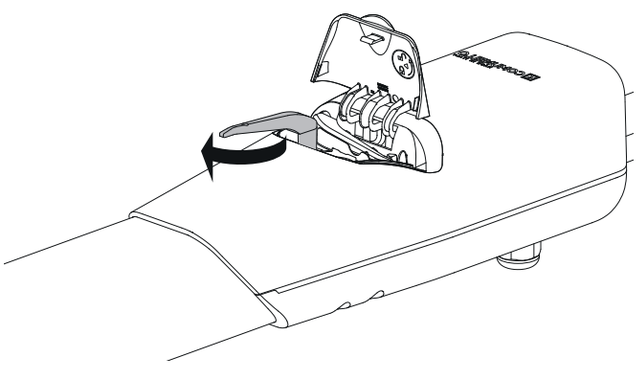


FIG. 9



- In this way the gear is neutralised, thus allowing manual opening of the gate (FIG. 10).
- To reset the motorised control, turn the handle to the start position by turning it anti-clockwise.
- Remove the handle and place it in the appropriate support, then lower the door (FIG. 11).

FIG. 10

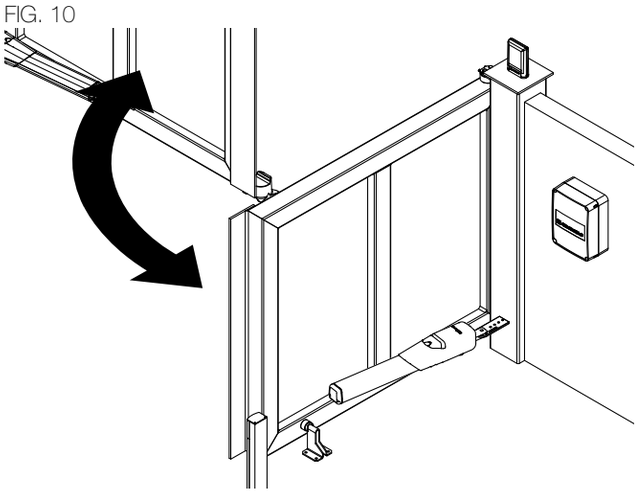
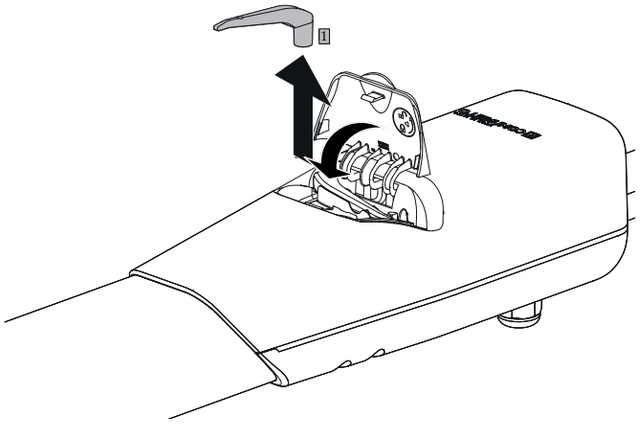


FIG. 11



5 SET-UP FOR ELECTRICAL CONNECTIONS

ATTENTION

For connection to the mains, use a multicore cable provided for by legislation in force and as per the control unit manual.

- Remove the line voltage and, if present, disconnect the batteries.
- Perform the manual unlock procedure as described in section 4.5.4.
- Loosen the screws of the terminal block and remove it as shown in FIG. 12.
- Loosen cable gland "G" located at the bottom of the terminal block. FIG. 12.
- Insert the power cable FIG. 13.

FIG. 12

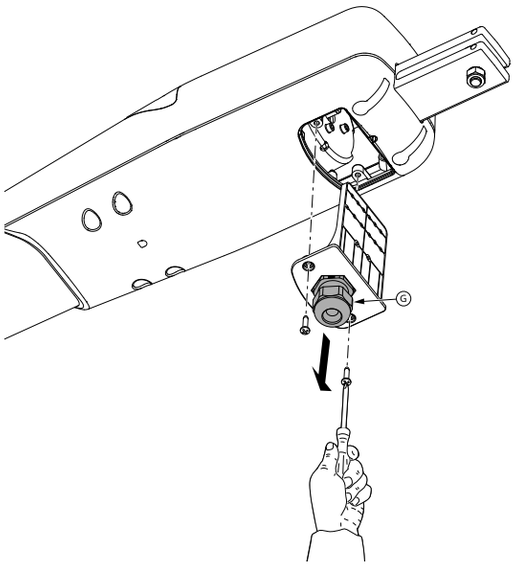
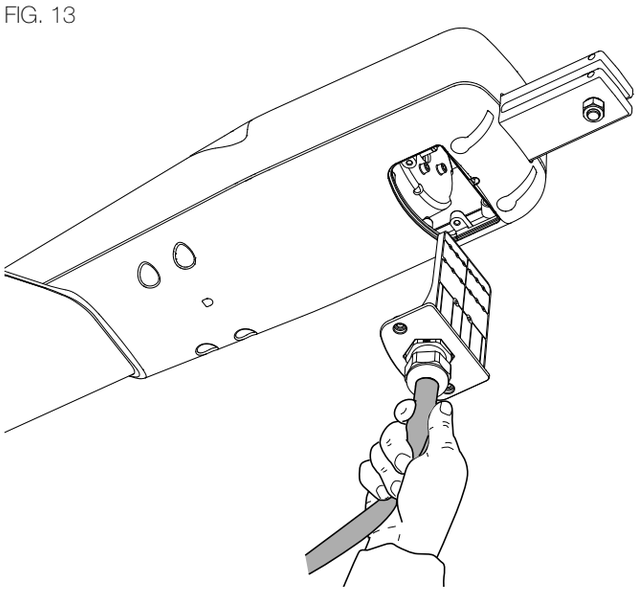
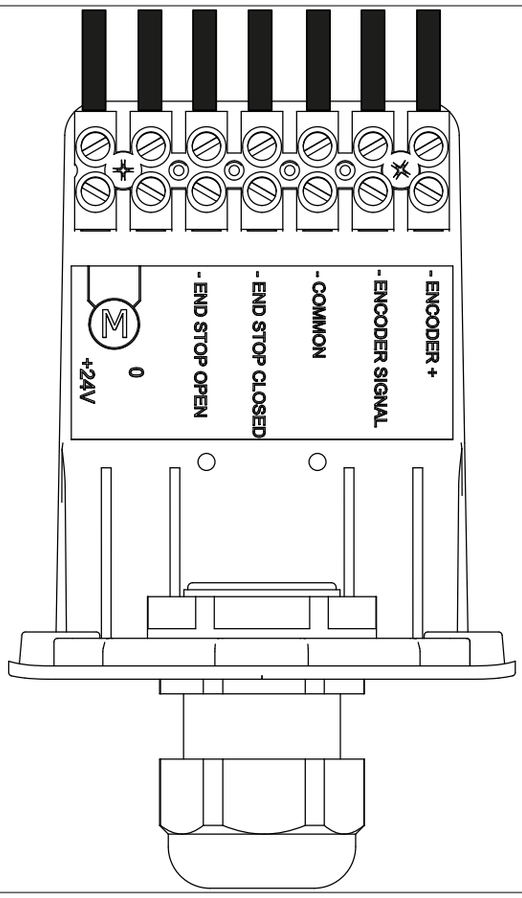


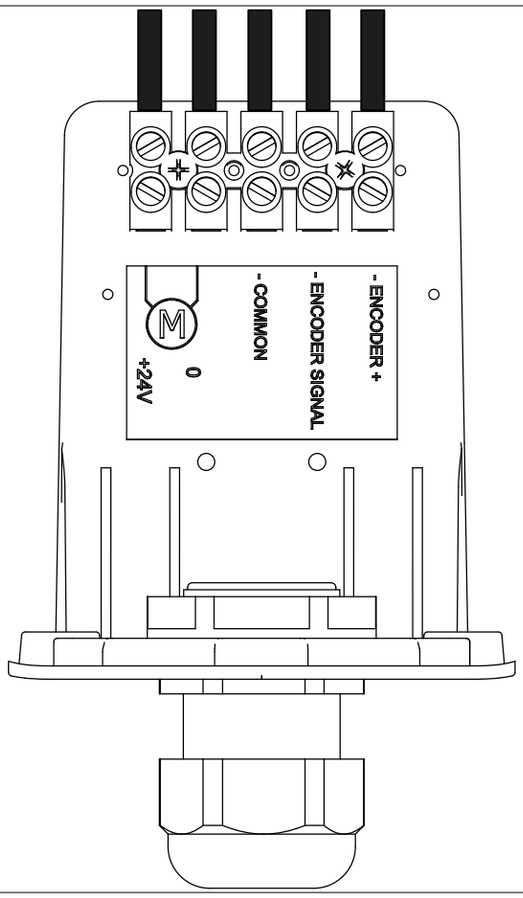
FIG. 13



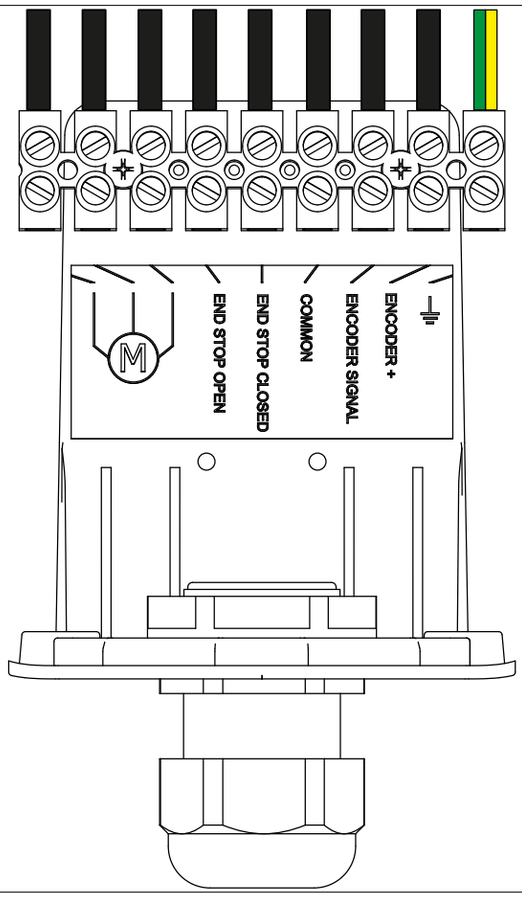
24+FE+E



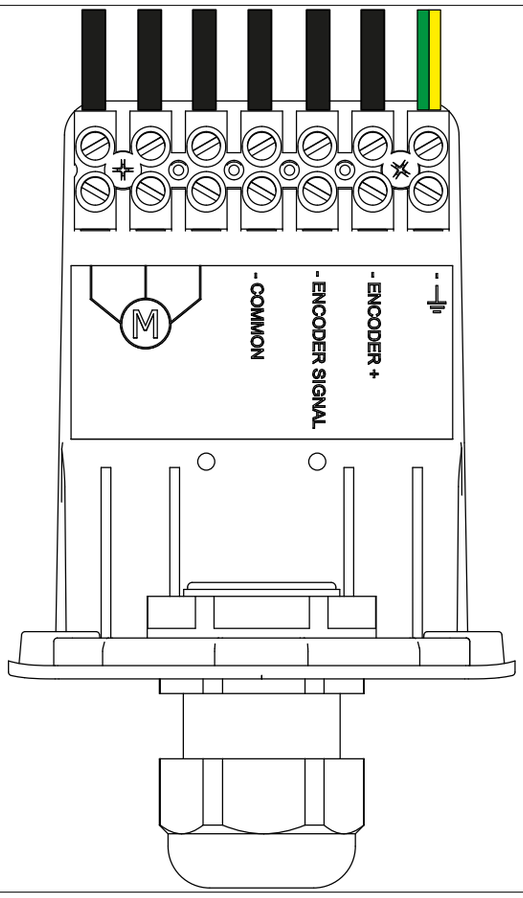
24+E



230+FE+E



230+E



- Connect the wires to the terminal block as indicated on the label.
- Ground the relevant terminal.(for class I models).
- Secure the cable by tightening the cable gland.
- Reinsert the terminal block into the appropriate compartment, screwing it into place FIG. 12.

6 TESTING

Each single element of the automation, for example the safety edges, photocells, emergency stop, etc., requires its own commissioning; for these devices, the procedures reported in the respective instruction manuals must be carried out. For **SKY** commissioning, perform the following sequence of operations:

- Check that all the provisions of this manual and in particular in chapter 1 "Warnings" have been strictly respected.
- Using the supplied control or stop devices (key-operated switch, control buttons or radio transmitters), test gate opening, closure and stoppage and check that the gate acts as expected.
- Check the correct operation of all safety devices in the system one by one (photocells, safety edges, emergency stop, etc.).
- If the dangerous situations caused by the movement of the door have been safeguarded by limiting the impact force, the force measurement must be performed in accordance with the EN 12445 standard.

7 PRODUCT MAINTENANCE

Lubricate the rod as required.
Maintenance must be regularly carried out by qualified personnel in accordance with the legal and regulatory provisions in force. For **SKY**, routine maintenance must be carried out at most within 6 months or 10,000 manoeuvres after the last servicing.

- Disconnect the motor from all power supplies.
- Check all the moving parts and replace any worn parts.
- Check all parts of the automation system for signs of deterioration.

Every 20,000 cycles and in any case every 6 months of activity, the following maintenance interventions are mandatory:

- Perform a general and complete check of the tightening of the bolts;
- Lubricate all moving mechanical parts;
- Check the correct functioning of the signaling and safety devices;
- Check the state of wear of the moving mechanical parts and verify their correct functioning;
- Check the efficiency of the release device by performing a manoeuvre with the leaf free. The door must not encounter any obstacles;
- Check the integrity of the cables and their connections.
- Open the release door and clean away any dirt present.

8 SPARE PARTS

It is possible to purchase spare parts. When this is necessary, contact **the COMUNELLO Service department through our contact details https://www.comunello.com/service/assistance/**

9 DISPOSAL

At the end of its useful life the automation system must be dismantled by qualified personnel and the materials must be recycled or disposed of in compliance with the local legislation in force.

10 WARRANTY

1 - This warranty supplied as part of commercial dealings or the sale of goods for professional use, is limited to the repair or replacement of Product parts recognised by FRATELLI COMUNELLO SPA as defective with equivalent repaired Products (hereinafter “Standard Warranty”). The warranty does not cover the costs incurred by the repair and replacement of materials (for example, cost of labour, material rental, etc.).

2 - The application of the discipline dictated by articles 1490-1495 of the Italian Civil Code is excluded.

3 - FRATELLI COMUNELLO SPA warrants the proper operation of the products within the limits indicated in 1 above. Unless otherwise agreed, the Standard Warranty is valid for a period of 24 (twenty-four) months from the date of production, indicated on the Products themselves. The Warranty is valid and binding for COMUNELLO only if the product is correctly assembled and serviced in accordance with the rules of installation and safety indicated in the documentation provided by COMUNELLO or in any case available on the website http://www.comunello.com/it/corporate/condizioni-generali/

4 - The warranty does not cover: faults or damage due to transportation; faults or damage caused by defects in the electric supply system installed at the premises of the purchaser of the Product and/or negligence, inadequacy or improper use of that system; faults or damage resulting from tampering on the part of unauthorised personnel or as a result of incorrect use/installation (in this regard, we recommend that the system be serviced at least every six months) or utilisation of non-original spare parts; defects caused by chemical agents and/or atmospheric conditions.
The warranty does not cover the cost of consumables, in any case COMUNELLO accrues credit for the intervention carried out at the client premises, in the event the latter proves useless because the warranty was no longer valid or because the client had used the COMUNELLO product in a negligent, careless or inexperienced manner, such that correct use of the product would have prevented the need for installation.

5 - Implementation of warranty: unless otherwise agreed, the right to claim under the Standard Warranty is exercised by submitting a copy of the purchase document (tax invoice) to COMUNELLO. The Client must report the defect to COMUNELLO within a period of 30 (thirty) days from its discovery.
Action must be taken within the statutory limitation period of 6 (six) months from the date of discovery. The parts of the Product for which a claim is made under the Standard Warranty must be sent by the Client to FRATELLI COMUNELLO SPA, Via Cassola 64, 36027 Rosà (VI) – Italy.

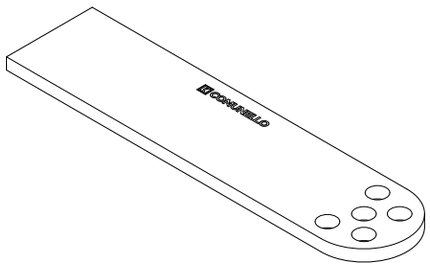
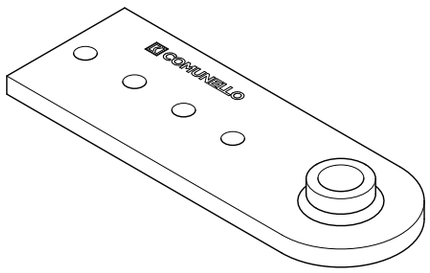
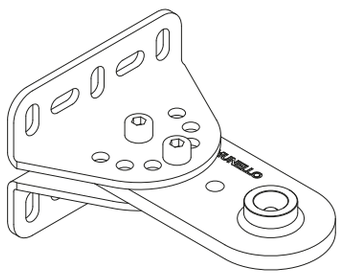
6 - The Client cannot claim compensation for consequential damage, loss of profit, loss of production and in any case cannot claim for sums higher than the value of the supplied components or Products. All expenses relating to the transportation of Products to be repaired or repaired, even if covered by the Standard Warranty, shall be borne by the Client.

7 - No external operations carried out by COMUNELLO technical personnel are covered by the Standard Warranty.

8 - Specific modifications to the terms of the Standard Warranty described herein may be established by the parties in their sales agreements.

9 - In case of legal disputes of any nature, Italian law shall apply and the competent forum shall be the Court of Vicenza.

11 OPTIONAL ACCESSORIES

AC-80 Outward opening bracket	
AC-85 Outward opening bracket	
Front and rear adjustable brackets	

NOTES

COMUNELLO
AUTOMATION

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dalle 08:30 alle 13:00
dalle 14:00 alle 17:30
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