COMUNELLO
AUTOMATION

HYRON 220 / 300 / 500

IT Attuatore elettromeccanico con pistone telescopico per anta battente

EN Electromecanical actuator with telescopid rod for swing gates

FR Actionneur électromécanique avec piston télescopique pour porte battante

ES Actuador electromecánico con pistón telescópico para puerta batiente

PT Atuador eletromecânico com pistão telescópico para folha de batente

DE Elektromechanischer Aktuator mit teleskopischem Kolben für Flügeltor

RU Электромеханический привод с телескопическим поршнем для распашных ворот

CE

MADE IN ITALY

ISTRUZIONI D'USO E DI INSTALLAZIONE
INSTALLATION AND USER'S MANUAL
INSTRUCIONS D'UTILISATION ET D'INSTALLATION
INSTRUCCIONES DE USO Y DE INSTALACION
MANUAL DE INSTRUÇÕES DE UTILIZAÇÃO
INSTALLATIONS-UND GEBRAUCHSANLEITUNG
ИНСТРУКЦИЯ ПО МОНТАЖУ

91300622 - Rev. 01 - 20.02.25

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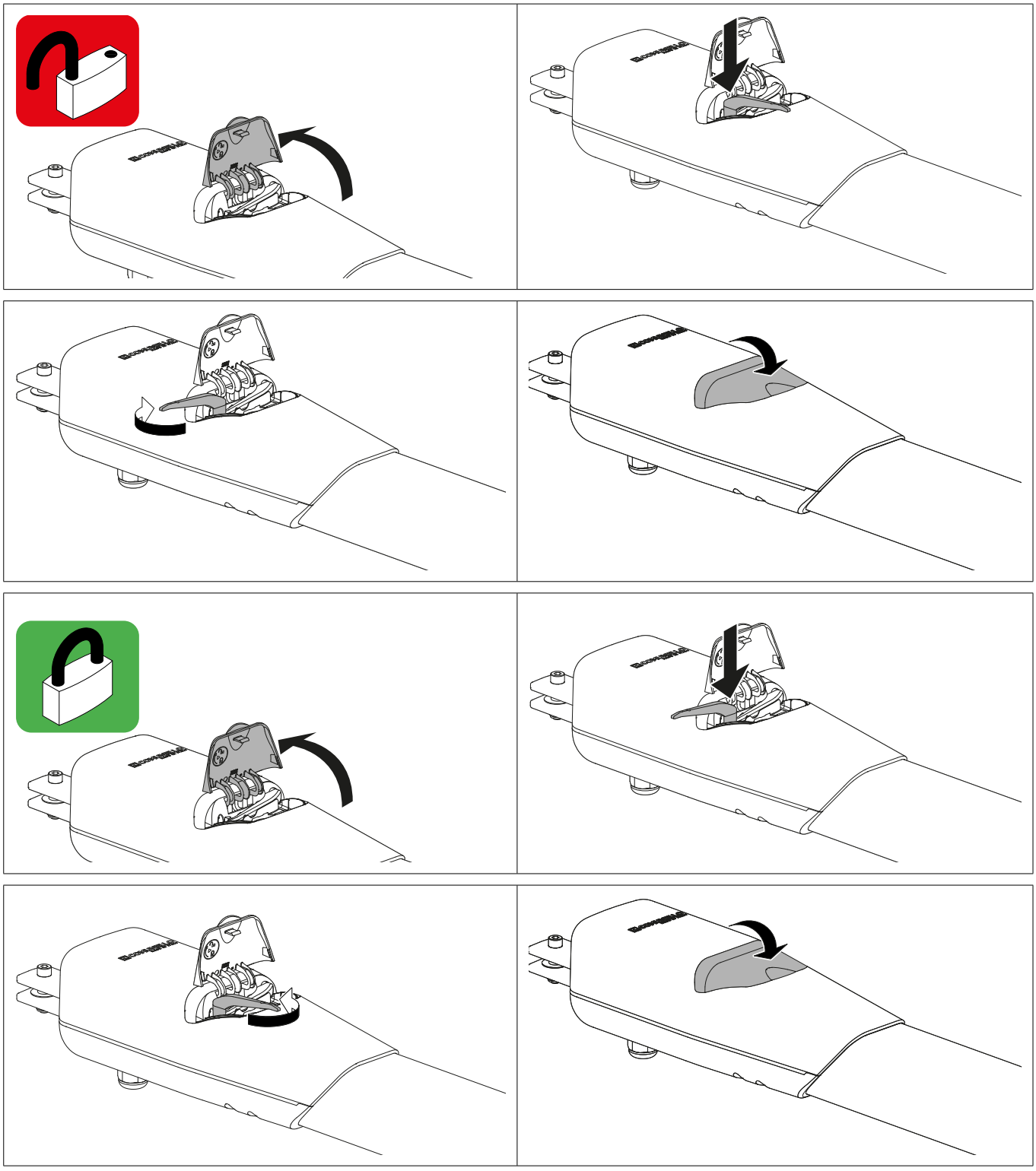

1 PRESCRIPTIONS

1.1 SAFETY WARNINGS

This installation manual is only intended for professional 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. Keep this manual for future reference. The design and construction of the devices fitted on the **HYRON** model as well as this manual are in full compliance with statutory legislation. Considering the risk situations that may occur during the installation and use of **HYRON**, 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.
HYRON is a CE-marked product. Fratelli COMUNELLO SPA ensures product compliance with the European Directives 2006/42/EC on machine safety, with the 2004/108/EC on electromagnetic compatibility and with the 2006/95/EC on 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 **HYRON** according to the specific situation of use.
- The automation must not be used before commissioning as specified in paragraph 4.
- The packaging material must be disposed of in full compliance with the current legislation.

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 **HYRON** in such conditions may generate potentially hazardous situations.
- Keep all parts of the **HYRON** 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.
- In case of long periods of non-use, to avoid the risk of leakage of harmful substances from the battery, it is preferable to remove it and store it in a dry place.
- All product maintenance operations of the **HYRON** 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.

EC 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 rod automation for swing gates.**
Model **HYRON 220 / 300 / 500**
complies with the legislative provisions transposing the following directives:

- Directive 2004/108/EC (EMC Directive) and subsequent amendments;
- Directive 2006/95/EC (Low Voltage Directive) and subsequent amendments;

and that all the following standards and/or technical specifications have been applied
EN 61000-6-3
EN 61000-6-2
EN 60335-1
EN 60335-2-103
and subsequent amendments
Last two digits of the year in which the CE marking was affixed **22**

Rosà (VI) – Italy - 01-09-2014
Moreover, the undersigned also declares that it is prohibited to place the machinery into operation until such time as the machine into which it will be incorporated, or of which it will become a component, has been identified and declared as conforming to the provisions of Directive 2006/42/EC and the national legislation transposing said directive.

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

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Fratelli Comunello S.p.A.
Company with certified Quality Management System
UNI EN ISO 9001:2015.

2 PRODUCT DESCRIPTION AND INTENDED USE

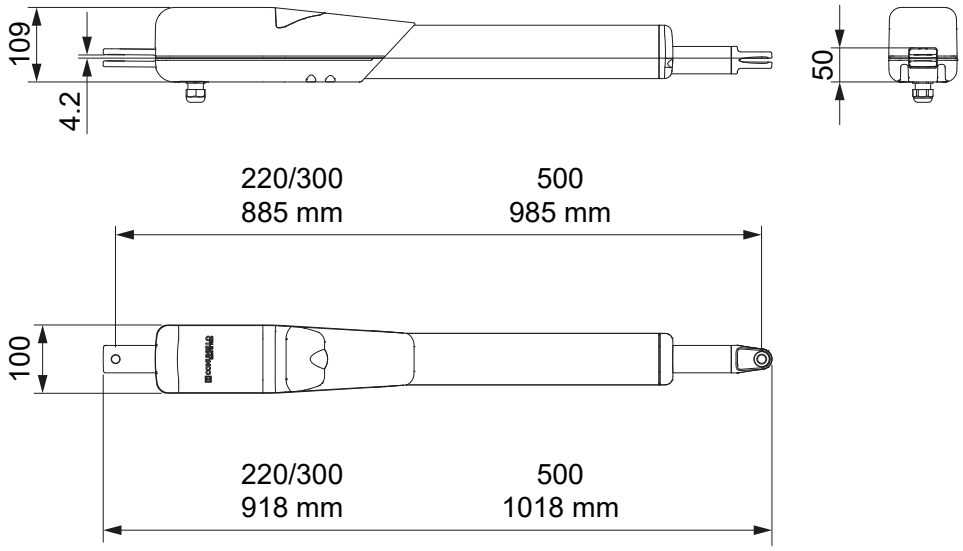
2.1 DESCRIPTION

Ambidextrous telescopic electromechanical actuator for swing-leaf gates. The Hyron automation transmits motion to the leaf via a trapezoidal screw system and telescopic rod. The practical built-in release device is used to manually move the gate in the event of a power failure.

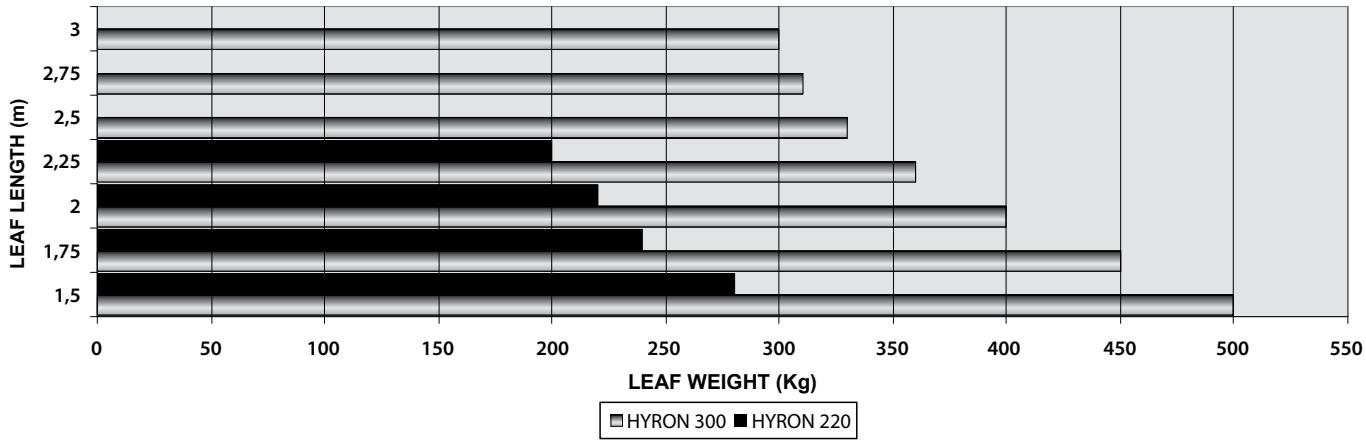
HYRON identifies a family of actuators with different characteristics based on the power supply voltage and on the presence or absence of electronic limit switches.

All the **HYRON** models in production are listed in **"TAB.1" on page 23**.

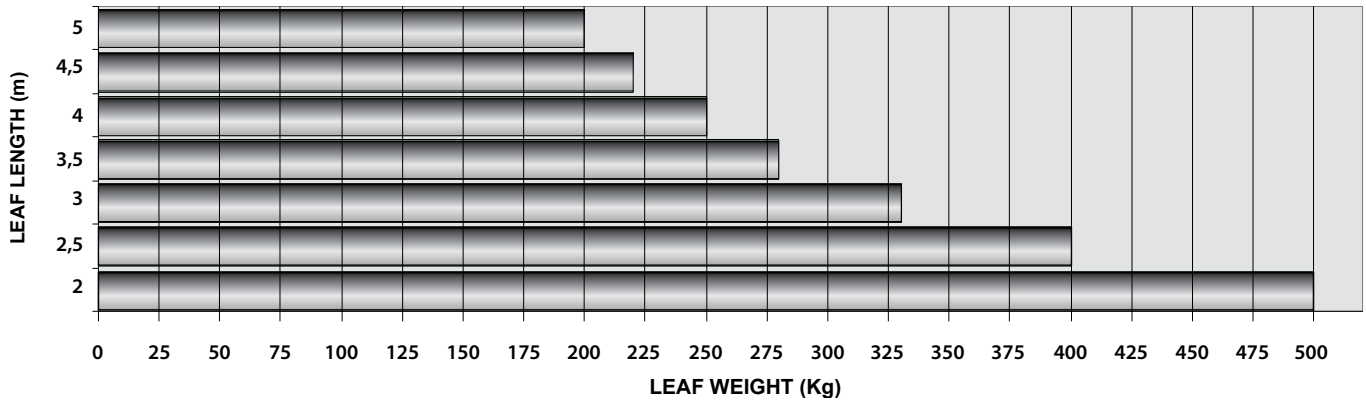
2.2 DIMENSIONS



2.2.1 LIMITS OF USE - HYRON 220 - HYRON 300

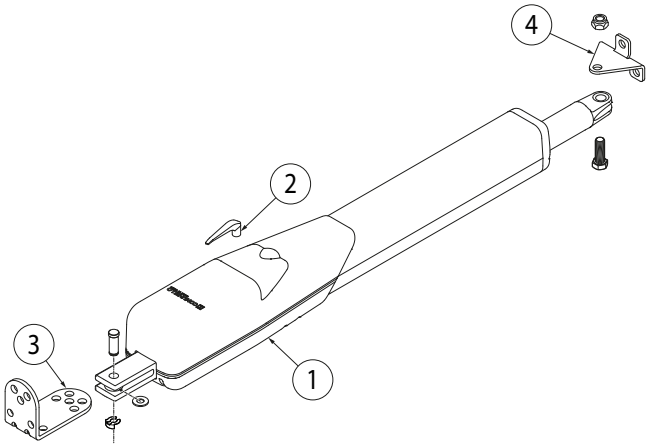


2.2.2 LIMITS OF USE - HYRON 500



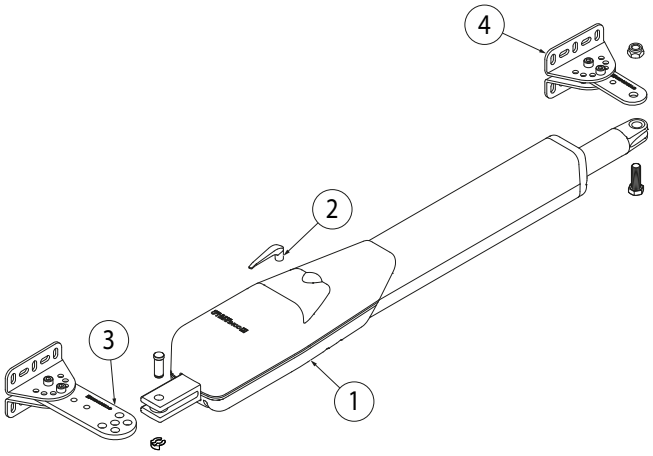
2.3 ACCESSORIES INCLUDED IN SUPPLY

HYRON WITH FIXED BRACKETS



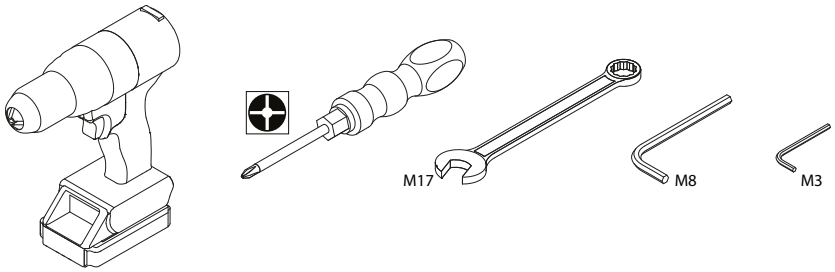
1. HYRON ACTUATOR
2. RELEASE KEY
3. STANDARD BRACKET FOR FIXING TO THE PILLAR
4. STANDARD GATE FIXING BRACKET

HYRON WITH ADJUSTABLE BRACKETS (ACCESSORY)

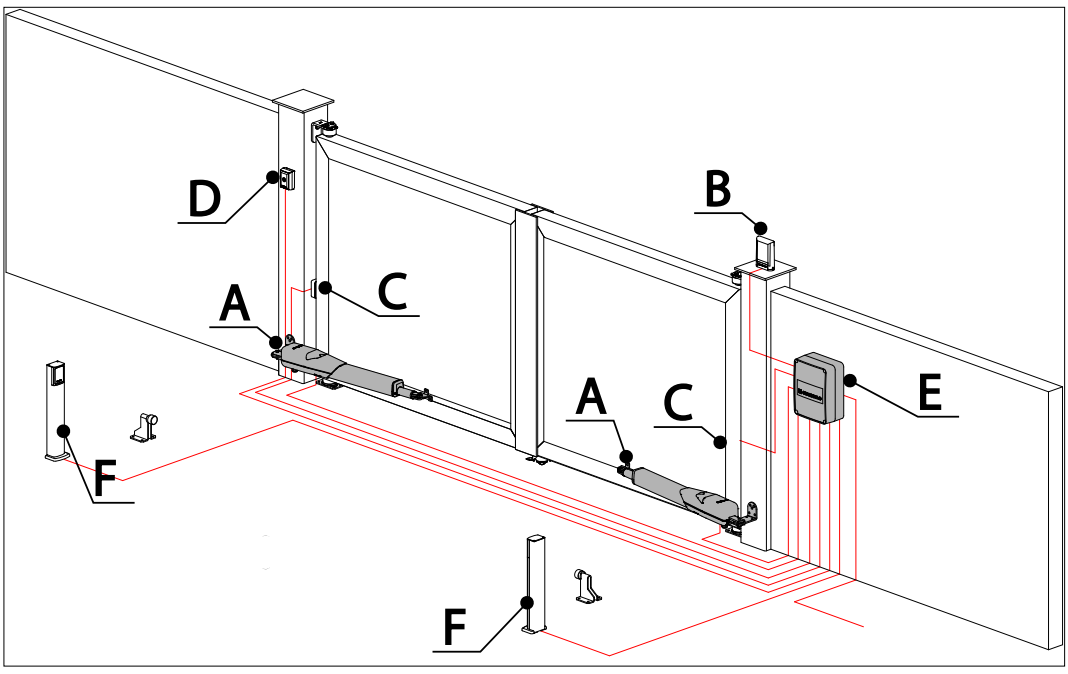


1. HYRON ACTUATOR
2. RELEASE KEY
3. ADJUSTABLE PILLAR FIXING BRACKET
4. ADJUSTABLE GATE FIXING BRACKET

2.4 TOOLS REQUIRED FOR INSTALLATION



2.5 TYPICAL INSTALLATION



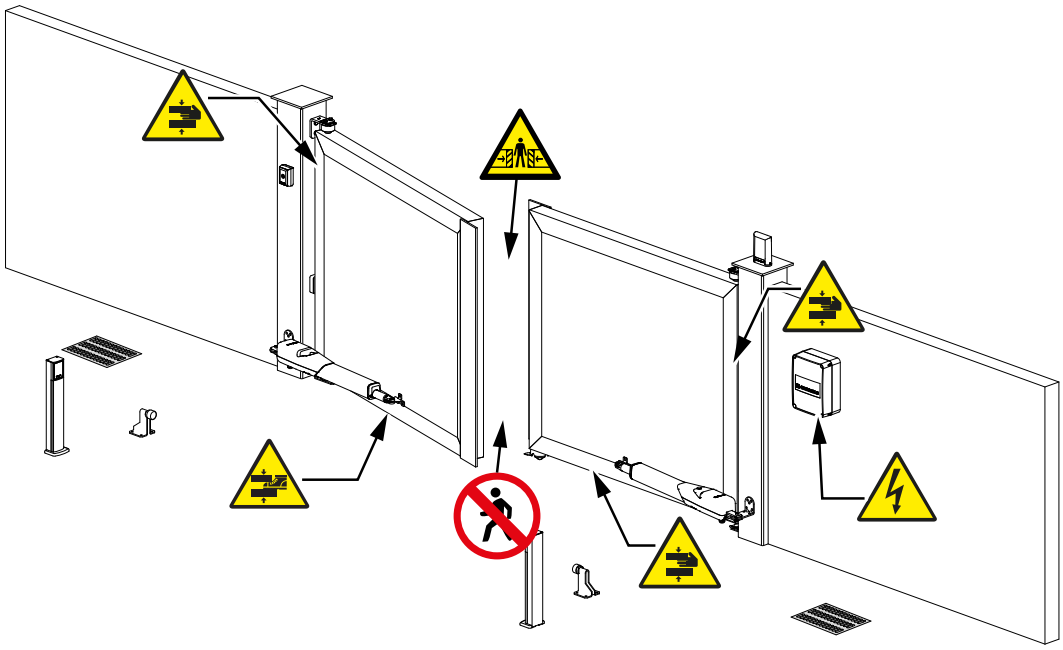
KEY

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

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

3 TECHNICAL CHARACTERISTICS OF THE PRODUCT

3.1 WARNING SIGNS ARRANGEMENT



 Voltage risk;

 Crushing risk;

 Foot crushing risk;

 Hand crushing risk;

 No transit during manoeuvre.

TAB.1

	HYRON 220	HYRON 300		HYRON 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	400 mm	400 mm	400 mm	500 mm	500 mm
Speed	18 mm/s	22 mm/s	16 mm/s	22mm/s	16 mm/s
OPENING TIME 90° (full load)	up to 14s	up to 11,5s	up to 18s	up to 13,5s	up to 20s
Duty cycle	Intensive	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 to perform a complete manoeuvre.
- 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 - HYRON 220 - HYRON 300”**, **“2.2.2 LIMITS OF USE - HYRON 500”**.

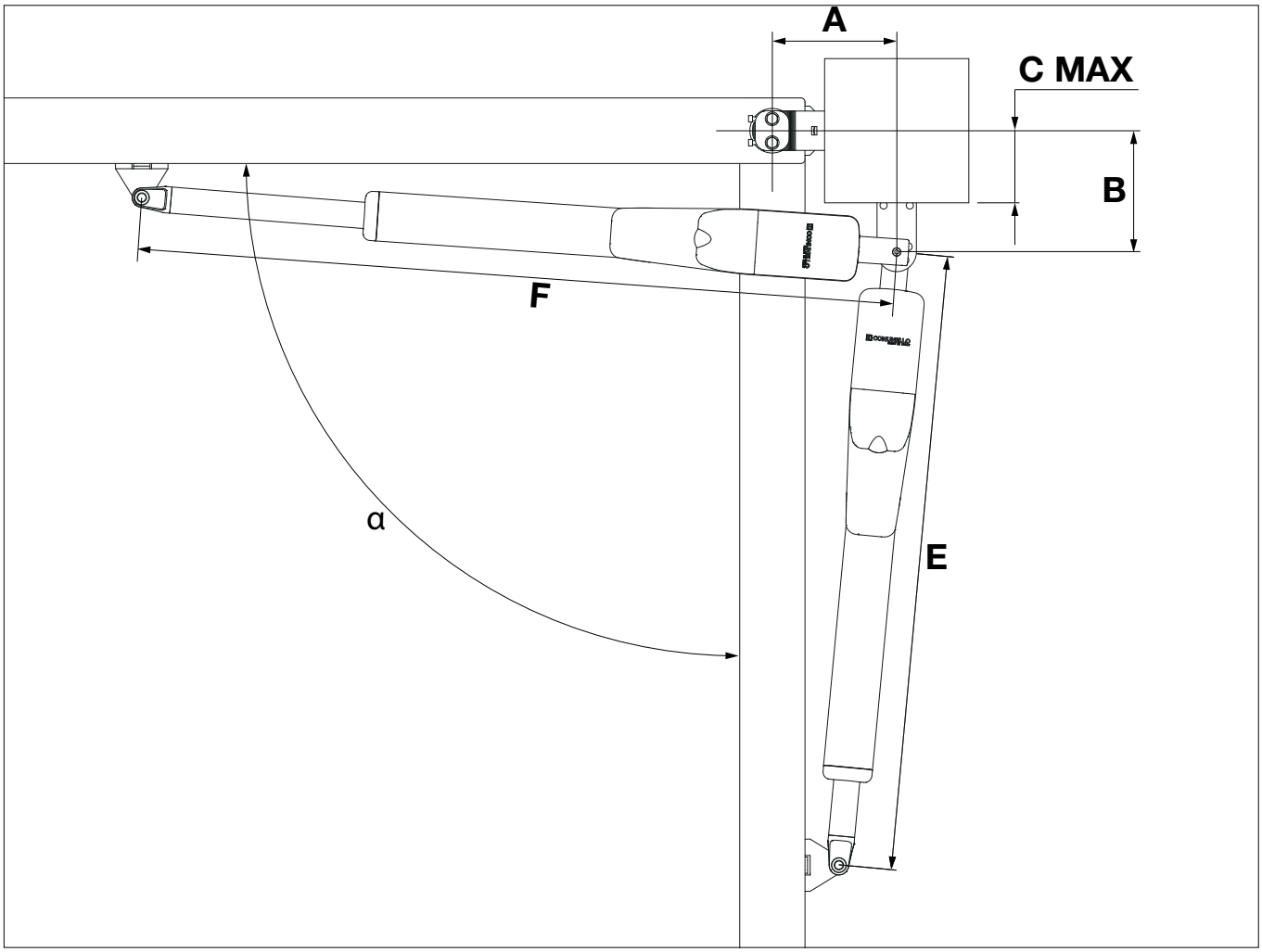
4.3 PREPARATORY WORK FOR INSTALLATION

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 abutments and closing abutments.
- 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



TAB.3

INSIDE INSTALLATION QUOTAS						
HYRON 220/300						
Door opening (α)	A	B	E	F	C	
90°	270	120	920	1285	25	
	130	130	1030	1285	35	
	150	130	1010	1285	35	
	130	130	1020	1310	60	FIXED TO 90°
	150	220	910	1290	125	
	120	270	885	1290	170	
	120	270	905	1300	200	FIXED TO 90°
105°	180	160	910	1290	65	
120°	180	130	910	1290	35	
	170	130	935	1310	60	FIXED TO 90°

TAB.4

INSIDE INSTALLATION QUOTAS						
HYRON 500						
Door opening (α)	A	B	E	F	C	
90°	120	120	1250	1490	25	
	200	120	1080	1490	25	
	150	150	1190	1490	60	
	150	200	1140	1490	105	
	200	200	1090	1490	105	
	120	300	1040	1490	200	
	120	350	995	1490	255	
120°	200	130	1080	1490	35	
	200	148	995	1490	80	FIXED TO 90°
135°	230	120	1050	1490	10	FIXED TO 90°

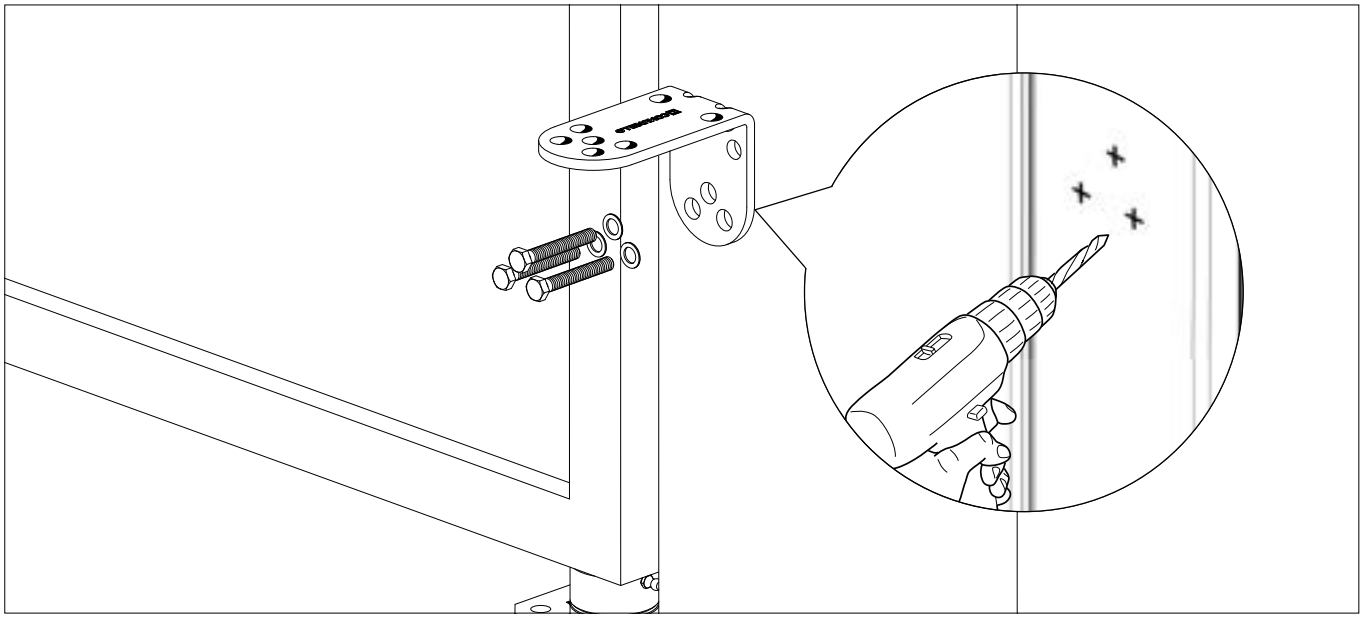
*** FIXED AT 90°= STANDARD FIXED BRACKETS**

4.5 INSTALLATION OF THE HYRON MOD. ACTUATOR

4.5.1 INSTALLATION

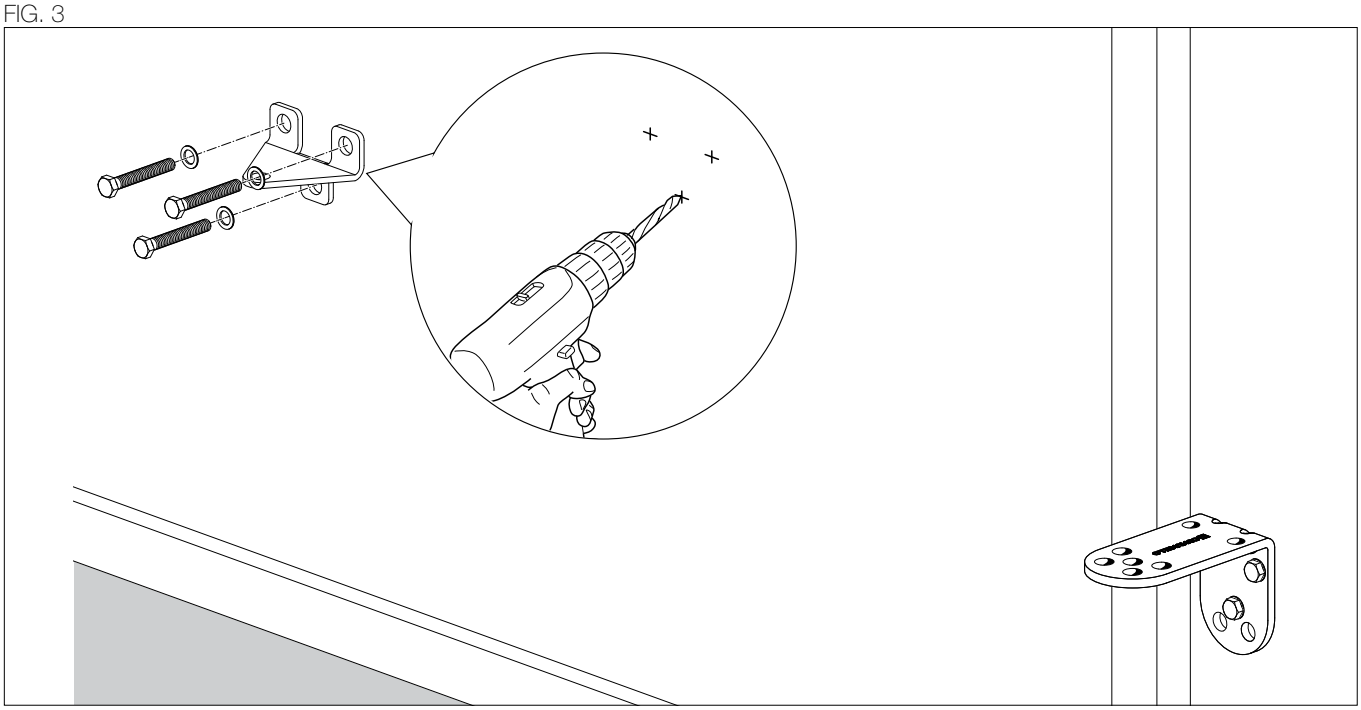
- Manually open the gate as described in the chapter **"END USER MANUAL"**
- Fix the rear bracket on the pillar which must have a minimum width of 100 mm (FIG. 2).

FIG. 2



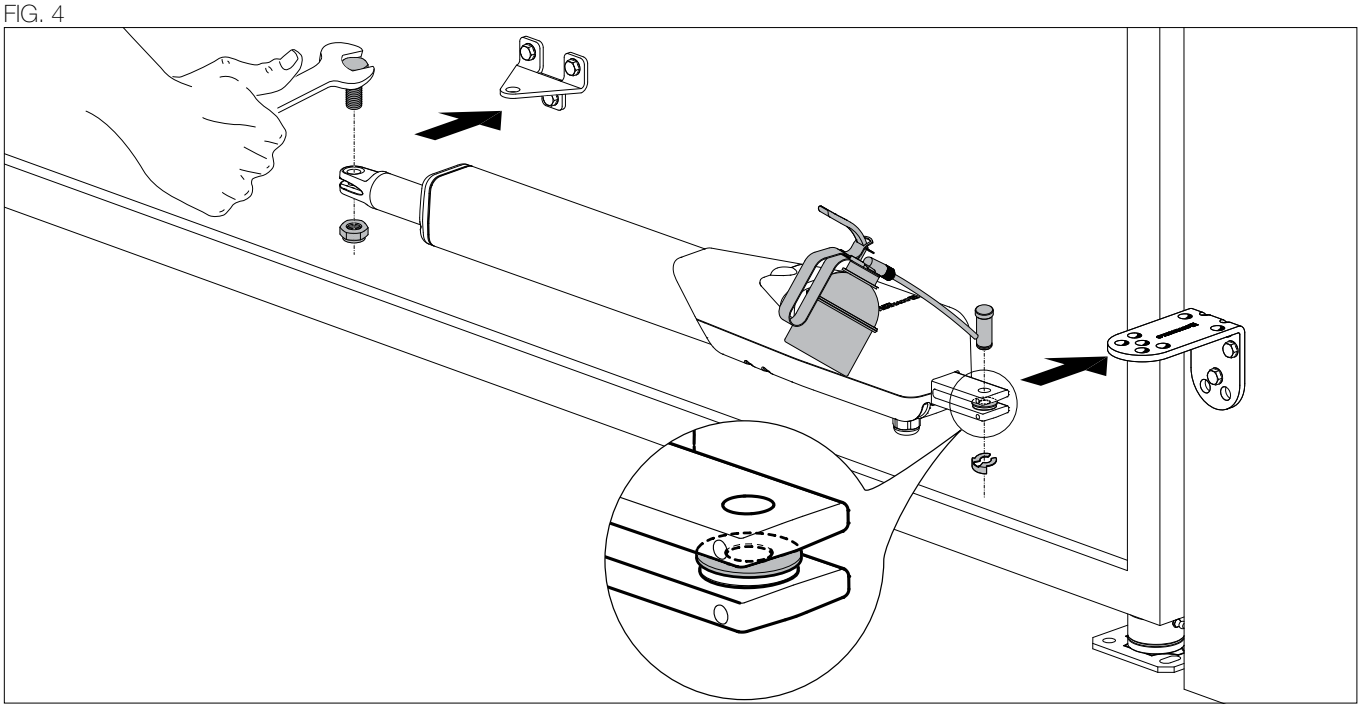
- When the gate is completely closed, secure the front bracket to the door (FIG. 3).

FIG. 3



- Attach the motor to the rear bracket by means of the pin and snap ring supplied, lubricating the rotation points (FIG. 4).
- Attach the rod to the front plate using the supplied screw and nut (FIG. 4).

FIG. 4



- The tip of the rod must converge towards the leaf, respecting the dimensions in TAB. 3-4-5-6.
- 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" dimensions indicated using the AC 80 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.

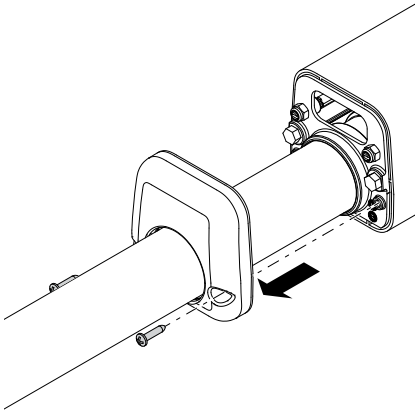
The manufacturer cannot be held responsible in any way for damage caused by failure to comply with the dimensions indicated in "TAB.5".

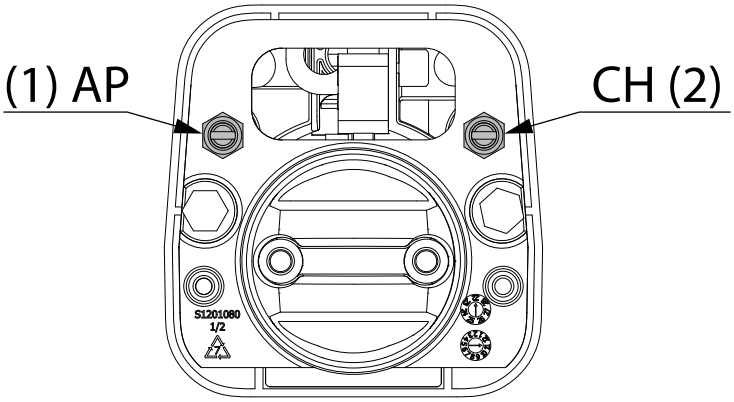
4.5.2 ELECTRONIC LIMIT SWITCHES

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

Determination of limit switch points with microswitches

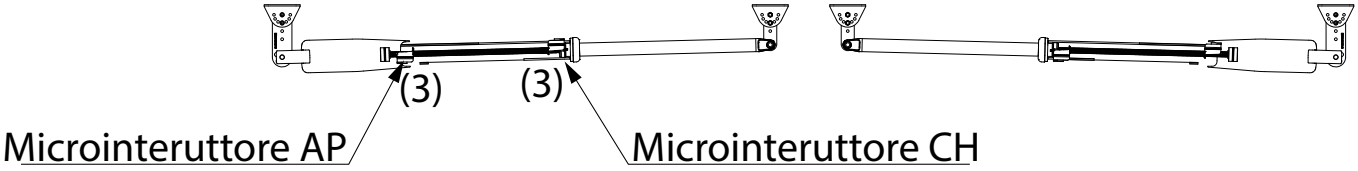
1) Rod to determine the opening end point
2) Rod to determine the closing end point **(to avoid damaging the microswitch, check the correct connection to the control unit before moving it).**





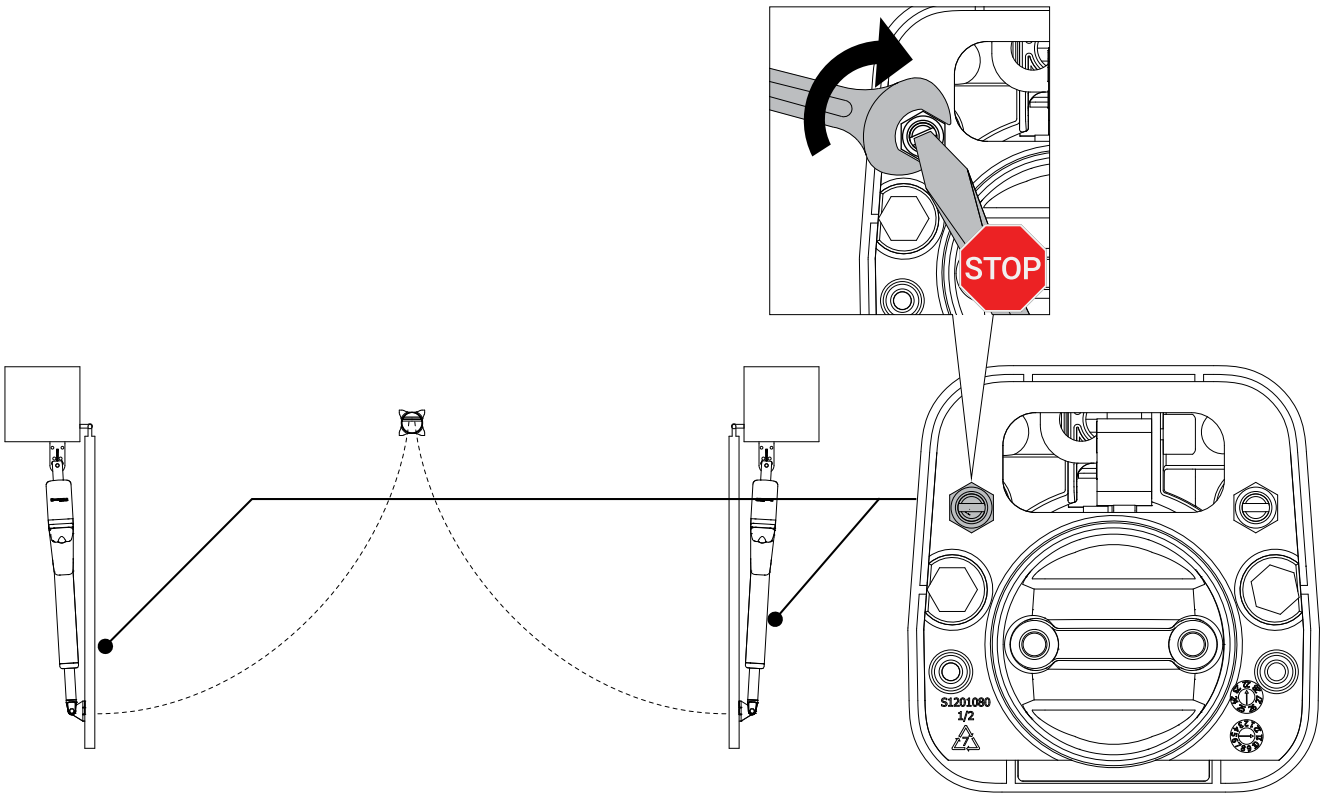
3) Limit switch microswitches

📖 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 12 full turns.



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.



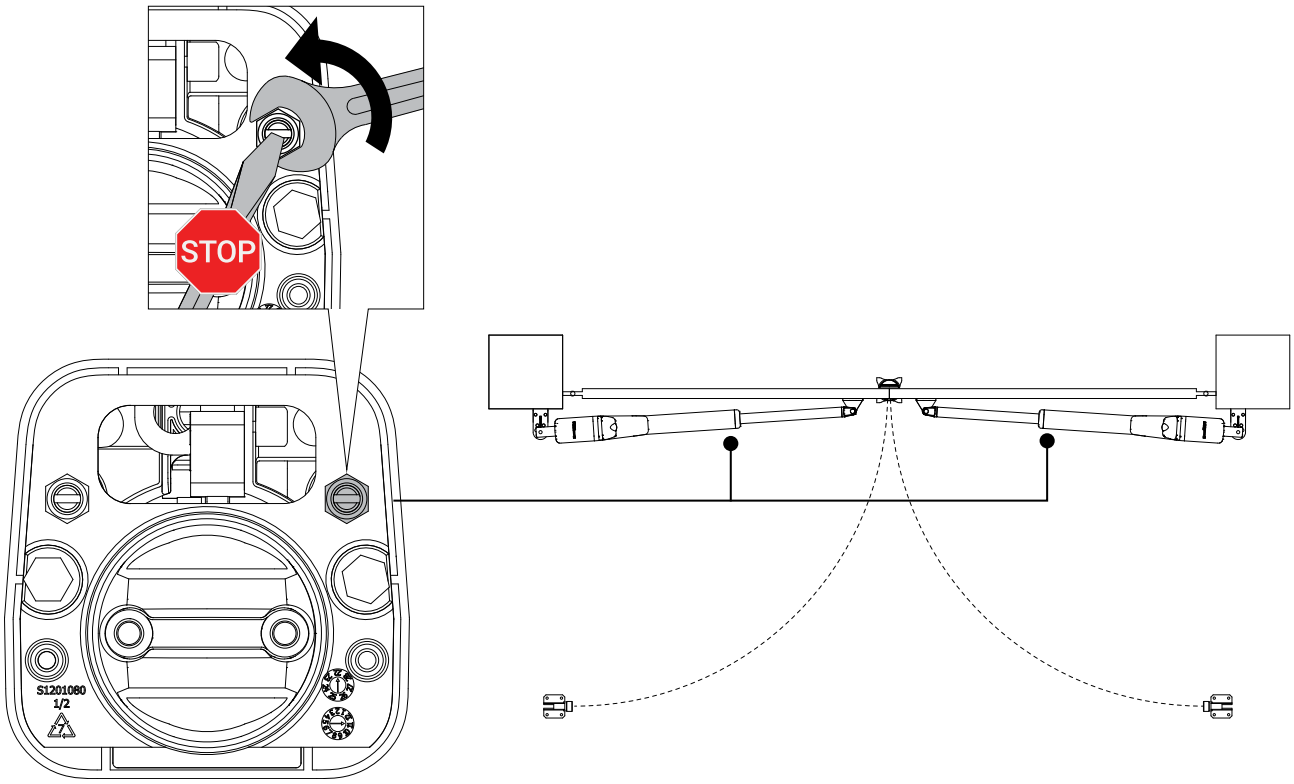
Determination of the closure limit switch points

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.



4.5.3 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. 5).
- Turn the handle clockwise (FIG. 6).

FIG. 5

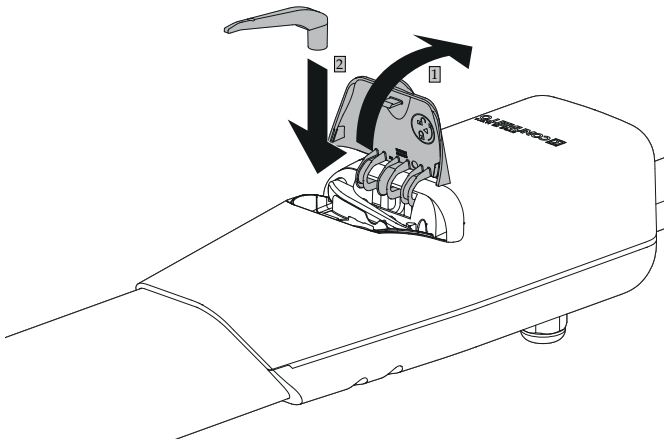
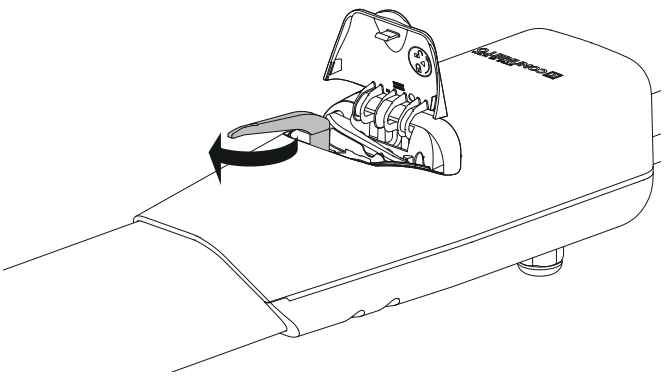


FIG. 6



- In this way the gear is neutralised, thus allowing manual opening of the gate (FIG. 7).
- To reset the motorised control, bring the handle to the home position by turning the handle anti-clockwise (FIG. 8)

FIG. 7

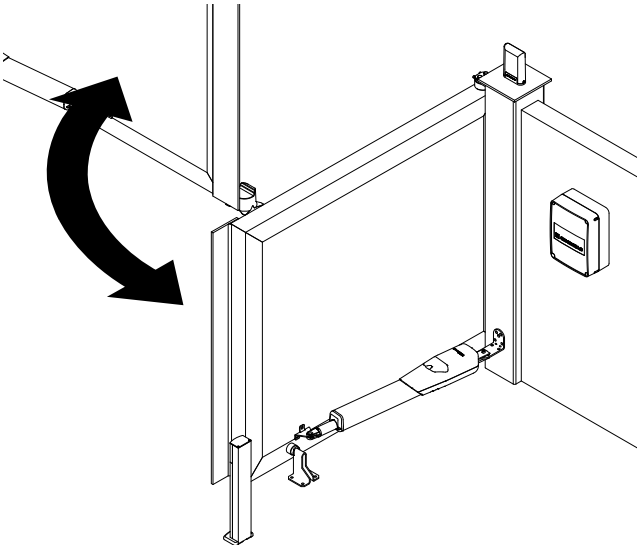
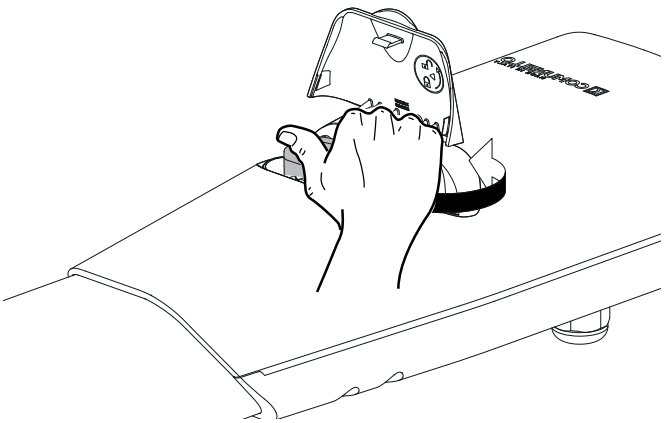
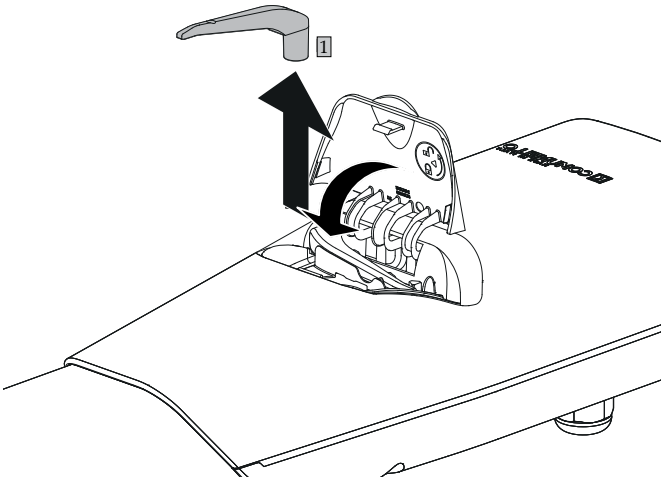


FIG. 8



- Remove the handle and place it in the appropriate support (FIG. 9).

FIG. 9



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 manual release as shown in paragraph “4.5.3 MANUAL MOTOR RELEASE”.
- Loosen the screws of the terminal block and remove it FIG. 10.
- Assemble the cable gland "G" located at the bottom of the terminal block FIG. 10.
- Insert the power cable FIG. 11.

FIG. 10

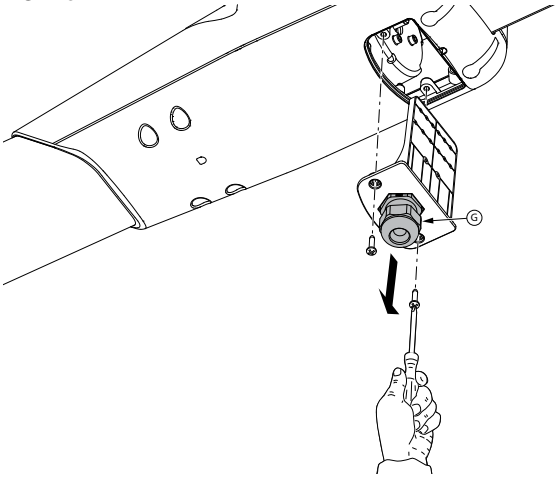
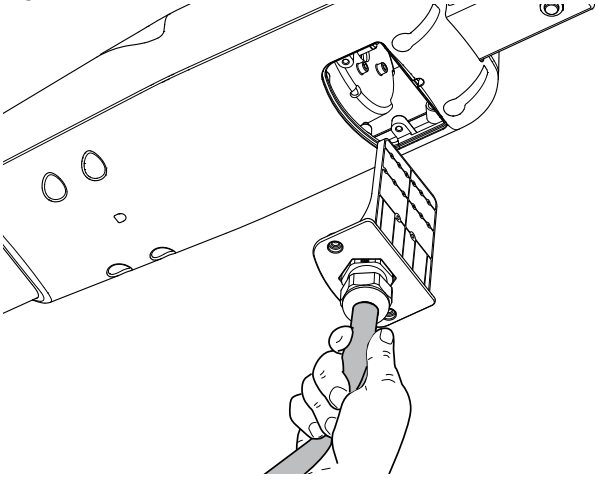
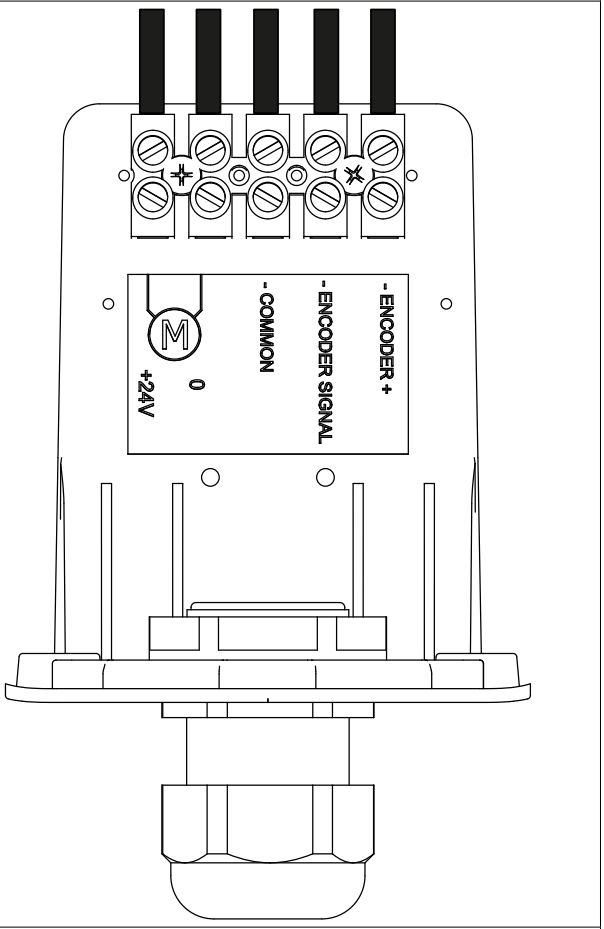


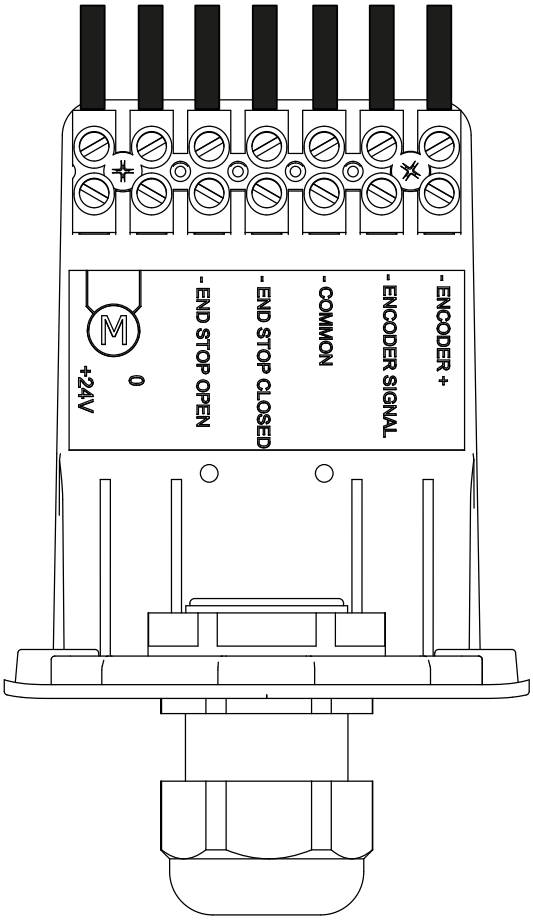
FIG. 11



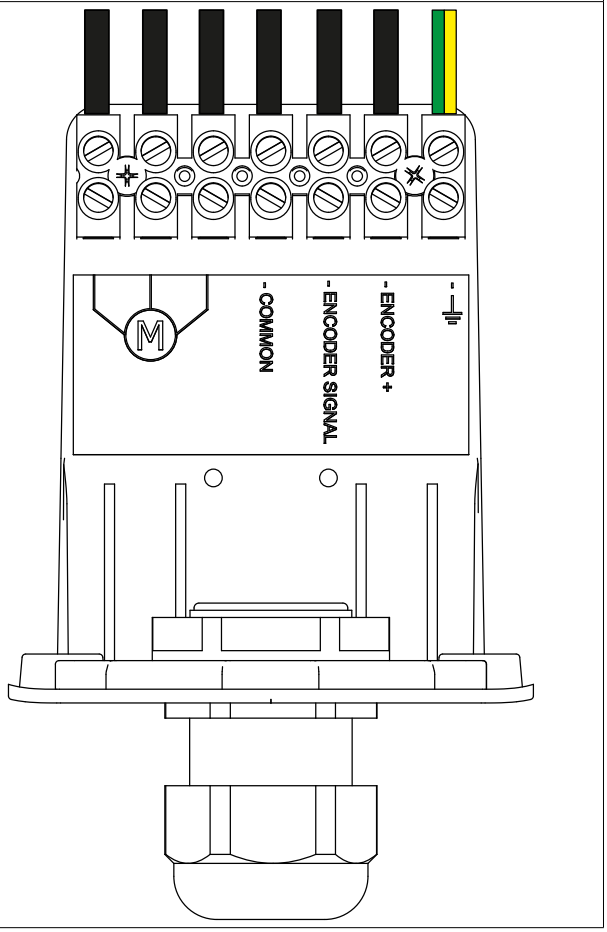
24+E



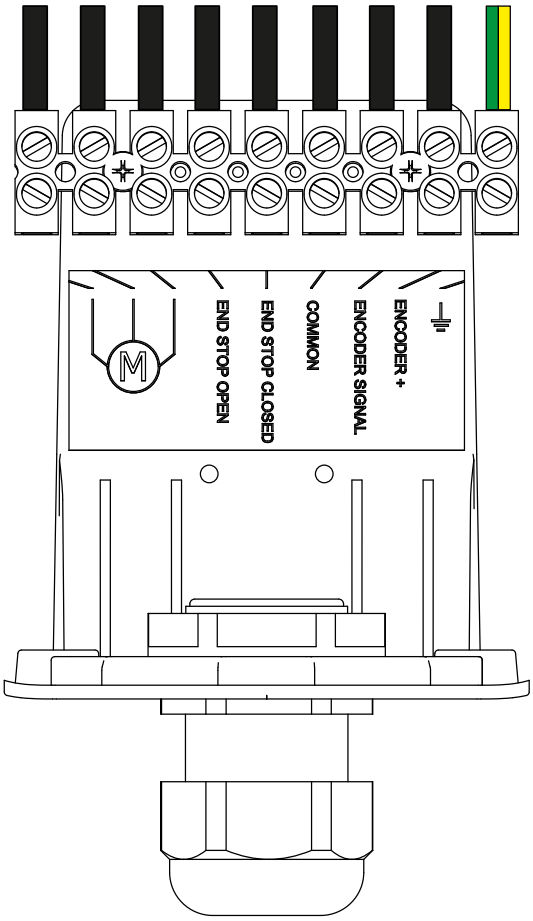
24+FE+E



230+E



230+FE+E



- Connect the earthing to the relevant terminal. (for class I models).
- Connect the wires to the terminal block as indicated on the label.
- Secure the cable by tightening the cable gland.
- Reinsert the terminal block into the appropriate compartment, screwing it into place FIG. 10.

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. To test the **HYRON**, perform the following sequence of operations:

- Check that all the provisions of this manual and in particular in chapter **"1 PRESCRIPTIONS" on page 20** 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 the **HYRON**, scheduled maintenance is required at most within 6 months or 10,000 manoeuvres from the previous maintenance.

- 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. In particular, lubricate the lip of the dust cover on the stem;
- 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.

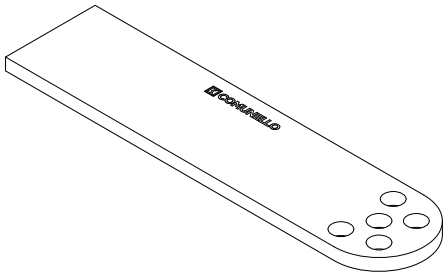
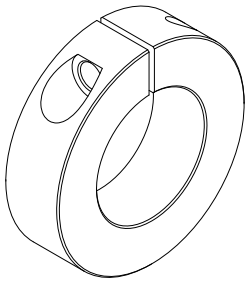
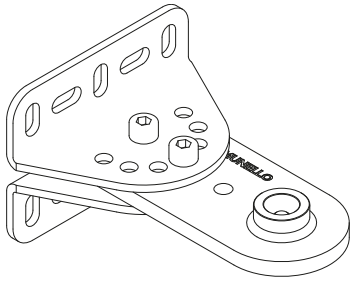
6 - The Client cannot claim compensation for consequential damage, loss of profit, loss of production and in any case cannot claim for sums higher than the value of the supplied components or Products. All expenses relating to the transportation of Products to be repaired or repaired, even if covered 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**	
Mechanical ring limit switch	
Front and rear adjustable brackets	

COMUNELLO
AUTOMATION

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