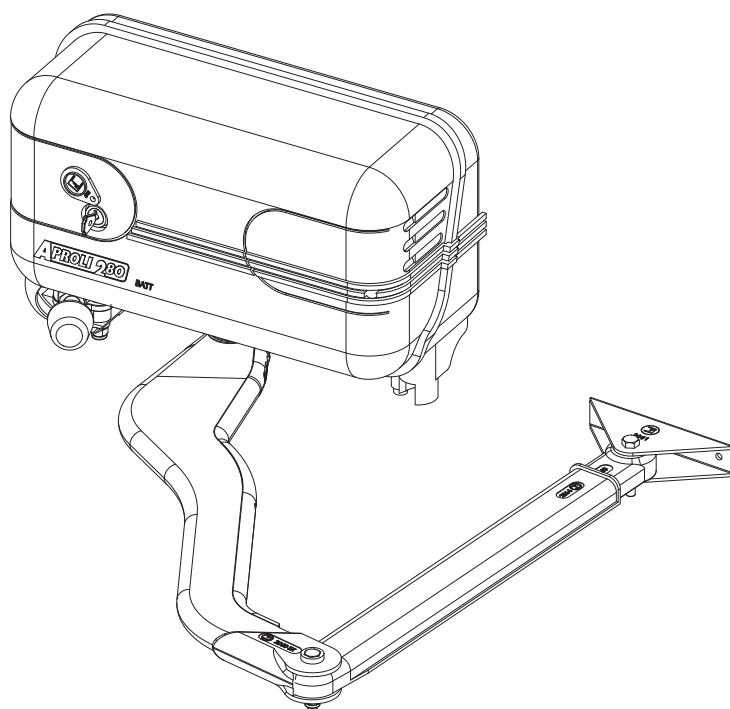


APROLI 280 Batt

**External oil-hydraulic operator
with articulated arm
for swinging gates mounted on large pillars**



GENERAL WARNINGS FOR PEOPLE SAFETY**THANK YOU**

Thank you for purchasing a Fadini product. Please read these instructions carefully before using this appliance. The instructions contain important information which will help you get the best out of the appliance and ensure safe and proper installation, use and maintenance. Keep this manual in a convenient place so that you can always refer to it for the safe and proper use of the appliance.

INTRODUCTION

This operator is designed for a specific scope of applications as indicated in this manual, including safety, control and signaling accessories as minimum required with Fadini equipment. □ Any applications not explicitly included in this manual may cause operation problems or damages to properties and people. □ Meccanica Fadini S.r.l. is not liable for damages caused by the incorrect use of the equipment, or for applications not included in this manual or for malfunctioning resulting from the use of materials or accessories not recommended by the manufacturer. □ The manufacturer reserves the right to make changes to its products without prior notice. □ All that is not explicitly indicated in this manual is to be considered not allowed.

BEFORE INSTALLATION

Before commencing operator installation assess the suitability of the access, its general condition and the structure. □ Make sure that there is no risk of impact, crushing, shearing, conveying, cutting, entangling and lifting situations, which may prejudice people safety. □ Do not install near any source of heat and avoid contacts with flammable substances. □ Keep all the accessories able to turn on the operator (transmitters, proximity readers, key-switches, etc) out of the reach of the children. □ Transit through the access only with stationary operator. □ Do not allow children and/or people to stand in the proximity of a working operator. □ To ensure safety in the whole movement area of a gate it is advisable to install photocells, sensitive edges, magnetic loops and detectors. □ Use yellow-black strips or proper signals to identify dangerous spots. □ Before cleaning and maintenance operations, disconnect the appliance from the mains by switching off the master switch. □ If removing the actuator, do not cut the electric wires, but disconnect them from the terminal box by loosening the screws inside the junction box.

INSTALLATION

All installation operations must be performed by a qualified technician, in observance of the Machinery Directive 2006/42/CE and safety regulations EN 12453 - EN 12445. □ Verify the presence of a thermal-magnetic circuit breaker 0,03 A - 230 V - 50 Hz upstream the installation. □ Use appropriate objects to test the correct functionality of the safety accessories, such as photocells, sensitive edges, etc. □ Carry out a risk analysis by means of appropriate instruments measuring the crushing and impact force of the main opening and closing edge in compliance with EN 12445. □ Identify the appropriate solution necessary to eliminate and reduce such risks.

□ In case where the gate to automate is equipped with a pedestrian entrance, it is appropriate to prepare the system in such a way to prohibit the operation of the engine when the pedestrian entrance is used. □ Apply safety nameplates with CE marking on the gate warning about the presence of an automated installation. □ The installer must inform and instruct the end user about the proper use of the system by releasing him a technical dossier, including: layout and components of the installation, risk analysis, verification of safety accessories, verification of impact forces and reporting of residual risks.

INFORMATION FOR END-USERS

The end-user is required to read carefully and to receive information concerning only the operation of the installation so that he becomes himself responsible for the correct use of it. □ The end-user shall establish a written maintenance contract with the installer/maintenance technician (on -call). □ Any maintenance operation must be done by qualified technicians. □ Keep these instructions carefully.

WARNINGS FOR THE CORRECT OPERATION OF THE INSTALLATION

For optimum performance of system over time according to safety regulations, it is necessary to perform proper maintenance and monitoring of the entire installation: the automation, the electronic equipment and the cables connected to these. □ The entire installation must be carried out by qualified technical personnel, filling in the Maintenance Manual indicated in the Safety Regulation Book (to be requested or downloaded from the site www.fadini.net/supporto/downloads). □ Operator: maintenance inspection at least every 6 months, while for the electronic equipment and safety systems an inspection at least once every month is required. □ The manufacturer, Meccanica Fadini S.r.l., is not responsible for non-observance of good installation practice and incorrect maintenance of the installation.

DISPOSAL OF MATERIALS

Dispose properly of the packaging materials such as cardboard, nylon, polystyrene etc. through specializing companies (after verification of the regulations in force at the place of installation in the field of waste disposal). Disposal of electrical and electronic materials: to remove and dispose through specializing companies, as per Directive 2012/19/UE. Disposal of substances hazardous for the environment is prohibited.

**CE DECLARATION OF CONFORMITY of the manufacturer:**

Meccanica Fadini S.r.l. (Via Mantova, 177/A - 37053 Cerea - VR - Italy) declares under own responsibility that: **APROLI 280 Batt** complies with the 2006/42/CE Machinery Directive, and also that it is sold to be installed in an "automatic system", along with original accessories and components as indicated by the manufacturing company. An automatic gate operator is, by law, a "machinery" and therefore the installer must fit the equipment with all of the applicable safety norms. The installer is also required to issue the installer's Declaration of Conformity. The manufacturer is not liable for possible incorrect use of the product. The product complies with the following specific norms: analysis of the risks and subsequent action to cure them as per EN 12445 and EN 12453, Low Voltage Directive 2014/35/UE, Electromagnetic Compatibility 2014/30/UE. In order to certify the product, the manufacturer declares under own responsibility the compliance with the EN 13241-1 PRODUCT NORMS.

Meccanica Fadini S.r.l.
Director in charge

GENERAL DESCRIPTION OF THE PRODUCT

Aproli 280 Batt is an oil-hydraulic operator for external application, fitted with an articulated arm, it is studied to open and close swinging gates mounted on pillars of significant dimensions. Aproli 280 Batt is designed in a single version as it can be indifferently mounted on the right or left side of the gate (view from inside).

it is an oil-hydraulic product and has all the advantages that such systems can offer, such as reliability, smooth movements, adjustable thrust power being controlled by low and high pressure valves, and flexibility as it can suit most types of swinging gates.

Quick and easy to install. The pressure cast aluminium back bracket is fastened to the gate pillar by means of expanding bolts and provides support to the drive assembly, made of galvanized steel and aluminium and fixed by screws.

The pivoting shaft is made of hardened steel to ensure long lasting reliability over the time.

The driving arm is made of pressure cast aluminium and has the advantage that its last section can be adjusted to three different steps to meet any installation requirements, even with pillars of large dimensions.

The operator comes in two options, fitted with a hydraulic locking valve or non locking ie. reversible (in this case an electric lock is to be fitted to the gate).

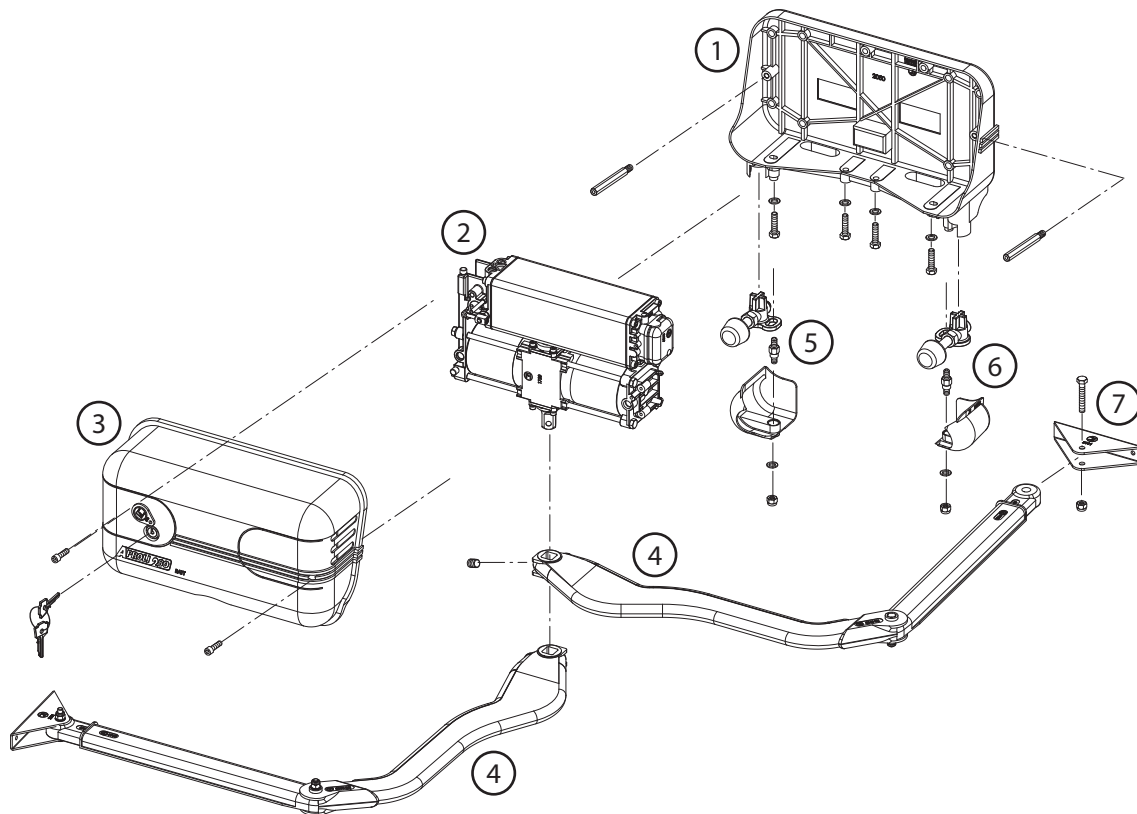
it is also possible to have Aproli 280 Batt in the special option with flow regulator. This is an incorporated device that can control the speed of the gate (in opening and closing movements independently) all along the gate travel, recommended for those heavy gates whose inertia is significant.

For Aproli 280 Batt to work as an automatic system it is required that an electronic control box type Elpro be fitted externally in a sheltered place. Operations can be selected to be either fully automatic or semiautomatic (closing by pulse), depending on the user's requirements.

The system is designed to work together with accessories that ensure proper operations in full safety and reliability, making it suitable for any public or private applications.

A polycarbonate cover protects the inner drive unit, and a flap allows only authorized access to the control valves by means of a coded key for the following operations: high and low pressure adjustment, manual release and removal of the cover.

COMPONENTS



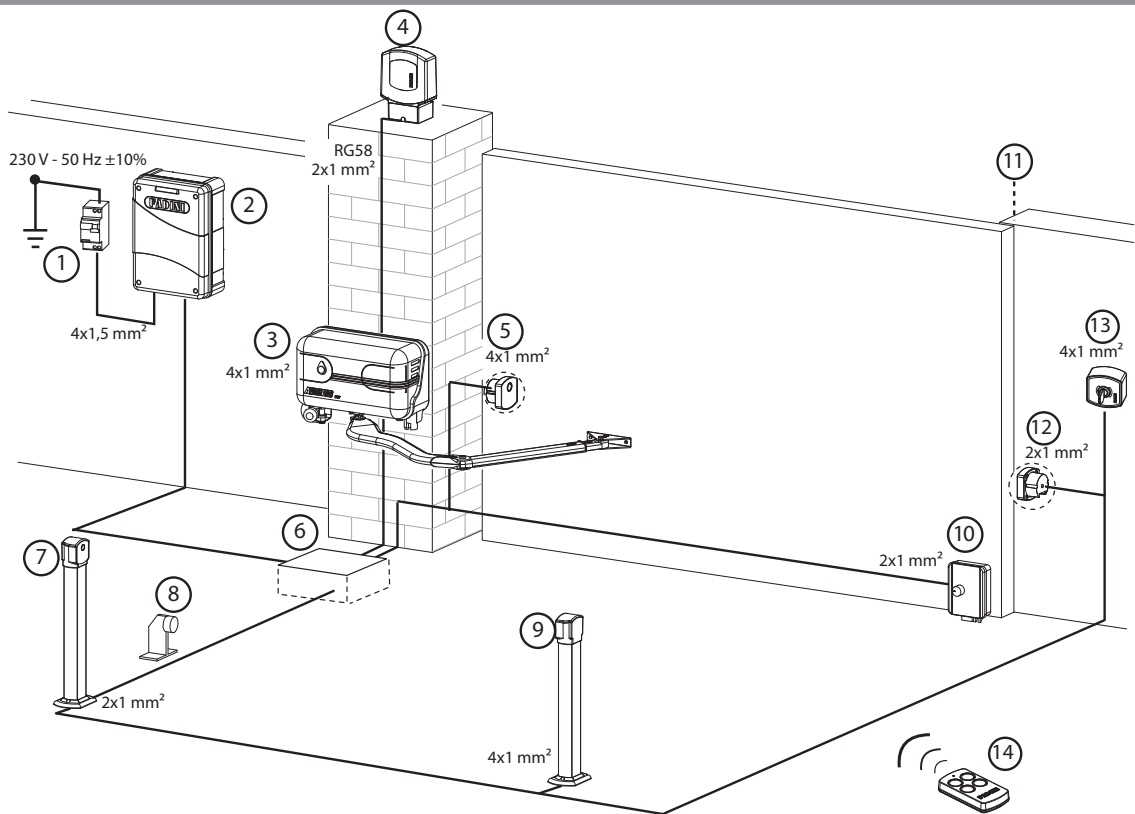
- 1 - Back bracket for gate post fixing
- 2 - Motor pump-jack assembly
- 3 - Cover with lockable flap for manual realasing by coded key
- 4 - Complete arm assembly: it can be used for both right and left applications
- 5 - Incorporated stop assembly for Aproli 280 Batt installed on the left
- 6 - Incorporated stop assembly for Aproli 280 Batt installed on the right
- 7 - Arm bracket for gate fixing

Pic. 1

ELECTRICAL WIRING DIAGRAM AND LAYOUT OF THE ACCESSORIES

Before installing Aproli 280 Batt it is advisable that preparatory work be carried out for all of the accessories required at least to ensure safety and proper control of the system. *General layout: it is the installer's care and responsibility to properly lay the tubes required for the electrical connections.*

English



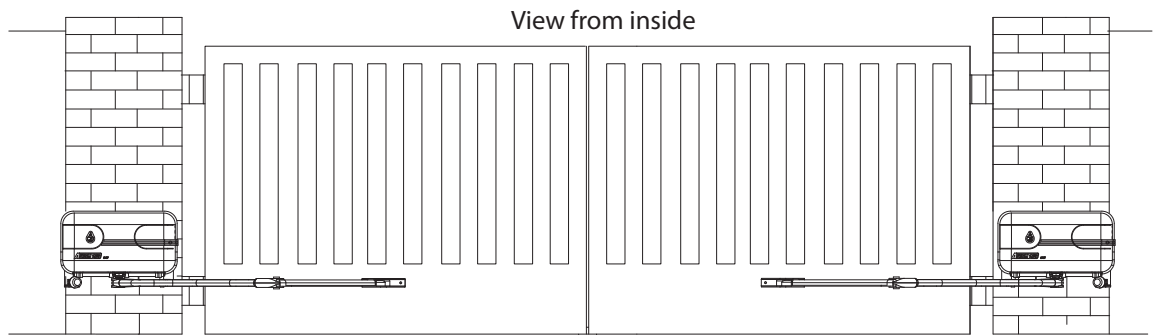
- | | |
|---|---|
| <ul style="list-style-type: none"> 1 - 230 V - 50 Hz - 0,03 A magneto-thermal circuit breaker (cable section recommended 2,5 mm² beyond 100 m) 2 - Control box with VIX 53/2 R plug-in radio receiver 3 - Aproli 280 Batt 4 - Flasher 5 - Photocell receiver 6 - Junction pit 7 - Photocell transmitter on post mount | <ul style="list-style-type: none"> 8 - Ground gate stop in open position [A] 9 - Photocell receiver on post mount 10 - Gate electric lock 11 - Gate stop in closed position [A] 12 - Photocell transmitter on post mount 13 - Keyswitch 14 - Radio transmitter |
|---|---|

! [A]: IMPORTANT: ground gate stops in open and closed gate positions are most important for proper operations and therefore safety of the system equipped with Aproli 280 Batt.

Pic. 2

APROLI 280 BATT SAME VERSION FOR BOTH RIGHT AND LEFT INSTALLATIONS

Aproli 280 Batt is not designed as a handed ie. left- or right-hand unit; it comes in a single version factory pre-set to be installed to the left handside of the gate (gate closed, view from inside). For those installations where the operator is on the right handside, it is required that the rotation shaft be set accordingly (Pic. 9 and Pic. 10).



Aproli 280 Batt installed on the **left**

Aproli 280 Batt installed on the **right**

! Aproli 280 Batt, as default version, comes factory pre-set to be installed on the left, gate in closed position. For Aproli 280 Batt to be installed on the right, the shaft is to be rotated into the correct in-phase position (Pic. 9 and Pic. 10).

Pic. 3

PRELIMINARY STEP - CHECKING THE FIXING POINTS

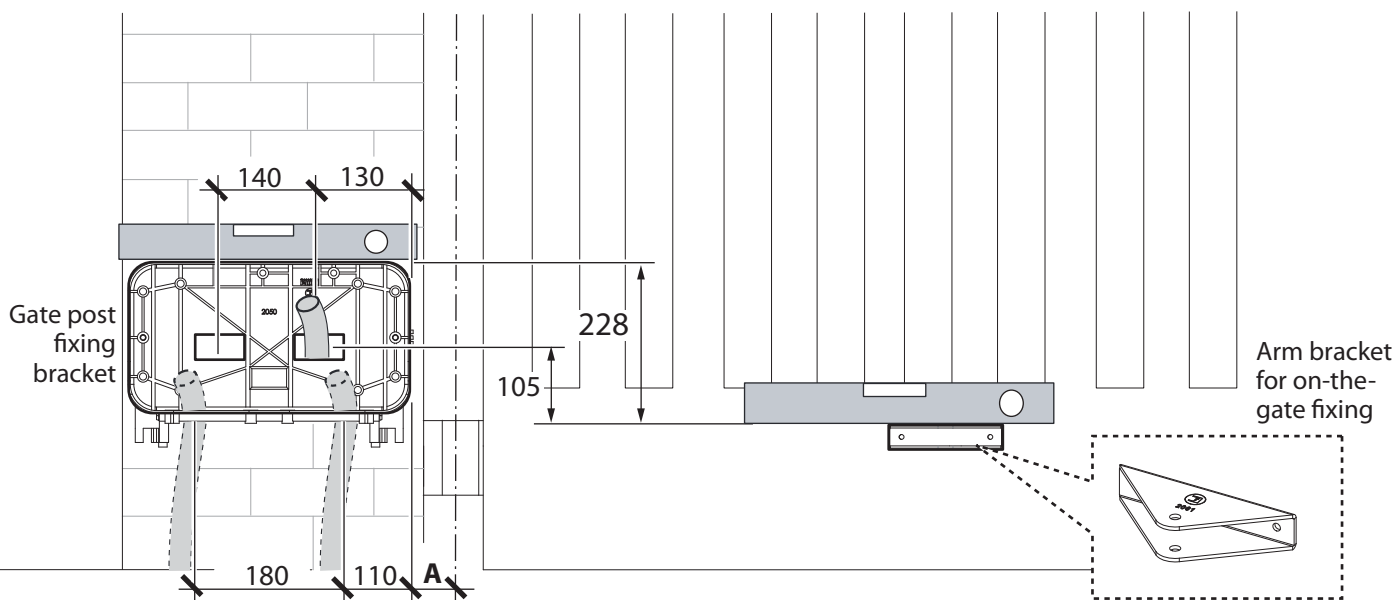
It is fundamental that the arm be attached onto the gate in a structural point.

The fixing of the operator back bracket depends on this point and consequently also the position/outlet of the tube for the electrical connections and voltage supply (Pic. 4).

The gate post fixing bracket has two openings in the back side towards the gate post and two underneath: in this way it can meet any application requirements (Pic. 4).



IMPORTANT: It is required that the operator arm be fixed to the gate in a structural position, the most suitable to take it being the strongest and most robust. The position of the gate post fixing bracket and therefore of the electric power cable inlet is to be established consequently.



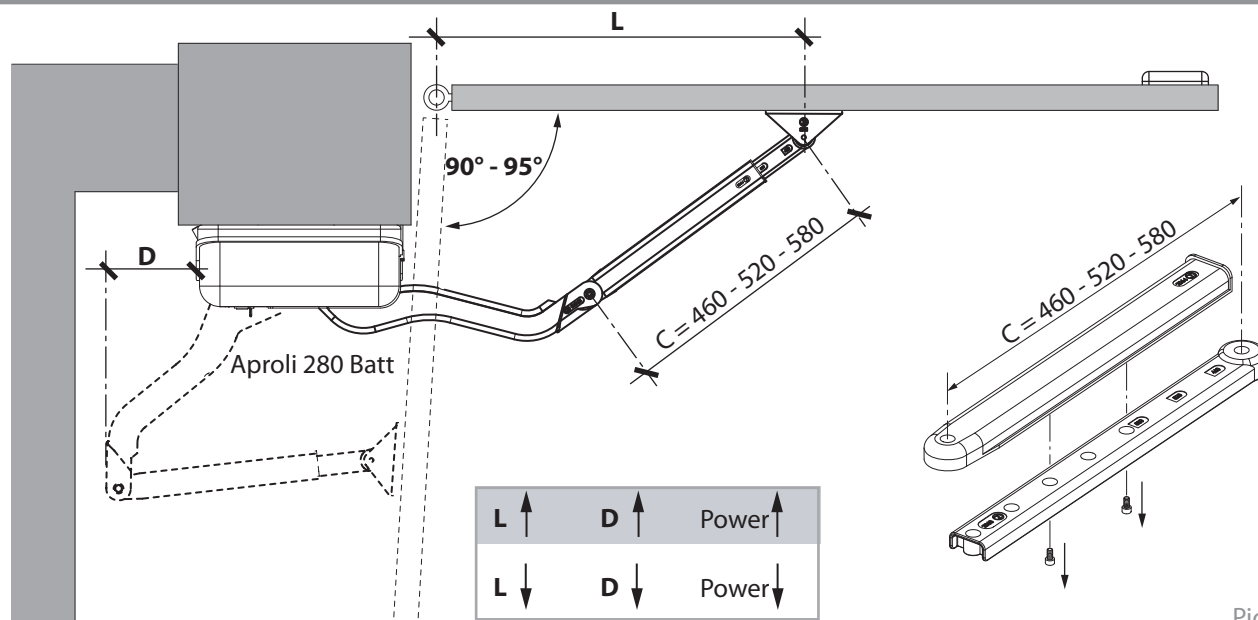
Pic. 4

PRELIMINARY ASSESSMENTS BEFORE INSTALLATION

Since Aproli 280 Batt comes with an arm whose gate fixing end can be adjusted into three lengths (460, 520 and 580 mm), it is required that the most suitable length be assessed in relation to the gate width (and inertia) and, also, in consideration of the space that the arm is allowed to take in the most critical position when the gate is fully open (Pic. 5).



IMPORTANT: The longer is distance L from the gate hinge center, the greater is the lever action the arm can exert onto the gate. This specially applies to heavy gates. But it is also to consider that D, ie. the space taken by the arm when the gate is fully open, increases consequently. Both factors are to be assessed at first (arm lever L and distance D with gate open) to find the most balanced solution to the application requirements.



Pic. 5

FIXING DISTANCES

English

Fixing distances (mm) to open 90°

A [B]	B	Distances to optimize arm lever L			Minimum space D		
		C	D	L	C	D	L
70	200	460	150	680	460	30	510
70	250	520	210	720	460	35	560
70	300	520	180	720	520	65	560
70	350	580	210	760	580	140	580
70	400	580	190	740	580	120	620
70	450	580	170	730	580	90	650
70	500	580	35	680	580	40	670

[B]: The distances indicated in the table have been figured out on a gate having a thickness of 50 mm and a gate hinge positioned at 50 mm from gate post. The above considerations can be applied even to gates having a different size, leaving to the experience and technical skill of the installer the task of assessing the most suitable fixing geometry.

Pic. 6

FIXING THE BACK BRACKET TO THE GATE POST

The back bracket is to be fixed to the gate post by means of suitable expanding bolts using 4 of the 8 holes provided in it.

M8 expanding bolts to suit gate post material or brickwork

Pic. 7

Gate view from inside

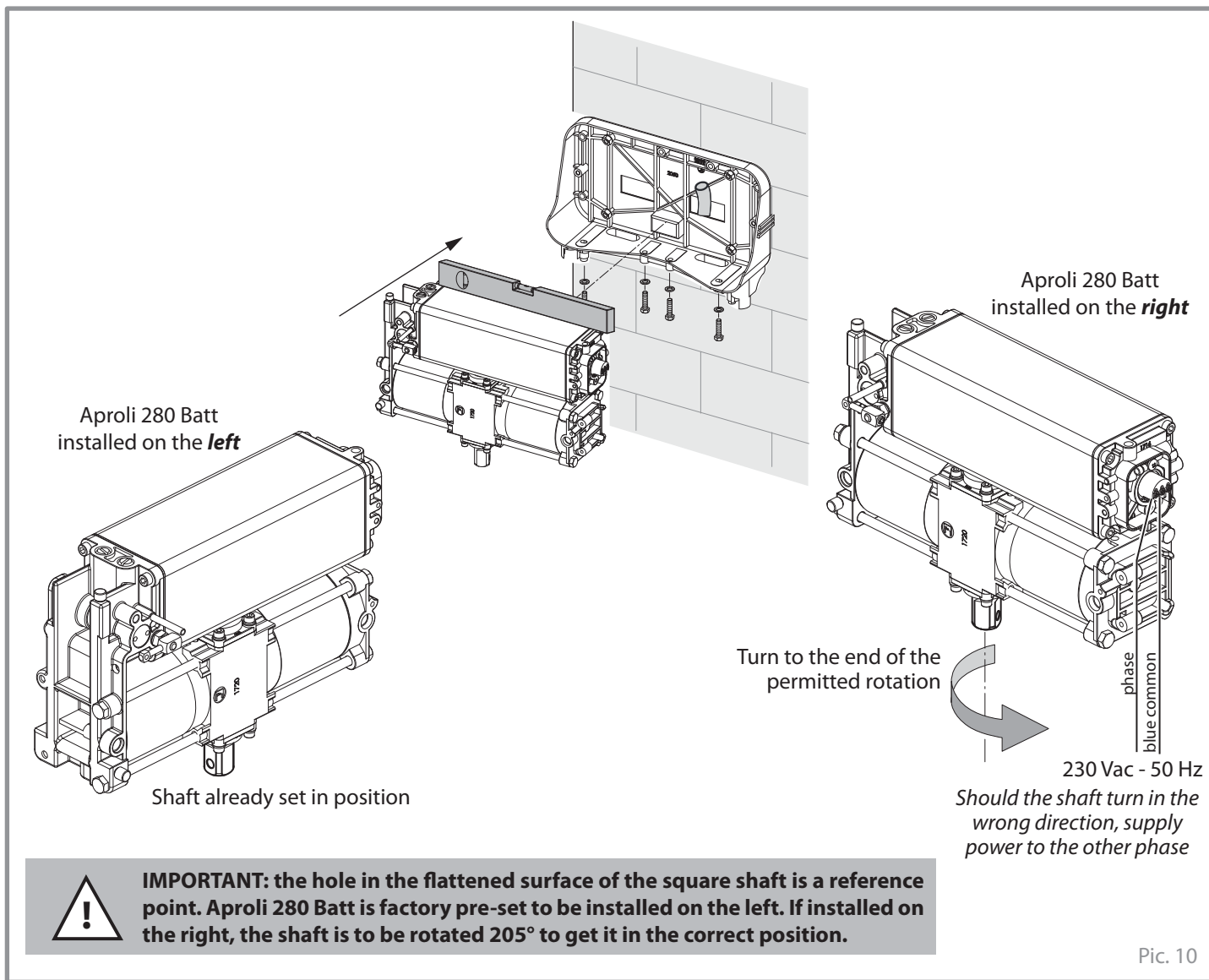
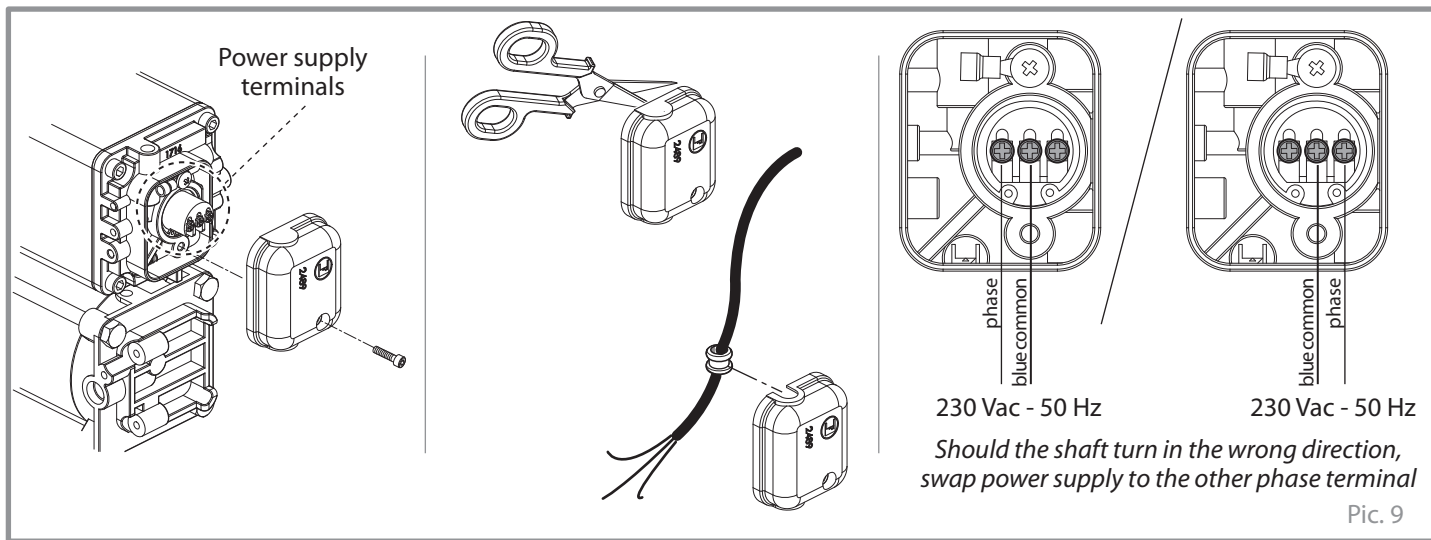
Aproli 280 Batt installed on the **left** Aproli 280 Batt installed on the **right**

Pic. 8

SETTING TO GATE OPERATION - APROLI 280 BATT INSTALLED ON TO THE RIGHT AND LEFT

Once satisfied that voltage is properly supplied to the motors, operator setting is to be attended. Aproli 280 Batt installed on the left is factory pre-set, gate in closed position. Whereas with Aproli 280 Batt installed on the right, it is required that the motor shaft be turned to the end of the permitted rotation.

As next step with both operators, the motor shafts are to be rotated a few degrees in the open direction allowing for the arms to be fixed.

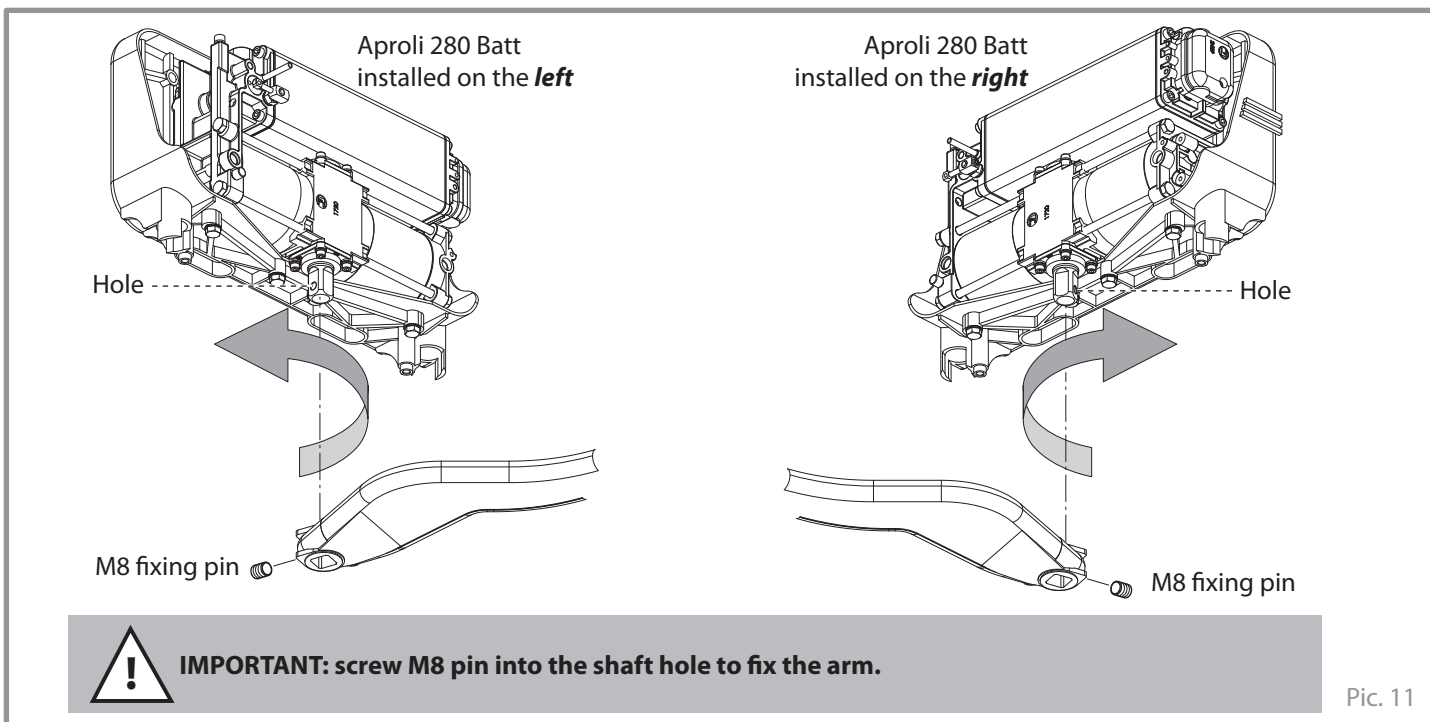


IMPORTANT: the hole in the flattened surface of the square shaft is a reference point. Aproli 280 Batt is factory pre-set to be installed on the left. If installed on the right, the shaft is to be rotated 205° to get it in the correct position.

English

FIXING THE ARM

In order to mount the arm, it is required that the motor be supplied with voltage so it can rotate the square shaft towards the opening direction of the gate. Fit the arm and fix the retaining pin into the hole.



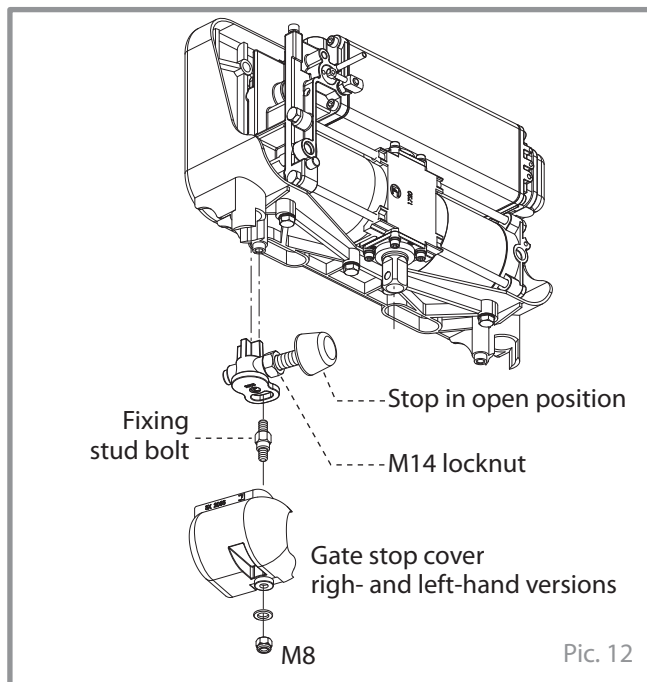
FIXING THE GATE STOP IN OPEN POSITION

IMPORTANT: it is recommended that ground gate stops be always provided in open and closed gate positions.

Anyway, for those situations where a gate stop in open position cannot be fixed on the ground, Aproli 280 Batt comes with an accessory (*open gate stop*), adjustable, to be mounted on to the operator under the gate post fixing back bracket for the operator arm to stop against it. Once satisfied it is adjusted to the required distance, tighten M14 locknut and fit the cover and fasten it by M8 nut (Pic. 12).

In closed gate position, though, a gate stop fixed to the ground is to be provided.

Adjust the gate stop for the gate to open and stop as required, then tighten hard the locknut.



ADJUSTING THRUST FORCE

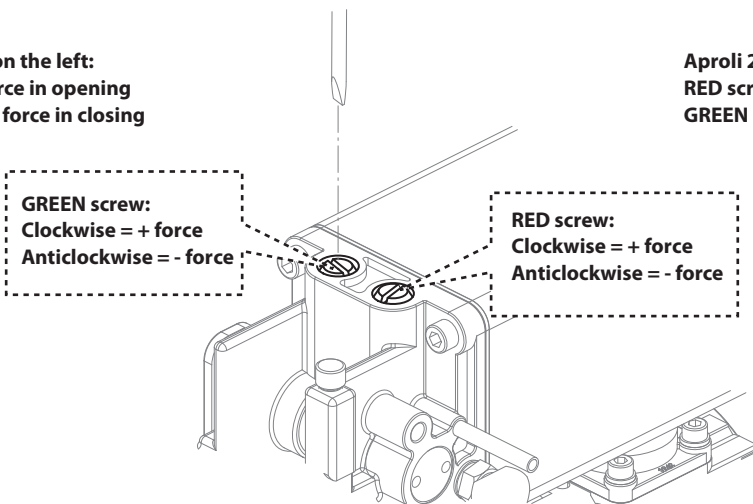
In order to adjust thrust power in opening and closing, turn the respective adjusting screws under the cover as indicated (Pic. 13).



NOTE WELL: Depending on which side of the gate Aproli 280 Batt is mounted, on the left or on the right, The function of the *red* and *green* adjusting screws changes in relation to open and close control. On default, Aproli 280 Batt comes factory pre-set for installation on the left side of the gate.

Aproli 280 Batt installed on the left:
RED screw controls the force in opening
GREEN screw controls the force in closing

Aproli 280 Batt installed on the right:
RED screw controls the force in closing
GREEN screw controls the force in opening

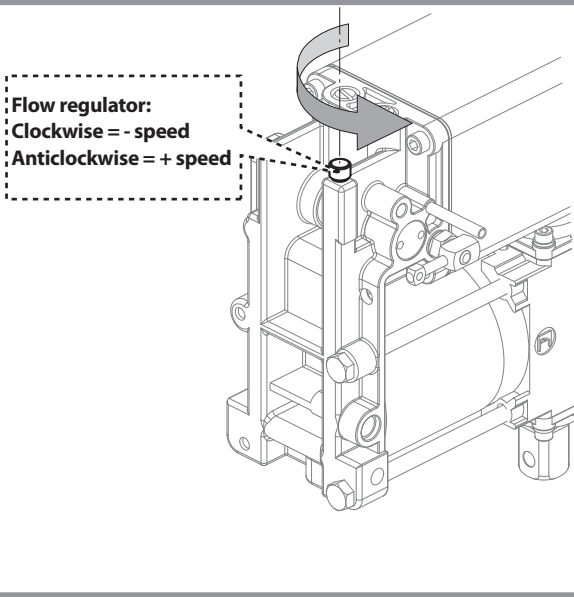


Pic. 13

SPEED CONTROL (OPTIONAL VERSION WITH FLOW REGULATOR)

At the time of the order it is possible to require that Aproli 280 Batt be fitted with flow regulators: this device allows for speed control, specially with heavy or infilled gate leaves without any openings.

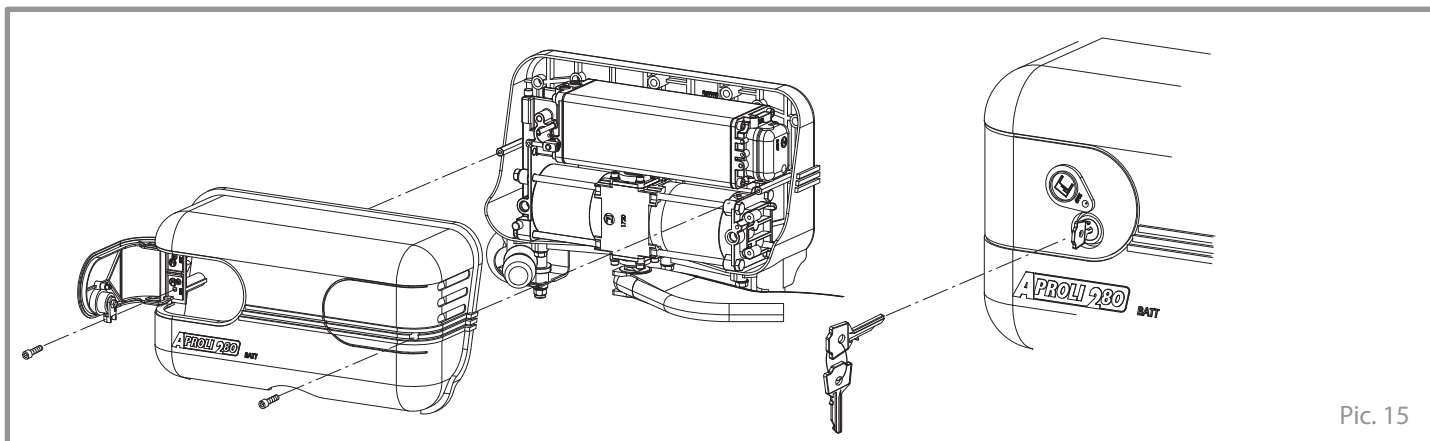
Adjusting is by tightening or loosening the device as indicated in Pic. 14.



Pic. 14

FITTING THE FRONT COVER BACK

Once setting is completed, first put the operator cover back and secure it by the screws, then close the flap by the key (Pic. 15).



Pic. 15

TECHNICAL SPECIFICATIONS

HYDRAULIC PUMP AND OPERATOR

Working temperature	-20 °C +80 °C [C]
Working torque	220-300 Nm
Oil type	Oil Fadini - Item 708L
Shaft rotation angle	205°
Weight with arm	15 kg
Protection standard	IP 67

[C]: -40 °C with specific optional accessories (Ref. General Catalogue).

ELECTRIC MOTOR

Power output	0,18 kW (0,25 CV)
Supply voltage	230 Vac
Frequency	50 Hz
Absorbed power	250 W
Absorbed current	1,2 A
Motor rotation speed	1.350 rpm
Capacitor	12,5 µF
Intermittent service	S3

APPLICATIONS

Max. gate weight per leaf	400 kg
Max. gate width per leaf	2 m

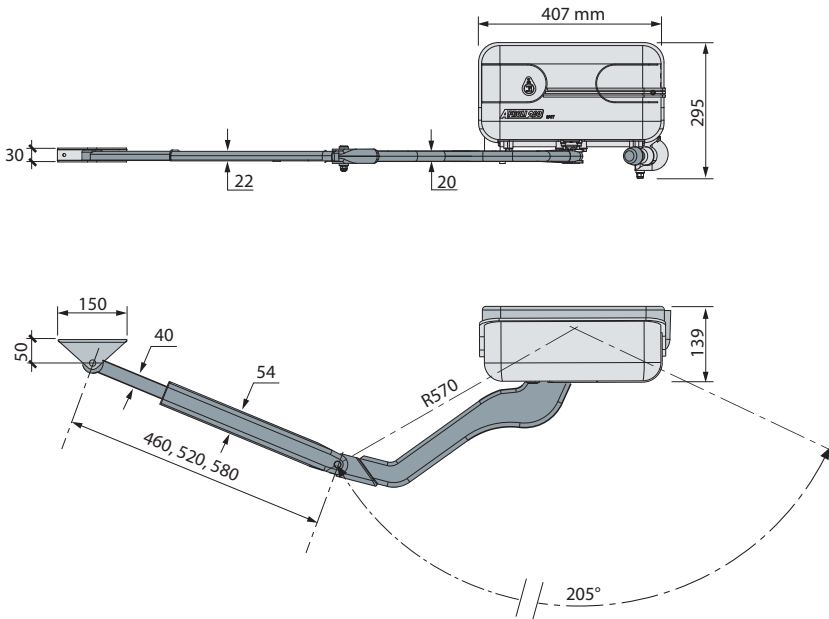
VERSIONS

- Non locking (reversible): an electric lock is needed
- With bidirectional hydraulic locking device
- With flow regulator

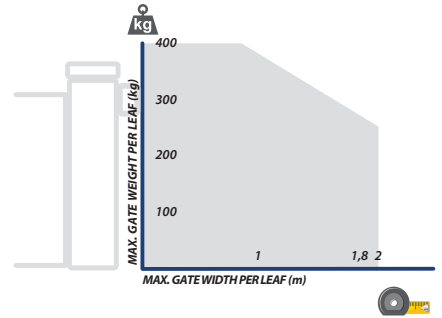
PERFORMANCE

Frequency of use	intensive	
Service cycle	opening	23 s
	dwel	15 s
	closing	23 s
	dwel	15 s
Complete cycle time	76 s	
Complete cycles		
opening-dwell-closing-dwell	No. 45/hour	

English



Pic. 16



The gate structure, design (solid, in-filled), height and strong wind pressure may affect and decrease the indicated values. Make always sure the gate structure is adequate to automation.

Pic. 17

hand over to the end user of the installation

English

MAINTENANCE RECORD hand over to the end user of the installation				
Installation address:		Maintainer:		Date:
Installation type: Sliding gate <input type="checkbox"/> Folding door <input type="checkbox"/> Swinging gate <input checked="" type="checkbox"/> Road barrier <input type="checkbox"/> Over-head door <input type="checkbox"/> Bollard <input type="checkbox"/> Lateral folding door <input type="checkbox"/> <input type="checkbox"/>		Operator model: Dimensions per gate leaf: Weight per gate leaf:		Quantity of models installed: Installation date:
<p>NOTE WELL: this document must record any ordinary and extraordinary services including installation, maintenance, repairs and replacements to be made only by using Fadini original spare parts. This document, for the data included in it, must be made available to authorized inspectors/officers, and a copy of it must be handed over the end user/s.</p> <p>The installer/maintainer are liable for the functionalities and safety features of the installation only if maintenance is carried on by qualified technical people appointed by themselves and agreed upon with the end user/s.</p>				
N°	Service date	Service description	Technical maintainer	End user/s
1				
2				
3				
4				
5				
6				
_____ Stamp and signature installation technician/maintainer		_____ Signed for acceptance end user buyer		



GUIDANCE FOR PROPER USE (for the end user)

WARNINGS

- Transit across the gate is allowed only if motor is stopped; stand at safe distance during opening and/or closing cycles of the gate.
- Do not touch any components of the system while the operator is working.
- Do not allow children and/or people to stand in the proximity of a working operator.
- Keep all the accessories able to turn on the operator (transmitters, proximity readers, key-switches, etc.) out of the reach of the children.
- Do not run the system in case of anomalies.

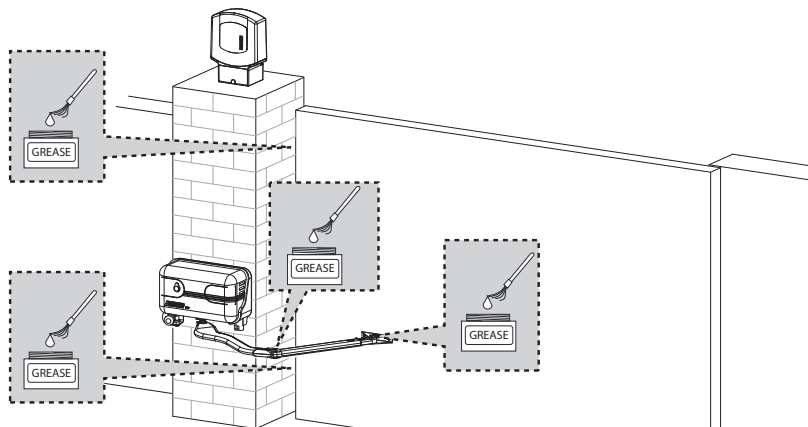
DISPOSAL OF MATERIAL: dispose properly of the packaging materials such as cardboard, nylon, polystyrene etc. through specializing companies (after verification of the regulations in force at the place of installation in the field of waste disposal). Disposal of electrical and electronic materials: to remove and dispose through specializing companies, as per Directive 2012/19/UE. Disposal of substances hazardous for the environment is prohibited.

MAINTENANCE

For optimum performance of system over time according to safety regulations, it is necessary to perform proper maintenance and monitoring of the entire installation: the automation, the electronic equipment and the cables connected to these. The entire installation must be carried out by qualified technical personnel. Operator: maintenance inspection at least every 6 months, while for the electronic equipment and safety systems an inspection at least once every month is required. The manufacturer, Meccanica Fadini S.r.l., is not responsible for non-observance of good installation practice and incorrect maintenance of the installation.

Advice for the end user:

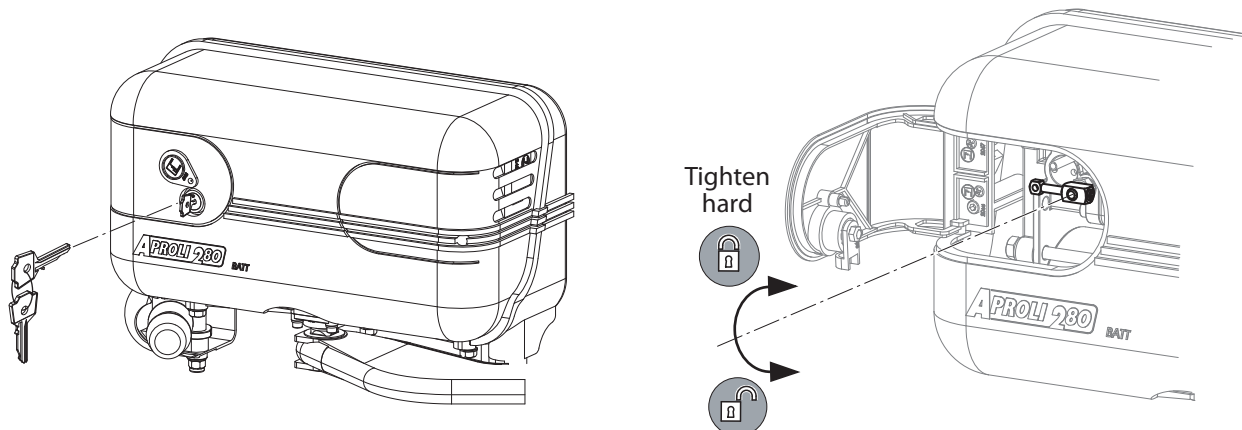
- clear the site of materials that may have deposited in the equipment and hinder its correct functioning (such as rests of insects, foliage, stones, etc.); before carrying out this operation, switch off voltage supply;
- clean regularly the equipment by using a damp cloth. Do not use flammable substances such as alcohol, solvents or benzene: these substances may cause explosions and/or damage the system.



Pic. 18

RELEASING FOR MANUAL OPERATIONS

With Aproli 280 Batt non locking (reversible version) it is first required that the electric lock be released by the coded key and the gate pushed open by hand. With the locking version, releasing is by opening the flap in the front cover by the coded key and lowering the inner lever. Locking again is by rising the lever and tightening it hard, overtightening though is to be avoided (Pic. 19).



Pic. 19