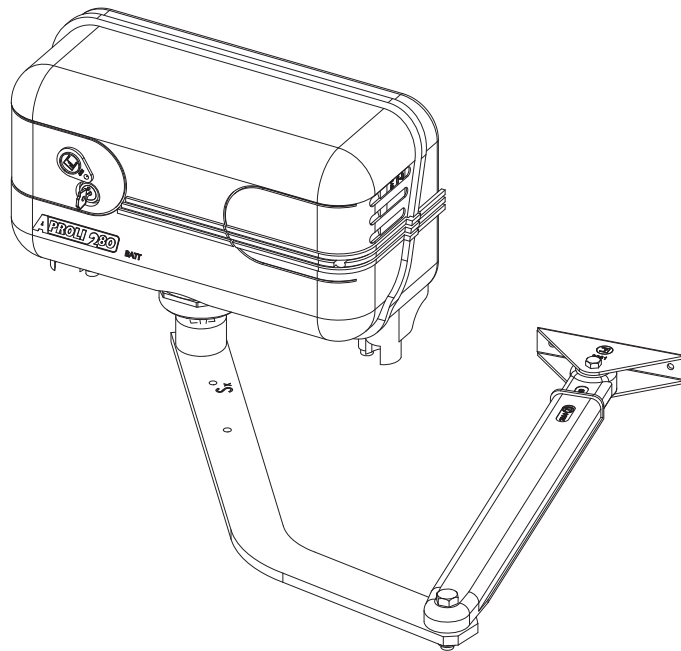


APROLI 280-700 Robusto

**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 280/700 Robusto** 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 280/700 Robusto is an oil-hydraulic operator for external application, fitted with an articulated arm made of steel, studied to open and close swinging gates mounted on pillars of large dimensions.

Aproli 280/700 Robusto is a handed unit depending on which gate side it is to be mounted either on the right or the left (view from inside the property); the motor shaft is factory pre-set in the correct position to take the arm for either right or left applications. 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.

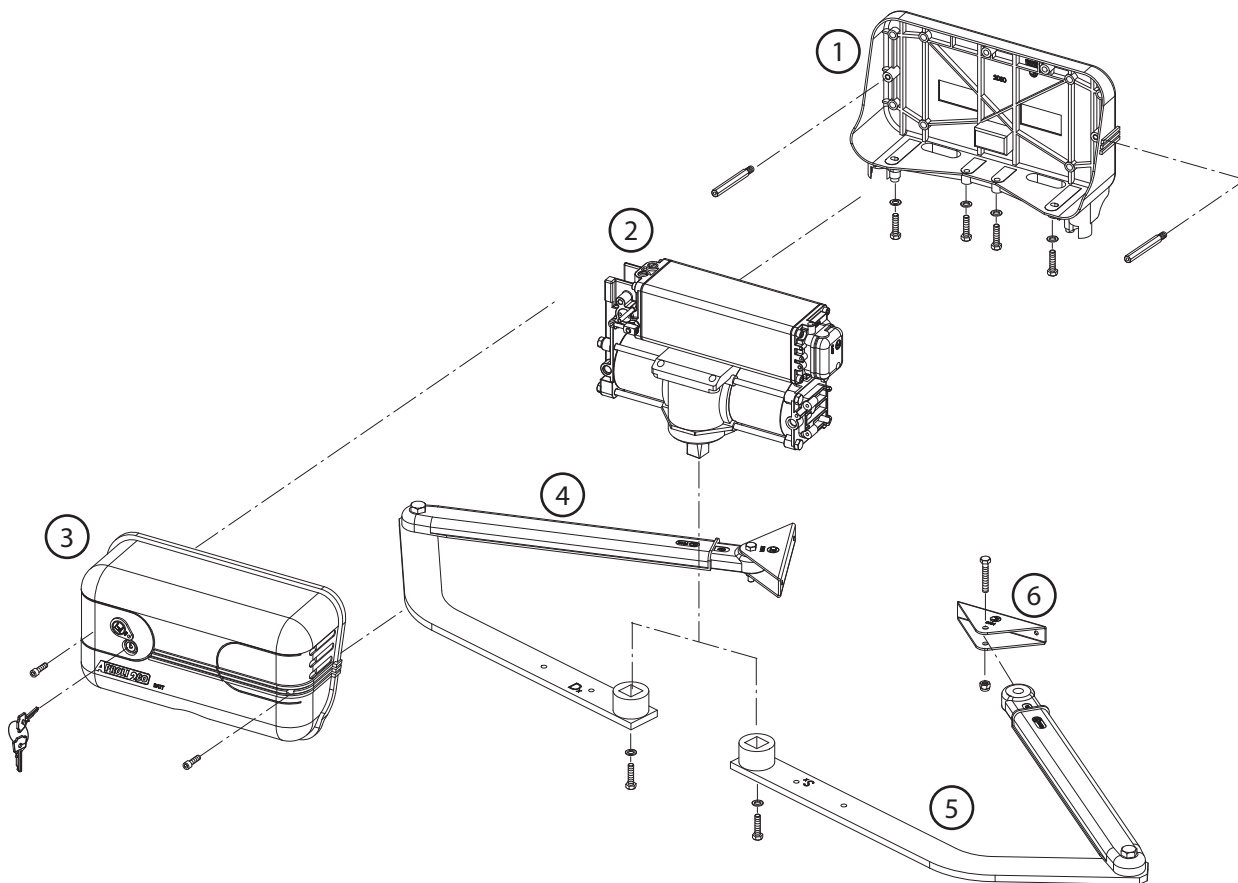
The driving arm (right- or left-handed version) is made of cathaphoresis treated steel and has the advantage that its last section can be adjusted into three different lengths to meet any installation requirements, even with pillars of large dimensions.

This operator is fitted with a bidirectional locking device to hydraulically lock the gate in open and closed positions.

For Aproli 280/700 Robusto 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 Aproli 280/700 Robusto right- or left-hand
- 3 - Cover with lockable flap for manual release by coded key
- 4 - Right-hand complete arm assembly
- 5 - Left-hand complete arm assembly
- 6 - Bracket for gate fixing

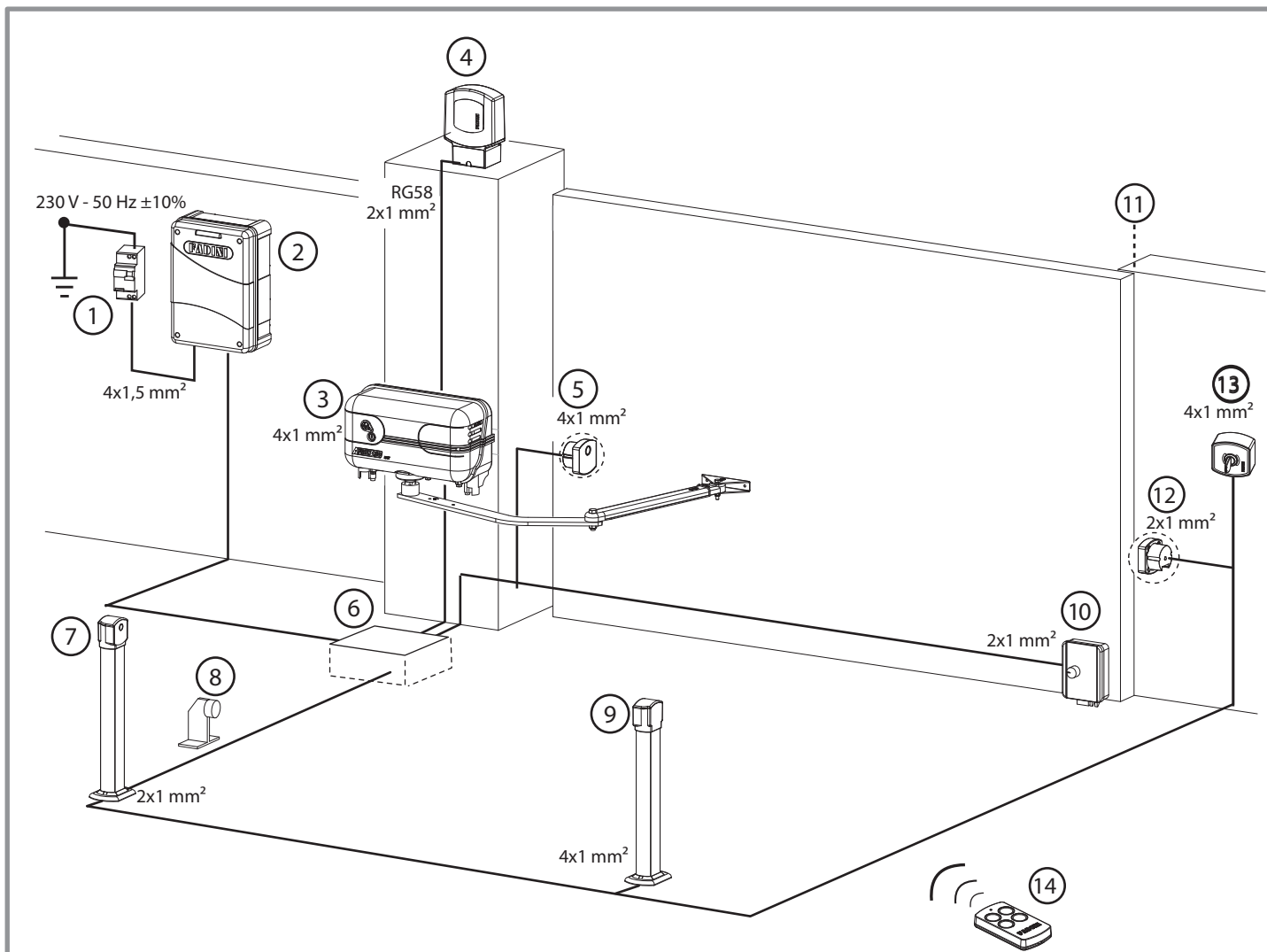
Pic. 1

ELECTRICAL WIRING DIAGRAM AND LAYOUT OF THE ACCESSORIES

Before installing Aproli 280/700 Robusto it is advisable that preparatory works 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



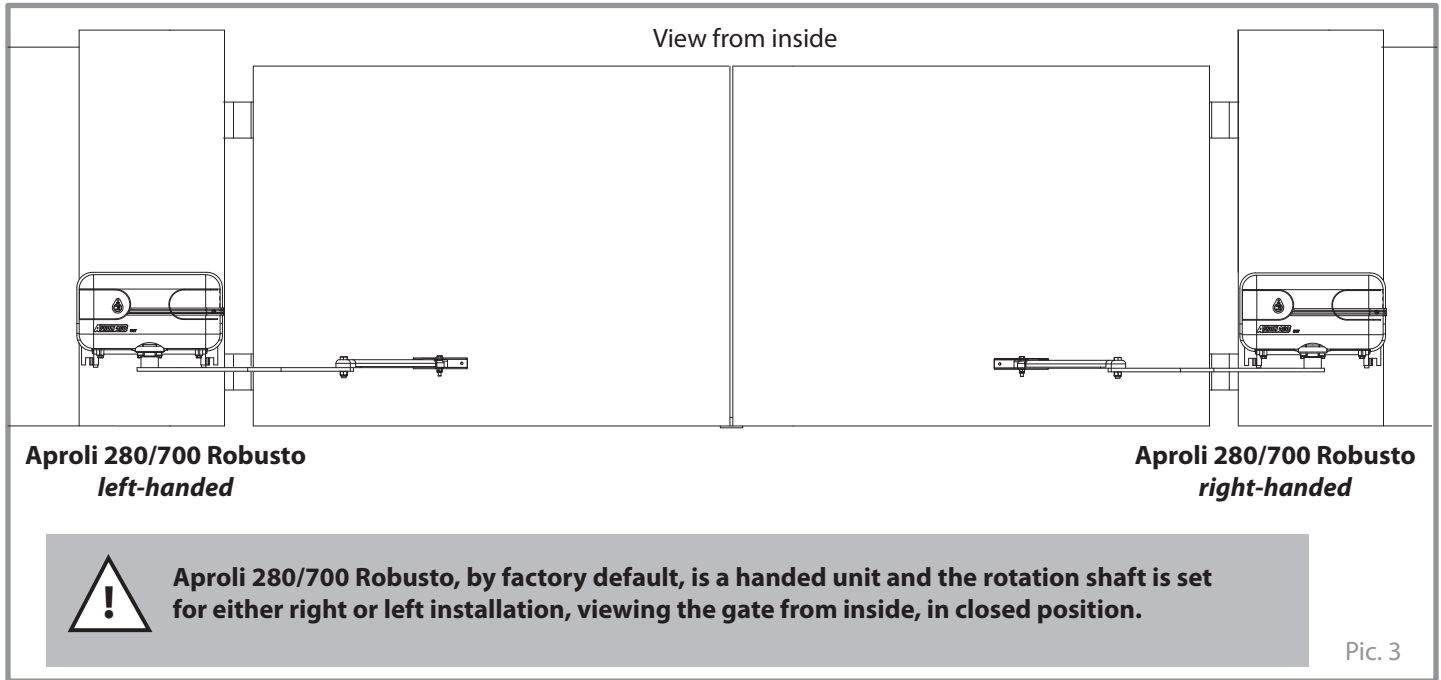
- 1 - 230 V - 50 Hz - 0,03 A magneto-thermal circuit breaker (cable section recommended to be 2,5 mm² beyond 100 m)
- 2 - Control box with plug-in radio receiver
- 3 - Aproli 280/700 Robusto, left-hand
- 4 - Flasher
- 5 - Photocell receiver
- 6 - Junction pit
- 7 - Photocell transmitter on post mount
- 8 - Ground gate stop in open position [A]
- 9 - Photocell receiver on post mount
- 10 - Gate electric lock recommended beyond 2 m width per gate leaf
- 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 for the safety of the system equipped with Aproli 280/700 Robusto.**

Pic. 2

RIGHT- AND LEFT-HANDED APROLI 280/700 ROBUSTO

Aproli 280/700 Robusto is distinguished into *right-* and *left-handed* depending on which gate side it is installed to (gate closed, view from inside): the distinction is very important as Aproli 280/700 Robusto comes, by factory default, with the rotation shaft already preset to be installed either on to the right or left side of the gate.

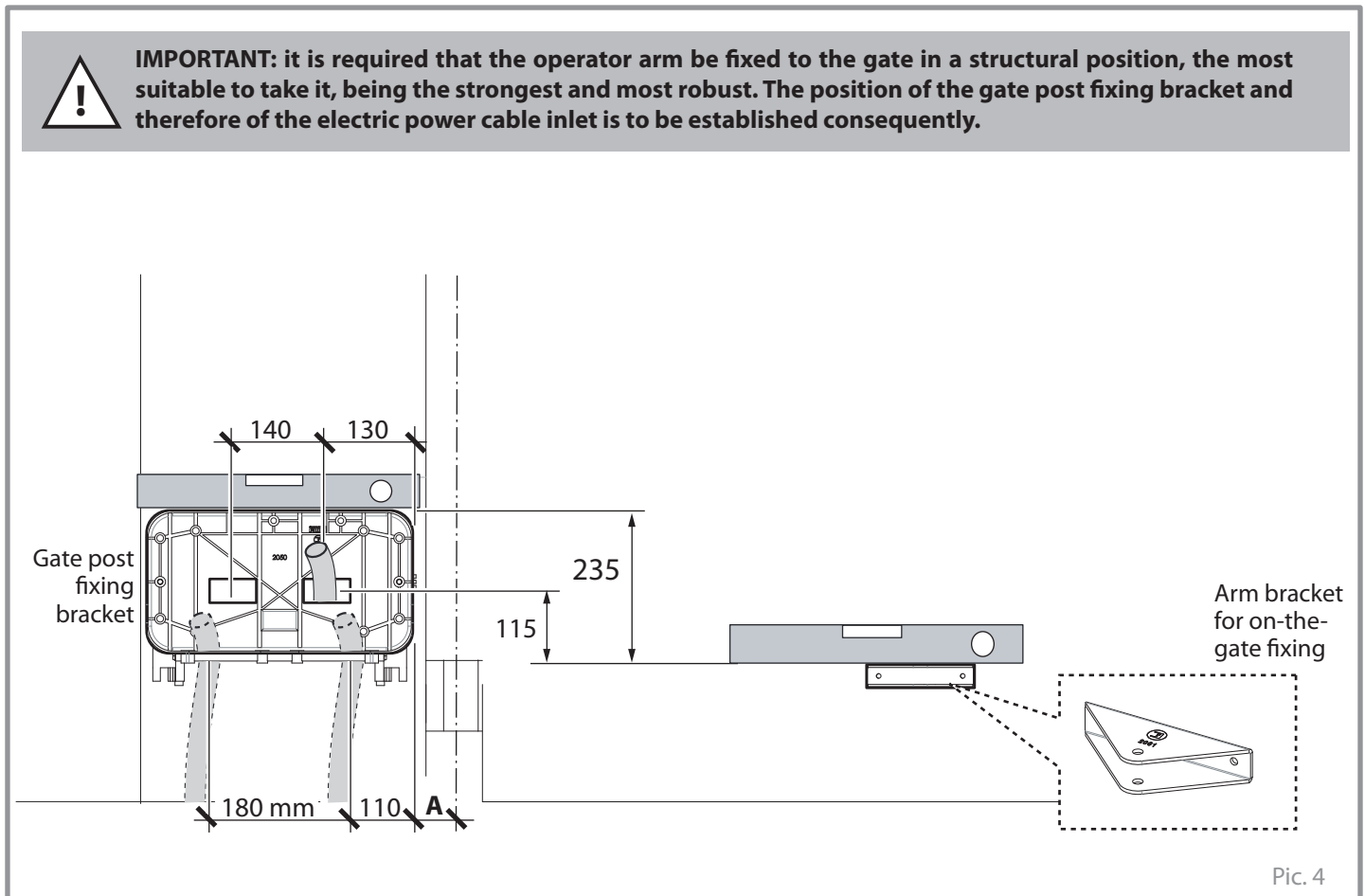


PRELIMINARY STEP - CHECKING THE FIXING POINTS

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

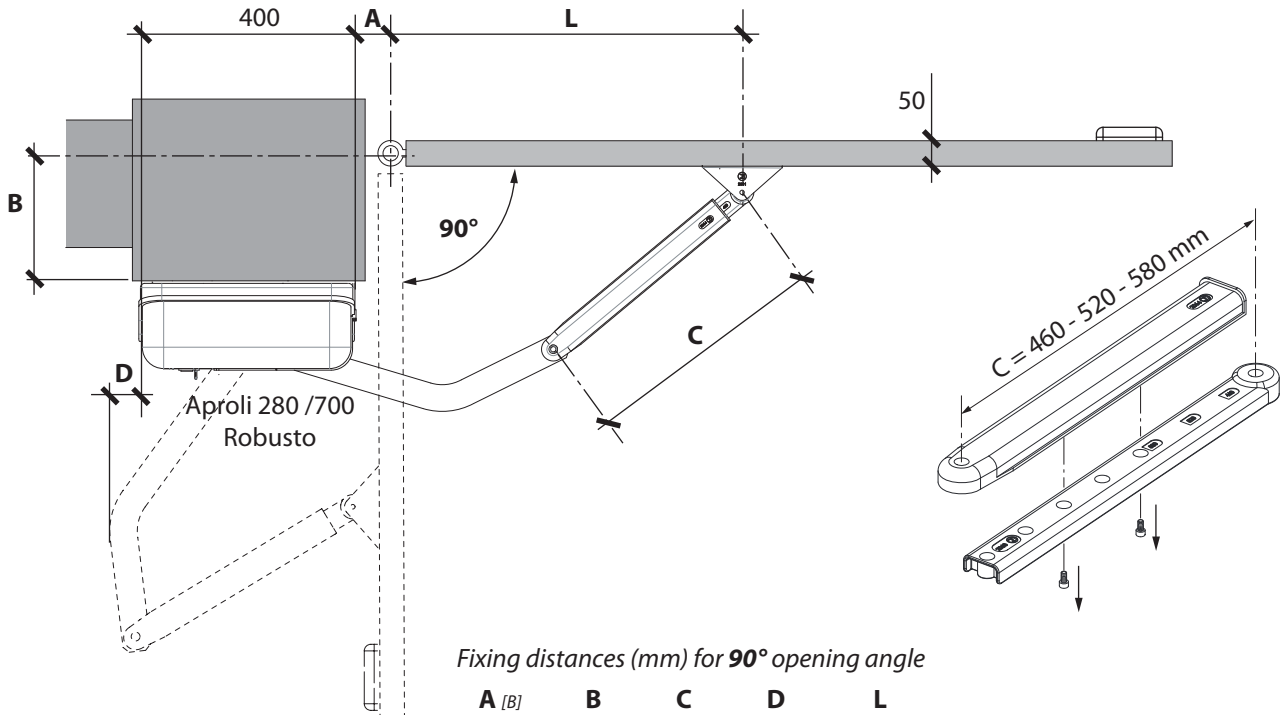
The fixing of the operator back bracket depends on this point and consequently also the position/outlet of the tube for the electrical connections and voltage supply (Pic. 4).

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



INSTALLATION DISTANCES

Aproli 280/700 Robusto comes with an arm whose gate fixing end can be adjusted into three lengths (460, 520 and 580 mm):



Fixing distances (mm) for 90° opening angle

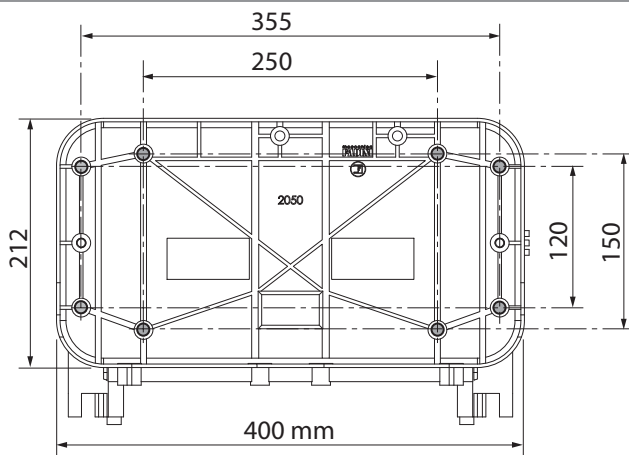
A [B]	B	C	D	L
70	150	460	75	650
70	200	460	70	650
70	250	520	120	650
70	300	520	85	650
70	350	580	150	650
70	400	580	100	650
70	450	580	0	600

[B]: The distances indicated in the table have been calculated 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.

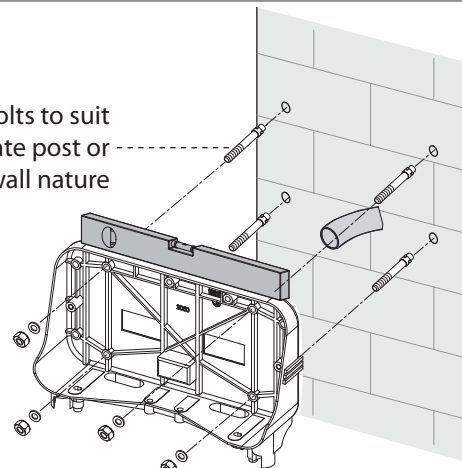
Pic. 5

FIXING THE BRACKET TO THE GATE POST

The support bracket is to be fixed by expanding bolts suitably to the post nature and using four of the eight holes in it.



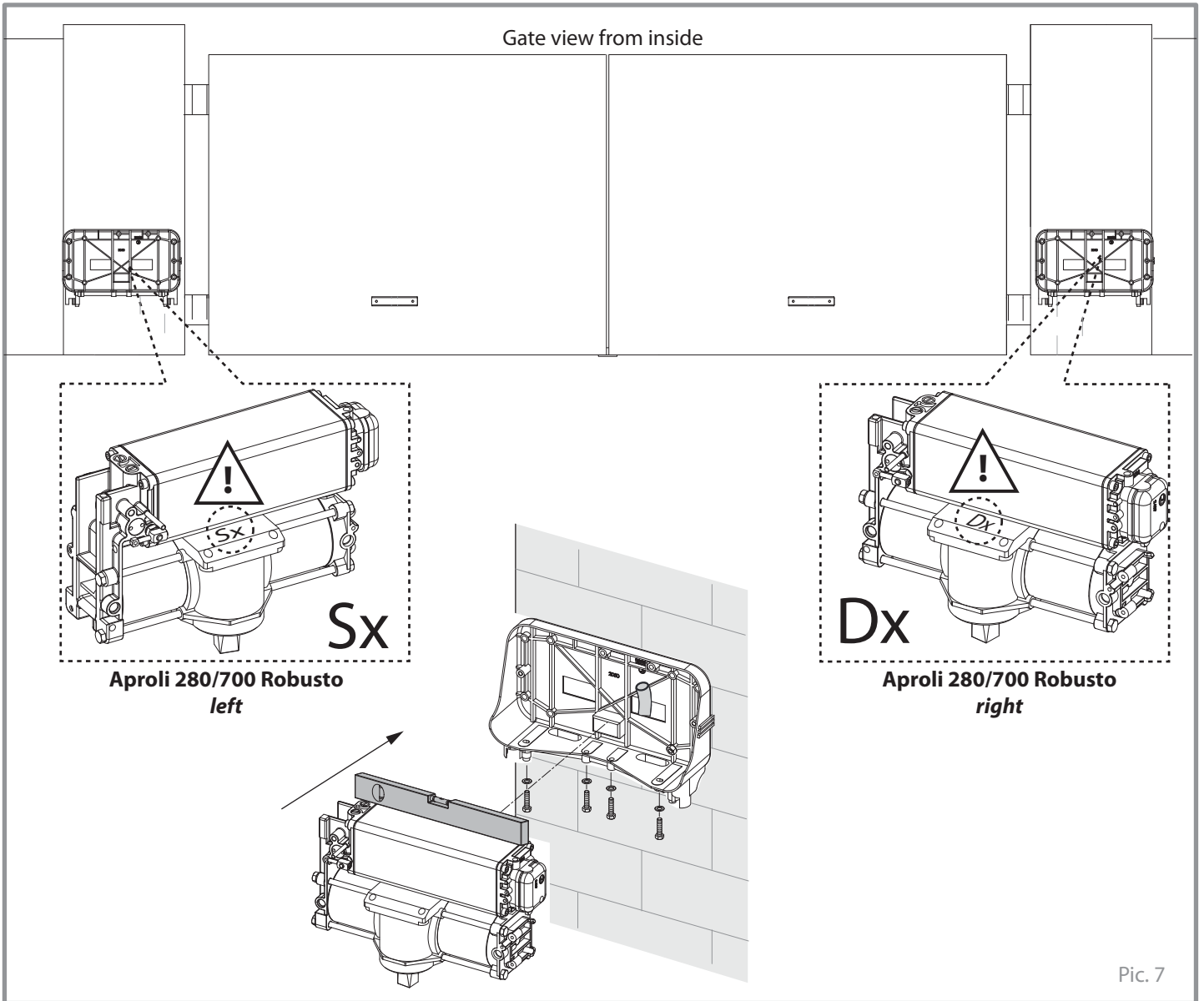
M8 fixing bolts to suit gate post or wall nature



Pic. 6

FIXING APROLI 280/700 ROBUSTO TO THE SUPPORT BRACKET

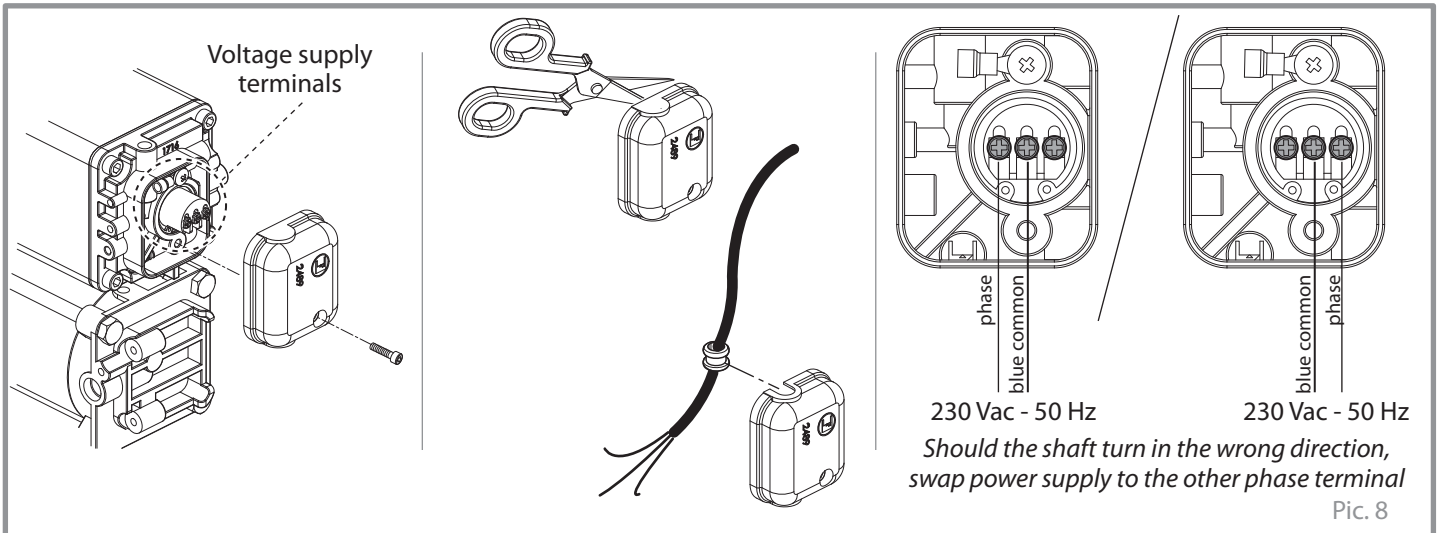
Mount Aproli 280/700 Robusto onto the support bracket; the *right* and *left* versions are marked Dx and Sx on the aluminium casting, as indicated in Pic. 7.



Pic. 7

POWER SUPPLY AND FIRST RUNNING TEST

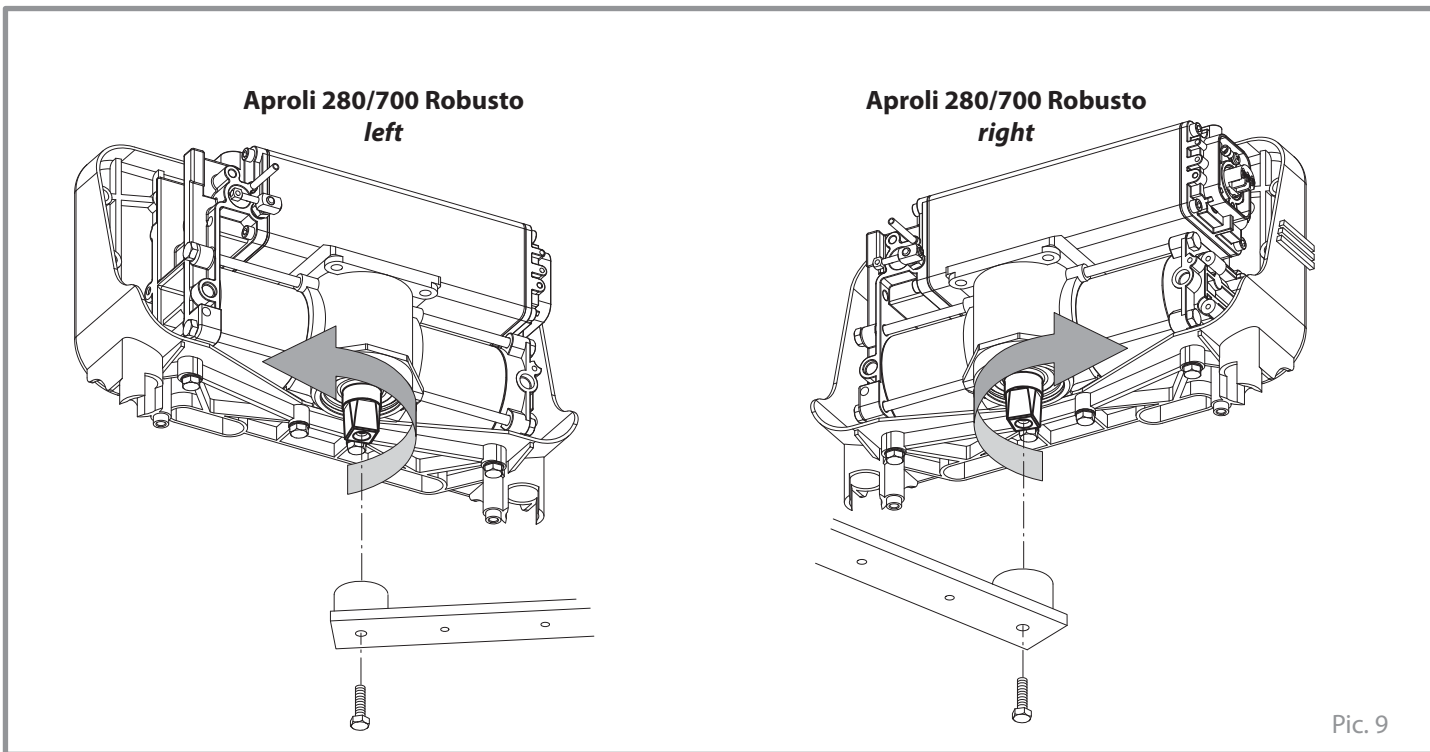
Remove the cover to have access to the terminal board for power supply connections.
Cut the marked area to get an inlet for the power supply cable fitted with a cable gland (Pic. 8).



Pic. 8

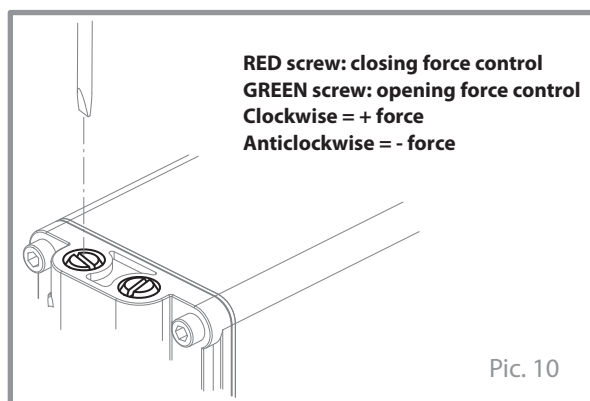
FIXING THE ARM

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



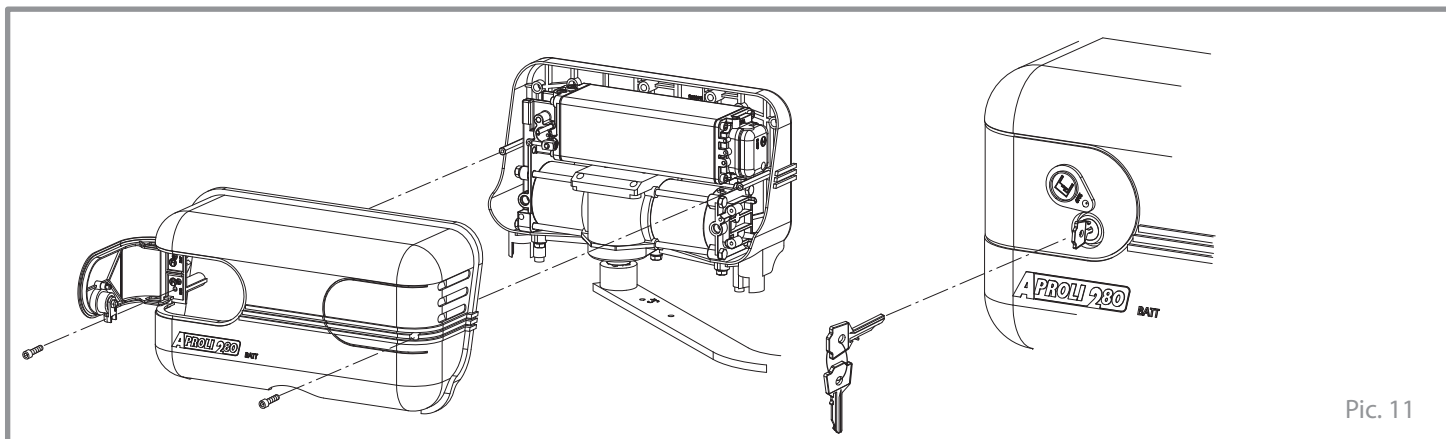
ADJUSTING THRUST FORCE

In order to adjust thrust power in opening and closing, turn the respective adjusting screws on the motor pump casting (Pic. 10).



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. 11).



TECHNICAL SPECIFICATIONS

HYDRAULIC PUMP AND OPERATOR

Working temperature	-20 °C +80 °C [C]
Working torque	250-400 Nm
Piston diameter	80 mm
Piston stroke	62 mm
Oil type	Oil Fadini - Item 708L
Shaft rotation angle	130°
Weight of operator c/w arm	19 kg
Protection standard	IP 67

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

APPLICATIONS

Max gate weight per leaf	400 kg
Max gate width per leaf	3 m

VERSIONS

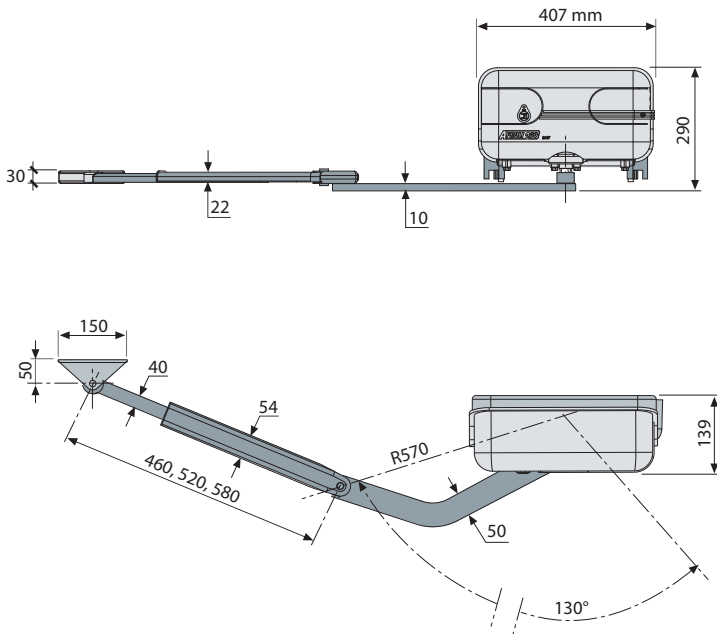
- Non locking (reversible): an electric lock is needed
- With bidirectional hydraulic locking device

ELECTRIC MOTOR

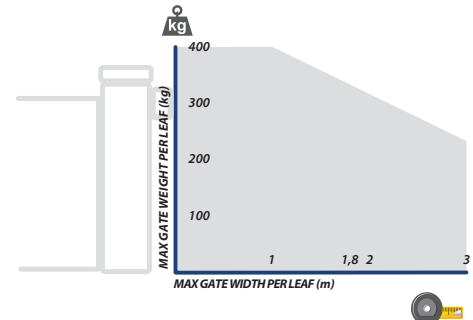
Power output	0,18 kW (0,25 CV)
Supply voltage	230 Vac
Frequency	50 Hz
Absorbed power	250 W
Absorbed current	1,2 A
Motor rotation speed	1.350 rpm
Capacitor	12,5 µF
Intermittent service	S3

PERFORMANCE

Frequency of use	very intensive	
Service cycle	opening	23 s
	dwll	30 s
	closing	23 s
	dwll	30 s
Complete cycle time	106 s	
Complete cycles		
opening-dwell-closing-dwell	No. 34/hour	
Annual cycles (with 8 hours of use per day)	No. 99.280	



Pic. 12




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. 13

hand over to the end user of the installation

English

MAINTENANCE RECORD		FADINI 		
hand over to the end user of the installation				
Installation address:		Maintainer:		Date:
Installation type:		Operator model:		Quantity of models installed:
Sliding gate	<input type="checkbox"/>	Folding door	<input type="checkbox"/>	Dimensions per gate leaf:
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"/>	Weight per gate leaf:
				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 to 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				
<hr/> Stamp and signature installation technician/maintainer		<hr/> 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.

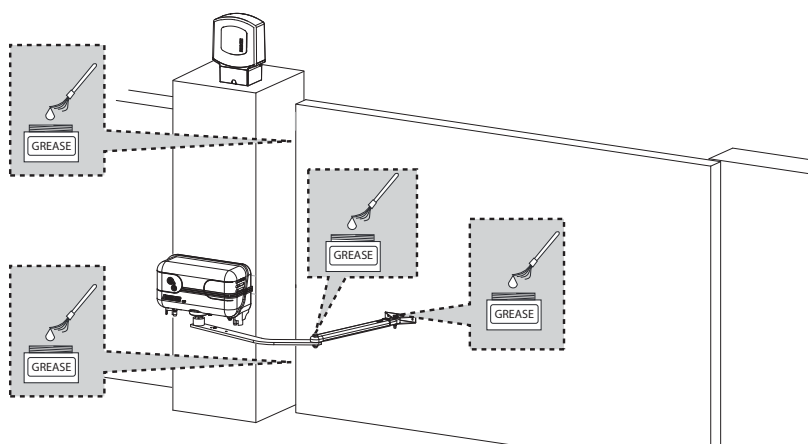
DISPOSAL OF MATERIAL: dispose properly of the packaging materials such as cardboard, nylon, polystyrene etc. through specializing companies (after verification of the regulations in force at the place of installation in the field of waste disposal). Disposal of electrical and electronic materials: to 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:

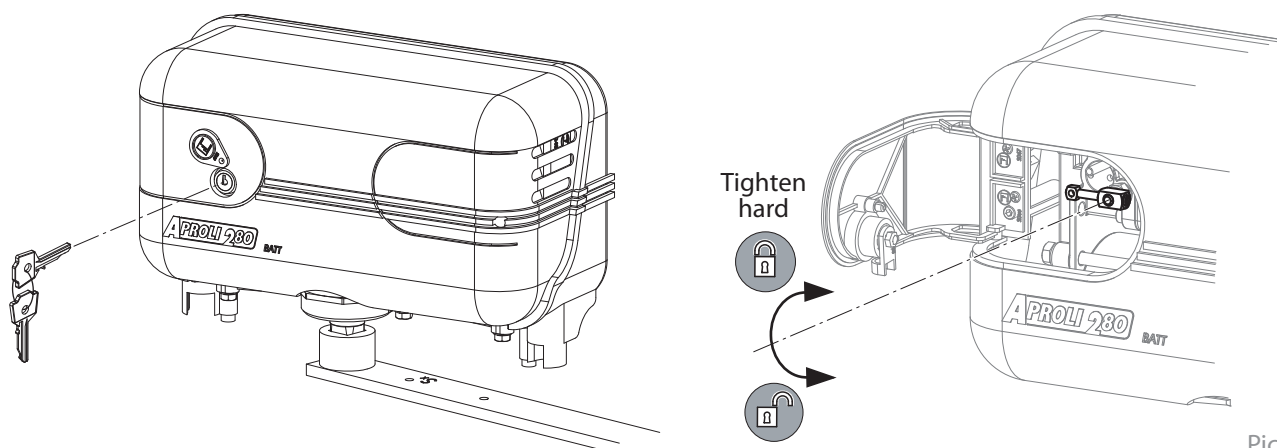
- clear the site of materials that may have deposited in the equipment and hinder its correct functioning (such as rests of insects, foliage, stones, etc.); before carrying out this operation, switch off voltage supply;
- clean regularly the equipment by using a damp cloth. Do not use flammable substances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



Pic. 14

RELEASING FOR MANUAL OPERATIONS

Manual override allows for Aproli 280/700 Robusto to be disengaged from the gate. This is possible by opening the flap in the front cover and lowering the release lever. To engage it back, raise the lever until tightened but avoid overtightening (Pic. 15).



Pic. 15