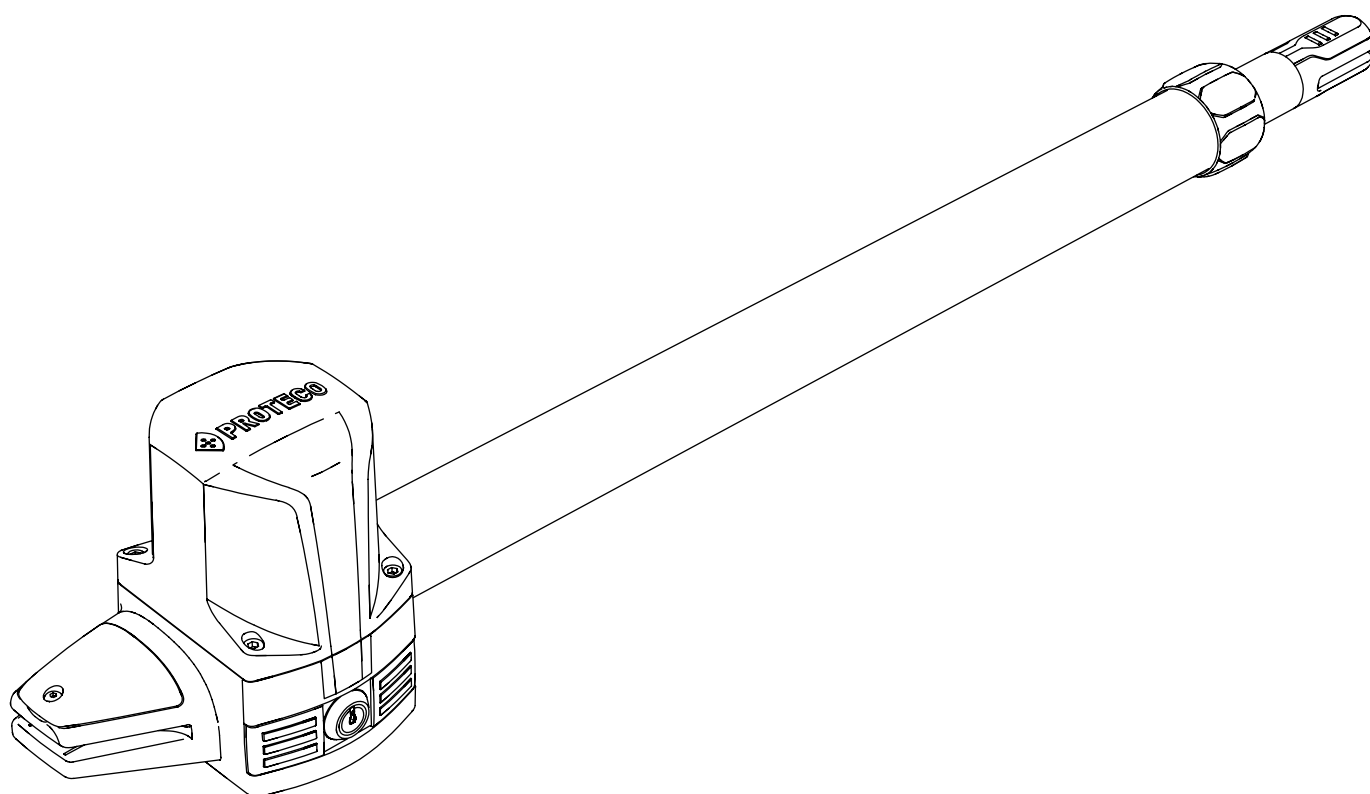


LEADER NEW

AUTOMATION FOR SWING GATES

Installation Manual



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1. WARNINGS

This manual contains important information concerning personal safety.
An incorrect installation or an improper use may lead to severe injuries.
Read carefully and store for future use. Pay particular attention to this symbol  .

-  Connect the automation to the earth system, which must be efficient and properly carried out.
-  The installation of automatic doors and gates must comply with the Machine Directive 2006/42/CE, in particular EN 12453 and performed by qualified personnel only..
-  Make sure the main power line is equipped with state of the art safety grounding system; as well be sure the whole installation is protected by a power cut switch and against overcurrent.

Make sure the area is clear from flammable gases and/or electromagnetic interferences: it could lead to very dangerous injuries.

-  After installation, packaging and waste materials (cardboard

kept away from children as they could be potentially harmful.
Use only original spare parts. Any alteration to the system is prohibited.
Protoco Srl will not respond in case of using additional and/or fake spares.

-  Before commissioning the system, deliver the last pages of this manual to the user (section 5. END USER'S TIPS).

Protoco S.r.l. reserves the right to make changes to the product without notice.

2. DESCRIPTION AND INTENDED USE.

The LEADER operator is designed to automate swing gates.

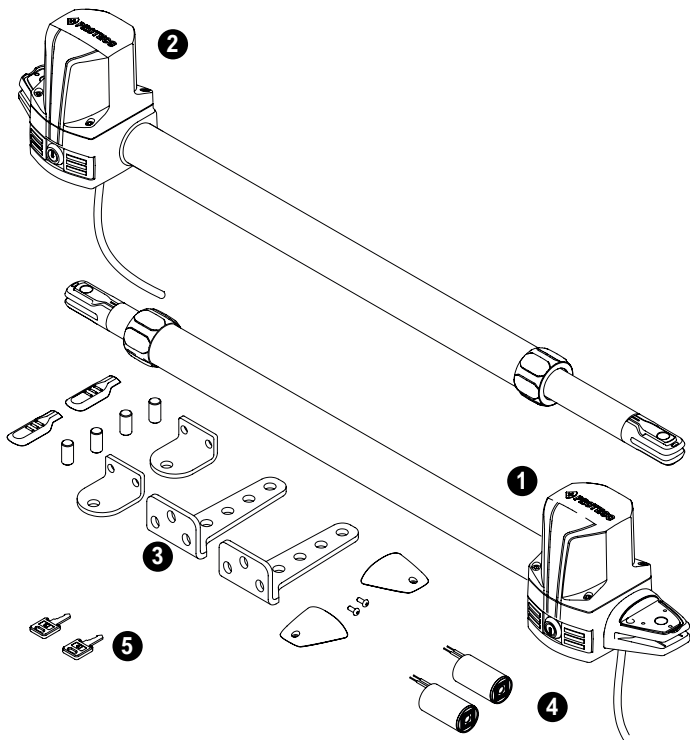
The use of this product for purposes other than those described and installation executed in a manner other than as instructed in this technical manual are prohibited.

All LEADER systems are locked, therefore no electric-lock is needed.

In case of power cut the gate operator can be easily released by manual operation. (See 5.2. Manual operation).

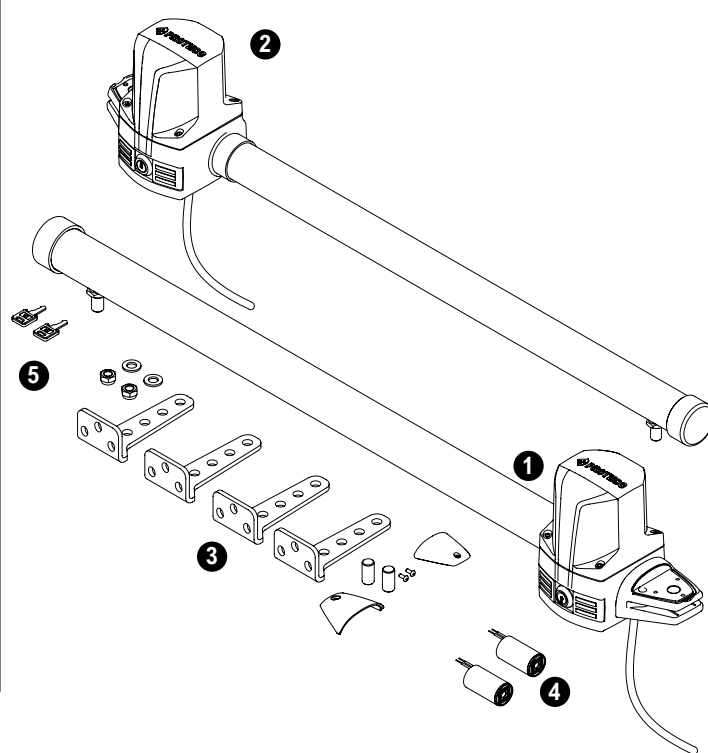
2.1 Content

LEADER TI



DESCRIPTION	ITEM	UNITS
① LEADER NEW - RH operator		1
② LEADER NEW - LH operator		1
③ FITTINGS BAG		1
④ CAPACITOR		2
⑤ RELEASE KEY	SCH0190	2

LEADER TA



DESCRIPTION	CODE	UNITS
① LEADER NEW - RH operator		1
② LEADER NEW - LH operator		1
③ FITTINGS BAG		1
④ CAPACITOR		2
⑤ RELEASE KEY	SCH0190	2

2.2 Technical features

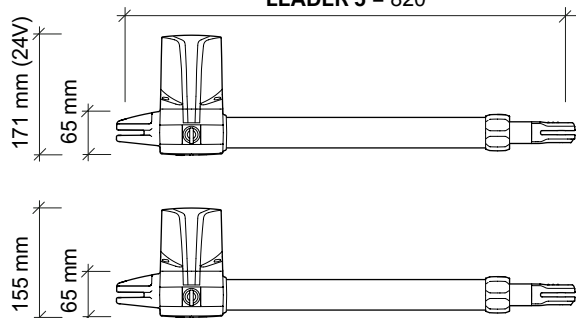
	LEADER 3 TI			LEADER 4 TI			LEADER 5 TI			LEADER 4 TA		
Power supply	24Vdc	230V-50Hz	115V-60Hz	24Vdc	230V-50Hz	115V-60Hz	24Vdc	230V-50Hz	115V-60Hz	24Vdc	230V-50Hz	115V-60Hz
Max. motor voltage	0,75A	1,7A	2,3A	0,75A	2A	2,3A	0,75A	1,7A	2,3A	0,75A	1,7A	2,3A
Rated power	50W	280W	300W	50W	280W	300W	50W	280W	300W	50W	280W	300W
Capacitor	---	8µf	30µf	---	8µf	30µf	---	8µf	30µf	---	8µf	30µf
Thermal cut off	---	150°C	150°C	---	150°C	150°C	---	150°C	150°C	---	150°C	150°C
Rated thrust	2500N	2800N	3000N	2500N	2800N	3000N	2500N	2800N	3000N	2500N	2800N	3000N
IP rating	44	44	44	44	44	44	44	44	44	44	44	44
Revolutions	1700 rpm	1400 rpm	1700 rpm	1700 rpm	1400 rpm	1700 rpm	1700 rpm	1400 rpm	1700 rpm	1700 rpm	1400 rpm	1700 rpm
Max. opening angle	100°	100°	100°	110°	110°	110°	110°	110°	110°	100°	100°	100°
Opening time - 90° opening	13,5"	17"	14"	18"	22"	18"	22,5"	27"	22"	18"	22"	18"
Max. leaf weight	275 Kg	350 Kg	300 Kg	250 Kg	350 Kg	300 Kg	150 Kg	250 Kg	200 Kg	200 Kg	350 Kg	200 Kg
Max. leaf length	2,00 m	2,00 m	2,00 m	2,50 m	2,75 m	2,75 m	3,00 m	3,50 m	3,50 m	2,50 m	2,75 m	2,75 m
Duty cycle	80%	40%	40%	80%	40%	40%	80%	40%	40%	80%	40%	40%

2.3 Dimensions

LEADER TI

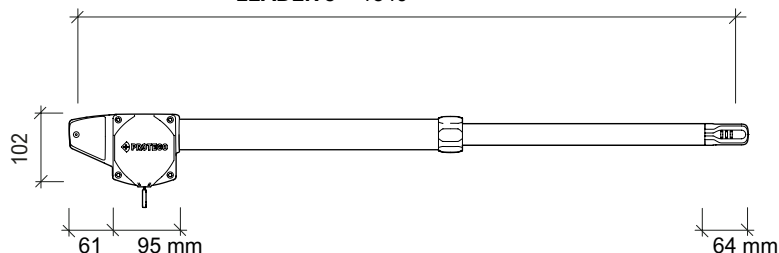
DIMENSIONS - RETREATED POSITION

LEADER 3 = 620
LEADER 4 = 720
LEADER 5 = 820

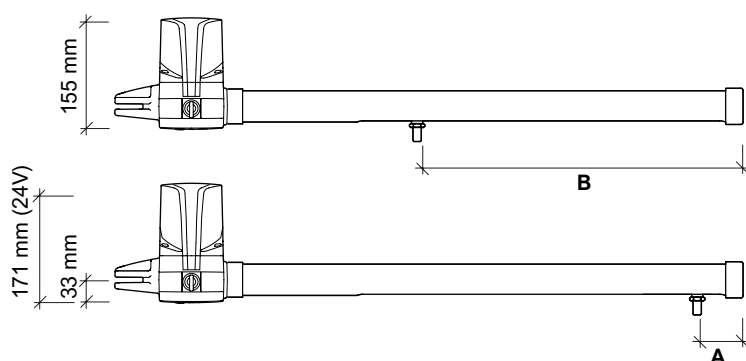


DIMENSIONS - EXTENDED POSITION

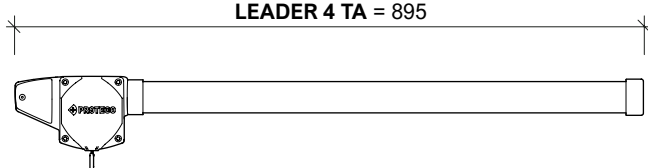
LEADER 3 = 940
LEADER 4 = 1140
LEADER 5 = 1340



LEADER TA



LEADER 4 TA = 895



In closing position **A** shall be minimum di 50 mm
In opening position **B** shall be maximum 450 mm

2.4 Life line

The life of the gearmotor may be affected by multiple waste factors. The life expectation can be calculated using the criteria outlined in the below table.

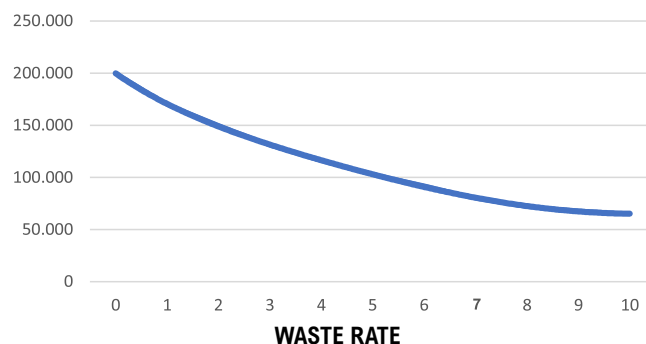
In order to obtain the waste rate add up the values included in **Table 1**, according to the conditions of the installation and the accessories fitted.

ATTENTION:

If the waste rate obtained is beyond 10, move to a superior version in order to fulfill the expected performances.

	LEADER 3 NEW	LEADER 4 NEW	LEADER 5 NEW
Max. width 1 m	0	0	0
Max. width 1,5 m	1	1	0,5
Max. width 2 m	1,5	1	1
Max. width 2,5 m	2,5	1,5	1
Max. width 3 m	3	2,5	1,5
Max. width 4 m	3,5	3	2,5
Max. weight 100 Kg	0	0	0
Max. weight 200 Kg	1,5	1	1
Max. weight 250 Kg	2	1,5	1,5
Max. weight 300 Kg	2,5	2,5	2
Max. weight 350 Kg	3	3	2,5
Blind gate in strong wind areas	0 - 4,5	0 - 4,5	0 - 4,5
Standard gate in strong wind areas	0 - 3	0 - 3	0 - 3
Outside temperatures often beyond 40° or below 0°	1	1	1

CYCLES



Follow the waste rate line of the graph to get the estimated duty cycles.

Duty cycles obtained may be compromised if the maintenance plan is not carefully respected.

Duty cycles are determined on the base of design analysis, project calculations and tests carried out at factory (gates opening at 90°).

Therefore duty cycles achieved as well as the waste rate are a mere estimation.

3. INSTALLATION

3.1 Introduction



ATTENTION!

ASTER must be installed by qualified personnel only, complying with law regulations and instructions contained in this manual.

ATTENTION!

Any other use other than that described and in environmental conditions other than those indicated in this manual is to be considered improper and prohibited.

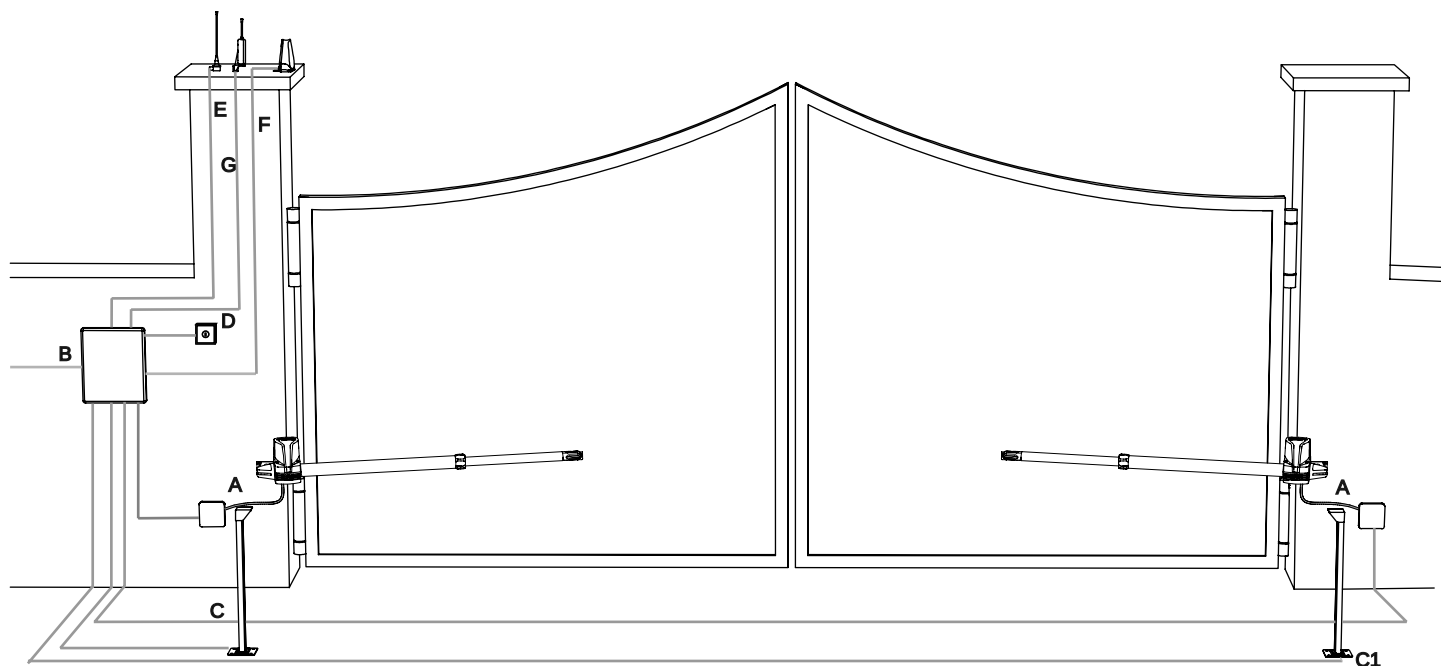
For a proper installation, strictly follow the following procedure, respecting the below chronological order

3.2 Preliminary checks

Before proceeding to installation, it is necessary to double check the good condition of every component and make sure the site is suitable for installation purposes.

- All components must be integral and suitable to use.
- Make sure the area around the system is clear enough to allow easy and safe manual operation.
- Make sure weight, dimensions and gate features are suitable to the model you have chosen.
- Make sure the gate area is fitted with ground stops both in opening and closing.
- Make sure the gate is mechanically free of friction.
- Make sure the automation fixing area is compatible with the dimensions of the brackets and that there is sufficient space to carry out manual operation easily and safely.
- Make sure the automation positioning area is not subject to flooding.
- Make sure the electric circuit is connected to a state of the art safety grounding.
- Make sure the fixing surfaces of the photocells are flat and allow correct alignment between transmitter and receiver.

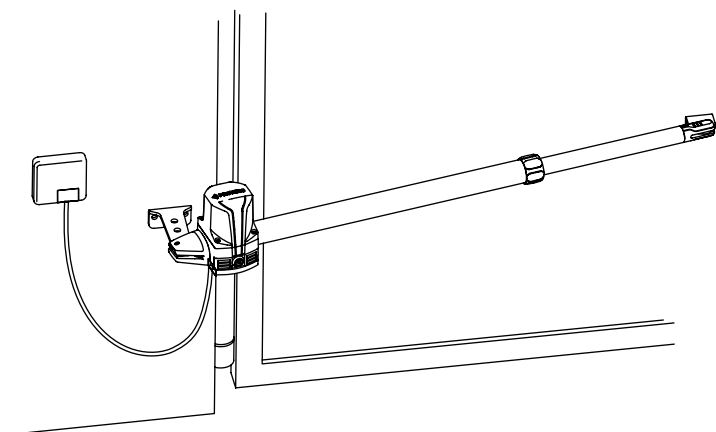
3.3 Electric layout



	Motor 230V/115V	Motor 24V
A Operator	3 x 1,5 mm ² + Terra	2 x 1,5 mm ²
B Control unit	2 x 1,5 mm ² + Terra	2 x 1,5 mm ² + Terra
C RX photocell	4 x 0,5 mm ²	4 x 0,5 mm ²
C TX photocell	2 x 0,5 mm ²	2 x 0,5 mm ²
D Key switch	2 x 0,5 mm ²	2 x 0,5 mm ²
E Antenna	RG58	RG58
F Blinker	2 x 0,5 mm ²	2 x 0,5 mm ²
G Radio receiver	2 x 0,5 mm ²	2 x 0,5 mm ²

NB: Cables necessary for the installation of the system (not included) may vary according to the quantity and type of accessories and devices fitted.

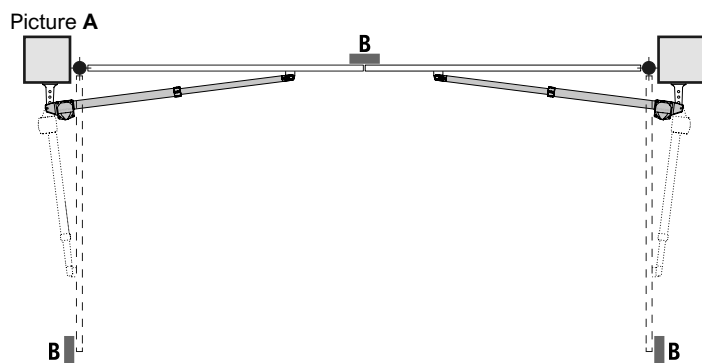
- 3 Switch the POWER OFF before starting any wiring.
- 3 Fit a power cut switch to protect the electric plant against overcurrent.
The standard requires a separation of contacts of at least 3 mm in each pole(EN 60335-1).
- 3 The installation requires skills in the electrical and mechanical fields; it must only be performed by qualified personnel able to release the declaration of conformity (type A) on the whole installation (Machine Directive 2006/42/CEE, attachment IIA).
- 3 The main electric plant shall comply with the outstanding regulation and shall be state of the art carried out.
- 3 The power supply lines to the motors, control unit and accessories must be separated in order to avoid possible interferences that could generate system malfunctions.
- 3 The electric cable coming out of the actuator must not be stretched but make a wide downward curve to avoid the backflow of water inside the actuator itself (see the picture above).



3.4 Installing the operator

Check the orientation of the motors, left or right hand, referring to picture A.
If hinges are positioned on the right (property view), the motor will be right hand, and viceversa.

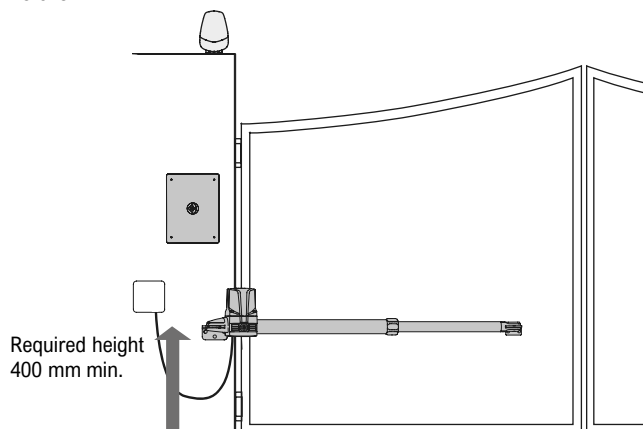
Make sure the gate is fitted with ground stops both in opening and closing (picture B).



3.4.1 Quotes from ground

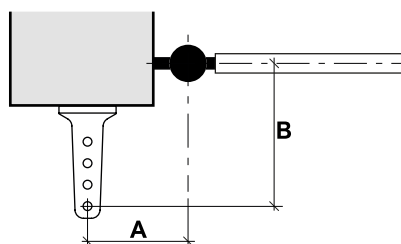
Brackets must be positioned at a minimum height of (picture B).
If the gate is particularly light, fit the operator as closer as possible to gate centerline.

Picture B



3.4.2 Pillar quotes

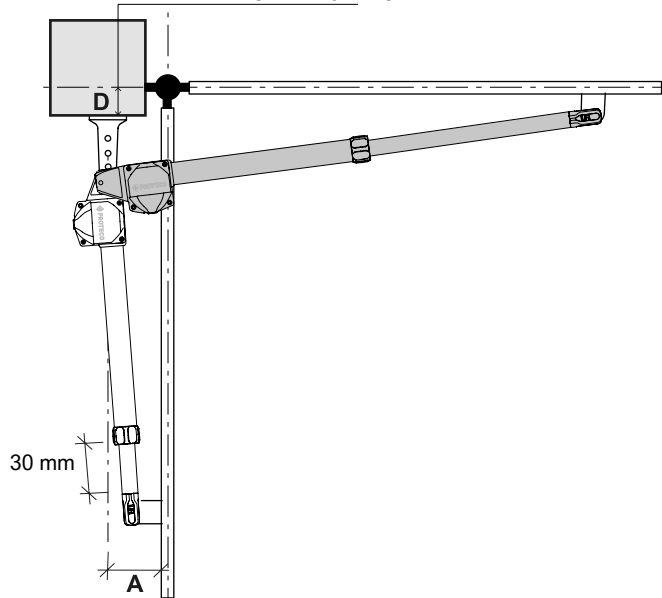
The ideal approach is to fix the brackets complying with the measures A and B as indicated in the below table for an opening angle of 90° (picture C/D).



LEADER 3: A=150 B=150
LEADER 4: A=200 B=200
LEADER 5: A=250 B=250

Picture D

LEADER 3: D= max 125 mm
LEADER 4: D= max 175 mm
LEADER 5: D= max 225 mm



If the ideal scenario of A and B is not applicable, then refer to the below table to get some other possible combinations according to the width of the pillar.

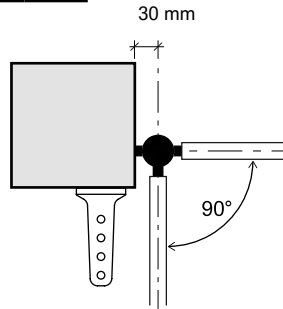
Values are expressed in mm. The **Leader New** can replace the previous model ensuring the same excursions and the same opening angles, without having to replace the existing ones.

LEADER NEW 5 (90°)									
D	225	200	175	150	125	100	75	50	25
A	165	190	200	200	200	200	250	300	345
B	305	280	255	260	265	240	215	190	165
Bracket	80	80	80	110	140	140	140	140	140
Minimum leaf length	1150	1130	1130	1130	1140	1120	1100	1070	1050

LEADER NEW 4 (90°)								
D	175	150	125	100	75	50	25	0
A	115	140	165	160	155	180	210	240
B	255	230	205	210	215	190	165	140
Bracket	80	80	80	110	140	140	140	140
Minimum leaf length	1000	980	980	970	970	970	950	930

LEADER NEW 3 (90°)						
D	125	100	75	50	25	0
A	110	150	145	140	135	160
B	205	150	155	160	165	140
Bracket	80	50	80	110	140	140
Minimum leaf length	860	840	840	850	850	830

NB: for an opening angle of 90° the minimum recommended distance between the hinge and the pillar is 30 mm.



LEADER NEW 4 TA (90°)						
D	125	100	75	50	25	0
A	110	150	145	140	135	160
B	205	150	155	160	165	140
Bracket	80	50	80	110	140	140
Minimum leaf length	860	840	840	850	850	830

LEADER NEW 4 TA (100°)							
D	125	100	75	50	25	0	
A	110	150	145	140	135	160	
B	205	150	155	160	165	140	
Distance between hinge and pillar	80	50	40	40	30	30	
Bracket	80	50	80	110	140	140	
Minimum leaf length	850	850	850	850	850	820	

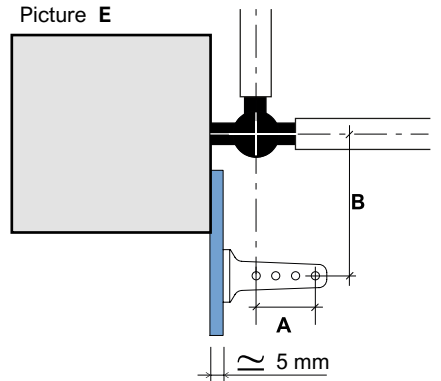
LEADER NEW 4 TA (110°)					
D	100	75	50	25	0
A	150	145	140	135	160
B	150	155	160	165	140
Distance between hinge and pillar	70	60	50	40	30
Bracket	50	80	110	140	140
Minimum leaf length	850	850	850	850	820

LEADER NEW 5 (110°)				
D	100	75	50	25
A	220	220	215	235
B	210	185	190	165
Distance between hinge and pillar	70	60	50	40
Bracket	80	110	140	140
Minimum leaf length	1100	1100	1200	1100

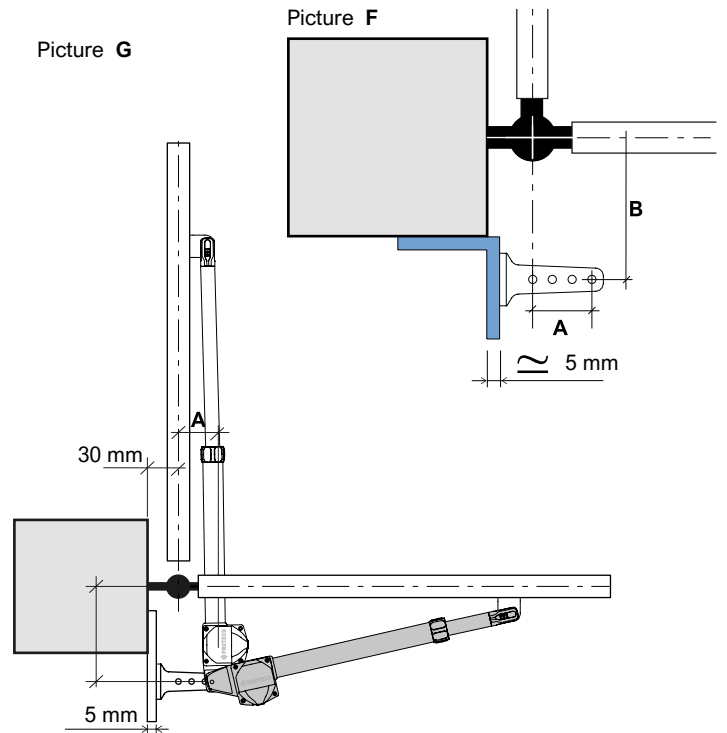
LEADER NEW 4 (110°)		
D	50	0
A	175	175
B	140	140
Distance between hinge and pillar	40	30
Bracket	80	140
Minimum leaf length	925	920

3.4.3 Outward opening

It's possible to have your gate opening outward (picture E/F).



Picture G



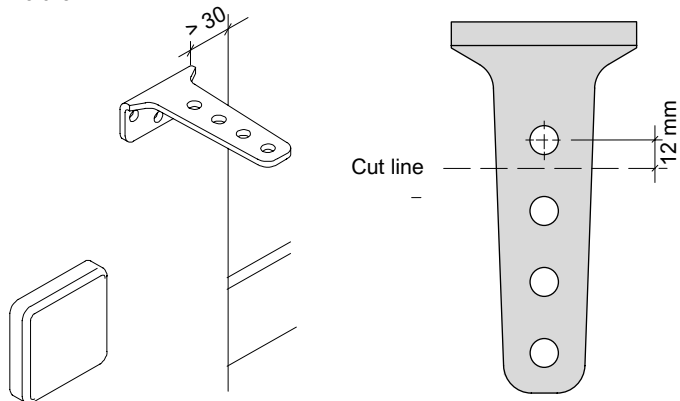
Operator	LEADER 3	LEADER 4	LEADER 5
A	115	115	115
B	220	200	200
Distance from pillar	5	5	5
bracket	140	140	140
Min. leaf length	800	1000	1200

NB: For outward opening, fit an additional bracket between the pillar and the Proteco bracket, as show **Pic. E** or **Pic. F**.

3.4.4 Fixing the pillar bracket - NEW LEADER TI

Fix or weld the bracket to the pillar according to the quotas outlined in the previous paragraph.
If screw anchors are used, go for **M10** type and keep in mind the screw anchor has to be fitted no less than **30 mm** from the pillar edge just to avoid possible breakages (Pic. H).
In case of masonry pillars, use chemical or resin anchors, or properly wall the bracket.

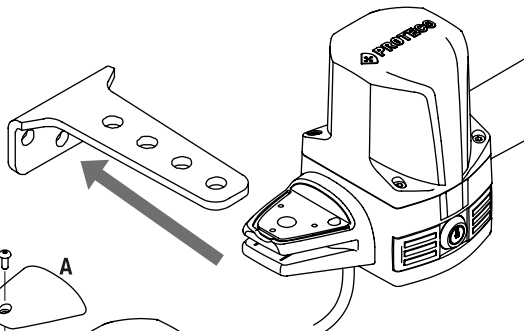
Picture H



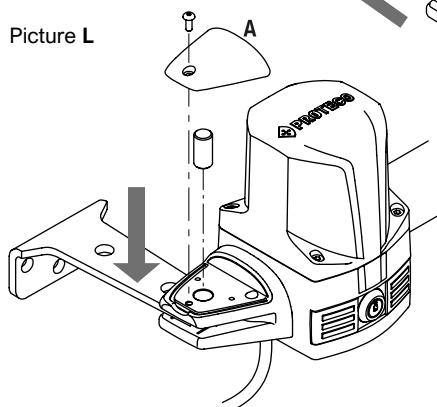
In order to properly cut the bracket start 12 mm from the hole center, as shown in the picture.
Fix the motor to the bracket following the below procedure:

- Remove screw from plastic cap (picture L - A).
- Fit the bracket to the motor (picture I).
- Fit the pin (picture L).
- Put the cap back and screw (fig. M).

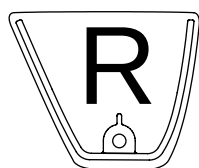
Picture I



Picture L



Picture M



RH cap = RH motor

LH cap = LH motor

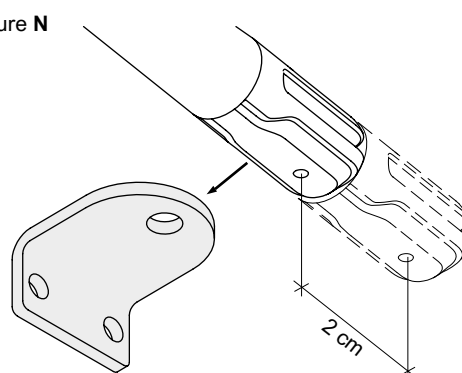
NB: Be carefull when fitting the cap. It has to match the proper motor.

3.4.5 Fixing the gate bracket - NEW LEADER TI

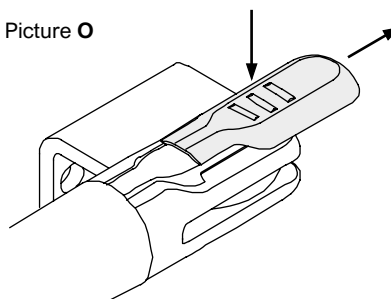
Follow the below procedure to determine the bracket position on the gate:

- Put the gate to CLOSING position.
- Unlock the operator (refer to section 5.2 Manual Operation).
- Extend the inox arm fully.
- Turn back the arm 2 cms. This avoids the motor to "leap forward" (picture N).
- Press the plastic cap with little force, and gently slide it forward (picture O).
- Insert the bracket in the motor and fit the pin (picture P).
- Mount the arm of the motor onto the gate.
Ensure the arm is perfectly straight. Check the manual opening of the leaf before definitively fixing the bracket to make sure the gate can open fully to your required angle.
- If the bracket position is the correct one, remove the pin (picture R) and proceed to definitively fix it.
- Repeat steps shown in picture P and Q.

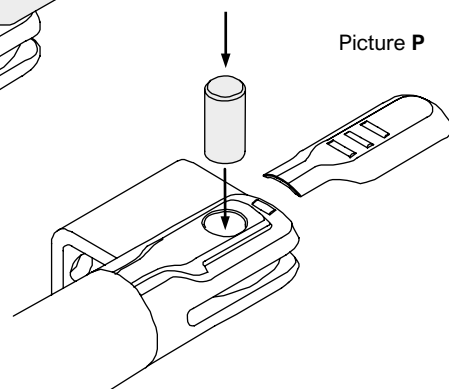
Picture N



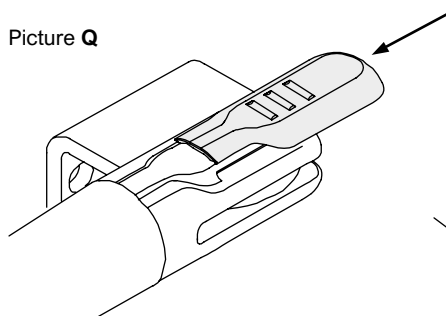
Picture O



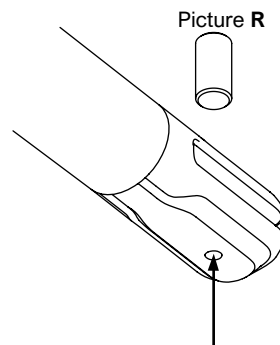
Picture P



Picture Q



Picture R



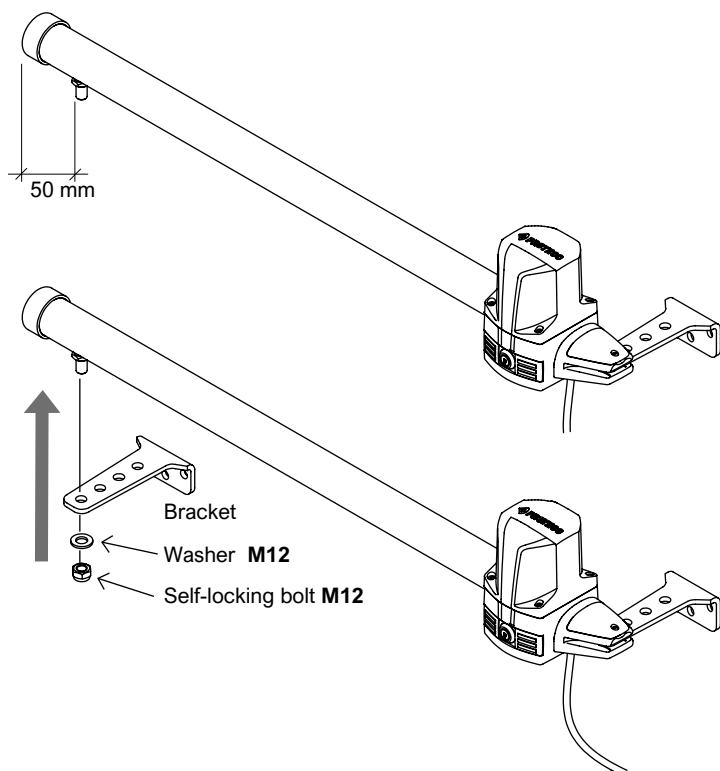
NB: Check the manual opening of the leaf before definitively fixing the bracket to make sure the gate can open fully to your required angle.

NB: If you wish to remove the pin, take the cap off, and push using a screwdriver ($\varnothing$ max 4,5 mm) until the pin is out.

3.4.6 Fixing New LEADER TA

Fix the S4 bracket position as follows:

- Put the gate in closing position.
- Release the ram.
(See chapter 5.2. *Manual Operation*)
- Slide the front pin till reaching the closing limit switch position (keep a gap of 50 mm between the pin and the pipe end).



- Fix the bracket to the front pin as shown in the above picture, using washer M12 and bolt M12 supplied.
- Lay the bracket on the gate leaf keeping the ram in horizontal position, then fix or weld.

NB: Check the manual opening of the leaf before definitively fixing the bracket to make sure the gate can open fully to your required angle.

3.4.7 Wirings



Attention!

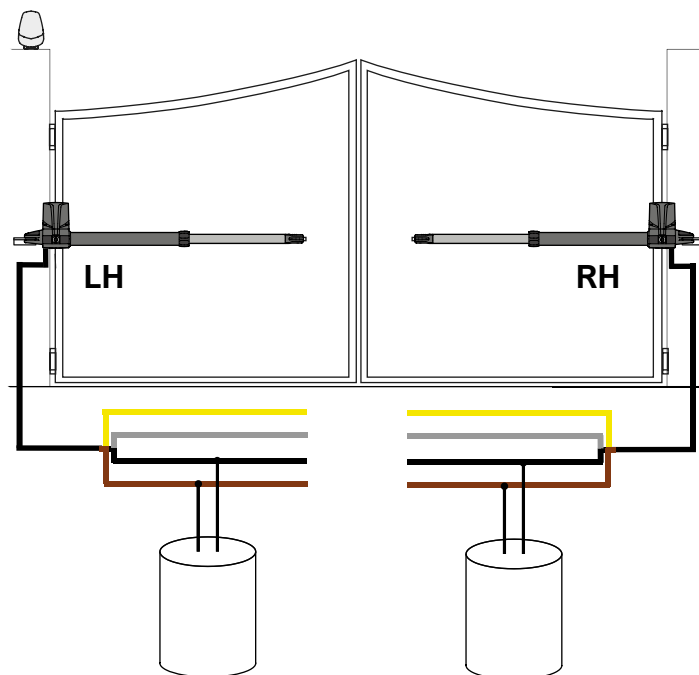
An incorrect wiring may cause serious dangers and damages; refer to the control unit manual.

Switch the power and batteries OFF before any wiring operation.



The electric plant must be performed by qualified personnel and must comply with the outstanding regulations

Picture S



ATTENTION!

The electric plant must be protected by a ground system, in accordance to the current safety regulations. Do not let the motor wire stretch during opening and closing.

Capacitors are provided just with 230V and 115V motors.

4. MAINTENANCE

ATTENTION!

Maintenance service must be carried out by qualified technical personnel, in full compliance with the safety standards required by the laws in force.

Maintenance has to be carried out every six months.

In order to proceed to maintenance service, follow the below checks:

- Turn the POWER OFF.
- Check the good condition of any component.
- Check screw connections are properly tightened.
- Unlock the operator, and make sure the gate opens and closes freely. Clean the inox arm using a dry cloth (no lubrication needed).
- Put the gate to closing position, lock the operator and if necessary repeat the programming procedure.

Release system test

- In order to check the good operation of the release system put the gate to closing position and unlock to motor. The unlock operation has to be smooth and easy.
- The gate has to move freely in both directions.
- The release key has to turn smoothly and easily.

Take note of each intervention performed and mark it in the section END USER GUIDELINES, 5.3 Maintenance: maintenance services and repairs shall be noted, and the owner of the system shall keep them for future reference.

5. END USER GUIDELINES

Dear Customer, the following pages contain important information for your safety and for complying with standing safety regulations.

Keep this manual for future reference.

5.1 Safety tips

Keep the operator away from children.

Children and people with reduced physical, sensory, mental or limited experience and / or knowledge can use automation only if provided with supervision or specific instructions regarding the safe use of the system.

The LEADER operator is designed to automate swing gates.

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

Stay away from internal parts of the automation: It's dangerous and there are no components that can be repaired or replaced by unqualified personnel.

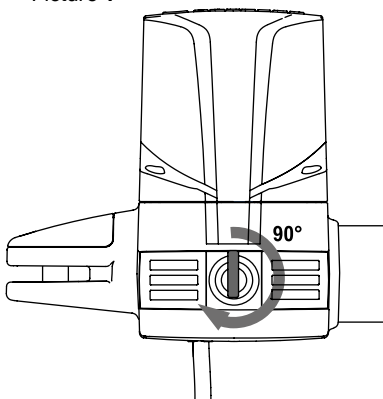
Remote controls or other command devices can be used only when the automation is clearly visible and no dangerous situations are detected.

Do not allow children to play within the system area.

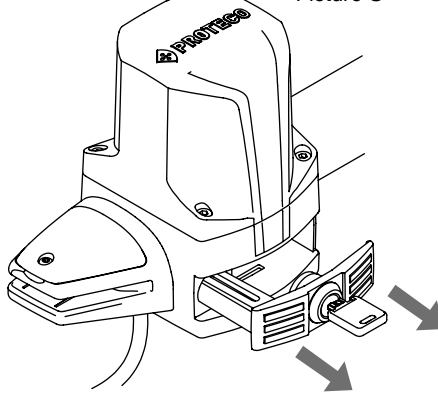
5.2 Manual Operation

- Switch the POWER OFF.
- Insert the release key supplied inside the lock and rotate 90 ° clockwise (Pic.T).
- The release handle will be pushed outwards (Pic. U).
- Rotate the handle downwards till reaching a complete vertical position (Pic.V).
- Now it is possible to manually open and close the gate.
- Put the door back to closing position, lock the motor returning the handle to its horizontal position (Pic. U)
- Push the handle against the motor casting and turn the key 90 ° anticlockwise.
- Remove the key and turn the power ON.

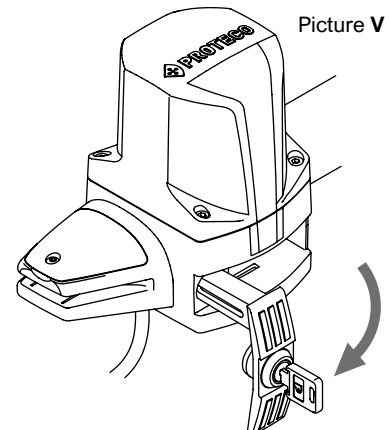
Picture T

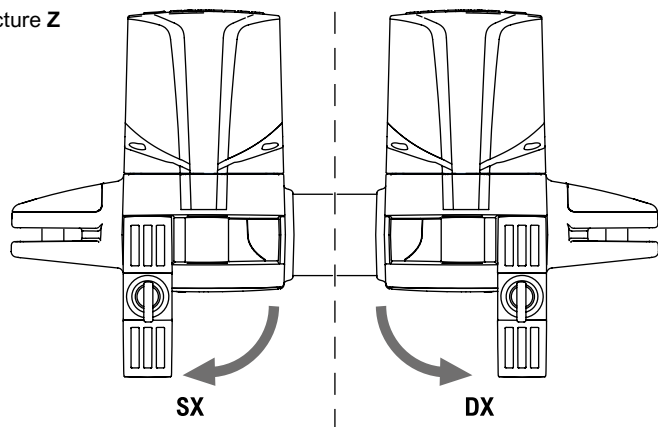


Picture U



Picture V



Picture **Z**

NB: to completely unlock the gate, repeat the procedure for both motors.

5.3 Maintenance

To keep the automation safety and in good operation over time, it is advisable to schedule a periodic maintenance plan with the installer, or at least report any anomalous behaviors that may require inspection.

In case of malfunctions it is advisable to contact the installer who carried out the whole installation, rather than others. Periodic maintenance and repairs must be reported by the installer and the owner must keep them safe and available for future reference.

End user may only take care of photocells and automation housing cleaning.

Use the below table to note any intervention on the installation.

[illegible]

5.4 Warranty

PROTECO products are covered by a **3-year limited warranty** from the production date printed on the product. During this period, Proteco Srl offers a guarantee in case of malfunction due to construction, material or assembly faults. Warranty terms are applicable just if the instructions and maintenance included in this manual are fully respected and carried out.

Warranty is void when fake spares are used and doesn't respond for faults due to incorrect installation. Installation and any maintenance works are responsibility of the person installing the system. In no case and in no way will Proteco Srl be liable to the end user for damages, including any loss of profits, savings or other accidental or indirect damages, resulting from the use or inability to use PROTECO products.

Any return without authorization number will be rejected. The shipment of the returned product and the related costs are the end user/buyer charge. All defective products must be returned together with the proof of payment to:

PROTECO Srl Via Neive 77, 12050 Castagnito (CN) - Italia

Warranty is void when:

- The product has been treated / stored under abnormal conditions of use and maintenance.
- The product has been repaired, modified or altered.
- The product has been subject to misuse, neglect, electrical problems, improper package, accident, or natural events.
- The product was installed improperly.
- The product warranty label is illegible or is missing entirely.
- The malfunction is due to improper installation or to natural and/or accidental causes (eg: falls, oxidation, overvoltage).

5.5 Disposal

5.5.1 Disposal of the system

Any part of the system, including devices such as remote controls, must be disposed in compliance with current legislation, as they may be harmful for the environment.

Most of the materials used are similar to solid urban waste and can be handled accordingly.

They can be recycled through separate collection and disposed in authorized centers.

Other components (electronic boards, batteries, etc.) may instead contain polluting substances.

They must therefore be removed and delivered to companies authorized for their recovery and disposal.

Before proceeding, it is always advisable to check the specific regulations in force.

Disposal of packing

Packaging components (cardboard, plastics, etc.) are sare similar to solid urban waste and can be handled accordingly without any difficulty, simply by carrying out separate collection for recycling. Before proceeding, it is always advisable to check the specific regulations in force.

DO NOT POLLUTE THE ENVIRONMENT!

COMPLIANCE DECLARATION

Manufacturer: **PROTECO S.r.l.**
Address: Via Neive, 77 - 12050 CASTAGNITO (CN) - ITALY

declares that

The product type: Automation for swing gates and accessories **LEADER**
modello: **LEADER 3 - LEADER 4 - LEADER 5 - LEADER 6**

Is built to be integrated into a machine or to be assembled with other machinery to crate a machine under provisions of 2006/42/EC Machinery Directive.

The product also complies with
2011/65/CE (RoHS 2) + 2015/863/UE (RoHS 3)
2014/35/UE (LVD)
2014/30/UE (EMC)

The product also complies with
EN12453,
EN55014-1, EN55014-2,
EN61000-6-1, EN61000-6-3 EN 60335-1,
EN 60335-2-103

The manufacturer declares that the start-up of the machinery is not permitted unless the machine, in which the product is incorporated or of which is becoming a component, has been identified and declared as conformed to 2006/42/EC Machinery Directive.

Castagnito, 2020 July 22nd

Marco Gallo
CEO

