

ACE

Gearmotor for swing gates

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1. SAFETY INSTRUCTIONS

Warning: Important safety instructions for people, READ CAREFULLY when you see this symbol: 
This product must only be used for its intended purpose. Any other use is dangerous.
Follow all instructions as improper installation may result in serious bodily injury.
Keep these warnings together with the installation and operation manuals that come with the gearmotor.



Always cut off the power supply before performing any type of intervention.



Always make sure the gearmotor is properly connected to the earth

Use and installation of the product must comply with Machinery Directive 2006/42/CE.
Verify that the system is EN 124445 and EN 12453 standard compliant.

Installation must be carried out by expert qualified personnel who knows the potential hazards associated and in full compliance with current regulations.

Use of the product must be restricted to its intended use. Any other use is to be considered dangerous and therefore forbidden.



**Do not allow children to play with the fixed command devices, or in the gate's area of operation.
Keep any remote control devices (i.e. transmitters) away from children,
to prevent the gearmotor from being accidentally activated**

Keep the gate and the gate opener regularly maintained. Use only Proteco's original spares.
Users are strictly forbidden to carry out any changes on the gate operator.

Proteco Cancelli Automatici Srl is not liable for any damage resulting from improper, wrongful or unreasonable use.

CE COMPLIANCE DECLARATION

Manufacturer: PROTECO S.r.l.
Address: Via Neive, 77 – 12050 Castagnito (CN) – ITALIA
declares that
The product type: ACE electromechanical gear motor for swing gates
Models: ACE 3 TI, ACE 4 TI, ACE 4 REV, ACE 3 24 TI, ACE 4 24 TI
ACE 4 TA, ACE 4 24 -TA

Is built to be integrated into a machine or to be assembled with other machinery to create a machine under provisions of 2006/42/EC Machinery Directive, with reference in particular to the following requirements: 1.1.2 1.1.3 1.1.5 1.2.1 1.2.2 1.2.3 1.2.6 1.3.2 1.3.4 1.3.9 1.4.1 1.4.2.1 1.5.1 1.5.4 1.5.6 1.5.8 1.5.13 1.6.1 1.6.4 1.7.1 1.7.3 1.7.4

It complies with the essential requirements of EEC Directives:

2004/108/CE (electromagnetic compatibility)
2011/65/CE (directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

It complies with the essential requirements of EEC Directives:

EN 12453 Industrial, commercial and garage doors and gates. Safety in use of power operated doors. Requirements
EN 60335-1 Safety of household and similar electrical appliances - Part 1: General requirements
EN 60335-2-103 Household and similar electrical appliances - Part 2-103: Particular requirements for drives for gates, doors and windows.

The manufacturer also 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, 3 October 2016

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Marco Gallo
CEO

2. PRODUCT DESCRIPTION AND INTENDED USE

ACE gear motors are designed to automate residential or commercial swing gates with one or two wings.

Any other use than above described has to be considered as inappropriate and strictly prohibited.

All models feature an irreversible gearing system that locks the gate when it is in its fully closed position.
Therefore no additional lock is needed.

In case of a power failure the motor lock can be released to move the gate manually (from inside).

The 24V versions can also be powered by a back-up battery system that allows emergency openings even in case of a power cut.

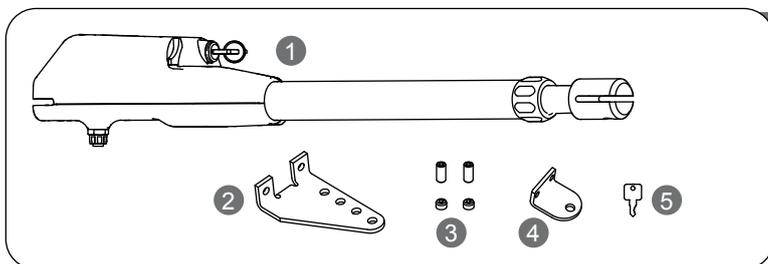
ACE TI

| | Ace 3 TI | Ace 4 TI | Ace 4 REV | Ace 3 TI 24 | Ace 4 TI 24 | Ace 3TI 115 | Ace 4 TI 115 |
|--------------------|-----------------|-----------------|------------------|--------------------|--------------------|--------------------|---------------------|
| Motor power supply | 230V ~ 50Hz | 230V ~ 50Hz | 230V ~ 50Hz | 24V dc | 24V dc | 115V ~ 60Hz | 115V ~ 60Hz |
| Max draw. | 1,2 - 1,7A | 1,2 - 1,7A | 1,2 - 1,7A | 0,5 - 0,75A | 0,5 - 0,75A | 3,1 - 3,3A | 3,1 - 3,3A |
| Power | 300W | 300W | 250W | 50W | 50W | 300W | 300W |
| Capacitor | 10µF | 10µF | 8µF | — | — | 20µF | 20µF |
| Thermal protection | 150°C | 150°C | 150°C | — | — | 150°C | 150°C |
| Adjustable thrust | 3000 N | 3000 N | 2500 N | 2500 N | 2500 N | 3000 N | 3000 N |
| Protection rating | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| Revolutions | 1400 rpm | 1400 rpm | 900 rpm | 1600 rpm | 1600 rpm | 1700 rpm | 1700 rpm |
| Opening angle | 120° deg | 120° deg | 120° deg | 120° deg | 120° deg | 120° deg | 120° deg |
| Opening time (90°) | 17" | 22" | 22" | 15" | 20" | 15" | 18" |
| Leaf weight | 350 Kg | 400 Kg | 350 kg | 250 Kg | 300 Kg | 350 Kg | 400 kg |
| Leaf length | 2,0 m | 3,0 m | 3,0 m | 2,0 m | 3,0 m | 2,0 m | 3,0 m |
| Duty cycle | 40% | 40% | 40% | 80% | 80% | 40% | 40% |

ACE TA

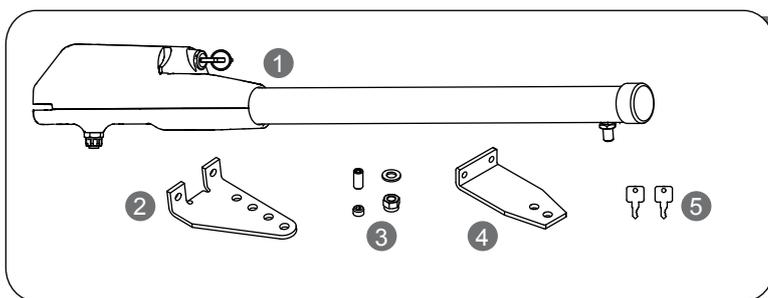
| | Ace 4 TA | Ace 4 TA 24 | Ace 4 TA 115 |
|--------------------|-----------------|--------------------|---------------------|
| Motor power supply | 230V ~ 50Hz | 24V dc | 115V ~ 60Hz |
| Max draw. | 1,2 - 1,7A | 0,5 - 0,75A | 3,1 - 3,3A |
| Power | 300W | 50W | 300W |
| Capacitor | 10µF | — | 20µF |
| Thermal protection | 150°C | — | 150°C |
| Adjustable thrust | 3000 N | 2500 N | 3000 N |
| Protection rating | 44 | 44 | 44 |
| Revolutions | 1400 rpm | 1600 rpm | 1700 rpm |
| Opening angle | 110° deg | 110° deg | 110° deg |
| Opening time (90°) | 22" | 20" | 18" |
| Leaf weight | 350 Kg | 200 Kg | 350 Kg |
| Leaf length | 2,5 m | 2,5 m | 2,5 m |
| Duty cycle | 40% | 80% | 40% |

2.2 KIT CONTENT



ACE TI

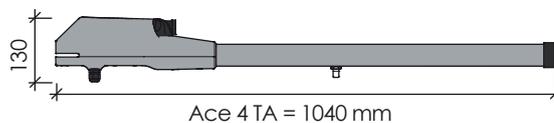
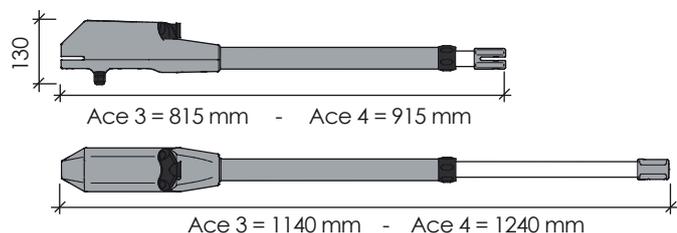
| | |
|----------|------------------------------------|
| 1 | ACE Swing operator |
| 2 | SPIP0770 Rear RH bracket T1 |
| | SPIP0870 Rear LH bracket T1 |
| 3 | MGR1410Z Fixing pack |
| | MPE1226 |
| 4 | SPIA0270 Front bracket S3 |
| 5 | Release key |



ACE TA

| | |
|----------|------------------------------------|
| 1 | ACE Swing operator |
| 2 | SPIP0770 Rear RH bracket T1 |
| | SPIP0870 Rear LH bracket T1 |
| 3 | MGR1410Z Fixing pack |
| | MPE1226 |
| | MRO12Z |
| | MDAM12AB |
| 4 | SPIA0370 Front bracket S4 |
| 5 | Release key |

2.3 DIMENSIONS



3. INSTALLATION

3.1 Preliminary checks

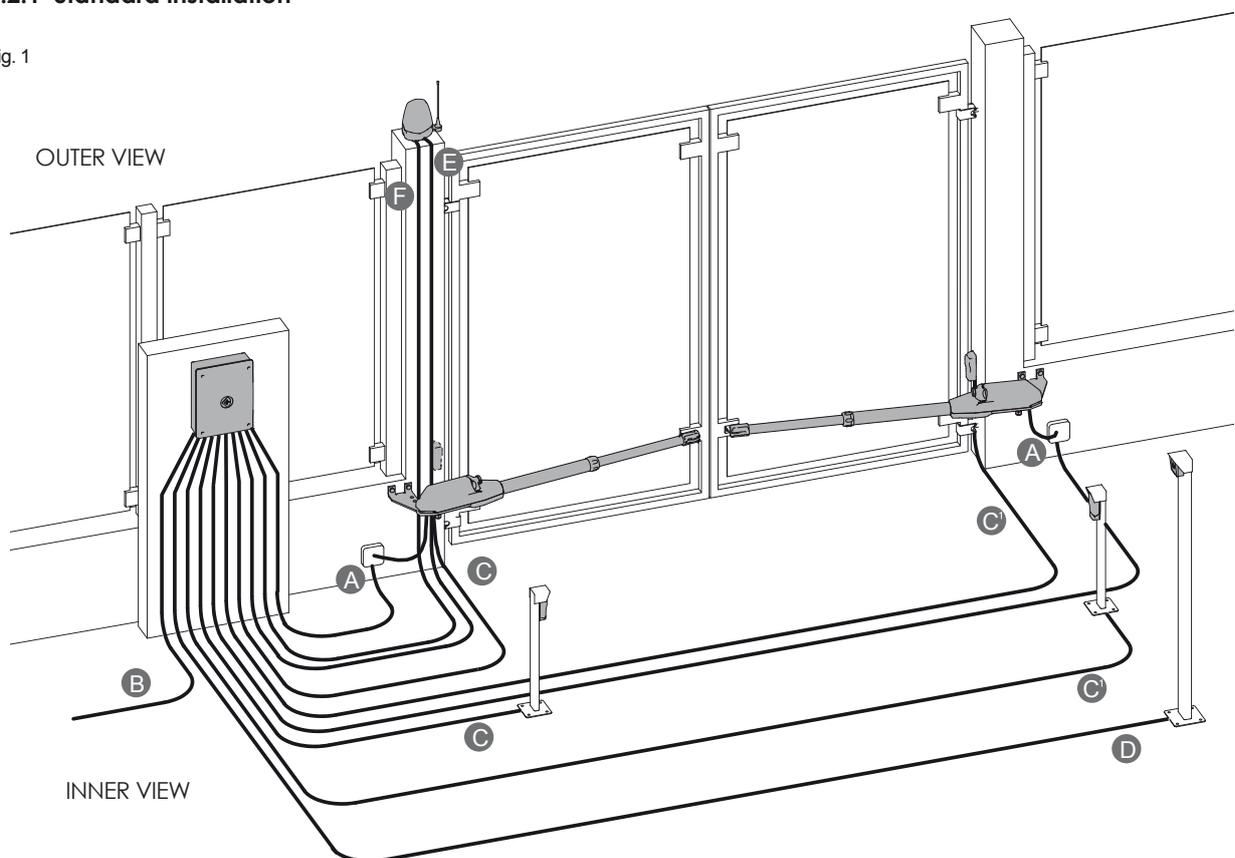
Before installing make sure:

- The gate conditions are suitable to automate.
- Weight, dimensions and gate construction are proper for the operator you intend to buy.
- You have suitable mechanical ground stops.
- The automated parts are in good mechanical conditions.
- The opening of the automated gate is not an entrapment hazard as regards any surrounding fixed parts and there is sufficient space for manual release.
- Any lawn watering devices will not wet the gearmotor from the bottom up.
- The earth cable is properly connected.
- Do not install onto gates on either an upward or downward slope (i.e. that are not on flat, level ground).

3.2 Wiring

3.2.1 Standard installation

Fig. 1



3.2.2 CABLE TYPES AND MINIMUM THICKNESSES The quantities of tubes and cables needed (not included in the kit) depend on the type and number of accessories connected to the gate area.

| | 230V | 24V |
|---------------------------------|---------------|---------------|
| A operator | 3x1,5 Earth | 2x1,5 |
| B Control panel | 2x1,5 + Earth | 2x1,5 + Earth |
| C Photocell receiver | rx 4x0,75 | rx 4x0,75 |
| C' Photocell transmitter | tx 2x0,75 | tx 2x0,75 |
| D Key switch | 2x0,75 | 2x0,75 |
| E Aerial | RG58 | RG58 |
| F Blinker | 2x0,75 | 2x0,75 |

- Cut off the power before starting wiring.
- Make sure you have set up a suitable dual-pole cut off device (3 mm wires) along the power supply.
- Make sure you have suitable tubing and conduits for the electrical cables: connect the motors, control panel and accessories using separated corrugated tubes, in order to prevent interferences that may result in bad operation.
- Fit the power cable keeping a curve as shown in picture 2, in order to avoid water backflow inside the operator.
- All opening commands and safety devices must be free of tension (dry contact).

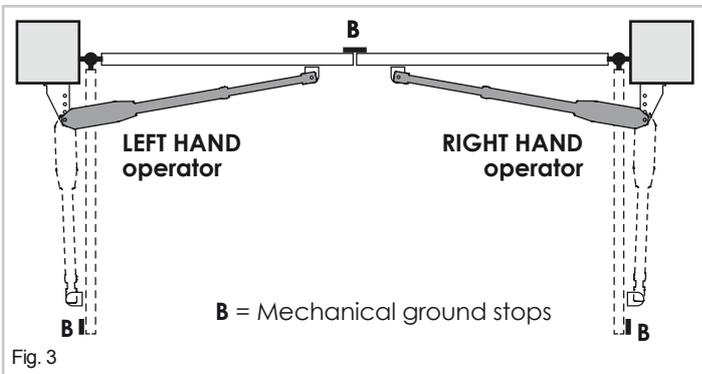
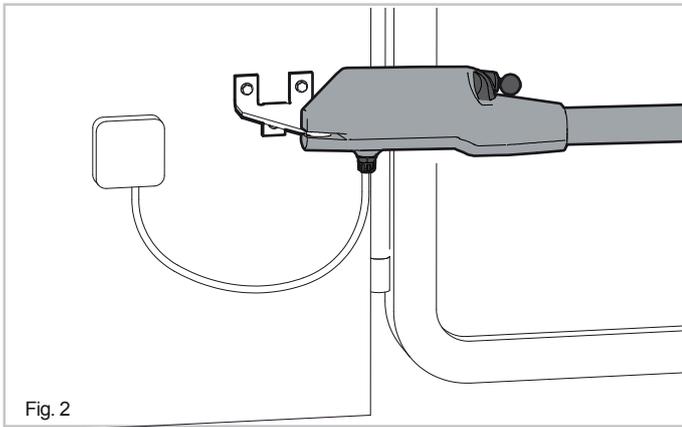


Fig. 3

B = Mechanical ground stops

Fig. 2

3.3 ESTABLISHING RH AND LH OPERATOR

The ram operators are supplied handless version, it means they can be installed either on the right or left side of the gate (see picture 3).

ACE TI

Gate in closing position - inox pipe maximum extension:

Ace 3 = 345 mm

Ace 4 = 445 mm

Gate in opening position - inox pipe minimum extension 50 mm (see picture 4).

Fig. 4

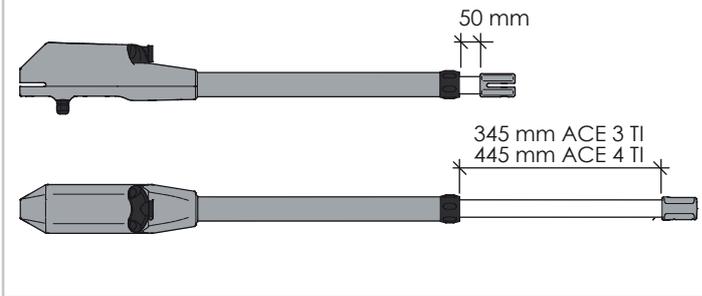
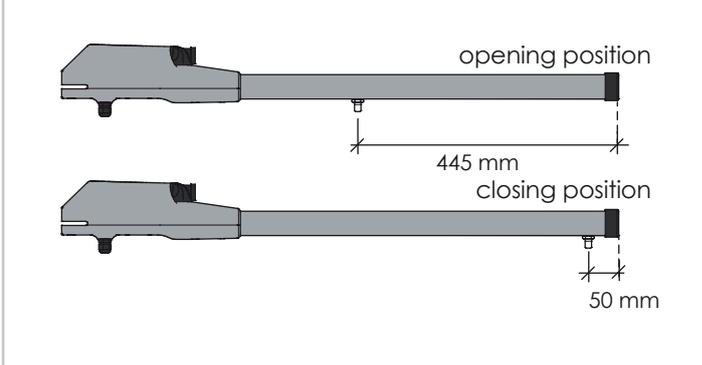


Fig. 5



ACE TA

Gate in closing position: minimum distance 50 mm.

Gate in opening position: maximum distance 450 mm. (see picture 5)

3.4 FASTENING THE GEARMOTOR

3.4.1 Vertical positioning quota

- a) If the gate is sturdy you can fit the gearmotor wherever it goes, at any height from ground.
- b) If the gate is particularly light fit the gearmotor as close as possible to gate centerline.

3.4.2 Horizontal positioning quota

Gate leaf hinged in the center of the pillar (see picture 6). **Gate leaf hinged on the corner of the pillar** (see picture 7). Best of performance is obtained respecting **A** and **B** dimensions, see picture 8 (opening angle 90°).

INWARD OPENING EXAMPLES

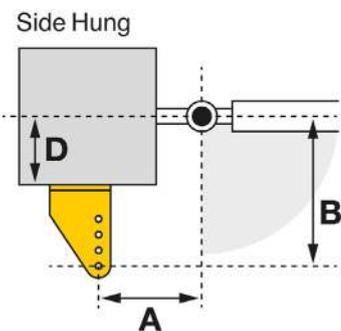


Fig. 6

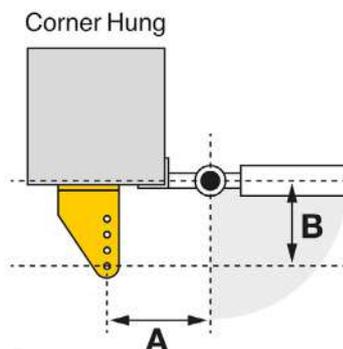
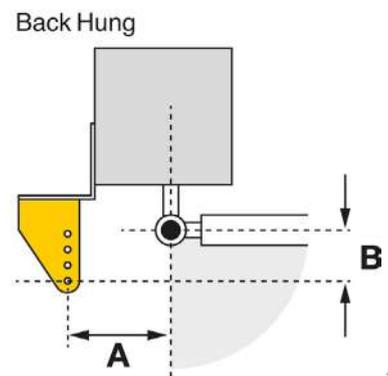
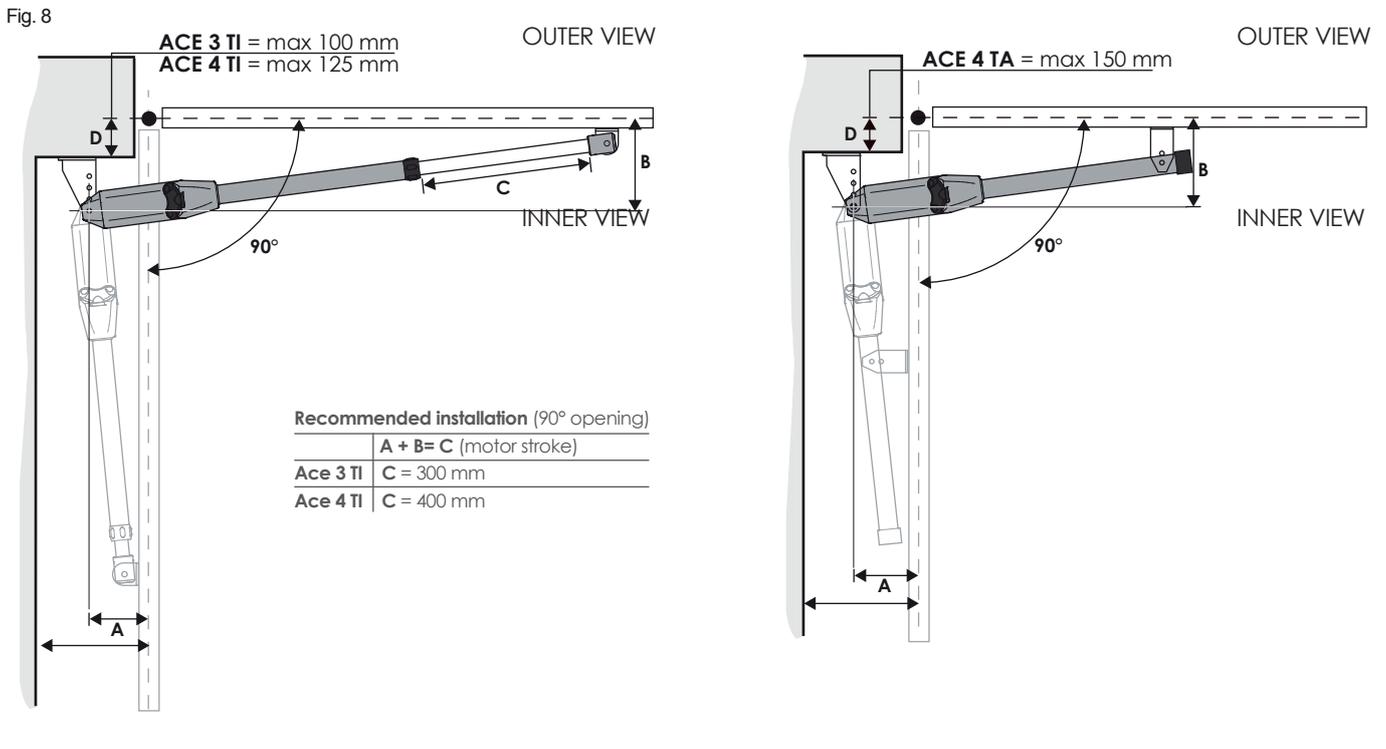


Fig. 7





If the ideal scenario of **A** and **B** is not applicable, refer to the below table to determine the brackets position (values are expressed in **mm**).

Tab. 1

| ACE 3 TI | | | | | | |
|---------------------|-----|-----|------|------|-----|--|
| D | 100 | 75 | 50 | 25 | 0 | |
| A | 120 | 145 | 140 | 135 | 160 | |
| B | 180 | 155 | 160 | 165 | 140 | |
| Rear bracket | 80 | 80 | 110 | 110 | 140 | |
| | | | | | | |
| Minimum leaf length | 990 | 990 | 1000 | 1000 | 980 | |

| ACE 4 TI | | | | | | |
|---------------------|------|------|------|------|------|------|
| D | 125 | 100 | 75 | 50 | 25 | 0 |
| A | 195 | 160 | 185 | 210 | 235 | 260 |
| B | 205 | 240 | 215 | 190 | 165 | 140 |
| Rear bracket | 80 | 110 | 140 | 140 | 140 | 140 |
| | | | | | | |
| Minimum leaf length | 1140 | 1170 | 1150 | 1130 | 1100 | 1080 |

| ACE 4 TA | | | | | | | |
|---------------------|-----|-----|-----|-----|-----|-----|-----|
| D | 150 | 125 | 100 | 75 | 50 | 25 | 0 |
| A | 170 | 195 | 160 | 185 | 210 | 235 | 260 |
| B | 230 | 205 | 240 | 215 | 190 | 165 | 165 |
| Rear bracket | 80 | 80 | 140 | 140 | 140 | 140 | 140 |
| | | | | | | | |
| Minimum leaf length | 860 | 840 | 870 | 840 | 820 | 800 | 800 |

3.4.3 OUTWARD OPENING

Your gate can be automated for opening outwards too. In this case the value of **A** dimension shall be calculated towards the gate center. See picture 9 and 10 and fit the bracket accordingly.

ATTENTION!:

A and B however will remain the same applied for inward opening.

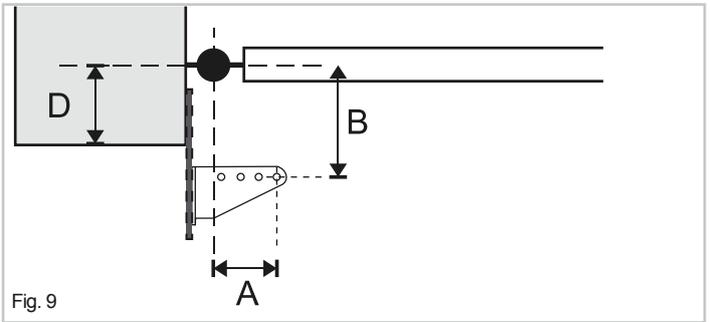
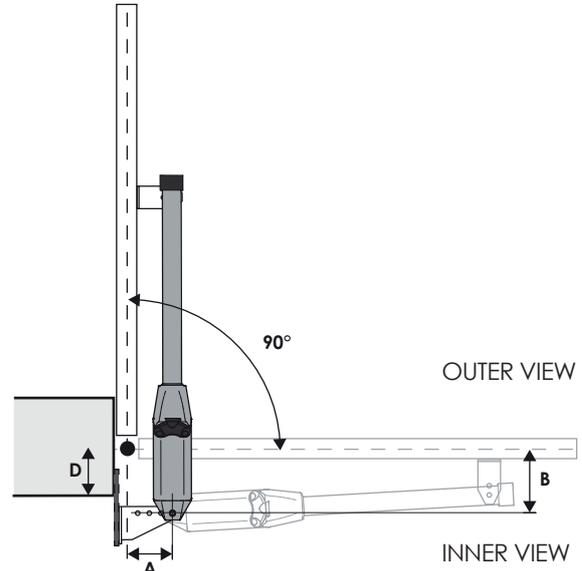
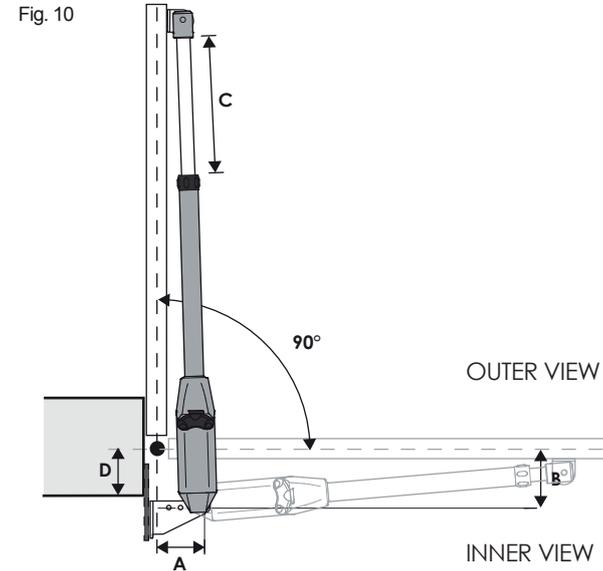


Fig. 9



3.5 FASTENING REAR BRACKET T1

Weld or bolt the rear **bracket T1** on the post, applying the **A** and **B** quota calculated according to the gate hinge position and the motor rotation point. Chemical bolts can be used and must comply with the post features (brick, wood, steel, etc. etc.). When fixing keep a minimum distance of 30/35 mm from the post edge in order to avoid damages (see picture 11).

- Rear **brackets T1** are provided **LH** and **RH**, to match to the according **LH** and **RH** motor (see picture 12).
- When fixing the operator to the rear **bracket T1**, plug **PR1** rotation pin downward oriented (see picture 13).

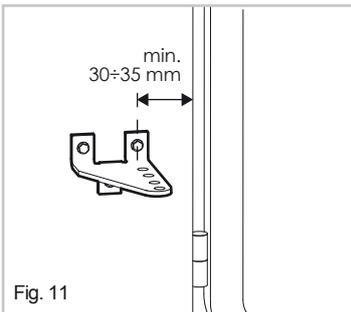


Fig. 11

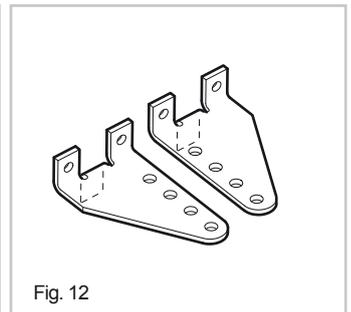


Fig. 12

3.6 FASTENING FRONT BRACKET S3

3.6.1 ACETI

To determine the position of **bracket S3**:

- Put the gate in closing position.
- Release the gearmotor.
- Extend the inox pipe arm fully.
- Turn back the arm 2 cms. This avoids the motor to "leap forward" (see picture 14)
- Affix the **bracket S3** to the motor slot. Plug the rotation pin **PR1** into the locating hole.
- Fit the **bracket S3** on the gate.
- Keep the motor horizontal, fix or weld.

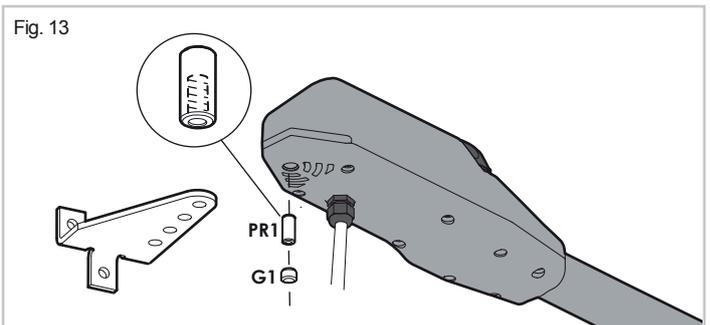


Fig. 13

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

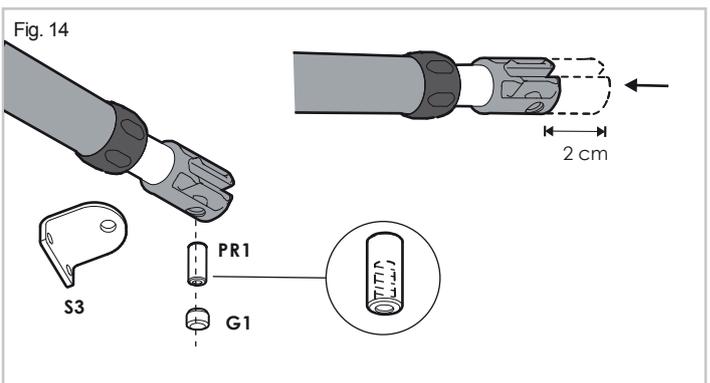


Fig. 14

3.6.2 ACETA

To determine the position of **bracket S4**:

- Put the gate in closing position
- Release the gearmotor
- Slide the front drive pin to the closing limit-switch point (keep a distance of 45 mm between the pin and the pipe end terminal (see picture 15).
- Fix the **bracket S4** to the drive pin (see picture 16).
- Fit the **bracket S4** onto the gate and keep the motor horizontal. Fix or weld.



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

Fig. 15

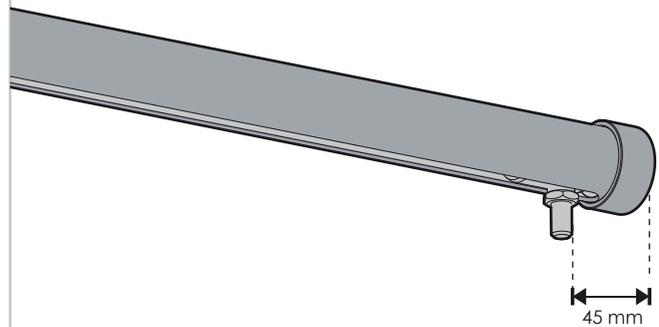
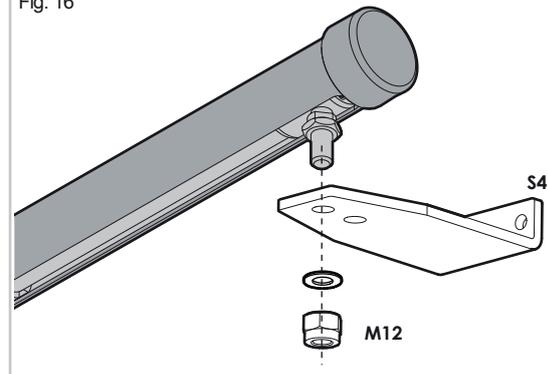


Fig. 16



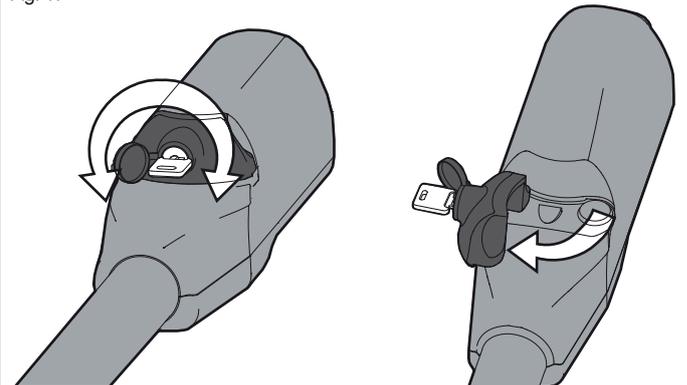
4. RELEASING THE GEARMOTOR

- Insert the key and turn it 90° clockwise (see picture 17).
- Pull the release handle inwards to unlock the **LH motor** and outwards to unlock the **RH motor**.

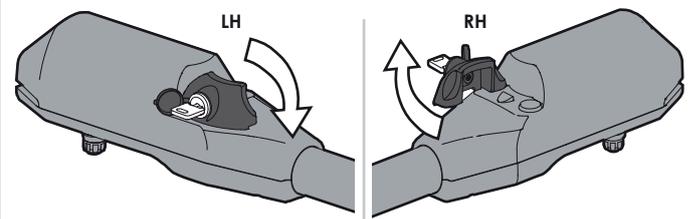


The gate can be locked in any position after the first start command the system will return to its default settings.

Fig. 17



OUTER VIEW



INNER VIEW

5. MAINTENANCE

Functional checks must be performed once every 6 months, including: checking the state of lubrication and tightness of the anchoring screws on the operator as well as the good operation of all safety devices.

6. DISMANTLING AND DISPOSAL



DO NOT DISPOSE OF IN NATURE!

Some components may contain hazardous waste. They must, thus, be removed and turned into licensed firms for their disposal. Before acting always check the local laws on the matter.