IMPORTANT REMARKS

⚠ **Prior to proceeding with installation, it is essential the instructions be read in full, since they contain important information regarding safety, installation, use and maintenance.**

AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:
EN 60204-1, EN 12453, EN 13241-1, EN 12635

- The installer must provide for a device (es. magnetotermical switch) ensuring the omnipolar sectioning of the equipment from the power supply. The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).
- The plastic case has an IP44 insulation; to connect flexible or rigid pipes, use pipefittings having the same insulation level.
- Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the Compliance Certificate concerning the whole installation (Machine Directive 89/392 CEE, Annex IIA).
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.
- We recommend to make use of an emergency button, to be installed by the automation (connected to the control unit STOP input) so that the gate may be immediately stopped in case of danger.
- For correct installation of the system, we recommend following the instructions issued by UNAC very carefully.
- This instruction manual is only for qualified technicians, who specialize in installations and automations.
- The contents of this instruction manual do not concern the end user.
- Every programming and/or every maintenance service should be done only by qualified technicians.
- Anything not expressly described in these instructions is prohibited; unforeseen uses may be a source of danger to people and property.
- Do not install the product in explosive environments and atmospheres: the presence of inflammable gases or fumes is a serious safety hazard.
- Do not make any modifications to any part of the automation device, or the accessories connected to it, unless described in this manual.
- Any other modifications will void the warranty on the product.
- The installation steps should be conducted so as to avoid rainy weather, which can expose electronic circuits to dangerous water seepage.
- All operations requiring the casing of the device to opened should be performed with the control unit disconnected from the electricity supply and with a warning notice displayed, for example: ”CAUTION, MAINTENANCE IN PROGRESS”.
- Avoid exposing the device close to sources of heat and flame.
- In the event of interventions on automatic or differential breakers or fuses, it is essential that faults be identified and resolved prior to resetting. In the case of faults that cannot be resolved using the information to be found in this manual, consult the V2 customer assistance service.
- V2 declines all responsibility for failure to comply with good construction practice standards in addition to structural deformation of the gate that might occur during use.
- V2 reserves the right to make modifications to the product without prior warning.
- Installation/maintenance personnel should wear individual protection devices (IPDs), such as overalls, safety helmets, boots and gloves.
- The ambient operating temperature should be that indicated in the technical characteristics table.
- The automation device should be shut down immediately in the event of any anomalous or hazardous situation; the fault or malfunction should be immediately reported to the person responsible.
- All safety and hazard warnings on the machinery and equipment should be complied with.
- Electromechanical actuators for gates are not intended to be used by people (including children) with diminished physical, sensory or mental capacity, or lacking in experience or knowledge, unless they are under supervision or have been instructed in use of the actuator by a person responsible for safety.

V2 has the right to modify the product without previous notice; it also declines any responsibility to damage or injury to people or things caused by improper use or wrong installation.

PRELIMINARY CHECKS AND IDENTIFICATION OF THE TYPE TO BE USED

It should be remembered that the device does not compensate for defects caused by improper installation, or poor maintenance, thus, prior to proceeding with installation, ensure that the structure is suitable and meets current standards and, if necessary, perform any structural modifications aimed at the implementation of safety gaps and the protection or segregation of all crushing, shearing and transit zones, and verify that:

- Your gate is equipped with a central latch.
- The gate has no friction points, either during closing or opening.
- The gate is well balanced, i.e. there is no tendency to move spontaneously when stopped in any position.
- The position identified for fixing the motor reducer allows easy and safe manual manoeuvring, compatible with the size of the motor reducer itself.
- The support on which the automation device will be fixed is solid and durable.
- The mains power supply to which the automation device is connected has a dedicated safety earthing system and differential breaker with tripping current less than or equal to 30 mA (the breaker gap distance should be greater than or equal to 3 mm).

Warning: The minimum safety level depends on the type of use; please refer to the following outline:

	CLOSURE USE TYPE		
TYPE OF ACTIVATION COMMANDS	**GROUP 1** Informed people (use in private area)	**GROUP 2** Informed people (use in public area)	**GROUP 3** Informed people (unlimited use)
Man-present command	A	B	Not possible
Remote control and closure in view (e.g. infrared)	C or E	C or E	C and D or E
Remote control and closure not in view (e.g. radio)	C or E	C and D or E	C and D or E
Automatic control (e.g. timed closure control)	C and D or E	C and D or E	C and D or E

GROUP 1 - Only a limited number of people are authorised for use, and closure is not in a public area. Examples of this type are gates inside business premises, where the sole users are employees, or a part of them who have been suitably informed.

GROUP 2 - Only a limited number of people are authorised for use, but in this case, closure is in a public area. An example of this may be a company gate that accesses onto a public street, and which is only used by employees.

GROUP 3 - Anyone can use the automated closure, which is thus located on public land. For example the access gate to a supermarket or an office, or a hospital.

PROTECTION A - Closure is activated by means of a control button with the person present, i.e. with maintained action.

PROTECTION B - With the person present, closure is activated by a command controlled by means of a key-switch or the like, in order to prevent use by unauthorised persons.

PROTECTION C - Restricts the force of the leaf of the door or gate. I.e., in the case of the gate striking an obstacle, the impact force must fall within a curve established by the regulations.

PROTECTION D - Devices, such as photocells, capable of detecting the presence of people or obstacles. They may be active on just one side or on both sides of the door or gate.

PROTECTION E - Sensitive devices, such as footboards or immaterial barriers, capable of detecting the presence of a person, and installed in such a way that the latter cannot be struck in any way by a moving leaf or panel. These devices should be active within the entire “danger zone” of the gate. The Machinery Directive defines “Danger Zone” as any zone surrounding and/or near machinery where the presence of an exposed person constitutes a risk to the health and safety of that person.

The risk analysis should take into consideration all danger zones for the automation device, which should be appropriately protected and marked.

In a clearly visible area, apply a sign with information identifying the motorised door or gate.

The installer should provide the user with all the information relating to automatic operation, emergency opening and maintenance of the motorised door or gate.

EU DECLARATION OF CONFORMITY AND DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINE

Declaration in accordance with Directives: 2014/35/UE (LVD); 2014/30/UE (EMC); 2006/42/CE (MD) ANNEX II, PART B

The manufacturer V2 S.p.A., headquarters in Corso Principi di Piemonte 65, 12035, Racconigi (CN), Italy

Under its sole responsibility hereby declares that:
the partly completed machinery model(s):
HY MEDIUM 4000 230I
HY MEDIUM 4000 230R
HY LARGE 6000 230I
HY LARGE 6000 230R

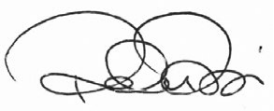
Description: electromechanical actuator for gates

- is intended to be installed on gates, to create a machine according to the provisions of the Directive 2006/42/EC. The machinery must not be put into service until the final machinery into which it has to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC and 89/106/CE.
- is compliant with the applicable essential safety requirements of the following Directives:
  Machinery Directive 2006/42/EC (annex I, chapter 1)
  Low Voltage Directive 2014/35/EU
  Electromagnetic Compatibility Directive 2014/30/EU
  Directive RoHS-3 2017/2102

The relevant technical documentation is available at the national authorities' request after justifiable request to:
V2 S.p.A., Corso Principi di Piemonte 65, 12035, Racconigi (CN), Italia

The person empowered to draw up the declaration and to provide the technical documentation:

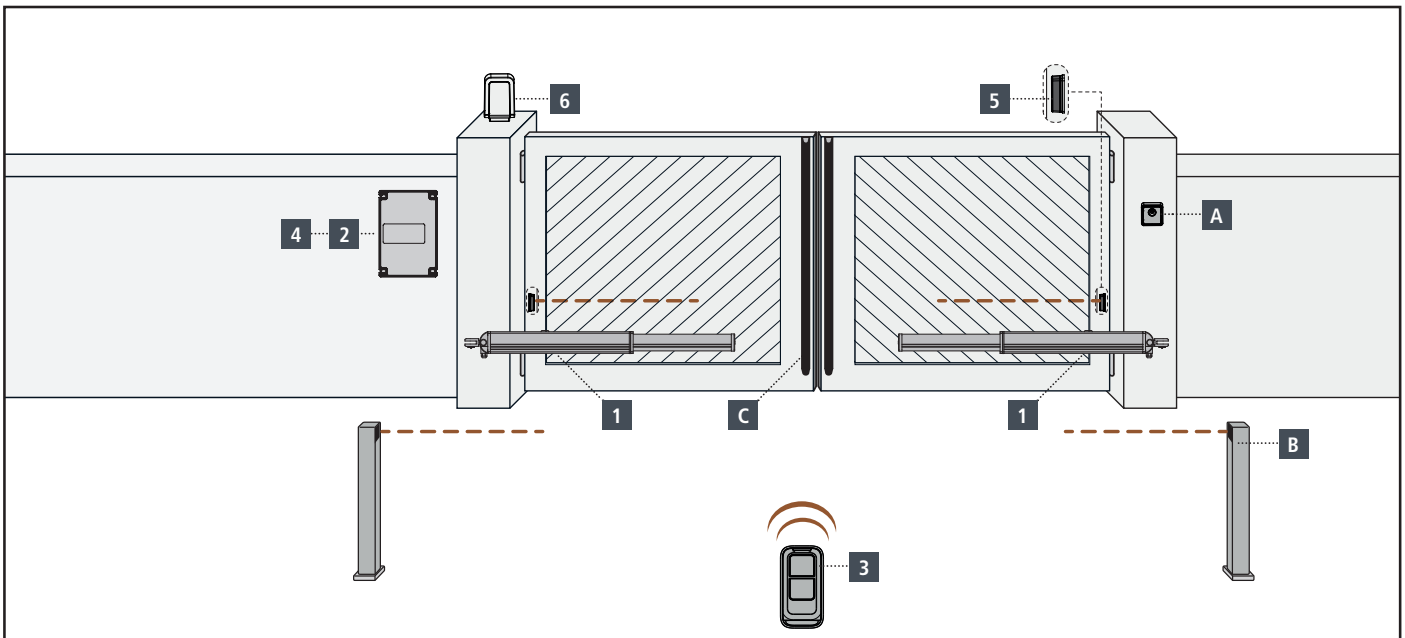
Roberto Rossi
Legal representative of V2 S.p.A.
Racconigi 01/03/2025



TECHNICAL DATA

		HY MEDIUM 4000 230I	HY MEDIUM 4000 230R	HY LARGE 6000 230I	HY LARGE 6000 230R
Max. leaf lenght	m	4	4	6	6
Max. leaf weight	Kg	700	700	700	700
Power supply	V~ / Hz	230 - 50/60	230 - 50/60	230 - 50/60	230 - 50/60
Full load current	A	1	1	1	1
Maximum Power	W	230	230	230	230
Capacitor	µF	10	10	25	25
Max travel	mm	265	265	400	400
Operating speed	m/s	0,01	0,01	0,01	0,01
Maximum thrust	N	7000	7000	7000	7000
Working temperature	°C	-10 ÷ +60	-10 ÷ +60	-10 ÷ +60	-10 ÷ +60
Protection	IP	65	65	65	65
Working cycle	cycles/hour	continuous	continuous	continuous	continuous
Motor weight	Kg	9,5	9,5	11	11

INSTALLATION LAYOUT



COMPONENTS

1. Motor
2. Control unit
3. Transmitter
4. Receiving module
5. Photocells
6. Flashing light

ADDITIONAL ACCESSORIES

A. Key switch
B. Pillar photocells
C. Safety edges

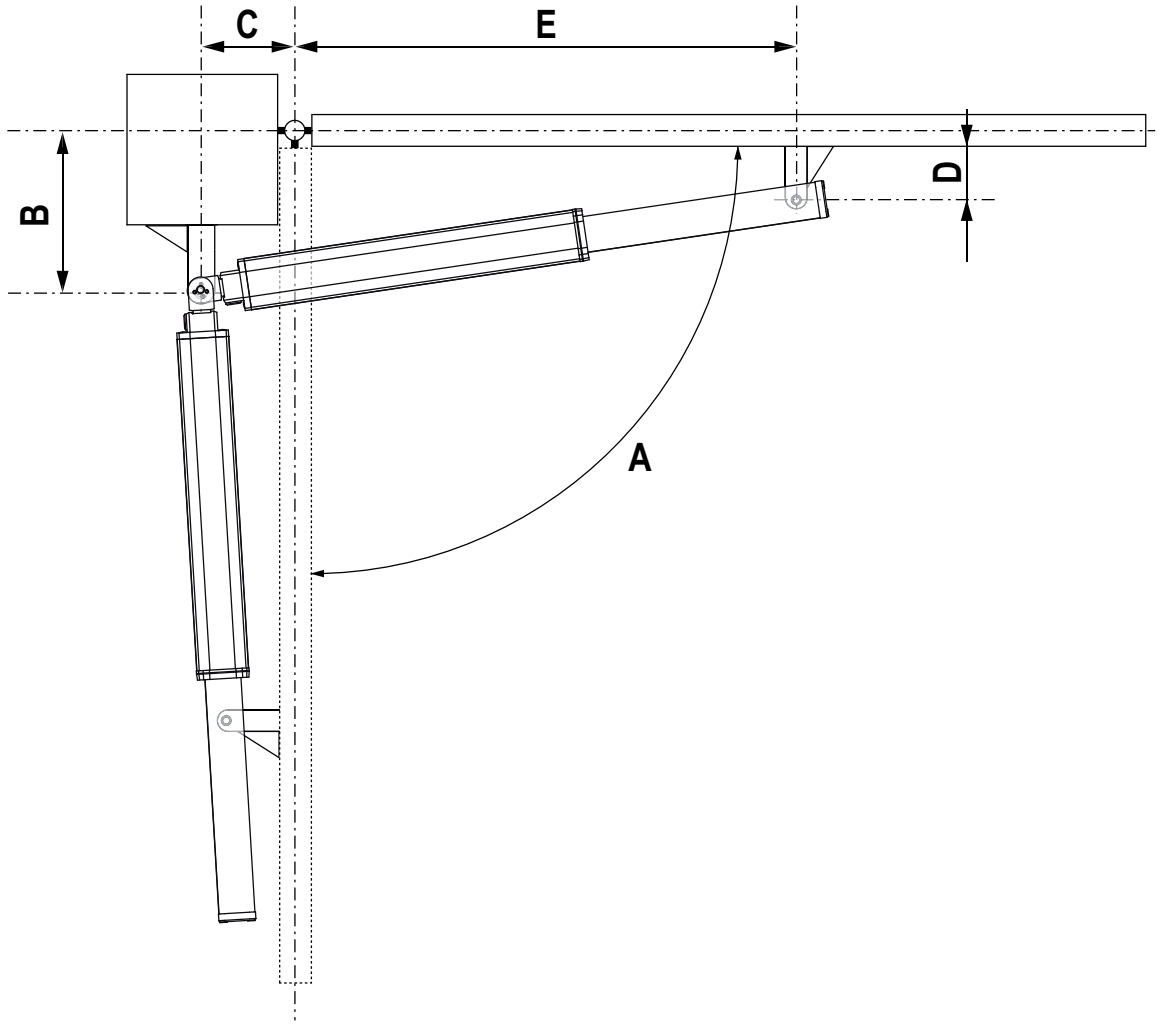
LENGTH OF THE CABLE	< 10 metres	from 10 to 20 metres	from 20 to 30 metres
Power supply (230V)	3G x 1,5 mm^2	3G x 1,5 mm^2	3G x 2,5 mm^2
Motor power supply	4G x 1,5 mm^2	4G x 1,5 mm^2	4G x 2,5 mm^2
Photocells (TX)	2 x 0,5 mm^2	2 x 0,5 mm^2	2 x 0,5 mm^2
Photocells (RX)	4 x 0,5 mm^2	4 x 0,5 mm^2	4 x 0,5 mm^2
Key switch	2 x 0,5 mm^2	2 x 0,5 mm^2	2 x 0,5 mm^2
Safety edges	2 x 0,5 mm^2	2 x 0,5 mm^2	2 x 0,5 mm^2
Flashing light	2 x 1,5 mm^2	2 x 1,5 mm^2	2 x 1,5 mm^2
Antenna (integrated into the flashing light)	RG174	RG174	RG174

INSTALLATION MEASURES

To carry out a proper installation of the operator parts as well as to ensure the best automation performance, the measurement levels
shown in the following table shall be complied with. Change the gate structure to adapt it to one of the cases in the table, if necessary.

⚠ **WARNING: In the case of leaf longer than 2,5 metres, an electric lock must be fitted to ensure an efficent closig.**

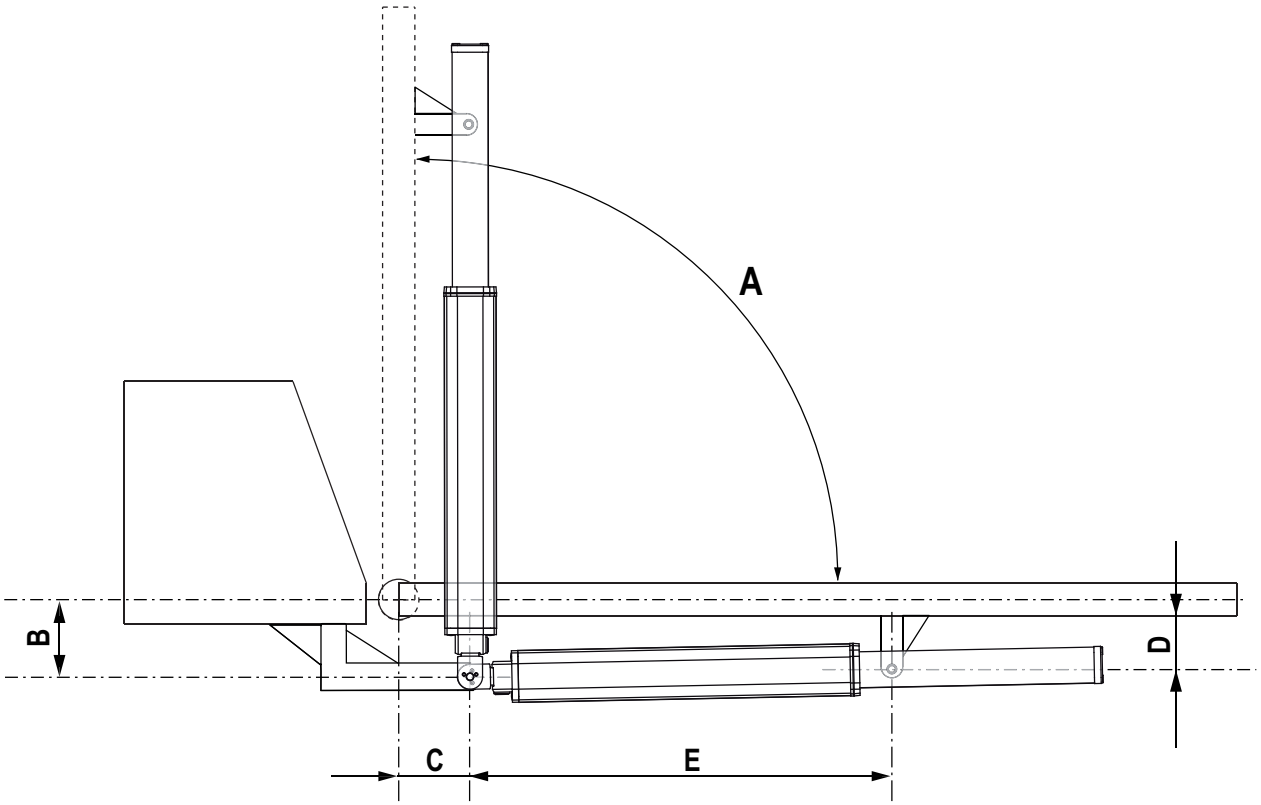
INWARD OPENING



HY MEDIUM				
A	**B [mm]**	**C [mm]**	**D [mm]**	**E [mm]**
80°	155	130	80	860
85°	140	130	80	860
90°	140	120	80	870
90°	115	145	80	845
95°	125	125	80	865
100°	120	120	80	870
110°	105	120	80	870

HY LARGE				
A	**B [mm]**	**C [mm]**	**D [mm]**	**E [mm]**
80°	250	180	80	1080
85°	235	175	80	1085
90°	200	195	80	1065
90°	235	150	80	1110
95°	220	155	80	1105
100°	175	190	80	1070
110°	190	155	80	1105

OUTWARD OPENING

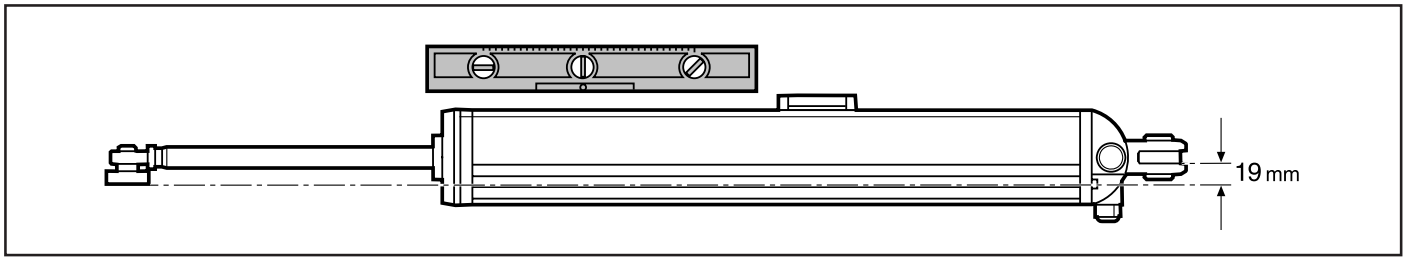


HY MEDIUM				
A	**B [mm]**	**C [mm]**	**D [mm]**	**E [mm]**
80°	150	135	80	735
85°	150	125	80	735
90°	100	155	80	735
90°	130	130	80	735
95°	120	130	80	735
100°	100	135	80	735
110°	95	125	80	735

HY LARGE				
A	**B [mm]**	**C [mm]**	**D [mm]**	**E [mm]**
80°	200	235	80	870
85°	180	230	80	870
90°	165	225	80	870
90°	195	200	80	870
95°	160	215	80	870
100°	140	215	80	870
110°	140	195	80	870

INSTALLING THE OPERATOR

⚠ **The operator must work horizontally: to do this, the supports must be positioned with a height difference of 19 mm. Check horizontality using a Spirit level.**



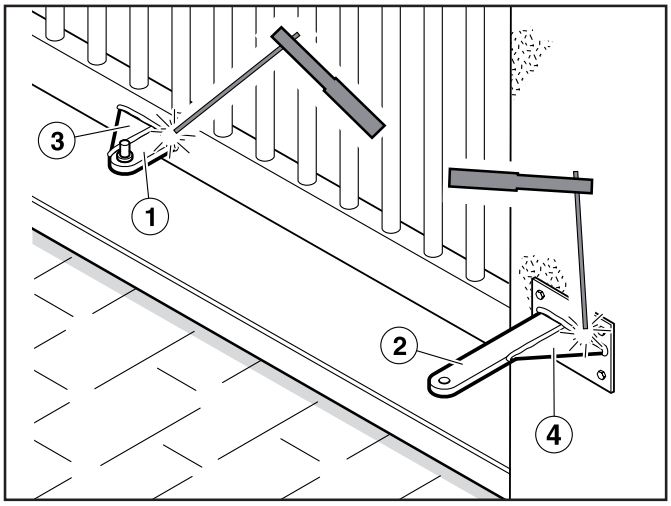
A) - Position the front and rear supports

1. Attach the front (1) and rear (2) supports, keeping strictly to the dimensions shown in the previous section.

⚠ **The installer should choose the support attachment system (welding, screwing, molding, etc) in accordance with the composition of the material to which the supports are attached (metal, concrete, etc).**

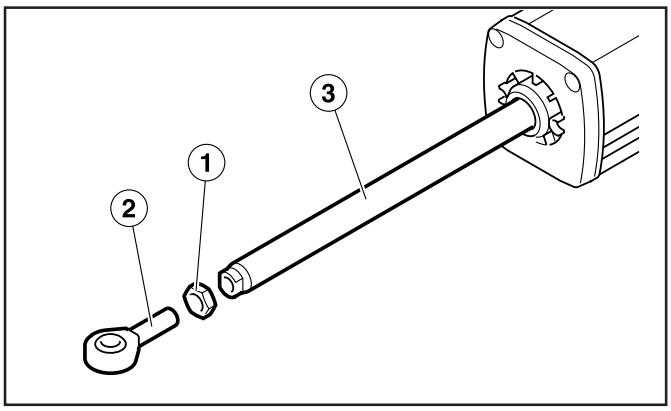
⚠ **Attach the supports on sufficiently robust structural elements.**

⚠ **IT IS VERY IMPORTANT TO RESPECT THE DIMENSIONS: If the dimensions are not respected, the piston rod will not make the whole travel, meaning the mechanical slow down system will not work.**



2. Weld the support brackets (3) and (4) to the supports (1) and (2).

⚠ **Carry out the welding with the operator withdrawn and at a distance. If not, the piston rod may become damaged from Welding splatter, which could lead to failures and oil leaks.**

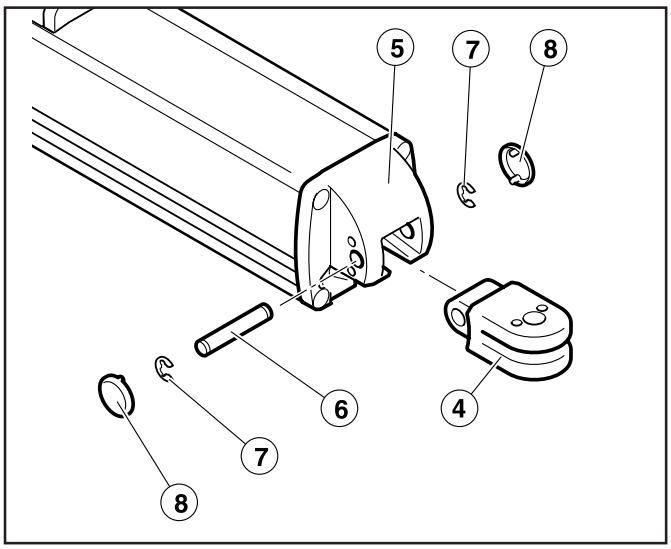


B) - Mount the ball bearing joint and the gudgeon

1. Introduce the nut (1) in the ball bearing joint (2).
2. Thread the ball bearing joint-nut set on the piston rod (3).
3. Position the gudgeon (4) in its housing in the rear end cap (5).
4. Introduce the horizontal pin (6), crossing the gudgeon and the top.

⚠ **Horizontal pin: ø = 10mm, L = 57.2mm**

5. Secure the pin using the safety washers (7).
6. Position the caps (8) to close the housing.

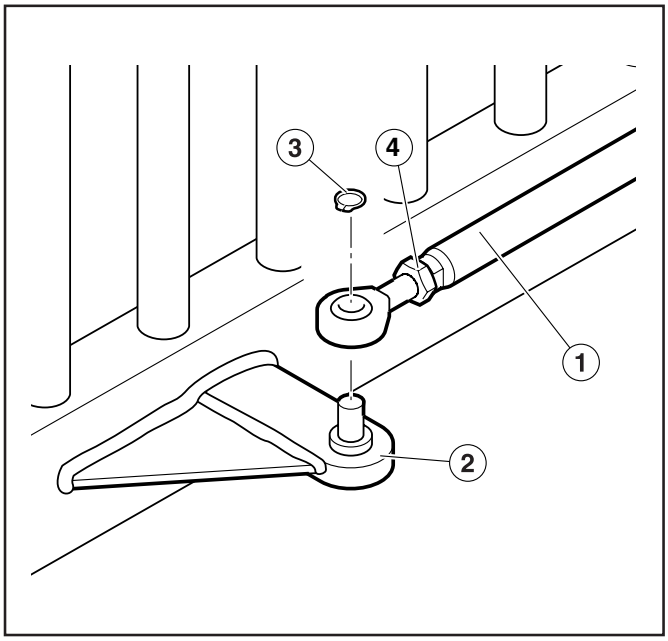


C) - Mount the operator on the front support

1. Introduce the operator ball bearing joint (1) in the front support pin (2).
2. Only models with mechanical slow down: adjust the ball bearing joint in order to achieve the required mechanical slow down distance.

⚠ **The mechanical slow down distance reduces as the ball bearing joint is unthreaded. The mechanical slow down distance increases as the ball bearing joint is threaded.**

3. Secure the ball bearing joint using the safety washer (3).
4. Lock the safety nut (4) against the servo motor spindle.

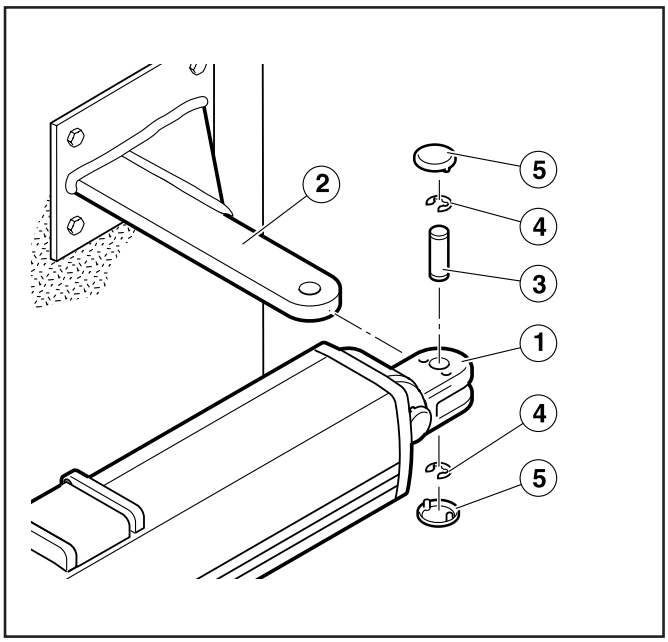


D) - Mount the operator on the rear support

1. Introduce the gudgeon (1) in the support (2).
2. Position the vertical pin (3), crossing the orifices of the gudgeon and of the support.

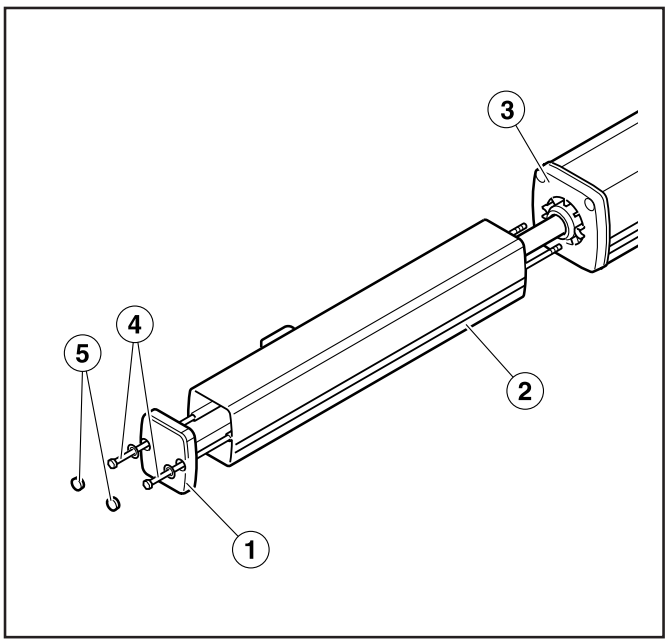
⚠ **Vertical pin: ø = 12mm, L = 37mm**

3. Secure the pin using the safety washers (4).
4. Position the caps (5) to close the housing.



E) - Mount the cover and the top

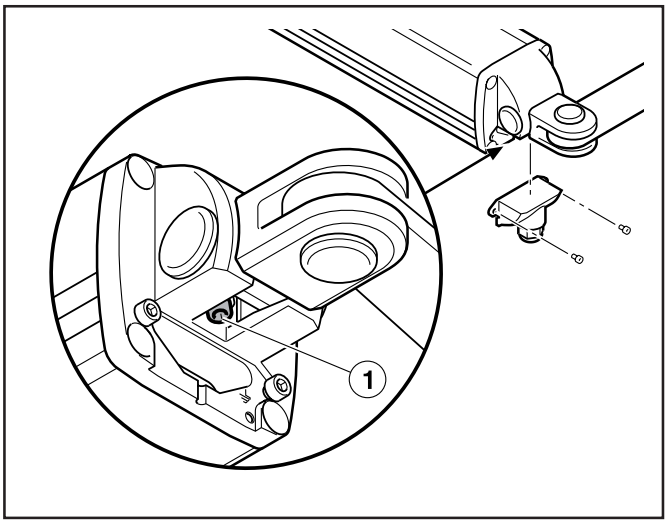
1. Introduce the rods (4) through the orifices of the top (1) and the internal cover guides (2).
2. Thread the rods in the front top of the operator (3) and tighten firmly.
3. Position the caps (5) in the holes in the top.



F) - Loosen the discharge screw

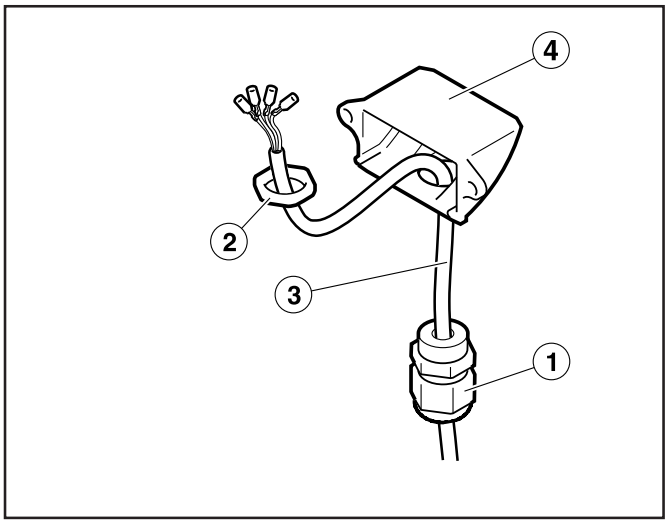
Once the operator is mounted on the supports, turn the discharge screw (1) once to allow the correct operation of the hydraulic system.

⚠ **If you have to dismount the operator from its supports, first tighten the discharge screw in order to prevent the hydraulic fluid from leaking.**



G) - Mount the gland and introduce the cable

1. Introduce the cable (3) through the gland PG11 (1).
2. Position the gland in the end cap (4) and attach using the nut PG11 (2).



MANUAL OPERATION

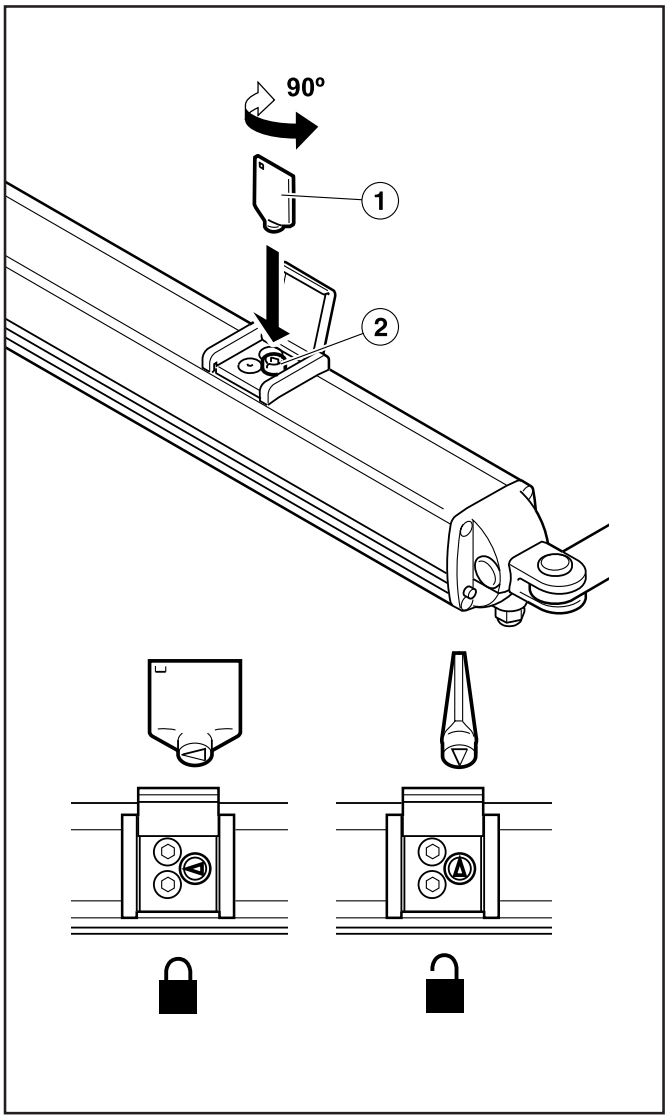
In the event of need, the gate may be operated manually. In locked models, it is necessary to first run the unlocking mechanism.

Unlock for manual operation

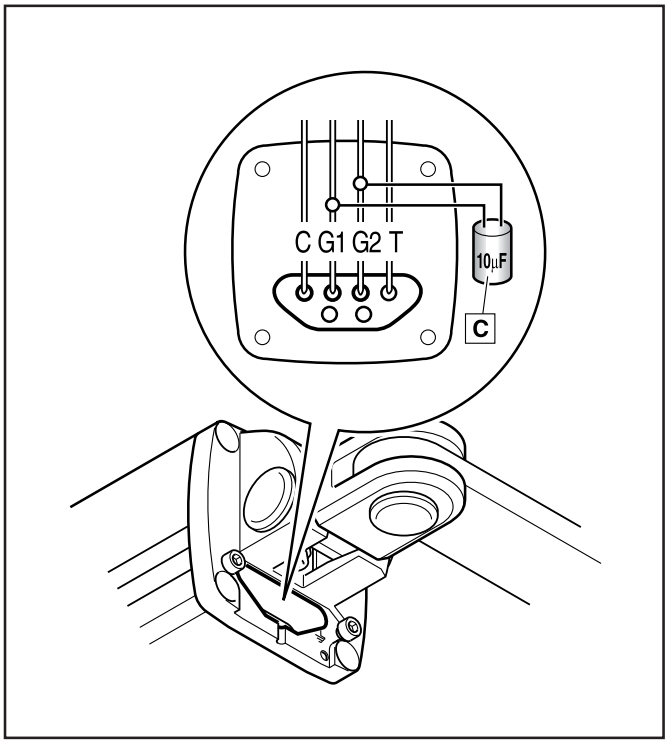
1. Lift the top and introduce the key (1) in the unlocking screw (2).
2. Turn the unlocking key in any direction until it is perpendicular to the operator piston rod. The operator is unlocked.
3. The gate can now be moved manually.

Locking for automatic operation

1. Lift the top and introduce the key (1) in the unlocking screw (2).
2. Turn the unlocking key in any direction until it is parallel to the operator piston rod. The operator is locked.
3. Remove the key and close the lid.



CONNECT THE OPERATOR TO THE CONTROL UNIT



⚠ **Before making any electrical connections, check the control unit instructions manual.**

1. Connect the actuator to the control unit following the instructions in the figure.
   - **C** common
   - **G1** turning 1
   - **G2** turning 2
   - **T** earth
2. Connect the capacitor (C) in cable connectors Turn 1 and Turn 2.

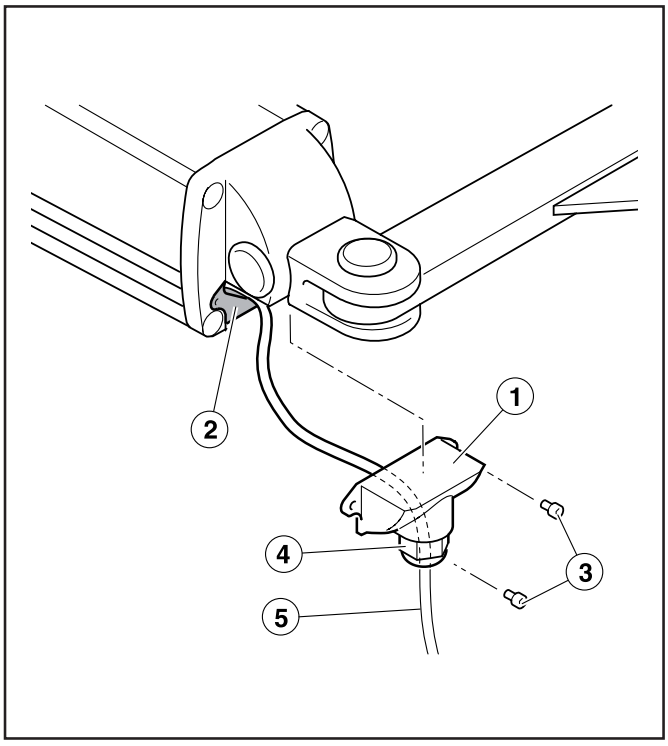
⚠ **Ensure the earth cable is properly connected.**

3. Connect the control unit to the power supply.
4. Activate the power power supply switch.

⚠ **Before carrying out any gate movement, ensure there is no person or object in the radius of action of the gate and the drive mechanisms.**

5. Use the control unit pushbuttons (CLOSE/OPEN) to check the motor connections are correct (turning direction).
6. If the turning direction is not correct, interchange the cables **G1** and **G2**.

POSITION THE END CAP AND TIGHTEN THE GLAND



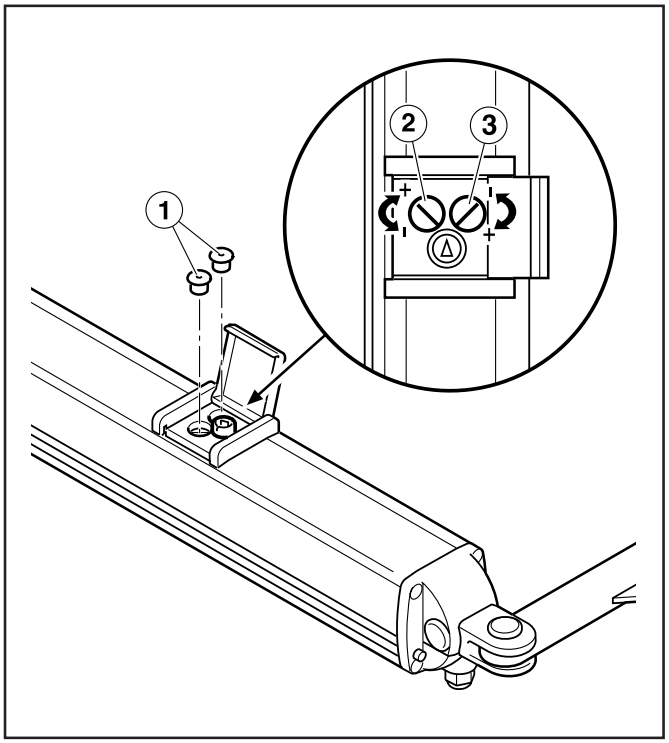
1. Position the end cap (1) in its housing (2) and attach using the screws (3).
2. Tighten the gland (4) to ensure the electrical cable input (5) is seal tight.

ADJUST THE OPENING AND CLOSING FORCE

⚠ The opening and closing forces must be adjusted to fulfil standard EN 12453.

For both screws, clockwork rotation increases the force. Anti-clockwork rotation reduces the force.

Do not tighten the regulation screws (2) to (3) to the maximum, as this may cause damage.



SELF LOCKING MODELS

1. Remove the caps (1) which cover the adjustment screws.

2. CLOSING FORCE: yellow colour cap, screw (2).

⚠ The "Closing force" is, more exactly, the force during the extension of the piston rod.

- In inward opening installations, it corresponds to the closing operation.
- In outward opening installations, it corresponds to the opening operation

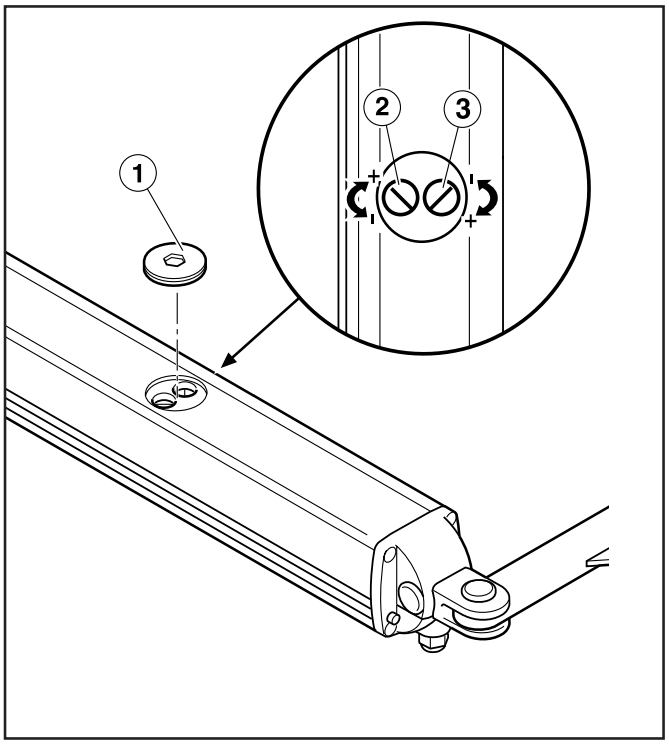
3. OPENING FORCE: white colour cap, screw (3).

⚠ The "Opening force" is, more exactly, the force during the retraction of the piston rod.

- In inward opening installations, it corresponds to the opening operation.
- In outward opening installations, it corresponds to the closing operation.

4. Regulate correctly.

5. Replace the caps (1), respecting the colours.



NONE LOCKING MODELS

1. Remove the cap (1) which covers the adjustment screws.

2. CLOSING FORCE: screw (2).

⚠ The "Closing force" is, more exactly, the force during the extension of the piston rod.

- In inward opening installations, it corresponds to the closing operation.
- In outward opening installations, it corresponds to the opening operation.

3. OPENING FORCE: screw (3).

⚠ The "Opening force" is, more exactly, the force during the retraction of the piston rod.

- In inward opening installations, it corresponds to the opening operation.
- In outward opening installations, it corresponds to the closing operation.

4. Regulate correctly.

5. Replace the cap (1).

TESTING AND START-UP

In implementing the automation device, these are the most important steps for guaranteeing maximum safety.

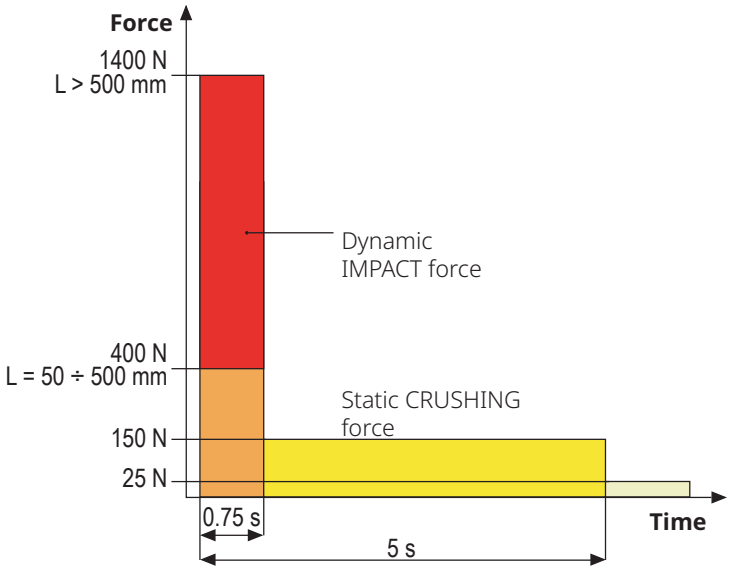
V2 recommends the application of the following technical standards:

- EN 12445 (Safety in the use of automated closures, test methods)
- EN 12453 (Safety in the use of automated closures, requirements)
- EN 60204–1 (Safety of Machinery, electrical equipment of machines, part 1: general principles)

In particular, with reference to the table in the section "PRELIMINARY CHECKS and IDENTIFICATION OF THE TYPE OF USE" in the majority of cases, it will be necessary to measure the impact force, in accordance with the provisions of EN 12445.

Adjusting the operating force is possible by programming the electronic circuit board, and the impact force profile should be measured using an appropriate device (itself also certified and subjected to annual calibration) capable of tracing the force-time graph.

The result should be in compliance with the following maximum values:



MAINTENANCE

⚠ **Before carrying out any maintenance operation, disconnect the device from the power supply.**

⚠ **If you have to dismount the operator from its supports, first tighten the discharge screw in order to prevent the hydraulic fluid from leaking.**

Maintenance should be performed in full compliance with the safety instructions described in this manual and in accordance with current legal and regulatory provisions.

The recommended interval between each maintenance operation is six months, the checks involved should at least relate to:

- the perfect efficiency of all warning devices
- the perfect efficiency of all safety devices
- measurement of the gate operating forces
- the lubrication of mechanical parts on the automation device (where necessary)
- the state of wear of the mechanical parts on the automation device
- the state of wear of the electrical cables on the electromechanical actuators

The result of each check should be recorded in a gate maintenance log.



DISPOSAL OF THE PRODUCT

As for the installation operations, even at the end of this product's life span, the dismantling operations must be carried out by qualified experts.

This product is made up of various types of materials: some can be recycled while others need to be disposed of. Find out about the recycling or disposal systems envisaged by your local regulations for this product category.

Important! – Parts of the product could contain pollutants or hazardous substances which, if released into the environment, could cause harmful effects to the environment itself as well as to human health. As indicated by the symbol opposite, throwing away this product as domestic waste is strictly forbidden. So dispose of it as differentiated waste, in accordance with your local regulations, or return the product to the retailer when you purchase a new equivalent product.

Important! – the local applicable regulations may envisage heavy sanctions in the event of illegal disposal of this product.