


## IMPORTANT REMARKS

For any installation problems please contact  
**V2 S.p.A.** TEL. (+39) 01 72 81 24 11

**V2 S.p.A. 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.**

 **Please read this instruction manual very carefully before installing and programming your control unit.**

- 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.

### **AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:**

**EN 60204-1** (Machinery safety. electrical equipment of machines, part 1: general rules)

**EN 12445** (Safe use of automated locking devices, test methods)

**EN 12453** (Safe use of automated locking devices, requirements)

- The installer must provide for a device (es. magnetothermal 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 IP55 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 98/37/EEC, Annex IIA).
- The automated vehicular gates shall comply with the following rules: EN 12453, EN 12445, EN 12978 as well as any local rule in force.
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.
- The door thrust force adjustment shall be measured by means of a proper tool and adjusted according to the max. limits, which EN 12453 allows.
- 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.
- The appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children being supervised do not play with the appliance.

- For correct installation of the system, we recommend following the instructions issued by UNAC very carefully, which can be consulted at the following web site:  
[www.v2home.com](http://www.v2home.com)

## **EC DECLARATION OF INCORPORATION FOR PARTLY COMPLETED MACHINERY** (Directive 2006/42/EC, Annex II-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):  
VULCAN-230V, VULCAN-120V, VULCAN-24V

Identification number and year of manufacturing:

**typed on nameplate**

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 (annex II-A).
- is compliant with the applicable essential safety requirements of the following Directives:  
Machinery Directive 2006/42/EC (annex I, chapter 1)  
Low Voltage Directive 2006/95/EC.  
Electromagnetic Compatibility Directive 2004/108/EC.

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), Italy**

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

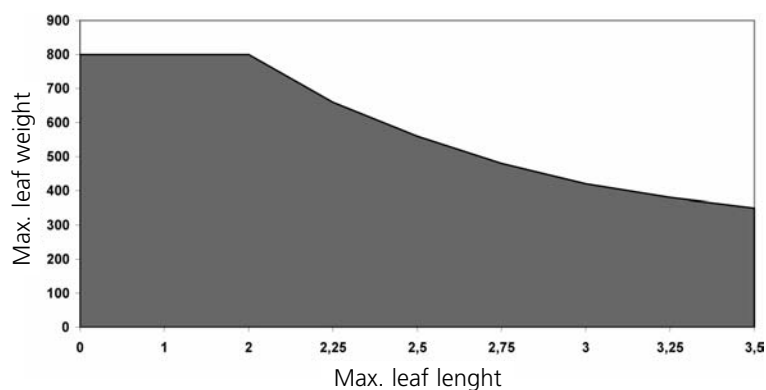
**Cosimo De Falco**

Legal representative of V2 S.p.A.

Racconigi, 11th January 2010

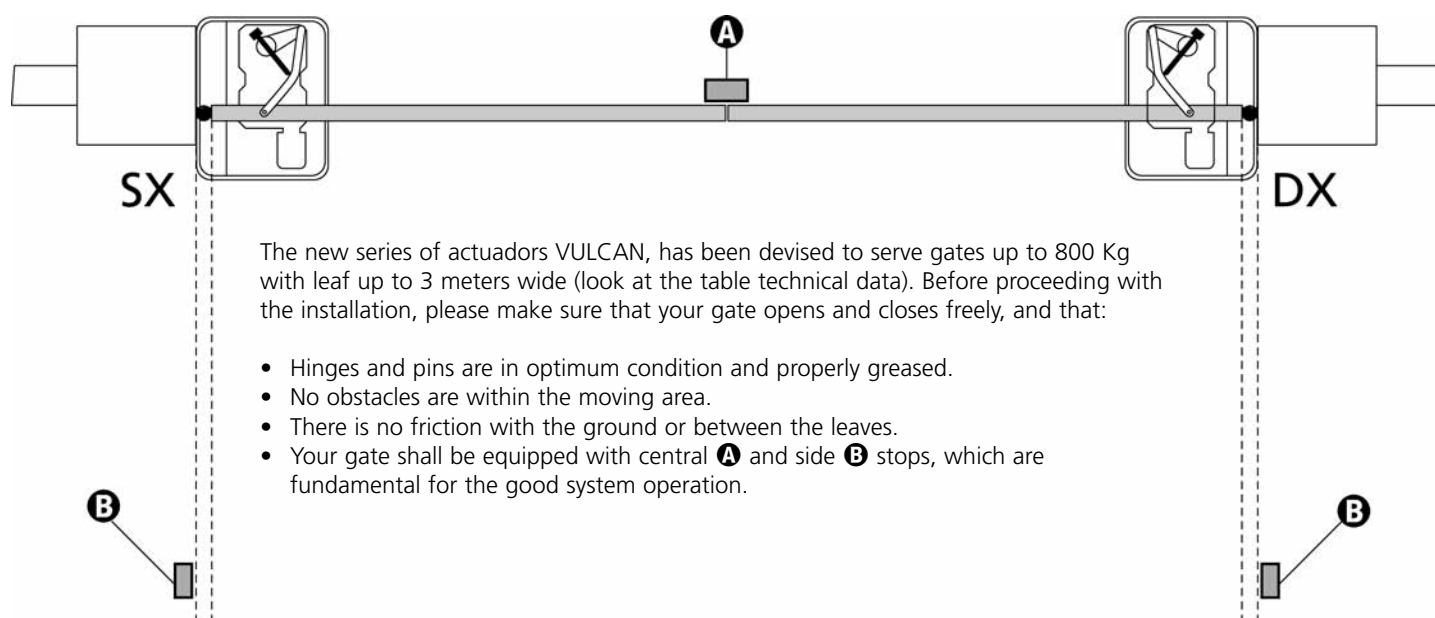


TECHNICAL DATA		24V	120V	230V
Max. leaf length*	m	2 x 600 Kg 2,5 x 500 Kg 3 x 400 Kg 3,5 x 350 Kg	2 x 800 Kg 2,5 x 550 Kg 3 x 400 Kg 3,5 x 350 Kg	2 x 800 Kg 2,5 x 550 Kg 3 x 400 Kg 3,5 x 350 Kg
Power supply	V / Hz	24	120 / 60	230 / 50
Idling current	A	1	3	1,5
Maximum current absorption	A	15	4,8	2,4
Maximum power	W	-	500	500
Nominal power	W	230	350	350
Capacitor	µF	-	35	14
Opening time (90°)	s	15 ÷ 25	15	17
Maximum torque	N m	320	320	320
Working temperature	°C	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55
Thermal protection	°C	-	150	150
Working cycle	%	80	30	30
Motor weight	Kg	11,5	11	11
Protection	IP	67	67	67



\* **WARNING:** if it is installed the accessory device for opening up to 180° (code 162218), the maximum length of the wing is 2,5m for a maximum weight of 400Kg

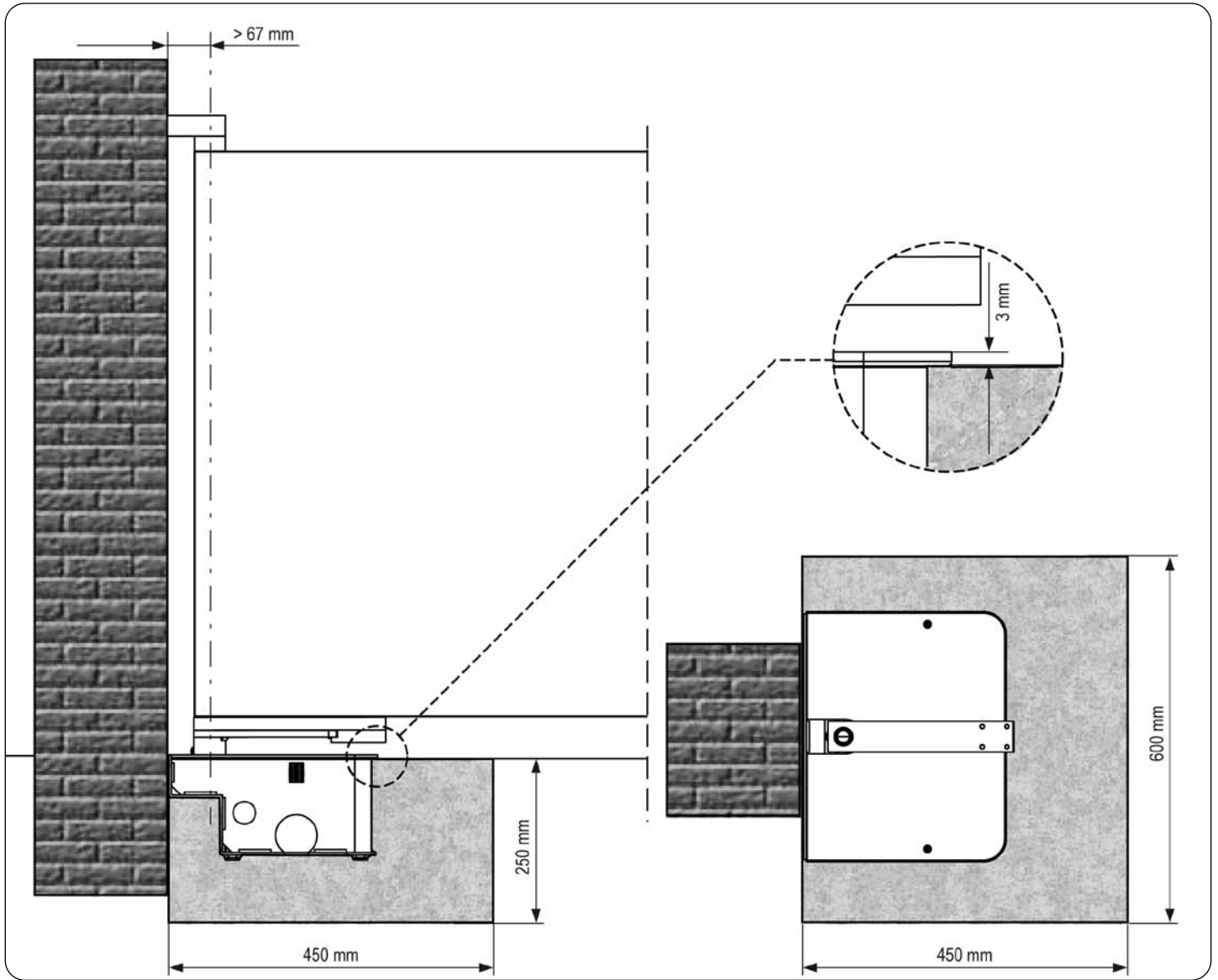
## PREPARATORY STEPS



The new series of actuators VULCAN, has been devised to serve gates up to 800 Kg with leaf up to 3 meters wide (look at the table technical data). Before proceeding with the installation, please make sure that your gate opens and closes freely, and that:

- Hinges and pins are in optimum condition and properly greased.
- No obstacles are within the moving area.
- There is no friction with the ground or between the leaves.
- Your gate shall be equipped with central **A** and side **B** stops, which are fundamental for the good system operation.

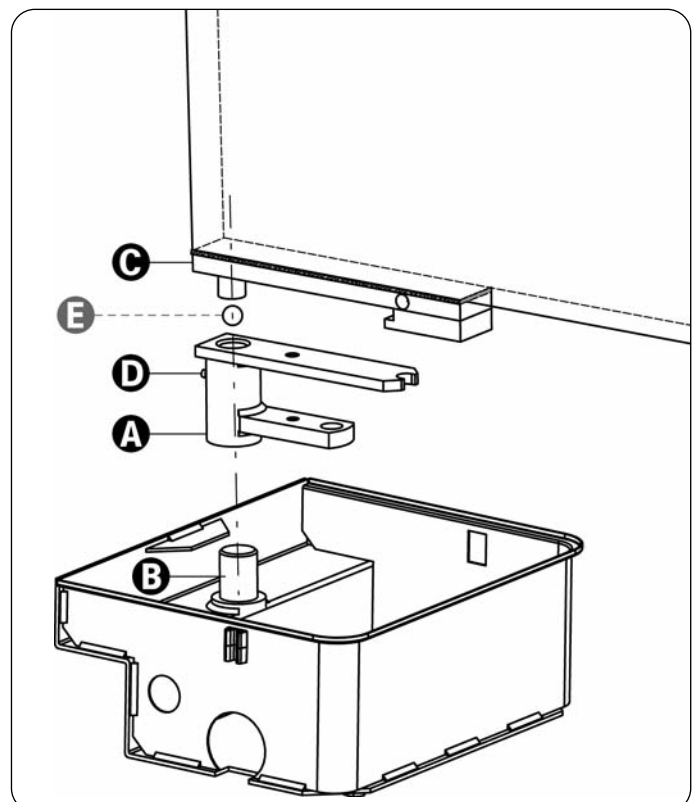
## POSITIONING THE FOUNDATION BOX AND THE LEVER CONTROL AND BLOCKING SYSTEM



1. Depending on the dimensions, dig a suitably sized foundation ditch (it is recommended to provide adequate drainage in order to avoid water pooling).
2. Place the foundation box inside the trench, with the support pivot aligned with the hinge axis.
3. Install a conduit for the electrical cables, and another for drainage.
4. Embed the foundation box in concrete, ensuring it is level and plumb.

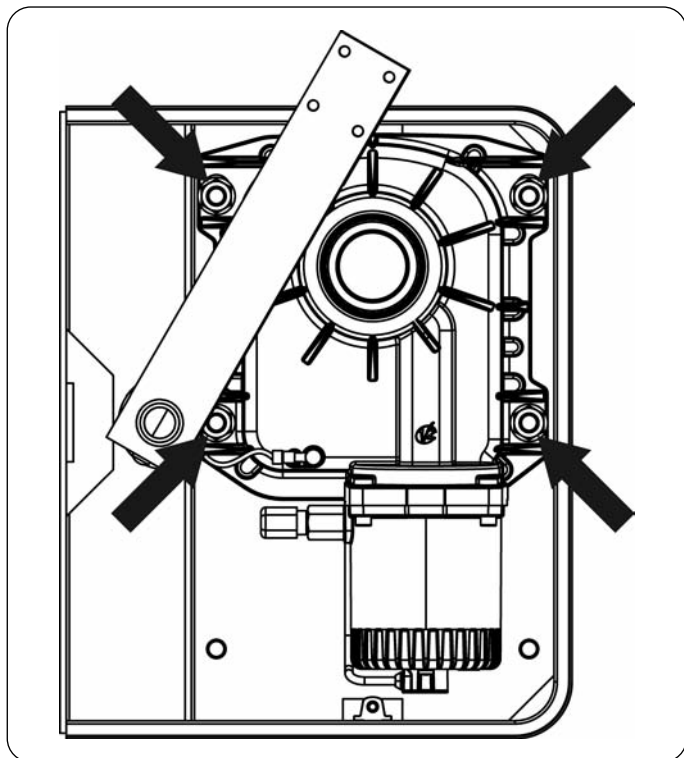
**WARNING: ensure that the concrete used is properly cured prior to proceeding with the following steps.**

5. Insert the control rod A over the foundation box supporting pivot B.
6. Insert the ball E into the special hole (only for model 162221) after having greased it
7. Fix with a strong welding the wing of the gate on the release lever C, then put everything on the driving bracket A in correspondence of the hole
8. Grease the mechanism using the appropriate grease nipple D.

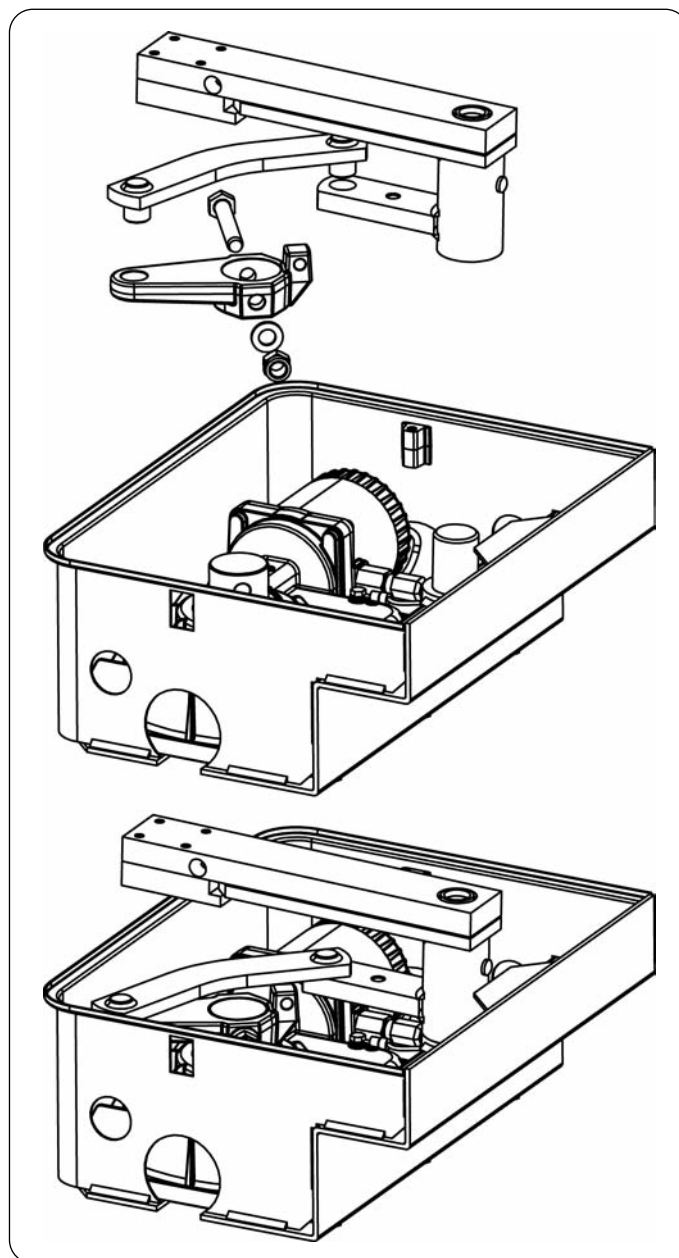


## INSTALLING THE MOTOR REDUCER

1. Place the motor reducer gear unit inside the foundation box.
2. Fix the motor reducer in place inside the foundation box by tightening the 4 nuts.

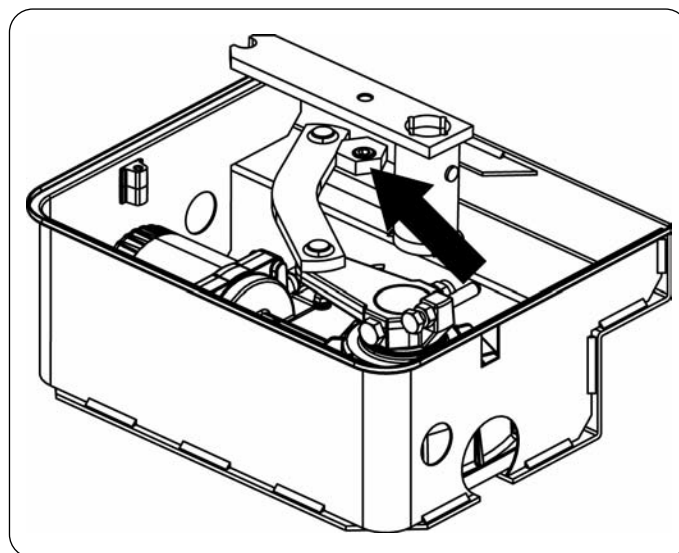
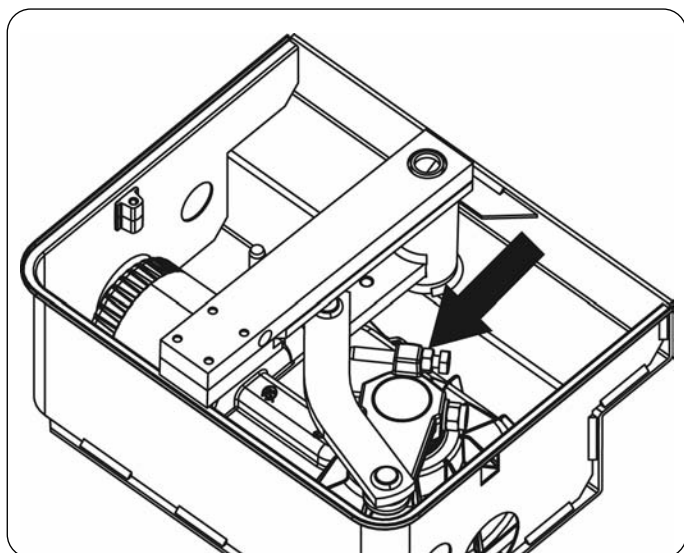


3. Mount the motor connecting rod on the motor drive shaft and fix the screw in place using the corresponding self-locking nut.
4. Connect the motor connecting rod to the control rod by means of the elbow lever.
5. Connect the motor to the control unit, following the instructions in the following paragraph.



## INSTALLATION OF THE STOP LIMIT SWITCHES

1. Place the gate in the maximum closed position, and then attach the limit switch screw as shown in the figure.
2. Place the gate in the maximum open position, and then attach the limit switch nut as shown in the figure, and tighten the screw.



# ELECTRICAL CONNECTIONS

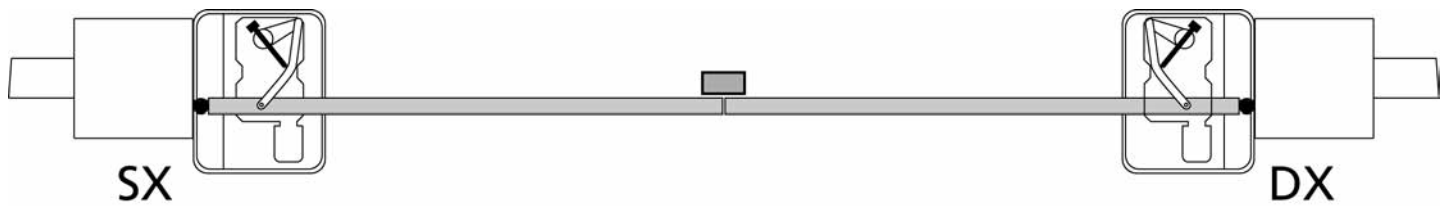
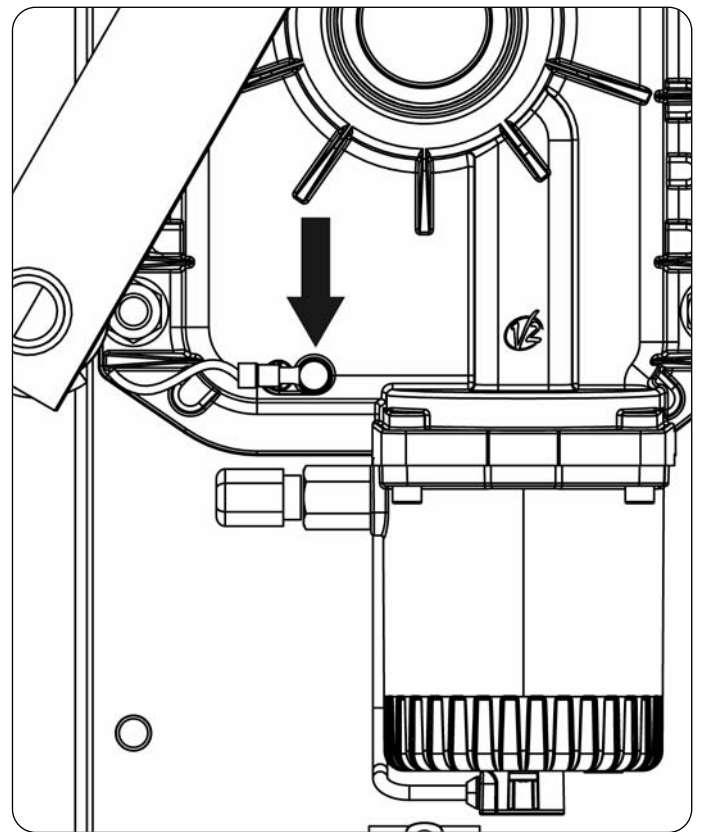
VULCAN-230V / VULCAN-120V

Motor cable	CONTROL UNIT	
	DX motor	SX motor
YELLOW - GREEN	GND	GND
BLUE	COMMON	COMMON
BLACK	OPENING	CLOSING
BROWN	CLOSING	OPENING

**⚠ WARNING:** Always connect the earth cable to the mains power earth system. Use the special fastom shown in the figure, and a cable with a minimum cross sectional area of 2.5 mm<sup>2</sup>

VULCAN-24V

Motor cable	CONTROL UNIT	
	DX motor	SX motor
BLU	+	-
MARRONE	-	+



## ENCODER connection

**⚠ ATTENTION:** For encoder operation, when in the closed position, both gate panels must rest against a mechanical stop.

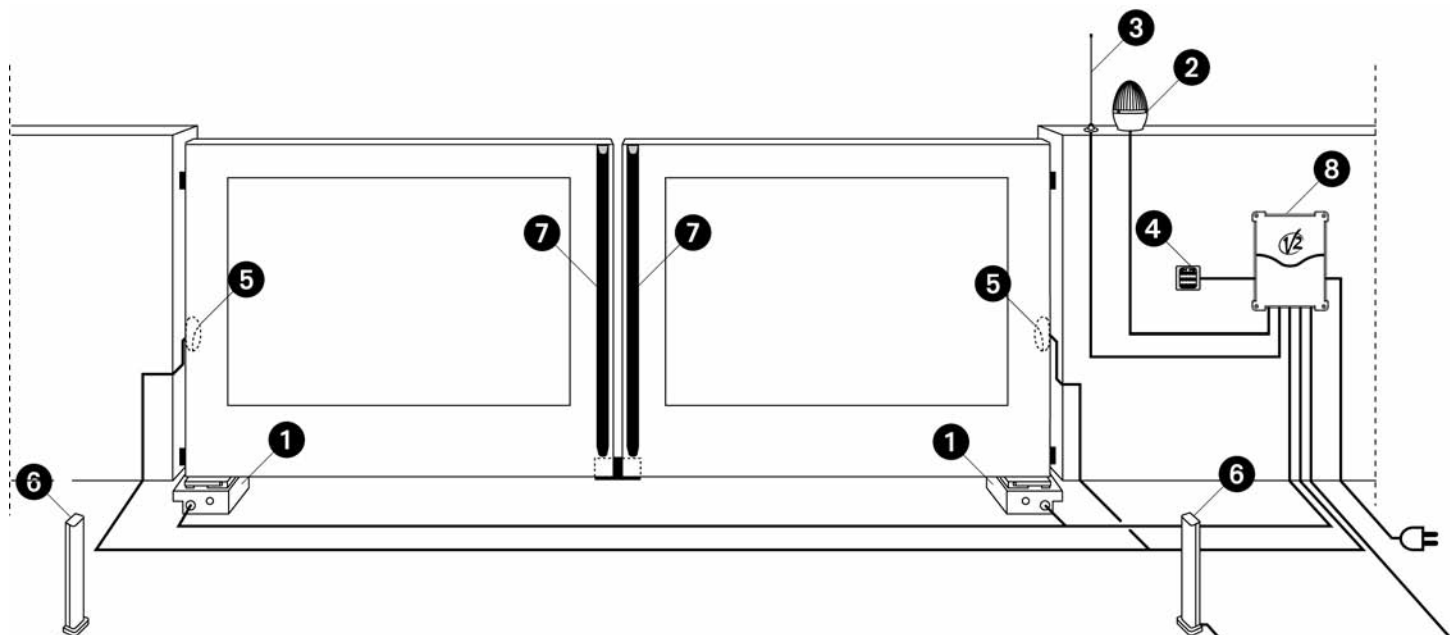
Hereafter the directions to follow to connect the cables of the encoder to the control unit:

**⚠ ATTENTION:** extensions of the cables must be made only with a 4x0,22 shielded cable with polyethylene sheath

**⚠ ATTENTION:** connect the shielding braith sheath to the common accessories. Check that the ground of the power supply of the accessories is connected to the common accessories.

ENCODER cable			CONTROL UNIT	
			DX motor	SX motor
MOTOR 1	<b>A</b>	RED	+ 24 Vdc	+ 24 Vdc
	<b>B</b>	BLACK	COM (-)	COM (-)
	<b>C</b>	BLUE	FCA2	FCC2
	<b>D</b>	WHITE	FCC2	FCA2
MOTOR 2	<b>A</b>	RED	+ 24 Vdc	+ 24 Vdc
	<b>B</b>	BLACK	COM (-)	COM (-)
	<b>C</b>	BLUE	FCA1	FCC1
	<b>D</b>	WHITE	FCC1	FCA1

## INSTALLATION LAYOUT



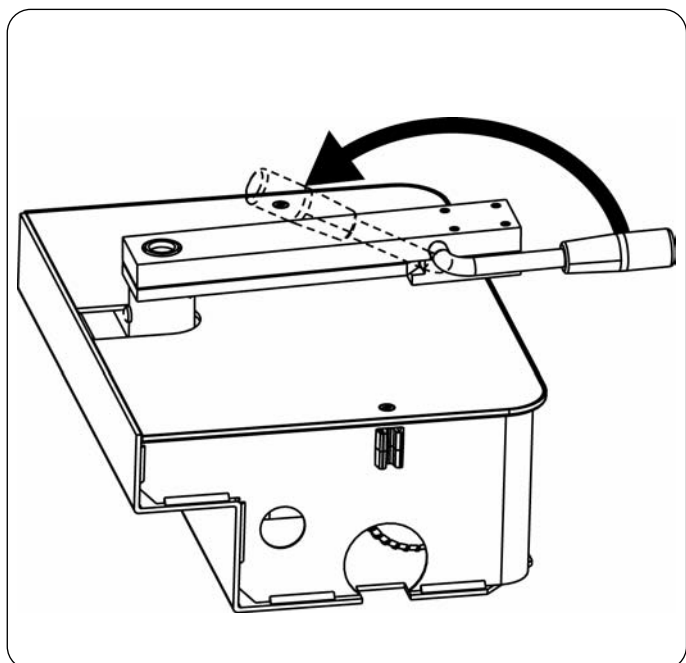
1 VULCAN actuator	cable 4 x 1 mm <sup>2</sup>
2 Blinker	cable 2 x 1,5 mm <sup>2</sup>
3 Aerial	cable RG-58
4 Key or digital selector	cable 2 x 1 mm <sup>2</sup>
5 Safety edge (EN 12978)	-

6 Internal photocells	cable 4 x 1 mm <sup>2</sup> (RX) cable 2 x 1 mm <sup>2</sup> (TX)
7 External photocells	cable 4 x 1 mm <sup>2</sup> (RX) cable 2 x 1 mm <sup>2</sup> (TX)
8 Control unit	cable 3 x 1,5 mm <sup>2</sup>

## EMERGENCY UNBLOCKING

In the case of a power failure, the gate can be unblocked mechanically by operating the motor.

Insert the supplied unblocking lever and rotate 180° clockwise. Automation will be automatically restored the first time the motor is operated.





**V2 S.p.A.**

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