



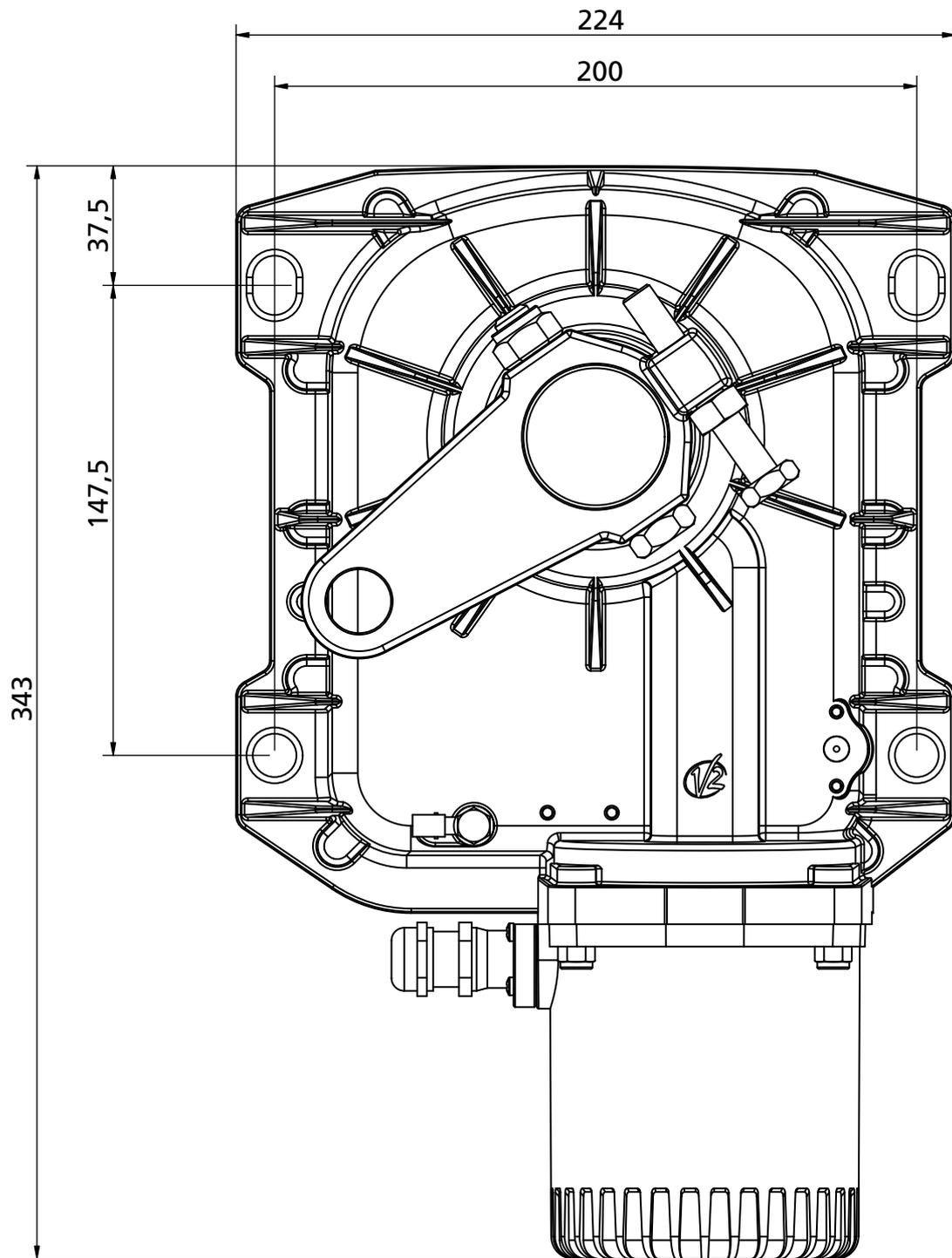
VULCAN

GB

**IRREVERSIBLE
ELECTROMECHANICAL
ACTUATOR (UNDERGROUND
INSTALLATION) FOR LEAF GATES**



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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):
VULCAN-230V, VULCAN-230V-S, VULCAN-120V, VULCAN-24V

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 2014/35/EU
Electromagnetic Compatibility Directive 2014/30/EU
Directive RoHS3 2015/863/EU

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:

Sergio Biancheri

Legal representative of V2 S.p.A.
Racconigi, il 01/06/2020



IMPORTANT REMARKS

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.

m 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)

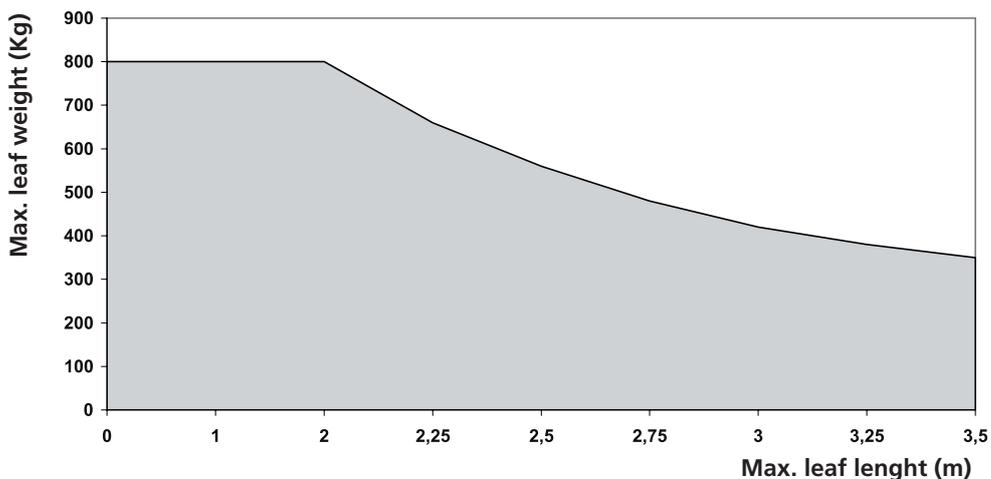
EN 12453 (Safe use of automated locking devices, requirements)

- 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.

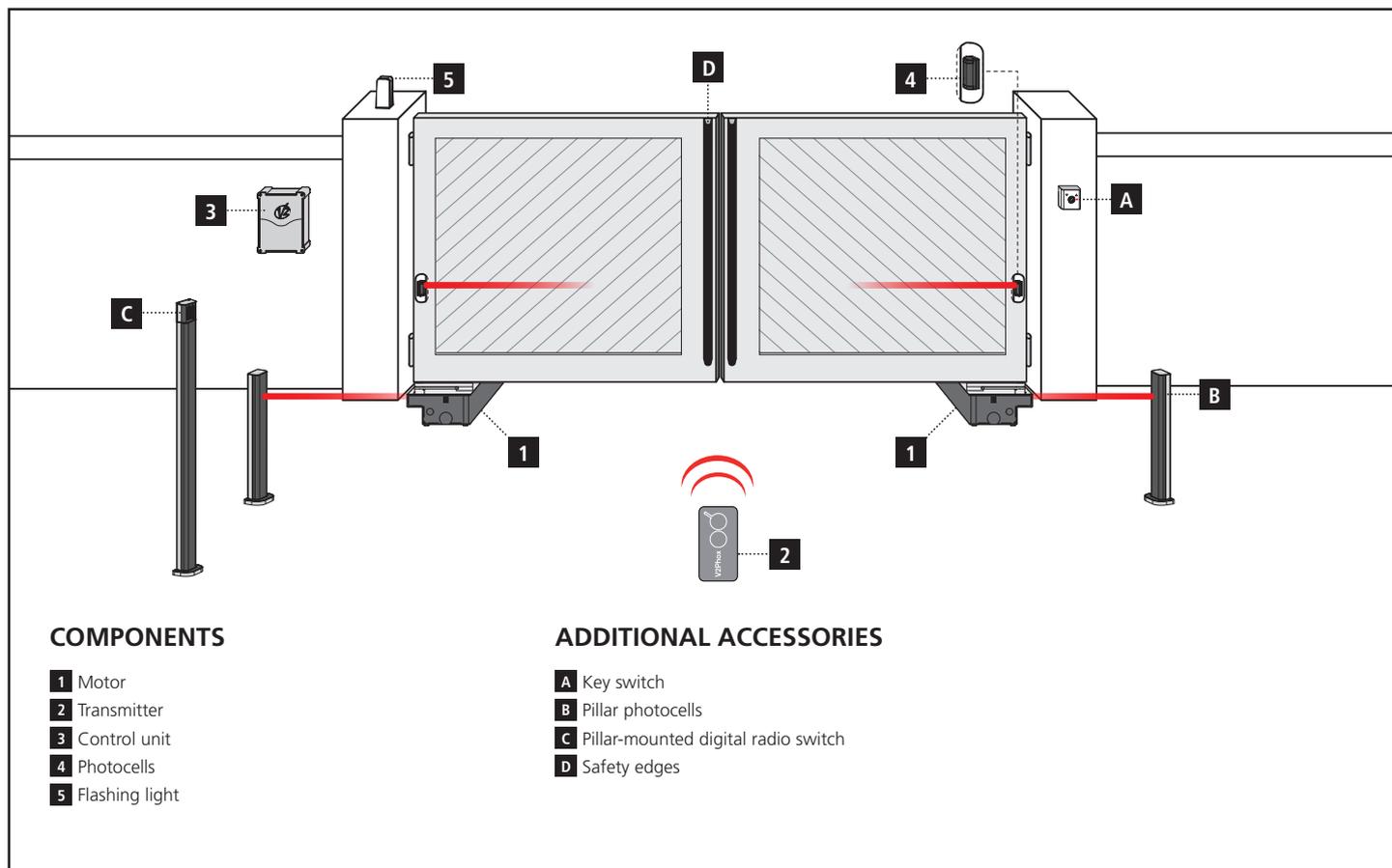
TECHNICAL DATA

		VULCAN-24V	VULCAN-120V	VULCAN-230V	VULCAN-230V-S
Max. leaf length*	m x Kg	2 x 600 2,5 x 500 3 x 400 3,5 x 350	2 x 800 2,5 x 550 3 x 400 3,5 x 350	2 x 800 2,5 x 550 3 x 400 3,5 x 350	2 x 800 2,5 x 550 3 x 400 3,5 x 350
Power supply	V / Hz	24	120 / 60	230 / 50	230 / 50
Idling current	A	1	3	1,5	1,5
Maximum current absorption	A	15	4,8	2,4	2
Maximum power	W	-	550	550	460
Nominal power	W	230	350	350	350
Capacitor	µF	-	35	14	14
Opening time (90°)	s	15 ÷ 25	15	17	28
Maximum torque	N m	320	320	320	300
Working temperature	°C	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55
Thermal protection	°C	-	150	150	150
Working cycle	%	80	30	30	30
Motor weight	Kg	11,5	11	11	11
Protection	IP	67	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



INSTALLATION LAYOUT



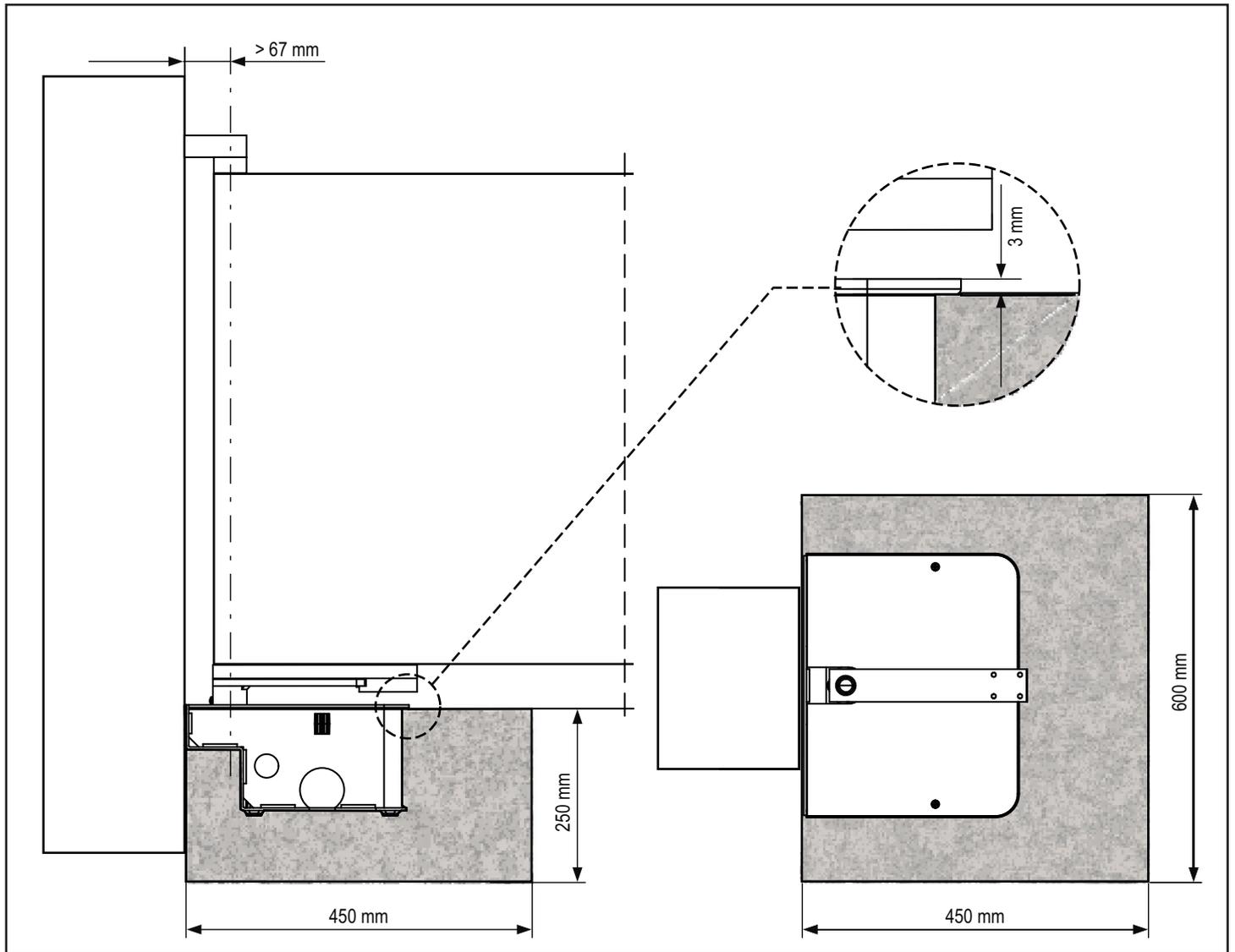
LENGTH OF THE CABLE	< 10 metres	from 10 to 20 metres	from 20 to 30 metres
Power supply 230V	3G x 1,5 mm ²	3G x 1,5 mm ²	3G x 2,5 mm ²
Photocells (TX)	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Key switch	4 x 0,5 mm ²	4 x 0,5 mm ²	4 x 0,5 mm ²
Photocells (RX)	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Flashing 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

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.
- The stop limit switch must be installed inside the foundation box (see paragraph about Installation of the stop limit switches)

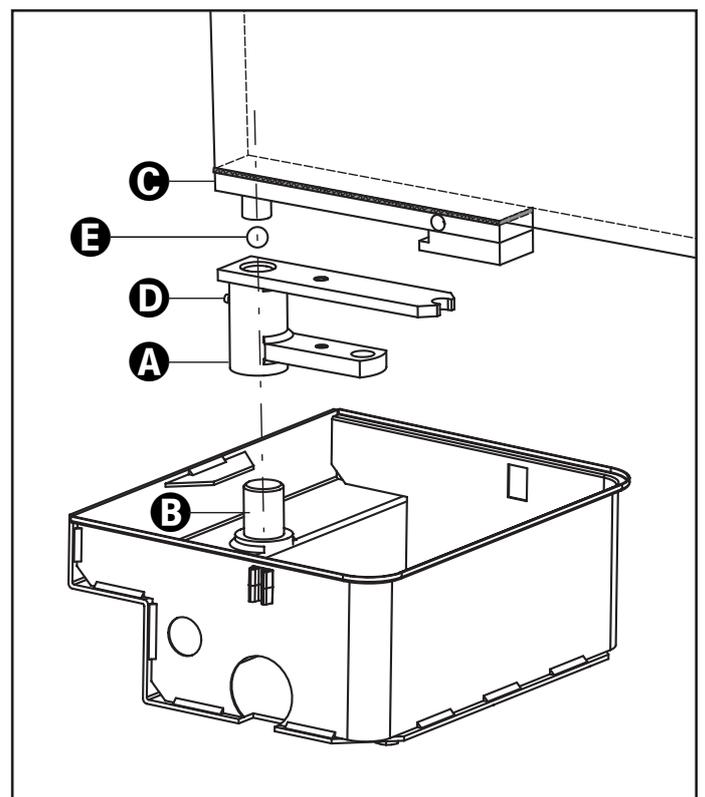
POSITIONING THE FOUNDATION BOX AND THE LEVER CONTROL AND BLOCKING SYSTEM



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.

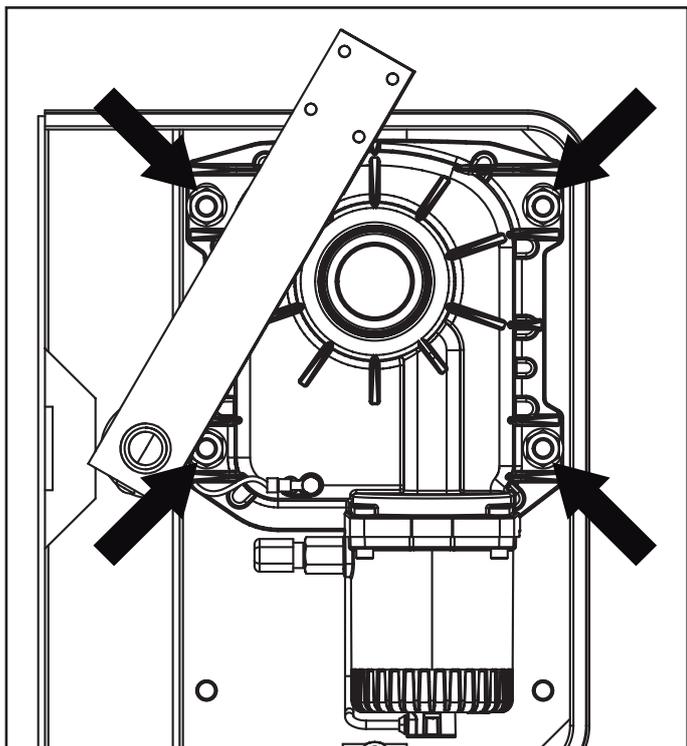
⚠ WARNING: ensure that the concrete used is properly cured prior to proceeding with the following steps.

5. Insert the control rod **A** over the foundation box supporting pivot **B**.
6. Insert the ball **E** into the special hole 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**

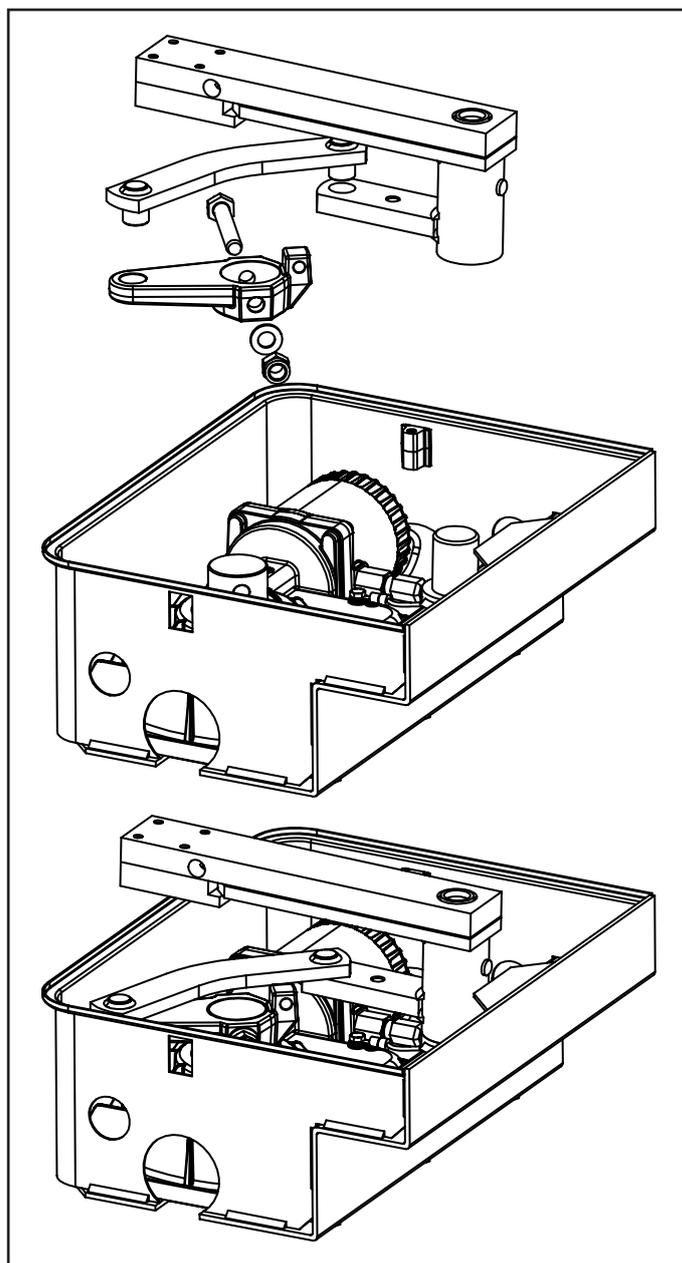


INSTALLING THE MOTOR REDUCER

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.

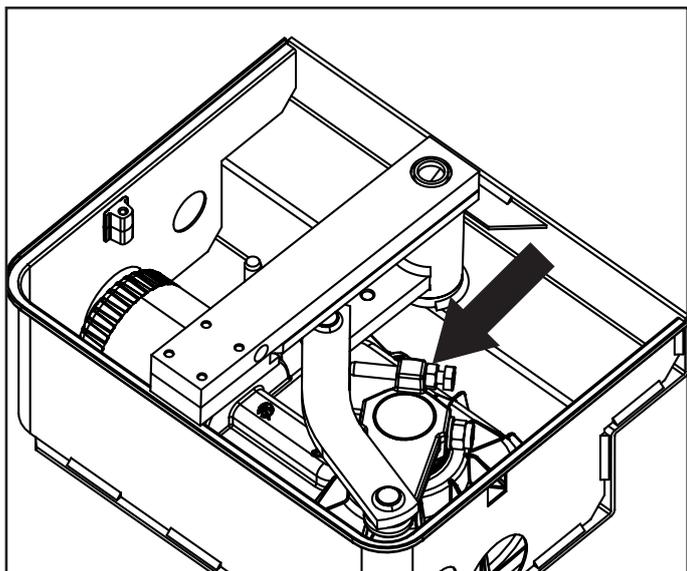


3. Mount the motor connecting rod on the motor drive shaft and fix the screw in place using the corresponding self-locking nut.
4. Connect the motor connecting rod to the control rod by means of the elbow lever.
5. Connect the motor to the control unit, following the instructions in the following paragraph.

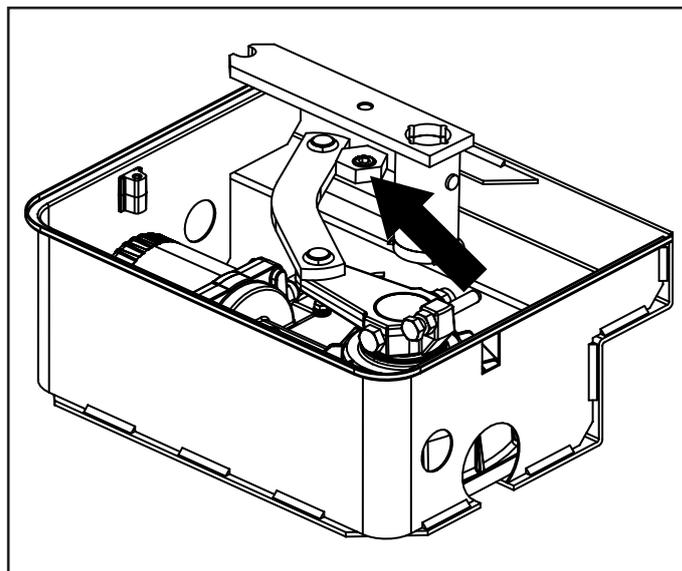


INSTALLATION OF THE STOP LIMIT SWITCHES

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

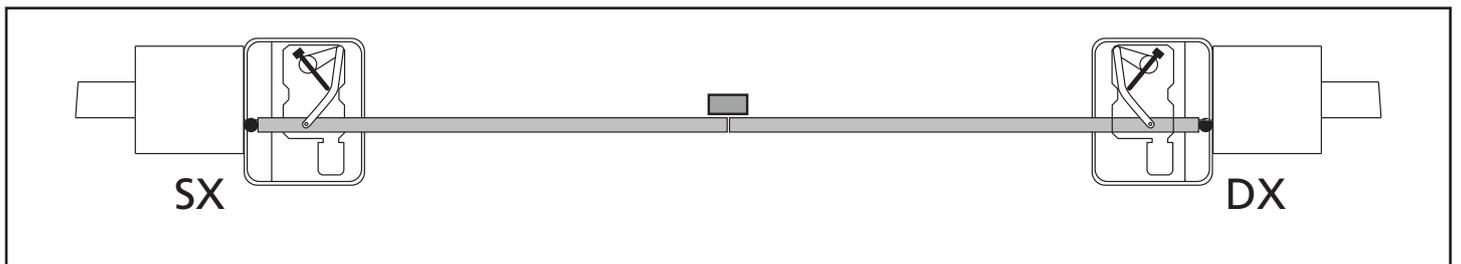
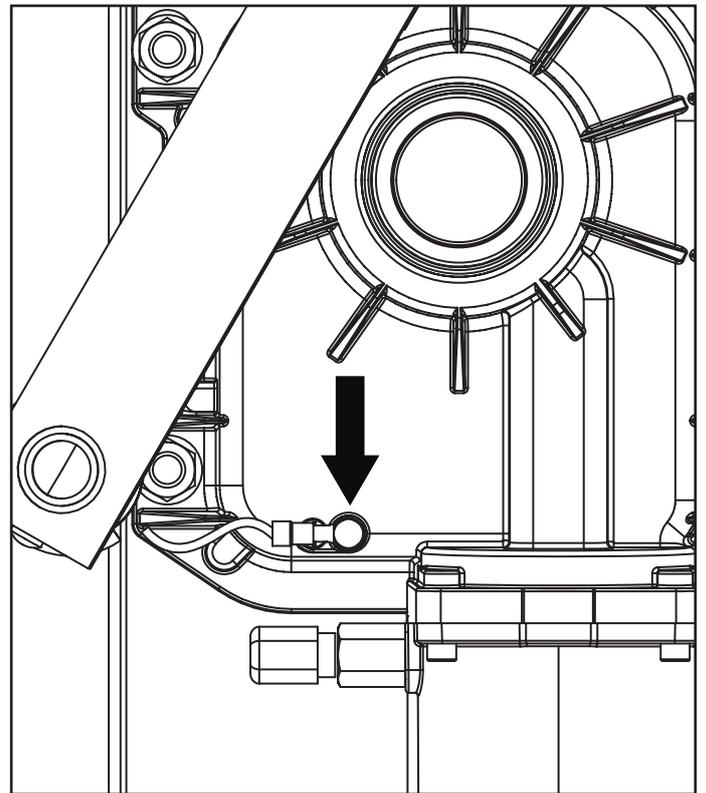
VULCAN-230V / VULCAN-120V

Motor cable	CONTROL UNIT	
	DX motor	SX motor
YELLOW - GREEN	GND	GND
GREY	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 mm²

VULCAN-24V

Motor cable	CONTROL UNIT	
	DX motor	SX motor
BLUE	+	-
BROWN	-	+



ENCODER CONNECTION

To connect the encoders please refer to the control unit manual.

⚠ WARNING: For the encoders to work properly it is essential that the stoppers inside the case are installed correctly.

⚠ ATTENTION: DO NOT use the motor cable channel for the sensor cables.

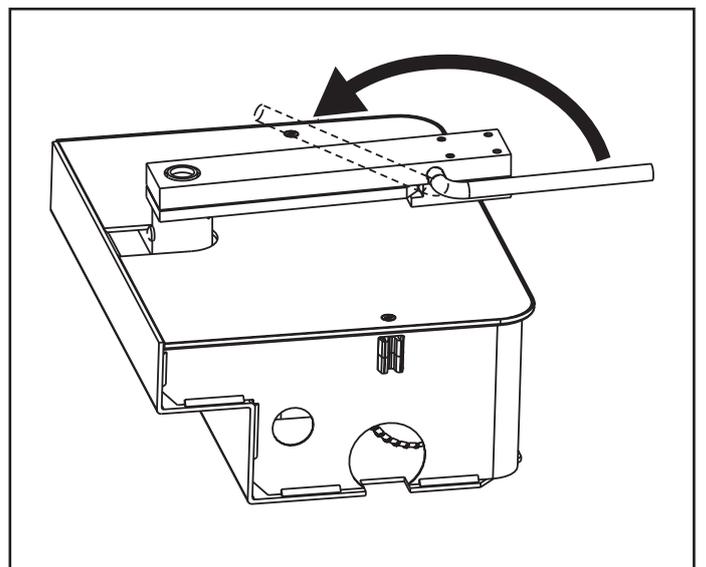
⚠ ATTENTION: extensions of the cables must be made only with a 4x0,22 shielded cable with polyethylene sheath

⚠ 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.

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.





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