



Vehicle Access Control
Pedestrian Access Control
Safety & Security Equipment

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Sentinel MB24 Articulated Arm Swing Gate Operator v02/23

Installation Instructions

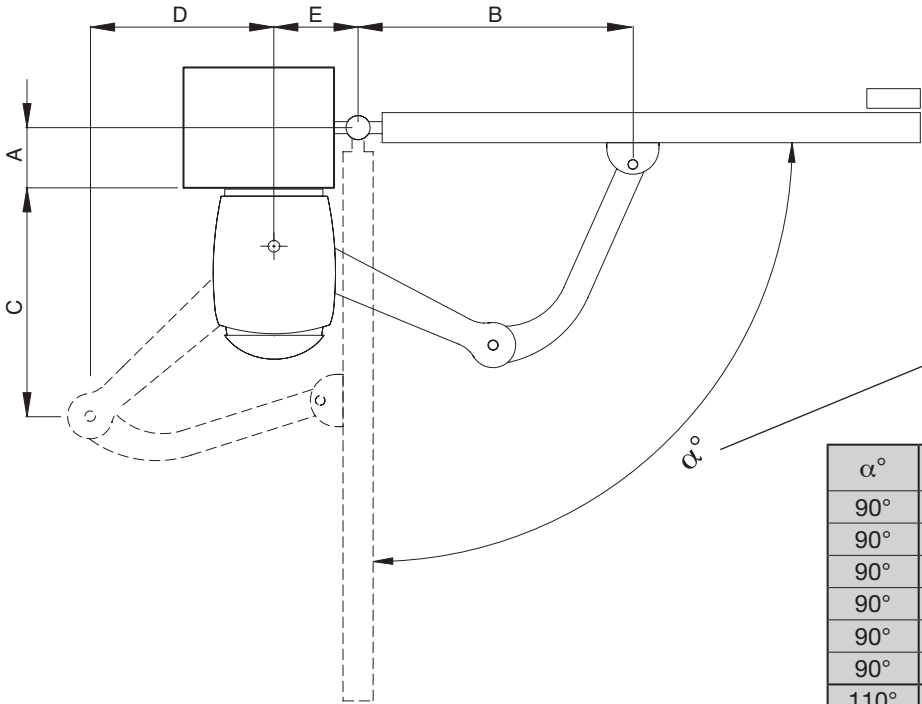
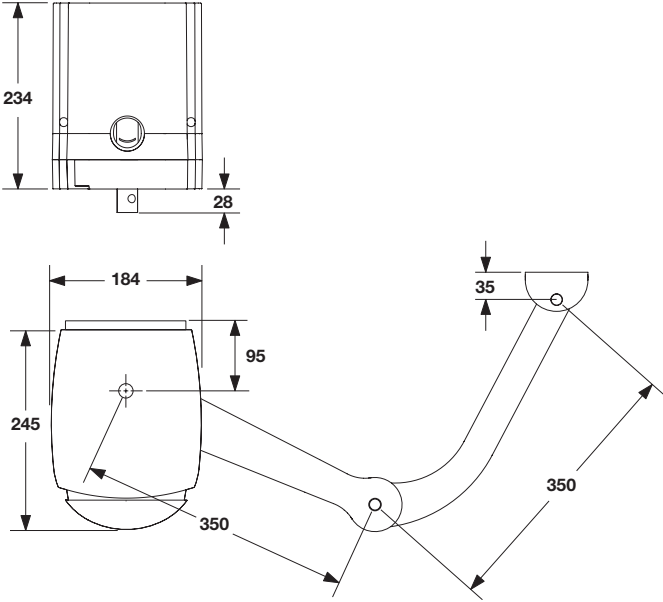


Please read these instructions fully before installing

Technical data	MBE24	MB24V
Power supply	230 Vac	--
Motor feed	24 Vdc	24 Vdc
Power drawn	160 W	160 W
Current drawn	0,76 A	6,2A
Torque	180 Nm	180 Nm
Noise level	<70 dB	<70 dB
Operating time at 90°	10 s (1)	10 s (1)
Door leaf max. weight	300 kg (2)	300 kg (2)
Door leaf max.	2,5 m(2)	2,5 m(2)
Jogging	(3)	(3)
Lubrication	(4)	(4)
IP class	IP44	IP44
Weight	10,7 kg	9 kg
Built-in release:	(5)	(5)

- (1) With braking disabled
(2) See table
(3) Intensive use
(4) Permanent grease
(5) Customized key

Door leaf width (m)	Door leaf weight (kg)
1	300
1,5	250
2	215
2,3	200



Door leaf max. rotation

α°	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
90°	0	470	350	243	140
90°	50	470	339	255	140
90°	100	470	331	262	140
90°	150	470	328	264	140
90°	185	470	356	237	160
90°	200	440	410	160	200
110°	0	420	244	318	200
105°	100	420	262	310	200

Fig.1

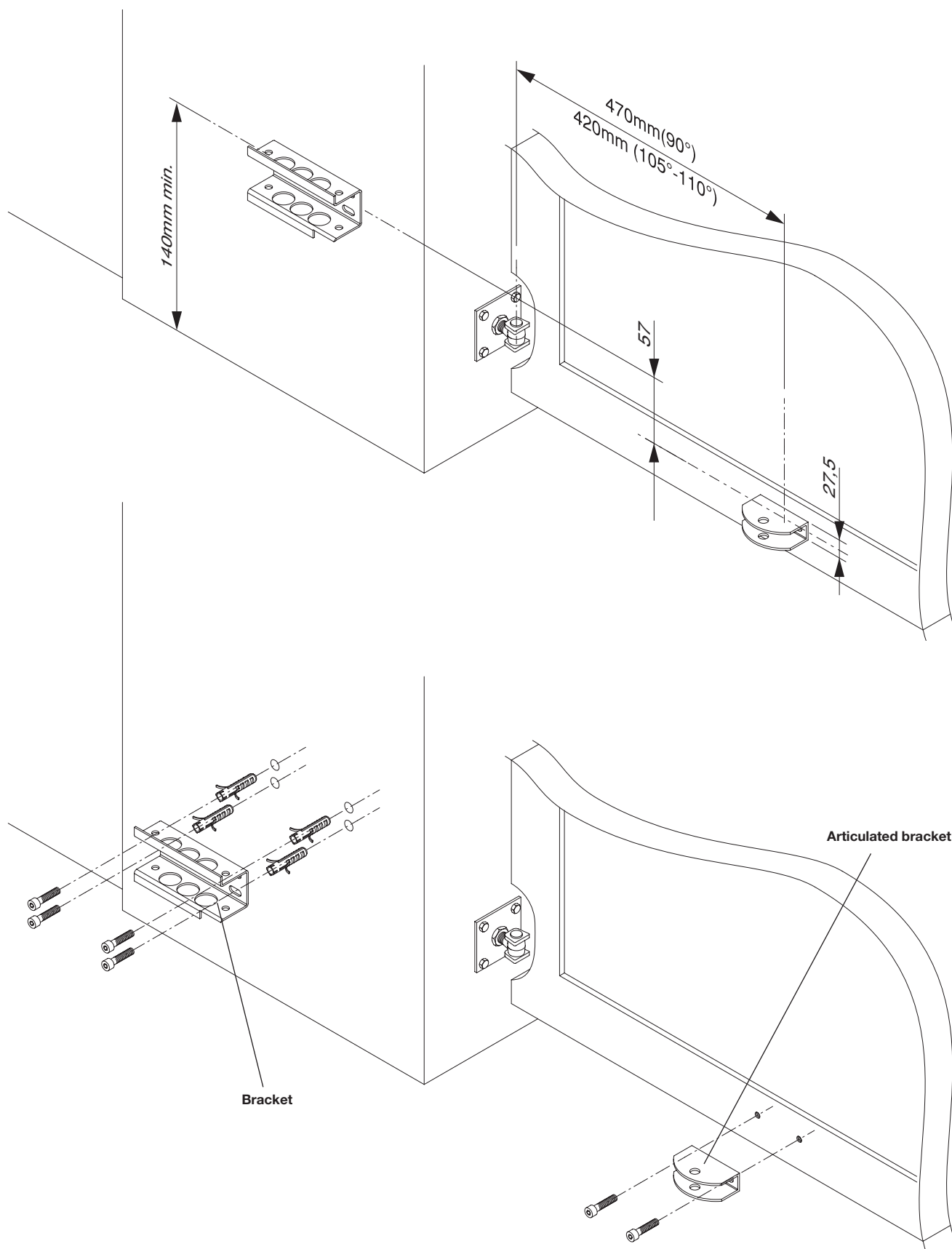


Fig.2

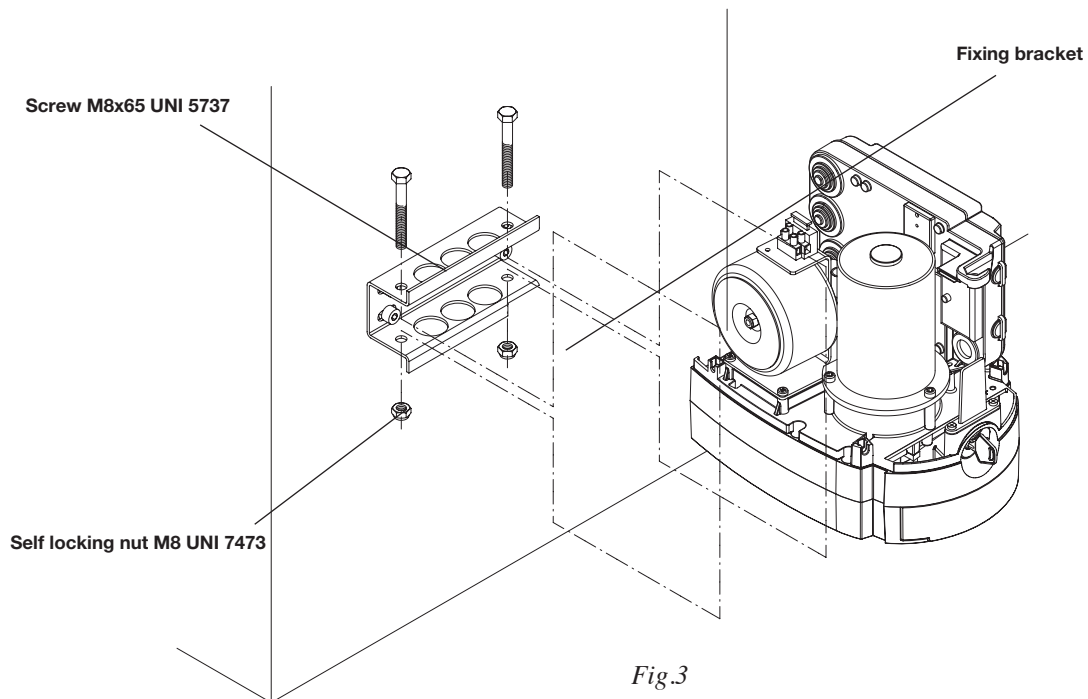


Fig.3

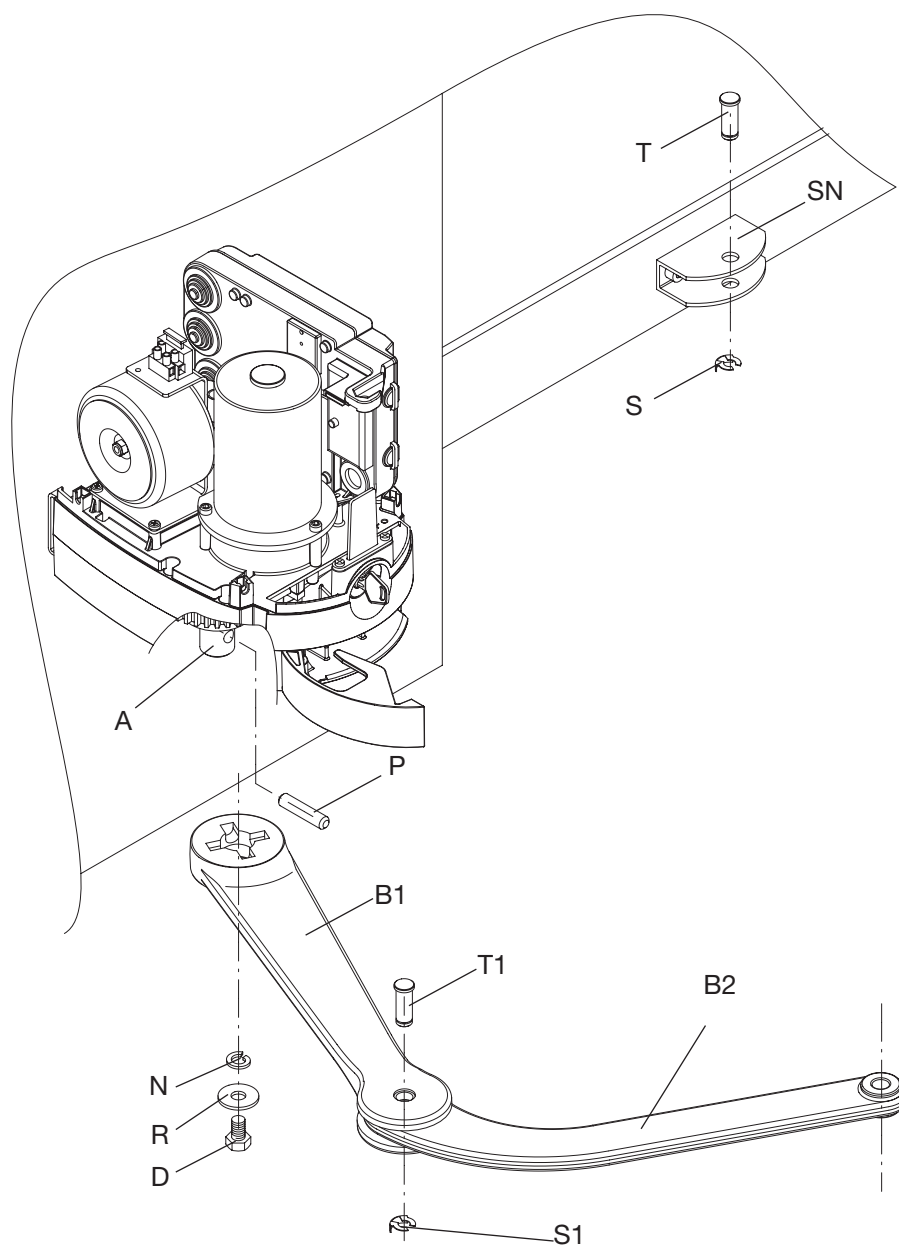


Fig.4

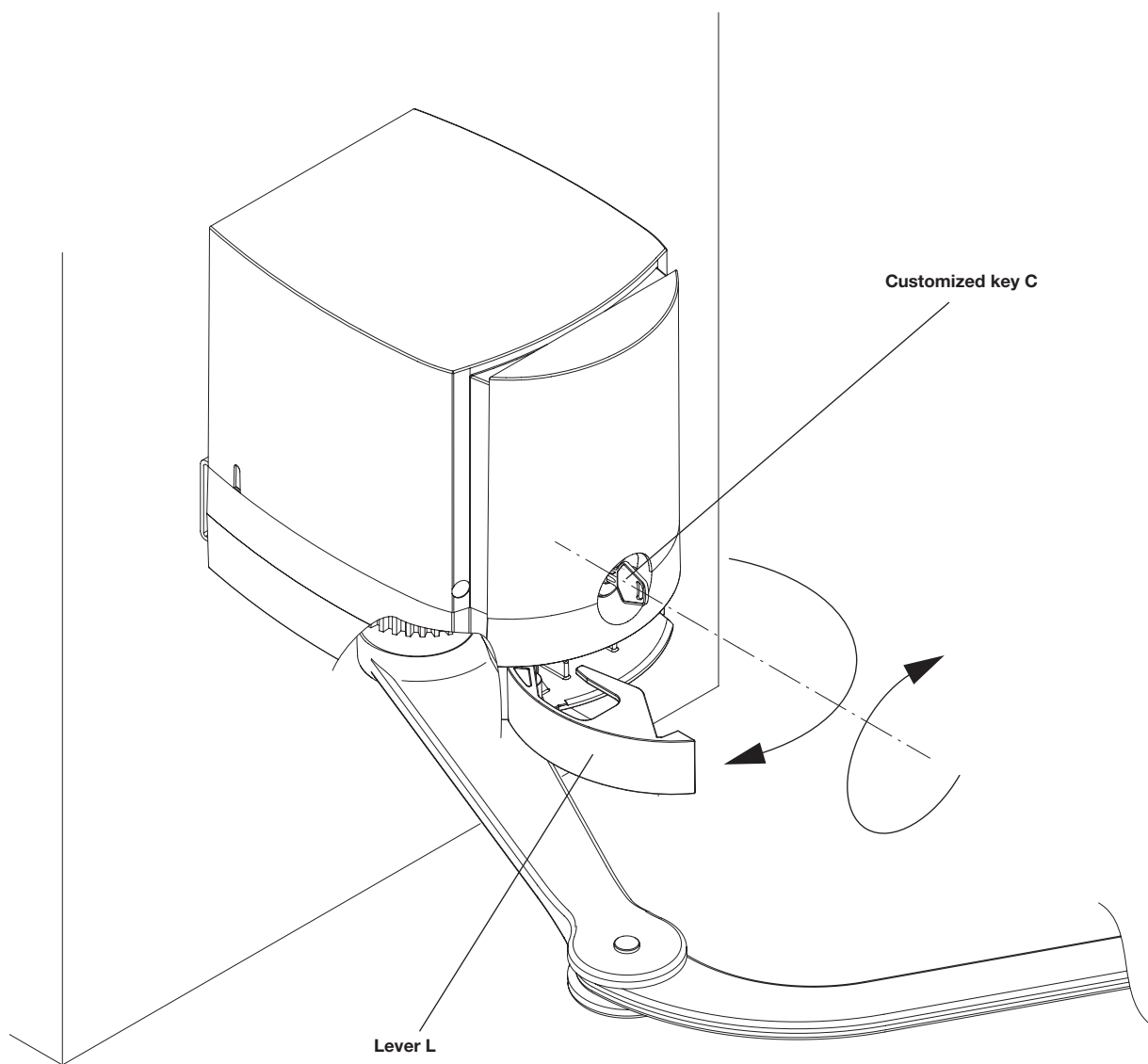
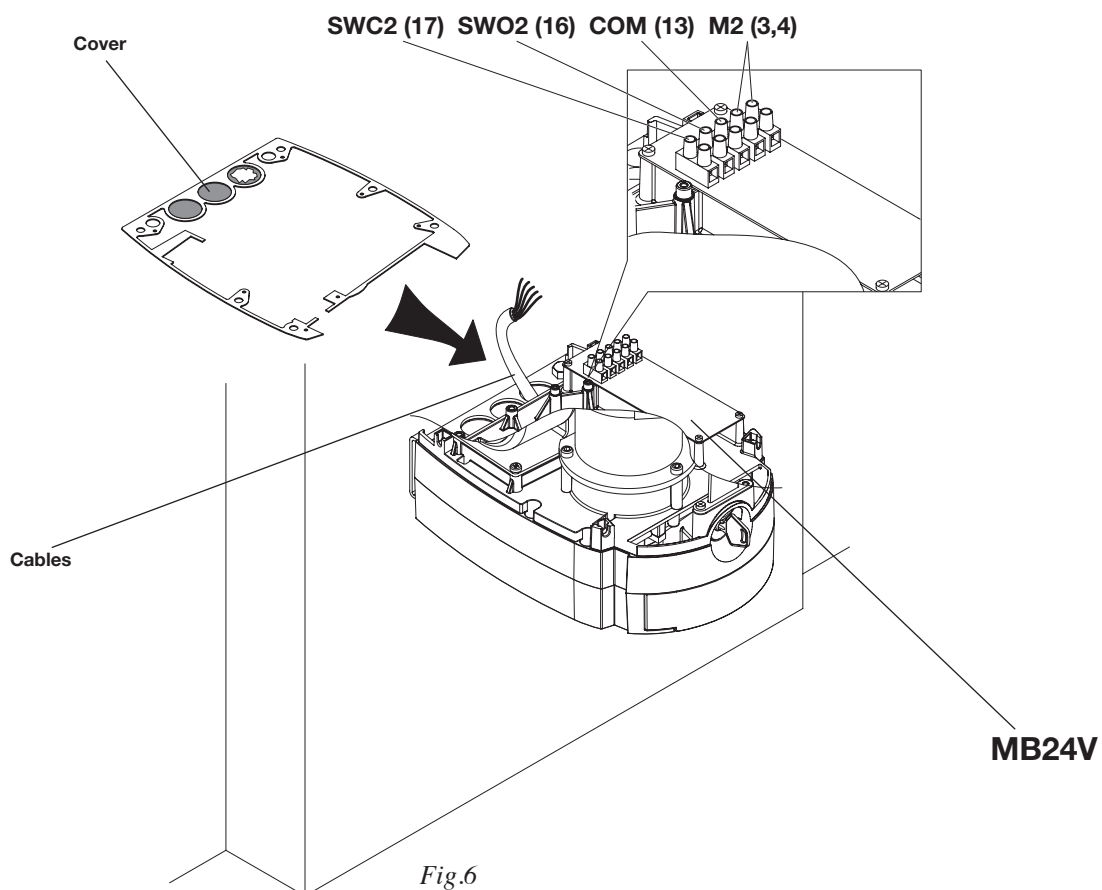
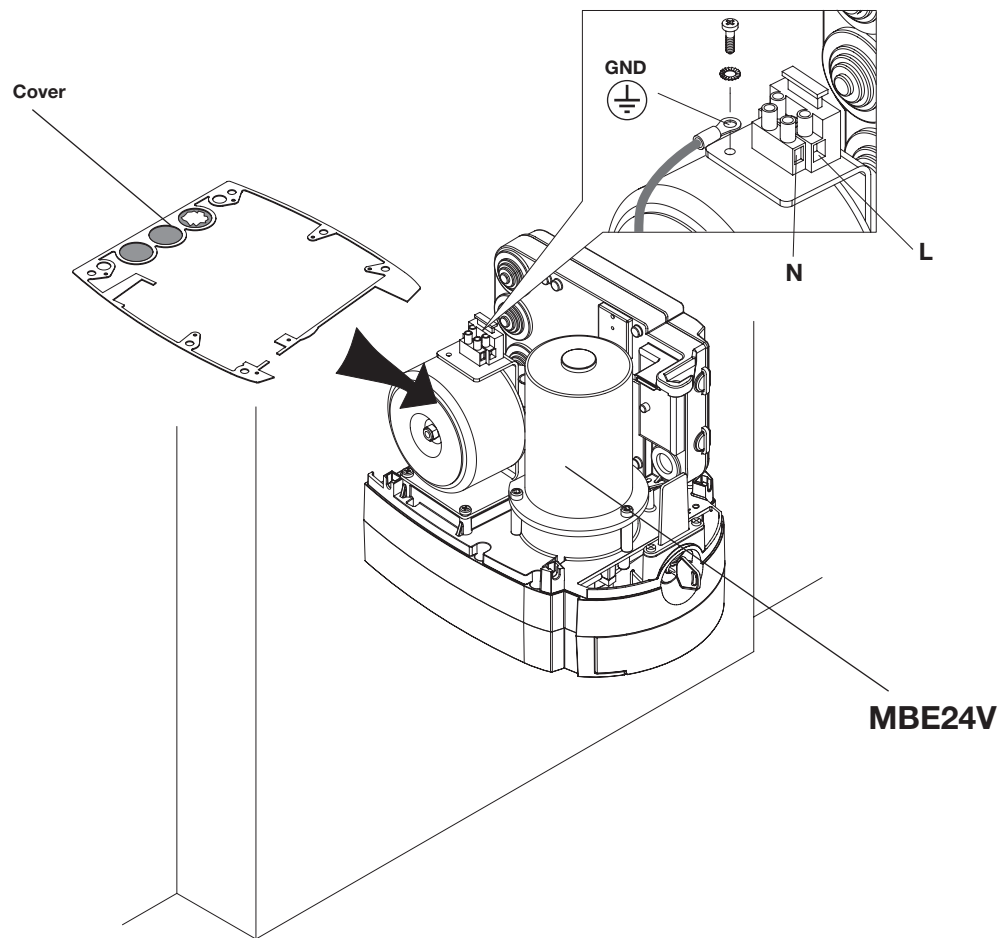


Fig.5



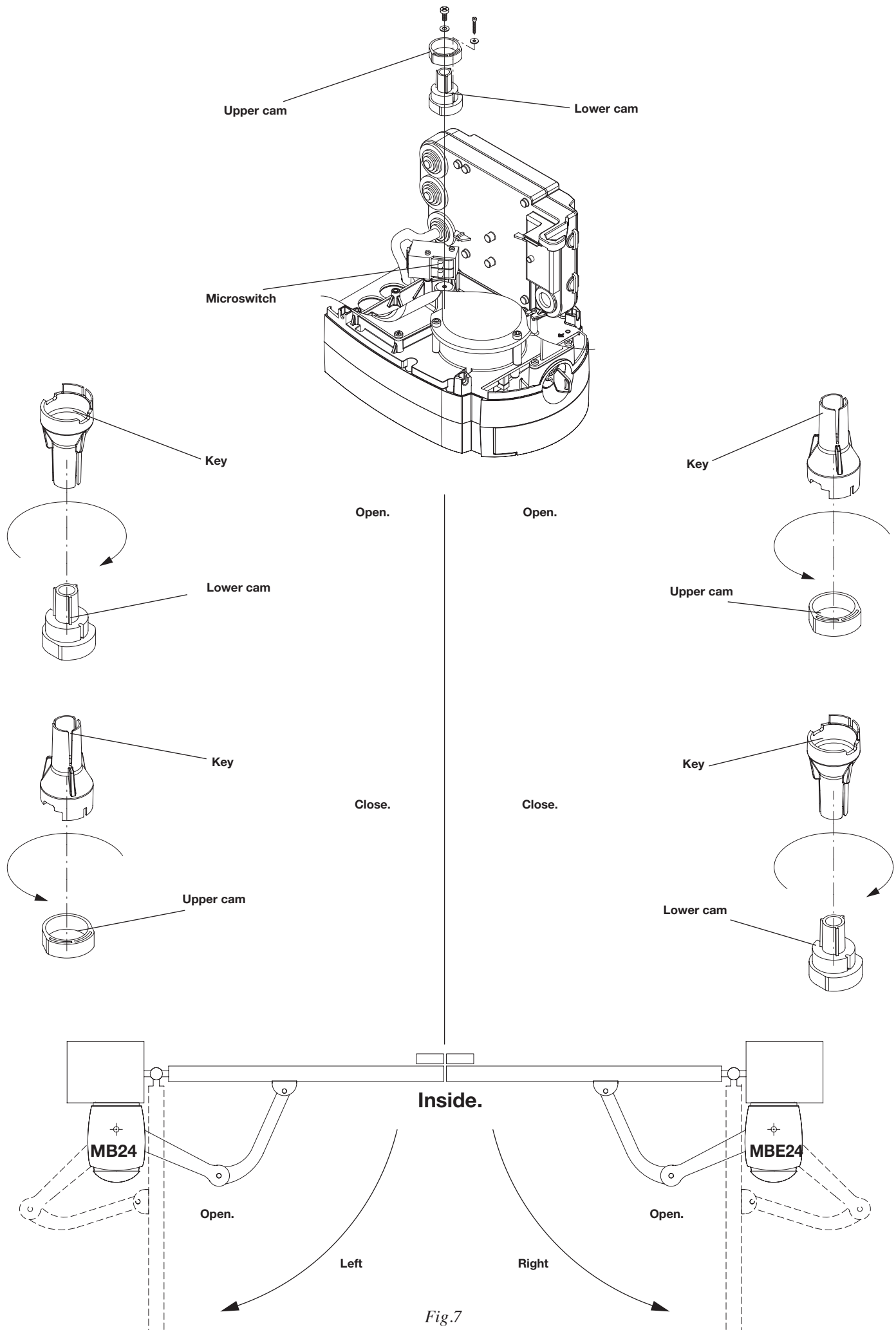
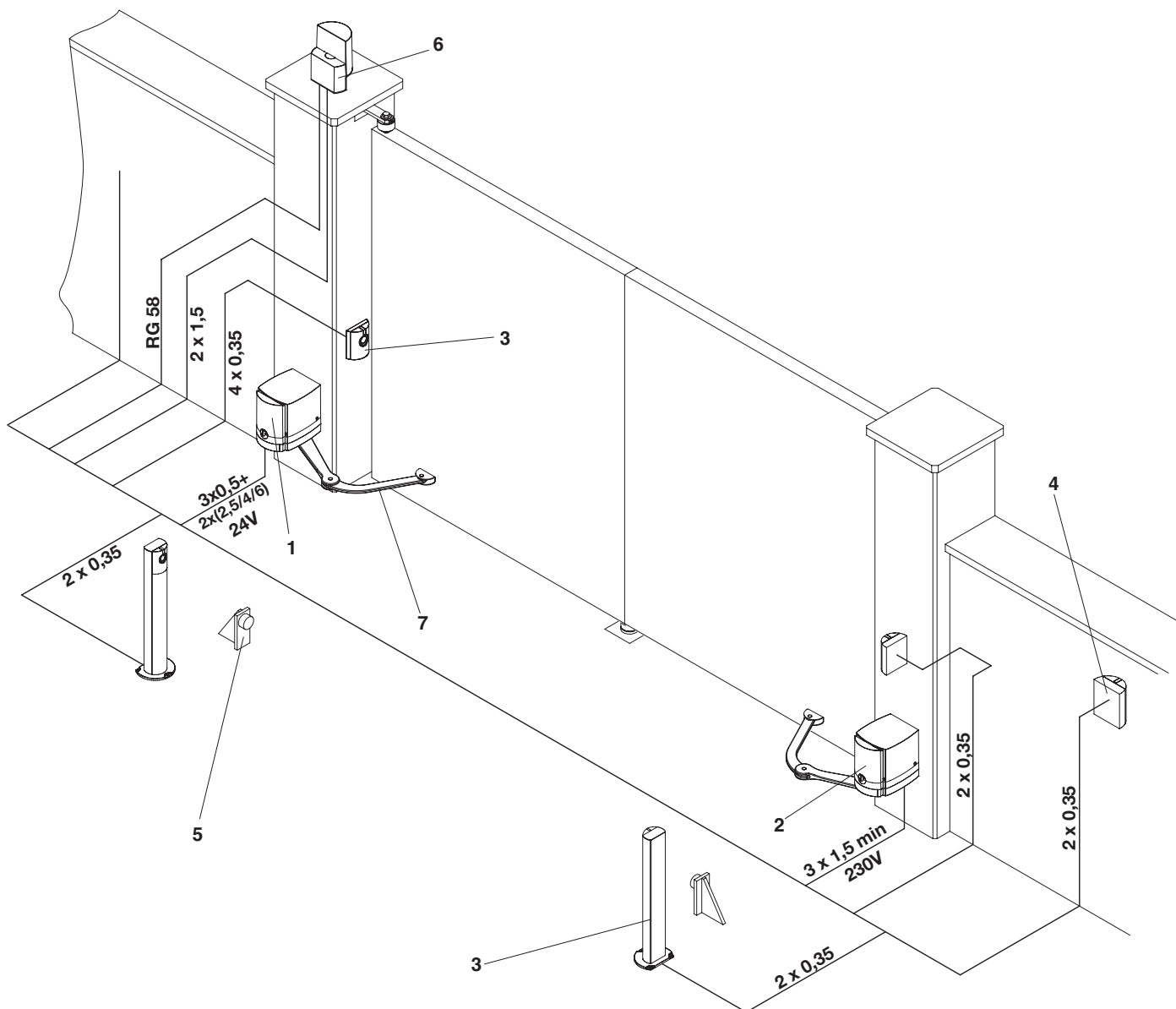


Fig.7



Legend:

- 1 Ratio-motor MBE24V
- 2 Ratio-motor MB24V
- 3 Photo-electric cells FTC/FTM
- 4 Key selector CH
- 5 Mechanical stop
- 6 Blinker LAMP
- 7 Aerial AW
- 8 Articulated arm with brackets BA

Warning

- Before installation, carefully read the instructions hereunder.
- It is strictly forbidden to use the item MB24V/MBE24V for applications other than the intended uses described in these instructions.
- Instruct the user on how to use the system.

Introduction

Thank you for choosing our MB24V/MBE24V ratiomotor. All items in the wide Benincà production range are the result of twenty-years' experience in the automatism sector and of continuous research for new materials and advanced technologies. We are, therefore, in the position to offer highly reliable products that due to their power, effectiveness and useful life, fully satisfy the final user's requirements.

All our products are manufactured to the existing standard and are covered by warranty. Possible injury to people or accidents caused by defects in construction are covered by a civil liability policy drawn up with one of the major insurance companies.

1. General notes

For a good operation of the automatic system the door to be automated must feature the following characteristics:

- Rugged and stiff door leaves.
- Efficient hinges.
- The door leaves should be moved by hand without any friction for the entire stroke.
- The doors should be complete with a catch in the closing phase.

In the negative, replace the faulty parts. Reliability and safety of the automatic system depend on the gate structure.

2. Specifications

This automatic system is suited to motorise doors when overall dimensions, large pillars or columns impair the use of traditional actuators. MB24V/MBE24V is equipped with an articulated arm BA which permits smooth and noiseless movements, it is easy to assemble and, thanks to its pleasant design, is able to meet the most stringent requirements. It is composed of an irreversible geared motor group, made with very strong materials and two die-cast aluminium shells. The door opening is adjusted by limit switches. The system can be released by an emergency lever with customized key which allows the manual operation of the gate in the event of power failure.

3. Versions

MBE24V: 24Vdc , irreversible geared motor with built-in control unit

MB24V: 24Vdc , irreversible geared motor.

BA: Articulated arm with brackets.

4. Overall dimensions and limits for use (Fig.1)

For a correct installation check the limits for use and the overall dimensions, then calculate the values for installation.

5. Anchoring of brackets (Fig.2)

Once the fixing value "E" is taken from the relevant table, and considering a minimum height from floor of 100mm, fit the bracket to the pillar by means of the screws M8 with relevant screw anchors.

Once the fixing value "B" is calculated, fit the articulated bracket to the gate with the same screws M8 and relevant screw anchors or weld it to the gate by aligning the articulation bracket to the fitting bracket for the pillar, as shown in the drawing. Reinforce the fitting areas which are not sufficiently thick, or in any case not strong enough.

6. Positioning the geared motor (Fig.3)

Place the geared motor in the fitting bracket for assembly to pillar by using the special nuts and screws supplied.

7. Positioning the articulated arm BA (Fig.4)

- Release the gear motor (see paragraph "Emergency manual operation")
- Insert pin P in the hole of the motor shaft A
- Join arm B1 to arm B2 and lock them by means of pin T1 and lock ring S1
- Fix the arms to the motor shaft A and lock them by means of nut D by inserting washer R and ring N
- Hook the arm to bracket SN and lock it by means of pin T1 and release ring S1.
- Apply cover C and fix it by means of the two screws V.

The gear motor can be installed on the other gate leaf (Fig. 6) in a similar way. The only difference between right-hand and left-hand leaves relies in the position of arm B2.

With released gear motor, completely open the gate and check the operating clearances of the two arms.

8. Manual and emergency operation (Fig.5)

To manually open or close the door in case of power failure or faults, two solutions are possible:

- **Built-in release**

Introduce the customized key C, turn it clockwise and pull lever L. At this point the geared motor is released and the gate can be manually pushed.

To reset the normal operation, close lever L again and turn key C anticlockwise. Manually move the gate until the geared motor is engaged again.

- **Rope external release: optional**

It is available for fitting to external wall or with accessory to be mounted flush (see MB.SE).

9. Wire connections (Fig.6)

For wire connections of the control unit, refer to instructions given in the control unit booklet.

Lay the cables, adequately placed in ducts, by tearing only the cover of the cable passage used.

Use a 3x0.5sqmm cable to connect the limit switches of MB motor to the control unit.

To connect the MB motor to the control unit, the cable cross section should comply with the values here-under:

For cable length lower than 5m, use a cable 2x2.5sqmm

For cable length from 5 to 7.5m use a cable 2x4sqmm

For cable length from 7.5 to 10m use a cable 2x6sqmm

Cables longer than 10m are not recommended to connect control unit and motor.

If it is required to invert the rotation direction of the motor, invert the connections of motors in the control unit, 1/2 for motor 1 (MBE24) and 3/4 for motor 2 (MB24).

10. Adjusting the limit switches (Fig.7)

N.B.: The position of the cams referring to micro-switches varies according whether the installation of the geared motor is lefthand or righthand, view from inside. Pay attention to diagrams.

- **Closing limit switches**

Release the geared motor and manually close the door.

Turn the related cam to the position shown by using the special key supplied, until the micro-switch is activated. Lock the cam by tightening the central screw supplied.

- **Opening limit switches**

Release the geared motor and manually open the door.

Turn the related cam to the position shown by using the special key supplied, until the micro-switch is activated. Lock the cam by tightening the two screws supplied.

11. Adjusting the motor torque)

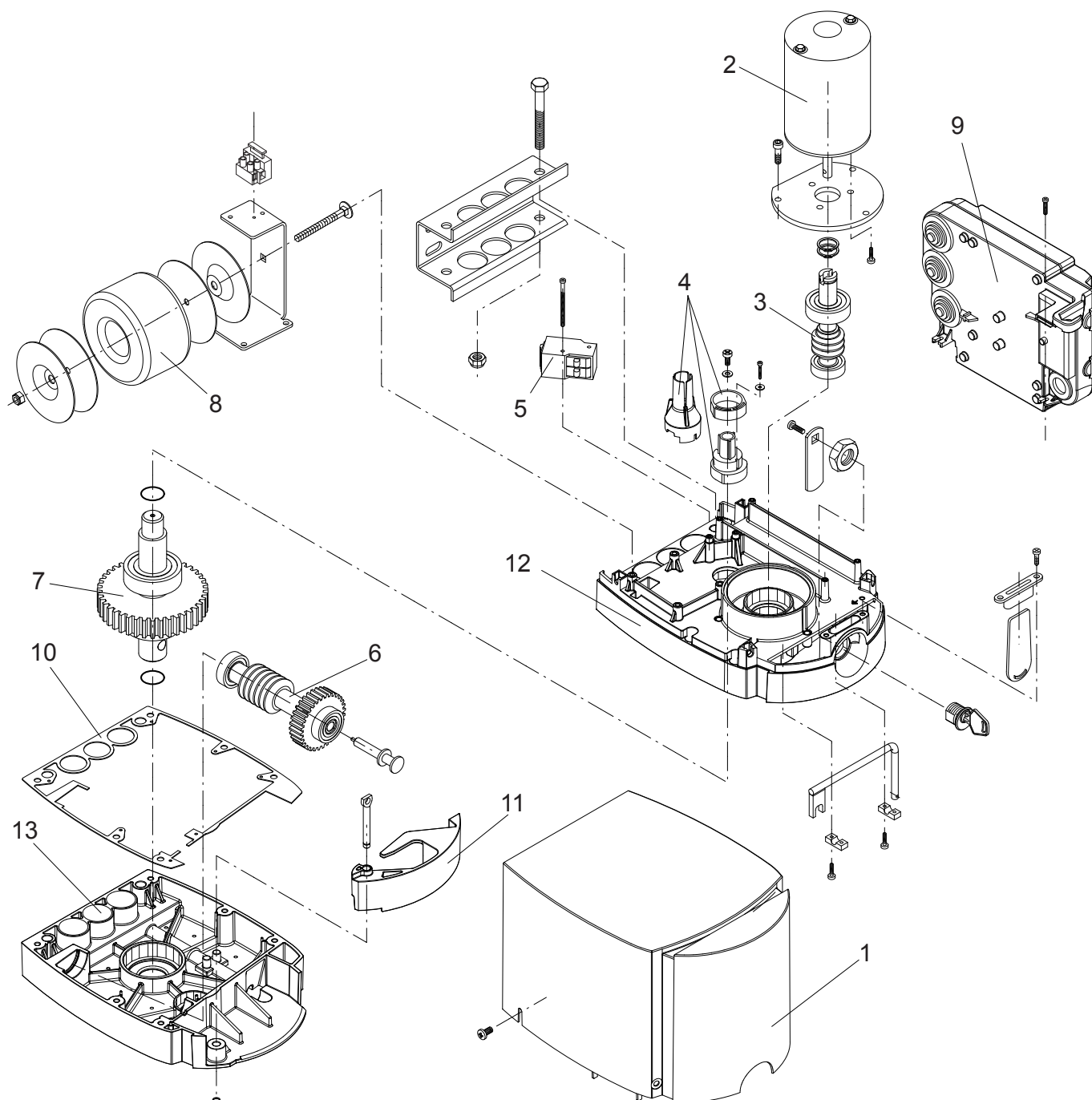
The torque adjustment is preset by the control unit. Please refer to the specific instructions.

An incorrect presetting of the torque may result in injuries or damages to property.

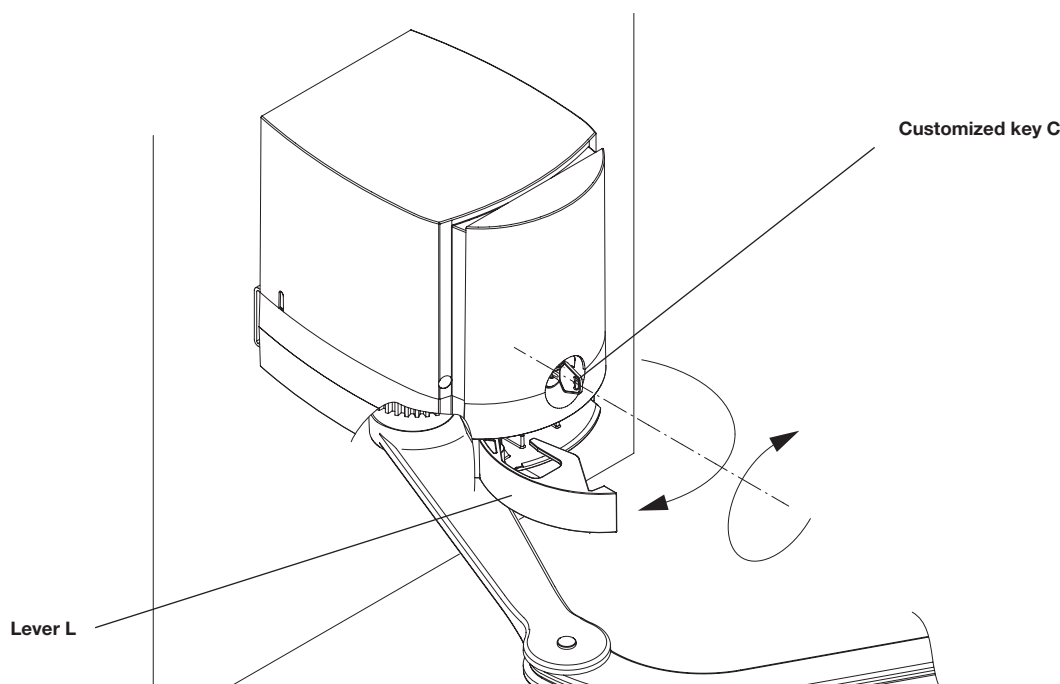
PLEASE COMPLY WITH REGULATIONS IN FORCE!.

CAUTION

The civil liability policy, which covers possible injuries to people or accidents caused by defects in construction, requires the system to be to existing standard and to use original Benincà accessories.



Pos.	Description	Code.
1	Cover	9686930
2	Motor	9686811
3	Screw	9686326
4	Limit stop	9686934
5	Microswitches	9686935
6	Shaft	9686936
7	Output shaft	9686937
8	Transformer	9686812
9	Control unit	9686927
10	Gasket	9686944
11	Release lever	9686941
12	Cover	9686942
13	Cover	9686943



Safety rules

- Do not stand in the movement area of the door.
- Do not let children play with controls and near the door.
- Should operating faults occur, do not attempt to repair the fault but call a qualified technician.

Manual and emergency operation

To manually open or close the door in case of power failure or faults, two solutions are possible:

• Built-in release

Introduce the customized key C, turn it clockwise and pull lever L. At this point the geared motor is released and the gate can be manually pushed.

To reset the normal operation, close lever L again and turn key C anticlockwise. Manually move the gate until the geared motor is engaged again.

• Rope external release: optional

It is available for fitting to external wall or with accessory to be mounted flush (see MB.SE).

Maintenance

- Every month check the good operation of the emergency manual release.
- It is mandatory not to carry out extraordinary maintenance or repairs as accidents may be caused. These operations must be carried out by qualified personnel only.
- The operator is maintenance free but it is necessary to check periodically if the safety devices and the other components of the automation system work properly. Wear and tear of some components could cause dangers.

Waste disposal

If the product must be dismantled, it must be disposed according to regulations in force regarding the differentiated waste disposal and the recycling of components (metals, plastics, electric cables, etc..). For this operation it is advisable to call your installer or a specialised company.

Warning

All Benincá products are covered by insurance policy for any possible damages to objects and persons caused by construction faults under condition that the entire system be marked CE and only Benincá parts be used.

CE Declaration of Conformity

Declaration in accordance with Directives 2004/108/CE(EMC); 2006/95/CE(LVD); 2006/42/CE(MD) Annex II, part B

The Manufacturer:

AUTATISMI BENINCÀ SPA

Address:

Via Capitello, 45 - 36066 Sandrigo (VI) - Italy

Declares that the product:

Electromechanical actuator 24V DC for swing gates, model:

MB24V - MBE24V

conforms with the requirements of the following EU Directives:

- DIRECTIVE 2004/108/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL, 15 December 2004, in relation to the harmonisation of the legislation of member states regarding electromagnetic compatibility , in abrogation of Directive 89/336/CEE, per the following harmonised standards: EN 61000-6-2:2005, EN 61000-6-3:2007.
- DIRECTIVE 2006/95/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL, 12 December 2006, in relation to the harmonisation of the legislation of member states regarding electrical material intended to be used within certain voltage ranges, per the following harmonised standards: EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008; EN 60335-2-103:2003.
- DIRECTIVE 2006/42/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL, 17 May 2006, in relation to machinery, amending Directive 95/16/CE, in relation to the requisites for "partly completed machineries", per the following harmonised standard: EN13241-1:2003.
- Automatismi Benincà SpA declares, furthermore, that the pertinent technical documentation has been completed in conformity with Annex VII B of Directive 2006/42/CE and that the following essential requisites have been satisfied: 1.1.1 - 1.1.2 - 1.1.3 - 1.1.5 - 1.2.1 - 1.2.3 - 1.2.6 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.3.7 - 1.3.9 - 1.5.1 - 1.5.2 - 1.5.4 - 1.5.5 - 1.5.6 - 1.5.7 - 1.5.8 - 1.5.10 - 1.5.11 - 1.5.13 - 1.6.1 - 1.6.2 - 1.6.4 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 - 1.7.4.3.
- The manufacturer agrees to forward the pertinent information regarding the "partly completed machinery" to the national authorities if justifiably requested to do so. This agreement includes the means of transmission and does not affect the manufacturer's intellectual property rights.
- The "partly completed machinery" may not be put into service unless the machine into which it is to be incorporated has been declared conforming - as applicable - to the requirements of Directive 2006/42/CE.
- Furthermore, the product, with limitation to the applicable parts, is conforming with the following standards: EN 12445:2002, EN 12453:2002, EN 12978:2003.

Benincà Luigi, Legal representative.
Sandrigo, 02/11/2010.

