

AUTOMATED SYSTEM 740-24V

These instructions apply to the following models:

740 24V

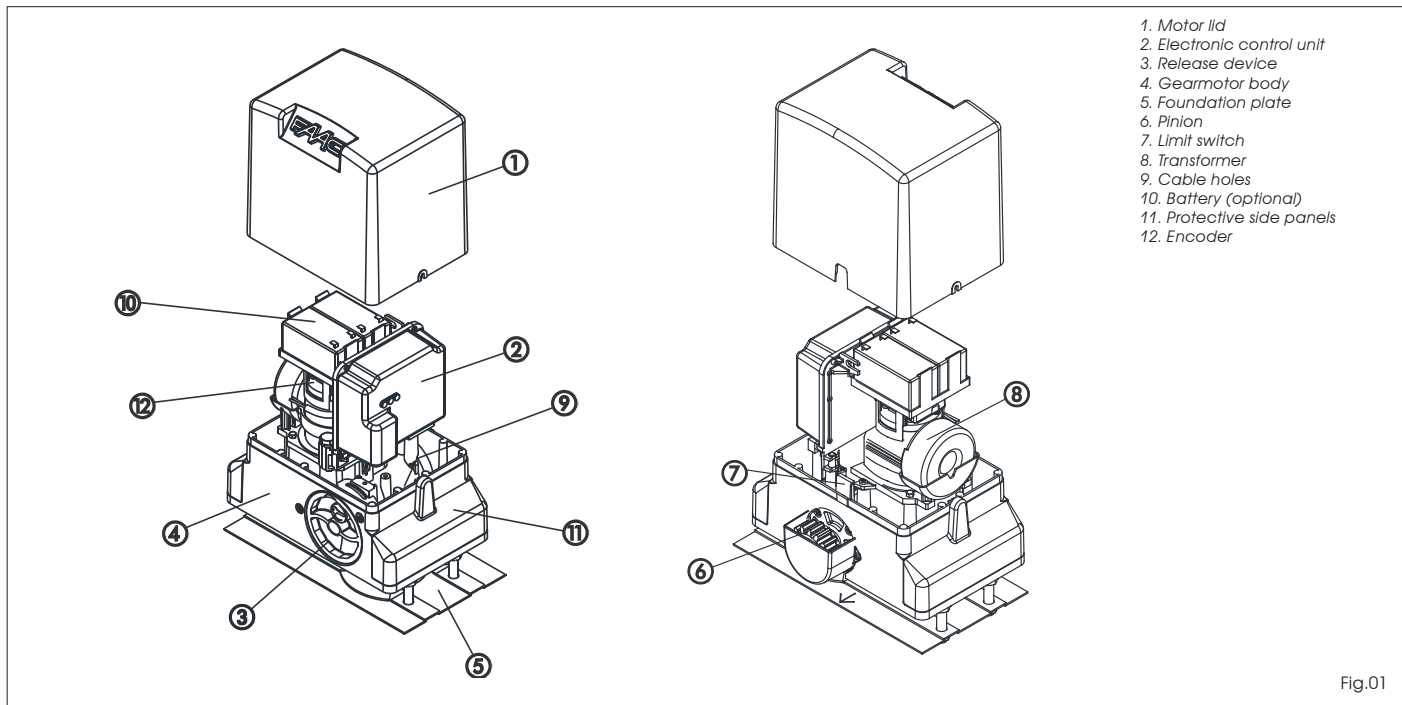
The 740 gearmotor is an electro-mechanical operator designed for moving sliding gates.

The non-reversing reduction system ensures the gate is mechanically locked when the gearmotor is not operating, therefore it is not necessary to install any electric lock

A convenient manual release with customised key makes it possible to move the gate in the event of a power failure or malfunction of the operator.

The 740 gearmotor was designed and built for controlling vehicle access. AVOID ANY OTHER USE WHATEVER.

1. DESCRIPTION AND TECHNICAL SPECIFICATIONS

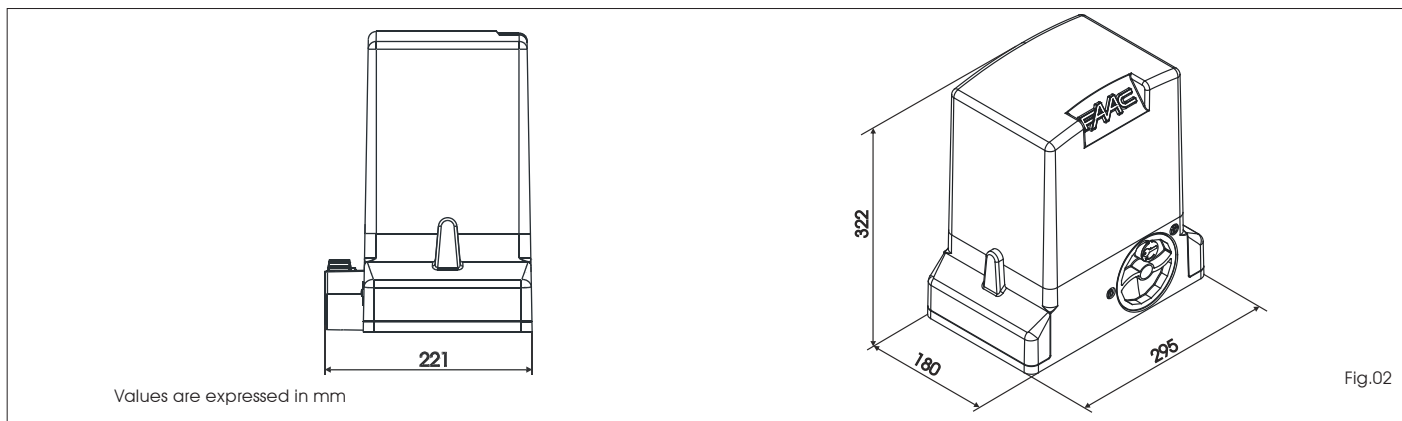


- 1. Motor lid
- 2. Electronic control unit
- 3. Release device
- 4. Gearmotor body
- 5. Foundation plate
- 6. Pinion
- 7. Limit switch
- 8. Transformer
- 9. Cable holes
- 10. Battery (optional)
- 11. Protective side panels
- 12. Encoder

Fig.01

MODEL	740 - 24V
Power supply	230/115 V~ 50/60 Hz
Absorbed power (W)	70
Absorbed current (A)	3
Capacitor (µF)	-
Thrust on pinion (daN)	40
Torque (Nm)	13.5
Winding thermal protection (°C)	-
Leaf max weight (Kg)	400
Type of pinion	Z16
Gate speed (m/min)	12
Gate max length (m)	15
Type of limit switch	Mechanical
Clutch	Electronic
Use frequency	100%
Operating temperature (°C)	-20 +55
Gearmotor weight (Kg)	8.5
Protection class	IP44
Gearmotor overall dimensions	See Fig.02

2. DIMENSIONS



Values are expressed in mm

Fig.02

3. MAXIMUM USE CURVE

The curve makes it possible to establish maximum work time (T) according to use frequency (F).
With reference to IEC 34-1 Standard, the 740 gearmotor with an S3 duty, can operate at a use frequency of 100%.
To ensure efficient operation, it is necessary to operate in the work range below the curve.

Important: The curve is obtained at a temperature of 20°C. Exposure to the direct sun rays can reduce use frequency down to 20%.

Calculation of use frequency

Use frequency is the percentage of effective work time (opening + closing) compared to total time of cycle (opening + closing + pause times).

Calculation formula:

$$\% F = \frac{T_a + T_c}{T_a + T_c + T_p + T_i} \times 100$$

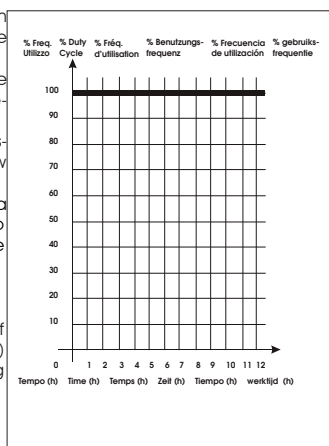
where:

T_a = opening time

T_c = closing time

T_p = pause time

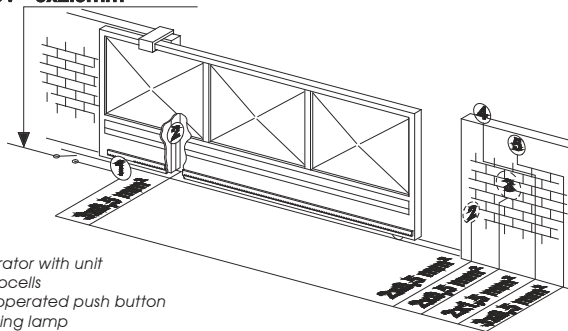
T_i = time of interval between two complete cycles



ENGLISH

4. ELECTRICAL SET-UP (standard system)

230/115V~ 3x2.5mm²



- 1- Operator with unit
- 2- Photocells
- 3- Key-operated push button
- 4- Flashing lamp
- 5- Radio receiver

Fig.03

5. INSTALLING THE AUTOMATED SYSTEM

5.1. Preliminary checks

To ensure safety and efficiency of the automated system, make sure the following requirements are observed before installing the system:

- The gate structure must be suitable for automation. The following are necessary in particular: wheel diameter must be in proportion to the weight of the gate, an upper track must be provided, plus mechanical travel stops to prevent the gate derailing.
- The soil must guarantee a perfect stability of the foundation plinth.
- There must be no pipes or electric cables in the plinth excavation area.
- If the gearmotor is located in the vehicle transit or manoeuvre area, adequate means of protection should be provided against accidental impact.
- Check if an efficient earthing is available for connection to the gearmotor.

5.2. Masonry for foundation plate

- 1- Assemble the foundation plate as shown in figure 04.
- 2- In order to ensure that the pinion and rack engage correctly, the foundation plate must be positioned as shown in Fig. 05 (right closing) or Fig. 06 (left closing).

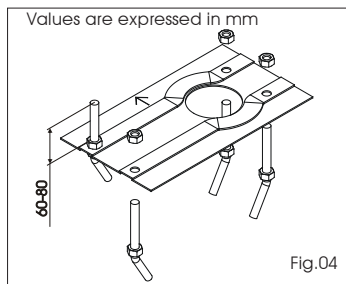


Fig.04

Warning: The arrow on the foundation plate must always point to the gate, see Figs. 05-06.

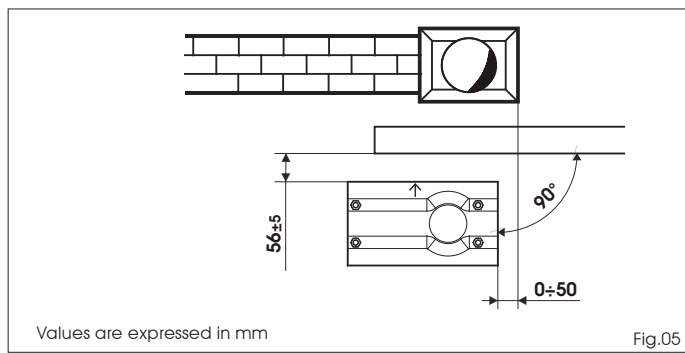


Fig.05

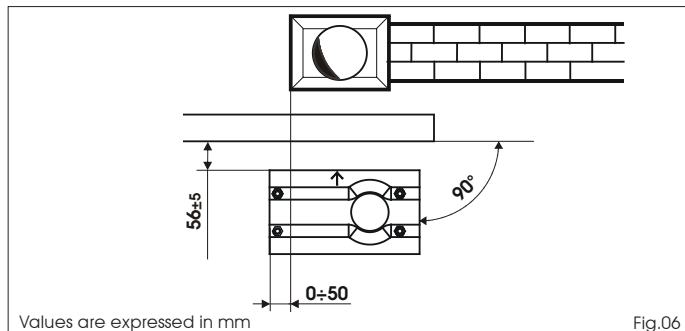


Fig.06

- 3- After determining the position of the foundation plate, make a plinth as shown in Fig. 07 and wall the plate, providing several sheaths for routing the cables. Using a spirit level, check if the plate is perfectly level. Wait for the cement to set.
- 4- Lay the electric cables for connection to the accessories and power supply as shown in diagram of Fig. 03. To facilitate connections to the control unit, allow the cables to protrude by at least 50 cm from the hole on the foundation plate.

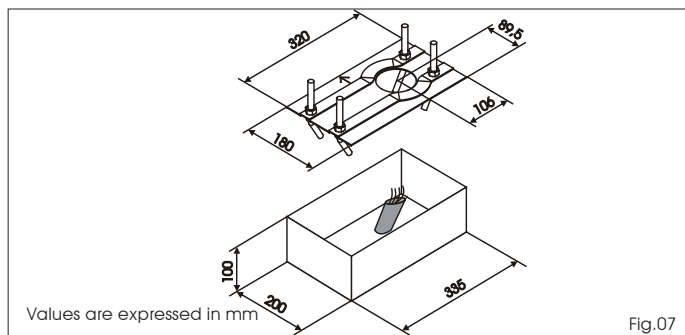


Fig.07

5.3. Mechanical installation

- 1- Remove the cover, Fig. 08 ref. 1.
- 2- Position the operator on the foundation plate, using the supplied washers and nuts as shown in Fig. 09. During this operation, route the cables through the appropriate openings in the motor body (See Fig.01 ref.9). If necessary, the two holes can be joined using a hammer to obtain a wider space.
- 3- Adjust the height of the gearmotor and the distance from the gate, referring to dimensions in Fig. 10.

Attention: This operation is necessary to ensure the rack is correctly secured and to enable any new adjustments.

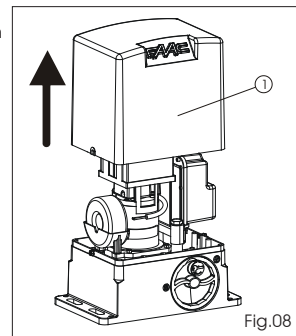


Fig.08

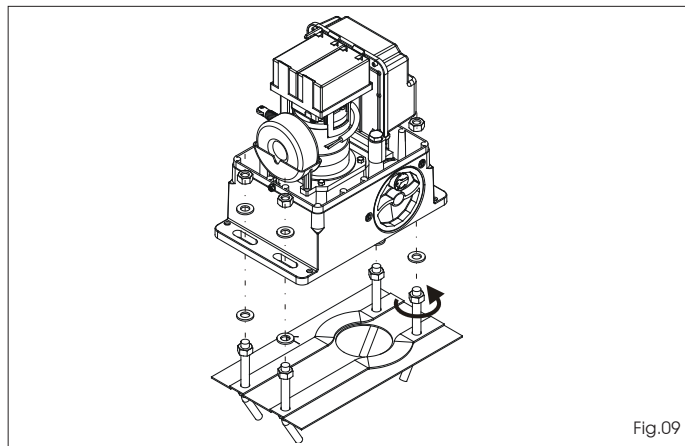


Fig.09

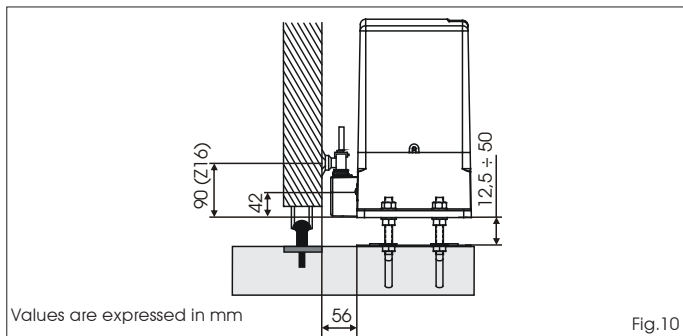


Fig.10

- 4- Secure the gearmotor to the plate, tightening the nuts.
- 5- Prepare the operator for manual operation as described in paragraph 8.

5.4. Assembling the rack

5.4.1. Steel rack to weld (Fig. 11)

- 1) Fit the three threaded pawls on the rack element, positioning them at the bottom of the slot. In this way, the slot play will enable any future adjustments to be made.
- 2) Manually take the leaf into its closing position.
- 3) Lay the first section of rack level on the pinion and weld the threaded pawl on the gate as shown in Fig. 13.
- 4) Move the gate manually, checking if the rack is resting on the pinion, and weld the second and third pawl.
- 5) Position another rack element end to end with the previous one, using a section of rack (as shown in Fig. 14) to synchronise the teeth of the two elements.
- 6) Move the gate manually and weld the three threaded pawls, thus proceeding until the gate is fully covered.

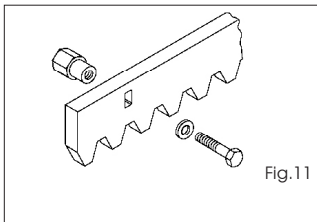


Fig.11

5.4.2. Steel rack to screw (Fig. 12)

- 1) Manually take the leaf into its closing position.
- 2) Lay the first section of rack level on the pinion and place the spacer between the rack and the gate, positioning it at the bottom of the slot.
- 3) Mark the drilling point on the gate. Drill a $\varnothing 6,5$ mm hole and thread with an M8 male tap. Screw the bolt.
- 4) Move the gate manually, checking if the rack is resting on the pinion, and repeat the operations at point 3.
- 5) Position another rack element end to end with the previous one, using a section of rack (as shown in figure 14) to synchronise the teeth of the two elements.
- 6) Move the gate manually and carry out the securing operations as for the first element, thus proceeding until the gate is fully covered.

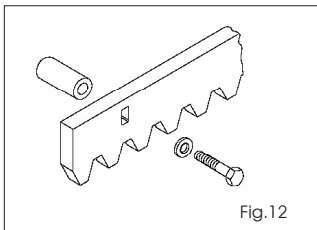


Fig.12

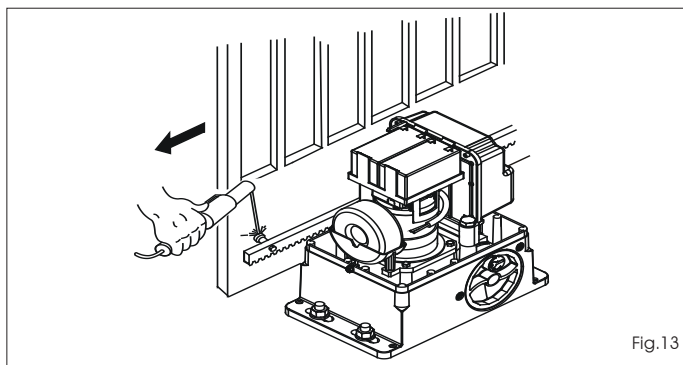


Fig.13

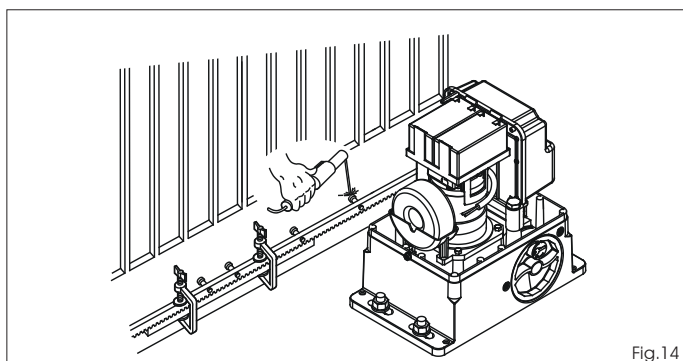
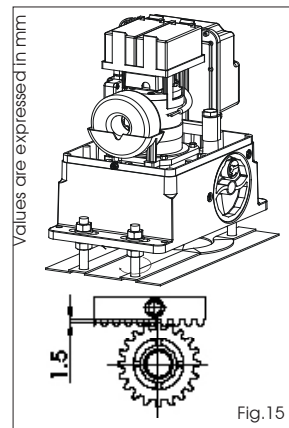


Fig.14

Notes on rack installation

- Make sure that, during the gate travel, all the rack elements do not exit the pinion.
- **Do not, on any account, weld the rack elements either to the spacers or to each other.**
- When the rack has been installed, to ensure it meshes correctly with the pinion, it is advisable to lower the gearmotor position by about 1.5 mm (Fig.15).
- Manually check if the gate correctly reaches the mechanical limit stops maintaining the pinion and rack coupled and make sure there is no friction during gate travel.
- Do not use grease or other lubricants between rack and pinion.



Values are expressed in mm

Fig.15

6. START-UP

6.1. Control board connection

Before attempting any work on the board (connections, programming, maintenance), always turn off power.

Follow points 10, 11, 12, 13 and 14 of the GENERAL SAFETY OBLIGATIONS.

Following the instructions in Fig. 3, route the cables through the raceways and make the necessary electric connections to the selected accessories.

Always separate power cables from control and safety cables (push-button, receiver, photocells, etc.). To avoid any electric noise whatever, use separate sheaths.

6.1.1. Earthing

Connect the earth cables as shown in Fig.16 ref.A.

6.1.2. Electronic control unit

In the gearmotors, the electronic control unit is fitted to an adjustable support (Fig. 16 ref. 1) with transparent lid (Fig. 16 ref. 3).

The board programming push buttons (Fig. 16 ref. 4) have been located on the lid. This allow the board to be programmed without removing the lid.

For correct connection of the control unit, follow indications the specific instructions:

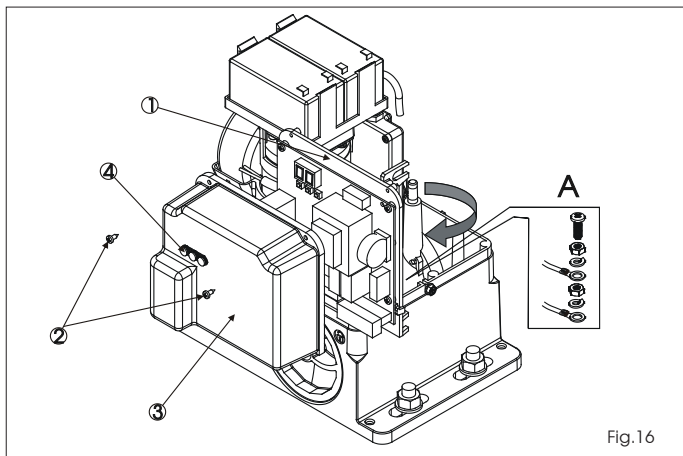


Fig.16

6.1.3. Connection of power cable

The 740 24V gearmotor houses a screw terminal with fuse-holder (Fig 17) connected to the primary circuit of the toroidal transformer. The mains power cable 230 / 115 V ~ must be connected to this terminal, respecting what was specified in Fig. 17. If you have to replace the fuse, use a fuse type T1.6A/250V - 5x20 for a 230V power supply and type T3.15A/250V - 5x20 for a 115V power supply.

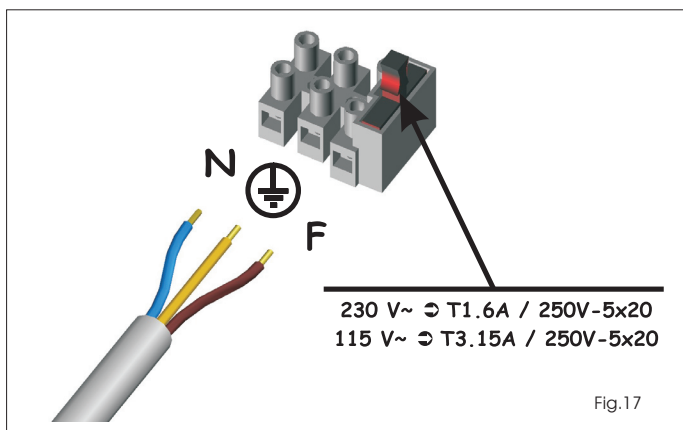


Fig.17

6.2. Positioning the limit switches

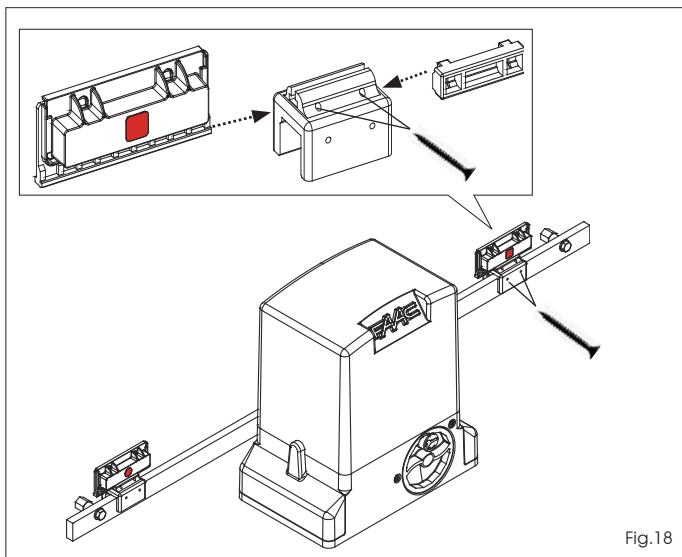


Fig.18

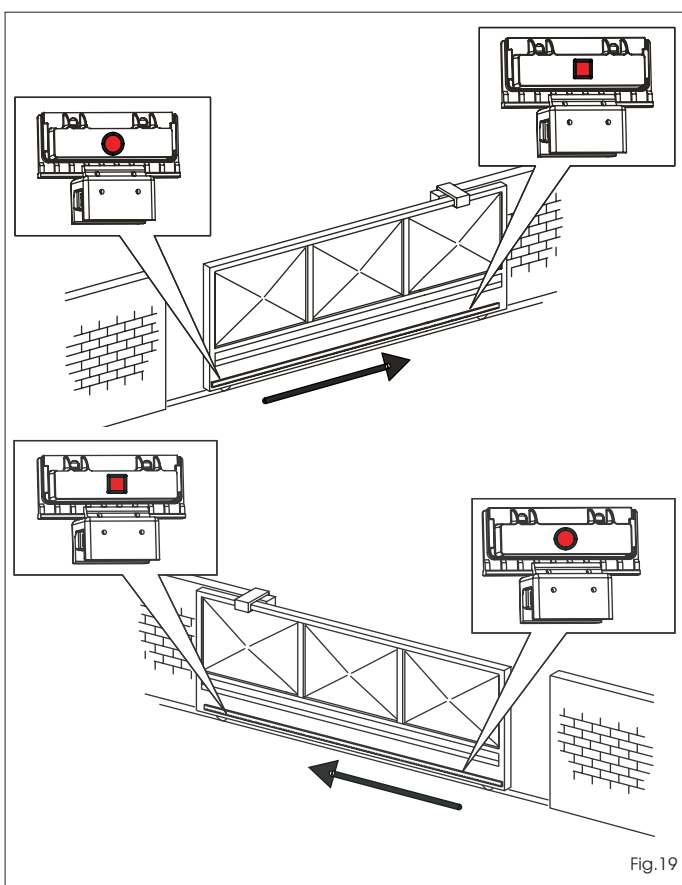


Fig.19

7. TESTING THE AUTOMATED SYSTEM

After installing the operator, carefully check operating efficiency of all accessories and safety devices connected to it.

Return the board support to its original position. Fit the cover, Fig. 20 ref. 1, and tighten the two side screws provided (Fig. 20 ref 2), and snap-fit the side panels (Fig. 20 ref.3).

Apply the danger sticker on the top of the cover (Fig. 21). Hand the "User's Guide" to the Customer and explain correct operation and use of the gearmotor, indicating the potentially dangerous areas of the automated system.

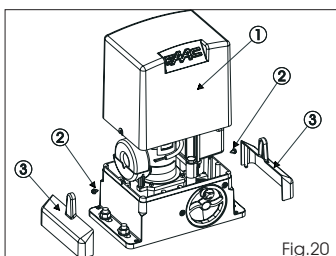


Fig.20

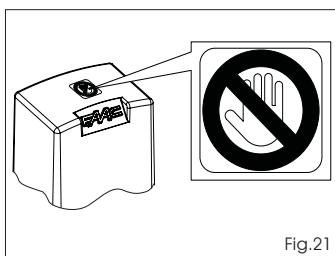


Fig.21

8. MANUAL OPERATION

Warning: Cut power to the system to prevent an involuntary pulse from activating the gate during the release manoeuvre.

To release the operator proceed as follows:

- 1) Insert the key provided and turn it clockwise as shown in Fig. 22 ref. 1 and 2.
- 2) Turn the release system clockwise, until the mechanical stop is reached, Fig. 22 ref. 3.
- 3) Open and close the gate manually.

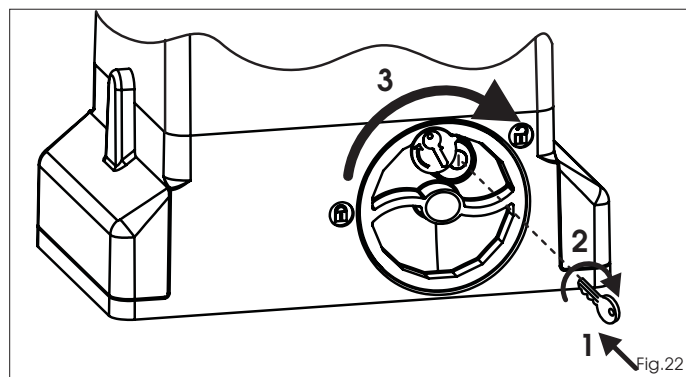


Fig.22

9. RESTORING NORMAL OPERATION

Warning: Cut power to the system to prevent an involuntary pulse from activating the gate during the manoeuvre for restoring normal operation.

To restore normal operation proceed as follows:

- 1) Turn the release system anti-clockwise, until its stop is reached, Fig. 23 ref. 1.
- 2) Turn the key anti-clockwise and remove it from the lock, Fig. 23 ref. 2 and 3.
- 3) Move the gate until the release system meshes (corresponds to gate locking)
- 4) Power up the system.

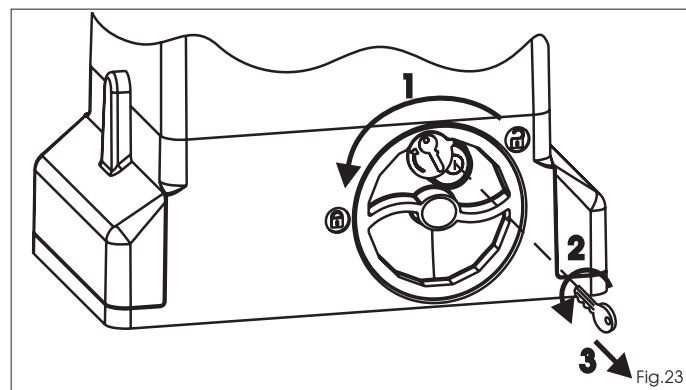


Fig.23

10. SPECIAL APPLICATIONS

There are no special applications.

11. MAINTENANCE

Check the operational efficiency of the system at least once every 6 months, especially as regards the efficiency of the safety and release devices (including operator thrust force).

12. REPAIRS

For any repairs, contact the authorised Repair Centres.

13. AVAILABLE ACCESSORIES

Refer to the catalogue for available accessories.