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CE DECLARATION OF CONFORMITY FOR MACHINES (DIRECTIVE 98/37/CE)

Manufacturer: FAAC S.p.A.

Address: Via Benini, 1 - Zola Predosa - Bologna - ITALY

Declares that: **550 - 550 I** mod. operator

• is built to be integrated into a machine or to be assembled with other machinery to create a machine under the provisions of Directive 98/37/CE;

• conforms to the essential safety requirements of the following EEC directives:

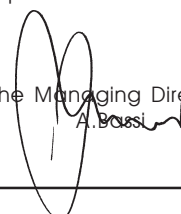
73/23 EEC and subsequent amendment 93/68/EEC.

89/336 EEC and subsequent amendment 92/31/EEC and 93/68/EEC

and also declares that the machinery must not be put into service until the machine in which it will be integrated or of which it will become a component has been identified and declared as conforming to the provisions of Directive 98/37/CE.

Bologna, 01-08-2006


The Managing Director
A. Bossi



Notes on reading the instruction

Read this installation manual to the full before you begin installing the product.

The  symbol indicates notes that are important for the safety of persons and for the good condition of the automated system

The  symbol draws your attention to the notes on the characteristics and operation of the product.

550 AUTOMATION SYSTEM

The 550 automation system is designed to operate residential counterbalanced up-and-over garage doors.

It consists of an electromechanical operator, a control unit with courtesy light and a protective cover integrated into a single unit to be mounted on the garage door panel using the relevant accessories.

The irreversible system locks the door mechanically when the motor is not running, so a lock is not required. A manual release device allows the door to be operated in the case of a power failure or malfunction.

Anti-crushing safety is assured by an adjustable electronic device.

The 550 automation system allows two operators (550 I + 550) to be installed on the same door.

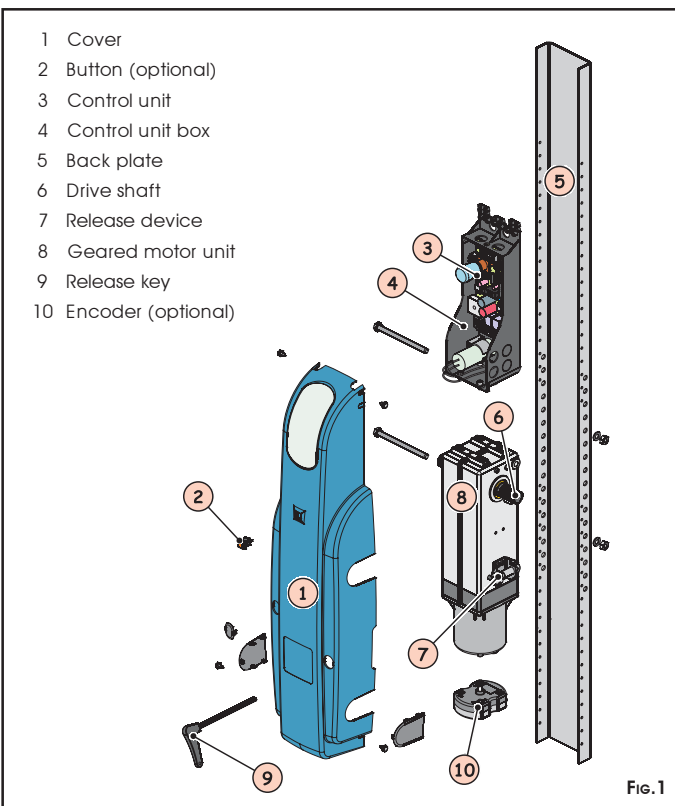
The 550 automation system has been designed and constructed for vehicle access control. Do not use for any other purpose.

TABLE. 1 GEARED MOTOR TECHNICAL SPECIFICATIONS

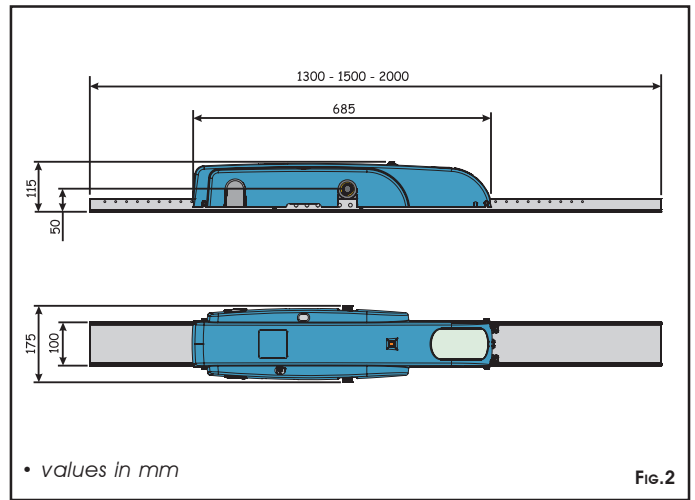
| MODEL | 550 | |
|---------------------------|---|-----------------|
| | 230V lento | 230V |
| Power supply | 230V~ 50Hz | |
| Power consumption | 280 W | 350 W |
| Current draw | 1.2 A | 1.5 A |
| Max. torque | 250 Nm | 300 Nm |
| Surge capacitor | 8 μ F 400V | 10 μ F 400V |
| Thermal cutout on winding | 140 °C | |
| Motor speed | 900 g/min | 1400 g/min |
| Reduction ratio | 1:700 | |
| Angular velocity | 8 °/sec | 12 °/sec |
| Duty cycle S3 | 30% | |
| Cycles/hour | 20 (without limit switch) 30 (with limit switch) | |
| Temperature range | -20°C / +55°C | |
| Max. door width (m) | 1 operator | 3.3 |
| | 2 operators | 5 |
| Max. door height (m) | 3 | |
| Max. door weight | 10 Kg/m ² | |
| Operator weight | 7.5 Kg | |
| Housing protection | IP31 IP44 (without cards) | |
| Operator dimensions | see fig. 2 | |

ENGLISH

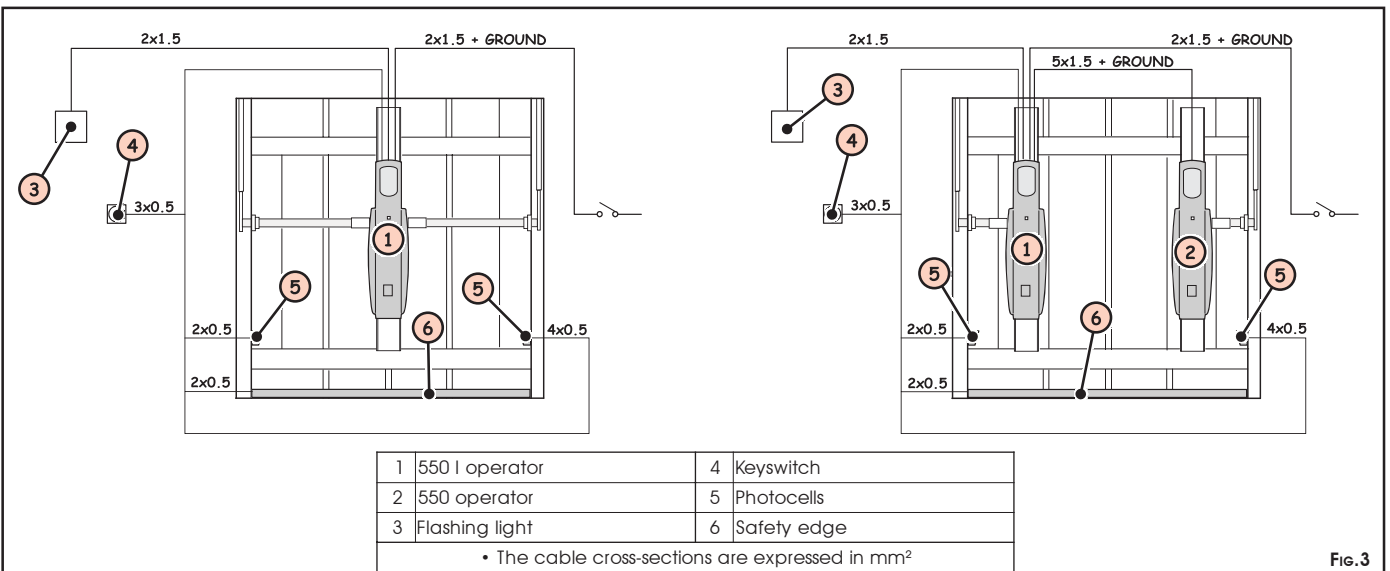
1. DESCRIPTION AND TECHNICAL SPECIFICATIONS



2. DIMENSIONS



3. ELECTRICAL INSTALLATION LAYOUT (standard system)



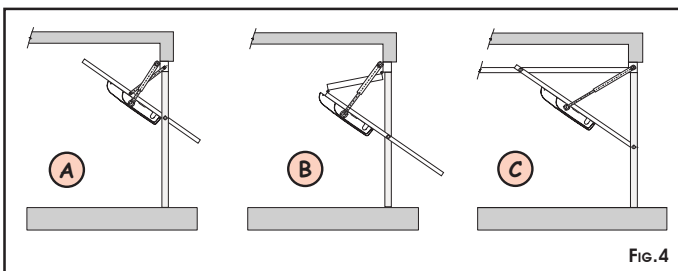
4. INSTALLING THE AUTOMATION SYSTEM

4.1. PRELIMINARY CHECKS

To ensure safe, proper operation of the automation system, check the following:

- The door's structure must be suitable for automation. Make particularly sure that dimensions of the door meet the requirements given in the technical specifications and that the door is sufficiently robust.
- Check the condition of the door bearings and joints.
- Check that the door moves smoothly; if necessary clean the tracks and lubricate them with a silicone based lubricant. Do not use grease.
- Check that the door is correctly balanced.
- Remove the mechanical door locks so that when the door is closed it is locked only by the automation system.
- Check that there is an effective earth connection for the geared motor.

The 550 automation system is designed to operate various types of counterbalanced up-and-over garage doors. Fig. 4 shows the most common types:

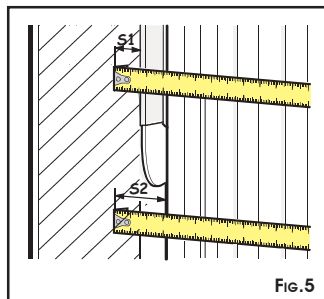


- a) single section outward swinging
 b) double section outward swinging
 c) single section inward swinging with horizontal tracks

4.2. POSITIONING TELESCOPIC ARMS

The gap between the existing balancing arm and the frame (distance "S1" in fig. 5) must be at least 15 mm to allow the straight telescopic arms to rotate correctly.

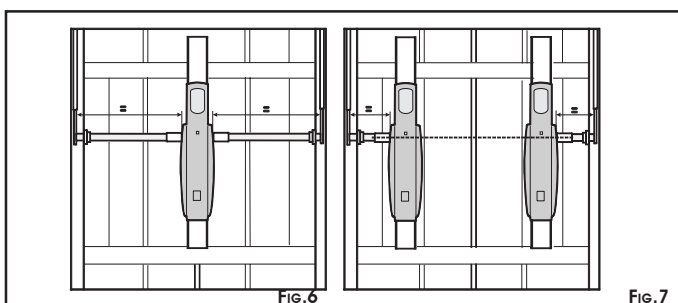
If not, it is possible to use curved telescopic arms which can be installed over the top of existing balancing arms. Check that the gap between the door panel and the frame is at least 20 mm (distance "S2" in fig. 5).



4.3. POSITIONING OPERATOR/BACK PLATE

In accordance with the measurements given in Table 1, install either a single operator at the centre of the door as shown in fig. 6 or two operators at the sides of the door as shown in fig. 7. The operator is designed so that the geared motor unit can be installed with the drive shaft at two different heights (see section 5).

The following instructions apply to both assembly options, although they refer specifically to installation of the operator with the geared motor unit output shaft at the centre.



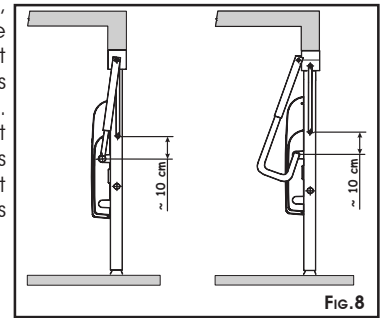
4.4. ASSEMBLY SEQUENCE

Begin installation with the garage door closed and the operator released (see section 8).

1) Determine the position of the operator shaft as follows:

- **single section outward swinging garage door (fig. 8)**

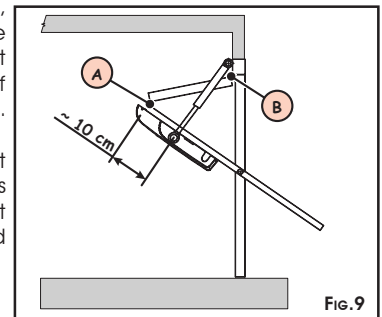
When the door is closed, the axis of rotation of the drive shaft must be about 10 cm lower than the axis of rotation of the door. The telescopic arms must be attached as close as possible to the point where the door arm is fixed.



- **double section garage door (fig. 9)**

When the door is closed, the axis of rotation of the drive shaft must be about 10 cm below the axis of rotation of the door hinge. (A).

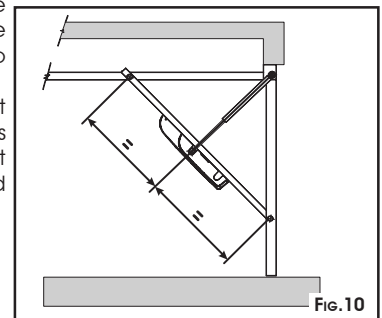
The telescopic arms must be attached as close as possible to the point where the hinges are fixed to the door. (B).



- **garage door with horizontal guides (fig. 10)**

The axis of rotation of the drive shaft must be halfway between the two bearings.

The telescopic arms must be attached as close as possible to the point where the upper and vertical guides meet.



2) Fix the back plate to the reinforcement ribbing of the door panel using suitable screws for the door's structure. It is advisable to use nuts and bolts.



• Position the back plate in such a way that the end with the reference marking **E** is facing upwards. This reference marking indicates the point at which the control unit is to be positioned.

• The back plate has a series of Ø 8mm holes which, when it is fixed, allow the operator to be installed at various heights.

• Check that the fixing position of the back plate allows the operator to be installed in accordance with the previously determined shaft position.

• In double operator installations, both shafts must be aligned at the same height.

3) Fix the operator to the back plate using the nuts and bolts provided, as shown in fig. 11.

4) Weld the upper telescopic arm fixing brackets in the position described in the instructions for the specific type of garage door.

In the case of curved arm installation, the brackets can be welded directly to the existing door arms.

Fix the outer profiles of the telescopic arms to the brackets using the pins and the nuts and bolts provided, as shown in fig. 11.

5) Fit the transmission shafts firmly onto the drive shaft and cut them to size as shown in figs. 6 and 7.



If limit switches are used (optional), first fit the cams as shown in fig. 11.

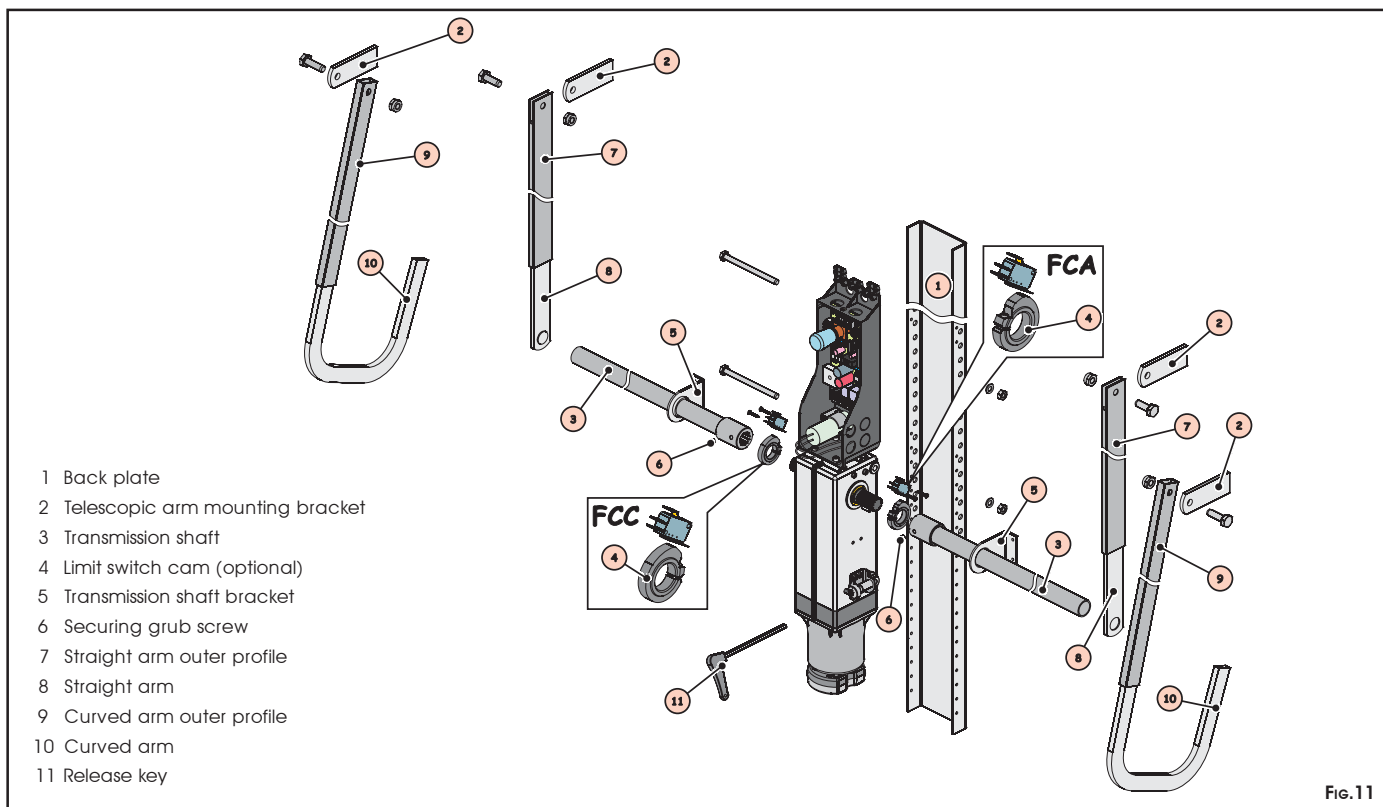


Fig.11

- 1 Back plate
- 2 Telescopic arm mounting bracket
- 3 Transmission shaft
- 4 Limit switch cam (optional)
- 5 Transmission shaft bracket
- 6 Securing grub screw
- 7 Straight arm outer profile
- 8 Straight arm
- 9 Curved arm outer profile
- 10 Curved arm
- 11 Release key

- 6) Mount the brackets on the transmission shafts and fasten them to the door panel using screws, taking care to maintain perfect alignment.
- 7) Tighten the grub screws on the transmission shaft bushings.
- 8) Open the garage door and adjust the length of the telescopic arms as follows:

• **straight arms (fig. 12)**

Cut the outer profile at the position of the transmission shaft. (A). Push the inner profile of the telescopic arm into the outer profile and cut off at the position of the rotation pin. (B).

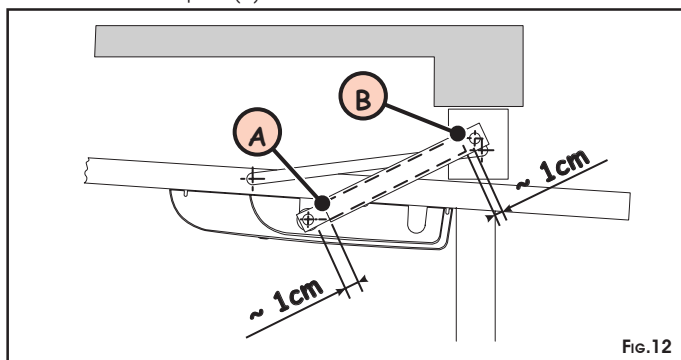


Fig.12

• **curved arms (fig. 13)**

Place the telescopic arm in position as shown in figure 13. Cut the outer profile of the telescopic arm at point A. Cut the inner profile at point B.

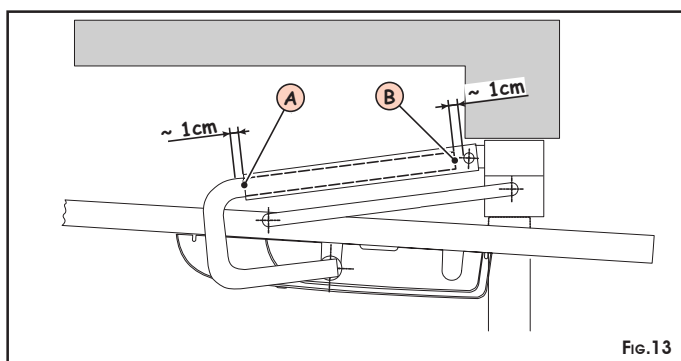


Fig.13



Leave a gap of about 1 cm at the ends of both profiles.

- 9) Fit the inner profile of the telescopic arm to the transmission shaft and weld securely.

4.5. ADJUSTING THE COUNTERWEIGHTS

On completing mechanical installation, check whether the door has become unbalanced by the weight of the operator and accessories. If necessary, change the counterweights. For optimum balancing, the door should remain in equilibrium in an intermediate position (45°) with the operator released. Also check that the door opens and closes smoothly without jerky or irregular movements.

5. MOUNTING GEARED MOTOR UNIT

Depending on requirements, the geared motor unit can be mounted in two different ways:

- With the drive shaft at the top (fig. 14)
The card support is fixed to the geared motor by means of 4 bolts which engage with nuts inserted in the guides. Fastening the gearmotor in this way **enables** you to next install the encoder (optional).
- With the drive shaft at the bottom (fig. 15)
The card support is fixed to the electric motor cap by means of 4 screws. Fastening the gearmotor in this way **does not enable** you to next install the encoder (optional).

The cover is designed for both applications (note that in the two cases the release device is located in different positions).

6. START-UP

6.1. CONNECTING ELECTRONIC CARD

Before carrying out any operation on the control unit (connections, programming, maintenance), be sure to switch off the power supply.

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

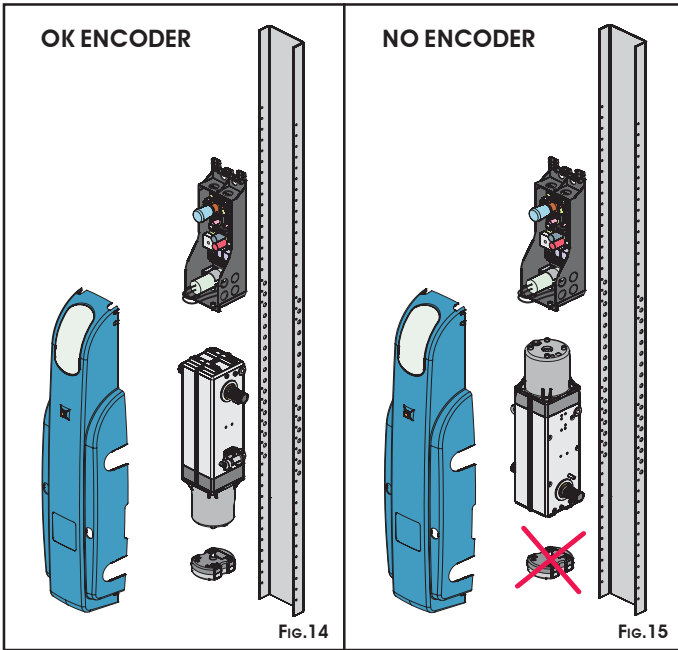
As shown in fig.3, prepare the conduits and make the electrical connections between the control unit and the chosen accessories.

Always route the power cables separately from the control and safety cables (pushbuttons, receivers, photocells, etc.). Use separate sheaths to avoid electrical disturbance. Follow the instructions provided with the control unit and program it according to your requirements.

6.2. CHECKING DIRECTION OF ROTATION

- 1) Turn off the power supply to the system.
- 2) Move the door manually to its half open position.
- 3) Lock the operator (see section 9)
- 4) Turn the power supply back on.
- 5) Send an open signal (START) and check that this causes the door to open.

If the door closes, invert the electric motor phase wires on the card terminal block (brown and black wires). In the double operator installation, connect the same colour wires to the COM, OP and CL terminals on the control card and the courtesy light card. If you have to invert the wires, invert them on both motors.



6.3. ADJUSTMENT OF LIMIT SWITCHES (OPTIONAL)

Open the door as far as required, then turn the cam until it just trips microswitch **FCA** (fig. 11). Close the door, then turn the cam until it just trips microswitch **FCC** (fig. 11).

- ☞ If you are using a control unit with deceleration, advance the activation of the microswitches. Tighten the screws on the cams.

6.4. MOUNTING COVER

Fasten the cover in place by tightening the four screws at the sides. Push the 2 plastic caps onto the side slots on the cover not used by the operator shaft. Push the plastic cap onto the unused front slot on the cover for gaining access to the release system.

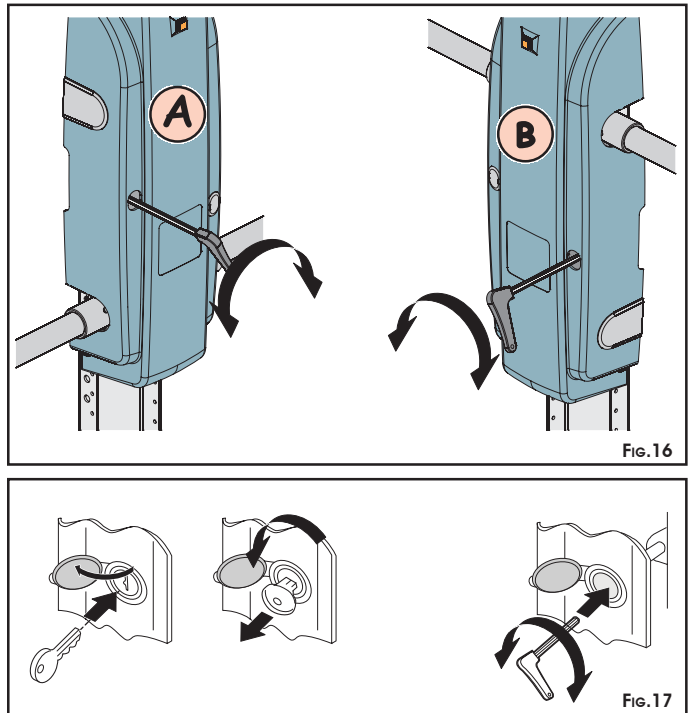
7. TESTING THE AUTOMATION SYSTEM

Thoroughly test operation of the automation system and all accessories connected to it. Give the customer the page entitled "User's Guide" and demonstrate how the automation system is used.

8. MANUAL OPERATION

The operator is equipped with an emergency release device that can be operated from inside the garage. On request, a lock can be fitted to the door panel to allow the release device to be operated from outside. If the door has to be operated manually due to a power failure or a malfunction of the automation system, operate the release device as follows:

- **From inside (fig. 17)**
Insert the hex wrench provided and turn clockwise about half a turn until the stop is reached.
- ☞ Depending on the type of installation, the release device may be on the right (A) or left (B).
- **From outside (fig. 18)**
1) Open the safety door and insert the wrench.
2) Turn anticlockwise as far as possible and remove the lock unit.
3) Insert the hex wrench provided and turn anticlockwise about half a turn until the stop is reached.



9. RETURNING TO NORMAL OPERATION

To prevent an accidental movement from activating the door during the operation, disconnect the power supply from the system before locking the operator again.

- **From inside (fig. 17)**
Insert the hex wrench provided and turn anticlockwise about half a turn until the stop is reached.
- ☞ Depending on the type of installation, the release device may be on the right (A) or left (B).
- **From outside (fig. 18)**
1) Insert the hex wrench provided and turn clockwise about half a turn until the stop is reached.
2) Remove the hex wrench and insert the lock unit.
3) Turn the wrench clockwise so that it can be removed; close the safety door again.

10. MAINTENANCE

- Carry out the following operations at least every six months:
- Check that the motor torque is set correctly.
 - Check the door's rollers and sliding guides; clean and lubricate if necessary.
 - Check the efficiency of the release system.
 - Check the efficiency of the safety devices.

11. REPAIRS

The end user has to be refrained to any tempted of repairing and he must contact only qualified Genius' s personnel, or Genius's technical after sale offices.