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### 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.

## CE DECLARATION OF CONFORMITY FOR MACHINES

(DIRECTIVE 98/37/EC)

**Manufacturer:** FAAC S.p.A.

**Address:** Via Benini, 1 - 40069 Zola Predosa BOLOGNA - ITALY

**Declares that:** Barrier mod. 615BPR,

- 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/EC;
- conforms to the essential safety requirements of the other following EEC directives:

2006/95/EC Low Voltage Directive  
2004/108/EEC Electromagnetic Compatibility Directive

Furthermore, the manufacturer declares that the machinery must not be put into service until the machine into which it will be integrated or of which it will become a component has been identified and its conformity to the conditions of Directive 89/392/EEC and subsequent modifications assimilated in Italian National legislation under Presidential Decree No. 459 of 24 July 1996 has been declared..

Bologna, 1<sup>st</sup> September 2008

The Managing Director

A. Marcellan



## WARNINGS FOR THE INSTALLER

### GENERAL SAFETY OBLIGATIONS

- ATTENTION! To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.**
- Carefully read the instructions before beginning to install the product.
- Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
- Store these instructions for future reference.
- This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- FAAC declines all liability caused by improper use or use other than that for which the automated system was intended.
- Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
- The system must be built as specified in Standards: EN12604, EN12605, EN12453, EN12445 with the exception of strictly vehicular use systems, for which it is however necessary to supply identification signs of the strictly vehicular use type. For non-EU countries, the above mentioned standards must be observed in addition to the national standard references.
- FAAC is not responsible for failure to observe Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.
- Before attempting any job on the system, cut out electrical power.
- The mains power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
- Make sure that the earthing system is perfectly constructed, and connect metal parts of the means of the closure to it. Also earth connect the Yellow/Green wire of the automated system.
- The automated system also has an intrinsic anti-crushing safety device, which consists of a torque control, which however must be accompanied by other safety devices.
- The safety devices (e.g. photocells, sensitive edges, etc.) protect any danger areas against **mechanical movement Risks**, such as crushing, dragging, and shearing.
- Use of at least one indicator-light (e.g. FAAC LAMP MINILAMP etc.) is recommended for every system, as well as a warning sign adequately secured to the frame structure, in addition to the devices mentioned at point "15".
- FAAC declines all liability as concerns safety and efficient operation of the automated system, if system components not produced by FAAC are used.
- For maintenance, strictly use original parts by FAAC.
- Do not in any way modify the components of the automated system.
- The installer shall supply all information concerning manual operation of the system in case of an emergency, and shall hand over to the user the warnings handbook supplied with the product.
- Do not allow children or adults to stay near the product while it is operating.
- Keep radiocontrols or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
- The User must not attempt any kind of repair or direct action whatever and contact qualified personnel only.
- Anything not expressly specified in these instructions is not permitted**

## AUTOMATED SYSTEM 615BPR

The 615BPR automated system consists of an aluminium beam with reflex reflectors, and a steel upright subjected to cataphoresis treatment and painted with polyester paint. The upright houses the hydraulic operator and the electronic control unit.

The operator, which moves the beam, consists of a hydraulic power pack and a double-acting cylinder.

The system is supplied with an adjustable torque limitation system. It also includes a device stopping the beam in any position, and a handy manual release command for use in case of power cuts or faults.

The beam and the relevant balancing spring must be ordered by referring to the sales price list.

**The 615BPR automated system was designed and built for controlling vehicle access. Do not use for any other purpose.**

ENGLISH

### 1 DESCRIPTION AND TECHNICAL SPECIFICATIONS

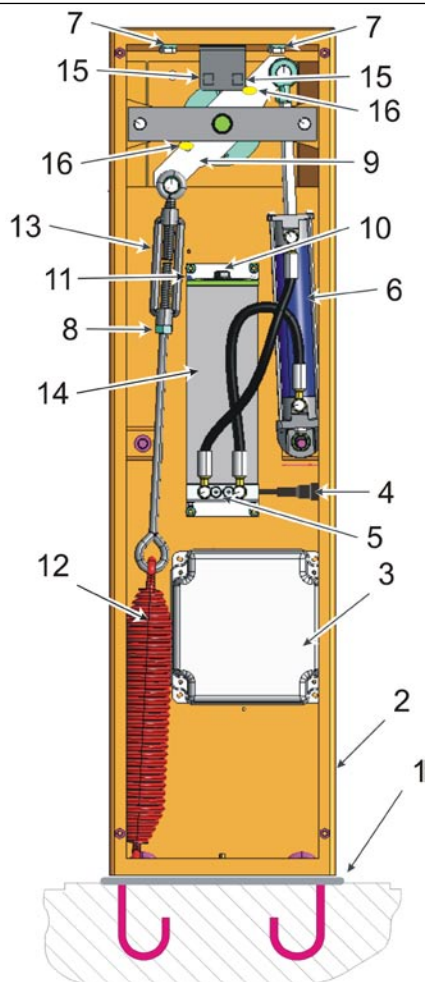


fig.1

- |                                |                             |
|--------------------------------|-----------------------------|
| ① foundation plate             | ⑨ rocker                    |
| ② barrier upright              | ⑩ oil filling plug          |
| ③ control board                | ⑪ breather screw            |
| ④ emergency release            | ⑫ balancing spring          |
| ⑤ torque adjustment screws     | ⑬ spring adjustment tie-rod |
| ⑥ double acting piston         | ⑭ hydraulic power pack      |
| ⑦ travel limit screw           | ⑮ travel limit sensors      |
| ⑧ M12 nut blocking the tie rod | ⑯ travel limit magnets      |

Tab. 1 - Technical specifications "Barrier 615BPR"

BARRIER MODEL	615BPR STD	615BPR RAP
Beam max. length (m)	5	2,5
Max. opening time (sec)	5,7	2,9
Angular speed (rad/sec)	0.28	0,54
Pump flow-rate (l/min)	1.5	3
Max. torque (Nm)	400	300
Types of beam	Rectangular / Rectangular skirt articulated / Round	
Use frequency (at 20°C)	50%	40%
Max. consecutive cycles (at 20°C)	220	340
Power supply	230V~ (+6 -10 %) 50Hz	
Absorbed power (W)	220	
Type of oil	FAAC HP OIL	
Oil quantity (Kg)	0,9	
Thermal protection for winding	120° C	
Torque adjustment system	standard by-pass valves	
Operating ambient temperature	-40 ÷ +55 °C	
Hood protective treatment	cataphoresis	
Hood paint	Polyester RAL 2004	
Protection class	IP 44	
Weight (Kg)	34	
Upright dimensions LxHxP(mm)	270 x 1015 x 140	
<b>Electric motor technical specifications</b>		
RPM	1400	2800
Power (W)	220	
Absorbed current (A)	1	
Power supply	230V~ (+6 -10 %) 50Hz	

#### 1.1 MAXIMUM USE CURVE

The curve makes it possible to establish maximum work time (T) according to use frequency (F).

E.g. The 615 BPR automated system can operate non-stop at a use frequency of 50%.

To ensure efficient operation, operate in the work range under 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

The percentage of effective work time (opening + closing) compared to total time of cycle (opening + closing + pause times).

Calculation formula:

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

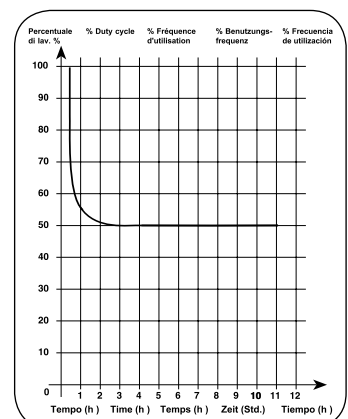
where:

**T<sub>a</sub>** = opening time

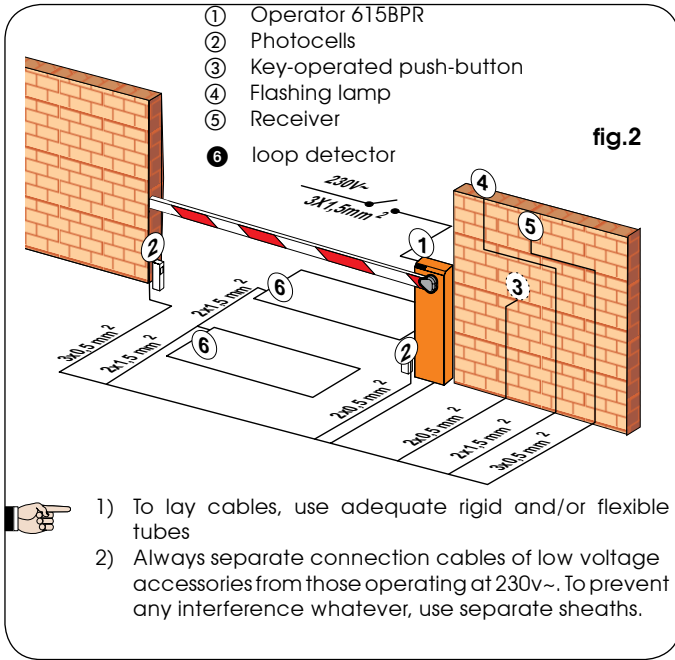
**T<sub>c</sub>** = closing time

**T<sub>p</sub>** = pause time

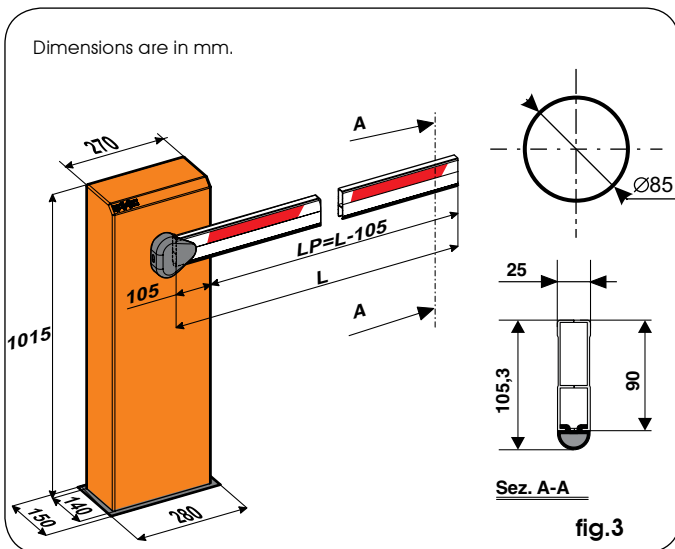
**T<sub>i</sub>** = interval time between one complete cycle and another.



**2. ELECTRIC PREPARATIONS (standard system)**



**3 DIMENSIONS**



**4 INSTALLING THE AUTOMATED SYSTEM**

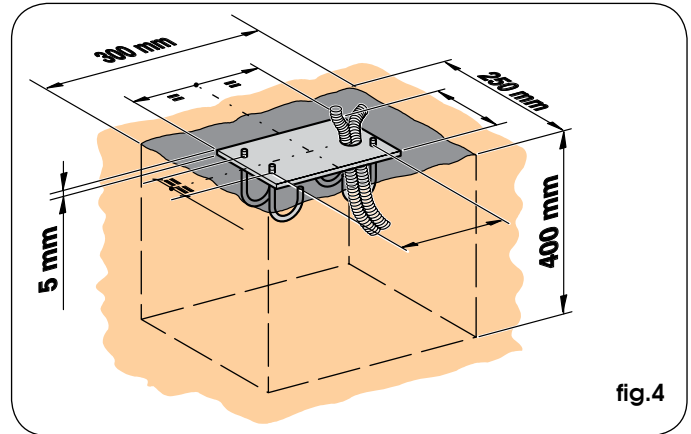
**4.1 PRELIMINARY CHECKS**

To ensure safety and an efficiently operating automated system, make sure the following conditions are observed:

- When moving, the beam must not, on any account, meet any obstacles or overhead power cables.
- The soil must permit sufficient stability for the foundation plinth.
- There must be no pipes or electrical cables in the plinth excavation area.
- If the barrier body is exposed to passing vehicles, install, if possible, adequate means of protection against accidental impact.

**4.2 MASONRY FOR FOUNDATION PLATE**

- 1) Make a foundation plate as shown in fig.4 (referred to clayey soil)
- 2) Wall the foundation plate as shown in fig.4, supplying one or more sheaths for routing electrical cables. Using a spirit level, check if the plate is perfectly level. Wait for the cement to set.



**4.3 INSTALLING THE UPRIGHT**

- 1) Remove the cover, unscrewing the screws securing it to the upright.
- 2) Using the four nuts and washers supplied, secure the upright on the foundation plate as shown in fig.5. Remember that the hatch of the upright should normally face the building.

**4.4 INSTALLING THE BEAM**

**⚠ The 615BPR automated system is always supplied in the right-hand version – for left-hand installation, see chapter 5.5.**

- 1) Make sure that the rod of the piston secured to the rocker is completely extended (corresponding to the beam's vertical position).
- 2) Remove and store the breather screw as shown in fig.6
- 3) Assemble the bar as in fig.7a for the rectangular version, or as in fig.7b for the round version.

**4.5 INSTALLING AND ADJUSTING THE BALANCING SPRING**

- 1) Check if the balancing spring matches the type of beam installed: see chapter 5.
- 2) While keeping the beam in vertical position, assemble the tie rod and spring as shown in fig.8
- 3) Release the operator (see chapter 7) and position the beam at 45°, then adjust the tie-rod and set the spring until the weight of the beam is balanced in that position.
- 4) Restore normal operation as described in chapter 7.

**ENGLISH**

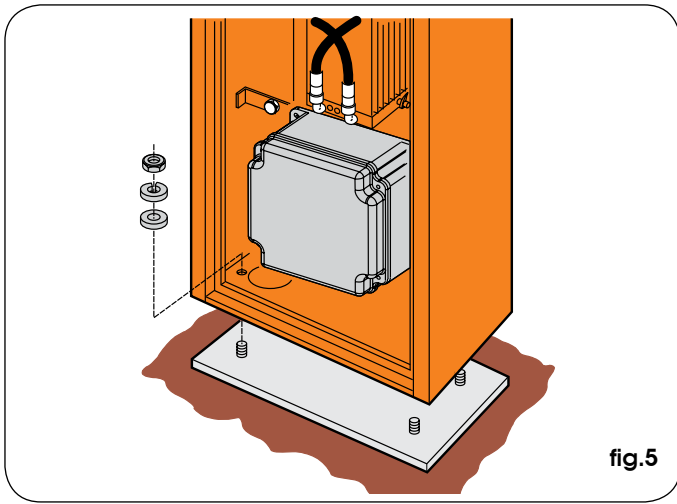


fig.5

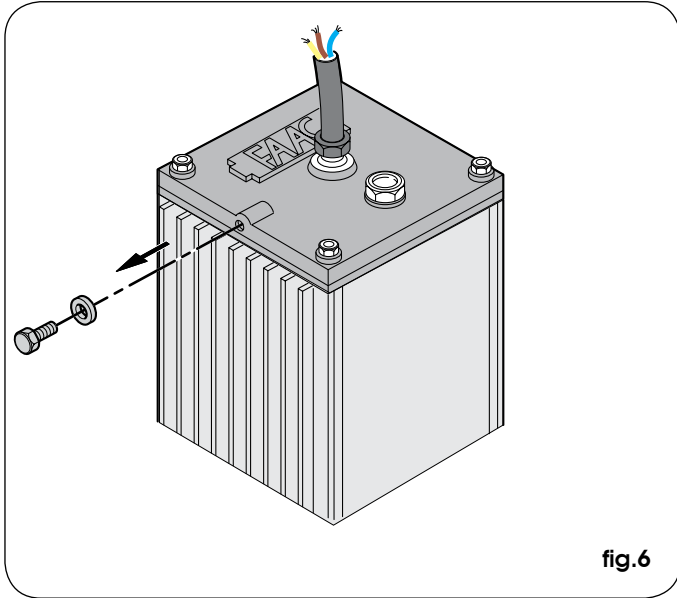


fig.6

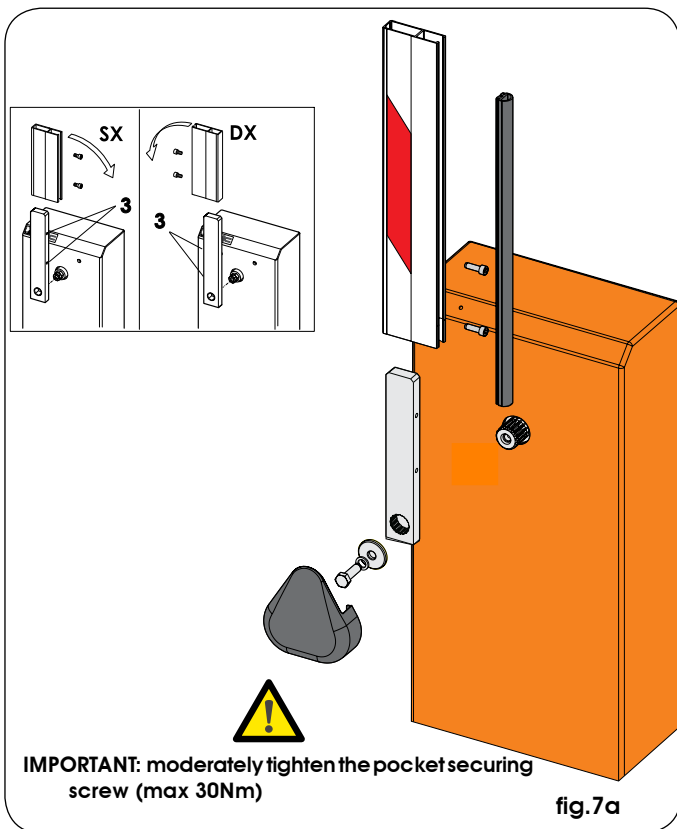


fig.7a

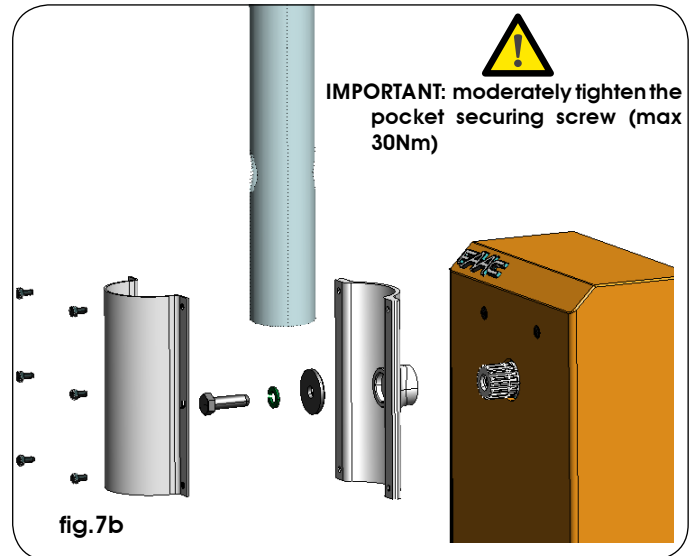


fig.7b

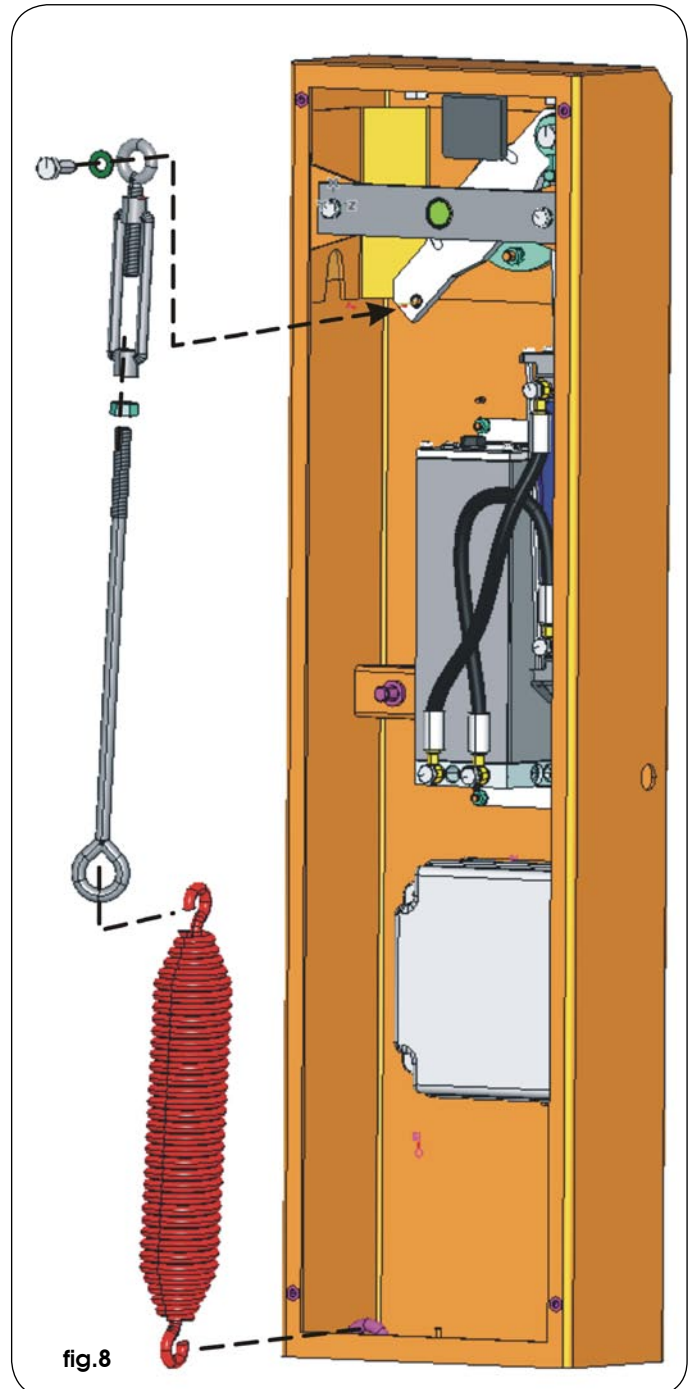


fig.8

### 5 BALANCING SPRINGS

The 615 BPR automated system requires a balancing spring for the beam, which must be ordered separately. The spring varies according to length and type of beam (rigid, skirt or articulated).

Consult the tables below to see if the spring matches.

#### 5.1 SPRINGS FOR RECTANGULAR BEAMS WITH SKIRT

BALANCING SPRING			
∅	rectangular beam	beam with skirt	code
5,5	1315 – 2315	1315 - 2315	721008
6,0	2316 – 2815	2316 – 2815	721005
7,0	2816 – 3815		721006
7,5		2816 – 3815	721007
8,0	3816 – 4815		721018

#### 5.2 SPRINGS FOR RECTANGULAR BEAMS WITH FOOT AND WITH SKIRT AND FOOT

BALANCING SPRING			
∅	beam with foot	beam with skirt and foot	code
5,5	1315 – 1815	1315 - 1815	721008
6,0	1816 – 2315	1816 – 2315	721005
7,0	2316 – 2815		721006
7,5		2316 – 3315	721007
8,0	2816 – 3815		721018

#### 5.3 FOR 615BPR RAPID

BALANCING SPRING			
∅	rectangular beam	round beam	code
5,5	1315 – 2315	1315 - 2315	721008

#### 5.4 SPRINGS FOR ROUND BARS

BALANCING SPRING		
∅	round beam	code
5,5	1500 – 3000	721008
6	3001 – 4000	721005
7,5	4001 – 5000	721006

#### 5.5 TRANSFORMATION FROM RIGHT TO LEFT VERSION

Procedure for converting a right-hand version to left-hand:

Release the operator.

Loosen the connection (fig.9 ref.A).

Provisionally remove the piston securing screw (fig.9 ref.B) and the seeger ring (fig.9 ref.C).

Rotate the rocker.

Position the piston from the left side and secure it with the screw (fig.9 ref.D) and the seeger (fig.9 ref.E) you had removed.

Tighten the connection (fig.9 ref.F).

Re-lock the operator.

Dismantle the container of the control unit and re-install it on the left of the hood, using the existing holes.

Change over the connectors of the travel-limit sensors (J6 and J9 on the 596/615BPR board).

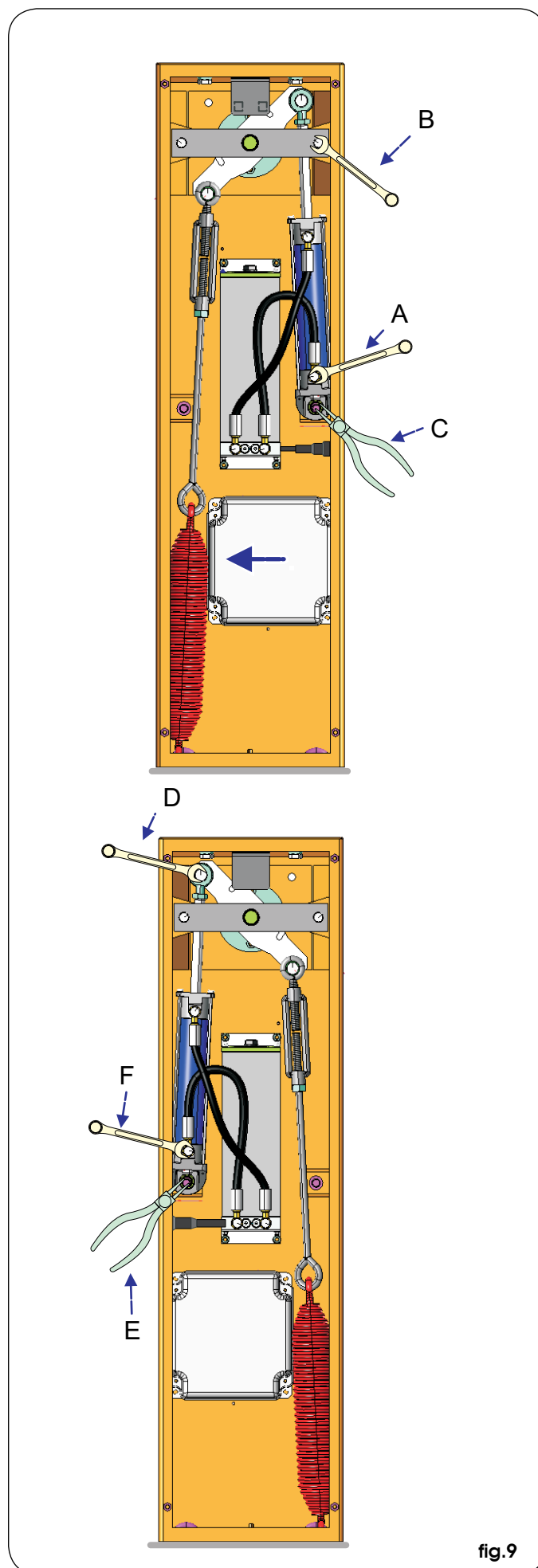


fig.9

**6 START-UP**

**6.1 ADJUSTING THE TRANSMITTED TORQUE**

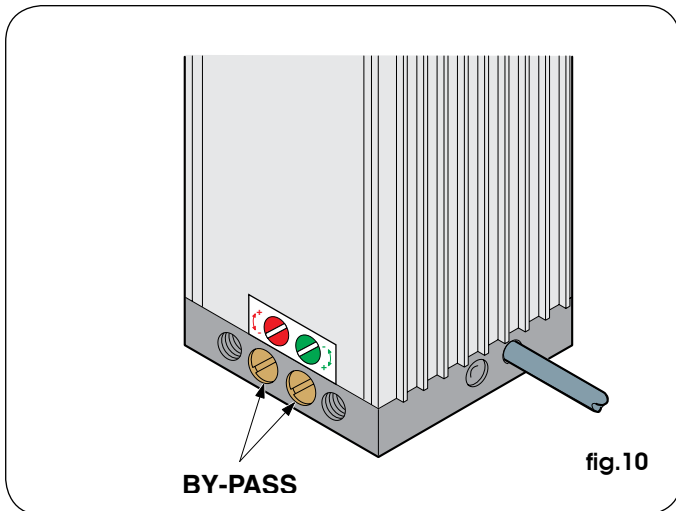
To set the hydraulic system controlling transmitted power, turn the two by-pass screws (fig.10).

The red screw controls closing movement torque.

The green screw controls opening movement torque.

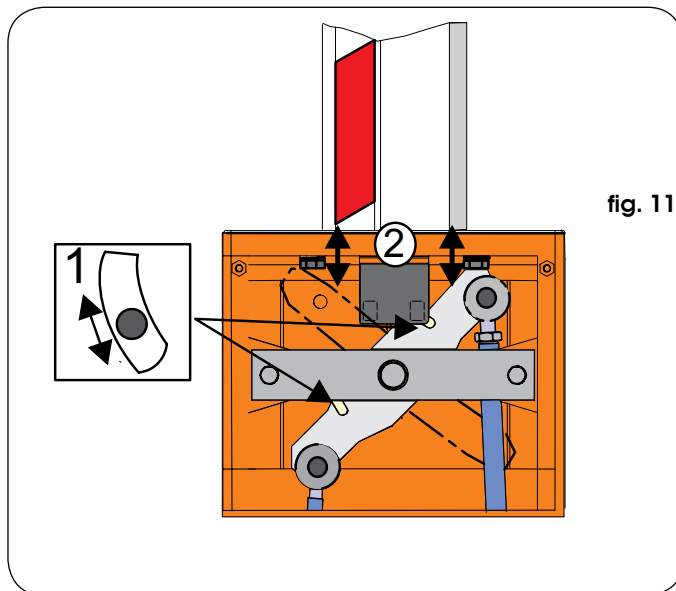
To increase torque, turn the screws clockwise.

To reduce torque, turn the screws anti-clockwise.



**6.2 ADJUSTING THE MECHANICAL TRAVEL LIMITS**

Adjust the position of the beam to maximum closing and opening positions, using the travel limit mechanical stops as shown in fig.11.ref.1.



**6.3 ADJUSTING THE MAGNETIC TRAVEL LIMITS**

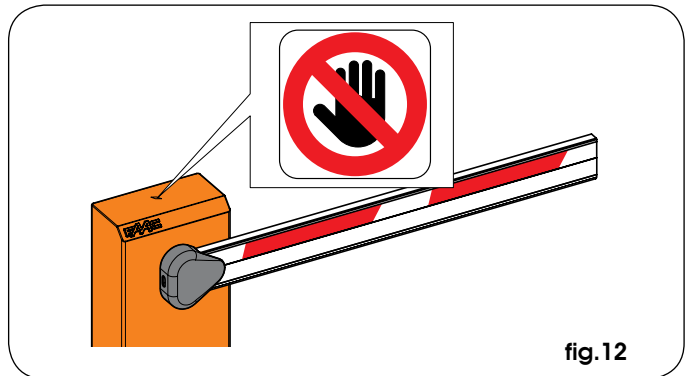
The point where the automated system begins to make the slow-down movement can be modified, by moving the magnetic cylinder inside the seat located on the two arms of the rocker in the motion unit (fig.11 - ref.2).

**6.4 AUTOMATED SYSTEM TEST**

After installation, apply the danger warning sticker on the top of the upright (Fig. 12).

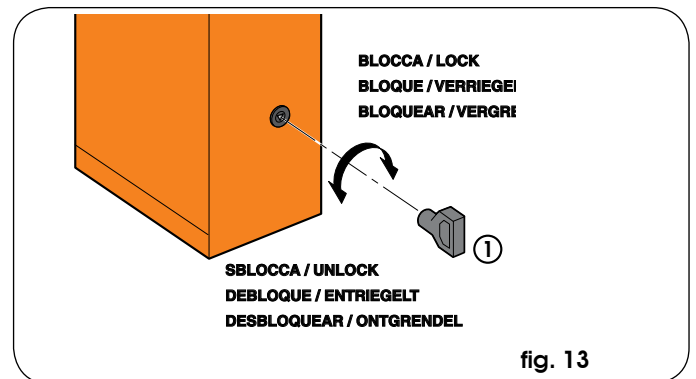
Check operating efficiency of the automated system and all accessories connected to it.

Hand the "User's Manual" to the Client, explain correct operation and use of the barrier, and indicate the potentially dangerous areas of the automated system.



**7 MANUAL MODE OPERATION**

If the barrier has to be moved manually due to a power cut or fault of the automated system, use the release device as follows.



- Fit the standard triangular key (Fig.13) in the lock and turn it **anti-clockwise** through 1 turn.
- Open and close the barrier manually.

**8 RESTORING NORMAL OPERATION MODE**

To prevent an involuntary impulse from activating the barrier during the manoeuvre, before restoring normal operation, switch off power to the system, and turn the triangular key **clockwise** until it stops, and then remove it.

**9 AVAILABLE ACCESSORIES**

**SKIRT KIT (fig.14)**

The skirt kit increases visibility of the beam. It is available in lengths from 2 m to 3 m.

**⚠ If a skirt kit is installed, the balancing spring must be adapted.**

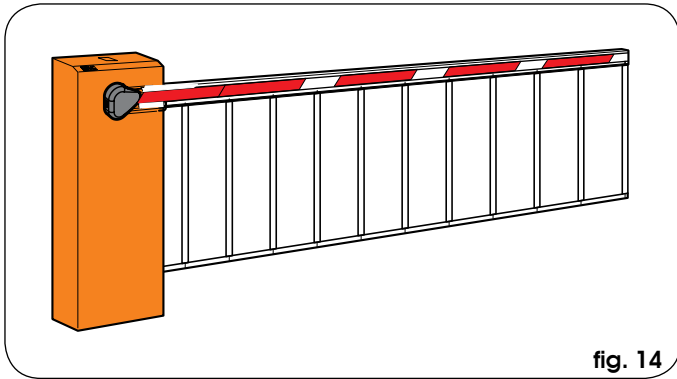


fig. 14

**FORK SUPPORT (fig.15)**

The fork has two functions:

- it prevents the beam, when closed, from bending or splitting if its end is stressed by extraneous forces.
- it allows the beam to rest when closed and thus prevents the profile bending downward.

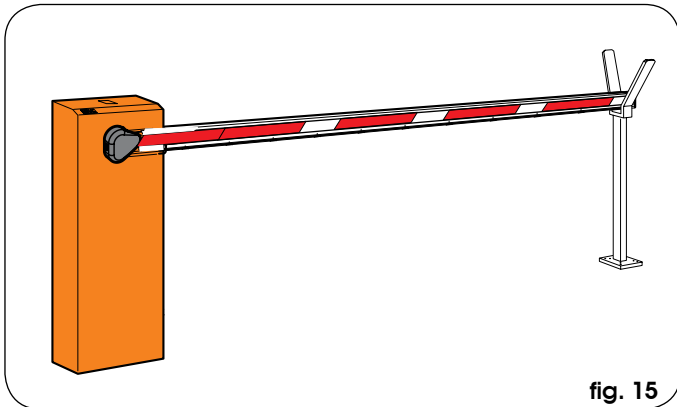


fig. 15

**POSITIONING THE FORK SUPPORT FOUNDATION PLATE**

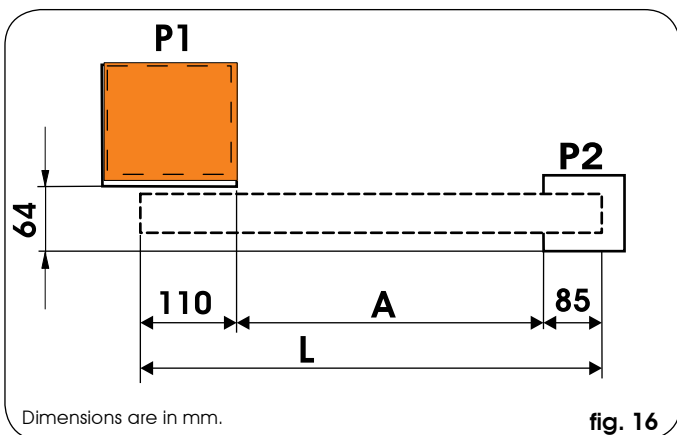


fig. 16

To position the foundation plate of the fork support, refer to fig.16 where:

- P1 = barrier foundation plate
- P2 = fork support foundation plate
- L = beam length (in mm)
- A = L - 195 (in mm)

**ARTICULATION KIT (fig.17)**

The articulation kit makes it possible to articulate a rigid beam to a maximum ceiling height of 3 m. (see specific instructions).

**⚠ If the articulated kit is installed, the balancing spring must be adapted.**

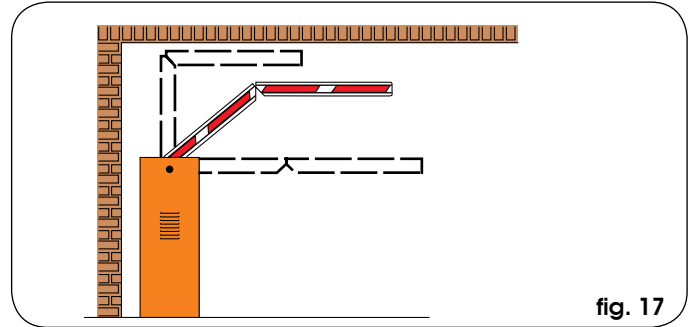


fig. 17

**END FOOT (fig.18)**

The end foot allows the beam to rest when closed and thus prevents the profile bending downward.

**⚠ If a foot is installed, the balancing spring must be readjusted.**

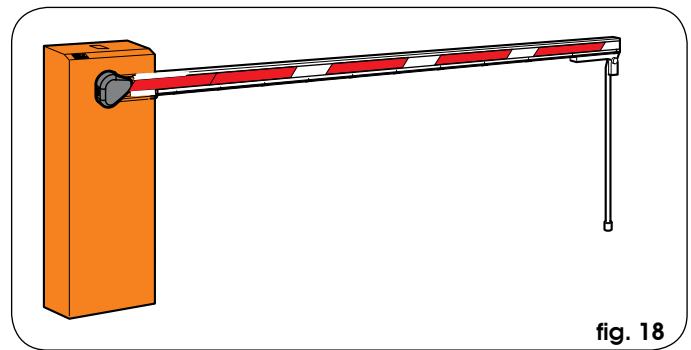


fig. 18

**10 MAINTENANCE**

Whenever doing maintenance, always check correct settings of the by-pass screws, system balancing, and efficiency of safety devices. The automated system does not require any type of oil topping-up.

**11 REPAIRS**

For any repairs, contact FAAC's authorised Repair Centres.

ENGLISH