

N1D KIT

N1D AUTO KIT

N1D SENSO KIT



FAAC

EC DECLARATION OF CONFORMITY

Manufacturer: FAAC S.p.A.

Address: Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALIA

Declares that: The operator mod. N1D Kit, N1D auto Kit, N1D senso kit

- conforms to the essential safety requirements of the following EEC directives:
 2006/95/EC Low Voltage Directive
 2004/108/EC Electromagnetic Compatibility Directive
 99/05/ECRTTE Directive
- conforms to that foreseen by the following harmonised standards:
 - EN 60335-2-103
 - EN 61000-3-2, EN 61000-3-3
 - EN 55014-1, EN 55014-2

Bologna, 01-07-2014

CEO
A. Marcellan



**WARNINGS FOR THE INSTALLER
GENERAL SAFETY REQUIREMENTS**

1. ATTENTION! It is important for the safety of people to follow all the instructions carefully. Incorrect installation or incorrect use of the product could cause serious harm to people.
2. Read the instructions carefully before installing the product.
3. The packaging materials (plastic, polystyrene, etc.) must not be left within reach of children as they are potential sources of danger.
4. Keep these instructions for future reference.
5. This product was solely designed and built for the use described in this document. Any other use, not specifically described, could compromise the integrity of the product and/or be a source of danger.
6. FAAC declines all liability deriving from improper use or use other than that for which the automated system is intended.
7. Do not install the equipment in an explosive atmosphere: the presence of flammable gas or fumes is a serious safety risk.
8. FAAC is not responsible for failure to comply with Good Technical Practice when constructing the closing elements that are to be motorised or for any deformation that may occur during use.
9. Before performing any operation on the system, disconnect the power supply.
10. Installation must be performed by skilled technical personnel and in compliance with regulations in force.
11. The power mains of the automation system must be fitted with a multi-pole power switch with a switch-contact gap of at least 3 mm. It is advisable to use a 6A circuit breaker with a multi-pole power switch.
12. Verify that there is a differential switch with a 0.03 threshold upstream of the system.
13. For outdoor use, install the electric cables inside specific protective conduit.
14. Verify that the earthing system is perfectly constructed and connect the metal closing parts.
15. Do not connect more than one engine to the same inverter.
16. Do not connect two inverters to the same engine.
17. FAAC declines all liability concerning safety and the automated system working properly, if system components not manufactured by FAAC are used.
18. Only use original FAAC parts for maintenance.
19. Do not modify the components of the automated system in any way.
20. The appliance must always be visible when handled.
21. Do not allow children or adults to stay near the product during operation.
22. Keep radio controls or other pulse generators out of the reach of children to prevent the automation system from being activated involuntarily.
23. The user must not attempt any kind of repair or direct intervention and must only contact qualified personnel.
24. Anything not specifically stipulated in these instructions is not permitted.

N1D KIT

1 TOOLS REQUIRED



Fig. 1

2 COMPOSITION OF THE KIT

- | | | |
|---|---|---|
| 1. Engine chassis: profile containing the engine | 10. Fast transmission (grey) with reinforcement | 20. 2 nuts |
| 2. Transmission frame: empty profile | 11. Slow transmission (yellow) with reinforcement | 21. Transmission arms (ND1 or ND4 depending on markets) |
| 3. Cover casing | 12. Transmission axis | 22. 2 guides |
| 4. Cover caps | 13. 2 screws (6x50) | 23. 4 guide caps |
| 5. 1 cable gland | 14. 2 lock washers | |
| 6. Wired control (for N1D kit and N1D AUTO kit) | 15. 4 screws for guides (5x35) | |
| 7. Single channel remote control TM XT1 433 (N1D SENSO Kit) | 16. 2 drive rings | |
| 8. 2 spring washers | 17. 2 screws (12x20) | |
| 9. 2 tie rods (8x80) | 18. 2 reversible rollers | |
| | 19. 2 safety screws | |

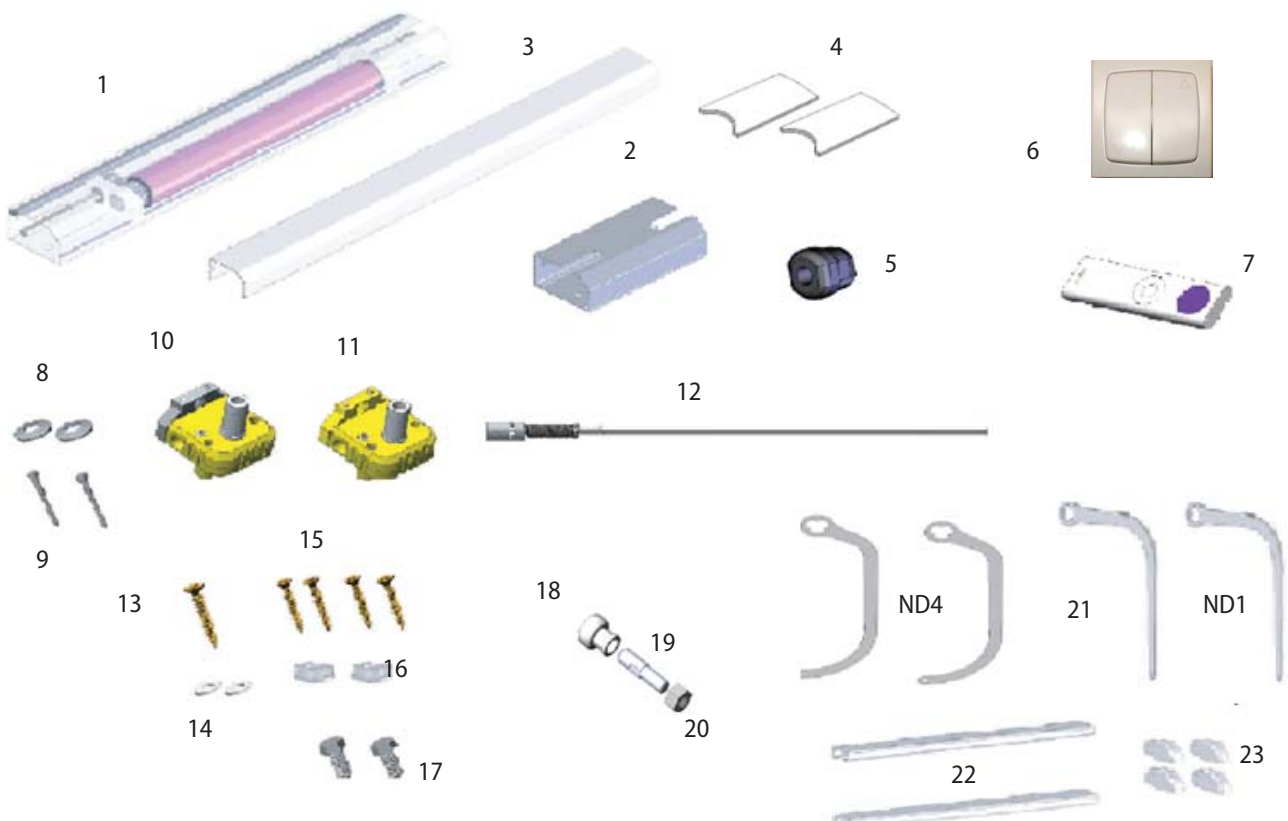


Fig. 2

Automations of the N1D line are designed to automate shutters in the 16 configurations described in chapter 4.

In the case of a double leaf application, the opening angles of the two leaves must be identical.

Different models require different modes of operation:

- 1) N1D KIT : controlled by distinct opening / closing buttons, with dead man logic. The N1D model kit does not require automatic limit switches.
- 2) N1D AUTO KIT : controlled by distinct opening / closing buttons. The N1D model AUTO kit requires automatic limit switches that recognise the mechanical opening and closing stops and interrupt the stroke.
- 3) N1D SENSO KIT : remote controlled and by a step logic button (optional). The opening and closing limit switches are set during the learning stage. The automation recognises the presence of obstacles during the stroke.

3 PRELIMINARY OPERATIONS AND TECHNICAL SPECIFICATIONS

	N1D KIT	N1D AUTO KIT	N1D SENSO KIT
POWER SUPPLY VOLTAGE	230V 50-60Hz		
POWER	130W	180 W	180 W
OPENING/CLOSING TIME	About 16 seconds		
POWER SUPPLY CABLE OUTLET	Right or left		
RAL CASING	White RAL 9010 or Brown RAL 8017		
CONTROL	Dead man switch	Switch Opens/Closes	FAAC 433 MHz radio transmitter or step button

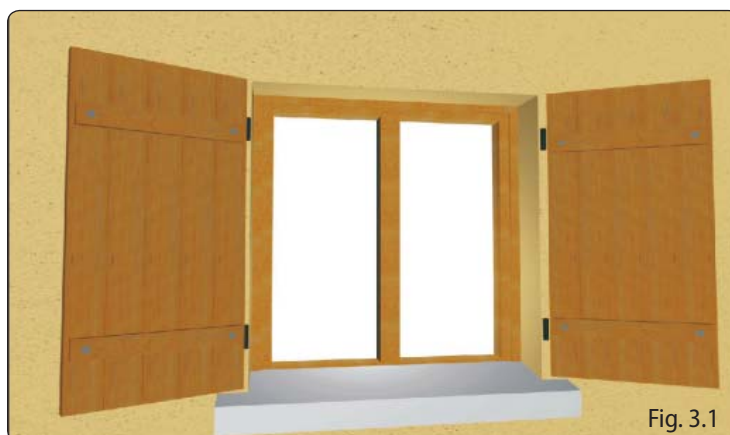
3.1 Application limits

The following table describes the application limits for the various kits.

MODEL		COMPARTMENT MAXIMUM WIDTH (mm) (* cutting the casing and shaft)	COMPARTMENT MAXIMUM WIDTH (mm)
N1D KIT	1 LEAF	672 (* 600)	1100
	2 LEAVES	850 (* 780)	1400
N1D AUTO KIT	1 LEAF	760 (* 660)	1400
	2 LEAVES	960 (* 860)	1600
N1D SENSO KIT	1 LEAF	760 (* 660)	1400
	2 LEAVES	960 (* 860)	1600

3.2 Checking shutter operation

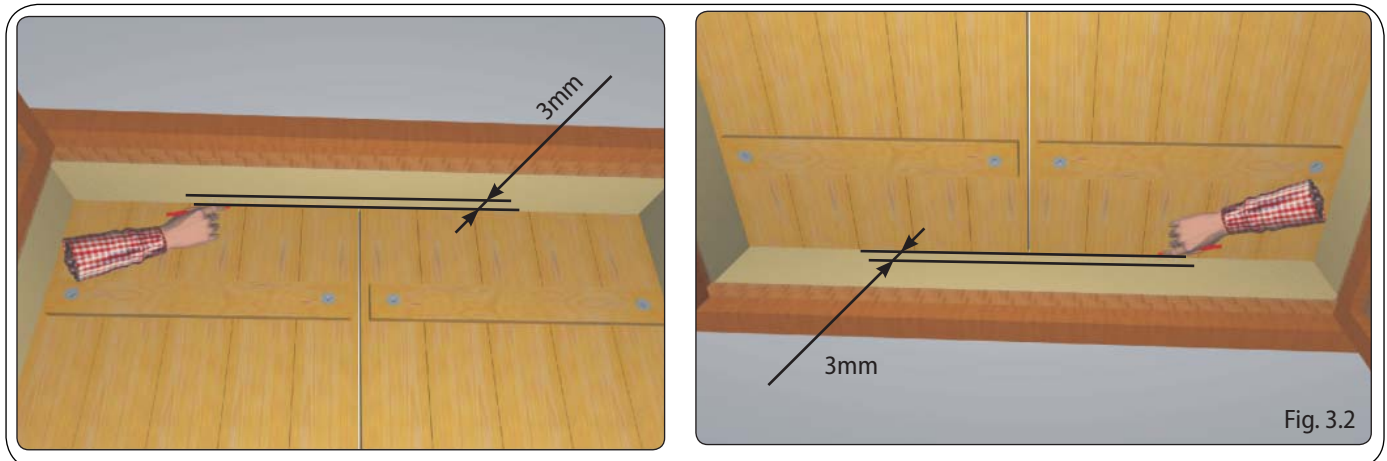
First of all, check that the shutter works properly. If needed, lubricate the hinges and level the shutter. (Fig. 3.1)




3.3 Reference mark


Close the shutters, trace a line from the inside 3 mm from the closed shutter, on the architrave or on the windowsill according to the chosen installation.

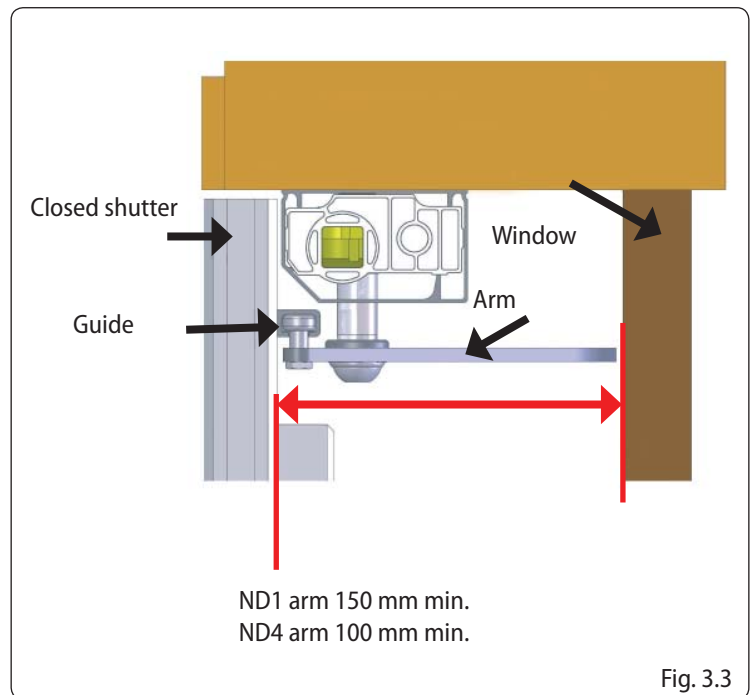
This line will delimit the position of the frames. (Fig. 3.2)



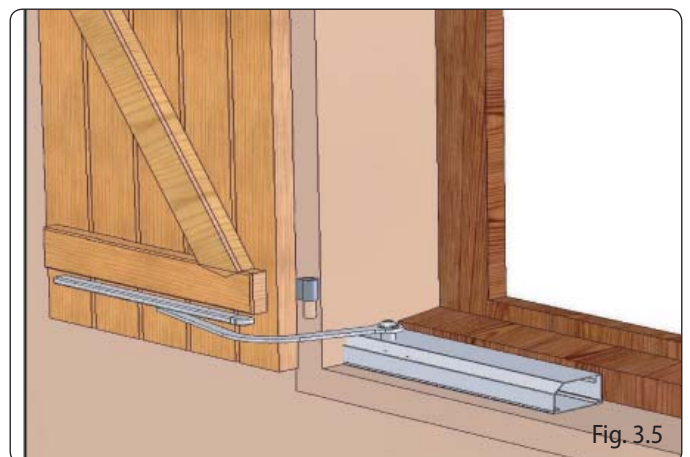
3.4 Indications

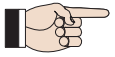
 The minimum depth with the ND4 arm supplied in the kit is 100 mm. For different arms, see chapter 12 on the optional arm range

 The minimum depth with the ND1 arm supplied in the kit is 150 mm. For different arms, see chapter 12 on the optional arm range



The frame must be installed with the bevelled angle facing outwards. (Fig. 3.4 and Fig. 3.5)

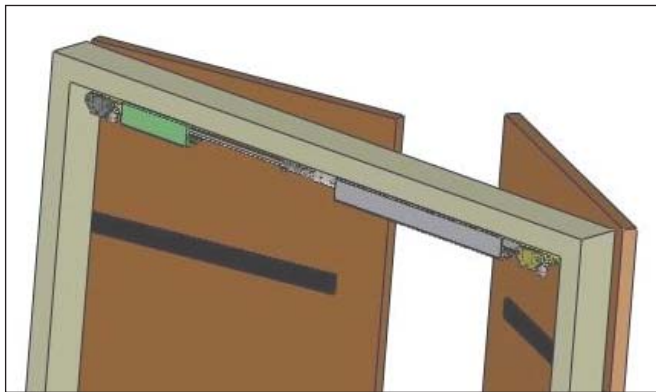
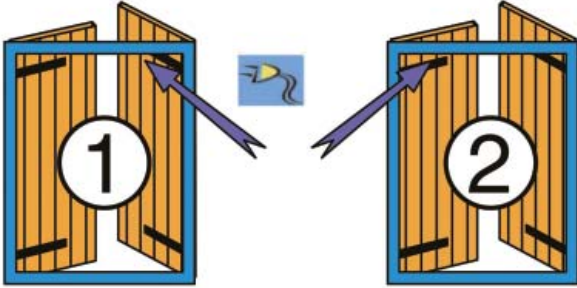




The shutter closing delay is always seen from the inside.

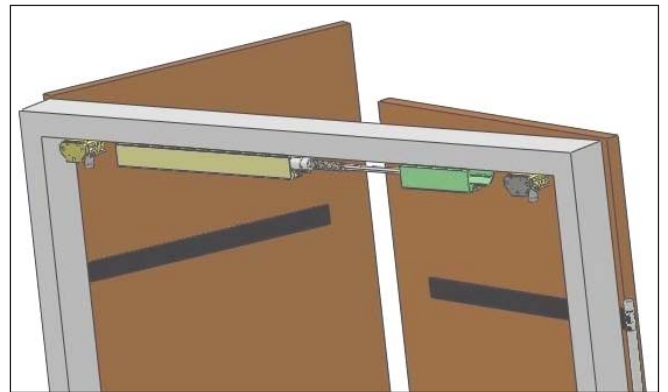
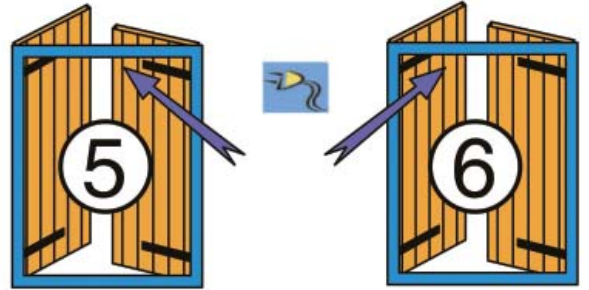
Architrave assembly
Right delay
Right cable outlet

Architrave assembly
Right delay
Left cable outlet



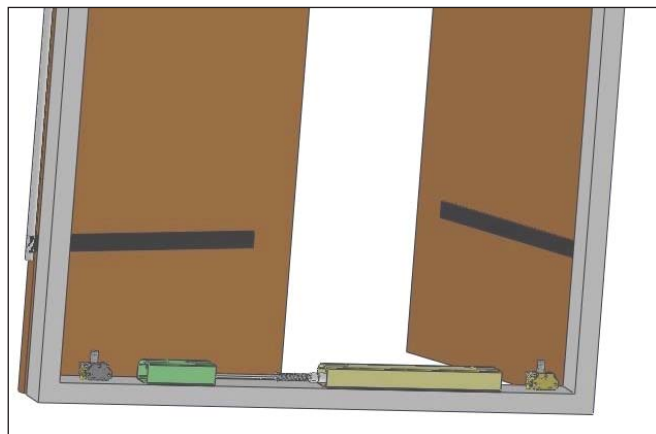
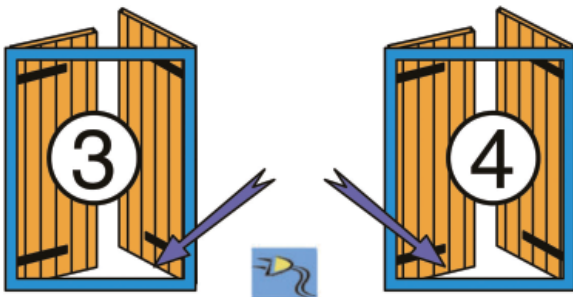
Architrave assembly
Left delay
Right cable outlet.

Architrave assembly
Left delay
Left cable outlet



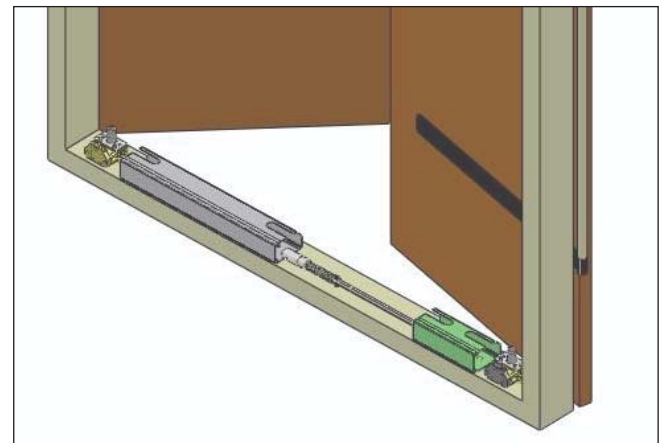
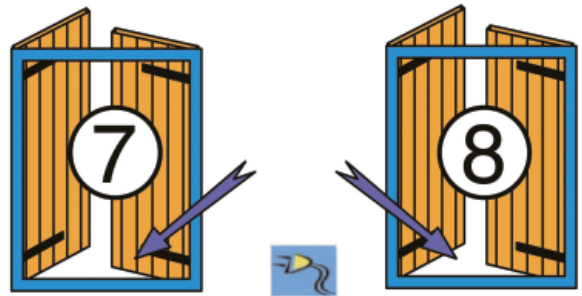
Assembly on the windowsill
Right delay
Right cable outlet

Assembly on the windowsill
Right delay
Left cable outlet



Assembly on the windowsill
Left delay
Right cable outlet

Assembly on the windowsill
Left delay
Left cable outlet



Architrave assembly
Right shutter
Right cable outlet



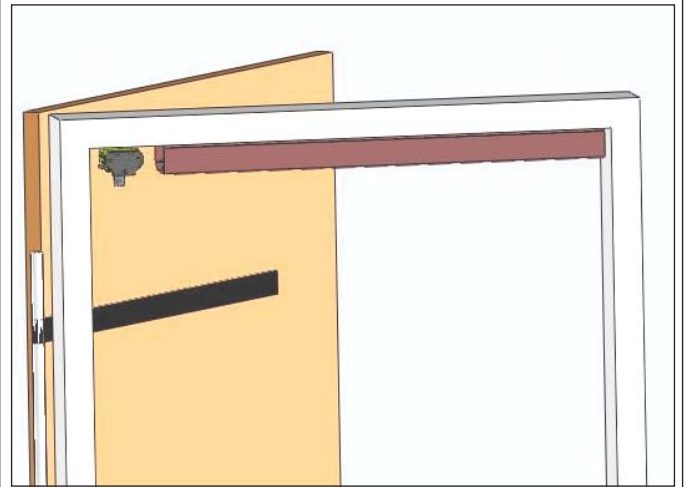
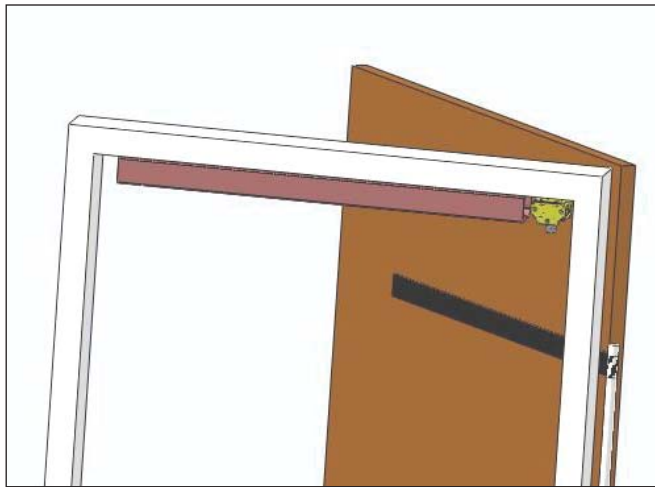
Architrave assembly
Right shutter
Left cable outlet



Architrave assembly
Left shutter
Right cable outlet



Architrave assembly
Left shutter
Left cable outlet



Assembly on the windowsill
Right shutter
Right cable outlet



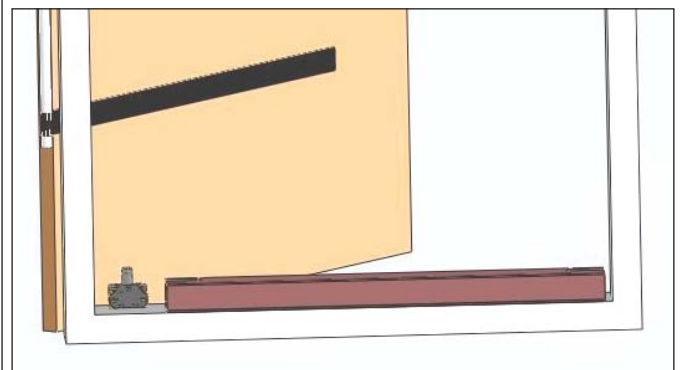
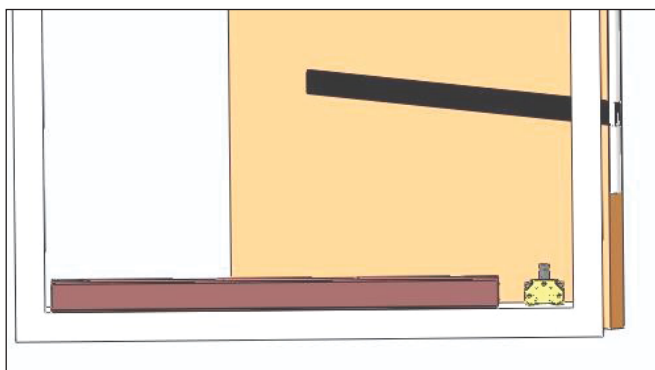
Assembly on the windowsill
Right shutter
Left cable outlet



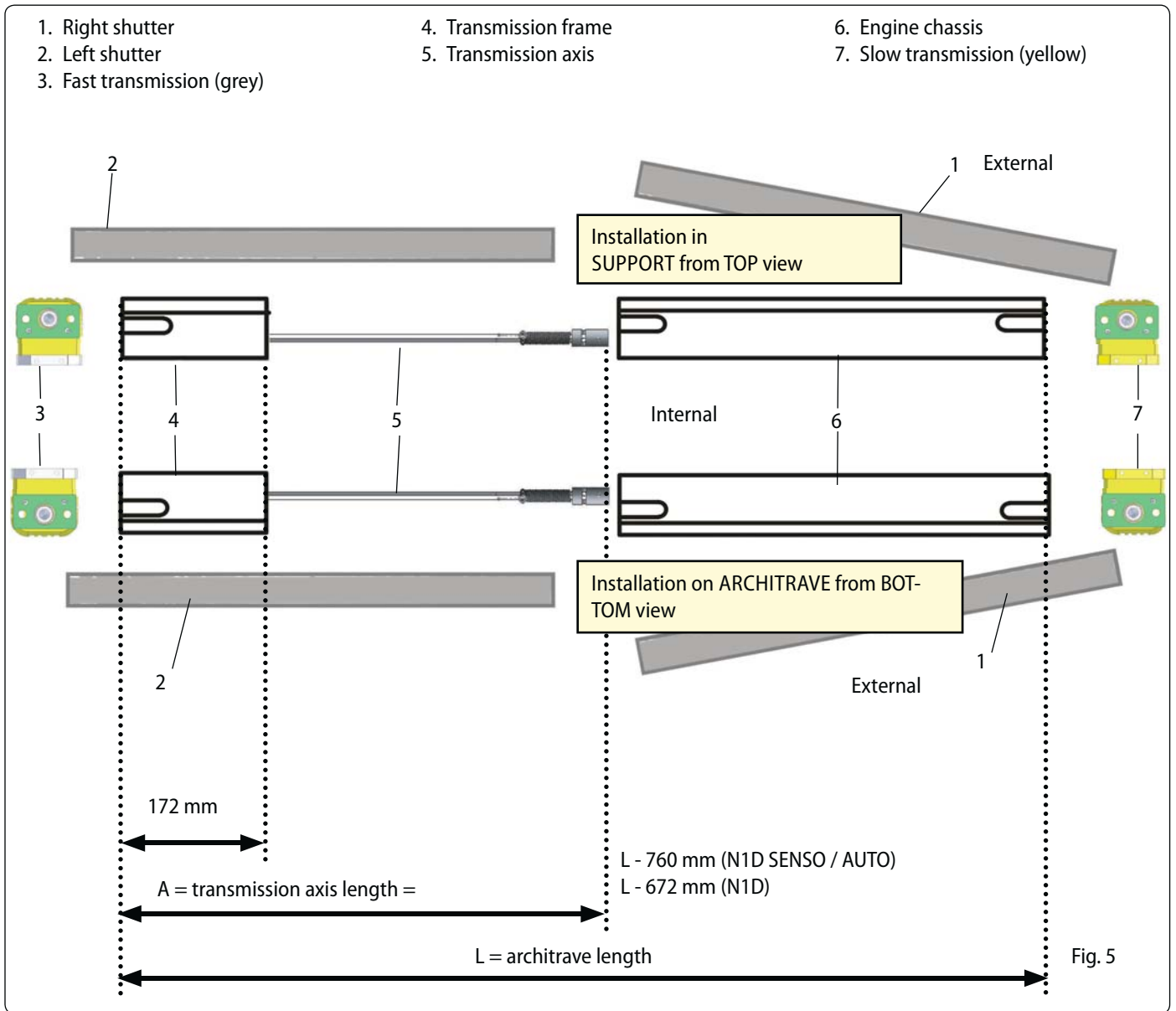
Assembly on the windowsill
Left shutter
Right cable outlet



Assembly on the windowsill
Left shutter
Left cable outlet



Arrange the pieces as in fig. 5.

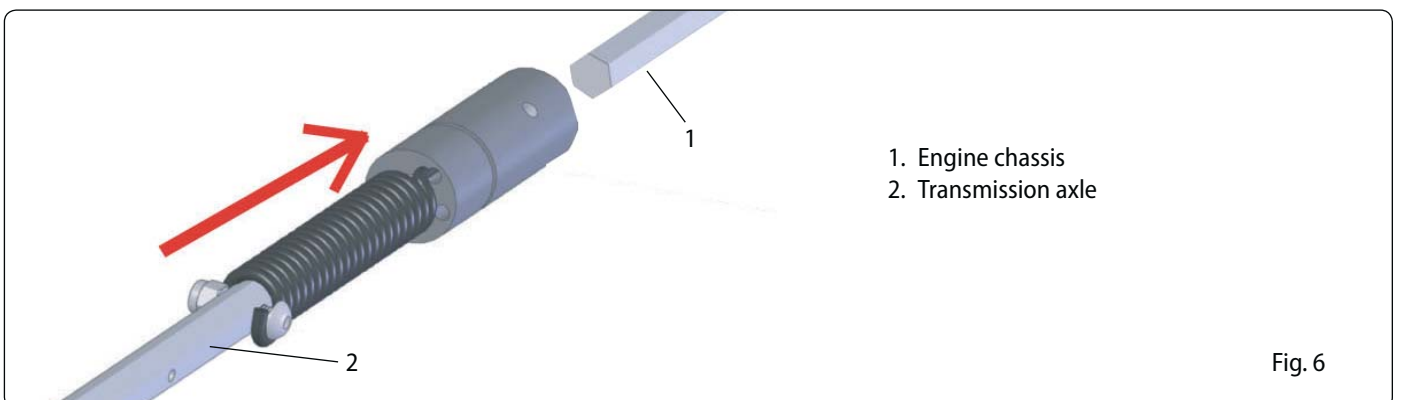


5.1 Transmission axis insertion

Depending on the selected N1D model, cut the transmission axis (Fig.6 ref. 2) according to measurement A (Fig.5 ref. A), according to the following formulas:

- N1D SENSO / AUTO : A= Architrave length - 760 mm
- N1D : A= Architrave length - 672 mm

Eliminate burrs from the transmission axis in line with the cut made.
Insert the transmission axis into the hexagonal profile of the engine chassis.



5.2 Cable outlet

Only for settings 2 and 3:
pass the cable through the specific PVC tube (see image Fig. 7).



ATTENTION: the electric cable must not be in contact with any movable part.



ATTENTION: It is essential to keep the cable fully stretched.

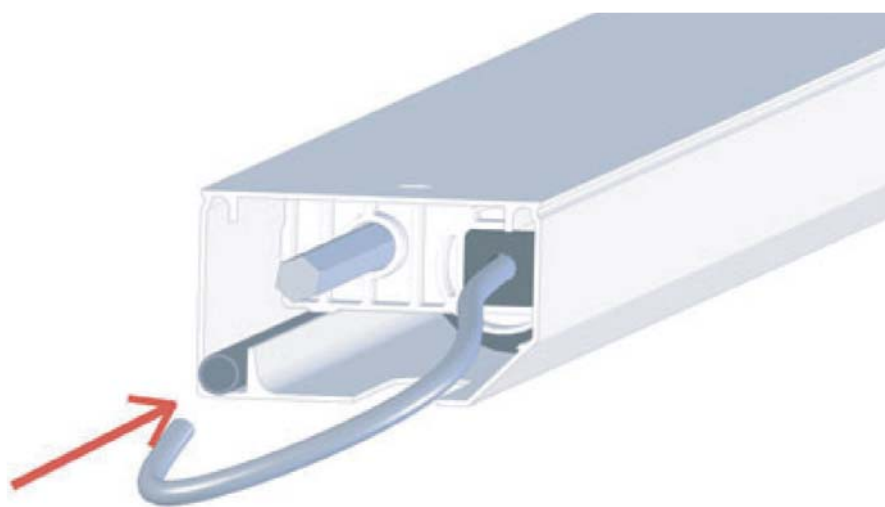


Fig. 7

5.3 Assembly

Insert the transmissions at each end, making sure the reinforcing screws are properly secured.
Insert the hexagonal transmission axis in the return slot.
Insert the transmission axis into the engine chassis and tighten the grub screw A. (Fig. 8)

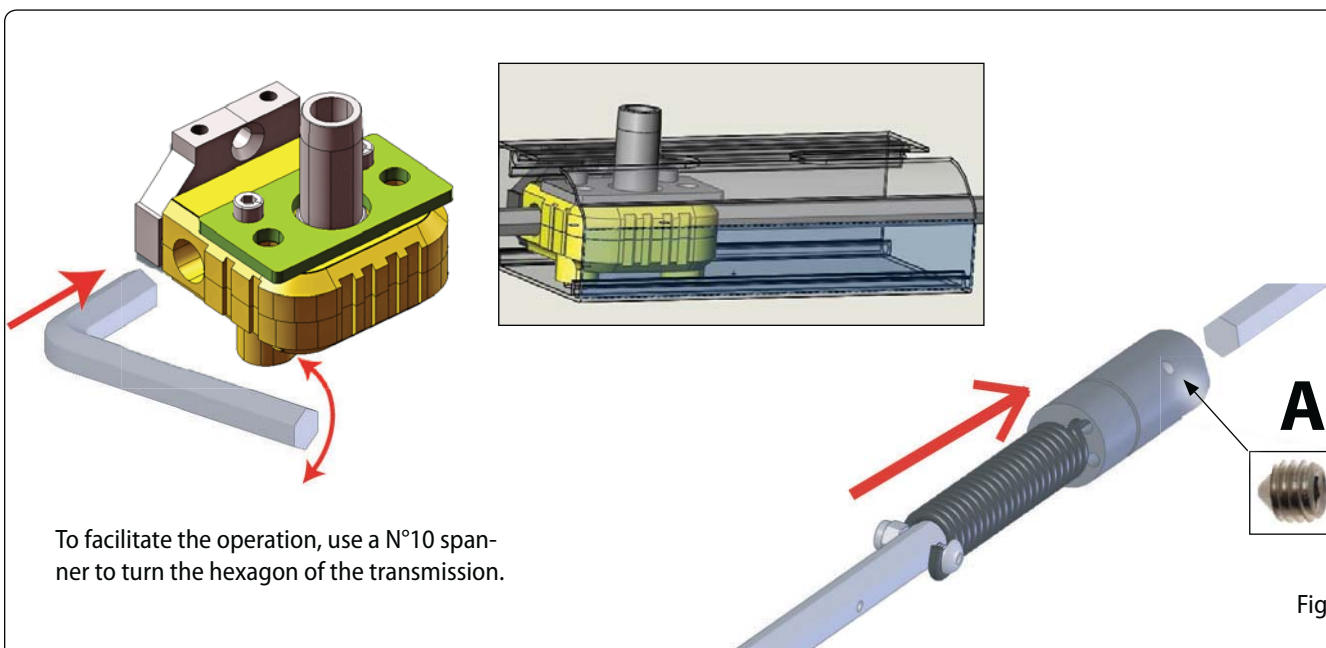


Fig. 8

5.4 Fixing holes

Assemble the pieces and place them under the architrave or on the windowsill (installation on the architrave in figure 9).
 Mark the position of the holes on the frames and drill with the appropriate bit.
 Place the dowels adequate for the material on which the N1D will be installed.



ATTENTION: The quality of the fastening is essential for the device to work properly. For this, the dowels must be adequate for the type of fastening material and 8x80 screws.

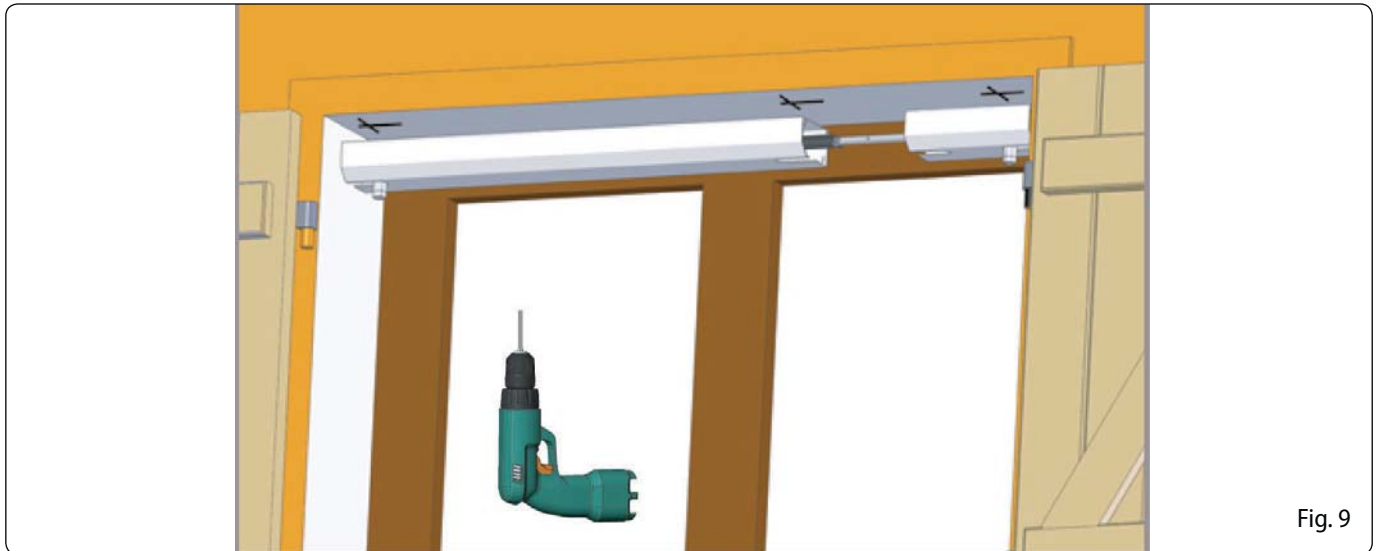


Fig. 9

5.5 Fixing the frame

Make sure that the frames are aligned.
 Use the level to check that the device is horizontal.
 Set the supplied toothed washers in place and tighten the tie rods using a T40 Torx wrench.
 Proceed as described in Chapter 9.

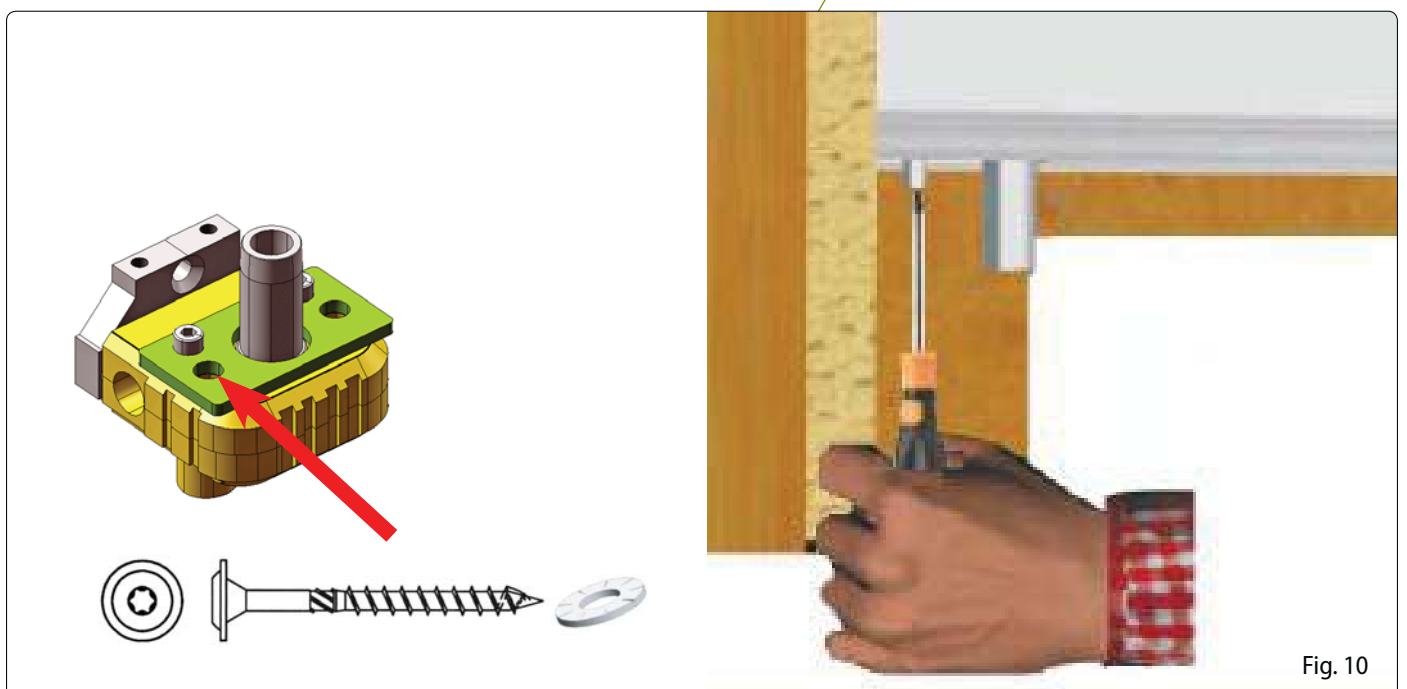


Fig. 10

Arrange the pieces as in fig. 11.

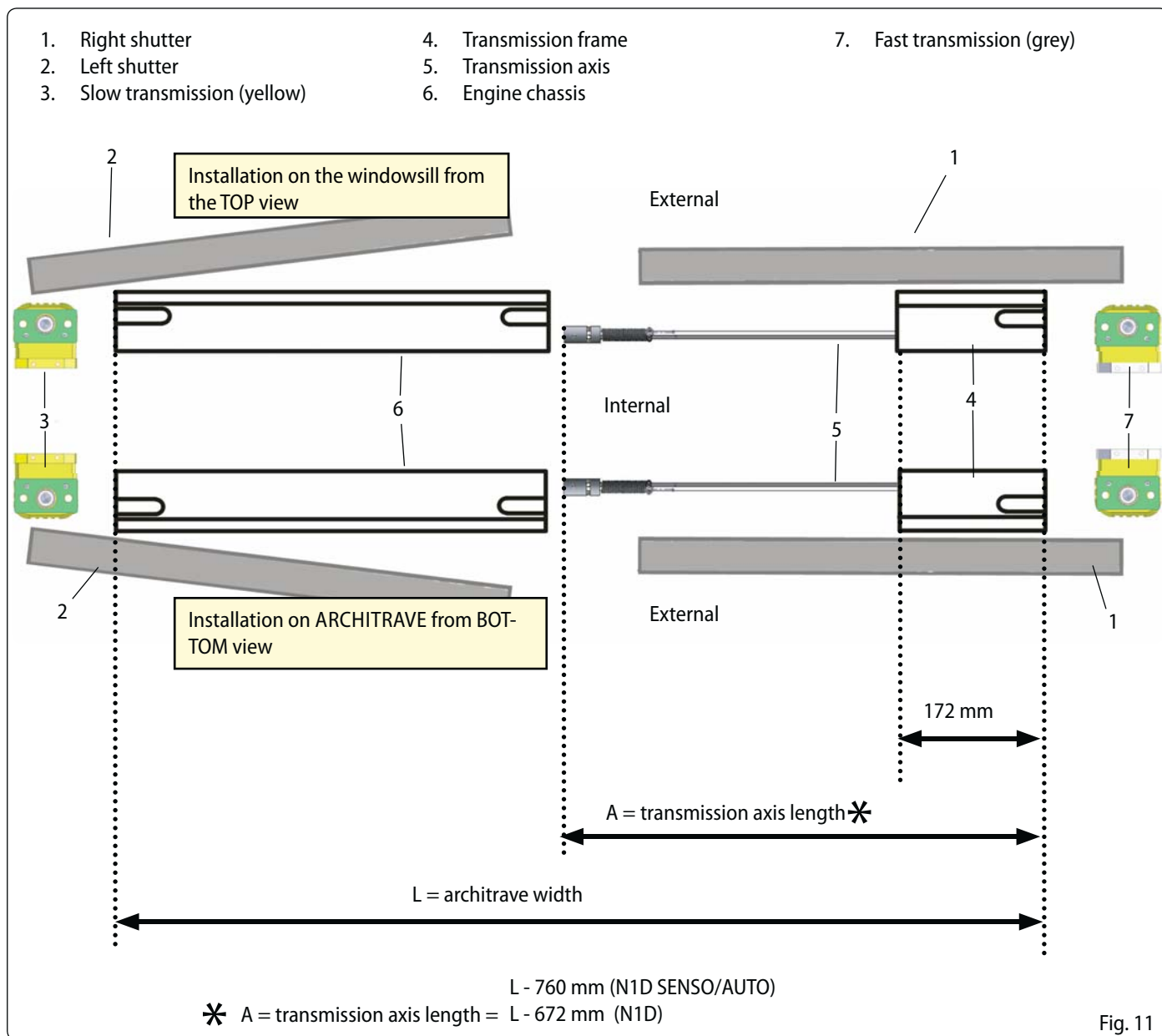


Fig. 11

6.1 Transmission axis insertion

Depending on the selected N1D model, cut the transmission axis (Fig.6 ref. 2) according to measurement A (Fig.5 ref. A), according to the following formulas:

- N1D SENSO / AUTO : $A = \text{Architrave length} - 760 \text{ mm}$
- N1D : $A = \text{Architrave length} - 672 \text{ mm}$

Eliminate burrs from the transmission axis in line with the cut made.
 Insert the transmission axis into the hexagonal profile of the engine chassis.

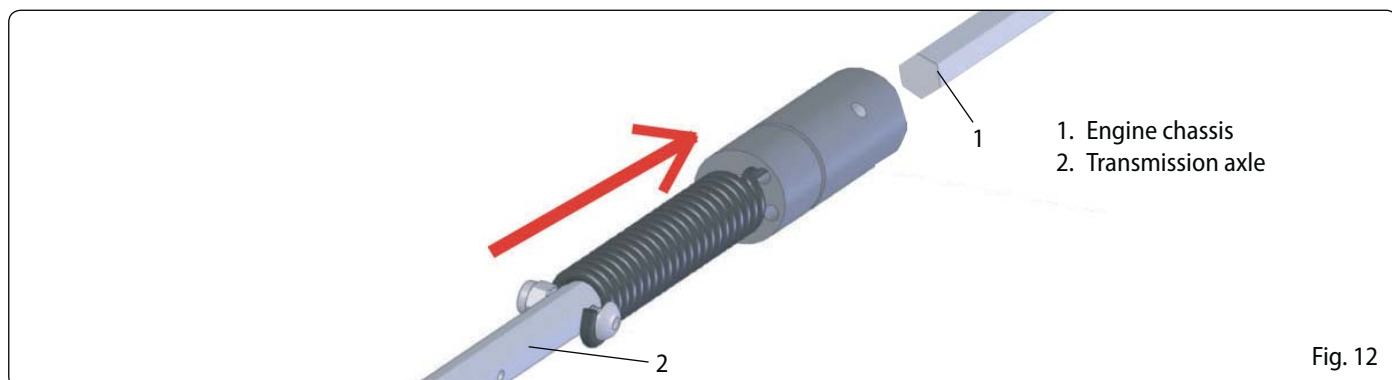


Fig. 12

6.2 Cable outlet

Only for settings 6 and 7:

- pass the cable through the specific PVC tube (see image Fig. 13).



ATTENTION: the electric cable must not be in contact with any movable part.

ATTENTION: It is essential to keep the cable fully stretched.

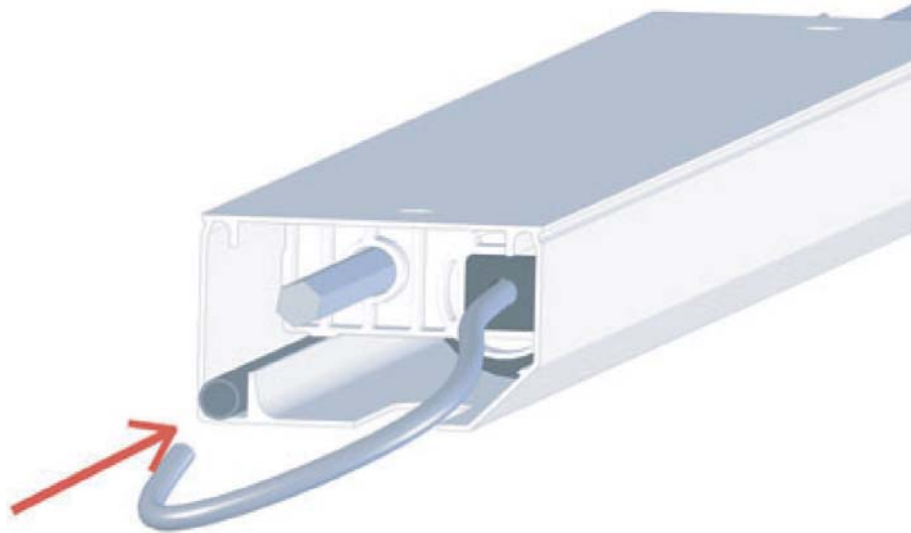


Fig. 13

6.3 Assembly

Insert the transmissions at each end, making sure that the reinforcement is mounted properly.

Insert the hexagonal transmission axis in the return slot.

Insert the axis into the engine chassis and tighten the grub screw A. (Fig. 14)

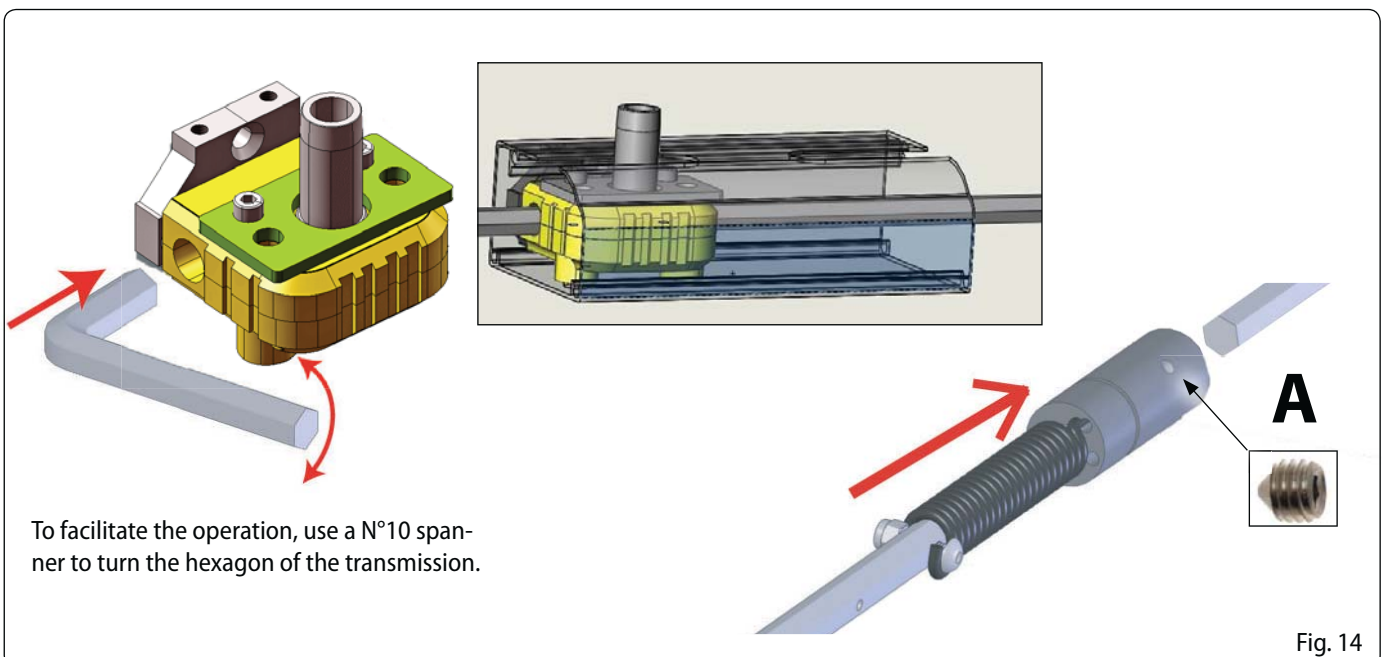


Fig. 14

6.4 Fixing holes

Assemble the pieces and place them under the architrave or on the windowsill (installation on the architrave in the figure).
 Mark the position of the holes on the frames and drill with the appropriate bit.
 Place the dowels in the holes.



ATTENTION: The quality of the fastening is essential for the device to work properly. For this the dowels must be adequate for the type of fastening material and 8x80 screws.

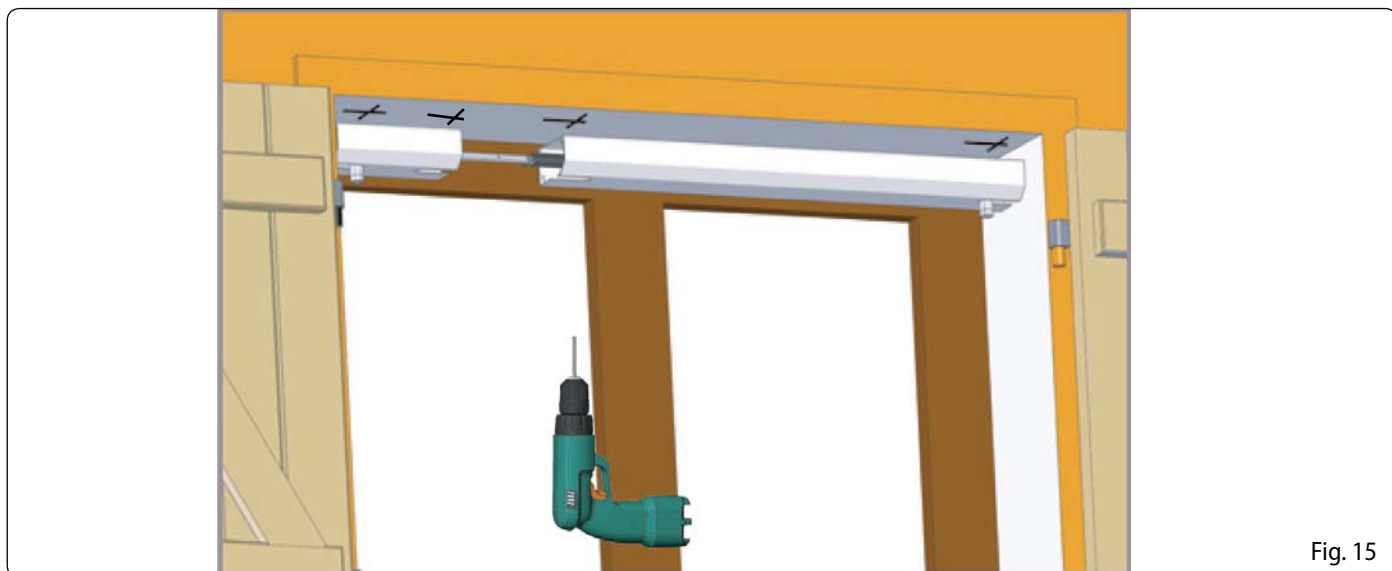


Fig. 15

6.5 Fixing the frame

Make sure that the frames are aligned.
 Use the level to check that the device is horizontal.
 Set the supplied toothed washers in place and tighten the tie rods using a T40 Torx wrench.
 Go to chapter 9

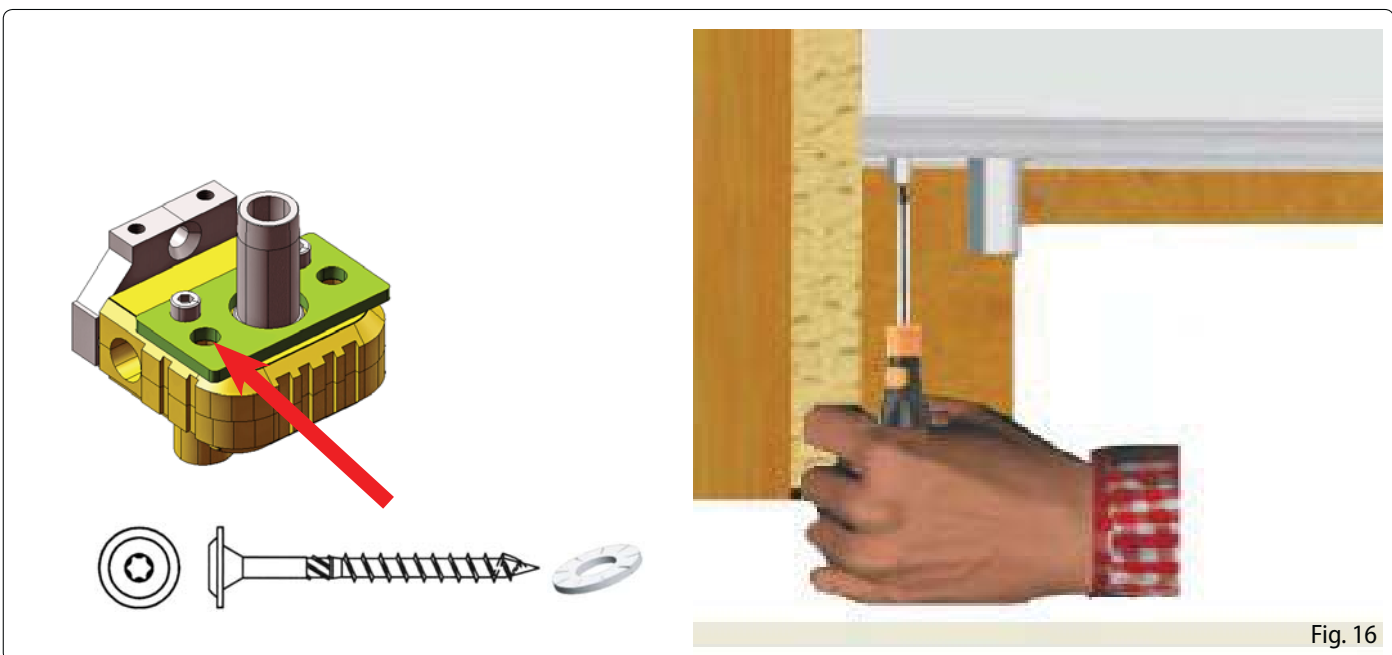
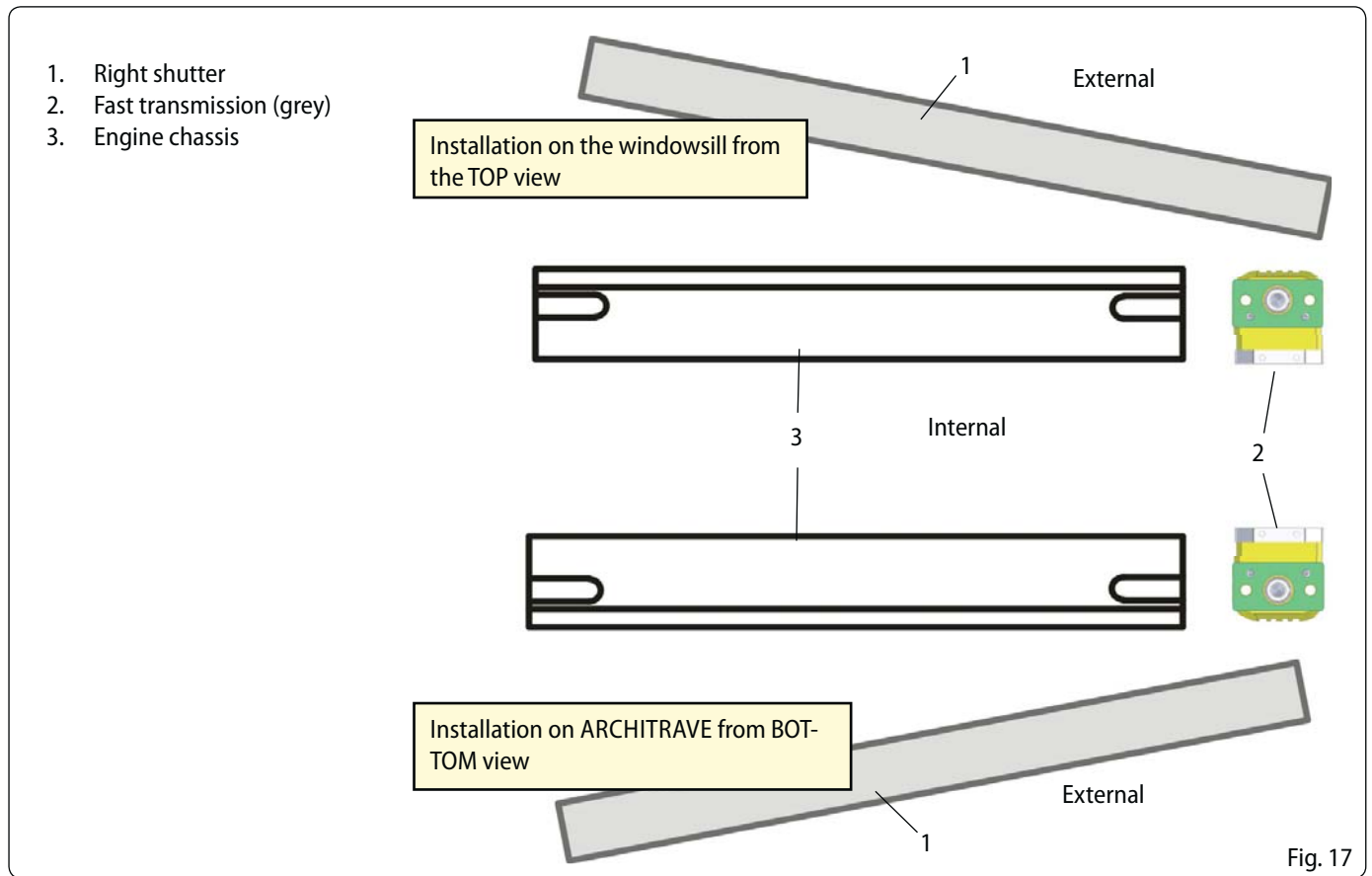
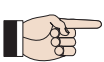


Fig. 16

Arrange the pieces as in fig. 17.



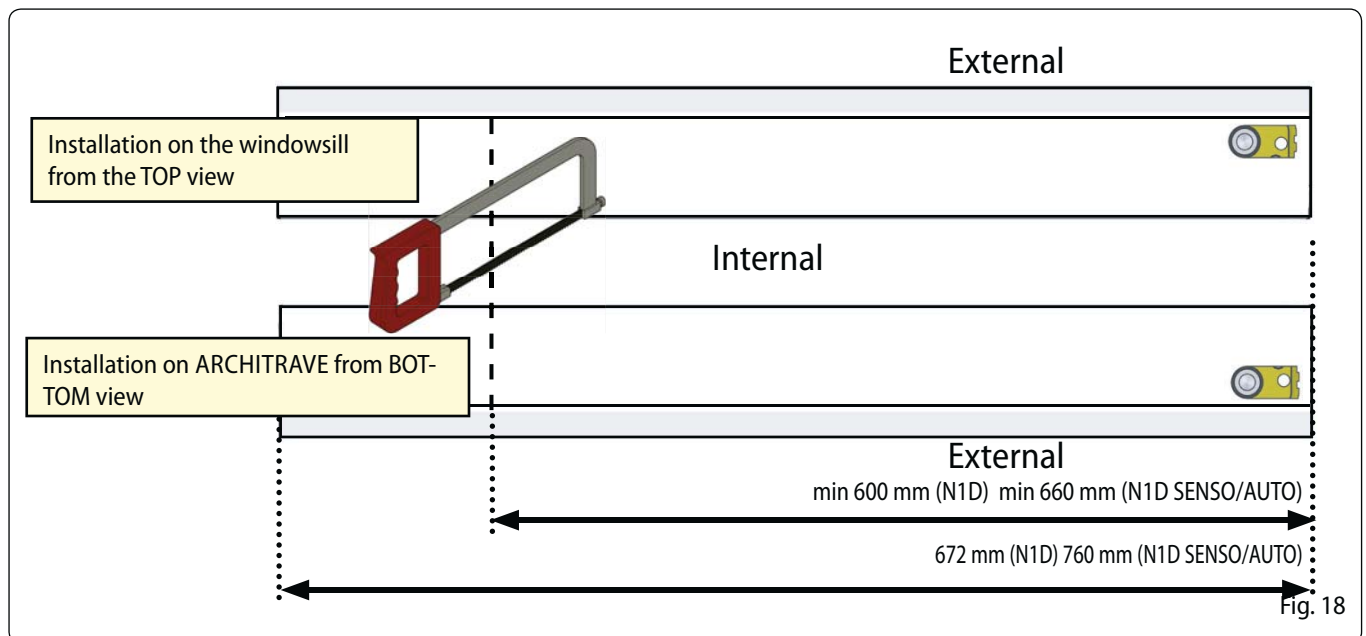
7.1 Rearrangement of frame



For windows between 600 and 672 mm wide (N1D), and between 660 and 760mm wide (N1D SENSO/AUTO), cut the frame as in fig. 18



ATTENTION: Protect the cable during this operation.



7.2 Cable outlet

Only for settings 10 and 11:

- pass the cable through the specific PVC tube (see image Fig. 19).



ATTENTION: the electric cable must not be in contact with any movable part.



ATTENTION: It is essential to keep the cable fully stretched.

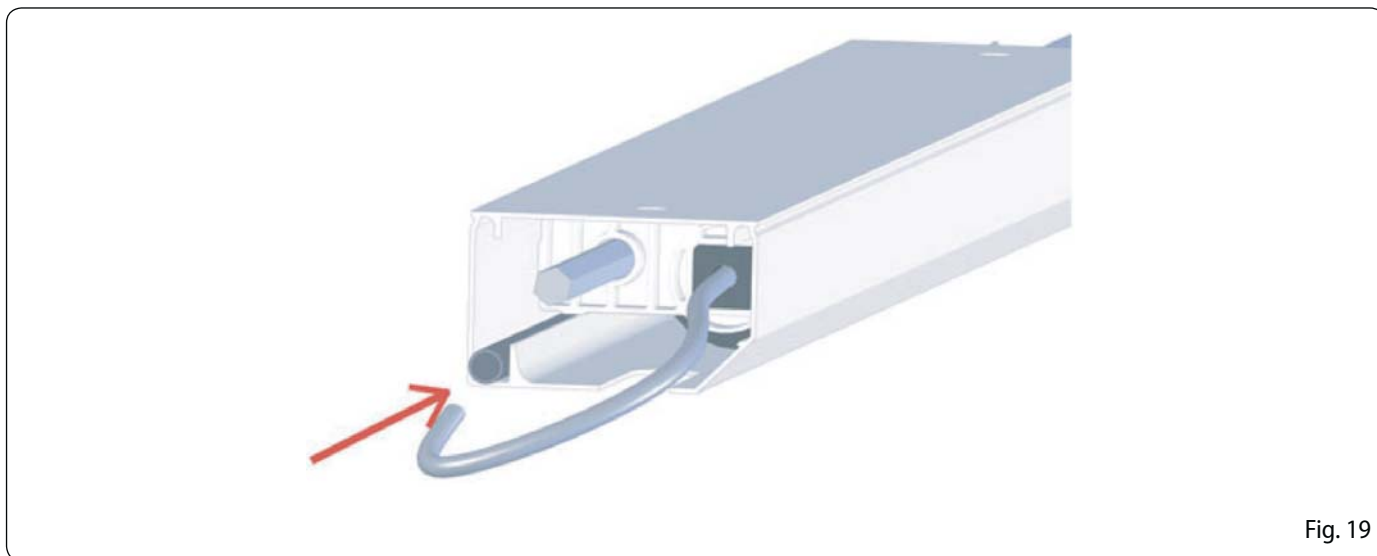


Fig. 19

7.3 Assembly

Insert the right transmission, making sure that the reinforcement is mounted properly.
Place the frame in position.

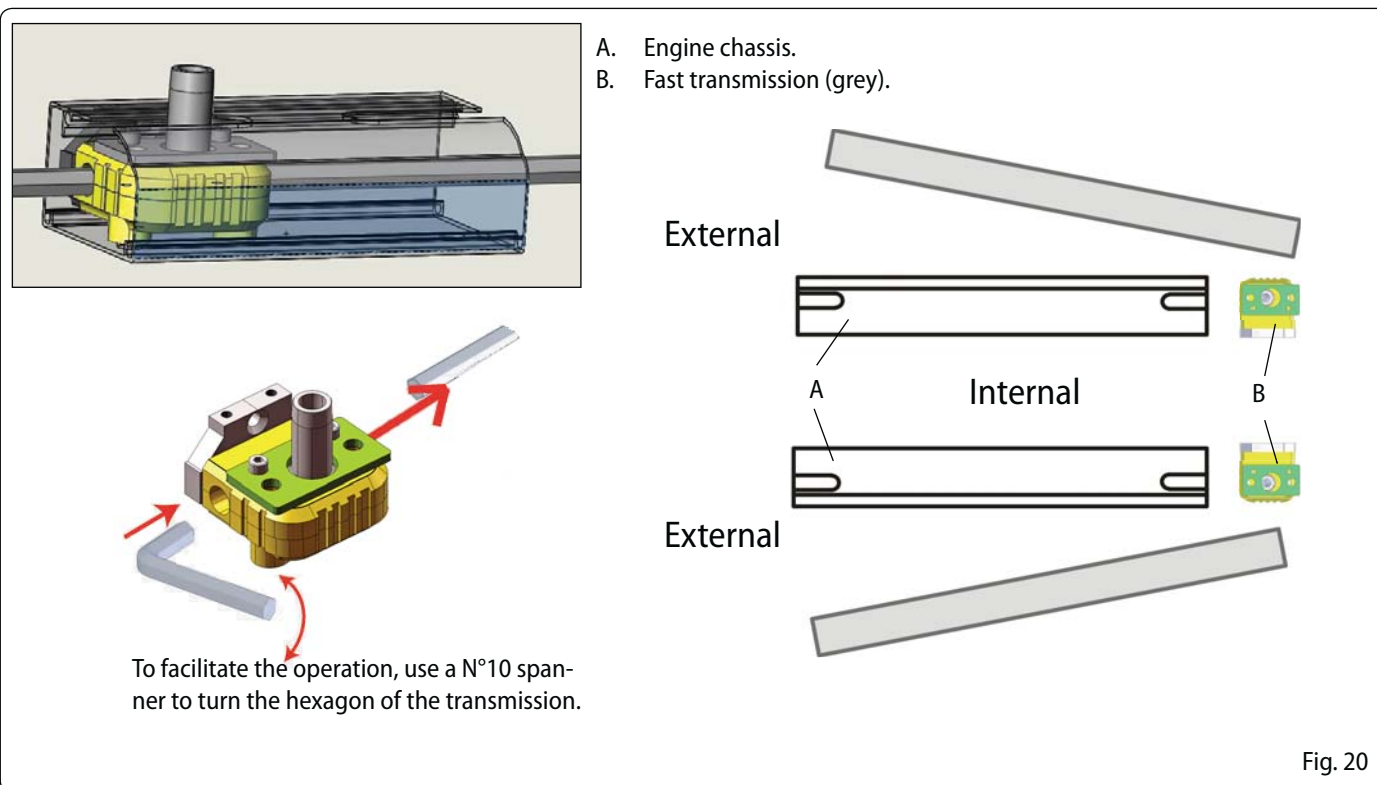


Fig. 20

7.4 Fixing holes

Assemble the pieces and place them under the architrave or on the windowsill (installation on the architrave in the figure). Mark the position of the holes on the frame and drill with the appropriate bit. Place the dowels in the holes.



ATTENTION: The quality of the fastening is essential for the device to work properly. For this the dowels must be adequate for the type of fastening material and 8x80 screws.

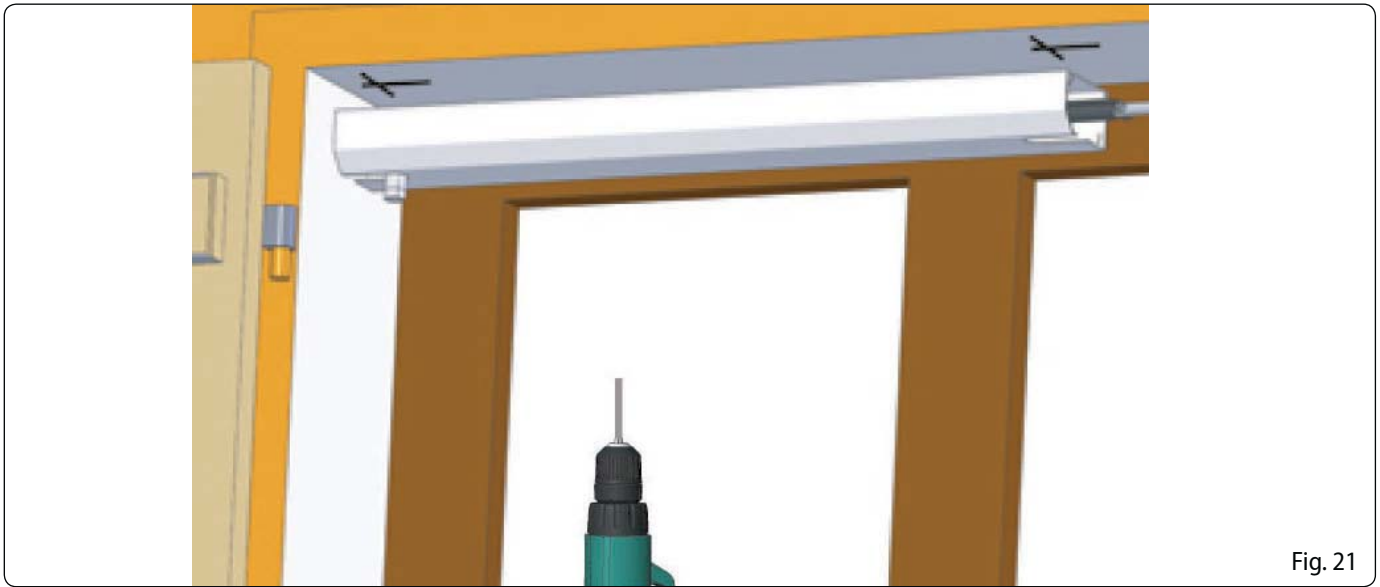


Fig. 21

7.5 Fixing the frame

Use the level to check that the device is horizontal. Set the supplied toothed washers in place and tighten the tie rods using a T40 Torx wrench. Go to chapter 9.

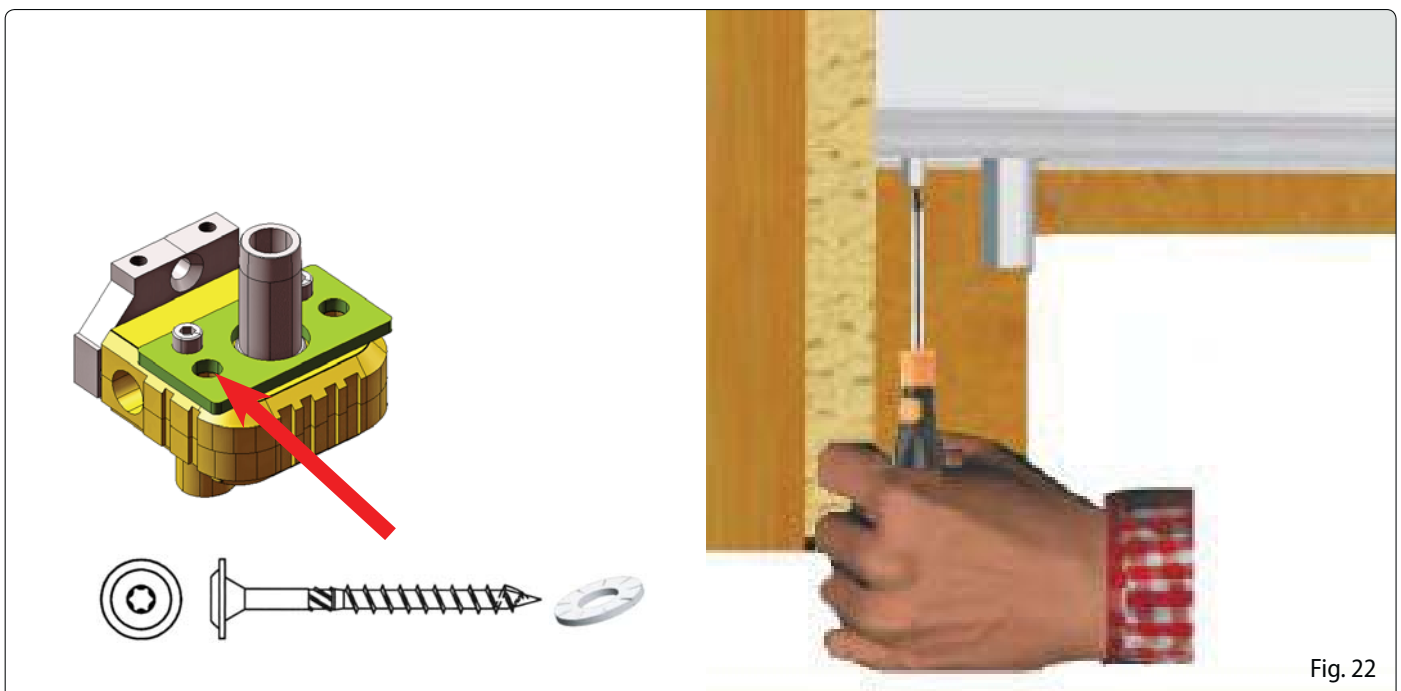
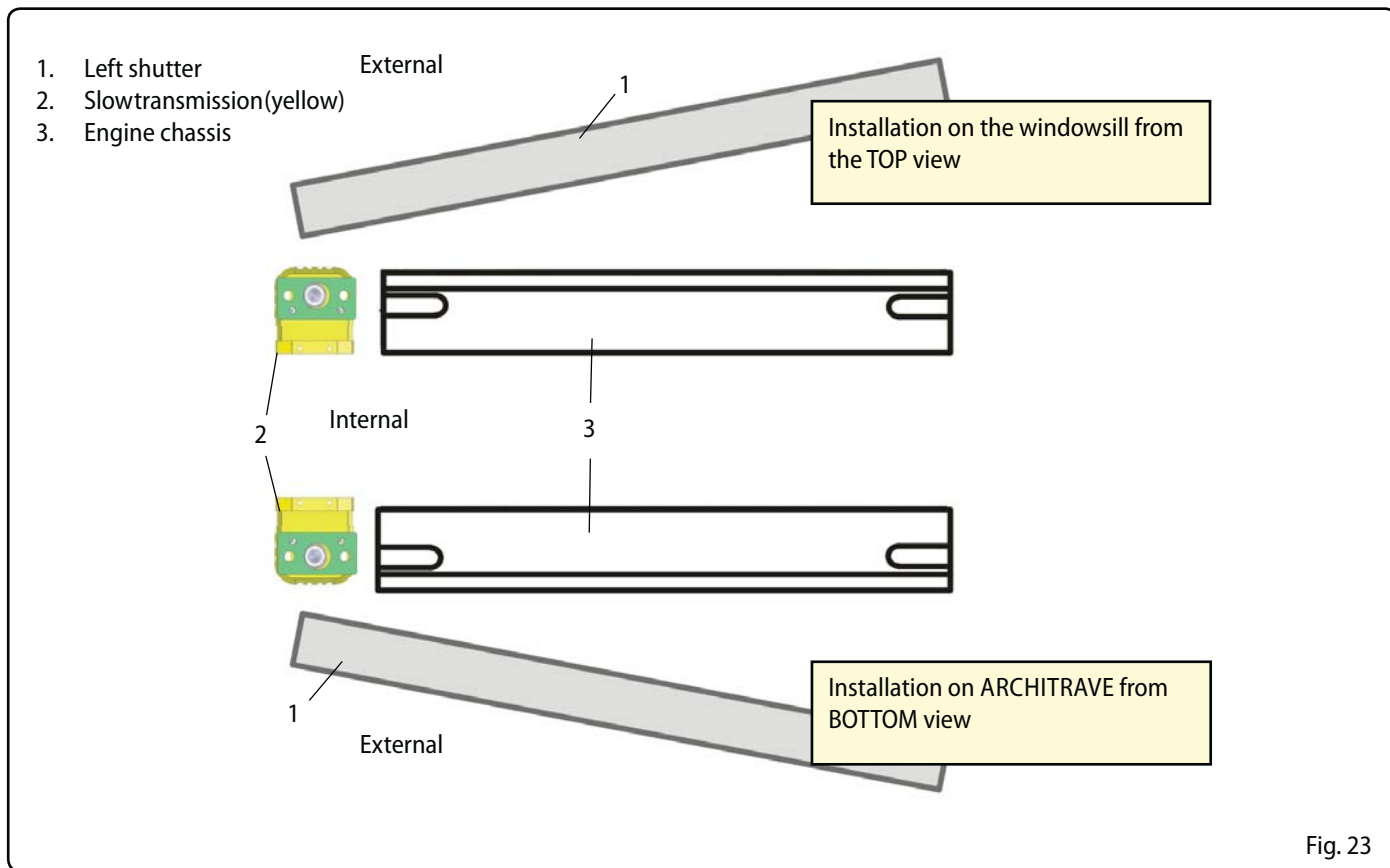
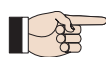


Fig. 22

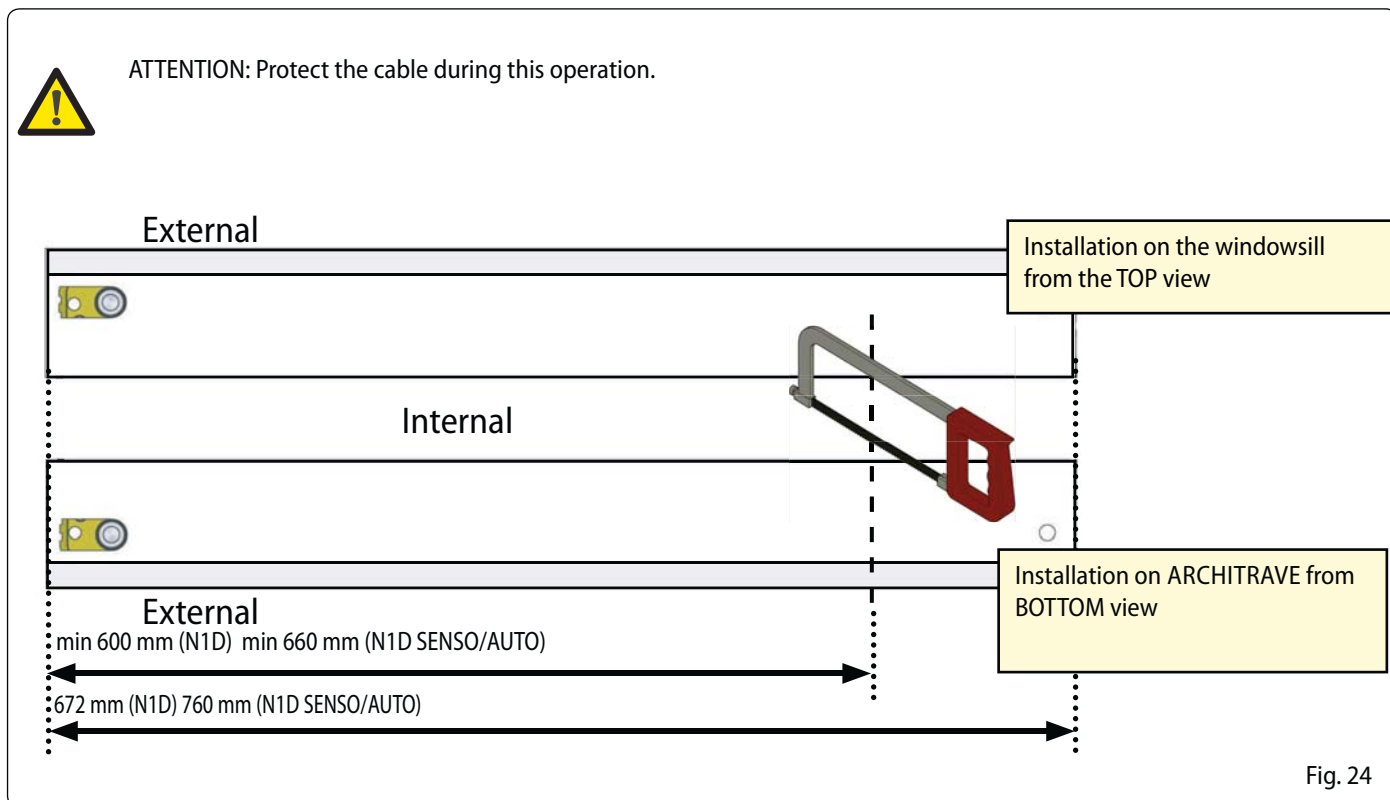
Arrange the pieces as in fig. 23.



8.1 Prerangement of frame



For windows between 600 and 672 mm wide (N1D), and between 660 and 760mm wide (N1D SENSO/AUTO), cut the frame as in fig. 24



8.2 Cable outlet

Only for settings 14 and 15:
pass the cable through the specific PVC tube (see image Fig. 25).



ATTENTION: the electric cable must not be in contact with any movable part.



ATTENTION: It is essential to keep the cable fully stretched.

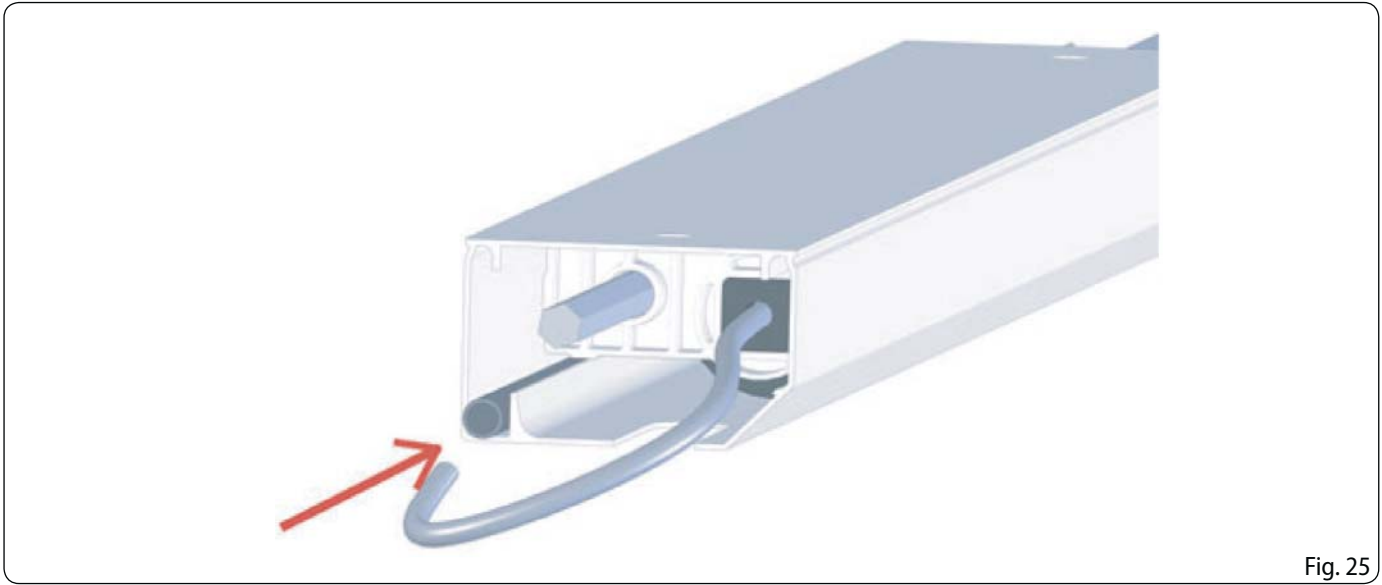


Fig. 25

8.3 Assembly

Insert the left transmission, making sure that the reinforcement is mounted properly.
Place the frame in position.

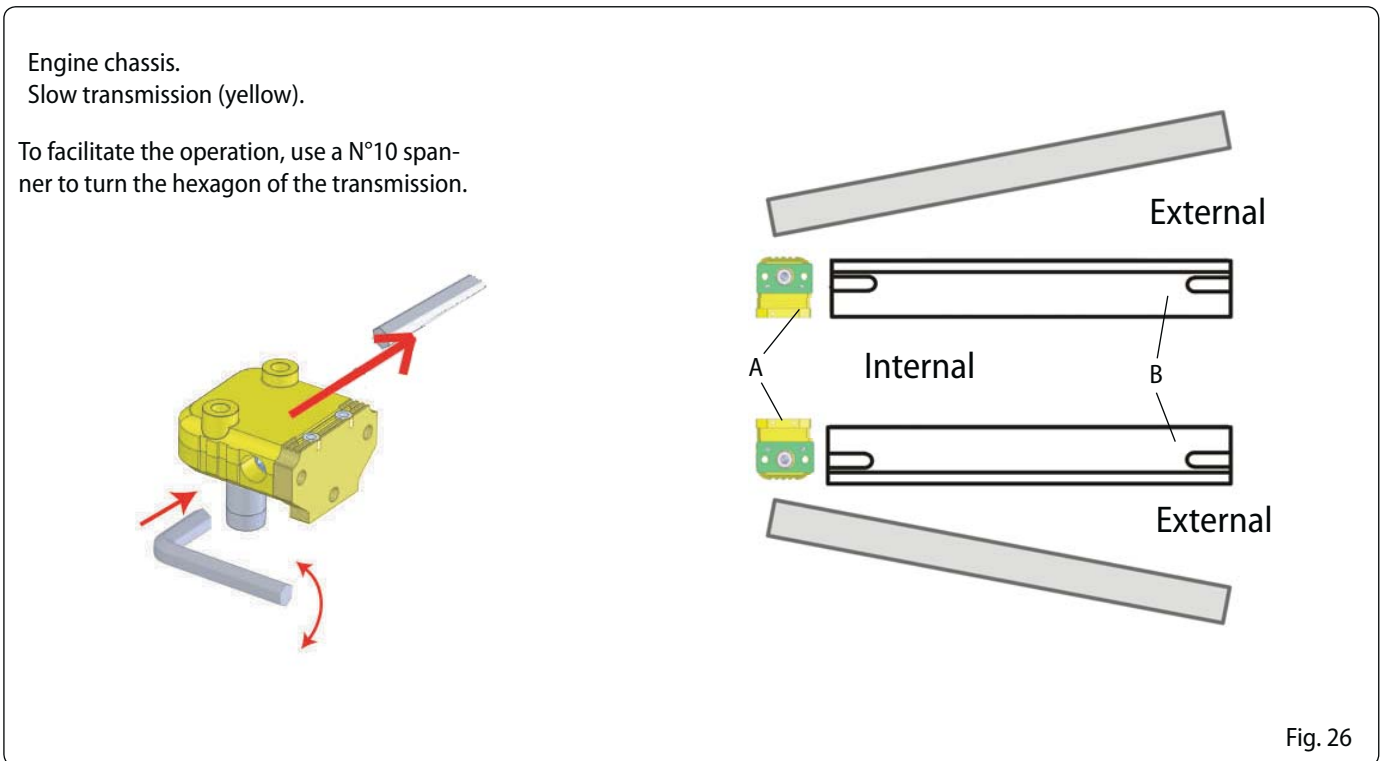


Fig. 26

8.4 Fixing holes

Assemble the pieces and place them under the architrave or on the windowsill (installation on the architrave in the figure).
 Mark the position of the holes on the frames and drill with the appropriate bit.
 Place the dowels in the holes.

ATTENTION: The quality of the fastening is essential for the device to work properly. For this the dowels must be adequate for the type of fastening material and 8x80 screws.



Fig. 27

8.5 Fixing the frame

Use the level to check that the device is horizontal.
 Set the supplied toothed washers in place and tighten the tie rods using a T40 Torx wrench.
 Go to chapter 9.

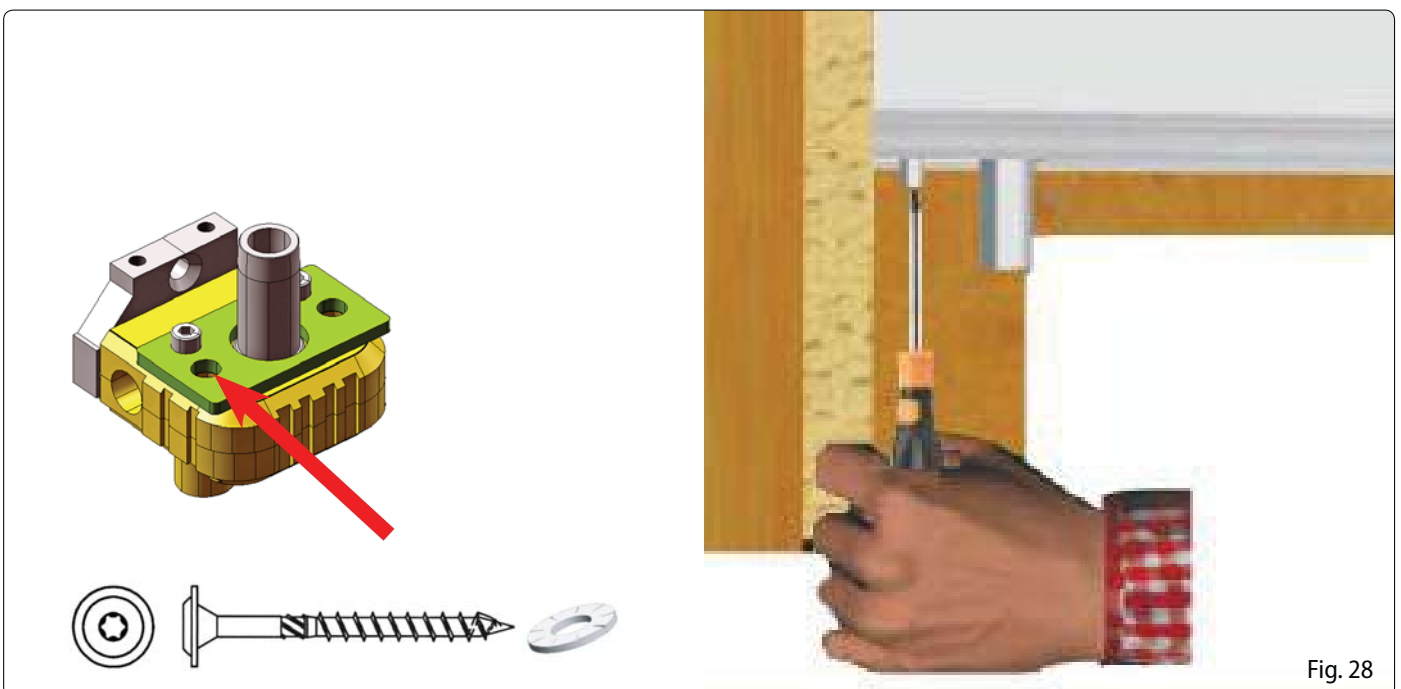


Fig. 28

9 POSITIONING THE CABINET

9.1 Passage of the cable

Pass the cable through the cable gland.
 Insert the cable gland in the specific slot in the frame at the cable outlet.

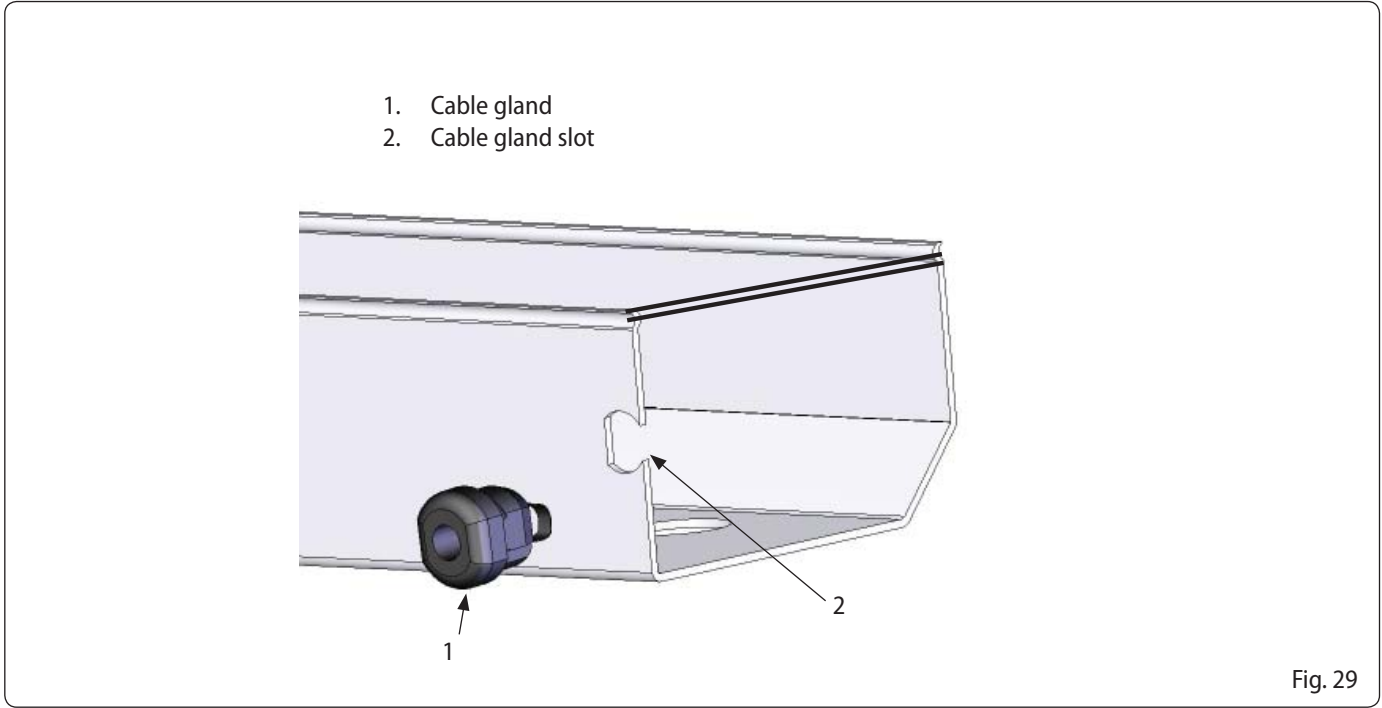


Fig. 29

9.2 Installing the cabinet

- 1) Position the cabinet and the side covers on the frame.
- 2) Push them up until they click.

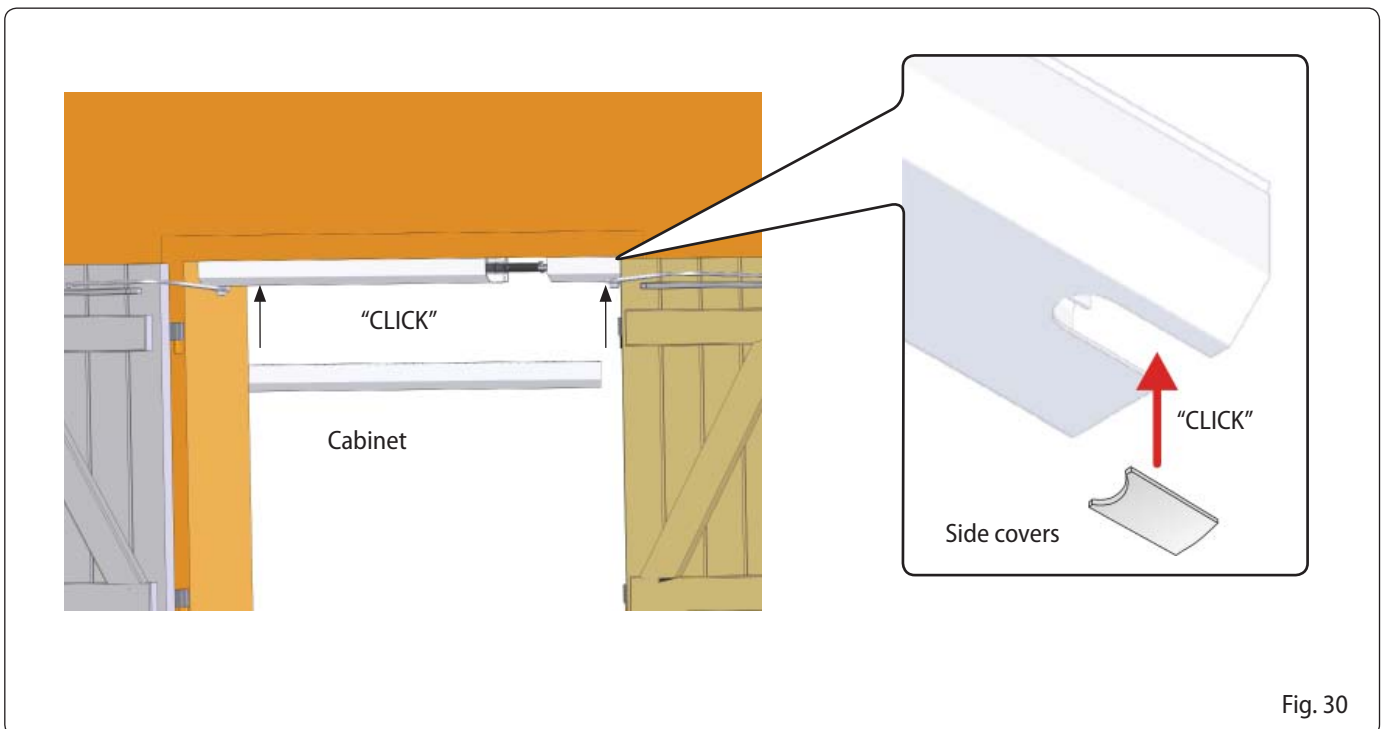


Fig. 30

10 POSITIONING THE ARMS

10.1 Installation of the arms

Open both leaves (the leaves must open to the same degree).

Insert the spring washer (Fig. 31 ref. F) into the screw (fig. 31 ref. G), while paying attention to the direction of insertion described in the figure.

Insert the drive ring (Fig. 31 ref.E) into the arm.

Insert the ring/arm assembly into the transmission shaft of the gearbox and tighten screw G so that the arm can rotate.

Insert the safety screw into the shaft (Fig. 31 ref. A) and secure it to the latter with the M6 nut (Fig. 31 ref. C).

If present, perform the same operation on the other leaf.

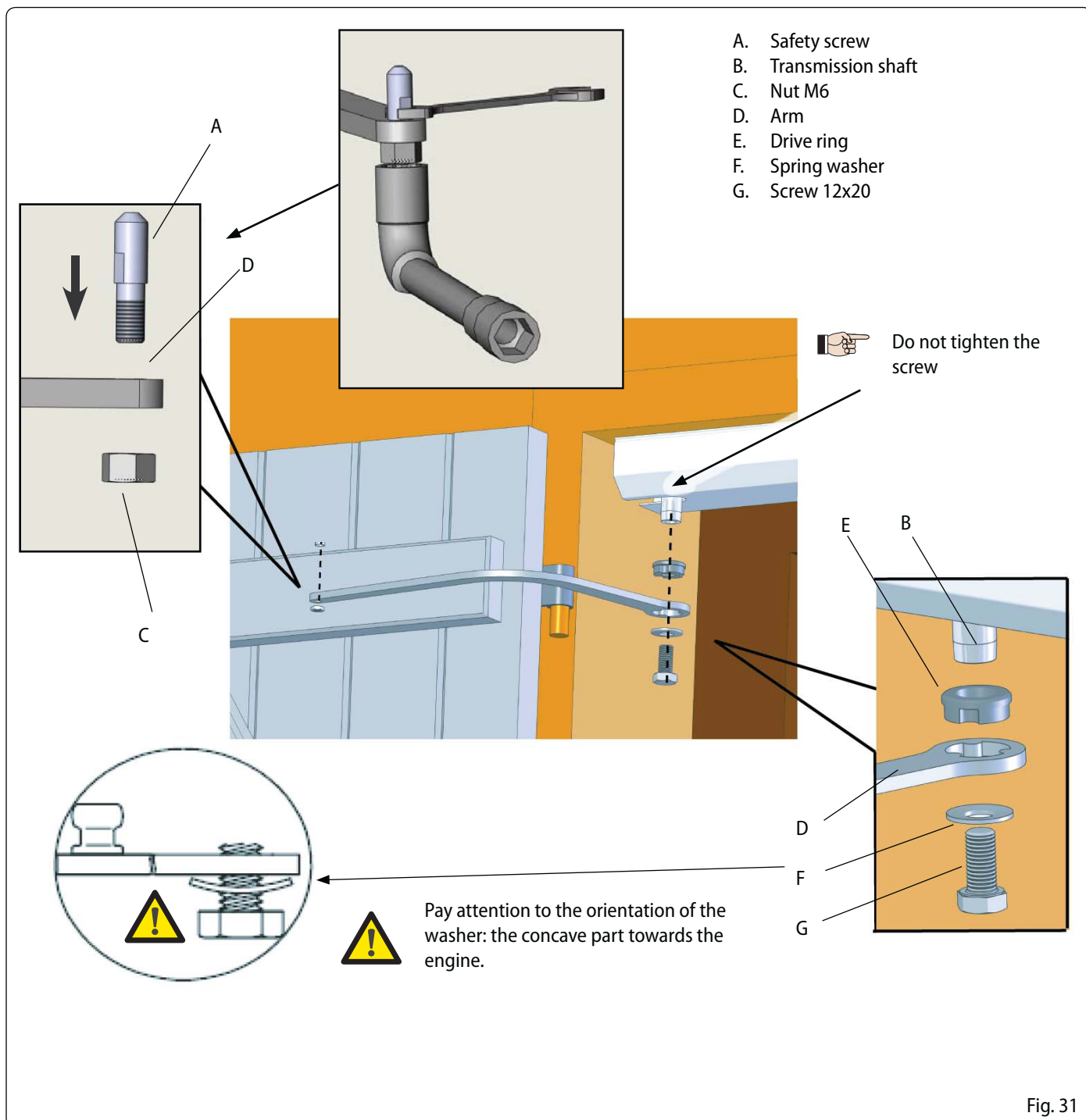
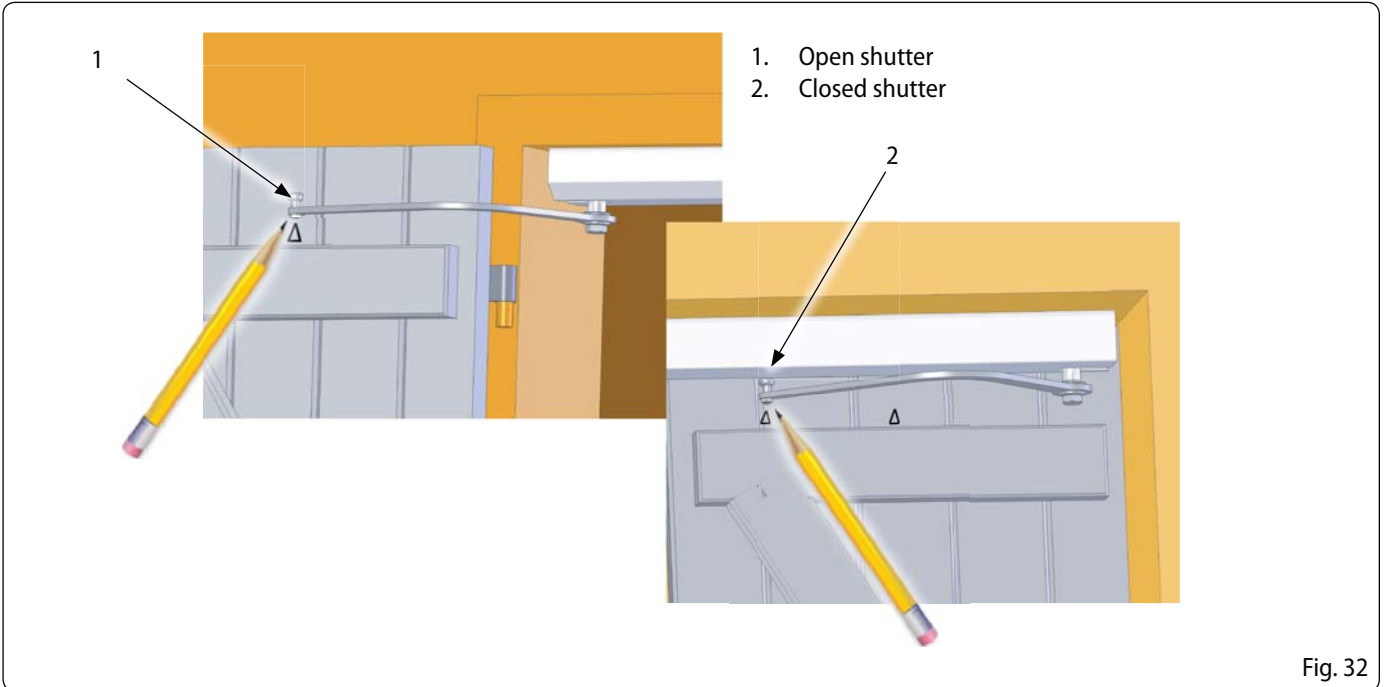


Fig. 31

10.2 Determination of arm stroke

Mark the position on the shutter of the arm spacer:
 Open shutter
 Closed shutter



10.3 Installing the guide

Insert the bush in the guide and position it on the open shutter.

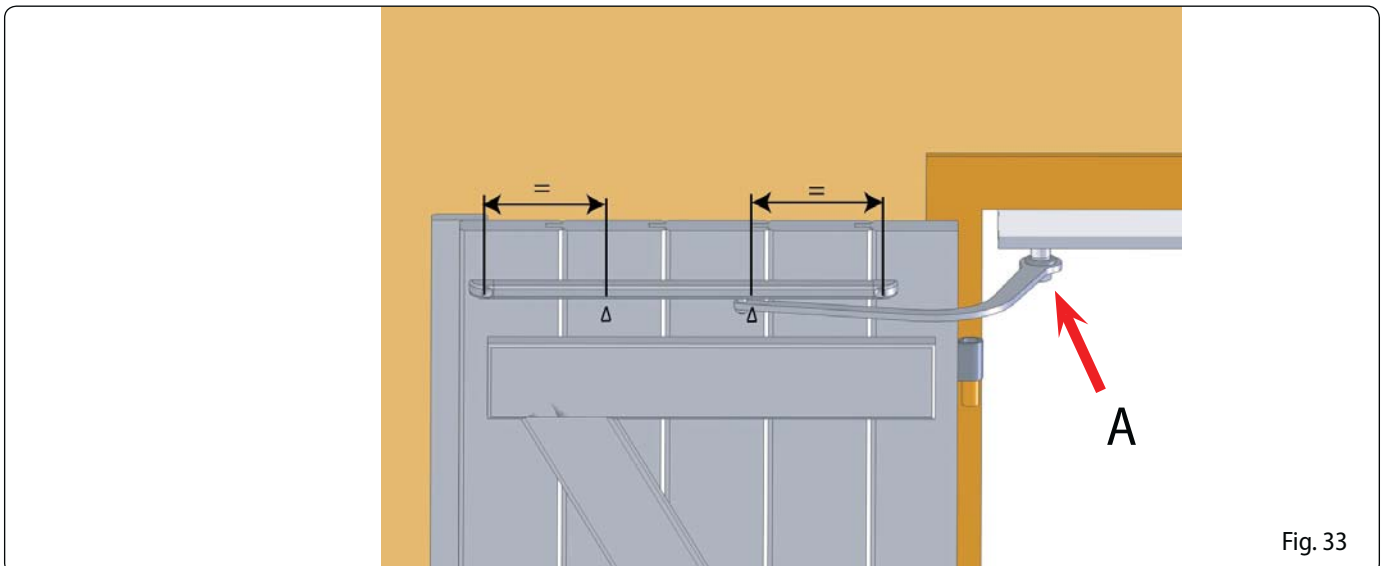
Centre the guide on the shutter and level it.

Insert the caps into the guides and secure them to the shutter with the 5x35 screws.

After commissioning (see chapter 11), electrically control an opening of the shutters and let the engine run for a few seconds with the shutters open.

Make sure that the shutters are well set on the façade.

Tightly secure the 12x20 screws of the arms (Fig.33 ref. A).



11 COMMISSIONING


11.1 Electric wiring mod. N1D KIT- N1D AUTO KIT

The N1D model is controlled by a button and operates with the dead man logic (the engine moves in the selected direction as long as the button is pressed).

The N1D AUTO model is controlled by a switch and stops motion automatically as soon as it encounters an obstacle or the mechanical stop when opening or closing.

Connect the yellow green cable to earth.
Connect the cables to the mains power supply as shown in the figure.

Do not connect N1D KIT or N1D AUTO KIT in parallel.

 Check that the button is wired correctly based on the installation made. Pressing the opening key should open the shutters. If not, swap the two engine phases (brown and black wires).

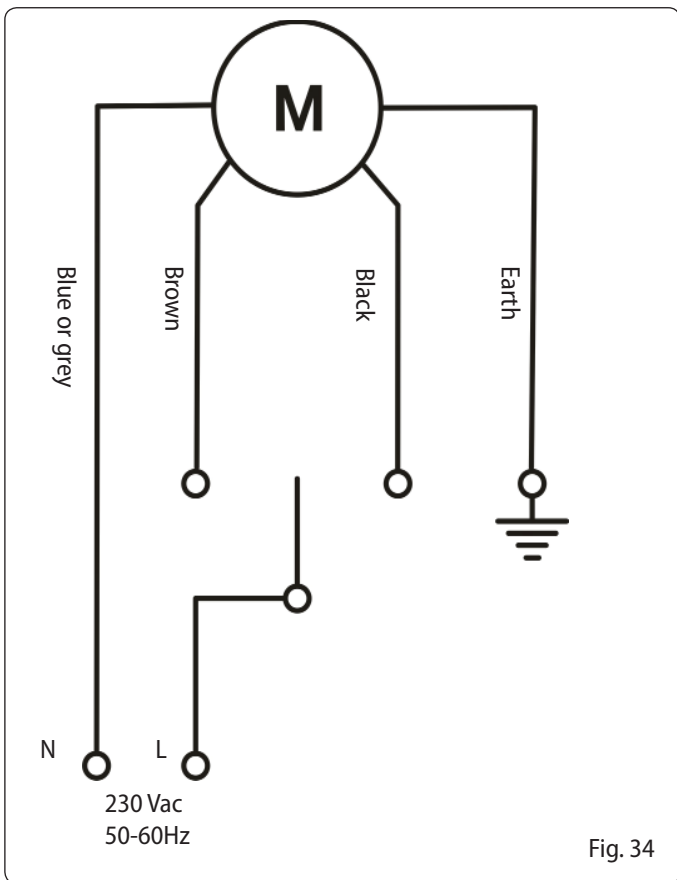


Fig. 34

11.2 OPEN/CLOSE selector for mod. N1D KIT and N1D AUTO KIT

The figure displays the dimensions and electrical connections of the OPEN/CLOSE selector of mod. N1D and N1D AUTO.

Do not connect N1D KIT or N1D AUTO KIT in parallel.

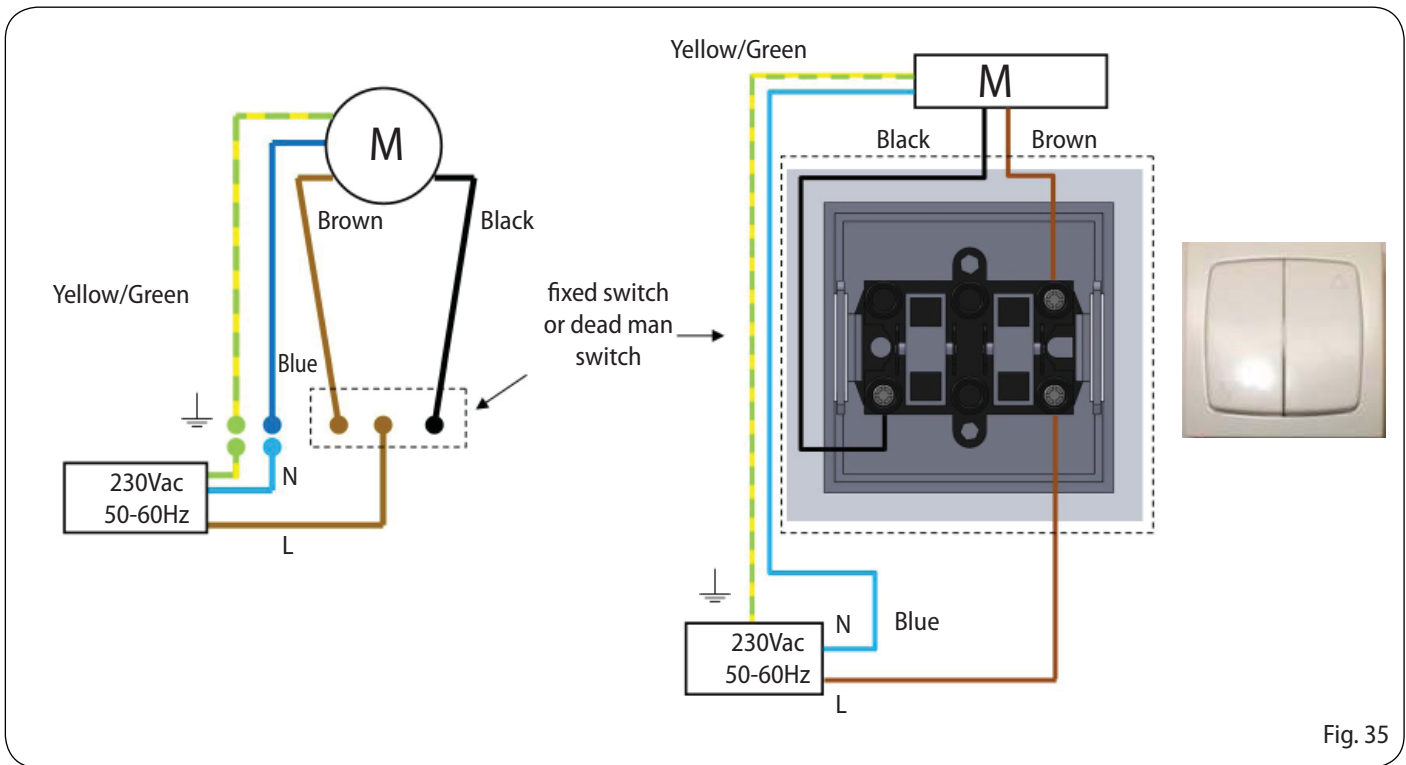


Fig. 35

11.3 Electric wiring mod. N1D SENSO KIT

The N1D SENSO can be either remote controlled or controlled by a step logic button and automatically inverts the motion as soon as it encounters an obstacle.

Connect the yellow green cable to earth.
Connect the brown and blue (or grey) cables to 230V.

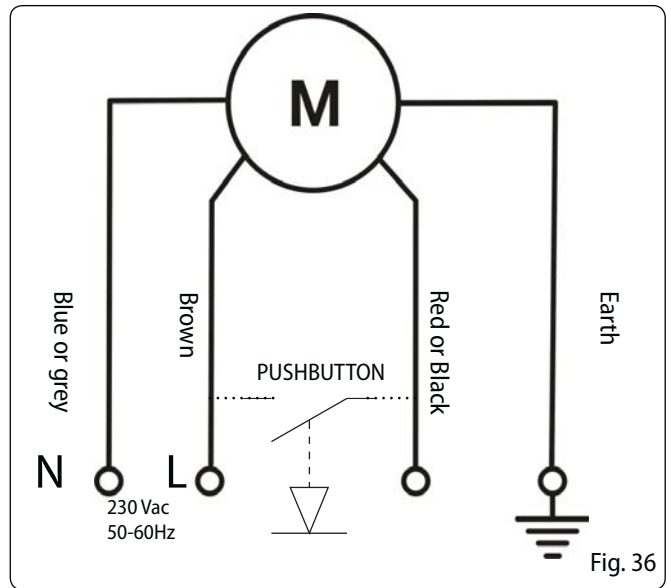


Fig. 36

AUTOMATION COMMANDED ONLY BY REMOTE CONTROL: If you wish to perform this type of configuration, you must connect the blue wire and the brown wire of the engine to the mains power supply and the yellow-green wire to earth. The RED or BLACK wire must not be connected.

AUTOMATION COMMANDED BOTH BY REMOTE CONTROL AND BY PUSHBUTTON: If you wish to use this type of configuration, connect the engine according to the diagram in figure 36.

The button has step logic: every time the button is pressed a pulse is sent to the engine (EXAMPLE: FIRST OPEN PULSE-SECOND STOP PULSE-THIRD CLOSING PULSE-etc.). After an opening or closing command, the engine is active up to the limit switch.

11.4 Remote Control mod. N1D SENSO KIT

Every time the open or close button is pressed on the remote control, it commands a complete movement. Press the STOP pushbutton to stop the manoeuvre.

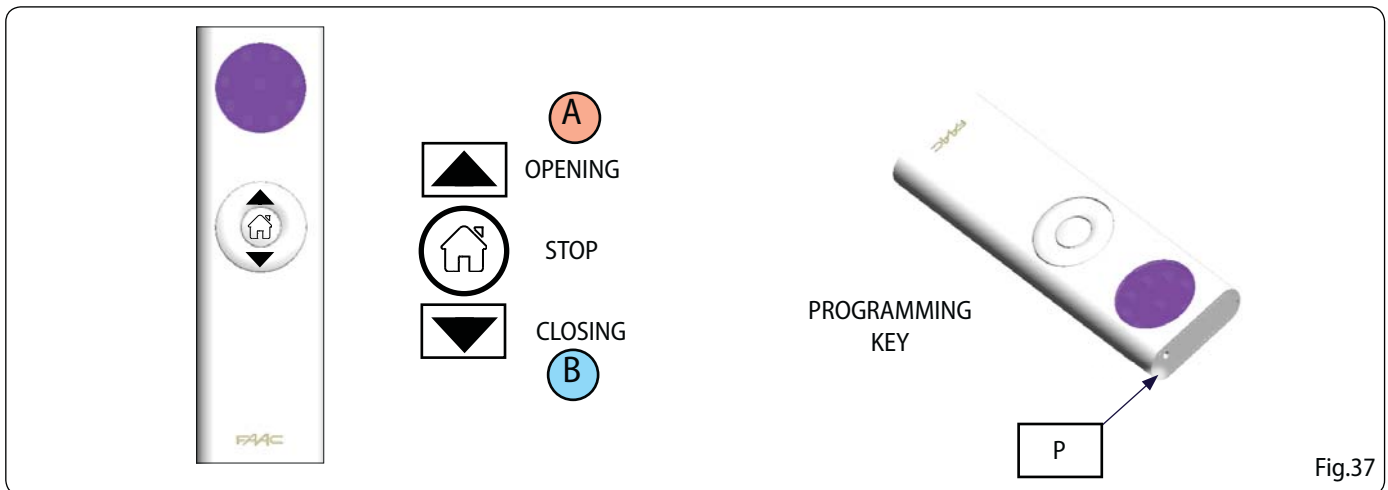


Fig.37

11.5 Storing the first remote control mod. N1D SENSO KIT

The remote control inside the KIT is already stored inside the engine. This procedure, therefore, does not need to be performed.

- 1) Power the engine.
- 2) After a few seconds, the engine performs a brief movement in both directions to indicate the absence of stored remote controls.
- 3) Press the programming key "P" for 2 seconds within 10 seconds and then the "STOP" key (see the figure).
- 4) The engine performs 2 brief movements in both directions to indicate that the remote control has been stored.

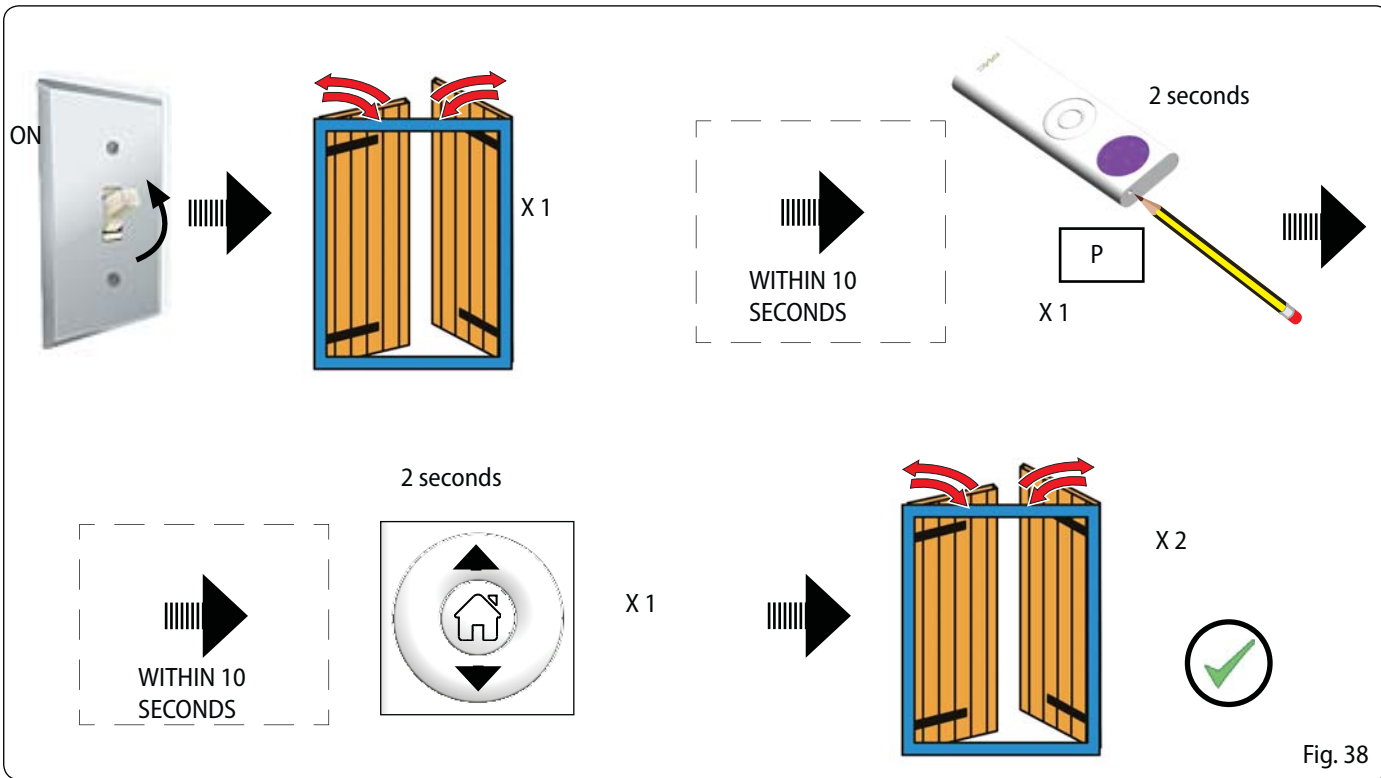


Fig. 38

11.6 Learning the opening and closing limit switch points (SET-UP) mod. N1D SENSOKIT

If the SET-UP has not been completed, the engine is actuated via dean man operation (pressed button)

Before completing the SET-UP, the automation could work in reverse mode (e.g. the shutter closes when the opening key is pressed). Once the set-up is completed, the position between the opening or closing key and the correct movement will be achieved automatically.

11.6.1 AUTOMATIC learning of the opening and closing limit switch points (SET-UP) mod. N1D SENSOKIT

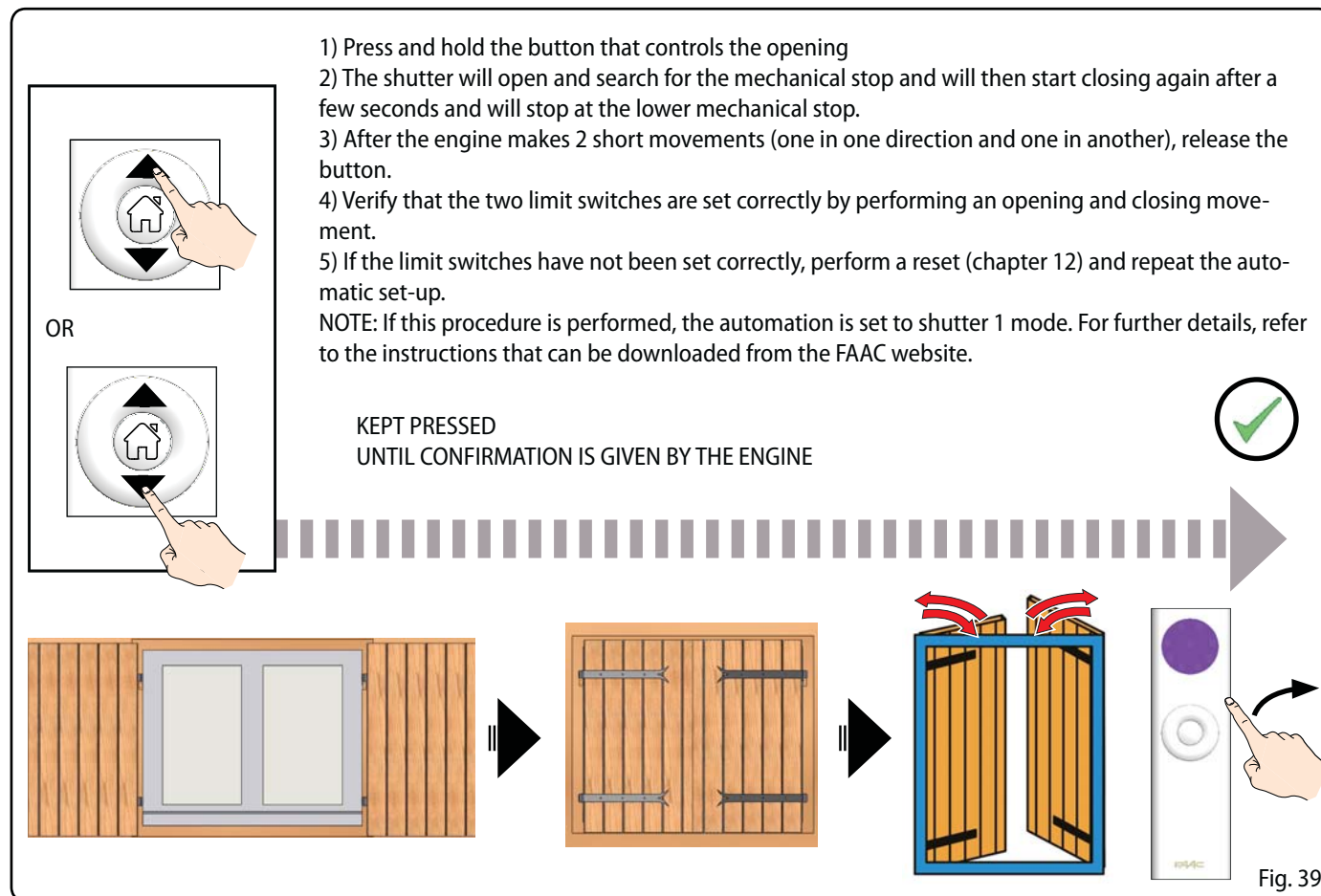
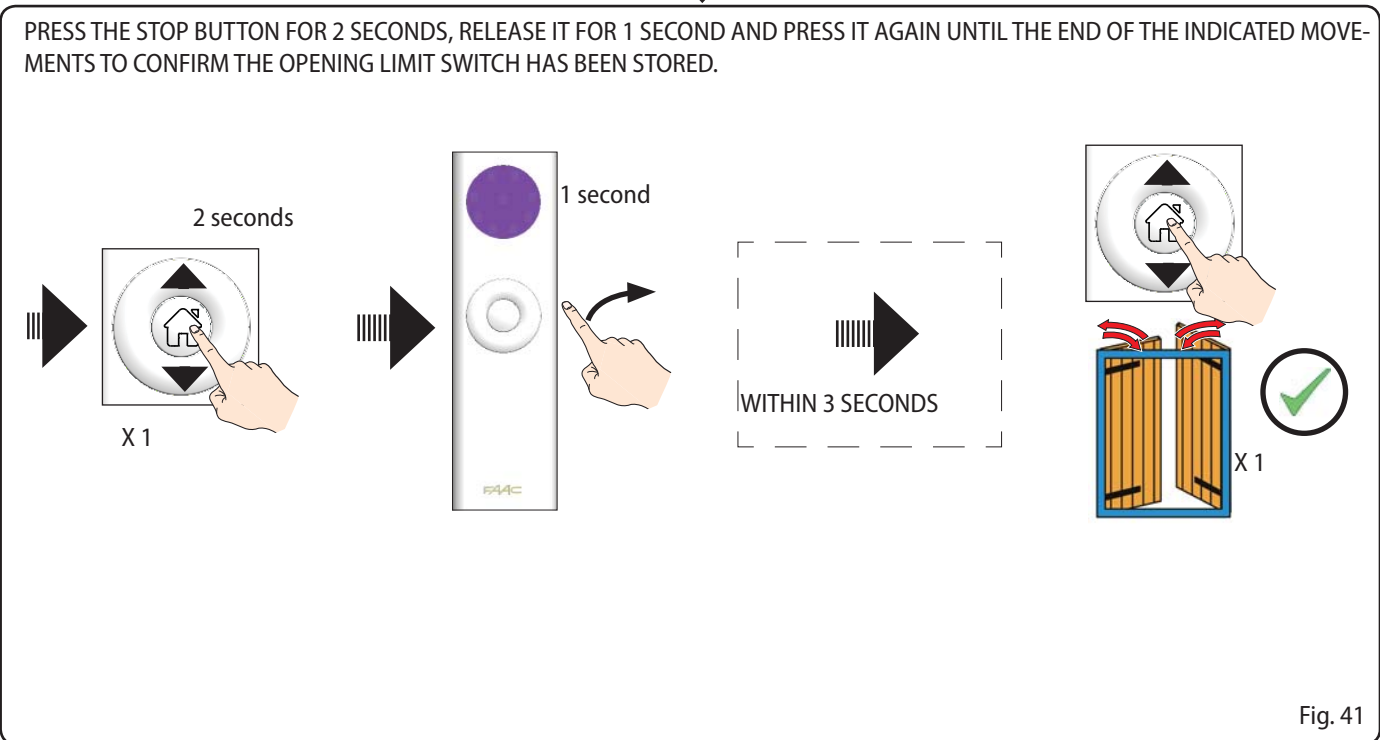


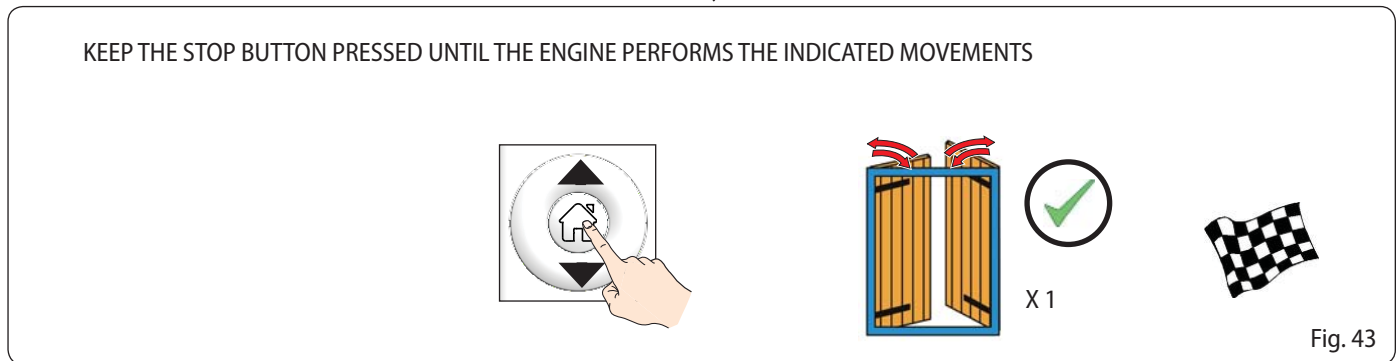
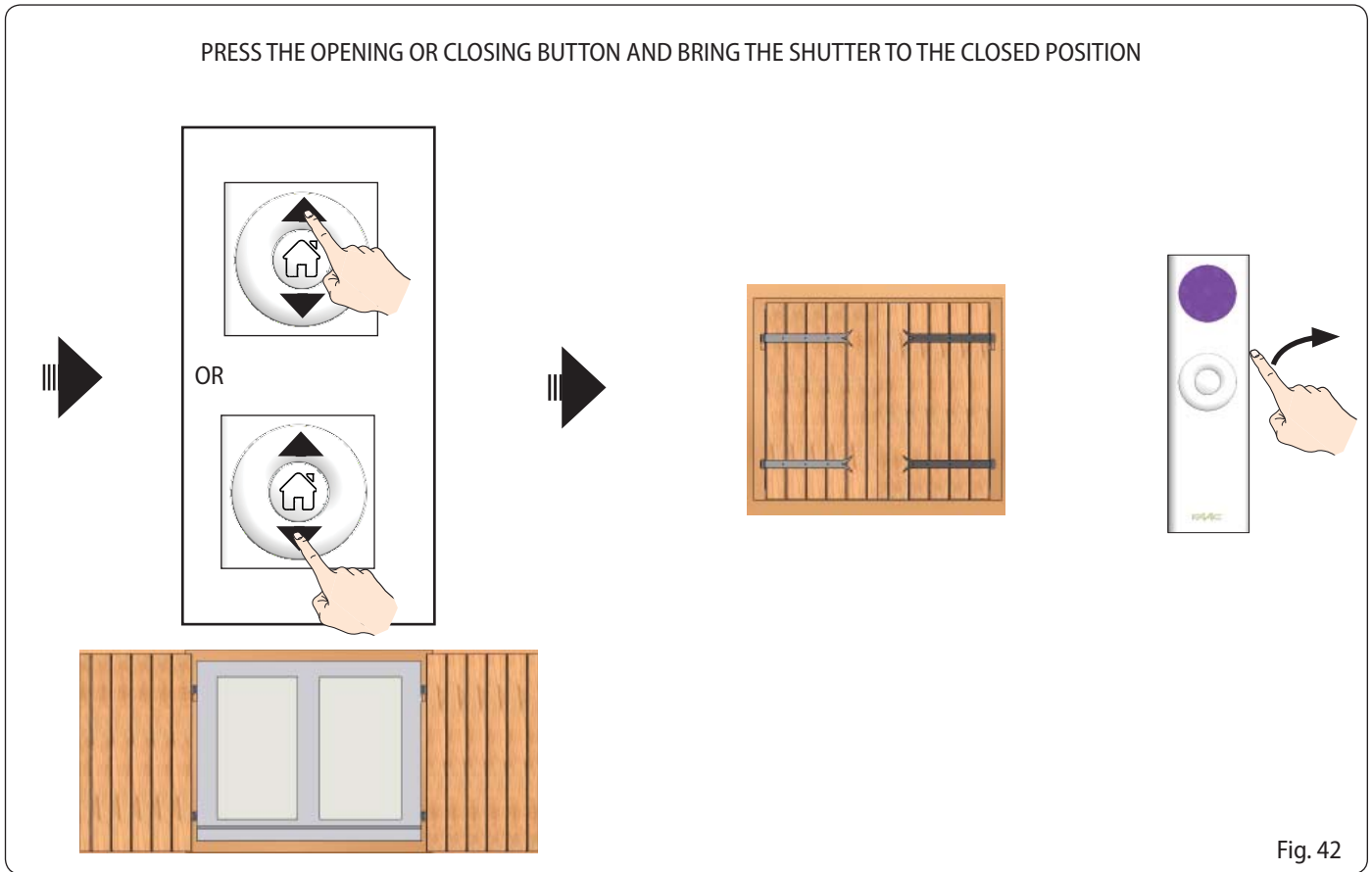
Fig. 39

11.6.2 MANUAL learning of the opening and closing limit switch points (SET-UP) mod. N1D SENSO KIT

- 1) Press and hold the opening or closing button until the shutter reaches the open position and then release the button.
- 2) Press the stop button for 2 seconds, release it, and hold it down again until the engine performs a brief movement in both directions to verify that the opening limit switch is set correctly.
- 3) Press and hold the opening or closing button until the shutter reaches the closed position and then release the button.
- 4) Press the stop button until the engine performs a brief movement in both directions.
- 5) Verify that the positions of the limit switches are correct. If the limit switches have not been set correctly, perform a reset switch (chap. 12) and repeat the set-up procedure.

NOTE: If this procedure is performed, the automation is set to shutter 3 mode. For further details, refer to the instructions that can be downloaded from the FAAC website.

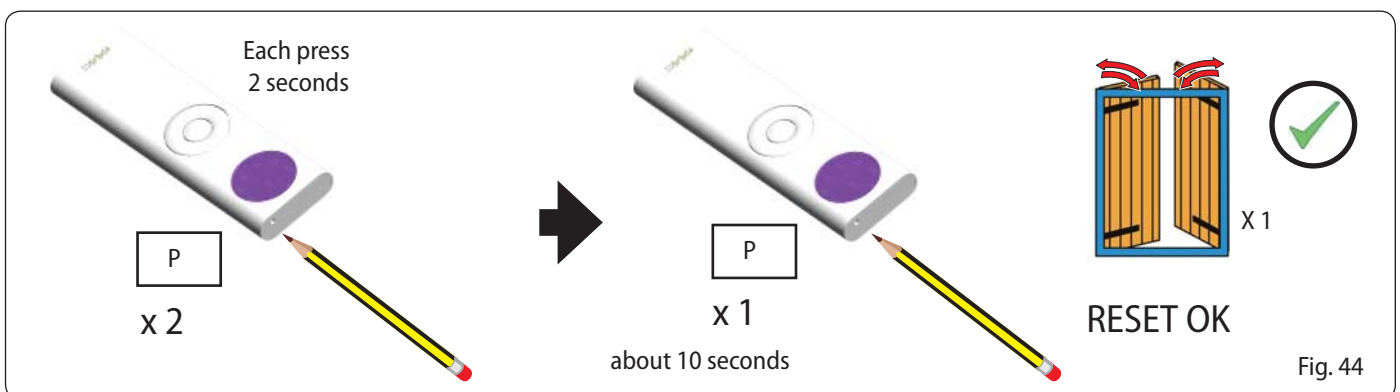




12 RESETTING THE STORED LIMIT SWITCH POINTS mod. N1D SENSO KIT

With the following procedure the previously set limit switch points are deleted from the memory. The stored remote controls are kept.

- 1) Press the programming button twice for 2 seconds.
- 2) Press the programming key "P" again for 2 seconds until the engine performs a brief movement in both directions, thereby confirming that the deletion was successful.



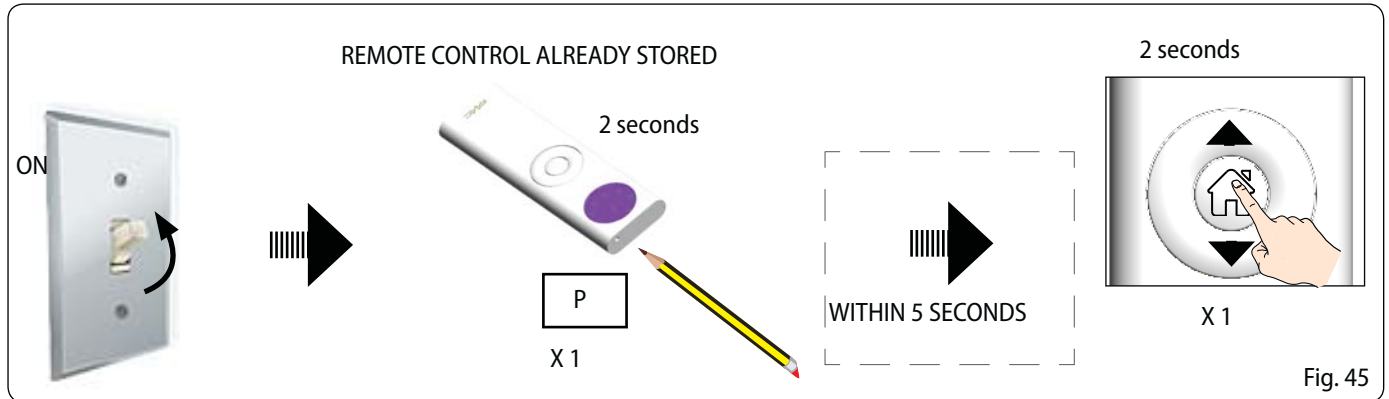
13 STORING ADDITIONAL REMOTE CONTROLS mod. N1D SENSO KIT

Power the engine.

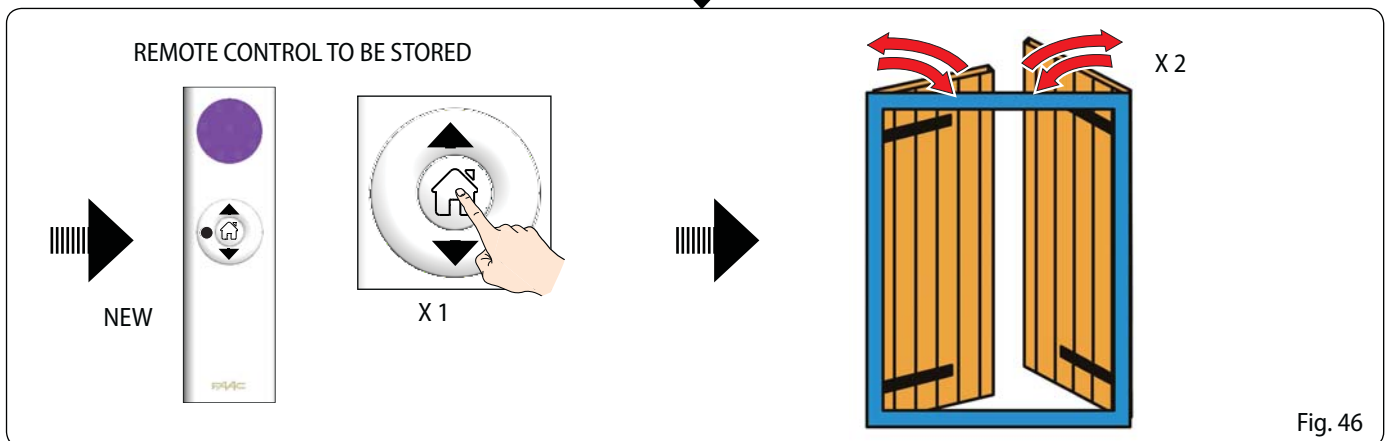
Using an already stored remote control, press the PROGRAMMING key for 2 seconds and, within 5 seconds, press the STOP key for 2 seconds.

Within 5 seconds, press STOP on the remote control to be stored.

To confirm that the remote control has been stored, the engine must perform two short movements in both directions.



Within 5 seconds

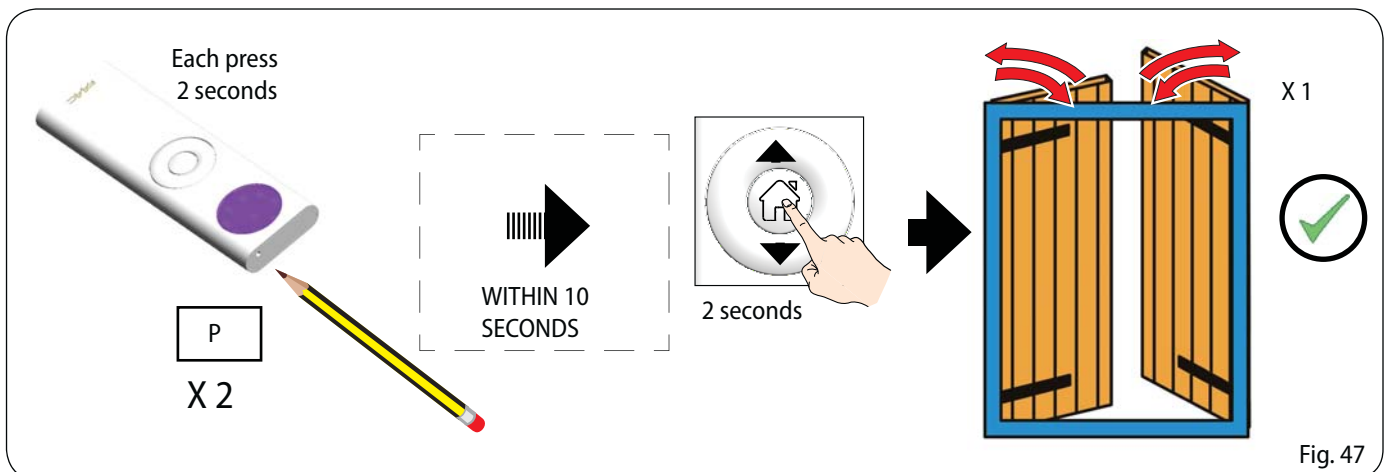


14 DELETING A SINGLE REMOTE CONTROL mod.ND1 SENSO KIT

Press the PROGRAMMING button twice for 2 seconds.

Within 10 seconds, press the STOP button for 2 seconds.

The engine will perform a short movement in both directions confirming that the remote control has been deleted.

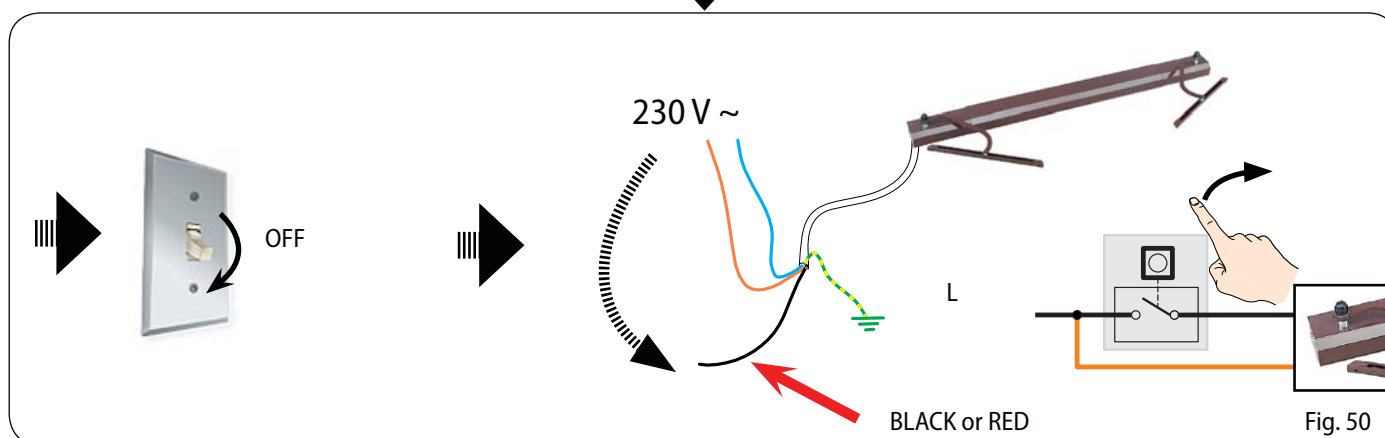
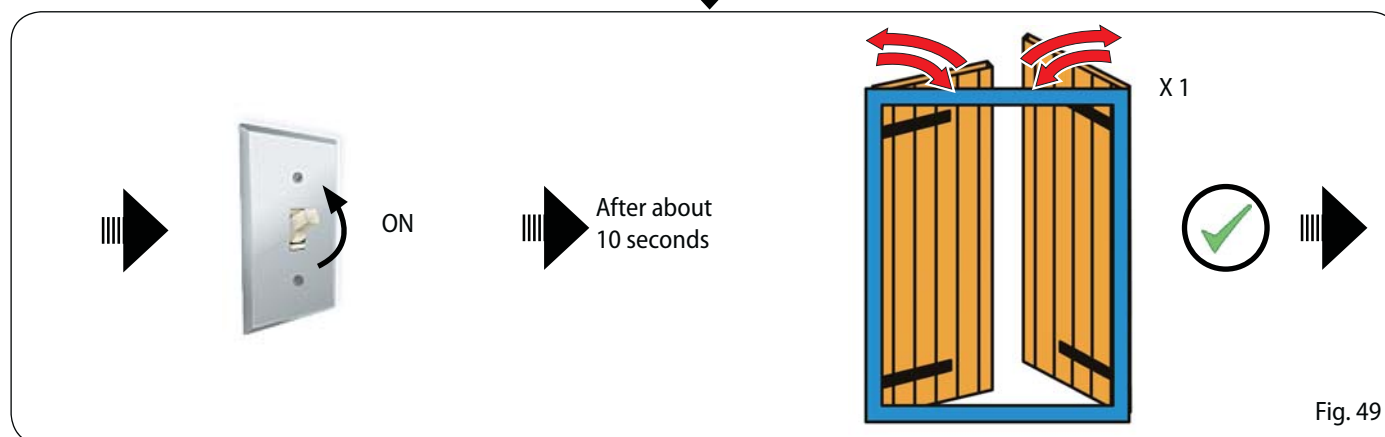
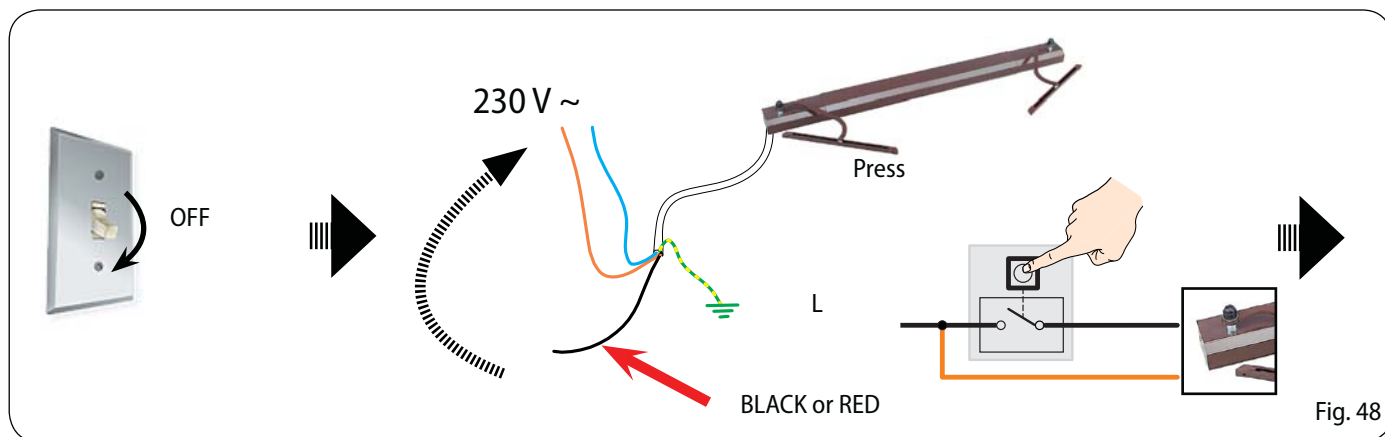


15 DELETING ALL THE RADIO ACCESSORIES IN THE RECEIVER mod.ND1 SENSO KIT

With the following procedure, the previously stored RADIO accessories are deleted from the memory. **The set limit switch points are not reset.**

Disconnect the power and connect the red wire (or black) and the brown wire (if there is the step button, press it and keep it pressed). Power the engine and wait for it to move in both directions, meaning that the memory has been completely deleted.

Disconnect the engine from the power supply again. Disconnect the red or black wire from the brown wire. (Release the button if it is "step-by-step")




16 DETECTING OBSTACLES mod.N1D SENSO KIT

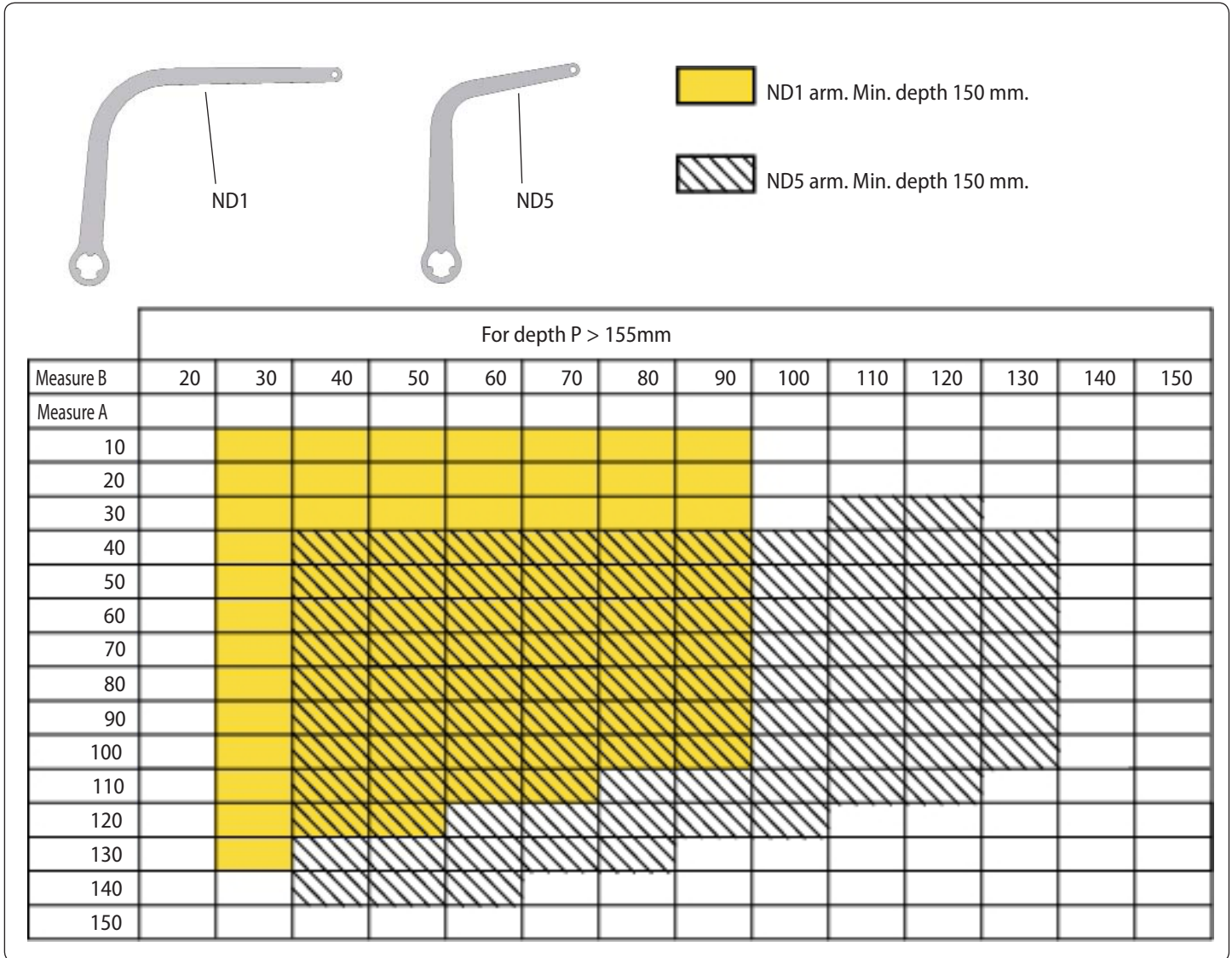
The N1D SENSO model allows obstacles to be recognised during motion.


If an obstacle is detected while opening, it reverses to close for 1 second and then tries to open again two more times. If it cannot open, the shutter returns to the closed position.

If an obstacle is encountered while closing, it reverses totally to open.

At the start from the opening or closing position, the automation does not consider any blocks or obstacles for about 2 seconds.

 The KIT is supplied with arms (type ND1 or ND4 depending on the country). Other types of arms are available for particular installation requirements. The following tables allow the most suitable model to be identified according to the dimensions of the application in question.



 This table is not always suitable. It is valid for shutters 28 mm thick, 500 mm wide.

The groove could be made on the shutter instead of on the wall.

Use the articulated arm for "padovana" shutters.

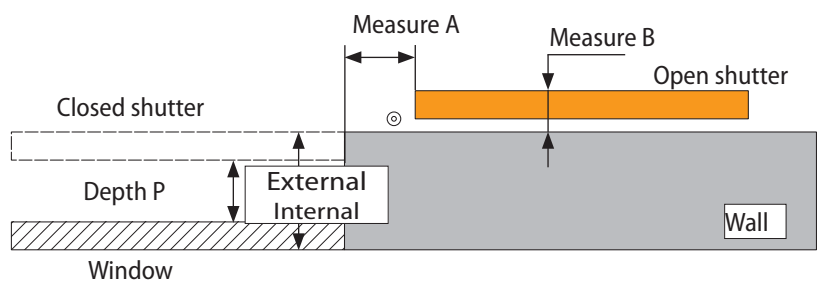
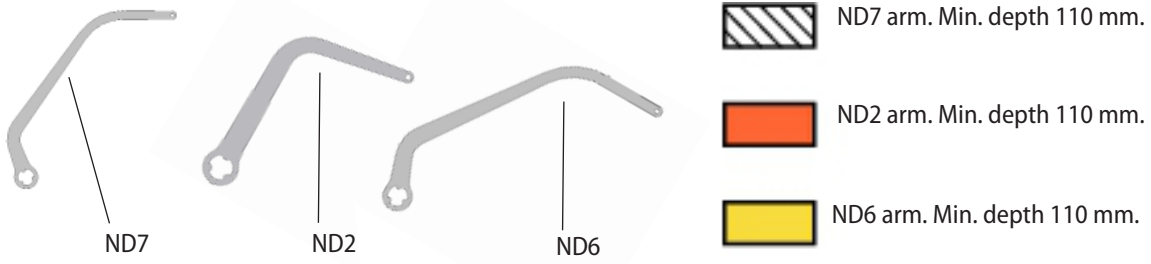


Fig. 51



For depth P > 110mm

Measure B	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Measure A														
10		ND2	ND2	ND2	ND2	ND2								
20		ND2	ND2	ND2	ND2	ND2								
30														
40				ND7										
50				ND7	ND7									
60				ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7
70				ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7
80				ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7
90				ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7	ND7
100		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
110		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
120		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
130		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
140		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
150		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
160		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
170		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6
180		ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6	ND6

This table is not always suitable. It is valid for shutters 28 mm thick, 500 mm wide.

The groove could be made on the shutter instead of on the wall.

Use the articulated arm for "padovana" shutters.

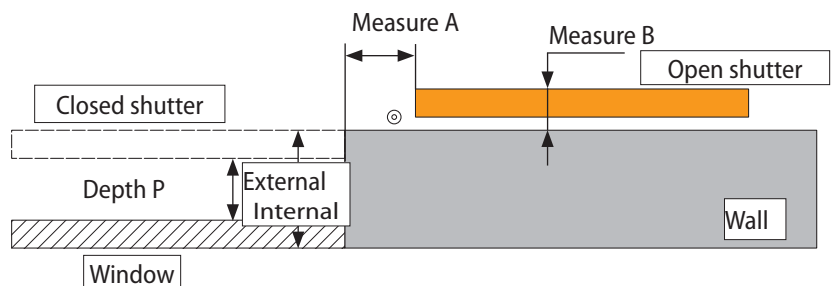
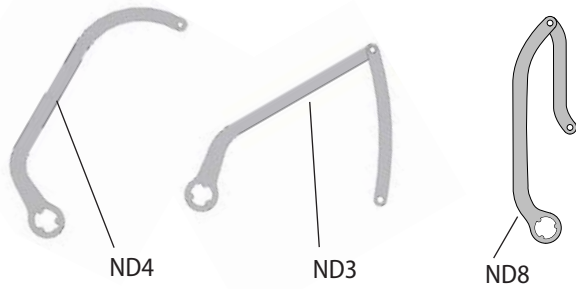


Fig. 52



- ND4 arm. Min. depth 100 mm.
- ND3 arm (use without guide). Min. depth 110 mm.
- ND8 arm (use without guide). Min. depth 110 mm.

For depth P > 100/110mm

Measure B	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Measure A														
10														
20														
30														
40														
50														
60														
70														
80														
90														
100														
110														
120														
130														
140														
150														
160														
170														
180														

This table is not always suitable. It is valid for shutters 28 mm thick, 500 mm wide.

The groove could be made on the shutter instead of on the wall.

Use the articulated arm for "padovana" shutters.

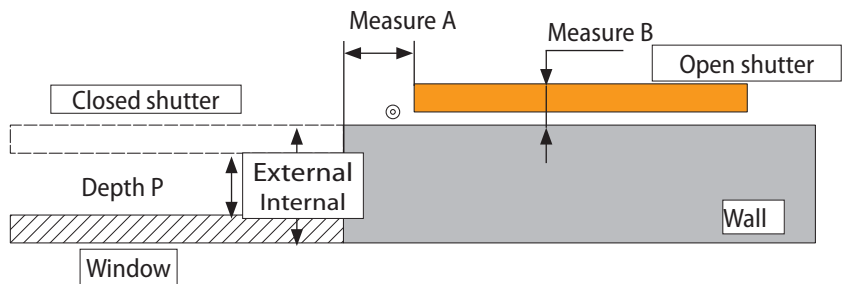


Fig. 53

With the shutters closed due to a power failure or automation malfunction, you can release the leaves as follows:

- 1) Pull the arm of the first leaf that opens downwards to remove the pin from the guide.
- 2) Open the leaf.
- 3) Perform the same procedure on the other leaf (if present).
- 4) Reset by closing the leaves and inserting the pin into the guide again.

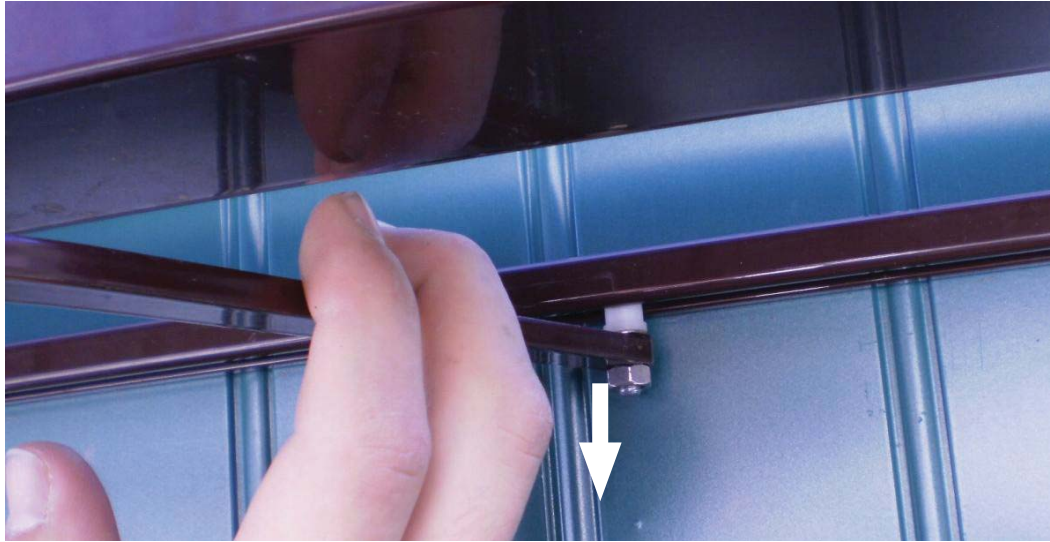


Fig. 54



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