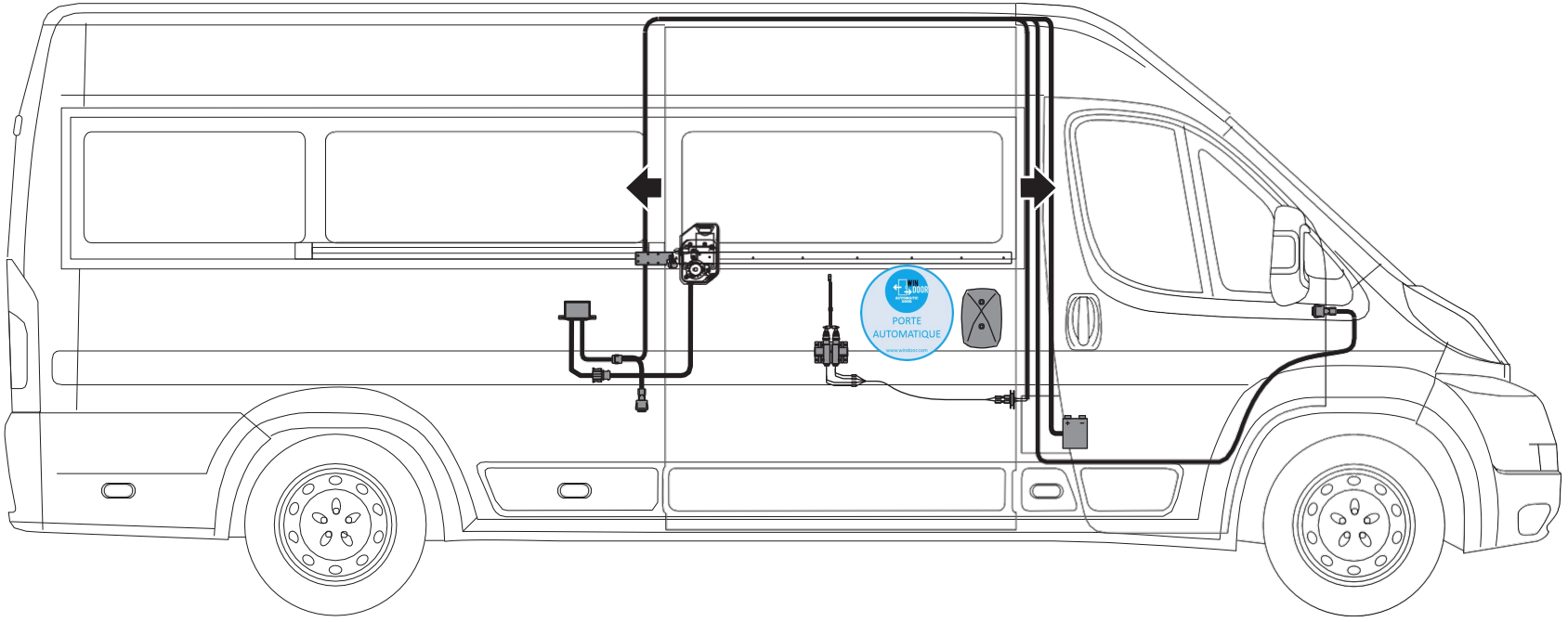
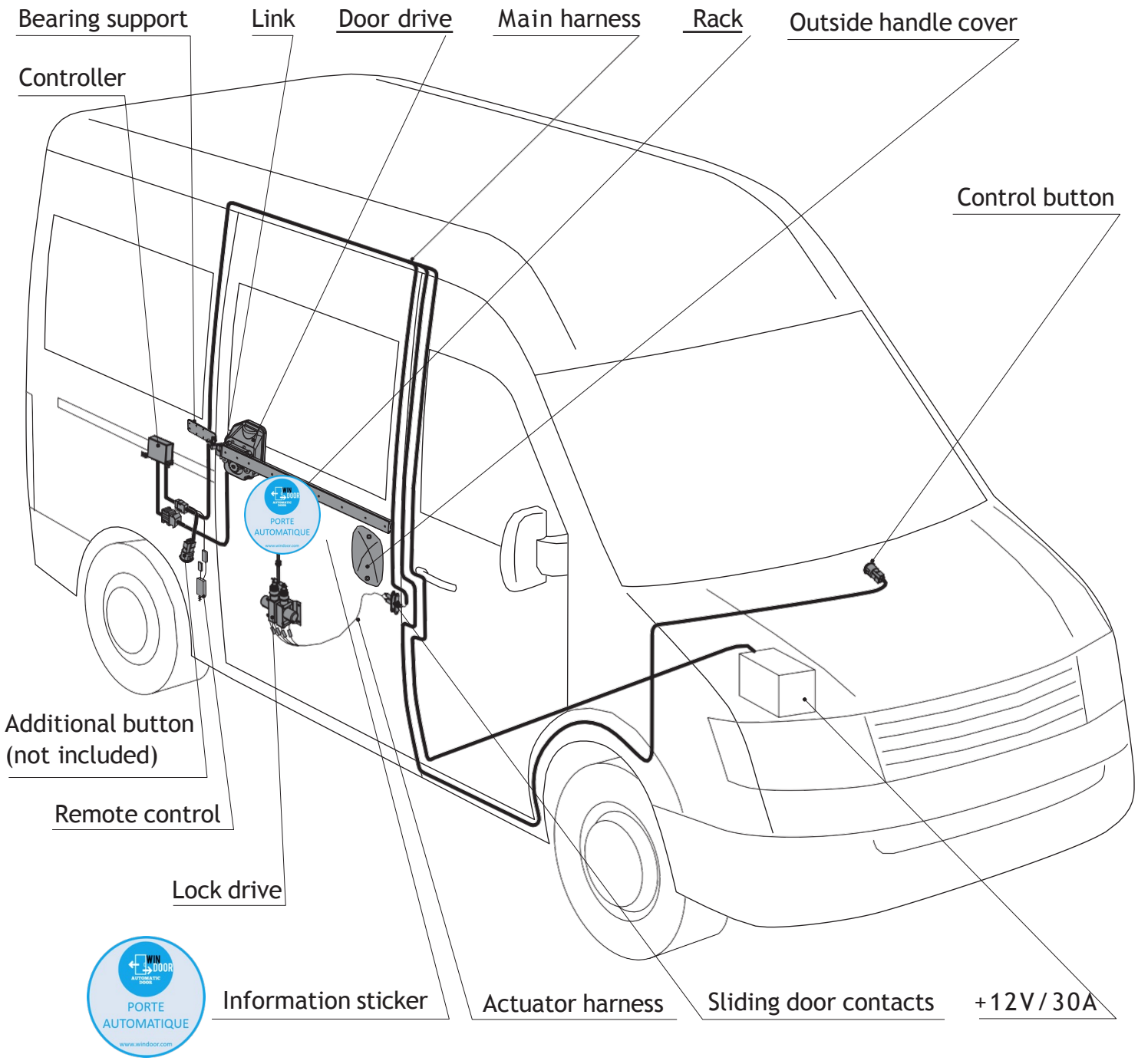
WIN-DOOR Automatism

INSTALLATION MANUAL

PEUGEOT BOXER / CITROEN JUMPER / FIAT DUCATO (250)





This model is suitable for opening and closing sliding doors in «Peugeot Boxer», «Citroen Jumper», «Fiat Ducato Maxi» vans

Disposition of assemblies and parts of the drive is shown on the model of a standard minibus.

NOTE

This manual describes installation of the **WIN-DOOR** system with maximum specifications. If you install a system without any additional options, just omit unnecessary paragraphs of the manual.

BASIC TECHNICAL CHARACTERISTICS

WIN-DOOR drive is designed for opening and closing doors in minibuses working as vanss. The models of the vans are listed on the manual cover.

Power consumption (nominal)	70 W
Power consumption (maximum)	250 W
Time of door opening (depends on the width settings)	2 - 6 .sec
Time of door closing (depends on the width settings)	2 - 6 .sec
External temperatures	-40 - +40
Maximum allowed angle of bus ascent when the door will close	15%
Resource	Not less than 1200000 opening/ closing cycles
Maximum force on the door	370N (37 kg)

⚠ NOTE ⚠

Long-lasting and trouble-free operation of **WIN-DOOR** system depends on the quality of installation. That is why installation must be carried out by skilled technicians.

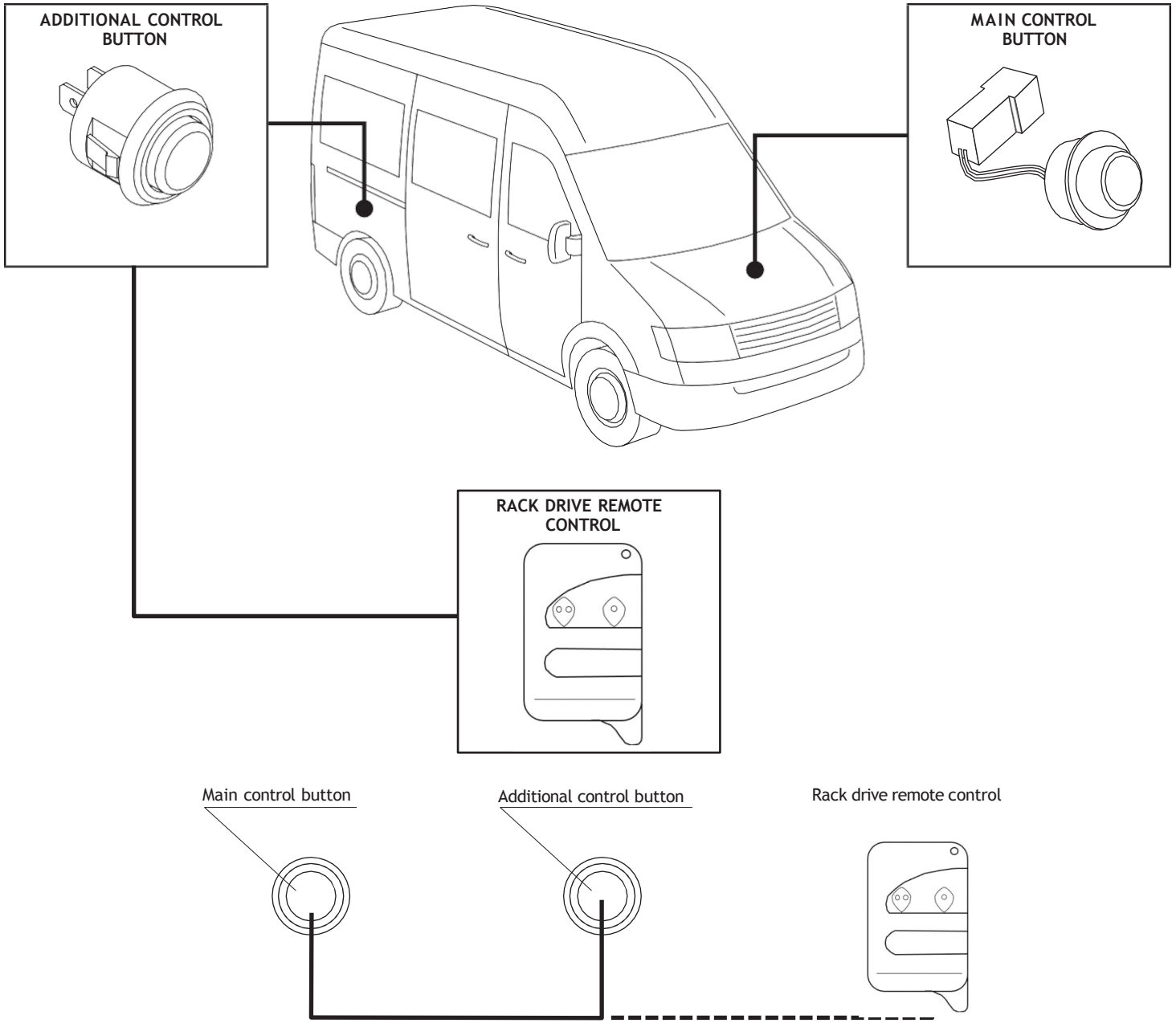
OPERATING CONTROL

WIN-DOOR system is an electromechanical device which operates being connected to the in-vehicle network. The drive consists of two main parts: lock drive and door drive. The lock drive opens the lock and the door drive opens and closes the door Drive control can be carried out by means of:

- **Main control button**
which controls the door functions and the system settings
- **Rack drive remote control**
which controls the door functions

MOTOR DRIVE FUNCTIONS:

- **Opening and closing the door**
- **Automatic roll-back of the door**
- **Door stopping**
- **Sound signal**
- **Operating mode with and without fixing the sliding door**
- **Adjustment of the opening width**
- **Adjusting the door closing speed**



PRECAUTIONS

Drive installation involves refining of existing body parts of a minibus. All body parts of a minibus are made of sheet metal, so there is a high probability of being cut by sharp edges appearing after refinement or by sharp parts of mechanical hand tools. During drive installation follow safety procedures while working with mechanical hand tools, blunt sharp edges of drilled holes . Use only tools in good working condition. During installation keep your working place clean, especially in the bus saloon. Before starting installation prepare all the necessary tools and parts, take away unnecessary things.

Trouble-free operation, reliability and operating life of the drive depend on precise accomplishments of the instructions given . It also depends on the precision of relative disposition of drive parts and assemblies. Before drilling fixation holes put the marks for drilling thoroughly, check correct disposition of a concrete part or assembly and only after that drill the holes .

This drive is an electromechanical device, so alongside metalwork there is also wire installation and connection to power supply. That is why electrical safety procedures must be followed. While connecting contacts, keep your hands and working place clean. This will provide reliable contacts connection and trouble-free operation of the drive as a whole .

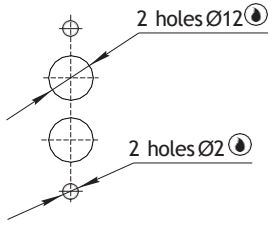
TOOL LIST

Clip withdrawal tool.....1
Head stock 10-17 mm.....1set
Riveter 1
Riveter for pull-out nuts GESIPA GBM 10 1
Centre punch 1
Combination wrenches 1set
Metal ruler.....1
Hammer 1
Hexagon wrench tools 1
Star wrench tools Torx 1
Knife 1
Flat tip screwdriver 1
Cross tip screwdriver 1set
Pliers 1set
Wire for tightening ..... 3m.
Drill bits 2.5; 3.2; 5; 6.5; 9; 1
Step-shaped drill 4-24 mm 1
Slack adjuster 1
Electrical extension cord 1
Lamp 1
Sliding calipers 1
Electric drill 1
Hack saw 1
Multimeter 1
Sidecutter 1
Rivet nut 15
Rubber solvent petrol ..... 1 bottle

After drilling holes burrs are left on hole edges and paint coating of the body is inevitably damaged. In some places which require additional processing the following symbols will be used

— Remove burrs off the edges
— Blunt sharp edges
— Coat the edge with rust-proof liquid

Example: coat the edges of the holes with rust-proof liquid



Before installing the drive, adjust the minibus's door because its adjustment influences the drive operation.

2.1.1 Wash out the door carriage guides with petrol and wipe them with dry rags.

2.1.2 Wash out the door latch mechanism, dry it and lubricate with WD-40.

2.1.3 Remove door tenons.

2.1.4 Adjust the door position in relation to its doorway (it is adjusted with the carriages).The closed door must not sag or go inwards minibus overly.

2.1.5 Adjust the latch tenon and latch bracket on the rear post in such way that it provides the minimum possible closing speed.

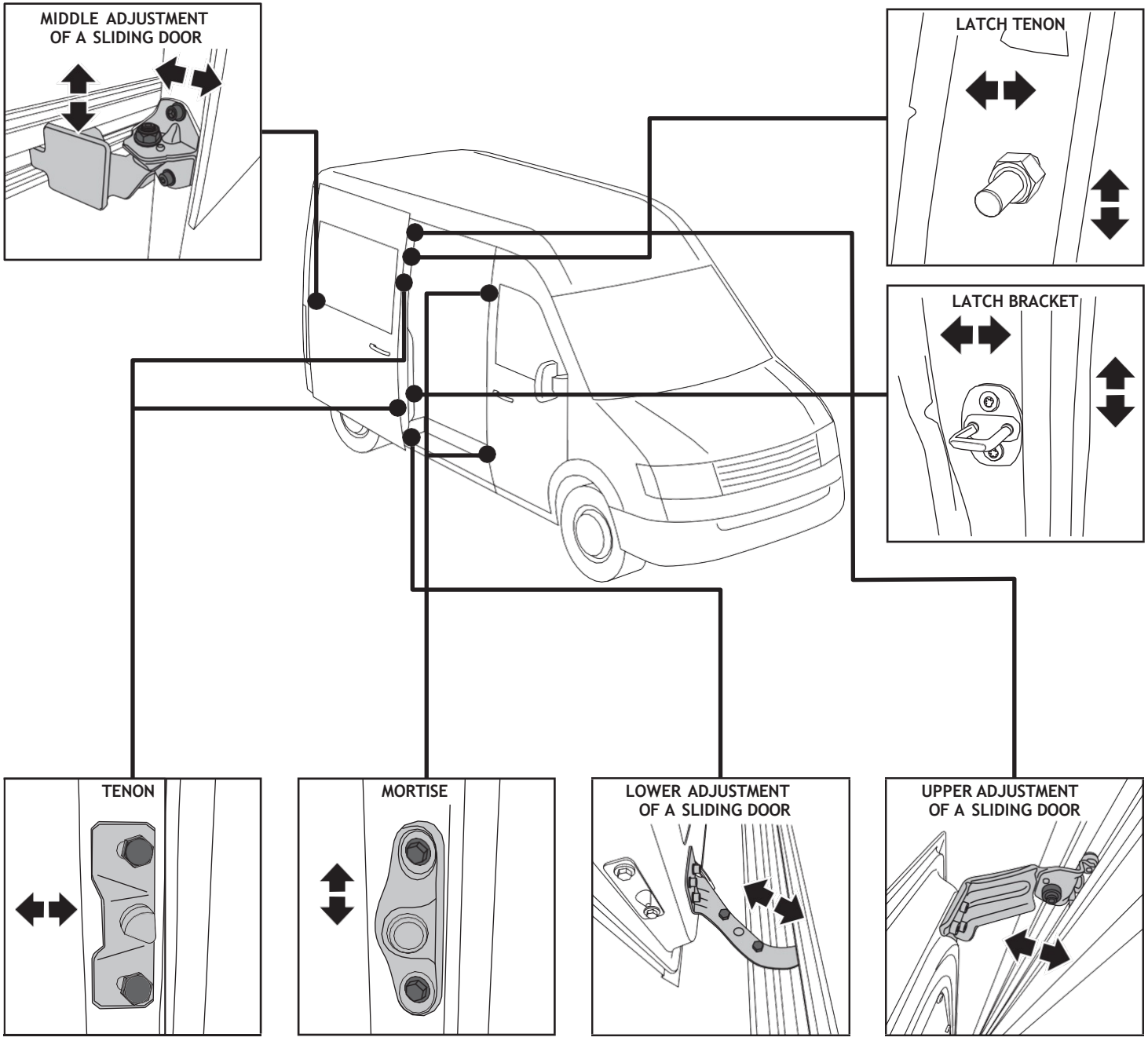
2.1.6. Check the sealing material when the door is closed. The sealing material must not shrink overly. Otherwise remove the sealing material and unbend its edge in the compressed places.

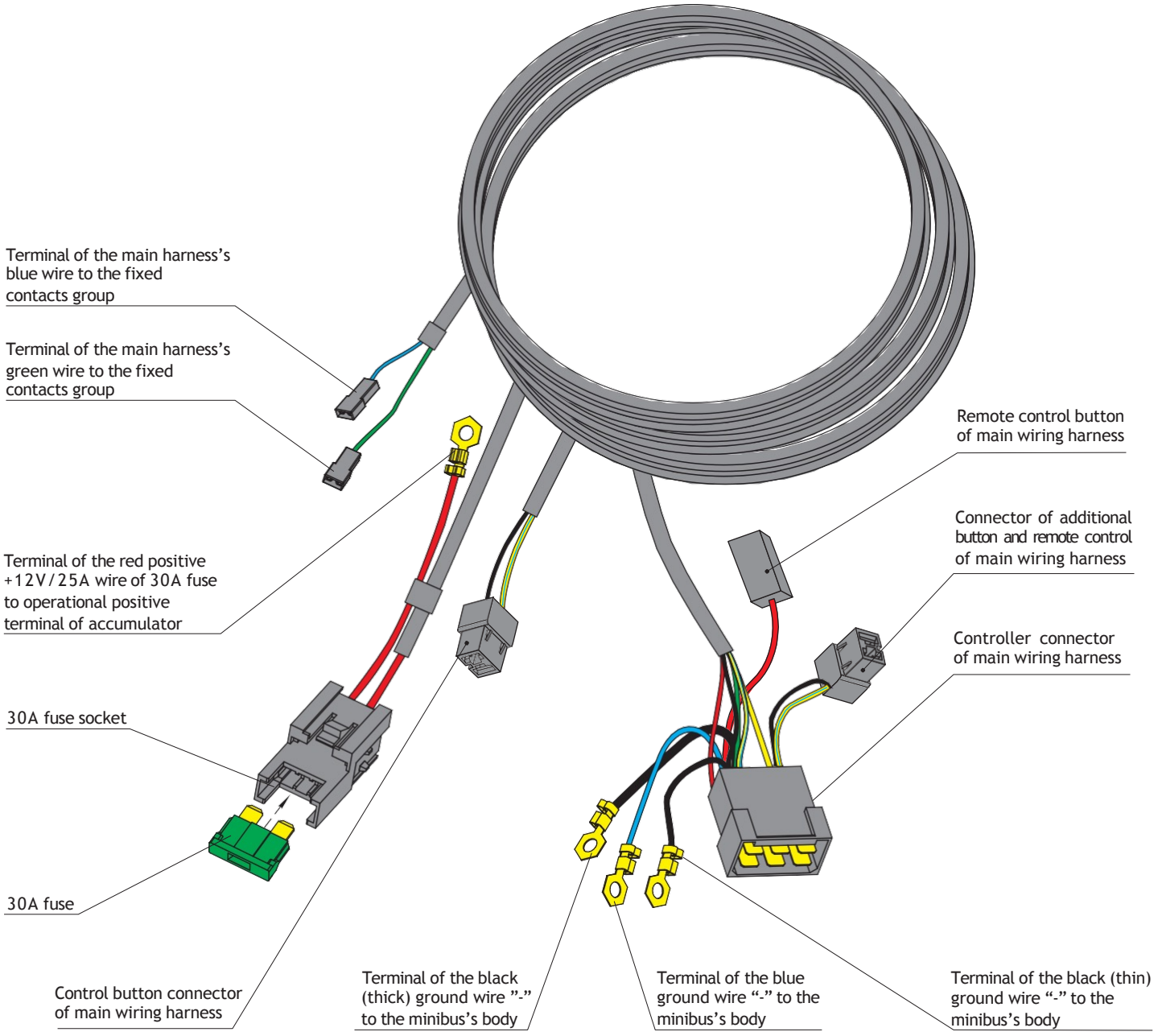
7. Install the door tenons, adjust their position.

8. Open and close the door when the bus is motionless.

9. Make sure that the sliding door retainers are in their positions and have no any visible damage or wear. Do not use the minibus without retainers or with damaged sliding door retainers.

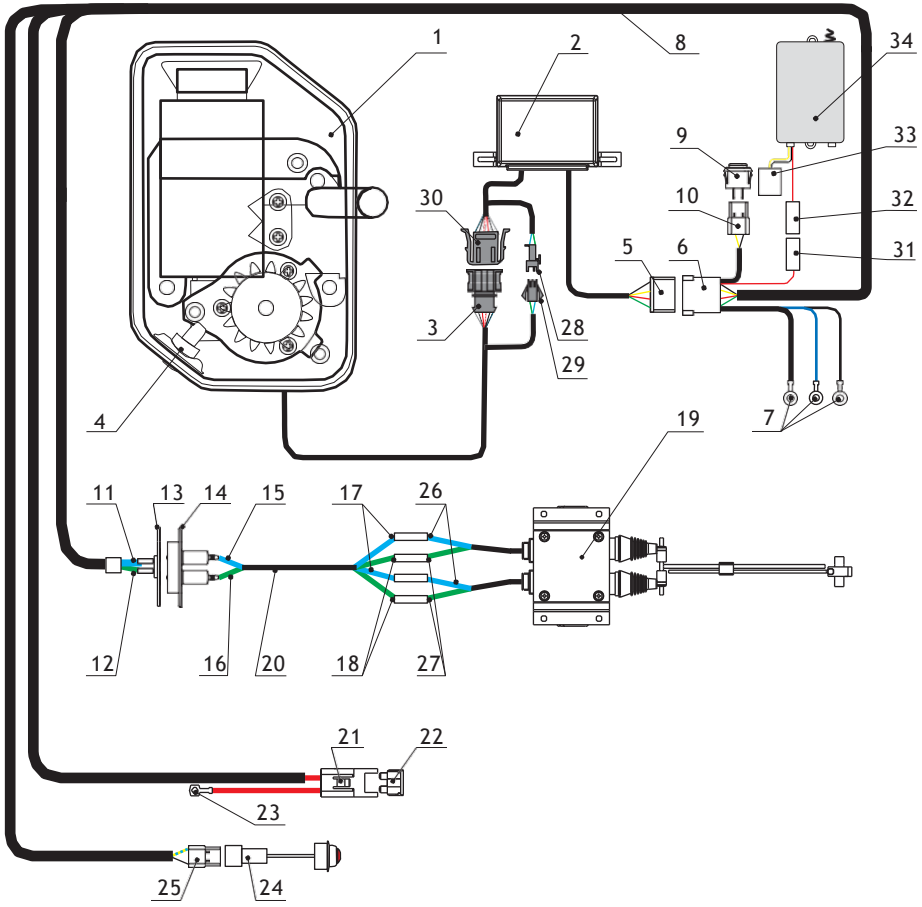
2.1.10 Check the upper, middle and lower door adjustments. The door must go along the door guide easily without any jerks and knocks, it must open and close freely. The correctly adjusted door in a closed position must come to the sealing material tightly having the same equal gaps.



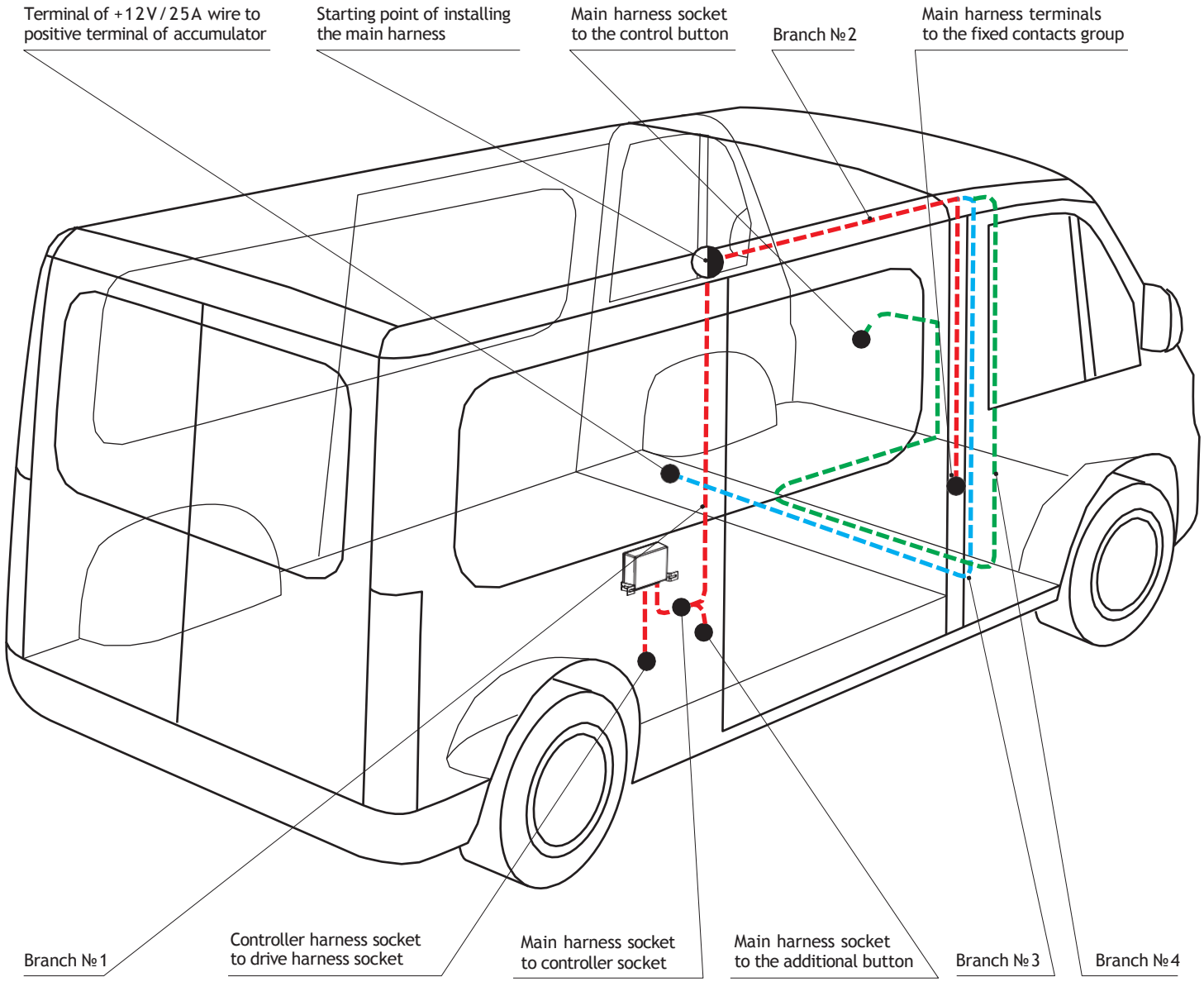

Terminal of the main harness's blue wire to the fixed contacts group
Terminal of the main harness's green wire to the fixed contacts group
Terminal of the red positive +12V/25A wire of 30A fuse to operational positive terminal of accumulator
30A fuse socket
30A fuse
Control button connector of main wiring harness
Terminal of the black (thick) ground wire "-" to the minibus's body
Terminal of the blue ground wire "-" to the minibus's body
Terminal of the black (thin) ground wire "-" to the minibus's body
Remote control button of main wiring harness
Connector of additional button and remote control of main wiring harness
Controller connector of main wiring harness

2.3 CONNECTION DIAGRAM OF RACK AND PINION DRIVE

1. WIN-DOOR drive
2. Controller
3. Drive harness connector to controller wiring harness (black, red, grey-and-black, blue-and-black, grey-and-white, red-and-white)
4. Torch
5. Controller wiring harness connector (red, black, green, yellow-and-blue, yellow)
6. Main wiring harness connector (green, red, blue, black (thick), black (thin), yellow-and-blue)
7. Terminals of the ground (black (thick), black (thin), blue) wires "-" to the minibus's body
8. Main wiring harness
9. Additional button
10. Additional button connector (black, yellow-and-blue) and remote control
11. Terminal of the main wiring harness's blue wire to the fixed contacts group
12. Terminal of the main wiring harness's green wire to the fixed contacts group
13. Fixed contacts group
14. Movable contacts group
15. Terminal of the activator blue wire to the movable contacts group
16. Terminal of the activator green wire to the movable contacts group
17. Terminal of the activato wiring harness's blue wire
18. Terminal of the activator wiring harness's green wire
19. Lock drive
20. Actuator wiring harness
21. Terminal of 30A fuse red wire
22. 30A fuse
23. Terminal of +12V red positive wire of 30A fuse to operational positive terminal of accumulator
24. Main control button
25. Main control button connector (black, yellow-and-blue)
26. Terminal of the activator blue wire
27. Terminal of the activator green wire
28. Controller connector to torch connector (green, blue)
29. Torch connector (green, blue)
30. Connector of controller (black, red, grey-and-black, blue-and-black, grey-and-white, red-and-white)
31. Main wiring harness connector (red)
32. Remote control wiring harness connector (red)
33. Remote control wiring harness connector (yellow-and-blue, black)
34. Remote control



2.4 MAIN HARNESS INSTALLATION



ATTENTION

All wires must be protected and firmly attached to avoid any breakage, abrasion or chafing.

When installing the main harness use steel wire to conceal the harness in the hidden places. Disposition of the main harness is shown in the picture. Be careful while installing the harness: insulating material must not be damaged.

Begin installing the main harness at the starting point as shown in the picture in the following order:

- Extend branch №1
- Extend branch № 2
- Extend branch № 3
- Extend branch № 4

When installing branch №. 1, it is necessary to disconnect the pad from the main wiring harness, while marking the location of the wires in the pad by colors.

2.5 CONTROLLER INSTALLATION AND CONNECTION OF GROUND WIRE «-» TERMINAL 11

In the car sidebar place and screw up a controller with two self-tapping screws 4,2x12 from the hardware bag as shown in fig. 1

To fix ground wire «-» terminals it is required to make a hole with diameter **Ø** 6.5 mm in any place of the car inside bar, next to the controller as shown in fig. 1. Remove the paint around the hole completely so you can see metal in order to provide a good contact as shown in fig. 2. With the bolt M6x14, toothed washer and the nut M 6 from hardware bag fix the ground wire "-" terminals as shown in fig. 3. The toothed washer must be between terminals and a car body. After tightening an M6 screw, apply the rust proofing on the surface with damaged rust-proofing paint.

⚠ NOTE ⚠

It is necessary to place the controller so as working hole looked down to prevent the controller card from ingress and accumulation of condensate (v. fig. 1)

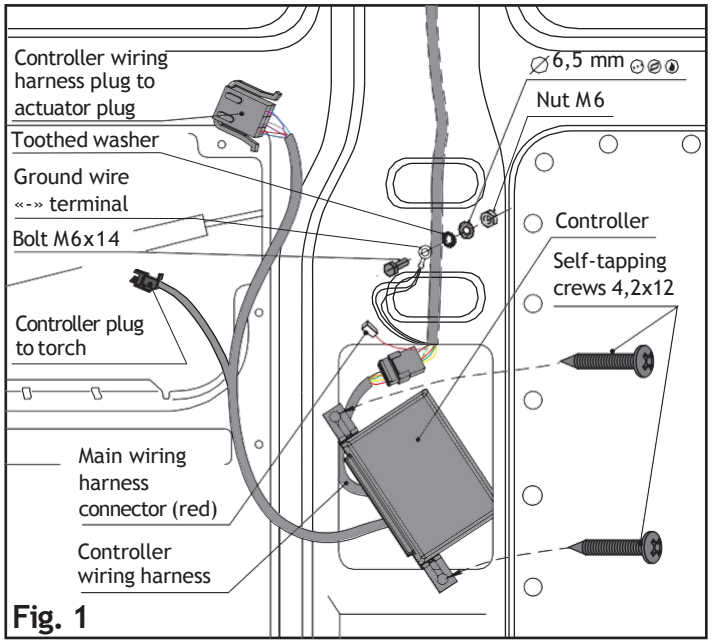


Fig. 1

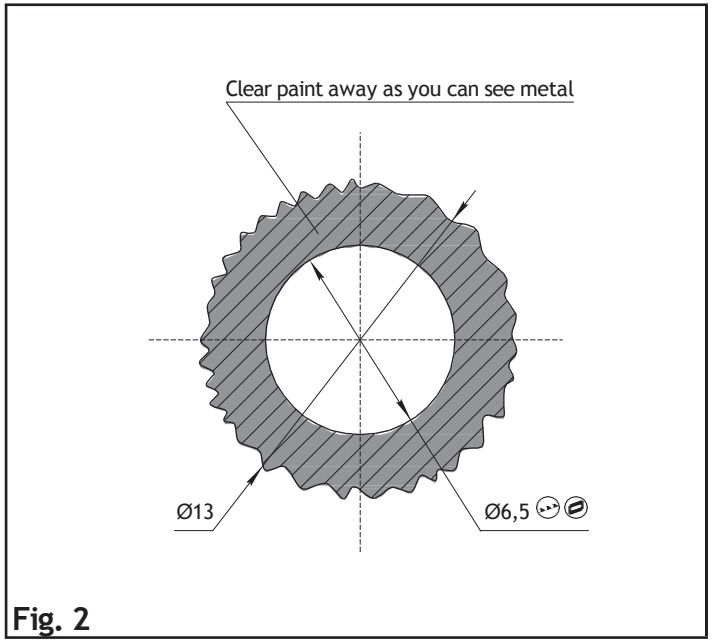


Fig. 2

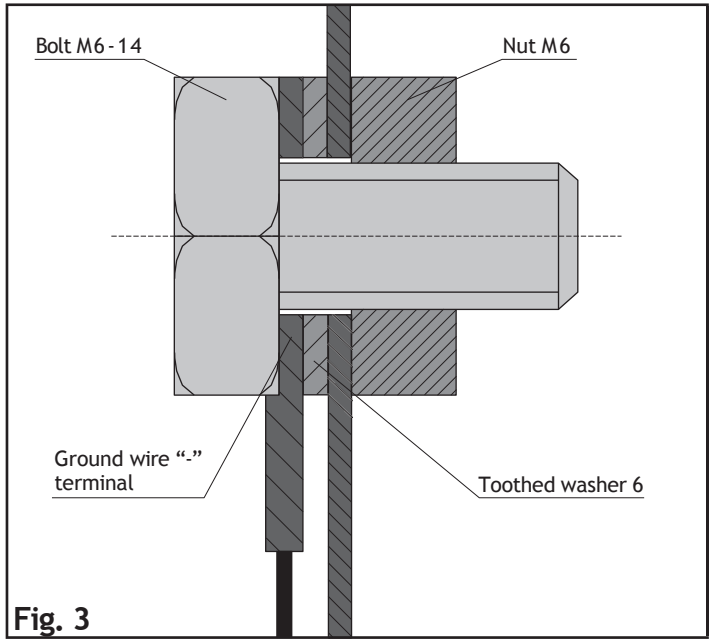
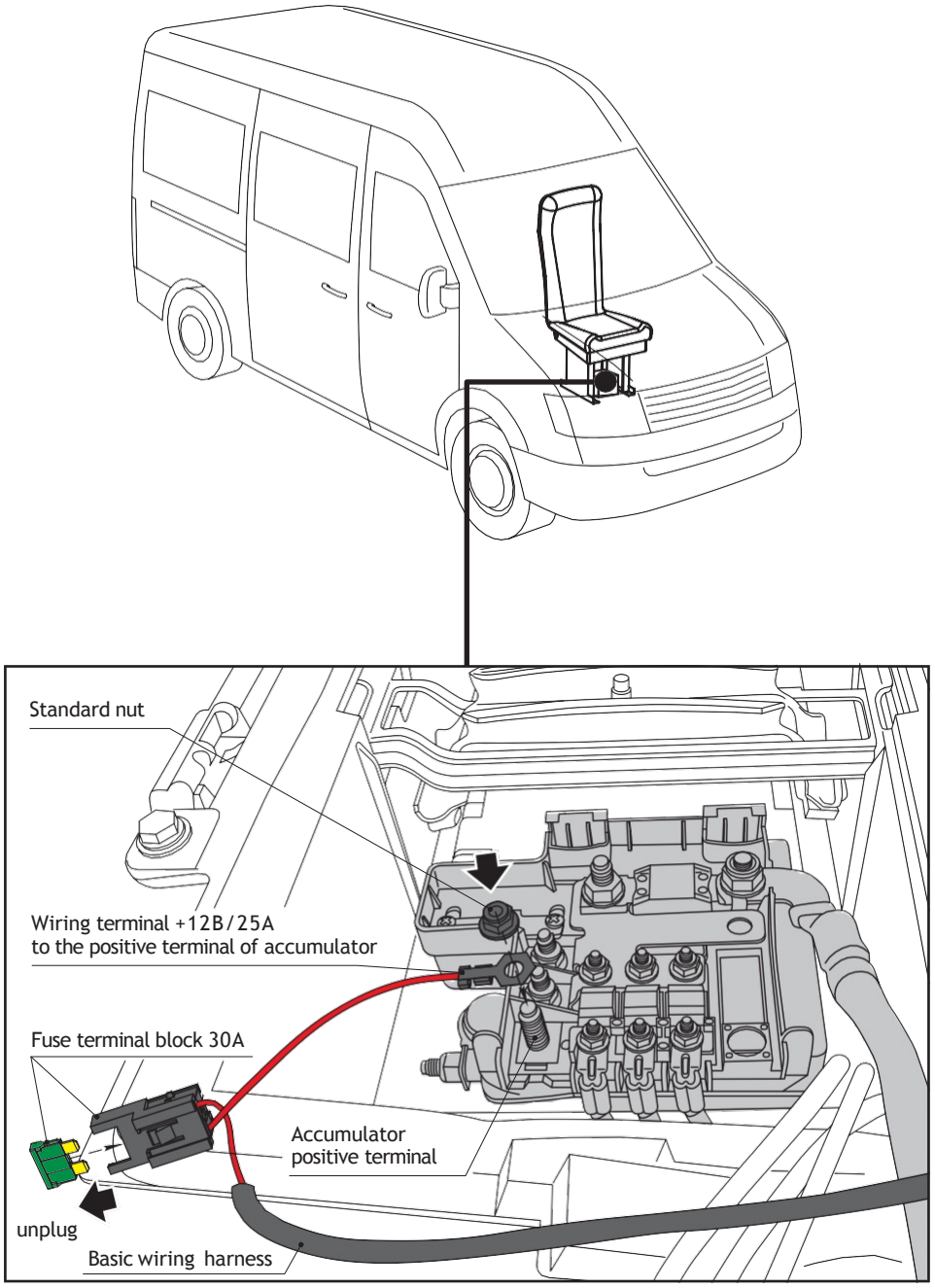
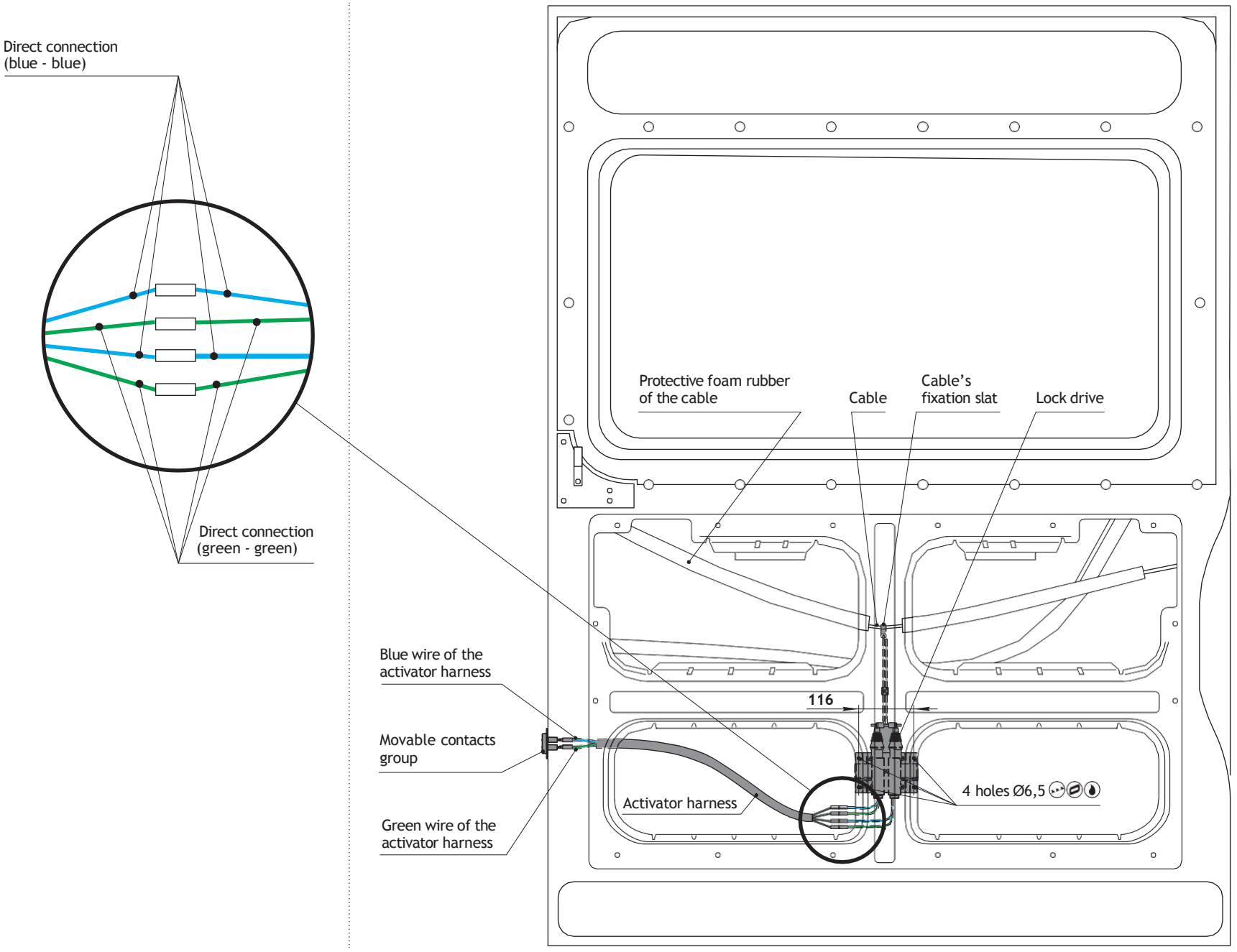


Fig. 3

2.6 CONNECTION OF POSITIVE WIRE TO POSITIVE TERMINAL OF ACCUMULATOR



Connect the wire terminal +12V/25A of the basic wiring harness to a free positive accumulator terminal, which is under a driver's feet. Fix the wire terminal +12V/25A of the basic wiring harness with the standard accumulator nut. Before connecting, please, take the fuse 30A out of the fuse terminal block.


Direct connection
(blue - blue)
Direct connection
(green - green)
Protective foam rubber
of the cable
Cable
Cable's
fixation slat
Lock drive
Blue wire of the
activator harness
Movable contacts
group
Green wire of the
activator harness
116
Activator harness
4 holes Ø6,5

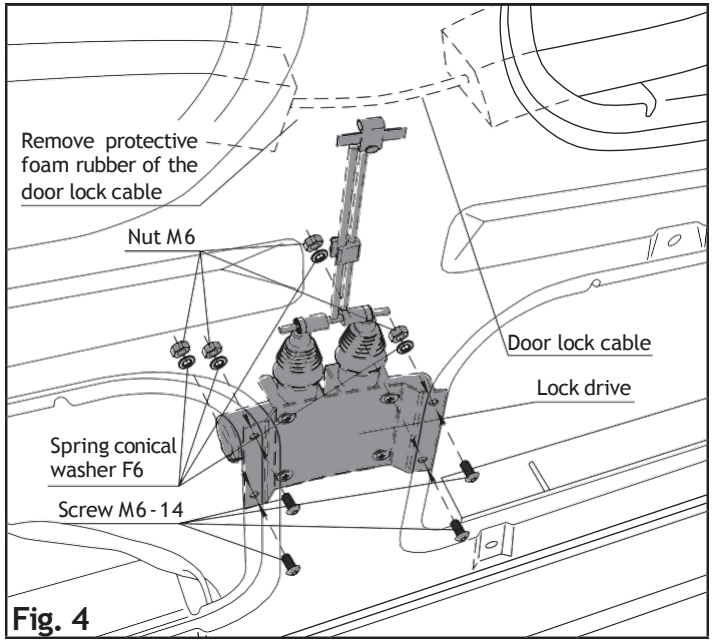


Fig. 4

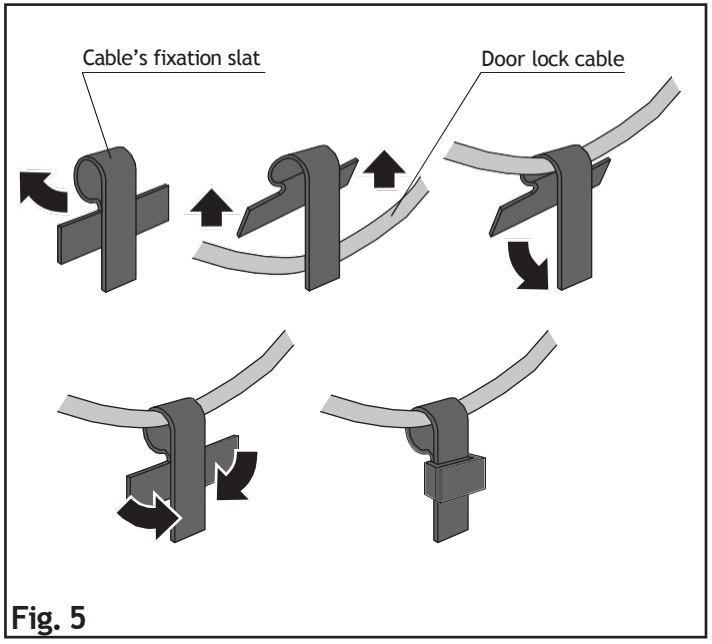


Fig. 5

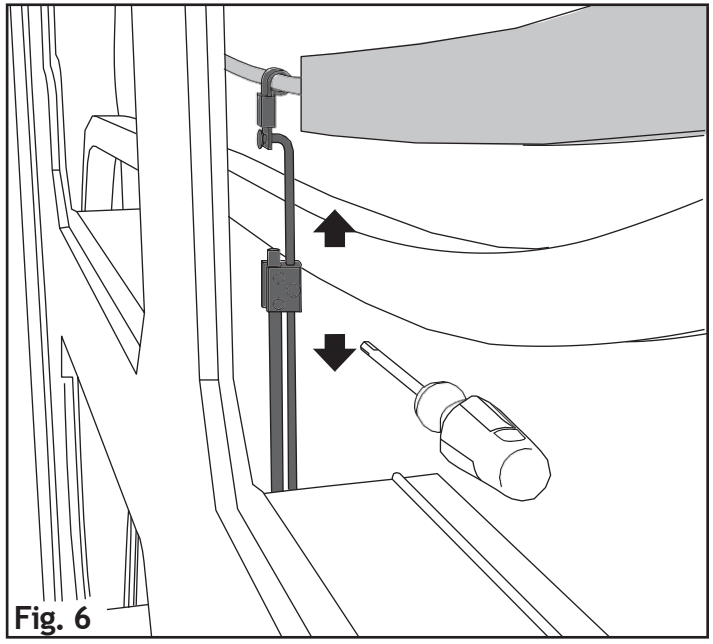


Fig. 6

Cut off a piece of protective foam of the cable. Put the drive with the bracket to the door reinforcement as shown in fig. 13, and mark out the fixing holes. Drill four holes **Ø** 6.5 mm. Put the drive inside the door and fix it with 4 screws M6x14 with nuts M6 and spring washers (fig.4).

Put the cable's fixation slat on the cable and fix it as shown in picture 5.

Close the door manually.
With the help of terminal strip adjust rod length so as (fig.6) the cable was tightened to the utmost, but sliding door locks were closed safely.

Connect the terminals of the lock drive's green wires to the terminals of the activator harness's green wires, and the terminals of the lock drive's blue wires to the terminals of the activator harness's blue wires as shown in the picture on

To place the control button drill a hole **Ø** 23 mm on the dashboard where you find it convenient to use. Remove burr from the edges and blunt sharp edges. Insert the control button into the hole having connected it to the main wiring harness connector (fig. 9).

NOTE

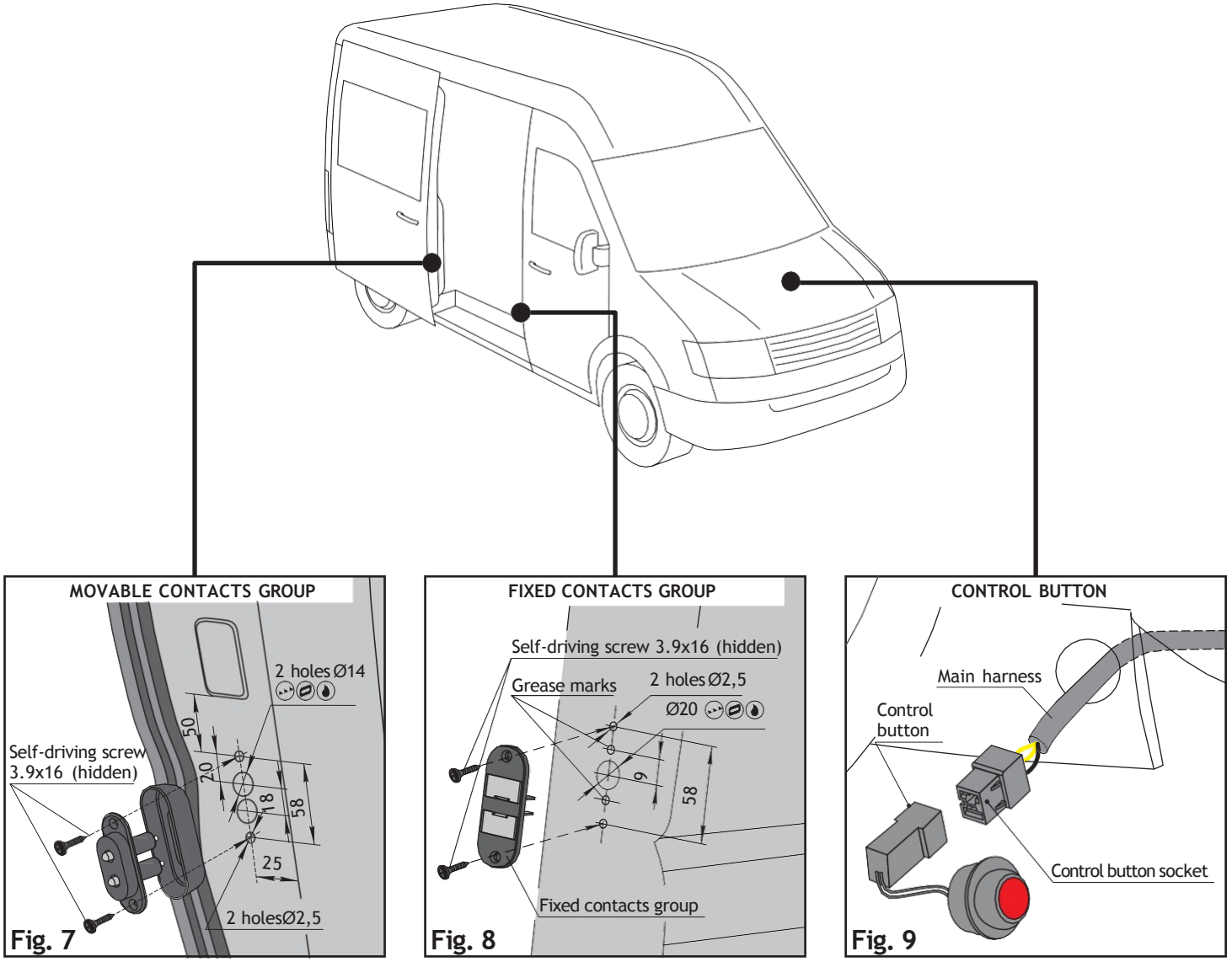
The movable contacts and fixed contacts groups must be located in such a way that «Autodoor» inscription is positioned on top of it.

Mark out on the exposed face of the sliding door as shown in fig. 1. Drill 2 holes**Ø** 14 mm (fig. 7). Connect the blue wire of wiring harness of an actuator to the top contact of the portable contact group, and green to the underneath one according to the diagram at p. 9 and the figure at p. 13 Fix the movable contacts group with 2 tapping screws 3,9 x 16 using the contacts separator (fig.7).

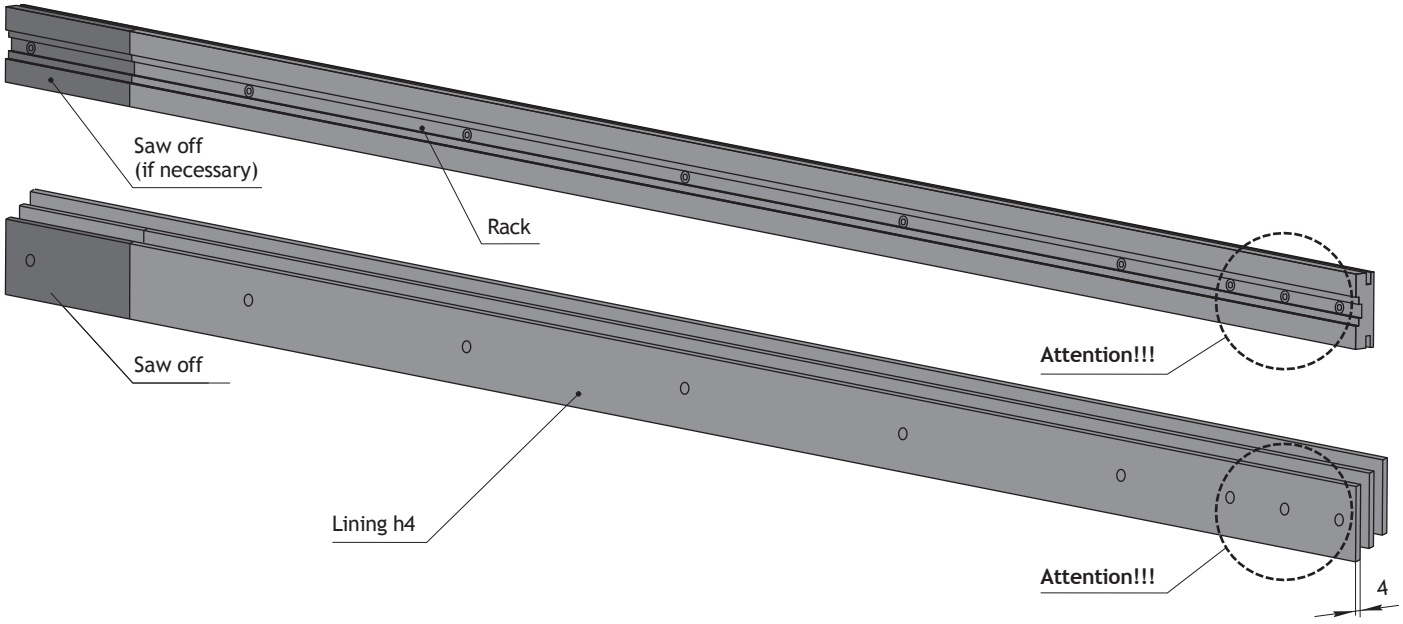
Apply grease lubricant on the contacts of the movable group. Open/close the door. Using the marks left by the grease on the pillar, mark and drill 2 holes **Ø** 20 mm (fig. 8).

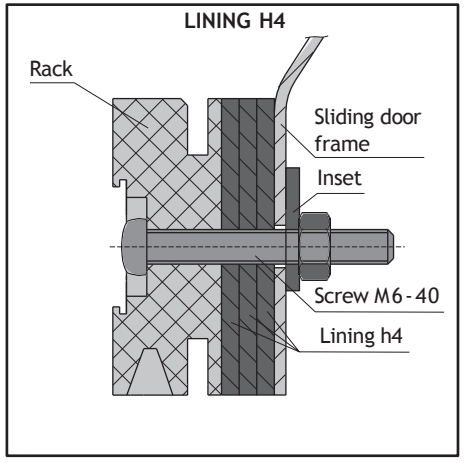
Connect the blue wire terminal of the main wiring harness to the upper terminal of the fixed contacts group and the green one to the lower terminal as shown in scheme on page 9.

Secure the fixed contacts group with 2 tapping screws 3,9x16 (fig.8)



3.1 INSTALLATION OF THE RACK AND LINING ON THE DOOR





It is recommended to install a rack with maximum length using some special liners.

NOTE

The rack must be sawn only on the left side .

The rack is installed on 3 linings H4 which must be sawn to the needed length beforehand .

EXTRA NOTE :

You received the rack and rack lining in two parts that must be assembled

Put the rack to the marked place as shown in figure 10.The lower edge of the rack should be aligned with the lower convex edge of the plastic door cover (Fig. 10 A), and the rear part of the rack should be at 45 mm distance from the opening seal (Fig. 10 B). Using the holes in the rack, mark out the centres of the fixing holes on the door.

Drill holes Ø 6,5 mm using the marks. The holes must be positioned in one line.

Fix the rack using metalware from the metalware set:

- Screws M6 - 40
- Plate nuts M6

> **NOTE**
>
> If operating mode of the drive is very intensive, you should use an inset under the rack. It is installed through 4 back fixation holes of the rack.

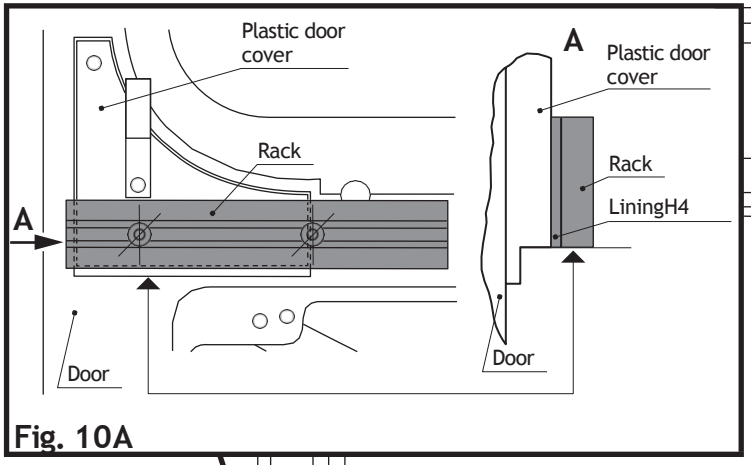


Fig. 10A

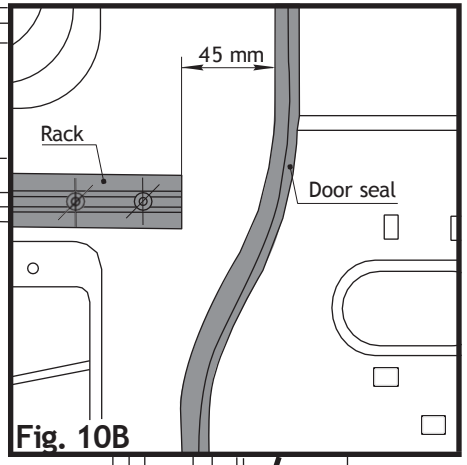


Fig. 10B

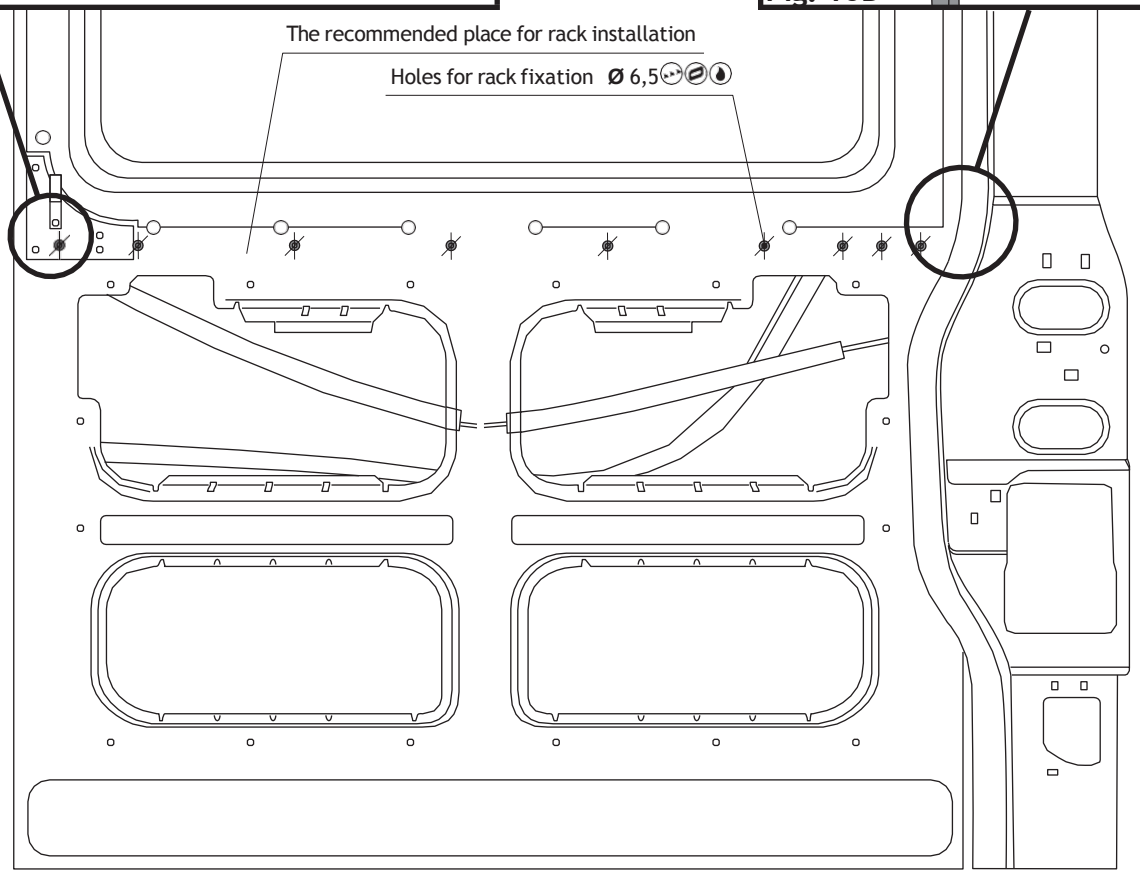


Fig. 10

3.3 BEARING SUPPORT INSTALLATION

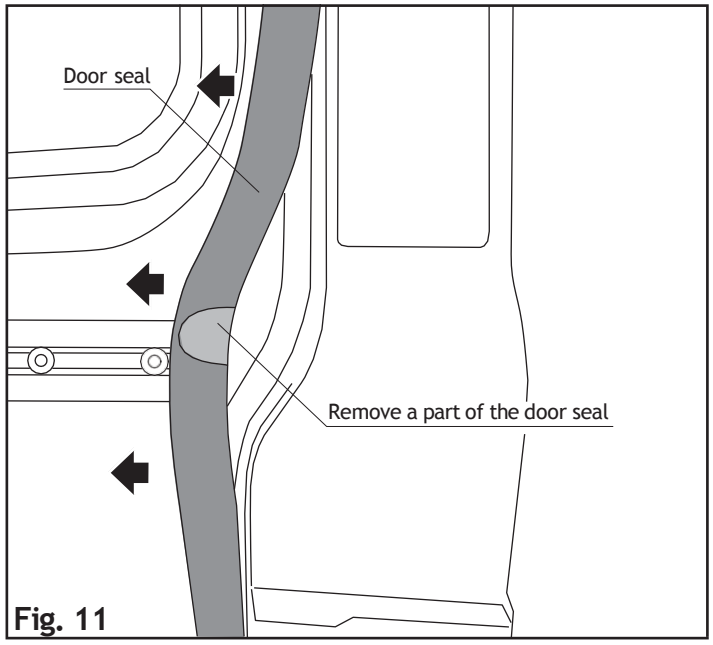


Fig. 11

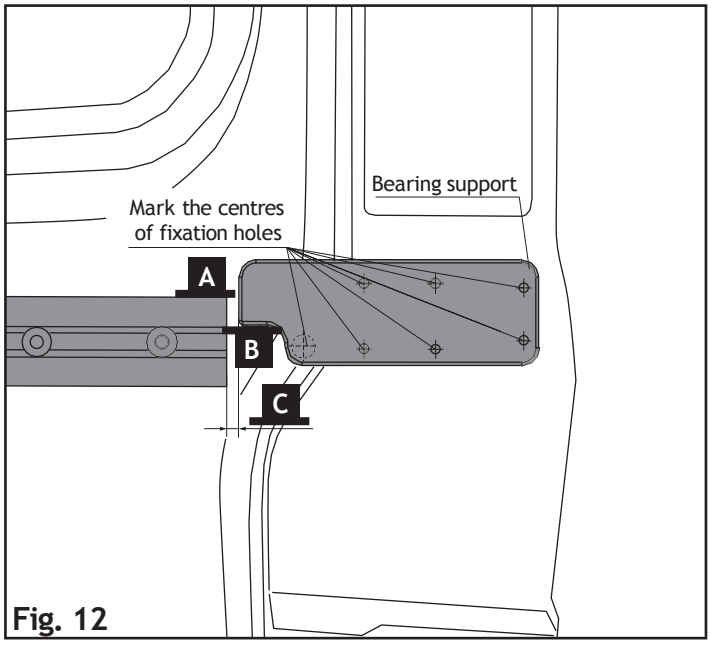


Fig. 12

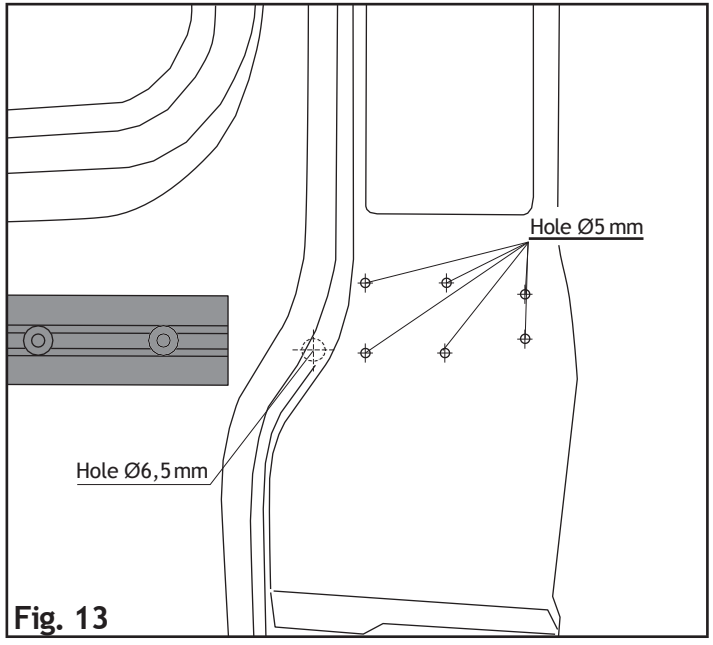


Fig. 13

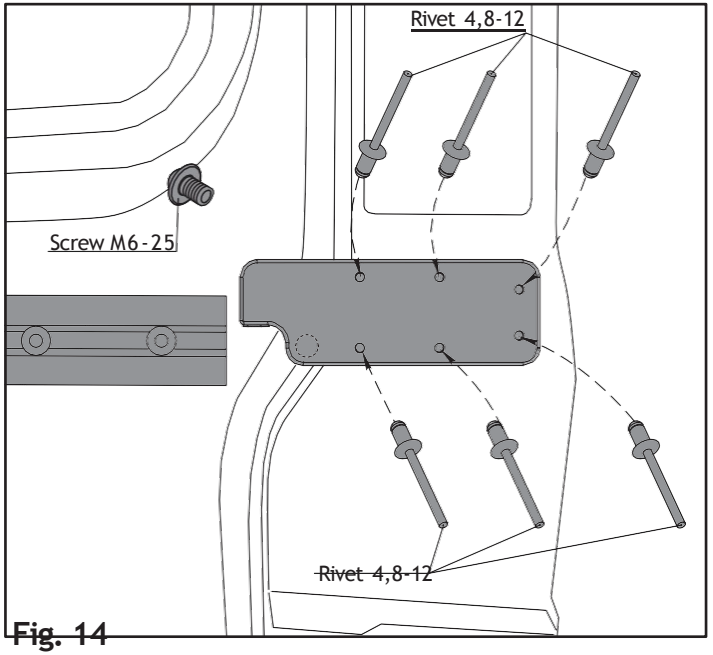


Fig. 14

Remove door seal in the area of bearing support installation (figure 11).

Put the bearing support to the body pillar (figure 12) so that rack plane A would be 8-10 mm above the bearing support plane B and space C between the bearing support and the rack would be 6-10 mm. Mark the centres of fixation holes on the bearing support with a marker.

Drill a hole Ø6.5 mm for a screw M6-8 using the marks. Drill holes Ø5 mm for rivets 4 .8-12from the metalware set (figure 13).

Fix the bearing support with a screw M6-8 only, then with rivets 4.8-12from the metalware set (figure 14).

Cut off a part of the door seal from the inside so that the cutout would envelope the support's spacing collar (figure 11).

Put the door seal back.

Connect the link to the bearing support (figure 15).

Close the door by hand.

Make sure that the parts of the bearing support and the link do not hinder to close the door easily.

Install the door drive onto the rack (figure 17). Connect the link to the door drive.

Drill holes in the rack and install the block stop lock (figure 18).

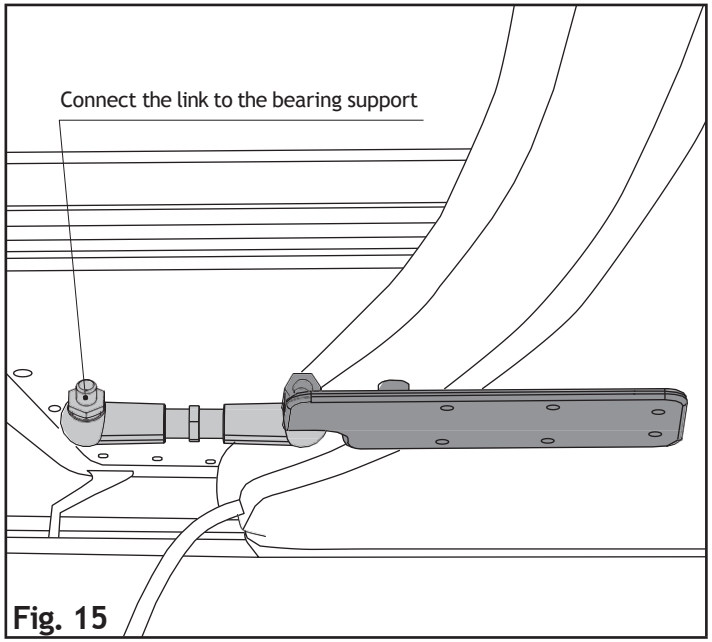


Fig. 15

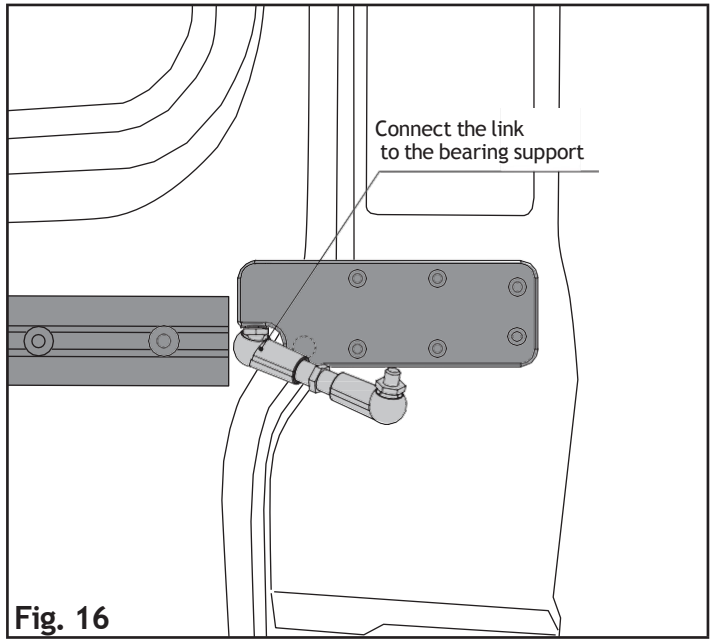


Fig. 16

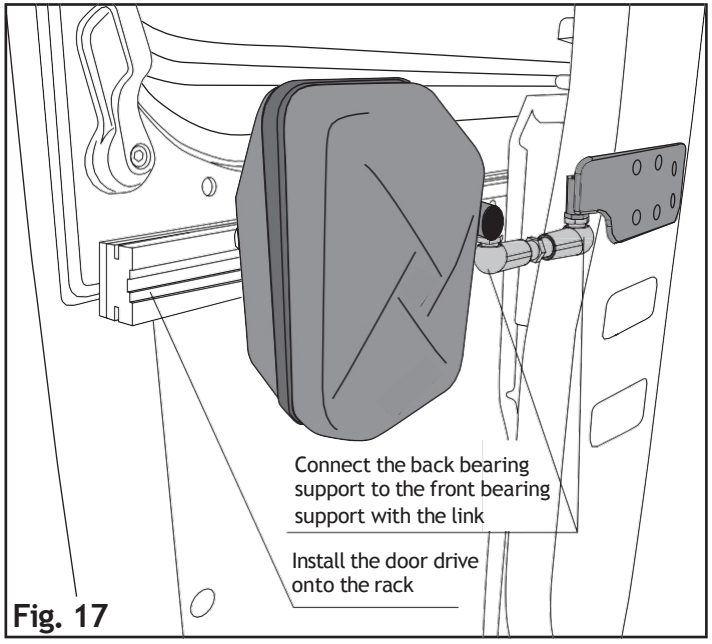


Fig. 17

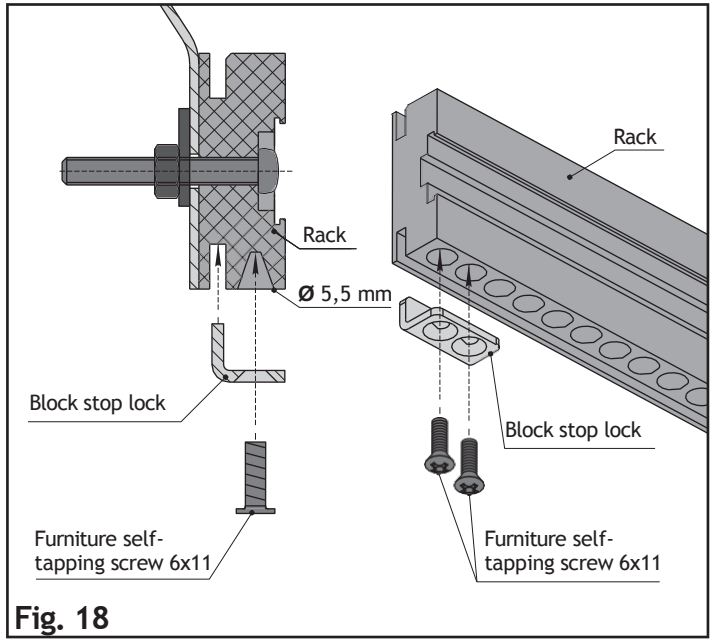


Fig. 18

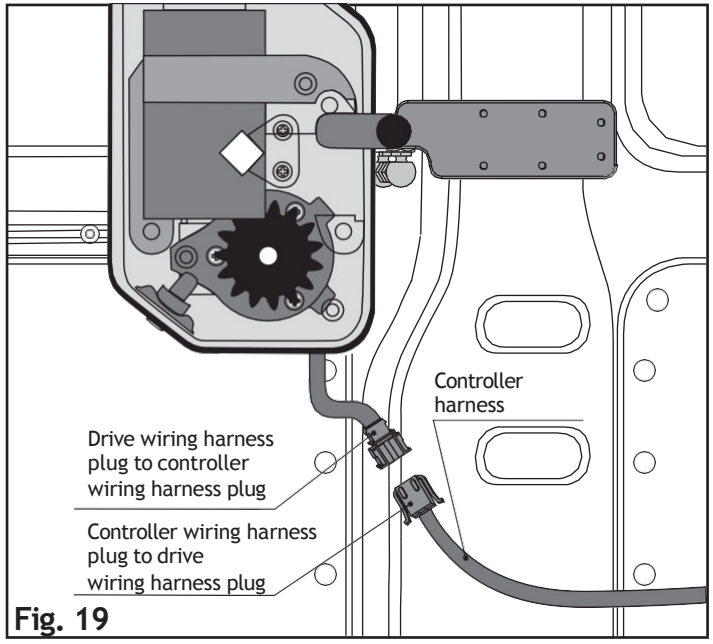


Fig. 19

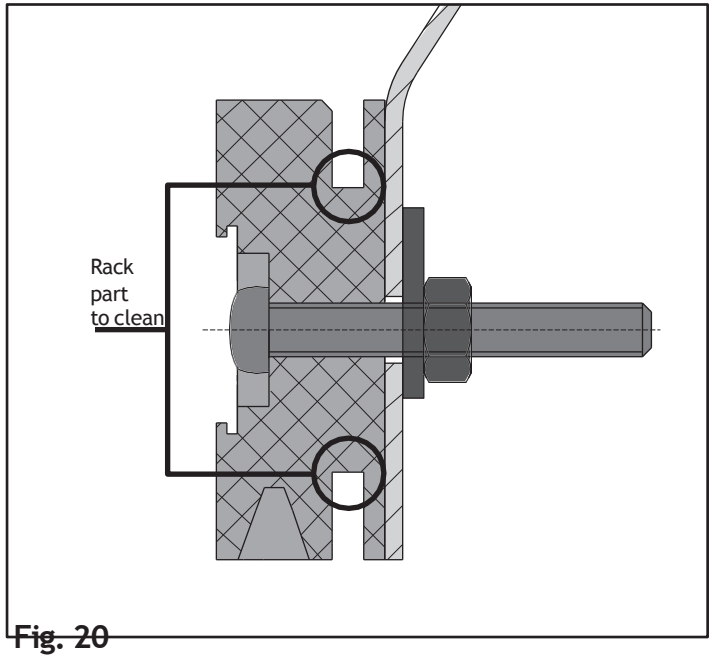


Fig. 20

Clear up the grooves of the rack from cuttings (figure 20).

Connect the drive to the controller (figure 19).

Insert 30A fuse into the fuse socket . The controller will make a sound signal.

Start up the engine of the minibus .

Press the control button. The drive will close the door and the controller will be making sound signals for 1-2 sec. Then start opening cycle. The drive will open the door and slowly roll up to the index pin. After that the drive will be working in regular operation mode.

ATTENTION

Before removing the drive (if necessary) or switching off the controller, first remove 30A fuse from the fuse socket .

DRAFT ADJUSTMENT

Draft position with correctly closed door in the locking mode is shown in fig. 21 and fig. 28, p. 25.

Rotating the pin by the hexagon drive (fig. 22), adjust the draft length so as the door could close tightly.

If draft installed correctly, it should bear against the cluster gear damper (fig. 23).

Draft position with correctly closed door in the nonlocking mode is shown in fig. 23 and fig. 29, p. 25.

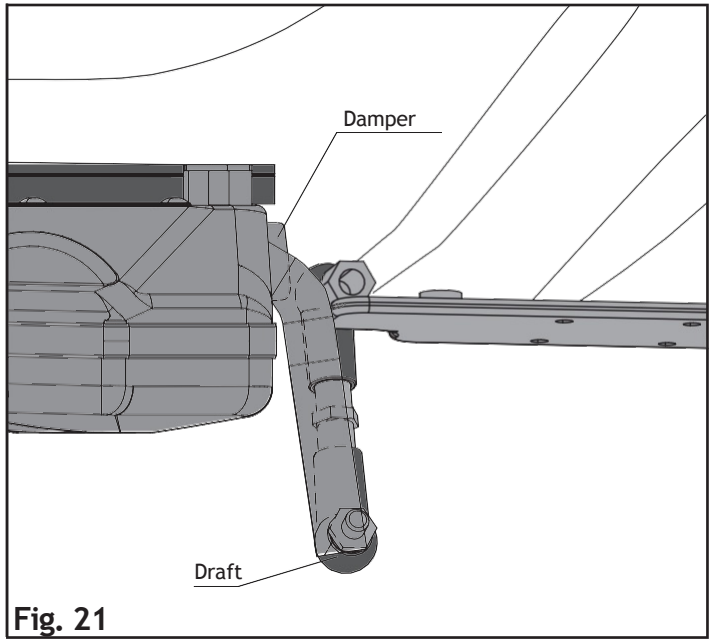


Fig. 21

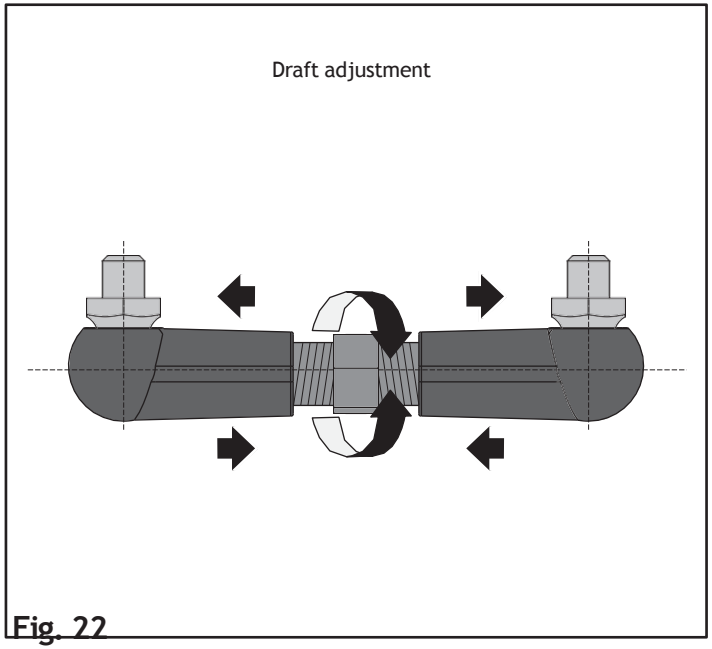


Fig. 22

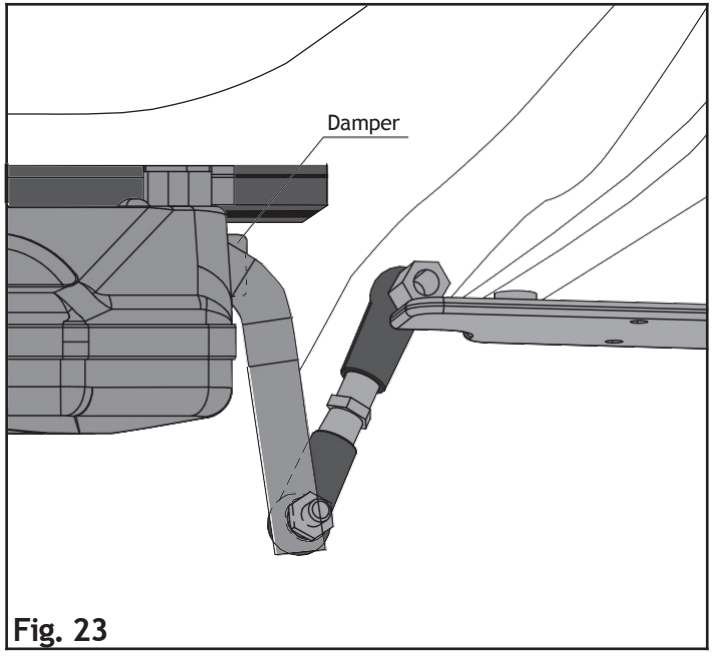


Fig. 23

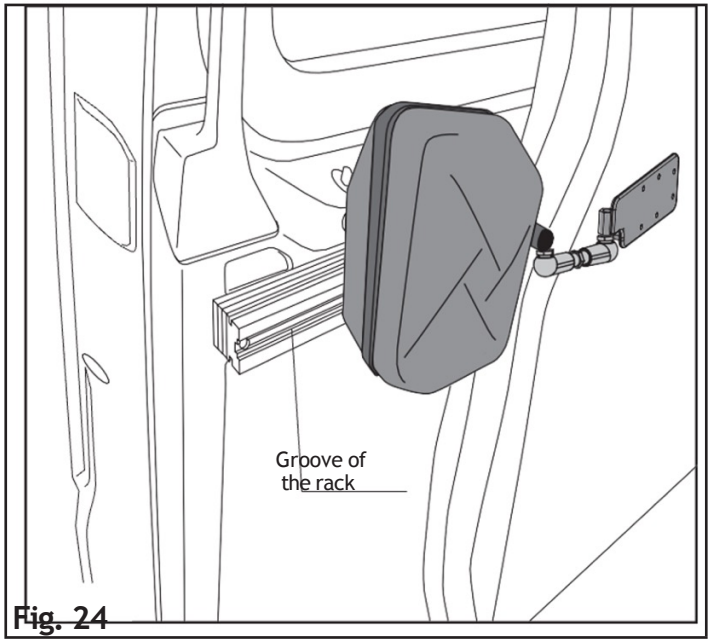


Fig. 24

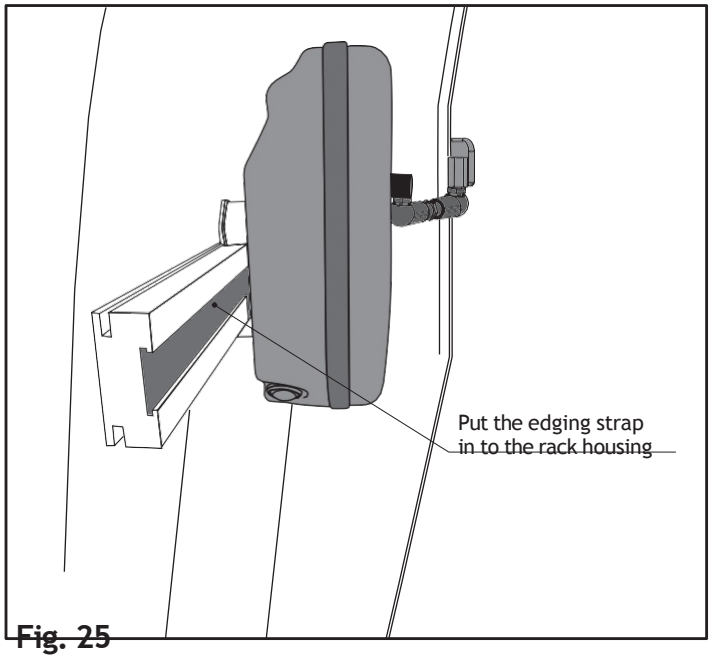


Fig. 25

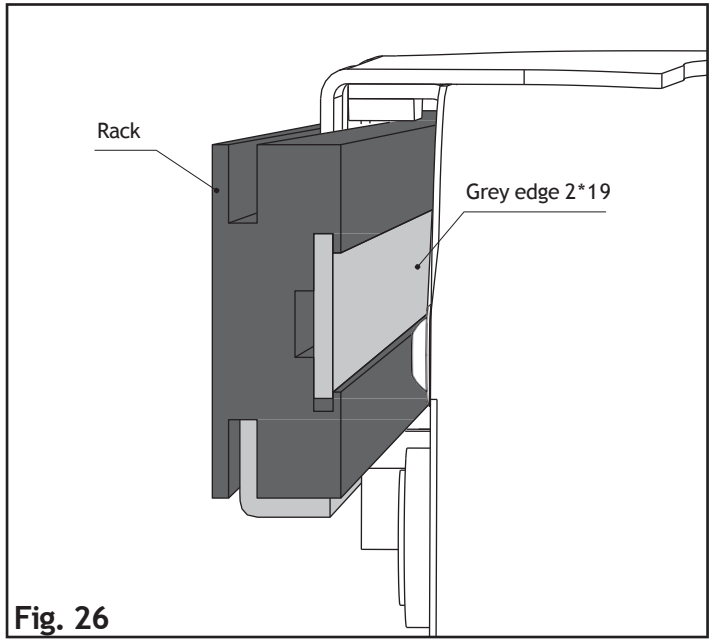
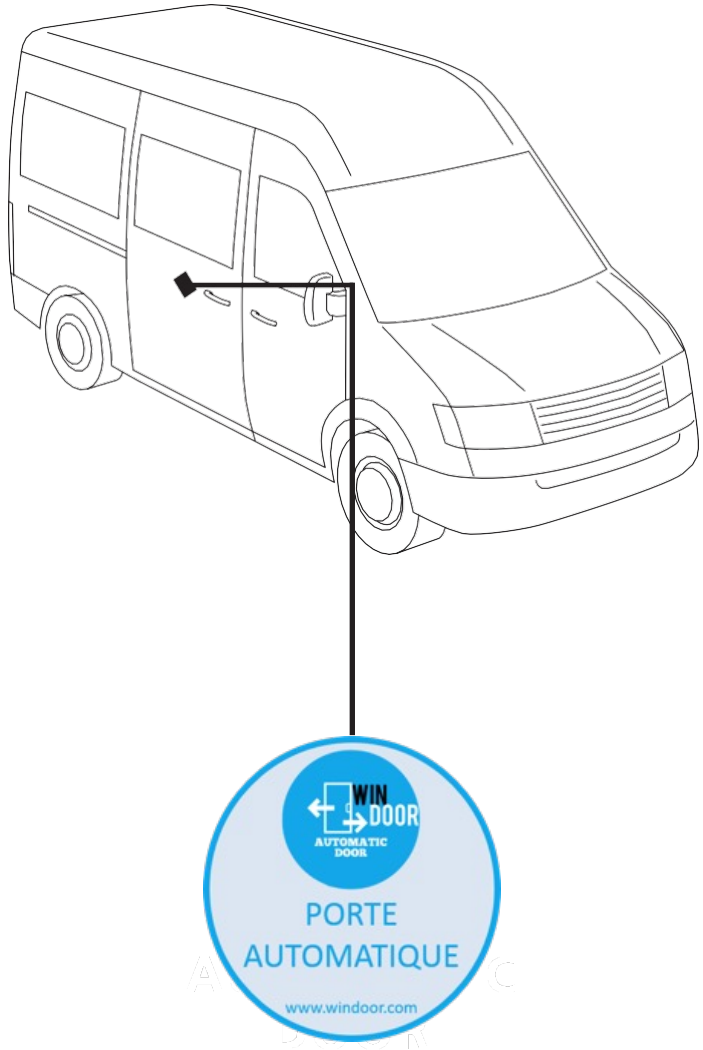


Fig. 26

Cut the decorative strap according to the rack (fig. 25 and 26).

Carefully put the strap into the rack housing as shown in figures 24, 25 and 26.

Place the information sticker outside the sliding door on the panel next to the handle so as it is easy to notice.



Put the cover of the external handle to the opening/closing door handle. Mark and drill 2 holes Ø 3,5 mm. Fix the cover of the external handle on the opening/closing door handle with 2 self-driving screws 4.2x16 from the metalware set as shown in figure 27.

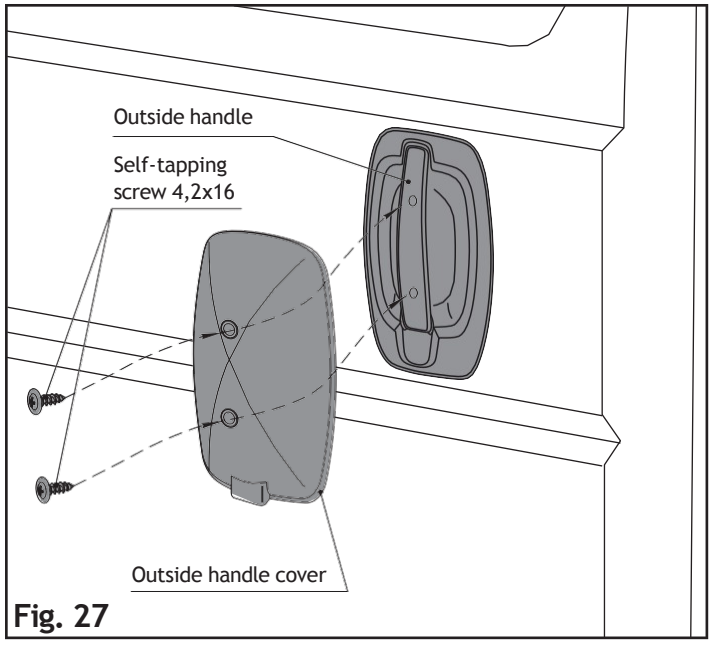


Fig. 27

OPENING AND CLOSING THE DOOR

Press and hold on the control button for about 0.5sec. The door starts moving after you release the button.

DOOR STOP

Press the control button once and shortly to stop the door on the move.

AUTOMATIC ROLL BACK

If during the closing process the door meets an obstacle, it will stop and roll back automatically.

DOOR OPENING WIDTH ADJUSTMENT

Open the door. Manually adjust it to desired width. Press and hold on the control button for about 10 seconds till double signal. Release the button. Since now the drive remembers the adjusted opening width.

SLIDING DOOR LOCKING MODE

The drive can work in two modes:

1. locking (in factory settings) fig. 28;
2. nonlocking fig. 29. (only with lock actuator)

To turn to the nonlocking mode, please, press and hold on the button for about 15 seconds until 3 long audio signals. Release the button.

ADJUSTING THE DOOR CLOSING SPEED

The drive has three door opening/closing speeds.

Press and hold on the control button for about 20 seconds until quadruple audio signal. Release the button.

In order to increase the speed by one position, it is enough to press the button once while closing the door.

In order to reduce the speed by one position, it is enough to press the button once while opening the door.

FACTORY SETTINGS RESET

Press and hold on the control button for about 25 seconds until quadruple audio signal. Release the button. All the drive settings will turn to factory.

NOTE

The drive settings reset to factory during power failure.

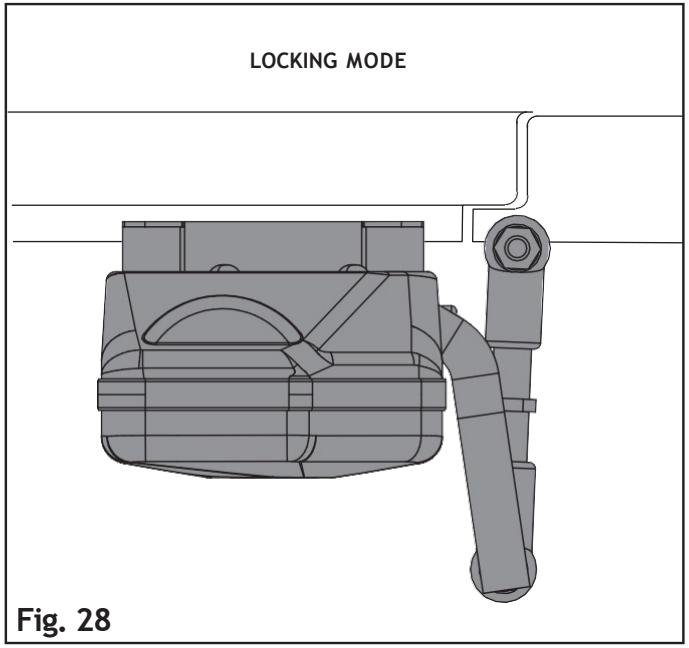


Fig. 28

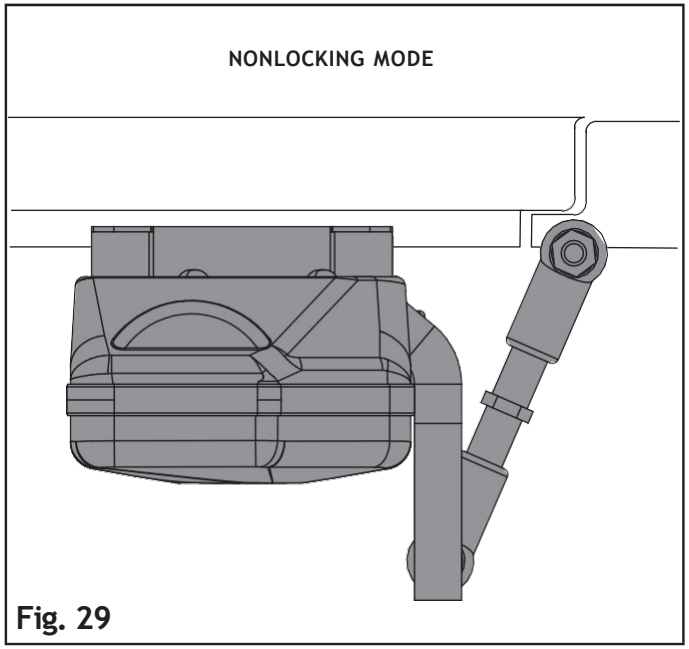


Fig. 29

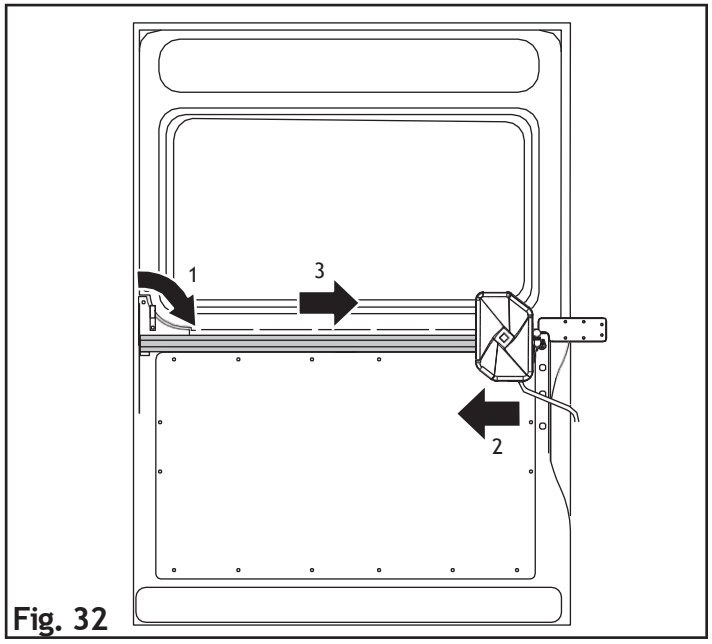


Fig. 32

EMERGENCY DOOR OPENING

FROM THE INSIDE ONLY

1. Turn the door handle and hold it (figure 32).
2. Move the drive to the left against the stop (figure 32).
3. Open the door by hand (figure 32).

We recommend not to install the interior hand cover (sold in option)

CHANGING TO MANUAL OPERATING MODE

1. Unscrew the outside handle cover and open the door by hand (figure 33).
2. Remove the block stop lock (fig.34).
3. Disconnect the drive harness socket (fig. 34)
4. Unscrew the link (figure 35).
5. Remove the drive off the rack (figure 35).

Now the door can be used in manual mode.

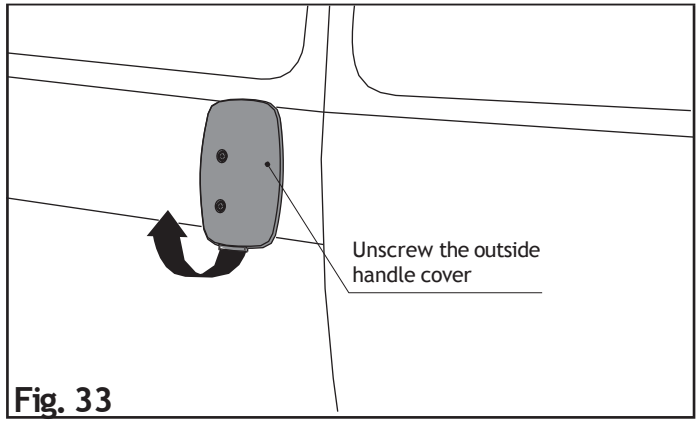


Fig. 33

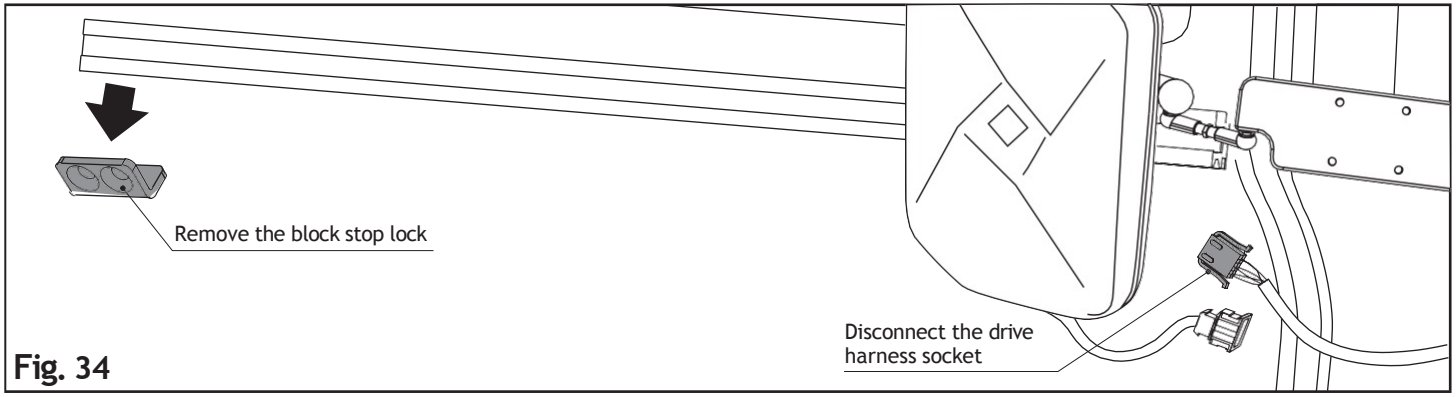


Fig. 34

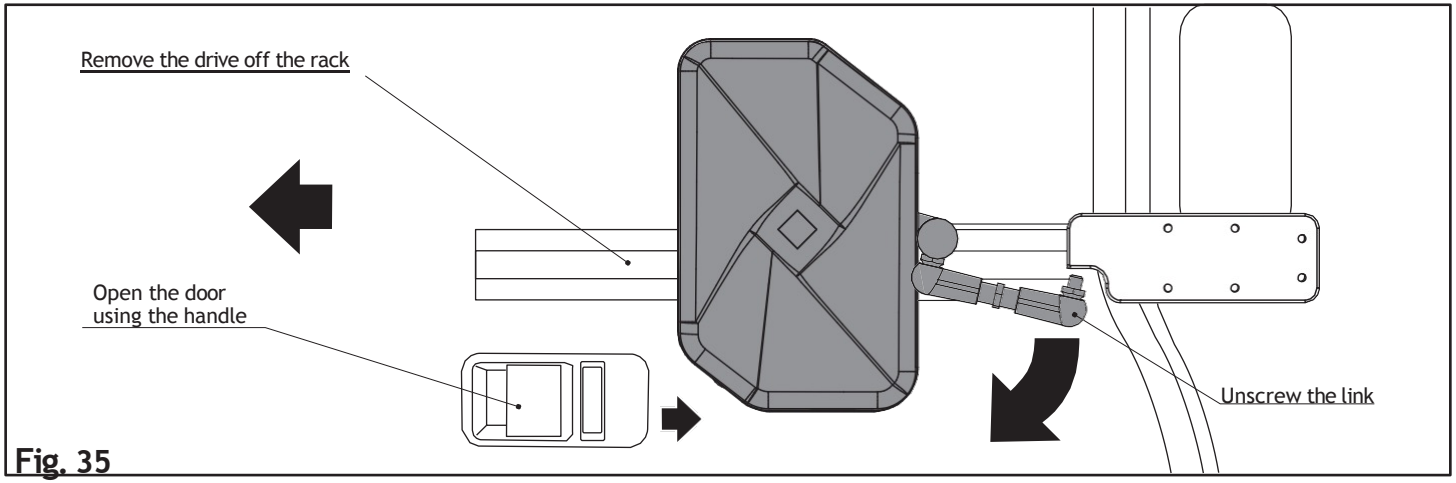


Fig. 35