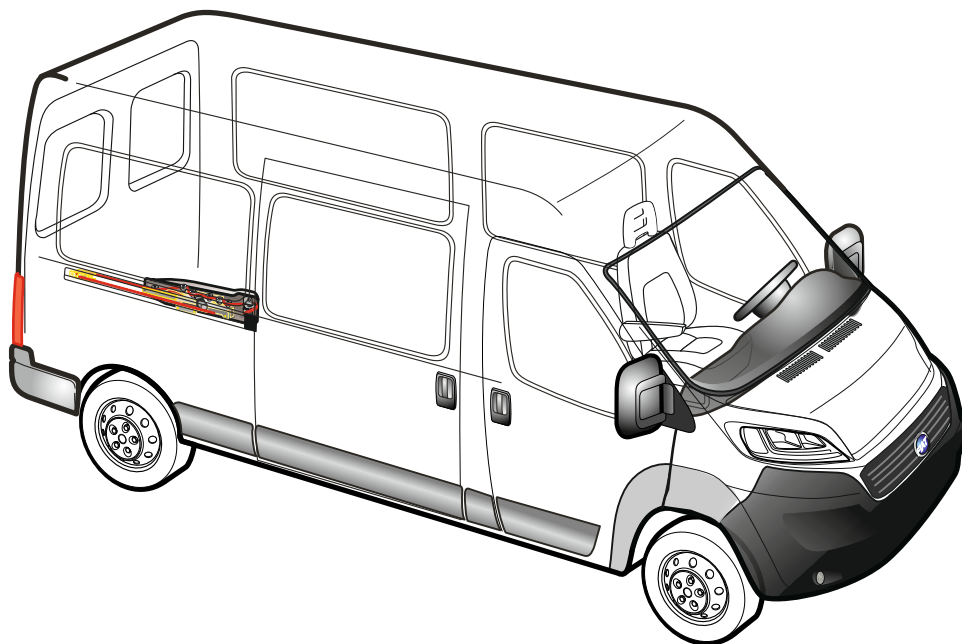


Your Cool Partner

**Auto
Cool** IND. LTD.



**RAM
ProMaster**



ASD - Automatic Sliding Door
L2,L3,L4 vehicles.

Right door

PN: 015-0002-DL2

Original Door latch mechanism
& operation with handles

Models from 2015

And for OPEL MOVANO models from 2022

[PRINT THE INSTRUCTIONS IN COLOR](#)

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Introduction:

- The purpose of this Installation manual is to simplify the installation of the system.
- The information presented here is guidance only and is not intended to change, eliminate or override any safety or installation requirements required in your country or the final destination to which the vehicle is intended.
- If you have any questions or need any clarifications, please contact your local distributor.
- Our manufacturer's warranty does not cover malfunctions or damage caused by incorrect installation or modifications made without the written consent of our engineering department.
- The manufacturer shall not be liable in any form or manner for any injury, accident, loss or damage caused directly or indirectly as a result of using the installation instructions listed here.

Before any installations:

- Detach the battery negative wire.
- Check O.E. door for properly opening / closing and alignment.
- Ensure that the right kit has been selected and match to the vehicle type.
- Check all part of the kit are present.
- Make sure the work area is protected against damage.
- Tight all bolts with calibrated torque wrench.
- Take extreme care with removing O.E. parts.
- After cutting / drilling, make sure to clean the metal shavings and apply anti-rust.
- Before applying Sikaflex, make sure to clean with alcohol and apply Sikaflex primer.

ASD technical data:

- System voltage - 12VDC
- Nominal current - 5A
- Operating temperature: -30°C to +80°C
- Driven by rustproof chain
- Hidden chain
- Remote control / OEM remote
- Manual and electrically operation
- Electronically controlled microprocessor
- Net weight: 7-9 kg

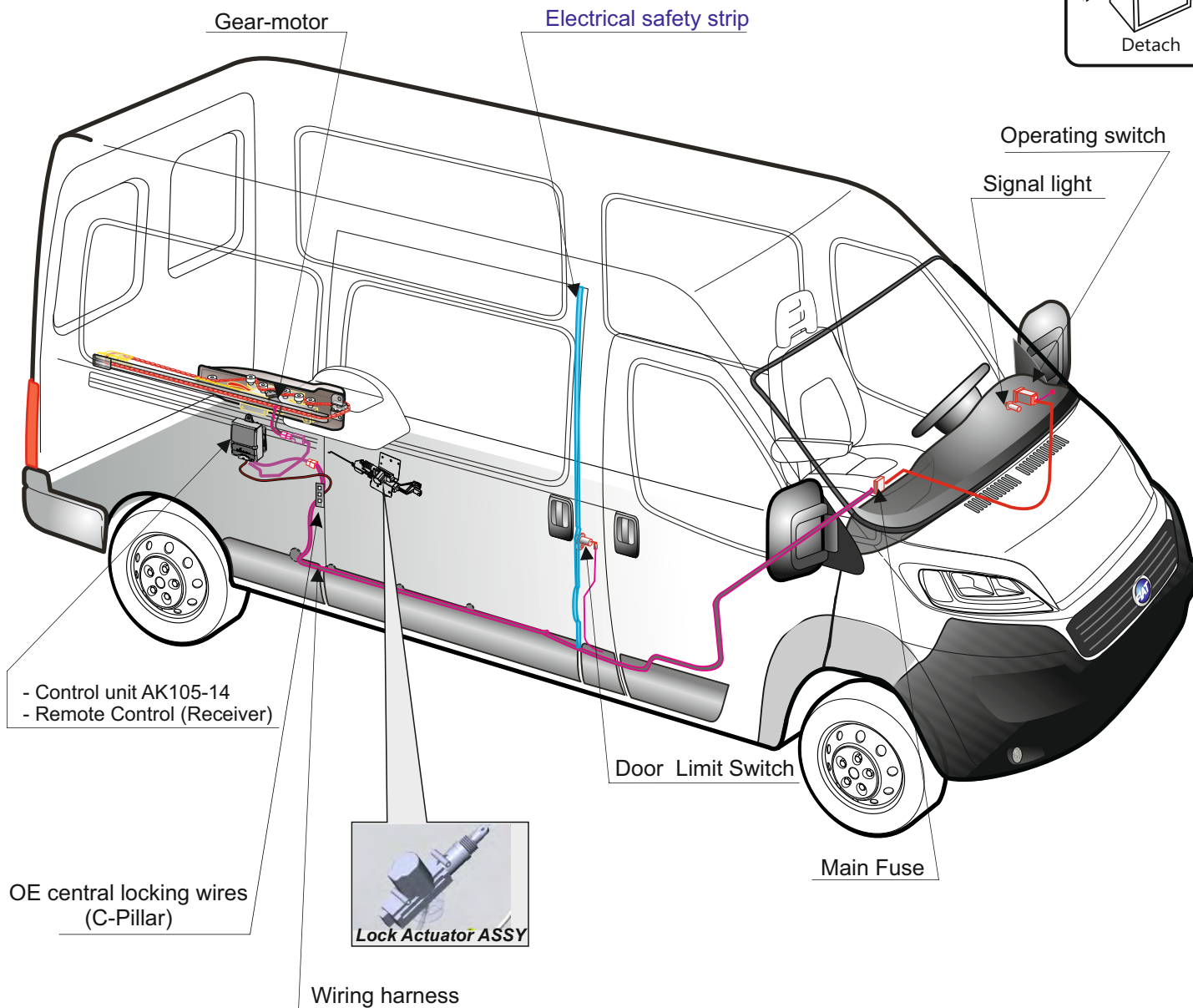
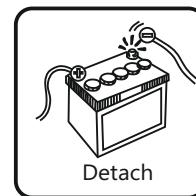
For any technical support please contact the AutoCool.

Fax: 972-3-9343208

Tel: 972-3-9342080

E-Mail: info@autocool.co.il

www.autocool.co.il



Remote control



(Use the button with opening symbol only)

Short pressing-fully opens/closes the door .
The remote control is being inoperative while turning on the ignition.

Button on the Dashboard



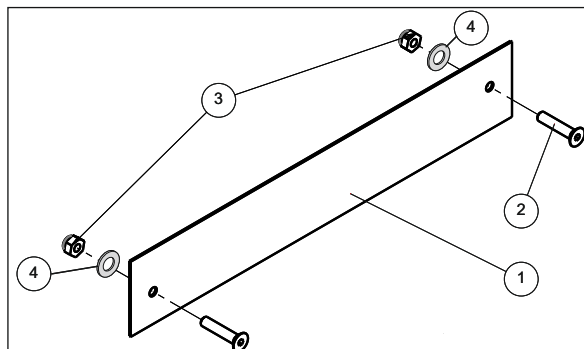
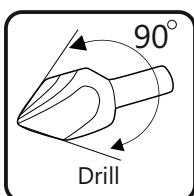
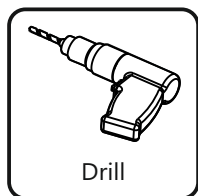
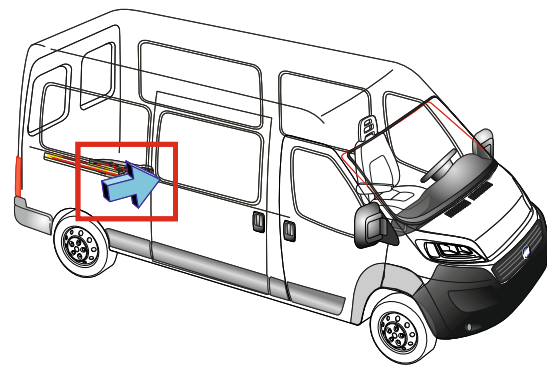
Short pressing-fully opens/closes the door .

Continuously pressing (semi-automatic mode)- opens the door until the button is released.

*The system is inactivated while the vehicle exceeds speed of 5km/h

Before any installation, test the function and alignment of the original door.

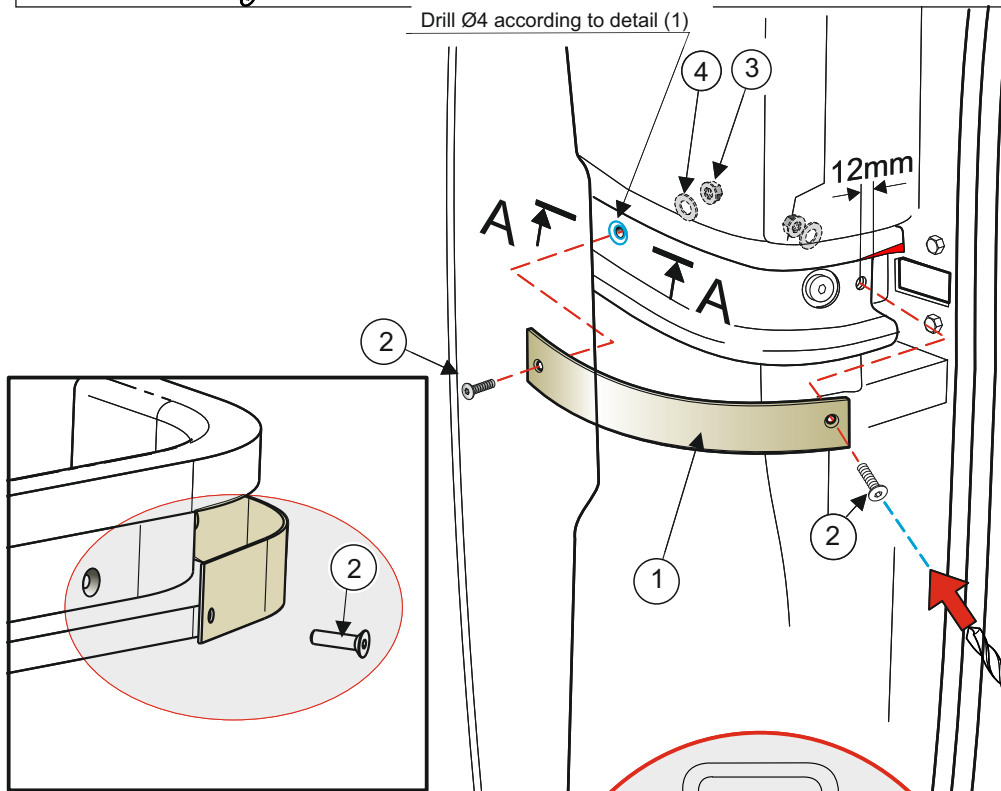
Chain slide strip installtion



Chain Slide Strip Kit
PN:160-04-002

ITEM NO.	PART NUMBER	DESCRIPTION	E/QTY.
1	134-01-002	Slide Strip (Ducato2007)	1
2	613-04-020	Flat head socket screw M4X20	2
3	602-02-004	Lock nut M4 DIN985	2
4	600-12-040	Flat washer 4	2

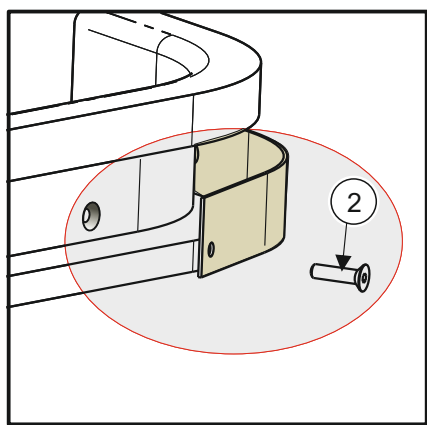
Drill Ø4 according to detail (1)



Step 1
Align chain slide strip ① to the right and bottom of the track.

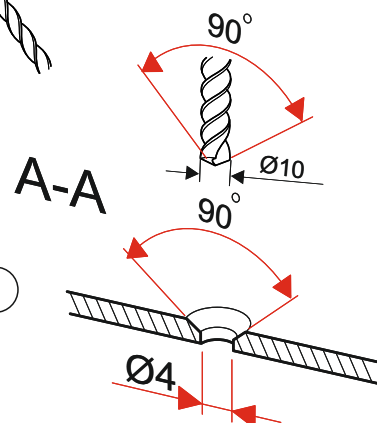
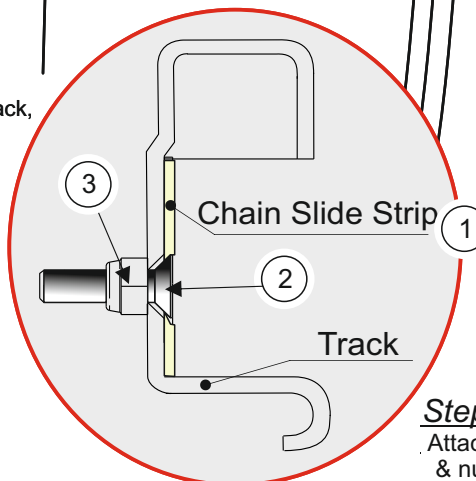
Step 2
Mark & drill thru the right strip hole 4 mm.

Step 3
Attach the right strip using screw M4x20 & nut M4 and flat washer



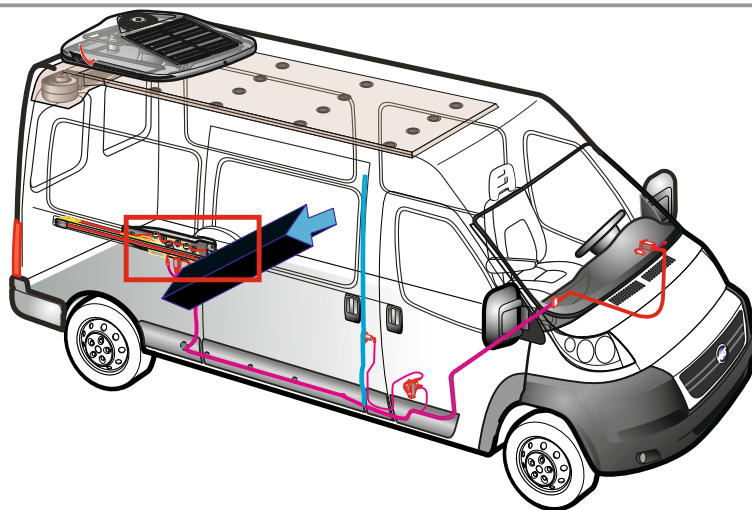
Step 4
Tightly pressed chain slide strip to the surface of track, Mark & drill thru the left strip hole 4 mm.

Step 5
Attach the left strip using screw M4x20 & nut M4 and flat washer 4

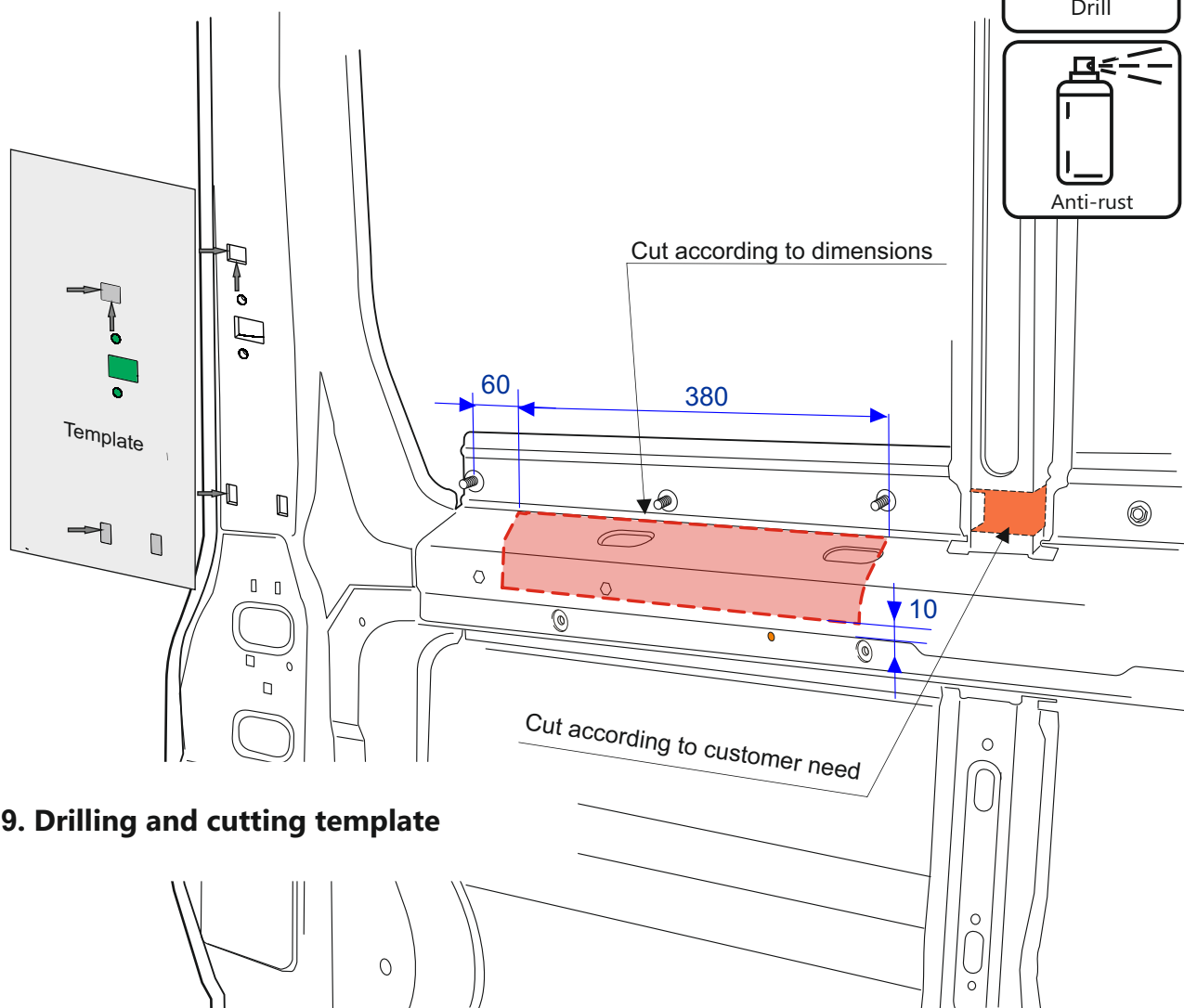
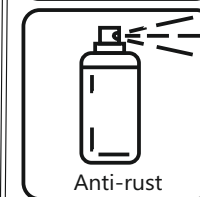
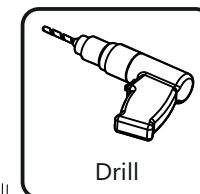
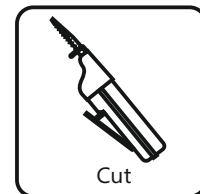


Step 6
Attach the left strip using screw M4x20 & nut M4.
*Make sure the screw is entirely inside

Section A-A



Models up to 2015



See Page 39. Drilling and cutting template

Keep all plastic parts that have been disassembled in a safe place.

After drilling/cutting, clean unit surface carefully, and paint all holes and cutting lines with top quality anti-rust.

Gear Motor Bracket Kit

PN:160-06-0021

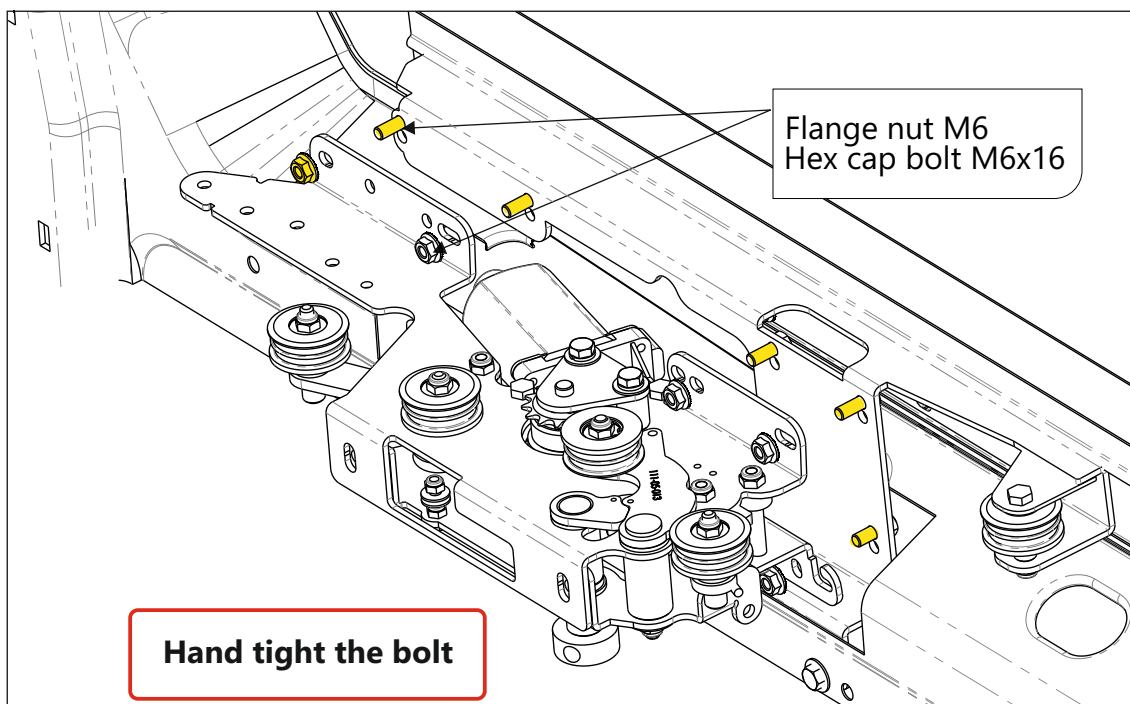
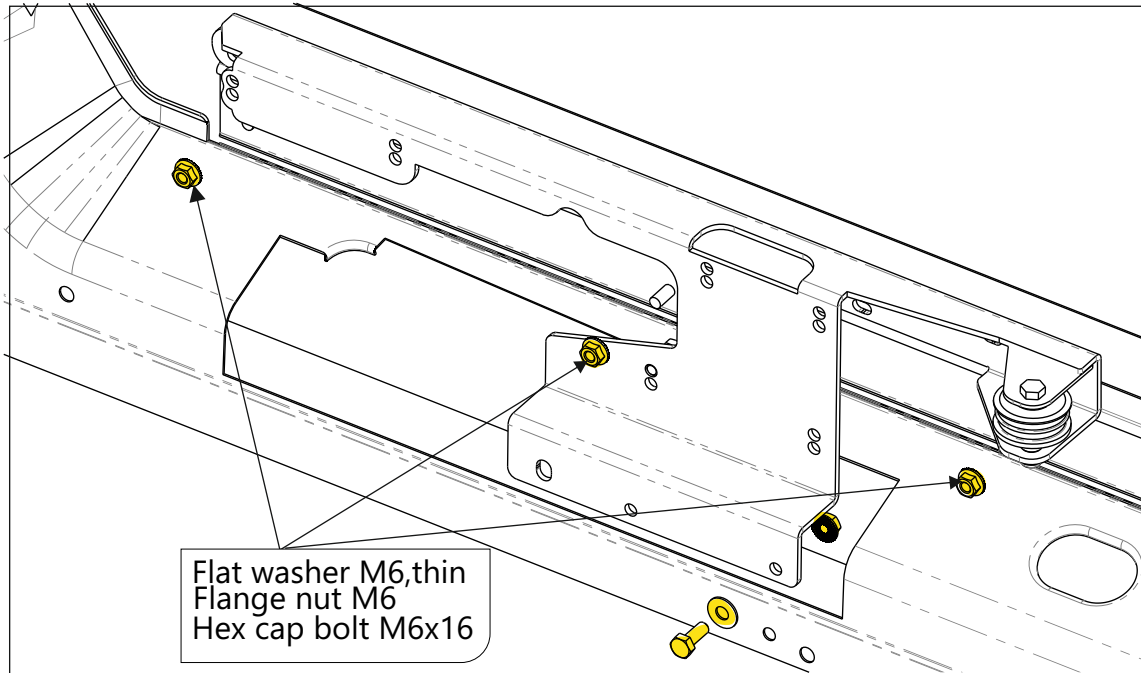
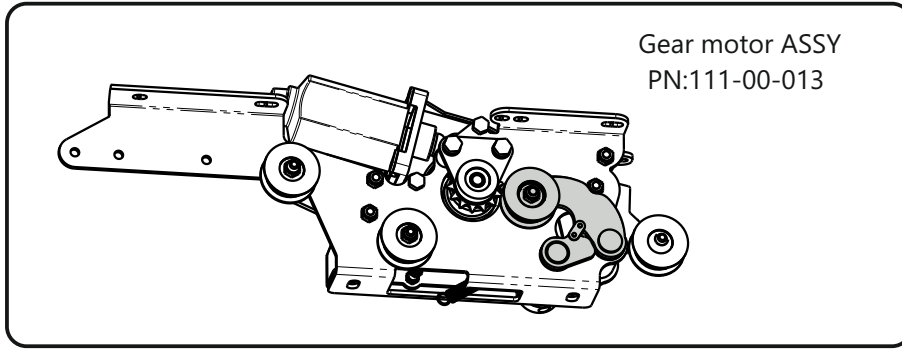
ITEM NO.	PART NUMBER	DESCRIPTION	Exploded/QTY.
1	111-00-0021	Gear Motor Bracket	1
2	600-12-080	Flat washer M6,thin DIN735	1
3	601-06-006	Hex flange nut M6 DIN 6923	7
4	632-06-016	Hex cap screw M6x15 DIN933	7

Gear Motor Bracket

PN:111-00-0021

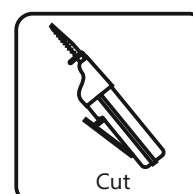
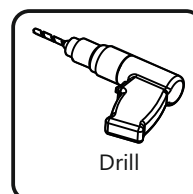
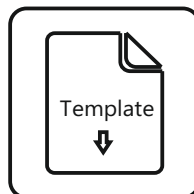
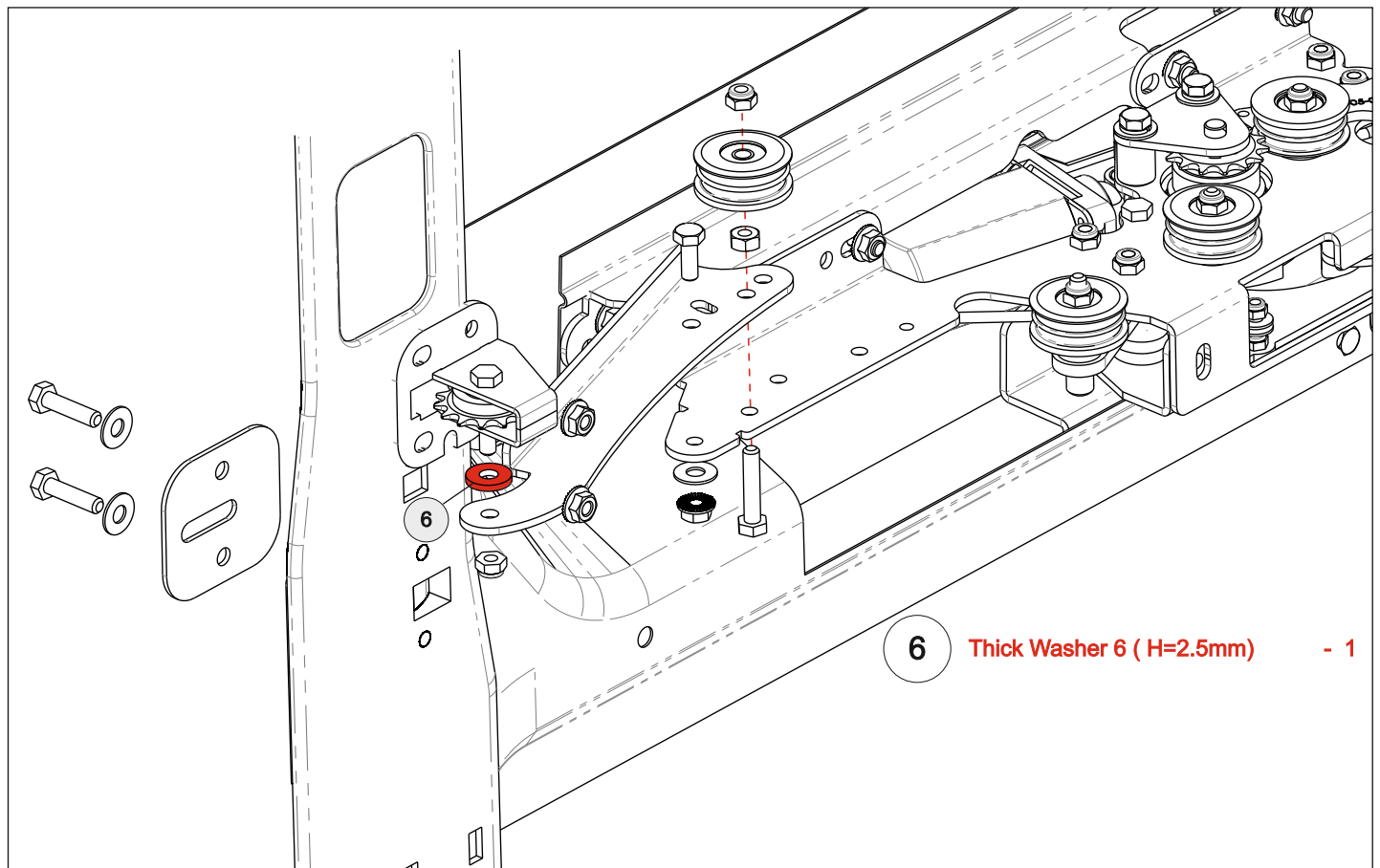
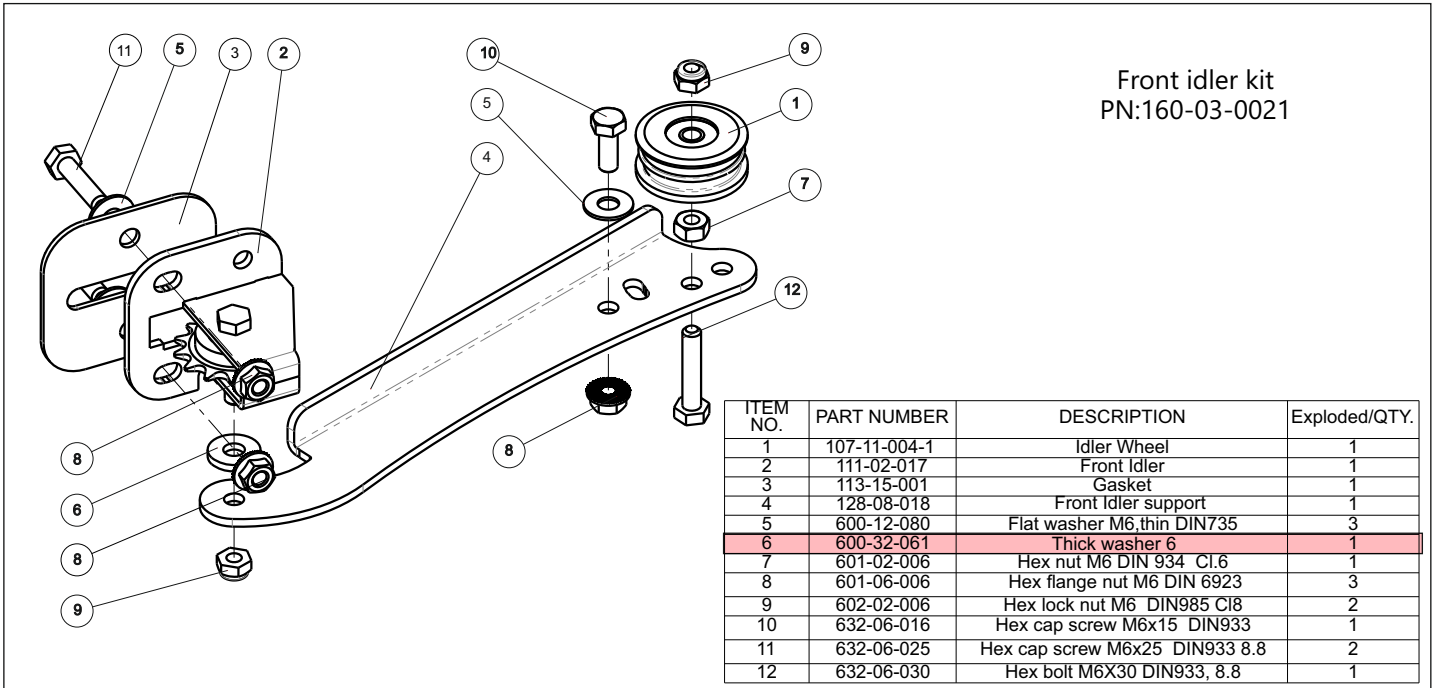
ITEM NO.	PART NUMBER	DESCRIPTION	Expl./QTY.
1	111-15-021	Gear-motor bracket WLDMNT	1
2	107-11-004-1	Idler Wheel	1
3	602-02-006	Hex lock nut M6 DIN985 Cl8	1
4	632-06-040	Hex head bolt M6X40	1
5	600-00-002	Washer 6x12x1.6 DIN1440	1
6	501-12-002	Spacer	1

Gear motor installation



Front idler installation

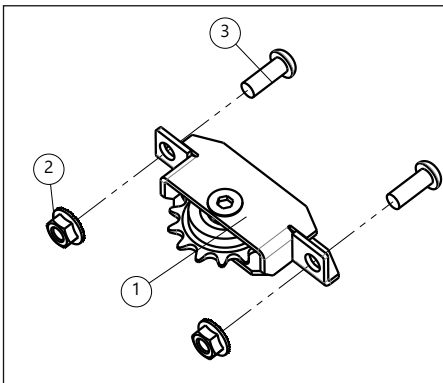
Front idler kit
PN:160-03-0021



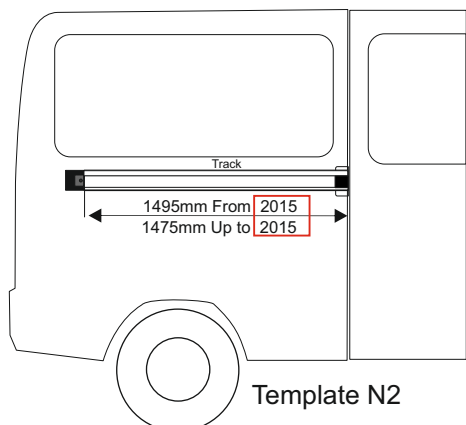
Check the front idler determine final position after the chain installation.

Rear idler installation

Rear Idler Kit
PN:160-01-0021

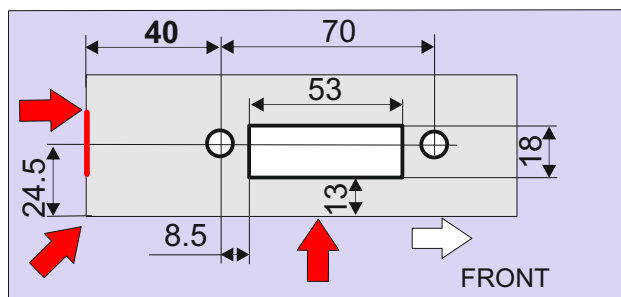
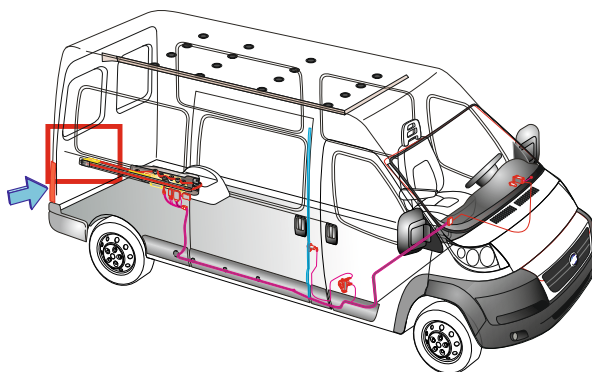


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	111-02-003	Rear Idler	1
2	601-06-006	Hex flange nut M6 DIN 6923	2
3	614-06-016	Socket button head cap screw M6x16	2



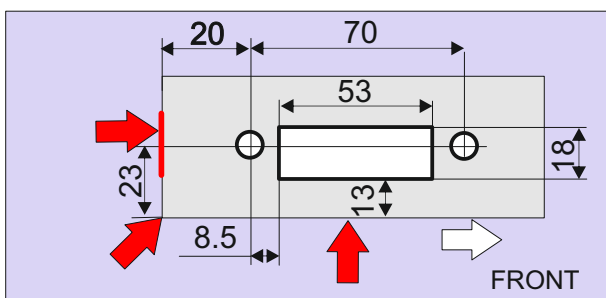
Template N2

1495mm Track From 2015



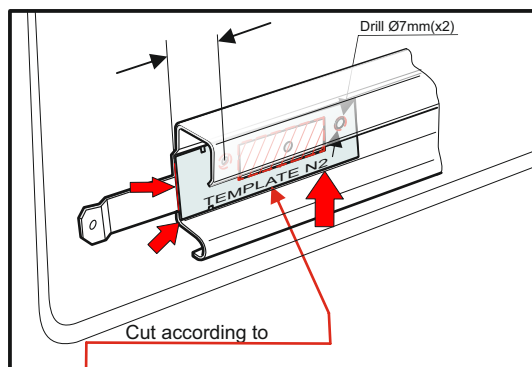
FRONT

1475mm Track Up to 2015

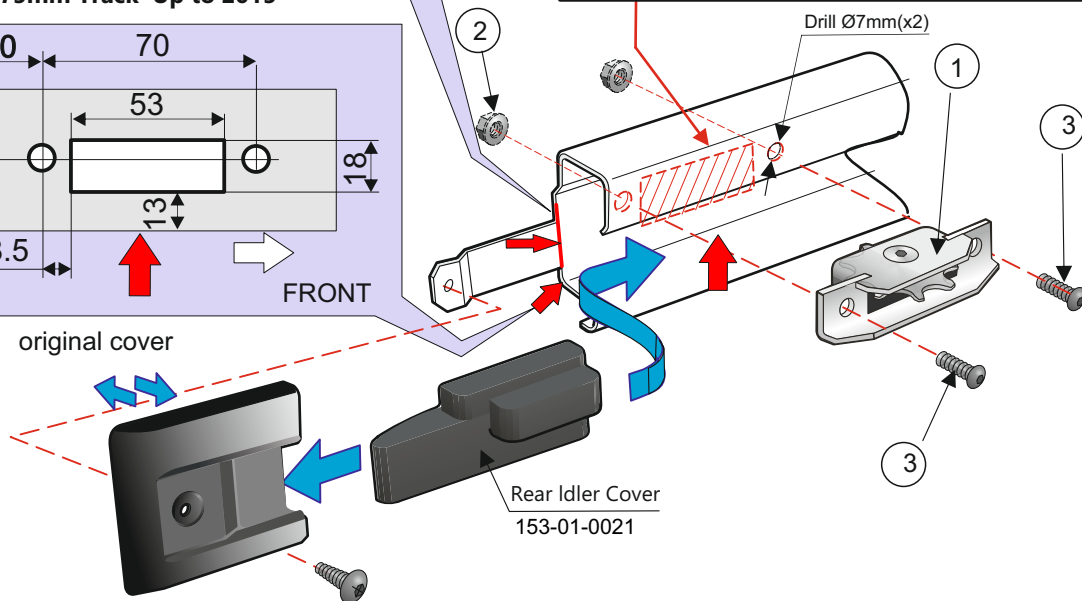


FRONT

original cover



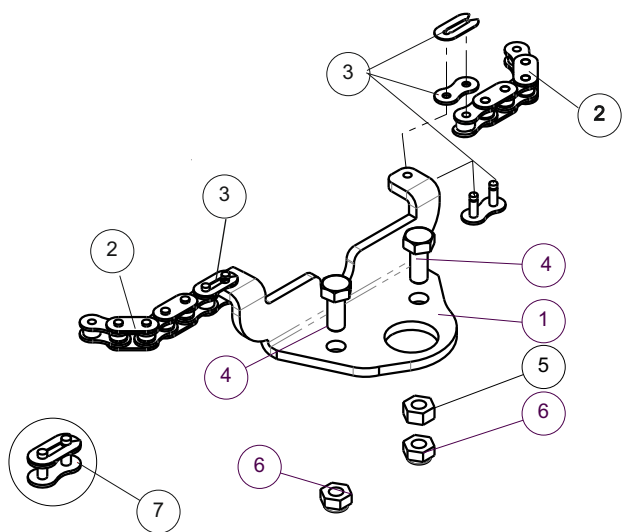
Cut according to



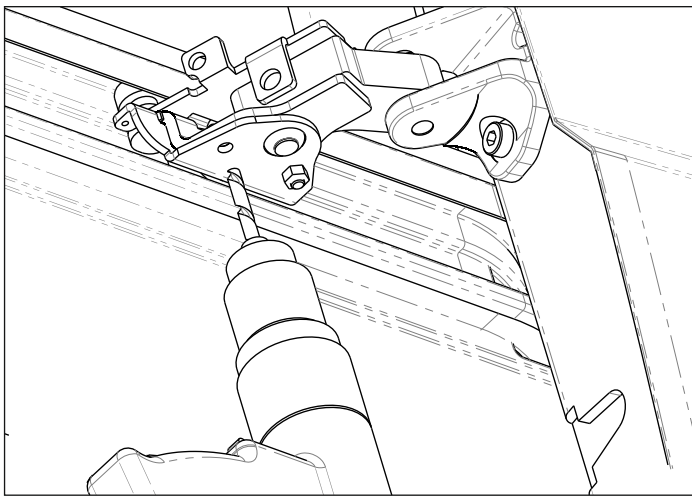
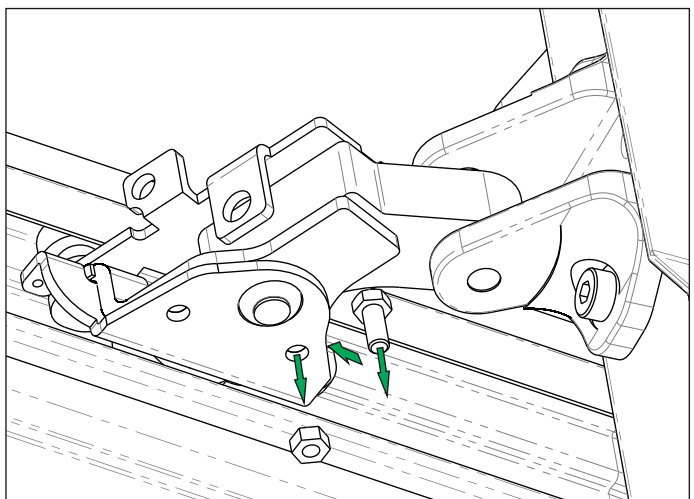
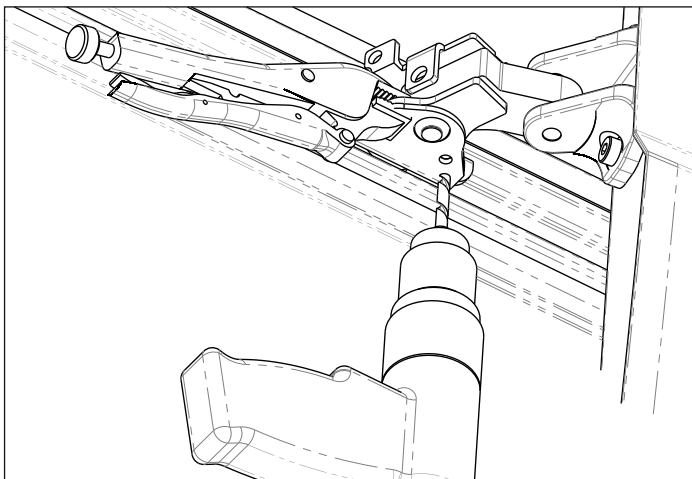
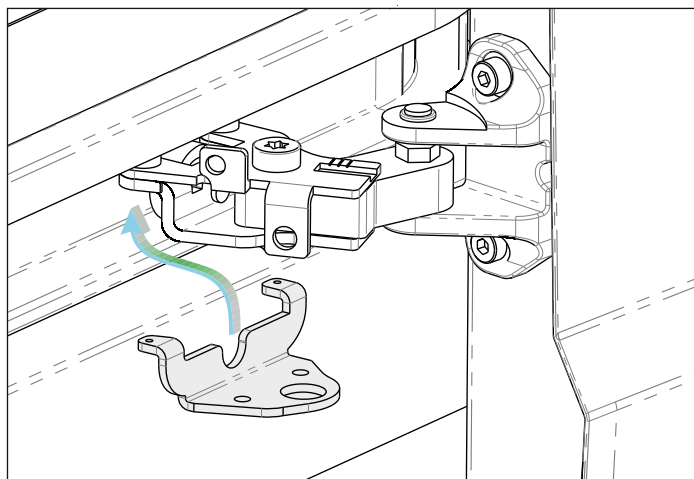
Rear Idler Cover
153-01-0021

See Page 41. Drilling and cutting template



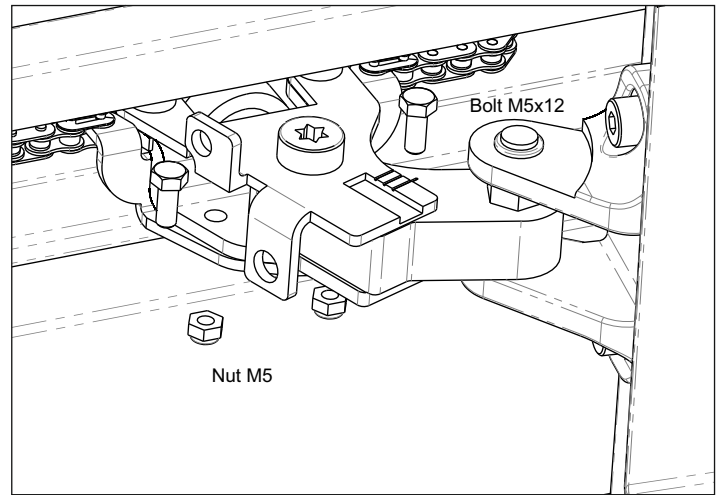
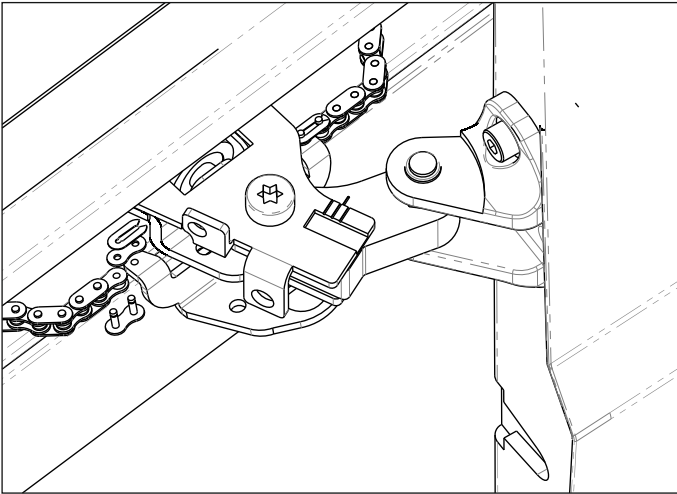


ITEM NO.	PART NUMBER	DESCRIPTION	Exploded/QTY.
1	128-15-216	Chain holder Fiat 2016	1
2	178-00-002-1	Roller chain B05 L=2936mm (183)	1
3	900-01-072	Chain connecting link B05	2
4	632-05-012	Bolt 5x12 M. ST	2
5	601-02-005	Nut M5 DIN 934	1
6	602-02-005	Hex lock nut M5 DIN 985 Cl6	2
7	150-00-000	Spare part	1

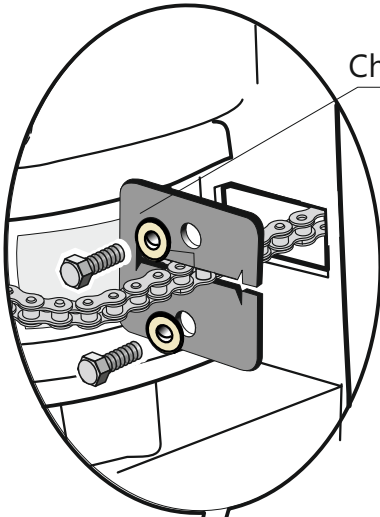


1. Put the chain holder and clamp with vise grips , drill 5mm diameter hole through holder.
2. Put the screws M5X16 through holder and central roller ,secure using Nut M5
3. Drill second hole diameter 5mm.

Drive chain installation

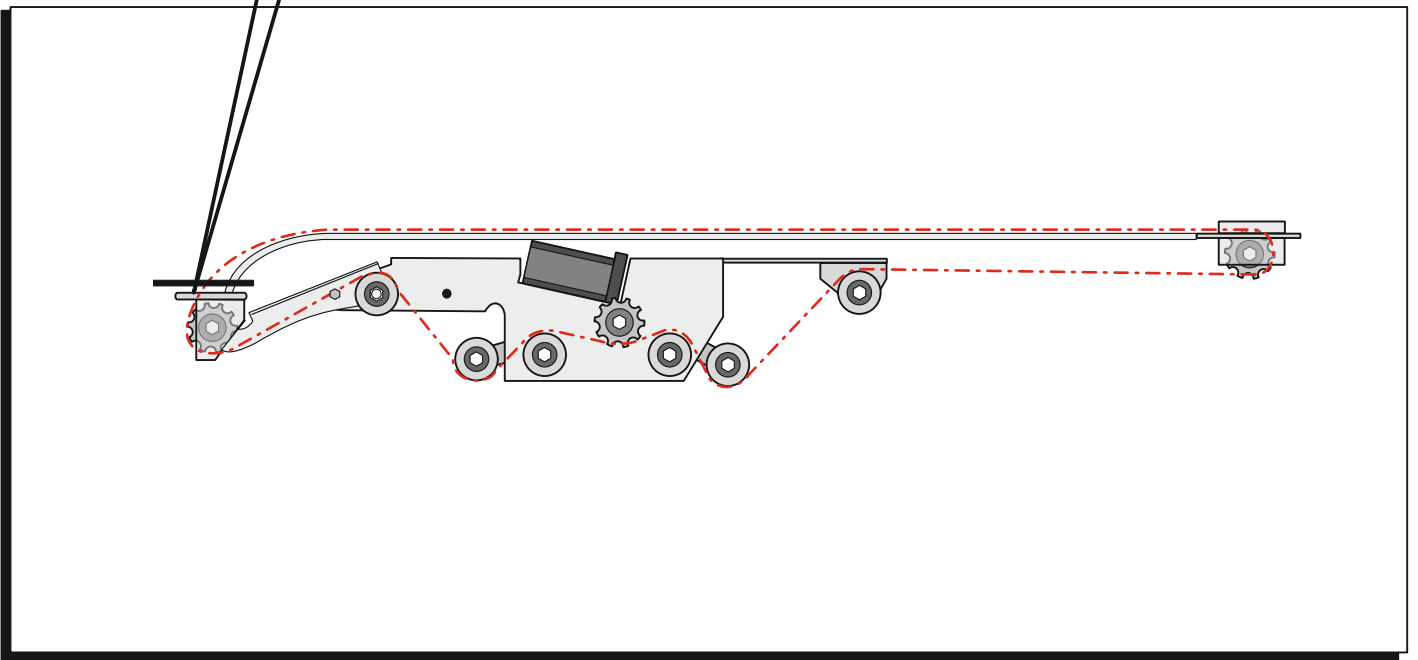


1. Connect the roller chain to the chain holder using connecting link on both side.
2. Place the chain holder with chain into the place.
3. Insert the screws M5X16 through holder and central roller ,secure using locknut M5.

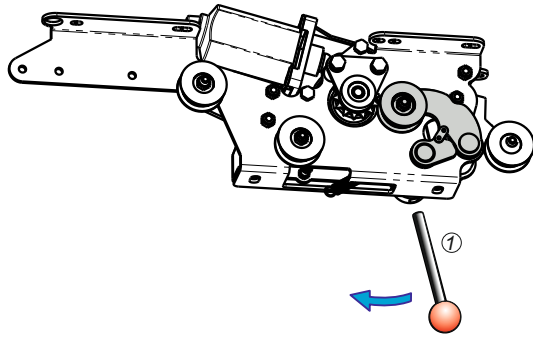


Chain sealing rubber- Option

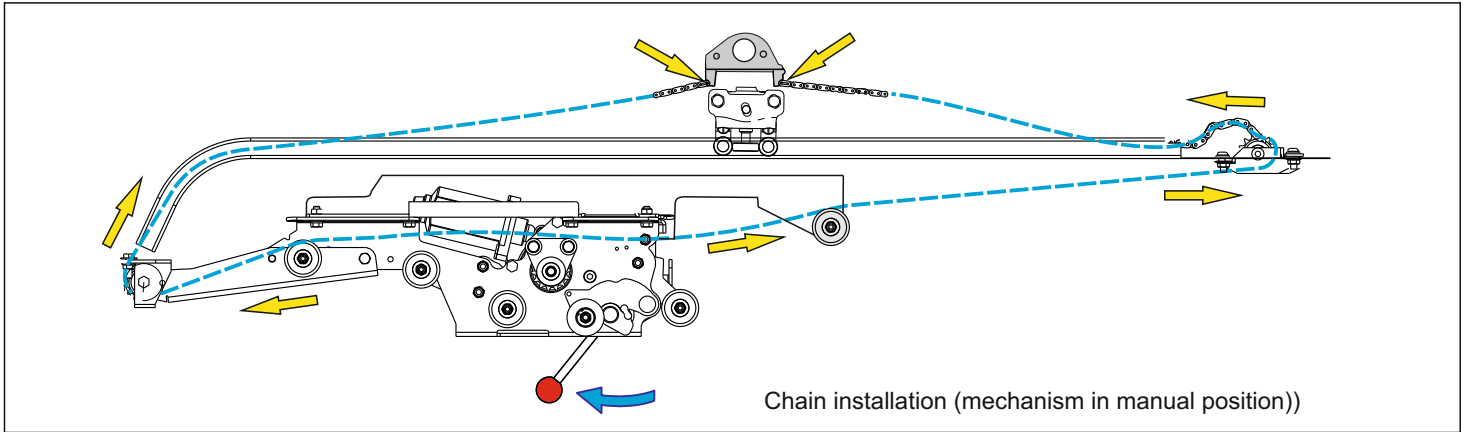
113-15-001



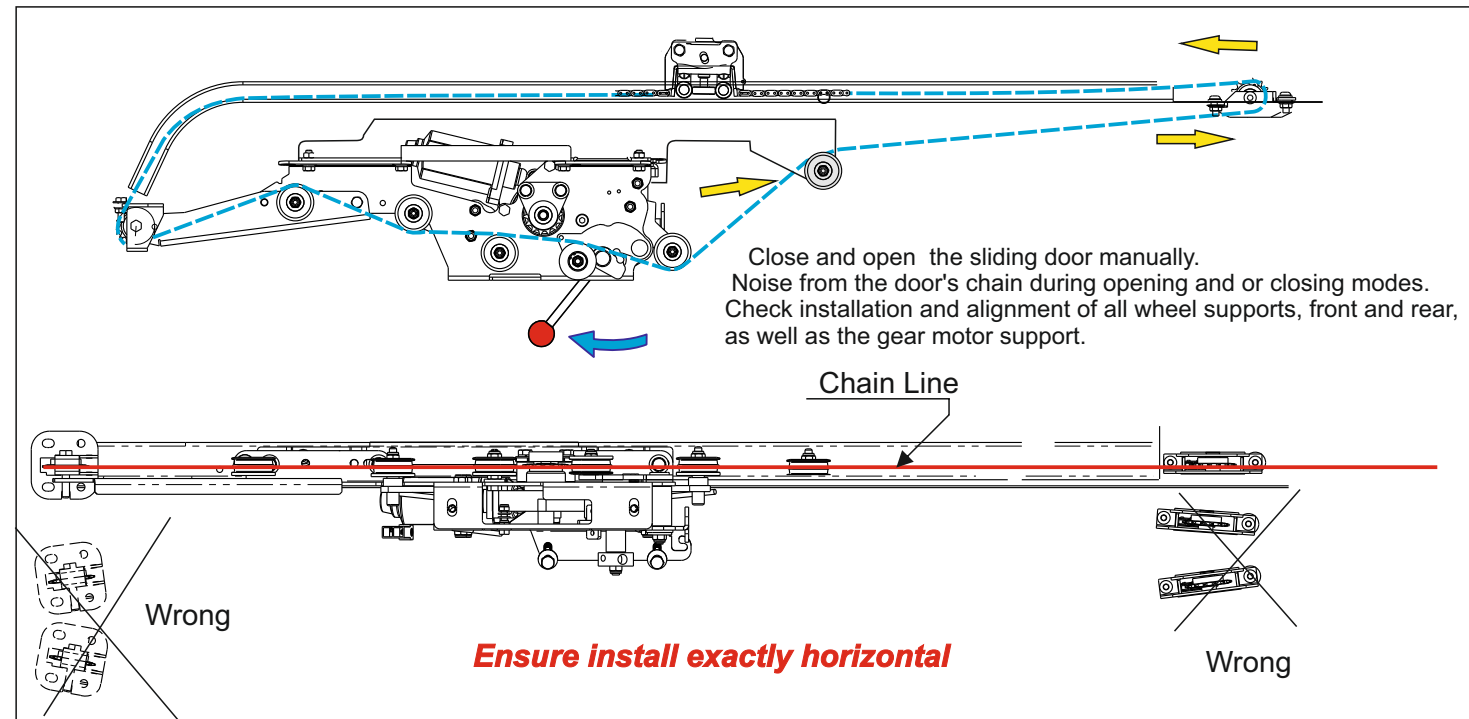
Drive chain installation



Insert the emergency manual handle (1). Move the handle to left for manual operating



Chain installation (mechanism in manual position))



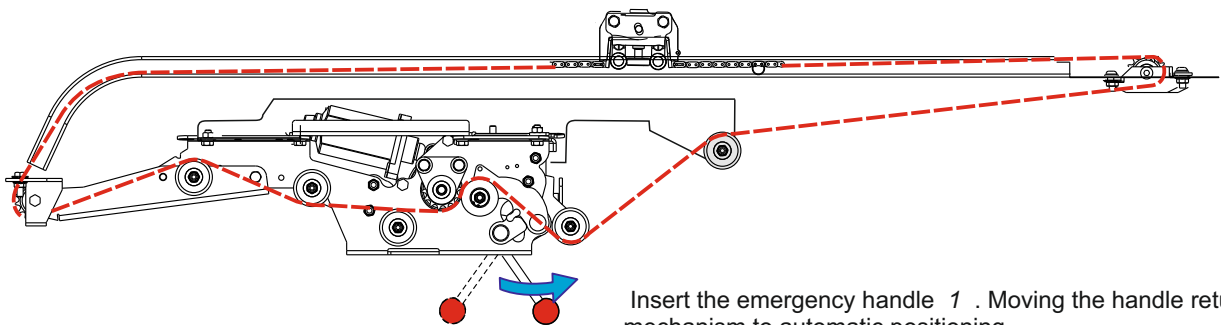
Close and open the sliding door manually. Noise from the door's chain during opening and or closing modes. Check installation and alignment of all wheel supports, front and rear, as well as the gear motor support.

Chain Line

Wrong

Ensure install exactly horizontal

Wrong



Insert the emergency handle 1. Moving the handle returns the mechanism to automatic positioning.

ASD Fiat Ducato Original Door latches mechanism & operation with handles

PN:160-15-201-1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	125-10-014	Cable strap 150mm	2
2	125-10-016	Cable strap 100mm	3
3	601-06-006	Hex flange nut M6 DIN 6923	2
4	125-10-005	Plastic clamp UC-2 3/8"	1
5	646-08-020	Phillips screw 8x5/8"	1
6	613-06-016	Socket flat head screw M6X16 DIN7991	2
7	111-15-201-1	Fiat Ducato locker bracket ASSY	1
8	647-08-003	Phillips pan head self-drilling screw 8x1/2"	1

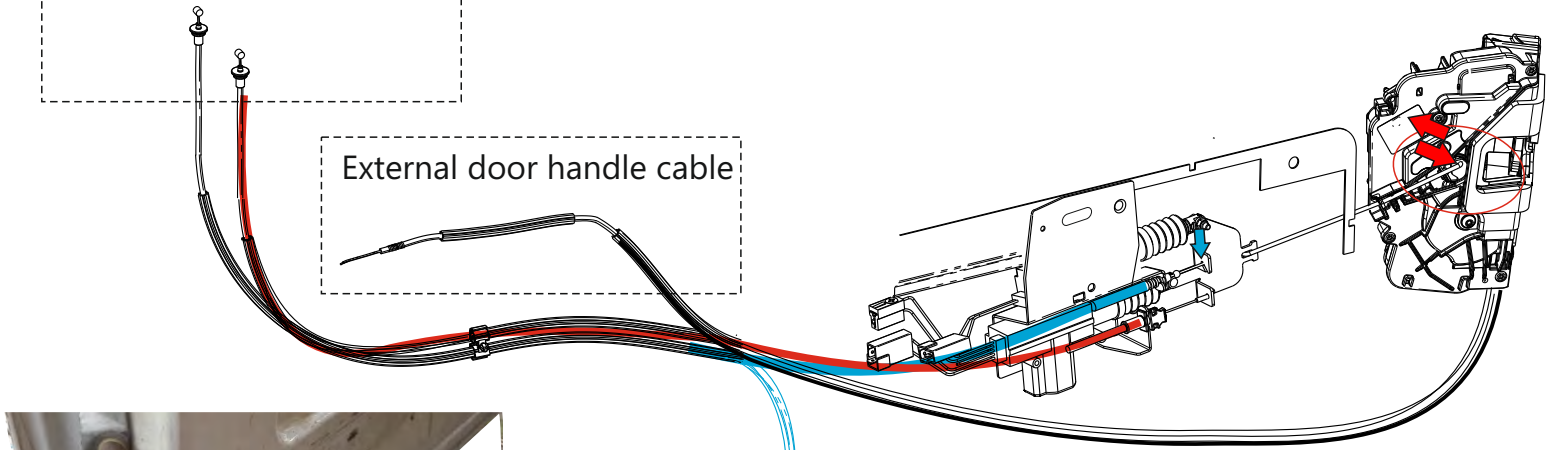
Actuators ASSY Door Latch

PN:111-15-201-1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	128-15-201-1	Fiat Ducato locker bracket	1
2	110-01-006-10	Lock actuator ASSY	1
3	110-11-006	Actuator ASSY	1
5	128-15-204	Fiat/ ProMaster Lock Actuator arm	1
6		Philips cross Screw 4.2	4
7	632-04-016	Hex bolt M4x16 , DIN933	1
8	128-15-203	Cables adapter	1
9	602-02-004	Lock nut M4 DIN985	1

Internal door handle cables

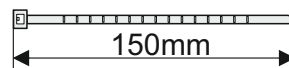
External door handle cable



Release lower cable



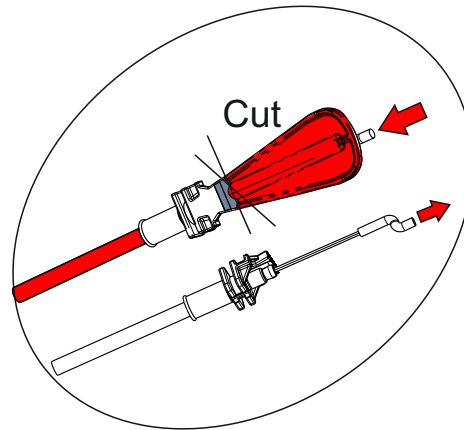
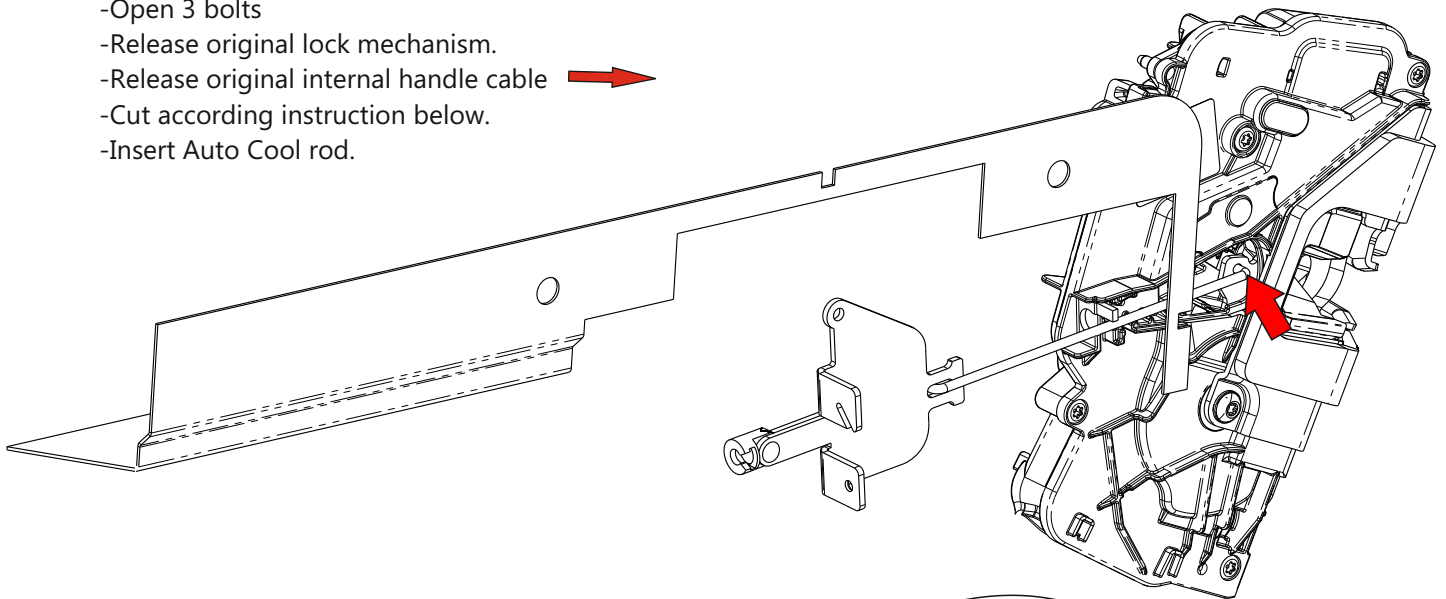
Cancel the lower original latch:
turn original hook and hold it with a cable strap



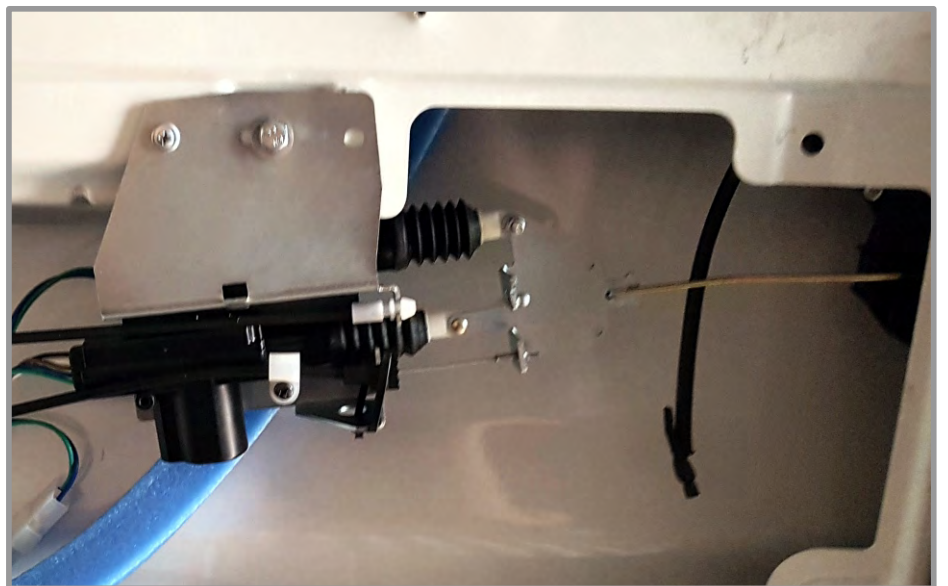
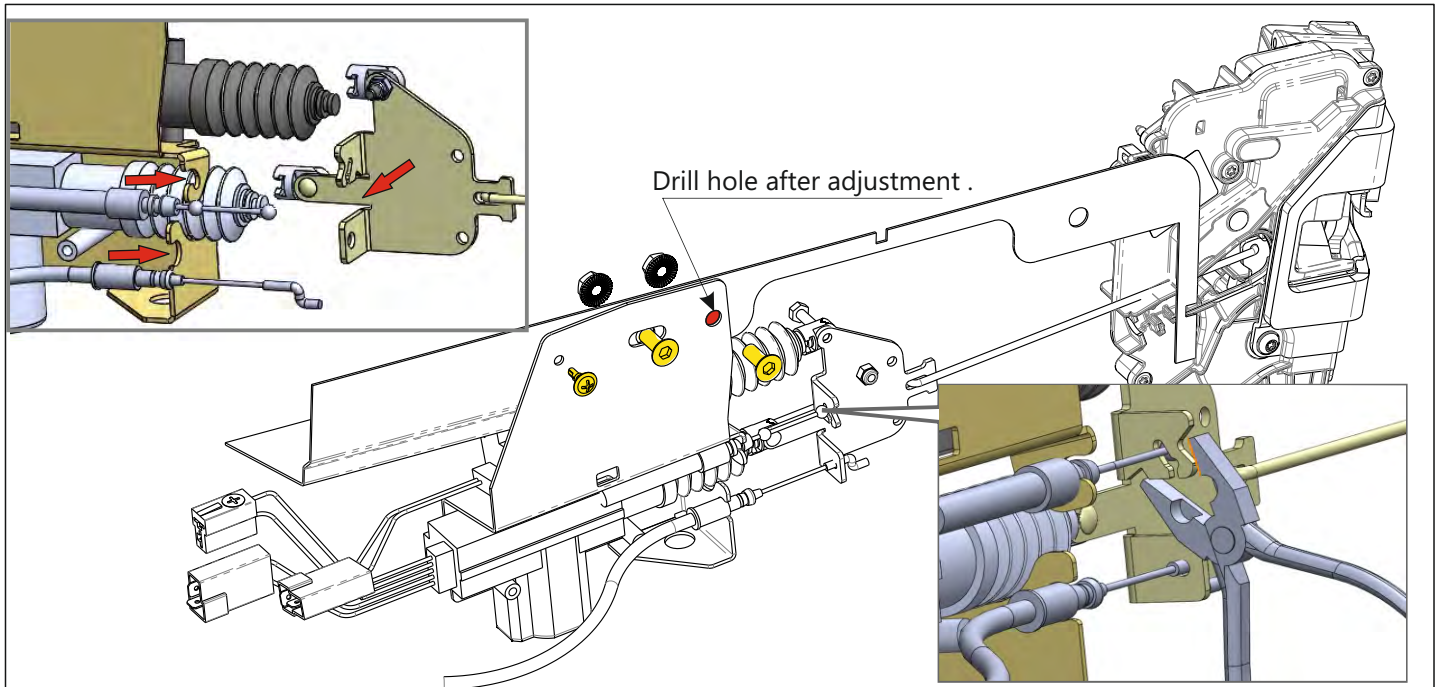
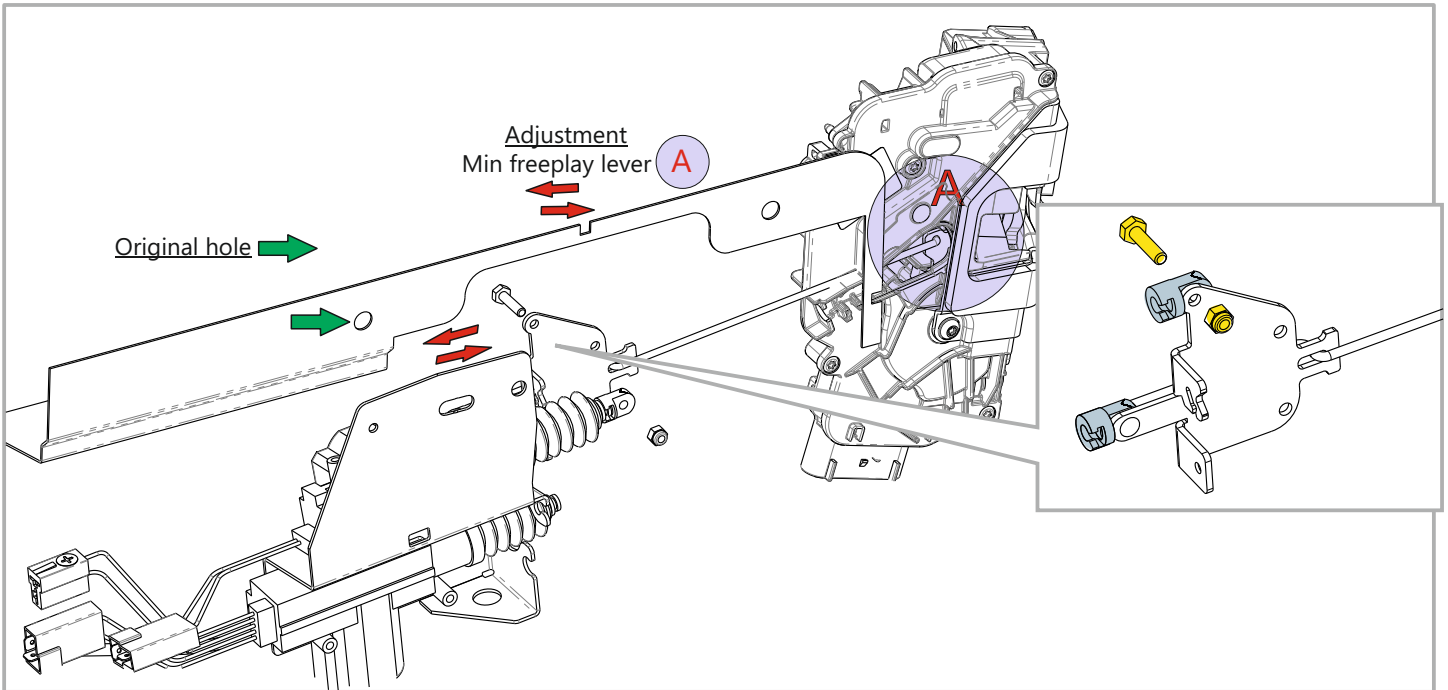
Cable strap
PN:125-10-014



- Open 3 bolts
- Release original lock mechanism.
- Release original internal handle cable →
- Cut according instruction below.
- Insert Auto Cool rod.

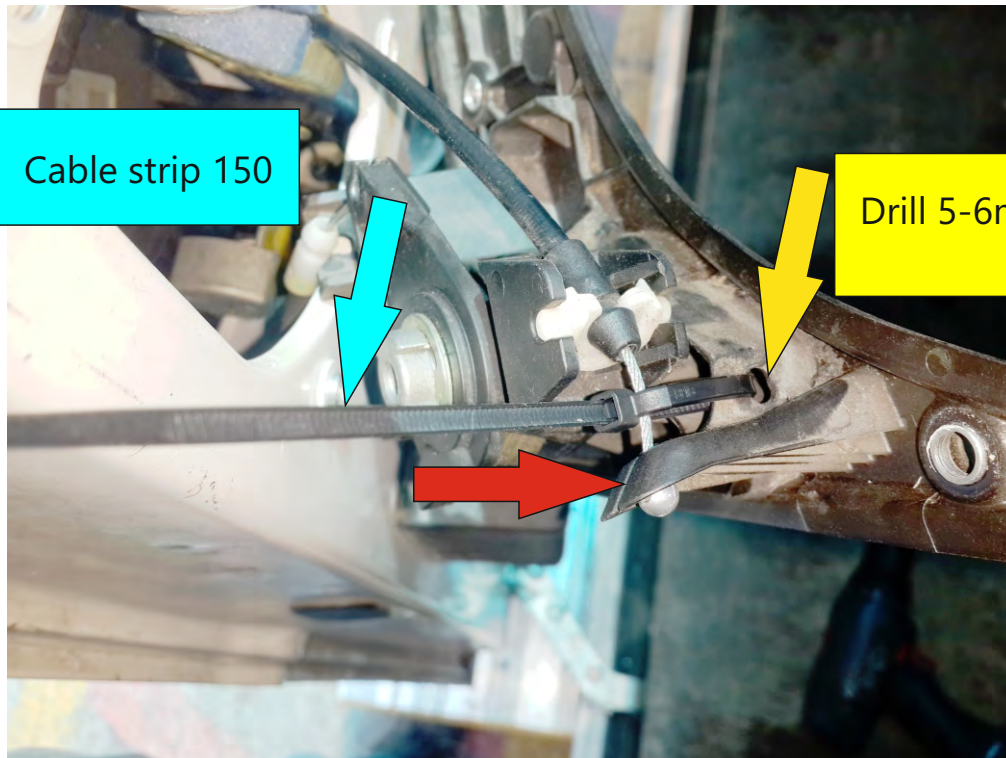
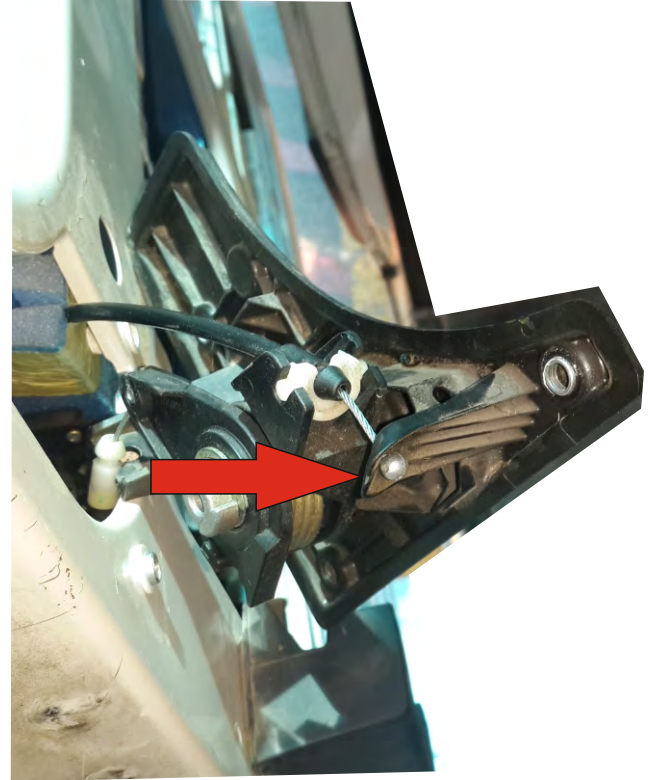


Lock actuator ASSY. installation





Internal Door handle



Cable strip 150

Drill 5-6mm hole

1. Disassemble the original internal handle
2. Hold the original cable with zip tie.

Note that you are holding the cable from the moment it is released until it is tied by the zip tie.

Electrical Accessories Kit

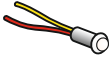
160-15-002-DL1



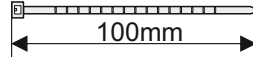
Operating Switch
PN:124-02-012-1



Fast Glue
PN:144-30-007



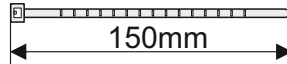
Signal Light
PN:124-10-069



Cable strap
PN:125-10-016



Decal
PN:125-00-018



Cable strap
PN:125-10-014



Phillips self drill screw 8x1/2"
PN: 647-08-003



Door Limit Switch
PN:124-00-039



Flange nut M8
PN:601-08-008



Star washer
PN:600-04-061



Nut M6
PN:601-02-006



PN:600-12-080

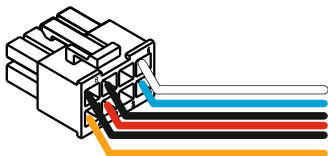


PN:632-02-025

Electric sliding door safety kit

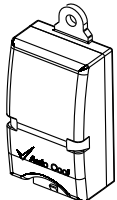
160-015-0001

Harness for electric safety strip
116-015-0001



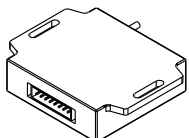
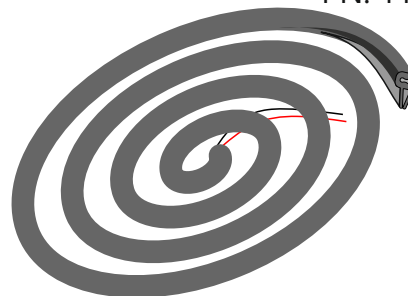
Electrical harness
PN: 116-12-008

Electric safety strip kit
113-015-0001



Transmitter
P.N:124-12-008-2

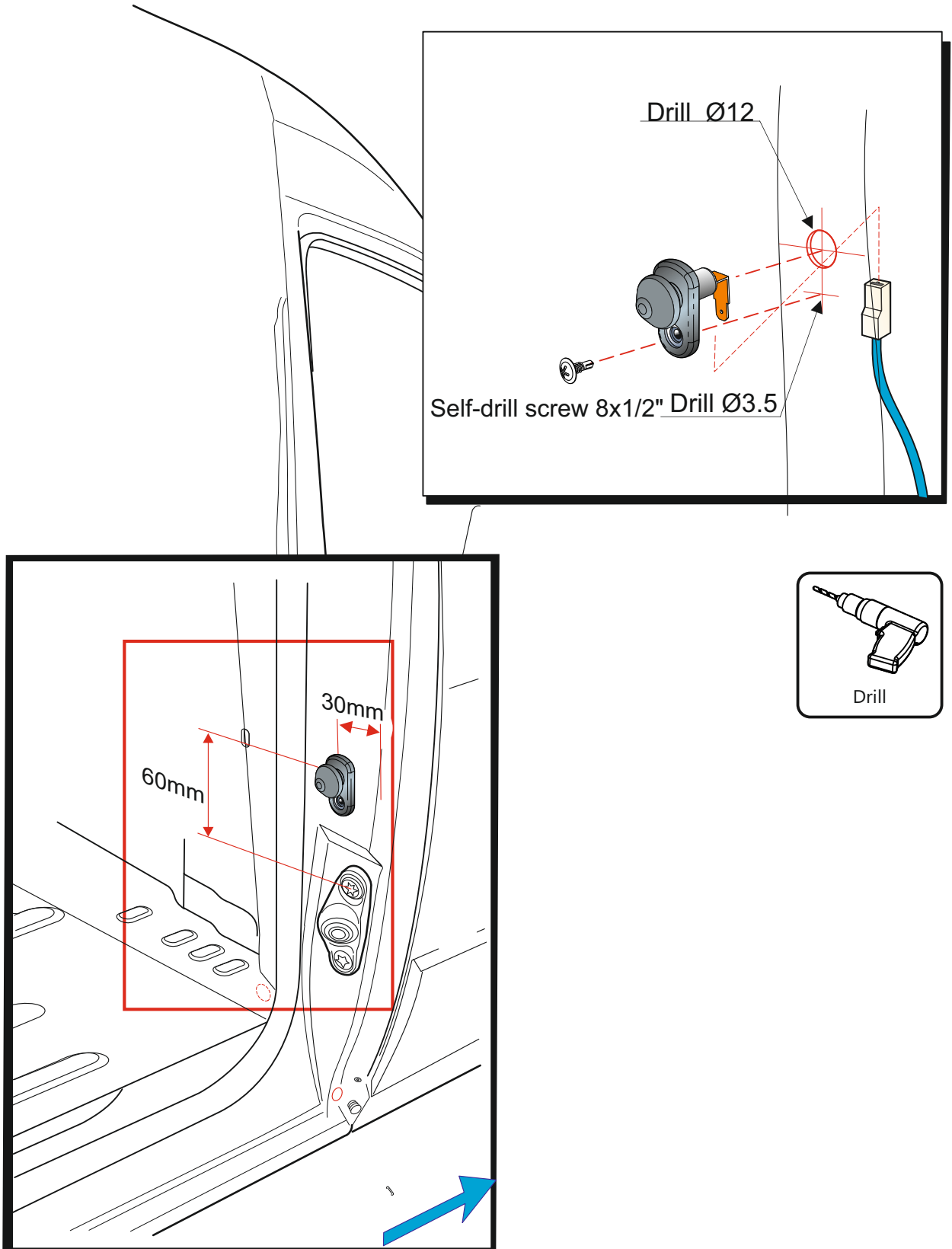
Electrical safety strip
PN: 113-55-067



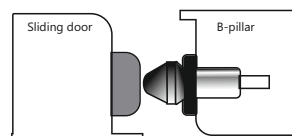
Receiver
PN: 124-03-006



Plastic cap for safety strip 5x8mm
PN:112-05-008

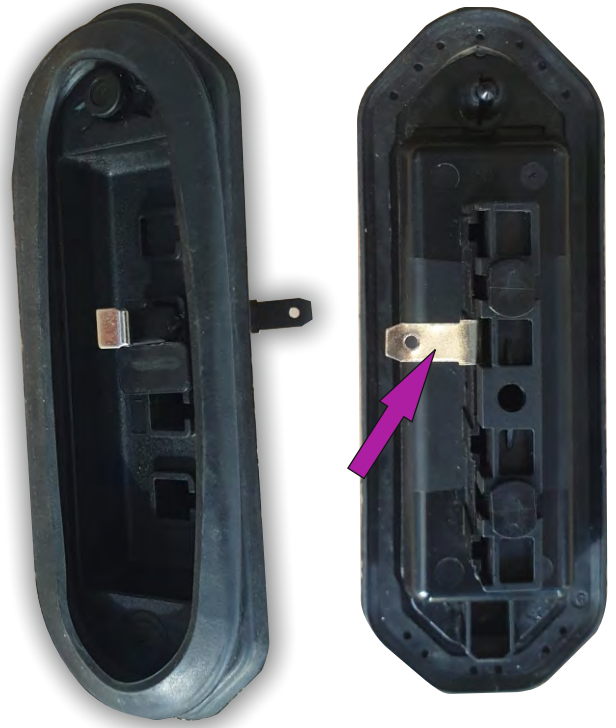


Make sure there is good press on the pillar micro switch.



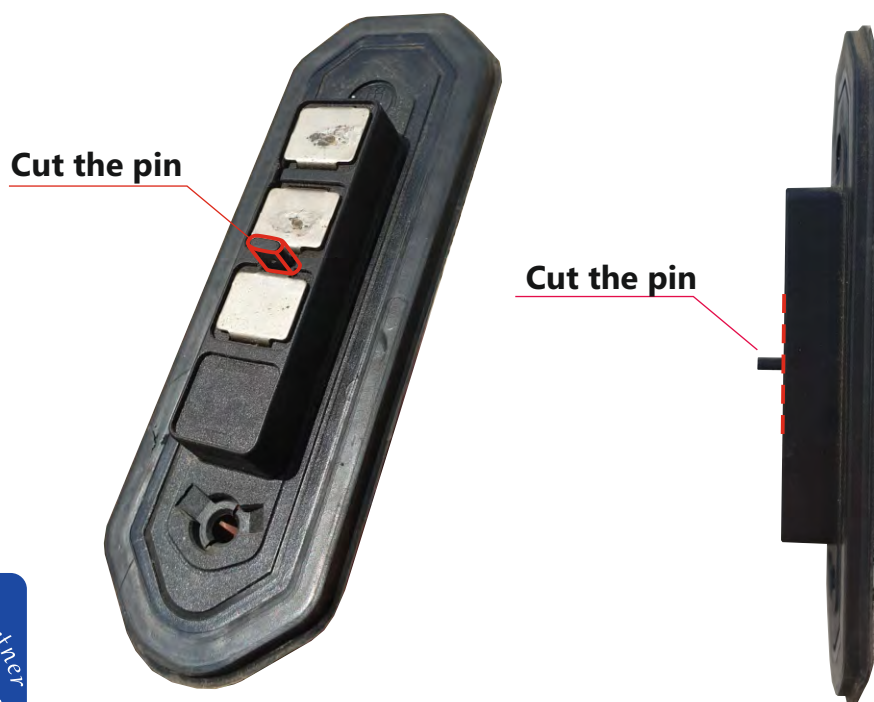
For models until 2021

Sliding door contactor



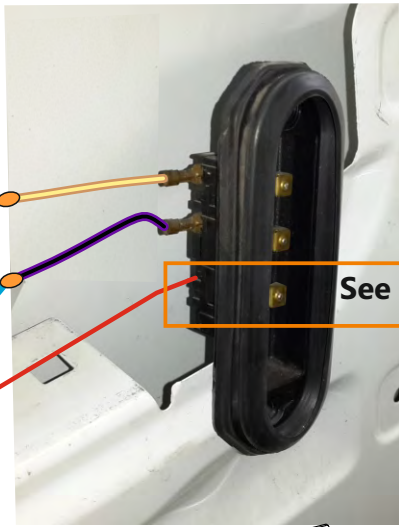
The third pin is necessary to install for leading the charge voltage for the smart transmitter

C-Pillar contactor

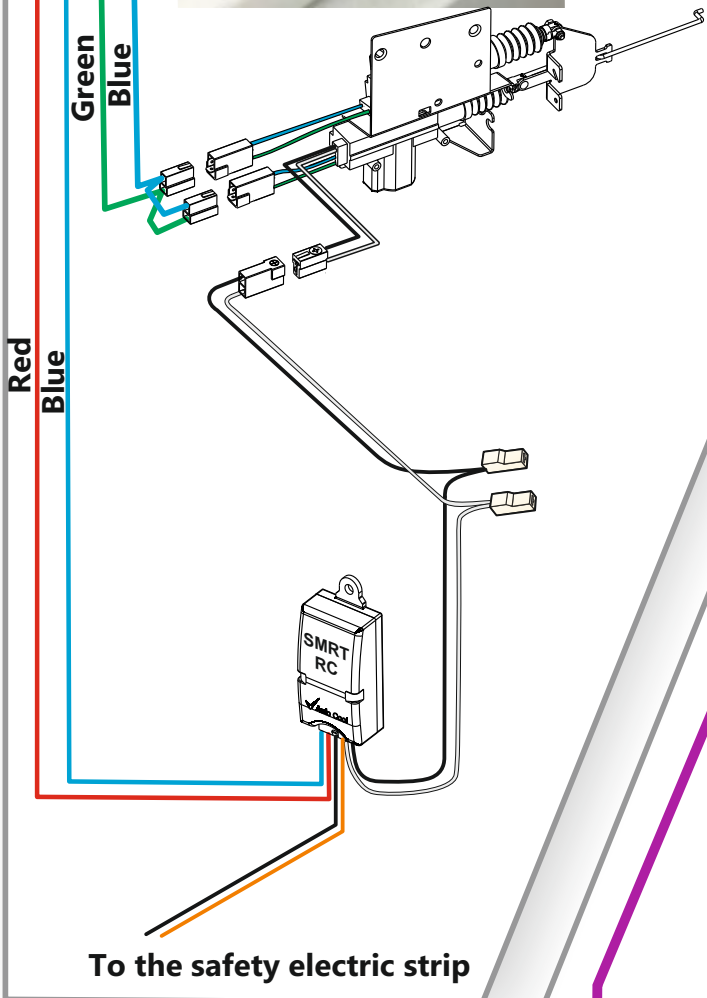


For models until 2021

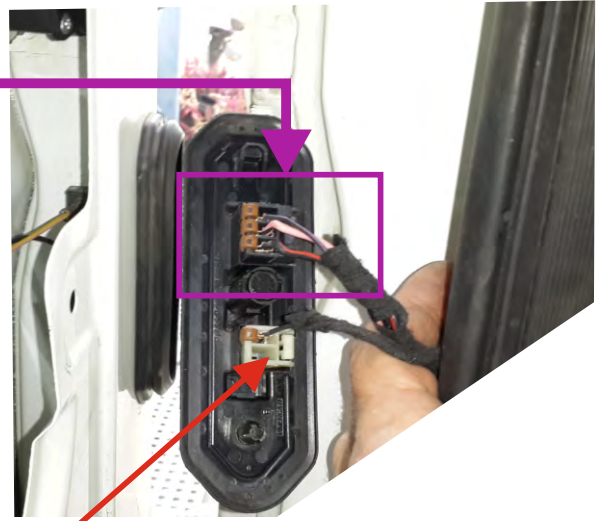
Sliding door



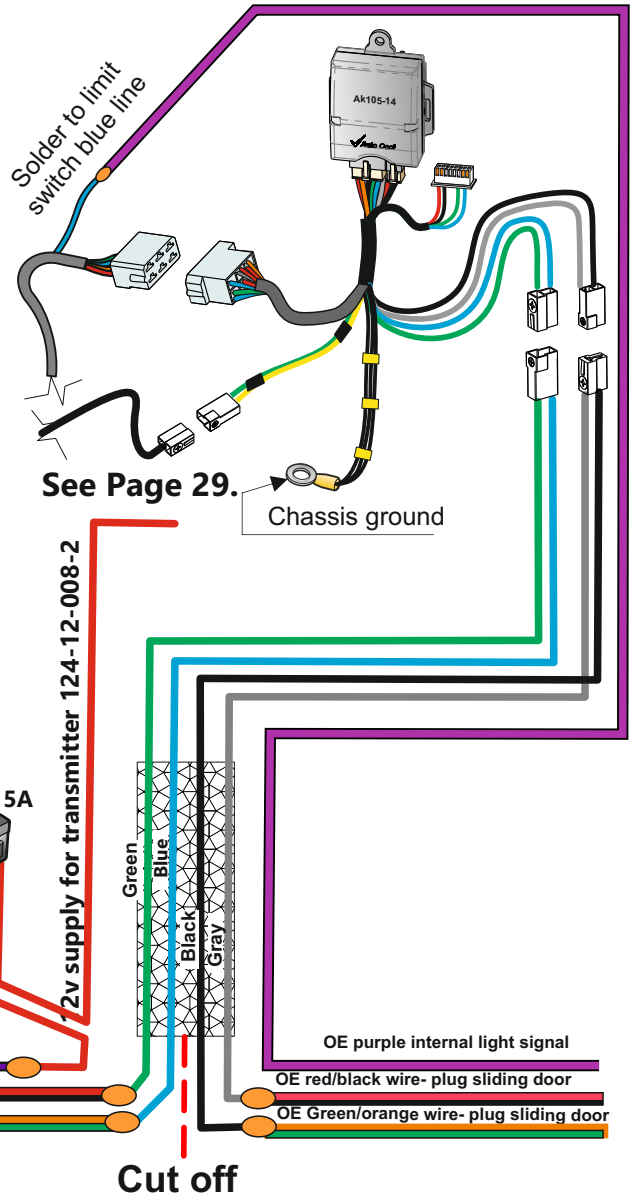
See next page



C-Pillar



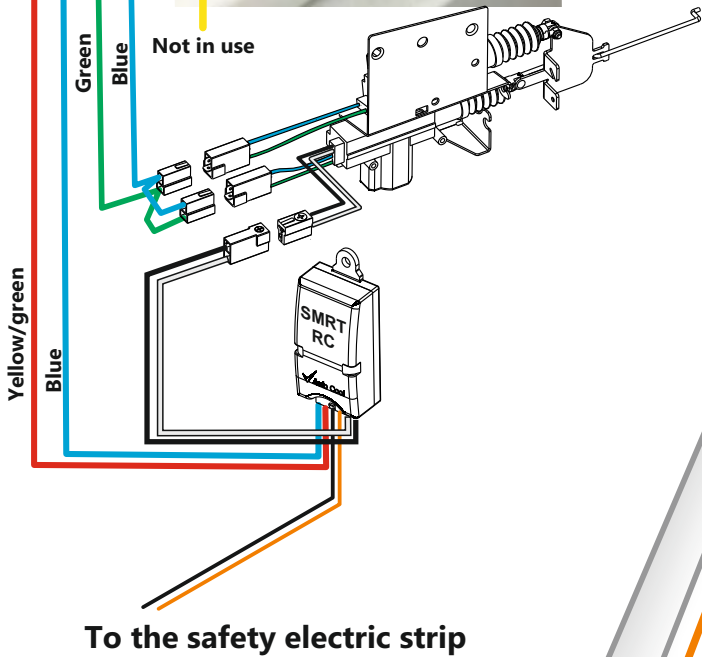
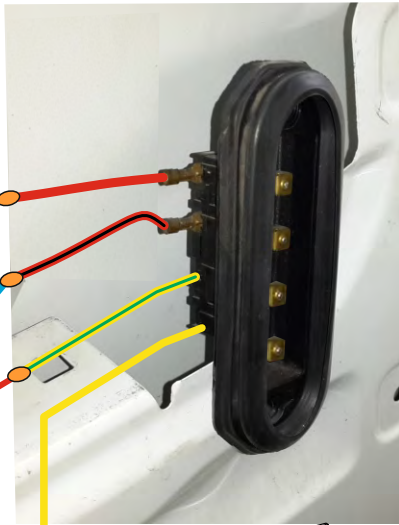
Disconnect permanently



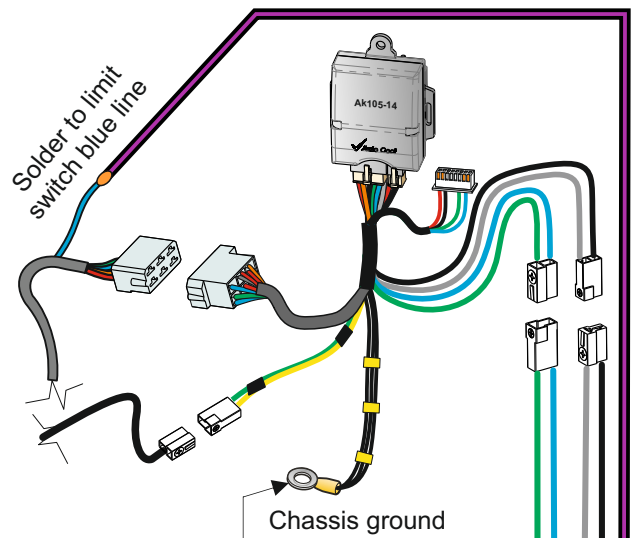
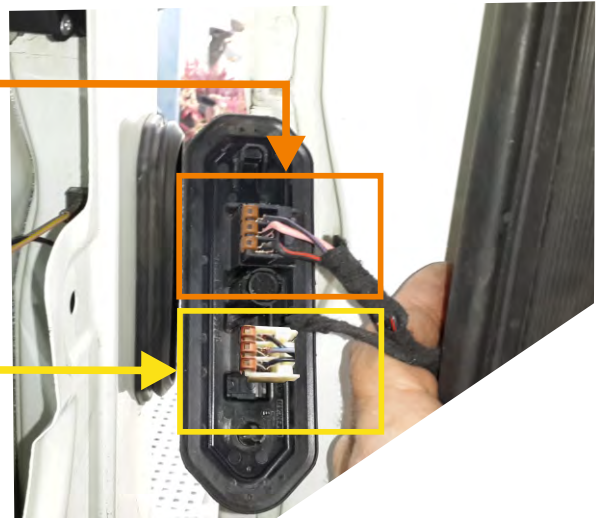
For models from 2022

- After the connection, the OE button of the external handle will be canceled.

Sliding door



C-Pillar



Fuse 5A

12v supply for transmitter 124-12-008-2

Cut off

Green

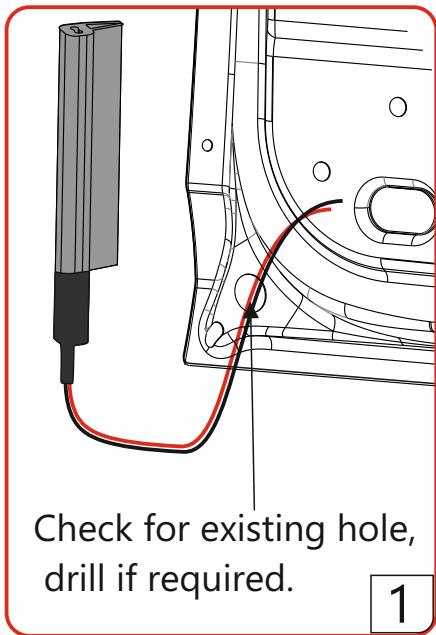
Blue

OE purple internal light signal

OE red/black wire- plug sliding door

OE Green/orange wire- plug sliding door

Critical!

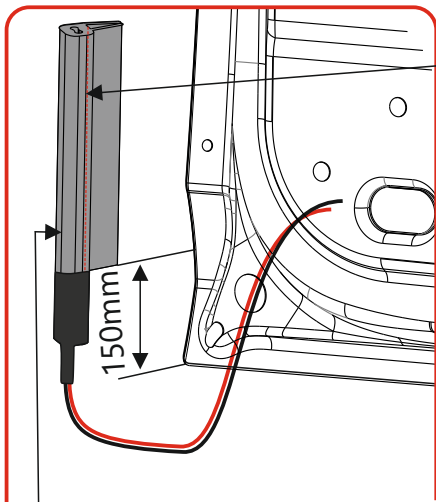


Check for existing hole, drill if required.

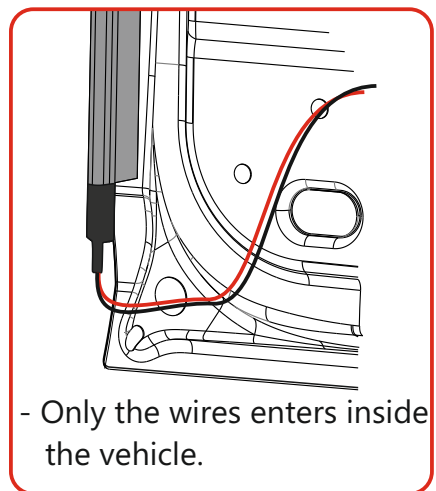


.REF

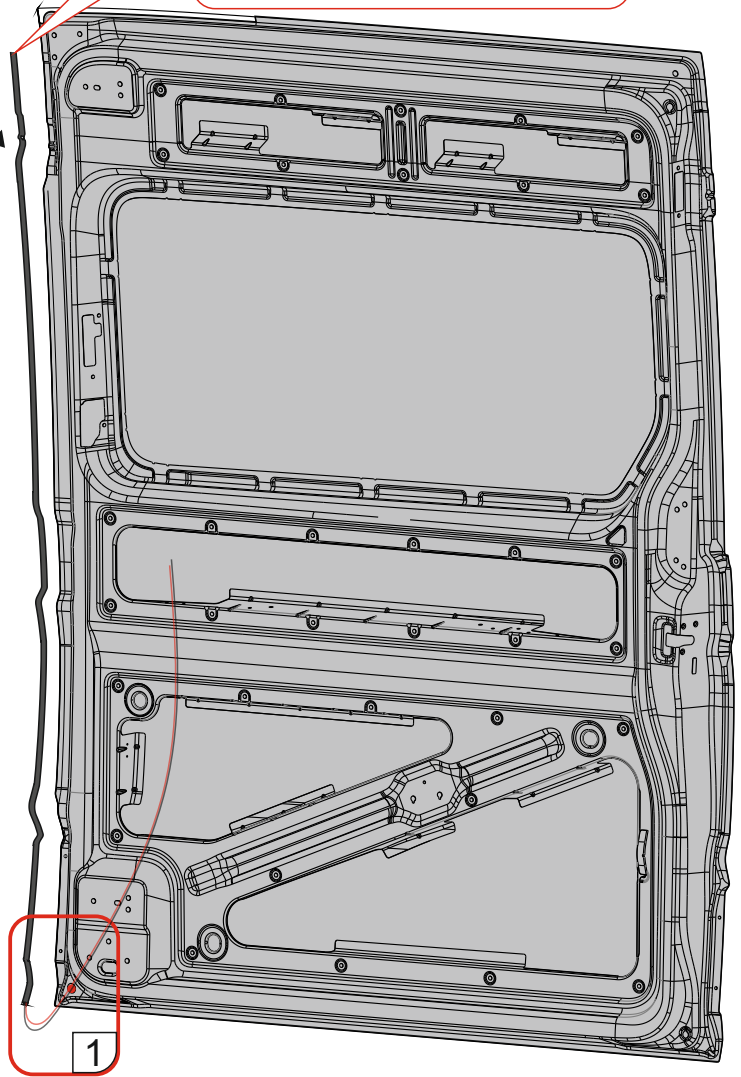
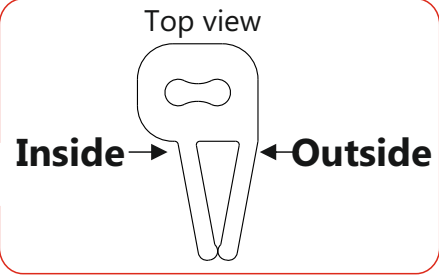
PN: 113-015-1201

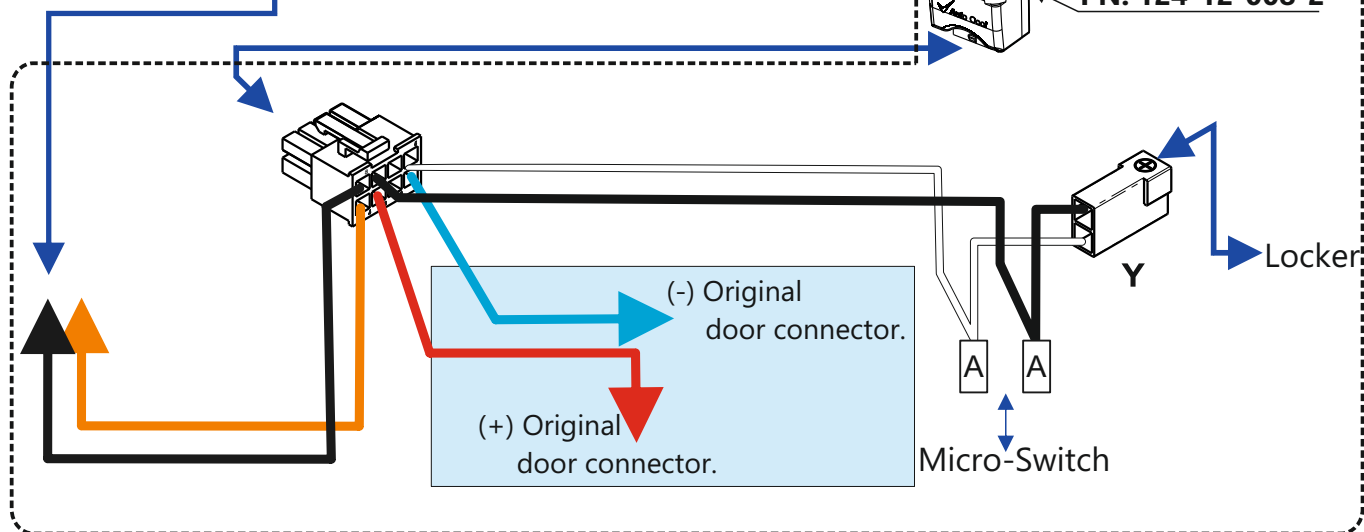
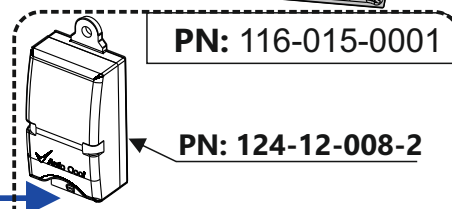
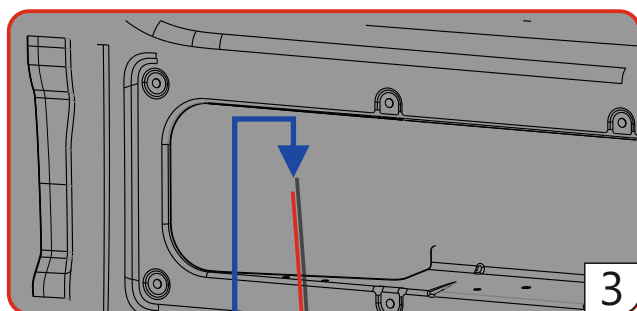
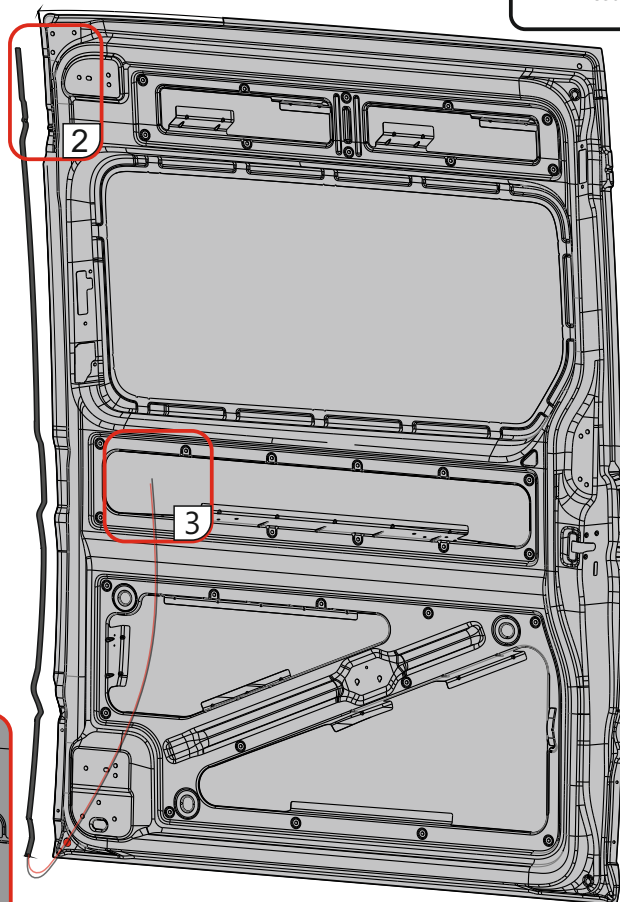
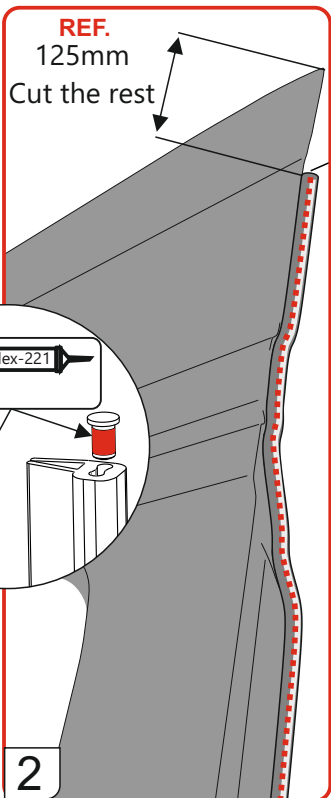
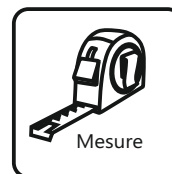


- Make sure not to bend the rubber profile. If bend it will make a short circuit.
- Glue the rubber from the bottom to the top.

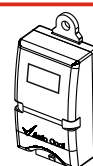


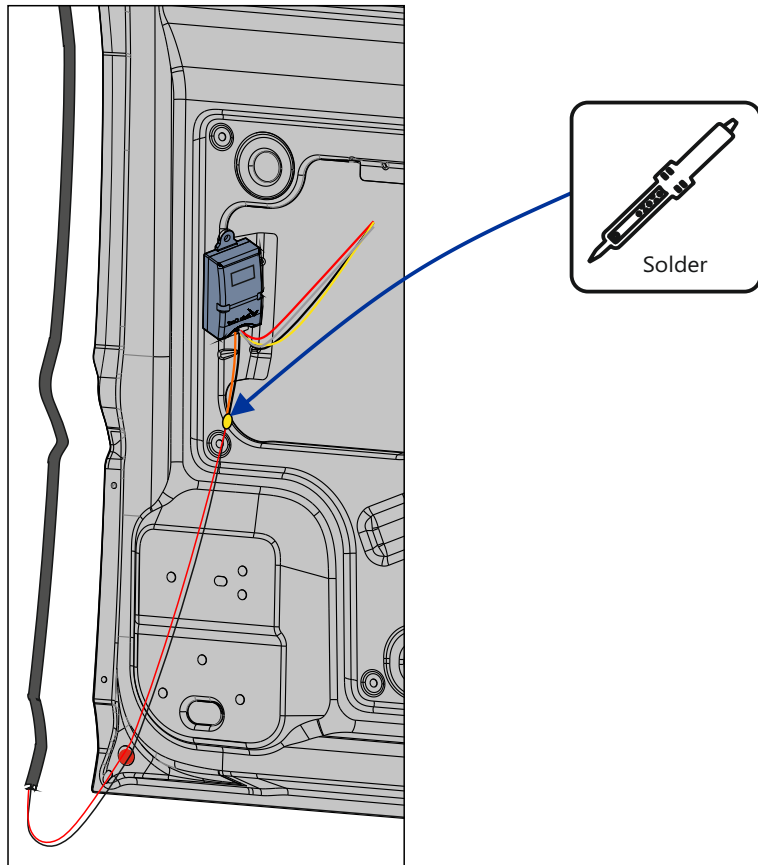
- Only the wires enters inside the vehicle.





Smart transmitter must be installed in vertical position (connectors down).



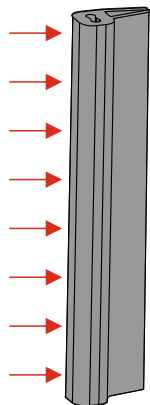


Peering Smart transmitter (if necessary)

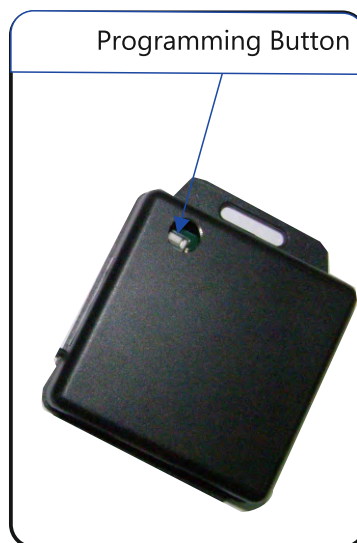
For smart transmitter \ door transmitter (P.N: 124-12-008-2):

- Connect all wires to the smart transmitter and B-pillar wiring.
- Close the door for 10 seconds (capacitors in the smart transmitter will charge, make sure that the main battery is temporarily connected).
- Press the receiver programming button until the red light turns on then release.
- Press the electrical safety rubber or handle and make sure the LED on the receiver blinks.
- After the receiver LED blinked - the smart transmitter is paired and ready to work.

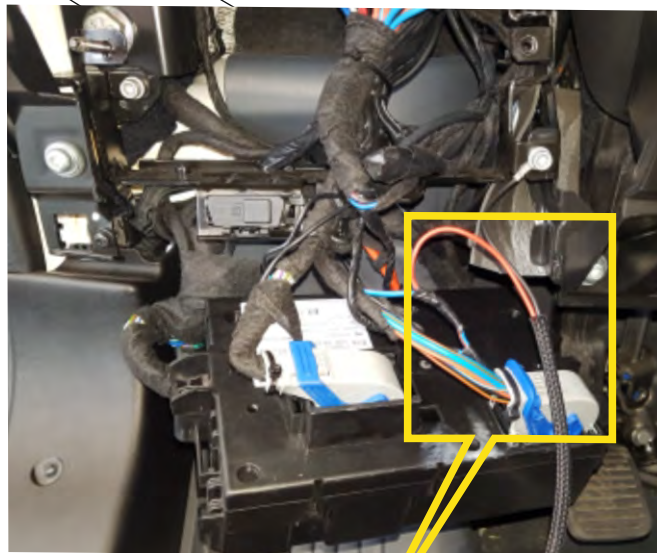
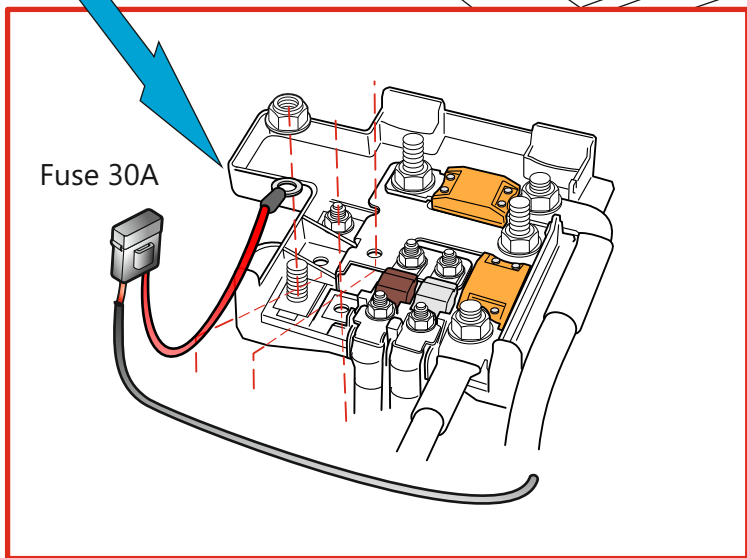
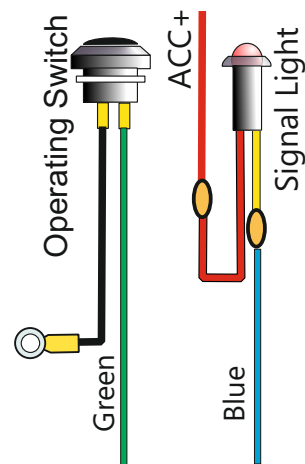
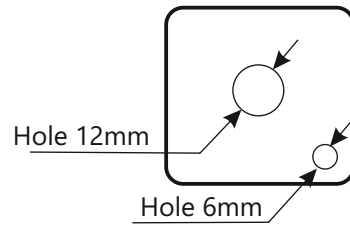
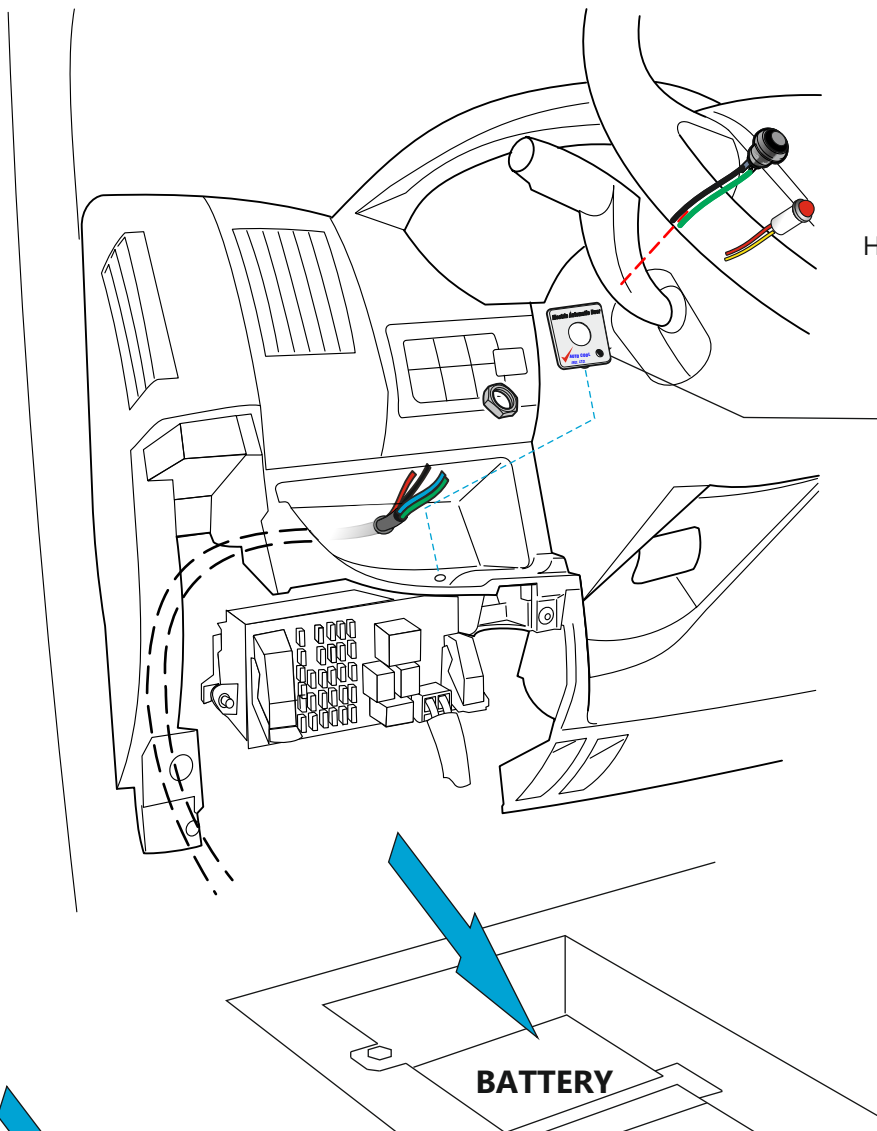
Electrical rubber

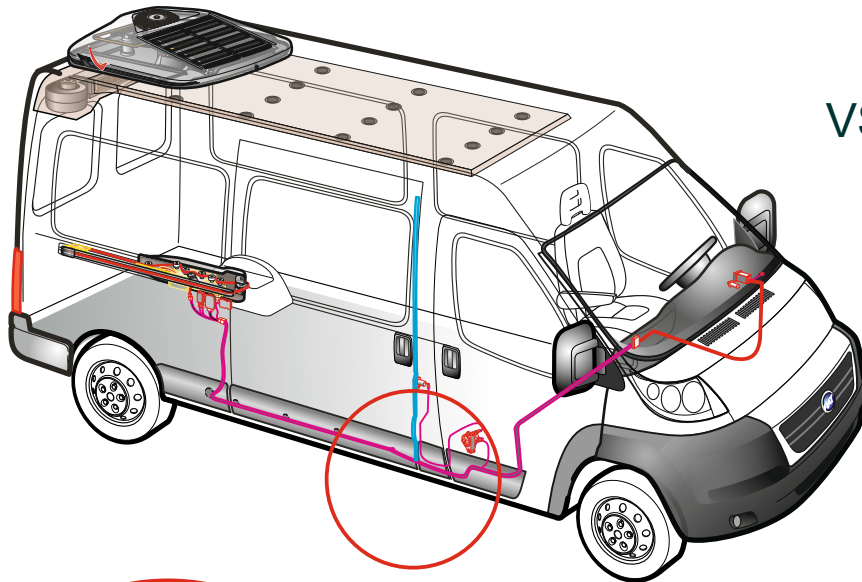


Programming Button

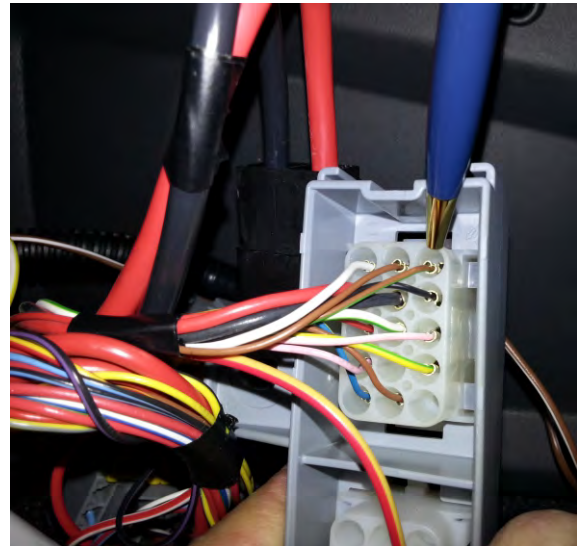


Operation switch installation

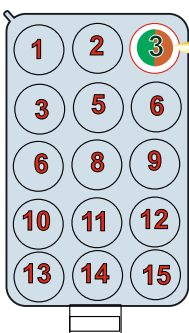




VSS Connection (Vehicle Speed Signal)



VSS Connection



Green/brown



Its mandatory to connect and check the VSS!

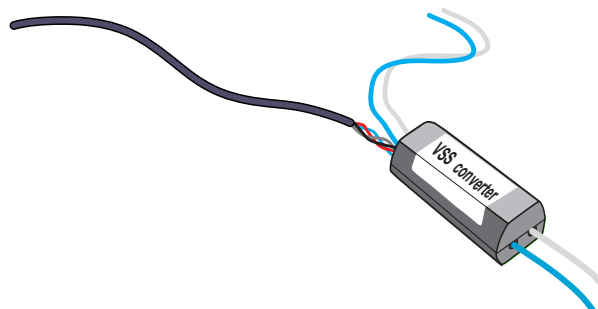
If the vehicle does not have connection to the VSS source you can order a wireless VSS converter PN 124-015-1501. Please contact us to get the instructions for this part.

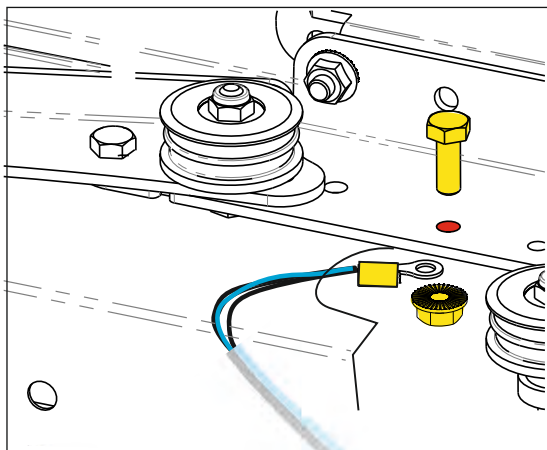
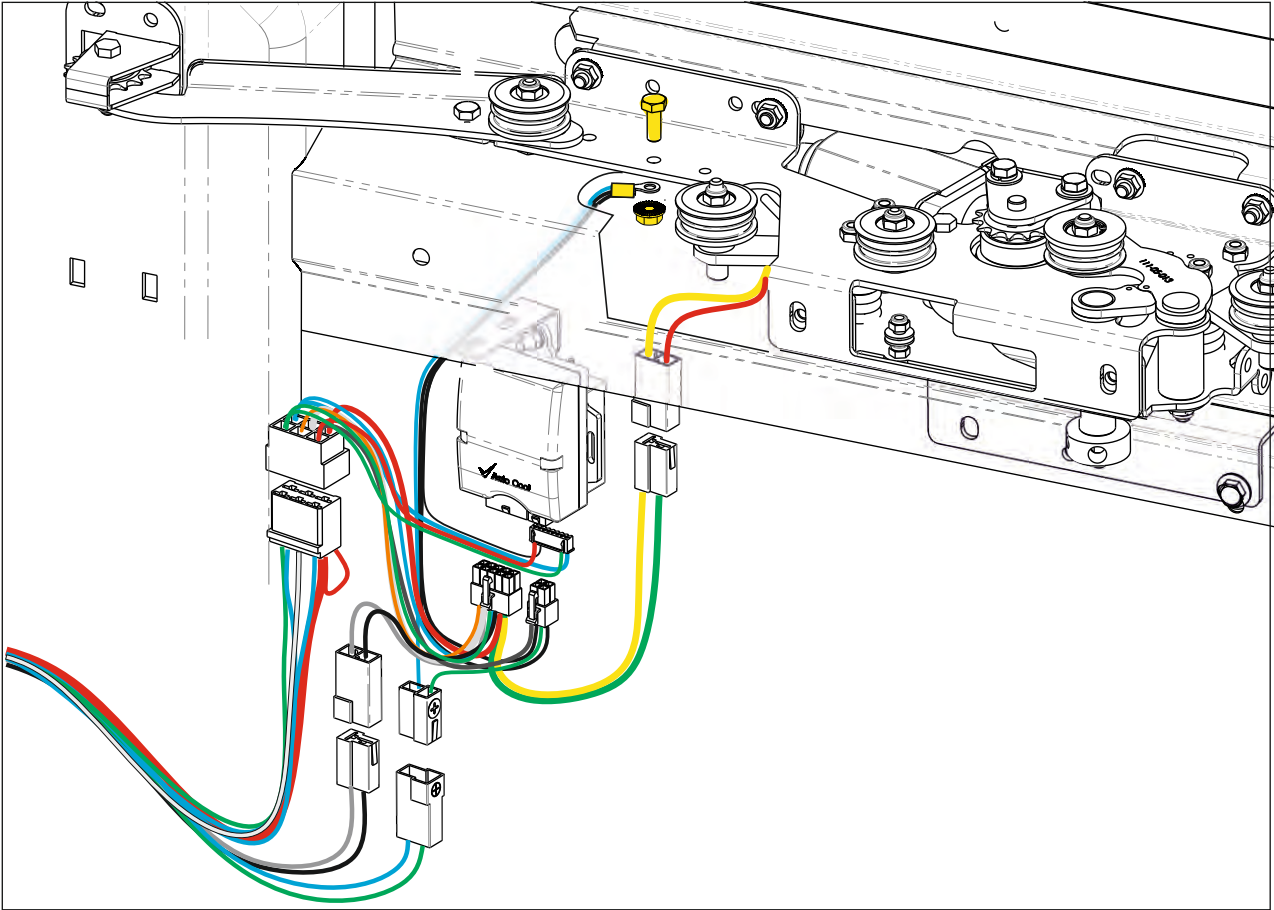


D3DA6RHI

Its mandatory to connect and check the VSS!

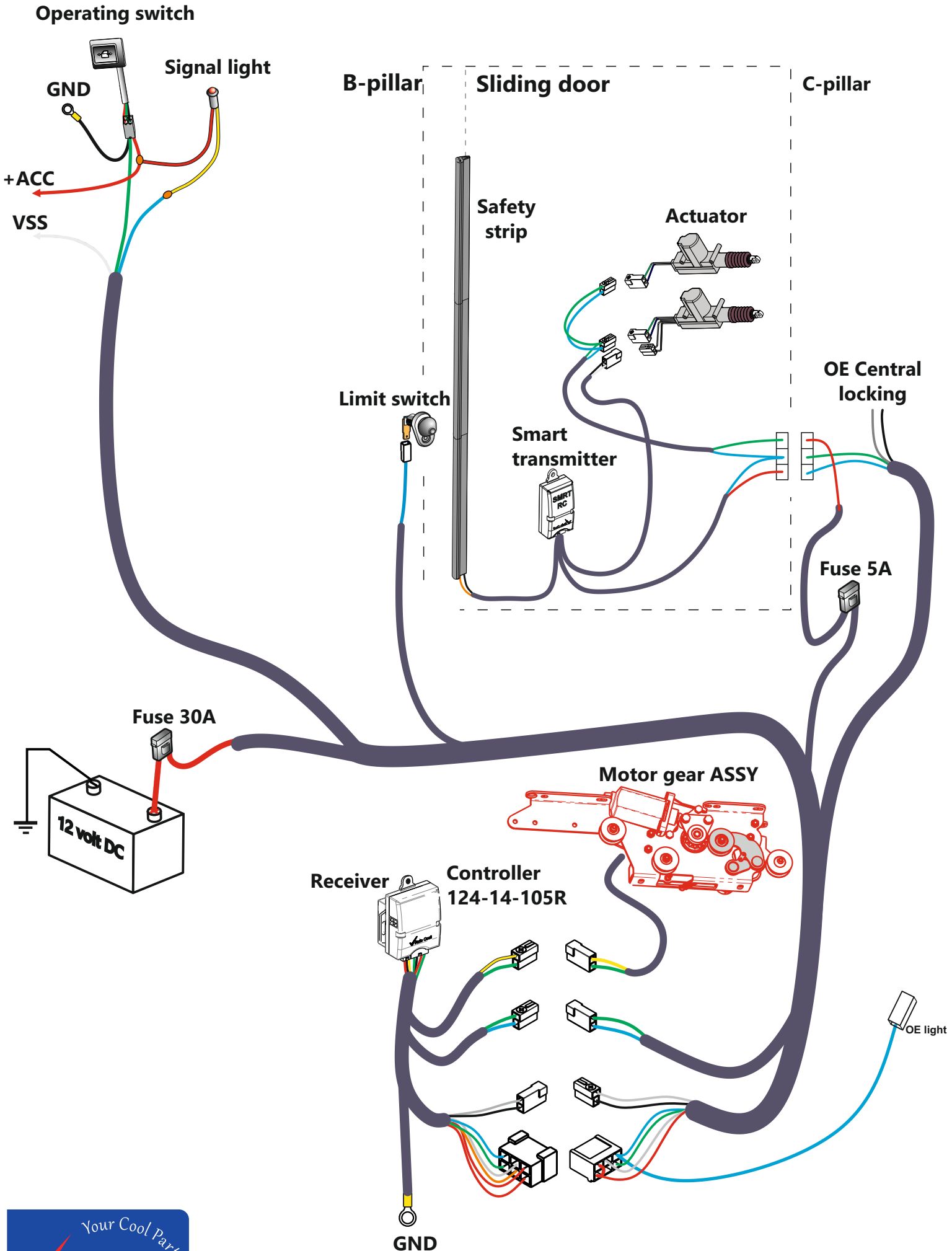
If the vehicle does not have connection to the VSS source you can order a wireless VSS converter PN 124-015-1501. Please contact us to get the instructions for this part.

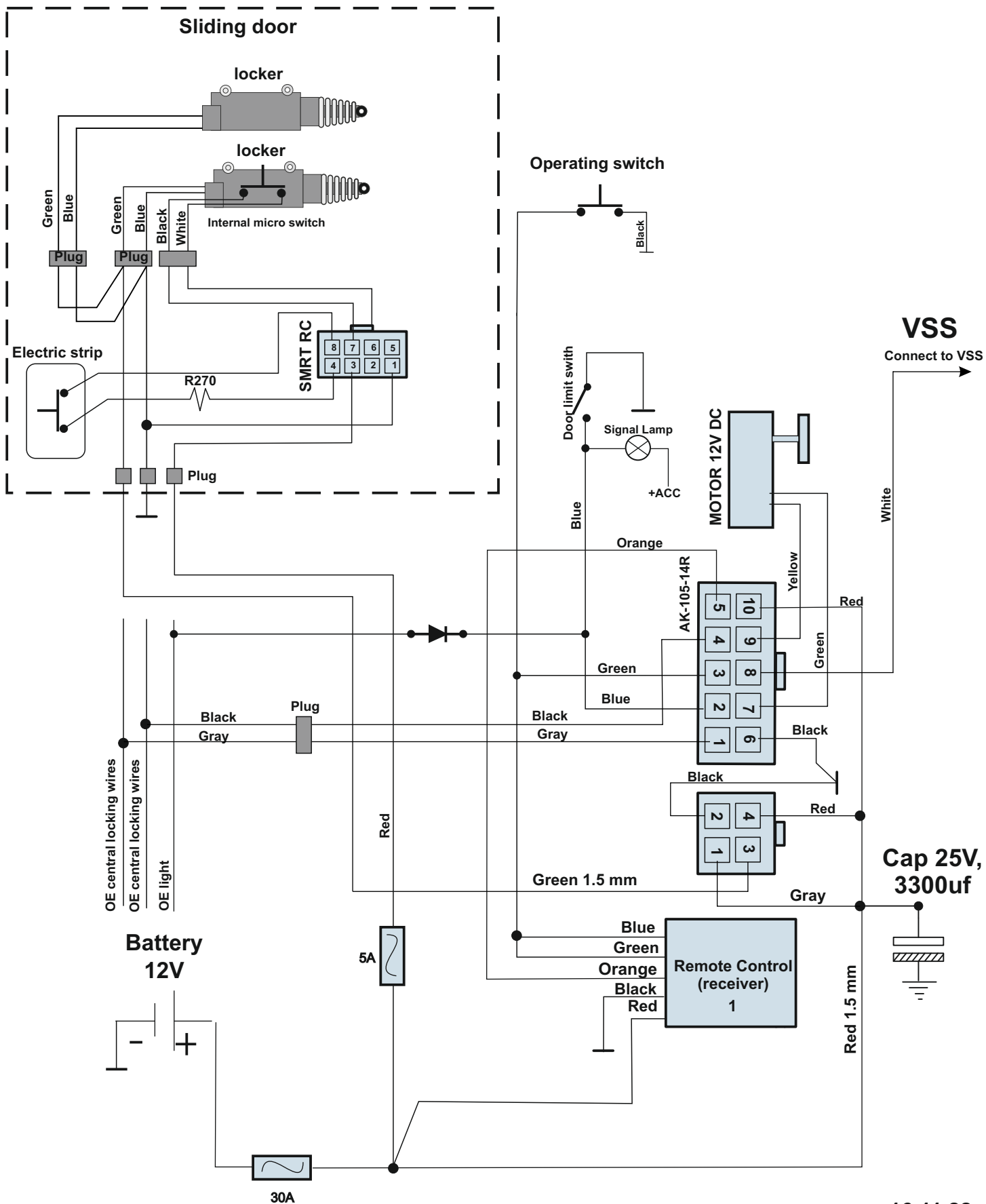




Chassis ground

Wiring diagram

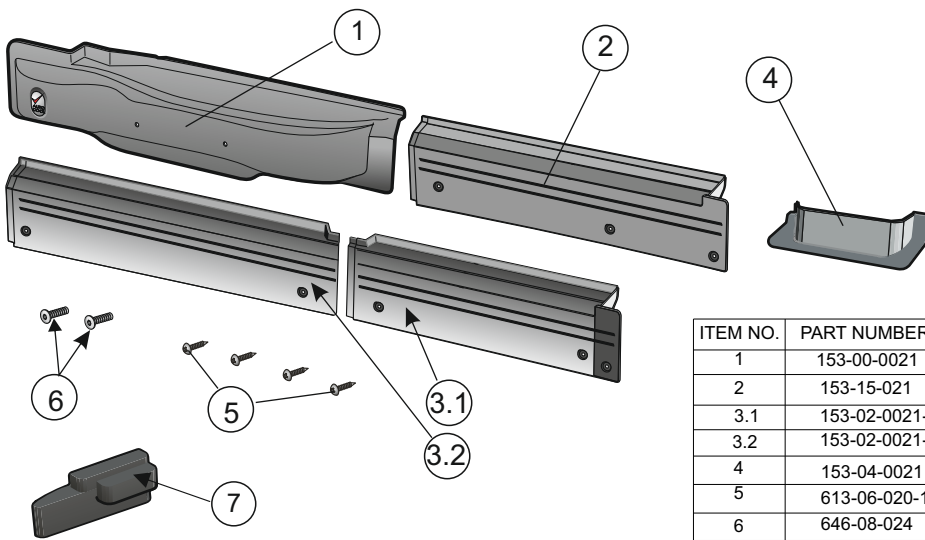




16.11.22

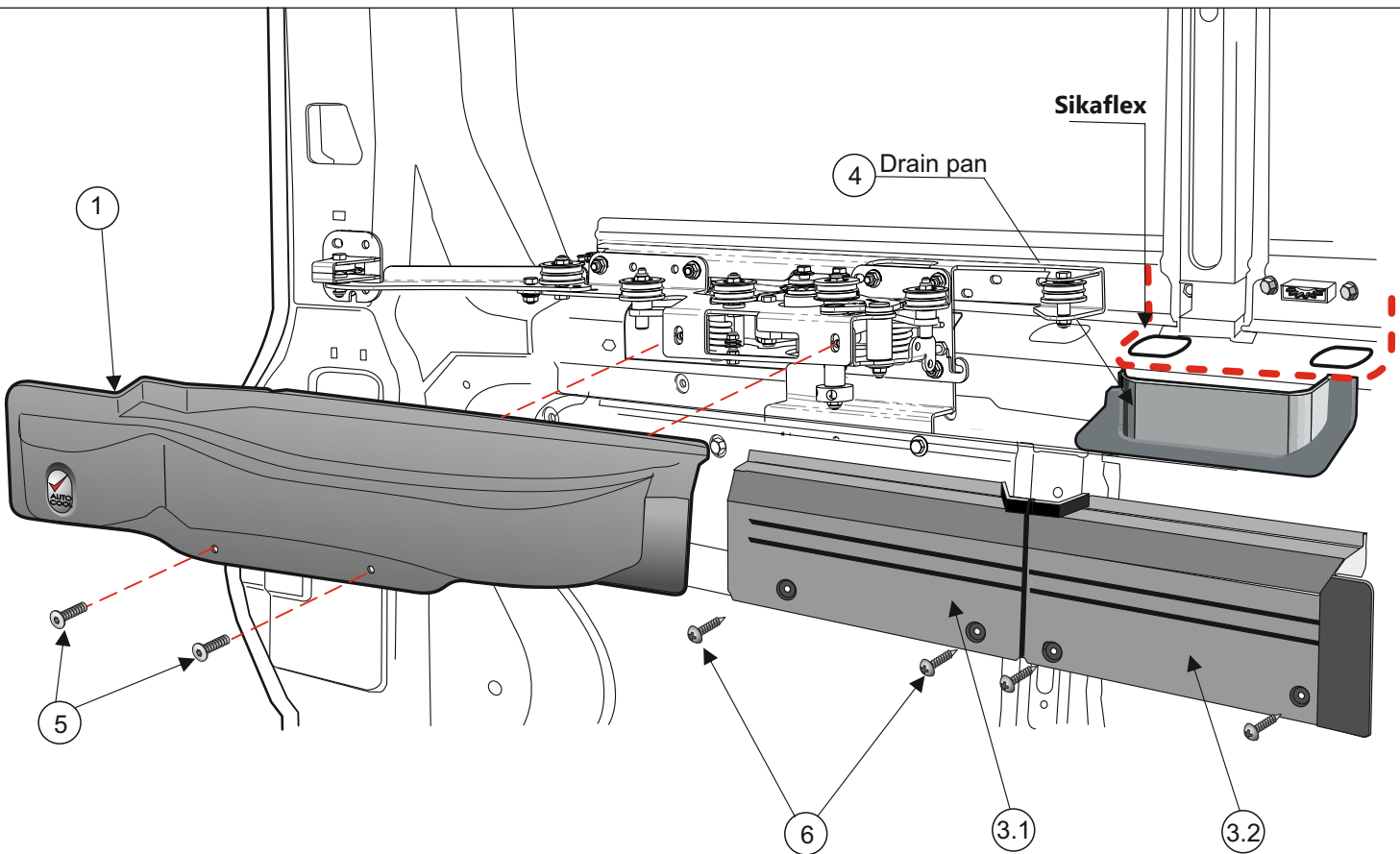
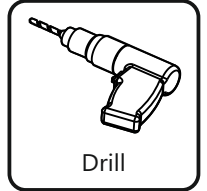
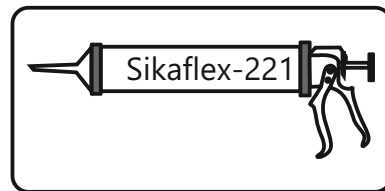
Cover installation

Covers Kit
PN:151-00-0021

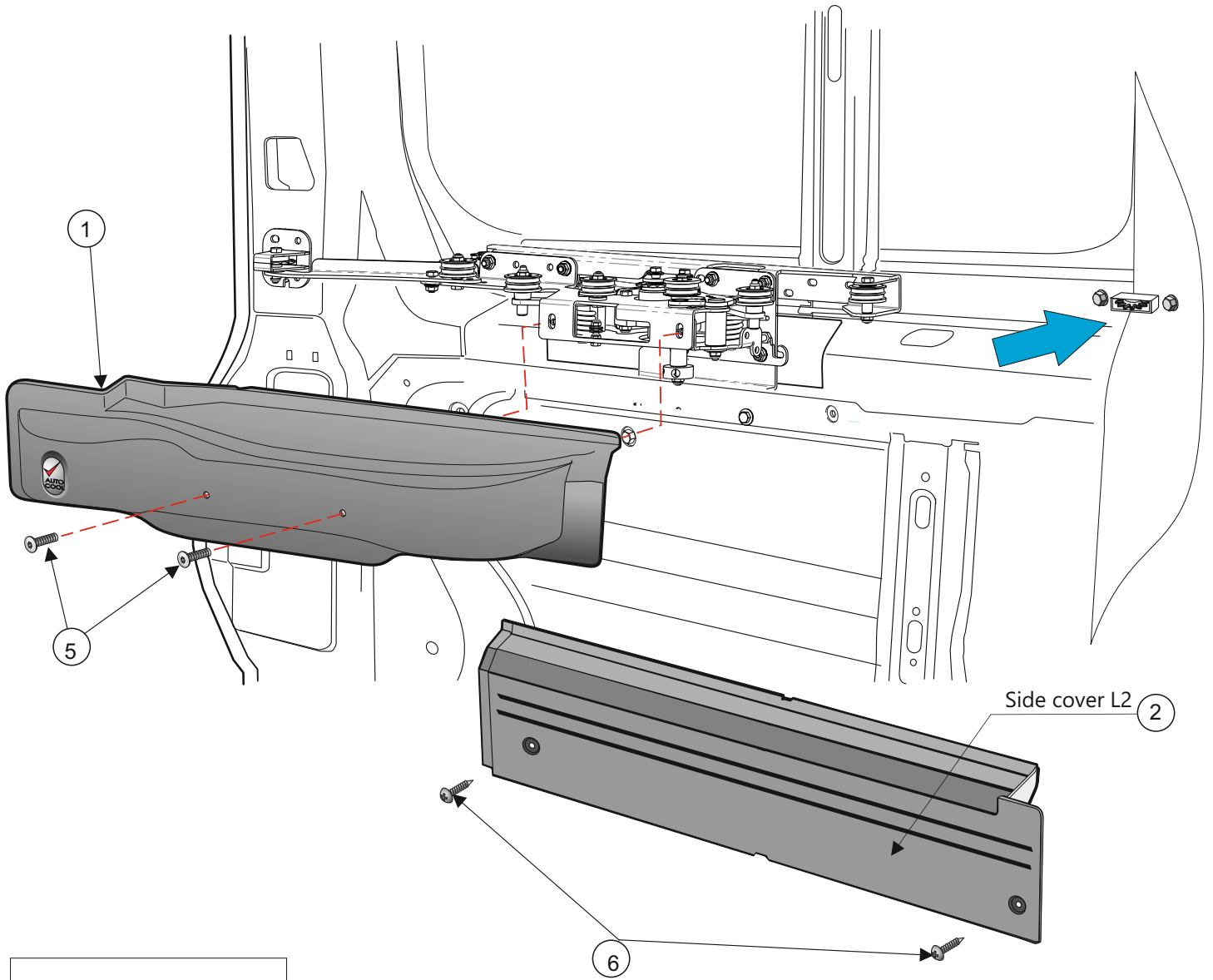


ITEM NO.	PART NUMBER	DESCRIPTION	E/QTY.
1	153-00-0021	Gear Motor Cover	1
2	153-15-021	Side Cover L2	1
3.1	153-02-0021-1	Side Cover L3 front	1
3.2	153-02-0021-2	Side Cover L3 rear	
4	153-04-0021	Drain Pan	1
5	613-06-020-1	Socket Flat Head Screw M6x20	2
6	646-08-024	Phillips pan head tapping screw 8x3/4"	4
7	153-01-0021	Rear Idler Cover	1

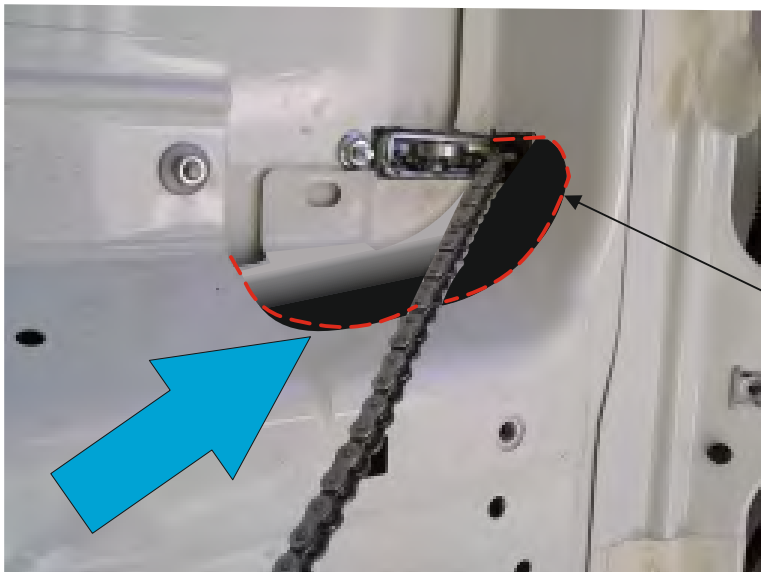
Model L3

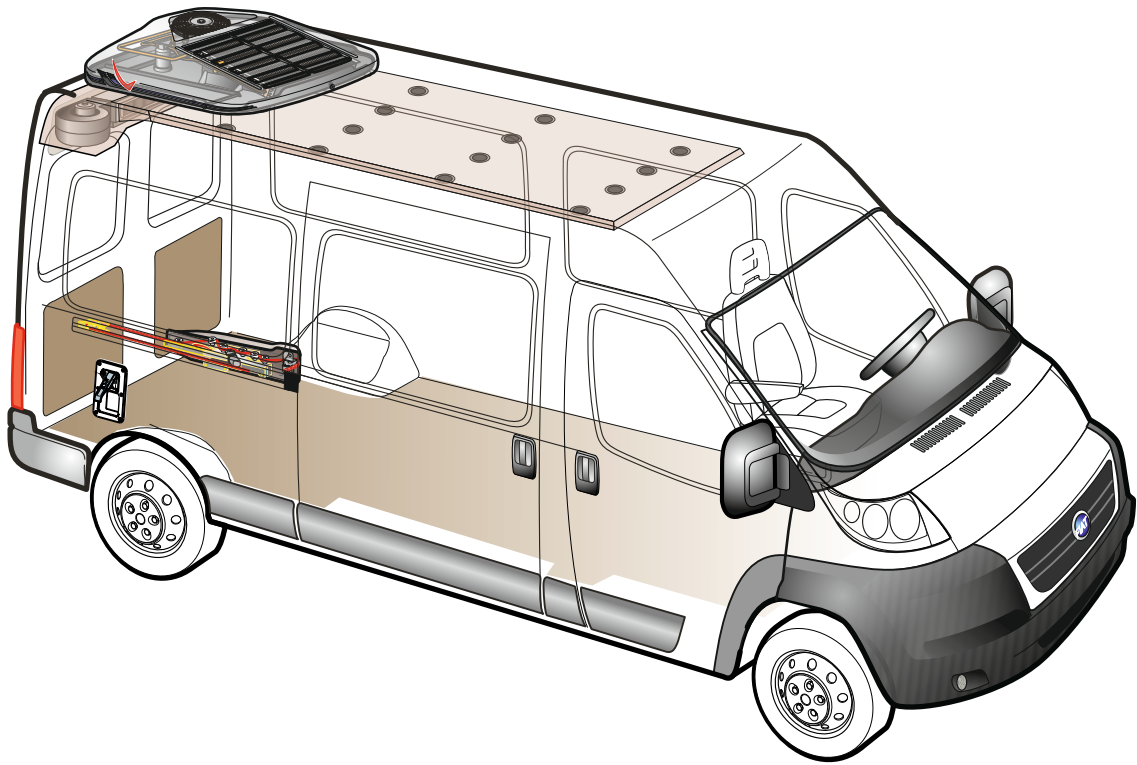


Cover installation

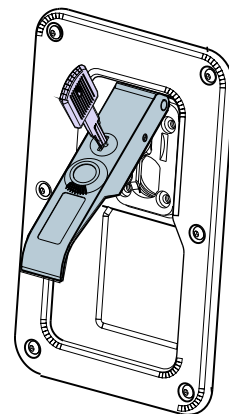


Model L2

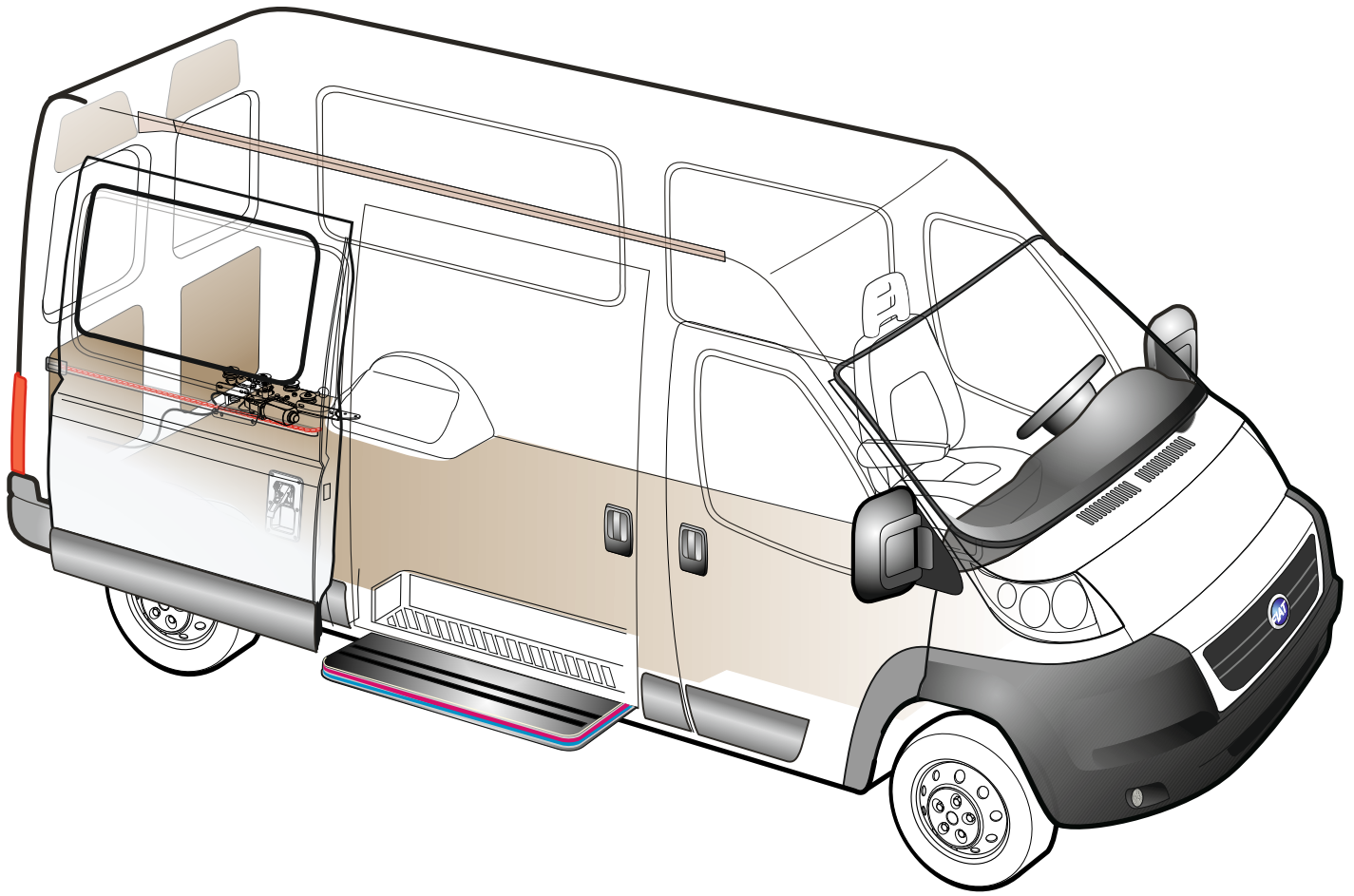




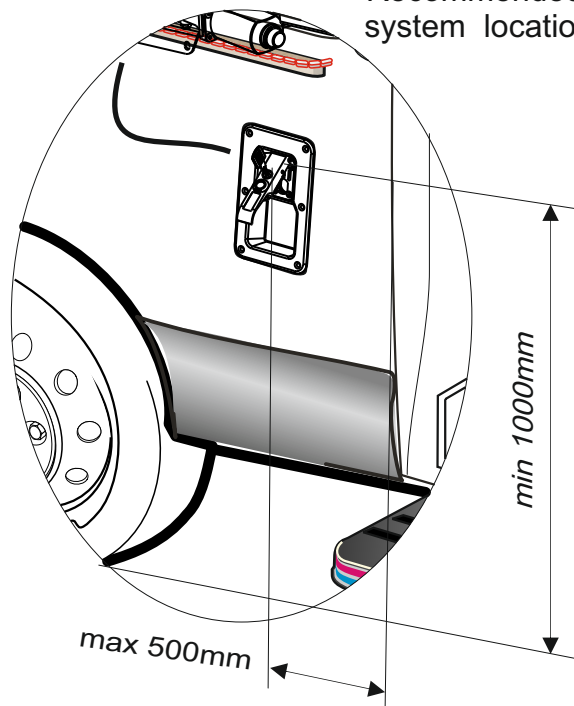
ASD
Automatic Sliding Door
External emergency door opening kit
AUTO COOL PN: 111-03-013



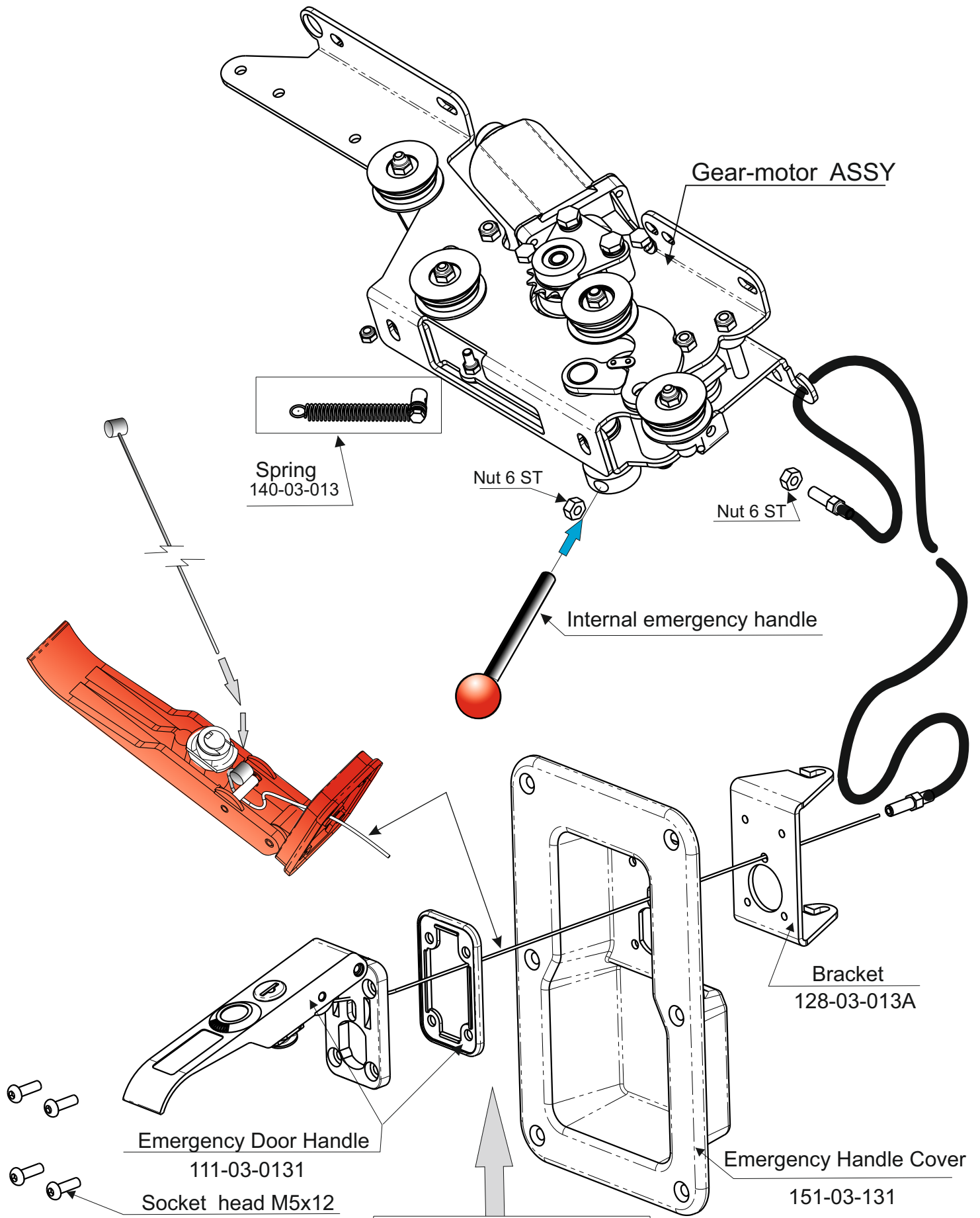
Option



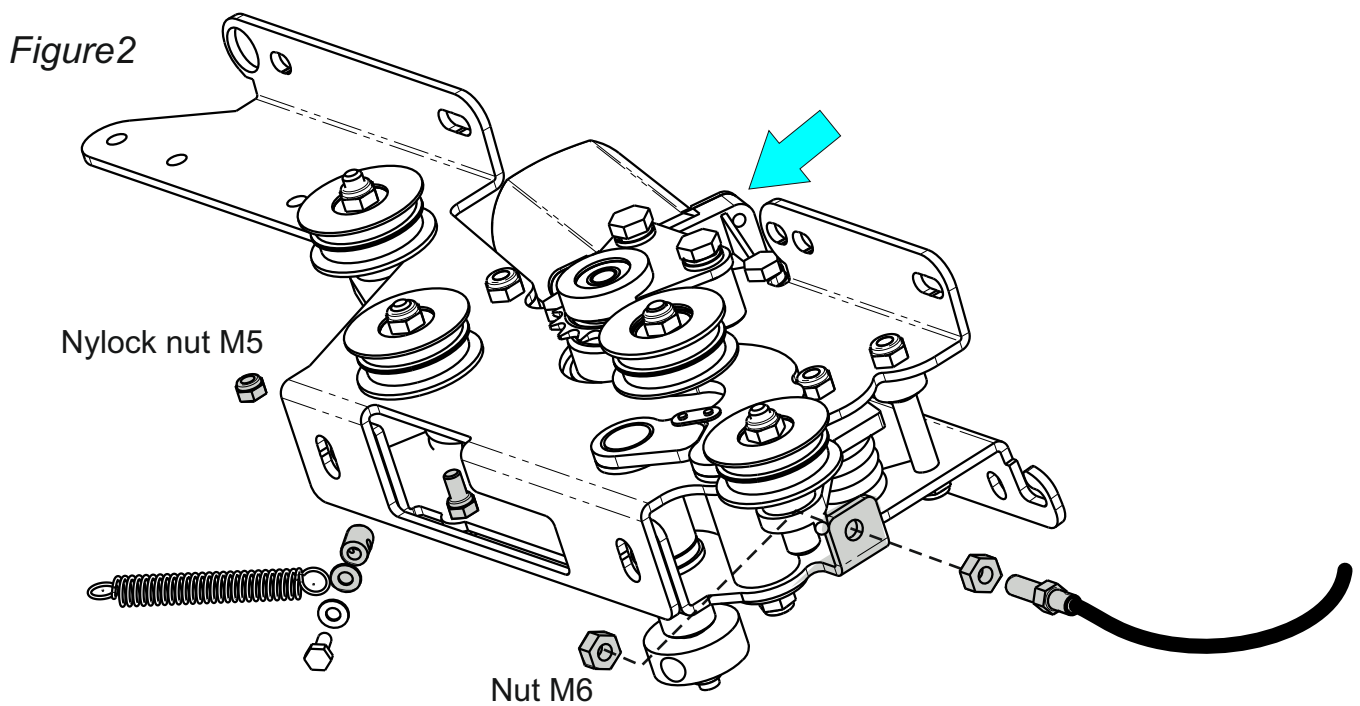
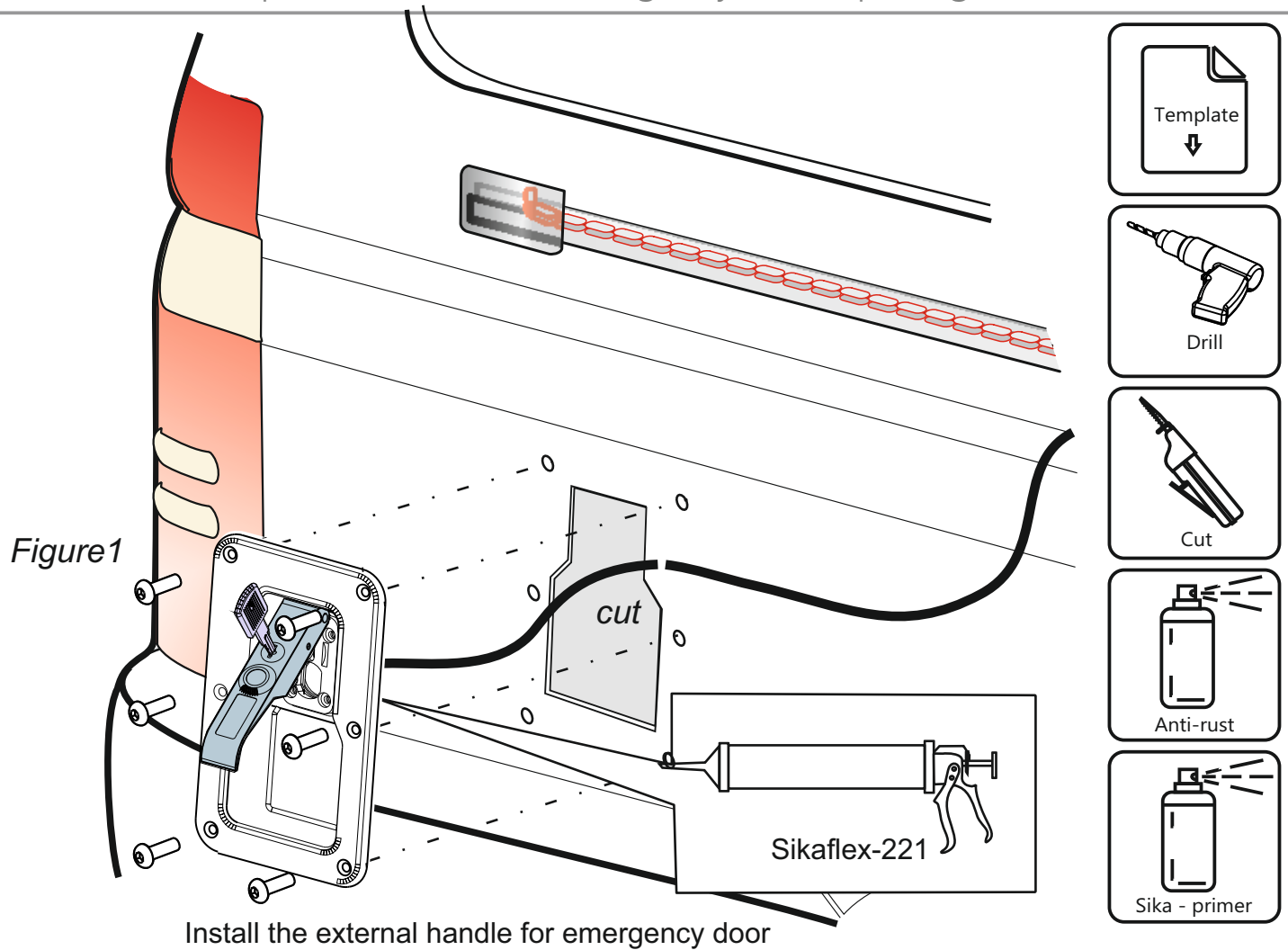
Recommended Emergency door opening system location



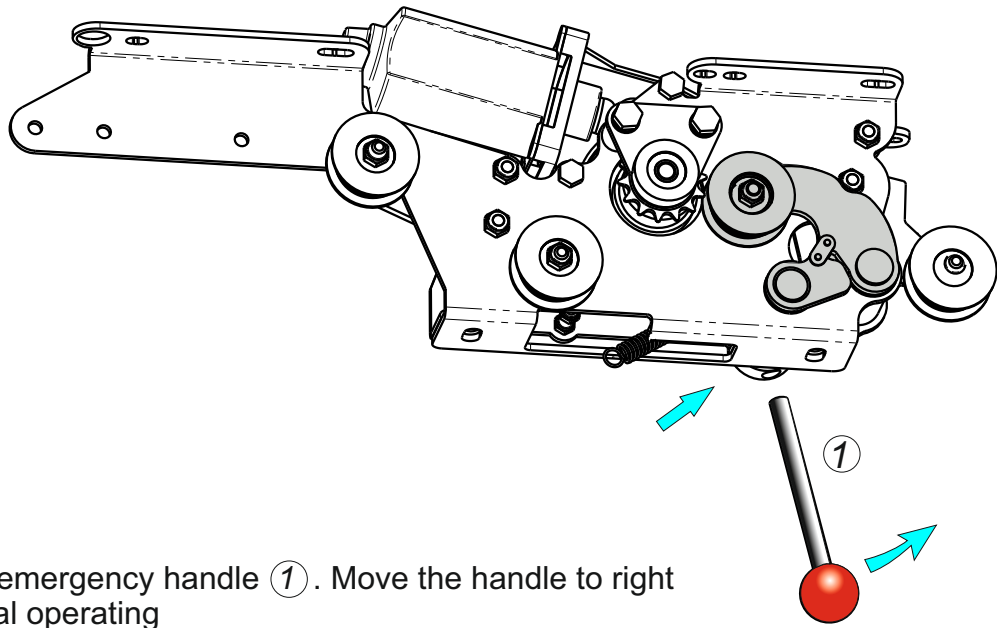
Optional - external emergency door opening kit



External emergency door opening KIT
PN: 111-03-013

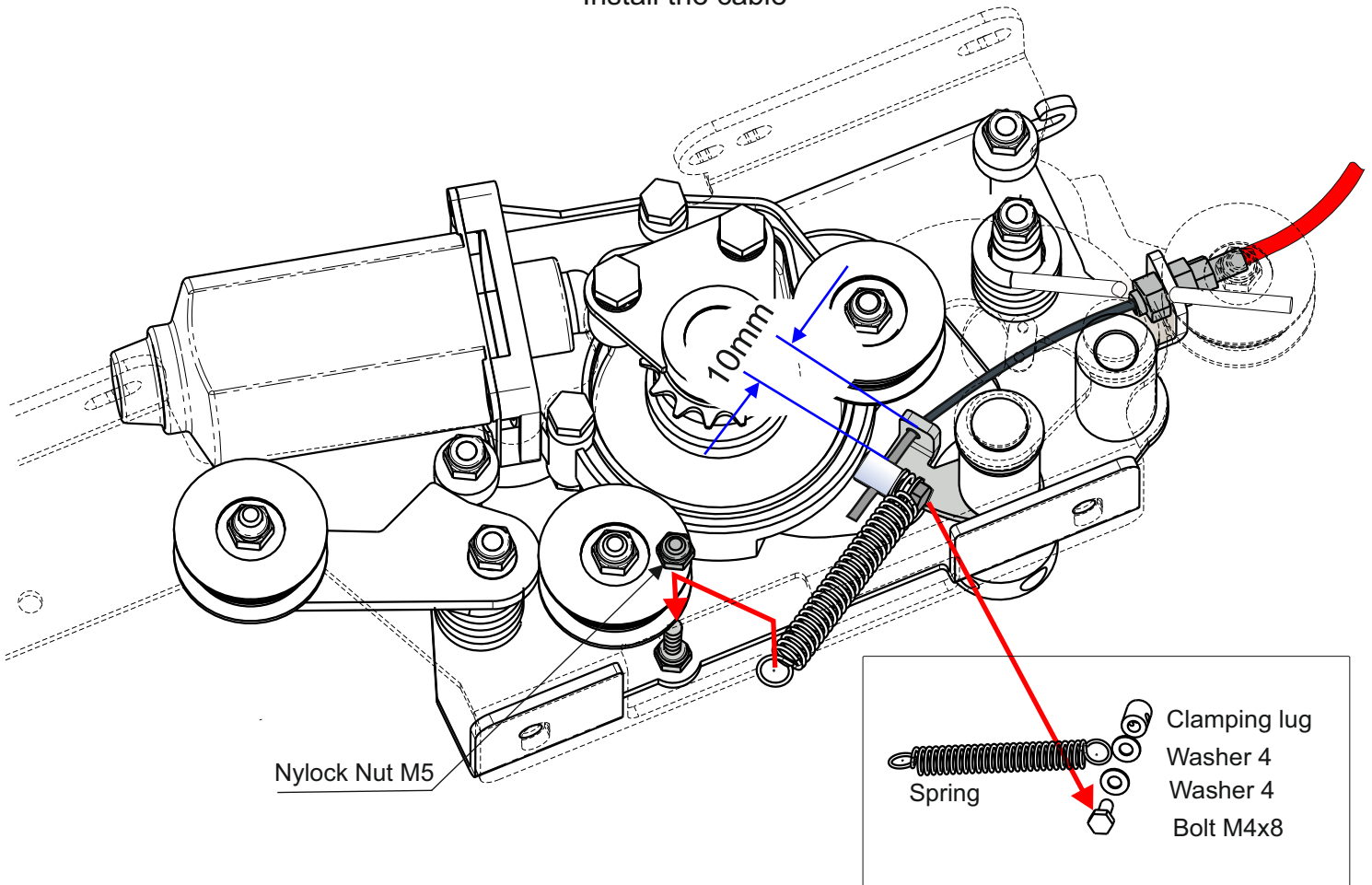


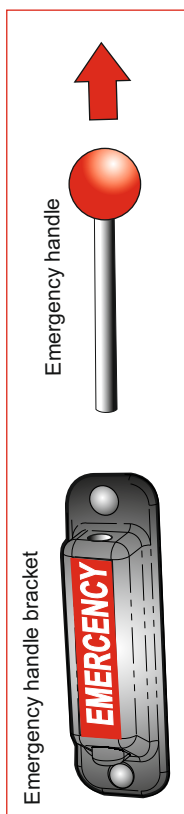
To install the cable:
 Verify that the Internal emergency handle is on closed position.
 Insert the cable into the hole (see figure 2) fasten nuts M6



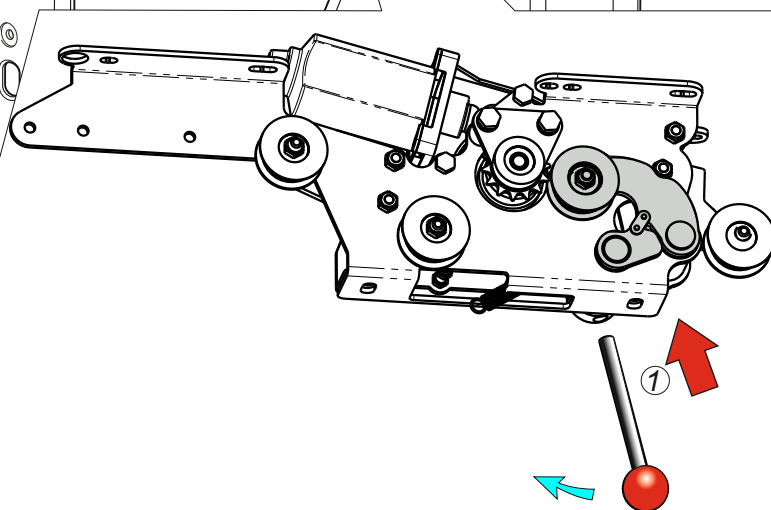
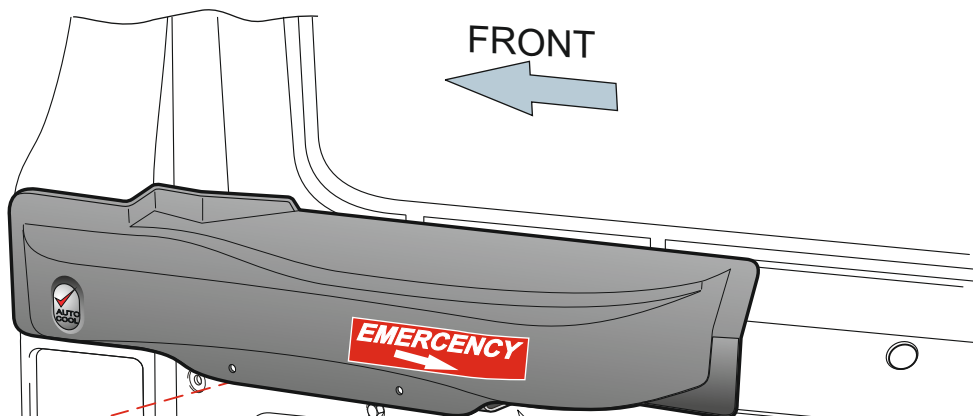
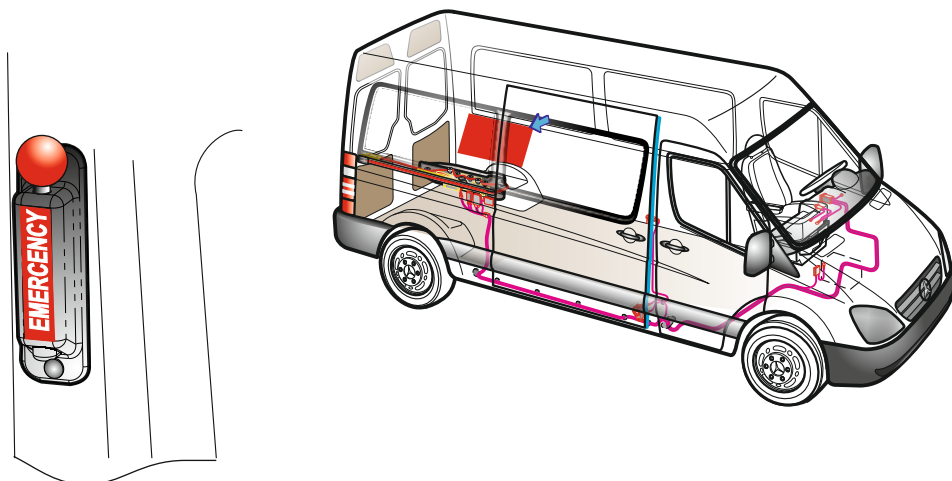
Insert the emergency handle ①. Move the handle to right for electrical operating

Install the cable

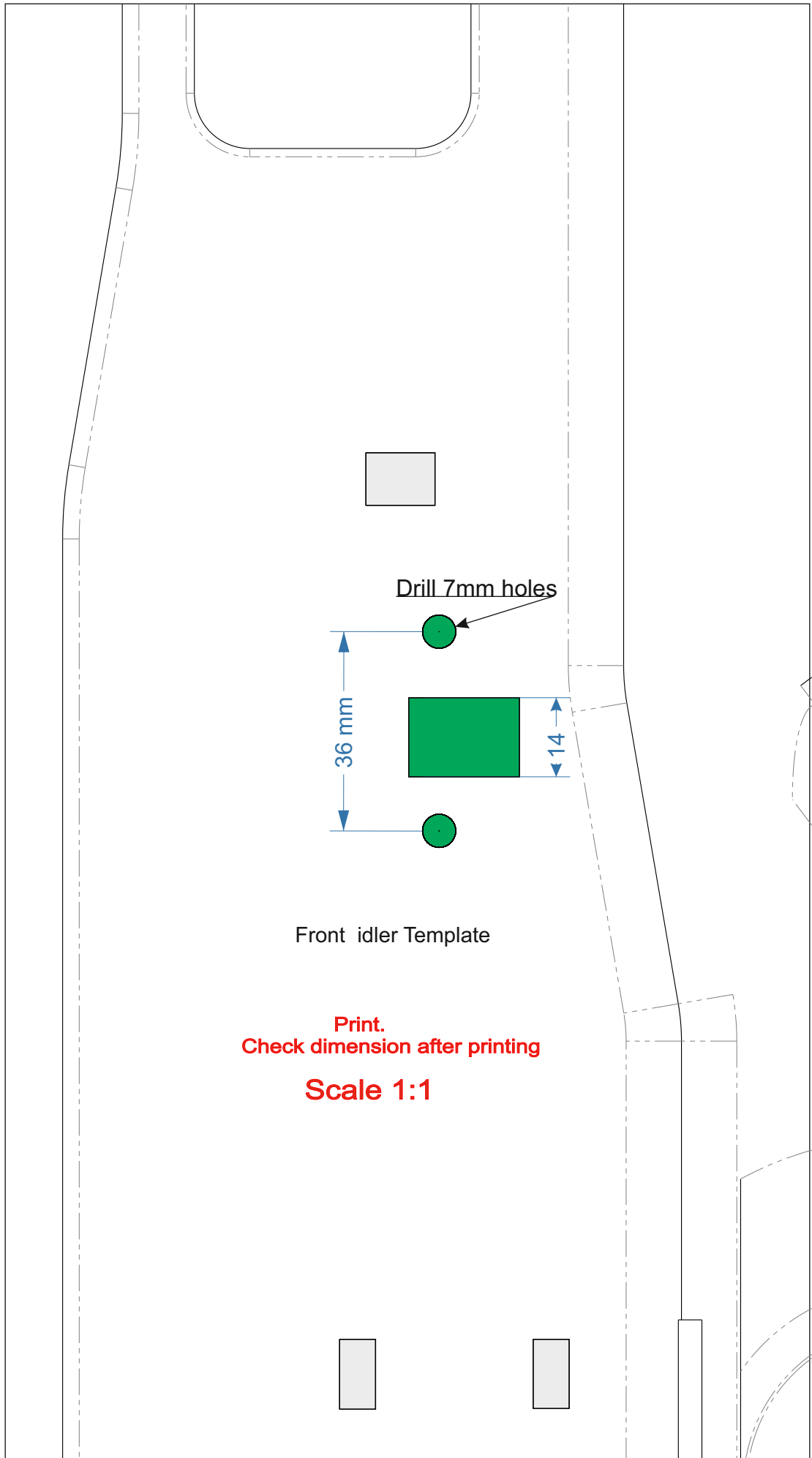




Internal emergency door kit
PN: 160-15-000

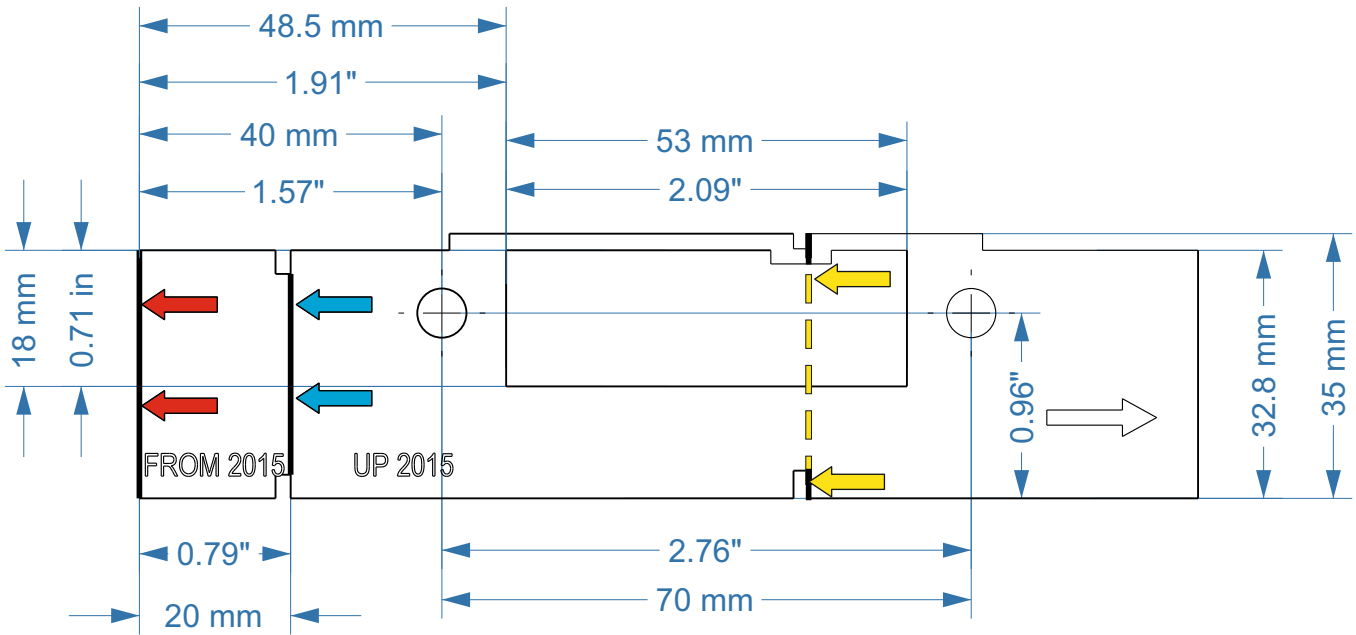


Insert the emergency handle ① . Move the handle to left for manual operating



Front idler Template

Print.
Check dimension after printing
Scale 1:1



← **Model L1**

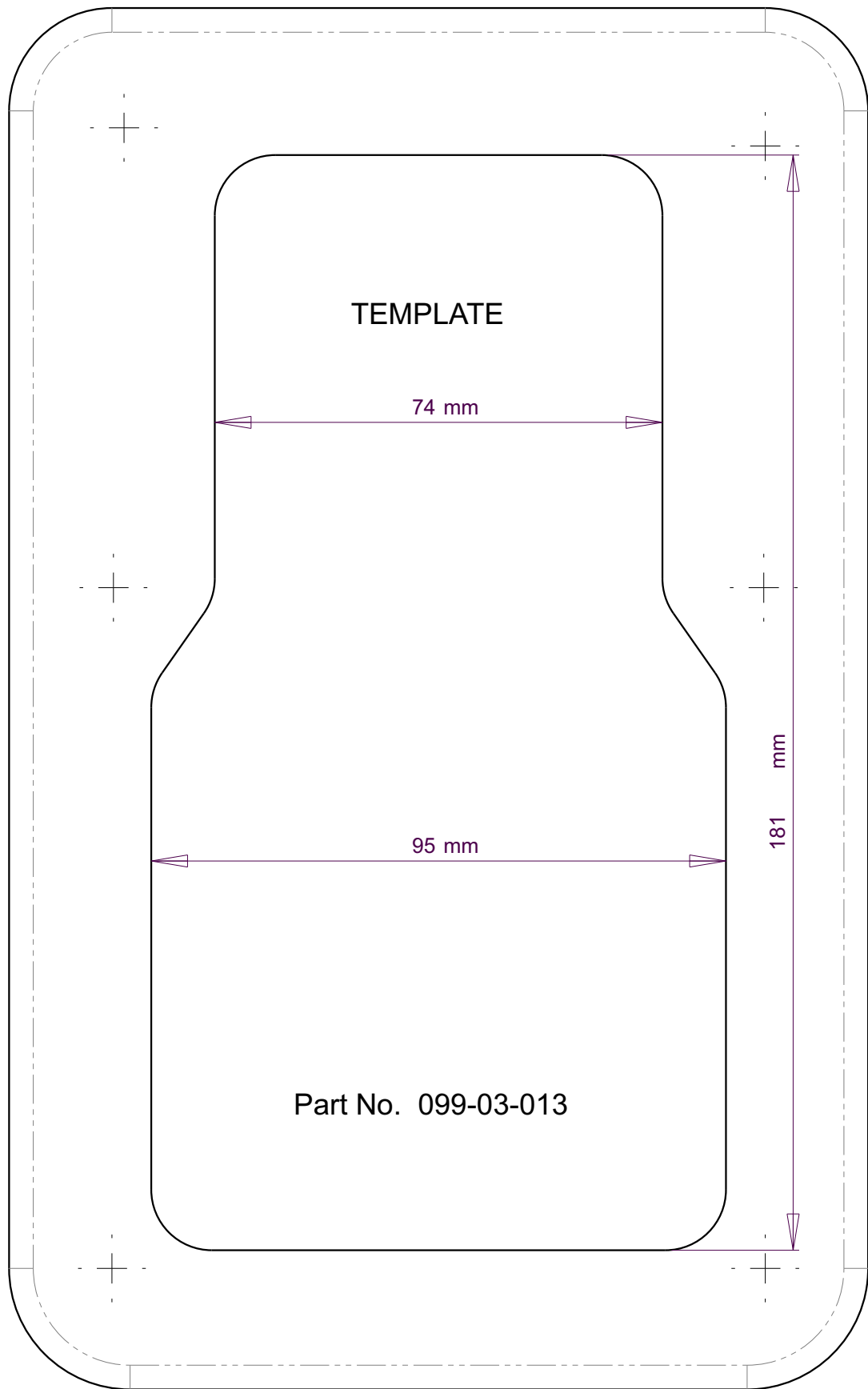
Template2 Rear idler

PN:099-00-0022

Scale 1:1

Print.

Check dimension after printing



Scale 1:1

Print.

Check dimension after printing

Operation:

- The door is operated by a switch located on the dashboard or remote control:
- To open—press the switch shortly, door opens to end of its range.
- To close - press the switch shortly, door closes and locks.
- To change its direction while in motion - press the switch shortly - the door will stop; press the switch shortly again - the door will change direction.
- To control opening range – Continuous pressure on the control switch will set the door in motion upon its release, the door will stop.
- Visual status indications – When the vehicle's main ignition switch is on and the door is open, the indication light is visible.
- Audio status indicators – Independently of the vehicle's main switch – the vehicle's buzzer is always functioning whenever the door is in closing motion.

Safety measures

The system includes safety features to protect the passengers.

- Closing – When encountering an obstruction, the controller automatically reverses the door direction to open full way .
- In addition, a safety switch is attached to the front side of door or B pillar, which upon sensing touch performs the same function and retracts immediately.
- Opening - When encountering an obstruction, the controller stops the door.
- While the vehicle is in motion: the ASD will not be operational at speeds exceeding 3 km\h. If the door is open, the system close the door automatically and buzzer will operated.

Emergency facility

The system has inside and outside (optional) emergency releasing handle. Pulling one of them will result in disconnecting the ASD mechanism device and the door will function normally immediately.

Please note:

Original central lock system still work with ASD. It remains fully functioning. For open door mechanism first turn OFF central lock.

* **Basic checks for any situation:**

- Visual check for loosen / broken parts.
 - Operate the system from different source:
Remote / driver switch / original remote/ original door handler.
 - System reset:
 - Disconnect the main fuse for 2 min - while waiting, check manually the system.
- or**
- Disconnect the control unit for 2 min - while waiting, check manually the system.

***Specific situations:**

1. Door does not function:

- Check main fuse.
- Check connections of power terminals to the control unit, motor and operating switch.
- Check control units
- Check motor.

2. Door does not close properly:

(Do not move at all or when reaching the fully closed positions it reverses).

- Check the safety strip tube:
Disconnect the plugs of transmitter and close the door automatically.
- Check inside the door the remote which connected to the safety strip transmitter.
While pressing the safety strip the LED indicator on the remote should light.
- Check limit switch on the B/C pillar for a good ground connectivity.
- Check control unit.
- Check voltage of the main battery, if under 12V start the engine.
- Check alignment of the door, tune it according to installation manual if required.

4. Door does not open:

- Check the electrical motor is engaged.
- If the ASD kit is a DL (Door Latch) ASD kit, check position of the locker unit (inside the door), which disable the OEM. locking system of the door.
- Check lock actuator (for DL model only).
- Check if OEM children lock on the door is active.

5. Door does not automatically reverse when encountering an obstruction during closing mode.

- Check safety strip.
- Check control unit.
- Check remote transmitter (inside sliding door).
- Check if door's limit switch (on B/C pillar) in place and good ground connectivity.

6. Noise from the door's chain during opening and/or closing modes.

- Move the mechanism to hand mode. Slide the door and try to find the source of the noise.
- Check installation and alignment of all wheels supports, front and rear idlers, and gear motor sprocket.
- Check chain tension and if needed, shorten it by removing one or two "links" of the chain (a very loose chain may also "jump" and cause damage to the sprocket's main motor).

7. Auto Cool remote control unit does not function.

- Check with spare remote control.
- Check battery in the key unit transmitter.
- Check if the LED indicator on the remote lights.
- Check connections (plugs) of receiver and main controller.
- If this issue still occurs, replace remote control receiver and transmitter set, with a new full set. Make sure to calibrate the existed transmitter inside the door.

8. VSS (Vehicle Speed Sensor) do not operate (the door operates although the vehicle is over 3 Km/h speed).

- Check connections to VSS (see installation manuals).
- Check control unit.

9. Buzzer does not operate during the closing mode.

- Check control unit.

10. Main driver button do not work:

- Check wires to the button.
- Replace and check button.
- Check control unit.

11. Original handle switch do not work:

- Check remote inside the door (see note 7 above).
- Check micro switch connections inside the door.
- When pulling the original door handle, check remote inside the door.

12. OEM remote / central locking button do not work:



* For vehicles including OEM remote / central locking option.

- Check control unit.
- Check connection to the OEM central locking wires (see installation manual).

Tools index

Combination wrench set metric		Straight flute HSS step drill diameter 4-30mm	
1/4" Drive socket set metric		Drill point countersinks	
Saw blades		Straight shank twist drill Diameter 4mm / 5mm / 6mm/ 6.5mm / 7mm / 9.5mm 12mm	
Air reciprocating saw		T-handle set	
13mm Pneumatic drill		Hand files	
Hand holding battery-powered drill		Plier set	
Soldering-iron		Wire stripper/crimper	
High speed threaded insert tool or Heavy duty hand tool for field and low volume production use or Small hand tool for prototype work and repairs.		Heavy duty snap blade knives	
Rubber hammer		Locking plier	
Flashlight or drop light		Screwdriver set	
		Tape 50mm	
		Anti-rust primer	
		Pencil or marker	

Recommended Torque (steel x steel)

Bolt  8.8	Torque (Nm)	Bolt  10.9	Torque (Nm)	A2 or A4 Stainless steel	Torque (Nm)
M5	6.0			M5	5.1
M6	10.3			M6	8.7
M8	25.5	M8	37.6	M8	21.2
M10	50.0	M10	72.0	M10	42
M12	87.0	M12	126.0	M12	73

Installation check before delivery

ASD checking	YES	NO
1. Check manually the system, then make sure that all windows / doors are closed and check electrically the system. Be careful to not cause any damage.		
2. Fully close and open the door electrically using: drivers button, remote control, original handle if existed. Repeat 10 times.		
3. Safety strip.		
4. VSS - drive above 3kmh while the door is open, and make sure the door automatically close.		
5. VSS -make sure operating buttons and remote controls are disabled while driving above 3kmh		
6. Check driver LED alerts.		