

Installation Instruction

AK-Motion DataDisplay NextGen

F2X/F3X

!!! Installation only by qualified persons !!!

!!! Disconnect battery before installation !!!

Document release notes

Version	Comments	Date	Author
1.0	Initial draft	05.04.2023	A.K.
1.1	Translation changes	14.05.2023	A.K.

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1 Delivery Content



- Display-Unit
- Junction-Box
- Harness: Junctionbox > Car
- Display cable
- 1x USB Cable (Display Update)
- 2x Housings for car connector
- Step drill

2 Required Tools

- Torx T20
- Plastic Wedge (optional)
- Wrench 10mm (8mm)
- Small flat-head screwdriver or paperclip (for pin out the contacts)
- Drilling machine

3 Disassembly

3.1 Disassembling the passenger footwell cover

Tool: Ratchet with 10mm nut

Remove 2 screws:



Pull down the front cover. This is held with 3 clips.

Attention: there are still at least 1 plug that needs to be removed.



Disconnect plug for 12 volt socket (if available) and footwell lighting.



The cover can now be removed.

Lift off the door sill strip at the front.

It does not have to be completely removed, but the FEM cover sits underneath.



Now remove the FEM cover. This is held by 3 clips.

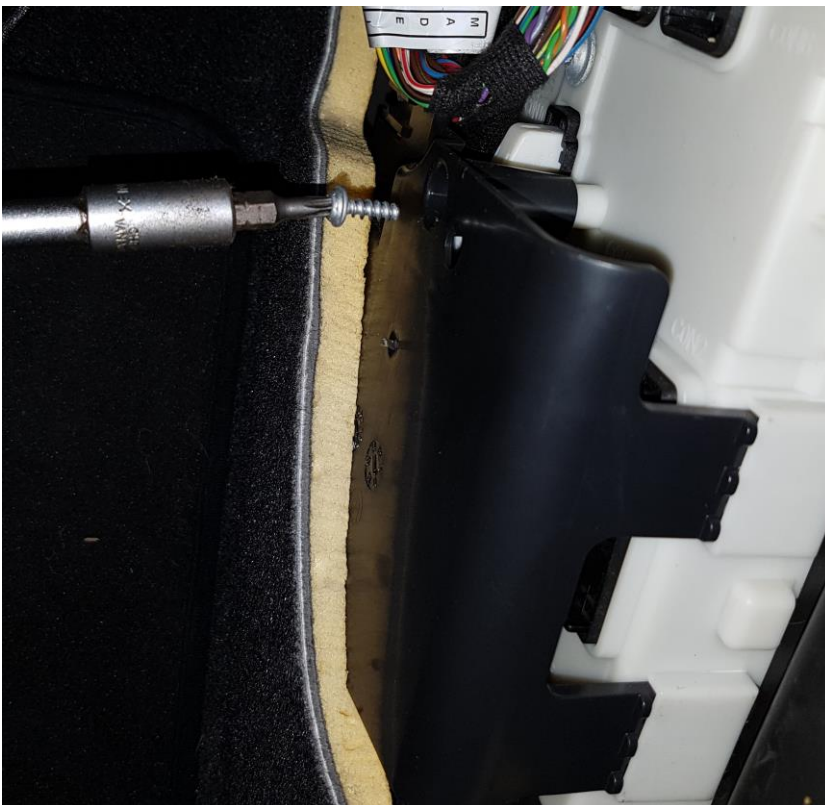


FEM Abdeckung:



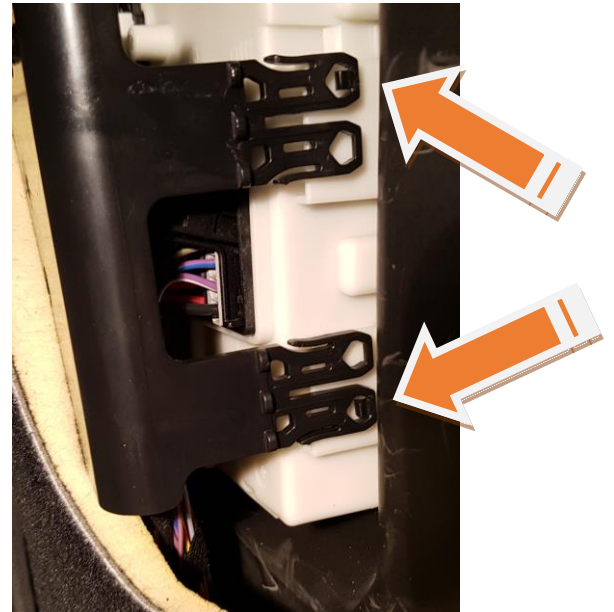
Remove the cover on the FEM:

Tool: Torx T20



The cover is still held by 2 retaining lugs.

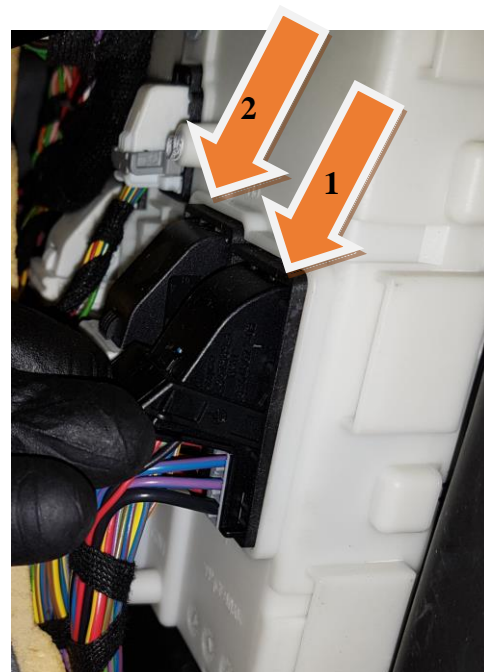
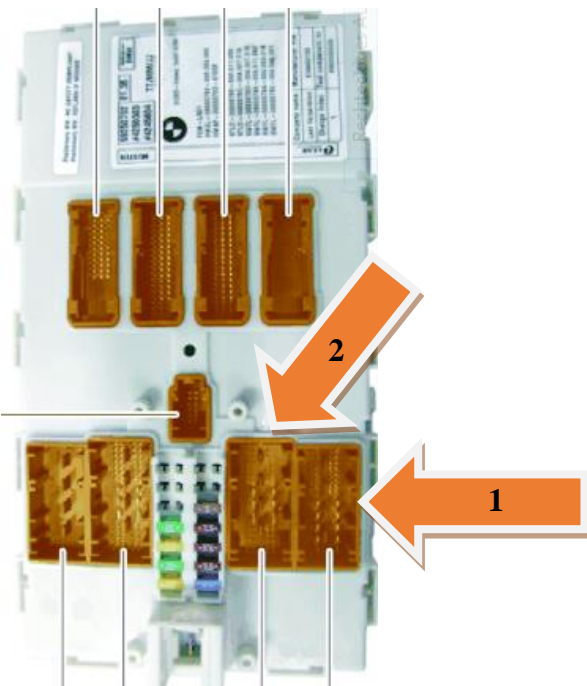
Press them one after the other and carefully pull on the cover:



The cover can now be put backwards.

Access to the FEM is now free. The DataDisplay is connected to the following plugs:

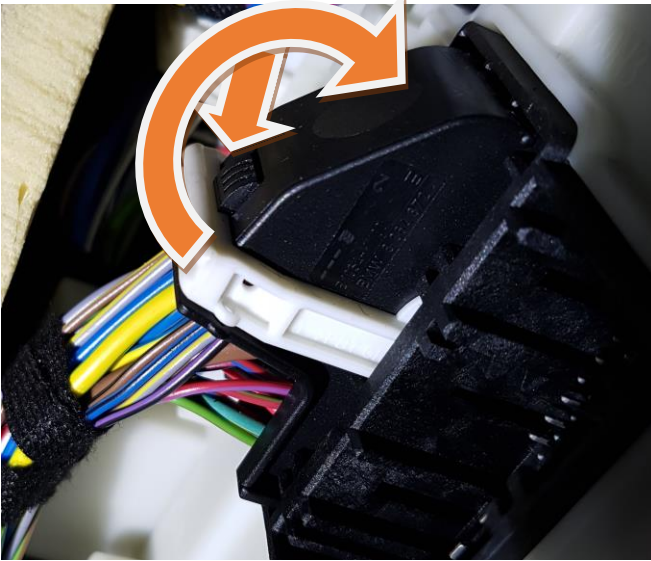
FEM:



3.2 CAN bus connection

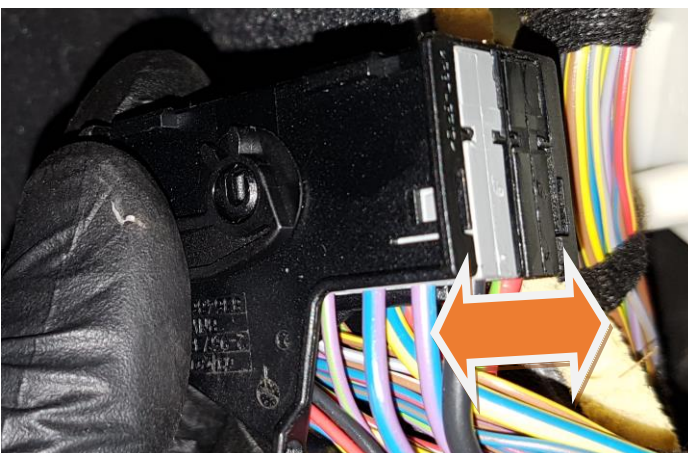
The first connector (1) has the CAN bus to which the DataDisplay is connected.

Press the latch and fold the handle:

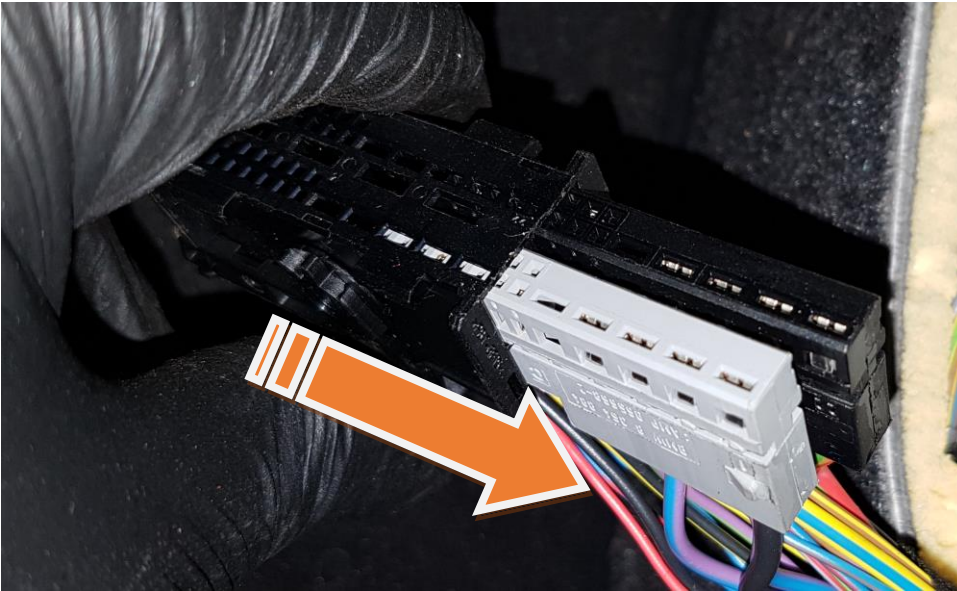


While the clip is folded down, the plug is pressed out of the FEM a bit and can then be removed.

To remove the connector housing, the sides must be pulled apart. This can be done with your hands or you can use a flat-head screwdriver.

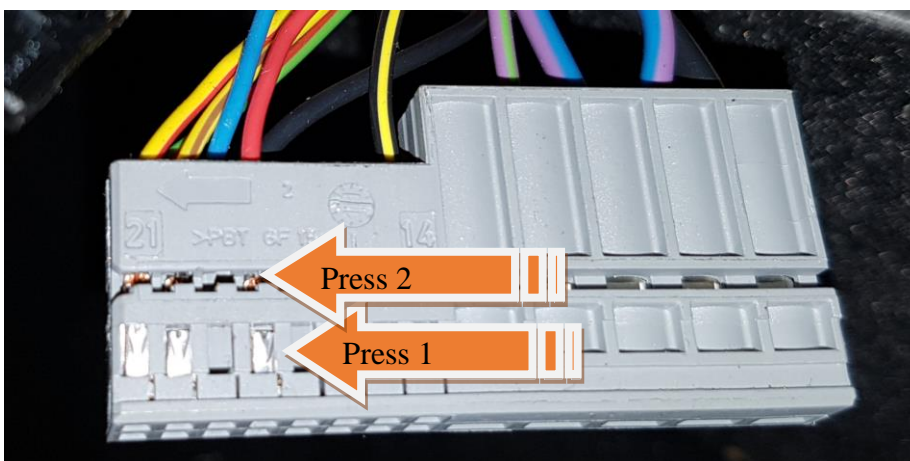


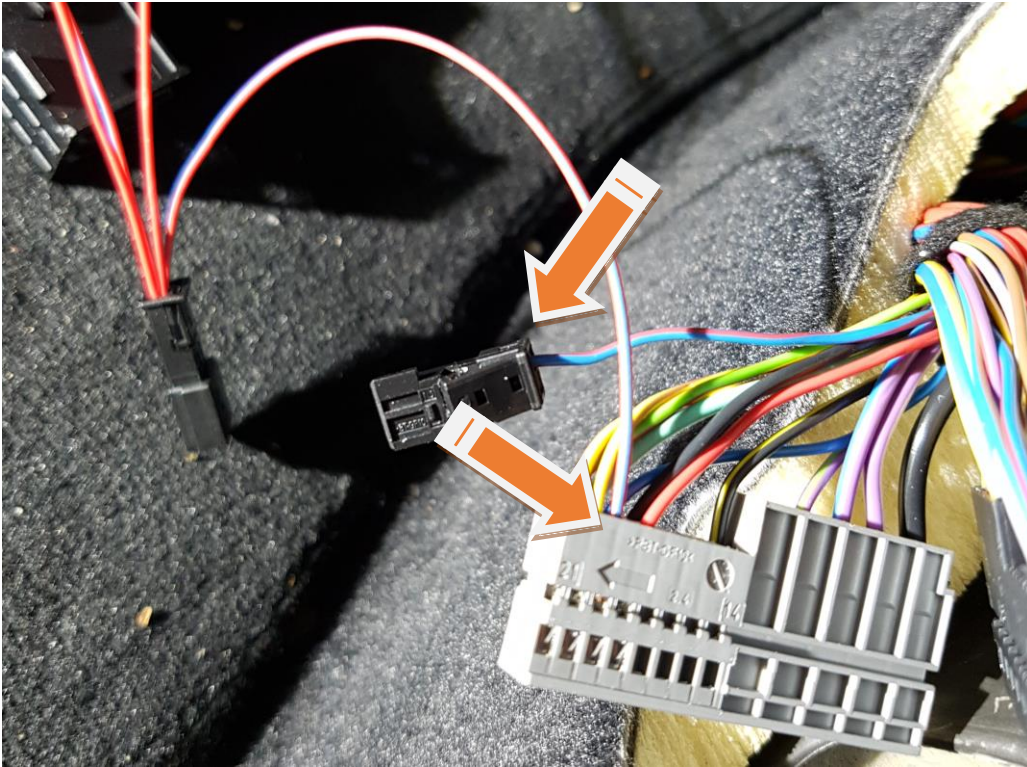
When pulling the housing carefully backwards, the plugs come out.



Now the cables Pin # 19 (CAN_High with the color red / blue) and Pin 18 (CAN_Low with the color red) are spun out. Use a small flat-head screwdriver, a needle or something similar. The crimp contacts have a flag which works like a barb. This flag must be pressed and at the same time carefully pulled on the cable.

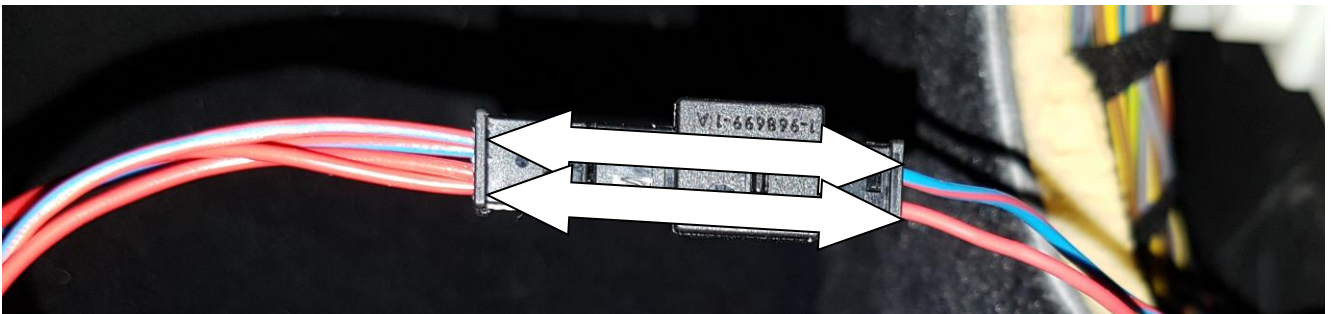
Attention: the flag can snap into the intermediate opening a second time. Here you have to press again.





Insert the removed cables into the supplied socket housings.

Caution: The side on which the cable is inserted is specified by the supplied cable harness! **The colors must match!**



If both cables have been inserted into the socket housing, press the safety clip until it clicks into place. This again prevents slipping out of the contacts.



Now connect the plug of the DataDisplay cable harness and the just connected socket.
Pay attention to the correct match again!

3.3 Power supply connection

ATTENTION: Be sure to note point 3.5 !!!

The second plug (2) has the power supply. (See figure in 3.1)

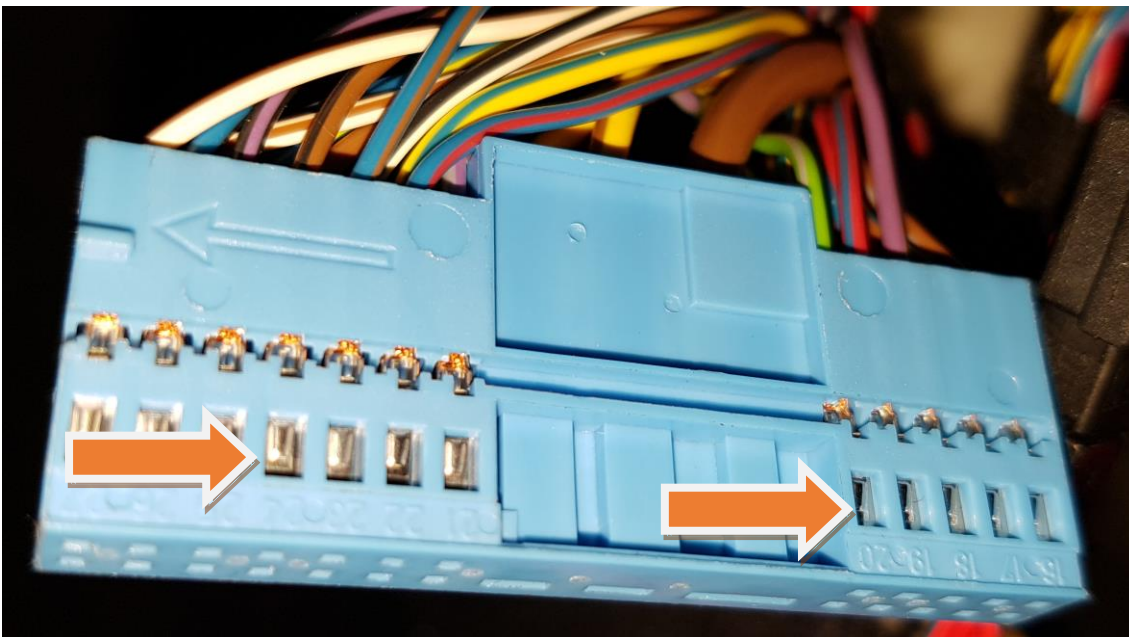
The power supply is tapped on the plug (2) directly next to the Can bus connector.

The access is exactly the same as the already described Can-Bus.

The connections are as follows:

Voltage 12 Volt Clamp 15N: Pin 20 Color Green / Gray

Ground: Pin 24 brown

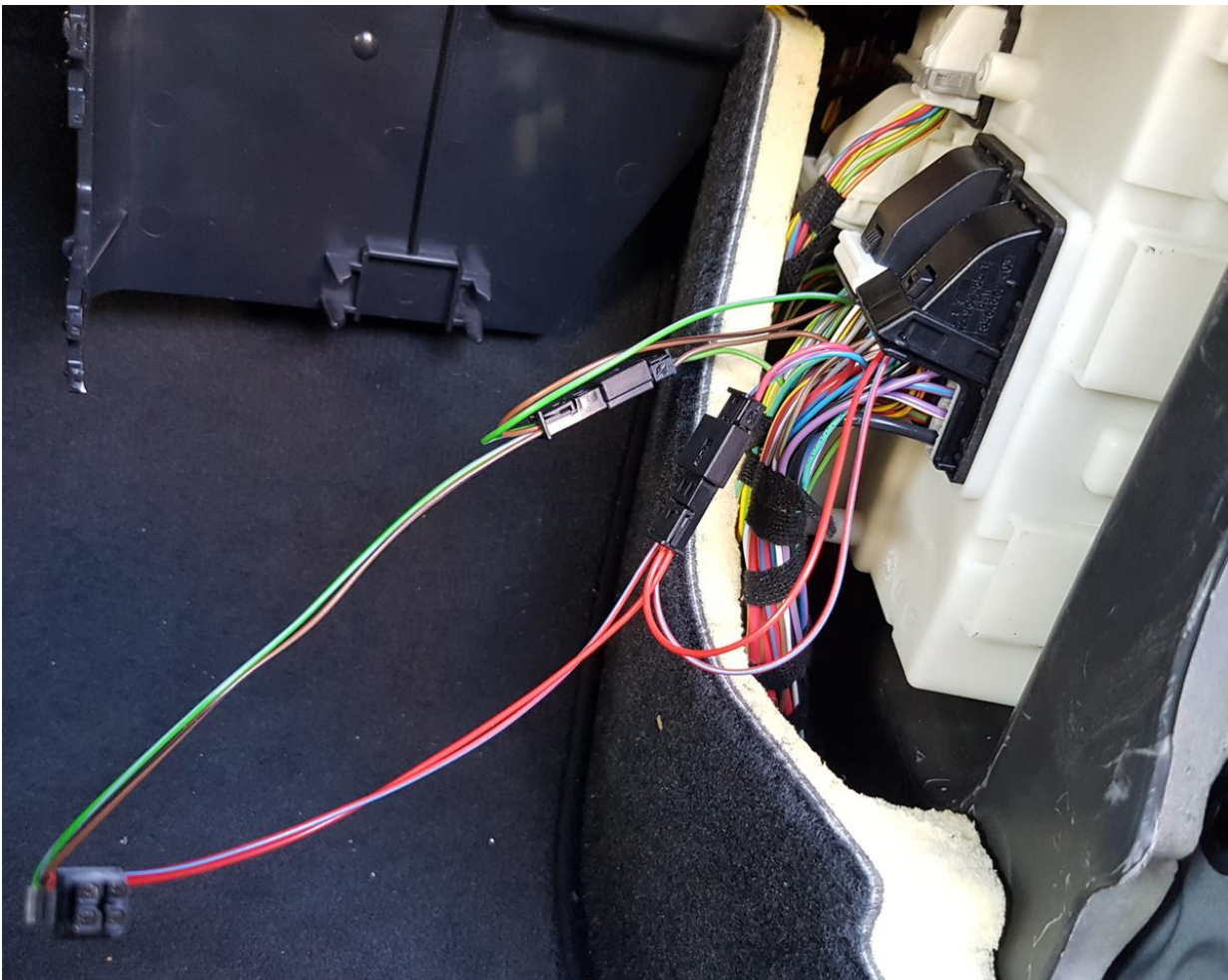


Disconnect **pin 20 green / gray** and insert into the second supplied socket housing. Make sure that the position matches the green / gray cable of the DataDisplay when they are put together.

Disconnect **pin 24 brown / black** and put it in the free space of the socket housing next to the green / gray pin. This is then opposite the brown / black cable of the DataDisplay harness.



When all cables are plugged in and the housings are plugged back into the FEM, it looks like this:



3.4 Display installation

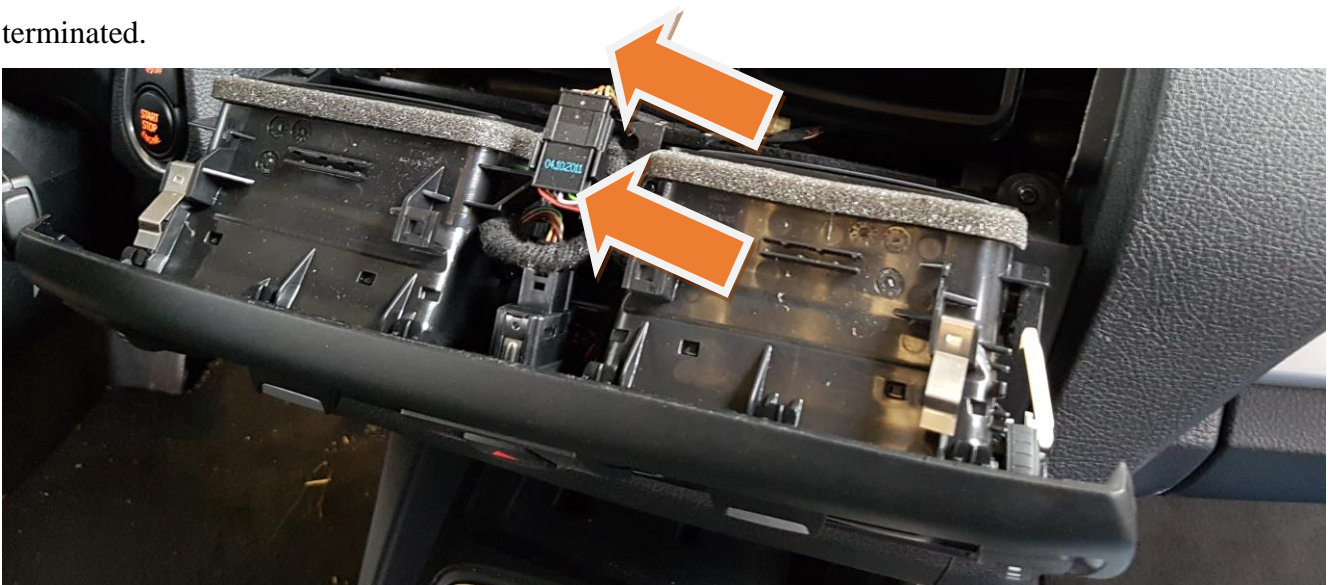
3.4.1 Installation VFL (pre facelift)

Pull out the fresh air grill at the top first (possibly use plastic lever):



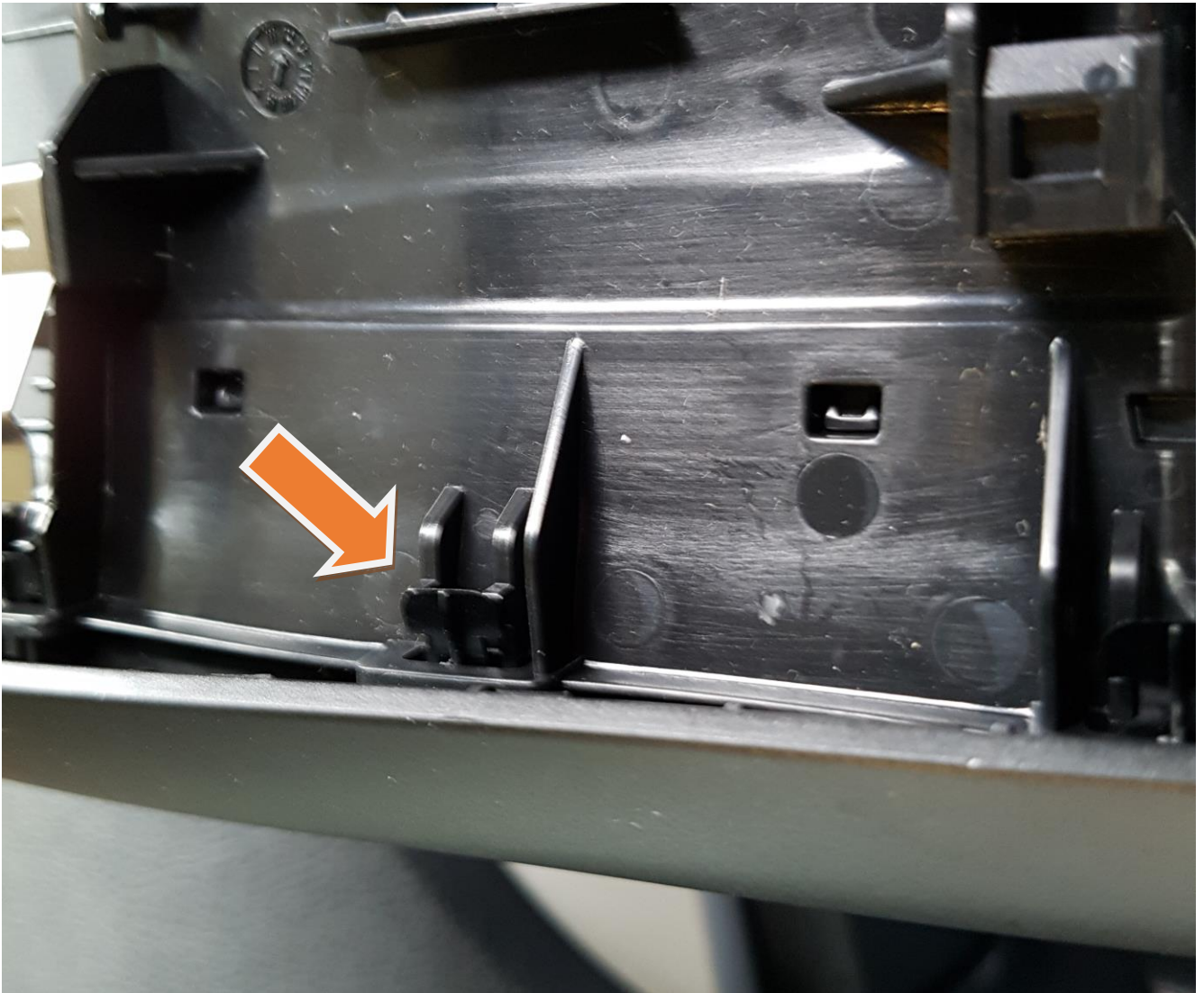
Now you can pull out the fresh air grill only one then on the other side.

The plugs on the back can but do not need to be terminated.



Remove the panel of the fresh air grill.

Beginning on one side, gently push the holders upwards all the way around until they can slide over the locking lugs. Carefully push the panel away from the rest of the grill:

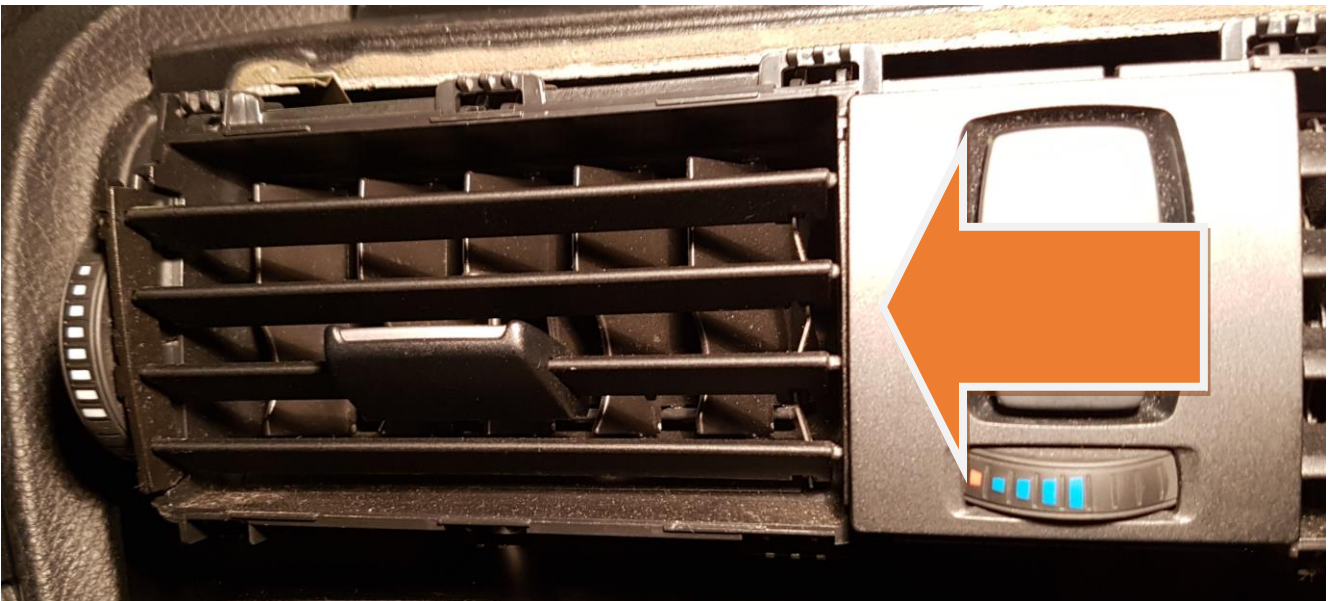


At the end remove the panel.



Carefully remove the first part of the grill on the left side.

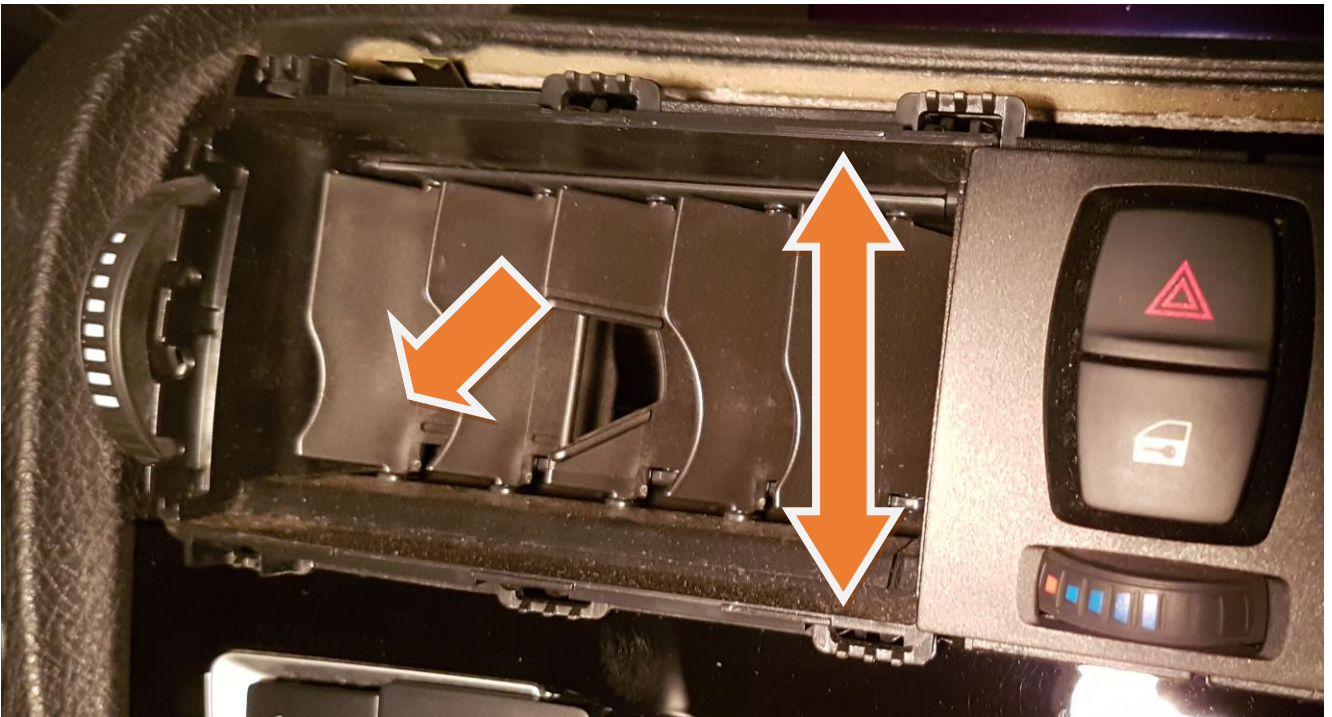
If necessary, pry it out with a screwdriver. When the left side is free, pull left away.



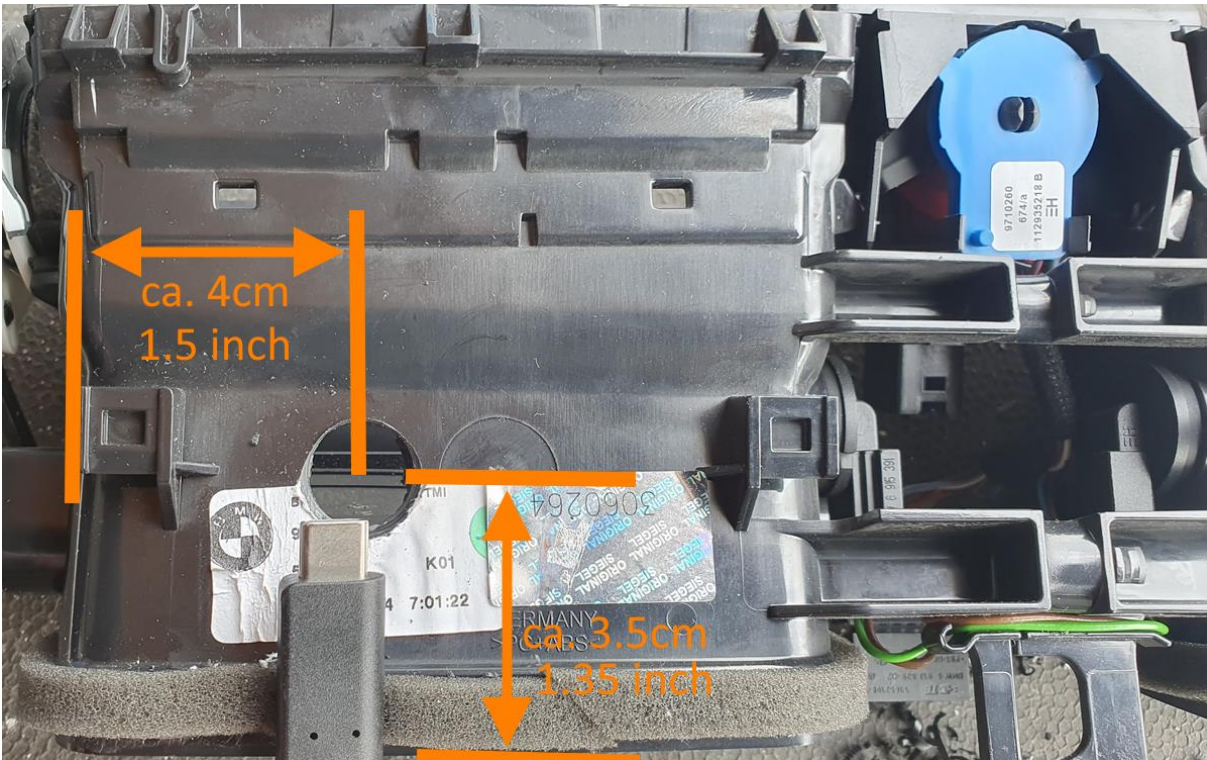
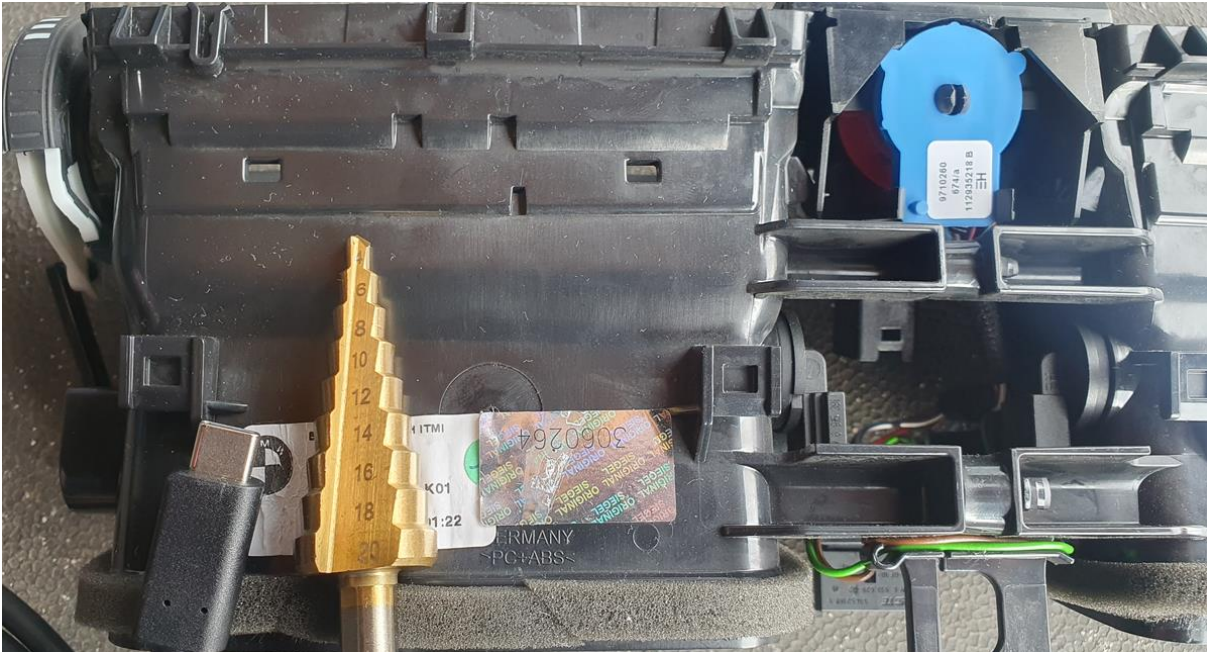
Keep the following parts in a safe place so that retrofitting is possible at any time:



The second part of the grill can be easily removed by pulling apart the fresh air grill a bit:



Drill a large enough hole for the display cable using the step drill provided:



Approximately 4cm (1.5 inch) from the outside and 3.5cm (1.35 inch) from the back.

Make sure that the sensor and the flap on the inside are not damaged.

Deburr the hole a little so that no sharp edges damage the cable.

Feed the display cable through the opening and plug it into the display.

Attention, the display cable can only be plugged in one way.



If the "retaining clip" is still on the left in the fresh air grill, remove it and attach it to the left side of the display. First insert the display on the hazard warning light side and then fold in the other side.





Now carefully put on the panel again until all noses are hooked.



Route the display cable into the footwell on the passenger side.

Note: The picture above shows the old display wire. Do not try to pass the cable of the NextGen in this way, it will be too tight.

Reconnect the two fresh air grille connectors and push the fresh air grille into the dashboard until it is back in place.

3.4.2 Installation LCI (Facelift) and F3X

Pull out the trim strip with the fresh air grill.

Start on one side. Best on the driver's side, possibly plastic wedge to help.



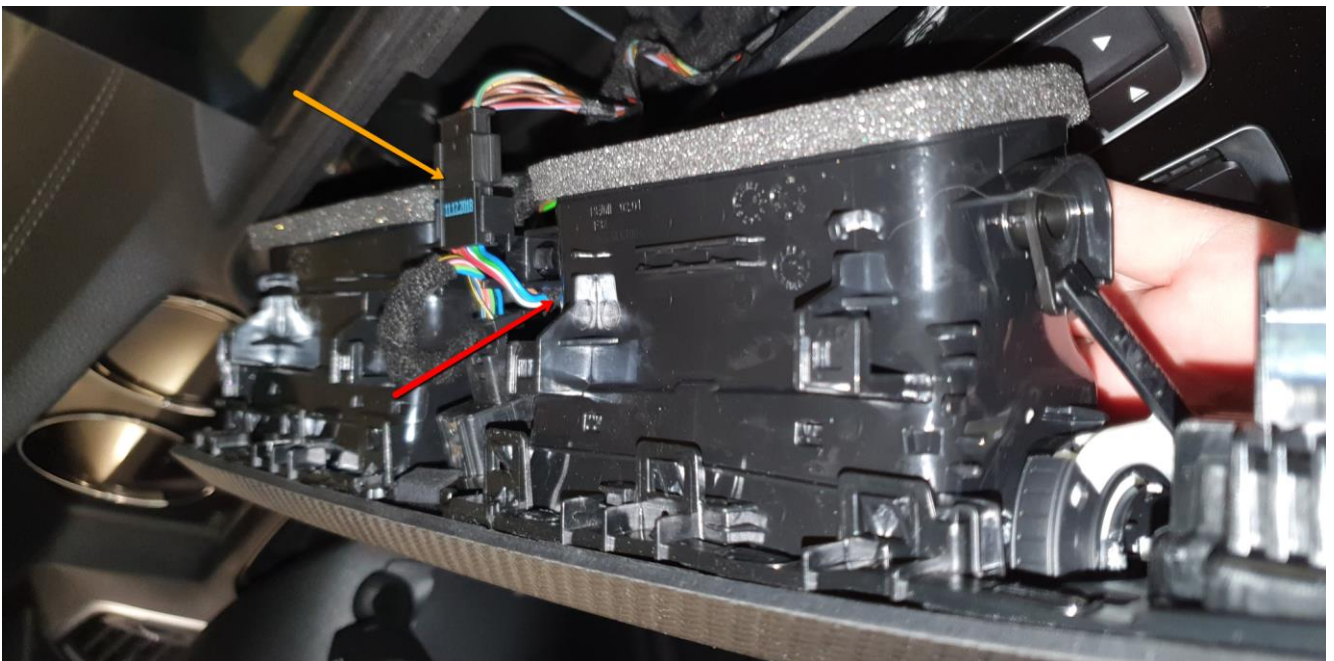
Carefully pull the strip out further (attention, there are still cables on the fresh air grill!)

If the trim strip is very tight, use a tool (plastic wedge or similar) to pry it.

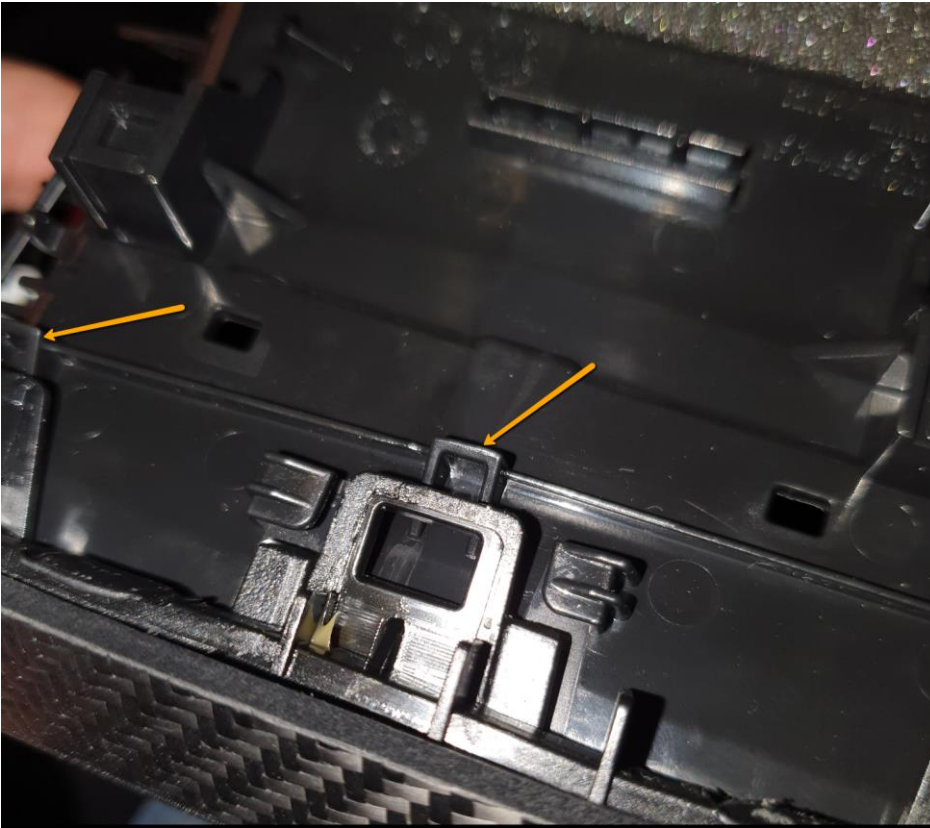


Disconnect the two connectors on the fresh air grill.

Orange Arrow is just pulled apart, Red Arrow has a retaining nose on the bottom that needs to be pressed.



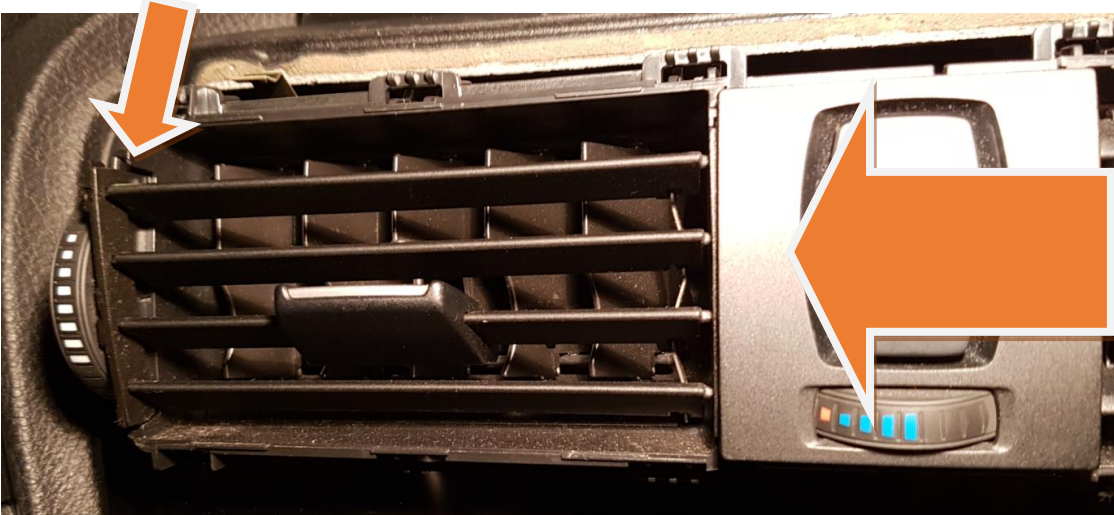
On one side, starting from the top, pull up the retaining clips while pulling the fresh air grill away from the trim strip.



Fold away the fresh air grill and remove.

Carefully remove the first part of the grill on the left side.

If necessary, pry it out with a screwdriver. When the left side is free, pull left away.



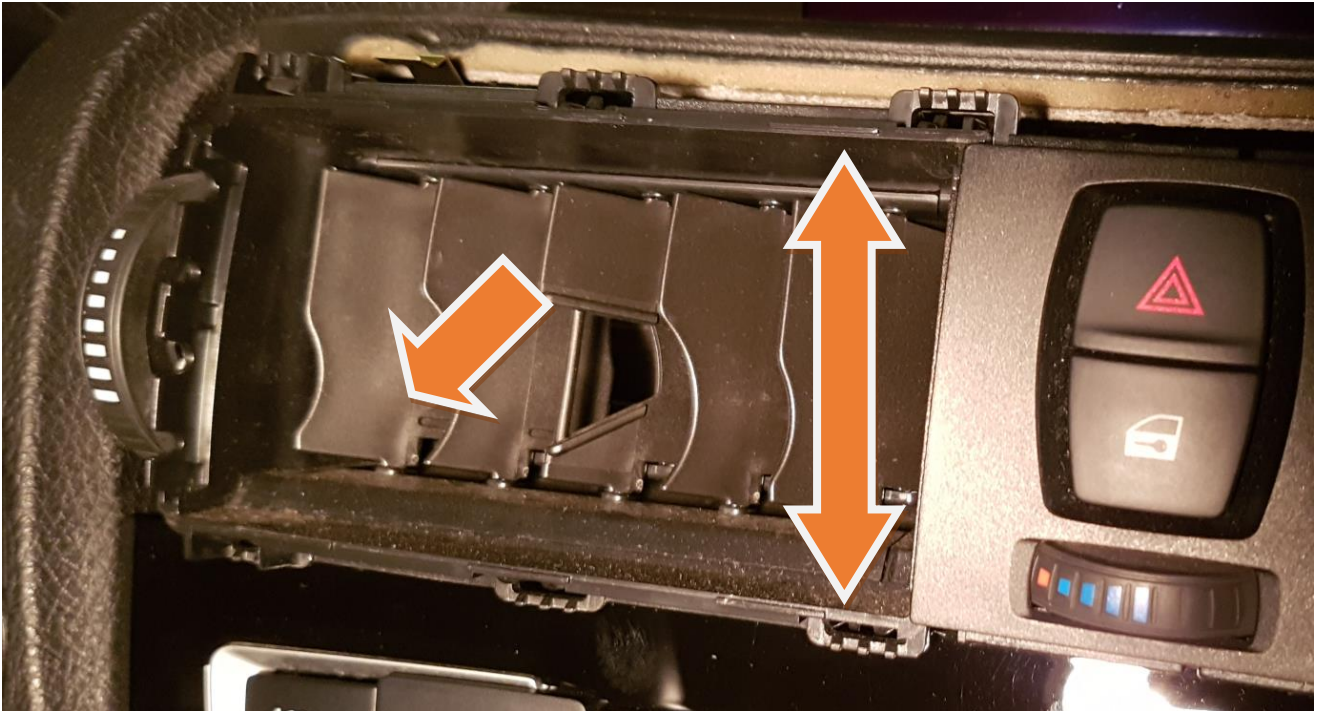
Keep the following parts in a safe place so that retrofitting is possible at any time:



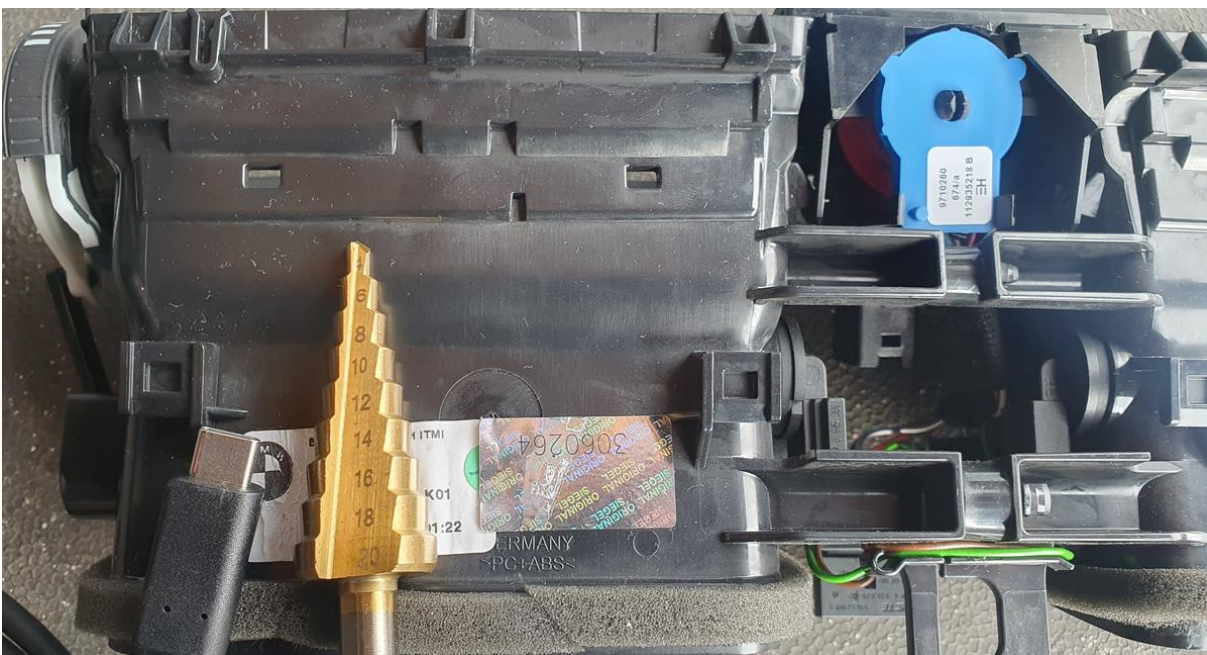
Pull off the connecting piece that may still be on the air ducts towards the driver's side or pull it out of the fresh air grille, this will later be attached to the display.

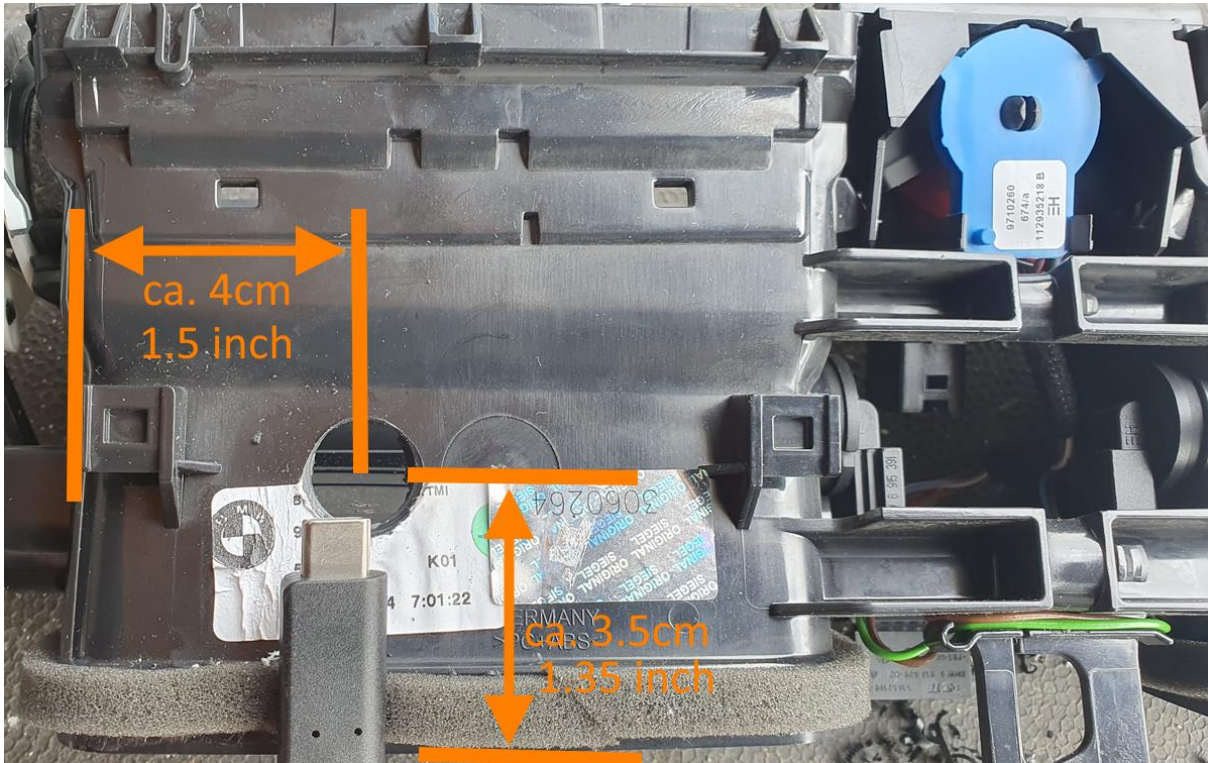


The second part of the grill can be easily removed by pulling apart the fresh air grill a bit:



Drill a large enough hole for the display cable using the step drill provided:





Approximately 4cm (1.5 inch) from the outside and 3.5cm (1.35 inch) from the back.

Make sure that the sensor and the flap on the inside are not damaged.

Deburr the hole a little so that no sharp edges damage the cable.

Feed the display cable through the opening and plug it into the display.

Attention, the display cable can only be plugged in one way.

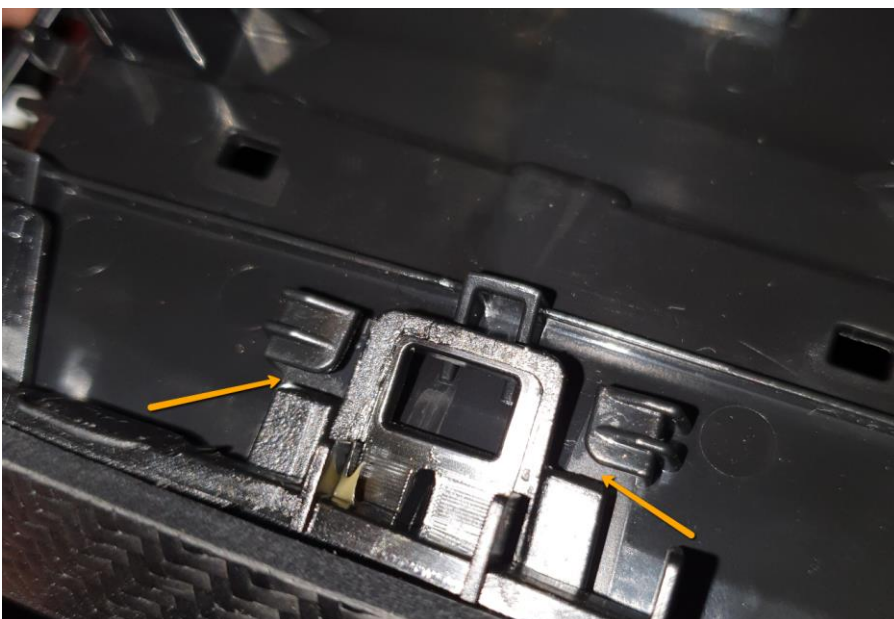


If the "retaining clip" is still on the left in the fresh air grill, remove it and attach it to the left side of the display. First insert the display on the hazard warning light side and then fold in the other side.





Put the fresh air grill incl. display back on the decorative strip. To do this, place the fresh air grill at the bottom and fold it up. Make sure that a bracket fits into the guides provided on each nozzle.



Reconnect the two cables, routing the display cable into the footwell on the passenger side. Put the decorative strip with the fresh air grille back on the dashboard.

Here are a few more tips on method how to get the trim over the display, as there seem to be problems with one or the other:

Insert the fresh air grill into the panel with the display at the bottom. On the top side it may appear that the interior trim doesn't extend over the display, but this can be done by placing your thumbs on the interior trim and your fingers behind on the body housing and then gently pulling the interior trim over the display. Do not press/touch the display.

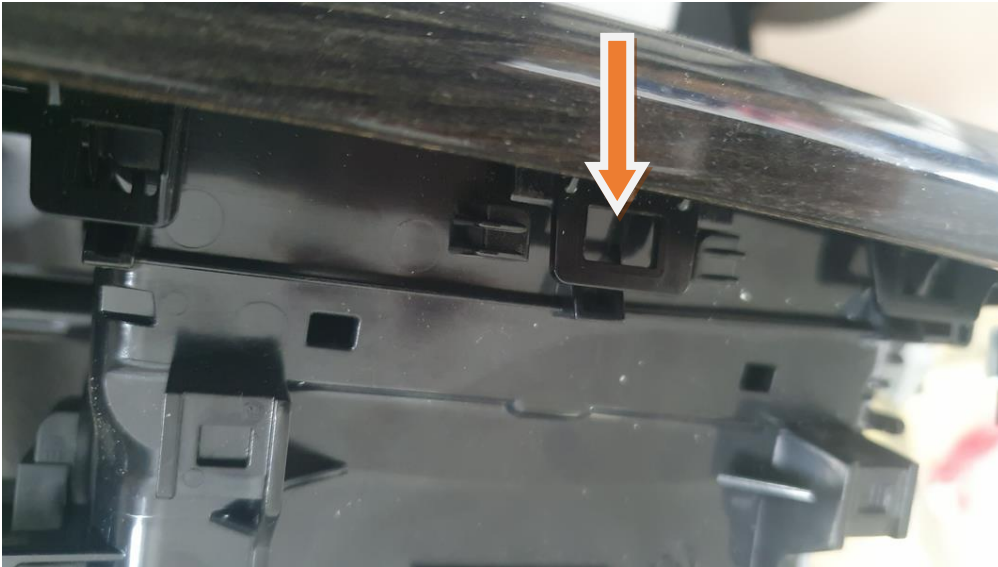


If the interior trim was then pulled a bit over the display -



at the top, make sure that the retaining clip is correctly seated in the guide, then snap the panel into place.

Press down on the retaining lug so that it fits into the guide on the fresh air grill housing and press in the cover.

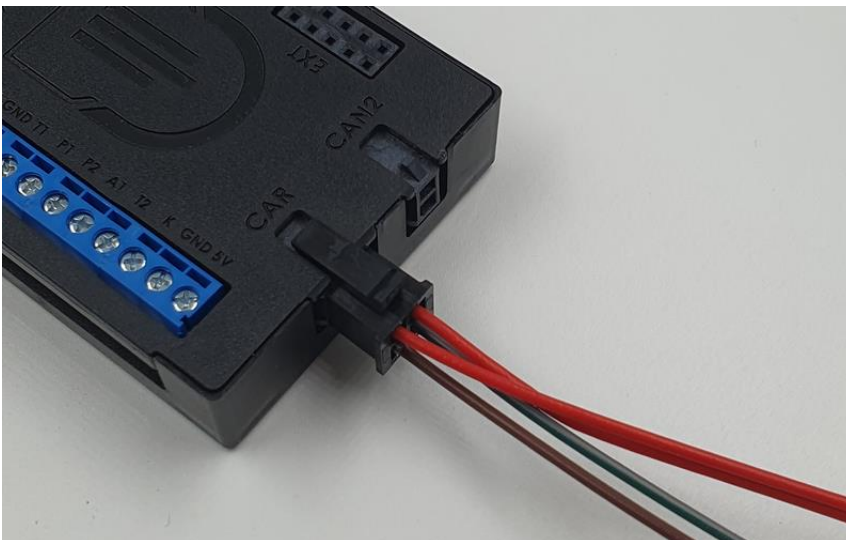


Connect the Junction-Box:

Connect the Display cable:



Harness from car:



It makes sense to put the USB cable through the glove compartment to the controller.

There is often a cover cap at the top which can be easily levered out.

Example:



With LCI2 models, the small cover has been omitted, the USB cable can alternatively be routed through an opening under the rubber mat.

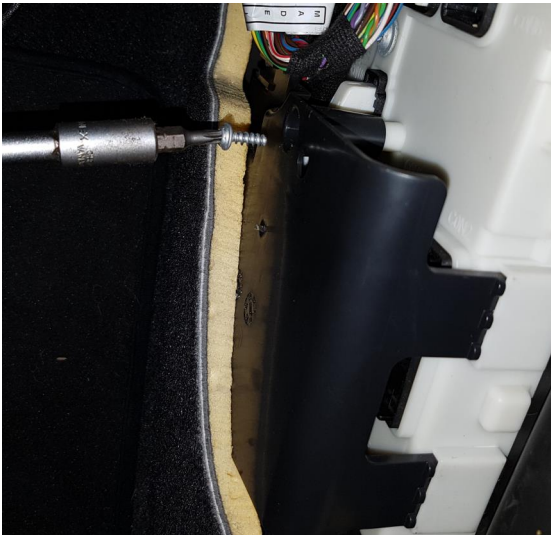
This means that the USB cable for updating is always accessible in the glove compartment.

Connection USB cable:



The connection is now ready and everything can be reassembled.

Install the cover of the FEM and secure with the Torx screw.



Insert the cover with the 3 plastic pins over the FEM and press firmly.

The rubber lip towards the door belongs over this cover.

To easily re-install the door sill, there is a simple trick.

Turn the bar from the inside to the outside over the plastic clip and then press it directly onto the clip.

One after the other.



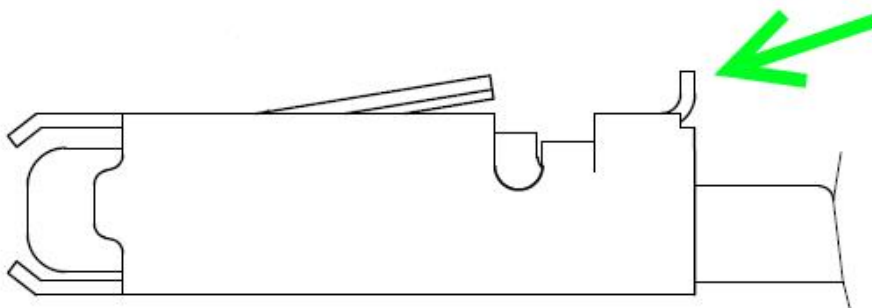
3.5 If the crimp contacts do not fit

On some models (build date before 03/213) it may be that the crimp contacts of the power supply do not fit.

This was changed for a short time by BMW.

The difference:

Pins that do not fit have no lateral but a guide in the middle:



This guide must be removed, otherwise the contacts will not fit into the supplied socket housings.
The matching contacts, on the other hand, have a side guide as shown here:



These contacts fit directly, nothing has to be edited.

According to experience, the 2 contacts for the power supply to vehicles before 03/2013 must be processed so that the rear middle guide is no longer in the way.

This does not affect the contact in any way, it is just a guide!

Vehicles from 03/2013 should have the right contacts again.

The DataDisplay by AK-Motion is now ready for use.

We hope you have fun
Technical specifications

4 Technical specifications

- working voltage 7V - 36V
- Current < 120mA (0mA after vehicle standby about 30-60 minutes after shutting off)
- current consumption 1.0A@12V
- input 12W
- Temperature range -40°C bis +85°C
- weight ca. 200g