

BMW E61 Hydraulic Pump replacement instructions

This DIY will guide you through the tasks needed to successfully replace your defective tailgate hydraulic pump

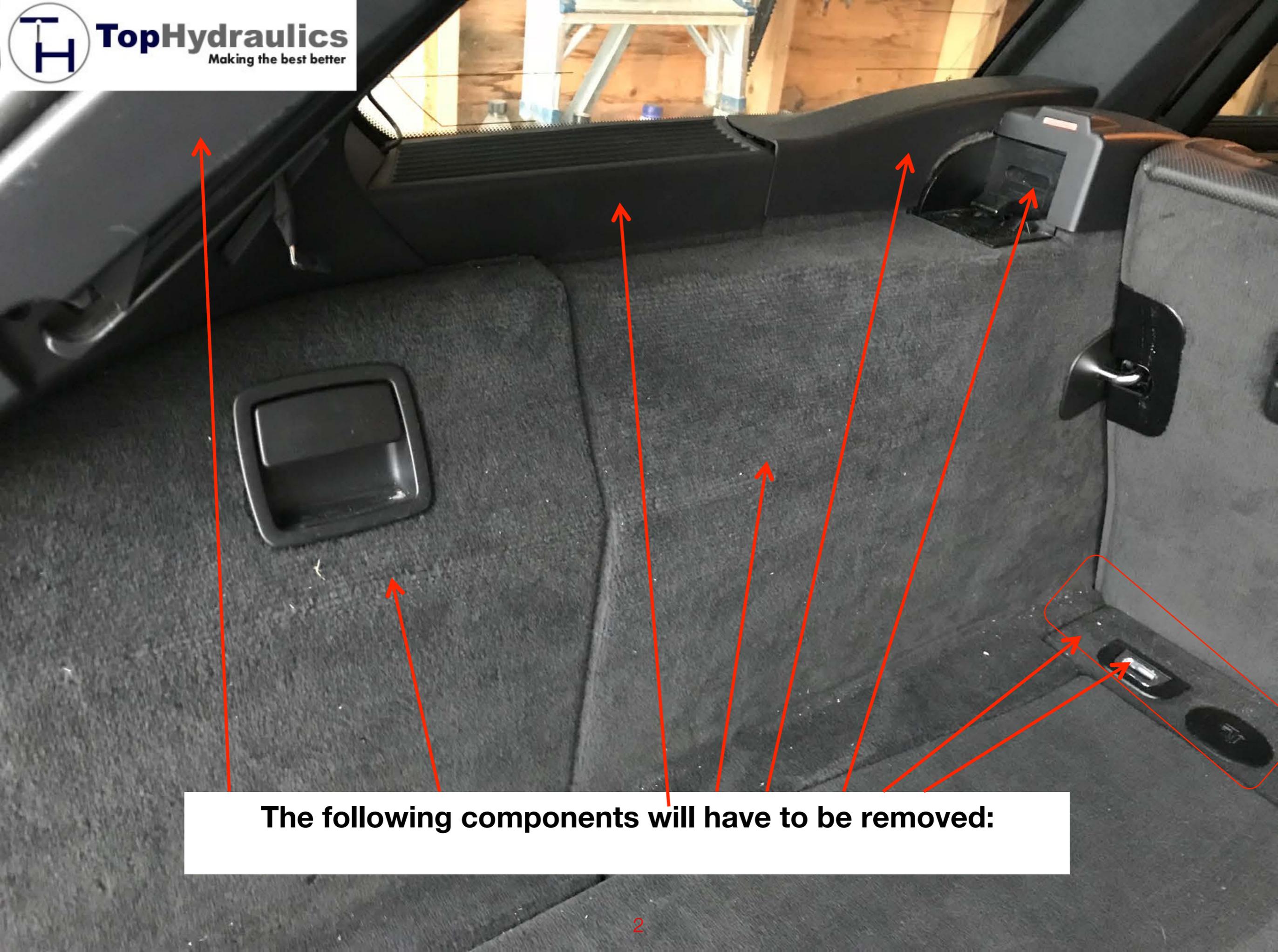
Difficulty 3 of 10. The most difficult part will be keeping the tailgate open and opening and closing of the tailgate while refilling the hydraulic cylinder. Find a 2x4 or something to hold the tailgate in the fully opened position and you are good to go. The rest is just bolts and plastic, really!

Time needed; I spent 2 hours while at the same time trying to take pictures. Writing the DIY took a lot longer. There is nothing to fear, but fear itself. You can do this!

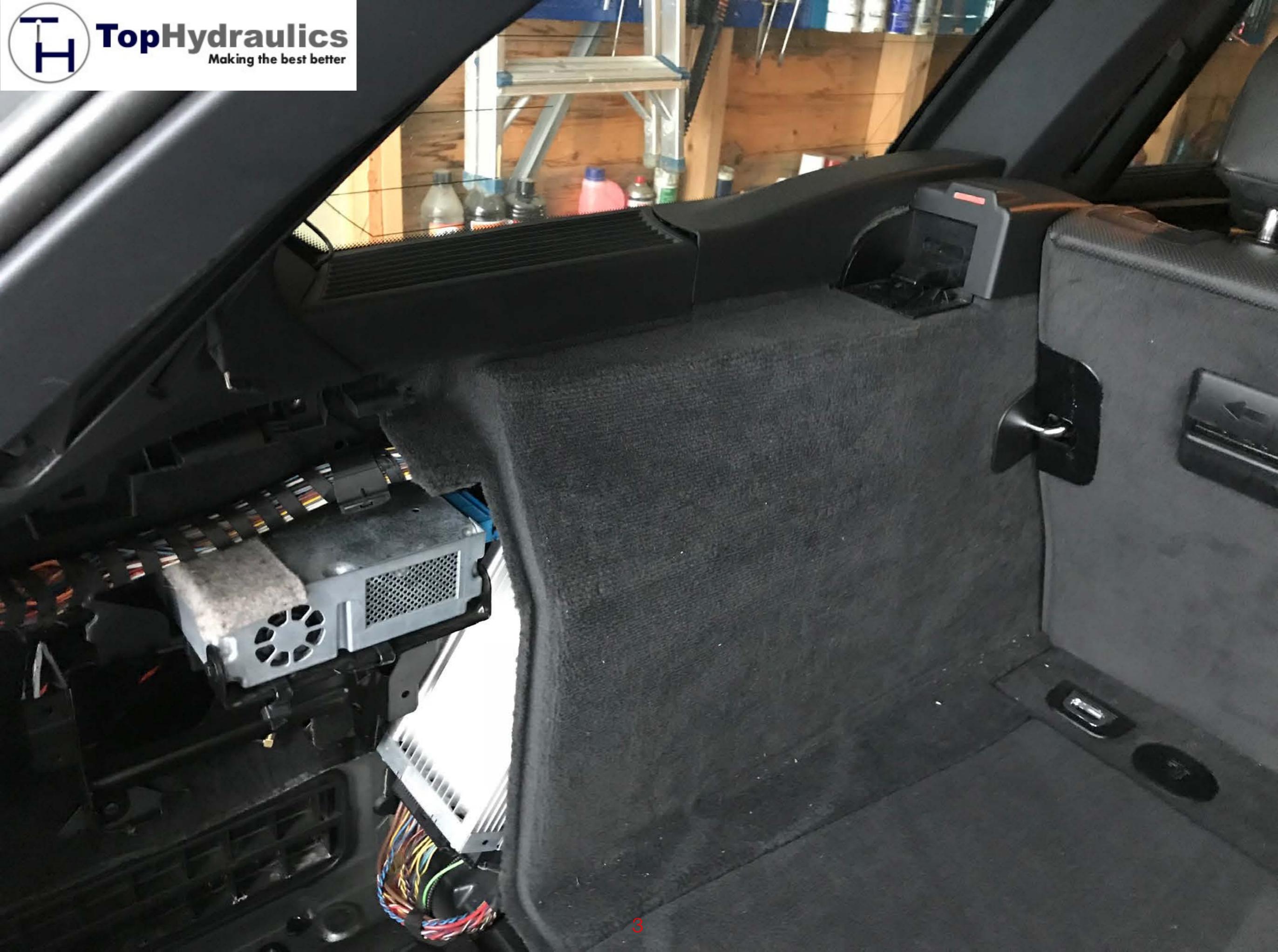
Tools needed:

- TINY flathead screwdriver
- Medium sized flathead screwdriver
- 7mm socket wrench
- 8mm socket wrench
- 10mm socket wrench
- 15mm socket wrench or normal wrench
- Allen key HW4
- T20 Torx screwdriver
- T25 Torx screwdriver
- Syringe 5ml size

DISCLAIMER: You do this at your own risk



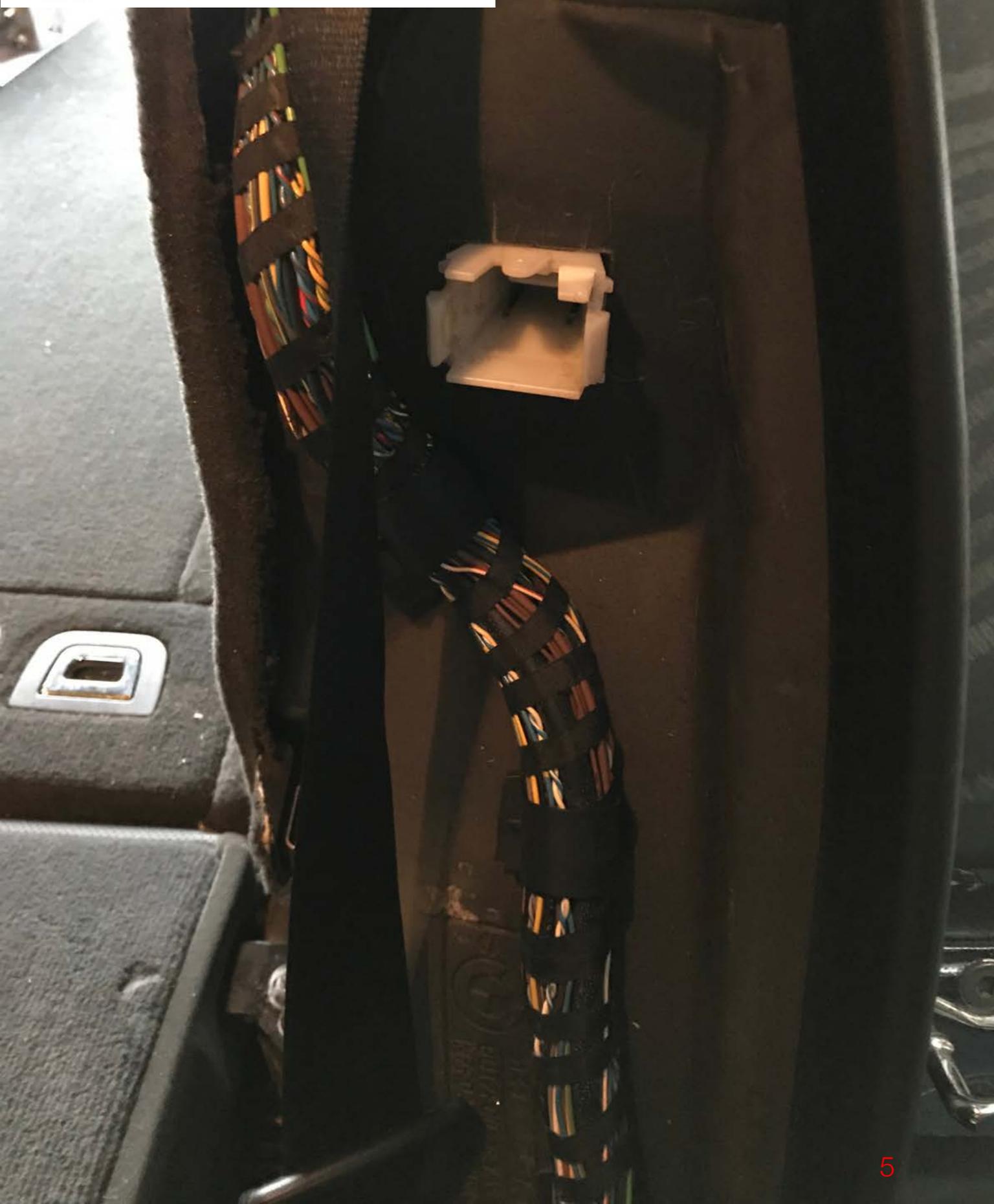
The following components will have to be removed:



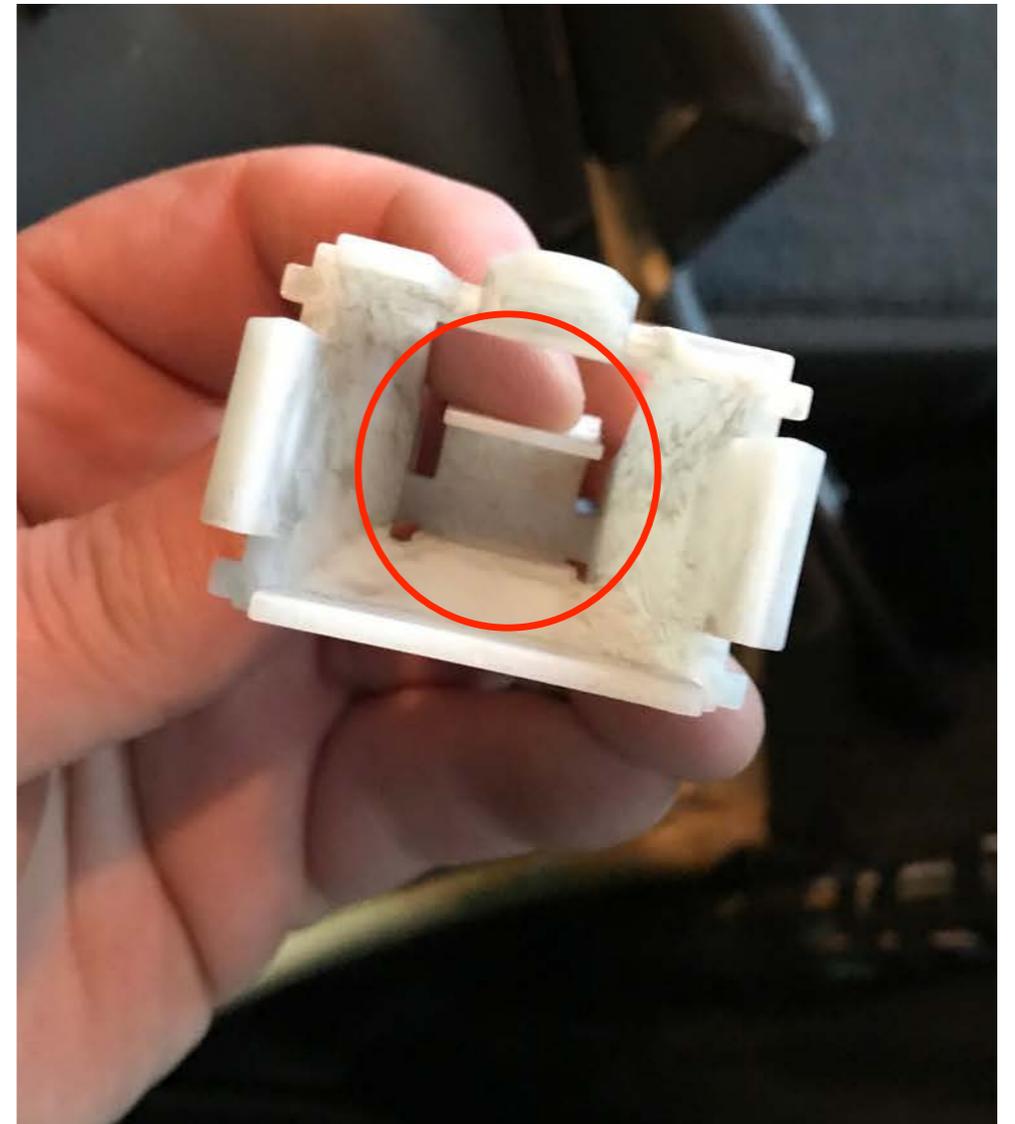


Pull outwards on the top of the side cushion, then lift up



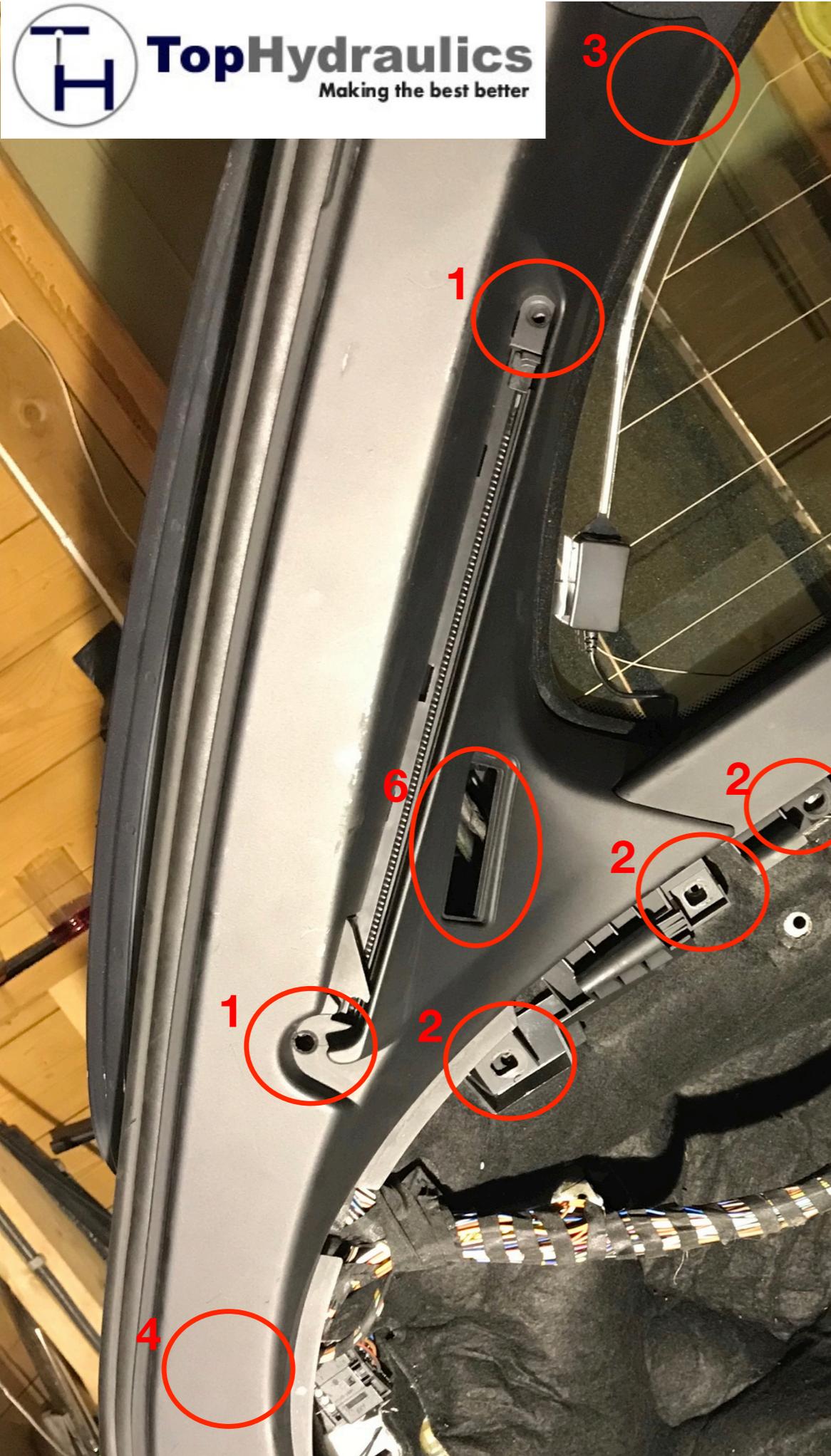


**The retainer clip will most likely be seated in the chassis.
Remove by pressing down on the lock pin inside the clip**

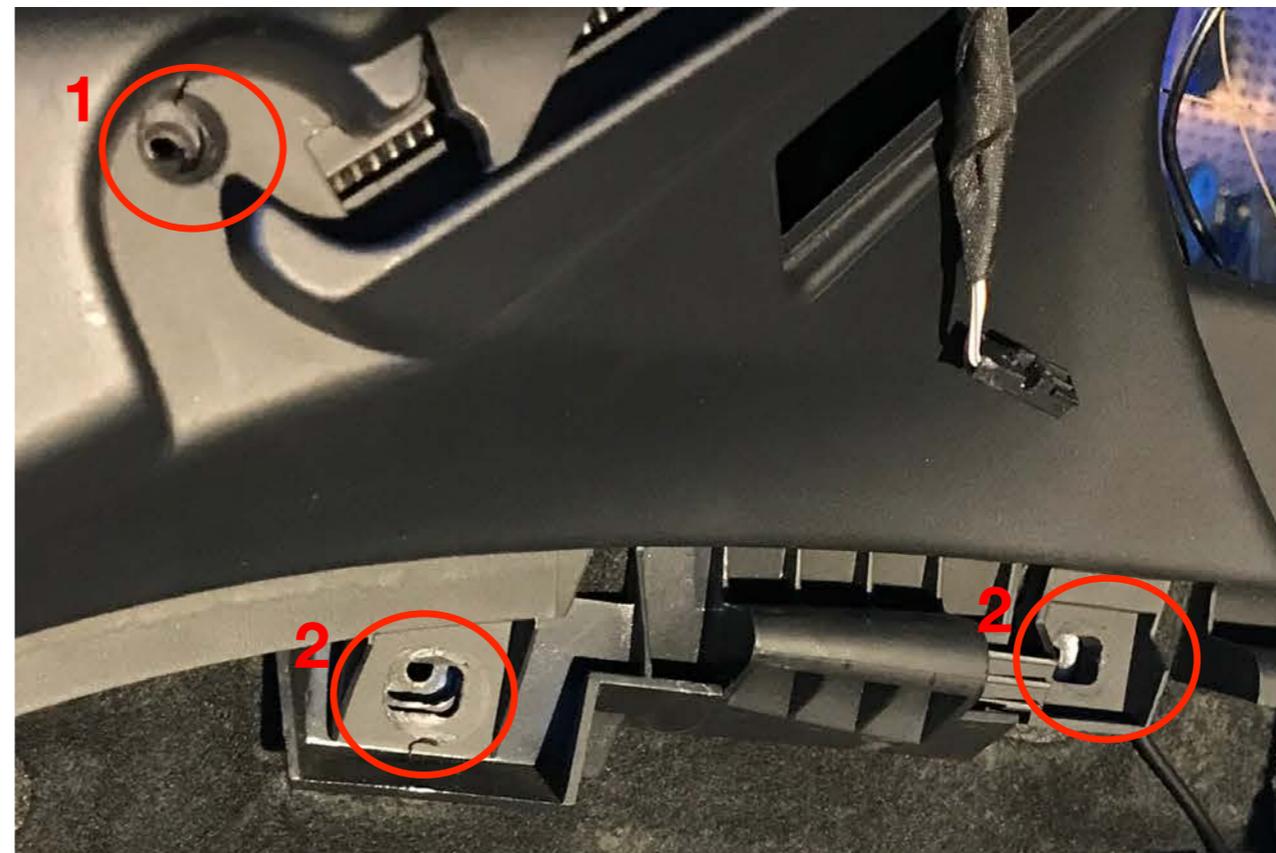




Put the clip back into the side cushion so it doesn't go missing.



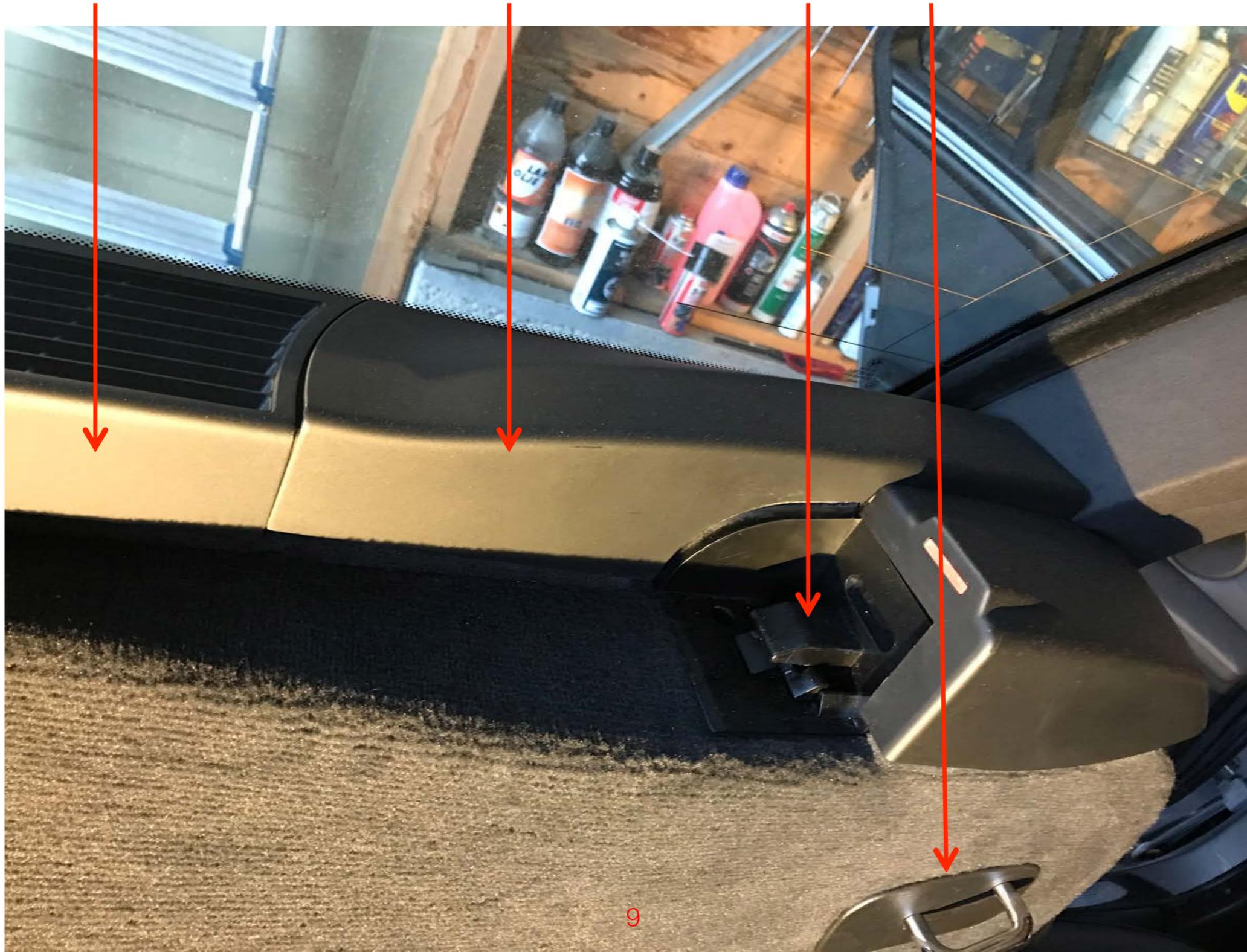
1. Remove 2 screws for the compartment lid mechanism
T20 Torx
2. Remove 2 screws for the panel
T25 Torx
3. Pull / slide top of panel from side window towards center of the trunk lid. See next slide for detail
4. Gently pull panel outwards towards center / locking mechanism until clip disconnects. See next slide for details
5. Lift panel up from lower floor panel
6. Disconnect lamp



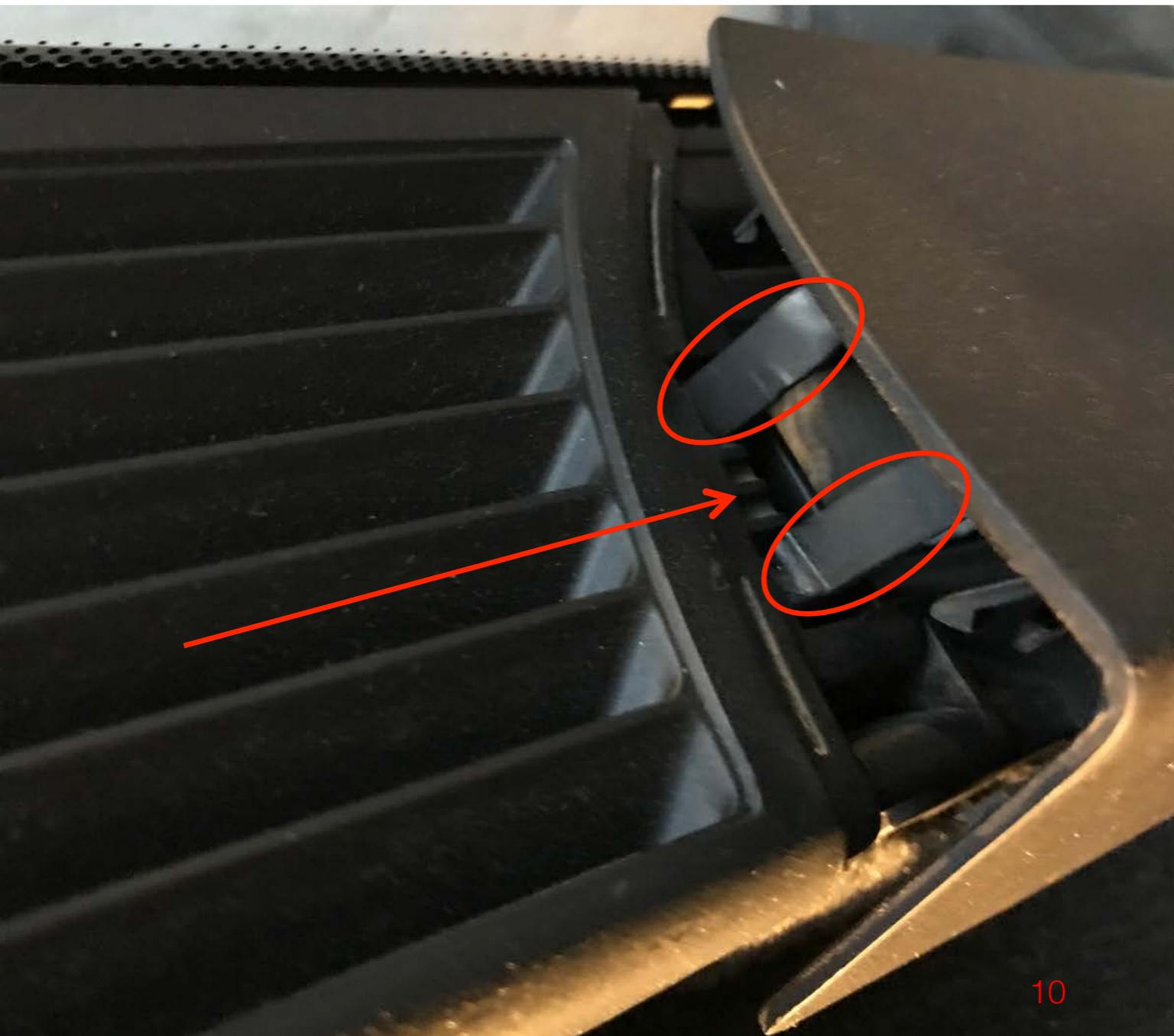


These covers needs to be removed or loosend in order to get the interior cover off of the side of the boat.

The anchor for the compartment lid needs to be removed as well.



This one can be a bit tricky. The two pins are connected below the visible area in this picture. You need to press them backwards to clear the lock indicated by the arrow. See next slide for more detail.



1. Retainer clip on this panel is broken and is supposed to be in one piece.
2. Also, be aware of the small clips that secure the panel
3. When replacing, also pay attention to the control pins on the side facing the window

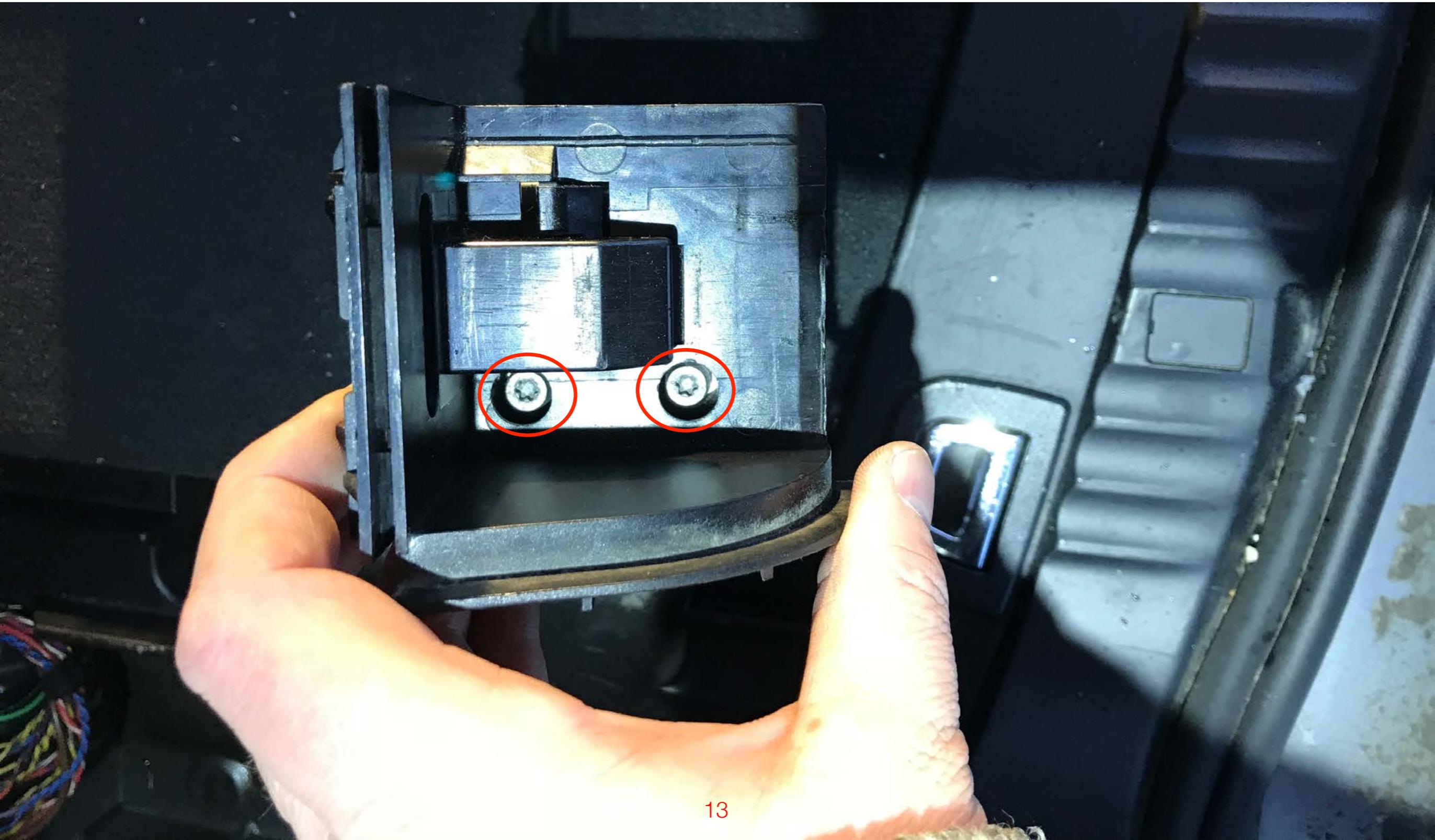


Remove the two screws below the panel

- 1. Torx 30 Airbag fastner (do not pull or tug, simply lift gently when loose)**
- 2. 8mm socket, panel fastner**



**Next, remove the anchor for the compartment lid
2 x T20 Torx**





The cover for the anchor and the seatbelt need only be slightly lifted to ensure that the interior panel can be freed

**Remove the cover for the locking hoop for the back seat.
Use two flat screwdrivers or similar equipment to press down on the 2 tabs.
Then pull slightly out from top and lift up.**

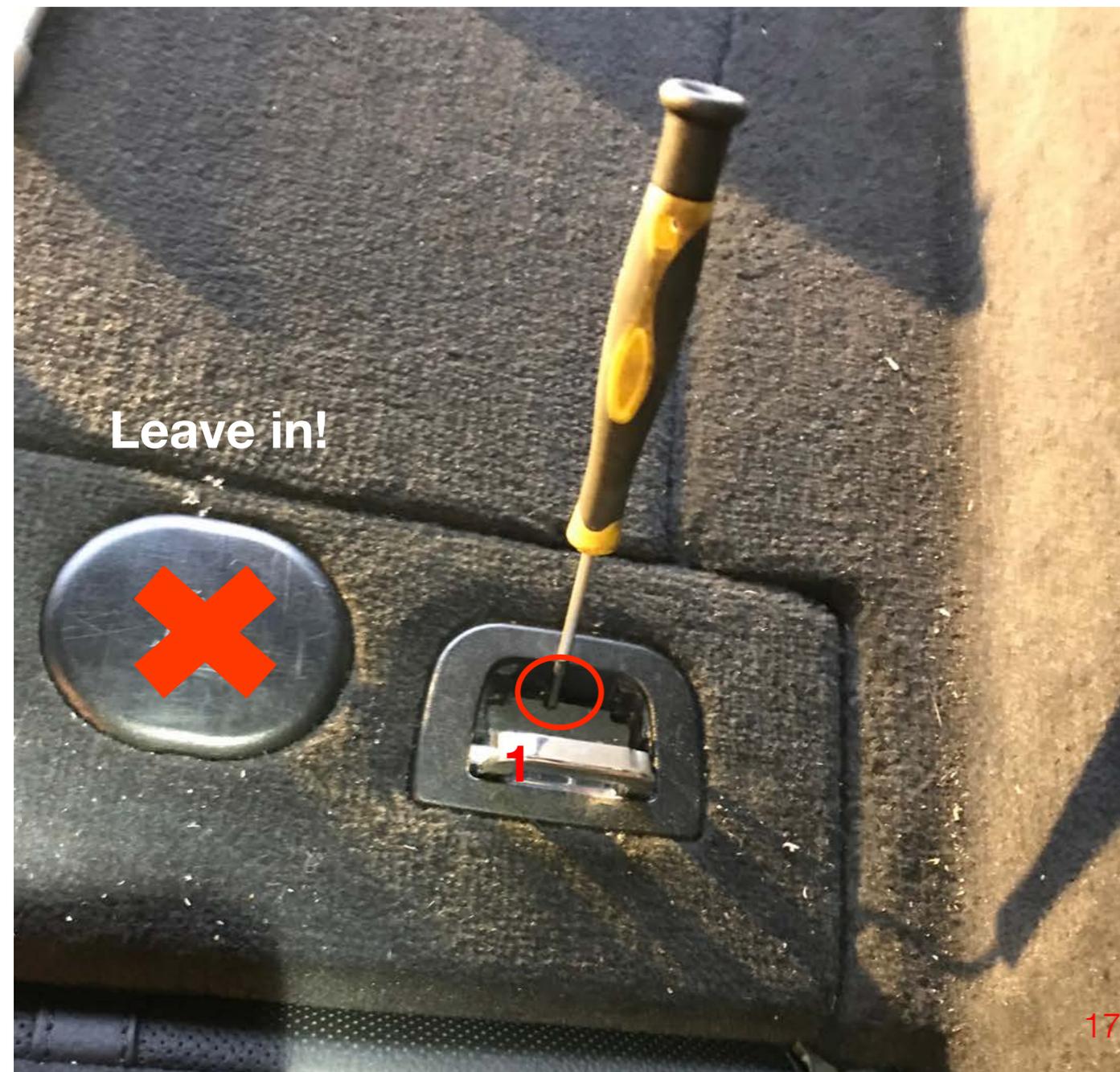


**Open the floor lid and remove the plastic push-pin lock for the interior side panel.
If you do not have a special tool for removing these plugs, use a flat head screwdriver and gently lift the center piece of the push-pin lock.**



Next, we need to remove the long cover running parallel with the backrest. Fold down the backrest before you start.

1. Use a tiny flathead screwdriver to lift up the cover inside the luggage fastening hoop. Then pull the cover upwards and towards the rear of the trunk.
2. Use an allen key (HW4) to remove the 2 bolts under the cover. You may have to lift the hoop up as you go because the bolts will be too long to come straight up. They may connect with the hoop if you do not.
3. Do this on both sides



Once the luggage fastening hoops are removed, lift the panel up from the backrest side.

When that side is loosened simply pull the rest of the panel away.



Remove the plastic push-pin lock for the interior side panel.

If you do not have a special tool for removing these plugs, use a flat head screwdriver and gently lift the centre piece of the push-pin lock.



Under the cover for the seatbelt and the anchor for the compartment lid there is an 8mm bolt that needs to come out

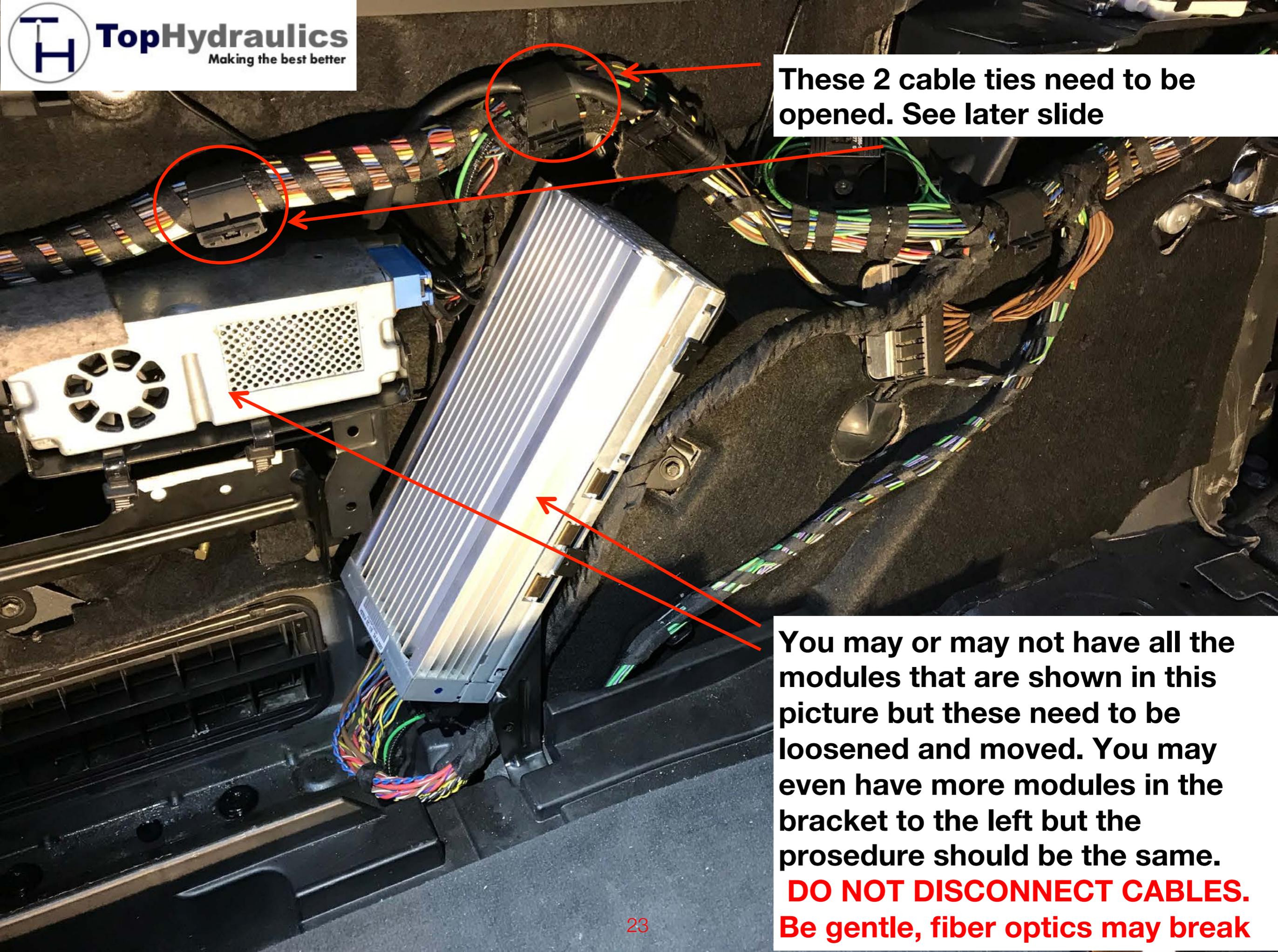


**Remove the plastic push-pin lock for the interior side panel.
If you do not have a special tool for removing these plugs, use a flat head screwdriver and gently lift the center piece of the push-pin lock.**



Remove the interior side panel



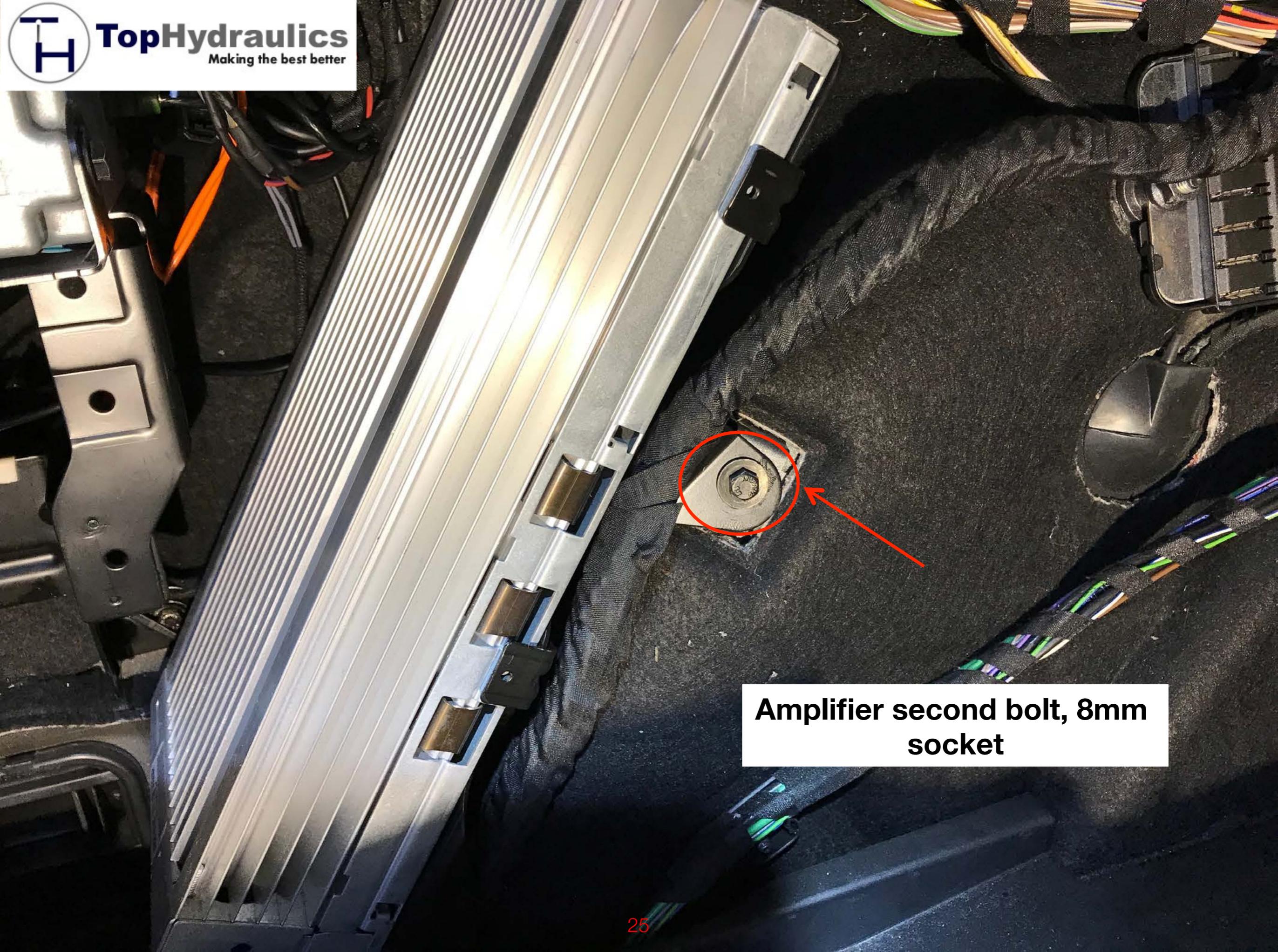


These 2 cable ties need to be opened. See later slide

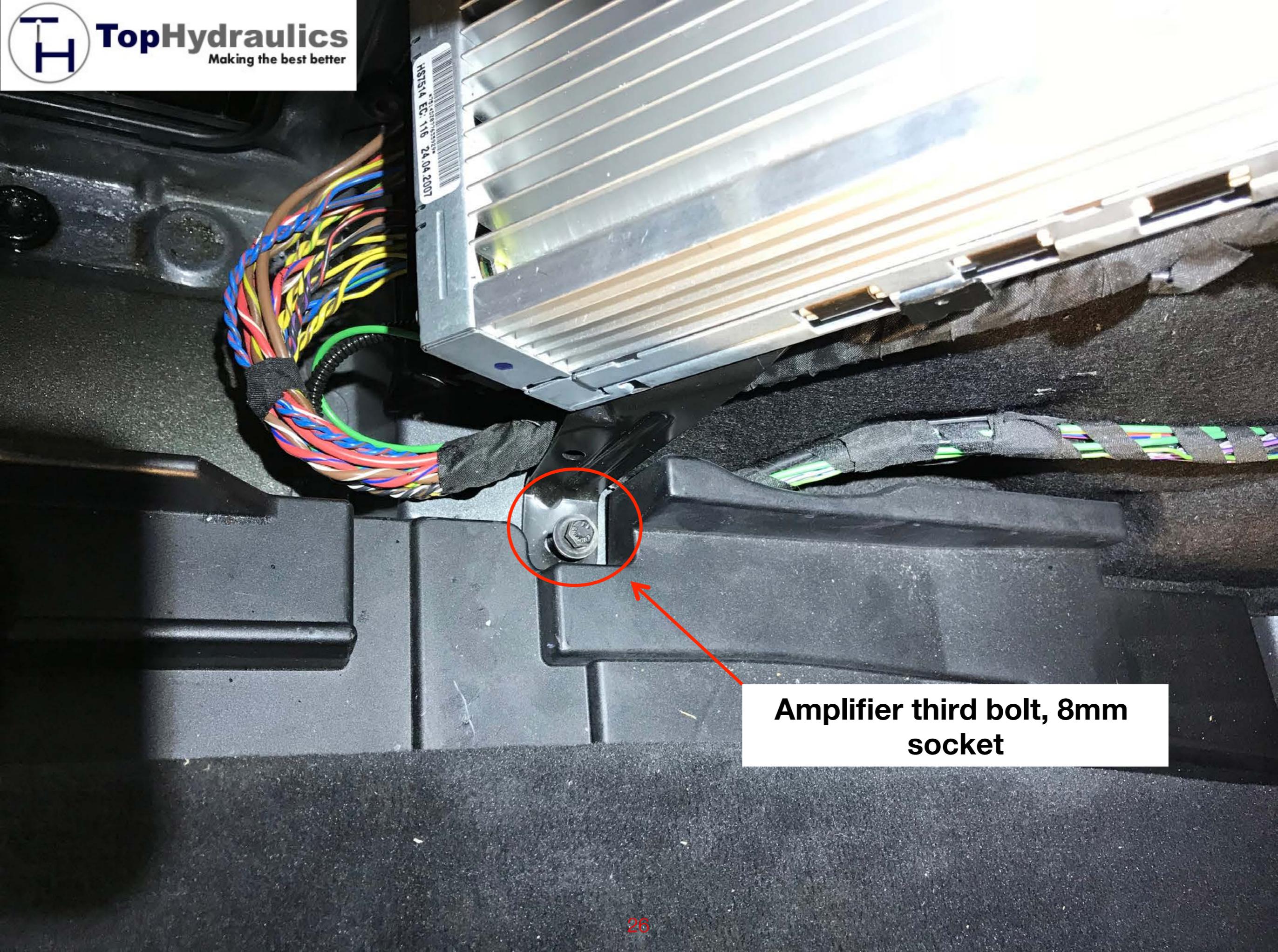
You may or may not have all the modules that are shown in this picture but these need to be loosened and moved. You may even have more modules in the bracket to the left but the prosedure should be the same.
DO NOT DISCONNECT CABLES.
Be gentle, fiber optics may break



**The amplifier is secured by 3x 8mm bolts.
Going from top to bottom, the top one is best accessed by a 8mm socket with an extension.**



Amplifier second bolt, 8mm socket



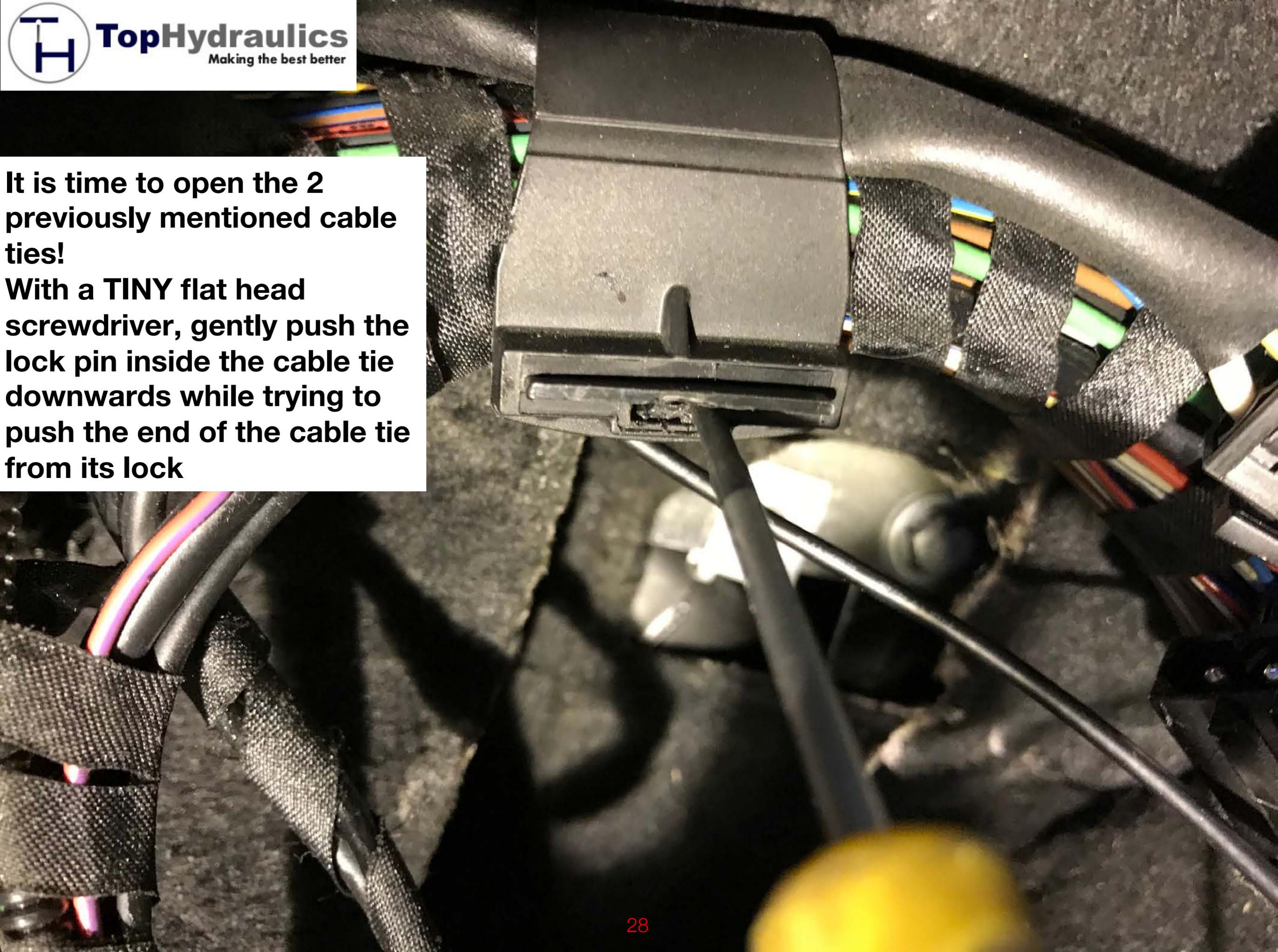
Amplifier third bolt, 8mm socket

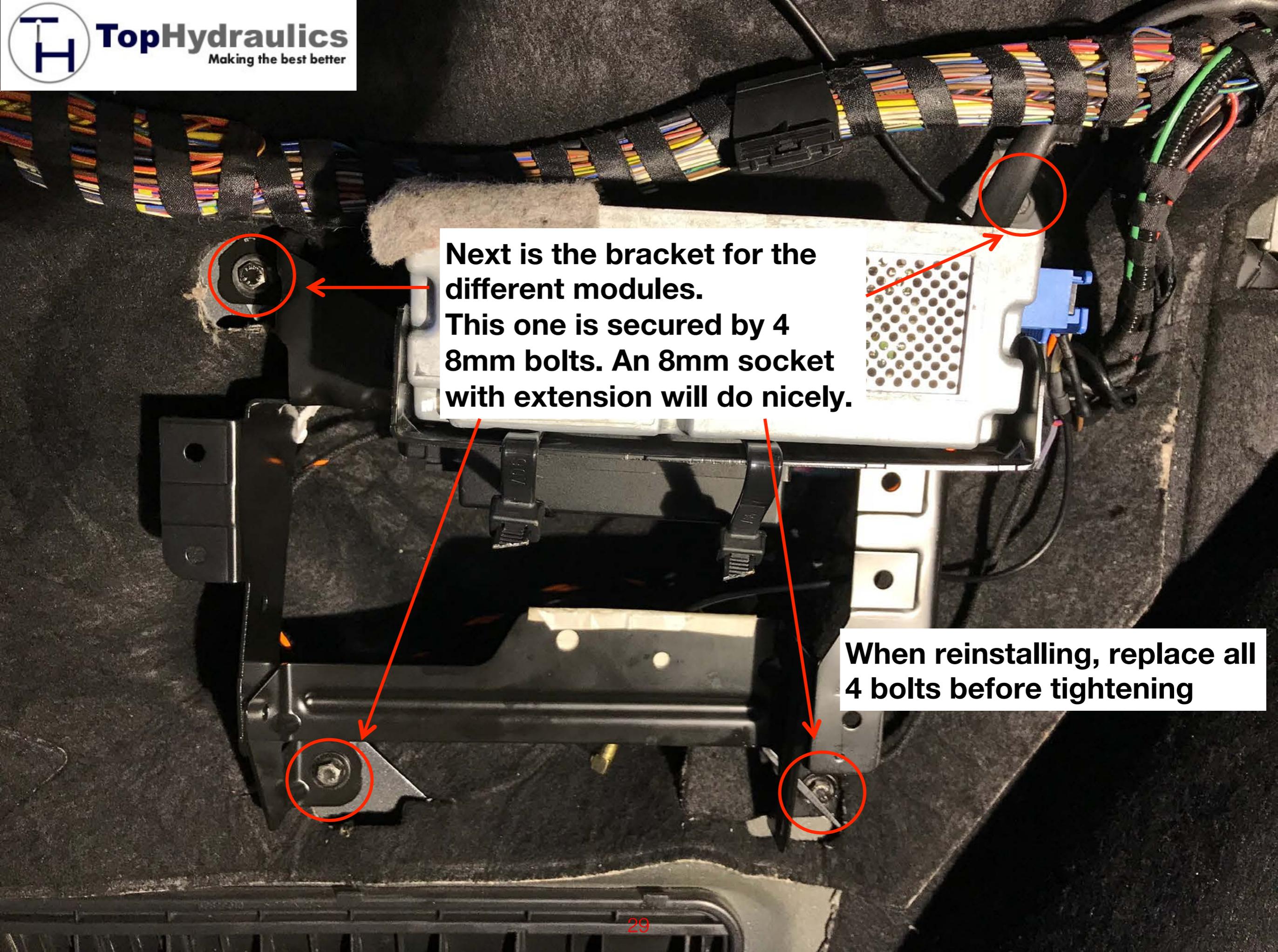


Simply slide the amplifier towards the front and leave it be.

**It is time to open the 2
previously mentioned cable
ties!**

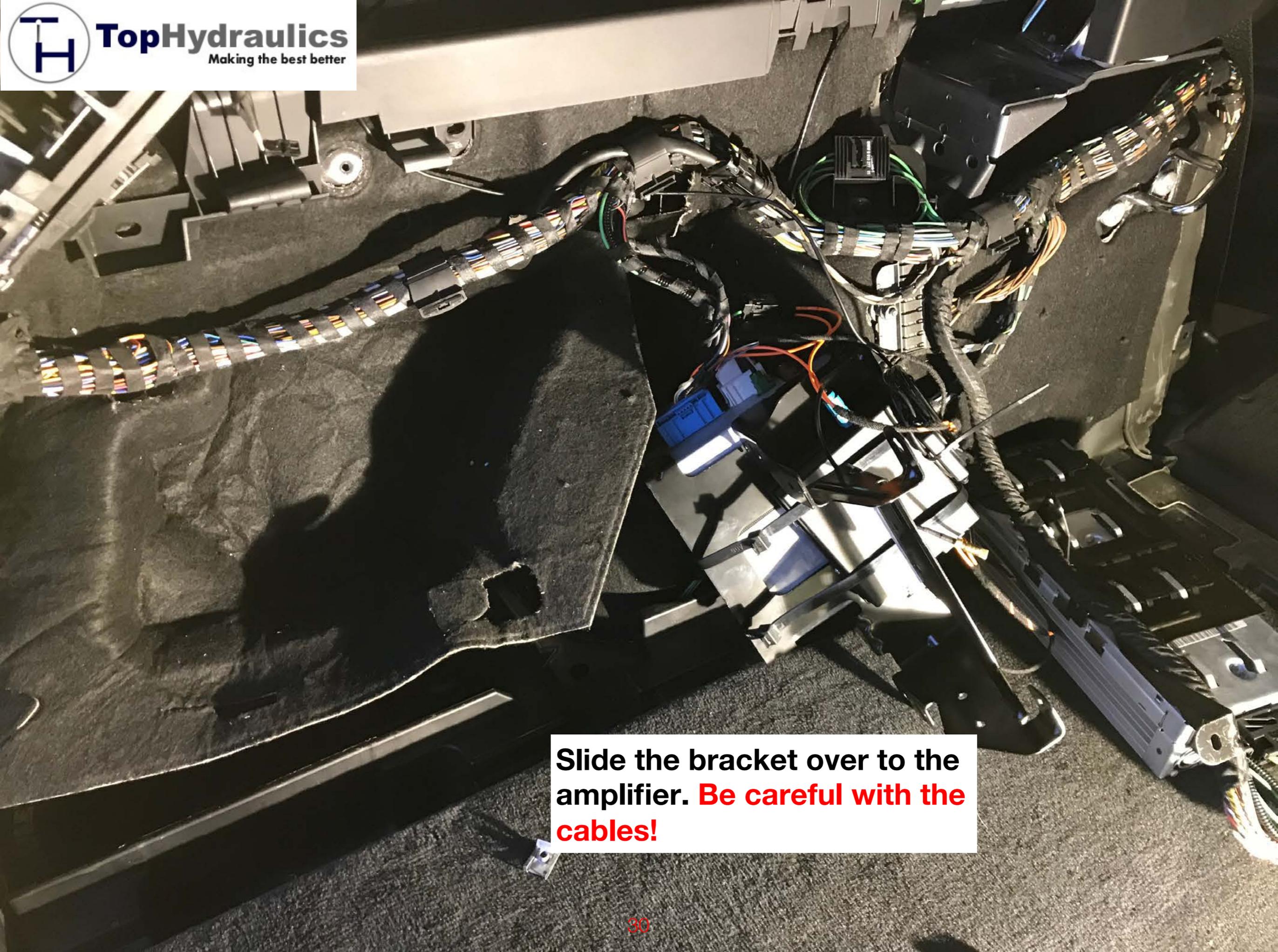
**With a TINY flat head
screwdriver, gently push the
lock pin inside the cable tie
downwards while trying to
push the end of the cable tie
from its lock**





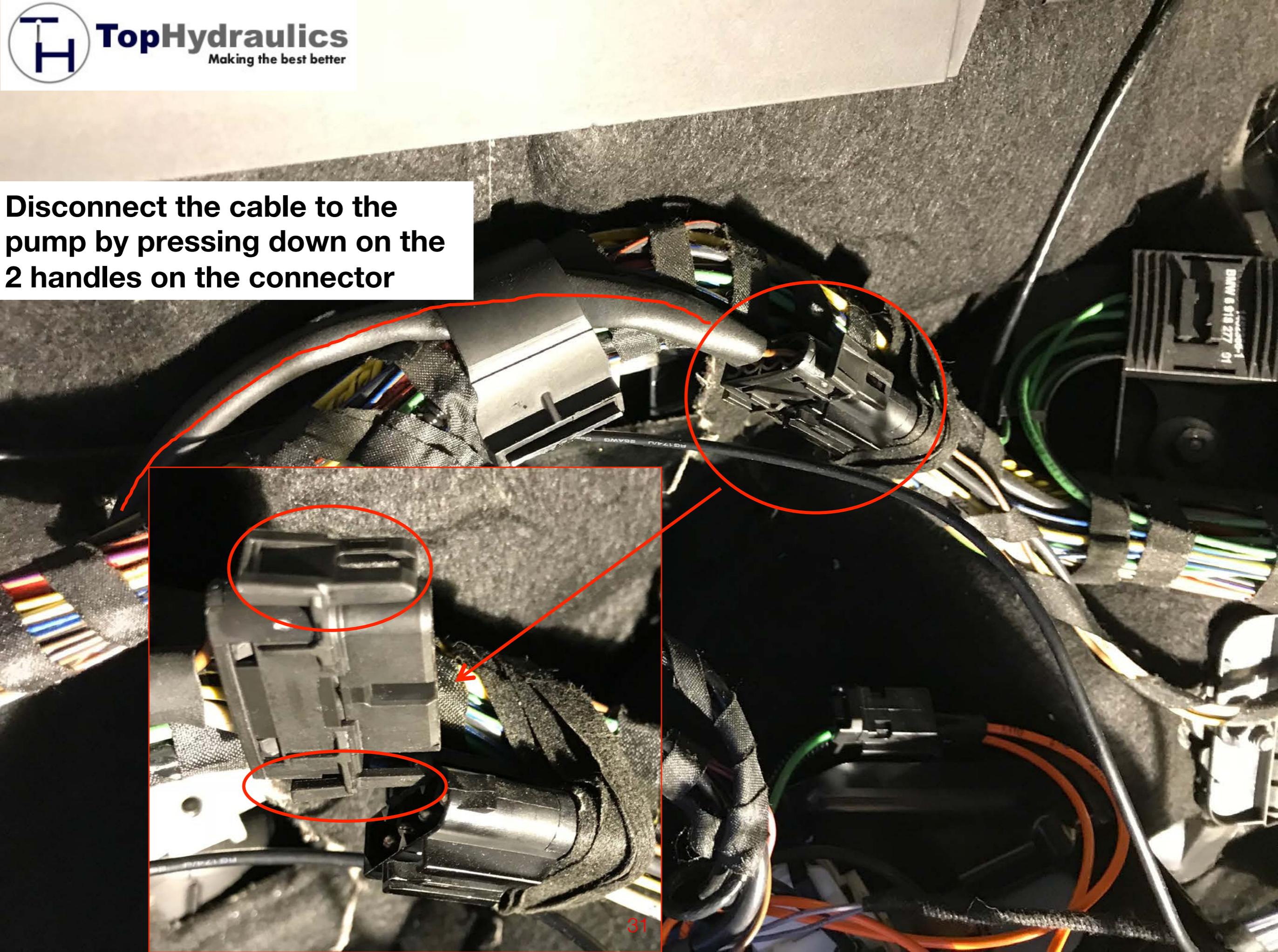
Next is the bracket for the different modules. This one is secured by 4 8mm bolts. An 8mm socket with extension will do nicely.

When reinstalling, replace all 4 bolts before tightening



Slide the bracket over to the amplifier. Be careful with the cables!

Disconnect the cable to the pump by pressing down on the 2 handles on the connector



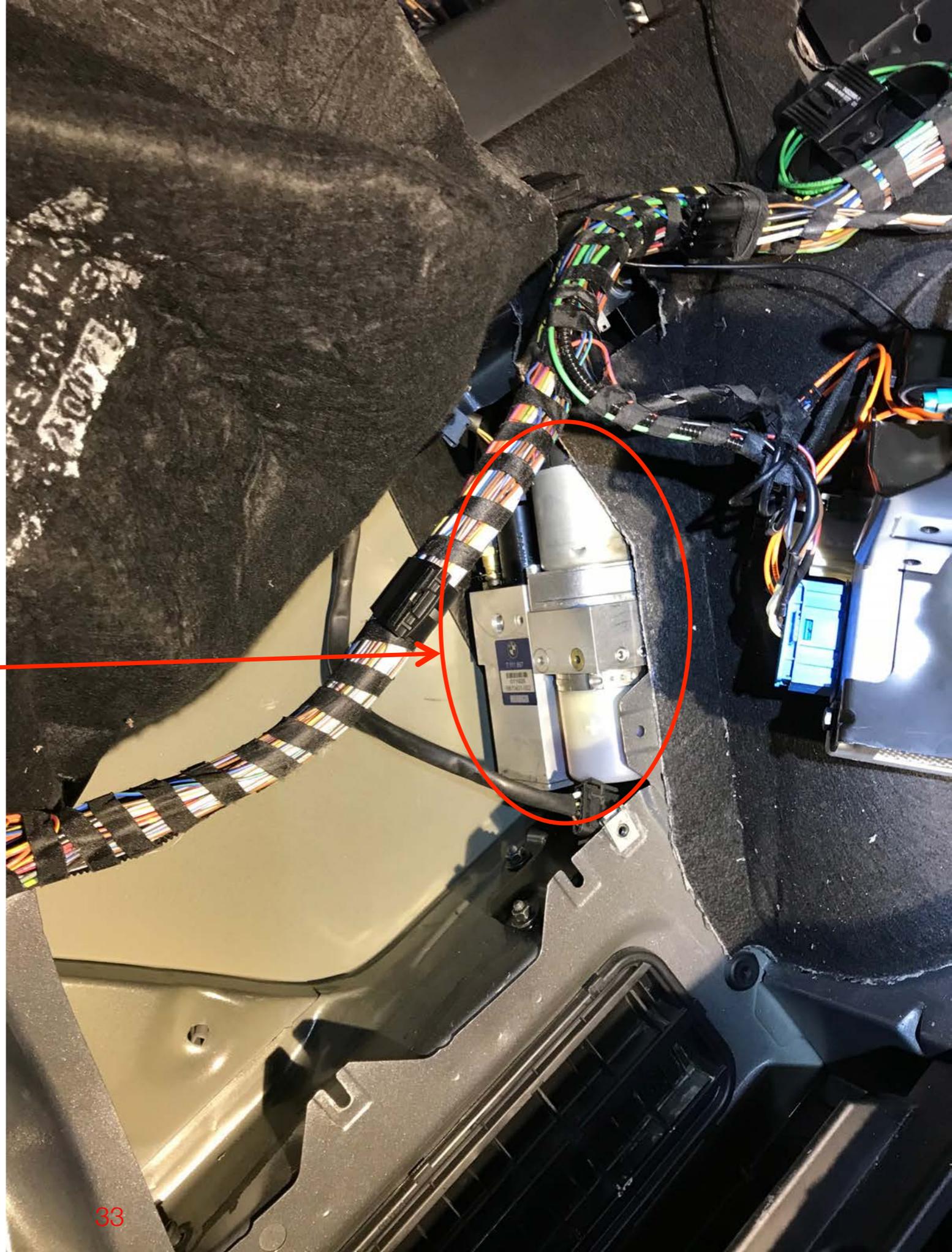
Push the cable to the pump through the hole in the insulation cloth



Lift up the insulation cloth and we have arrived. Now the easy part begins. The pump is now accessible.

It is secured by 2 x 10mm nuts at the bottom and 1 x 10mm bolt at the top

See the next 2 slides for details.



There are 2x 10mm nuts at the bottom.

When reinstalling the pump, place the pump down on the bolts and tighten the nuts 1/3 of the way down.

This will give you wiggle room to secure the top bolt.



The 10mm bolt at the top. It is just to the right of one of the bolts to the amplifier.

When reinstalling the pump, place the pump down on the bottom bolts and tighten the 2 nuts 1/3 of the way down.

This will give you wiggle room to secure the top bolt.

Use one hand to lift and tilt the pump and a 10mm socket with extension to thread the bolt half way in, then secure the bottom 2 and at last the top bolt.



Lift the pump off of the fixed bolts at the bottom and swing it onto the compartment floor.



Disconnect the 2 hydraulic hoses from the clip on the pumps cradle.

**Turn the pump over.
Remove the cradle by removing 3
x 7mm nuts.**

**Do not over tighten when
installing on the new pump as it
may destroy the rubber mount.**

Turn the pump over.

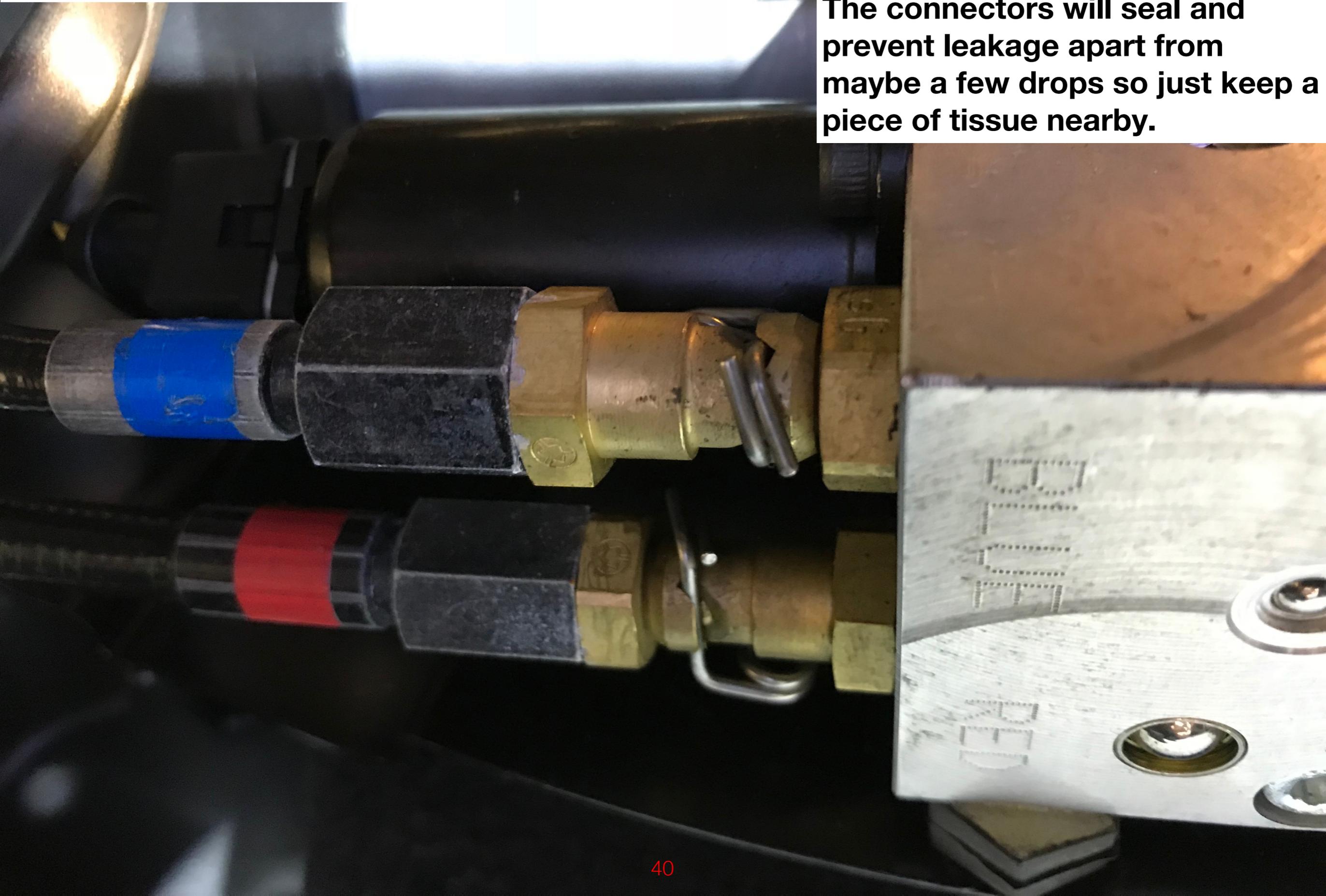
Remove the 3 rubber mounts with a 15mm socket or wrench. Be sure to push the tool firmly down in order to grip the lower metal part.

Do not over tighten when reinstalling on the new pump as it may destroy the rubber mount.



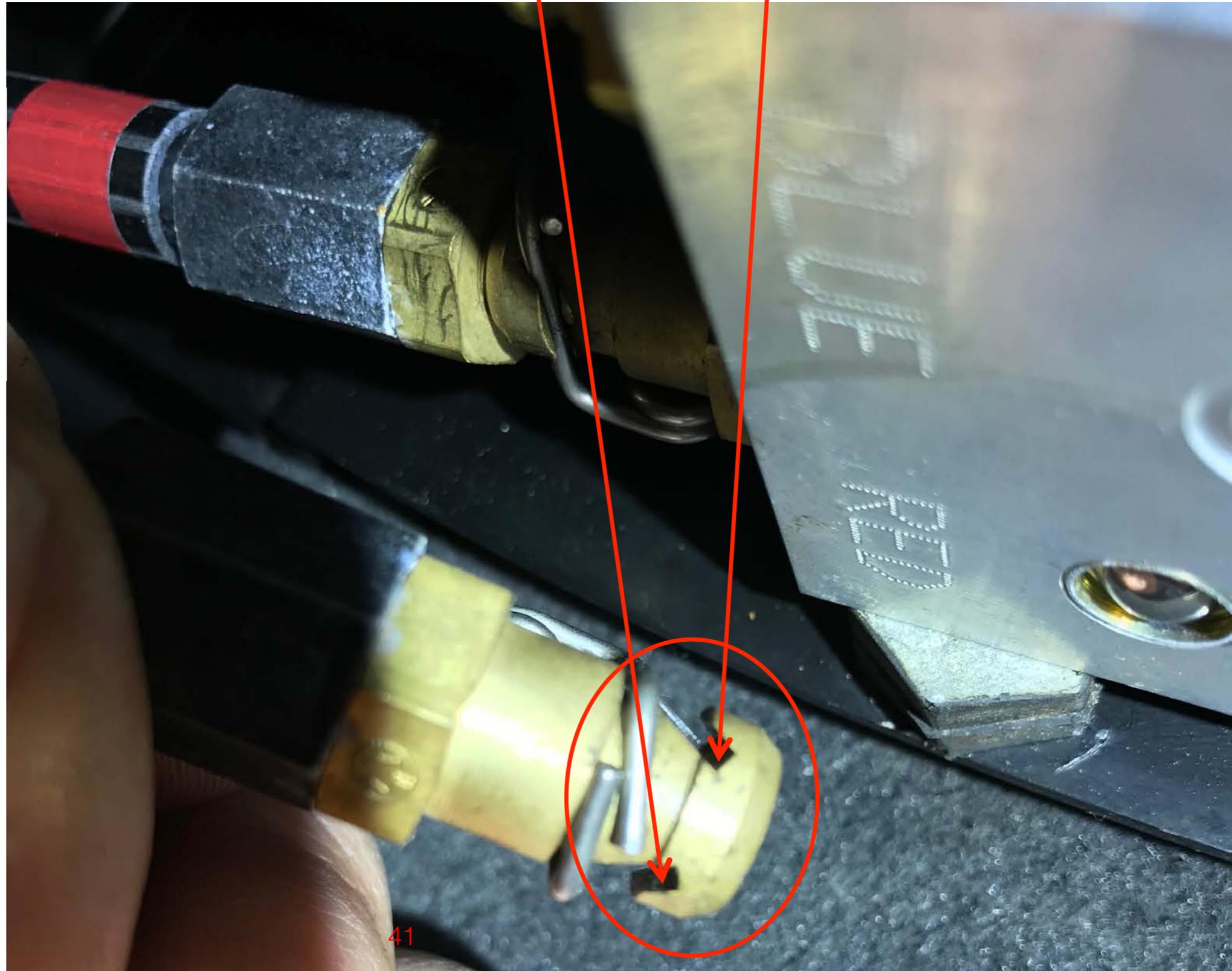
It is time to disconnect the faulty pump.

The connectors will seal and prevent leakage apart from maybe a few drops so just keep a piece of tissue nearby.



The hydraulic hose connectors are locked with a clip that needs to be pushed out of the way in order to release the hose from the pump. A flat head screwdriver will do fine.

When connecting the new pump make sure to check that the locking clip is firmly seated in the right position.



Next we need to bleed the hydraulic cylinder in order to get all the old oil out.

The first thing to do is to remove the connectors on the pump and put them on the hoses.

Warning, now the hoses will be open and spilling might occur if you are not careful.

Make sure your trunk lid is still secured and get ready to put the hoses into something that can contain the oil from the cylinder.

I found that cutting a plastic bottle made it quite easy.



Emptying the hydraulic cylinder in the tailgate

With the hoses in the bottle, or your choice of reservoir, now slowly open and close the tailgate manually several times until you can no longer see oil dripping from the connectors.

Then, leave the tailgate in fully open position for a few minutes letting gravity do a bit of the work.

Again slowly open and close to get the last drops out. Wipe everything down with some paper.



Filling the hydraulic cylinder in the tailgate with new fresh oil!

The next step is to refill the hydraulic cylinder with oil.

For this step you can choose one of 2 different approaches.

- 1. Fill by manually opening and closing of the tailgate to suck oil back into the cylinder, then connecting the pump and topping off the reservoir. (For this one move on to the next slide)**
- 2. Connecting the pump and filling the reservoir for every open and close of the tailgate (For this one jump further down to the slide about filling the reservoir)**

I prefer number one

It is a bit more messy but it will allow for a lot less air coming into the pump.

The pump will bleed itself so either option will be fine.

Fill a suitable container with enough fresh oil to cover the connectors and then some. Start pumping the tailgate manually all the way up and down while paying attention to the container so you do not suck air into the system.

When the oil level is stabilized remove the hoses from the container, remove the connectors previously put on the hoses, and wipe down.

Connect the hoses to the pump and make sure you secure the locking clip. (See previous slide)

WARNING:
Remember to attach the connectors to the old pump before sending it in.



Using the pump to open and close the tailgate for the first time.



Leave the pump upright and resting on the chassis. Cycle the tailgate once by using the key fob or tailgate switch. Yes, it's noisy the first couple of cycles

**Pay attention to the amount of oil in the reservoir and make sure there is enough oil.
Turn the pump upside down and refill through the cap in the bottom.
You need an Allen key (HW4) and a 5 ml syringe (or equivalent).
Do not tighten too much when done. Metal vs plastic will break the threads in the cap.
Repeat the process until the tailgate cycles with minimal sound and the oil level seems to be stable.**

The reservoir should be level with the + mark on the cup.



When satisfied with the filling of the pump and reservoir it's time to put it all back together. Start with the bracket for the pump and do the whole DIY in reverse. You have now successfully changed the hydraulic pump!