

Porsche 955 Cayenne Turbo

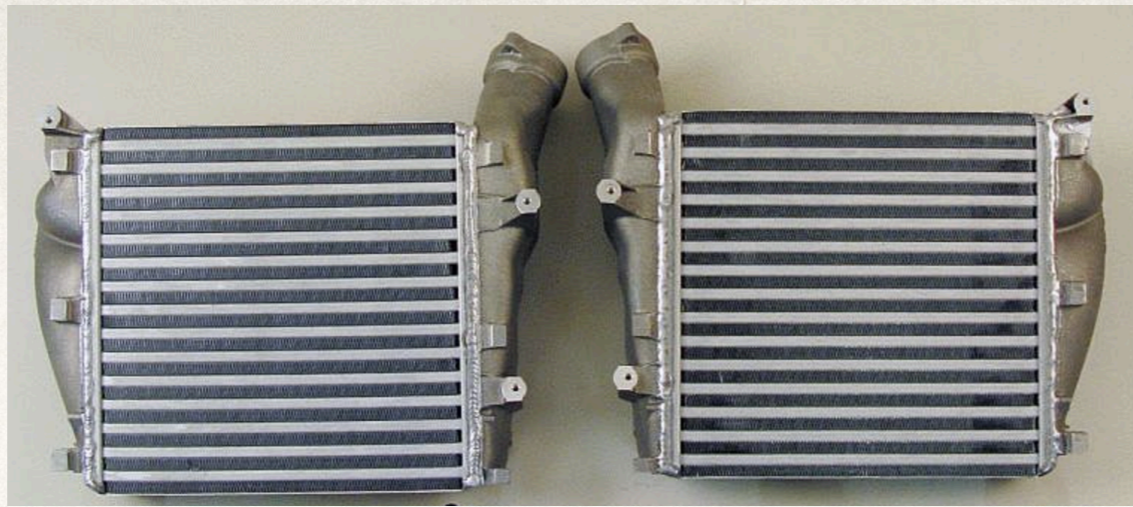
Intercooler upgrade to FVD Brombacher or 2006 Turbo S intercoolers

All Cayenne Turbo intercoolers are not created equal



The 957 intercoolers are *not* the same as the 2006 Turbo S

The FVD intercoolers *are* the same as the 2006 Turbo S intercoolers



- ❖ This is an overview of what is needed to upgrade from the Behr (VW) intercooler that came with your 955 CTT to '06 Turbo S intercoolers (or FVD Brombacher intercoolers, they are identical, moving forward I will call them AKG intercoolers.)
- ❖ You may be able to use some of this information to upgrade to the all aluminum 957 Turbo intercoolers if you can't find the AKG units but know that the AKG units are superior to the 957 intercoolers.

Parts you will need:

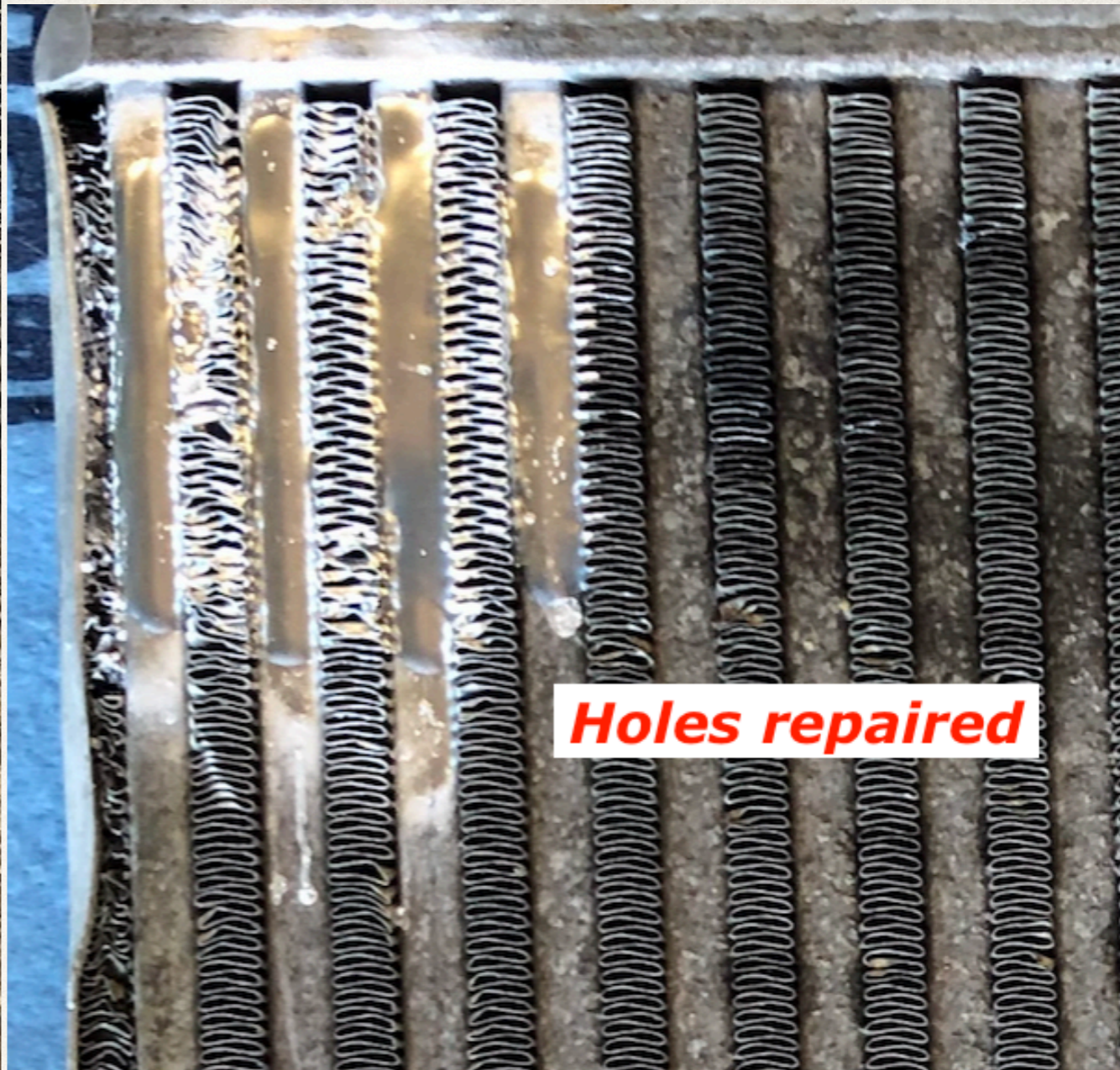
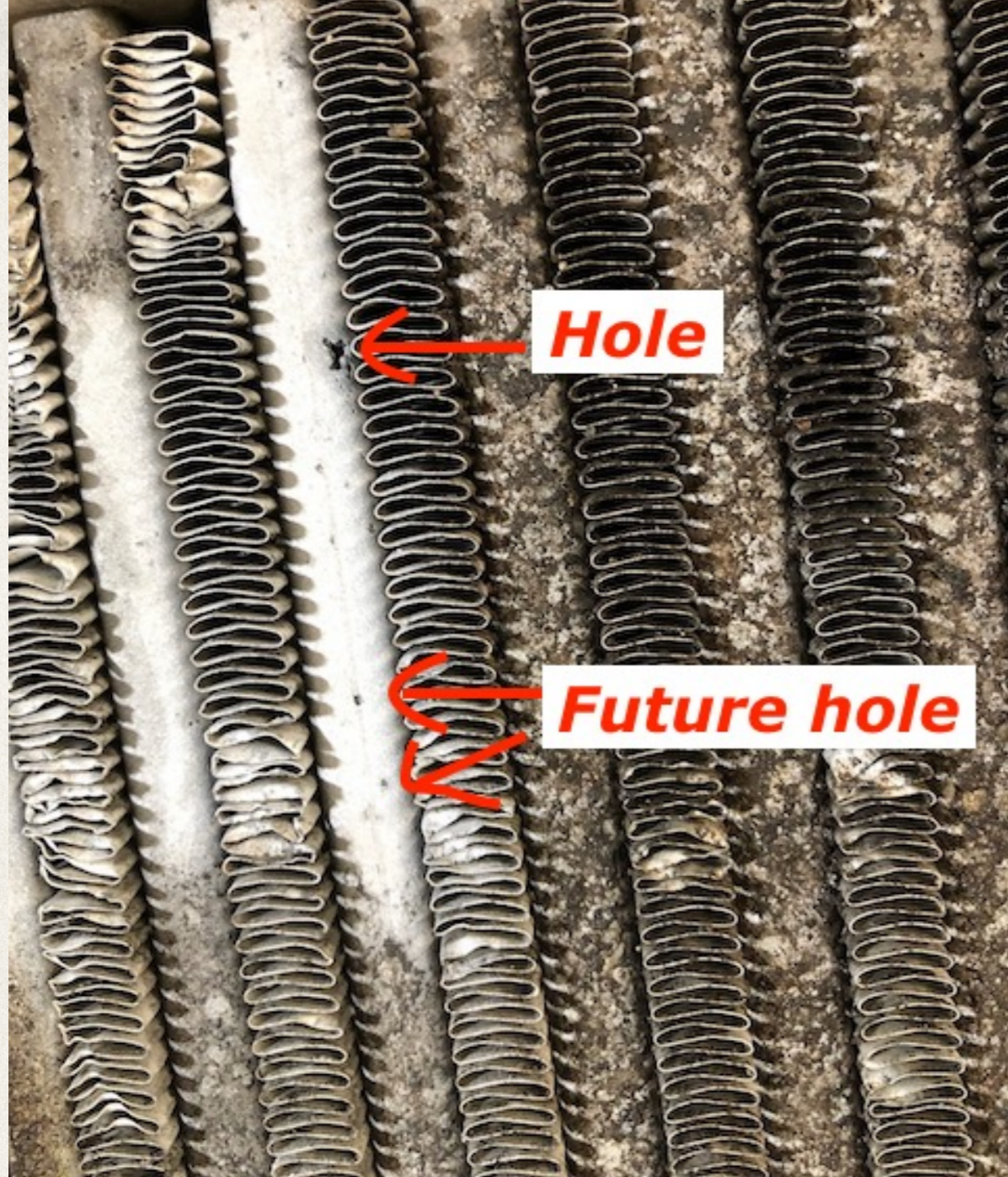
Left (7L5.145.803.A) and Right (7L5.145.804.A) intercoolers. If you buy the FVD Brombacher kit they include the correct lower charge hoses for you so no cutting of hoses is required.

Right (passenger) lower “charge hose” from a 957 turbo: = 7L5145834D

The left (driver side) lower charge hose from a 957 doesn't have a fitting for your diverter valve so you need to cut your existing hose or source a 2006 Turbo S left side lower hose.

You will need some sort of shim system to hold your 955 ducts (front and rear) in place. I bought 957 front ducts which fit the AKG intercoolers but the bumper cover didn't fit right so I had to go back to the 955 ducts. I used plastic (home improvement store) shims and large washers.

2 good quality hose clamps. I used T clamps for intercooler lines from Amazon. I broke a factory clamp when trying to reuse them so I highly recommend better clamps.



If your intercoolers are used, take them to a good shop to have them pressure tested and cleaned. Both of mine needed repair.

Follow the procedure to remove the front bumper cover:

https://www.pelicanparts.com/techarticles/Porsche-Cayenne/55-BODY-Front_Bumper_Cover_Removal/55-BODY-Front_Bumper_Cover_Removal.htm

The sides (in front of the wheels but at the rear of the front/nose cover) were very difficult to get loose on my car. When they let go, the whole cover came off at once and I was not prepared, use caution.

No clamp is needed for the headlight washer line, just release the line and the washer fluid will not run out. Someone or a couple of someones will need to hold the cover while the electrical harness is disconnected, this is challenging to get disconnected, have patience.



The bumper cover safely removed.

Note: If your horns don't work well (common issue) now is a good time to replace them. Be careful where you put your new horns, in the end, I had to remove my bumper cover 3 times to line my horns up so that the bumper cover would fit with the new horns in place.

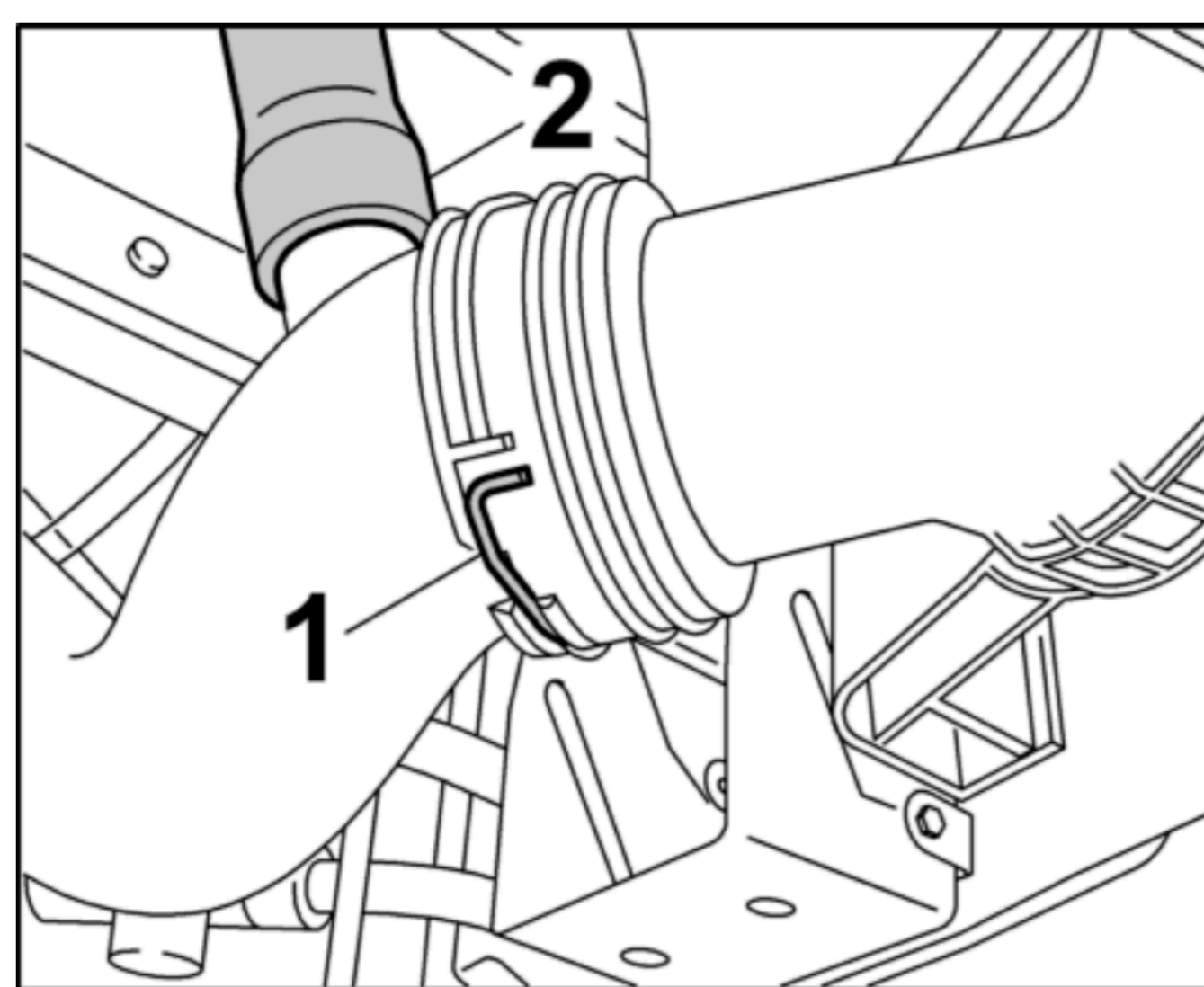


Fig. 47: Lower pressure pipe
 Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Disconnect lower pressure pipe. To do so, lever out wire clips using a screwdriver -1- and pull off tube. Put wire clips back into installation position immediately. --> Lower pressure pipe --> Pressure pipe with right pressure hose (other view) . See **Fig. 47** and **Fig. 48**.

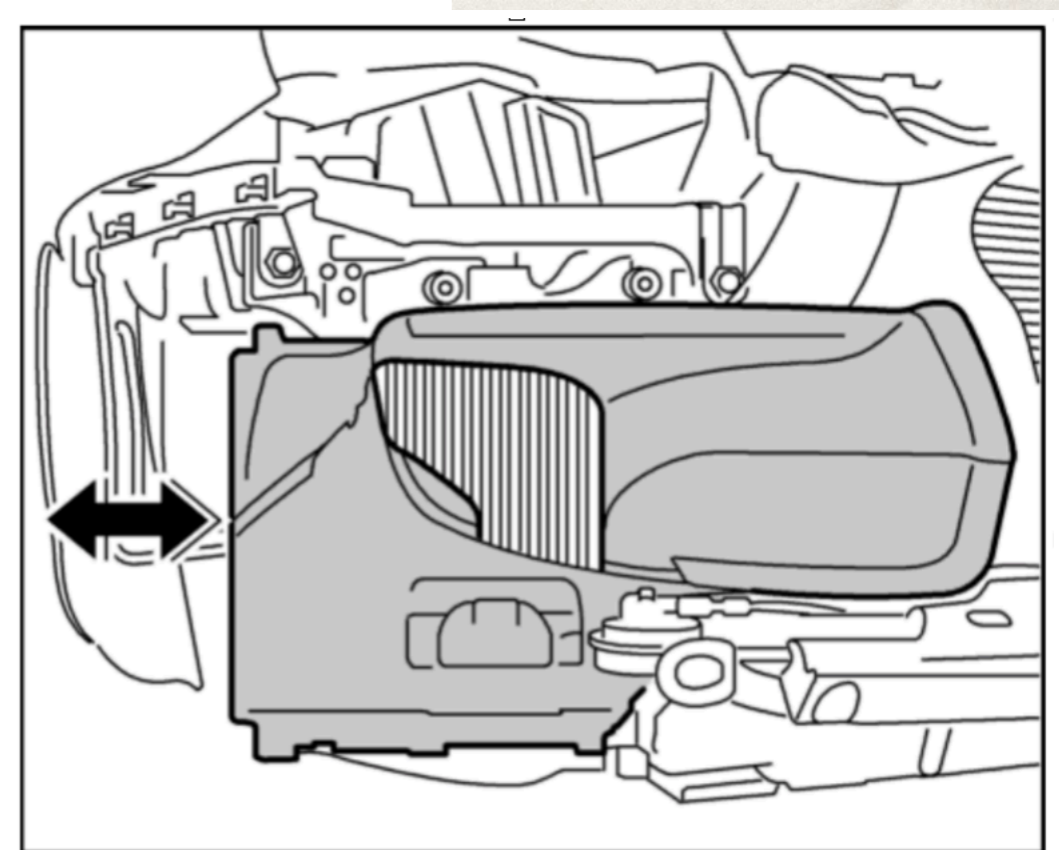


Fig. 46: Air guide
 Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Pull air guide in front of charge air cooler off to the side.

Passenger (right side)

This side is much easier than the driver (left) side. Remove the spring clip on the lower intercooler (1 above) then loosen pinch clamp (2 above) and slide clamp upward removing the diverter valve hose from the aluminum housing. Remove the front air duct by sliding it to the side.

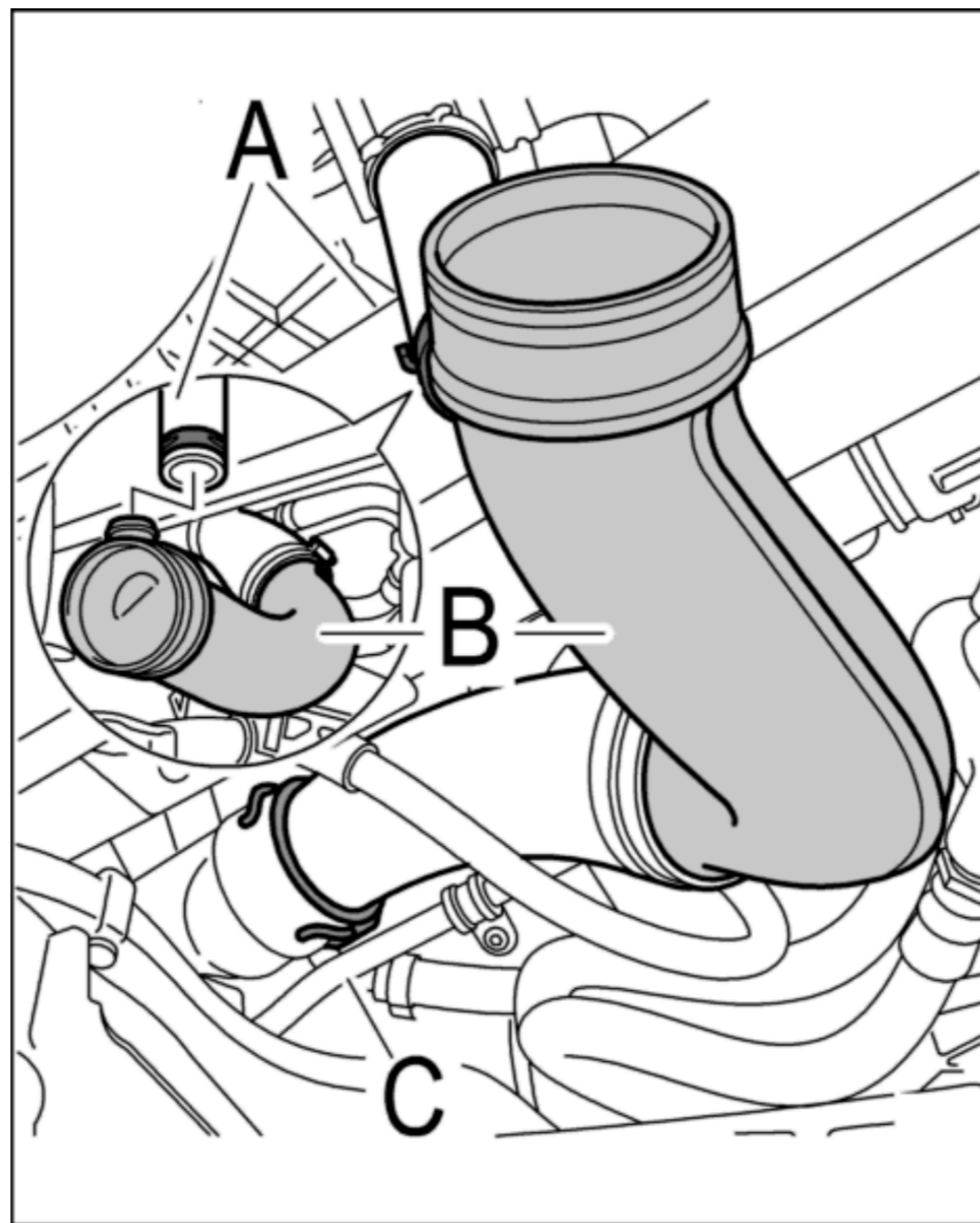


Fig. 48: Pressure pipe with right pressure hose (other view)
Courtesy of PORSCHE OF NORTH AMERICA, INC.

Because the AKG intercooler has different angles and connectors from your 955 Behr unit, you will need to remove your right side lower charge pipe/hose and replace it with the 957 or '06 Turbo S hose. Remove the clip on the diagram labeled "C" and pull the pipe out of the turbo housing. The fitting has a notch so you may need to twist a bit to get it free.

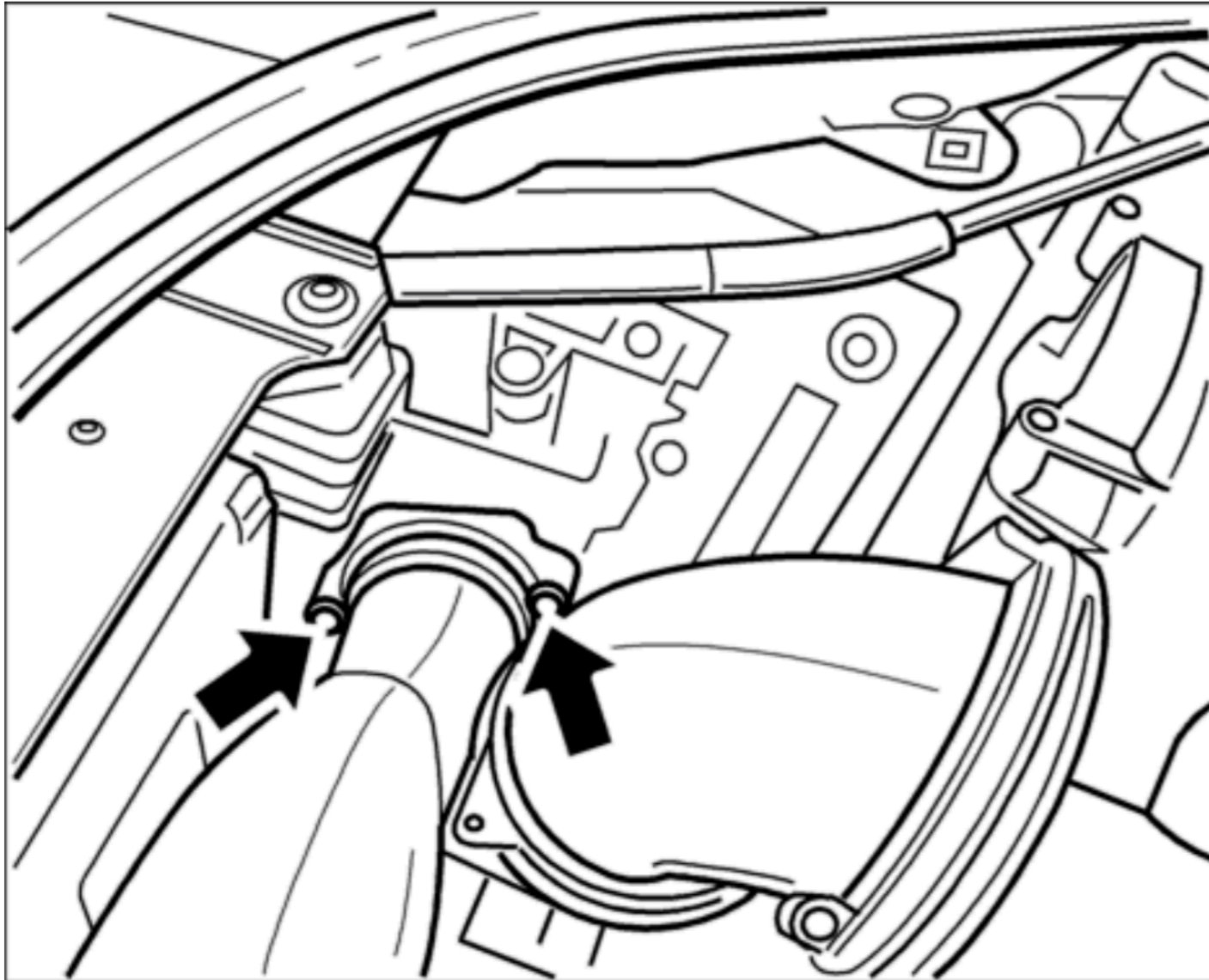
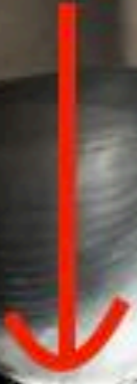


Fig. 49: Mount for pressure pipe
Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Unscrew the two hexagon socket head bolts (M6 x 20) on the pressure pipe **-arrows-** and pull off pressure pipe. See **Fig. 49**.



Using a short extension with a swivel worked for me



I tried this a couple of different ways but leaving the intake pipe connected ended up working for both upper intercooler pipe bolts for removing and installing the intercoolers.

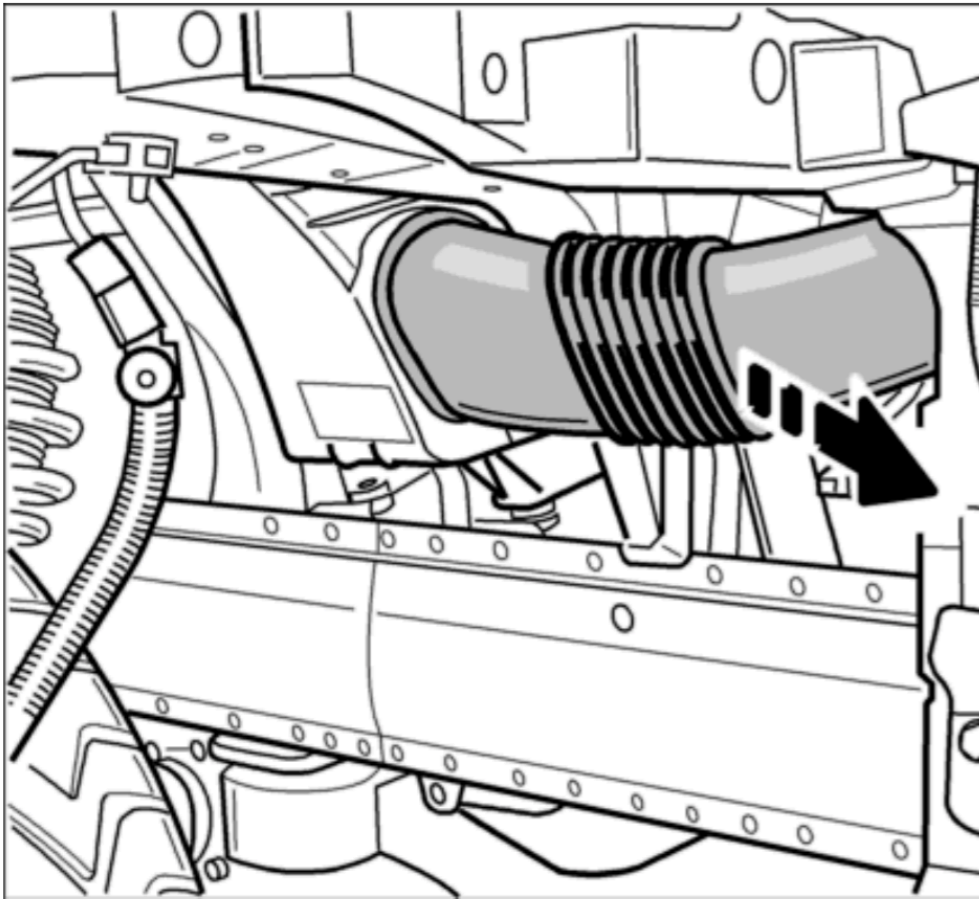


Fig. 50: Charge-air cooler air guide
Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Pull off air guide to air cleaner housing.

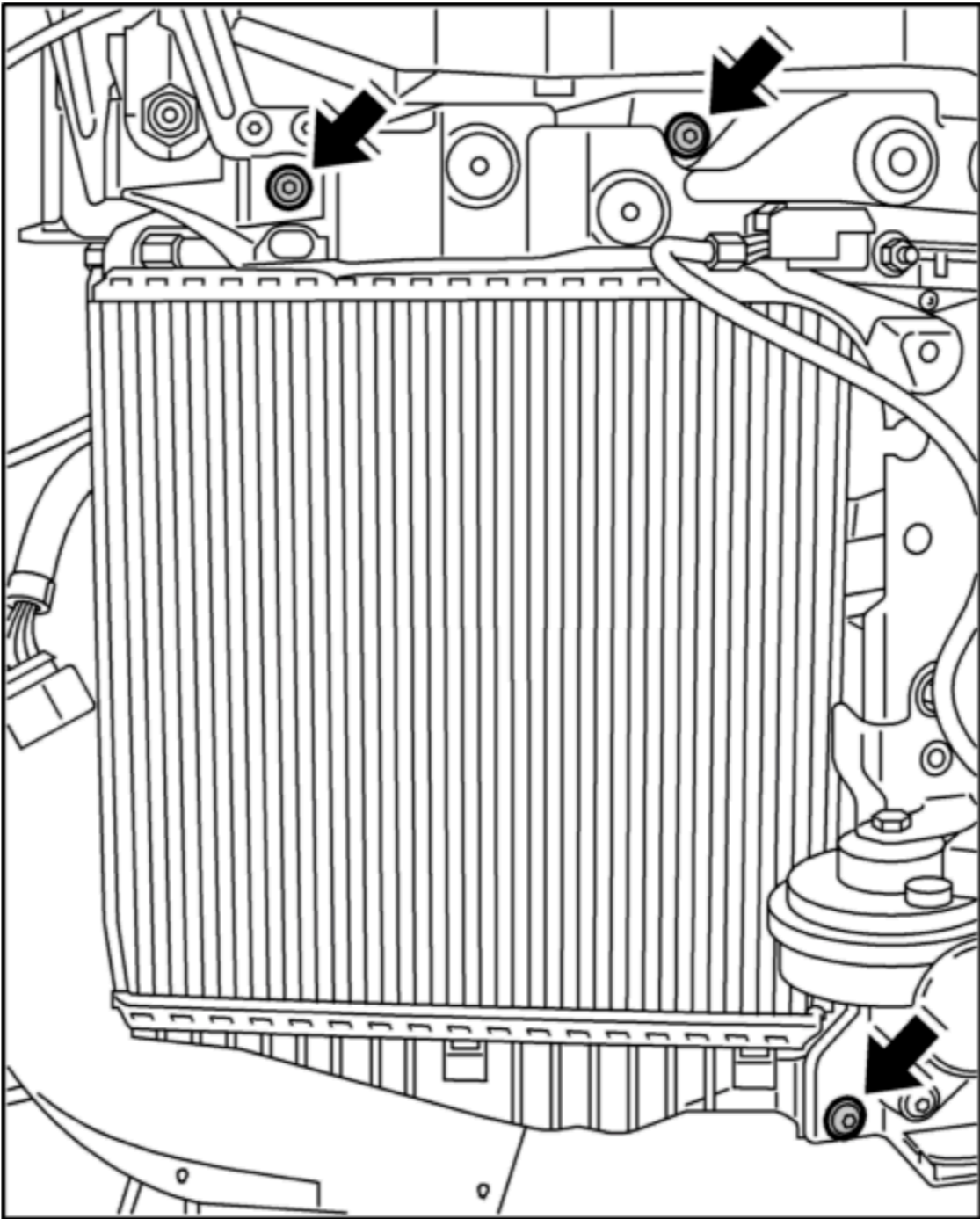


Fig. 51: Fastening screws on the charge air cooler
Courtesy of PORSCHE OF NORTH AMERICA, INC.

6. Unscrew the three fastening screws on the charge air cooler -arrows- , press the charge air cooler carefully towards the tires and remove sideways. See **Fig. 51**.

Catch the 2 washers that come off of the back side as you remove the bolt.
The first intercooler is removed, nice job!



Passenger (right) side rear duct:

Just like the front air duct, slide the rear air duct to the side to remove it from the old intercooler. Note, this is the 957 hose on the AKG intercooler with the 955 duct on it but you get the idea...

Rear shroud shims

I was not able to find either (side) of the rear 957 intercooler shrouds for sale. The 955 units aren't as loose on the rears as they were on the fronts so I used some composite shims (for door frames and the like) to hold the rear shrouds in place.



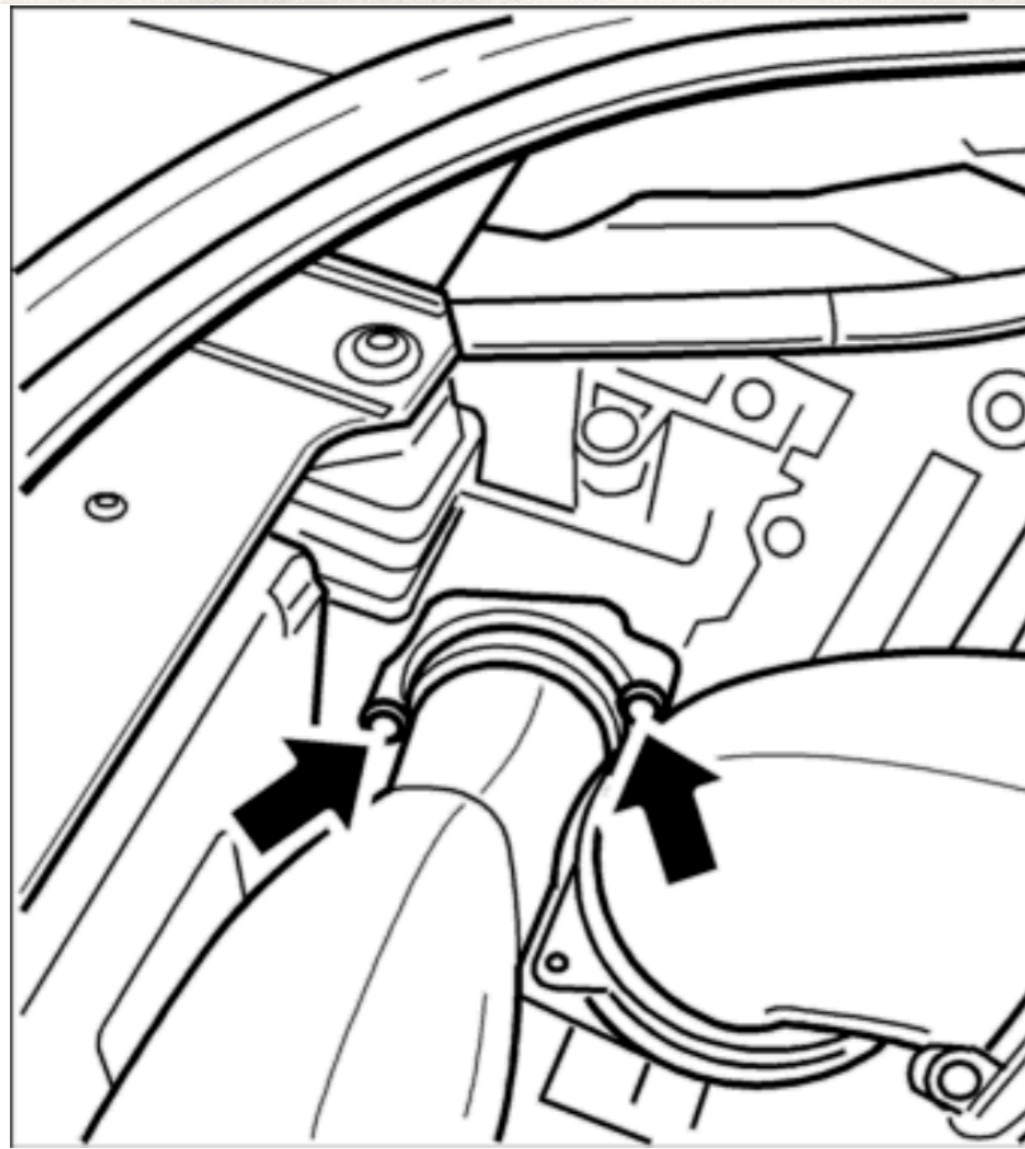
Push retaining clip into slot



You will need to replace the lower hose with one from either a 2006 Turbo S or any 957 turbo. Slide the notched fitting into the turbo housing. Push the retaining clip in place (above) only once the hose is all the way in the housing.



The elbow for the lower hose is removable, remove it keeping track of the rubber gasket/seal. Connect that elbow to the diverter valve hose, return the clamp to the fitting. Next install the intercooler (3 allen head bolts with 2 washers on the intercooler side) then connect the elbow again.



Tighten the upper hose bolts, the one closest to the front of the car will be easier to get to if you remove the air box intake pipe and reach in through the hole in the front support.

Slide the front air duct into place. You are done with the passenger side.

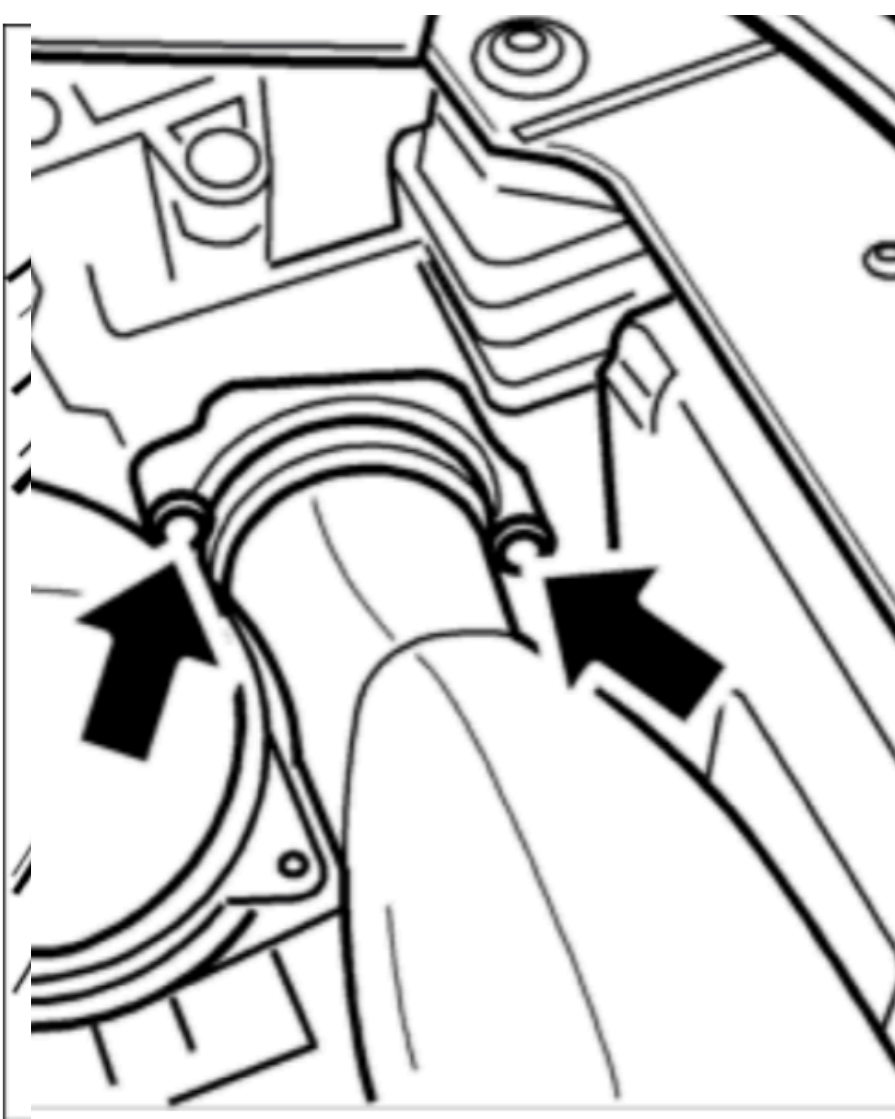


Fig. 49: Mount for pressure pipe

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Unscrew the two hexagon socket head bolts (M6 x 20) on the pressure pipe **-arrows-** and pull off pressure pipe. See **Fig. 49**.

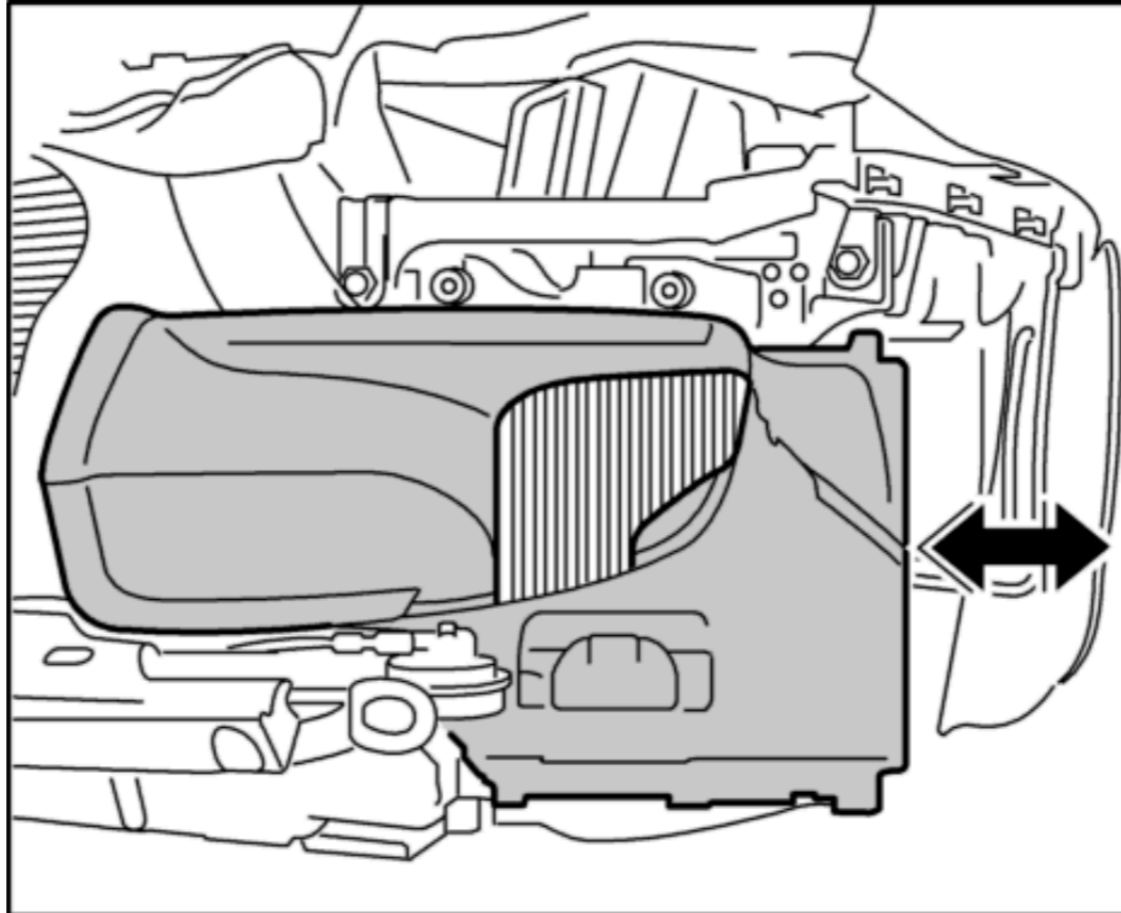


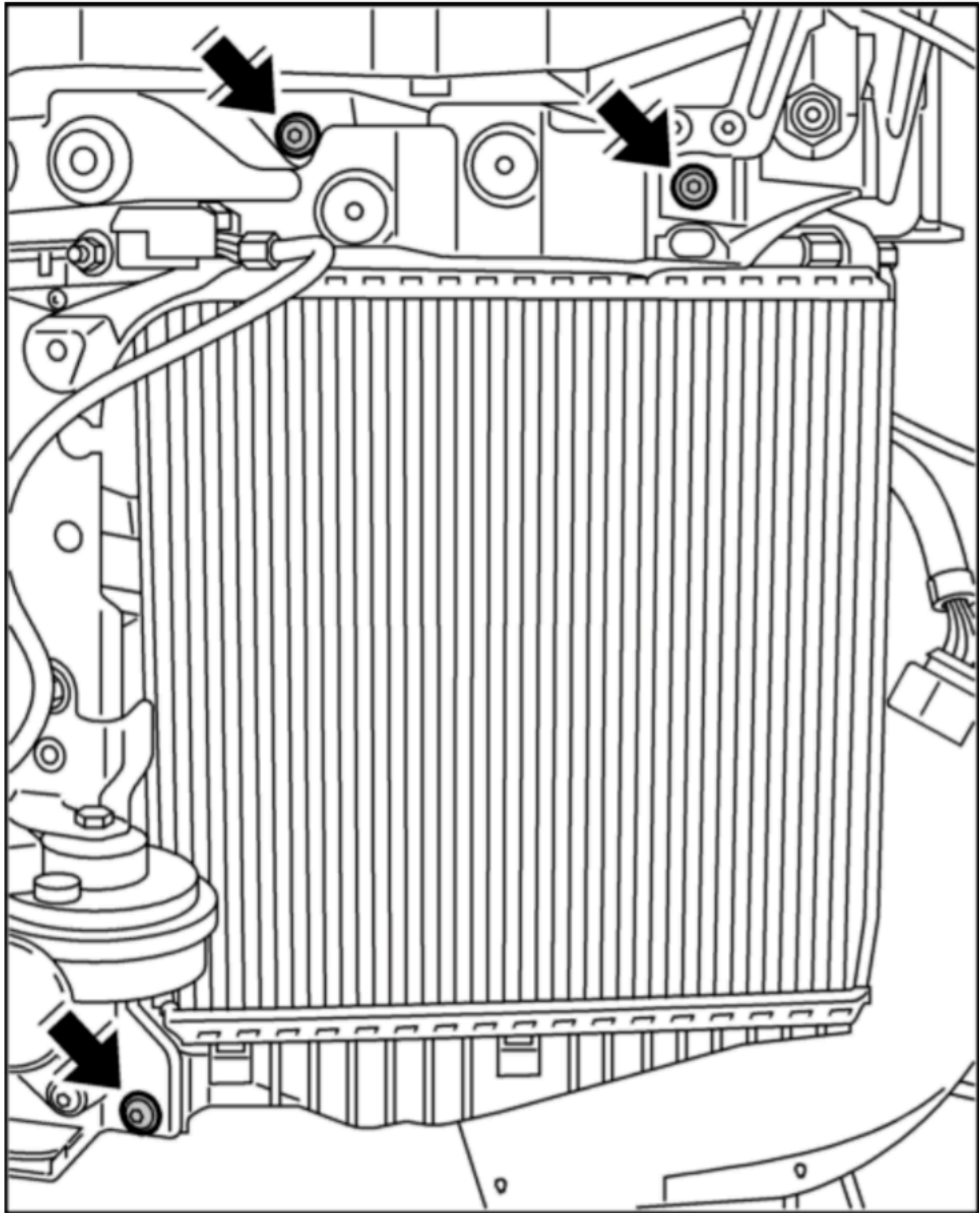
Fig. 46: Air guide

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Pull air guide in front of charge air cooler off to the side.

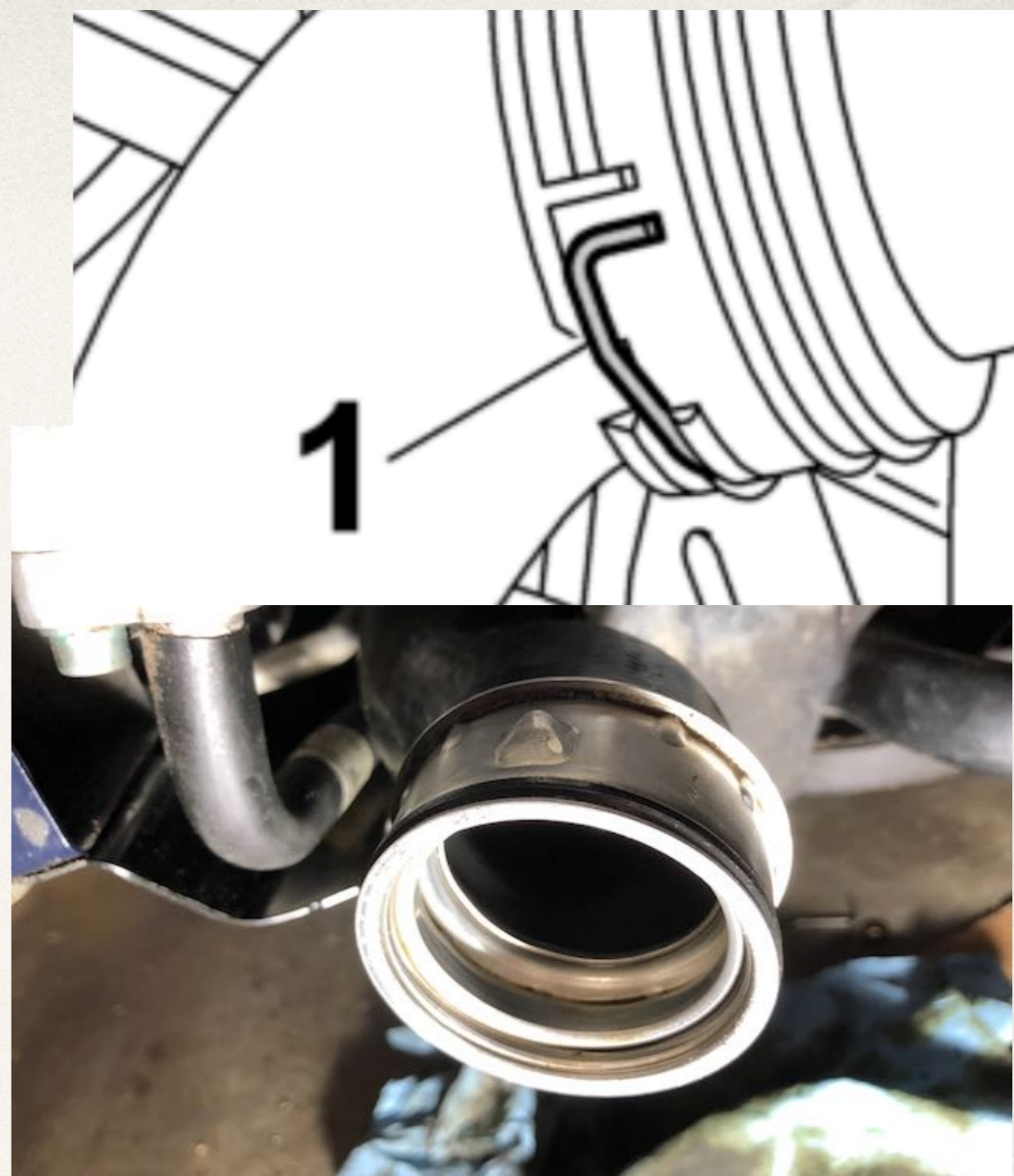
Now for the driver side. This side is more difficult because of the upper coolant hose for the engine is right in your way.

Remove the two allen head bolts holding the upper intercooler pipe in place. Slide the intake duct to the side to remove it.

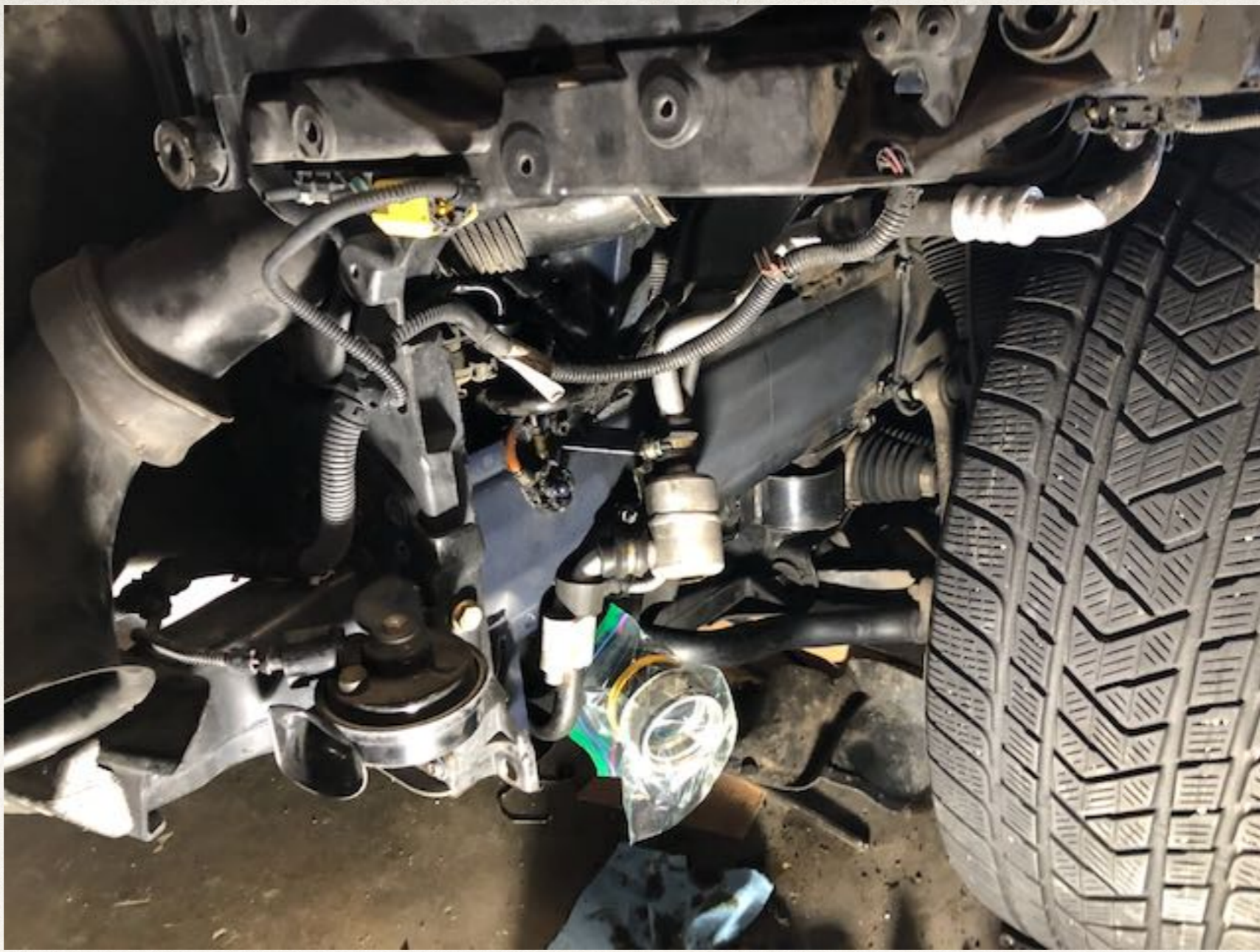


Courtesy of PORSCHE OF NORTH AMERICA, INC.

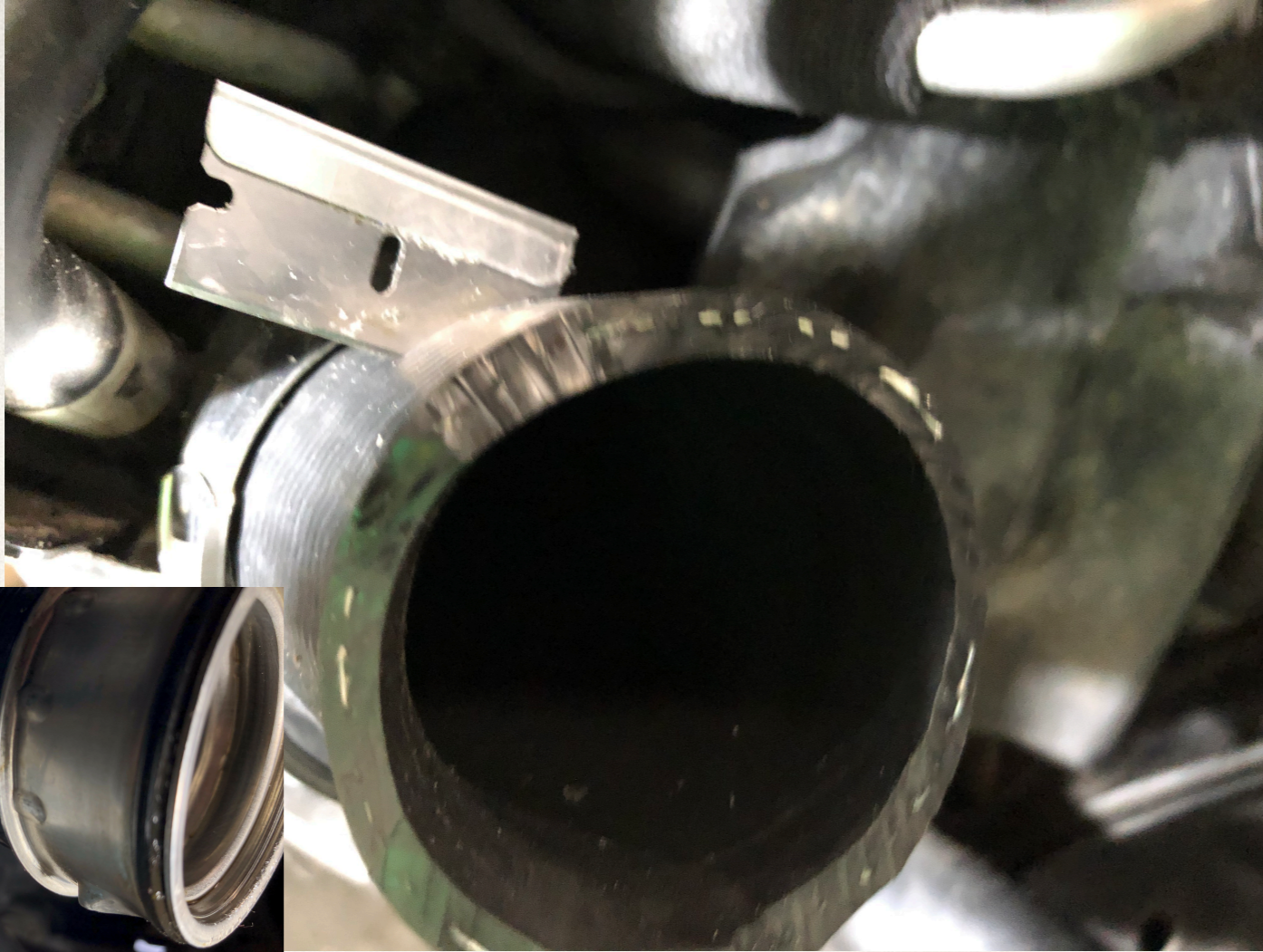
6. Unscrew the three fastening screws on the charge air cooler **-arrows-** , press the charge air cooler carefully towards the tires and remove sideways. See **Fig. 51**.



Removing the intercooler is just like the passenger side (3 allen head bolts, 2 washers behind the mount point and air ducts that slide to the side.) One difference on this side is that you must remove the lower hose at the intercooler side, **not** at the turbo housing. There is a single retaining (spring) clip that you must remove then the hose pulls right out of the housing (1 above.)

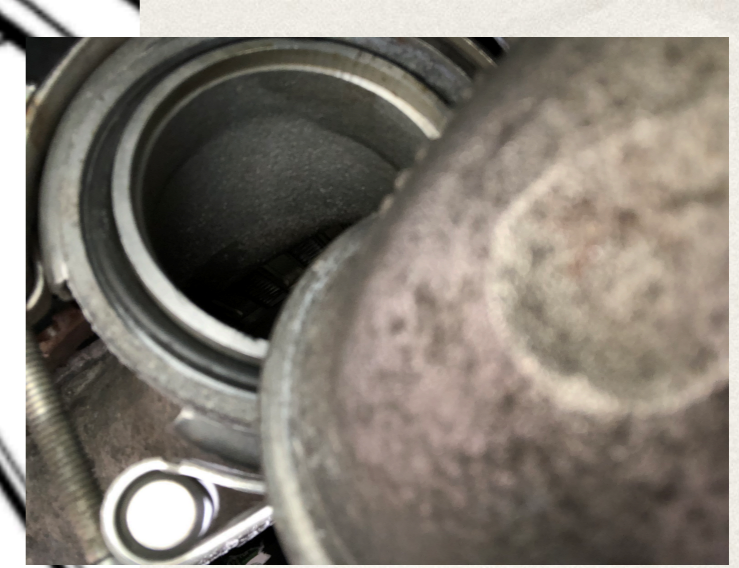
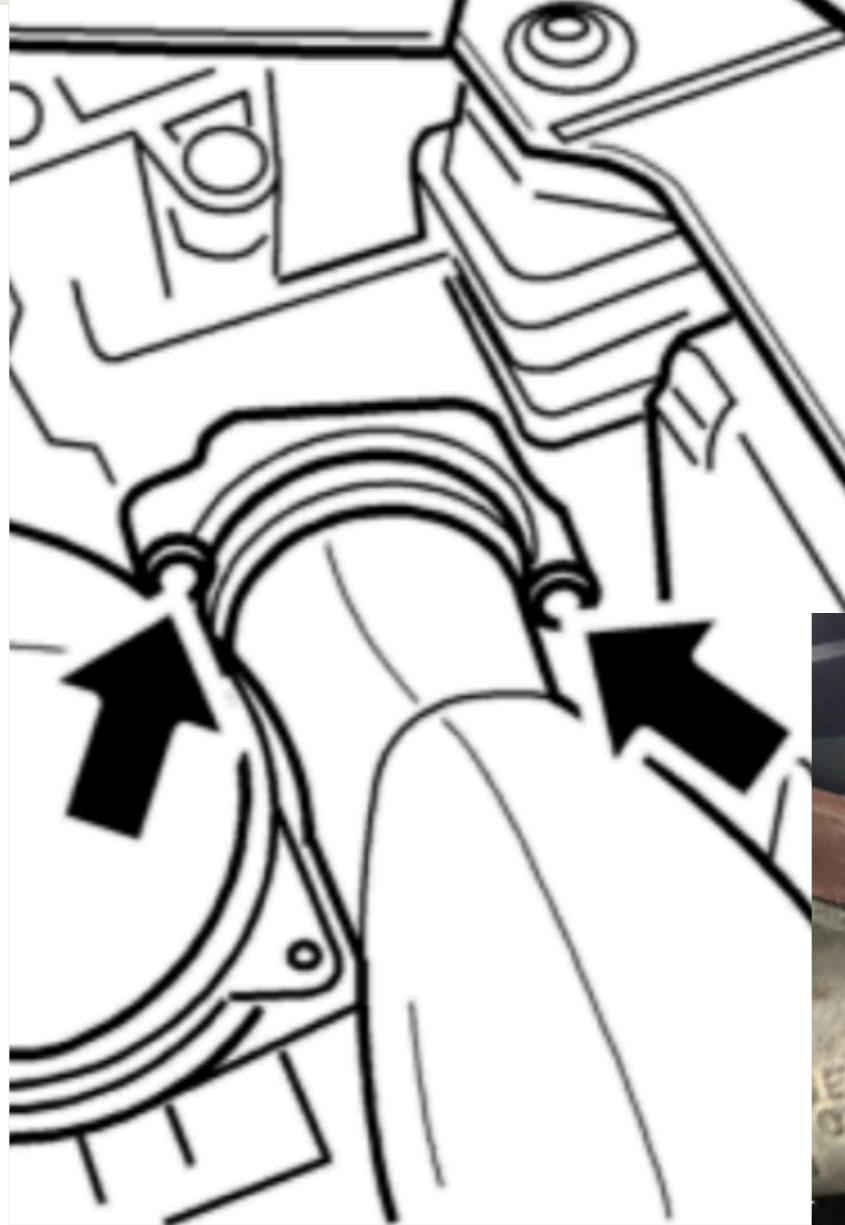
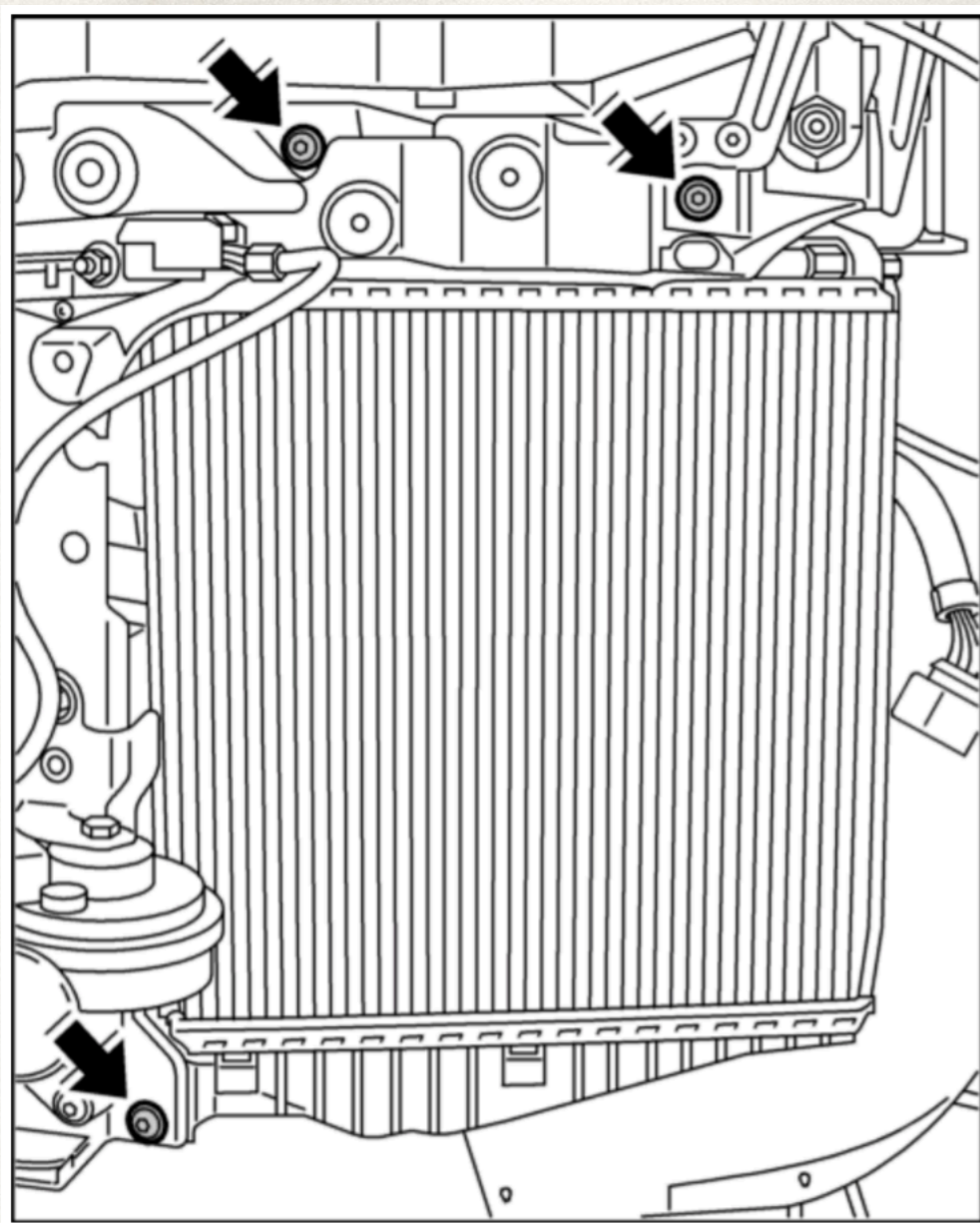


Always cover any pipes or openings to avoid debris from finding its way into your turbos.

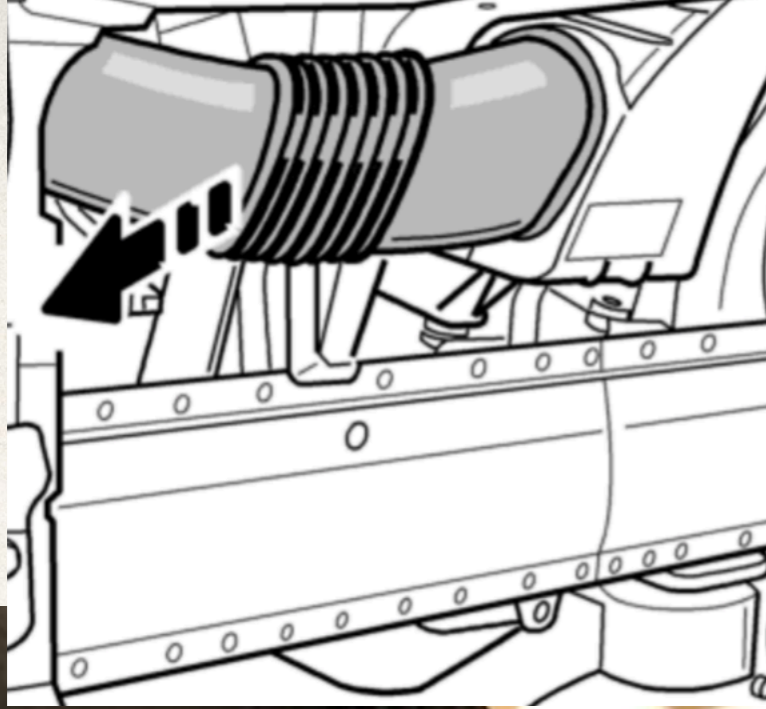


The driver's side lower charge hose must be cut if you cannot source the correct 2006 Turbo S hose. I recommend removing the lower elbow from the new intercooler (like you did on the passenger side) so that you can connect it to the hose. Use the elbow to figure out how much of the hose to cut off, I cut about 4-5 inches off.

I used a heat gun to get the hose loose enough to accept the Turbo S intercooler elbow. It is helpful that this elbow is removable, don't lose that rubber seal!



Install the rear air duct like you did for the passenger side (957 part may go straight on, 955 part needs shims/“engineering” to fit.) Mount the intercooler, add the 2 washers to the rear (intercooler) side as you put the intercooler back in place. Connect the upper connections. Connect the lower elbow to the intercooler making sure to properly install the rubber gasket/seal.



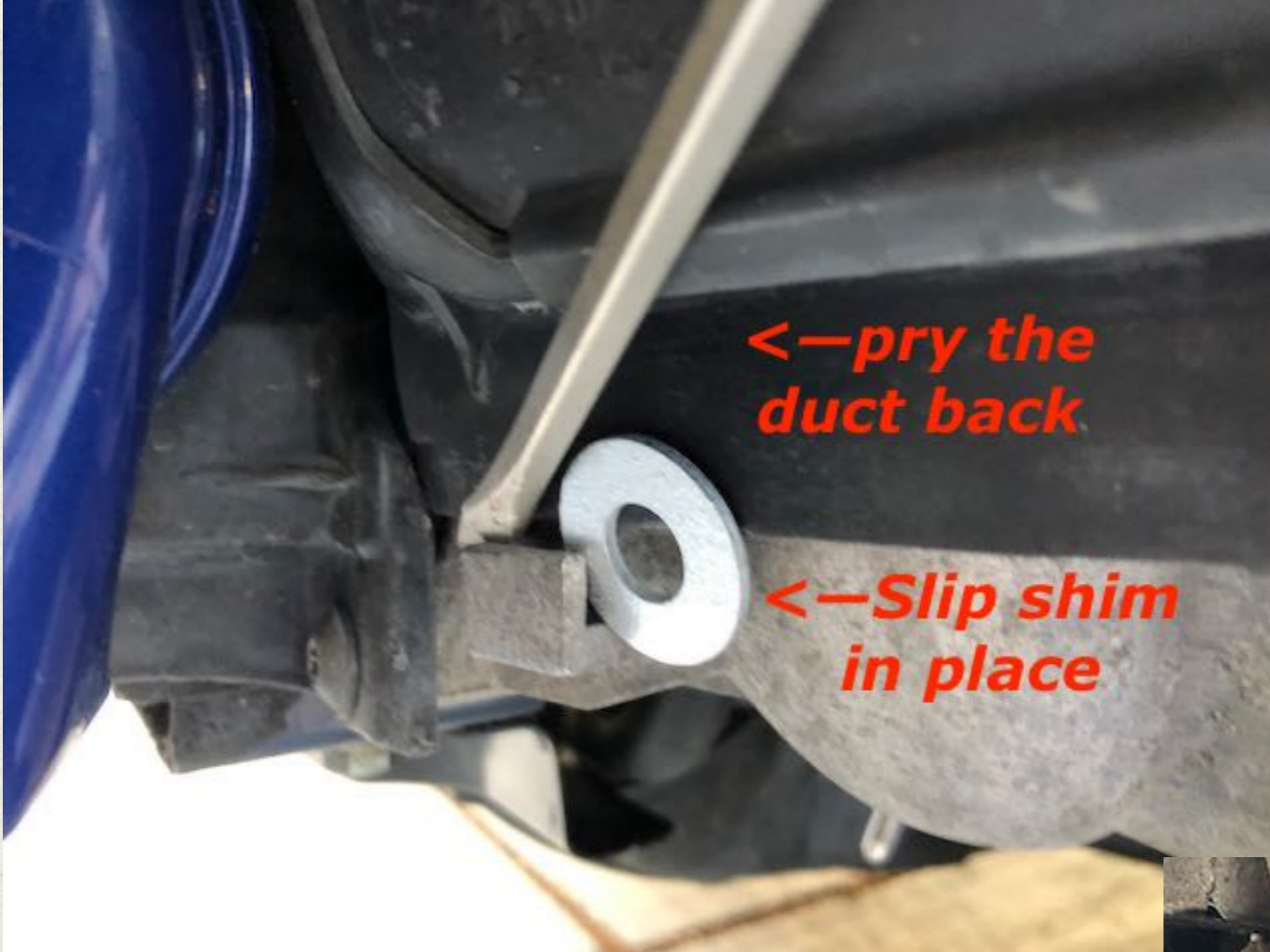
The plastic ducting that used to feed the stock air box may not fit due to the angle of the upper intercooler hose. I am using the EVOMS V-flow system so I cut the stock air box fitting off of that duct. If you are using the factory air box, you will need to wrestle the plastic pipe back into place. Finally, slide the front air duct into place, return any hoses you disconnected (to gain better access) and you are done with the upgrade.

I was convinced that I needed to use 957 ducts but they didn't allow the bumper cover to fit due to headlight washer system.



...so I had to put the 955 ducts on anyway. I shimmed them with large washers which held them better than the plastic shims





I really didn't want to use shims but the "correct" ducts don't allow the bumper cover to fit with the headlight washer system so shims it was...





Now you get to put the front and fender liners back on your Cayenne.