



## G8 GT Auxiliary Transmission Cooler Installation

1. Jack up the vehicle at the appropriate jacking points. This installation is more convenient on a lift, as later on you will need to add & check the transmission fluid, but it is possible to do it on jackstands if a lift is not available.
2. Removing the front wheels is optional. It is possible to install it with the wheels on, taking them off would allow you a little more room to work around the wheel well liners though.
3. Under the hood on the top of the bumper, remove the two push pins and two 10mm bolts securing the bumper to the car. The easiest way to remove these push pins is to use a plastic prying tool or flat head screw driver to pop the center section up and out, and then pull the bottom half out.



4. Remove the skid plate underneath the bumper by removing the four 7mm screws along the bumper's edge and the 6 push pins that hold it to the car's underbody. There are a few additional pins attaching the skid plate to the wheel well, remove those also. After the screws/pins are removed, pull it towards the back of the car to dislodge and remove it.



*skid plate*

5. Remove the push pins in the wheel well. You do not have to remove the entire wheel well – we simply pulled out the pins and let it drape on the wheel. You just need enough room to get to the bolts holding on the corners of the bumper.



*wheel well liner pulled out of the way*

6. Where the bumper meets the fender there are two 10mm bolts on each side securing it. These bolts screw into a retaining nut that will come loose upon removal. Take the nut out also so that you do not lose it during the rest of the installation.



*10mm bolts & recessed nuts holding bumper to fender*

7. There is only one wiring harness to disconnect the bumper from the body. It is located on the driver's side near the foglights. There are two connectors back to back, you need to detach the smaller black one.



*detach black connector*

- Now that the bumper is free of push pins, bolts and screws, the only thing holding it on are plastic lock tabs underneath the headlight. If you lightly pull down on the bumper from the front and look in the crease below the headlight you will see them. You need to use your fingers from the backside of the bumper to release the tabs – while having someone else pull the bumper out. Repeat on the other side, holding the bumper firmly. Beware that once the bumper is free from the tabs it will just want to fall out!



*close up of locking bumper tabs*

- Under the bumper there is a long, rippled piece of plastic covering the metal bumper support. Grab it firmly and pull it straight off.
- Install the included j-clips to the transmission cooler brackets. The brackets ARE left and right specific – please see pic for correct orientation!



*j-clip orientation*

- Install the brackets on either side of the cooler with the  $\frac{3}{4}$ " bolt and  $\frac{3}{8}$ " lock nut, with the fitting side of the cooler on the driver's side of the car. Do not tighten down all the way yet.



*brackets attached to cooler*

12. Set cooler and brackets into place, over the air dam, underneath the steel bumper support. Slip slotted tab into each end of the bumper support where there the metal is cut out from the factory. Insert a  $\frac{3}{4}$ " bolt from the bottom through the bracket, bumper support and slotted tab (in that order), topping it off with a locknut. Repeat on other side.



*$\frac{3}{4}$ " bolt, bracket, bumper support, slotted tab, capped off with locknut*

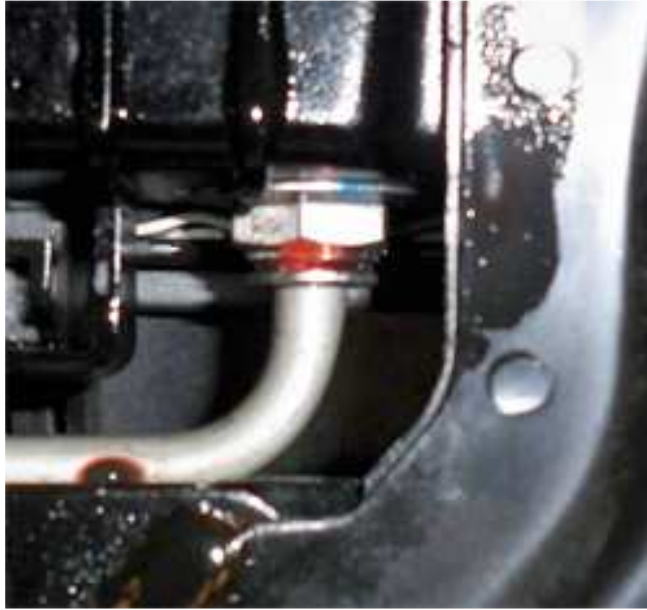
13. Center the transmission cooler to your liking. When you are happy with the placement, tighten the four bolts attaching the brackets to the bumper support, and then finally tighten the bolts that attach the brackets to the cooler.

**\*\*\* OPTIONAL STEP \*\*\***

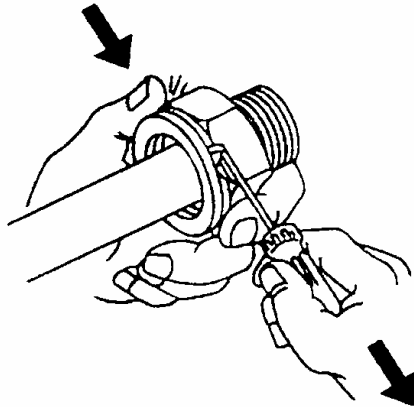
We did not do this on our own prototype car, but the kit includes two sheet metal screws if you wish to further attach the transmission brackets to the bumper support. There are predrilled holes in the brackets; simply drive the sheet metal screw through the bracket into the bumper support.

**\*\*\* END OPTIONAL STEP \*\*\***

14. Place a drip pan underneath the stock transmission lines to catch spilled fluid.
15. On the driver's side of the radiator, there is a transmission line going into the bottom. Remove the line by popping out the small wire clip, and then pulling it straight off. See illustration. Follow the line to the other end and detach it there also.



*trans line on driver's side of radiator*



16. Once the line has been removed, you can measure your new rubber line. They are not pre-cut so that the installer can measure the exact length that they need to be for each individual car.
17. There are two types of pushlock fittings in our kit. One is shorter, non swivel and also is pipe thread. The other swivels, is taller, and is AN thread.
18. On one end of the rubber line, install the shorter pushlock fitting. Lightly cover the barb end in grease, and push it into the rubber end until it is fully seated. You do not need tools to do this. To seat it fully, you can hold the rubber end and push the fitting against a firm surface. Do not use a hose clamp with any pushlock fittings/hose.
19. Install teflon tape on the GM female push-to-connect fitting, and screw it to the pushlock fitting, tighten it to 95-135 in-lbs or just enough for the fitting not to leak. Attach this to the transmission side of the stock line you removed.
20. Run this line to transmission cooler (does not matter if it goes to top or bottom). Cut hose to appropriate length, and install AN pushlock fitting. Loosely attach to cooler. Mark edge of air dam for cutting so that this line and the other you are about to make will not rub. Detach line, and cut away plastic until they no longer touch.



**Figure 5 1/8NPT- -6AN Installed in Male Push to connect**

21. Screw the 1/8NPT - -6AN fitting into the CNC Male Push to connect fitting with teflon tape. Tighten to 45-65 in-lbs or just tight enough for the fitting not to leak. Do not over tighten. See Figure 5. Plug the CNC'd\*\*\* push to connect fitting into the radiator. Measure your rubber line from that fitting to the other end of the transmission cooler. Then install the AN pushlock fitting and assemble. \*\*\* when tightening against the CNC'd fitting, hold the hex barb so that it does not over tighten and strip the fitting.\*\*\*
22. Run line to cooler, cut and install final AN pushlock fitting into hose end.
23. Reinstall cooler lines for a final time. The transmission cooler fitting takes a 5/8" wrench, and the PCMforless line fitting takes an 11/16" wrench.



24. Be sure that both lines are out of the way of moving parts. Use provided zip ties if necessary.
25. Do a final check that bolts are tight, lines are tight, and nothing will contact moving parts.



*final installation*

26. Start the vehicle. Make sure it is level on the jacks/lifts. Allow it to warm up to operating temperature.
27. Be careful when refilling the transmission fluid. Everything underneath the car will be very hot! Refill the transmission with Dexron VI fluid. The refill plug is on the passenger side of the transmission, pull up on the center of it, and then the whole plug comes out. There is also a plug on the bottom of the transmission pan, this is how you check the fluid. It will take roughly a quart to fill the cooler/lines and replace what you have spilled. Once the fluid starts spilling back out of the drain hole on the bottom, it is full. Reinstall both plugs. (Transmission refill plug shown below).

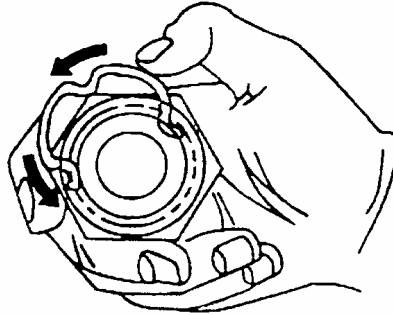


28. Recheck lines/cooler for any leaks. Turn off car.
  29. Reinstall plastic bumper support by pushing it on.
  30. Reinstall bumper, pushing it into the locking tabs beneath the headlights. Reattach the two push pins and 10mm screws on top. Reinstall 10mm bolts & retaining nuts on either end of where the bumper/fender meet.
  31. Reconnect wiring harness from body to bumper.
  32. Reinstall skid plate. It slides in between the air dam and front bumper, and needs a bit of convincing to get into place. Once in, reattach the 7mm bolts and push pins.
  33. Reinstall wheel well liners, including push pins that attach it to the skid plate.
- If you would like a color copy of the instructions, please email [sales@pcmforless.com](mailto:sales@pcmforless.com)

## Addendum – Transmission cooler line reassembly.

To re-install transmission line fittings it is imperative that a few steps be followed.

1. Squeeze clip back together to make sure it will re-install tightly. If clip appears to be damaged or unusable replace with a new clip from dealer.
2. Rotate the clip back on to the fitting. Do not push the clip straight on as it will spread the clip back out. The clip must remain reasonably tight.



**Figure 1. Rotate clip to re-install. Do not Push straight on**

3. Reinstall ring retainer **-OR-** use zip tie. The ring retainer can be reused from the factory line. Simply pull on it gently over the male barb and re-install it over the new barb. Note factory orientation. **A zip tie is sometimes a better solution with our CNC male fittings as it is easier to remove in the future.**



**Figure 2 & 3. On the left the factory ring retainer is re-installed on the CNC male fitting. On the right a zip tie is used to retain the ring. Using a zip tie instead of the factory ring retainer is sometimes a better option as it is easier to remove later.**