# Transmission Line Kit Instructions

## KIT CONTENTS:

- ✓ (1) -6AN PTFE Braided Stainless Feed Line
- ✓ (1) -6AN PTFE Braided Stainless Return Line
- ✓ (2) Tru-Cool 40K Transmission Cooler -AN Conversion Fittings
- ✓ (2) 4L60/65/70e or 4L80e -AN Conversion Fittings
- ✓ (4) ½" DIA Insulated "P" Clamps
- ✓ (4) Self Drilling Screws
- ✓ **OPTIONAL** - (4) Billet Aluminum Hose Separators

TECH NOTE: -6AN PTFE hose has the same inner diameter as standard hose, but with a much smaller outer diameter due to the increased pressure capacity of the PTFE liner. Do not be concerned by this smaller OD, as the ID allows for the same amount of fluid flow as standard -6AN hose. A small cutaway sample of hose has been included with your kit to illustrate this. This makes PTFE hose ideal for applications that have tighter space constraints. In addition to this advantage, PTFE hose has a significantly increased working pressure range, chemical resistance, and heat tolerance compared to traditional viton or rubber core braided stainless hose. -6AN PTFE lined hose is rated to 2500PSI and has an acceptable temperature range of -75ºF to 400ºF. These features make PTFE hose the absolute best choice for the high pressure and temperature requirements of automatic transmission, especially for the demanding conditions of performance and racing applications.

NOTE: 4L80e Kits are only compatible with 1997+ 4L80e transmission cases. These cases are identified by having one cooler port positioned near the rear of the case and the other positioned towards the front. In addition, the 1997+ cases will have a bolt hole in the 12 o'clock position on the bellhousing.

NOTE: This kit is designed to eliminate/bypass the radiator's internal transmission cooler.

## BEFORE INSTALLATION:

Remove OE transmission line assemblies and fittings and Install the Tru-Cool 40K Transmission Cooler (LPD47391). If you're using one of our Tru-Cool Transmission Cooler bracket kits, please see its supplied instructions for installation.

## Step 1

Install conversion fittings into transmission. Be sure to use the supplied crush washers during install. It is important that these fittings are properly tightened to ensure that they do not leak. Due to the inability to fit a torque wrench in the space if the transmission is installed, care must be taken to tighten the fittings sufficiently enough to crush the sealing washer but, not to the extent that fitting/transmission damage occurs (4L80e fittings use a rubber o-ring rather than crush washers).

TECH NOTE: On 4L60/65/70e transmissions both fittings are identical. On 4L80e (1997+) transmissions, the longer fitting goes into the **REAR** (return) port.

## Step 2

Loosely install the pressure and return hoses to the transmission conversion fittings you installed in step 1. Do not fully tighten the fittings at this time. Please be sure to install the correct line onto the correct port, as this is critical to the hoses routing correctly. Please see the notes below to assist in identifying the lines and their respective ports according to your transmission type:

**4L60/65/70e** – The longer of the two lines (the one with the 90-degree hose end) is the pressure line and the shorter of the two lines (the one with the 45-degree hose end) is the return line. The pressure line (90-degree end) will be installed on the **LOWER** port on the 4L60e transmission and the return line (45-degree end) will be installed on the **UPPER** port on the 4L60e transmission. **(SEE FIGURE 1)**

**4L80e** – The longer of the two lines is the pressure line and the shorter of the two lines is the return. The longer line (pressure line) will be connected to the **FRONT** port on the transmission. The shorter line (return line) will be installed on the **REAR** port on the transmission. **(SEE FIGURE 2)**

## 4L60/65/70e

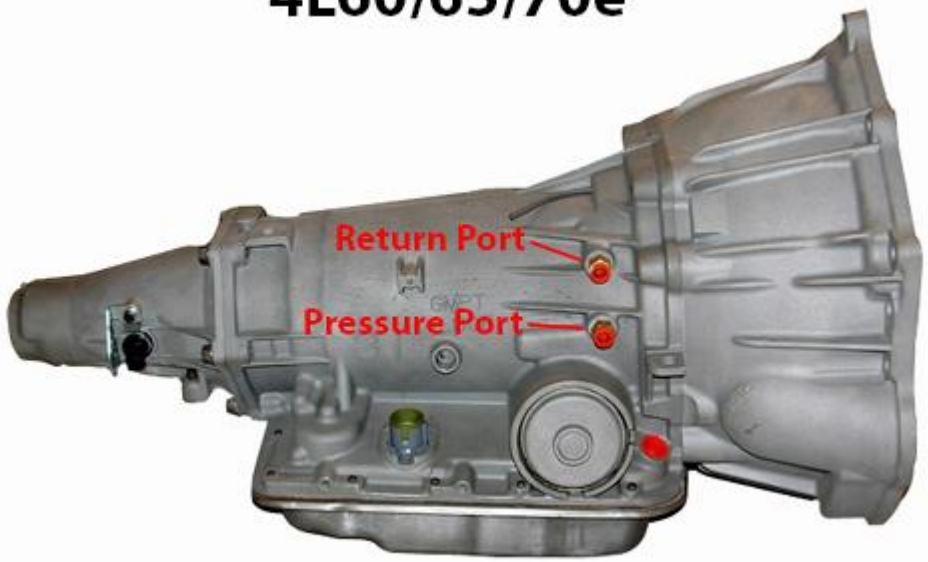



Figure 1

## 4L80e

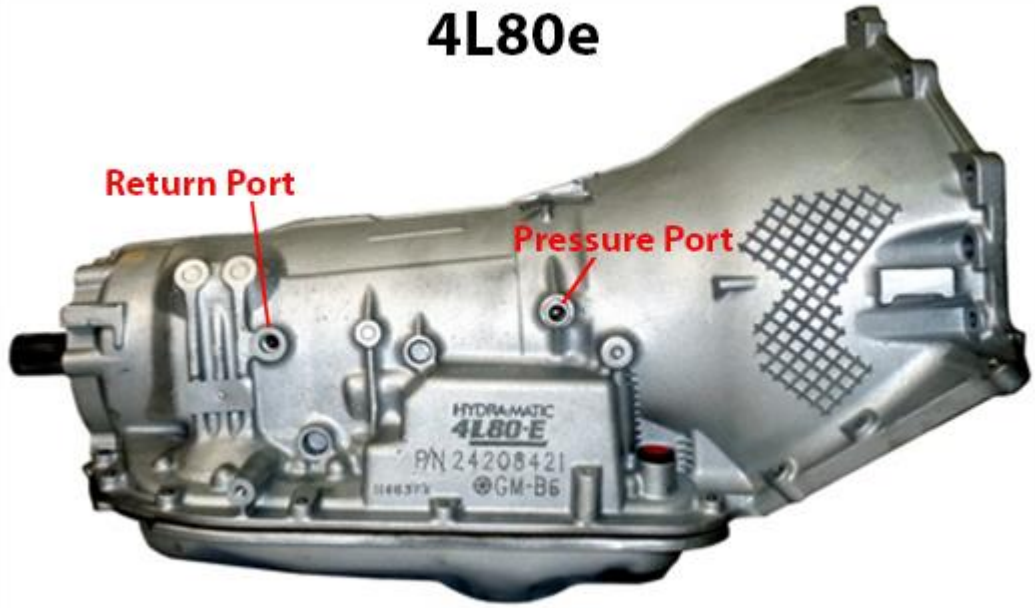



Figure 2

## Step 3

Install the -AN conversion fitting into the Tru-Cool 40K Transmission Cooler. Both fittings are identical and can be installed in either side. Be sure to tighten the fittings securely, holding the transmission cooler hex with the correct sized wrench to prevent twisting of the inlet or outlet of the transmission cooler.

## Step 4

### Hose Routing

The lines supplied in this kit are specific lengths and will require to be routed exactly as pictured and described. These hoses are designed to generally follow the same path as the original lines and will be routed between the engine in the crossmember, rather than along the frame, to provide for increased clearance in applications that are utilizing long tube headers. This will help to keep the lines away from the radiant heat of the exhaust.

The lines will come forward off of the transmission, above the servo (4L60e models), and gradually inwards so that they pass underneath of the starter/bellhousing (**See Figure 3 & 4**). On 4L80e applications, additional care needs to be taken to ensure that the lines remain away from aftermarket exhaust in this area, due to increased length.


Figure 3

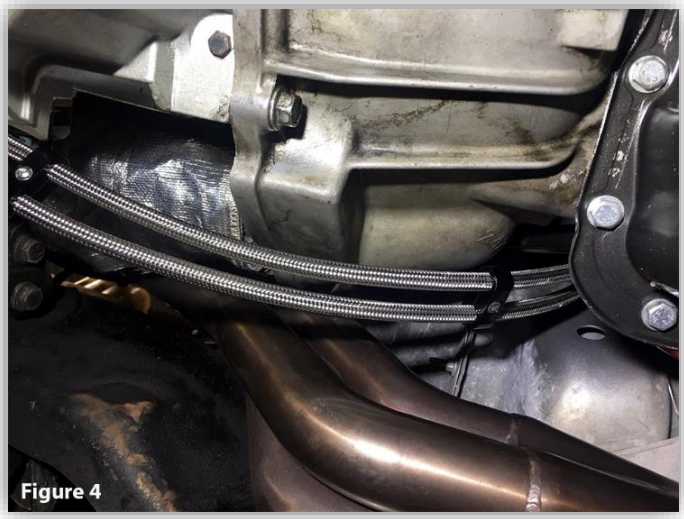


Figure 4

Route the lines toward the original bracket that is mounted to the engine (**See Figure 5**).


Figure 5

The lines are designed to be installed into the original bracket assembly. This can be done by slightly opening the bracket provisions by bending the tabs downward to allow the installation of the slightly larger -6AN line assemblies (**See Figure 6**). From this bracket, the lines continue forward and gradually toward the passenger side frame rail. The lines will pass above the Rack and Pinion (or drag link assembly if equipped with gearbox steering) (**See Figure 7**). Take care to ensure there is proper clearance between the lines and any moving steering components.


Figure 6

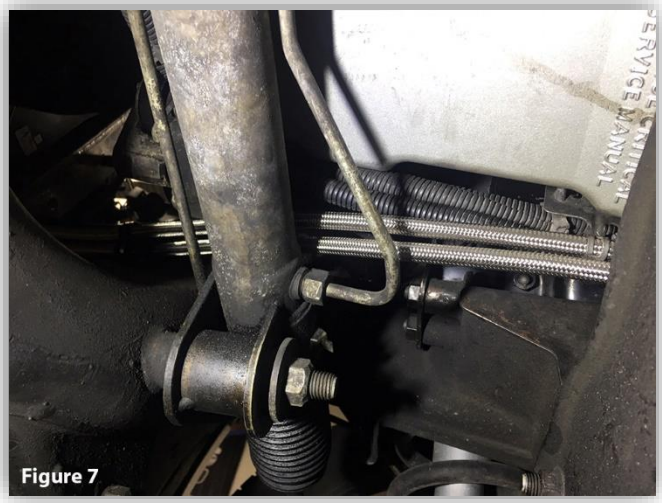


Figure 7

The lines will then pass underneath the A/C compressor bracket (between this bracket and the frame's crossmember) (**See Figure 8**). Follow the passenger frame rail towards the front, passing under the core support, but over the front frame crossmember (**See Figure 9**).


Figure 8


Figure 9

The return line will pass directly up, in front of the core support, and will connect to the passenger side of the transmission cooler (**See Figure 10**). The pressure line assembly will follow the underside of the core support towards the driver side (**See Figure 11)** where it will then pass up in front of the core support and connect to the driver side of the transmission cooler (**See Figure 12**).


Figure 10


Figure 11

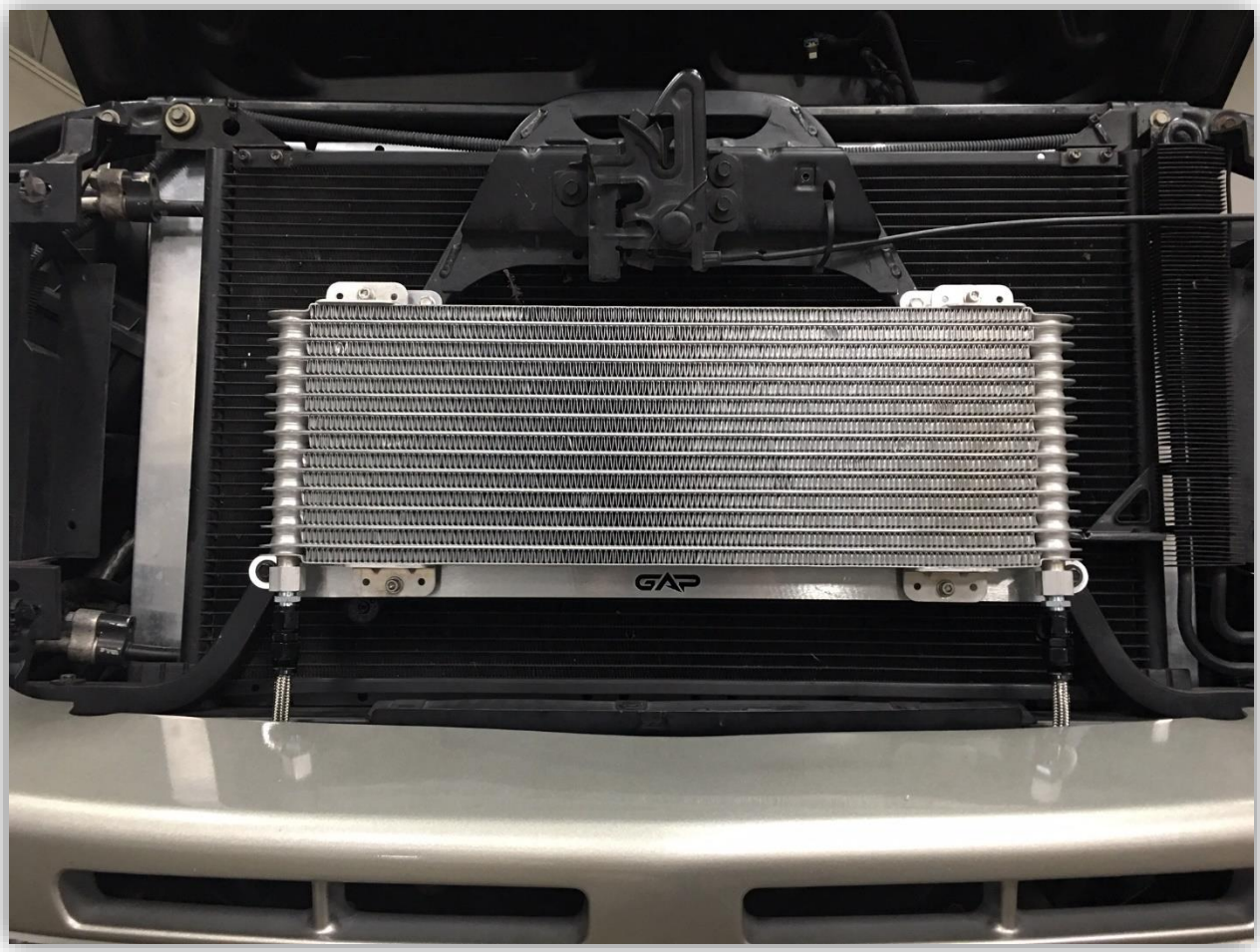
We recommend securing the pressure line to the bottom of the core support as pictured with the supplied “P” clamps and self-drilling screws (**See Figure 11**). We also recommend using a “P” clamp to secure the line assemblies directly in front of the A/C compressor to the cross member that passes under engine (**See Figure 8**). This will ensure that the line assemblies cannot shift and come into contact with the A/C compressor clutch assembly.

Figure 12

## Step 5

Final tighten all connections, ensuring that the hoses do not bind at the transmission fittings. The line assemblies are constructed with swivel hose ends at transmission, so it is expected that they will have some movement at that connection to allow for drivetrain movement and engine mount flex. Fill the transmission with the appropriate amount of fluid and start engine to check for leaks. Allow the vehicle to come up to temperature at idle while inspecting for leaks.

Remember, the addition of an aftermarket transmission cooler will change the total fluid capacity. Please be sure the transmission has been bled and filled to proper capacity before driving the vehicle. Over or under filling of the transmission may result in damage to the unit. After fluid level has been verified, and the vehicle is at operating temperature, take the vehicle for a short drive. Inspect for leaks after driving and double check fluid level. If no leaks are present, and the fluid is at proper level, the installation is complete.



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# TRANS LINE KIT