

Coyote Swap A/C Line Kit

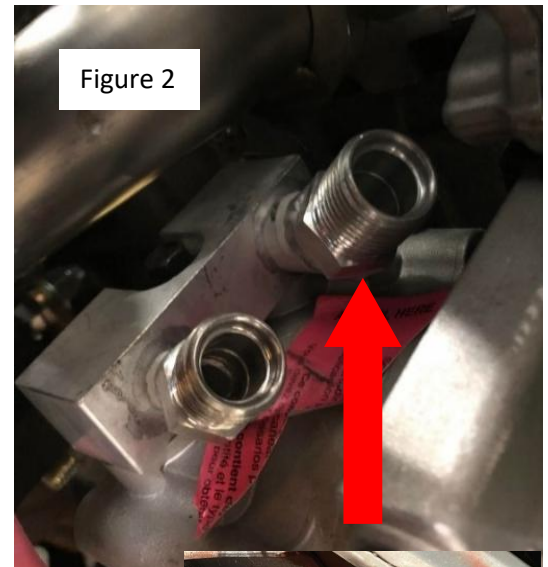
Instructions

1. Put your vehicle on a level surface in park with e-brake set.
2. Jack the front vehicle up using the frame rail or the center of the K-member. Depending on the jack you have, place both A-arms on jack stands.
3. Open hood and remove front passenger wheel.
4. Remove passenger side wheel well plastic splash guards **Note: You may have to trim a small portion of the front of splash guard to better route the two hoses that get routed above it but so far it hasn't been an issue for most.**
5. **IF YOU HAVE A FS20 COMPRESSOR, YOU MAY NEED TO TRIM THE PASSENGER SIDE SWAYBAR MOUNT. IF YOU WANT TO RETAIN THE SWAYBAR CUSTOM MODIFICATION WILL BE NEEDED ON BOTH SIDES.** As far as handling goes, in my experience these cars still turn great without much body roll without the sway bar.
6. **YOU WILL NEED TO MAKE A LARGE ENOUGH OPENING WHERE THE BRAKE LINE GOES THROUGH THE FENDER BEHIND STRUT TOWER FOR THREE LINES TO PASS THROUGH.**

7. There is an instructional video for mounting the accumulator on **YouTube**. Just search for **Fathead Garage Accumulator Mount**. Mount the accumulator bottle in rear part of fender well near the door mounts (Figure 1). You can drill two small holes for the screws to engage easier. You can accomplish this with a 3/32" drill bit on a 90-degree drill adapter that you can pick up from a Lowes or Home Depot which will be needed unless you pull the fender off. The two holes need to be spaced vertically 2" – 3" apart in the relative location (Figure 1).



8. **CAREFULLY....**Connect thicker #10 suction hose (contains the low side service port) to the large fitting on compressor adapter (Figure 2). These threads can be difficult to get started so I suggest starting them off the vehicle, along with the #8 hose (with the high side fittings), before mounting the adapter on the compressor. Route the hose to make a 180 degree turn up under the frame rail and up as if the plastic fender liner were still installed. This line will then be routed to the accumulator bottle and must be attached to horizontal female springlock fitting on the accumulator (Figure 3).



9. Connect the short hose (size 8 markings and the high side service port) to the compressor (Figure 4). Connect opposite end to the top fitting on the condenser, push in until the spring clicks (Figure 5).

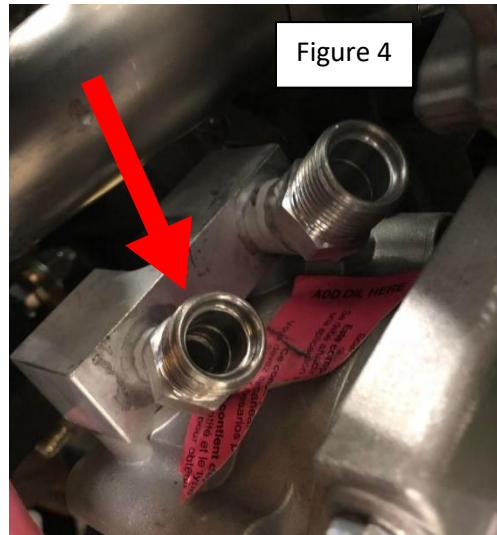


Figure 4

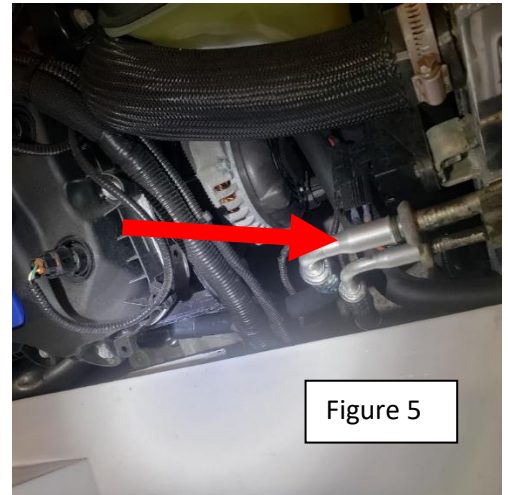


Figure 5

10. Connect small hose with size 6 markings with two 90-degree fittings in close succession to the bottom fitting on the condenser (Figure 6). Route the rest of line under frame rail and up as if the plastic fender liner were still installed and through the fender behind strut tower and connect to spring lock fitting on firewall for the evaporator (Figure 7).

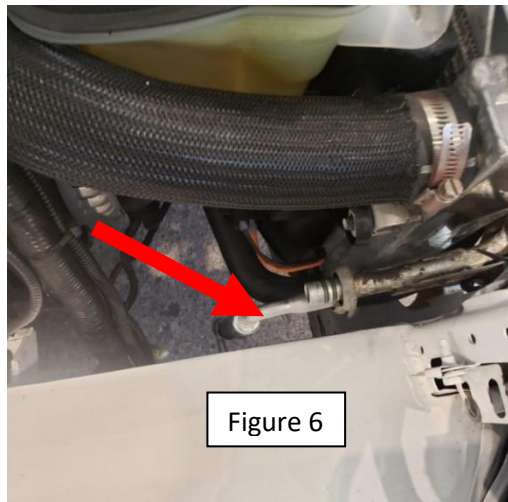


Figure 6

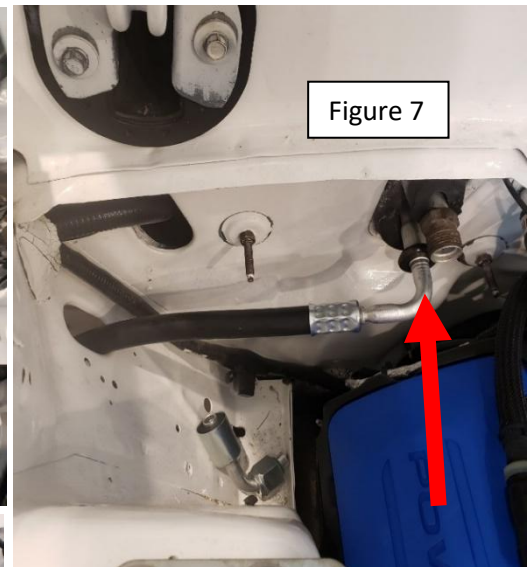


Figure 7

- Make sure fitting for the silver inline orifice tube fittings are tight. I ship them loose; they need a final torque.**

11. Connect last hose by attaching large B-nut fitting (Figure 8) to threaded attachment on fire wall and route back through the fender and connect to the vertical fitting tube (Figure 9). Again, make sure the spring clicks to assure the fitting is fully seated.

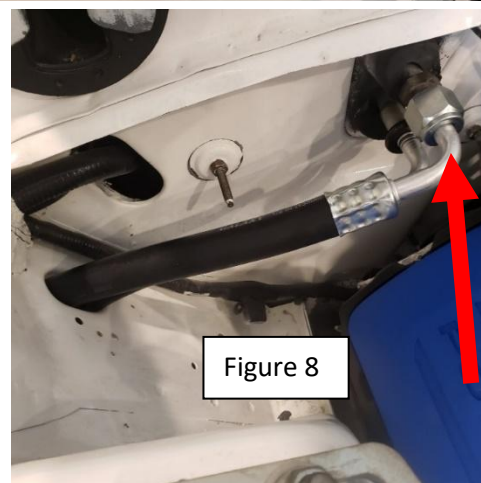


Figure 8

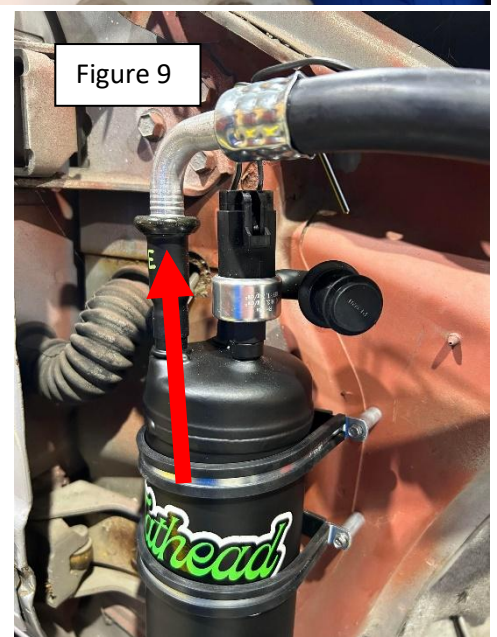


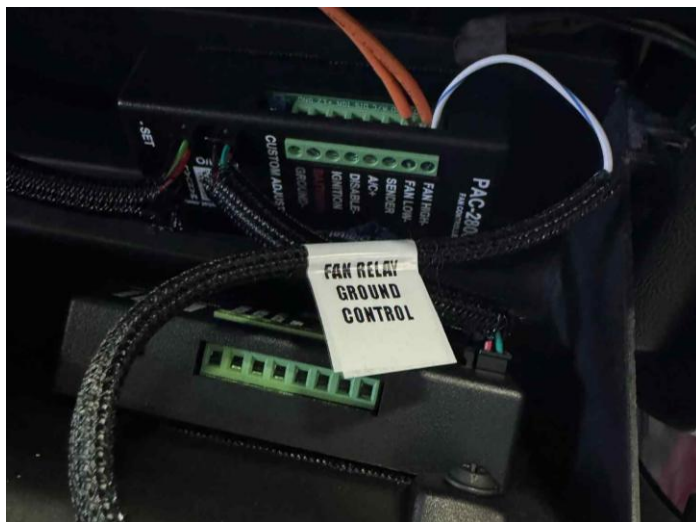
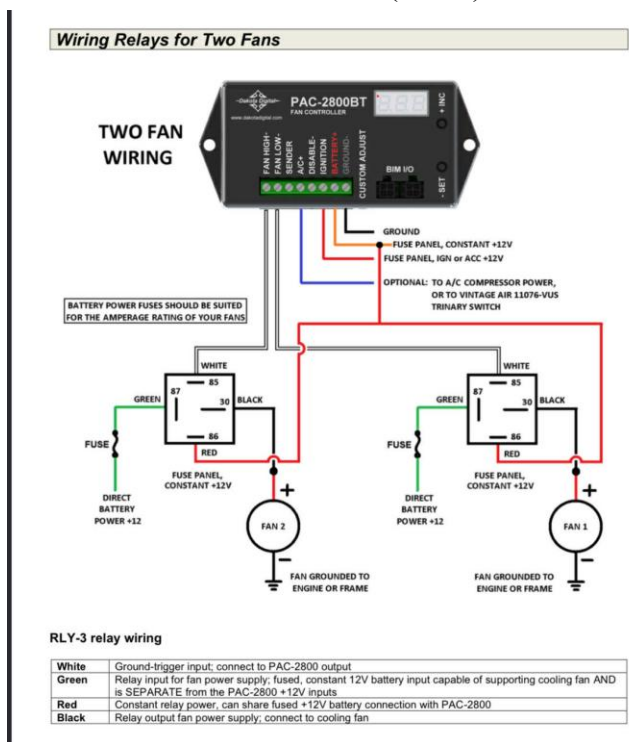
Figure 9

12. To hook up the electrical to make the system function, it was necessary to wire it separately from the engine control pack. You need to do some additional wiring connections on your own. If you are not savvy with wiring, please check out a YouTube video on wiring 101 so there is less of a possibility of electrical issues. **If you run into any issues with wire colors, locating wires, etc., please contact me so that we can get it figured out before cutting into the wrong wire or circuit.**

a. Ford Control Pack

- i. **Electric Fan Relay Ground Control (White/Blue)** - You will need to connect to the wire going from the control pack fuse panel for the Electric Fan Ground Control when compressor is commanded ON. This circuit will ground the fan relay control side and turn the electric fan ON when the A/C is commanded ON. The wire is the tan/red wire on the Gen 1 control pack. It should be a white/blue wire on a Gen 2 control pack. At the PCM BODY connector you will be looking for PIN 18 for Gen 1 (11-14), PIN 10 for Gen 2 (15-17), PIN 89 or PIN 59 for Gen 3 (18+), and PIN 75 for Gen 4. **If you're**

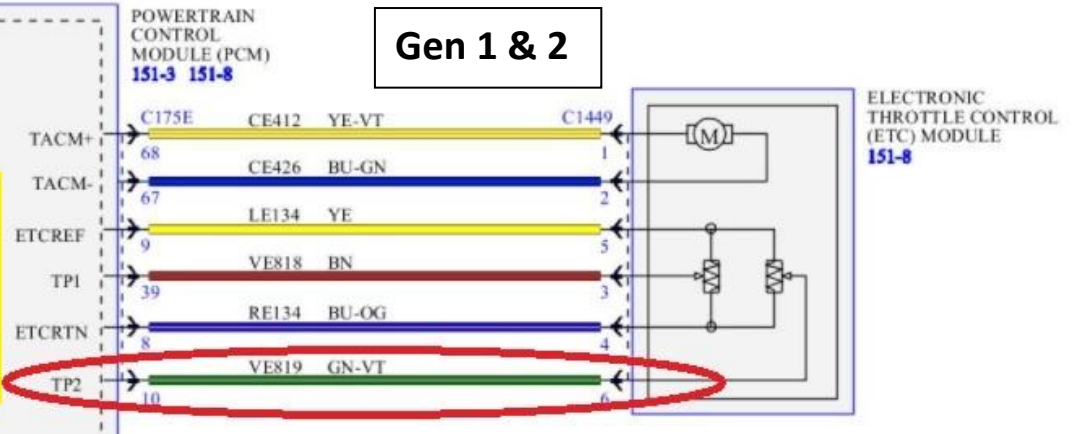
unsure, please contact me for help. NOTE: If you're using a Dakota Digital PAC-2800BT Fan Controller, use the diagram (left) to wire up the cooling fan(s) and connect the white/blue wire to the FAN HIGH- pin on the DD 2800BT controller (below).



- ii. **TPS Signal (White/Black)** – You will need to connect to the rising 0-5 volt throttle position sensor signal (APP sensor signal on GEN 3) wire for the WOT switch voltage trigger in the shutoff relay. This circuit will feed a signal to the controller that will disengage the A/C compressor when it sees about 3.7 volts (roughly 80% throttle). The exact voltage is written on the back of the module. I personally check the operation of the module to ensure proper operation before shipping. I suggest making this connection closer to the PCM as well. You won't have to run nearly as far and you can keep the connections more hidden. As you can see in the diagram below, that will be the green/violet wire at the PCM ENGINE connector PIN 9 or 10 (not the same PCM connector as the fan relay ground circuit).

Gen 1 & 2

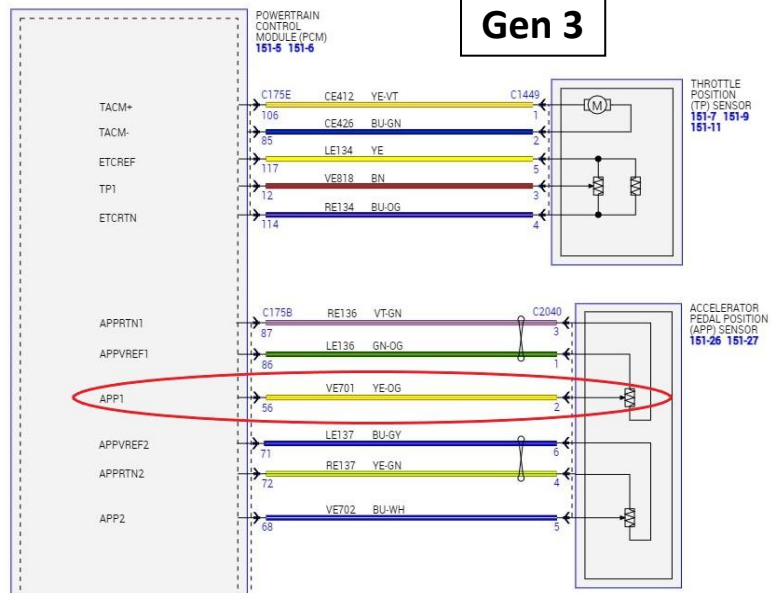
The TP2 circuit should range from 0.3-1.9 volts when fully released to 4.1-4.7 volts when fully applied



Gen 3

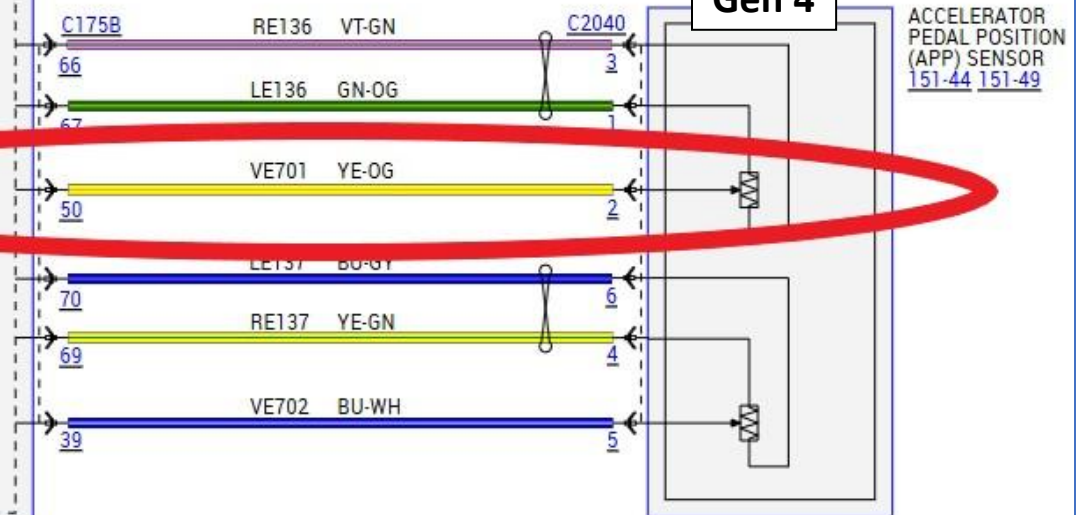
On a Gen 3 setup, when connecting your white "TPS SIGNAL" wire, you'll want to connect to the APP1 signal wire. That will be a yellow/orange wire that connects to Pin 56 at the PCM and Pin 2 at the APP sensor. This signal will have a voltage range of 0.61 volts at idle to 4.6 volts at WOT.

PID	Minimum Volts	Maximum Volts
APP1	0.61	4.6
APP2	0.27	2.4

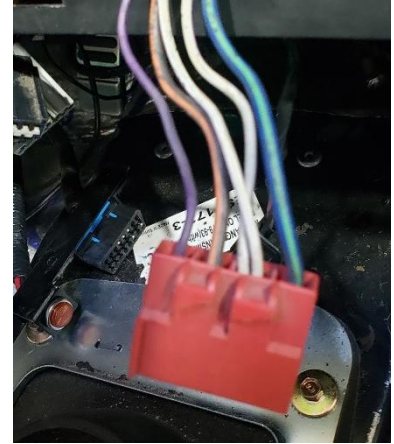


Gen 4

APPRTN1
APPVREF1
APP1
ETCREF
APPVREF2
APPRTN2
APP2



- iii. **Ignition Switched 12V (Pink)** – This wire should be connected to a fused battery voltage source. It provides power for the entire A/C control system.
- iv. **A/C “ON” Signal (Light Blue/White)** – You will need to remove the air conditioning control panel and locate the (usually) purple wire and splice the A/C “ON” Signal wire into that wire for circuit power. It will power the compressor in modes: A/C, MAX A/C, DEFROST, and DEFROST MIX. Give yourself enough room in case you want to revert to factory. This circuit should see voltage with A/C, A/C MAX, Defrost, or Blend and will “activate” the circuit to turn on the A/C compressor. The power for this wire comes through your factory fuse box via Fuse #6 & #9. If you are having troubles with the compressor turning on, this is a good place to check.
- v. **Ground (Black)** – You will need to ground the black wire with the eyelet. Clean off any paint or corrosion before attaching this wire to a good ground.



b. **Holley**

- i. **Ignition Switched 12V (Pink)** – This wire should be connected to a fused battery voltage source. It provides power for the entire A/C control system.
- ii. **A/C “ON” Signal (Light Blue/White)** – You will need to remove the air conditioning control panel and locate the (usually) purple wire and splice the A/C “ON” Signal wire into that wire for circuit power. It will be in the connector for what condition you want (A/C, max A/C, defrost, etc.). Give yourself enough room in case you want to revert to factory. This circuit should see voltage with A/C, A/C MAX, Defrost, or Blend and will “activate” the circuit to turn on the A/C compressor. The power for this wire comes through your factory fuse box via Fuse #6 & #9. If you are having troubles with the compressor turning on, this is a good place to check.
- iii. **IAC Kick (White/Blue)** – This wire should be connected to your Holley A/C Kick Relay Input. This ground input will allow for the Idle Air Control motor to automatically make an increase in IAC %, which is necessary to avoid a momentary drop in idle speed when the A/C compressor turns on. It will also be the signal that the Holley will use to turn on the electric fan(s).
- iv. **A/C Shutdown (White/Black)** – This wire should be connected to your Holley A/C Shutdown Relay Output. This output will provide a ground at a defined throttle position. If desired, this throttle position can be changed using the Holley software.
- v. **Ground** – You will need to ground the black wire with the eyelet. Clean off any paint or corrosion before attaching this wire to a good ground.
- vi. After finishing the wiring, go into your Holley ECU configuration and setup your electric cooling fan(s) to turn on when the A/C is commanded ON. Also, setup your A/C Shutdown by configuring the TPS level that you desire the A/C to disengage. And

finally, adjust your IAC Kick percentage in order to bump the idle when the A/C is engaged.

- c. **Everything will be labeled, but if my instructions are not clear enough or you have an issue, please reach out and contact me via Facebook Messenger or e-mail (fatheadgarage618@gmail.com).**

Description & Operation

- After install, it is highly recommended that you use an A/C machine that is capable of putting the system into a vacuum for 30-45 minutes in order to fully remove any moisture. The recommended charge amount of **R-134a refrigerant** is 32 ounces. Almost everyone has great results with this amount. If you don't have sufficient cooling with this amount, check system operating pressures and make adjustments based on ambient temperature and the humidity level in your area. Normally you should see about a 25° difference between ambient temperature and air outlet in the car. The oil amount will depend on whether you're using all new components or not. Most new compressors are pre-filled. A new accumulator should take about 1 ounce of oil. A new evaporator should take about 3 ounces of oil.
- Status Light (Control Pack modules)
 - It will blink when the module is powered ON.
 - It will stay on when the WOT (wide open throttle) cutout is active.
 - The module obtains power through the low-pressure cycle switch on top of the accumulator. If the module does not have power, make sure the system is charged and that you have battery voltage going through the low-pressure cycle switch.