

1986 944 Turbo Vacuum Line Update

This is a write up on how to replace the old rotten vacuum lines and remove the venturi tube system and update to the new Porsche hoses.

This was also done running a MBC (Reliaboost) with the cycling valve deleted.

The updated kit was bought from Lindsey Racing and cost around \$110.00 Total, but there are plenty of other places that sell them as well.

Parts included with the updated kit:

25 feet of 5/32 blue purosil hose for the small vacuum lines

5 brass T's for the 5/32 hose

3 foot section of 1/2" blue purosil hose

Edit: A few months ago, this was sent to me by Lindsey racing. Since then, they have started selling an updated black Porsche hose that runs from the brake booster to the intake. I just requires cutting the hose in half to insert the check valve by the firewall. This updated hose is formed, and is much better than the 1/2" purosil hose. I am not sure of the Porsche part number for this hose.

2 foot section of 3/4" blue purosil hose

Two updated Porsche hoses that run from the intake manifold to the ISV, and from the ISV to the intercooler pipe. Part #s: 951-110-223-01 & 951-110-221-00

1 small bent 3/4" hose that enables the connection from the 3/4" hose to the J boot

1 small male/male connector that will go from the bent 3/4" hose to the j boot

2 Male/Male 3/4" connectors (These were left out of my kit, should have been there. Being I was impatient, I just went to Napa and picked up them for 2 bucks or so)

***Make sure you install one line at a time, and make sure to tighten down each hose clamp before going to the next step. This will save you a giant headache when you start the car and realize you have a big vacuum leak under the intake.

I followed the instructions on the intake manifold removal via Clarks-garage.com homepage

Once that is out of the way, you will see a mess of rubber rotten hoses going everywhere. Unbolt the metal venture tube (3 tubes welded together, about a foot and a half long or so)

Rip all the rubber lines out. Be careful of the wiring harness that is in there as well, don't want to tear that.

1st: 3/4" Line running from the oil/air separator (OAS) to the J boot: (See picture below, color key for arrows is on the next page)

There is a black 90 degree $\frac{3}{4}$ " elbow coming off the top of the OAS: Mine was so hard and brittle, that I replaced it by going to Napa. They found a radiator hose with a 90 degree elbow in it, of proper diameter and I just cut it to fit. It was 10 bucks. This was the only hose that was not included in the kit.

After the 90 degree elbow is on the OAS, plug in a male/male connector and fasten with hose clamp. Then attach the $\frac{3}{4}$ " purosil hose and clamp down. (You will end up cutting about 6 inches or so off the end of the hose, to make it fit to length).

Plug in the other male/male connector to the other end of the blue hose, and then plug the small $\frac{3}{4}$ " bent hose into that. Then add the 3rd male/male connector and plug into the J boot.



The color key for arrows in the picture above is as follows:

Blue: New Lindsey $\frac{3}{4}$ " hose which you will cut to length to make fit. (sorry about the dirty fingers)

Yellow: Line running from wastegate to reliaboost then to the banjo bolt on intercooler pipe

Red: Updated Porsche hoses from intake to ISV to intercooler pipe

Green: ISV (Arrow on the ISV is pointing to the left short curly hose)

You can see the little blue lines are just pushed out of the way right now since you will do those last. This picture was taken after I had done the update, and had the intake off for another reason.

2nd: 1/2" Line running from the brake booster to T fitting to Intake manifold (Between 2nd and 3rd runners)

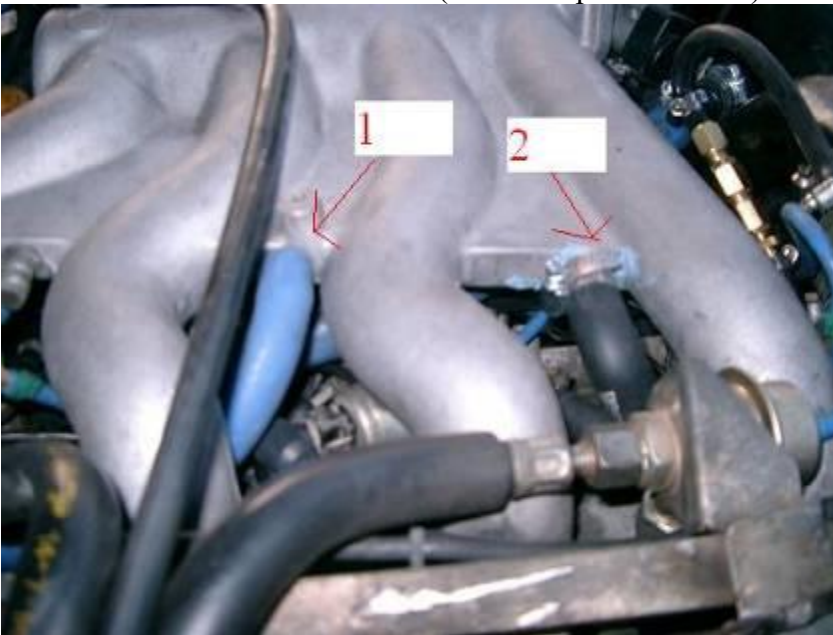
In the picture below, I had not yet replaced the line coming from the brake booster to the T fitting, because the connection was so hard to get off. I did this later after I had the heat shield off for a turbo project. I have seen the fitting pop off on other vehicles, mine was just stubborn and I didn't want to break anything. This is where the the updated hose that is now available from Lindsey would go. Again, it needs to be cut at that T fitting.



This picture below shows the plastic T fitting.



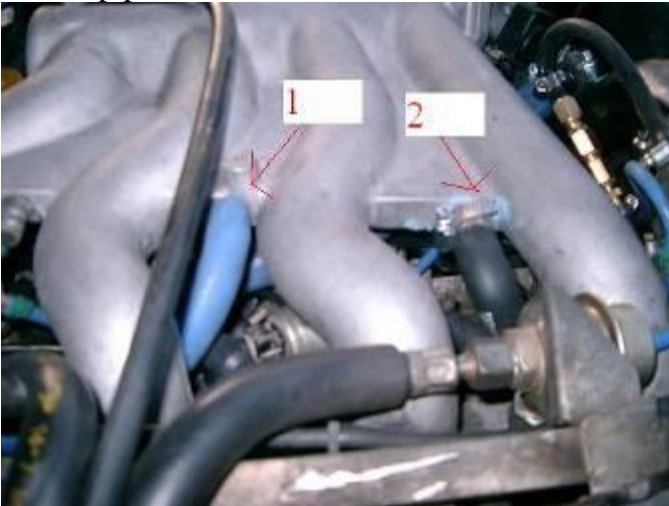
Then the 1/2" line runs here to the intake: (# 1 in the picture below) It needs a hose clamp, just hadn't done that yet.



Here is an updated picture showing the black brake booster line replaced completely. Still needs to be zip tied to the firewall.



The next line are factory Porsche lines that run from the intake (#2), to the ISV, and then from the ISV to the side of the intercooler pipe.



Here you can see these hoses laid out (Red arrows), this is how you will leave them until you put the intake manifold on.



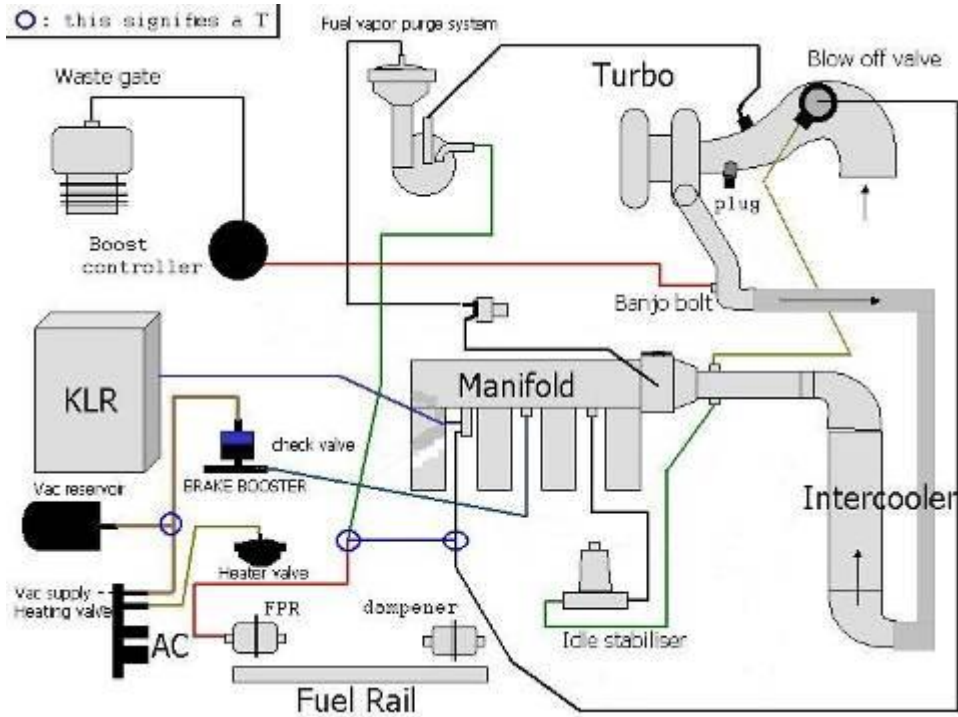
In the picture below you can see the ISV. This is shot between the 1st and 2nd intake runners. Notice the arrow on the ISV pointing towards the short hose.



Oh and the blue goo around my Intake connections is because the metal nipples came loose that are suppose to be welded to the intake manifold, so I just slapped some blue gasket maker on them, and it sealed them up good. JB Weld would be preferred.

Now for all the little lines:

Refer to this diagram, it shows how to run the lines very good. It is included in Lindsey's kit, but I copied this from someone off of Rennlist, where it was posted many times, so this is not my diagram. Also, there should be a [blue circle](#) on the right of the fuel damper, denoting a brass T fitting, for some reason it was left out.



First is the Fuel Purge Valve:
The line I am holding here:



Will run to the thermo valve circled in the picture below. (I bypassed this and went straight to the throttle body due to one of the nipples being broken on the thermo valve. Someone said you really don't need it to be hooked up. The picture below is shot between the 3rd and 4th intake runners. You can see the banjo bolt for the boost gauge.



It will then run from the thermo valve to the underside of the throttle body seen here: Sorry the picture sucks. You can see the electrical connector for the throttle body at the top center of the picture to give you an idea.



The next vacuum line runs from the fuel purge valve (one I am holding) in this picture:



It will run from the above picture to a brass T fitting, (seen almost directly in the middle of the picture) which will be connected to a line from the FPR also, the line will then go to the Banjo bolt that the boost gauge is connected to.



The next vacuum line is from the BOV here, which goes to the fuel damper in the 2nd picture below: Via a Brass T fitting.



All the small lines should have zip ties on them to keep them securely in place. Some had not been done at the time of the pictures.