

42 Draft Designs

Inline Vacuum Manifold Kit – Installation Instructions

Kit Contents:

Vacuum Manifold (6 ports)

Input Fittings (all fittings 1/4" NPT threads)

2 Straight Barbs: 1/2" Tubing

2 90° Barbs: 1/2" Tubing

2 Straight Barbs: 3/8" Tubing

2 90° Barbs: 3/8" Tubing

Output Fittings (all fittings 1/8" NPT threads)

1 Straight Barb: 1/8" Tubing

3 Straight Barbs: 3/16" Tubing

1 Straight Barb: 1/4" Tubing

Tubing

4' 1/8" ID Tubing

12' 3/16" ID Tubing

4' 1/4" ID Tubing

2 1/8" NPT Output Plugs

10 4" Zip-Ties

Tools Recommended:

tubing cutters, sharp knife, Teflon tape, 7/16" deep socket, 7/16" open end wrench, 9/16" deep socket, 9/16" open end wrench

Before You Begin:

This kit is designed for universal installation. We have included an assortment of tubing and fittings which should allow for installation on *most* vehicles with *most* accessories. Because every engine differs, not every combination of tubing and fittings can be provided. Before you begin installation check the tubing sizes on your accessories to be sure the tubing sizes and lengths included will fit properly. Additionally, be sure the included input fittings will fit your factory tubing. In some cases alternative methods of installation may be necessary. If additional tubing and fittings are necessary please visit our website. We offer the tubing and fittings included in this kit individually, as well as additional sizes and configurations.

1. Locate the largest vacuum line in your engine bay. Typically, the largest vacuum line on a engine runs from the intake manifold to the brake booster. Remove one end of this line and determine the correct fittings to use. We have included fittings for 3/8" and 1/2" tubing which should accommodate metric & sizes in-between. Locate an area on this vacuum line to install the inline manifold. The area should be between the intake manifold and any vacuum accessories such as check valves or emissions equipment. The area should be long enough to install the manifold without kinking the line or disrupting the flow of the line. Some larger vacuum lines have curves molded into them. Pick a straight section, or use a 90° barb to work the manifold into a curve. Choose an area which will be supported once the weight of the manifold is added.
2. Install the input fittings that your installation requires. On the straight barb use a 9/16" deep socket. On a 90° barb use the closed end of an open end wrench. Use one wrap of Teflon tape on all threads.
3. Hold the assembled manifold above your chosen line and confirm fitment. Mark the vacuum line at the ends of the manifold (purposely leaving a bit of extra tubing). Using a sharp knife or tubing cutters, cut the center portion out of the vacuum line. Clean up your cuts and install your manifold. Depending on the size of your tubing, small hose clamps may be necessary. In most cases they are not. The barbs on our fittings are aggressive and typically do not require tubing clamps.

4. With the manifold installed, route your chosen output vacuum lines from the manifold to their prospective locations. Install your output fittings in the order which makes sense in your installation. Use a 7/16" deep socket and one wrap of Teflon tape on all fittings. Plug any empty ports.
5. Slide your tubing onto the barbs. This may take some force. Use a drop of water to lubricate the barb if necessary. No zip-ties or hose clamps should be necessary.
6. Finish routing your output tubing. When routing tubing do not bend or kink tubing. Zip-tie tubing where necessary for a clean installation. Cut tubing to length as needed and slide onto the barbs of your vacuum accessories. If you are unable to get a tight fit use a miniature hose clamp or zip tie. Whether hidden, exposed, or stealth your tubing routes should be smooth, flexible, and safe.

A Few Tips:

- You will have extra fittings and tubing. Save it! You will need it later if your engine setup changes.
- To avoid marking the plastic barb fittings use sockets whenever possible. 6 point sockets are better than 12 point.
- When threading the fittings into the manifold use 1 wrap of Teflon tape. Turn the fittings until they are tight. Because plastic is soft, the fittings can be turned (with force) until they bottom out. Our manifold is designed to allow the plastic fitting to thread in 75%. NPT threads are tapered, so once the fitting seems tight it will seal just fine.
- Avoid heat. Our fittings are made of Glass Filled Nylon, which is a plastic polymer protected by glass fibers. Our fittings can withstand blasts of heat, but naturally won't stand up to open flame. Our fittings should not be installed on accessories which are mounted to exhaust components – such as wastegates. They are frequently used for coolant systems, so they can stand up to pretty much anything else. The same goes for our tubing. It can take the heat, but most likely won't stand up to the heat of a wastegate. In this case, use a 6" length of high temperature rubber or silicone tubing and a straight barbed coupler to fit our tubing.
- Never leave a port on our manifold open. Always plug the port to avoid a vacuum leak.

Alternative Installations

Some engines do not have a vacuum line large enough to fit our manifold. If you only have a smaller line to work with, don't panic. Fittings can be purchased which will allow installation. Check our website for fitting options or contact us with your specific needs.

Some engines have hard plastic vacuum lines. In this case, measure the OD of the vacuum line. Using soft tubing (rubber, silicone, or our flexible tubing) create a pair of couplers roughly 2" long. Using these couplers, the appropriate input fittings, and some hose clamps the manifold can be installed without issue. In many cases, the hard line can be completely replaced by rubber tubing into which the manifold can be spliced.

Some engines have metal vacuum lines with rubber tubing pressed onto each end. In these cases there may be enough length in the rubber sections to install the manifold. Certain sections of the vacuum line may be replaced with the manifold. If the metal line is large enough it can also be cut-out and the manifold installed using couplers as described above.