

H P S I
HI PERFORMANCE STORE INC

BOOST RETAINER VALVE INSTALLATION INSTRUCTIONS

For questions or tech support, CONTACT US!

Email: greg@hiperformancestore.com sales@hpsimotorsports.com

Sites: www.hiperformancestore-fiat.com www.hpsimotorsports.com

Phone: 918-760-0668

Thank you for buying our product. Please read these instructions thoroughly before beginning installation.

Boost Retainer Valve Installation Instructions

Thank you for purchasing this product. It works very well, and is easy to set up. Please read these instructions thoroughly before beginning installation.

What's included:

- Valve
- Pressure Switch
- (2) Female electrical connectors
- (2) One Ring connectors
- Zip Tie
- Mounting bracket (chrome) for valve
- 2 feet of 4mm silicone line with 8mm adapter (for pressure switch)
- 6 feet of 8mm silicone line (for valve connections)
- 5 feet of Red Wire
- 5 feet of Black Wire
- 5 feet of Wire Loom

Tools Needed:

- Wire stripper/cutter/crimper tool
- Various wrenches/sockets
- Razor blade
- Soapy Water

NOTE: The wiring is already attached to the valve for you. You will need your wire tool to trim off the wiring for the pressure switch, and also to attach your female connectors to the wiring.

Connecting everything is pretty simple. We recommend valve placement at the front of the battery box. ***You will need to remove your stock airbox for installation.***

Valve Mounting:

Note: This mount location causes us to use quite a bit of extra hose effectively making the “bypass hose” longer. However, this has absolutely no negative effects on system performance. This method was chosen because it locates the valve in an easy to access location. The valve will be mounted with the valve fittings side pointed upward, and the electrical housing pointed downward.

Gather your provided bracket, and use a wrench to loosen the large nut on top of the valve. Slide the large hole in bracket over exposed bolt, replace large nut, and tighten down to bracket. Your bracket will mount via the smaller holes underneath the battery box, like below:



****The arrows drawn on the valve indicate direction of flow. In order for the valve to work properly with the hose routing, you should have the valve positioned and installed so that the arrows point towards the engine.****

Once mounted your installation is complete and should look like the picture below. Double check your hoses and routing to make sure everything is secure.



Pressure Switch Mounting:

This part of the installation is fairly easy. The system operates as follows. A pressure switch senses boost. When boost rises above the desired level, the switch closes and allows power to go to the valve.

The pressure switch mounts to the firewall with the included zip tie. Attach your switch to the existing lines on the firewall (see picture below).

The Pressure switch zip ties to the firewall *(photo courtesy of 2300cc)*.



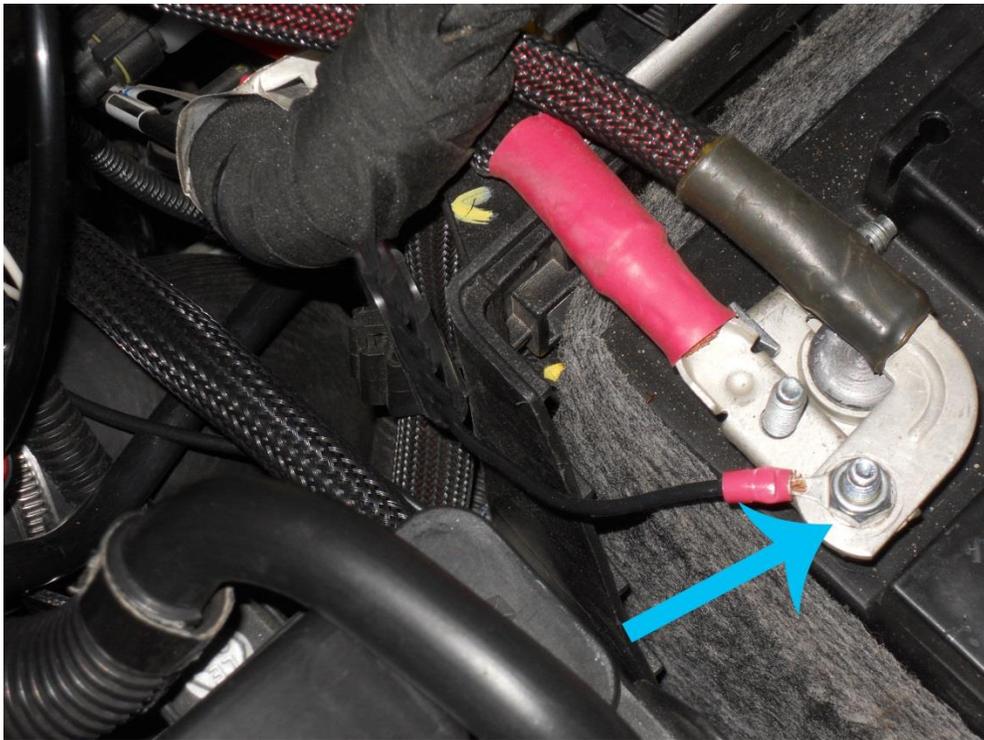
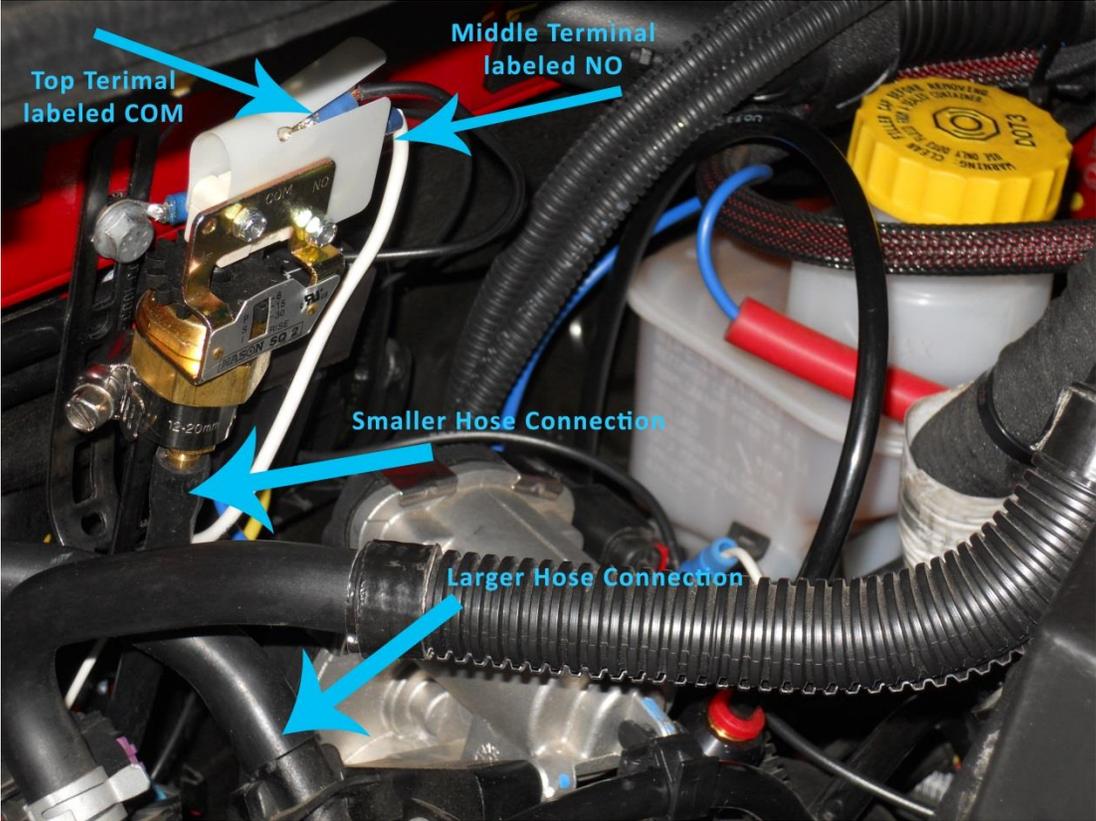
Wiring: One valve wire needs to go to a ground. Use the included one ring connector and attach it to any ground you would like (pull the wire from the valve to your ground destination, and trim so as not to have excess wire hanging around, then attach your one ring connector to the wire). We suggest attaching it to the ground at either the included pressure switch bracket or the bolt on the firewall, right next to it. Both of those items attach to the firewall with a bolt that grounds very well and isn't likely to suffer from corrosion. We suggest routing it around the outboard side of the battery box.

The arrows in the picture below show the grounding locations we use and recommend.



Next, we need to connect the two power wires. The first wire goes from the **valve** to the top terminal labeled “COM” on the **pressure switch** with a provided male connector. The second wire goes from the middle terminal on the pressure switch labeled “NO” to the battery positive terminal where it connects with a provided ring connector.

Below, you can see where the power wire running from the valve attaches to the “COM” terminal on your pressure switch. The wire running from the “NO” terminal on your pressure switch will connect to the positive terminal on the battery, (see image below this one).



Hoses: Next we need to route the hoses. This is really easy. Remove the Air Filter Housing and locate the “Bypass Hose”. If it’s confusing, it’s the hose that connects to the main air intake. With a razor, cut the hose at a convenient spot. I suggest cutting it before it passes under the air filter box because room under that box is tight and you will be adding some hoses.

This is the bypass hose, and the blue arrow shows about where you should cut it. Use the throttle body as a reference to locate (shown just to the right of the arrow).



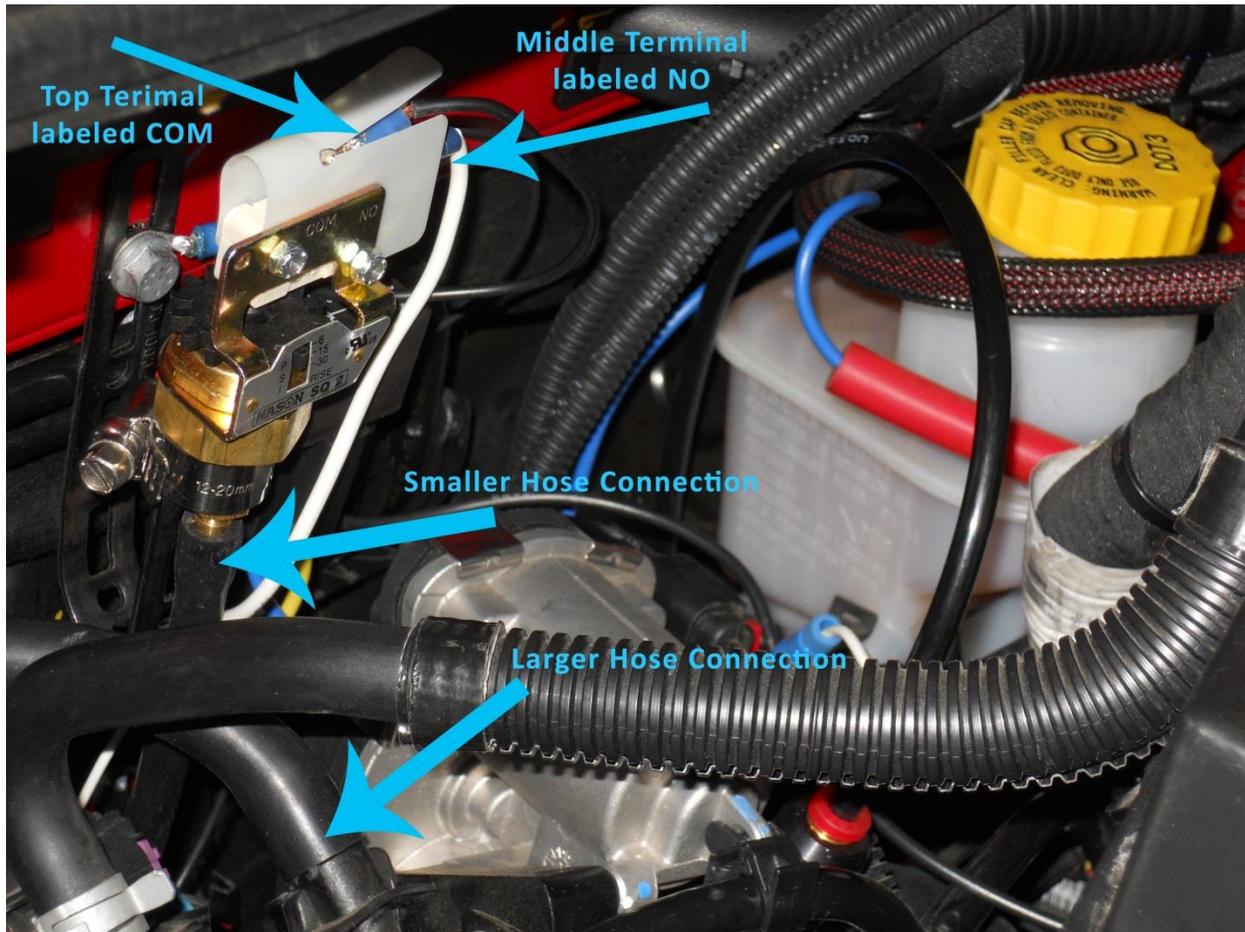
After you’ve made the cut, there are now two hoses: **1). The end of the hose coming from the boost pipe, and 2). The end of the hose going back to the air intake.**

Hose #1: This is the hose coming from the boost pipe. It will need to be connected to the silicone hose coming from the side of the valve facing outward towards the driver side fender (or inlet side of valve). Use your provided silicone, and push Hose #1 into the silicone hose. Use a soap and water solution to lube up the factory hose, and the inside of the silicone for easy installation. It should go on an inch or more. The silicone hose will have to make a turn and work its way to the inlet side of the valve. We include plenty of length, and I suggest going around the battery box. Run the silicone to the inlet side of the valve, measure, cut, and push on to the valve fitting.

Hose #2: This is the remaining side of the hose you spliced, which goes back to the air intake. This hose will be connected to the provided silicone, and then connected to the outlet side of the valve (valve fitting pointed towards inside of the engine compartment). Perform a similar procedure like you did previously with hose #1, lubing the factory hose and silicone, then pushing one into the other an inch or more. Run the silicone hose to the outlet side of the valve, measure, cut and push on to the valve fitting.

Now we'll connect the hose coming from the pressure switch. The factory provided us with a nice location to take boost pressure. There is a boost port near the top of the driver's side position on the intake manifold. It has a factory cap on it which must be CAREFULLY removed. I use a razor knife to remove the outer covering and then carefully pull the cap off with pliers. Then put the larger end of the included boost hose onto the fitting and the smaller end (it's two hoses joined together with a nylon adapter) on to the inlet port on the pressure switch.

The arrows towards the bottom of the photo show the two ends of the pressure hose. The bigger end goes onto the manifold, the smaller end to the pressure switch. Take a good look at this picture to understand where the boost port on the manifold is located.



System operation:

The valve is totally automatic and will close whenever the pressure switch closes. **The valve comes pre-set to 12 psi.** A setting of 12psi works very well, although we've tested extensively at 10psi also with great success. With the valve set to close at 10-12psi you will NOT get a check engine light in normal street or track driving. Your evap system will function correct and purge all vapors and not soak your charcoal canister with fuel.

The valve could be set to trigger below 10-12psi. We have tested it as low as 9psi and not had any problems. However there is a case of diminishing returns here. At lower boost levels, the leak is less significant, thus plugging the leak at lower boost levels isn't as important from a performance standpoint.

If you set it too low, it's possible you will cause a check engine light and trigger the P1CEA code. We do not know exactly how low it would have to be to cause that to happen, and driving style will have an influence on that anyway, so it's impossible to give an exact minimum number.

Nevertheless, at our recommended settings or even higher, the valve works excellent. Enjoy your new boost retaining mod, and don't let that boost leak plague you any longer.

Thanks for purchasing this mod, and stay tuned for more...

-HPSI