



# INSTALLATION INSTRUCTIONS

## FUEL PULSE DAMPER (FPD-R, FPD-XR)

### IN-LINE AND DIRECT MOUNT CONFIGURATIONS

Support: [info@radiumauto.com](mailto:info@radiumauto.com)

Document# 19-0097

### CAUTION

Only a qualified technician following applicable safety procedures should perform the installation of this product. One must have knowledge in repair and modification of fuel systems and general vehicle modifications to install this product.

**Gasoline and other fuels are flammable and can be explosive.**

Only install in a well-ventilated location to minimize buildup of fuel vapors.

No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended.

Proper eye and personal protection is required at all times during installation.

### WARNING

The fuel system is under pressure! Do not loosen any connections until relieving the fuel system pressure.

Consult a service manual for instructions on relieving fuel pressure safely. This product is designed for off-highway and racing use only.

Fuel system components may not be legal for sale or use on emissions controlled motor vehicles. Consult local, state, and federal laws.

**NOT TO BE USED ON THE LOW PRESSURE SIDE OF MECHANICAL FUEL PUMPS (INCLUDING DIRECT INJECTION)**

## Vacuum Port Connection

The vacuum port is #10-32 thread tapped. Always use a wicking thread locker, such as green Loctite for this port. If fuel pressure operates within the specified pulse damper range in all dynamic scenarios, the vacuum port can be plugged.

If fuel pressure operates within the specified pulse damper range when not in boost, but outside of the pulse damper range in boost, a vacuum line from the intake manifold must be connected. This will prevent the internal diaphragm from bottoming out and becoming unfunctional. Use a 4mm-5.5mm rubber vacuum hose on the provided barb. **NOTE: If connecting a vacuum line, temporarily remove it before starting the engine the first time. Once the engine starts, confirm no fuel is coming out of the pulse damper barb. This verifies that the internal components are in perfect working order.**

## Fuel Pulse Damper Plumbing

All FPDs can mount at any angle including upside down. Keep the FPD away from excessive temperature areas that could preheat the fuel or damage internal components.

NOTE: For older dampers (20-0176 and 20-0177) that do not have the swiveling feature, the FPD top cap can be clocked to an alternative angle. But pay close attention to the diaphragm and make sure it is seated properly before reassembling. **Diaphragm damage from reassembly error voids the warranty.** Torque small screws to 40 to 45 in-lbs in a gradual alternating pattern.

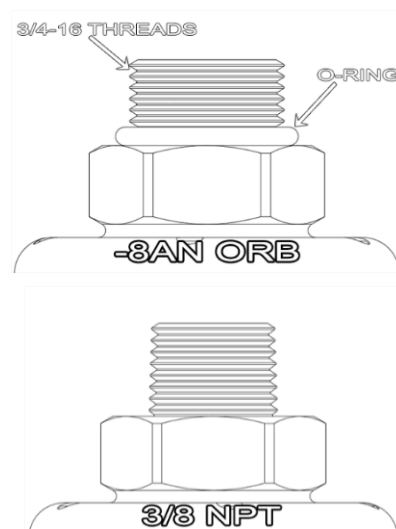
## Mounting, Direct Mount Dampers

P/Ns: 20-0176, 20-0177, 20-0776, and 20-0777

These direct mount fuel pulse dampers use standard 3/4"-16 threads (8AN ORB) and requires the included O-ring for sealing. The female mating port must be threaded with 3/4"-16 female threads and feature a SAE J1926 chamfer for the O-ring to seat properly. **Lubricate the O-ring** with clean engine oil before installing. No thread sealant or PTFE is required.

P/Ns: 20-0178 and P/N 20-0179

These direct mount fuel pulse dampers use tapered pipe threads. They require a 3/8" NPT female tapped mating hole. Threads should be tapped deep enough so at least 4 threads are engaged with the FPD. O-rings are not required because the seal is obtained from the threads meshing together. When installing, it is required to apply PTFE paste to the threads for proper lubrication and sealing. Screw the fuel pulse damper finger tight and then tighten an additional 1.5 to 3 turns using a wrench.



## Installation, In-Line Dampers

P/N 20-0199 and P/N 20-0200

The inline fuel pulse dampers have female ports that are threaded for 8AN ORB (3/4"-16). Before installing adapter fittings, **lubricate both O-rings with clean engine oil**. The small port in the center can be used for a gauge or pressure sensor, or it can be plugged with the included 1/8" NPT hex plug. PTFE paste must be applied to NPT threads.

For mounting, make two holes on the mating face that are 1" (25.4mm) apart using a 17/64" (6.75mm) drill. Insert the included M6x1mm bolts and tighten the M6x1mm nuts using a 10mm socket wrench and 5mm Allen wrench.

The inline FPD kits do not include plumbing. Modification or replacement of the preexisting fuel hoses will be necessary. Re-route the primary fuel feed line to the inline FPD and use a second hose to route from the opposite FPD port into the fuel system. Note: The FPD is NOT flow direction specific.



## Servicing

Radium Engineering recommends regular inspections of the fuel pulse damper. The internal diaphragm is a "wear and tear" item and can be easily serviced.

To disassemble, first apply force to the top cap. Simultaneously remove the 5 perimeter screws using a 3mm Allen wrench. Remove the spring and inspect the diaphragm. Replacement fuel pulse damper diaphragms can be purchased from [www.radiumauto.com](http://www.radiumauto.com). When reinstalling, compress the spring using the top cap and torque the 5 screws to 40 to 45 in-lbs in a gradual alternating pattern.