

INSTALLATION INSTRUCTIONS

FUEL RAIL

MITSUBISHI EVO 8/9

Document: 19-0075
 Support: info@radiumauto.com

CAUTION

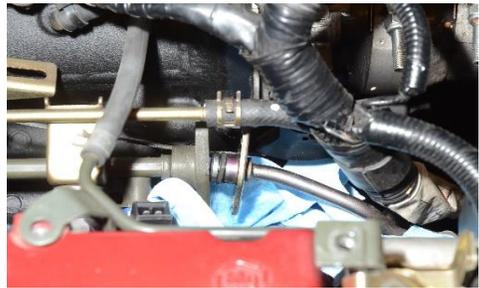
This product is to be installed by persons with knowledge in the repair and modification of vehicle fuel systems and general vehicle modifications. Only a qualified technician who is aware of applicable safety procedures should perform the installation of this product.

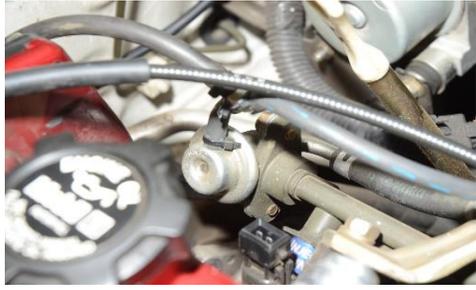
Gasoline and other fuels are flammable and can be explosive.

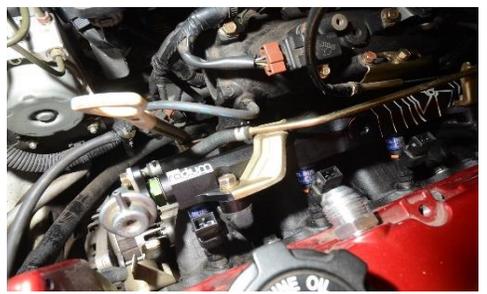
Installation must be performed in a well ventilated location to minimize build up of fuel vapors. No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended. Proper eye and personal protection is required at all times during installation.

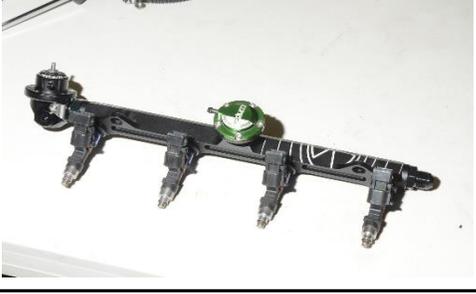
WARNING

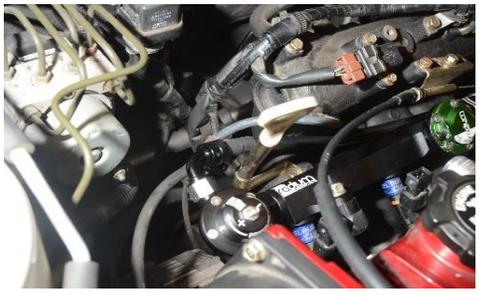
The fuel system is under pressure! Do not loosen any connections until relieving the fuel system pressure. Consult a service manual for instructions on relieving fuel pressure safely. This product is designed for off-highway and racing use only. Fuel system component may not be legal for sale or use on emissions controlled motor vehicles. Consult local, state and federal laws.

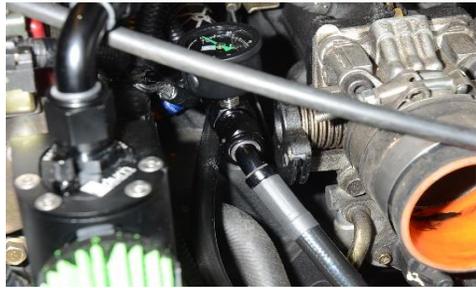
STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	10mm Socket	Remove the two bolts holding the wiring harness to the back of the valve cover. This allows easier access to the fuel rail area.	
2	Pick	Use a pick to remove the metal clips on the fuel injector electrical connectors and pull the connectors off the injectors. Do not lose the clips.	
3	10mm socket	Remove the two bolts holding the fuel feed line to the end of the fuel rail.	
4		Pull the feed line out of the end of the factory fuel rail.	

5	Pliers	Use pliers to loosen the spring hose clamp and remove the return hose from the pipe on the fuel rail.	
6		Remove the vacuum line from the nipple on the fuel pressure regulator.	
7	12mm Socket	Remove the two mounting bolts holding the OEM fuel rail to the intake manifold. Be careful to not drop the spacers behind the engine.	
8		Remove the OEM fuel rail from the engine bay. Drain the fuel out of the rail into a fuel safe container.	
9		Inspect the injector seats in the intake manifold. Make sure the rubber donuts are in place. Clean each donut to remove dirt that may have built up in these areas.	
10		Transfer the fuel injectors into the new Radium fuel rail. Make sure the O-rings are clean and lubricated with a small amount of engine oil.	
		If installing aftermarket injectors, make sure they are a direct fit OEM replacement.	

11	1/4" Allen wrench	<p>20-0119-10 or 20-0119-PK: Install the port fittings included in the kit into the fuel rail corresponding to the picture at right. Lubricate all fitting O-rings with a small amount of oil before installing them.</p> <p>20-0119-12: Install appropriate fittings for your custom installation. Lubricate all fitting O-rings prior to installation.</p>	
	1" Wrench		
12	10MM Socket	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Remove the OEM fuel pressure regulator from the OEM fuel rail.</p>	
13		<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Install the flange for the fuel pressure regulator adapter as shown. Make sure the side with the recess is facing outward.</p>	
14	10MM Socket	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Loosly install the OEM fuel pressure regulator into the adapter as shown. Do not tighten the bolts yet. It is not necessary to remove the piping from the fuel pressure regulator return port.</p>	
15		<p>Install the fuel rail onto the intake manifold. Maneuver each injector into the donut seals. Re-use the plastic fuel rail mounting spacers that were used with the OEM fuel rail.</p>	
16	12mm Socket	<p>Install the mounting bolts. Make sure the spacers are centered on the mounting tabs before tightening the bolts. If this is not accomplished there is a chance the lips on the spacers will break off.</p> <p>If using the OEM fuel return line make sure the mounting brackets are installed under the bolt heads as shown. Clocking of the OEM fuel pressure regulator might be necessary to get the brackets positioned correctly. Once properly orientated, tighten the two OEM fuel pressure regulator bolts.</p> <p>Plug in all fuel injector connectors and secure with the metal clips.</p>	
	10mm Socket		

17	14mm Flare Nut Wrench	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Disconnect the factory fuel feed line from the hard line underneath the brake master cylinder (LHD cars). Use a 14mm flare nut wrench and a 19mm open end wrench. Significant force will be required. Try not to bend/distort the OEM hard line.</p>	
	19mm Wrench		
18	14mm Flare Nut Wrench	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Install the inverted flare adapter fitting included in the kit and tighten.</p>	
	19mm Wrench		
19	Pliers	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Install the rubber fuel return line to the OEM return pipe. Secure with the OEM spring hose clamp.</p> <p>Locate the 6AN hose in the kit and attach it to the 6AN fuel rail inlet fitting. Tighten the hose end.</p>	
	11/16" wrench		
20	19mm wrench	<p>Follow this step for 20-0119-10 or 20-0119-PK ONLY</p> <p>Attach the other end of the hose to the fuel feed line green adapter fitting and tighten. It will be necessary to hold the adapter with a wrench while the hose end is tightened.</p> <p>Make sure all fuel connections are tight. Start the engine and check for leaks.</p> <p>Installation Complete</p>	
	11/16" wrench		
21	1" Wrench	<p>The following is for the Evo 8/9 Complete Fuel Delivery System ONLY</p> <p>Configure the fuel rail as shown by installing the Radium fuel pressure regulator, pulse damper, and inlet adapter fitting as shown.</p> <p>Orientating the damper and pressure regulator caps may be necessary to point the vacuum barbs in an ideal direction. Consult the specific product instructions for more details.</p> <p>Lubricate all O-rings with a small amount of oil.</p>	
22	12mm Socket	<p>Place the fuel rail on the intake manifold. Line up each injector with the ports on the runners.</p> <p>Bolt the fuel rail in place re-using the factory spacers and screws.</p>	

23	11/16" Wrench	Find the -6AN return hose in the kit and attach the 90 degree end to the return fitting on the regulator. Route the hose along the fuel rail over to the area of the LH strut tower. Make sure the hose does not interfere with the operation of the throttle body.	
24	19mm Wrench	Attach the other end of the 6AN PTFE hose to the fuel line adapter installed in Step 18. NOTE: The factory feed line will now function as the return line.	
	11/16" Wrench		
25		Plug in all fuel injector connectors and secure with the metal clips. Plug in any other accessories that were previous unplugged for access to the fuel rail.	
26	Hose cutter	Connect vacuum hoses from the pressure regulator and fuel pulse damper to a port on the intake manifold (not throttle body). Use the hose and "Y" fitting that are included with the damper.	
27	7/8" Wrench	Install the in-line fuel pressure gauge adapter on to the fuel rail inlet fitting. Make sure the 1/8" NPT port is pointed in a direction so that the fuel pressure gauge can be installed.	
28	PTFE Paste	Apply a small amount of PTFE paste to the fuel pressure gauge threads and screw it into the adapter from the previous step. Tighten the gauge by using a wrench on the square fitting on the back of the gauge.	
	7/16" Wrench		

29		Find the 43" long 8AN PTFE hose in the kit and slide the end with the straight hose end down into the back of the engine bay. Route the hose just outboard of the steering shaft through a passage to the underside of the car.	
30	7/8" Wrench	Connect the 45 degree hose end to the fuel pressure gauge inline adapter. Make sure the fitting is clocked so that there is no interference with throttle body operation and tighten. Refer to the installation instructions for the Evo 8/9 fuel pump hanger for the remaining steps to complete the installation of the fuel delivery system.	

See diagrams below for some of the many ways to configure the fuel rail

