



# INSTALLATION INSTRUCTIONS

## FUEL PRESSURE REGULATOR KIT

### 99-05 MAZDA MX-5

Document: 19-0331

Support: info@radiumauto.com

**FOLLOW THE AREAS BELOW IN ORANGE COLOR ONLY IF THE OEM FUEL PUMP HANGER ASSEMBLY IS STILL INSTALLED.**

#### 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.**






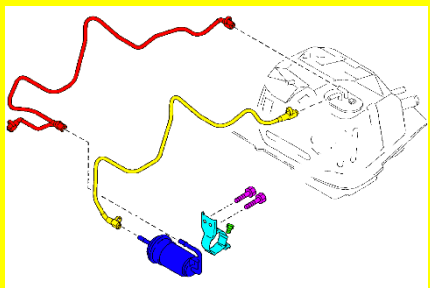
Only install in a well-ventilated location to minimize buildup of fuel vapors.




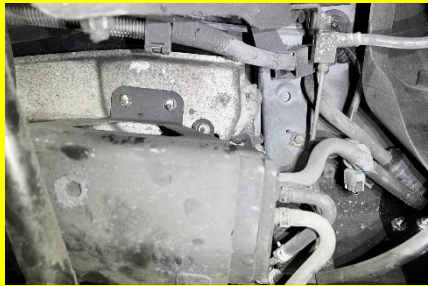


No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended. Proper eye and personal protection is required at all times during installation.

#### WARNING




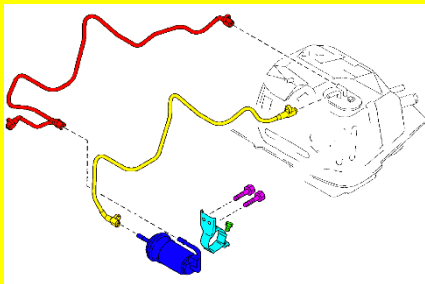


The fuel system is under pressure! Do not loosen any connections until relieving the fuel system pressure. Consult a service manual for instructions on relieving fuel pressure safely. This product is designed for off-highway and racing use only. Fuel system components may not be legal for sale or use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



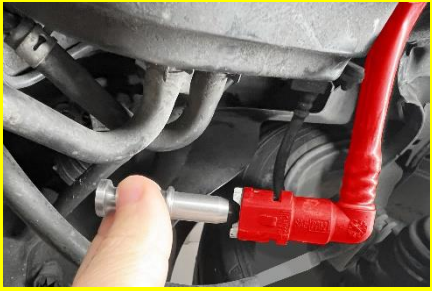

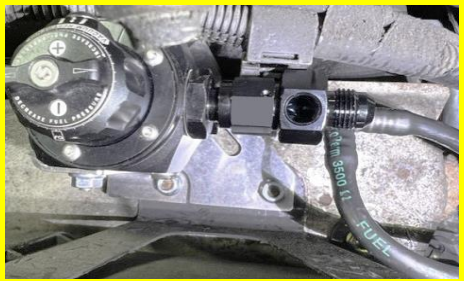

STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1		The terms "driver-side" and "passenger-side" will NOT be referenced. As depicted, these instructions will always reference "LH" and "RH" areas of the vehicle.	
2	Pry Tool Screwdriver	The fuel pump assembly is located underneath the rear parcel shelf. As shown, carefully remove the 5 plastic carpet retainers using a pry tool. From the front, lift up and tightly roll the carpet towards the rear to expose the fuel pump access cover.  Next, remove the fuel pump access cover.	
3	10mm Socket	To unplug the fuel pump connector (shown), depress the thumb lock and pull. Start the vehicle and allow the engine to stall. This will depressurize the fuel lines.  Remove the fuel cap and reinstall. This will depressurize the air volume inside the fuel tank.  Disconnect the negative battery terminal.	
4	Rag	Push the SAE quick connect fuel line fittings further on, then simultaneously squeeze the 2 outer locks and pull away. Have a rag handy.	







5	7mm Socket	There will be a metal strap that needs to be removed. First, unscrew the nut, as shown. Next, look under the sheet metal and find the line that it is fastened to. Squeeze the plastic clip to remove the strap.	
6	Bucket	<p>Remove the 8 perimeter screws.</p> <p>Pull up, tilt, and twist the assembly to clear the fuel float arm. As shown, place the fuel pump hanger assembly into a bucket. then set onto a workbench.</p> <p>Cover the gas tank opening to prevent dirt and/or debris from accidentally falling in.</p>	
	Screwdriver		
7	Cutters	The fuel pressure regulator (FPR) is mounted next to the fuel pump. First, cut the cable zip tie that secures the low pressure fuel return hose to the metal fuel pump bracket.	
	10mm Socket	<p>Remove the two M6x1mm bolts that secure the FPR.</p> <p>NOTE: Low pressure fuel will now return out of this 2 bolt flanged pipe.</p>	
9		<p>Inspect the large fuel tank gasket. Replace if necessary. Mazda P/N: BP4W-60-962</p> <p>Reinstall the fuel pump hanger assembly in reverse order.</p>	
10		<p>Reference the following factory items depicted.</p> <p>Blue: OEM fuel filter</p> <p>Cyan: OEM fuel filter mount</p> <p>Purple: OEM fuel filter mounting hardware</p> <p>Yellow: OEM fuel feed line from fuel pump to the fuel filter</p> <p>Red: OEM fuel feed line to engine and back to OEM FPR</p>	

11		The OEM fuel filter is located in front of the EVAP charcoal canister in between the drive shaft and the RH rear wheel behind a plastic cover (shown).	
12	Screwdriver	Remove the 5 plastic clip retainers and pull off the fuel filter cover.	
13	Rag	<p>Just the fuel line TEE (shown in red) that routes from the filter outlet to the engine as well as back to the fuel tank will be removed. The fuel line that routes from the pump hanger to the filter inlet (shown in yellow) can remain attached.</p> <p>Push the SAE quick connect fuel line fittings (red arrows) further on, then simultaneously squeeze the 2 outer locks and pull away. Have a rag handy.</p>	
14	10mm Socket Wrench	<p>Remove the nuts that secure the EVAP charcoal canister and allow it to hang.</p> <p>NOTES:</p> <ol style="list-style-type: none"> <li>1. The OEM nuts will likely be oxidized and/or rusted. Replacements are included so these will NOT be reused.</li> <li>2. Inspect the OEM studs for corrosion or damage. Chase with a M6x1mm die, if necessary.</li> </ol>	
15	Oil Lubrication	<p>Install the provided fittings to the regulator ports as shown.</p> <p>Install the 2 long bolts and 2 of the M6x1mm flange nuts to the bracket, as shown.</p>	
	1/4" Allen Wrench		
	22mm Wrench		
	16mm Wrench		
	10mm Socket		
	4mm Allen Wrench		
16		Here is another view for the previous step.	

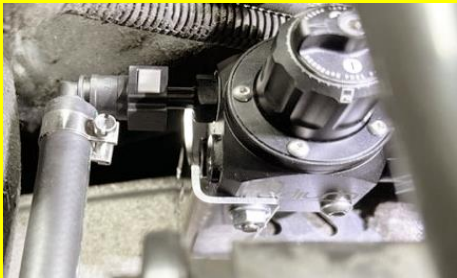








17	Threadlocker	Before installing a vacuum adapter, be sure to apply a wicking medium-strength threadlocker to the threads.	
18	1/8" Allen Wrench	<p>To keep a constant fuel pressure like the OEM fuel system, use the screw (shown) to plug the vacuum port.</p> <p>Notes if changing to a 1:1 vacuum reference:</p> <ol style="list-style-type: none"> <li>1. The MX-5 (NB) does not use a 1:1 FPR from Mazda.</li> <li>2. One of the other vacuum adapters would be used.</li> <li>3. There is no vacuum line (or hose) included in this kit.</li> <li>4. Remove the vacuum line when setting static fuel pressure.</li> </ol>	
19	12mm Wrench	Temporarily remove the M8x1.25mm nut that holds the RH rear emergency brake cable bracket.	
20		To permit the OEM fuel line (shown in red) to connect directly to the regulator return port, some lines will need to be shifted around. See below.	
21		Move the aforementioned OEM fuel line (shown in red) underneath the emergency brake cable mount and around the EVAP canister lines.	
22		Be very careful not to force the OEM fuel line (shown in red) as it could potentially kink.	

23	10mm Socket	Raise the regulator assembly up into position just behind the EVAP charcoal canister. Line up the 2 mounting holes with the OEM M6x1mm studs. Using the last 2 included flange nuts, secure the regulator assembly.	
24		Grab the same OEM fuel line (shown in red). Install this line into the regulator return port. Fully insert until a "click" is felt.	
25		<p>As shown, install the provided SAE quick connect plug in the unused OEM fuel line (shown in red). Fully insert until a "click" is felt.</p> <p>Tuck this section of the OEM fuel line up and out of the way.</p>	
26	12mm Wrench	Reinstall the bolt that holds the RH rear emergency brake cable bracket.	
27	11/16" Wrench	Install the inline 1/8" NPT adapter to the 6AN male fitting on the regulator. During the tightening process, be sure to rotate the 1/8" NPT port so it points directly downwards, as shown.	
28	Hose Cutter	Cut the provided hose in half.	

29	Oil Lubrication	Find the straight SAE quick connect hose end and one of the EFI hose clamps in the kit.	
	Screwdriver		
30	Marker	Route the hose around the EVAP charcoal canister towards the inline 1/8" NPT adapter. Temporarily thread the included 6AN PushLok hose end to the inline adapter, as shown.	
	Hose Cutter		
31	Oil Lubrication	Lubricate the PushLok barbs. With excessive force, fully seat the hose end into the hose, as shown.  NOTE: hose clamps are NOT required for PushLok hose ends.	
32	11/16" Wrench	As shown, permanently install the hose.	
33	Thread Sealant	Apply PTFE paste to the fuel pressure gauge threads.	
34	11mm Wrench	Spin the fuel pressure gauge into the 1/8" NPT port of the inline adapter. Hand tighten the gauge, then add another 1.5 to 3 turns with a wrench.	



35	Oil Lubrication	Find one of the 90 degree SAE quick connect hose ends and one of the EFI hose clamps in the kit.	
	Screwdriver		
36	Marker	Direct the hose around the EVAP charcoal canister towards the OEM fuel hard line. This is the feed line that routes fuel to the engine. Temporarily install the other 90 degree SAE quick connect hose end to the OEM hard line.	
	Hose Cutter		
37	Oil Lubrication	Push the last included EFI clamp over the other end of the hose. Insert the 90 degree SAE quick connect hose end into the hose. Slide the clamp over the barbed area and secure.	
	Screwdriver		
38	Oil Lubrication	Push both hose ends onto the SAE quick connect male fittings until a "click" is felt.	
39	10mm Socket	Reconnect the battery.  Pressurize the fuel system and check for leaks.  Start and idle the engine. Recheck for leaks.	
40		Pressure Adjustment Notes: a. The regulator is NOT pre-set to a particular pressure. b. Mazda MX-5 (NB) fuel pressure: 60 psi. c. Tighten the knob (clockwise) to increase pressure. d. Loosen the knob (counter-clockwise) to decrease pressure. e. No locking necessary. Don't attempt to tighten the screw. f. It is not uncommon for pressure to drop after the pump is off. This behavior does not necessarily imply there is a regulator issue.	

41		Using the 5 OEM plastic clips, reinstall the plastic fuel filter cover, as shown.	
		<b>INSTALLATION COMPLETE</b>	