



INSTALLATION INSTRUCTIONS

FUEL HANGER PLUMBING KIT

BMW E36 E46

Document: 19-0399

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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.

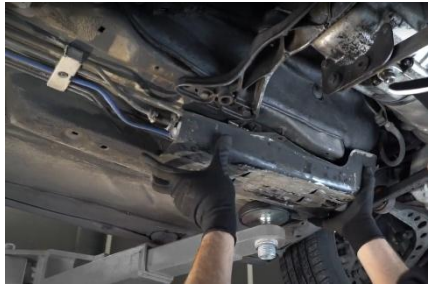

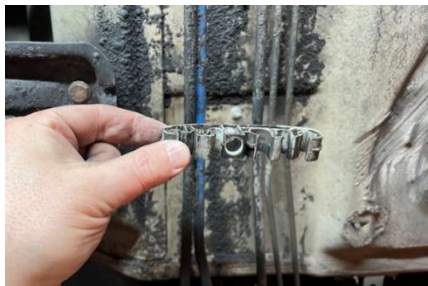


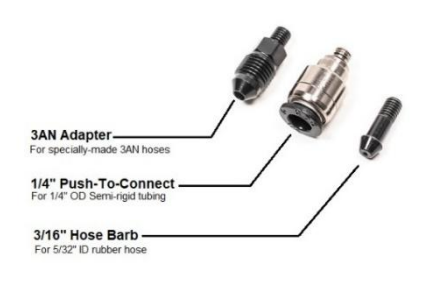
WARNING

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





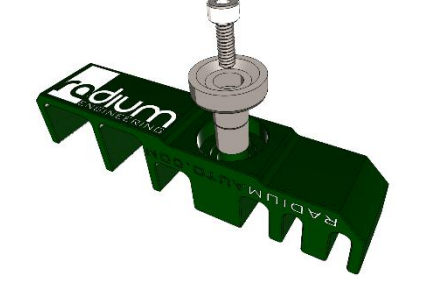

Consult a service manual for instructions on relieving fuel pressure safely. This product is designed for off-highway and racing use only.







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		NOTE: This document assumes a Radium fuel pump hanger has already been installed into the vehicle.	
2	Screwdriver	Remove the 10AN ORB to barbed banjo fitting from the LH passive side tank inlet port.	
	4mm Allen Wrench		
		Install the provided 10AN ORB to 6AN male banjo fitting into the inlet port, as shown.	
3	Screwdriver	Remove the 10AN ORB to SAE quick connect fitting from the RH active side tank outlet port.	
	5mm Allen Wrench		
		Install the provided 10AN ORB to 8AN male banjo fitting into the outlet port, as shown.	
4	13mm Socket	The fuel tank will need to be lowered slightly. If there is fuel inside, the tank will need to be supported.	
		First, remove the center screw near the drive shaft. Next, remove the 2 (RH and LH) fuel tank strap screws. These are at the rear of the tank.	

5	10mm Socket	<p>Remove the steel fuel filter bracket under the vehicle. Disconnect the fuel and return lines and remove the fuel filter from the vehicle.</p> <p>NOTE: For late model vehicles, disconnect and remove the fuel pressure regulator and vacuum line.</p>	
	Screwdriver		
	Rag		
6	13mm Socket	<p>Unscrew the 2 rearward fuel and brake line retainers.</p>	
7		<p>Pry all lines from the fuel and brake line retainers.</p>	
8		<p>For BMW E36, nothing shown will be reused.</p> <p>NOTE: For the BMW E46, only the 2 plastic mounting nuts, shown in the picture, would be reused.</p>	
9	Screwdriver	<p>To remove the fuel feed and return lines from the vehicle, first get into the interior of the vehicle. The OEM feed line is clipped onto the top of fuel tank in the center (under the sheet metal). Reach your hands into the RH and LH access hole openings one at a time. Feel for the fuel feed line and pull upwards to release.</p> <p>NOTE: For late model vehicles, remove the vacuum line.</p>	
10	Oil Lubrication	<p>Prepare the included fuel pressure regulator (FPR). Because this kit provides vacuum hose, the hose barb should be installed to the vacuum port. However, there are other fittings that could be used (as shown).</p> <p>NOTE: Use a wicking thread lock, such as green Loctite.</p>	 <p>3AN Adapter For specially-made 3AN hoses</p> <p>1/4" Push-To-Connect For 1/4" OD Semi-rigid tubing</p> <p>3/16" Hose Barb For 5/32" ID rubber hose</p>
	8mm Allen Wrench		
	Thread Locker		

11	Oil Lubrication	<p>Install the 8AN ORB to 6AN ORB fitting (shown blue) to the direct mount regulator inlet port.</p> <p>Temporarily spin the FPR onto the front LH fuel rail port.</p>	
	8mm Allen Wrench		
12	PTFE Paste	<p>Apply plumber's paste to the tapered male 1/8" NPT threads on the elbow (shown orange). Thread the elbow onto the port shown. Hand tighten the NPT threads, then add 1.5-3 turns with a wrench.</p> <p>NOTE: This should be properly clocked quickly in a later step.</p>	
	15mm Wrench		
13	PTFE Paste	<p>Apply plumber's paste to the tapered male 1/8" NPT threads on the gauge (shown green). Hand tighten the NPT threads, then add 1.5-3 turns with a wrench.</p> <p>NOTE: This should be properly clocked quickly in a later step.</p>	
	11mm or 7/16" Wrench		
14	PTFE Paste	<p>Apply plumber's paste to the tapered 1/8" NPT plug threads. Hand tighten the plug to the FPR side port. Now add 1.5-3 turns with a wrench.</p> <p>Install the SAE quick connect the return port.</p>	
	3/16" Allen Wrench		
	Oil Lubrication		
	5/8" Wrench		
15	Oil Lubrication	<p>NOTE: Install the FPR to the rear fuel rail port.</p>	
	7/8" or 22mm Wrench		
16	Oil Lubrication	<p>Install the 8AN ORB to 8AN male banjo fitting to the front fuel rail port.</p>	
	5mm Allen Wrench		

17		Install the fuel rail to the engine. Readjust all of the aforementioned fittings for optimal fitment.	
18	7/8" Wrench	Find the long PTFE hose (short PTFE hose will be used later). This will be routed in the same path as the OEM feed line.	
		Starting from the RH active (RH) side opening, send the PTFE hose under the sheet metal towards the passive (LH) side. Now route the PTFE hose down (in front of the fuel tank) underneath the vehicle. Allow the hose to hang.	
		Secure the PTFE hose to the active (RH) side outlet fitting.	
19	Oil Lubrication	Find the long rubber EFI hose in the kit. Starting from the passive (LH) side opening, route the rubber EFI hose down along the outer LH side of the PTFE fuel feed hose and underneath the vehicle. Allow the hose to hang.	
		Lubricate the provided straight PushLok hose end barbs and fully seat into the hose, as shown. NOTE: PushLok hose ends do NOT require hose clamps.	
20	11/16" Wrench	Secure the hose end to the active (RH) side return inlet port fitting, as shown.	
	13mm Socket Wrench		
		Reinstall the fuel tank hardware.	
21	3mm Allen Wrench	For the BMW E36, press the included stainless steel bushings into the aluminum retainers. Route the new fuel lines along the OEM brake hard lines. Secure the retainers with the 2 provided stainless steel screws.	
		NOTE: For BMW E46, the OEM plastic nuts would be used with the aluminum retainers instead of the bushings and screws shown.	
22	Oil Lubrication	Lubricate the O-rings on the provided 10AN ORB to 8AN male fittings. Secure the fittings to the fuel filter ports.	
	Adjustable Wrench		
	1" Wrench		

23	Scissors	Remove the rubber sleeve from the OEM fuel filter and make a single cut down it's length as shown.	
		Slide the rubber sleeve over the Radium Engineering fuel filter body.	
24	10mm Socket Wrench	As shown, place the Radium Engineering filter inside the OEM fuel filter clamp.	
	1" Wrench		
	Adjustable Wrench	Attach the OEM clamp in the factory location and secure using the BMW nut.	
		Secure the PTFE hose (from the pump) to the fuel filter inlet.	
		Secure the other (shorter) PTFE hose in the kit to the fuel filter outlet.	
25	7/8" Wrench	When routing the (short) 8AN PTFE hose and the 6AN rubber return hose up in a LHD engine bay, be sure to keep away from the steering shaft. Looping them around the inside of the oil dipstick tube is recommended. NOTE: The return line can be clipped into the OEM feed line retaining loop.	
		Secure the feed line to the front fuel rail fitting, as shown.	
26	Hose Cutter	Route the 6AN rubber return line up against the firewall and towards the fuel pressure regulator return.	
		Cut the 6AN rubber return hose to length.	
27	Oil Lubrication	Lubricate the barbs on the provided SAE quick connect hose end.	
	Screwdriver	Fully insert the return hose and secure the SAE quick connect hose end using the included EFI clamp, as shown.	
28	Hose Cutter	Push the SAE quick connect hose end onto the FPR return fitting until in locks in place.	
		Route the provided vacuum hose for best fitment.	
		NOTE: Some BMW engines do NOT plumb the FPR to vacuum (intake manifold). Instead they route upstream of the throttle body to the intake pipe (not 1:1 fuel pressure).	

29	10mm Socket Wrench	Connect the battery and turn the key to the ON position.	
		Check for fuel leaks. If no leaks are found, start the vehicle. The engine may run rough for a few seconds until the air is bled from the system.	
30		Turn the fuel pressure regulator knob (shown) clockwise to increase pressure and counterclockwise to decrease pressure.	
		After the engine is fully warmed up, verify fuel pressure.	
31	10mm Socket Wrench	Use the cable zip ties to secure the hoses away from moving parts. Reinstall the metal fuel filter cover (shown).	
		Reinstall the RH and LH metal covers. Pop-in the carpet and the rear bench seat. Reinstall the cabin filter tray.	
		INSTALLATION COMPLETE	
		<i>NOTE: There will be unused leftover parts from the kit.</i>	