

INSTALLATION INSTRUCTIONS

FUEL FILTER/FPR KIT

2001-2006 BMW E46 M3

Document: 19-0336
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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.





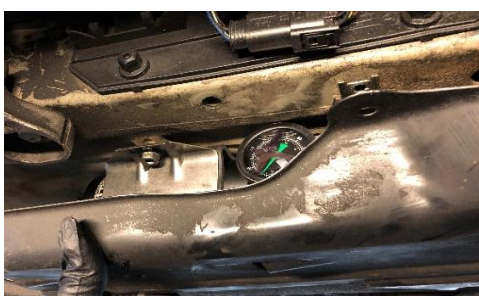
No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended. Proper eye and personal protection is required at all times during installation.

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	8MM Socket	Raise and safely support the vehicle. Remove the metal cover from the area of the fuel filter.	
	10MM Socket		
2	Rag	Disconnect the fuel pressure regulator (FPR) vacuum line.	
	Screwdriver	To relieve fuel pressure, access the Schrader valve on the FPR. Remove the metal cap and surround the valve with a towel. Press the center of the valve.	
		Once pressure is relieved, disconnect the fuel lines from the inlet of the filter and the outlet of the regulator. This is done by pressing the plastic retainers into the hoses and then pulling off the fittings.	
3	10MM Socket	Remove the nut holding the fuel filter bracket in place and remove the fuel filter/FPR assembly from the vehicle.	
4	5/8" Wrench	Find one of the green SAE adapter fittings in the kit and install the smaller brown o-ring onto the 6AN male side. Screw the 6AN male fitting into the port shown on the Radium FPR. All o-rings should be lubricated with oil prior to installation.	
		You regulator may look slightly different than the one shown in these instructions.	

5	5/64" Allen wrench	Install the two 6AN plugs into the other two ports on the Radium FPR as shown.	
6	Oil Lubrication	On the opposite side of the FPR, install the -10AN male adapter into the top port and the hose barb adapter into the bottom port, as shown. Tighten these fittings.	
	19MM Socket		
	25MM Socket	Several vacuum reference adapter fittings are provided. The vacuum nipple that matches the vacuum hose type can now be installed. Use a medium strength loctite and finger tighten.	
7	Oil Lubrication	On the inlet (black end) of the fuel filter, install the 10AN ORB to 6AN male adapter and tighten. Then install the female/female 6AN coupler and 6AN male to 5/16" SAE quick connect adapter, as shown. Tighten all fittings.	
	25MM Socket		
	9/18" Wrench		
	5/8" Wrench		
8	Oil Lubrication	Apply Teflon paste to the fuel pressure gauge threads and screw it into the inline 1/8" NPT adapter fitting. Tighten finger tight, then add another 1.5 to 3 turns with a wrench.	
	PTFE Teflon Paste		
	1" Wrench	Install the included O-ring to the male portion of the inline adapter. Lubricate the O-ring and install to the fuel filter "OUTLET" port.	
	7/16 Wrench		
9	Scissors	Remove the rubber sleeve from the OEM fuel filter and make a single cut down it's length as shown.	
10		Slide the filter sleeve over the Radium fuel filter.	

12	10MM Socket	Install the fuel filter/FPR assembly in to the factory clamp as shown.	
		Check the orientation of the pressure gauge and FPR and adjust them if necessary by loosening the fitting installed in step 8.	
		When clocking is complete, tighten the nut for the mounting bracket.	
13		Connect the fuel feed line to the fuel filter outlet. Push until a "click" is felt.	
		Confirm the OEM vacuum hose will reach the FPR vacuum port. NOTE: fuel pressure is typically adjusted at atmospheric pressure so this vacuum line can be temporarily removed.	
14		Connect the fuel feed line to the inlet of the filter as shown. Push until a "click" is felt.	
15	Screwdriver	Hook up the fuel return line to the FPR hose barb fitting, as shown. Re-use the factory hose clamp. The hose can be cut shorter for best fit. Ensure all connections are tight. NOTE: The FPR is not pre-set to any particular pressure. Turn on the fuel pump and check for leaks. If no leaks are present, proceed to the next step for fuel pressure calibrating.	
	Hose cutter		
16	10MM Socket	With the pump running, and no vacuum connection to the FPR, turn the knob on top of the FPR to adjust pressure. For reference, the stock BMW fuel system operates at 5bar (72.5 psi).	
		Once adjustment is complete, install the metal cover as shown. Some trimming in the area of the pressure gauge will be required. Alternatively, the pressure gauge can be removed and a 1/8" NPT plug installed (not included).	