






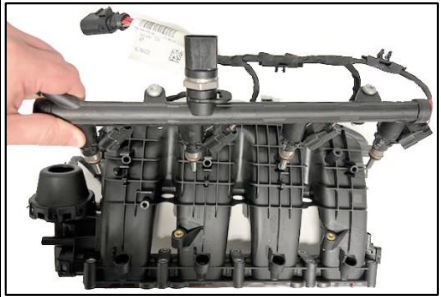
# INSTALLATION INSTRUCTIONS

## EA888 PORT INJECTION FUEL RAIL

P/Ns: 20-0889 and 20-0889-PK





Document: 19-0345  
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CAUTION
<p>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.  <b>Gasoline and other fuels are flammable and can be explosive.</b>          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.</p>
WARNING
<p>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.</p>

STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	10mm Socket Wrench	First, be sure to turn OFF the ignition and disconnect the battery (as shown).  CAUTION: Disconnecting the battery may cancel the fault memories of some control units.	
2		The Radium Engineering fuel rail is designed to replace the factory European domestic market (EDM) VW/Audi EA888 fuel rail that came standard with port injection.  For securing the fuel rail on non port injected vehicles, it is common to modify the factory intake manifold or simply install a EDM intake manifold kit (shown). However, wiring and plumbing will also need to be modified. None of this will be covered in this installation manual.	
3	T30 Torx	Removal of the manifold/throttle body will not be covered. But be prepared to remove the following: front duct, air box, oil filter, etc. Also, be prepared to reposition or disconnect the following: coolant line, sensors, solenoids, wire loom stays, fuel line, charge pipe, vacuum line, etc.  It is recommended to have a factory Workshop Manual.	
	7mm Socket		
	13mm Ratchet Wrench		
	Pick		
	#10 Triple Square		
	Socket Extension		
	Rag		
4	T30 Torx	Unscrew the 2 fuel rail mounting bolts. Pull up and separate the fuel rail from the intake manifold.	
	Rag		

5	Pliers	<p>If still attached, remove the hose from the fuel rail. Unscrew the fuel pressure sensor from the fuel rail, as shown. NOTE: These can both be reused with the 20-0889-PK fuel rail plumbing kit.</p> <p>Dislodge the 4 metal retaining clips from the fuel injectors. These will be reused. Pull the 4 fuel injectors from the fuel rail.</p>	
	27mm Wrench		
	Rag		
6	Oil	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Find the 8AN ORB plug provided in the kit. Lubricate the O-ring and install to the RH port, as shown.</p>	
	5/16" Allen Wrench		
7	Oil	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Find the 8AN ORB to barb fitting provided in the kit. Lubricate the O-ring and install to the LH port, as shown.</p>	
	22mm Wrench		
8	Oil Lubrication	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Find the 6AN ORB plug provided in the kit. Lubricate the O-ring and install to the bottom port, as shown.</p>	
	1/4" Allen Wrench		
9	19mm Wrench	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Install the fuel pressure sensor to the provided adapter as shown. NOTE: lubrication or paste is NOT required for this step.</p>	
	Bench Vice		
10	PTFE Paste	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Apply PTFE paste to the tapered 1/8" NPT male threads.</p>	

11	27mm Wrench	<b>20-0889-PK FUEL RAIL PLUMBING KIT</b>	
		Hand tighten the 1/8" NPT fitting to the top fuel rail port. Next, add 1.5 to 3 turns.	
12		Just like factory, the injector connectors will be rotated at the proper angle when installed. But know that the retaining clip slots integrated into the top of aftermarket injectors are most likely oriented 90 degrees when compared to the OEM injectors, as shown.	
		Fortunately, Radium fuel rails have provisions for this injector variance so this is a moot point. The injectors can be clocked to the correct "OEM" position with either type (factory or aftermarket Bosch EV14).	
13		For ease of installation, lubricate the injector O-rings, intake manifold injector seats, and fuel rail injector bores.	
		Place the wiring harness so the loom runs along the intake manifold side of the fuel rail, as shown.	
		Fully insert the injectors into the fuel rail bores.	
14		Orientate the fuel injectors until they lock into place, as shown. If clocked properly, there should not be any interference with the surrounding area.	
15	5mm Allen Wrench	Line-up and place the fuel rail assembly onto the intake manifold. Once everything is positioned correctly, push the fuel rail downwards to fully seat the injectors. Secure the fuel rail using the provided M6x1mm socket head bolts.	
		If not already performed, reinstall the intake manifold.	
16		NOTE: If missing the barbed orifice fitting on the high pressure fuel pump (HPFP), here is the P/N: VW/Audi 06F 127 213 C	

17		<p>NOTE: If missing the fuel hose assembly from the HPFP, here is the P/N: VW/Audi 06K 133 986 K</p>	
18		<p>Run the OEM fuel hose (from the HPFP) to the fuel rail.</p>	
19	Hose Cutter	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Depending how this OEM fuel hose is routed, it might need to be cut slightly shorter.</p>	
20	Pliers	<p><b>20-0889-PK FUEL RAIL PLUMBING KIT</b></p> <p>Fully insert the hose over the fuel rail barb fitting. To secure, slide the spring clamp over the hose barb, as shown.</p>	
21	10mm Wrench	<p>After everything is reinstalled, reconnect the battery.</p> <p>Cycle the keyed ignition switch ON/OFF a few times (without starting the engine). This allows the fuel pump to prime the system. Check for leaks.</p> <p>Start the engine and confirm again while the engine is running.</p> <p><b>INSTALLATION COMPLETE</b></p>	