



INSTALLATION INSTRUCTIONS

TOYOTA 1/2/3UZ-FE VVT-I FUEL RAILS

P/Ns: 20-0963

Document: 19-0373

Support: info@radiumauto.com

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.

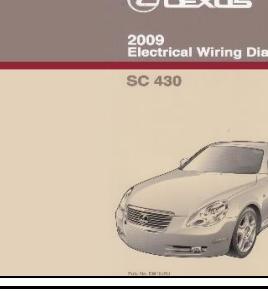
Gasoline and other fuels are flammable and can be explosive.

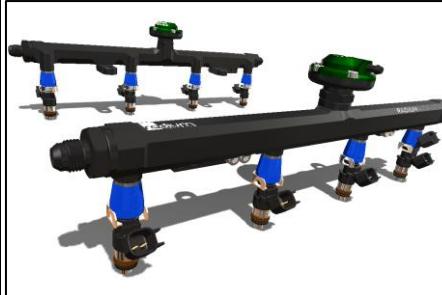
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No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended.
Proper eye and personal protection is required at all times during installation.

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	10mm Socket Wrench	First, turn OFF the ignition and disconnect the battery.	
		CAUTION: Disconnecting the battery may cancel the fault memories of some control units.	
2	Rag	Because of the various compatible vehicles, removal of the fuel lines, fuel rails, and fuel injectors will not be covered. It is recommended to have a factory Workshop Service Manual.	
		NOTES:	
		1. The OEM M8x1.25mm flanged nuts will be reused.	
		2. Leave the 4 factory thermal insulating spacers on the M8x1.25mm studs, as they will be reused.	
		3. When removing the injectors from the fuel rails, have a rag handy.	
3a		ENGINES THAT CAME WITH TOYOTA AIR-ASSIST: a. If reusing factory air-assist fuel injectors (shown), the 8 provided injector seats will NOT be used.	
		b. Confirmed aftermarket injector compatibility: Bosch EV14 "60mm", O-rings: 11mm upper/14mm lower. Note: the 8 provided injector seats must be installed into the intake manifold.	
3b		ENGINES THAT DID NOT COME WITH TOYOTA AIR-ASSIST: a. The 8 provided injector seats will NOT be used in any scenario. b. The OEM injectors are compatible. b. Aftermarket injectors must be OEM equivalent.	

4	Oil	<p>This step is only used if using aftermarket injectors in an air-assist manifold. Do NOT install the injector seats if reusing OEM air-assist injectors. Do NOT attempt to install them in non air-assist manifolds.</p> <p>Thoroughly clean the injector seat areas on the intake manifold. Be sure the O-rings are installed into the injector seat grooves. Lubricate the intake manifold seats and the O-rings and push or tap to fully seat the injector seats into place. NOTE: Using these injector seats, eliminates the air-assist feature on these intake manifolds.</p>	
5	4mm Allen Wrench	<p>In the next step, the included mounting feet will be installed to the fuel rails. However, they must be positioned so the machined internal "step" is visible from underneath, as shown. This is necessary in a later step for proper mating with the OEM spacers (excluding 2UZ-FE VVT-i).</p>	
6a	4mm Allen Wrench	<p>ALUMINUM 3UZ-FE / 1UZ-FE VVT-I INTAKE MANIFOLDS ONLY</p> <p>As depicted, be sure not to mistakenly use the extra outer mounting location shown.</p>	
6b	4mm Allen Wrench	<p>PLASTIC 2UZ-FE (VVT-I) INTAKE MANIFOLD ONLY</p> <p>As depicted, be sure one (RH) fuel rail uses the inner mounting location and the other (LH) fuel rail uses the outer mounting location.</p>	
7	Oil	<p>Because this will be a custom fuel rail installation, adapter fittings are NOT included. Each fuel rail has three 8AN ORB (3/4"-16) ports. Go to www.radiumauto.com to find an array of compatible adapter fittings, fuel pressure regulators, pulse dampers, etc. that can be used.</p> <p>NOTE: Lubricate the O-rings prior to installation.</p>	
8	Oil	<p>For ease of installation, lubricate the injector O-rings, intake manifold injector seats, and fuel rail injector bores.</p> <p>Fully insert the injectors into the fuel rail bores, as shown.</p>	

9	<p>ALUMINUM 3UZ-FE / 1UZ-FE VVT-I INTAKE MANIFOLDS Confirm all 4 OEM thermal insulating spacers are installed to the intake manifold studs, as shown.</p> <p>PLASTIC 2UZ-FE (VVT-I) INTAKE MANIFOLD The threaded bosses on the plastic intake manifold are already properly raised. Thus, no fuel rail spacers are required.</p>	
10	<p>Line-up and place the fuel rail assemblies onto the intake manifold. Once everything is positioned correctly, push the fuel rails downward to fully seat the injectors.</p>	
11a	<p>12mm Socket</p> <p>Secure the fuel rail using the OEM M8x1.25mm hex flanged nuts.</p> <p>Orient the fuel injectors so the connectors can be plugged in.</p>	
11b	<p>The plastic 2UZ-FE (VVT-I) intake manifold is shown. Notice the front RH fuel rail mounting foot location.</p>	
12	<p>10mm Wrench</p> <p>After all the necessary fuel rail plumbing is installed, reconnect the battery. 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>INSTALLATION COMPLETE</p>	