



INSTALLATION INSTRUCTIONS

PORT INJECTION KIT (PIK)

AUDI R8 / LAMBORGHINI GALLARDO LP

Document: 19-0283
Support: info@radiumauto.com

IMPORTANT NOTES:

- o Installation must be performed by an experienced technician.
- o This document outlines the installation of the port injection to the cylinder heads only.
- o A custom fuel system will need to be created to feed the port fuel injectors.
- o Bosch EV14 fuel injectors must have 14mm upper and lower O-rings and be 34mm height.
- o Wiring and control of the port injectors must be configured by the installer.
- o Because the intake manifold will sit 0.925in (23.5mm) higher, the throttle body connection will need an adjustment.
- o If 20-0967-0(3/5) PIK PLUMBING was purchased, follow the areas below in RED along with that kit's full instructions at www.radiumauto.com.
- o The steps below cover installation into a Lamborghini Gallardo LP550-2. Other vehicles may slightly differ.

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.	FRONT LH SIDE RH SIDE REAR 
2	10mm Socket Wrench	Disconnect the negative battery terminal in the front trunk.	
		CAUTION: Disconnecting the battery may cancel fault memories of some control units. Consequently, before disconnecting the battery, always cross examine any fault memories.	
3	13mm Socket	Remove the rear deck lid.	
4	Flat Head Screwdriver	Loosen the 1/4 turn fasteners and remove the rear firewall cover.	

5	Pliers	Disconnect all related intake manifold vacuum lines and electrical plugs. Remove the intake manifold from the vehicle. NOTE: A 5mm Allen wrench can be used for the triple square bolts on the intake manifold valley cover.	
	5mm Allen Wrench		
	T30 Socket		
6		Do NOT remove the 2 lower intake manifold runners shown.	
7	T30 Socket	To permit the necessary space for the new fuel rails, some things will need to be rearranged. For example, there are two 2-bolt intake manifold brackets (shown) mounted on both engine banks. Unlatch the vacuum hose bundles from the brackets. As shown, loosen the mounting brackets.	
8		Permanently remove the intake manifold mounting brackets from the vehicle. The 2 brackets and 4 bolts will NOT be reused.	
9	Oil Lubrication	Open the Radium Engineering package and remove the contents. <i>Optionally, the cylinder head adapters can simply be used as intake manifold spacers (without the need of the fuel rail or injectors. In this case, plug the 10 cylinder head adapter ports as shown using Radium Engineering 14-0427 2AN ORB plugs (not included).</i>	
	1/8" Allen Wrench		
10	Oil Lubrication	Adapter fittings (not included) can now be installed into the fuel rail end ports. Be sure to lubricate the O-rings first. <u>20-0967-03 / 20-0967-05 PIK PLUMBING ONLY</u> Install the 8AN ORB plugs to the rear fuel rail ports (shown right side) and the 8AN ORB to 6AN male fittings to the front fuel rail ports (shown left side).	
	7/8" Wrench		
	5/16" Allen Wrench		

11	Oil Lubrication	Lubricate the upper fuel injector O-rings and press into the fuel rail injector bores.	
		NOTE: This kit is designed around Bosch EV14 fuel injectors. They must have 14mm upper and 14mm lower O-rings. They must also be the short Bosch EV14 variation (34mm height).	
12		NOTE: If the fuel injectors came with locking clips, they can be used, as shown. However, these are not necessary or critical.	
13	Oil Lubrication	Lubricate the lower O-rings and press the fuel injectors into the cylinder head adapters one by one.	
		To prevent interference, rotate the injector electrical plugs upwards.	
14	3mm Allen Wrench	Secure the fuel rail to the cylinder head adapter, using the 16 provided M5x0.8mm bolts and 4 mounting brackets.	
15		Press-in the included gaskets to the cylinder head adapters, as shown.	
		Clean and prep the OEM lower intake manifold runner surfaces.	
16	4mm Allen Wrench	Place the fuel rail assemblies onto the lower intake manifold runners. Without securing, test fit to the engine. Check to see if there is interference with the forthcoming fuel line plumbing.	
		Find the twelve M6x1.0mm bolts provided in the kit. Start hand tightening the center bolts first. Then move outwards slowly tightening more and more until the fuel rail assemblies are secure.	

17		Plug in the 10 fuel injector connectors.	
		NOTE: Electronic control for the fuel injectors is not covered here.	
18	11/16" Wrench	20-0967-03 / 20-0967-05 PIK PLUMBING ONLY Find the 2 PTFE hoses provided in the kit. They have identical hose end configurations, however, the hoses are different lengths. As shown, attach the 45 degree hose ends to the fuel pressure regulator (FPR) ports.	
		For optimal hose routing fitment, install the shorter hose on the inboard FPR port and the longer hose on the outboard FPR port.	
19	11/16" Wrench	20-0967-03 / 20-0967-05 PIK PLUMBING ONLY Allow the hoses to swing around the outer LH side of the engine bay. This hose routing permits engine movement. It also prevents inteference with other common upgrades in the area. Example: Dual Radium Engineering catch cans (shown).	
20		Next, pry up and remove the lower rubber grommets from the 10 OEM intake manifold mounting bolts, as shown. Now remove the upper rubber grommets and bolts from the OEM intake manifold.	
21		As shown, the 10 OEM intake manifold mounting holes should be empty.	
22		Insert the 10 provided M6x1mm bolts into the intake manifold mounting holes. They will be loosely hanging, as shown.	
		Note that the 45 degree hose ends are on the fuel pressure regulator side.	

23	10mm Socket	Carefully set the intake manifold in place. NOTE: These bolts are magnetic if they pop loose and accidentally fall out. Loosely install the bolts starting from the center of the intake manifold and moving outwards. Do NOT tighten any bolt until all have been started. Torque Specification: 80 inlbs (9 Nm).	
	Torque Wrench		
24	T30 Socket	Reinstall all components in reverse order.	
	Pliers	NOTE: The intake manifold will now be spaced 0.925in (23.5mm) higher. Depending on the throttle body coupler used, some adjustment may be necessary.	
	5mm Allen Wrench		
25	10mm Socket Wrench	Reconnect the battery.	
		Turn ON the ignition to prime the fuel pump. Check for leaks.	
		INSTALLATION COMPLETE	