



INSTALLATION INSTRUCTIONS

Unitronic Multi-Port Injection for MQB® EA888 GEN3 UH009-FLA

Unitronic recommends that you read through the entire installation instructions prior to beginning the installation to familiarize yourself with the included components, tools required, and procedures involved with the installation.

DISCLAIMER: Unitronic recommends that a Unitronic Authorized Dealer or other qualified and trained professional should perform the installation of this product.

Unitronic Installation Instructions are also available in digital format, if you prefer. Please visit the corresponding product page for a link to download the digital Installation Instructions. www.getunitronic.com

It is recommended to confirm all parts are present prior to beginning the installation.

PACKING LIST:

Multi-Port Injection for MQB EA888 GEN3 (UH006-FLA)

PART NUMBER	DESCRIPTION	QUANTITY INCLUDED
UH001-FL3	Fuel Rail	1
UH016-FL1	Injectors	4
UH014-FL7	MPI Wiring Harness with Ethanol	1
UH001-FL0	MQB FUEL RAIL HARDWARE KIT	1

Hardware

PART NUMBER	DESCRIPTION	QUANTITY INCLUDED
UH001-FL0	MQB FUEL RAIL HARDWARE KIT	1
KIT A	HARDWARE KIT A	1
	11/32" Drill Bit for Inserts	1
	7mm Drill Bit for Injector Holes	1
	M6x1x10mm Insert Tool	1
	M6x1x12.29 Threaded Insert	2
	Injector Drill Guide	1

See next page for hardware kits B and C.



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PART NUMBER	DESCRIPTION	QUANTITY INCLUDED
KIT B	HARDWARE KIT B	1
	OEM Injector Retaining Clip	4
	M6x1x40 Socket Head Screw	2
	Fuel Pressure Sensor	1
	M14 Copper Sealing Washer	3
	M14 x 1.5 Plug	1
	M14x1.5x28mm Socket Allen Banjo Bolt Aluminum Black Anodized	1
	20 Amp Fuse	1

PART NUMBER	DESCRIPTION	QUANTITY INCLUDED
KIT C	HARDWARE KIT C	1
	Ethanol Content Sensor	1
	Stainless Pinch Clamps (13.2 to 15.7 mm)	2
	Long Fuel Line with Banjo to quick connect ends	1
	Short Fuel Line with Y barb and quick connect	1
	M6 X 16 Torx Screw (for plastic)	1
	Fuel to coolant line plastic CLIP	1
	Fuel Line Middle Bracket with CLIP	1
	Fuel Line Second Bracket with CLIP	1

RECOMMENDED TOOLS NEEDED:

- Drill
- 5mm ALLEN hex socket
- 1/4" ALLEN hex socket
- T30 TORX socket
- T25 TORX socket
- Pinch Clamp Pliers
- 27mm deep socket
- 12 mm ALLEN hex socket
- 10mm wrench / socket
- Pick tool
- Torque Wrench
- Needle Nose Pliers



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- 1** Unpack all components of your Unitronic MPI kit, lay them out on the table, and ensure that you have all the pieces as listed in the packing list. (Fig. 1-A and 1-B)
- 2** Open the engine compartment and remove the engine cover by pulling up on the 4 corners. (Fig. 2-A and 2-B)
- 3** Disconnect the NEGATIVE battery terminal using a 10mm wrench or socket. (Fig. 3)
- 4** Unclip wiring harness tray with a pic or flathead screwdriver by prying the tabs on the back. Unplug sensor connector on the intake manifold. (Fig. 4)
- 5** Loosen the coolant line with T30 TORX to allow space to install fuel rail with injectors later. (Fig. 5-A and 5-B)
- 6** **DISCLAIMER:** RECOMMENDED REMOVAL OF INTAKE MANIFOLD AS PER OEM INSTRUCTIONS.
The next steps can be done with the manifold on the car, but we recommend being extra careful with cleanliness and preventing any debris from falling into the intake manifold when drilling the injector holes.



FIG. 1-A



FIG. 1-B

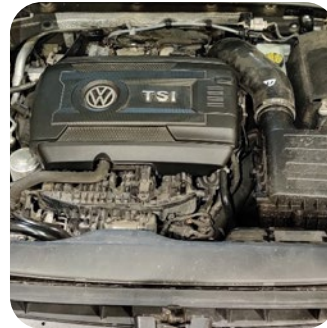


FIG. 2-A



FIG. 2-B



FIG. 3

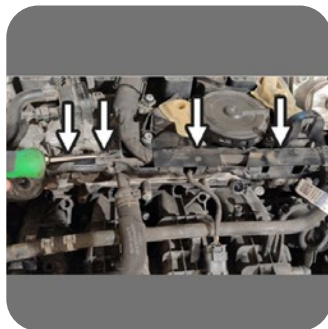


FIG. 4



FIG. 5-A



FIG. 5-B



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- 7** Locate the 11/32" drill bit from the hardware kit and check if it fits in the 2 holes in the intake manifold. (Some manifolds have smaller holes that need to be drilled to size, some have larger holes from the factory). If required drill the holes with the provided 11/32" drill bit only until the bottom of the hole is reached. **!Do not drill all the way through!** (Fig. 7)
- 8** If your manifold has larger holes, please apply a small amount of plastic epoxy to the outside threads of the insert before screwing it in using the Installation M6 shoulder bolt and 10mm socket.

If your manifold had smaller holes that needed to be drilled, please use a hairdryer or heat gun on low setting to warm up the plastic around the hole to allow for smooth insert installation without warping or cracking.

Screw the insert only until the shoulder of the bolt bottoms out on the plastic seat. Do not overtighten. Just slowly unscrew the shoulder bolt and repeat for the other side. (Fig. 8)
- 9** Next, before drilling out the 7mm injector holes, clean out the hole locations with brake cleaner, compressed air or a vacuum but make sure no debris is left in the holes.
- 10** Locate the 7mm drill bit from the hardware kit and measure 16mm from the end of the shank and mark it. Insert the drill bit 16 mm into the drill chuck to avoid damaging the intake flaps when drilling the manifold. (Fig. 10)
- 11** Drill out the injector holes with the supplied 7 mm drill bit and injector drill guide tool. Insert the tool all the way to the bottom of the square stops and hold steady with one hand while drilling straight with the other. (If drilling the manifold on the car, apply some grease to the drill bit and drill slowly to capture all the shavings and remove and clean them before proceeding with the next hole.) (Fig. 11)
- 12** Reinstall intake manifold as per OEM instructions if removed during installation.

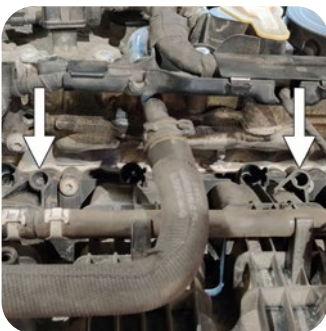


FIG. 7



FIG. 8



FIG. 10



FIG. 11

INSTALLATION INSTRUCTIONS

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Preparing Fuel Rail for installation on engine

- 13** Locate the fuel rail, M14 plug, copper sealing washer and fuel pressure sensor. (Fig. 13)
- 14** Using the 1/4" Allen Hex Bit with a torque wrench, tighten the M14 Plug on the left side of the rail (closer to the logo) to 25 Nm. Using the 27mm deep socket, tighten the fuel pressure sensor to 20 Nm. (Fig. 14)
- Note:** We recommend using "Permatex 51817 Flange sealant" or "Permatex 85420 Fuel Resistant Gasket Sealant" on both sides of the copper seals when installing on the fuel rail.
- 15** Lubricate the injector O-rings with a drop of engine oil before installation. Install injector retaining clips as shown aligning the slots on the side and the flat front of the clip with the corresponding flat on the fuel rail. (Fig.15)
- 16** Install the injectors into the fuel rail orienting the plugs to the left side of the rail. Route the wiring harness injector plugs the fuel rail and plug the connectors before installing the rail on the intake manifold. (Fig. 16)

Installing the fuel rail

- 17** Remember that cable tray and coolant line brackets were previously loosened to allow space for installing the fuel rail. Disconnect the pressure sensor on the manifold. Unclip the factory fuel line going to the HPFP. (Fig. 17)
- 18** Slide the rail into place from the right side under the factory fuel line with the wiring plugged in. Line up the injectors into the injector holes and rock the rail back and forth slowly to seat the injectors (lubed O-rings with oil) into the bores correctly. Make sure the rail is seated completely on the inserts on the intake manifold. (Fig. 18)
- 19** Install both M6 socket-head screws with the 5mm Allen Hex socket (Fig. 19)



FIG. 13



FIG. 14



FIG. 15

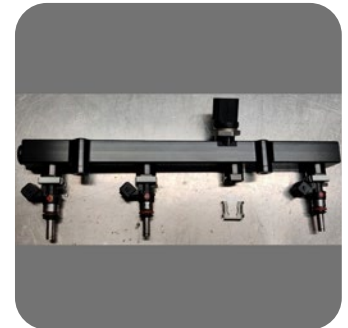


FIG. 16

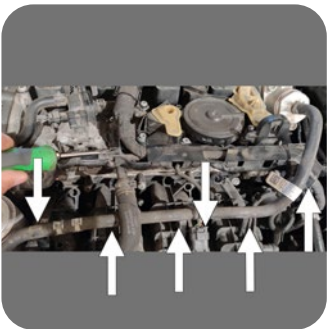


FIG. 17



FIG. 18



FIG. 19



INSTALLATION INSTRUCTIONS

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- 20** Attach the long fuel line with the banjo connection side using the 2 crush washers and Banjo Bolt. (We recommend fuel resistant flange sealant on the copper sealing washer). Tighten to 25 Nm using 12mm Allen Hex Socket and torque wrench. (Fig. 20)

Note: We recommend using "Permatex 51817 Flange sealant" or "Permatex 85420 Fuel Resistant Gasket Sealant" on both sides of the copper seals when installing on the fuel rail.

- 21** Reinstall the coolant bracket screws using the T30 socket, reinstall the plastic wiring tray in its place, the factory fuel line in the plastic clips and reconnect the manifold pressure sensor. (Fig. 21)

Installing the fuel line and ethanol content sensor

- 22** Locate and install coolant hose to fuel line plastic clip as shown. (Fig. 22)

- 23** Locate the bracket with 2 bends attached to the plastic clip and install on the right side of the engine manifold post. Use the T30 plastic screw and T30 socket to secure the bracket in place. (Fig. 23)

- 24** Towards the middle of the intake manifold install the bracket with a single bend as shown using the existing plastic T30 screw and a T30 socket. (Fig. 24)

- 25** Route the fuel line along the installed brackets and clips. (Fig. 25)

- 26** (BEFORE CUTTING FUEL LINE PREPARE A WAY TO COLLECT LEAKAGE AND HAVE FIRE EXTINGUISHER ON HAND) (WEAR PROTECTIVE EQUIPMENT LIKE SAFETY GLASSES AND GLOVES)

Unclip the fuel line from the expansion tank. Lightly score the abrasion sleeve with a sharp razor blade, peel the sleeve off between the solid blue lines drawn on Fig. 26 (approximately 1-2 inches) Cut the OEM fuel line as shown in the second image (Before the top bend and then 6 inches further down). (Fig. 26 A and B)



FIG. 20



FIG. 21



FIG. 22



FIG. 23



FIG. 24



FIG. 25



FIG. 26-A

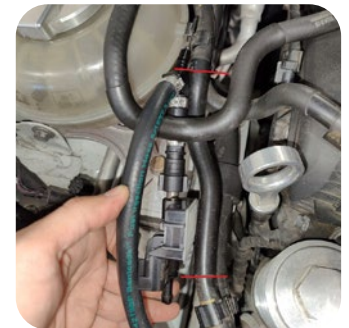


FIG. 26-B



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27 Now place the pinch clamp on the straight end of the cut fuel line and insert the straight barb into that line. Slide the pinch clamp over the barb end, make sure there is no abrasion sleeve in that area for the clamp and use pinch clamp pliers to tighten the clamp on the fuel line.. (Fig. 27-A & 27-B)

28 On the lower cut of the OEM fuel line, place the pinch clamp then insert the provided fuel quick connect and tighten the pinch clamp over the barb of the fuel quick connect as shown. Finally connect the ethanol sensor between the preinstalled Y quick connect and the lower quick connect that was just installed. (Fig. 28)

Installing MPI Wiring Harness

29 Set the wiring harness into the plastic cable tray next to the factory harness. The tray can be opened with a small pick or flathead screwdriver by prying on the small plastic tabs. Recall the injector plugs were already plugged into the injectors on the rail before installation and routed from the back of the rail. Connect the middle larger connector to the fuel pressure sensor as shown. (Fig. 29)

30 Use a small pick tool to unplug the intake manifold flap sensor and plug in the respective male and female plugs from the wiring harness into the available connections. Tuck the wires and connectors away under the intake manifold. (Fig. 30)

31 (If you have the UniFlex kit installed then leave the MPI ethanol sensor connector unplugged and instead connect the ethanol sensor to your UniFlex device) Plug the last connector on the left that corresponds to the ethanol content sensor. (Fig. 31)

32 If not already done, remove intake air box and route the MPI wiring harness along the engine harness going to the ECU. Use zip-ties along the way to attach the harness. (Fig. 32-A and 32-B)



FIG. 27-A



FIG. 27-B

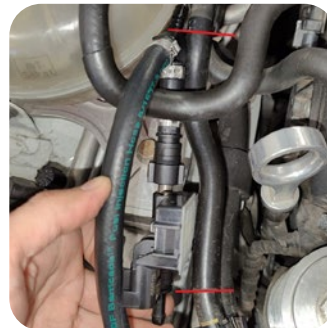


FIG. 28



FIG. 29

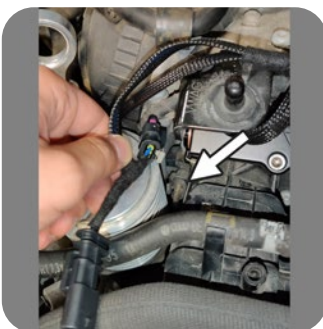


FIG. 30



FIG. 31

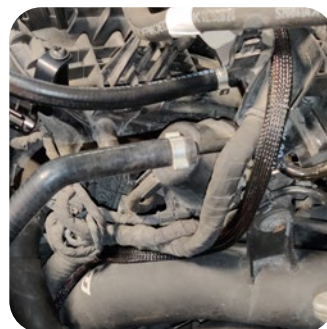


FIG. 32-A

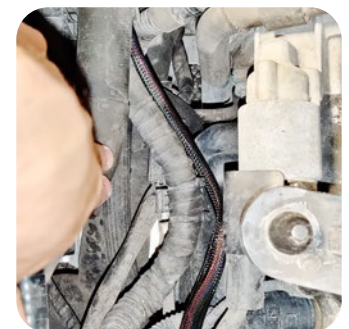


FIG. 32-B



INSTALLATION INSTRUCTIONS

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- 33** Prepare the wiring harness by placing the pin ends next to the ECU and route the positive wire tab towards the fuse box. (Fig. 33)
- 34** Disconnect the ECU multipin connector by pulling the lever down and lifting the retaining tab up. (Fig. 34)
- 35** Once the 105 pin connector is removed, pry the lever/cover off with a small pick tool or flathead screwdriver right where the tab is shown. (Fig. 35-A and 35-B)
- 36** Using a pick tool or small flathead screwdriver pull the purple locking tab to allow the wires and pins to be installed into the connector. (**Warning do not pull on the wires as they may pull out once unlocked**). (Fig. 36)
- 37** Using a VW pin tool (Or thin metal wire or paperclip) Pull out plastic blank pins in the 24,25,45,46,50 and 71 pin locations and **keeping the same pin orientation** insert the corresponding wires using needle nose pliers. (Fig. 37-A and 37-B)
- 38** Reinsert the purple locking tab to lock all the pins in place.
- 39** Reinstall the connector rear cover as previously shown.
- 40** Reinstall the 105 pin connector on the ECU plug.
- 41** For the positive wire with the fuse box terminal start by opening the fuse box (Fig. 41)



FIG. 33

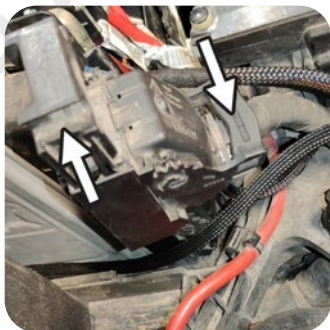


FIG. 34

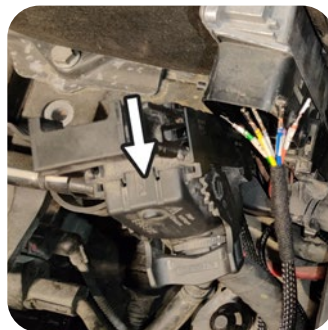


FIG. 35-A

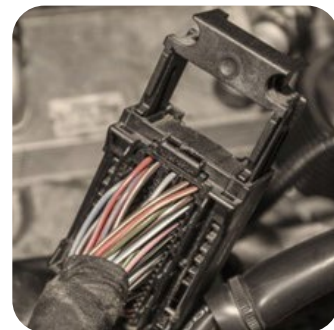


FIG. 35-B



FIG. 36

GREEN WIRE	PIN 24
BLUE WIRE	PIN 25
ORANGE WIRE	PIN 45
YELLOW WIRE	PIN 46
GRAY WIRE	PIN 50
PINK WIRE	PIN 71

FIG. 37-A

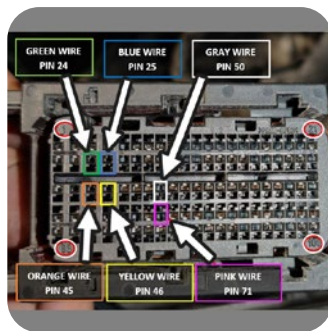


FIG. 37-B



FIG. 41



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- 42** Then Remove the front of the fuse box cover by unclipping the lower tab and pulling up straight. (Fig. 42)
- 43** Pull the inner tray up with your hand while going around the perimeter to pry the clips loose. This will take some effort and time to release correctly and avoid breaking clips. (Fig. 43)
- 44** Once the tray is pulled out you can reach under it routing the positive wire through the front fuse box opening and install in the location shown on Fig. 44. Install the 20A fuse in this location. (Fig. 44)
- 45** Route the positive wire through the bottom front of the fuse box with the factory wiring passage.
- 46** Reinstall the fuse tray into the box paying attention to realign the plastic clips and slots on the surrounding edge.
- 47** Reinstall the front cover.
- 48** Reinstall the fuse box top cover.
- 49** Reconnect the battery negative terminal.

CONGRATULATIONS! You have successfully installed Unitronic's MPI Kit!



FIG. 42



FIG. 43



FIG. 44