

# CorkSport High Pressure Fuel Line

## MZR DISI Engine found in Mazdaspeed 3, 6, and CX-7



**Introducing the CorkSport High Pressure Fuel Line designed for the MZR DISI.** This fuel line is designed to replace the OEM fuel line which are prone to failure at the brazed connection at the rail. The custom machined fittings designed to work with the OEM rail and fuel pump outlet for a bolt in design. The lines are rated to 3000psi and have been burst tested to 16000psi. Let us know your thoughts about the CorkSport High Pressure Fuel Line by submitting a review at:

<http://corksport.com/mazdaspeed-high-pressure-feed-line.html>

### Pre-Installation Notes:



**Use extreme caution while releasing fuel under pressure!** Ensure that your work space is well ventilated and that there are no open sparks or flame sources. Have a fire extinguisher on hand for emergencies.



**Make sure your vehicle is completely cooled down** prior to starting installation. If you are going to work on your car within an hour or two of having driven it, use a fan to cool off the car.



**These instructions were written for reference only** and the use of a factory service manual is recommended.



**How our instructions work:** To best cover all of our customers experience levels, we have included a table of contents/order of operations along with step-by-step instructions.



**These in car installation photos were produced using a 2013 Mazdaspeed 3.** 2007-2013 Mazdaspeed 3, 2006-2007 Mazdaspeed 6, and CX-7 will be similar.

### Materials and Time:



#### General Info.

**Part #:** GEN-6-919-10  
**Time Est:** 2 Hours  
**Wrench Rating:** 3/5



#### Tooling List

11mm Wrench  
17mm Wrench  
19mm Wrench  
8mm 3/8 Drive Socket  
10mm 3/8 Drive Socket  
13mm 3/8 Drive Socket  
3/8 Extension  
3/8 Ratchet  
3/8 Torque Wrench  
Large Flat Screwdriver  
Small Flat Screwdriver x2  
Small Vise Grips or Small C-Clamps x2  
Needle Nose & Standard Jaw Pliers  
Blue Locktight



#### Parts List




One (1) High Pressure Fuel Line  
One (1) Fuel Rail Adapter  
One (1) Adapter Nut  
One (1) Pump to -3AN Fitting  
One (1) M8x1.25x55mm Bolt  
One (1) M8 Flat Washer  
Two (2) Mounting Brackets

#### Suggested Items (not included) :

Fuel Rail Cap O-Ring P#: ZZM0-13-253  
Fuel Rail Split Ring Small P#: L3K9-13-2K2  
Fuel Rail Split Ring Large P#: L3K9-13-2K3

Need Help With Your Installation?  
Call (360) 260-CORK

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CorkSport High Pressure Fuel Line Assembled



**Depressurize the fuel system before beginning installation:** Access the fuse box located in the engine compartment. Remove the blue relay labeled "CIRCUIT". Start the vehicle and let run until it dies.



**If you are using an EGR Delete Plate** in place of the OE EGR Valve you will need to source a correct length bolt for the position shown in [Figure 5c](#).

**The bolt length = EGR Plate Thickness + 9mm**

**Bolt Specs: M8x1.25**

The bolt CANNOT extend past the housing it threads into in the cylinder head as this may cause damage to the fuel line.

**Failure to complete this will void the warranty.**

## Detailed Instructions

### 1. Remove the OEM Intake and Filter Housing

- a) Remove the top mount intercooler cover (TMIC) by removing the two 10mm bolts (red circles in Figure 1a).



Now is a good time to look at your intercooler and see if you have any bent fins or debris lodged in the intercooler fins. Removing debris and straightening the fins will improve the performance of the intercooler.



Figure 1a

- b) Loosen the two (2) 10mm hose clamps on the factory rubber intake elbow (red circle and green circle in Figure 1b).

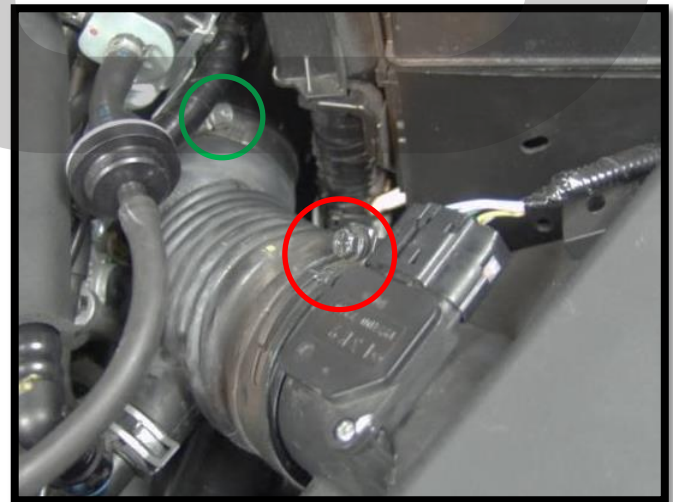
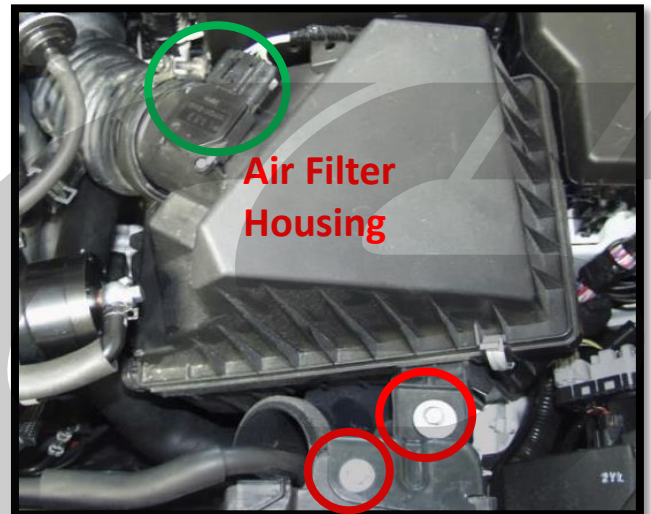


Figure 1b

- c) Unplug the MAF housing sensor located on the air filter housing (green circle in Figure 1c).



Air Filter Housing

Figure 1c

- d) Remove the two 10mm bolts on the air filter housing bracket and remove the bracket (shown in red circle in Figure 1c).

## 1. Remove the OEM Intake and Filter Housing

- e) **Remove the valve cover breather tube.** Push the hose connector toward the valve cover and press both sides of the colored clip simultaneously. Pull the hose away from the valve cover (**Figure 1d**).
  
- f) **Pull up on the filter housing** to pop it free from the car and remove it along with the intake elbow and breather tube.

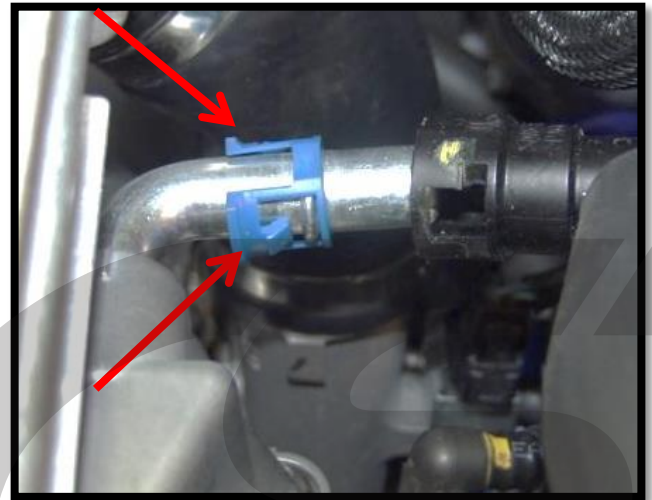


Figure 1d

## 2. Remove the Battery and ECU

- a) **Remove the battery box cover.** The cover is held on with two clips (shown with **red arrows** in **Figure 2a**). Pry the clips outward by hand and lift the front of the lid off of the box.

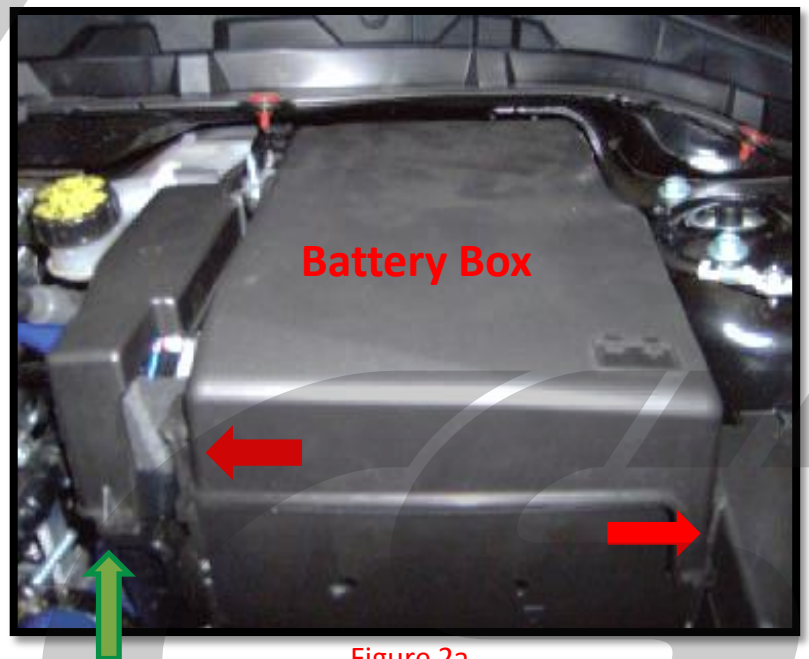


Figure 2a

## 2. Remove the Battery and ECU (continued)

b) **Disconnect the battery.** Disconnect the battery terminals with a 10mm end wrench. Refer to Figure 2b for negative (-) and positive (+) terminals (Figure 2b).

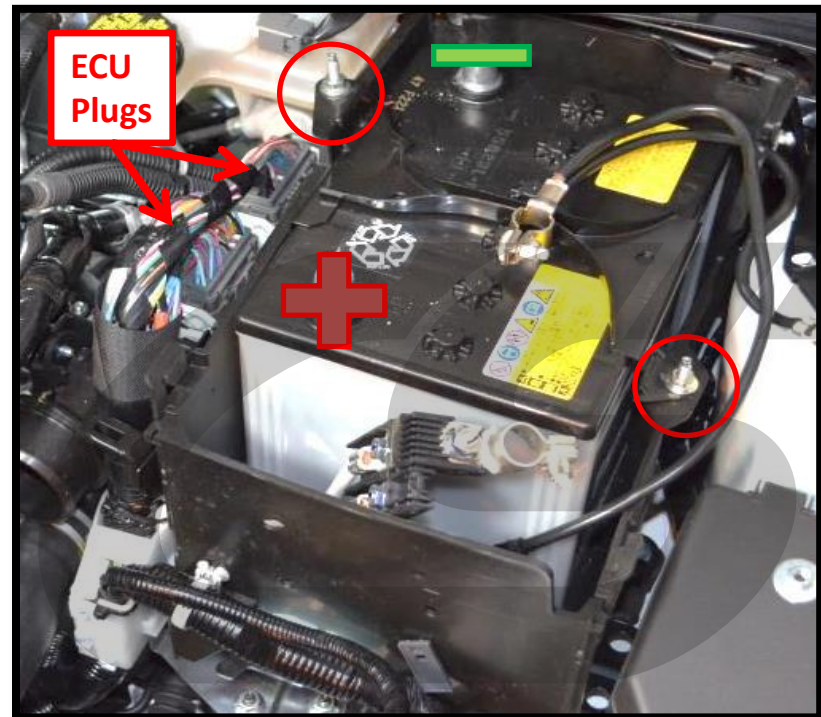


Figure 2b

c) **Remove the two 10mm nuts for the battery tie down bracket** (shown with red circles in Figure 2b).

d) **Remove the battery** from the battery box.

e) **Remove the front battery box panel.** Remove the MAF wiring harness clip (blue circle Figure 2c), and negative battery cable clip (purple circle Figure 2c), from the front battery box panel using needle nose pliers to compress the clips on the inside of the battery box. Then slide the panel upwards and remove it (green arrow in Figure 2c).

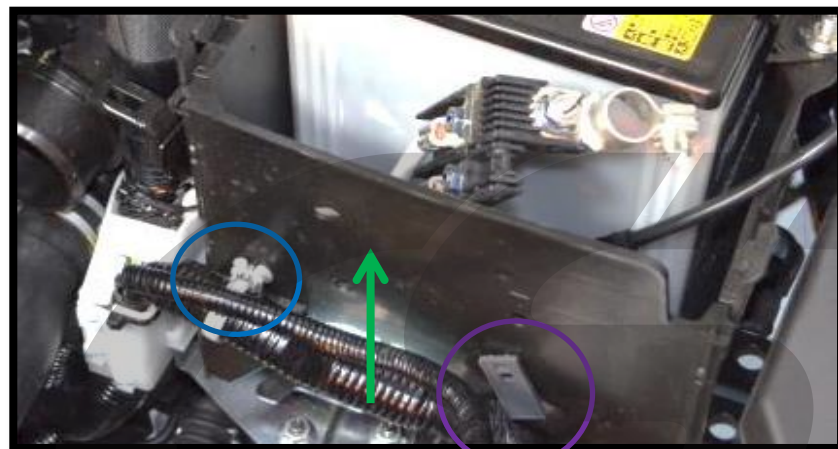


Figure 2c

## Part # GEN-6-919-10

### 2. Remove the Battery and ECU (continued)

- f) **Disconnect the ECU plugs** by pushing on the tabs (**red arrows** in **Figure 2d**) and pulling the white lock upward simultaneously (**green arrows** in **Figure 2d**). Refer to **Figure 2b** for location of ECU plugs and **Figure 2d** for close ups.

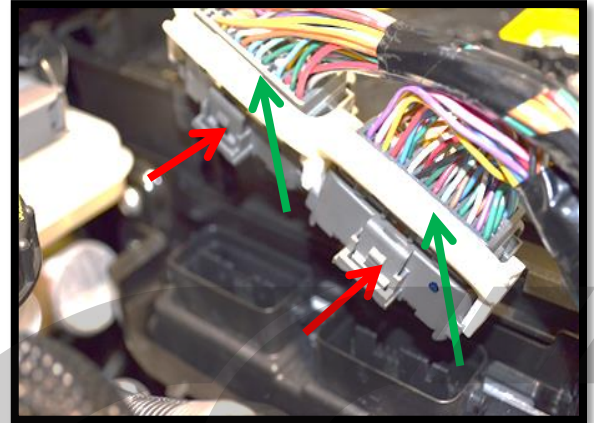


Figure 2d



When done correctly, this process should be effortless.

- g) **Remove the battery box.** Remove the three 10mm bolts in the bottom of the box, and remove the battery box and ECU (**red circles** **Figure 2e**).

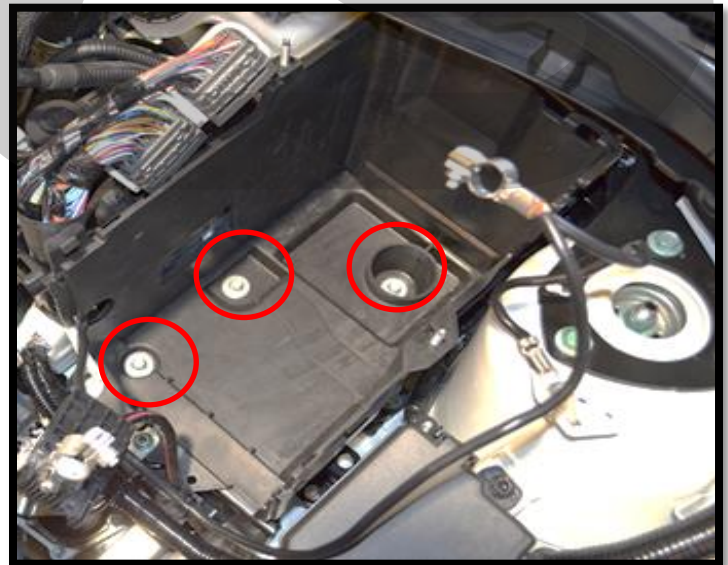


Figure 2e

### 3. Remove the OEM Turbo Inlet Pipe (TIP)

- a) **Using pliers, release the hose clamps** (**red circles** in **Figure 3a**) located on the **bypass valve hose**. Remove the hose from the car and save if you are re-using it. You can discard the rubber hose and spring clamps if you will be installing the optional CorkSport Silicone BPV Hose.

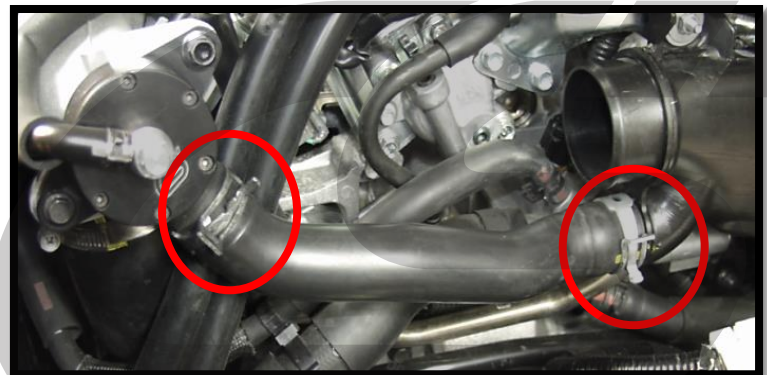


Figure 3a

**3. Remove the OEM Turbo Inlet Pipe (TIP) (continued)**

- b) Remove the two wiring harness clips (red arrows in Figure 3b) located on the stock turbo inlet pipe.
- c) Using needle nose pliers, remove the hose from solenoid fitting on the stock turbo inlet pipe and the boost control solenoid (Shown in Figure 3b by blue arrow).



Be very careful to not break the nipple off the boost control solenoid.



If you are having difficulty getting it loose, try rotating the hose to break the seal of the rubber to the plastic fitting and then pulling straight up. It takes a little force, but cleanly comes off.

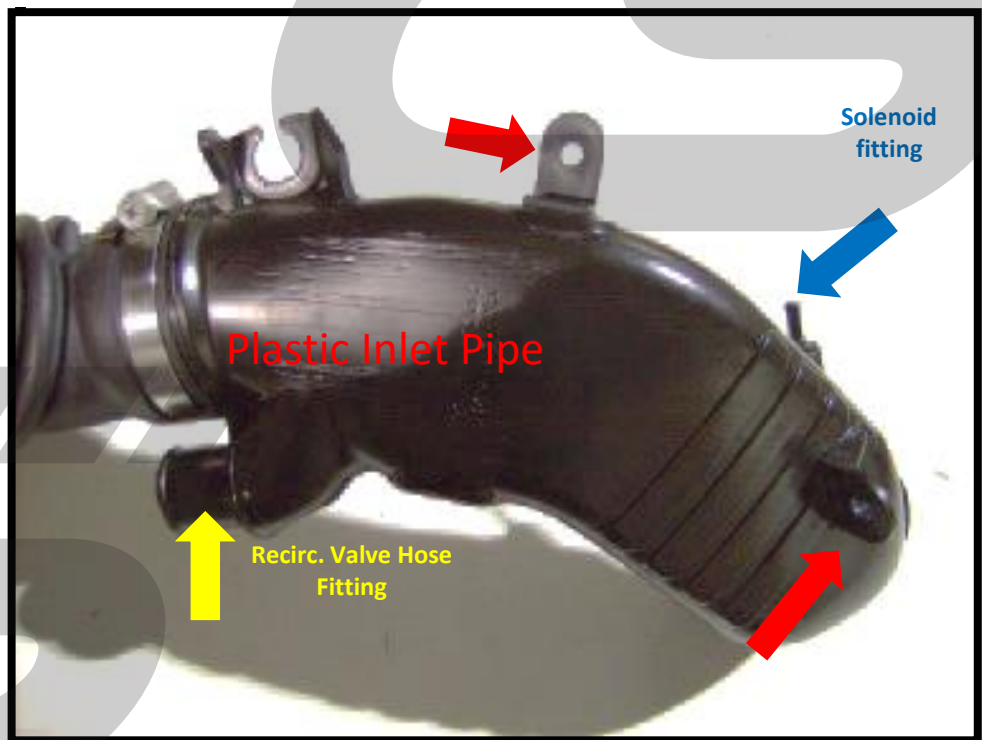


Figure 3b

- d) Remove the plastic inlet pipe from the turbocharger. Loosen the 10mm hose clamp at the turbo inlet, pull the stock turbo inlet pipe off of the turbocharger, and remove it from the car.

#### 4. Throttle Body Removal

- a) **Unclamp the throttle body coolant line and slide the spring clamps back.** Use the needle nose pliers to grab and loosen the clamps. **Green circles** in **Figure 4a**



Do not remove the hoses off the ports until the vise grips or c-clamps have been installed in the next step. Failure to do so will lead to messy coolant everywhere!

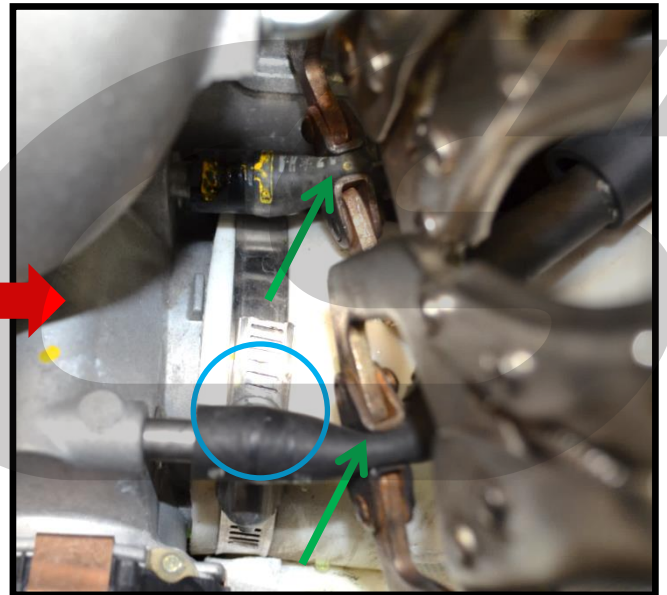
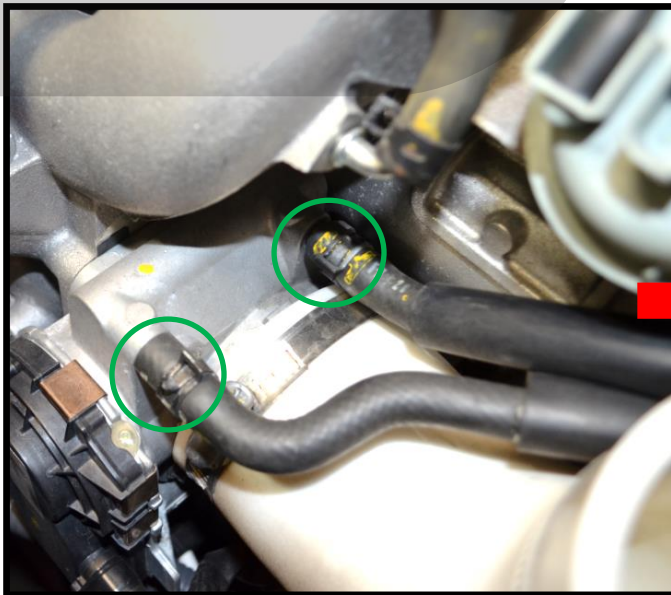


Figure 4a

- b) **Clamp the coolant hoses with the vise-grips or c-clamps to stop the coolant flow.** Excessive clamping force is not required. Clamping location shown with the **green arrows** in **Figure 4a**.

- c) **Remove the throttle body inlet hose** using a 10mm socket wrench. Shown with the **blue circle** in **Figure 4a**.

- d) **Remove the throttle body** using an 8mm socket wrench and extension. The four bolts are shown with **red circles** in **Figure 4b**. Peel the gasket off the intake manifold for further inspection (be careful to not bend the gasket) Gasket tab shown with **blue arrow** in **Figure 4b**.

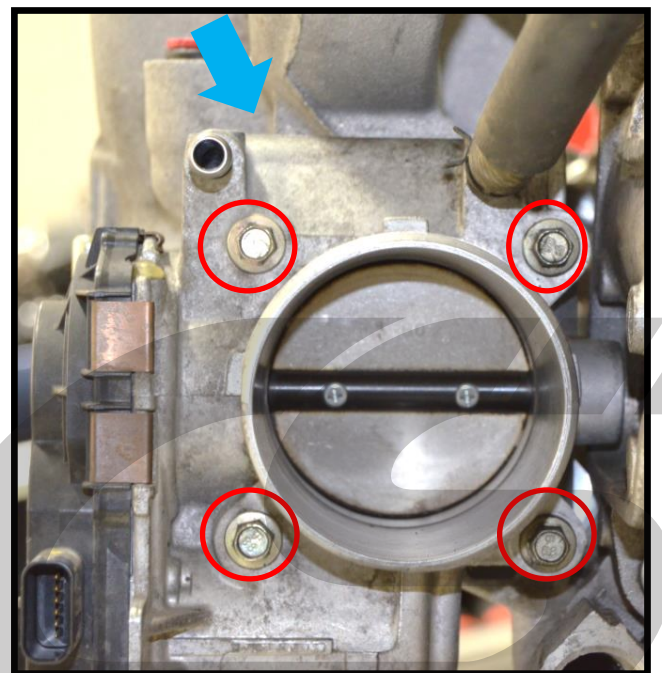


Figure 4b



## 5. Fuel Rail Shield Removal & EGR Bolt Replacement

- a) Use the 10mm socket and ratchet to remove the four bolts holding the fuel rail shield (circled in red in Figure 5a). The fuel rail shield will not be reinstalled.
- b) Locate the EGR valve (shown in Figure 5b).
- c) Remove the 10mm flange bolt circled in red in Figure 5c. Replace the OEM bolt with the provided M8 bolt and washer. Use blue locktight on the threads and torque to 15-22 ft-lbs.

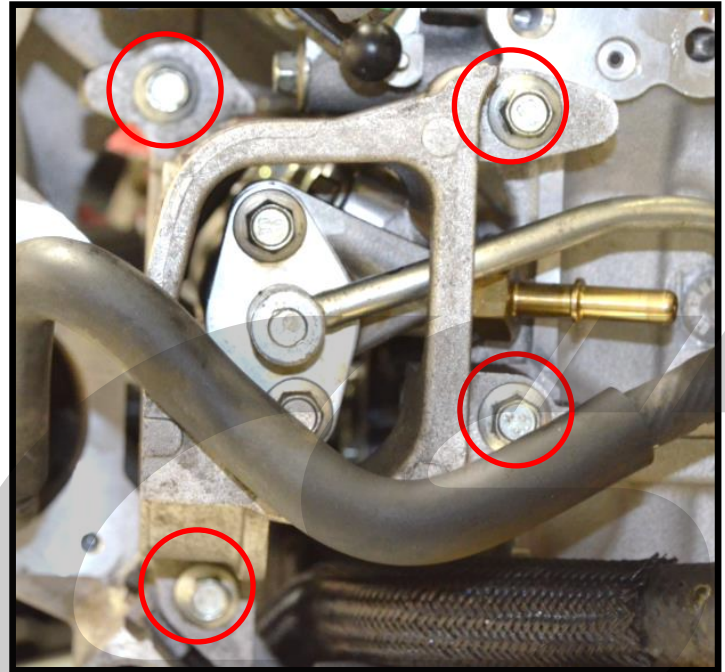


Figure 5a

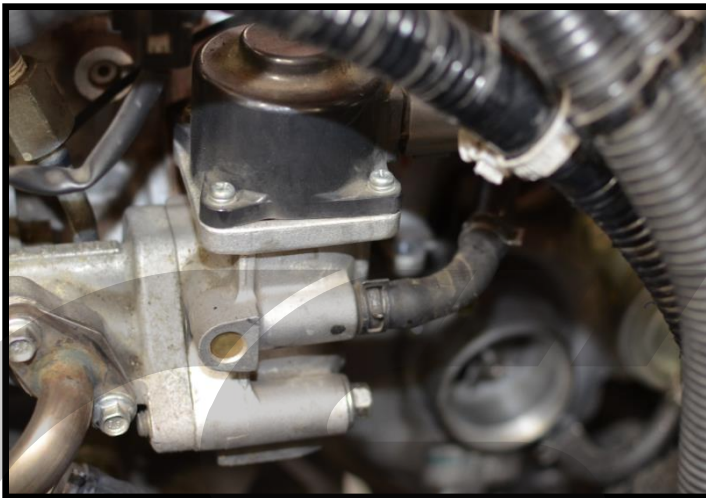


Figure 5b



If you are using an EGR Delete Plate in place of the OE EGR Valve you will need to source a correct length bolt for the position shown in Figure 5c.

**The bolt length = EGR Plate Thickness + 9mm**

**Bolt Specs: M8x1.25**

The bolt CANNOT extend past the housing it threads into in the cylinder head as this may cause damage to the fuel line.

**Failure to complete this will void the warranty.**

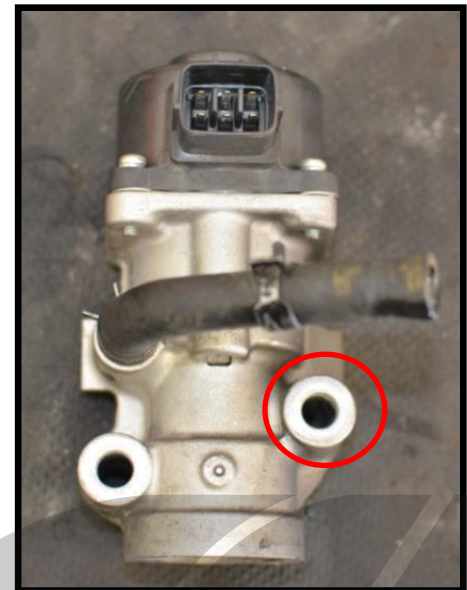


Figure 5c



6. OEM High Pressure Line Removal

a) Using the 8mm socket, extension and ratchet to remove two 8mm bolts holding the high pressure fuel line. Bolts locations show with 3/8" extensions (circled in red in Figure 6a and Figure 6b).

b) Place a rag around and under the high pressure fuel line nut to absorb fuel. Loosen 19mm nut holding HP fuel line to the fuel pump (shown with the blue arrow in Figure 6a). Use a 17mm wrench to hold the fuel pump then loosen the 19mm nut slightly to relieve pressure, see Figure 6c.

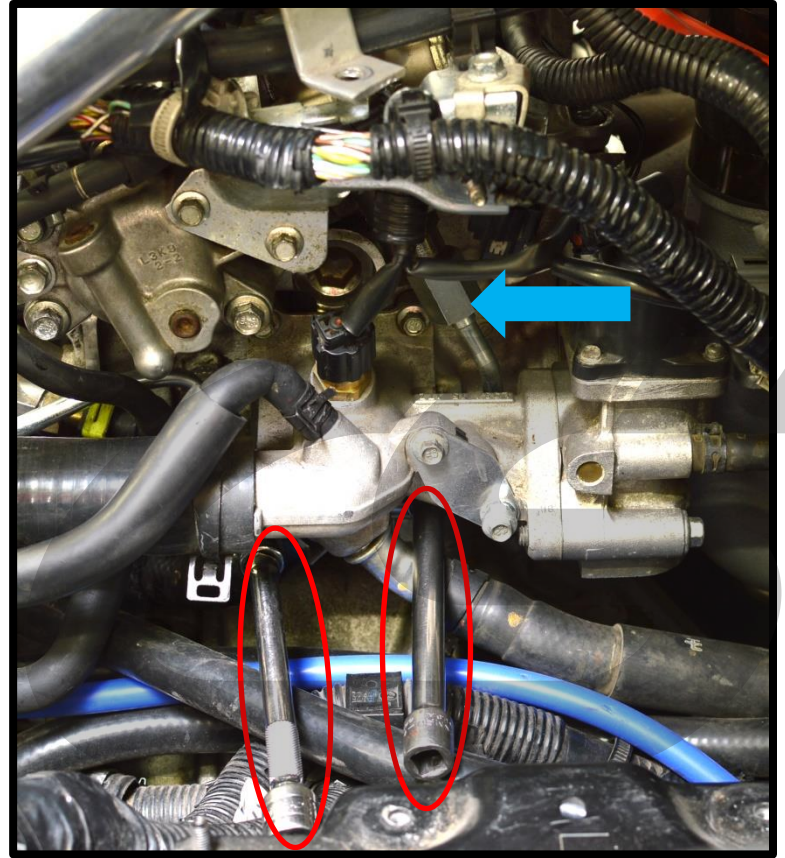


Figure 6a

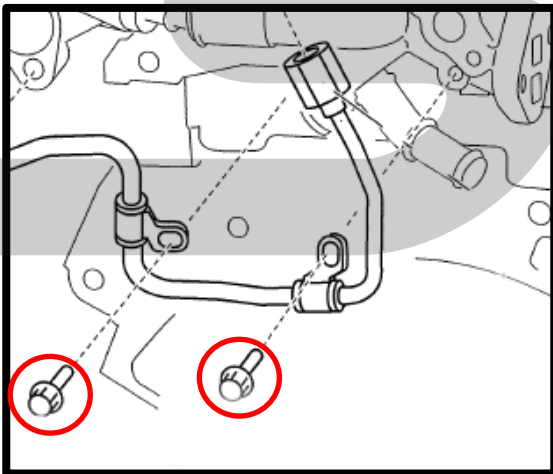


Figure 6b

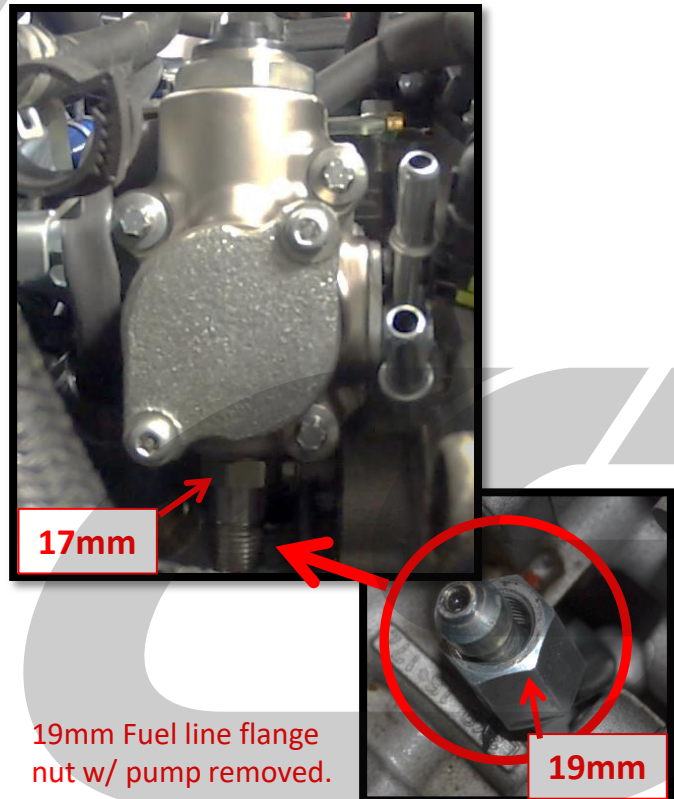


Figure 6c

6. OEM High Pressure Line Removal (continued)

- c) Remove the fuel return line from the fuel rail (shown in Figure 6d). Use a flathead screwdriver to open the clip (shown in Figure 6e). Place rag under the connection point to absorb excess fuel, then remove the fuel return line.

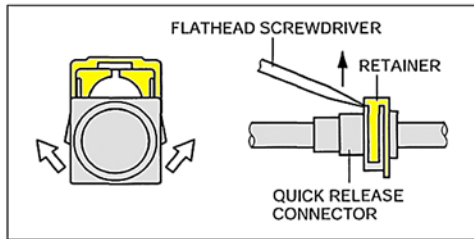


Figure 6e

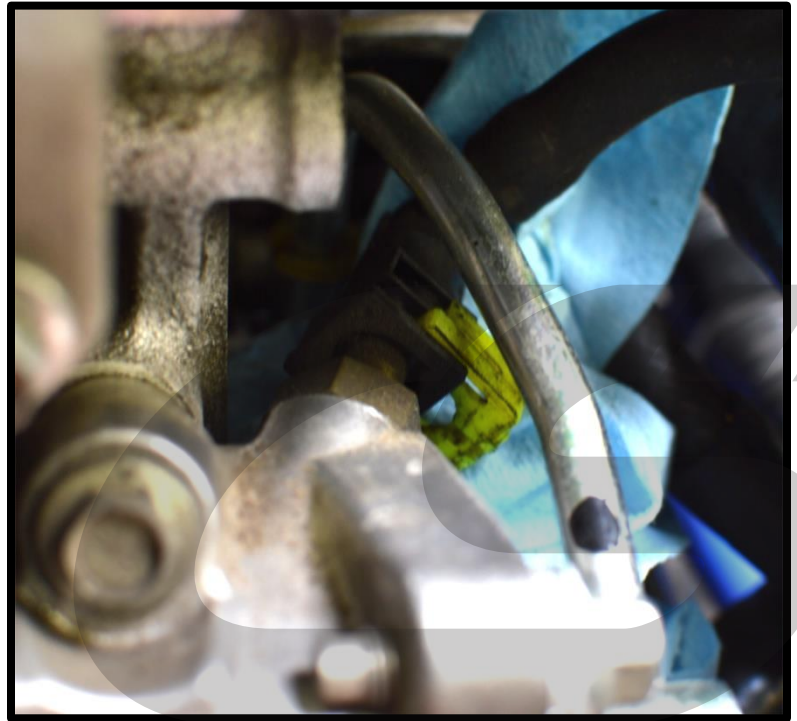


Figure 6d

- d) Remove the lower 10mm bolt from the HP fuel line cap location (shown circled in blue in Figure 6f). Remove the upper 10mm bolt (shown circled in red in Figure 6f). Begin pulling the HP fuel line out of the fuel rail slowly. If needed, use a flathead screwdriver to leverage the fuel line out of the rail. Remove the line from the car.



Place a small paper cup under the fuel rail cap to catch excess fuel. Do not use plastic as it will melt immediately.

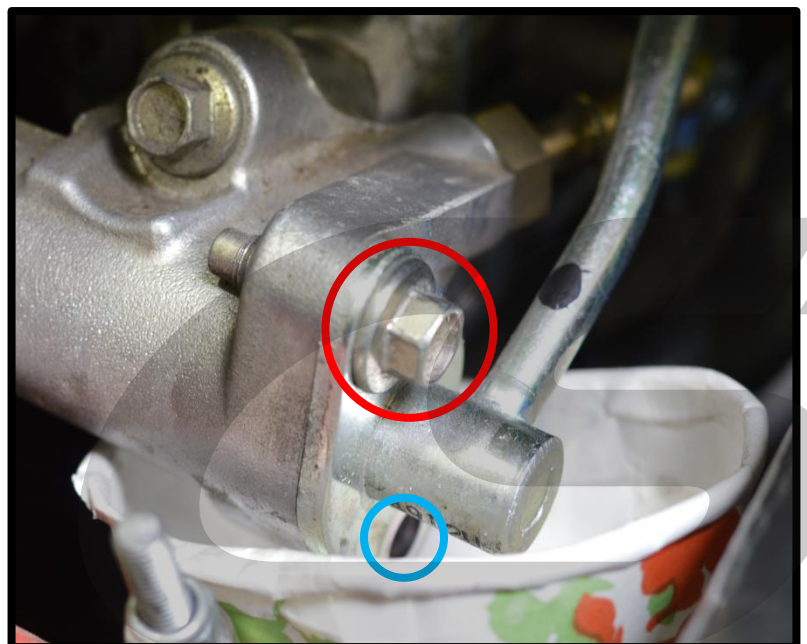


Figure 6f

## 7. CorkSport Fuel Rail Cap Assembly



If you purchased a new O-ring and split washers install those on the CorkSport Fuel Rail Cap now. If you are reusing the used parts, follow the steps below.

- a) Follow the images in **Figure 7a**.
- b) Remove the small split ring.
- c) Remove the O-ring with a small flat screwdriver. Be careful to not cut or nick the O-ring.
- d) Remove the large split ring. Note that the large split ring has a flat side and chamfered side.
- e) Reinstall the split rings and O-ring onto the CorkSport Fuel Rail Cap in the reverse order. A small amount of clean engine oil can be used to lube the O-ring for installation.
- f) Install the CorkSport Fuel Rail Cap. Apply a thin layer of oil to the outside edge of the O-ring; this will improve installation and simply dissolve into the fuel. Press the fuel rail cap into the fuel rail then install and torque the two 10mm bolts to **13-16 ft-lbs** as (shown circled in red in **Figure 7b**).

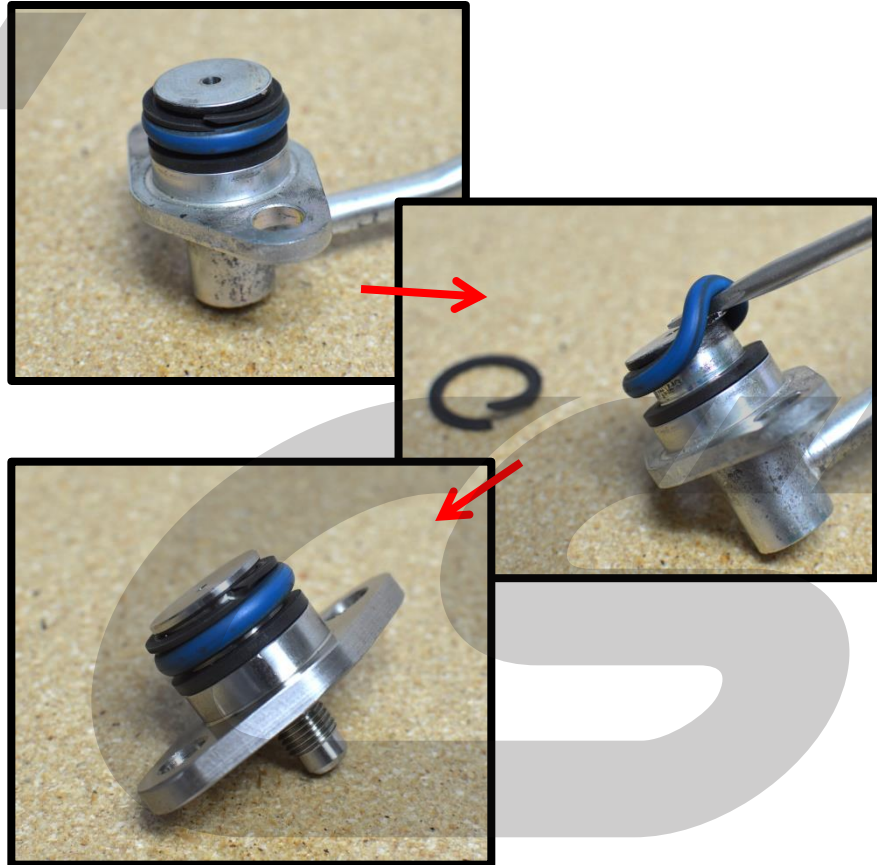


Figure 7a

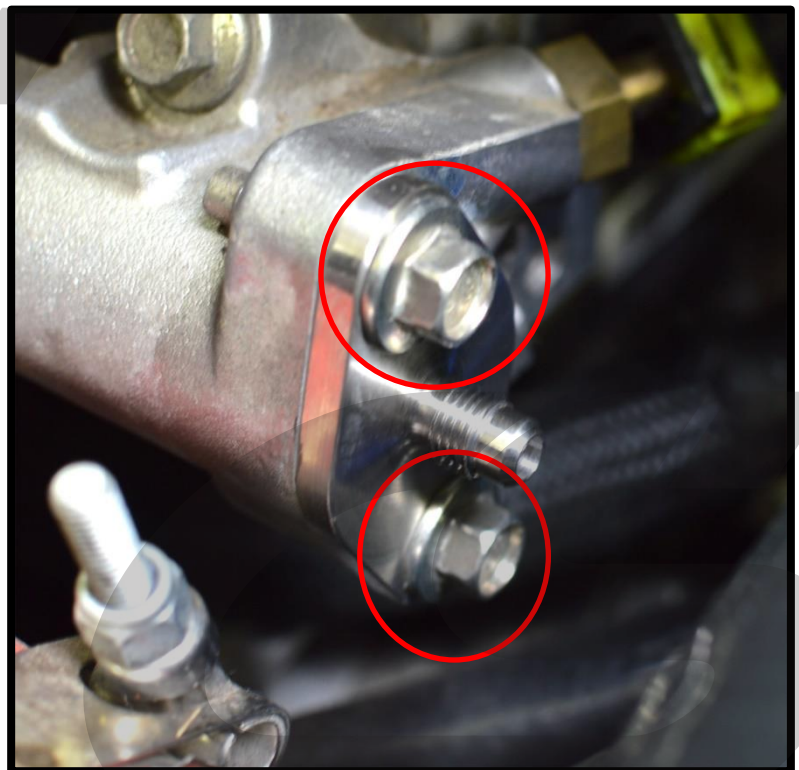


Figure 7b

## 8. CorkSport Fuel Line Installation

- a) Install the CorkSport fuel pump fitting and fuel pump nut (shown in Figure 8a).



DO NOT use thread tape or any other type of thread sealant. The threads do not provide any of the sealing.

- b) Use a 17mm wrench to hold the pump (red arrow in Figure 8a).

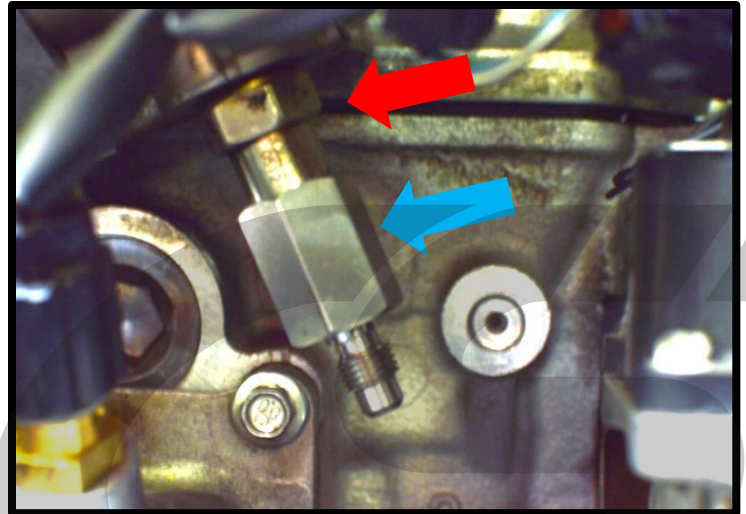


Figure 8a

- c) Torque the CorkSport 19mm fuel pump nut to **18-25 ft-lbs** (blue arrow in Figure 8a).

- d) Route the CorkSport fuel line along the same path as the OEM fuel line with the straight connection towards the fuel pump.

- e) Thread the fuel line onto the fuel pump connection hand tight (Shown in Figure 8b).



Figure 8b

8. CorkSport Fuel Line Installation (continued)



DO NOT use thread tape or any other type of thread sealant. The threads do not provide any of the sealing.

g) **Thread the fuel line onto the CorkSport fuel rail cap.** Use a 11mm wrench for the **red arrow** and hold the fuel line at the **blue arrow** to keep the fuel line from rotating. **Torque to 15-18ft-lbs or 1/2 turn past snug (shown in Figure 8c).**

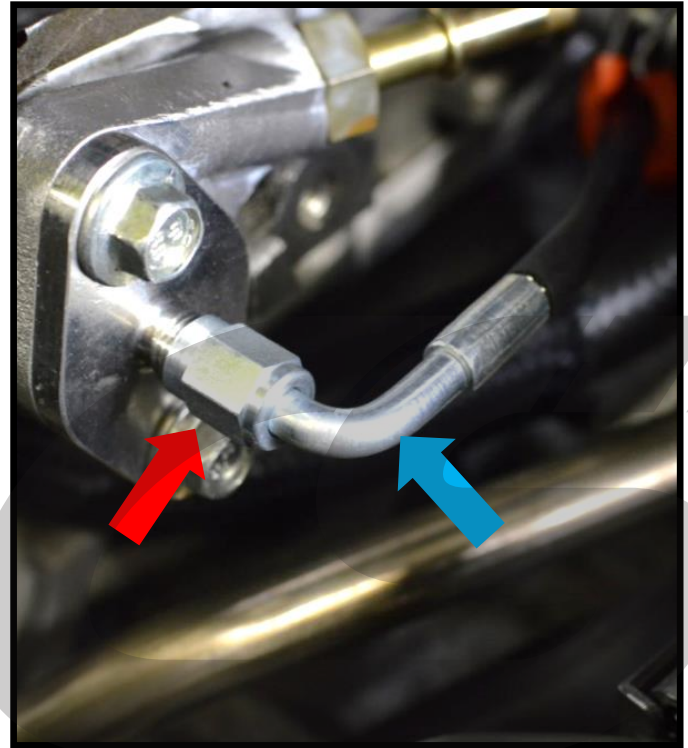


Figure 8c

h) **Torque the CorkSport fuel line to the fuel pump.** Tighten the fuel line finger tight then use a 11mm wrench at the **red arrow** to torque the fuel line to **15-18 ft-lbs or 1/2 turn past snug (shown in Figure 8d).**



Verify that the fuel line is in-line with the fuel pump fitting. Misalignment may cause leakage.



DO NOT use pliers on the crimps of the fuel line to hold.

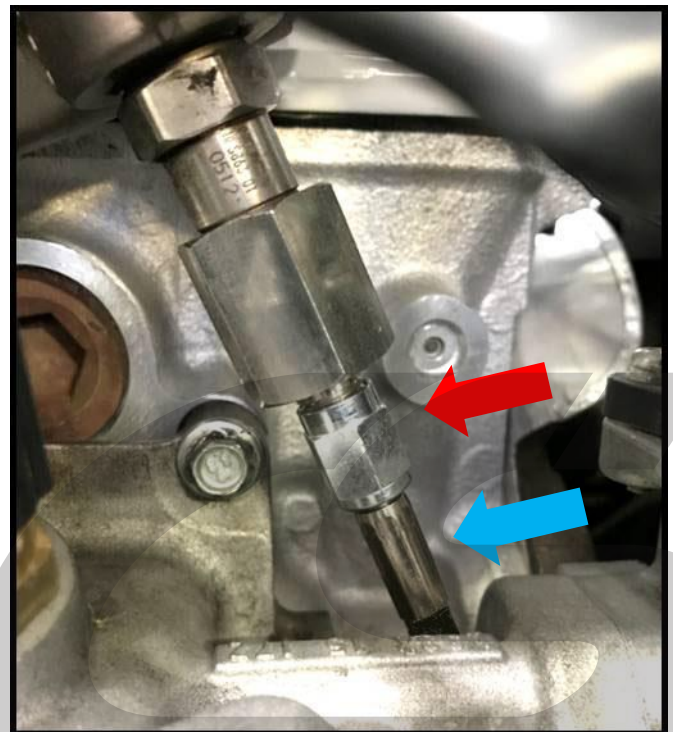


Figure 8d

## 8. CorkSport Fuel Line Installation (continued)

- i) Install the 8mm bolt into the brackets mounted on the CorkSport fuel line. Torque to 71-97 in-lbs (shown in Figure 8e).
- j) Forward mounting bracket shown in Figure 8f.
- k) Rearward mounting bracket shown in figure 8g.

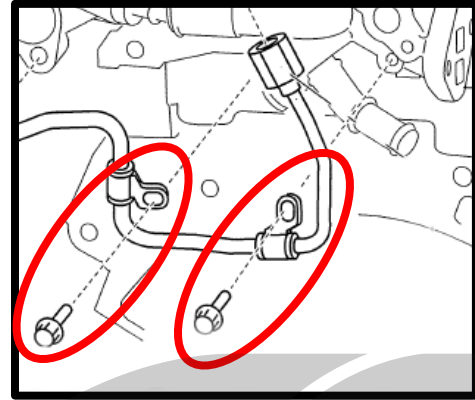


Figure 8e



Figure 8f



Figure 8g



DO NOT let the brackets rotate clock-wise when tightening the bolts. Hold the bracket perpendicular to the fuel line routing when tighten to resist the bracket from rotating.

## 9. Reinstall the Throttle Body

- a) Follow steps 4a – 4d in reverse order. Torque the throttle body bolts to 71-97 in-lbs.

## 10. Reinstall the Intake and Battery

- a) Re-install the TIP with the reversal of step 3 of the installation instructions.
- b) Re-install the Battery box and battery with the reversal of step 2 of the installation instructions.
- c) Re-install the intake with the reversal of step 1 of the installation instructions.

## 11. Check for Leaks

- a) Cycle the key to the ON position 3-4 times to fill the fuel rail. Start the car. You may need to the start the car another time after the air in the fuel system is removed.
- b) While the car is running check for fuel leaks around the fuel rail cap, fuel pump connection, and the fuel rail return line. If any are found turn off the car and fix them. This may require tightening the connections slightly more or loosening them and going through the torquing process again.

Part # GEN-6-919-10

What's Next:



## CorkSport 72mm Throttle Body

The CorkSport Throttle Body takes performance and OE fitment and combines them to create a combination that performs and fits without compromise. If a higher flow capacity throttle body is what you desire, there is no substitute for the CorkSport Throttle Body.

## CorkSport VTA BPV

The CorkSport Binary VTA BPV provides features and performance to suit stock cars and on up to big turbo high power setups. The CorkSport Binary VTA BPV holds 50psi, responds in 50 milli-sec, and won't stall your car every shift. All this comes in a compact design with nozzle adjustability to allow for easy installation in even the most cramped engine bay or with custom piping.



## CorkSport DISI MZR Fuel Injector Seals

CorkSport DISI MZR Fuel Injector Seals for the 2007-2013 Mazdaspeed 3 & 2006-2007 Mazdaspeed 6. Constructed from beryllium copper; the CorkSport fuel injector seals will lock in every PSI of boost so that every bit of your hard earned horsepower keeps you moving forward.

