



**INNOVATE MOTORSPORTS®**  
**SCION FR-S / SUBARU BRZ / TOYOTA FT86**  
**SUPERCHARGER KIT**

FOR INNOVATE PART NUMBERS  
6010 and 6011



**INSTALLATION INSTRUCTIONS**

Kit Serial # \_\_\_\_\_

Supercharger Serial # \_\_\_\_\_

## TABLE OF CONTENT

1	Getting to Know your Supercharger System .....	3
1.1	Intellectual Property used in this Publication.....	3
1.2	Product Warning.....	3
1.3	Safety Warning.....	4
1.4	Changes to Factory Specifications .....	5
2	Tools .....	6
3	System Contents.....	7
4	Disassembly Instructions.....	9
4.1	Preparation .....	9
4.2	Disconnect Battery.....	11
4.3	Disconnect Inlet Pipe .....	11
4.4	Remove Inlet Manifold Cover.....	11
4.5	Disconnect Hoses .....	12
4.6	Disconnect MAP Sensor.....	12
4.7	Disconnect Throttle Body.....	12
4.8	Disconnect Harness from Manifold .....	13
4.9	Remove Sound Generator .....	14
4.10	Remove ECU Mount .....	14
4.11	Disconnect Fuel Rail Support.....	15
4.12	Disconnect Injector Harness .....	16
4.13	Disconnect Heater Hoses .....	17
4.14	Remove Manifold .....	17
4.15	Remove the EVAP. solenoid.....	18
5	Installation Instructions.....	19
5.1	Install Engine Breather Hose Extension.....	19
5.2	Install Throttle Body Heater Hoses .....	20
5.3	EVAP Solenoid Relocation .....	21
5.4	Install Throttle Body Loom Extension .....	22
5.5	Attach the MAP Sensor loom extension.....	22
5.6	Remove Brake Booster Hard Line (Automatic Transmission ONLY) .....	22
5.7	Install Idler Pulley Mount.....	23
5.8	Prepare Manifold .....	24
5.9	Test Fit The Supercharger Manifold .....	25
5.10	Attach throttle body connector .....	27
5.11	Attach heater hoses .....	27
5.12	Install drive belt.....	27
5.13	Connect Fuel supply line.....	28
5.14	Mount ECU .....	29
5.15	Attach MAP Sensor Connector .....	29
5.16	Fit Breather Hoses .....	30
5.17	Brake Booster Jumper Hose Connection (Automatic Transmission ONLY).....	31
5.18	Fit Air Inlet pipe .....	32
5.19	Reconnect Battery.....	32
5.20	Remove Under Hood Insulation .....	33
5.21	Install ECU Calibration .....	33
6	Pre Test-Drive Inspection.....	34
6.1	Pre-Start Inspection .....	34
6.2	Engine Warm Up .....	34
6.3	Road Test Vehicle .....	34
7	Supercharger System Maintenance .....	35
7.1	Drive Belt .....	35
7.2	Supercharger Gear Oil.....	36
7.2.1	Check Oil Level.....	36
7.2.2	Replace Gear Oil.....	37
8	LIMITED WARRANTY.....	38
	SUPERCHARGER WARRANTY REGISTRATION FORM .....	41

# 1 Getting to Know your Supercharger System

## 1.1 Intellectual Property used in this Publication

This document is copyright of **Innovate Motorsports**. This document may not be re-sold, copied or distributed in any way without prior written authorization of a director of Innovate Motorsports.

Innovate Motorsports has patents for its products or are pending. Any unauthorized copying or modification of the Innovate Motorsports products may result in legal action.

Copyrights / Trademarks:

Innovate Motorsports® is a registered trademark of Performance Motorsports, Inc. Innovate Motorsports has patents for its superchargers. Any unauthorized copying or modification of the system may result in legal action.

Loctite® and Grey Maxx® are registered trademarks of Henkel KGaA, a company incorporated in Germany. Other than commercial supply arrangements, Henkel KGaA does not have any association with Innovate Motorsports.

RedLine® is a registered trademark of RedLine Synthetic Oil Corporation, a company incorporated in the United States of America. Other than commercial supply arrangements, Redline and RedLine Synthetic Oil Corporation do not have any association with Innovate Motorsports.

Toyota FT86, Subaru BRZ & Scion FR-S are registered trademarks of Toyota, Subaru & Scion Companies

SAE is a trademark of SAE International ([www.sae.org](http://www.sae.org)), a global technology information and standards setting resource organization for the design, manufacturing, operation, and maintenance industry.

Gates is a registered trademark of the Gates Rubber Company, a subsidiary of Tomkins PLC, incorporated in London, United Kingdom. Other than commercial supply arrangements, Gates and Tomkins PLC do not have any association with Innovate Motorsports Limited.

## 1.2 Product Warning

Installation of the Innovate Motorsports Supercharger kit on Scion FR-S, Subaru BRZ & Toyota FT86 vehicles may void all or parts of Toyota, Subaru & Scion Warranties. Customers should consult their dealer for details.

Innovate Motorsports makes no representation that installation and use of the Innovate Motorsports supercharger kit is legal for public road use worldwide. Customers should check that installation and use of the Innovate Motorsports supercharger kit on their vehicle is legal by contacting the relevant statutory authority in their jurisdiction prior to use on roads.

**Innovate Motorsports supports safe driving. So always remember to observe all speed limits and road rules relevant to the state, city or other local jurisdiction.**

Provided in this installation manual are detailed instructions to the installer on how to install the Innovate Motorsports patent pending supercharger kit to the Toyota FT86 / Subaru BRZ / Scion FR-S vehicle (the vehicle). The instructions are aimed at being simple yet informative, and are aided with well-presented

pictures to make installations as simple, fast, and problem free as possible. **Please read the entire instruction manual prior to beginning the installation procedure.** Pictures and descriptions may vary slightly from model to model.

It is recommended that all wiring harness connectors, and vacuum hoses are labeled at the time of removal for easy and correct refitting. Some components that are removed and are to be refitted are fragile, and should be stored safely to prevent damage to these components.

**Innovate Motorsports recommends performing the following vehicle checks prior to installing the supercharger.**

- 1) Check that the factory fuel system is operating correctly.**
- 2) Inspect the factory exhaust catalyst for blocks or damage.**
- 3) Check fuel quality in fuel tank ensuring that it is not stale or low octane fuel. Replace with a higher octane, 91 octane Premium Unleaded Gasoline as required. It is also recommended to replace the fuel filter if the vehicle has travelled more than 9000 miles or 15,000 Km.**

Innovate Motorsports will not be liable for any loss, damage, payment, costs, expenses or other liability, not expressly stated in this document. In particular, Innovate Motorsports shall not be liable to any person for any consequential, indirect or economic loss or punitive or exemplary damages of any kind.

Innovate Motorsports reserves the right to change specifications from time to time and will not be liable to any person for doing so. Innovate Motorsports believes that information in this document is correct at time of print. Innovate Motorsports limits its liability to the maximum extent permissible at law with regard to the reliance which any person places on anything in this document.



**THIS INNOVATE MOTORSPORTS INSTALLATION REQUIRES THAT THE VEHICLE BE FITTED WITH AN APPROVED ECU AND ECU CALIBRATION. FAILURE TO ENSURE THIS WILL CAUSE CATASTROPHIC ENGINE FAILURE AND VOID ALL WARRANTY.**

### **1.3 Safety Warning**

No unauthorized service or alteration may be undertaken to the Innovate Motorsports supercharger. Installation should be carried out in a workshop which is a safe and ventilated working environment with equipment and procedures compliant with local authority guidelines and legal requirements. Installers should ensure adequate hearing, eye, and physical protection is used at all times during the installation process. Installers should take reasonable precautions to avoid fatigue and closely follow the installation instructions during every installation. Innovate Motorsports recommends installation should not be carried out unsupervised. Innovate Motorsports, its directors, employees and agents will not accept liability for damage accident or injury resulting from the installation process. Safety warnings are also provided throughout this document.



**Many of the photos shown in this document are of a typical FT86 Right hand drive vehicle and are similar to a typical FT86 Left hand drive vehicle.**



Some of the terminology and language used in this instruction may vary from that of the end user / installer's expectations, as some tools and automotive components have different common names in different geographical locations.

## ***1.4 Changes to Factory Specifications***

**FUEL: 91 OCTANE (OR HIGHER) PREMIUM UNLEADED PUMP GASOLINE TO BE USED AT ALL TIMES. NEVER ALLOW THE ENGINE TO KNOCK OR DETONATE AS SERIOUS ENGINE DAMAGE MAY OCCUR.**

**REQUIRED SERVICE: (SEE MAINTENANCE SECTION OF MANUAL)**

- 1. INSPECT SUPERCHARGER DRIVE BELT AT EVERY ROUTINE SERVICE AND REPLACE WHEN REQUIRED.**
- 2. DRAIN AND REPLACE SUPERCHARGER OIL EVERY 30,000 miles or 50,000 km. USE REDLINE 75W90 NS GEAR OIL OR EQUIVALENT. IT IS CRITICAL NOT TO OVERFILL SUPERCHARGER GEARBOX AS DAMAGE WILL OCCUR. FILL WITH EXACTLY 5.31oz 157mil. THE ENGINE SITS AT A REARWARD ANGLE. THIS PREVENTS ACCURATE MEASUREMENT OF THE GEAR OIL WITH THE DIPSTICK AND PROPER DRAINING. WHEN MEASURING OR REPLACING THE SUPERCHARGER OIL LEVEL, ENSURE THE ENGINE IS LEVEL. CHECK OIL LEVEL WITH THE DIPSTICK PROVIDED IN THE SUPERCHARGER ASSEMBLY. TIGHTEN DIPSTICK FULLY BEFORE CHECKING THE OIL LEVEL.**

## **2 Tools**

Safety Glasses

Tape For Masking

Spray Lube

3/8" Drive Ratchet

3/8" Drive Breaker Bar

3/8" Drive – Short Length 6-Point Sockets - 10mm, 12mm, 13mm, 14mm

3/8" Drive Elbow

3/8" Drive - 5mm Allen Socket ( Check Supercharger Oil Level )

3/8" Drive Extensions – 5.000" To 7.000"

Torque Wrench

3mm Allen Wrench - Map Sensor Allen Bolt

Flat Heat & Phillips Screw Drivers

Adjustable Pliers, Needle Nose Pliers, Dykes "Cutters"

File

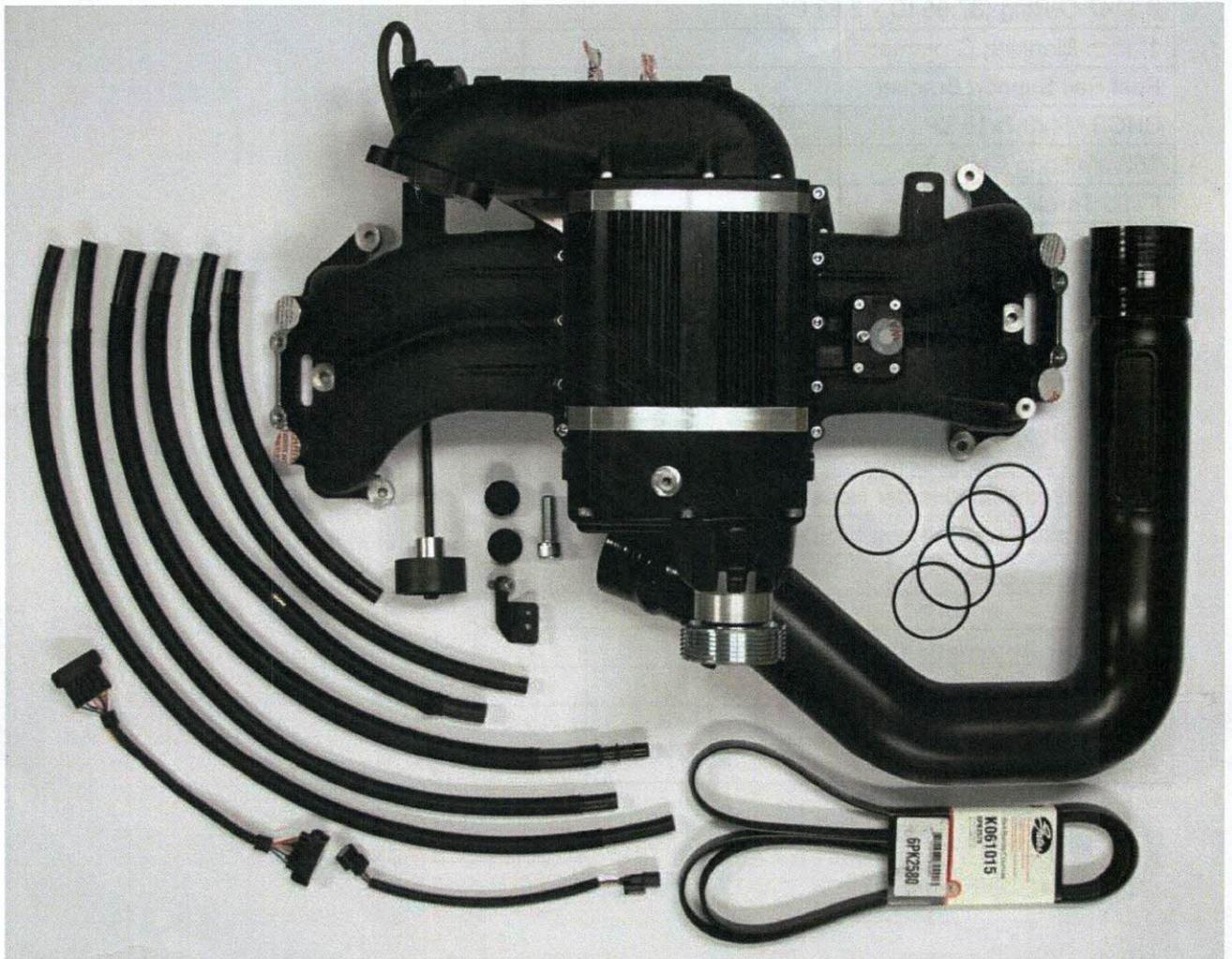
Telescoping Magnet

Panel Push-Pin Clip Removal Tool

Blue Thread Locker (Optional)

Tape Measure (Optional)

### 3 System Contents



Part Name	QTY
Supercharger Manifold Assembly	1
Inlet Pipe	1
SHCS M14 X 1.5 X 40 ZP	1
Idler Pulley Mount FT86	1
Idler Pulley	1
Washer Dia 24 x Dia 8.5 x 4mm	1
M8 x 170mm Long Hex Head Bolt	1
6PK 2579 Micro V-Belt	1
75mm ID Hump Coupler 90mm Long	1
75mm ID Straight Silicone Coupler 75mm Long	1
Dia 65-89mm Hose Clamp	4
Evap. Solenoid Relocation Bracket	1
SHCS M8x1.25x16 ZP	1

BS144 O-Ring (63.17 ID x 2.62 CS)	4
BS147 O-Ring (67.95 ID x 2.62 CS)	1
1" inch Blanking Grommet	1
Fuel Rail Support Bracket	1
SHCS M4x0.7x16 ZP	1
150mm Long Cable Tie	8
FT86 Throttle Body Loom Extension	1
FT86 Map Sensor Loom Extension	1
Engine Breather Extension Hose Assembly 700mm	1
Evap. Solenoid Relocation Hose Assembly 520mm	1
Evap Solenoid Hose Assembly 330mm	1
Throttle Body Outlet Heater Hose Assembly 800mm	1
Throttle Body Inlet Heater Hose Assembly 900mm	1
FT86 Brake Booster Hose (RHD)	1
12mm Hex Tool	1

<b><u>Automatic Transmission Kit</u></b>	
Brake Booster Vacuum Cap	1
Hose Barb	2
Brake Booster Re-Route Hose	1

## 4 Disassembly Instructions

### **SAFETY WARNING**

No unauthorized service or alteration may be undertaken to the Innovate Motorsports supercharger. Installation should be carried out in a workshop which is a safe and ventilated working environment with equipment and procedures compliant with local authority guidelines and legal requirements. Installers should ensure adequate hearing, eye, and physical protection is used at all times during the installation process. Installers should take reasonable precautions to avoid fatigue and closely follow the installation instructions during every installation. Innovate Motorsports recommends installation should not be carried out unsupervised. Innovate Motorsports, its directors, employees and agents will not accept liability for damage accident or injury resulting from the installation process. Safety warnings are also provided throughout this document.

#### **4.1 Preparation**

Ensure that all components required to assemble the supercharger are available. Refer to the Parts Supplied section provided earlier.

Ensure that all required tools are available.

Please read the entire instruction manual prior to beginning the installation procedure. Ensure vehicle is located in a secure position with vehicle tires secured and handbrake applied. To avoid injury, Innovate Motorsports® recommends use of suitable a vehicle lift or axle stands when the vehicle is required to be lifted for access to. Stands should be positioned as per the vehicle Manufacturers Owners Handbook.

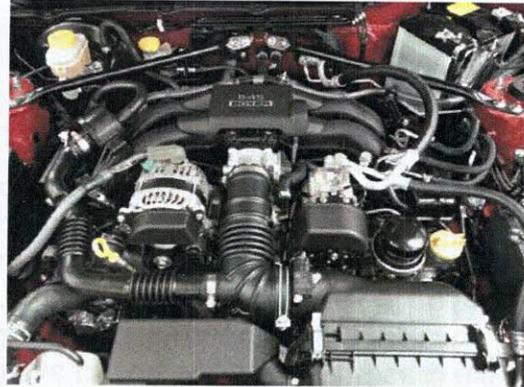
**SAFETY WARNING:** Use Personal Protective Equipment such as safety glasses, gloves, etc. at all times and as necessary. Allow engine to cool prior to proceeding with disassembly to prevent scalding.



During disassembly and removal of components, take notes and ensure to label and store them safely; this will help with the reassembly.



Many of the photos shown in this document are of a typical FT86 right hand drive vehicle and are similar to a typical FT86 left hand drive vehicle.



**Caution:**

Connect and disconnect battery cables, jumper cables or battery charger only with the ignition switched off

**Warning:**

Disconnecting the battery may erase fault codes stored in control module memory. Using diagnostic equipment, check for fault codes before disconnecting battery cables. If the malfunction indicator light (MIL) is illuminated.

**MIL (Malfunction Indicator Lamp) light.**

The MIL light can be found in one of two locations, dependent on the market the vehicle has been built for.

1. The MIL light may be an illuminated **ENGINE** symbol within the speedometer cluster.
2. The MIL light may be displayed as **SERVICE ENGINE SOON** within the tachometer.

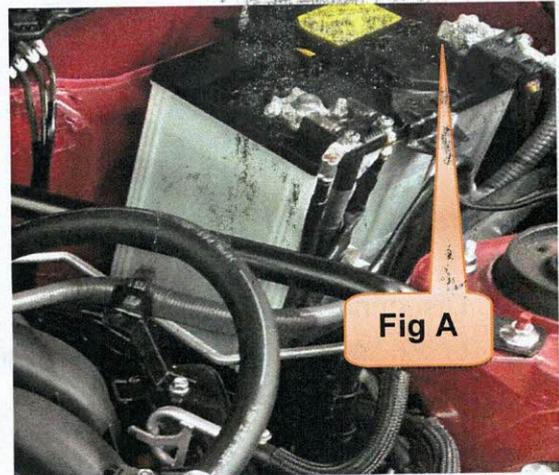
Please refer to the **OWNERS HANDBOOK** to define which off the above applies to the vehicle to be fitted with the Innovate Motorsports unit.

**Note:**

**Always disconnect the negative battery terminal before the positive terminal. This prevents possible shorting and potential battery damage.**

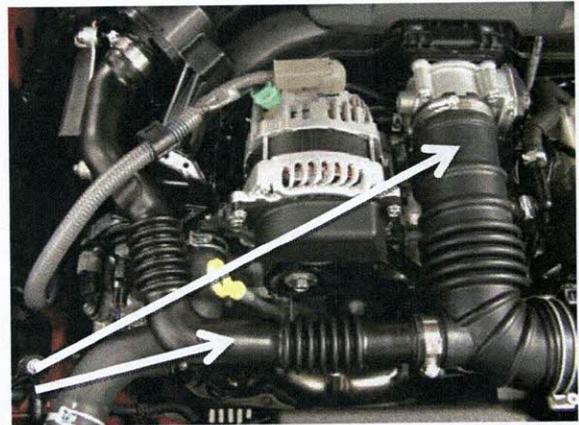
## 4.2 Disconnect Battery

- First disconnect negative (-) battery cable (Fig A).
- Lift positive (+) terminal plastic cover (B), then disconnect positive (+) cable.



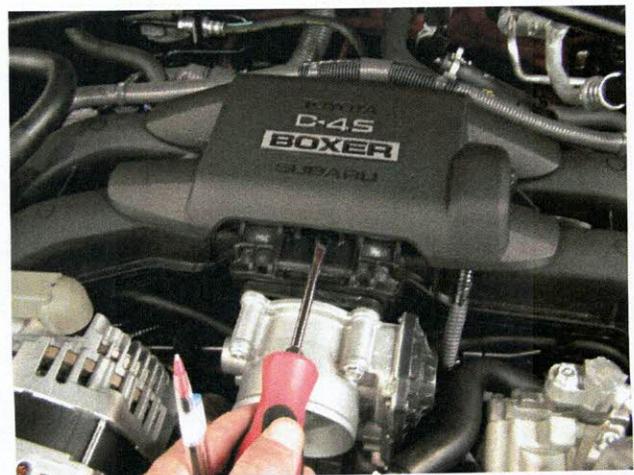
## 4.3 Disconnect Inlet Pipe

- Disconnect vacuum hoses from inlet pipe.
- Loosen hose clamps and remove the inlet pipe and sound pipe from the vehicle.



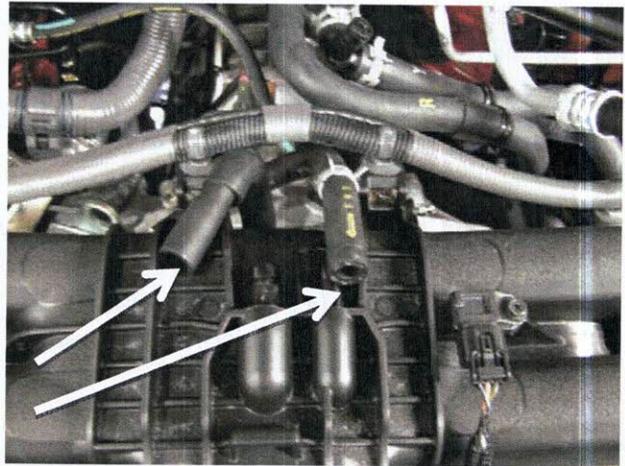
## 4.4 Remove Inlet Manifold Cover

- Depress tabs and lift cover to remove.



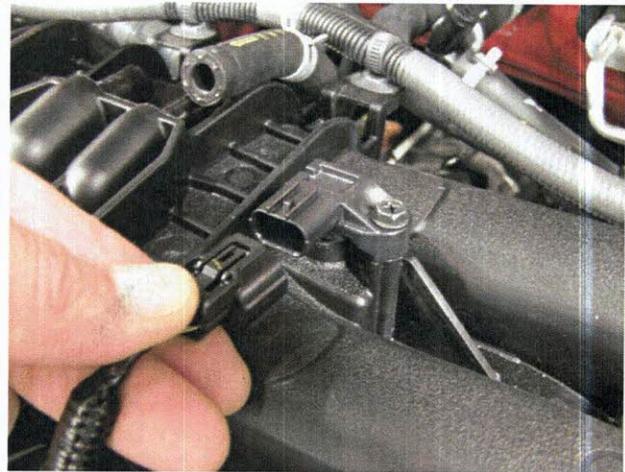
#### **4.5 Disconnect Hoses**

- Disconnect engine breather and brake vacuum hose from the rear of the manifold.



#### **4.6 Disconnect MAP Sensor**

- Disconnect MAP sensor plug.



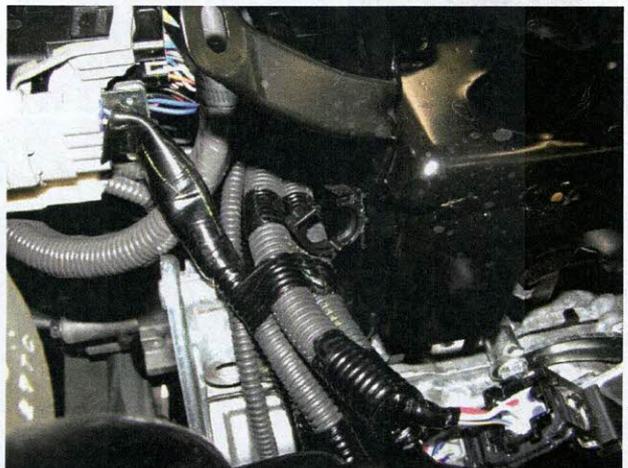
#### **4.7 Disconnect Throttle Body**

- Disconnect throttle body plug.



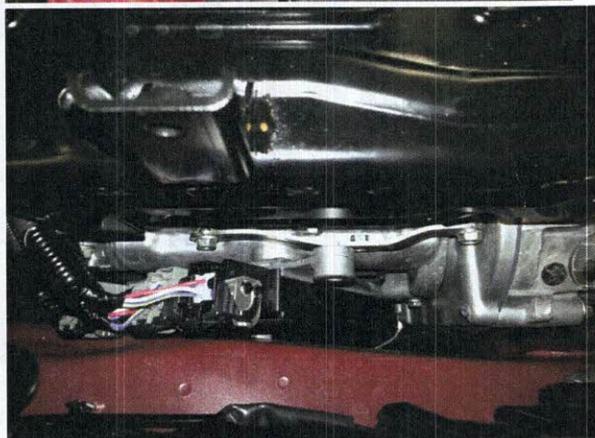
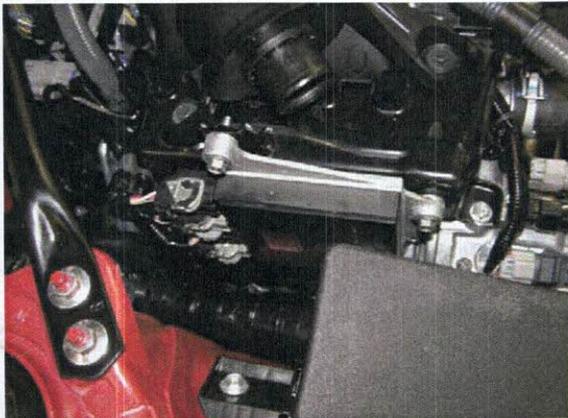
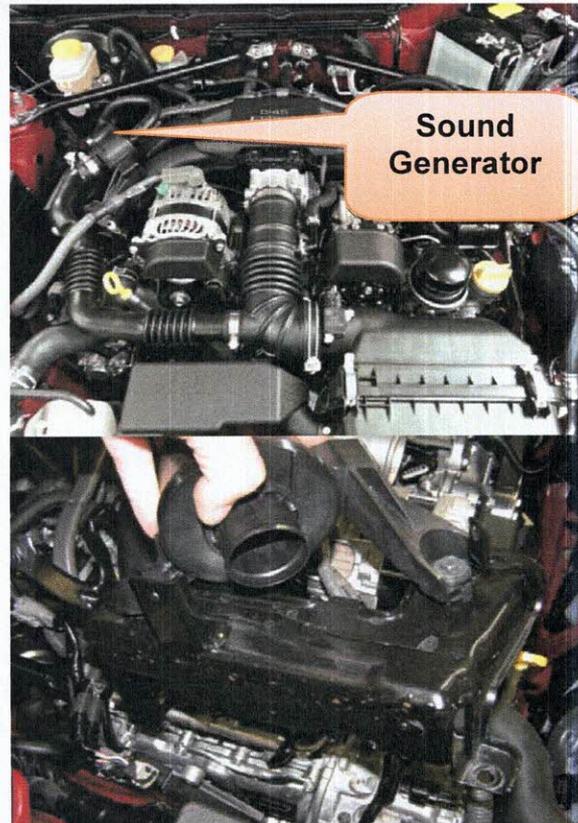
#### **4.8 Disconnect Harness from Manifold**

- Disconnect wiring harness from manifold supports.
- Disconnect alternator harness from manifold covers.



#### **4.9 Remove Sound Generator**

- Remove Sound Generator (2 bolts)
- Plug the hole in the firewall with the blanking grommet supplied.

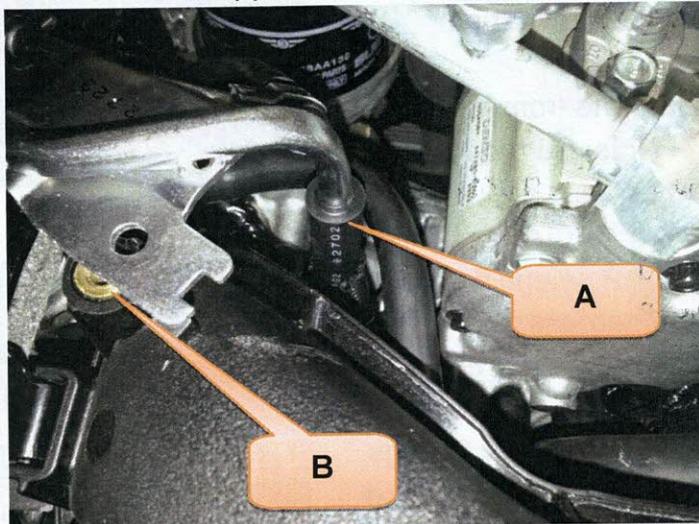


#### **4.10 Remove ECU Mount**

- Disconnect ECU from mount (3 bolts) and carefully lower the ECU.
- Remove ECU mount from Engine (2 bolts).

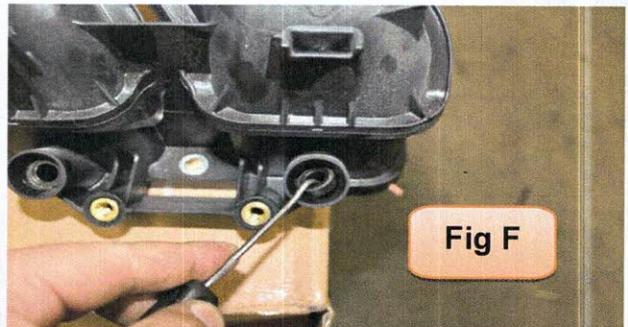
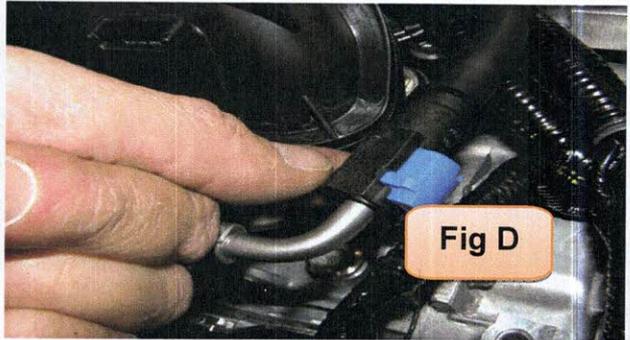
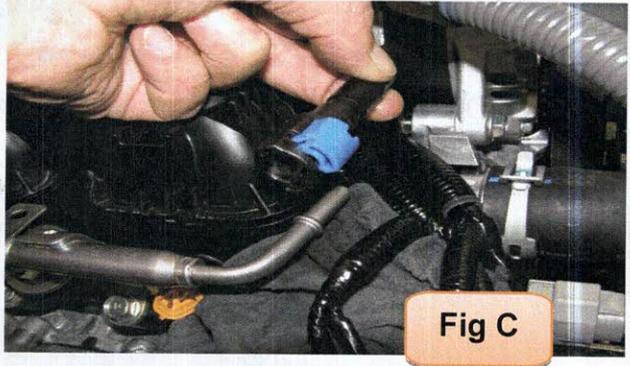
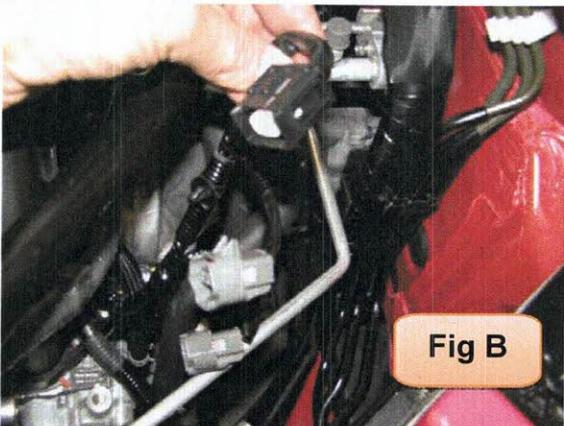
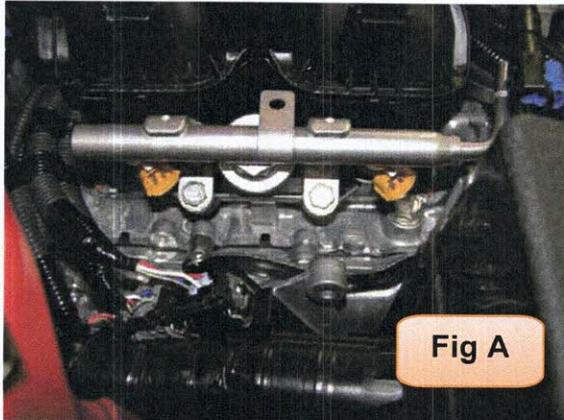
#### 4.11 Disconnect Fuel Rail Support

- Disconnect EVAP solenoid hose from barb (A).
- Remove bolt from fuel rail support (B).



#### 4.12 Disconnect Injector Harness

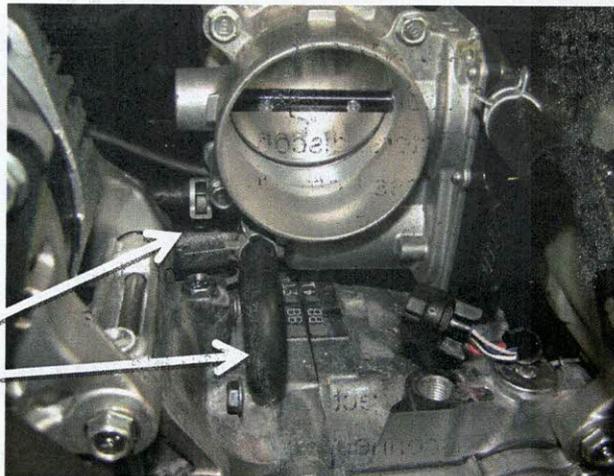
- Disconnect injector plugs from injectors; disconnect injector harness from fuel rail on both banks. (Fig. A & B)
- Disconnect fuel line from fuel rail, both banks. Note: Be prepared to catch fuel when lines are disconnected. (Fig. C & D)
- Disconnect EVAP solenoid connector and harness from manifold (right hand side rear). (Fig. E)
- Be sure to remove injector O-rings from intake manifold, you will need to reuse these O-rings on the Supercharger intake manifold installation. (Fig. F)



### 4.13 Disconnect Heater Hoses

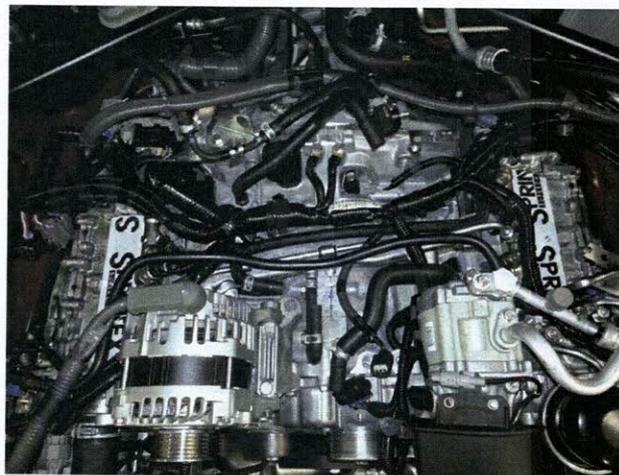
- Disconnect throttle body heater hoses from throttle body.

Note: Be prepared to catch coolant when hoses are removed.



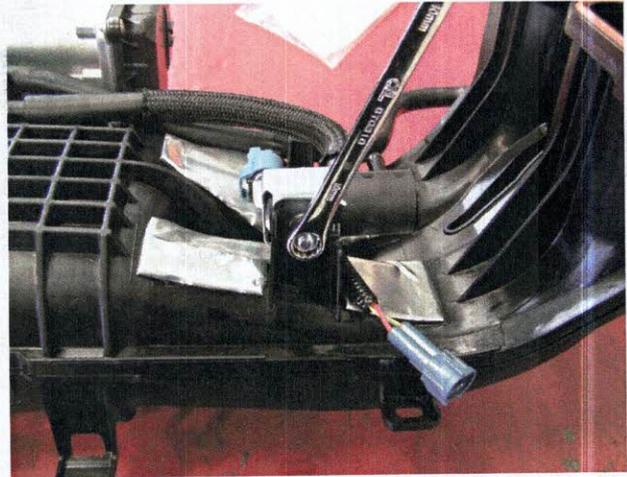
### 4.14 Remove Manifold

- Remove the 6 bolts from the intake manifold flanges (3 on each bank) and carefully lift the intake manifold from engine.
- Cover intake ports with rags or tape to prevent foreign objects falling into the engine.
- Remove the belt guards from the alternator and AC compressor.
- Use a 14 mm wrench to release the tension on the dynamic tensioner and remove the drive belt from the engine.



#### **4.15 Remove the EVAP. solenoid**

- Remove the EVAP solenoid from the manifold, also remove the throttle body and fuel rails from the intake manifold. Ensure that the injector seals are removed from the manifold and set aside for installation to the supercharger system.
- Remove the 2 throttle body heater hoses from the engine also remove the spring band clamps on original hoses, put aside to re-use later in the installation.



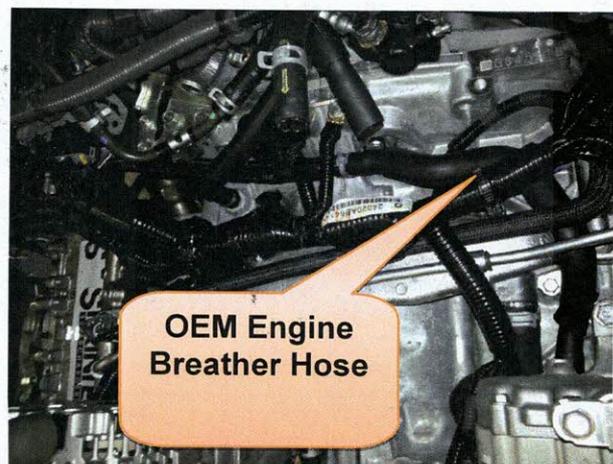
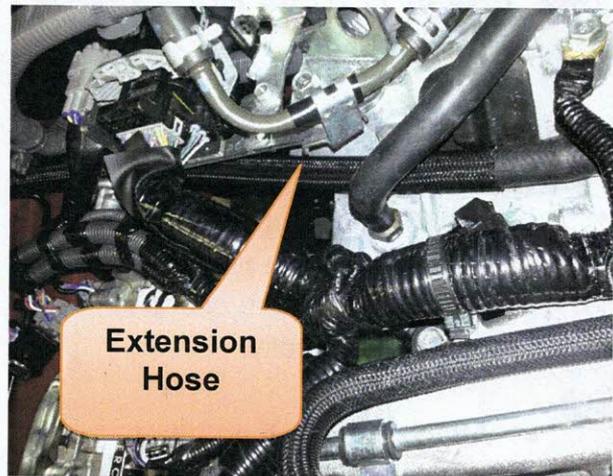
## 5 Installation Instructions

### SAFETY WARNING

No unauthorized service or alteration may be undertaken to the Innovate Motorsports supercharger. Installation should be carried out in a workshop which is a safe and ventilated working environment with equipment and procedures compliant with local authority guidelines and legal requirements. Installers should ensure adequate hearing, eye, and physical protection is used at all times during the installation process. Installers should take reasonable precautions to avoid fatigue and closely follow the installation instructions during every installation. Innovate Motorsports recommends installation should not be carried out unsupervised. Innovate Motorsports, its directors, employees and agents will not accept liability for damage accident or injury resulting from the installation process. Safety warnings are also provided throughout this document.

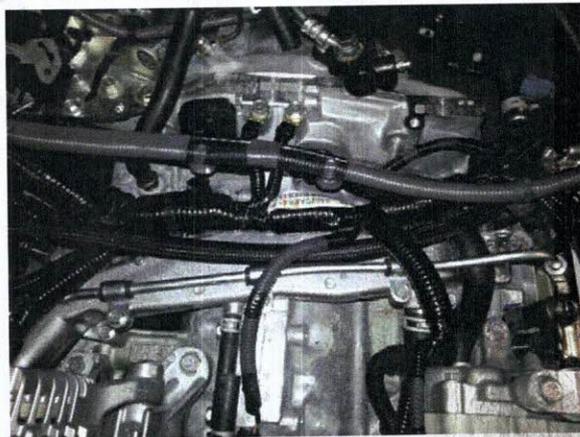
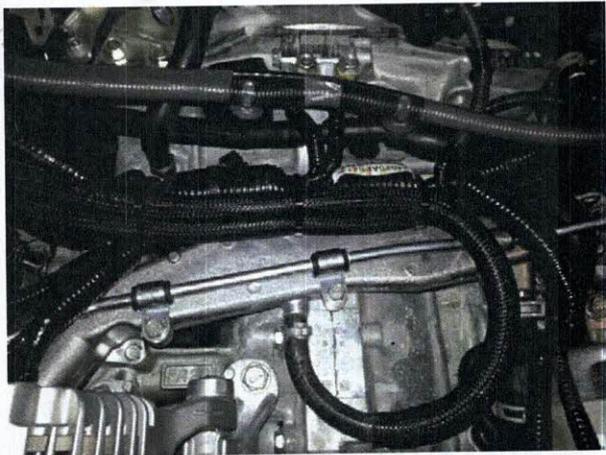
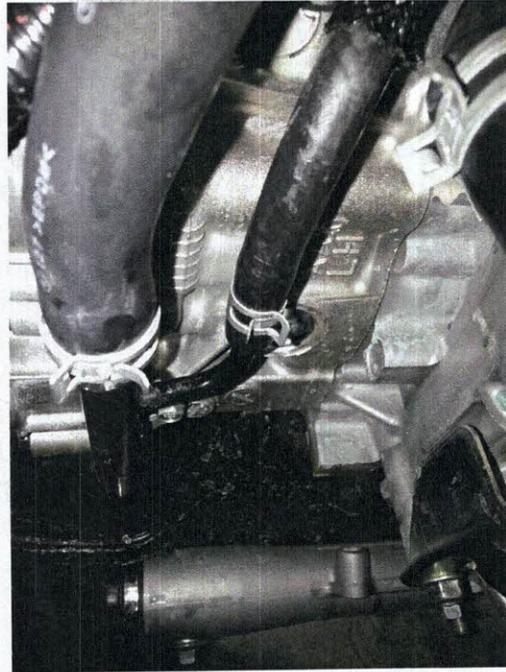
#### 5.1 Install Engine Breather Hose Extension

- Attach the ½" inch ID. 700mm long engine breather extension hose to the OEM engine breather hose, route the supplied hose as shown in picture. The extended hose will connect to the supercharger inlet later in the installation



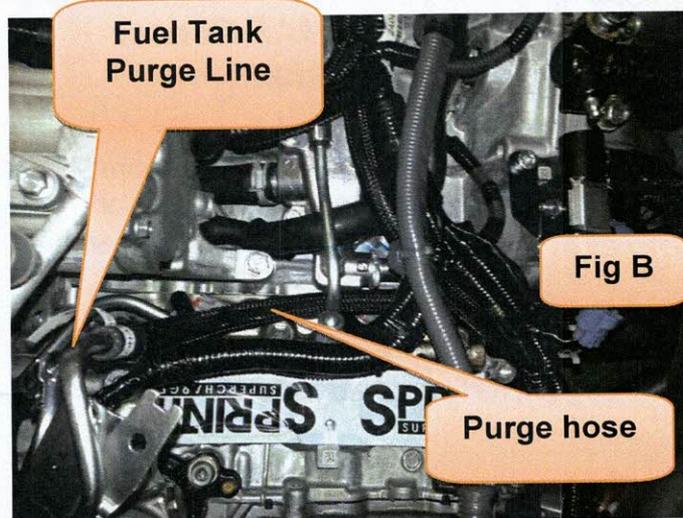
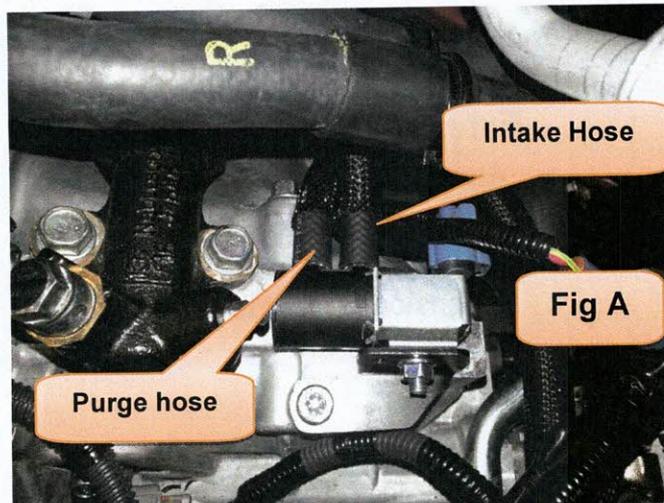
## 5.2 Install Throttle Body Heater Hoses

- Attach spring band clamp to new throttle body heater hoses, install the 900mm long heater hose to the outlet on the rear of the engine make sure clamp is secured correctly.
- Attach 800mm long heater hose to the outlet, secure hoses in place with cable ties supplied.



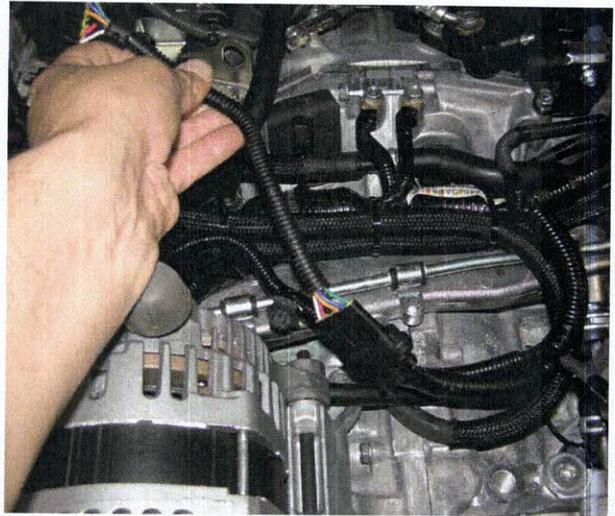
### 5.3 EVAP Solenoid Relocation

- Attach the 520mm long fuel tank purge hose to the solenoid, attach the other end of the hose to the fuel tank purge line, route hose as shown in image. (Fig A & B)
- Attach the 330mm long fuel vapor hose to the solenoid; the other end of this hose will be attached to the supercharger intake once installed.
- Attach EVAP solenoid to the relocation bracket supplied in kit. (Fig C)
- Secure EVAP solenoid bracket to the engine with the M8 x 16 SHCS bolt supplied.



#### 5.4 Install Throttle Body Loom Extension

- Attach the throttle body loom extension to the throttle body connector and route the extension behind the alternator.



#### 5.5 Attach the MAP Sensor loom extension

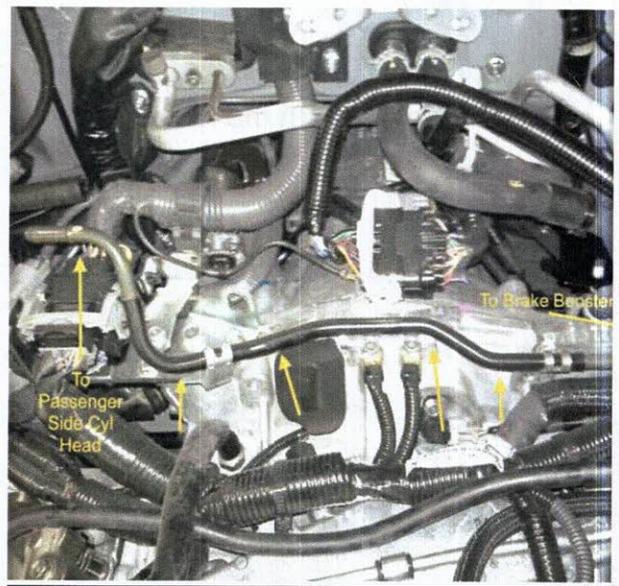
- Attach the MAP sensor loom extension to the MAP sensor connector and lay the extension towards the firewall.

Note: MAP sensor extension harness is NOT required on LHD vehicles



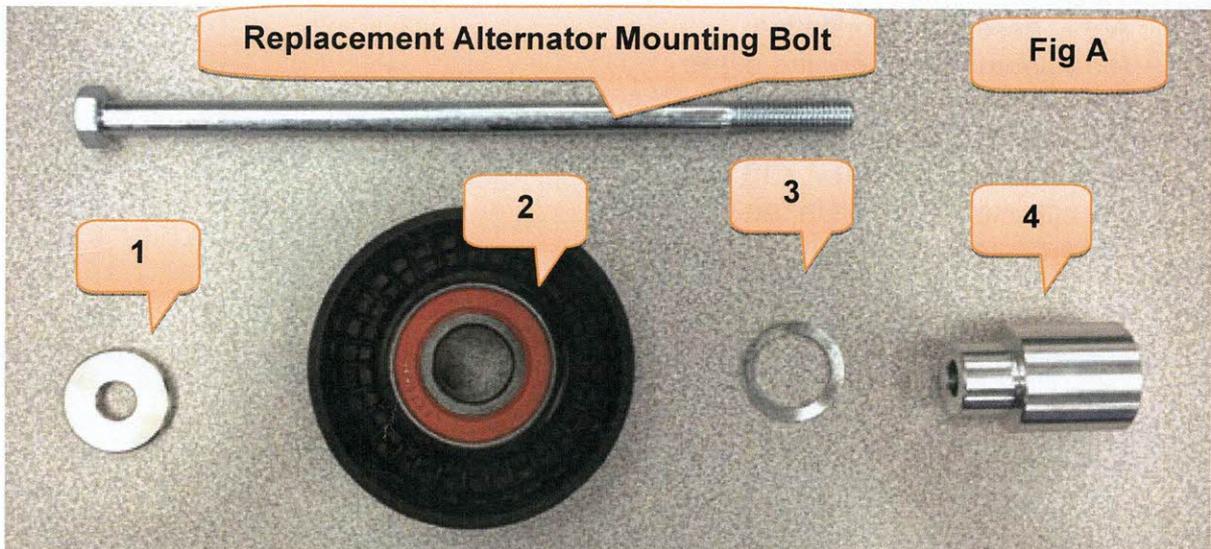
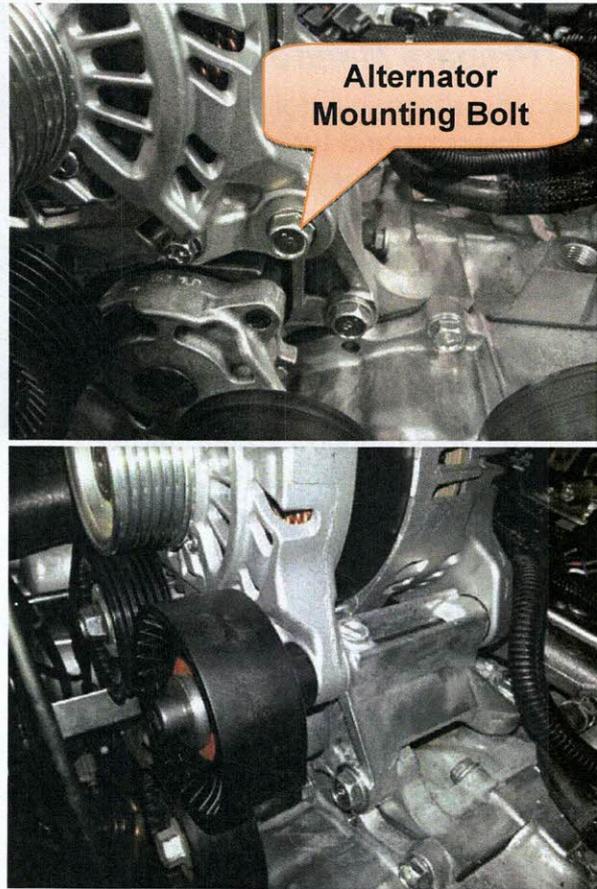
#### 5.6 Remove Brake Booster Hard Line (Automatic Transmission ONLY)

- Automatic Transmission OEM Brake Booster Tube must be removed as it will interfere with the Supercharger installation.



### 5.7 Install Idler Pulley Mount

- Remove alternator mounting bolt.
- Assemble idler pulley in the order illustrated in Fig A. using replacement alternator mounting bolt supplied.
- Bolt idler pulley assembly to alternator bracket. (Blue Loctite is recommended)



## 5.8 Prepare Manifold

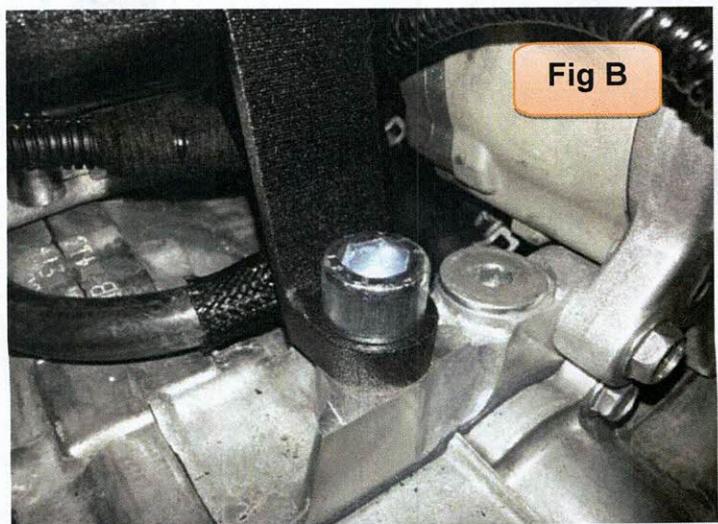
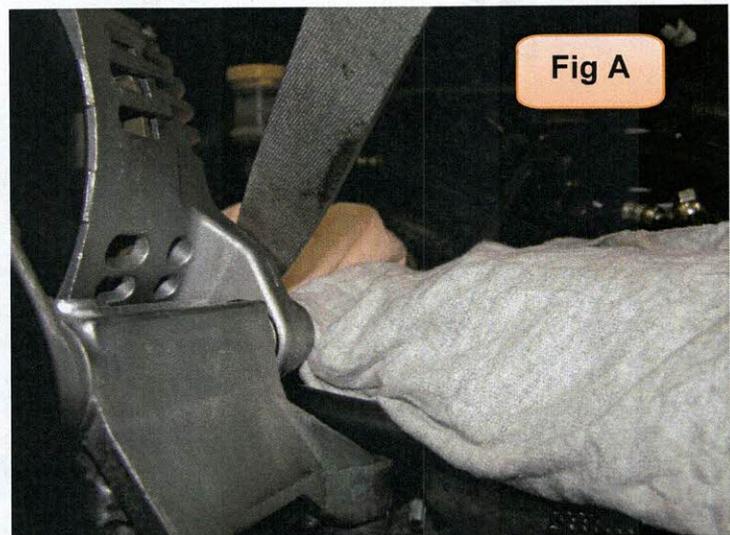
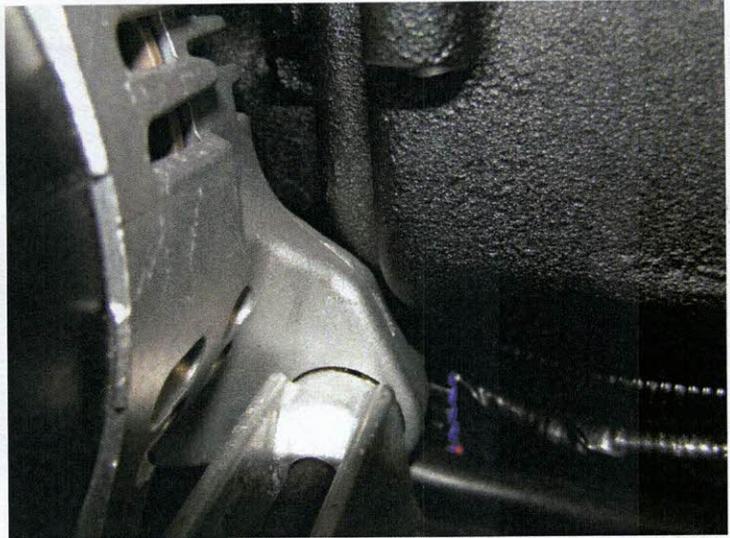
- Install the injector O-rings, injectors and fuel rails onto the supercharger manifold. Apply assembly lubrication (petroleum jelly or engine oil) to the O-rings prior to installation.
- Turn the supercharger manifold upside down on a clean rag to prevent marking supercharger and install the manifold seals supplied. Apply assembly lubrication (petroleum jelly or engine oil) to the O-rings prior to installation.
- Turn the supercharger back over.
- Install the throttle body seal and throttle body to the supercharger manifold, attach with OEM fasteners and tighten to 12 Nm.
- Apply assembly lubrication (petroleum jelly or engine oil) to the MAP sensor O-ring prior to installation. Install MAP sensor with supplied M4 X 0.7 X16 bolt. Do not use OEM bolt in the supercharger manifold



## 5.9 Test Fit The Supercharger Manifold

- Carefully lower the supercharger manifold into place (**2 PERSON LIFT**) and check the clearance around the alternator. Due to normal fluctuation in the OEM components, it may be necessary to file the corner of the alternator bracket to make sure that the supercharger manifold is not prevented from sitting flat on the intake face of the cylinder heads. This step, if needed, should be simple with a large flat file and take less than 1 minute.
- Make sure that the intake ports are covered before filing the corner of the alternator support. (Fig A)
- Use a vacuum cleaner to collect any metal debris before removing tape or rags from the intake runners prior to fitting the manifold.
- Position throttle body plug so it can be accessed once manifold is in place.
- Lower the manifold into place and secure the manifold in place with the 6 original OEM fasteners. Torque to 18 ft lb (25 Nm).

It is recommended to re-torque these 6 intake manifold bolts after 500 miles.



- Secure the manifold with the M14 x 1.5 x 40 SHCS bolt as shown. (Fig B)
- 12mm Hex Insert Tool Provided In Supercharger Kit. (Fig. C)
- 12mm Hex Insert Tool Provided In Supercharger Kit In Use 12mm 6-Point Socket, Elbow & Extension as shown. (Fig. D)

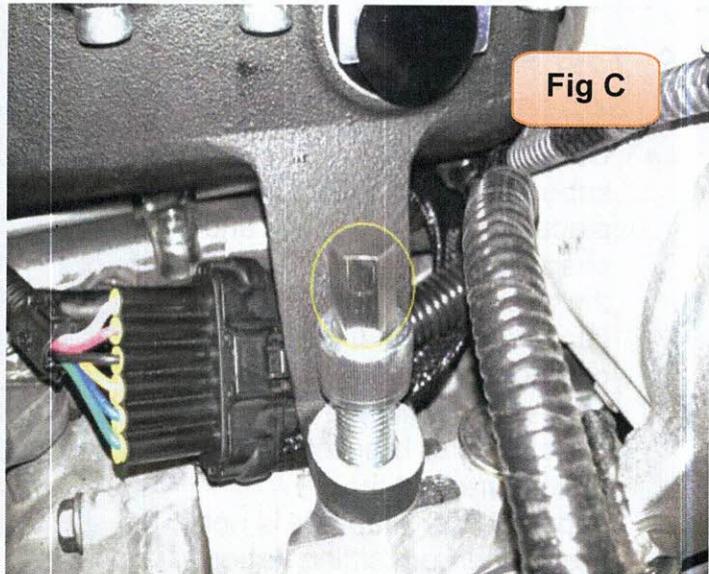


Fig C

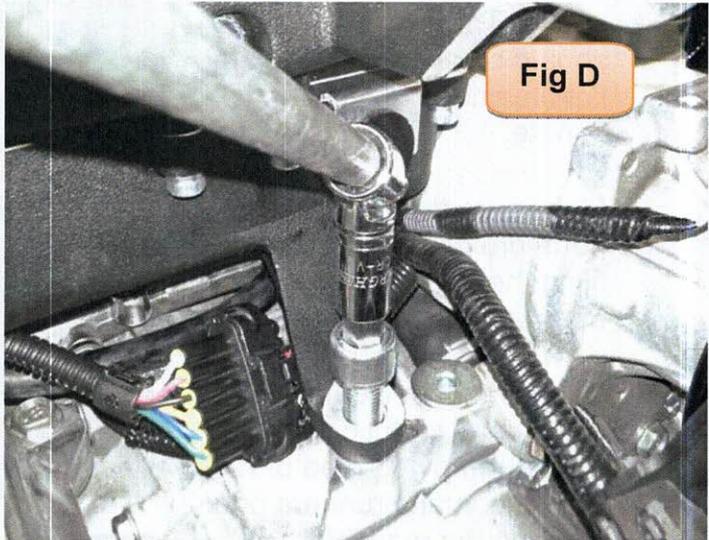


Fig D

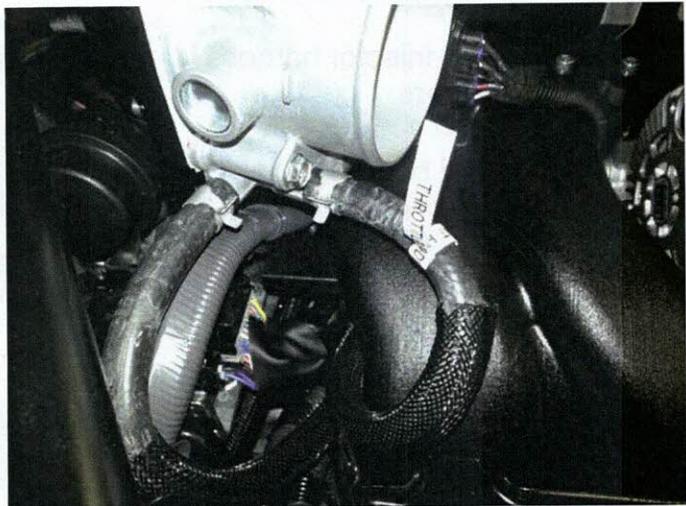
### 5.10 Attach throttle body connector

- Connect throttle plug connector to throttle body.



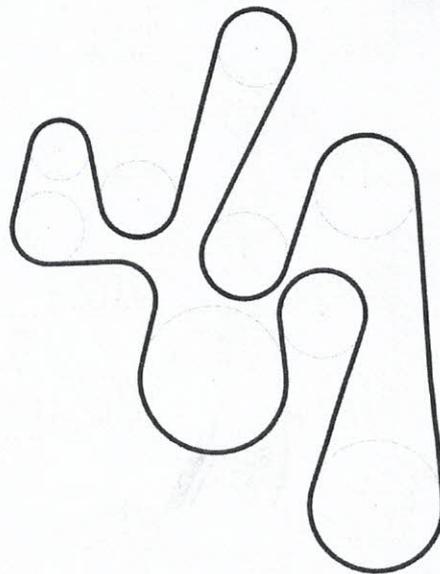
### 5.11 Attach heater hoses

- Connect the throttle body heater hoses to the throttle body, making sure hose clamps are installed correctly.



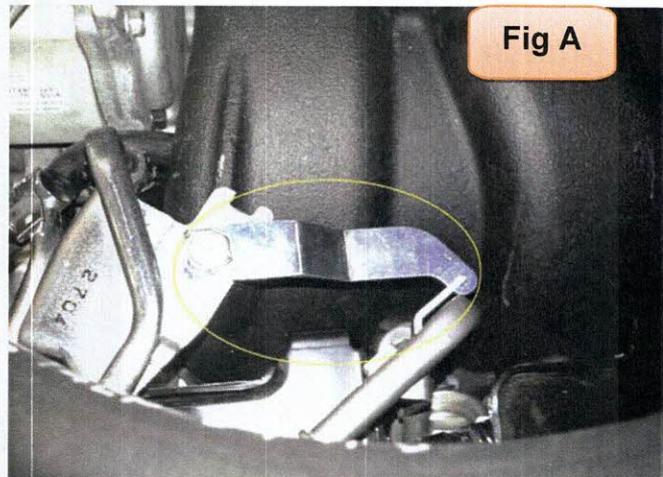
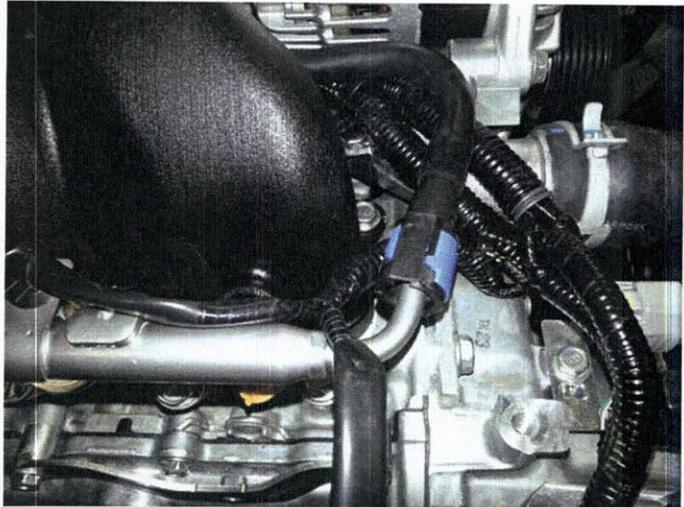
### 5.12 Install drive belt

- Use a 14 mm wrench to release the tension on the dynamic tensioner and install new drive belt. Follow belt routing diagram and make sure that the belt is properly aligned on each pulley.



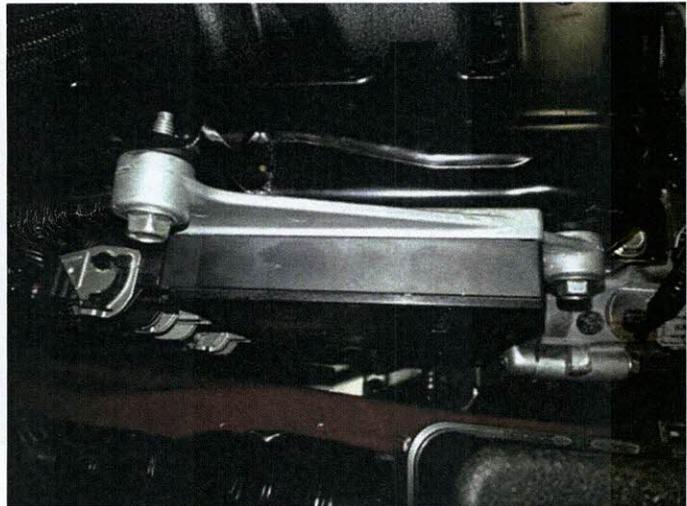
### 5.13 Connect Fuel supply line

- Reconnect the fuel supply line to both left and right fuel rails, making sure that each locking tab is fully engaged.
- Reconnect injector harness to all injectors.
- Install Fuel Rail Support Bracket Provided - Part# 260P8111 (Fig A)



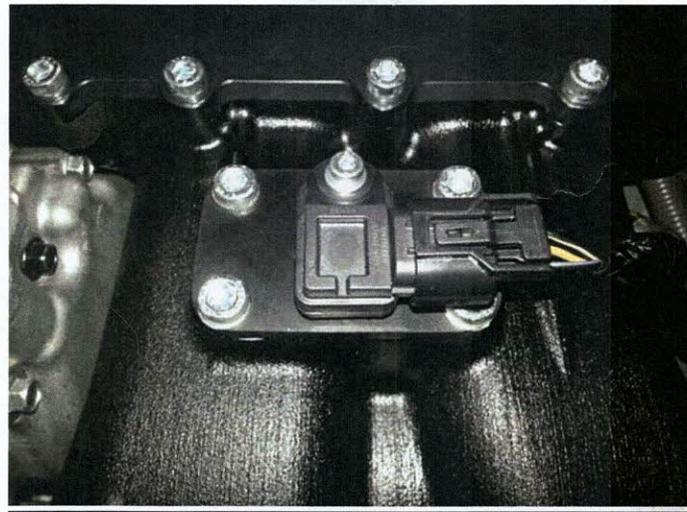
### **5.14 Mount ECU**

- Install ECU mount and secure with original fasteners, attach RHS injector cover and secure with original bolts.
- Re-attach ECU and secure with original bolts.



### **5.15 Attach MAP Sensor Connector**

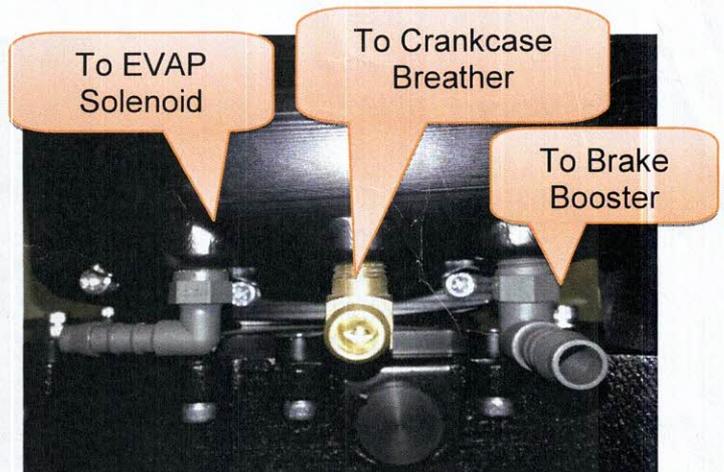
- Attach MAP sensor extension loom to the MAP sensor.

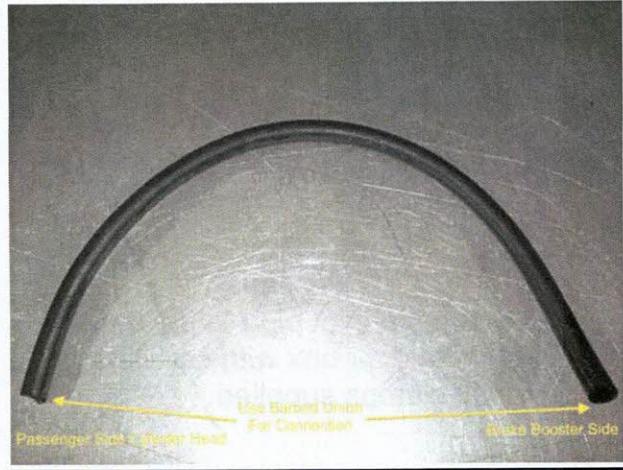
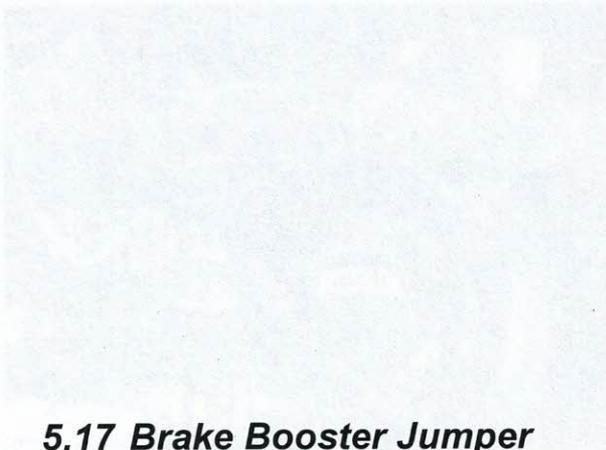


## 5.16 Fit Breather Hoses

- Attach loose end of EVAP solenoid vacuum hose to supercharger intake.
- Attach crank case breather hose to supercharger intake.
- **Manual Transmission Vehicle:** Attach brake booster hose supplied to supercharger intake and attach other end to brake booster. Use OEM spring band clamp from original hoses. Ensure that the vacuum check valve supplied with this hose is oriented correctly ('To Motor' arrow on the check valve is installed towards the engine).

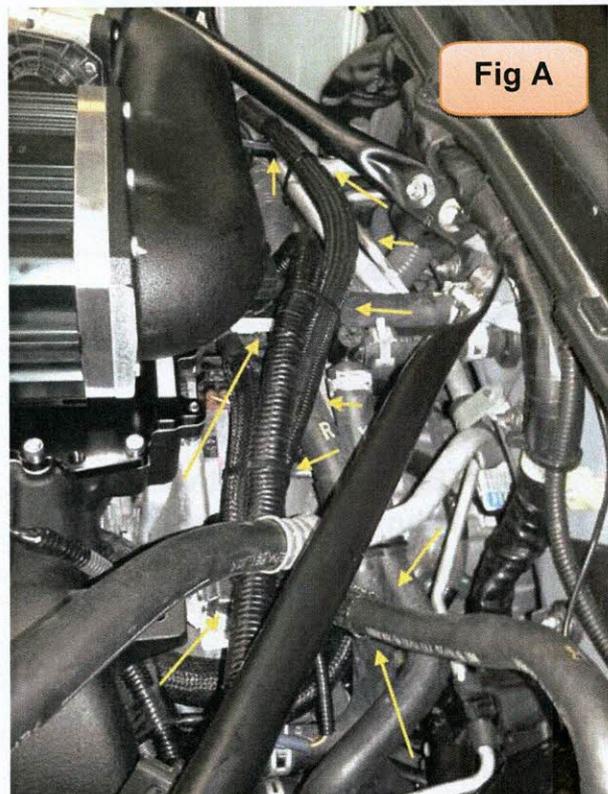
**Automatic Transmission Vehicle:** Using the supplied vacuum cap, block off the brake booster line.





### 5.17 Brake Booster Jumper Hose Connection (Automatic Transmission ONLY)

- Using the supplied hose and (2) hose barb fittings route the brake booster line behind the supercharger (Fig A.)



### **5.18 Fit Air Inlet pipe**

- Attach the inlet pipe to the throttle body and air box with couplers and hose clamps supplied.



### **5.19 Reconnect Battery**

- Re-install battery if removed and connect terminals.

**NOTE: Battery Positive terminal (B+) should always be connected before the negative terminal (B-).**

## 5.20 Remove Under Hood Insulation

- Under Hood Insulation will need to be removed. Use a commercially available tool such as the one pictured in Fig A. to properly remove plastic retaining rivets which this insulation is held by.



Fig A

## 5.21 Install ECU Calibration



This Innovate Motorsports installation requires that the vehicle be fitted with AN APPROVED ECU and ECU calibration. Failure to ensure this will cause catastrophic engine failure and void all warranty.

## **6 Pre Test-Drive Inspection**

### **6.1 Pre-Start Inspection**

- Supercharger comes prefilled with gear oil. Verify correct gear oil level. Refer to instructions on page 36.
- Ensure coolant is at correct level.
- Ensure engine oil is at correct level.
- Ensure vehicle has fresh 91 Octane (or higher) Premium Unleaded Pump fuel.
- Ensure the belt is aligned.
- Ensure the air filter is clean.
- Check & replace spark plugs, if necessary. Set gap to factory spec. 0.050”.

### **6.2 Engine Warm Up**

- Start engine and allow it to run until engine reaches normal operating temperature.
- Check for oil leaks.

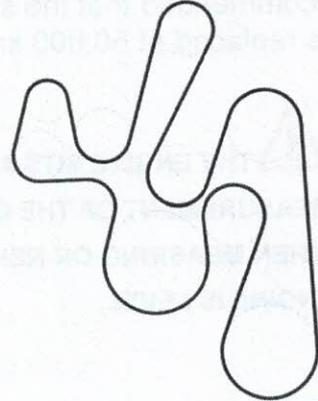
### **6.3 Road Test Vehicle**

- Road test vehicle.
- Recheck all joints and connections for leaks –rectify as needed.

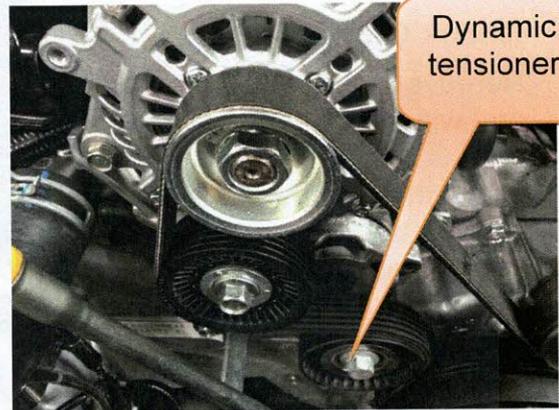
## 7 Supercharger System Maintenance

### 7.1 Drive Belt

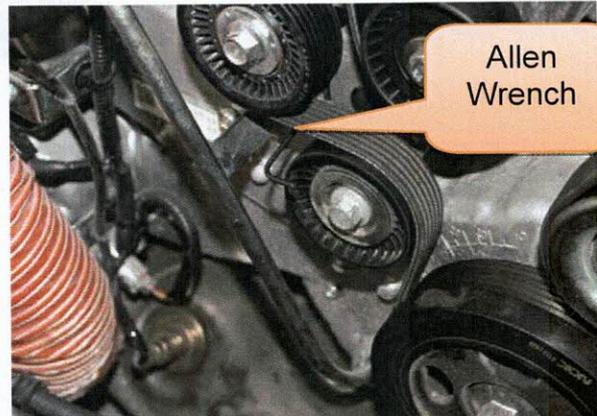
- It is recommended that the supercharger drive belt be checked at every regular service and be replaced at 50,000 km (30,000 miles) or 2 years, whichever occurs first. The part number for the replacement belt is **K061015**.



- Use a 14mm wrench to release the dynamic tensioner and remove the belt.



- Tensioner Arm may be into position by a small Allen Wrench to provide ease of belt



## 7.2 Supercharger Gear Oil

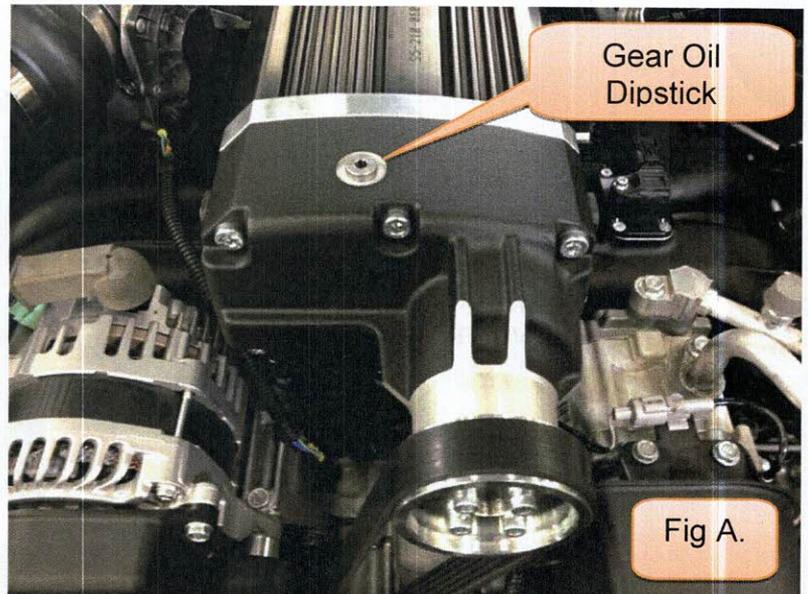
It is recommended that the supercharger gear oil be checked at every regular service and be replaced at 50,000 km (30,000 miles) or 2 years, whichever occurs first.



**THE ENGINE SITS AT A REARWARD ANGLE. THIS PREVENTS ACCURATE MEASUREMENT OF THE GEAR OIL WITH THE DIPSTICK AND PROPER DRAINING. WHEN MEASURING OR REPLACING THE SUPERCHARGER OIL LEVEL, ENSURE THE ENGINE IS LEVEL.**

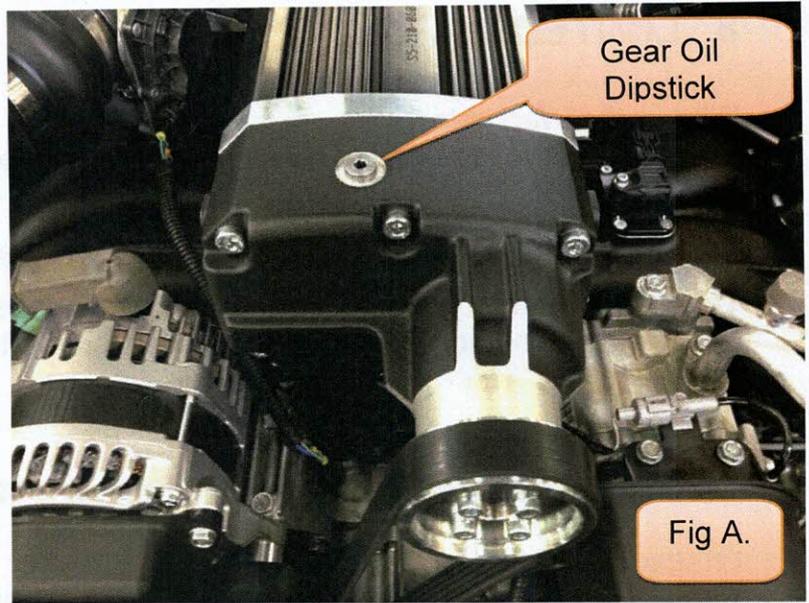
### 7.2.1 Check Oil Level

- Remove the Gear Oil Dipstick and wipe off with a rag. (Fig A.)
- Reinsert and tighten the dipstick before removing again and inspect oil level on the dipstick
- The scribed mark on the dipstick indicates proper oil level.



## 7.2.2 Replace Gear Oil

- Remove the Gear Oil Dipstick. (Fig A.)
- Using a syringe to draw out the old gear oil, drain the supercharger's gearbox.
- Using Redline 75W90 NS Gear Oil or equivalent fill with exactly 5.31 oz (157 mil.)
- Check oil level with dipstick.



## **8 LIMITED WARRANTY**

### **Who is the Warrantor**

The warrantor for this limited warranty is Innovate Motorsports, 8 Mason, Irvine, CA 92618.

### **Which Products are Covered**

This limited warranty applies to Innovate Motorsports superchargers and supercharger systems sold and normally operated in the United States, Canada, and Mexico (the "Product").

### **When Warranty Begins**

The warranty period begins on date the Product is sold to the first retail purchaser.

### **Limitations**

Repair, replacement, or a refund of not more than the retail price of the Product are the exclusive remedies under this limited warranty or any implied warranties. Innovate Motorsports does not authorize any person to create for it any other obligation or liability in connection with the Product.

Warranty coverage is limited to the first retail purchaser of the Product. This limited warranty is not transferrable and terminates upon the first retail purchaser's sale or other transfer of the Product.

Any implied warranty or merchantability or fitness for a particular purpose is limited to the duration of this written warranty. Some states and jurisdictions do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

### **Your Rights Under State Law**

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state and jurisdiction to jurisdiction.

## **WHAT IS COVERED AND HOW LONG**

### **Basic Warranty**

Innovate Motorsports warrants to the first retail purchaser of the Product that (1) the Product will be free from defects in materials and workmanship during the period of 12 months or 12,000 miles, whichever comes first, from the date of purchase (the "Warranty Period").

This warranty is an express limited warranty. If the Product fails during the Warranty Period under normal operating conditions as a result of a defect in materials or workmanship, at Innovate Motorsports' option, it will either (1) repair the Product, using new, used or refurbished replacement parts, or (2) replace the Product with a new, used or refurbished equivalent Product, or (3) refund not more than the retail price of the Product. You must pay the costs of returning any Product to Innovate Motorsports for a warranty claim. Innovate Motorsports is not responsible for any freight or handling charges on Products returned to it. If a Product returned to Innovate Motorsports is

returned for a reason covered by this limited warranty, Innovate Motorsports will pay for ground shipping charges only to return the Product to you.

The decision whether the Product should be repaired or replaced or whether a refund of not more than the retail price of the Product should be given will be made by Innovate Motorsports.

Innovate Motorsports neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of the Product.

This limited warranty is subject to the exceptions indicated under "What is Not Covered" section below.

### **WHAT IS NOT COVERED**

This warranty does not cover damage, defect, or failure resulting directly or indirectly from any of the following:

- Use of contaminated, poor quality or incorrect fuels;
- Alteration, modification or disassembly;
- Improper or incorrectly performed installation or repairs, or when the Product is used in an application for which it was not designed or approved;
- Use of an incorrect pulley size or failure to regularly inspect and replace the pulley belt;
- Abuse, negligence or neglect;
- Misuse – for example, racing;
- Lack of or improper maintenance;
- Use of non-genuine Innovate Motorsports parts;
- Repair, modification or any other action performed by anyone other than a Innovate Motorsports approved repairer;
- A matter outside the control of Innovate Motorsports or its employees and contractors (for example a defect caused by the failure of a product supplied to you by a person that is unrelated to us such as the manufacturer or your motor vehicle);
- Corrosion from environmental conditions or chemical treatments;
- Fire, accident or theft; or
- Act of God.

This warranty also does not cover the following:

#### **Normal Wear and Tear**

Noise, vibration, cosmetic conditions and other deterioration caused by normal wear and tear.

#### **Maintenance Expense**

Normal maintenance services such as changing oils, belts, injectors and any similar consumable parts.

### **Vehicles With Altered Odometer**

Failure of a Product installed on a vehicle on which the odometer has been altered so that actual vehicle mileage cannot be readily determined.

### **Vehicles With Unknown Vehicle Identification Number**

Any vehicle for which the original factory-assigned vehicle identification number cannot be determined.

### **Salvage or Total-Loss Vehicles**

Any vehicle that has ever been issued a "salvage" title or similar title under any state's law; or has ever been declared a "total loss" or equivalent by a financial institution or insurer, such as by payment for a claim in lieu of repairs because the cost of repairs exceeded the cash value of the vehicle.

### **Incidental and Consequential Damages**

Incidental or consequential damages associated with a Product failure. Such damages include, but are not limited to, inconvenience; the cost of removal, installation, transportation or towing; labor; telephone calls and lodging; the loss of time; the loss of personal or commercial property; destruction of other components; and the loss of pay, profits, business or other opportunities.

Some states and jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

### **Disclaimer of Extra Expenses and Damages**

The performance of necessary repairs, replacement, or refund of not more than the retail price of the Product are the exclusive remedies under this limited warranty and under any implied warranty. Innovate Motorsports does not authorize any person to create for it any other obligation or liability in connection with the Product. Innovate Motorsports shall not be liable for incidental or consequential damages resulting from breach of this written warranty or any implied warranty.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this written warranty, except in states where this limitation is not allowed. Some states and jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

### **WARRANTY CLAIMS**

To make a warranty claim contact Innovate Motorsports at 8 Mason, Irvine, CA 92618. To make a warranty claim, you must provide proof of your purchase of the Product. While necessary maintenance or repairs on the Product can be performed by any company, we recommend that you use only authorized Innovate Motorsports repairers. Improper or incorrectly performed maintenance or repair voids this limited warranty. A list of approved repairers is available from us by contacting the Innovate Motorsports.



## SUPERCHARGER WARRANTY REGISTRATION FORM

Thank you for purchasing an Innovate Motorsports Supercharger System! In order to activate this limited warranty, you must return this Warranty Registration Form along with a copy of your original purchase receipt within 30 days of purchase.

### Owner Information

Name (First & Last): \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

Country: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

### Vehicle Information

Year: \_\_\_\_\_

Make: \_\_\_\_\_

Model: \_\_\_\_\_

VIN: \_\_\_\_\_

### Purchased Product Information

*\*Required serial numbers needed to complete this form are located on the front of your installation manual.*

System Serial #: \_\_\_\_\_

Supercharger Serial #: \_\_\_\_\_

Product Purchase Date: \_\_\_\_\_

Name of company where purchased: \_\_\_\_\_

Please mail or fax this completed registration form, copy of your original purchase receipt to:

Innovate Motorsports

Warranty Registration Dept.

8 Mason

Irvine, CA 92618

**FAX: (714) 893-2142**



## Whataboutbob's Innovate SC Install Notes

Reccomended tools:

- Extendable magnetic tool to grab any bolts that you will drop during install
- 1/2 inch socket adapter for the replacement alternator mounting bolt

Reccomended supplies:

- 1 Gallon of coolant for the car from the Scion/Subaru dealer.

Reccomeneded preparation:

- Measure and identify all supplied coolant and vaccum hoses provided in the Innovate kit before starting work. 25.4mm per 1 inch is the conversion.

4.10 There is a 3rd bolt under the ECU. Be careful it is easy to drop this once it comes out.

4.12 The connector for the high pressure fuel pump (figure B) is relased by depressing both sides on their top section which will spread the lower half of the connector and allow it to be pulled up. The connector for the fuel line on both rails (figures C & D) is released by depressing both tabs on the bottom of the connector and pulling the blue section up. The fuel injector rail cover must also be removed in this step, but is not noted in directions.

4.13 The throttle body heater hose on the front of the motor will leak a small amount of fluid when disconnected. Have a shop rag or two handy to mop up the fluid that will come out once the hose has been removed. The second throttle body heater hose is on the driver's side rear of the motor. You should have set aside the new hose from the parts provided with the Innovate kit and be prepared to mount the new hose ASAP. I failed to be prepared for this step and lost about 2 quarts of coolant before it stopped draining.

4.14 A 3mm allen wrench can be used to hold the dynamic tensioner in place once a 14mm wrench is used to de-tension the belt.

5.1 The new engine breather extension hose will route to an inlet on the intake tube. Route new hose so that it will lay under new manifold and exit behind manifold on passenger's side of the car.

5.2 The new throttle body heater hoses will route to the ports on the throttle body after it is mounted to the supercharger compressor. Route these hoses adjacent to the engine breather extension hose referenced in 5.1. They will also exit behind the manifold on passenger's side of the car.

5.3 The evap solenoid shown in Figure A should be mounted so that the hoses are facing the rear of the car toward the firewall. The evap solenoid will mount using one of the holes that was previously used to mount the brake booster line if you have an automatic car (See step 5.6). The provided mounting bolt is a M8x1.25.16 piece.

5.4 and 5.5 I routed the loom extension cables from under the new manifold out the front and up to the associated components (throttle body and MAP sensor).

5.6 The brake booster hard line should be removed in one piece without damaging any parts. The provided new cable assembly is assembled for a RHD car and the directions I was provided were vague about how to disassemble the RHD assembly and re-assemble for LHD car. I ended up re-using the OEM hard line assembly and zip tied it to the firewall. There is an updated set of directions that I did not have available at the time that I did the install that is supposed to provide more detail on what the proper steps are to use the provided new hardware to make up a hose set that replaces the OEM hard lines.



5.7 The figure A diagram identifies 4 parts and the replacement alternator mounting bolt. Parts 2 & 3 were in a bag together. I spent 5 min trying to find part 3 in its own bag. The replacement alternator mounting bolt is a STD 1/2 head. You'll need one STD tool for this part. I would recommend that you remove the alternator at this point as the odds are very good that you will need to use a flat file to create some clearance as noted in step

5.9. Removing the alternator will ensure that you don't have metal shavings scattered all over the top of your motor which may contaminate your manifold mounting surface and could possibly make their way into the intake ports of the motor depending on how well you covered them in step 4.14. 5.8 The throttle body seal is part number 13 on the parts list. 5.9 I used a flat file to remove material from the alternator bracket. The material is smooth and it did not take much force to grind off the material. I took off the rounded edge as shown in the unlabeled figure and figure A. My clearance basically made the rounded edge flat from end to end. This was the perfect amount of clearance for my install as I ended up with about 3/16 of an inch of clearance. Before you put the supercharger manifold assembly back on your motor make sure you have your coolant, breather hoses, extension looms, wiring harnesses, and fuel rail assemblies (especially the fuel supply line referenced in step 4.12 and

5.13)safely routed or out of the way. It is pretty difficult, even with 2 people, to deal with having to move all of these attachments while trying to get the manifold to set down on the motor in the right place to align with the mounting bolt holes.

5.13 Be sure to also connect the harness back to the high pressure fuel pump. The re-installation of the fuel injector rail cover is also part of this step, but is not noted in the directions.

5.14 You need to have installed the fuel injector rail cover in 5.13 to have the top 2 ECU mounting holes available.

5.16 You should re-connect the wiring and alternator harnesses referenced in 4.8 before you fit the breather hoses to the back of the supercharger. Failure to do this first may make alignment and reconnection of the harnesses more difficult. The supplied vacuum cap failed on my car in the 1st 2 days. You may need to source a more robust (thicker) piece to prevent failure (and associated leaks).

5.17 These directions are seriously lacking. This is a known issue, but I don't have the updated directions as of yet. I ended up re-using the OEM hard line as an interim step.

5.18 Re-connection of the air inlet pipe is fairly straightforward, but it should be noted that depending on how you line up and tighten the couplers the factory airbox may be pulled away from the coupler point on the radiator mounting bar. I ended up re-aligning the air inlet pipe a second time while watching the coupler point to ensure that the factory airbox did not get pulled away.

6.1 If you ended up leaking coolant in step 4.13, you will need to add additional coolant to the system to replace that which was lost. Do this while the car is cold. It is also a good idea to verify that the coolant overflow tank is appropriately filled at this point.

6.1.25 Check the supercharger to verify that there is the proper amount of lubricant in the gearset.

The first thing I noticed when I stepped out of the plane was the fresh air. It felt like I had been in a cocoon for the last few days. The sun was shining brightly, and the birds were chirping. I had never felt so alive before.

As I walked along the beach, I noticed that the water was crystal clear. The sand was soft and warm. I had never seen a beach like this before. It was perfect. I had found a hidden gem.

I had heard that the island was beautiful, but I didn't know it would be this good. The people were friendly and welcoming. They had a special way of life that was so different from the one I had left behind.

I had never been to a place like this before. It was so peaceful and quiet. I had never felt so at home. I had found a place where I could be myself and live the life I had always dreamed of.

I had never been so happy. I had never felt so free. I had never been so close to nature. I had never been so close to the people I had always admired. I had found a place where I could be myself and live the life I had always dreamed of.

I had never been so close to nature. I had never been so close to the people I had always admired. I had found a place where I could be myself and live the life I had always dreamed of.

I had never been so close to nature. I had never been so close to the people I had always admired. I had found a place where I could be myself and live the life I had always dreamed of.

I had never been so close to nature. I had never been so close to the people I had always admired. I had found a place where I could be myself and live the life I had always dreamed of.

I had never been so close to nature. I had never been so close to the people I had always admired. I had found a place where I could be myself and live the life I had always dreamed of.