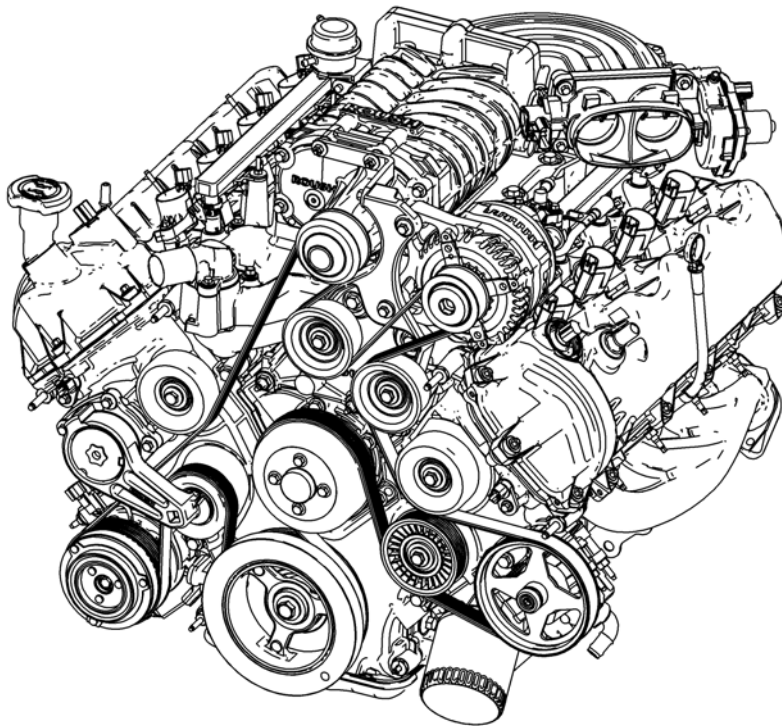


2010 Ford Mustang GT ROUSHCharger Kit

P/Ns: 13106066M90 (Black) & 13106066M90C (Chrome)

E.O# - D-418-18

Installation Instructions



Applications:

2010 Ford Mustang GT with 4.6L 3-valve engine (w/ Manual & Automatic Transmissions).

Important Notes:

- Before installing your Mustang ROUSHCharger Kit, please read the installation manual and verify that all items are present.
- Premium fuel (91 octane or higher) is required to prevent “spark-knock” or detonation under certain operating conditions.
- The use of fuel additives (ie. octane boosters) is not recommended. There is a possibility that these chemicals can damage your engine and cause drivability issues with your vehicle.
- Operating your engine without the Roush PCM recalibration will result in engine damage or failure and will void your warranty.



PREMIUM FUEL REQUIRED

TABLE OF CONTENTS

PACKAGING LIST FOR COMPLETE ROUSHCHARGER KIT 3
EQUIPMENT AND SUPPLIES REQUIRED 7
GLOSSARY OF TERMS 8
INFORMATION ABOUT THE SUPERCHARGER BYPASS OPERATION 8
LIMIT OF LIABILITY STATEMENT 9
SAFETY PRECAUTIONS 9
SECTION A – DISASSEMBLY 10
SECTION B – MODIFICATIONS 21
 Alternator Modification 21
 Airbox Modification 22
 Heater Tube Assembly Modification 23
 VMV Modification 25
 Brake Booster Hose Modification 27
 Wiring Harness Modifications 28
SECTION C – SUBASSEMBLY 31
 Alternator 31
 Intercooler Low Temperature Radiator (LTR) 32
 Intake Manifold Build Up 35
 Fuel Rail Assembly 36
SECTION D – INSTALLATION 37
 Intercooler Reservoir Mounting 37
 Intercooler Radiator Assembly Mounting 38
 Electric Water Pump, Mounting Bracket and Hoses 39
 Induction Resonance Tube Delete Grommet 44
 Tensioner 44
 Intake Manifold and Roushcharger Installation 45
 FEAD Assembly 51
 Air Intake System 56
 Coolant Hoses 59
 Air Induction System 61
 Battery and Tray 64
 Coolant Fill and Final Assembly 65
CARE AND MAINTENANCE OF OPTIONAL POLISHED ROUSHCHARGER 67
WARRANTY 67

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

PACKAGING LIST FOR COMPLETE ROUSHCHARGER KIT

Part Ref	Description	RPP Part Number	Qty
	Air Induction	---	
1	Upper Airbox Lid	13109643HC	1
2	Clean Air Tube	13109R504	1

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit A – Induction	13106066M90HKA	1
1	Hose Clamp (Airbox side)	R07130015	1
2	SAE Fitting – PCV Insert	R07130012	1
3	Grommet – Induction Resonance Tube Delete	W651016	1

Part Ref	Description	RPP Part Number	Qty
	Fuel Charging Assembly	13109H487	1
6	Upper Intake Manifold	13109424	1
7	Lower Intake Manifold	R07060039	1
8	Intercooler	R07060171	1
9	ACT Sensor	F6SF-12A697-AB	1
10	Fitting – 90 deg. PCV Bubbler (3/8")	391273	1
11	Gasket – Upper to Lower	G1ZE-9461-BB	1
12	Gasket – Intake Manifold Ports	R07060045	8
13	Gasket – Water Crossover Right	R07070001	1
14	Gasket – Water Crossover Left (Hot side)	R07070072	1
15	Billet Tube – Intercooler Floating Tubes	13109L442	2
16	O-Ring – Floating Tube	2-115	4
17	Bolt – Intercooler to Intake (M5 x 16)	SCS-05016-YZ	11
18	Bolt – Upper to Lower Intake (M6 x 33)	N808429	12
19	Dowel – Intake to Supercharger	388192	2
20	Washer – Intercooler to Intake	11-452-0033	11

Part Ref	Description	RPP Part Number	Qty
21	Throttle Spacer	13109A589	1
22	ROUSHCharger – Standard	13106F066-AA	1
Optional	ROUSHCharger – Chrome	13106F066-BA	1
23	Fuel Rail	R07110006	1

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit B – Fuel Charging	13106066M90HKB	1
24	Fuel Injectors	R14010001	8
25	Fuel Injector Clip	13109C995	8
26	Gasket – Intake to Supercharger	G1ZE-9H486-BA	1
27	Gasket – Supercharger to Spacer	13109L437	1
28	Tube – Heater Supply	R07070014	1
29	¾" Hose – Heater Jumper Hose	R07070067	1
30	Clamp – ¾" Hose (Constant Tension)	CT19x12-BO	2
31	Bolt – Heater Supply Tube Mounting (M6 x 13)	N605771	2
32	Bolt – Throttle Body (M6 x 33)	N808429	4
33	Bolt – Intake to Cylinder Heads (M6 x 40)	R18020004	9
34	Bolt – Intake to Cylinder Head (M6 x 62)	W709552	1
35	Bolt – Spacer to Supercharger (M8 x 33)	N605788	6
36	Bolt – Supercharger to Intake (M8 x 38)	W705128	6

Part Ref	Description	RPP Part Number	Qty
	FEAD	---	
37	Alternator Bracket	131010153	1
38	Serpentine FEAD Belt	R07020063	1
39	Tensioner	R07020043	1

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit C – FEAD	13106066M90HKC	1
40	Pulley - Idler B/S 76mm (Flanged)	R07020049	2
41	Bracket – Alternator Rear Support	R07020052	1
42	Bracket – Supercharger Studs to Alternator Bracket	R07020018	1
43	Bolt – Rear Alternator Support Bracket (M5 x 10)	R18020059	2
44	Nut – Rear Alternator Support Bracket (M5)	R07020053	2
45	Bolt – Idler (M8 x 28 large washer)	R18020060	2
46	Bolt – Alternator Support Brkts to Intk & FEAD Brkt (M8 x 25)	W500224	2
47	Bolt – FEAD Bracket to Intake (M8 x 38)	W705128	2
48	Bolt – Alternator (M8 x 55)	N808130	2
49	Nut – Supercharger to Alternator Support Bracket Front (M6)	W520412	2
50	Nut – Alternator (M8)	W520413	2

Part Ref	Description	RPP Part Number	Qty
	PCV & Vacuum	---	
51	PCV Fresh Air Inlet	R07050083	1
52	PCV Purge Hose with Bubbler	13106K817	1
53	Vacuum Harness – Supercharger Bypass Circuit	13109E498	1
54	Vacuum Harness – IPTS Reference	1310291923	1

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

Part Ref	Description	RPP Part Number	Qty
	Wiring	---	
55	Electrical Jumper – Intercooler Pump	13108W501	1
56	MAF/ACT Wiring Harness	131012A690	1
57	Alternator Charge Harness	131014305	1
58	TPS Extension Harness	131014A595	1

Part Ref	Description	RPP Part Number	Qty
	Shipping Box & Instructions	---	
59	Box – PCM Return	13106066M90SB	1
60	Installation Instructions	13106066M90IM	1

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit D – Decals & Instructions	13106066M90HKD	1
61	Decal – Premium Fuel Only (IP Cluster)	R07110004	1
62	Decal – Premium Fuel Only (Fuel Door)	13109A095	1
63	Decal – 2010 Single Sheave Belt Routing Diagram	13106E072	1
64	Decal – PCM	R07100008	1
65	Warranty Card	131019A505	1
66	Decal – E.O Label	13109A095EO	1

Part Ref	Description	RPP Part Number	Qty
	Intercooler System	---	
67	Degas Bottle	13108D080	1
68	Intercooler Electric Water Pump with Bracket	392022009	1
69	Bracket - Intercooler Pump Mounting	13108C419	1
70	Intercooler Low Temp Radiator (LTR)	13108K229	1
71	Tube Assembly – CAC Lines	R07070005	1
72	Upper Radiator Hose	R07070022	1
73	3/4" Hose – Degas Bottle Inlet	13108D031	1
74	3/4" Hose – Intercooler Pump Inlet	13108D029	1
75	3/4" Hose – Intercooler Pump to LTR	13108K236	1
76	3/4" Hose – Intercooler LTR Outlet	13108D030	1
77	3/4" Hose – Intercooler Engine Inlet	13108A506	1
78	3/4" Hose – Intercooler Engine Outlet	13108A527	1
79	Side Shield – Radiator Assembly – LH	1310010207LH	1
80	Side Shield – Radiator Assembly – RH	1310010207RH	1

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit E – Intercooler System	13106066HKE	1
81	Bracket – LTR Upper LH	13108K242	1
82	Bracket – LTR Upper RH	13108K243	1
83	Bracket – LTR Lower LH	13108K244	1
84	Bracket – LTR Lower RH	13108K245	1
85	Rubber Grommet – LTR Isolator	R07060107	4
86	Sleeve – LTR Isolator	R07060108	4
87	Degas Bottle Cap	XL3Z-8100-AA	1
88	Clamps – 3/4" Hoses (Constant Tension)	CT19x12-BO	12
89	Bolt – Long Bumper Bolts (M8 x 35)	R18020007	2
90	Bolt – LTR to Brackets (4) & I/C Pump to Bracket (2) (M8 x 25)	W500224	6
91	Bolt – I/C Tube Assembly Mounting (M6 x 18)	N605891	1
92	Nut – I/C Pump Mounting Bracket to Bumper Bolts (M8)	W520413	4
93	Bolt – Degas Bottle Mounting & LTR Bracket to Chassis (M6 x 22)	R18020057	4
94	J-Clip – Degas Bottle & Pump Bracket Mounting (M6 Short)	N623332	1
95	Bolt – 9N491 Tube Assembly Mounting (M16 X 40)	R18020006	1
96	NVH Isolator – I/C Pump to Bumper Beam	13108Z419	1
97	NVH Isolator – I/C Pump to LTR	13108Y419	1
98	Clamp – Heater Inlet Hose	15500018	1

If you are missing any items, please call us toll free at 1-800-59-ROUSH.

ROUSH[®]

THE **ART** OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

EQUIPMENT AND SUPPLIES REQUIRED

- 1/4" and 3/8" Drive Ratchets with Extensions
- Metric and Standard Socket Sets (short and deep recommended)
- 1/2" Drive Ratchet or Breaker Bar
- Metric and Standard Wrench Sets
- 3/8" Drive Torque Wrench (7-35 ft-lb range)
- Short Phillips-head Screwdriver
- 5/8" Fuel Line Removal Tool
- T-20 Torx Bit Screwdriver or Socket
- 5/16" Drill Bits and Drill motor
- Coolant (meeting G-05 specification)
- 6" Scale, Tape Measure, or Other Measuring Device
- Assembly Lubricant (White Lithium Grease or Petroleum Jelly)
- Electrical Tape
- Sharp Knife or Razor Blade
- Tie Straps (Zip Ties)
- Trim Pad Tool (for pushpin removal)
- Fender Cover (2)
- Medium Strength Thread Locker – Loctite 242 (blue) or equivalent

GLOSSARY OF TERMS

ACT	Air Charge Temperature Sensor (From the factory, this function is integrated into the MAF sensor. With this kit, a separate ACT sensor is installed into the intake manifold)
CMCV	Charge Motion Control Valve (Located on the back of the base intake manifold. This feature is not used with the Roushcharger)
ETC	Electronic Throttle Control
IPTS	Injection Pressure and Temperature Sensor
MAFS	Mass Air Flow Sensor
PCM	Powertrain Control Module (a.k.a. ECM, ECU, PCU, EEC)
PCV	Positive Crankcase Ventilation
TPS	Throttle Position Sensor
VMV	Vapor Management Valve (Located on driver side strut tower)
Breakout Point	A place in an electrical harness where the wiring for an individual component leaves (breaks out of) the main harness to attach to an individual component.

INFORMATION ABOUT THE SUPERCHARGER BYPASS OPERATION

There is a great deal of misinformation about the function of supercharger bypass systems. The supercharger is a positive-displacement pump; that is, so long as it is rotating, it is always pumping air. During low demand or high vacuum operation (i.e. idle, deceleration, and light throttle cruise), the pumping action is undesirable as it creates unwanted heat and noise. The bypass circuit, when open, prevents any pressure buildup across the supercharger and allows air to circulate through the rotors, allowing the supercharger to “idle” freely during these conditions. This results in reduced noise, and by reducing heat buildup in the intake, significantly improves street and strip performance. As throttle demand increases, the bypass circuit is closed, resulting in full performance from the supercharger. The bypass circuit is never used to limit or control boost during full-throttle operation and defeating or altering the bypass function will not result in improved performance in any condition, and will result in poor drivability.



LIMIT OF LIABILITY STATEMENT

The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. Roush Performance Products (RPP) reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

SAFETY PRECAUTIONS

STOP! CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS AND WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personal injury or death. Read each step of the installation manual carefully before starting the installation.

- ! Always wear safety glasses for eye protection.
- ! Place the ignition switch in the OFF position.
- ! Always apply the parking brake when working on the vehicle.
- ! Block the front and rear tire surfaces to prevent unexpected vehicle movement.
- ! Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- ! Do not smoke or use flammable items near or around the fuel system.
- ! Use chemicals and cleaners only in well-ventilated areas.
- ! Batteries can produce explosive hydrogen gas which can cause personal injury. Do not allow flames, sparks or flammable sources to come near the battery.
- ! Keep hands and any other objects away from the radiator fan blades.
- ! Keep yourself and your clothing away from moving parts when the engine is running.
- ! Do not wear loose clothing or jewelry that can be caught in rotating or moving parts.

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

SECTION A – DISASSEMBLY

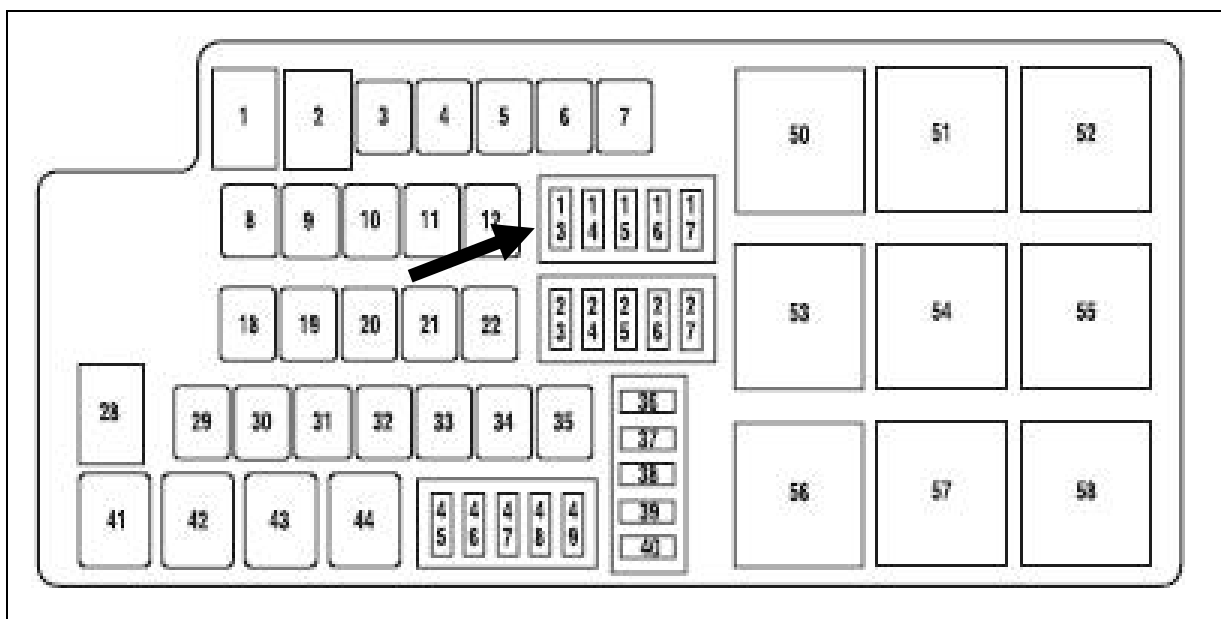
The following section will guide you through the disassembly of the stock components. Special care should be taken to label fasteners and parts that are taken off during this procedure since many will be reused:

1. Cover both fenders with fender covers to protect the vehicle finish.
2. Release the fuel system pressure (**NOTE:** The following procedure is taken directly from the Ford Service Manual).

⚠ WARNING: Fuel in the fuel system remains under high pressure even when the engine is not running. Before working on or disconnecting any of the fuel lines or fuel system components, the fuel system pressure must be relieved. Failure to do so can result in personal injury.

⚠ WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel-related components. Highly flammable mixtures are always present and can be ignited, resulting in personal injury.

- a. Remove the fuel pump module fuse.
NOTE: The fuel pump module fuse is located in the underhood fuse box, location 13.

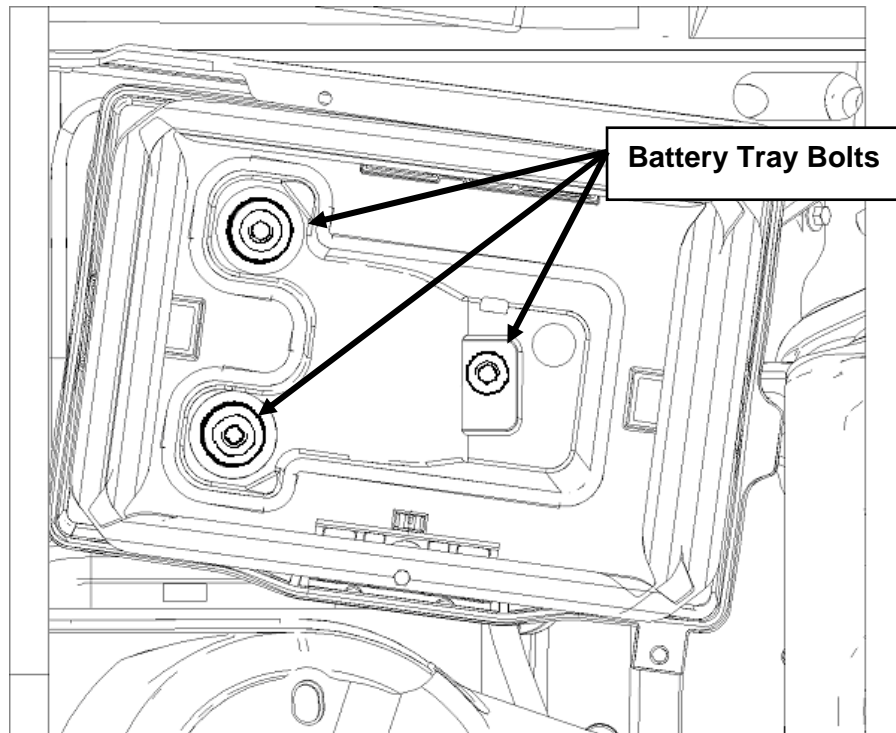


ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

- b. Start the engine and allow it to idle until it stalls.
 - c. After the engine stalls, crank the engine for approximately 10 seconds to make sure the fuel injector supply manifold pressure has been released.
 - d. Turn the ignition switch to the OFF position.
 - e. Reinstall the fuse that was removed in step a.
3. Using an 8mm wrench, disconnect the (-) negative & (+) positive connections to the battery. Remove the battery hold down bolt using an 8mm socket wrench. Remove the hold down & battery. With an 8mm socket wrench, remove the 3 bolts holding the battery tray to the vehicle. Remove the battery tray.

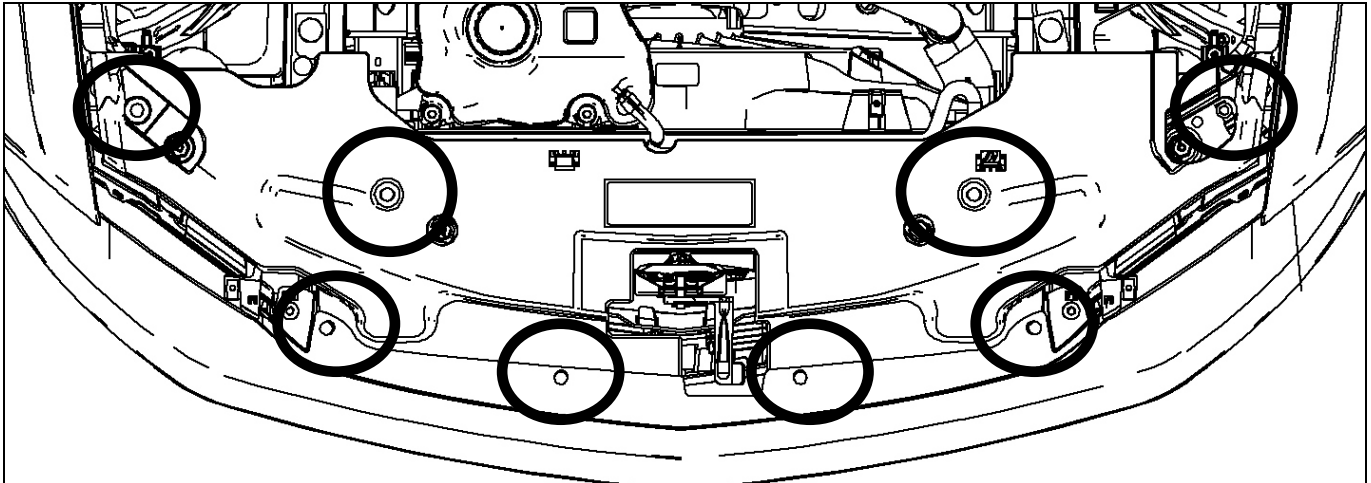


ROUSH[®]

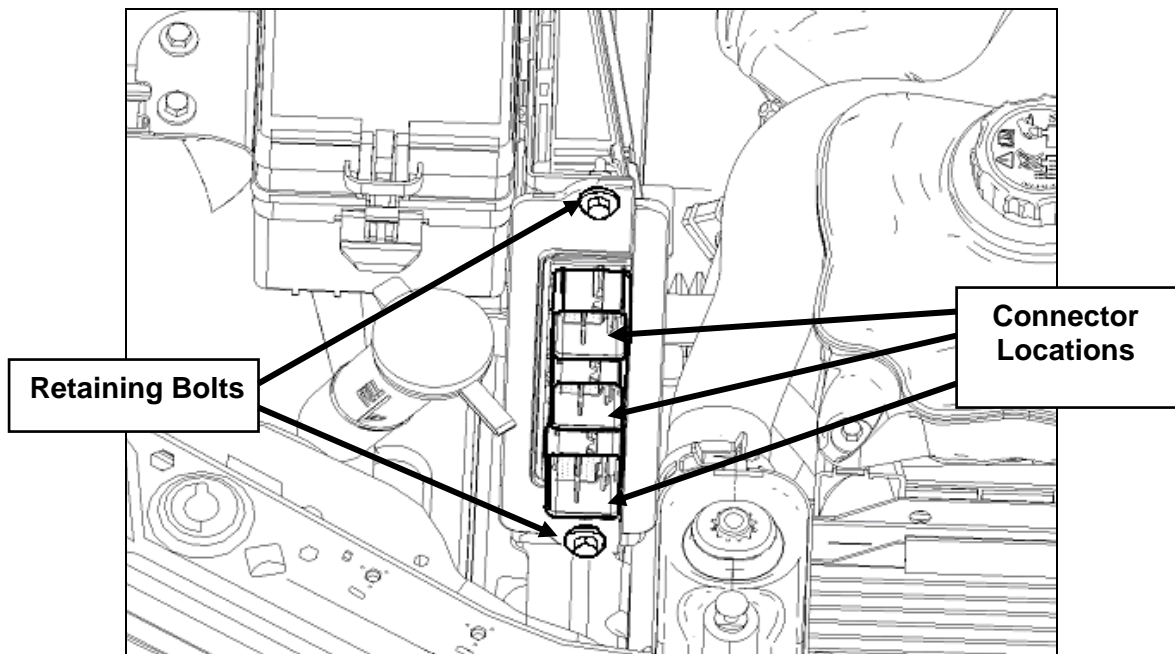
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

4. Remove the (8) push pin retainers highlighted below by pulling the center pin and remove the radiator trim cover.



5. Disconnect the 3 PCM (Powertrain Control Module) connectors by lifting the grey levers over the connector back shell and lifting the connectors from their sockets. Remove the PCM by removing two 10mm bolts and pulling the PCM forward and lifting out of the engine compartment. Follow the instructions on the next page as soon as possible to help minimize the amount of time you are without a PCM.



Important: Be sure to write your VIN number and phone number (in case we need to contact you for additional vehicle information) on the PCM using a permanent marker.

ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

INSTRUCTIONS FOR RETURNING THE PCM TO ROUSH FOR CALIBRATION

Outlined below are the instructions for returning your stock powertrain control module (PCM) to Roush Performance Products so we can install our calibration to make the engine run properly with the new components. **Please complete the “Warranty Registration Card” and include it, along with the PCM, in the prepaid shipping box.** The prepaid shipping box is set-up for next day delivery to us. Once we receive your PCM, we will reprogram and return it back to you the same day for next-day delivery. **Operating your engine without our calibration will result in engine damage or failure and will void all warranty.**

Note: It is important to reinstall the PCM in the vehicle it came from to prevent setting a trouble code and having to relearn the anti-theft code which can only be performed using specialized Ford Service Bay tools.

- If you haven't already done so, write your vehicle identification number (VIN) and phone number on the PCM using a permanent marker.
- Remove the bubble wrap from inside the supplied shipping box and wrap it around the PCM to help prevent it from being damaged during shipping.
- Place the wrapped PCM in the shipping box (13106066M90SB).
- **Complete the “Warranty Registration Card” (131019A505) and include it in the shipping box along with the PCM.**
- Fill in your name and address in the **FROM** area of the shipping label that is located inside the box. Follow the instructions on the box for sealing it shut.
- Peel the right label off and attach to the box where indicated.
- Retain the left side label for your records.
- Schedule a FEDEX **Package Pick-up** by calling **1-800-463-3339** and select **OPTION 0** to speak directly to an agent. DO NOT use the automated option to schedule a pick up.
- Inform the agent you have a **Prepaid FEDEX billable stamp package** and you need a pick-up.
- If there are any issues with the shipping box we supply and you want to ship the PCM to us another way, the address for the PCM re-flash only is: Roush Powertrain Development, Building 57 – attn: **PCM Flash, 777 Republic Drive, Allen Park, MI 48101**



2010 Mustang ROUSHCharger Kit

Customer Name: _____ **Contact Number:** _____

VIN: _____

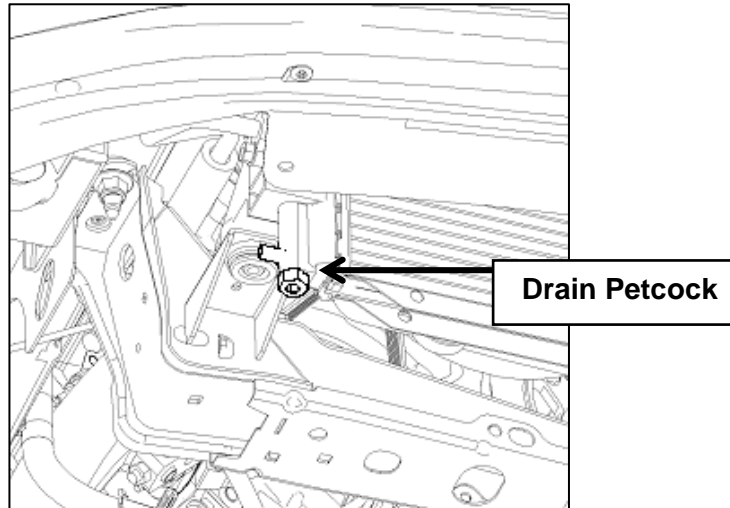
ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

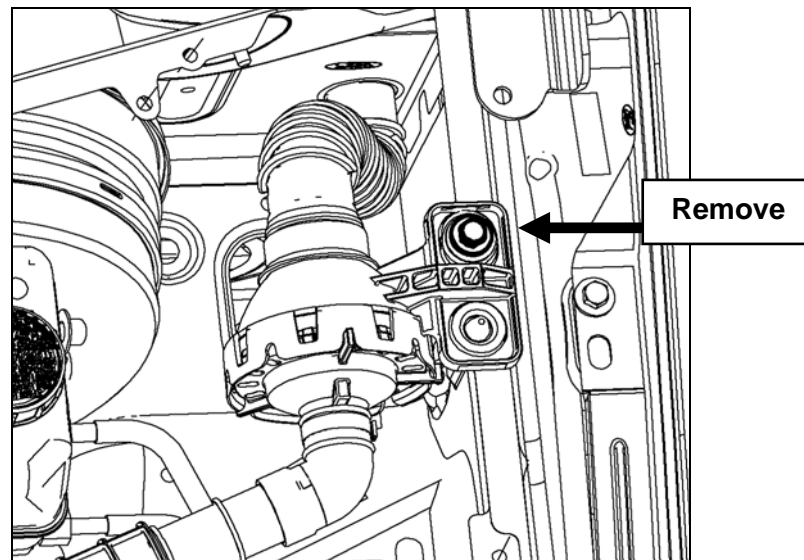
PREMIUM FUEL REQUIRED

6. With the engine cool, remove the cap on the engine coolant degas bottle and drain the coolant using the petcock located on the lower passenger side of the radiator.

TIP: Connect 3/8" hose to the drain fitting next to the petcock and run into a clean drain pan or bottle. Use a 3/4" wrench to open petcock and allow coolant to drain out of the fitting.



7. Remove the M6 bolt that secures the induction resonance tube to the driver side fender near the cowl. Pull the tube from the cowl.

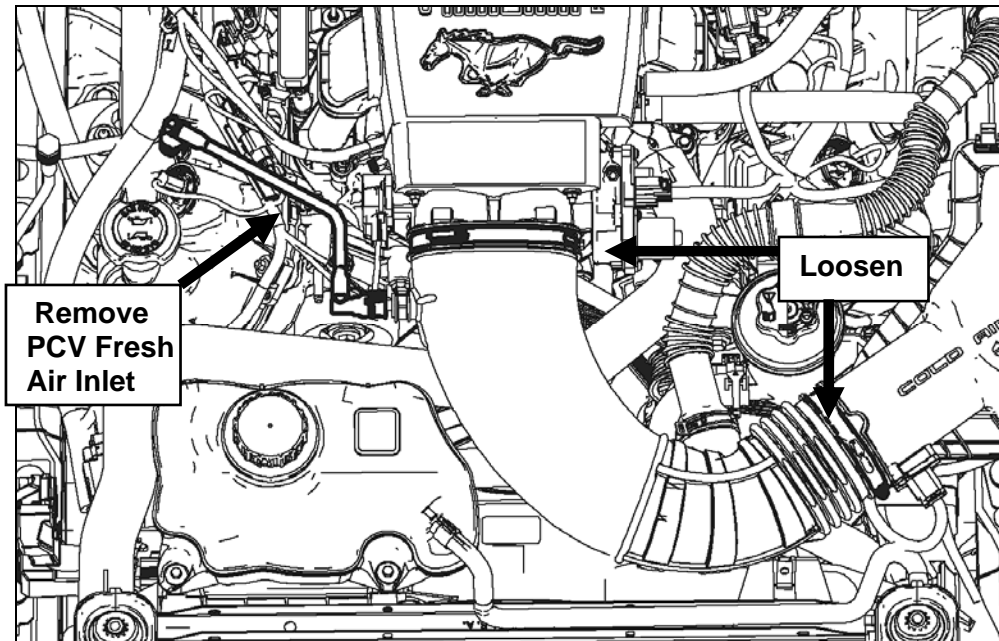


ROUSH®

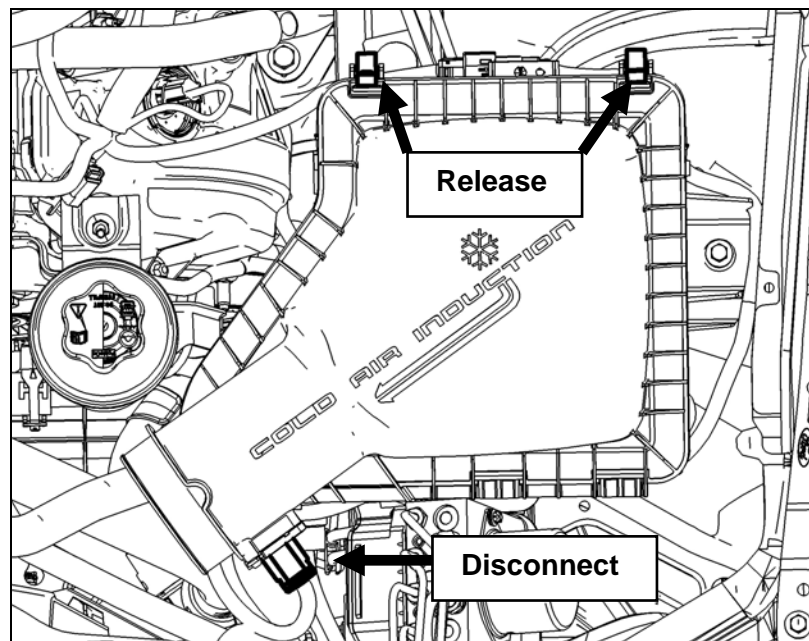
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

8. Disconnect the PCV Fresh Air Inlet tube from the right-hand cam cover and clean air tube. Using an 8mm nut driver, loosen the 2 clamps at either end of the clean air tube. Remove the clean air tube from the throttle body and airbox. Remove clean air tube and the induction resonance tube from the vehicle.



9. Remove the MAF (mass air flow) sensor connector by pulling the red locking tab back and pressing the black release tab. Release the locking tabs securing the upper airbox lid to the lower airbox and remove the lid from the vehicle.

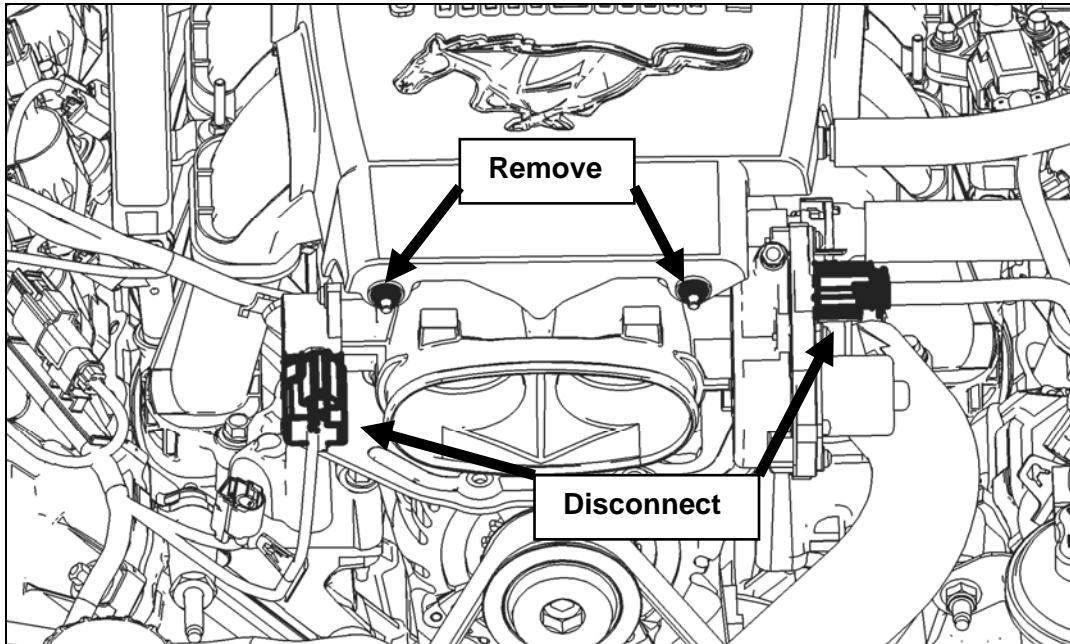


ROUSH®

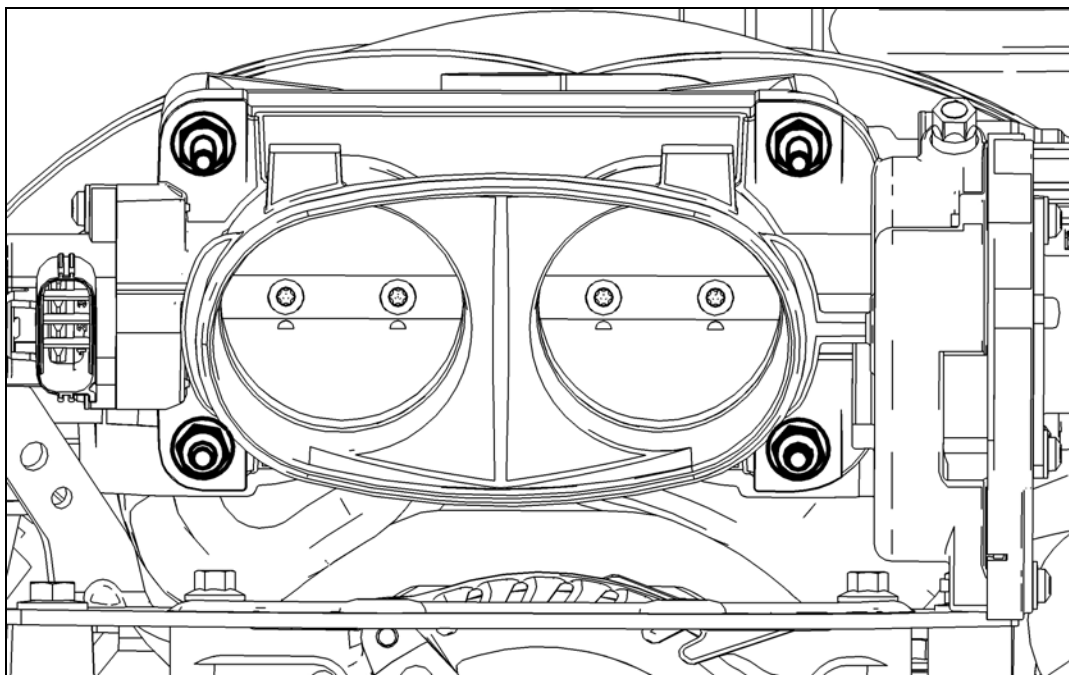
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

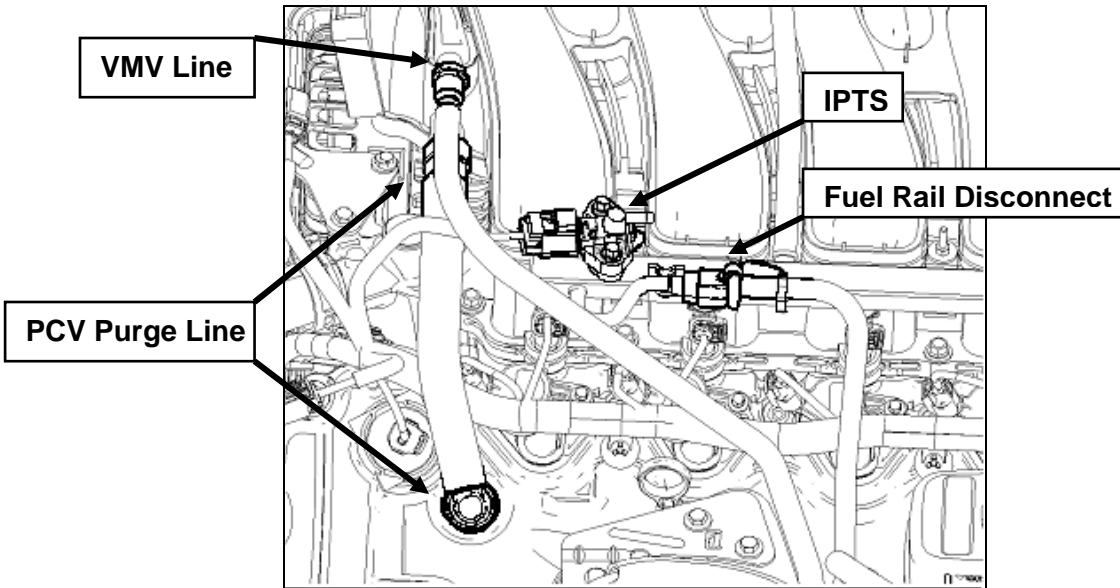
10. Disconnect the ETC (electronic throttle control) & TPS (throttle position sensor) connectors from the throttle body (Pull the red locking tab back; press the black release tab to disengage the lock). Remove the two M6 nuts that secure the engine cover and remove the cover from the vehicle.



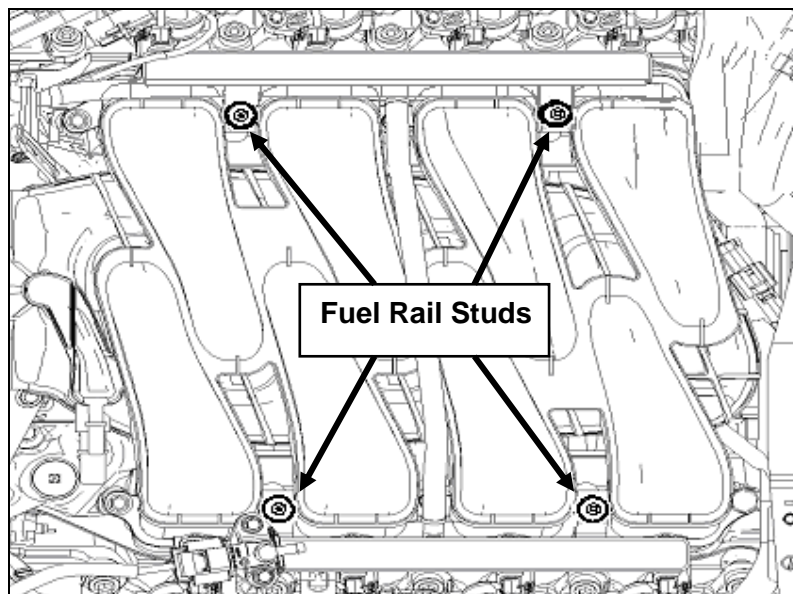
11. Remove the throttle body using a 10mm socket to remove the two studs on the top and the two nuts on the bottom. Save these fasteners for later use. Remove throttle body gasket from the intake manifold and save for later use.



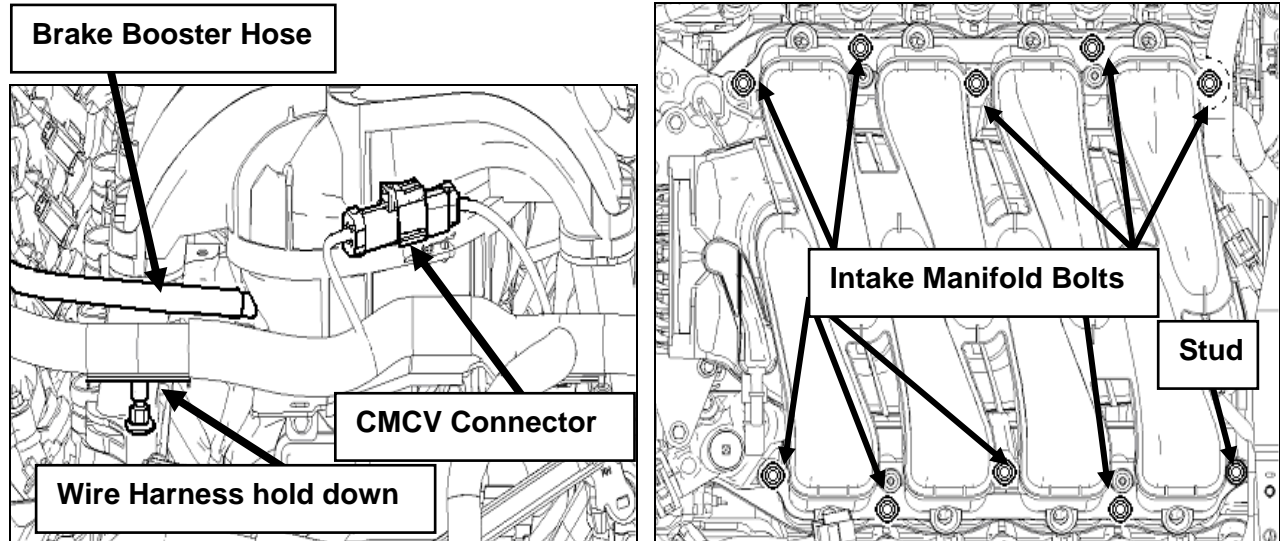
12. Remove the PCV Purge line from the intake manifold and left-hand cam cover. Remove the VMV line from the intake manifold and the VMV valve. Remove the vacuum line and electrical connector from the IPTS. Remove the black safety clip from the fuel line connection. Place rags under the fuel rail, using a 5/8" fuel line tool (wrap additional rags around the tool) and disconnect the fuel line from the fuel rail.



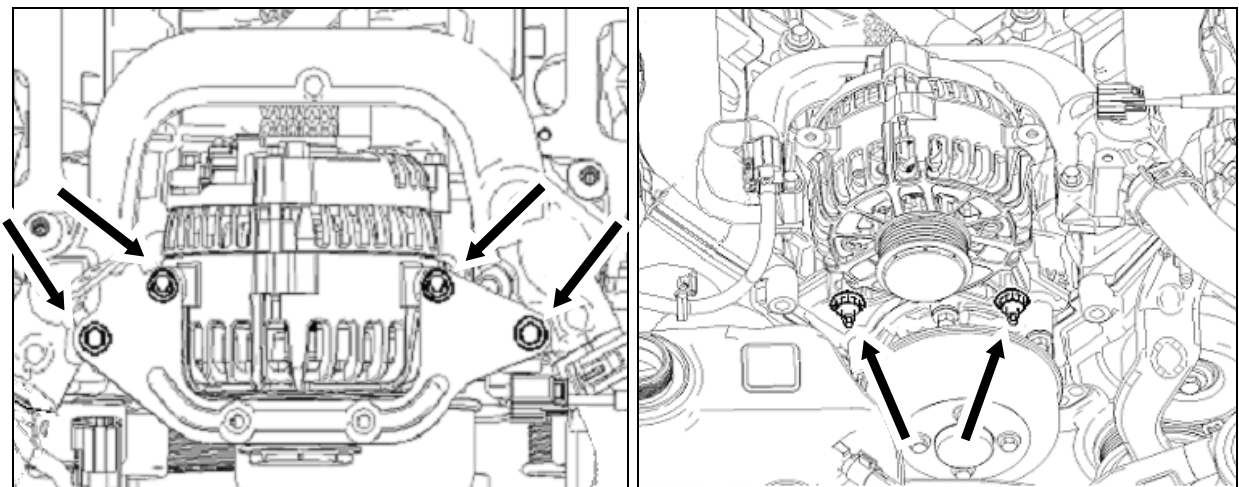
13. Disconnect the wiring connectors from the fuel injectors (8). Remove the four stud bolts holding the fuel rail to the intake manifold using an 8mm socket and remove the fuel rail assembly with injectors. There may be some additional fuel leakage around the injectors. Clean all excess fuel before proceeding.



14. Disconnect the CMCV connector located in the center rear of the intake manifold. Remove the brake booster vacuum line from the intake manifold. Pull the wiring harness off of the stud bolt on the driver side rear of intake manifold. Remove the ten fasteners which used to bolt the intake manifold to the cylinder heads. Save the rear stud for reuse. Remove the intake manifold. Use tape or equivalent to cover the cylinder head ports to prevent engine contamination.



15. Release the accessory drive belt by rotating the tensioner clockwise with a ½ " breaker bar or ratchet and slip the belt off the water pump pulley and remove the belt completely. Disconnect the regulator connector and the battery cable from the alternator. Using a 10mm socket wrench, remove the four upper support bracket bolts. Remove the two 13mm alternator nuts and remove the alternator.



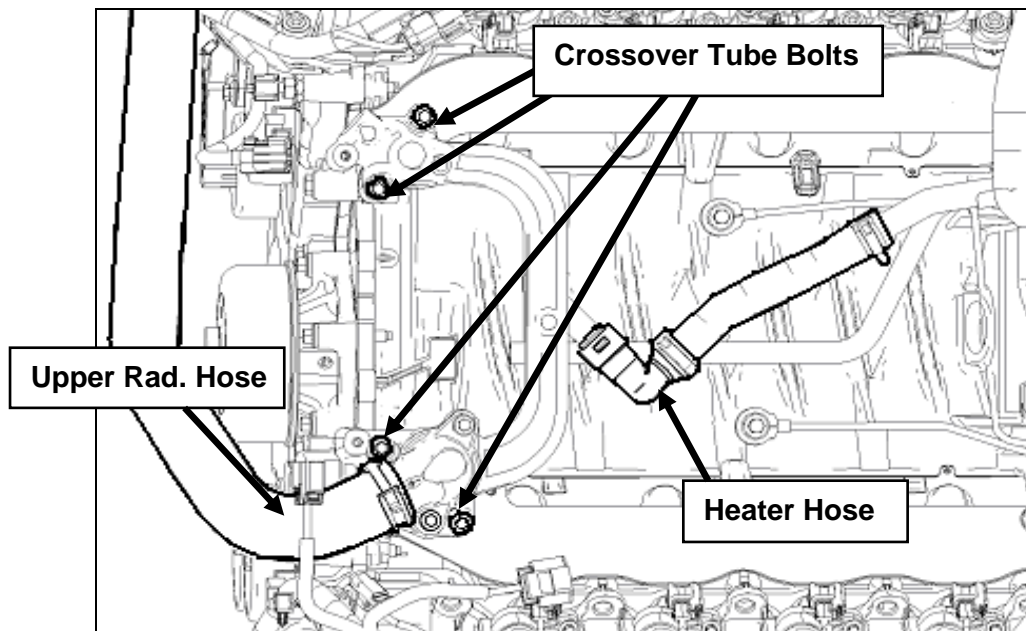
16. Disconnect the alternator charger harness from the positive battery cable and remove the harness from the vehicle.

ROUSH[®]

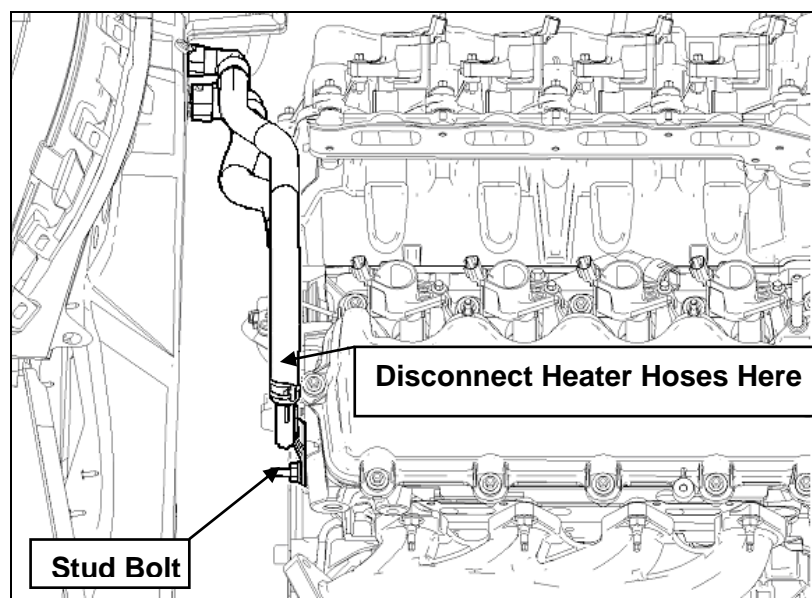
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

17. Remove the upper radiator hose from both the crossover and the radiator. Remove the two (2) constant tension hose clamps from this hose and save for reuse. Disconnect the heater hose from the back side of the water crossover. Remove the water crossover using a 10mm socket or wrench. Save these bolts for later use.



18. Disconnect the rubber portion of the heater hoses from the metal tubes at the rear of the right-hand cylinder head. Remove the heater tube assembly from the engine by removing the stud on the back side of the passenger cylinder head and sliding off the water pump fitting in the block.

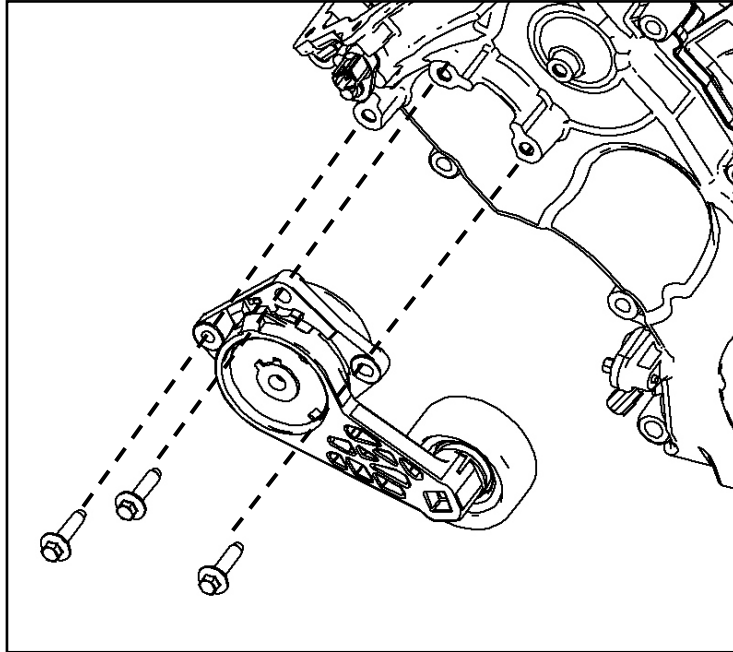


ROUSH®

THE **ART** OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

19. Remove the stock belt tensioner by removing the (3) bolts that secure it to the front cover by using a 10mm socket.



ROUSH®

THE ART OF PERFORMANCE ENGINEERING

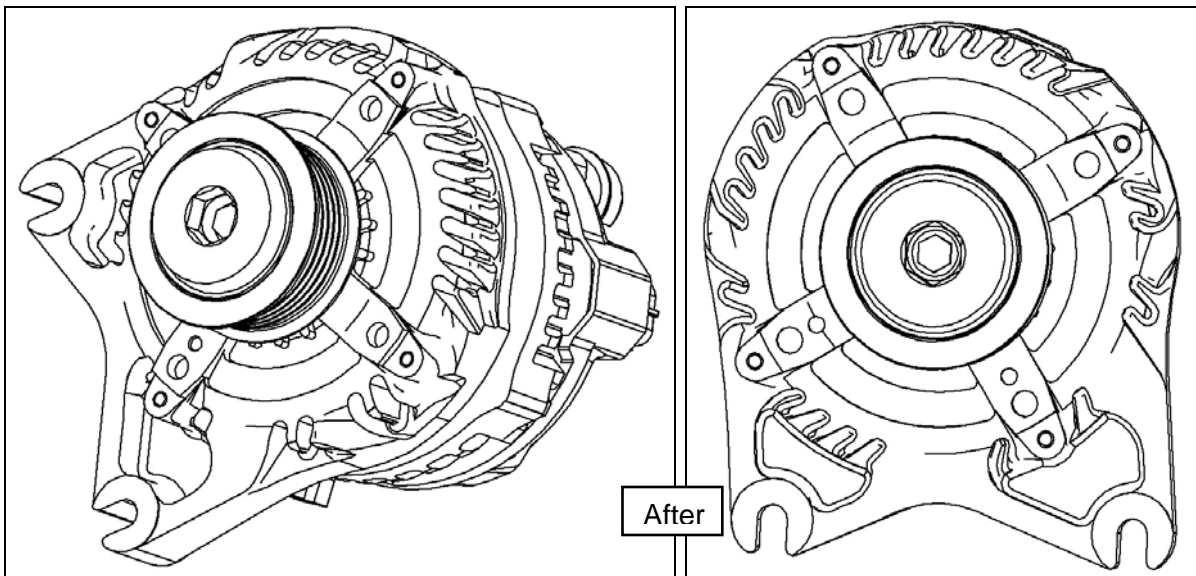
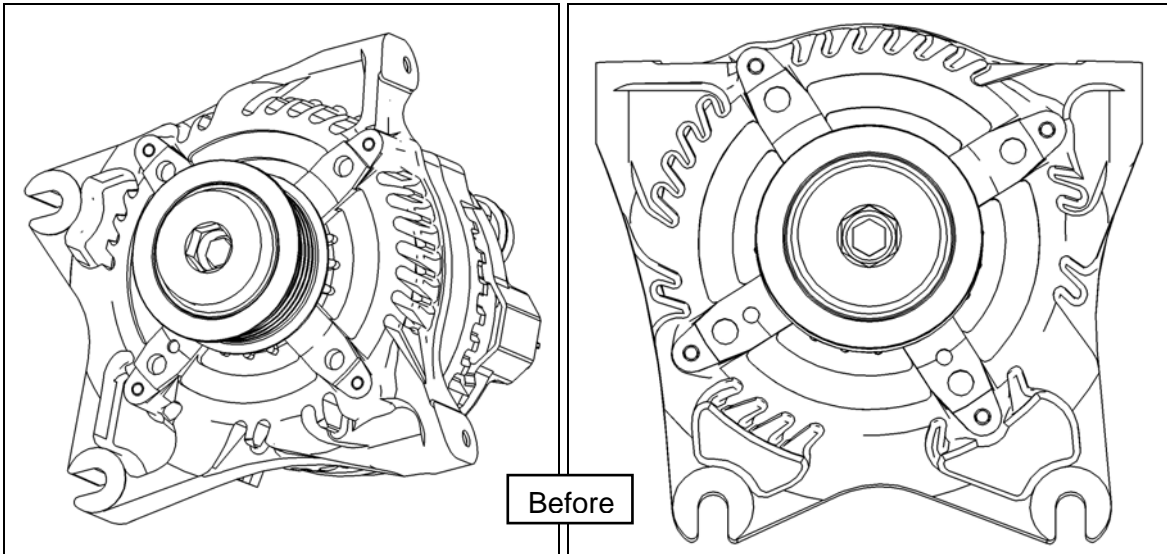
PREMIUM FUEL REQUIRED

SECTION B – MODIFICATIONS

The following section will guide you through the required modifications of existing components and build up of the assemblies used to complete the installation. With the exception of the wiring modifications and intercooler pump bracket mounting, all of this work can be performed away from the vehicle.

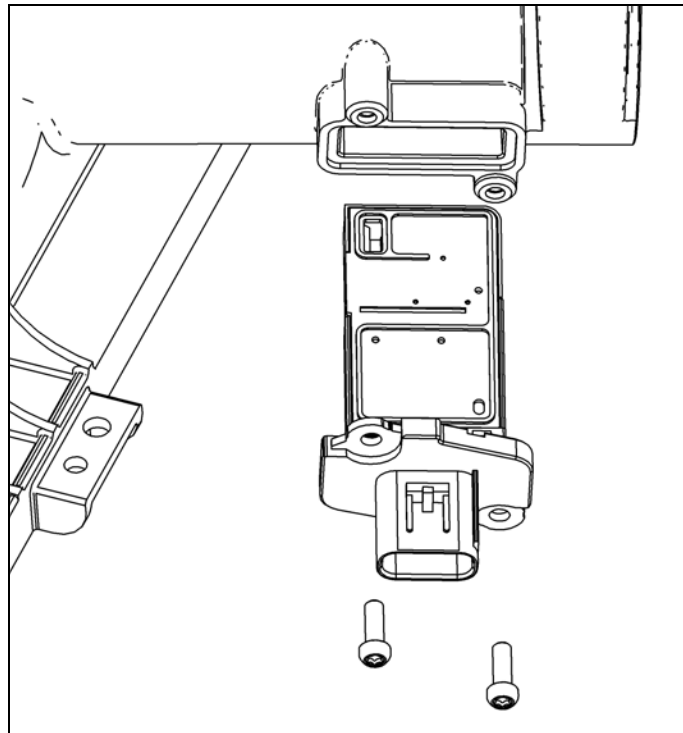
Alternator Modification

1. In order for the alternator to be installed in its new location, two of the original mounting ears must be removed. Using a band saw or similar cutting tool, remove the mounting ears shown. Be very careful to avoid getting debris inside of the alternator when removing these features. Use tape to cover any areas that lead into the alternator. Any debris that may get inside the alternator can lead to premature failure.

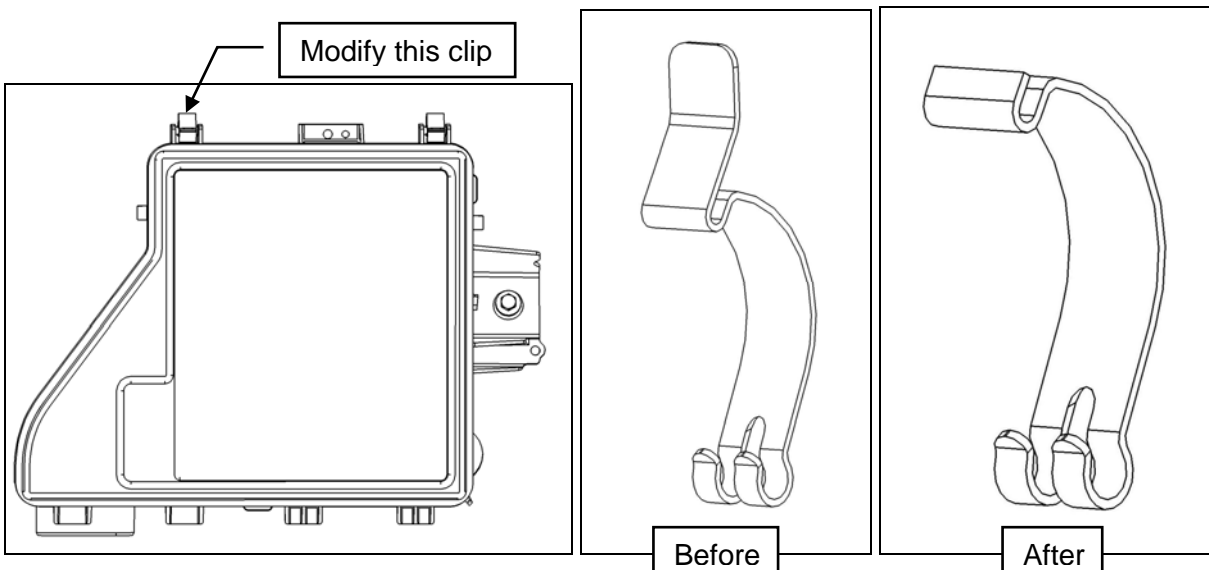


Airbox Modification

1. Remove the MAF sensor from the stock airbox cover and install into the new upper airbox lid (13109643HC-AA) using the two take off screws. Torque screws to 1.8 – 2.2 Nm.

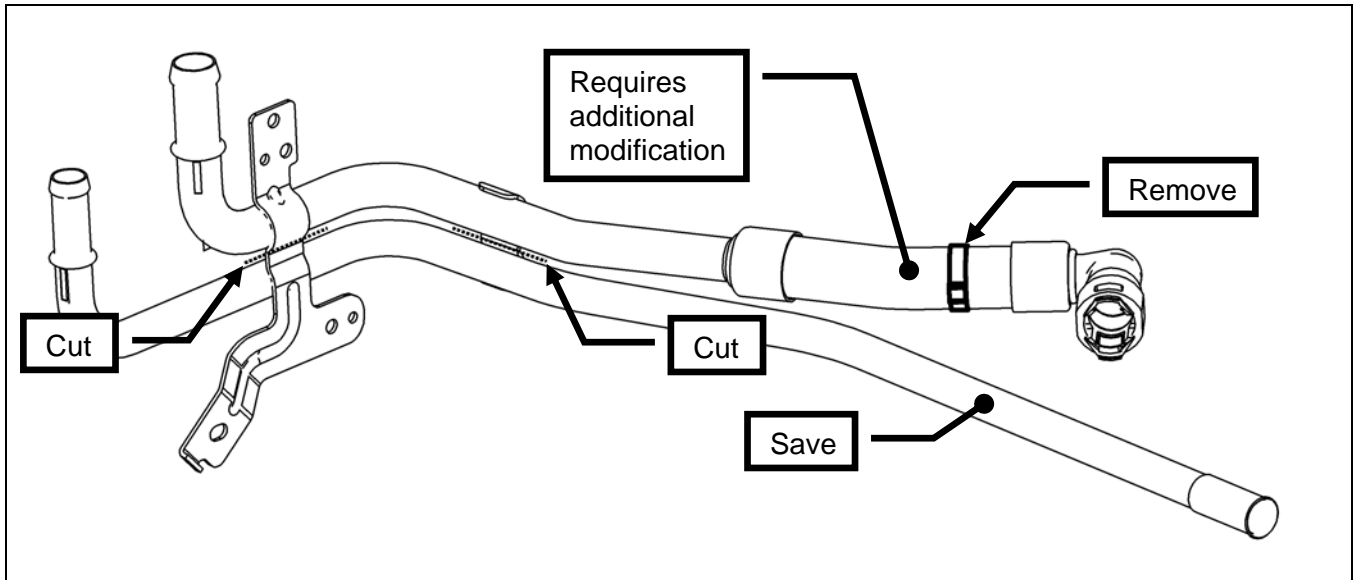


2. In order for the new airbox lid to be secured to the lower airbox tray properly, the inboard retaining clip needs to be modified. Remove the inboard clip from the tray and use a saw or grinder to remove part of the clip as shown. Deburr all sharp edges.

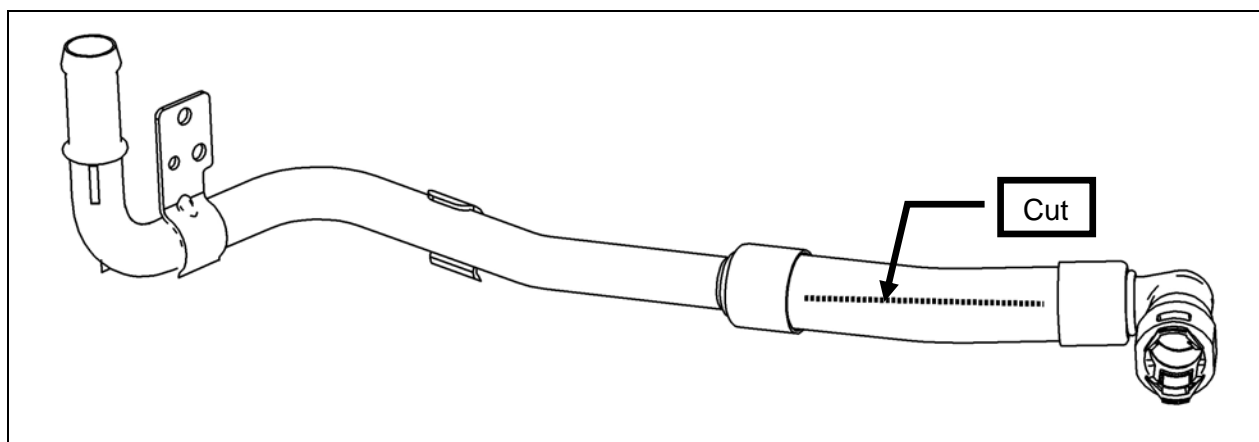


Heater Tube Assembly Modification

1. The upper tube and hose on the heater tube assembly is not used (a new tube is supplied in the kit). Using a die grinder or air saw, cut the brackets that connect the two tubes together and remove the clamp on the rubber portion of the upper tube. Deburr all sharp edges. Retain the lower tube which connects to the water pump and the mounting bracket for reinstallation.



2. Cut along the dash line to remove the coolant flow restrictor from rubber portion of the heater tube that was just cut from the assembly.



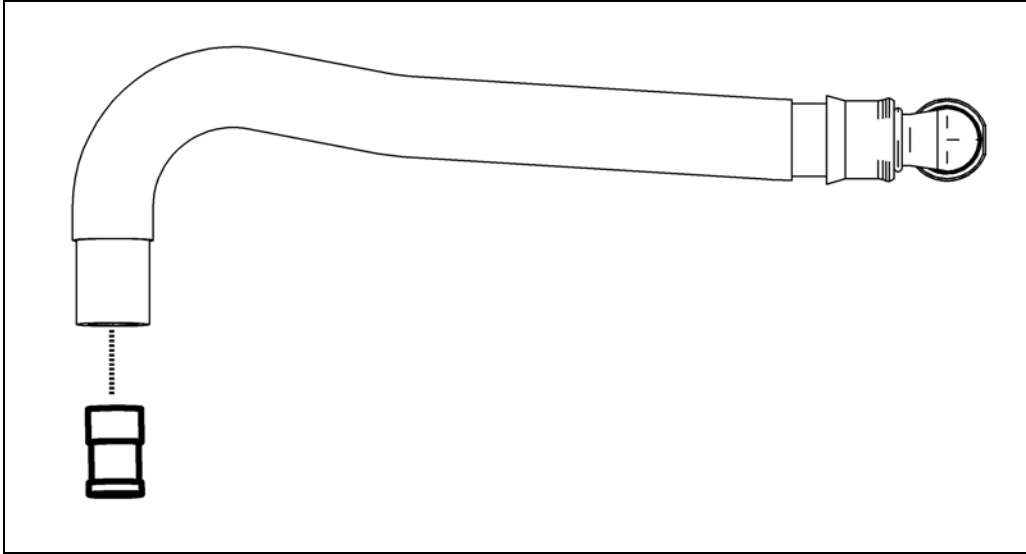
3. Remove the 3/4" rubber heater inlet hose from the vehicle by disconnecting it at the lower heater core fitting at the back of the engine compartment. Remove the clamp that is glued to the hose and save for later use.

ROUSH[®]

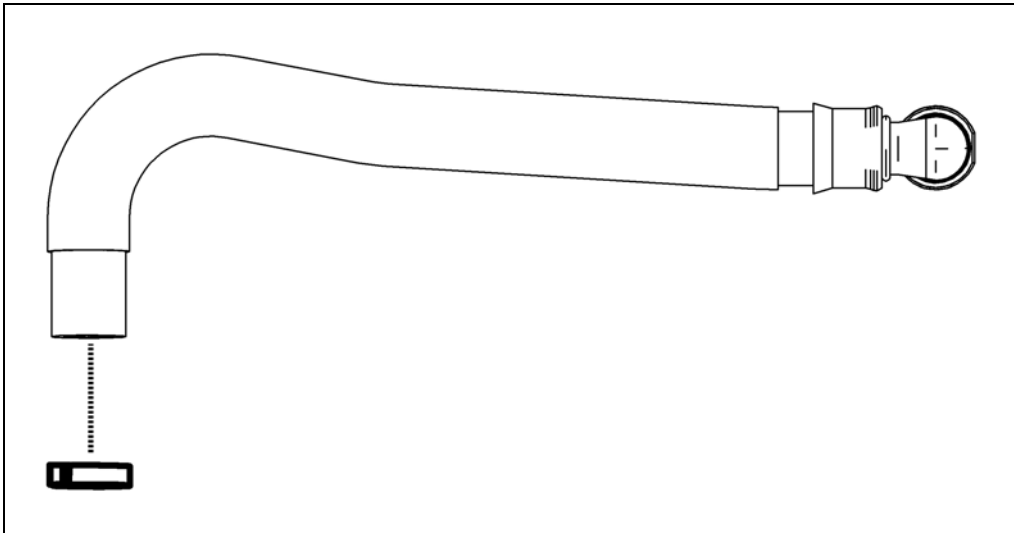
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

4. Insert the plastic coolant flow restrictor into the heater inlet hose so that it is 45mm from the edge of the hose.



5. Install the Heater Inlet Hose Clamp (15500018) from Hardware Kit E onto the heater inlet hose and position it so that it is 75mm from the edge of the hose. The abrasion sleeve may need to be pulled back to install the clamp.



6. Re-install the clamp that was removed in step 3 and re-install heater inlet hose in the vehicle.

VMV Modification

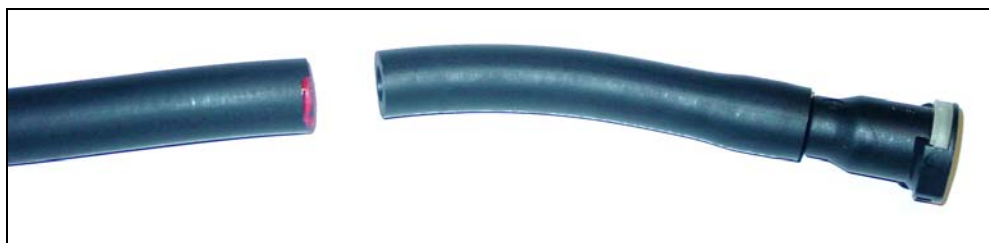
1. Remove split loom convolute from stock VMV hose assembly.



2. Mark hose at 75mm (~3in) from end of straight connector.



3. Using a knife, cut the hose at the applied mark.

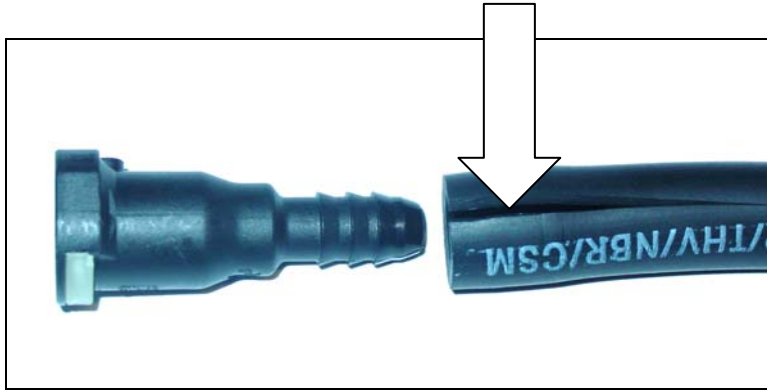


ROUSH[®]

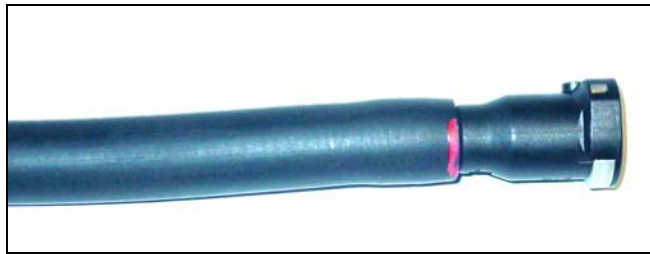
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

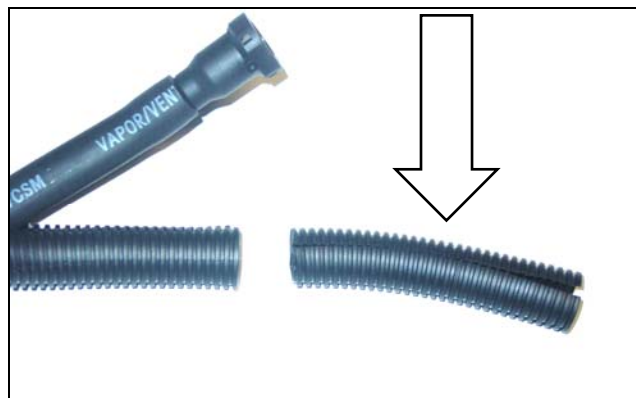
- Using a knife, cut the hose as shown to remove the straight connector from the cut off piece of VMV hose.



- Re-install straight connector into shortened VMV hose.



- Using a knife, cut off 100mm (~4 in) of split loom convolute to fit the shortened VMV line. Re-install the split loom convolute onto the modified VMV hose.



Brake Booster Hose Modification

Note: This modification does not require removal of the hose from the booster.
Removing the hose from the booster could damage the booster fitting.

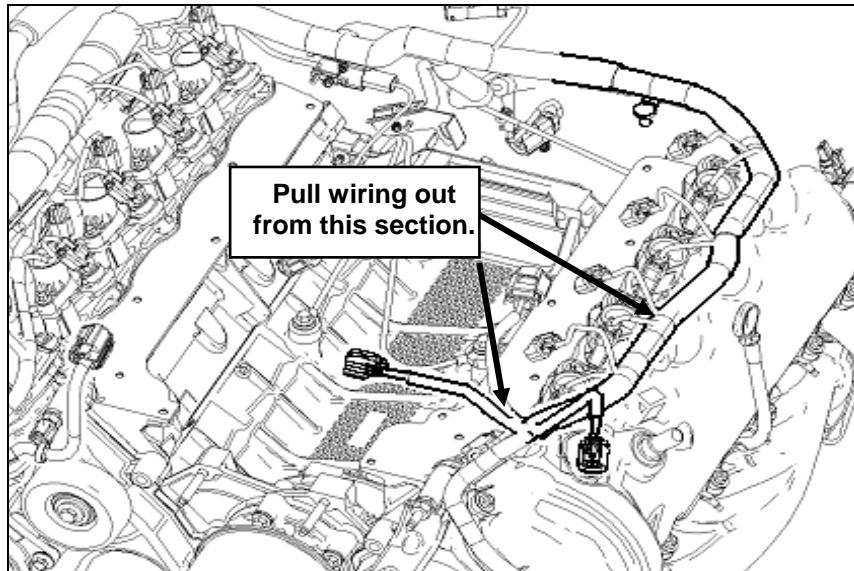
1. Remove the split loom convolute from brake booster hose. Remove the T-fitting with the 7/32" vacuum hose and the upper brake booster hose from the brake booster hose assembly.



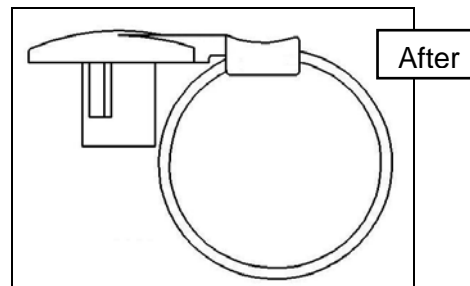
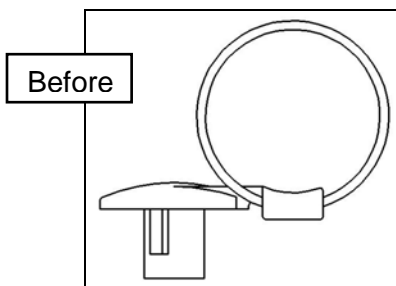
2. Remove the T-fitting from the upper brake booster hose. Remove the 7/32" vacuum hose which connected the T-fitting to the fuel rail IPTS sensor.
3. Using a knife or hose cutter, remove 25mm of hose from the upper brake booster hose (T-fitting to intake) and 100mm from lower brake booster hose (T-fitting to booster). **BE VERY CAREFUL DURING THIS STEP.**
4. Reassemble the brake booster hose assembly using the T-fitting.

Wiring Harness Modifications

1. Make a note of the locations of the harness retaining clips and breakout points. With the harness still fastened to the engine with the factory retainers, carefully cut the tape off of the convoluted tubing and wiring harness on the driver's side of the engine from the ETC branch to the #6 coil break out point. The area is highlighted in the following diagram. The convoluted tubing is split from the factory so follow the split. Lift the wiring out of the convoluted tubing without disturbing the factory retainers wherever possible.



2. Pull the 2-wire ETC (electronic throttle control) wiring loose from the main harness and drag it back to the #6 coil break out point.
3. Pull the 4-wire IPTS (injection pressure and temperature sensor) wiring loose from the main harness and drag it back to the #5 coil break out point.
4. Slide the wiring harness back into its convoluted tubing and re-tape the harness and the wiring that was moved in steps 2 and 3.
5. Move (2) harness retainers on driver's side harness from the bottom side to the top side of the harness leaving the rear retainer on the bottom side.

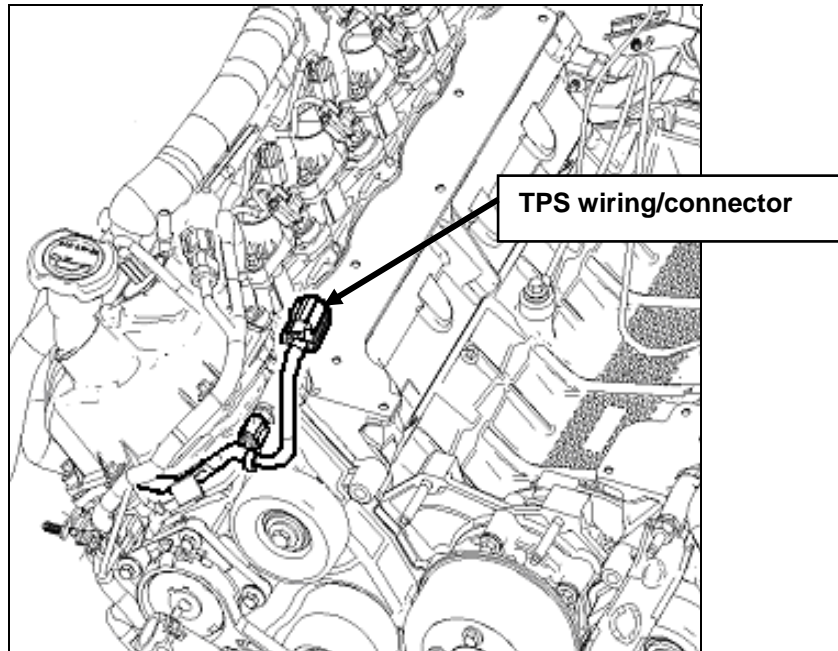


ROUSH[®]

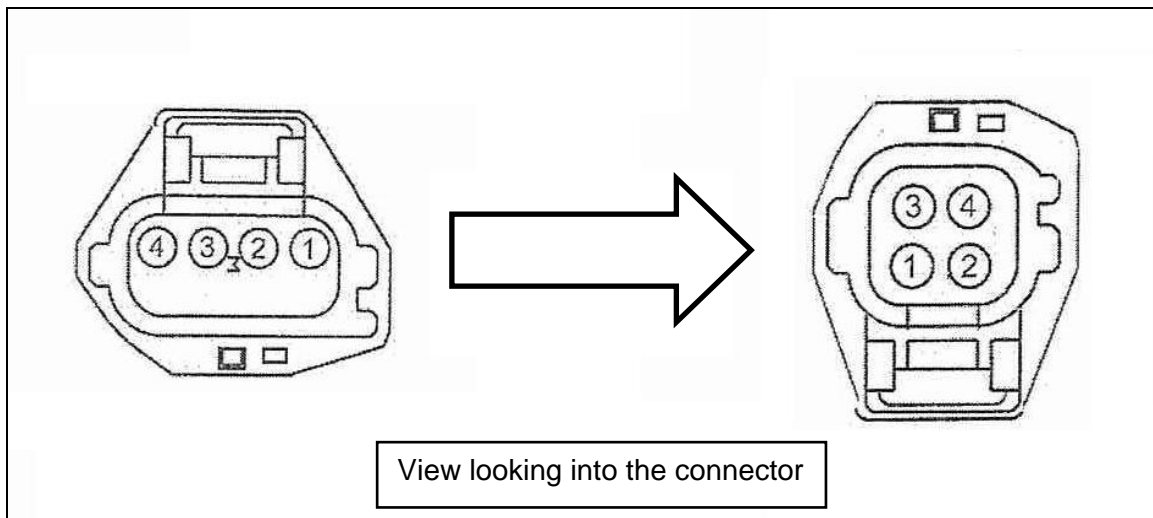
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

6. Locate the TPS (Throttle position sensor) connector and harness at the front of the passenger side. Use a proper de-pinning tool to remove the connector from the harness.



7. Remove the female 2x2 connector from the new TPS extension harness (131014A595). Use this connector to replace the connector that was removed in the previous step. Populate the new connector so the green wire is in position 1, the yellow wire is in position 2, the blue wire is in position 3 and the tan wire is in position 4. Fully seat the white plastic part inside the connector to secure the wires in place.



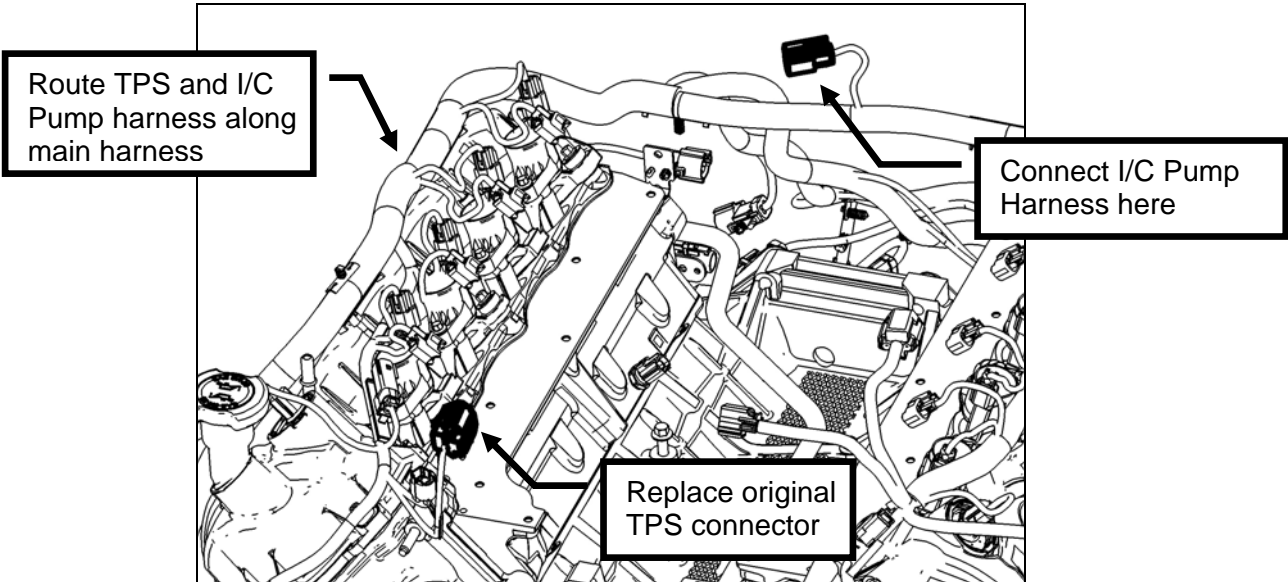
8. Connect the TPS extension harness to newly installed connector and run the harness along the main wiring harness to the rear of the driver side cam cover. Tape the extension harness to the main harness.

ROUSH®

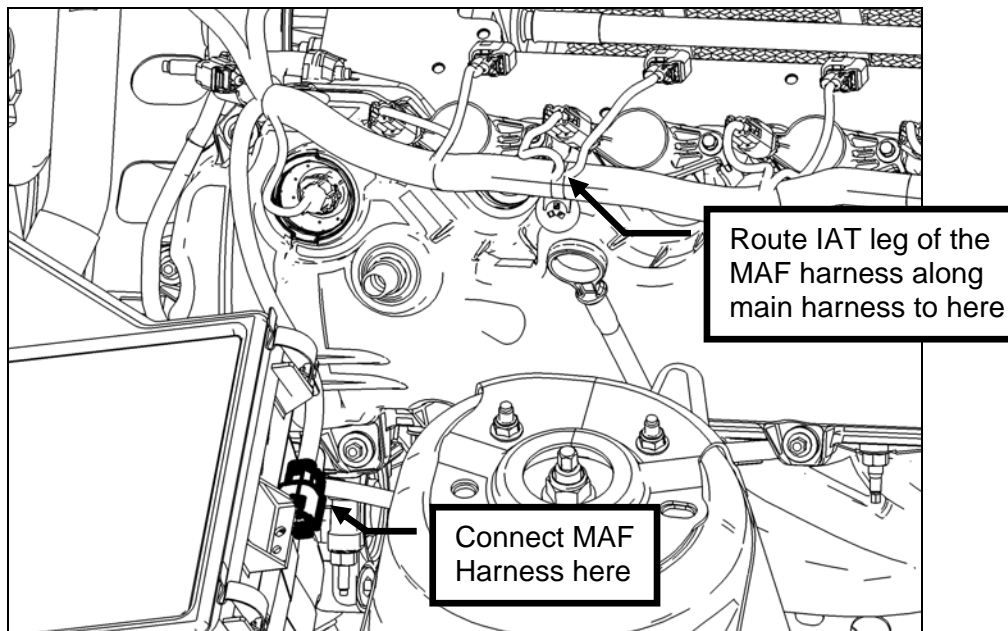
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

9. Connect the Intercooler Pump Wiring Harness (13108W501) to the CMCV connector located at the rear of the engine on the main engine wiring harness. Route the pump harness with the main engine harness along the passenger side cam cover. Remove the main harness from the cam cover harness mounting studs and push the retaining clips of the pump harness onto the studs. Re-install the main harness onto the studs. The remainder of the routing of this harness will be finished later.



10. Remove the stock MAF sensor harness from the main engine harness. Replace this harness with the MAF/ACT Wiring harness (131012A690). Connect the new harness to the main wiring harness and secure the connector to the lower airbox tray with the push pin on the connector. Route the ACT leg of the harness back up the main harness to the #6 coil breakout point.



ROUSH[®]

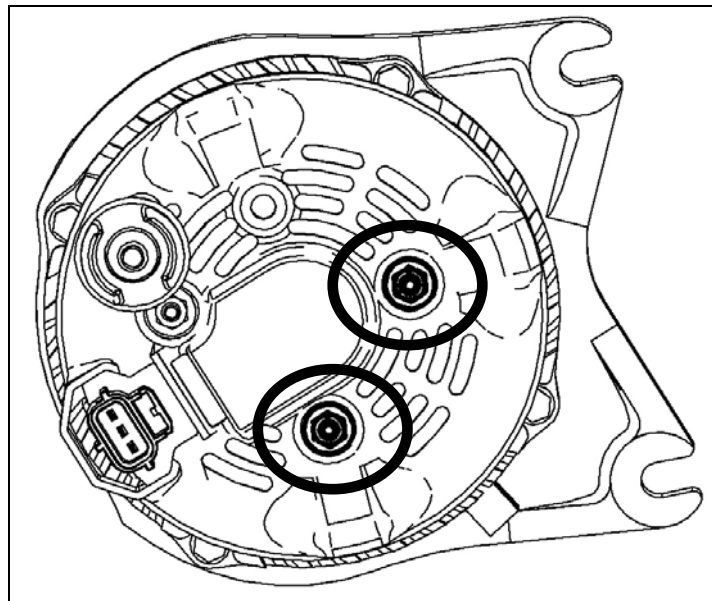
THE **ART** OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

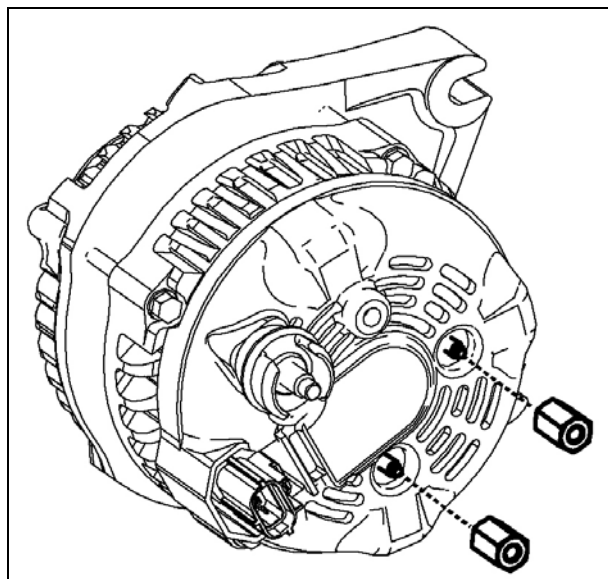
SECTION C – SUBASSEMBLY

Alternator

1. Remove the (2) nuts shown from the back of the modified alternator.



2. Install (2) hex nuts (R07020053) in place of the (2) nuts removed in the previous step. Torque hex nuts to 5 – 7 Nm. **BE CAREFUL NOT TO OVERTIGHTEN THESE NUTS.**

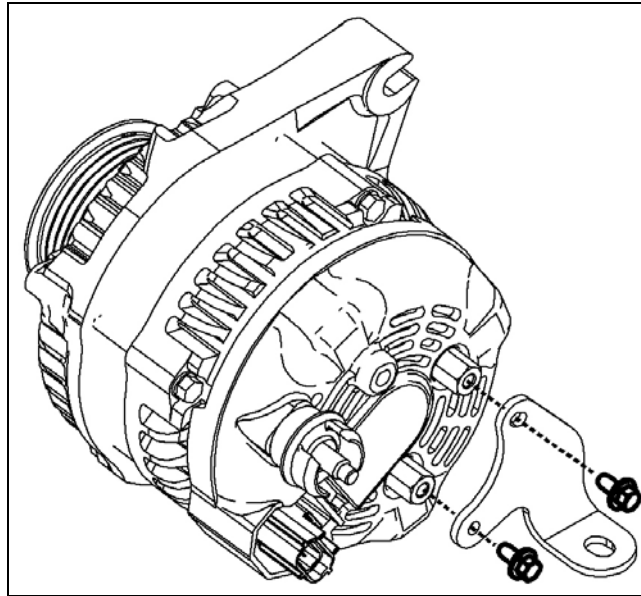


ROUSH®

THE ART OF PERFORMANCE ENGINEERING

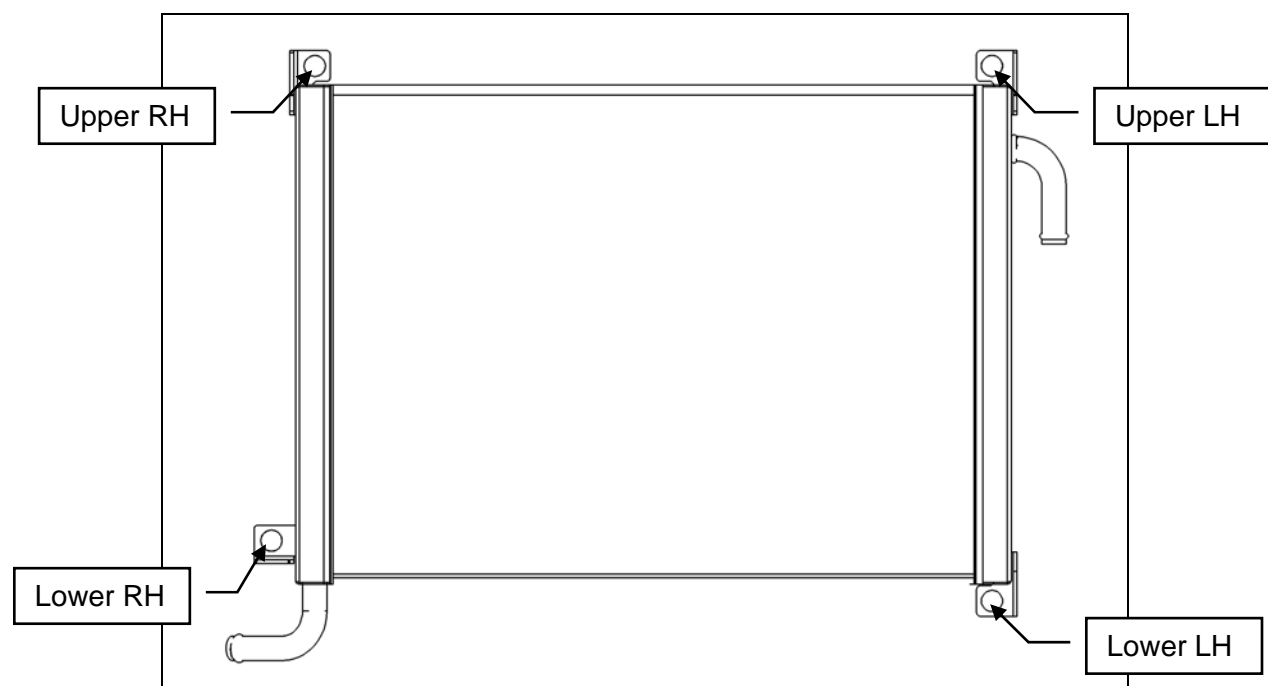
PREMIUM FUEL REQUIRED

3. Secure the Rear Alternator Bracket (R07020052) to the rear of the alternator using (2) M5 x 0.8 x 10mm bolts (R18020059). Torque bolts to 5 – 7 Nm. BE CAREFUL NOT TO OVERTIGHTEN THESE BOLTS.



Intercooler Low Temperature Radiator (LTR)

1. Insert (1) Rubber Grommet (R07060107) into each mounting tab on the LTR (13108K229).

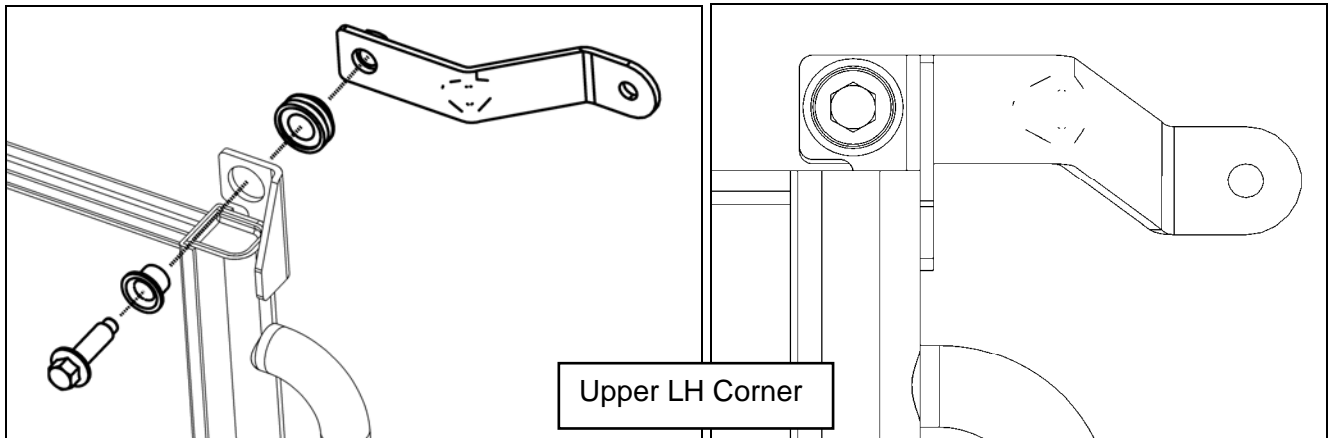


ROUSH®

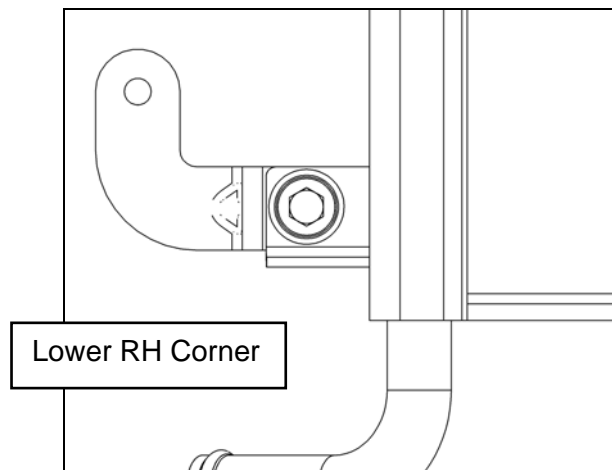
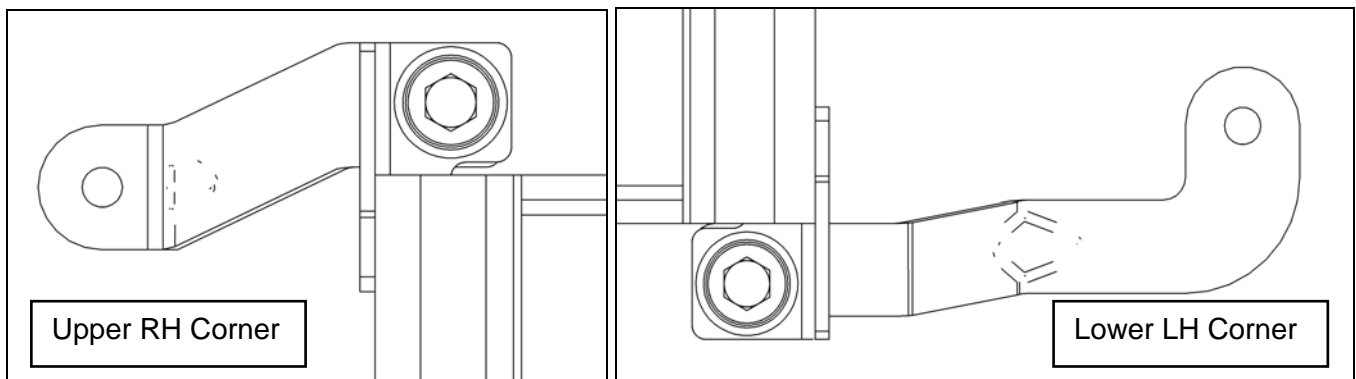
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

2. Push (1) Sleeve (R07060108) into each of the rubber grommets.
3. Mount the Upper LH LTR Bracket (13108K242) to the upper LH corner of the LTR using (1) M8 x 1.25 x 25mm bolt (W500224). Align the edges of the bracket such that they are flush with the mounting tab on the LTR. Torque bolt to 20 – 30 Nm.



4. Repeat step 3 for each of the remaining LTR Brackets. 13108K243 will go to the upper RH corner, 13108K244 to the lower LH corner and 13108K245 to the lower RH corner of the LTR.

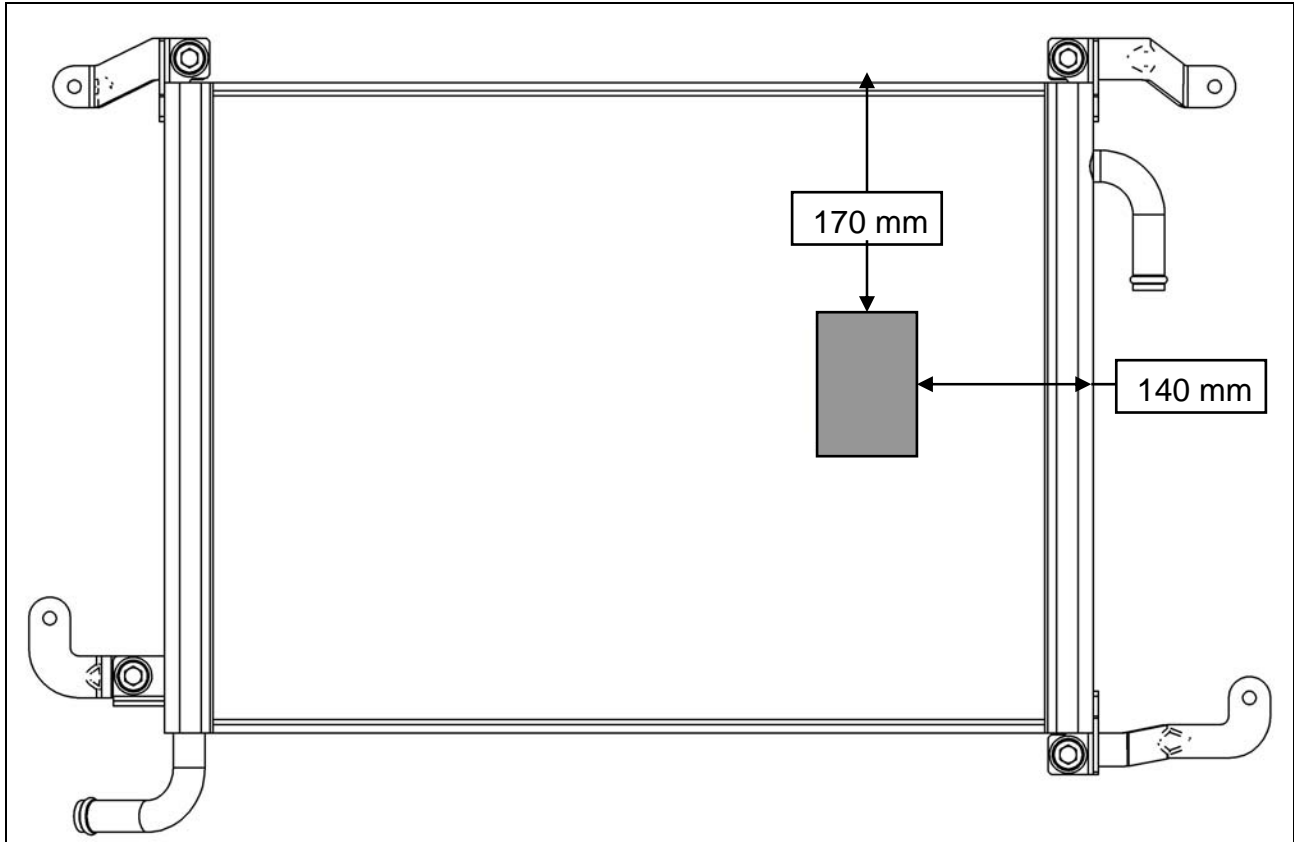


ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

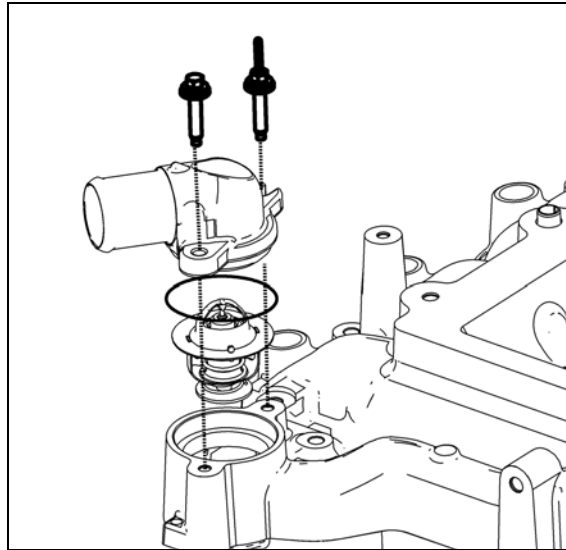
PREMIUM FUEL REQUIRED

5. Install the Intercooler Pump to LTR NVH Isolator (13108Y419) on the front face of the LTR. The pad should be stuck to the LTR so that it is 170mm from the top and 140mm from the right side.

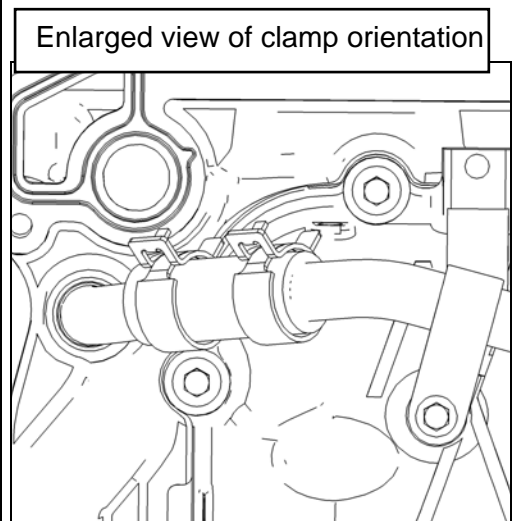
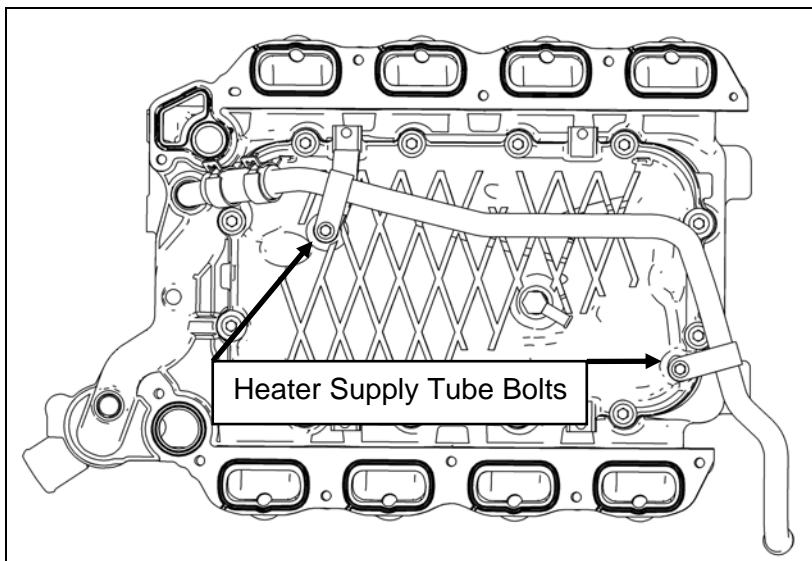


Intake Manifold Build Up

1. Remove Fuel Charging Assembly (13109H487) from the packaging.
2. Remove the thermostat, housing and o-ring from the stock water crossover by removing the two M6 bolts using an 8mm socket. Secure the thermostat, o-ring and thermostat housing to the intake manifold using (1) take off thermostat housing bolt and (1) take off throttle body stud. Torque both fasteners to 8 – 12 Nm.



3. Install the 3" long $\frac{3}{4}$ " Heater Supply Hose (R07070067) and one $\frac{3}{4}$ " Constant Tension Clamp (CT19x12-OB) onto the heater Supply Tube (R07070014). Place one $\frac{3}{4}$ " CT clamp (CT19x12-OB) over the intake manifold heater fitting. Install the Heater Supply Tube using (2) M6 x 1.0 x 13mm bolts (N605771) from Hardware Kit B and torque to 8 – 12 Nm. Position the remaining loose hose clamp onto the hose and orient clamps as shown.

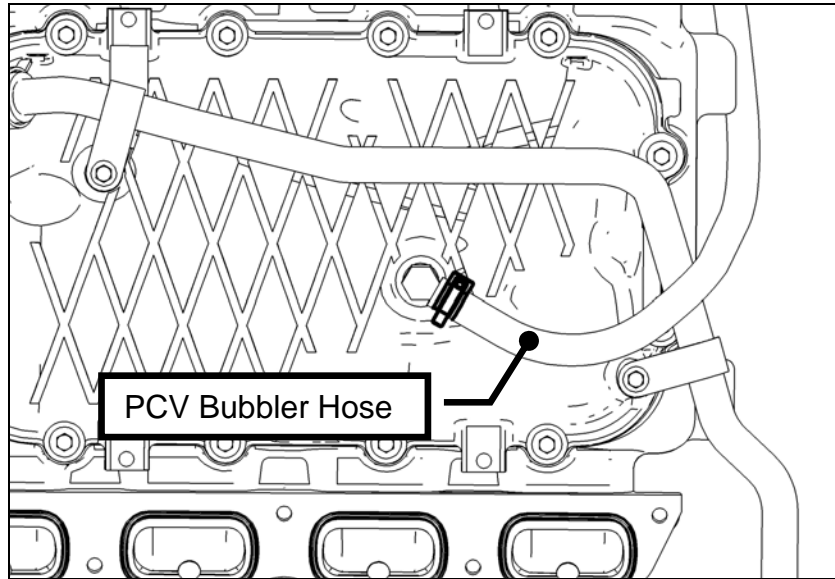


ROUSH®

THE ART OF PERFORMANCE ENGINEERING

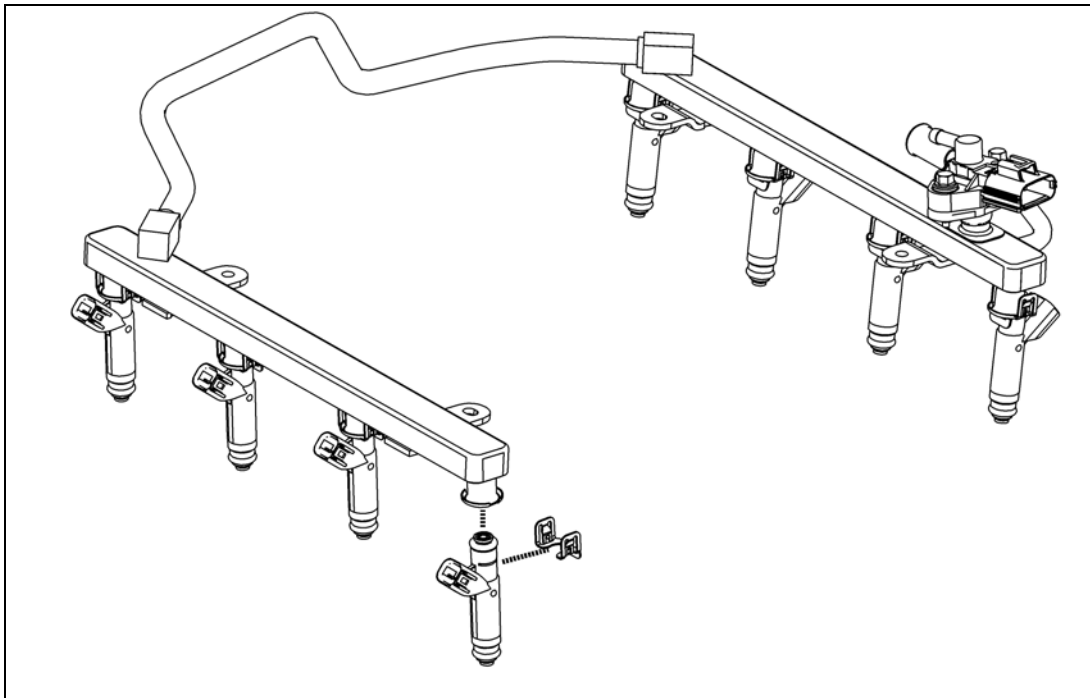
PREMIUM FUEL REQUIRED

4. Attach the rubber hose from the PCV Purge Hose (13106K817) to the bubbler fitting on the bottom of the fuel charging assembly and secure it with the supplied clamp.



Fuel Rail Assembly

1. Install the new injector clips (13109C995) onto the new Fuel Injectors (R14010001) from Hardware Kit B. Apply assembly lube to the injector O-rings and install the injectors into the new Fuel Rail (R07110006). Verify that the injector clips are properly seated and fully engaged into the fuel rail injector cups.



ROUSH®

THE ART OF PERFORMANCE ENGINEERING

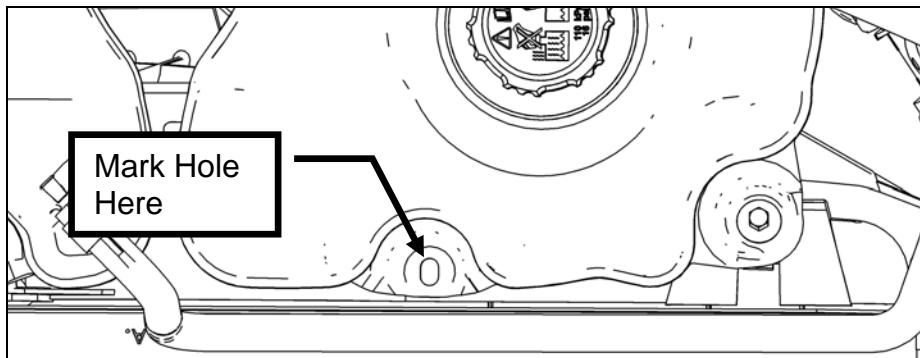
PREMIUM FUEL REQUIRED

SECTION D – INSTALLATION

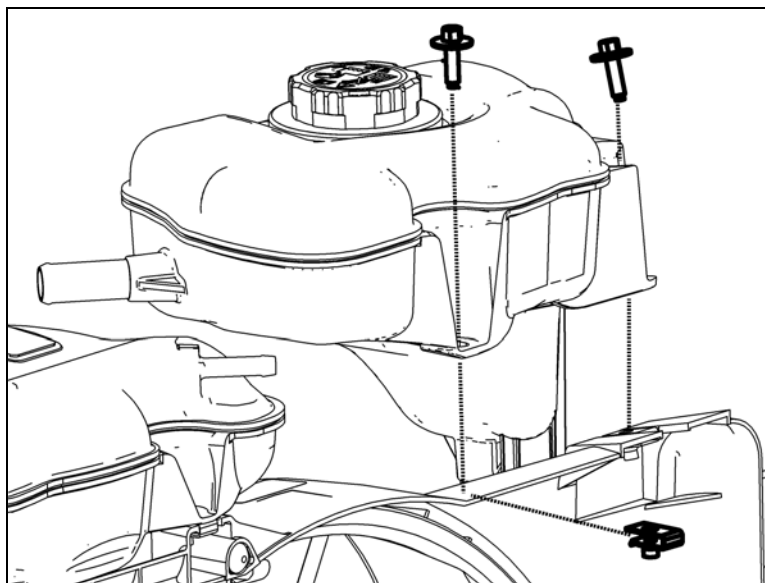
The following section will guide you through the final installation of the kit into the vehicle. If you need to stop during any part of the installation, make sure you cover any open ports in the cylinder heads or intake manifold to prevent foreign material from contaminating your engine.

Intercooler Reservoir Mounting

1. Install the Intercooler Degas Bottle (13108D080) with Degas Bottle Cap (XL3Z-8100-AA) onto the fan shroud using (1) M6 x 1.0 x 22 mm bolt (R18020057) from Hardware Kit E. Use the bottle as a template to mark the second mounting hole with a paint pen. Remove the bottle and drill a 5/16" hole through the fan shroud.

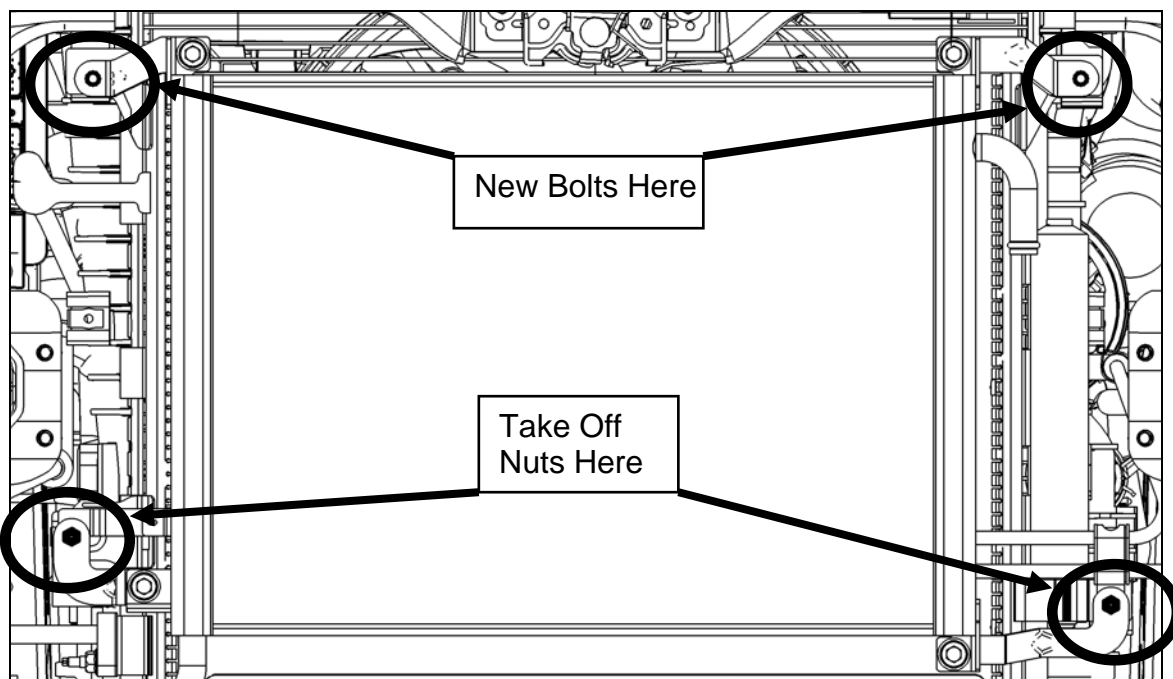


2. Remove the upper fan shroud bolts and force the shroud toward the rear of the vehicle. Install (1) M6 J-Clip (N623332) from Hardware Kit E. Reinstall the upper fan shroud bolts and torque to 8 – 12 Nm. Reinstall the intercooler degas bottle using (2) M6 x 1.0 x 22 mm bolts (R18020057) and torque to 8 – 12 Nm.



Intercooler Radiator Assembly Mounting

1. Remove the three forward Phillips-head screws from each front wheel liner. Using a Phillips-head screwdriver, turn the (5) inner fender push pins $\frac{1}{4}$ turn to release the centers. Remove the pushpins and then remove the forward inner fenders. NOTE: The front tires of the vehicle may need to be removed for easier access.
2. Remove the three lower close-out to radiator support screws (7mm socket). Remove the two upper bumper cover screws near the headlights (10mm socket). Remove the four front fender to bumper cover nuts inside the forward wheel well (10mm socket).
3. Reach inside the front wheel wells and unplug the front turn signals. Lift the front bumper cover slightly and pull partially off of the vehicle. Unplug the fog lights and set the front bumper cover aside.
4. Remove the four push pins that retain the impact absorber to the front bumper beam and set the absorber aside.
5. Remove the stock radiator side shields. Keep the push pins for later use.
6. Remove the two upper bolts that secure the air conditioning condenser to the radiator and the two lower mounting nuts.
7. Install the LTR assembly into the vehicle using (2) M6 x 1.0 x 22 mm bolts (R18020057) at the top into the radiator and the two nuts that were removed in the previous step at the bottom. Torque the two bolts and two nuts to 8 – 12 Nm.



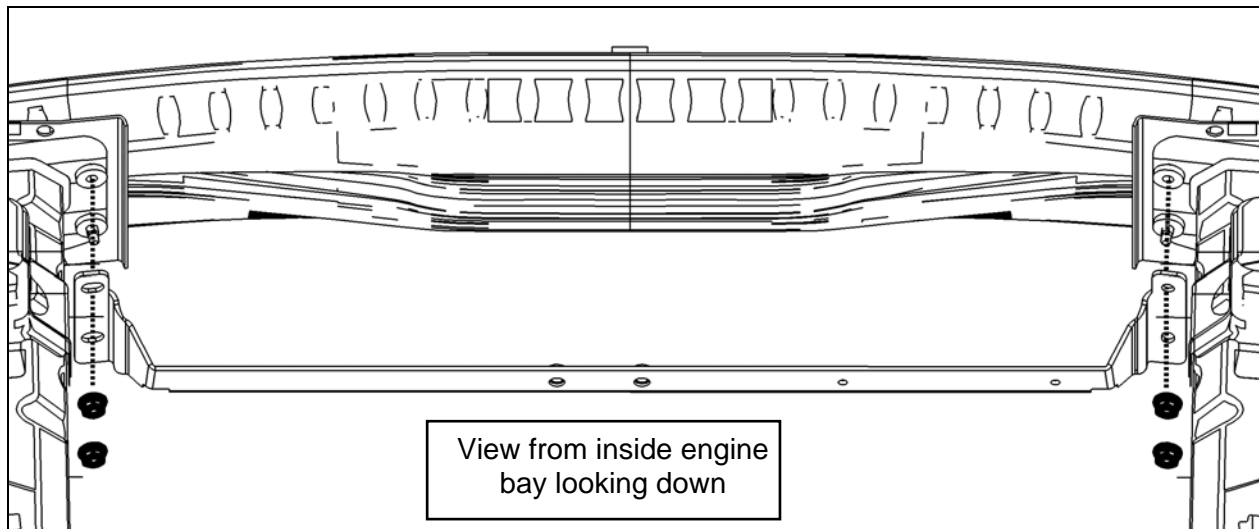
ROUSH®

THE ART OF PERFORMANCE ENGINEERING

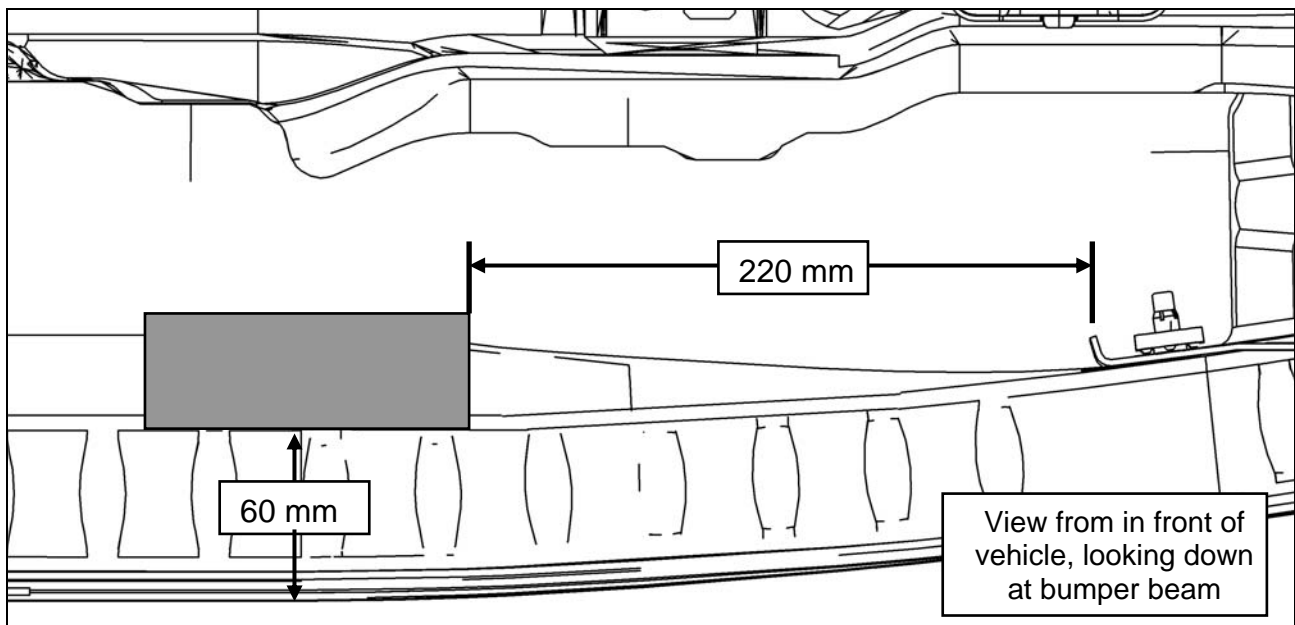
PREMIUM FUEL REQUIRED

Electric Water Pump, Mounting Bracket and Hoses

1. Remove the two upper inner front bumper beam bolts.
2. Install the (2) Long Bumper Bolts (R18020007) from Hardware Kit E in place of the two which were just removed and torque to 20 – 30 Nm. Install the Intercooler Pump Mounting Bracket (13108C419) behind the bumper onto the long bumper bolts using (4) M8 nuts (W520413) from Hardware Kit E. Torque these nuts to 20 – 30 Nm.



3. Install the Intercooler Pump to Bumper Beam NVH Isolator (13108Z419) on the rear of the bumper beam such that the edge of the pad is 220mm from the driver side bumper beam mounting plate and 60mm from the front edge.

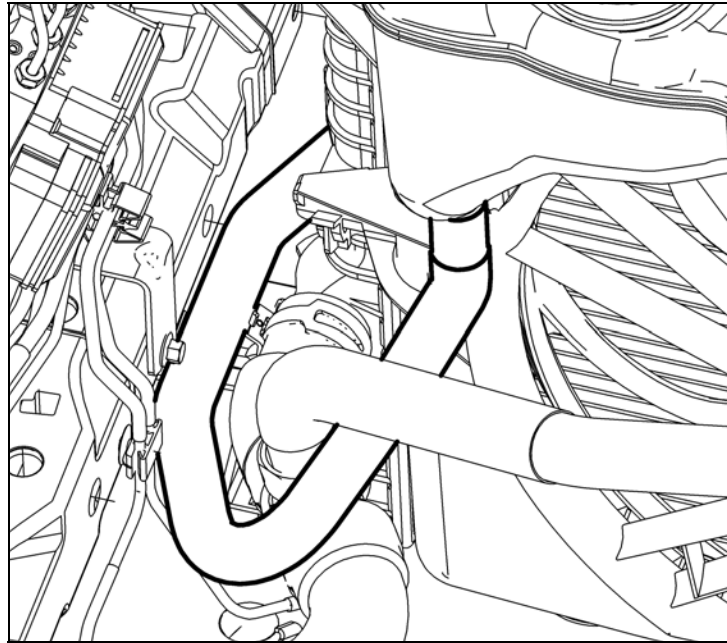


ROUSH®

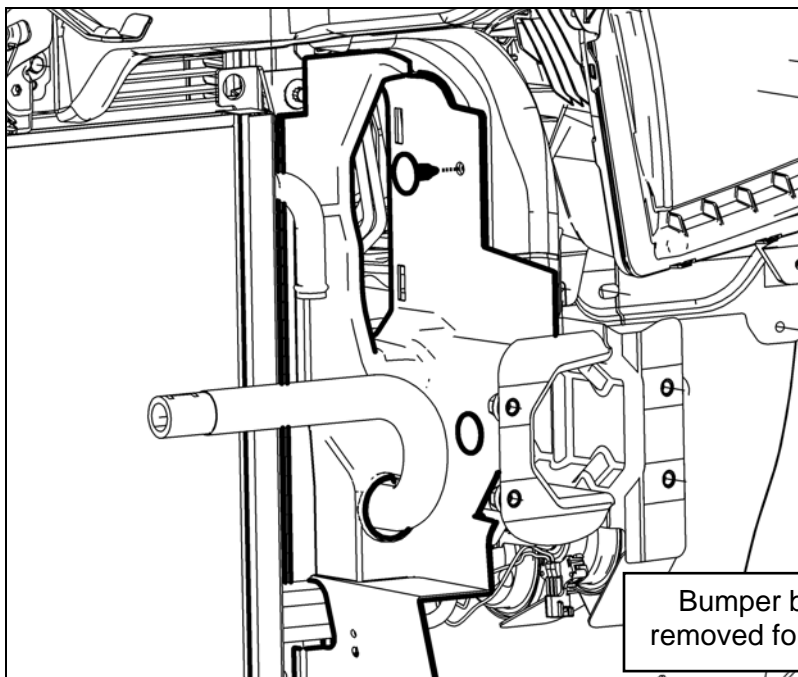
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

4. Install the Intercooler Pump Inlet Hose (13108D029) from the degas bottle outlet port to the front of the LTR by routing the hose around the lower radiator hose "T" joint and along the frame rail. Secure the hose to the bottom of the degas bottle using (1) $\frac{3}{4}$ " constant tension clamp (CT19x12-BO). Orient the clamps so the "I" on the hose is in the center of the clamp tangs.



5. Install the LH side Radiator Side Shield (1310010207LH) by routing the Intercooler Pump Inlet Hose (installed in the previous step) through the hole in the shield and securing the shield to the chassis using the take off push pins.

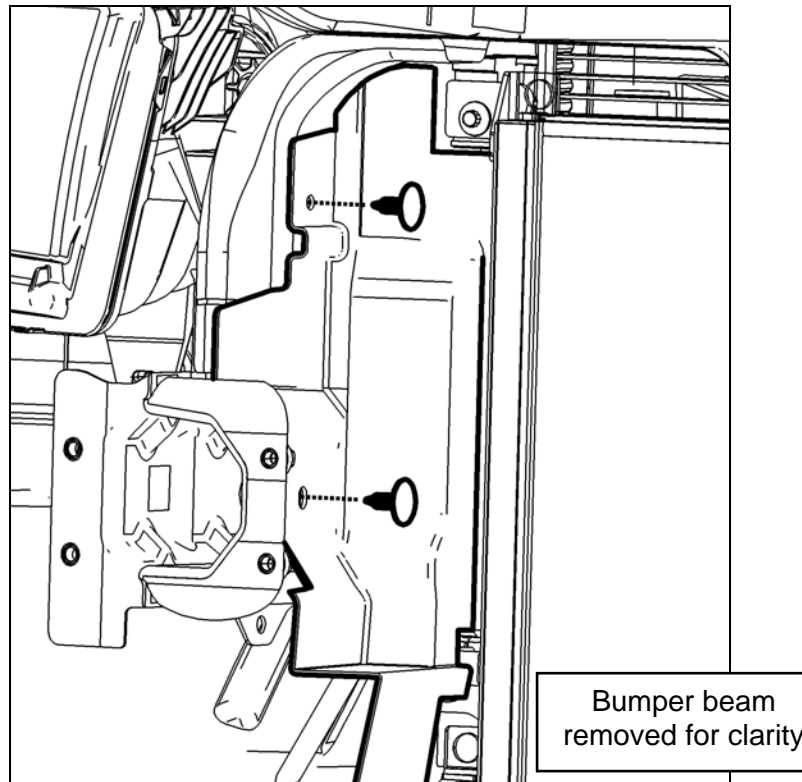


ROUSH®

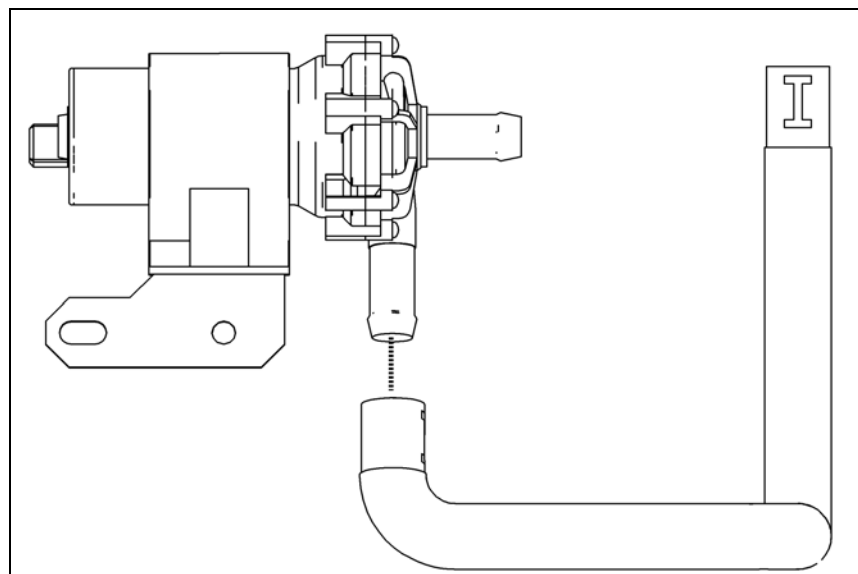
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

6. Install the RH side Radiator Side Shield (1310010207RH). Secure the shield to the chassis using the take off push pins.



7. Connect the Intercooler Pump to LTR hose (13108K236) to the Intercooler Pump and Bracket assembly (392022009). Orient the hose so the "I" is aligned with the arrow on the pump outlet port. Secure the hose to the pump using (1) $\frac{3}{4}$ " constant tension clamp. Orient the clamp so the "I" on the hose is in the center of the clamp tangs.

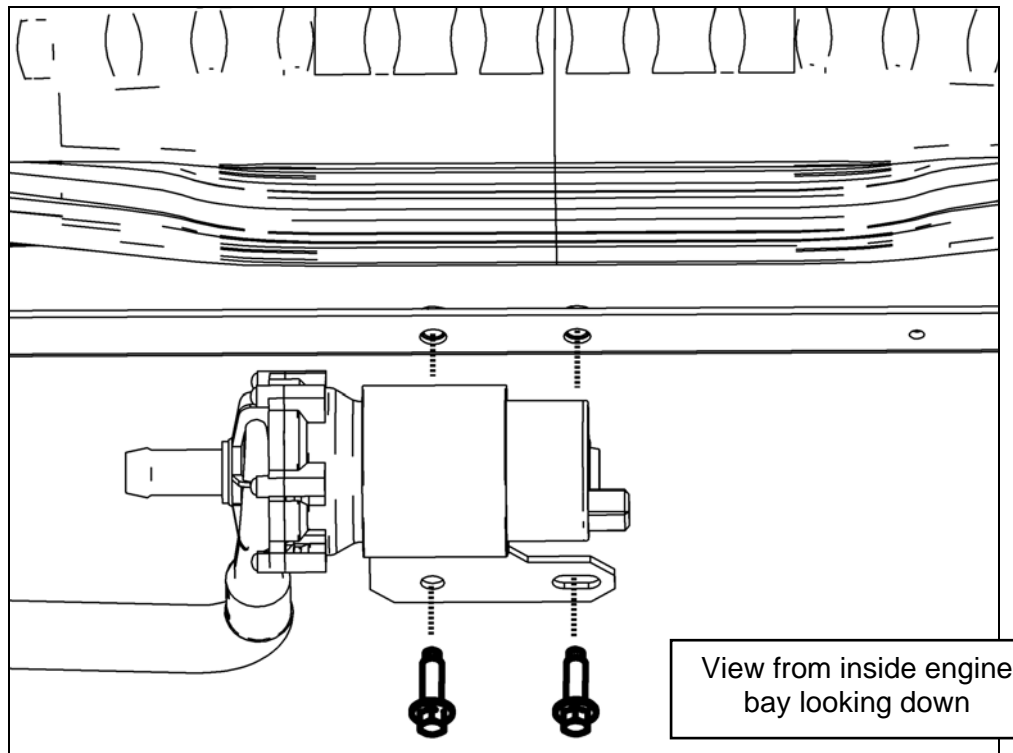


ROUSH®

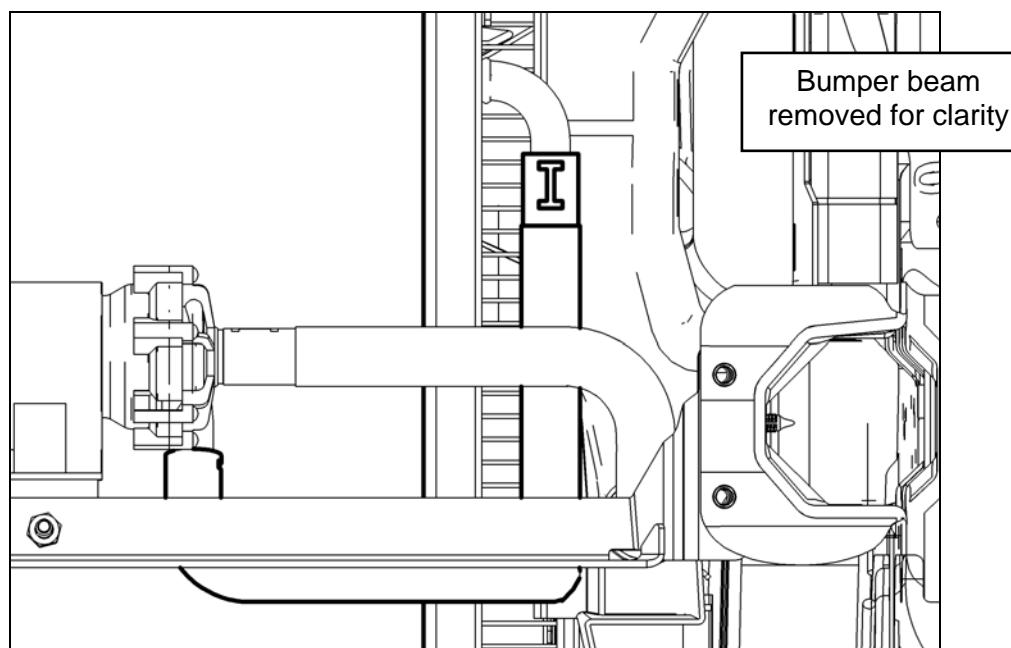
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

- Secure the Intercooler Pump and hose to the Intercooler Pump Mounting Bracket using (2) M8 x 1.25 x 25 mm bolts (W500224) from Hardware Kit E so the outlet is facing away from the two holes that are in the bracket. Torque bolts to 20 – 30 Nm.



- Connect the Intercooler Pump to LTR hose to LTR inlet port using (1) $\frac{3}{4}$ " constant tension clamp. Orient the clamp so the "I" on the hose is in the center of the clamp tangs.

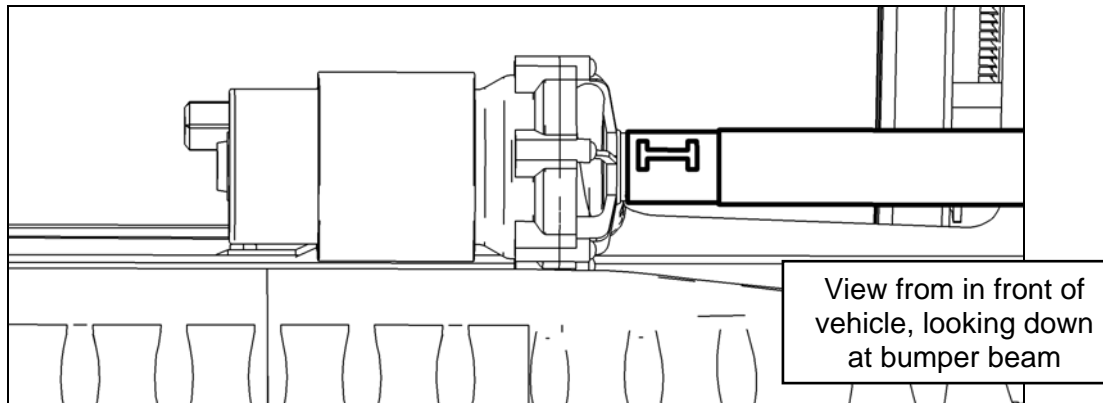


ROUSH®

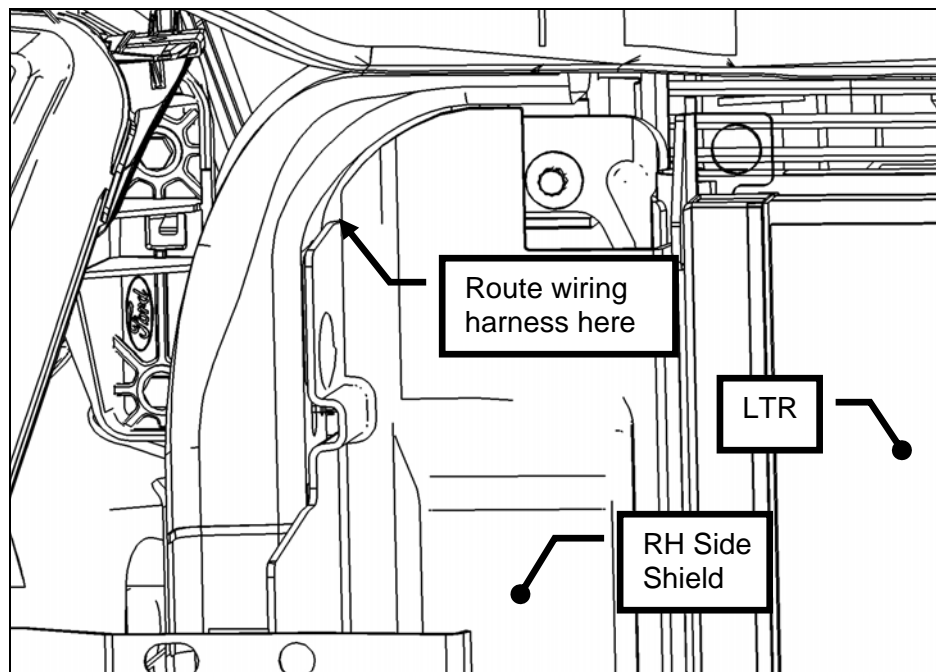
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

10. Connect the Intercooler Pump Inlet Hose to the inlet port on the intercooler pump. Secure the hose to the pump using (1) $\frac{3}{4}$ " constant tension clamp. Orient the clamp so the "I" on the hose is in the center of the clamp tangs.



11. Route the remainder of the Intercooler Pump Wiring Harness next to the headlight and radiator and through the hole in the RH Radiator Side Shield. Connect the wiring harness to the pump and secure the harness to the bracket by pushing the push pins on the harness into the holes in the mounting bracket.

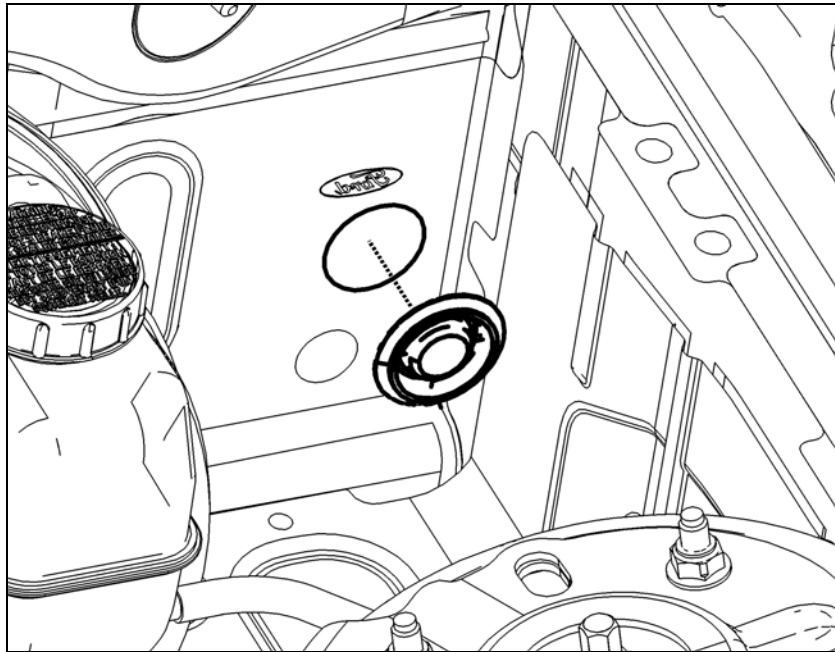


12. Reinstall the impact absorber onto the front bumper beam using the take out pushpins.

Note: Route all intercooler hoses very carefully. It is critical for intercooler performance that these hoses are not kinked once installed into the vehicle.

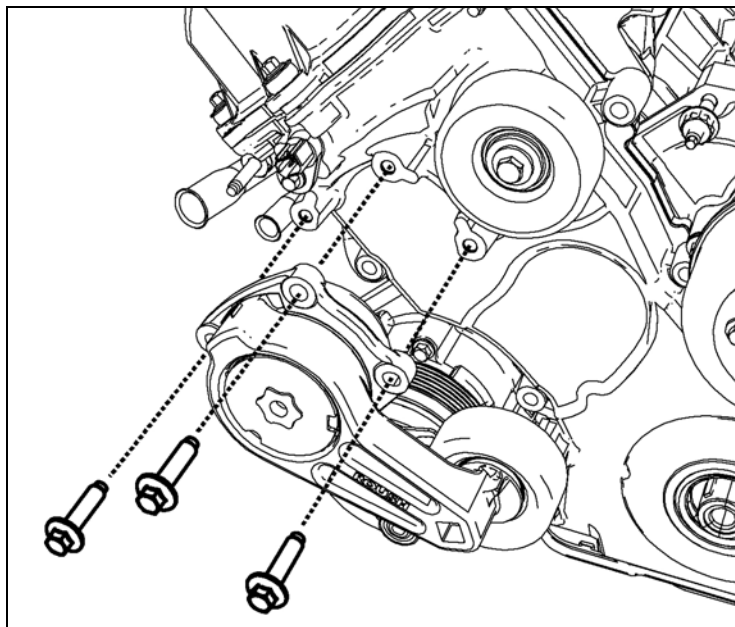
Induction Resonance Tube Delete Grommet

1. Install the Induction Resonance Tube Delete Grommet (W651016) in the hole that was exposed when the boom tube was removed.



Tensioner

1. Using the take off bolts, install the FEAD tensioner (R07020043). Torque bolts to 20 – 30 Nm.



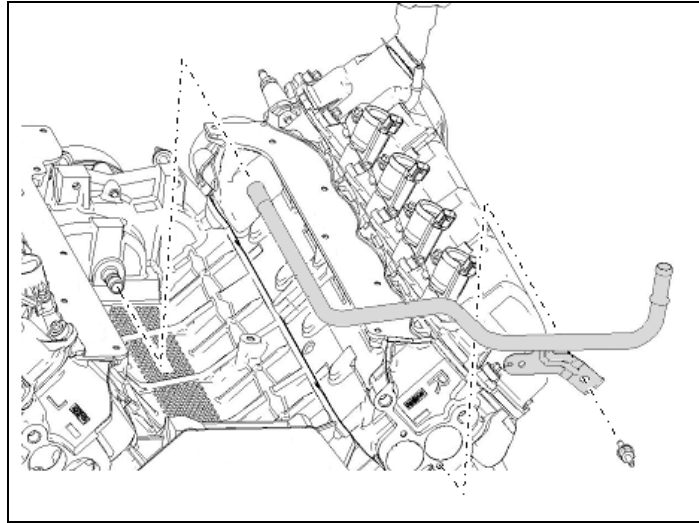
ROUSH®

THE ART OF PERFORMANCE ENGINEERING

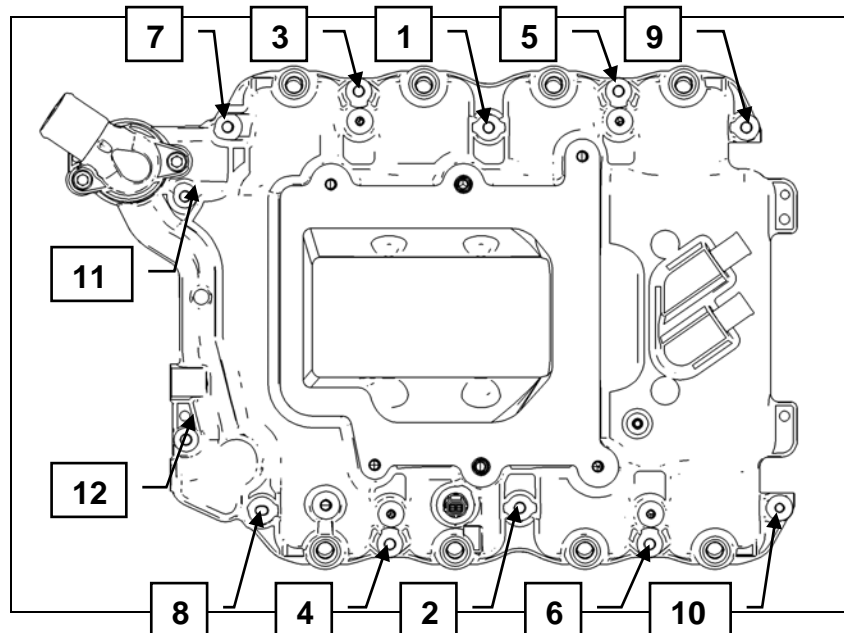
PREMIUM FUEL REQUIRED

Intake Manifold and Roushcharger Installation

1. Install the modified heater tube assembly using the take out stud bolt. Be sure to lube the O-rings with assembly lube before installing the heater tube to the water pump fitting in the block. Torque the stud to 8 – 12 Nm.



2. Remove the tape from the cylinder heads and clean the cylinder head to intake manifold mating surfaces.
3. Install the intake manifold using (9) M6 x 1.0 x 40 mm bolts (R18020004, holes 1-6, 8, 9 & 12), (1) M6 x 1.0 x 62mm bolt (W709552, hole 11), (1) take off M6 x 1.0 x 54mm bolt from the water crossover (hole 7) and the stock driver side rear stud (hole 10, used to retain the wiring harness). Install these fasteners in the positions shown and torque all bolts to 8 – 12 Nm in the sequence shown.

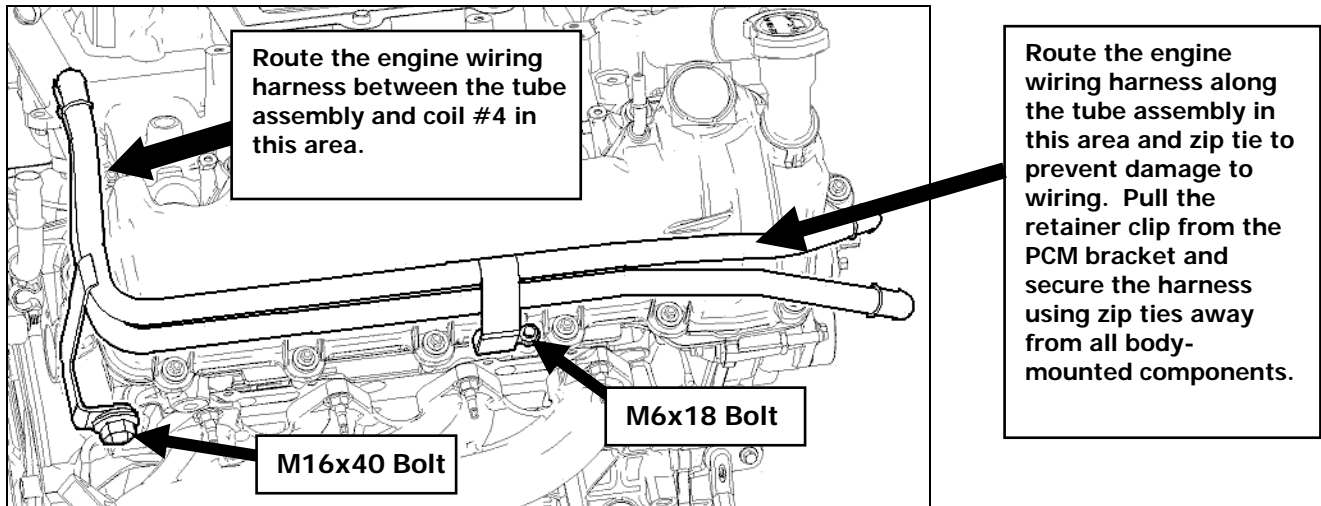


ROUSH®

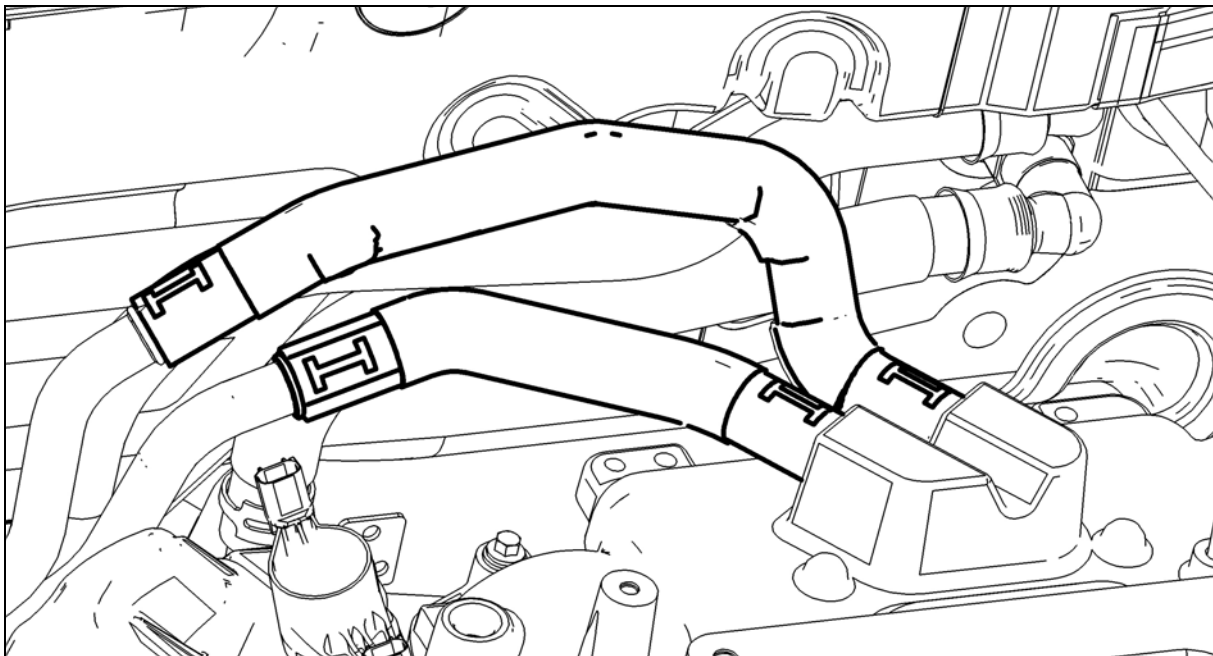
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

4. Install the Intercooler Tube Assembly (R07070005) onto the passenger side cylinder head using the M16 x 40mm Tube Mounting Bolt (R18020006) for the rear and (1) M6 x 1.0 x 18 mm I/C Tube Mounting Bolt (N605891) for the front from Hardware Kit E. Torque the M16 bolt to 45 Nm and the M6 bolt to 8 – 12 Nm. Carefully manipulate the wiring harness in the area shown.



5. Reconnect the stock heater hoses at the back of the passenger side cylinder head using the original clamps. Install the Intercooler Engine Inlet hose (13108A506) using (2) $\frac{3}{4}$ " constant tension clamps and the Intercooler Engine Outlet hose (13108A527) using (2) $\frac{3}{4}$ " constant tension clamps. Orient the clamp so the "I" on the hose is in the center of the clamp tangs.

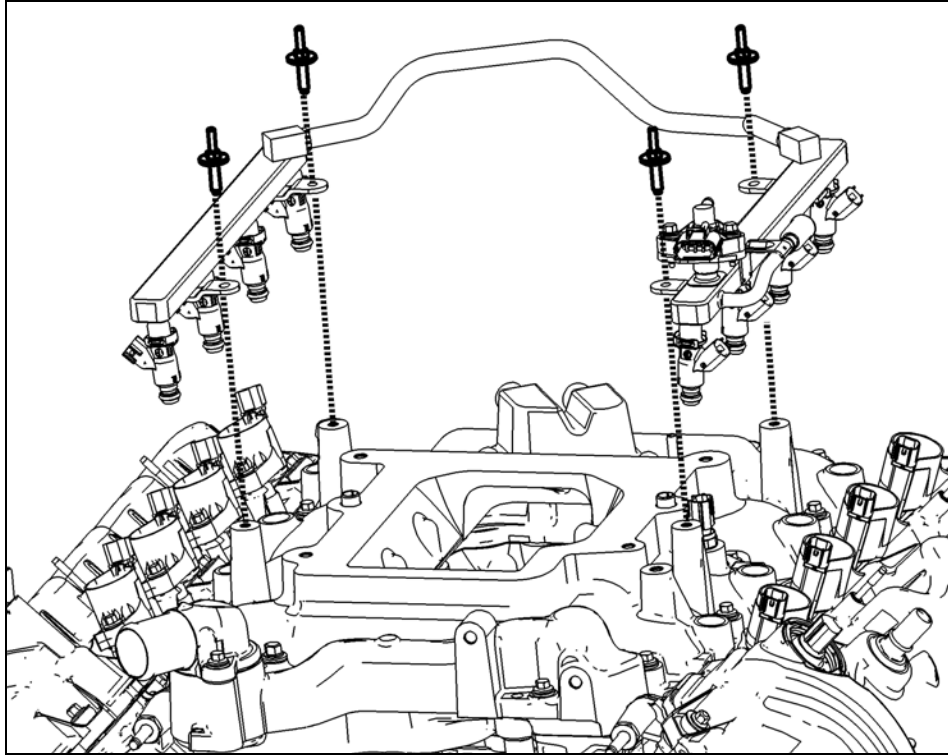


ROUSH[®]

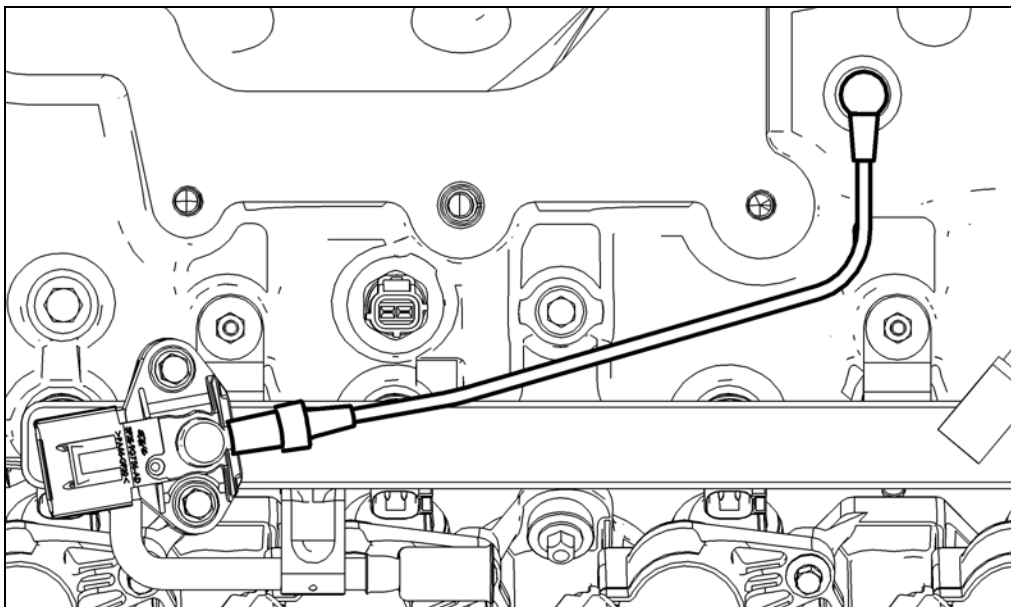
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

6. Lube the fuel injector o-rings with assembly lube. Install the fuel rail and injectors into the intake manifold using the take off stud bolts and torque to 8 – 12 Nm. Be sure each injector is properly seated into the intake manifold.



7. Install the IPTS Reference Harness (1310291923) from the small vacuum port on the upper intake manifold to the IPTS sensor on the fuel rail.

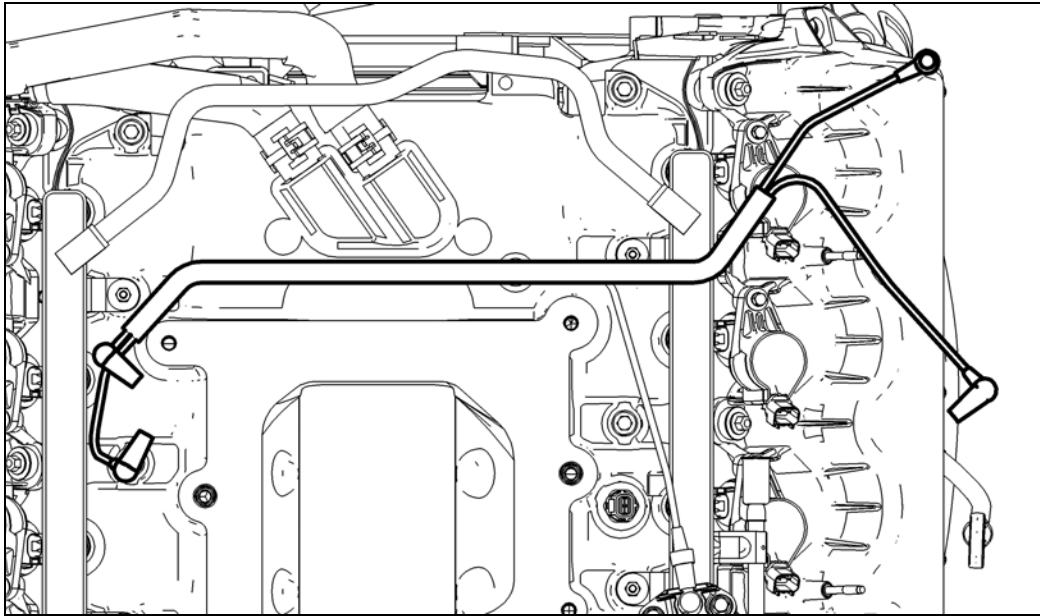


ROUSH[®]

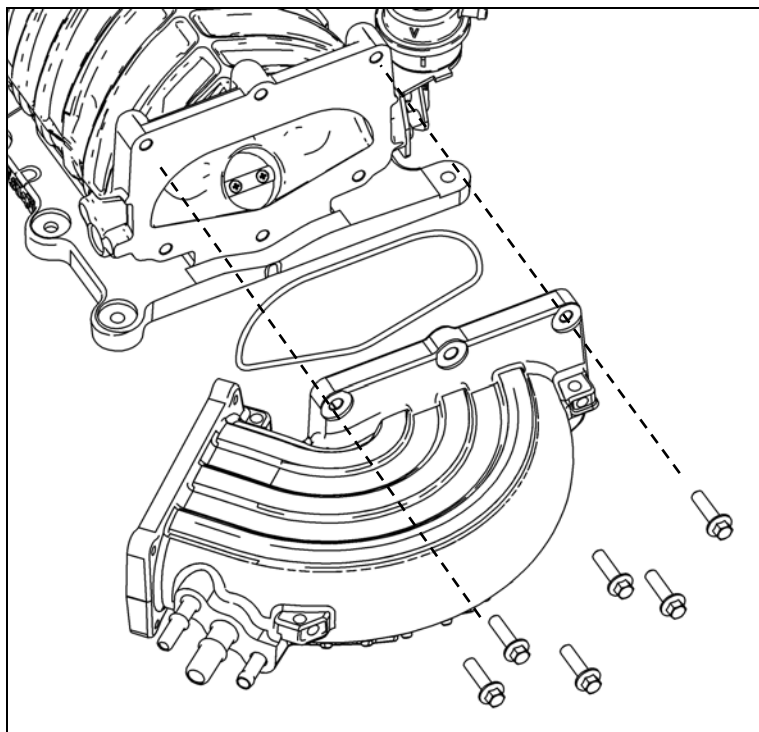
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

8. Lay the S/C Bypass Vacuum Harness (13109E498) between the ROUSHCharger mounting surface and the intercooler fittings with the two 90 deg bent tubes on the passenger side.



9. Fasten the Throttle Body Spacer (13109A589) to the ROUSHCharger (13106F066) using the S/C to Spacer Gasket (13109L437) and (6) M8 x 1.25 x 33mm bolts (N605788) from Hardware Kit B. Torque bolts to 20 – 30 Nm.

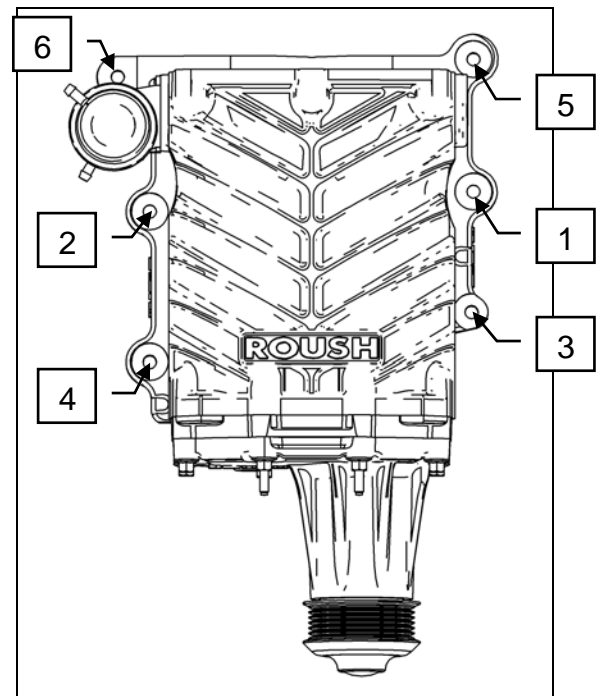
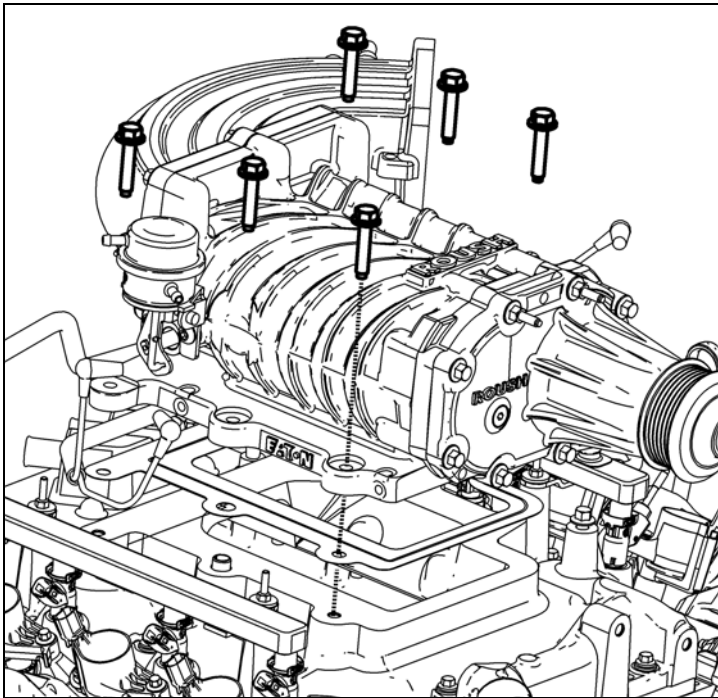


ROUSH®

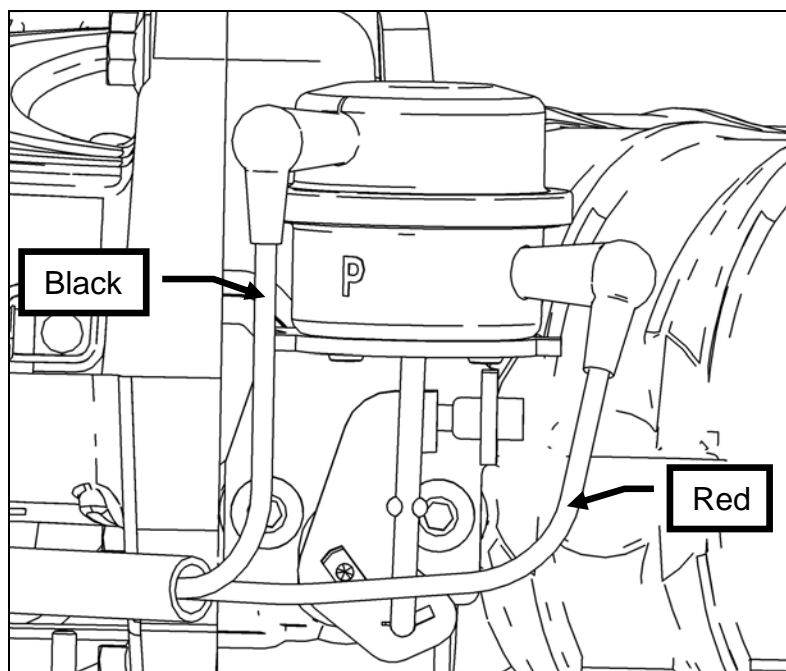
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

10. Install the intake to ROUSHCharger gasket (G1ZE-9H486-BA) over the dowels in the upper intake. Install the ROUSHCharger and spacer assembly using (6) M8 x 1.25 x 38mm bolts (W705128) provided in Hardware Kit B. Torque to 20 – 30 Nm in the sequence shown.



11. Connect the black vacuum hose to the upper fitting on the bypass actuator and the red vacuum hose to the lower fitting on the bypass actuator.

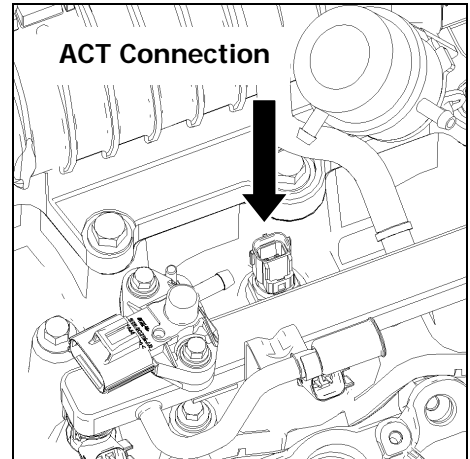
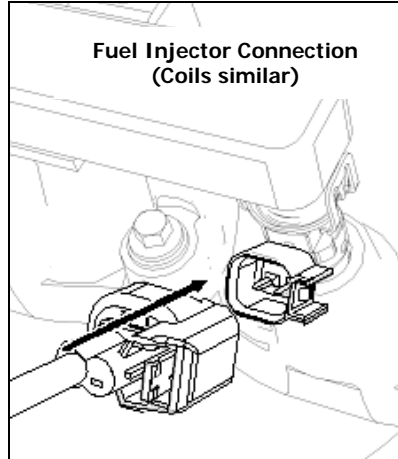
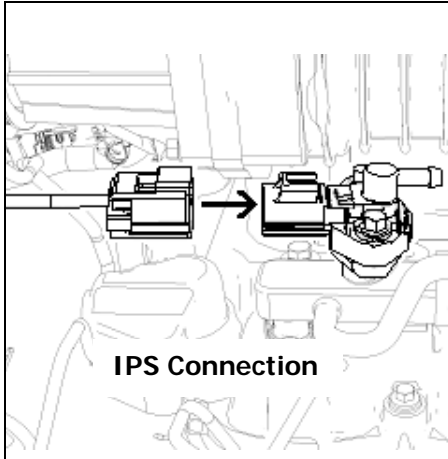


ROUSH®

THE ART OF PERFORMANCE ENGINEERING

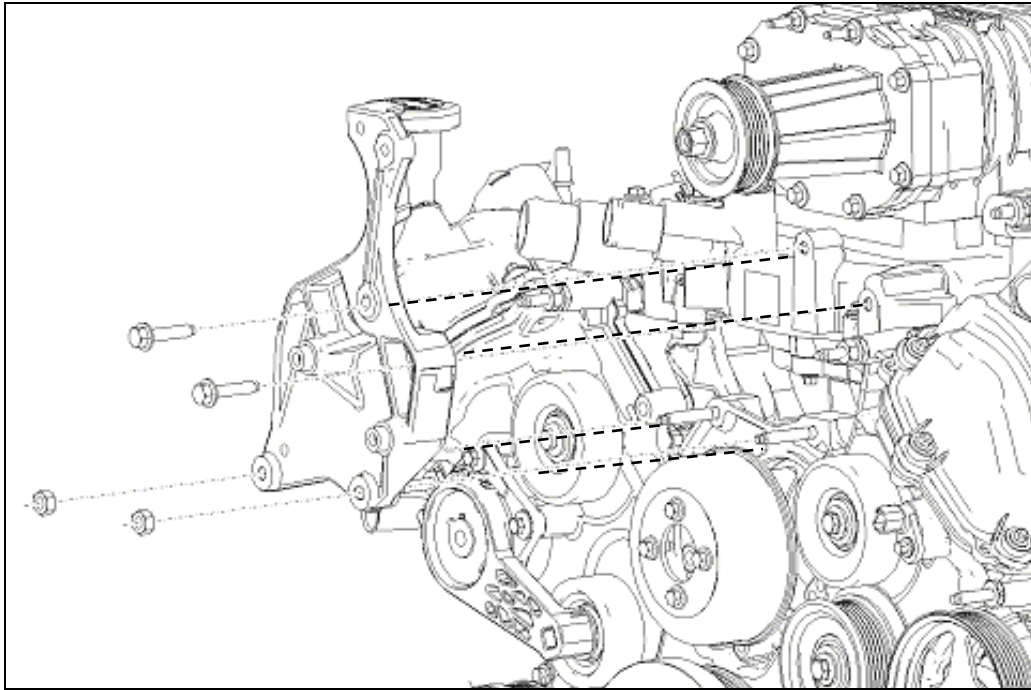
PREMIUM FUEL REQUIRED

12. Connect the IPTS, ACT, and all eight fuel injector and coil connectors.

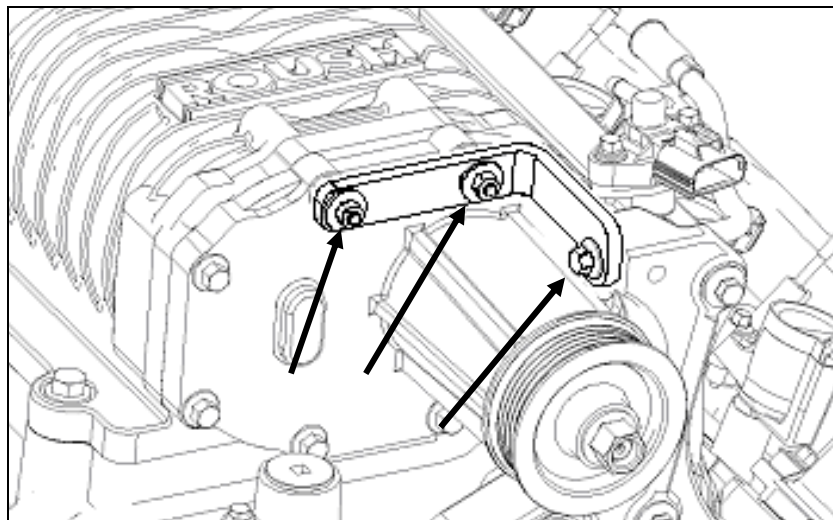


FEAD Assembly

1. Install the Alternator Bracket (131010153) onto the studs previously used to mount the alternator. Position the bracket onto alternator studs and loosely secure with the take-off M8 nuts. Use (2) M8 x 1.25 x 38mm bolts (W705128) from Hardware Kit C to secure the alternator bracket to the intake manifold. Torque all nuts and bolts to 20 – 30 Nm.



2. Install the Supercharger Studs to Alternator Bracket (R07020018) from Hardware Kit C using (2) M6 nuts (W520412) and (1) M8 x 1.25 x 25 mm bolt (W500224) also from Hardware Kit C. Torque the nuts to 8 – 12 Nm and the bolt to 20 – 30 Nm.

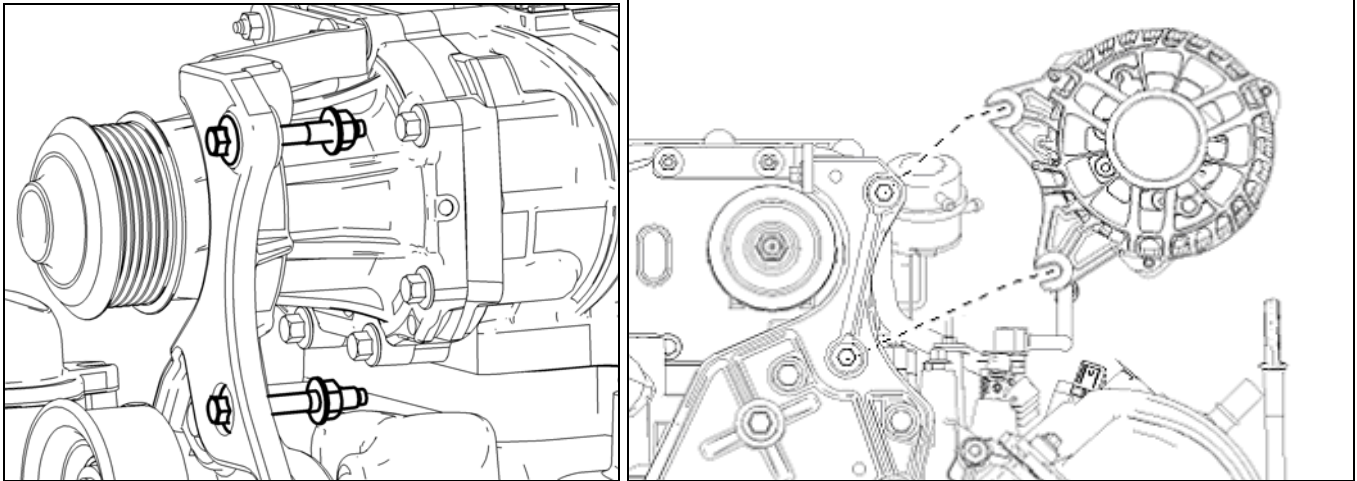


ROUSH®

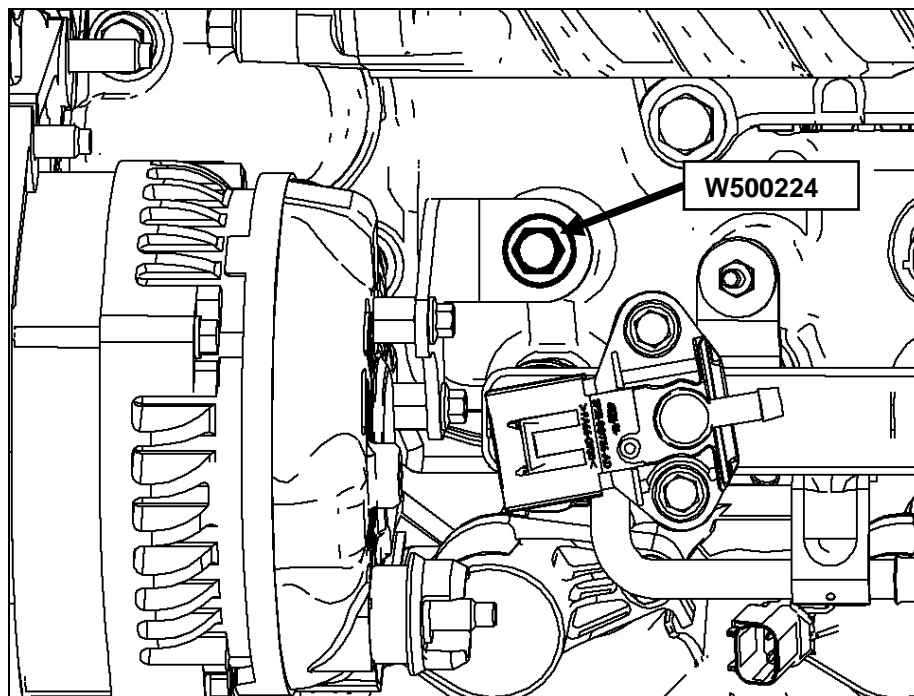
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

3. Insert (2) M8 x 1.25 x 55 mm bolts (N808130) and (2) M8 nuts (W520413), from Hardware Kit C, through the alternator bracket. Be sure to leave enough room to insert the alternator. Slide the alternator onto the bolts and torque to 20 – 30 Nm.



4. Secure the alternator to the intake using (1) M8 x 1.25 x 25 mm bolt (W500224) from Hardware Kit C. Torque to 20 – 30 Nm.



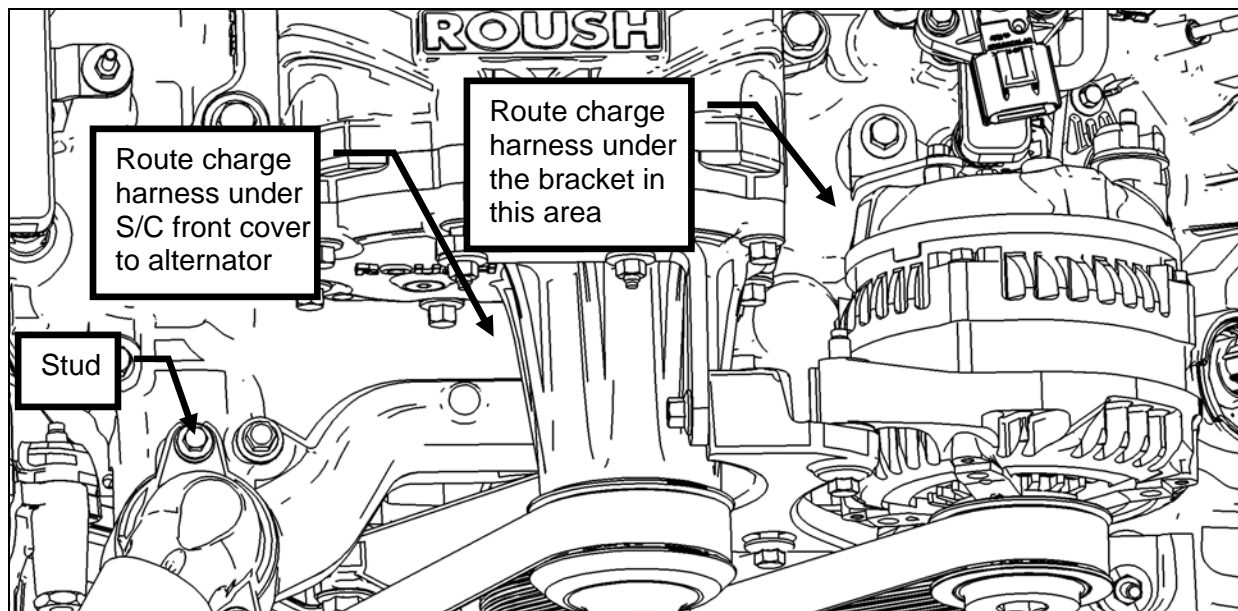
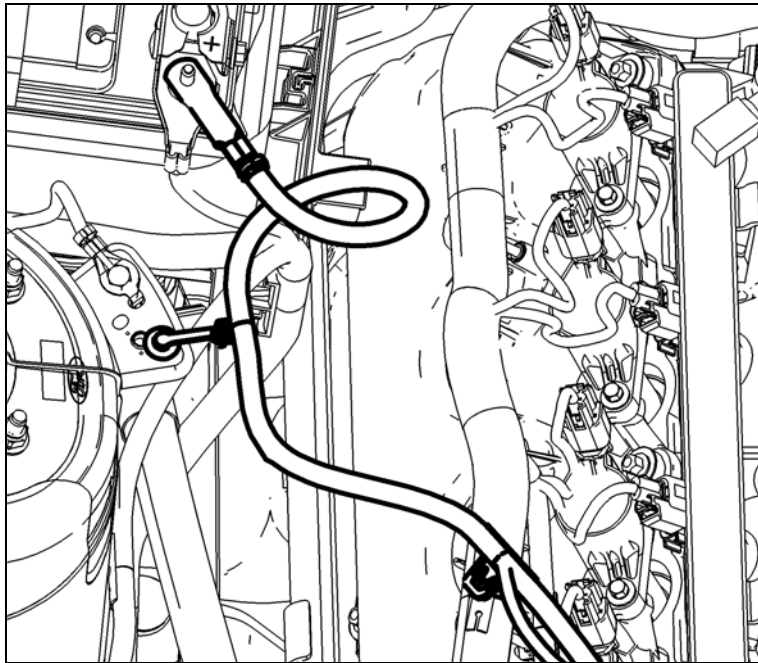
ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

5. Install the Alternator Charge Harness (131014305) by routing it as per the illustration below. Route both the alternator eyelet and regulator connector of the harness across the front of the intake manifold and beneath the supercharger nose. Continue routing both ends under the rear alternator support bracket and connect the alternator battery cable to the alternator stud. Torque the M8 nut to 20 – 30 Nm. Plug in the alternator regulator connector. Push the harness clip onto the stud at the thermostat housing.

Note: If alternator cable is rubbing on any sharp edges, carefully bend the cable to provide adequate clearance.

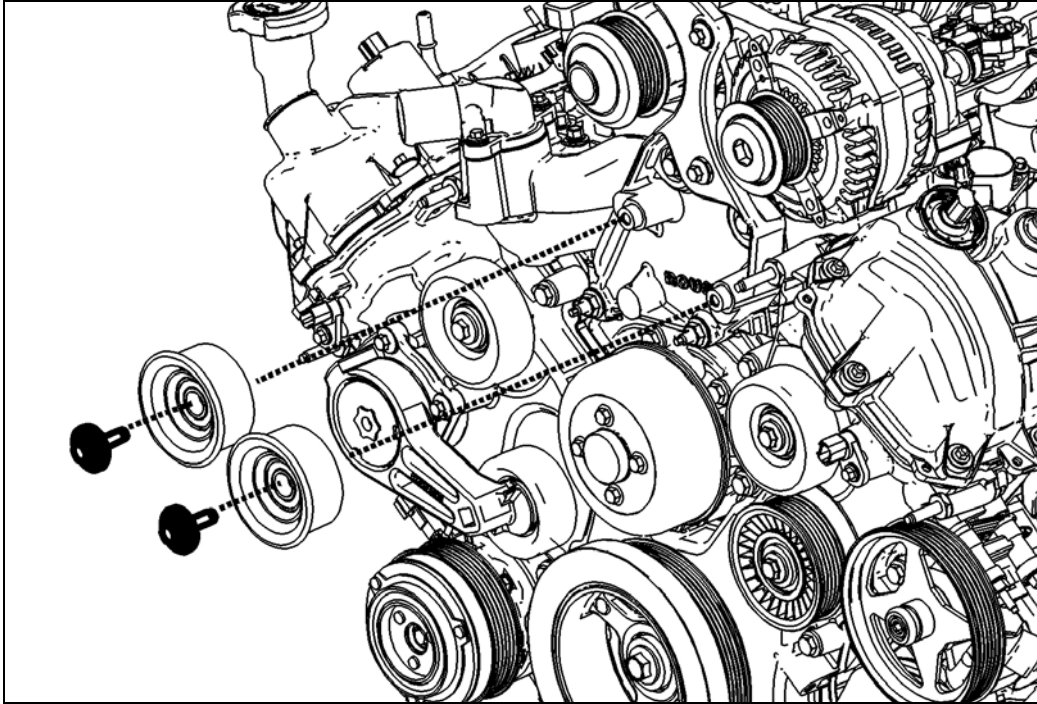


ROUSH[®]

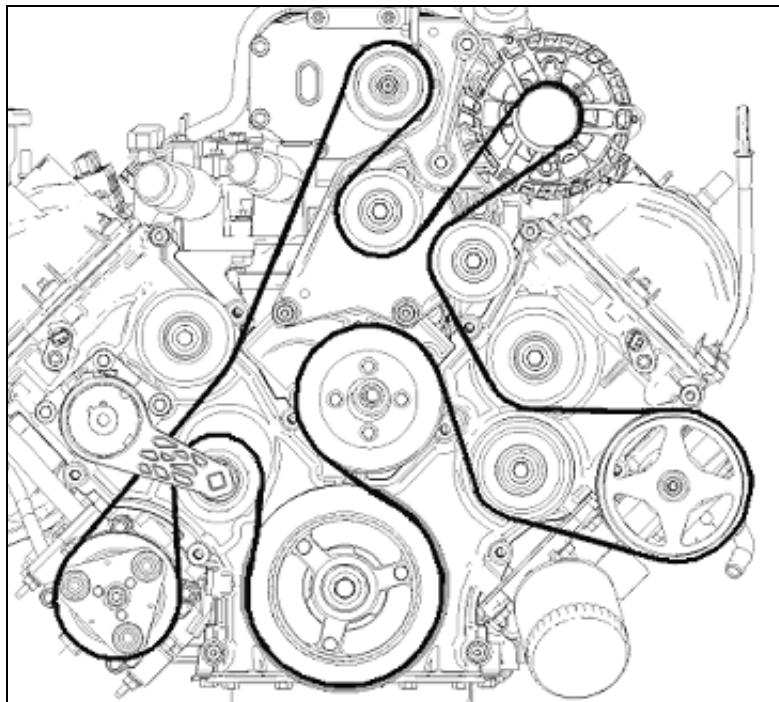
THE **ART** OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

6. Install (2) Idler Pulleys (R07020049) to the alternator bracket using (2) M8 x 1.25 x 28mm idler bolts (R18020060). All parts listed can be found in the Hardware Kit C. Torque bolts to 20 – 30 Nm.



7. Install the FEAD belt (R07020063) as shown. Using a ½ inch drive breaker bar or ratchet, rotate the belt tensioner clockwise and install the belt.

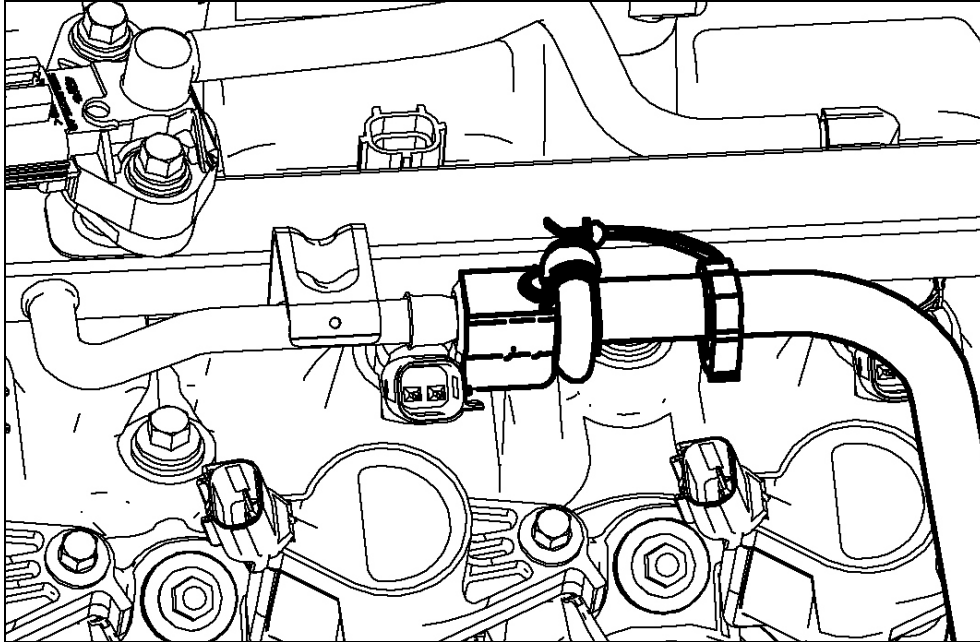


ROUSH[®]

THE **ART** OF PERFORMANCE ENGINEERING

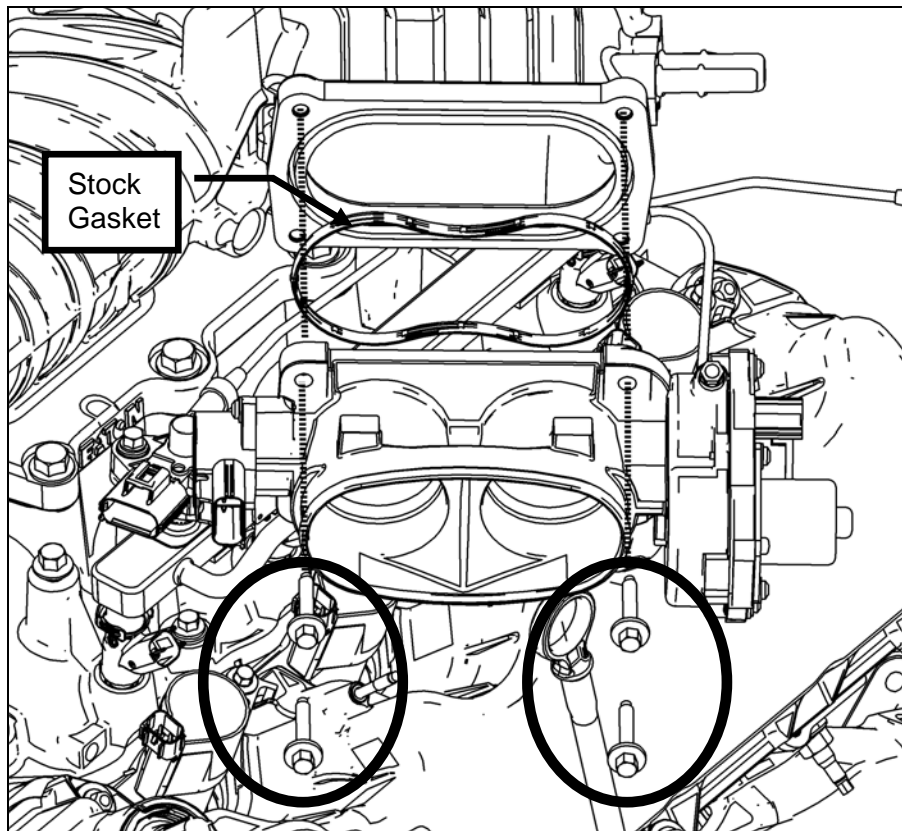
PREMIUM FUEL REQUIRED

8. Connect the fuel inlet line to the fuel rail and secure it using the safety clip.

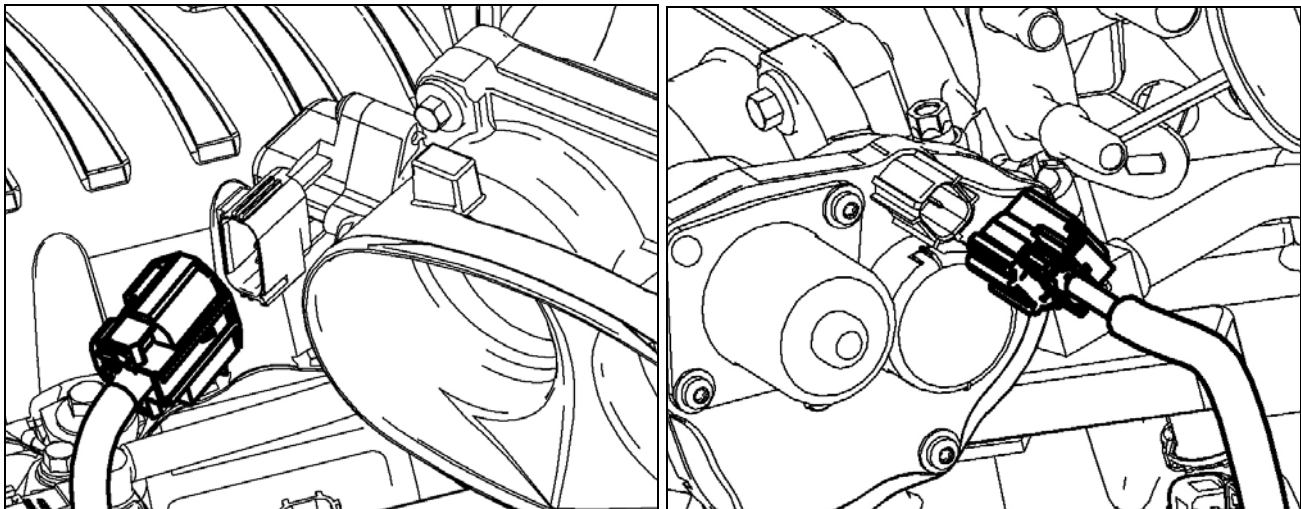


Air Intake System

1. Install the stock throttle body gasket and throttle body on the throttle body spacer using (4) M6 x 1.0 x 33 mm bolts (N808429). Torque bolts to 8 – 12 Nm.



2. Connect the newly relocated throttle body wiring connectors (ECT and TPS).

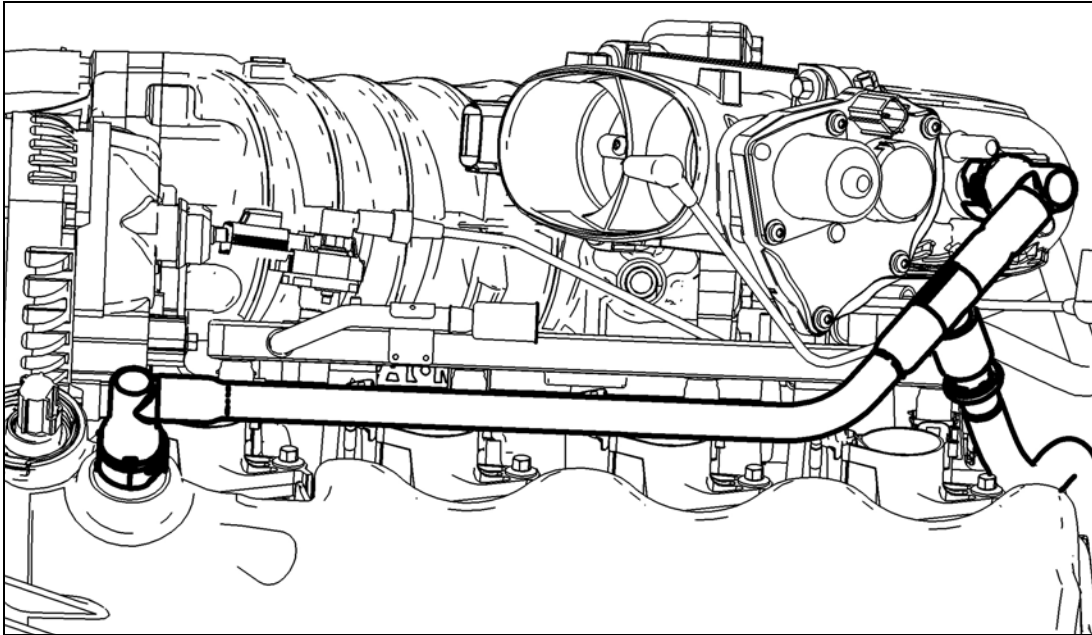


ROUSH®

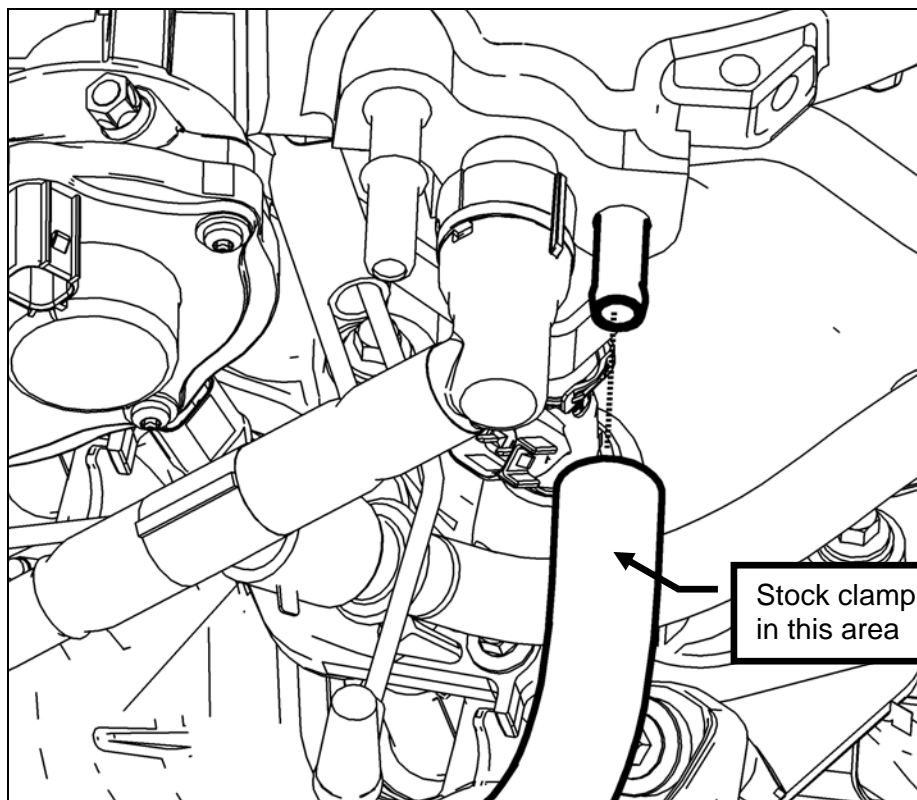
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

3. Connect the PCV Purge Hose (13106K817) from the driver side cam cover to the throttle body spacer.



4. Connect the modified brake booster hose and clamp assembly onto the throttle body spacer.

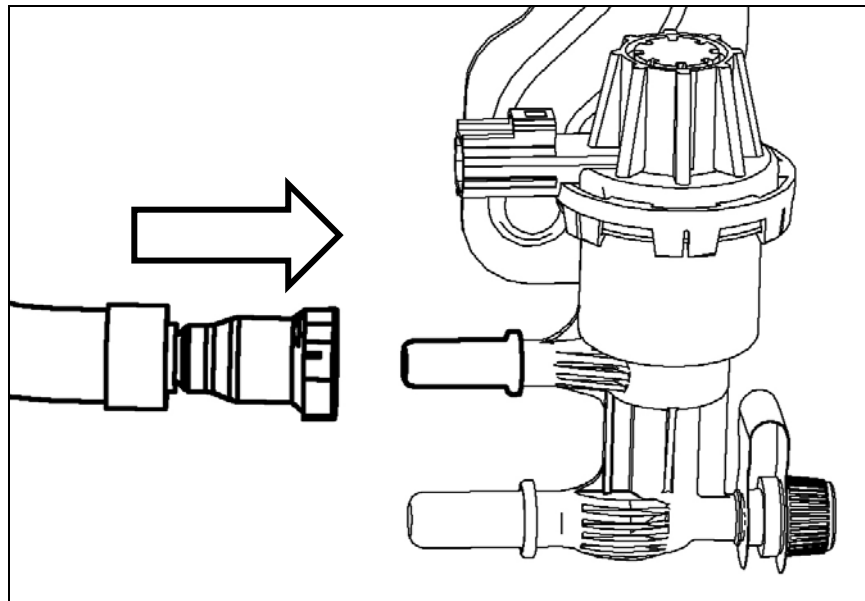
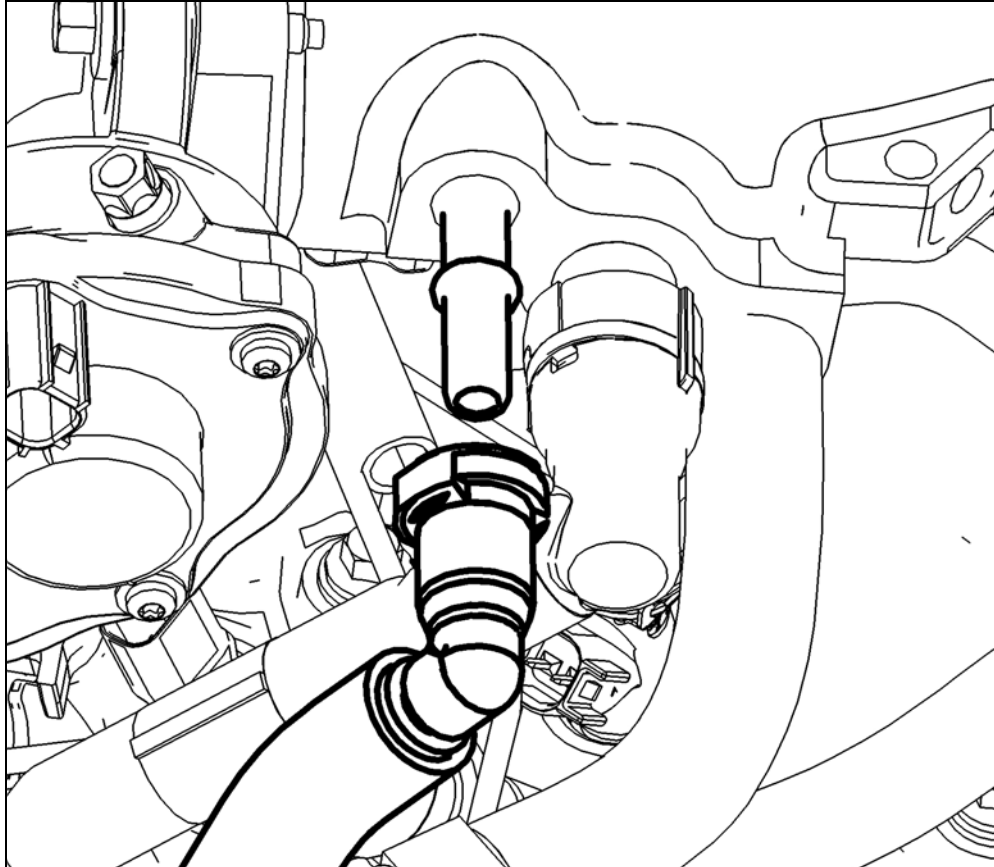


ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

5. Install the modified VMV hose so the 90 deg. fitting is connected to throttle body spacer and the straight fitting is connected to the VMV's upper port.



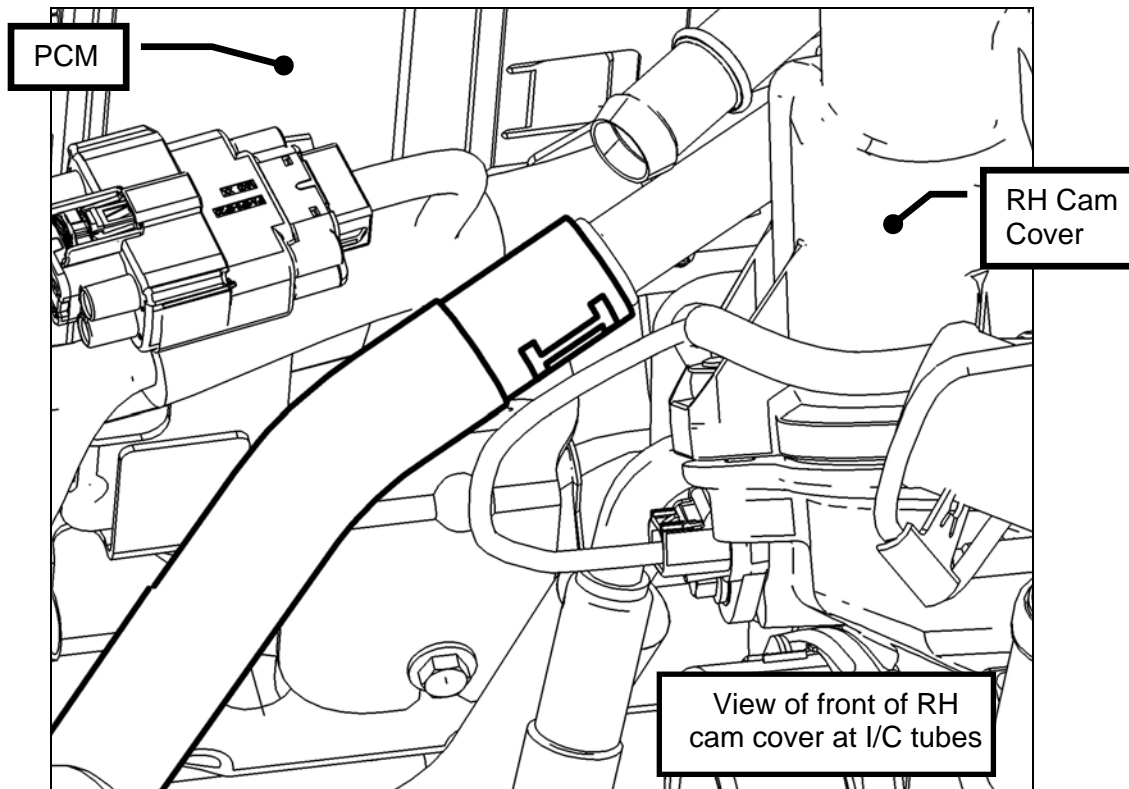
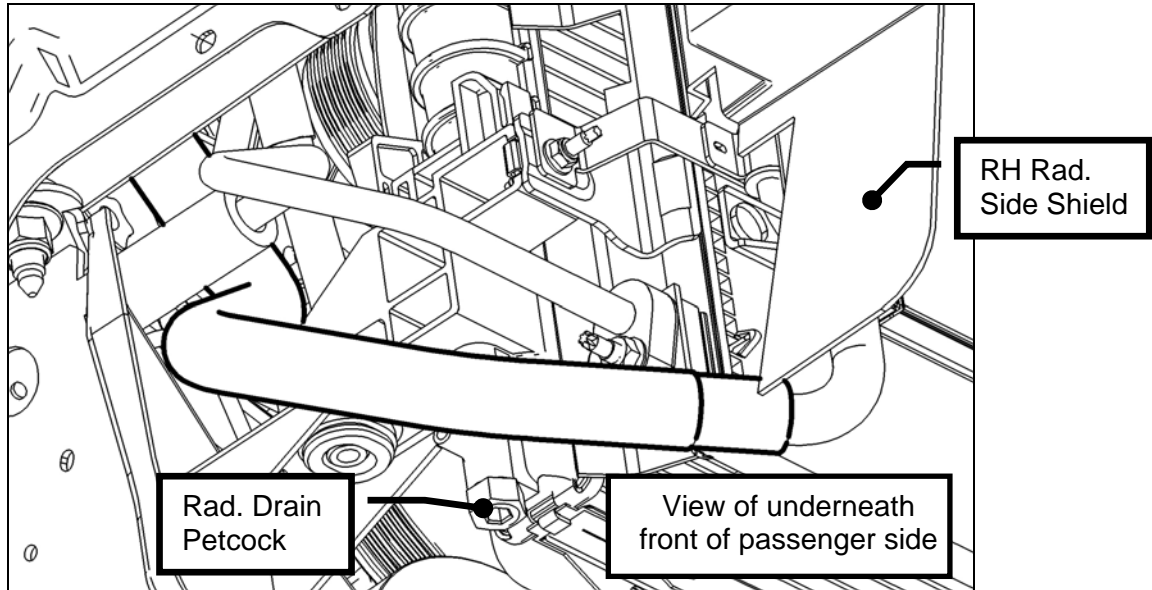
ROUSH®

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

Coolant Hoses

1. Install the Intercooler LTR Outlet hose (13108D030). Route the hose from the LTR, behind the passenger side headlamp to the lower Intercooler tube. Secure the hose using (2) ¾" constant tension clamps. Orient the clamps so the "I" on the hose is in the center of the clamp tangs.

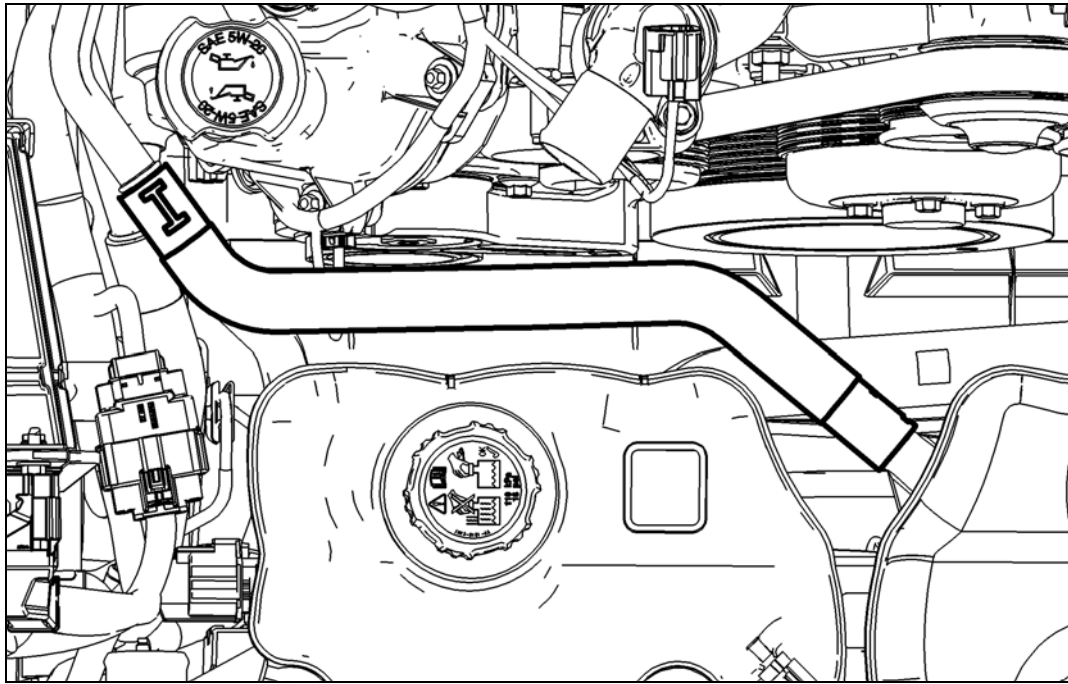


ROUSH®

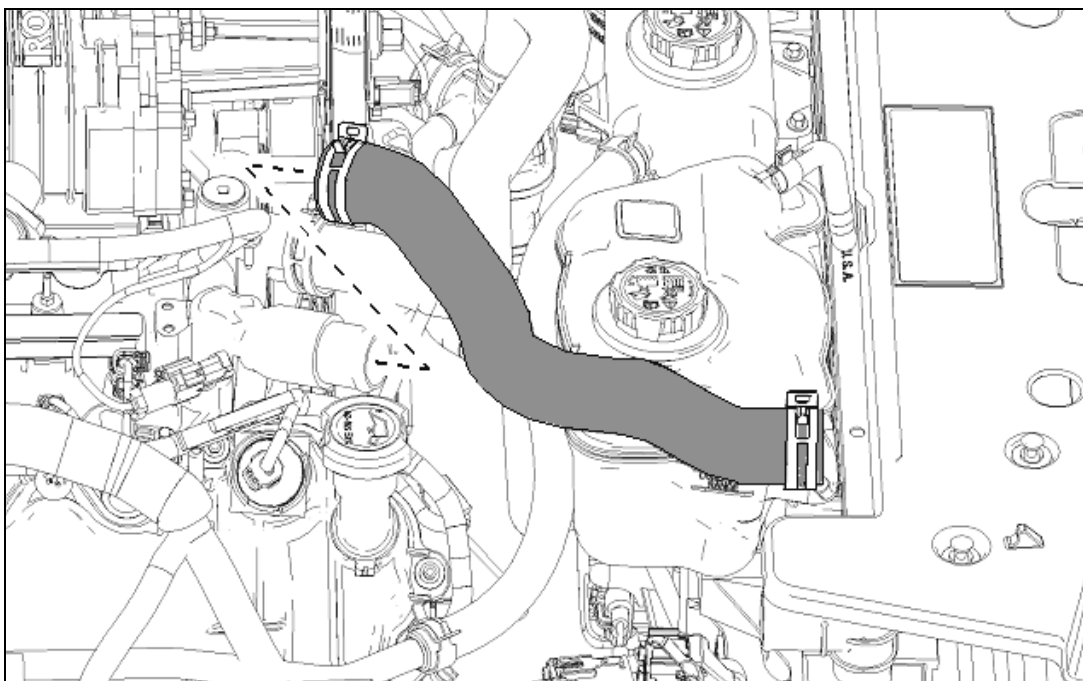
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

2. Install the Degas Bottle Inlet (13108D031) hose from the upper intercooler tube to the upper degas bottle fitting using (2) $\frac{3}{4}$ " constant tension clamps. Orient the clamps so the "I" on the hose is in the center of the clamp tangs.



3. Install the upper radiator hose (R07070022) between the intake manifold and the radiator. Secure with the constant tension removed from the factory upper radiator hose.



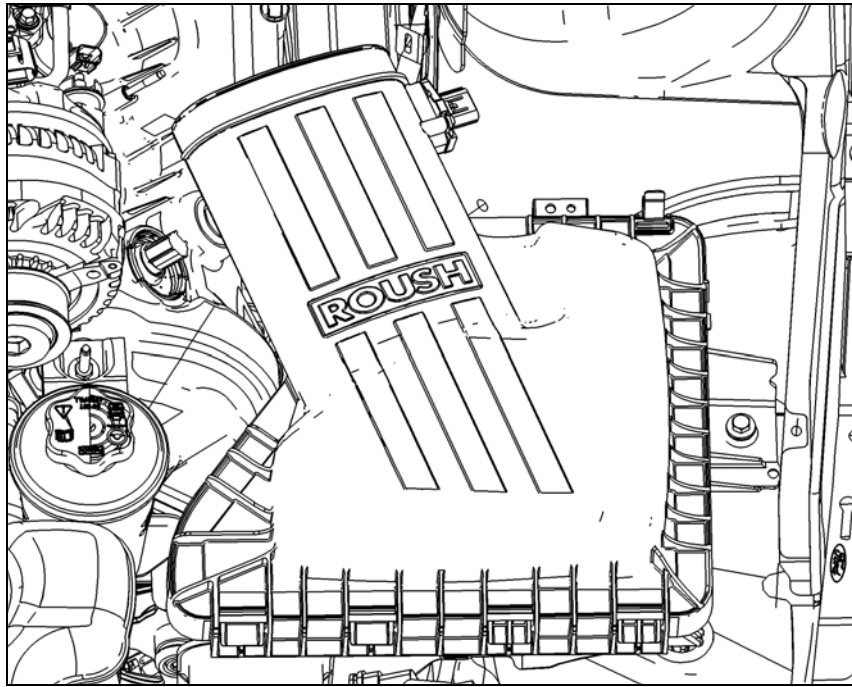
ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

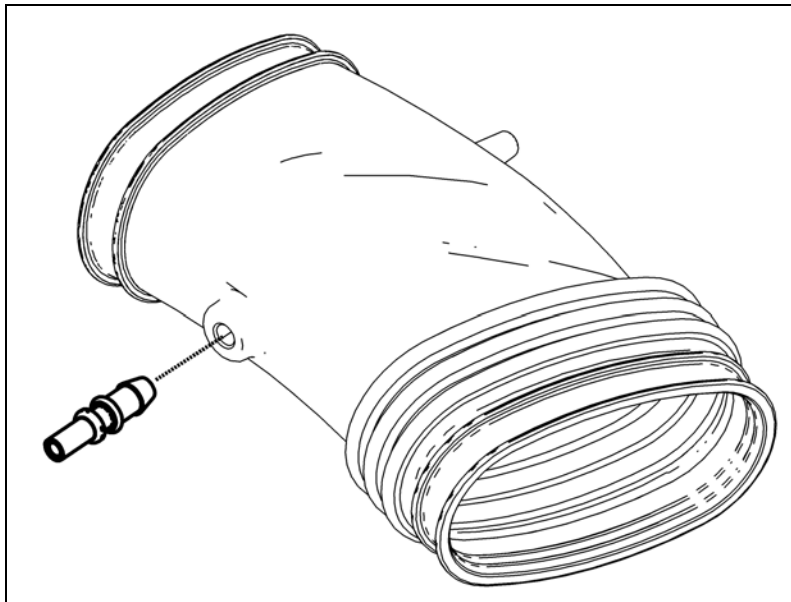
PREMIUM FUEL REQUIRED

Air Induction System

1. Install the Upper Airbox Lid (13109643HC) onto the lower airbox using the factory clips. Connect the MAF sensor.



2. Insert the PCV Fitting (R07130012) into the Clean Air Tube (13109R504) in the orientation shown. Apply assembly lube to the fitting to reduce the insertion effort.

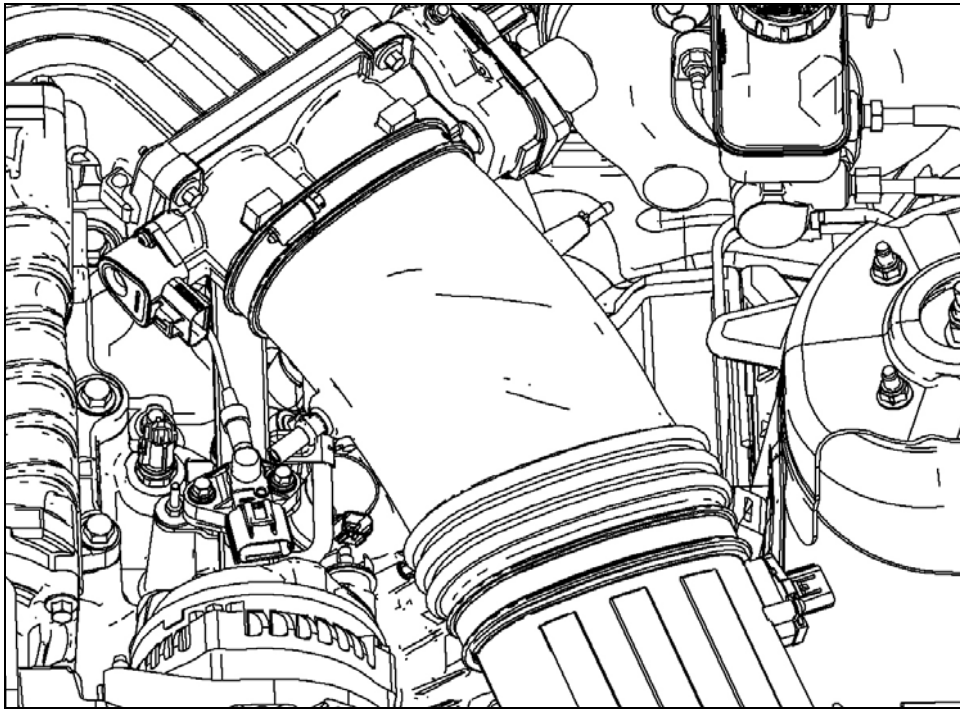


ROUSH®

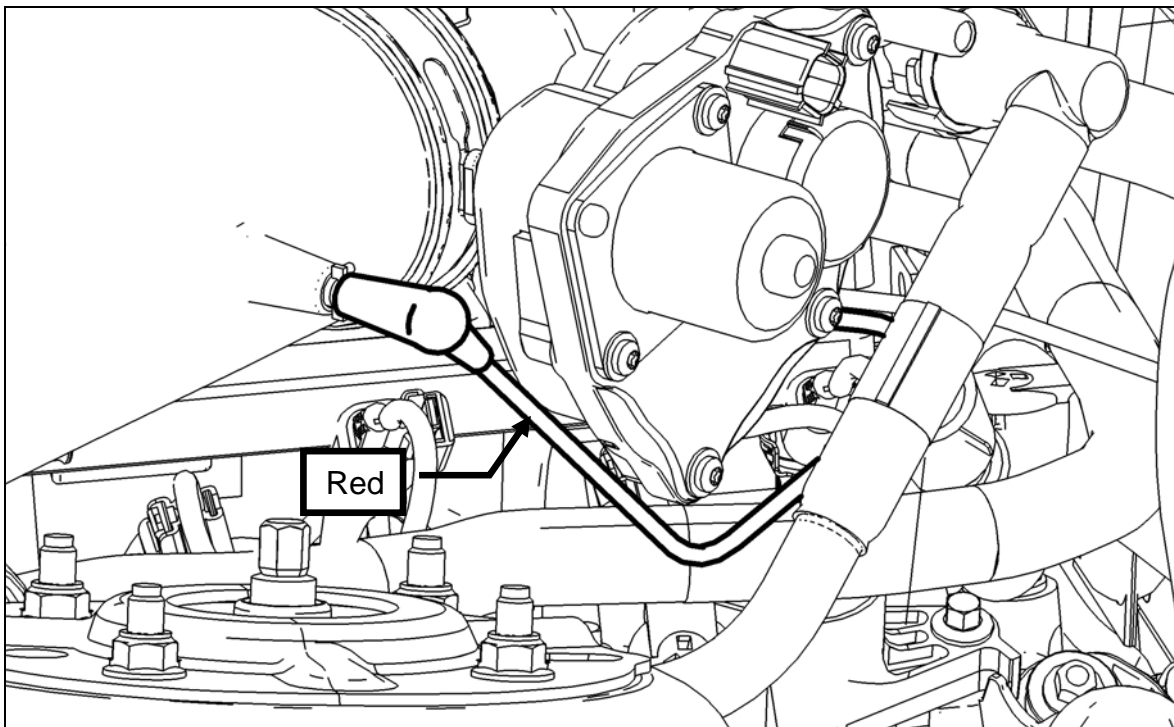
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

3. Install the Clean Air Tube in the vehicle using (1) hose clamp (R07130015) from Hardware Kit A on the airbox side and the take off hose clamp on the throttle body side.



4. Connect the red vacuum hose to the clean air tube.

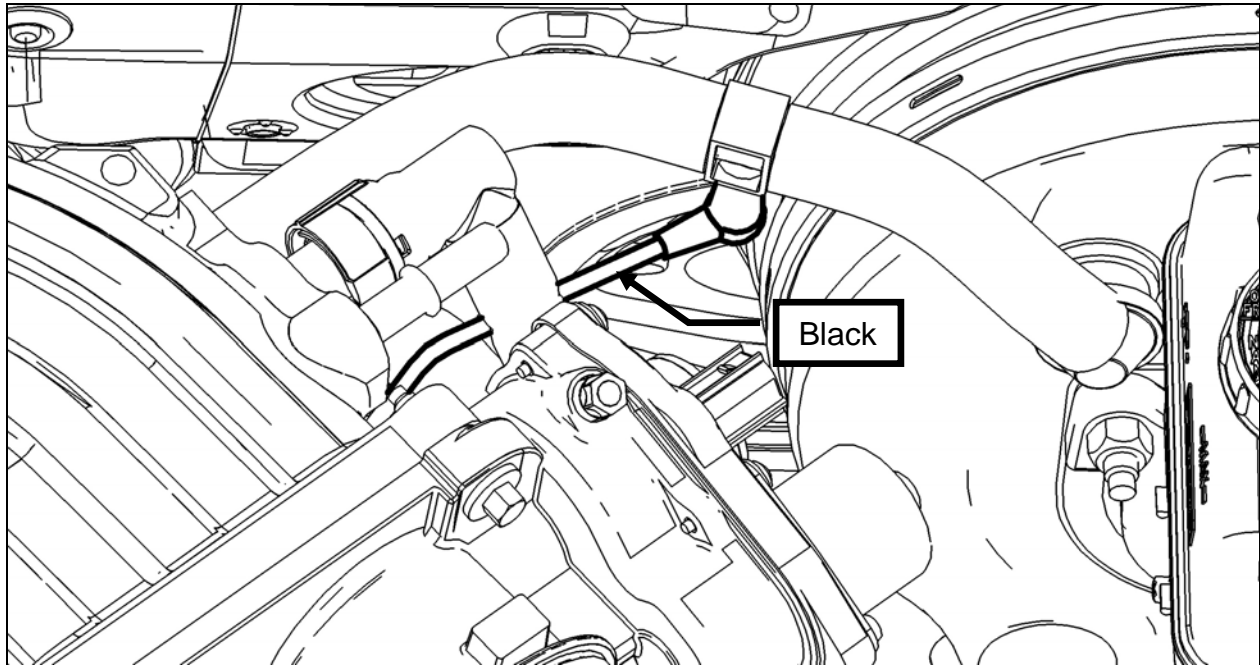


ROUSH®

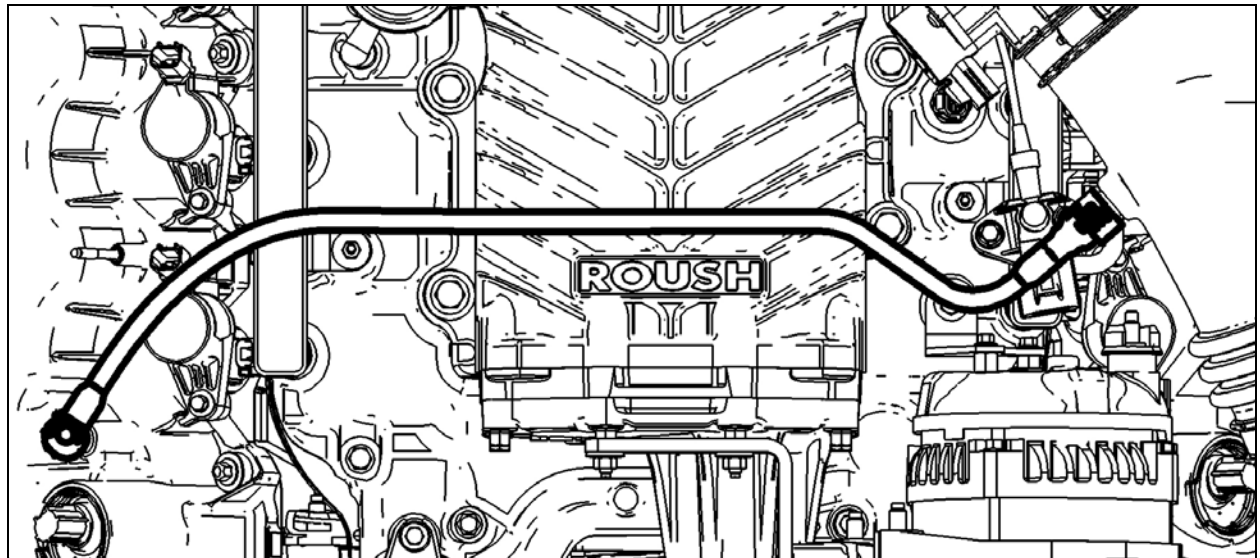
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

5. Connect the black vacuum hose to the T-fitting on the brake booster hose.



6. Install the PCV Fresh Air tube (R07050083) by connecting the 90 deg fitting to the passenger side cam cover and running the tube over the supercharger and connecting the straight fitting to the PCV fitting in the clean air tube.



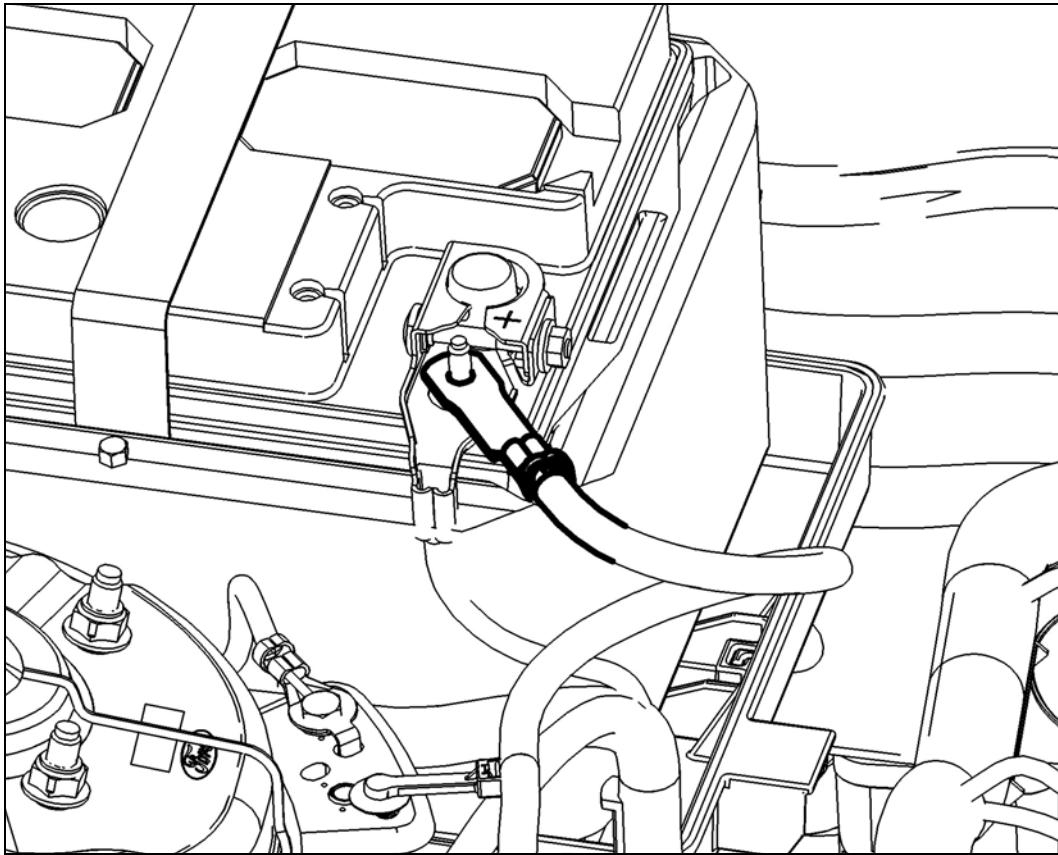
ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

Battery and Tray

1. Install the battery tray by reversing the removal instructions. Torque the battery tray bolts to 8 – 12 Nm.
2. Place the battery in the tray and secure with battery hold down. Torque the battery hold down bolt to 8 – 12 Nm. Reinstall the heat protecting battery wrap over the battery.
3. Reinstall the battery connections by connecting the positive cable first then connecting the negative cable.
4. Connect the B+ Alternator Harness to the positive battery terminal. Torque nut to 8 – 12Nm.



ROUSH[®]

THE ART OF PERFORMANCE ENGINEERING

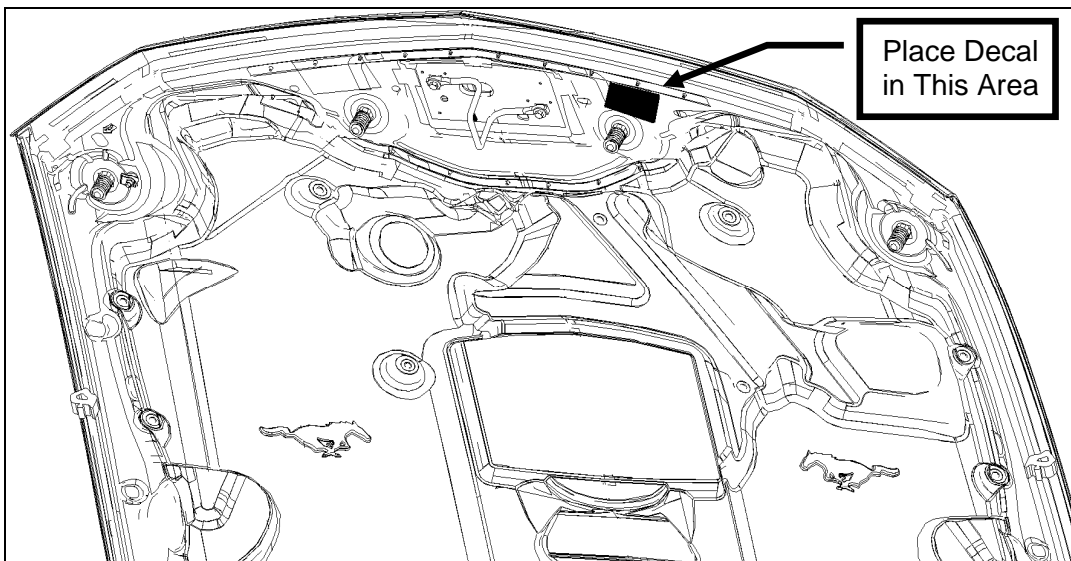
PREMIUM FUEL REQUIRED

Coolant Fill and Final Assembly

1. Fill the engine cooling system (using a proper G-05 coolant mixture) to the marked level on the radiator degas bottle.
2. Using the same coolant mixture, fill the intercooler system. The coolant should be approximately one inch below the top of the cap.

Important: Both coolant systems can trap a large amount of air. It is very important to verify that the air is purged and that coolant is flowing properly through both systems. Roush Performance recommends vacuum filling both systems to properly evacuate the trapped air.

3. Reinstall front bumper cover and inner fenders by reversing the removal instructions.
4. Reinstall the front wheels/tires (if applicable).
5. Apply the PCM Decal (R07100008) to the newly flashed PCM. Reinstall the PCM by reversing the removal instructions.
6. Inspect all under-hood wiring harnesses for potential interference issues. Use zip ties to safely position the harness away from any areas of concern.
7. Reinstall the radiator trim cover by reversing the removal instructions.
8. Start the vehicle and check for fluid leaks, unusual noises, dash service lights, and unusual operation. If problems are detected, immediately stop the engine or vehicle, diagnose and repair the problem.
9. The Belt Routing Diagram (13106E072) is to be placed on the underside of the hood, on the driver side, opposite of the factory Vehicle Emission Control Information decal.

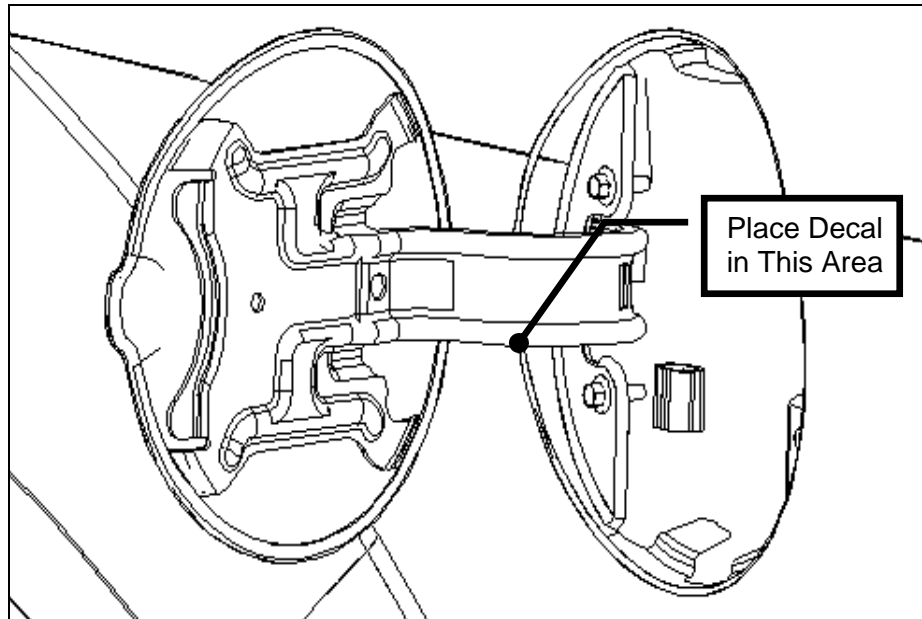


ROUSH®

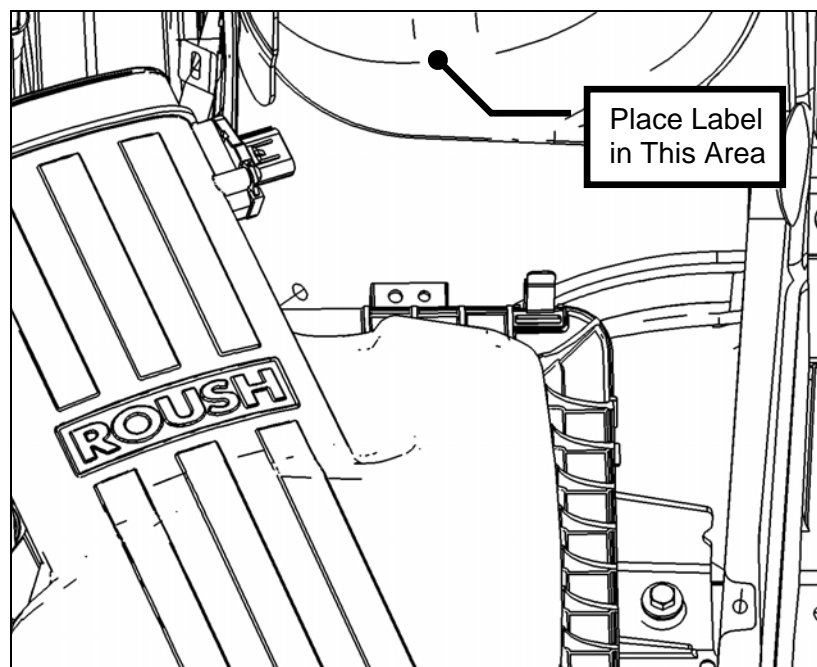
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

10. The “Premium Fuel” decal (R07110004) is to be installed on the instrument cluster as a reminder that the vehicle **MUST** use premium fuel at all times.
11. The “Premium Fuel” decal (13109A095) is to be placed on the fuel filler door hinge as shown below.



12. The E.O. Label (13109A095EO) is to be placed on driver side strut tower, adjacent to the air filter assembly.



ROUSH[®]

THE **ART** OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

CARE AND MAINTENANCE OF OPTIONAL POLISHED ROUSHCHARGER

The optional polished Roushcharger unit is uncoated, polished aluminum. As such, it will occasionally require polishing using a quality aluminum polishing compound to maintain its luster. Many “spray-on” aluminum cleaners contain caustic chemicals and may discolor or damage the finish of the Roushcharger and, as such, are not recommended.

WARRANTY

All retail parts carry a 90-day warranty from the date of purchase. This warranty covers defects in materials or workmanship, and does not include (i) normal wear and tear, environmental conditions, improper installation; (ii) road hazards, misuse, abuse, neglect, accidents, collision, fire, theft, freezing, vandalism, riot, explosion, or objects striking the vehicle; (iii) misusing the vehicle, such as driving over curbs, overloading, racing, or using the vehicle as a stationary power source; (iv) altering, disassembling or modifying the parts; (v) defects caused or induced by failures, breakdowns, or damage by other parts, components or the vehicle; (vi) subjecting the parts to excessive moisture or water or any motor vehicle fluids (e.g.: oil, anti-freeze, battery acid, brake fluid, etc.); (vii) acts of God, natural disasters and other similar causes beyond the reasonable control of Roush; or (viii) application of chemicals that affect the parts. This Limited Warranty does not cover surface deterioration of paint, trim, and appearance items that result from use and/or exposure to the elements, such as stone chips, scratches, bird droppings, lightning, hail, windstorm, dings, dents, earthquake, road salt, tree sap, water or flood.

ROUSH SHALL NOT BE LIABLE TO REIMBURSE CUSTOMER/DEALER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE INSTALLATION OR USE OF ANY PRODUCT SOLD THROUGH THIS CATALOG OR ARISING OUT OF ANY BREACH OF WARRANTY. EXCEPT AS MAY BE STATED IN THIS CATALOG, ROUSH DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ROUSH'S LIABILITY EXCEED THE PRICE PAID BY CUSTOMER/DEALER FOR PRODUCTS SOLD REGARDLESS IF ROUSH HAS BEEN ADVISED IN ADVANCE OF ANY POTENTIAL PROBLEM OR IF A CLAIM IS BASED ON CONTRACT, TORT, STRICT LIABILITY, PRODUCT LIABILITY OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED WARRANTIES OR THEIR DURATION, OR LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY.

This Roush Supercharger kit is designed and tested to function properly only on vehicles as they are equipped from the factory (completely stock powertrain). The use of aftermarket parts and equipment such as: cams, headers, nitrous oxide systems, other bolt-on performance parts, or any other performance parts not sold by, manufactured by, or approved of in writing by Roush, will result in powertrain and supercharger kit damage and will not be the responsibility of Roush in any way.

If you have any questions or concerns please call 1-800-59-ROUSH.