ROUSH
THE ART OF PERFORMANCE ENGINEERING

PREMIUM FUEL REQUIRED

2004-08 Ford F150 Intercooled Roushcharger Kit

P/N: R07000012

E.O. # D-418-12

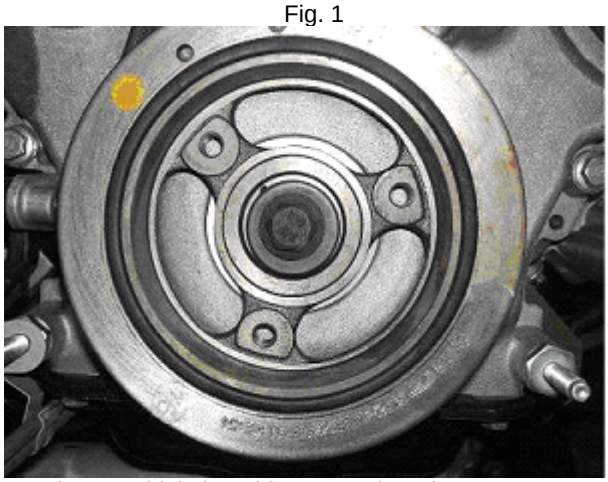
Installation Instructions

Applications: 2004-08 Ford F150 5.4L 3 Valve & 2006 Lincoln Mark LT 5.4L 3 Valve.

** Customers with 2007-2008 model year F-150 vehicles must purchase the "F150 Supplemental Kit" (P/N: R07000024) to complete this installation.

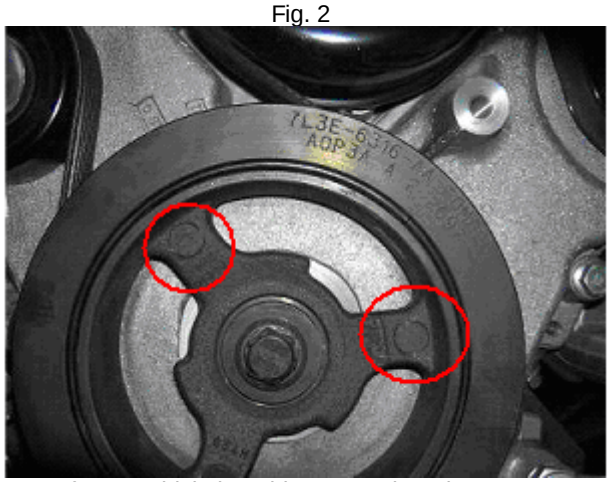
** Customers with 2007-2008 model year F150 vehicles with the Harmonic Balancer shown in Fig. 2, which does not have the three PTO mounting holes in the spokes, must purchase the "F150 Supplemental Kit" (P/N: R07020046) to complete this installation.

Fig. 1



If your vehicle has this Harmonic Balancer, you can install this kit.

Fig. 2



If your vehicle has this Harmonic Balancer, you must purchase the "F150 Supplemental Kit" (P/N: R07020046)

Important Notes:

Before installing your Roushcharger kit, please read the installation manual and verify that all items listed in the packing list are present.

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Important Notes: (continued)

This 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 for specific application to the F150 5.4L 3V Roushcharger kit will result in powertrain and supercharger kit damage, including potential total engine failure, and will not be the responsibility of Roush in any way.

After installation of the Roushcharger Kit, E85 Fuel can no longer be used in the vehicle. E85 Fuel requires a fuel supply volume which exceeds the capacity of all the OEM and kit supplied components when the vehicle is Roushcharged. Running the vehicle on E85 will result in extremely poor drivability.

Premium fuel (91 octane or higher) is required to help reduce the possibility of “spark-knock” or detonation under various operating conditions.

Use of fuel additives (ie. octane boosters) is not recommended. There is a possibility that these chemicals can cause drivability issues with your vehicle.

Operating your engine without the Roush PCM recalibration will result in engine damage or failure and will void all warranty.

Spark plugs have not been packaged in this kit. Please follow the instruction in Section A, to send us your PCM for reprogramming, and depending on the engine code and build date information, spark plugs will be shipped with your reprogrammed PCM. All 2007 models and earlier vehicles will require Spark Plug R07030001. If your vehicle is a 2008 model, with the engine code 7G-692-BB (Unleaded Fuel) or 7G-600-BB (Flex Fuel), you must use the original spark plugs in the engine; otherwise, Spark Plug R07030001 is required. The use of improper spark plugs may cause damage to your engine and will void your warranty.

Customers with 2007-2008 model year vehicles must purchase the “F150 Supplemental Kit” (P/N: R07000024) to complete this installation. Installation Instructions for this Supplemental Kit are in Section D of these instructions.

Customers with 2007-2008 model year F150 vehicles with the Harmonic Balancer shown in Fig. 2 on page 1, which does not have the three PTO mounting holes in the spokes, must purchase the “F150 Supplemental Kit” (P/N: R07020046) to complete this installation.

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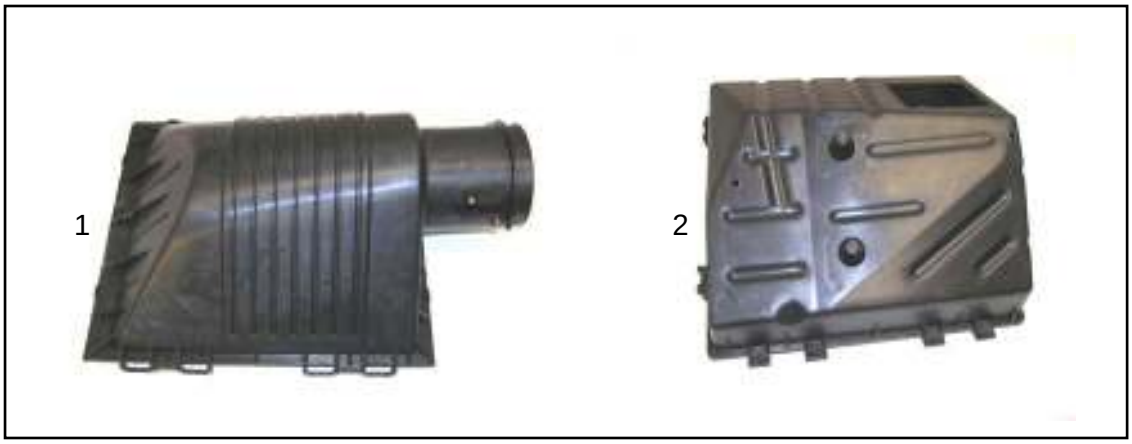
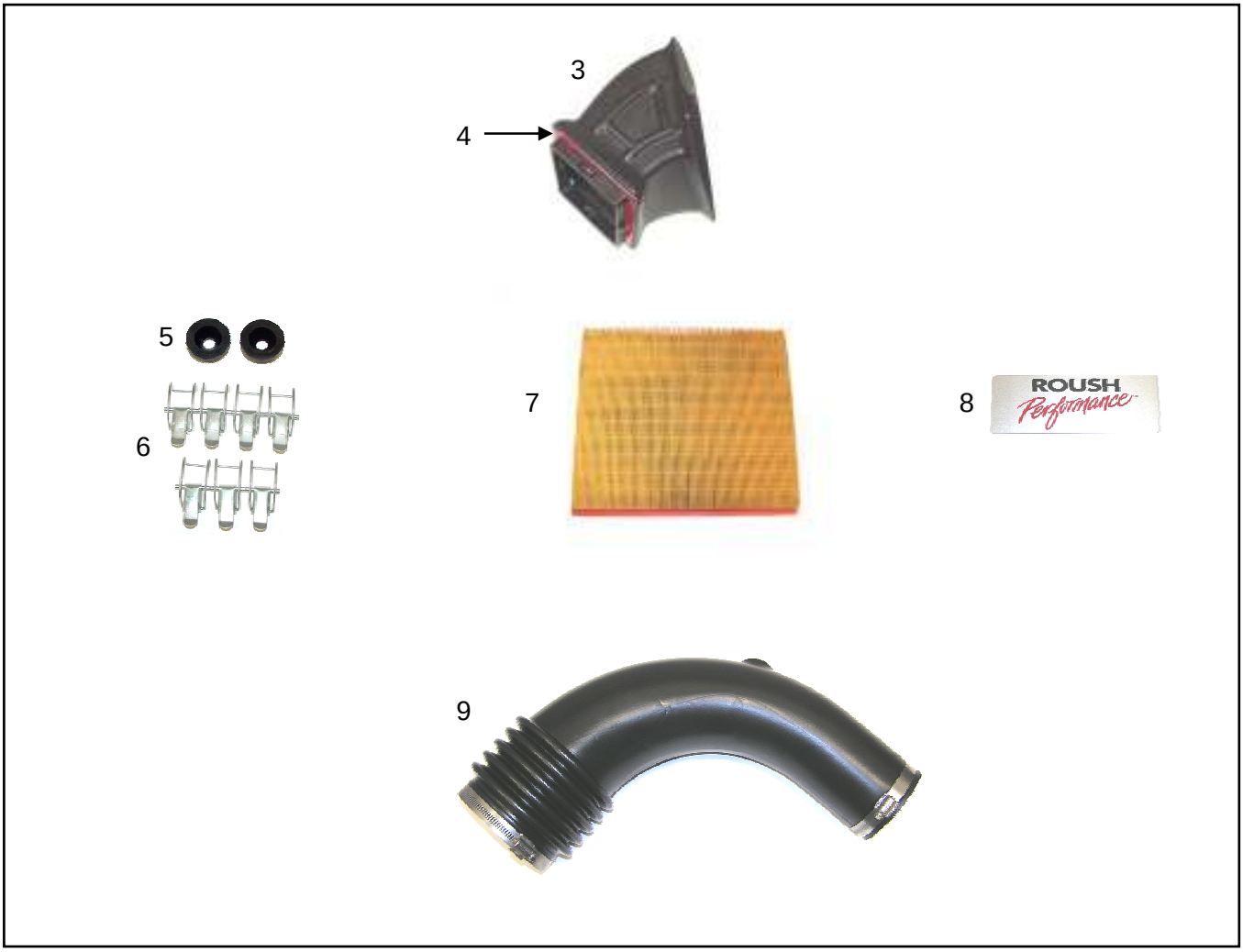
1. PACKAGING LIST FOR SUPERCHARGER KIT

P/N: R07000012

NOTE: The Air Box Assembly (R07060081) is shown above. It has been pre-assembled by Roush to ensure quality and simplify installation. It consists of parts 1 thru 7 which are shown individually below for reference only.



Part Ref	Description	RPP Part Number	Qty
	Complete Air Box Assembly	**R07060081**	**1**
1	Upper Air Box Tray	R07060073	1
2	Lower Air Box Tray	R07060074	1



Part Ref	Description	RPP Part Number	Qty
	Complete Air Box Assembly...Continued	**R07060081**	**1**
3	Air Inlet	R07060075	1
4	Double-Sided Tape - Air Inlet to Lower Tray	R18120001	4
5	Rubber Grommet	R07060080	2
6	Spring Clamp	R07060079	7
7	Air Filter Element	R07060076	1
8	Badge - "Roush Performance" Applique for Airbox	R07060078	1
9	Clean Air Tube Assembly with Clamps	R07060077	1

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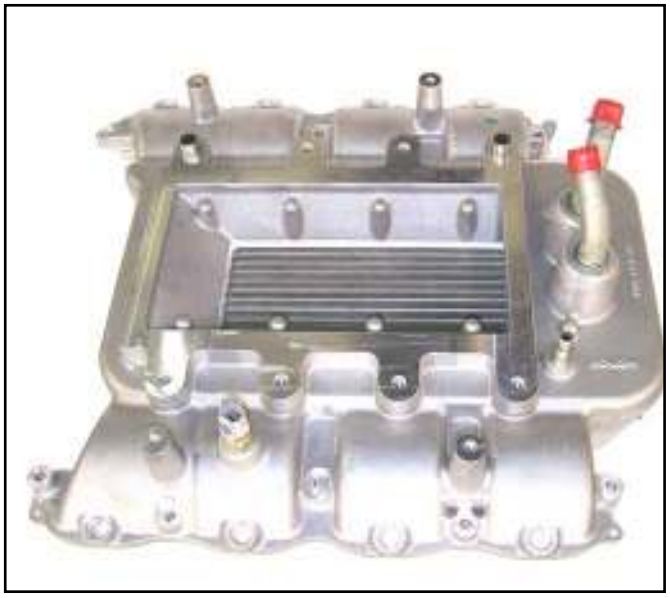
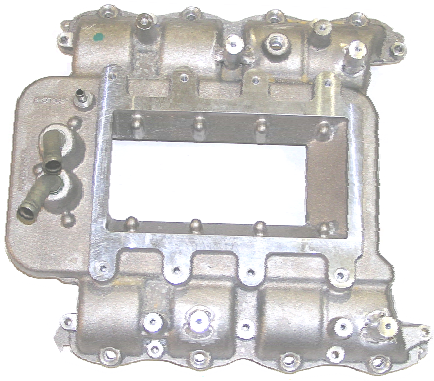


NOTE: The Fuel Charging Assembly (R07060082) is shown above. It has been pre-assembled by Roush to ensure quality and simplify installation. It consists of parts 10 thru 21 which are shown individually below for reference only.

10



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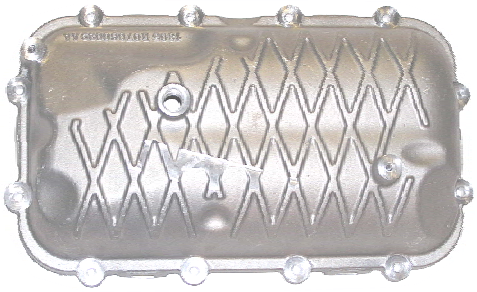
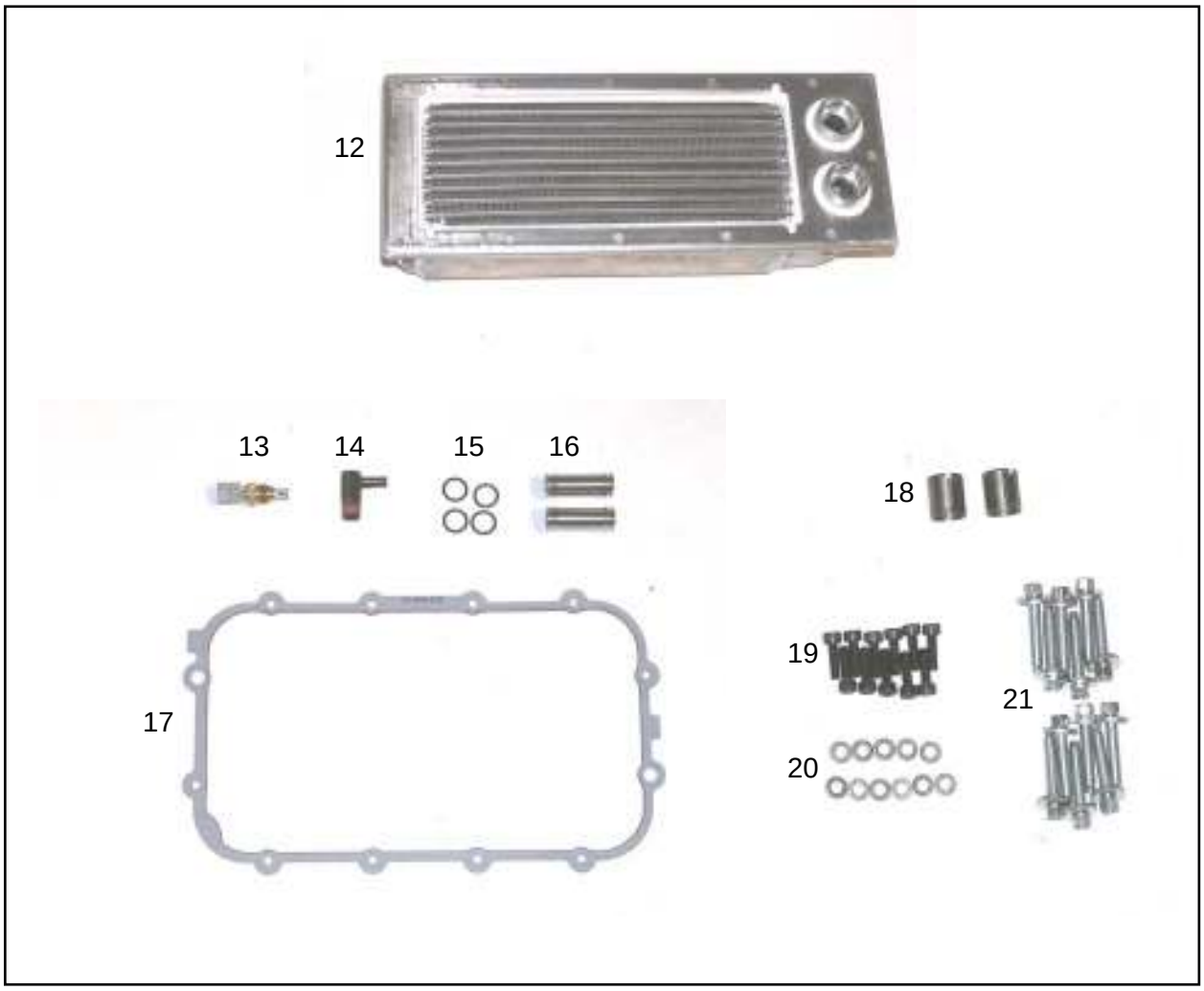


Part Ref	Description	RPP Part Number	Qty
	Fuel Charging Assembly	**R07060082**	**1**
10	Upper Intake Manifold	R07060054	1
11	Lower Intake Manifold	R07060039	1



Part Ref	Description	RPP Part Number	Qty
	Fuel Charging Assembly…Continued	**R07060082**	**1**
12	Intercooler	G1ZE-6K775-AA	1
13	ACT Sensor	R07090044	1
14	90 Degree Pipe Plug Fitting	391273-S100	1
15	O-Ring - Floating Tube	2-115	4
16	Billet Tube - Intercooler Floating Tube	G1ZE-9L442-AA	2
17	Gasket - Upper to Lower	G1ZE-9461-BA	1
18	Dowel - Intake to Supercharger	W704688-S300	2
19	Bolt - Intercooler to Intake (M5x16mm)	SCS-05016-YZ	11
20	Washer - Intercooler to Intake	11-452-0033	11
21	Bolt - Upper to Lower Intake (M6x33mm)	N808429-S437	12

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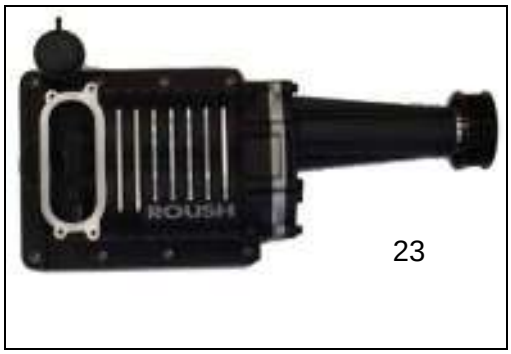
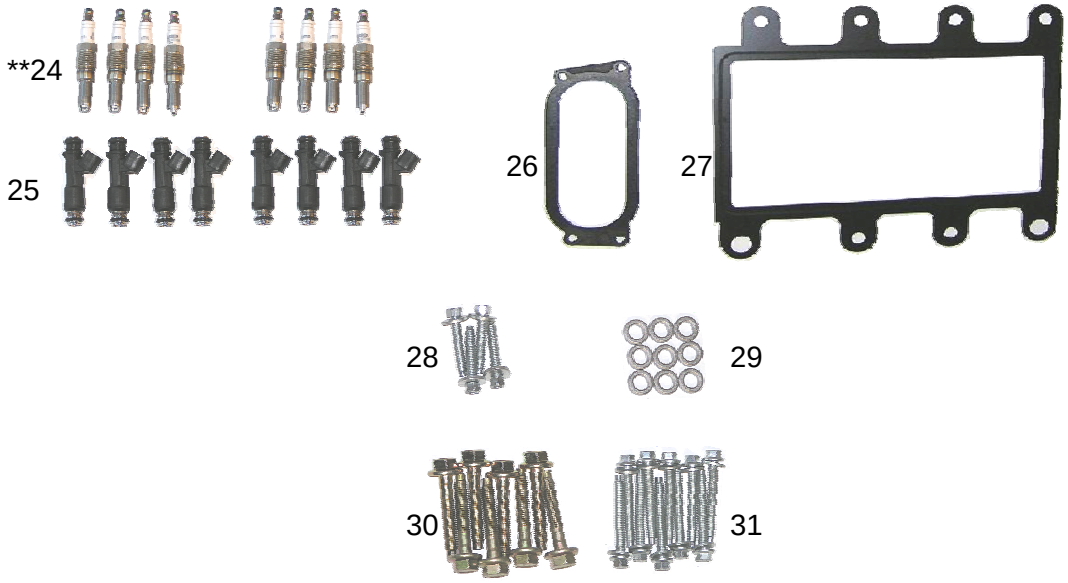
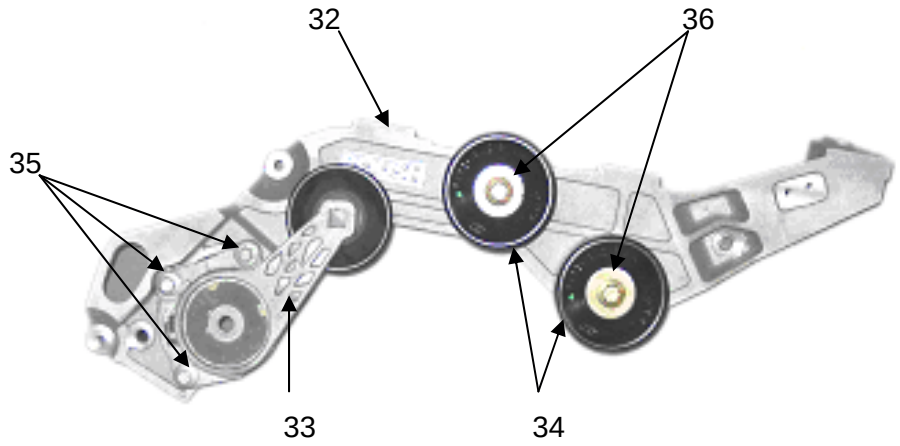


Part Ref	Description	RPP Part Number	Qty
22	Throttle Spacer	1104-9A589-AA	1
23	Supercharger	R07050044	1



Part Ref	Description	RPP Part Number	Qty
	Hardware Kit A - Intake	**R07060057**	**1**
**24	Spark Plug ** (see note below)		0 **
25	Fuel Injector (5.0 g/s flow rate)	R07110002	8
26	Gasket - Supercharger to Spacer	R07050009	1
27	Gasket - Intake to Supercharger	R07050008	1
28	Bolt - Spacer to Supercharger (M6X33mm)	N808429-S437	4
29	Spacer - Crush Limiter	1104-9439-AA	9
30	Bolt - Supercharger to Intake (M8x48mm)	W705430-S309	8
31	Bolt - Intake to Cylinder Head (M6x45mm)	W503282-S437	10

NOTE: ** Spark plugs have not been packaged in this kit. Please follow the instruction in Section A, pg. 20 & 21, to send us your PCM for reprogramming. Depending on the engine code and build date information, new spark plugs, if required, will be shipped with your reprogrammed PCM.



NOTE: The Bridge Assembly (1104-8B653-AA) is shown above. It has been pre-assembled by Roush to ensure quality and simplify installation. It consists of parts 32 thru 36 which are labeled in detail above.

Part Ref	Description	RPP Part Number	Qty
	Bridge Assembly	**1104-8B653-AA**	**1**
32	Bridge	1104-8B603-AA	1
33	Tensioner Assembly	R07020007	1
34	Idler Assembly	R07020008	2
35	Bolt - Tensioner to Bridge	N808920-S309	3
36	Bolt - Idler to Bridge	N811493-S309	2
37	Supercharger Drive Pulley	R07020009	1

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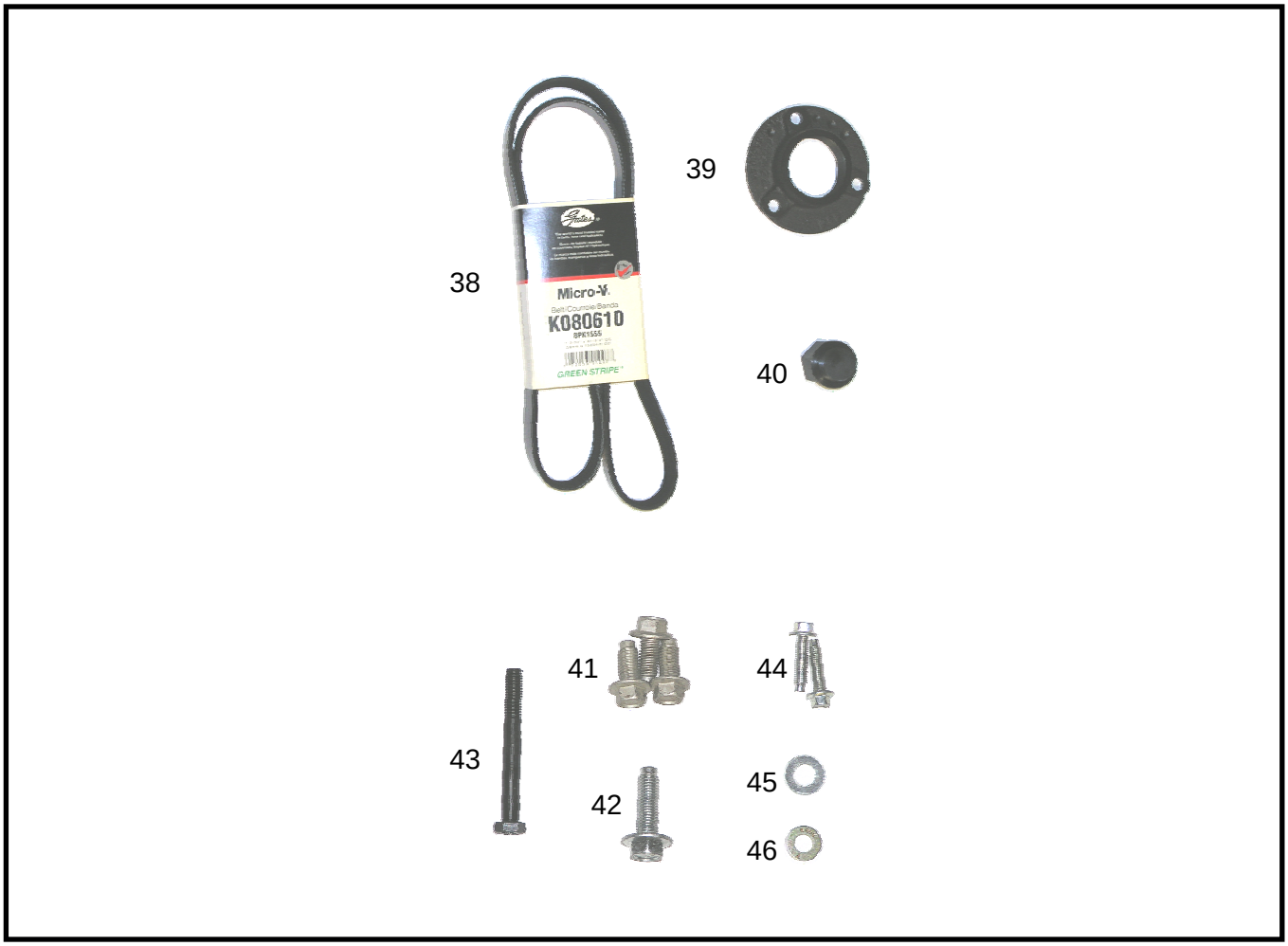

Part Ref	Description	RPP Part Number	Qty
	Hardware Kit B - FEAD	**R07020027**	**1**
38	Supercharger Drive Belt	R07020021	1
39	Supercharger Drive Pulley Adapter	R07020010	1
40	Fan Spacer (Water Pump) (See NOTE Below)	1104-8546-AA	1
41	Bolt - Supercharger Drive Pulley Adapter to Damper (M10x23mm)	N605918-S427	3
42	Bolt - Supercharger Drive Pulley to Front Cover (M10x36mm)	N807239-S437	1
43	Bolt - Bridge to Front Cover (M8x75mm)	R07050007	1
44	Bolt - Power Steering Reservoir to Bridge (M6x28mm)	W500215-S437	2
45	Washer - 10mm Flat	11-452-0072	1
46	Washer - 8mm Flat	11-452-0038	1

NOTE: Part #40, Fan Spacer is different for the 07-08 F-150. Customers with 2007-2008 model year vehicles must purchase the "2007-08 F150 Supplemental Kit" (P/N: R07000024) to complete this installation. Installation Instructions for this supplemental kit are in Section D of these instructions.

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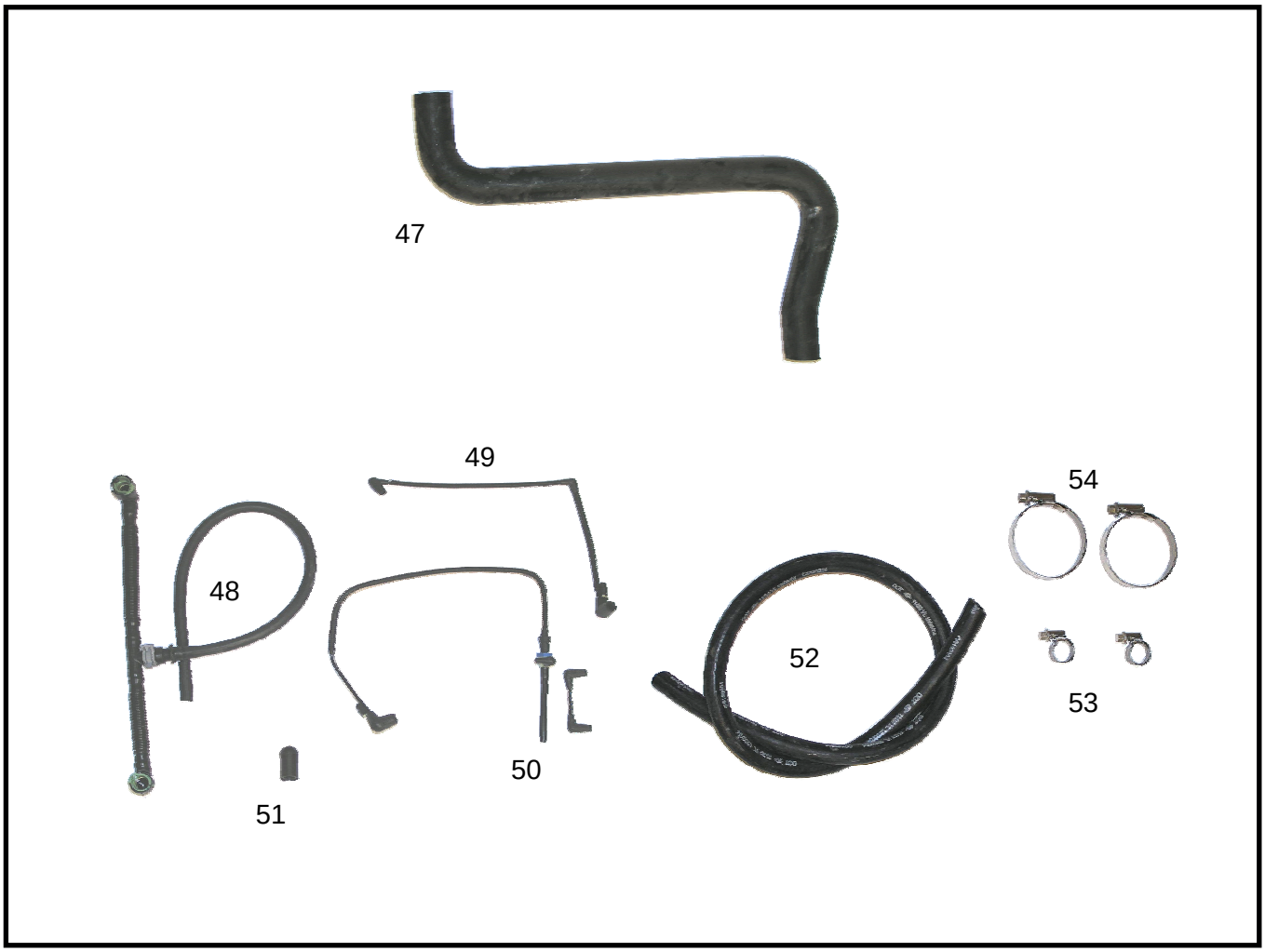
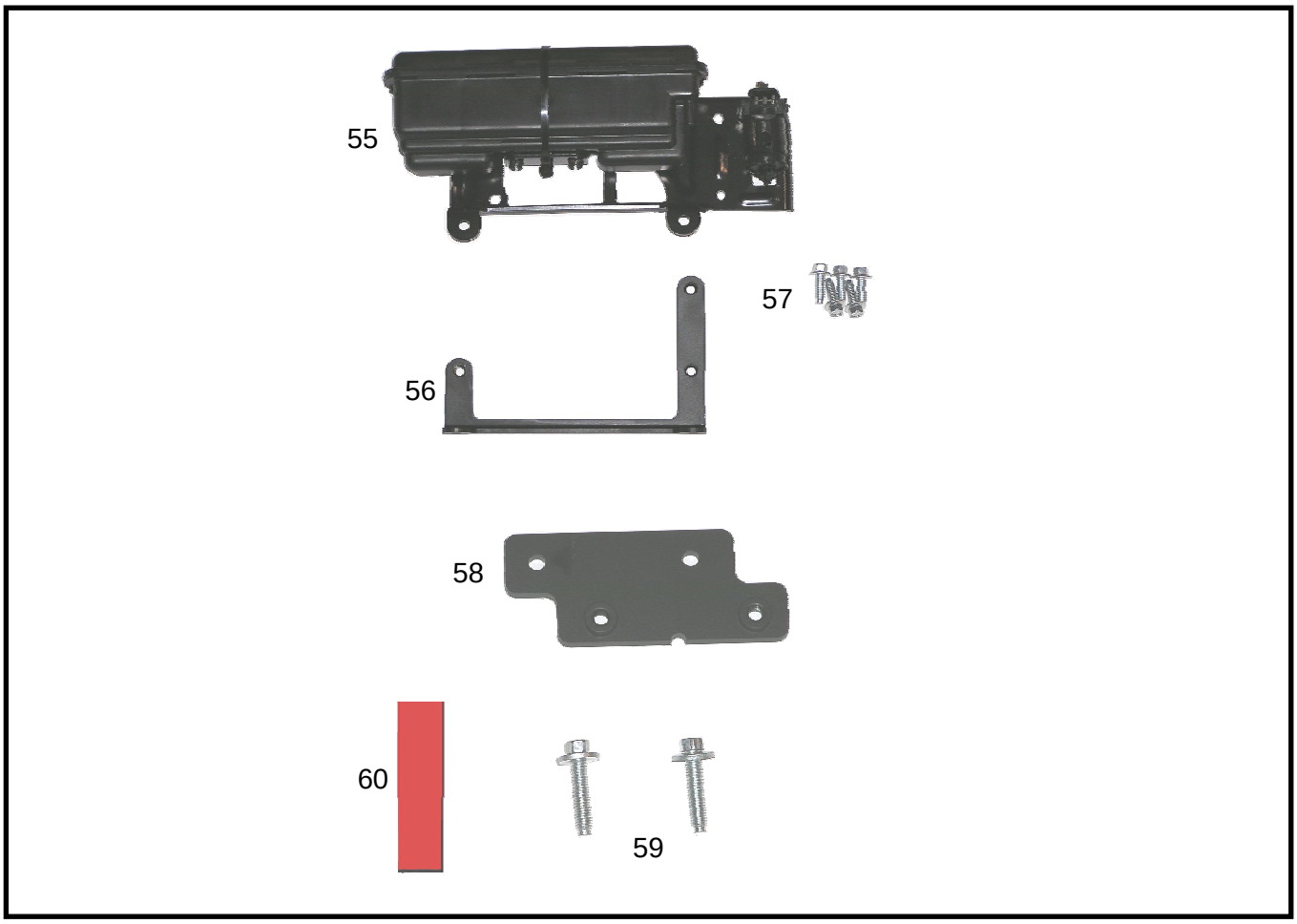


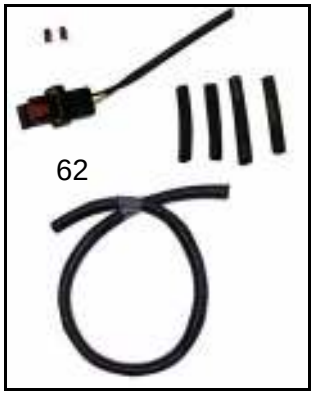
Part Ref	Description	RPP Part Number	Qty
47	Upper Radiator Hose	1104-8B274-AA	1
	Hardware Kit C - PCV, Vacuum, Hoses & Clamps	**R07040013**	**1**
48	PCV Hose	R07040001	1
49	Vacuum Harness - IPTS	R07040028	1
50	Vacuum Harness - Supercharger Bypass	R07040015	1
51	Vacuum Cap - 1/4"	R07040003	1
52	Hose - 11/32" ID Brake Booster	1104-2B432-AA	1
53	Clamp - Brake Booster Hose (8-16mm)	01266703013	2
54	Clamp - Upper Radiator Hose (40-60mm)	01368045050	2

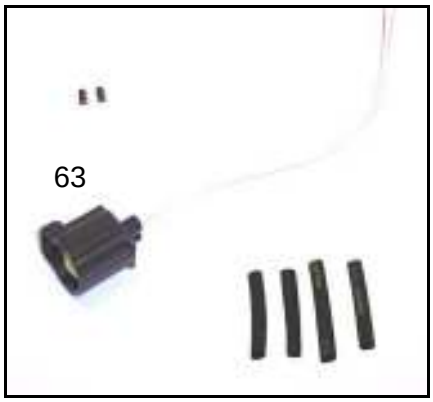
PREMIUM FUEL REQUIRED

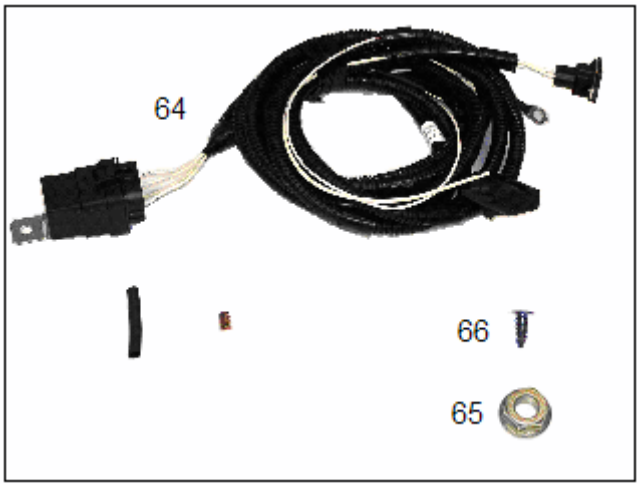


Part Ref	Description	RPP Part Number	Qty
	Hardware Kit D - Boost Bypass Bracket & P/S Relocation	**R07020023**	**1**
55	Bypass Solenoid Bracket Assembly	4G7V-9J472-CA	1
56	Bypass Reservoir Mounting Bracket	R07040027	1
57	Bolt - Bypass Brackets (M6x18mm)	N605891-S437	5
58	Power Steering Reservoir Relocation Bracket	R07020024	1
59	Bolt - Power Steering Reservoir Relocation Bracket (M6x35mm)	R18020009	2
60	Double-Sided Tape - P/S Reservoir to Relocation Bracket	R18120002	1

PREMIUM FUEL REQUIRED







Part Ref	Description	RPP Part Number	Qty
61	Box- PCM Return	R07050012	1
	Hardware Kit E- Electrical	**R07080011**	**1**
62	Electrical Jumper - Bypass Solenoid	R07080012	1
63	Electrical Jumper - ACT	1104-12B637-BA	1
64	Electrical Harness - Intercooler Pump	R07080013	1
65	Nut - Intercooler Pump Relay (M6)	W520412-S309	1
66	Push Pin - Intercooler Pump Fuse Holder	R18130001	1

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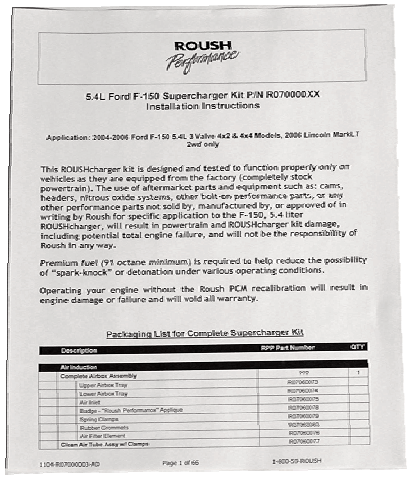
ROUSH Performance

5.4L Ford F-150 Supercharger Kit P/N R070000XX
Installation Instructions

Application: 2004-2006 Ford F-150 5.4L 3 Valve 4x2 & 4x4 Models, 2006 Lincoln Mark LT 2wd only

This ROUSHcharger 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 for specific application to the F-150, 5.4 liter ROUSHcharger, will result in powertrain and ROUSHcharger kit damage, including potential total engine failure, and will not be the responsibility of Roush in any way.

Premium fuel (91 octane minimum) is required to help reduce the possibility of "spark-knock" or detonation under various operating conditions.

Operating your engine without the Roush PCM recalibration will result in engine damage or failure and will void all warranty.

Packaging List for Complete Supercharger Kit

	Description	RPP Part Number	QTY
	Air Induction		
	Complete Airbox Assembly		1
	Upper Airbox Tray	R07040073	
	Lower Airbox Tray	R07060074	
	Air Inlet	R07060075	
	Badge - "Roush Performance" Applique	R07060078	
	Spring Clamps	R07060079	
	Rubber Grommets	R07060065	
	Air Filter Element	R07060076	
	Clean Air Tube Assy w/ Clamps	R07060077	

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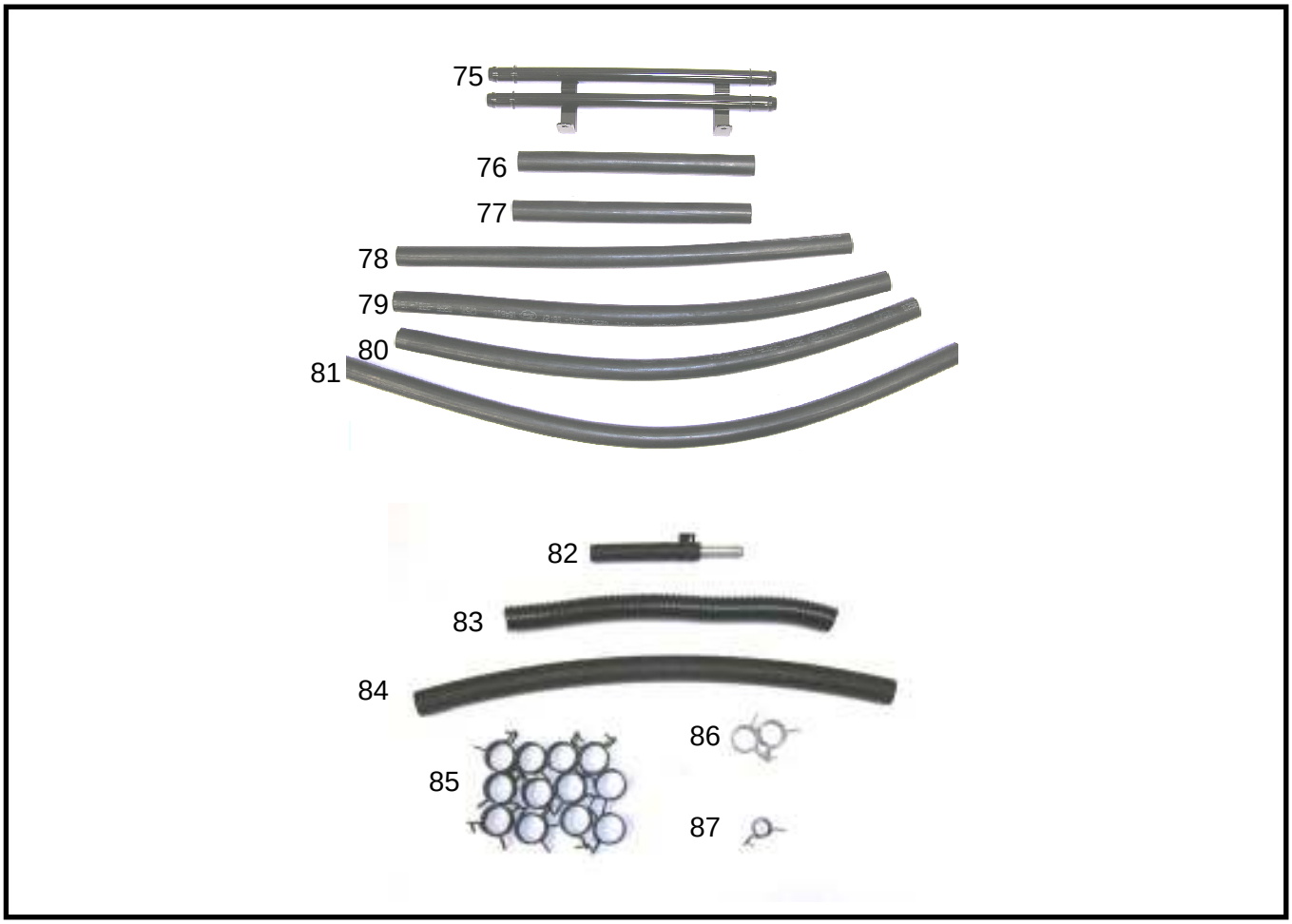
Part Ref	Description	RPP Part Number	Qty
	Hardware Kit F- Instructions & Decals	**R07040016**	**1**
67	Installation Instructions	R07040018	1
68	Decal - Belt Routing	R07020026	1
69	Decal - Premium Fuel Only (Fuel Door)	R07110003	1
70	Decal - Premium Fuel Only (IP Cluster)	R07110004	1
71	Decal – C.A.R.B. E.O. Certification	R07140006	1

72

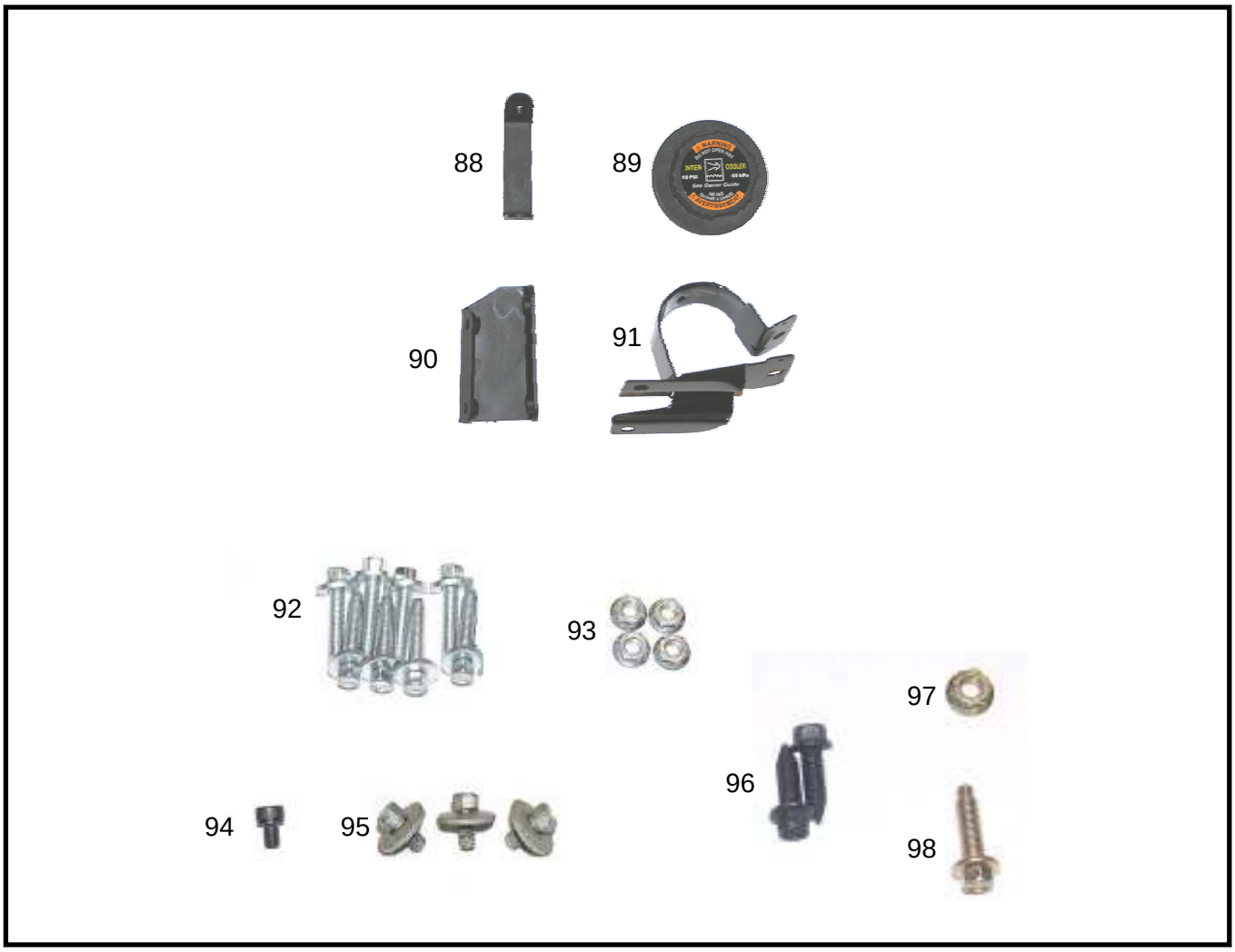
73

74

Part Ref	Description	RPP Part Number	Qty
72	Intercooler Electric Water Pump	F8YZ-8501-AA	1
73	Degas Bottle	R07070007	1
74	Low Temp Radiator (LTR)	R07060072	1



Part Ref	Description	RPP Part Number	Qty
	Intercooler Tube & Hose Kit	**R07070018**	**1**
75	Steel Intercooler Tubes	R07070019	1
76	3/4" Hose - Intercooler Inlet (11.5")		1
77	3/4" Hose - Intercooler Outlet (11.5")		1
78	3/4" Hose - Degas Inlet (21.75")		1
79	3/4" Hose - LTR Inlet (23.75")		1
80	3/4" Hose - Degas Outlet (25.25")		1
81	3/4" Hose - LTR Outlet (30.75")		1
82	3/8" Hose - Power Steering (4") with Barb Fitting & 1 Clamp	R06010003	1
83	3/4" Convolute (12")		1
84	5/8" Hose - Power Steering (16.5")		1
85	3/4" Hose Clamp		12
86	5/8" Hose Clamp		2
87	3/8" Hose Clamp		1



Part Ref	Description	RPP Part Number	Qty
	Hardware Kit G - Intercooler System Mounting	**R07070020**	**1**
88	Degas Bottle Mounting Bracket - Secondary	R07070020	1
89	Degas Bottle Cap	XL3Z-8100-AA	1
90	Degas Bottle Mounting Bracket - Primary	R07070017	1
91	Bracket - Intercooler Pump Mounting	R07070015	1
92	Bolt - LTR Mounting (4), Degas (2), & I/C Tube Mtg (2) (M6x35mm)	R18020009	8
93	Nut - LTR Mounting (M6)	W520412-S309	4
94	Cap Screw - Degas Bracket (M6x8mm)	R18020010	1
95	Bolt - Degas Brackets (M6x10mm)	R18020011	3
96	Screw - Pump Bracket Mounting (M8x27mm)	N802455-S2	2
97	Nut - Pump Bracket (M8)	W520413-S309	1
98	Bolt - Pump Bracket (M8x25mm)	W500224-S437	1

2. EQUIPMENT AND SUPPLIES REQUIRED

- ¼", 3/8", and ½" Drive Ratchets with Extensions
- Metric and Standard Socket Sets (short and deep recommended)
- Metric and Standard Wrench Sets
- Torque Wrench (7-75lb-ft range)
- Short Phillips-Head Screwdriver
- 5mm & 14mm Hex Key Drivers
- Teflon Tape (pipe thread sealing)
- 5/8" Fuel Line Removal Tool
- T-20 Torx Bit Screwdriver or Socket
- Soldering Iron and Solder
- Ford Cooling Fan Removal Tools
- Wire Strippers
- Wire Crimpers ("W" type for OEM-style wiring connectors)
- Coolant (See Owner's Guide for Specification)
- 3 Jaw Pulley Puller (Recommended Ford Service Tool # 303-D121)
- Crankshaft Vibration Damper Installer (Recommended Ford Service Tool # 303-102)
- Silicone Gasket and Sealant (Recommended Ford Service P/N: TA-30)
- 1/8", 9/64", and ¼" Drill Bits and Drill Motor
- 6" Scale, Tape Measure, or Other Measuring Device
- Brake Parts Cleaner
- Assembly Lubricant (White Lithium Grease or Petroleum Jelly)
- Electrical Tape
- Sharp Knife or Razor Blade
- Anti-Seize (thread lubricant)
- Constant Tension Hose Clamp Tool
- Air Saw, Jig Saw, Dremel, Roto-Zip, or Pneumatic 3" Cut-Off Wheel (something able to cut plastic)
- Palm Sander, Sand Paper, or File
- Zip Ties
- Trim Pad Tool (for pushpin removal)
- Fender Cover (2)
- Medium Strength Thread Locker - Loctite 242 (Blue) or equivalent

3. GLOSSARY OF TERMS

ACT	Air Charge Temperature Sensor (On the base truck, this function is integrated into the MAF sensor. For the supercharged truck, a separate ACT sensor is used in the intake manifold)
CMCV	Charge Motion Control Valve (Also referred to as IMRC - Intake Manifold Runner control. Located on the back of the base intake manifold - not used with the supercharger. Two wires are reconfigured to operate the SCBP)
ETC	Electronic Throttle Control.
IPS/IPTS	Injection Pressure Sensor (2004), Injection Pressure and Temperature Sensor (2006)
MAF	Mass Air Flow Sensor
PCM	Powertrain Control Module (aka. ECM, ECU, PCU, EEC).
PCV	Positive Crankcase Ventilation
SCBP	Supercharger Control Bypass (A 3-way electronic vacuum control solenoid to allow the PCM to control the supercharger bypass to reduce heat buildup and noise during low throttle operation)
TPS	Throttle Position Sensor (Located on the left side of the throttle body)
VMV	Vapor Management Valve (Located near the brake booster on driver side dash panel)
CHT	Cylinder Head Temperature Sensor (Located on the passenger side of the head, below the intake manifold)

4. 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 (idles, decelerations, 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 significantly degraded drivability.

5. 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.

6. SAFETY PRECAUTIONS

STOP! READ IMPORTANT SAFETY CAUTIONS AND WARNINGS BEFORE PROCEEDING.

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 actual installation.

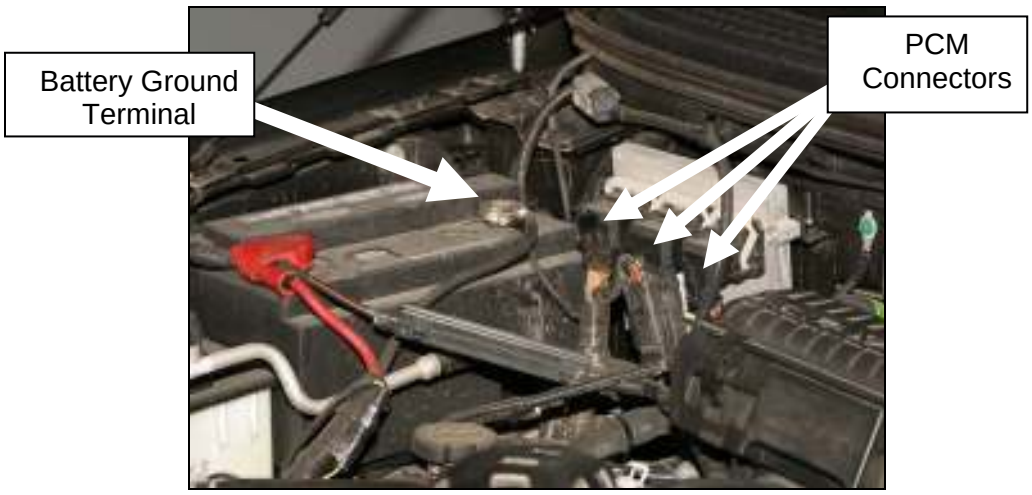
- Always wear safety glasses for eye protection.
- Place the ignition switch in the OFF position.
- Always apply the parking brake when working on the vehicle.
- Block the front and rear tire surfaces to prevent unexpected vehicle movement.
- Operate the engine only in well-ventilated areasto avoid exposure 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. Therefore do not allow flames, sparks or flammable substances 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.

7. SECTION A - DISASSEMBLY

The following section will guide you through the disassembly of the stock components on the 5.4L 3V engine. Special care should be taken to label fasteners and parts that are taken off during this procedure since many will be used again. In order to facilitate photography, some of the following photos show the hood removed from the vehicle. Hood removal is not required in order to install the kit.

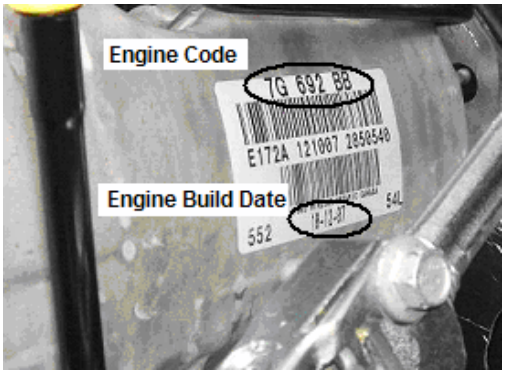
A. **Disconnect the ground terminal from the battery.**

B. Remove the PCM (powertrain control module) by disconnecting the three electrical connectors and removing the four bolts.



IMPORTANT:

In order to determine the correct Spark Plug required for the F150 ROUSHcharger Kit, the engine must be identified. Each engine will have a Bar Code Label with the Engine Code and Build Date. This label is located on the drivers side Valve Cover adjacent to the Brake Booster. Write the Engine Build Date, Engine Code, Vehicle Identification Number (*VIN*), and your Phone Number (*in case we need to contact you for additional vehicle information*) on your PCM using a permanent marker.



**2008 MY vehicles with Engine Codes 7G-692-BA (reg. fuel) & 7G-600-BA (flex fuel) will require a revised Spark Plugs. New spark plugs, P/N R07030001, will be provided with your reprogrammed PCM.

**2008 MY vehicles with Engine Codes 7G-692-BB (reg. fuel) & 7G-600-BB (flex fuel) do not require a revised spark plug. The spark plugs delivered with these vehicles are approved for use with the F-150 ROUSHcharger Kit.

C. Instructions for returning the PCM to Roush for calibration.

Outlined below are the instructions for sending 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 the PCM and return it back to you, along with spark plugs for you engine if required, 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: The F150 PCM is VIN matched and security programmed for each individual truck, it is imperative that you reinstall the PCM into the vehicle that it came from in order to prevent setting trouble codes and activating the anti-theft system.

a) If you haven't already done so, write your engine build code, engine build date, vehicle identification number (VIN) and phone number on the PCM using a permanent marker.

b) Remove the bubble wrap from the supplied shipping box (R07050012) and wrap it around the PCM to help prevent it from being damaged during shipping.

c) Place the wrapped PCM in the shipping box and follow the instructions on the box for sealing it shut.

d) **Complete the "Warranty Registration Card" and include it in the shipping box along with the PCM.**

e) Fill in your name and address in the **FROM** area of the shipping label that is located inside the box.

f) Peel the right label off and attach it to the box where indicated.

g) Retain the left side label for your records.

h) 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.

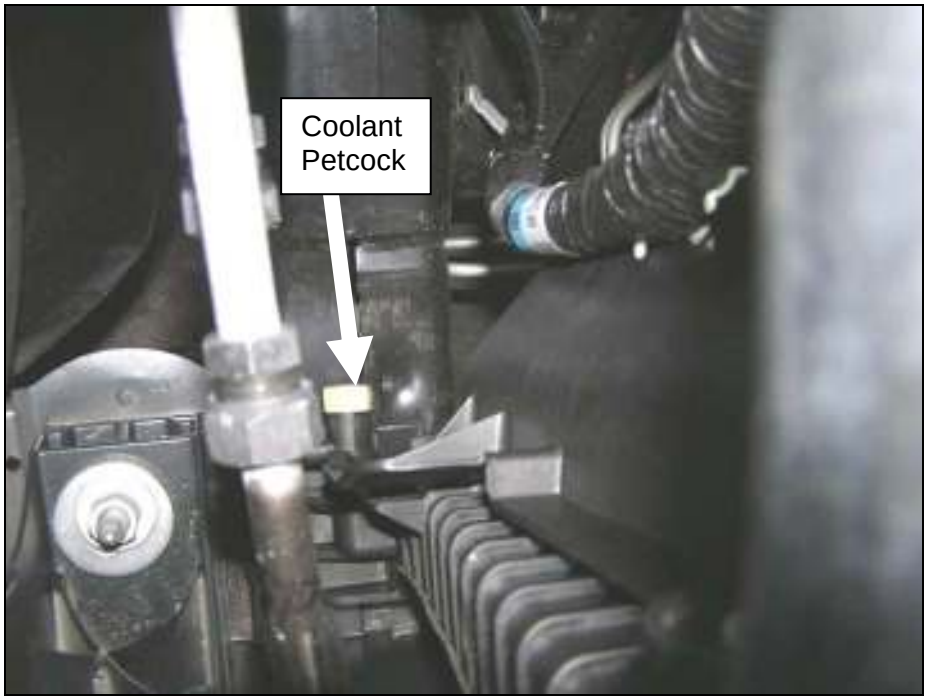
i) Inform the agent that you have a **Prepaid FEDEX billable stamp package** and you need a pick-up.

j) 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**

The prepaid shipping box is set-up for next day delivery to us. Once we receive your PCM, we will reprogram and return ship your PCM back to you, with new Spark Plugs, the same day for next-day delivery.

If you have any questions, call Roush customer service at 1-800-597-6874.

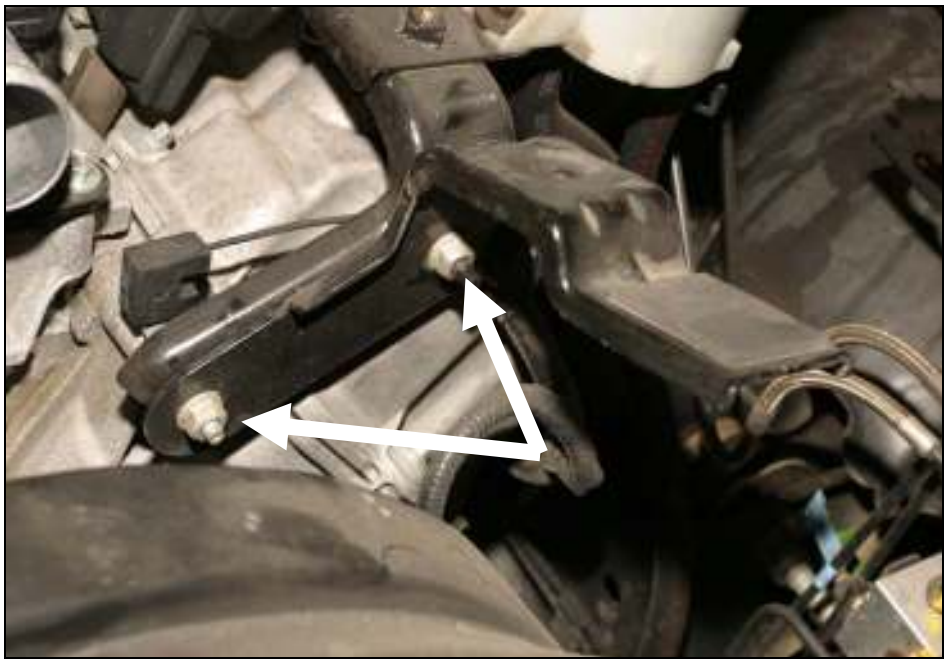
D. Open the cap on the degas bottle and drain the engine coolant using the petcock located on lower passenger side of the radiator. Use a ¾" wrench to open the petcock and allow the coolant to drain out of the fitting. Tip: Connect a 3/8" hose to the drain fitting next to the petcock and run the coolant into a clean drain pan or bottle.



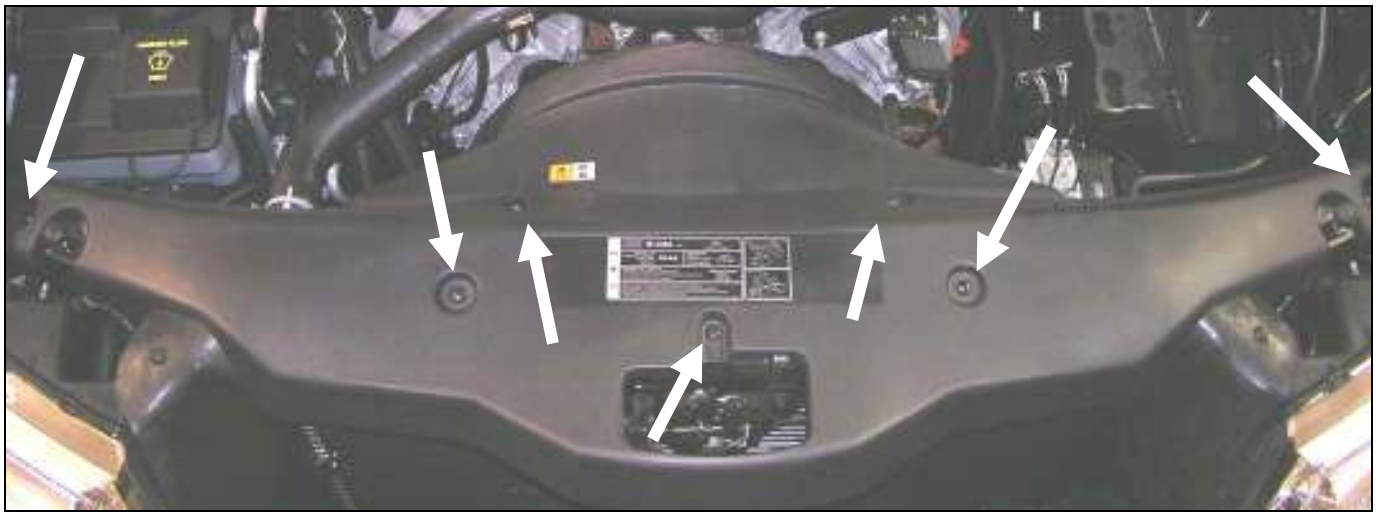
E. Remove the air inlet tube retaining bolt, and pull the tube out of the fender and air box.

F. Remove the mass-air flow connector (MAF) from the driver side of the air box by pulling the red locking tab back and then pressing the black release tab to disengage the lock. Remove the two torx-head screws retaining the MAF to the air box. Save the MAF and the screws for reuse later. Remove the PCV breather hose from the passenger side cam cover and air box. Unclip the battery cable from the air box. Remove the four 10mm hex bolts and remove the air box.

G. Remove the air tube support bracket.



H. Remove the radiator cover (7 pushpins – unscrew and completely remove the phillips-head center of the pushpin to disengage).



I. Remove the upper radiator hose (2 hose clamps). Remove the upper radiator hose support bracket.

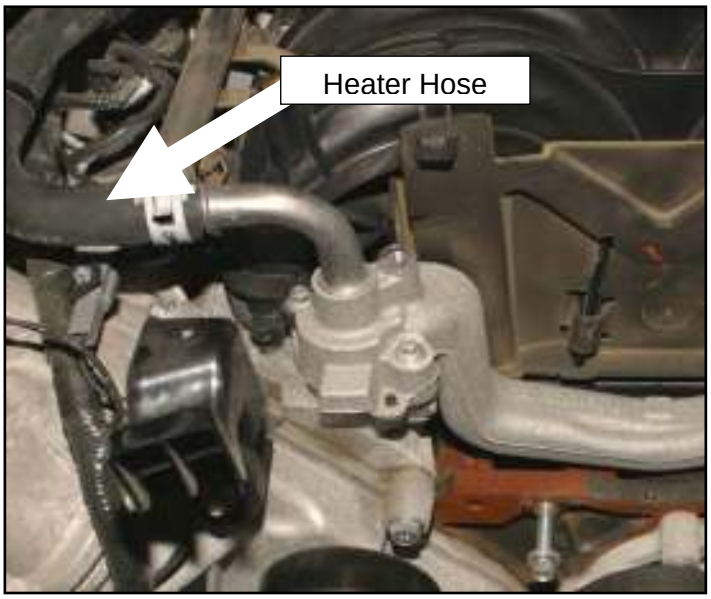
(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D - INSTALLATION OF 07-08 SUPPLEMENTAL SUPERCHARGER KIT** *on page 93*)

J. Remove the two bolts holding the fan shroud to the radiator. Remove the wiring clip from the passenger side of the fan shroud. Using the fan removal tools, disconnect the fan from the water pump. Remove the fan and shroud from the vehicle.

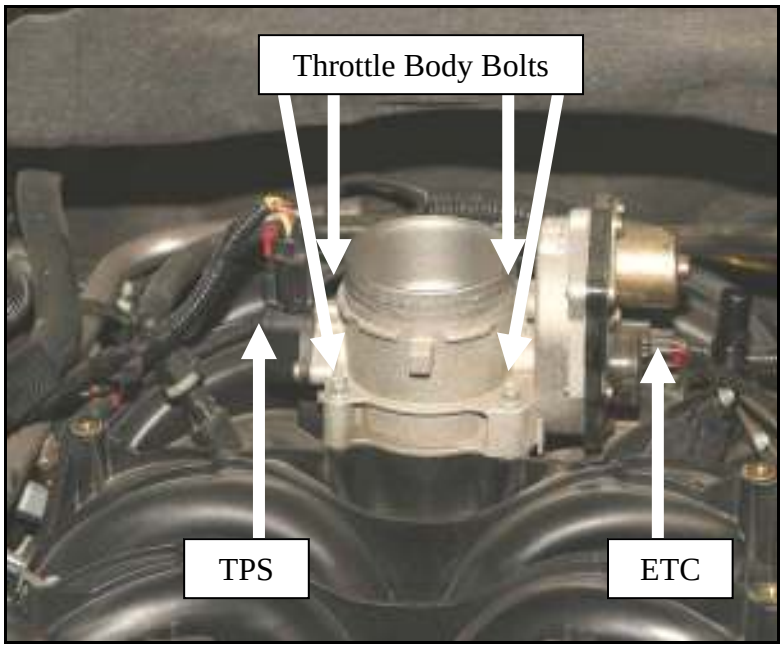
K. Release the accessory drive belt by rotating the tensioner clockwise with a ½" breaker bar or ratchet, and slip the belt off of the alternator pulley.

L. Remove the battery cable from the alternator (10mm hex). To remove the alternator, remove the four upper support bracket bolts and loosen the two lower alternator bolts. Disconnect the regulator connector from the alternator, and fold the battery cable and support bracket back out of the way.

M. Remove the heater hose from the water crossover.



N. Unplug the TPS connector from the passenger side of the throttle body. Remove the four bolts and remove the throttle body. Unplug the ETC connector from the driver side of the throttle body (this is much easier once the throttle is unbolted from the intake). Remove the light blue o-ring gasket from the intake manifold and wipe it dry. To prevent swelling, immediately install the o-ring gasket into the new throttle spacer (1104-9A589-AA). Cover the throttle opening to prevent anything from falling into the manifold.

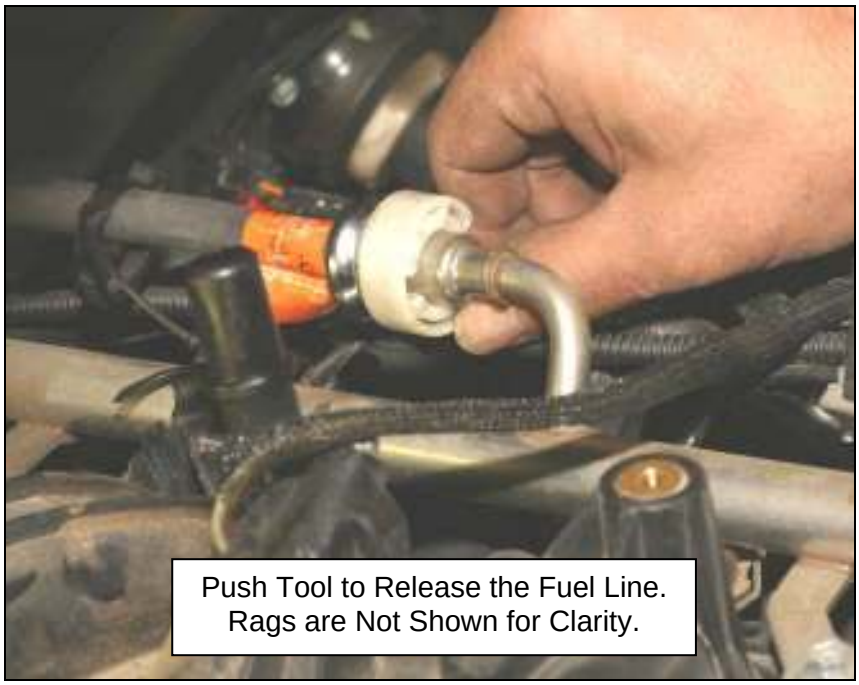


O. Remove the PCV hose from the driver side cam cover and intake manifold. Disconnect the heated PCV fitting electrical connector. Remove the heated PCV fitting from the manifold.

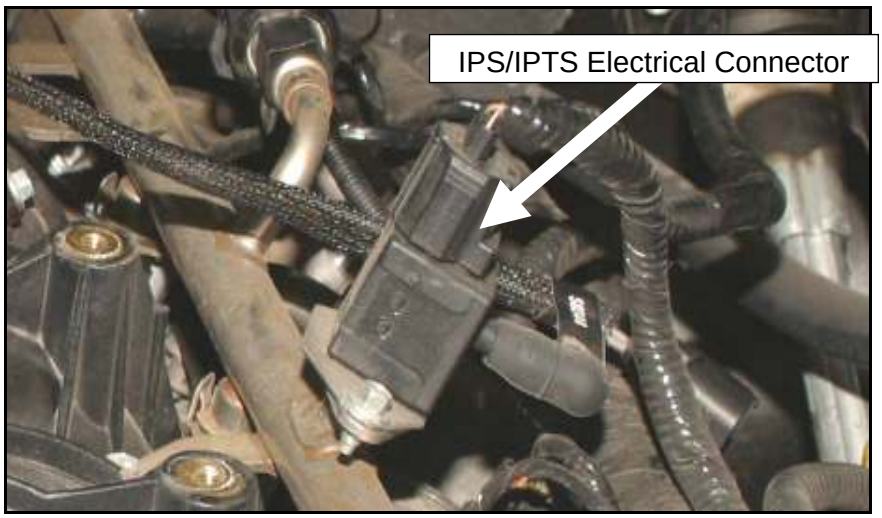
P. Disconnect the VMV hose and clip from the intake manifold; fold it back out of the way.

Important: Ensure that the ground cable is disconnected from the battery and that any possible sources of ignition are eliminated.

Q. Place rags under the fuel line connection at the fuel rail. Remove the black safety clip from the fuel line connection. Using a 5/8" fuel line tool (wrap additional rags around the tool), disconnect the fuel line from the fuel rail. There will be some release of pressurized fuel, so be careful and proceed slowly. Clean up all released fuel prior to proceeding with the next steps.

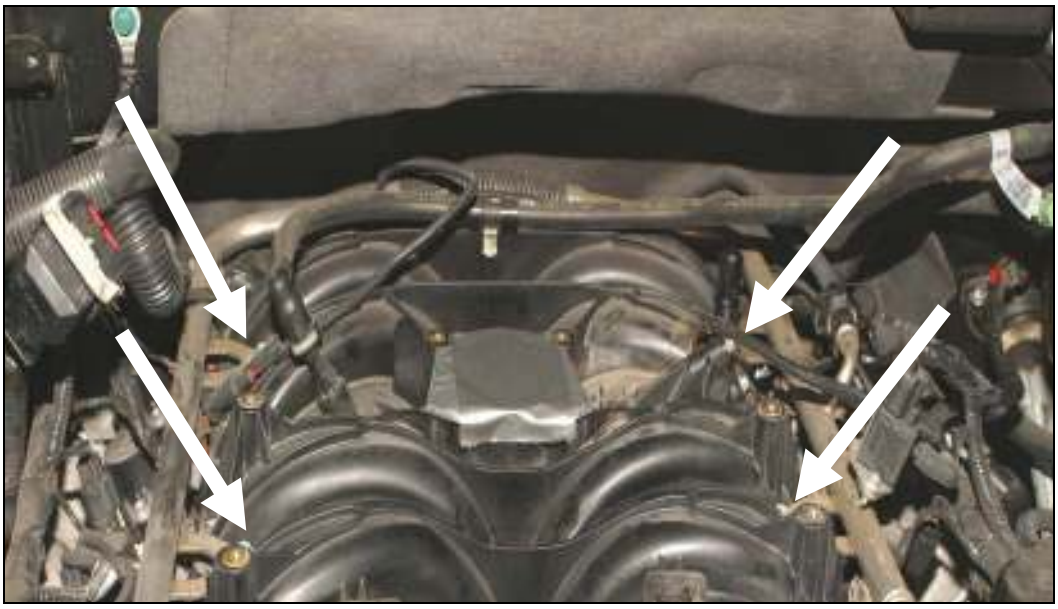


R. Disconnect the eight wiring connectors from the fuel injectors and IPS/IPTS electrical connector located on the fuel rail (2004 model shown).

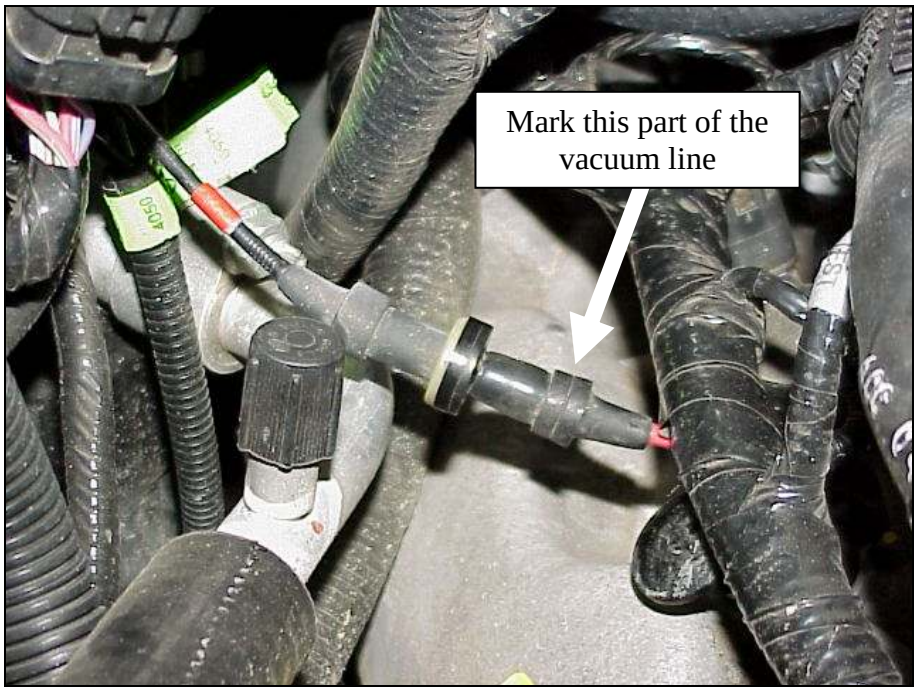


S. If the ground strap is routed between the fuel rail and the intake manifold, unbolt it from the dash panel, unwrap it from the rail, and reconnect it to the dash panel.

T. Remove the four bolts holding the fuel rail to the intake manifold. Remove the fuel rail assembly with injectors. There may be some additional fuel leakage around the injectors; clean up with rags prior to proceeding. Drain the fuel rail of all remaining fuel.

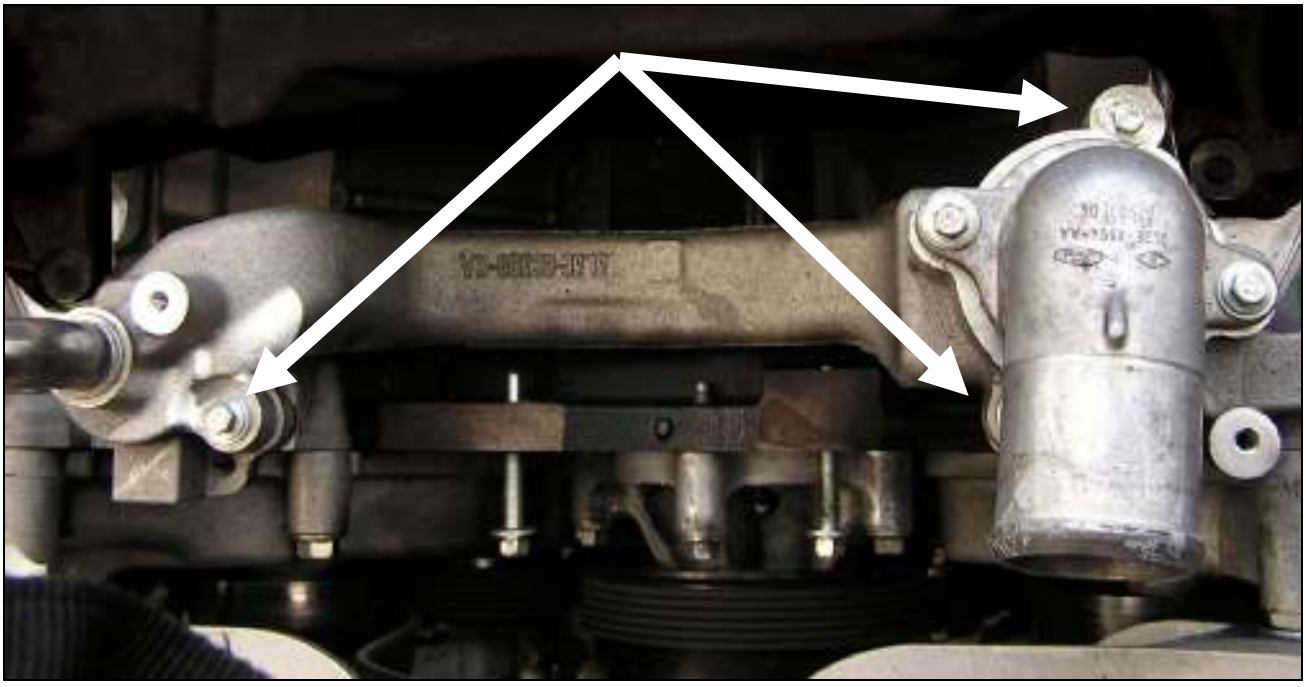


U. (2004 4x4 models ONLY) Disconnect the vacuum line located above the passenger side cam cover. Mark the engine side of the line with tape or paint to make it easy to identify later.



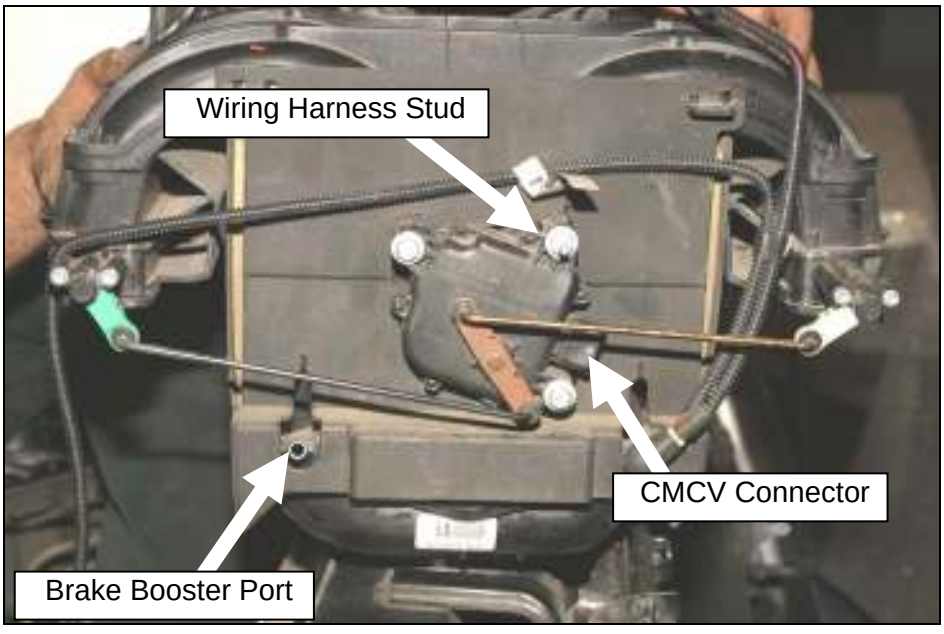
V. Remove the ten bolts holding the intake manifold to the cylinder heads.

W. Remove the three bolts which retain the water crossover bridge and remove the bridge.



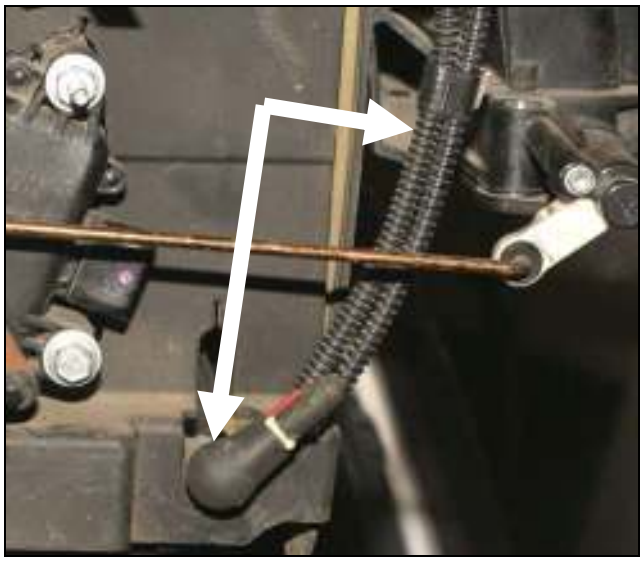
X. Move the intake manifold into a forward position as shown, in order to gain access to components on the rear of the intake manifold.

Y. Reach behind the intake manifold and remove the nut holding the wiring harness to the back of the intake. Disconnect the CMCV wiring connector. Check for other wiring connectors behind the manifold; you may need to disconnect the knock sensors and/or CHT sensor connectors in order to remove the manifold completely. **Ensure that the knock sensors and the CHT are reconnected once the intake manifold is removed.** Disconnect the brake booster hose attached to the driver side bottom of the intake manifold.



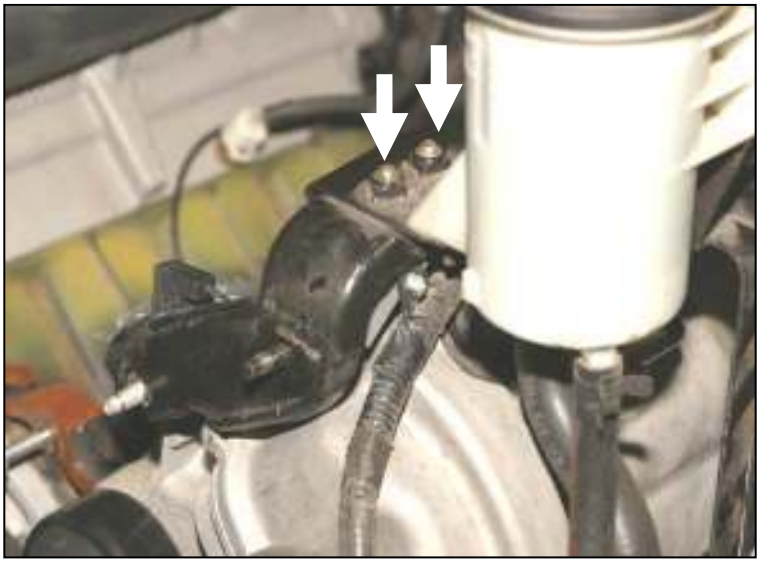
Z. Clean the intake port surfaces. Ensure dirt and debris does not fall into the ports while cleaning. Cover the cylinder head intake ports (tape is recommended) to prevent engine contamination.

AA. (2004 4x4 models ONLY) Remove the factory vacuum harness from the back of the manifold and set aside for use during build-up of the new intake manifold. The line which supplies vacuum to the 4x4 canister will be reused.



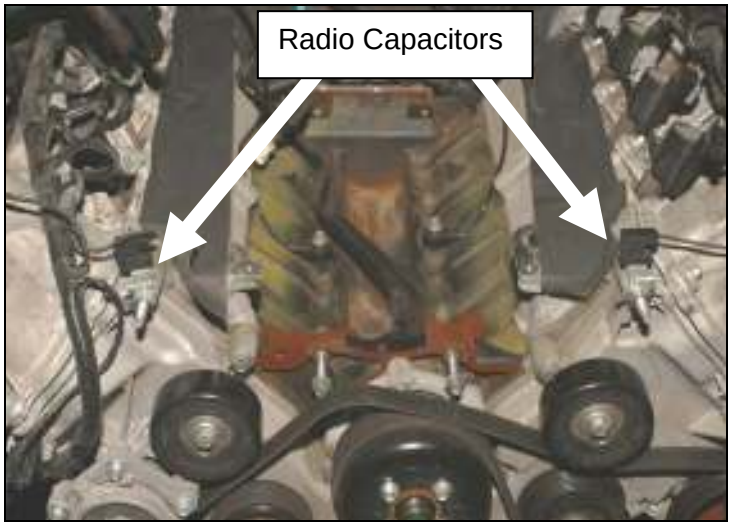
BB. Remove the 3/8" brake booster hose from the steel line (2004 models) or the 90-degree adapter (2005-08 models) located near the back of the driver side cylinder head and the dash panel. Cut and discard 4 inches from the new brake booster hose (1104-2B432-AA) and secure it to the steel line or the 90 degree adapter using the 8-16mm clamp (01266703013) from hardware kit C (R07040013). Route the hose under the wiring harness, then over the passenger side cam cover (2006 model shown below).

CC. Using a 13mm socket, remove the two power steering reservoir support bracket bolts (located on the underside of the bracket).

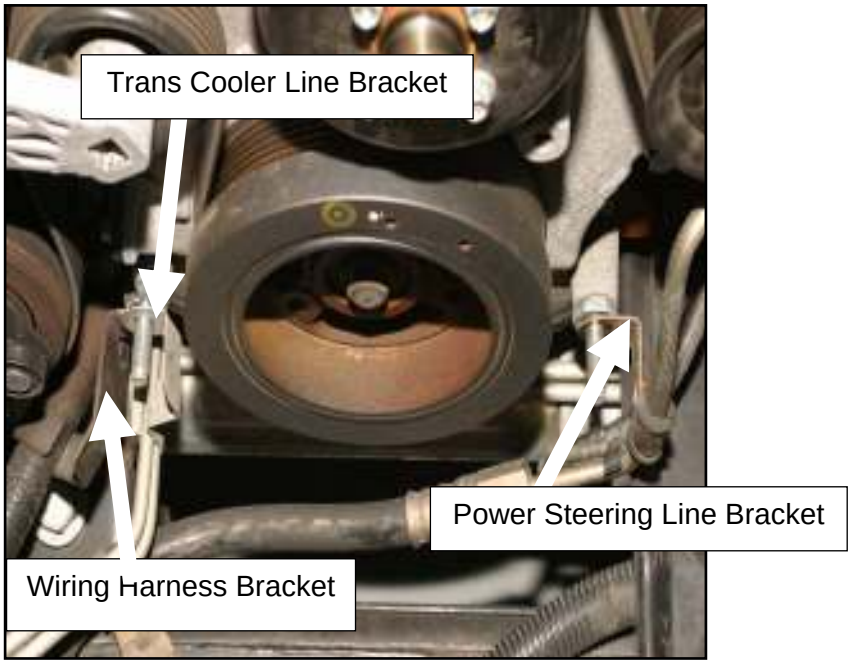


DD. Remove the wiring harness support clip from the front cover located above the tensioner and below the cam cover. This clip can be extremely difficult to remove; if necessary, cut the clip from the harness and use pliers to remove the remaining clip from the front cover. Then use a nylon zip tie, instead of the clip, to retain the harness at the completion of the build.

EE. Remove the two nuts attaching the radio capacitors to the front cover upper studs. Fold the radio capacitor wires back out of the way. These will be reinstalled later in the build.



FF. Remove the two nuts on the bottom right and left studs of the engine front cover. Slide the transmission cooler line bracket and wiring harness off of the passenger side stud and out of the way. Pull the power steering line bracket off of the driver side stud.



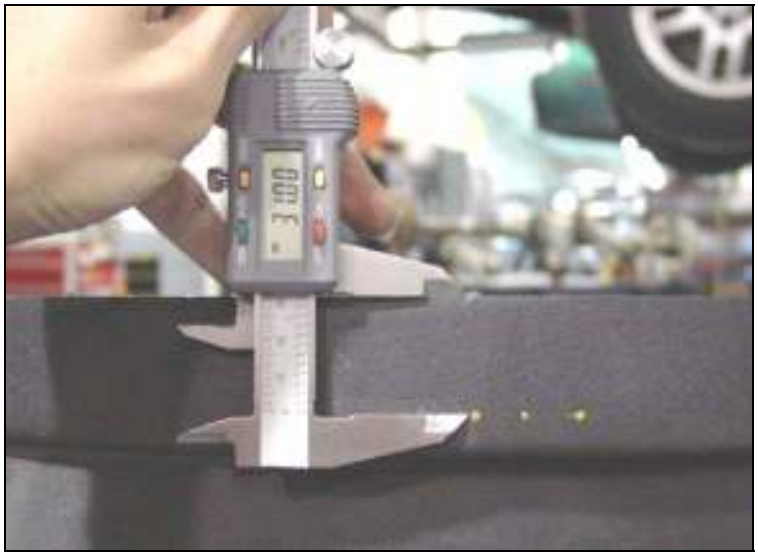
(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D - DISASSEMBLY OF 08 SUPLIMENTAL SUPERCHARGER KIT P/N R07020046** *on page 94*)

8. SECTION B - MODIFICATIONS

The following section will guide you through the required modifications of existing components used to complete the installation.

A. Fan Shroud Modification

a) Lay the fan shroud on a level surface with the radiator end down. Measure 31mm (1 7/32") from the top surface and mark all the way around the shroud.



b) Using a 3" cutoff wheel or other appropriate cutting tool, cut through the plastic shroud along the marked line. Eliminate all rough edges with an electric palm sander or file for a smooth, flat finish.

B. Vacuum Harness Modifications

2004 4x4 models ONLY:

a) Pull the previously marked 4x4 vacuum line out of the large rubber vacuum connector that was connected to the rear of the factory intake manifold.

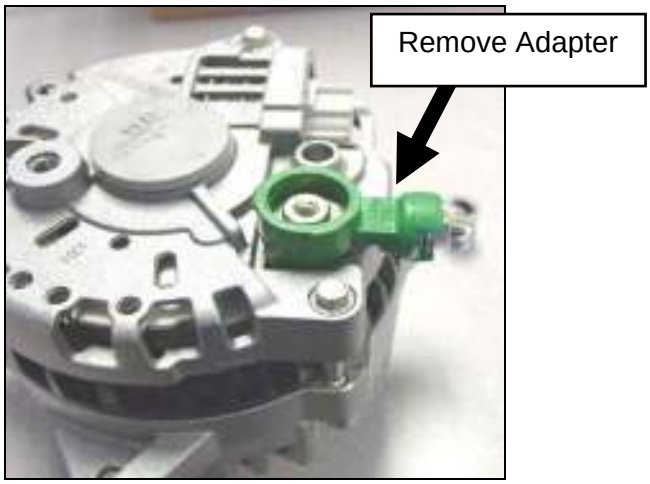
b) Remove the straight fitting and vacuum cap from the large rubber vacuum connector on the new supercharger bypass vacuum harness (R07040015) provided in hardware kit C (R07040013). Install the 4x4 vacuum line into the harness (in place of the straight fitting you just pulled out).

2005-up models ONLY:

a) Remove the factory vacuum line connecting the steel tube (brake booster line) to the IPTS. Install the vacuum cap (R07040003) from hardware kit C onto the open nipple on the brake booster steel tube.

C. Alternator Modification

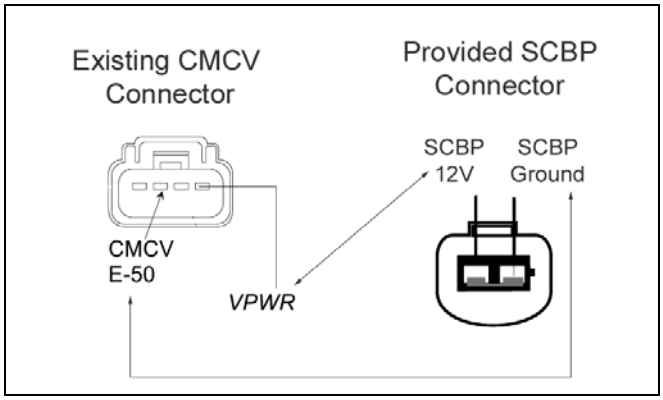
a) Remove the green plastic adapter and retain the nut for reuse.



D. Wiring Modifications

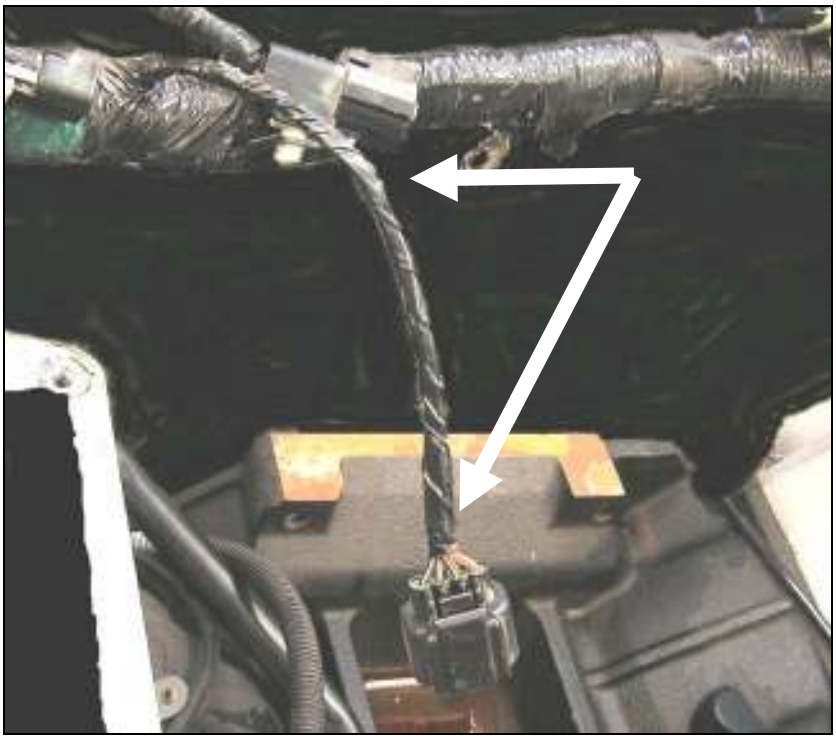
In order to properly control the supercharger system, four circuits in the vehicle need to be modified. Refer to the following connectors.

A) Supercharger Bypass Solenoid (SCBP)

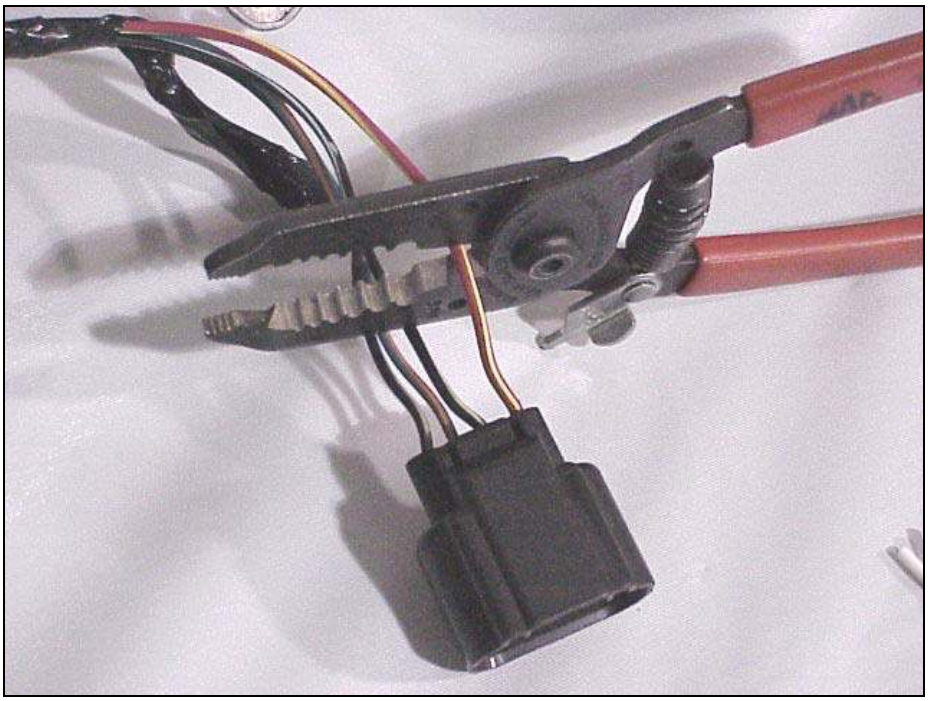


Note: Images are shown looking into the connector on the wiring harness.

a) Locate the 4-pin CMCV connector branching from the engine harness near the dash panel. Using a razor blade or sharp knife, carefully cut the insulating tape from the hard plastic convoluted tubing and remove the convoluted tubing from the wires.

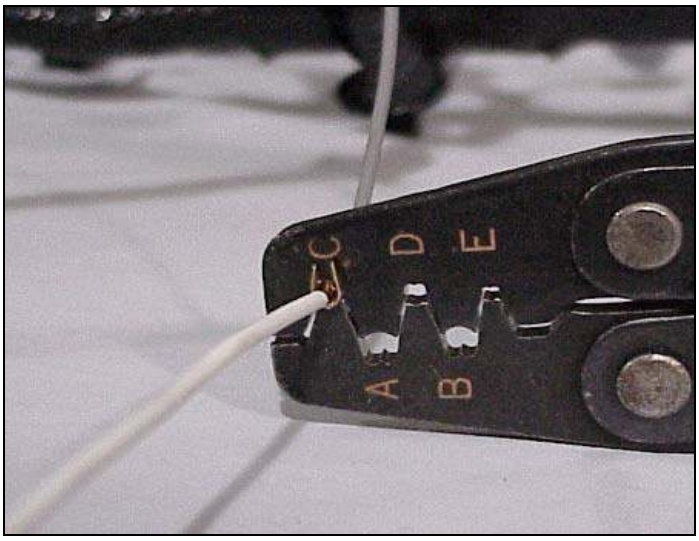


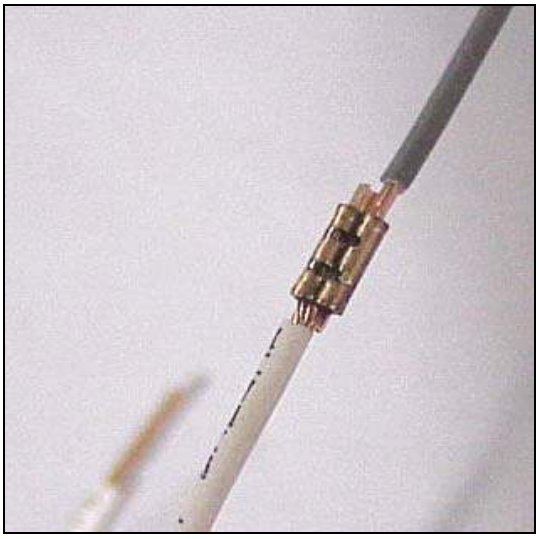
b) Approximately one inch from the CMCV connector, cut the red wire with yellow tracer (**VPWR**), and blue wire with orange tracer (**CMCV**) as shown below.



c) Strip approximately ¼" of insulation from the harness ends of both wires.

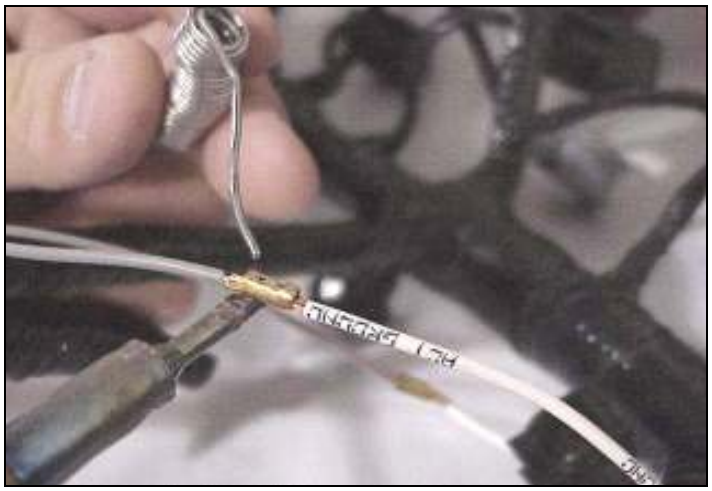
d) Using components provided with the bypass solenoid electrical jumper (R07080012), found in hardware kit E (R07080011), slide a short length of heat shrink tubing over the harness end of each wire. Lay the stripped end of the red wire with yellow tracer (**VPWR**) into one of the splice connectors provided. Lay the **SCBP 12V** wire from the bypass solenoid electrical jumper into the same splice connector and crimp using a W-type crimp tool.





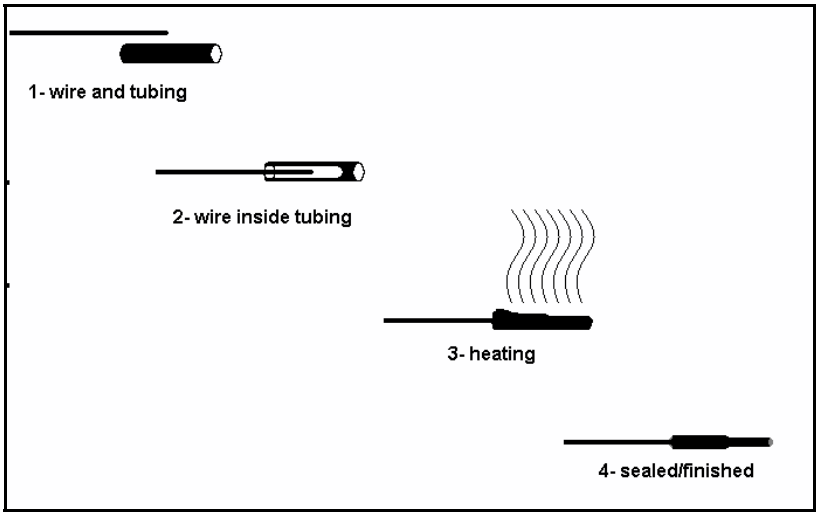
e) Repeat steps 3) and 4) to attach the blue wire with orange tracer (**CMCV**) engine harness wire to the **SCBP GROUND** wire from the bypass solenoid electrical jumper.

f) Using a clean soldering iron, heat the wire junctions until they are hot enough to melt the solder touched to them. Using the solder sparingly, solder all wire junctions.



g) Slide the heat shrink tubing over the wire junctions and heat gently with a heat gun or other suitable heat source to shrink and seal.

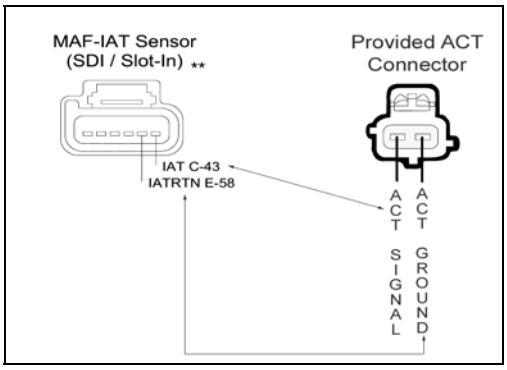
h) Cut the two remaining wires from the CMCV connector and seal the ends with supplied heat shrink tubing. Heat the shrink tubing with the wires inserted approximately halfway into the tube and squeeze the open end closed with a pair of pliers before it cools.



i) Push all four wires back into the convoluted tubing and rewrap the CMCV harness with electrical tape or harness wrap.

j) Slide the convoluted tubing supplied with the bypass solenoid electrical jumper over the uncovered portion of the SCBP wiring and secure it to the harness with pieces of tape spaced six inches apart.

B) Air Charge Temp (ACT) Sensor



Note: Images are shown looking into the connector on the wiring harness.

a) Locate the 6-pin MAF wiring harness/connector branching from the engine harness above the driver side valve cover. Using a razor blade or sharp knife, carefully cut the electrical tape and pull back the convoluted tubing to gain access to these wires.

b) Approximately two inches from the connector, cut the gray wire (labeled **IAT** in the drawing above) and the gray wire with red tracer (labeled **IATRTN**).

c) Using components provided with the ACT electrical jumper (1104-12B637-BA) found in hardware kit E, follow the same procedure used for the SCBP wiring to crimp and solder the **IAT** to **ACT SIGNAL**, and **IATRTN** to **ACT GROUND**, and seal with heat shrink tubing.

d) Wrap the full length of the exposed ACT wiring with electrical tape or wire harness wrap.

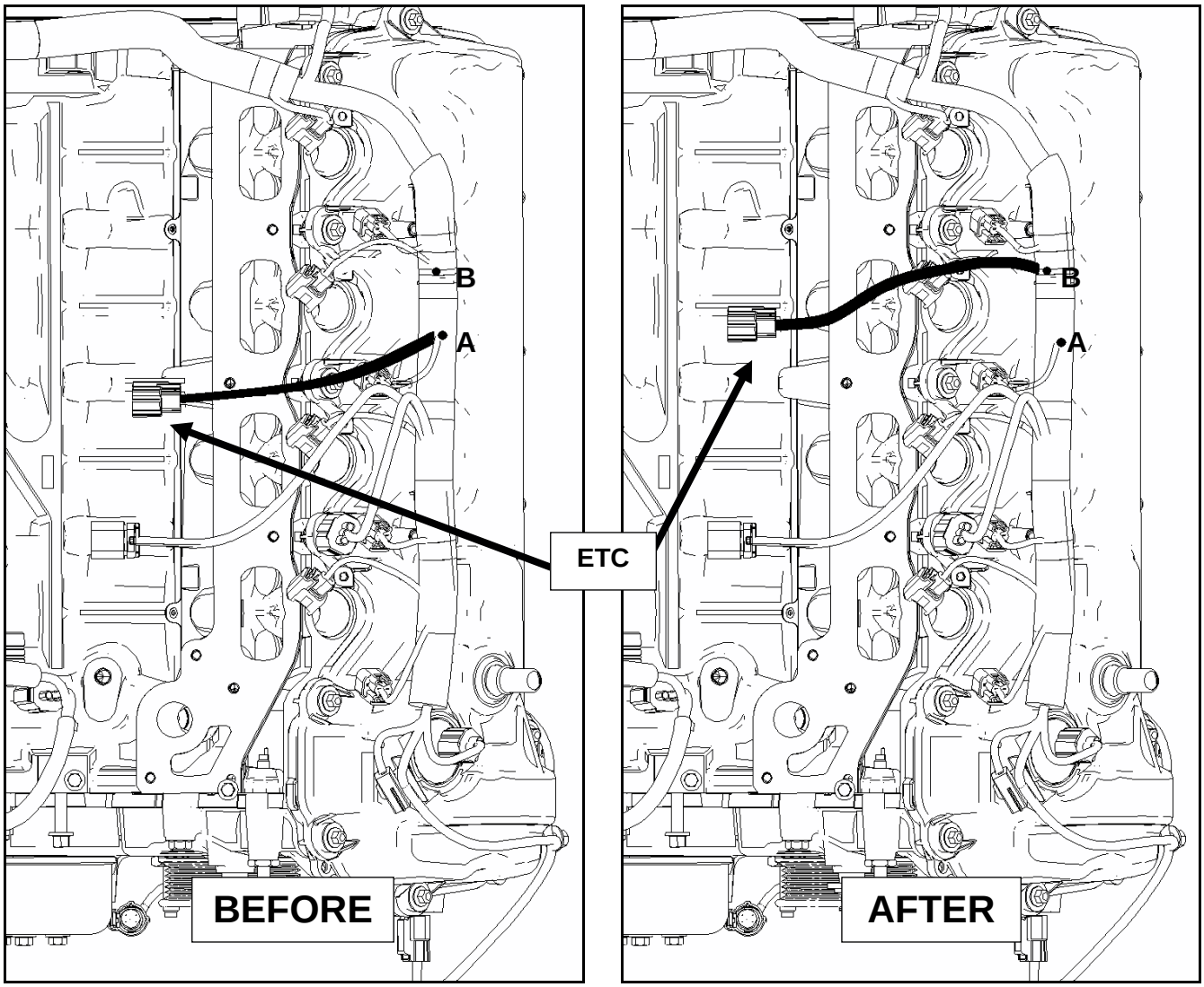
e) Seal the wire ends left attached to the MAF connector with heat shrink tubing (same procedure as step h) of the previous section).

f) Push the wires back into the convolute, and rewrap the MAF harness with electrical tape or harness wrap.

C) Electronic Throttle Control (ETC) Connection

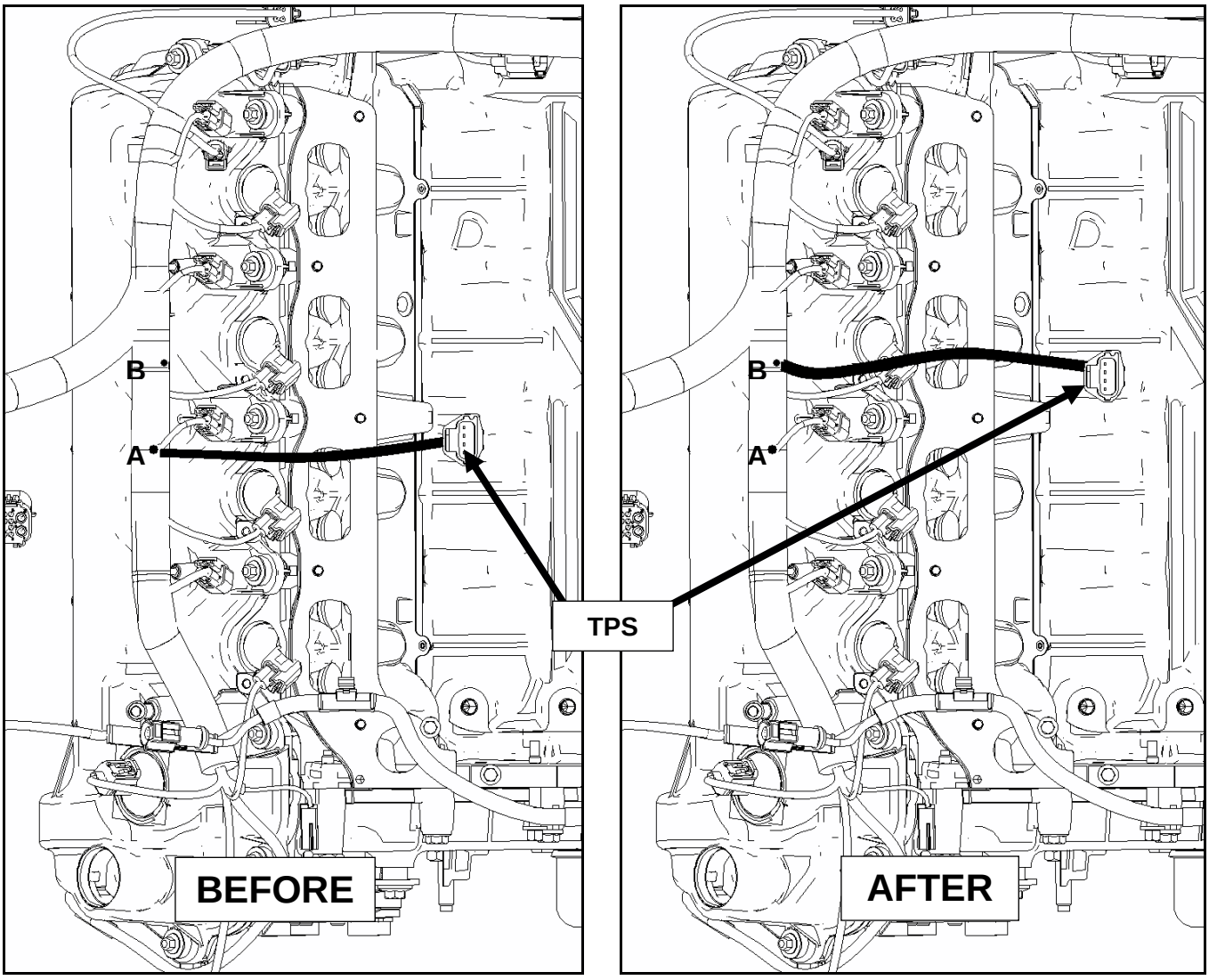
a) Locate the 2-pin ETC wiring harness/connector branching from the engine harness above the driver side valve cover. Using a razor blade or sharp knife, carefully cut the electrical tape and pull back the convoluted tubing to gain access to these wires.

b) Pull approximately 2 ½" of the two ETC wires free from the harness, allowing the breakout point of the wires to be relocated from point A to B as shown. Wrap the full length of the exposed ETC wiring and the opened engine harness with electrical tape or wire harness wrap.



D) Throttle Position Sensor (TPS) Connection

a) Locate the 4-pin TPS wiring harness/connector branching from the engine harness above the passenger side valve cover. Repeat steps 1 and 2 to gain approximately 2 ½" of wire length.



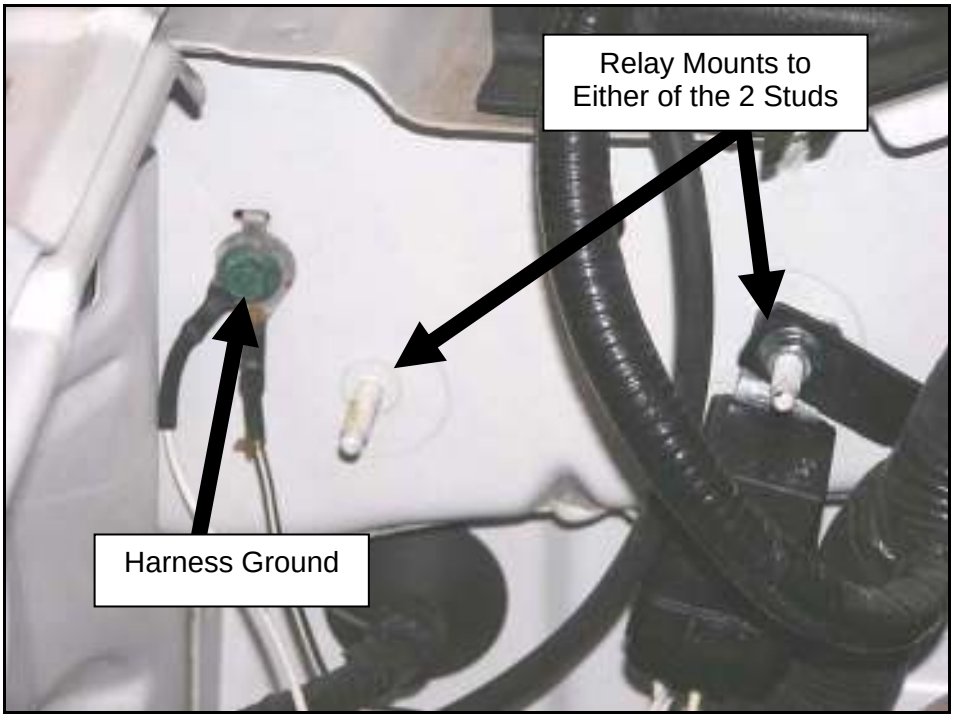
E. Intercooler Pump Harness

a) Disconnect the two positive battery leads from the main positive battery cable by removing the 10mm nut that secures them.

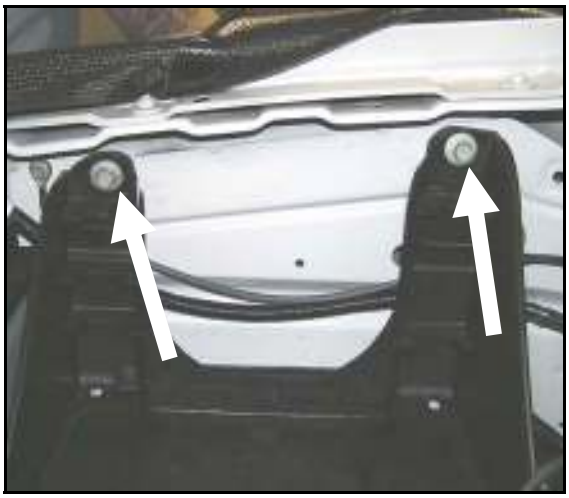
b) Remove the positive battery cable, battery cover, battery clamp and the battery.

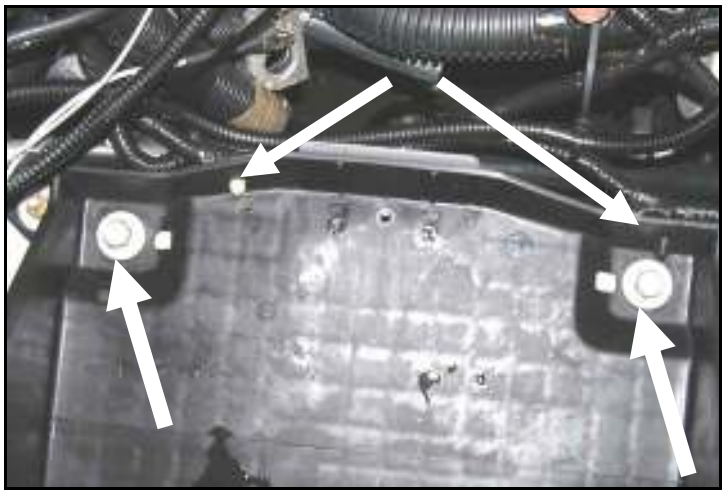
c) Mark the upper forward corner of the battery cover approximately ½" from the top and side. Drill a ¼" hole in the cover at the mark.

d) Using the M6 nut (W520412-S309) found in hardware kit E, mount the relay portion of the intercooler pump electrical jumper (R07080013) to the stud that is protruding from the dash panel near the battery. Remove the green ground screw next to the relay, and fasten the harness ground wire with the other vehicle ground wires.

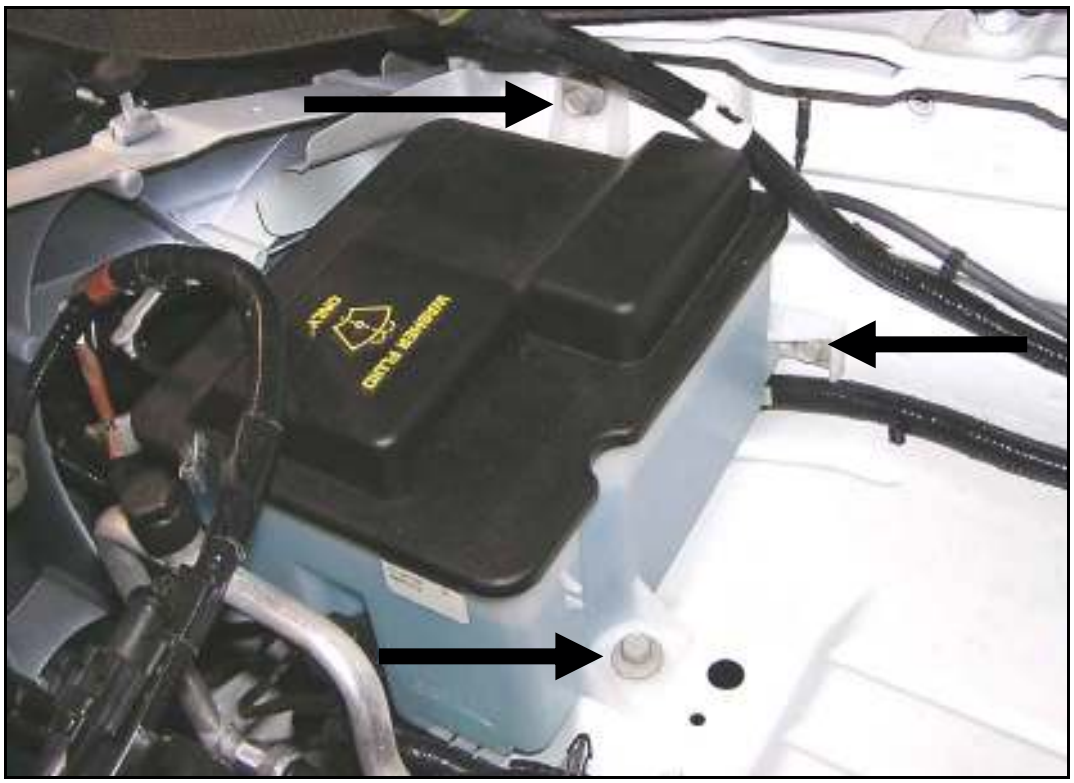


e) Disengage the two push pins securing the harness to the engine-side of the battery tray. Remove the four bolts holding the battery tray and pull it from the truck.



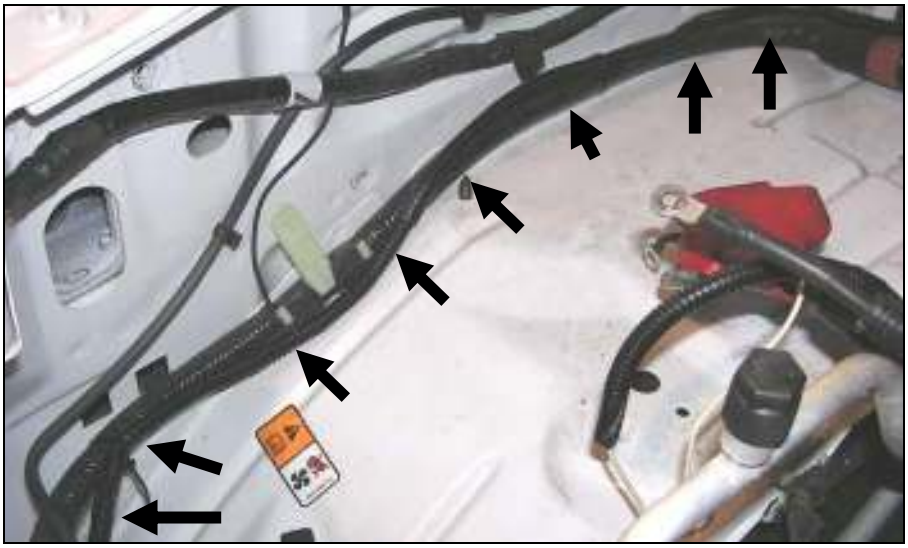


f) Remove the three bolts holding the windshield washer fluid reservoir and lean it toward the engine.



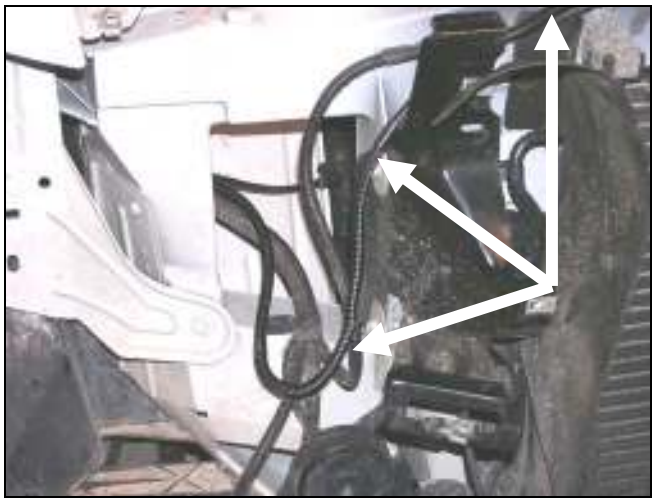
g) Following the factory harness, route the pump branch of the harness from the dash panel-mounted relay behind the battery tray and windshield washer fluid reservoir.

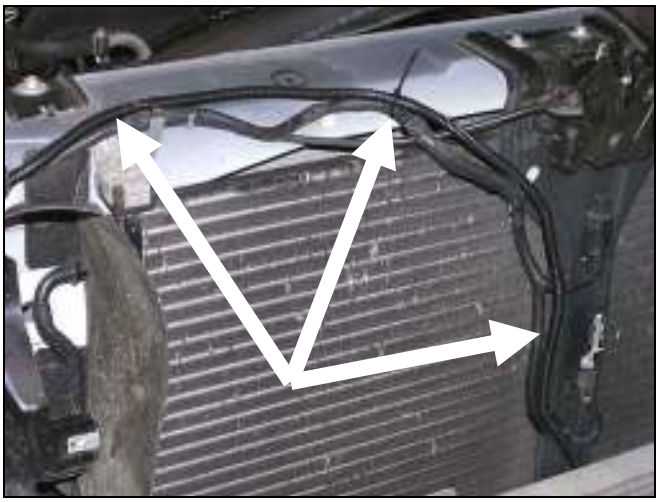
Note: The windshield washer fluid reservoir has been removed for clarity in the picture below.



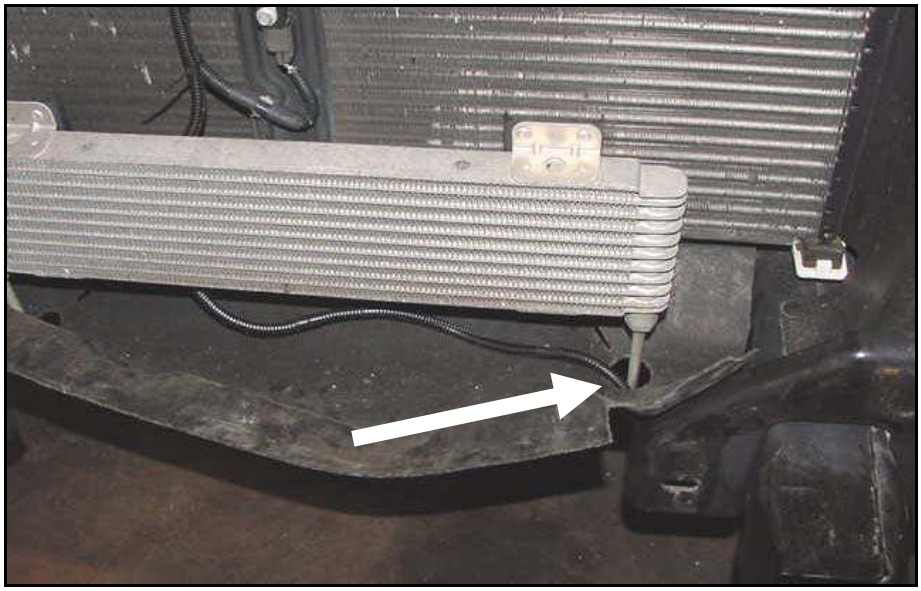
h) Continue to follow the factory harness though the large opening behind the headlamp, across the top of the A/C condenser core, and then down the center support to the crash sensor. Secure the intercooler pump harness to the factory harness using zip ties.

Note: The passenger side headlamp has been removed for clarity.





i) Continue to route the harness down the center support and secure with zip ties. Run the harness toward the driver side on top of the close-out panel and route it through the existing transmission cooler line hole.



j) Reinstall the windshield washer fluid reservoir and battery tray; ensure that the push pins are reinserted into the engine-side of the battery tray. Torque bolts to 25Nm (18.5lb-ft).

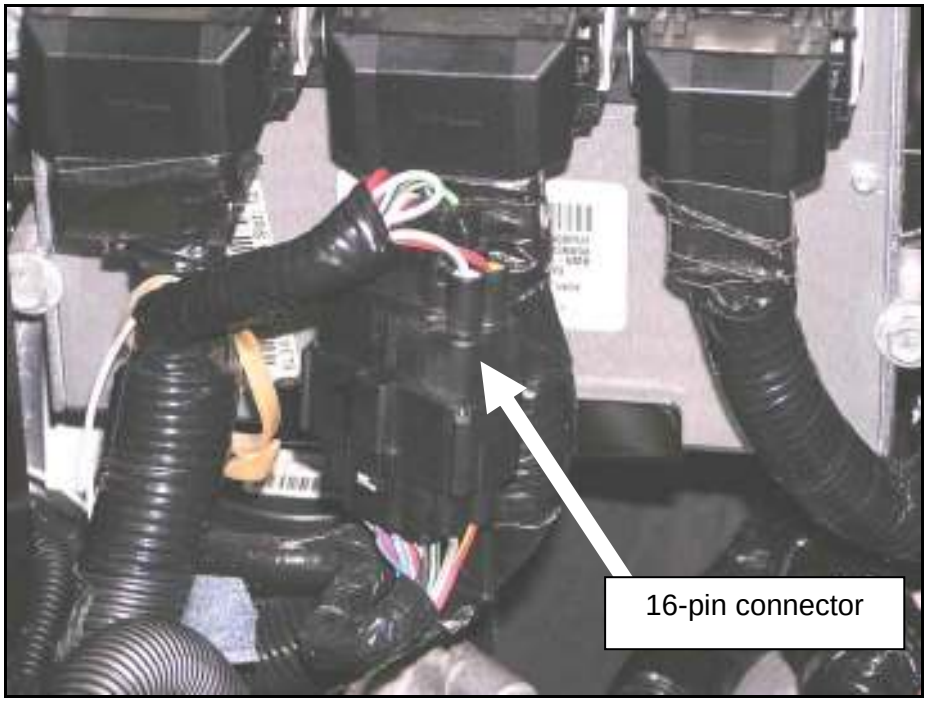
k) Route the fuse holder branch of the intercooler pump electrical jumper along the existing harness which is mounted to the engine-side of the battery tray. Secure the new harness to the factory harness with zip ties.

l) Place the battery cover over the battery and reconnect the positive cable. Slide the eyelet on the lead from the fuse holder into the battery terminal cover and place it on the cable stud.

m) Reconnect the other positive cables to the terminal in the same order and orientation as removed. Torque the nut to 10Nm (7.5lb-ft).

n) Drill the existing hole in the tab of the fuse holder to ¼" and using the push pin (R18130001) supplied in hardware kit E, secure the fuse holder to the hole previously drilled in the corner of the battery cover.

o) Route the single wire labeled **S22** branching from the relay to the PCM connector area following the factory wiring harness. Secure the wire to the harness with tape or zip ties. Locate the 12-pin (2004/5) or 16-pin (2006) inline connector in front of the center PCM connector. Carefully remove the three inch piece of convoluted tubing covering the wire on the top side of the connector (2006 model shown).



p) Locate the red with yellow tracer wire in pin location 4 (2004/5) or pin location 15 (2006). Cut this wire approximately 1 ½" behind the connector. Strip approximately ¼" of insulation off each end of the cut wire.

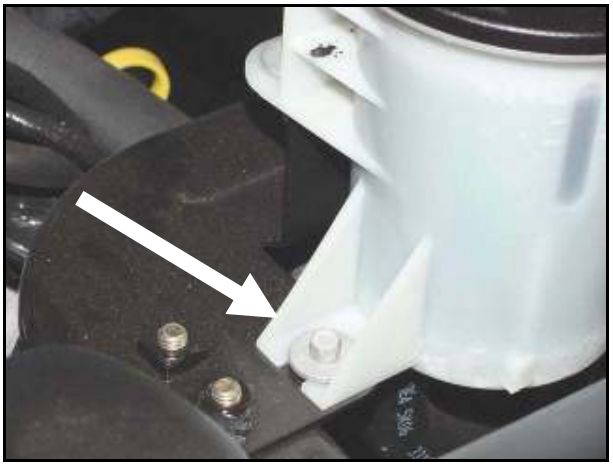
q) Slide a piece of heat shrink tubing over the harness side of the red with yellow tracer wire. Slide the **S22** wire through the same piece of heat shrink tubing.

r) Using a splice connector, crimp the red with yellow tracer wires and the **S22** wire together. Refer to the SCBP wiring section for wire crimping details. Solder the splice.

s) Slide the heat shrink tubing over the splice and heat to seal.

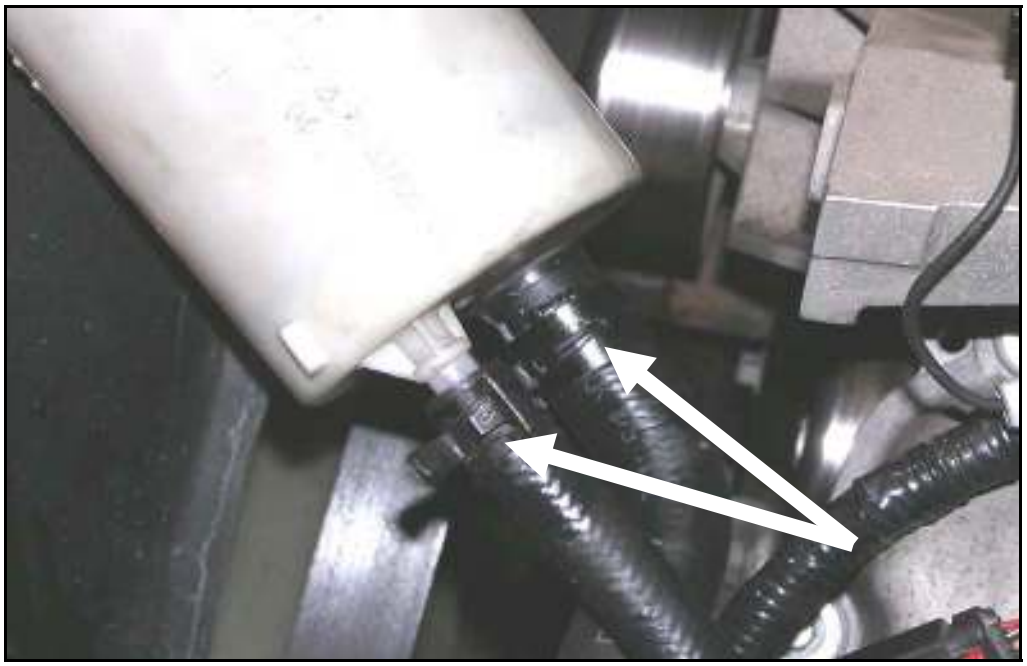
F. Power Steering Reservoir Relocation

a) Remove the three power steering reservoir mounting bolts.

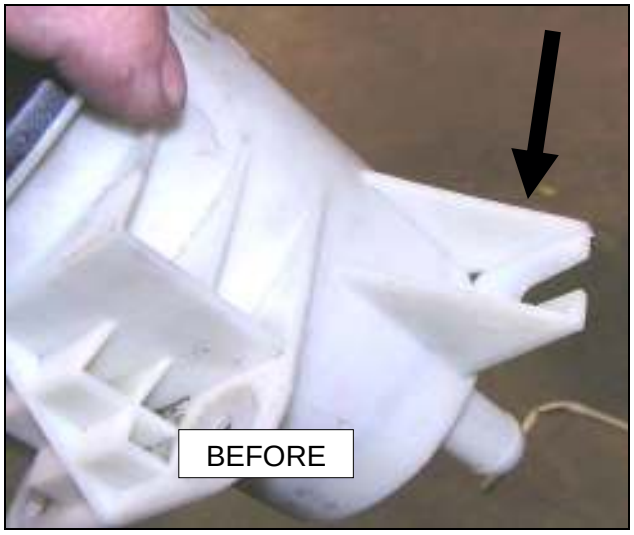


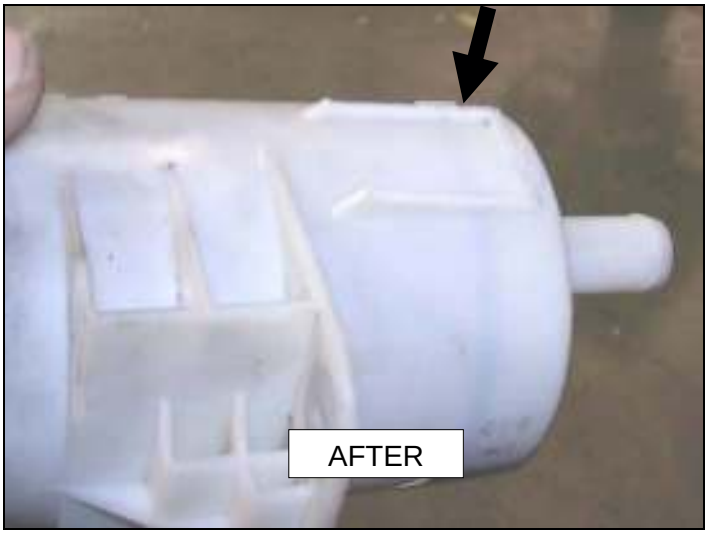
b) Remove the power steering reservoir cap and tilt the reservoir to empty the fluid into a clean container.

c) Release the clamps on the 3/8” ID and the 5/8” ID hoses on the bottom of the reservoir and remove the hoses.



d) Carefully remove the reservoir’s side mounting bracket using a suitable saw or cutting tool.





e) Install the 3/8" ID extension hose (R06010003) into the factory 3/8" ID power steering hose and secure it with the 3/8" hose clamp provided in the intercooler tube and hose kit (R07070018). Cover the lower portion of the hose with the ¾" convoluted tubing which is also provided in the hose kit.

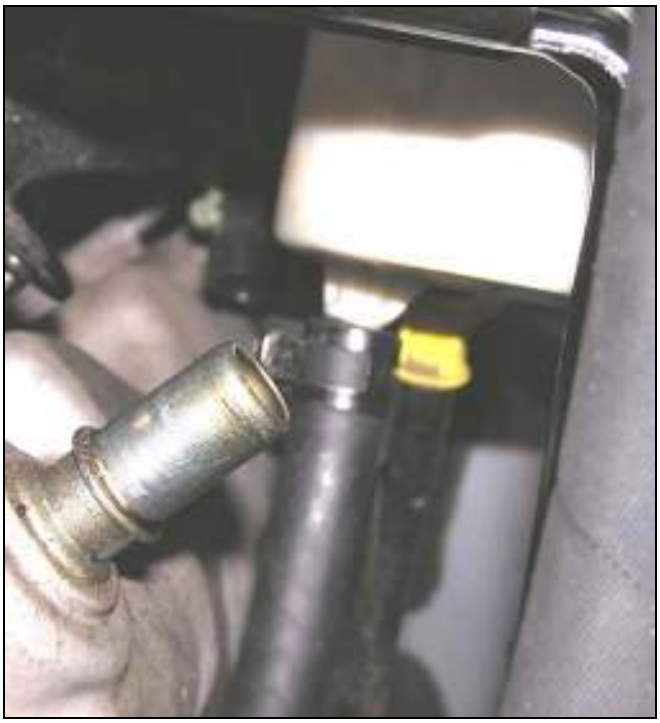
f) Completely remove the factory 5/8" ID power steering hose. Connect the new 5/8" ID power steering hose to the power steering pump and secure using a new 5/8" hose clamp. This hardware can be found in the intercooler tube and hose kit.

g) Thoroughly clean the top of the factory power steering reservoir mounting bracket using brake cleaner or rubbing alcohol. Place the supplied piece of double-sided tape (R18120002), found in hardware kit D (R07020023), on the driver side top rear corner.

h) With the weld nuts facing down, fasten the power steering reservoir relocation bracket (R07020024) to the factory bracket using the bolts originally removed from the reservoir. Torque to 10Nm (7.5lb-ft)

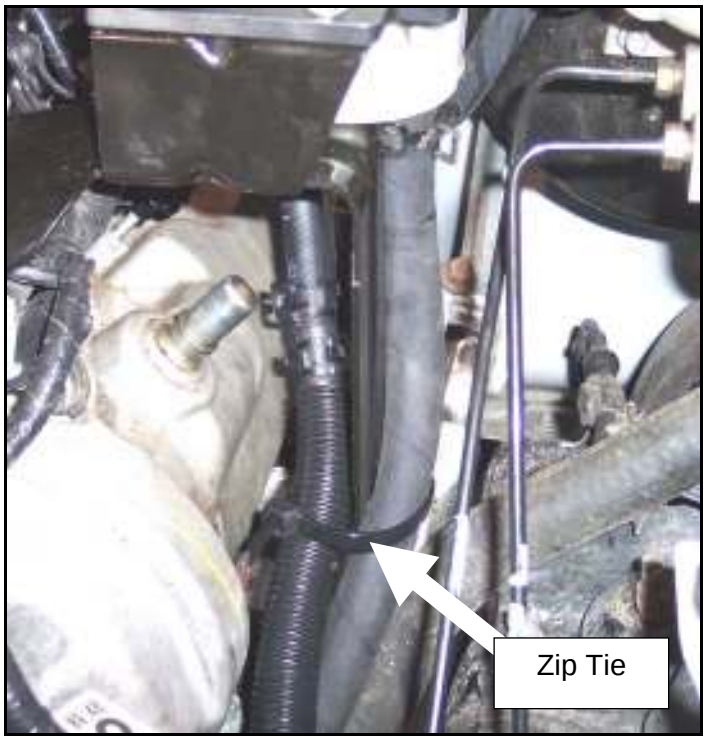
i) Peel the top of the double-sided tape and fasten the reservoir to the new bracket using the two M6x35mm bolts (R18020009) supplied in hardware kit D. Torque to 10Nm (7.5lb-ft)

j) Route the 3/8” ID power steering hose between the reservoir bracket and the valve cover. Install the hose onto the reservoir and secure it using the original hose clamp.



k) Route the 5/8” ID power steering hose around the outside of the reservoir bracket. Secure it to the reservoir using the supplied 5/8” hose clamp.

l) Secure the power steering hoses to the reservoir bracket using a zip tie.



m) Refill the power steering reservoir.

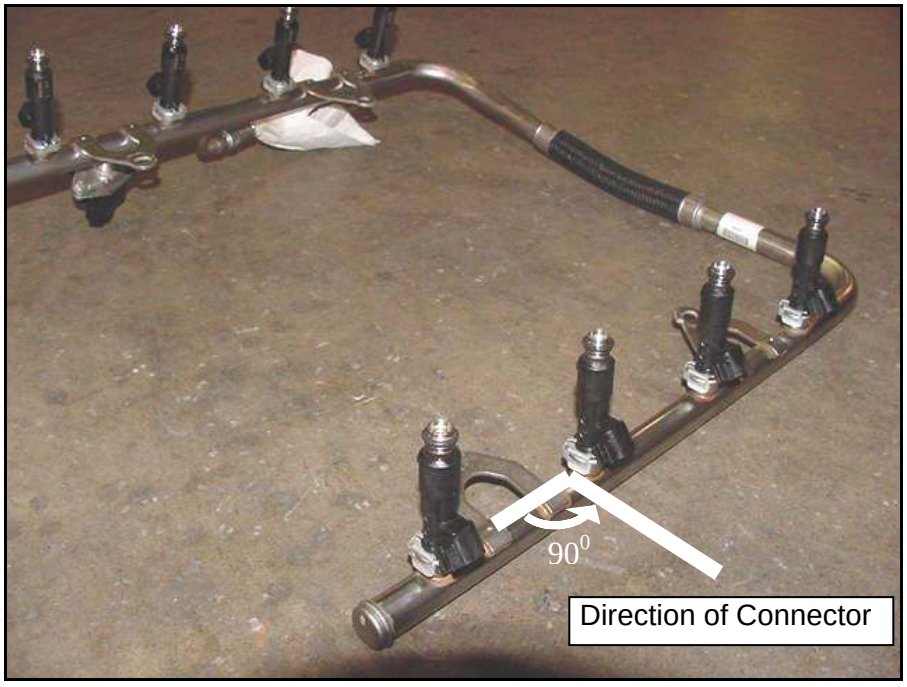
(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D - INSTALLATION OF 07-08 SUPLIMENTAL SUPERCHARGER KIT** *on page 95*)

9. SECTION C - ASSEMBLY

A. Fuel Rail Assembly

a) Remove the eight factory fuel injectors and retaining clips from the factory fuel rail.

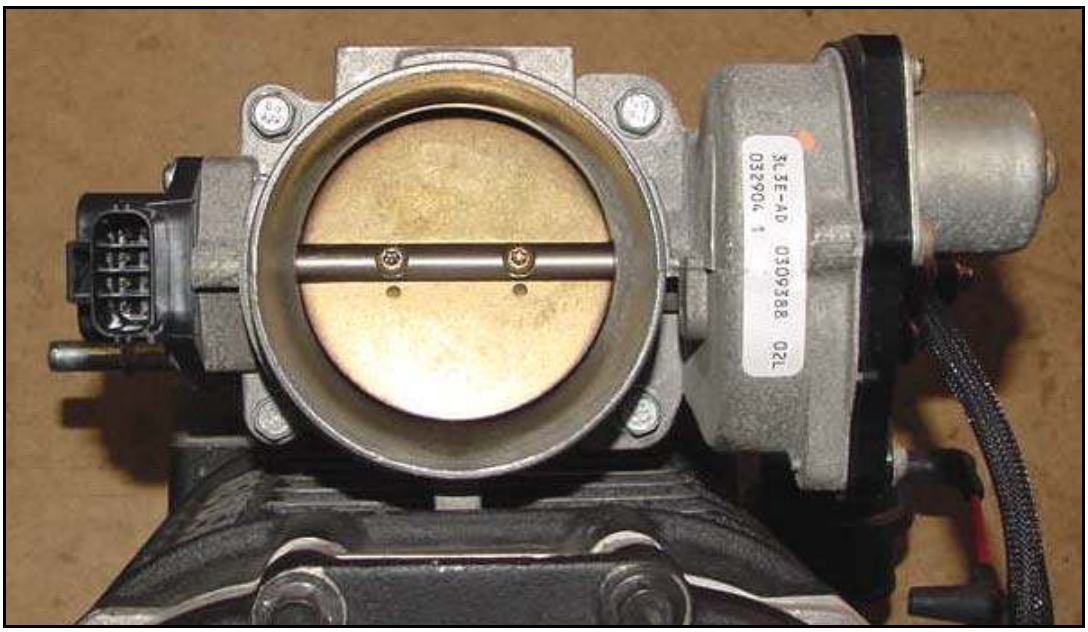
b) Lubricate the fuel injector o-ring seals with a suitable lubricant and carefully push the new fuel injectors (R07110002), found in hardware kit A (R07060057), into the injector cups on the rail. Ensure that each injector's electrical connector is pointed outward, 90 degrees relative to the fuel rail.



B. Supercharger Assembly Buildup

a) Place the supercharger to spacer gasket (R07050009) on the supercharger (R07050044). Bolt the throttle body spacer (1104-9A589-AA) onto the supercharger using the four M6x33mm bolts (N808429-S437) from hardware kit A, and torque the bolts to 10Nm (7.5lb-ft).

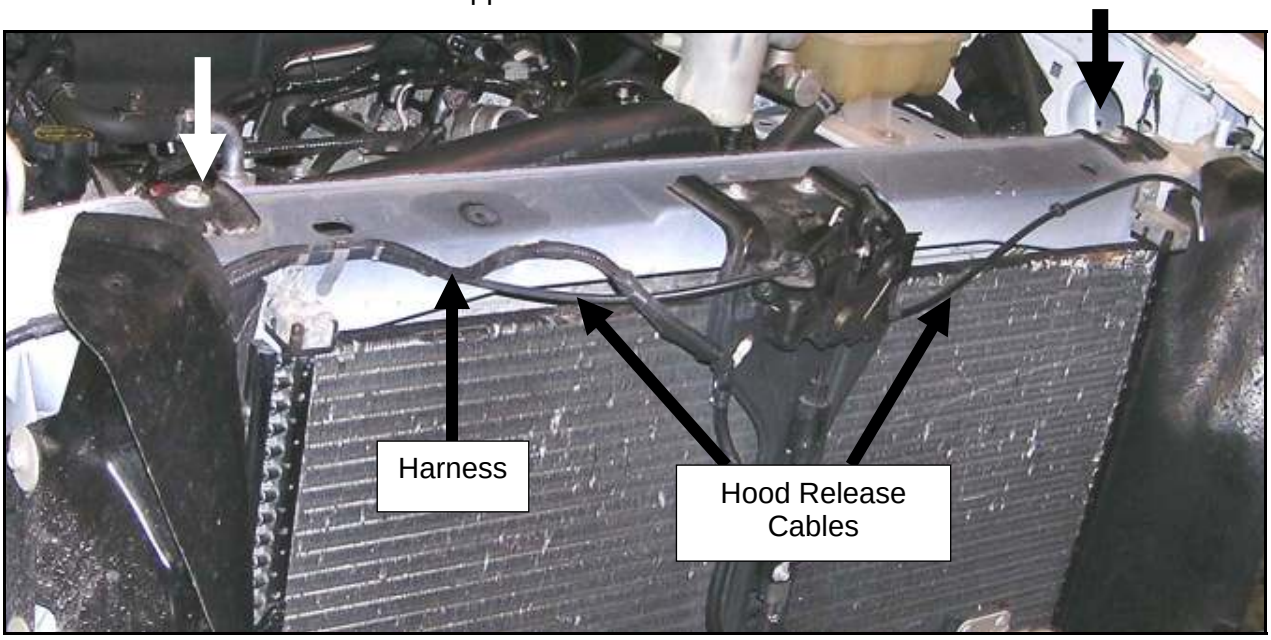
b) Install the throttle body onto the spacer using the carry over gasket (blue o-ring) and fasteners. Torque the bolts to 10Nm (7.5lb-ft).



c) Lubricate the o-ring on the heated PCV fitting and install it into the driver side of the throttle spacer using the takeoff bolts. Torque to 5Nm (3.5lb-ft).

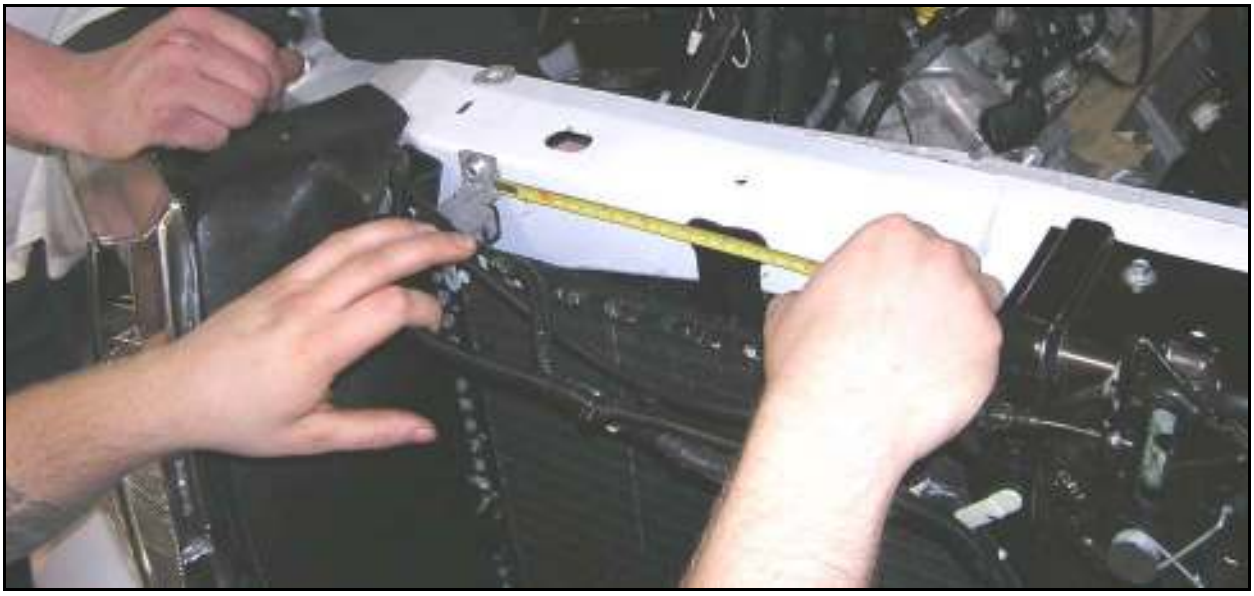
C. Intercooler Low Temperature Radiator (LTR) Installation

a) Remove the bolts which retain the upper radiator mounts to the core support. Twist the mounts out of the way and lean the radiator toward the engine. Unclip the harness and hood release cable retainers from the core support above the condenser.



b) Install the LTR inlet (23 ¾") and LTR outlet (30 ¾") hoses onto the LTR (R07060072). Secure using ¾" hose clamps.

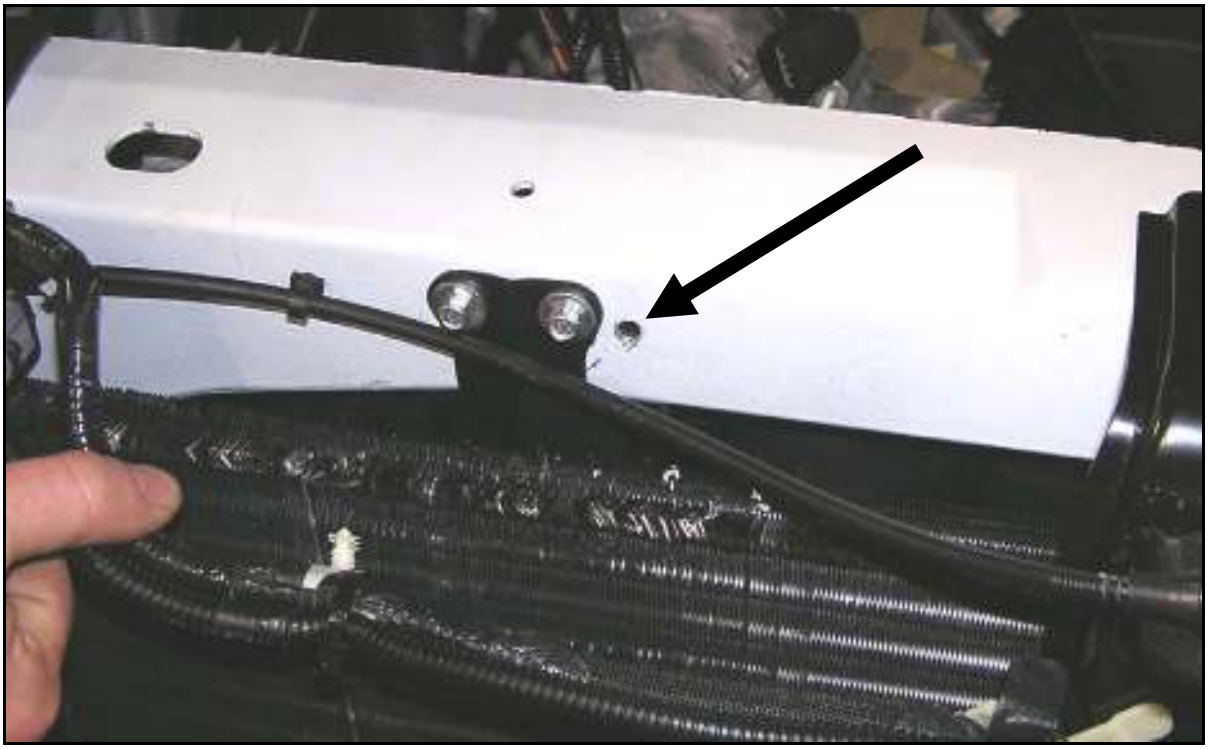
c) Slide the LTR, with the brackets facing forward, between the radiator and the condenser so that the mounts are on the front side of the core support and the gussets connecting the mounts to the LTR are pressed up against the bottom of the core support. Position the LTR 4 7/8" from the outside edge of the passenger side LTR mount to the inside edge of the passenger side condenser mount.



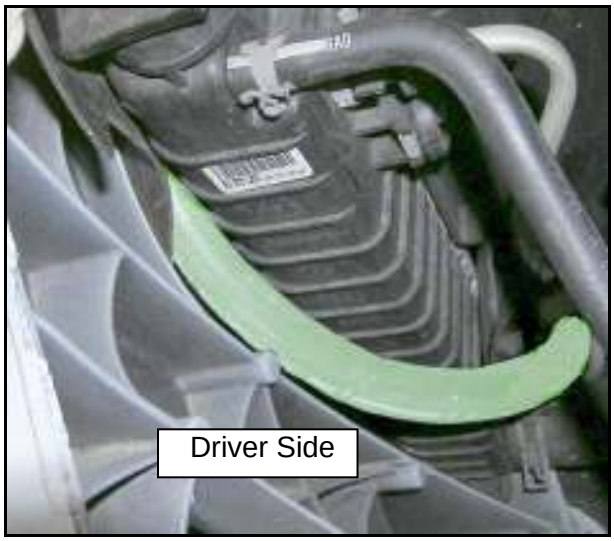
d) Mark the 4 mounting holes and then remove the LTR. Center punch the markings and then drill through the core support with a ¼" drill bit.

e) Position the LTR back over the holes and secure with the four LTR mounting bolts (R18020009) and four LTR mounting nuts (W520412-S309), provided in hardware kit G (R07070020). Torque to 10Nm (7.5lb-ft).

f) Drill a ¼" hole directly beside the passenger side LTR mount and use it to reattach the harness push pin to the core support. Reattach the hood release cable clips to the core support.



g) Pull the radiator back into the original mounting location. Make sure that the LTR hoses are routed downward, following the curve of the core support, to a point where they can come around the radiator without being crushed by the radiator end caps (hoses highlighted for clarity).



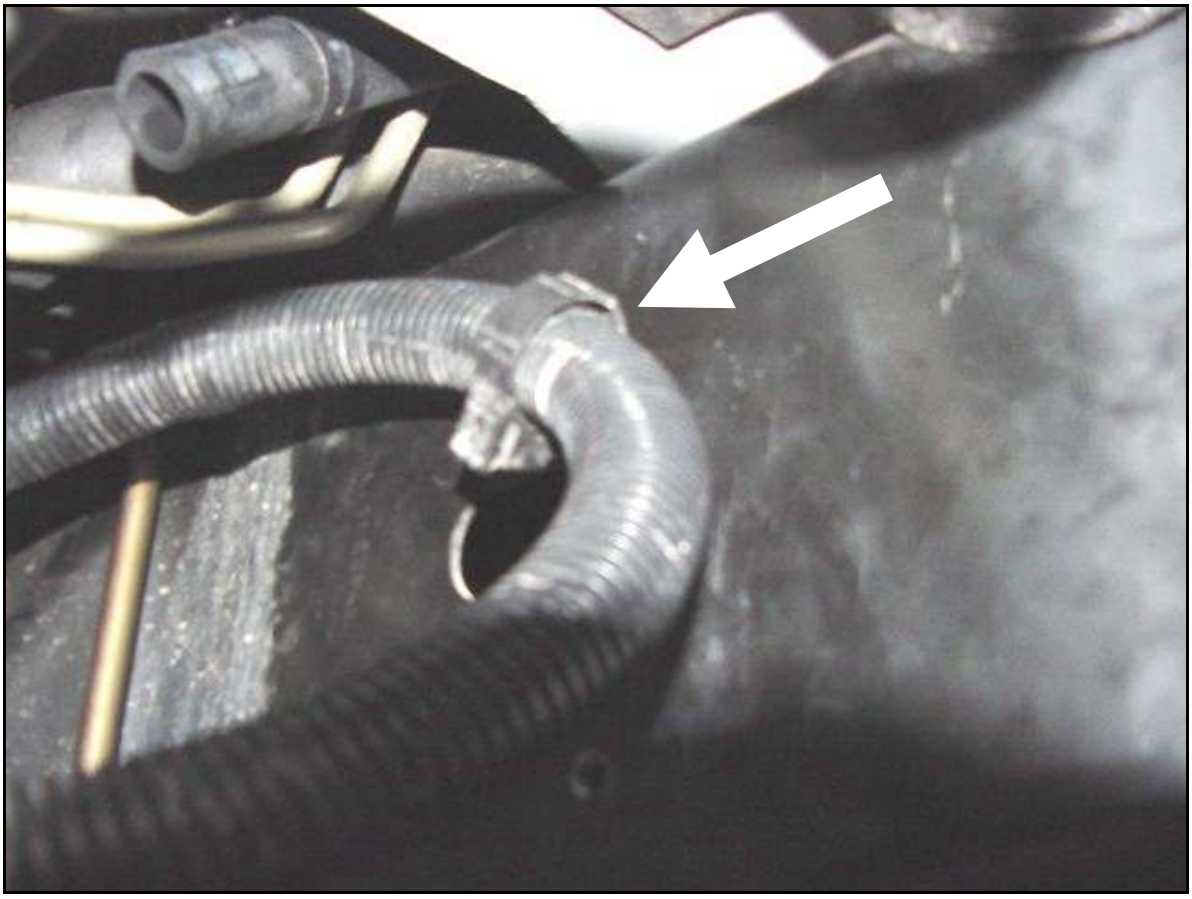
h) Re-install the upper radiator mounts.

i) Route the LTR inlet hose around the radiator, down over the transmission cooler line, and over the lower radiator hose, staying close to the radiator (hose highlighted for clarity).

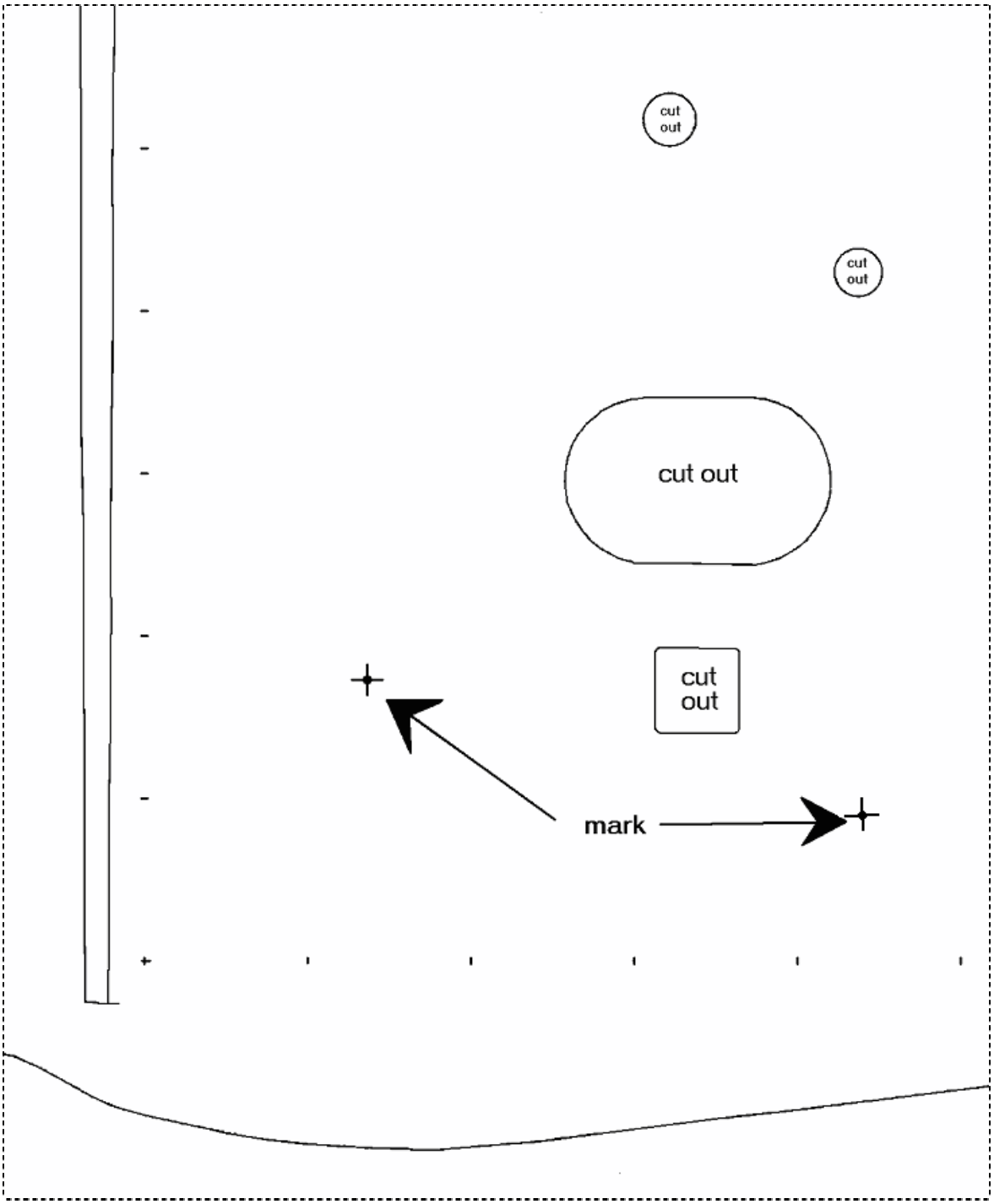
D. Intercooler Pump Installation

a) Safely raise the vehicle.

b) Under the radiator, remove the power steering line and retaining clip from the inside of the driver side frame rail.

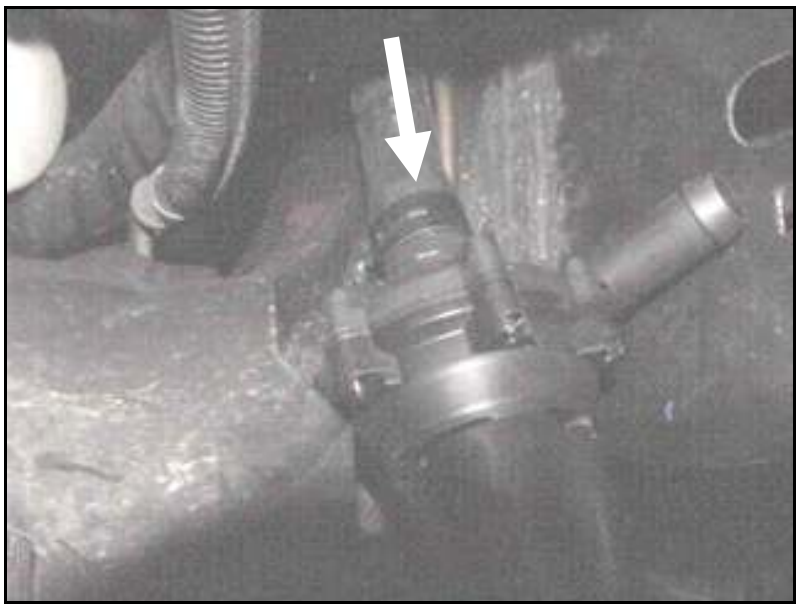


c) Cut out and use the following template to locate and center punch the location for the intercooler pump bracket mounting holes.



d) Drill two ¼" holes in the previously marked locations.

e) Install the degas bottle outlet hose (25 ¼") onto the nose of the intercooler pump (F8YZ-8501-AA). Secure the hose using a ¾" hose clamp. Put the intercooler pump into place, routing the degas outlet hose under the lower radiator hose and up into the engine compartment.



f) Connect the LTR inlet hose to the side of the intercooler pump. Secure it using a ¾" hose clamp.

g) Slide the intercooler pump bracket (R07070015), found in hardware kit G (R07070020), over the intercooler pump and fasten it to the frame using one of the self-tapping M8x27mm screws (N802455-S2), from hardware kit G.

h) Install the ground eyelet from the intercooler pump harness under the other supplied self-tapping M8x27mm screw. Torque both of the screws to 20Nm (15lb-ft).

i) Secure the intercooler pump to the intercooler pump bracket using the M8x25mm bolt (W500224-S437) and M8 nut (W520413-S309) from hardware kit G.

j) Connect the intercooler pump harness to the intercooler pump.

k) Fasten the power steering line, removed in step B, to the intercooler pump bracket using a zip tie.

E. Spark Plugs

Note: The required Spark plugs have not been packaged in this kit. Please follow the instruction in Section A, pg. 20 & 21, to send us your PCM for reprogramming. Depending on the engine code and build date information, new spark plugs, if required, will be shipped with your reprogrammed PCM. Using improper spark plugs may cause damage to your engine and void your warranty (See Notes on page 2 & 21)

a) Unplug the eight ignition coils; remove the 8 coil bolts and coils using a 7mm driver.

Left Bank Shown with First Coil Removed

b) Remove the spark plugs using a 9/16" spark plug socket and suitable extensions.

c) Install the new spark plugs (see Note above) using a 9/16" spark plug socket and suitable extensions. Torque the plugs to 35Nm (25lb-ft).

Note: It is very important to properly torque the spark plugs.

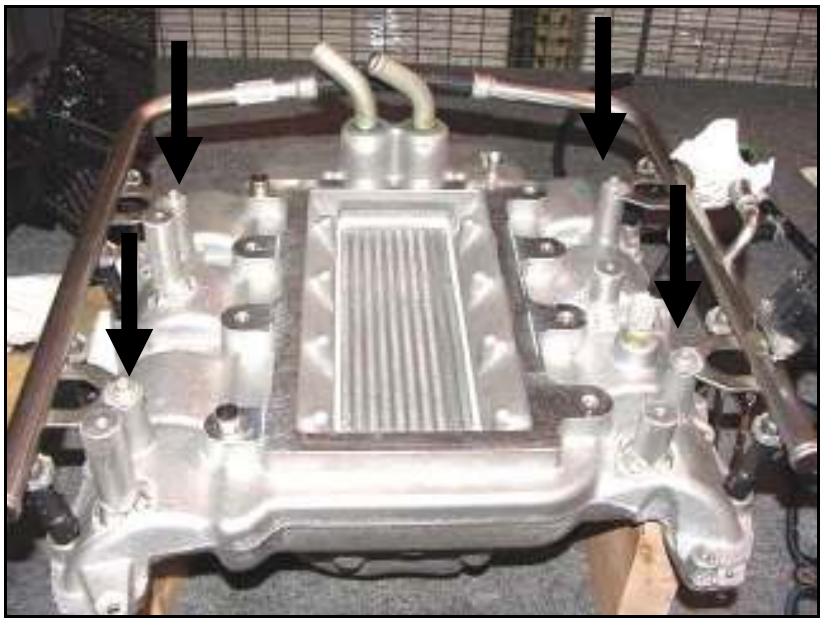
d) Reinstall the coils. Torque bolts to 5Nm (3.5lb-ft). Plug in the coils.

F. Intake Manifold Build-Up

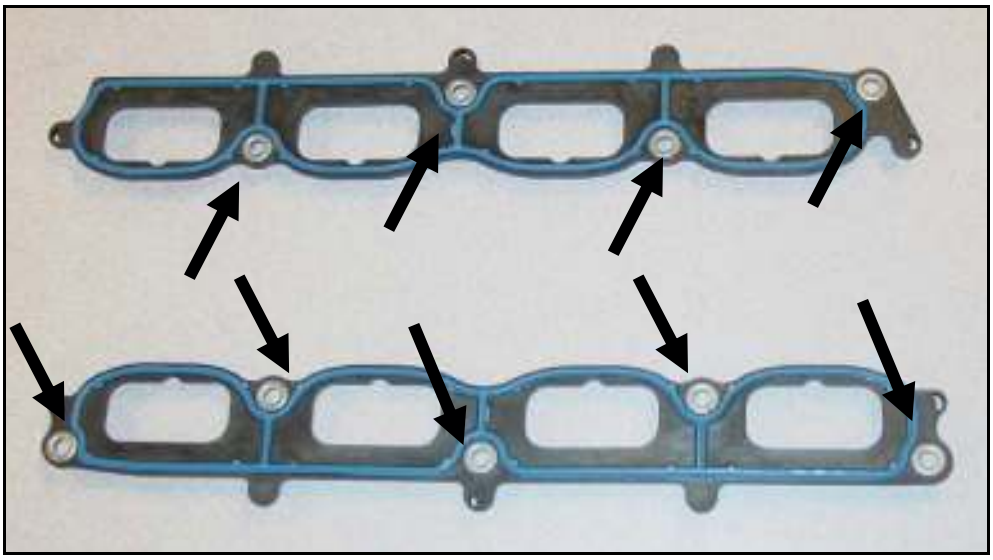
a) Remove the fuel charging assembly (R07060082) from its packaging and place it upside-down on a workbench. Take care not to damage the ACT sensor (R07090044) on the top of the manifold.

b) Install and clamp the PCV hose (R07040001) from hardware kit C, to the 90 degree pipe plug fitting (391273-S100).

c) Lubricate all eight injector pockets and fuel injector o-rings using clean motor oil. Place the fuel rail, with injectors, over the injector pockets in the manifold with the crossover tube portion of the fuel rail near the intercooler water tubes. Carefully press the injectors into the pockets and fasten the rail using the take-off fuel rail bolts. Torque the bolts to 10Nm (7.5lb-ft).



d) Insert the nine metal crush limiters (1104-9439-AA) from hardware kit A, into the take-off intake manifold to cylinder head gaskets as shown.



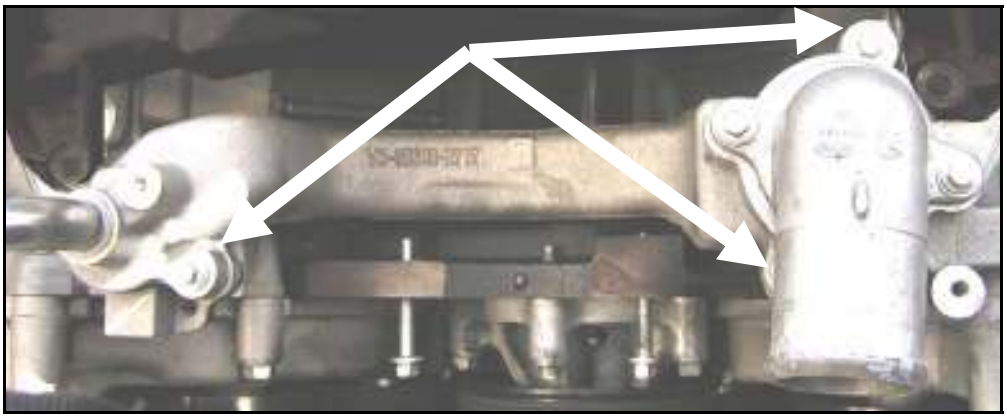
e) Place the intake to head gaskets onto the intake. The retainers molded into each end of the gasket will hold the gasket to the intake.

G. Intake Manifold and Supercharger Installation

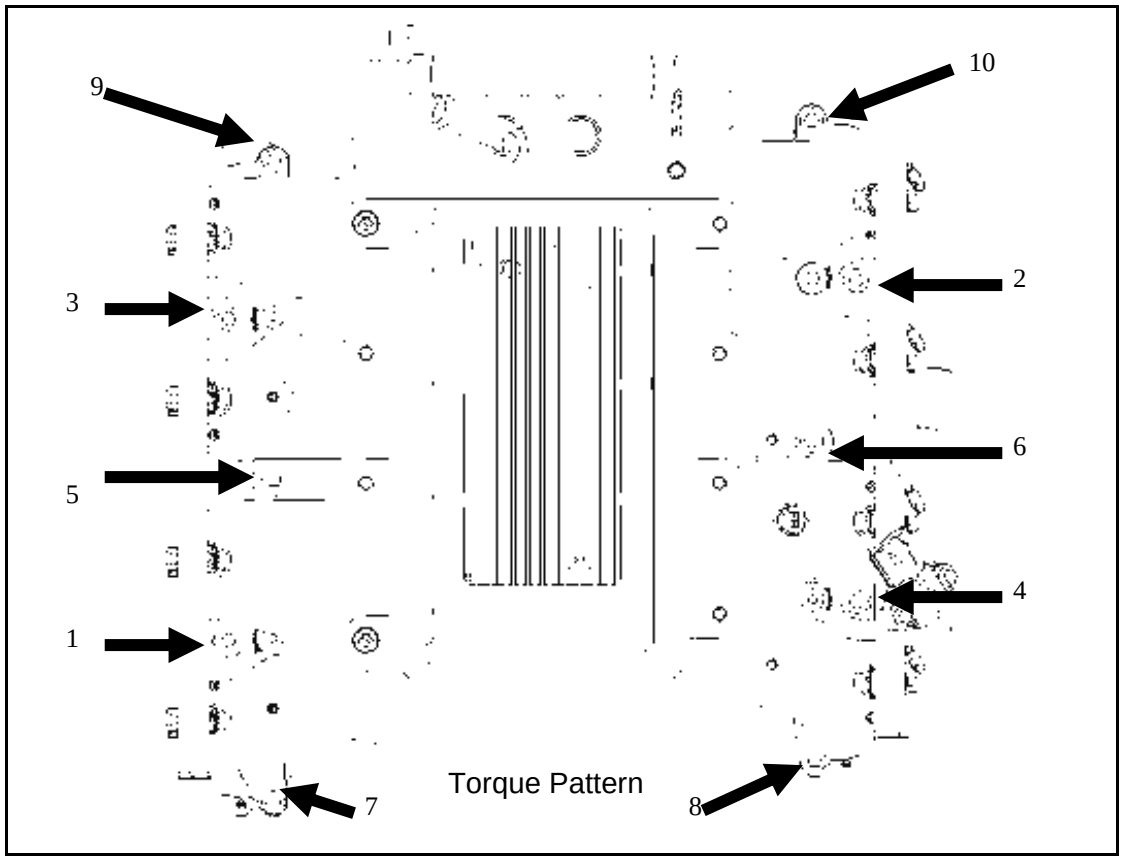
The following sections will guide you through the final installation of the kit into the vehicle. If you need to stop during the installation, make sure to always cover any open ports in the cylinder heads or intake manifold to prevent foreign material from getting into your engine.

a) Remove the tape from the cylinder heads. Carefully clean the cylinder head and intake mating surfaces. Check each cylinder's intake port thoroughly for foreign objects.

b) Reinstall the water bridge with the take-out bolts. Torque the three bolts shown below to 10Nm (7.5lb-ft). Reconnect the heater hose and secure using the original clamp.



c) Confirm that the blue intake manifold gaskets are in place on the intake. Place the intake manifold (with gaskets) down onto the cylinder heads and secure it using the ten M6x45mm intake bolts (W503282-S437) found in hardware kit A. Ensure that the engine wiring harness is running over the back of the intake manifold and is NOT trapped between the manifold and the dash panel. Torque the bolts to 10Nm (7.5lb-ft) according to the following torque diagram.



d) Use a zip tie to secure the engine wiring harness to the lobe on the rear passenger side of the upper intake manifold. Reconnect the fuel injector wiring connectors. Reconnect the fuel line and fuel line safety clip. The clip should install easily; if any force is required, remove and check the fuel line to ensure that the spring is still properly seated in the fitting.

e) Connect the IPS/IPTS vacuum harness (R07040028) from hardware kit C by routing it under the fuel rail and behind the last injector and reconnect the IPTS wiring connector (2004 model shown with vacuum harness highlighted for clarity).

f) Place a ¾" hose clamp on each end of the intercooler inlet (11 ½") and intercooler outlet (11 ½") hoses and attach both hoses to the short end of the steel intercooler tubes (R07070019). Using two M6x35mm bolts (R18020009) from hardware kit G, fasten the intercooler tubes to the intake with the intercooler hoses pointed towards the firewall. Torque the bolts to 10Nm (7.5lb-ft).

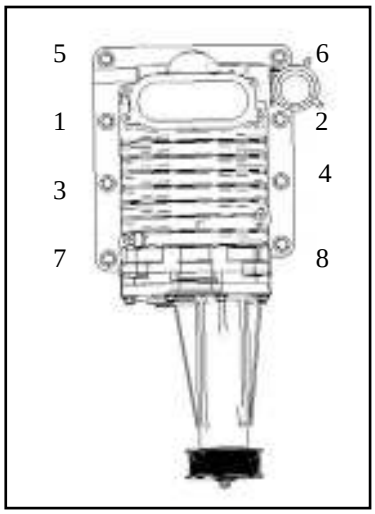
g) Connect the lower hose to the intercooler fitting on the driver side of the intake manifold. Connect the upper hose to the fitting on the passenger side of the intake manifold. Secure using ¾" clamps.

Very Important: Check hoses to ensure that there are no kinks.

h) Place the supercharger to intake gasket (R07050008) from hardware kit A onto the intake manifold. Route the VMV line around the back of the engine, toward the passenger side, and the SCBP connector around the back of the engine toward the driver side, ensuring that neither will interfere with the installation of the supercharger. Move all vacuum lines, wiring, etc. to ensure that they do not interfere with the installation of the supercharger.

i) Separate the short jumper from the supplied supercharger bypass vacuum harness (R07040015) found in hardware kit C. Connect the main harness to the rear-most fitting on the throttle body spacer installed on the supercharger.

j) Install the supercharger assembly onto the intake manifold, carefully aligning the unit onto the dowels. Install the eight M8x48mm bolts (W705430-S309) from hardware kit A. Torque to 25Nm (18lb-ft) following the torque sequence below.



(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D - INSTALLATION OF 07-08 SUPPLEMENTAL SUPERCHARGER KIT P/N R07000024** *on page 97*)

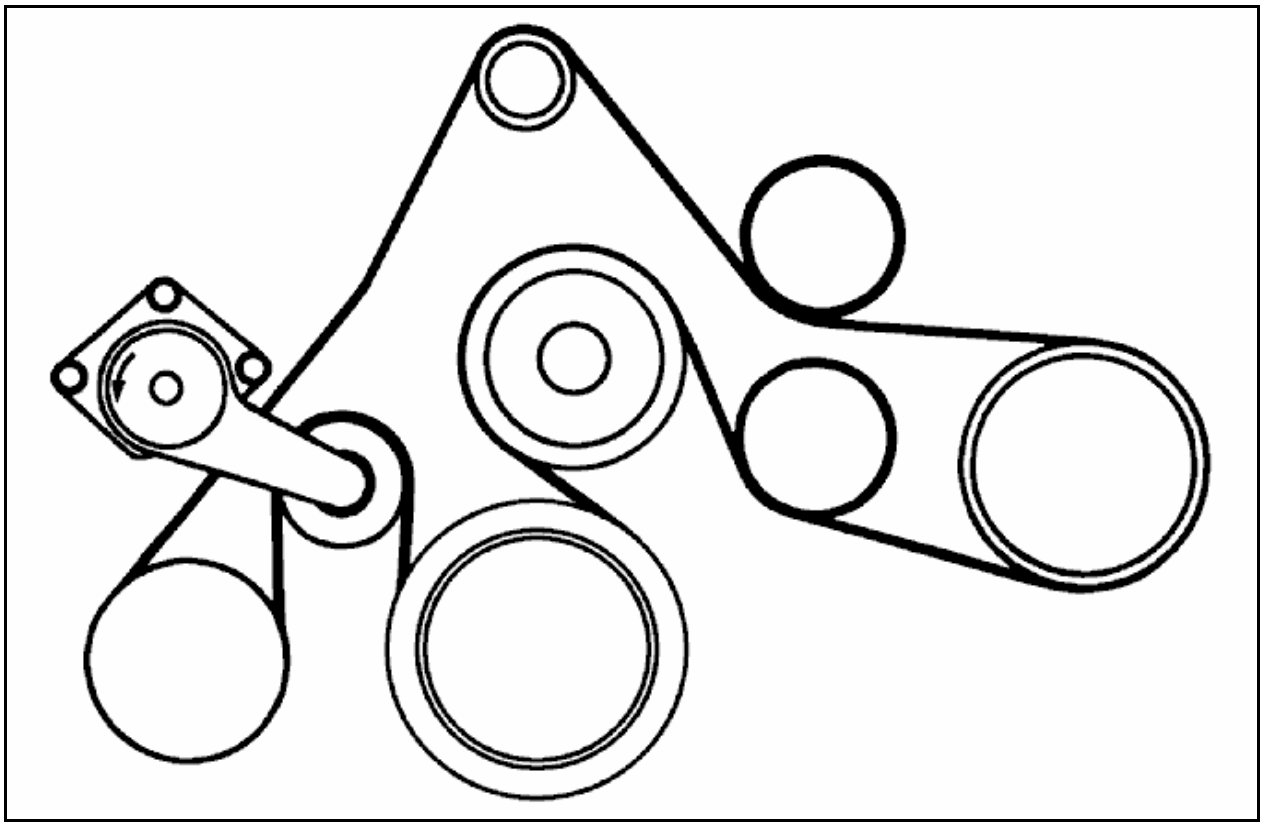
H. Alternator Installation

a) Connect the alternator wiring harness directly to the alternator terminal. Torque the nut to 10Nm (7.5lb-ft).

b) Reconnect the regulator connector.

c) Install the alternator using the carryover fasteners & brackets. Torque the M6 bolts to 10Nm (7.5lb-ft) and the M8 bolts to 25Nm (18lb-ft).

d) Using a ½" breaker bar or ratchet, rotate the tensioner clockwise and reinstall the 1st sheave serpentine belt, routed as shown below.

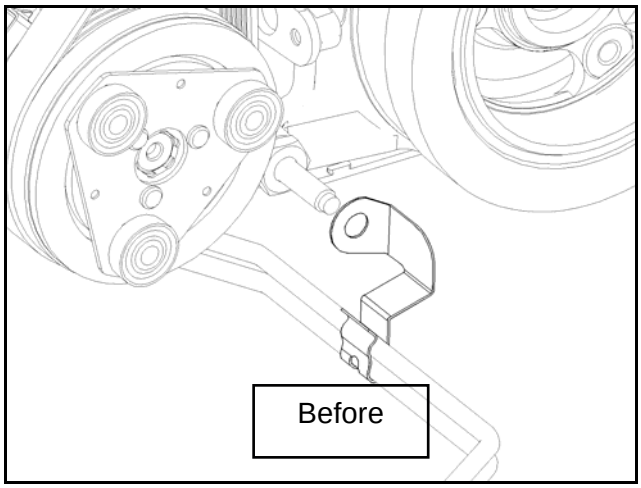


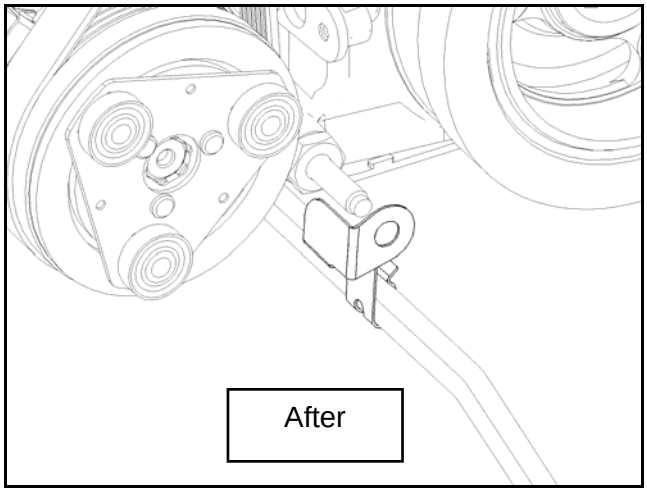
(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D – INSTALLATION OF 08 SUPPLEMENTAL SUPERCHARGER KIT P/N R07020046** *on page 96*)

I. 2nd Sheave FEAD Installation

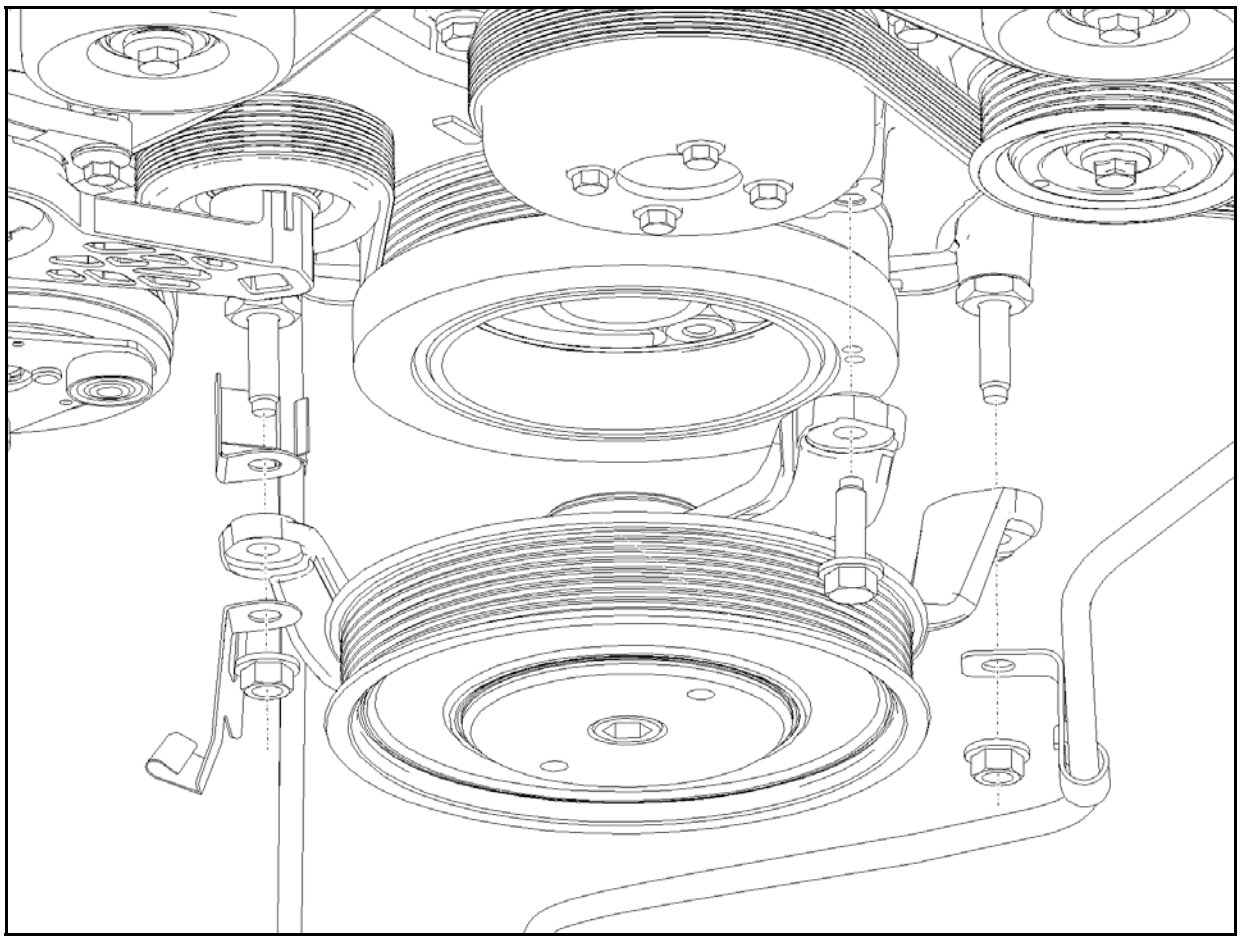
a) Install the supercharger drive pulley adapter (R07020010) using the three M10x23mm bolts (N605918-S427) provided in hardware kit B (R07020021). Torque the bolts to 47Nm (35lb-ft). Apply anti-seize to the inner threads of the crank adapter to allow easier installation and removal of the supercharger drive pulley.

b) Remove the transmission cooler line bracket from the lines and reinstall as shown below.





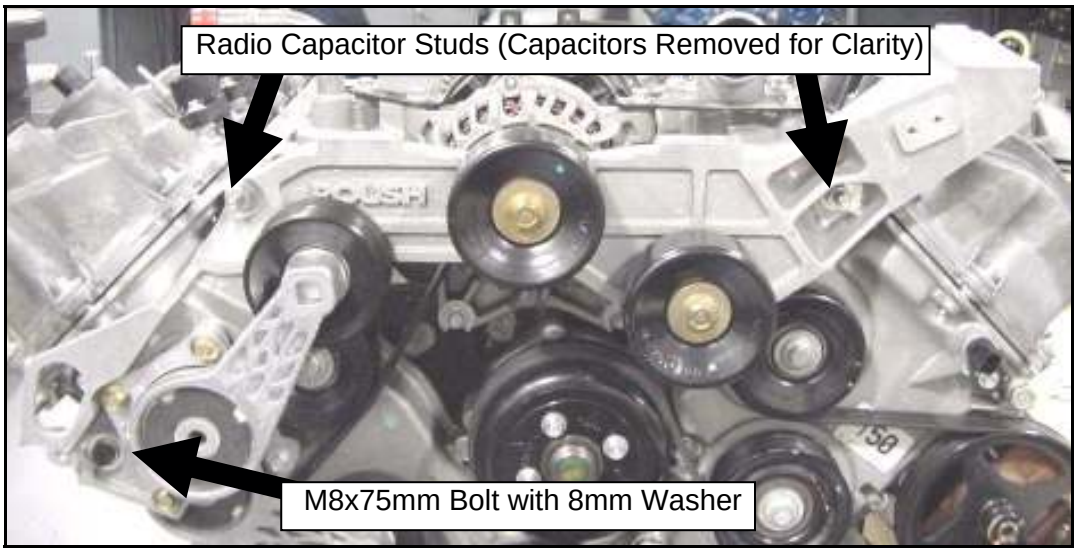
c) Slide the transmission cooler line bracket over the lower passenger side timing cover stud. Align the legs of the supercharger drive pulley (R07020009) over their proper studs and bosses. Thread the pulley onto the crank adapter by rotating the pulley counter-clockwise.



d) Slide the power steering hose bracket over the driver side lower stud. Slide the battery cable bracket over the passenger side lower stud and install the original nut. Install the M10x36mm bolt (N807239-S437) from hardware kit B into the upper driver side leg. Torque all fasteners to 47Nm (35lb-ft).

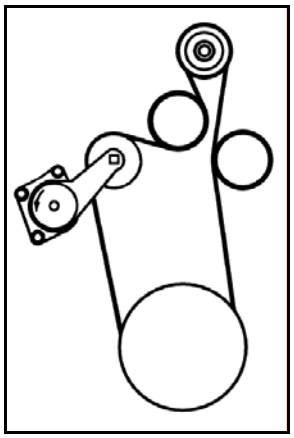
e) Torque the center pulley bolt with a 14mm hex socket to 100Nm (74lb-ft).

f) Place the FEAD bridge assembly (1104-8B653-AA) over the radio capacitor studs and secure using the two take-off nuts and the M8x75mm bolt (R07050007) with the 8mm washer (11-452-0038) from hardware kit B. Install the passenger side radio capacitor onto the stud. Torque the bolt and nuts to 25Nm (18lb-ft).



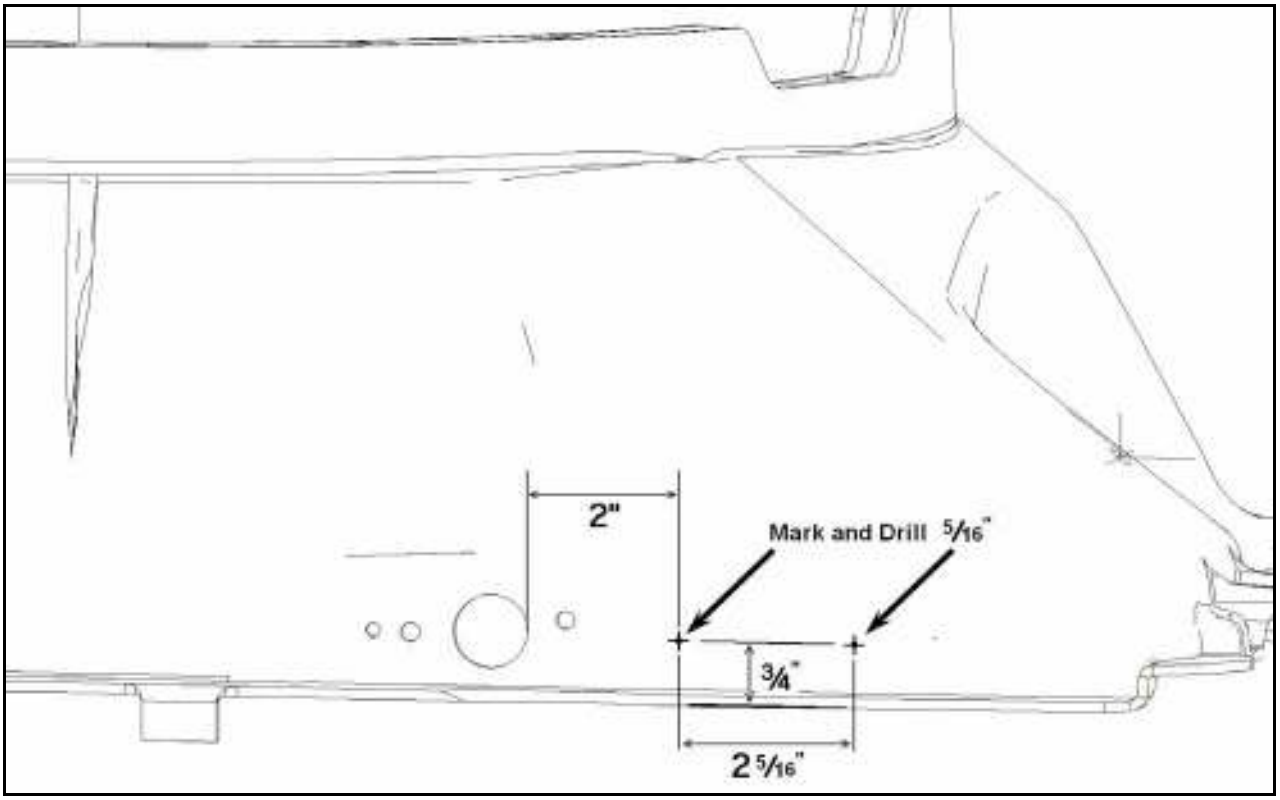
g) Fasten the power steering reservoir bracket to the FEAD bridge using the two M6x28mm bolts (W500215-S437) supplied in hardware kit B. Locate the driver side radio capacitor under the front bolt as shown and torque to 10Nm (7.5lb-ft).

h) Using a ½" breaker bar or ratchet, rotate the second tensioner clockwise and install the supercharger drive belt (R07020021), routed as shown below.

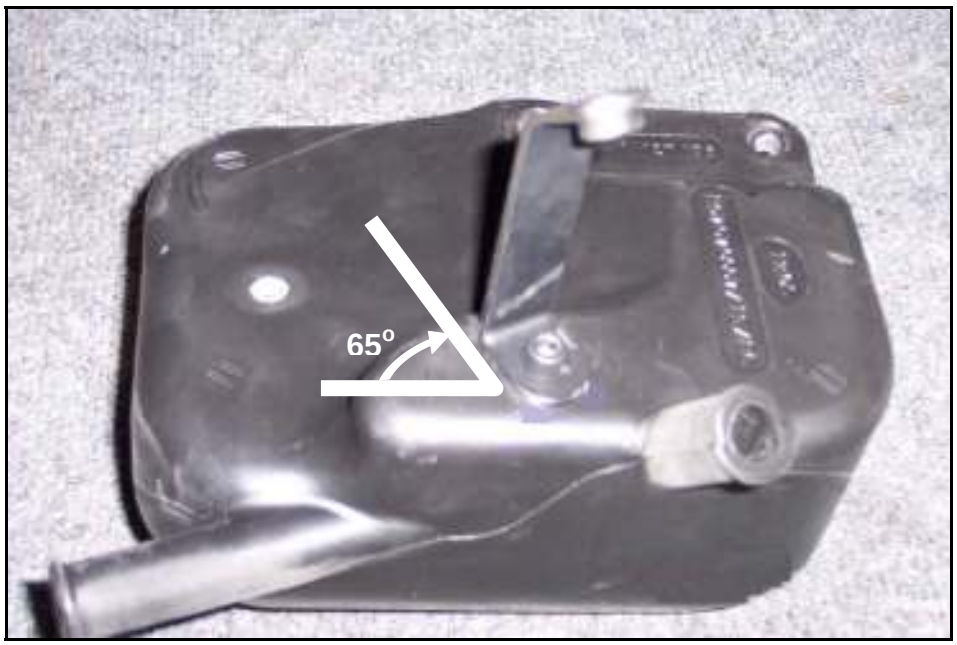


J. Intercooler Degas Bottle & Fan Shroud

a) Using dimensions from the following figure, mark two holes on the fan shroud for the primary degas bottle mounting bracket (R07070017) found in hardware kit G. Drill the holes to 5/16" and mount the bracket using two M6x10mm bolts (R18020011). Torque the bolts to 10Nm (7.5lb-ft).

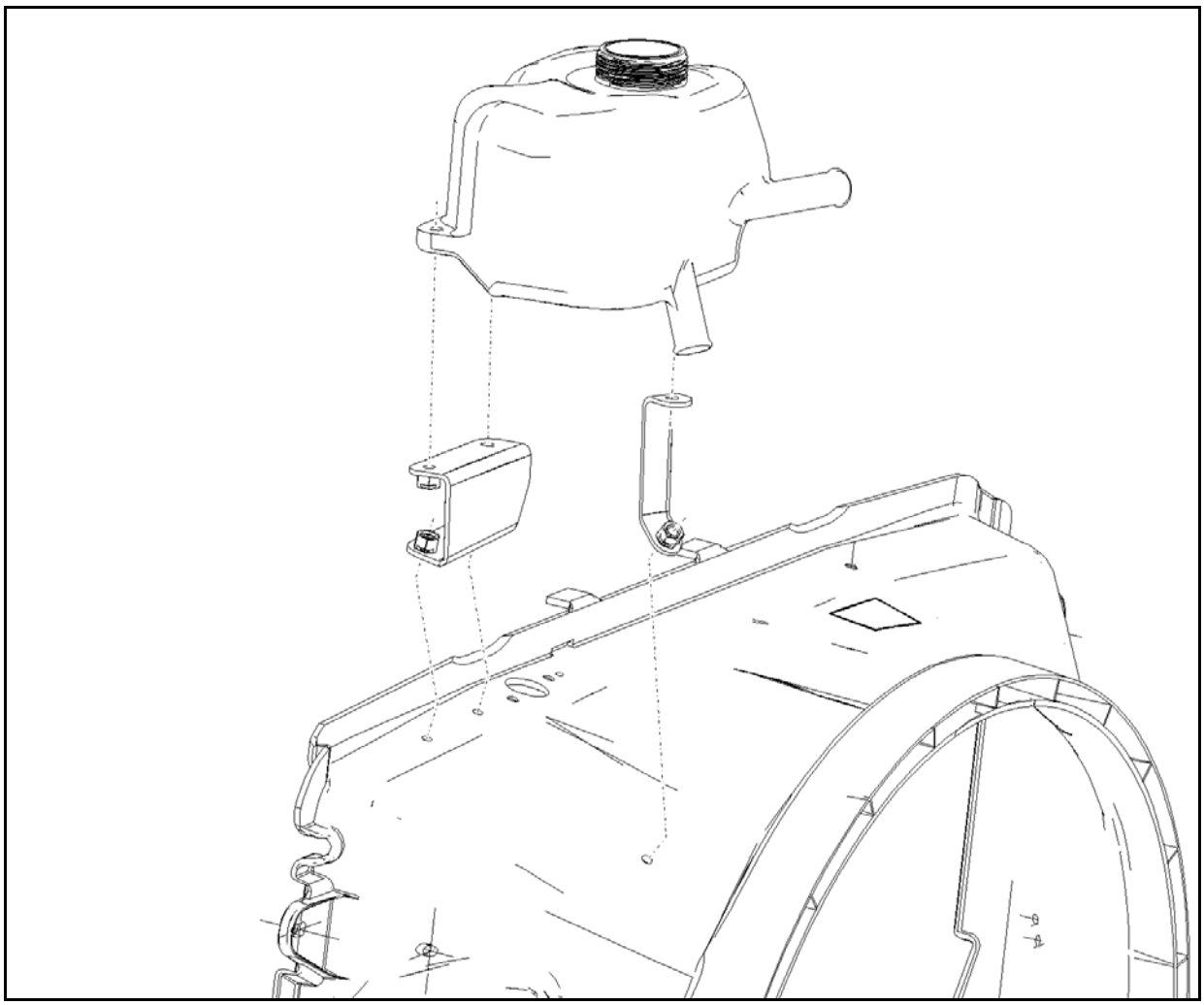


b) Attach the secondary degas bottle mounting bracket (R07070020) to the degas bottle using the M6x8mm socket head cap screw (R18020010) found in hardware kit G. Align the bracket so that it is running parallel to the 65 degree score marking on the bottle as shown below.



c) Temporarily mount the degas bottle to the primary bracket with two M6x35mm degas bolts (R18020009) found in hardware kit G. Using the secondary mounting bracket as a template, mark the hole for the third fastener.

d) Remove the bottle from the primary bracket and drill the hole to 5/16". Reinstall the degas bottle to the primary bracket, and fasten the secondary bracket to the fan shroud using the third M6x10mm bolt (R18020011) from hardware kit G. Torque these bolts to 10Nm (7.5lb-ft).



(*For customers with 07-08 F-150, additional instructions are located in* **SECTION D - INSTALLATION OF 07-08 SUPPLEMENTAL SUPERCHARGER KIT** *on page 99*)

e) Apply anti-seize lubricant to the inside threads of the fan and fan spacer (1104-8546-AA) found in hardware kit B. Tighten the fan to the fan spacer and torque to 55Nm (41lb-ft).

f) Install the fan and the fan shroud at the same time. Tighten the fan spacer to the water pump. Position the fan shroud into the lower retainers and fasten using the take out bolts. Torque to 10Nm (7.5lb-ft). Reinsert the wiring harness push pin into the passenger side of the fan shroud.

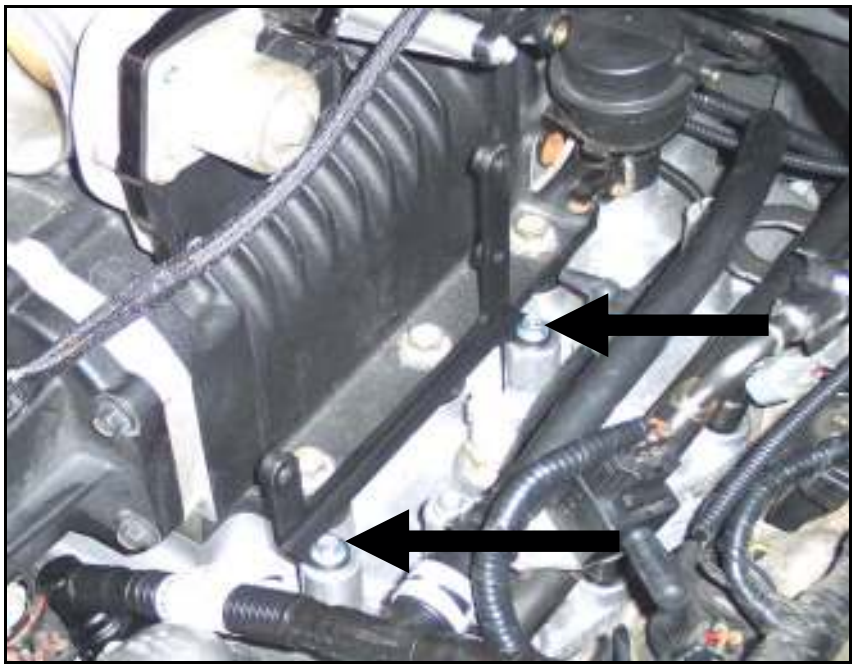
K. Brake, VMV & Supercharger Bypass Vacuum Harness

a) Install the brake booster hose to the middle port on the throttle body spacer and secure using the 8-16mm clamp (01266703013) provided in hardware kit C.

b) Connect the VMV line to the 3/8" SAE-style fitting on the throttle body spacer.

c) (2004 4x4 models ONLY) Route the carryover portion of the vacuum harness neatly over the fuel rail, coils, and valve cover. Reconnect the 4x4 vacuum supply hose.

d) Install the bypass reservoir mounting bracket (R07040027) using two of the M6x18mm bolts (N605891-S437) found in hardware kit D. Torque the bolts to 10Nm (7.5lb-ft).



e) Fasten the bypass solenoid bracket assembly (4G7V-9J472-CA) to the bypass reservoir mounting bracket using the three remaining M6x18mm bolts in hardware kit D. Torque the bolts to 10Nm (7.5lb-ft).

f) Locate the supercharger bypass vacuum harness (installed on page 71) and ensure that it is routed behind the supercharger and exits on the driver side. Install the 90 degree connector onto the lowest port on the solenoid. Connect the hose on the end of the check valve to the reservoir.

g) Install the larger diameter connector on the short jumper to the top port on the bypass actuator and the smaller diameter connector to the middle port on the solenoid. Leave the upper solenoid port (brass) open to the atmosphere as shown in the picture above. Route the SCBP electrical connector over the fuel rail and connect it to the solenoid. Route the ACT electrical connector under the fuel rail and connect it to the ACT sensor.

L. PCV & Throttle Body Electrical Connections

a) Connect the new PCV line to the PCV heater fitting on the throttle spacer and the driver side cam cover port (located below the power steering reservoir bracket).

b) Unclip the PCV heater electrical connector shell from the engine harness to provide additional slack. Reconnect the PCV heater circuit.

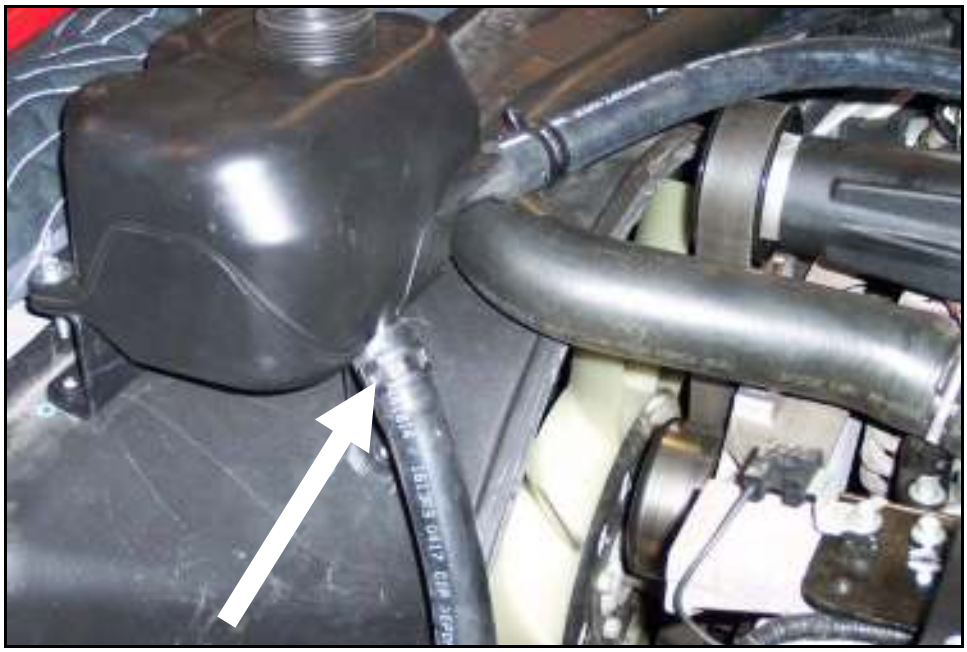
c) Connect the wiring for the ETC and the TPS. Push the red locking tabs in to secure.

M. Final Cooling & Intercooler System Connections

a) Install the supplied upper radiator hose (1104-8B274-AA) with the two 40-60mm clamps (01368045050) found in hardware kit C.

b) Install the degas bottle inlet hose (21 ¾") between the upper intercooler tube and the degas bottle inlet (top of the bottle). Secure the hose with two ¾" hose clamps. Connect the LTR outlet hose to the lower intercooler tube. Secure it with a ¾" clamp.

c) Connect the degas bottle outlet hose to the bottom of the bottle and secure using a ¾" clamp.



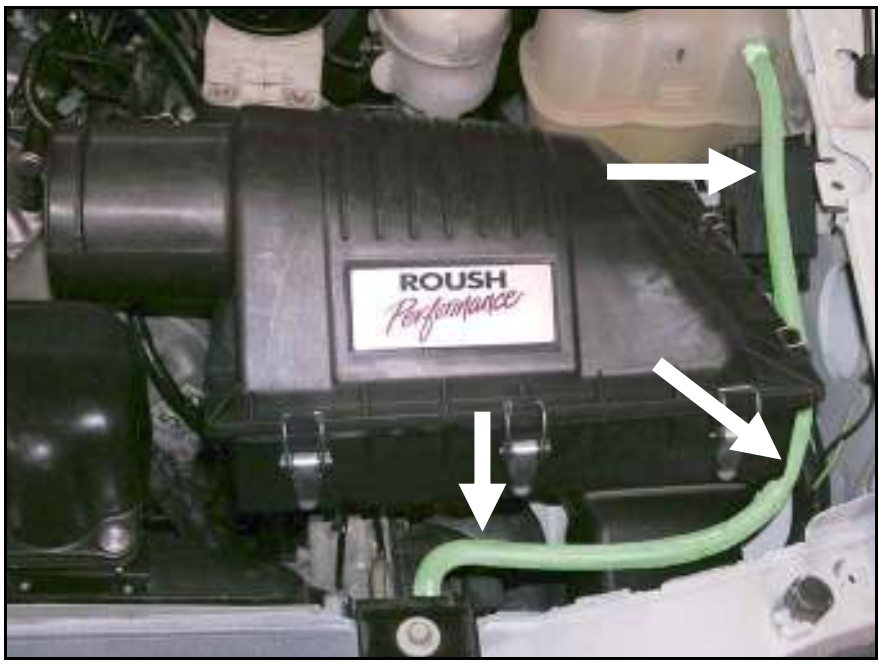
N. Air Cleaner and Clean Air Tube

a) Remove the two large rubber body grommets (R07060080) from the underside of the air box assembly (R07060081) and insert them into the sheet metal bracket above the ABS module.

b) Install the “Roush Performance” badge (R07060078) on the upper air box tray as shown below.

c) Install the MAF sensor into the air box assembly using the take-out screws. Torque to 6Nm (4.5lb-ft).

d) Lubricate the grommets and install the air box by positioning the two legs over the grommets and applying downward pressure. Route the radiator degas hose as shown below to avoid any restriction of the hose (hose highlighted for clarity).



e) Connect the MAF electrical connector and lock with the red tab.

f) Push one end of the clean air tube assembly (R07060077) over the throttle body. Push the other end over the air box assembly outlet. Torque the clamps to 5Nm (4lb-ft).

g) Reconnect the passenger side PCV breather tube to the clean air tube. It may be necessary to re-orient the fittings on the ends of the tube to improve the fit. Reinstall the radiator cover with the original push pins.

O. Final Assembly

a) Fill the engine and intercooler systems with coolant. Use the proper mix of coolant specified in your owner's manual. Cap the degas bottle with the degas bottle cap (XL3Z-8100-AA) found in hardware kit G.

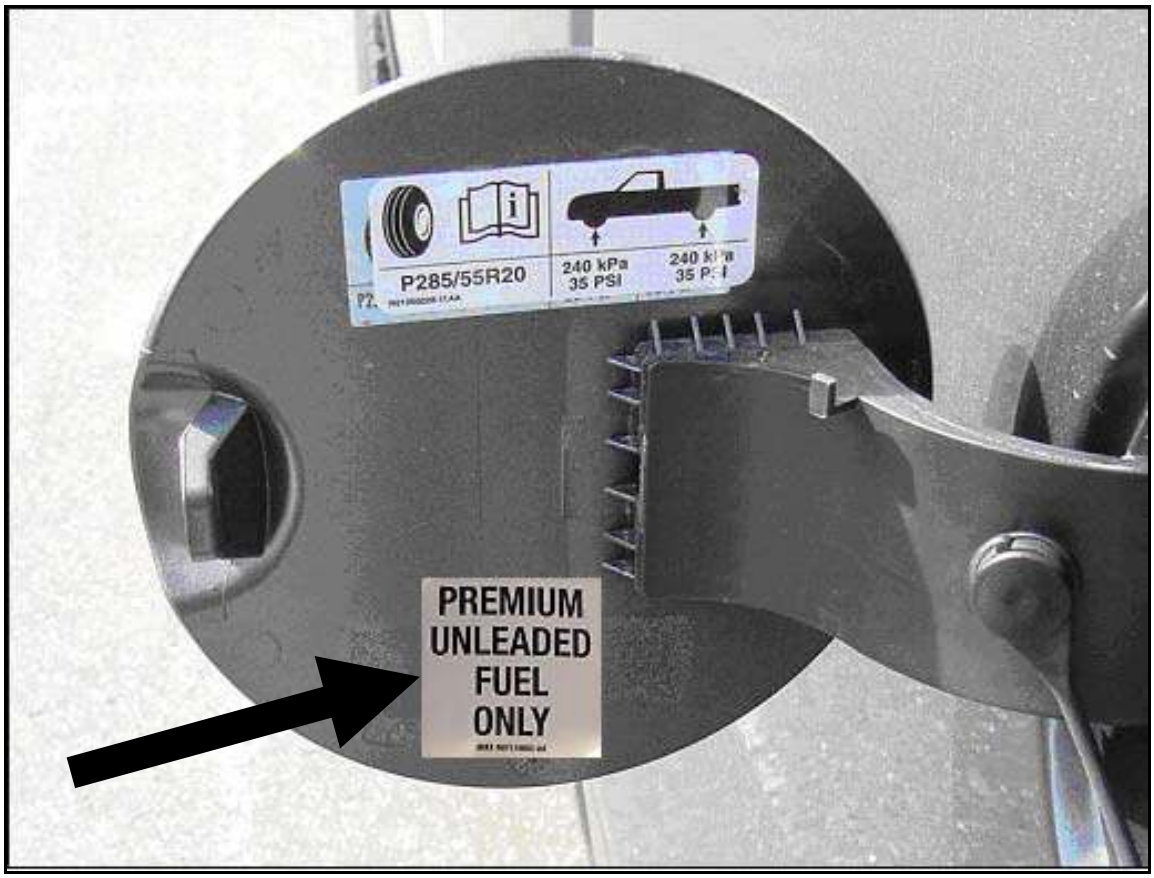
Important: Both coolant systems can trap a large amount of air. It is very important to verify that the air is purged and that coolant is flowing properly through both systems. Roush Performance recommends vacuum filling both systems to properly evacuate the trapped air.

b) Re-install the reprogrammed PCM.

Note: Due to the significant changes in the induction system and supercharger, the vehicle is NOT drivable on the original PCM calibration. Warranty will not cover resulting damage. Do not attempt to drive the vehicle with the original calibration, or use the Roush calibration in an unmodified vehicle.

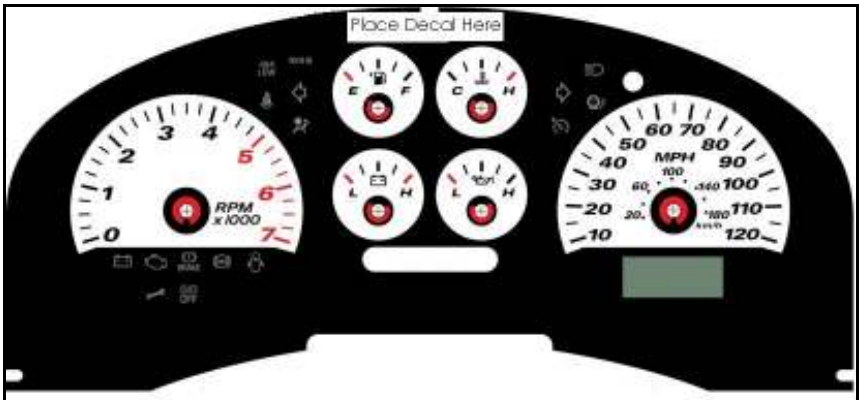
c) Install belt routing decal (R07020026) and E.O. decal on top of radiator cover as shown.

d) Install fuel door “Unleaded Premium Fuel Only” decal (R07110003) on the fuel filler door.

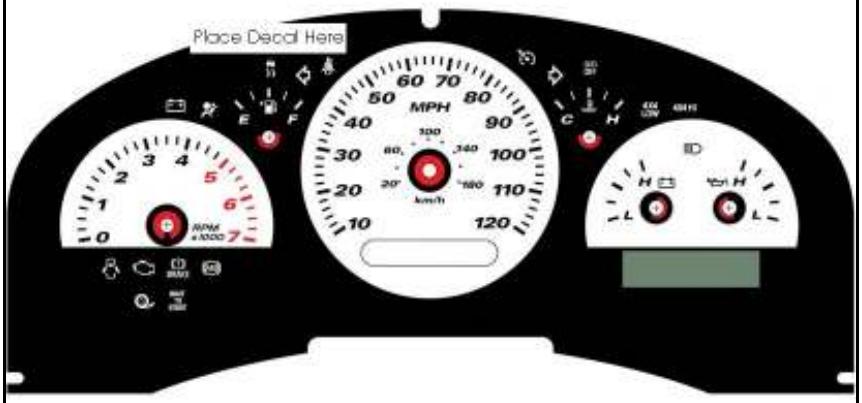


e) Carefully place the instrument panel “Premium Fuel Only” decal (R07110004) on the cluster bezel in the recommended area (dependent on vehicle’s equipment level). Using a soft plastic device (i.e. back end of a ballpoint pen) or your fingernails, press the decal down firmly, starting from the center and working outward to avoid trapping air bubbles in the adhesive.

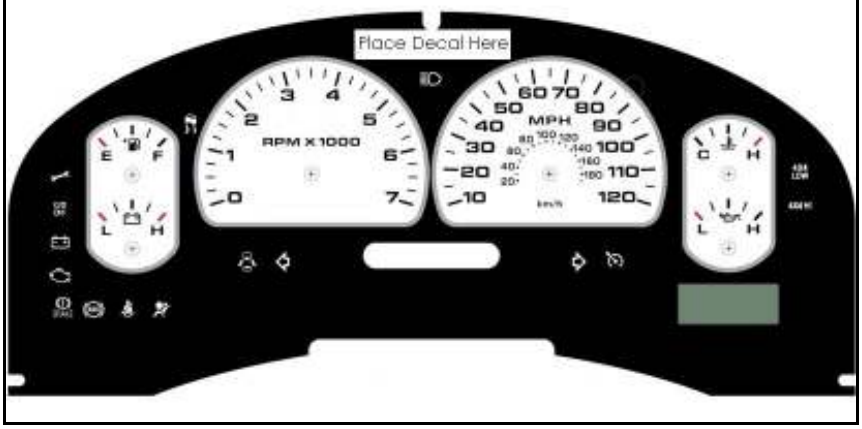
FX4 Model



LARIAT Model



XLT Model



f) Reconnect the battery terminals. Review the engine compartment to ensure that all the wiring connections are installed, all the hoses are properly clamped, and that any loose hoses or wires are properly secured.

g) Before starting the vehicle for the first time, cycle the key to the ON position two or three times to pressurize the fuel system. **Check the fuel lines and fuel rail for any sign of fuel leakage, and repair prior to any further action.**

h) With the key on, open the intercooler degas bottle cap and check the intercooler system for proper flow. Flow should be very significant. If not, check for trapped air at the pump or kinked hoses in the system.

i) Start and idle the vehicle to cycle the coolant. If there is any sign of rough operation, high or unstable RPM, or audible whistling, shut off the engine and thoroughly check for vacuum or other air leaks. Otherwise, continue warming the vehicle until the thermostat opens (upper radiator hose will become hot).

j) If the coolant level drops significantly during this period, **allow the vehicle to cool off,** and then top off to the proper level. Repeat this cycle until no further coolant addition is required.

10. SECTION D – SUPPLEMENTAL KIT INSTALLATION (2007- 08 VEHICLES ONLY)

Important Note:

Customers with 2007-2008 model year vehicles must purchase the “F150 Supplemental Kit” (P/N: R07000024) to complete this installation.

Customers with 2007-2008 model year F150 vehicles with the Harmonic Balancer shown in Fig. 2 on page 1, which does not have the three PTO mounting holes in the spokes, must purchase the “F150 Supplemental Kit” (P/N: R07020046) to complete this installation.

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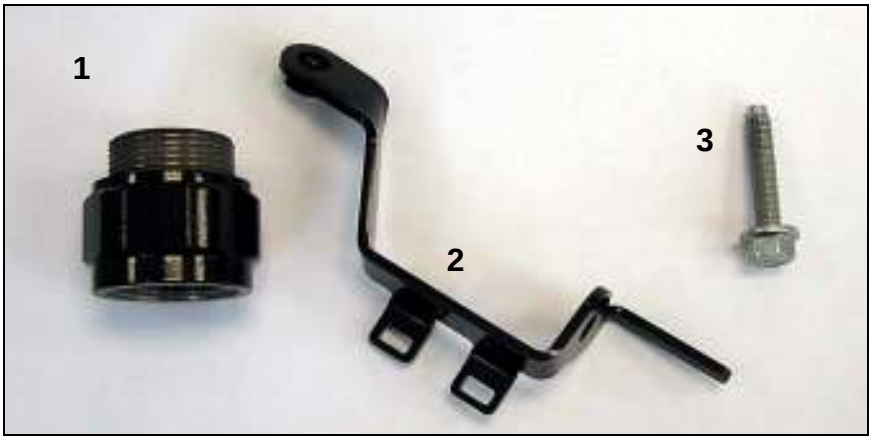
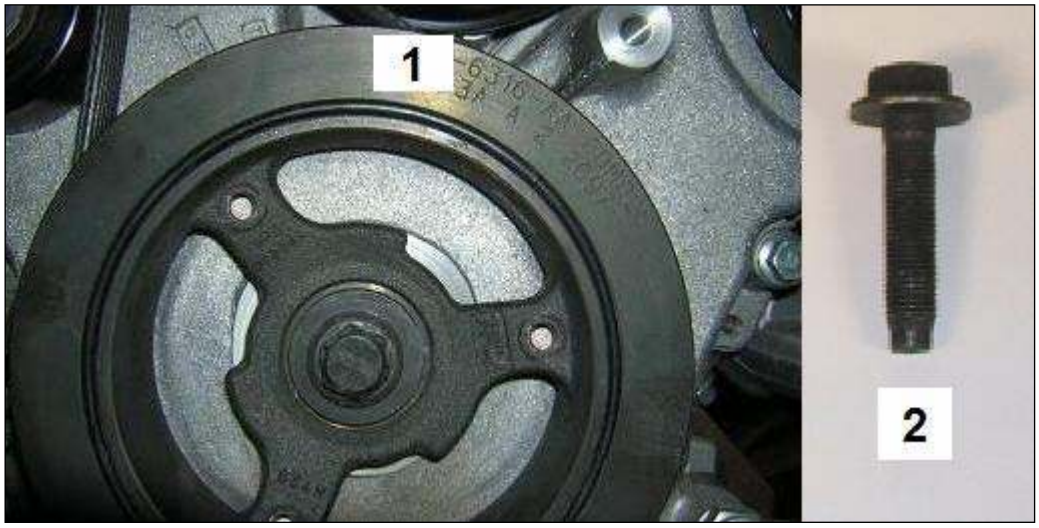
Changes for Section B – Modifications 95

Changes for Section C – Assembly 96

PACKAGING LIST FOR SUPPLEMENTAL SUPERCHARGER KIT PN R07000024



PACKAGING LIST FOR SUPPLEMENTAL SUPERCHARGER KIT P/N R07020046

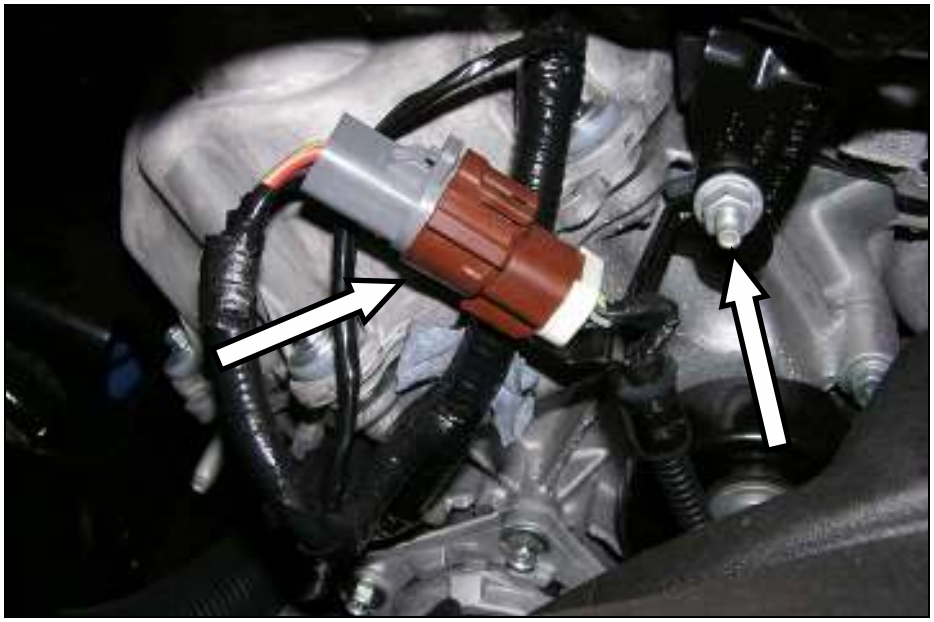


Part Ref	Description	RPP Part Number	Qty
1	Harmonic Balancer / Crankshaft Pulley	R07020047	1
2	Bolt - M12 x 1.5 x 52.5	R07010018	1

CHANGES FOR SECTION A - DISASSEMBLY

(This instruction replaces step k) on page 25)

k) Remove the nut for the Electro-fan harness bracket at the front of the passenger cylinder head. Unplug the fan harness from the engine harness.



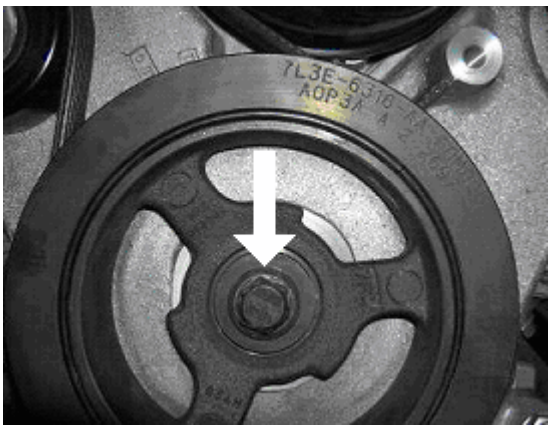
k.a) Remove the two bolts holding the fan shroud to the radiator. Remove the wiring clip from the passenger side of the fan shroud.

k.b) Using the fan removal tools, disconnect the fan from the water pump. Remove the fan and shroud from the vehicle.

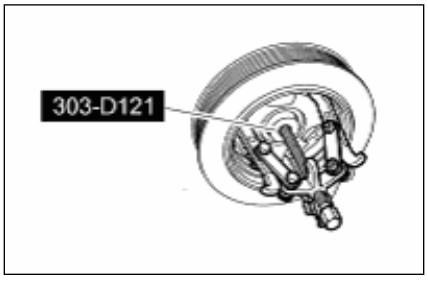
k.c) Unplug the Electro-fan harness from the fan clutch and slip the harness out of the retaining bracket. Remove the rubber isolator from the harness and place it back into the retaining bracket.

(This instruction is an addition to the <u>Disassembly</u> section that ends on page 34)

HH. Using an 18 mm socket and ratchet, remove the crankshaft pulley bolt and washer. Discard the crankshaft pulley bolt.



I I. Using the special tool, (3-Jaw Puller 303-D121) remove the crankshaft pulley.

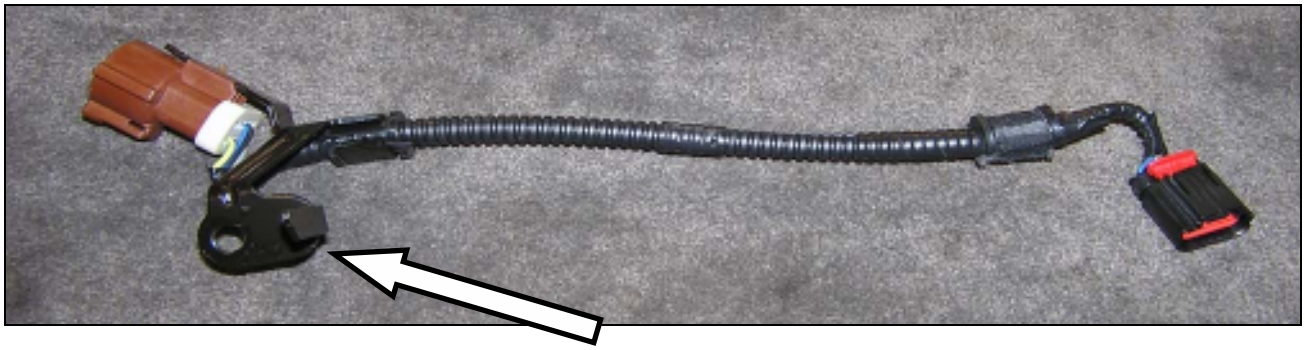


CHANGES FOR SECTION B - MODIFICATIONS

(These steps are additional to the Modifications section that ends on page 55)

G. Fan Harness Modification

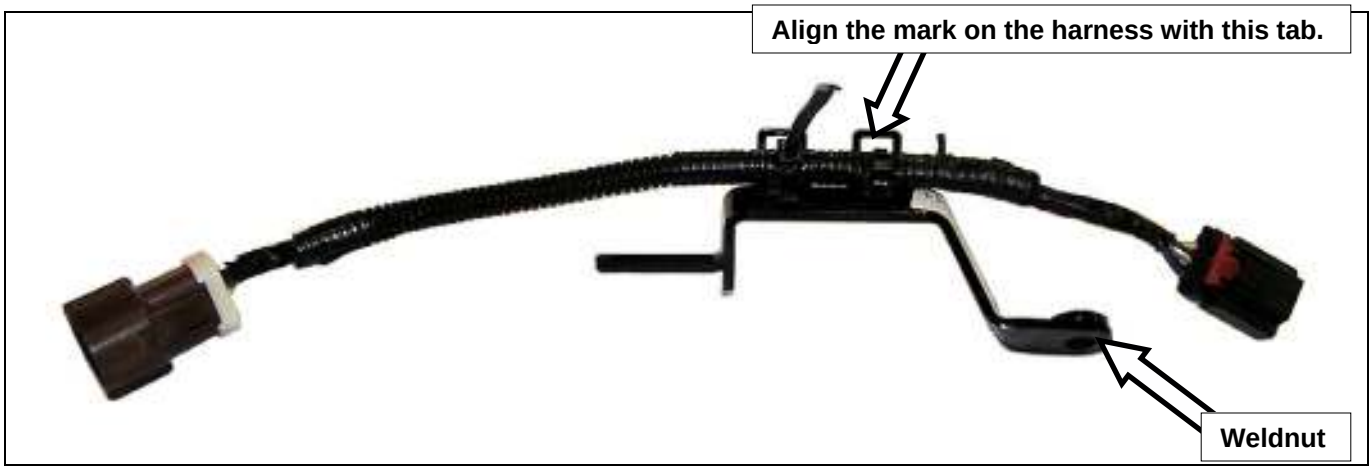
a) Remove the harness retaining bracket from the engine side of the Electro-fan Harness.



b) Remove the convoluted tube covering from the fan connector side of the harness. Remove the reinforcement tube.

c) Reinstall the convoluted tube. Place a mark on the harness 3 ¾" from the back side of the fan connector.

d) Place the fan clutch harness on the Fan Clutch Wiring Retainer Bracket (R07070036) with the fan connector end of the harness over the weldnut end of the bracket. Align the mark you made on the harness with the zip tie tab closest to the weldnut. Using zip ties routed through the tabs in the bracket, secure the harness to the bracket. Trim the loose end of the zip ties.



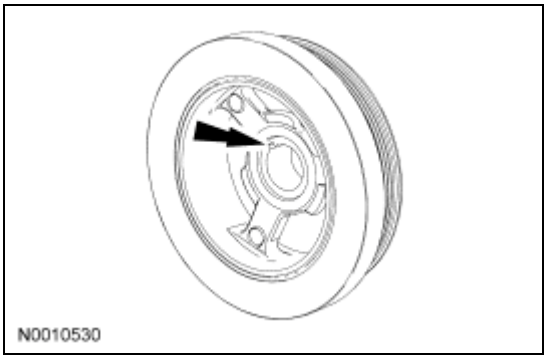
CHANGES FOR SECTION C – ASSEMBLY

(This instruction is an addition to the Assembly section to be preformed prior to I. 2nd Sheave FEAD Installation on page 74)

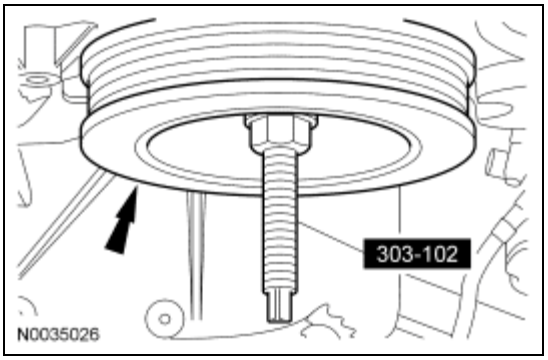
Installation

1. **NOTE:** If not secured within 4 minutes, the sealant must be removed and the sealing area cleaned. To clean the sealing area, use silicone gasket remover and metal surface prep. Follow the directions on the packaging. Failure to follow this procedure can cause future oil leakage.

   Apply silicone gasket and sealant to the Woodruff key slot in the crankshaft pulley.



2. Using the special tool, install the crankshaft pulley.



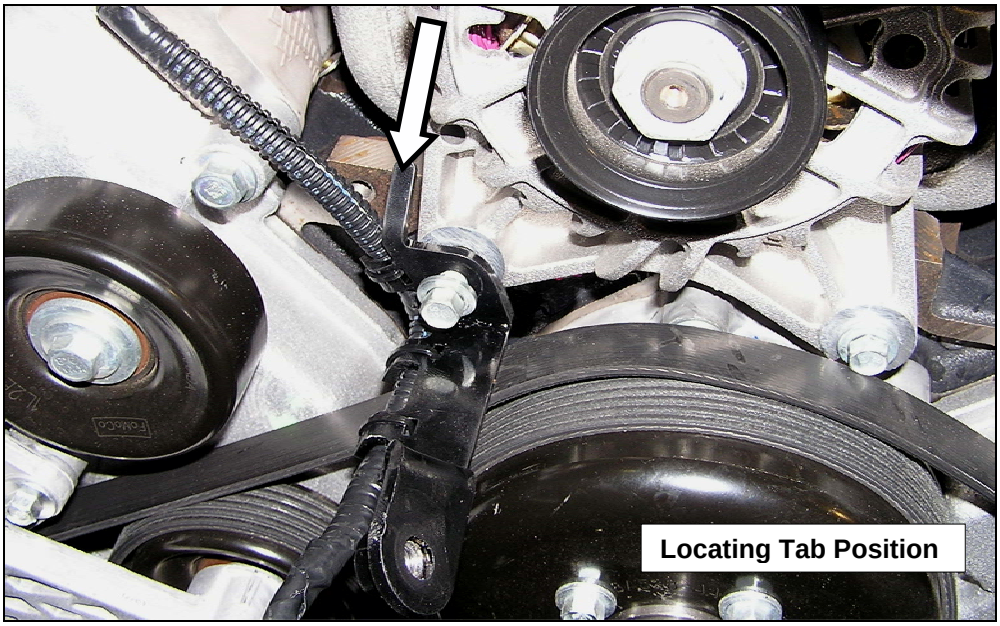
3. Using a new crankshaft pulley bolt, install the bolt and washer and tighten the bolt in 4 stages.
    - Stage 1: Tighten to 90 Nm (66 lb-ft).
    - Stage 2: Loosen 360 degrees.
    - Stage 3: Tighten to 50 Nm (37 lb-ft).
    - Stage 4: Tighten an additional 90 degrees.

(These steps replace step* H. Alternator Installation *on page #73)

H. Alternator Installation

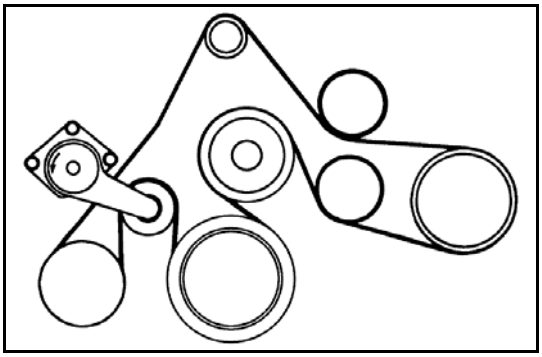
a) Connect the alternator wiring harness directly to the alternator terminal. Torque the nut to 10Nm (7.5lb-ft). Place the cover over the connection. Reconnect the regulator connector.

b) Place one 8mm lower alternator bolt through the Fan Clutch Wiring Retainer Bracket. Install the alternator reusing the original fasteners & brackets and placing the bolt with the bracket in the lower passenger side location. Ensure that the bracket is positioned with the locating tabs over both sides of the alternator ear. Torque the M6 bolts to 10Nm (7.5lb-ft) and the M8 bolts to 25Nm (18lb-ft).



c) Reconnect the Electro-Fan harness to the engine harness.

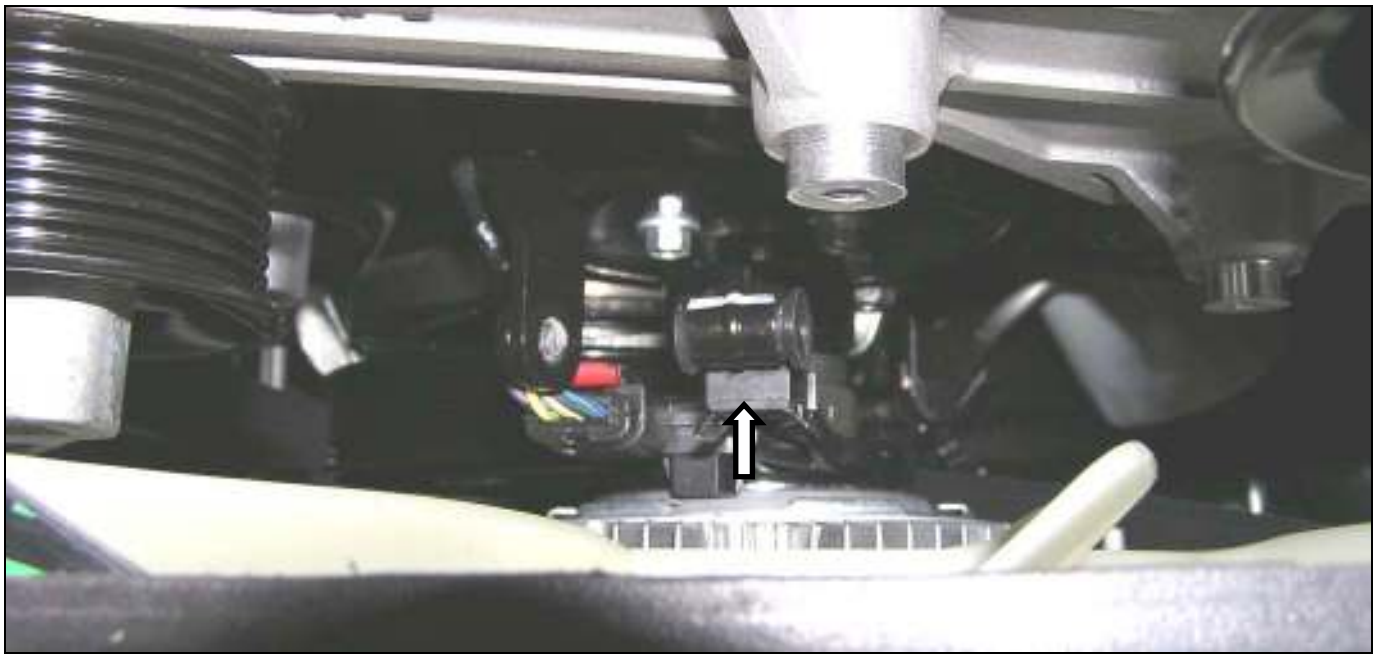
d) Using a ½" breaker bar or ratchet, rotate the tensioner clockwise and reinstall the 1st sheave serpentine belt, routed as shown below.



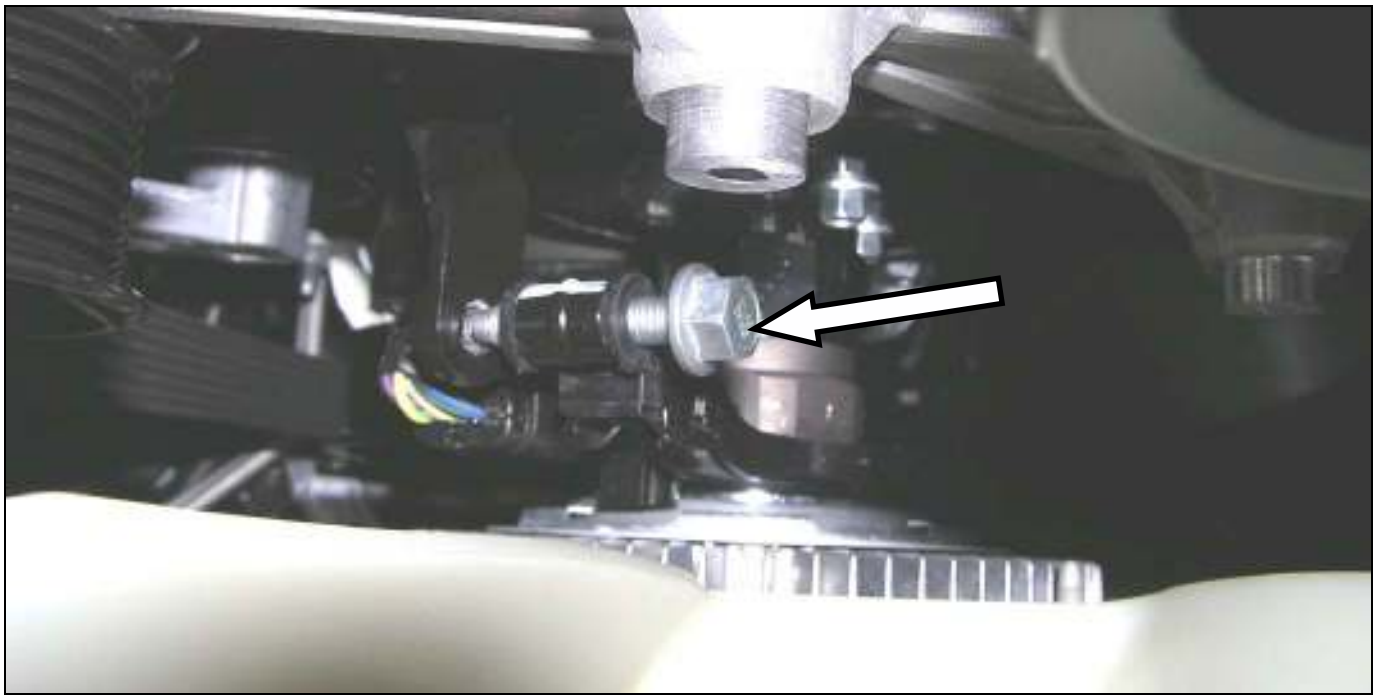
(These instructions add a Step d.a), replaces Step f), and adds Steps g), h), and i) in Section J. <u>Intercooler Degas Bottle & Fan Shroud</u> on page 79)

d.a) Loosen the 2nd sheave FEAD Belt and remove the driver side idler pulley from the FEAD Bridge.

f) Install the fan and the fan shroud at the same time. Start the fan onto the water pump while ensuring the arm/connector of the Electro-fan clutch is positioned straight up. Torque the fan spacer to the water pump to 55Nm (40lb-ft). Position the fan shroud into the lower retainers and fasten using the take out bolts. Torque the shroud bolts to10Nm (7.5 lb-ft). Reinsert the wiring harness push pin into the passenger side of the fan shroud.



g) Apply red threadlocker to the supplied bolt (W705128-S437). Position the arm of the Electro-fan clutch over the Fan Clutch Wiring Retainer Bracket and fasten it to the bracket with the bolt. Torque the bolt to 7 Nm (60 lb-in).



h) Plug in the Electro-fan clutch.

i) Reinstall the removed idler pulleys and torque the pulley bolts to 25Nm (18 lb-ft). Reinstall the supercharger drive belt.

11. Troubleshooting

Condition	Possible Source	Action to take
Check engine light on in dash- code P0113	Poor connection/ bad solder joint/ wire pushed out of connector	Verify pin out of ACT wiring and connector
S/C always in bypass mode/ Poor performance W.O.T.	Vacuum lines switched at SCBP solenoid	Verify routing and installation of vacuum lines
Poor performance @ light loads/ part throttle	Pinched vacuum line/ no vacuum @ SCBP actuator/ noisy operation	Verify routing and installation of vacuum lines
Part throttle hesitation	Poor connection/ bad solder joint/ wires pushed out of SCBP solenoid connector	Verify pin out of SCBP solenoid wiring and connector

12. Limited *Warranty*

R07000001 ROUSHCHARGER™, NON-INTERCOOLED
401633 ROUSHCHARGER™, INTERCOOLED
Applications: 2004-2008 Ford F-150 5.4L Engine

WHO IS COVERED

ROUSH's warranty obligations for ROUSHcharger™ Kit(s) identified above is limited to the original owner of the vehicle in which the ROUSHcharger™ Kit(s) is installed and who has submitted the warranty registration card and other documentation in order to activate this warranty. This warranty is not transferable to a second owner and is secondary to all other warranties and manufacturers' recall that may be in effect. The term "ROUSHcharger™ Kit(s)" as used in this warranty applies to each ROUSHcharger™ identified above.

WARRANTY PERIOD

The Warranty Period for the R07000001 ROUSHcharger™ Non-Intercooled Kit, and 401633 ROUSHCHARGER™ Intercooled Kit is as follows:

(a) 3 years or 36,000 miles from the vehicle's original in-service date as determined by Ford dealer OASIS (On-Line Service Information System) report, **or**

(b) On vehicles where the original manufacturer's 3 year or 36,000 mile warranty has expired, the warranty on the ROUSHcharger™ Kit(s) is 12 months or 12,000 miles on ROUSHcharger™ Kit(s) components only.

WARRANTY COVERAGE

When a ROUSHcharger™ Kit(s) is correctly and completely installed by a certified Ford automotive technician or automotive service technician certified by the Institute for Automotive Service Excellence (ASE) on an eligible, legally registered and licensed vehicle, we will cover defects in ROUSH materials and workmanship during the Warranty Period, as solely determined by us.

Below are those vehicle components covered and not covered under this warranty:

ENGINE COMPONENTS

COVERED: Pistons, piston rings, piston pins, crankshaft and bearings, connecting rods and bearings, camshafts and bearings, timing chain and gears, intake/exhaust valves and seals, valve springs, oil pump, push rods, rocker arms, rocker arm shafts, and lifters. If a failure of any of the above parts damages either the engine block or cylinder heads, a remanufactured long block assembly will be provided up to the maximum coverage of $5000.00

NON-COVERED: Those engine components specifically not listed including, but not limited to, parts, filters, etc., that are required to be replaced as a part of a normal vehicle maintenance schedule are not covered under this warranty.

TRANSMISSION COMPONENTS

COVERED: Planetaries, oil pump, governor, bands, drums, shaft(s), sprag(s), bearings, shift rail(s), torque converter, fork(s), and synchronizers.

NON-COVERED: All-wheel drive vehicles are excluded from transmission coverage under this warranty. Failure of related parts external to the transmission that cause a transmission claim including, but not limited to, transmission coolers, levers, controls, etc., void coverage under this warranty.

REAR AXLE COMPONENTS

COVERED: Rear axle, ring gear, drive pinion, pinion shaft, side gears, bearings, bearing cap, washers, slinger, axle shaft, housing and housing cover.

TRANSFER CASE COMPONENTS

COVERED: All internally lubricated parts of the Transfer Case are covered under this warranty.
NON-COVERED: The transfer case housing is not covered under this warranty.

When you present us with a valid, properly documented warranty claim during the Warranty Period, ROUSH will replace the defective component(s) covered by this warranty or, at our option and sole discretion, refund the purchase price you paid for the ROUSHcharger™ Kit(s) purchased. We reserve the right to improve or modify the ROUSHcharger™ Kit(s) without assuming any obligation to update or replace any previously manufactured or sold ROUSHcharger™ Kit(s).

OUR TOTAL LIABILITY PER COVERED VEHICLE UNDER THIS WARRANTY IS LIMITED TO 10,000.00 (AGGREGATE). EACH COVERED COMPONENT HAS ITS OWN AGGREGATE VALUE WHICH WHEN COMBINED EQUALS THE TOTAL LIABILITY PER VEHICLE. THE ENGINE IS COVERED FOR $5000.00, $2500.00 PER TRANSMISSION, AND $1500.00 PER REAR AXLE. VEHICLES EQUIPPED WITH A TRANFER CASE RECEIVE $1000.00 COVERAGE ON THESE COMPONENTS. VEHICLES WITHOUT A TRANSFER CASE FORFEIT ANY CASH REFUNDS OR REPAIR CREDITS. THESE AMOUNTS CANNOT BE COMBINED TOGETHER TO AID IN THE REPAIR OF ANOTHER COVERED COMPONENT. IN THE RARE CASE WHEN THE REPAIR COST EXCEEDS THE ACTUAL CASH VALUE OF THE VEHICLE, ROUSH WILL REFUND THE PURCHASE PRICE OF THE ROUSHCHARGER™ KIT(S) ONCE THE COMPLETE KIT IS RETURNED PREPAID TO US.

A replacement ROUSHcharger™ Kit(s) or component(s) that has been installed in accordance with our instructions, assumes the remaining warranty of the original replaced. If a ROUSHcharger™ Kit(s) or any of its components is exchanged, the replacement becomes your property and the returned ROUSHcharger™ Kit(s) or component(s) becomes our property. Component(s) provided by us to fulfill our warranty obligation must be used in the product for which warranty service is claimed. When we issue a refund for a ROUSHcharger™ Kit(s), the returned ROUSHcharger™ Kit(s) becomes our property.

WARRANTY DISCLAIMER/EXCLUSIONS/LIMITATIONS:

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY AND ITS REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, STATUTORY, EXPRESS OR IMPLIED. AS PERMITTED BY APPLICABLE LAW, ROUSH SPECIFICALLY DISCLAIMS ALL EXPRESS, STATUTORY OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. IF ROUSH CANNOT LAWFULLY DISCLAIM ANY STATUTORY OR IMPLIED WARRANTIES THEN TO THE EXTENT PERMITTED BY LAW, ALL SUCH WARRANTIES SHALL BE LIMITED IN DURATION TO THE WARRANTY PERIOD AND THE WARRANTY COVERAGE DESCRIBED ABOVE. THIS WARRANTY COVERS ONLY DEFECTS IN OUR MATERIALS OR WORKMANSHIP, AND DOES NOT APPLY TO THE ORIGINAL EQUIPMENT MANUFACTURER (OEM) EXTERIOR ENGINE COMPONENTS, IGNITION, FUEL SYSTEM OR DAMAGE RELATED TO OR ARISING FROM:

a. **IMPROPER INSTALLATION, ABNORMAL OPERATION, ABUSE, NEGLECT, LACK OF MAINTENANCE OR LACK OF FLUIDS, OR DAMAGE RESULTING FROM A COLLISION. OPERATION OF SUCH AN IMPAIRED VEHICLE WILL VOID THIS WARRANTY. THE VEHICLE OWNER IS RESPONSIBLE FOR ENSURING NO FURTHER DAMAGE OCCURS ONCE DAMAGE HAS OCCURRED.**

b. **COVERED COMPONENTS BEING TAMPERED WITH OR ALTERED AFTER THE ROUSHcharger™ HAS BEEN INSTALLED ON THE VEHICLE.**

c. **THE USE OF NON-ROUSH ACCESSORIES, SUCH AS, HEADERS, CAMSHAFTS, NITROUS OXIDE SYSTEMS, AND OTHER AFTERMARKET PRODUCTS.**

d. **DAMAGE OR ABUSE RELATED TO OVERLOADING, MISUSE, NEGLIGENCE, ROAD CONDITIONS, OVERSIZED TIRES, AND OTHER NON-ROUSH APPROVED MODIFICATIONS.**

e. **PARTICIPATING IN OR PREPARATION OF THE VEHICLE FOR RACING (ON A TRACK OR OTHERWISE), FIRES,**

FLOOD, RIOTS, ACTS OF WAR OR TERRORISM, THEFT, VANDALISM, AND ACTS OF GOD ARE NOT COVERED.

THIS IS NOT A PERFORMANCE WARRANTY. IT DOES NOT COVER ANY VEHICLE IN WHICH THE ROUSHCHARGER™ IS INSTALLED. IT IS A WARRANTY COVERING THOSE SPECIFIC COMPONENTS LISTED UNDER WARRANTY COVERAGE. EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW, ROUSH IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY INCLUDING, WITHOUT LIMITATION, LOSS OF REVENUE, LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS), LOSS OF THE USE OF MONEY, LOSS OF ANTICIPATED SAVINGS, LOSS OF BUSINESS, LOSS OF OPPORTUNITY, LOSS OF GOODWILL, LOSS OF REPUTATION; LOSS OF EARNINGS, PERSONAL DAMAGES, PERSONAL INJURY INCLUDING DEATH, PERSONAL EXPENSES (FOOD, ROOM, MEDICAL, DENTAL), RENTAL VEHICLE EXPENSES, STORAGE OR ANY OTHER LOSS OR DAMAGE HOWSOEVER CAUSED INCLUDING THE REPLACEMENT OF THE VEHICLE ON OR IN WHICH THE ROUSHCHARGER™(S) IS INSTALLED OR OTHER PROPERTY.

WARRANTY ACTIVATION

To activate this warranty you must return this warranty registration card along with your paid service order installation receipt that includes your vehicle identification number (VIN) and engine serial number within 30 days of the service order installation date identified on your installation receipt. Make a photocopy of this documentation before you send it to ROUSH.

OBTAINING WARRANTY SERVICE

- To obtain warranty service on your vehicle upfitted with the ROUSHcharger™ Kit(s), the vehicle **must** have an operational odometer and have maintenance services performed at the intervals as stated in the Ford Motor Company's vehicle maintenance schedule, either at a Ford dealership or commercial maintenance center. You **must** present these invoices in the unlikely event of a warranty claim; therefore, we strongly recommend that you retain them for your records.
- You **must** submit copies of the following documents with your warranty claim: (a) your warranty registration form, (b) the receipt showing installation of the ROUSHcharger™ by a certified Ford Automotive Technician or ASE automotive service technician, and (c) all requested vehicle maintenance records.
- **YOUR FAILURE TO CONTACT US AND RECEIVE AUTHORIZATION BEFORE ANY REPAIR WORK IS PERFORMED WILL INVALIDATE YOUR WARRANTY CLAIM.**
- If a warranted component has failed, please contact us immediately at 1-800-59-ROUSH (1-800-597-6874). You **must** authorize the repair facility to tear down the component for inspection before we authorize the replacement of a failed component covered by this warranty. If the failed component is not covered under this warranty, the tear down and subsequent repair costs are solely your responsibility.
- An ASE certified repair facility **must** complete the replacement based on the written estimate they provide to us. We base labor rates for replacement services on national labor time standards, such as those in Motor's or other comparable labor time standard guides.

CONSUMER PROTECTION LAWS

This warranty is valid only in the United States and Canada.

Some states and provinces do not allow the exclusion or limitation of certain damages or the duration of implied warranties or conditions so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state or province. The laws of the State of Michigan (excluding its conflict of laws provisions) will govern this warranty. The U.N. Convention for the International Sales of Goods will not apply. Any action brought to enforce or interpret this warranty shall occur only in a court of the State of Michigan or in U.S. District Court for the Eastern District of Michigan.

MISCELLANEOUS:

- **NEITHER RESELLER OR ITS EMPLOYEE, NOR ANY EMPLOYEE OF ROUSH IS AUTHORIZED TO MAKE ANY MODIFICATION, EXTENSION OR ADDITION TO THIS WARRANTY.**

ROUSH RESERVES THE RIGHT TO MODIFY THIS LIMITED WARRANTY AT ANY TIME, HOWEVER, ANY SUCH MODIFICATION WILL NOT ALTER THE WARRANTY CONDITIONS APPLICABLE AT THE TIME OF SALE.

If you have any questions, please call us toll free at 1-800-59-ROUSH.