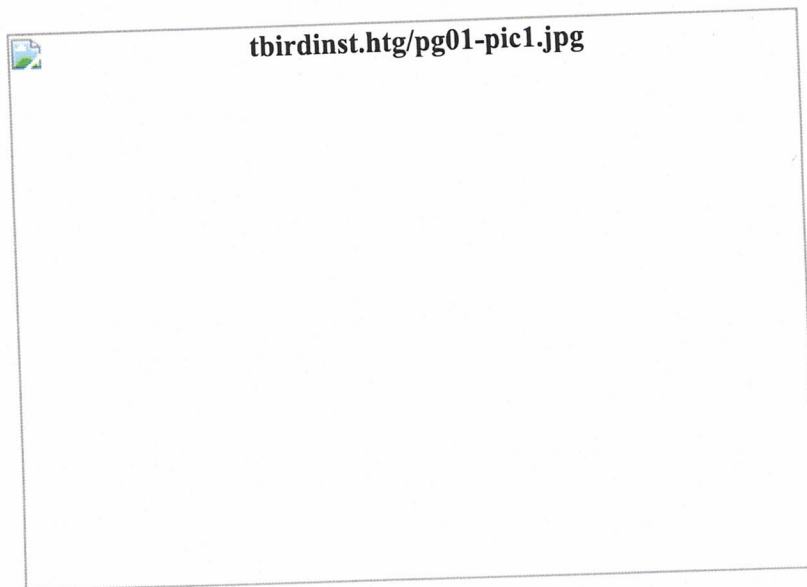


# INSTALLATION INSTRUCTIONS

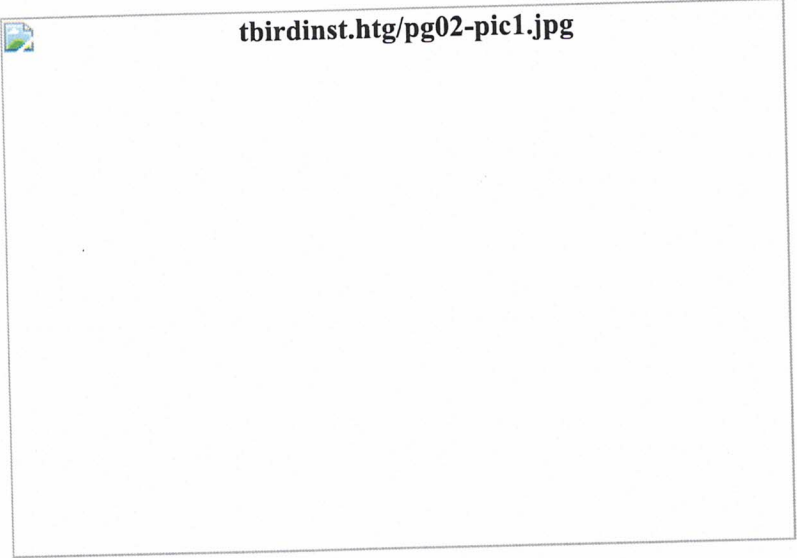
## 96-97 4.6 L Thunderbird

Before you start you will need some parts that are not included in the installation kit. Click [Here](#) for a parts list. Use your browser's BACK function to return to this page.

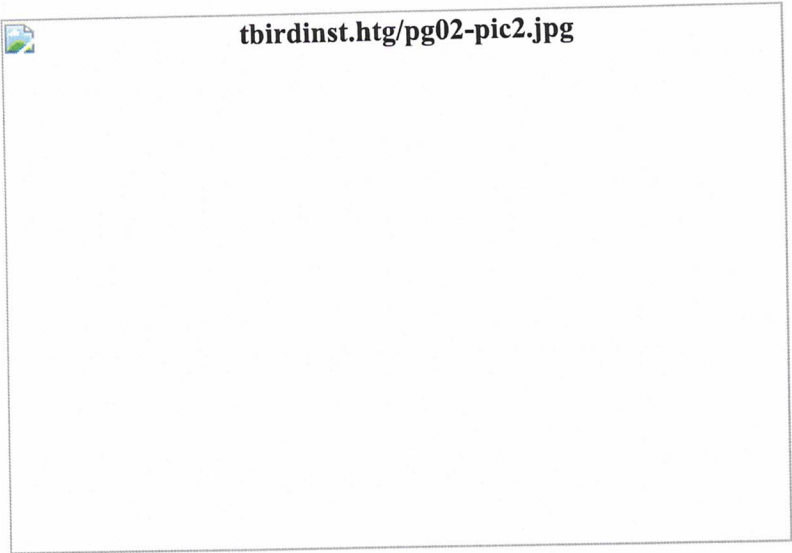
1. Disconnect negative ground cable from battery.
2. Remove spark plug wires, and mounting plate/separators from vehicle. CAUTION: Do not pull on the ignition wires, use the rubber boot.
3. Remove air cleaner outlet tube from vehicle.
4. Remove PCV hose from vehicle.
5. Remove idle air hose and silencer from vehicle.
6. Remove crankcase vent hose from vehicle.
7. Disconnect vacuum hoses from Intake Manifold.



8. Drain engine cooling system from petcock valve on bottom of radiator.
9. Relieve fuel system pressure and disconnect spring lock couplings. CAUTION: NO Smoking.

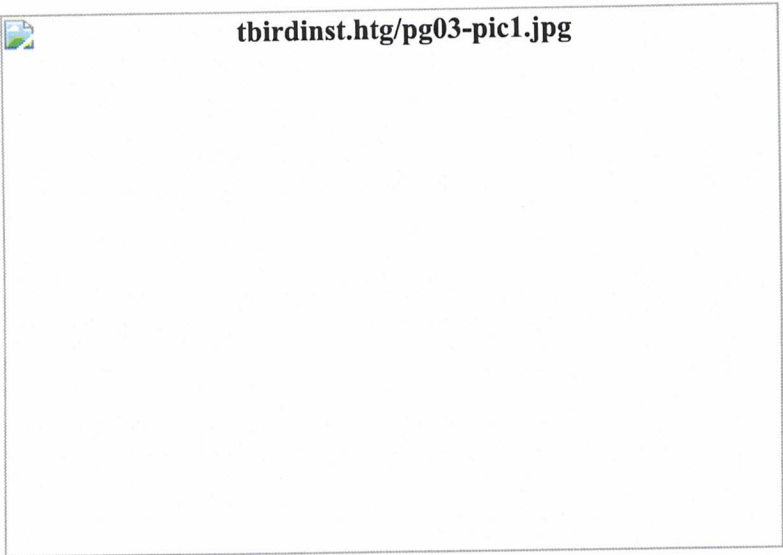


**10. Remove accessory drive belt.**

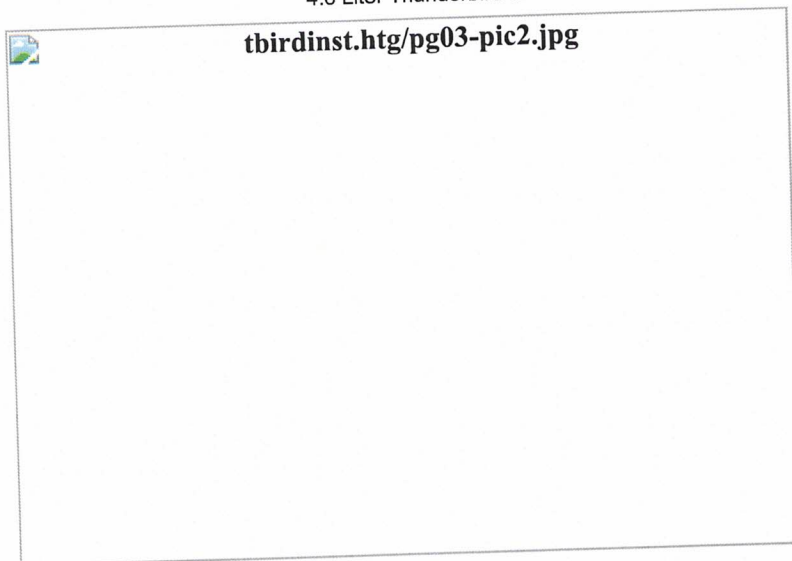


**11. Disconnect Alternator wires (2 plugs and 1 power cable).**

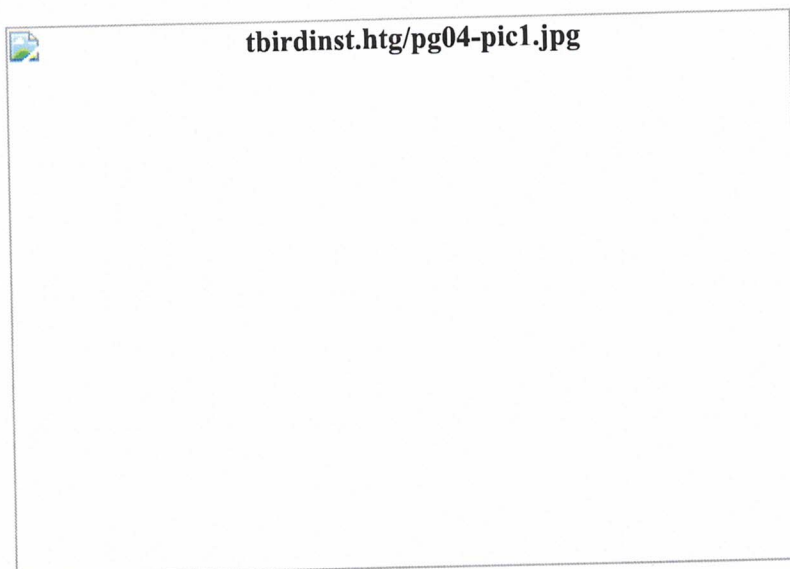
**12. Remove Alternator.**



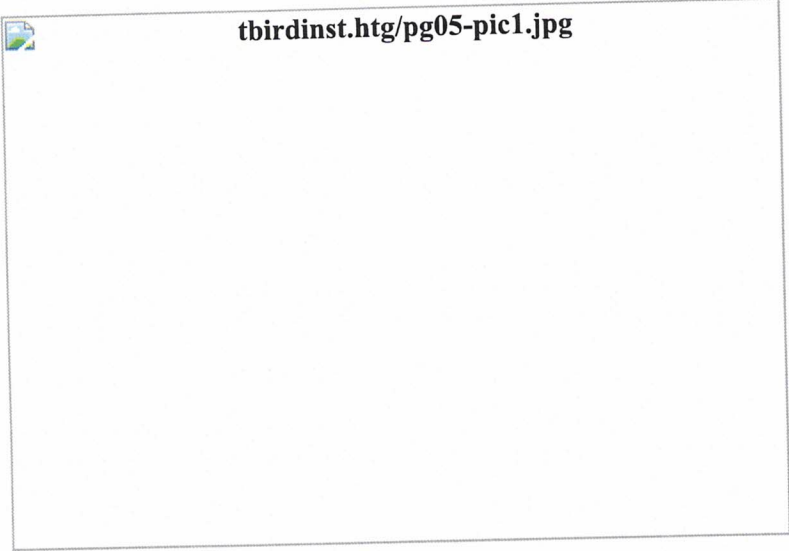
**13. Disconnect throttle cable (and cruise control cable if equipped) and mounting bracket from intake manifold.**



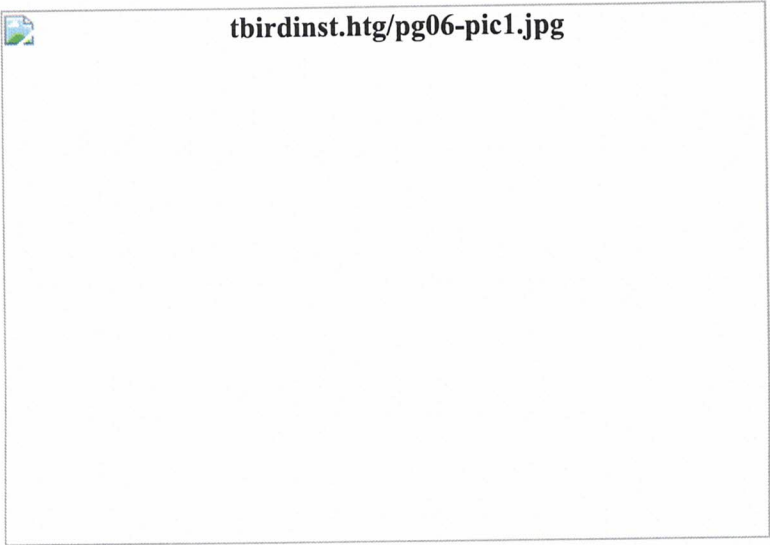
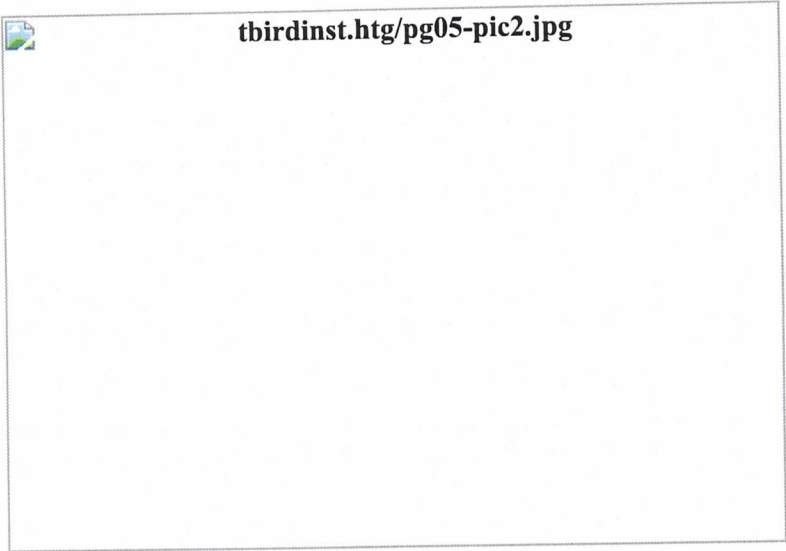
- 14. Disconnect water heater hose from intake manifold.**
- 15. Loosen EGR tube retaining nut at EGR Valve.**
- 16. Disconnect vehicle wiring harness connectors from Fuel Injectors, Temperature Sensors, Throttle Position Sensor, Idle Air Valve, etc., and position out of the way.**
- 17. Remove Fuel Rails and Injectors.**
- 18. Remove Intake Manifold bolts (11), including the ones retaining the water outlet.**
- 19. Remove water outlet and upper radiator hose.**
- 20. Remove thermostat and O-Ring from the Intake Manifold.**
- 21. Remove Intake Manifold.**



- 22. Remove Intake Manifold Gaskets.**
- 23. Vacuum any dirt or debris from the Intake Manifold flanges and cover with duct tape or equivalent.**
- 24. Mark Heater water tube/hose assembly, located in the engine valley, at the location shown. After the tube is marked, loosen the two bolts (on rear of cylinder head) holding the tube assembly and remove.**



**25. Cut tube at mark, and slightly flare tube end (so hose will not slip off). Install a longer hose and position to the right side of valley, to have clearance for By Pass Valve.**



**26. Move condenser from right side of Driver side coil pack to left side, to give alternator clearance. Grind or cut bracket.**

**27. Remove Driver side coil pack mount from front cover. Do not remove the coil from the mount!**

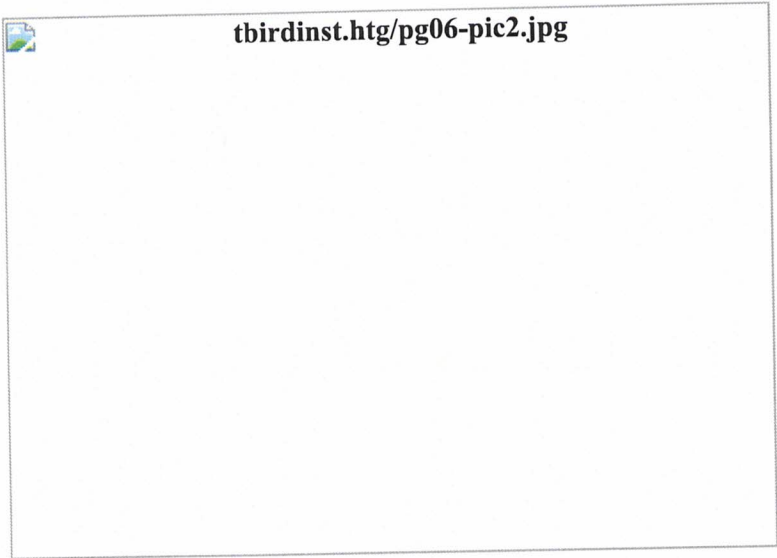


**28. Remove lower stud used for driver side coil pack mount. This will need to be replaced with a new stud without the integrated nut. (supplied in kit)**

**29. Remove front cover bolts which will need to be replaced for the mounting of the Idler Pulley Mount. To determine which bolts need to be removed, if not obvious to you, hold the mount up to the front cover and position the hole over the stud you just replaced.**

**30. Position Idler Pulley Mount and retain with bolts provided. (Torque to 17-22 ft-lb.)**

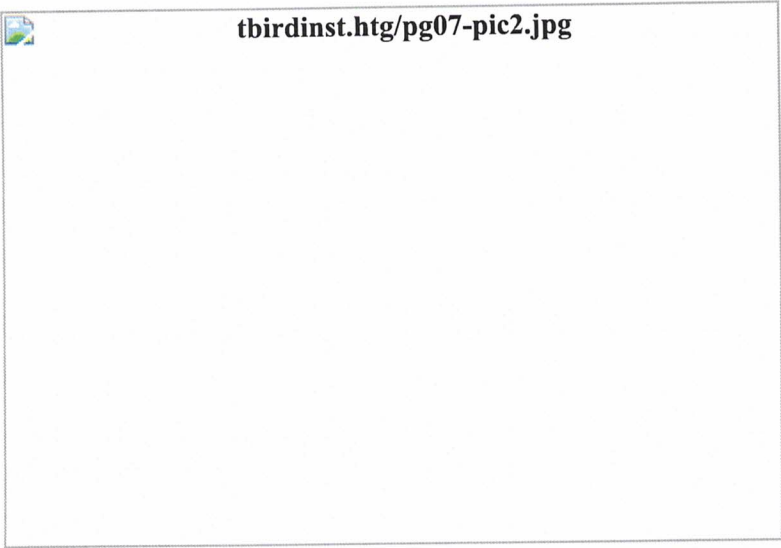
**31. Attach Pulley to Mount and retain with provided bolt. (Torque to 25 ft-lb.)**



 tbirdinst.htg/pg07-pic1.jpg

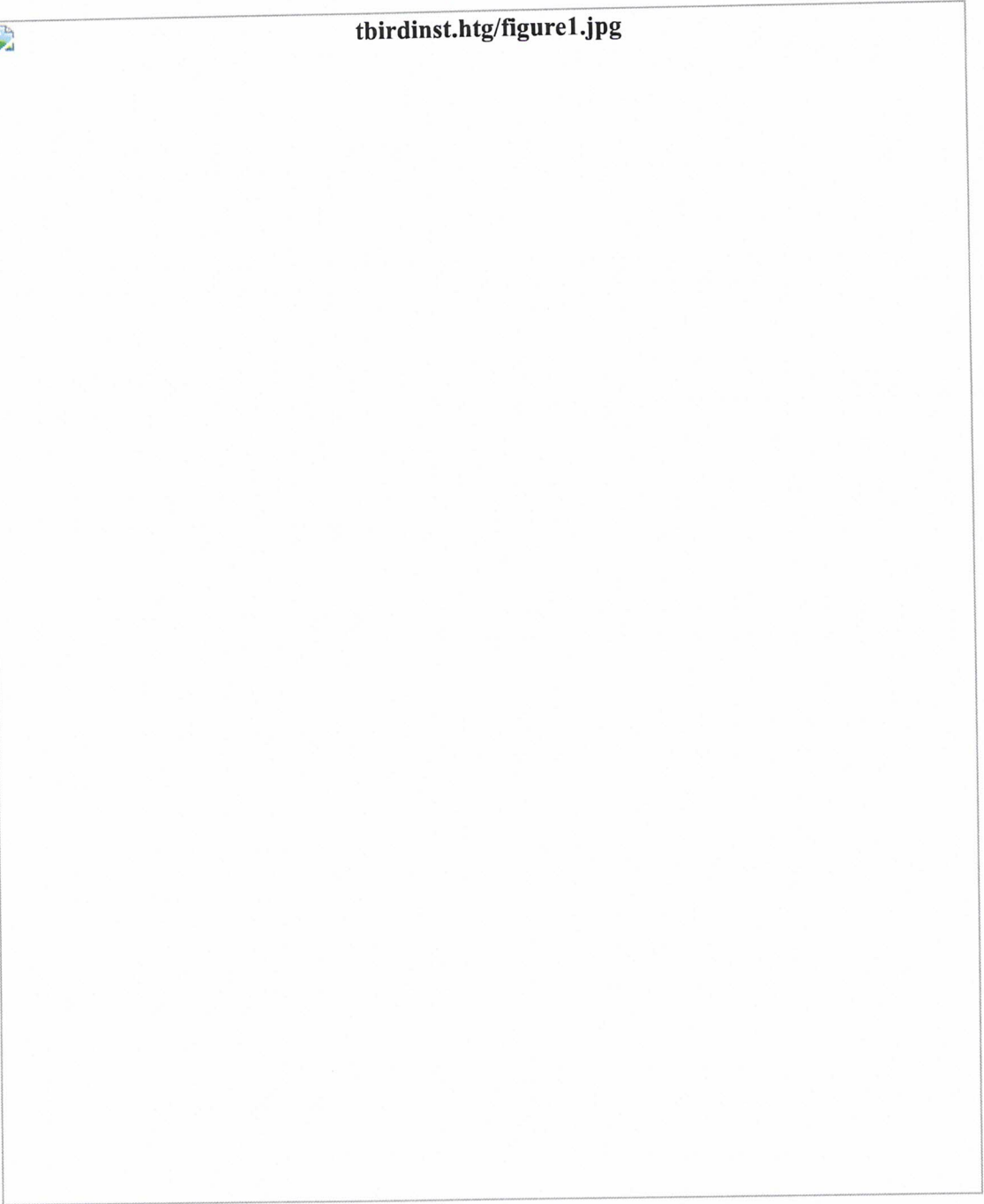
**32. Install Drive Belt (provided) and attach Alternator Mount to engine block. This may seem like two steps in one, but they must be done simultaneously. Use the bolts from the alternator and tighten by hand. (to be torqued later). Please note the revised belt routing before attempting this step. (See figure 1)**

**33. Transfer the EGR Valve from the stock manifold to the Throttle Body Adapter (TBA). The TBA must be removed from the supercharger to complete this transfer. Use the same bolts as were used on the old setup. (Torque to 17-22 ft-lb.) Be sure to replace the gasket to assure proper functioning of the OBDII emission controls. NOTE: The EGR bolt extends into the port, but flow testing indicates no flow restriction! (DO NOT SHORTEN THE BOLT)**

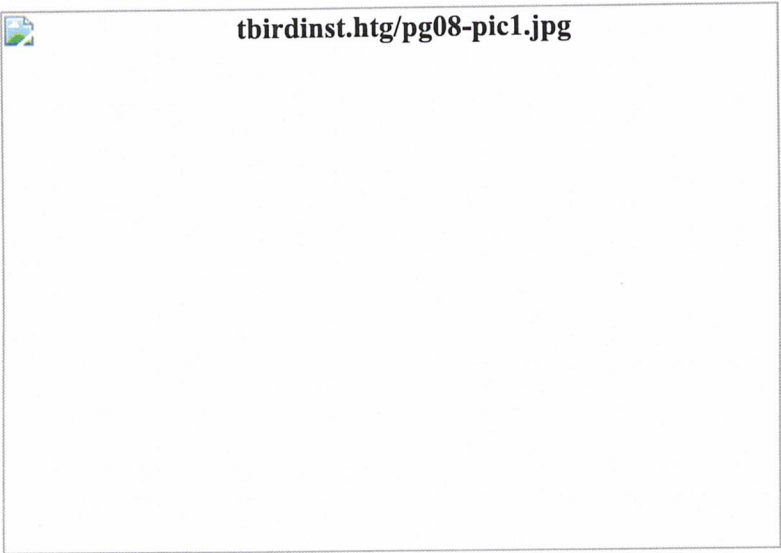




**tbirdinst.htg/figure1.jpg**

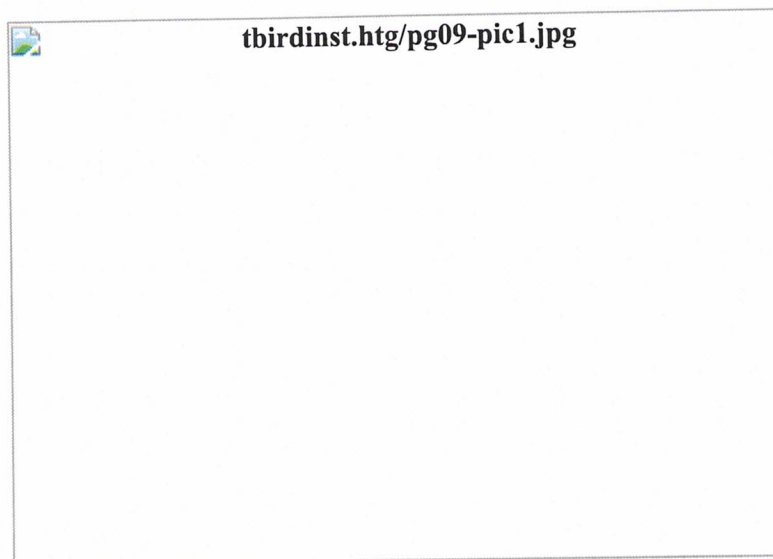
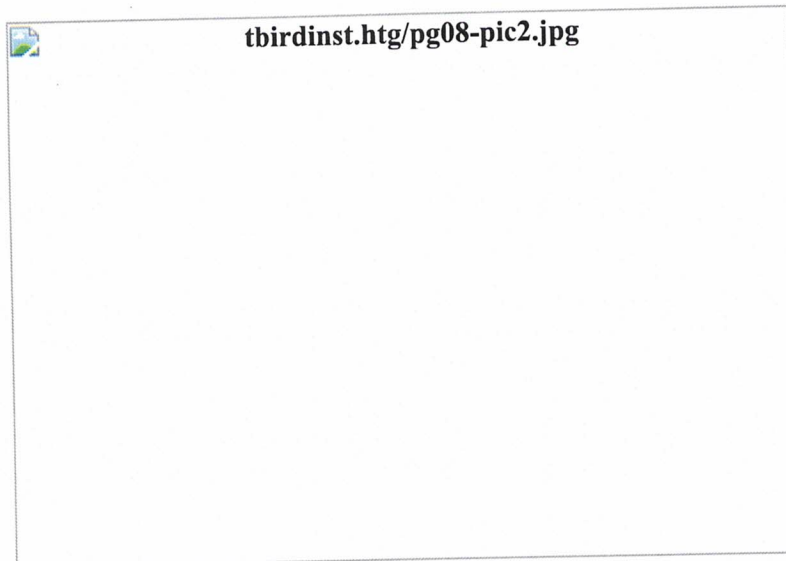


**tbirdinst.htg/pg08-pic1.jpg**



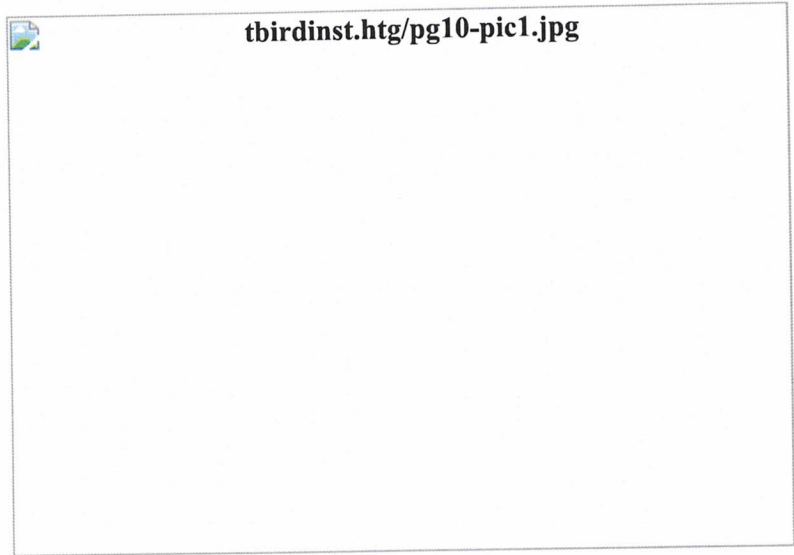
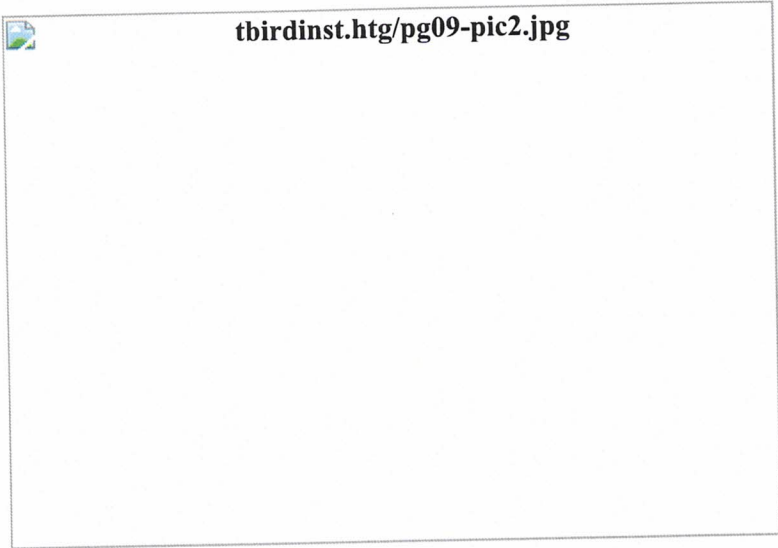
**34. Add sealant (Loctite 510 or equivalent) to the TBA and Attach to the Supercharger. Torque bolts to 17-22 ft-lb..**

**35. Pay close attention to clean any dirt or debris from inside the supercharger or TBA.**

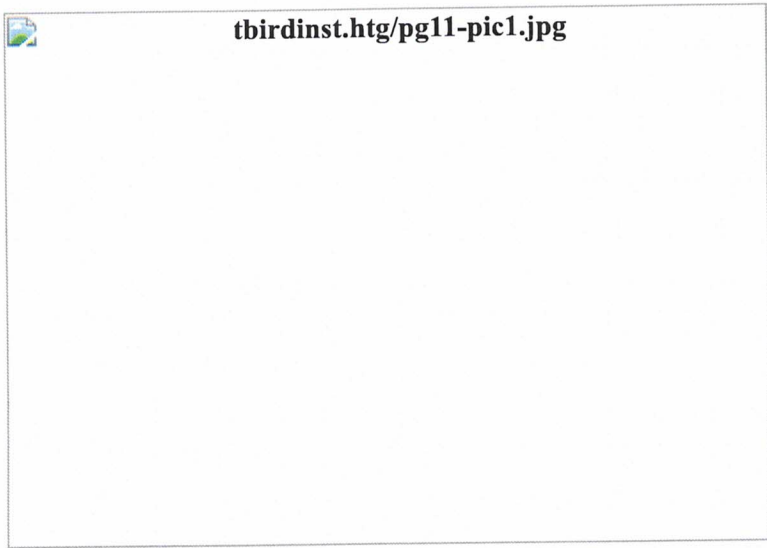


**36. Transfer the Idle Air Valve from the stock manifold to the Throttle Body Adapter. Use the old gasket.**

**37. Move the EGR Pressure Transducer to the firewall (#32 Drill .111). Do Not pull hoses tight, allow some slack for engine movement. CAUTION: Do not drill through firewall any further than necessary. Use screws provided.**

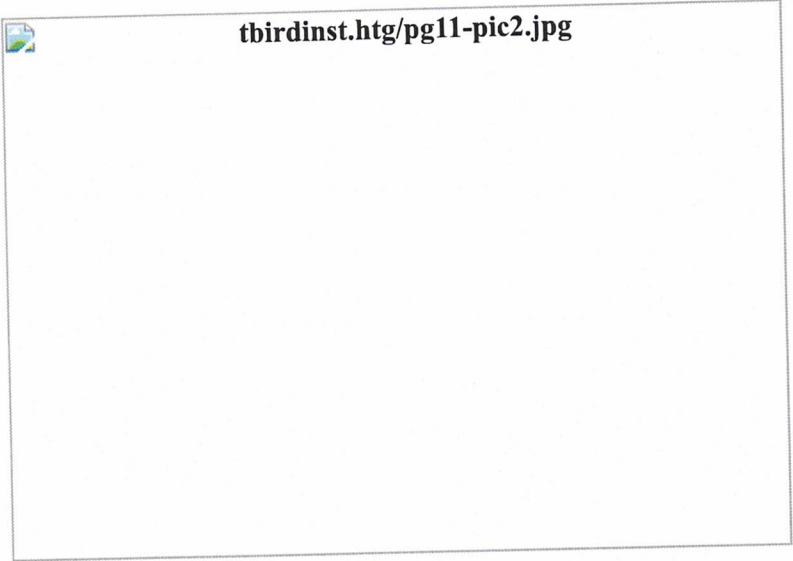


**38. Move Wiring Harness to firewall with clamp provided. Use nut from EGR mount.**



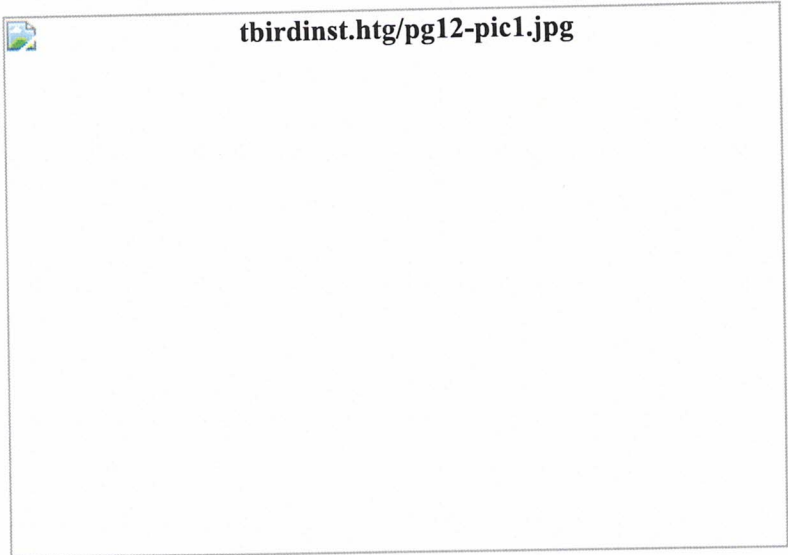
**39. Since the EGR Valve has been re-located, the EGR Tube must be “Modified”. This can be done with common hand tools.**

**Cut the EGR Tube at point shown (Sears Tube Cutter Part # 51251). Tube needs to be moved approximately 1/2 inch closer to driver side of car to clear Throttle Body Intake Tube. Use Brass Tube connector (supplied).**



**40. EGR Tube also needs to be cut as it goes over the Throttle Body Intake Tube.**

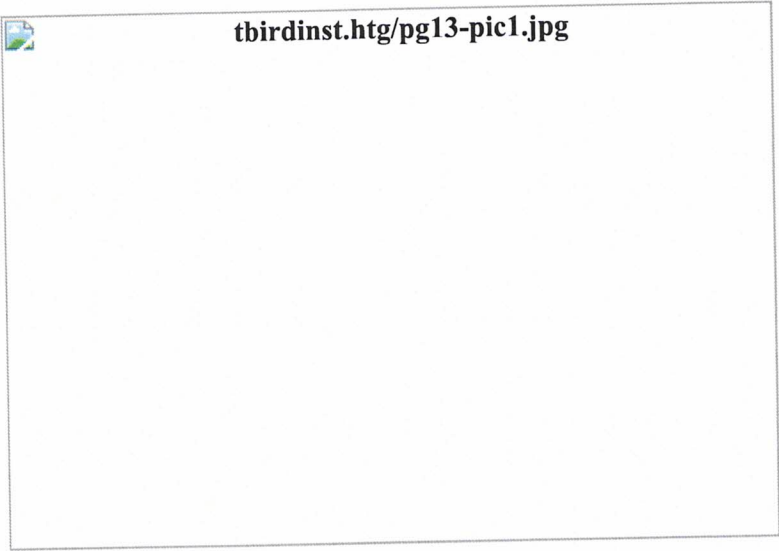
**41. Install brass tube connector on EGR tube.**



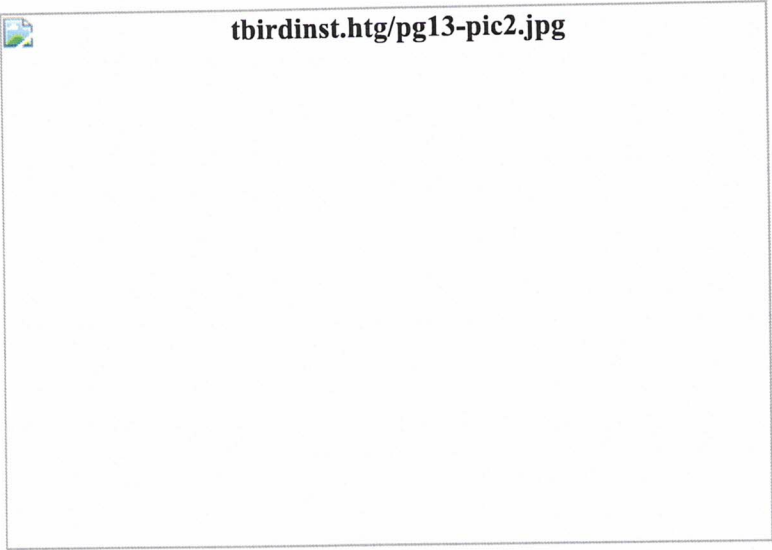
**42. Slide insulator over EGR tube.**



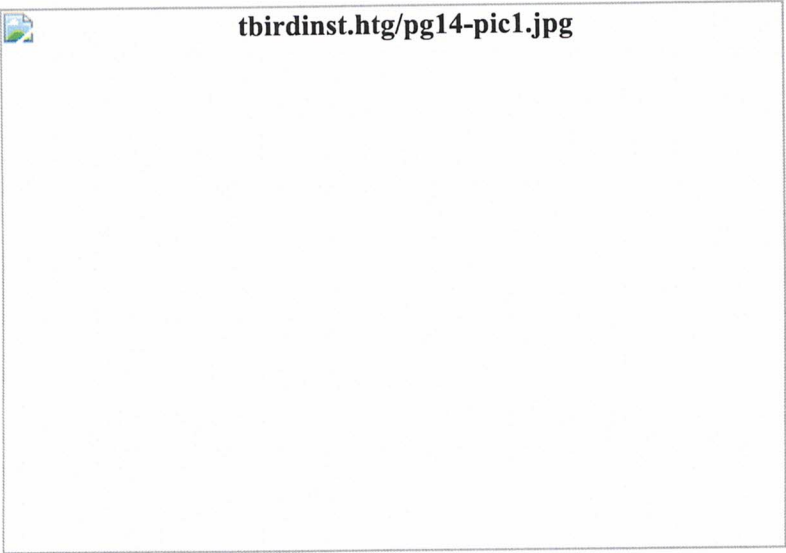
**43. Set supercharger / throttle body adapter into position.**



**44. EGR now needs to be bent more. Tighten EGR tube/nut in a vise and push down on the outer end to bend. This may take several try's to get right. Mark tube at center of brass coupling and cut off.**

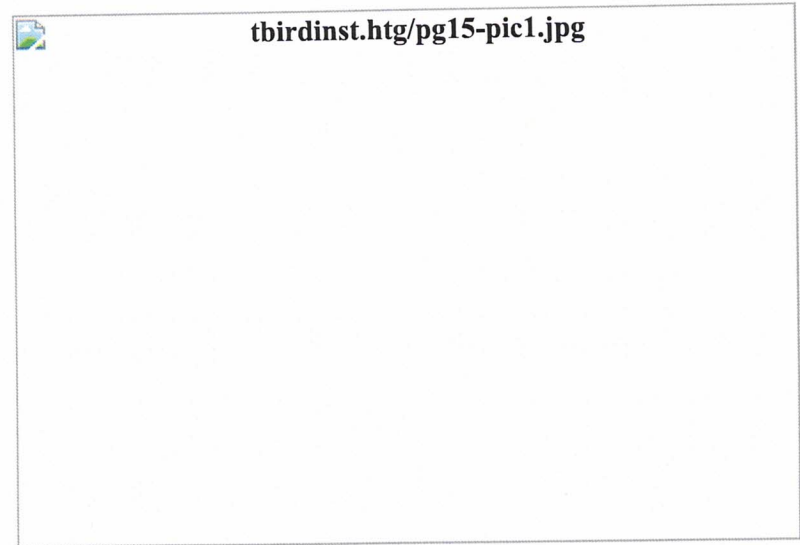
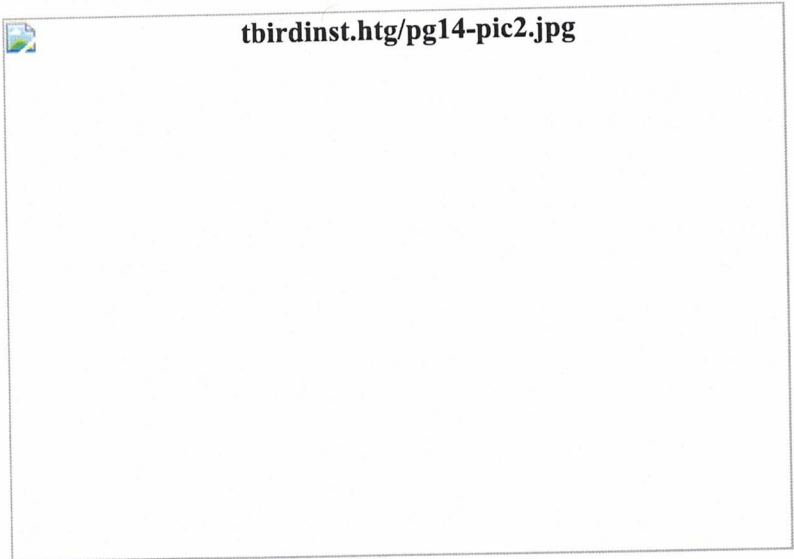


**45. Tighten brass connector on EGR tube and large nut on EGR valve. Slide insulator tube over brass coupling and down to bend.**

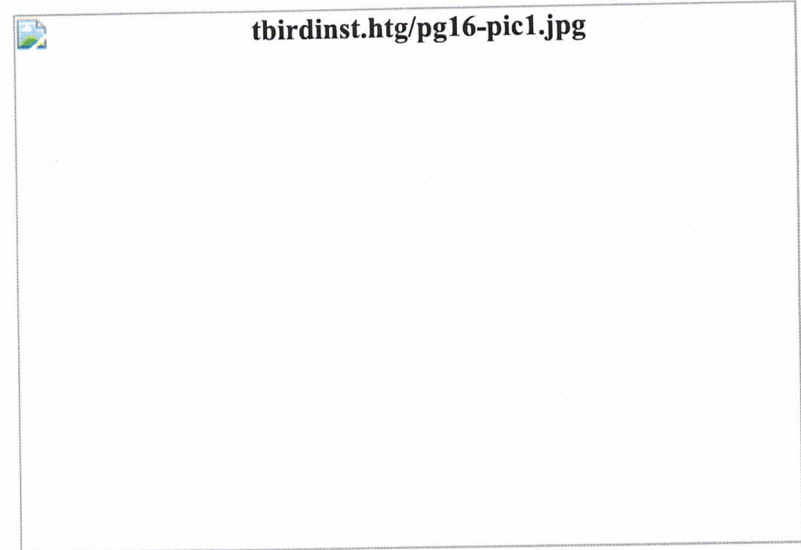
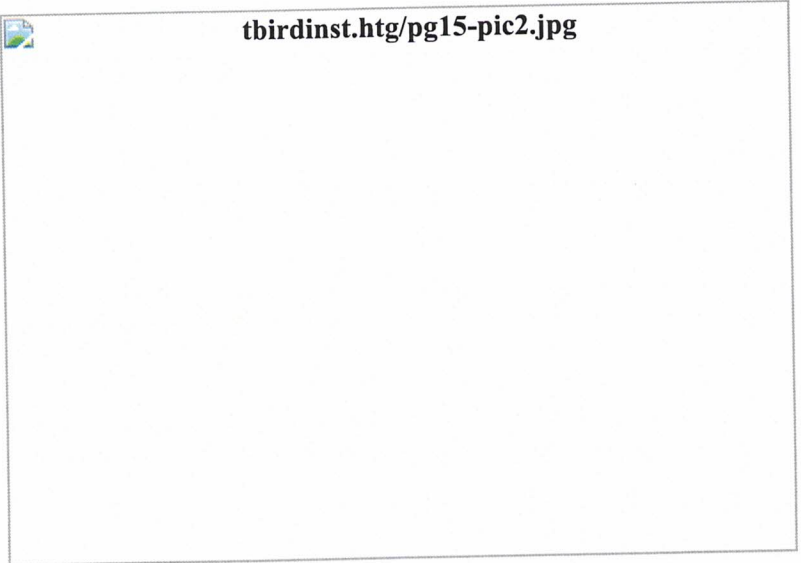




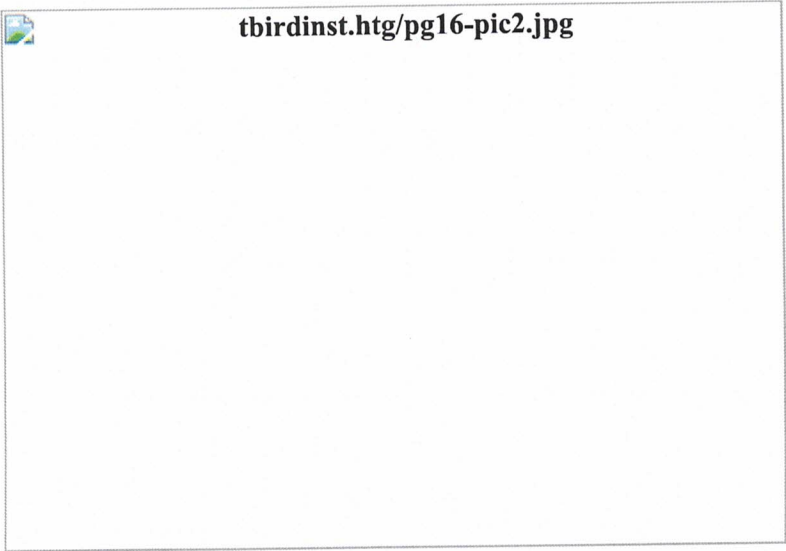
**46. The throttle body stop needs to be modified to clear the EGR insulator tube. Grind part of stop away, as shown in photo. After modification is done install throttle body on to TBA using the factory bolts. (torque 6-9 ft-lb.) The cable linkage goes on top. Be sure to connect 3 wire connector and install gasket properly, it is not symmetrical. Note: the top front bolt hole has no threads, this is where the TBA hanger attaches. Tighten this bolt finger tight, until the bolt to the plenum is installed later.**



**47. The idle air valve, throttle body, temp sensors, and alternator wiring must be lengthened to accommodate the revised locations. Wires of the proper color are provided for each along with crimp connectors. It is highly recommended that soldering and shrink-wrapping be used, in favor of the crimp connectors. Cut the wires a few inches from the connector and splice them to the wire provided. Leave the loose ends of the wires free until the wiring harness is installed later. Be sure to obey the color coding and don't be afraid to mark where they go ( check at least twice ).**



**48. Throttle cable bracket needs to be modified. Please refer to figure 2 and photo's. Attach the throttle cable bracket to the intake manifold using bolt's provided. Bend flat at this point.**



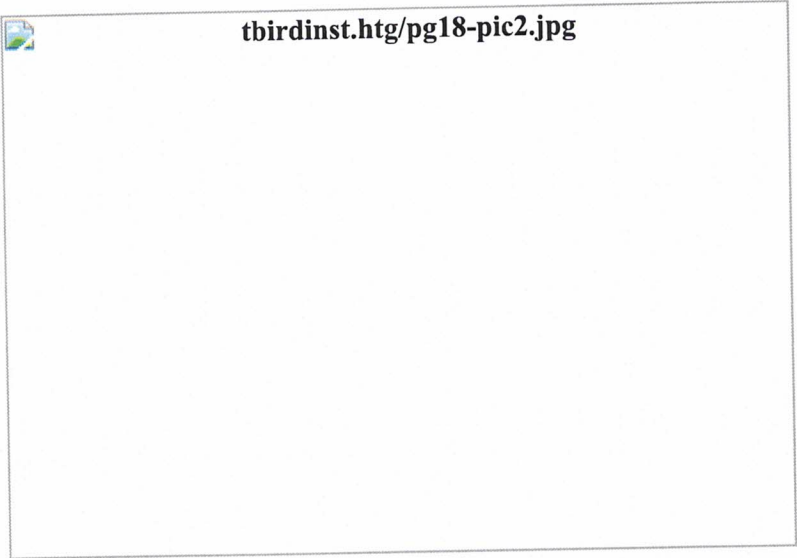


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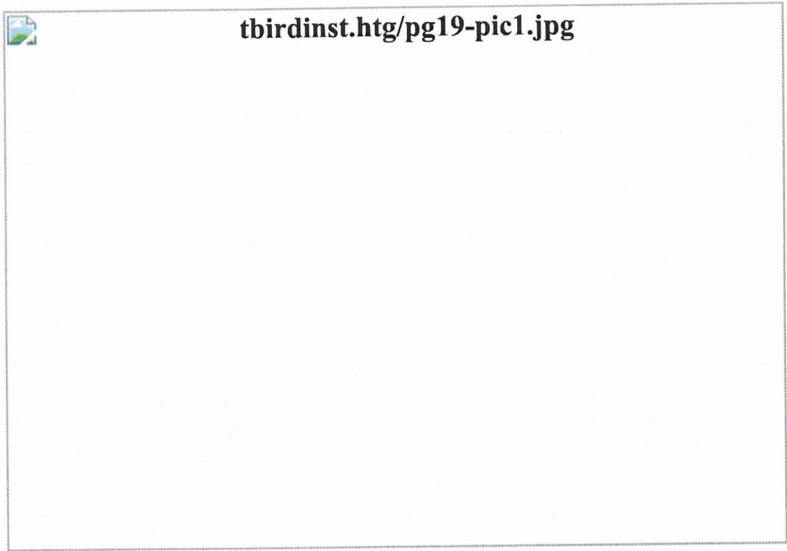


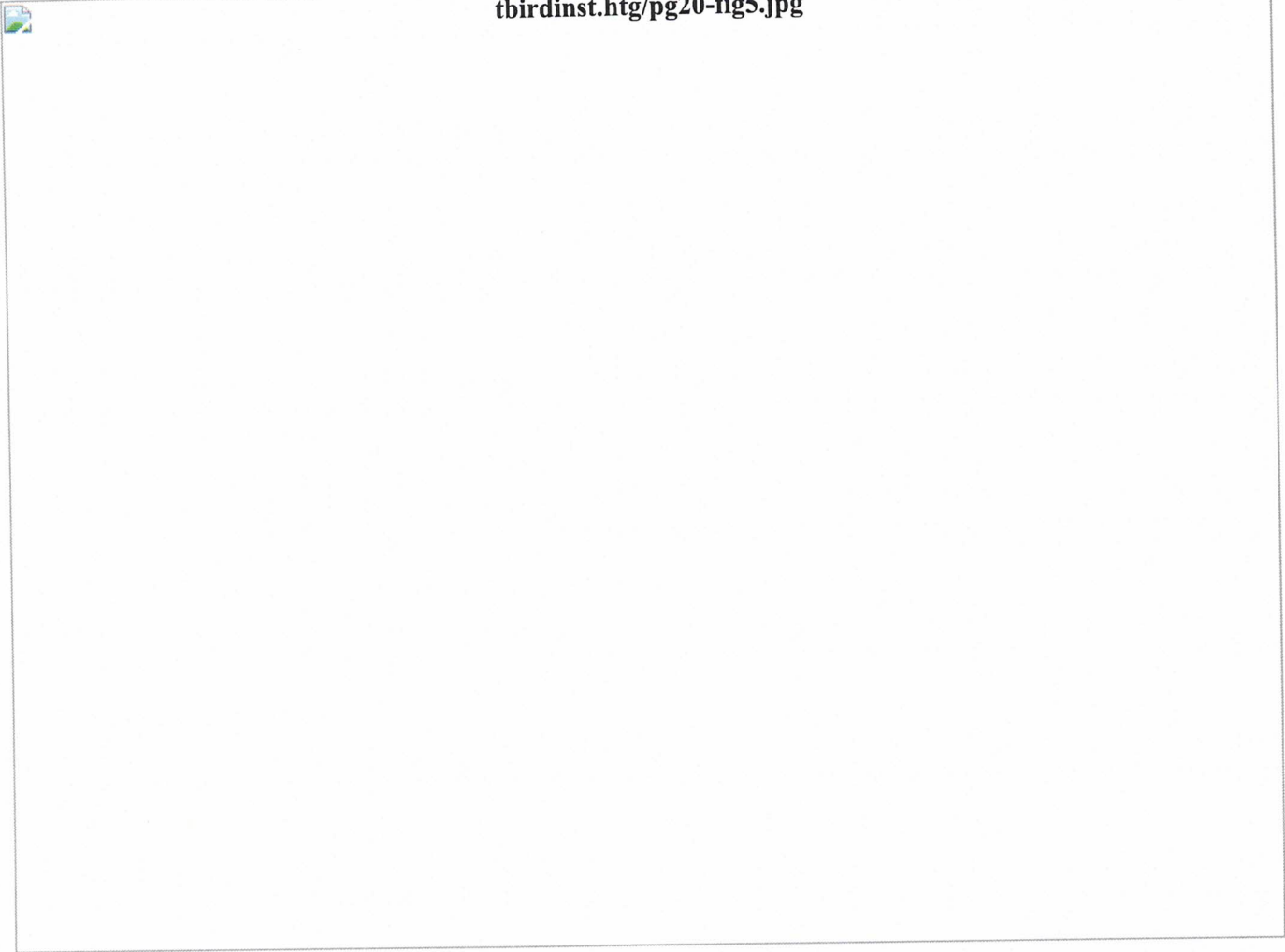
**tbirdinst.htg/pg18-pic1.jpg**

**Cut the back part of the mount off and drill this hole with a 17/64 drill bit. Install throttle return spring and attach cruise control mount using the original bolt and the supplied nut.**



- 49. Fit all hoses on TBA as specified in figure 5.
- 50. Plug in idle air control (IAC) valve electrical connector with extended wire to valve. Do not forget this step as this plug is very difficult to install later. This will need to be routed through runners #7 & #8.
- 51. Add sealant to blower flange (L`octite 510 or equivalent.)
- 52. Remove protective tape from the intake manifold flanges, and position the intake manifold gasket's.
- 53. Be sure to align intake manifold gasket tabs to holes in cylinder heads.
- 54. Plug in fuel regulator hose, located under plenum between #7 & #8 runners.

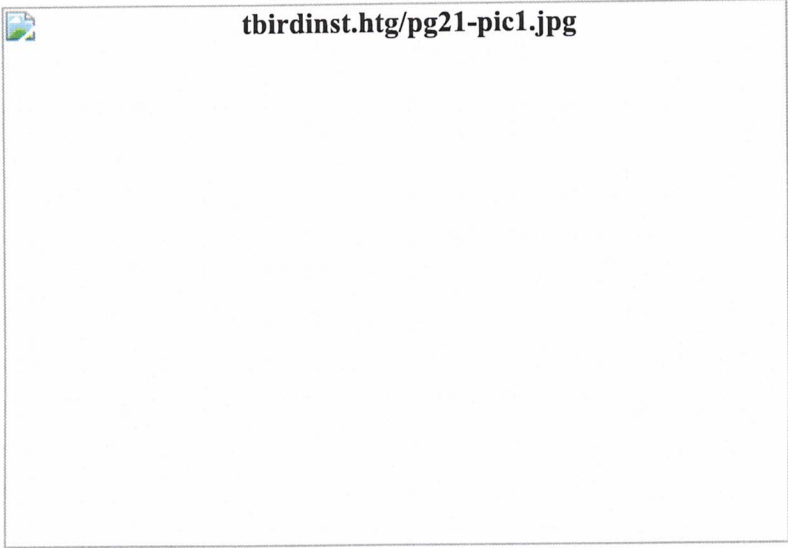




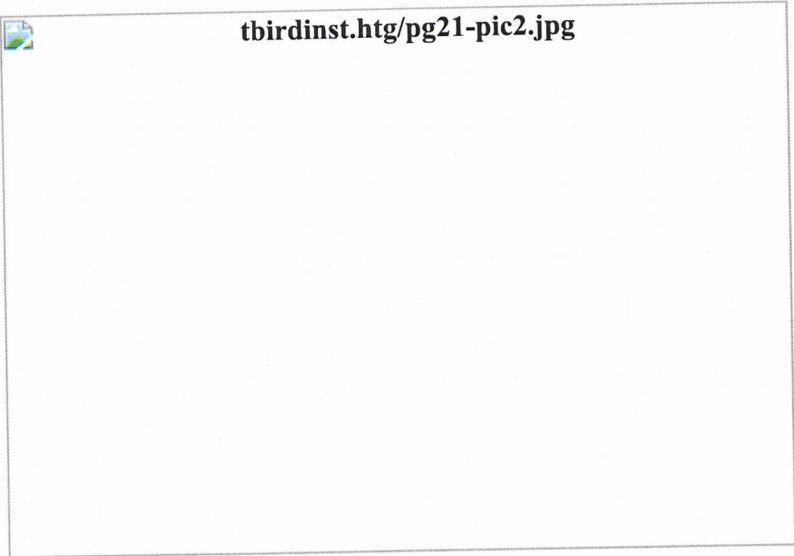
**55. Set the intake manifold on top of the engine a few inches forward of the actual mounting position.**

**56. Install the throttle and cruise control cables to the modified mount.**

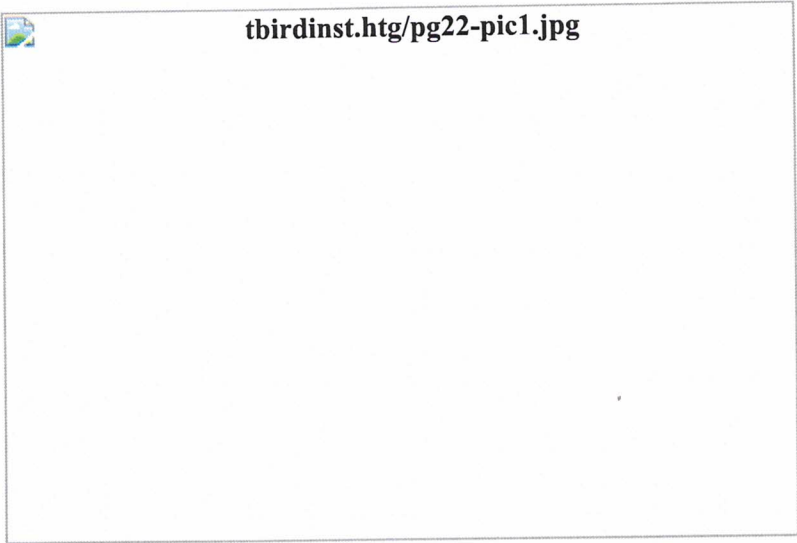
**57. The manifold can now be guided into the proper mounting position. It is important to make sure the vacuum hoses for the EGR solenoid and purge canister are routed between runner #3 & #4. The fuel regulator hose and idle air control wire's are routed between runner #7 & #8. The PVC hose is routed in front of runner #1 and the power brake hose in back of runner #8.**



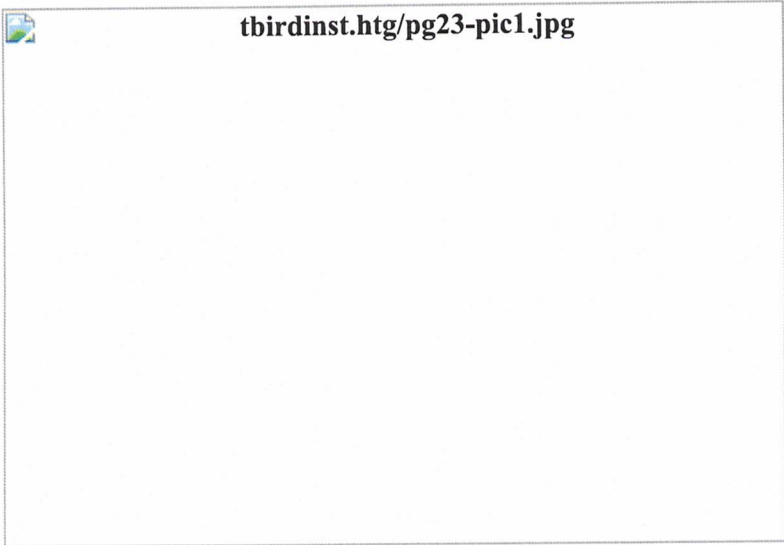
**58. Install and tighten bolts (4) that hold the supercharger to the intake manifold and torque to 17-22 ft-lb.**



**59. Install and tighten the bolt's (12) that hold the intake manifold to the engine. Note that the 2 bolts by the thermostat housing are a different length. Torque to 17-22 ft-lb.**

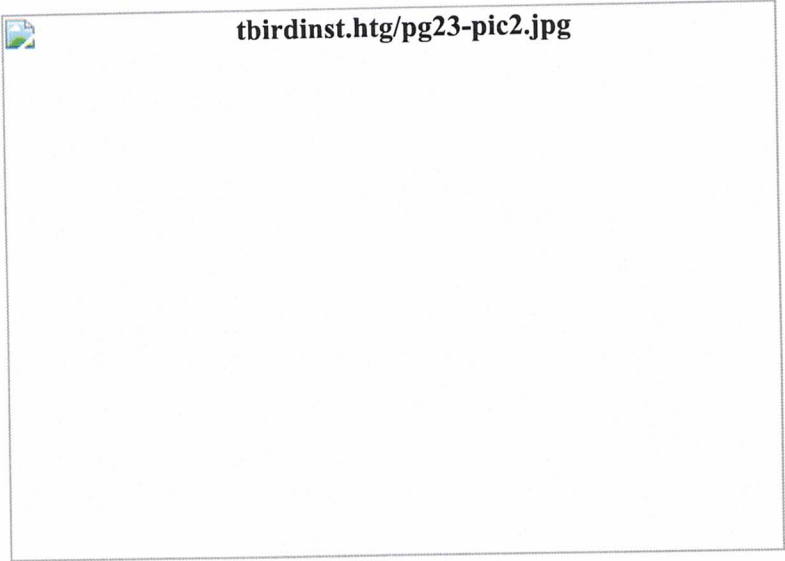


**60. Lubricate the O rings and install the intercooler into the intake manifold. Be sure to remove any protective covering before installing. Note: the intercooler has a chamfer on its front edge which needs to be positioned down.**

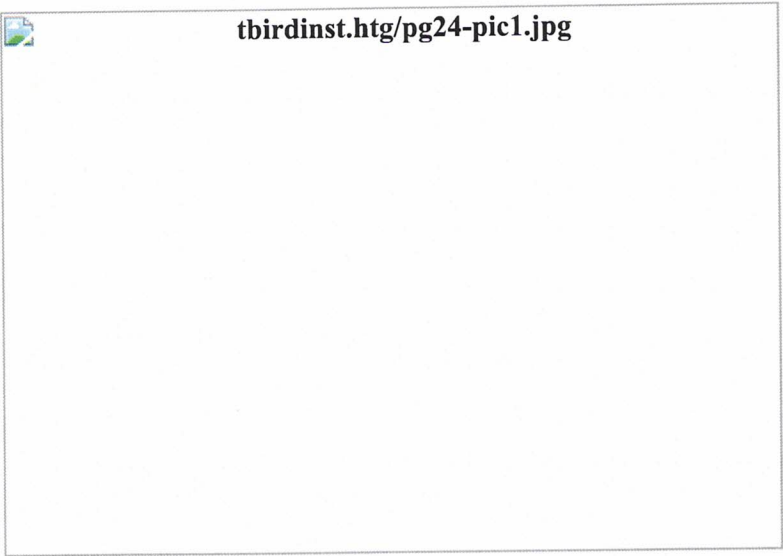




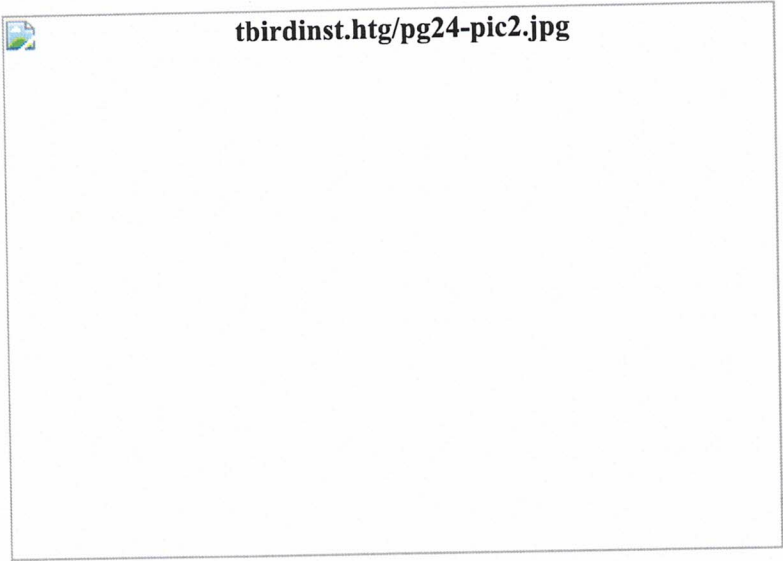
**61. install intercooler clamp bolt. Use loctite or equivalent on threads. Install plenum cover on intake manifold using silicone as a sealant. Torque bolts to 6-9 ft-lb.**



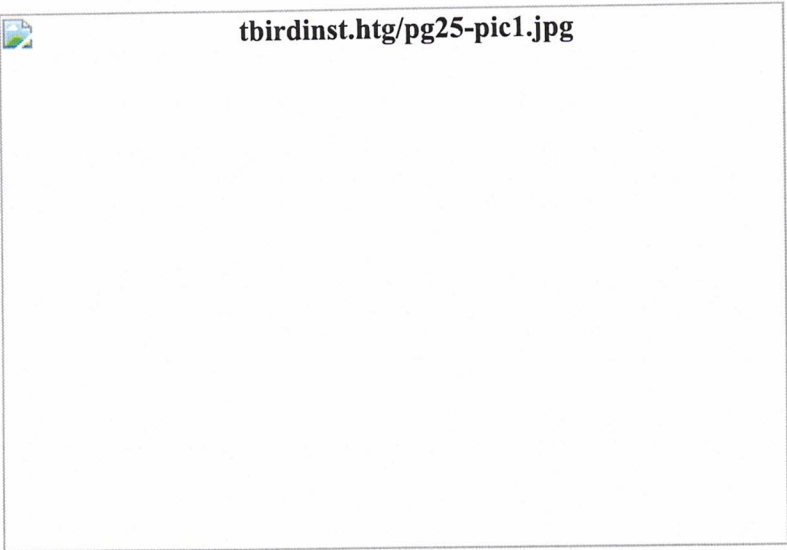
**62. Install blower housing clamp and tighten bolts to 5 lb-ft. Do not over tighten.**



**63. The alternator bracket bolts can be tightened now torque to 17-22 ft-lb. The alternator can now be installed. The red adapter can be removed ( for hood clearance ) and the alternator wire attached directly to the alternator.**



**64. The upper radiator hose must be cut and the supplied elbow fitted. use the factory spring clamps at their original position, and the supplied hose clamps at the elbow.**



**65. Connect the heater hose from the rear intake manifold flange to the heater core, use the factory spring clamp. Rotate this clamp with ears as far forward as possible, next to number 4 intake runner. This necessary to clear the air cleaner adapter tube.**

**66. Install the bolt for the throttle body adapter hanger and tighten both to 6-9 ft-lbs. This hanger attaches to one of the throttle body bolts and a bolt at the rear of the plenum.**

**67. Attach throttle and cruise control cables to throttle body.**

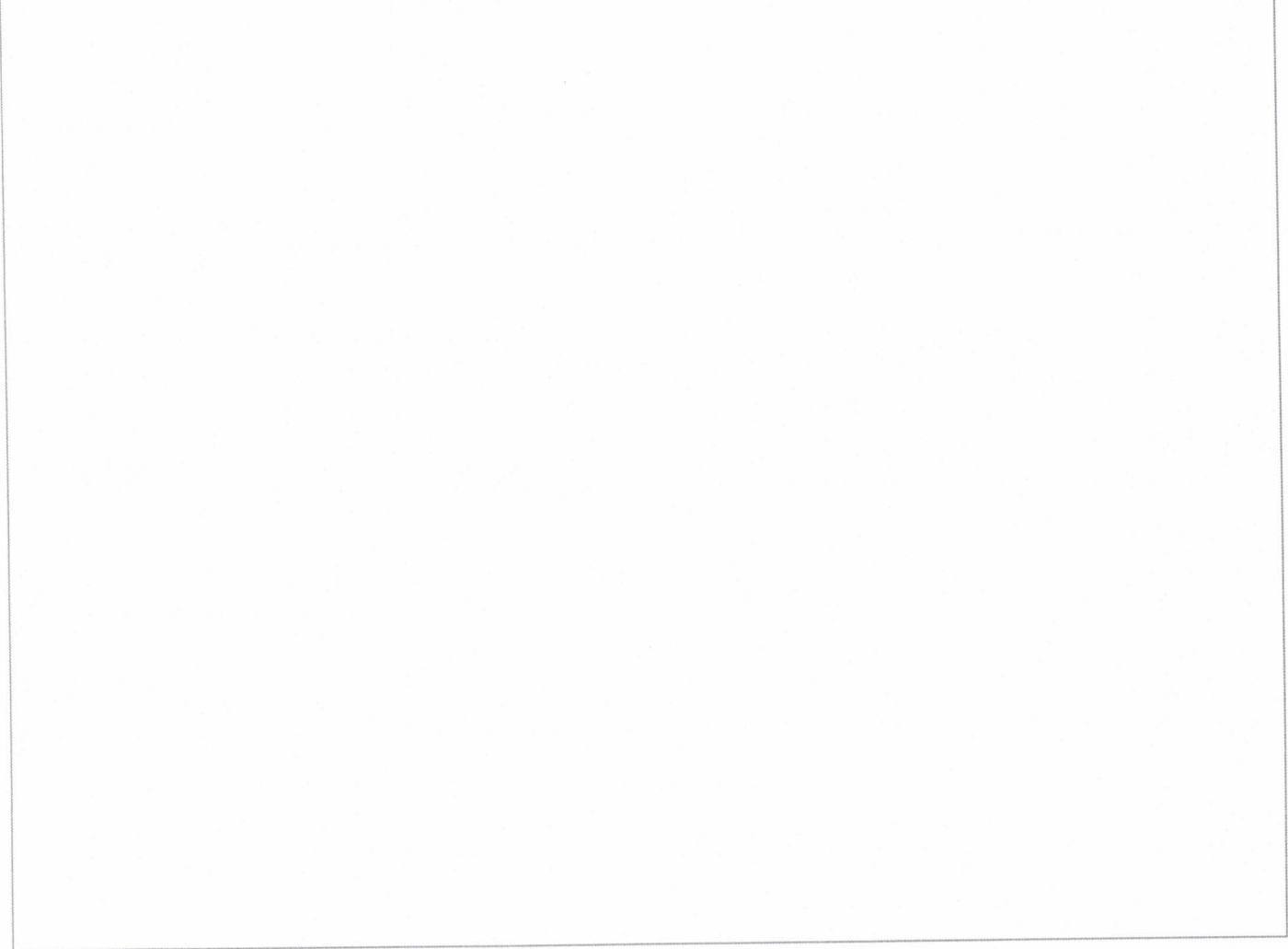
**68. Using a small amount of grease as lubrication on the O-rings, press the fuel injectors into the intake manifold.**

**69. The fuel rails now need to be modified. Note figure 3.**

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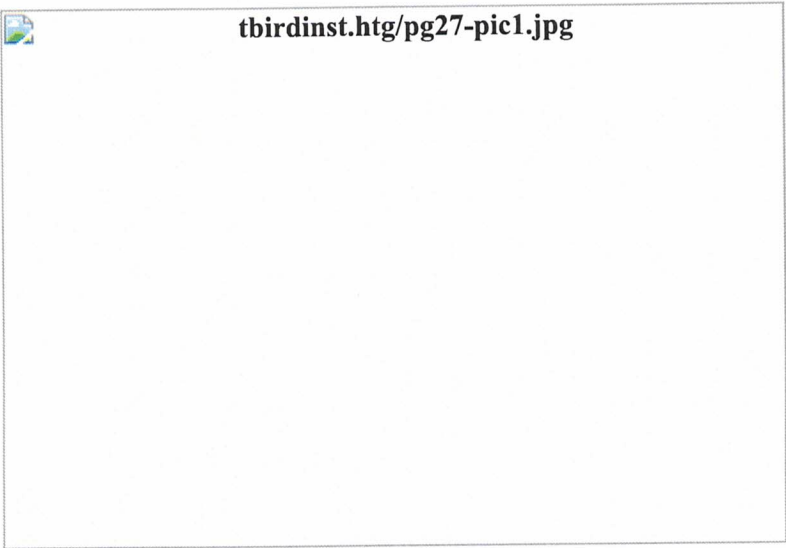
tbirdinst.htg/pg26-fig3.jpg



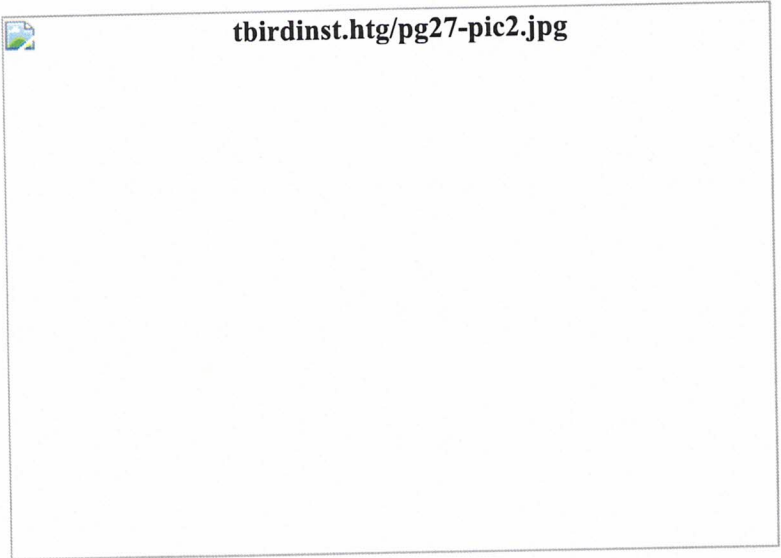
**70. Cut the rubber fuel hoses both front and rear of fuel rail. Do not get so close to the metal part of the fuel rail as to crush it.**



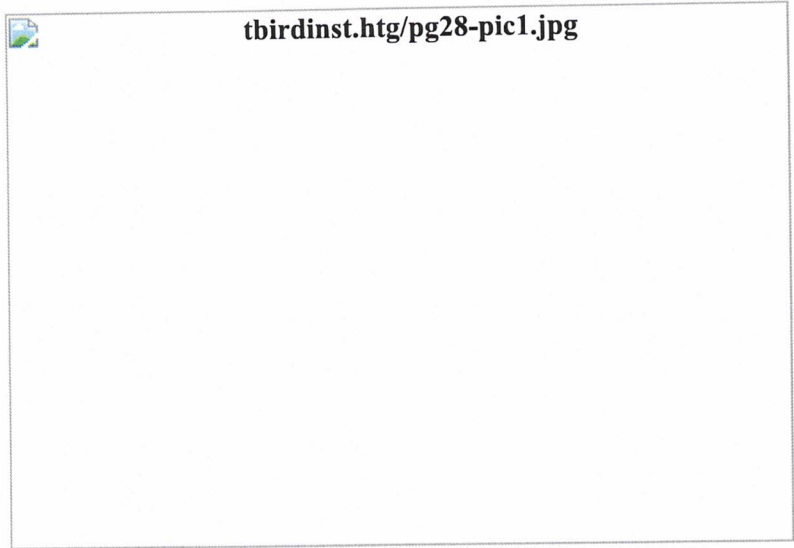
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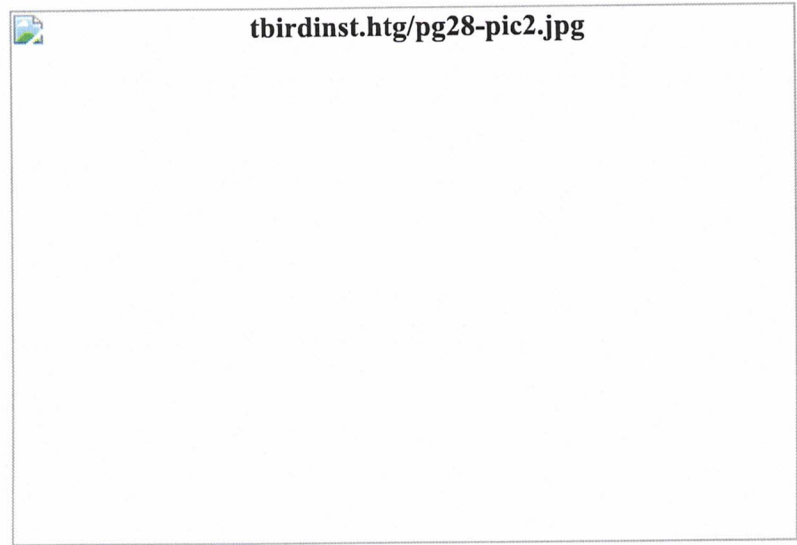
**71. After cutting trim the fuel line off the fuel rail with a knife.**



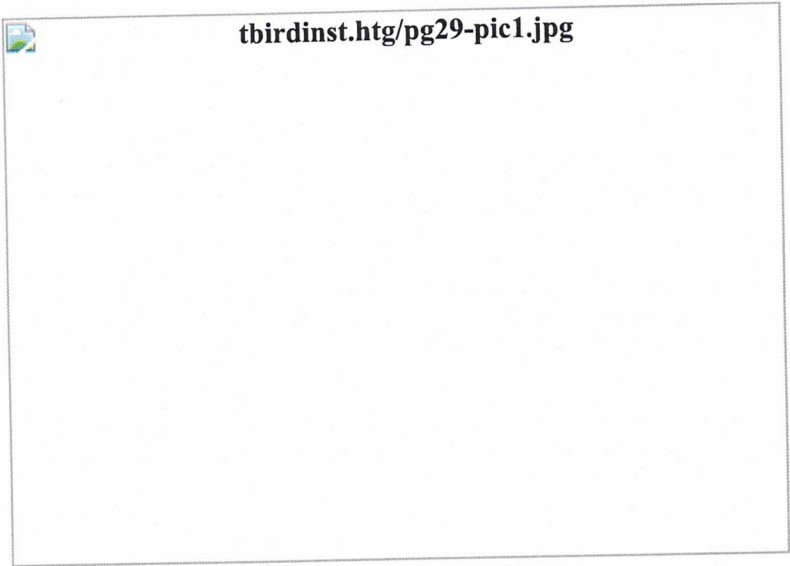
**72. Remove metal fuel return ( small outlet ) from right fuel rail. This can be done with a hacksaw at this point.**



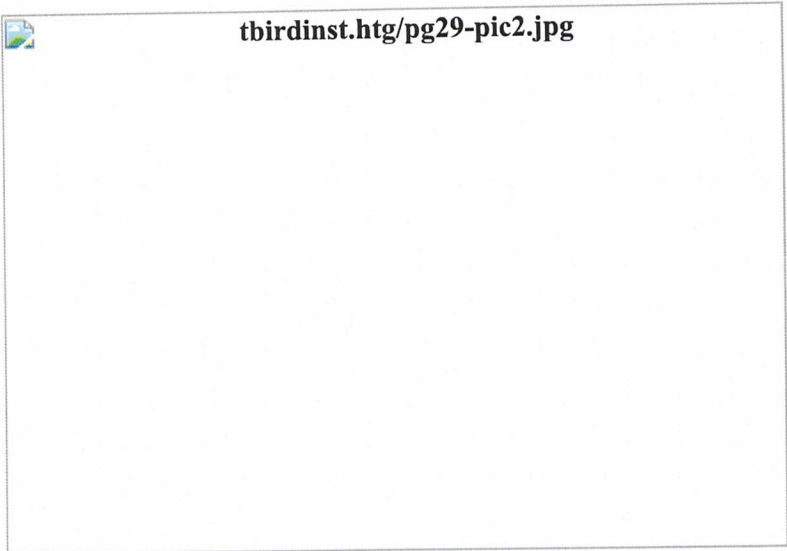
**73. You can now use a side cutter here to mark and bend off. Use a file to smooth. Be sure to tape the fuel rail to keep the shavings out.**



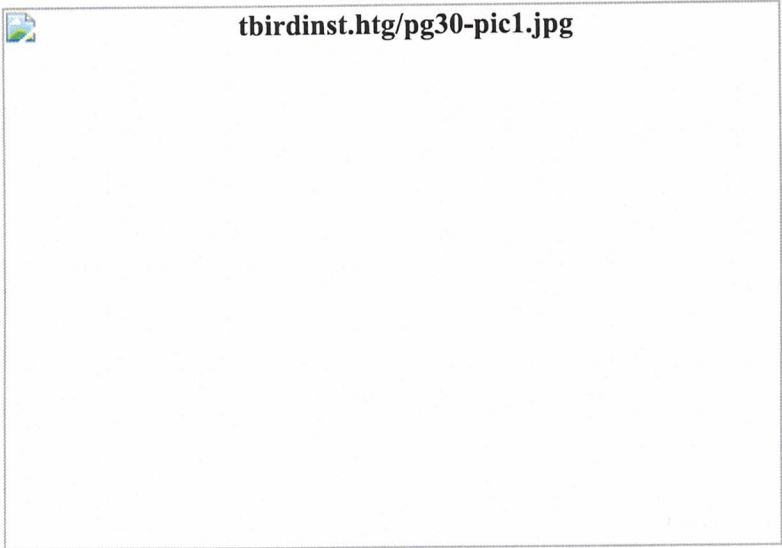
**74. Remove fuel pressure regulator from left side fuel rail.**



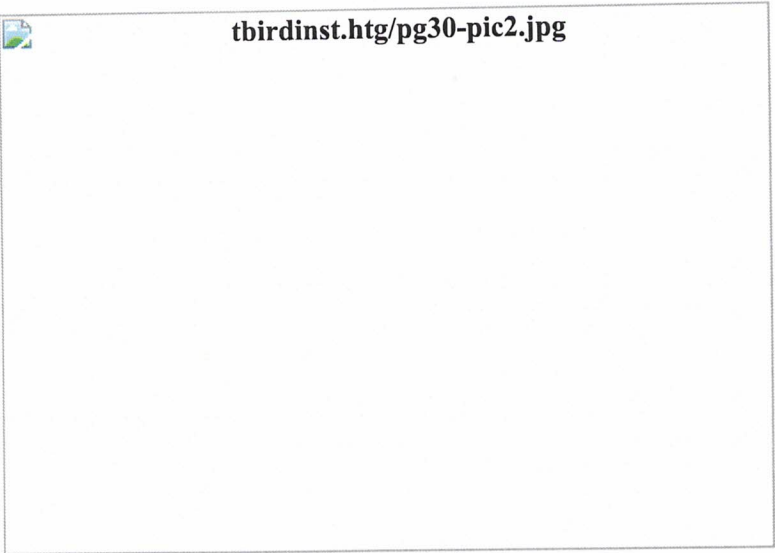
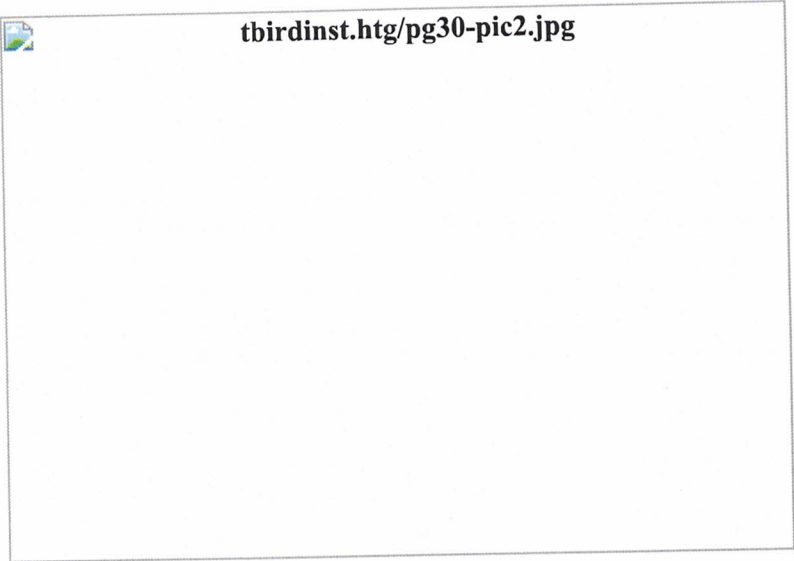
**75. Install supplied fuel return adapter. All fuel will now exit the fuel rail through this fitting.**



**76. Using a small amount of oil as lubrication press the fuel line onto the right side fuel rail. Rout the fuel hose in back of # 1 intake manifold runner around the front of the manifold and in back of # 5 intake manifold runner. Trim the fuel hose to length, (do not cut too short) and press on the left side fuel rail. Use the stock fuel rail hold down bolts and tighten the drivers side fuel rail to 6-9 ft-lbs.**

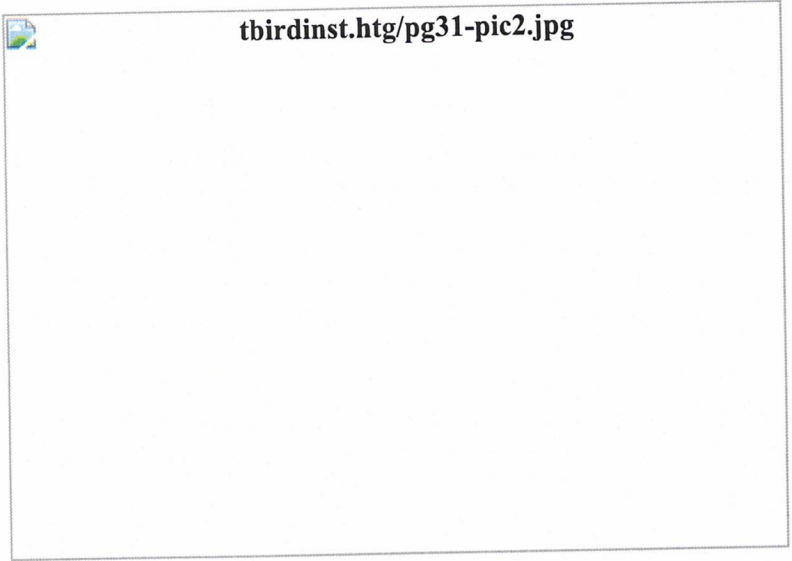


**77. Attach fuel pressure regulator to adapter supplied. ( use oil as a lubricant on the O ring ). Assemble the fuel pressure regulator/adapter to the supplementary fuel pressure regulator using the V band clamp.**

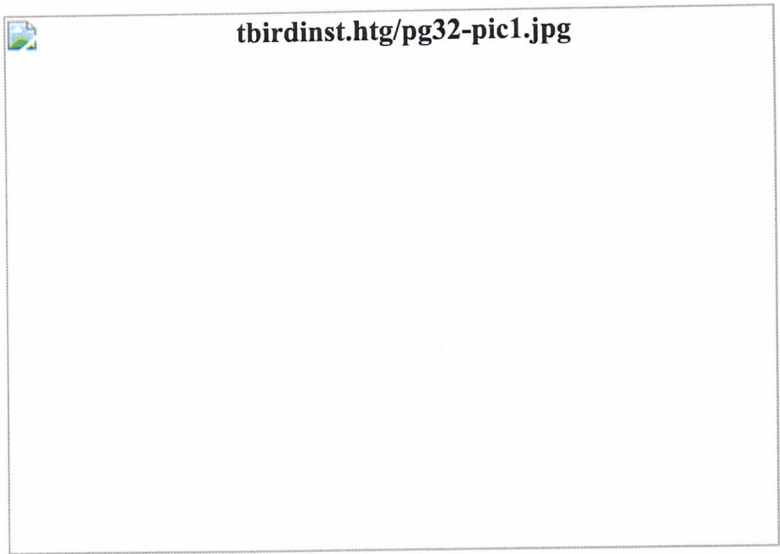


**78. Press the fuel return hose on to rear of driver’s side fuel rail and press outer end on to fuel pressure regulator adapter. Mount the SFPR to the side of the manifold using a clamp provided. Press the fuel return hose on to the outlet of the fuel pressure regulator adapter, and route the hose around the front of the manifold and along the passenger side fuel rail to the fuel return.**  
**The SFPR has two vacuum ports that are linked with a T and connect to the bottom of the manifold.**

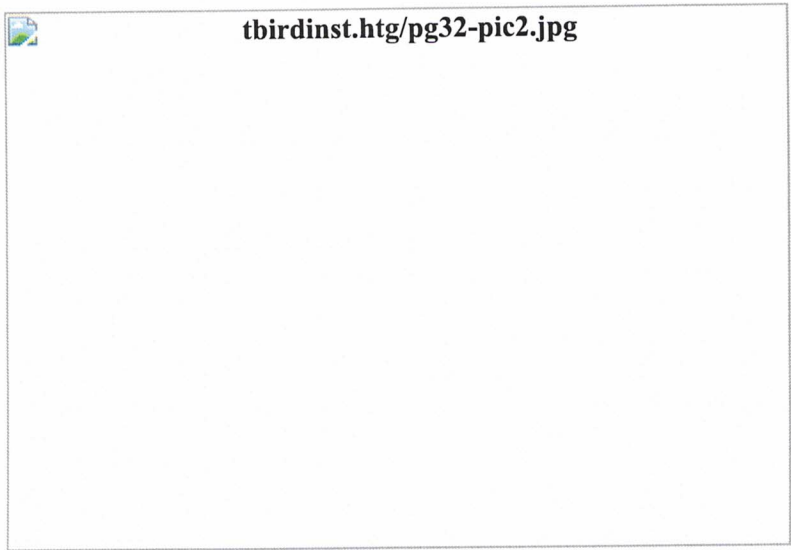




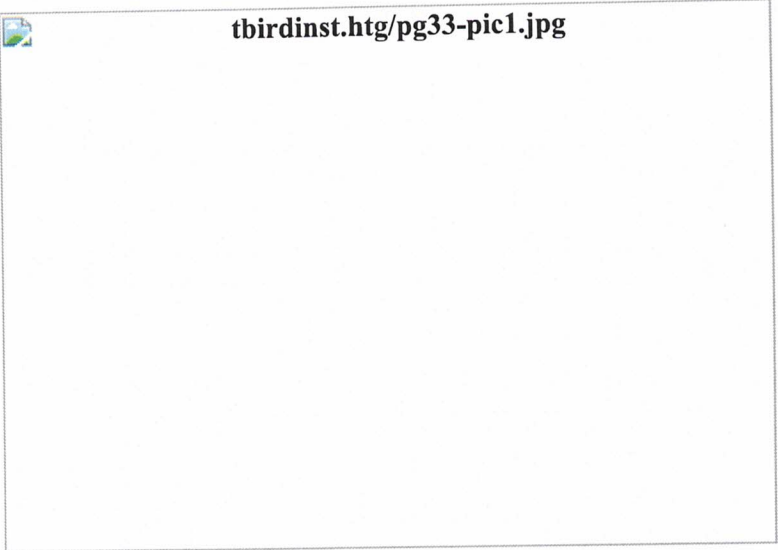
**79. Cut the two vacuum lines that go to the EGR solenoid ( at # 1 injector ) and attach the vacuum hose from the throttle body adapter to the red vacuum line. Attach a vacuum hose from the green line to the EGR valve. Attach the vacuum hose from the throttle body adapter to the purge canister which comes over the passenger side valve cover at shock tower.**



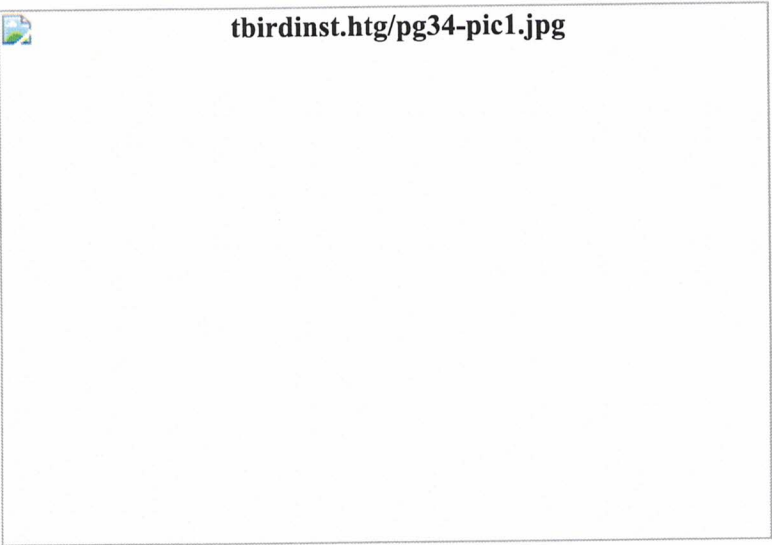
**80. Install the air cleaner adapter tube ( black plastic ) and install factory air cleaner tube.**



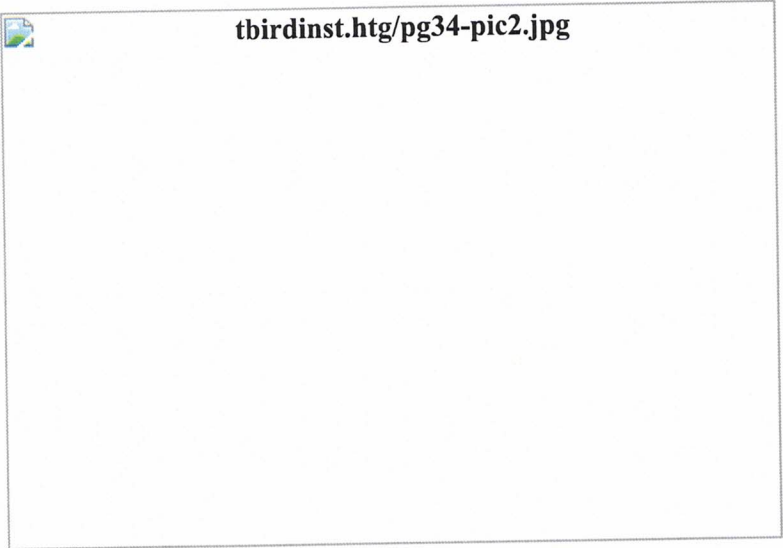
- 81. Hook up power brake vacuum line ( 3/8” hose) which comes from back of throttle body adapter.
- 82. Plug in the PCV hose ( 3/8” ) to the passenger side valve cover PCV valve.
- 83. Install idle air valve supply hose. Since the IAC has been relocated you will need to use the longer ( 3/4” hose ) supplied. You can throw away the muffler.
- 86. Install crankcase breather hose from the driver side valve cover to the air cleaner tube using the hose provided.
- 87. The wiring harness for the passenger side injectors runs over the top of the manifold between the two hoses as can be seen in the picture.
- 88. Re-fill the engine cooling system. Close the petcock first.
- 89. The passenger side fuel rail can now be tightened.
- 90. Re-connect the fuel line spring lock couplings and safety clips.



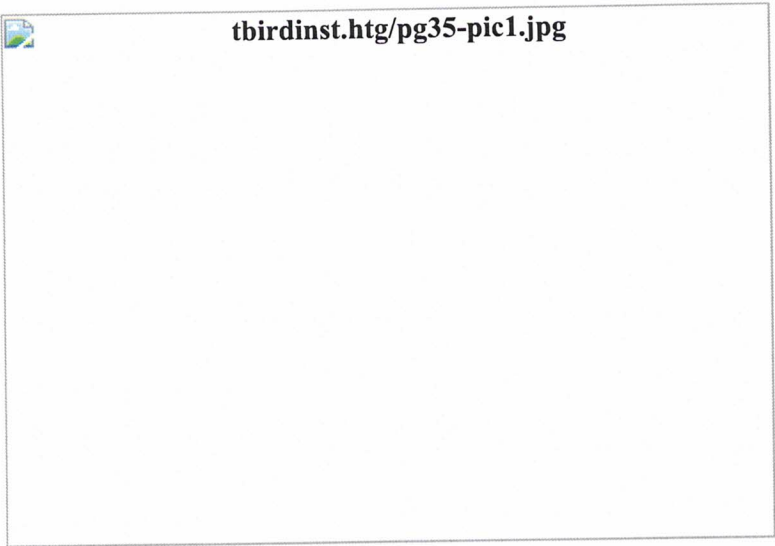
- 91. Attach the intercooler tank to the SFPR cover with button head screws provided. Hood clearance is minimal here slide the SFPR down on clamp as far as possible.



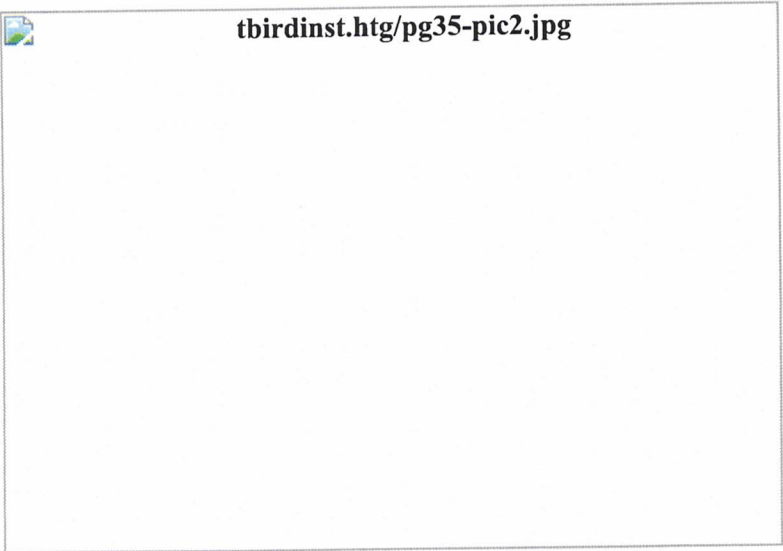
- 92. Install the two 5/8 “ hose fitting’s into the intercooler water pump. Mount the pump on the water pump mount using the four socket head screws, and washers provided. The pump can now be mounted in the drivers side wheel well, and attached to the front bumper. The holes in the bumper are already there, push the studs through the holes and install the washers and nuts.



**93. The heat exchanger for the intercooler can now be mounted under the valence with the outlets on the drivers side.**

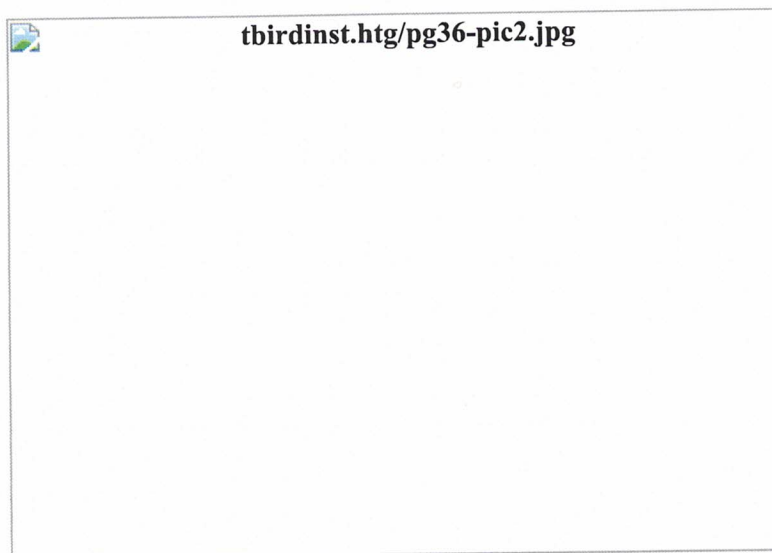


**94. It is possible to cut a small piece out of the valence and slide the heat exchanger in. You can now install the mounting brackets, and mark the hole positions using a magic marker. Drill the holes using a # 33 drill bit for the self tapping screws supplied. Button head screws are provided for the mounting bracket ends that attach to the valence.**





**95. At this time you can run the wire for the water pump. This is a continuous duty pump which requires a switched power supply. You can tap into the TURN SIG fuse under the dash. Run this wire out to the relay which is mounted in front of the battery. A fusible link ( which is supplied ) can be attached to the + side of the battery and run to the relay. In this picture you can see the fusible link and the relay.**



**96. Connect the intercooler hoses. Fill the intercooler water tank with coolant ( 50/50 water glycol mixture ). It will be necessary to burp the system by loosening the set screw on the side of the water pump. When you get water at this point tighten the screw and top off the intercooler tank. Run the water pump for a few seconds and recheck the level in the tank. When the system is properly bled you will be able to see the coolant circulating when the pump is on. Top off the intercooler tank and install the radiator cap.**

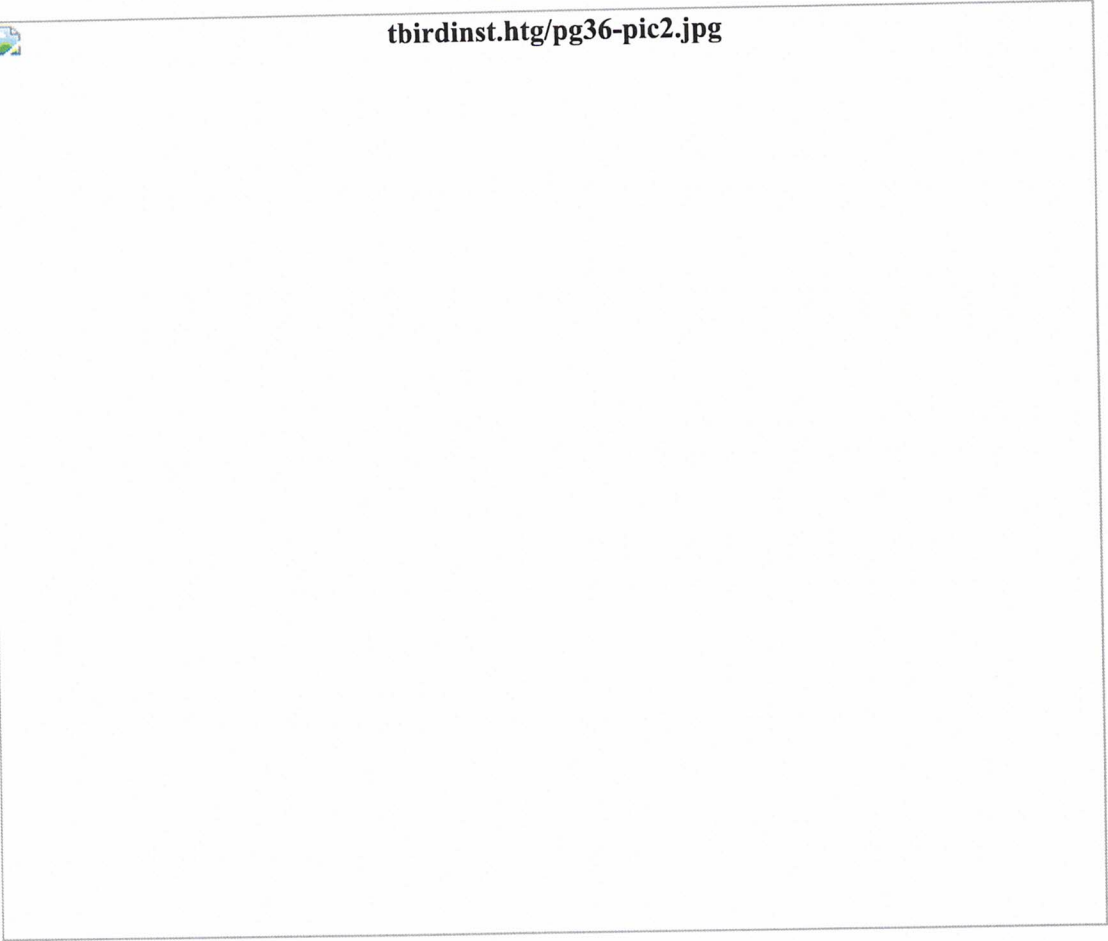
**97. On figure 6 it is easier to install the fuse link between # 30 and battery + 12V.**

**98. Figure 7 is hose routing for intercooler.**

**You now have a 100 more horsepower !!! ENJOY**

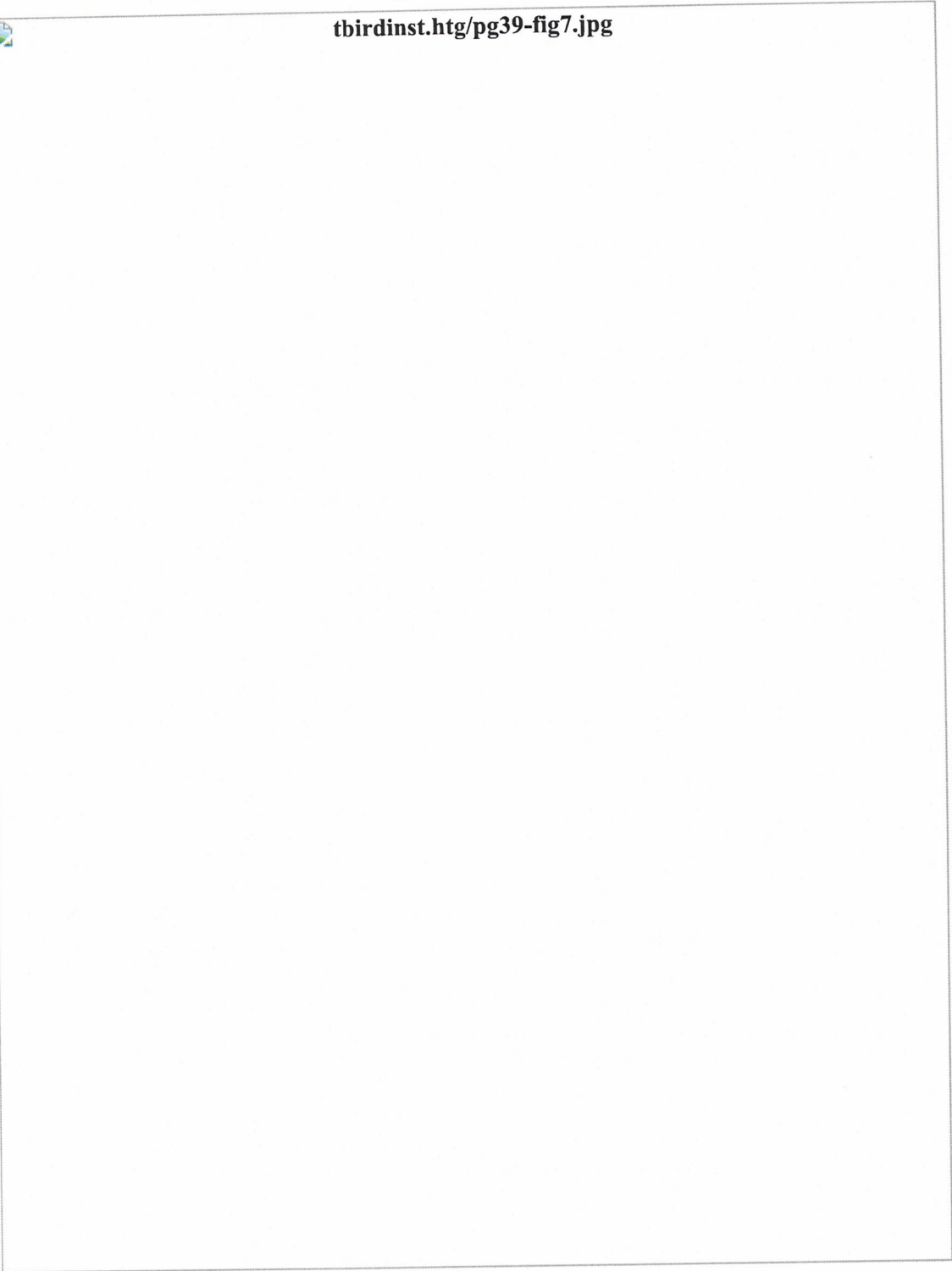


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tbirdinst.htg/pg39-fig7.jpg



# FUEL PUMP INSTALL

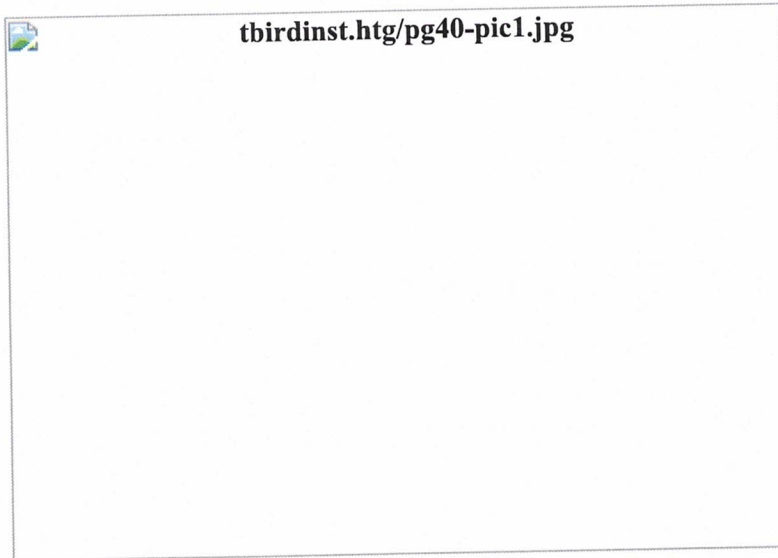
**1. Remove the gas tank from car. On the Mustang this can be done by removing the metal screw that holds the support bracket for the gas filler tube, and the 4 strap bolts. Unplug the electrical connection at the rear of the gas tank and the tank will then pull out of the filler tube and drop down. You can then release the plastic clips that hold the fuel lines together.**

**On the Thunderbird remove the exhaust system by taking off the 2 nuts at the exhaust ball clamp and pop the metal hangers out of their rubber mounts. (Spray WD 40 on the rubber mounts and the metal hangers will pull out). remove the gas filler hose clamp at the gas tank and also the vent hose clamp by the filler tube and the vent**

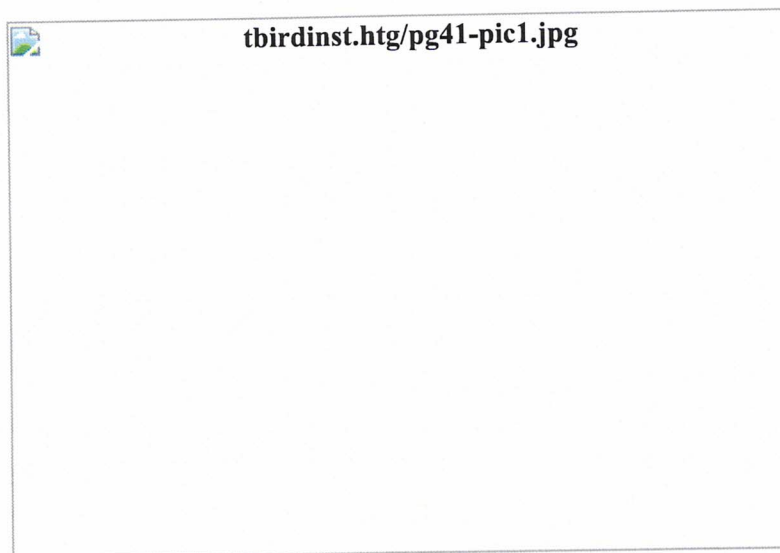


**hose clamp over the differential. Remove the 4 strap bolts and drop down the gas tank. You can now release the plastic clips that hold the fuel lines together and pull off the electrical connection.**

**2. Remove the large nut, that holds the fuel pump/fuel level assembly.**



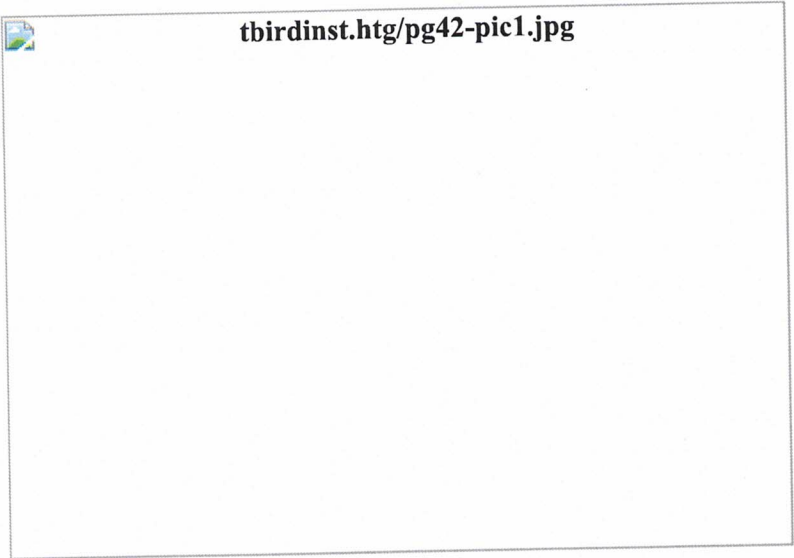
**3. Remove the fuel pump/fuel level assembly.**



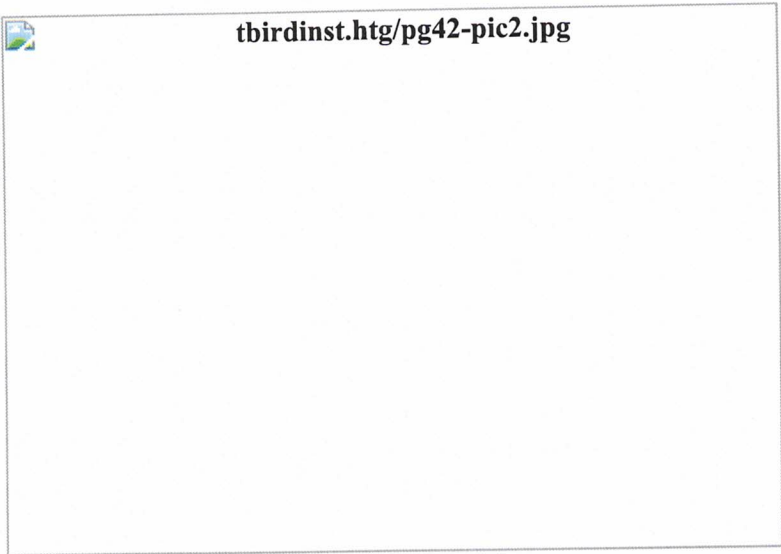
**4. Pry the fuel filter off the fuel pump noting which way the large part of the filter is pointing.**

 [tbirdinst.htg/pg41-pic2.jpg](#)

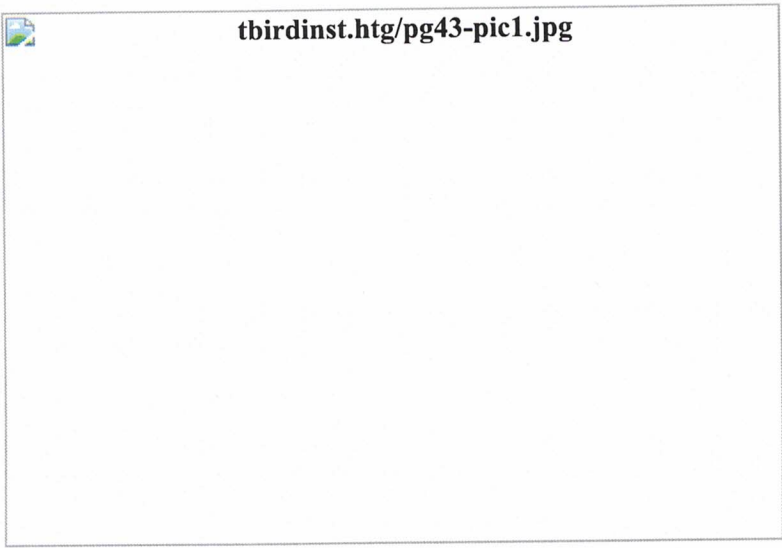
**5. Pull the production fuel pump up and slide it out of its mount. Cut the electrical wires and remove the fuel pump.**



**6. Slide the bottom rubber over the new fuel pump.**



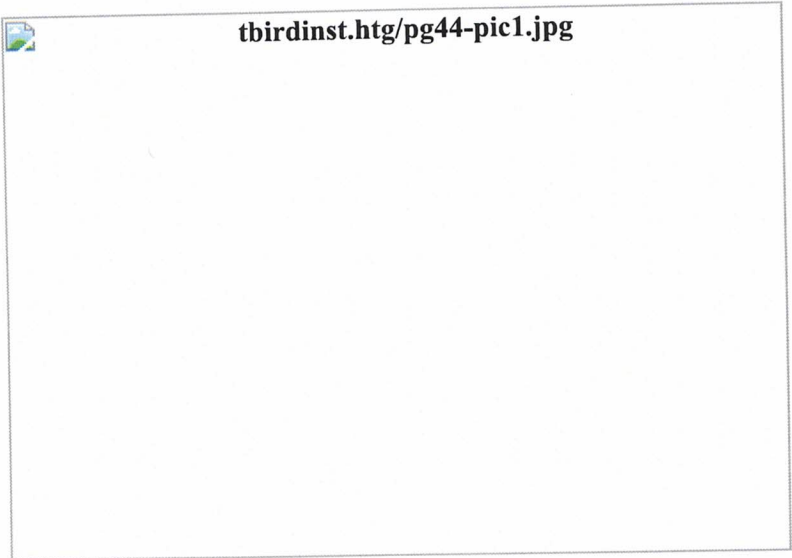
**7. Slide the rubber hose and hose clamps over the fuel pump outlet. Slide the fuel pump into its mount and tighten the hose clamps. On the Thunderbird this hose will need to be shortened and the bend straightened out.**



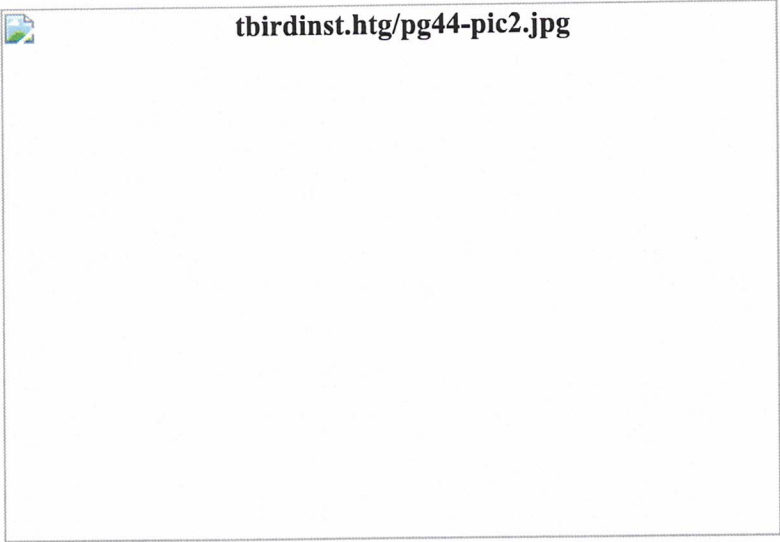
**8. Hook up the electrical wires using the crimp connectors supplied with the fuel pump.**



**9. Push the fuel filter securely on the fuel pump. Make sure it is positioned in the proper direction.**



**10. Slide the fuel pump into the fuel tank and make sure the O ring seal is in the O ring groove. Tighten the large nut that holds the fuel pump in the tank and Install the fuel tank on the car. The plastic safety clips that lock the fuel lines to the fuel tank are inexpensive and at your Ford dealer if needed.**



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**Click [HERE](#) to return to the Supercharger Page**

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