



XS0500-MXCX-R8

05-10 Mustang
XTREME SPEC

4.0 SOHC X-CHARGER

INSTALLATION MANUAL

**THIS SUPERCHARGER KIT IS NOT EXEMPTED FOR USE IN CALIFORNIA
AND OTHER STATES WITH CALIFORNIA EMISSIONS STANDARDS**

1



INTRODUCTION

Identify Supercharger (S/C) kit parts & hardware and read this manual completely before starting.

Left side is the driver's side.

This engine uses metric fasteners.

We have done this installation many times and this is the most efficient way to do it in the least amount of time. Follow these directions **EXACTLY** for a professional quality installation.

This kit is very straight forward and easy to install, but if there is some part of the manual that you don't understand, or if you have any other questions or comments, please call our Tech Line at 707-254-7025 Monday thru Thursday 10AM till 4PM Pacific for expert, experienced, friendly assistance.

**FUEL IN TANK MUST BE PREMIUM GRADE
CAST PARTS MUST BE CLEANED WITH HOT SOAPY WATER**

PARTS LIST

2

| key no | description | quan | part no | application |
|--------|---|------|-----------------|--|
| 01 | supercharger assembly MP90 GEN4 | 1 | MP | |
| 02 | discharge manifold | 1 | XS0505-01 | |
| 03 | discharge manifold lid | 1 | XS0505-02 | |
| 04 | bracket, coil | 1 | XS0505-15 | |
| 05 | fuel line | 1 | XS0505-09 | |
| 06 | stay, coil bracket | 1 | XS0505-16 | |
| 07 | fuel rail | 1 | GF4L2E-9D280-AD | |
| 08 | inlet adapter, cast aluminum | 1 | XS0500-03 | |
| 09 | inlet extension | 1 | XS0500-07 | |
| 10 | fuel rail adapter, right | 1 | XS0505-04R | |
| 11 | , left | 1 | XS0505-04L | |
| 12 | cap, sensor | 1 | XS0505-13 | |
| 13 | fuel rail | 1 | XS0505-14 | |
| 14 | screw, 5.8mm .8 socket head button x 20 | 4 | MK92095A214 | |
| 15 | 16 | 6 | MK92095A212 | (4) adapters / (2) rail cap |
| 16 | screw, 5.8mm .8 s/head countersunk x 16 | 2 | MK92125A212 | |
| 17 | washer, 5mm flat | 10 | BBFW5MM | |
| 18 | lock | 10 | BBLW5MM | |
| 19 | o-ring, large | 1 | MK9263K234 | |
| 20 | small | 5 | GFFOPZ-9229-A | (1) rail cap / (2) adapters / (2) crossover |
| 21 | idler plate, .375 aluminum | 1 | XS5556-04 | |
| 22 | nose support, .250 aluminum | 1 | XS0500-05 | |
| 23 | bracket, idler plate | 1 | XS5556-06 | |
| 24 | spacer, aluminum, short 1.0 dia X .90 | 1 | XS5556-13 | |
| 25 | long 1.0 dia x 1.2 | 2 | XS5556-14 | |
| 26 | pulley 1.0 dia x .320 | 2 | XS5556-15 | |
| 27 | alternator 125 alum | 1 | XS5556-07R | |
| 28 | bolt, 7/16-20 special shoulder | 2 | FS45907 | |
| 29 | 10mm 1.5 x 130mm hex head | 2 | MX91280A663 | idler plate to right head |
| 30 | 10mm 1.5 x 120mm hex head | 1 | MX91280A661 | idler plate to left head |
| 31 | 8mm x 20 flange head | 4 | BB8X20FH | (2) idler plate to bracket / (2) nose support to idler bracket |
| 32 | washer, 10mm flat | 3 | BB10FW | idler bracket bolts |
| 33 | lock | 3 | BB10LW | idler bracket bolts |
| 34 | gasket, supercharger discharge | 1 | XS0500-10 | |
| 35 | discharge manifold lid | 1 | XS0505-05 | |
| 36 | supercharger inlet | 1 | XS0500-12 | |
| 37 | throttle body | 2 | XS0500-13 | |
| 38 | discharge flange | 6 | XS0500-14 | |
| 39 | locktite | 1 | PM27100 | |
| 40 | tiewrap | 8 | DC9627 | |
| 41 | , heavy duty | 1 | DC9639 | |
| 42 | hose, 7/32 vac x 14 | 1 | GY65112*14 | fuel pressure sensor |
| 43 | x 12 | 1 | GY65112*12 | by-pass valve |
| 44 | wire, grey w/ red x 7.5 18 ga | 1 | XS0500-31 | |
| 45 | orange x 20.5 18 ga | 1 | XS0500-32 | |
| 46 | blue x 20.5 18 ga | 1 | XS0500-33 | |
| 47 | red x 20 18 ga | 1 | XS0500-34 | |
| 48 | wire armor, 1/2 x 5 | 1 | DC786*5 | |
| 49 | 3/8 x 10 | 1 | DC1784*90 | cut 10 / 13 / 15 / 21 / 29 |
| 50 | 3/8 x 13 | 1 | | |
| 51 | 3/8 x 15 | 1 | | |
| 52 | 3/8 x 21 | 1 | | |
| 53 | 3/8 x 29 | 1 | | |
| 54 | bracket, plug wire, coil | 1 | XS0500-41 | |
| 55 | , inlet | 1 | XS0500-42 | |
| 56 | bolt, 8mm 1.25 socket head x 55 | 6 | MS67221242 | |
| 57 | x 20 | 6 | MS67221200 | |
| 58 | 6mm 1.0 flange head x 25 | 2 | | |
| 59 | x 20 10.9 | 12 | | |
| 60 | x 20 | 4 | MS77551141 | |
| 61 | x 16 | 11 | MS77551133 | (9) discharge manifold / (2) coil bracket |
| 62 | x 12 | 1 | | |
| 63 | washer, flat 5/16 AN | 5 | MK98017A690 | |
| 64 | fitting, 3/8 NPT x 5/8 tube special | 1 | XS0500-68 | |
| 65 | 1/4 NPT x 3/8 tube 90 deg | 3 | PC4501-06-04 | |
| 66 | 1/4 NPT x 1/4 tube tee | 1 | | |
| 67 | pipe plug 1/8 NPT | 2 | | |
| 68 | vacuum cap 7/32 | 1 | | |
| 69 | clamp, #06 mini | 1 | DC2363 | |

| | | | | | |
|-----------------|-----|---------------------------------------|---|------------------|-----------------|
| subkit MINZ | 70 | injectors, 39 lb | 6 | GF2R3Z-9F593-BA | |
| | 71 | spacer, fuel rail | 4 | GFF0PZ-9229-A | |
| | 72 | bolt, 8mm 1.25 flange head x 25 | 4 | BB8X25FH | |
| subkit MACT | 73 | sensor, IAT | 1 | MCDY-754 | |
| | 74 | harness, IAT | 1 | XS0500-35 | 26" |
| subkit MEGR | 75 | adapter, EGR | 1 | XS0500-16 | |
| | 76 | gasket, EGR | 1 | GFE6AZ-9D476-B | |
| | 77 | bolt, 8mm x 20 socket head | 1 | MS67221200 | |
| | 78 | c/s socket head | 1 | MK92125A214 | |
| subkit MR | 79 | washer, 5/16 AN | 1 | MK98017A690 | |
| | 80 | insulator, hose | 1 | MK9142K34 | |
| | 81 | cover, thermostat | 1 | GFF7TZ-8594-A | |
| subkit M5 | 82 | hose, 5/16 x 38 | 1 | GY64995*38 | 05 ONLY |
| | 83 | 32 | 1 | GY64995*32 | 05 ONLY |
| | 84 | tiewrap | 6 | DC9627 | 05 ONLY |
| | 85 | bracket, airbox grommet, large hole | 1 | XS0500-44 | 05 ONLY |
| subkit MAB | 86 | small hole | 1 | XS0500-44S | 06-10 |
| | 87 | stay, front | 1 | XS0500-45 | |
| | 88 | rear | 1 | XS0500-43 | |
| | 89 | pins, airbox | 2 | XS5556-58R | |
| | 90 | bolt, 6mm 1.0 flange head x 12 | 4 | MS775511* | |
| | 91 | 1/4NC flange head x1/2 | 2 | | |
| | 92 | nut, 6mm 1.0 flange head | 4 | | |
| | 93 | fitting, plastic 90 deg 3/8 x 3/8 NPT | 1 | MK5463K503 | |
| | 94 | clamp, hose #8 mini | 1 | DA91008 | |
| | 95 | tiewrap | 1 | DC9627 | |
| subkit MHE | 96 | heat exchanger | 1 | AF80280NDP | |
| | 97 | hose, preformed 3/4 x 20 | 1 | | |
| | 98 | grommet | 4 | | |
| | 99 | bushing | 4 | | |
| | 100 | bolt, 8mm 1.25 x 50 | 4 | | |
| | 101 | nut, 8mm nyloc | 4 | | |
| | 102 | 5/16 nc flange head | 2 | | |
| | 103 | washer, 8mm fender | 8 | | |
| | 104 | hose clamp #12 | 2 | | |
| | 105 | hose, preformed 3/4 x 59 | 1 | GY63960 | |
| subkit MXW | 106 | straight 3/4 x 22" | 1 | GA28412*22 | |
| | 107 | bracket, water pump | 1 | XS0505- | |
| | 108 | wiring harness | 1 | XS0505-20 | |
| | 109 | wire armor 1" ID x 66 | 1 | DC1930*66 | cut 48 / 10 / 4 |
| | 110 | tiewrap, standard | 6 | DC9631 | |
| | 111 | heavy duty | 2 | DC9639 | |
| | 112 | clamp, Adel #36 | 2 | DC2036 | |
| | 113 | bolt, 6mm1.0 x 16 flangehead | 2 | | |
| | 114 | nut, 6mm1.0 flangehead | 2 | | |
| | 115 | fuse, 15A ATO | 1 | DC78025 | |
| subkit MXGT | 116 | fuse tap | 1 | PI1593PT | |
| | 117 | terminal, .188 x 16 ga blade, female | 1 | DC890185 | |
| | 118 | clamp, hose #12 | 4 | DC2368 | |
| | 119 | #12 mini | 2 | | |
| | 120 | airfilter | 1 | KNRC5040 | |
| | 121 | hose, inlet | 1 | GFXL2Z-9B659-CA | |
| | 122 | airbox | 1 | XS0500-40 | |
| | 123 | tube, EGR | 1 | XS0500-20 | |
| | 124 | pulley, idler | 2 | GY49001 | |
| | 125 | hose, radiator | 1 | GY52430 | |
| subkit MIXCX | 126 | drivebelt, 6 rib / 105.5 length | 1 | GY4061055 | |
| | 127 | spark plugs | 6 | NGK7060 | |
| | 128 | hose, breather | 1 | GY63824 | 2.5 x 20 |
| | 129 | pump, intercooler | 1 | BH | |
| | 130 | surge tank | 1 | GF7R3Z-8A080-A | |
| | 131 | cap, surge tank | 1 | GA31405 | |
| | 132 | bracket, p/s reservoir | 1 | XS0505-10A | |
| | 133 | hose, 3/4 preformed x 16.5 | 1 | GY63924 | |
| | 134 | washer, 1/4 fender | 1 | MK91100A150 | |
| | 135 | bolt, 6mm 1.0 x 16 flangehead | 1 | | |
| subkit MIXCX | 136 | computer reprogrammer | 1 | SCT Xcalibrator3 | |
| | 137 | sticker, drivebelt routing | 1 | ZD5556-22 | |
| | 138 | octane warning | 1 | ZD5556-24 | |
| | 139 | instructions | 1 | XS0500-MXCX | |

PARTS ILLUSTRATIONS

4



Figure PA inlet adapter key no 08



Figure PB inlet extension key no 09



Figure PC discharge manifold key no 02



Figure PD discharge manifold lid key no 03



Figure PE nose support key no 22



Figure PF idler plate key no 21



Figure PG coil bracket key no 04



Figure PH spacers



Figure PI EGR adapter key no 75



Figure PJ EGR tube key no 123



Figure PK thermostat cover key no 81



Figure PL fuel rail adapter key no 10 / 11



Figure PM breather hose key no 128



Figure PN IAT harness / sensor key no 73 / 74

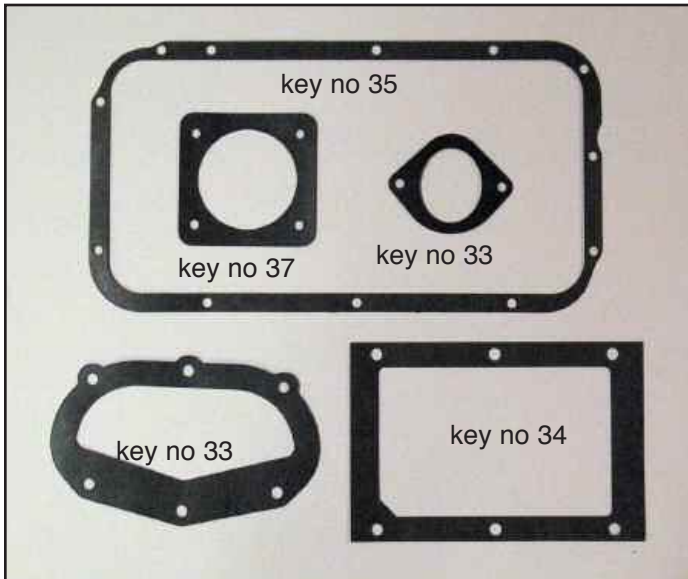


Figure PO gaskets

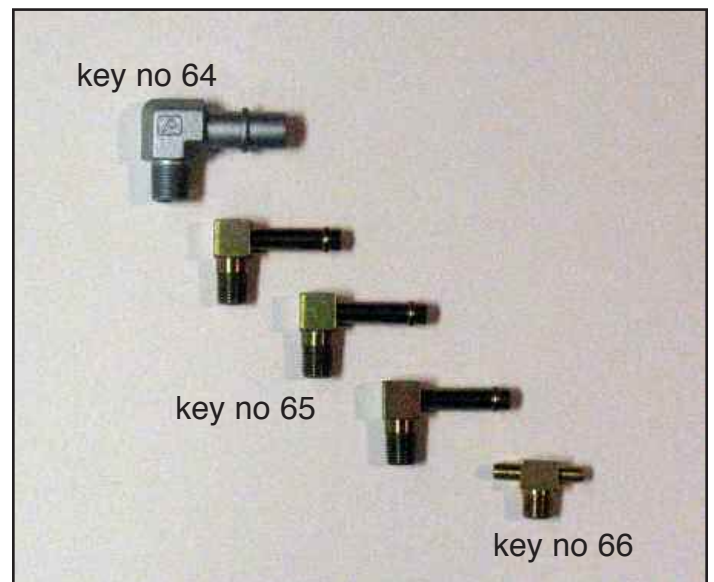


Figure PP fittings

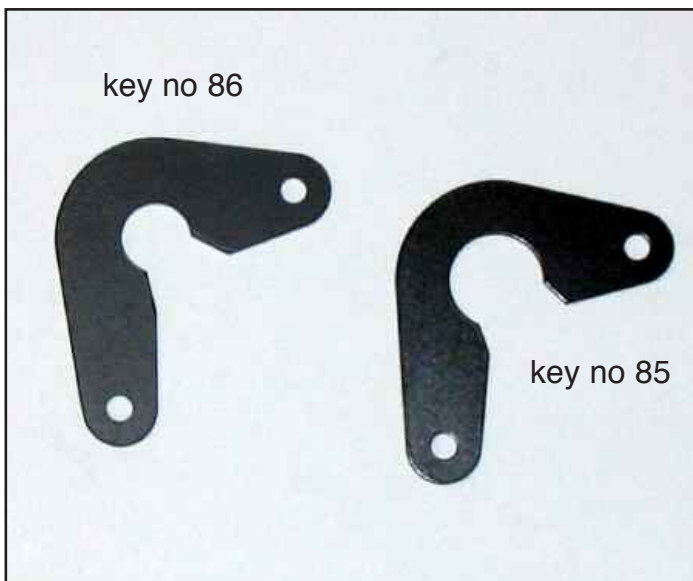


Figure PQ airbox grommet bracket



Figure PR plug wire brackets



Figure PU fuel rail key no 07



Figure PV fuel line bracket key no 05



Figure PW fuel rail cap key no 13



Figure PX sensor cap key no 12



Figure PY intercooler hoses

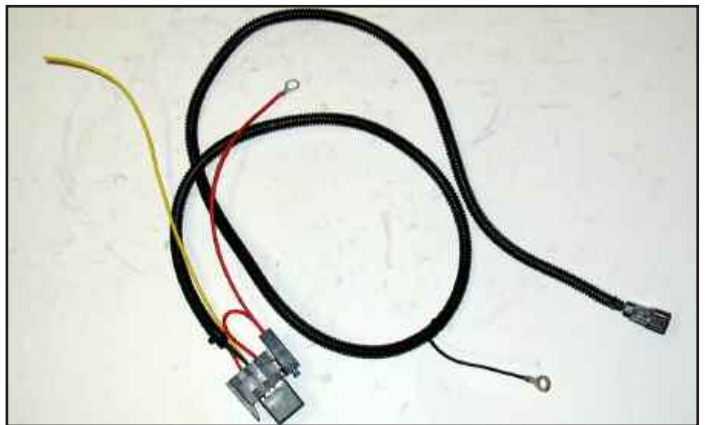


Figure PZ harness key no 108



Figure PAA surge tank key no 130



Figure PAB
fuse tap
key no 116



Figure PAC pump bracket key no 107



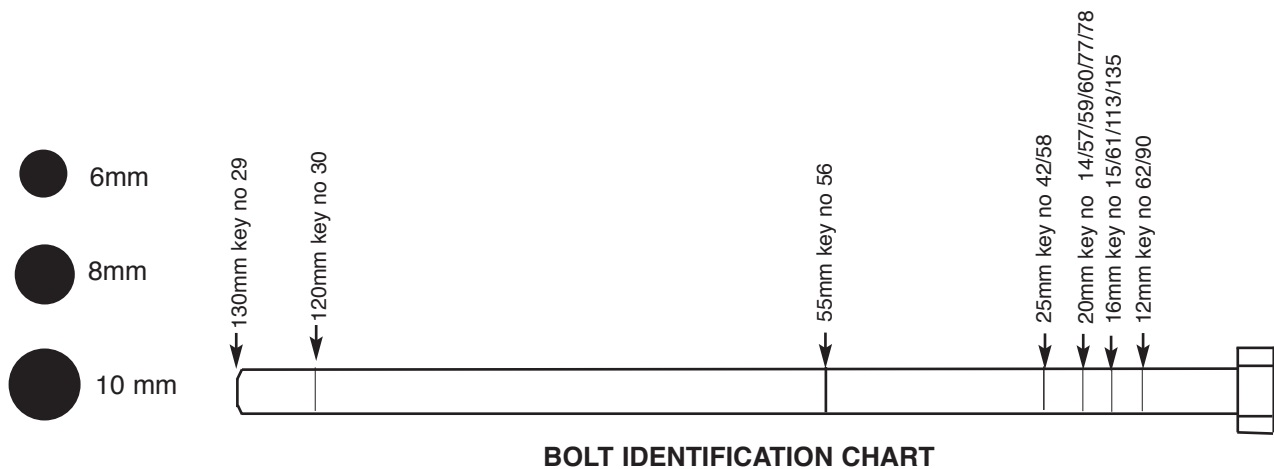
Figure PAD P/S reservoir bracket key no 132



Figure PAE IC pump key no 129



Figure PAF inlet tube assembly



TOOLS & SUPPLIES

REQUIRED TOOLS

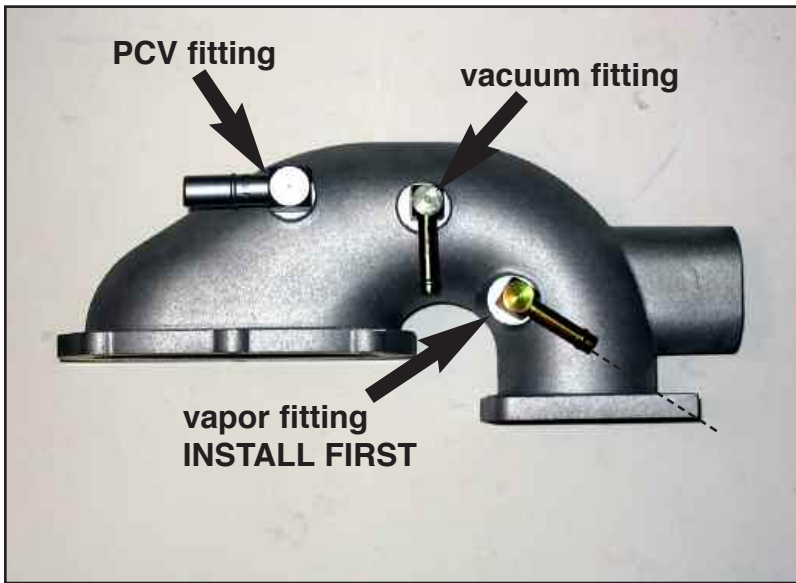
standard metric hand tools
#30 torx tool
3/8 allen wrench or socket
metric allen wrenches
electric drill
1/8 drill bit
8mm tap or thrted chaser

RECOMMENDED TOOLS:

1 1/16 crowfoot wrench
10mm 1/4 drive swivel socket
magnet tool

RECOMMENDED SUPPLIES:

rubber lube
silicone spray
weatherstrip adhesive (3M 08031)
silver tape
teflon paste sealer (Permatex #14)
gallon long life antifreeze



1. Locate the **Inlet Adapter** (key no 08).

CAUTION:
**THIS PART MUST BE THOROUGHLY
CLEANED WITH SOAP AND WATER
BEFORE ASSEMBLY**

Install the **1/4 NPT X 3/8 Vapor Fitting** (key no 65) **FIRST**.

Install the **1/4 NPT X 3/8 Vacuum Source Fitting** (key no 65).

Install the **PCV Special Fitting** (key no 64).

Use teflon tape or paste on the pipe threads and align as indicated in Figure SA.

2. Turn the Inlet Adapter over and install **1/4 NPT X 3/8 Barb Fitting** (key no 65) aligned as shown.

This angle is important for clearance at the Fuel Crossover when assembled.

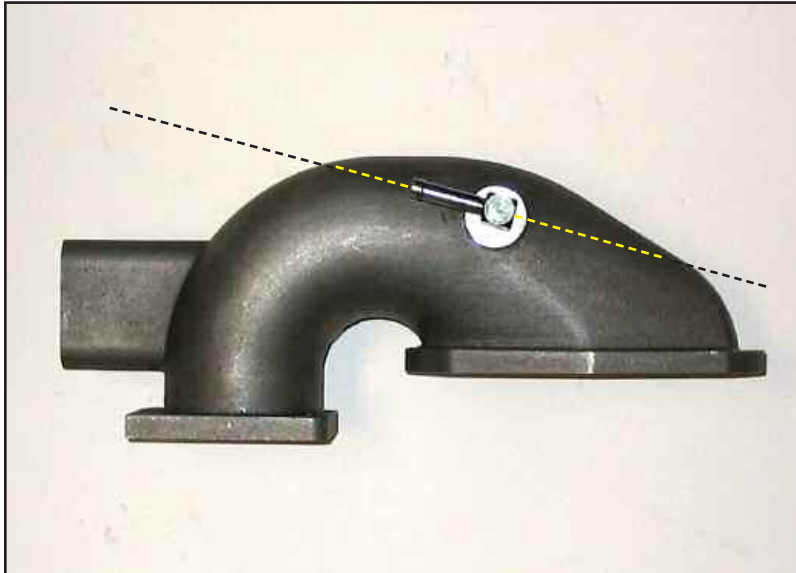


Figure SB bottom side fitting

3. Install the Inlet Adapter onto the supercharger assembly with **Supercharger Inlet Gasket** (key no 36).

Use (6) **8mm X 20 Socket Head Bolts** (key no 57) with an **5/16 AN Washer** (key no 63) under each bolt head except at the Plug Wire Bracket.

Install **Inlet Plug Wire Bracket** (key no 55) under the left upper bolt as shown. Start all the bolts first, then tighten in stages.

CAUTION:
**DO NOT PICK THE ASSEMBLY UP
BY THE BY-PASS VALVE**



Figure SC install inlet adapter

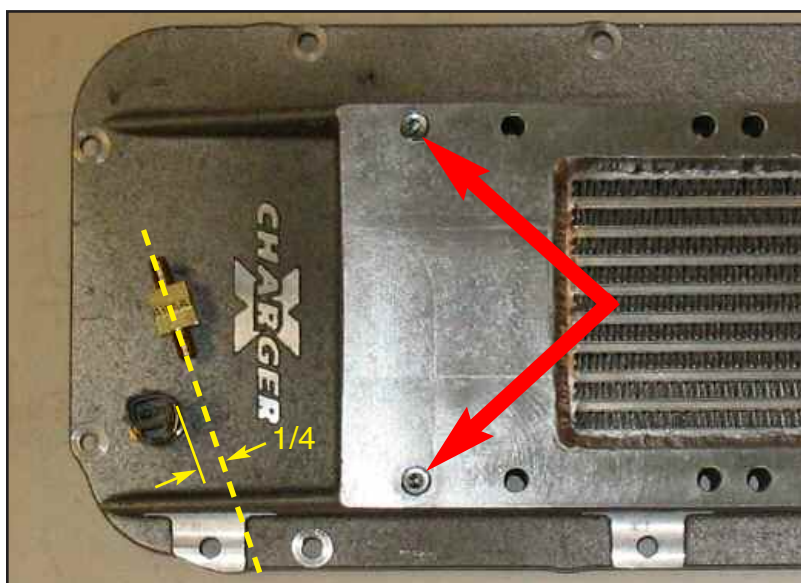


Figure SD install sender and fitting

4. Locate **Discharge Manifold Lid** (key no 03).

Install **1/4 NPT x 1/4 Tube Tee Fitting** (key no 66) into Lid as shown.

Install **IAT Sensor** (key no 73).

Install (2) **1/8 NPT Pipe Plug** (key no 67). 3/16 Allen wrench.

Use teflon tape or paste on all threads.

There should be minimum 1/4 inch clearance between the sensor and the fitting tube.

CAUTION:

USE CARE NOT TO DAMAGE THE ACT SENSOR WHEN HANDLING THE DISCHARGE MANIFOLD LID / SUPERCHARGER ASSEMBLY

5. With Supercharger assembly upside down, place **S/C Discharge Gasket** (key no 34) on the S/C outlet with angle cut to rear as shown.

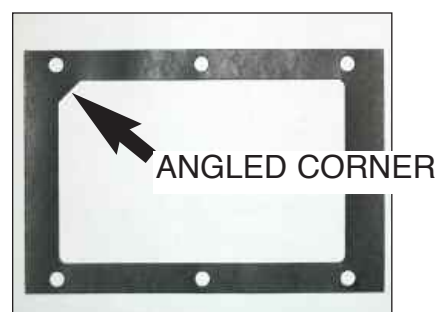


Figure SF-1 discharge gasket



Figure SE discharge gasket

6. Bolt the Discharge Manifold Lid to the S/C with (6) **8mm x 55 Socket Head Bolt** (key no 56).

Apply **Loctite** (key no 39) to threads. Start all six bolts finger tight.

Tighten in stages in the pattern shown. Torque to 20 ft lbs.

Glue **Discharge Manifold Lid Gasket** (key no 35) to the Lid. The gasket is glued on so that it doesn't get out of position when the S/C assembly is installed. We use weatherstrip adhesive, but any glue or gasket sealer that makes the gasket stick will work. It's better if the gasket is 100% glued so there will be less chance of it tearing when the assembly is installed.



Figure SF install discharge manifold lid



Figure SG install EGR adapter

7. Install the **EGR Adapter** (key no 75) with **EGR Gasket** (key no 76) between the parts and secure with **8mm Countersunk Socket Head Bolt x 20** (key no 78) and one **8mm Socket Head Bolt x 20** (key no 77) with a **5/16 AN Washer** (key no 79) under the head as shown with the countersunk bolt towards the supercharger nose.

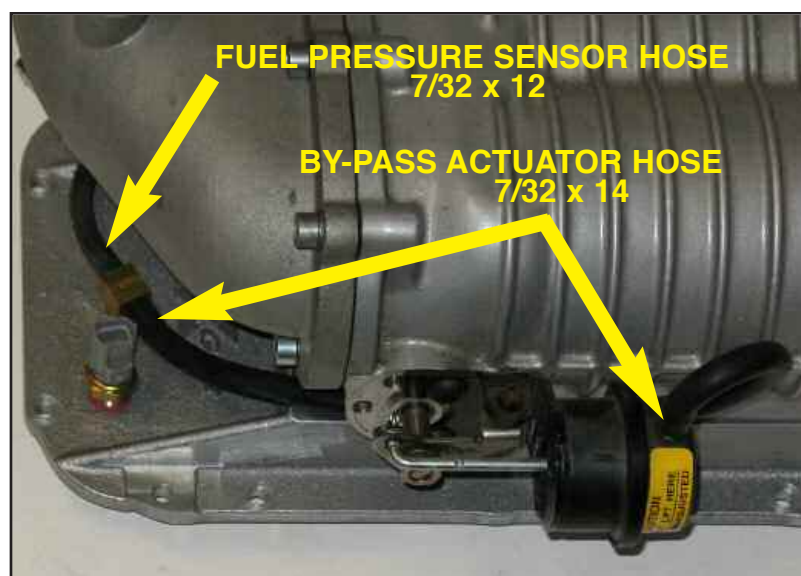


Figure SH connect vacuum hose

8. Install By-pass Actuator **Vacuum Hose 7/32 X 14** (key no 42) and Fuel Pressure Sensor **7/32 Vacuum Hose x 12** (key no 43)

CAUTION:
DO NOT PICK THE ASSEMBLY UP BY
THE BY-PASS VALVE

DISASSEMBLY



Figure A remove fuel pump relay

1. Remove fuel pump relay. Position #21.

Start the engine and allow it to idle until engine dies.

After the engine stalls, crank the engine for 5 seconds to make sure the fuel pressure has been relieved.



Figure B disconnect battery

2. Disconnect negative battery cable. Use a 8MM wrench.

Reinstall fuel pump relay.

3. Drain coolant. Radiator drain plug is on the right side of the radiator. Use a 19 mm wrench.

The Mustang uses long life coolant. Save coolant for reinstallation later.

After coolant has drained out, retighten drain plug. Do not overtighten.

4. Disconnect MAF sensor connector. Pull red tab out, then squeeze connector to disconnect.

Disconnect breather tube. Push green tab to release.

Remove air inlet hose. Use 8mm nut driver on clamps.

Remove the single 10mm head bolt retaining the airbox. Remove the airbox.

The retaining bolt will be reused.

Using a T20 Torx tool remove the MAF sensor element screws and sensor.

The Sensor will be reused.



Figure C drain coolant

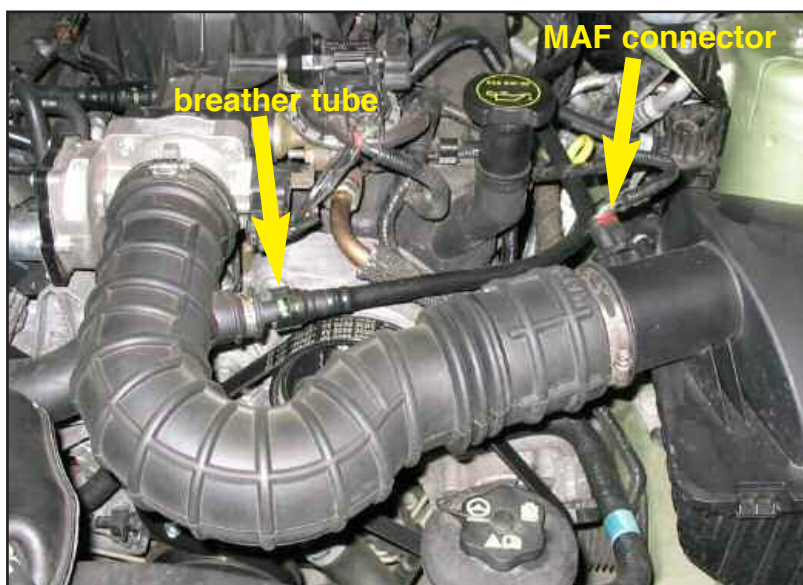


Figure D remove inlet hose

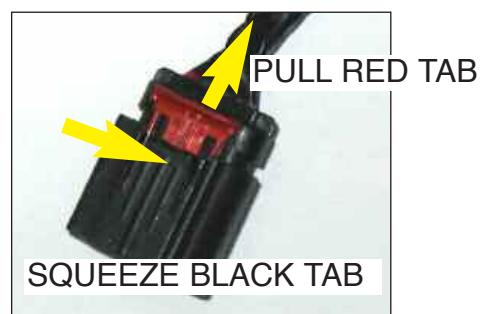


Figure C-1 electrical connector



Figure D-1 hose connector

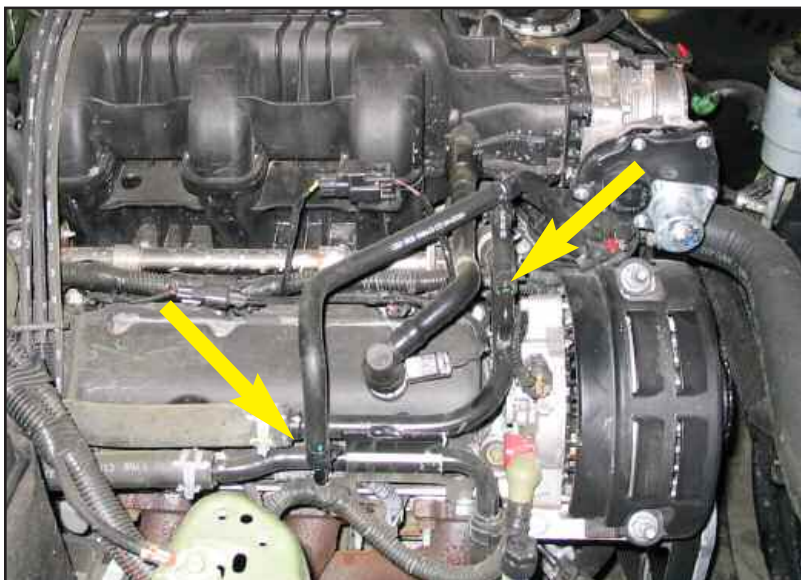


Figure E disconnect throttle heater hoses

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5. Disconnect throttle body heater hoses. Remove hoses. They will not be reused.

Save hose clamps.

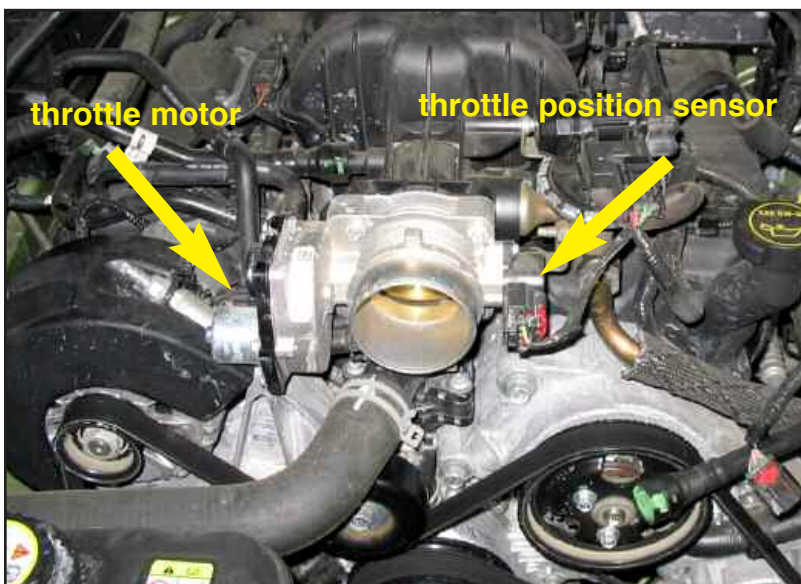


Figure F remove throttle body

6. Disconnect throttle body electrical connectors for the throttle motor and position sensor. Pull the red tabs, then squeeze connectors to remove.

Remove the throttle body. Use 8mm socket. Save the bolts, they will be reused.



Figure G remove PCV tube

7. Remove the PCV tube. Push green tab on connector to release.



Figure H knock sensor connector

8. Pry knock sensor connector from intake manifold. Do not disconnect.



Figure I remove breather hose

9. Remove breather tube. Pull green tab to release connector at valve cover.

PRESS BLACK TAB



Figure J-1 EGR connector

10. Disconnect EGR electrical connector. Squeeze connector to release.

Remove vacuum tube from EGR valve, fuel regulator and vacuum source.

Loosen large tube nut at EGR valve. Use 1 1/16 wrench.

Remove EGR bolts. Use 10mm socket. Remove EGR Valve. The EGR valve, bolts and gasket will be reused.

Remove EGR supply tube from the exhaust manifold. Use a 1 1/16 wrench. A crowfoot wrench is very helpful on the manifold end.

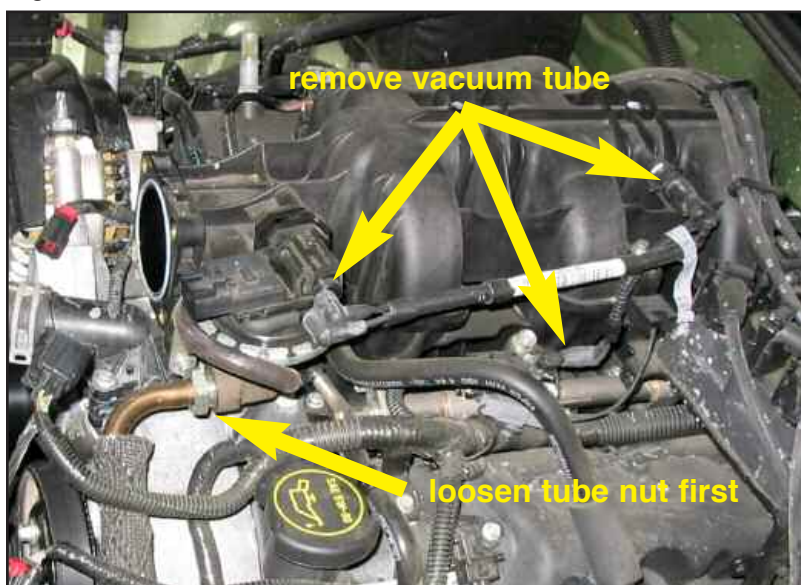


Figure J remove EGR valve

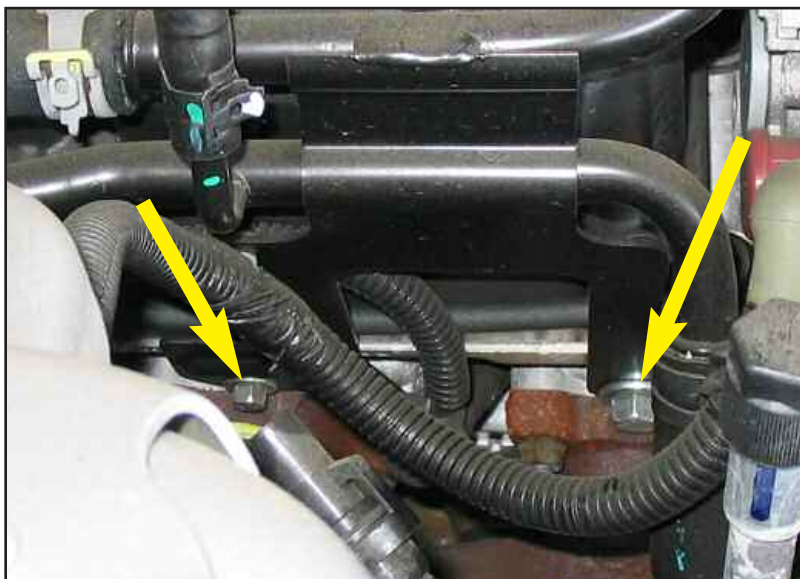


Figure K loosen heater hose bracket

11. The #1 spark plug wire is trapped by the heater hose bracket.

Loosen two bracket bolts so that the bracket can be pulled away from the valve cover and the spark-plug boot pulled clear. Use 10mm wrench or socket and 15mm wrench or socket.

Free the plug wire.

Retighten the bolts.

CAUTION:
DON'T BE ROUGH WITH THE PLUG WIRES, THEY ARE FRAGILE

NOTE:
PLUG WIRES AND COIL PLUG WIRE CONNECTIONS ARE NUMBERED

12. Remove spark plug wires. Pry wire separators from intake manifold and coil bracket. Use needle nose pliers to pull the retainers from the valve cover studs.

The plug wires will be reused, but on the opposite sides. The wire retainers and separators will be reused.

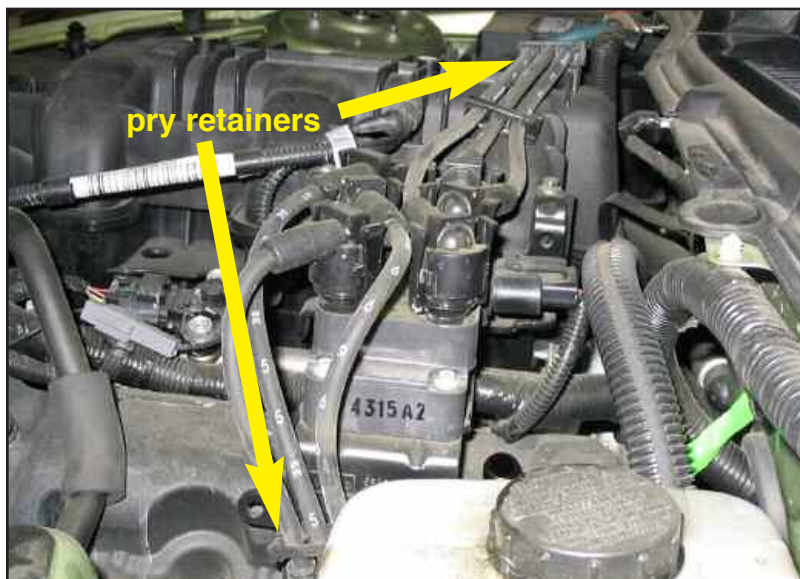


Figure L remove plug wires



Figure M-1 coil connector

13. Disconnect coil harness. Pry CAREFULLY on plastic retainer and pull connector loose. Plastic retainer breaks easily - do not over bend.

Remove four coil screws. Use 7mm socket.

Remove coil.

Do not disconnect the capacitor.

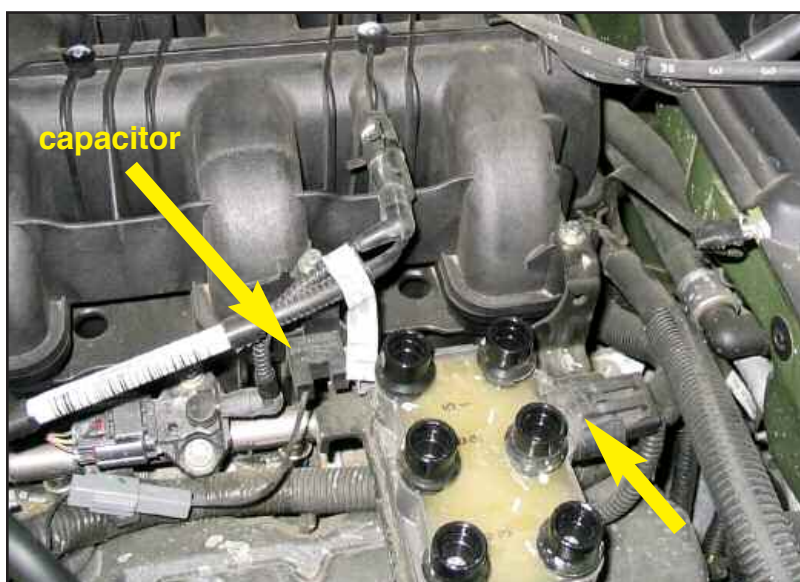


Figure M disconnect coil



Figure N remove coil bracket

14. Remove two coil bracket bolts from intake manifold. Use 8mm socket. These bolts will not be reused.

Remove lower bracket bolts from head. Use 10mm wrench or socket and 15mm wrench or socket. These bolts will be reused to attach Fuel Line Bracket later.

Remove coil bracket. It will not be reused.



Figure O-1 brake booster connector



Figure O remove vapor and booster hoses



Figure O-2 vapor hose connector

15. Disconnect brake booster hose.

Disconnect vapor hose. Depress white ring to release.

16. Low budget special tool.

Use a Torx 30 bit with 5/16 hex, 5/16 1/4 drive socket and 6" 1/4 extension. Tape the tool together so they won't fall apart when pulled from the manifold access holes.

The bolts can be left in the manifold holes and removed with the manifold.



Figure P low budget special tool

17. If compressed air is available blow dirt, etc from around base of intake manifold.

Remove (8) intake manifold bolts. Use #30 torx tool or low budget special tool as shown in Figure P.

Remove intake manifold.

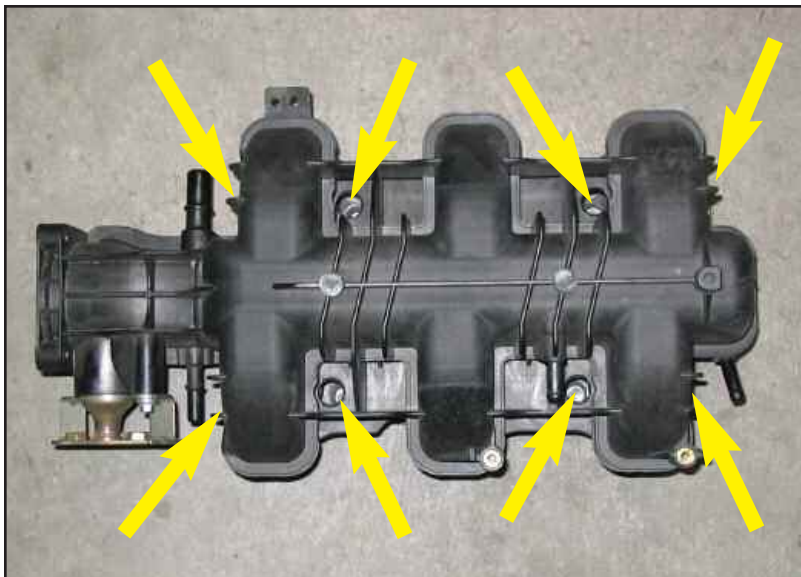


Figure Q intake manifold bolts

18. Clean intake port flanges.

Tape intake ports.



Figure R tape intake ports

19. Remove upper radiator hose.

Remove thermostat cover. Use 8mm socket.

Save the bolts and clamps, they will be reused.



Figure S remove thermostat cover and upper rad hose



Figure T remove thermostat cover dowels

20. Remove thermostat housing dowels.

Squeeze the split side of the dowel with pliers and pull each dowel out.



Figure U Remove drivebelt

21. Remove drivebelt.

Use a 3/8 flex handle or 3/8 long handle ratchet.

Engage the 3/8 square into the square in the tensioner and turn counterclockwise.

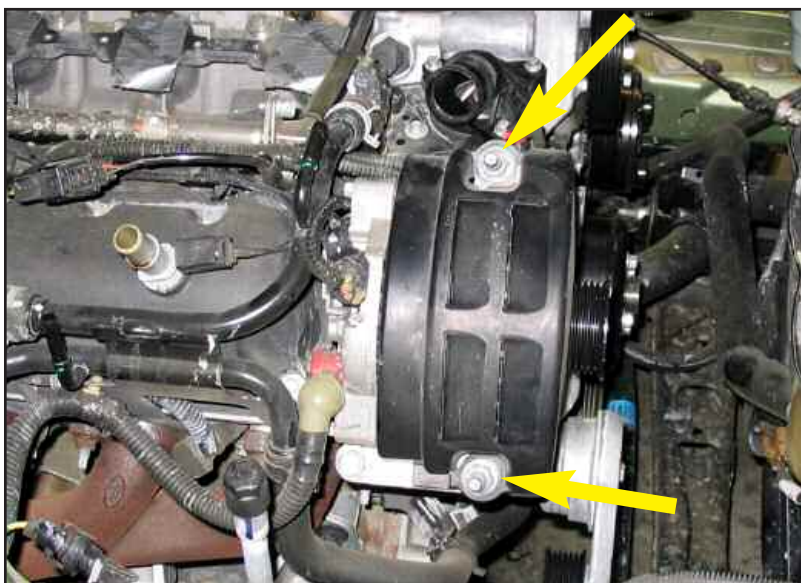


Figure V remove alternator cover

05 ONLY

22. Remove alternator cover.

Use a 15mm deep socket on the nuts. Do not reinstall nuts at this time.



Figure W modify alternator cover

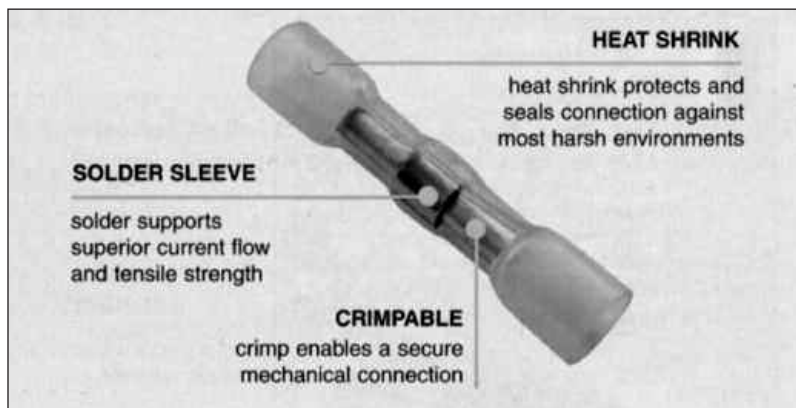
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23. Modify the alternator cover by cutting off 3/8 inch as shown.

Dress cut with file or belt sander.

MODIFY WIRING HARNESS

INSTALLING ULTIMATE CRIMP CONNECTORS



The butt connectors supplied with the extension wires are the most up to date technology and make a very trouble free connection when properly installed.

NOTE:
INSTALLATION REQUIRES
A HEAT GUN

1. Strip 3/8 insulation from wire.

Make sure the wire is properly seated and crimp the connector using a crimping tool of the correct size for insulated connector.

CAUTION:
DO NOT CUT
CONNECTOR INSULATION

2. Apply heat evenly with a heat gun around the length of the tubing (including the crimp area) from the center out until the tubing fully shrinks and the adhesive flows out the ends.

Continue distributing the heat until solder melts and gets shiny.

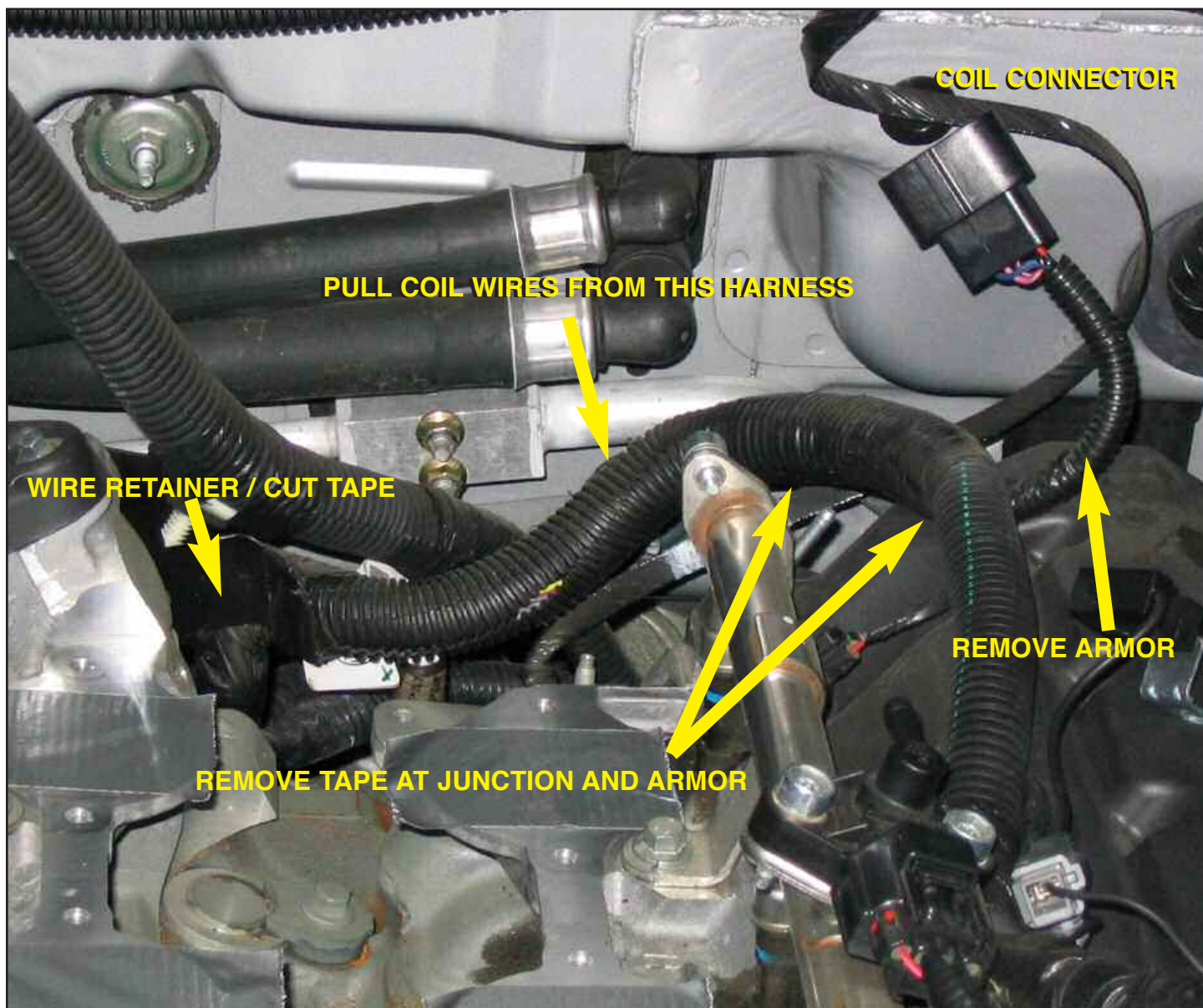


Figure HA modify coil harness

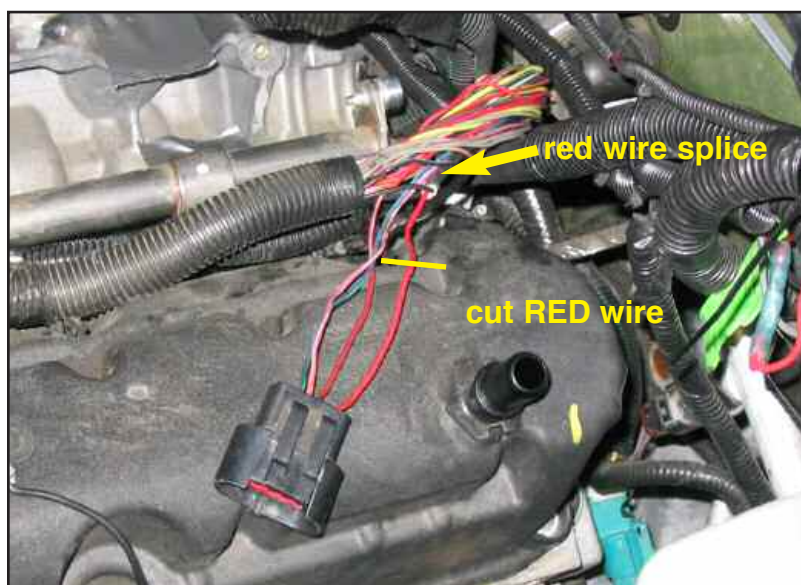


Figure HB expose coil wires

1. Remove the wire armor at the coil harness.

Pull coil wires from harness.

Locate RED wire (NOT RED WITH WHITE).

Locate red wire splice in main harness.

Cut the red wire between the harness splice and the coil connector.

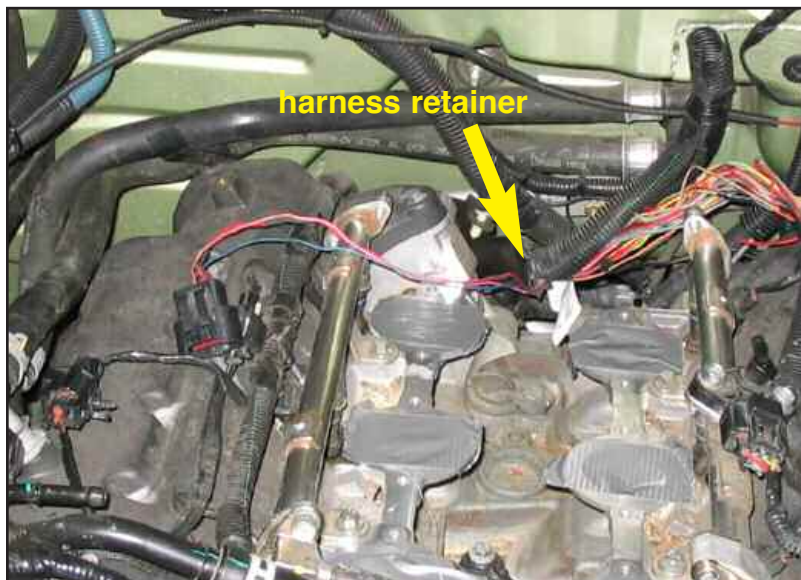


Figure HC pull coil wires from harness

2. Carefully cut the tape from the harness junctions and from the armor as shown in Figure HA.

Pull the wire armor off the wires, but do not remove the armor. Cut the tape that holds the wire bundle together inside the armor.

Pull four coil primary wires from harness back to the v shape harness retainer at the back of the block. Wires will be about 15" from v shaped bracket to the end of the coil connector.

Splice the **Red Extension Wire x 20** (key no 47) to loose ends of cut red wire as shown above.

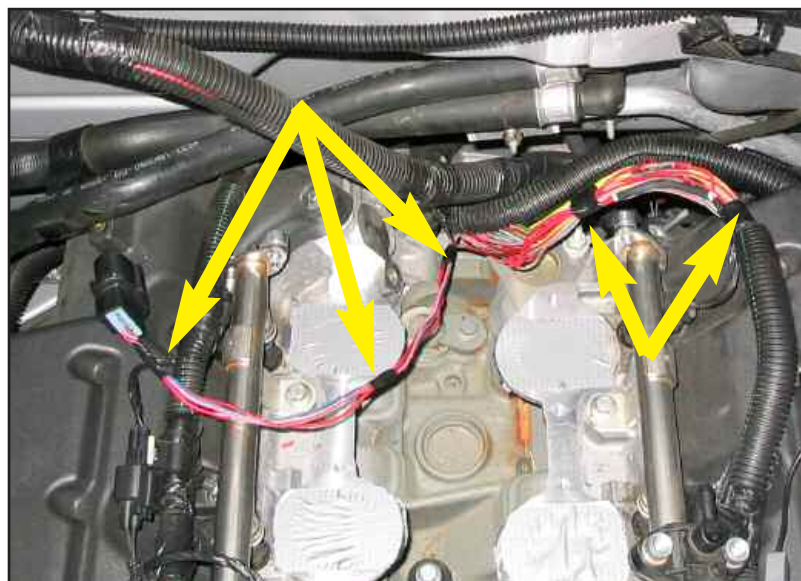


Figure HD tape coil harness

3. Tape the wires together at harness junctions and in several places on the coil wires and on the main harness where tape was cut off above.

Reinstall main harness wire armor.

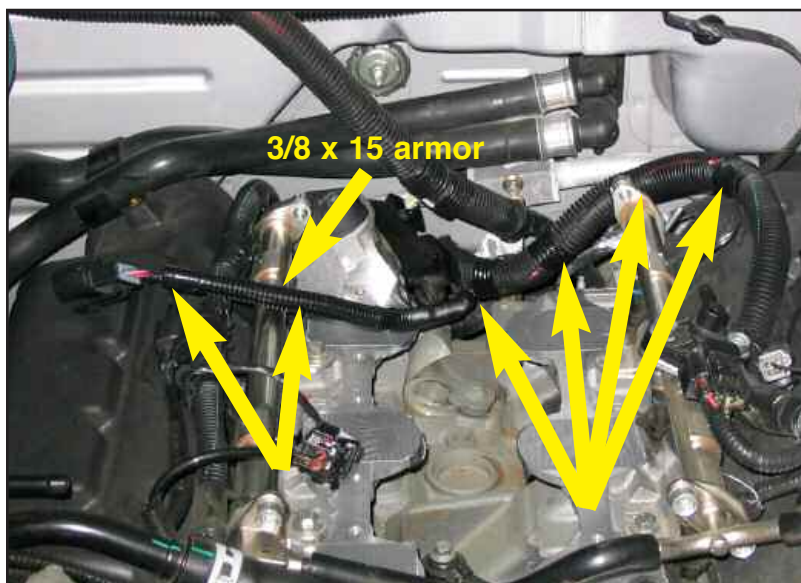


Figure HE tape coil harness

4. Install new **3/8 Wire Armor x 15** (key no 51) over coil wires.

Retape wire armor at the junctions and in several places along the armor.

NOTE:
**WIRE ARMOR IS CUT TO LENGTH
FROM 96" PIECE**

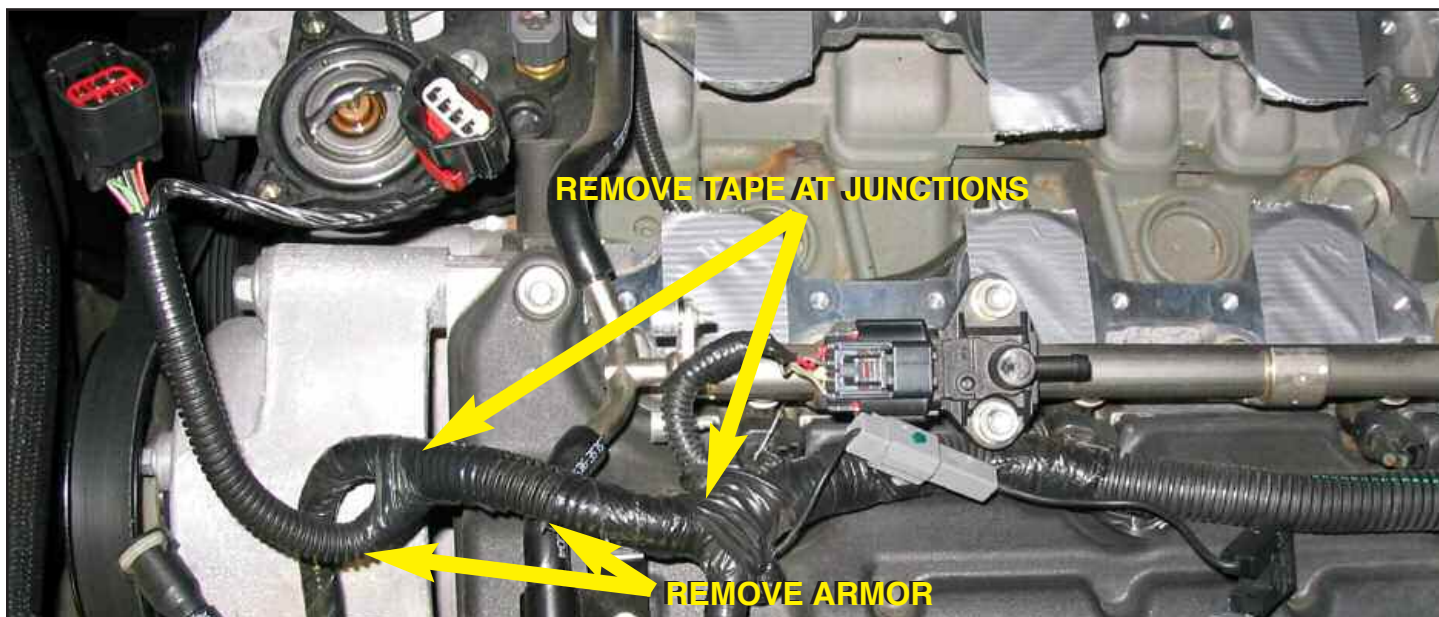


Figure HF throttle body / EGR harness

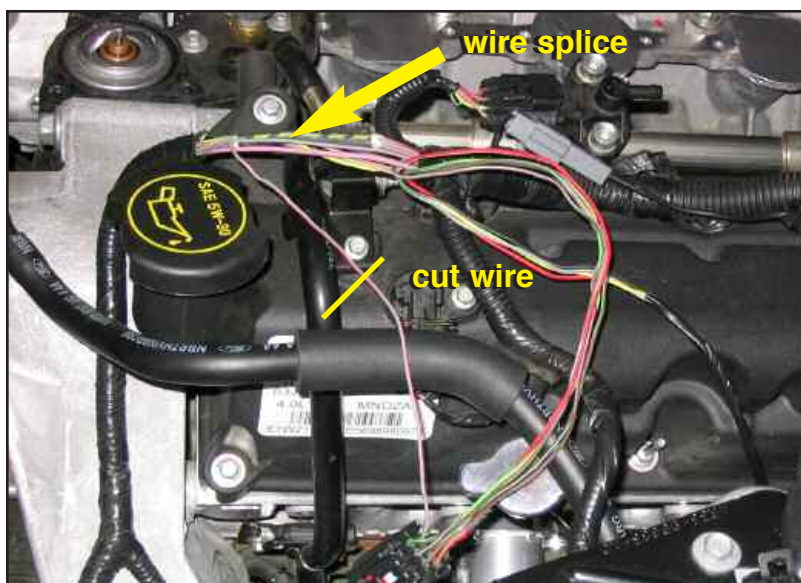


Figure HG cut TB wire

5. Locate grey with red stripe junction. Separate grey with red stripe wire and cut as shown. The grey/red wire to be extended is shorter than the others.

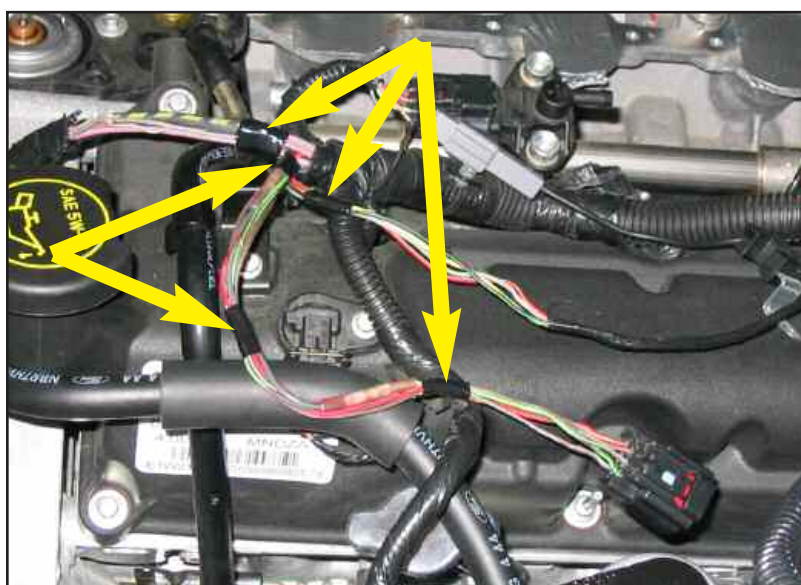


Figure HH tape EGR/TB wires

6. Extend cut grey w/ red wire with **Grey / Red Extension Wire x 7.5** (key no 44).

Tape the wires together as shown.

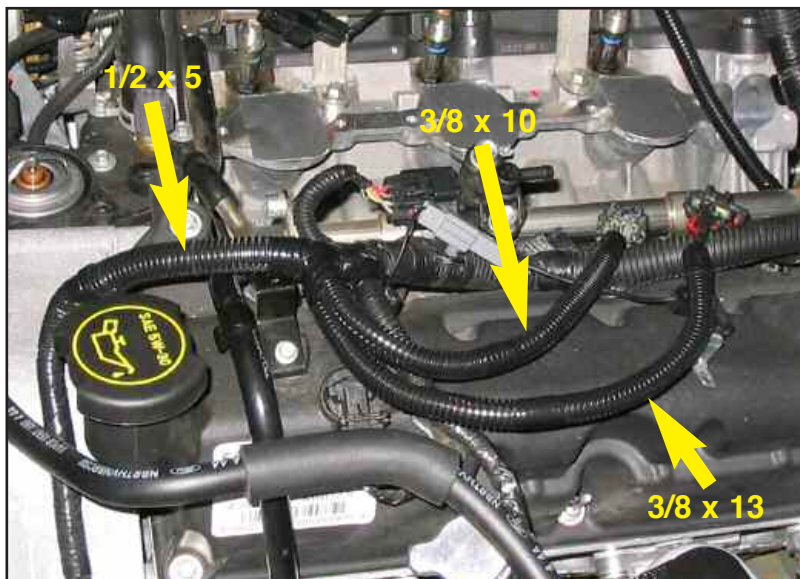


Figure HI wire armor installed

7. Locate:

(1) **1/2 Wire Armor x 5 inches** (key no 48)

Cut from 96" length:

(1) **3/8 Wire Armor x 10 inches** (key no 49)

(1) **3/8 Wire Armor x 13 inches** (key no 50)

Install Wire Armor as shown.

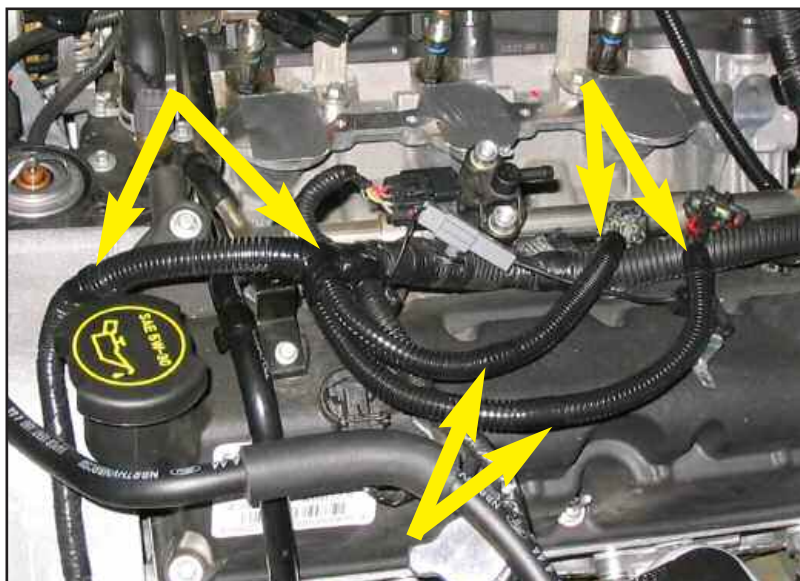


Figure HJ install wire armor

8. Tape junction, centers and ends of armor.

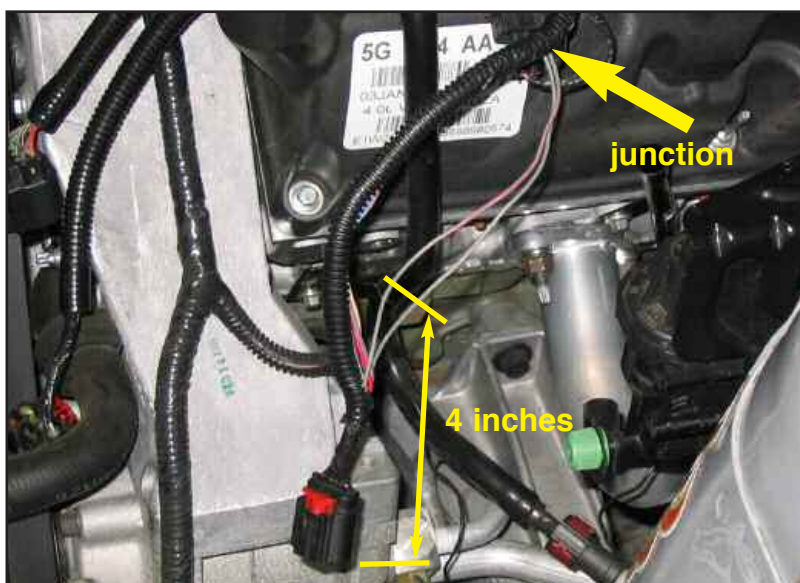


Figure HK cut MAF harness

9. Remove tape from the MAF harness from the end of the armor to the junction with the Cam Position Sensor wires.

Pull grey and grey w/ red wires from the harness.

Cut grey and grey w/ red wires 4 inches from the end of the connector.

Pull the grey and grey w/red wires out of the armor up to the Cam Position Sensor harness junction.



Figure HL cut ACT wires

10. Connect the new **IAT Sensor Harness** (key no 74) to the cut ends of the IAT wires. These wires do not need to be indexed (color coded).

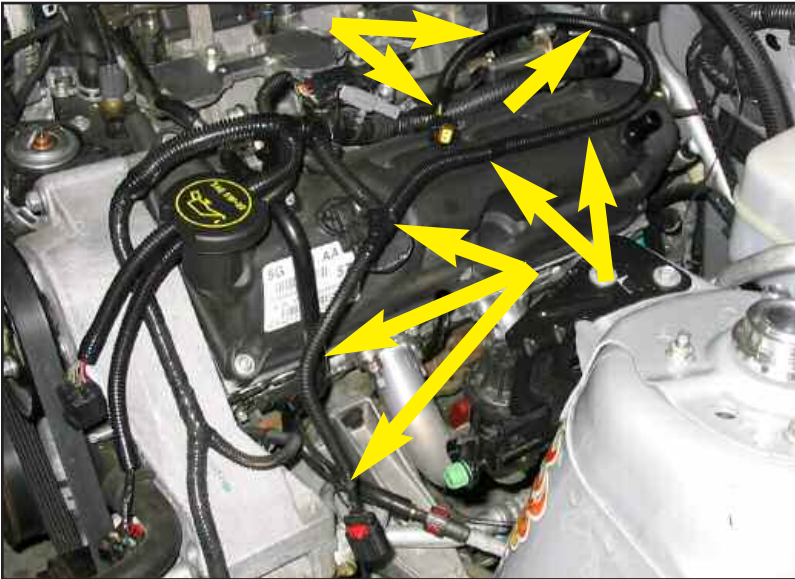


Figure HM tape ACT harness

11. Route the IAT harness toward the rear of the engine and install **3/8 Wire Armor x 29** (key no 53).

Push cut grey and grey w/ red wire stubs into the existing stock wire armor.

Tape the ends, junction and several places on the armor.



Figure HN harness tiewraps

12. Cut tape from the end on the Throttle Position Sensor harness.

Pull the TPS wires from the armor.

Stagger cut the wires approximately 1.5 inches apart.

Connect **Orange Extension Wire x 20.5** (key no 45) to the orange w/ white wire ends between the harness and the cut off connector.

Connect the **Blue Extension Wire x 20.5** (key no 46) to the blue w/ yellow wires.

13. Tape the Throttle Actuator wires together in several places.



Figure HO tape Throttle Actuator wires

14. Push Throttle Actuator wires back into the original armor.

Install **3/8 Wire Armor x 21** (key no 52) over the Throttle Actuator wires from the end of the stock armor.

Tape the armor together in several places.



Figure HP install Throttle Actuator wire armor

15. Route the Throttle Actuator harness along the front of the engine and under the left side harness.

Route the TPS harness under the right side engine harness toward the center.

Route the ACT harness rearward and along the firewall.

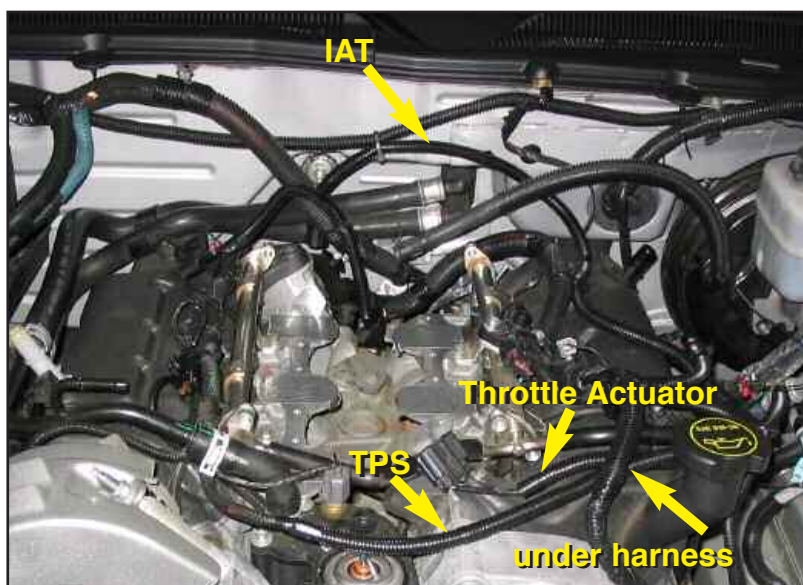


Figure WQ route Throttle Actuator harness

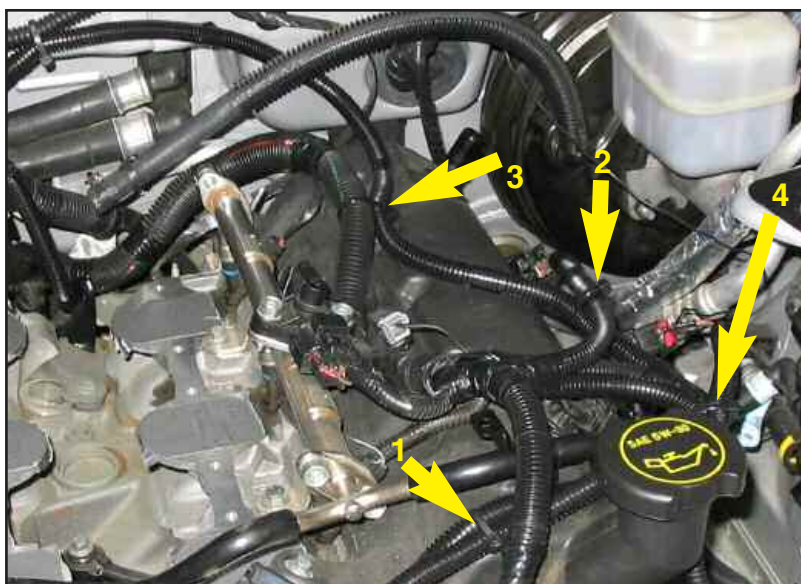


Figure WR four tiewraps on the left side

16. Install (4) **Tiewraps** (key no 40) on the left side harness:

1. TPS harness to the Throttle Actuator harness
2. ACT harness to the EGR harness
3. ACT to engine right side harness
4. Throttle Actuator harness to MAF harness and TPS harness

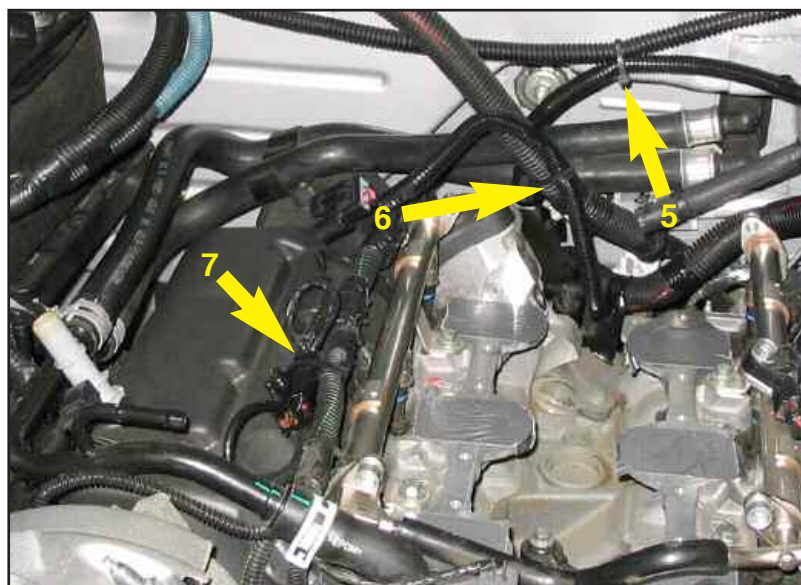


Figure WS three tiewraps on the right side

17. Install (3) **Tiewraps** (key no 40) on the right side harness:

5. ACT harness to firewall harness
6. Coil harness to main harness
7. Knock Sensor connector to engine harness

PREPARE PCV TUBE



Figure BA remove PCV valve fitting

1. Locate the stock PCV Tube.

Evenly heat the end of the tube with heat gun until the 90 fitting can be pulled from the tube.

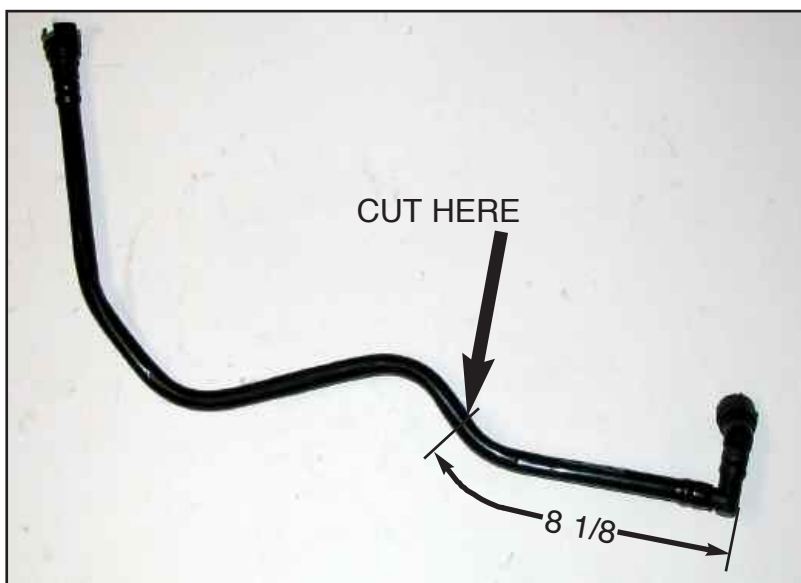


Figure BB cut off stock breather tube

2. Measure from the very end of the tube fitting 8 1/8 inches along the top radius of the tube as shown.



Figure BC complete new PCV tube

3. Heat the cut end of the former breather hose and insert the fitting. Concentrate the heat on the end of the tube. Do not overheat.

This is the new PCV Tube.

REPLACE FUEL INJECTORS

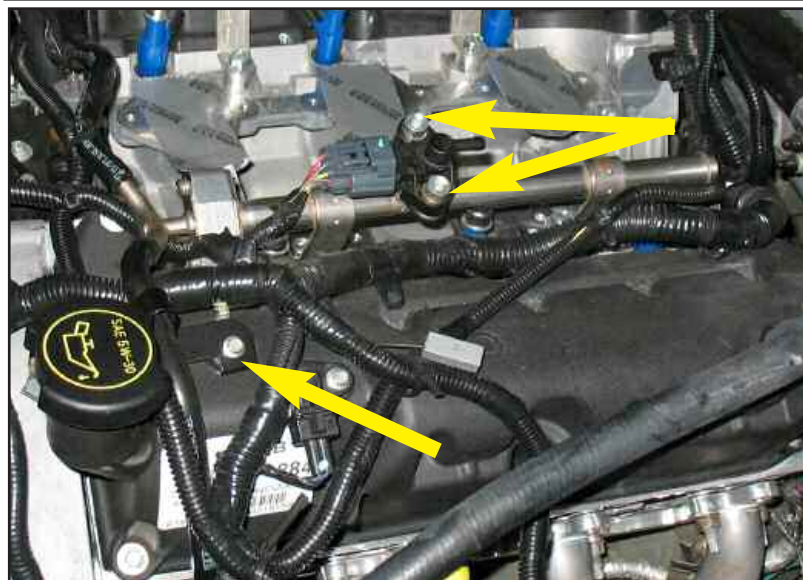


Figure IA remove fuel line bracket

1. Remove Fuel Pressure Sender. Use T30 torx tool.

Save bolts.

NOTE:
DO NOT DISCONNECT ELECTRICAL CONNECTOR

Remove Fuel Line Bracket. 7MM bolt head.

Bracket and bolt will not be reused.

2. Release Fuel Hose connector at chassis as shown.

Pull Fuel Hose from connector.

CAUTION:
HAVE A RAG HANDY TO SOAK UP
FUEL DRAINING OUT OF HOSE

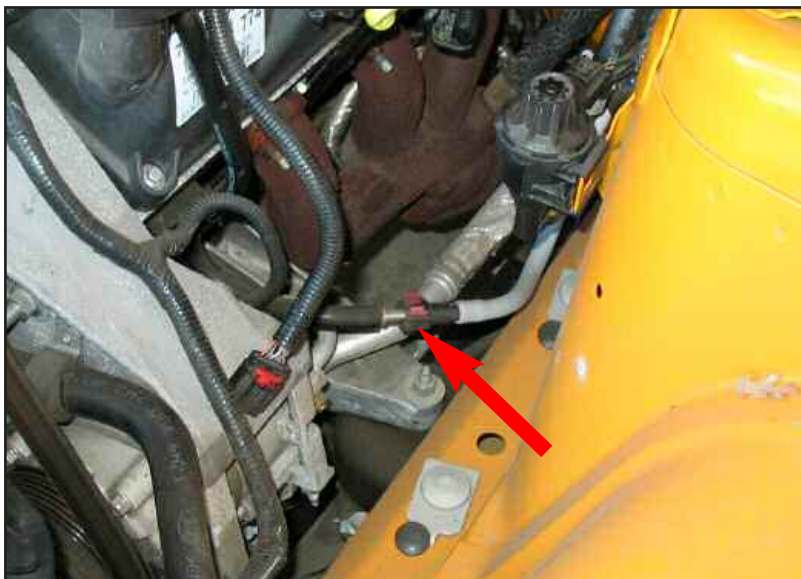


Figure IB loosen fuel crossover bolts



Figure IB-1 release red lock catch

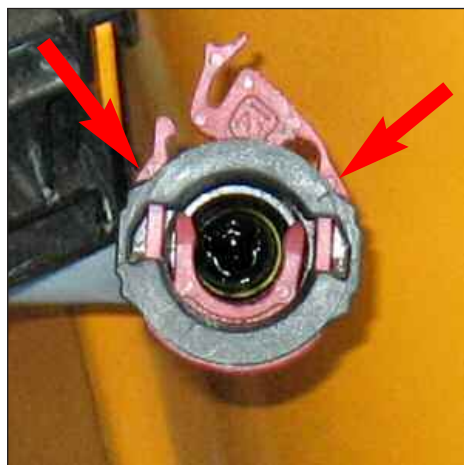


Figure IB-2 squeeze tabs



Figure IB-3 push lock down

3. Remove Fuel Line Retainer bolt. 8mm head.

Bolt will not be reused.

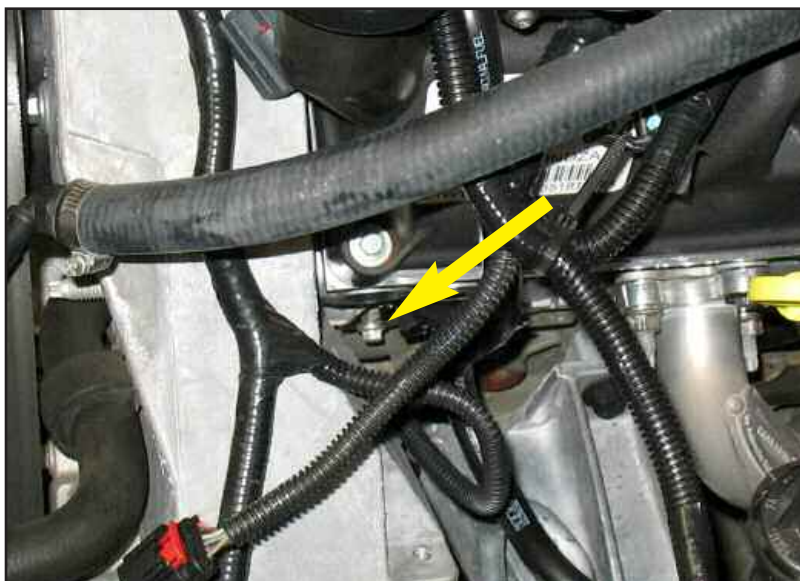


Figure IC fuel hose bracket



Figure ID fuel rail bolts

4. Remove (4) Fuel Rail bolts. Use a 10mm socket.

Pull Fuel Rail off Injectors.

Remove Fuel Line Crossover and Fuel Rails as an assembly

5. Clean dirt and grit from the injector seat area. Note orientation of injectors.

Remove injectors from the head.

Disconnect injector connectors by squeezing on the tab on the connector side.



Figure IE injector orientation



Figure IE-1 injector connector

6. If any of the seats came out with the injectors, remove seat from old injector and reinstall in head.

If any of the seats are damaged, they must be replaced. See your local friendly Ford dealer or contact Explorer Express..

Install new **39 lb Injectors** (key no 70) into heads.

Lube o-rings with silicone spray.

Orientate fuel injectors, then plug in injector electrical connectors.



Figure IF injectors and seats

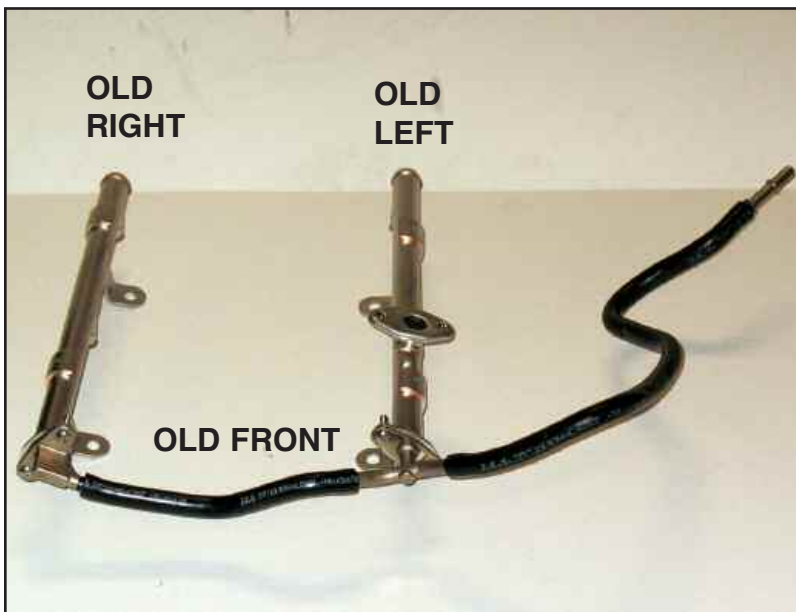


Figure RA old fuel rail

1. The stock left side Fuel Rail will be moved to the right side and a new **Fuel Rail** (key no 07) will be installed on the left side.

The Fuel Crossover Pipe will be relocated to the rear of the engine.

Disassemble Fuel Rails from Fuel Crossover. Use a Torx 30 tool.

Screws will not be reused. Right side Fuel Rail will not be reused.

Remove stock Fuel Hose Bracket. Save Bracket and Phillips Head Screw.

2. Identify:

Fuel Rail Adapter, Right (key no 10)

Fuel Rail Adapter, Left (key no 11)

NOTE:

THE FUEL RAIL ADAPTERS ARE DIFFERENT LEFT AND RIGHT

NOTCHES IDENTIFY THE BOTTOM

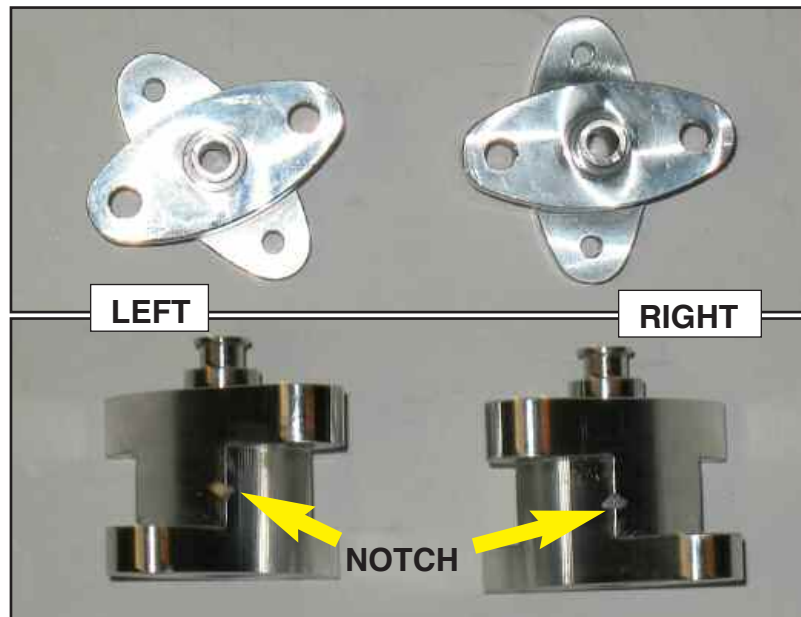


Figure RB fuel rail adapter

3. Identify:

Fuel Rail Cap (key no 13)

Fuel Sensor Cap (key no 12)

Select:

(1) **Large O-ring** (key 19)

(5) **Small O-ring** (key no 20)

(4) **5.8MM x 20 Screw** (key no 14)

(6) **5.8MM x 16 Screw**(key no 15)

(2) **5.8MM x 16 Countersunk Screw**(key no 16)

(10) **5MM Flat Washer** (key no 17)

(10) **5MM Lock Washer** (key no 18)

Lube **Large O-ring** and install on **Pressure Sensor Cap**.

Lube **Small O-ring** and install on **Fuel Rail Cap**.



Figure RC rail caps

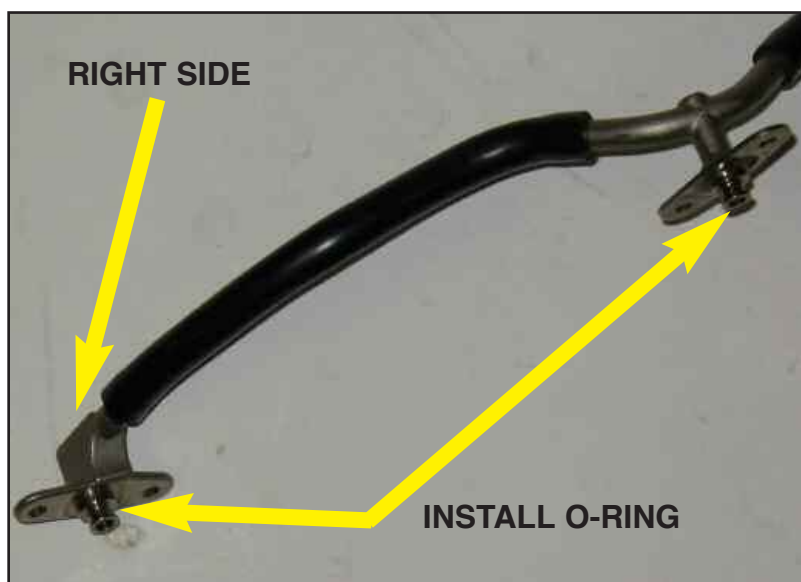
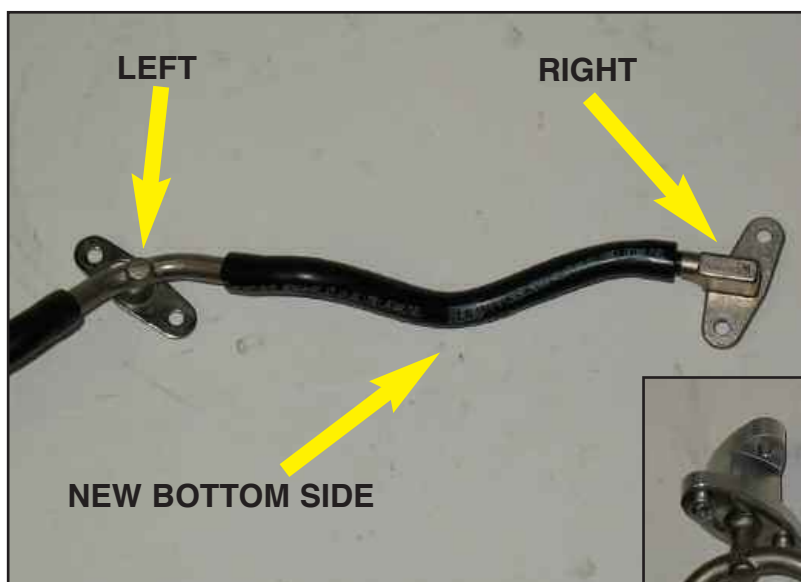


Figure RD replace o-rings

4. Lube (2) **Small O-rings** and install on **Fuel Rail Adapter** nipples.

Remove old O-rings from the Fuel Crossover. Lube and install (2) **Small O-ring** on Fuel Crossover nipples.



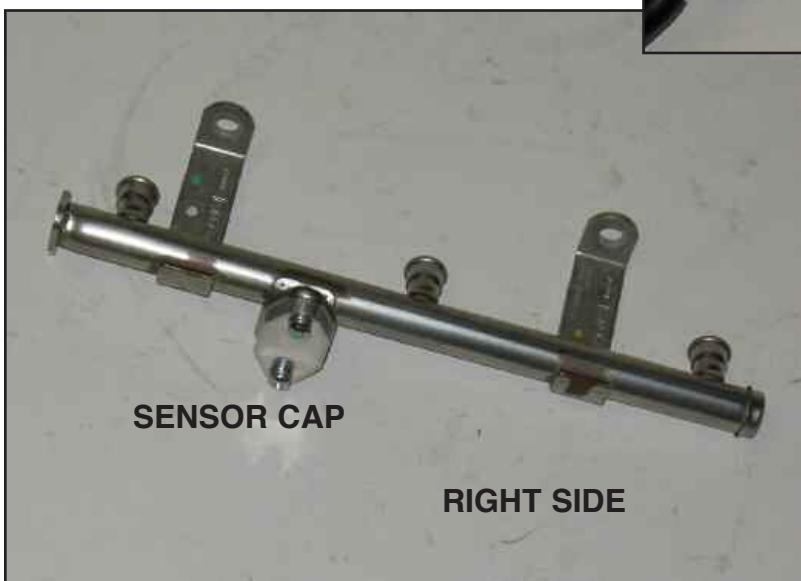
5. **Install Fuel Rail Adapter, Left** on the left side of Fuel Crossover with the notch facing the down. Secure with (2) **5.8MM x 20 Screw** with **5MM Lock Washer** under the screw head, then **5MM Flat Washer**.

Install **Fuel Rail Adapter, Right** on the right side with the notch facing the down. Secure with (2) **5.8MM x 16 Screw** with **5MM Lock Washer** under the screw head, then **5MM Flat Washer**.



Figure RE new crossover orientation

Figure RF rail adapters installed



6. Install **Fuel Pressure Sensor Cap** on the former left side Fuel Rail with (2) **5.8MM Countersunk Screws x 16**.

This is the right Fuel Rail.

NOTE:
THE O-RING STUD IS NOT CENTERED

Figure RG new right fuel rail



Figure RH new let fuel rail

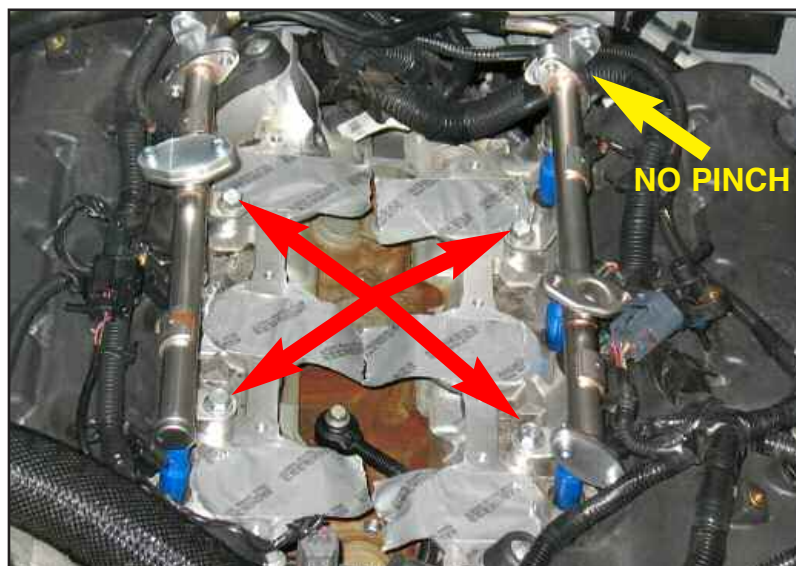
7. Install **Fuel Rail Cap** on the new left side Fuel Rail with (2) **5.8MM x 16 Screw**, **5MM Lock Washer** and **5MM Flat Washer**.

This is the left Fuel Rail.



8. Attach Fuel Crossover with (4) **5.8MM Screw x 20**, **5MM Lockwasher** and **5MM Flat Washer** as shown.

Fuel Rails are ready to install.



9. Lube O-rings.

Install modified Fuel Rail / Crossover assembly. Use **8mm Bolts X 25** (key no 72) and with **Fuel Rail Spacers** (key no 71) between the Rails and Heads.

Check to be that the Wiring Harness is not pinched by the Rail Adapter.

Figure RJ fuel rails installed

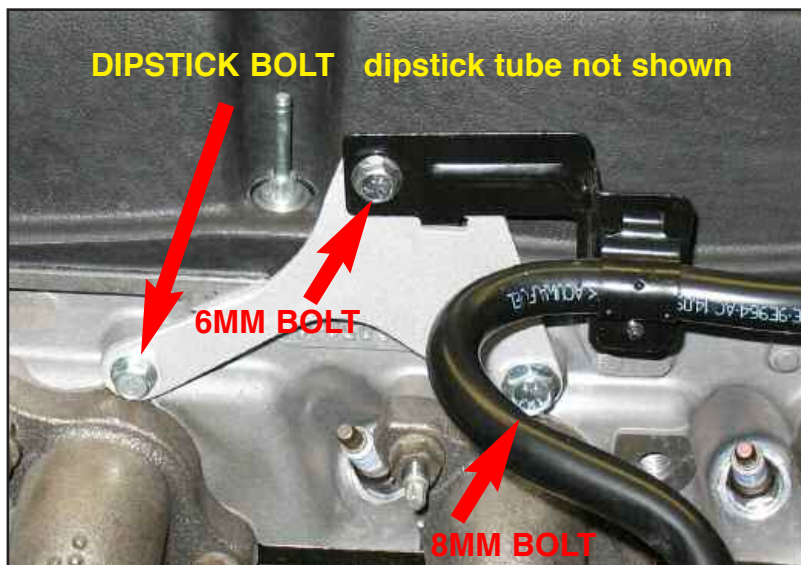


Figure RK fuel line bracket

10. Remove Dipstick bolt.

Install **Fuel Line Bracket** (key no 05) with original Dipstick bolt thru the Dipstick Bracket hole then thru the Fuel Line Bracket.

Install 8MM x 20 Bolt from former Coil Bracket in rear Fuel Line Bracket hole. Tighten bolts.

Reinstall stock Fuel Line Bracket on Fuel Line as shown. Secure the Fuel Line to the Bracket with stock Clip and Phillips Head Screw.

Engage stock Bracket tang into the new Fuel line Bracket and secure with **6MM X 12 Flange Head Bolt** (key no 62).

11. Plug Fuel Line into the chassis Fuel Hose. Tighten Retainer by pushing red retainer up then snap lock closed.



Figure RL connect fuel line



Figure DA install alternator spacer and bracket

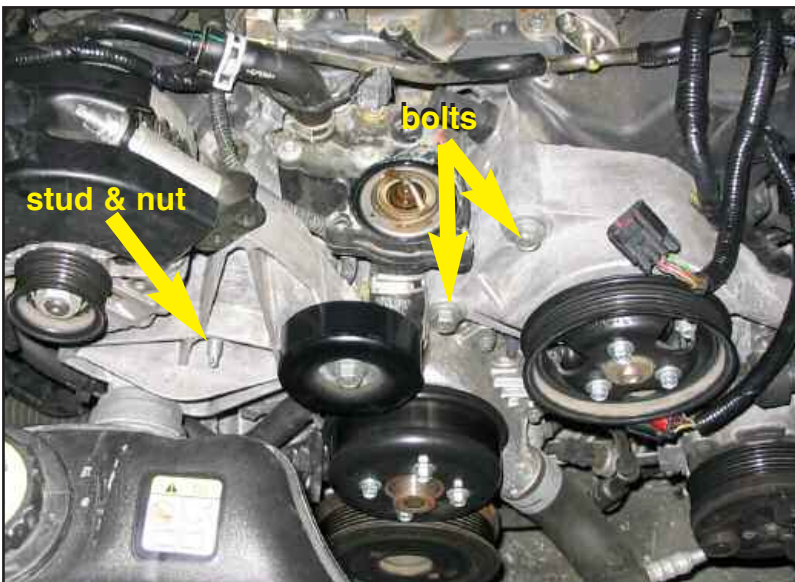


Figure DB remove idler pulley and front bolts

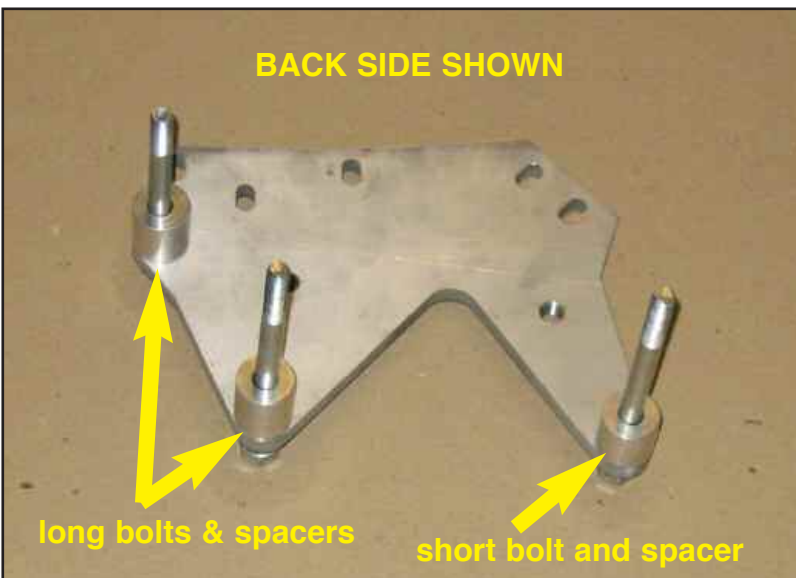


Figure DC idler plate with bolts and spacers

1. Remove alternator nuts and bolt. Use 15mm deep socket on the nuts and 13mm socket on the bolt.

DO NOT DISCONNECT ALTERNATOR WIRING

Pull alternator clear of studs.

Install **Idler Plate Bracket** (key no 23) over upper single stud orientated as shown in Figure DA.

Install **Alternator Spacer** (key no 27) over stud on the lower, 2 bolt side.

Reinstall stock nuts and bolt. Do not tighten alternator bolt or nuts at this time.

2. Remove the stock idler pulley. Socket size 15mm.

Remove one nut from the alternator bracket as shown. Use 15mm deep socket.

Remove stud with #E8 inverted torx socket. Nut and stud will not be reused.

Remove two power steering bolts from left side accessory bracket. Use 15mm socket.

These bolts will not be reused.

NOTE:

SOME ENGINES HAVE A BOLT RATHER THAN THE STUD AND NUT AS SHOWN.

3. Locate **Idler Plate** (key no 21)

(1) **Short Spacer** (key no 24)

(2) **Long Spacer** (key no 25)

(2) **10mm X 130 Bolt** (key no 29)

(1) **10mm x 120 Bolt** (key no 30)

(3) **10mm Flat Washer** (key no 32)

(3) **10mm Lock Washer** (key no 33)

(2) **8mm x 20 Flange Head Bolt** (key no 31)

Bolts, with lock washers under the head and flat washers under the lock washers, are installed thru Idler Bracket and thru Spacers, thru the factory brackets and into the cylinder heads.



Figure DD install idler plate

4. Install bolts, washers and spacers into Idler Plate. Then place the Idler Plate into position and the bolts into the engine brackets. Finger tighten bolts.

Install (2) **8mm x 20 Flange Head Bolts** thru the Idler Bracket into the Idler Plate Bracket previously installed. Finger tighten bolts.

Tighten the 10mm Bolts evenly, in stages, until tight. Use 17mm socket.

Tighten bracket bolts. 13mm socket.

Tighten alternator bolt and nuts.

Reinstall alternator cover, if originally equipped.



Figure DE install idler pulleys

5. Install **Special Shoulder Bolts** (key no 28) thru **Idler Pulleys** (key no 124).

Install **Pulley Spacers** (key no 26) on to Idler Bolts on the backside of the pulley.

Install Idler Pulleys and tighten with a 3/4 socket.



Figure DE1 idler pulley spacer

ASSEMBLY



Figure AA install thermostat cover

1. Install new **Thermostat Cover** (key no 81) using original bolts.

Secure TPS harness to the Fuel Crossover Tube with (1) **Tiewrap** (key no 40).



Figure AB position heater hoses

2. Rotate heater hoses and tuck them behind valve cover to ease coil installation.

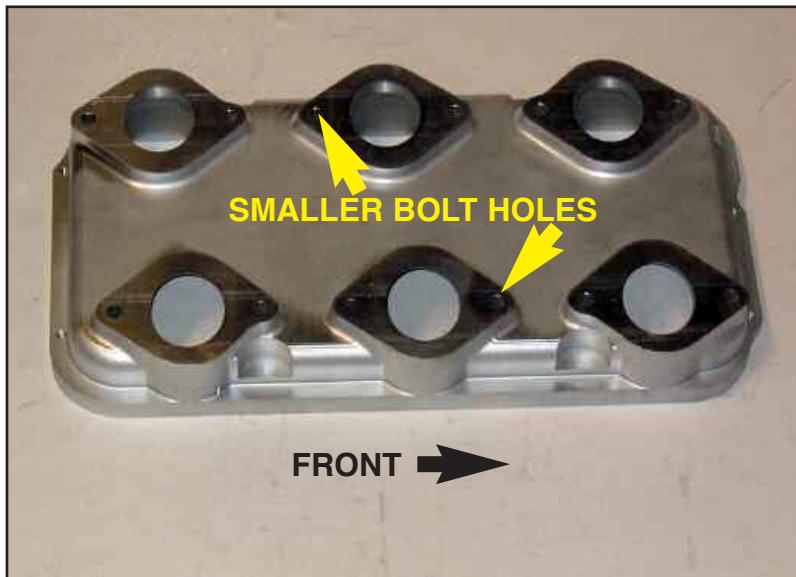


Figure AC prep discharge manifold

3. Turn the **Discharge Manifold** (key no 02) upside down and glue (6) **Discharge Manifold Gaskets** (key no 38) to the Manifold.

The Gasket must be glued on with more rounded edge toward the outside.



Figure BT1 discharge gasket

4. Remove tape from the intake ports. Clean port flanges.

Angle manifold into place. It may be necessary to spread the fuel rails slightly for clearance at the left sensor flange.

With manifold in place check Gaskets.



Figure AD discharge manifold installation

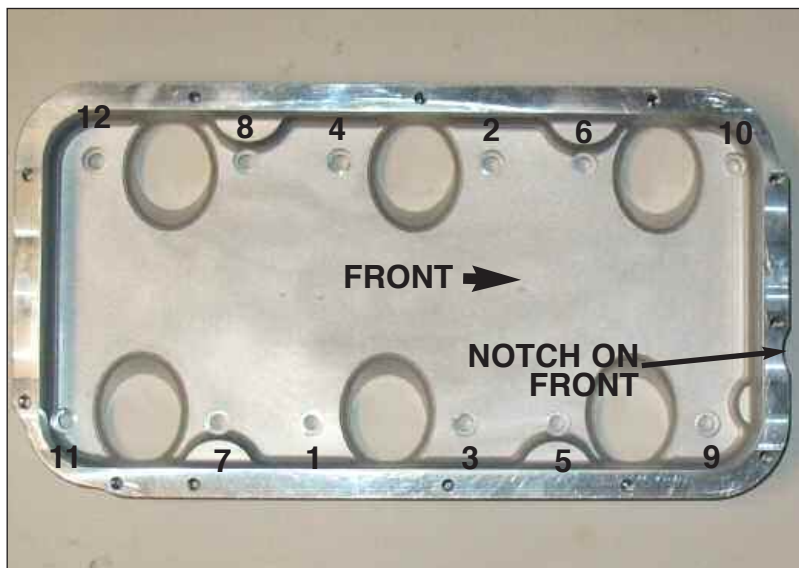


Figure AE manifold torque pattern

5.

NOTE:

THE CENTER RIGHT AND LEFT PORT HAVE ONE HOLE DRILLED SMALLER THAN THE OTHERS. INSTALL THESE BOLTS FIRST TO LOCATE THE MANIFOLD.

CAUTION:

START ALL THE BOLTS BEFORE TIGHTENING ANY

5. Apply **Locktite** to bolt threads.

Insert (12) **6MM x 25 10.9 Flange Head Bolts** (key no 59) (black color) into Discharge Manifold.

Use a 10MM socket and tighten bolts evenly, in stages, in a center to outside pattern as shown.

Repeat the tightening sequence several times

Torque to 10-12 lf/lbs.

Retorque.

6. Reinstall Fuel Pressure Sensor with original screws.



Figure AF fuel pressure sensor installed

7. Lube gasket surface with a thin layer of chassis lube or other heavy lube. This will help the gasket slide on the manifold flange rather than getting caught and tearing.

Inspect to be sure that there aren't any wires or hoses that could get pinched between the S/C assembly and the Discharge Manifold.

Grasp the Supercharger assembly by the nose and PCV fitting. Lean over the left fender and angle the assembly between the Fuel Rails as shown. It may be necessary to pry the left side fuel rail slightly for clearance.

Inspect Lid Gasket thru bolt holes to be sure it didn't slip.



Figure AG install s/c assembly

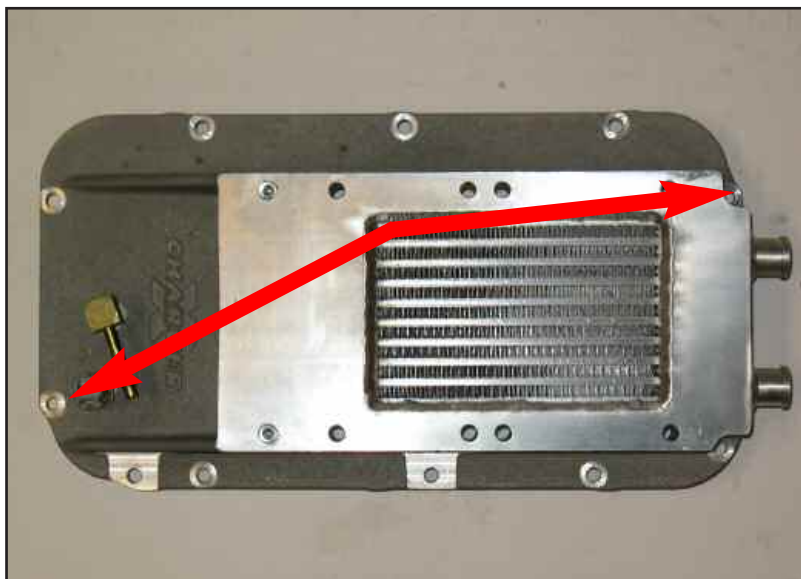


Figure AH lid locator holes

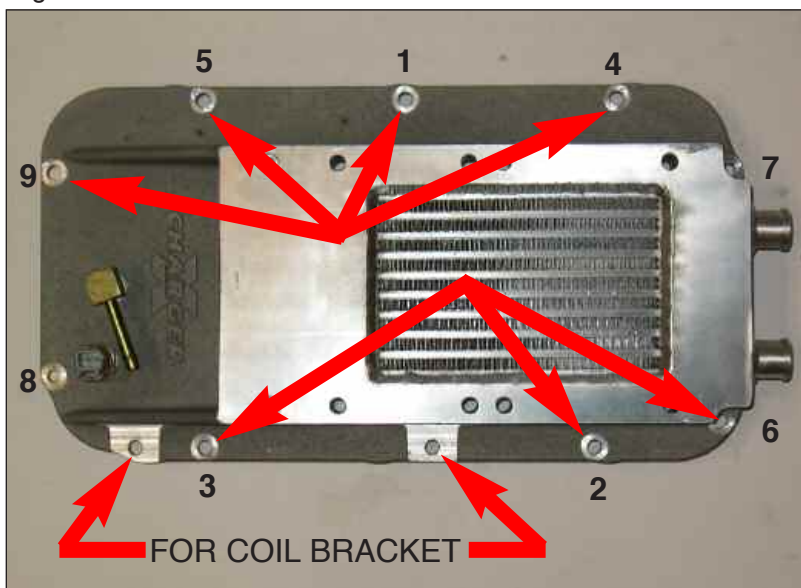


Figure AI lid torque pattern



Figure AJ coil bracket

8. Locate (9) **6MM x 16 Flange Head Bolt** (key no 61) and (2) **6MM x 25 Flange Head Bolt** (key no 58).

Loosely install (2) **6MM x 16 Flange Head Bolts** in the positions shown. These two holes are smaller and the bolts will align the rest of the holes.

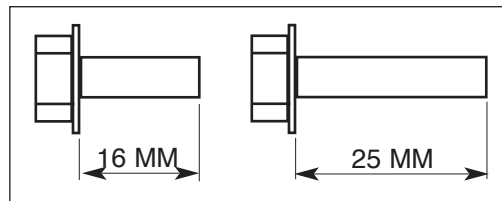


Figure AH1 lid / coil bracket bolts

9. Install (7) **6MM x 16 Bolts**.

Tighten Bolts in stages from the center to the outside as shown.

10. Install **Coil Bracket** (key no 04) with (2) **6MM Flange Head Bolt x 25**. Place the Bracket so that the rear leg is next to the Pressure Sensor flange, then slide rearward into alignment with bolt holes.



Figure AK coil bracket stay



Figure AK1

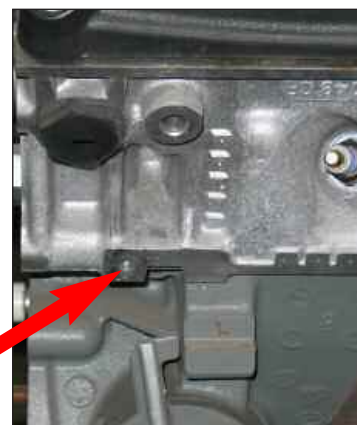


Figure AK2

11. Position Heater Hoses as shown.

Reposition Coil for access if necessary and install **Coil Bracket Stay** (key no 06) with (2) **6MM x 16 Flange Head Bolt** (key no 61).

Install the lower bolt finger tight first, then the upper.

Tighten bolts.

12. Install Coil and **Coil Plug Wire Bracket** (key no 54) with original bolts as shown below.

Connect Coil primary terminal.



Figure AL coil installed



Figure AL1 coil plug wire bracket

13. Regap new **Spark Plugs** (key no 127) to .035". Install new Spark Plugs.

Locate the stock Spark Plug Wires.

Remove plug wire retainers. Pry the catch open with a screwdriver.



Figure AM remove plug wire retainers

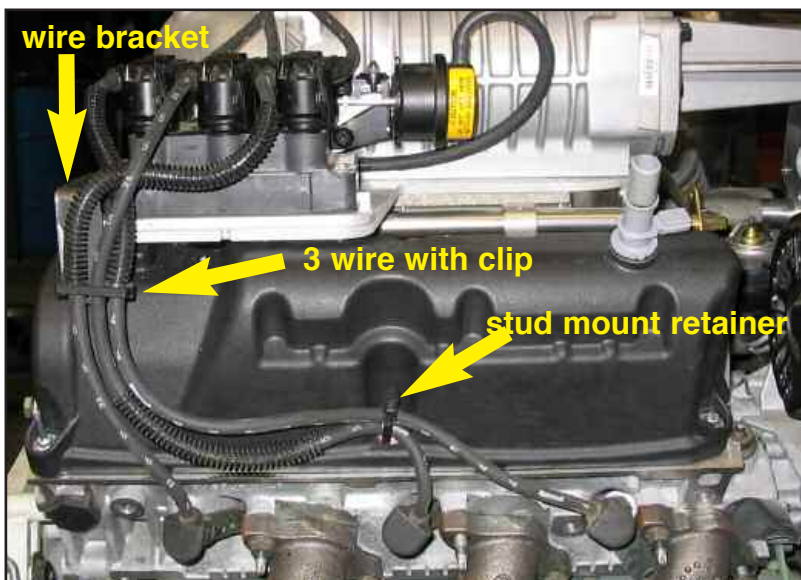


Figure AN install retainers right side

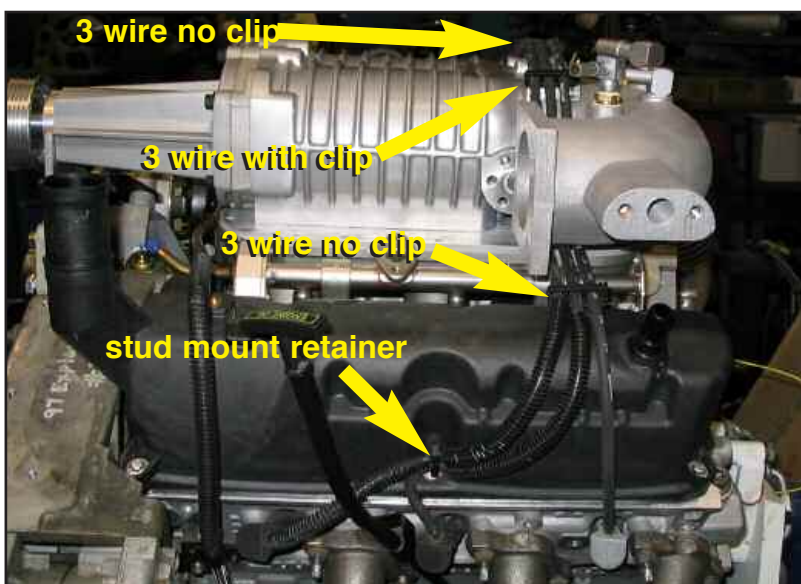


Figure AO install wire retainers left side

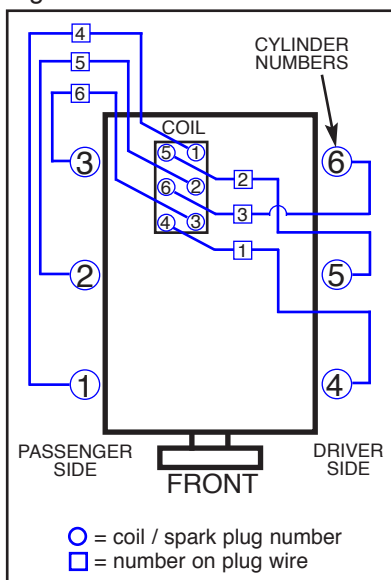


Figure AP cylinder numbers

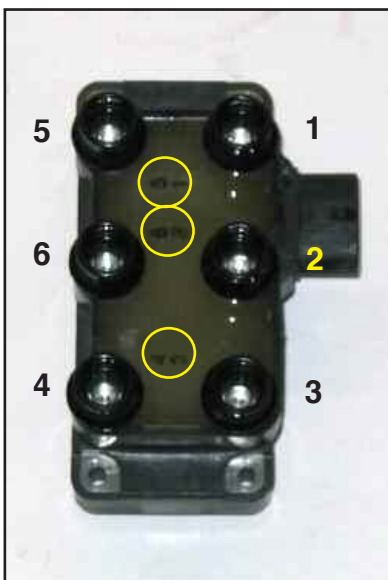


Figure AQ coil numbers

14. Install passenger side plug wire retainers.

Install one retainer with mounting clip into the Plug Wire Bracket on the coil with the long end toward the front.

Install one stud mount retainer on the center valve cover stud .

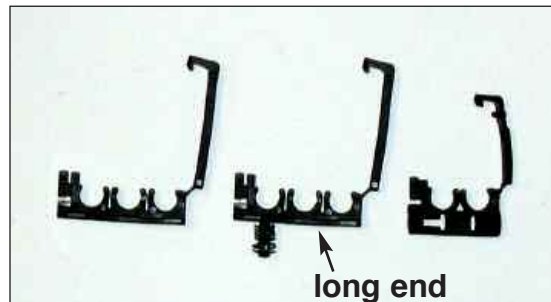


Figure AK-1 plug wire retainers

15. Install driver's side plug wires retainers.

Install one retainer with mounting clip into the Plug Wire Bracket on the Inlet Adapter with the long end toward the front.

One plain 3 wire clip goes near the coil (see Figure AO).

One plain 3 wire retainer goes on top of the valve cover.

One two wire stud type retainer goes on the center valve cover stud.

16. Install Plug Wires.

THE PLUG WIRES ARE NOT REINSTALLED IN THEIR ORIGINAL POSITIONS.

Connect the wires as follows:

| ORIGINAL WIRE NUMBER: | NOW CONNECTS TO CYLINDER NUMBER: |
|-----------------------|----------------------------------|
| 1 | 4 |
| 2 | 5 |
| 3 | 6 |
| 4 | 1 |
| 5 | 2 |
| 6 | 3 |

Plug wire routing at the coil is shown in Figure AR below.

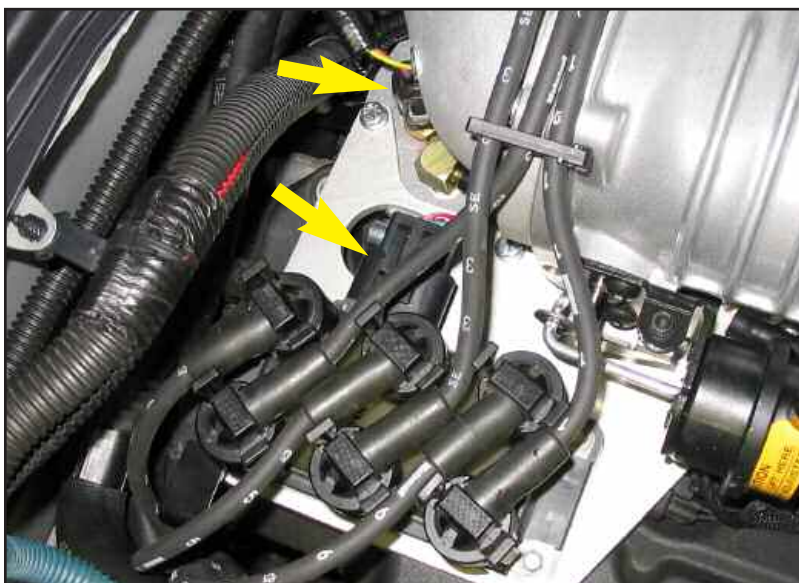


Figure AR plug wires at coil

17. Plug in coil primary wiring connector.

Plug in ACT Sensor.

Note Plug Wire routing and separator location (figure AO).

18. Remove the insulator from the stock EGR Tube. Compress the woven fabric to expand the size enough to let the insulator clear the fitting.

Cut the insulator to 14.5 inches.

Install the shortened insulator onto the the **EGR Tube** (key no 123).

Install EGR valve with the original bolts and gasket. Leave the EGR bolts finger tight and start the EGR tube threads on bolt ends. With the EGR tube in place, tighten the EGR bolts.

Use a 1 1/16 crowfoot wrench to tighten the fittings. Antisieze on the threads will ease the next removal.



Figure AS EGR and tube

19. Pull the vapor hose snap-on connector from the end of the vapor hose.

Install the vapor hose. Secure with an **06 Mini Clamp** (key no 69).

Pull old vacuum hose to Fuel Pressure Sensor from vacuum source connector.

Original Fuel Pressure vacuum hose will not be reused.

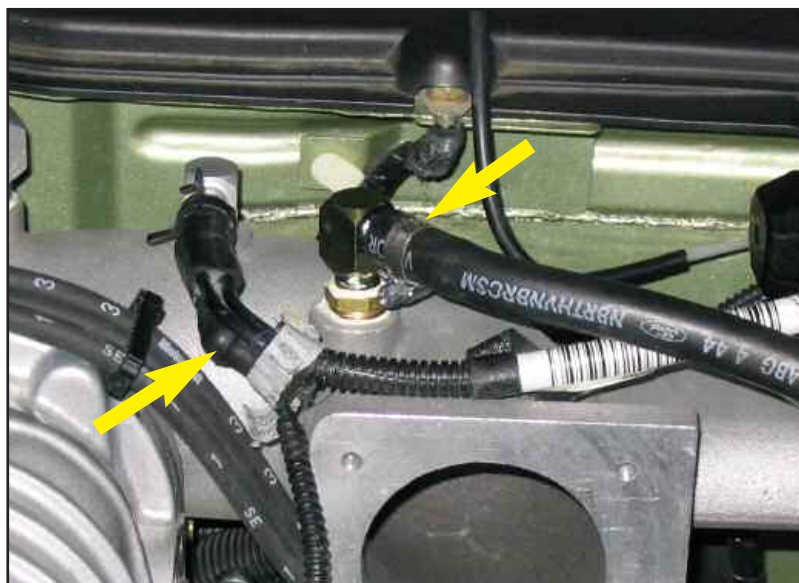


Figure AT vapor hose installed



Figure AU remove hose connector

20. The nylon connector may pull out from rubber junction. If so, use pliers to pull the nylon connector from the vacuum line fitting and reinsert into the junction.



Figure AV

21. Install **7/32 Vacuum Cap** (key no 68).

Connect loose end of the new 7/32 x 12 Vacuum Hose from the Lid fitting to the Fuel Pressure Sensor.



Figure AW

22. Plug in EGR electrical connector.

Free capacitor connector from the harness and pull to side. Do not disconnect the capacitor.



Figure AX vacuum source tube



Figure AY brake booster hose



Figure AP1 prep booster hose

23. Prep Brake Booster Hose. Squeeze outer clamp tangs together with pliers and insert stiff wire as shown.

Lube the inside of rubber hoses before installing with silicone spray or rubber lube.

Slide Brake Booster hose onto fitting on underside of Inlet Adapter, then pull out the wire.



Figure AZ inlet extension

24. Install **Inlet Adapter Extension** (key no 09) with (4) **6mm x 20 Flange Head Bolts** (key no 60) and **Throttle Body Gasket** (key no 37) between the parts.

25. Install Throttle Body with original bolts and **Throttle Body Gasket** (key no 37).

Remove Throttle Body motor bolt with #20 Torx bit and secure Coil Resistor as shown.



Figure AAA coil resistor



Figure AAB throttle body electrical connections

26. Plug in Throttle Actuator connector.

Plug in Throttle Position Sensor connector.



Figure AAC throttle body heater hoses (05 ONLY)

05 ONLY

27. Install **5/16 Hose x 38** (key no 82) and **5/16 Hose x 32** (key no 83) as shown.

Reuse original spring clamps.

Secure Throttle Body heater hoses together with (6) **Tiewraps** (key no 84) at even intervals for a neat appearance.

28. Install **Radiator Hose Insulator** (key no 80). Compress the material to expand size.

Install **Upper Radiator Hose** (key no 125). Use original clamps.

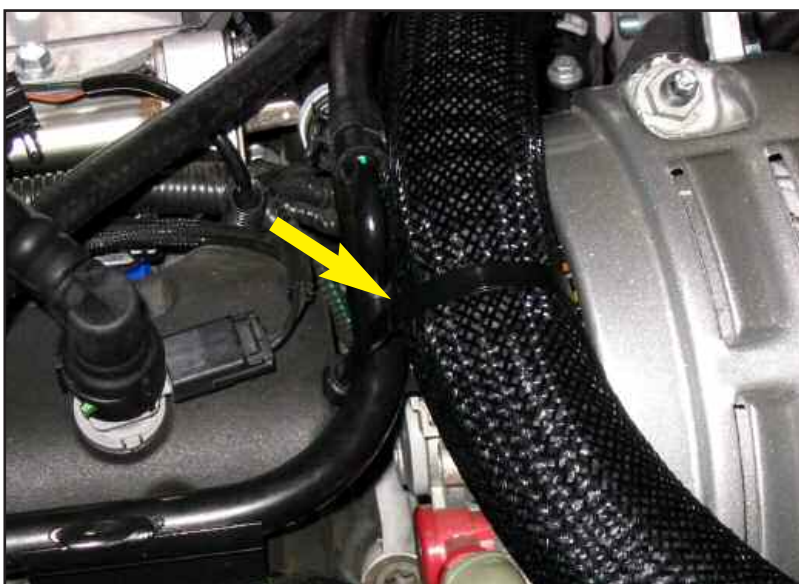


Figure AAD radiator hose tiewrap

29. Reinstall coolant.

Pressure test cooling system.

NOTE:

HD TIEWRAP SHOWN IN FIGURE AAD WILL BE INSTALLED LATER AND WILL ALSO SECURE THE INTERCOOLER HOSES



Figure AAF install nose support

30. Install **Nose Support** (key no 22) with (2) **8mm 1.25 x 20 Flange Head Bolts** (key no 31).

Use a small pry bar to seat the support against the machined end of the supercharge snout.

CAUTION:

DO NOT FORCE THE NOSE SUPPORT AGAINST THE SUPERCHARGER. USE JUST ENOUGH PRESSURE SO THAT SUPPORT FULLY CONTACTS THE S/C NOSE.

31. Install **Drivebelt** (key no 126).

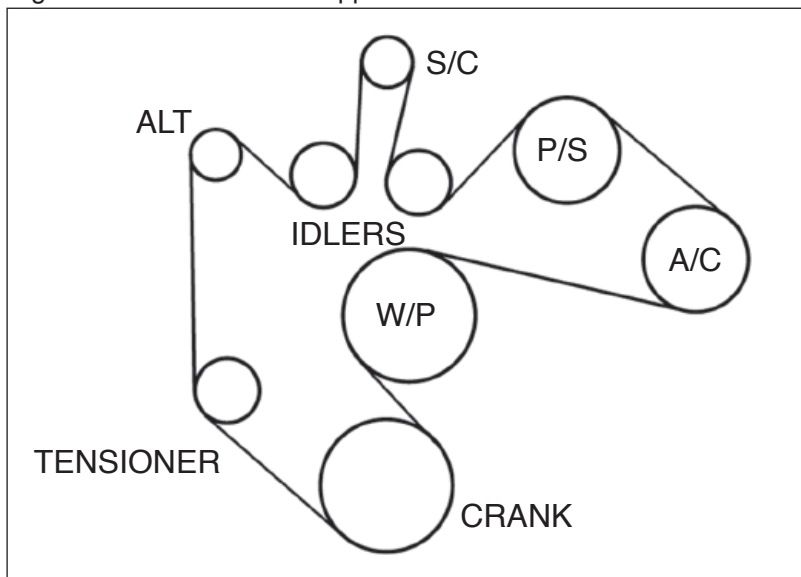


Figure AAG install drivebelt



Figure AAH PCV tube installed

32. Install the modified PCV Tube.



Figure ICA remove radiator cover

1. Remove (6) plastic rivets from the Radiator Cover.

There are small notches on the rivet body. Use a small straight screwdriver to pry the rivet center out.

Remove radiator cover.

Reassemble the rivets, they will be reused.



Figure ICB rivet detail



Figure ICC inner fender screws

2. Remove (3) screws that attach the Bumper Cover to the plastic Inner Fender on both sides.

NOTE:

BUMPER COVER HARDWARE WILL BE REUSED. DO NOT DISCARD FASTENERS. INSTRUCTIONS APPLY TO RIGHT AND LEFT SIDES.

LOWERED CARS MAY NEED TO BE JACKED UP FOR ACCESS



Figure ICD front inner fender rivets

3. Remove (3) push rivets from the front of the Inner Fender. Use a phillips head screwdriver to turn pin 90 degrees. Then pry out from under rivet body.



Figure ICE rivet detail

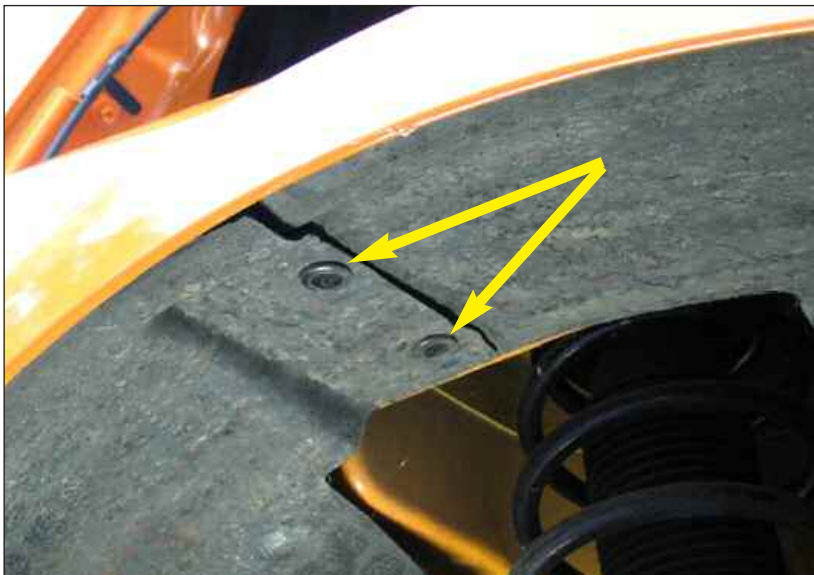


Figure ICF rear inner fender rivets

4. Remove two rivets from rear of front Fender Liner.

Remove Inner Fender.

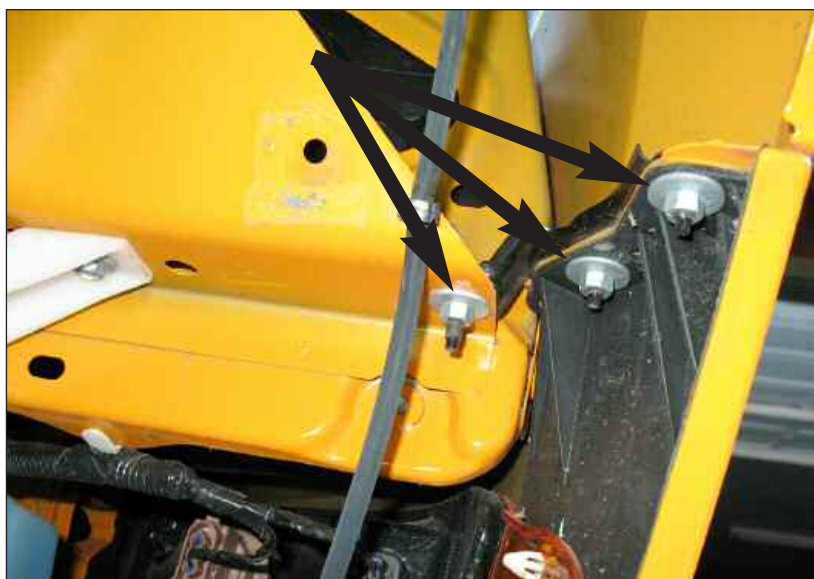


Figure ICG remove fender bracket

5. Remove (3) nuts with 10mm socket.

Remove Fender bracket.

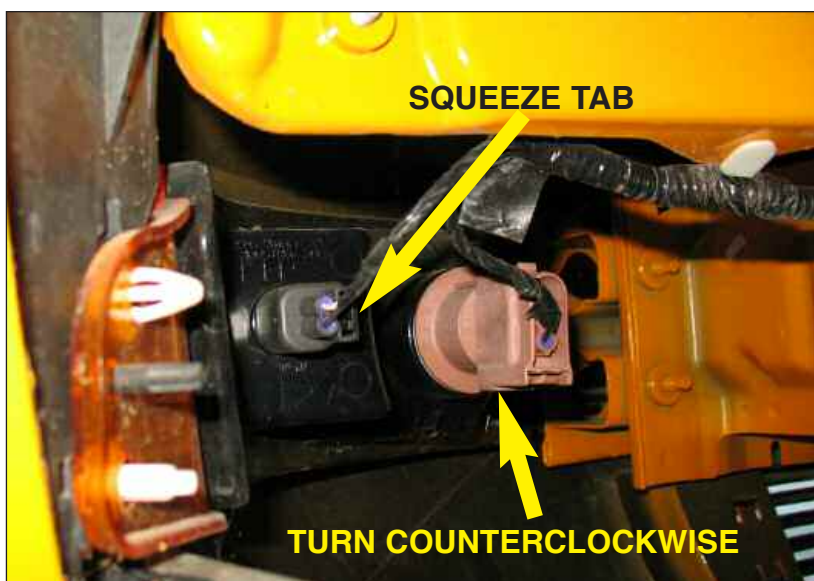


Figure ICH disconnect lights

6. Disconnect Parking and Side Marker lights.

Turn the Parking Light plug assembly counter-clockwise and pull loose.

Squeeze tab on Side Marker connector and pull loose.



Figure ICI bumper cover upper bolt

7. Remove Bumper Cover upper bolts from both sides. 10mm socket.

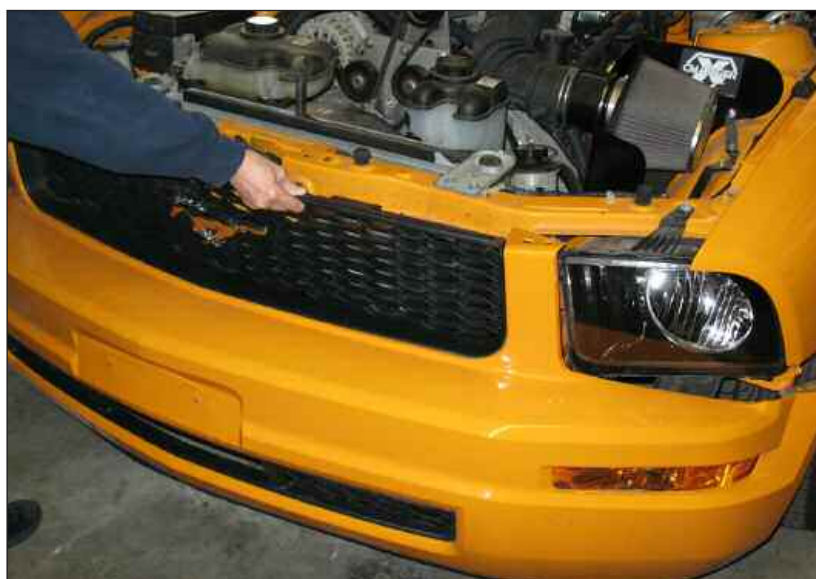


Figure ICJ remove bumper cover

8. Lift the Bumper Cover assembly slightly off the locators that are next to the upper bolts. Free the sides of the Cover if they hook on the fenders. Carefully pull the Bumper Cover forward and off the car.

NOTE:
ON MODELS EQUIPPED WITH FOG LIGHTS
DISCONNECT THE FOG LIGHT CONNEC-
TORS.



Figure ICK disconnect fog lights

9. If equipped with Foglights disconnect the electrical lead to the lights by squeezing the tab on the connector.

Remove Bumper Cover.



Figure ICL remove upper bumper pad

10. Remove the upper center bumper padding by carefully pulling it up and out of the interlocking shape on the front bumper pad.

11. Pry out (4) plastic retaining clips from the bumper front pad and remove the front pad.

The clips will be reused.



Figure ICM remove front bumper pad



Figure ICN bumper pad clip

NOTE

Hardware included in Heat Exchanger Box:

- (4) 8mm 1.25 x 50 Hex Bolts (key no 100)
- (8) 8mm Flat Washer (key no 103)
- (4) 8mm Nyloc Nuts (key no 101)
- (4) Grommets (key no 98)
- (4) Bushings (key no 99)
- (2) #10 Hose Clamps (key no 104)
- (1) Preformed Hose 3/4 x 20 (key no 97)

12. Remove the inner bumper support bolts as shown. Some cars have bolts in all four positions, some just the lower two. Using a 13mm socket remove stock bolts and replace with (4) **8mm x 50 Hex Bolts** with (4) **8mm Fender Washer** under the heads.

Thread the bolts back in just far enough so the the small diameter guide on the bolts protrudes approximately 3/8 inch. The protruding tips will be used to locate and hold the Heat Exchanger Assembly in position when it is installed.



Figure ICO bumper support bolts



Figure ICP pump/bracket

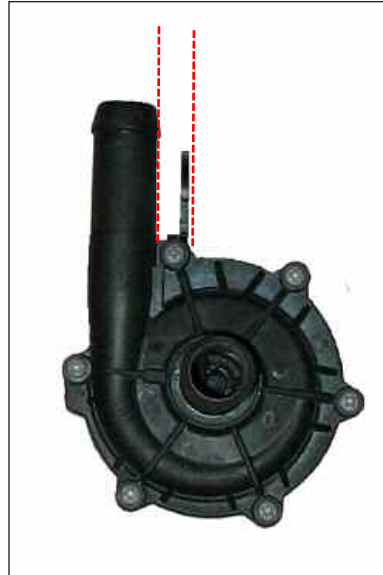


Figure ICQ bracket alignment

13. Install the **Intercooler Pump** (key no 129) onto **Pump Bracket** (key no 107) with (2) **#36 Adel Clamps** (key no 112) and (2) **6mm x 16 Flange Head Bolts** (key no 113) and (2) **6mm Flange Nuts** (key no 114) using a 10mm tool to tighten the nuts. Orientate as shown in Figures ICP and ICQ. Pump bracket should be parallel to the pump outlet as shown.

The pump position may change when the bolts are tightened and the clamps form around the pump. If so, remove the pump bolts and turn the clamps into the correct position and reinstall.

Tighten bolts.



Figure ICR install exchanger isolators

14. Install (4) **Grommets** from the **Heat Exchanger** (key no 96) hardware subkit into the holes on the **Heat Exchanger**, positioning the metal side outwards as show.

Insert (4) **Bushing** into the Grommet holes.

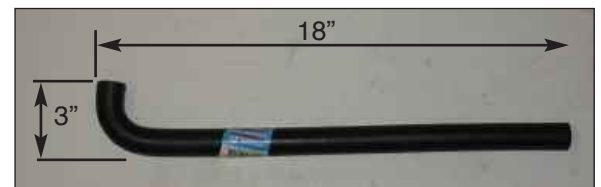


Figure ICR1 trim hose



Figure ICS pump/hose installed

15. Locate the Pump/Bracket on the Heat Exchanger studs as shown and secure with (2) **5/16-18 Flange Head Nuts**.

Install **3/4 x 20 Pump Discharge Hose** with (2) **#10 Hose Clamps** as shown.

Verify exposed length of bumper bolts.



Figure ICT bumper bolts



Figure ICU heat exchanger installed



Figure ICV prep IC hoses



Figure ICW surge tank

16. Have a 13mm socket and extension ready. Carefully install the Heat Exchange Assembly from the bottom side. Position the Heat Exchanger Assembly between the A/C condensor and the back of the Bumper Support and hang it on the Bumper Support Bolts. Hold the HE in place.

Tighten the Bumper Support Bolts. Verify that the Bolts are tight against the sheet metal and that the washers are not cocked.

Place (4) **8mm Flat Washers** on the exposed bolts, then (4) **8mm Nylock Nuts**. Tighten the Nuts until the Insulators are slightly compressed. Do not overtighten.

NOTE:
IF EQUIPPED WITH ABS
SEE ADDENDUM

17. Locate **Hose Armor x 66 inches** (key no 109).

Cut (1) x 4"
(1) x 10"
(1) x 48"

Locate:

Preformed Hose 3/4 x 59 (key no 105)

Preformed Hose 3/4 x 20 (key no 133)

Straight Hose 3/4x 22 (key no 106)

Prep IC hoses by installing Hose Armor as shown.

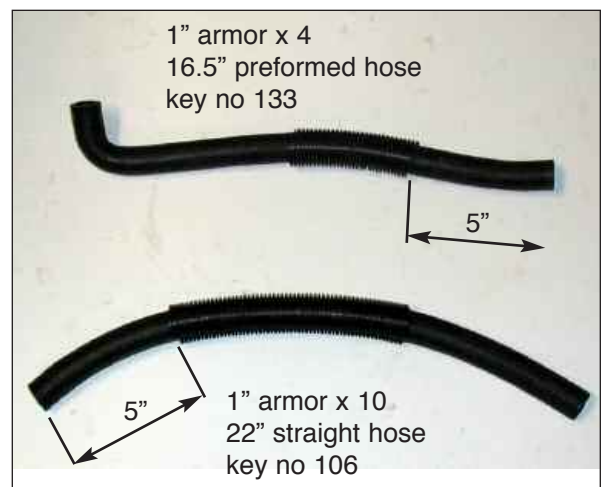


Figure ICVA prep IC hoses

18. Remove P/S reservoir bolt from the Fan Shroud with an 8mm tool. Do not disconnect P/S hoses. Let the reservoir hang by it's hoses.

Install **Surge Tank** (key no 130) with original P/S reservoir bolt.



Figure ICX

19. Route 3/4 Hose x 22 between the Radiator Support and the plastic Filler as shown.

Be sure Armor is positioned so that no sharp edge can contact Hose.

Secure Hose to IC Pump with **#12 Hose Clamp** (key no 118).



Figure ICY

20. Connect to Surge Tank outlet with **#12 Hose Clamp** (key no 118).

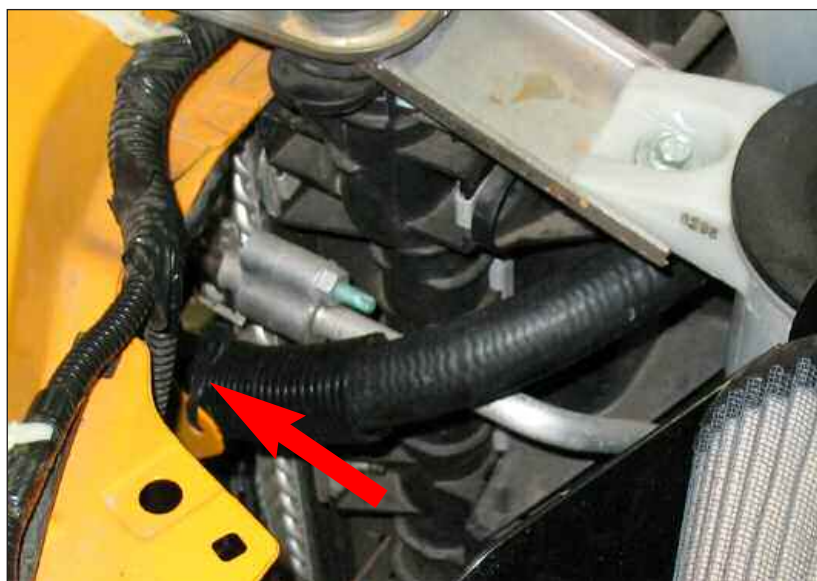


Figure ICZ

21. Secure Hose with **Tiewrap** (key no 110) around Hose and thru hole in Radiator Support.



Figure ICAA inlet hose at ECU

22. Connect the angled end of **3/4 90 Degree Hose x 59** to the right side Intercooler Core nipple and secure with **#12 Mini Clamp** (key no 119).

Route the hose behind the Radiator Hose angling down beside the ECU and on top of the stock harness as shown in Figure ICAB.

NOTE
DO NOT KINK HOSE AT THE
IC CORE ELBOW

Angle the hose outwards over the Frame Rail and under the headlight sheetmetal bracket



Figure ICAB

23. Route Hose along factory harness.



Figure ICAC

24. Route Hose outwards under headlight assembly.

Connect to Heat Exchanger nipple and secure with (1) **Hose Clamp** (key no 118).



Figure ICAC inlet hose at ECU

25. Install **Heavy Duty Tiewrap** (key no 41) around Radiator Hose, Intercooler Hose and Heater Hose metal tube.



Figure ICAD

26. Secure Hose with **HD Tiewrap** (key no 111) as shown.



Figure ICAE

27. Install the **3/4 x 16.5 Preformed Hose** with (1) **#12 Hose Clamp** (key no 118) on the Tank end and (1) **#12 Mini Clamp** (key no 119) on the Manifold end.

Install a **Tiewrap** (key no 110) around the Hose and thru the Nose Support adjustment hole.



Figure ICAF

28. Remove stock left side Radiator bracket. Install **Power Steering Reservoir Bracket** (key no 132) with original bolts.

Secure the P/S Reservoir with **6mm x 16 Flange Head Bolt** (key no 135) with **1/4 Fender washer** (key no 134) under the head.

NOTE:
IF EQUIPED WITH ABS
SKIP THIS STEP
ABS SYSTEMS REQUIRE A
DIFFERENT SURGE TANK
SEE ADDENDUM

INSTALL INTERCOOLER PUMP HARNESS

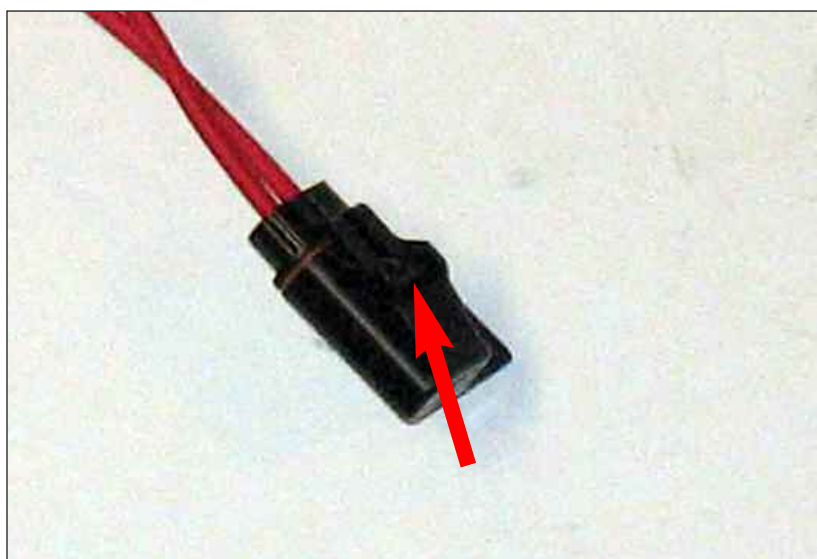


Figure HA fuse holder

1. Locate **IC Pump Harness** (key no 108).

Lift tang and pull on the fuse cover to remove cover.

Install **15 Amp ATO Fuse** (key no 115) in Fuse Holder.

Install cover.

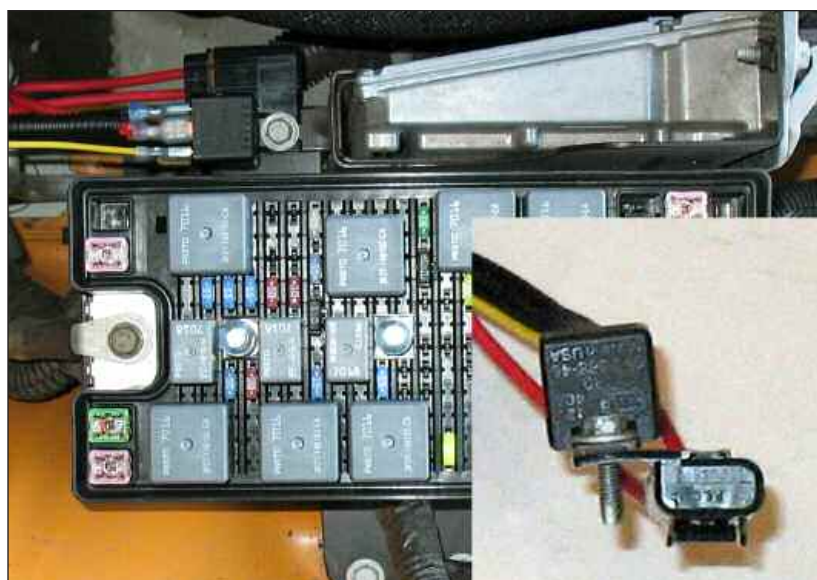


Figure HB relay / fuse holder

2. Remove rear bolt from the ECU bracket.

Thread the ECU bolt thru the Relay bracket hole, then thru the Fuse Holder bracket hole.

Install Relay and Fuse Holder as shown. Tighten bolt.



Figure HC battery voltage terminal

3. Remove bolt from the power lead to the Fuse Box. Unthread the bolt from the terminal if required.

Insert the bolt thru the Pump Harness eye and then thru the stock ring terminal.

Tighten bolt with wires routed next to each other as shown for clearance at Fuse Box lid.

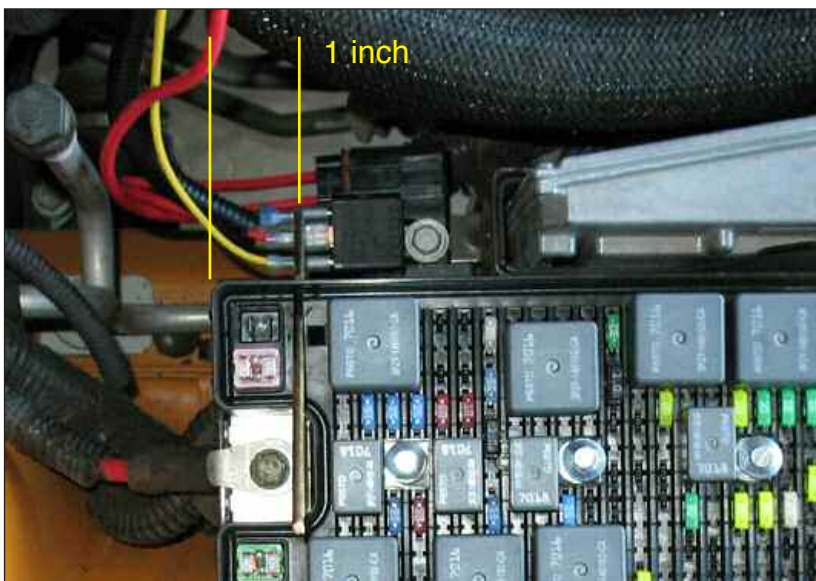


Figure HD drill hole

4. Drill a 1/8 inch hole in the fuse box at a 45 degree angle as shown.

Run the Yellow Wire thru the hole into the Fuse Box.

Verify that the Fuse Box Cover can be installed without touching wire.



Figure HE drill angle

5. Remove fuse from the #40 location.

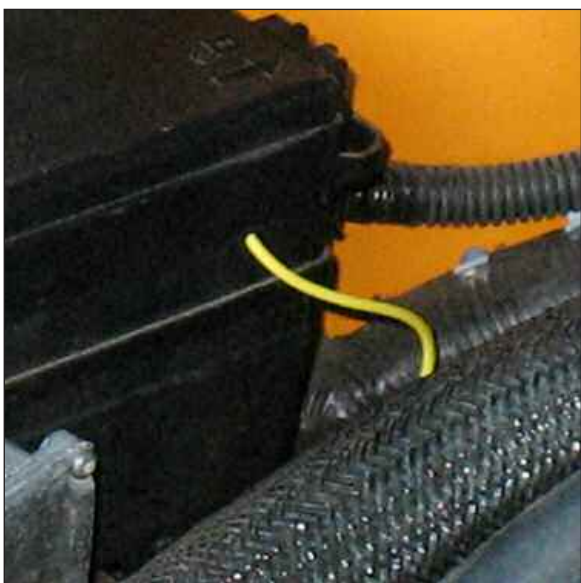


Figure HF check clearance

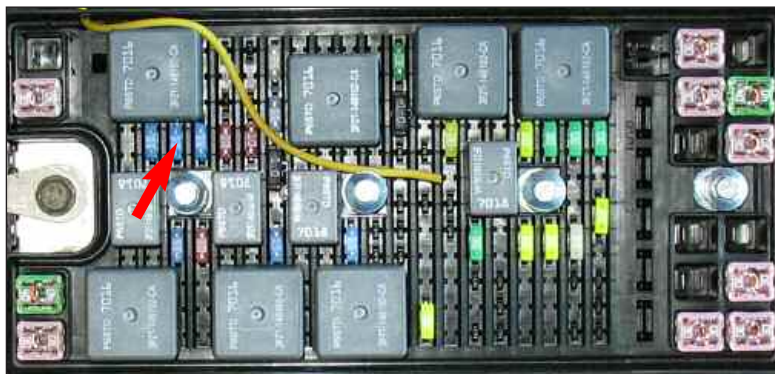


Figure HG remove fuse

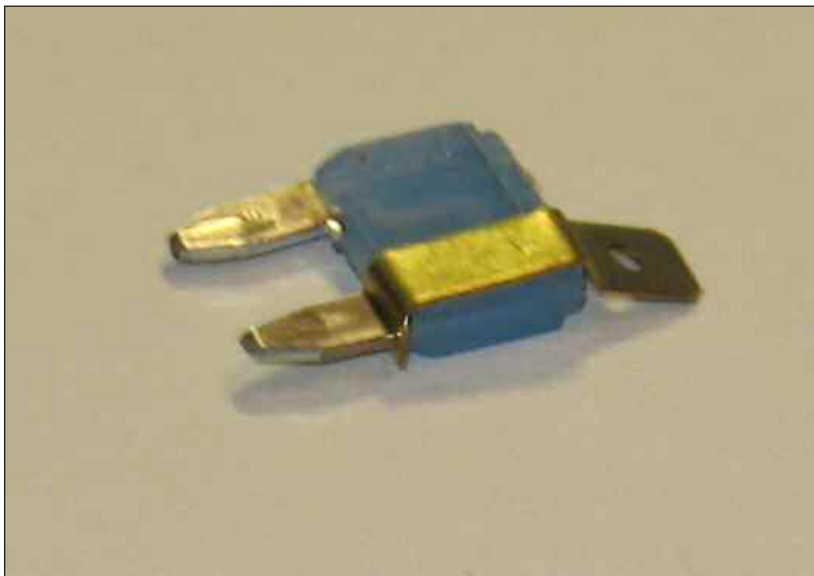


Figure HH fuse with tap

6. Install **Fuse Tap** (key no 116) onto the fuse as shown. Insert Fuse leg into the rectangular hole in Fuse Tap and press on until Tap locks over the top of the fuse.

For best results the Fuse Tap should be orientated exactly as shown.

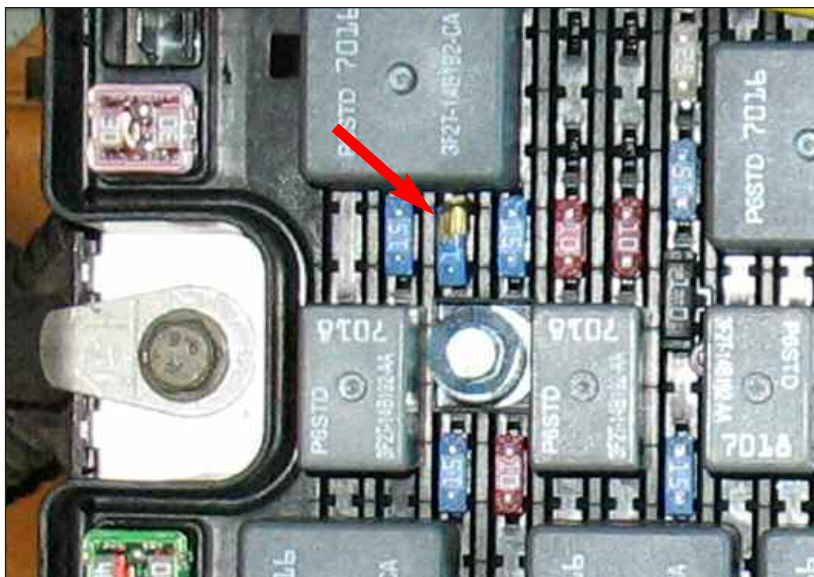


Figure HI reinstall fuse

7. Reinstall fuse with the tap next to the relay as shown.

Bend the connector blade slightly to the rear.



Figure HJ connect wires

8. Route Yellow Wire as shown.

Crimp the **Female Wire Terminal** (key no 117) onto the bare wire on the end.

Install the Wire Connector onto the Fuse Tap.

Reinstall lid.



Figure HK secure harness

9. Route the IC Pump Harness along the factory harness under the Upper Radiator Hose

Secure the Harness **Tiewrap** (key no 110) as shown.



Figure HL ground wire

10. Remove 10mm head bolt from stock ground wire on the Radiator Support.

Place bolt thru the Pump Harness connector, then thru the factory ground wire connector and reinstall bolt.



Figure HM harness routing

11. Route the harness thru the Radiator Support opening next to the Radiator and along the factory Horn harness.

Secure with (3) **Tiewrap** (key no 110) as shown.

12. Connect Negative Battery Cable.



Figure HN fill surge tank

13. Fill the Surge Tank with Longlife Antifreeze diluted according to it's manufacturer's instructions to indicated fuel line. See Figure FB below.

The Intercooler System holds approximately 1 gallon.

Install **Surge Tank Cap** (key no 131).

Turn key to "ON", but do NOT start engine.

The Intercooler Pump will run. Add more coolant mix until the level is within 1 inch from the top.

Turn key off. Top up Surge Tank if required.

Inspect Intercooler System for leaks.

14. Reinstall Front Bumper Cover padding, Bumper Cover, Radiator Cover and Fender Liners with original hardware.



Figure FB surge tank level

INSTALL HI-PO AIRBOX

60

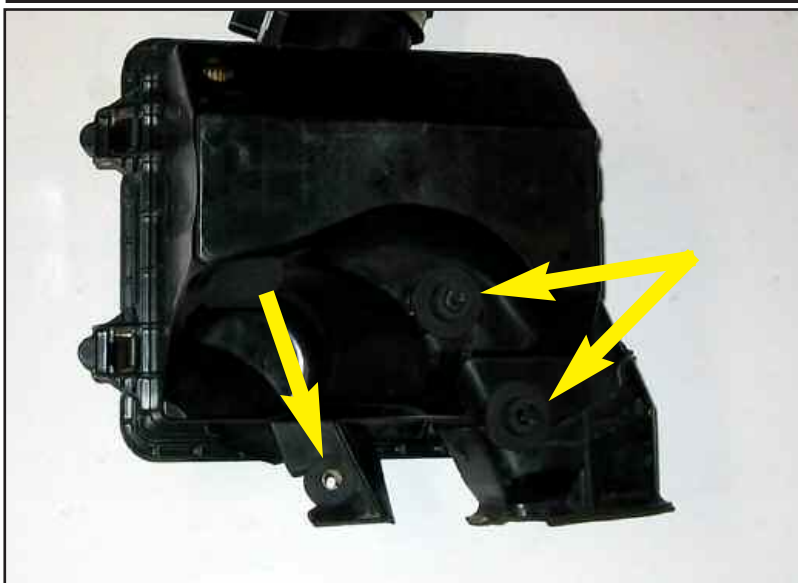


Figure ABA install breather hose

1. Remove rubber grommet and insulators from the bottom of the stock airbox

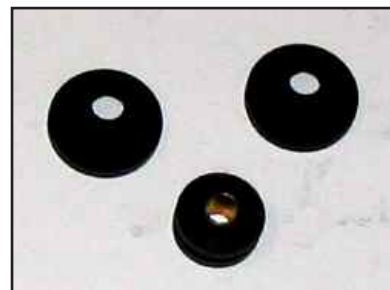


Figure ABB airbox bushings

2. Locate:

Airbox (key no 121)

Airbox Grommet Bracket (key no 85) (05 ONLY)
OR

Airbox Grommet Bracket (key no 86)

Airbox Front Stay (key no 87)

Airbox Rear Stay (key no 88)

NOTE:

**05 STOCK AIRBOXES USE A
SMALLER RETAINING GROMMET**

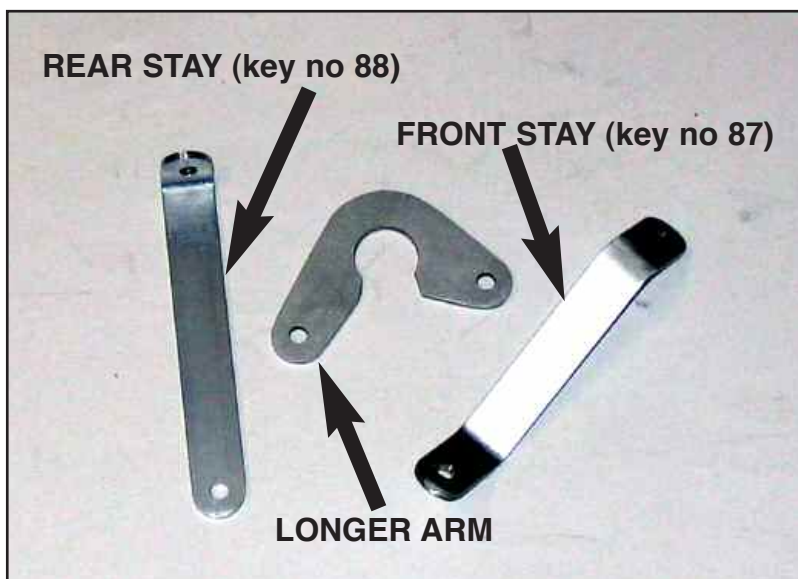


Figure ABB airbox brackets

3. Insert the retainer grommet into the **Grommet Bracket** with the tapered side up as shown.

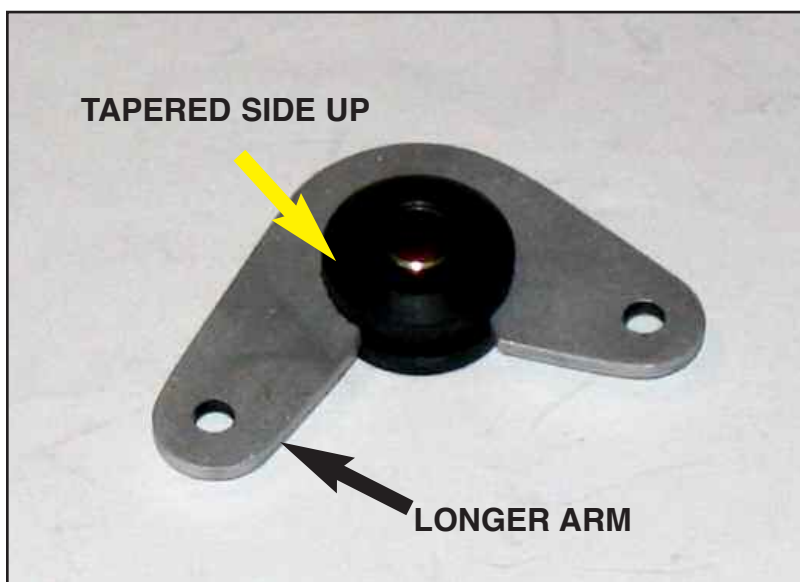


Figure ABC grommet bracket

4. Assemble Airbox retainer as shown with (2) **6mm x 12 Flange head Bolts** (key no 90) and (2) **6mm Flangehead Nuts** (key no 92).

Do not tighten bolts.

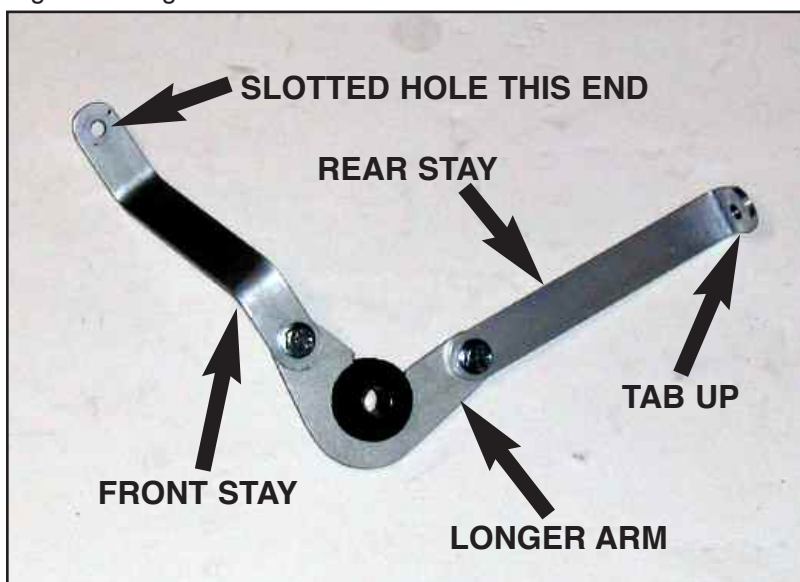


Figure ABD assemble airbox retainer



Figure ABG retainer parts

5. Install **Airbox Pins** (key no 89) with (2) **1/4 NC x 1/2 Flangehead Bolts** (key no 91) onto the **Airbox** (key no 97) as shown.

Tighten bolts.



Figure ABE install airbox pins



Figure ABF install airbox retainer

6. Install Airbox Retainer Assembly onto Airbox as shown with (2) **6mm x 12 Flange head Bolts** (key no 90) and (2) **6mm Flangehead Nuts** (key no 92).

Do not tighten bolts.



Figure ABG install airbox insulators

7. Install Airbox Insulators onto the Airbox Pins with the tapered side out.



Figure ABH install MAF sensor

8. Install Mass Air Sensor with the “flow” arrow pointed away from the airbox into Airbox MAF tube with original screws. Use T20 tool.

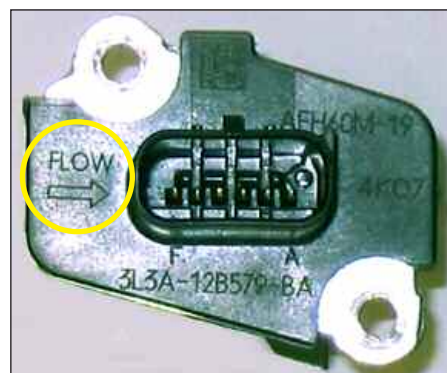


Figure ABI flow arrow



Figure ABJ install airbox

9. Install Airbox assembly with insulators in the holes in inner fender.

Position box with even clearance to inner fender along the rear baffle. Install original airbox retainer bolt and tighten.

Tighten the other four Airbox bolts.

Plug harness into the MAF sensor.



Figure ABK air tube preassembly

10. Prep **Air Inlet Tube** (key no 96). Silicone spark always recommended for rubber/plastic parts assembly.

Install **Inlet Tube Grommet** (key no 101) into the Inlet tube hole.

Insert **Breather Hose Fitting** (key no 92) into the Inlet Hose hole.

Verify that the Grommet is seated in the Air Tube.



Figure ABL air tube grommet



Figure ABM install inlet tube

11. Install **Straight Coupler** (key no 97) onto the the grommet end of the Tube. Loosely install (2) **Hose Clamp #52** (key no 99) on the coupler.

Install **Tapered Coupler** (key no 98) onto the Tube with **Hose Clamp #52** (key no 99) with smaller end on the Tube. Place **Hose Clamp #56** (key no 100) on the larger end.

12. Install Air Tube Assembly onto the engine. Position for even alignment with Airbox and Throttle Body.

Tighten Clamps.

12. Lube the ID of the hose end and install **Breather Hose** (key no 128) with the short end on the Valve Cover fitting. Push hose on until it is over the bead on the VC fitting and all the way down on the fitting.

Connect the long end of the hose to the fitting on the Inlet Hose and secure with **#8 Mini Clamp** (key no 94).

Secure the Breather Hose to to the Coil Resistor with **Tiewrap** (key no 95) for neat appearance.

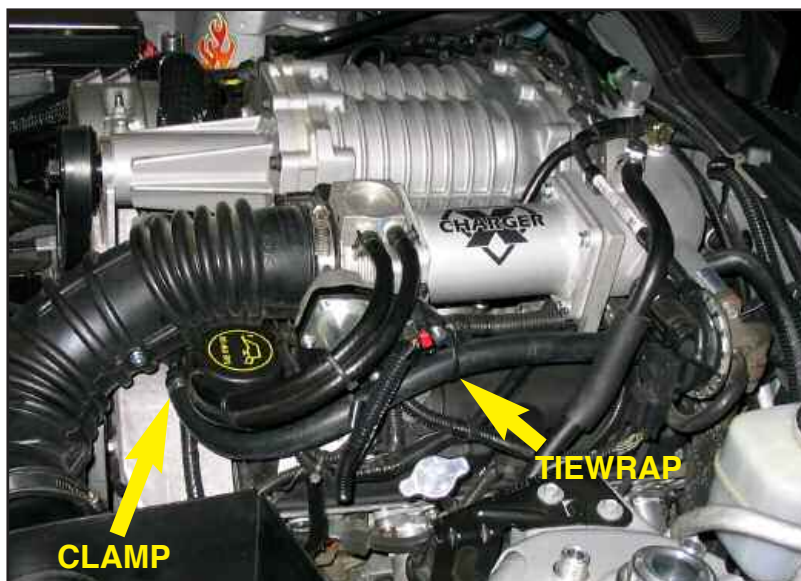


Figure ABN install breather hose

13. Install **Air Filter** (key no 120).

Seat the Air Filter on the MAF tube at a slight angle as shown and secure with included clamp.



Figure ABO install air filter



1. Connect optional Boost Gauge here with 3/8 x 3/8 x 1/8 plastic fitting and 2 inches of 3/8 vacuum tube. Fitting and Boost Gauge are not included with kit.

Figure FA connect boost gauge



2. Install **Belt Routing Sticker** (key no 137).

Figure FB belt routing sticker



3. Install **Octane Warning Sticker** (key no 138).

Figure FC fuel warning sticker



Figure FD OBD2 port

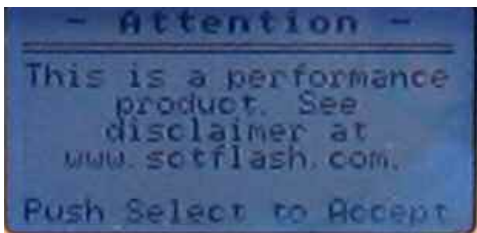


1. Display will light up and handheld unit will make a tone.



2. Using side arrows position vehicle image with large arrow in center position. Text reads "Custom Tune".

Push "Select"



3. SCT Disclaimer appears.

Press "Select" to accept.



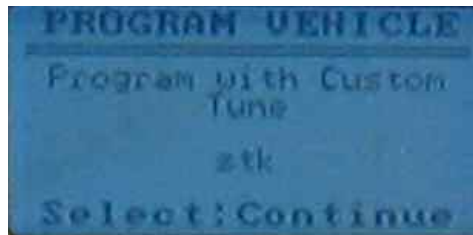
4. Using the up/down arrows scroll to "X-charger Performance" for 91 octane fuel or "X-charger Performance Plus" for 93 octane fuel.

Push "Select".

4. Install tune.

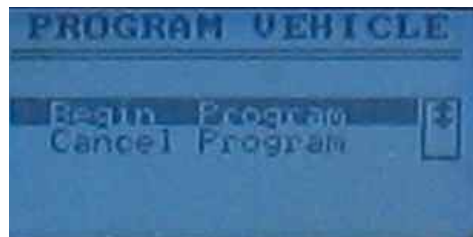
With ignition off, connect Xcalibrator cable to OBDII port.

The factory tune will be uploaded to the handheld Xcalibrator as part of the tuning process.



5. Display reads "Program vehicle with custom tune".

Press "Select" to continue.



6. Use up/down arrows to highlight "Begin Program".

Press "Select".



7. Display reads "Turn Key On / Do Not Start Engine".

Turn ignition to "ON" position. Do NOT start engine.

The handheld unit will automatically begin uploading the factory tune. When the upload is complete the SCT unit will automatically download the previously selected tune.

8. When the download is complete the display will read "Turn Key Off / Press Select". Press "Select" and display will read "Program vehicle".

The reflash tuning process is complete.

Unplug the tuner cable from the OBDII port.



Figure FE road test

5. Start engine

Let the engine idle for a few minutes.

Inspect for coolant and fuel leaks.

Your Mustang will respond to the throttle much differently than stock. Drive cautiously for few miles while bringing the engine up to full power and RPM.

Enjoy the power and response of your new X-CHARGER.

CAUTION:

**IF THERE IS ANY DETONATION AT ALL RETURN USING LIGHT THROTTLE
AND CONTACT EXPLORER EXPRESS**

THIS SUPERCHARGER KIT IS NOT EXEMPTED FOR USE IN CALIFORNIA AND OTHER STATES WITH CALIFORNIA EMISSIONS STANDARDS

TO AVOID ENGINE DAMAGE, IF YOU NOTICE ANY PINGING UNDER LOAD, BACK OFF AND DRIVE CONSERVATIVELY ENOUGH TO AVOID BOOST UNTIL PROBLEM CAN BE DIAGNOSED AND REPAIRED.

**USE MINIMUM
91 OCTANE FUEL**

SUPERCHARGER AND BY-PASS VALVE LIMITED WARRANTY

Magnuson Products

1 YEAR LIMITED WARRANTY

Eaton Supercharger Division

Magnuson Products warrants and will repair or replace, at their option and after inspection in their facility, any new item produced by **Eaton** or **Magnuson** found defective by means of material and/or workmanship for a period of one year from invoice date. This limited warranty does not cover products which fail because of accident, alteration, misuse, neglect, racing, improper installation, abuse, or when used in applications for which they were not designed or approved. Removal, installation, transportation, labor, inconvenience, damage of other components, personal damage or injury and any injury or liability to other persons or property are not covered under this warranty. **Magnuson Products, Z Doctor or Explorer Express** shall not be liable for any and all consequential damages occasioned by the use of this supercharger or by breach of any written or implied warranty pertaining to this sale in excess of the original purchase price.

Model # M90

Serial # _____

Date purchased _____

If you should experience any problems or have technical questions about your X-CHARGER contact Explorer Express at
707-254-7025



thank you for choosing
X-SPEC Performance Parts
the finest available

part no XS0500-MXCXR8

**EXPLORER
EXPRESS**



X-CHARGER XTREME SURGE TANK INSTALLATION WITH ANTI LOCK BRAKES

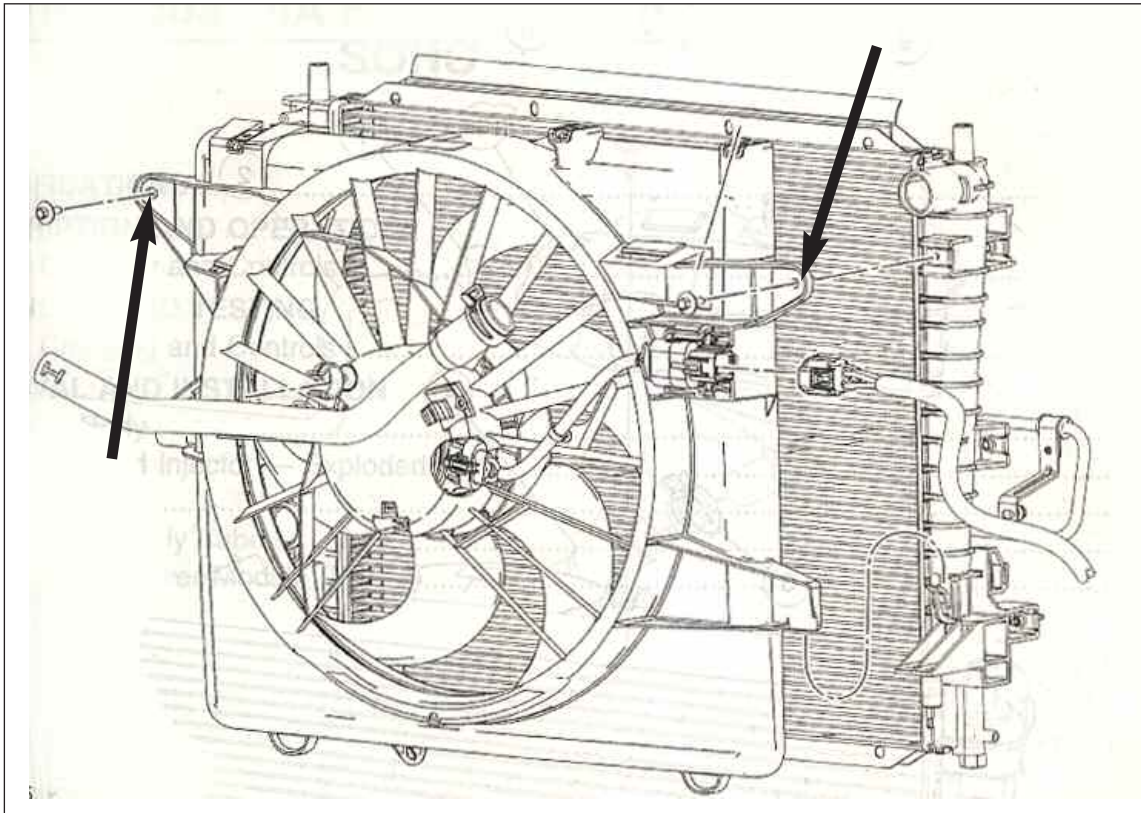
1. Place the Intercooler Surge Tank on flat area of the Fan Shroud between the Power Steering Reservoir and the engine Coolant Tank. Position IC Tank so that the bottom contour fits well against the Fan Shroud and the front edge of the IC Tank is against the Radiator lip.

Using the two IC Tank mounting holes as a guide drill 1/4" holes thru the mounting holes and thru the Fan Shroud.

Remove Tank, then enlarge the holes to 5/16".



2. Remove Fan shroud bolts



3. Install J-nuts with the threaded side under the Fan Shroud.

Reinstall Fan Shroud bolts.

4. Clean the underside of the Surge Tank and corresponding area of Fan Shroud with alcohol or lacquer thinner. Peel one side of the Double Sided Tape.

Align Surge Tank holes with the J-nuts and press Surge Tank onto Fan Shroud.

5. Install and tighten (2) 6mm x 20 Bolts.

HOSE ROUTING

The ABS spec Surge Tank return Hose is routed differently than the GT500 Tank. The short elbow of the hose connects to the IC core as shown. Route along the front side of the Radiator Hose and connect to Surge Tank. Secure to radiator Hose with HD Tiewrap provided in original kit.

