



Honda S2000 2000-2005 Supercharger Kit Installation Instructions

Kit # 350-043, 046, and 048

3239 Monier Cr, STE 5 • Rancho Cordova, CA 95742 • 916.635.4550 • FAX 916.635.4632 • www.ct-engineering.com • M-F 8:00 AM—5:00 PM PST

INS-159

8.10.2010

Thank you for purchasing the CT Engineering Supercharger Kit for the Honda S2000. All components have been designed and manufactured utilizing the latest in technology and materials. All CT products are designed to blend with the original vehicle design to improve performance, without modifying the original vehicle's integrity or emission certification. We are sure you will be pleased with the look, fit, dependability and performance this kit will provide.

Should you have any questions, please call us at 916-635-4550.

To further realize the full potential of this supercharger kit, we recommend the addition of a CT Cat-Back Exhaust system for the S2000.



Before starting:

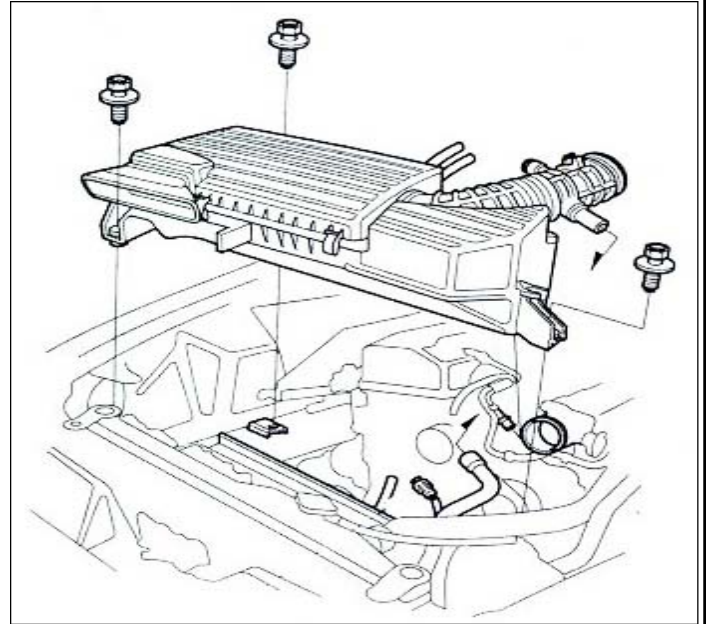
- **Thoroughly read these instructions.**
- We reference and recommend the factory service manual to supplement these installation instructions.
- **We recommend that only a competent and qualified mechanic perform this installation.**
- Some special tools are required to remove crank pulley. (see step#13)
- Thoroughly check the enclosed parts list to insure that all components are included in this kit **before** proceeding with the installation.
- Many factory parts are reused for installation, use caution not to damage or discard any parts, small or large.
- Always use jack stands to support the vehicle when a car lift is not available.
- Always work in a clean environment and use the appropriate safety equipment and tools.



Step #1: DISCONNECT NEGATIVE BATTERY LEAD.

Step #2: Remove air box:

- Label and disconnect the vacuum lines, air control solenoid valve wiring harness, air injection hose and crankcase vent tube from air box assembly.
- Disconnect the MAP sensor lead located on top of the throttle body.
- Remove the air control solenoid valve from the air box (It will be re-used in Step# 14)
- Remove the three 6mm mounting bolts and hose clamp from the assembly. This will allow you to remove the complete assembly as one unit.



Step #3: Inner fender removal:

- Raise the front of the car and support with jack stands
- Remove front wheels to access inner fender wells.
- Remove forward most plastic retainers securing inner fender (retainers ahead of front shock assembly). This will allow front half to be folded back for access.

Step #4: Front bumper, undercover and splash shield removal:

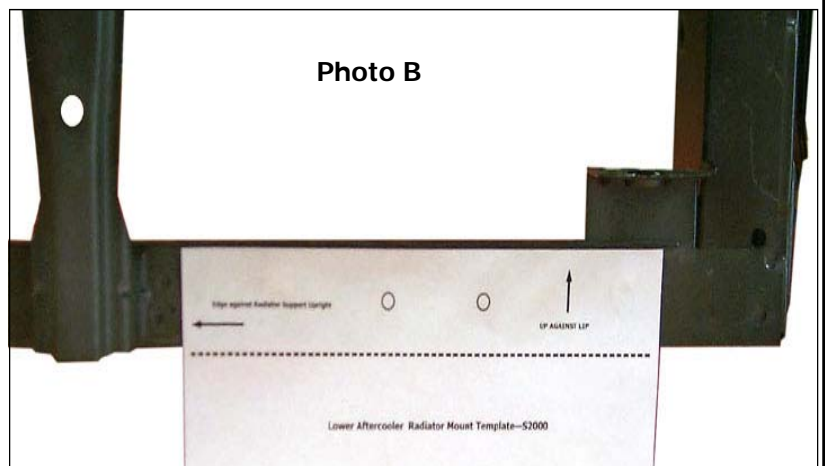
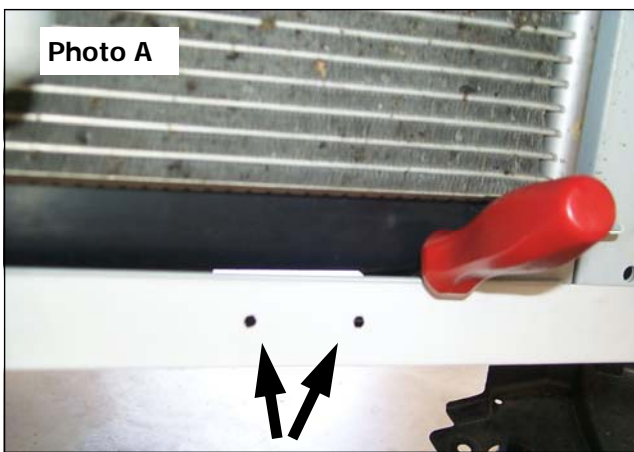
- Remove assorted hardware securing bumper bottom.
- Remove and set aside front undercover.
- Remove front splash shield and set aside.

Front bumper removal (topside)

- Remove front bumper upper stiffener and set aside.
- Remove all remaining bumper fasteners.
- Once hardware is removed, bumper cover may be unsnapped from hooks. This requires pressing down on outer ends of bumper to disengage corner pins, then pull bumper forward and out until remaining snaps disengage.
- Set front bumper cover and foam absorber aside.

Step #5: Aftercooler radiator installation:

- Remove the upper engine radiator brackets and cushion. This will allow the engine radiator to be lifted slightly.
- Lift and support engine radiator so it clears the cross member. Supporting the engine radiator can be done with a screwdriver as seen in **Photo A**.
- Using the supplied template at the end of these instructions, position against bottom of lip (top) and welded edge of radiator support upright (left) to locate the position of the two aftercooler radiator support mounting holes as shown in **Photo B**. Center punch and drill two 1/4" holes. These holes are shown in **Photo A**.
- From the parts provided, locate the pair of M6 mounting bolts (800-2012), washers (804-0013), spacers (354-149), rubber mounts (806-057) and M6 flange nuts (803-1008).
- Pass mounting bolt through the washer and then through rear of the cross member. Slip a spacer over the bolt and thread on the rubber mount. Tighten to 50 in-lbs. Repeat with the second mounting assembly. Remove the screwdriver supporting the engine radiator and refit the upper engine radiator cushions and brackets.
- Fit the upper aftercooler radiator support as shown in **Photo C**. Do not tighten bolts yet.
- Install the aftercooler radiator.
- Install the lower mounting flange nuts and torque to 50 in-lbs.
- Rotate the upper support to obtain a snug fit on the aftercooler radiator and tighten the mounting bolt to 8 ft-lbs.



Step #6: Mounting Coolant Pump

- **Reference: Air Pump, 11-149**
- Remove lower nuts (2) securing air pump. Discard plate under nuts. See **Photo D**.
- Install pump and bracket assembly as shown in **Photo E** and replace nuts from prior step and torque to 50 in-lbs.

Photo D

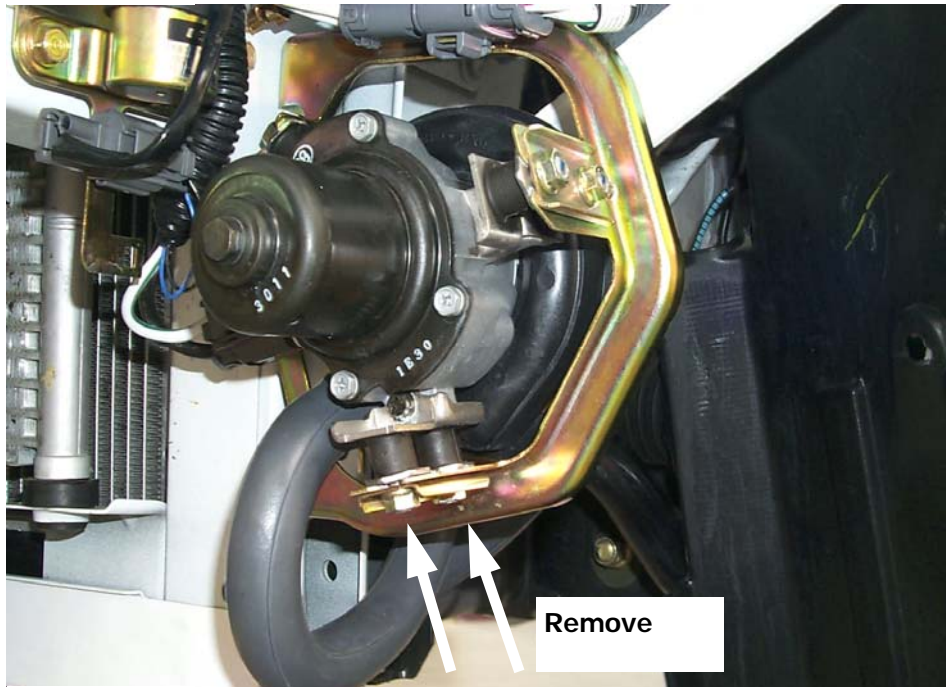
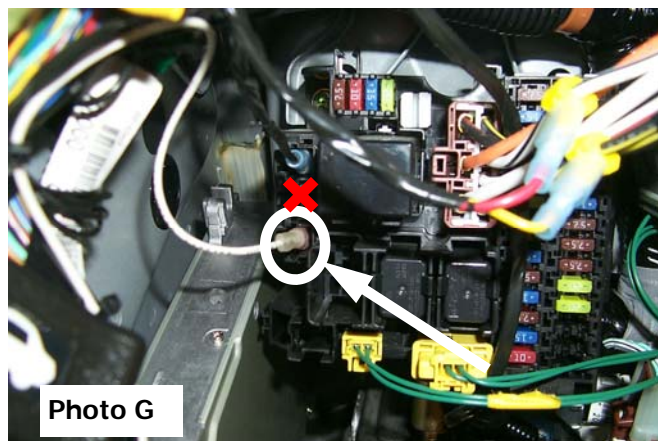
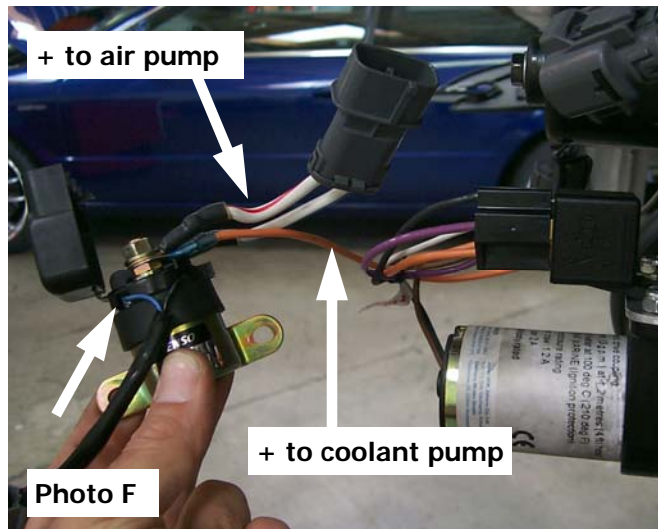


Photo E



Step #7: Coolant Pump Wiring

- **Reference: air Pump, 11-149**
- Remove air pump relay.
- Remove air pump relay terminal cover.
- Determine which relay terminal is positive by checking continuity at chassis side of air pump relay connector. Check continuity between chassis and connector terminals. Terminal with continuity to chassis is ground, remaining terminal is positive (Test vehicle positive wire was white/red, but should always be verified on every vehicle, since wire colors can vary from year to year).
- Remove nut on positive post of air pump relay.
- Place coolant pump relay positive lead (orange wire with ring terminal) on post in addition to air pump lead.
- Reinstall nut, being careful not to damage terminals. See **Photo F**.
- Reinstall air pump relay terminal cover.
- Reinstall air pump relay.
- **Reference: Connectors & Harnesses 22-15, 22-19**
- Long white lead from coolant pump relay provides power to energize this relay. This wire should be routed parallel to factory harness into vehicle cockpit where it will be attached within the fuse box. Route wire parallel to left engine compartment harness and carefully secure it with the supplied ty-wraps to avoid chaffing. Pass wire through firewall alongside engine wire harness by piercing small hole in grommet and feeding wire through.
- **Reference: Trim Removal/Installation-Door Area, 20-48**
- Once wire has been fed into cockpit, remove left side kick panel and doorsill trim.
- **Reference: Under Dash Fuse/Relay Box, 22-33**
- Secure wire to factory harness allowing adequate length to reach Socket C of fuse/Relay box. See **Photo G**.
- Crimp supplied female spade terminal (342-112) on wire, heat shrink insulation, and plug terminal into Socket C (switched Ignition). This will energize coolant pump when ignition is turned on.
- Leave left side Kick Panel off for access.



Step #8: Front Undercover Modification

- Utilize provided template to locate and drill/cut a 1 3/8" Dia. hole in front undercover. See **Photo H**.
- Install supplied grommet (807-008) in hole. Coolant hose running from pump to heat exchanger will pass through this hole.

Photo H



Step #9: 26" Coolant Hose Installation (Pump out to Aftercooler Radiator)

- Install modified front undercover.
- Locate 26" hose (811-004-28) and (2) spring clamps (812-004).
- Install hose as shown in **Photo I** and **Photo M**. Care should be taken to avoid any chafing or kinks.

Photo M

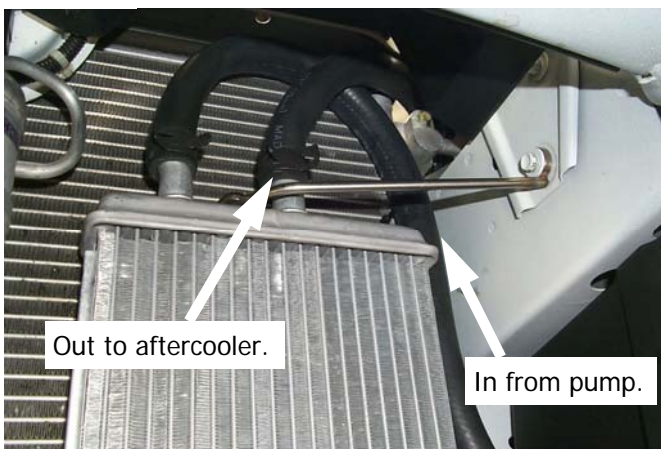


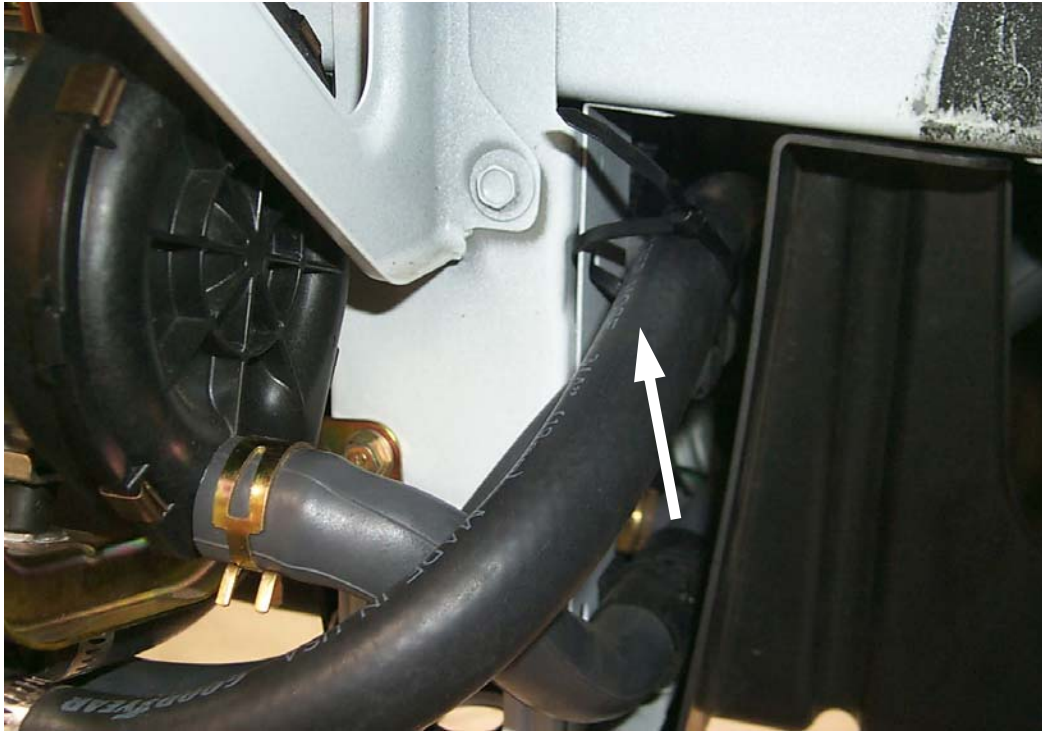
Photo I



Step #10: 25" Coolant Hose Installation (Aftercooler to Pump)

- Locate 25" hose (811-004-22) and (1) spring clamp (812-004).
- Install hose as shown in **Photo J** noting location of tie-wrap in photo. Care should be taken to avoid any chafing or kinks. Hose end in engine bay will hang free for now.

Photo J



Step #11: Modifying Cooling Fan Bracket

- **Reference: Radiator and Fan Replacement, 10-11.**
- Remove coolant recovery tank for clearance.
- It is necessary to modify bracket holding cooling fan harness for hose clearance. Remove wire clip and bend tab as shown. See **Photo K** (before) and **Photo L** (after).
- Replace wire clip as shown in **Photo L**.

Photo K—Before



Photo L—After



Step #12: 34" Coolant Hose Installation (Aftercooler Radiator to Aftercooler)

- Locate 34" coolant hose (8111-004-33) and (1) spring clamp (812-004).
- Install hose as shown in **Photo M** and **Photo N**. Care should be taken to avoid any chafing or kinks. Hose end in engine bay will be attached in a later step.

Photo M

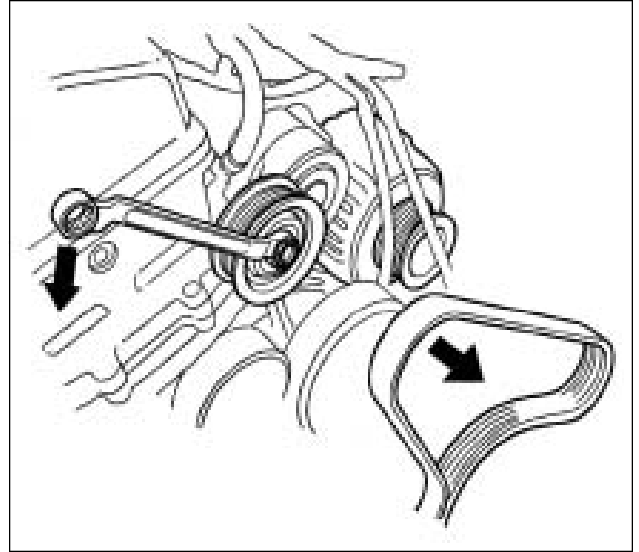


Photo N



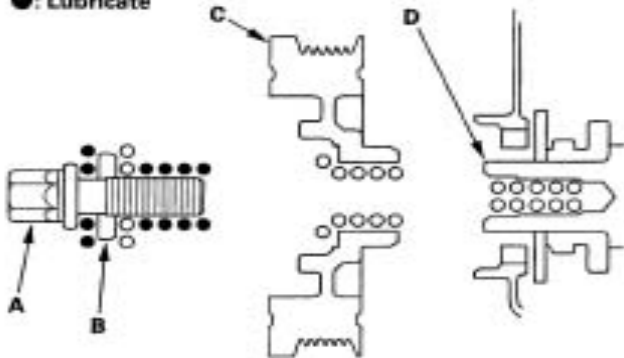
Step #13: Blower drive pulley:

- To gain more clearance during this procedure, the vacuum tank attached to the subframe should be removed.
- Due to limited space, the crank pulley must first be installed without the supercharger pulley attached.
- **Honda tools #07JAB-001040A & #07JAB-001020A are required to complete this procedure.**
- Remove the stock belt.
- Using the tools listed above remove the pulley bolt, pulley and key (if loose) in the keyway.
- Install the modified crank pulley with stock key and bolt in reverse order of removal.
- Lubricate the crank bolt threads & the top of the washer with clean oil. Torque to 181 lbs.ft.
- Install the 6-groove blower pulley using the supplied 10/32 x 1 1/4" Allen bolts and washers. The crank pulley will need to be rotated to access all 6 bolts.
- Apply blue Loctite to the bolt threads and torque bolts to 80 in/lbs .
- Reattach vacuum tank to the subframe.

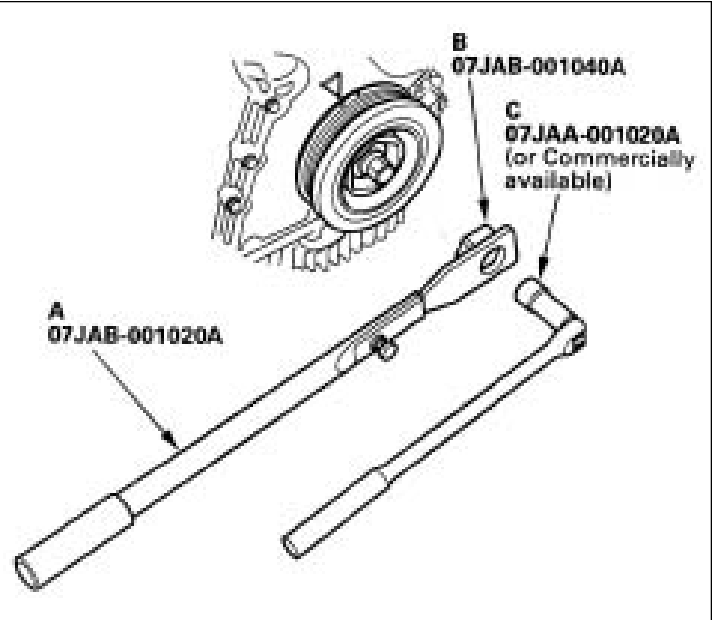


1. Clean the bolt (A), washer (B), pulley (C) and crankshaft (D). Lubricate as shown below.

○: Clean
●: Lubricate



2. Install the crankshaft pulley, and tighten the bolt to 245 N·m (25.0 kgf·m, 181 lbf·ft). Do not use an impact wrench.



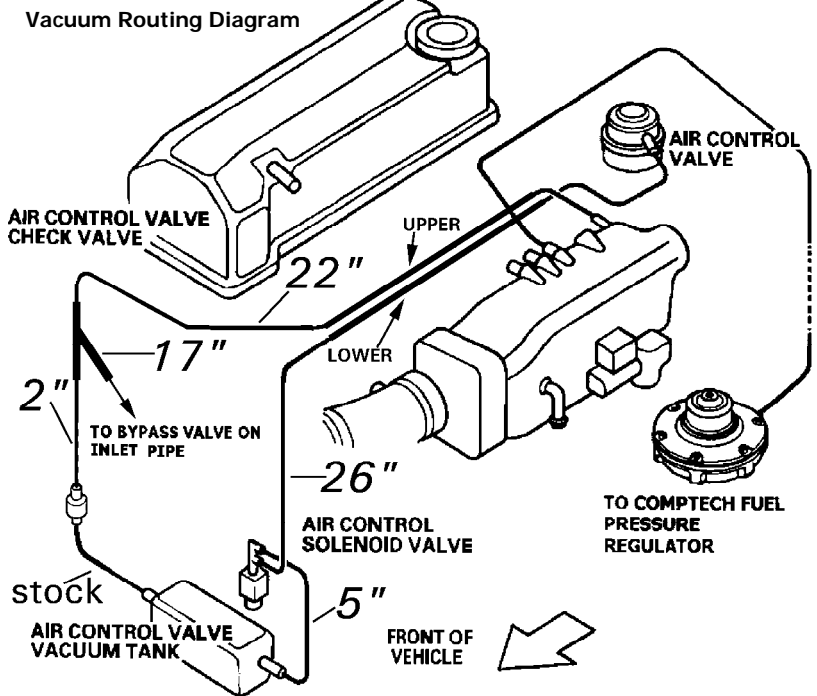
Step #14: Alternator extension:

- Remove the top M10x45 alternator bolt and bracket.
- Install the new bracket using the supplied M10x55 bolt. Align the bracket at approximately the one o'clock position but do not tighten until the supercharger is installed in step #19.
- Reinstall the stock belt.



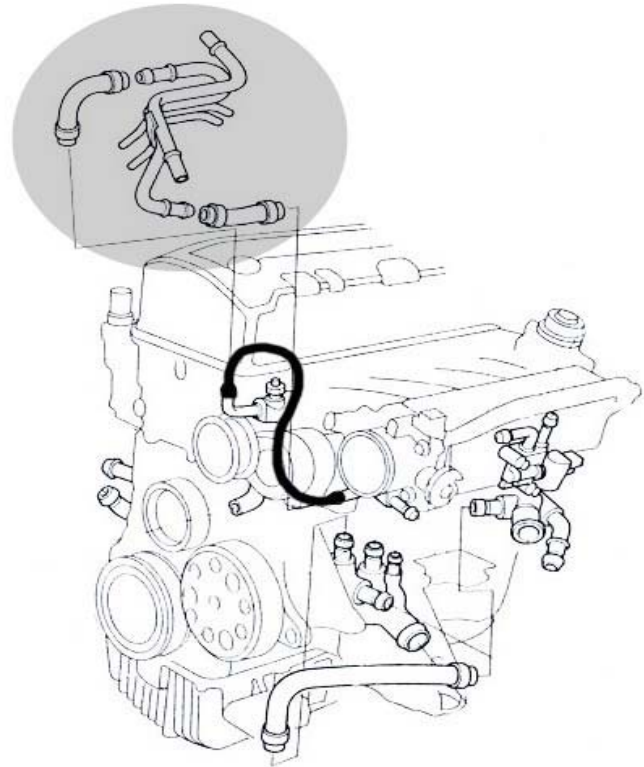
Step #15: Air Control Valve (ACV):

- Longer vacuum hoses are provided to accommodate new ACV location. Label, remove and replace hoses individually to avoid confusion. Please refer to Vacuum diagram for any vacuum routing problems.
- Mount the ACV (removed from the air box in **Step# 2**) to the vacuum tank using the 5mm bolt and spacer provided.
- Connect the 26" vacuum hose from the lower vacuum port on the air control solenoid valve to the lower hard line, located under the fuel rail.
- Connect the 5" vacuum hose from the vacuum tank to the top of the ACV.
- Remove stock vacuum line after inline check valve and replace with 2" hose to stock check valve.
- 17" hose will be routed to supercharger bypass valve in inlet pipe in **Step #21**.
- Connect the 22" hose from ACV to upper hard line attaching to upper intake port.
- Route the steering-box wiring harness under the vacuum tank-mounting tab on the sub-frame for clearance to super charger.
- Mount vacuum tank in stock location using original 6mm bolt.



Step #16: Crankcase vent tube:

- Label and remove the vacuum hoses, wiring harness and coolant lines from the vent tube assembly.
- Replace stock coolant hose with 5/16" hose and stock clamps. (See diagram A)



Step #17: VTEC mounting block:

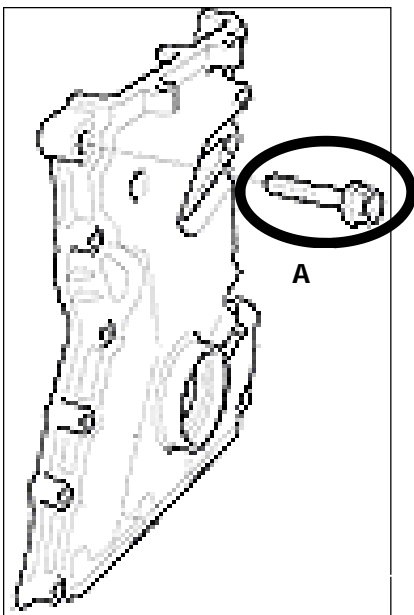
- Remove the three M6 bolts that hold the VTEC solenoid to the cylinder head. (Some oil will leak out). Make sure the gasket stays in the VTEC solenoid.
- Install the rubber O-ring gasket in the VTEC mounting block and place between the VTEC solenoid and the cylinder head using the M6x70 and M10x45 bolts provided.
- Torque the M6 bolts to 8 ft/lbs and the M10 bolt to 30 ft/lbs



These lower three holes will be used to mount the blower stand off block in step #12.

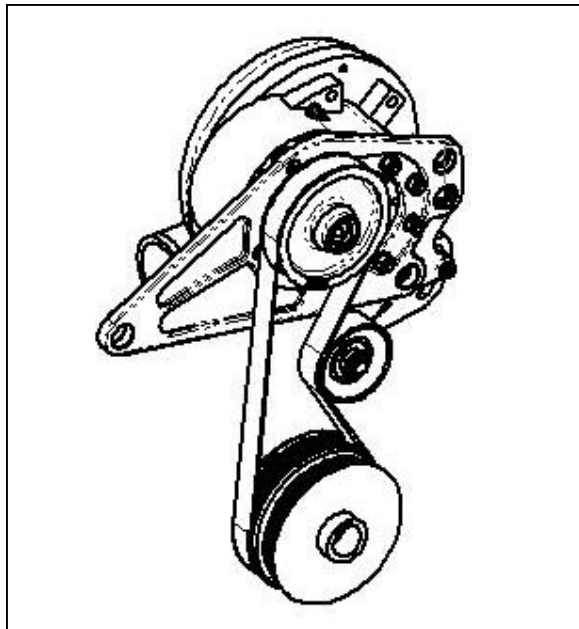
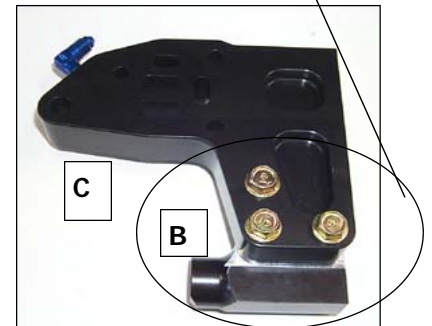
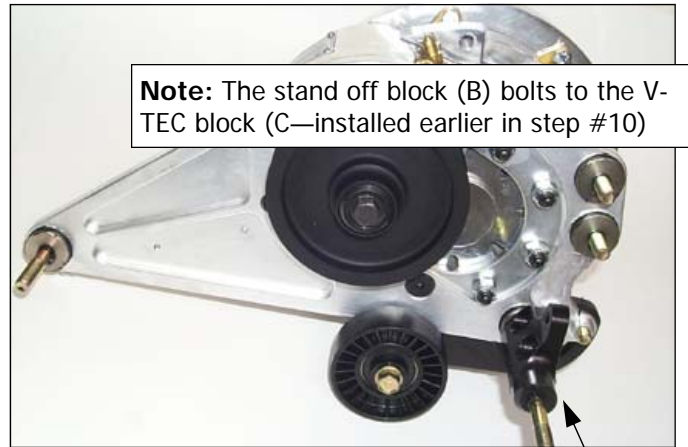
Step #18: Blower area preparation:

- Remove the M10x45 bolt from the upper passenger side of the engine timing cover (A) beside VTEC block.
- The fan shroud must be trimmed to allow clearance for the after-cooler. Cut a 1" by 6" long piece out of the fan shroud. The photo below shows the trimmed shroud with the aftercooler installed for reference.



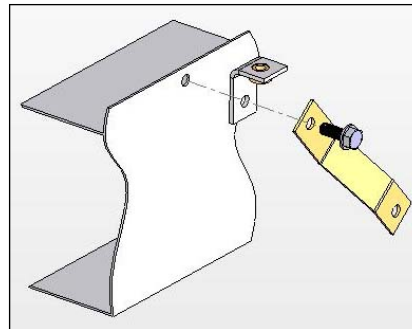
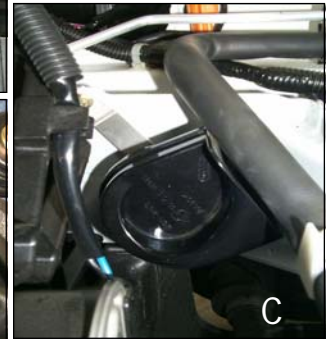
Step #19: Blower installation:

- Align the blower assembly with the mounting brackets and start the four mounting bolts.
- Orient the lower VTEC stand off block to align holes and start the three M8x35 bolts
- With all the bolts started, tighten in steps and then torque M10 bolts to 33 ft/lbs (except pulley tensioner pivot bolt, see below). Tighten the alternator stand off bolt left loose in step #9.
- Torque the three M8 VTEC stand off bolts to 20 ft/lbs.
- Route the supercharger drive belt as shown in diagram A. With the belt in place, use a 14mm wrench on the tensioner pulley-mounting bolt and rotate it clockwise to apply tension against the belt and tighten M10 adjuster and pivot bolt (left loose above).
- Check the belt tension by applying 20lbs. of force to the drive side of the belt (side opposite the tensioner). Deflection should be .500" to .625". When correct torque the tensioner pivot bolt to 33 ft/lbs and tighten the lock the bolt/nut.



Step #20: CT Air Box installation:

- Remove the alarm horn from the tab on the inner fender and remove its mounting bracket. Install the new horn mounting bracket supplied and clock it as shown in Photo A (THIS STEP IS FOR 2002 AND LATER CARS ONLY).
- Remove the stock air box mounting tab. Relocate the alarm horn to this mounting point and secure it using the original bolt and supplied shorter air box mounting tab. Reroute the plug to the new location and plug it into the horn (See Photos B & C).
- Install the CT air box as shown in the photo.
- Start the rear lower bolt and then the front lower bolt. Do not tighten.
- Once both lower bolts are started, use the supplied bolt and the supplied extension bracket to attach the side of the airbox to the inner fender. With one hand, position the extension bracket in through the large hole behind the headlight in the inner fender and line up the threads with the empty hole in the inner fender. Once the threads are lined up, install the supplied washer bolt through the airbox, through the inner fender and thread it into the extension bracket you are holding. Once all of the air box bolts are started, they may be tightened.



Step #21: Install air filter & blower inlet tube:

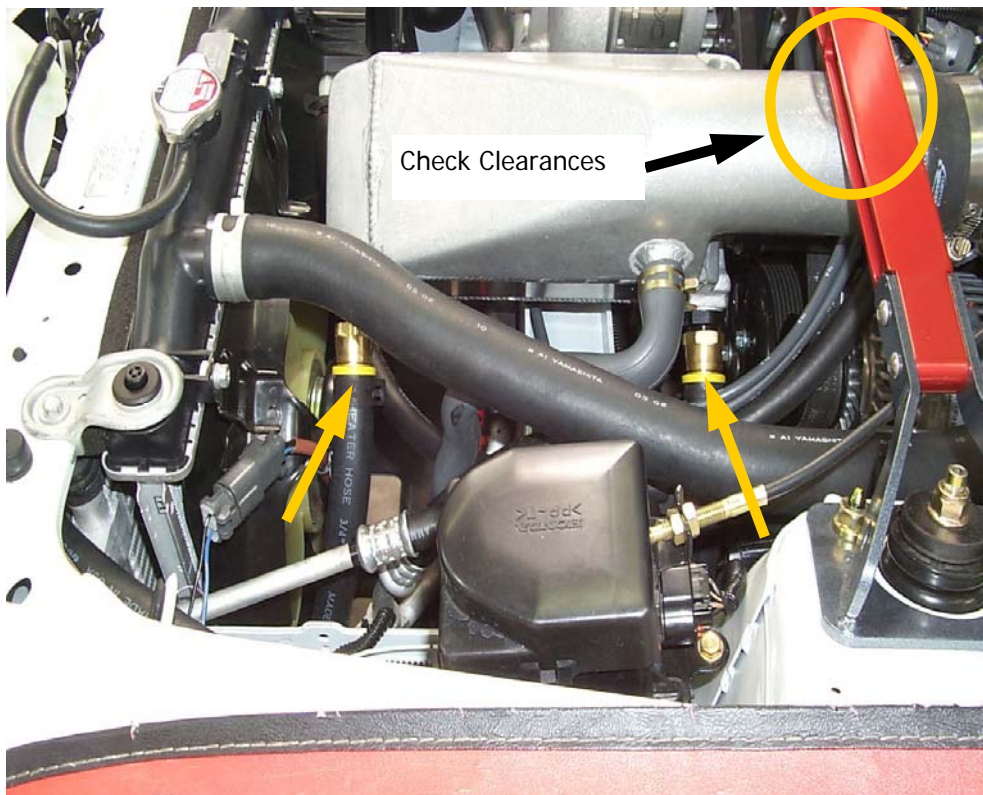
- Install the air filter into the airbox. From the outside of the airbox install the black air intake funnel through the hole in the airbox and slide the filter over it. Tighten the hose clamp while holding the filter and funnel together.
- Using the supplied curved black plastic inlet tube, two hump hoses and four hose clamps (three #48 and one #52) connect the blower inlet to filter adaptor making sure the bypass valve is pointing down and to the drivers side of the car. If the inlet tube comes in contact with the radiator fan shroud push it on to the blower and filter adaptor further.
- Connect the 17" vacuum hose from Step# 15 to the bypass valve vacuum fitting.
- The bypass valve and vent tube will be connected in a later step.
- Install the carbon air box cover and gently tighten the four screws. **Warning: DO NOT OVERTIGHTEN!**



Step #22: Aftercooler Installation

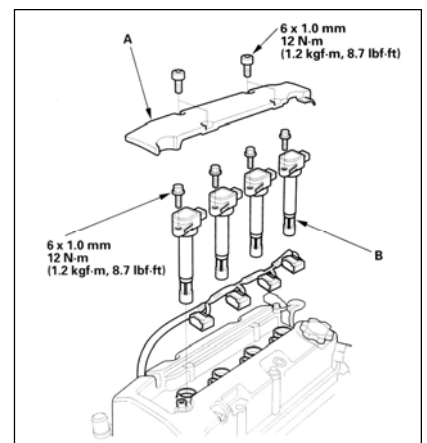
- Loosely install hoses on aftercooler; using the 3"x2-5/8"x 3" hose on the blower side of the aftercooler, and the 3"x2-1/2" hose on the inlet side.
- Place remaining hose clamp on respective hoses and install aftercooler. Important: aftercooler must be aligned properly. Not only should it provide clearance from any strut bars fitted, it must provide room for coolant lines to be attached without kinks. See **Photo R**.
- Tighten hose clamps.
- Install coolant lines; checking for any chafing or kinks, and tighten hose clamps. See **Photo R**.
- Replace coolant recovery tank removed in Step #11. It may be necessary to bend tank bracket slightly to gain adequate clearance for coolant hose.

Photo R



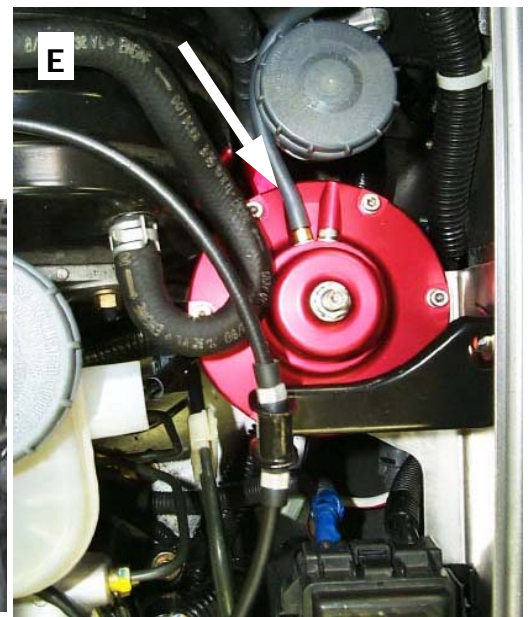
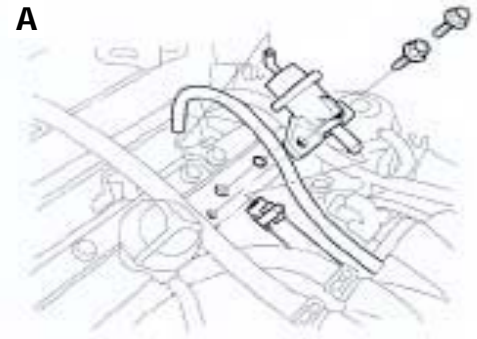
Step #23: Spark plug replacement:

- Remove the coil cover from the valve cover.
- Remove the coils and stock spark plugs.
- Install the new supplied colder plugs. They are pre-gapped; do not try to change the gap, as it will damage the coating on the tip.
- Reinstall the coils and coil cover.



Step #24: Fuel Pressure Regulator (FPR):

- Remove the plastic intake manifold cover and PCV valve from the valve cover (A).
- Disconnect the vacuum hose from the intake manifold to the stock FPR (A).
- Remove the hose clamp from the fuel return hose and loosen the two 6mm bolts and carefully remove the regulator with the O-ring which will be reused (A). (Use caution in removing the regulator as it may be under pressure and some fuel will leak out).
- Install the O-ring in the fuel rail to banjo fitting adaptor provided. Using stock hardware mount in same location and torque to 7 ft/lbs. Replace plastic intake manifold cover (B).
- The new FPR comes pre-assembled on the mounting bracket and will mount behind the throttle bracket and the fuse box bracket next to the brake master cylinder (C).
- Before mounting the new FPR/bracket, connect the -6 fuel hose to the FPR. install the -4 push on fitting to the stock return hose using the stock clamp (D).
- Route the fuel return line underneath the brake booster. Route the -6 line between the clutch reservoir and the brake booster and on top of the heater by-pass tube. And attach both hoses to the FPR before mounting it to the fender (D).
- With both hoses attached mount the FPR to the fender well behind the stock throttle brackets using the stock 6mm bolts (E).
- Connect the -6 fuel line to the FPR adapter in the fuel rail using the provided banjo bolt and crush washers (F).
- Install the supplied 35" vacuum line from the vacuum port located on the FPR to the port on the intake manifold that the original fuel pressure regulator connected to. Route the vacuum line along the top of the fuel line.



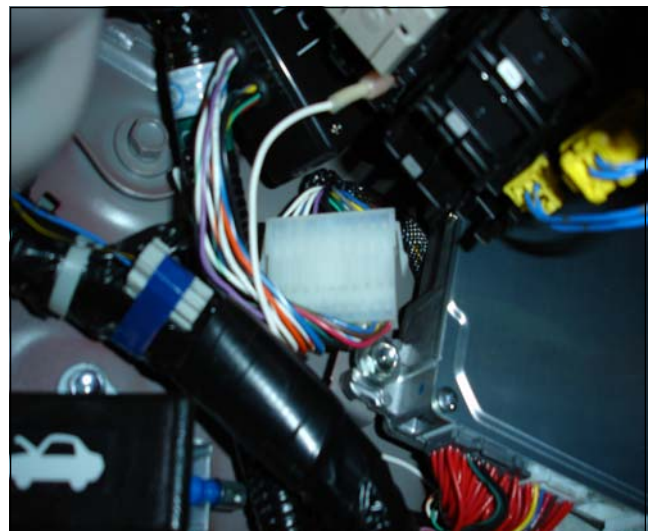
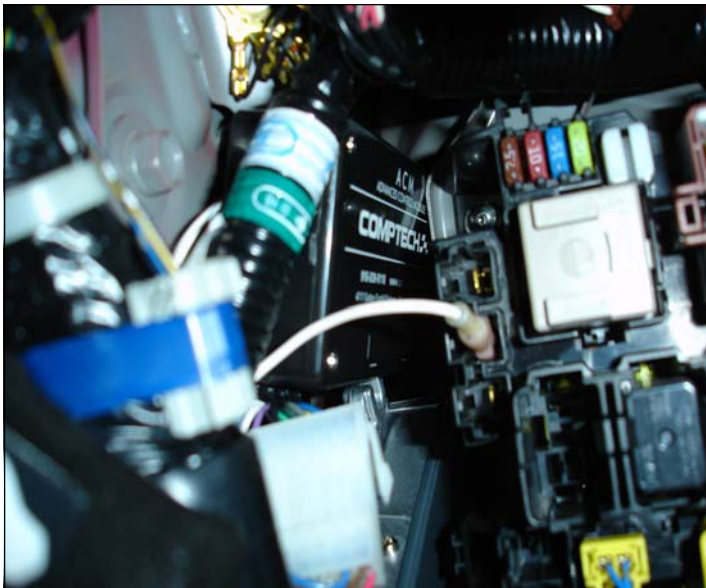
Step #25: Hose connections:

- **Valve cover vent hose:** Using the provided 40"x1/2" hose, connect the crank case vent on the valve cover to the plastic barb in the side of the plastic blower inlet tube. Route the hose down underneath the throttle body and along the underside of the aftercooler. Use the supplied clamps to secure it.
- **Bypass valve hose:** Using the supplied 1" 90 degree hose, connect the bypass valve (on the bottom of the blower inlet tube) to the open port on the front of the aftercooler. Use the supplied hose clamps to secure it.



Step #26: Install CT ACM:

- Using the supplied jumper harness, plug it into the ECU's A and B plugs. Plug the other end of the harness into the chassis wiring harness. Wrap the jumper harness up behind the ECU. Once the harness is behind the ECU, bolt the ECU to the chassis. Route the extra end of the jumper harness out from behind the ECU towards the rear of the car. The jumper harness needs to be behind the ECU in order for the interior panel to fit back in to place.
- Connect the ACM to the open connector of the jumper harness. Tuck the ACM box up to the chassis next to the fuse/relay panel and next to the ECU. See photo below.
- Once everything is plugged in, reinstall the foot well kick panel removed in step #7 and the door sill cover plate.



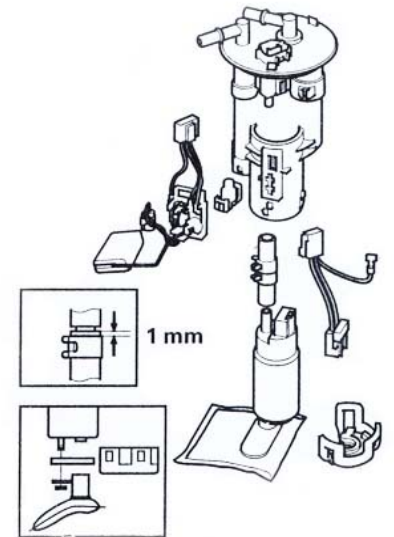
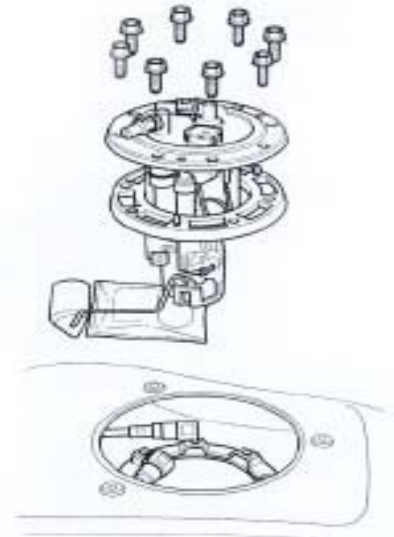
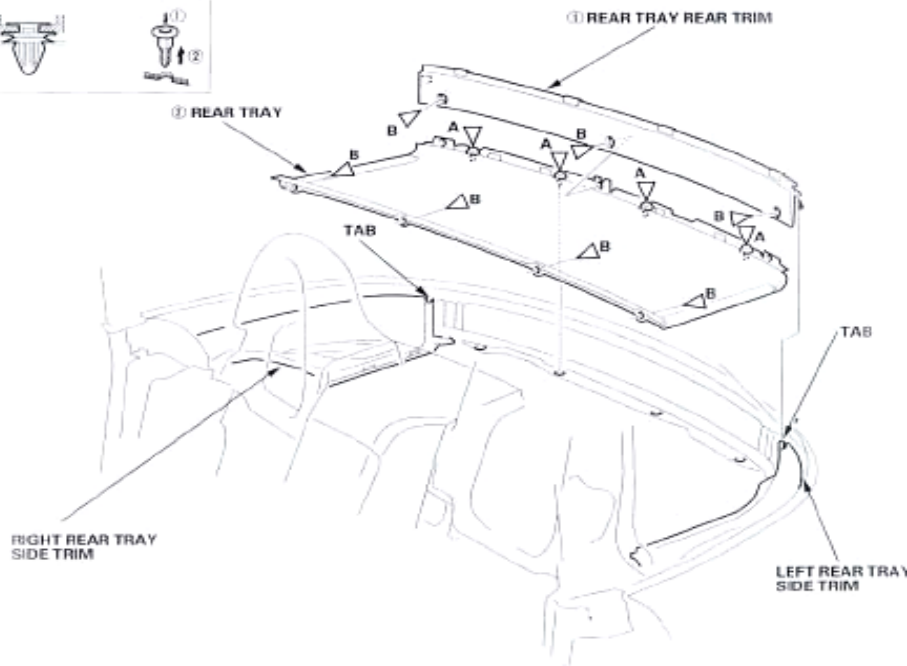
Step #27: Fuel pump:

- We recommend following the fuel pump replacement procedure in the Factory Service Manual to install the new fuel pump. Note that the fuel pressure in the system should have already been relieved in **Step# 24**.
- All parts except fuel pump are reused. Do not lose or damage anything during disassembly.

Fastener Locations

A ▷ : Clip, 4

B ▷ : Clip, 7



Step #28: Filling/bleeding aftercooler & install bumper:

- Fill the aftercooler with bottled water and Redline Water Wetter (620-028—**Not Included**) to prevent corrosion. A 50/50 water/antifreeze mixture is also acceptable. (**Note:** *If unit is to be used in climate where freezing temperatures may occur, it should be filled with a 50/50 water /antifreeze mixture to prevent freezing and subsequent rupture of aftercooler and potential engine damage.*) System uses approximately 1/2 gallon of fluid.
- Remove the fill plug at the back of the aftercooler and fill the system.
- Connect the battery and turn on the ignition to run the pump and inspect for leaks.
- Reinstall the front bumper in the reverse order of removal and reattach the inner front fender panel removed in step#3.
- Lower the front of the car back to the ground.
- Cycle ignition switch to run the coolant pump and check coolant level.
- Repeat until coolant level in cooler is consistent and level is 3/4" below top of the fill plug hole on level ground with the pump not running. This allows for expansion of fluids at operating temperatures.
- Install the M18 fill plug and washer, and torque to 20 in-lbs.

Step #29: Before starting, perform the following steps:

- **Review these instructions and check for anything that was possibly overlooked.**
- Check all hoses, fittings and hardware for proper torque and adjustment.
- Check the engine oil and coolant levels.
- Without starting the car turn the ignition key to the on position twice to pressurize fuel system and check for leaks.

Step #30: Startup and final checks:

- Start the vehicle, let it idle, and check for leaks. (There will be a slight rattle from supercharger unit at idle from impeller gear lash).
- If everything is operating properly, shut the vehicle off before it gets too warm.
- Recheck the drive and accessory belt tension and retention if needed. After about 50 miles of driving the blower belt should be checked and re-tensioned.
- Check the engine oil level.
- With engine cool, radiator cap removed and heater control on hot, restart car and run engine until fully warm (radiator fan comes on twice) to bleed any air out of the cooling system.
- Refill radiator and replace radiator cap.
- Enjoy the Drive.
- Make sure to put a copy of these instruction in the car for your customer.

**Return your original crank pulley in good working condition to get your core charge back!
Fill out the Warranty Card and mail to CT Engineering!**



CT Engineering Product Warranty

CT Engineering- All products manufactured by CT Engineering are warranted against defects in materials and workmanship for a period of two years from date of original purchase. **This warranty is applicable only to parts which were purchased on or following June 1, 2007. All parts purchased on or preceding March 31, 2007 are subject to the conditions of our previous warranty period of two years.** This warranty applies only to the original retail purchaser and is not transferable. This warranty is intended to cover CT Engineering products when they are used in the manner for which they were originally designed. This limited warranty shall be void on all products found to have been used in racing or off-road applications, of any nature whatsoever, and on all products that show evidence of abuse, lack of maintenance, improper installation, misapplication, alteration in any way whatsoever from their original design or negligence in the use of CT Engineering products by the original retail purchaser or by any agent of the original purchaser. The warranty specifically excludes, but is not limited to; brake pad material, brake rotors, clutch friction surfaces, belts, normal maintenance items, and those items designated as a racing part. This warranty applies only to products made by CT Engineering, and does not include claims for labor or inconvenience. This warranty does not cover consequential damages claimed as a result of the failure or use of a CT Engineering product. Other products distributed by CT Engineering are covered by the terms of that manufacturer's warranty. CT Engineering reserves the right to change product design and/or specification without prior notice.

Warranty Service Procedure - In the event a problem develops with a CT Engineering product, please contact CT Engineering at 916.635.4550 during our normal business hours (8 AM to 5 PM M-F PST).

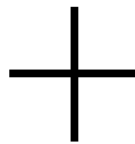
1. It may be determined that the product will have to be returned to CT Engineering for warranty inspection. A Return Goods Authorization will be assigned to you and is required for return, unless specified otherwise by a CT Engineering employee.
2. The retailer or the customer should return the product in question, freight prepaid. It must be accompanied by the original sales receipt and a clear description of the problem.
3. If the product is determined to be defective and within the warranty period, CT Engineering will repair, replace or issue a credit to the customer at CT Engineering's discretion. Any repaired or replaced product will be returned to sender, freight prepaid via UPS or truck.
4. No replacement warranty parts will be shipped until original parts are returned to CT Engineering for inspection.

Returns - In the event that a purchase must be returned, please contact a CT Engineering salesperson for a Return Goods Authorization number.

1. All returns must have the RGA number clearly written on shipping label or box, or shipment may be refused.
2. No returns after 14 days.
3. A 20% restocking fee will be assessed on all merchandise returned in 100% resalable condition (clean packaging, all pieces intact, etc.). If returned goods are not 100% resalable, an additional charge will be assessed. If merchandise is damaged, or shows signs of installation, the return will be disallowed.
4. All returns must be freight prepaid.
5. Special Orders parts are not returnable.
6. All approved returns are for credit only.

CT Engineering
3239 Monier Circle., Suite 5
Rancho Cordova, CA 95742
Phone : 916.635.4550
Fax: 916.635.4632

**Place on inside of panel on
driver's side undercover in
recess for alignment of hole.**



Edge against Radiator Support Upright



UP AGAINST LIP



Lower Aftercooler Radiator Mount Template—S2000