



INSTALLATION INSTRUCTIONS

**Upgrade Front Intercooler
2006- Chevrolet / GMC Duramax**

P/N 2 - 487





READ THIS FIRST: Study these instructions completely before proceeding. Engine and / or turbocharger damage may occur if any component within these instructions is improperly installed. Turbonetics, Inc or any of its distributors cannot be held responsible for damages as a result of negligent or improper installation. This complete turbocharger system can be installed using common tools and automotive procedures, but installer must have a thorough knowledge of automotive engine operation and feel comfortable working on the vehicle. If in doubt, contact Turbonetics' technical support staff at 805-581-0333, between the hours of 8:00AM and 5:00PM PST, Monday through Friday.

Remove the heat exchanger from its carton and inspect for any obvious physical damage. All kit components are thoroughly inspected and carefully packaged prior to shipment from the factory. If any shipping damage is evident, contact your supplier and request that they process a claim with the shipper involved. Be sure to review the parts list on to verify that you have all necessary system components to proceed. If any components in the parts list are missing, contact Turbonetics' customer service staff.

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

SAFETY REQUIREMENTS: It is recommended to follow these precautions.

- Always wear safety glasses & gloves.
- Turn the ignition switch to the OFF position & disconnect the batteries.
- Always use properly rated jack stands when lifting and working under the vehicle.
- Prevent unexpected vehicle movement by using wheel chocks and/or parking brake.
- Operate the vehicle only in well ventilated areas.
- Do not smoke or use flammable items near or around the vehicle's fuel system.
- Keep hands, clothing and other objects away from moving parts when engine is running.

SUPPLIES: It is recommended to have the following items before beginning installation.

- GM factory service manual, for your model year
- A large table or bench, and plenty of adjacent available workspace
- Standard selection of automotive tools, primarily metric sizes
- A/C system discharging and charging components

PARTS LIST:

<i>Part Number</i>	<i>Description</i>	<i>Quantity</i>
70007	Duramax Intercooler	1
21809	Elbow, Aluminum – 3.0"	1
11374	Hardware Kit, Installation	1
21415	Badge, Polydome – Jelly Top	2
30687	License Frame – Spearco	2
60184	Instructions	1

Hardware Kit – P/N 11374

3162-4	Silicone Hose Coupling, 3.0" –Blk	1
30275-300	T-Bolt Clamp	2
30593	Washer, Lock, M8	2
30807	Washer, Flat, M8	2
31076	Bolt, M8-1.25 x 30mm	2

INSTALLATION:

Removal

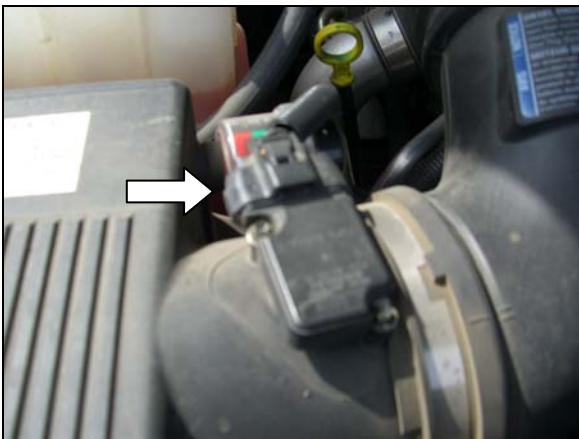
1. Evacuate the A/C system. Consult a GM service manual for the correct procedure.
2. Using an 8 mm socket loosen the hose clamp holding the air intake arm to the intake manifold. SEE FIGURE 1

FIGURE 1



3. Unplug the MAF sensor from the wiring harness. The MAF sensor is located on the outlet of the air box. SEE FIGURE 2

FIGURE 2



4. Pull the plastic intake arm off the intake manifold. Pull up on the air box to free it from the rubber grommets in the metal air box support. Remove the air box and intake arm from the engine bay. SEE **ERROR! REFERENCE SOURCE NOT FOUND. & ERROR! REFERENCE SOURCE NOT FOUND.**

FIGURE 3

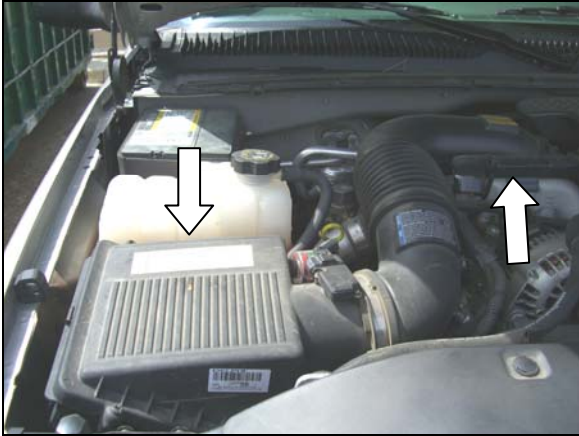


FIGURE 4



5. Using a 10 mm socket remove the 4 bolts securing the metal air box support tray. Unbolt the 10mm bolt that secures the coolant tank to the brackets. Remove the fender support bracket from the vehicle by unbolt the two 100mm bolts that secures the bracket to the cross member frame. **SEE ERROR! REFERENCE SOURCE NOT FOUND. & ERROR! REFERENCE SOURCE NOT FOUND.**

FIGURE 5

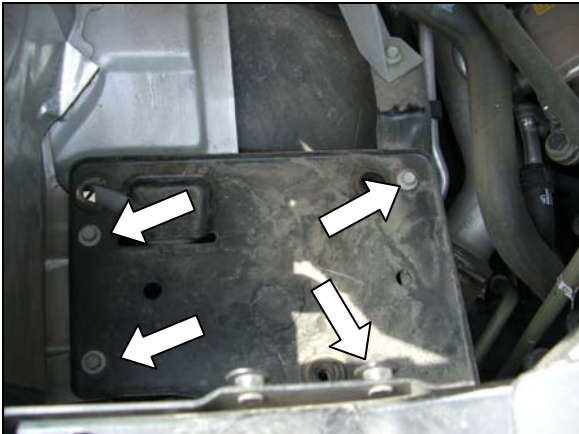
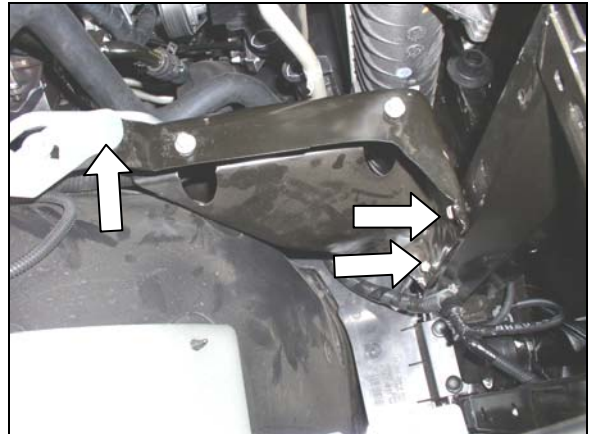


FIGURE 6



6. Using a flat heat screw driver remove the 8 plastic fasteners securing the plastic protective covering. The covering stretches between the front grill and the upper cross-member. Remove the cover. **SEE ERROR! REFERENCE SOURCE NOT FOUND. & ERROR! REFERENCE SOURCE NOT FOUND.**

FIGURE 7

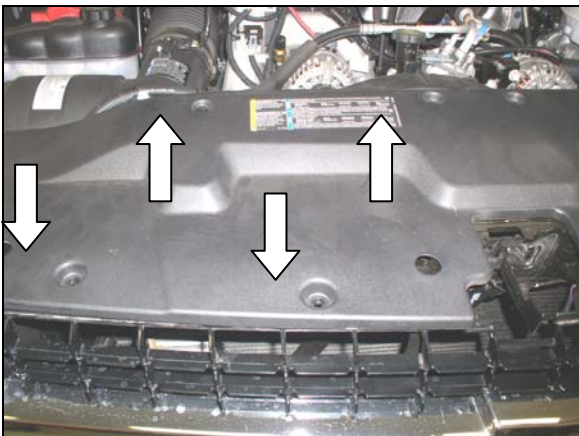
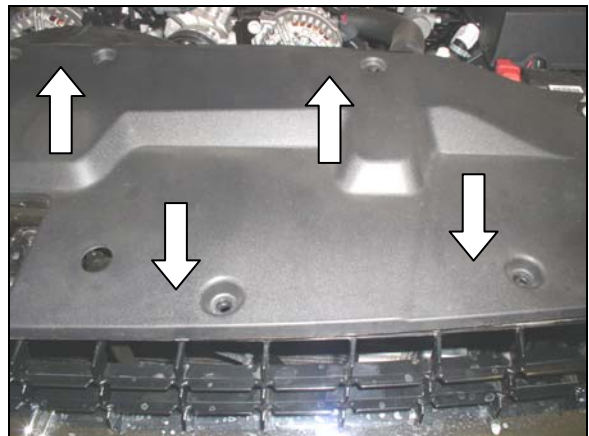


FIGURE 8



7. Using a 10mm socket, remove the 4 bolts securing the grill to the truck. SEE FIGURES 9 & 10

FIGURE 9



FIGURE 10



8. There are 6 clip-in fasteners that secure the grill to the truck. Squeeze the clips together and push it through the opening in order to release the grill. SEE FIGURES 11-14

FIGURE 11



FIGURE 12

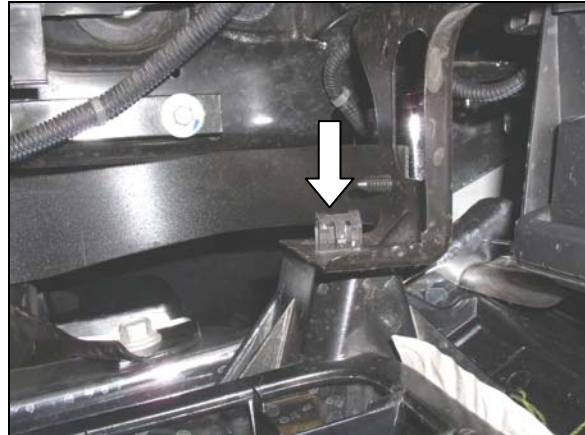


FIGURE 13

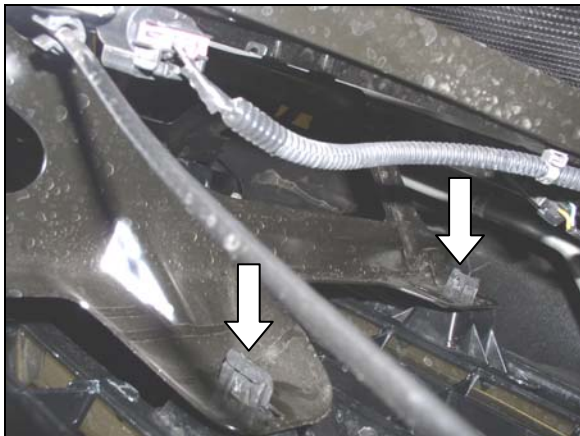
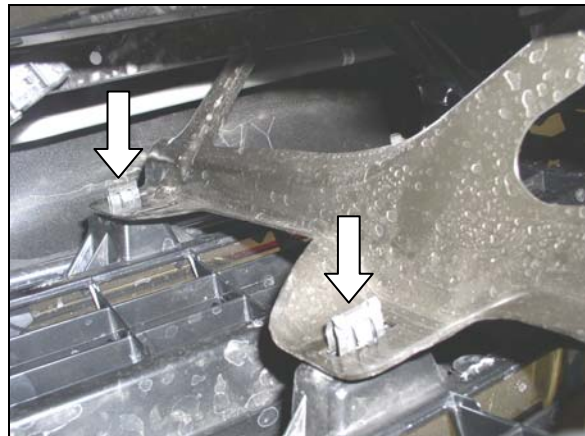


FIGURE 14



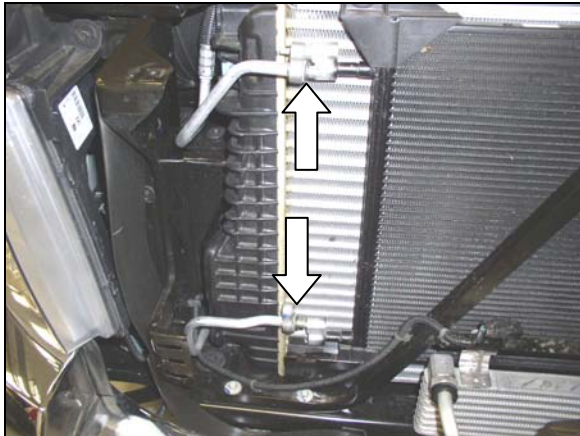
9. Remove the factory grill. SEE FIGURE 15

FIGURE 15



10. Using a 13mm socket, remove the inlet and outlet lines to the A/C condenser. SEE FIGURE 16

FIGURE 16



11. Remove the lower hood latch support by unbolting four 10mm bolts. SEE FIGURE 17 & 18

FIGURE 17

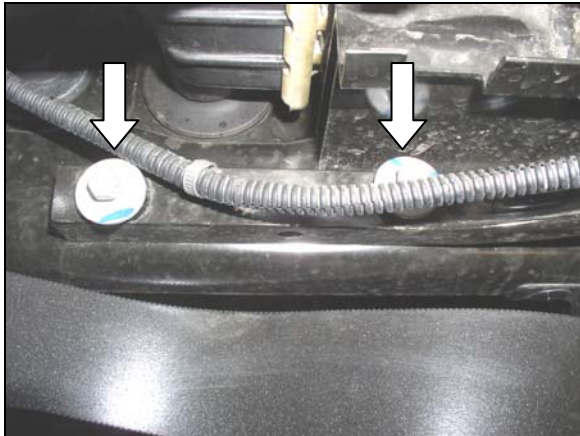
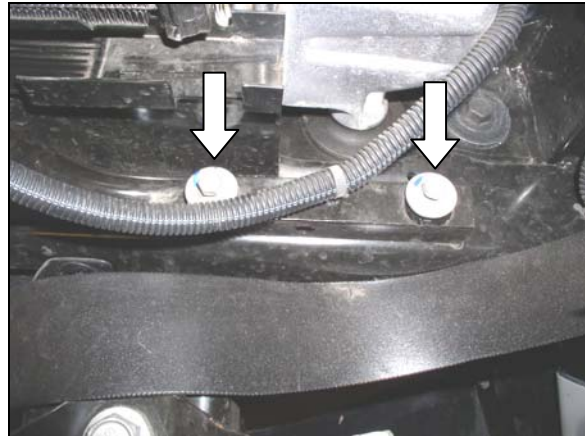


FIGURE 18



12. Remove the A/C condenser from the vehicle, by unbolting two 10mm bolts. Slightly lift the driver's side to remove the rubber mount and then the passenger side. Carefully lift the condenser out of the vehicle. Once the condenser is out of the way, remove two 10mm bolts securing the upper hood latch support to the cross member. SEE FIGURE 19 & 20

FIGURE 19

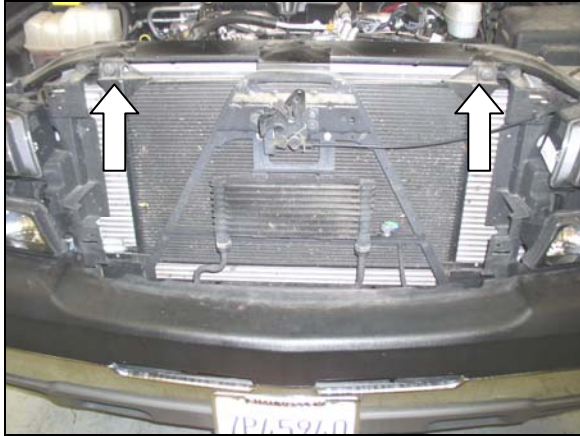


FIGURE 20



13. Using a 21mm socket, remove two vertical bumper bolts. SEE FIGURE 21 & 22

FIGURE 21



FIGURE 22



14. Remove two lower bumper support bolts using a 15mm socket. SEE FIGURE 23 & 24

FIGURE 23

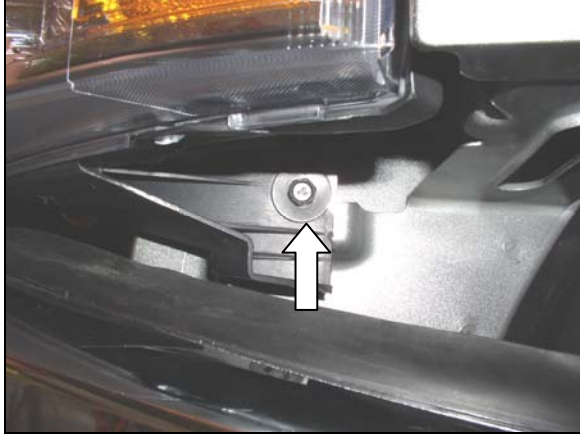


FIGURE 24



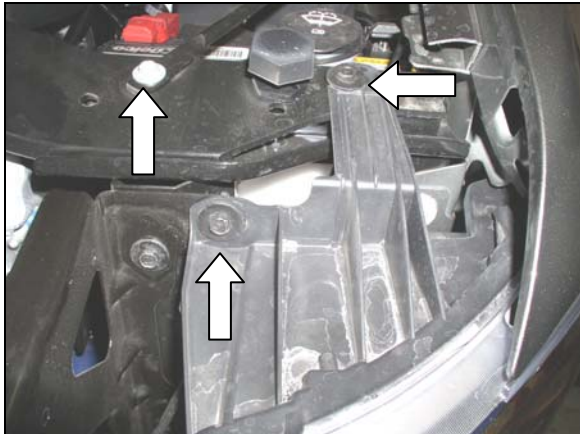
15. The bumper will not have to be removed from the vehicle. Slide the bumper forward ~3-4.0" and let it tilt back to expose the 10mm bolt (one on each side) that secures the bottom headlight bracket to the body.
FIGURE 25

FIGURE 25



16. Remove the two 10mm bolts per side that secures the headlight to the cross member. Make sure the front bumper is slide forward enough, where the rubber flap is just slightly tight. Remove the 10mm bolt that secures the diagonal support to the cross member. SEE FIGURE 26

FIGURE 26

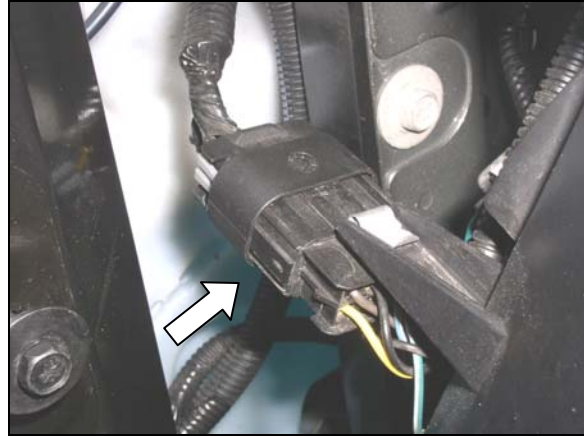


17. Once all the headlight bolts are removed, slide the headlight forward slightly, just enough to unplug the headlight harness. Remove both headlights. SEE FIGURE 27 & 28

FIGURE 27

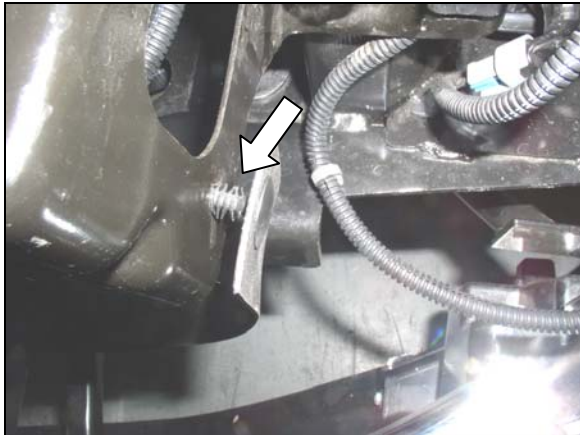


FIGURE 28



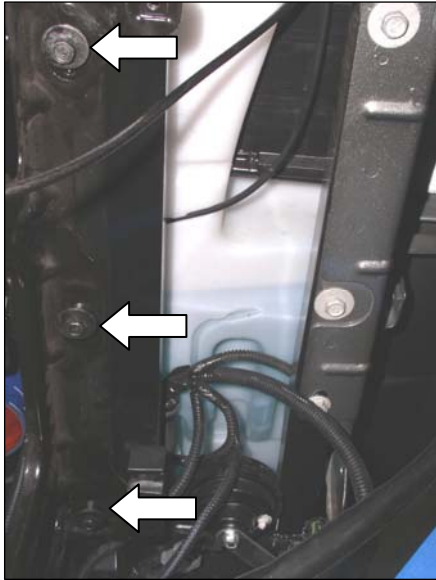
18. Gently pry out the plastic trim retainers the secures the rubber flap to the grill support on each side. SEE FIGURE 29

FIGURE 29



19. Remove the three 10mm bolts on each side that secures the grill support brace to the core support. SEE FIGURE 30

FIGURE 30



20. Using a 10mm socket, remove 6 bolts that secures the cross member to the body. SEE FIGURE 31

FIGURE 31



21. Using a 13mm socket, remove the two upper bolts that secures the factory intercooler to the cross member and remove the cross member.

22. Remove the 2 upper grommets from the top mounting bracket of the factory intercooler and install them onto the new supplied intercooler (P/N 70007). SEE FIGURE 32 & 33

FIGURE 32

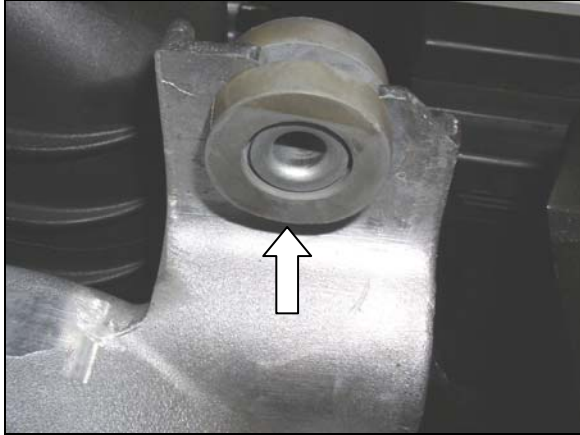
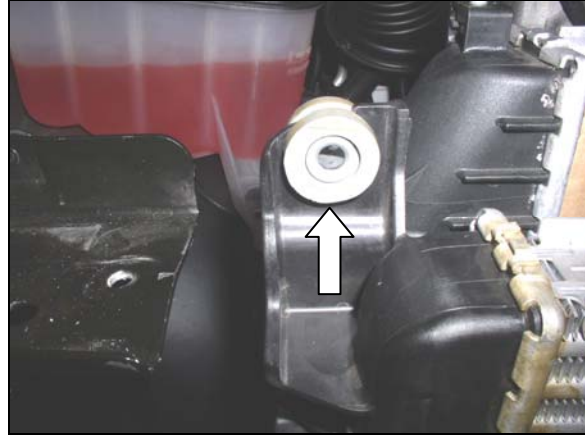


FIGURE 33



23. Remove the top and bottom boost tube keeper clips from the boost tube on the passenger side and remove the boost tube from the vehicle. SEE FIGURE 34 & 35

FIGURE 34



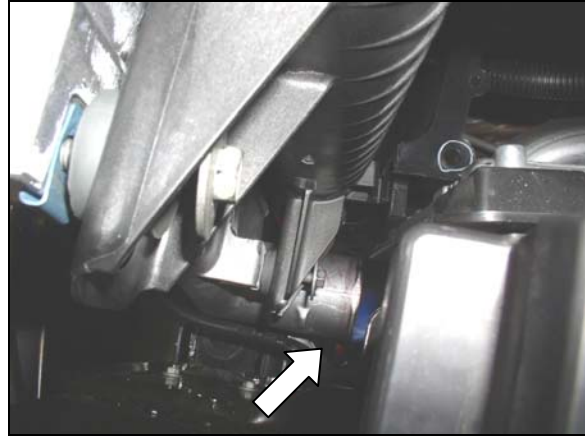
FIGURE 35



24. Loosen the intercooler side hose clamp on the factory silicone hose that secures the boost tube to the intercooler on the driver's side. SEE FIGURE 36 & 37

FIGURE 36

FIGURE 37



25. Remove the plastic clip that secure the TCM to the radiator fan shroud. SEE FIGURE 38

FIGURE 38



26. Remove the two 13mm bolts that secure the fan shroud to the radiator. SEE FIGURE 39 & 40

FIGURE 39

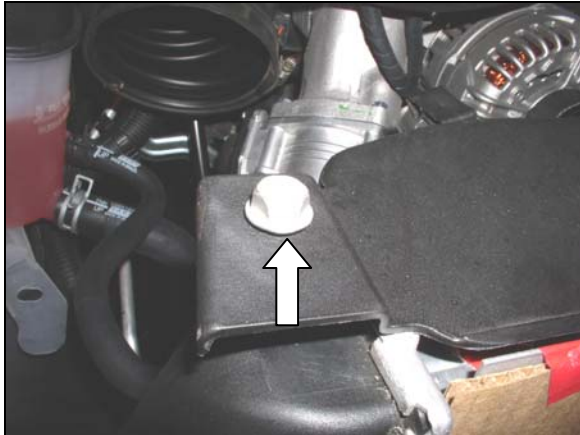


FIGURE 40



27. Remove the 4 plastic clips that secure the two halves of the radiator shroud together. SEE FIGURE 41 & 42

FIGURE 41

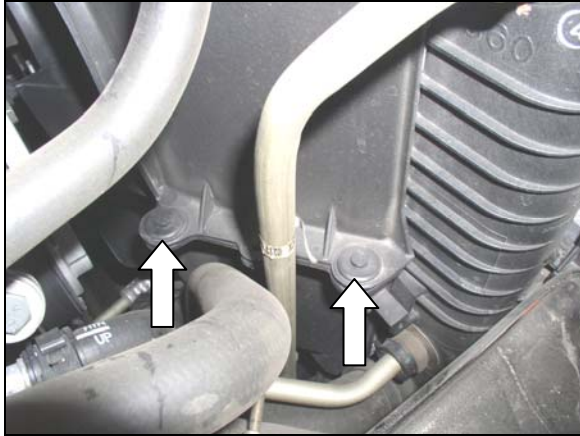


FIGURE 42



28. Protect the front and rear radiator face with a cardboard to prevent any damages. SEE FIGURE 43

FIGURE 43



29. Using a 13mm socket, remove the 4 bolts that holds the radiator to the factory intercooler. SEE FIGURES 44-46

FIGURE 44

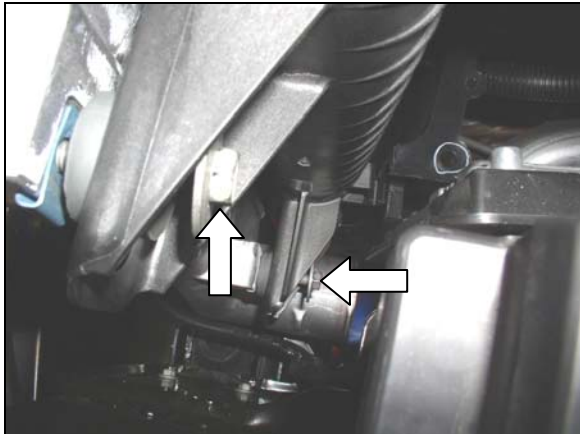


FIGURE 45



FIGURE 46



30. Carefully remove the factory intercooler. SEE FIGURE 47

FIGURE 47



31. Remove the 2 rubber isolators from the bottom pegs of the factory intercooler and install them onto the new upgrade intercooler. SEE FIGURES 48 & 49

FIGURE 48



FIGURE 49



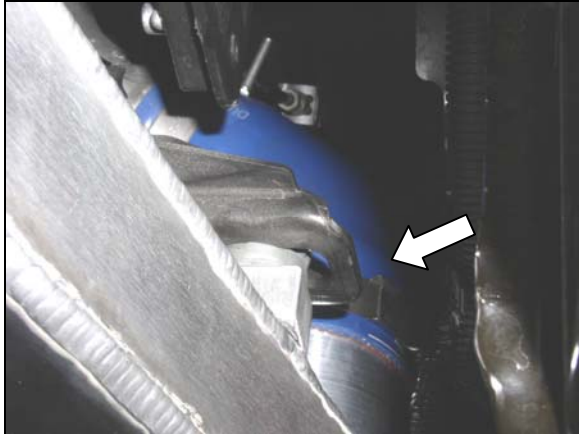
32. Carefully install the new supplied intercooler (P/N 70007) into the vehicle. SEE FIGURE 50

FIGURE 50



33. Install the driver side factory silicone coupler to the new intercooler and secure using the factory hose clamp. SEE FIGURE 51

FIGURE 51



34. Using 2 of the factory 13mm bolts, loosely secure the radiator to the upper mount of the new intercooler (P/N 70007). Secure the lower radiator brackets to the intercooler using supplied M8-1.25 x 30mm bolts (P/N 31076), lock washers (P/N 30593), and fender washers (P/N 30807). SEE FIGURES 52 & 53

FIGURE 52

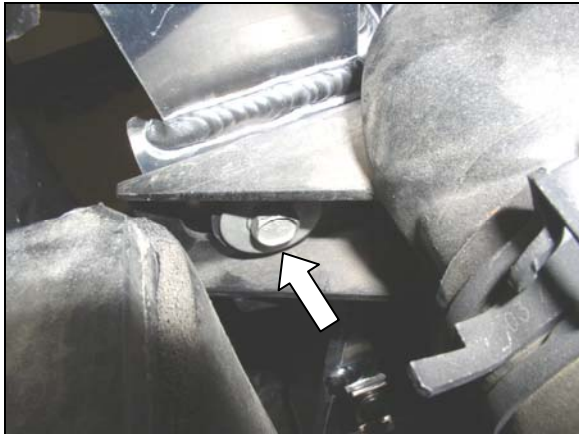
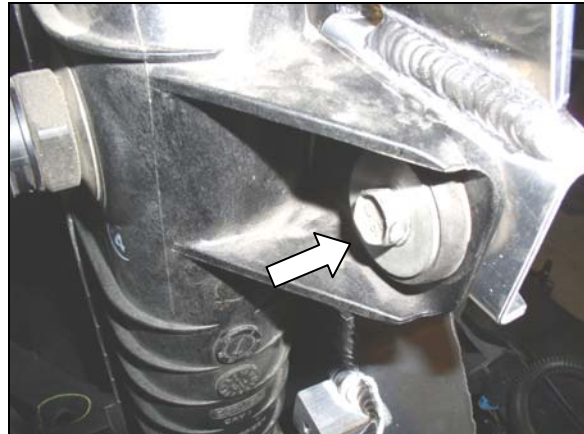


FIGURE 53



35. Center the radiator to the intercooler and tighten all 4 bolts. SEE FIGURES 54 & 55

FIGURE 54

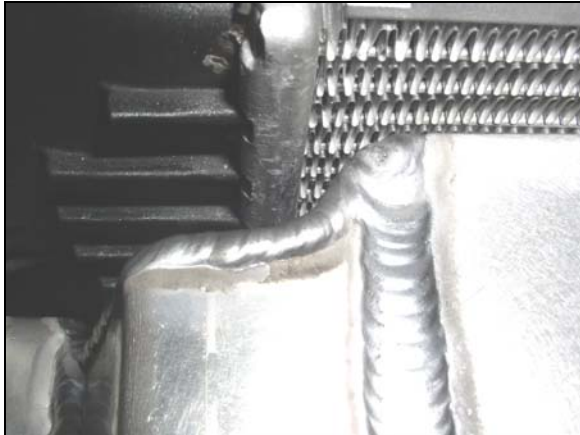


FIGURE 55



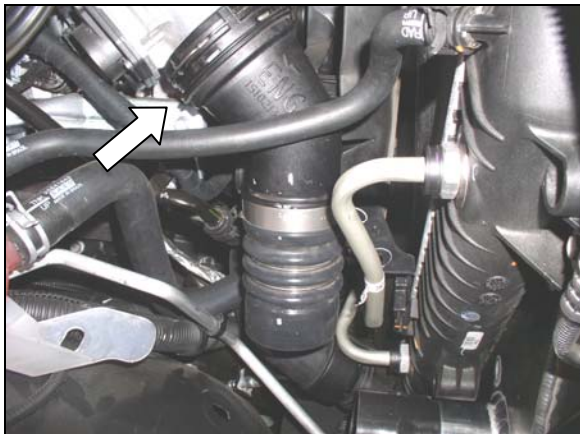
36. Remove the plastic elbow from the factory boost tube that is labeled "CAC" from the silicone coupler. SEE FIGURE 56

FIGURE 56



37. Install the upper portion of the factory boost tube that is labeled "ENG" to the engine and secure using the factory retaining clip. SEE FIGURE 57

FIGURE 57



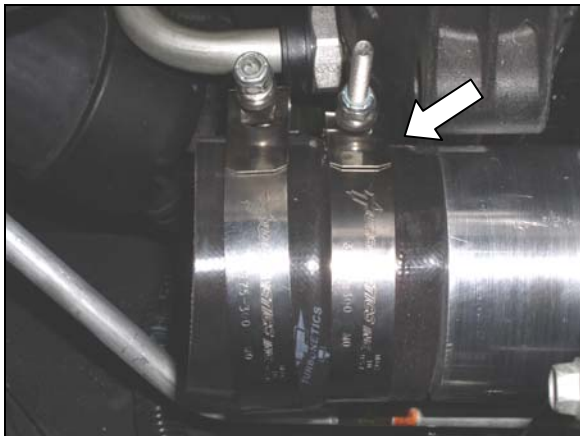
38. Slide the supplied 3.0" silicone hose coupler (P/N 30162-4) over the outlet of the new upgrade intercooler. SEE FIGURE 58

FIGURE 58



39. Slide the 2 supplied 3.0" t-bolt clamp (P/N 30275-300) over the 3.0" silicone hose coupling that you just installed. Tighten the clamp (P/N 30275-300) that secures the silicone hose coupler (P/N 30162-4) to the intercooler outlet with the orientation shown in the picture or interference will occur. SEE FIGURE 59

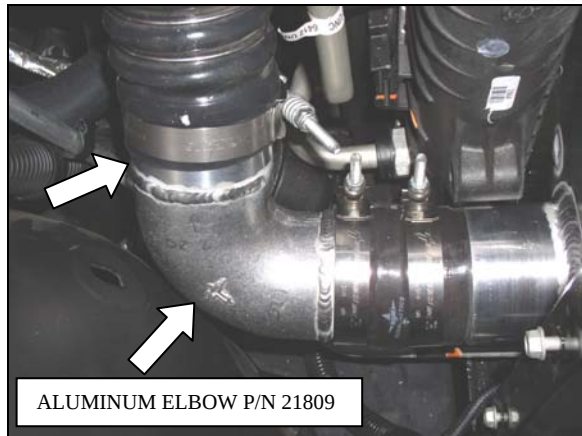
FIGURE 59



40. Install the supplied aluminum elbow (P/N 21809) from the new intercooler to the factory plastic boost tube and secure with t-bolt clamps. Before installing the supplied aluminum elbow (P/N 21809), be sure the factory t-bolt clamp is on the silicone coupler on the plastic boost tube. SEE FIGURE 60

NOTE: Make all the orientation of the t-bolt clamps matches the orientation shown in the figures.

FIGURE 60



41. Re-install the lighting assembly mounts, headlights, and grill. Follow the steps used to disassemble the components in reverse order for reinstallation.
42. Recharge the A/C system. Consult a GM service manual for the correct procedure.



FINAL CHECKLIST

- Review these instructions to make sure that all fasteners, clamps connections have been installed correctly.
- Check that all hose routings are free of any kinks or near any hot or abrasive surfaces that may cause wear over time. Adjust or reroute as necessary to provide adequate slack for engine movement.

“NO FAULT / NO HASSLE” WARRANTY PROGRAM

TURBONETICS will repair or replace, at our expense, any new TURBONETICS / Spearco products that fail, including products used in racing or competition applications, for a period of one year from the original date of purchase. All turbocharger and cartridge assemblies have a factory installed inline oil filtration device. This filter device must remain in place if any warranty is to be considered under the No-Fault / No-Hassle program. Electrical components that fail due to misuse are not covered under the No-Fault / No-Hassle Warranty Program.

Warranty is limited to TURBONETICS products and does not include progressive or subsequential damage and does not cover removal or installation labor or associated parts. No warranty is made for any other claims for special, indirect or consequential damages including but not limited to component removal or installation equipment downtime, prospective profits or other economic loss.

Warranty will not be granted for recurring damage, malfunction, or failure due to improper installation, misuse, unauthorized repair or alterations, or externally induced physical damage.

Warranty is non-transferable and must be processed via the original purchaser from TURBONETICS.

Remanufactured units, performance upgraded units, and O.E.M. replacement units are covered by a 90-day warranty or the O.E. warranty period.

TURBONETICS highly recommends that the installation of mechanical or electrical parts be performed by trained professionals. Improperly installed products may lead to unsafe and unreliable conditions.

RETURN POLICY:

Only unused and complete merchandise may be accepted for return subject to inspection and acceptance by TURBONETICS. No goods will be accepted without prior return authorization from TURBONETICS. Call for approval and RGA (Returned Goods Authorization) tracking number. No returns will be accepted without an RGA tracking number. No returns will be accepted after ninety (90) days from the original shipping date from TURBONETICS unless approved. All approved returns are subject to a 15% restocking charge – NO EXCEPTIONS. The original invoice must accompany the return. Accepted warehouse / distributor and open account returns will be issued credit only.

RETURNED GOODS AUTHORIZATION TRACKING NUMBER:

TURBONETICS will only accept product returns, repair orders / upgrades, and warranty requests that have been approved and are returned with a corresponding RGA (Returned Goods Authorization) tracking number.

Contact TURBONETICS for approval and the RGA number. Write the RGA number clearly on the outside of the package and include it inside the package. This is very important in allowing us to properly identify and process your request. Failure to comply with this requirement will result in the delay of processing or the product being returned to you.