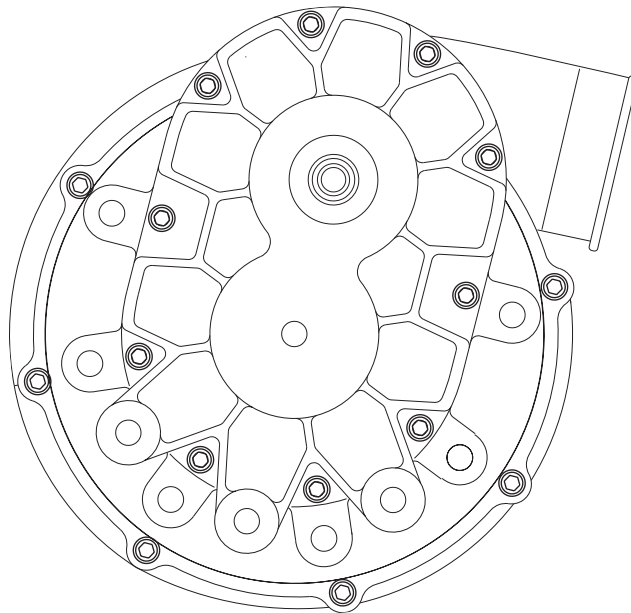


GM Truck 5.3L Supercharger System Installation Instructions

2014-2018 Model Year



ENGINEERING, INC

1650 Pacific Avenue, Channel Islands, CA 93033-9901 • Phone (805) 247-0226
Fax: (805) 247-0669 • www.vortechsuperchargers.com • M-F 7:00 AM - 3:30 PM (PST)

FOREWORD

This manual provides information on the installation, maintenance and service of the Vortech supercharger kit expressly designed for this vehicle. All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. Changes to the manual may be made at any time without notice. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0226 7:00am-3:30pm PST.



Take note of the following before proceeding:

1. Proper installation of this supercharger kit requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please contact your dealer or Vortech Engineering for possible installers in your area.
2. This product was designed for use on stock (unmodified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock. If the vehicle or engine has been modified in any way, check with Vortech prior to installation and use of this product.
3. Use only premium grade fuel with a minimum of 91 octane (*R+M/2*).
4. Always listen for any sign of detonation (*knocking/pinging*) and discontinue hard use (*no boost*) until problem is resolved.
5. Vortech is not responsible for any clutch, transmission, driveline or engine damage.

Exclusions from Vortech warranty coverage considerations include, but not limited to:

1. Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
2. Continued operation with an impaired vehicle or sub-system.
3. The combined use of Vortech components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

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NOTICE

This product is protected by state common law, copyright and/or patent. All legal rights therein are reserved. The design, layout, dimensions, geometry, and engineering features shown in this product are the exclusive property of Vortech Engineering, Inc. This product may not be copied or duplicated in whole or part, abstractly or fundamentally, intentionally or fortuitously, nor shall any design, dimension, or other information be incorporated into any product or apparatus without prior written consent of Vortech Engineering, Inc.

2014 - 2018 GM Truck 5.3L

Installation Instructions

Before beginning this installation, please read through this entire instruction booklet and the Street Supercharger System Owner's Manual which includes the Limited Warranty Program, the Warranty Registration form, and return envelope.

Vortech supercharger systems are performance improving devices. In most cases, increases in torque of 30-35% and horsepower between 35-45% can be expected with the boost levels specified by Vortech Engineering. This product is intended for use on healthy, well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine as well as the supercharger. Vortech Engineering is not responsible for engine damage.

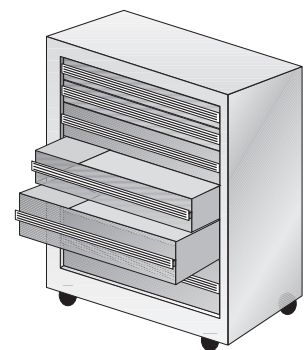
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take note of the following key points:

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. The engine must have stock compression ratio.
3. If the engine has been modified in any way, check with Vortech prior to using this product.
4. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.
5. Before beginning installation, replace all spark plugs that are older than 1-year or 15,000 miles with original heat range plugs as specified by the manufacturer and reset timing to factory specifications (follow the procedures indicated within the factory repair manual and/or as indicated on the factory under hood emissions tag). Do not use platinum spark plugs unless they are original equipment. Change spark plugs every 15,000 miles.
6. **Oil-Fed Units Only:** Perform an oil and filter change upon completion of this installation and prior to test driving your vehicle. Thereafter, always use a high-grade SF rated engine oil or a high quality synthetic, and change the oil and filter every 3,000 miles. Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.

Tool and supply requirements:

- 3/8" drive ratchet, socket and extension set: SAE and metric
- 3/8" drive 13mm and 17mm crows foot
- 3/8" drive torque wrench
- 1/2" drive ratchet or breaker bar
- Open end wrenches: SAE and metric
- Hex keys: SAE and metric
- Screwdriver set
- Grinding tool (file, drum sander, Dremel, etc.)
- Power drill and 1/8", 3/16", 1/4", 11/16" drill bits
- Ear clamp pliers
- Hose cutters
- Utility knife
- Heat gun
- Ramps or lift
- Clean coolant container
- Medium strength (Blue) threadlocker
- Thread sealant



If it has been one year or 15,000 miles or more since your vehicle's last spark plug change, then you will also need:

- Spark plug socket
- New spark plugs



2014-2018 GM Truck 5.3L Tuner Kit Part No. 4GQ218-110L PARTS LIST

IMPORTANT: Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY.	PART NUMBER	DESCRIPTION	QTY.
008110	SMALL SILVER DIE CUT DECAL	2	7U030-065	HOSE, 3/4 X 90 ELBOW RUBBER, SHORT	2
008130	LICENSE PLATE FRAME, VORTECH	1	7U038-000	3/4" HEATER HOSE	10.8 FT.
008447	1 YR S/C STRT INFO PKG VORT	1	7U038-012	HOSE, 3/4 DIA 90 , 4 X 12 LEGS	1
009035	S/C LUBE, BOTTLED, 3-PACK	1	7U038-150	HOSE, 3/4 D X 150 MOLDED HOSE	1
2A046-960	BELT, GATES K060960	1	8N055-035	TANK, WATER, TRIANGLE SHAPE, 2014 GM TRUCK, 5.3	1
2F338-060	V3 ASY, SCI-TRIM, GM TRK LT1, SAT	1	8N055-050	PLASTIC CAP, SURGE TANK	1
4GQ020-010	INSTR MAN, 14-19 GM TRK 5.3L	1	8N056-060	SURGE TANK, PLASTIC	1
4GQ110-044	MTNG BRKT ASSY, GM TRK LT1	1	4GQ212-020	DISCH ASSY, GM TRUCK LT1	1
1210517	ASY, IDLER PLY, SMOOTH GRIB	2	4GQ012-020	DISCHARGE TUBE B, 3.0 DIAM 2014 SILVERADO 1500 5.3	1
2A017-730-210	STANDOFF, .433" ID, .730" OD, 2.100" L	6	4GQ017-010	SPACER, MAP SENSOR, L83	1
2A017-980-183	STANDOFF, IDLER PULLEY, .531" ID, .980" OD, 1.830" L	2	4GQ112-010	DISCHARGE TUBE A, 2.75 DIAM	1
2A017-980-210	STANDOFF, .531" ID, .980" OD, 2.100" L	1	5A002-070	SENSOR, MAP, ZR1 3-BAR	1
4GA017-002	BEARING SUPPORT, 17 MM, IDLER PULLEY, .500" ID X .100" L	1	5W001-096	HARNESS, MAF EXTEN, 2016 CAM SS	1
4GQ010-010	S/C BASE PLATE REAR, GM TRUCK LT1	2	7A250-074	1/4-20 X .75 HHCS PLTD	1
4GQ010-020	S/C BASE PLATE FRONT, GM TRUCK LT1	1	7C040-008	M4-7 X 8MM SCHD SS	2
7A375-126	3/8-16 X 1.25", HX HD, GR8	2	7K250-001	1/4" AN WASHER	1
7A500-300	1/2"-13 X 3.00"L HHCS GR 8.8. YELLOW ZINC	1	7P125-038	1/8NPT STRAIGHT TO 5/32 BARB	1
7A500-550	1/2"-13 X 5.50"L HHCS GR 8.8. YELLOW ZINC	1	7PS275-092	ELBOW, 2.75 X 90 SILICONE BLK	1
7C010-023	M10 X 1.5 X 20L FLANGE HEAD, ZINC, MACHINED	1	7PS275-300	SLEEVE, BLACK 2.75ID X 3.0	1
7C010-030	M10 X 1.5 X 30 HXHD CL10.9	2	7PS300-090	ELBOW, BLK, 3" X 90 SILICONE	1
7C010-081	M10 X 1.5 X 80 HHCS, GR8, ZINC PLATED	6	7PS400-301	REDUCER, BUMP, PROG 3.0 X 4.0	1
7C080-030	M8 X 1.25 X 30 HXHD CL10.9	2	7PS400-352	ELBOW, REDUCER, 4.0 X 3.5 X 83 DEG, SILICONE, BLACK	1
7J010-002	WASHER, M10 X .06 FLAT, ZN PLT	8	7R002-016	#16 SAE TYPE F SS HOSE CLAMP	4
7J080-002	WASHER, M8 X 1.8 FLAT, ZN PLT	2	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	4
7J375-044	WASHER, 3/8 SAE PLTD	4	7R002-052	#52 SAE TYPE F SS HOSE CLAMP	3
			7R002-056	#56 SAE TYPE F SS HOSE CLAMP	2
			7R002-064	#64 SAE TYPE F SS HOSE CLAMP	2
			7S350-220	HONEYCOMB, FLOW STRAIGHTNER, 3.5"	1
			7U012-109	O-RING, -109, BUNA-N	1
4GQ112-110	AIR INLET ASSY, GM TRUCK LT1	1	7U030-046	5/32" VACUUM LINE	17 IN.
4GL010-011	BRKT,D SIDE GM TRK AIR INLET	1	7U133-100	HOSE,ELBOW,90 ,1"ID, MOLDED	1
4GL010-012	BRKT,P SIDE GM TRK AIR INLET	1	8A003-074	MAF, 3.8 ID, BLACK	1
4GQ112-030	ASSY, DUCT, INLET, LONG GM SUV/TRK, W/ PORTS	1	8D001-004	COMPRESS BYPASS VALVE, G2	1
4GQ112-040	INLET TUBE A, 3.5 DIAM, SAT	1			
7A250-050	1/4-20 X .50" SHCS ZINC PLT	2	7U030-500	1/2" PCV/VAC RUBBER HOSE	.33 FT
7A375-104	3/8-16 X 1" SHCS, CLR ZN	2	7U030-500	1/2" PCV/VAC RUBBER HOSE	.33 FT
7C040-007	M4-70 X 8MM, SS, BLK OXIDE	2	7U100-055	TIE WRAP, 7.5" NYLON	20
7F375-021	3/8-16 NYLOCK FLANGE NUT	2	8N006-034	HEAT EXCHANGER	1
7J050-001	WASHER, M5, 15 MM OD, SS, BLK OXIDE	2	8N107-210	WATER PUMP MTG ASSY, GM TRK LT1	1
7J375-044	WASHER, 3/8 SAE PLTD	2	5W001-145	HARNESS, AUX WATER PUMP, 11 FT, MICRO FUSE	1
7K250-001	1/4" AN WASHER	2	7A250-075	1/4-20 X .75 SHCS PLTD	1
7PS350-091	ELBOW, BUMP, 3.5 X 90 DEG, FORMED, SILICONE, BLACK	1	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	1
7PS350-200	SLEEVE, BLACK 3.50 ID X 2.0" LG	2	7J250-001	1/4 WASHER, SAE, PLTD	2
7R002-056	#56 SAE TYPE F SS HOSE CLAMP	6	7R003-029	ADEL CLAMP, 1-5/8" ID	1
8A004-011-1	BLOCK OFF PLT, GM SLOT MAF, BLK	1	8F001-405	BOSCH AUX WATER PUMP	1
4GQ115-010	SUPPORT ITEMS, CAC SYS, GM TRK	1	8N201-500	ASY, AIR-TO-WATER COOLER	1
2A017-094	SPACER, .380L, .313ID, .600D	1			
4GQ010-030	BRKT, CHARGE AIR COOLANT RESERVIOR, GM TRUCK LT1	1			
4GQ010-040	BRKT, CHARGE AIR COOLANT SURGE TANK, GM TRUCK LT1	1			
4GQ010-050	BRKT, AIR TO WATER COOLER, RH, GM TRUCK LT1	1			
4GQ010-060	BRKT, AIR TO WATER COOLER, LH, GM TRUCK LT1	1			
4GQ010-070	BRKT, HARNESS CONNECTOR RELOCATION, GM TRUCK LT1	1			
4GQ010-080	BRKT, HEAT EXCHANGER, RH, GM TRUCK LT1	1			
4GQ010-090	BRKT, HEAT EXCHANGER, LH, GM TRUCK LT1	1			
5W001-030	1 1/2" HEAT SHRINK	2 FT.			
5W001-082	SLEEVE, FLEX BRAID .75" NOM.	16.25 FT.			
7A250-050	1/4-20 X .50" SHCS ZINC PLT	8			
7A250-051	1/4-20 X .50 HHCS GR5 ZINC PLTD	4			
7A250-101	1/4-20 X 1 HHCS ZINC PLTD	1			
7C060-016	M6 X 1.0 X 16 HXHD	1			
7E014-075	#14 X .75 HEX HD SHEETMETAL SCREW	4			
7J250-001	1/4 WASHER, SAE, PLTD	2			
7K250-001	1/4" AN WASHER	8			
7P375-075	3/4" HOSE BARB UNION, BRASS	3			
7P500-026	1/2NPT X 3/4 BARB 90 BRASS	4			
7P500-030	1/2" PIPE PLUG STEEL, ZINC PLATED	1			
7P500-035	FITTING, 1/2 NPT X 3/4 BARB X 45	1			
7P500-078	1/2NPT X 3/4 HOSE FIT STRT	1			
7R002-010	#10 SAE TYPE F SS HOSE CLAMP	10			
7R004-007	STEPLESS CLAMP, 28.6 X 7MM	6			

1. BASIC COMPONENT REMOVAL

- A. Using a 10mm socket, disconnect the negative battery cable and set it aside.

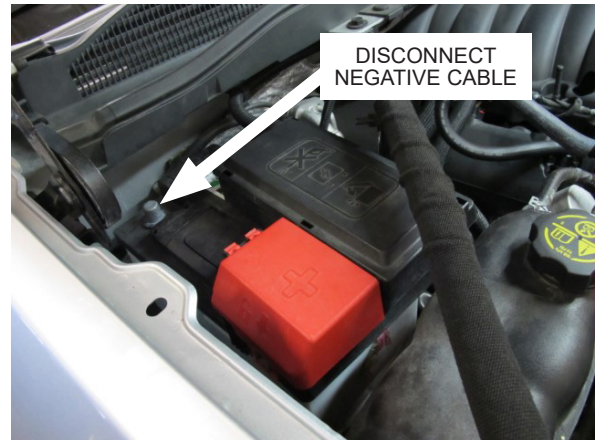


Fig. 1-A: Disconnect negative battery cable

- B. You'll notice that there are two breather hoses connecting the air inlet to the breather port on each of the valve covers. Using a small pick or a flathead screwdriver, press in on the grey tab on the quick disconnect fitting. Simultaneously pull up on the quick disconnect fitting and detach them from the valve cover breather port and air inlet.

NOTE: Passenger side shown. Repeat for driver side.

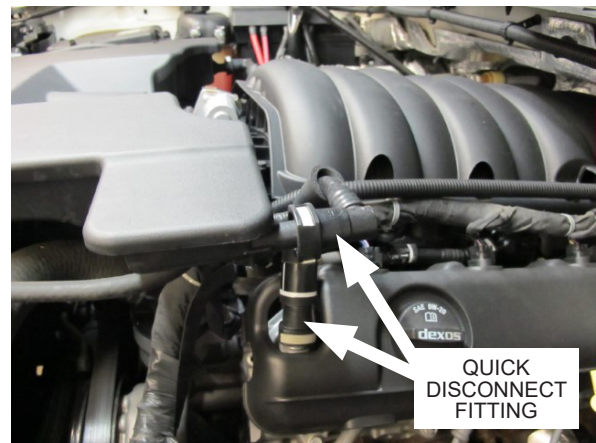


Fig. 1-B: Disconnect breather hoses

- C. Using a flathead screwdriver, loosen the hose clamps securing the air inlet to the throttle body and the air box. With both hose clamps loosened, proceed to remove the air inlet from the vehicle and set it aside. It will not be reused. To avoid any foreign object damage, place a clean rag into the throttle body or cover it with blue painter's tape.

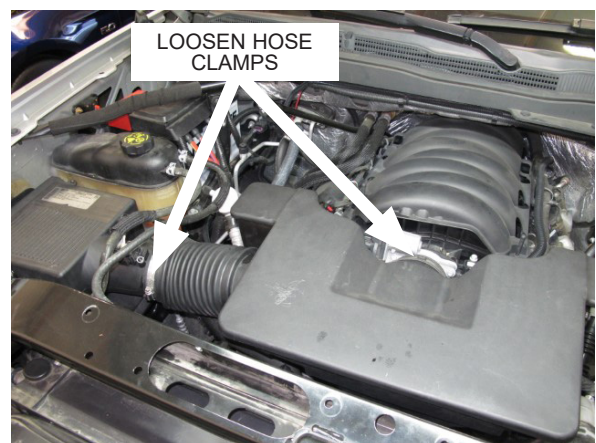


Fig. 1-C: Remove air inlet

1. BASIC COMPONENT REMOVAL

- D. Using a 10mm socket, remove the two screws securing fender brace. Temporarily set the brace aside. Disconnect the MAF sensor connector. Firmly grab the air box with two hands and pull it up and out. Set it aside as it will be reused.

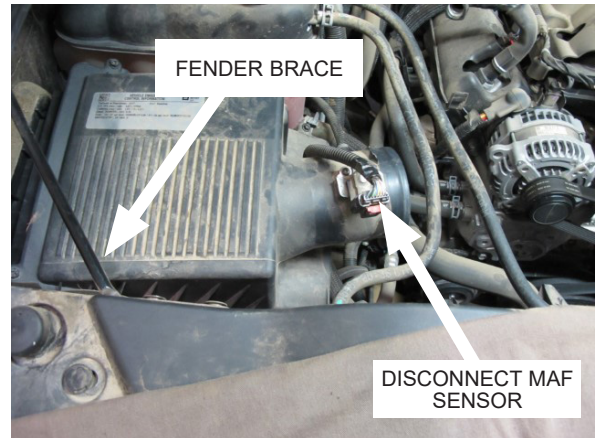


Fig. 1-D: Disconnect MAF sensor connector and remove airbox

- E. Underneath the airbox is an airbox tray. Using a 10mm socket, remove the four screws securing the airbox tray, then lift the tray out of the vehicle and set it aside. With the airbox tray removed, you'll notice there are two clip-on nuts on the passenger side airbox tray mount. Using a small pick or flathead screwdriver, remove the upper clip-on nut by lifting the small locking tab and sliding it off of its mounting flange. It will not be reused. Do not remove the lower clip-on nut as it will be reused in a later step.

NOTE: The airbox tray is already removed in this picture.

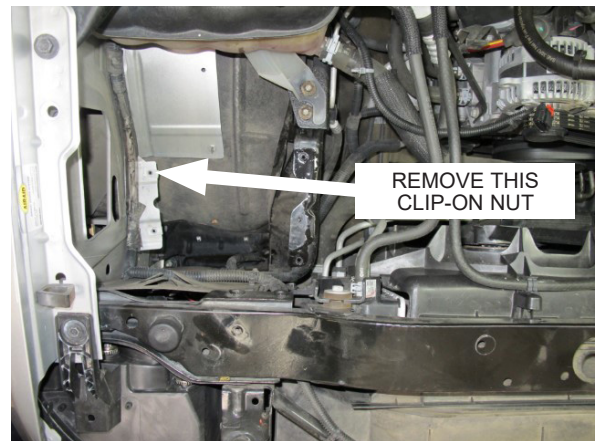


Fig. 1-E: Remove airbox tray and clip-on nut

- F. Using a long 1/2" drive ratchet or breaker bar, insert the square drive into tensioner arm slot. Turn the belt tensioner counterclockwise and remove the serpentine belt. It will not be reused.

NOTE: The use of a leverage bar may help in this step.



Fig. 1-F: Remove OEM serpentine belt

1. BASIC COMPONENT REMOVAL

- G. There is a plastic harness guide that secures the engine harness on the driver side of the engine near the upper coolant hose. Using a 10mm socket, remove the flanged nut that secures the plastic harness guide to the engine. Set the nut aside as it will not be reused.

NOTE: In a later step, the threaded stud that this nut attaches to will be removed.



Fig. 1-G: Remove flanged nut

- H. Using a 10mm socket, remove the screw securing the plastic harness guide to the water pump housing outlet. Set the screw aside as it will not be reused.

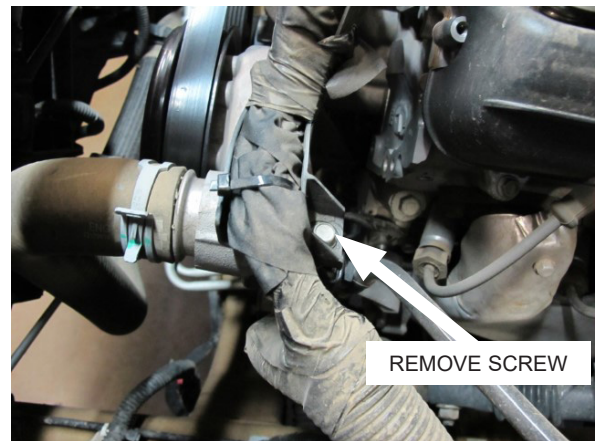


Fig. 1-H: Remove screw

- I. Next, using a pair of cutters, cut off the zip ties and tape that secure the plastic harness guide to the harness, making sure not to damage any of the wires. Proceed to remove the plastic harness guide and set it aside. It will not be reused.

NOTE: In a later step, the harness will pass between the supercharger mounting plates.



Fig. 1-I: Remove plastic harness guide

1. BASIC COMPONENT REMOVAL

- J. Using a deep 10mm socket, remove the threaded stud that was previously used by the plastic harness guide nut. Set the threaded stud aside as it will not be reused.

NOTE: Failure to remove the threaded stud will result in supercharger mounting bracket interference.



Fig. 1-J: Remove threaded stud

- K. Located behind the water pump on the driver side of the engine is a hard plastic vacuum line that leads to the brake booster. This vacuum line is mounted to a small bracket. Using a 13mm socket, remove the bracket screw and set it aside. Next, separate the small bracket from the vacuum line. Set the small bracket and screw aside as they will not be reused.

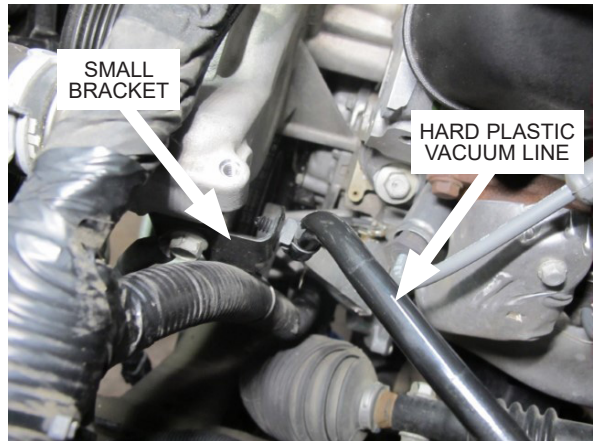


Fig. 1-K: Remove hard vacuum line bracket

- L. The hard plastic vacuum line needs to be protected from chafing against the supercharger mounting bracket assembly. Locate one of the provided 4" lengths of 1/2" rubber hose and cut it lengthwise down the middle using a razor blade. Place the hose over the vacuum line as shown and secure the hose using two of the provided tie wraps.

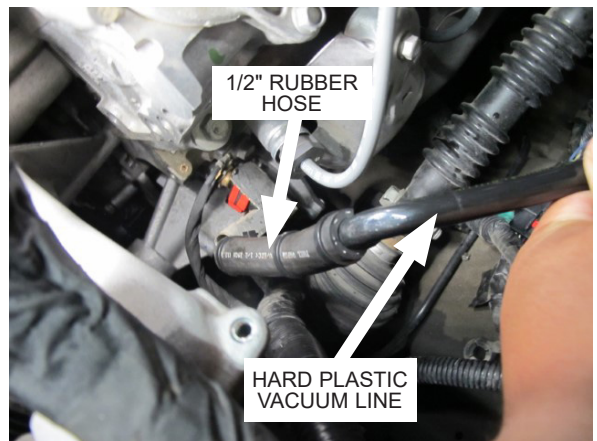


Fig. 1-L: Install 1/2" rubber hose around hard plastic vacuum line

1. BASIC COMPONENT REMOVAL

- M. Remove driver side ignition coil cover by unscrewing the oil fill cap. Pull upwards on the corners of the cover to detach it from its mounts. Reinstall the oil fill cap to keep debris from entering engine.

NOTE: The ignition coil cover will be modified in a later step.



Fig. 1-M: Remove ignition coil cover

- N. Using a panel removal tool or a flathead screwdriver, remove the twelve plastic fasteners securing the radiator support cover. Pop the center section of each fastener upward and then the large outer part of the fastener will loosen. Set the cover and plastic fasteners aside as they will be reused.

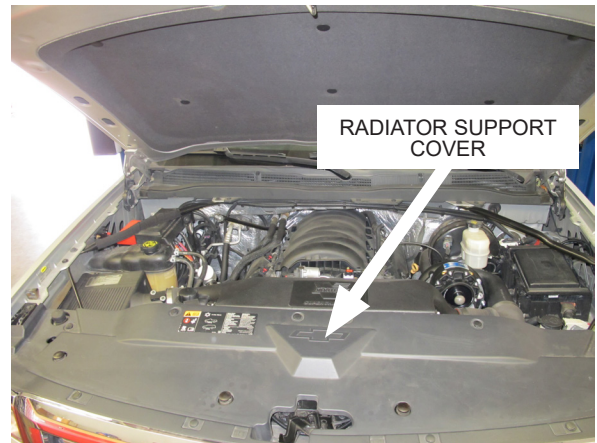


Fig. 1-N: Remove radiator support cover

- O. To make the installation easier, we suggest removing both front fender liners inside the front wheel wells. Using a T-15 tool, remove the screws securing the fender liners to the front fenders.

NOTE: Driver side shown. Repeat for passenger side.



Fig. 1-O: Remove front fender liners

1. BASIC COMPONENT REMOVAL

- P. Remove the lower splash shield using a 15mm socket for two front screws and a 10mm socket for the four remaining screws. Set the splash shield and screws aside as they will be reused.



Fig. 1-P: Remove lower splash shield

2A. FRONT GRILL REMOVAL - CHEVROLET SILVERADO

NOTE: This section applies to Chevrolet Silverado only. For GMC Sierra, see Section 2B.

- A. **2014-2015 Model-Years Only:** Located underneath the grill are four screws that secure the front grill. Using a 10mm socket, remove the four screws and set them aside.

NOTE: Grill removed for screw location identification. These four screws are best accessed from underneath the vehicle on the back side of the grill.



Fig. 2A-A: Remove lower grill screws

- B. **2014-2015 Model-Years Only:** Move to the corners of the grill. You'll notice that there's one screw on each corner of the grill securing it to the vehicle. Using an 8mm socket, remove each screw. Along with being secured by the screws, the corners of the grill typically snap into place along the top of the front bumper. To release the corners of the grill, you will need to pull the corners away from the front bumper with a good amount of force until you feel them unsnap. Make sure you have a good grip as to not cause any damage to yourself or the grill during removal.



Fig. 2A-B: Remove corner grill screws

- C. **2016-2018 Model-Years Only:** Remove the three plastic clips from bottom of grill and set them aside. Next, disconnect the main fog light connector.

NOTE: These three clips are best accessed from underneath the vehicle on the back side of the grill.



Fig. 2A-C: Remove three plastic clips and disconnect main fog light connector

2A. FRONT GRILL REMOVAL - CHEVROLET SILVERADO

- D. **All Model-Years:** Using a 10mm socket remove the screws securing the upper section of the grill to the radiator support. The grill is also held in place by locking tabs located around the perimeter of the grill. Gently pull the corners of the grill forward to disengage the locking tabs. Once the grill is removed, set it aside as it will be reused.



Fig. 2A-D: Remove upper grill screws then remove the grill

- E. **All Model-Years:** For vehicles equipped with a radiator shutter assembly, disconnect the shutter actuator plug and use a 10mm socket to remove thirteen screws that hold it in place. After you have removed the screws, remove the radiator shutter assembly and set it aside as it will be reused.

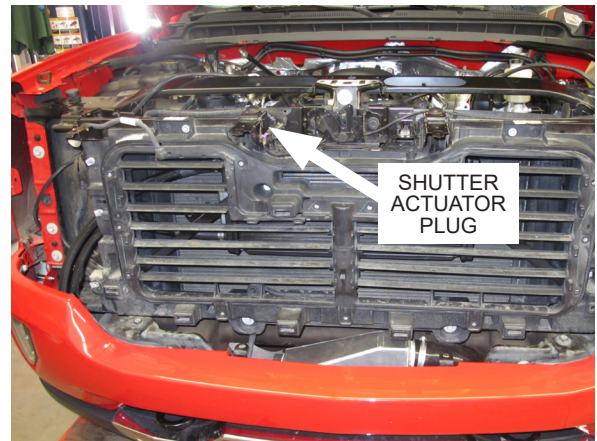


Fig. 2A-E: Remove radiator shutter assembly

- F. **2016-2018 Model-Years Only:** The front bumper will have to be removed as it needs to be modified to allow space for the air-to-water cooler. Using an 18mm socket, remove the four upper support screws (two per side). Next, use a 15mm socket to remove the two corner support screws (one per side) by accessing them from the back side of the bumper. With all the screws removed, slide the bumper forward and set it aside. A helping hand is suggested as the front bumper is rather heavy.

NOTE: Driver side shown. Repeat for passenger side. Bumper removed for screw location identification.

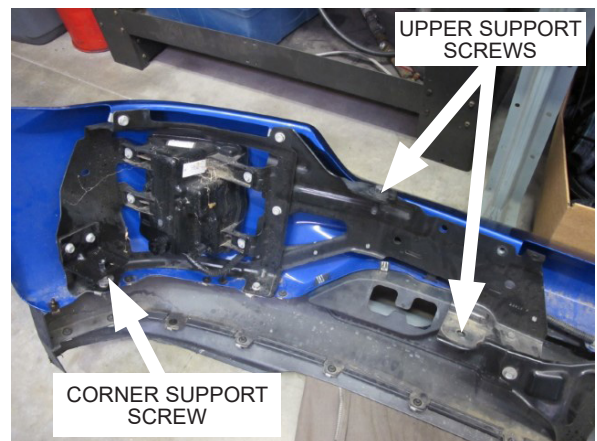


Fig. 2A-F: Remove bumper support screws

2A. FRONT GRILL REMOVAL - CHEVROLET SILVERADO

- G. **All Model-Years:** Using a 10mm socket, remove the passenger side headlight screws. Remove the headlight from the vehicle and disconnect its electrical connector. The electric water pump and coolant hoses will be installed below the headlight later in the installation.

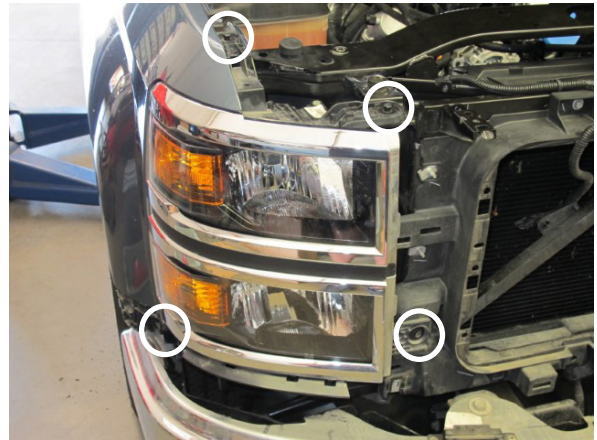


Fig. 2A-G: Remove passenger side headlight

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2B. FRONT GRILL REMOVAL - GMC SIERRA

NOTE: This section applies to GMC Sierra only. For Chevrolet Silverado, see Section 2A.

NOTE: 2015 Model-Year shown, however these steps apply to all model-years.

- A. Use a T-15 tool to remove the six screws securing the outer edge of the fender guard. Next, use a 13mm socket to remove the screw used to secure the underside of the fender guard to the underside of the fender, near the door. With all of the screws removed, gently pull the fender guard away from the fender.



Fig. 2B-A: Remove fender guard

- B. Located behind the corners of the bumper trim piece, there is a screw that secures it to the front fender. Using a 7mm socket, remove the screw securing the two pieces together and set it aside.

NOTE: Passenger side shown. Repeat for driver side.

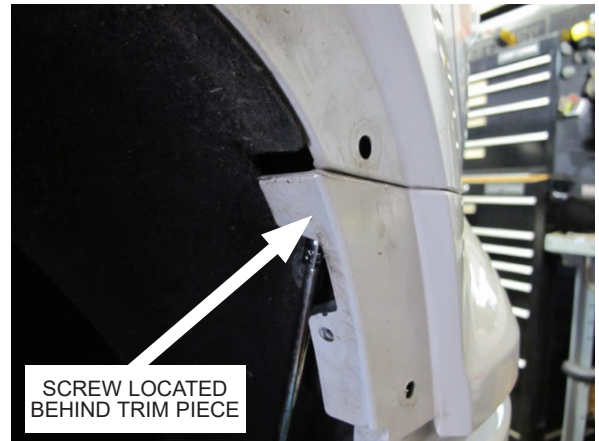


Fig. 2B-B: Remove bumper trim piece screws

- C. To release the corners of the bumper trim piece, you will need to pull the corners away from the front fenders with a good amount of force until you feel them unsnap. Make sure you have a good grip as to not cause any damage.



Fig. 2B-C: Detach bumper trim piece from front fenders

2B. FRONT GRILL REMOVAL - GMC SIERRA

- D. Continue to unsnap the bumper trim piece, then remove it from the vehicle and set it aside.

NOTE: The tabs in the center of the bumper trim piece can be accessed from under the vehicle behind the grill. If some of the tabs don't want to unsnap, you can use a pry tool and unsnap them from the back side of the trim piece.



Fig. 2B-D: Remove bumper trim piece

- E. There are four screws securing the lower grill section to the vehicle. Using a 10mm socket, remove the screws and set them aside.



Fig. 2B-E: Remove screws securing the lower grill section

- F. There are four screws securing the upper grill section to the vehicle. Using a 10mm socket, remove the screws and set them aside. Proceed to remove the grill from the vehicle and set it aside.



Fig. 2B-F: Remove screws securing the upper grill section then remove grill

3. ENGINE COOLING SYSTEM MODIFICATION

- A. The engine coolant will now be drained. Remove the coolant reservoir cap. Locate the coolant drain fitting on the lower passenger side of radiator. Place a clean container in the area directly below the drain fitting. Turn the drain fitting counterclockwise and drain the coolant into the clean container as it will be reused.

NOTE: To minimize coolant spill when draining the coolant into your container, we suggest attaching a small hose to the coolant drain fitting and using it as a funnel.



Fig. 3-A: Remove cap and drain coolant

- B. To make space for the supercharger mounting bracket, it will be necessary to flip the upper radiator hose, then trim one of the ends. Using a pair of channel locks, remove the spring clamps from each end of the hose, then proceed to remove the hose. Flip the hose around so the long leg of the hose will be installed to the thermostat housing and the short leg of the hose will be installed on to the radiator. Using a pair of hose cutters, remove 1" from the short end of the hose that will be installed on the radiator. Once the hose has been trimmed, install the hose as shown and secure using the original spring clamps.

NOTE: The hose is already flipped and modified in Fig. 2-B.

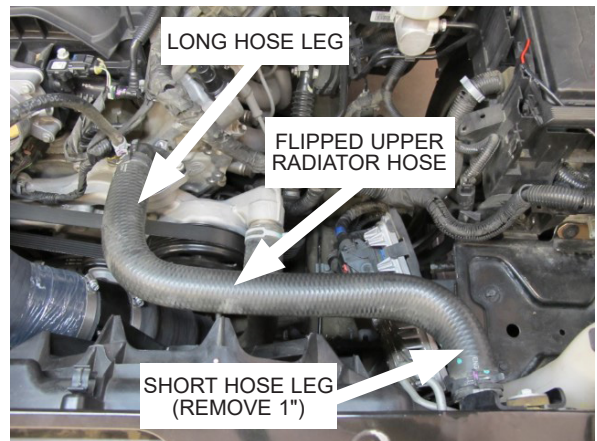


Fig. 3-B: Flip upper radiator hose

- C. Using a pair of channel locks, remove the spring clamp from the engine side of the lower radiator hose and detach the hose from the engine. Using a pair of hose cutters, remove 1" from the end of the hose, then proceed to reattach the hose to the engine and secure using the original spring clamp.

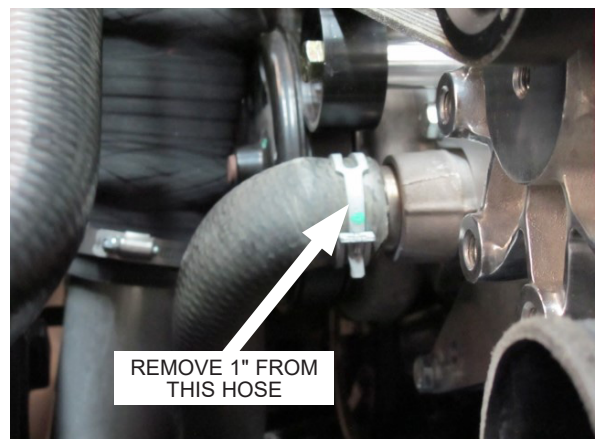


Fig.3-C: Modify engine side of lower radiator hose

3. ENGINE COOLING SYSTEM MODIFICATION

- D. Verify that all coolant hoses are secure.
Proceed to refill the engine coolant reservoir using the same coolant from step A.

NOTE: To minimize coolant spilling, we recommend using a funnel when refilling the engine coolant reservoir.



Fig.3-D: Refill engine coolant reservoir

4. SUPERCHARGER MOUNTING BRACKET INSTALLATION



Use blue threadlocker on all screws in this section.

- A. The supercharger mounting bracket assembly should come preassembled, however it will need to be disassembled during the installation to properly route part of the engine wiring harness. We suggest taking detailed pictures of the bracket assembly prior to disassembly.

NOTE: Use the mounting bracket diagram located in Appendix A as reference.

- B. Disassemble the mounting bracket assembly, but hold on to the rear mounting plate and M10 x 1.5 x 20mm flange head screw. Insert the screw into the rear mounting plate as shown.

NOTE: You'll notice that the head of the M10 x 1.5 x 20mm flange head screw has been machined down. This was done to assist during installation in the following step. When installing the mounting plate, be sure to insert this screw into the mounting plate hole before you lower it into position as it cannot be inserted afterwards.

- C. Located on the driver side just behind the water pump, you'll see a threaded hole in the cylinder head. This is the first hole you'll use to secure the mounting plate to the cylinder head.



Fig. 4-A: Supercharger mounting bracket assembly

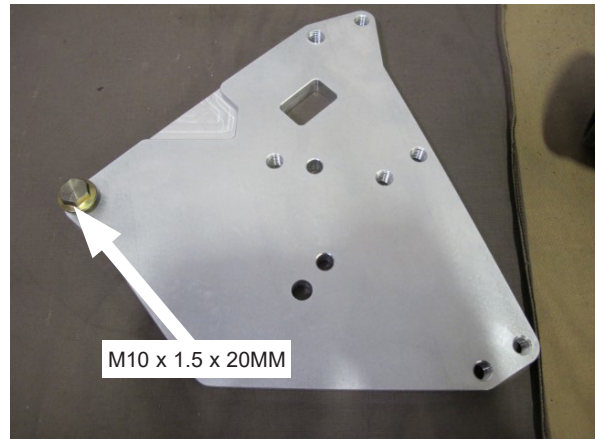


Fig. 4-B: Rear mounting plate

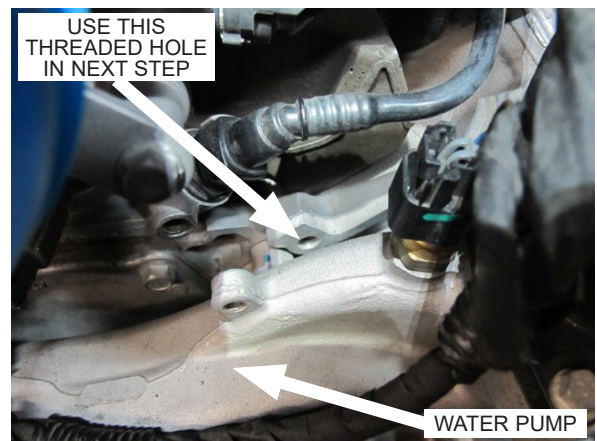


Fig. 4-C: Flange head bolt location

4. SUPERCHARGER MOUNTING BRACKET INSTALLATION

- D. **Installation Tip:** In some instances, it can be difficult to thread the M10 x 1.5 x 20mm flange head screw into the threaded hole on the cylinder head due to limited space. If you have a hard time getting the screw started, consider cleaning up the leading edge of the screw using a file or a belt sander. We have found this to make the installation of this screw much easier. Keep this tip in mind moving forward.

NOTE: Be sure not to damage the threads on the screw.



Fig. 4-D: Clean up leading edge if necessary

- E. **Installation Tip:** Due to casting variances between valve covers, it may be necessary to partially grind down the front of the molded boss on the valve cover with a file in order to position the rear mounting plate. Keep this tip in mind moving forward if you have trouble positioning the rear mounting plate.

NOTE: Be sure not to damage the front face of the cylinder head.

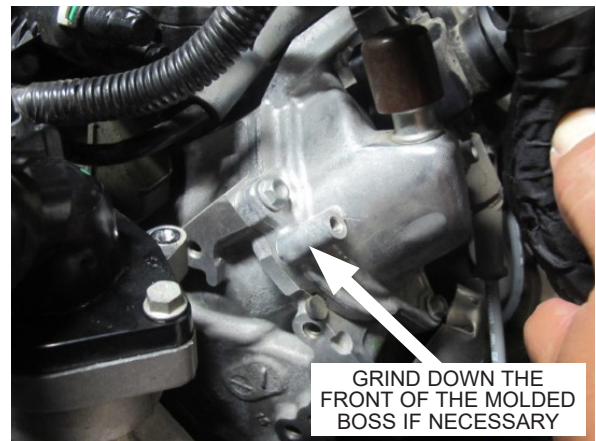


Fig. 4-E: Molded boss

- F. Position the rear mounting plate as shown and loosely secure it to the cylinder head using the machined M10 x 1.5 x 20mm flange head screw.

NOTE: It can be difficult to access the shortened M10 x 1.5 x 20mm flange head screw once the rear mounting plate is in position. If you position your hands as shown in Fig. 3-f, you should be able to use the tips of your fingers to push the machined screw forward and turn it clockwise. If aligned correctly with the threaded hole, the screw should thread into position.

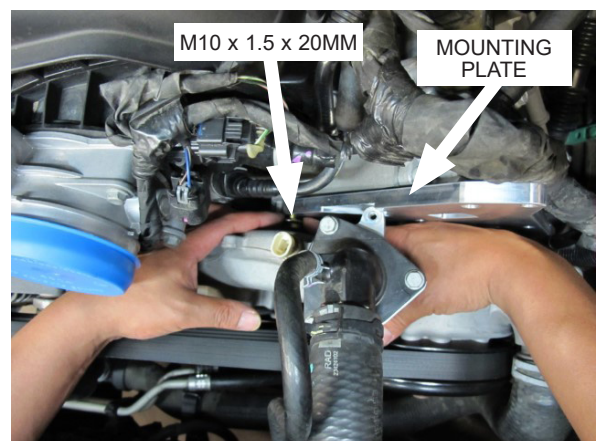


Fig. 4-F: Install rear mounting plate flange bolt

4. SUPERCHARGER MOUNTING BRACKET INSTALLATION

- G. With the rear mounting plate in position, locate the following hardware and loosely install it as shown. Use a 13mm socket for the M8 screws and a 17mm socket for the M10 screws.

- a) Two M8 x 1.25 x 30mm & M8 washers
- b) Two M10 x 1.5 x 30mm & M10 washers

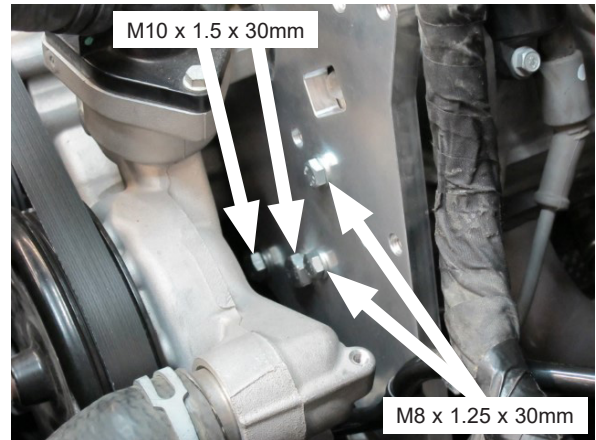


Fig. 4-G: Install rear mounting plate hardware

- H. Due to the limited space between the rear mounting plate and the water pump, you'll need to use a "crows foot" with a torque wrench to torque four of the five screws in this step. Use a 13mm crows foot for the M8 screws and a 17mm crows foot for the M10 screws. You will not be able to torque the M10 x 1.5 x 20mm flange head screw from step B due to limited space. With everything in position, torque the screws to the following:

- a) M8 x 1.25 x 30mm : 16 lb-ft \pm 2 lb-ft
- b) M10 x 1.5 x 30mm : 25 lb-ft \pm 2 lb-ft

NOTE: Since you won't be able to torque the M10 x 1.5 x 20mm flange head screw, tighten it using a 15mm wrench.

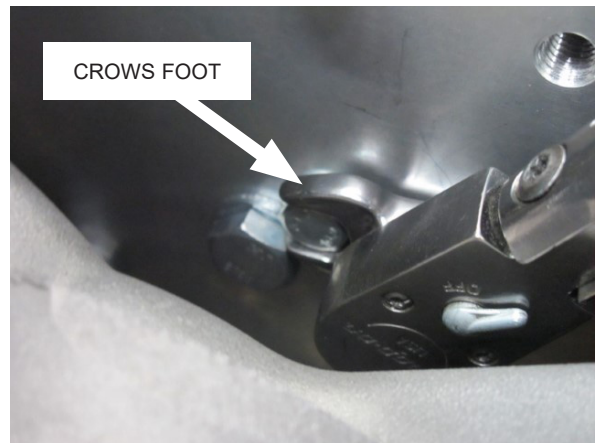


Fig. 4-H: Tighten mounting rear mounting plate hardware

- I. Begin reassembling the rest of the supercharger mounting bracket. During reassembly, be sure to route the wiring harness between the spacers as shown.

NOTE: Use the supercharger mounting bracket assembly diagram located in Appendix A for reference during reassembly.

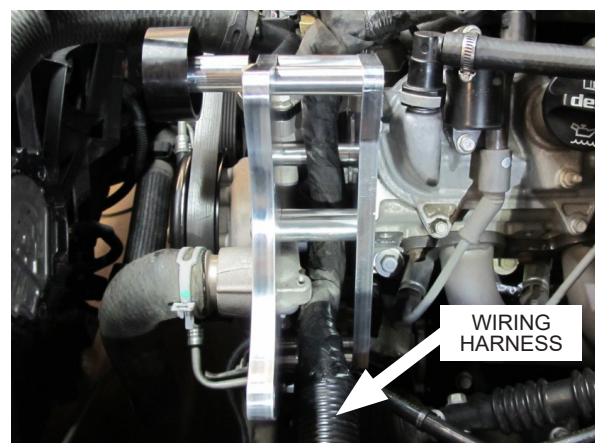


Fig. 4-I: Install front mounting plate & hardware

4. SUPERCHARGER MOUNTING BRACKET INSTALLATION

J. For this step, use a 17mm socket for the M10 screws and a 19mm socket for the 1/2" screws. With all spacers and screws in position, proceed to torque the remaining screws to the following:

- a) 1/2"-13 x 5.50" : 35 lb-ft \pm 2 lb-ft
- b) 1/2"-13 x 3.00" : 35 lb-ft \pm 2 lb-ft
- c) M10 x 1.5 X 80mm : 25 lb-ft \pm 2 lb-ft

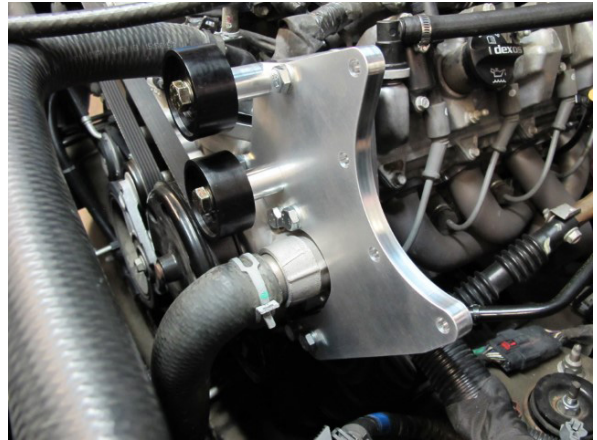


Fig. 4-J: Torque all mounting bracket screws

K. Locate the provided harness connector relocation bracket. Prior to installing the supercharger, you'll need to relocate the harness connector on the side of the fuse box to the area in front of the fuse box. Remove this connector from its original mount and route it under the fuse box harness as shown. In front of the fuse box, you'll notice that there are two screws securing the secondary battery tray. Using a 10mm socket, remove those two screws and place the relocation bracket in the same position, then secure it using the same screws.

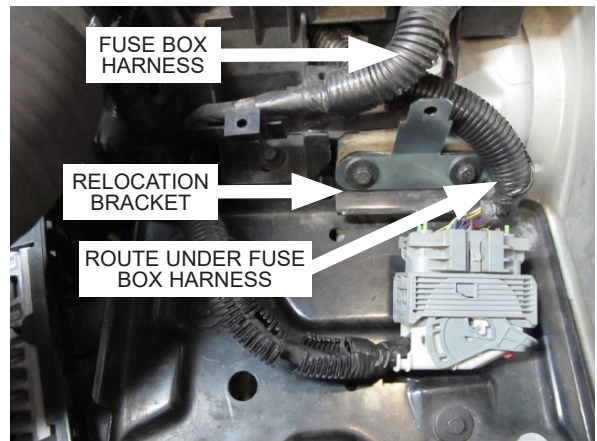


Fig. 4-K: Harness connector relocation bracket

L. Now that the harness connector relocation bracket is installed, install the harness onto the relocation bracket using the same mounting point on the connector. Press the connector down onto the bracket tab until you hear it click into position.



Fig. 4-L: Secure harness connector to relocation bracket

5. SUPERCHARGER INSTALLATION

- A. Turn the supercharger upside down to access the oil drain plug. Using a 9/16" wrench, remove the oil drain plug and install the oil drain line.

NOTE: Take care not to spill any of the prefilled supercharger oil.

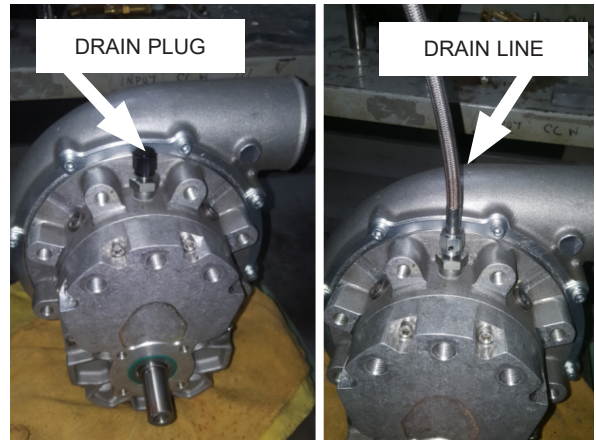


Fig.5-A: Install oil drain line

- B. Turn the supercharger right side up. Using a 3/16" hex key, remove the flat shipping plug and replace it with the provided vent plug. Take care not to spill any of the prefilled supercharger oil. Do not overtighten the vent plug.

NOTE: Failure to replace the flat shipping plug with the provided vent plug can result in damage to the supercharger.

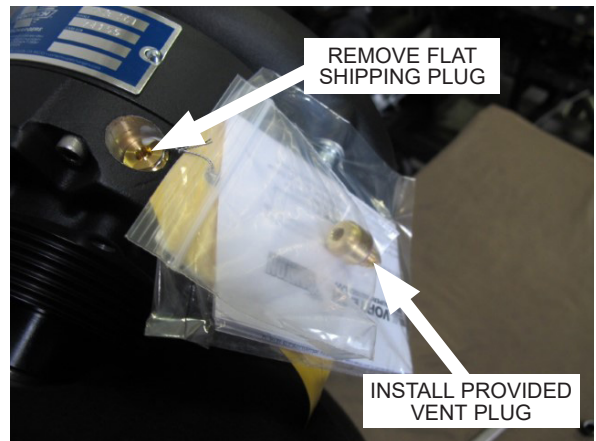


Fig. 5-B: Remove shipping plug and install vent plug

- C. Locate the straight 2.75" ID silicone sleeve and install it to the supercharger outlet as shown. Install a #48 hose clamp as shown and secure it using a 5/16" nut driver or a flathead screwdriver.



Fig. 5-C: Install straight 2.75" ID silicone sleeve

5. SUPERCHARGER INSTALLATION

- D. Install the supercharger to the mounting bracket assembly, routing the drain line towards the driver's side wheel well. This line will be secured in a later step. Secure the supercharger using four 3/8" washers and four 3/8"-16 x 1.25" hex head screws. Using a 9/16" socket and torque wrench, torque the screws to the following 22 lb-ft \pm 2 lb-ft.

NOTE: When installing the supercharger, make sure that the engine harness rests between the front mounting plate and the supercharger.



Fig. 5-D: Install supercharger

- E. Locate the provided belt. Use the belt routing diagram as a reference, install the provided 6-rib serpentine belt using a 1/2" drive ratchet or breaker bar to loosen the tensioner. The use of a leverage bar may help in this step.

NOTE: Refer to the belt routing diagram located in Appendix F.



Fig. 5-E: Install 6-rib serpentine belt

- F. **Installation Tip:** If you follow the engine harness down towards the lower driver side of the engine, you'll notice that it runs near the vacuum pump pulley. In some cases, part of the engine harness gets too close to the vacuum pump pulley. If this is the case, use zip ties to secure it away from the pulley. This keeps the harness from potentially becoming damaged.

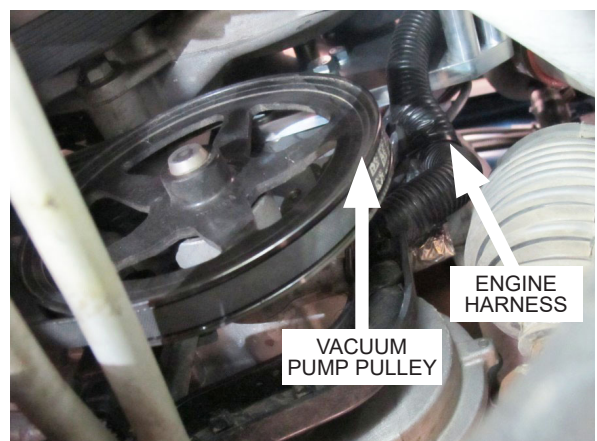


Fig. 5-F: Secure engine harness away from vacuum pump pulley

6. AIR-TO-WATER COOLER MOUNTING

- A. **2016-2018 Model-Year Silverado**
Only: Located on the back side of the front bumper is a bumper support brace. Using a panel removal tool, detach the fog light harness from the bumper support brace and push it aside. Next, use a 7mm socket to remove the two lower screws. Lastly, use a 13mm socket to remove the three larger screws. Set the screws and bumper support bracket aside as they will not be reused.

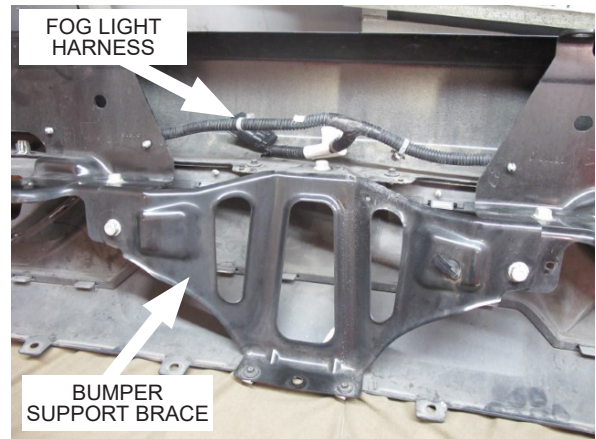


Fig. 6-A: Remove bumper support brace

- B. **2016-2018 Model-Year Silverado**
Only: To provide enough space for the air-to-water cooler, the mounts for the previously removed bumper support brace will need to be modified. Measure 1.50" from the inside edge and draw a vertical line. Next draw two horizontal lines as shown and connect them to the vertical line. This will be the section that will be removed. See next step for "after" images.

NOTE: Driver side shown. Repeat on passenger side.

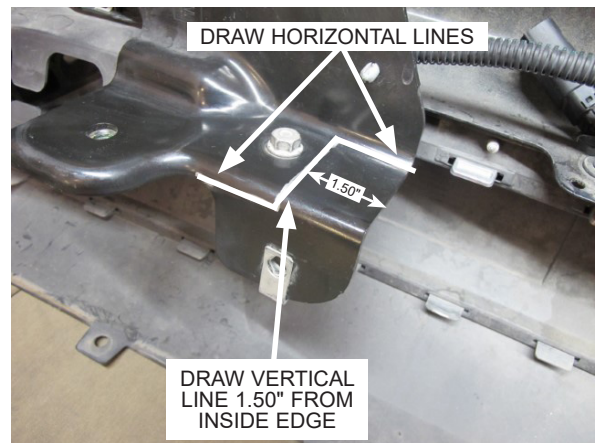


Fig. 6-B: Draw modification lines (before modification)

- C. **2016-2018 Model-Year Silverado**
Only: Using an appropriate cutting tool, remove the previously marked section of the bumper support brace mount. Be sure to wear proper protective equipment when cutting. Coat the exposed metal with protective paint to protect from corrosion.

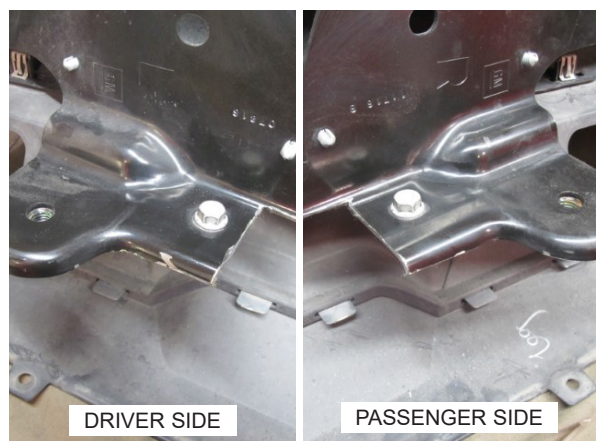


Fig. 6-C: Modify bumper support brace mounts (after modification)

6. AIR-TO-WATER COOLER MOUNTING

- D. **2014-2015 Model-Year Silverado, All Model-Year Sierra:** Located behind the center of the front bumper are two bumper mounting points. These will be the mounting points for the air-to-water cooler. Using an 18mm socket, remove the two large screws if they have not been removed already.

2016-2018 Model-Year Silverado Only: Proceed to reinstall the bumper but leave the two center screws out for the time being. The air-to-water cooler will be installed to the center of the bumper in a later step.

NOTE: Passenger side shown. Repeat on driver's side.

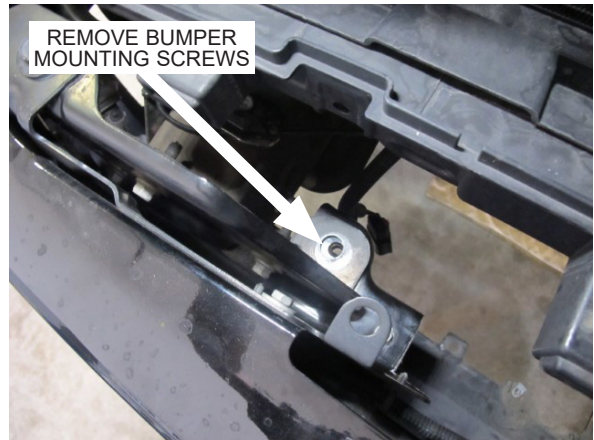


Fig. 6-D: Remove two center bumper mount hardware

Use thread sealant on both 1/2" NPT fittings.



- E. Orient the air-to-water cooler so the bleed ports are on top as shown. Locate two 1/2" NPT x 3/4" x 90° fittings and install them to the air-to-water cooler. The lower fitting should be parallel with the ground as shown. The upper fitting should be angled down and pointed towards the upper threaded mounting hole. Use the dashed line in Fig. 5-e as reference to align the upper fitting. Use a 7/8" wrench to tighten the fittings.

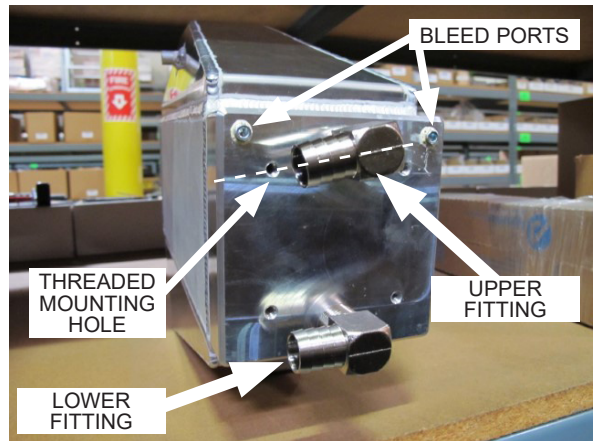


Fig. 6-E: Install air-to-water cooler fittings

Use blue threadlocker on all screws in this step.



- F. Locate the driver side air-to-water cooler mounting bracket. Install it as shown and secure using two 1/4"-20 x .50" hex head screws and two 1/4" washers. Use a 7/16" socket to secure the screws.

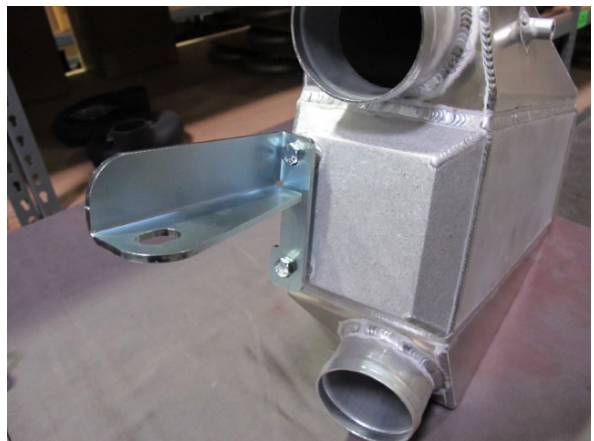


Fig. 6-F: Install driver side air-to-water cooler mounting bracket

6. AIR-TO-WATER COOLER MOUNTING



Use blue threadlocker on all screws in this step.

- G. Locate the passenger side air-to-water cooler mounting bracket. Install it as shown and secure using two 1/4"-20 x .50" hex head screws and two 1/4" washers. Use a 7/16" socket to secure the screws.



Fig. 6-G: Install driver side air-to-water cooler mounting bracket

- H. Lower the air-to-water cooler in position behind the center of the bumper as shown, making sure to align the holes on the mounting brackets to the holes on the bumper. Loosely reinstall the two large screws, securing air-to-water cooler to the bumper. Shift the cooler assembly as far to the passenger side as the slots allow, then using an 18mm socket, torque the screws to 43 lb-ft \pm 2 lb-ft.

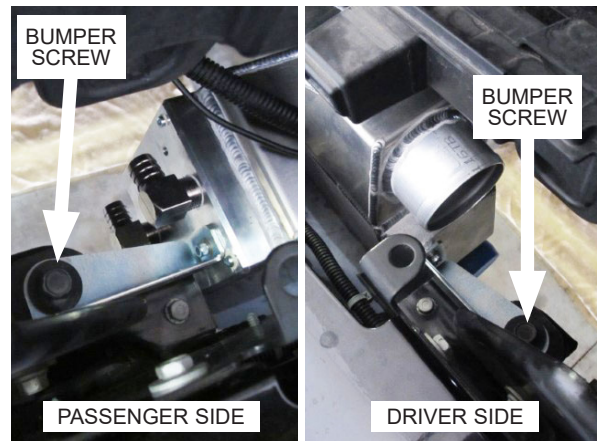


Fig. 6-H: Install air-to-water cooler

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7. HEAT EXCHANGER INSTALLATION



Use blue threadlocker on all screws in this section.

NOTE: Refer to Appendix C3 for bracket orientation.

- A. Locate the provided heat exchanger brackets and install them onto the heat exchanger using four 1/4"-20 x .50" socket head screws and 1/4" washers. Orient them as shown.

NOTE: We suggest leaving the protective cover on the heat exchanger during installation.

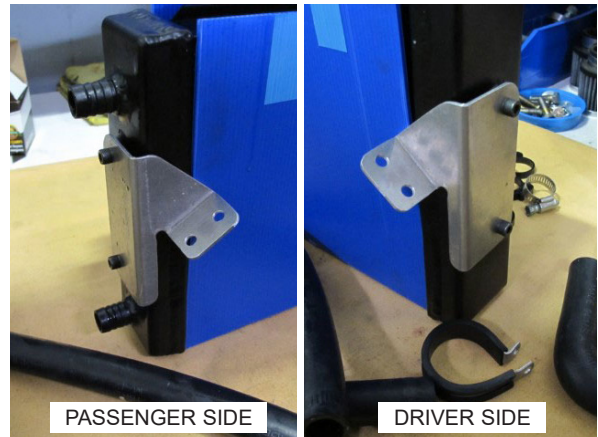


Fig. 7-A: Install heat exchanger brackets as shown

- B. Using a 13mm socket or wrench, remove the two upper radiator support screws (one on each side of the radiator.) This allows the radiator assembly to tilt back, allowing more space for the heat exchanger during installation.

NOTE: Passenger side shown. Repeat on driver's side.

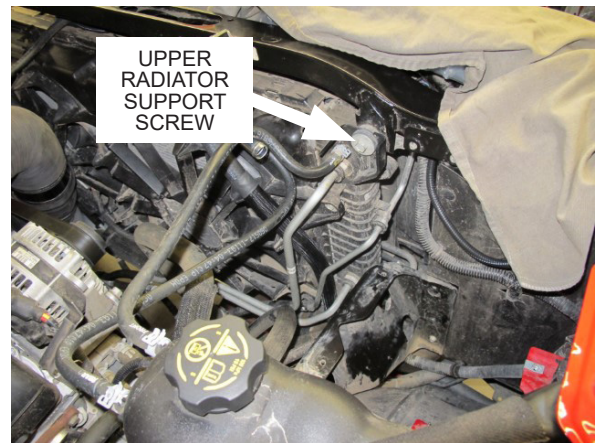


Fig. 7-B: Remove upper radiator support screws

- C. The heat exchanger mounts behind the braces just in front of the radiator. In order to mount the heat exchanger to the braces, four holes will need to be drilled. Temporarily slide the heat exchanger (with brackets installed) behind the braces, making sure that the brackets are pressed up against the braces as shown and the cooler is centered and level. Make sure that the ports on the heat exchanger are mounted on the passenger side of the vehicle.

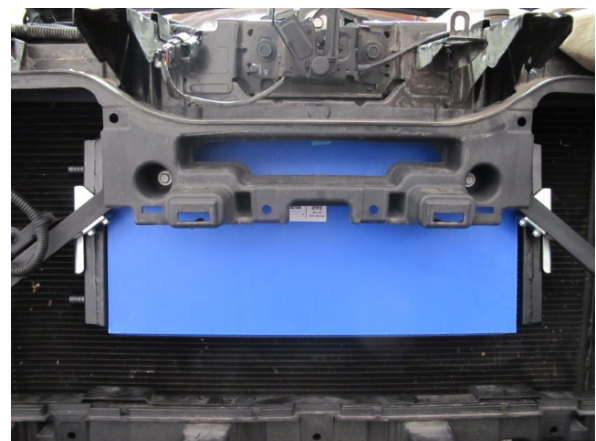


Fig. 7-C: Temporarily place heat exchanger up against both braces as shown

7. HEAT EXCHANGER INSTALLATION

- D. Have a helper hold the heat exchanger in position. Using the brackets as a template, mark the holes to be drilled. Once you have marked your holes, temporarily remove the heat exchanger. Use a center punch to dent the centers of the marks.

NOTE: Passenger side shown. Repeat on driver's side.



Fig. 7-D: Make your drill marks

- E. Using a drill motor and a sharp 1/8" drill bit, drill through the first wall of the brace. You DO NOT need to drill through to the other side. Repeat this process for the three other center punched dents. We suggest drilling a small pilot hole into the center punched dents with a smaller drill bit before using the 1/8" drill bit.

NOTE: Passenger side shown. Repeat on driver's side.



Fig. 7-E: Drill heat exchanger mounting holes

- F. Reinstall the heat exchanger and press the brackets up against the braces. Have a helper hold the heat exchanger in position. Line up the holes on the braces with the holes on the brackets and use the self-tapping screws to secure the two together. With the heat exchanger installed, proceed to reinstall the previously removed upper radiator support screws.

NOTE: Proceed to remove the protective cover from the heat exchanger.



Fig. 7-F: Install heat exchanger and secure using self-tapping screws

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- A. Drill the indicated ports on the surge tank. Use a center punch to locate the centers of holes. Drill a 3/16" pilot hole. Then drill using an 11/16" drill bit. Deburr the holes and clean plastic chips from inside of the tank.



Fig. 8-A: Drill holes in surge tank



Use blue threadlocker on all screws in this section.

Use thread sealant on both 1/2" NPT fittings.

- B. Locate the surge tank assembly and assemble it in the orientation as shown. Use a 3/16" hex key for the screws.
- a) 1/2" NPT x 3/4" x 90° barbed fitting
 - b) 1/2" NPT x 3/4" x 45° barbed fitting
 - c) Two 1/4"-20 x .50" socket head screws
 - d) Two 1/4" washers
 - e) Surge tank bracket
 - f) Surge tank cap



Fig. 8-B: Install surge tank components as shown

- C. Drill the indicated port on the coolant reservoir. Use a center punch to locate the center of the hole. Drill a 3/16" pilot hole. Then drill using an 11/16" drill bit. Deburr the hole and clean plastic chips from inside of the reservoir.



Fig. 8-C: Drill hole in reservoir

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION



Use blue threadlocker on all screws in this section.

Use thread sealant on both 1/2" NPT fittings.

- D. Locate the following components and assemble them as shown. Use a 3/16" hex key for the screws.

- a) 1/2" NPT x 3/4" x straight barbed fitting
- b) 1/2" NPT x 3/4" x 90° barbed fitting
- c) Two 1/4"-20 x .50" socket head screws
- d) Two 1/4" washers
- e) Coolant reservoir (triangle shape)
- f) Coolant reservoir bracket

- E. Locate the previously removed airbox tray. The hole on the bottom-left side will need to be slotted to allow for proper fitment with the provided triangle shaped coolant reservoir.

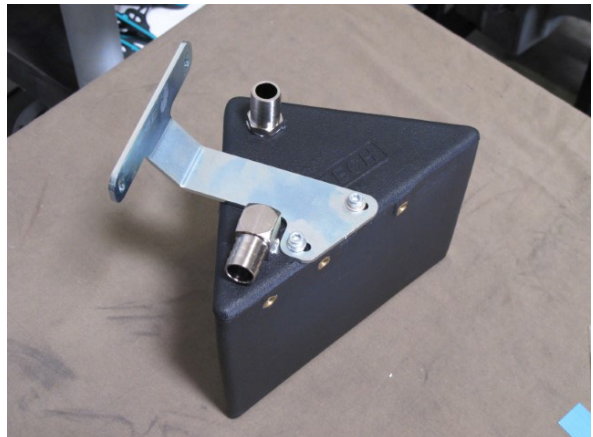


Fig. 8-D: Install reservoir components as shown



Fig. 8-E: Airbox tray

- F. Measuring from the left edge of the existing hole, make a mark 3/4" of an inch to the right.



Fig. 8-F: Mark drill location

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- G. Using a 1/4" drill bit, drill through the mark. Using an appropriate grinding tool, remove the material between both holes and create a slot as shown.

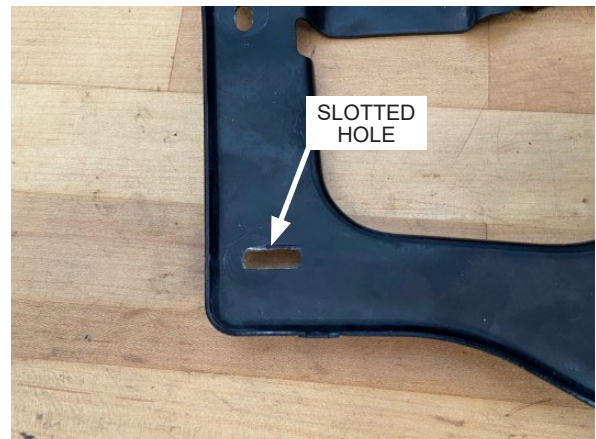


Fig. 8-G: Drill and slot the hole

- H. The upper hole on the passenger side airbox tray mount will need to be slotted. Using an appropriate grinding tool, start slotting the hole towards the outside of the vehicle.

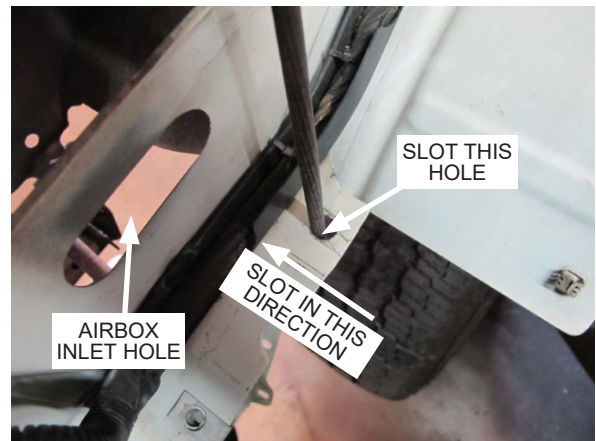


Fig. 8-H: Slot the upper airbox tray mount hole as shown

- I. **2014-2015 Model-Year Sierra Only:** Behind the right corner of the front bumper, you'll notice a plastic panel. To make space for the electric water pump, this panel will need to be trimmed down.

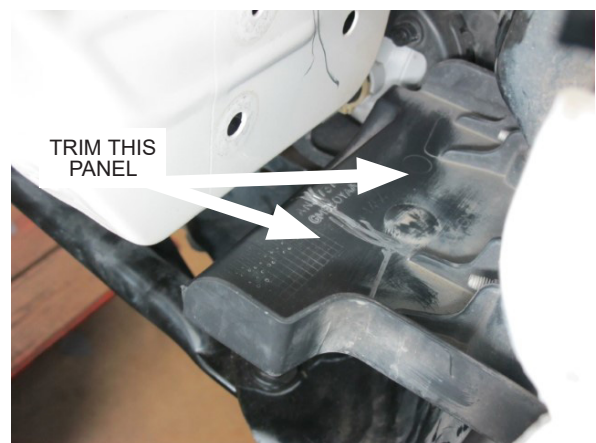


Fig. 8-I: Plastic panel (before trimming)

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- J. **2014-2015 Model-Year Sierra Only:** Using an appropriate cutting or grinding tool, remove as much of the plastic panel as you can.

NOTE: Take care not to damage the fog light housing and harness when trimming.

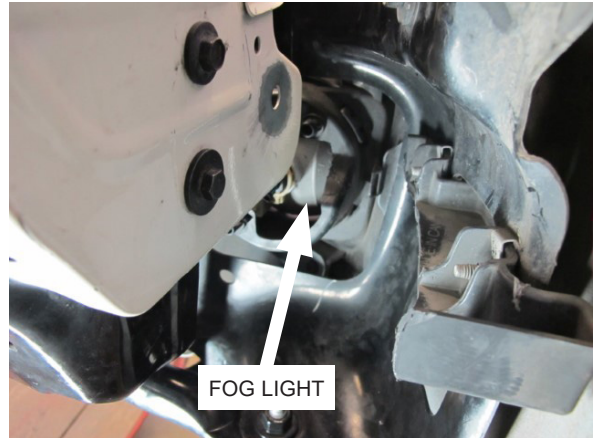


Fig. 8-J: Plastic panel (after trimming)

- K. Using a 10mm socket, remove two of the three screws securing the airbox tray to the front core support. Keep the screws nearby as they will be used to secure the coolant reservoir bracket.

NOTE: Make note of the screw locations and be sure they are reinstalled into their original location.

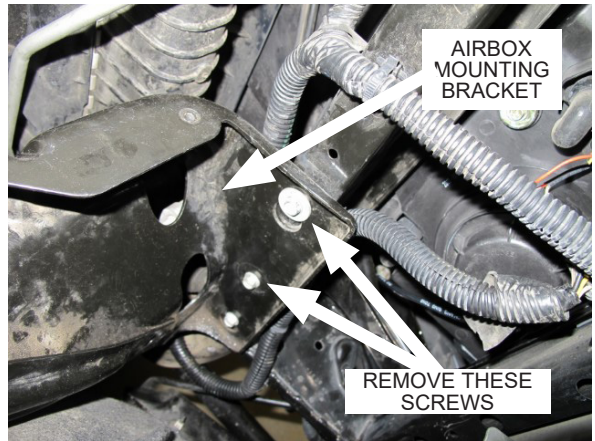


Fig. 8-K: Remove two screws

- L. Lower the coolant reservoir assembly into the vehicle as shown. Using a 7/16" socket, secure the top of the coolant reservoir using one 1/4"-20 x 1.00" hex head screw, one large 1/4" washer and the 3/8" spacer. Next, using a 10mm socket, loosely secure the screws previously removed in step C, but make sure to sandwich the coolant reservoir bracket between the screws and the front core support. At this time, use a 3/16" hex key to secure the two 1/4"-20 x .50 socket head screws securing the coolant reservoir bracket to the coolant reservoir.

NOTE: The screw securing the top of the coolant reservoir is only being temporarily installed. It will be used again later in this manual to secure the airbox tray.

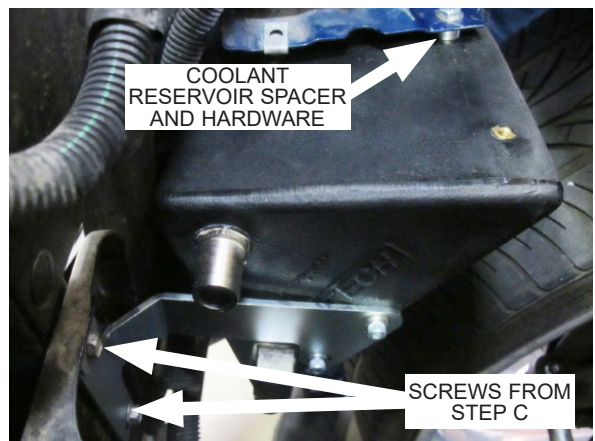


Fig. 8-L: Install coolant reservoir

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- M. To properly route the coolant hoses, you'll need to mount the surge tank assembly. The passenger side air inlet bracket shares the same mounting location, so it'll be installed now as well. To start, locate one 3/8"-16 x 1.00" socket head screw, one 3/8"-16" nylock flange head nut and one 3/8" washer. Insert the screw with washer through the upper radiator support and through the hole location as shown. Place the passenger side air inlet bracket onto the screw, followed by the surge tank bracket. Once in position, use a 5/16" hex key and 9/16" wrench to loosely secure both brackets to the screw using the 3/8"-16 nylock flange head nut.

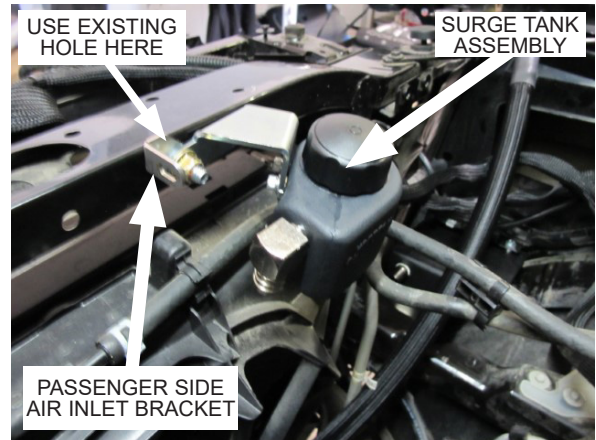


Fig. 8-M: Loosely install surge tank and passenger side air inlet bracket

- N. The electric water pump wiring harness needs to be installed. Remove the fuse box cover. With a 5/8" drill bit, drill through the fuse box cover as shown. Pass the fuse tap side of the harness through the hole, then secure the rubber grommet to the fuse box cover.

NOTE: See Appendix E for hole location dimensions.



Fig. 8-N: Drill hole in fuse box cover

- O. On the underside of the fuse box cover is a fuse diagram. Using a fuse removal tool or needle nose pliers, locate and remove fuse #39. Replace it with the tapped fuse on the electric water pump harness as shown. Reinstall the fuse box cover.

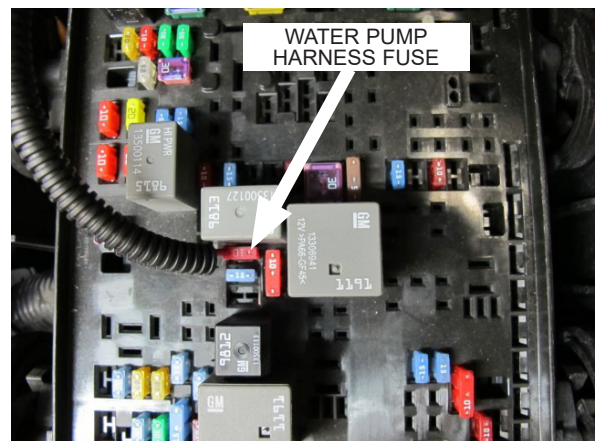


Fig. 8-O: Remove fuse #39 and replace with water pump harness fuse

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- P. Route the electric water pump harness along the firewall and down towards the passenger side headlight as shown, making sure to keep it away from sharp edges and moving objects. It will be connected to the electric water pump in the next step.

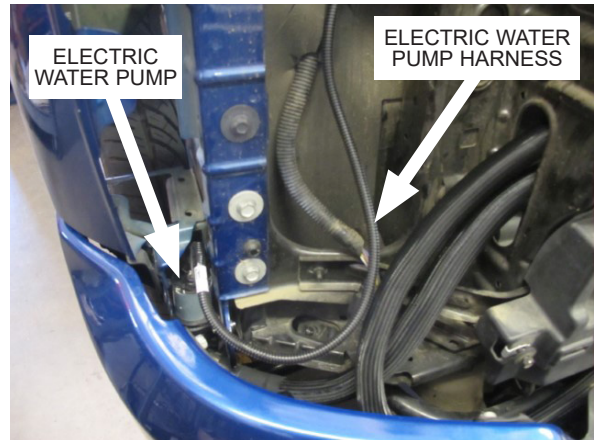


Fig. 8-P: Route electric water pump harness

- Q. There is an existing hole near the passenger side headlight that will be used to mount the electric water pump. Using one adel clamp, one 1/4"-20 x .50" socket head screw, one 1/4"-20 nylock nut, and two 1/4" washers, mount the electric water pump so the pump outlet is positioned as shown, making sure to place the ring terminal from the electric water pump harness between the adel clamp and body of the vehicle. Once in position, secure using a 3/16" hex key and 7/16" wrench. Proceed to connect the electric water pump harness to the electric water pump.

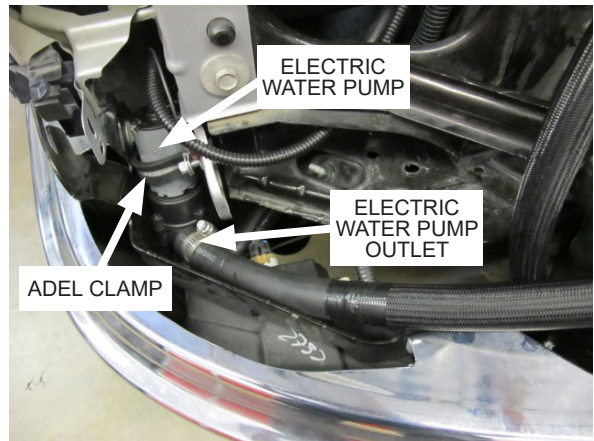


Fig. 8-Q: Install water pump and water pump harness ground wire

NOTE: Scraping off a bit of paint from the section where the ring terminal will be mounted will ensure a proper ground for the electric water pump.

- R. Five hose assemblies will need to be prepared before installation to the air to water cooling system. See the image and description below for a preview of the finished hose assemblies.

HOSE 1	30" HOSE	35" SLEEVE
HOSE 2	48" HOSE	70" SLEEVE
HOSE 3	48" HOSE	70" SLEEVE
HOSE 4	4" HOSE ADDED TO 90 DEGREE HOSE	20" SLEEVE
HOSE 5	TWO PRE-SHAPED HOSES	ADDED TOGETHER
		(NO SLEEVE)



Fig. 8-R: Hose assembly overview

NOTE: See Appendixes C1-C3 for specifications.

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

S. Cut the following provided material to the specified quantities and lengths:

- 3/4" heater hose
 - QTY 1 4"
 - QTY 1 30"
 - QTY 2 48" ea.
- 3/4" flex braided sleeve
 - QTY 1 20"
 - QTY 1 35"
 - QTY 2 70" ea.
- 1-1/2" heat shrink
 - QTY 8 2" ea.
 - QTY 1 4" ea.



Fig. 8-S: Cut material to specifications

T. Assemble sleeves centered on hoses 1, 2, 3 and 4 as shown with the ends of the sleeves approximately 4 inches away from the hose ends. Secure the sleeve to the hoses with a piece of heat shrink and a heat gun.

NOTE: Use caution not to melt the sleeve when applying heat to the heat shrink.

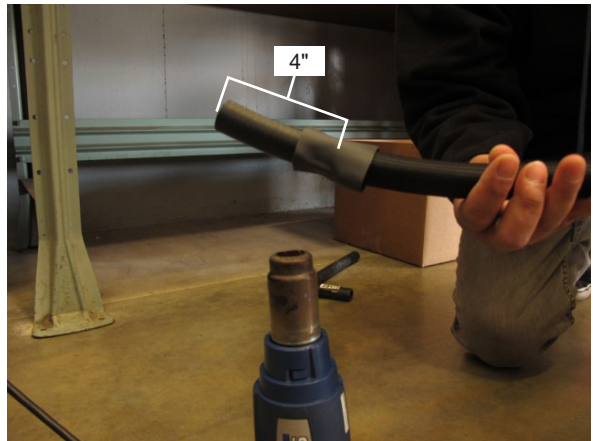


Fig. 8-T: Assemble sleeve onto hoses

U. For hose #2, add a short 90-degree elbow to the end as shown with a 3/4" barbed brass union and 2 stepless clamps. Assemble in the orientation as shown. Once in position crimp the stepless clamps using ear clamp pliers.



Fig. 8-U: Assemble hose 2

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- V. For hose #4, add a 4" length of hose with a barb union and clamps to the short end of the 90° HOSE 4. Assemble in the orientation as shown. Once in position crimp the stepless clamps using ear clamp pliers.



Fig. 8-V: Assemble hose 4

- W. Apply a 4" length of heat shrink to cover over the clamps and union.



Fig. 8-W: Apply heat shrink to hose 4

- X. For hose #5, combine a short 90-degree elbow and a 150-degree molded hose with a barb union and clamps. Assemble in the orientation as shown. Once in position crimp the stepless clamps using ear clamp pliers. This assembly does not require a sleeve nor heat shrink.

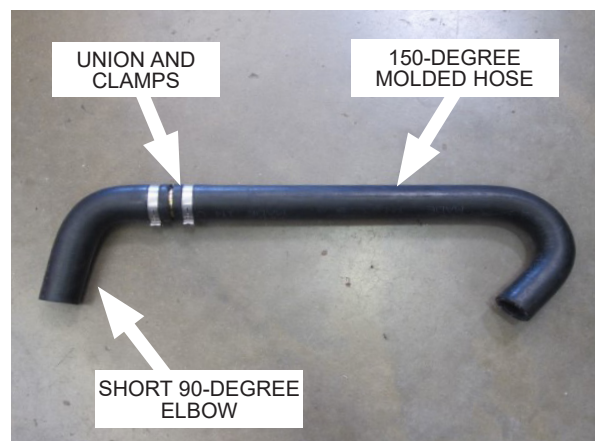


Fig. 8-X: Assemble hose 5

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

NOTE: For the following steps, refer to Appendix C3 for the hose routing diagram and hose identification.

- Y. Install hose #1 through slot on passenger side of the radiator shroud, from the electric water pump outlet (side port) to the heat exchanger inlet (lower port). Secure each end of the hose using #10 hose clamps. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: This hose MUST be installed to the heat exchanger inlet (lower port), otherwise you will not be able to bleed the air-to-water cooling system correctly.

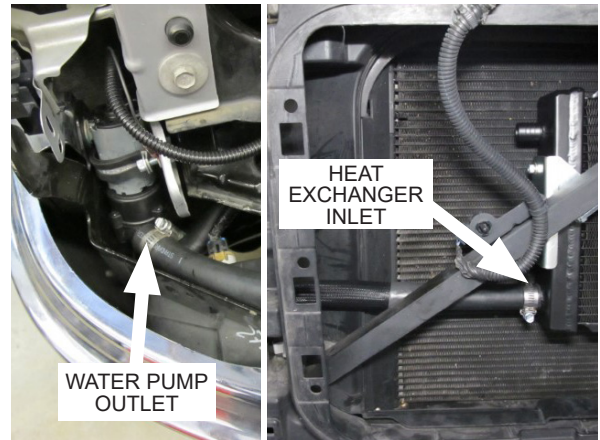


Fig. 8-Y: Route hoses from water pump outlet to heat exchanger inlet

- Z. Install the straight end of hose #2 through the slot on the passenger side of the radiator shroud. Install the hose to the heat exchanger outlet (upper port). Route the hose down to the air-to-water cooler and install the 90° end of the hose to the air-to-water cooler inlet (lower port). Secure each end of the hose using #10 hose clamps. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: This hose MUST be installed to the air-to-water cooler inlet (lower port), otherwise you will not be able to bleed the air-to-water cooling system correctly.

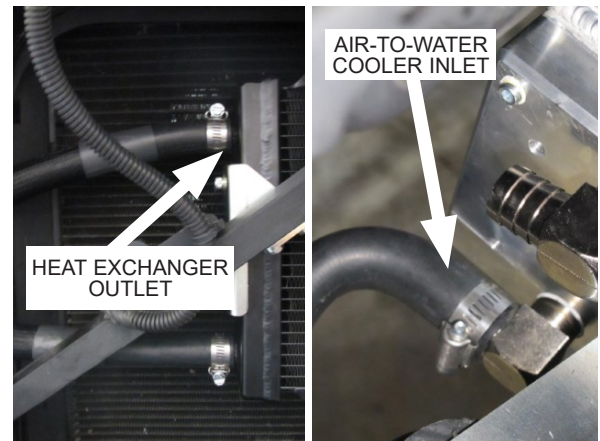


Fig. 8-Z: Heat exchanger outlet to air-to-water cooler inlet

- AA. Install hose #3 to the air-to-water cooler outlet (upper port). Route the other end of the hose under the radiator, into the engine bay and up towards the previously installed surge tank. Secure the hose to the surge tank inlet (upper port). Secure each end of the hose using #10 hose clamps. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: Route the hose along the radiator shroud and up to the surge tank inlet.

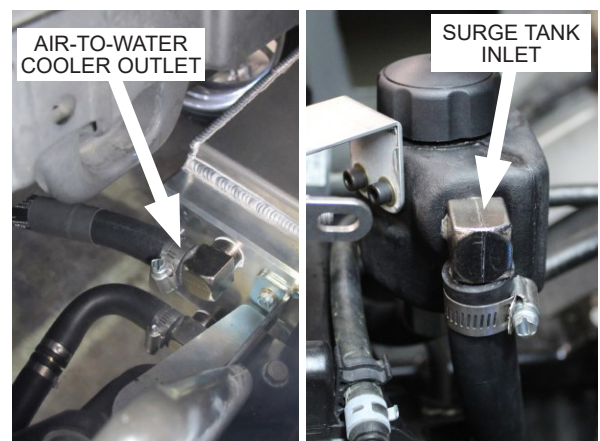


Fig. 8-AA: Air-to-water cooler outlet to surge tank inlet

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

- BB. Install hose #4 from the surge tank outlet (lower port) to the coolant reservoir inlet (upper port). Secure each end of the hose using #10 hose clamps. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: There is an airbox mounting bracket located between the radiator and the coolant reservoir. Route the hose through the hole on the side of the airbox mounting bracket and over to the coolant reservoir inlet.

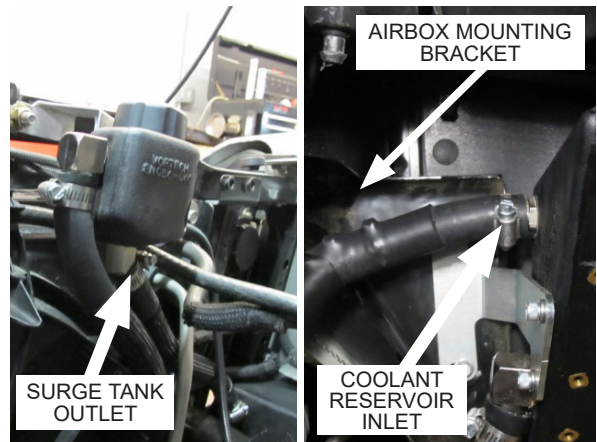


Fig. 8-BB: Surge tank outlet to coolant reservoir inlet

- CC. Install the 90° end of hose #5 to the coolant reservoir outlet (lower port). Install the 105° U-bend end of hose #5 to the electric water pump inlet (lower port). Secure both ends with a #10 hose clamp. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: We suggest preinstalling a #10 hose clamp on the 90° end of hose #5 as it is a tight fit between the coolant reservoir and the 90° outlet fitting.

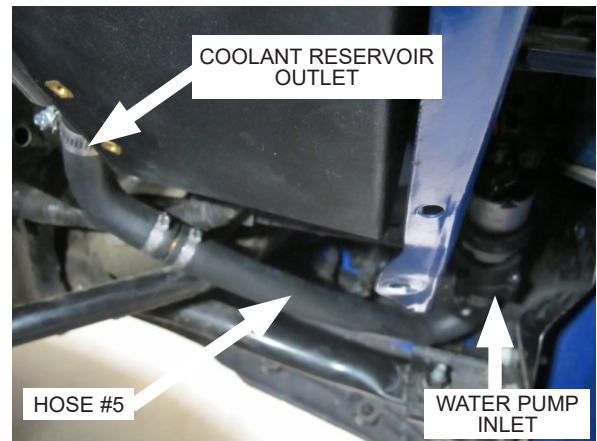


Fig. 8-CC: Coolant reservoir outlet to electric water pump inlet

- DD. Verify that all hose clamps for the air-to-water cooling system are secured, then begin to fill with 50/50 water/coolant mix at the surge tank. Check for leaks and correct if necessary.

NOTE: The air-to-water cooling system should use about 1.5 gallons of coolant.



Fig. 8-DD: Fill coolant at surge tank

8. AIR-TO-WATER COOLING SYSTEM INSTALLATION

EE. **Installation Tip:** There are two bleed ports located on the upper passenger side of the air-to-water cooler. When you begin to bleed the air-to-water cooling system, use a 5/32" hex key to periodically loosen one of these bleed ports to let air out of the system. You do not need to completely remove the bleed port screw. Loosen the screw just enough to let air out of the system. Once you see a constant stream of coolant without any air bubbles, close the bleed port screw. You may have to repeat this process a few times to get all of the air out of the system. Keep this in mind moving forward.

NOTE: You can use either of the two bleed ports to bleed air from the system.

FF. In order to properly bleed the air-to-water cooling system, the electric water pump needs to be turned on. Temporarily reconnect the negative battery cable. Step inside the vehicle, **KEEP YOUR FOOT OFF OF THE BRAKE PEDAL** and turn the key to the **ON** position. **DO NOT START THE ENGINE!** Doing this turns on all vehicle accessories as well as the electric water pump. Let the coolant cycle and continue topping off the coolant as air is bled from the system. You may have to cycle the accessories on and off a few times to get all of the air out of the system. Remember to periodically loosen one of the bleed ports on the air-to-water cooler as you bleed the system.

NOTE: The air-to-water cooling system should use about 1.5 gallons of coolant.

GG. After all the air has been bled from the system, close the surge tank using the provided cap. Step inside the vehicle and turn the key to the **OFF** position. Once complete, disconnect the negative battery cable. Make sure the bleed port on the air-to-water cooler is tightened shut, then proceed to install the surge tank cap.



Fig. 8-EE: Air-to-water cooler bleed ports



Fig. 8-FF: Bleed air-to-water cooling system



Fig. 8-GG: Install the surge tank cap

9. DISCHARGE ASSEMBLY INSTALLATION

NOTE: Refer to Appendixes D1 to D3. Do not tighten any hose clamps until instructed to do so. For ease of installation, lubricate the inside of the sleeve ends with a light coat of soapy water.

- A. Locate the factory airbox. Using a T-15 tool, remove the MAF sensor from the air box. Set the air box and original MAF screws aside. They'll be reused in a later step.

NOTE: A MAF sensor block-off plate will be installed in a later step.

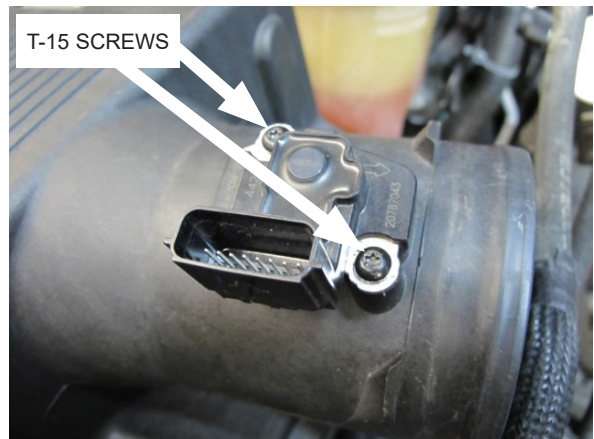


Fig. 9-A: Remove MAF sensor from air box

- B. Locate the provided MAF housing and install the MAF sensor as shown. Using a 3mm hex key, secure the MAF sensor to the housing using the provided M4 x 0.7 x 8mm screws.

NOTE: We suggest using a small amount of blue threadlocker on these screws to keep them from potentially backing out.

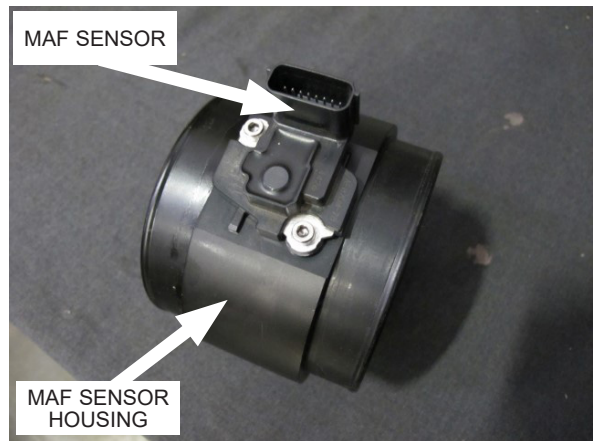


Fig. 9-B: Install MAF sensor to housing

- C. Locate the bump sleeve reducer shown. This sleeve should have an air flow straightener pre-installed inside the sleeve, as well as one hose clamp in the center securing the air flow straightener. Install the previously assembled MAF sensor housing as shown and secure using a #64 hose clamp. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

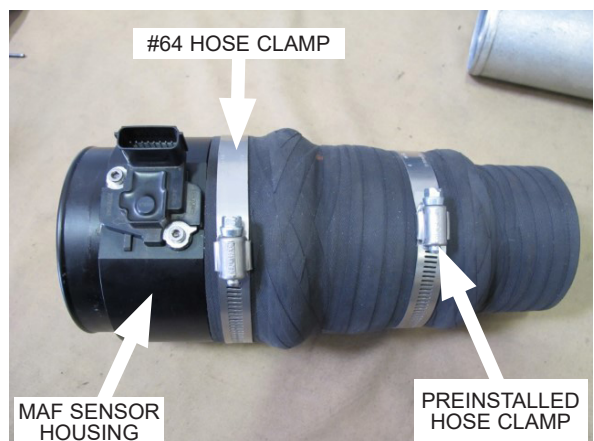


Fig. 9-C: Install MAF sensor housing to silicone sleeve with air flow straightener

9. DISCHARGE ASSEMBLY INSTALLATION

- D. Locate the 3/4" x 90° hose. You'll notice that one end of the hose is shorter than the other. Using a pair of hose cutters, remove 2.75" from the long end of the hose, but keep the cut section as it will be used in the next step.



Fig. 9-D: Cut a 2.75" section of hose

- E. Locate the provided bypass valve. For reference, the "top" of the bypass valve is the end of the valve with the small vacuum nipple. Install the long end of the 3/4" ID x 90° hose from the previous step to the bung on the bottom of the valve and secure with a #16 hose clamp. Next, install the 2.75" length of previously cut hose to the bung on the side of the valve and secure with a #16 hose clamp. Lastly, slide a #16 hose clamp on each length of hose, but leave them loose at this time. They will be secured once the bypass valve assembly is installed to discharge tube A and the air inlet.



Fig. 9-E: Bypass valve assembly

- F. Locate the provided 3.00" x 90° silicone sleeve and loosely install it to the upper port of the charge air cooler. Slide two #52 hose clamps over the sleeve but leave them loose at this time.

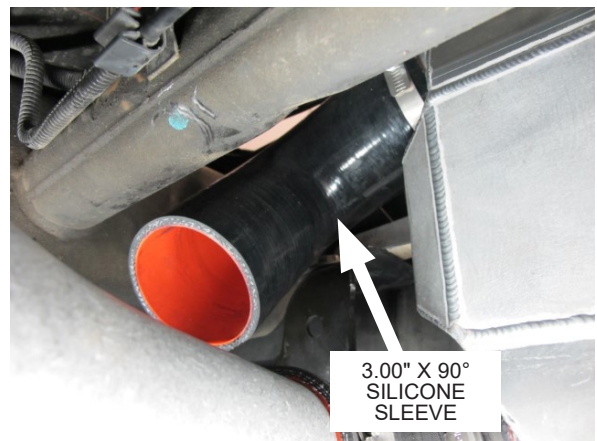


Fig. 9-F: Install sleeve onto cooler

9. DISCHARGE ASSEMBLY INSTALLATION

- G. Loosely install discharge tube B to the 3.00" 90° silicone sleeve on top of the charge air cooler. Leave the hose clamps loose at this time.

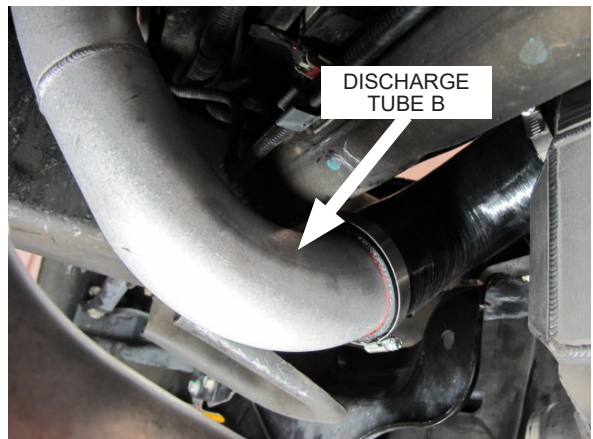


Fig. 9-G: Install discharge tube B to silicone sleeve

- H. Route the other end of discharge tube B up towards the engine compartment as shown, making sure that it is placed between the coolant hose and the fan shroud.

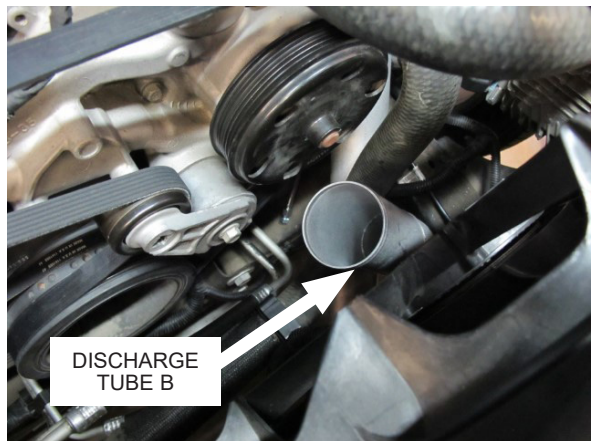


Fig. 9-H: Route discharge tube B into engine compartment

- I. Install the MAF sensor housing and sleeve to discharge tube B as shown and secure using a #48 hose clamp. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamp.

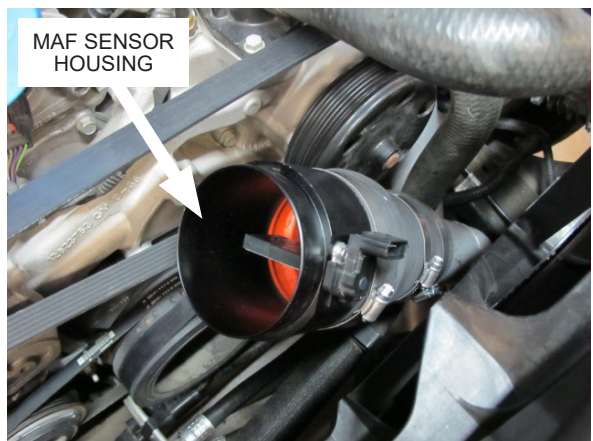


Fig. 9-I: Install MAF sensor housing and sleeve to discharge tube B

9. DISCHARGE ASSEMBLY INSTALLATION

- J. Locate the large 4.00" to 3.50" x 105° silicone reducer sleeve. Install the 4.00" end of the sleeve onto the MAF sensor housing and the 3.50" end of the sleeve onto the throttle body. Use a #56 hose clamp on the throttle body and #64 hose clamp on the sensor housing to secure both ends of the sleeve. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

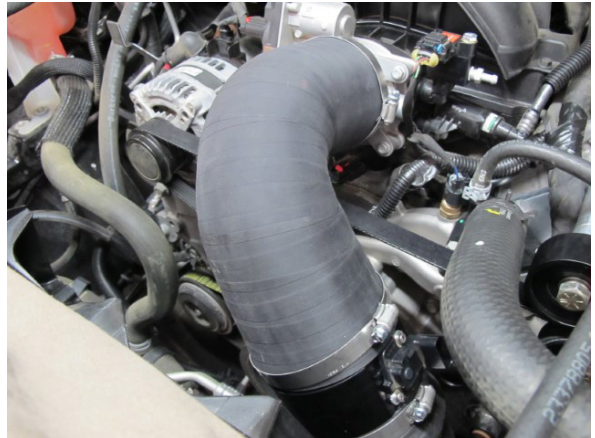


Fig. 9-J: Install 4.00" to 3.50" x 105° sleeve to MAF sensor housing and throttle body

- K. Locate discharge tube A. The end of the tube with the welded bung will be installed onto the sleeve already installed on the supercharger. Install from bottom of vehicle.



Fig. 9-K: Discharge tube A

- L. Before installing discharge tube A, place another #48 hose clamp into position. Route the end of the tube with the welded bung up towards the supercharger and slide it into the silicone sleeve as shown but leave the hose clamp loose at this time.

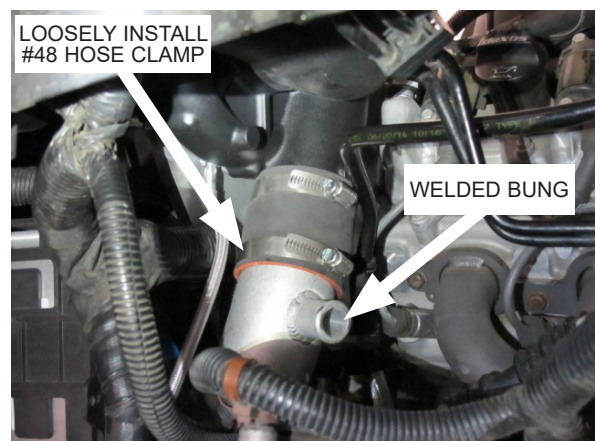


Fig. 9-L: Insert discharge tube A into silicone sleeve on the supercharger

9. DISCHARGE ASSEMBLY INSTALLATION

- M. Loosely install the 2.75" x 90° silicone sleeve to the lower end tank on the charge air cooler. Slide two #48 hose clamps over the sleeve. Proceed to insert discharge tube A into the silicone sleeve but leave the hose clamps loose at this time.

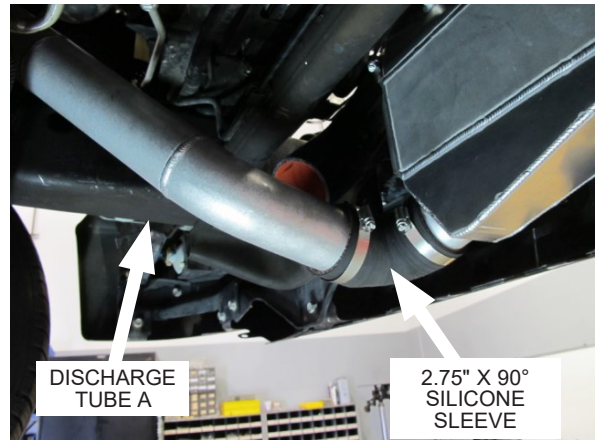


Fig. 9-M: Insert discharge tube A into 2.75" x 90° silicone sleeve on charge air cooler

- N. Install the bypass valve assembly to discharge tube A by first installing the long hose with the 90° to the welded bung on discharge tube A. Leave the #16 hose clamp loose at this time. It will be tightened after the air inlet tube is installed later in the manual.

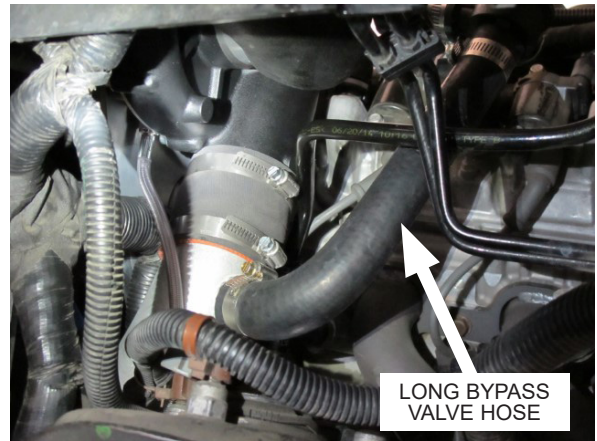


Fig. 9-N: Install bypass valve assembly to discharge tube A

- O. The opposite end of the bypass valve will be installed to the air inlet tube in a later step. For now, leave the #16 hose clamp loose installed. It will be tightened after the air inlet tube is installed later in the manual.

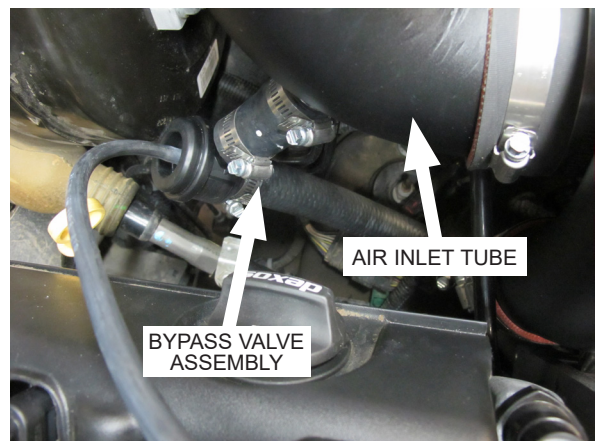


Fig. 9-O: Loosely install two #16 hose clamps

9. DISCHARGE ASSEMBLY INSTALLATION

- P. With all of the discharge tubes and silicone sleeves in position, proceed to tighten all of the hose clamps associated with the discharge tube assembly. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

NOTE: Leave the #16 hose clamps for the bypass valve assembly loose at this time. They will be tightened after the air inlet tube is installed later in the manual.

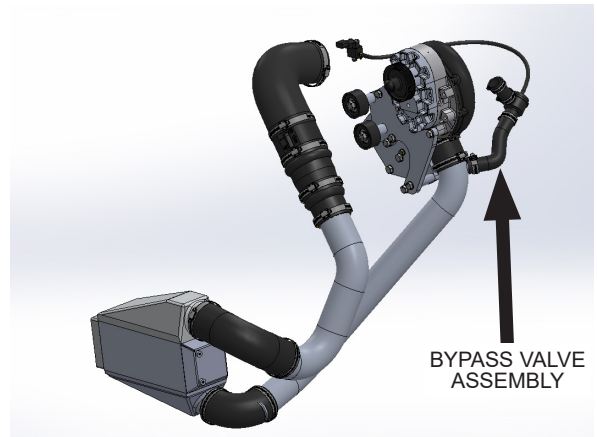


Fig. 9-P: Secure all discharge tube assembly hose clamps

- Q. Since the MAF sensor was relocated, you'll need to install the provided MAF sensor extension harness. Connect the harness to the factory MAF sensor connector. Route the harness towards the MAF sensor that is now installed in the MAF sensor housing on discharge tube B. Be sure to keep the harness away from any sharp and/or moving objects. Secure with tie wraps as shown.

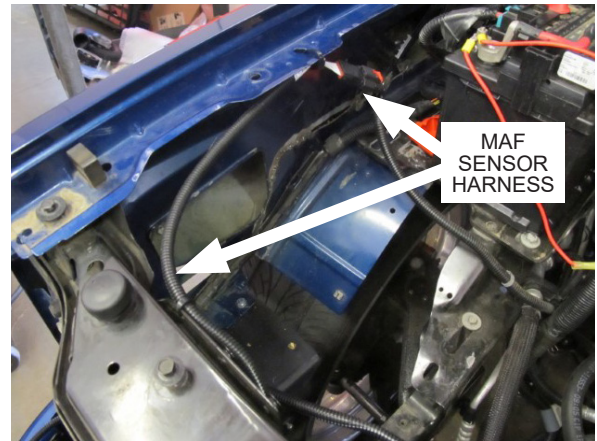


Fig. 9-Q: Route MAF sensor harness

- R. Connect the MAF sensor extension harness to the MAF sensor. Once it's in position, use the provided zip ties to secure the harness away from any sharp and/or moving objects.

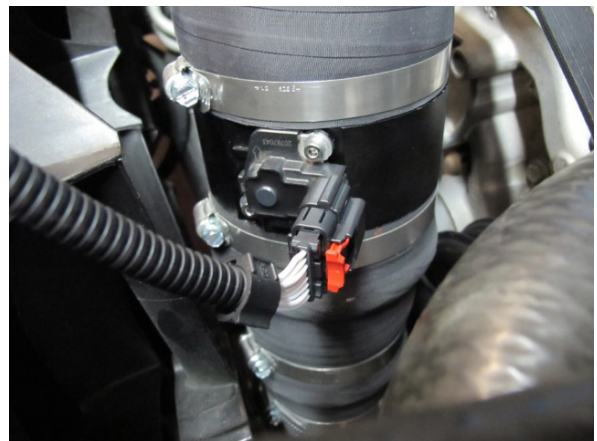


Fig. 9-R: Connect MAF sensor extension to MAF sensor

10. AIR INLET ASSEMBLY INSTALLATION

- A. Using a 7/16 socket, temporarily remove the 1/4"-20 x 1.00" hex head screw that secures the top of the coolant reservoir. Reinstall the airbox tray above the coolant reservoir as shown and secure using the previously removed 1/4"-20 x 1.00" hex head screw. Make sure that the 3/8" spacer remains between the airbox tray and coolant reservoir. Using a 10mm socket, secure the airbox tray with two of the original screws and the provided M6 x 1.0 x 16mm screw.

NOTE: To keep the 3/8" spacer from falling out when you temporarily remove the 1/4"-20 x 1.00" hex head screw, have someone hold the coolant reservoir in position from underneath.

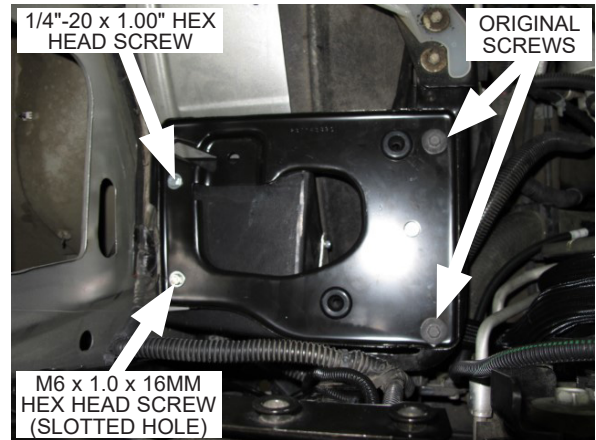


Fig. 10-A: Install airbox tray

- B. Reinstall the air box to its original location, making sure to route the small coolant hoses under the air box as shown.

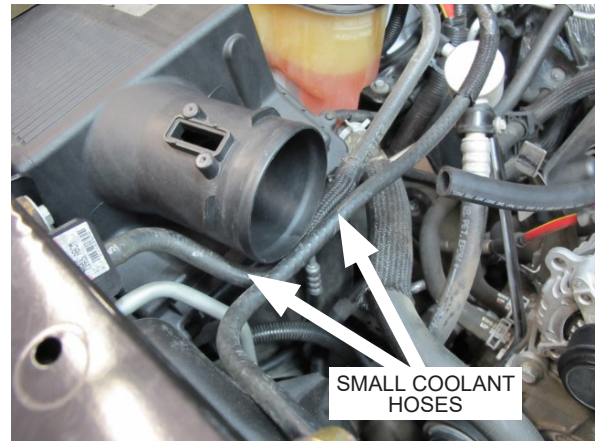


Fig. 10-B: Install factory air box

- C. Locate the driver side air inlet bracket, one 3/8"-16 x 1.00" socket head screw, one 3/8"-16" nylock flange head nut and one 3/8" washer. Insert the screw with washer through the upper radiator support and through the hole location as shown. Place the driver side air inlet bracket onto the screw. Once in position, use a 5/16" hex key and 9/16" wrench to loosely secure the 3/8"-16 nylock flange head nut.

NOTE: For part and hardware identification, refer to the air inlet diagram located in Appendix B.



Fig. 10-C: Install driver side air inlet bracket

10. AIR INLET ASSEMBLY INSTALLATION

- D. Using a small pick, press in on the grey tab on the quick disconnect fittings that are attached to the air inlet. Simultaneously pull on the quick disconnect fitting and detach it from the air inlet. Using a sharp razor blade, carefully cut the factory breather hose lengthwise for about 2". Once the breather hose is cut, proceed to remove the 90° quick disconnect fitting. Do this for both breather hoses.

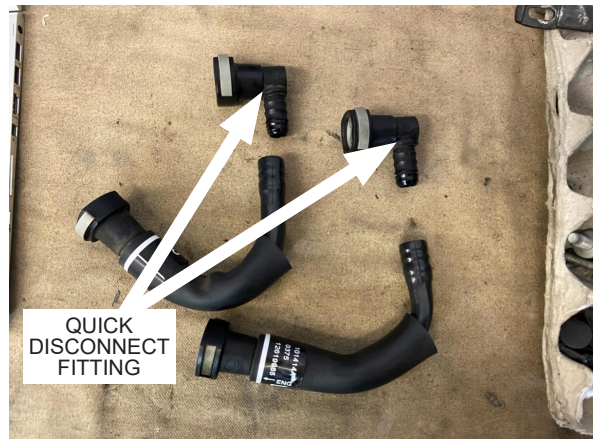


Fig. 10-D: Remove quick disconnect fittings from the breather hoses

- E. Press the barbed ends of the quick disconnect fittings into the preinstalled hoses on the air inlet assembly as shown.

NOTE: Use a heat gun to soften the hose. Using oil on the barbs of the quick disconnect fittings will make it easier to install them into the breather hoses.

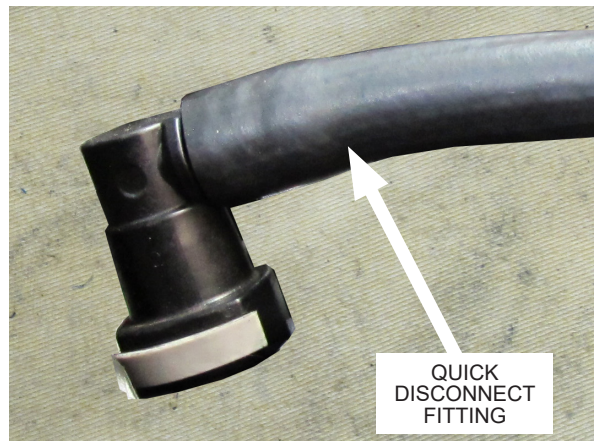


Fig. 10-E: Install quick disconnect fittings

- F. Locate the 3.50" x 90° bump sleeve and two #56 hose clamps. Install the long end of the sleeve to the air inlet as shown. Install the hose clamps as shown but leave them loose at this time.



Fig. 10-F: Install bump sleeve

10. AIR INLET ASSEMBLY INSTALLATION

- G. Locate the 3.50" ID x 2.00" length silicone sleeve and two #56 hose clamps. Install the sleeve to the air box inlet. Secure the sleeve to the air box with one hose clamp, but leave the other hose clamp loose. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

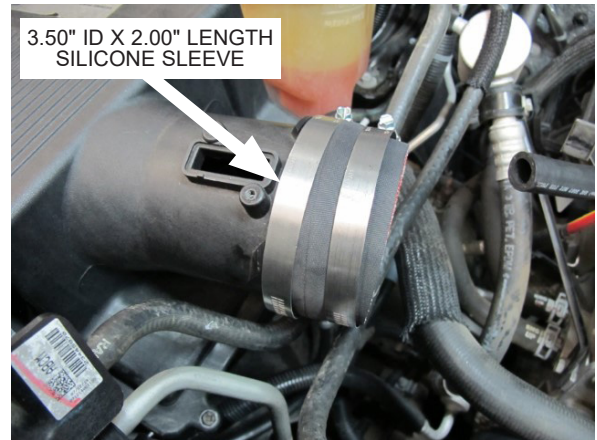


Fig. 10-G: Install silicone sleeve

- H. Locate the MAF sensor block-off plate and two M4x0.7 pan head screws and two 1/4" washers. Use the block-off plate to cover the original location of the MAF sensor on the air box lid. Use the original MAF sensor screws and two 1/4" washers to secure the block-off plate to the air box lid.

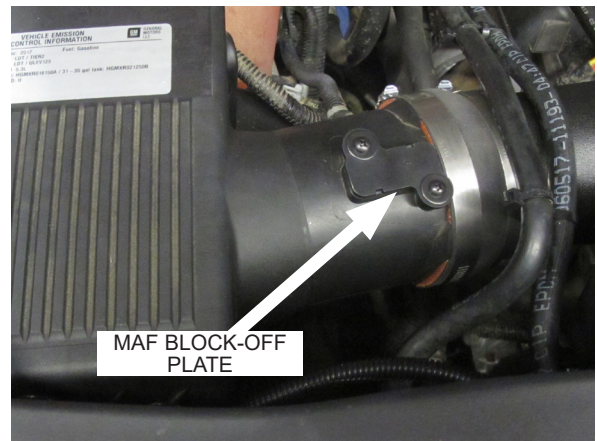


Fig. 10-H: Install MAF sensor block off plate

- I. Install one end of the air inlet to the silicone sleeve previously installed onto the airbox outlet. Lower the air inlet into position in between the two air inlet brackets.

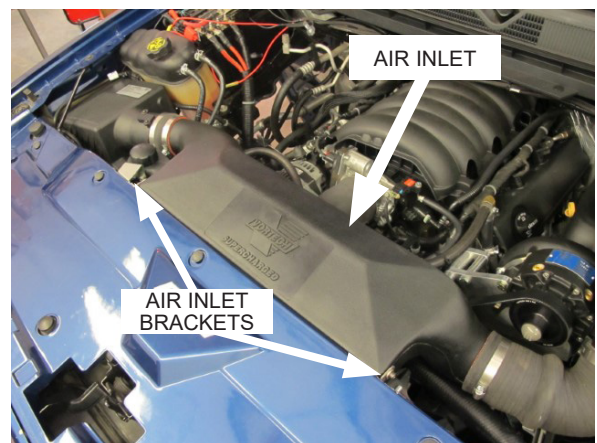


Fig. 10-I: Install air inlet

10. AIR INLET ASSEMBLY INSTALLATION

- J. Install 3.5 x 2" sleeve onto the inlet of the supercharger. Use two #56 clamps over the sleeve, then install air inlet tube A. Leave clamps loose for the time being.

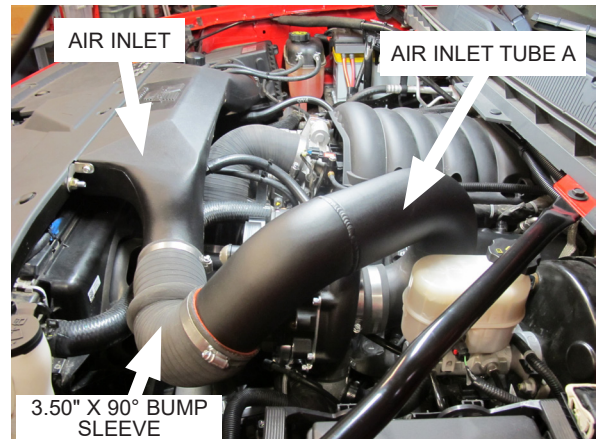


Fig. 10-J: Install air inlet tube

- K. Install the bypass valve assembly to the air inlet by installing the short hose to the bung on air inlet tube A and secure using the preinstalled #16 hose clamps. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps.

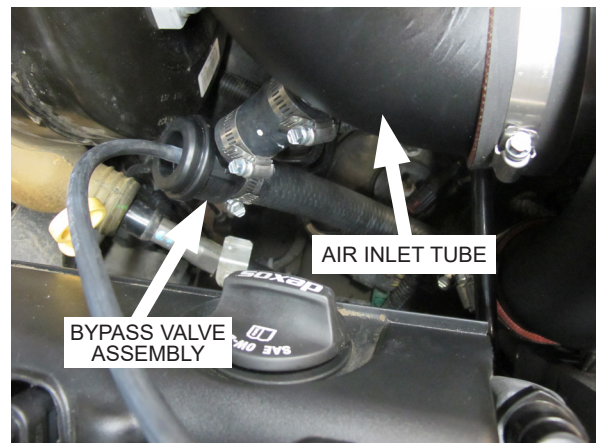


Fig. 10-K: Install bypass valve to air inlet tube A

- L. Using one 1/4"-20 x .50" socket head screw and one 1/4" washer, loosely secure the air inlet to the driver side air inlet bracket using a 3/16" hex key.



Fig. 10-L: Loosely install air inlet hardware

10. AIR INLET ASSEMBLY INSTALLATION

- M. Using one 1/4"-20 x .50" socket head screw and one 1/4" washer, loosely secure the air inlet to the passenger side air inlet bracket using a 3/16" hex key. Now that the air inlet tube, brackets and silicone sleeves are in place, go back and secure all of the loose hardware and hose clamps. Leave a small gap between air inlet assembly and radiator core support. Use a flathead screwdriver or 5/16" nut driver to tighten the hose clamps and a 3/16" hex key for the socket head screws.



Fig. 10-M: Install passenger side air inlet hardware

- N. Install the driver side and passenger side breather hoses to the valve cover breather ports. Use the provided zip ties to secure the driver side breather hose and the small coolant hose located directly next to it.

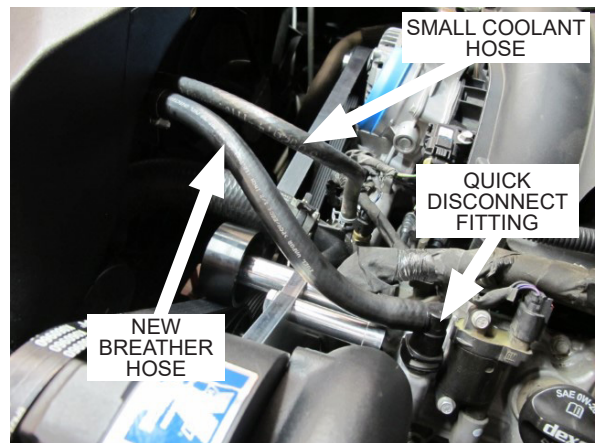


Fig. 10-N: Install breather hoses

- O. Using a 10mm socket, reinstall the fender brace and secure with its original screws.

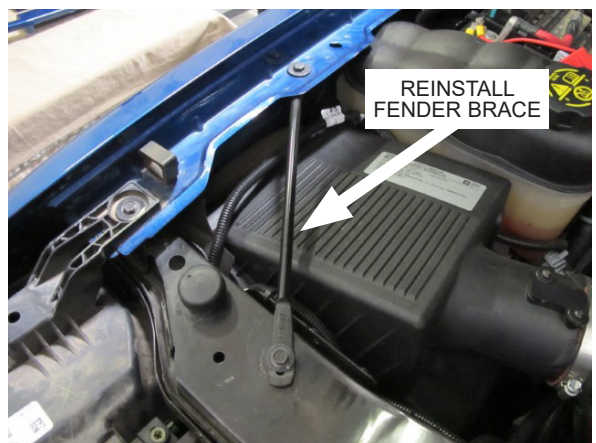


Fig. 10-O: Reinstall fender brace

11. MAP SENSOR & BYPASS VALVE SIGNAL HOSE INSTALLATION

- A. Located on the driver side of the engine near the throttle body is the MAP sensor. Disconnect the MAP sensor and using a 10mm socket, remove the screw securing the MAP sensor to the intake manifold. The screw will be reused.

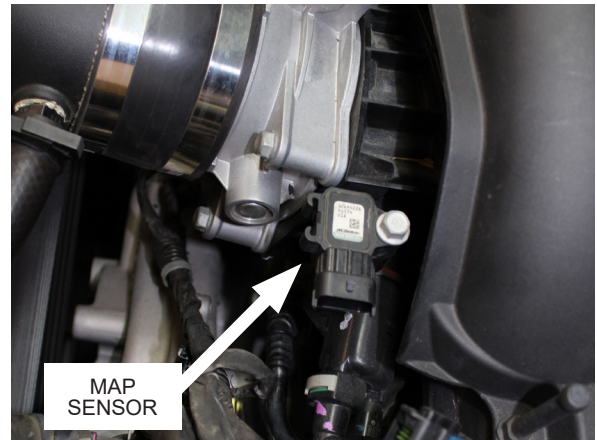


Fig. 11-A: Remove factory MAP sensor



Use thread sealant on the vacuum fitting.

- B. Locate the provided MAP sensor block and install the provided O-ring to the groove on the nipple. Use a 7/16" socket to install the vacuum fitting. Make sure to use thread sealant on the threads of the fitting. Install the provided 3-bar MAP sensor to the MAP sensor block and secure using one 1/4"-20 x .75" hex head screw and one 1/4" washer. Use a 7/16" socket to secure the screw.

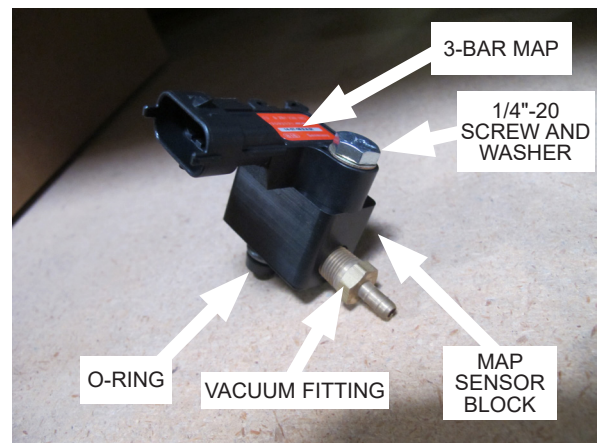


Fig. 11-B: Assemble MAP sensor block

- C. Gently install the MAP sensor block assembly to the original MAP sensor location on the intake manifold, making sure not to damage the O-ring. Use the original MAP sensor screw and a 10mm socket to secure the MAP sensor block to the intake manifold.

NOTE: DO NOT OVERTIGHTEN THE ORIGINAL MAP SENSOR SCREW. The intake manifold is made from plastic and overtightening the screw will strip the screw threads. Hold onto the MAP sensor block while tightening to prevent damage to the plastic port.

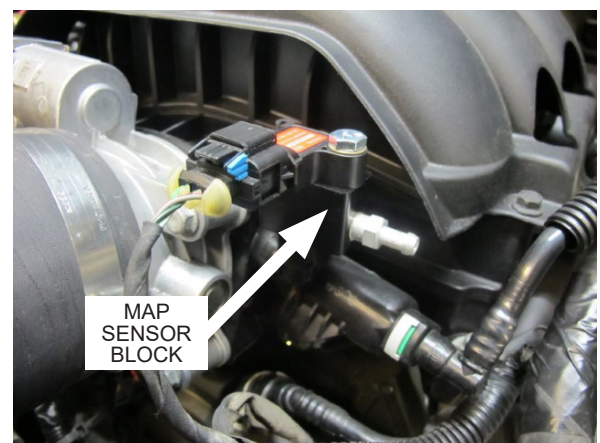


Fig. 11-C: Install MAP sensor block assembly

11. MAP SENSOR & BYPASS VALVE SIGNAL HOSE INSTALLATION

- D. Locate the provided length of 5/32" vacuum hose. Install one end of the hose to the vacuum fitting on the MAP sensor block, then install the other end of the vacuum hose to the signal port on the bypass valve. Use the provided zip ties to secure the vacuum hose away from sharp edges and moving parts.

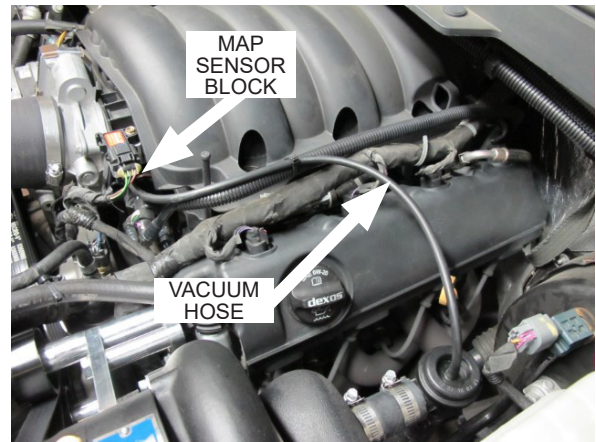


Fig. 11-D: Install vacuum hose

12. PANEL TRIMMING

- A. To clear the air inlet brackets, you'll need to trim the upper radiator support cover. Trim as shown, then proceed to reinstall it to the vehicle.

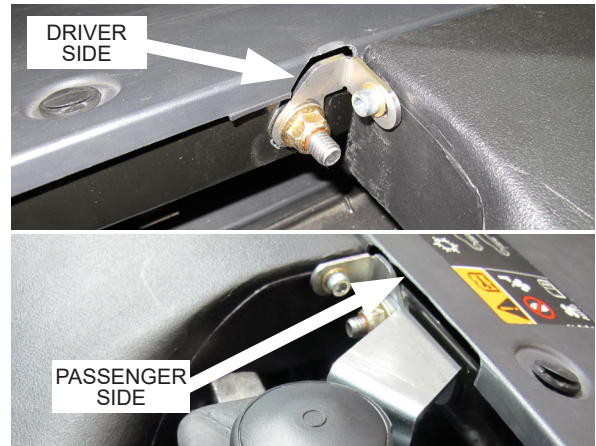


Fig. 12-A: Trim upper radiator support cover

- B. You'll need to trim the splash guard for it to clear the discharge tubes. Trim the splash guard as shown, then proceed to reinstall it to the vehicle using its original hardware.

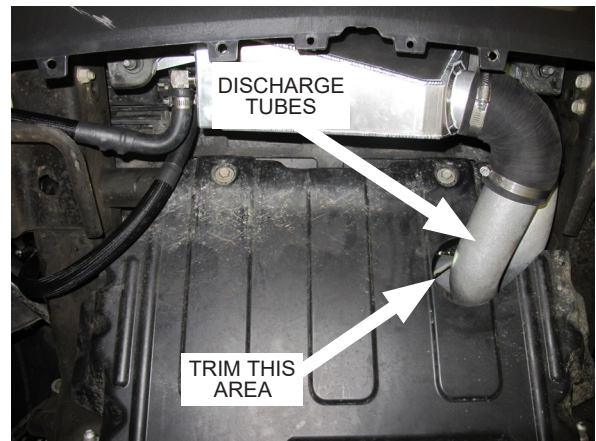


Fig. 12-B: Trim splash guard

- C. Using a small hack saw or a cutting wheel, trim the driver side ignition coil as shown. This is done to provide room for the supercharger mounting bracket assembly. After it has been trimmed, proceed to reinstall it to its original location. Firmly press down on it until you feel it snap into place.



Fig. 12-C: Trim ignition coil cover

12. PANEL TRIMMING

- D. There's a molded boss located on the corner headlight mount. Using a file or a sanding drum, grind down the molded boss as shown. This is done to provide clearance between the electric water pump and the corner headlight mount.

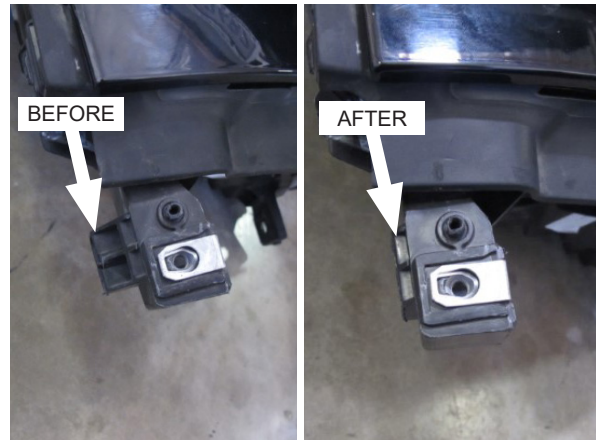


Fig. 12-D: Grind down molded boss

13. GENERAL REASSEMBLY

- A. Zip tie the supercharger drain line to available hole below the upper control arm camber adjustment bolt.

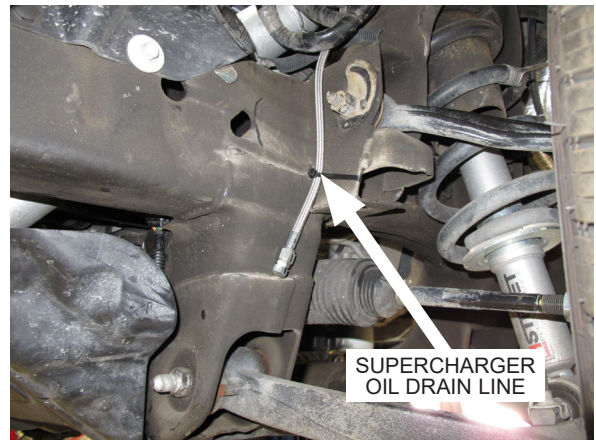


Fig. 13-A: Secure oil drain line

- B. Plug in the headlight connector and reinstall the passenger side headlight. Using a 10mm socket, secure the original hardware.



Fig. 13-B: Reinstall headlight

- C. **2016-2018 Model-Years Silverado Only:** One of the passenger side headlight screws can only be accessed by reaching behind the corner of the front bumper. Using a 10mm wrench, reach behind the front bumper in the area shown in Fig. 1-j and reinstall the lower headlight screw.



Fig. 13-C: Passenger side lower headlight screw location

13. GENERAL REASSEMBLY

- D. Using a T-15 tool, reinstall the front fender liners and secure using their original screws.

NOTE: Driver side shown. Repeat for passenger side.



Fig. 13-D: Reinstall front fender liners

- E. Reinstall the radiator shutters to their original location and secure the original hardware using a 10mm socket. Be sure to reconnect the connector for the grill shutters.



Fig. 13-E: Reinstall radiator shutters

- F. Reinstall the grill and secure using the original hardware and plastic fasteners.



Fig. 13-F: Reinstall the grill

13. GENERAL REASSEMBLY

- G. Using a 10mm socket, reconnect the negative battery cable.



Fig. 13-G: Reconnect negative battery cable

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14. FINAL CHECK

WARNING: Do not attempt to operate the vehicle until all components are installed and all operations are completed including the final check.

- A. If your vehicle has gone over 15,000 miles since its last spark plug change, you will need to change the spark plugs now *before* test driving the vehicle.
- B. Check all fittings, nuts, bolts and clamps for tightness. Pay particular attention to oil and fuel lines around moving parts, sharp edges and exhaust system parts. Make sure all wires and lines are properly secured with clamps or tie-wraps.
- C. Check all fluid levels, making sure that your tank(s) is/are filled with 91 octane or higher fuel before commencing test drive.
- D. Start the engine and allow to idle a few minutes, then shut off.
- E. Recheck to be sure that no hoses, wires, etc. are near exhaust headers or moving parts. Look also for any signs of fluid leakage.
- F. **PLEASE TAKE SPECIAL NOTE:** Operating the vehicle without ALL the subassemblies completely and properly installed may cause **FAILURE OF MAJOR COMPONENTS.**
- G. Test drive the vehicle.
- H. Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.
- I. Read the **STREET SUPERCHARGER SYSTEM OWNER'S MANUAL AND RETURN THE WARRANTY REGISTRATION FORM** within thirty (30) days of purchasing your supercharger system to qualify.

For internally lubricated V3 units only

This supercharger has been factory pre-filled with special Vortech synthetic lubricant. Oil does not need to be added to a brand-new unit, however a fluid level check should be performed.

Prior to operating the supercharger on the vehicle and after installation onto the vehicle:

Remove the factory installed flat-head brass shipping plug (not the dipstick) from the top of the supercharger case. Replace the sealed shipping plug with the supplied "vented" plug. Do not operate the supercharger without it. Check the supercharger fluid level.

Fluid level checking procedure:

1. Verify that the vehicle is at room temperature. Ensure that the .06" copper sealing washer is located on the dipstick base.
2. Thread the clean dipstick into the unit until it seats.
3. Once the dipstick has seated, remove the dipstick from the unit. Fluid should register in the crosshatched area on the dipstick.
4. **DO NOT OVERFILL!!!** Drain excess fluid from the unit if it is above the maximum level on the dipstick.

Check the fluid level using the dipstick at least every 2,500 miles.

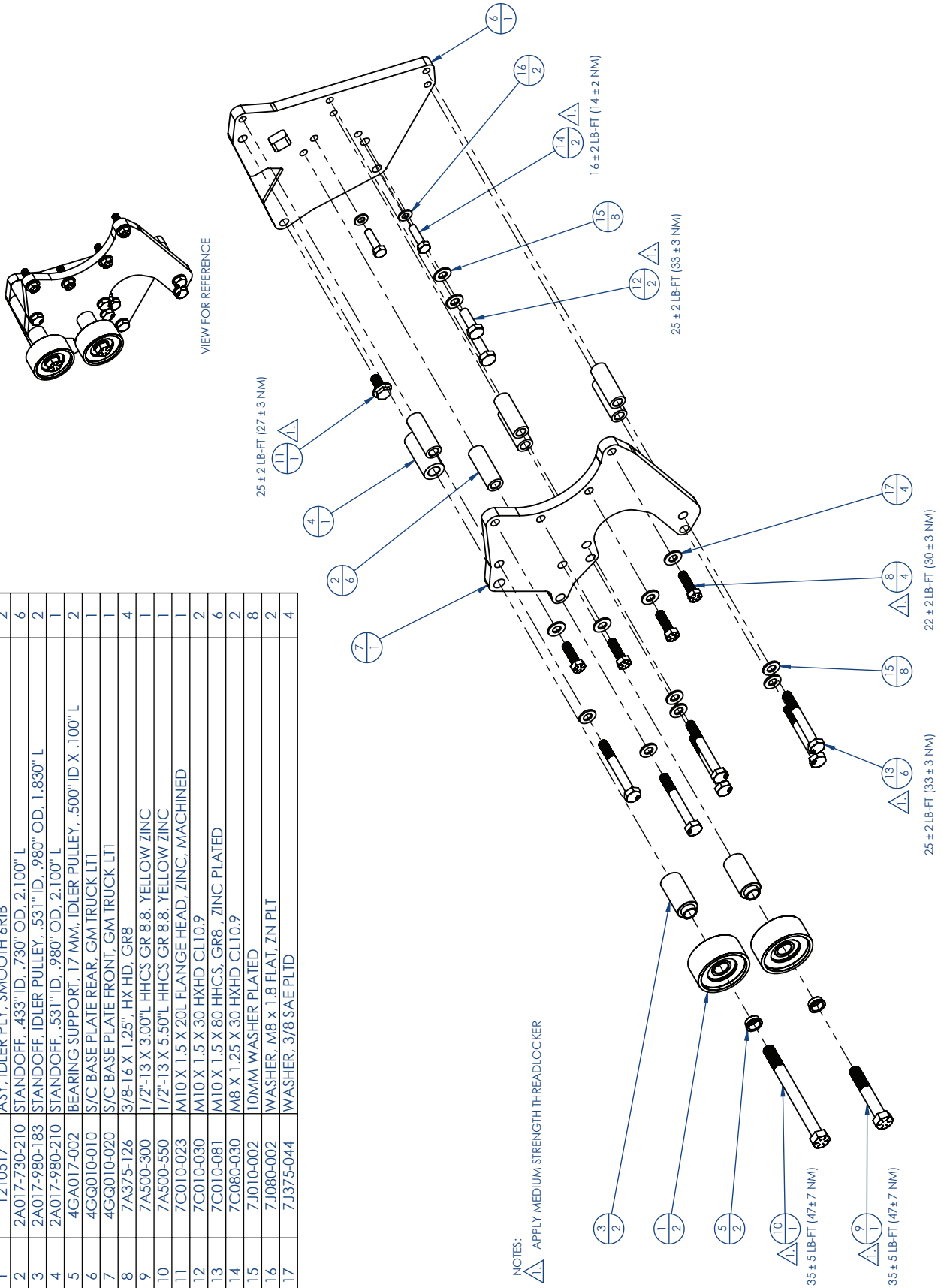
Initial supercharger fluid change must be performed at 2,500 miles. The supercharger fluid must be changed at least every 7,500 miles.

Drain the fluid, refill the unit with 4 oz. of Vortech V3 synthetic lubricating fluid and then confirm proper oil level using the dipstick. **DO NOT OVERFILL!!!**

WARNING: Use of any other fluid other than the proprietary Vortech/Paxton synthetic lubricant will void the warranty and may cause component failure.

APPENDIX A. DIAGRAM, MOUNTING BRACKET ASSEMBLY

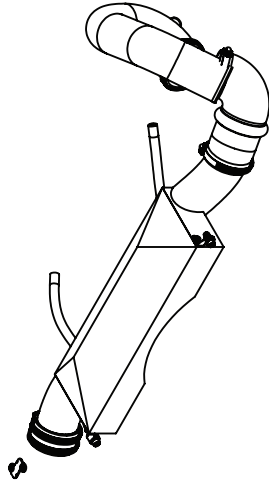
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1210517	ASY, IDLER PLY, SMOOTH 6RIB	2
2	2A017-730-210	STANDOFF, .433" ID, .730" OD, 2.100" L	6
3	2A017-980-183	STANDOFF, IDLER PULLEY, .531" ID, .980" OD, 1.830" L	2
4	2A017-980-210	STANDOFF, .531" ID, .980" OD, 2.100" L	1
5	4GA017-002	BEARING SUPPORT, 17 MM; IDLER PULLEY, .500" ID X .100" L	2
6	4GQ010-010	S/C BASE PLATE REAR, GM TRUCK LTI	1
7	4GQ010-020	S/C BASE PLATE FRONT, GM TRUCK LTI	1
8	7A375-126	3/8-16 X 1.25" HX HD, GR8	4
9	7A500-300	1/2"-13 X 3.00" L HHCS GR 8.8, YELLOW ZINC	1
10	7A500-550	1/2"-13 X 5.50" L HHCS GR 8.8, YELLOW ZINC	1
11	7C010-023	M10 X 1.5 X 20L FLANGE HEAD, ZINC, MACHINED	1
12	7C010-030	M10 X 1.5 X 30 HXHD CL10.9	2
13	7C010-081	M10 X 1.5 X 80 HHCS, GR8, ZINC PLATED	6
14	7C080-030	M8 X 1.25 X 30 HXHD CL10.9	2
15	7J010-002	10MM WASHER PLATED	8
16	7J080-002	WASHER, M8 x 1.8 FLAT, ZN PLT	2
17	7J375-044	WASHER, 3/8 SAE PLTID	4



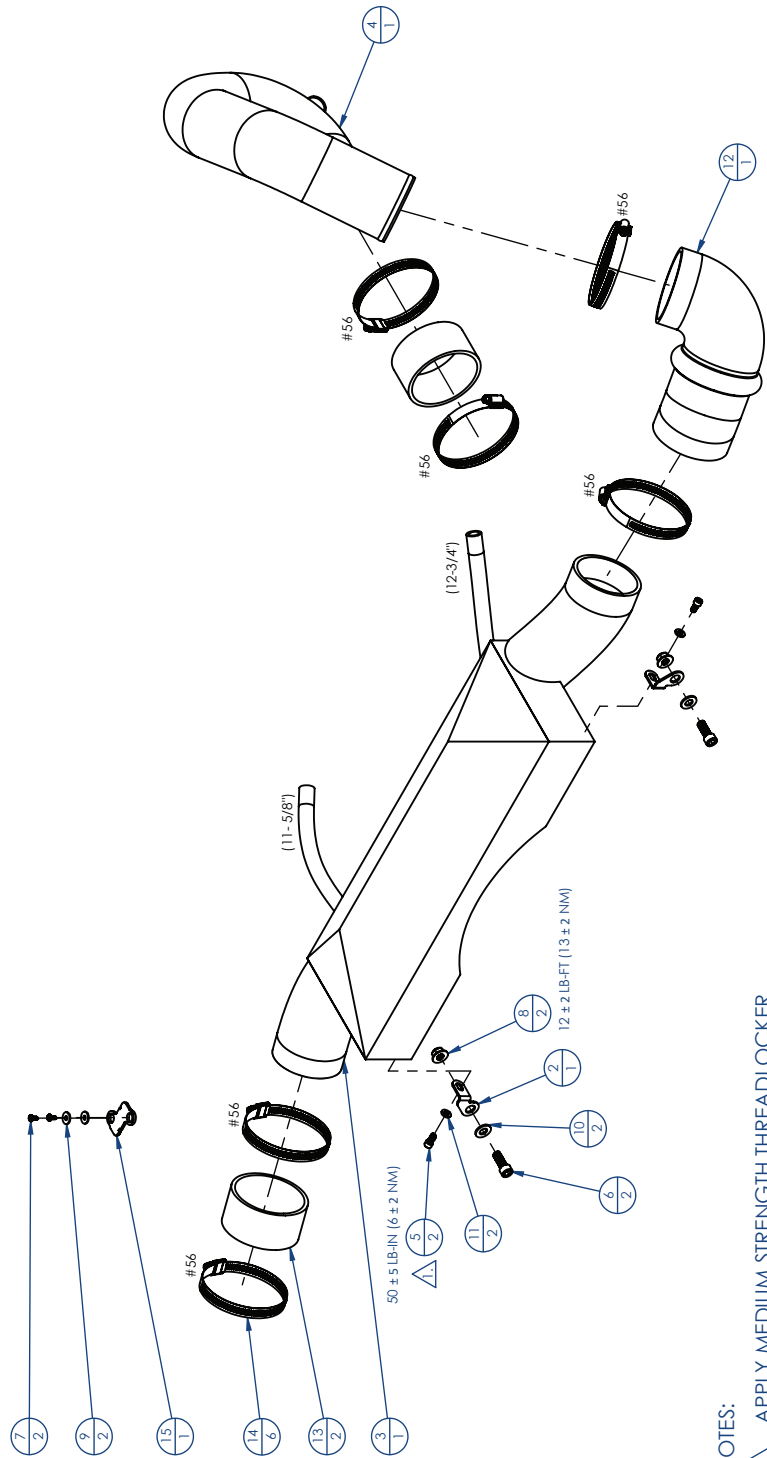
NOTES:
 1. APPLY MEDIUM STRENGTH THREADLOCKER

APPENDIX B. DIAGRAM, AIR INLET ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4GLO10-011	BRKT,D SIDE GM TRK AIR INLET	1
2	4GLO10-012	BRKT,P SIDE GM TRK AIR INLET	1
3	4GQ112-030	ASSY. DUCT, INLET, LONG GM SUV/TRK, W/ PORTS	1
4	4GQ112-040 / 044 / 048	INLET TUBE A, 3.5 DIAM, 1 IN PORT, 2014 SILVERADO 1500 5.3L, SAT / BLK / POL	1
5	7A250-050	1/4-20 X .50" SHCS ZINC PLT	2
6	7A375-104	3/8-16 X 1" SHCS, CLR Zn	2
7	7C040-007	M4-.70 X 8MM, SS, BLK OXIDE	2
8	7F375-021	3/8-16 NYLOCK FLANGE NUT	2
9	7J050-001	WASHER, M5, 15 MM OD, SS, BLK OXIDE	2
10	7J375-044	WASHER, 3/8 SAE PLTD	2
11	7K250-001	1/4" AN WASHER	2
12	7PS350-091	ELBOW, BUMP, 3.5 X 90 DEG, FORMED, SILICONE, BLACK	1
13	7PS350-200	SLEEVE, BLACK 3.50 ID X 2.0" LG	2
14	7R002-056	#56 SAE TYPE F SS HOSE CLAMP	6
15	8A004-011-1	BLOCK OFF PLT, GM SLOT MAF, BLK	1



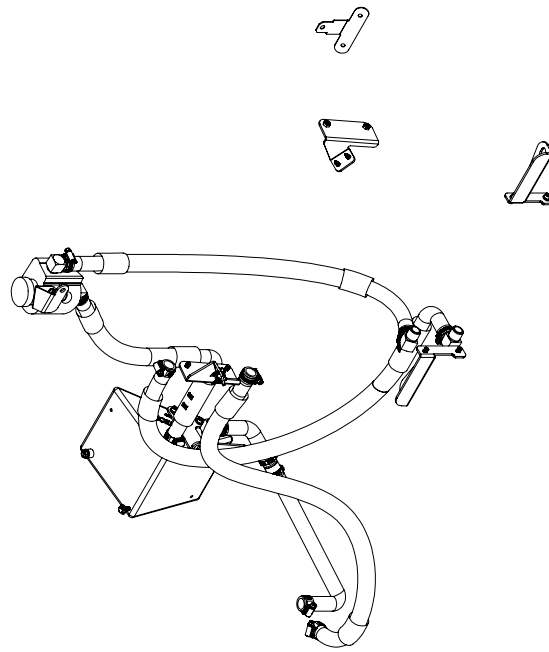
VIEW FOR REFERENCE



NOTES:
 1. APPLY MEDIUM STRENGTH THREADLOCKER

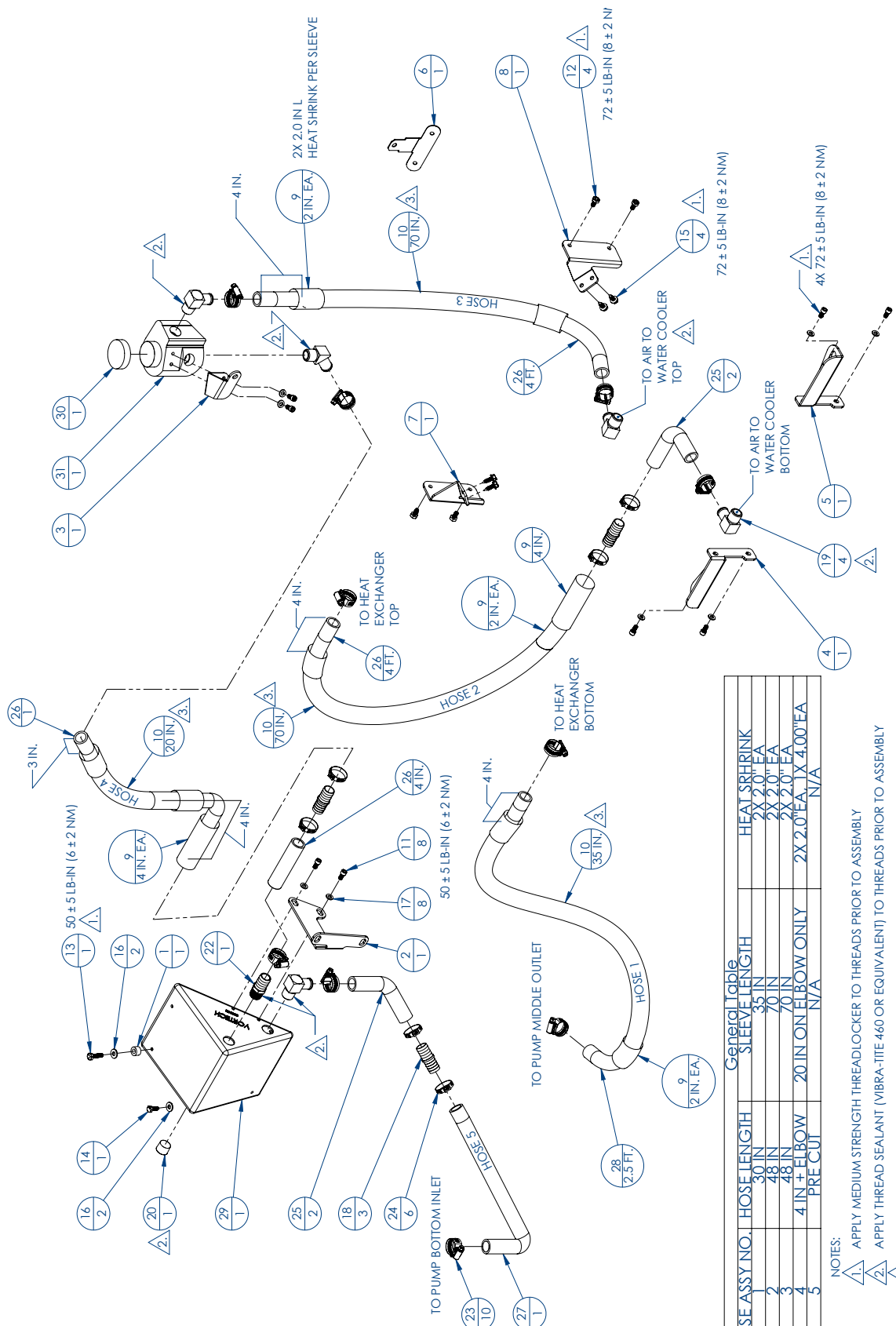
APPENDIX C1. DIAGRAM, AIR-TO-WATER COOLING SYSTEM

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	2A017-094	SPACER, .380L, .313ID, .600D	1
2	4GQ010-030	BRKT, CHARGE AIR COOLANT RESERVIOR, GM TRUCK LTI	1
3	4GQ010-040	BRKT, CHARGE AIR COOLANT SURGE TANK, GM TRUCK LTI	1
4	4GQ010-050	BRKT, AIR TO WATER COOLER, RH, GM TRUCK LTI	1
5	4GQ010-060	BRKT, AIR TO WATER COOLER, LH, GM TRUCK LTI	1
6	4GQ010-070	BRKT, HARNESS CONNECTOR RELOCATION, GM TRUCK LTI	1
7	4GQ010-080	BRKT, HEAT EXCHANGER, RH, GM TRUCK LTI	1
8	4GQ010-090	BRKT, HEAT EXCHANGER, LH, GM TRUCK LTI	1
9	5W001-030	1 1/2" HEAT SHRINK	2 FT.
10	5W001-082	SLEEVE, FLEX BRAID .75" NOM.	16.25 FT.
11	7A250-050	1/4-20 X .50" SHCS ZINC PLT	8
12	7A250-051	1/4-20 X .50 HHCS GR5 ZINC PLTD	4
13	7A250-101	1/4-20 X 1 HHCS ZINC PLTD	1
14	7C060-016	M6 X 1.0 X 16 HXHD	1
15	7E014-075	#14 X .75 HEX HD SHEETMETAL SCREW	4
16	7J250-001	1/4 WASHER, SAE, PLTD	2
17	7K250-001	1/4" AN WASHER	8
18	7P375-075	3/4" HOSE BARB UNION, BRASS	3
19	7P500-026	1/2NPT X 3/4 BARB 90 BRASS	4
20	7P500-030	1/2" PIPE PLUG STEEL, ZINC PLATED	1
21	7P500-035	FITTING, 1/2 NPT X 3/4 BARB X 45	1
22	7P500-078	1/2NPT X 3/4 HOSE FIT STRI	1
23	7R002-010	#10 SAE TYPE FSS HOSE CLAMP	10
24	7R004-007	STEPLESS CLAMP, 28.6 X 7MM WID 1.126 IN OPEN - 1.00 IN Closed	6
25	7U030-065	HOSE, 3/4 X 90 ELBOW RUBBER, SHORT	2
26	7U038-012	HOSE, 3/4 DIA 90, 4 X 12 LEGS	1
27	7U038-150	HOSE, 3/4 D X 150 MOLDED HOSE	1
28	7U038-000	3/4" HEATER HOSE	10.8 FT
29	8N055-035	TANK, WATER, TRIANGLE SHAPE, 2014 GM TRUCK, 5.3	1
30	8N055-050	PLASTIC CAP, SURGE TANK	1
31	8N056-060	SURGE TANK, PLASTIC	1



VIEW FOR REFERENCE

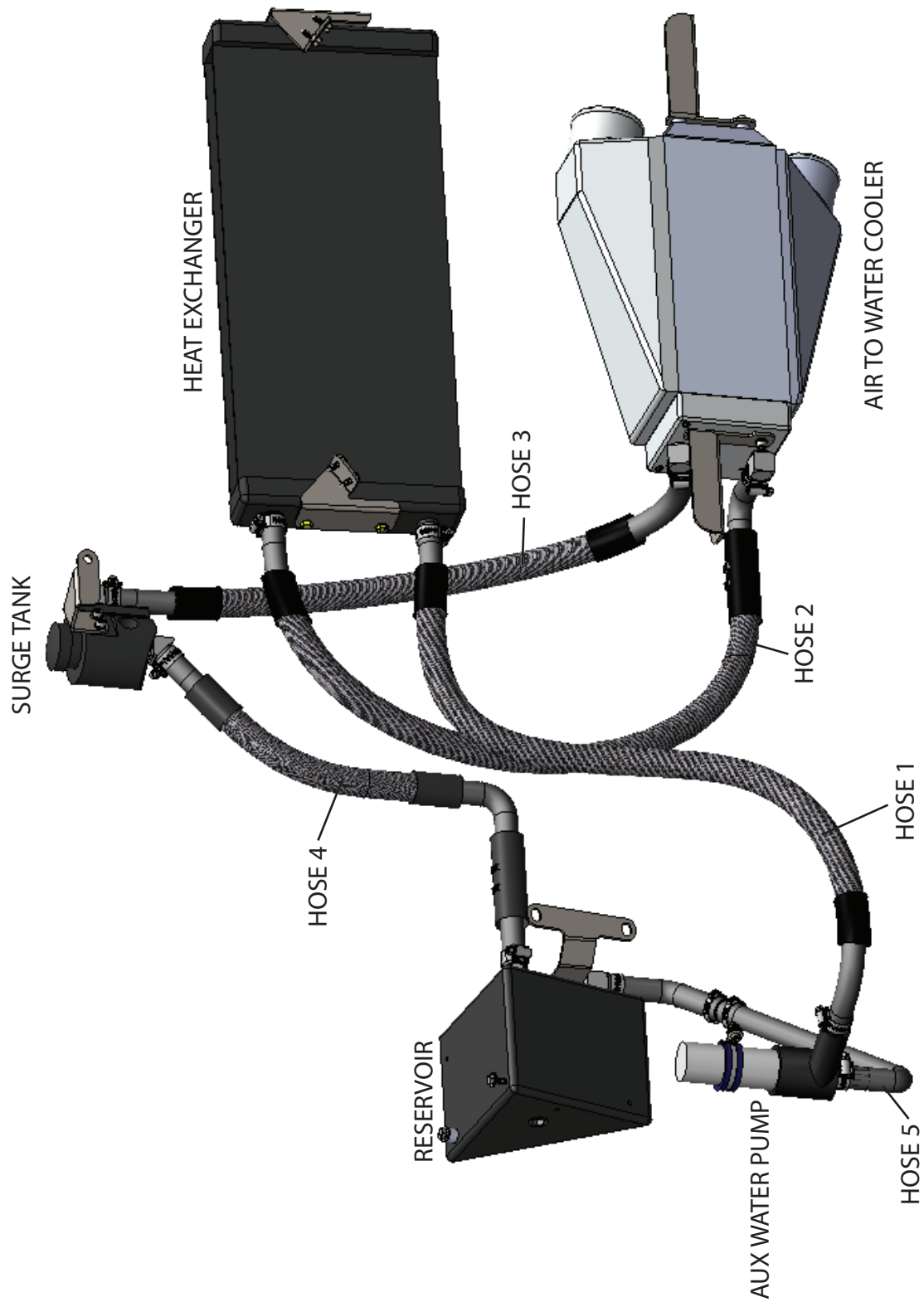
APPENDIX C2. DIAGRAM, AIR-TO-WATER COOLING SYSTEM



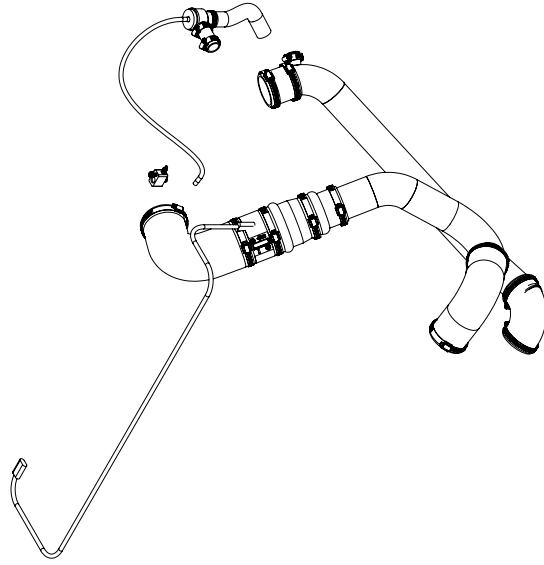
HOSE ASSY NO.	HOSE LENGTH	SLEEVE LENGTH	HEAT SHRINK
1	30 IN	35 IN	2X 2.0" EA
2	48 IN	70 IN	2X 2.0" EA
3	48 IN	70 IN	2X 2.0" EA
4	4 IN + ELBOW	20 IN ON ELBOW ONLY	2X 2.0" EA, 1X 4.00" EA
5	PRE-CUT	N/A	N/A

- NOTES:
- 1. APPLY MEDIUM STRENGTH THREADLOCKER TO THREADS PRIOR TO ASSEMBLY
 - 2. APPLY THREAD SEALANT (VIBRA-TITE 460 OR EQUIVALENT) TO THREADS PRIOR TO ASSEMBLY
 - 3. ASSEMBLE SLEEVE CENTERED ONTO HOSE AND SECURE WITH 2.0" OF HEAT SHRINK AT EACH END

APPENDIX C3. DIAGRAM, AIR-TO-WATER COOLING SYSTEM



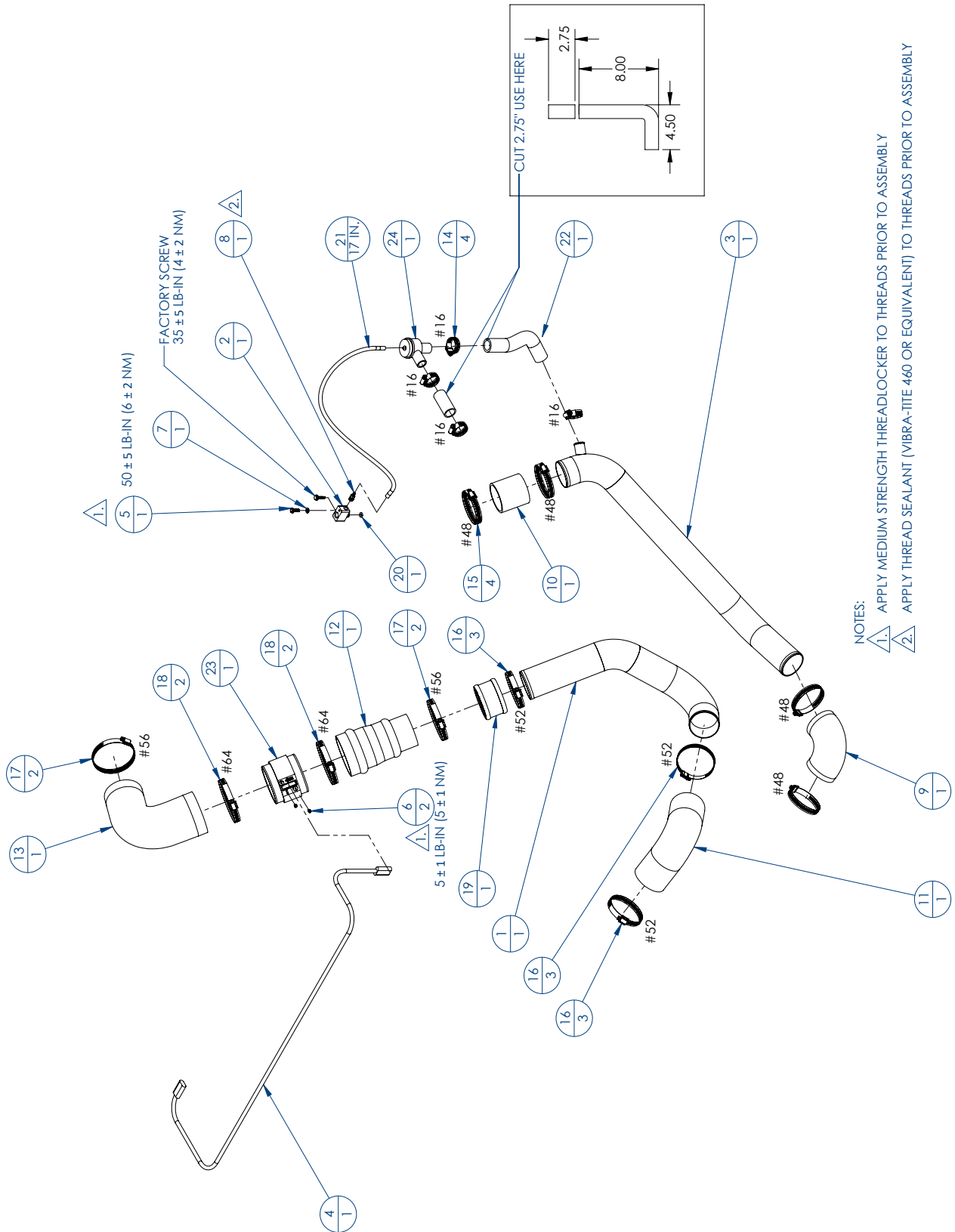
APPENDIX D1. DIAGRAM, DISCHARGE ASSEMBLY



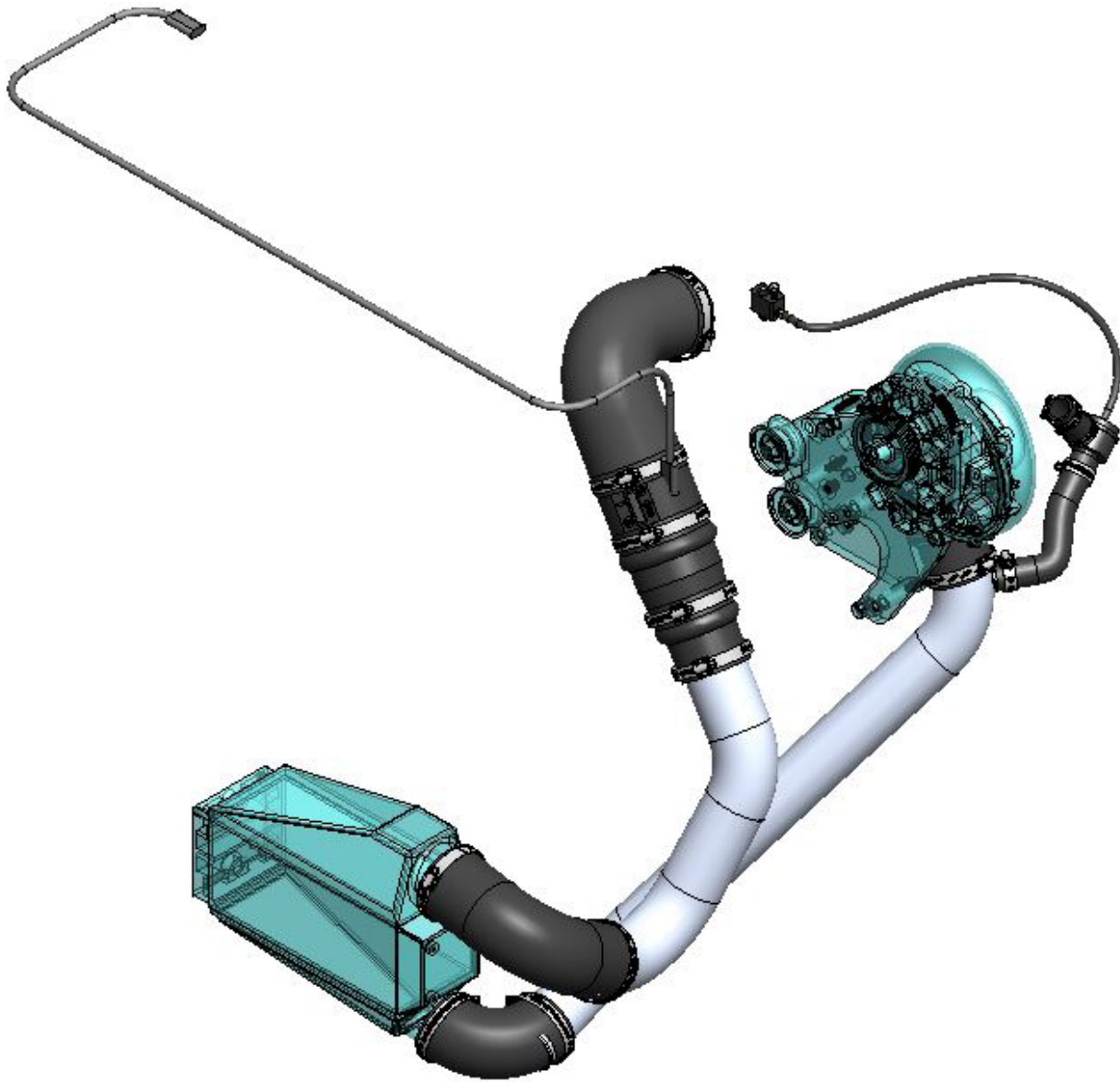
VIEW FOR REFERENCE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4GQ012-020	DISCHARGE TUBE B, 3.0 DIAM 2014 SILVERADO 1500 5.3	1
2	4GQ017-010	SPACER, MAP SENSOR, L83	1
3	4GQ112-010	DISCHARGE TUBE A, 2.75 DIAM, 1 IN PORT, 2014 SILVERADO 1500 5.3L SAT	1
4	5W001-096	HARNESS, MAF EXTEN, 2016 CAM,SS	1
5	7A250-074	1/4-20 X .75 HHCS PLTD	1
6	7C040-008	M4-.7 X 8MM SCHD, SS	2
7	7K250-001	1/4" AN WASHER	1
8	7P125-038	1/8NPT STRAIGHT TO 5/32 BARB	1
9	7PS275-092	ELBOW, 2.75 X 90 SILICONE BLK	1
10	7PS275-300	SLEEVE, BLACK 2.75ID X 3.0	1
11	7PS300-090	ELBOW, BLK, 3" X 90 SILICONE	1
12	7PS400-301	REDUCER, BUM, PROG 3.0 X 4.0	1
13	7PS400-352	ELBOW, REDUCER, 4.0 X 3.5 X 83 DEG, SILICONE, BLACK	1
14	7R002-016	#16 SAE TYPE F SS HOSE CLAMP	4
15	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	4
16	7R002-052	#52 SAE TYPE F SS HOSE CLAMP	3
17	7R002-056	#56 SAE TYPE F SS HOSE CLAMP	2
18	7R002-064	#64 SAE TYPE F SS HOSE CLAMP	2
19	7S350-220	HONEYCOMB, FLOW STRAIGHTNER, 3.5"	1
20	7U012-109	O-RING, -109, BUNA-N	1
21	7U030-046	5/32" VACUUM LINE	17 IN.
22	7U133-100	HOSE,ELBOW,90,1"ID, MOLDED	1
23	8A003-074	MAF, 3.8 ID, BLACK	1
24	8D001-004	COMPRESS BYPASS VALVE, G2	1

APPENDIX D2. DIAGRAM, DISCHARGE ASSEMBLY

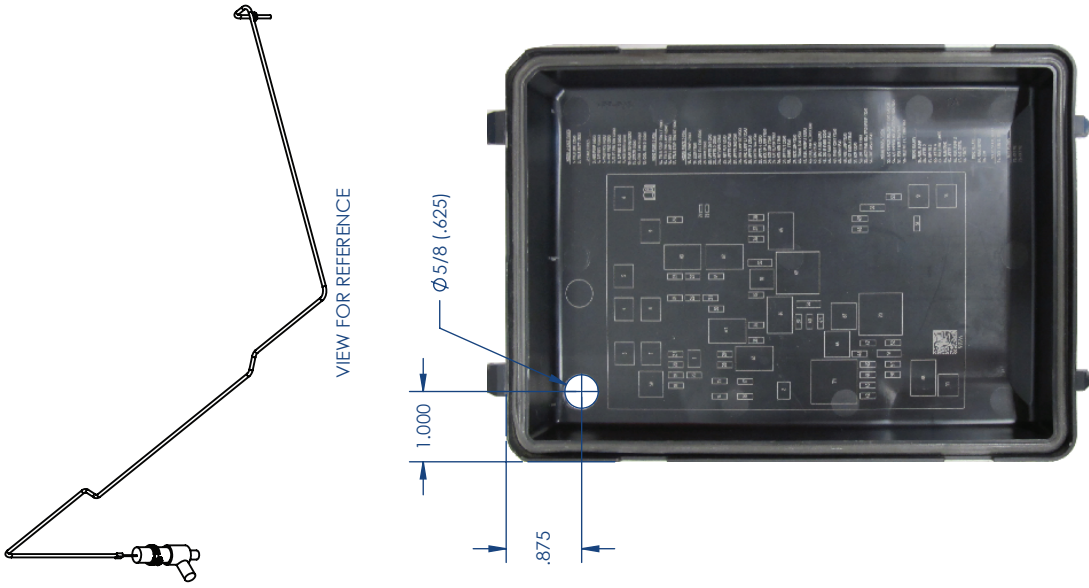
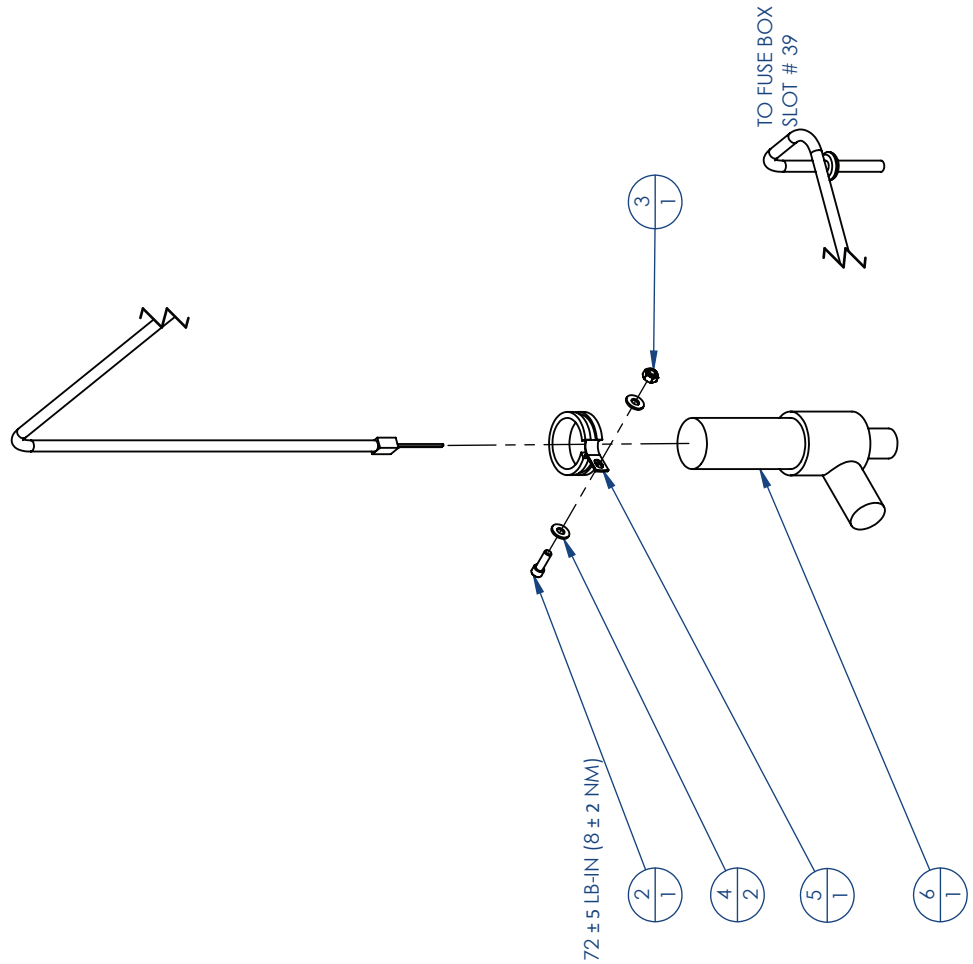


APPENDIX D3. DIAGRAM, DISCHARGE ASSEMBLY



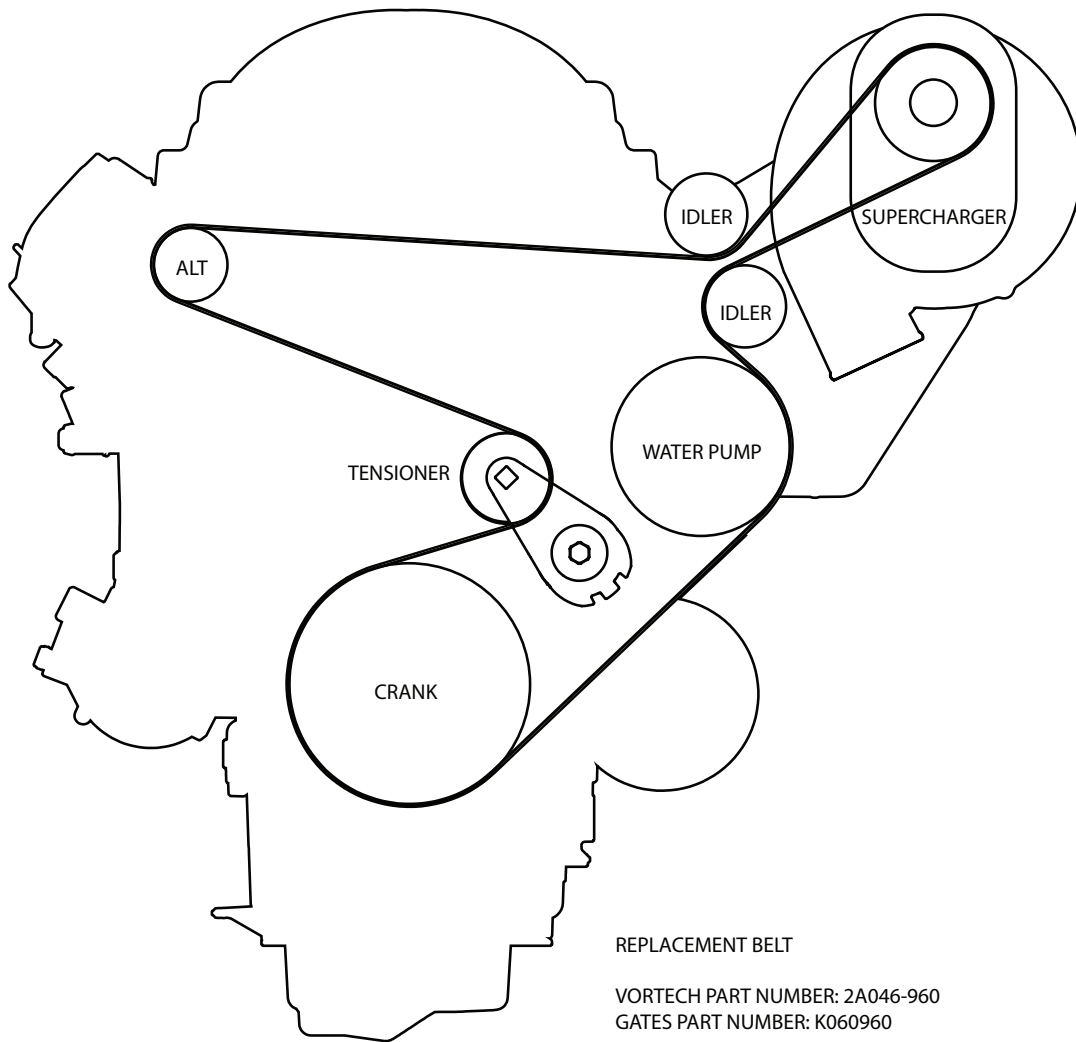
APPENDIX E. DIAGRAM, ELECTRIC WATER PUMP MOUNTING ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	5W001-145	HARNES, AUX WATER PUMP, 11 FT, MICRO FUSE	1
2	7A250-075	1/4-20 X .75 SHCS PLTD	1
3	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	1
4	7J250-001	1/4 WASHER, SAE, PLTD	2
5	7R003-029	ADEL CLAMP, 1-5/8" ID	1
6	8F001-405	BOSCH AUX WATER PUMP	1



DRILL AS INDICATED IN FUSE BOX COVER.
ROUTE FUSED HARNESS THROUGH COVER
THEN MOUNT GROMMET IN THE HOLE

APPENDIX F. DIAGRAM, BELT ROUTING





ENGINEERING, INC

1650 Pacific Avenue, Channel Islands, CA 93033-9901 • Phone (805) 247-0226
Fax: (805) 247-0669 • www.vortechsuperchargers.com • M-F 7:00 AM - 3:30 PM (PST)