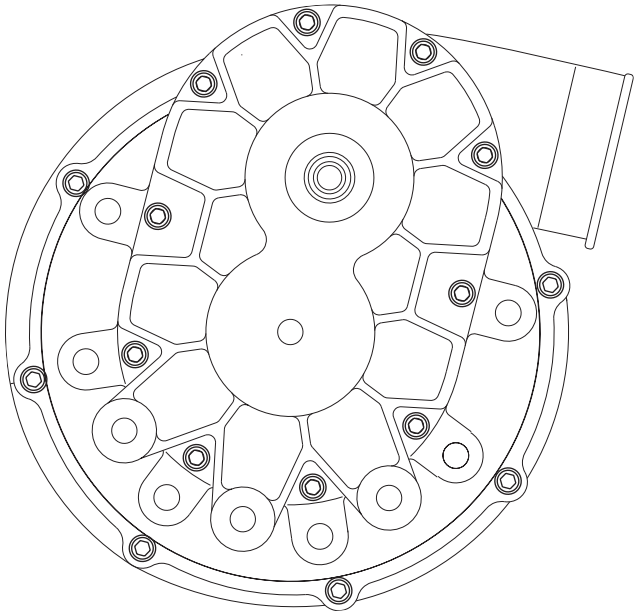
FORD F-150 5.0L

Supercharger System Installation Instructions

2021-2022 Model Year



VORTECH®

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)

DP/N: 4FV020-010 - v1.0, 04/20/22

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

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2021-2022 FORD F-150 5.0L
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.

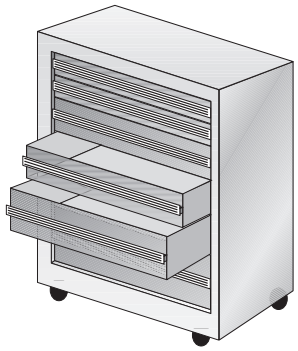
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

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" ratchet and socket set: SAE and metric
- 3/8" ratchet extensions
- 1/2" ratchet or breaker bar
- 1/4" and 3/8" torque wrenches
- Open end wrenches: SAE and metric
- Screwdriver set
- Hose cutters
- Utility knife
- Grinding tool (file, drum sander, dremel, etc.)
- Hex keys SAE
- 1/8", 11/64" & 1/4" drill bits
- Power Drill
- Heat Gun
- Medium Strength **(**Blue) threadlocker Medium Strength
- Thread sealant
- Ramps or lift
- Clean coolant container



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

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VORTECH® ENGINEERING, INC

2021-2022 FORD F-150 5.0L

Tuner Kit Part No. 4FV218-110L / 114L / 118L

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.
008110	**SMALL SILVER DIE CUT DECAL**	**2**
008130	**LICENSE PLATE FRAME, VORTECH**	**1**
008447	**1 YR S/C STRT INFO PKG VORT**	**1**
009035	**S/C LUBE, BOTTLED, 3-PACK**	**1**
2A046-837	**BELT, GATES K060837**	**1**
2F329-250/254/258	**V3 S/C ASY, 2021 F150 5.0L, SAT / BLK / POL**	**1**
4FV020-010	**INSTR MAN, S/C BRACKET, 2021 FORD TRUCK**	**1**
4FV110-044	**MTNG BRKT ASSY, 2021FORD TRUCK, 5.0**	**1**
4FV010-010	S/C BASE PLATE REAR, 2021 FORD TRUCK, 5.0	1
4FV010-020	S/C BASE PLATE FRONT, 2021 FORD TRUCK, 5.0	1
2A017-700-105	STANDOFF, .260" ID, .700" OD, 1.053" L	1
2A017-875-445	STANDOFF, .354" ID, .875" OD, 4.456" L, NECK DOWN 0.75"	1
2A017-880-398	STANDOFF, .397" ID, .880" OD, 3.976" L	1
4FV017-980-119	BEARING SUPPORT, 17 MM, IDLER PULLEY, .433" ID X 1.197" L	1
4FV017-980-187	BEARING SUPPORT, 17 MM, IDLER PULLEY, .433" ID X 1.875" L	1
4FV017-980-188	BEARING SUPPORT, 17 MM, IDLER PULLEY, .531" ID X 1.875" L	1
4FV112-110/114/118	**AIR INLET ASSY, 2021 FORD TRUCK, SAT / BLK / POL**	**1**
4FV112-060/064/068	AIR INLET TUBE, 2021 F150, SAT/BLK/POL	1
4FV112-080	ASSY, AIR INLET ELBOW, ROTOMOLDED, 1 IN PORT	1
4VF010-040	BRKT, AIR INLET ELBOW SUPPORT	1
7A375-075	3 /8-16 X 3/4 GR5 HXHD ZINC	2
7K375-040	3 /8 AN960 FLAT WASHER PLATED	2
7P375-039	3 /8 NPT X 5/8" BARB 90, PLATED	1
7PS350-303	BUMP HOSE, 3.50D X 3.00L	1
7PS375-350	REDUCER, BLK 3.75-3.5 X 3.0L	1
7R001-006	# 6 STNLS HOSE CLAMP, NARROW	1
7R002-056	# 56 SAE TYPE F SS HOSE CLAMP	3
7R002-060	# 60 SAE TYPE F SS HOSE CLAMPS	1
7R005-003	CLAMP, T-BOLT, 200-87	1
7U033-000	5 /8" PCV HOSE	2 FT.
4FV212-020/014	**DISCH ASSY, 2021 FORD TRUCK, SAT / BLK**	**1**
4FV012-010	DISCHARGE TUBE A, 2021 F150	1
4FV112-020/024	DISCHARGE TUBE B, 1 IN PORT, 2021 F150, SAT/BLK	1
4FV012-030/034	DISCHARGE TUBE C, 2021 F150, SAT/BLK	1
4FV012-040	DISCHARGE TUBE D, 2021 F150	1
7P250-033	1/4 X 5/32 REDUCER UNION	1
7P312-082	5 /16 TEE HOSE BARB	1
7PS300-091	ELBOW, BLK, 3" X 90 SILICONE, .75" LEGS, MOD	2
7PS300-277	SLEEVE, BUMP REDUCER, 3.0- 2.75	1
7PS300-301	BUMP HOSE, 3.00D X 3.00L	2
7PS388-300	ELBOW, 3.88 X 3.0 X 90 GM TRK	1
7R002-016	# 16 SAE TYPE F SS HOSE CLAMP	4
7R002-048	# 48 SAE TYPE F SS HOSE CLAMP	1
7R002-052	# 52 SAE TYPE F SS HOSE CLAMP	10
7R002-064	# 64 SAE TYPE F SS HOSE CLAMP	1
7U030-030	1/4" VACUUM HOSE	0.33 FT.
7U030-046	5/32" VACUUM LINE	3 FT.
7U034-016	1" GS HEATER HOSE	0.22 FT.
7U133-100	HOSE,ELBOW,90 ,1"ID, MOLDED	1
8D001-004	COMPRESS BYPASS VALVE, G2	1
8PN101-050/054	WELDED CORE ASSY, 05 MUST GT / BLK	1

PART NUMBER	DESCRIPTION	QTY.
4FV115-010	**SUPPORT ITEMS, CAC SYS, 2021 FORD TRUCK**	**1**
4FV010-030	BRKT, SUPPORT, DISCHARGE TUBE, 2021 F150	2
4FV010-040	BRKT, CHARGE COOLER, LEFT, F150, 2021	1
4FV010-050	BRKT, CHARGE COOLER, RIGHT, F150, 2021	1
7A250-101	1 /4-20 X 1 HHCS ZINC PLTD	6
7A375-100	3 /8-16 X 1 G5 HHCS, PLT	4
7E014-075	# 14 X .75 HEX HD SHEETMETAL SCREW	4
7F250-021	1 /4-20 NYLOCK NUT ZINC PLATED	6
7F375-021	3/8-16 NYLOCK FLANGE NUT	4
7J250-001	1/4 WASHER, SAE, PLTD	12
7J375-044	3 /8 SAE WASHER, PLTD	4
7R002-052	# 52 SAE TYPE F SS HOSE CLAMP	2
4FV139-096	**PCV ASSY, 2021 FORD TRUCK, 5.0L**	**1**
5W001-030	1 1/2" HEAT SHRINK	3 IN.
5W001-082	SLEEVE, FLEX BRAID .75" NOM.	1 FT.
7P375-106	PCV VALVE, FORD, 3/8" HOSE	1
7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1
7P625-375	REDUCER, 5/8 BARB TO 3/8 BARB	1
7R004-002	STEPLESS CLAMP, 17.0-70	2
7R004-004	STEPLESS CLAMP, 25.6 X 7MM WID 1" HOSE	5
7R004-007	STEPLESS CLAMP, 28.6 X 7MM WID 1.126 IN OPEN - 1.00 IN CLOSED	1
7U030-056	3/8 PCV/VAC RUBBER HOSE	0.33 FT.
7U033-000	5/8" PCV HOSE	0.66 FT.
4FV114-020	**COOLANT MOD ASSY, 2021 FORD F150, 5.0L**	**1**
4FE014-010	RADIATOR PIPE-STAINLESS	1
4FV114-010	Ø1.5" FORD THERMOSTAT ASSEMBLY	1
7R002-010	#10 SAE TYPE F SS HOSE CLAMP	4
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	6
7U038-000	3/4" HEATER HOSE	1.5 FT.
7U100-055	**TIE WRAP, 7.5" NYLON**	**12**

OPTIONAL PARTS

4FV212-100/104	**RACE BOV UPGRADE ASSY, 2021 F150, SAT / BLK**	**1**
4FV112-050/054	DISCHARGE TUBE B, 2021 F150, RACE BOV, SAT / BLK	1
7U030-030	1/4" VACUUM HOSE	4 FT.
8D204-111	ASSY, BILLET RACE BOV, BLACK	1

1. BASIC COMPONENT REMOVAL

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

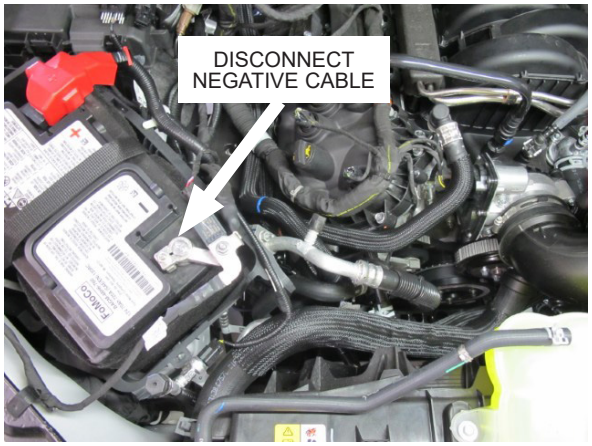

Fig. 1-A: Disconnect negative battery cable

B. You'll notice a breather hose assembly connected to the air inlet tube and the driver side valve cover. Disconnect the assembly and set it aside as the fittings will be reused in a later step.

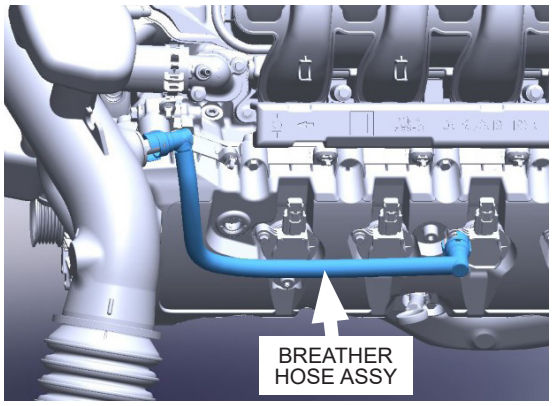

Fig. 1-B: Disconnect breather hoses

C. Using an 8mm socket, loosen the hose clamps securing the air inlet tube to the throttle body and the air box. With both hose clamps loosened, proceed to remove the air inlet tube 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 tape.

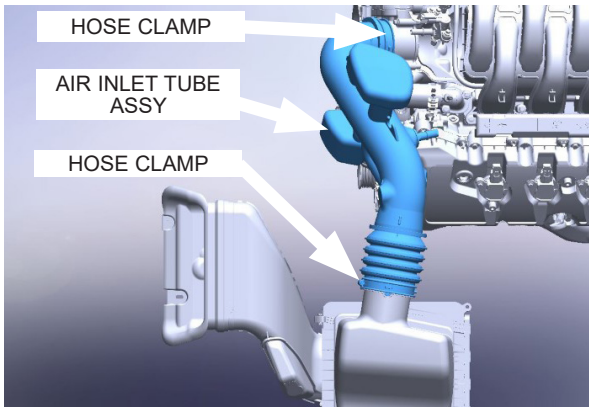

Fig. 1-C: Remove air inlet tube

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1. BASIC COMPONENT REMOVAL

D. Using a 13mm socket, loosen the bolt securing the air cleaner assembly to the chassis. Remove the plastic fasteners that secure the ram air inlet duct to the chassis. Remove the air cleaner assembly and ram air duct by pulling it upwards.

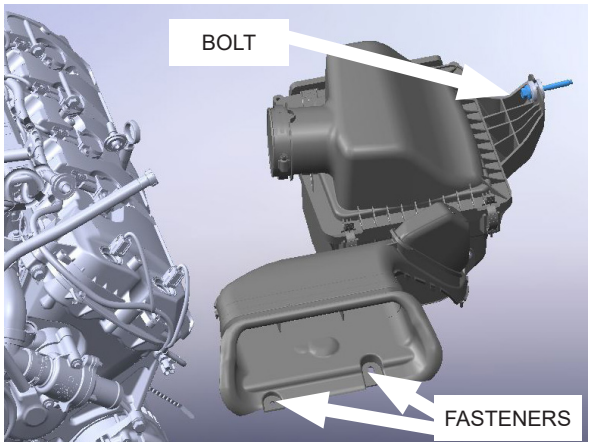

Fig. 1-D: Remove air cleaner assembly

E. Using a long ratchet and 15mm socket, 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-E: Remove OEM serpentine belt

F. The engine coolant will now be drained. Remove the coolant reservoir cap. Locate the coolant hose going to the oil cooler closest to the crank pulley. Undo the hose clamp, pull out the coolant hose and drain the coolant into a bucket.

Fig. 1-F: Remove cap and drain coolant

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1. BASIC COMPONENT REMOVAL

G. Once the coolant is drained, remove the remainder of the coolant hose assembly by removing the other coolant lines from the oil cooler and larger hoses connected to the thermostat housing intlet and to the radiator outlet. Set aside as it will be modified in a later step.

Fig. 1-G: Remove coolant hose assembly

H. Using an 8mm socket, remove the 2 screws securing the thermostat inlet and remove it.

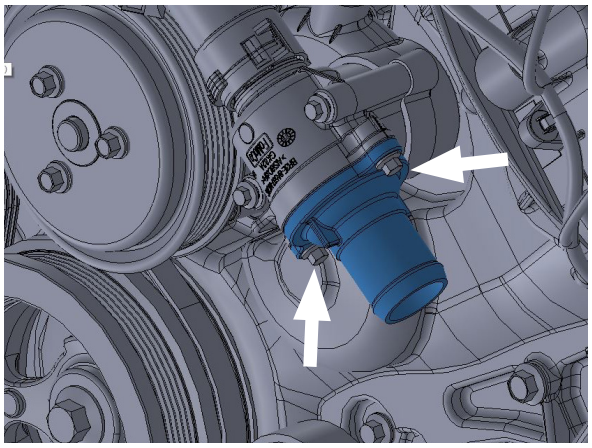

Fig. 1-H: Remove thermostat inlet

I. Replace the thermostat inlet with the supplied 90-degree assembly. Torque to 85 lb-in.

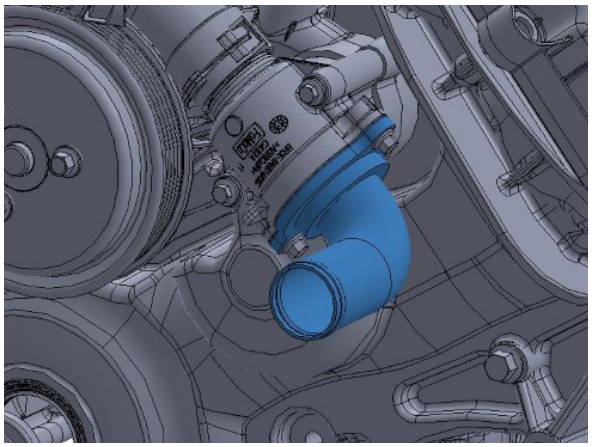

Fig. 1-I: Install 90-degree assembly

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1. BASIC COMPONENT REMOVAL

J. Remove the thermostat housing bolts. They will be replaced with longer bolts when installing the front supercharger mounting bracket. Ensure the O-ring in between the thermostat housing and engine block stays in place and does not get lost.

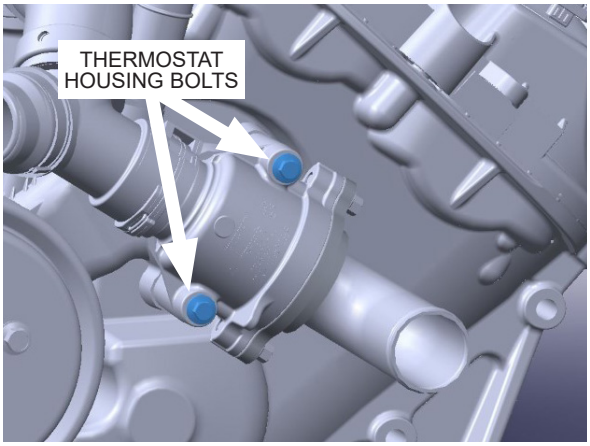

Fig. 1-J: Remove thermostat housing bolts

K. Remove the indicated top, inner, front engine cover bolt. It is located on the driver's side of the engine next to the valve cover. It will be replaced with a longer bolt which will support the supercharger mounting bracket.

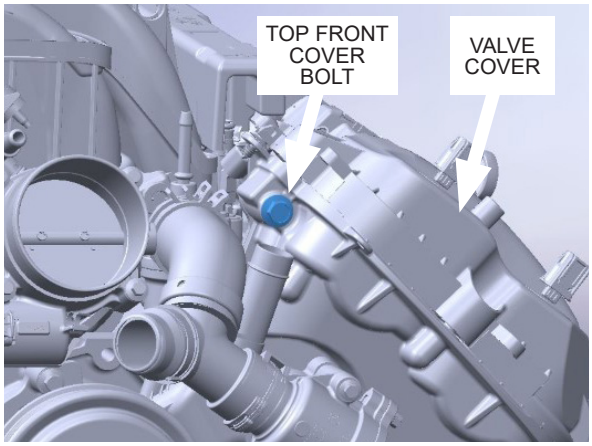

Fig. 1-K: Remove front engine cover bolt

L. Remove the two indicated front engine cover bolts. They are located on the driver's side of the engine, above the alternator. They will be replaced with longer bolts which will support the supercharger mounting bracket.

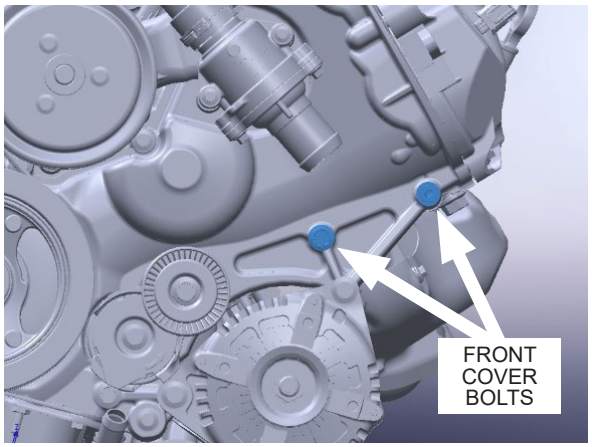

Fig. 1-L: Remove front engine cover bolts above alternator

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1. BASIC COMPONENT REMOVAL

M. Remove the top alternator mounting bolt. It will be replaced with a longer bolt which will support the supercharger mounting bracket.

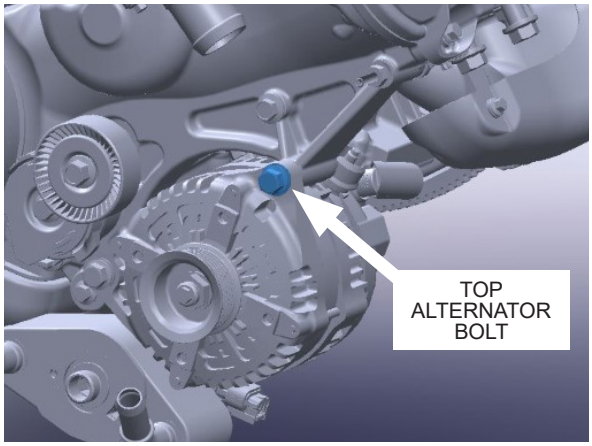

Fig. 1-M: Remove top alternator mounting bolt

N. Using a panel removal tool or a flathead screwdriver, remove the 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. Disconnect the shutter actuator and ambient air temperature plugs located near the hood latch.

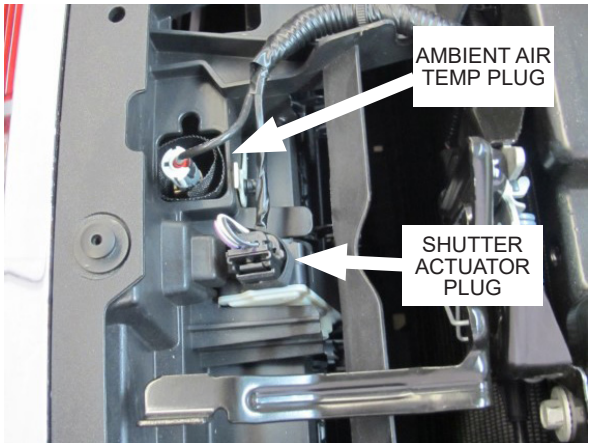

Fig. 1-O: Remove radiator shutter assembly

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1. BASIC COMPONENT REMOVAL

P. Using a 10mm socket, remove the four screws securing the upper section of the grill assembly to the radiator support.

Fig. 1-P: Remove upper grill screws

Q. You'll notice that there's two screws on each corner of the bumper trim securing it to the vehicle. Using an 8mm socket, remove the two screws on each side.

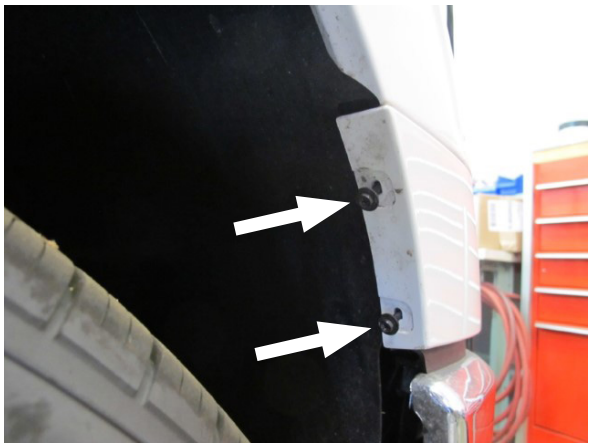

Fig. 1-Q: Remove bumper trim screws

R. To release the bumper trim, you will need to pull it away from the front bumper with a good amount of force until you feel them unsnap from the vehicle. Make sure you have a good grip as to not cause any damage to yourself or the trim during removal.

Fig. 1-R: Remove bumper trim

1. BASIC COMPONENT REMOVAL

S. Using a 10mm socket, remove the two screws that mount the grill to the radiator support. There is one bolt on each bottom corner of the grill. Remove the grill by pulling it forward from the truck.

Fig. 1-S: Remove grill lower screws

T. Remove all the air deflectors and linkages from the grill assembly by using a screwdriver to pry and unclip them from the inner and outer mount tabs. Place the deflectors linkages aside as they will not be reused. The shutter assembly housing will be later modified to make clearance for the charge air cooler.

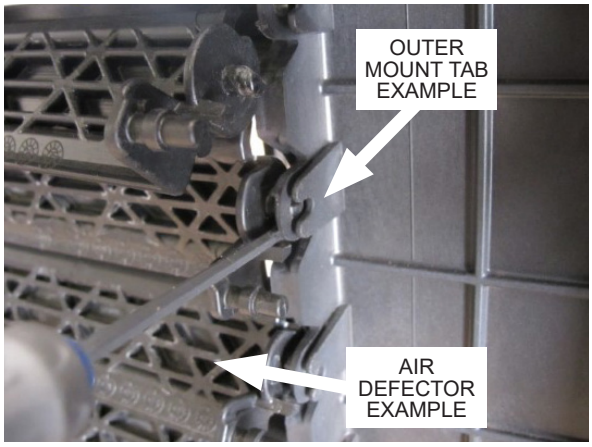

Fig. 1-T: Remove air deflectors

U. Remove the air deflector actuator motor and ambient air temperature sensor from the shutter housing. The ambient air temperature sensor is held on by a plastic clip. These parts will be relocated in a later step.

NOTE: Though the air deflectors were removed, the actuator motor will remain connected to prevent diagnostic trouble codes.

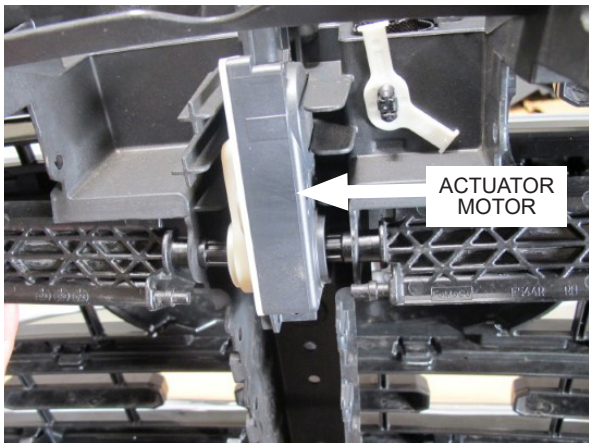

Fig. 1-U: Remove air deflector actuator

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1. BASIC COMPONENT REMOVAL

V. Using a panel remover tool, remove the vinyl flap from the bottom of the grill assembly by prying from under the plastic tabs. Set the flap and its fasteners aside as they will not be reused.

Fig. 1-V: Remove grill lower flap

W. Using a 10mm socket, remove the four indicated nuts which secure the shutter assembly to the front grill.

Fig. 1-W: Remove grill nuts

X. Using a panel removal tool or a flathead screwdriver, remove the plastic fasteners securing the shutter assembly from the grill. Pop the center section of each fastener upward and then the large outer part of the fastener will loosen.

Fig. 1-X: Remove grill plastic fasteners

1. BASIC COMPONENT REMOVAL

Y. Using a panel removal tool or a flathead screwdriver, remove the shutter assembly housing from the grill by unclipping the spring clips that hold the bottom of the housing to the grill. Once the shutter housing is removed from the grill, remove the metal spring clips as they will no longer be used.

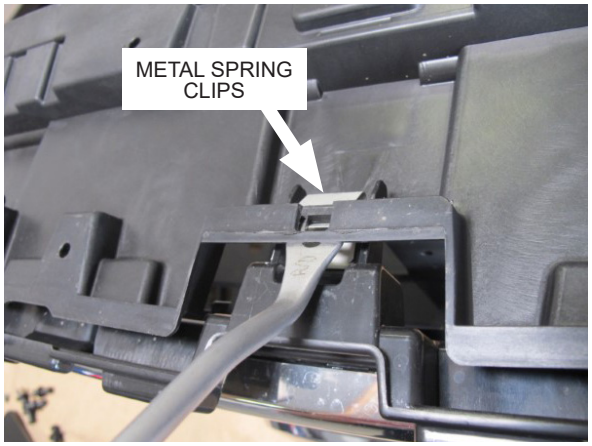

Fig. 1-Y: Remove shutter housing from grill

Z. Locate the horn assembly on the passenger side upper radiator support. Unplug it and remove the mounting bolt using a 10mm socket. Remove the horn assembly from the radiator support and set it aside. It will be relocated in a later step.

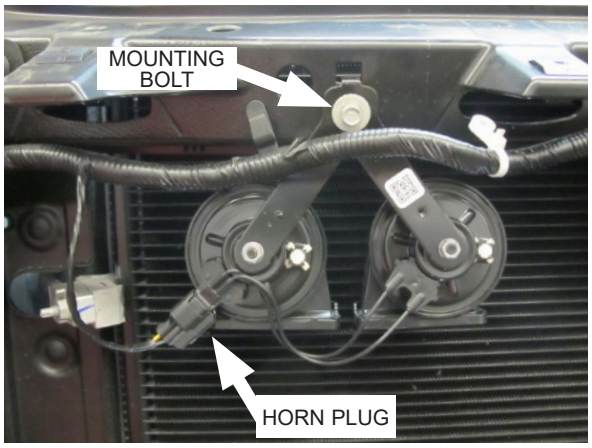

Fig. 1-Z: Remove horn assembly

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2. COMPONENT MODIFICATIONS

A. To make room for the charge air cooler, the shutter housing needs to be modified. The center section will be removed which will be detailed in the following steps.

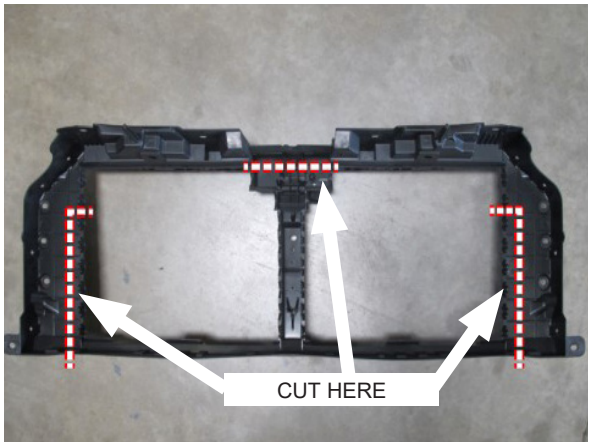

Fig. 2-A: Preview of cut locations

B. Cut the housing using a reciprocating saw or an abrasive cut off wheel on the driver's side as indicated by the dotted line. Use the ribs molded on the housing as a reference. Cut from the second rib down and first rib over from the inside edge.

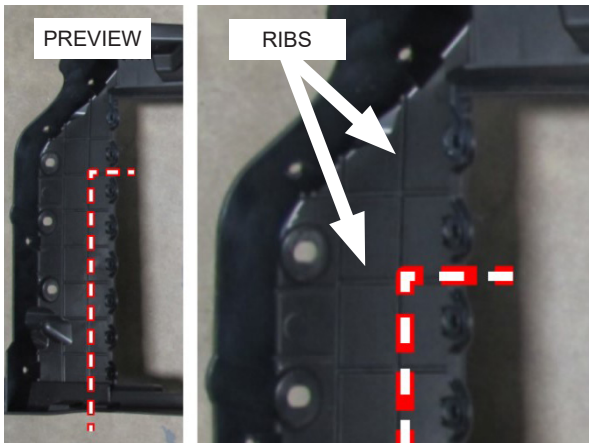

Fig. 2-B: Cut shutter housing as indicated

C. Repeat the process on the passenger side of the housing.

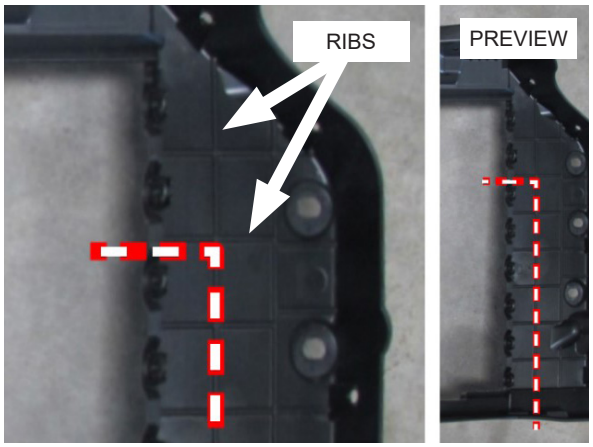

Fig. 2-C: Cut shutter housing as indicated

2. COMPONENT MODIFICATIONS

D. Cut the center of the housing as indicated in the image. After the center section is cut, remove, and discard it. Deburr the plastic edges with a file or sanding disc.

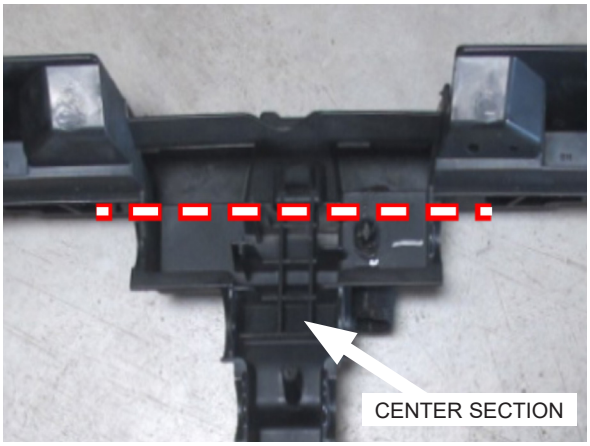

Fig. 2-D: Cut shutter housing as indicated

E. Reattach the modified shutter shroud to the grill using the 4 nuts and plastic fasteners which were previously removed from the assembly.

Fig. 2-E: Reattach shutter housing to grill

F. The coolant hose assembly which was previously removed will need to be modified. Cut off all the molded plastic retainer clamps on the assembly as shown to release the hoses from the union. Remove all hoses from the union. All clamps will be replaced with stainless steel hose clamps after the modification. The two smaller 3/4 inch hoses and 1.5 inch diameter metal spring clamps will not be reused.

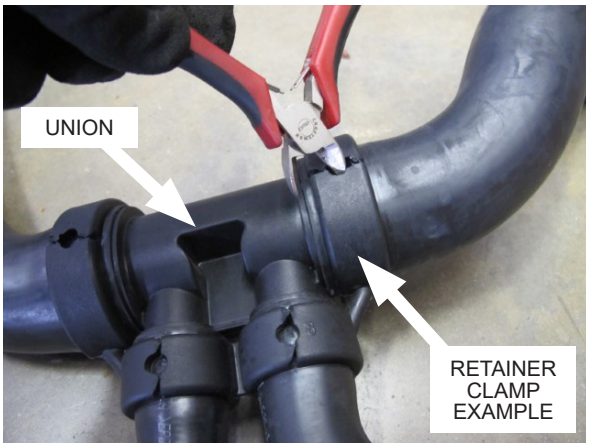

Fig. 2-F: Remove clamps and hoses from union

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2. COMPONENT MODIFICATIONS

G. Remove the large hose that connects to the engine coolant outlet to the union. Mark and cut the hose as shown. Discard the 1.5 inch section shown after it is cut. The resulting elbows will be used in the next step.

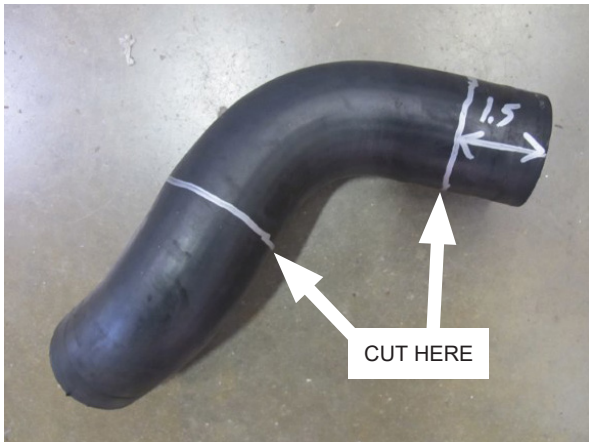

Fig. 2-G: Mark and cut coolant hose

H. Assemble the previously cut elbows onto the union as shown. Cut 2 lengths of supplied 3/4 inch heater hose, one 8 inch and one 10 inch lengths. Assemble them to the union as shown.

NOTE: See Appendix E as reference.

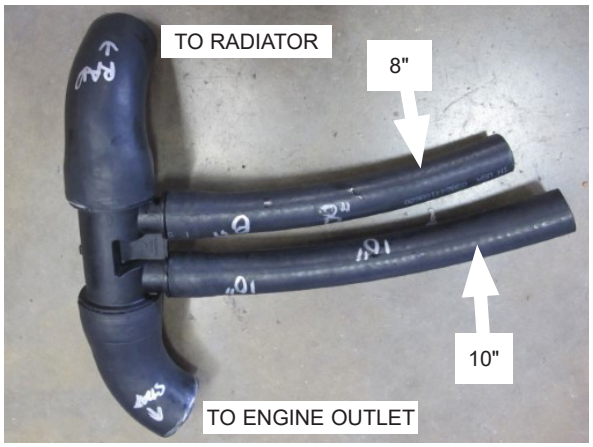

Fig. 2-H: Assemble coolant hoses onto union

I. Assemble the #10 and #24 stainless hose clamps onto the assembly as shown. Assemble the stainless radiator pipe between the elbow going to the radiator and the removed hose going to the radiator. Position the components in the orientation as shown. Set the assembly aside as it will be installed in a later step.

NOTE: See Appendix E as reference.

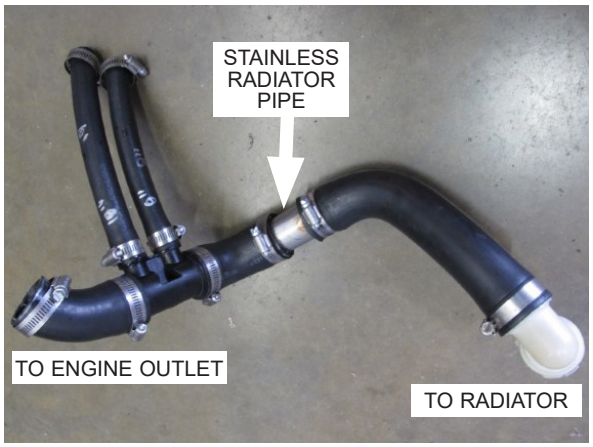

Fig. 2-I: Assemble hoses and clamps

2. COMPONENT MODIFICATIONS

J. Clearance for the air inlet duct needs to be made on the radiator fan support ribs. Locate the bottom left, two support ribs for the driver's side radiator fan motor. Cut and remove the indicated ribs.

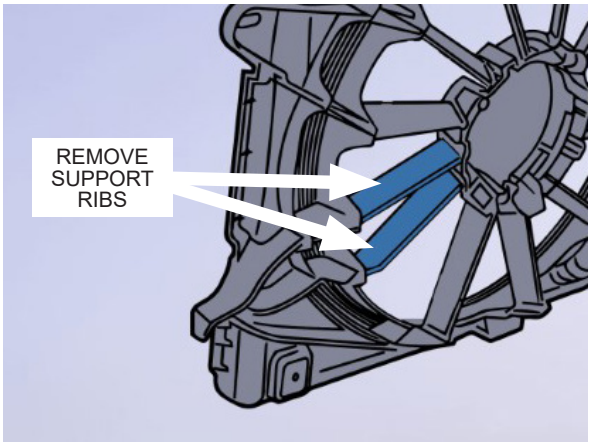

Fig. 2-J: Cut and remove two support ribs

K. Remove the quick disconnect coolant fitting from the indicated coolant barb. Insert a rod inside the coolant hard line and bend it over toward the passenger side of the vehicle about a 1/4 inch to make clearance for a standoff. Reconnect the hose after the modification.

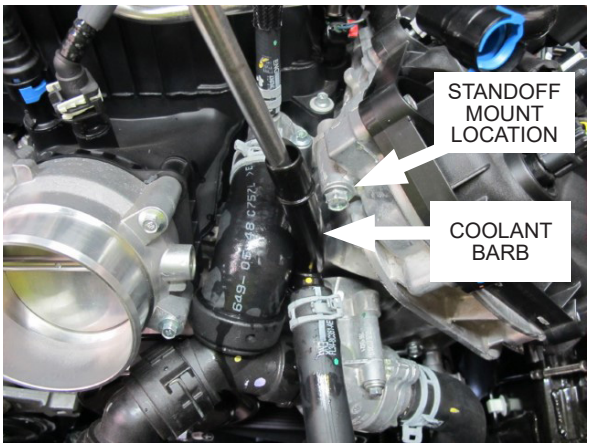

Fig. 2-K: Bend hardline for standoff clearance

L. Now that we will have positive manifold pressure under boost, you will need to add a check valve on the crank case breather hose assembly. It is located on the passenger side valve cover and connects to the throttle body.

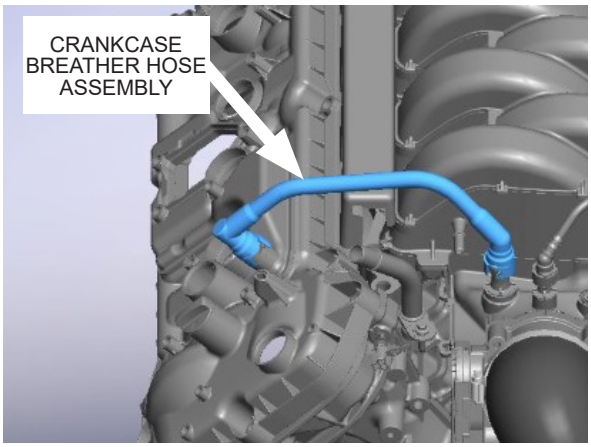

Fig. 2-L: Locate breather hose assembly

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2. COMPONENT MODIFICATIONS

M. Remove the hose assembly from the engine. Carefully cut the hose off the fittings with a razor blade. Cut the hose along its axis in several light passes until the hose can split off the fitting as to not damage the barbs and O-ring. The fittings will be reused in the following step.

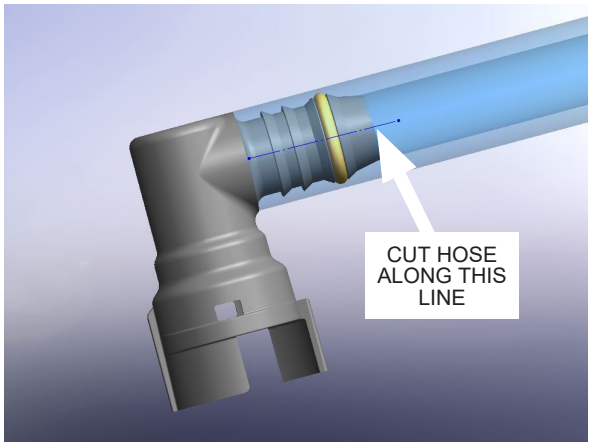

Fig. 2-M: Remove fittings from hose assembly

N. Assemble the new PCV assembly using Appendix C as a reference. Assemble the check valve, hoses, elbow, reducer and stepless clamps. Cover the assembly with protective sheath and heat shrink. Assemble the fittings from the previous step and secure them with stepless clamps.

NOTE: See Appendix C as reference.

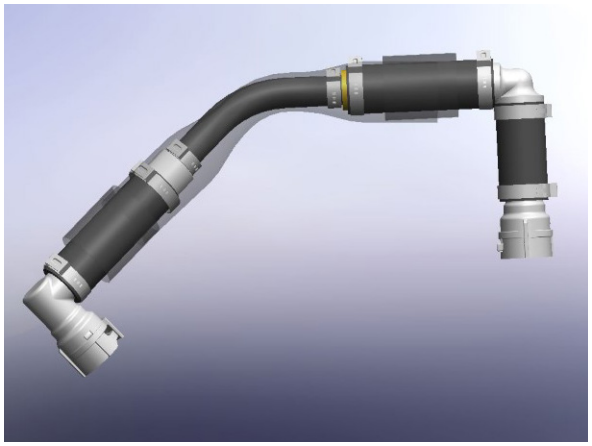

Fig. 2-N: Assemble the new PCV assembly

O. Install the new PCV assembly to the engine in its original location.

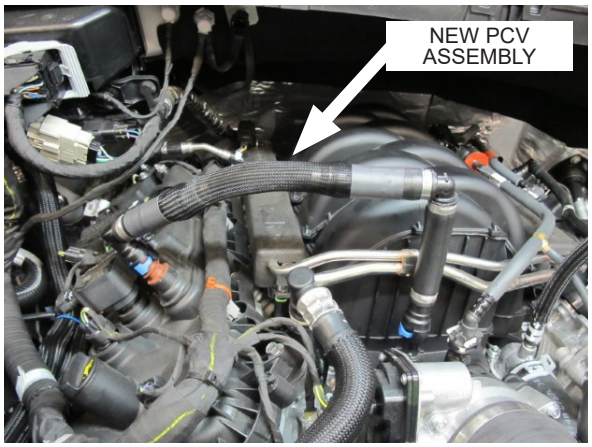

Fig. 2-O: Install new PCV assembly

3. MOUNTING BRACKET AND SUPERCHARGER INSTALLATION

Use blue threadlocker on all screws in this section.

A. The supercharger mounting bracket assembly should come pre-assembled, however it will need to be disassembled during the installation. We suggest taking detailed pictures of the bracket assembly prior to disassembly.

NOTE: Refer to appendixes A-G for parts and torque specifications.

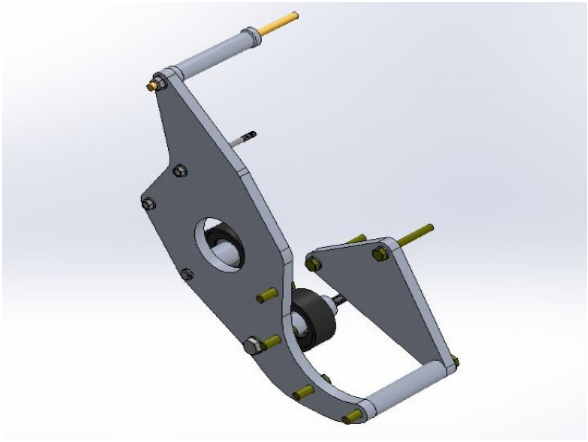

Fig. 3-A: Supercharger mounting bracket assembly

B. Assemble the rear mounting plate as shown onto the two holes above the alternator. Torque the two M8 bolts to 22 lb-ft.

NOTE: See Appendix A as reference.

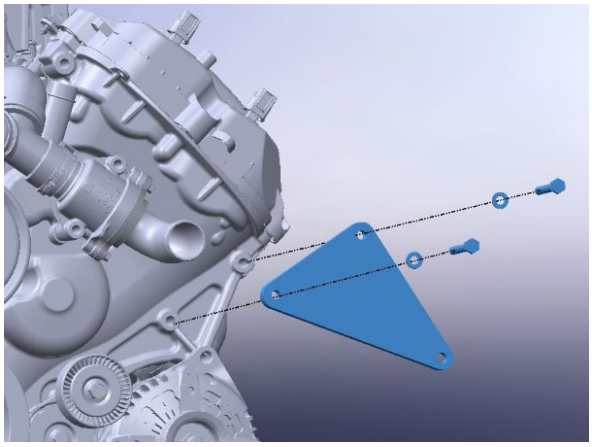

Fig. 3-B: Install rear mounting plate

C. Preassemble the front mounting plate and components as shown. The snap rings of the idler pulleys should face the rear of the vehicle. Bolt the top Idler pulley to the plate. Torque to 35 lb-ft. Hold the threaded stud in the middle with pliers or in a vise. Screw the M8 nut onto the stud until at least 3 threads show past the nut. The notes indicate where the fasteners will mate to.

NOTE: See Appendix A as reference.

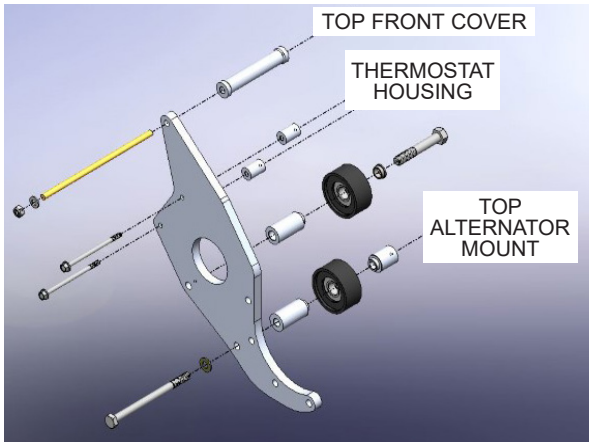

Fig. 3-C: Preassemble the front mounting plate

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3. MOUNTING BRACKET AND SUPERCHARGER INSTALLATION

D. Assemble the front plate assembly to the engine. Hand tighten the fasteners until all parts are in place and aligned. Then torque the fasteners to spec.

NOTE: See Appendix A as reference.

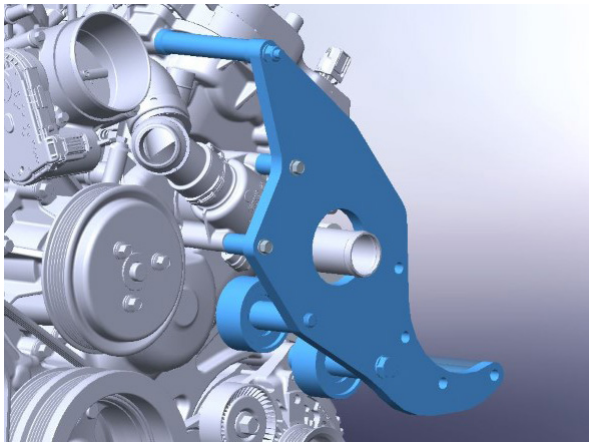

Fig. 3-D: Assemble front mounting plate to engine

E. 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.

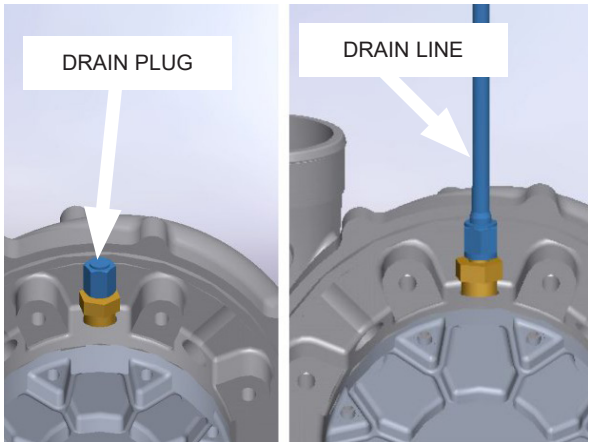

Fig. 3-E: Install oil drain line

F. 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.

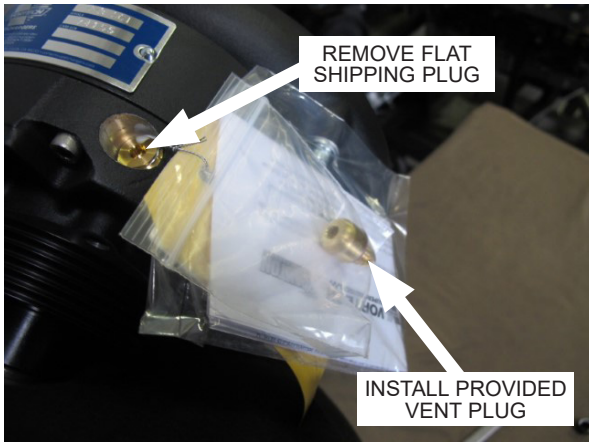

Fig. 3-F: Remove shipping plug and install vent plug

3. MOUNTING BRACKET AND SUPERCHARGER INSTALLATION

G. Assemble the air inlet support to the supercharger gear case with two 3/8"-16 bolts and two 3/8" washers. Torque to 22 lb-ft.

NOTE: See Appendix B as reference.

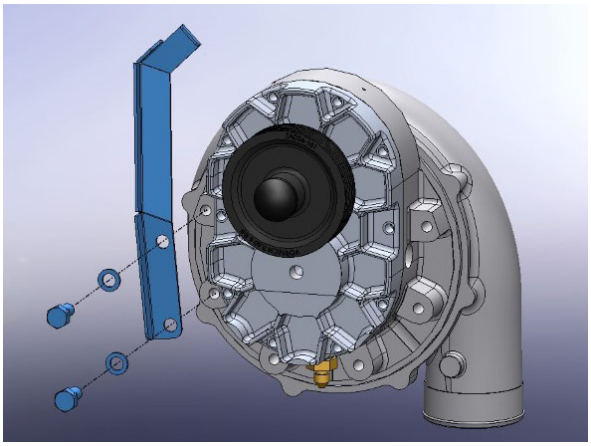

Fig. 3-G: Assemble air inlet support

H. Assemble a 3.5" bump hose onto the end of the air inlet elbow. Using pipe sealant on the threads, assemble a 3/4" NPT fitting onto the air inlet elbow. Assemble the air inlet elbow onto the supercharger inlet in place with a T-bolt clamp, however, leave the clamp loose until the next step.

NOTE: See Appendix B as reference.

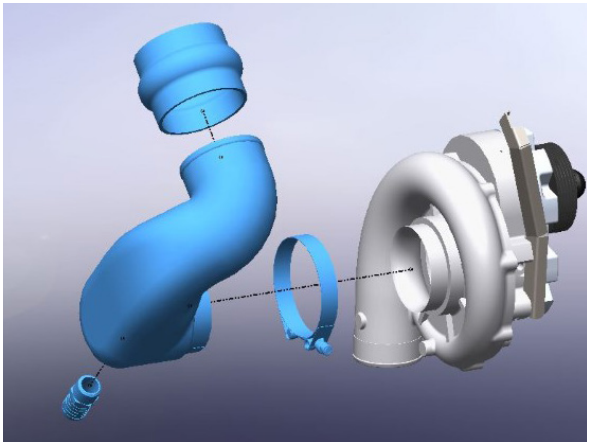

Fig. 3-H: Assemble air inlet elbow

I. Align the air inlet so the bump hose on it is resting next to the air inlet support. Assemble a #56 clamp over air inlet support and bump hose. Once the components are in place, tighten the T-bolt and #56 hose clamps.

NOTE: See Appendix B as reference.

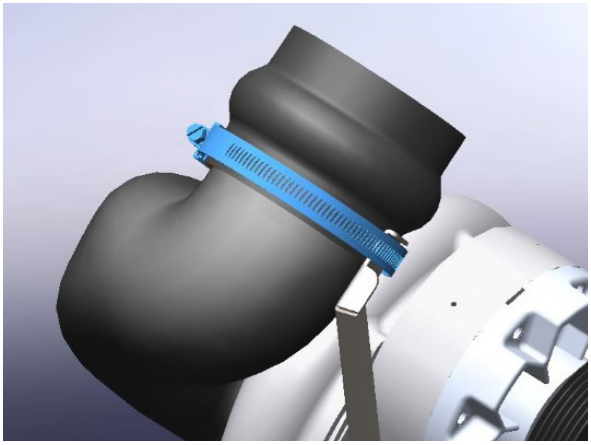

Fig. 3-I: Secure the air inlet elbow

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3. MOUNTING BRACKET AND SUPERCHARGER INSTALLATION

J. Assemble the supercharger to the mounting bracket with the four 3/8" bolts, four 3/8" washers and a standoff as shown. Torque to 22 lb-ft. Route the drain line downwards towards the front of the vehicle. This line will be secured in a later step.

NOTE: See Appendix B as reference.

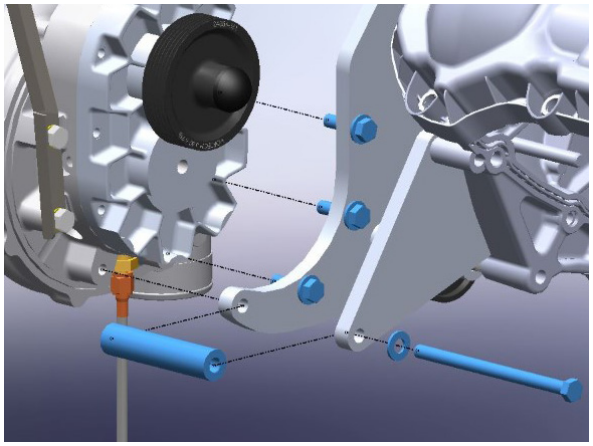

Fig. 3-J: Assemble supercharger to mounting bracket

K. Install the provided 6 rib belt from the bottom in between the two idler pulleys, then wrap it around the supercharger pulley. Wrap the rest of the belt around the accessary pulleys. Use a 14mm wrench to turn the tensioner counterclockwise, then wrap the belt over the tensioner pulley.

NOTE: See Appendix G as reference.

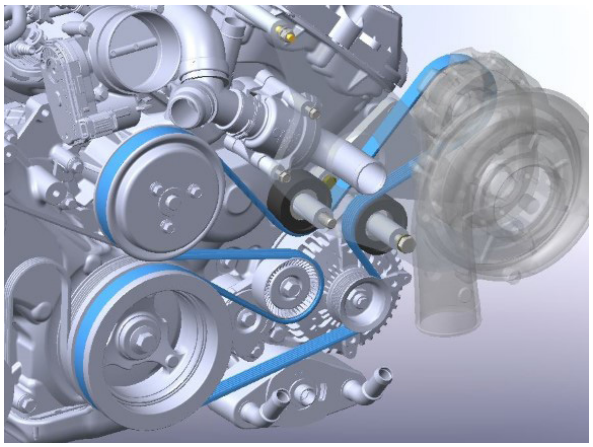

Fig. 3-K: Install the provided 6 rib belt

4. CHARGE AIR COOLER INSTALLATION

A. Center punch locations for holes to be drilled for the charge air cooler mounts. On the top radiator support, notice diagonal indentations marks on the front surface. On the driver's side, use the point where the diagonal intersects the bottom of the support for a reference point as shown. Center punch a mark .650 inch up from the bottom surface and 1.00 inch inwards from the reference point, towards the center of the vehicle as shown. Drill a hole out in steps using a 1/8" drill bit first then a 1/4 inch drill for the final size. Repeat process for the passenger side.

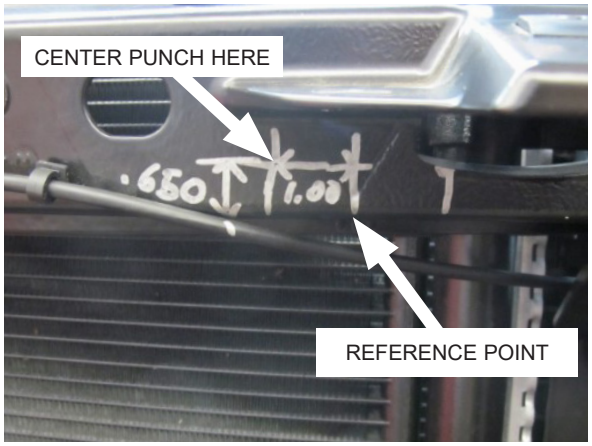

Fig. 4-A: Drill holes in top radiator support

B. Temporarily mount the left and right charge cooler brackets from the top hole to the upper radiator support with the 1/4 inch hardware. Once in position a lower slot should line up with a preexisting hole in the vehicle's lower radiator support's top surface. Temporarily install the 1/4 inch hardware for this hole. Ensure that the bracket is vertical and perpendicular to the lower radiator support. Center punch the lower radiator support to mark the center of the other slot in the bracket. Drill the hole out in steps using a 1/8 inch drill bit first then a 1/4 inch drill for the final size. Repeat for the other bracket.

NOTE: See Appendix F as reference.

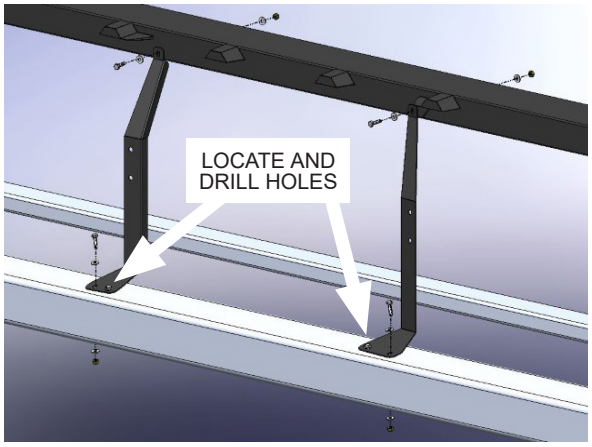

Fig. 4-B: Drill bracket hole locations

C. Temporarily mount the charge air cooler and its mounting hardware in the orientation as shown. Center and level the cooler in position and then tighten the mounting hardware to spec.

NOTE: See Appendix F as reference.

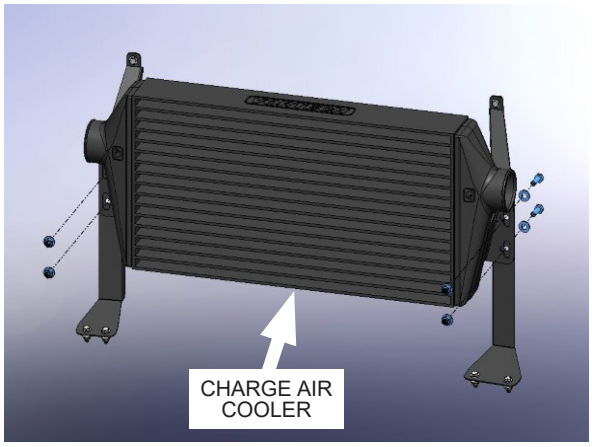

Fig. 4-C: Install charge air cooler

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5. DISCHARGE ASSEMBLY INSTALLATION

A. Assemble a 3.0 to 2.75 inch bump sleeve reducer and hose clamps from the blower outlet to discharge tube A. Leave the hose clamps loose until all discharge tubes are set in place.

NOTE: See Appendixes D1 AND D2 as reference.

NOTE: For ease of installing tubes to silicone couplers, brush a light coat of oil on the inside mating surface of the silicone sleeve prior to assembly.

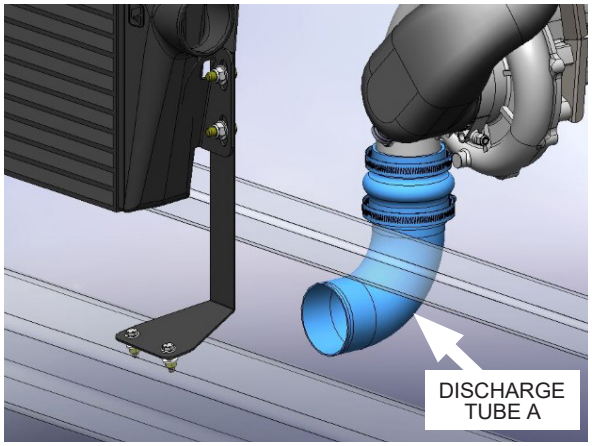

Fig. 5-A: Install discharge tube A

B. Assemble a 3.0 inch bump sleeve and hose clamps from discharge tube A to discharge tube B. Assemble a 90 degree elbow and hose clamps from discharge tube B to the charge air cooler. Leave the hose clamps loose until all discharge tubes are set in place.

NOTE: See Appendixes D1 AND D2 as reference.

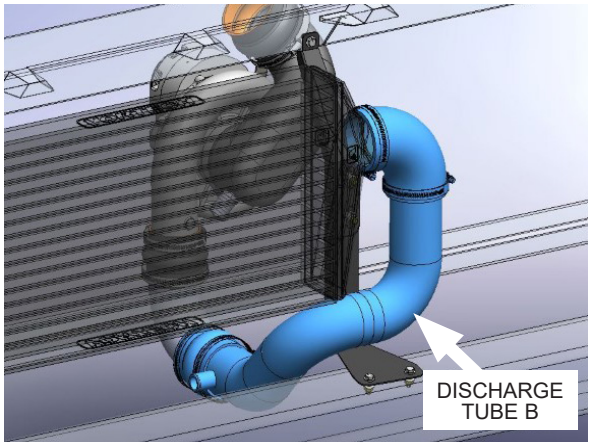

Fig. 5-B: Install discharge tube B

C. Assemble a 90 degree elbow and hose clamps from the charge air cooler to discharge tube C. Assemble a 3.0 inch bump sleeve and hose clamps from discharge tube C which will lead to discharge tube D. Leave the hose clamps loose until all discharge tubes are set in place.

NOTE: See Appendixes D1 AND D2 as reference.

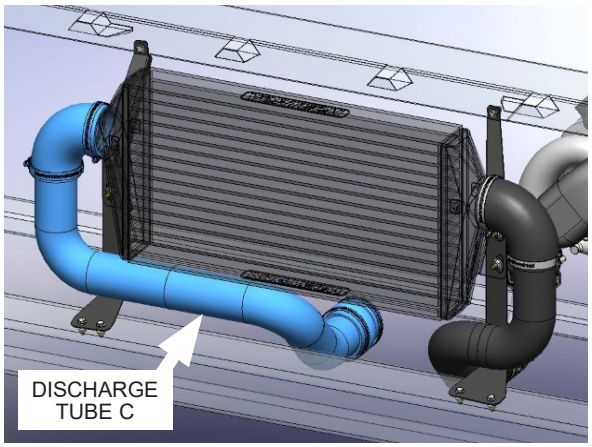

Fig. 4-C: Install discharge tube C

5. DISCHARGE ASSEMBLY INSTALLATION

D. Remove any tape or protective cover on the throttle body then assemble a 3.88 to 3.0 inch elbow reducer and hose clamps onto the throttle body. Install discharge tube D in between discharge tube C and the throttle body as shown. Note the orientation of the elbow and discharge tube D to clear the indicated coolant hose. Leave the hose clamps loose until all discharge tubes are set in place.

NOTE: See Appendixes D1 AND D2 as reference.

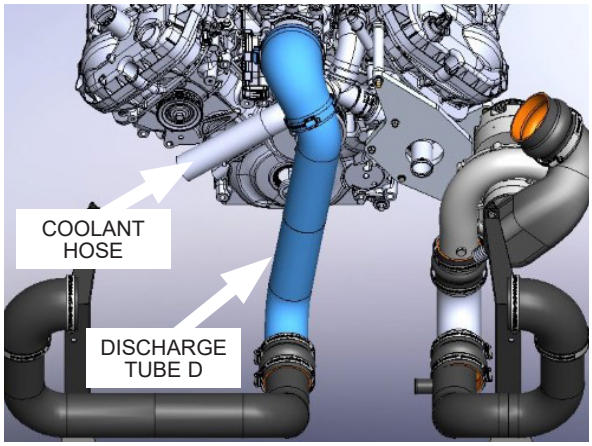

Fig. 5-D: Install discharge tube D

E. Discharge tubes B and C will be supported from the vehicles lower radiator support cross member. Set the support brackets in position over discharge tubes B and C and against the cross member in the orientation as shown. Using the bracket as a template, mark the slot locations roughly in the middle of the height of the cross member. Center punch the locations and drill them to 11/64“ in two steps using a 1/8” drill as a pilot hole then a 11/64” drill for the final diameter. Mount each bracket to the cross member with 2 self-tapping screws. Clamp the discharge tubes to the support brackets with a #52 hose clamp.

NOTE: See Appendix F as reference.

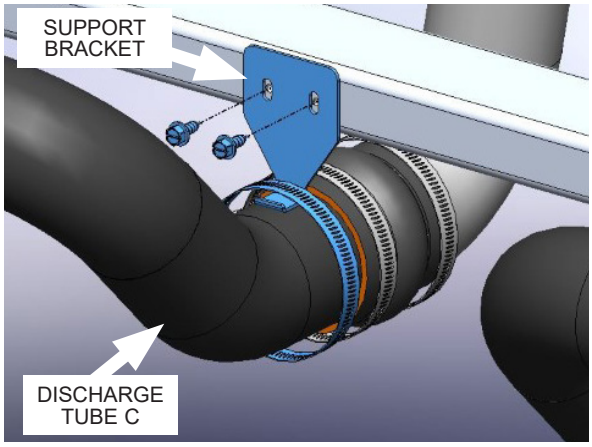

Fig. 5-E: Install support bracket

F. Check that all discharge tubes, silicone couplers and hose clamps are free from interference with surrounding components. Once all the discharge tubes are in position, tighten the hose clamps.

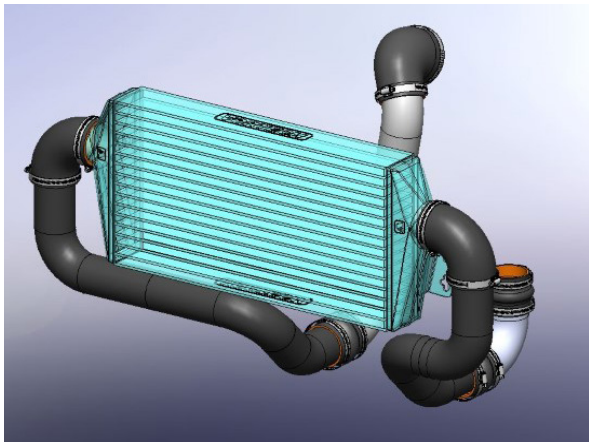

Fig. 5-F: Tighten hose clamps

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5. DISCHARGE ASSEMBLY INSTALLATION

G. Preassemble the bypass components as shown. Notice the orientation of the bypass valve vacuum port.

NOTE: See Appendix D2 as reference.

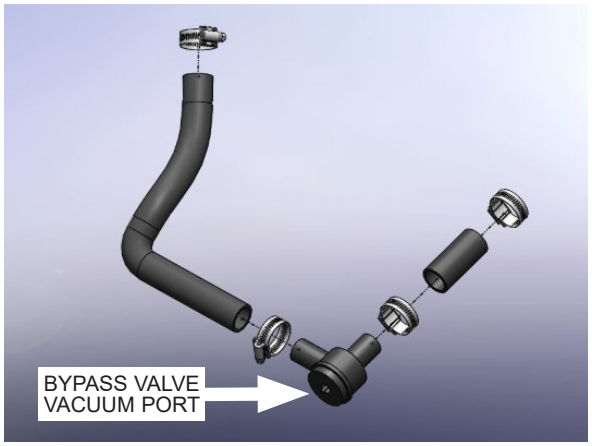

Fig. 5-G: Preassemble bypass components

H. Install the bypass assembly hose ends onto the 1 inch port on discharge tube B, and the 1 inch barb fitting on the air inlet elbow as shown.

NOTE: See Appendix D2 as reference.

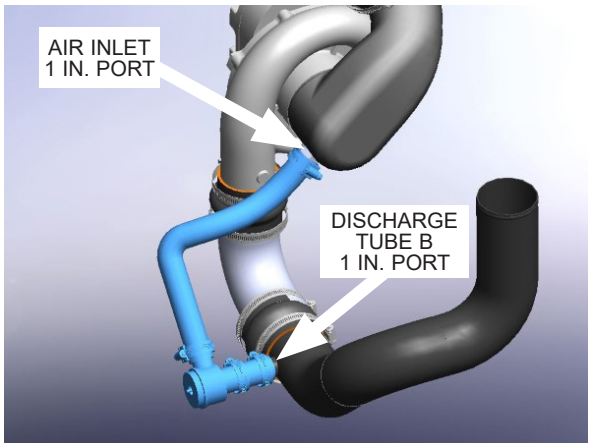

Fig. 5-H: Install bypass assembly

I. Assemble the vacuum tee assembly as shown. Assemble a 4 inch length of 1/4" vacuum hose to a 3 foot length of 5/32" vacuum hose with a 1/4" to 5/32" reducer.

NOTE: See Appendix D2 as reference.

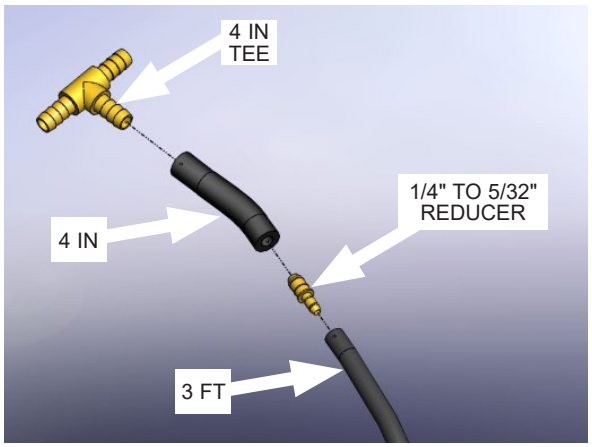

Fig. 5-I: Preassemble vacuum tee assembly

5. DISCHARGE ASSEMBLY INSTALLATION

J. Cut the 1/4" vacuum hose that comes off the throttle body and over to the driver's side where indicated. Insert the tee assembly in the orientation shown with the 5/32" vacuum hose going towards the front of the vehicle.

NOTE: See Appendix D2 as reference.

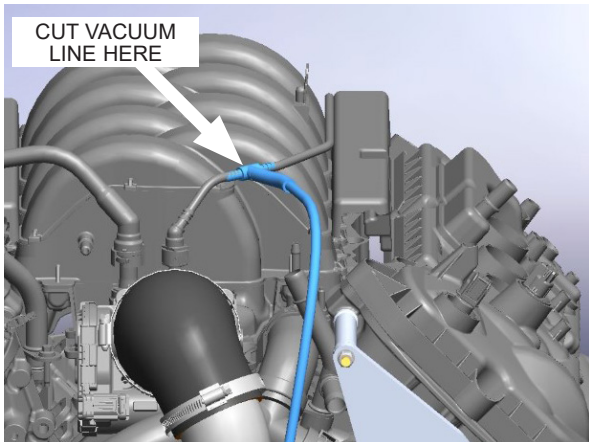

Fig. 5-J: Insert tee assembly

K. Route the 5/32" vacuum hose along discharge tube D, towards the bypass valve. Secure the vacuum hose to the discharge tube with zip ties. Use two zip ties to make one long zip tie long enough to wrap around the discharge tube and vacuum hose. Connect the vacuum hose to the vacuum port on the bypass valve. Do not choke the vacuum hose by over tightening the zip ties.

NOTE: See Appendix D2 as reference.

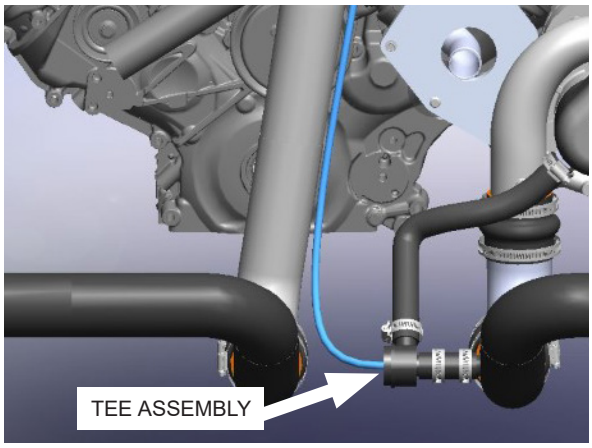

Fig. 5-K: Connect vacuum hose to bypass valve

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6. AIR INLET INSTALLATION

A. Install the air cleaner assembly back into its original location. Align the rubber grommets on the chassis to the post on the bottom of the air cleaner assembly. Press the air cleaner assembly down to secure it in the rubber grommets. Secure the air cleaner assembly to the chassis with its retaining bolt.

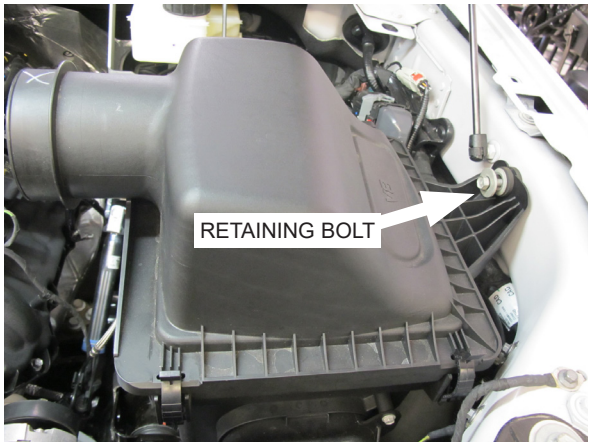

Fig. 6-A: Install air cleaner assembly

B. Install a 3.75 inch to 3.5 inch reducer onto the air cleaner assembly outlet. Secure it with a #60 hose clamp.

NOTE: See Appendix B as reference.

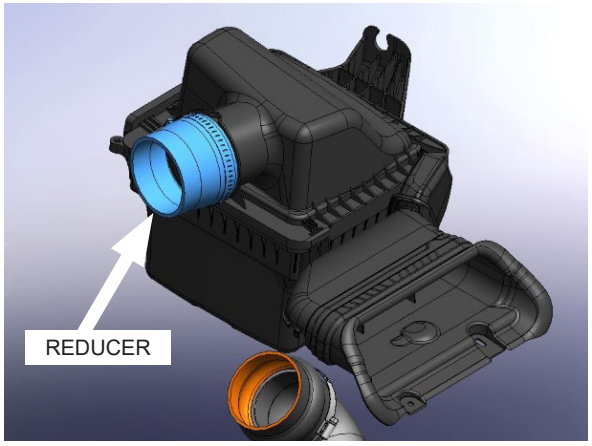

Fig. 6-B: Install reducer and clamp

C. Locate the air inlet tube and a 3/8" NPT to 5/8" 90-degree barb fitting. Use pipe sealant on the fittings threads and assemble the fitting onto the air inlet tube in the orientation as shown.

NOTE: See Appendix B as reference.

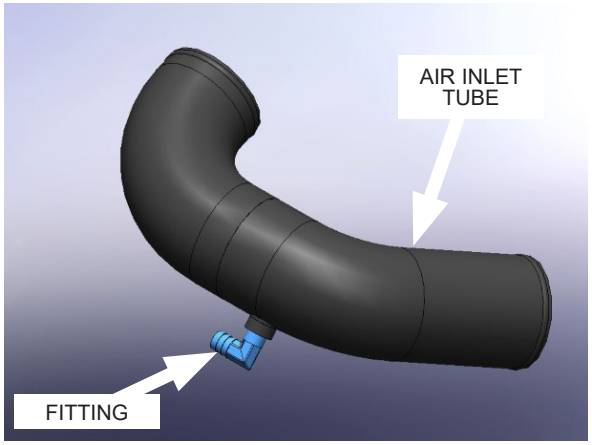

Fig. 6-C: Install 90 Degree fitting

6. AIR INLET INSTALLATION

D. Locate the breather hose assembly that was removed in step 1B. Carefully cut the hose off of the 90-degree fitting with a razor blade. Cut the hose along its axis in several light passes until the hose can split off the fitting as to not damage the barbs and O-ring. The fitting will be reused in the following step.

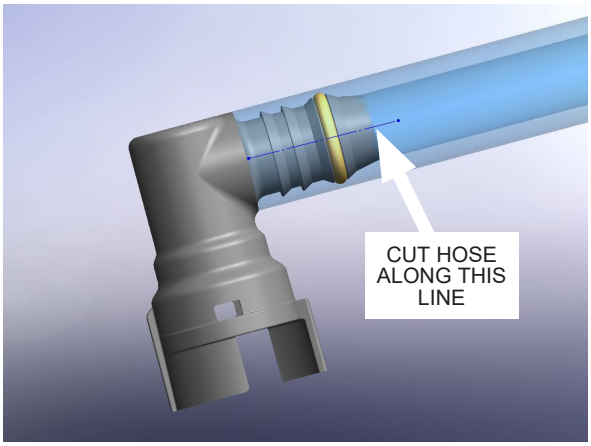

Fig. 6-D: Remove 90-degree fitting

E. Assemble a 2 feet section of 5/8" PCV hose onto the 5/8" 90 degree barb fitting in the orientation as shown. Secure the hose to the fitting with a #6 hose clamp.

NOTE: See Appendix B as reference.

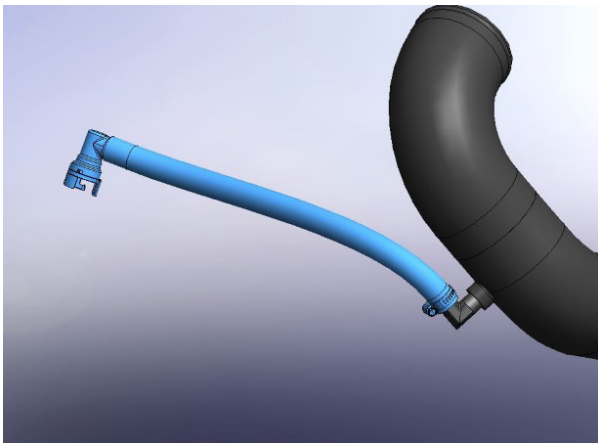

Fig. 6-E: Assemble PCV hose

F. Install the air inlet tube to the air cleaner assembly and air inlet elbow in the orientation as shown. Secure the inlet tube to the silicone couplers with #56 hose clamps. Connect the crankcase breather hose fitting to the barb on the valve cover.

NOTE: See Appendix B as reference.

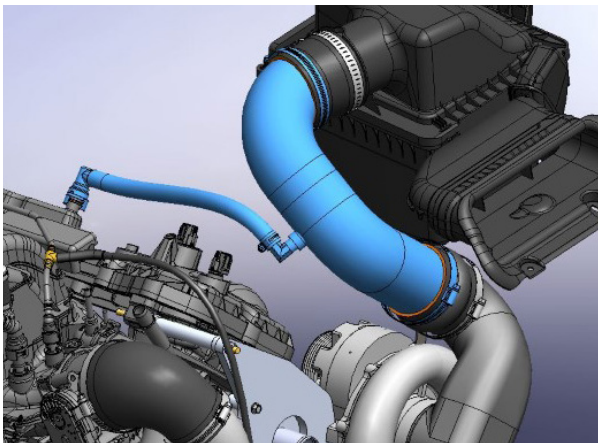

Fig. 6-F: Install air inlet tube

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7. COOLANT HOSE ASSEMBLY INSTALLATION

A. Install the coolant hose assembly which was previously modified in the orientation as shown. Secure the hose to the thermostat outlet with a #24 hose clamp. Secure the 3/4" heater hoses to the oil cooler with #10 hose clamps. Reconnect the coolant hose assembly to the radiator.

NOTE: See Appendix E as reference.

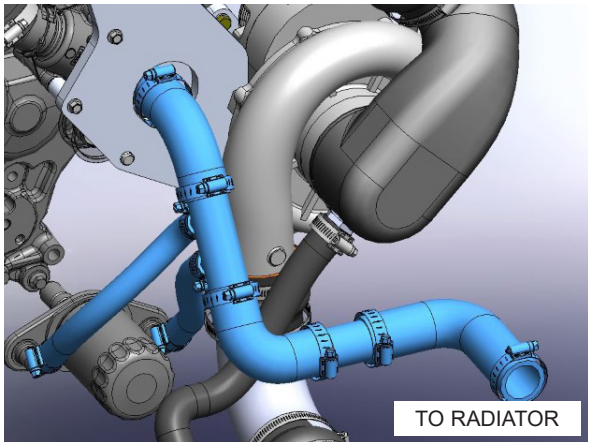

Fig. 7-A: Install coolant hose assembly

B. Check that all coolant hoses are secure and free from interference with surrounding components. Locate the coolant reservoir and refill the engine coolant.

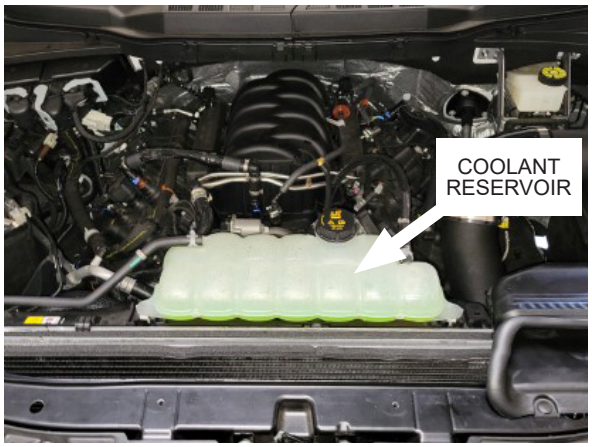

Fig. 7-B: Refill coolant

8. MAP / IAT SENSOR INSTALLATION

A. The MAP / IAT (manifold absolute pressure / intake air intake temperature) sensor is integrated into a single unit. Locate the MAP / IAT sensor on back of the intake manifold. It is in a tight space between the intake manifold and fire wall.

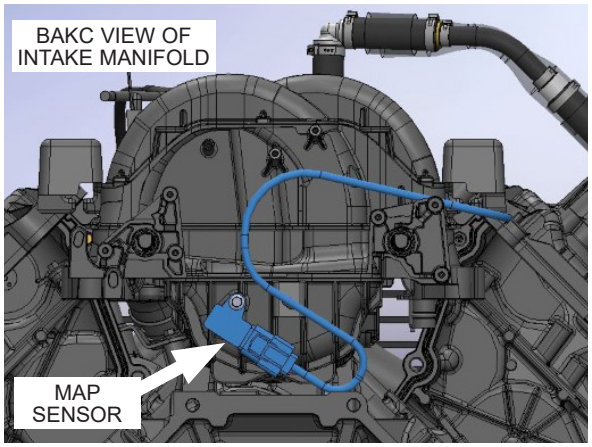

Fig. 8-A: Locate MAP / IAT sensor

B. Carefully unlock the connector by pulling the lock tab towards the sensor. Depress the connector latch and disconnect the MAP / IAT connector. Using an 8mm ratchet box wrench, remove the single fastener which secures the sensor to the intake manifold. Remove the sensor from the intake manifold by pulling it away from the manifold towards the rear of the truck.

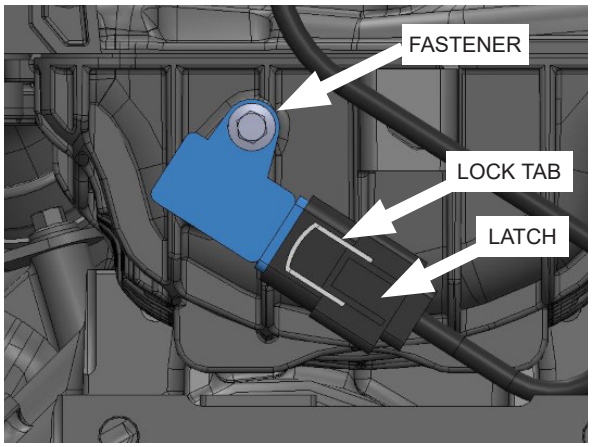

Fig. 8-B: Disconnect and remove MAP / IAT sensor

C. Install the new MAP / IAT sensor in the reverse order of removal.

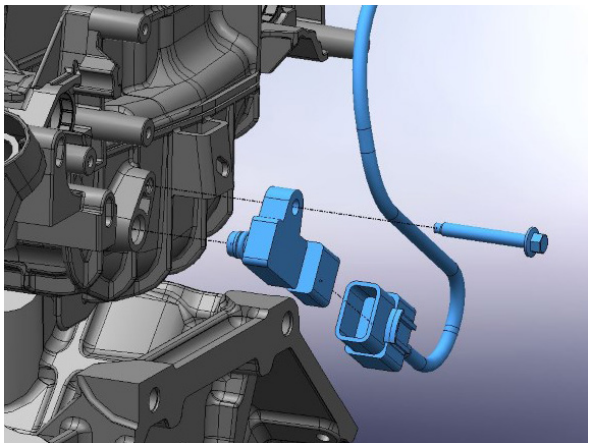

Fig. 8-C: Install new MAP / IAT sensor

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9. GENERAL REASSEMBLY

A. Drill a 1/4 inch hole in the side of plastic oil drain gutter for a hole to zip tie the supercharger drain line to. The oil drain gutter is located directly below the oil filter.

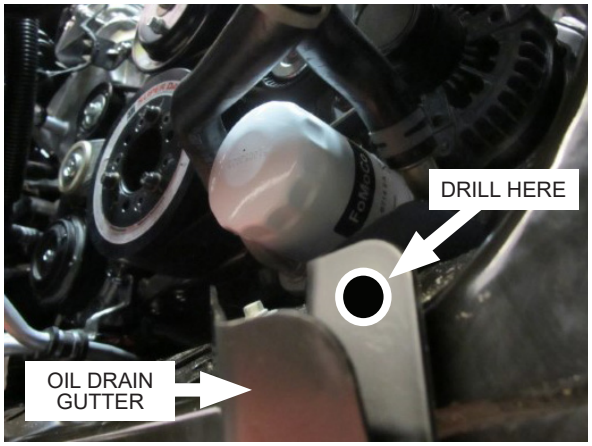

Fig. 9-A: Drill hole in oil drain gutter

B. Route the supercharger oil drain line downwards and towards the front of the truck. Secure it to the oil drain gutter with zip tie.

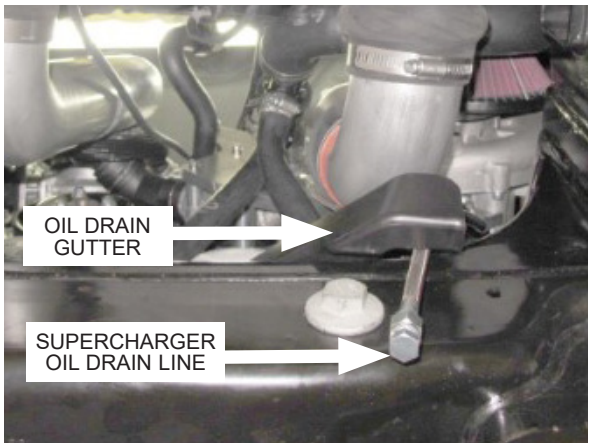

Fig. 9-B: Secure oil drain line

C. Relocate the air deflector actuator motor to a plastic cross member located on top of the shutter shroud, next to the hood latch. Secure it with the suppled zip ties. Reconnect the connector

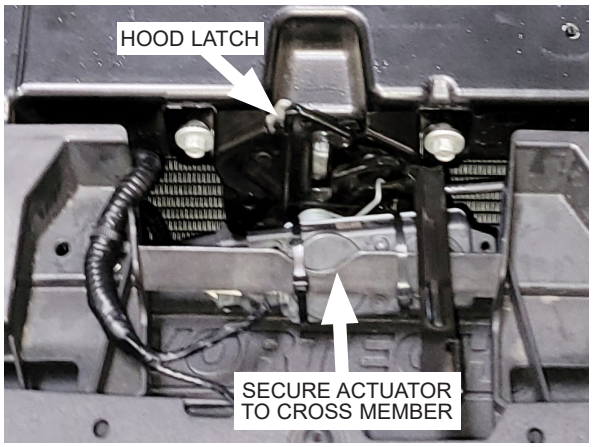

Fig.9-C: Mount air deflector motor

9. GENERAL REASSEMBLY

D. Reinstall the ambient air temperature sensor to its original location. Secure it with its locking clip. Reconnect the connector

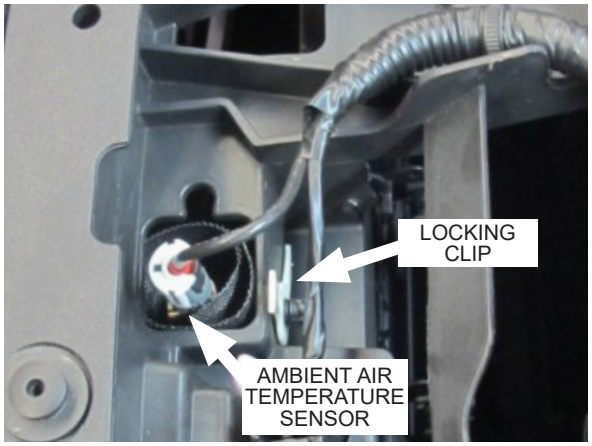

Fig. 9-D: Install and reconnect ambient air temperature sensor

E. Flip the horn assembly 180 degrees so the horns are protruding forward towards the front of the truck and assemble to its original location. Reconnect the connector.

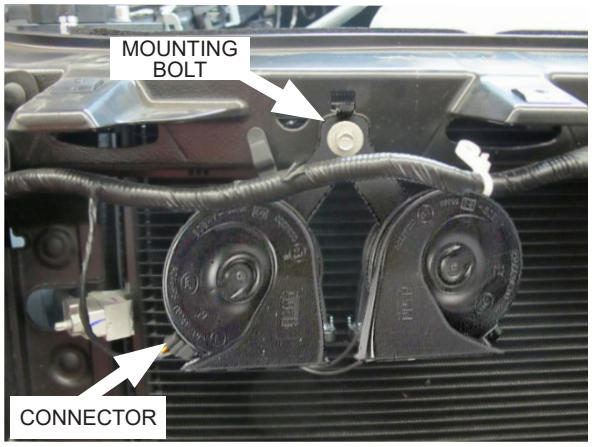

Fig. 9-E: Flip and instlall horn

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

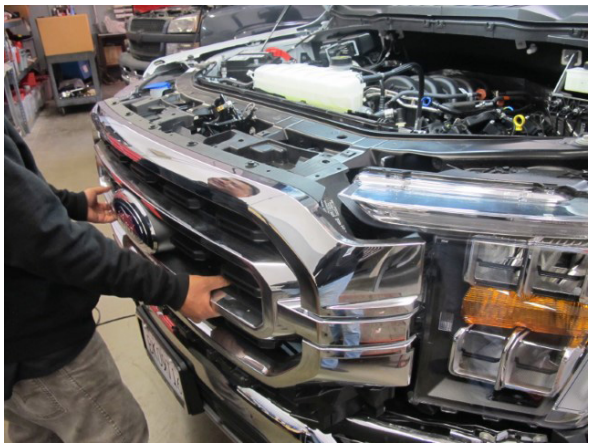

Fig. 9-F: Reinstall the grill

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9. GENERAL REASSEMBLY

G. Reinstall the bumper trim by snapping it back into place and securing it using the original hardware at the corners.

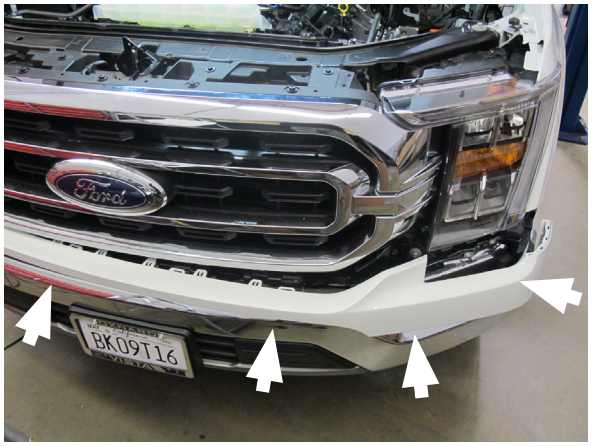

Fig. 9-G: Reinstall bumper trim

H. Reinstall the radiator support cover and secure it using the original plastic fasteners.

Fig. 9-H: Reinstall radiator support cover

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

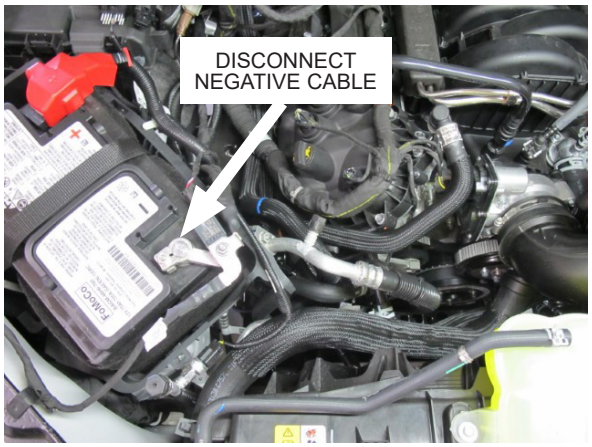

Fig. 9-I: Reconnect negative battery cable

10. 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, and clamps for tightness. Double check that all nuts and bolts are torqued to specifications noted in the appendixies. 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 zip ties.

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.

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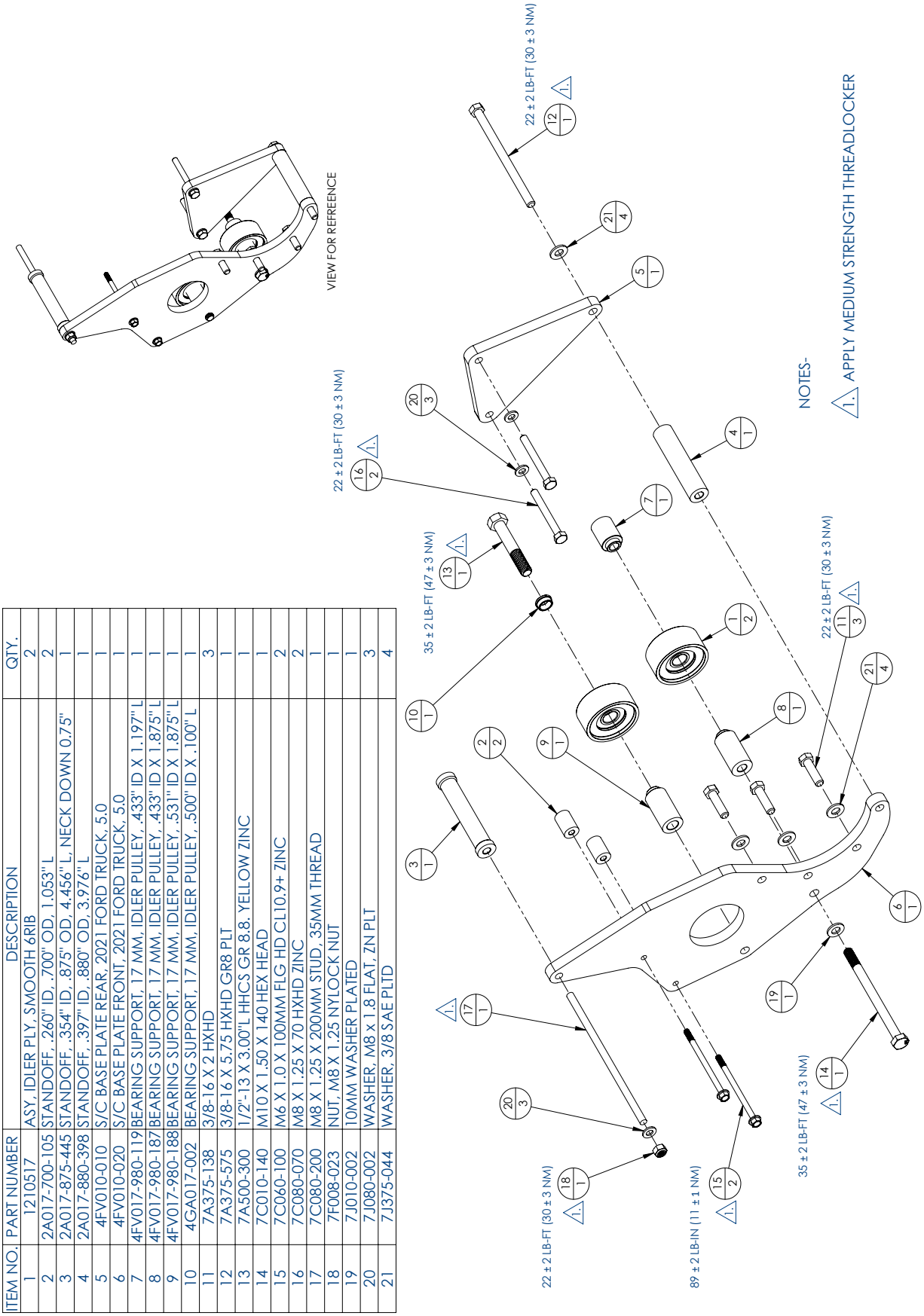
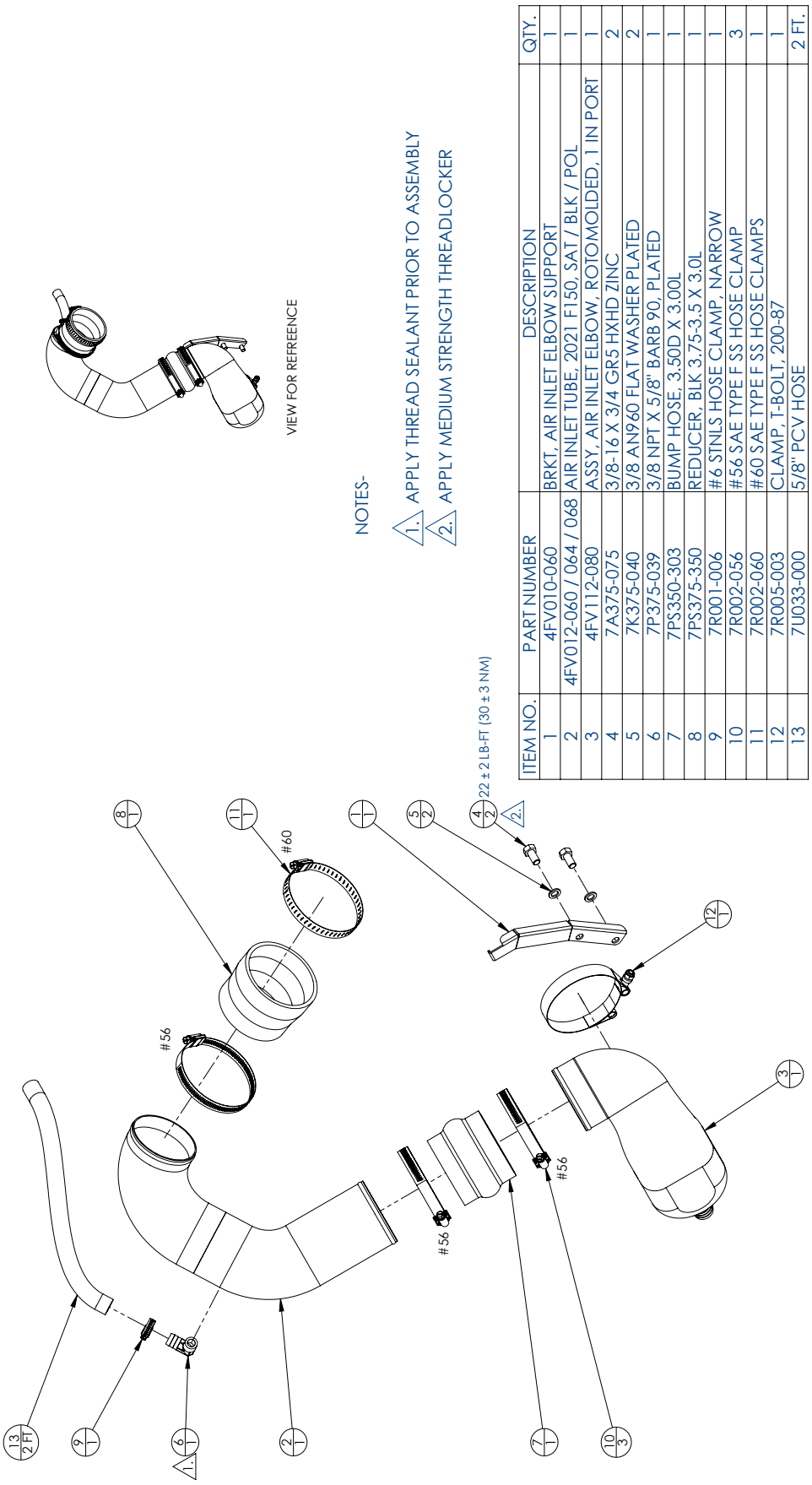
APPENDIX A. DIAGRAM, MOUNTING BRACKET ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1210517	ASY, IDLER PLY, SMOOTH 6RIB	2
2	2A017-700-105	STANDOFF, .260" ID, .700" OD, 1.053" L	2
3	2A017-875-445	STANDOFF, .354" ID, .875" OD, 4.456" L, NECK DOWN 0.75"	1
4	2A017-880-398	STANDOFF, .397" ID, .880" OD, 3.976" L	1
5	4FV010-010	S/C BASE PLATE REAR, 2021 FORD TRUCK, 5.0	1
6	4FV010-020	S/C BASE PLATE FRONT, 2021 FORD TRUCK, 5.0	1
7	4FV017-980-119	BEARING SUPPORT, 17 MM, IDLER PULLEY, .433" ID X 1.197" L	1
8	4FV017-980-187	BEARING SUPPORT, 17 MM, IDLER PULLEY, .433" ID X 1.875" L	1
9	4FV017-980-188	BEARING SUPPORT, 17 MM, IDLER PULLEY, .531" ID X 1.875" L	1
10	4GA017-002	BEARING SUPPORT, 17 MM, IDLER PULLEY, .500" ID X .100" L	1
11	7A375-138	3/8-16 X 2 HXHD	3
12	7A375-575	3/8-16 X 5.75 HXHD GR8 PLT	1
13	7A500-300	1/2"-13 X 3.00"L HHCS GR 8.8. YELLOW ZINC	1
14	7C010-140	M10 X 1.50 X 140 HEX HEAD	1
15	7C060-100	M6 X 1.0 X 100MM FLG HD CL10.9+ ZINC	2
16	7C080-070	M8 X 1.25 X 70 HXHD ZINC	2
17	7C080-200	M8 X 1.25 X 200MM STUD, 35MM THREAD	1
18	7F008-023	NUT, M8 X 1.25 NYLOCK NUT	1
19	7J010-002	10MM WASHER PLATED	1
20	7J080-002	WASHER, M8 x 1.8 FLAT, ZN PLT	3
21	7J375-044	WASHER, 3/8 SAE PLTD	4

APPENDIX B. DIAGRAM, AIR INLET ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4FV010-060	BRKT, AIR INLET ELBOW SUPPORT	1
2	4FV012-060 / 064 / 068	AIR INLET TUBE, 2021 F150, SAT / BLK / POL	1
3	4FV112-080	ASSY, AIR INLET ELBOW, ROTOMOLDED, 1 IN PORT	1
4	7A375-075	3/8-16 X 3/4 GR5 HXHD ZINC	2
5	7K375-040	3/8 AN960 FLAT WASHER PLATED	2
6	7P375-039	3/8 NPT X 5/8" BARB 90, PLATED	1
7	7PS350-303	BUMP HOSE, 3.50D X 3.00L	1
8	7PS375-350	REDUCER, BLK 3.75-3.5 X 3.0L	1
9	7R001-006	#6 STNLS HOSE CLAMP, NARROW	1
10	7R002-056	#56 SAE TYPE F SS HOSE CLAMP	3
11	7R002-060	#60 SAE TYPE F SS HOSE CLAMPS	1
12	7R005-003	CLAMP, T-BOLT, 200-87	1
13	7U033-000	5/8" PCV HOSE	2 FT.

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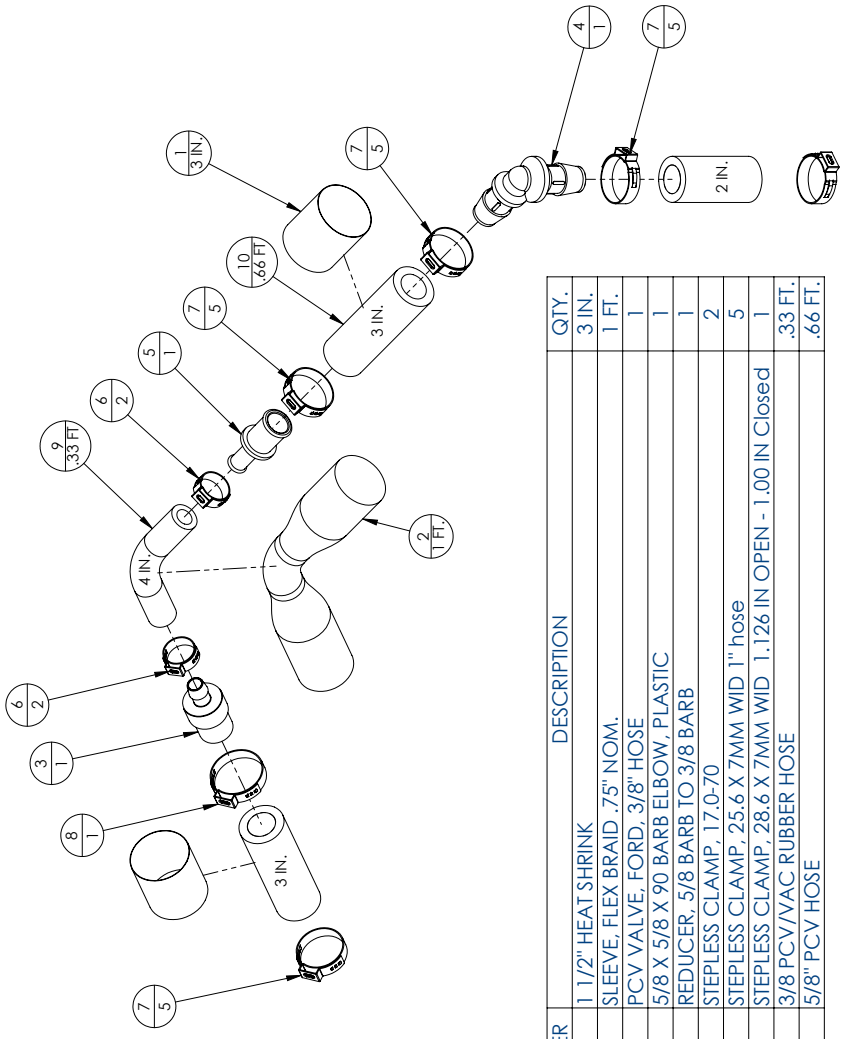
APPENDIX C. DIAGRAM, PCV ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	5W001-030	1 1/2" HEAT SHRINK	3 IN.
2	5W001-082	SLEEVE, FLEX BRAID .75" NOM.	1 FT.
3	7P375-106	PCV VALVE, FORD, 3/8" HOSE	1
4	7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1
5	7P625-375	REDUCER, 5/8 BARB TO 3/8 BARB	1
6	7R004-002	STEPLESS CLAMP, 17.0-70	2
7	7R004-004	STEPLESS CLAMP, 25.6 X 7MM WID 1" hose	5
8	7R004-007	STEPLESS CLAMP, 28.6 X 7MM WID 1.126 IN OPEN - 1.00 IN Closed	1
9	7U030-056	3/8 PCV/VAC RUBBER HOSE	.33 FT.
10	7U033-000	5/8" PCV HOSE	.66 FT.

APPENDIX D1. DIAGRAM, DISCHARGE ASSEMBLY

VIEW FOR REFERENCE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4FV012-010 / 014 / 018	DISCHARGE TUBE A, 2021 F150, RAW / SAT / BLK / POL	1
2	4FV012-030 / 034 / 038	DISCHARGE TUBE C, 2021 F150, RAW / SAT / BLK / POL	1
3	4FV012-040 / 044 / 048	DISCHARGE TUBE D, 2021 F150, RAW / SAT / BLK / POL	1
4	4FV112-020 / 024	DISCHARGE TUBE B, 1 IN PORT, 2021 F150 RAW/ SAT/BLK/POL	1
5	4VF212-100 / 104 / 108	RACE BOV UPGRADE ASSY, 2021 F150, SAT/ BLK / POL	1
6	7P250-033	1/4 X 5/32 REDUCER UNION	1
7	7P312-082	5/16 TEE HOSE BARB	1
8	7PS300-091	ELBOW, BLK, 3" X 90 SILICONE, .75" LEGS, MOD	2
9	7PS300-277	SLEEVE, BUMP REDUCER, 3.0- 2.75	1
10	7PS300-301	BUMP HOSE, 3.00D X 3.00L	2
11	7PS388-300	ELBOW, 3.88 X 3.0 X 90 GM TRK	1
12	7R002-016	#16 SAE TYPE F SS HOSE CLAMP	4
13	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	1
14	7R002-052	#52 SAE TYPE F SS HOSE CLAMP	10
15	7R002-064	#64 SAE TYPE F SS HOSE CLAMP	1
16	7U030-030	1/4" VACUUM HOSE	.33 FT.
17	7U030-046	5/32" VACUUM LINE	3 FT.
18	7U034-016	1" GS HEATER HOSE	.22 FT.
19	7U133-100	HOSE,ELBOW,90 ,1"ID, MOLDED	1
20	8D001-004	COMPRESS BYPASS VALVE, G2	1
21	8PN101-050	WELDED CORE ASSY, 05 MUST GT	1

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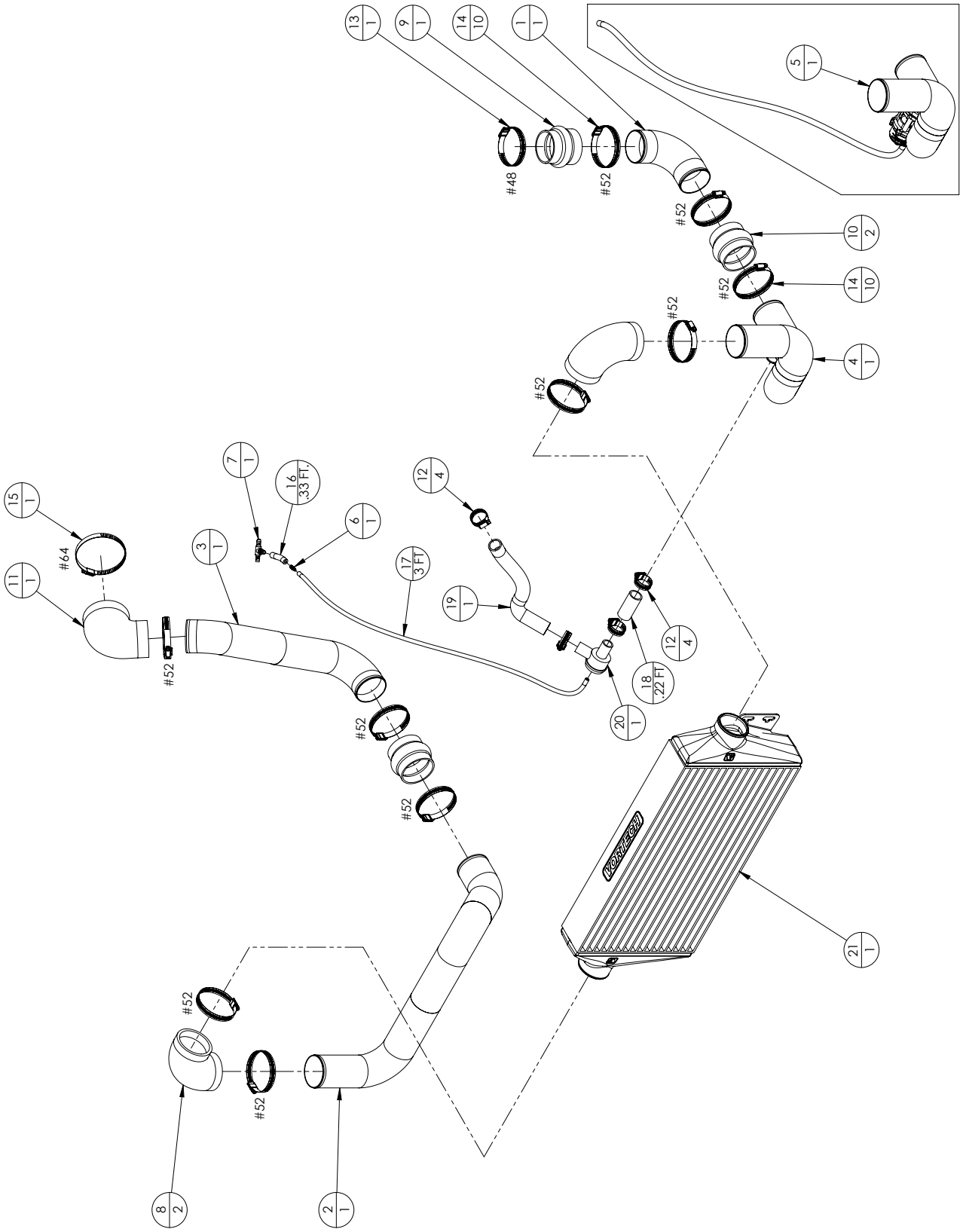
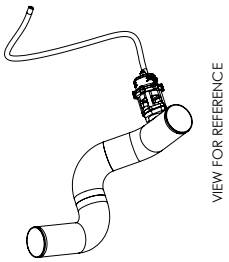
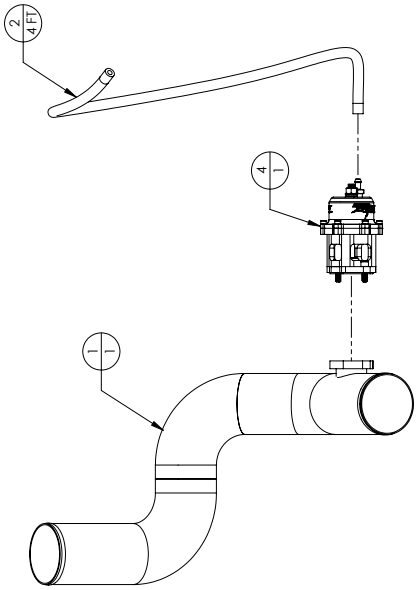
APPENDIX D2. DIAGRAM, DISCHARGE ASSEMBLY



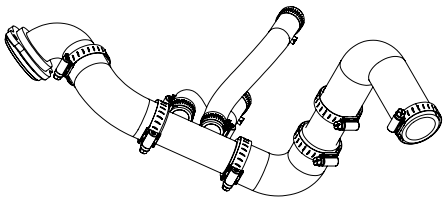
APPENDIX D3. DIAGRAM, RACE BOV UPGRADE ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4FV112-050 / 054	DISCHARGE TUBE B, 2021 F150, RACE BOV, SAT / BLK	1
2	7U030-030	1/4" VACUUM HOSE	4 FT.
3	7U100-055	TIE WRAP, 7.5" NYLON	4
4	8D204-111	ASSY, BILLET RACE BOV, BLACK	1



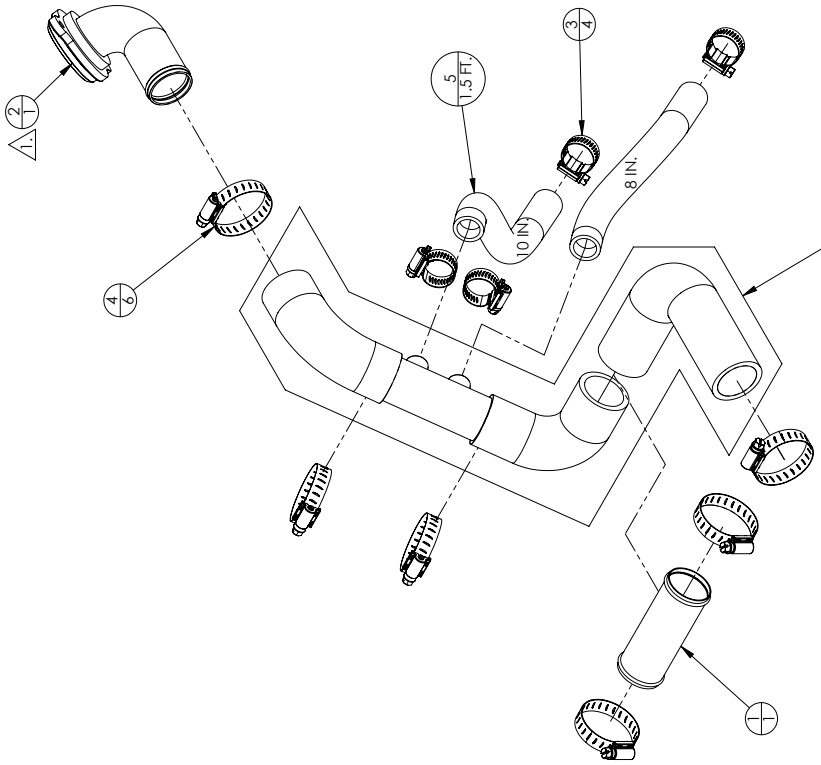
APPENDIX E. DIAGRAM, COOLANT MOD ASSEMBLY



VIEW FOR REFERENCE

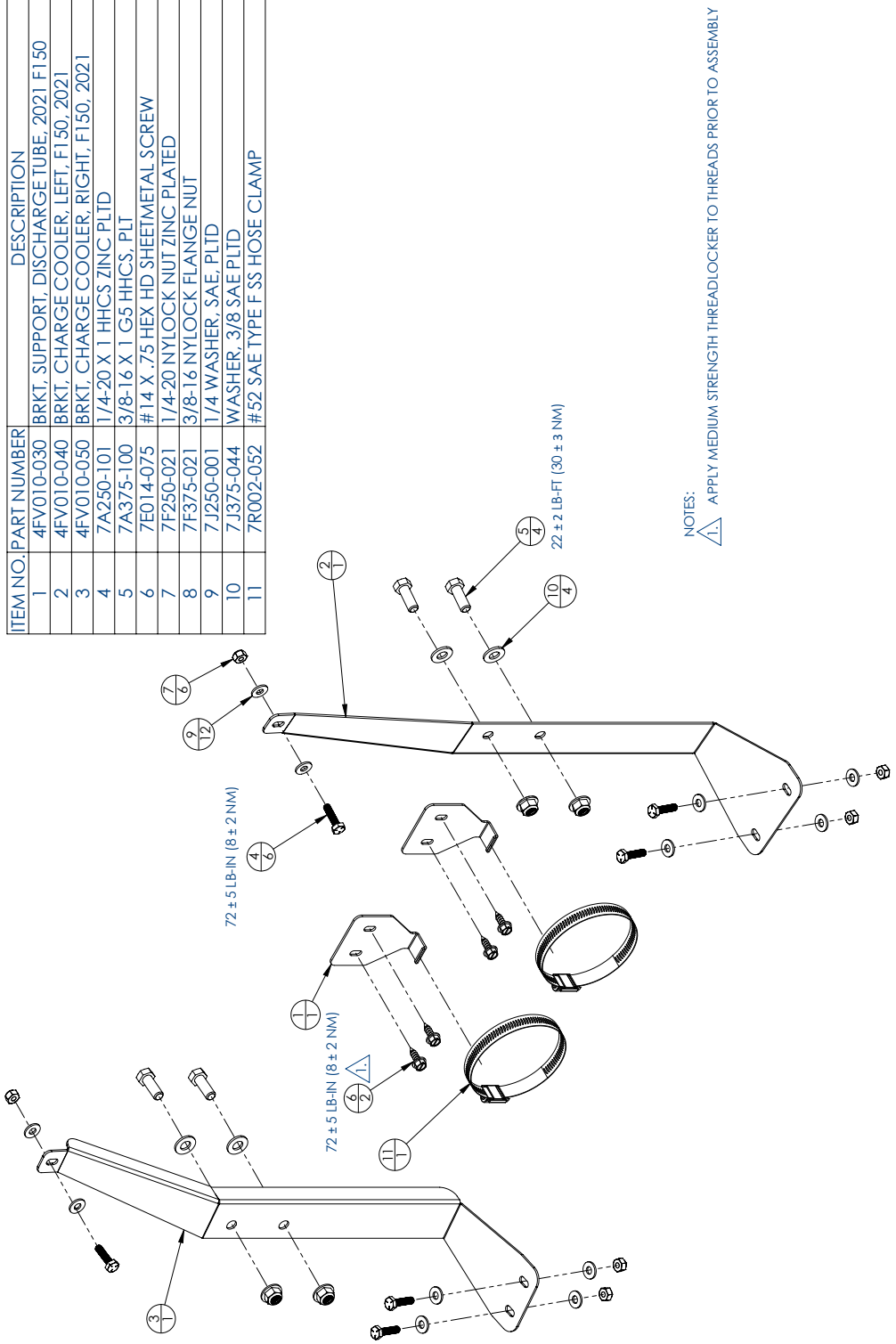
NOTE:
1. TORQUE M6 THERMOSTAT ASSEMBLY BOTLS TO 85 ± 5 LB-IN (10 ± 1 NM)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4FE014-010	RADIATOR PIPE-STAINLESS	1
2	4FV114-010	Ø1.5" FORD THERMOSTAT ASSEMBLY	1
3	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	4
4	7R002-024	#24 SAE TYPE F SS HOSE CLAMP	6
5	7U038-000	3/4" HEATER HOSE	1.5 FT.



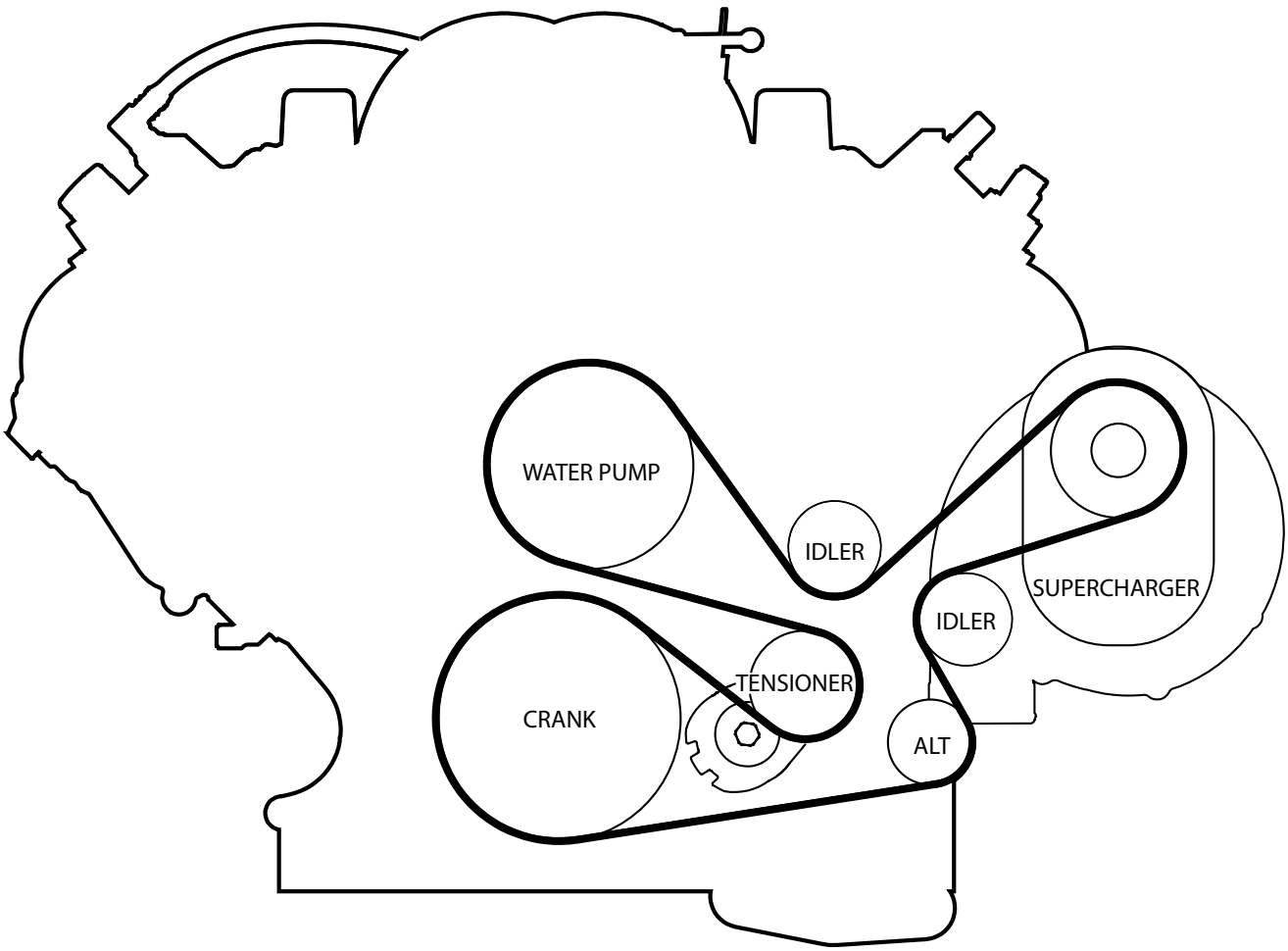
APPENDIX F. DIAGRAM, SUPPORT ITEMS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4FV010-030	BRKT, SUPPORT, DISCHARGE TUBE, 2021 F150	2
2	4FV010-040	BRKT, CHARGE COOLER, LEFT, F150, 2021	1
3	4FV010-050	BRKT, CHARGE COOLER, RIGHT, F150, 2021	1
4	7A250-101	1/4-20 X 1 HHCS ZINC PLTD	6
5	7A375-100	3/8-16 X 1 G5 HHCS, PLT	4
6	7E014-075	#14 X .75 HEX HD SHEETMETAL SCREW	4
7	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	6
8	7F375-021	3/8-16 NYLOCK FLANGE NUT	4
9	7J250-001	1/4 WASHER, SAE, PLTD	12
10	7J375-044	WASHER, 3/8 SAE PLTD	4
11	7R002-052	#52 SAE TYPE F SS HOSE CLAMP	2



P/N: 4FV020-010 v1.0, 04/20/22

APPENDIX G. DIAGRAM, BELT ROUTING



REPLCAEMNT BELT:

VORTECH PN: 2A046-837

GATES PN: K060837

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