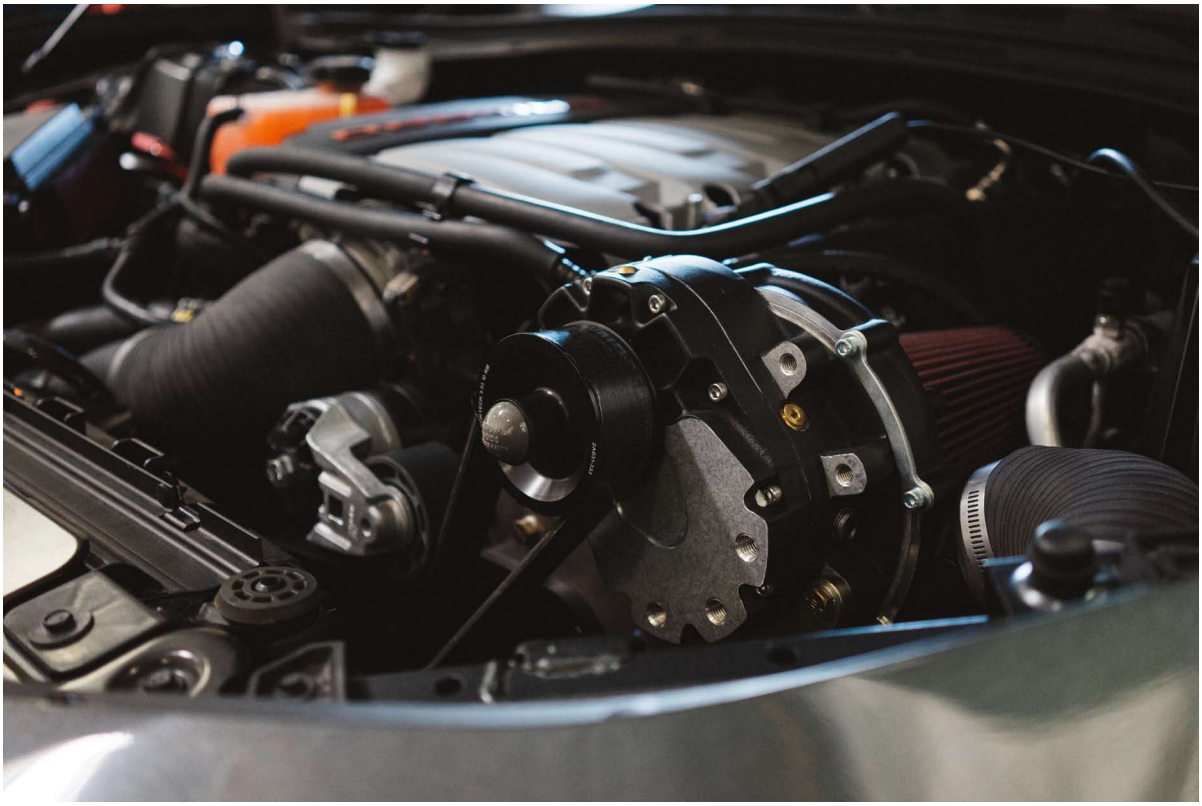
10-Rib Drive Upgrade

Installation Instructions



2016-2017 Chevrolet Camaro SS

P/N: 4GT116-001, 4GT116-002

* Legal in California only for racing vehicles which may never be used or registered or licensed for use upon a highway.

VORTECH®
ENGINEERING, INC.

1650 Pacific Avenue, Channel Islands, CA 93033-9901 • Phone (805) 247-0226
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FOREWORD

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 accessory 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 (un-modified, 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 detonatlion (knocking/pinging) and discontinue hard use (no boost) until the problem is resolved.

5. Vortech is not responsible for any clutch, transmission, drive-line 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.

DP/N: 007134v1.3, 2019-04-09

TABLE OF CONTENTS

DP/N: 007134v1.3, 2019-04-09

NOTICES

(Read before installation is started)

Included in this kit is a pulley combination that may be different than the original pulley combination. This new pulley combination is recommended to achieve the best performance results. Removal of the factory sealed supercharger pulley will reduce the supercharger warranty from three years to one year unless the supercharger unit (with the original supercharger pulley still attached) and new supercharger pulley are sent into Vortech for removal, installation and re-sealing. If the supercharger warranty is not a concern or if the supercharger warranty has expired, the supercharger pulley may simply be removed and replaced with the new part supplied. Hammering/prying etc. on the supercharger and/or pulley will cause damage to the parts. Light heating of the supercharger pulley with a propane torch (if the supercharger pulley is tight on the shaft) will aid removal. A return authorization number is required before the supercharger and supercharger pulley are sent into Vortech. Call the Vortech service department at (805) 247-0226 for a return authorization number. Return freight (ground) will be paid by Vortech.

This product may not be legal for use on public roads in all 50 states.

IMPORTANT

- Custom ECM programming and fuel / ignition system upgrades will be required when changing the supercharger pulley to any size other than what was originally supplied in the complete supercharger kit.
- Supercharger pulley removal may reduce or void the supercharger unit warranty.
- Pulley Diameter Changes: Careful size selection is mandatory for proper engine and supercharger longevity. Contact the applicable Vortech and Paxton tech line for assistance with impeller speed calculations if necessary.
- A Vortech Maxflow Race or Mondo compressor bypass valve is required for applications producing more than 11-12 psig.

DP/N: 007134v1.3, 2019-04-09

VORTECH 10-RIB DRIVE UPGRADE

Installation Instructions

2016-2017 CAMARO SS

Before beginning this installation, please read through this entire instruction booklet

The Vortech 2016-2017 Camaro SS 10-Rib drive upgrade was designed specifically for use on 2016-2017 Chevrolet Camaro SS vehicles equipped with a supercharger to support application with increased horsepower over the basic kit. As with any power enhancing product, this unit is intended for use on healthy, well-maintained engines. 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 a note of the following key points:

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.

TOOL & SUPPLY REQUIREMENTS:

- 3/8" ratchet & drive set: SAE & metric
- Open end wrenches: SAE & metric
- 3/8" ratchet extensions
- Torque wrench
- 1/2" breaker bar
- 1/2" drive 15/16" or 24mm socket
- 1/4" allen wrench
- Screwdriver set
- Hose cutters
- Utility knife
- Damper removal & installation tools
- Red Loctite (#262 or #271)
- Blue Loctite (#242)

DP/N: 007134v1.3, 2019-04-09

10-Rib Drive Upgrade
2016-2017 CAMARO SS

Part No. 4GT116-001 & 4GT116-002

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
007134	**INSTR MAN, 10-RIB UPGRADE '16 CAM SS**	**1**
2A017-882-02	**SPACER, .875 OD X .101 LNG**	**1**
2A031-347	**S/C DRIVE PLY, 3.47" 10 GRV**	**1**
4FD017-011	**PILOT, 6203/5 BRG, 1/2 SCREW**	**2**
4GE116-021	**IDLER ASSY, SMOOTH, 10-RIB, 75MM**	**1**
4GT010-101	**MTG PLATE C, AUX DRV, 2016 CAM**	**1**
4GT010-111	**MTG PLATE, TNSR, AUX DRV, 2016 CAM**	**1**
4GT016-010**	**DAMPER, CRANK, 2016 CAMARO SS**	**1**
4GT116-010	**DRIVE ASY, 10-RIB, 16 CAM SS**	**1**
2A041-568	BELT, DAYCO 5100568 10 RIB	1
4GT014-010	TUBE ASY, RADIATOR, 2016 CAM SS	1
4GT017-041	SPACER, CRK PLY, AUX DRV, 2016 CAM	1
4GT111-052	ASY, 10-RIB TENSIONER, 2016 CAM	1
4MA018-051	CRANK PLY, 10-RIB, 7", UNIV	1
7A375-352	3/8-16 X 3.5" HX HD GR8	3
7C016-010	BOLT, OEM LS1, M16-2.0	1
7E017-075	#17 X .75 HXHD SHEET METAL SCREW	1
7J375-044	3/8 SAE WASHER, PLTD	3
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2
7R003-011	ADEL CLAMP, 3/4 ID, 5/16" EYE	1
7U034-020	HOSE, 1.25 DIA RUBBER RAD.	4IN
4GT017-031	**SPACER, IDLR, 1.342", '16 CAM AUX DRV**	**2**
4GX016-150	**IDLER, GROOVED, 10-RIB, DUAL BRG**	**1**
7A312-052	**5/16-18 X 1/2" SHCS, GR8 PLATED**	**2**
7C010-035	**M10 X 1.5 X 35 HXCS CL10.9 PLT**	**1**
7C010-100	**M10 X 1.5 X 100 HXHD CL8.8**	**1**
7C012-083	**M12 X 1.75 X 80MM HHCS, SS**	**2**
7J010-002	**WASHER, M10 FLAT, ZN PLT**	**2**
8R101-003	**PULLEY RETAINER ASSY 10 RIB**	**1**

**: 4GT016-010 "DAMPER, CRANK, 2016 CAMARO SS" not included in 4GT116-002.

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL

A. Open the trunk lid & remove the battery cover on the inside-right side of the trunk.
(See Fig. 1-a)


Fig. 1-a: Remove Battery Cover

B. With the battery cover removed, unplug the negative battery terminal from the battery using a 10mm wrench. The negative battery terminal is closest to the inside of the trunk..
(See Fig. 1-b)


Fig. 1-b: Unplug Negative Battery Terminal

C. With the vehicle safely secured on jackstands or on a vehicle lift, remove the lower splash guard by removing 6x 10mm-headed screws & 6x 7mm-headed screws. Next, remove the remaining 7mm-headed screws along the front underside of the bumper that secure the fender liner to the front of the bumper.
(See Fig. 1-c)

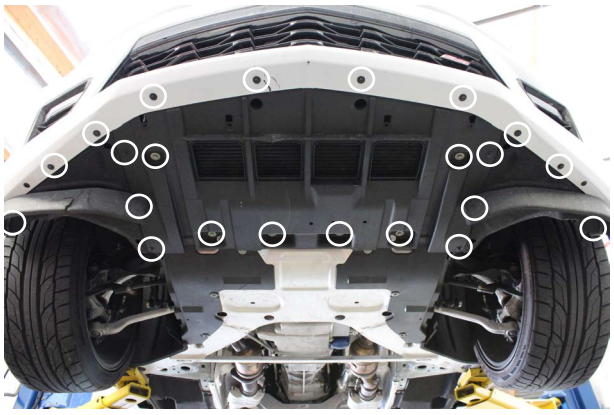
Fig. 1-c: Remove Splash Guard Fasteners

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

D. Remove 4x T10 screws securing the front of each fender liner, then pull the fender liner back to expose the front bumper screws. Remove 5x 7mm-headed screws securing the front bumper cover to the fender. Be sure to remove the screw that fastens the corner of the bumper to the fender.

(See Fig. 1-d)

NOTE: *Drivers side shown. Repeat on passenger side.*

Fig. 1-d: Remove Front Bumper Fasteners

E. Remove 4x plastic fasteners & 4x 10mm-headed screws securing the top of the front bumper cover to the vehicle.

(See Fig. 1-e)

Fig. 1-e: Remove Front Bumper Fasteners

F. Un-snap both corners of the front bumper cover away from the front fenders, then pull the front bumper cover away from the vehicle. Be sure to unplug the fog light connector from the main harness.

(See Fig. 1-f)

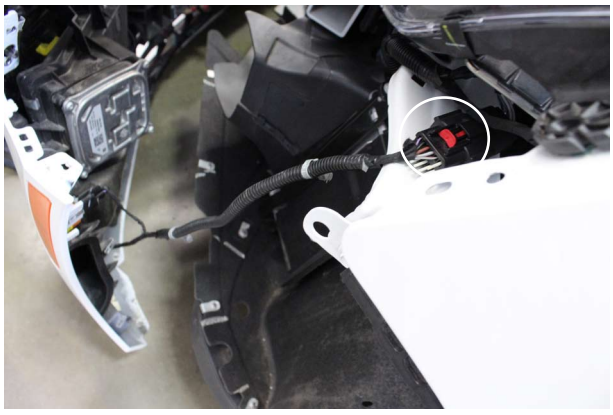

Fig. 1-f: Unplug Fog Light Harness

1. PREPARATION AND REMOVAL, cont'd

G. Detach the ambient air temperature sensor from the passenger side brake duct.
(See Fig. 1-g)

Fig. 1-g: Remove Ambient Air Temperature Sensor

H. There are 5x plastic fasteners securing the supplemental radiator duct & 1x plastic fastener securing the brake cooling duct to the transmission cooler mount. Remove these fasteners, then remove both ducts from the vehicle.
(See Fig. 1-h)

Fig. 1-h: Remove Brake & Radiator Ducts

I. Loosen the #48 hose clamp securing the custom silicone discharge sleeve to the charge air cooler. This is in preparation for a future step.
(See Fig. 1-i)

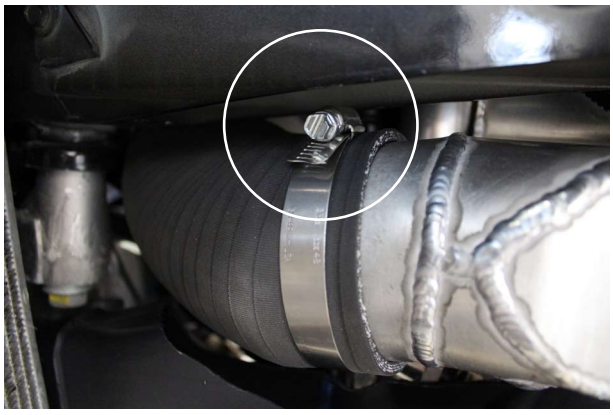

Fig. 1-i: Loosen Hose Clamp

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

J. Loosen the #64 hose clamp securing the 3.88"-3.00" reducer elbow to the throttle body, then loosen the #48 hose clamp securing the 3.00" bump sleeve to Tube C. Remove Tube D & both silicone sleeves from the vehicle & set them aside.

(See Fig. 1-j)

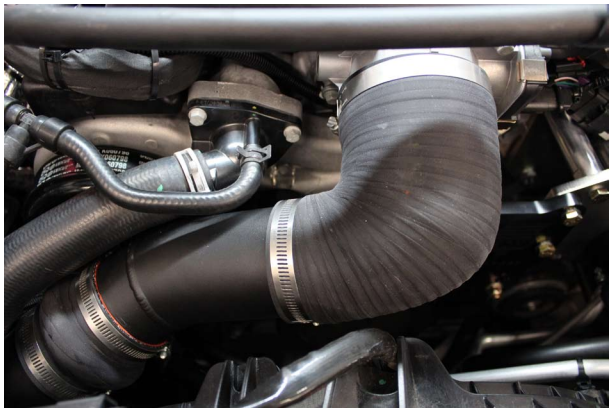

Fig. 1-j: Remove Throttle Body Sleeve & Tube D

K. Remove Tube C & the custom silicone discharge sleeve from the vehicle & set them aside.

(See Fig. 1-k)

Fig. 1-k: Remove Tube C & Custom Discharge Sleeve

L. Remove the smooth idler & it's hardware from the supercharger bracket, then remove the cog drive belt & set aside. They will not be re-used. Next, remove the 4x 3/8-16 x 1.00" screws & 4x 3/8 AN washers securing the supercharger to the supercharger bracket, then remove the supercharger unit from the vehicle.

(See Fig. 1-l)

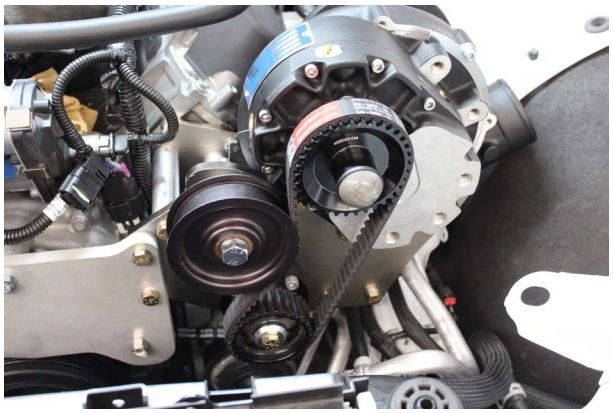

Fig. 1-l: Remove Drive Belt & Manual Tensioner Pulley

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

M. Using a 15mm wrench, turn the belt tensioner clockwise to de-tension the accessory belt & remove the accessory belt from the vehicle. Once the belt is removed, slowly release the tensioner back into its resting position. Failure to do so may result in damage to the tensioner. Next, remove the 2x M10 X 30mm screws, 2x M10 washers, 2x 3/8-16 X 1.00" screws & 2x 3/8 AN washers securing the idler plate to the water pump & supercharger bracket. Set the screws aside as they will be re-used. The idler plate will no longer be used.

(See Fig. 1-m)

Fig. 1-m: Remove Idler Plate

N. Use of the 10-rib drive upgrade requires the jackshaft assembly to be removed from the supercharger bracket. Using a 7/8" open end wrench to hold the slotted bracket spacers in place, remove the 4x 3/8-16 x 1.00" screws & 4x 3/8 AN washers securing the supercharger bracket to the slotted spacers.

(See Fig. 1-n)

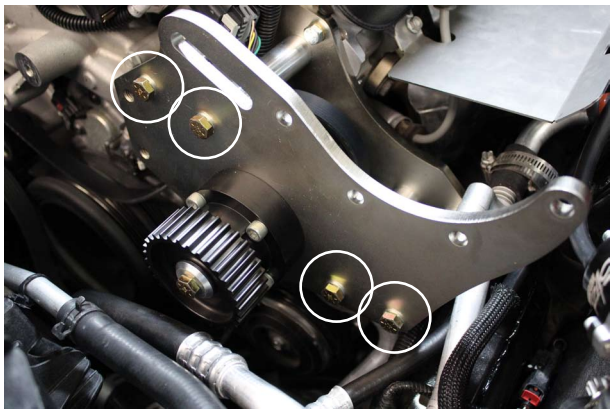

Fig. 1-n: Remove Supercharger Mounting Plate

O. Prior to removing the jackshaft assembly, you will need to remove both the cog drive pulley & 6-rib drive pulley. Using an impact gun, remove both pulley retainer screws & remove both pulleys from the jackshaft assembly.

(See Fig. 1-o)

NOTE: If the pulleys will not slide off of the shaft, DO NOT FORCE THEM. Light heating of the pulleys with a propane torch will aid in installation.

Fig. 1-o: Remove Pulley Retainers & Pulleys
(Cog pulley shown. Repeat for 6-rib pulley.)

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

P. Now that both pulleys have been removed, proceed to remove the jackshaft assembly by removing the 4x 5/16-18 x 1.25" socket head cap screws.

(See Fig. 1-p)

Fig. 1-p: Remove Jackshaft Assembly
(3 of 4 screws shown.)

Q. With the jackshaft assembly & both pulleys removed, you should be left with a bare supercharger bracket. Proceed to re-install the supercharger bracket to the vehicle at this time, making sure to re-use the 4x 3/8-16 x 1.00" screws & 4x 3/8 AN washers that originally secured the supercharger bracket to the slotted spacers. Use a 7/8" open end wrench to hold the slotted spacers in place while you re-attach the supercharger bracket.

(See Fig. 1-q)

Fig. 1-q: Bare Supercharger Bracket

R. Remove the pressure cap from the engine coolant reservoir near the passenger side of the engine compartment. Locate the engine coolant drain valve at the bottom passenger side corner of the radiator. Open the valve and drain the coolant into a clean container for later re-use.

(See Fig. 1-r)

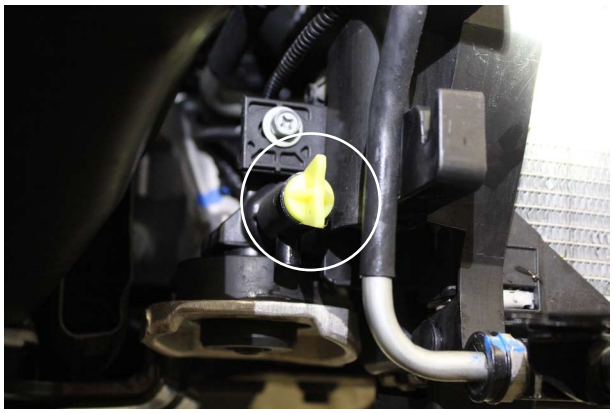

Fig. 1-r: Drain Engine Coolant

1. PREPARATION AND REMOVAL, cont'd

NOTE: In order to provide adequate working space to remove/install the damper, it may be necessary to remove the radiator fan shroud. However, if your remover/installer tool can fit without removing the fan shroud, proceed to Section 2 on Pg.11.

S. Disconnect the electric fan connector located on the upper passenger side of the fan shroud assembly.

(See Fig. 1-s)

Fig. 1-s: Unplug Electric Fan

T. Remove the upper radiator shroud by removing the 3x plastic fasteners securing it to the upper section of the fan shroud.

(See Fig. 1-t)

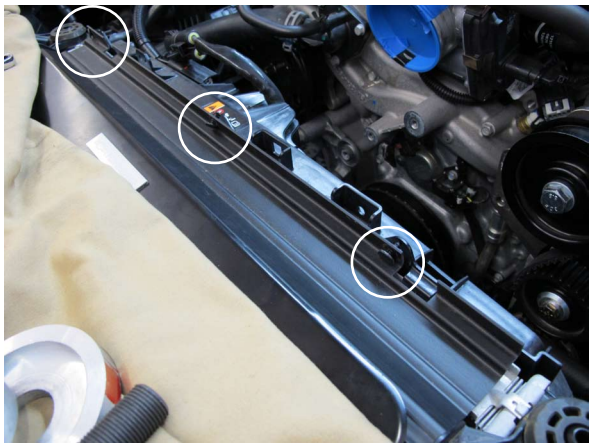

Fig. 1-t: Remove Upper Radiator Shroud

U. Remove the 3x 7mm-headed screws securing the lower section of the radiator fan shroud to the lower radiator shroud.

(See Fig. 1-u)

Fig. 1-u: Remove Lower Fan Shroud Screws

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

V. Detach the 2x plastic fasteners securing the coolant crossover tube to the radiator fan shroud.
(See Fig. 1-v)

Fig. 1-v: Detach Coolant Crossover Tube Fasteners

W. Detach the 1x plastic hose clamp securing the lower radiator hose to the radiator fan shroud.
(See Fig. 1-w)

Fig. 1-w: Detach Lower Coolant Hose Assembly

X. Located on the driver side of the radiator is a quick-release connection for one of the transmission cooler lines. Pull back the black plastic cap, then use a small pick to remove the snap ring securing the transmission cooler line to the radiator. Place a rag underneath the line as some oil will drain. When ready, pull the transmission cooler line away from the radiator & free it from the radiator fan shroud.
(See Fig. 1-x)

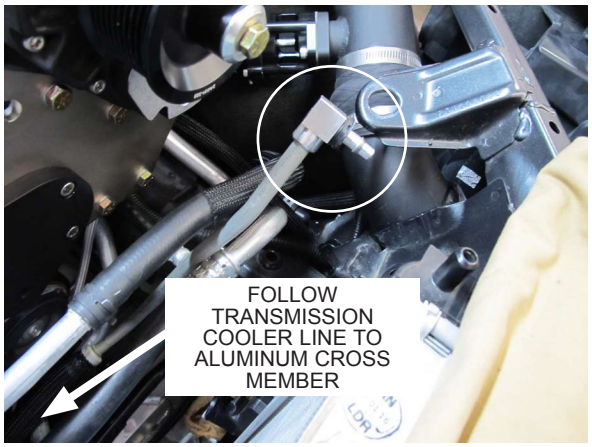

Fig. 1-x: Detach Driver Side Transmission Cooler Line

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

Y. Follow the transmission cooler line towards the bottom of the vehicle & you will see it is also retained on the cross member by a 10mm-headed screw & an adel clamp. Remove the 10mm-headed screw & push the transmission cooler line towards the front of the vehicle as it will be relocated. Thread the 10mm-headed screw back into it's original location, but discard the adel clamp.

(See Fig. 1-y)

Fig. 1-y: Release Trans. Cooler Line From Cross Member

Z. Unclamp both spring clamps securing the upper radiator hose & remove the hose. Next, detach the coolant overflow tank hose (smaller diameter) from the radiator.

(See Fig. 1-z)

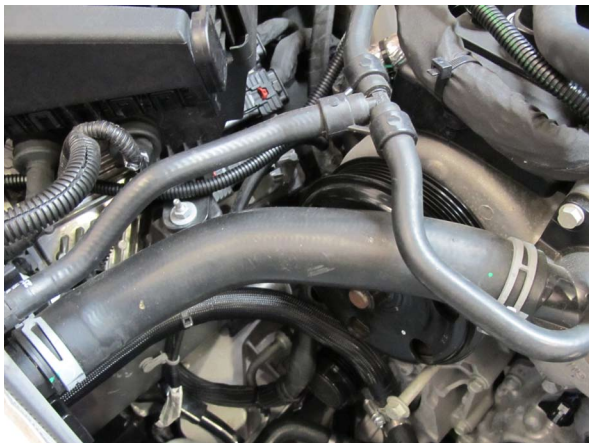

Fig. 1-z: Remove Upper Coolant Hose

AA. Located near the bottom passenger side of the radiator is a 5/8" coolant hose that was modified during the original installation of the supercharger system. In order to remove the radiator fan shroud assembly, this hose will need to be detached. Using an 8mm socket & a series of long extensions, loosen the #10 hose clamp securing the 5/8" coolant hose to the radiator.

(See Fig. 1-aa)

NOTE: Note of the position of the worm gear on the #10 hose clamp. Looking at the coolant hose from the top of the vehicle, the worm gear should be sitting on the right side, closest to the radiator fan shroud. Failure to position the worm gear correctly during re-installation will cause interference with the custom silicone discharge sleeve.

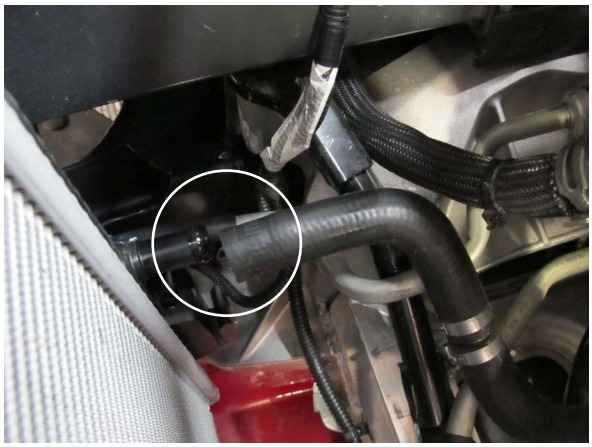

Fig. 1-aa: Remove 5/8" Coolant Hose
(Radiator fan shroud removed for clarity.)

DP/N: 007134v1.3, 2019-04-09

1. PREPARATION AND REMOVAL, cont'd

AB. There are 2x 10mm-headed screws securing the radiator fan shroud to the radiator (1x per side). Remove both 10mm-headed screws, then carefully remove the fan shroud from the vehicle, making sure not to damage the plastic bungs on the radiator.

(See Fig. 1-ab)

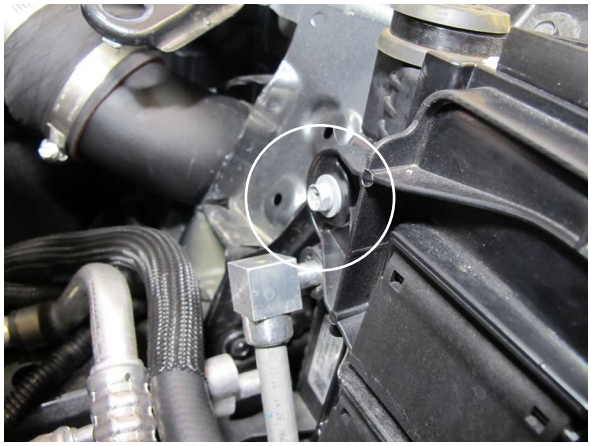

Fig. 1-ab: Remove Fan Shroud Screws
(1 of 2 screws shown.)

2. DAMPER REMOVAL & INSTALLATION

A. Place the car into neutral. Place a strap on the ribbed section of the A/C belt, then rotate the crank pulley so the strap gets sandwiched between the A/C pump & the A/C belt. Once the strap is in place, continue to rotate the crank pulley while simultaneiously pulling the strap towards you. This will throw the belt off of its track & cause it to come off. Repeat this step as many times as necessary until the belt is off.

(See Fig. 2-a)

Fig. 2-a: Remove A/C Bel

B. Lock the engine from rotating and remove the OEM damper pulley bolt using a 1/2" drive or larger breaker bar & a 15/16" or 24mm socket. Discard the used OEM damper pulley bolt as it will not be re-used.

(See Fig. 2-b)

NOTE: A/T cars: Lock the engine through the trans dust cover with an open end wrench to one of the torque converter mounting bosses on the flex plate.

M/T cars: Place car in 6th gear with wheels on the ground and apply parking brake.

Fig. 2-b: Remove Damper Bolt
(5th Gen Camaro shown.)

C. Remove the damper with the appropriate removal tool. Set the damper aside as it will not be re-used.

(See Fig. 2-c)

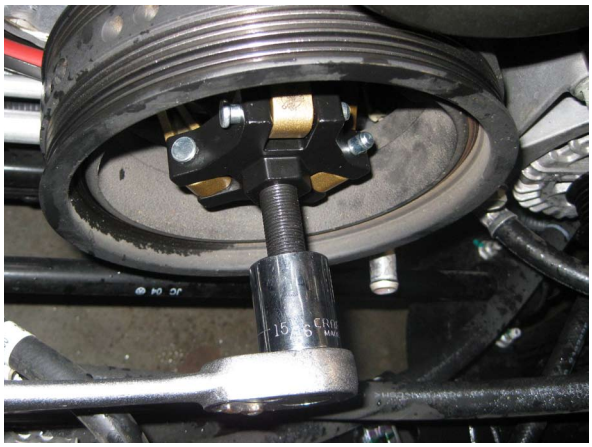

Fig. 2-c: Remove OEM Damper

DP/N: 007134v1.3, 2019-04-09

2. DAMPER REMOVAL & INSTALLATION, cont'd

NOTE: If your upgrade includes the ATI Damper provided by Vortech, proceed to Step D. Otherwise, follow the instructions provided by the manufacturer of your choice of damper, then proceed to Section 3 on Pg. 13.

D. Insert the hub into the back of the damper making sure to line up the “OFFSET HOLE” in the hub and damper as shown. This hole is labeled on the damper sticker, and there is also an indicator machined into both the damper and the hub.

(See Fig. 2-d)

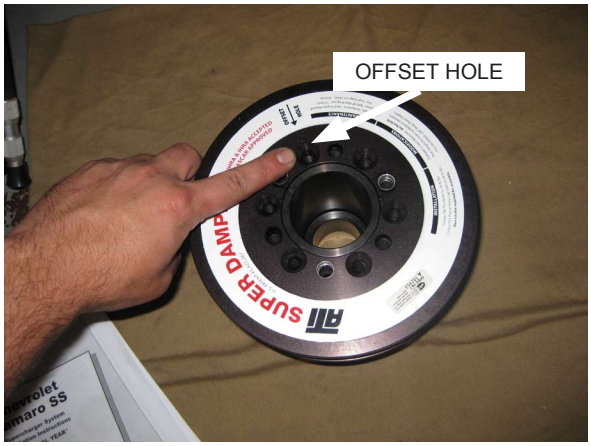

Fig. 2-d: Align "Offset" Hole

E. Install the 6x T-40 flat head screws, using blue threadlocker on each, and torque to 16 ft-lb.

(See Fig. 2-e)

Fig. 2-e: Secure Damper To Hub

F. Install the supplied damper onto the crankshaft using a proper damper installation tool with thrust bearing.

(See Fig. 2-f)

NOTE: DO NOT use the crank bolt to “pull” the damper onto the crankshaft. Use only an appropriate damper installation tool.

Fig. 2-f: Install ATI Damper

DP/N: 007134v1.3, 2019-04-09

2. DAMPER REMOVAL & INSTALLATION, cont'd

G. Lightly coat the threads of the new damper bolt with red loctite. First, install and torque to 37 ft-lb. Next, using a 1/2" drive or larger breaker bar, tighten the damper bolt an additional 120º or torque to 250 ft-lb.

(See Fig. 2-g)

Fig. 2-g: Install & Torque Damper Bolt
(5th Gen Camaro shown.)

H. Re-install the 4-rib A/C stretch belt as follows:

i. Route the belt around the 4-rib section of the ATI damper.

ii. Start the belt onto the top section of the A/C compressor pulley.

iii. While holding the belt in place, rotate the crankshaft clockwise using a 15/16" or 24mm socket and ratchet on the center crankshaft bolt head until the 4-rib belt is fully seated.

iv: Confirm proper installation of the 4-rib belt to both the ATI damper & the A/C compressor pulley.

v. Locate the OEM accessory belt that was removed during the original installation of the supercharger kit & re-install it back in its factory position.

(See Fig. 2-h)

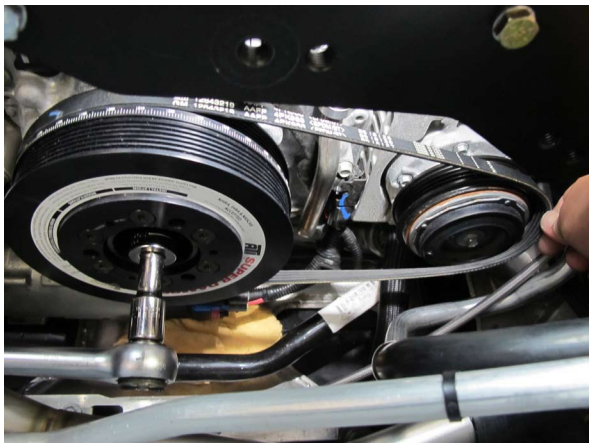

Fig. 2-h: Re-Install 4-Rib A/C Stretch Belt

I. Once the ATI damper is installed, re-install the radiator fan shroud to the radiator. Proceed to re-attach the transmission cooler line to the radiator & secure with the OEM snap ring, then re-secure the coolant crossover tube to the radiator fan shroud using the OEM plastic fasteners. Re-install the upper radiator shroud & secure with the previously removed 3x OEM plastic fasteners, then re-secure the lower section of the radiator fan shroud using the previously removed 3x OEM 7mm-headed screws. Reconnect the electric fan connector. Do not re-install any other components at this time.

(See Fig. 2-i)

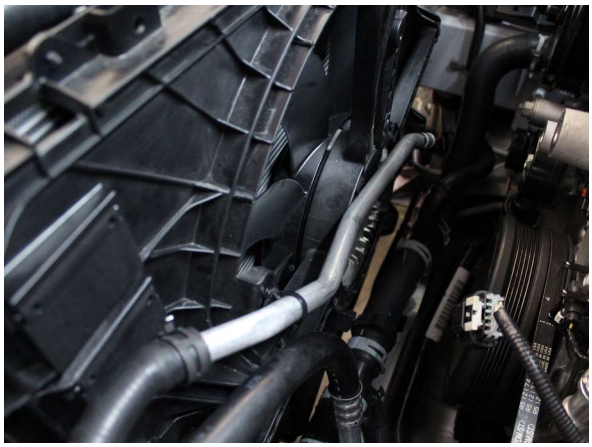

Fig. 2-i: Re-Install Radiator Fan Shroud

DP/N: 007134v1.3, 2019-04-09

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3. LOWER RADIATOR HOSE MODIFICATION

A. Remove the lower radiator hose from the water pump.

(See Fig. 3-a)

Fig. 3-a: Remove Lower Radiator Hose From Water Pump

B. There are 3x coolant hoses that tee into the lower radiator hose assembly. Detach those 3x hoses from the tees. Next, remove the lower radiator hose from the lower drivers side of the radiator, then pull the entire assembly (as shown) out of the vehicle.

(See Fig. 3-b)

NOTE: In order to access the spring clamp retaining the driver side of the lower radiator hose, it may be necessary to remove the driver side brake cooling duct & driver side supplemental radiator duct. Remove them if necessary.

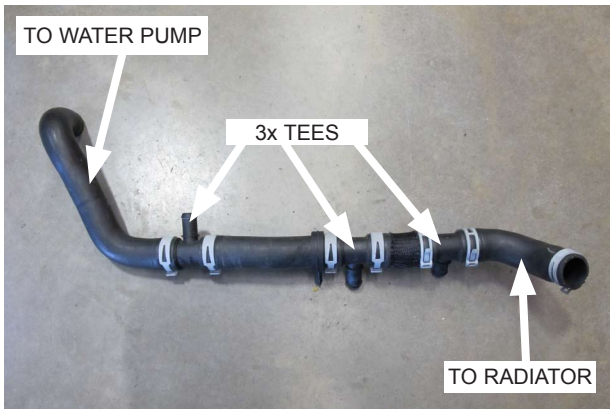

Fig. 3-b: Remove Lower Radiator Hose Assembly
(Removed from vehicle for clarity.)

C. The lower radiator hose assembly will need to be modified in order to clear the 10-rib drive crank pulley. The hose originally attached to the water pump as well as the tee attached to it will be re-used. The hose originally attached to the lower driver side of the radiator will be re-used. The 2x tees on the driver side as well as the 2x sections of straight hose attached to them can be set aside as they will not be re-used.

(See Fig. 3-c)

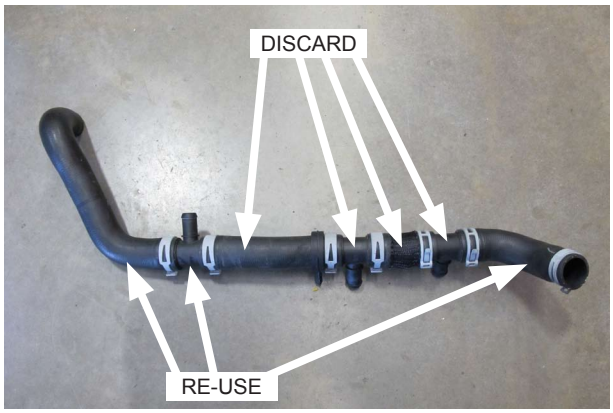

Fig. 3-c: Disassemble Lower Radiator Hose Assembly

DP/N: 007134v1.3, 2019-04-09

3. LOWER RADIATOR HOSE MODIFICATION, cont'd

D. There is a hole located on the front side of the aluminum cross member that will be used. Using the provided adel clamp & #17 screw, relocate the transmission cooler line to the front side of the aluminum cross member & secure it to the previously mentioned hole.

(See Fig. 3-d)

Fig. 3-d: Relocate Transmission Cooler Line

E. Use Diagram 3.1 below for reference on how to assemble the modified lower radiator hose assembly. Trim 1/2" from the radiator side of the driver side lower radiator hose elbow, then loosely assemble the assembly without clamps. Temporarily install it to the vehicle, making sure to clock hoses, tubes & tees correctly for proper fitment. Once in place, remove the assembly from the vehicle & install the OEM spring clamps & provided 2x #24 hose clamps as shown.

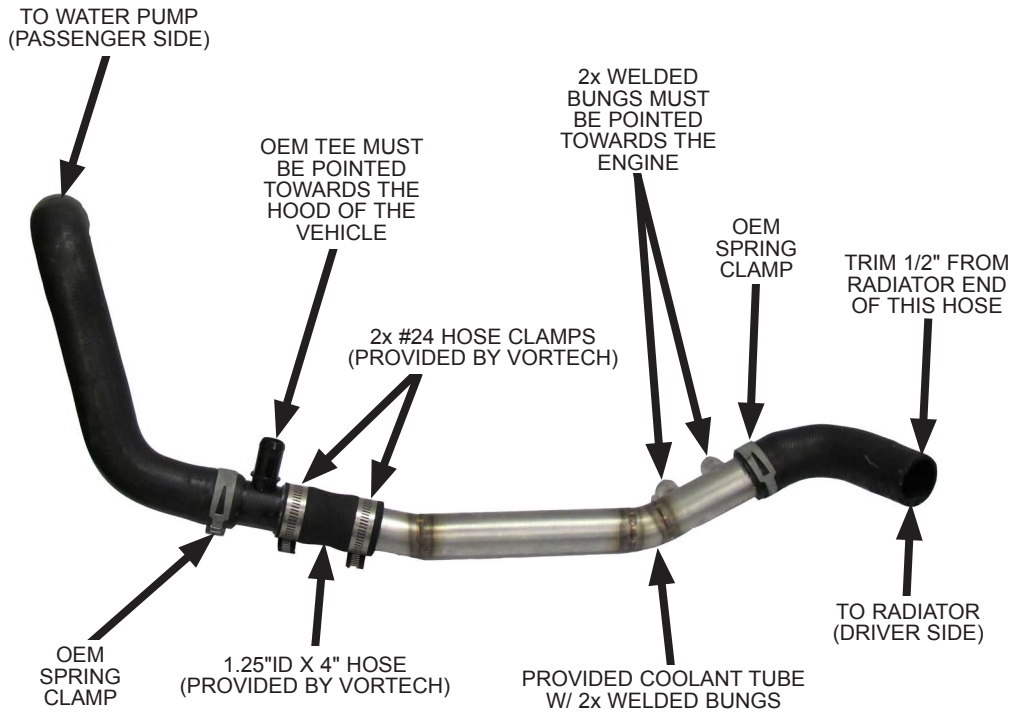

DIAGRAM 3.1: MODIFIED LOWER RADIATOR HOSE ASSEMBLY

DP/N: 007134v1.3, 2019-04-09

3. LOWER RADIATOR HOSE MODIFICATION, cont'd

F. Locate the coolant hose coming from the passenger side supplemental radiator & re-attach it to the OEM plastic tee on the modified lower radiator hose assembly. Secure to the OEM plastic tee using the OEM spring clamp.

(See Fig. 3-f)

Fig. 3-f: Re-attach Supplemental Radiator Hose

G. 1 of the 2 supplemental radiator hoses that tees into the driver side of the modified lower radiator hose assembly needs to be trimmed. Locate the supplemental radiator hose closest to the driver side wheel well & trim 1/2" from the end of the hose coolant hose. Proceed to attach both hoses to the 2x welded bungs & secure using the OEM spring clamps.

(See Fig. 3-g)

Fig. 3-g: Trim 1/2" From Suppl. Radiator Hose
(Closest to driver side wheel well.)

H. For proper fitment of the modified lower radiator hose assembly, trim 1/2" from the end of the 5/8" coolant hose & re-attach it to the lower passenger side of the radiator. Using an 8mm socket & a series of long extensions, secure the 5/8 coolant hose to the radiator using the previously removed #10 hose clamp.

(See Fig. 3-g)

NOTE: Note of the position of the worm gear on the #10 hose clamp. Looking at the coolant hose from the top of the vehicle, the worm gear should be sitting on the right side, closest to the radiator fan shroud. Failure to position the worm gear correctly during re-installation will cause interference with the custom silicone discharge sleeve.

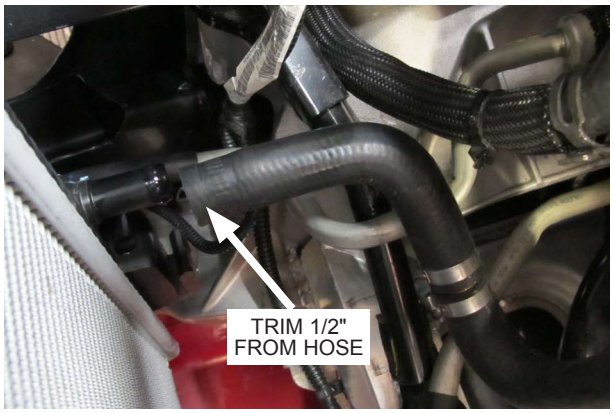

Fig. 3-h: Trim 1/2" From 5/8 Coolant Hose
(Radiator fan shroud removed for clarity.)

DP/N: 007134v1.3, 2019-04-09

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4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION

NOTE: If your upgrade includes the ATI Damper provided by Vortech, proceed to Step A. Otherwise, a custom crank pulley spacer may need to be machined to work with your choice of damper.

A. Using the provided 3x 3/8-16 x 3.50" & 3x 3/8 AN washers, align 3 holes on the provided 7" crank pulley with 3 holes on the provided crank pulley spacer. Be sure that the pilot on the crank spacer slides into the center bore of the crank pulley. If the supercharger crank pulley will not slide onto the spacer, DO NOT FORCE IT. Light heating of the supercharger crank pulley with a propane torch will aid in installation.

(See Fig. 4-a)

Fig. 4-a: Assemble Crank Pulley Components

B. Notice that the mouting surface of the crank pulley spacer is recessed into the spacer. This is to aid installation of the crank pulley spacer onto the damper. When placing the crank pulley assembly into the vehicle, leave the 3x 3/8-16 x 3.50" screws in the assembly as they will be difficult to install after the assembly is in.

(See Fig. 4-b)

Fig. 4-b: Crank Pulley Assembly

C. Lower the crank pulley assembly into the vehicle. Using blue loctite on all screws, line up the 3x 3/8-16 x 3.50" screws with the 3x holes on the ATI damper, then begin to thread the screws into the ATI damper assembly. Torque to 28-30 ft/lbs.

(See Fig. 4-c)

Fig. 4-c: Install Crank Pulley Assembly

DP/N: 007134v1.3, 2019-04-09

4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION, cont'd

D. Remove the pulley retainer & square key securing the supercharger pulley to the supercharger. In order to access the retainer, you will need to break the warranty cap. If the supercharger pulley will not slide off of the input shaft, DO NOT FORCE IT. Light heating of the supercharger pulley with a propane torch will aid in removal.

(See Fig. 4-d)

NOTE: See "NOTICES" section on Pg. iv for warranty information.

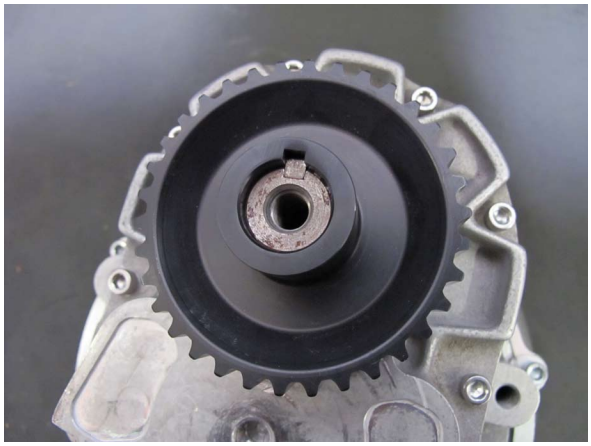


Fig. 4-d: Remove Cog Pulley

E. With the long hub of the supercharger pulley facing away from the supercharger, slide the provided 10-rib supercharger pulley onto the input shaft of the supercharger & secure with the new retainer assembly & supplied square key. Use blue loctite on the retainer screw & torque it to 36-40 ft/lbs. If the supercharger pulley will not slide onto the input shaft, DO NOT FORCE IT. Light heating of the supercharger pulley with a propane torch will aid in installation.

(See Fig. 4-e)

NOTE: Use a strap wrench to hold the supercharger pulley in place while you torque the retainer screw. If a strap wrench is not available, you can torque the retainer screw once the supercharger unit is installed in the vehicle & belt tension is applied.

Fig. 4-e: Install 10-Rib Pulley

F. Loosely install the provided idler plate as shown, re-using the previously removed 2x M10 X 30mm screws, 2x M10 washers, 2x 3/8-16 X 1.00" screws & 2x 3/8 AN washers. Additionally, 2x 5/16-18 x 1/2" socket head cap screws are provided & will be used to secure the new idler plate to 2x threaded holes where the jackshaft assembly once was. Use blue loctite on all screws. With all screws in place, proceed to tighten the screws at this time.

(See Fig. 4-f)

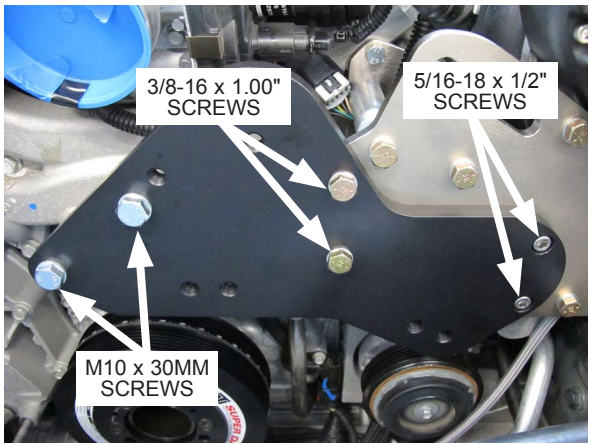


Fig. 4-f: Install Idler Plate

DP/N: 007134v1.3, 2019-04-09

4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION, cont'd

G. Place the supercharger unit back into the supercharger mounting bracket & re-secure using the previously removed 4x 3/8-16 x 1.00" screws & 4x 3/8 AN washers. Use blue loctite on all screws.

(See Fig. 4-g)

Fig. 4-g: Re-Install Supercharger Unit

H. Locate 1 of the 2 idler spacers provided, as well as the provided .101" shim. Slide the provided .101" shim onto the pilot of the idler spacer.

(See Fig. 4-h)

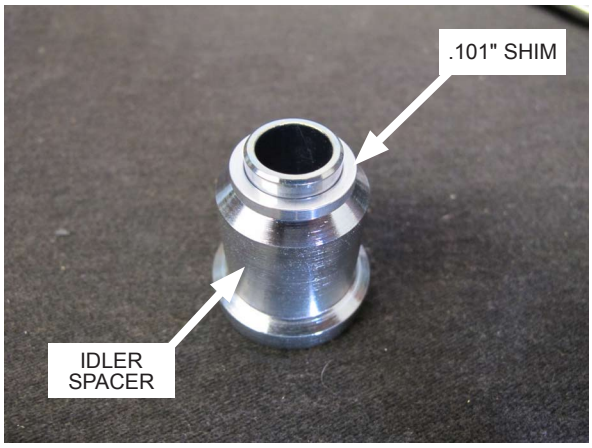


Fig. 4-h: Install .101" Shim To Idler Spacer

I. Locate the provided 10-rib grooved idler pulley & slide it onto the pilot of the spacer mentioned in the previous step, making sure that the .101" shim is sandwiched between the idler spacer & bearing in the idler. Next, you will notice there are 2x threaded holes on the bottom-left side of the idler plate. Using the provided M12 x 80mm screw & 1/2" ID bearing pilot, mount the 10-rib grooved idler to the threaded hole furthest to the left. Use blue loctite on the screw.

(See Fig. 4-i)

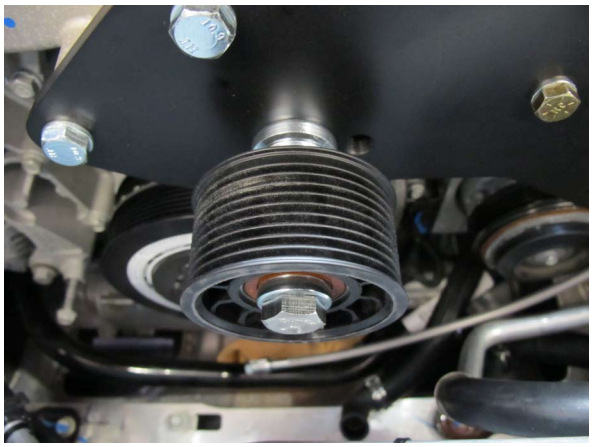


Fig. 4-i: Install 10-Rib Grooved Idler To Idler Plate

DP/N: 007134v1.3, 2019-04-09

4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION, cont'd

J. Locate the remaining idler spacer & slide the pilot into the smooth steel idler. Make sure that the snap ring is facing towards the idler spacer.

(See Fig. 4-j)

Fig. 4-j: Smooth Steel Idler Orientation

K. Next, you will notice there are 2x threaded holes on the bottom-right side of the idler plate. Using the provided M12 x 80mm screw & 1/2" ID bearing pilot, mount the smooth steel idler to the threaded hole furthest to the right. Use blue loctite on the screw.

(See Fig. 4-k)

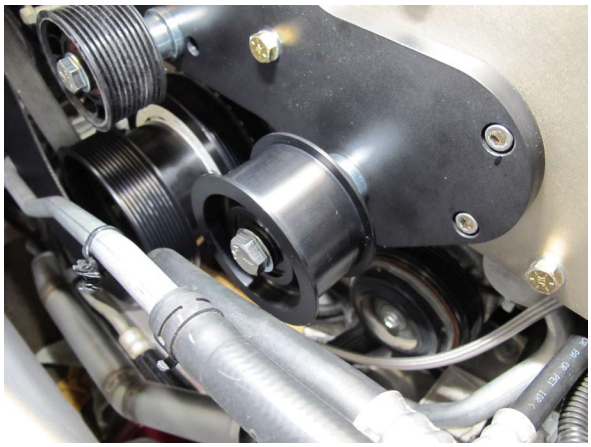


Fig. 4-k: Install Smooth Steel Idler To Idler Plate

L. Locate the tensioner mounting plate. The tensioner mounting plate has 3 different holes for the spring tensioner locating pin to allow for varying degrees of tensioner adjustment. Additionally, the tensioner mounting plate is slotted to allow for further adjustability.

(See Fig. 4-l)

Fig. 4-l: Tensioner Mounting Plate

DP/N: 007134v1.3, 2019-04-09

4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION, cont'd

M. Locate the provided spring tensioner. The pulley/ belt combination included in this kit will require the spring tensioner locating pin to be placed in the middle of the 3 holes. Using the provided 1x M10 x 100mm screw & 1x M10 washer, assemble the spring tensioner & tensioner mounting plate as shown.

(See Fig. 4-m)

Fig. 4-m: Spring Tensioner & Tensioner Mounting Plate

N. Loosely attach 1x M10 x 100mm screw into the threaded hole closest to the top of the idler plate. Next, locate the provided 1x M10 x 35mm & 1x M10 washer & insert it through the slotted hole in the tensioner mounting plate & thread it into the remaining threaded hole on the idler plate. Use blue loctite on all screws. With both M10 screws in place, position the tensioner mounting plate so it is flush with the idler plate. Once in position, proceed to tighten both M10 screws.

(See Fig. 4-n)

Fig. 4-n: Install Spring Tensioner & Tensioner Mounting Plate

O. Locate the provided 10-rib drive belt. Using a 1/2" drive ratchet or breaker bar, turn the spring tensioner counter-clockwise, then route the drive belt as shown. Once the 10-rib drive belt is in position, slowly release the spring tensioner, allowing the smooth idler on the spring tensioner to apply tension to the smooth side of the 10-rib drive belt.

(See Fig. 4-o)

NOTE: Remember to torque the supercharger pulley retainer screw to 36-40ft/lbs if you have not done so already.

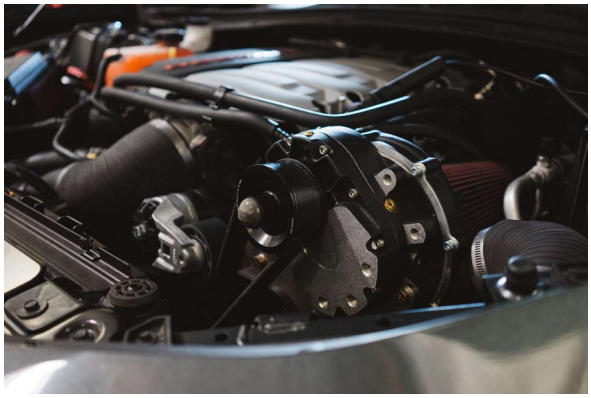
Fig. 4-o: Install 10-Rib Drive Belt

DP/N: 007134v1.3, 2019-04-09

4. 10-RIB DRIVE & MOUNTING BRACKET INSTALLATION, cont'd

P. Re-install all previously removed radiator hoses, front bumper cover, splash guards & any components that were removed during the installation process. Verify that all belts are lined up.

(See Fig. 4-p)



5. 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. Confirm that all fasteners are properly secured and tight.

B. Make sure all wires and hoses are routed away from hot, moving or sharp objects.

C. Test drive the vehicle.

D. Custom calibration will be REQUIRED if the drive speeds of the supercharger and the boost levels have been changed from the standard 6-rib serpetine/cog jackshaft drive system. Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.

DP/N: 007134v1.3, 2019-04-09

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