

2010 CAMARO COG DRIVE UPGRADE

Installation Instructions



2010 CAMARO SS (LS3 & L99)
P/N: 4GE118-010, 4GE118-020, 4GE118-030



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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 8:00am-4:30pm 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 (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 detonation (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.

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VORTECH 50MM COG DRIVE UPGRADE

Installation Instructions

2010 CHEVROLET CAMARO SS

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

The Vortech 2010 Camaro 50mm cog drive upgrade was designed specifically for use on 2010 Chevrolet Camaro SS vehicles equipped with a supercharger to support applications 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.

****IMPORTANT NOTE****

This supercharger drive system is designed for use ONLY on vehicles equipped with "heavy-duty" Vortech supercharger units (designated with RACE on the supercharger serial tag). Also, when employing a cog drive system, a Vortech race bypass valve must be used; this is crucial to maintain proper supercharger performance and longevity. Make sure that the proper supercharger pulley ratios are selected for your particular application and supercharger type. Call Vortech with any questions regarding maximum recommended supercharger speeds.

TOOL & SUPPLY REQUIREMENTS:

- Open End Wrenches (3/4")
- 3/8" Ratchet
- 1/2" Breaker Bar or Ratchet
- 5/16", 3/8", 9/16, 17mm, and 3/4" Sockets
- Flat #2 Screwdriver
- Hammer
- Allen Wrench, Standard Set
- Utility Knife
- Heat Gun/Propane Torch

2010 CAMARO COG DRIVE UPGRADE

50MM COG, 75T CRANK / 30T S/C PULLEY

Part No. 4GE118-010

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
4GE118-010	DRIVE ASSY, 75T/30T COG 50MM UPGRADE	
7B500-325	ARBOR, S/C TENS PLY	1
7PA375-500	SCREW, IDLER ADJUST, 5.00"	1
4PFA010-031	BRACKET, IDLER ADJUST SCREW	1
7F500-020	1/2"-20 HEX JAM NUT GR5 ZINC	1
7A250-100	1/4-20 X 1 FLAT ALLEN	2
4FP116-020	IDLER W/BRNG ASSY, 50MM	1
2A032-030	S/C PULLEY, 30T (50MM)	1
4MA018-075	CRANK PLY, 75T GT 8MM X 2.5W	1
7C010-057	M10 X 1.5 X 55MM HX HD CL10.9	2
4FD017-011	PILOT, 6203/5 BRG, 1/2 SCREW	1
4GE017-031	IDLER SPACER, 50MM COG, 2010 C	1
2A042-161	BELT, POWERGRIP GT2 1600 X 8M	1
007123	INSTR, 2010 CAMARO 50MM COG UP	1
7K437-001	7/16" AN WASHER	2
7U100-071	KEY, 3/16 SQUARE X 1-1/8 LONG	1
2A040-011	PULLEY RETAINER	1
7B375-200	3/8-24 X 2" GR8 BOLT	1
7K375-040	3/8 AN960 FLAT WASHER PLT	1

2010 CAMARO COG DRIVE UPGRADE

50MM COG, 75T CRANK / 32T S/C PULLEY

Part No. 4GE118-020

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
4GE118-020	DRIVE ASSY, 75T/32T COG 50MM UPGRADE	
7B500-325	ARBOR, S/C TENS PLY	1
7PA375-500	SCREW, IDLER ADJUST, 5.00"	1
4PFA010-031	BRACKET, IDLER ADJUST SCREW	1
7F500-020	1/2"-20 HEX JAM NUT GR5 ZINC	1
7A250-100	1/4-20 X 1 FLAT ALLEN	2
4FP116-020	IDLER W/BRNG ASSY, 50MM	1
2A032-032	S/C PULLEY, 32T (50MM)	1
4MA018-075	CRANK PLY, 75T GT 8MM X 2.5W	1
7C010-057	M10 X 1.5 X 55MM HX HD CL10.9	2
4FD017-011	PILOT, 6203/5 BRG, 1/2 SCREW	1
4GE017-031	IDLER SPACER, 50MM COG, 2010 C	1
2A042-161	BELT, POWERGRIP GT2 1600 X 8M	1
007123	INSTR, 2010 CAMARO 50MM COG UP	1
7K437-001	7/16" AN WASHER	2
7U100-071	KEY, 3/16 SQUARE X 1-1/8 LONG	1
2A040-011	PULLEY RETAINER	1
7B375-200	3/8-24 X 2" GR8 BOLT	1
7K375-040	3/8 AN960 FLAT WASHER PLT	1

2010 CAMARO COG DRIVE UPGRADE

50MM COG, 75T CRANK / 34T S/C PULLEY **Part No. 4GE118-030**

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
4GE118-030	DRIVE ASSY, 75T/34T COG 50MM UPGRADE	
7B500-325	ARBOR, S/C TENS PLY	1
7PA375-500	SCREW, IDLER ADJUST, 5.00"	1
4PFA010-031	BRACKET, IDLER ADJUST SCREW	1
7F500-020	1/2"-20 HEX JAM NUT GR5 ZINC	1
7A250-100	1/4-20 X 1 FLAT ALLEN	2
4FP116-020	IDLER W/BRNG ASSY, 50MM	1
2A032-034	S/C PULLEY, 34T (50MM)	1
4MA018-075	CRANK PLY, 75T GT 8MM X 2.5W	1
7C010-057	M10 X 1.5 X 55MM HX HD CL10.9	2
4FD017-011	PILOT, 6203/5 BRG, 1/2 SCREW	1
4GE017-031	IDLER SPACER, 50MM COG, 2010 C	1
2A042-161	BELT, POWERGRIP GT2 1600 X 8M	1
007123	INSTR, 2010 CAMARO 50MM COG UP	1
7K437-001	7/16" AN WASHER	2
7U100-071	KEY, 3/16 SQUARE X 1-1/8 LONG	1
2A040-011	PULLEY RETAINER	1
7B375-200	3/8-24 X 2" GR8 BOLT	1
7K375-040	3/8 AN960 FLAT WASHER PLT	1

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1. PREPARATION AND REMOVAL

- A. Unplug the connector from the MAF sensor.
- B. Remove the discharge piping from the passenger side intercooler up pipe to the throttle body.
- C. Remove the existing serpentine supercharger belt by loosening the spring tensioner with a ½" drive breaker bar or ratchet.



Fig. 1-a

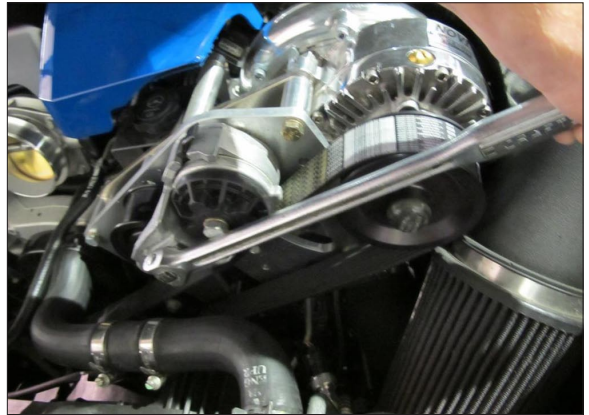


Fig. 1-b

1. PREPARATION AND REMOVAL, CONT'D

- D. Remove the spring tensioner from the front mounting plate and replace with M10X1.5X55mm bolt and washer.



Fig. 1-c



Fig. 1-d

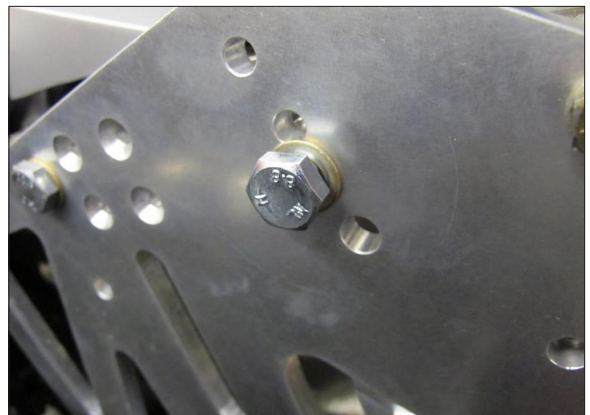


Fig. 1-e

1. PREPARATION AND REMOVAL, CONT'D

- E. Remove the fixed idler from the front mounting plate and replace with M10X1.5X55mm bolt and washer.

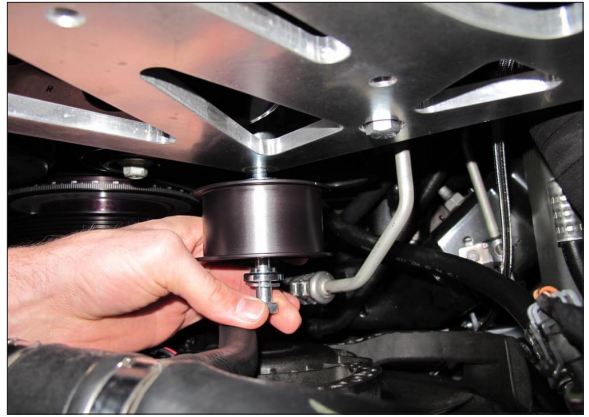


Fig. 1-f

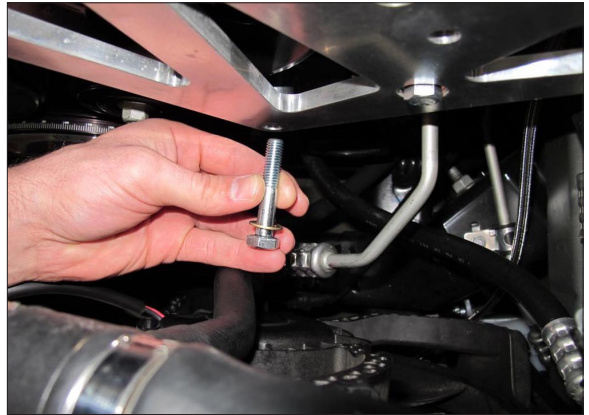


Fig. 1-g

1. PREPARATION AND REMOVAL, CONT'D

- F. Remove the six bolts holding the supercharger drive pulley to the front of the crank damper.
- G. Remove the drive pulley and set aside.
- H. Remove the 3/8 bolt securing the 10-rib supercharger pulley with a 9/16 socket
- I. Remove the 10-rib supercharger pulley from the input shaft and set aside. If necessary lightly heat the pulley with a propane torch until the pulley slides off.

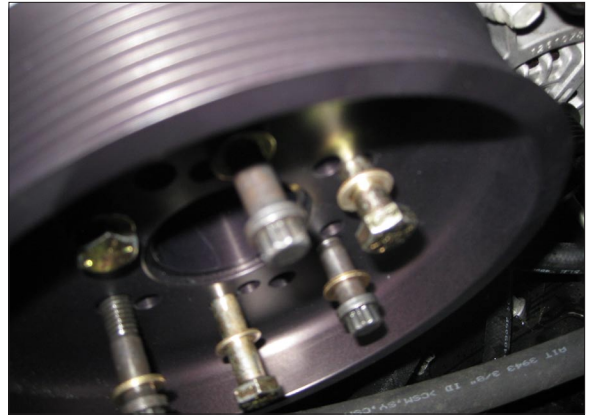


Fig. 1-h



Fig. 1-i



Fig. 1-j

2. HARDWARE INSTALLATION

NOTE: Do NOT hammer, press, or pry etc. on either of the pulleys when installing or removing them. Lightly heat the pulley with a propane torch until the pulley slides onto the input shaft/crank pulley spacer pilot.

- A. Re-using the crank spacer and six previously removed bolts with washers, install the newly supplied 75 tooth cog crank pulley using a drop of blue loctite thread locker on each fastener. Tighten all hardware evenly, using a progressive, criss-cross pattern. Torque to 35 ft/lbs.
- B. Adjust any factory hoses or lines to ensure adequate clearance around the new drive pulley for trouble free operation.
- C. Install the supplied 50 mm cog supercharger pulley onto the supercharger input shaft with the long hub facing the supercharger. Make sure to align and install the square key way. Secure pulley using the supplied retainer along with a drop of blue loctite on the 3/8-24x2" bolt and washer. See FIG 2-c



Fig. 2-a



Fig. 2-b

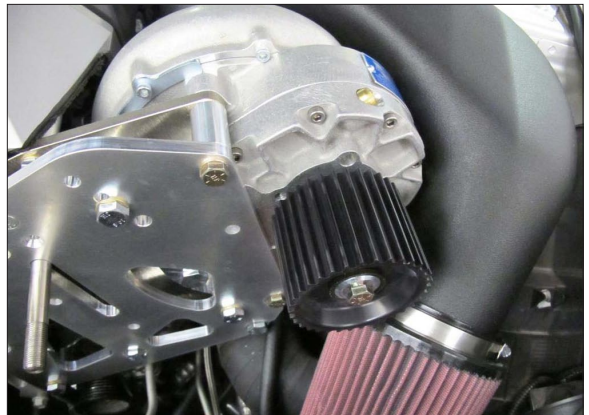


Fig. 2-c

2. HARDWARE INSTALLATION, CONT'D

- D. Locate the following parts: 7B500-325 tensioner arbor, 7PA375-500 adjustment screw, 4PFA010-031 adjustment screw bracket, two 7A250-100 1/4-20 flat allen screws.
- E. Apply a liberal amount of anti seize to the threads of the adjustment screw (7PA375-500)
- F. Feed the shaft of the tensioner arbor through the slot of the front plate from the back. See Figure 2-d.
- G. Start to thread the adjustment screw into the head of the tensioner arbor.
- H. Install the adjustment screw mounting block onto the head of the adjustment screw and secure with the supplied 1/4-20 x 1" flat head screws through the front plate in the appropriate location

NOTE: Use the upper tensioner mounting holes with a 1600 belt for kits with a 75 tooth crank and either 34 or 32 tooth supercharger pulley. Use the lower tensioner mounting holes with a 1600 belt for kits with a 75 tooth crank and 30 tooth supercharger pulley.

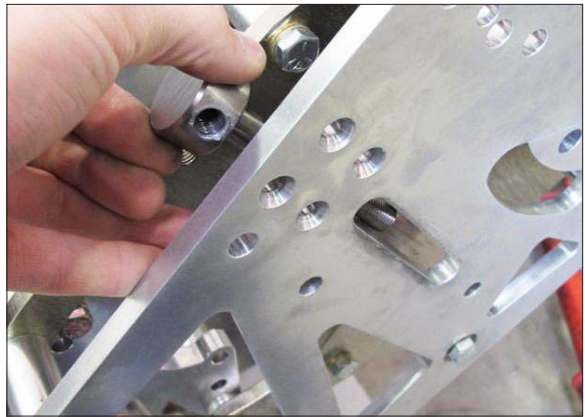


Fig. 2-d

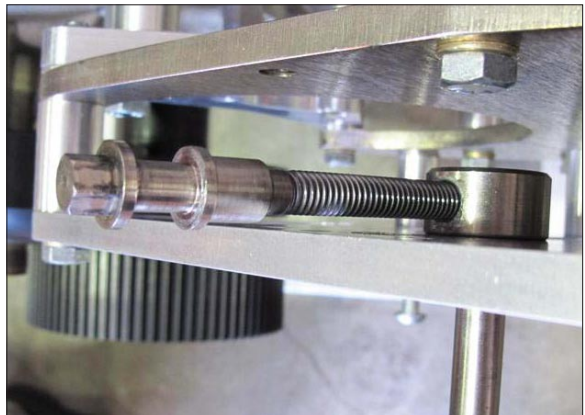


Fig. 2-e

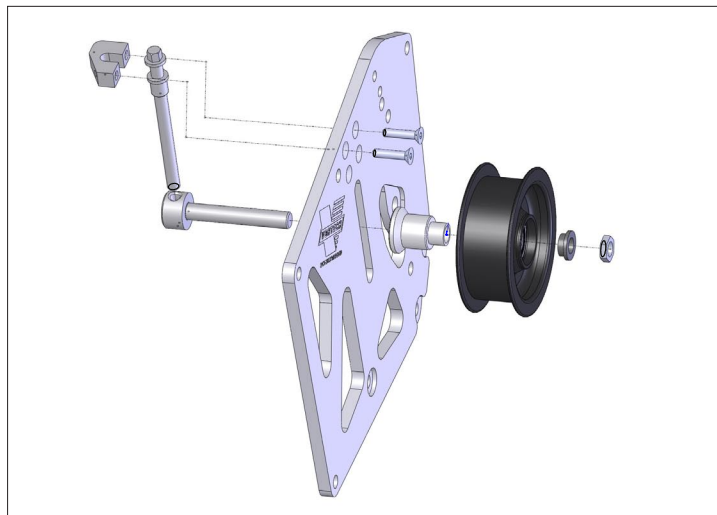


Fig. 2-g

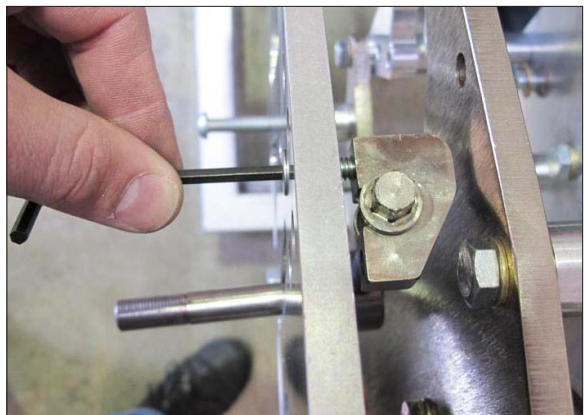


Fig. 2-f

2. HARDWARE INSTALLATION, CONT'D

- I. Slide the supplied idler spacer over the shaft of the tensioner arbor.
- J. Next install the supplied larger aluminum idler onto the arbor followed by the piloting washer and 1/2"-20 hex nut. Install only finger tight while still allowing for movement with the adjustment screw.

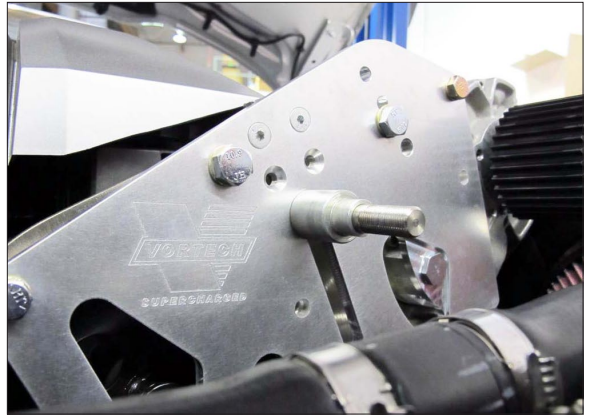


Fig. 2-h



Fig. 2-i



Fig. 2-j

3. BELT INSTALLATION AND TENSIONING

- A. Make sure the tensioner arbor is adjusted to the highest position and install the supplied cog belt around the crank first and then the supercharger pulley.
- B. With the belt routing underneath the tensioner idler pulley, adjust the tensioner by turning the tensioner screw counter-clockwise so that idler pulley is lowered onto the belt applying tension.
- C. Once adequate tension is applied, lock the tensioner in place by finally tightening the jam nut on the tensioner arbor previously left loose for adjustment purposes.



Fig. 3-a

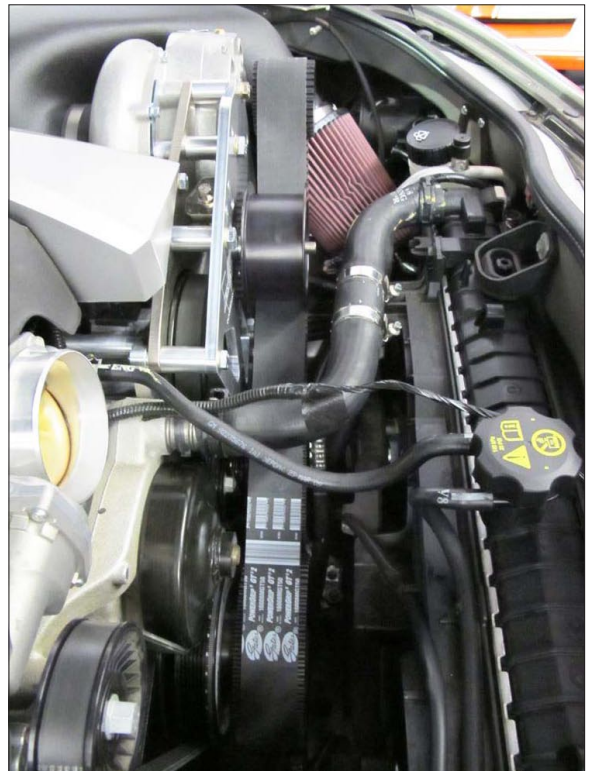


Fig. 3-b

4. FINAL ASSEMBLY

- A. Reinstall the discharge piping from the passenger side intercooler up pipe to the throttle body.
- B. Re-connect the MAF sensor wiring harness.



Fig. 4-a



Fig. 4-b

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 as the drive speeds of the supercharger and the boost levels will have been changed from the standard 10-rib serpentine drive system. Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.

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