

# TRU Trac

## 348/409 CHEVROLET

Installation Manual  
For Systems with A/C  
#14400 / #14420



**BilletSpecialties**

**Billet Specialties, Inc.**

500 Shawmut Ave. • La Grange, IL 60526  
Tech (708) 588-0505 • Fax (708) 588-7181

# PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLING ANY COMPONENTS OF THE TRU TRAC SERPENTINE SYSTEM

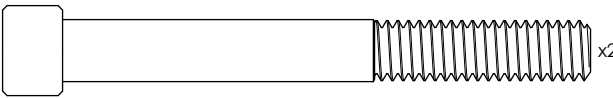
## Prepping The Block

- Disconnect the battery
- Remove the existing alternator, air conditioning compressor and associated brackets
- Remove pulleys and water pump
- Remove all traces of gasket and sealer with a gasket scraper and Scotch Brite® pad.
- Clean the water pump mounting threads with a 3/8-16 thread chaser.

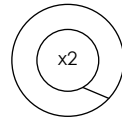
### Included Serpentine Belt

|             |                   |                         |               |          |
|-------------|-------------------|-------------------------|---------------|----------|
| With P/S    | Continental Elite | 6-Rib Poly-V Serpentine | Length: 68.0" | #4060680 |
| Without P/S | Continental Elite | 6-Rib Poly-V Serpentine | Length: 65.0" | #4060650 |

### Packaged With Power Steering Pump



5/16-18 x 2-3/4" Socket Head Cap Screw



5/16" Lock Washer

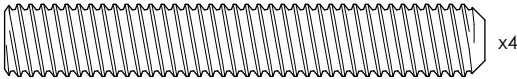
## Required Tools & Materials

- Anti-seize Compound
- Loctite 272 Thread Locker
- Permatex Hylomar® Gasket Dressing
- RTV Silicone
- 1/4" Hex Key
- 3/16" Hex Key
- 5/16" Hex Key
- 3/8" Hex Key
- 5/8" Combination Wrench
- 11/16" Combination Wrench
- 3/4" Combination Wrench
- Gasket Scraper
- Scotch Brite® Pad
- Socket Wrench & Extension
- 10mm 12pt. Socket
- 12mm 12pt. Socket
- 3/8" 12pt. Socket

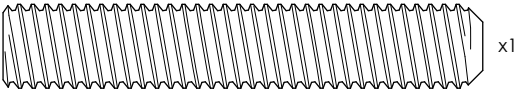
### TECH TIP:

Billet Specialties recommends the use of Anti-Seize on all fasteners to prevent thread lock-up.

### Packaged With Water Pump



3/8-16 x 2-1/2" Socket Set Screw



7/16-14 x 2-1/2" Block Mounting Stud

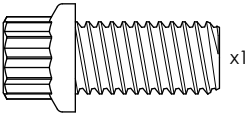


Stainless Stand-Off - 3.214"

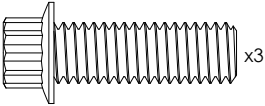


Stainless Stand-off - 2.470"

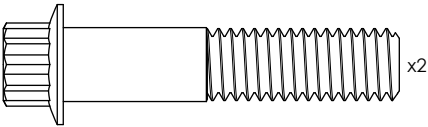
## Packaged In Main Box



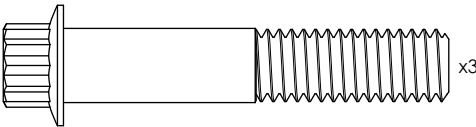
3/8-16 x 3/4" 12-point Cap Screw



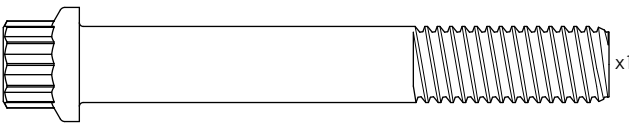
8mm-1.25 x 25mm 12-point Cap Screw



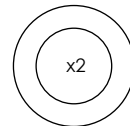
3/8-16 x 1-3/4" 12-point Cap Screw



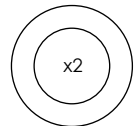
3/8-16 x 2" 12-point Cap Screw



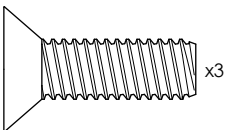
10mm-1.5 x 70mm 12-point Cap Screw



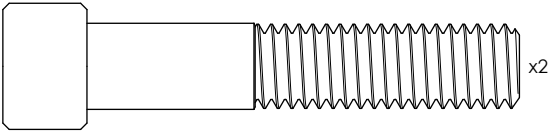
10mm x 16mm  
Shim Washer



10mm x 16mm  
Shim Washer

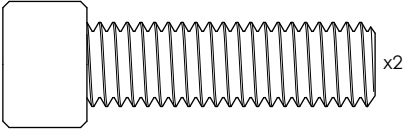


5/16-18 x 1" Flat Head Cap Screw



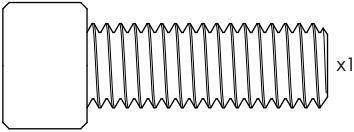
7/16-14 x 2-1/4" Socket Head Cap Screw

With Power Steering

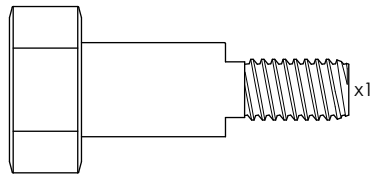


7/16-14 x 1-1/2" Socket Head Cap Screw

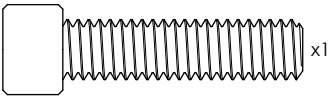
Without Power Steering



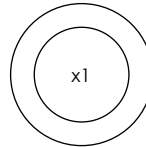
7/16-14 x 1-1/4" Socket Head Cap Screw



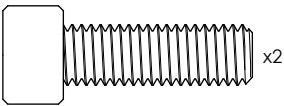
AC Compressor Shoulder Bolt



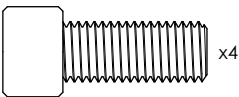
5/16-18 x 1-1/4" Socket Head Cap Screw



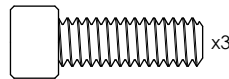
1/2" x .06" Flat Washer



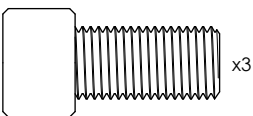
8mm-1.25 x 25mm Socket Head Cap Screw



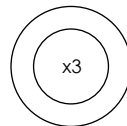
5/16-24 x 3/4" Socket Head Cap Screw



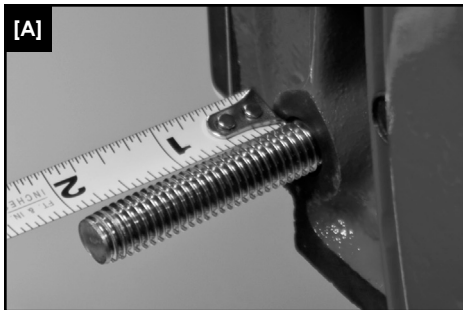
1/4-20 x 3/4" Socket Head Cap Screw



3/8-24 x 3/4" Socket Head Screw



3/8" Belleville Washer



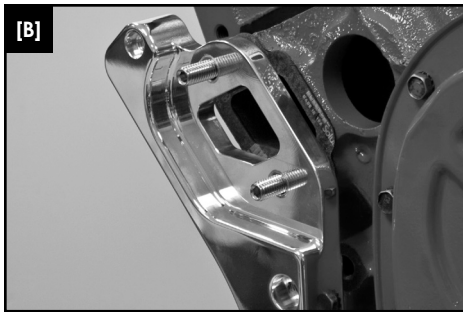
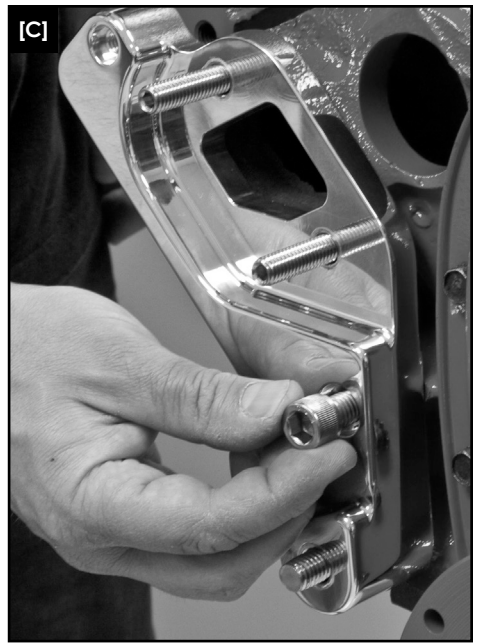
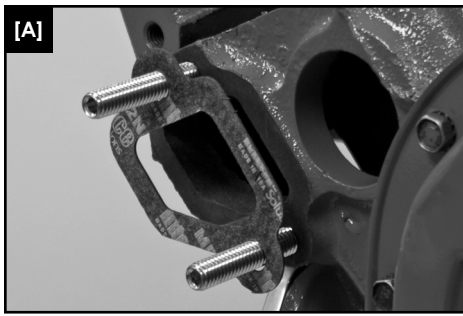
### Figure 1: Install Block Mounting Studs

**[A]** Thread the 7/16-14 x 2-1/2" stud into the bottom passenger side of the engine block leaving 2" of thread exposed as shown.

**[B]** Thread the two 3/8-16 x 2-1/2" studs into the passenger side water pump holes.

**[C]** Apply RTV silicone to one of the last two 3/8-16 x 2-1/2" studs. Thread the stud with RTV silicone into the driver side bottom water pump hole. Now thread the last 3/8-16 x 2-1/2" stud into the driver side top water pump hole.

**Note:** All water pump studs should be installed finger tight. All but the driver side bottom stud (the one with RTV silicone) will be replaced with bolts later in the installation.



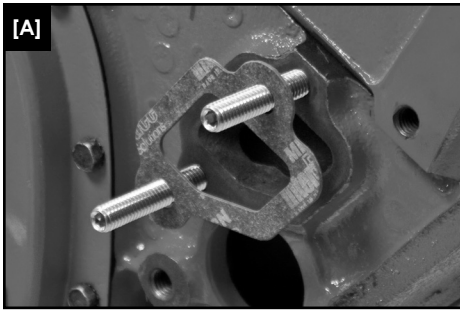
## Figure 2: Install Compressor Bracket

**[A]** Apply Permatex Hylomar® gasket dressing to both sides of one water pump gasket, place gasket over passenger side studs.

**[B]** Slide the compressor bracket over the two water pump studs and the 7/16" stud installed in Figure 1 [A].

Apply anti-seize to the following:  
(1) 7/16-14 x 1-1/4" socket head cap screw

**[C]** Thread the 7/16-14 x 1-1/4" socket head cap screw through the compressor bracket and into the block. Tighten firmly, 76 ft.lbs.



**Figure 3: Install Alternator Bracket**

**[A]** Apply Permatex Hylomar® gasket dressing to both sides of one water pump gasket, place gasket over driver side water pump studs.

**[B]** Slide the alternator bracket over the two studs.

**With Power Steering**

Apply anti-seize to the following  
(2) 7/16-14 x 2-1/4" socket head cap screws

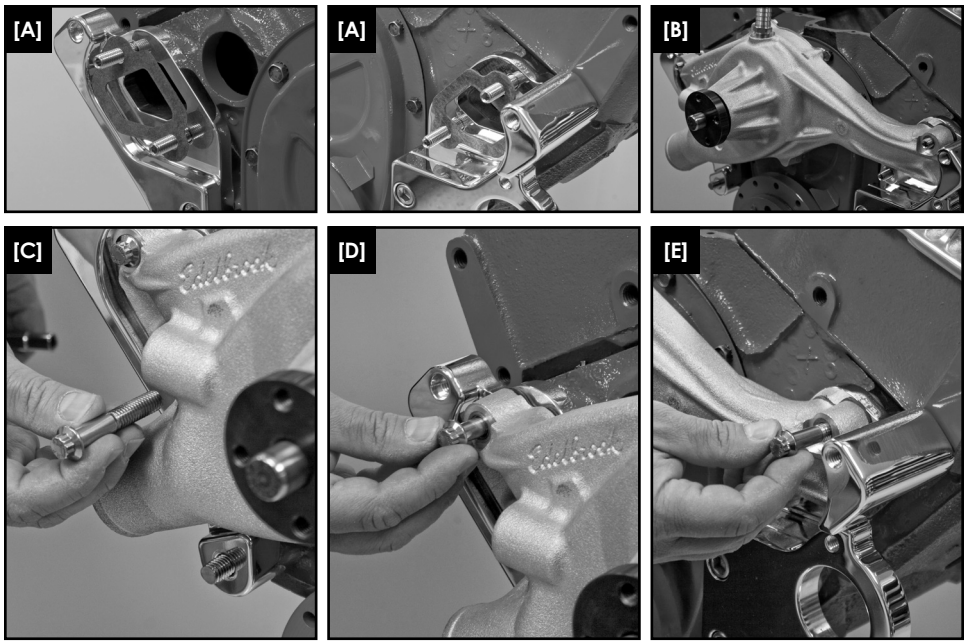
**[C]** Place the power steering bracket on the alternator bracket as shown and thread the two 7/16" socket head cap screws through the power steering bracket, alternator bracket and into engine block. Tighten firmly.

**Without Power Steering**

Apply anti-seize to the following:  
(2) 7/16-14 x 1-1/2" socket head cap screws

Thread 7/16-14 x 1-1/2" socket head cap screws through the alternator bracket and into engine block. Tighten firmly, 76 ft.lbs.





**Figure 4: Install Water Pump**

**[A]** Apply Permatex Hylomar® gasket dressing to both sides of the remaining water pump gaskets and install gaskets over studs.

**[B]** Slide water pump over studs into place.

Apply RTV silicone to the following  
 (3) 3/8-16 x 2" ARP 12-point cap screws

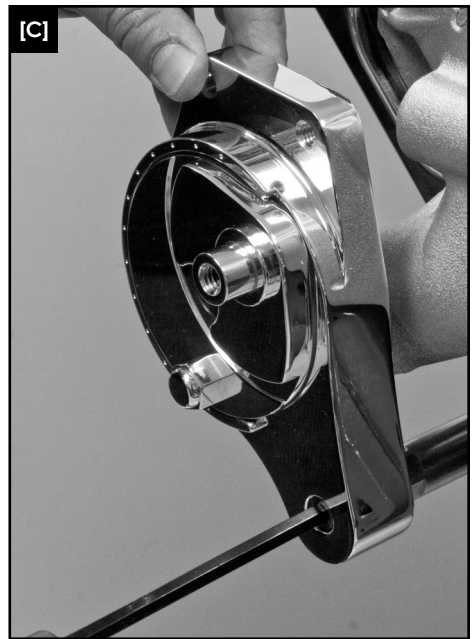
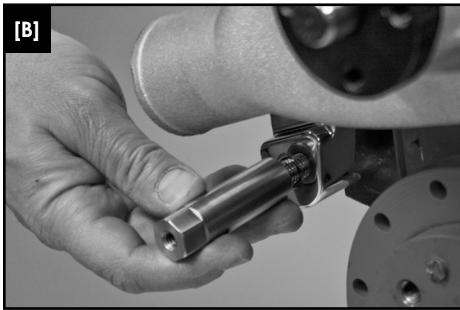
**[C]** Remove the passenger side bottom water pump stud and replace with one of the 12-point screws and finger tighten.

**[D]** Remove the passenger side top water pump stud and replace with one of the 12-point screws and finger tighten.

**[E]** Remove the driver side top water pump stud and replace with the final 12-point screw.

Tighten all fasteners firmly, 36 ft.lbs.

**Note:** Now is a good time to install the 1/2" barbed heater hose fitting on the water pump (not included with kit).



### Figure 5: Install Stand-offs & Tensioner

Apply anti-seize to the following:

- (1) 5/16-18 x 1-1/4" socket head cap screw
- Exposed threads of the two block mounting studs

**[A]** Install the longer (3.214") stand-off to the driver side water pump stud and tighten firmly.

**[B]** Install the shorter (2.470") stand-off to the lower passenger side bracket and tighten firmly.

**[C]** Attach the tensioner assembly to the lower passenger side stand-off with the 5/16-18 x 1-1/4" socket head cap screw. Tighten firmly enough to allow tensioner to remain upright in the proper position on its own.



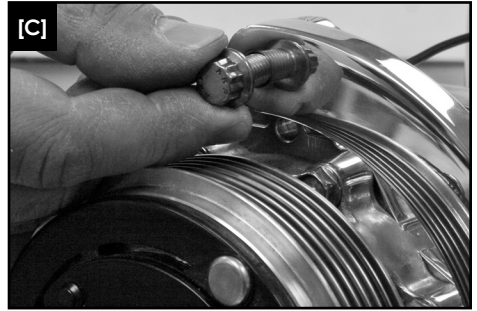
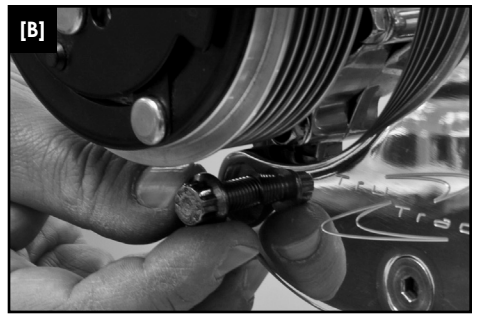
### Figure 6: Install Bridge Bracket

Apply anti-seize to the following:

(3) 5/16-18 x 1" flat head cap screws

**[A]** Place the bridge bracket on motor and install the bottom driver side flathead screw through the bridge bracket and into the stand-off, finger tighten.

**[B]** Follow by aligning the bridge bracket with the tensioner housing and install the remaining two 5/16-18 x 1" flat head screws, finger tighten.



## Figure 7: Install AC Compressor

Apply anti-seize to the following:

- (1) Compressor shoulder bolt
- (2) 8mm-1.25 x 25mm ARP 12-point cap screws

Place AC compressor between the compressor bracket and bridge bracket.

**[A]** Thread the compressor shoulder bolt with flat washer through compressor boss and into compressor bracket, finger tighten while supporting compressor.

**[B]** Thread one 8mm-1.25 x 25mm ARP 12-point cap screw through lower bridge bracket hole and into compressor lower boss, finger tighten.

**[C]** Thread the final 8mm-1.25 x 25mm ARP 12-point cap screw through upper bridge bracket and into top compressor boss, finger tighten.



## Figure 8: Install Alternator

Apply anti-seize to the following:

- (1) 10mm-1.5 x 70mm ARP 12-point cap screw
- (1) 8mm-1.25 x 25mm ARP 12-point cap screw

Place alternator between the alternator bracket and bridge bracket aligning the bottom bridge bracket hole with the lower alternator boss.

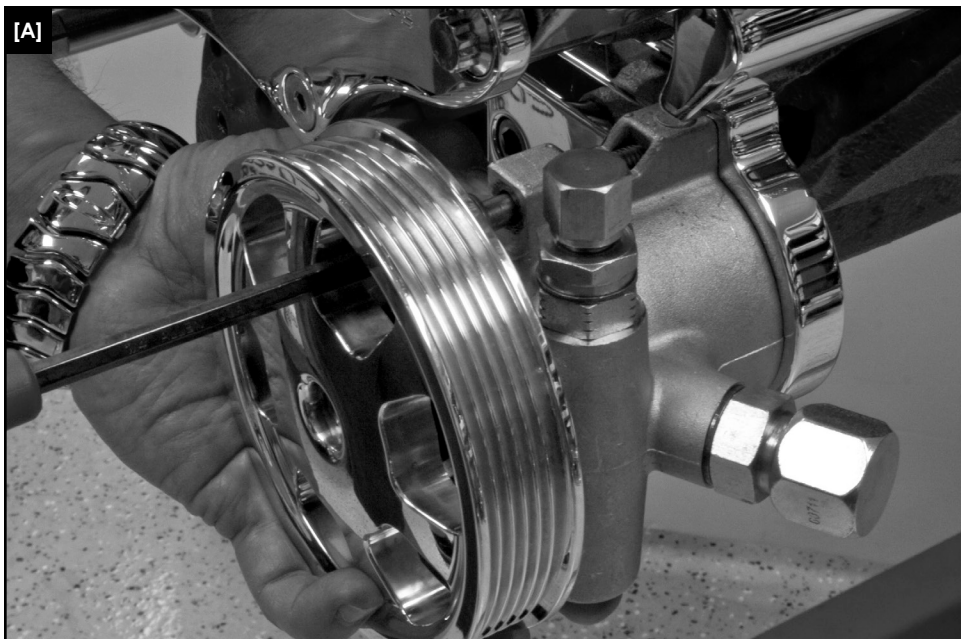
**[A]** Thread the 10mm-1.5 x 70mm ARP 12-point cap screw through the bridge bracket, alternator and into the alternator bracket.

**[B]** Thread the 8mm-1.25 x 25mm ARP 12-point cap screw through the bridge bracket and into the top alternator boss.

**Tighten fasteners at this time** including compressor bolt and rear tensioner bolt, leave lower alternator bolt loose and check if shim washers are needed\*.

**\*Note:** The alternator mounting boss may vary in thickness due to the polishing process. 10mm shim washers are provided to shim alternator to bridge bracket; washers may or may not be needed.

Tighten lower alternator bolt after inspection.



**Figure 9: Install Power Steering Pump**

For kits without power steering continue to Figure 10.

Apply anti-seize to the following:

(2) 5/16-18 x 2-3/4" socket head cap screws

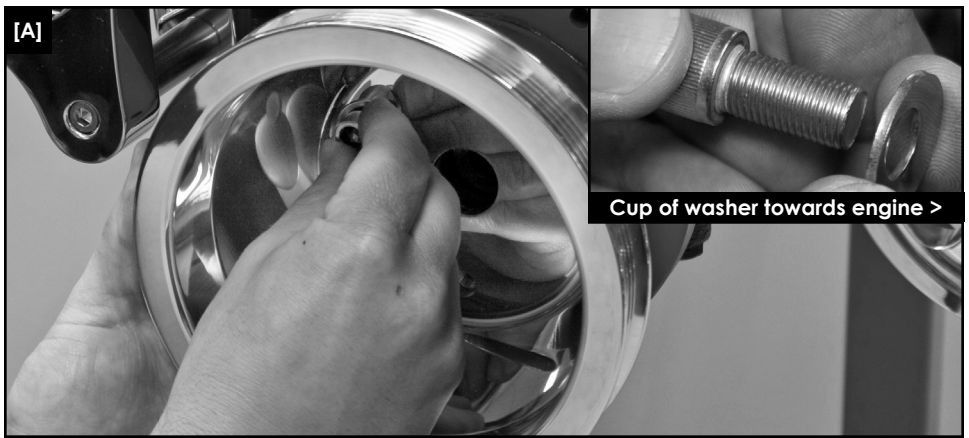
**[A]** Place power steering pump to bracket and thread the two 5/16-18 x 2-3/4" socket head screws with 5/16" split washers through the power steering pump bosses and into the power steering bracket and tighten firmly (26 ft/lbs).

## IMPORTANT

**DO NOT START MOTOR** until you have completely installed **ALL** power steering hoses, reservoir, and added power steering fluid to the system. A bleeding procedure sheet is included with this kit.

- Power steering fluid is the lubricant for the pump.
- **Serious Damage will occur to power steering pumps if they are run dry.**
- **Pumps that have been run dry are not warrantable.**

**NOTE:** Automatic Transmission Fluid (ATF) should never be used in place of a quality brand name power steering fluid.



### Figure 10: Install Crankshaft Pulley

Apply Loctite to the following:

(3) 3/8-24 x 3/4" socket head cap screws

**[A]** Place the crank pulley on the damper, thread the three 3/8-24 x 3/4" socket head screws with bellville washers (cup facing pulley) through pulley and into damper, tighten firmly (46ft/lbs).

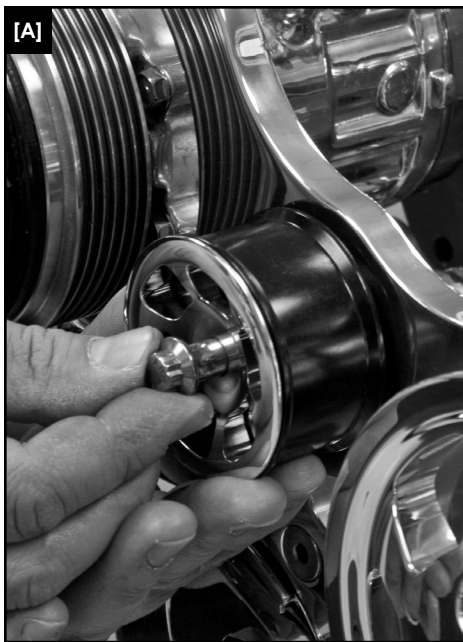


### Figure 11: Install Water Pump Pulley

Apply Loctite to the following:

(4) 5/16-24 x 3/4" socket head cap screws

**[A]** Place water pump pulley on water pump shaft, thread the four 5/16-24 x 3/4" socket head cap screws through the pulley and into the water pump flange, tighten firmly (28 ft/lbs).



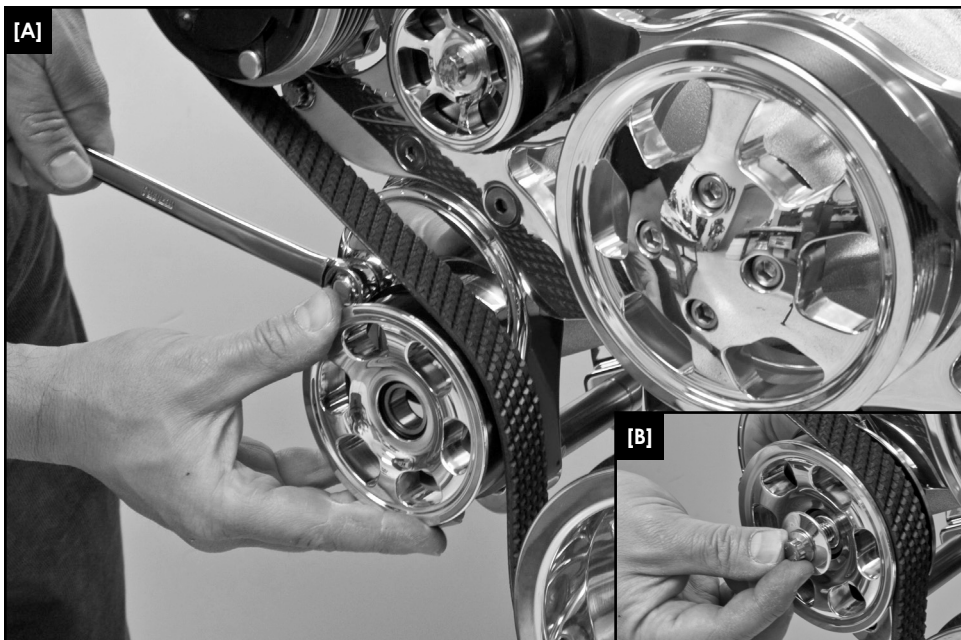
## Figure 12: Install Idler Pulleys

Apply anti-seize to the following:  
(3) 3/8-16 x 1-3/4" ARP 12-point cap screws

**[A]** Install the first pulley by threading the ARP 12-point cap screw through the pulley cover, pulley and boss into the bridge bracket, tighten firmly (46 ft/lbs).

**[B]** Install the second idler pulley by following the instructions described in step **[A]**.





**Figure 13: Install Tensioner Pulley & Belt**

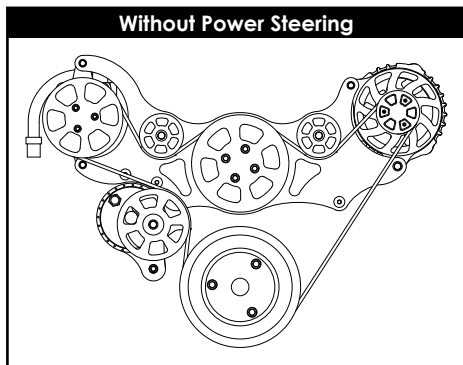
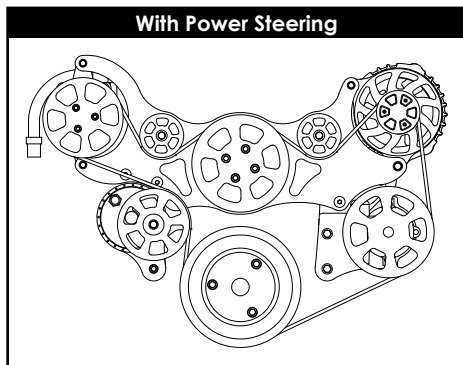
Route belt as shown below minus tensioner pulley.

Place a 5/8" box end wrench on tensioner, align belt onto groove of tensioner pulley.

**[A]** Pull box end up/clockwise until tensioner boss lines up with hole in tensioner pulley, slide pulley onto boss and slowly return wrench to starting position, applying tension to the belt.

Apply anti-seize to the following:  
(1) 3/8-16 x 3/4" ARP 12-point cap screw

**[B]** Thread ARP 12-point cap screw with aluminum washer onto tensioner boss and tighten firmly (46 ft/lbs.).



[A]



**DO NOT OVER-TIGHTEN!**

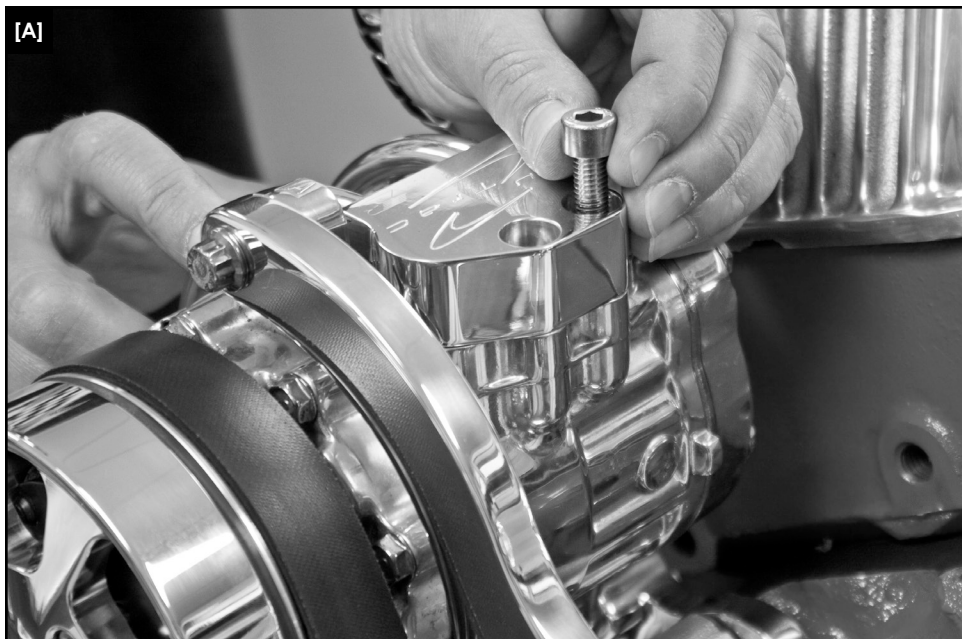
Over tightening these fasteners will cause damage to the compressor clutch.

**Figure 14: Install AC Compressor Clutch Cover**

Apply Loctite Blue 242 to the following:  
(3) 1/4-20 x 3/4" socket head cap screws

**[A]** Place cover on clutch and thread the socket head cap screws through the cover and into the clutch, torque to 40-45 **inch/lbs.**

Caution: Over tightening these fasteners will cause damage to the compressor clutch.  
**Do Not Over Tighten.**



**Figure 15: Install AC Compressor Manifold**

**Continue with this step ONLY if you are going to be installing your air conditioning hoses and charging your system at this time.**

Remove the plate on top of the compressor body.

Apply anti-seize to the following:

(2) 8mm-1.25 x 25mm socket head cap screws

**[A]** Install compressor manifold onto compressor with the two 8mm-1.25 x 25mm socket head cap screws and tighten firmly (13 ft/lbs).

Install hoses, connect clutch wire and charge system.

## IMPORTANT

If you are NOT installing hoses and charging system at this time, place manifold and hardware in a safe place and leave cover plate on compressor at this time.

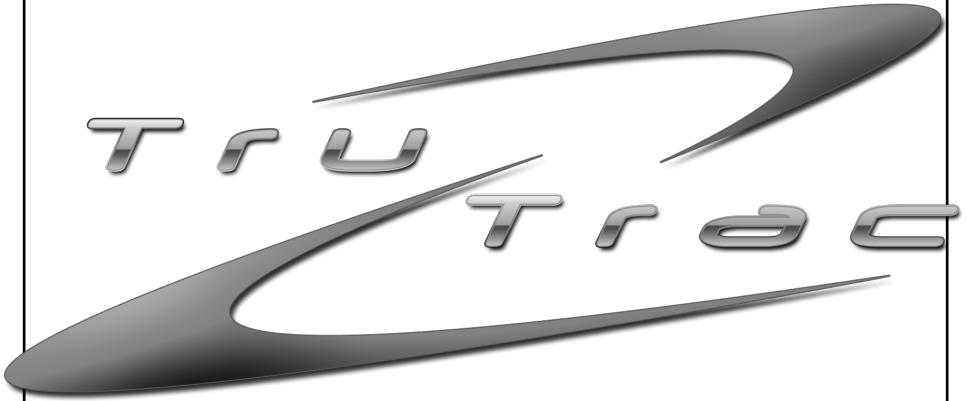
Do not connect clutch wire or apply power to clutch wire without the hoses connected and system charged – **serious damage will occur to compressor.**

### Compressor Oil

Although the compressor is supplied with oil, the level may not be correct for the entire system. Consult the instruction manual of the air conditioning unit for proper levels and system charging procedures.

**This compressor is designed for use with Air Conditioning units only. Serious damage will occur to AC compressor if used for anything other than its intended purpose. Warranty is Void if used for any non-AC application.**

#14400 / #14420



**Billet Specialties, Inc.**

500 Shawmut Ave. • La Grange, IL 60526  
Tech (708) 588-0505 • Fax (708) 588-7181  
[www.billet specialties.com](http://www.billet specialties.com)

