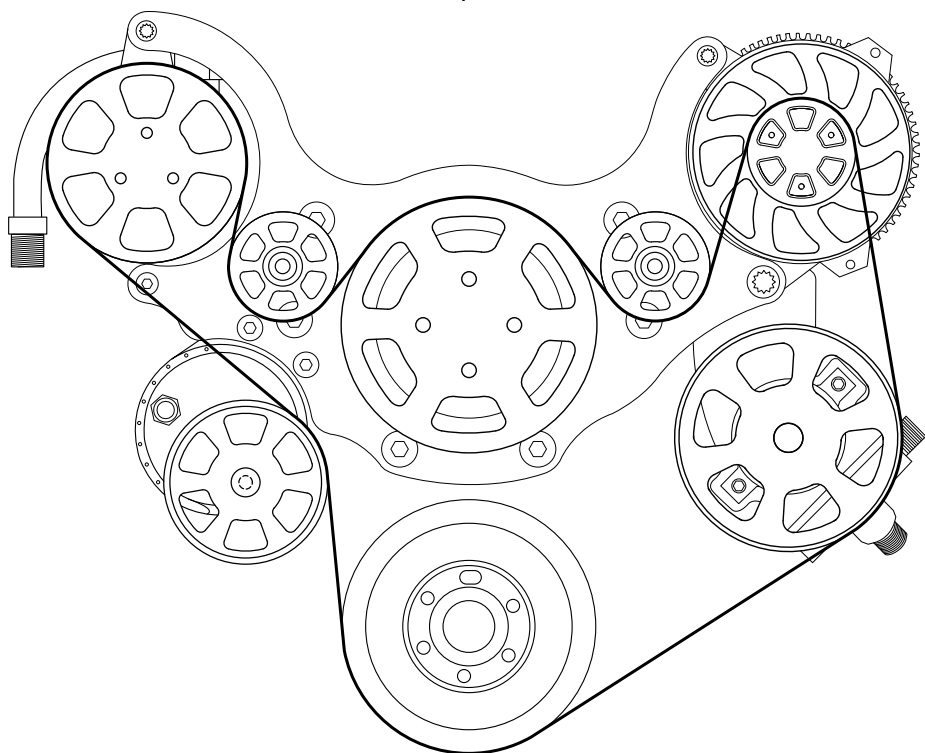




Small Block Chrysler
Installation Manual
For Systems with A/C
#13800 / #13820



Billet Specialties, Inc.
500 Shawmut Avenue.
La Grange, Illinois 60526
Tech Line (708) 588-0505
Fax (708) 588-7181

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

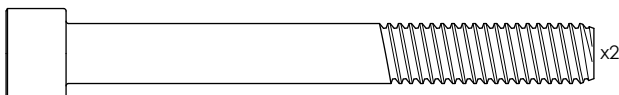
Required Tools & Materials

- | | | |
|--------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------|
| <input type="checkbox"/> Anti-seize Compound | <input type="checkbox"/> 5/8" Box End Wrench | <input type="checkbox"/> 5/32" Allen |
| <input type="checkbox"/> RTV Silicone | <input type="checkbox"/> 11/16" Box End Wrench | <input type="checkbox"/> 3/16" Allen |
| <input type="checkbox"/> Permatex Hylomar [®] (Gasket Dressing) | <input type="checkbox"/> 3/4" Box End Wrench | <input type="checkbox"/> 7/32" Allen |
| <input type="checkbox"/> Gasket Scraper | <input type="checkbox"/> Socket Wrench & Extension | <input type="checkbox"/> 1/4" Allen |
| <input type="checkbox"/> Scotch-Brite [®] Pad | <input type="checkbox"/> 3/8" 12-point socket | <input type="checkbox"/> 5/16" Allen |
| <input type="checkbox"/> 3/8-16 Thread Chaser* & Holder | <input type="checkbox"/> 10mm 12-point socket | <input type="checkbox"/> 6mm Allen |
- *Thread chasers are available at your local parts store and are different from a thread cutting tap.

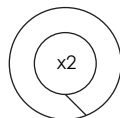
TECH TIP:

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

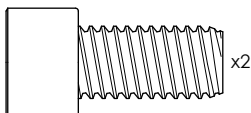
Skin Board #1 - Packaged With Power Steering Pump



5/16-18 x 2-3/4" Socket Head Cap Screw
Power Steering Pump To Bracket



5/16" Lock Washer



3/8-16 x 3/4" Socket Head Cap Screw
Power Steering Bracket To Alternator Bracket

Prepping The Block

Disconnect battery and remove all existing accessory drive brackets & components from motor.

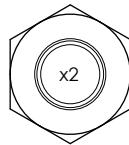
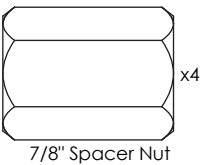
Remove water pump and mechanical fuel pump, scrape away any existing gasket material with a gasket scraper and dress surface with a Scotch Brite® pad.

Remove the timing bolt on the passenger side of the motor just below the fuel pump.

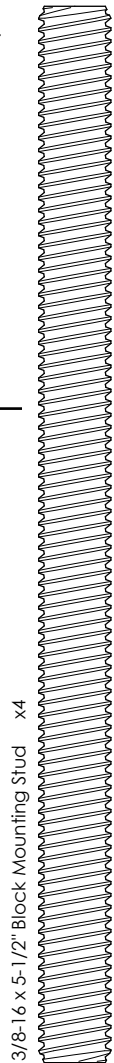
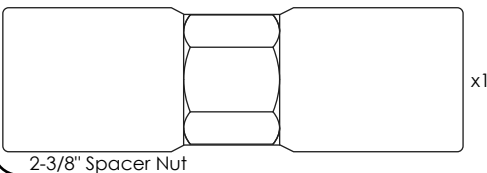
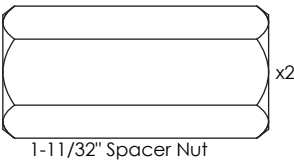
Note: If you wish to replace the timing cover gaskets and seals now is the time to do so. Fel-Pro makes a timing cover gasket set P/N TCS 6563-1 that covers all of them.

**THIS KIT IS NOT DESIGNED FOR USE WITH A
MECHANICAL FUEL PUMP**

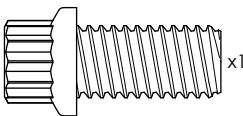
Skin Board #2 - Packaged With Water Pump



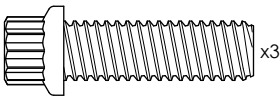
3/8-16 Zinc Coated
Hex Nuts
(Discard After Use)



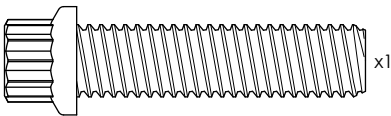
Skin Board #3 - Packaged In Main Box



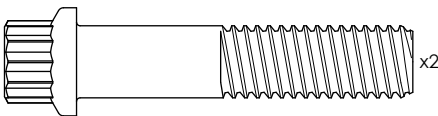
3/8-16 x 3/4" 12-Point Cap Screw
Tensioner Pulley



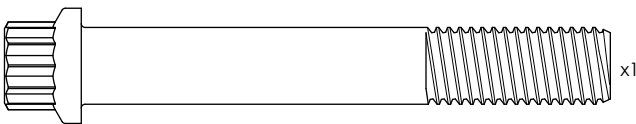
8mm-1.25 x 25mm 12-Point Cap Screw
Bridge Bracket



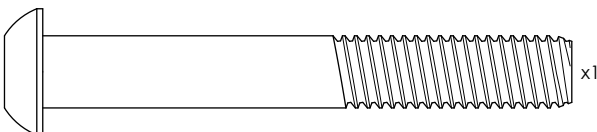
3/8-16 x 1-1/2" 12-Point Cap Screw
Water Pump To Block



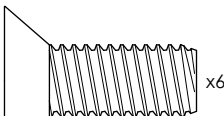
3/8-16 x 1-3/4" 12-Point Cap Screw
Idle Pulleys



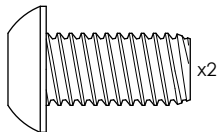
10mm-1.25 x 70mm 12-Point Cap Screw
Alternator - Lower Bolt



3/8-16 x 2-3/4" Button Head Cap Screw
Timing Cover To Block

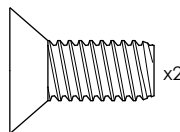


3/8-16 x 1" Flat Head Cap Screw
Thru Bridge Bracket Into Spacer Nuts

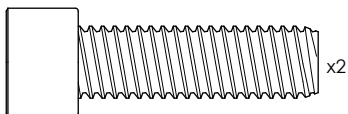


3/8-16 x 3/4" Button Head Cap Screw
Fuel Pump Block-Off

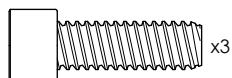
Packaged With Fuel Pump Block-Off



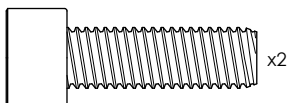
5/16-18 x 3/4" Flat Head Cap Screw
Thru Bridge Bracket Into Tensioner



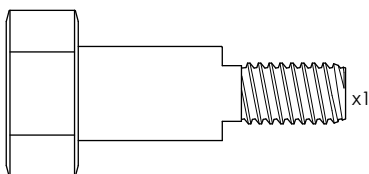
3/8-16 x 1-1/4" Socket Head Cap Screw
AC / Tensioner Bracket Assembly



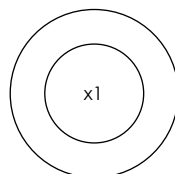
1/4-20 x 3/4" Socket Head Cap Screw
AC Clutch Cover



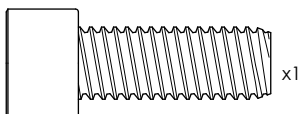
8mm-1.25 x 25mm Socket Head Cap Screw
AC Manifold



AC Compressor Shoulder Bolt



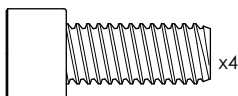
1/2" Flat Washer



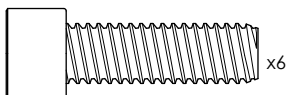
3/8-16 x 1" Socket Head Cap Screw
Thru back of AC bracket to
Tensioner Spacer Nut



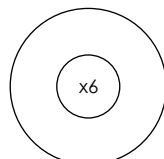
5/16-18 x 1" Socket Set Screw
Tensioner Assembly



5/16-18 x 3/4" Socket Head Cap Screw
Water Pump Pulley



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



5/16" Belleville Washer

Serpentine Belt

Continental Elite Poly-V 6-Rib Serpentine Belt - 68" #4060680 (with power steering)

Continental Elite Poly-V 6-Rib Serpentine Belt - 65" #4060650 (without power steering)

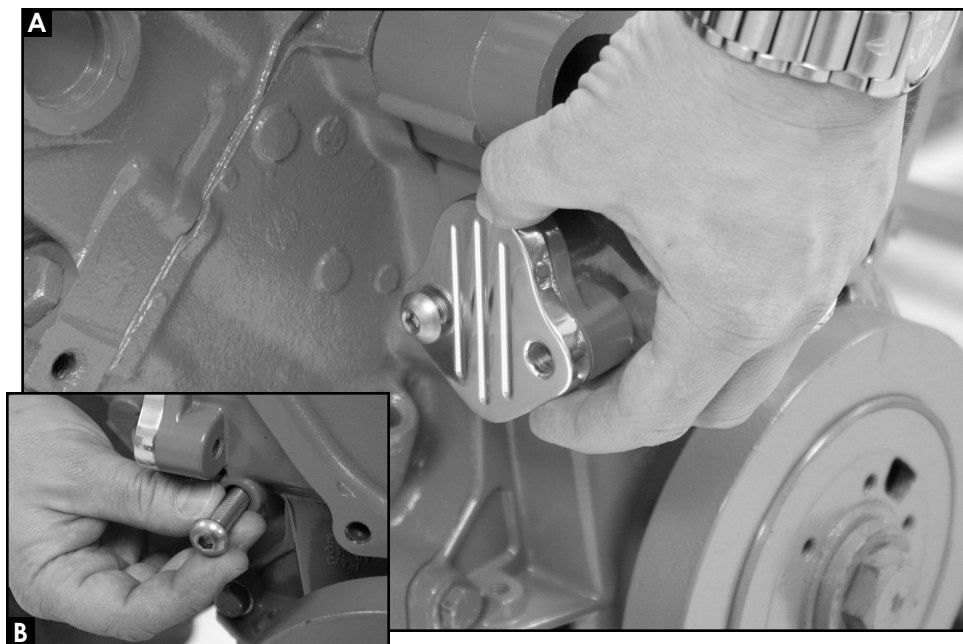
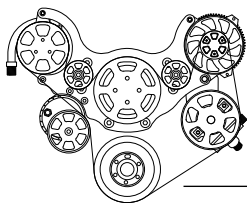


Figure 1: Install Fuel Pump Block-Off

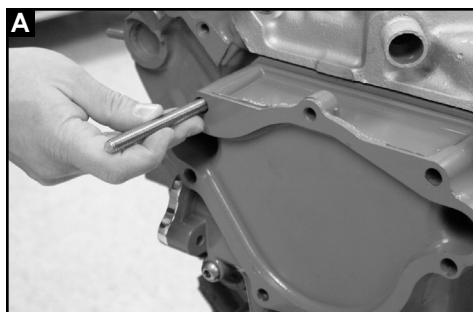
A] Sparingly apply RTV silicone to the timing cover surface and gasket. Attach the fuel pump block off with the two 3/8-16 x 3/4" button head cap screws and tighten firmly.

B] Thread the 3/8-16 x 2-3/4" button head cap screw into the timing cover by the fuel pump block off and tighten firmly.



*TRU
Trac*

Billet Specialties



2-7/16" From Timing Cover



2" From Timing Cover

Figure 2: Install Block Mounting Studs

Apply RTV silicone to one end of the threads of the four 3/8-16 x 5-1/2" threaded studs and the two 3/8-16 x 2-1/2" threaded studs.

A] Thread the silicone side of the 5-1/2" long studs into the upper four holes in the timing cover.

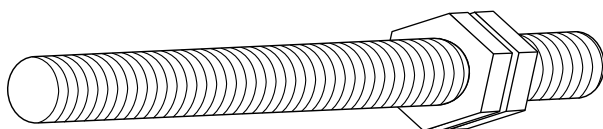
Important! Leave 2-7/16" of thread exposed from the timing cover face.

B] Thread the silicone side of the two 2-1/2" long studs into the bottom two holes of the timing cover.

Important! Leave 2" of thread showing.

Double check your lengths.

The studs can easily be tightened by threading two 3/16" zinc coated nuts (supplied) onto the stud and tighten them against each other to act as a drive nut (discard after use).



*Example



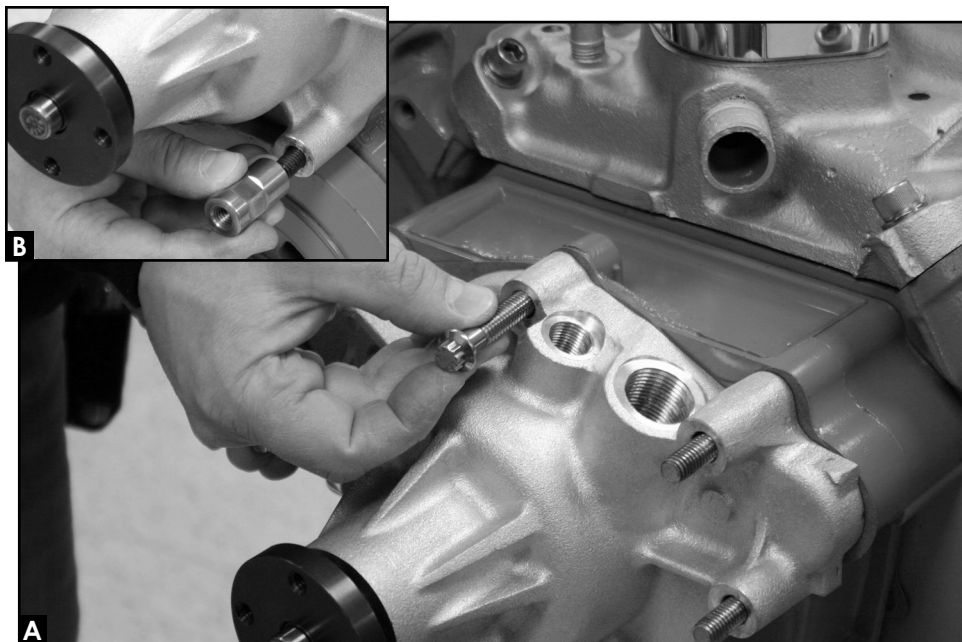


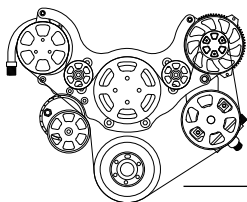
Figure 3: Install Water Pump

Coat both sides of water pump gasket with Permatex Hylomar gasket dressing & install gasket over studs.

A] Slide the water pump over the studs and into position. Apply anti seize to the threads of the 3/8-16 x 1-1/2" ARP 12-point cap screw and thread into top water pump hole, finger tighten.

Apply anti seize to the exposed threads on the remaining studs.

B] Finish by threading the two 1-11/32" spacer nuts to the bottom two studs and finger tighten.



TRU
Trac

Billet Specialties

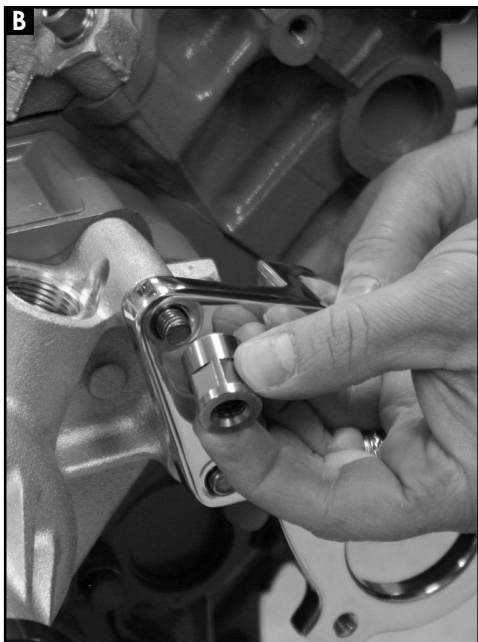


Figure 4: Assemble Compressor/Tensioner Bracket

Apply anti seize to the two 3/8-16 x 1-1/4" socket head cap screws.

A&B] Assemble front and rear compressor/tensioner bracket halves together with the two 3/8" cap screws and tighten firmly.

C] Place completed bracket on passenger-side water pump and secure with two 7/8" spacer nuts and finger tighten.



FOR KITS WITHOUT POWER STEERING - SKIP TO STEP B

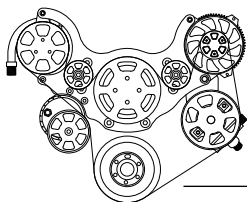
Figure 5: Install Alternator & Power Steering Bracket

A] Apply anti seize to the threads of two 3/8-16 x 3/4" socket head cap screws. Assemble power steering bracket to the back of the alternator bracket and tighten firmly.

B] Place alternator bracket on driver side of water pump and secure with two 7/8" spacer nuts.

Tighten all water pump spacer nuts at this time firmly in a cross pattern, make sure bracket fasteners are also tightened firmly.

Now is a good time to install the barbed fittings in the water pump.



*TRU
Trac*

Billet Specialties

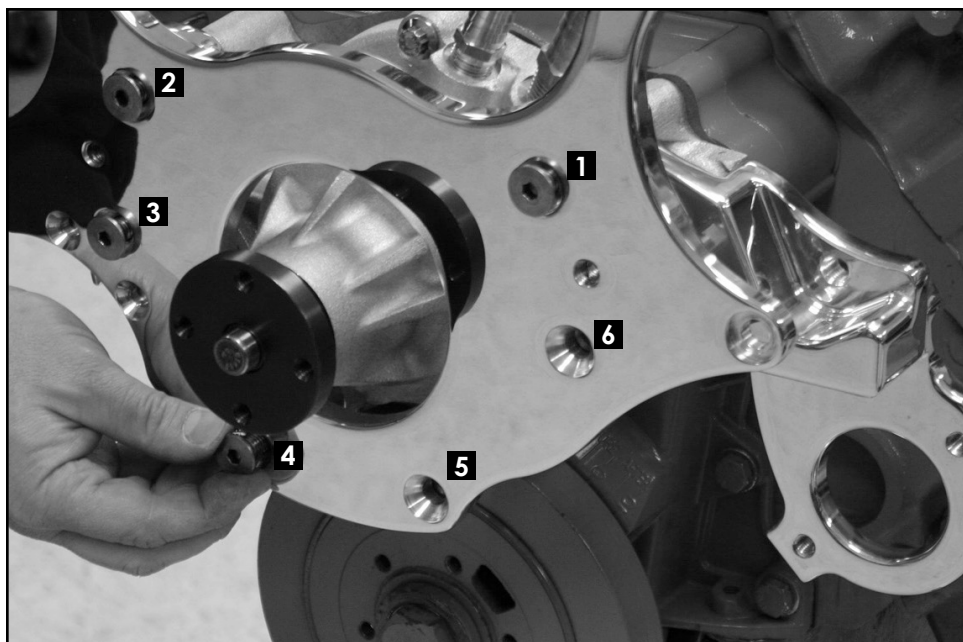


Figure 6: Install Bridge Bracket

Apply anti seize to the six 3/8-16 x 1" flat head cap screws.

Place bridge bracket to motor and align mount holes with the six water pump spacer nuts.

Thread the 3/8" flat head screws through the bridge bracket and into the spacer nuts, finger tighten only.



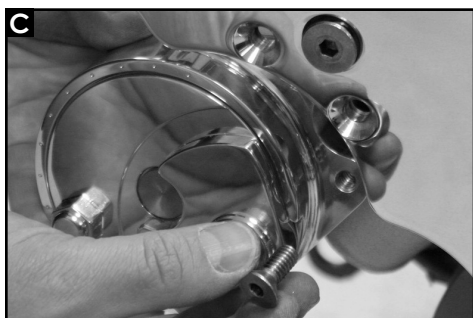


Figure 7: Install Tensioner

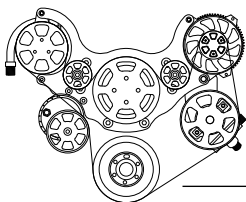
A] Apply Loc-Tite to one end of the of the 5/16-18 x 1" socket set screw and thread into the back of the tensioner body, finger tighten.

B] Apply anti seize to the remaining exposed threads of the stud. Thread the 2-3/8" spacer nut onto the stud and tighten firmly.

Apply anti seize to the threads of the two 5/16-18 x 3/4" flat head cap screws and the 3/8-16 x 1" socket head cap screw.

C] Place tensioner assembly between the compressor/tensioner bracket and the bridge bracket. Thread the two 5/16" flathead cap screws through the bridge bracket and into the tensioner body, finger tighten.

D] Thread the 3/8" socket head cap screw through the back of the tensioner bracket and into the tensioner spacer nut, tighten firmly.



TRU
Trac

Billet Specialties

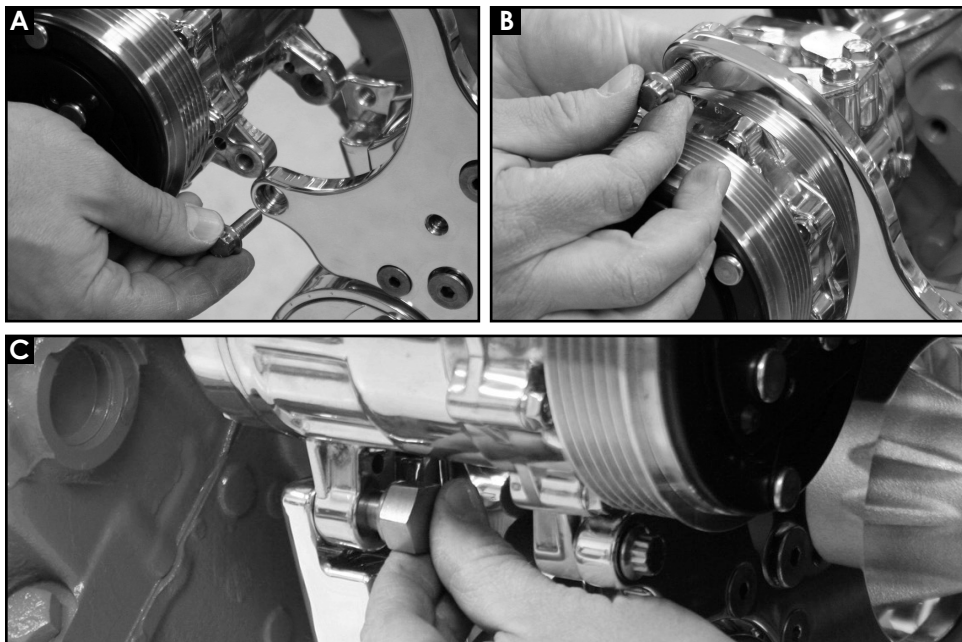


Figure 8: Install AC Compressor

Apply anti seize to the compressor shoulder bolt and two 8mm-1.25 x 25mm ARP 12-point cap screws.

A&B] Place the compressor between the bridge bracket and compressor/tensioner bracket, aligning the compressor bosses with the bridge bracket. Thread the two 8mm ARP 12-point cap screws through the bridge bracket and into the compressor bosses, finger tighten.

C] Thread the compressor shoulder bolt and washer through the rear compressor boss and into the compressor/tensioner bracket, finger tighten.

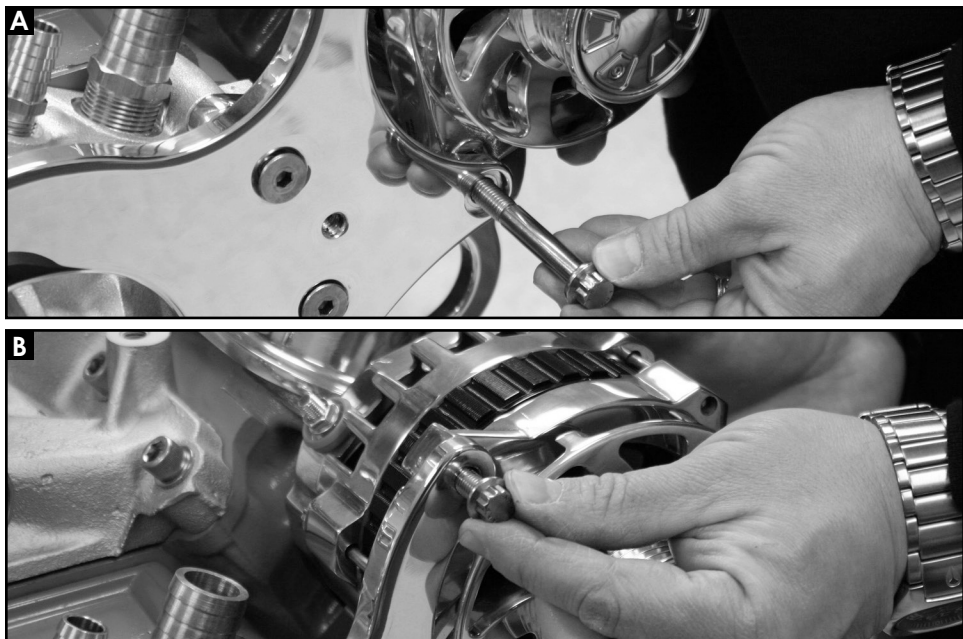


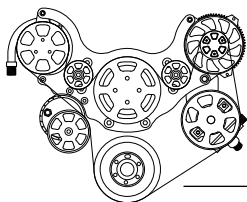
Figure 9: Install Alternator

Apply anti seize to the remaining 8mm-1.25 x 25mm ARP 12-point cap screw and the 10mm-1.25 x 70mm ARP 12-point cap screw.

A] Place alternator between bridge bracket and alternator bracket. Align alternator bosses with the bridge bracket and thread the 10mm ARP 12-point cap screw through the bottom bridge bracket hole & alternator, into the alternator bracket and finger tighten.

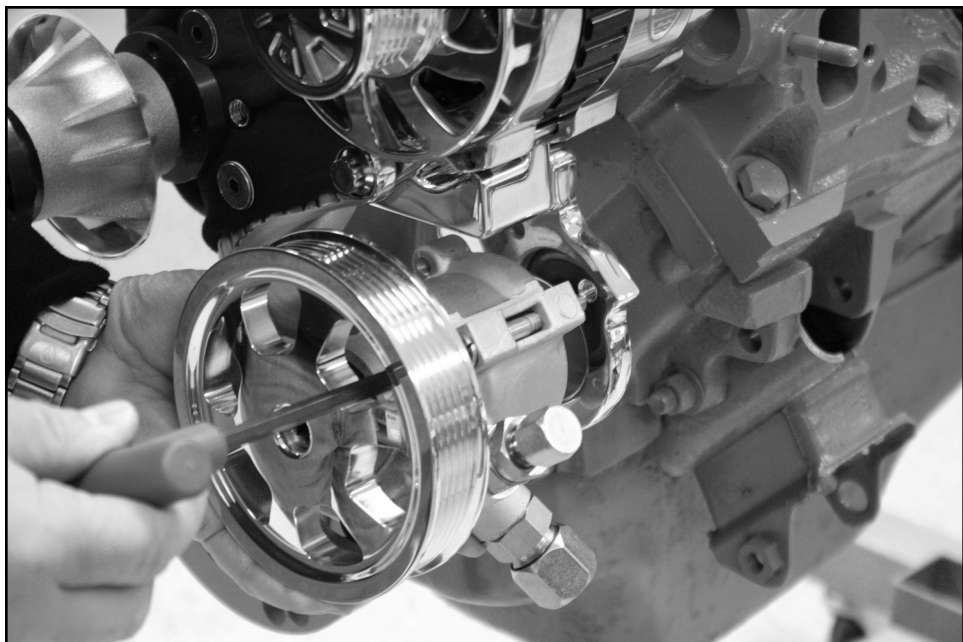
B] Thread the 8mm ARP 12-point cap screw through the bridge bracket and into the top alternator boss.

Tighten All Fasteners At This Time: All ARP 12-point fasteners, all flat head bridge bracket screws and AC compressor shoulder bolt.



*TRU
Trac*

Billet Specialties



FOR KITS WITHOUT POWER STEERING CONTINUE TO THE NEXT STEP

Figure 10: Install Power Steering Pump With Pulley

Apply anti seize to the threads of the two 5/16-18 x 2-3/4" socket head cap screws.

Place power steering pump with pulley on bracket and align.

Thread the two 5/16-18 x 2-3/4" cap screws with 5/16" lock washers through the power steering pump mount bosses and into the power steering bracket, tighten firmly 26ft/lbs.

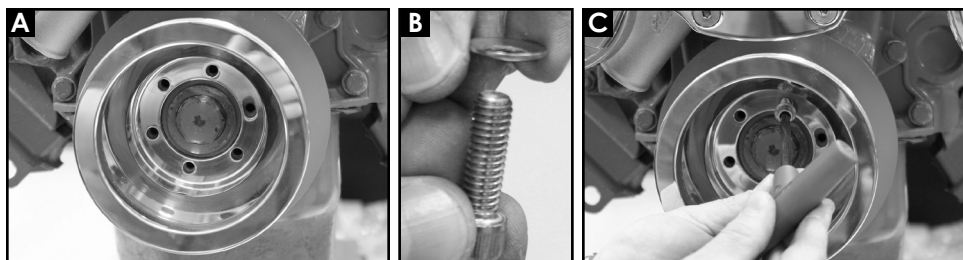


Figure 11: Install Crankshaft Pulley

Apply Loc-Tite to the threads of the six 5/16-18 x 1" socket head cap screws.

A] Place crankshaft pulley on damper and align holes.

B&C] Thread the 5/16" cap screws with a Belleville washer (cup side towards pulley) through the pulley and into the crankshaft, tighten firmly 26ft/lbs.

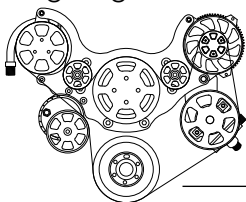


Figure 12: Install Water Pump Pulley

Apply Loc-Tite to the threads of the four 5/16-18 x 3/4" socket head cap screws.

Place water pump pulley on water pump and align holes.

Thread the 5/16" screws through the pulley and into the water pump flange, tighten firmly 26 ft/lbs.



TRU
Trac

Billet Specialties



Figure 13: Install AC Clutch Cover

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

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.**

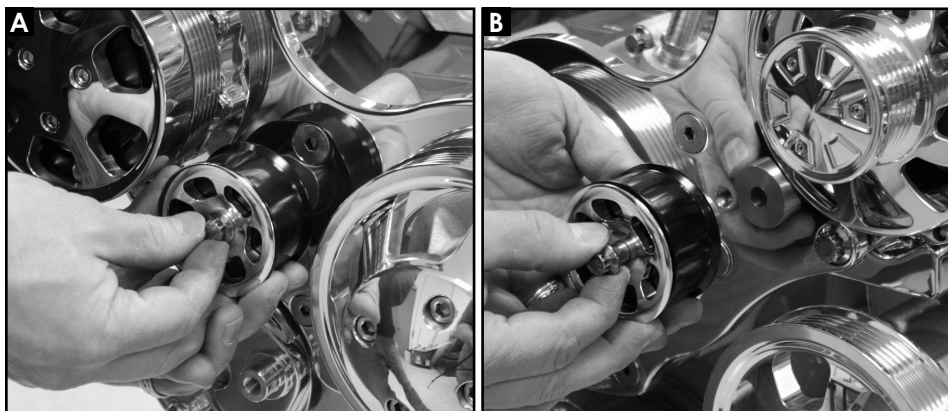


Figure 14: Install Idler Pulleys

Apply Loc-Tite to the threads of two 3/8-16 x 1-3/4" ARP 12-point cap screws.

A&B] Thread the 3/8" ARP 12-point cap screw through the idler pulley cover, idler pulley and pulley boss into the bridge bracket and tighten firmly 46ft/lb. Repeat for other side.

www.billet specialties.com





Figure 15: Install Belt & Tensioner Pulley

A] Apply anti-seize to one 3/8-16 x 3/4" ARP 12-point cap screw.

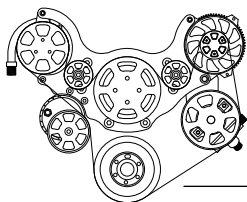
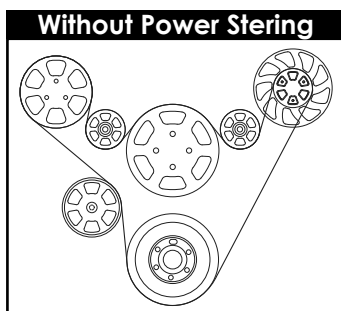
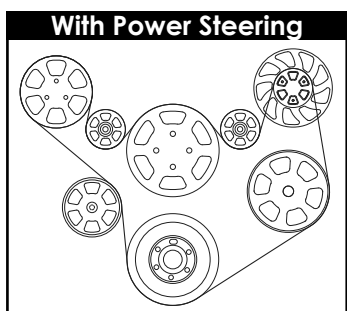
Route serpentine belt as shown below - minus tensioner pulley.

Place a 5/8" box end wrench on tensioner.

B] Align belt onto pulley and pull up on wrench to release tension until tensioner pulley slips onto tensioner shaft.

Slowly return wrench to starting position to apply tension to belt.

C] Remove wrench and install the 3/8-16 x 3/4" ARP 12-point cap screw with thrust washer onto pulley and tighten firmly (46 ft/lbs).



*TRU
Trac*

Billet Specialties



Figure 16: Install Compressor Manifold

If you are going to be installing your air conditioning hoses and charging the system at this time, remove the cover plate on top of the compressor body.

A,B] Apply anti-seize to the two 8mm-1.25 x 25mm socket head cap screws. Install compressor manifold onto compressor and thread the two 8mm socket head cap screws through the manifold and into the compressor, tighten firmly (25 ft/lbs.)

Install hoses, connect clutch wire and charge system.

Important

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

Do not connect the clutch wire or apply power to clutch wire without the hoses connected and the 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 procedure.



Billet Specialties, Inc.
500 Shawmut Avenue
La Grange, Illinois 60526
Tech Line 708.588.0505
Fax 708.588.7181
www.billet specialties.com

