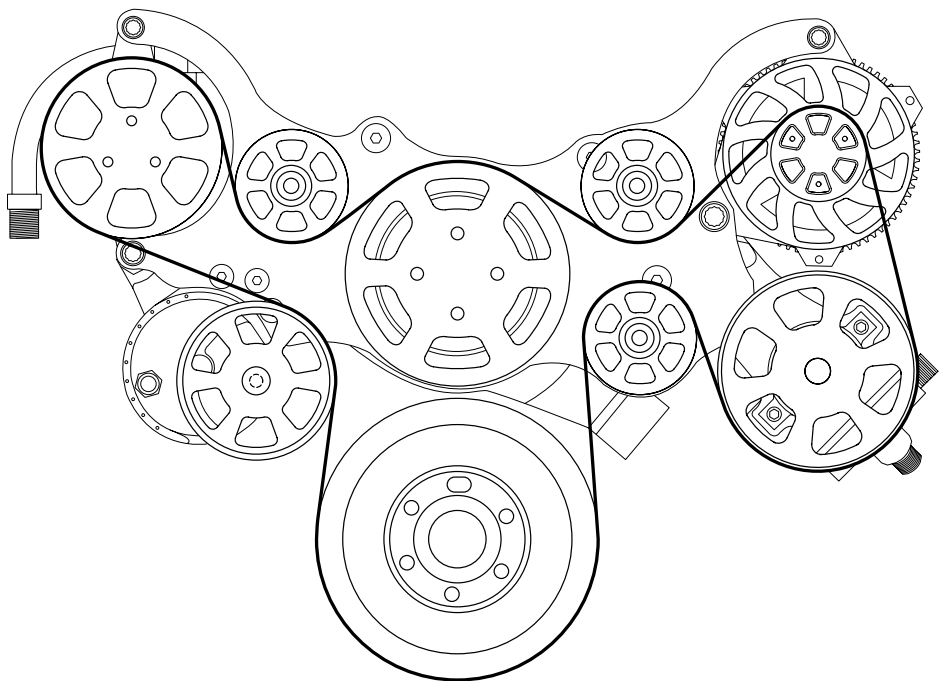




HEMI / BB Chrysler
Installation Manual
For Systems with A/C
#14800 / #14820



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

Tech Line: 708.588.0505
Fax: 708.588.7181
www.billet specialties.com

IMPORTANT: Must use thin crank vibration damper Mopar Performance number P3830183 or similar with this kit.

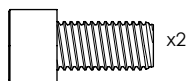
Required Tools & Materials

- | | | |
|--|--|--|
| ☐ Anti-seize Compound | ☐ 5/8" Box End Wrench | ☐ 3/16" Allen |
| ☐ RTV Silicone | ☐ 9/16" Box End Wrench | ☐ 5/16" Allen |
| ☐ Permatex Hylomar® gasket dressing | ☐ 3/4" Box End Wrench | ☐ 1/4" Allen |
| ☐ Gasket Scraper | ☐ 11/16" Box End Wrench | ☐ 7/32" Allen |
| ☐ Scotch-Brite® Pad | ☐ Socket Wrench & Extension | ☐ 4mm Allen |
| ☐ 3/8-16 Thread Chaser* & Holder | ☐ 10mm 12pt. socket | ☐ 6mm Allen |
| *Thread chasers are available at your local parts store and are different from a thread cutting tap. | | ☐ 12mm 12pt. socket |
| | ☐ 3/8" 12pt. Socket | |

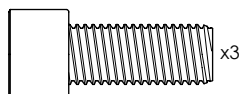
TECH TIP:

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

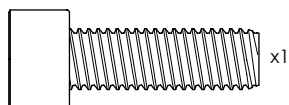
Skin Board #1 - Packaged with Power Steering Pump



x2
1/4-28 X 1/2" Socket Head Cap Screw
Power Steering Support Bracket To Bridge Bracket



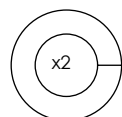
x3
5/16-18 x 3/4" Socket Head Cap Screw
Power Steering Bracket To Alternator Bracket



x1
M8-1.25 x 25mm Socket Head Cap Screw
Power Steering Pump To Power Steering Support Bracket



x2
5/16-18 x 2-3/4" Socket Head Cap Screw
Power Steering Pump To Bracket



x2
5/16" Lock Washer

Skin Board #2 - Packaged with Water Pump



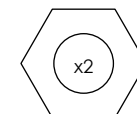
x1
3/8-16 x 3" Block Mounting Stud



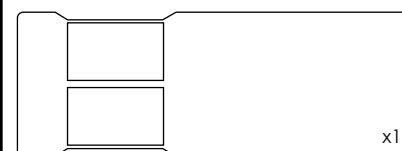
x1
3/8-16 x 3-1/2" Block Mounting Stud



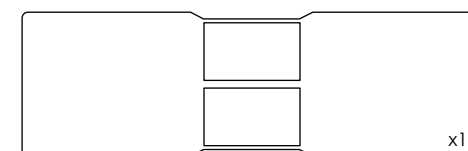
x1
3/8-16 x 4-1/4" Block Mounting Stud



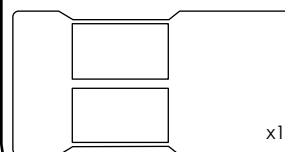
x2
3/8-16 Zinc Coated
Hex Nuts



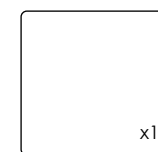
x1
2-3/32" Spacer Nut



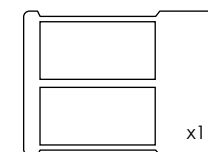
x1
2-13/32" Spacer Nut



x1
1-1/2" Spacer Nut

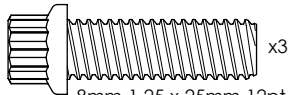


x1
13/16" Spacer

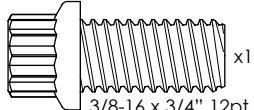


x1
1-1/32" Spacer Nut

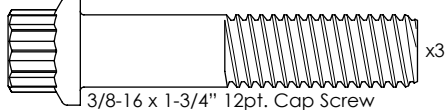
Skin Board #3 - Packaged In Main Box



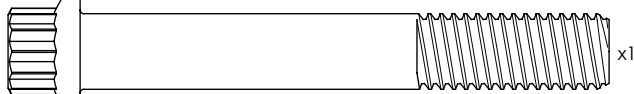
8mm-1.25 x 25mm 12pt. Cap Screw
Bridge Bracket To Alternator & Compressor



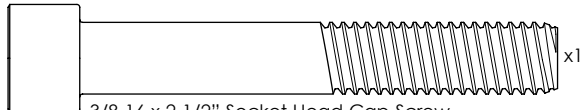
3/8-16 x 3/4" 12pt. Cap Screw
Tensioner Pulley



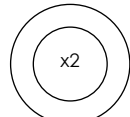
3/8-16 x 1-3/4" 12pt. Cap Screw
Idler Pulleys



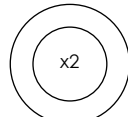
10mm-1.25 x 70mm 12pt. Cap Screw
Bridge Bracket To Alternator



3/8-16 x 2-1/2" Socket Head Cap Screw
Water Pump Housing To Block



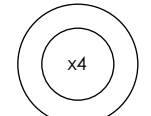
10mm x .5mm
Shim Washer



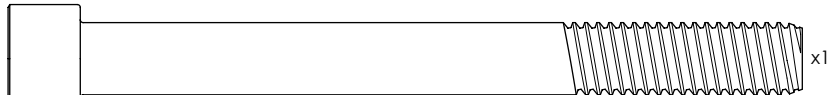
10mm x 1mm
Shim Washer



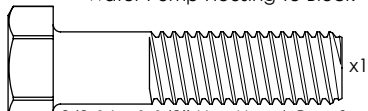
3/8-16 x 3" Socket Head Cap Screw
Compressor Bracket To Block



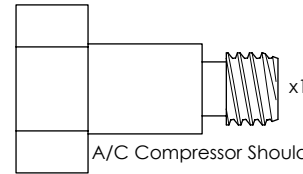
3/8" Flat Washer



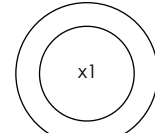
3/8-16 x 3-3/4" Socket Head Cap Screw
Water Pump Housing To Block



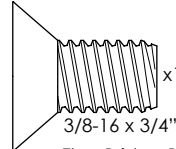
3/8-16 x 1-1/2" Hex Head Cap Screw
To Tensioner Spacer Nut From Backside Of Compressor Bracket



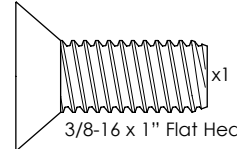
A/C Compressor Shoulder Bolt



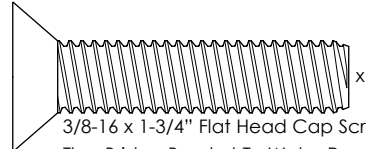
1/2" Flat Washer



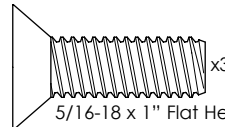
3/8-16 x 3/4" Flat Head Cap Screw
Thru Bridge Bracket Into Spacer Nut



3/8-16 x 1" Flat Head Cap Screw
Tensioner To Bridge Bracket



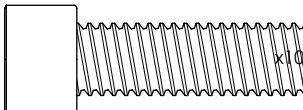
3/8-16 x 1-3/4" Flat Head Cap Screw
Thru Bridge Bracket To Water Pump Housing



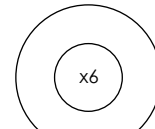
5/16-18 x 1" Flat Head Cap Screw
Bridge Bracket To Spacer Nut &
Tensioner To Bridge Bracket



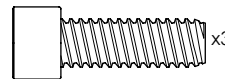
5/16-18 x 1" Socket Set Screw
Between Tensioner &
Tensioner Spacer Nut



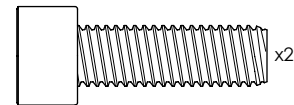
5/16-18 x 1" Socket Head Cap Screw
Crankshaft & Water Pump Pulley



5/16" Belleville Washer
Crank Pulley



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



M8-1.25 x 25mm Socket Head Cap Screw
A/C Compressor Manifold

Other Hardware / Gaskets

Goodyear Poly-V Serpentine Belt - 74.75" #4060747 (with power steering)

Goodyear Poly-V Serpentine Belt - 65.00" #4060650 (without power steering)

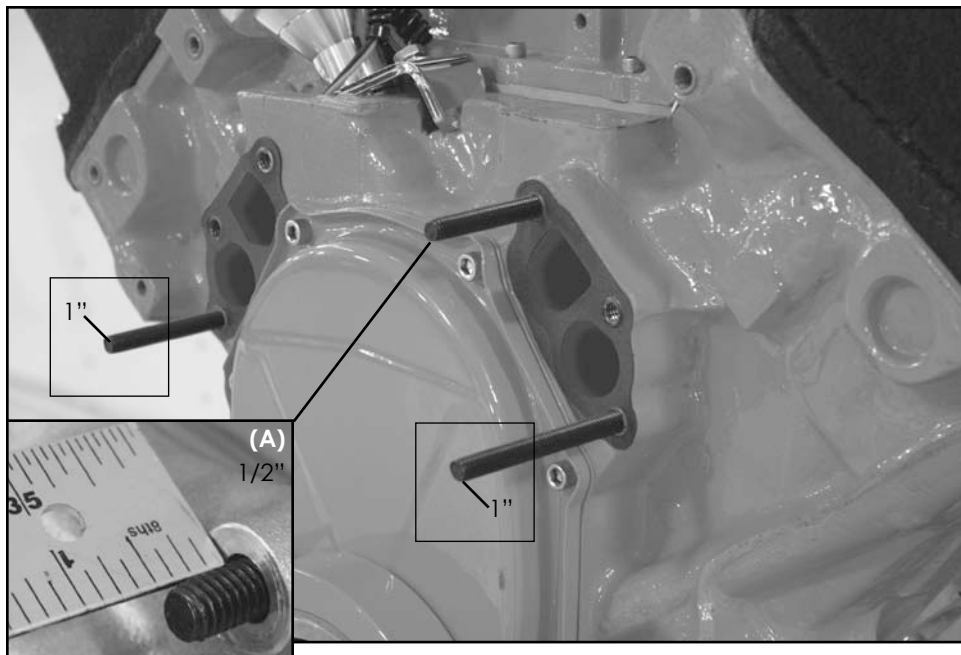


Figure 1: Prepping The Block

Disconnect battery; remove all existing accessory drive brackets and components from motor. Remove water pump and housing, scrape away any existing gasket material with a gasket scraper and dress surface with a Scotch Brite® pad. Clean and prep threads on engine block at water pump, use a 3/8-16 thread chaser if necessary. Thread chasers are available at your local auto parts store or tool dealer and are different from a thread cutting tool.

Apply RTV sealer to one end of the 3/8-16 x 3" threaded stud and thread stud into the driver side top water pump mount hole. Next apply RTV sealer to one end of the 3/8-16 x 4-1/4" stud and thread into the lower driver side mount hole and tighten. Apply RTV sealer to one end of the remaining 3/8-16 x 3-1/2" stud and thread into the bottom passenger side mount hole and tighten. The studs can easily be tightened by threading two 3/8-16 zinc coated nuts onto the stud and tighten them against each other to act as a drive nut*. Apply anti-seize the exposed threads of the studs at this time. Check installed height of studs by sliding water pump housing on to the studs. There should be 1/2" of exposed threads on the top stud and 1" of exposed thread on the bottom studs.

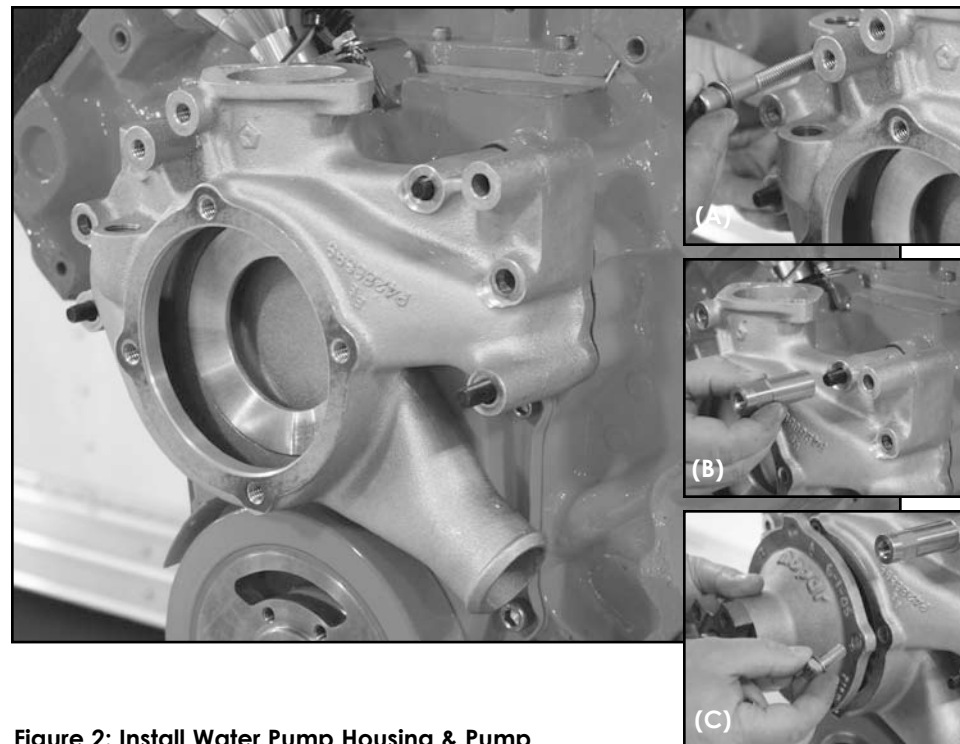
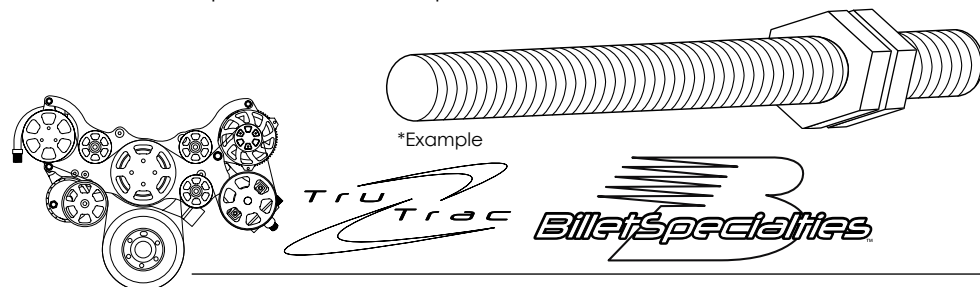


Figure 2: Install Water Pump Housing & Pump

Apply Permatex Hylomar® gasket dressing to both sides of water pump housing gaskets and slip over studs on block. Install water pump housing onto studs make sure top passenger gasket is still aligned.

(A) Apply anti-seize to the 3/8-16 x 2-1/2" socket head cap screw with 3/8" washer and thread through water pump housing and into block, finger tighten.

(B) Thread the 2-3/32" long spacer nut to the driver side top stud and finger tighten.

(C) Apply gasket dressing to both sides of water pump gasket and install water pump to housing and tighten firmly. Seep hole on pump should point down.

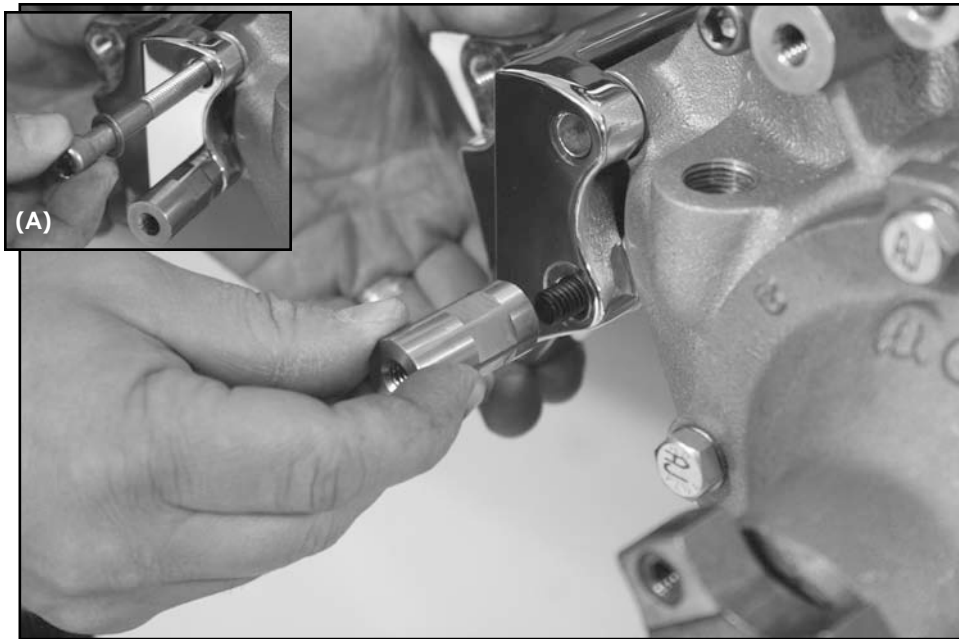


Figure 3: Install The A/C Bracket

Place A/C bracket (14806) on passenger side of water pump housing and align with the two left mount bosses.

Thread the 1-1/2" long spacer nut to the lower stud and finger tighten.

(A) Apply anti-seize to the 3/8-16 x 3" socket head cap screw with 3/8" washer and thread through A/C bracket, pump housing and into block and finger tighten.

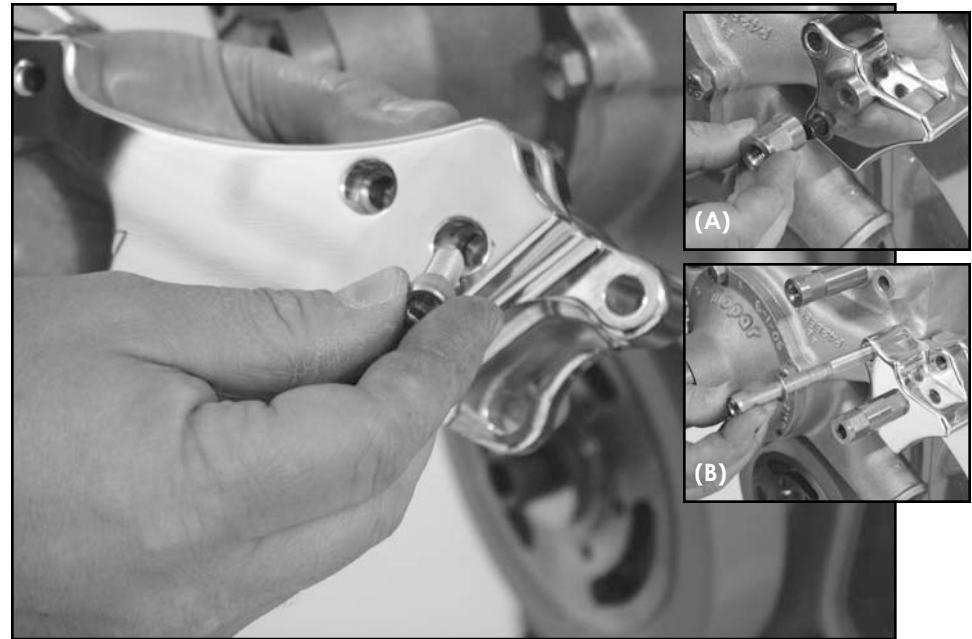


Figure 4: Install The Alternator Bracket

For kits without power steering continue to *Step 2*.

Step 1: Attach the power steering pump bracket (14807) to the back of the alternator bracket (14801) with three 5/16-18 x 3/4" socket head cap screws and tighten firmly.

Step 2: (A) Place alternator bracket on driver side of water pump and thread the 1-1/32" spacer nut onto the bottom stud and finger tighten.

(B) Apply anti-seize to the 3/8-16 x 3-3/4" socket head cap screw with 3/8" washer and thread through upper hole in bracket, thru the water pump housing and into block.

Tighten all fasteners at this time firmly.



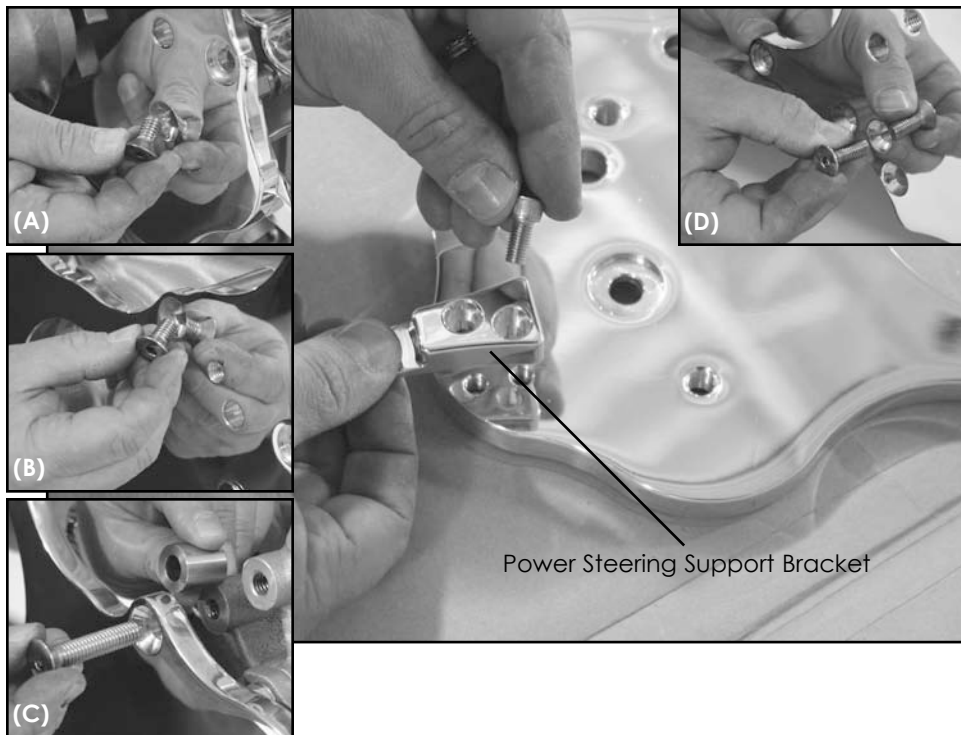


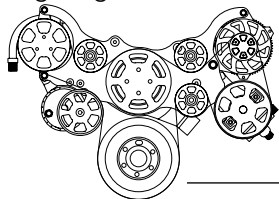
Figure 5: Install The Bridge Bracket

For kits with power steering: Attach the power steering support bracket to the back of the driver side bridge bracket with two 1/4-28 x 1/2" socket head cap screws and tighten firmly.

Place bridge bracket onto face of motor and align bracket mount holes with spacer nuts and water pump bosses. **(A)** Apply anti seize to the 3/8-16 x 3/4" flat head cap screw and thread through the lower driver side of the bridge bracket and into the spacer nut, finger tighten. **(B)** Apply anti seize to the 3/8-16 x 1" flat head cap screw and thread through the top driver side bridge bracket and into upper spacer nut, finger tighten.

(C) Apply anti seize to the 3/8-16 x 1-3/4" flat head cap screw. Place the 13/16" stainless spacer between bridge bracket and the top of the water pump housing, thread the 3/8-16 x 1-3/4" flat head screw through the bridge bracket, spacer and into the housing - finger tighten.

(D) Apply anti-seize to the 5/16-18 x 1" flat head screw and thread through the lower passenger side of the bridge bracket into the spacer nut and finger tighten.



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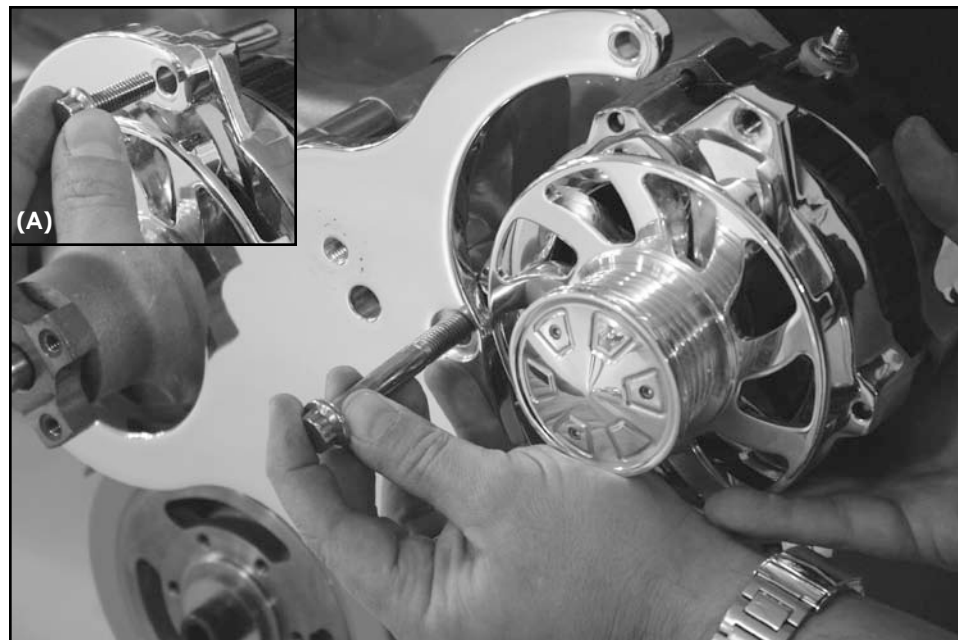


Figure 6: Install Alternator

Apply anti-seize to the M10 x 2-3/4" ARP 12pt cap screw, place and align the alternator between the bridge bracket and the alternator bracket with the long mounting boss at the bottom.

Thread the M10 x 2-3/4" ARP 12pt cap screw through the bridge bracket and alternator into the alternator bracket and finger tighten.

(A) Apply anti seize to the M8 x 1" ARP 12pt cap screw, align top alternator boss with the bridge bracket and thread cap screw through bridge bracket and into alternator - finger tighten.

10mm shim washers are provided to shim the alternator if needed at the bottom. The alternator mounting boss may vary in width due to the polishing process.

Do not tighten fasteners at this time.



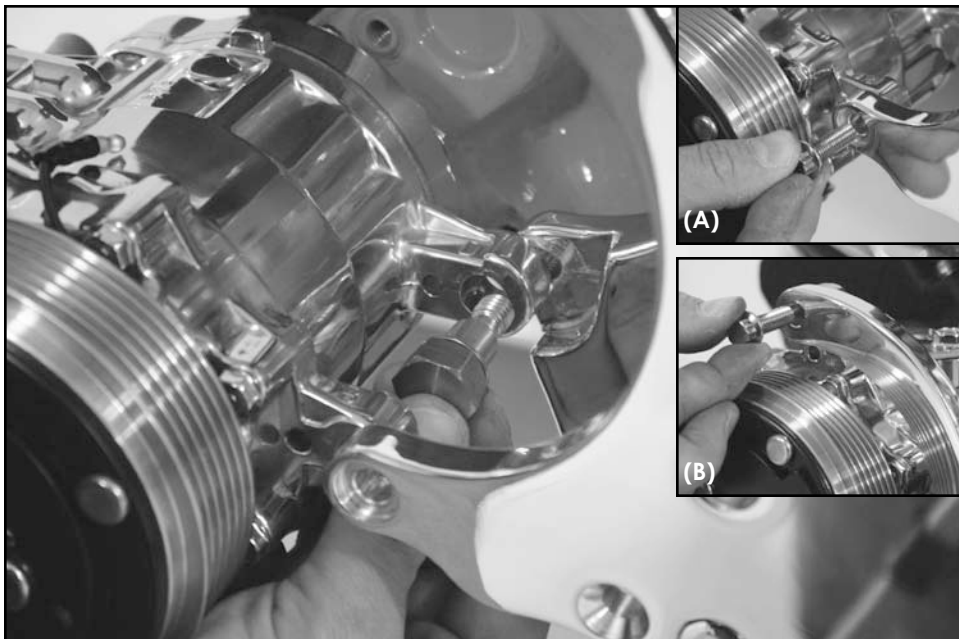


Figure 7: Install The A/C Compressor

Apply anti-seize to the compressor shoulder bolt threads.

Attach the SD-7 compressor to the compressor bracket using the compressor shoulder bolt and washer. The compressor shoulder bolt and washer install through the lower back ear of the compressor and thread into the compressor bracket, finger tighten.

(A) Apply anti-seize to the two 8mm-1.25 x 25mm 12pt ARP cap screws. Thread one cap screw through the bridge bracket in the bottom ear of the compressor and finger tighten.

(B) Swivel compressor up and line top compressor ear with top bridge bracket ear and thread second 8mm-1.25 x 25mm 12pt ARP cap screw through bracket and into the compressor and finger tighten.

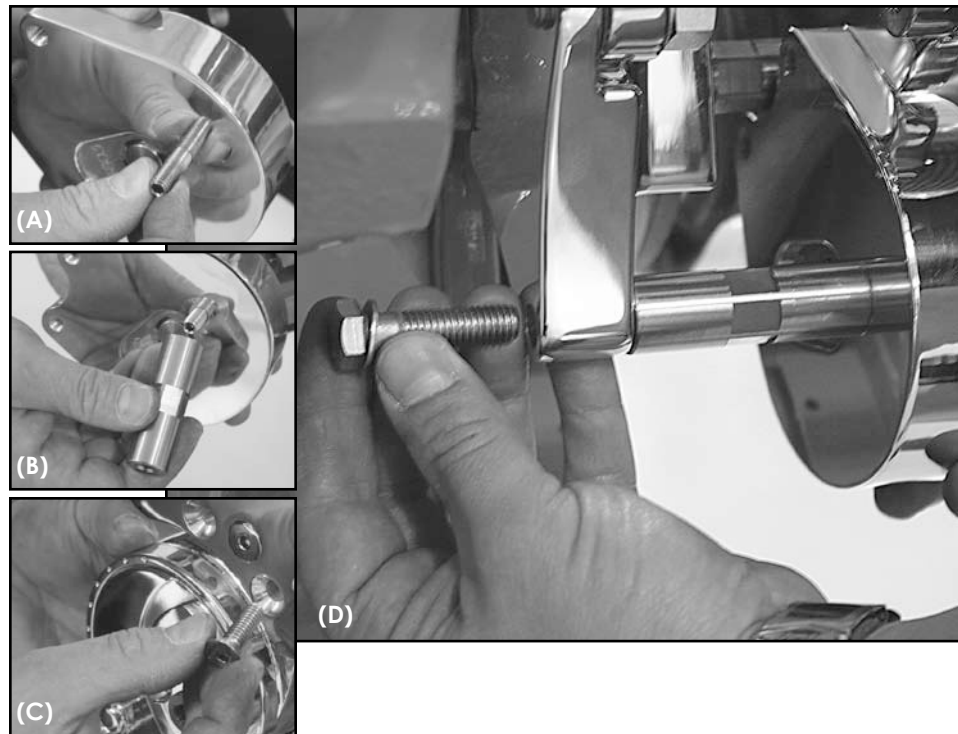


Figure 8: Install The Tensioner

(A) Apply anti-seize to the threads of the 5/16-18 x 1" set screw and thread into the back of the tensioner body and finger tighten.

(B) Apply anti seize to the remaining exposed threads. Thread the 2-13/32" long spacer nut onto the set screw and tighten firmly.

(C) Apply anti-seize to the two 5/16-18 x 1" flat head screws, place tensioner body with spacer nut between the bridge bracket and the A/C bracket. Align tensioner holes with bridge bracket and thread the two 5/16-18 x 1" flat head screws through the bridge bracket and into the tensioner and tighten firmly.

(D) Apply anti-seize to the 3/8-16 x 1-1/2" hex head cap screw, thread the hex head cap screw with 3/8" washer through back of compressor bracket and into spacer nut and tighten firmly.

For kits without power steering: Tighten all bridge bracket fasteners and accessory hardware firmly at this time, then proceed to Figure 10.



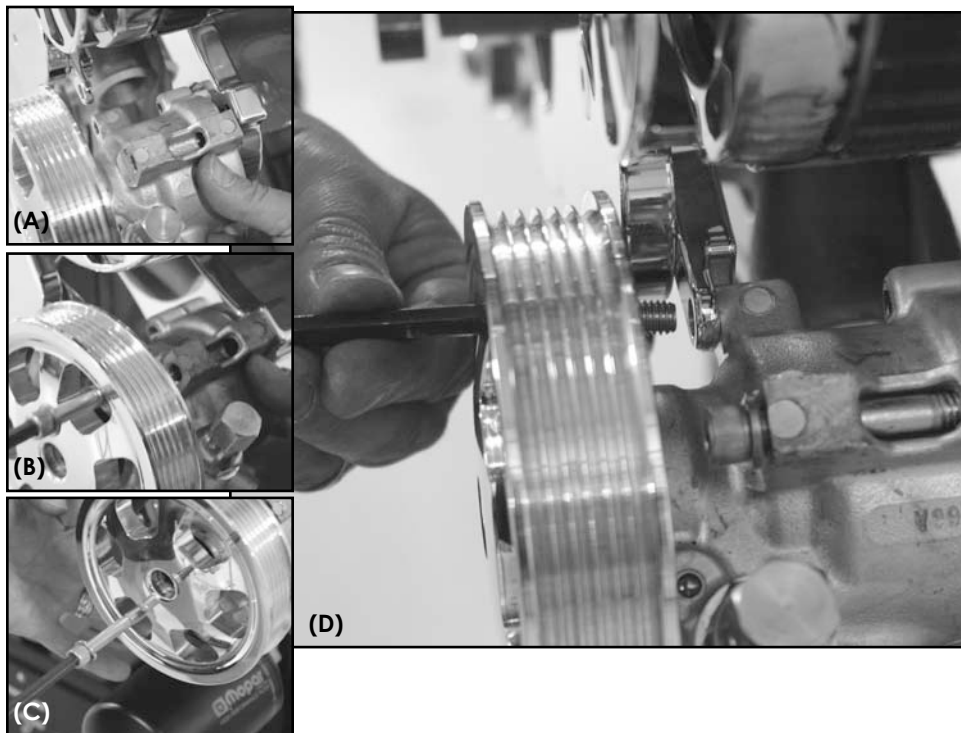


Figure 9: Install Power Steering Pump & Pulley

Apply anti-seize to the two 5/16-18 x 2-3/4" socket head cap screws and to the M8-1.25 x 25mm socket head cap screw.

(A) Place the power steering pump between the bridge bracket and the alternator bracket aligning the pump ears with the mount holes in the power steering bracket.

(B)(C) Thread the two 5/16-18 x 2-3/4" socket head cap screws with 5/16" medium-split washers through the power steering pump and into the small support bracket and finger tighten.

(D) Thread the M8-1.25 x 25mm socket head cap screw through the bracket into the power steering pump and tighten firmly.

Tighten the two other power steering fasteners firmly at this time.

Tighten all bridge bracket fasteners and accessory hardware firmly at this time.



Figure 10: Install Crankshaft & Water Pump Pulleys

Crankshaft Pulley: Place crank pulley on damper and align holes. Apply anti-seize to and thread six 5/16-18 x 1" socket head cap screws with 5/16" Belleville washers through pulley into damper and tighten firmly (26 ft/lb).

Water Pump Pulley: Place water pump pulley and nose cone on shaft. Apply anti-seize to and attach with four 5/16-18 x 1" socket head cap screws and tighten firmly (26 ft/lb).



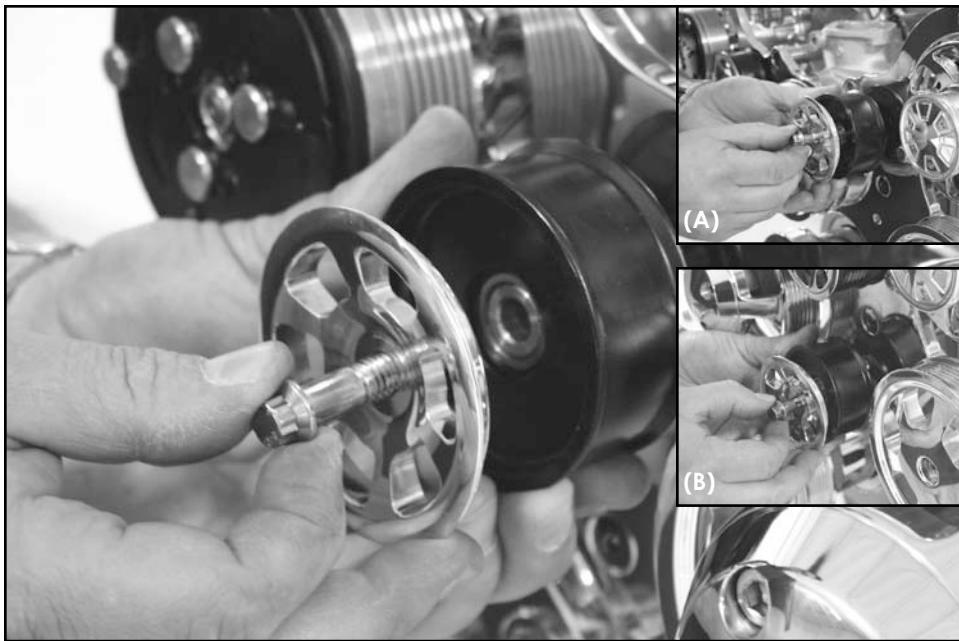


Figure 11: Install Idler Pulleys

Apply anti-seize to the three 3/8-16 x 1-3/4" ARP 12pt cap screws. Thread the 3/8-16 x 1-3/4" ARP cap screw through the idler pulley polished cover, idler pulley and boss into the bridge bracket and tighten firmly (46 ft/lbs).

(A)(B) Repeat step for other two idler pulleys.



Figure 12: Install A/C Compressor Clutch Cover

Install the compressor clutch cover by applying anti-seize to the three 1/4-20 x 3/4" socket head cap screws and threading them through the compressor cover into the compressor – tighten firmly.



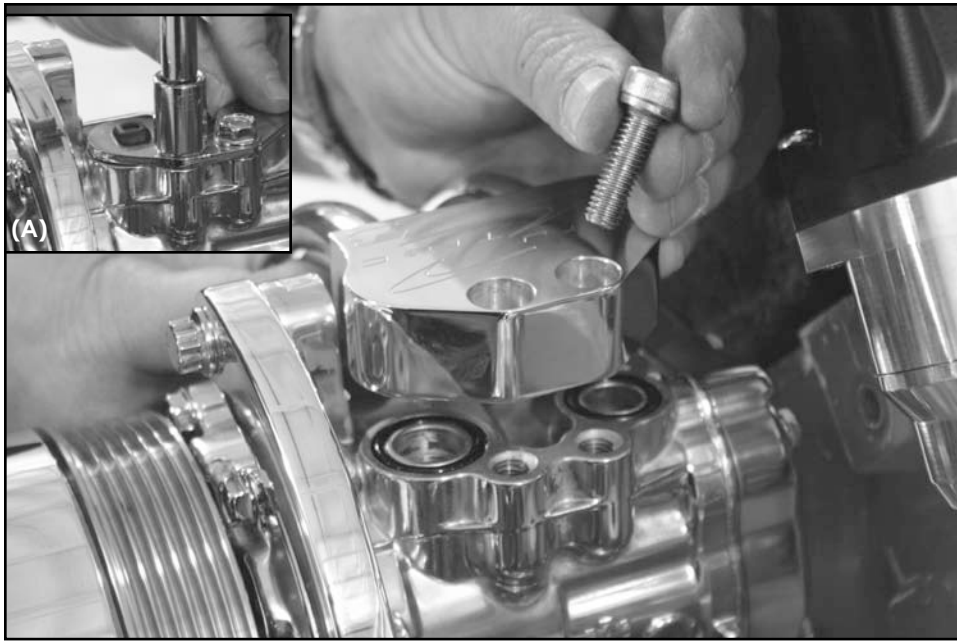


Figure 13: Install A/C Compressor Manifold

Important!

- Only remove sealed cap on compressor if you plan on charging you're A/C system. Immediately, leaving the compressor open to outside air can introduce moisture into the system causing the cooling system not to operate properly.

- Never connect the compressor clutch wire and run the compressor unless the system is completely charged. Serious damage may occur to the compressor.

(A) Attach the compressor manifold by removing the protective cover and placing the manifold onto the compressor.

Apply anti-seize to the two M8-1.25 x 25mm socket head cap screws and thread through manifold into the compressor and tighten firmly.

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.

- Billet Specialties recommends having your air conditioning charged and serviced by an automotive air conditioning service center with the proper equipment to ensure many years of trouble free service.

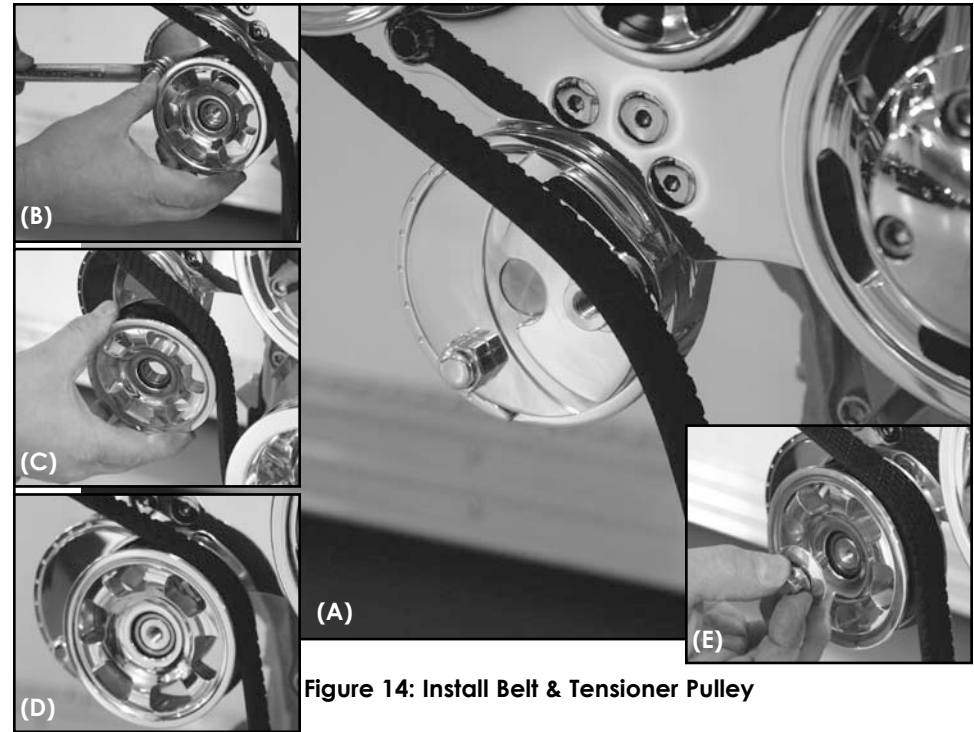


Figure 14: Install Belt & Tensioner Pulley

(A) Install and route belt as shown in the diagram below allowing belt to rest on pulley boss.

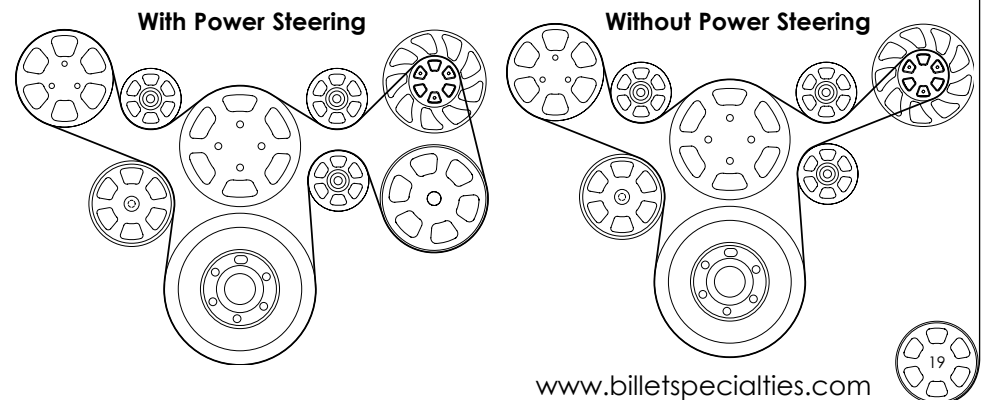
(B) Place a 5/8" box end wrench on tensioner nut.

(C) Align belt onto pulley groove above tensioner boss.

(D) Pull up on wrench until tensioner pulley is able to slip onto tensioner boss.

(E) Thread 3/8-16 x 3/4" 12pt ARP bolt and washer onto tensioner pulley and tighten firmly.

Connect electrical and fluid lines, test run motor. Inspect fittings and hardware, tighten if necessary.





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