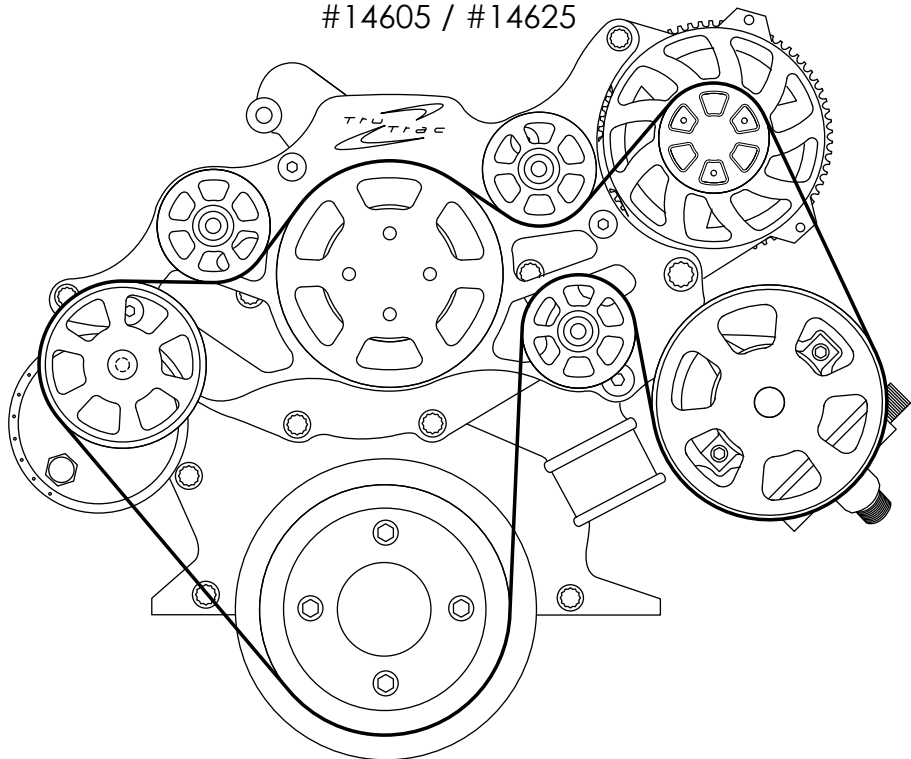




Big Block Ford
Installation Manual
For Systems without A/C
#14605 / #14625



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: VEHICLE OIL PAN MUST BE REMOVED FOR INSTALLATION

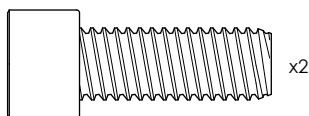
Required Tools & Materials

- | | | |
|--|--|--------------------------------------|
| ☐ Anti-seize Compound | ☐ 5/8" Box End Wrench | ☐ 3/16" Allen |
| ☐ RTV Silicone | ☐ 3/4" Box End Wrench | ☐ 5/16" Allen |
| ☐ Permatex Hylomar® gasket dressing | ☐ 11/16" Box End Wrench | ☐ 1/4" Allen |
| ☐ Gasket Scraper | ☐ 9/16" Box End Wrench | ☐ 7/32" Allen |
| ☐ Scotch-Brite® Pad | ☐ Socket Wrench & Extension | ☐ 4mm Allen |
| ☐ 5/16-18 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:

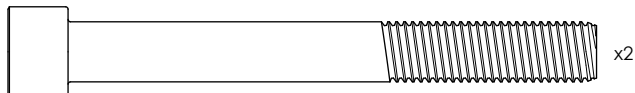
Billet Specialties recommends the use of Anti-Seize on all fasteners to prevent thread lock-up.

Skin Board #1 - Packaged with Power Steering Pump



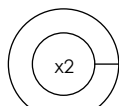
x2

3/8-16 x 1" Socket Head Cap Screw
Power Steering Bracket To Timing Cover



x2

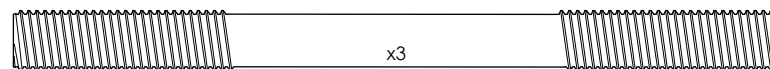
5/16-18 x 2-3/4" Socket Head Cap Screw
Power Steering Pump To Bracket



x2

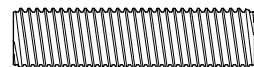
5/16"
Lock Washer

Skin Board #2 - Packaged with Water Pump



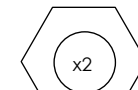
x3

5/16-18 x 4" Block Mounting Stud



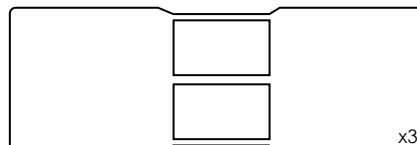
x1

3/8-16 x 1-1/4" Threaded Stud
Spacer Nut To Timing Cover



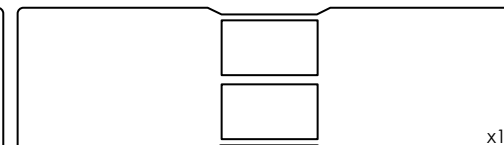
x2

5/16"
Hex Nut



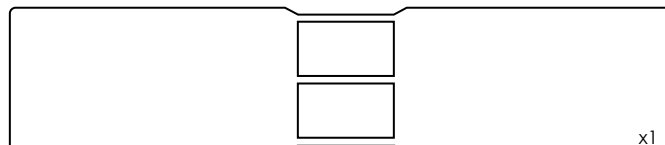
x3

2-3/16" Spacer Nut



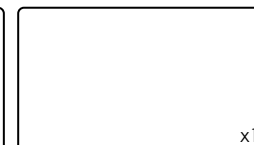
x1

2-5/8" Spacer Nut



x1

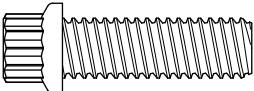
3-1/2" Spacer Nut



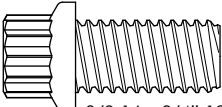
x1

1-5/16" Spacer

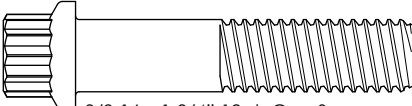
Skin Board #3 - Packaged In Main Box



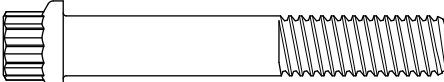
x1
8mm-1.25 x 25mm 12pt. Cap Screw
Bridge Bracket To Alternator



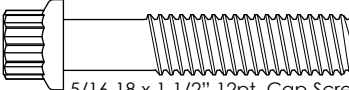
x1
3/8-16 x 3/4" 12pt. Cap Screw
Tensioner Pulley



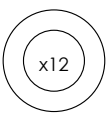
x3
3/8-16 x 1-3/4" 12pt. Cap Screw
Idler Pulleys



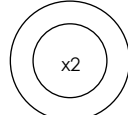
x4
5/16-18 x 2" 12pt. Cap Screw
Timing Cover To Block



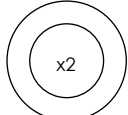
x5
5/16-18 x 1-1/2" 12pt. Cap Screw
Water Pump To Timing Cover



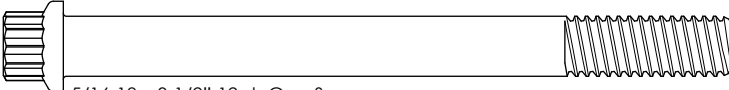
x12
5/16"
Flat Washer



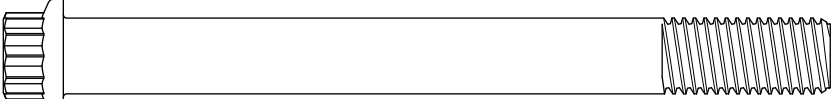
x2
10mm x .5mm
Shim Washer



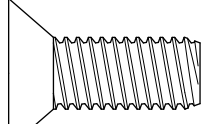
x2
10mm x 1mm
Shim Washer



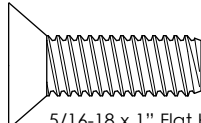
x3
5/16-18 x 3-1/2" 12pt. Cap Screw
Water Pump Thru Timing Cover To Block



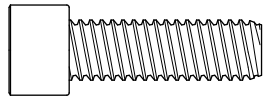
x1
10mm-1.25 x 100mm 12pt. Cap Screw
Bridge Bracket To Alternator



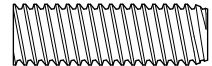
x1
3/8-16 x 1" Flat Head Cap Screw
Bridge Bracket To Water Pump



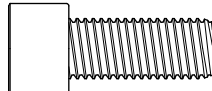
x6
5/16-18 x 1" Flat Head Cap Screw
Bridge Bracket To Spacer Nuts



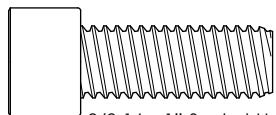
x1
5/16-18 x 1" Socket Head Cap Screw
To Tensioner Spacer Nut From Backside
Of Timing Cover



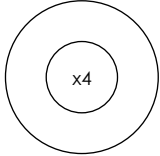
x1
5/16-18 x 1" Socket Set Screw
Between Tensioner & Tensioner Spacer Nut



x4
5/16-24 x 3/4" Socket Head Cap Screw
Water Pump Pulley

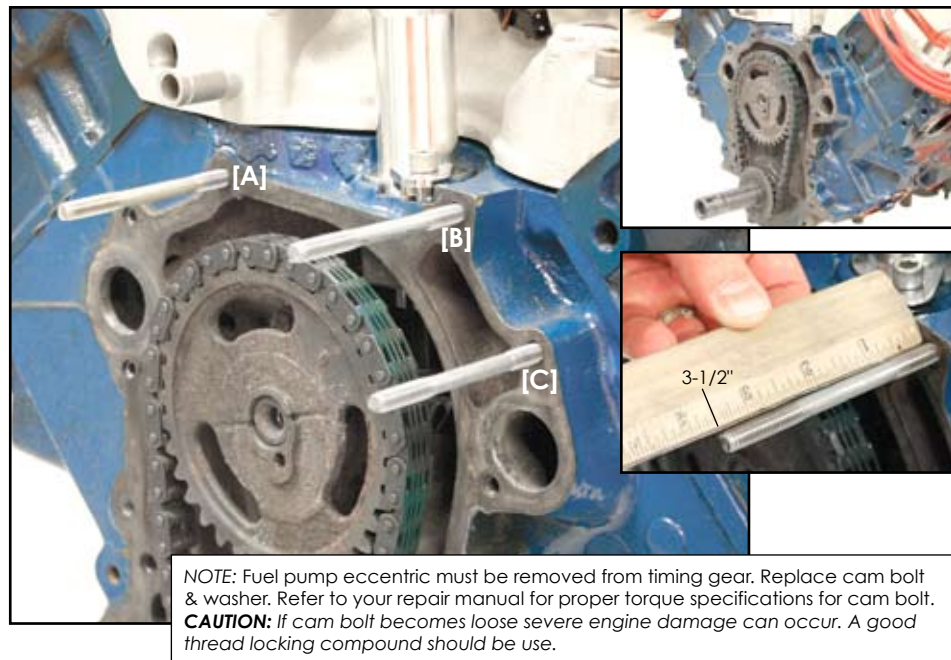


x4
3/8-16 x 1" Socket Head Cap Screw
Crankshaft Pulley



x4
3/8" Belleville Washer

Other Hardware / Gaskets
Goodyear Poly-V Serpentine Belt - 62.00" #4060620 (with power steering)
Goodyear Poly-V Serpentine Belt - 49.50" #4060495 (without power steering)



NOTE: Fuel pump eccentric must be removed from timing gear. Replace cam bolt & washer. Refer to your repair manual for proper torque specifications for cam bolt.
CAUTION: If cam bolt becomes loose severe engine damage can occur. A good thread locking compound should be use.

Figure 1 - Prepping The Block

Disconnect battery; remove all existing accessory drive brackets and components from motor. Remove crankshaft damper and spacer. Remove water pump and timing cover housing, scrape away any existing gasket material with a gasket scraper and dress surface with a Scotch Brite® pad.

Drop oil pan and repeat surface prep. Clean and inspect oil pan and hardware. Replace as necessary. Store hardware in a safe place for later use.

Clean and prep threads on engine block, use a 5/16-18 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.

Install Studs In Block

Apply RTV sealer to one end of the three 5/16-18 x 4" threaded studs and thread stud (A) into the upper passenger block mount hole. Follow by threading stud (B) into the upper driver side block mount hole near the distributor. Thread the last remaining stud (C) into the upper water pump mount hole on driver side of block.

Apply anti-seize to the exposed threads of the studs at this time. Check installed height of studs by measuring 3-1/2" from block surface – adjust as necessary.

The studs can easily be tightened by threading two 5/16-18 zinc coated nuts (supplied) onto the stud and tighten them against each other to act as a drive nut (discard nuts after use).

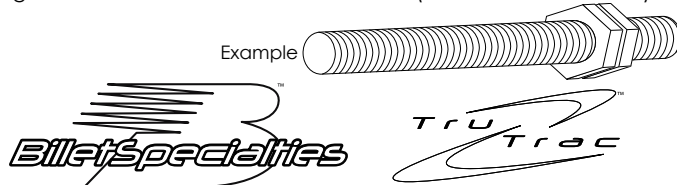
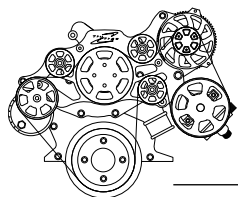


Figure 2 - Prepare & Install Timing Cover

[A] Install oil pan end seal into timing cover with a thin bead of RTV silicone (use sparingly). Lubricate crank seal with motor oil or grease to protect seal at start-up. Apply Permatex Hylomar® gasket dressing to both sides of timing cover gasket and place on engine block.

Install Timing Cover

[B] Slide timing cover over studs. Apply anti-seize to four 5/16-18 x 2" ARP 12pt. cap screws. Install 5/16" stainless steel washers to each screw at this time. Thread screws and washers into bottom mount holes in timing cover and finger tighten.

For Kits With Power Steering

Apply anti-seize to two 3/8-16 x 1" socket head cap screws. Place power steering bracket #14607 to timing cover and thread the two 3/8-16 x 1" socket head screws through bracket and into timing cover. Tighten firmly.



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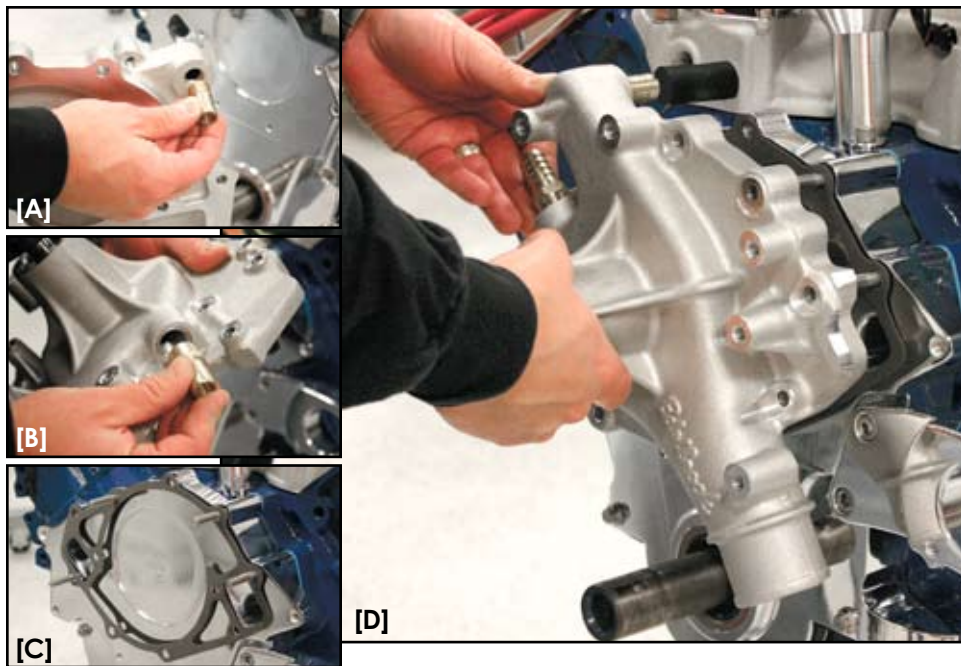


Figure 3A - Prepare Water Pump For Installation

[A] Install supplied water pump to manifold nipple and [B] heater hose barbed fitting or block-off if heater is not being used. Install bypass hose at this time.

[C] Apply Permatex Hylomar® gasket dressing to both sides of water pump gasket. Slide gasket over studs and position.

[D] Slide water pump over studs.



Thread the three 2-3/16" spacer nuts onto the top three exposed studs and finger tighten.

[E,F] Install the 3/8-16 x 1-1/4" threaded stud into the 3-1/2" spacer nut, seat firmly. **NOTE:** One end of the spacer nut is tapped 3/8-16, the other 5/16-18. Next install the spacer nut onto the passenger side of the timing cover in the upper hole farthest from the water pump; tighten firmly.

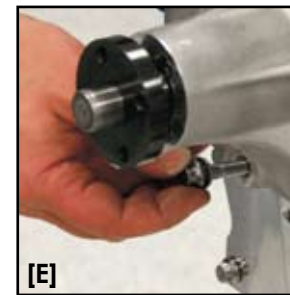
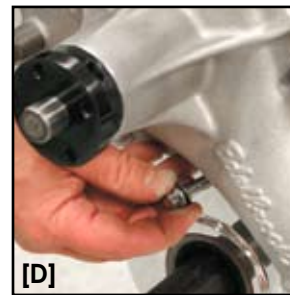


Figure 3B - Install Water Pump

Starting at the center top and working clock-wise on the water pump. Apply anti-seize to the five 5/16-18 x 1-1/2" ARP 12pt. cap screws and RTV Silicone to the threads of the three 5/16-18 x 3-1/2" ARP cap screws. Also install a 5/16" stainless steel washer to each screw at this time.

[A] Install first 5/16-18 x 1-1/2" ARP cap screw and washer at the top center of the water pump and finger tighten.

[B] Thread the next 5/16-18 x 1-1/2" ARP 12pt. cap screw and washer into the next exposed hole to the right. [C] Followed by installing one 5/16-18 x 3-1/2" ARP 12 pt. cap screw and washer through the next exposed hole (far right driver side).

[D,E,F] Next install three 5/16-18 x 1-1/2" ARP 12pt. cap screws with washers in the next 3 exposed holes on the bottom of the water pump.

[G] Install a 5/16-18 X 3-1/2" ARP 12pt. cap screw and washer in the lower passenger side water pump hole that does not have threads in it.

[H] Finish water pump installation by threading final 5/16-18 x 3-1/2" ARP 12 pt. cap screw with washer into last exposed hole on water pump passenger side. Tighten all installed hardware on timing cover bottom and water pump evenly and slowly in a cross pattern. Also tighten spacer nuts firmly at this time.

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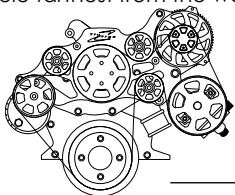


Figure 4 - Install Oil Pan

Apply a thin bead of RTV silicone on oil pan. Align and place oil pan rail gaskets on oil pan noting that there is a right and left side & apply another thin bead of silicone to top of gasket. Install rear oil pan seal on motor by applying a thin bead of RTV silicone to both sides (apply sparingly). Seat gasket firmly into block flush with surface, align and mount oil pan with saved hardware. Tighten to OEM specs.



Figure 5 - Prepping The Tensioner

[A] Apply anti-seize to one end of 5/16-18 x 1" socket set screw and thread into back of tensioner and finger tighten.

[B] Apply anti seize to exposed threads of stud, then thread 2-5/8" spacer nut onto stud and tighten firmly.

[C,D] Attach tensioner assembly to bridge bracket by applying anti seize to two 5/16-18 x 1" flat head cap screws, thread both screws through bridge bracket into tensioner and finger tighten.

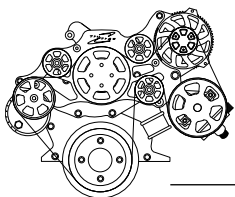


Figure 6 - Install Bridge Bracket

Apply anti seize to four 5/16-18 x 1" flat head cap screws and one 3/8-16 x 1" flat head cap screw.

[A] Place bridge bracket up to motor and align with mounts. Thread one 3/8-16 x 1" flat head cap screw through driver side bottom bridge bracket and into water pump boss, finger tighten.

[B,C,D,E] Finish the installation by threading the remaining three 5/16-18 x 1" flat head cap screws into the top three spacer nuts and finger tighten each one.

[F] Apply anti seize to the 5/16-18 x 1" socket head cap screw and thread through the timing cover and into the spacer nut attached to the tensioner, finger tighten.



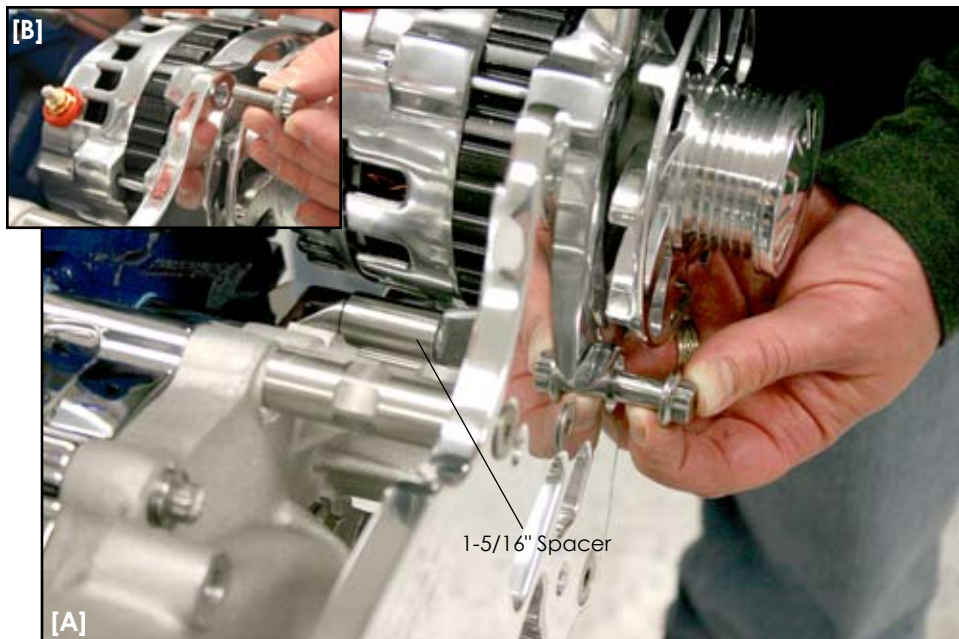


Figure 7 - Install Alternator

Apply anti seize to one 10mm-1.5 x 100mm ARP 12pt cap screw and one 8mm-1.25 x 25mm 12pt. cap screw.

[A] Place the alternator between the timing cover and bridge bracket with the wide mount boss at the bottom and align with bridge bracket. Thread the 10mm-1.5 x 100mm ARP 12pt. cap screw through the bridge bracket, alternator, 1-5/16" spacer and into the timing cover, finger tighten.

[B] Align top alternator ear with bridge bracket and thread remaining 8mm-1.25 x 25mm ARP 12pt. cap screw through bridge bracket and into alternator.

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

Tighten all bridge bracket fasteners, compressor shoulder bolt and tensioner bolt behind timing cover firmly at this time.

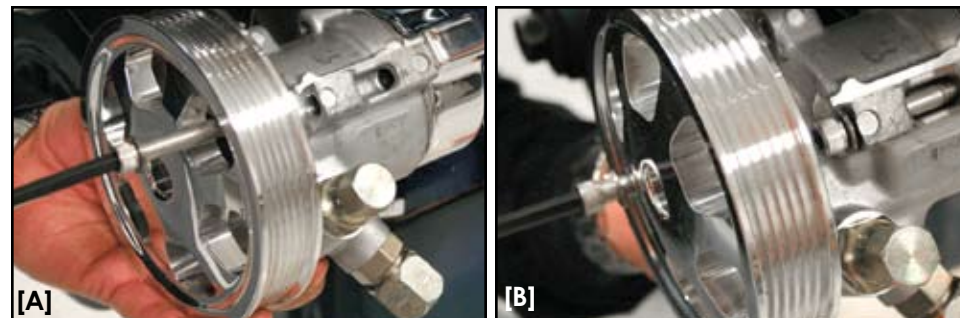


Figure 8 - Install Power Steering Pump

Install one 5/16" split washer to each of the two 5/16-18 x 2-3/4" socket head cap screws then apply anti seize to threads.

[A] Place power steering pump with pulley (fittings to driver side) to power steering bracket and align holes. Thread the one 5/16-18 x 2-3/4" socket head cap screws through the power steering pump and into the bracket

[B] Repeat the process with the second 5/16-18 x 2-3/4" socket head cap screw. Tighten both bolts firmly (26 ft/lb).

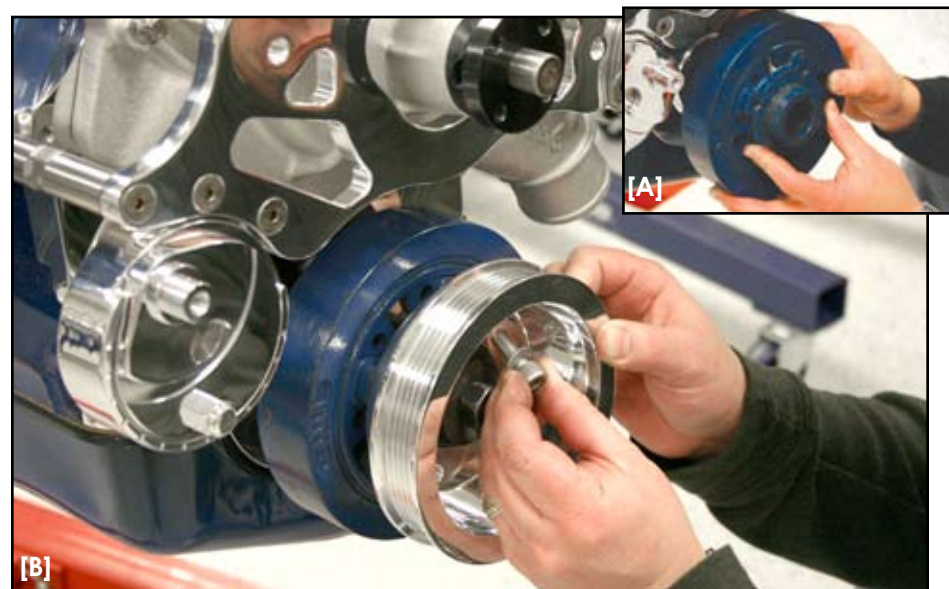
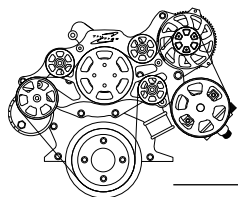


Figure 9 - Install Damper & Crankshaft Pulley

[A] Install damper and spacer on crank per OEM specifications. Place a 3/8" belleville washer onto one each of the four 3/8-16 x 1" socket head cap screws, apply anti seize to the threads.

[B] Place crank pulley on damper and attach with the four 3/8-16 x 1" socket head cap screws with belleville washers (cup towards damper) and tighten firmly (46 ft/lb).



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Figure 10 - Install Water Pump Pulley

Apply anti seize to four 5/16-24 x 3/4" socket head cap screws. Place water pump pulley on water pump and attach with 5/16-24 x 3/4 socket head cap screws, tighten firmly (26 ft/lb).

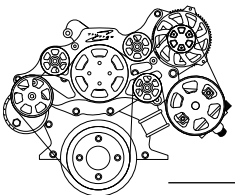


Figure 11 - Install Idler Pulleys

Apply anti seize to three 3/8-16 x 1-3/4" ARP 12pt. cap screw.

Thread a 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).

Repeat step for other two idler pulleys.



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[A]

Figure 12 - Install Belt & Tensioner Pulley

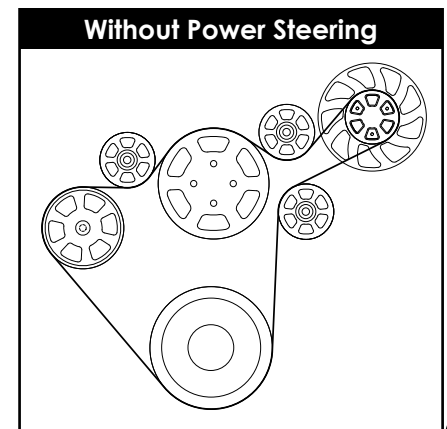
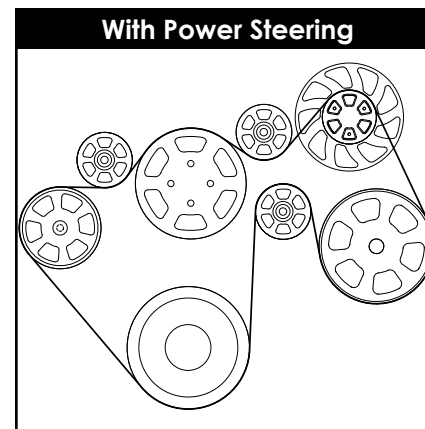
Install and route belt as shown in the diagram below allowing belt to rest on pulley boss.

[A] Place a 5/8" box end wrench on tensioner nut & align belt onto pulley groove above tensioner boss.

[B] Pull up on wrench until tensioner pulley is able to slip onto tensioner boss.

[C] Thread 3/8-16 x 3/4" ARP 12pt. bolt and thrust washer onto tensioner pulley and tighten firmly (46 ft/lb).

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





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500 Shawmut Avenue
La Grange, Illinois 60526
Tech Line 708.588.0505
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