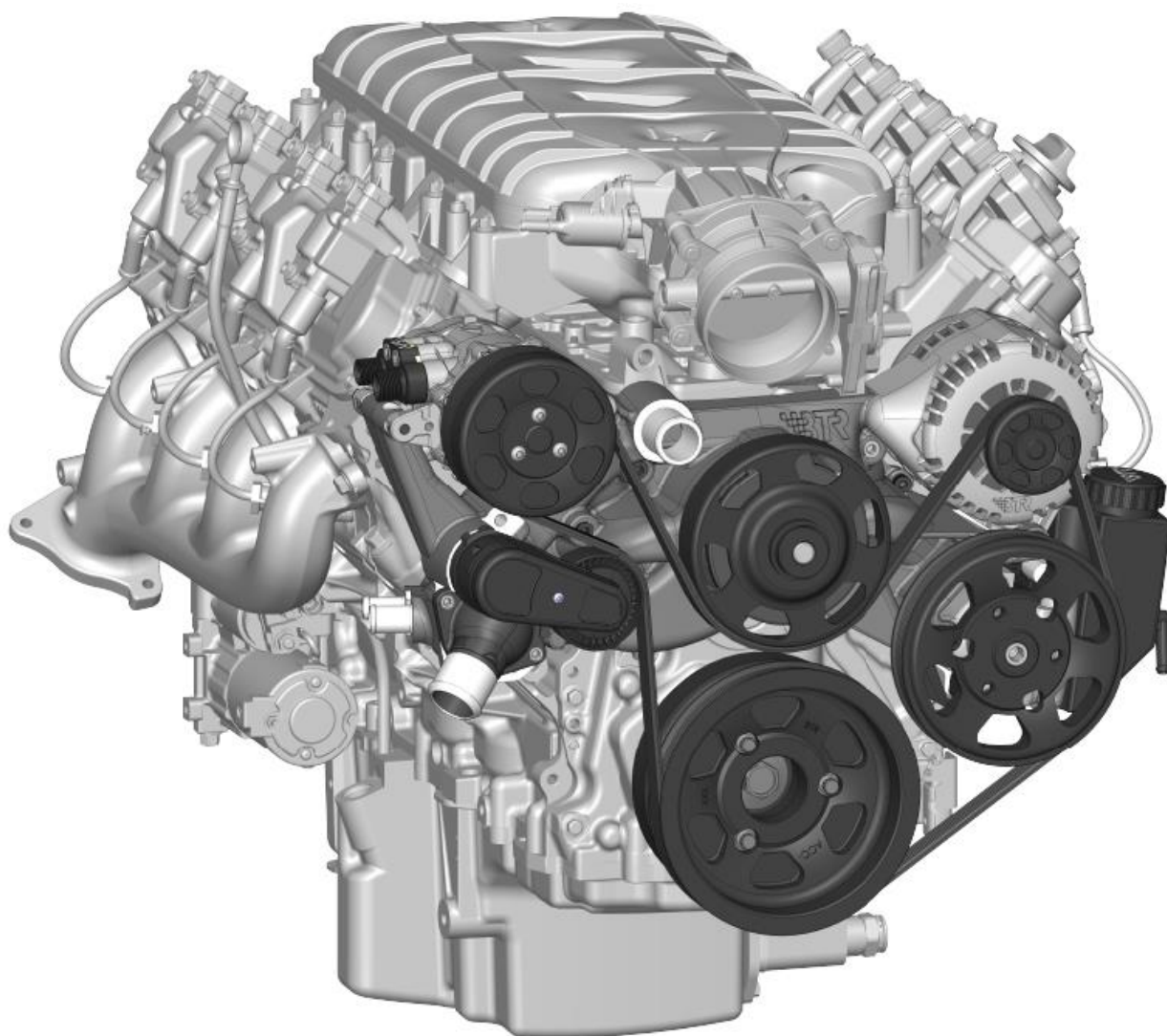




**HYPERDRIVE COMPLETE ACCESSORY SYSTEM  
GEN V (LT)  
INSTALLATION INSTRUCTIONS**



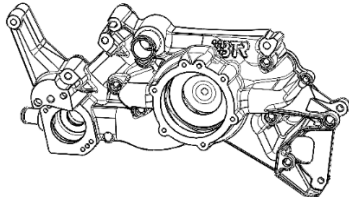
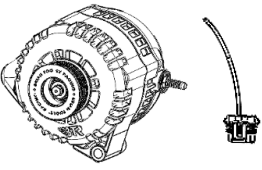
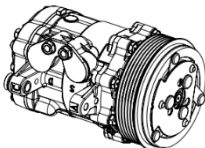
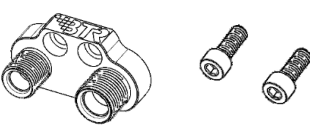
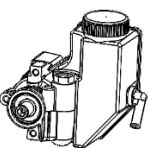
**QUESTIONS & TECHNICAL ASSISTANCE:**

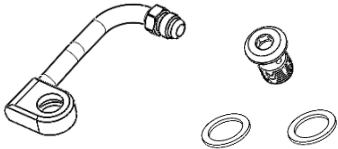
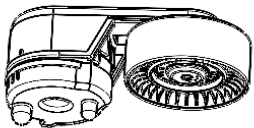
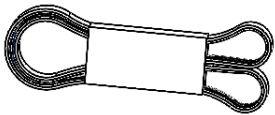
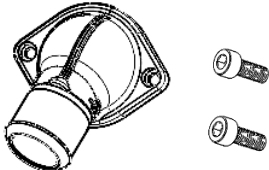
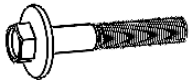
CALL: 888.959.8865 MONDAY-FRIDAY 9-5:30PM (EST)

EMAIL: [SALES@BRIANTOOLEYRACING.COM](mailto:SALES@BRIANTOOLEYRACING.COM)

[WWW.BRIANTOOLEYRACING.COM](http://WWW.BRIANTOOLEYRACING.COM)

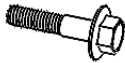
## Parts List:

| PICTURE                                                                             | QTY | DESCRIPTION                                                 | PART NUMBER                           |
|-------------------------------------------------------------------------------------|-----|-------------------------------------------------------------|---------------------------------------|
|     | 1   | Cooling manifold (LT)                                       | ACD-502 (natural)<br>ACD-502B (black) |
|    | 1   | Gasket set, cooling manifold to block (LT)                  | 12657430                              |
|    | 1   | Water pump                                                  | ACD-230                               |
|   | 1   | Gasket, water pump to manifold                              | 12619770                              |
|   | 1   | Alternator, harness pigtail                                 | ACD-200 (natural)<br>ACD-200B (black) |
|  | 1   | A/C compressor                                              | ACD-210 (natural)<br>ACD-210B (black) |
|   | 1   | A/C line adapter to #8 and #10,<br>(2) M8 X 1.25 X 20 bolts | ACD-320B                              |
|  | 1   | P/S pump with reservoir                                     | ACD-220                               |
|  | 1   | P/S pump pulley                                             | 19421325                              |

|                                                                                     |   |                                                                  |                      |
|-------------------------------------------------------------------------------------|---|------------------------------------------------------------------|----------------------|
|     | 1 | P/S pressure hardline to -6 AN, banjo bolt,<br>(2) crush washers | ACD-322              |
|    | 1 | Tensioner                                                        | ACD-300B             |
|     | 1 | Serpentine belt                                                  | ACD-340,<br>6PK1705  |
|    | 1 | Thermostat housing,<br>(2) M6 X 1.0 X 16                         | ACD-323B             |
|   | 1 | 187° thermostat                                                  | ACD-324,<br>89018168 |
|  | 1 | Crank damper bolt (LS/LT)                                        | 12557840             |

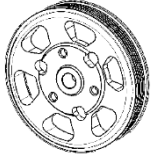
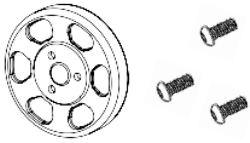
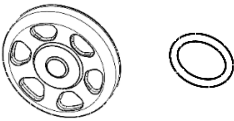
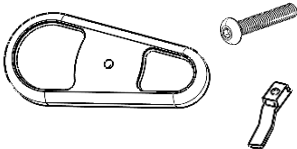
**NOTE: VERIFY BOLT LENGTH AND APPLICATION PRIOR TO ASSEMBLY. SOME BOLTS ARE SIMILAR LENGTH**

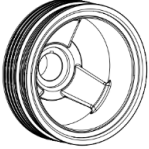
| HARDWARE (REPLACEMENT KIT AC700B)                                                   |     |                                       |                                                                                         |
|-------------------------------------------------------------------------------------|-----|---------------------------------------|-----------------------------------------------------------------------------------------|
| PICTURE                                                                             | QTY | DESCRIPTION                           | HARDWARE APPLICATION                                                                    |
|  | 6   | Socket head cap bolt, M8 X 1.25 X 95  | (4) Cooling manifold to block<br>(2) A/C Unit to Cooling manifold                       |
|                                                                                     | 1   | Socket head cap bolt, M8 X 1.25 X 85  | Cooling manifold to block -<br>under alternator ear                                     |
|                                                                                     | 2   | Socket head cap bolt, M8 X 1.25 X 30  | (1) Cooling manifold to block -<br>between alternator mounts<br>(1) P/S pump front bolt |
|                                                                                     | 1   | Socket head cap bolt, M10 X 1.25 X 40 | Alternator ear to cooling manifold                                                      |

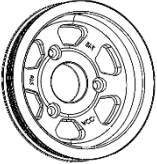
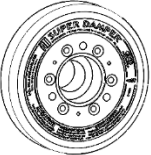
| HARDWARE (CONTINUED)                                                              |     |                                  |                                           |
|-----------------------------------------------------------------------------------|-----|----------------------------------|-------------------------------------------|
| PICTURE                                                                           | QTY | DESCRIPTION                      | HARDWARE APPLICATION                      |
|  | 6   | Button head bolt, M6 X 1.0 X 20  | Water pump to cooling manifold            |
|                                                                                   | 1   | Button head bolt, M10 X 1.5 X 70 | Tensioner to cooling manifold             |
|                                                                                   | 1   | Button head bolt, M10 X 1.5 X 80 | Alternator foot to cooling manifold       |
|  | 1   | Flange head bolt, M6 X 1.0 X 30  | P/S pump to cooling manifold (rear bolts) |
|  | 1   | M8 Slip spacer                   | P/S pump mounting                         |
|                                                                                   | 1   | M10 Slip spacer                  | Alternator mounting                       |

### Bolt Length Reference



| DRESS UP PULLEY AND COVERS (MAY OR MAY NOT BE INCLUDED)                             |     |                                |             |
|-------------------------------------------------------------------------------------|-----|--------------------------------|-------------|
| PICTURE                                                                             | QTY | DESCRIPTION                    | PART NUMBER |
|  | 1   | Billet P/S pump pulley         | ACD-329B    |
|   | 1   | Billet A/C pulley cover        | ACD-330B    |
|   | 1   | Billet alternator pulley cover | ACD-331B    |
|   | 1   | Billet tensioner cover         | ACD-332B    |

| OE STYLE CRANK DAMPER                                                             |     |                            |             |
|-----------------------------------------------------------------------------------|-----|----------------------------|-------------|
| PICTURE                                                                           | QTY | DESCRIPTION                | PART NUMBER |
|  | 1   | Crank damper / pulley (LT) | ACD-311     |

| ATI CRANK DAMPER AND PULLEY                                                        |     |                              |             |
|------------------------------------------------------------------------------------|-----|------------------------------|-------------|
| PICTURE                                                                            | QTY | DESCRIPTION                  | PART NUMBER |
|   | 1   | LT billet crank pulley (LT)  | ACD-318     |
|  | 1   | ATI damper/hub assembly (LT) | ACD-317     |

**Tools needed:**

Damper Puller like ICT P/N 551329

Torque wrench capable of 250 ft./lbs.

Torque angle gauge or wrench

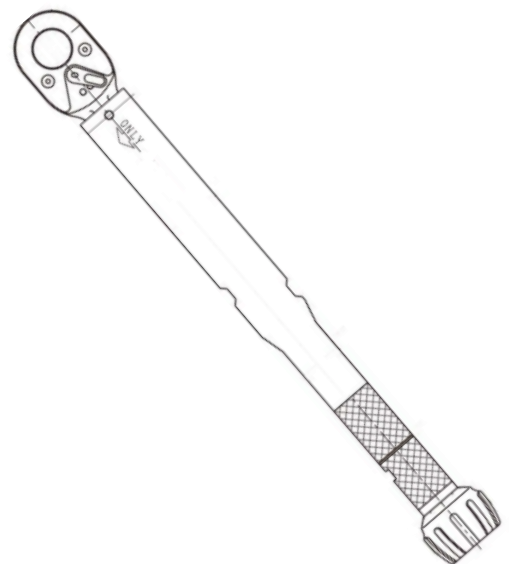
Flywheel holder like BTR P/N TFFWH

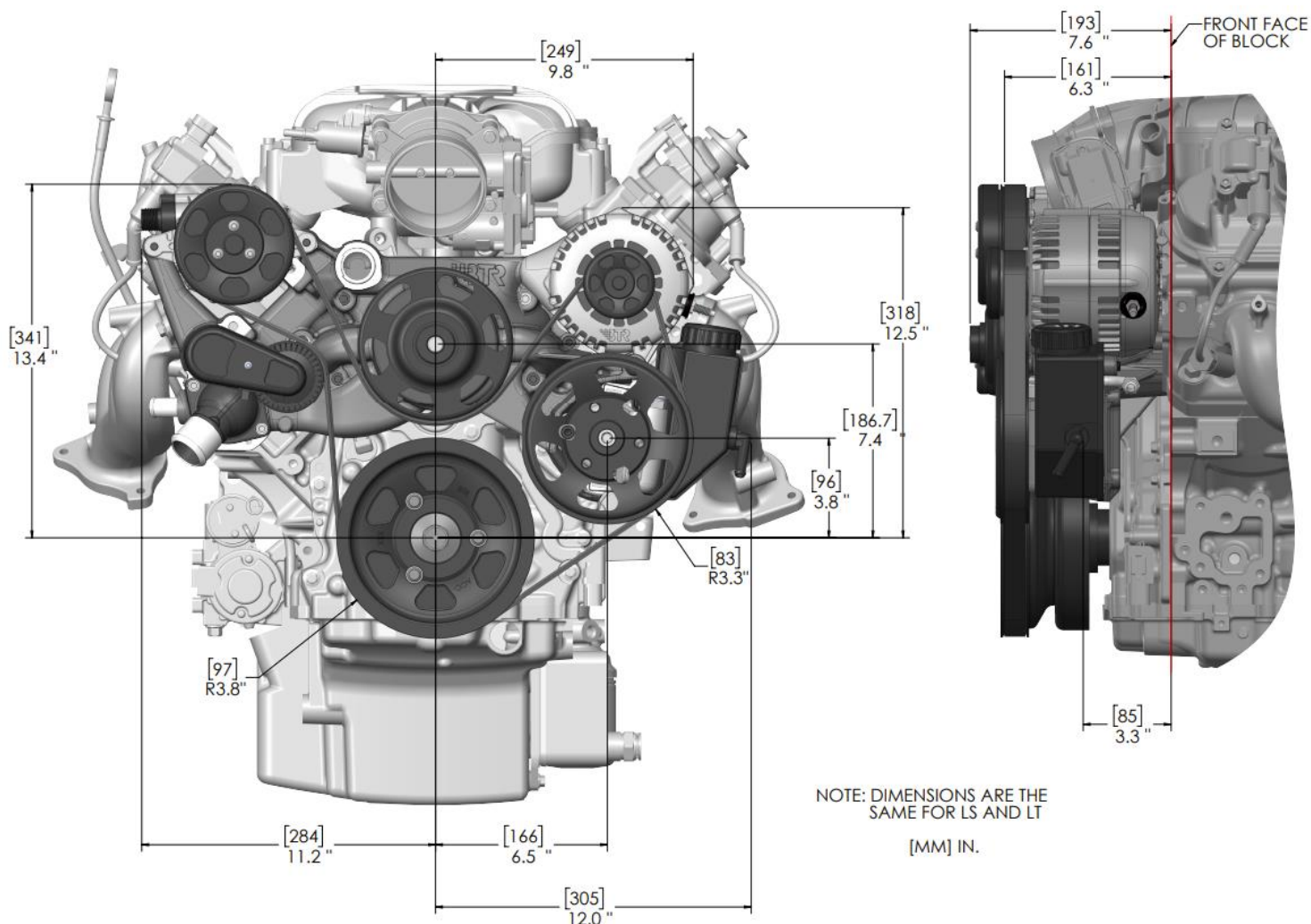
Harmonic Balancer/Damper install tool Like BTR P/N TFDIT

Loctite® 243

P/S pulley installation removal tool like OEM TOOLS 37031

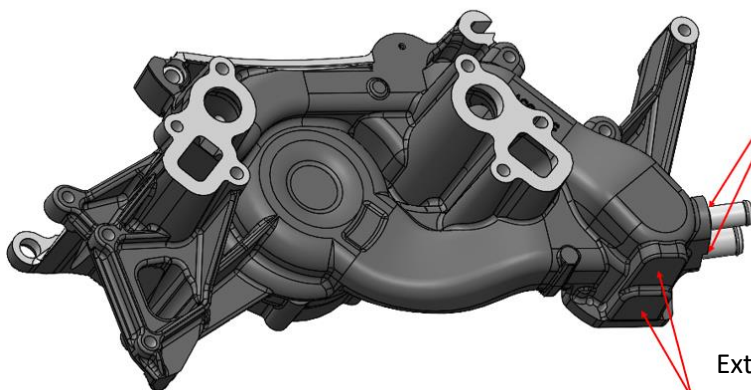
**NOTE:** for P/S pulley ACD-329B removal use OEM TOOLS 37187





#### NOTES:

- If painting components, The A/C compressor and alternator ground through the cooling manifold. If applying a finish to the manifold, you must maintain bare metal on mating surfaces to allow a ground path from the accessories' mounts to the engine block.
- Allowances have been made to the cooling manifold casting for the addition of an LS steam vent fitting and alternate heater port machining.



Extra material added at hose barbs to allow for 1/2" NPT machining.

Extra machine stock added for up to 1/2" NPT or 7/8-14 thread for alternate Heater Port machining if desired.



## Installation

These instructions assume you have already removed the existing accessory brackets from the engine and have cleaned the mating surface between the water pump and the block.

### **Install crank damper and pulley:**

Depending on which kit you ordered, you either received a one-piece crank damper or an ATI damper and billet pulley combo.

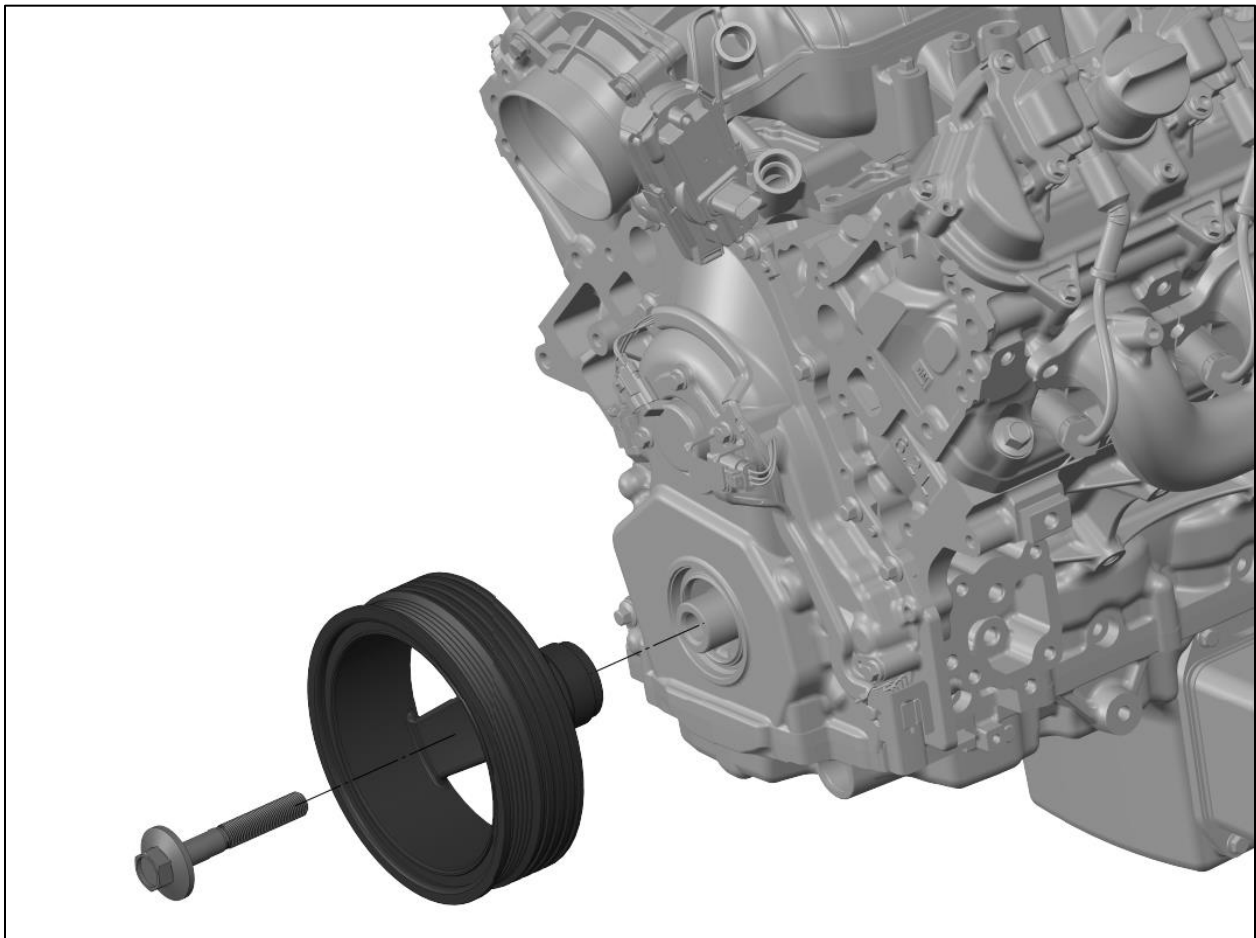
#### One-piece damper/pulley

Remove existing damper/pulley. Retain old damper bolt.

Lubricate the mating hole on the damper and install using damper install tool

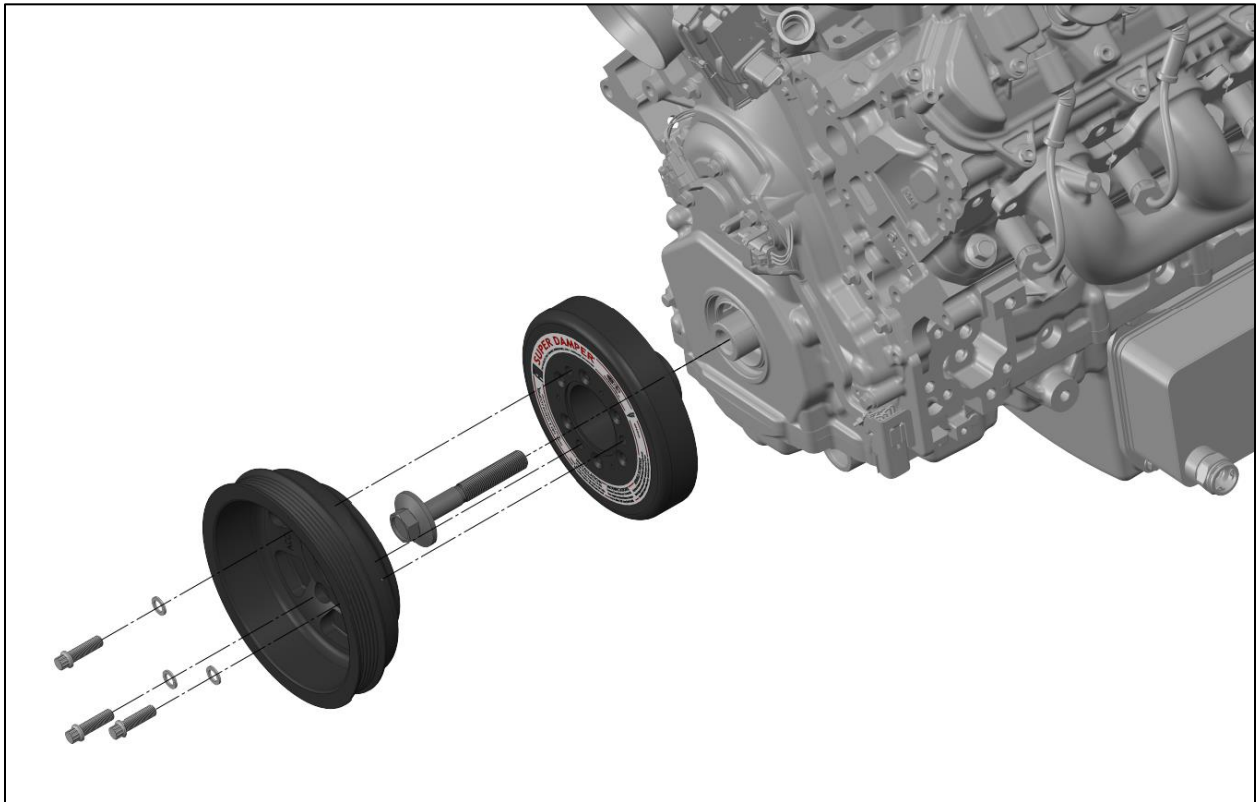
Lubricate the mating surface of the original damper bolt that you just removed, install and torque to 240 ft./lbs. and remove.

Install new Crank damper bolt and torque to 59 ft./lbs., then tighten another 125 Deg.



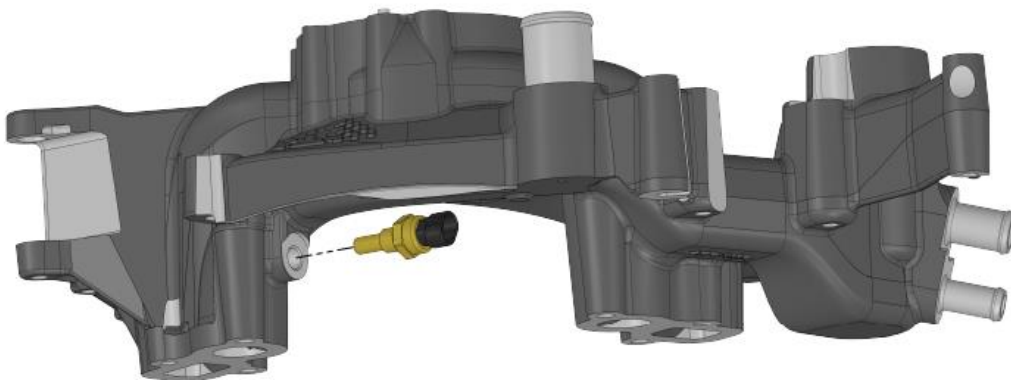
### ATI damper and billet crank pulley

Follow instructions included with damper assembly.



### **Install water manifold assembly:**

Coolant temp sensor installation:



Reuse existing coolant temp sensor. Torque to 15 ft./lbs.

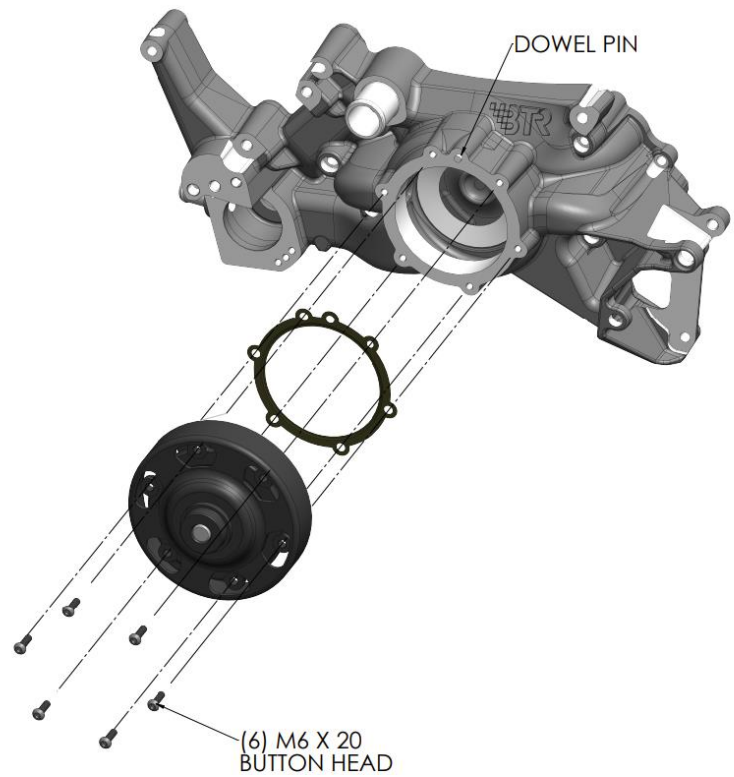
For Coolant temp sensor replacement use ACDelco P/N 213-4232



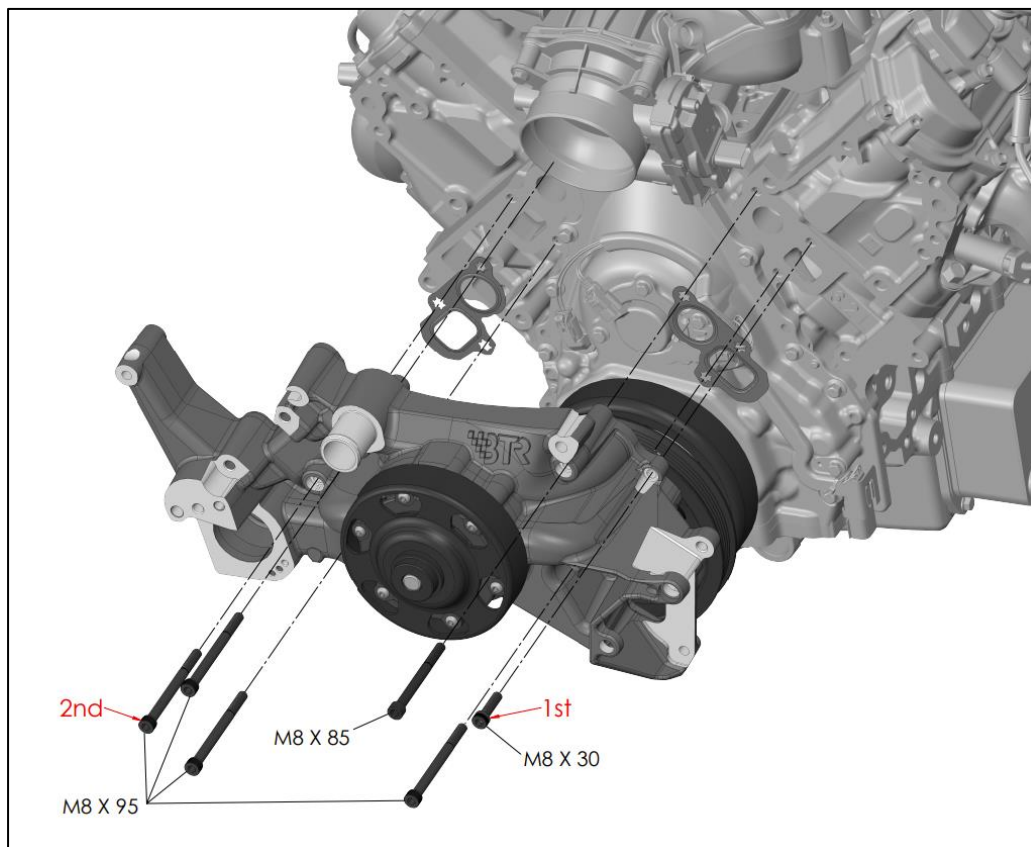
### Install water pump:

Assemble water pump and gasket to cooling manifold using (6) M6 X 20 button head bolts. Align gasket and pump to dowel pin. Torque to 85 in./lbs.

**NOTE:** Do not overtighten.

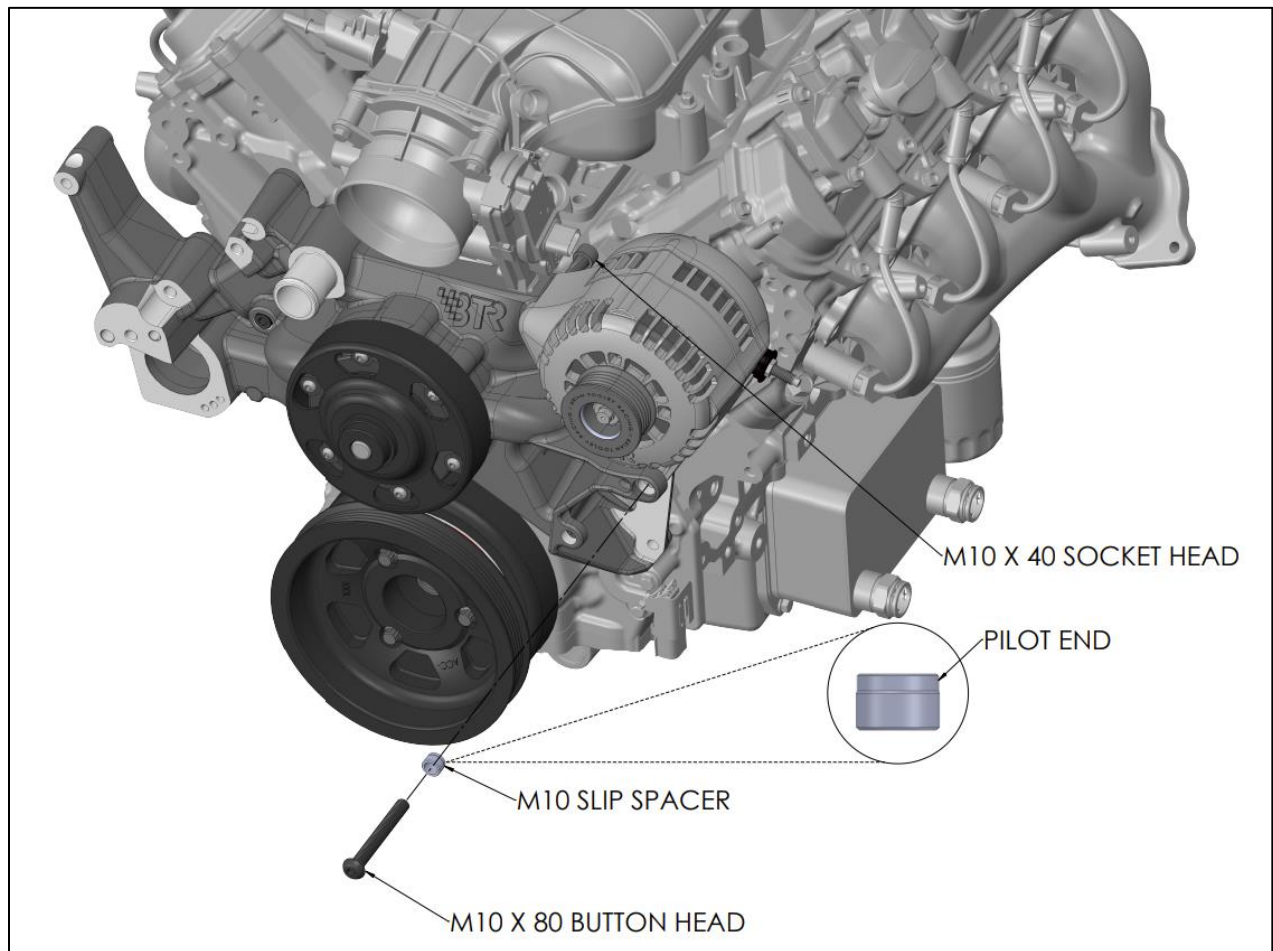


Assemble the cooling manifold to engine using supplied bolts and gaskets. Install the bolts labeled 1<sup>st</sup> and 2<sup>nd</sup> in that order before installing the other 4 bolts. Make certain the one M8 X 85 is installed in the location shown below. Torque all to 18 ft./lbs.



### Install alternator:

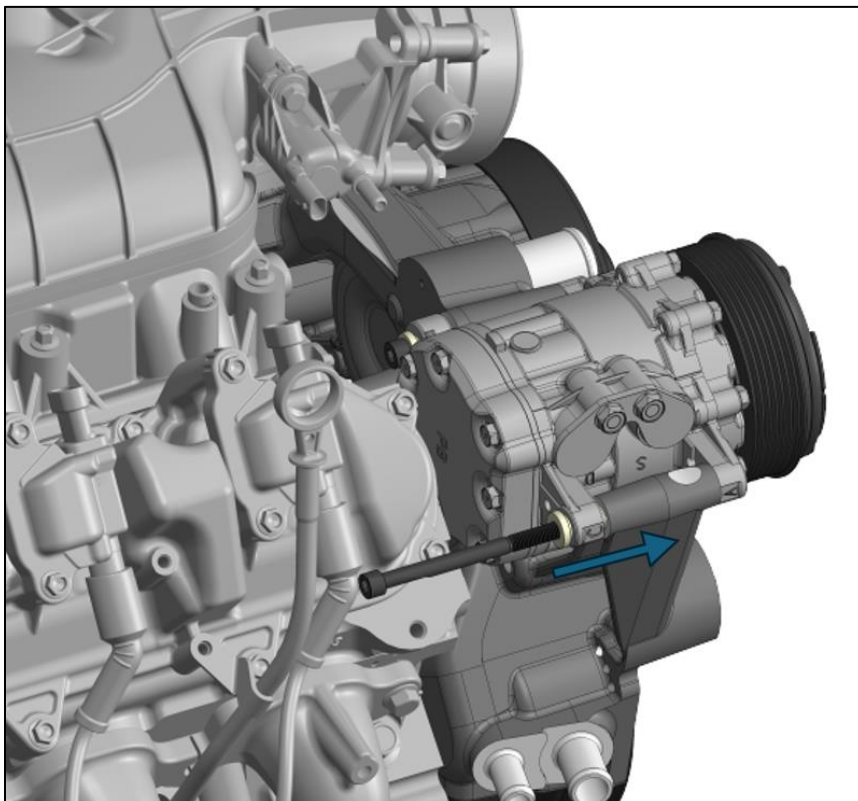
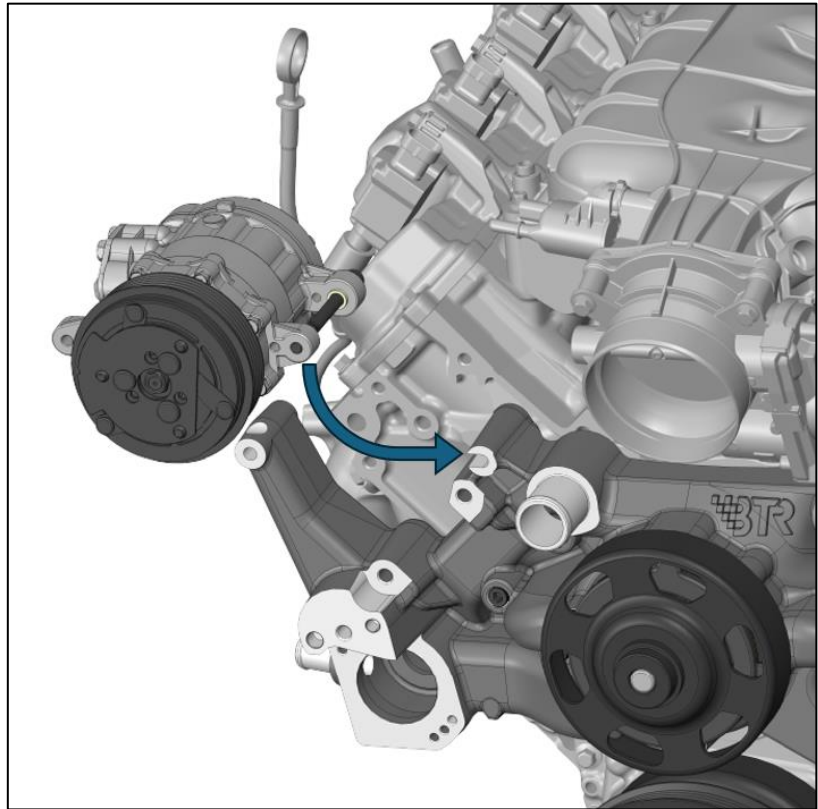
Install the alternator using the M10 slip spacer, M10 X 80 button head bolt and the M10 X 40 socket head bolt. The slip spacer small end pilot should be oriented towards alternator. Torque both bolts to 36 ft./lbs.



**NOTE:** Connect alternator's yellow pigtail to switched positive 12 volts that is only "on" when the key is in the run position. Connect the alternator charge post directly to the battery's positive post using a 6-gauge or larger fine stranded cable.

### Install A/C compressor:

Hand thread (1) M8 X 95 bolt to the inside ear of the A/C compressor. Slide it into the slot on the cooling manifold, then install the outside M8 X 95 bolt. Torque both to 18 ft./lbs

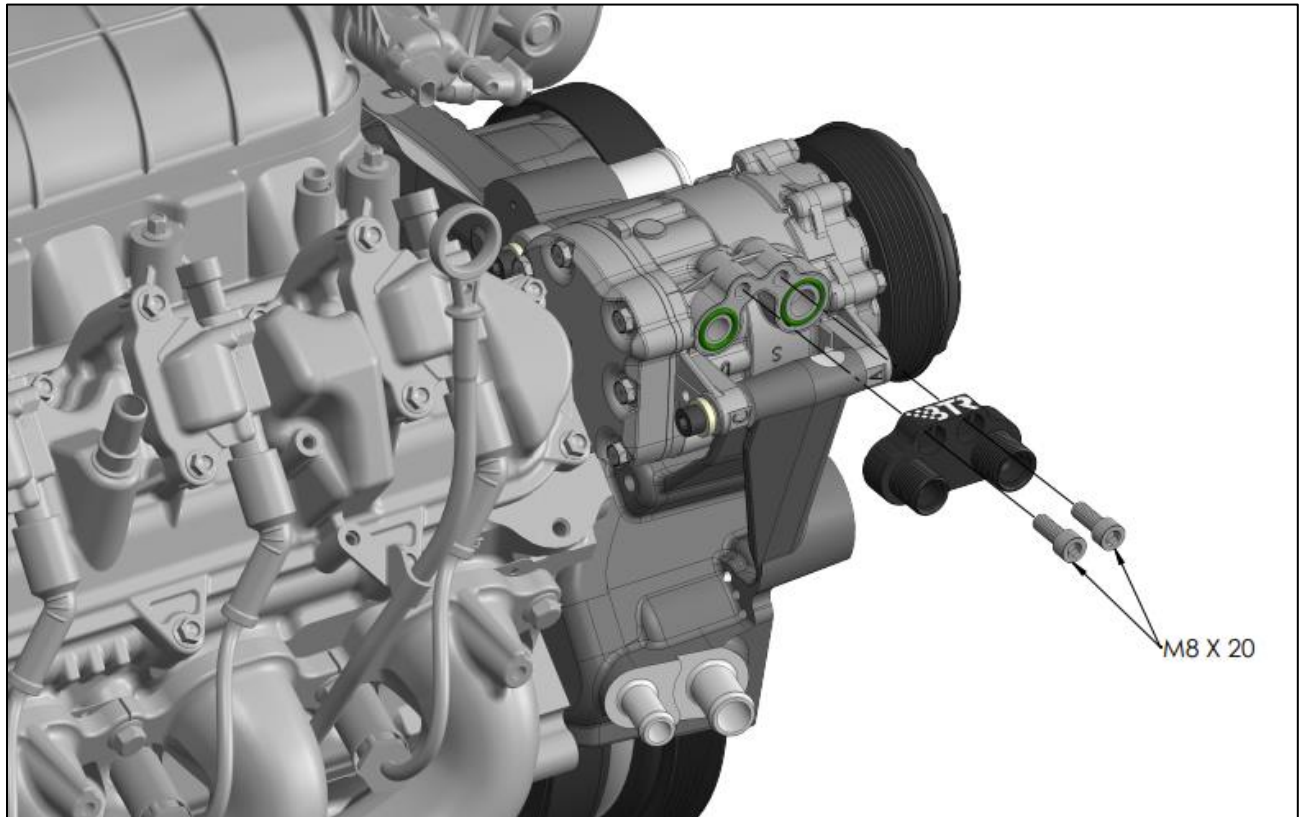


**NOTE:** Connect the compressor's black pigtail to switched positive 12 volts that is only "on" when the clutch and compressor should be activated.

**WARNING:** For high RPM applications (6500+ RPM redline), it is recommended to install an RPM window switch on the compressor clutch circuit to deactivate the compressor over 5000 engine RPMs.

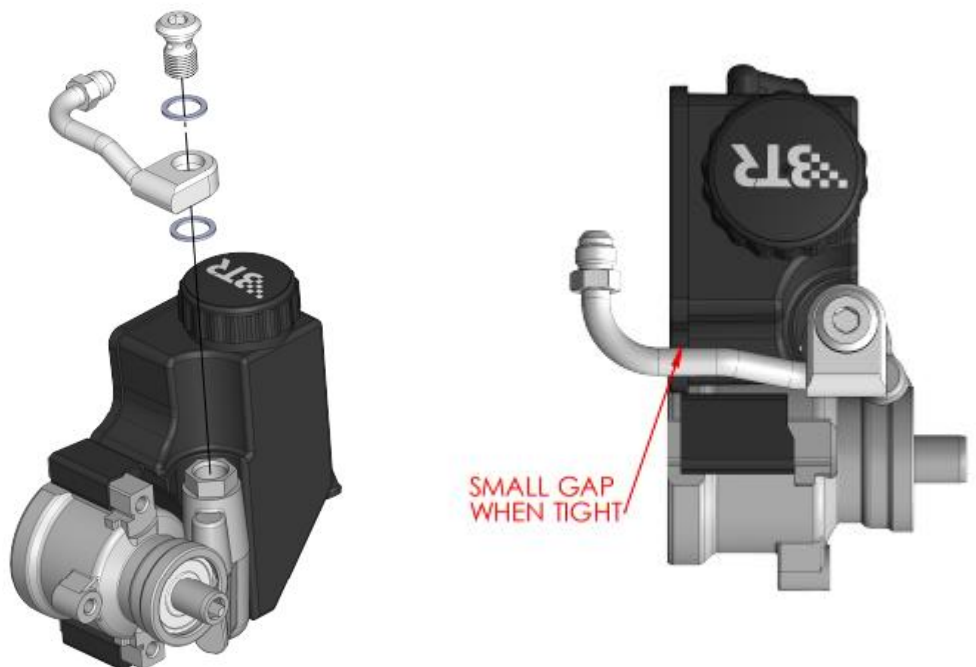
### Install A/C line adapter:

Make sure O-rings have not fallen out from the A/C compressor. Install the A/C line adapter using the (2) M8 X 20 bolts. Torque to 18 ft./lbs.



### Install P/S line adapter:

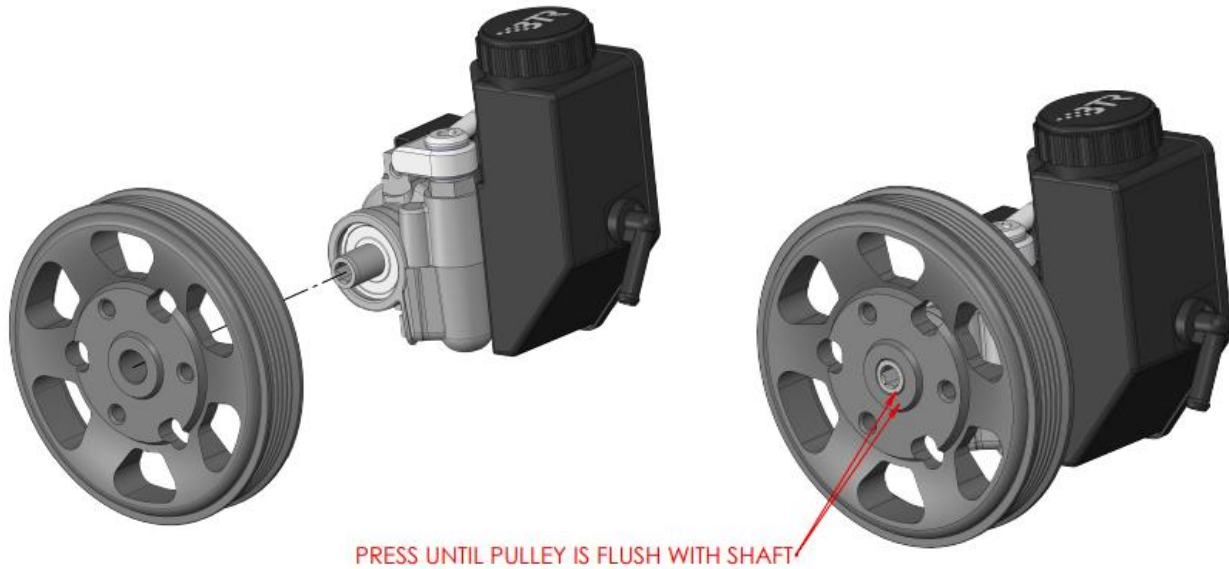
Assemble the P/S hardline to the power steering pump using the (2) crush washers and the banjo bolt. Orient the hardline as shown below. Torque the banjo bolt to 40-50 ft./lbs.





### Install P/S pulley:

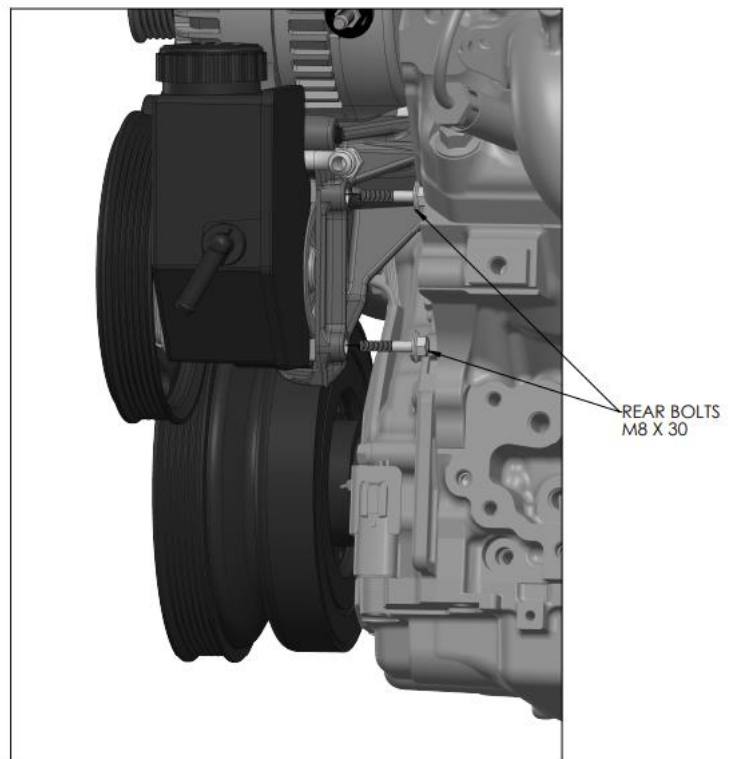
Install the pulley on the power steering pump shaft. (Shown with premium power steering pulley. Either pulley needs to be flush to the end of the power steering pump shaft when fully pressed on.)

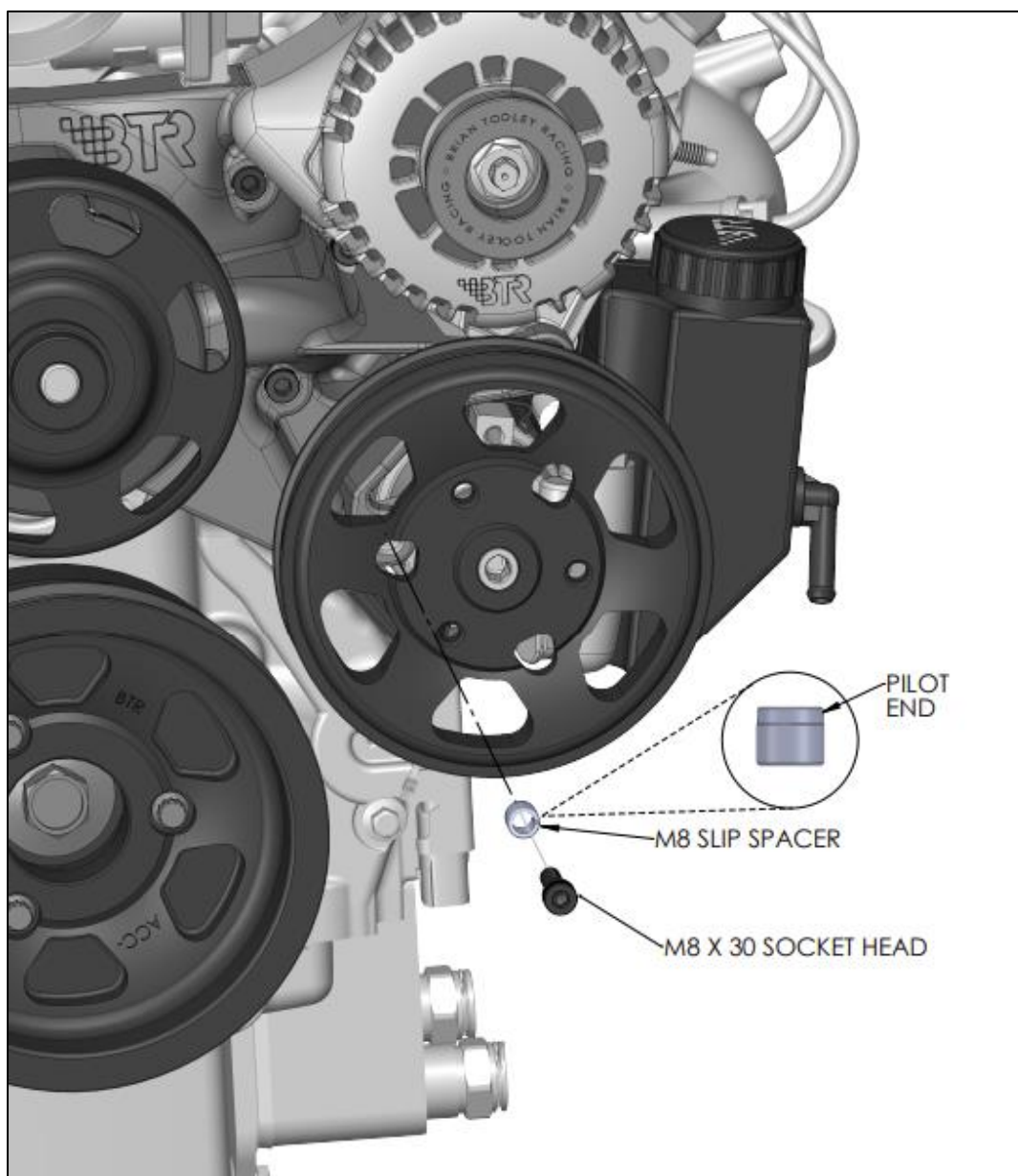


### Install P/S Pump:

Assemble the power steering pump assembly to the cooling manifold. Install the rear (2) M8 X 30 flange head bolts. **DO NOT TIGHTEN AT THIS TIME.**

Install the front M8 X 30 socket head bolt with the M8 slip spacer. The slip spacer small end pilot oriented towards the power steering pump. Torque to 18 ft./lbs. Torque the two rear bolts to 18 ft./lbs.





**NOTES:**

**Reservoir options** - Occasionally, the provided power steering pump reservoir can have interference to applications. If this happens, you can use Holley part number PS0001ERL, PS0002ERL, PS0003ERL, or PS0004ERL, to change the pump's inlet so it's compatible with remote reservoirs.

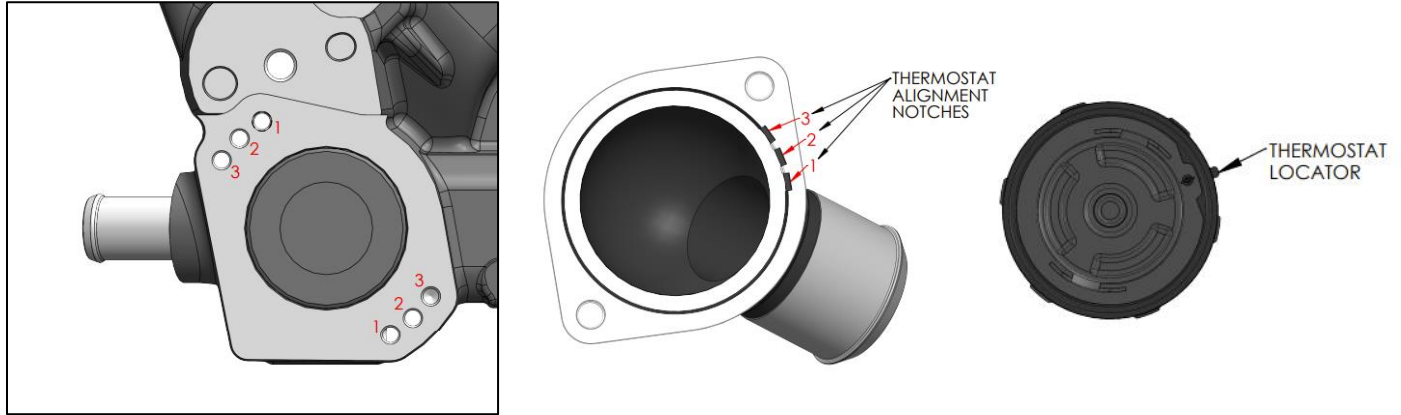
**Hydro-Boost Brakes** - For vehicles with hydro-boost brake systems, you will often need an extra inlet for the reservoir. In these specific cases, use PS0001ERL adapters with either a Holley 198-211 or 198-212 reservoir.

**Low pressure racks and steering boxes** - Mustang II and other low pressure rack/box applications may require Detroit Speed 091401DS to perform as needed.

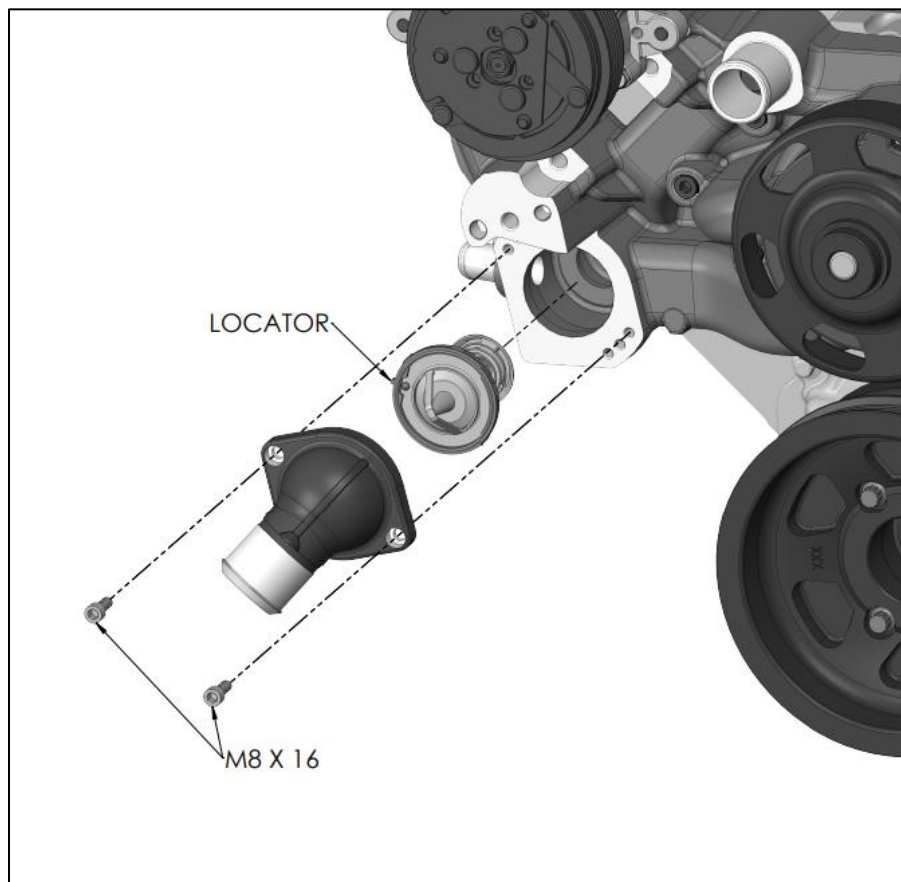


### Install Thermostat and housing:

The cooling manifold thermostat boss is machined for 3 possible angles on the thermostat housing. Choose the angle that works best for your application. Note the three respective alignment notches in housing for thermostat

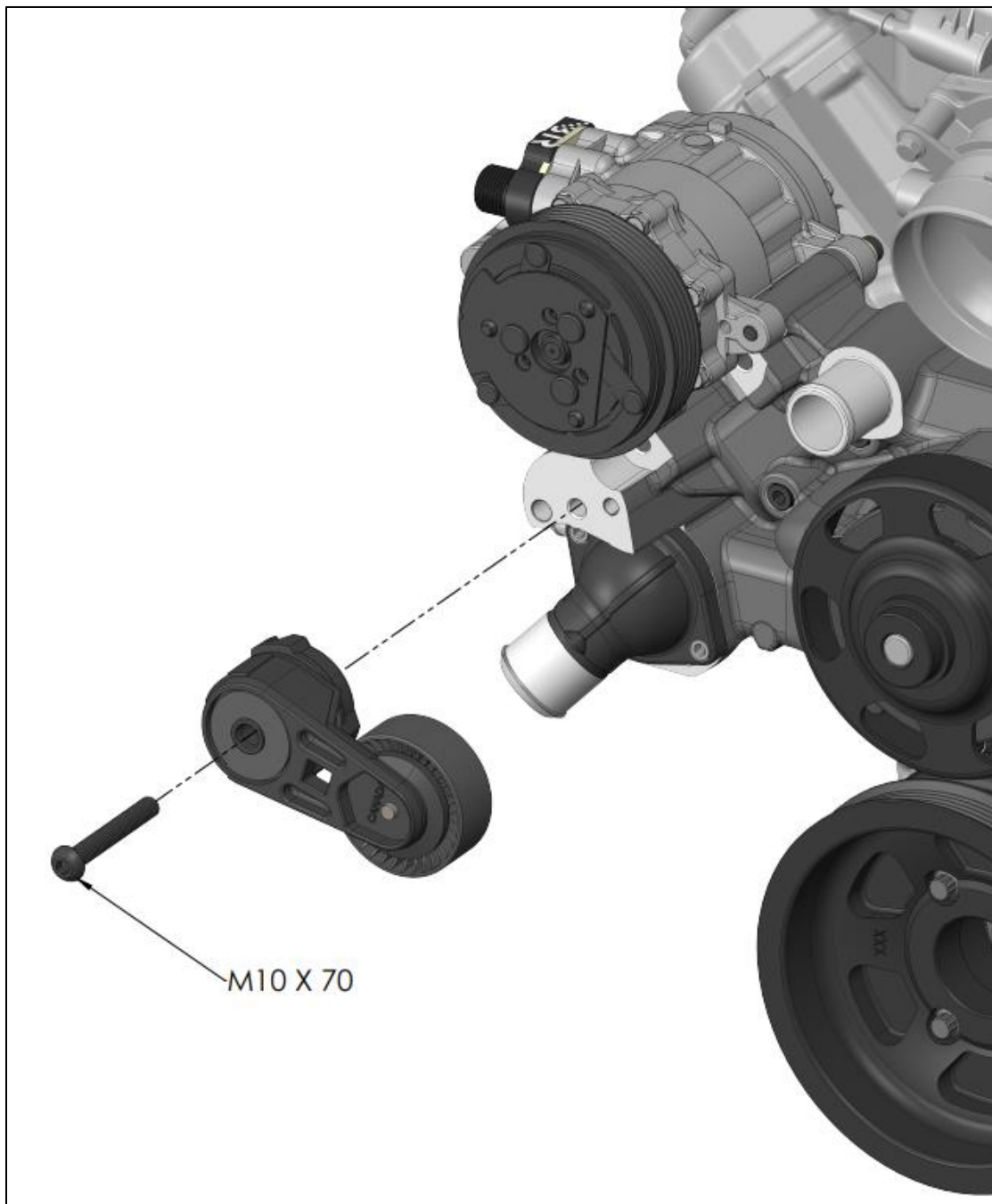


Assemble the thermostat and thermostat housing using (2) M6 X 16 bolts. Torque to 85 in./lbs.



**Install tensioner:**

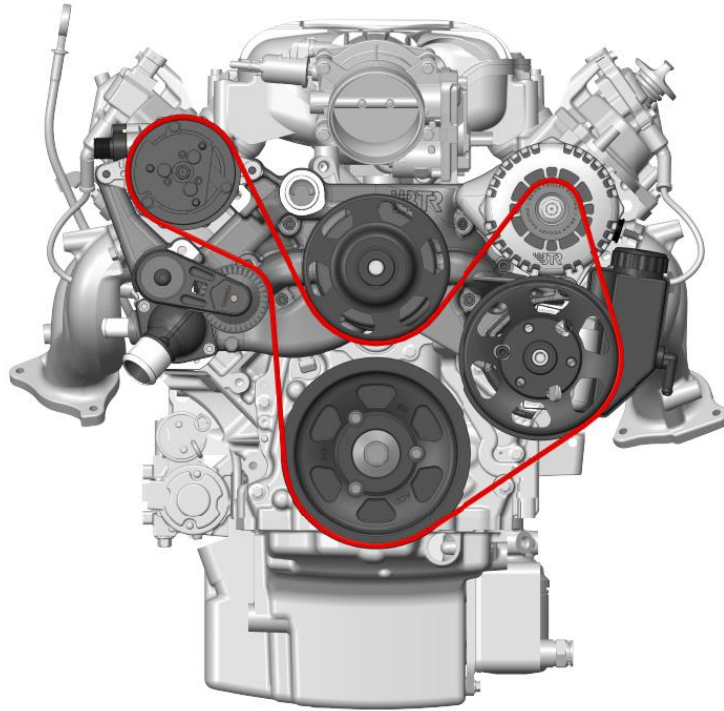
Use the M10 X 70 button head bolt. Torque to 18 ft./lbs.



### Install belt:

Use a ½" square drive ratchet to rotate clockwise and relieve tensioner pressure. Route belt as shown below. Slide belt over water pump pulley last.

NOTE: If not installing all accessories at this time, see [APPENDIX B](#)



### Review and testing:

Review that all steps are complete. Finish all respective plumbing and connections. Start engine and check for leaks.

## APPENDIX A

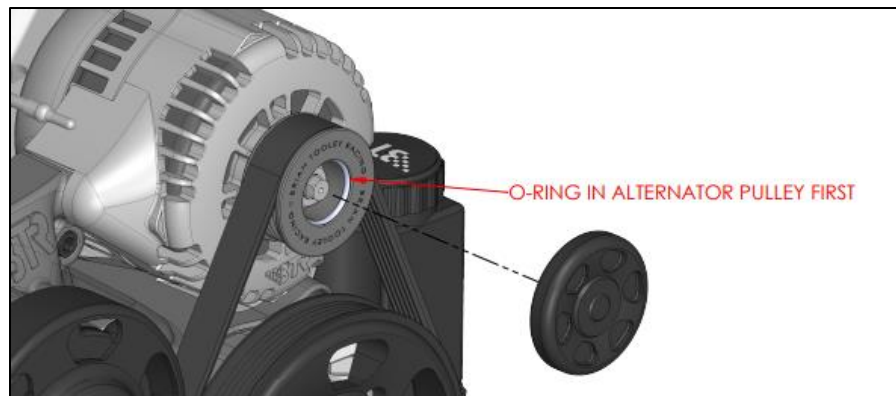
---

### Dress up covers (optional)

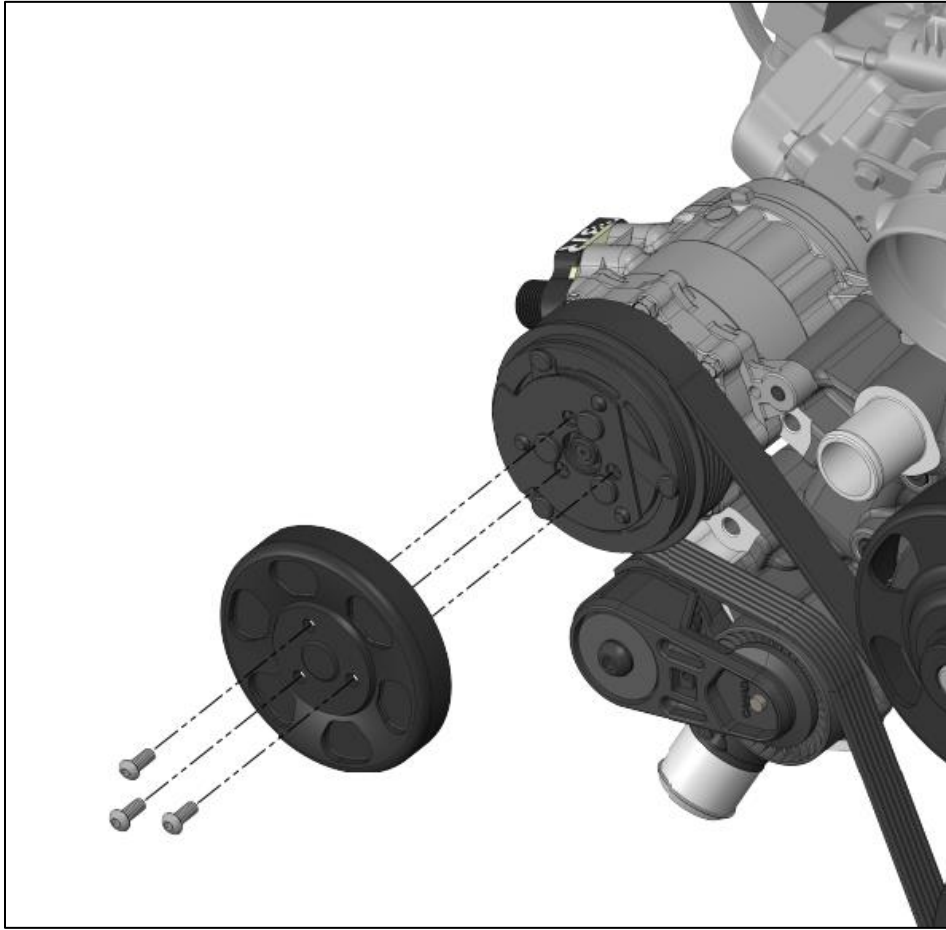
#### Install alternator pulley cover:

First, place O-ring inside the groove of the alternator pulley.

Next press alternator cover onto pulley.



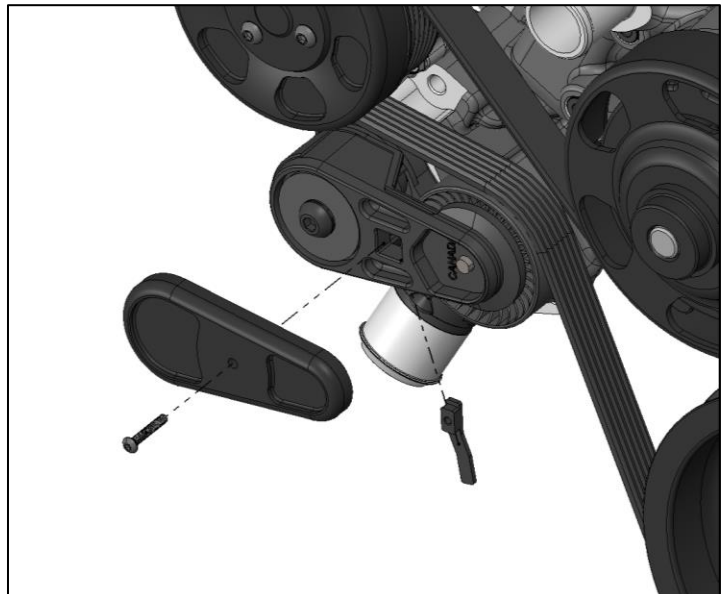
**Install A/C clutch cover:**



Torque screws to  
85 in./lbs.

**Install tensioner cover:**

Slide tab behind tensioner between pulley and tensioner housing. While holding the tab, secure the cover with bolt. Apply thread locking compound to thread and torque to 40 in./lbs.



## APPENDIX B

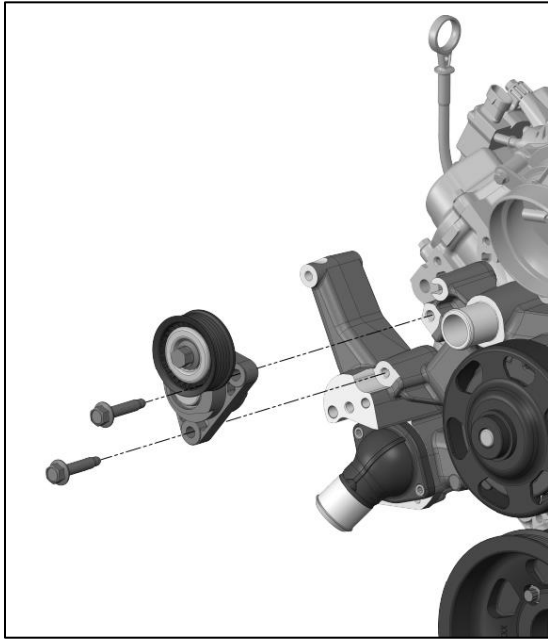
---

### Accessory and belt configurations (optional)

#### No A/C compressor:

It is acceptable to use the compressor as an idler if you do not or not yet have an A/C system, but do not activate the compressor clutch without connecting a proper system with a freon/oil charge.

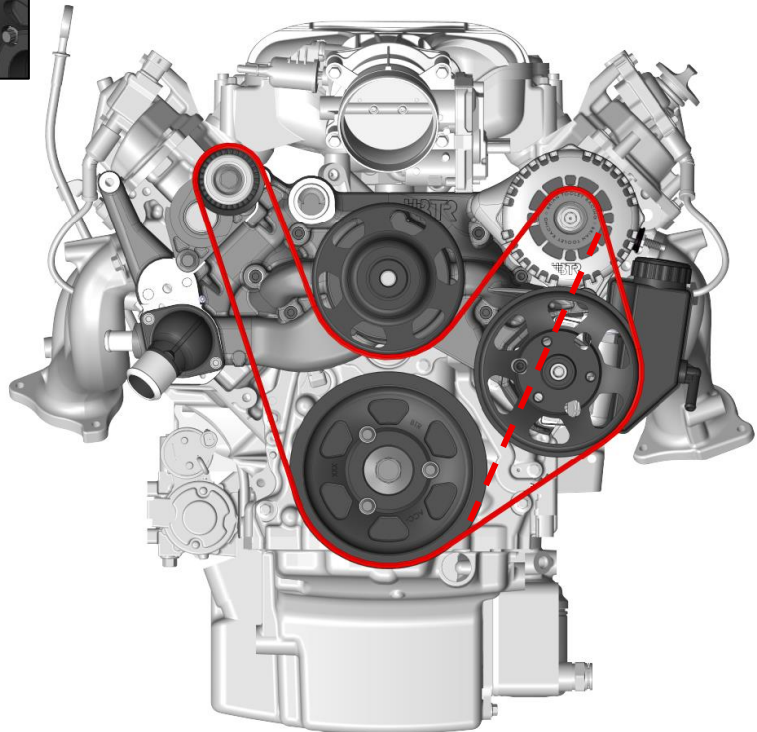
If you wish to run without the compressor, use optional tensioner ACD-301 with supplemental bolt kit ACD-701. Torque to 37 ft./lbs. Use BTR belt ACD-341 or Dayco 6PK1550



Route belt as shown to right.

#### NOTE:

This drive can also be configured with A/C and without P/S **or** without A/C and P/S. However, a customer sourced belt will be required.





## APPENDIX C

---

### Applications using an original equipment LT corvette manifold (optional)

If using an LT car style intake, consider using a throttle body angle adapter like Holley part number 717-15.



### QUESTIONS & TECHNICAL ASSISTANCE:

CALL: 888.959.8865 MONDAY-FRIDAY 9-5:30PM (EST)

EMAIL: [SALES@BRIANTOOLEYRACING.COM](mailto:SALES@BRIANTOOLEYRACING.COM)

[WWW.BRIANTOOLEYRACING.COM](http://WWW.BRIANTOOLEYRACING.COM)