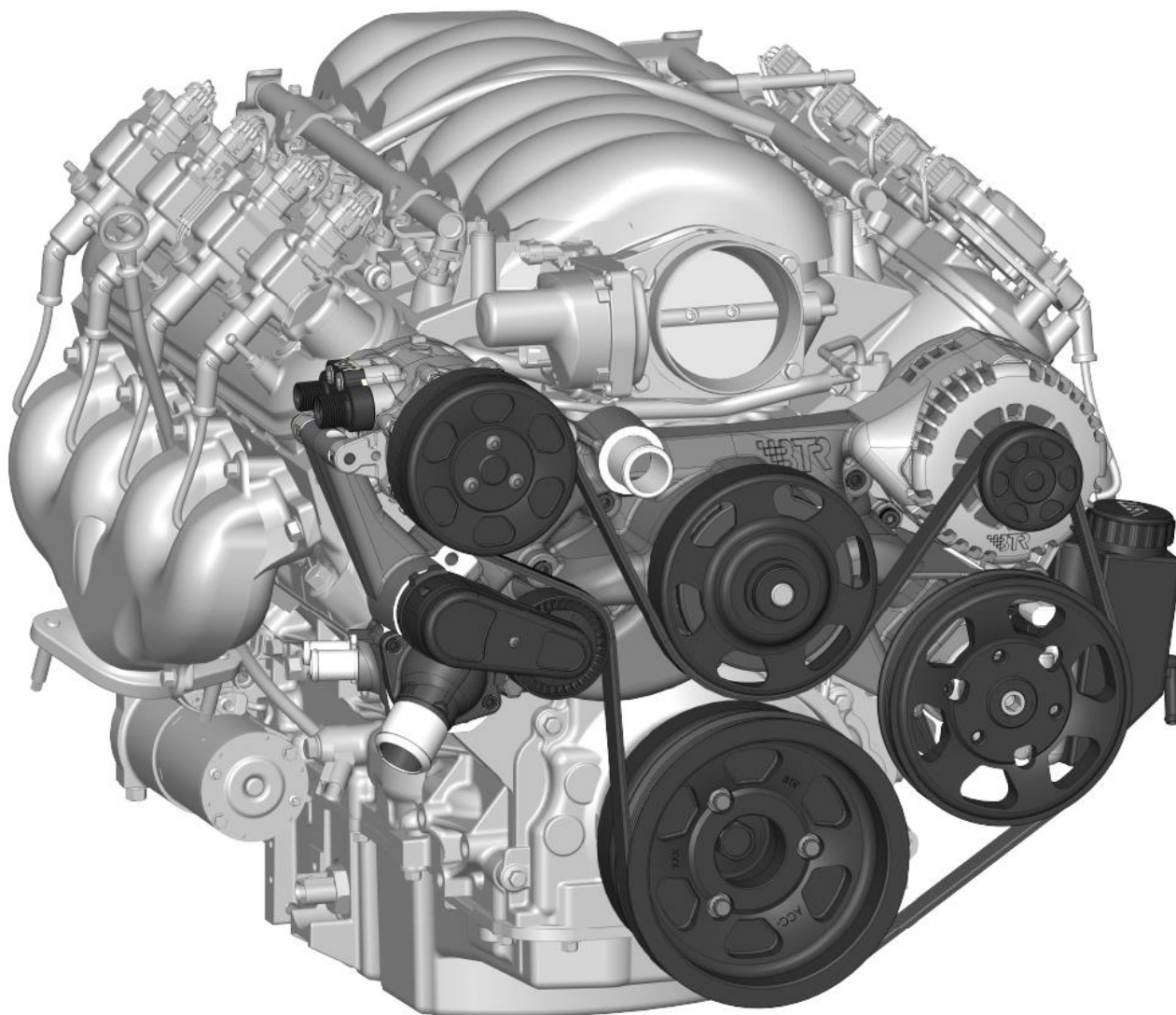




**HYPERDRIVE COMPLETE ACCESSORY SYSTEM
GEN III, IV (LS)
INSTALLATION INSTRUCTIONS**



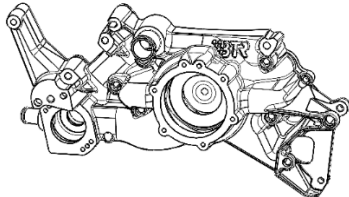
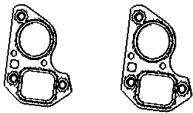
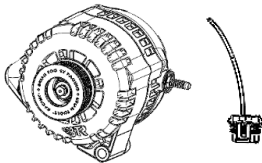
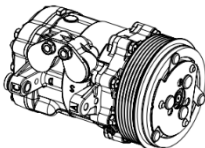
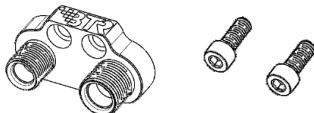
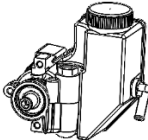
QUESTIONS & TECHNICAL ASSISTANCE:

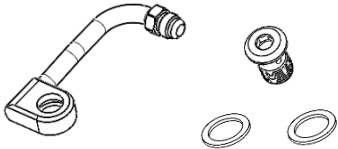
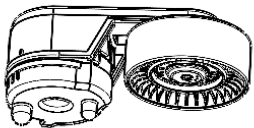
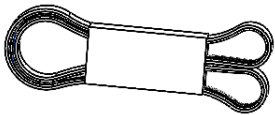
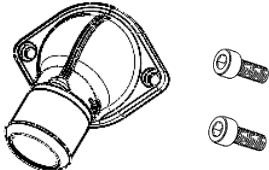
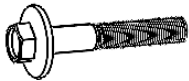
CALL: 888.959.8865 MONDAY-FRIDAY 9-5:30PM (EST)

EMAIL: SALES@BRIANTOOLEYRACING.COM

WWW.BRIANTOOLEYRACING.COM

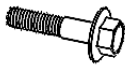
Parts List:

PICTURE	QTY	DESCRIPTION	PART NUMBER
	1	Cooling manifold (LS)	ACD-501 (natural) ACD-501B (black)
	1	Gasket set, cooling manifold to block (LS)	ACD-325
	1	Water pump	ACD-230
	1	Gasket, water pump to manifold	12619770
	1	Alternator, harness pigtail	ACD-200 (natural) ACD-200B (black)
	1	A/C compressor	ACD-210 (natural) ACD-210B (black)
	1	A/C line adapter to #8 and #10, (2) M8 X 1.25 X 20 bolts	ACD-320B
	1	P/S pump with reservoir	ACD-220
	1	P/S pump pulley	19421325

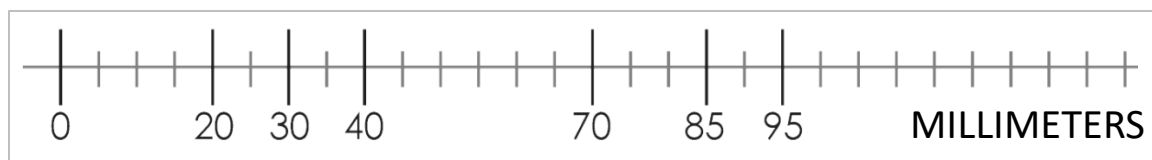
	1	P/S pressure hardline to -6 AN, banjo bolt, (2) crush washers	ACD-322
	1	Tensioner	ACD-300B
	1	Serpentine belt	ACD-340, 6PK1705
	1	Thermostat housing, (2) M6 X 1.0 X 16	ACD-323B
	1	187° thermostat	ACD-324, 89018168
	1	Crank damper bolt (LS/LT)	12557840

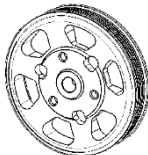
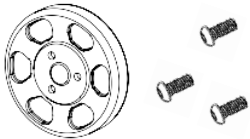
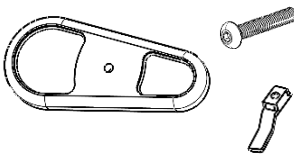
NOTE: VERIFY BOLT LENGTH AND APPLICATION PRIOR TO ASSEMBLY. SOME BOLTS ARE SIMILAR LENGTH

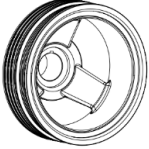
HARDWARE (REPLACEMENT KIT AC700B)			
PICTURE	QTY	DESCRIPTION	HARDWARE APPLICATION
	6	Socket head cap bolt, M8 X 1.25 X 95	(4) Cooling manifold to block (2) A/C Unit to Cooling manifold
	1	Socket head cap bolt, M8 X 1.25 X 85	Cooling manifold to block - under alternator ear
	2	Socket head cap bolt, M8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

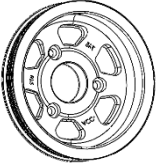
HARDWARE (CONTINUED)			
PICTURE	QTY	DESCRIPTION	HARDWARE APPLICATION
	6	Button head bolt, M6 X 1.0 X 20	Water pump to cooling manifold
	1	Button head bolt, M10 X 1.5 X 70	Tensioner to cooling manifold
	1	Button head bolt, M10 X 1.5 X 80	Alternator foot to cooling manifold
	1	Flange head bolt, M6 X 1.0 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 (LS)	ACD-310

ATI CRANK DAMPER AND PULLEY			
PICTURE	QTY	DESCRIPTION	PART NUMBER
	1	Billet crank pulley (LS)	ACD-316
	1	ATI damper/hub assembly (LS)	ACD-315

Tools needed:

Damper Puller like ICT P/N 551329

Torque wrench capable of 250 ft./lbs.

Torque angle gauge or wrench

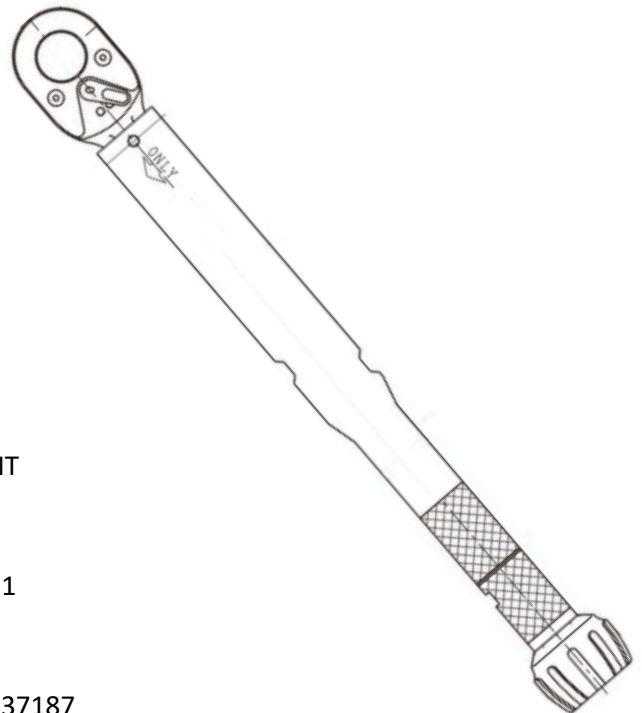
Flywheel holder like BTR P/N TFFWH

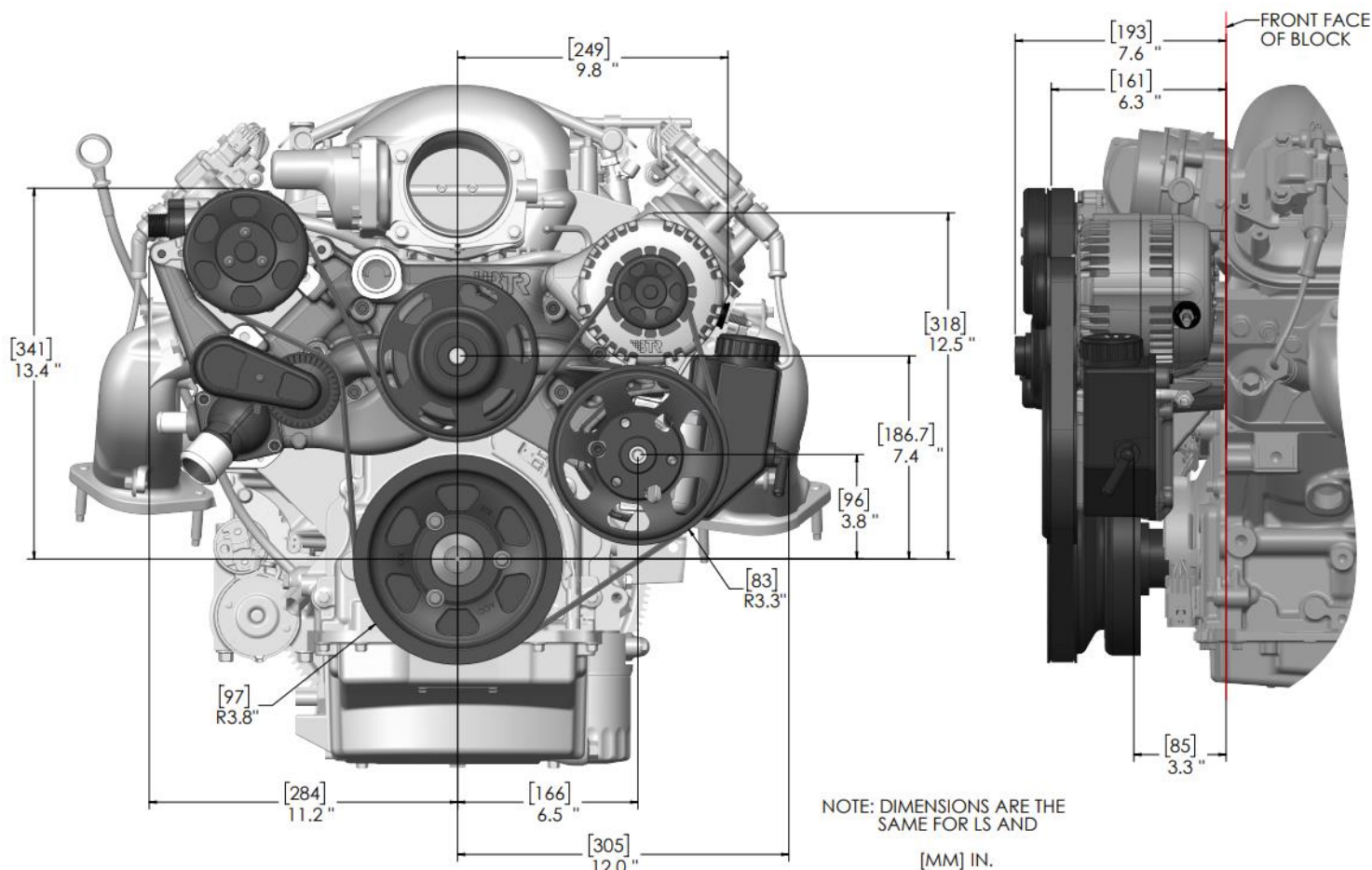
Harmonic Balancer/Damper install tool Like BTR P/N TFDIT

Loctite® 243

P/S pulley installation removal tool like OEM TOOLS 37031

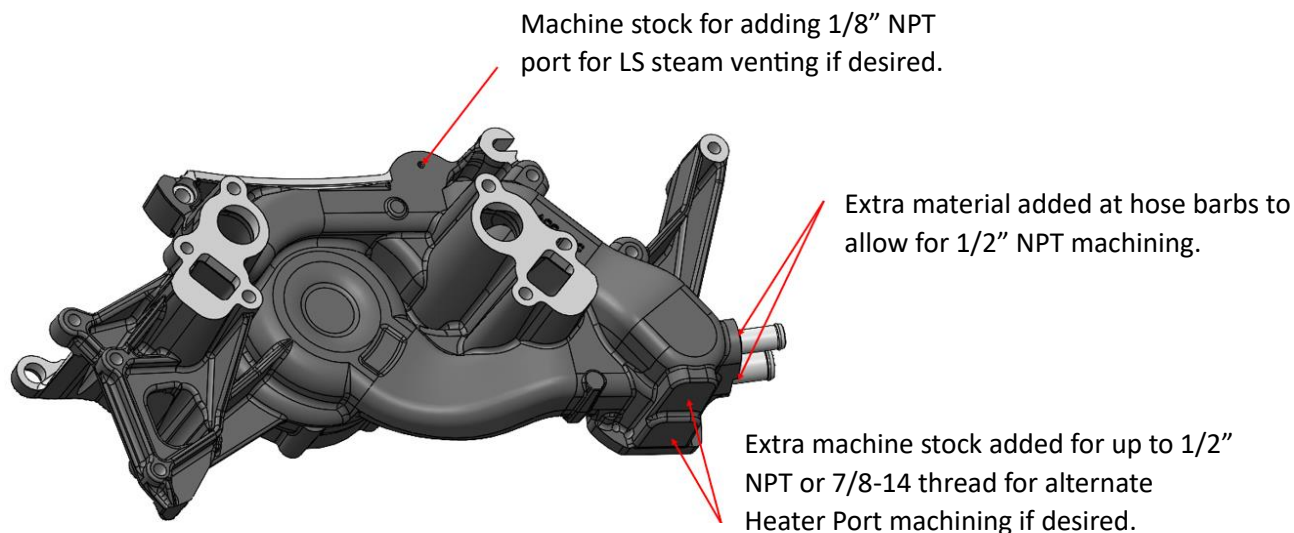
NOTE: for P/S pulley ACD-329B removal use OEM TOOLS 37187





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.



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.

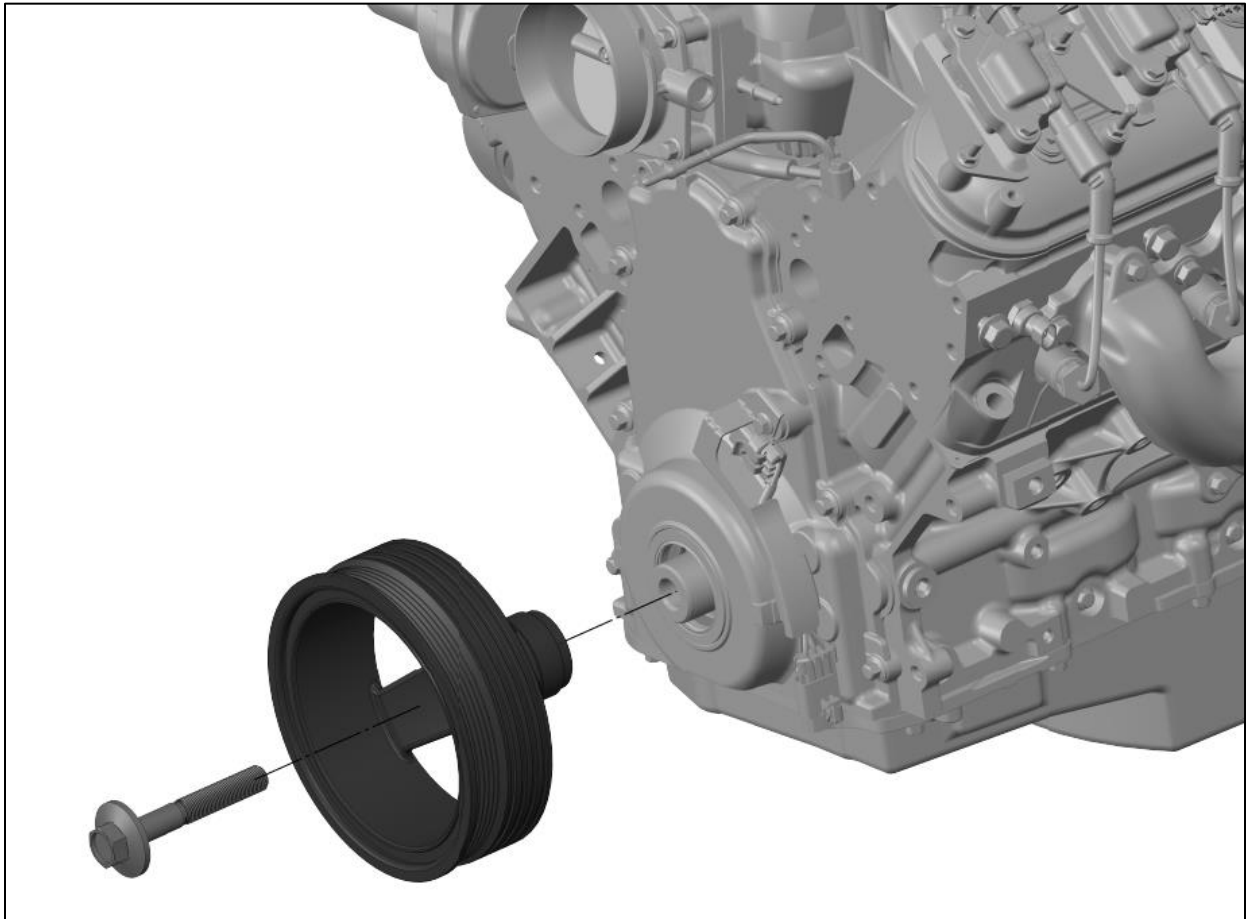
One-piece damper/pulley

Remove existing damper/pulley. Retain old damper bolt.

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

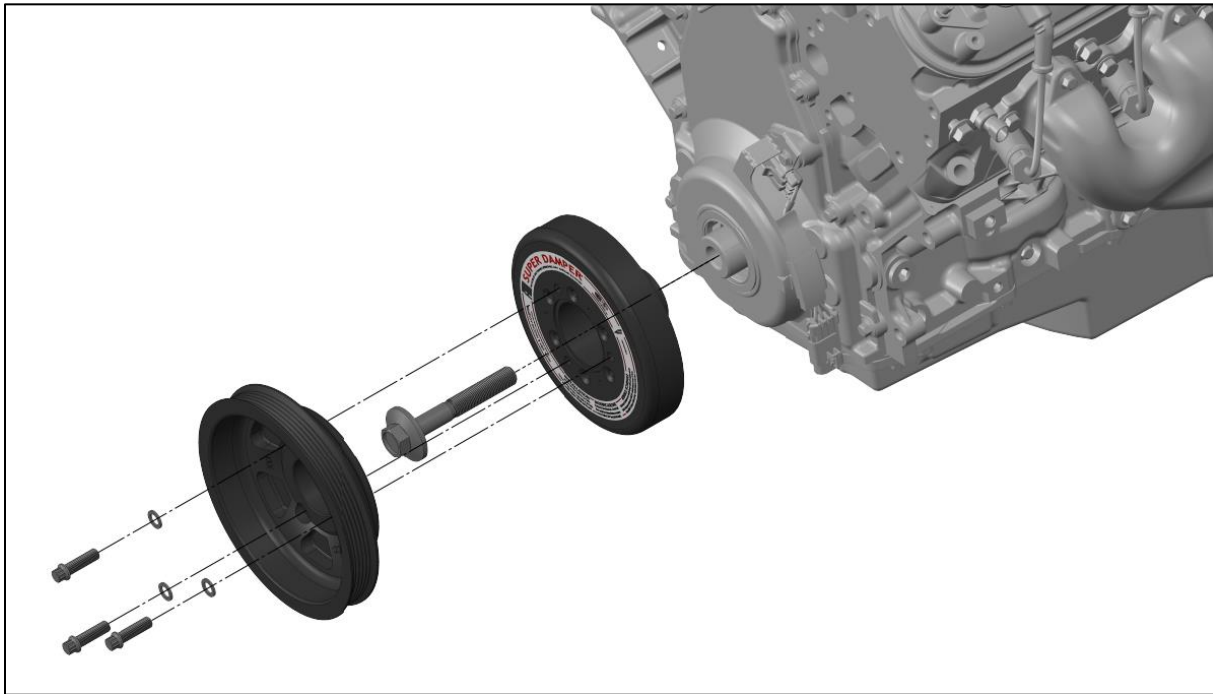
Lubricate the mating surface of the original damper bolt that you just removed, install and torque to 240 ft./lbs. and remove.

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



ATI damper and billet crank pulley

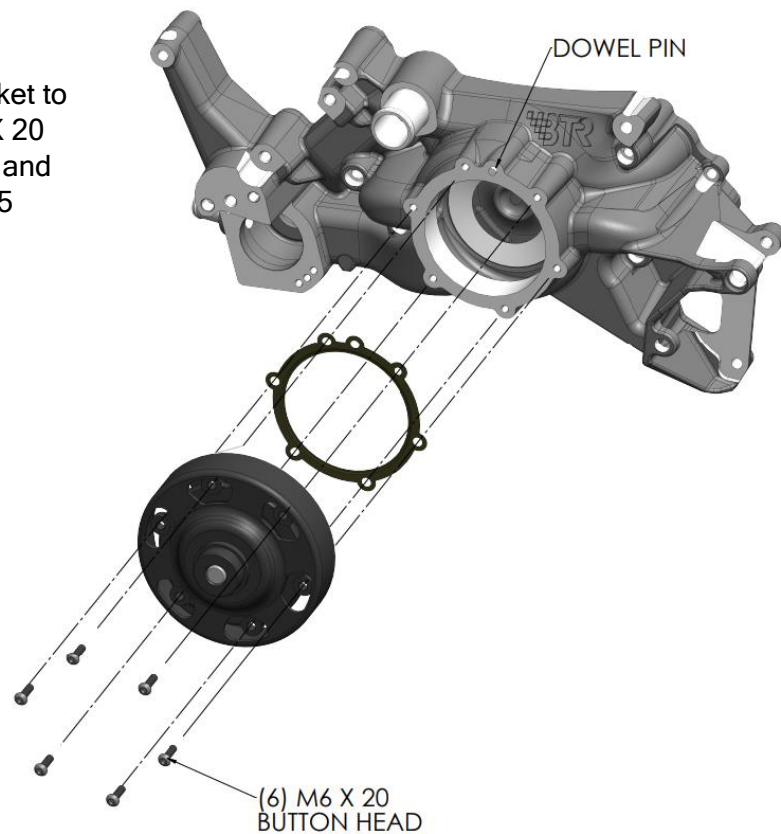
Follow instructions included with damper assembly.



Install water pump:

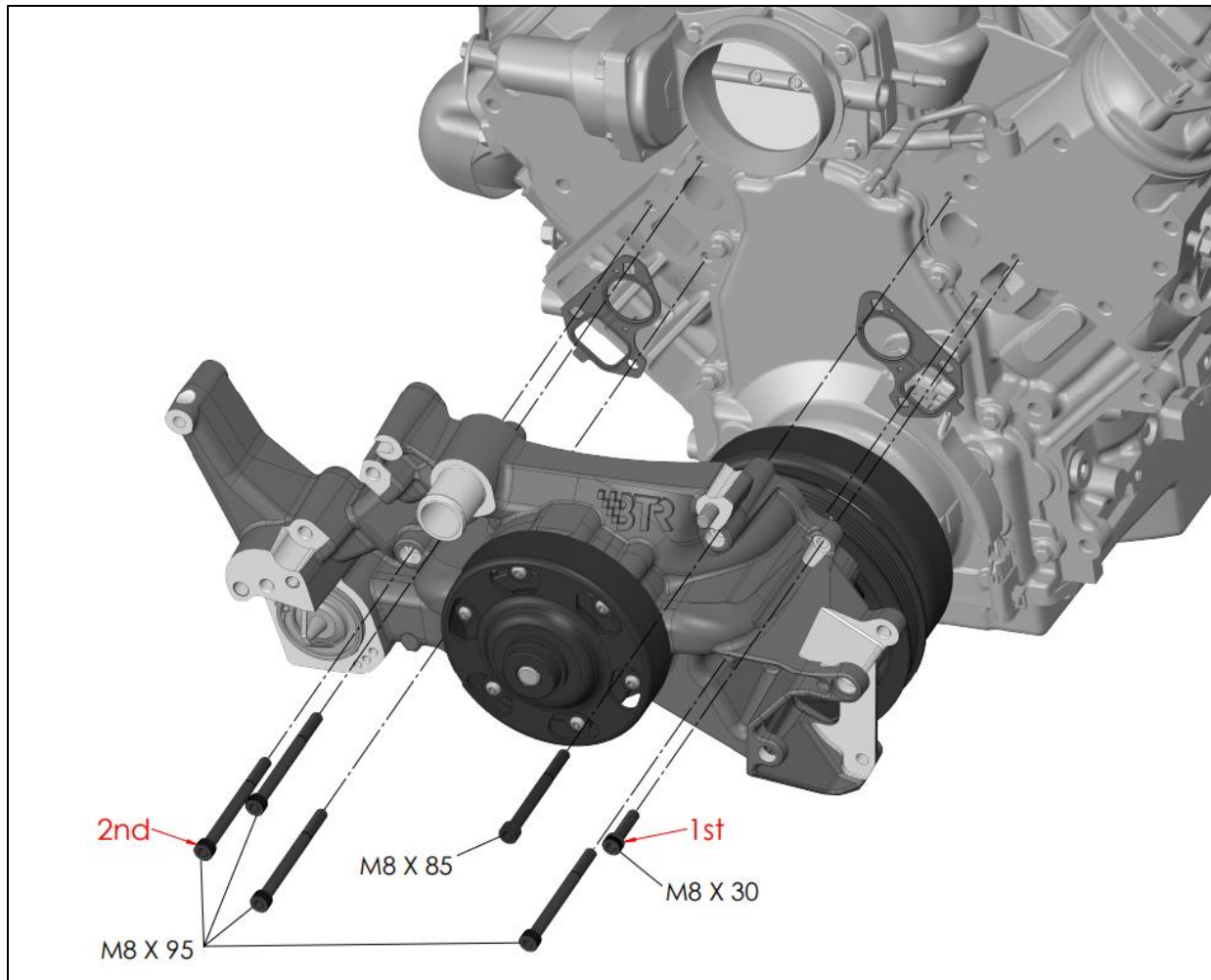
Assemble water pump and gasket to cooling manifold using (6) M6 X 20 button head bolts. Align gasket and pump to dowel pin. Torque to 85 in./lbs.

NOTE: Do not overtighten.



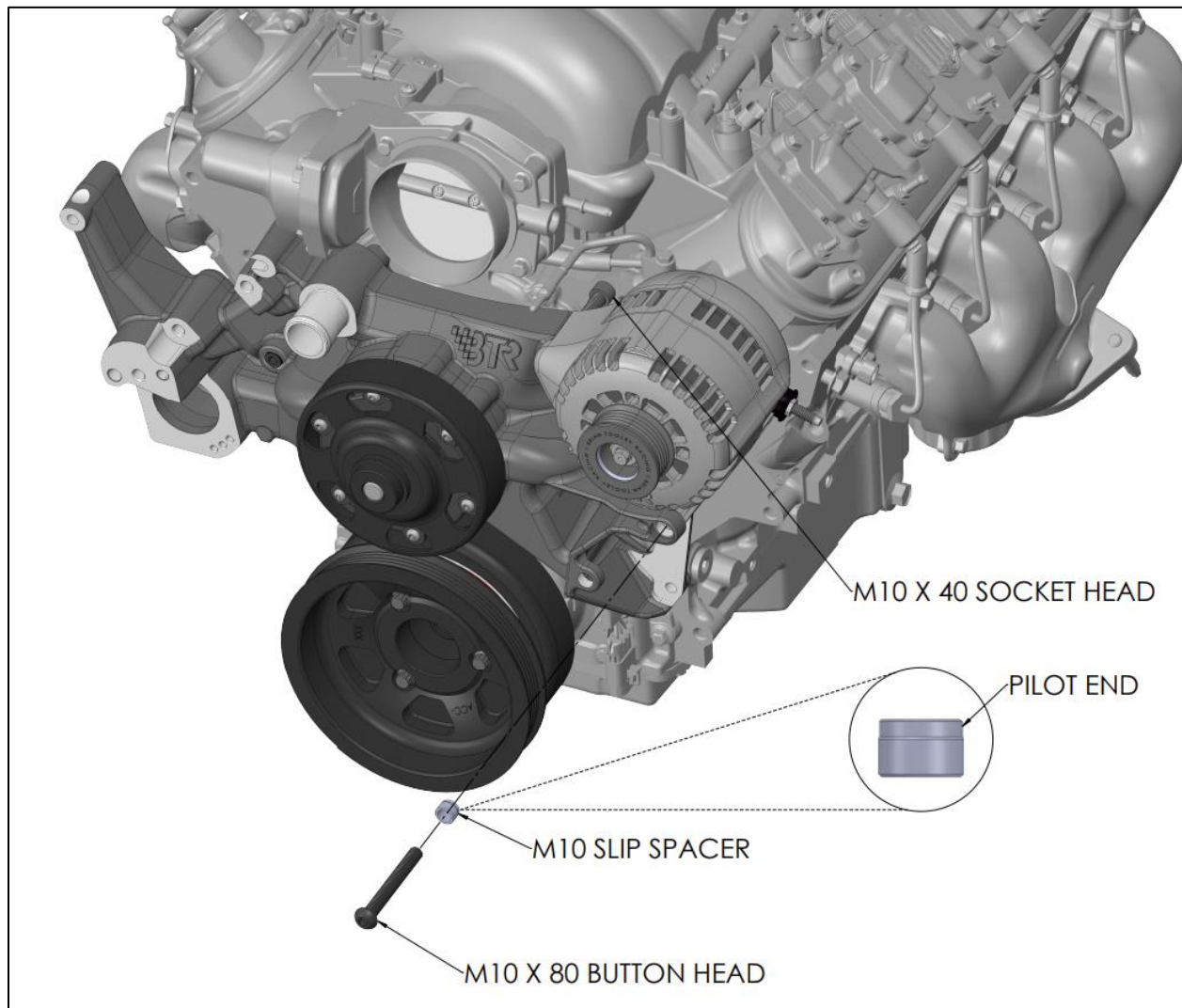
Install water manifold assembly:

Assemble the cooling manifold to engine using supplied bolts and gaskets. Install the bolts labeled 1st and 2nd 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:

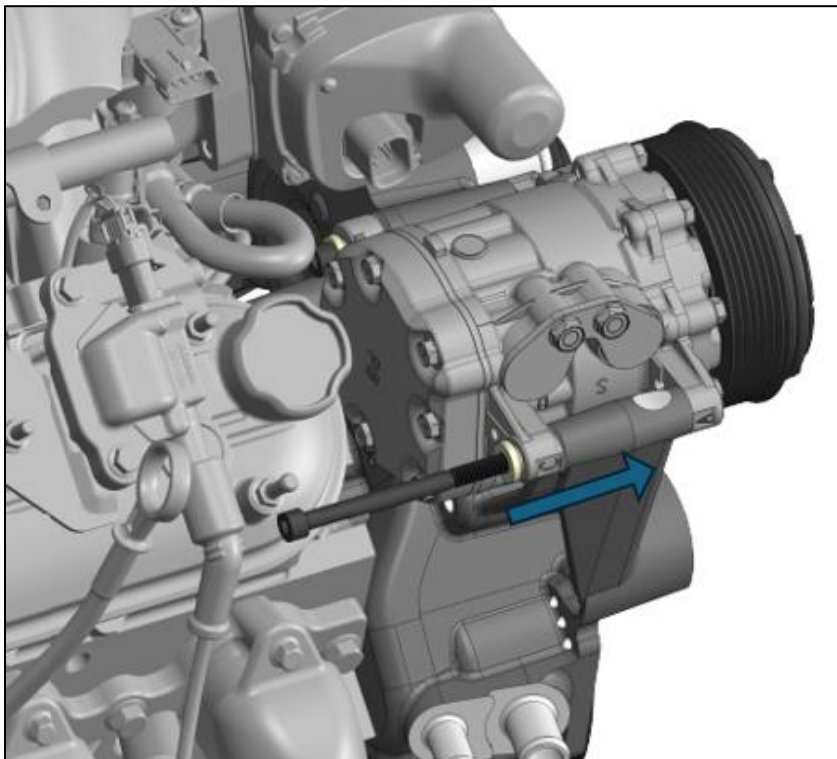
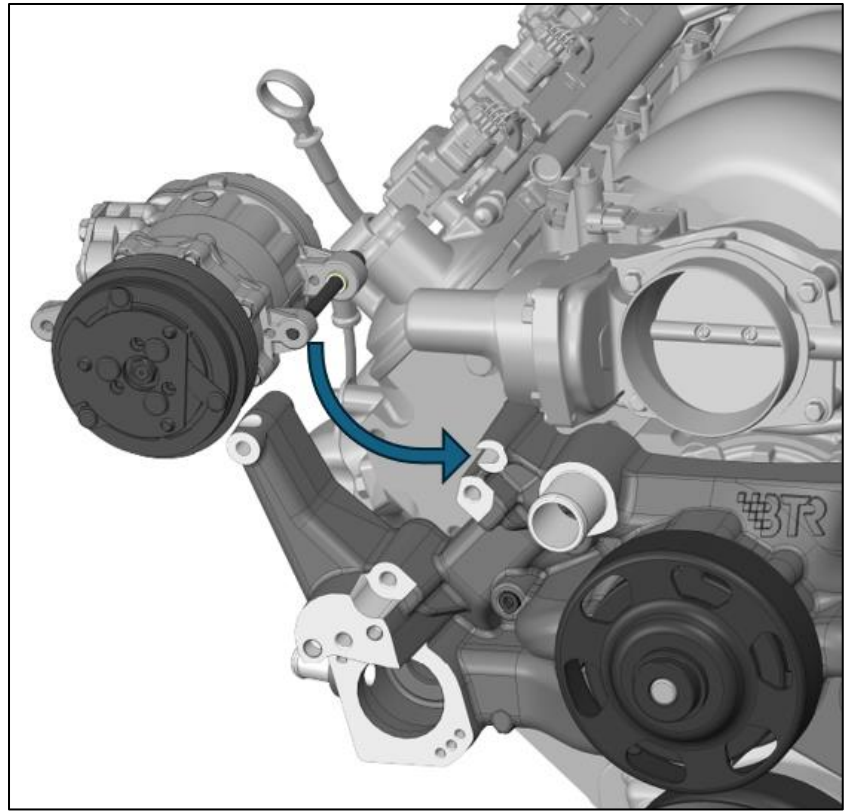
Install the alternator using the M10 slip spacer, M10 X 80 button head bolt and the M10 X 40 socket head bolt. The slip spacer small end pilot should be oriented towards alternator. Torque both bolts to 36 ft./lbs.



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

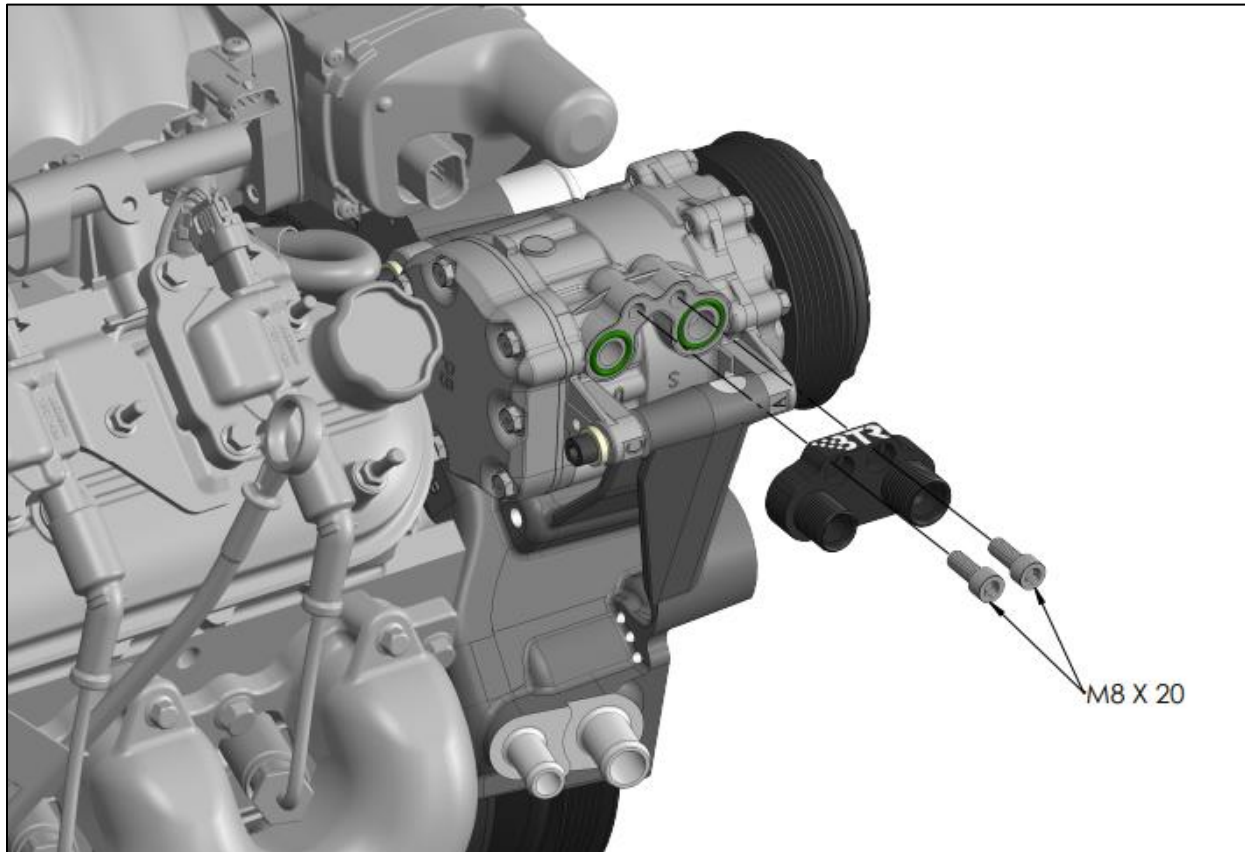


NOTE: Connect the compressor's black pigtail to switched positive 12 volts that is only "on" when the clutch and compressor should be activated.

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.

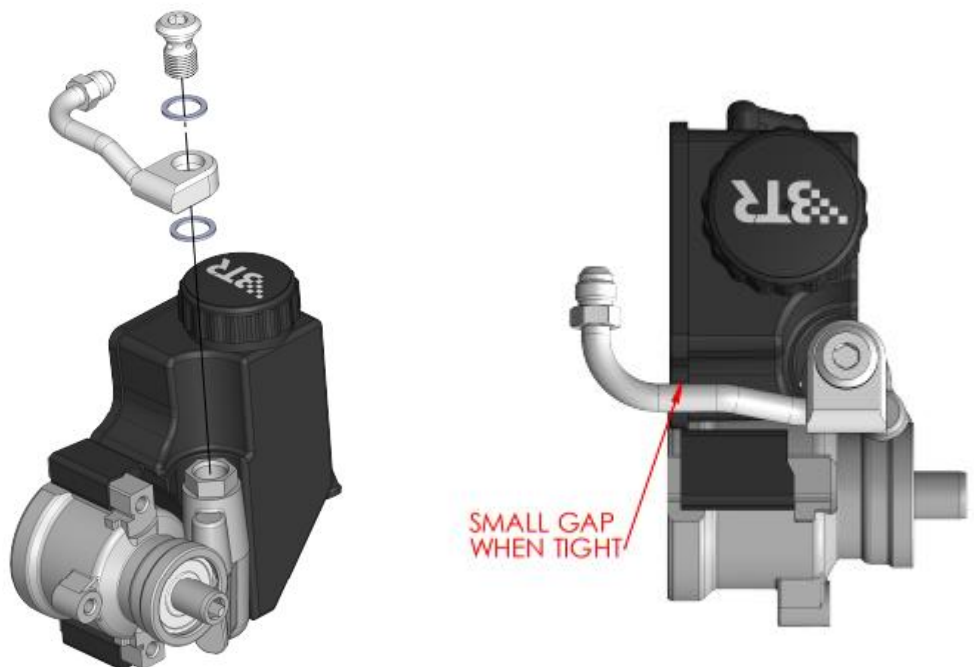
Install A/C line adapter:

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.



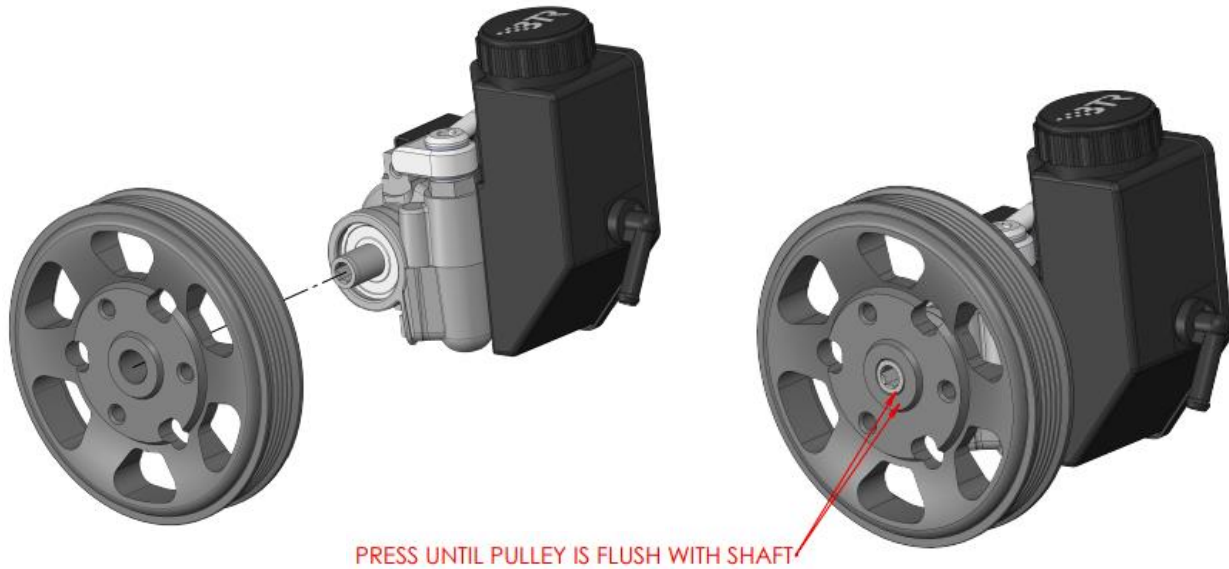
Install P/S line adapter:

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:

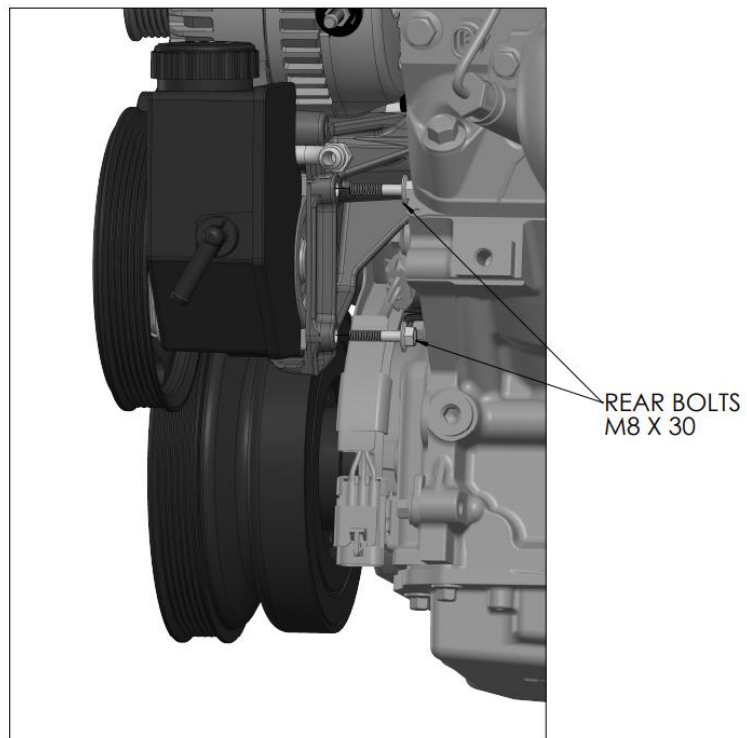
Install the pulley on the power steering pump shaft. (Shown with premium power steering pulley. Either pulley needs to be flush to the end of the power steering pump shaft when fully pressed on.)

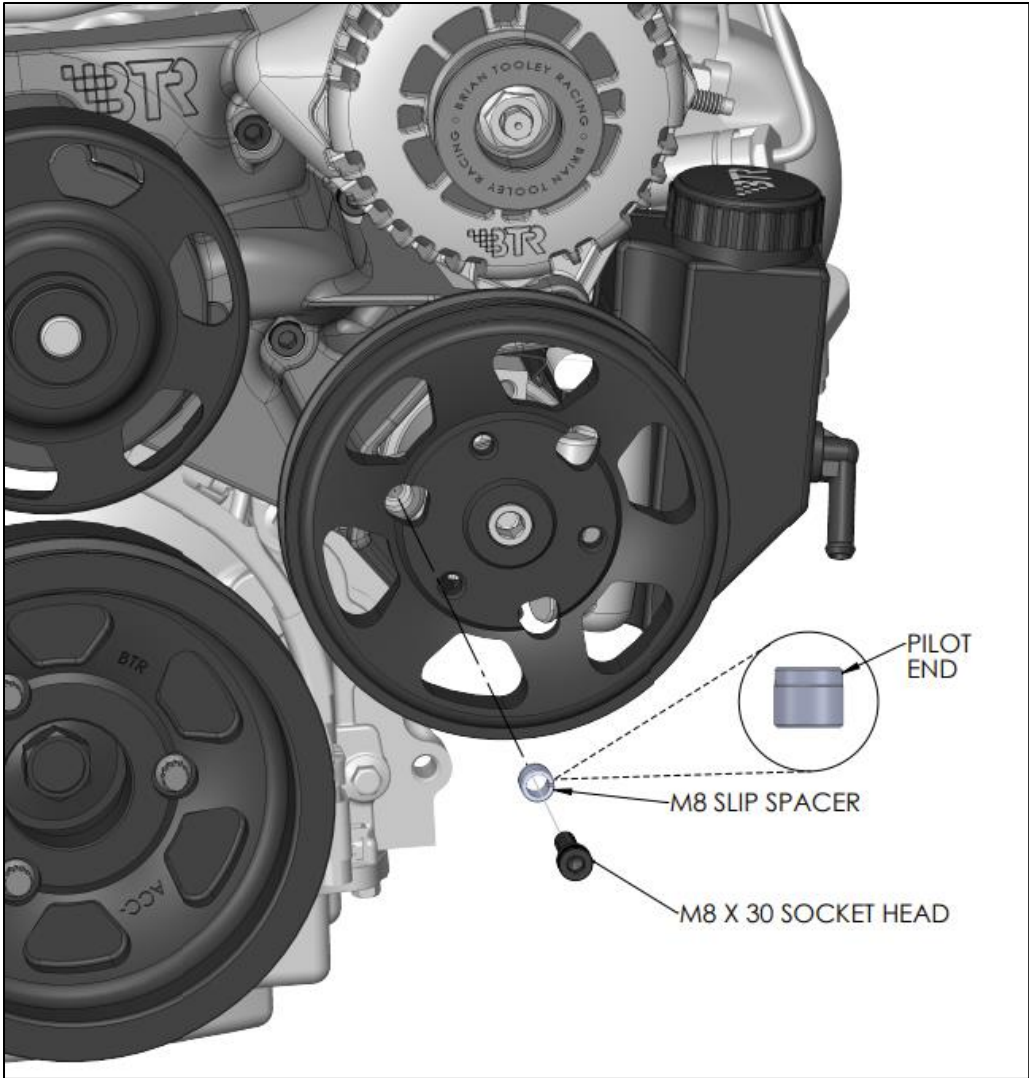


Install P/S Pump:

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:

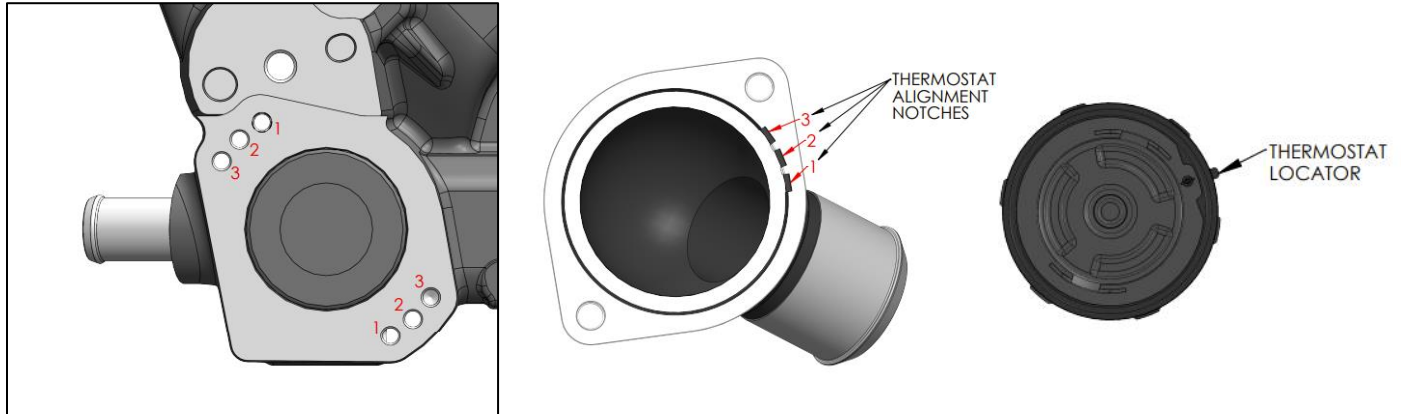
Reservoir options - Occasionally, the provided power steering pump reservoir can have interference to applications. If this happens, you can use Holley part number PS0001ERL, PS0002ERL, PS0003ERL, or PS0004ERL, to change the pump's inlet so it's compatible with remote reservoirs.

Hydro-Boost Brakes - For vehicles with hydro-boost brake systems, you'll 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.

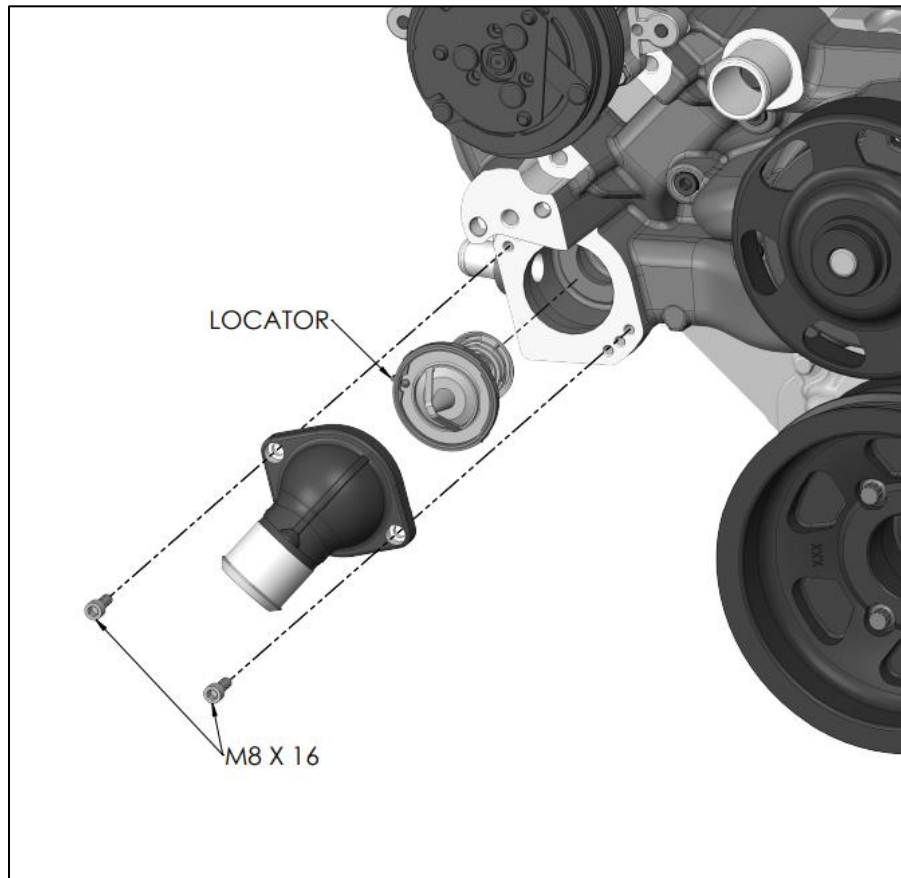
Low pressure racks and steering boxes - Mustang II and other low pressure rack/box applications may require Detroit Speed 091401DS to perform as needed.

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

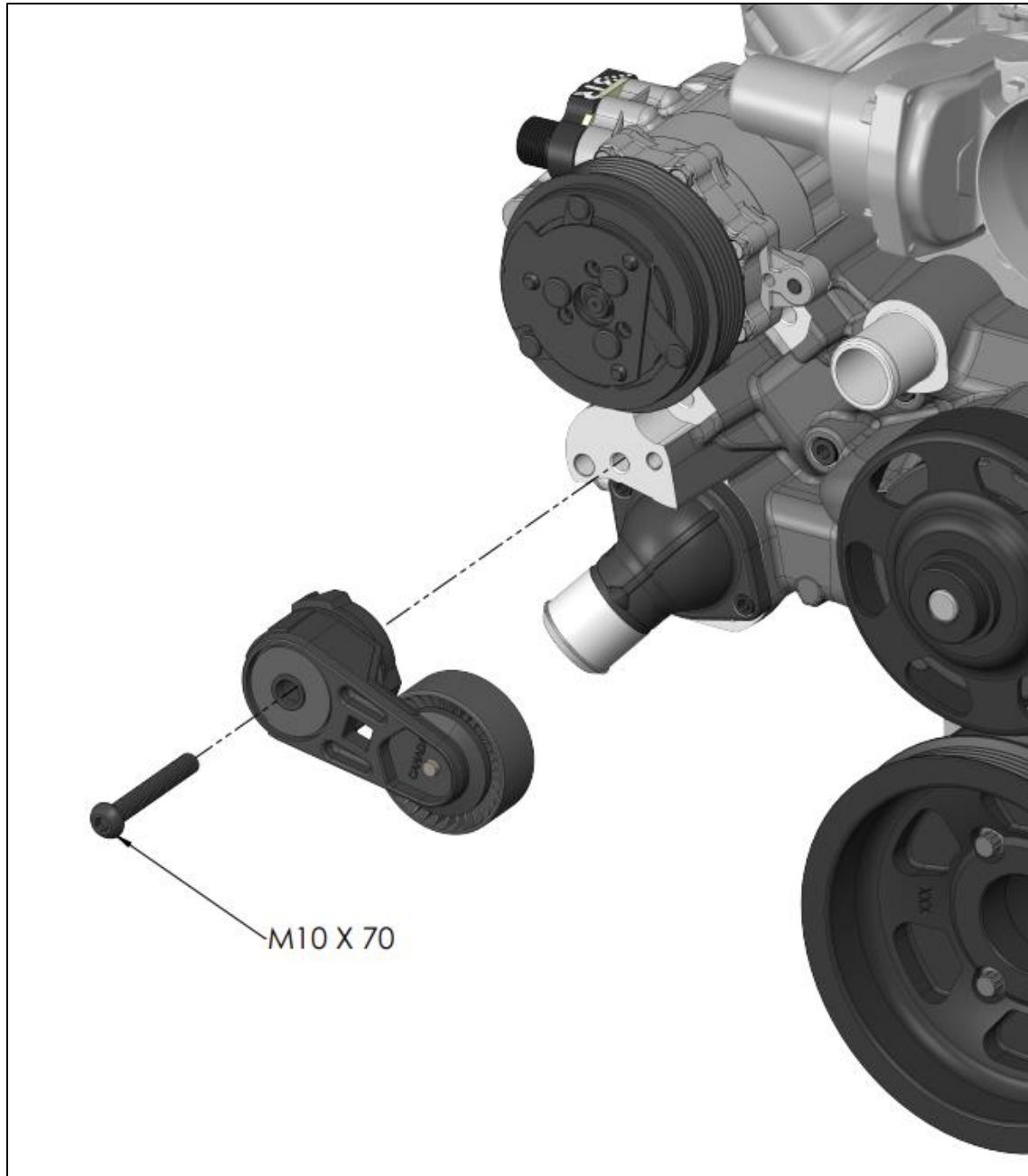


Assemble the thermostat and thermostat housing using (2) M6 X 16 bolts. Torque to 85 in./lbs.



Install tensioner:

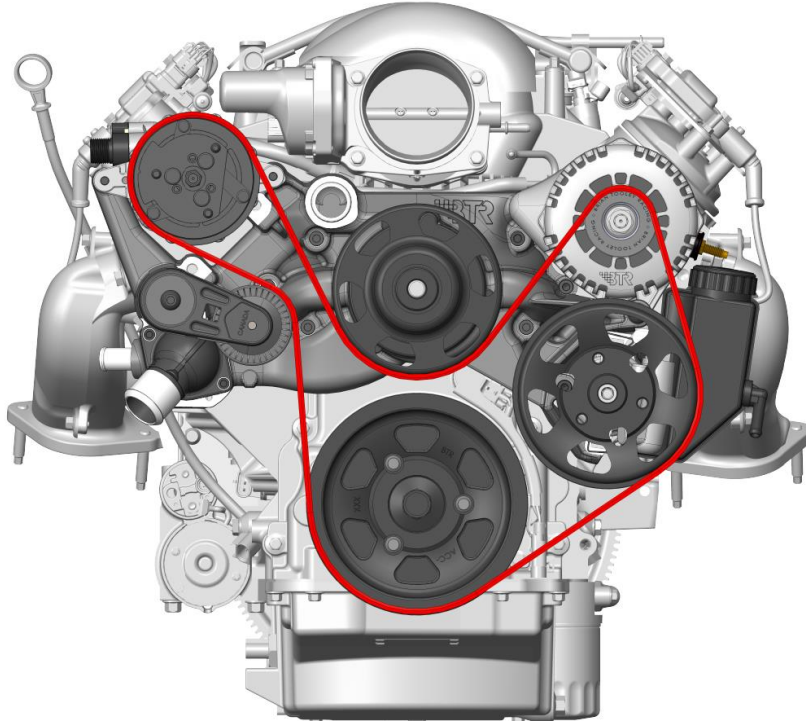
Use the M10 X 70 button head bolt. Torque to 18 ft./lbs.



Install belt:

Use a $\frac{1}{2}$ " 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.

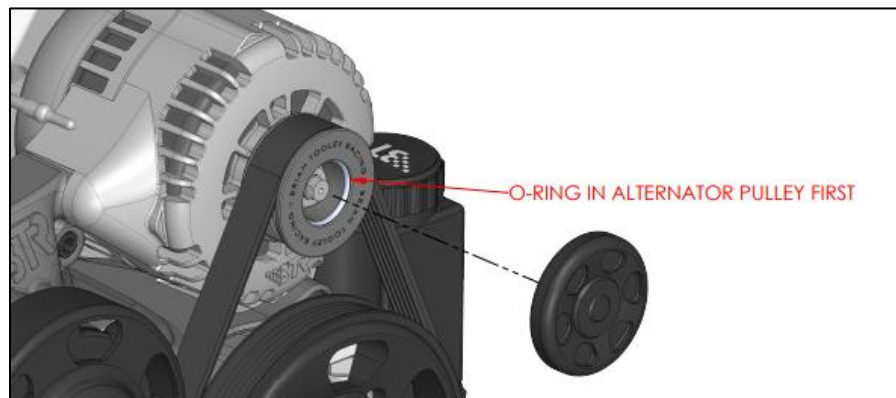
APPENDIX A

Dress up covers (optional)

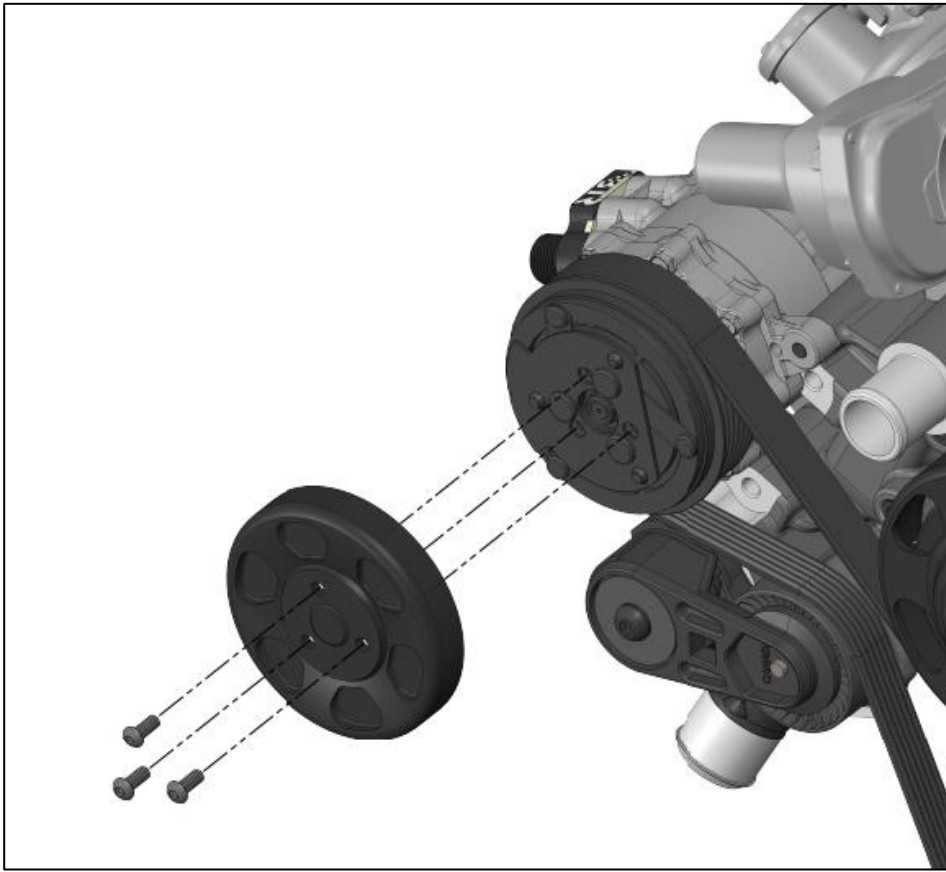
Install alternator pulley cover:

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

Next press alternator cover onto pulley.



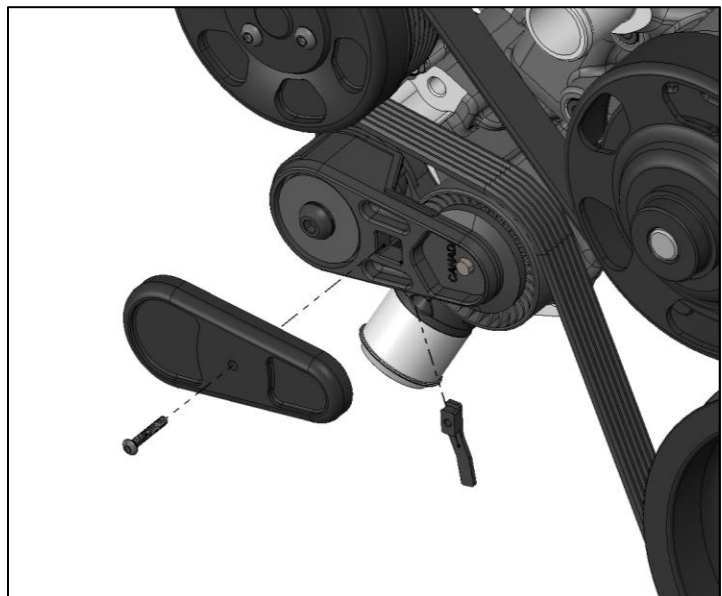
Install A/C clutch cover:



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.



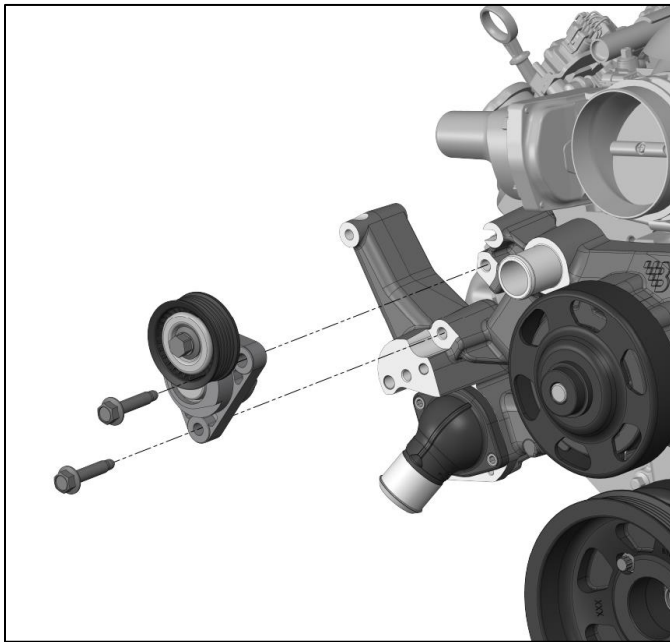
APPENDIX B

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.

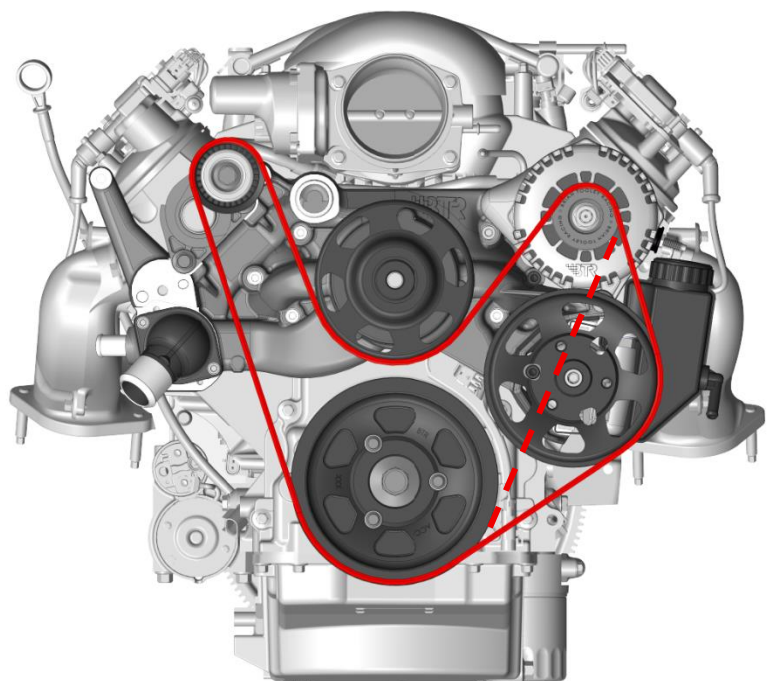
If you wish to run without the compressor, use optional tensioner ACD-301 with supplemental bolt kit ACD-701. Torque to 37 ft./lbs. Use BTR belt ACD-341 or Dayco 6PK1550



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.





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