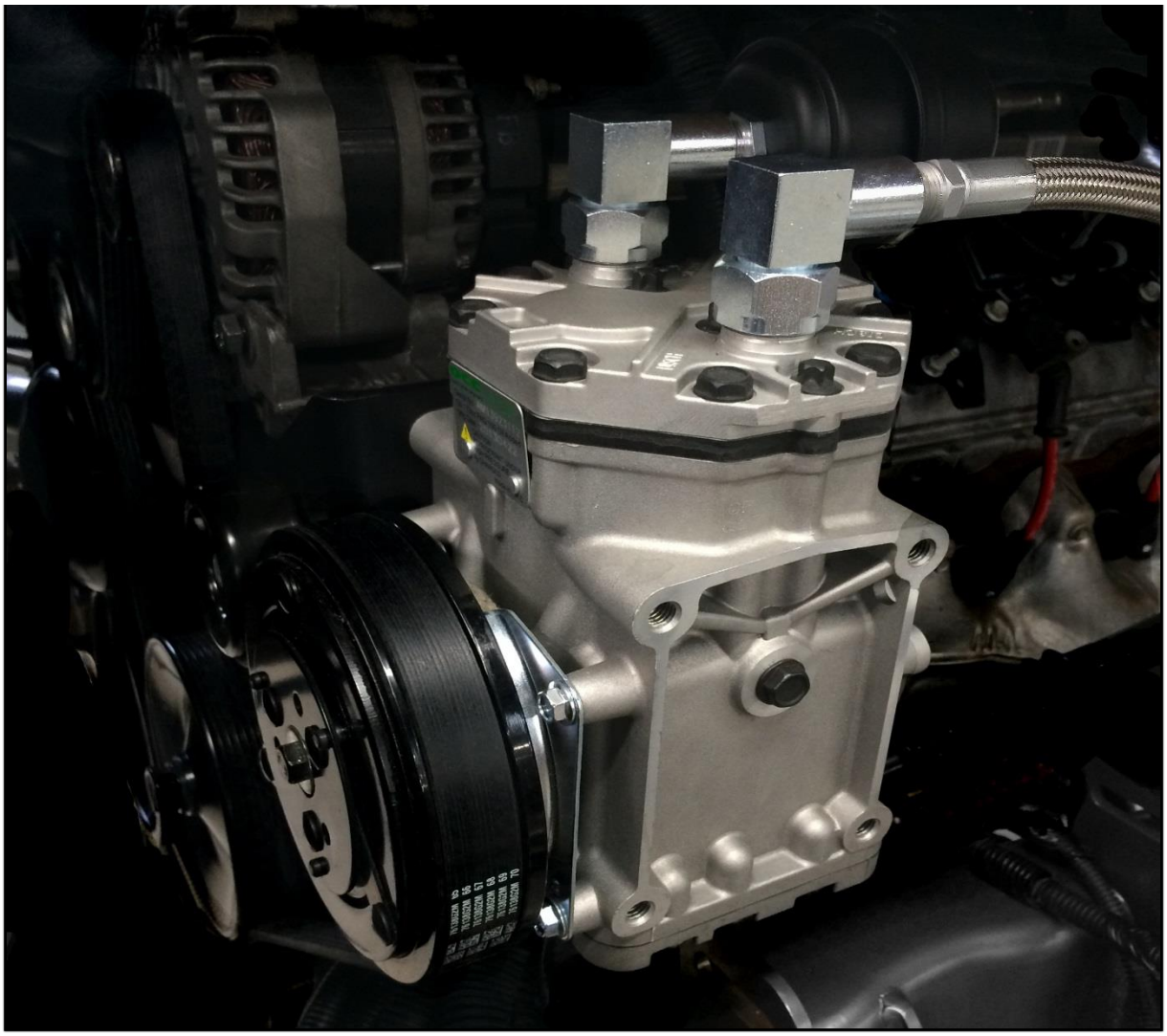
ENGINE DRIVEN COMPRESSOR --- GM 4.8, 5.3, 6.0, 6.2 ENGINES

(99-13 full-size GM trucks)

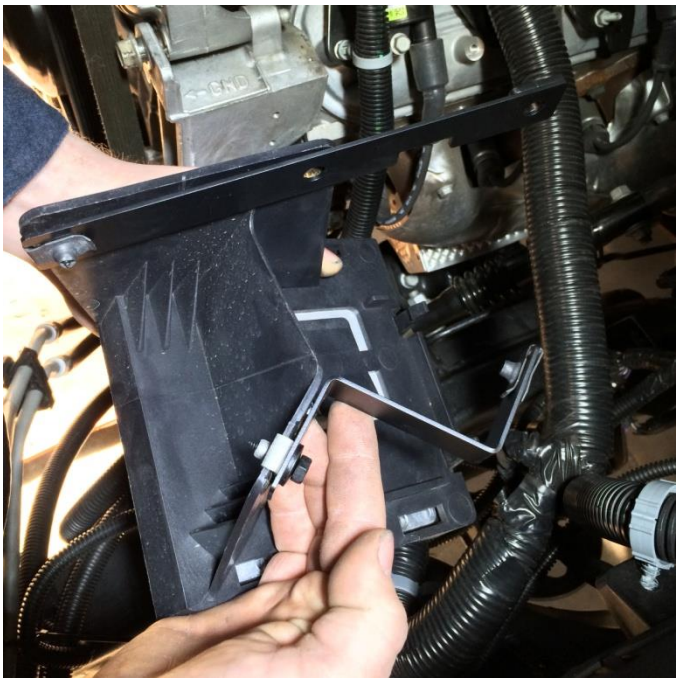
NOTE: Determine your proper belt length on **Step 23 and 24** before beginning the installation.



1 & 2

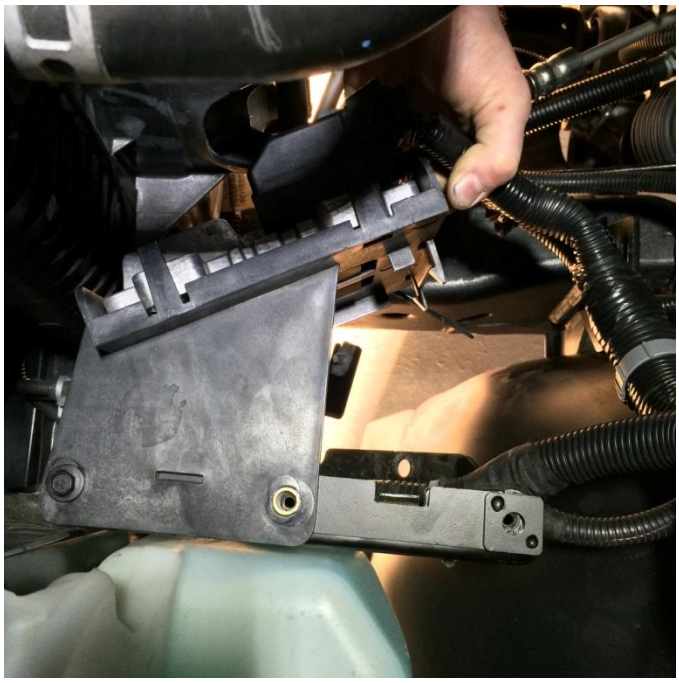
Installation of this system requires shifting the ECU towards the radiator support with the supplied hardware. If your application no longer has the ECU in the stock arrangement, then skip to **Step 7**. Otherwise, remove the battery (most 99-06 models) to access the tray beneath, then remove tray bolts and the tray itself. In the fenderwell, remove the bolts and the associated pushpins that will allow the front of the inner fender to be pulled back for temporary access.

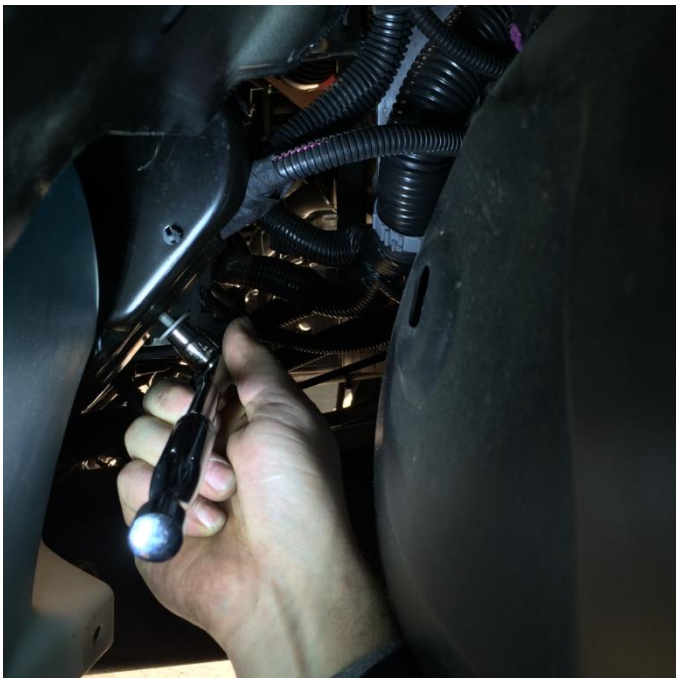
3 & 4



Remove the bolt holding the ECM bracket and loosely install the provided Z bracket and flat strap as shown using the supplied 6mm bolts.

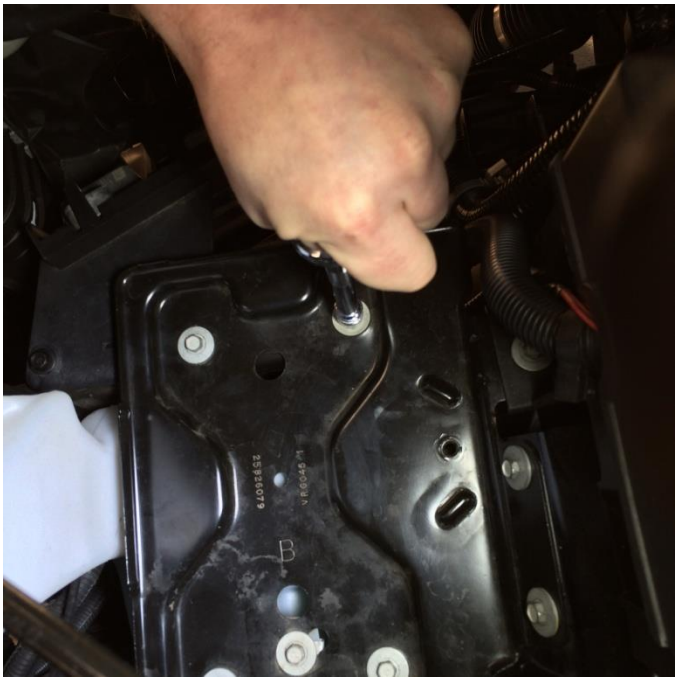
5 & 6





Line up the new strap and Z bracket in place over the existing battery tray holes and reinstall the ECM bracket bolt back into the bottom as shown.

7

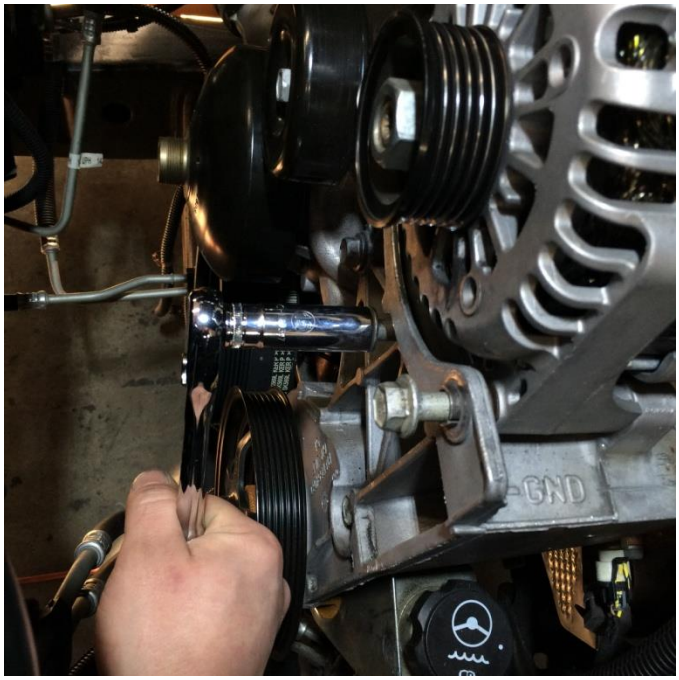


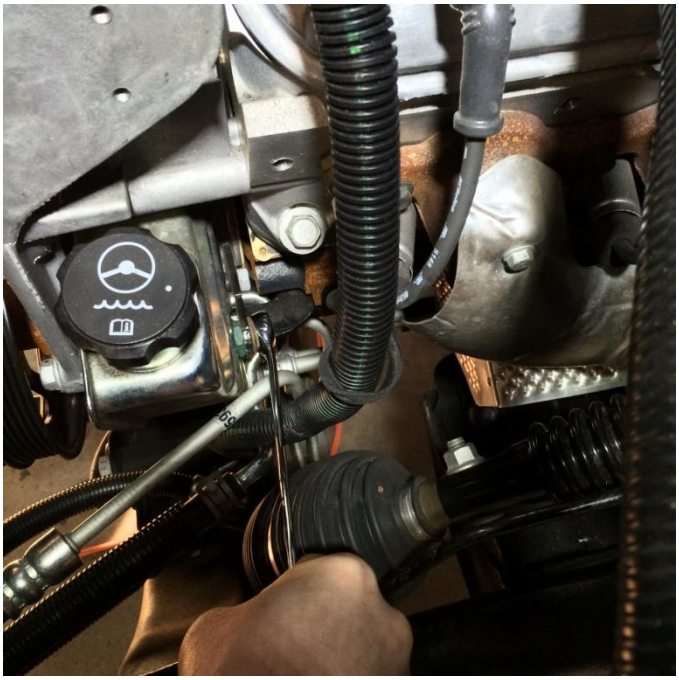
Tighten the tray bolts back through their original holes. The ECM has now been shifted to accommodate the engine driven compressor.

8 & 9

Use a wrench to rotate the tensioner pulley in a clockwise direction until the belt is loose enough to slip off.

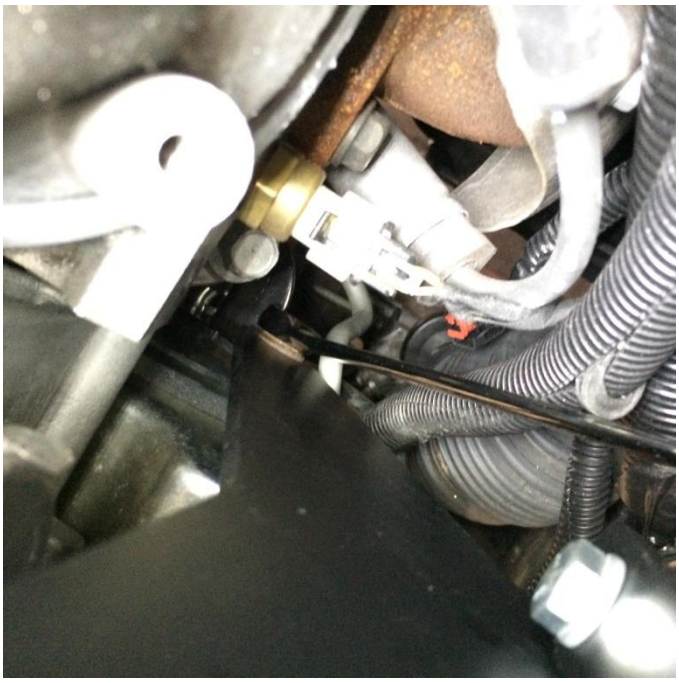
10 & 11





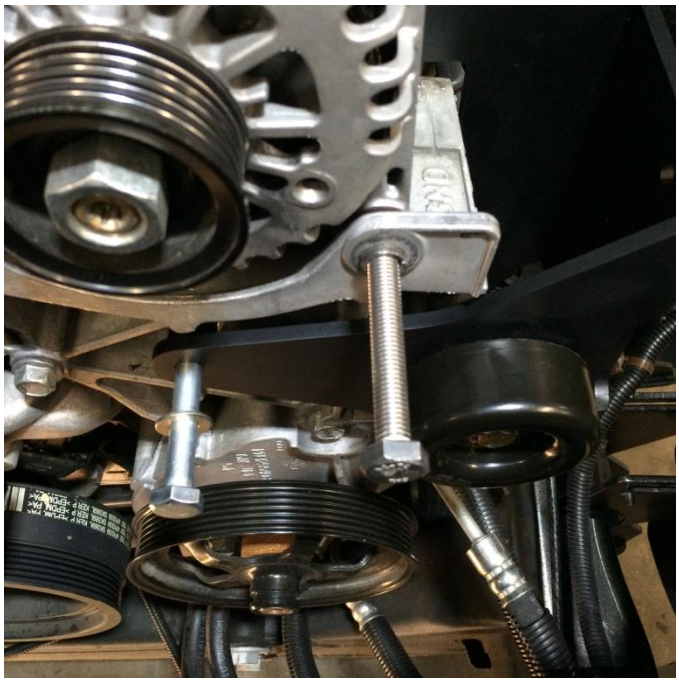
Remove the alternator bolt and accessory bracket bolts as shown. These will no longer be used. Remove the nut at the back of the power steering pump and retain. **NOTE:** Some models have a battery cable bracket attached in the 2 threaded holes shown in **Image 10**. This bracket can be angled by hand to sit behind the new compressor bracket.

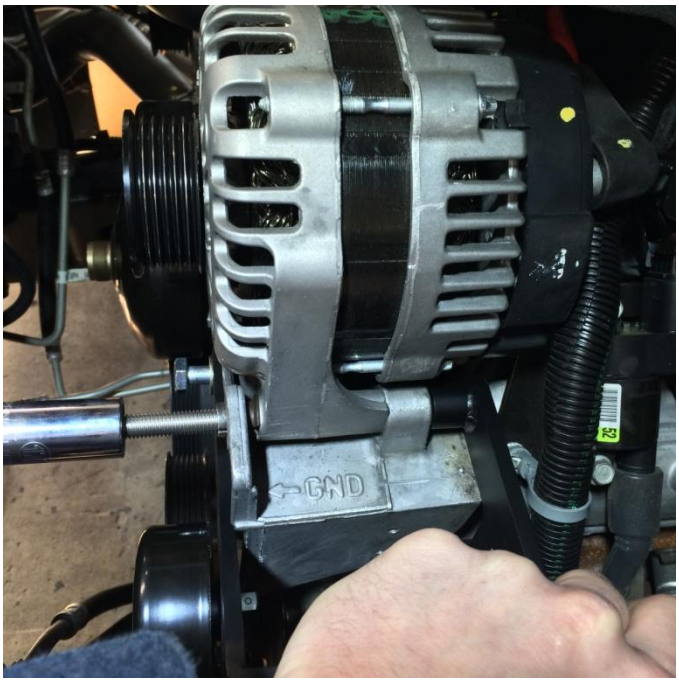
12 & 13



Use a medium strength thread locker (such as Loctite 243) on the nut and reinstall over the new compressor bracket. Start the threads but do not tighten at this time.

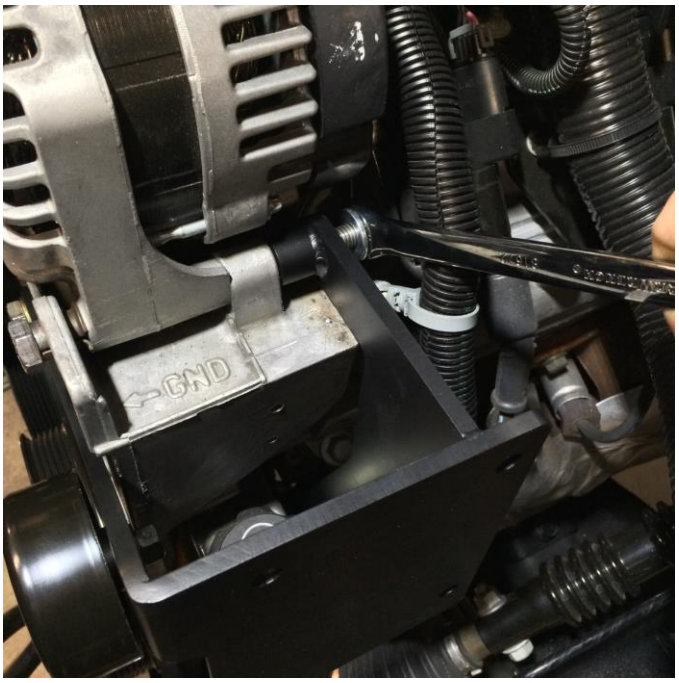
14 & 15





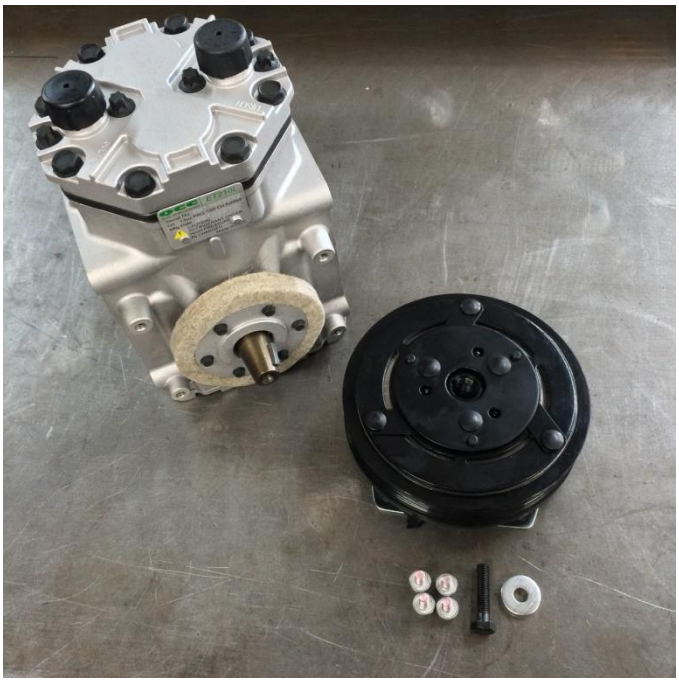
Start the threads of the partially threaded M10x130mm bolt and washer through the bracket. Install the fully threaded M10x130mm through the alternator and the bracket. It may be necessary to align the bracket with the bolt.

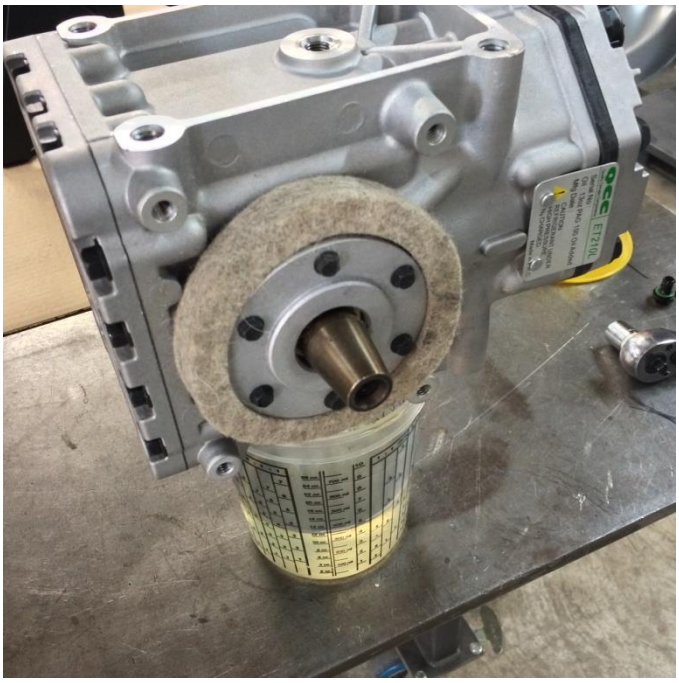
16



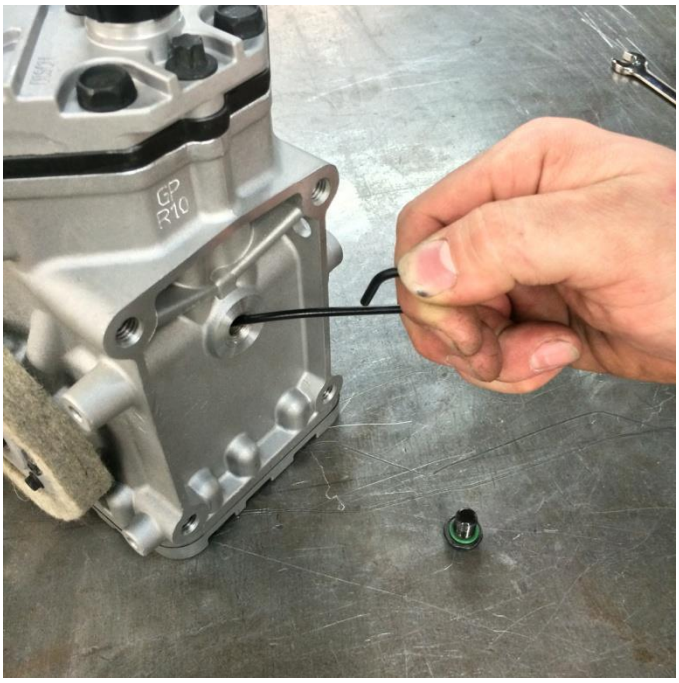
Tighten the fully threaded bolt and then install the M10 nut to sandwich the bracket. The partially threaded M10x130mm bolt should be tightened at this time along with the nut at the back of the power steering pump.

17 & 18





Standard and SLM compressors: Verify the new compressor has the half-moon shaped woodruff key installed in the crankshaft. **Standard Compressors only:** The compressors are shipped pre-filled with AC refrigerant oil, but it is recommended to run 12oz of SAE 30 non-detergent engine oil. Remove the bolts from each side of the compressor fill ports and drain the oil.



Standard compressors only: Put one bolt back in and fill with new oil (SAE 30 non-detergent) through the opposite port. It is recommended to use **Valvoline non-detergent SAE 30** (PN 822382)**. SLM compressors**: These are prepackaged with the proper synthetic compressor oil and should only require an oil level check using the supplied dipstick, however you should always confirm before installation. It is recommended to add **Amsoil PCK** or **Royal Purple Synfilm Recip 100** (PN 01513) as needed. Your oil level can be checked, and oil can be added using the side port. Refer to SLM compressor owner's manual for more information.

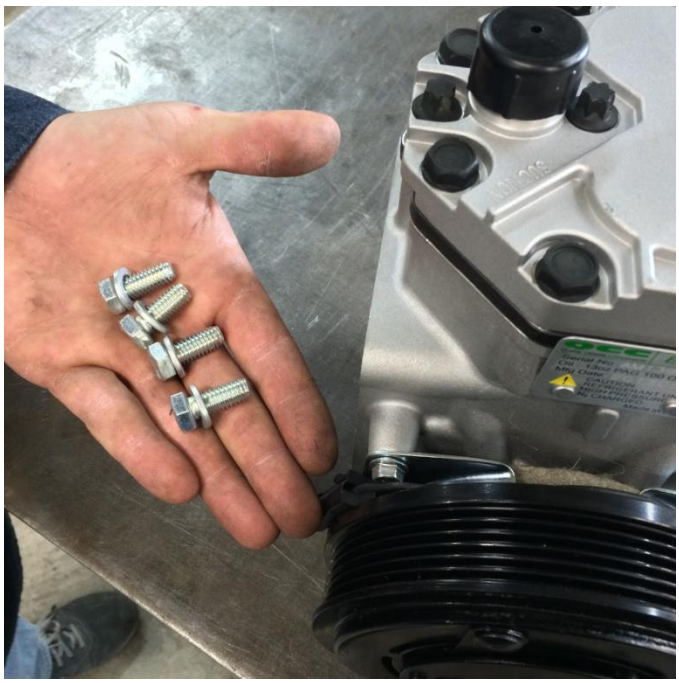
IMPORTANT:

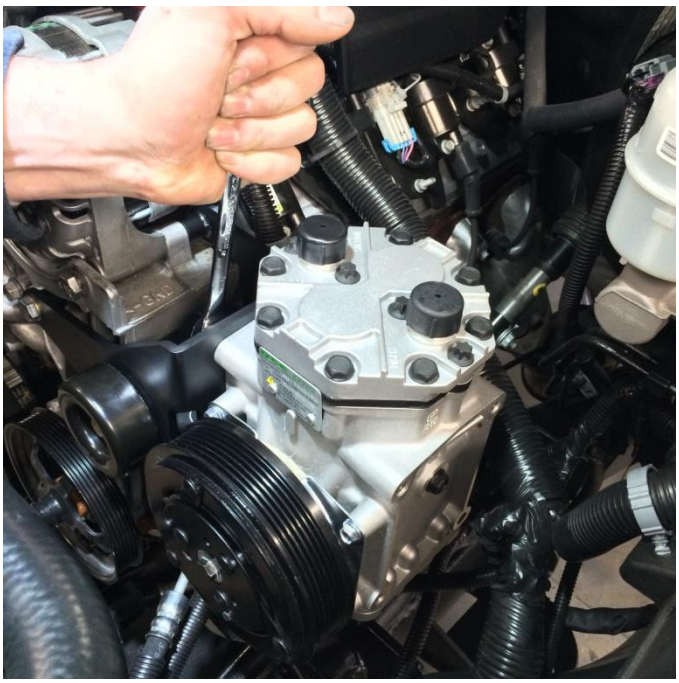
Check the oil level with your compressor on a level surface with the supplied dipstick touching the bottom "floor" of the compressor. Each mark on the dipstick represents 1oz of oil (sometimes it may be necessary to rotate the shaft on the compressor if the position of the crank assembly obstructs the path of the dipstick). **You should keep a maximum of 12oz and minimum of 8oz of oil in the compressor at all times. Once the compressor is installed, the oil level should be checked frequently to monitor consumption. This amount will depend on usage, and type of compressor. It should NEVER drop below 8oz. For standard compressors, check every week until you find your average use. For SLM compressors, check every month until you find your average use.**

21 & 22

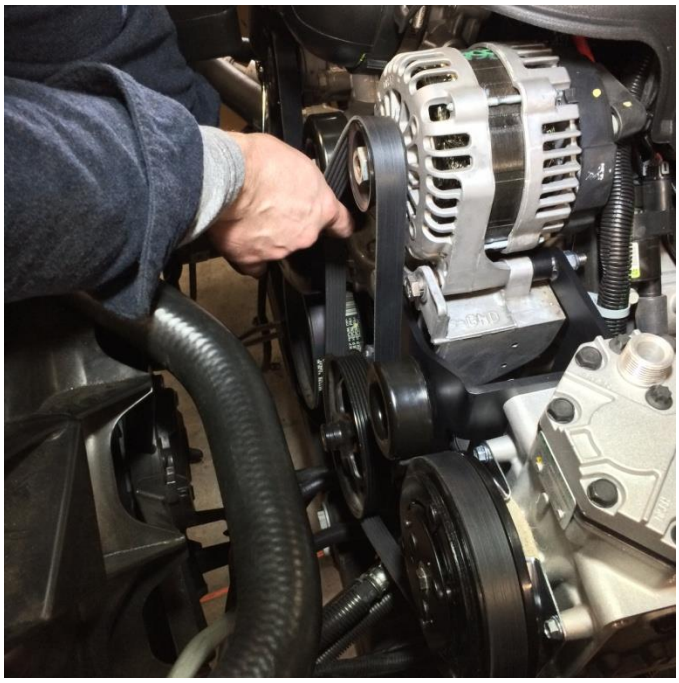
Install and tighten the 4 screws that attach the clutch. You can choose if you want the clutch wire oriented to the top or bottom. Install the 5/16 clutch retainer bolt and torque to **20-25ft lbs**. Never hammer the center bolt onto the snout. Let the screw pull it up until it seats.

23 & 24

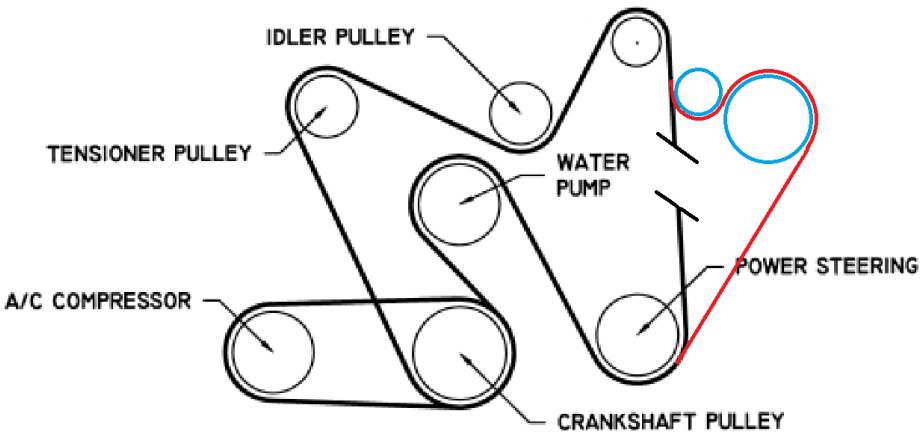




Four 3/8 bolts and lock washers are provided for mounting the compressor to the bracket. They should be tight but be careful not to strip the aluminum compressor body.



Choose a new belt using the chart below. Install the new belt per the routing diagram below. When sized correctly, it will barely slide on over the last pulley when the tensioner arm is completely locked to its side. Make sure to verify there is clearance all the way around the belt for free rotation, especially between the power steering pulley and new EDC pulley. It may be necessary to gently bend the power steering lines as shown in **Step 24**. **NOTE:** Continental Elite belts are preferred.

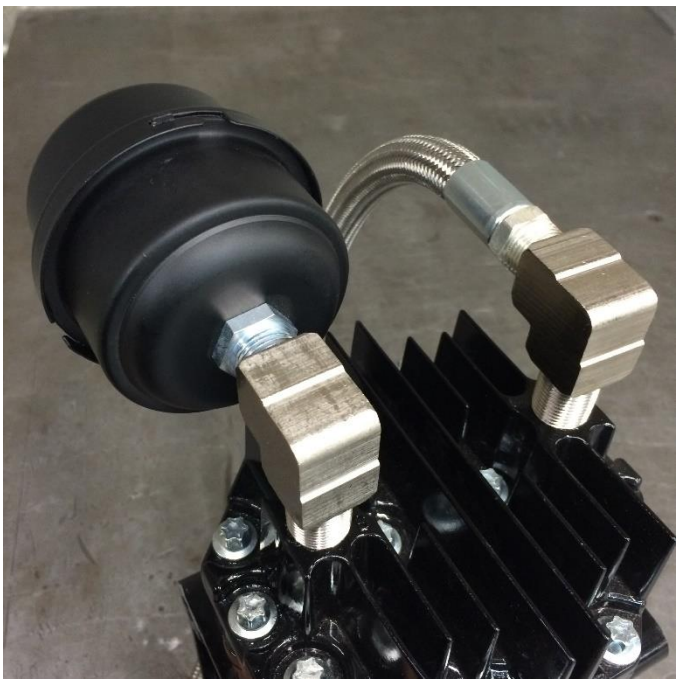


Model	**Alternator Size**	**Stock Length**	**New Length**	**Continental Part # (preferred)**	**Gates Part #**
99-07 classic	100-119 amp	92.9	111.63	4061110	K061110
99-07 classic	130+ amp	93.585	112.56	4061115	K061120
07-14	All	93.9	112.875	4061120	K061123

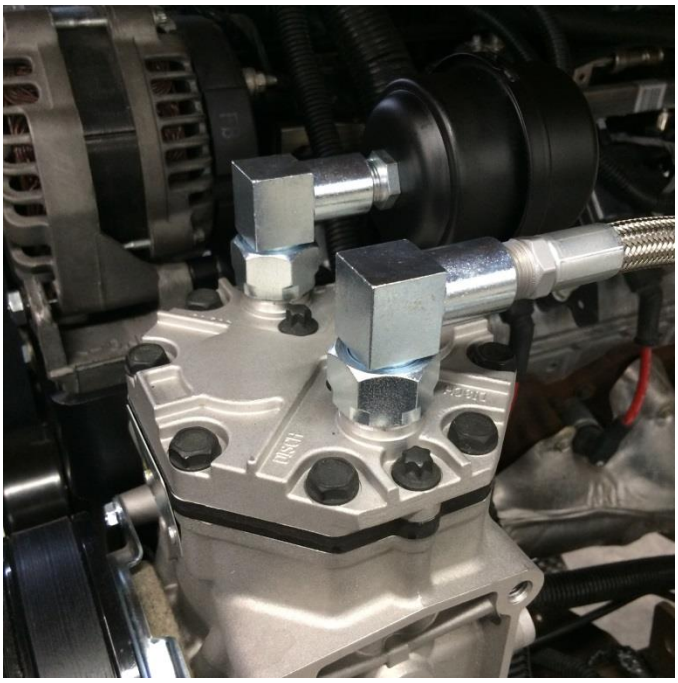
27 & 28

Standard compressors: Two 3/8 NPT head fittings are provided with the kit for direct connection to the intake filter and leader hose. Use a thread sealant such as Loctite 545 or Teflon tape to seal the connections to the filter and leader hose. Do not use sealant on the O-ring compressor threads. **SLM compressors:** Thread the provided 90-degree fittings into the head of the compressor using the provided nipples with Loctite 545 or Teflon on both sides of the nipples.

29 & 30



Standard compressors: Verify the O-rings are present in the bottom of each of the head fittings and install on the compressor. The filter/silencer will go on the port labeled “Suction”. **SLM compressors**: Install the filter/silencer into the suction port side, labeled with an “S”. Make sure to hold the 90 fitting with a wrench so as not to break the fitting or compressor head while tightening.



Now is a good time to start the engine and verify there are no problems with the serpentine drive, and that the compressor is not visually out of line. Check the witness mark made previously on the idler. It will be an indication if the belt is looser or tighter relative to the factory belt. Bear in mind that new belts will stretch slightly during their first few minutes of run-in. It is best to check after 3-5 minutes of run time. It is preferable for the marks to line up or be slightly tighter than the original belt. If it they are significantly different, then the belt length can be changed to the next size longer or shorter as needed.

Additional Information and Recommendations

Since everyone has different goals for their system, we cannot make exact recommendations for other parts you wish to use along with the EDC. However, here are some parts that are used in most installations:

- Check valve – like the 3/8 SMC (SMCNAK4000-N03) or ½ SMC (SMCNAK4000-N04) should be used just before a moisture/oil/water trap and keeps tank pressure from leaking back through the compressor. We offer both sizes on our website **HERE**.

- Moisture/oil/water trap – like the 3/8 SMC (SMCAF30-N03-2Z) or ½ SMC (SMCAF40-N04-2Z) should be used to catch residual oil and moisture before it enters the tank. Mount this as far away from the compressor as possible. Then mount a second unit on the outgoing port of the system before it enters a valve assembly (if using for air ride). We offer a 3/8 version on our website **HERE**, and a ½ version **HERE**.

- Blow-off safety valve – like the 225PSI version we have on our website **HERE**. This will act as a safety backup in the event that the system becomes over pressurized.

Additional Information and Recommendations (continued)

- Pressure switch/relay - we typically use a pressure switch to trigger the compressor on and off. It is preferred to use the lowest range which will still get the job done so that it will build up less heat and extend compressor life. DO NOT exceed 200 psi or damage to the compressor can occur. We offer a 110-145PSI and 145-175PSI pressure switch on our website **HERE**.

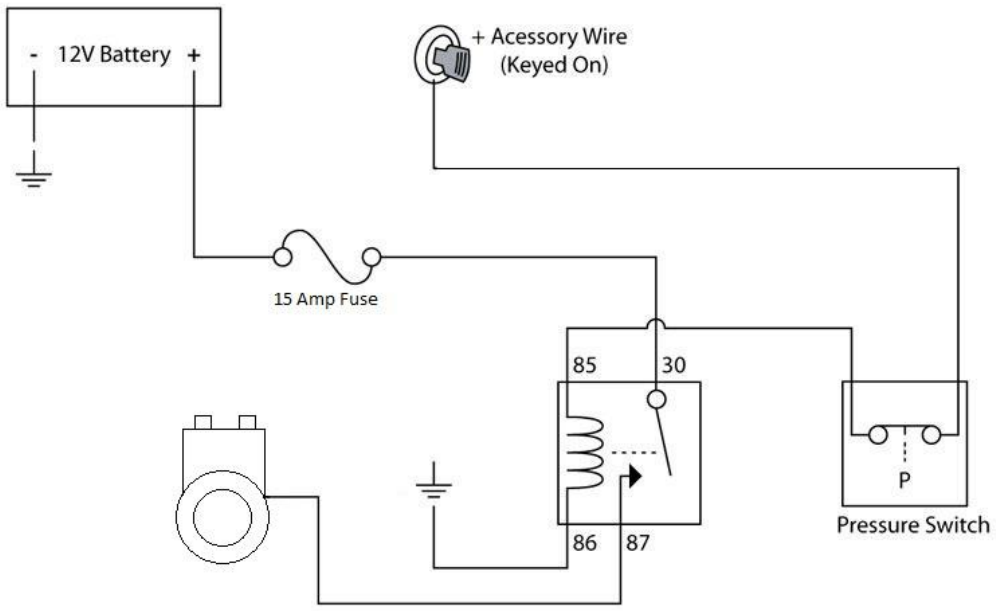
- Aluminum air tank – in a size suitable for your needs and space requirements. We typically use a 7–10-gallon tank which keeps up with most common air tools. We have 5–12-gallon tanks available on our website **HERE**.

- If you are installing our kit on a 2011+ 6.0L LS engine, please **CONTACT US** for additional installation notes specific to the 6.0L.

- **CHECK THE OIL OFTEN** until you become accustomed to the average consumption of the compressor. If the compressor is maintained properly, it should easily outlive your ownership of the vehicle. But, if the oil level is run regularly under 8oz, then just like any piston driven engine, internal failure will likely occur. Our commitment to the customer is that this bracket system fits well and works properly. IN NO WAY do we warranty the life of the pump itself. They have been used successfully as on-board air compressors on semis and autos for decades so if there are problems, it is very likely it was improperly maintained.

Wiring Diagram for EDC Systems Using a Pressure Switch

Below is an example of a wiring diagram that can be used if you're integrating a pressure switch into your onboard air setup. The pressure switch listed in the diagram is available on our website using the link above in our "Additional Information and Recommendations" section.



For any questions or suggestions please CONTACT US