



## ENGINE DRIVEN COMPRESSOR --- 2000-2007 Classic Duramax Engines (Horizontal)

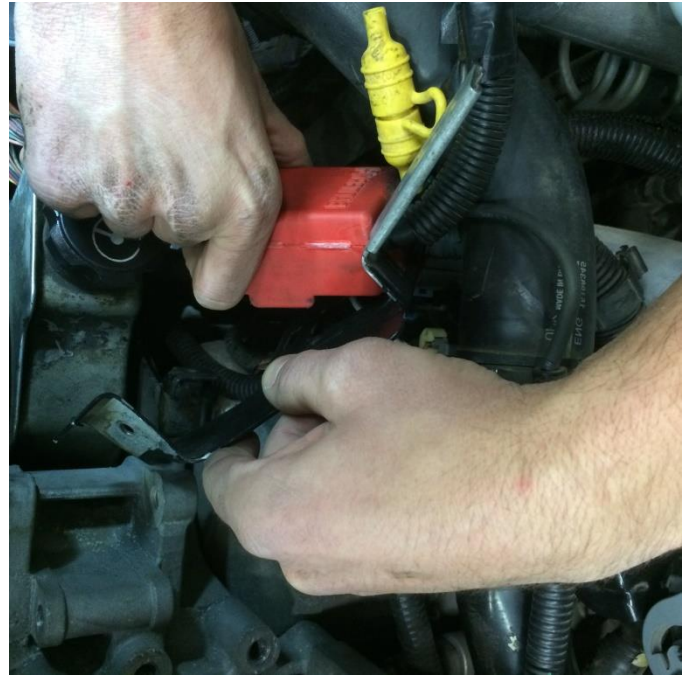
**NOTE:** If your model was equipped with dual alternators, the second will have to be removed for this installation. However, high output single alternators are available online and can take the place of a factory dual alternator setup.

**NOTE:** Determine your proper belt length on **Step 21** before beginning the installation.



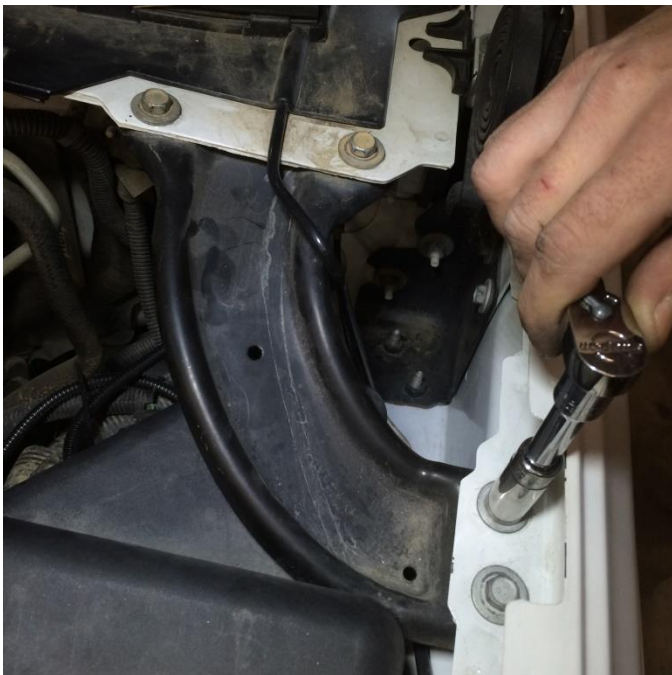
There are multiple positions in which the compressor can be mounted based on your application. If space allows, vertical mounting is preferred for the least amount of oil bypass. **SLM compressors can only be mounted vertically.** Please refer to the chart below to determine which position is to be used. These instructions describe the horizontal mounting. Please refer to the 2007-present instructions for vertical mounting.

| Model                  | Compressor Position | Front/Rear Position on Bracket | Notes   |
|------------------------|---------------------|--------------------------------|---|
| 2000-2007 Classic      | Horizontal          | Front                          |   |
| 2007-2010              | Vertical            | Front                          |   |
| 2011-16 w/ Factory EGR | Vertical            | Rear                           | Use inside 6 grooves of 8-groove clutch   |
| 2011-16 EGR Deleted    | Vertical            | Front                          |   |
| 2017-Present           | Vertical            | Front                          | Requires modification to resonator and hood-side intake plenum  |
| 4500/Kodiak/Topkick    | Either              | Front                          | Requires modification of engine bay components in both positions, please estimate your application prior to purchasing. |



1 & 2

Installation of this system requires shifting the battery junction box into a new position with the supplied hardware. Remove the screw holding the factory bracket and unclip the junction box from the bracket.



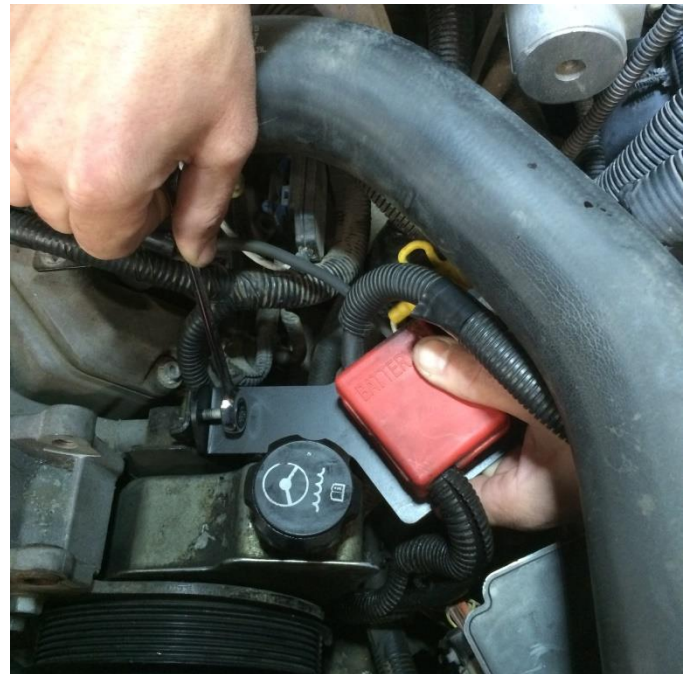
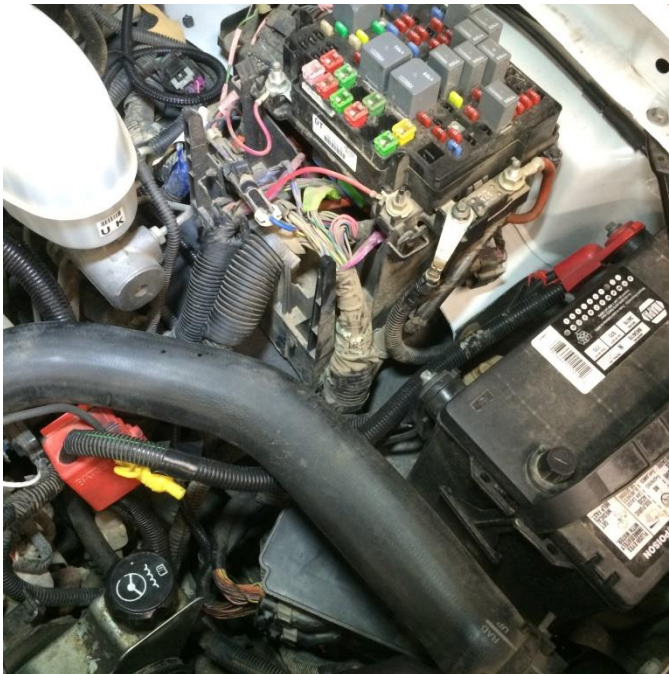
3 & 4

Remove the 4 screws holding the fender brace and unclip the fusebox cover from the 2 retainers towards the bottom.



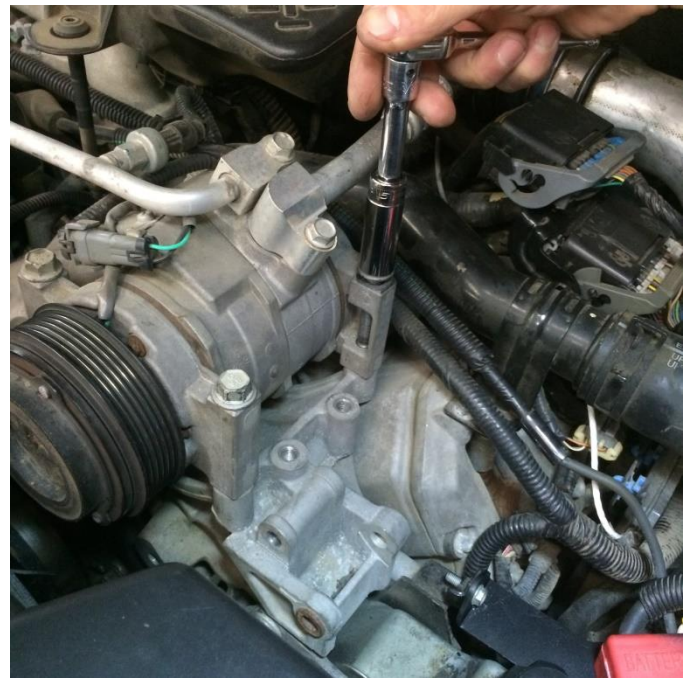
**5 & 6**

Disconnect the negative battery terminals on BOTH batteries (not shown) Then remove the fusebox power wire and the positive terminal on the battery as shown.



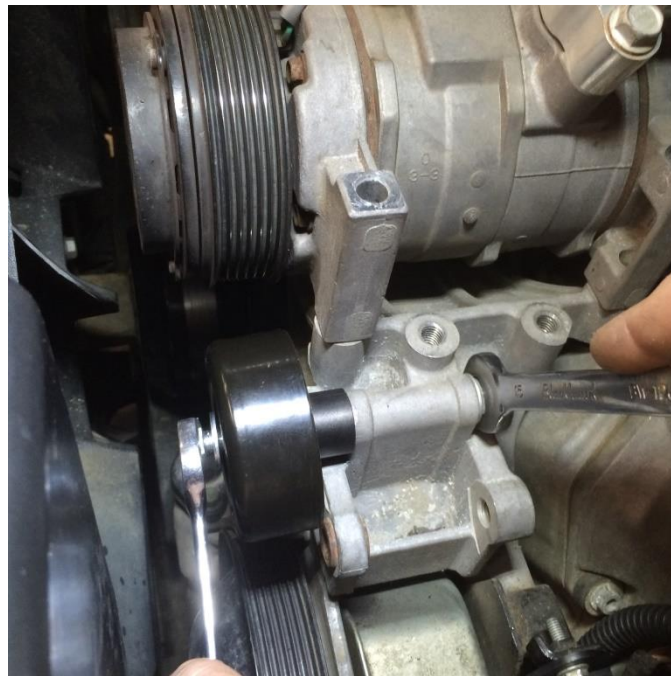
**7 & 8**

Route the positive battery lead underneath the upper radiator hose as shown and then reconnect to the battery and fusebox. The fusebox cover and lid can be put back on, and the fender brace reinstated. The junction box will snap into the new supplied bracket and bolt on with the original bolt.



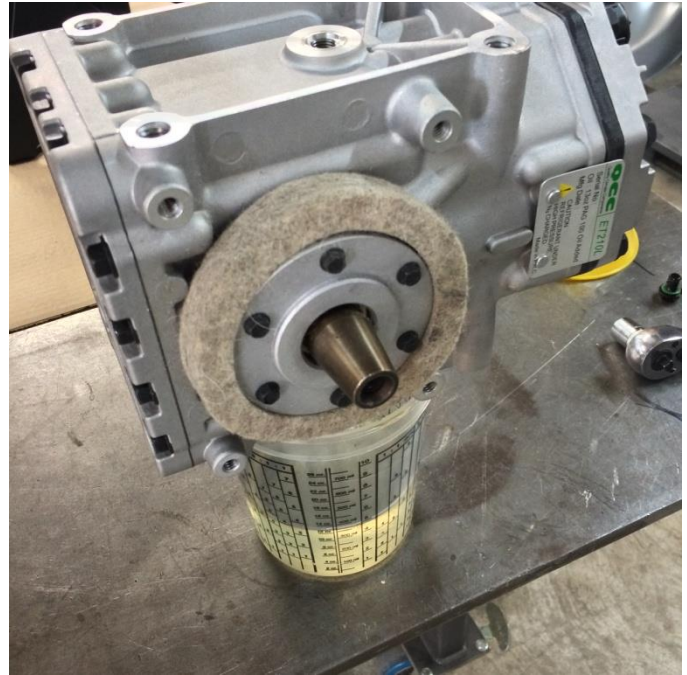
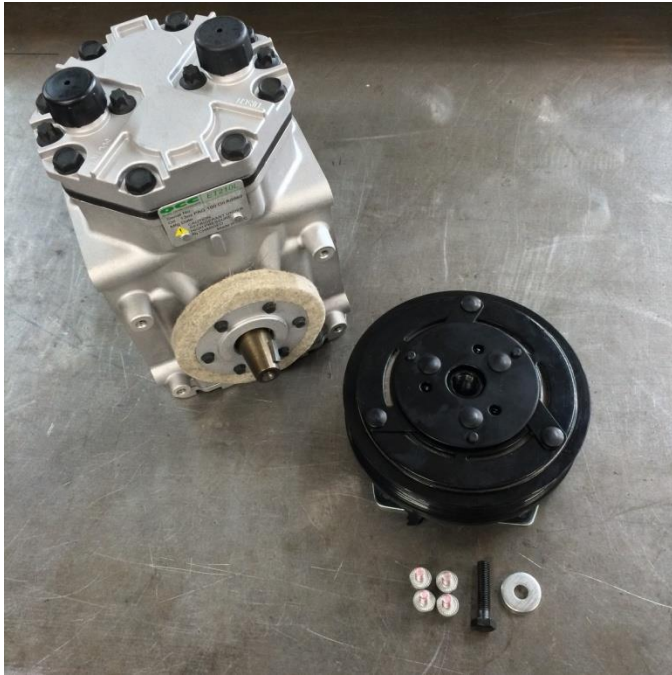
### 9 & 10

Rotate the idler pulley and remove the factory belt. A wrench or socket can be used for this, although a serpentine tool like the Gearwrench 3680d is very helpful. It can be measured at this time to determine the correct belt in **Step 24**. Remove the 2 bolts from the AC compressor. If your model was equipped with dual alternators, the second will have to be removed. High output single alternators are available online and can take the place of a factory dual alternator setup.



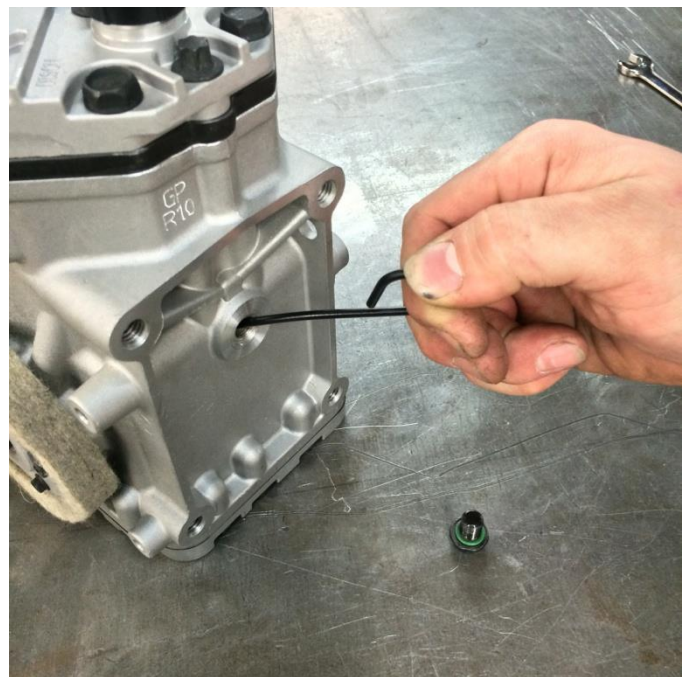
### 11

Install the idler pulley and spacer into the open boss of the factory bracket.



12 & 13

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



14 & 15

**Standard compressors only:** Put one plug back in and fill new oil thru the opposite port. It is recommended to use **Valvoline non-detergent SAE30 (PN 822382)**

**IMPORTANT:**

Check 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 1 oz. (Sometimes it’s 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 12 oz. and minimum of 8 oz. 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 8 oz. For Standard compressors check every 2 weeks until you find your average use. For SLM compressors check every 2 months until you find your average use.**



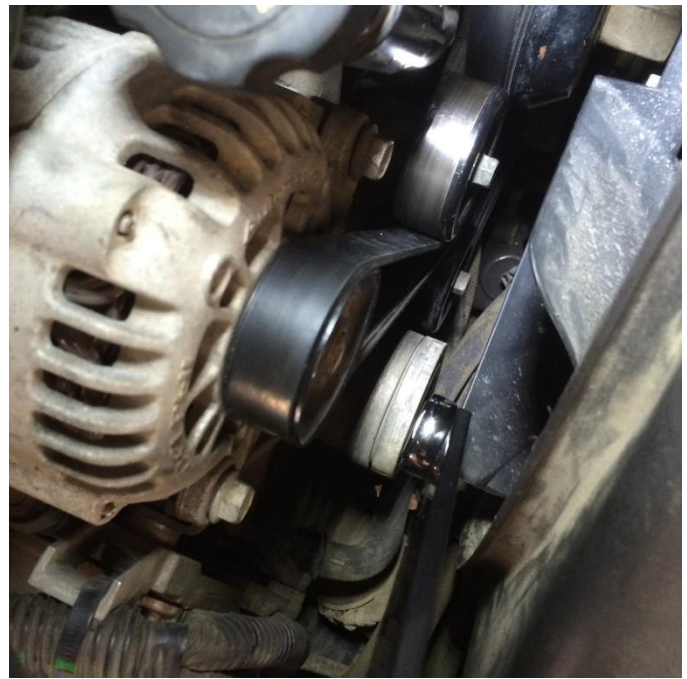
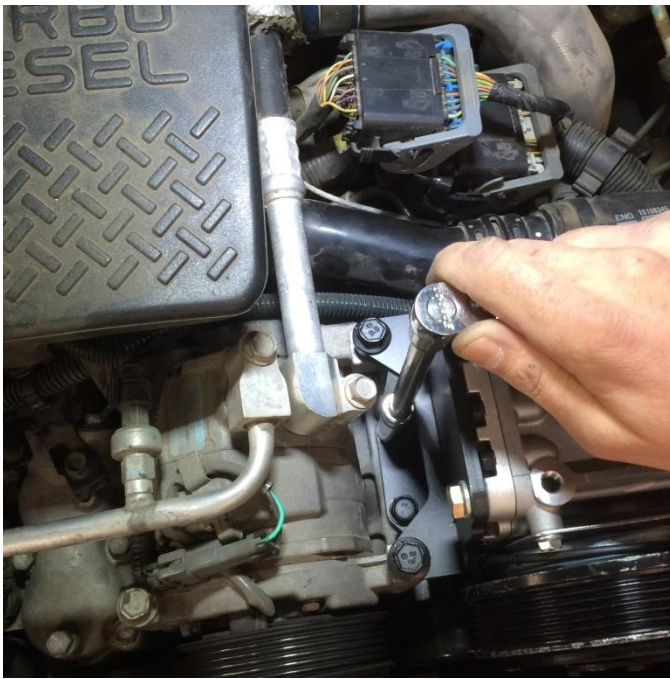
**16 & 17**

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 20-25 ft lbs. Never hammer the clutch onto the snout. Let the screw pull it up until it seats.



18 & 19

Bolt the compressor to the bracket using the supplied 3/8 bolts and lock-washers. The longer 1.5" length bolts will go into the bottom of the compressor (pic 21) and the shorter .875" length bolts will go into the side (pic 22).



20 & 21

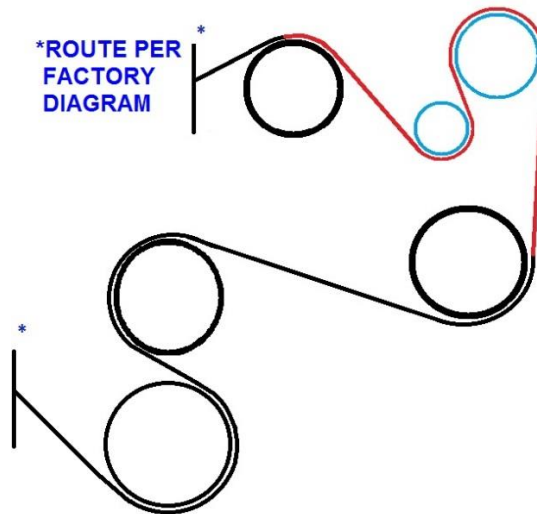
The compressor can now be secured using the 2 M10x25mm bolts thru the lower mount and the 2 M10x100mm bolts thru the AC mount. **For brackets with multiple mounting holes, use the holes that position the compressor closer to the rear of the vehicle.** Choose your belt and install it based off the information below.



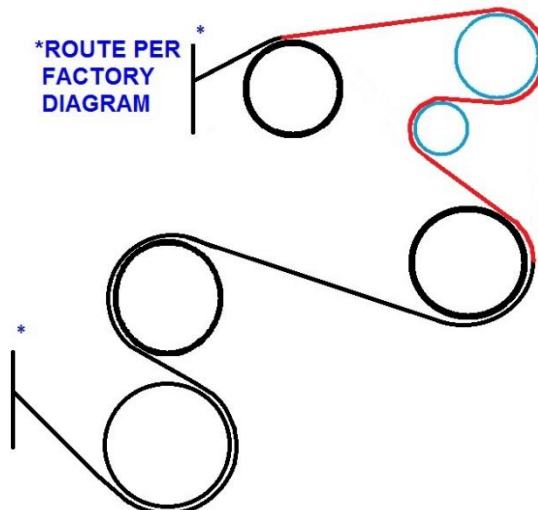
Your specific belt length will depend on your stock belt length, and is based off the chart below. (If you're removing a factory second alternator, you will need to find out the stock length for the single alternator version of your year model and accessories at a parts store or online.) Route the belt per the chart and diagrams below. The factory idler arm has 2 tension marks to indicate the high and low range of the factory belt. Ideally, you will want a new belt to fit towards the mark showing higher tension. However, they can run at the lower mark without adverse effects. **Please let us know if your application varies from the chart below. Email [eric@littleshopmfg.com](mailto:eric@littleshopmfg.com) with your year/make/model, factory belt length/new belt length, and routing.**

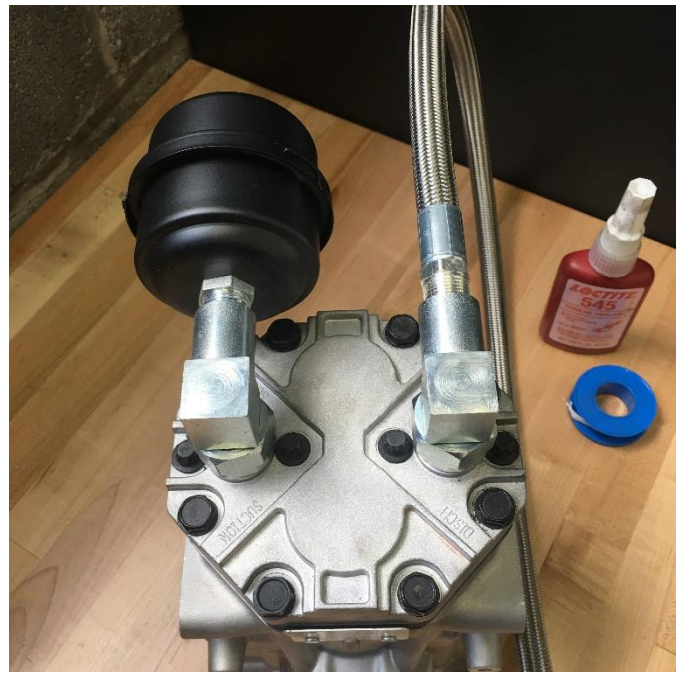
| <u>Stock Length</u> | <u>New Length</u> | <u>Belt Part Number</u>      | <u>Notes</u>         |
|---------------------|-------------------|------------------------------|----------------------|
| 111.29              | 131.732           | <a href="#">401967</a>       |                      |
| 112.37              | 132.441           | <a href="#">402065</a>       |                      |
| 117.72              | 137.875           | Gates K061373                |                      |
| 118.74              | 138.625           | Gates K061380                | Using Diagram 1 or 2 |
| 119.53              | 138.625           | Gates K061380                | Using Diagram 2      |
|                     | 139.58            | <a href="#">50-62000-61*</a> | Using Diagram 1      |

**Diagram 1**



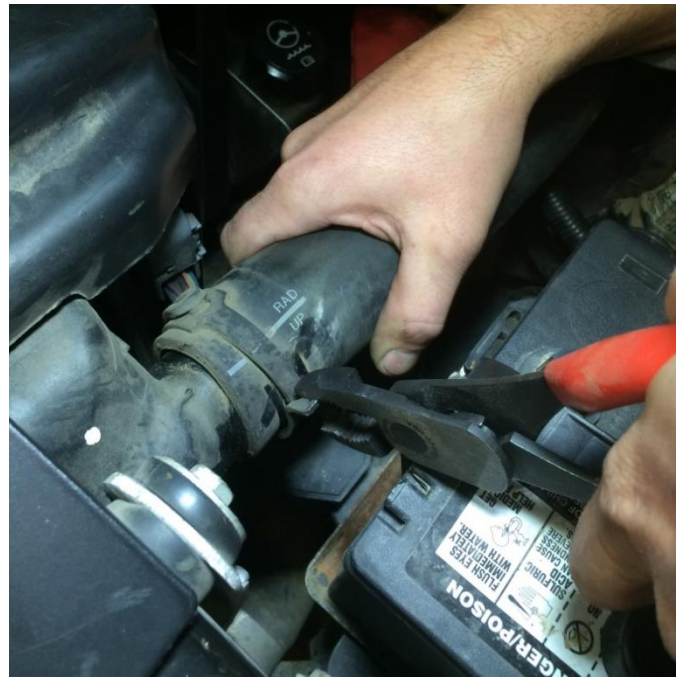
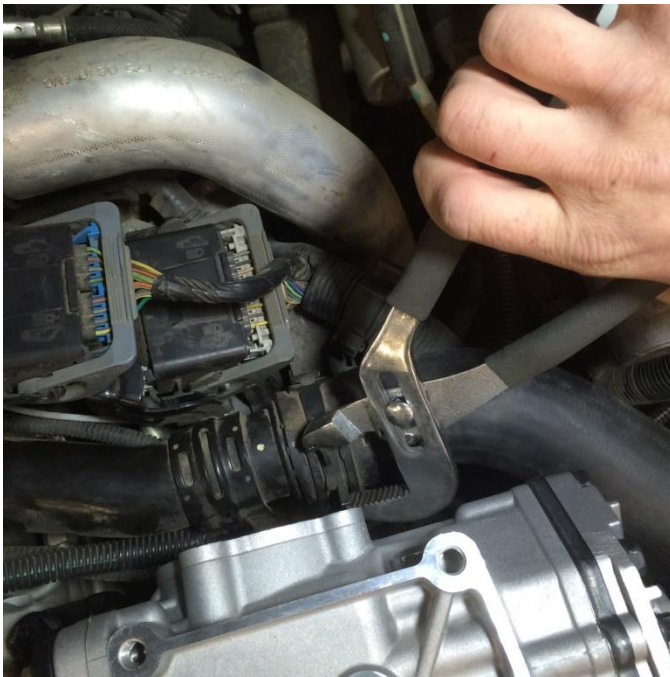
**Diagram 2** - Alternate belt routing for 2011-present models that need clearance around the power steering reservoir. This routing is slightly shorter than Diagram 1, so the same belt length will be effectively looser.





### 22 & 23

**Standard compressors:** Two head fittings are provided with the kit. They are threaded 3/8 NPT female 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 hose only. Do not use anything on the o-ring compressor threads. verify the o-rings are present in the bottoms of each of the head fittings and install on the compressor. The filter/silencer will be on the top port labeled "Suction"



### 24 & 25

Remove tension from the upper radiator hose clamps. They can be locked into themselves in the open position. Break the seals and slide the hose out approximately 1/4" on each water neck



## 26 & 27

Check clearance at the head fittings and behind the hose to the master cylinder. The hose needs to be manipulated until it has the most average space to any object. 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.

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

- Oil/water trap – like 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 to do the most good. Then mount a second unit on the outgoing port of the system before it enters a valve assembly (if using for air ride).
- Check valve – like the 3/8 SMC (SMCNAK4000-N03) and the ½ SMC (SMCNAK4000-N04) should be used just before the trap and keeps tank pressure from leaking back through the compressor
- Pressure switch/relay – we usually use a pressure switch to trigger the compressor on and off. It's preferred to use the lowest range which will still get the job done, so that it will build up less heat and live longer. Do not exceed 200 psi.
- **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 8 oz. 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 it has problems, it's very likely it was improperly maintained.

Thank you for your purchase and we appreciate your business! For questions or suggestions, email [orders@littleshopmfg.com](mailto:orders@littleshopmfg.com)