



## ENGINE DRIVEN COMPRESSOR --- 2007-Present Duramax Engines (Vertical)

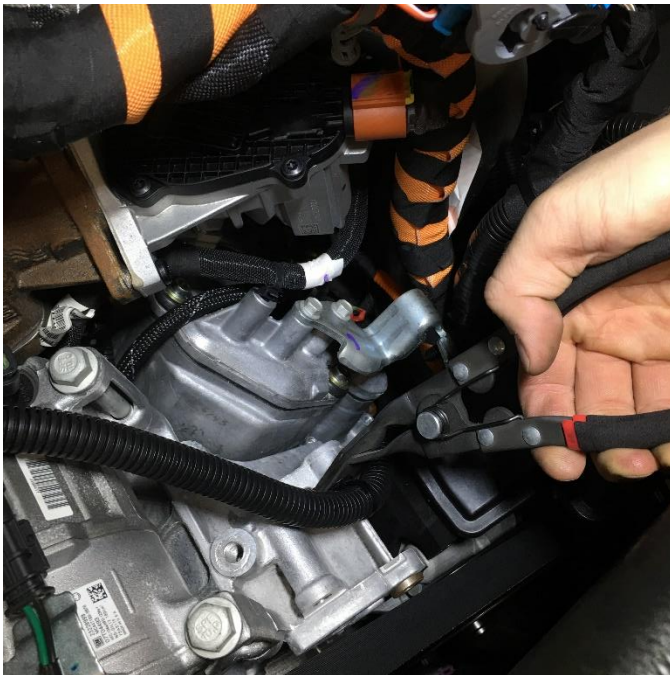
**NOTE:** If your model was equipped with dual alternators, the second will have to be removed for this installation. However, high output single alternators are available online and can take the place of a factory dual alternator setup.

**NOTE:** Determine your proper belt length on **Step 19** 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 vertical mounting. Please refer to the 2000-2007 Classic instructions for horizontal mounting.

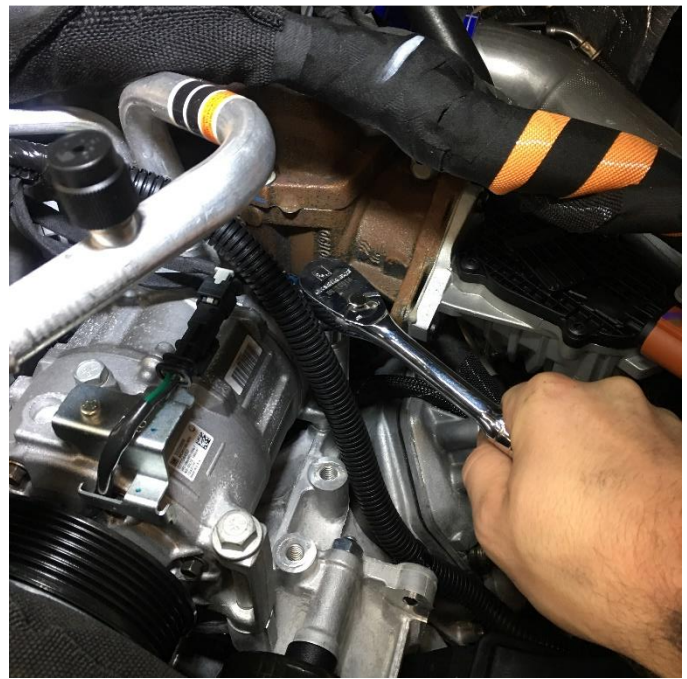
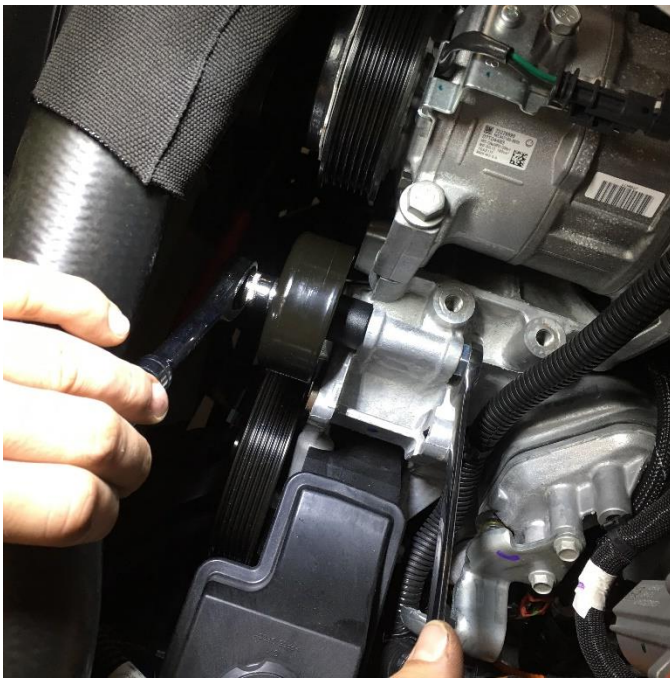
Model	Compressor Position	Front/Rear Position on Bracket	Notes
2000-2007 Classic	Horizontal	Front	
2007-2010	Vertical	Front	
2011-16 w/ Factory EGR	Vertical	Rear	Use inside 6 grooves of 8-groove clutch
2011-16 EGR Deleted	Vertical	Front	
2017-Present	Vertical	Front	Requires modification to resonator 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**

Remove the factory wiring loom from the front of the cast mounting ear and reinstall it into the rear of the same location as shown. Remove the factory belt.





**3 & 4**

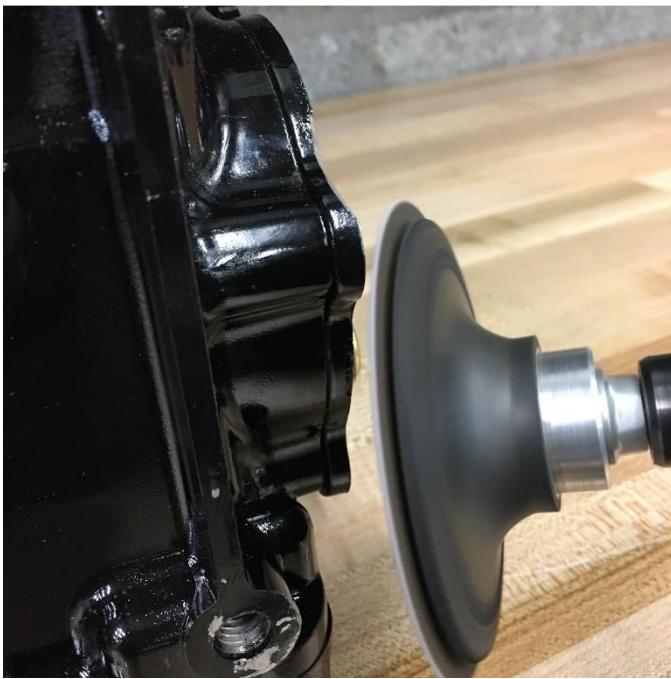
Install the supplied M10x1.5 100mm bolt through the idler pulley, machined spacer, through the factory accessory bracket, and secure with the included compression nut. Remove the two factory AC bolts on the driver side.



**5 & 6**

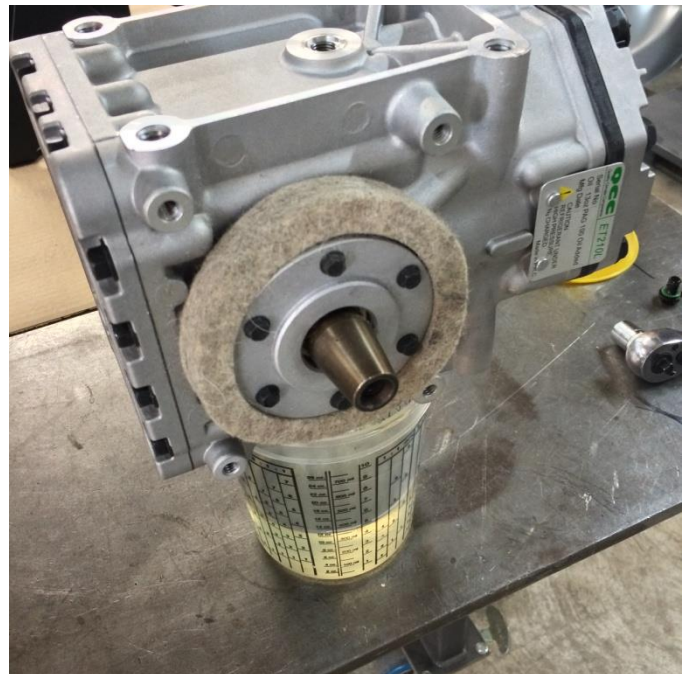
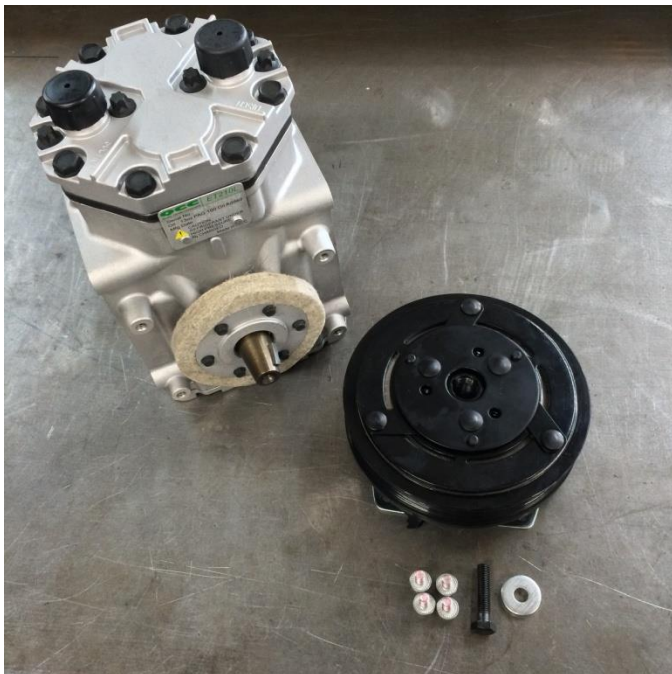
For 2014+ models with the factory EGR intact, use a 50 grit sanding pad to flatten the EGR mounting boss as shown.





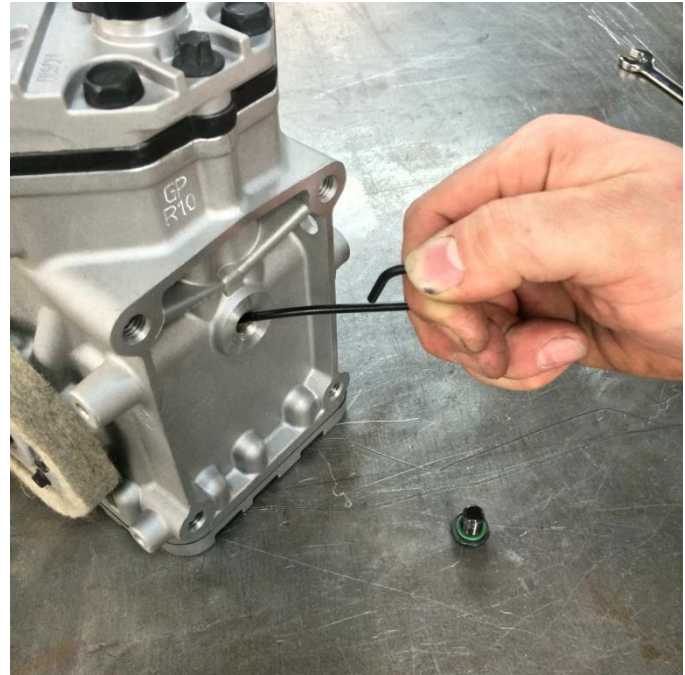
### 7 & 8

On the compressor body, lightly sand the corner of the rear cover plate as shown. This is to make clearance to the orange EGR electrical plug.



### 9 & 10

**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 packaged pre-filled with AC refrigerant oil but it is recommended to run 12 oz of SAE 30 non-detergent oil. Remove the screws from each side of the compressor fill ports and drain the oil.



## 11 & 12

**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)** **SLM compressors:** These are prepackaged with the proper synthetic compressor oil. It is recommended to add **Amsoil PCK or Royal Purple Synfilm Recip 100 (PN 01513)** as used. **NOTE:** there is a sight glass at the back of the compressor for viewing oil level but we recommend using a dipstick through the side port to keep the compressor at 10-12 oz of oil at all times. Refer to SLM compressor owner's manual for more information.

### **IMPORTANT:**

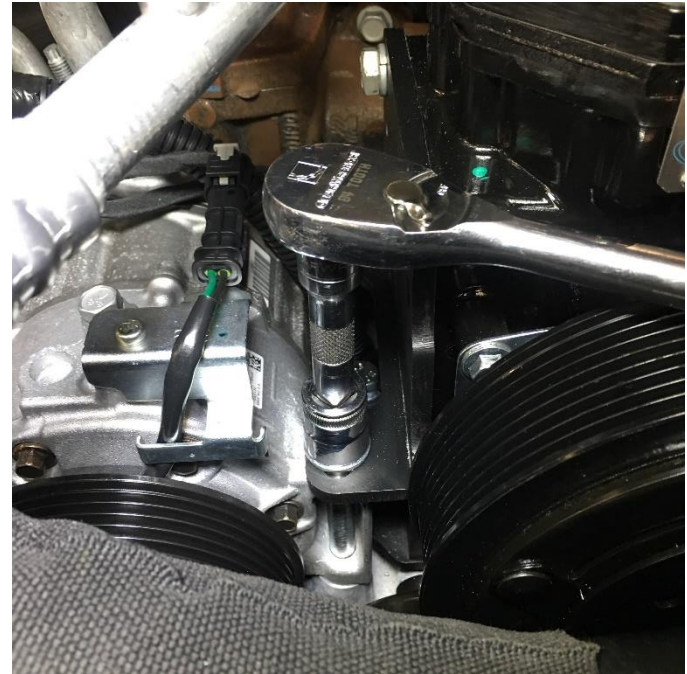
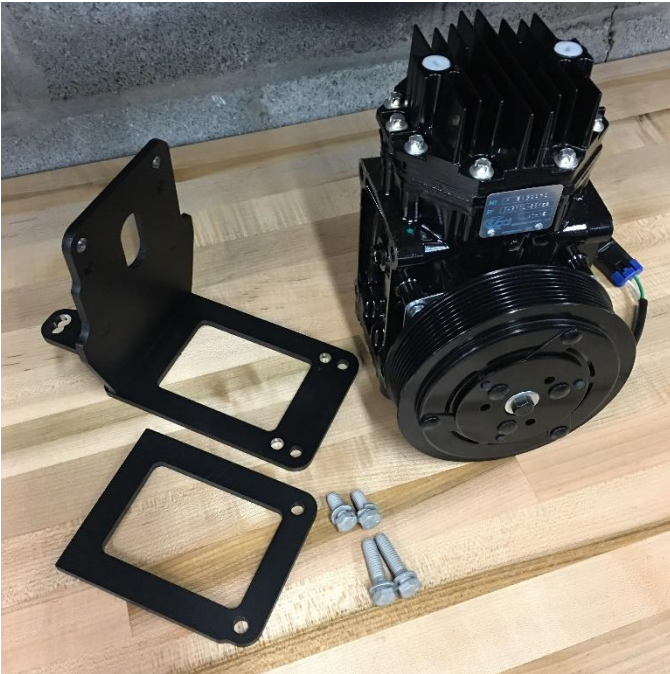
Check oil level with your compressor sittings level using the supplied dipstick touching the bottom "floor" of the compressor. Each mark on the dipstick represents 1 oz. (Sometimes it's necessary to rotate the shaft on the compressor if the position of the crank assembly obstructs the path of the dipstick) **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.**





### 13 & 14

Tighten the 4 screws that attach the clutch. You can choose if you want the clutch wiring oriented to the top or bottom. For 6-groove clutches, the clutch is self-grounding and the input wire is 12V. For 8-groove clutches, the white wire is ground and the green wire is 12V. Install the clutch retainer bolt and torque to 20-25 ft lbs. (An AC clutch tool such as Mastercool 90499 is best for holding it during installation). Never hammer the clutch onto the snout. Let the screw pull it up until it seats.



### 15 & 16

Bolt the compressor to the bracket using the supplied 3/8 bolts and lock-washers. The longer 1.5" length bolts will go through the supplied spacer and into the bottom of the compressor. The shorter .875" length bolts will go into the side of the compressor. The compressor can now be bolted onto the engine using two M10 100mm bolts and two M10 25mm bolts. **For 8-groove clutches, use the holes that position the compressor closer to the front of the vehicle. For 6-groove clutches, use the holes that position the compressor closer to the rear of the vehicle**



**17 & 18**

It may be wise to tape the 25mm bolts to the socket as shown in order to get them started. Once the compressor is secured, confirm clearance from the back of the compressor to the EGR body and plug. If it is touching, unbolt the compressor and remove material where necessary to make clearance.

**19**

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

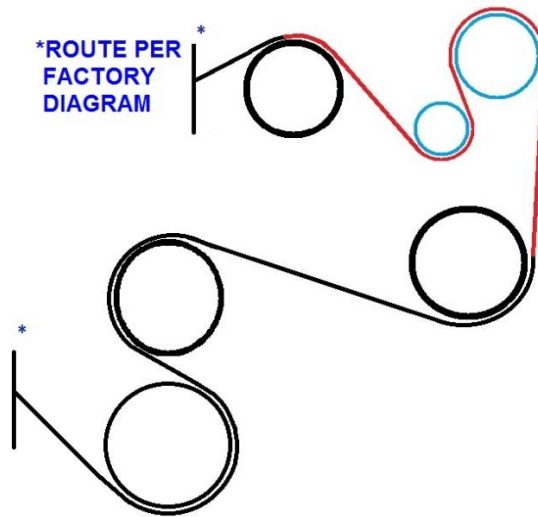
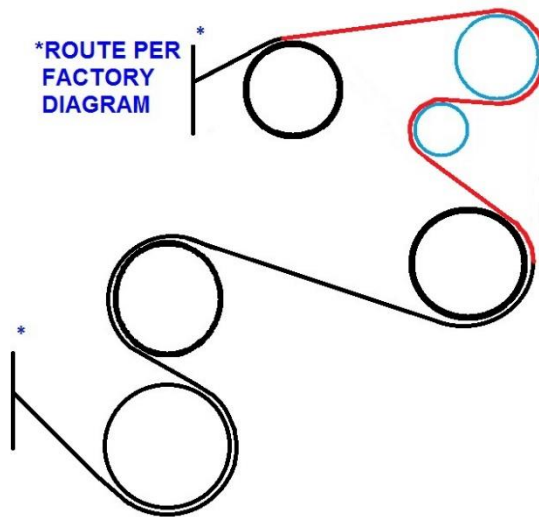


Diagram 2 - Alternate belt routing for 2011-present models that need clearance around the power steering reservoir. This routing is slightly shorter than Diagram 1, so the same belt length will be effectively looser.

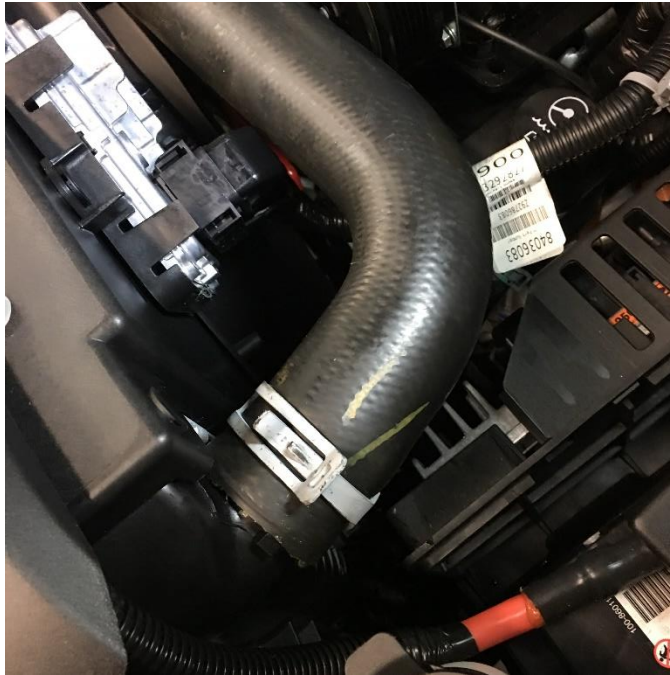






**20 & 21**

On 2011 to present models, remove tension from the upper radiator hose clamp and slide it to the end of the radiator neck underneath. Using the clamp as a guide, split the hose perpendicularly then trace the circumference. You'll be removing approximately 1.25" of the hose end.



**22 & 23**

After it is separated, the hose can be pushed back against the radiator and the clamp returned to its normal position. Check the backside of the hose for clearance to the clutch. If necessary, make more space in this way as needed.



24 & 25

**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 port labeled "Suction"



26 & 27

**SLM compressors:** Both ports will get the included 3/8 NPT street elbows using PTFE tape or Loctite 545 sealant. The suction port (labeled with an "S" on top) will get an additional 3/8 adapter and then the included filter/silencer. The discharge side port will get the included leader hose threaded into the street elbow.



**Note: A wiring junction relocation bracket may be included in the kit but will not be used for 2007+ applications.**

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)**