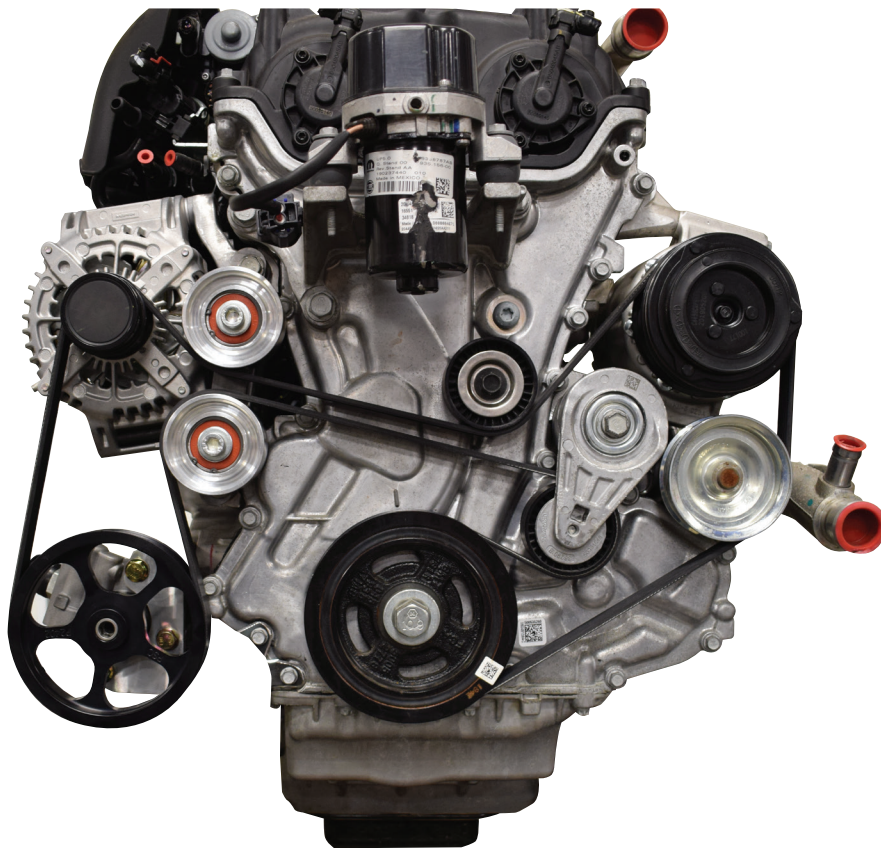




**PK1881 - JL 2.0L 2019-20**

**POWER STEERING CONVERSION KIT**

**(NON-ETORQUE ENGINE ONLY)**



**INSTALLATION GUIDE**

# **PSC Jeep JL/JT Power Steering Pump Retrofit Kit Installation**

## **General Information**

The PSC power steering pump retrofit kit is designed to convert the factory JL/JT electric power steering pump system to a conventional belt driven power steering pump system. You will need to delete the power steering mode from the ECU. This will require the purchase of an aftermarket programmer. We use and sell the Tazer programmer (<https://zautomotive.com/product/tazer-jl/>) to do this. It's available through PSC and most Jeep aftermarket part dealers. Other than the programmer, all parts needed are provided in the kit.

This kit can be installed in a home garage, but if you have doubts let a professional installer do the job. If you are installing our Big Bore XD steering gear also, we highly recommend a second person to help with the steering gear installation. It weighs about 50lbs and is difficult to locate and thread in the mount bolts by yourself.

You will need a 46mm socket and a torque wrench that will allow you to torque the pitman arm nut to 225 foot pounds. Other than that regular hand tools are all that's needed.

If you have any questions regarding installation contact us at PSC and ask for tech (817-270-0102).

**[www.pscmotorsports.com](http://www.pscmotorsports.com)**



# PK1881 PARTS LIST

## Parts Included

- (1) - SP43332S-2402 - P/S Pump with Pulley
- (1) - FL-SWE715-4PAK - Swepco P/S Fluid (4qts)
- (1) - BT60960 - Serpentine Belt
- (1) - CK200 - P/S Cooler Assembly
- (1) - SR351 - Fill Reservoir
- (1) - SR300B - Frame Mount Reservoir
- (1) - SR-VT - Anti-Splash Vent
- (1) - SR-VLK - Reservoir Vent Tubing
- (1) - 12.13 - P/S Pump Bracket
- (1) - 12.14 - Idler Pulley Bracket
- (2) - PP4100 - Idler Pulley
- (2) - 15.201 - Idler Pulley Spacer
- (1) - H-THS-10ML - Thread and Fitting Sealant

## Hose and Fittings

- (1) - HA-L100 - Hose-Cooler to Reservoir
- (1) - HA-L101 - Hose-Gearbox to Cooler
- (1) - HA-L113 - Hose-P/S Pump to Reservoir
- (1) - HA-L103 - Hose-Fill Reservoir to Frame Mount Reservoir
- (1) - HA-L104 - Hose-Frame Mount Reservoir to Drain
- (1) - HA-H200 - Hose-High PSI gearbox to P/S pump
- (1) - SF01-HF - Fitting - Gearbox Pressure
- (1) - SF11 - Fitting - Gearbox Return

## Bolts and Fastening Hardware

- (1) - FMHHDF-6x1.0-25 - Bolt - Hex 6mm x 25mm
- (1) - FMNL-6-1.0 - Nyloc Nut 6mm
- (1) - FMHHD-8x1.25-100 - Bolt - Hex 8mm x 100mm (May not be used in this kit)
- (4) - FMHHDF-8x1.25-30 - Bolt - Sockethead Flange - 8mm x 30mm
- (1) - FMNL-8x1.25 - Nyloc Nut 8mm
- (2) - FMW-8 - Flat Washer 8mm
- (2) - FMSHCS-10x1.5-45 - Bolt - Socket Head 10mm x 45mm
- (1) - FMSHCS-10x1.5-70 - Bolt - Socket Head 10mm x 70mm
- (1) - FMSHCS-10x1.5-90 - Bolt - Socket Head 10mm x 90mm
- (2) - FMW-10HD - Flat Washer - HD 10mm
- (1) - FSHHD-1/4-20x1 - Bolt - Hex 1/4" x 1"
- (2) - FSHHD-1/4-20X1.5 - Bolt - Hex 1/4" x 1.5"
- (3) - FSNL-1/4-20 - Nyloc Nut - 1/4"
- (6) - FSW-1/4 SAE - Flat Washer 1/4"

**NOTE:** Use medium grade thread locker compound on all bolts without lock washer or lock nut. Use pneumatic thread sealant on all pneumatic fittings and hose couplings.



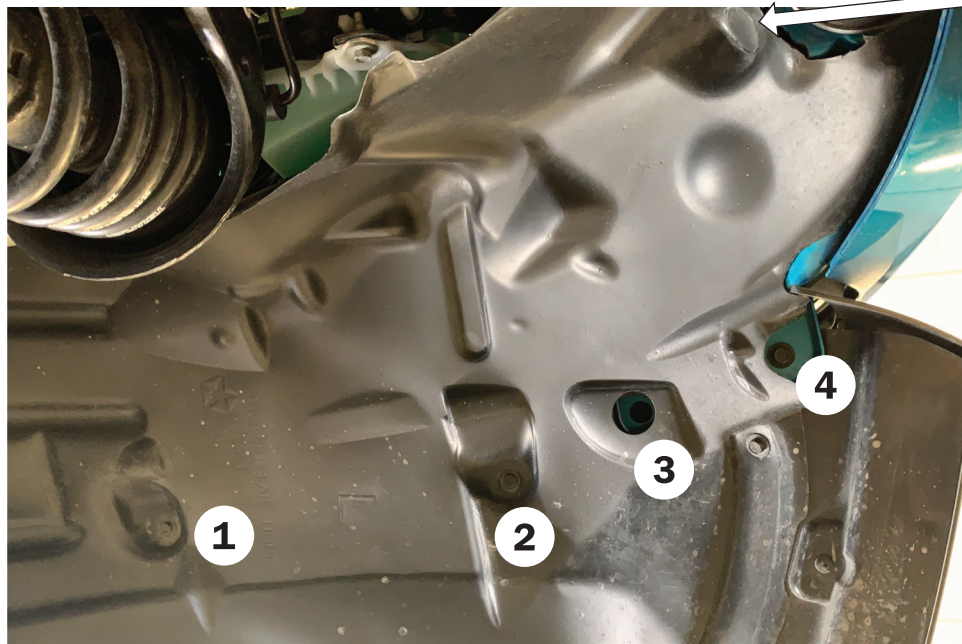


1. Lift hood all the way back against the windshield. Be sure to place something between them to prevent any damage.

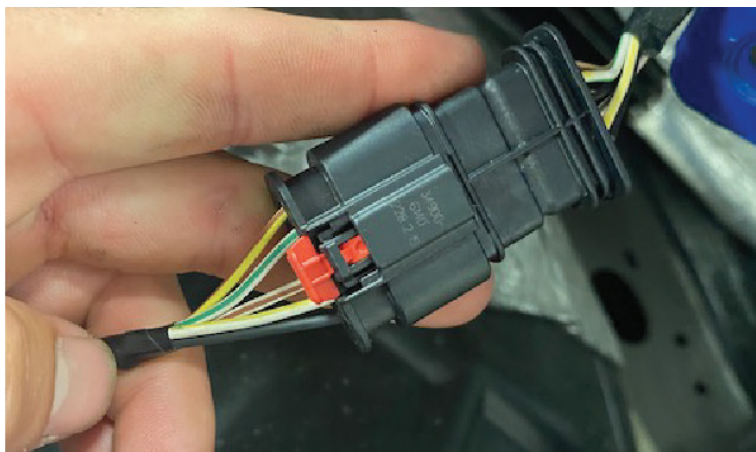


2. Disconnect battery. Remove air filter assembly and intake tubing.





3A. Remove passenger side fender with inner fender well. It is faster and easier to remove fender and inner fender well as one complete piece. Remove (4) bolts located thru holes in inner fender well and (1) push pin at front. Start by pulling up and out at rear of fender. There are several Youtube videos showing how this can be done. There are some body clips that can be damaged in this process also. They are readily available through multiple sources - Mopar Part# 6852-6185-AA-008.



3B. Before completely removing fender you will need to disconnect wiring connector to lights located at top rear under fender. To release connector - slide red lock tab out then push down on black tab while pulling connector apart.



4. Depending upon which bumper and/or winch setup you have, you may need to remove it for access to install this kit. You may only need to loosen winch and lean it forward to remove grill.



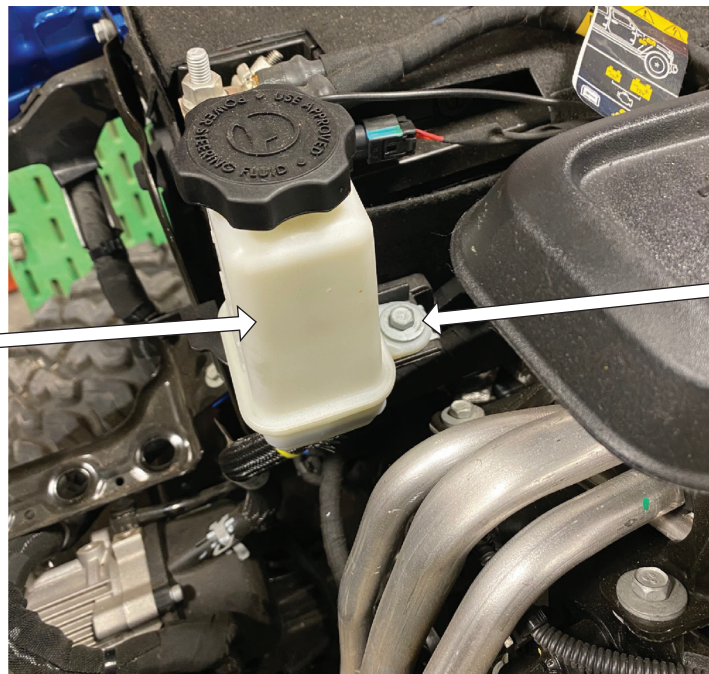
5. Remove grill by releasing and removing push rivets along top of grill (6 total). Then pull out on bottom edge of grill to release push-in snap connectors along bottom edge of grill.





OE Return Line

6. Disconnect return line from OE P/S pump to drain fluid. Opening fill reservoir cap will help fluid drain quicker.



Fill Reservoir

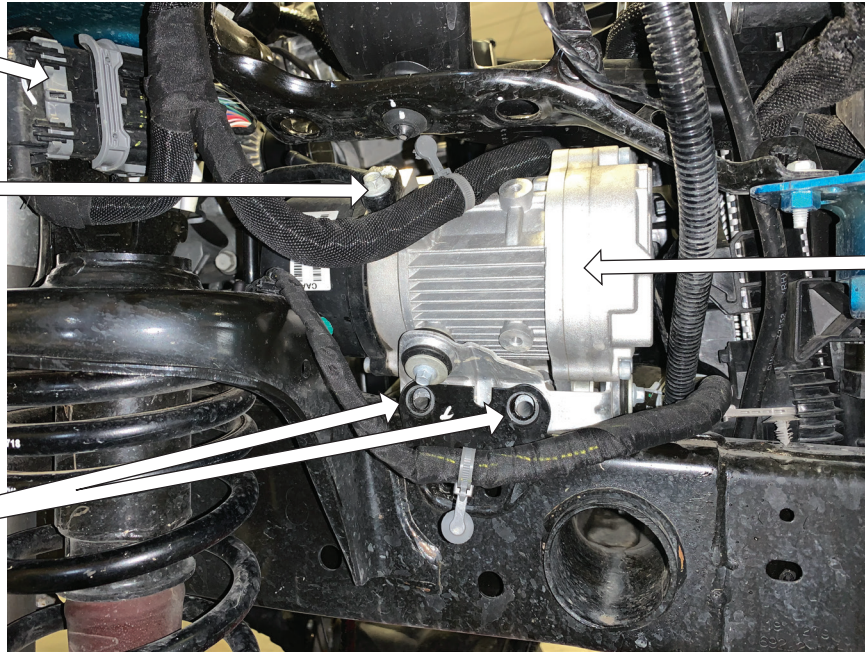
Spring Nut

7. Remove OE fill reservoir and retaining spring nut.

Secure OE P/S  
Harness Here

Pressure Line

Mount Bolts

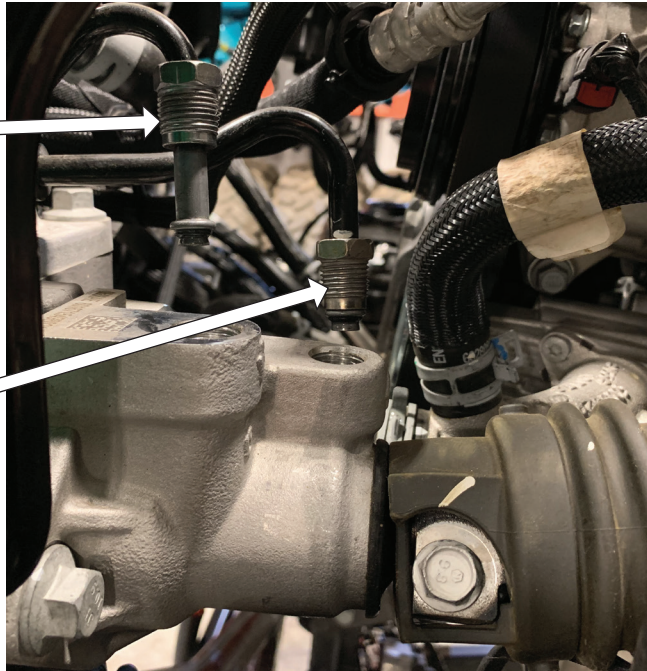


OE P/S Pump

8. Disconnect wiring harnesses and pressure line from OE power steering pump. Remove (2) mount bolts and remove OE power steering pump. Use zip ties to secure P/S pump wiring. We fold it and secure it to harness connector shown in picture.

Pressure Line

Return Line



9. Remove PSI and return lines from steering gear box.





Return Line  
Clamp Bolt --  
One on Each Side



Sway Bar Bolts --  
2 On Each Side

10. You can remove return and PSI lines by cutting them, however if you want to save them you will need to disconnect harness wiring at sway bar disconnect module and remove the 4 clamp bolts that secure the sway bar to the bottom of the frame (2 on each side), then let the sway bar swing down out of the way.

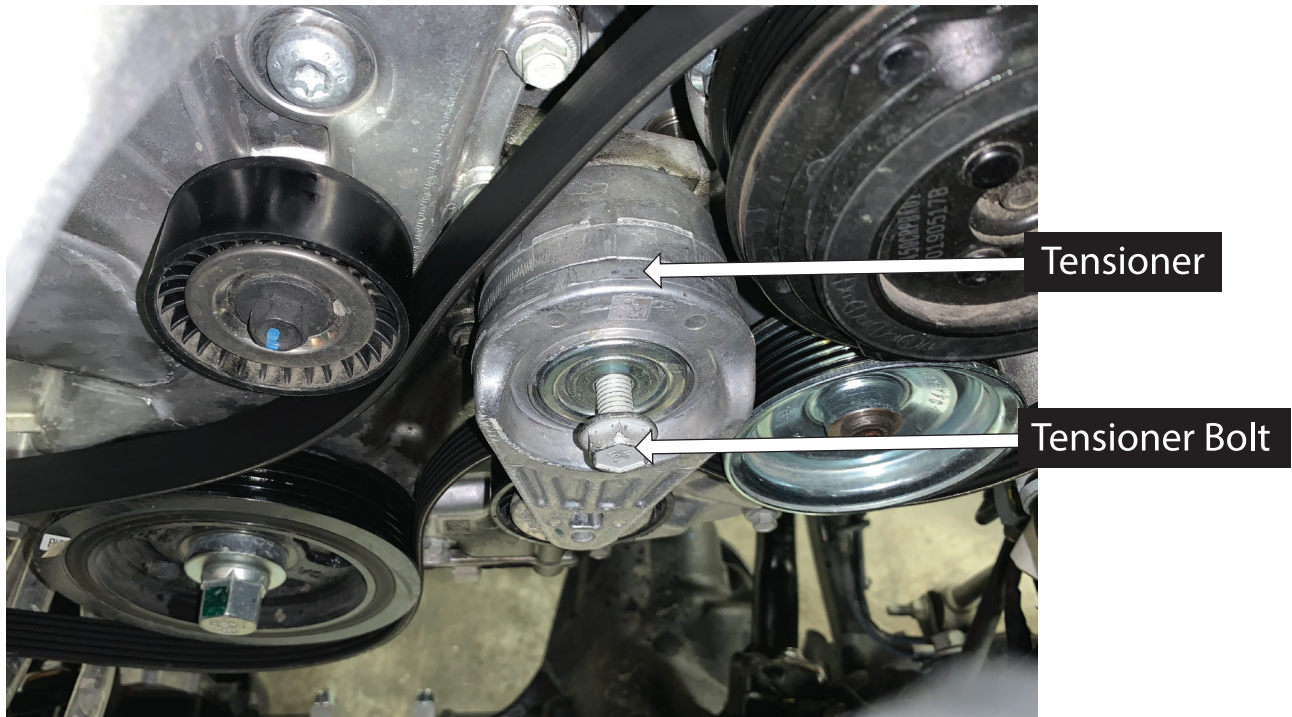
Return Line Clamps  
On Each Side of  
Frame Under  
Radiator



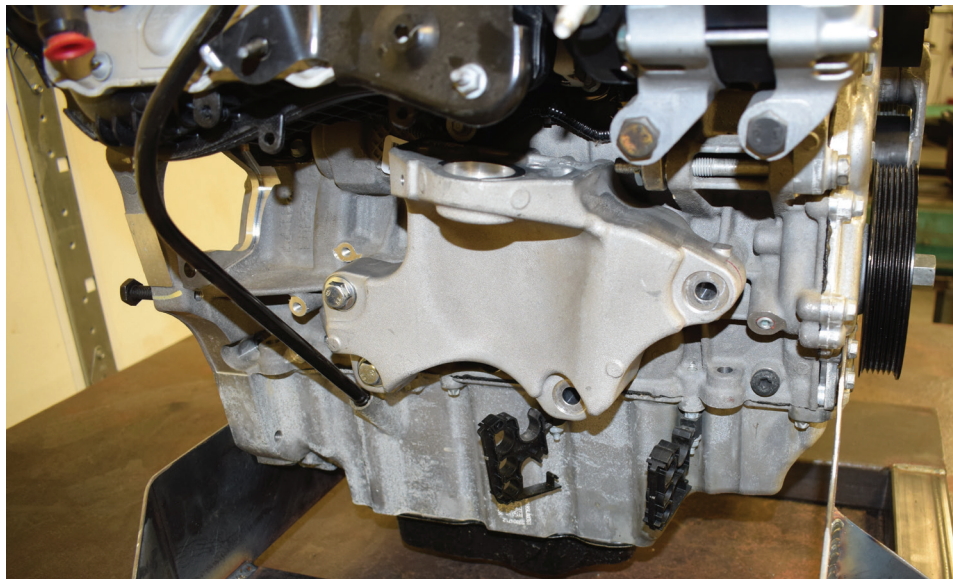
PSI Line Clamps  
On Front of Cross  
Member Under  
Radiator

11. Disconnect clamp bolts, then remove power steering pressure and return lines that are between power steering pump and steering gear box.

Note clamp locations in picture.



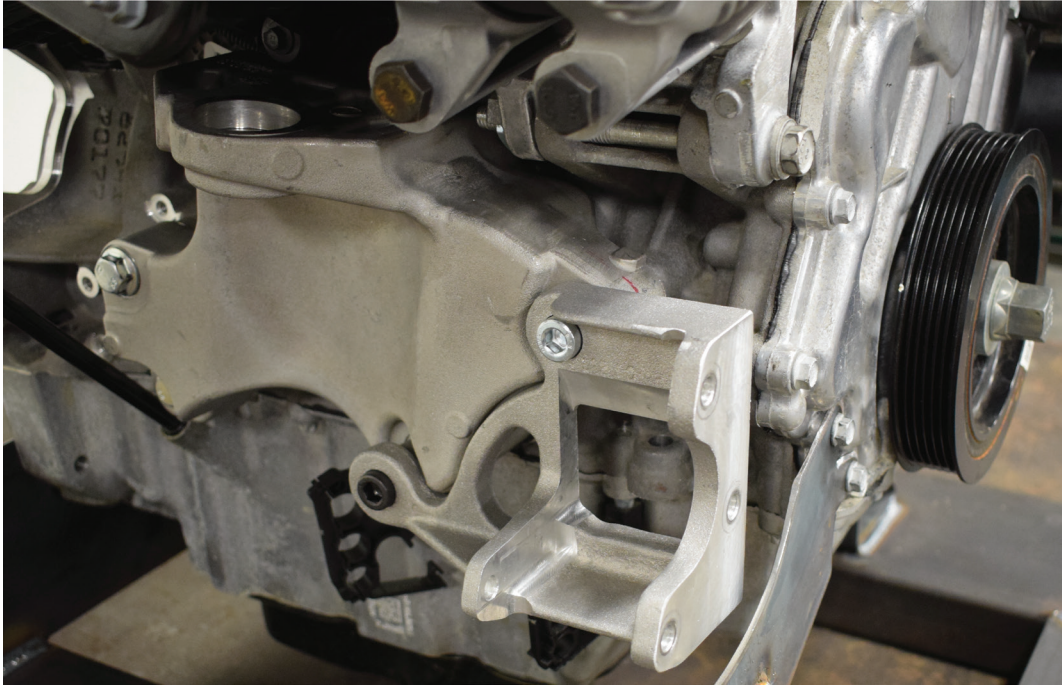
12. Release tensioner and remove belt from pulleys, (belt will not be reused). Loosen tensioner bolt enough to pull tensioner slightly forward to get belt off. Leave bolt loose until new belt is installed later.



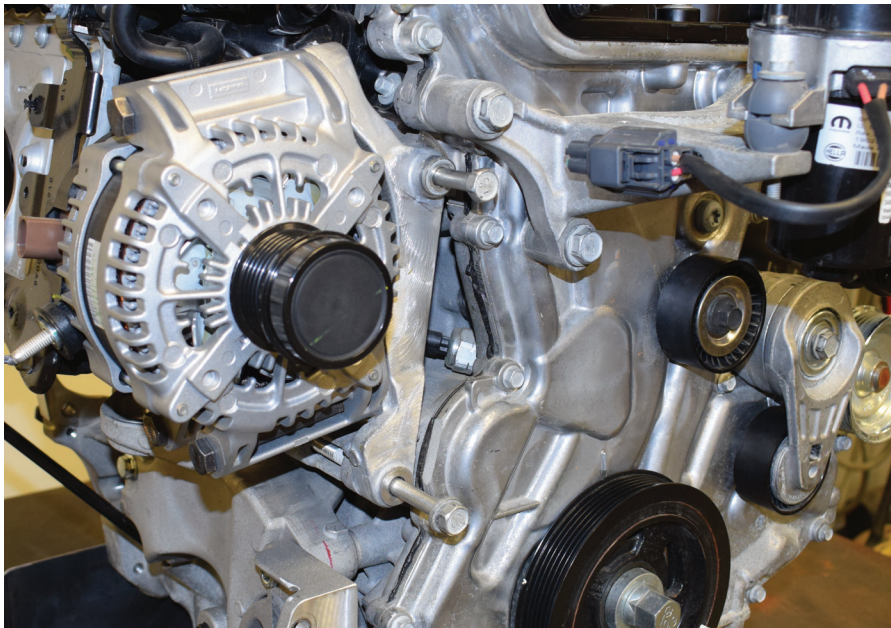
13. Remove front two bolts from passenger side engine mount bracket. Discard bolts.

NOTE: Use medium grade thread locker compound on all bolts without lock washer or lock nut.

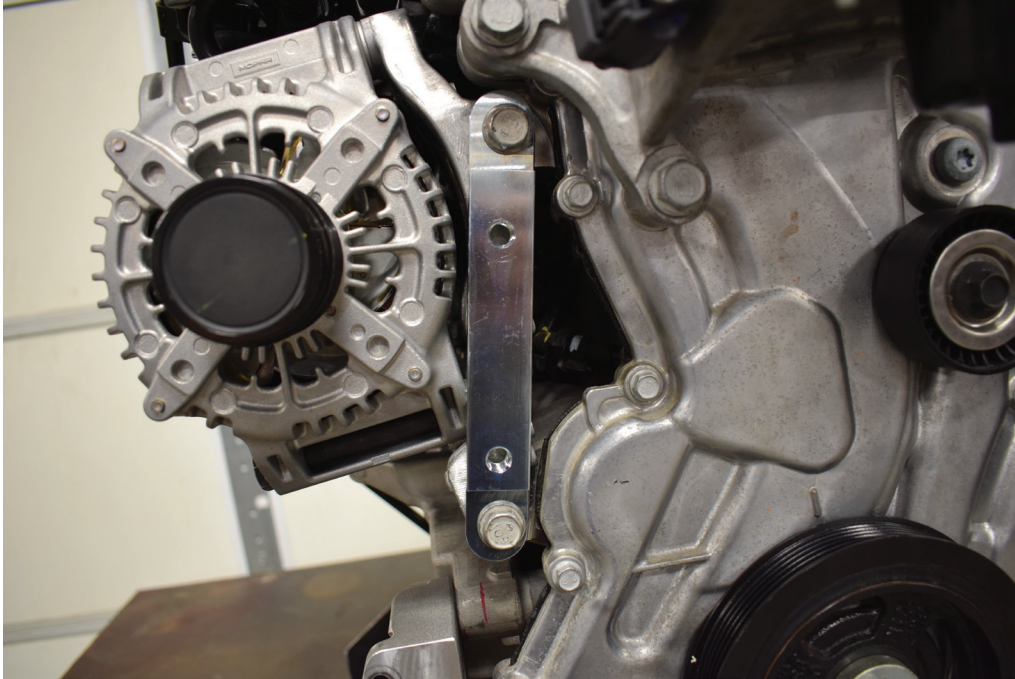




14. Install 12.13 power steering pump mounting bracket. Use (1) 10-1.5 x 90mm socket head bolt in lower bolt hole. Use (1) 10-1.5 x 70mm socket head bolt in upper hole.

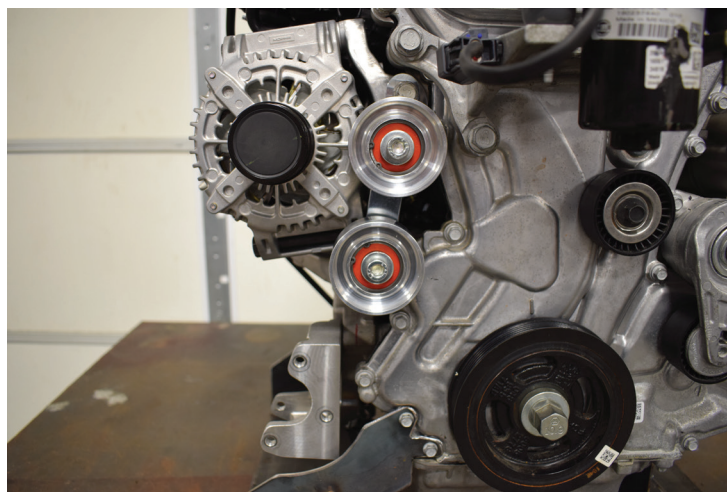


15. Support alternator and remove two alternator mount bolts. Save these bolts, they will be reused.



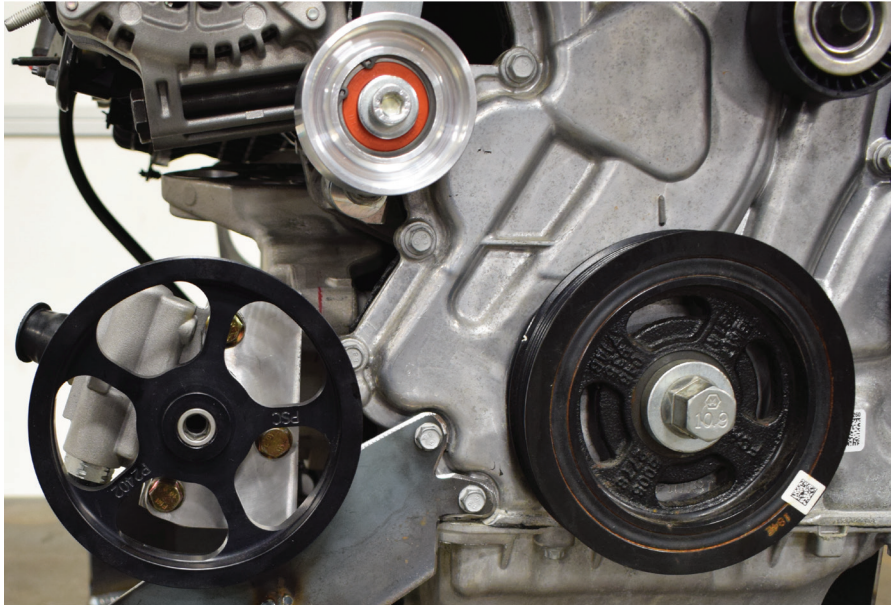
16. NOTE: 12.14 idler mounting bracket mount bolt holes are offset to one side. Widest flange between hole and edge of the bracket goes outward toward alternator. Correct mounting position shown above.

Install 12.14 idler mounting bracket to alternator bracket reusing (2) OE alternator bolts.

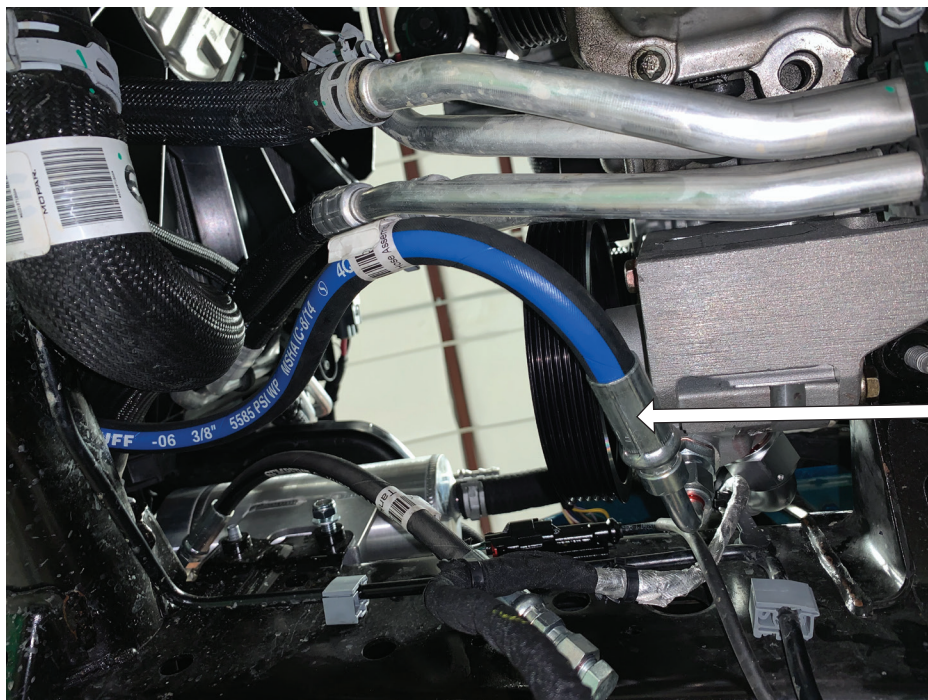


17. Install (2) PP4100 idler pulleys to 12.14 idler bracket with (2) 15.201 idler spacers between pulleys and bracket. Use (2) 10-1.5 x 45mm socket head bolts with (2) heavy duty flat washers.





18. Install power steering pump to bracket. Use (4) 8-1.25 x 30mm flange bolts. (3) into the front of the pump and (1) into the back.



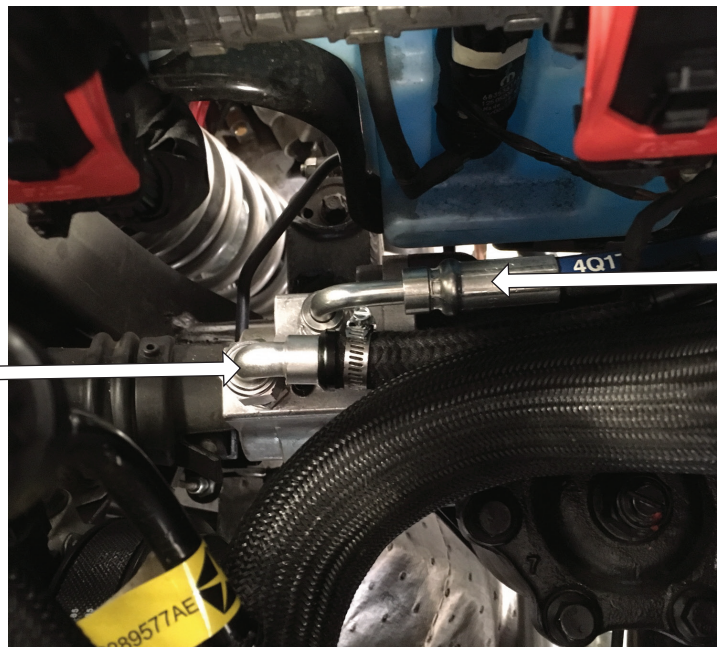
HA-H200

NOTE: USE PNEUMATIC THREAD SEALANT ON ALL FITTINGS AND HOSE COUPLINGS

19. Install HA-H200 high pressure hose to power steering pump. Route under radiator as shown in picture.



20. Route HA-H200 High pressure hose below radiator, in front of cross member and back under radiator to pump and gear box as shown. Connect (2) HCL1213 rubber coated hose clamps to OE positions using OE bolts. Do not tighten clamps until hose ends are connected and tight.

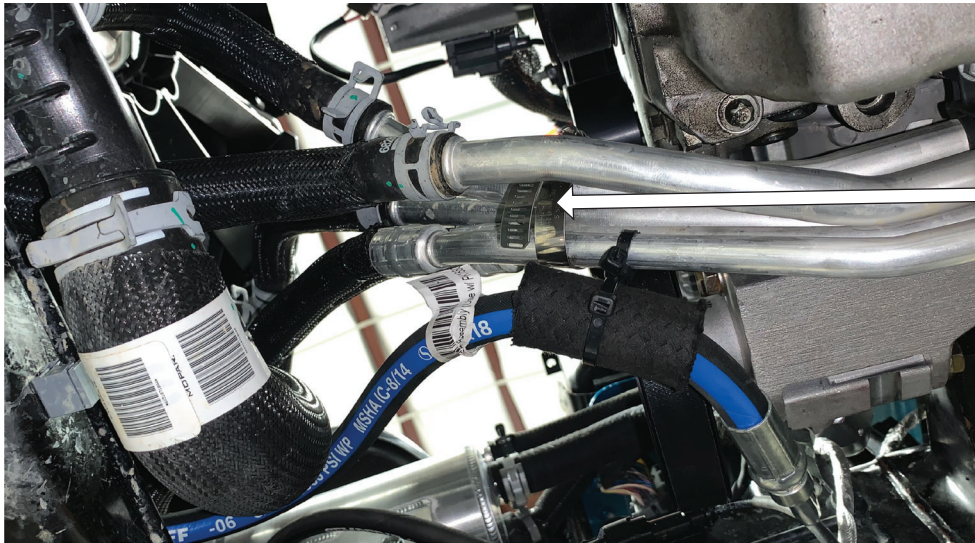


Return Port:  
SF11 & HA-L101

Pressure Port:  
SF01-HF & HA-H200

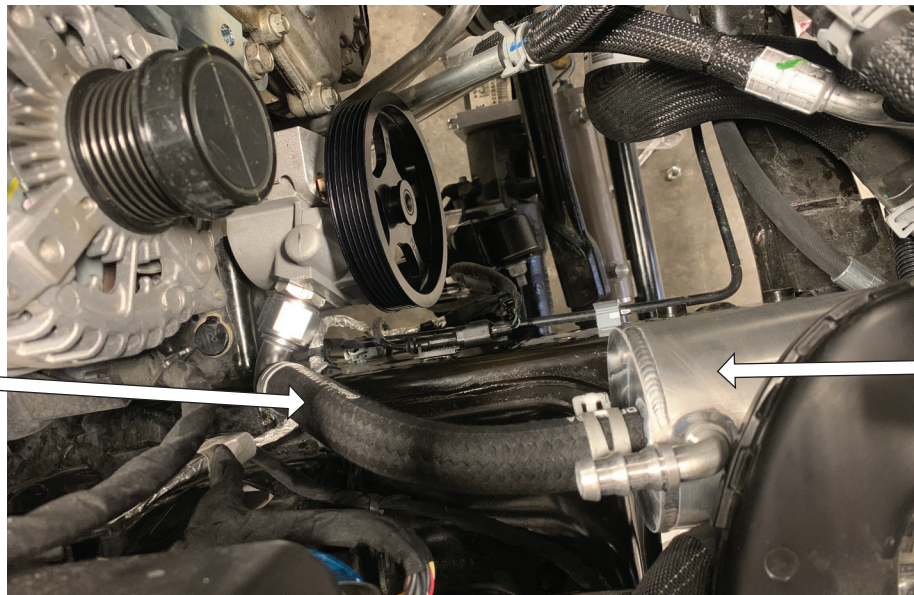
21. Install SF01-HF fitting into pressure port of gear box and connect HA-H200 high pressure hose. HA-L101 return hose will be install in a later step. Install SF11 return port fitting.





HC28 Worm Gear Clamp

22. Install HC28 worm gear clamp around three outermost coolant lines to provide ample clearance between coolant line and P/S pump pulley. Use zip ties to secure HA-H200 hose to hard line. Wrap-hose around HA-H200 hose not necessary but will provide extra protection.



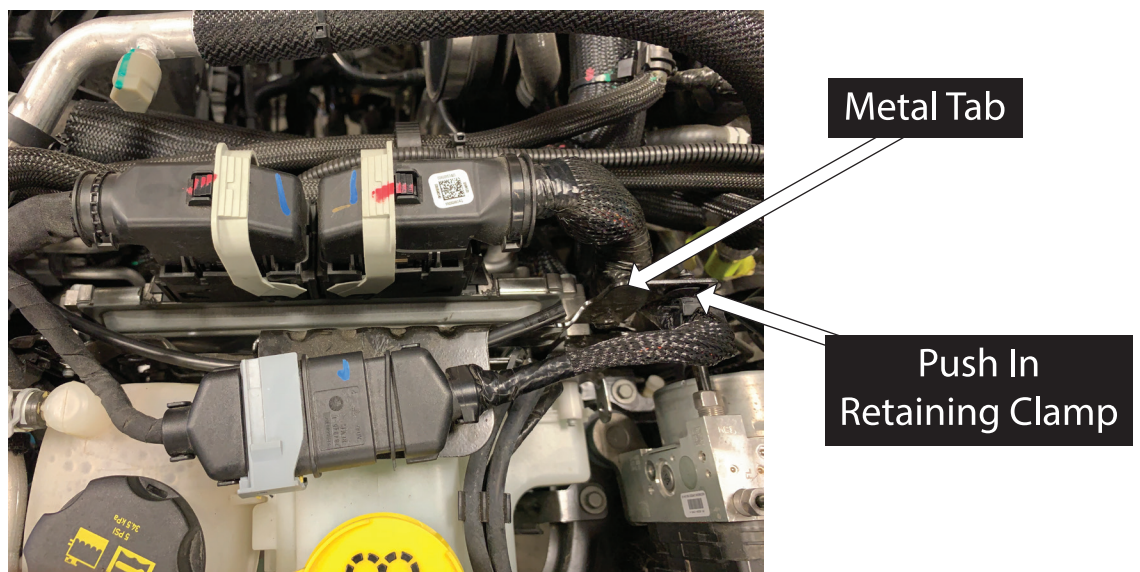
HA-L113  
Supply Hose

SR300B  
Reservoir

23. Install HA-L113 hose to SR300B frame mounted reservoir supply port, (using a small amount of grease on barbed fitting eases installation). Do not position clamp in place over barbed fitting until after hose fitting is installed onto P/S pump fitting. Hold reservoir up from mounting tabs, install HA-H113 onto P/S pump first then place reservoir down between mount tabs and install OE P/S pump bolts. Now tighten hose fitting and position clamp into place.

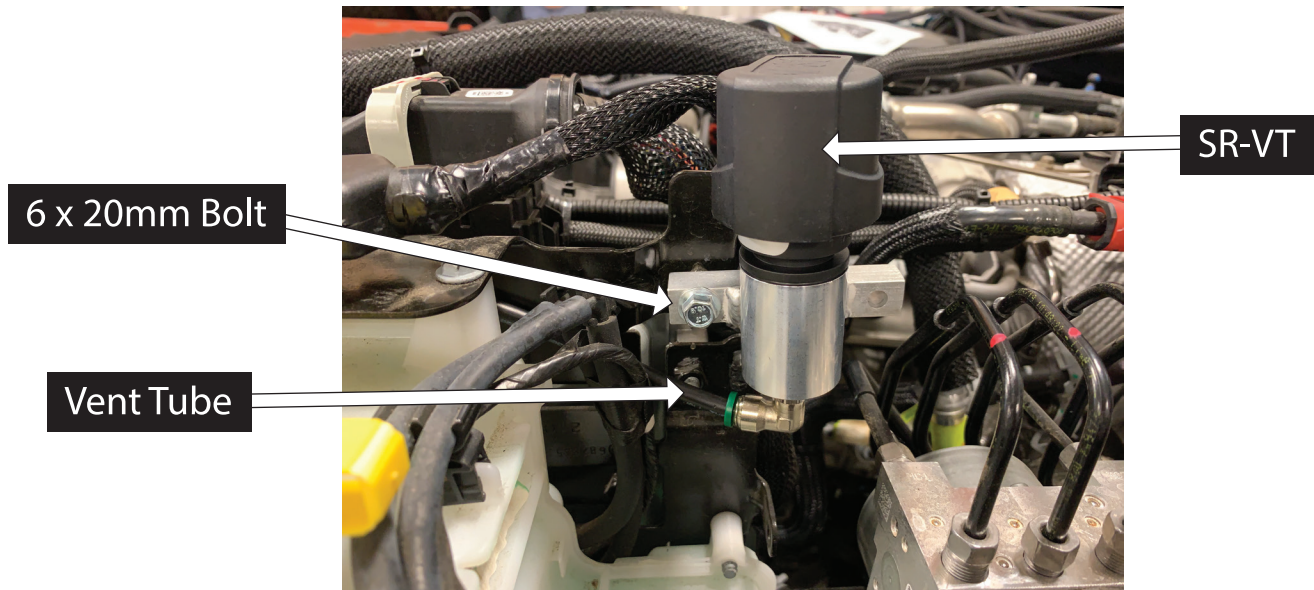


24. Install HA-L103 hose to SR351 fill reservoir, (do not tighten fitting until reservoir is mounted into position). Install SR351 to OE position using (1) 1/4-20 x 1" bolt with (2) flat washers and lock nut, then connect HA-L103 hose to top port on frame mounted reservoir. Install 1/4" vent tubing into push-loc fitting on top of SR351. Route vent tube around and under plastic radiator cover to drivers side of vehicle. It will connect to SR-VT when mounted.

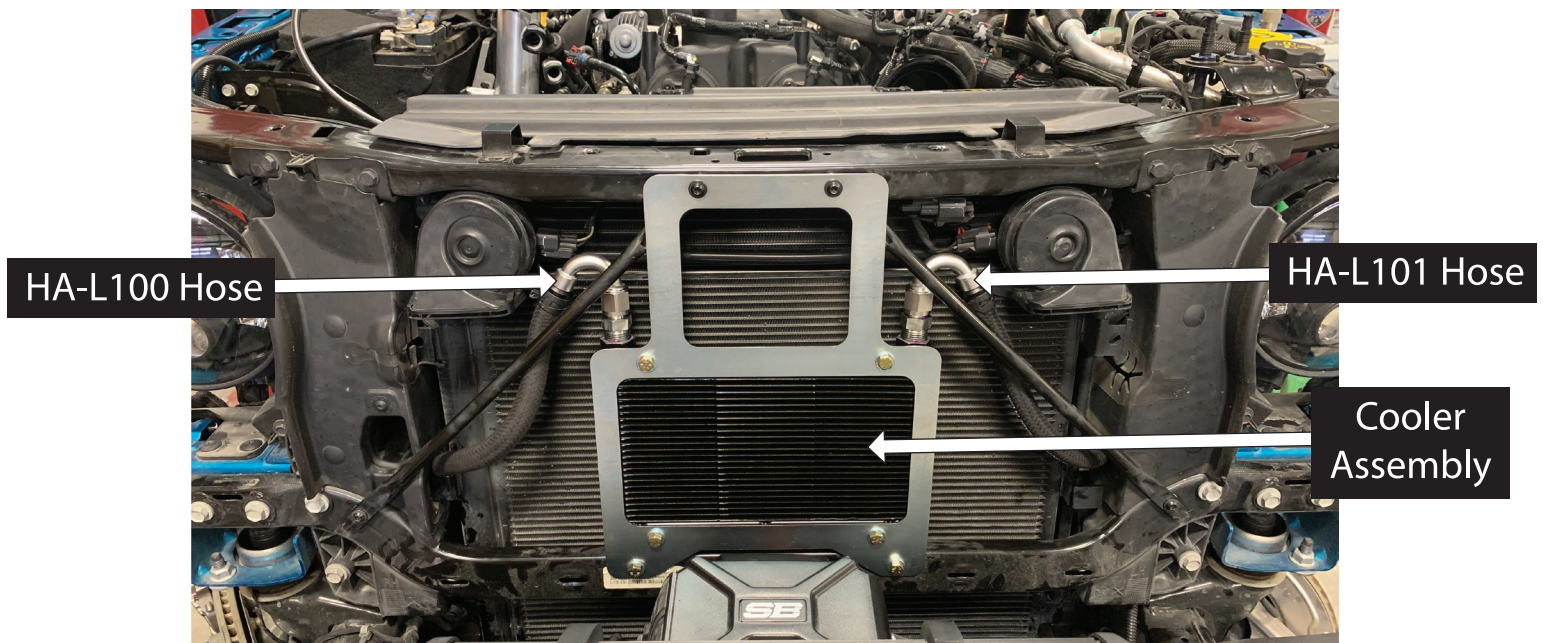


25. Located on drivers side front corner under hood - Remove push in retaining clamp from metal tab. Lift harness up and over to opposite side of metal tab and reinstall back into same hole.

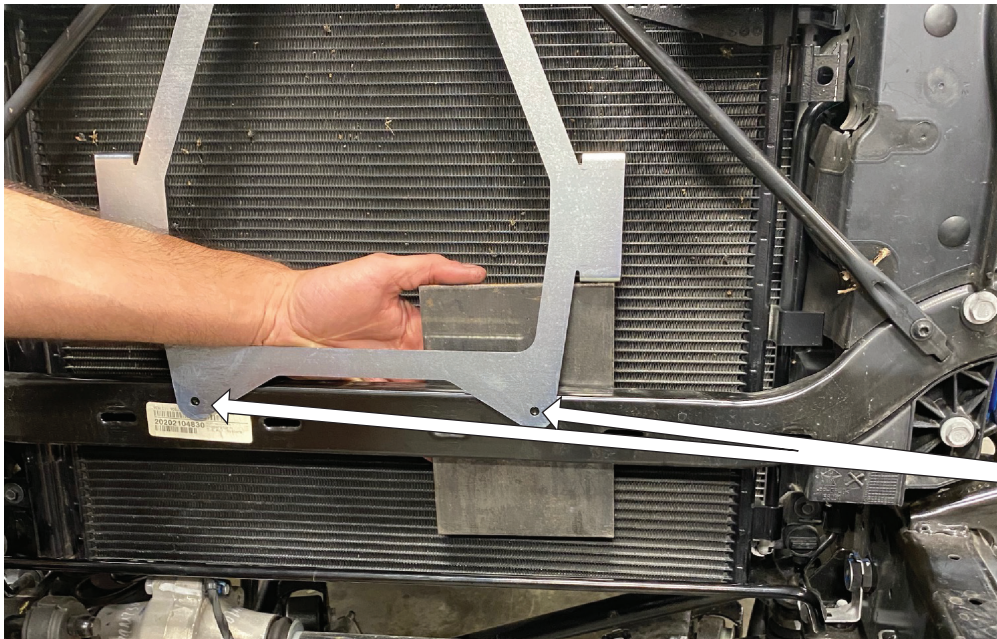




26. Install SR-VT to mount tab on drivers side as shown using 6mm x 20mm bolt. Route vent tube as shown and connect to SR-VT.



27. Connect HA-L100 and HA-L101 hoses to cooler assembly as shown. Remove (2) support rod bolts and mount cooler assembly. Route hoses thru core support beside radiator. Connect HA-L100 to SR300B reservoir, connect HA-L101 to steering gear box SF11 fitting installed in step 21.

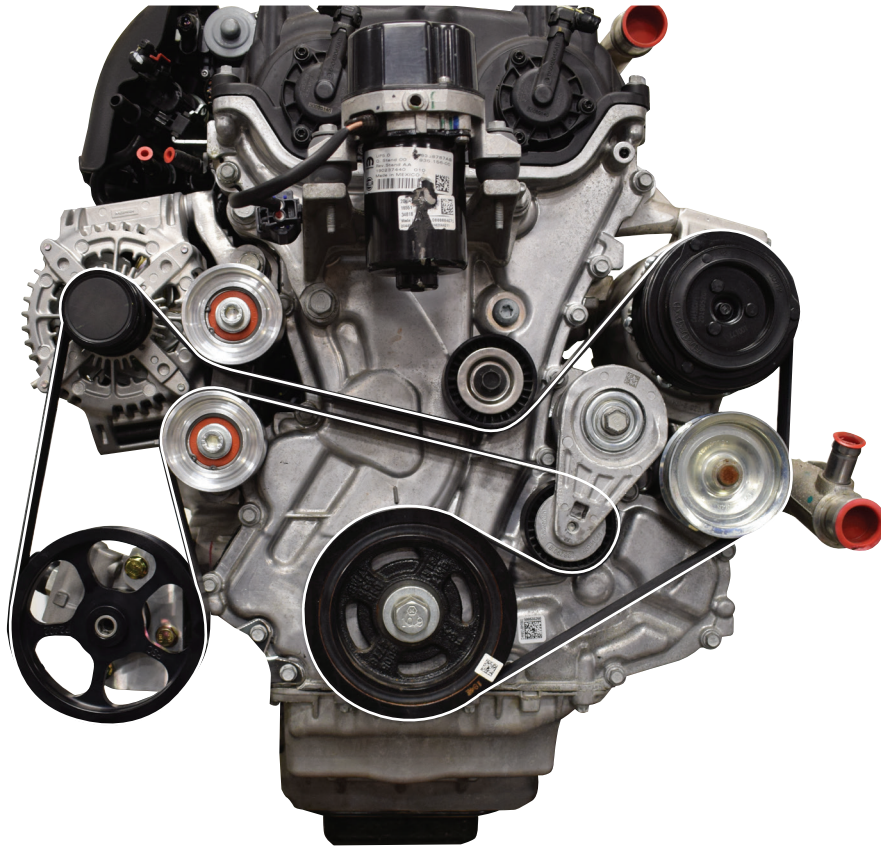


Drill (2) 9/32 Holes

28. Use bottom holes in cooler bracket to locate and drill (2) 9/32 holes thru core support. Secure bracket with (2) 1/4-20 x 1.5" bolts with (4) flat washers and (2) lock nuts.

NOTE: Use caution when drilling thru the back side of the core support so you don't damage the A/C condenser. Place a piece of metal or wood between the condenser and core support.





29. Install BT60960 belt. Refer to picture above for correct belt route.

30. Re-Install sway bar, grill and fenders in reverse order from disassembly.

31. Power steering fluid fill and bleeding instructions on next page.



## Jeep JL/JT Power Steering Pump Conversion System

### Bleeding Procedures

Once the pump conversion is installed you will then need to add power steering fluid. PSC highly recommends Swepco 715 for use in the system. 4 quarts of Swepco fluid is included in the kit.

This system can be rather difficult to purge all the air out. Always start by jacking up the front vehicle and put jack stands under the front axle. This allows it to be much easier to turn the steering wheel full right and left when there is no load resistance on the steering.

Next, start by adding P/S fluid in the remote fill tank. Only fill it about halfway during the air bleed procedure. **The proper final fluid level is about 1" to 1-1/2" of fluid in the bottom of fill reservoir.** Once it looks as though no more fluid is going into the system, install the tank cap and start the engine for about 2-3 seconds. The fluid will disappear in the fill tank and you can now add more fluid. Repeat this a couple of times letting a few minutes pass between startups. Fluid gets very aerated during this procedure and sometimes you need to let it sit, giving it time to clear the air bubbles out.

After starting and letting the system sit a few times you are now able to start the engine and turn the steering wheel completely to the right and then the left. This will really start pushing the air out. Do this 3 or 4 times and again shut off the engine and let sit a couple of minutes, add fluid and repeat. Once you've done this a few times the fluid level when checked should stop dropping.

At this time remove jack stands and lower the vehicle to put a full load on it. You will need to drive the vehicle to build a little heat in the fluid, this helps bleed the remaining air out. Always remember when you hear the pump whine, it is aerating the fluid. Shut off engine and let fluid clear up and top off to the above-mentioned fluid level. Make sure you install the vent hose to the remote relief valve before driving.

Again, note that getting all the air out of the system takes a while, so if you hear the pump whining you are aerating the fluid which is not good for the pump. So, running the vehicle for an extended time when the pump is whining needs to be addressed as soon as possible. Sometimes this can be just letting the vehicle sit to get the last of the air out. Finally make sure the fluid level is still good.

If you have any questions or issues give us a call. 817-270-0102

THANK YOU FOR YOUR PURCHASE