



## Installation Guide

### **FDI 2650 Supercharger**

### **Jeep Grand Cherokee SRT MY11-22**



## Important Information

Installing the supercharger indicates your acceptance of the responsibility and liability associated with the fitment and use of this product. Please ensure the owner and drivers of the supercharged vehicle are aware of their responsibilities and liabilities as indicated below.

Thank you for purchasing this supercharger which has been designed and made with pride. The owner and drivers of the enhanced vehicle must be aware that fitment of a supercharger may affect:

- The vehicle's factory warranty.
- Insurance cover and associated liabilities.
- Compatibility with emission and roadworthy certification.
- The validity of a driver's license for a supercharged vehicle.
- The handling & braking capability of the vehicle due to increased engine power & torque characteristics.
- The longevity of the engine.
- The vehicle will need to use premium unleaded fuel only (93 AKI/98 RON).

It is the owner's/driver's responsibility to accept any consequences and liabilities of using the supercharger and any subsequent effect it may have. Harrop Engineering shall not be liable and shall be 'Held Harmless' for any direct and/or indirect/consequential losses, costs, damages, expenses, injuries or liabilities whatsoever incurred by the owner/driver of the vehicle or other parties arising from this supercharger, its installation and/or its operation. It is recommended that vehicles have completed 1,500 km and have been driven, serviced and maintained in accordance with the vehicle manufacturer's handbook before fitting a supercharger. An engine should be deemed reliable and have delivered all reasonable expectations in line with the vehicle manufacturer's specifications prior to fitting a supercharger.

## Warranty.

This supercharger is covered by a limited warranty on components and workmanship for a period of 36 months from the date of purchase, subject to the following:

- Installation must be completed by a qualified motor mechanic or technician who has undertaken appropriate training in fitting Harrop superchargers.
- The supercharger has not been modified or "overdriven" by fitting alternative drive pulleys.
- The supercharged vehicle has been tuned by an appropriately qualified and experienced technician.
- The supercharged vehicle has been driven in accordance with the conditions specified by the vehicle manufacturer's normal use of operation, driving care and vehicle service program.
- The supercharged vehicle has not been used for competitive racing.

No warranty shall apply where Harrop have determined improper fitment or handling, misuse in operation, neglect, or accident damage. Engine modifications made prior to or in conjunction with the supercharger fitment may invalidate the Harrop limited warranty. Any warranty claims must be made immediately & directly in writing to Harrop Engineering so that a determination can be made promptly. Involvement of a third party or an attempt to repair a perceived/actual fault may invalidate the warranty. To the extent of the law, the determination on any warranty claim & associated costs will be at the sole discretion of Harrop Engineering.

By installing the supercharger you acknowledge that all conditions pertaining to this supercharger and its operation have been read, understood and accepted.

Since 1955, Harrop Engineering has been at the forefront of designing, developing and manufacturing precision performance components. Today our innovative and logical approach is applied to low volume automotive OEMs and the performance aftermarket through a dedicated team of 65 staff. Core performance products include Superchargers, Engine Components, Brakes, Differentials and we are also the exclusive Australian Distributor for Forgeline Motorsport Wheels.

Harrop are also the preferred supplier of Eaton Supercharger and Traction Control technology including dual branded product designed and manufactured in-house. There are currently over 4,000 components in our portfolio and this is growing daily as we continually develop more Harrop Performance Products.

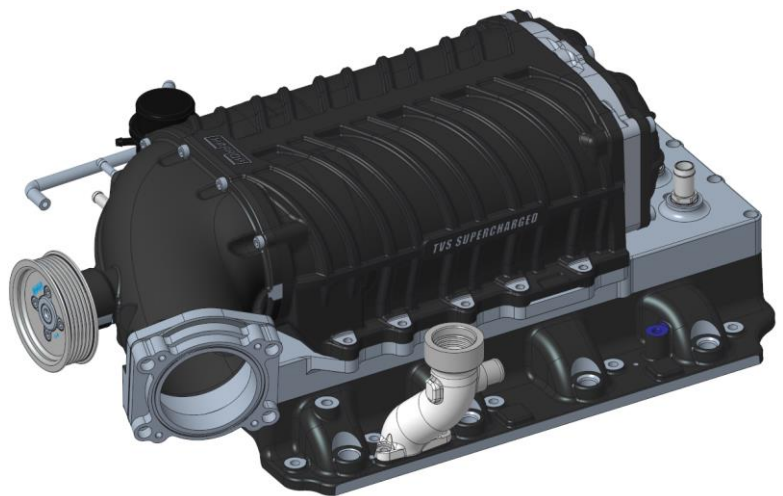
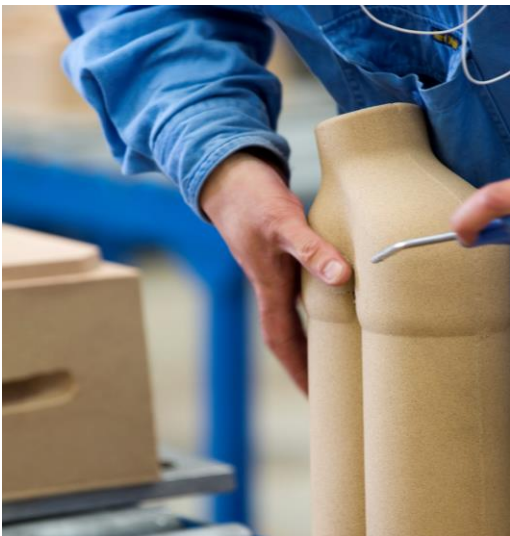
Our high profile car manufacturing customers have included Holden, HSV, FPV, Ford, Roush, Toyota, TRD and Lotus.

We also supply to race teams from categories including F1, NASCAR and V8 Supercars and an extensive range of drag, circuit and off-road competitors. Just as importantly, a large portion of our customers are performance enthusiasts and weekend warriors who are highly passionate about their ride.

Please take a moment to review the following pages and learn why Harrop is the first choice in Superchargers.

Thank you for choosing Harrop and enjoy your Harrop Enhanced ride.

- Team **HARROP**



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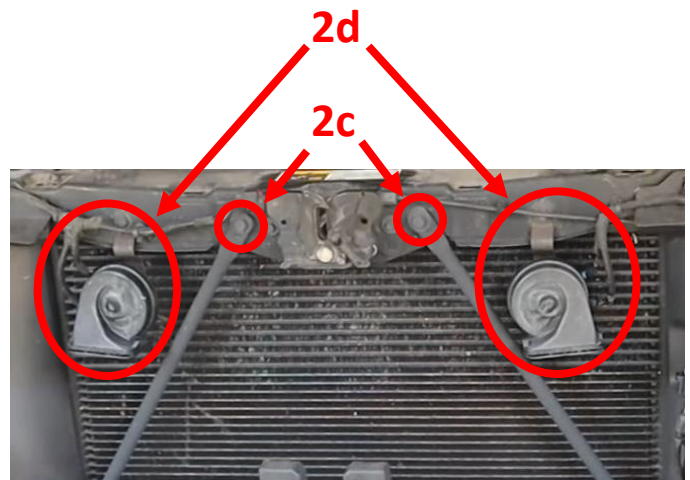
**References to left (LHS) and right (RHS) in the instructions are made to the vehicles side and NOT the installer**

## 1) Vehicle Preparation

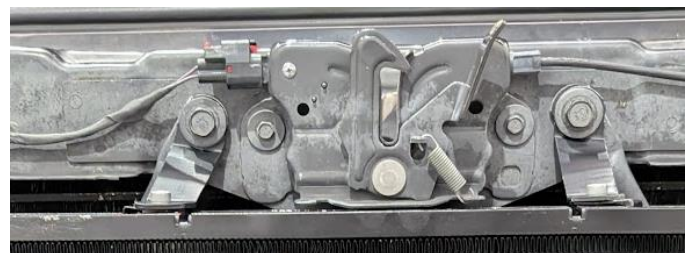
- For all MY18-22 vehicles, install a smart access cable to the vehicle, available at <https://vcperformance.com.au/products/hp-tuners-smart-access-cable-2018-dodge-jeep-chrysler-h-002-01/>.
- Read and save the original file from the ECU using HP Tuners software and MPVI tool.
- For MY15-22 vehicles, send the ECU to HP Tuners for modification. Refer to: <https://vcperformance.com.au/products/dodge-pcm-upgrade-service/>.
- Once the ECU has been modified and returned, re-install it to the vehicle and commence the supercharger installation.

## 2) Intercooler Radiator

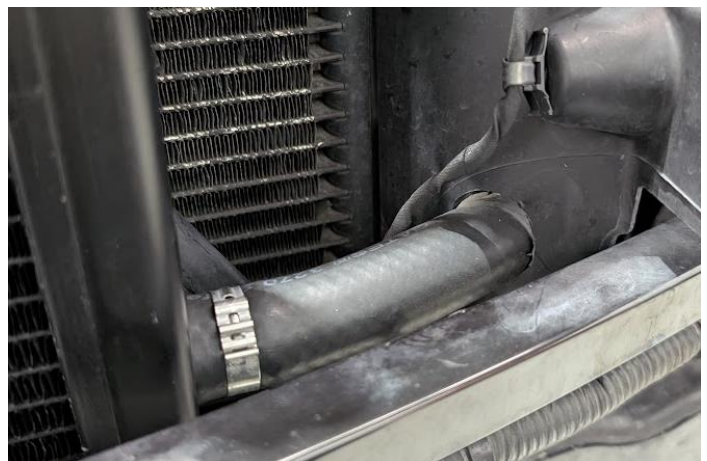
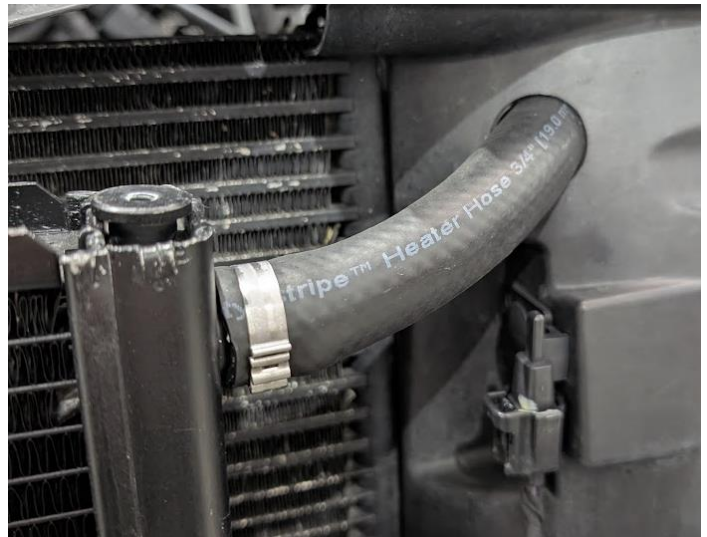
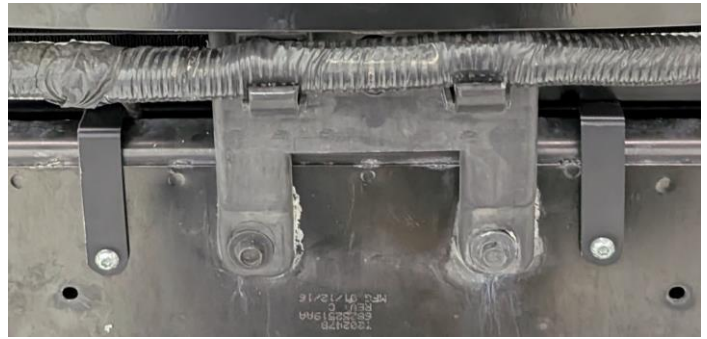
- Disconnect the negative terminal from the battery.
- Remove the front bumper.
- Undo bolts holding top of the rad support braces.
- Remove the horns and brackets.



- Mount the included L brackets to the bottom of the radiator with include M6x10 button head screws. Ensure the longer leg of the bracket is facing the front of the radiator.
- Mount the included top brackets to the radiator and the vehicle using the supplied M6x10 button head screws and the bolts removed in step 2c, respectively.



- g. With the top of the radiator securely mounted, mark on the front support bar where the bottom bolt holes need to be.
- h. Drill the bottom bolts holes using a  $\varnothing 9.1\text{mm}$  drill bit.
- i. Install the supplied M6 nutserts into the holes.
- j. Using the supplied M6x16 button head screws, fasten the mount to the vehicle.
  
- k. Using a  $\varnothing 32\text{mm}$  hole saw, drill 2 holes in the plastic piece on the LHS of the radiator for the intercooler hoses to pass through. Photos show top and bottom, respectively.



### 3) Horn Relocation

- a. Connect the supplied horn extension harness to the RHS vehicle connectors.
- b. Connect the extension harness to the RHS horn.

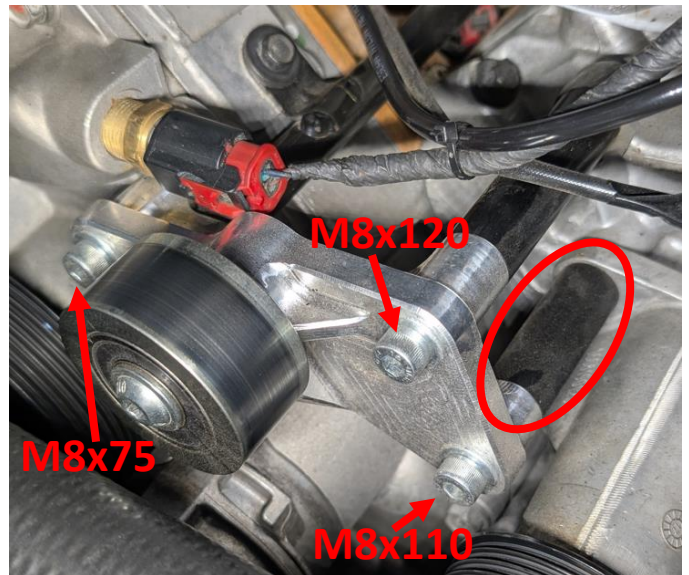
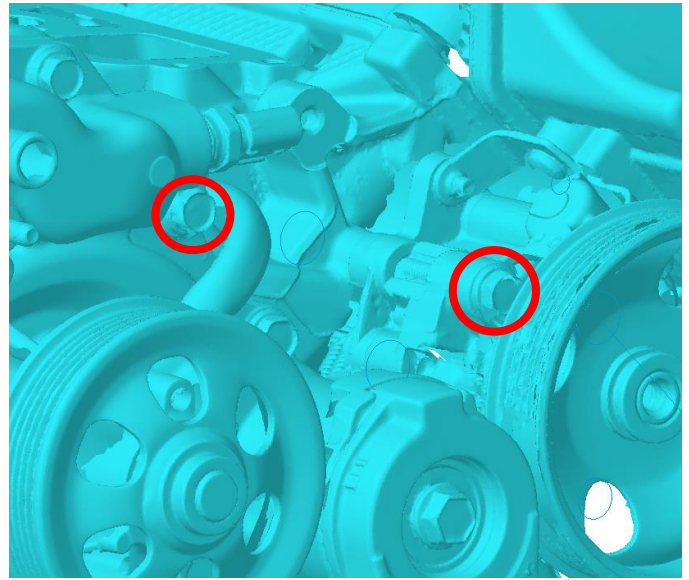


- c. Mount the horns to the front support bar using the OEM nuts.



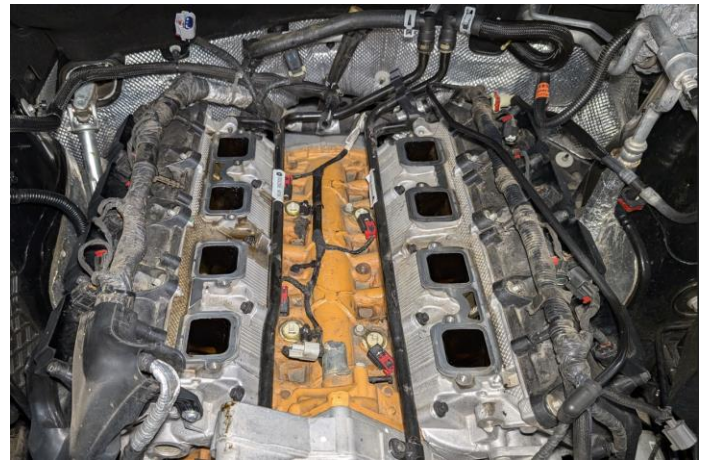
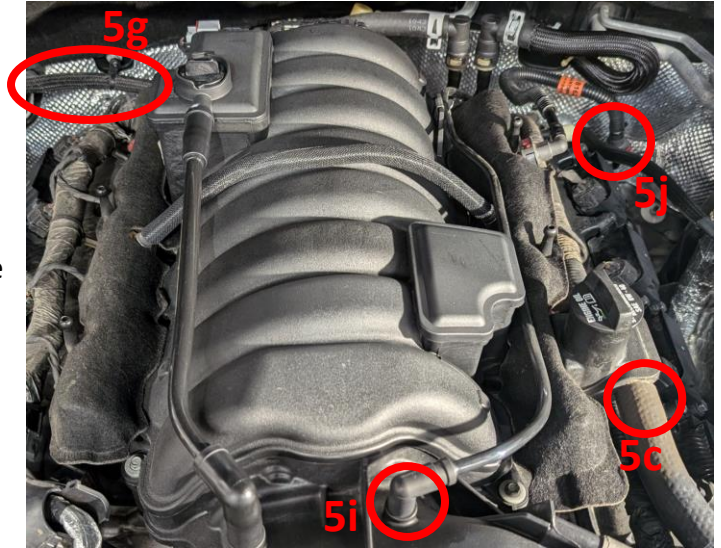
#### 4) Belt Drive Preparation

- a. Remove the serpentine belt.
- b. Remove the 2 shown bolts on the water pump and power steering pump/idler bracket.
- c. Install the idler bracket with the supplied M8 socket head cap screws. If your vehicle has an idler bracket instead of a power steering pump from factory like the image, the shorter spacer will also be required (see photo).



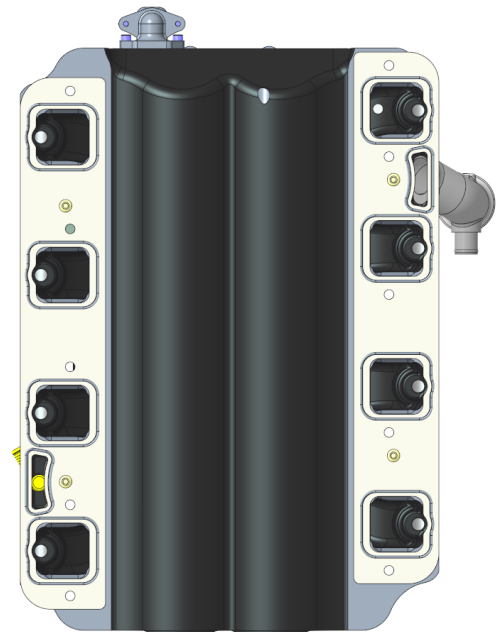
## 5) Manifold Removal

- a. Remove the "6.4L HEMI" covers.
- b. Remove the IAT sensor from the clean air tube.
- c. Remove the breather tube between the engine and the airbox.
- d. Remove the clean air tube between the airbox and the intake manifold.
- e. Disconnect the throttle body wiring.
- f. Disconnect SRV plug and tape it up at the rear of the manifold.
- g. Remove the brake booster vacuum hose.
- h. Disconnect the MAP sensor plug.
- i. Disconnect the fuel purge line.
- j. Disconnect fuel line at firewall.
- k. Undo 10x manifold bolts and remove manifold.
- l. Tape up intake ports to stop any debris entering the engine.



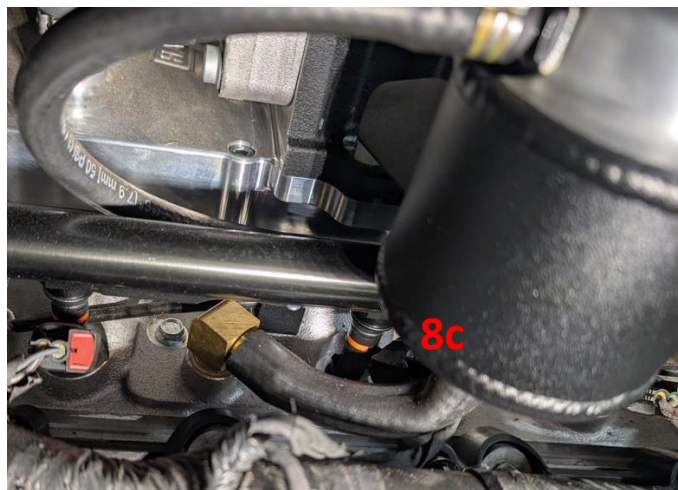
## 6) Supercharger Install

- a. Install the IAT sensor into the RHS of the supercharger manifold.
- b. Install the supplied MAP sensor extension loom to the vehicle loom at the back of the engine.
- c. Using the 4x supplied M6x12 button head screws, install the Teflon gaskets to the supercharger manifold. Ensure there are 10x o-rings between the Teflon gasket and the manifold, 5 per side.
- d. Ensure a further 10x o-rings are installed in the Teflon gaskets to seal the head faces.
- e. Remove the protective tape applied over the ports earlier, ensuring nothing enters the intake ports.
- f. Install the manifold assembly to the engine. Use the 10x M6x30 flange head screws. Torque to 10-12 Nm.
- g. Fit the OE oil cap to the supercharger manifold fill tube.
- h. Connect fuel line to the vehicle.
- i. Install the supplied throttle body adaptor with the supplied M6x20 socket head cap screws.
- j. Install the supplied O-ring into the throttle body adaptor.
- k. Install the OE Throttle to the adapter using the supplied M6x40 flange head screws. Orient the black plastic cover on the throttle to the rear of the vehicle. Make sure the O-rings are in place.



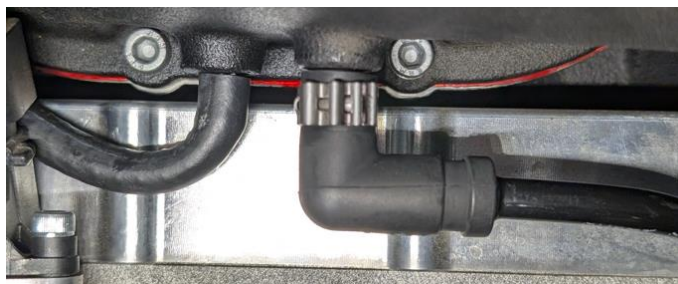
## 7) Engine Wiring

- Connect the supplied IAT extension loom to the original loom and connect to the IAT sensor.
- Connect the supplied MAP extension loom to the original loom and connect to the MAP sensor.
- Plug in the injectors.
- Plug in the throttle body wiring.



## 8) Vacuum Plumbing

- Swap the PCV valve from the OE intake manifold to the PCV housing.
- Mount the PCV housing to the 2x studs on the RHS of the supercharger, and secure with the 2x M6 flange nuts supplied.
- Using the provided 1/2" x 400mm long PCV hose, connect the drain (bottom barb) to the elbow on the manifold adjacent to #8 port. Trim the hose to length, ensuring it isn't kinked.
- Connect the top of the PCV housing to the top port on the supercharger using the supplied 5/16" x 750mm long PCV hose. Use the supplied 13mm cobra clamps on both ends.
- Connect the brake booster hose to the lower port on the supercharger.
- Connect the provided 3/4" x 400mm long PCV hose from the oil fill to the airbox.
- Connect the fuel purge line to the free port underneath the front of the supercharger. Use the supplied 12mm cobra clamp.

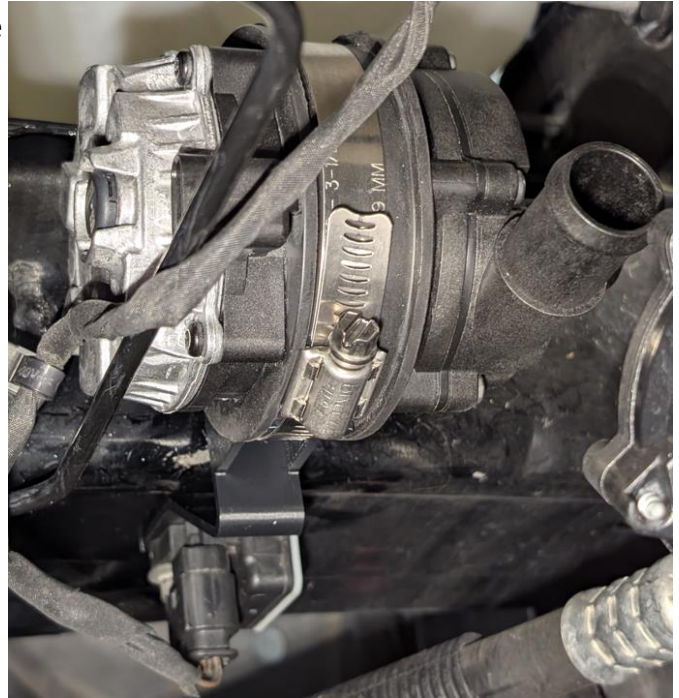


## 9) Intercooler System

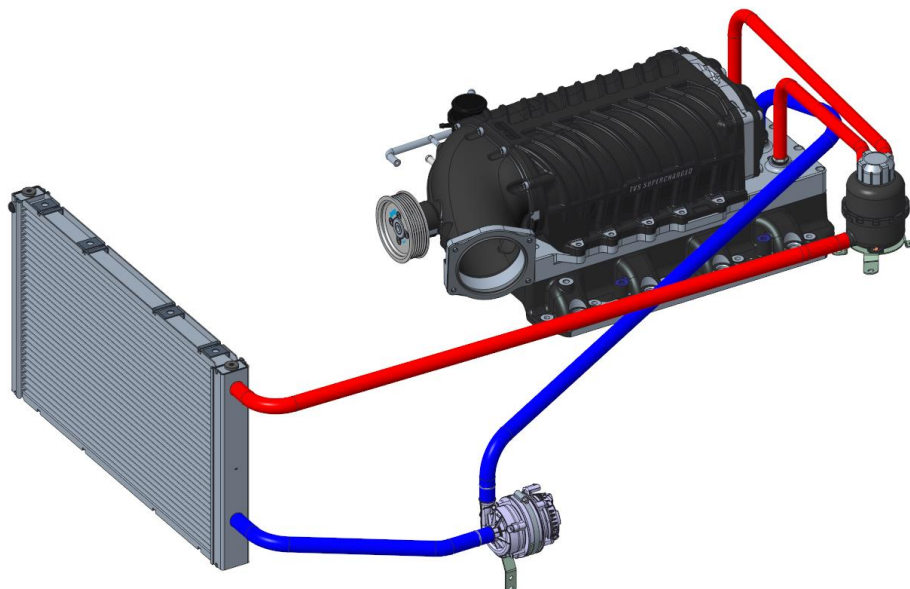
- a. Mount the intercooler reservoir to the top of the LHS shock tower with the supplied M8 flange nuts.
- b. Remove the active damping sensor from the frame rail in front of the ABS module.
- c. Attach the supplied 25mm long piece of foam to the bottom of the pump bracket.
- d. Mount the pump to the pump bracket with the supplied hose clamp.
- e. Place the active damping sensor on the intercooler pump assembly.



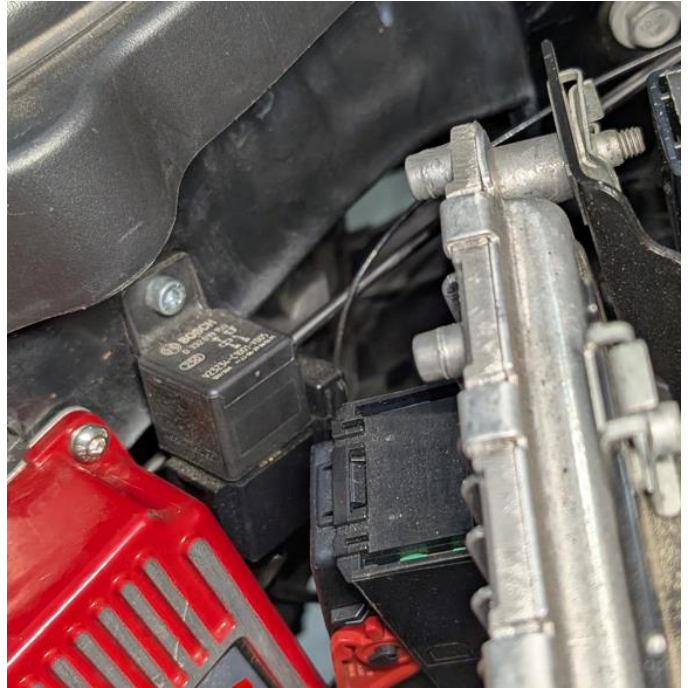
- f. Mount the pump assembly back to the frame rail.



- g. Connect the  $\frac{3}{4}$ " x 350mm long heater hose from the inlet of the intercooler pump to the bottom port of the intercooler radiator. Secure both ends with 25mm cobra clamps.
- h. Connect the  $\frac{3}{4}$ " x 1250mm long heater hose from the outlet of the intercooler pump to the middle port on the rear of the supercharger. Secure both ends with 25mm cobra clamps.
- i. Connect the  $\frac{5}{8}$ " x 525mm long and  $\frac{5}{8}$ " x 650mm long heater hose from the LHS and RHS ports on the rear of the supercharger, respectively, to the top ports of the intercooler reservoir. Secure all connections with 22mm cobra clamps.
- j. Connect the  $\frac{3}{4}$ " x 950mm long heater hose from the bottom of the intercooler reservoir to the top port of the intercooler radiator. Secure the reservoir end with a 26mm cobra clamp and the radiator end with a 25mm cobra clamp.



- k. Mount the intercooler pump relay to radiator support on the RHS of the vehicle in front of the ECU with the supplied M5x16 socket head screw and nut.



- l. Connect the black wire to the negative jumper cable location.

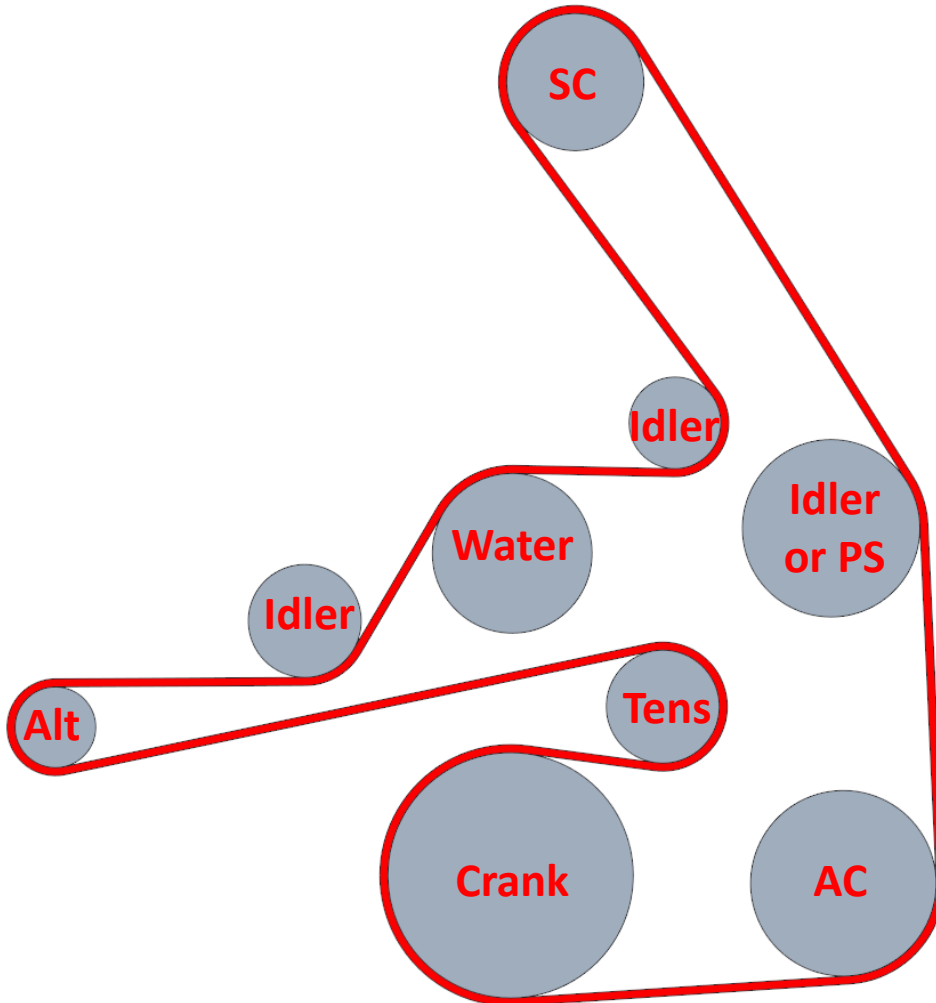


- m. Connect the red wire to the positive terminal.
- n. Trim a piece of the plastic in the fuse box to allow the trigger wire to run into the fuse box.
- o. Remove fuse F64 FUEL INJECTORS/PCM/ECM and insert the trigger fuse adapter.
- p. Route pump wire along radiator support and plug it into the pump.



## 10) Belt Routing

- a. Install the supplied serpentine belt.



## 11) Finalise Installation

- a. Install the supplied clean air tube between the throttle body and airbox reusing the OEM hose clamps.
- b. Reconnect negative terminal to the battery.
- c. **Fill the intercooler system with GM6277M, mixed with distilled or deionised water in a 50% concentrate.**  
**Note: Filling with a noncompliant coolant will void warranty.** Fill until the level comes to 25mm from the top, allow some time for the coolant to completely fill the intercooler radiator.
- d. Cycle the ignition to pump coolant. Top up as necessary and check for leaks. If the pump detects that it is being run dry, it will turn itself off then try again. After 20 unsuccessful attempts to pump liquid, the pump will stop trying and the ignition will need to be turned off then on to reset it.
- e. Refit the front bumper.
- f. Make sure any components that were removed to aid installation have been re-fitted where necessary.
- g. Start the engine and check that the supercharger belt is running correctly and there are no vacuum or liquid leaks.
- h. Calibrate the vehicle on a chassis dyno.
- i. Road test the vehicle.
- j. Check intercooler coolant level and top up if required.