Installation Guide

TVS 900

Suzuki Jimny MY19 onwards

04-Apr-25

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 (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.

For over 65 years 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, Ford, HSV, FPV, 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**

Contents

Tools required

- Sockets / spanners
  - 8mm
  - 10mm
  - 12mm
  - 14mm
  - 16mm
  - 17mm
  - E7 (see page 17, step 6n)
- Hex bits / allen keys
  - 3mm
  - 4mm
  - 5mm
  - 6mm
  - 8mm
  - 12mm
- Torque wrench
- Long nose pliers
- Cobra clamp pliers
- Side cutters
- Phillips head screwdriver
- Flat head screwdriver
- Pick tool
- Soldering iron
- Heat shrink
- Drill with 7mm drill bit
- Loctite 243
- Loctite 263

References to left and right in the instructions are made to the vehicles side and NOT the installer

1) ECU Removal

a. Remove negative terminal of battery using 10mm socket.

b. Disconnect both connectors from ECU and remove ECU with a 10mm socket.

c. Write your name and the vehicle VIN number on the ECU with permanent marker before sending. The ECU must be sent to Harrop Engineering with the included "Suzuki Jimny Supercharger Install ECU Flash Form" filled out.

2) Radiator Install

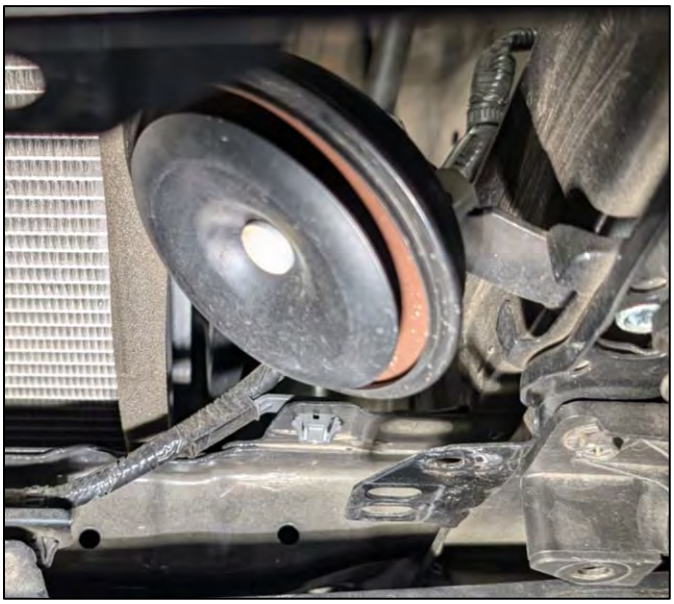
a. Disconnect the wiring to both indicator lights and remove the 2 plastic clips in the engine bay.

b. Undo the 2 clips at the bottom of the grill with a Phillips head screwdriver.

c. Remove the grill by pulling it forward.

d. Remove the inner grill by removing the 7 clips.

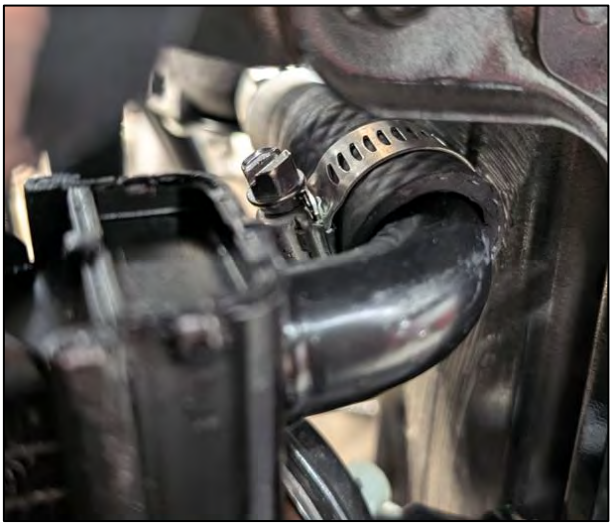
e. Bend horn back as per picture.



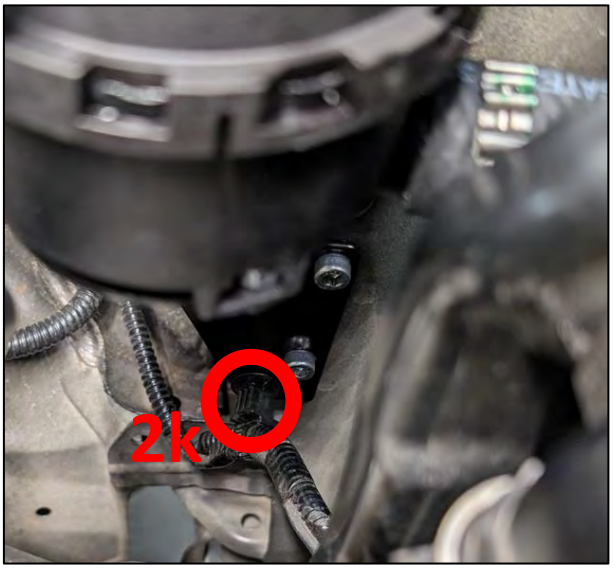
f. Unclip and move ambient air temp sensor as per picture.

g. Fit the intercooler radiator using 3x included M6x16mm socket head cap screws and M6 flange nuts.

h. Fit 100mm long ¾" heater hose to the bottom of the reservoir bottle securing it with a 26mm cobra clamp.



i. Connect the free end of the hose to the top of the intercooler radiator with the included 14-27mm hose clamp.



j. Attach reservoir bracket to the vehicle with 2x M6x16 socket head cap screws and M6 nuts.

k. Attach harness to free hole in reservoir bracket.

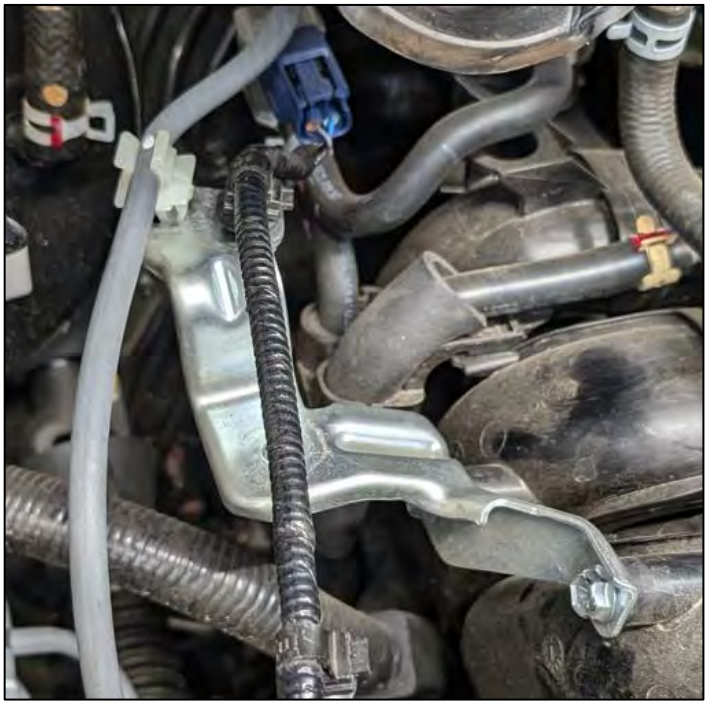
3) Intake Disassembly

a. Remove the intake air temp sensor and retain for later use.

b. Remove the airbox and retain the air filter for later use. The airbox is mounted with 2 bolts and a rubber grommet.

c. Remove wiring and vacuum line from the steel bracket.

d. Remove the steel bracket from the intake manifold.



e. Remove the belt cover from the front of the engine (5 bolts).

f. Remove the plastic harness connector from the harness located in front of the intake manifold.

g. Unplug the MAP sensor and throttle.

h. Remove breather from intake tube.

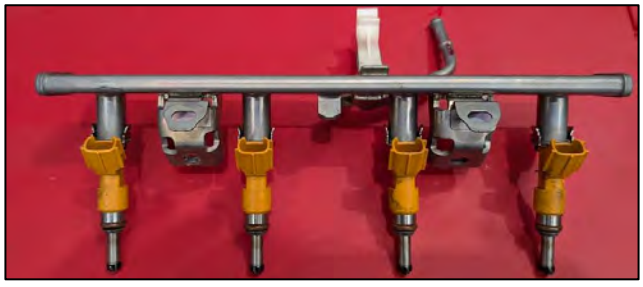
i. Remove intake tube from throttle body and retain the hose clamps for later use.

j. Remove throttle body, keeping gasket intact for later use.

k. Remove PCV hose.

l. Unclip injectors.

m. Remove fuel rail from the engine, ensuring that the tips do not fall off the injectors into the engine.



n. Remove vacuum line off the throttle elbow to the brake booster.

o. Remove line to the fuel purge solenoid from the rear of the car.

p. Remove the small grey vacuum line from the throttle elbow.

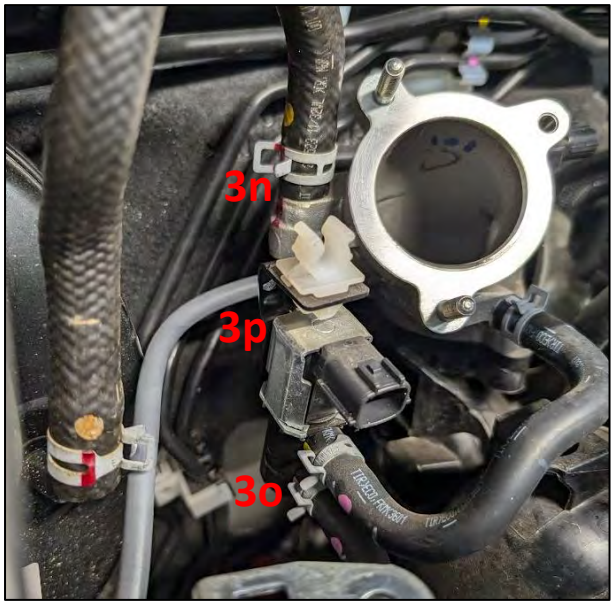
q. Remove intake manifold.

r. Tape the intake ports and injector holes so that nothing can fall into the engine.

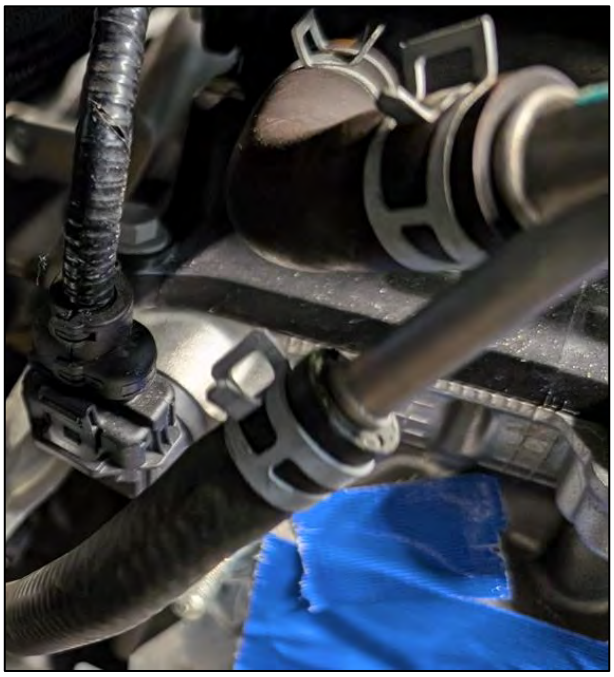
s. Remove the inlet port orings from the intake manifold for later use.

t. Remove the purge solenoid from the intake manifold.

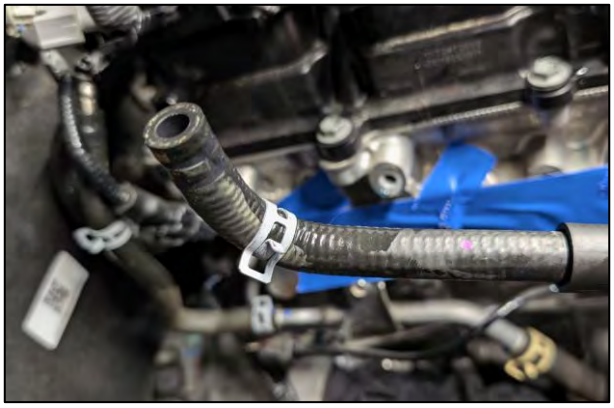
u. Remove bracket from rear of engine.



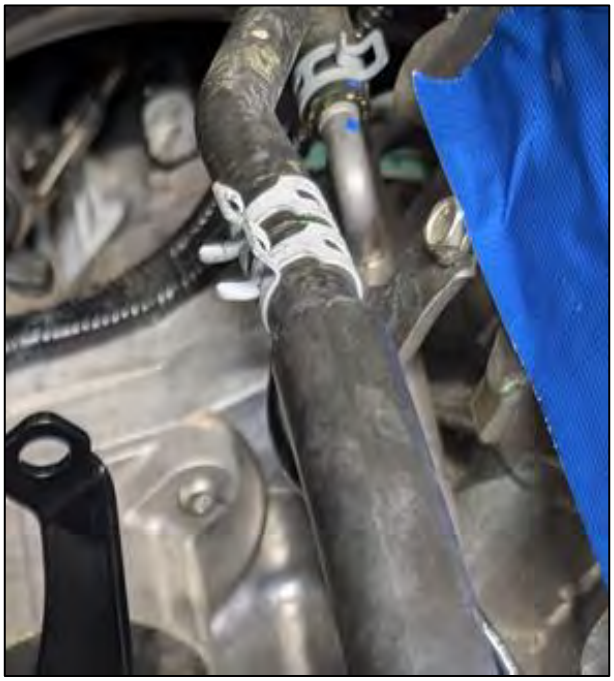
v. Remove the breather line from the engine and retain hose clamps for later use.



w. Disconnect the steam line from both ends of the joiner. This will drop a small amount of coolant.

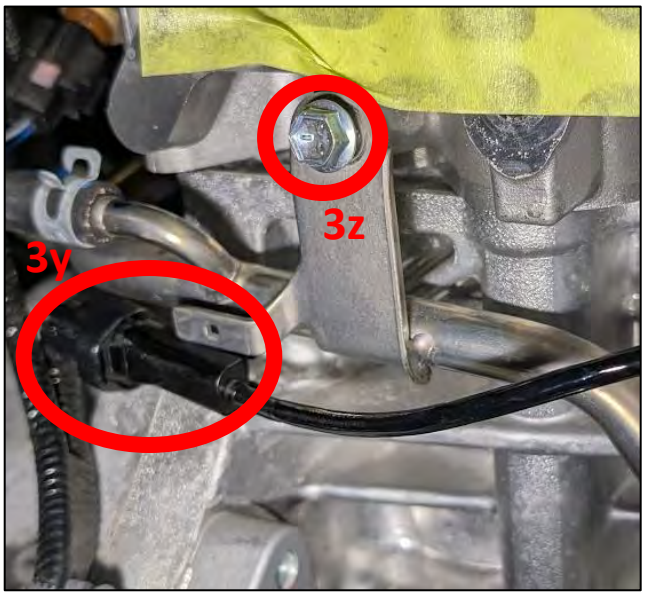


x. Reconnect these ends with the included hose joiner and the previous hose clamps.



y. Remove the knock sensor connector from the heater hose bracket

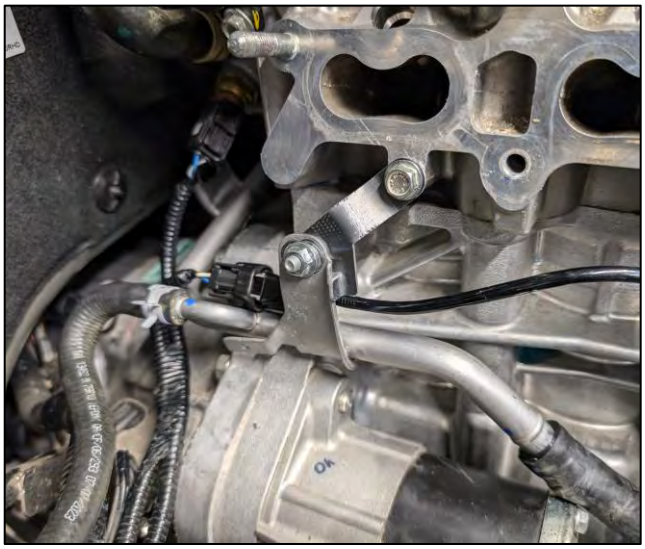
z. Remove the bolt holding the heater line to the side of the block.



aa. Unbolt heater hardline from the rear of engine and remove the bracket from the stud.

bb. Reinstall the removed nut back on the stud.

cc. Install the provided bracket between the block and the heater line reusing the bolt into the block and the included M6x12 socket head cap screw and M6 flanged nut through the bracket.

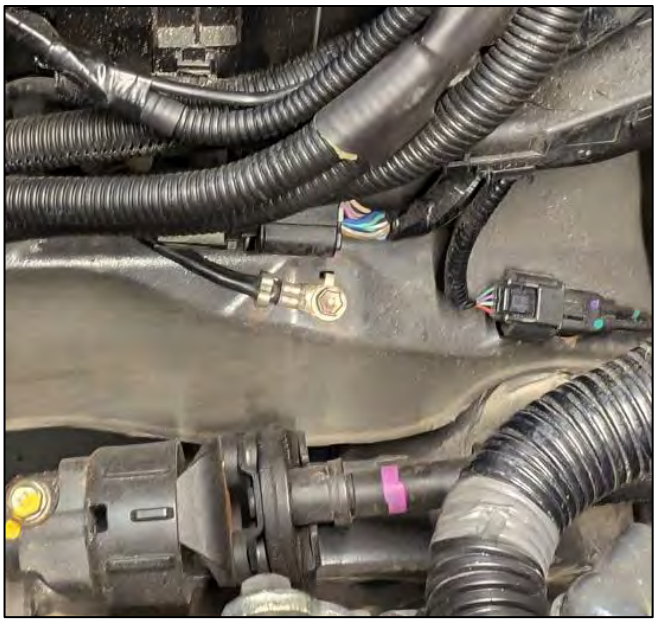


4) Pump Mount Install

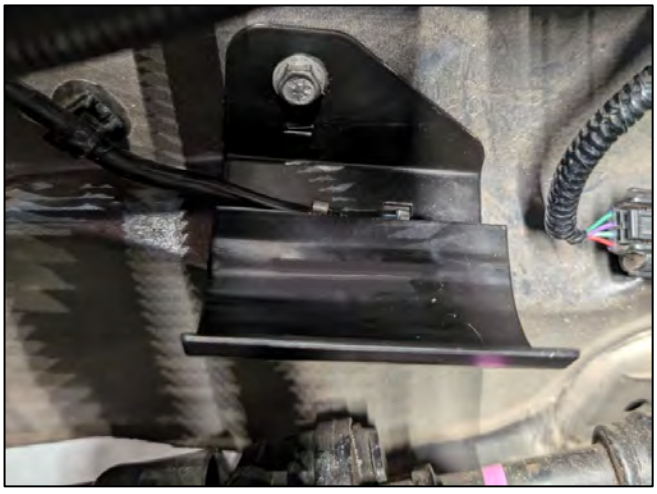
a. Remove wiring harness between steering shaft and fuse box. This is not present on all Jimny's.

b. Unbolt the harness bracket if the harness was present in the previous step.

c. Unbolt the earth lead.



d. Install pump mount reusing existing hardware ensuring that the earth lead is reattached. If in step 4b, there was no harness bracket to remove, install the supplied M6x20 socket head flange screw.



5) Intercooler Pump Wiring

a. Assemble relay into relay holder on intercooler pump loom.

b. Attach relay to the ECU mounting plate using the included M5x16 button head screw, washer and nyloc nut.

c. Connect red wire of the intercooler pump loom to the positive battery terminal.

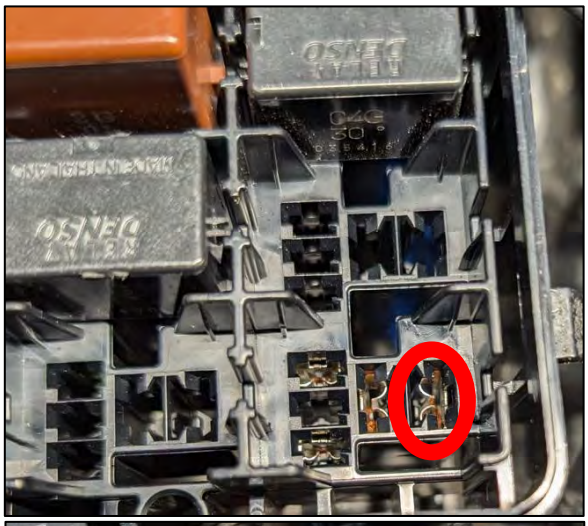
d. Connect the black wire of the intercooler pump loom to the earth point at the base of the ECU mount.

e. Remove the fuse cover.

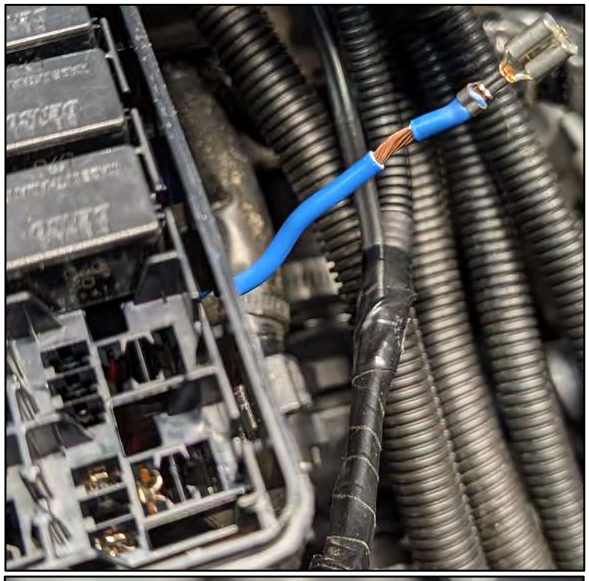
f. Separate the top section of the fuse box from the lower section.

g. Remove FL main relay.

h. Remove terminal closest to the engine using a pick tool to release the terminal.



i. Strip a section of the sheath on the wire near the terminal.



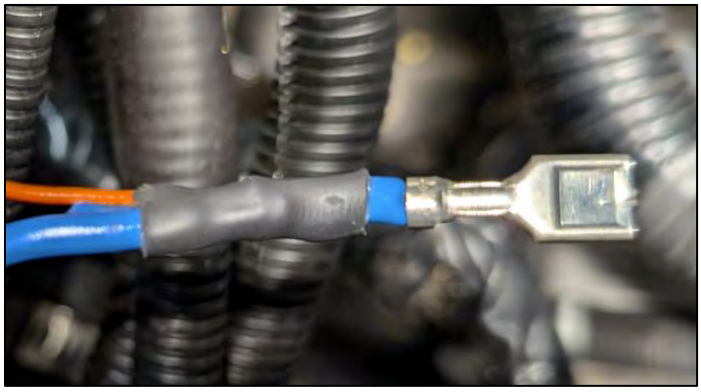
j. Feed relay signal wire up through the opening in the bottom of the fuse box.

k. Solder the end of the signal wire to the previously stripped section of the blue wire. Cover solder joint with heat shrink.

l. Insert the terminal back into its previous position.

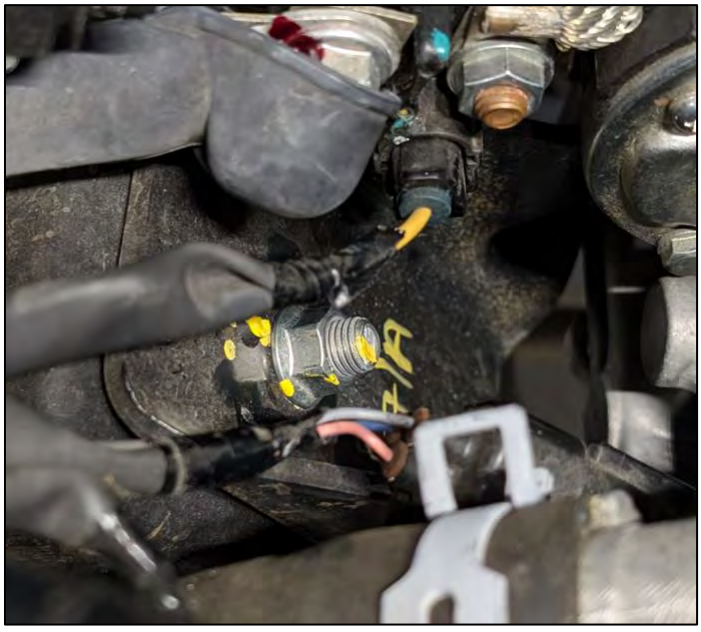
m. Reinstall FL main relay.

n. Reassemble fuse box.

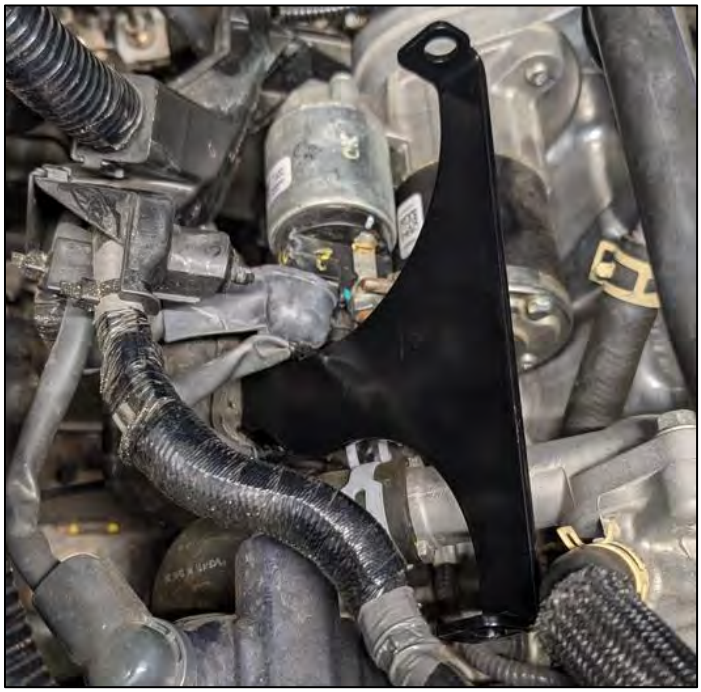


6) Lower Manifold Install

a. Remove engine mount bolt on RHS.

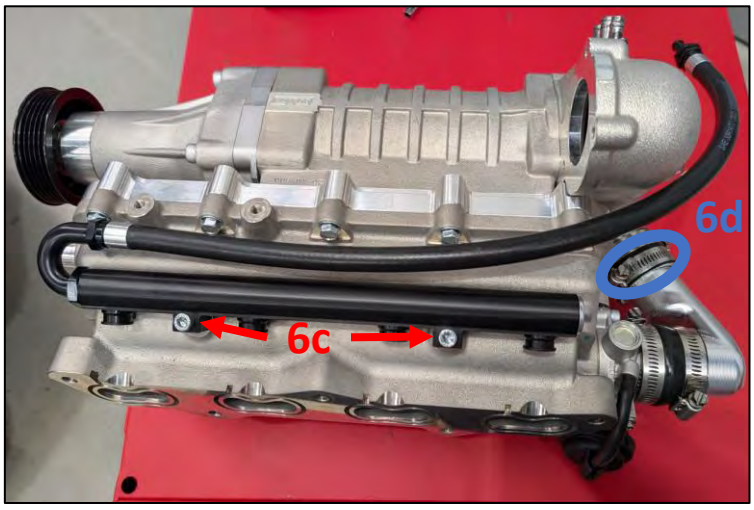


b. Install the supercharger manifold bracket, leaving the engine mount bolt finger tight.



c. Remove fuel rail from supercharger manifold.

d. Undo hose clamps on the bypass hose leaving the bypass hose attached to the bypass valve.



e. Undo the 12 bolts holding the upper manifold to the lower manifold noting that 2 of the bolts will be held captive in the upper manifold.

f. Remove supercharger and upper manifold from the lower manifold.

g. Remove the intercooler fittings.

h. Remove the intercooler from the lower manifold.

i. Fit 12x3 O-ring over the IAT sensor.

j. Install IAT sensor into the lower manifold using the included retainer, M6x12 socket head cap screw and spring washer.

k. Install the included MAP sensor with the M6x20 socket head cap screw with Loctite 243.

l. Connect included extension looms to the IAT and MAP.

m. Install the inlet port O-rings removed from earlier into the lower manifold.

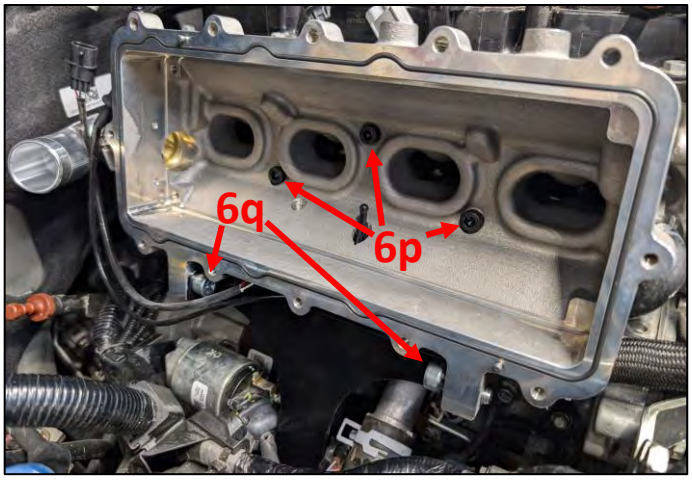
n. The intake manifold studs need to be in the front and rear holes. If the stud is in the centre hole as it is in this picture, it needs to be moved to the front hole with an E7 socket.

o. Fit lower manifold to the cylinder head using the 2 nuts removed in step 3q.

p. Apply Loctite 263 to the black M8x40 socket head caps screws and install them into the 3 bolt holes inside the lower manifold. Torque to 25Nm.

q. Attach the manifold support bracket to the lower manifold using the included M10x25 socket head cap screws.

r. Tighten engine mount nut from underneath the vehicle with a 14mm ratchet spanner.

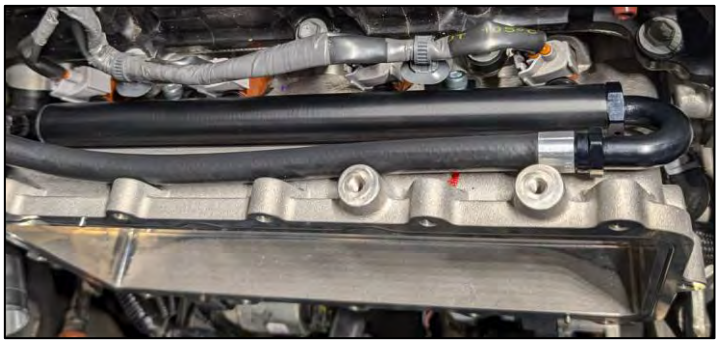


r. Connect IAT and MAP extensions to vehicle.

s. Swap the lower O-rings from the OEM injectors on to the included injectors (see picture).

t. Lubricate the upper O-rings on the injectors and install injectors into the fuel rail.

u. Lubricate the lower O-rings on the injectors and install fuel rail assembly into the cylinder head.



v. Fasten fuel rail to the upper manifold using the screws removed in step 6c.

w. Connect the injector loom to each injector. Ensure that the correct connector is connected to the correct injector.

x. Connect fuel line to the vehicle reusing the OEM hose clamp. Cable tie the fuel line out the way so that it cannot rub while the engine is running.

y. Install intercooler core using the screws removed in step 6h with Loctite 243. Torque to 12Nm.

z. Reinstall the intercooler fittings only tightening them till the bottom out. Over tightening them will strip the threads.

7) FEAD Bracket Install

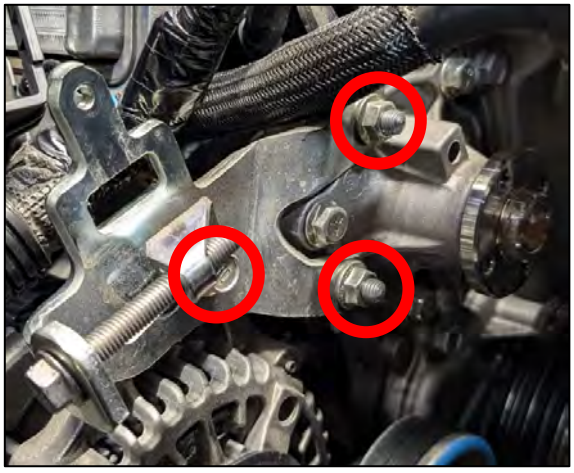
a. Remove the AC serpentine belt. Balancer bolt is a 17mm hex.

b. Loosen the water pump bolts.

c. Remove the accessory serpentine belt.

d. Remove the water pump pulley.

e. Remove the 2 nuts and 1 bolt securing the top alternator mount. Remove the top alternator mount.



f. Remove the tensioner from the Harrop FEAD bracket.

g. Undo the top idler bolt until the threaded end of the bolt is flush with the FEAD bracket.

h. Install the Harrop FEAD bracket with the 2 nuts removed in the last step along with the included bolt through the idler pulley.

8) Supercharger Install

a. Remove the pulley from the supercharger.

b. Apply Loctite 243 to the 12 bolts removed in step 6e. Install supercharger on lower manifold and fasten the bolts to 12Nm.

c. Install the snout support bracket over the front of the supercharger.

d. Thread the bolt loosened in step 7g through the bottom hole of the snout support bracket. Torque to 40Nm.

e. Install the supplied M10 nyloc nut onto the bolt from the previous step. Torque to 40Nm.

f. Apply Loctite 243 to and install the supplied M6x35 zinc plated socket head cap screw into the snout support bracket. **Torque to 12Nm. Over torquing this bolt can cause failure to the supercharger bearings. Any failures caused due to over torquing this screw are not covered under warranty.**

g. Fit 1/2” hose to the breather port at the rear of the rocker cover.

h. Install throttle body and throttle body gasket on to supercharger with the included M6x40 (1 off) and M6x20 (2 off) socket head cap screws.

i. Connect throttle body wiring.

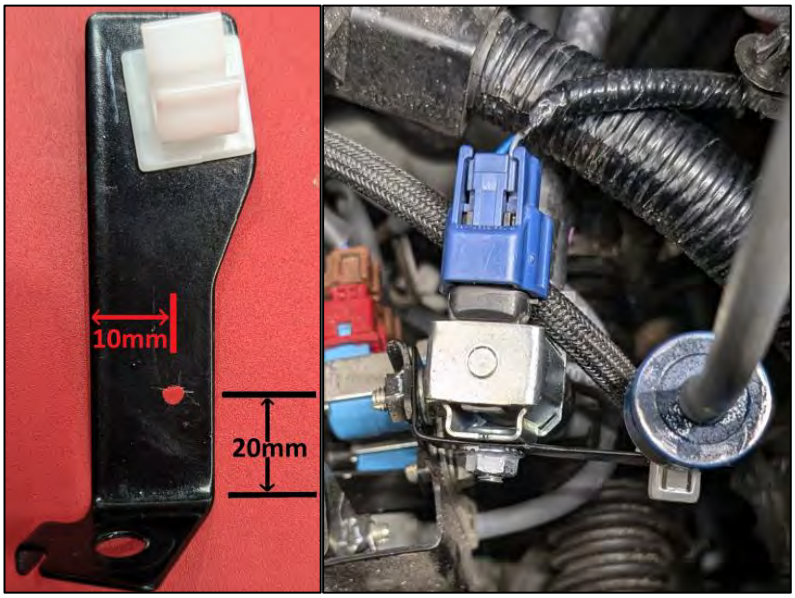
9) Vacuum Plumbing

a. Drill a Ø7mm hole in the bracket used to hold the grey diff lock vacuum line. See picture for dimensions.

b. Mount the fuel purge solenoid to the bracket with the included M6 flange nut.

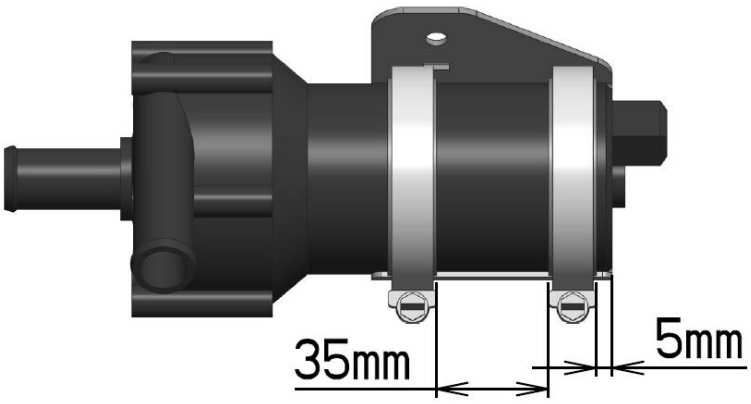
c. Fit 5/16” hose to the fuel purge solenoid using the OEM hose clamp.

d. Fit 3/8” hose to PCV at the front of the rocker cover.



e. Connect all hoses except the 1/2” hose connected in step 8g to the supercharger as per the picture. With port 1 being closest to the throttle body the hoses connect: port 1 diff lock hose, port 2 fuel purge, port 3 brake booster and port 4 PCV.

10) Intercooler Plumbing



a. Attach the included adhesive backed foam strips to the intercooler pump as per picture.

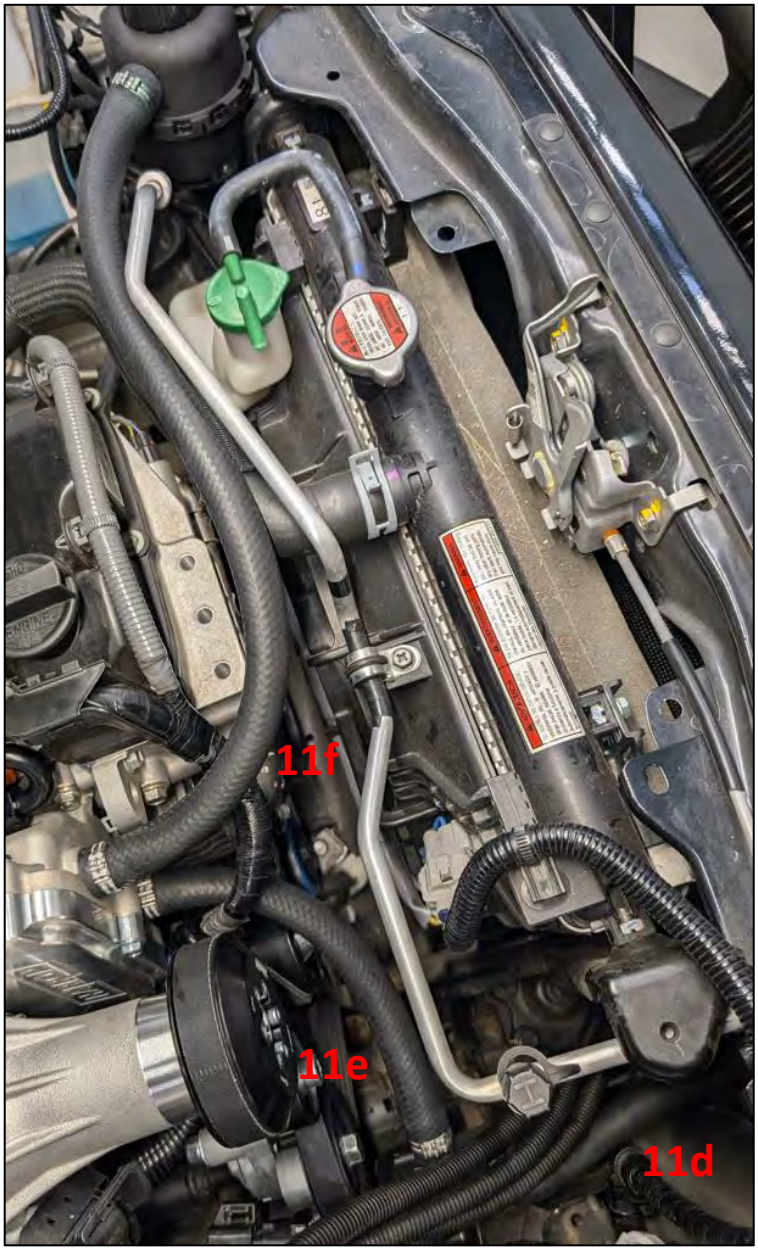
b. Install pump into pump mount using 46-70mm hose clamps (2 of) as per picture. Ensure that the outlet of the pump is point towards the lower intercooler port on the supercharger.

c. Connect the pump wiring connector to the rear of the pump.

d. Connect the 200mm long ¾" heater hose between the bottom of the intercooler radiator and the inlet of the pump. Secure the radiator end with the included 16-24mm hose clamp and the pump end with a 25mm cobra clamp.

e. Connect the 315mm long ¾" heater hose between the outlet of the intercooler pump and the bottom intercooler port of the supercharger. Secure both ends with 25mm cobra clamps.

f. Connect the 525mm long ¾" heater hose between the top intercooler port of the supercharger and the top of the intercooler reservoir. Secure the supercharger end with a 25mm cobra clamp and the reservoir end with a 26mm cobra clamp.



11) FEAD Belt Install

a. Refit the water pump pulley in step 7d.

b. Refit the tensioner removed in step 7f.

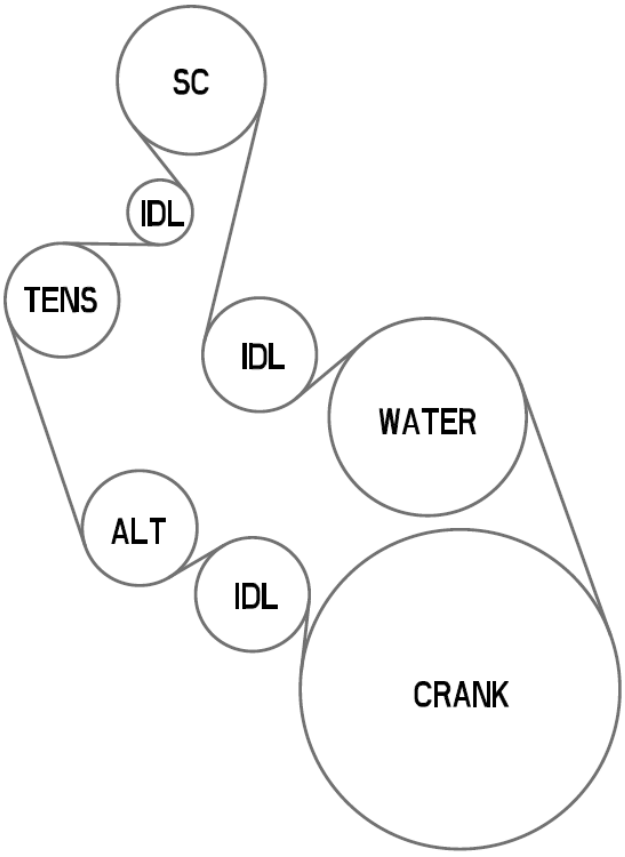
c. Refit the supercharger pulley removed in step 8a with Loctite 243 applied to the threads.

d. Install provided 5PK1635 serpentine belt. The belt will be tight to get on so 2 people may be required.

e. Tighten water pump pulley bolts.

f. Tighten supercharger pulley bolts to 12Nm.

g. Reinstall the AC serpentine belt.



12) Airbox Install

a. Bolt lower airbox to the supercharger using the included M6x20 flange head bolts with Loctite 243.

b. Fit clean air tube to throttle body. Loosely fit the OEM hose clamps.

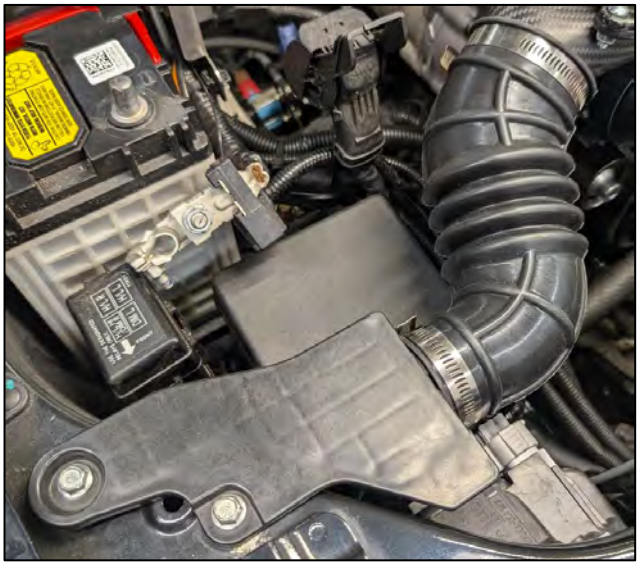
c. Place air filter in the lower airbox.

d. Install upper airbox using the included M6x20 button head screws and M6 nyloc nuts (8 off). Do not overtighten as this could crack the carbon fibre.

e. Tighten the OEM hose clamps on the clean air tube. Do not overtighten as this could crack the carbon fibre.

f. Connect the 1/2” breather line to the fitting on the upper airbox and secure with the OEM hose clamp.

g. Connect the dirty air tube between the lower airbox and the plastic bracket. Secure with the included 65-89mm hose clamp on the airbox side and 40-64mm hose clamp on the bracket side. Do not overtighten as this could crack the carbon fibre. If the vehicle is fitted with an aftermarket snorkel, the connection between the snorkel and the airbox will need to be made by the installer.



13) Finalise Install

a. Reinstall Harrop flashed ECU.

b. Reconnect negative terminal to 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.

e. Refit the front grill.

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.