



Installation Guide

TVS 2650 LT4

Camaro 6.2ltr ZL1 MY16 onwards



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 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.

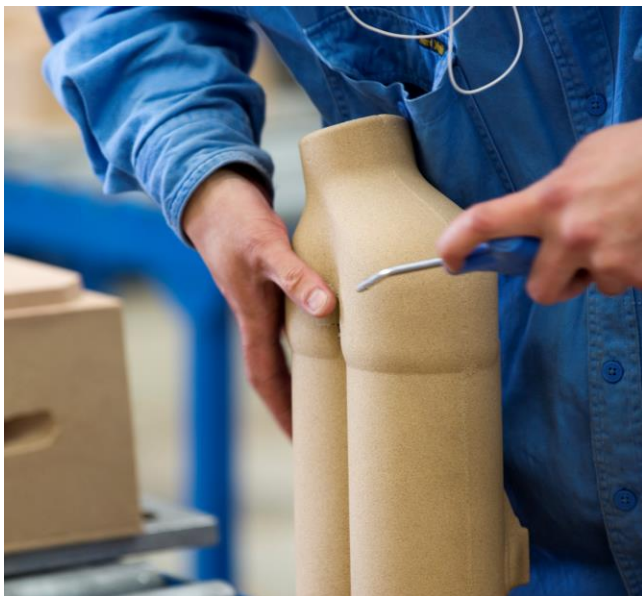
Harrop are also the preferred supplier of Eaton Supercharger and Traction Control technology including dual branded product designed and manufactured in-house. There are currently over 4,000 components in our portfolio and this is growing daily as we continually develop more Harrop Performance Products. Our high profile car manufacturing customers have included Holden, 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 and right in the instructions are made to the vehicles side and NOT the installer

REMOVAL OF EXISTING SUPERCHARGER

Disconnect the intercooler lines from the supercharger and let them drain out.

Disconnect the plastic valve cover breather lines and place aside.

Disconnect the plastic fuel purge line and place aside.

Disconnect and remove the clean air duct and place aside.

Disconnect the MAF and remove the complete air box, it just sits in 3 grommets and lifts off with a bit of force.

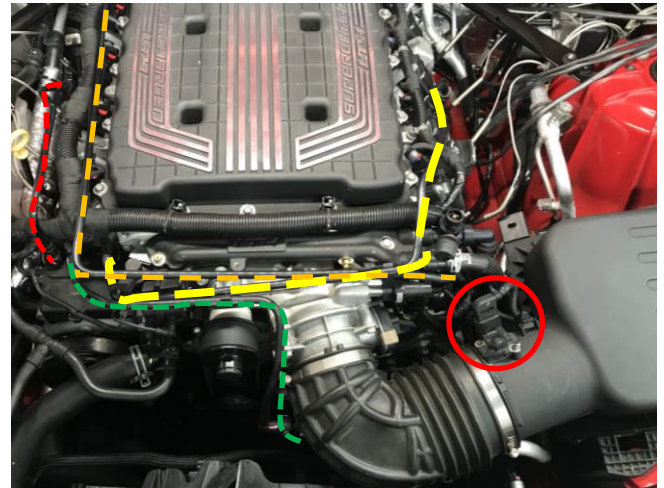
Disconnect the throttle body, unscrew this from the supercharger manifold and place aside.

Disconnect the MAP sensor (T27 torx), located below the intercooler connections and place aside.

Disconnect the fuel purge valve electrically.

Disconnect the boost control solenoid electrically

Remove the supercharger drive belt, 15mm AF.



REMOVAL OF EXISTING SUPERCHARGER

Disconnect the coils from the engine harness. Unclip the engine harness from the supercharger.

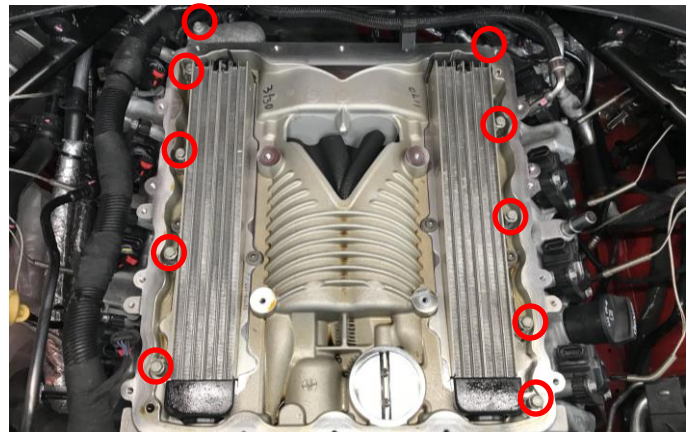
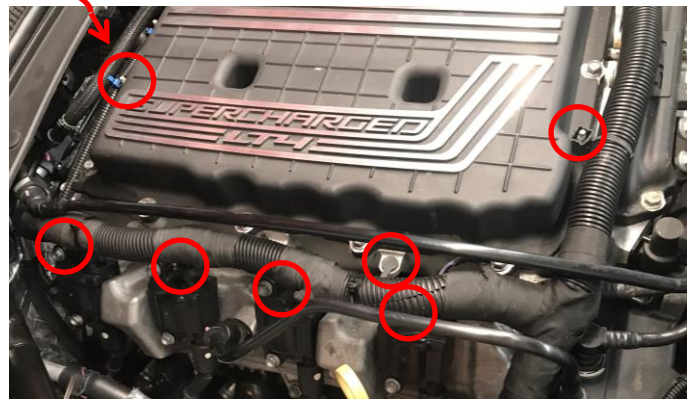
Disconnect the rear TMAP sensor, located centre left of the vehicle.

Unscrew the supercharger lid and remove it. Undo and remove the 10 manifold screws, once these are out lift off the supercharger and place it on a bench.

Clean the head faces and mask up the ports.

Fuel line disconnection, note the line will have residual pressure in it, placing a shop rag over the line whilst removing it will minimise fuel spill and spray. Remove the hard line section by undoing the securing screw on the LH valve cover and place aside, refit the screw to secure the valve cover.

Route the fuel line as per the image and secure it with the cable ties provided in the 2 places as per the image, be careful not to flatten the hose. (Cable tie to the RH fuel rail and the second tie to the electronic part of the DI pump just behind the connection).



PREPARING THE ENGINE AND SUPERCHARGER FOR INSTALLATION

The coils need to be spaced off the valve covers, using the spacers and new screws supplied unscrew each coil and fit the spacer. Once the spacers are fitted connect the coils electrically.

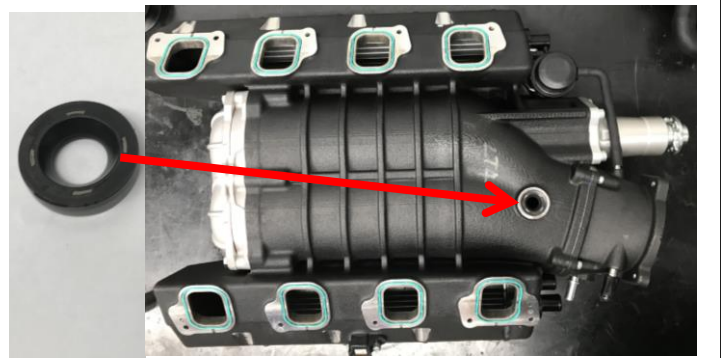


Remove the rear TMAP sensor from the manifold and screw this into the new supercharger with the supplied M6 x 16 long screw.



Transfer the 8 manifold to head seals from the old manifold to the new one.

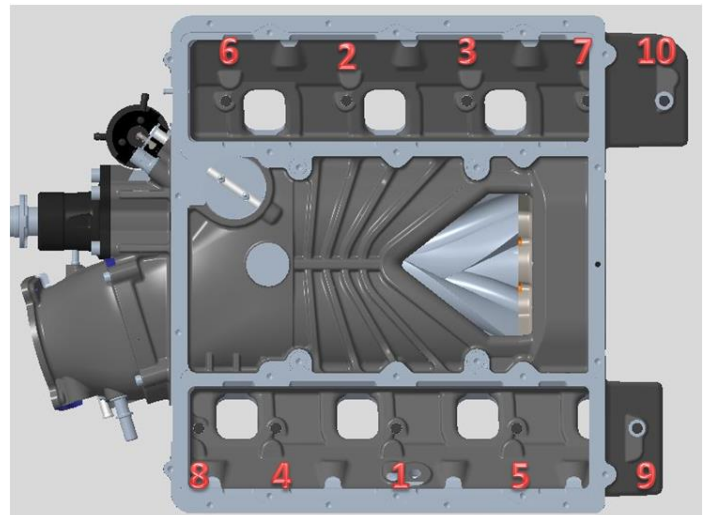
Transfer the valley plate breather seal from the existing manifold to the new one or alternatively purchase a new one.



Assemble the dowdy washers to the manifold screws 8 off M6 x 45, 1 x 90 long and 1 x120 long, place some lubrication under the heads. Insert the 2 rear screws into the new supercharger manifold, use a bit of tape to hold these up enough so they do not protrude out the bottom. (90mm long in the RH side and the 120mm long into the LH side).



Remove the masking tape off the inlet ports on the heads and lift the supercharger manifold into place. Remove the supporting tape off the rear screws and get these started in the heads. With the remaining 8 screws apply Loctite 263 and screw these in. Tighten the screws in the sequence shown and torque to 10-12Nm.



SUPERCHARGER INSTALLATION

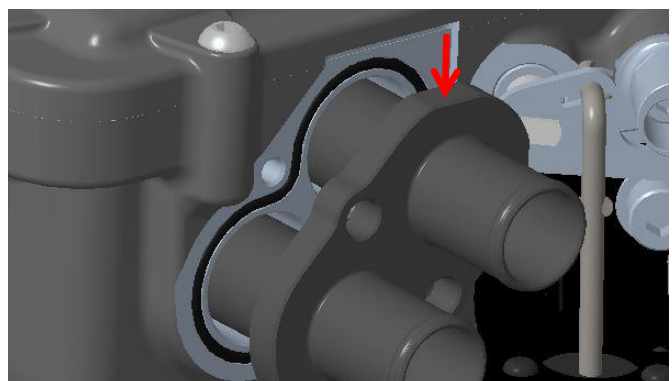
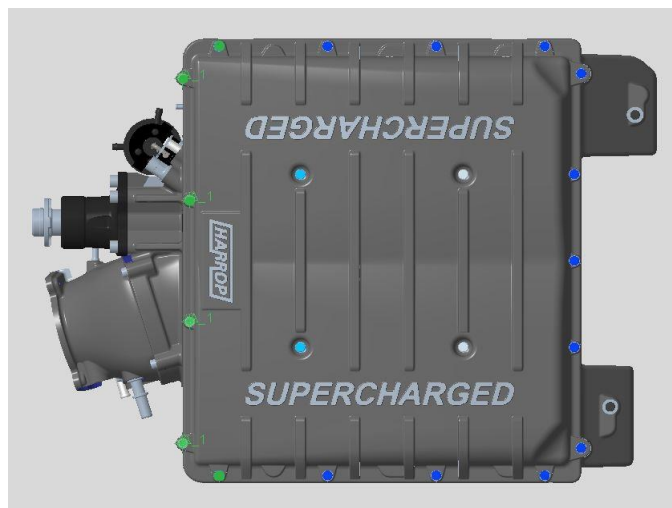
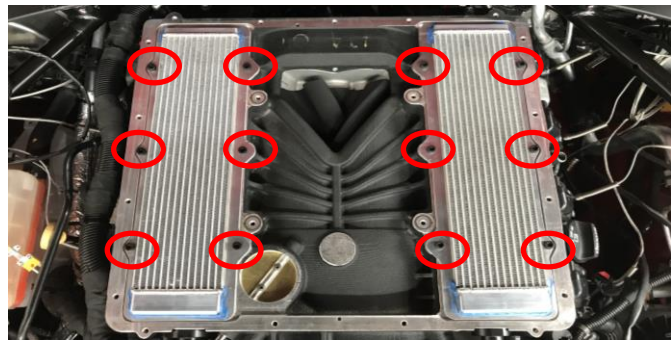
Check to ensure there is a gap between the valve cover coil posts and the manifold to ensure it is seated and sealed correctly. You can do this by sliding piece of paper between the manifold and the posts, if you find there is no gap loosen off the coil cover and see if it will slide down, if not then you will need to file/machine the post with the fowl condition.

Install the intercooler cores into the manifold, note these are handed. Apply Loctite 263 to the screws and torque to 10-12Nm.

Installing the lid, check to ensure that there are 4 brown 'O' rings in the centre of the lower manifold where the white and cyan screws fit. The green screws are M6 x 20 button head screws, the blue screws are M6 x 20 socket heads, The cyan coloured screws M6 x 35 long socket heads and the white screws are M6 x 45 socket heads. Torque these to 10-12Nm.

Apply a lubricant to the intercooler hose fittings on the opposite side to the hose connection and insert them through the manifold into the cores. Note the fittings have flats machined on one side, orient these flats to face the top as they provide clearance for the lid. Using the screws supplied M6 x 16 long flange heads, secure the fittings and torque to 10Nm.

Remove the MAP sensor from the old manifold and using the M6 x 20 long screw install the front MAP sensor on the throttle body adaptor on the new supercharger and connect it electrically.



RE-INSTALLATION OF SUPERCHARGER ANCILLARIES

Remove the fuel purge valve from the old supercharger and transfer it to the new one next to the MAP sensor and connect it electrically, reuse the original screw.



Remove the boost control valve off the old supercharger, remove the valve from the metal mounting plate. Assemble the valve into the new mounting plate provided and using a combination of the 3 existing vacuum hoses connect this on the front right side as per image and connect it electrically. Top hose connection goes to the vacuum actuator spigot and the lower to the manifold fitting. Use the M6x20 long screw and nyloc nut to secure the bracket as per the image.



Transfer the existing throttle body seal from the old supercharger and install the seal into the new supercharger. Using the screws supplied M6 x 40 long install the throttle body to the new supercharger and connect it electrically.



Using the extension harness provided connect the TMAP sensor on the LH side to the engine loom at the rear of the supercharger, cable tie the harness along the coil harness.



Refit the fuel purge line, and it is best to refit the valve cover breather lines prior to connecting the intercooler hoses. Cable tie the purge to the RH harness at front and rear, 2 places.



INTERCOOLER HOSE ROUTING

Remove the existing intercooler hose from the pump and the other one from the aluminium cross over tube and place a side.

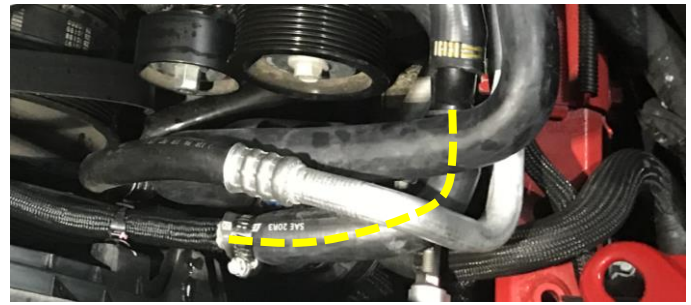
Install the RH lower intercooler hose, run this behind the throttle body adaptor towards the LH side of the vehicle. Install the LH hose downwards to meet up with the RH one and insert the Y piece supplied as per the image. Using the yellow banded Cobra clamps secure these hoses in position.

Install the 90 degree connecting hose to the Y piece and connect the other end to the aluminium cross over tube. Secure the hose to the cross over tube with the worm drive clamp and the other end with the yellow banded Cobra clamp.

Assemble the reservoir bracket to the reservoir using the M6 x 12 button heads and temporarily mount it to the LH strut tower refer final image on left.

Fit the upper intercooler lines and connect these using the Y piece supplied, secure the hoses with the yellow banded Cobra clamps. Fit the reservoir to Y piece hose and secure it with the yellow banded Cobra clamps.

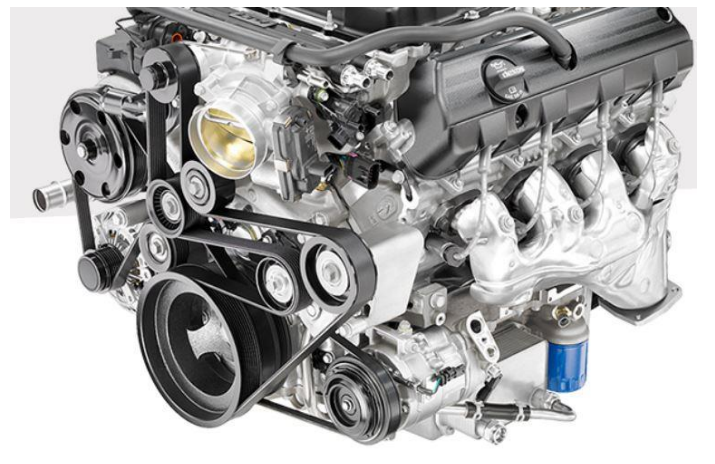
Install the reservoir to intercooler pump hose as per the image, secure the hose on the pump with the worm drive clamp supplied the other end with the yellow banded Cobra clamp.



INSTALLATION GUIDE

WRAP UP OF INSTALLATION

Install the supercharger drive belt, the belt route is as per factory installation.



Remove the reservoir from the strut tower so as to provide clearance for the air box to be refitted, refit the air box. Now secure the reservoir in its place. Install the clean air tube and connect the breather.



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. There is no need for a bleed in the system, fill until the level covers the upper fitting. Once the pump is running it will deaerate the system and keep filling it until no more air is evident.



The vehicle should start with the standard file, run the engine to confirm no leaks in the intercooler system and fuel line.

Run the vehicle on dyno to complete the tuning.