



**Installation Guide**  
**Nissan Y62 Patrol - Series 1-2**  
**FDFI2300 Supercharger Kit**



# Y62 PATROL SUPERCHARGER KIT

ENGINEERING PERFORMANCE SINCE 1955



For 60 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 & Lingenfelter Performance Parts.

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 4000 components in our portfolio and this is growing daily as we continually develop more Harrop Performance Products.

Our high profile car manufacturing customers include Holden, HSV, FPV, Roush 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



# Y62 PATROL SUPERCHARGER KIT



## CONTENTS PAGE

Introduction	1
Important information / warranty information	3
Horn Relocation	5
Mounting the Intercooler Radiator	6
Intercooler Pump Installation	7
Intercooler Pump Loom Installation	8
Remove OE Manifold	10
Assemble and Install Ancillaries	12
Install Supercharger Manifold, Supercharger & Drive Belt	14
Install Ancillaries and Intercooler Reservoir	15



# Y62 PATROL SUPERCHARGER KIT

ATTENTION: READ BEFORE PROCEEDING



## **Important information:**

The owner and driver 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
- The longevity of the engine and driveline components.
- The vehicle will need to use premium unleaded fuel only (98 RON).
- Coolant used in the intercooler system must adhere to Ford WSS-M97B44-D or GMW3420 specification mixed 50% concentrate with distilled or deionised water.

## **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 Harrop terms and conditions.

Please refer to Harrop Engineering's full warranty terms and conditions and applicable warranty registration forms which can be found at [www.harrop.com.au](http://www.harrop.com.au).

# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

This document is meant only as a guide, as any vehicle modification should be completed by a certified technician who has the relevant experience and equipment to be competent of a safe and effective supercharger installation.

### 1. Remove front grill

1. Remove front grill by removing the top scrivets that hold down the grill to the radiator support panel. Once these have been removed you should be able to get your arm down between the grill and radiator support panel and squeeze each arrow head tab together to work the grill out of the front bar cover.



### 2. Relocate front horns

2.a. Unscrew them from the radiator support panel. Reposition the LH one to the existing screw located just beside the LH headlamp as per image 2a.

2.b. For the RH horn, drill a pilot/location hole in the radiator support panel located just behind the RH headlamp to fit the tab on the horn bracket (blue hole), image 2b.

2.c. Once the horns have been mounted they may require some adjustment of the bracket so that the horn sits closer towards the engine to provide sufficient clearance for the grill.



# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE

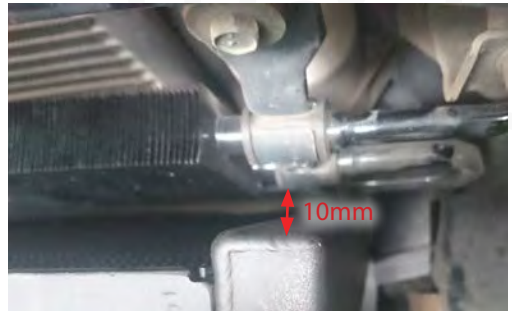


### 3. Mounting the intercooler radiator

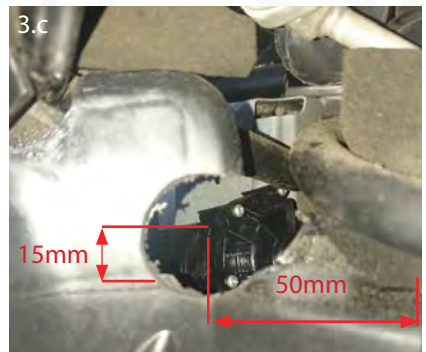
3.a. Remove the middle lower screw from the hood latch. Sit the radiator into position as per image 3a and secure with the new 30mm long screw supplied to the hood latch. The bottom holes should line up with the auxiliary cable fixing holes, note if there are cables attached to the holes then these must be unclipped out of the way.



3.b. Check that the auxiliary coolers in front of the condenser do not touch the newly positioned intercooler radiator. There must be at least 10mm of clearance, if there isn't then the auxiliary cooler brackets will need to be slightly modified towards the engine.



3.c. Now mark the holes that need to be drilled for the cooler hoses, these should be inline height wise with the pipes from the intercooler radiator. They will need to be over towards the right to clear the engine radiator. Drill a 30-32mm hole in the side seals. Image is of the lower hole, once lower hole is correct mark up a distance of 155mm for top hole. Note measurements are a guide only.



# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE



3.d. Now that the holes are drilled we can fully mount the intercooler radiator into position. Ensure that the lower mounts have the rubber isolators inserted and the steel sleeves. Use a thread locker (Loctite) to ensure that the nuts will not come loose.

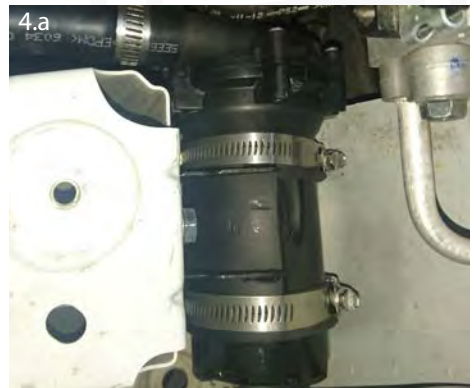


3.e. Finally double check that the core has a minimum of 10mm of clearance from accessories including the ambient temperature sensor.



## 4. Intercooler pump installation

- 4.a. Disconnect the battery.
- 4.b. Remove the battery from its position
- 4.c. Remove the battery tray.
- 4.d. Install pump assembly as per image 4a using the M8 hex screw supplied, this screws into an existing hole in the battery support bracket.



# Y62 PATROL SUPERCHARGER KIT

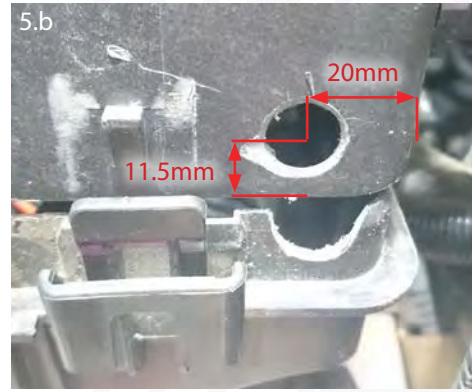
## INSTALLATION GUIDE



### 5. Intercooler pump loom installation

5.a. Lift off the fuse/relay cover

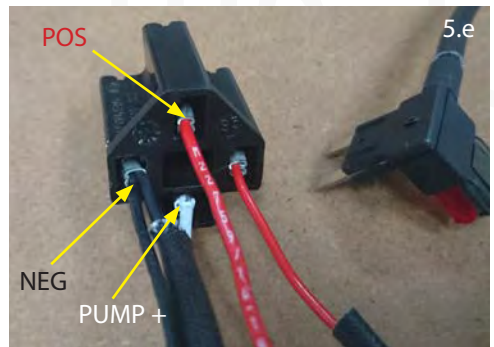
5.b. Drill a 11.5mm hole in the position as marked (approx. 11.5mm up from seal face and 20mm in from the engine side). Hole must be drilled when the unit is clipped together, once drilled cut the lower section as shown and file hole to 12mm diameter.



5.c. Clip the upper and lower halves of the fuse box together and install the supplied grommet.

5.d. Feed the pump, positive and negative wires through the grommet up into the fuse box.

5.e. Once all the wires are through these must be pushed into their correct pin holes into the rear of the relay connector. The connector comes preassembled with one red wire. Looking from the rear of the plug moving in an anticlockwise direction assemble the positive wire then the earth and then the pump positive (white).



5.f. Plug in the connector onto the pump.



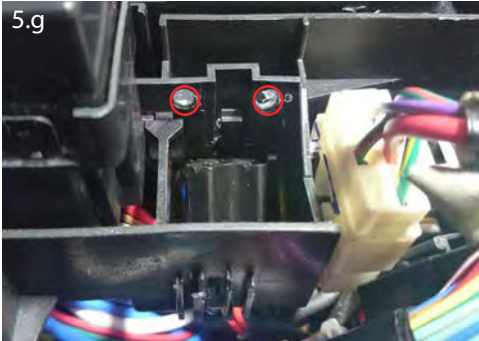
# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

5.g. Inside the middle of the fuse box, drill two holes using a 4mm drill bit that will be used to cable tie the relay connector in position. See image 5.g.

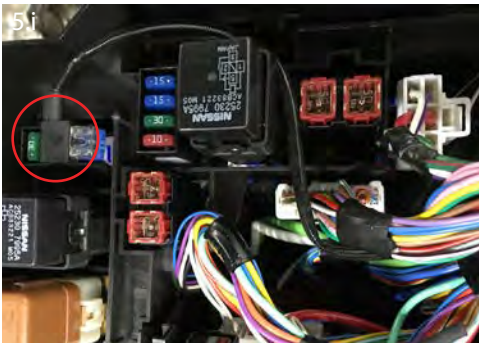
5.h. Once the holes have been drilled thread the supplied cable tie through the holes and secure the relay connector in position.



5.i. Remove the "Fuel Injector" fuse, replace the 10 Amp fuse in the "add a circuit fuse tap" harness and plug it in the injector fuse slot.

5.j. Connect the black wire to the earth strip as per image 5j located under the battery tray.

5.k. Connect the red wire with the eyelet to the positive on the battery terminal as shown in image 5k.



# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE

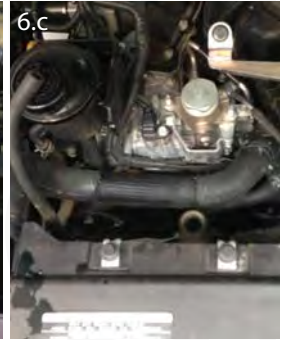


### 6. Remove OE manifold

6.a. Drain the engine coolant into a clean container and seal. There is a drain plug beneath the lower radiator hose.

6.b. Remove the engine cover.

6.c. Remove the engine coolant reservoir from the top of the radiator and disconnect the top radiator hose from the thermostat housing cover.



6.d. Disconnect the valve cover vent hoses and remove the air intake tube from the throttle body and the air-box.

6.e. Remove both LH and RH PCV vacuum lines and un-plug the MAP sensor from the rear of the manifold.

6.f. Disconnect the throttle body coolant lines and wiring loom.

6.g. Disconnect the fuel purge solenoid hoses and wiring from the intake plenum.

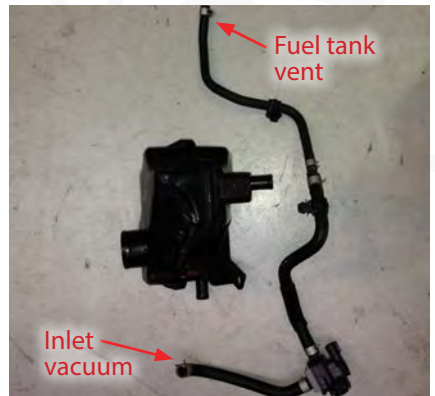


# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE



- 6.h. Clean any dirt or debris around manifold to prevent it from entering the engine.
- 6.i. Mask the inlet ports to ensure no foreign matter enters the engine, both sides.
- 6.j. Un-screw the manifold from the cylinder heads and remove from engine.
- 6.k. Remove the throttle body from the manifold.
- 6.l. Remove the MAP sensor from the rear of the manifold.
- 6.m. Remove the fuel purge solenoid including hoses from the front of the manifold.
- 6.n. Discard the intake plenum.
- 6.o. Keep the fuel purge solenoid and its hoses.
- 6.p. Take note of the connection points as these parts will be re-used.



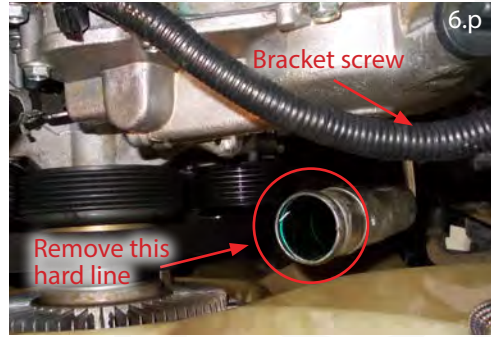
# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE



6.o. Remove the FEAD belt and disconnect both upper and lower radiator hoses from the engine coolant hard-line.

6.p. Remove the engine coolant hard-line by unscrewing its bracket from the front of the engine.



6.q. Remove the original Thermostat housing cover.

6.r. Remove the O-ring from the base of the original Thermostat cover.



## 7. Assemble and install ancillaries

7.a. Install the Thermostat housing cover O-ring to the Harrop Thermostat housing cover.

7.b. Install the Harrop Thermostat housing cover to the engine using the original fasteners.



# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

- 7.c. Install the MAP sensor to the rear of the Harrop Manifold using the original fastener.
- 7.d. Install the 8x O-rings supplied in kit into the Harrop Supercharger manifold.
- 7.e. Install the Harrop engine coolant hard-line to the front of the engine using the original fastener and location.
- 7.f. Ensure that the engine fan has a minimum of 10mm clearance to the hard-line
- 7.g. Re-install the original lower radiator hose between the Harrop hard-line and the radiator outlet. Secure with hose clamps.
- 7.h. Fit the short straight radiator hose between the Harrop hard-line and the Harrop Thermostat housing. Secure with hose clamps.
- 7.i. Install the Harrop belt idler bracket assembly using the supplied fasteners, torque to 16Nm.



# Y62 PATROL SUPERCHARGER KIT

## INSTALLATION GUIDE



### 8. Install supercharger manifold, supercharger & drive belt

8.a. Fit Supercharger/Manifold to the engine using supplied M6x25 flange head screws. Inspect Supercharger manifold including the ports to ensure there is no foreign objects or debris.

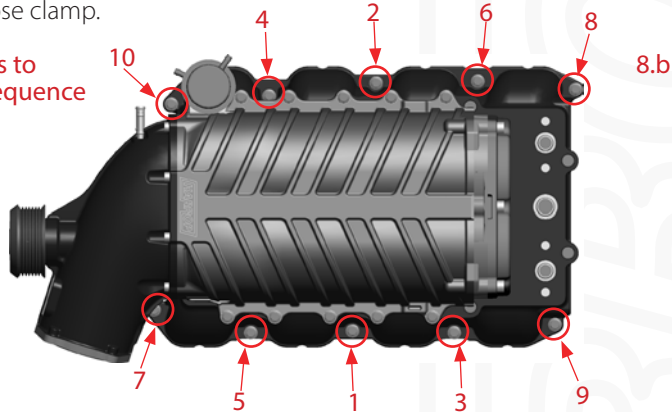
8.b. Note that the front and rear screws on the vehicle LHS will locate the manifold, and the other screws are designed with generous clearance.

8.c. Plug in the MAP sensor at the back of the manifold.

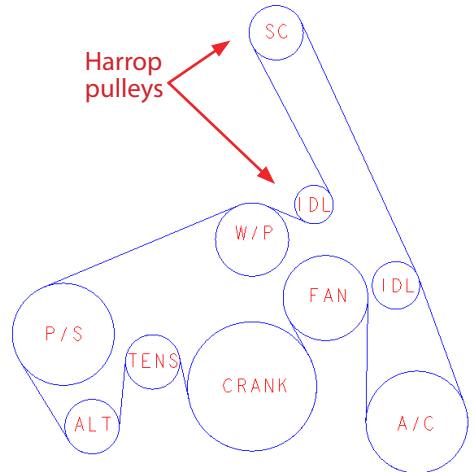
8.d. Fit the fuel purge solenoid hose to the fitting under the Supercharger inlet, as shown in 8.d.

8.e. Secure with a hose clamp.

Torque screws to  $18 \pm 2 \text{Nm}$  in sequence shown



8.f. Install the supplied 7pk drive belt. Check that there is equal clearance between the engine fan/engine coolant line and engine coolant line/Supercharger belt.



# Y62 PATROL SUPERCHARGER KIT

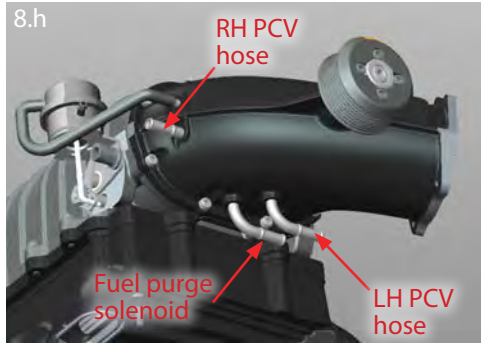


## INSTALLATION GUIDE

8.h. Using the supplied Ø10mm vacuum hose, connect the PCV vacuum lines, trimming to length as required.

8.i. Install the OE throttle body to the supercharger inlet in the position shown using the original fasteners.

8.j. Using the Throttle extension Loom, connect the throttle body to the wiring harness



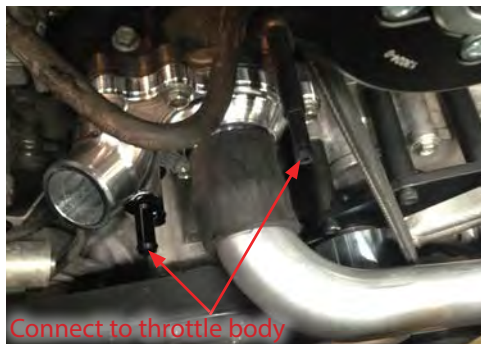
## 9. Install ancillaries and intercooler reservoir

9.a. Using the supplied Ø8mm hose, connect the throttle body coolant lines to the thermostat housing.

9.b. Trim to length as required.

9.c. Ensure that the hoses are secured away from the supercharger belt.

9.d. Secure with hose clamps.



# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

9.e. Attach the supplied fuel purge solenoid bracket to the solenoid with the supplied m6 cap screw and nut.

9.f. Attach the purge solenoid bracket to the LH second front Supercharger screw.

9.g. Re-connect the other end of the fuel purge line to the tank vent hard-line.

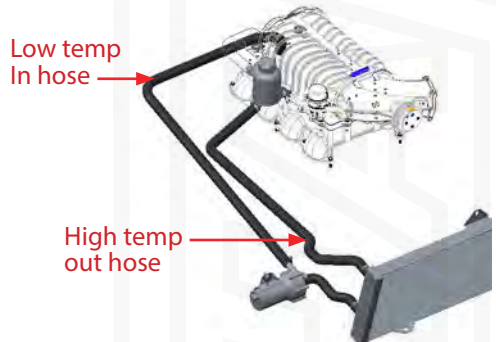


9.h. Install the Intercooler Reservoir to the RH side of the supercharger using the 3rd and 4th supercharger bolts.

9.i. Attach the Low temp-in Intercooler hose between the pump outlet and centre Ø20mm hose tail at the rear of the Supercharger manifold.

9.j. Attach the High temp-out Intercooler hose between the Ø20mm Reservoir outlet and the top Intercooler Radiator inlet.

9.k. Secure with hose clamps.





# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

9.l. Install the Intercooler outlet hoses between the two Ø16mm hose tails at the rear of the Supercharger manifold and the two Ø16mm hose tails on the Intercooler Reservoir.

9.m. Secure with hose clamps supplied.

9.n. Re-connect the top engine radiator hose to the Harrop Thermostat cover.

9.o. Install the Engine coolant Reservoir, making the original hose connections.

9.p. Secure with hose clamps.



9.q. Un-clip the airbox lid.

9.r. Install the original air intake tube between the throttle body and the airbox lid.

9.s. Re-clip the airbox lid.

9.t. Secure the intake tube with original hose clamps.



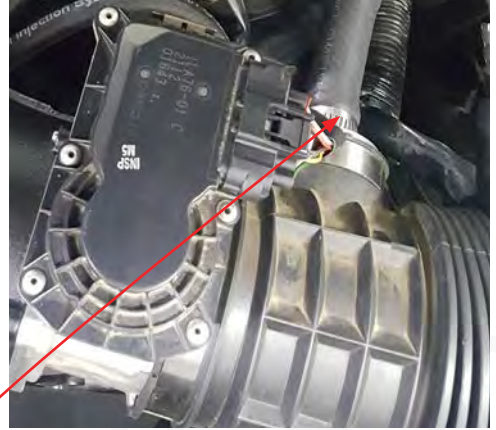
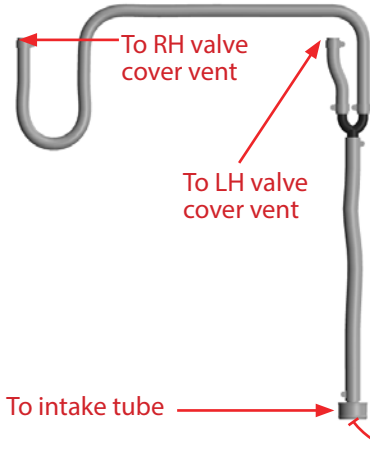
# Y62 PATROL SUPERCHARGER KIT



## INSTALLATION GUIDE

9.u. Using the supplied  $\text{\O}3/4''$  hose,  $\text{\O}40\text{mm}$  to  $\text{\O}20\text{mm}$  reducer and 'Y' fitting, connect the RH and LH Valve cover vent to the intake tube.

9.v. Secure with hose clamps.



9.w. Check that all engine coolant hoses are secured with hose clamps and re-fill the Engine cooling system with coolant via the Coolant reservoir above the radiator.

9.y. Re-install the battery.

9.x. Ensure all Intercooler hoses are secured with hose clamps.

9.z. Fill the Intercooler Reservoir with Automotive engine coolant **GM6277M**.

**Note - Warranty will be void if the incorrect coolant is used.**

9.aa. Open the bleed screw on the top front RH side of the intercooler radiator until the air is bled and close. Now top up reservoir.

9.ab. Close the reservoir fill cap and run the intercooler pump by switching the ignition on without starting the engine for a minute or so.

9.ac. Re-fill the reservoir and repeat this process (9.aa-ab) until all air is expelled from the system.

9.ad. Re-fit the front grille.

9.ae. Flash the ECU with a base calibration and start the engine.

9.af. Check that the Supercharger belt is tracking on all pulleys and that there is clearance between the engine coolant hard-line, supercharger belt and engine fan.

9.ag. Check that there are no coolant leaks from both the engine cooling system & the supercharger cooling system.

9.ah. We strongly recommend tuning the vehicle on a dynamometer to ensure optimum performance and durability. The engine will probably operate at no-boost levels with the factory tune. Do not attempt to rev the engine into boost mode with the standard tune, as the PCM may enter "limp" mode.