



# Dual External Transmission Oil Cooler with Bypass

**Suitable for:**



**Nissan Patrol Y62 with RE7  
7 Speed Automatic Transmission**

WITH THE FOLLOWING ENGINES:  
VK56 - 5.6L V8 Petrol - 2010 onwards

Please read through all of the instructions carefully before proceeding. If any of the information does not appear correct or the diagrams don't match your vehicle, please contact Wholesale Automatic Transmissions on +61 3 9762 8004.

## Safety First

Hot engines and hot transmissions can cause serious injury. Before removing the hoses and parts from the vehicle, allow sufficient time for engine and auto to cool.

### Parts List



Dual Cooler

2 x 5/16" Coolers plus  
1x Custom Bracket



1.5m x 5/16" Cooler  
Line Hose with Conduit



0.5m x 5/16" Dual  
Cooler Link Hose



1 x Nissan Y62 Bypass  
Valve with o-ring



1 x Circlip



1 x M8 x 20 SEMS Bolt



1 x M6 x 20 SEMS Bolt



6 x 8-16 Screw Clamps



1 x Screw

Expected Installation Time: 3 Hours

# 1. Summary of Installation - Experienced Fitters

- Ensure you have enough transmission oil to top up your transmission.
- Inspect o-ring on bypass valve, ensuring it is installed correctly.
- Remove the front grill and front lower bash plates / covers (if fitted).
- Remove the right-hand horn but leave wiring connected.
- Remove the nut off the stud that is mounting the airbag sensor but leave wiring connected.
- Disconnect air con pressure sensor cable and remove surrounding foam.
- Remove bolt from ambient temperature sensor bracket and move bracket out of the way.
- Remove lower transmission cooler ATF hose.
- Remove 2 x bolts holding power steering cooler to vehicle.
- Lower the power steering cooler to reveal bolt holding in transmission cooler. Do not lower too far as the fittings are easily damaged.
- Remove upper transmission cooler ATF hose. Be aware this fitting is easily damaged.
- Remove bolt holding in transmission cooler. This is attaching the top bracket located above the air con condenser dryer.
- Remove transmission oil cooler from vehicle.
- Remove the factory circlip holding in the thermostat.
- Drill a small 3mm pilot hole in the middle of the plastic thermostat retainer and screw in the supplied screw. Use this to extract the plastic retainer. Be aware the thermostat is spring-loaded behind this.
- Remove thermostat and spring.
- Insert bypass valve into thermostat housing. Use new supplied circlip to retain.
- Refit transmission cooler to vehicle. Be aware that the factory hard lines are quite soft and easy to damage.
- Reconnect upper transmission cooler hose.
- Replace lower transmission cooler hose with new 5/16" hose (mounted to radiator). Do not cut to length yet. Secure with new supplied hose clamps.
- With the hose in/outlets facing the drivers side of the vehicle, mount the cooler to the original horn mounting hole (OEM bolt), Airbag Sensor Stud (OEM nut), and the flat section of the lower radiator support (supplied M6 x 20 SEMS bolt).
- Fit hose that is coming from the pipe mounted on the radiator to the top of the rear cooler. Cut the hose to length and secure with a new supplied hose clamp.

## 2. Summary of Installation - Continued

- Fit hose that is on the OEM transmission cooler to the bottom of the front cooler. Cut the hose to length and secure with a new supplied hose clamp.
- Fit supplied 0.5m x 5/16" Dual Cooler Link Hose to the remaining in/outlets on the front and rear coolers. Secure with new supplied hose clamps.
- Before refitting horn, rotate the bracket 180° and retighten (horn outlet must be facing down to prevent it filling with water).
- Mount horn to the new cooler bracket with the supplied M8 x 20 SEMS bolt.
- Refit battery tray and battery.
- Check clearance of hoses and fittings to any other moving/hot components.
- Check transmission fluid level and top up where necessary.
- Check for leaks.
- Refit grill.
- Test drive vehicle for at least 10 minutes.
- Recheck transmission fluid level and top up where necessary. Recheck all hoses and fittings for leaks and tighten/adjust if necessary.
- Refit any bash plates or accessories removed.
- Clean any oil residue off vehicle.

### 3. Detailed Installation Instructions

**Before commencing work please ensure that you have approximately 2L of transmission fluid to top up at the end of the job.**

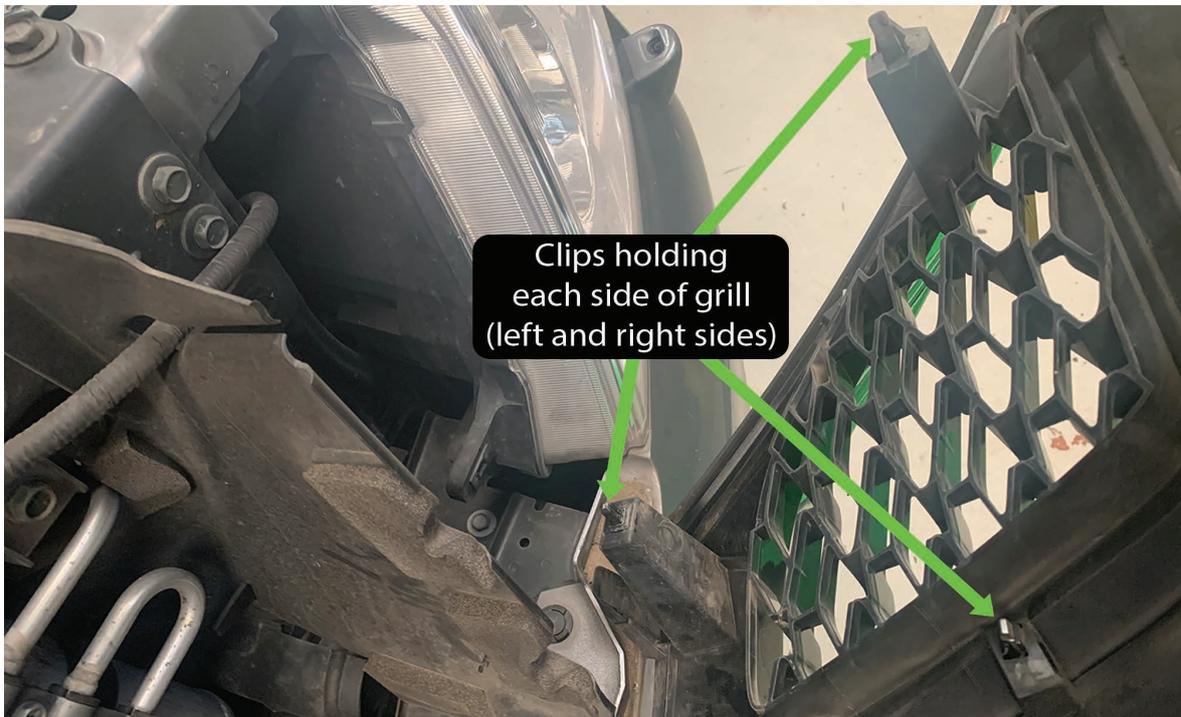
- 3.1. Ensure the vehicle is fully switched off. It is recommended that the vehicle is cold, or has at least cooled down a little, before starting the bypass install.
- 3.2. Inspect bypass valve assembly, making sure the o-ring is correctly seated in its groove and not torn or damaged. Apply a small amount of transmission fluid as a lubricant for later assembly.



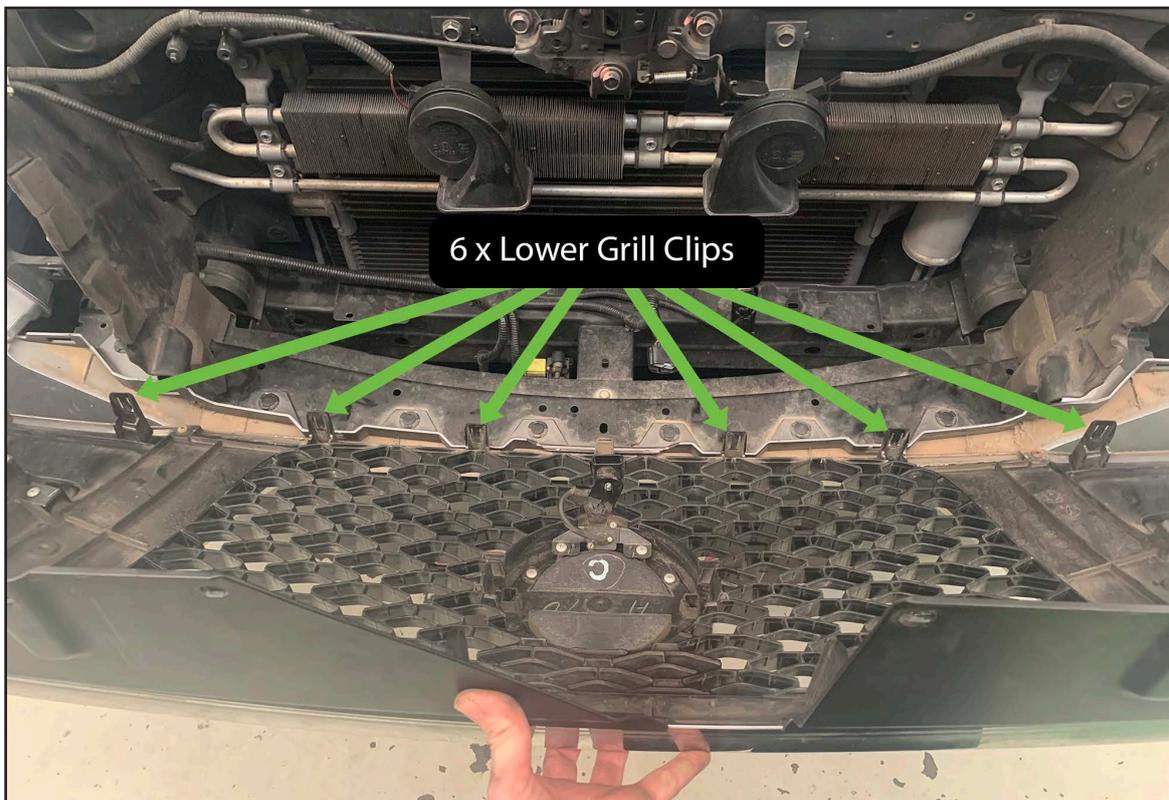
- 3.3. Open bonnet.
- 3.4. Remove the 8x plastic clips on the top of the grill.



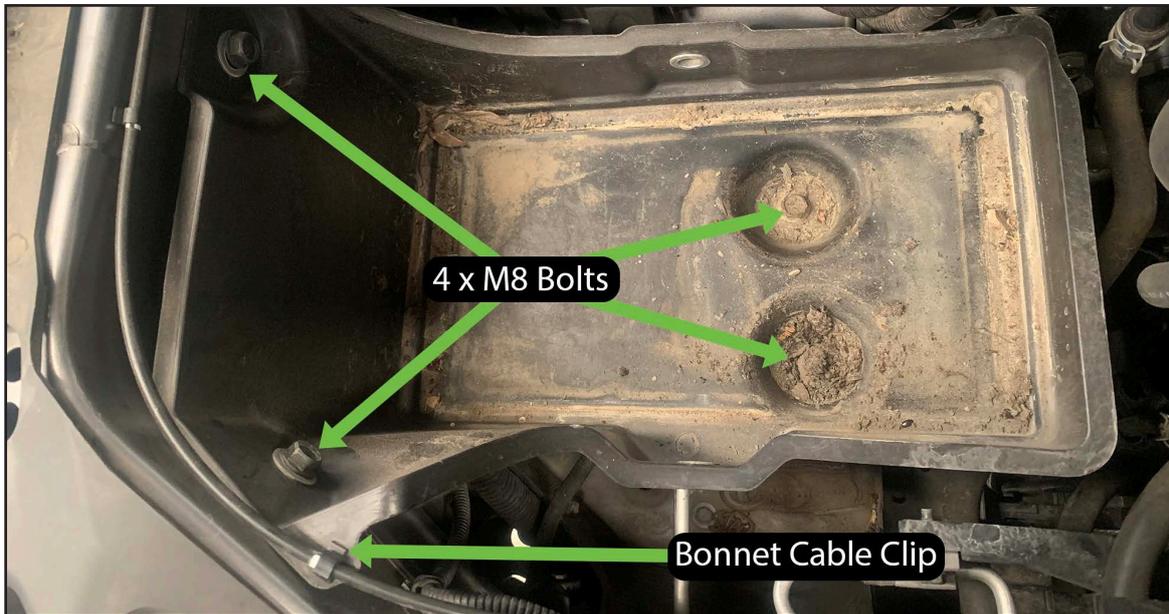
- 3.5. Pull forward gently on the left and right sides of the grill as they are held in place with clips.



- 3.6. Remove the grill by gently lifting up on the 6x clips at the bottom of the grill.



- 3.7. Remove battery and battery tray to allow easier access for removing the OEM cooler hose and routing the replacement hose. The battery tray is held in with 4 x M8 bolts and the bonnet cable clip.



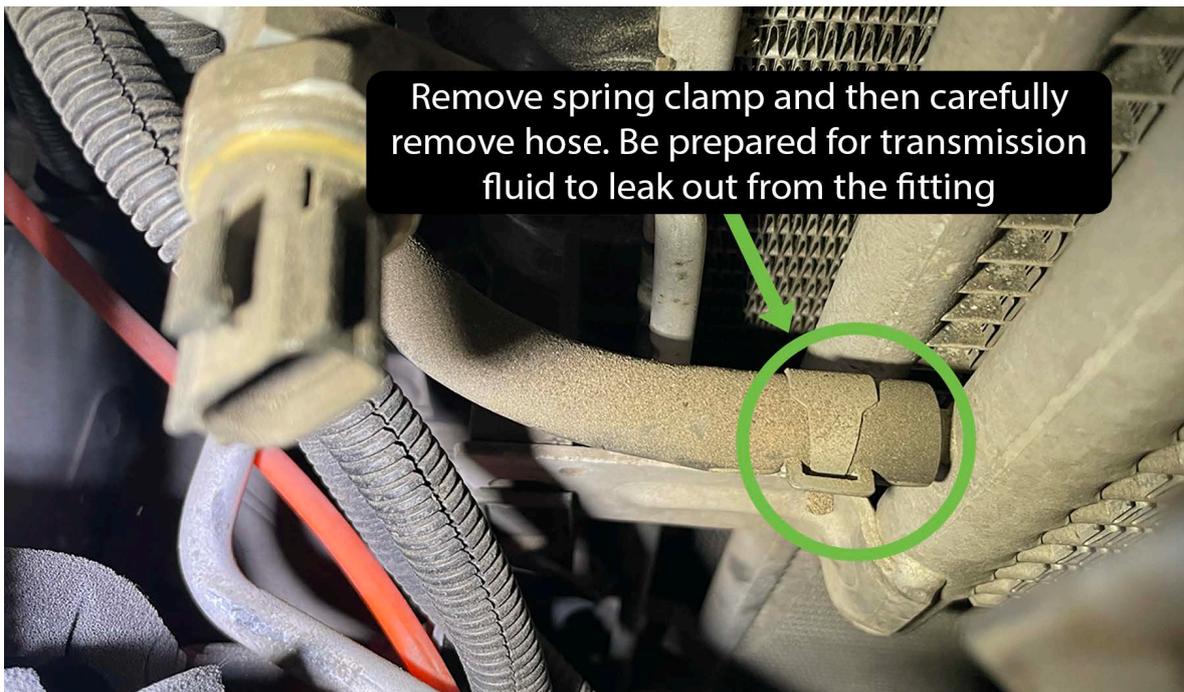
- 3.8. Remove the drivers side horn bracket but leave the wiring connected.
- 3.9. Remove the nut from the stud that is mounting the airbag sensor. **DO NOT unplug the sensor.**



- 3.10. Unplug the air con pressure sensor cable and move it out of the way. Remove the foam from around the pressure sensor as well to give you a bit more space.



- 3.11. Remove the bolt from the bottom of the ambient temperature sensor bracket and move the bracket out of the way. This is located on the front of the lower radiator support, on the side opposite from the transmission cooler fittings.
- 3.12. Trace the lower factory cooler hose to its hard line on the side of the radiator. Remove both factory spring clamps from the lower transmission cooler hose and remove the hose from the vehicle. Be prepared for transmission fluid to leak from these fittings once the hose is removed.

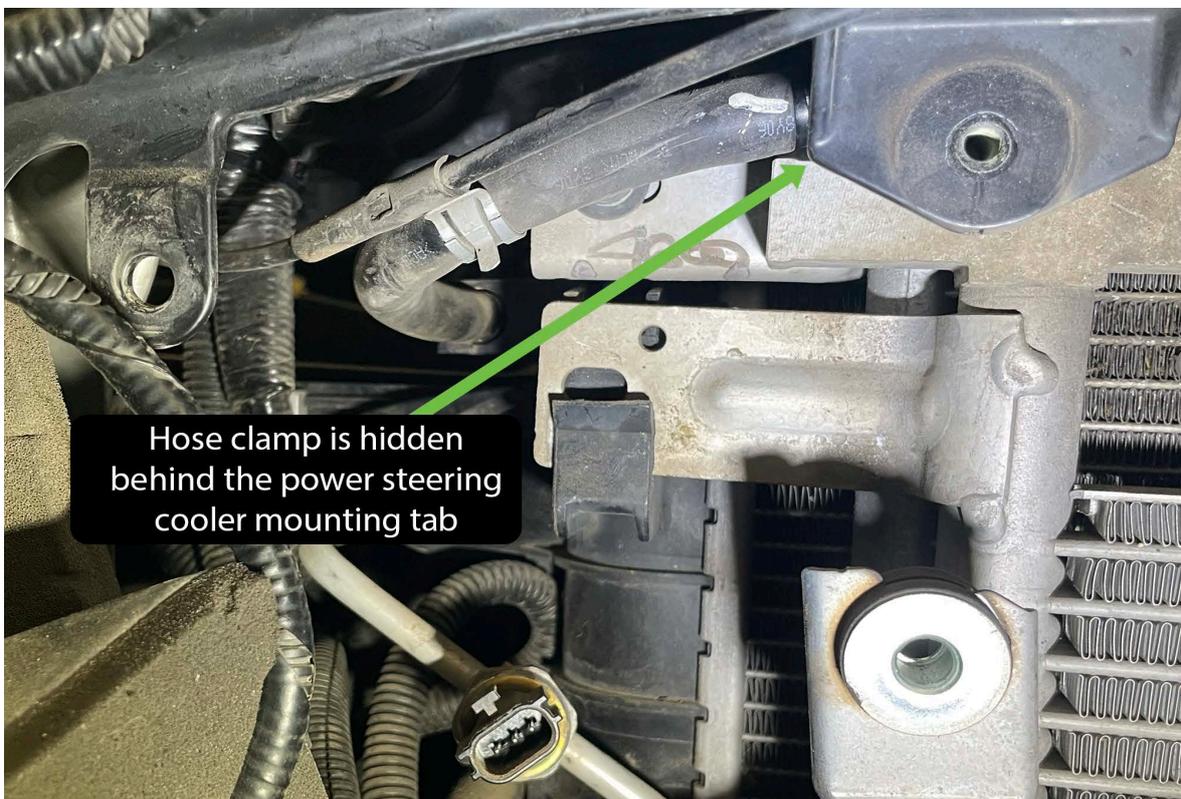


3.13. Remove the 2 x bolts holding in the power steering cooler.

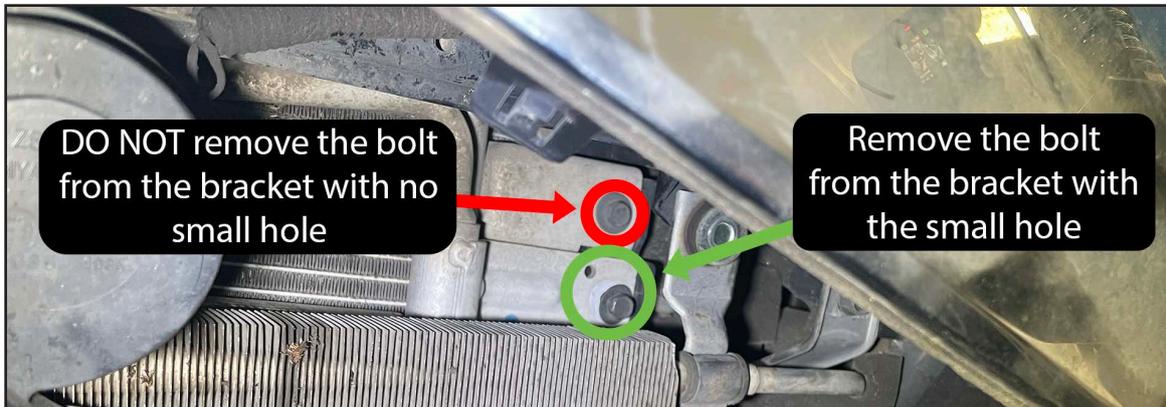


3.14. With the power steering cooler still connected to its flexible hoses, lower the power steering cooler down away from the upper radiator support. Be aware that the flexible section of the hoses aren't very long.

3.15. Remove the upper cooler hose from the transmission cooler. Squeeze the spring clamp with a pair of pliers and push it along the hose until it has cleared the barb on the cooler fitting. Make sure to leave the clamp in an orientation that makes it easy to grab when reassembling. **Be very careful removing this hose. The fittings on the cooler have very thin walls and it is very easy to accidentally crush, bend or crack the fittings.**



- 3.16. Remove the 1x bolt holding the upper transmission cooler mounting tab to the vehicle. This bolt was previously hidden by the power steering cooler and is located above the air con receiver dryer. Remove the bolt from the bracket that has the small hole in it, DO NOT remove the bolt from the bracket that doesn't have a small hole.

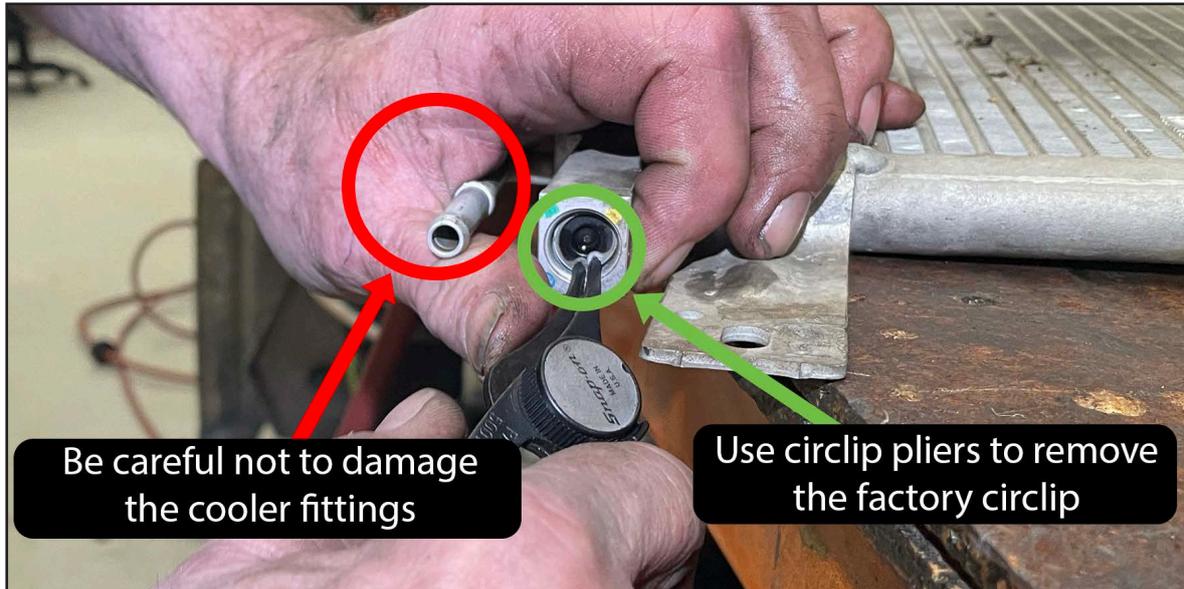


- 3.17. Remove the transmission cooler. The cooler is held in by 3 saddles, two on the side with the cooler hoses and one on the lower bracket on the other side. Holding the cooler at the bottom, lift the cooler straight up towards the upper radiator support until the brackets clear the saddles. Once clear, gently pull the cooler towards the front of the car until the saddles are no longer under the mounting brackets. Lower the cooler towards the lower radiator support, pulling forwards at the base of the cooler to clear the lower radiator support and lowering out the bottom. Be careful that the top of the cooler doesn't scrape against the power steering cooler or the lower radiator support.



- 3.18. Lay the cooler down gently on a clean, flat bench, making sure there is nothing on the surface that could damage the fin array and that the cooler is supported across its whole width.

- 3.19. Remove the circlip holding in the factory thermostat. This is located in the metal block on the top of the cooler, near the upper hose fitting.



- 3.20. Remove the plastic seal from the thermostat housing. This is a tight fit, so drill a small 3mm pilot hole into the plastic cap and then thread the supplied screw in. Pull on the head of the screw to remove the cap. Be aware that the thermostat is spring loaded behind this cap and may be forced out after removal, and there will also likely be transmission fluid leaking from this cavity once the seal is removed.

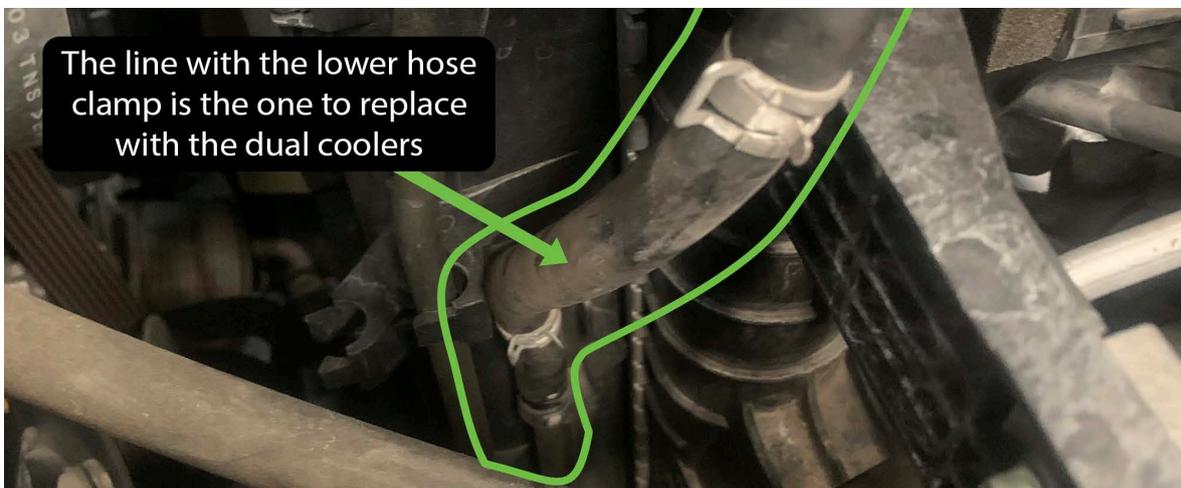


- 3.21. With the cap removed, extract the thermostat and spring if they aren't already out of the housing. The bypass valve does not require either of these parts to be reinstalled.

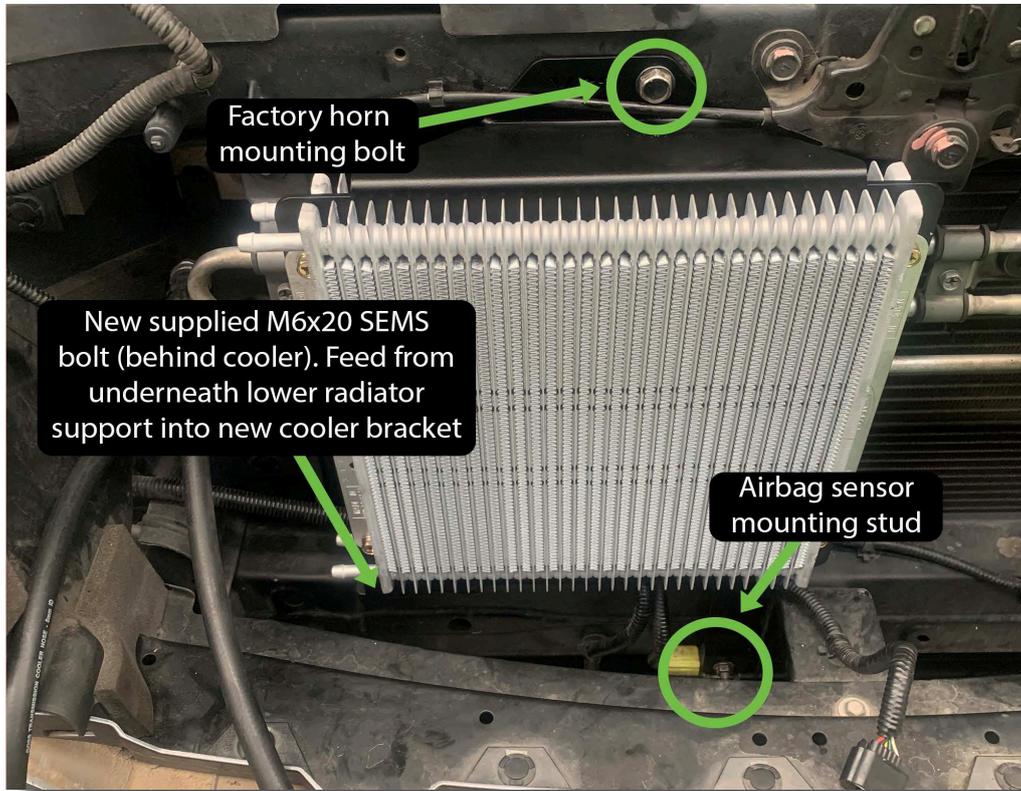
- 3.22. Using some transmission fluid as lubricant, insert the bypass valve into the thermostat cavity. Make sure it bottoms out in the housing and that you can see the circlip groove in front of the bypass valve.
- 3.23. Using circlip pliers insert the replacement circlip, ensuring it's fully seated in its groove.



- 3.24. The factory transmission cooler can now be reinstalled in the car. Be careful not to damage any of the fins or fittings when refitting the factory cooler. Attach the upper cooler hose and replace the bolt, but leave the lower hose disconnected as this is where we are going to plumb in the new transmission cooler.
- 3.25. Refit the power steering cooler.
- 3.26. Fit the new 1.5m x 5/16" Cooler Line Hose in place of the factory lower transmission cooler hose. Do not cut the hose to length yet, but route it in a way that has the extra hose length out through the hole left by the grill to make fitting easier. Secure with supplied new hose clamps on both ends. **DO NOT over-tighten these hose clamps as the factory fittings are easy to damage.**



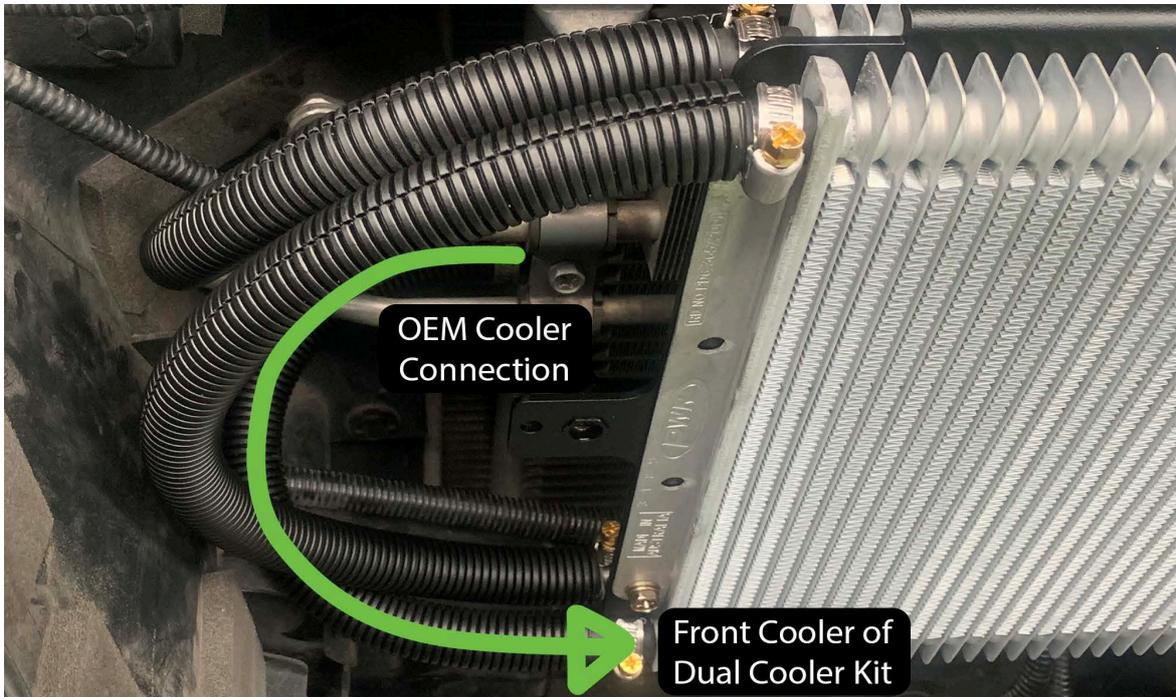
- 3.27. Fit the Dual Cooler Bracket, with the barbs facing the same side as the factory cooler fittings, in place, and bolt to the vehicle using the original horn bracket mounting location and its factory bolt, the airbag sensor mounting stud and its factory nut, and the flat section of the lower radiator support using the supplied M6 x 20 SEMS bolt, threaded into the new cooler bracket from underneath.



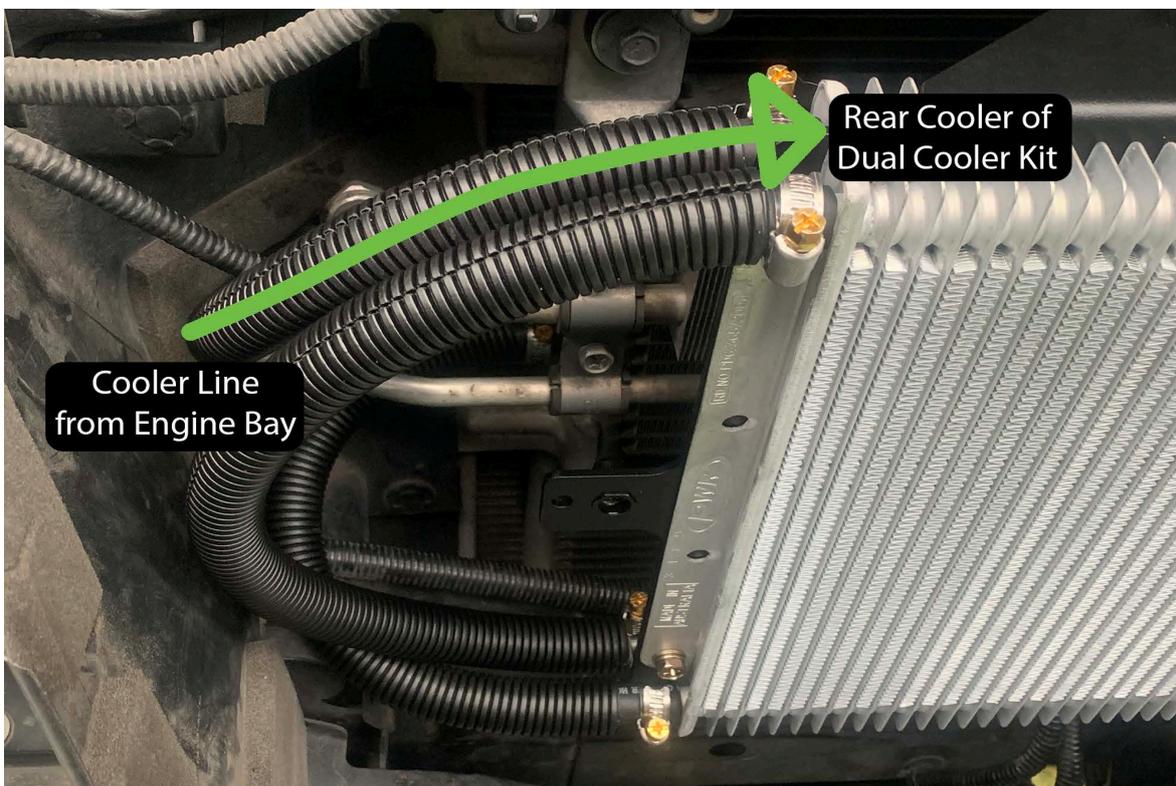
- 3.28. Fit the supplied 0.5m x 5/16" Dual Cooler Link Hose, using the bottom fitting of the rear cooler and the top fitting of the front cooler. Secure with new supplied hose clamps.



- 3.29. Connect the hose coming from the factory transmission cooler to the bottom fitting of the front cooler. Cut hose to length and secure using a new supplied hose clamp.



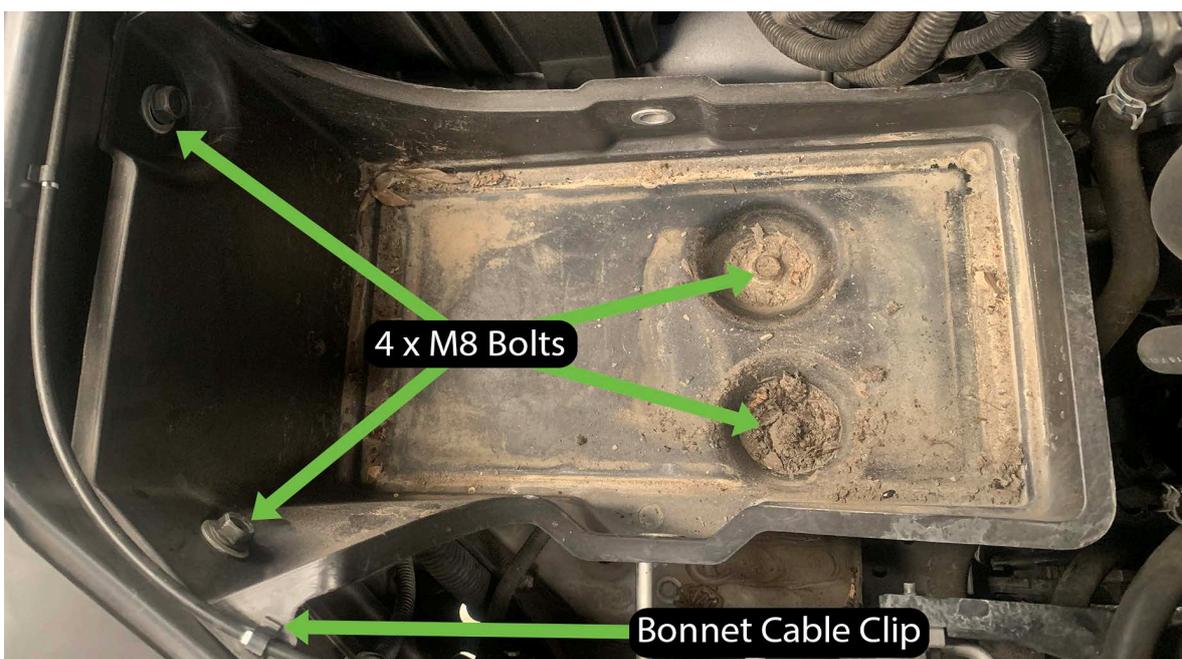
- 3.30. Connect the remaining new cooler line to the top fitting of the rear cooler. Cut the hose to length and secure using a supplied new hose clamp.



- 3.31. Before refitting horn, loosen the 10mm nut on the back of the horn bracket, rotate the bracket 180° and retighten. The horn outlet needs to be facing down to help prevent water ingress.
- 3.32. Mount the horn to the new cooler bracket with the supplied M8 x 20 SEMS bolt. The locator tab on the horn bracket should locate in the corresponding hole in the new dual cooler bracket.



- 3.33. Refit battery tray and battery.

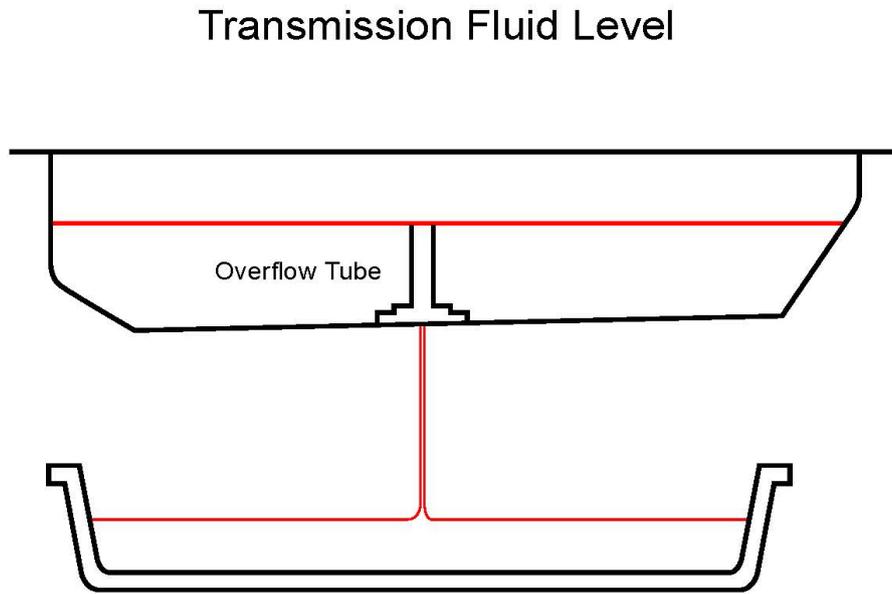


- 3.34. Plug in any connectors removed during the installation process and reinstall the foam around the air con sensor.
- 3.35. With the transmission in park, start the vehicle and verify there are no fluid leaks coming from any of the fittings, or from the bypass valve housing. If no leaks are detected refit the front grill by pushing the lower clips in first, then the left and right clips, and finally inserting the 8 plastic clips on top of the grill.
- 3.36. Before driving the vehicle it is important to confirm the correct fluid level. The Nissan RE7 transmission uses an overflow tube to gauge the fluid level which is located at the front of the transmission pan and is accessed via the 5mm hex bolt.

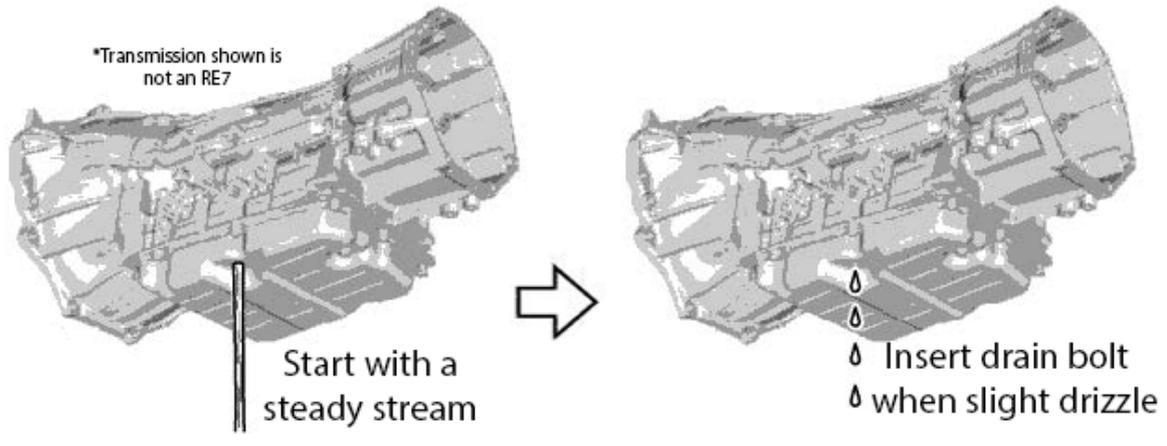


- 3.37. Once the engine has been running for at least 1 minute, move a drain tin into place under the overflow outlet and then remove the 5mm hex bolt. If the transmission fluid starts to flow out of the overflow tube in a light but steady stream (as indicated in the two following images), then there is sufficient fluid inside the transmission for the test drive. Wait until it slows to a dribble and re-install the overflow bolt. You can now skip to step 3.42.

### Transmission Fluid Level

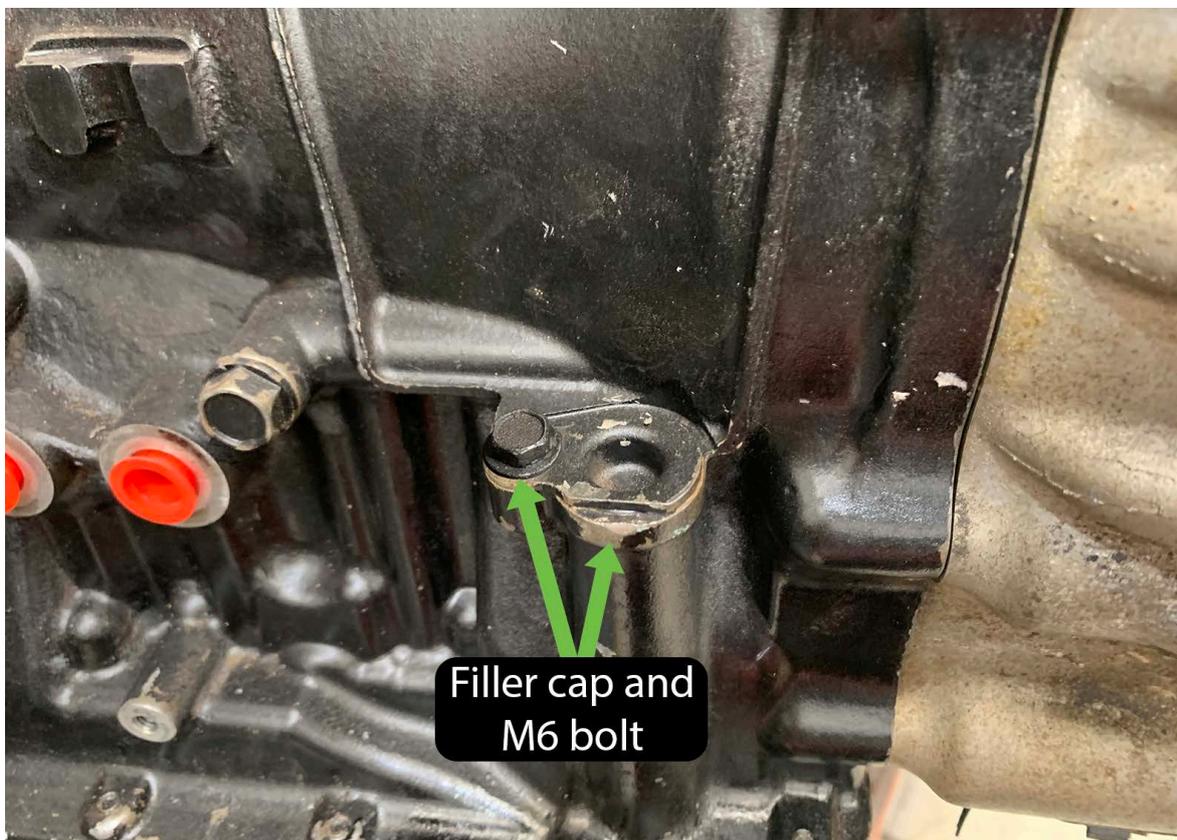


3.38. The following image is the fluid flow you are looking for when the transmission is filled to the correct level, starting with a steady stream, slowing to a drizzle.

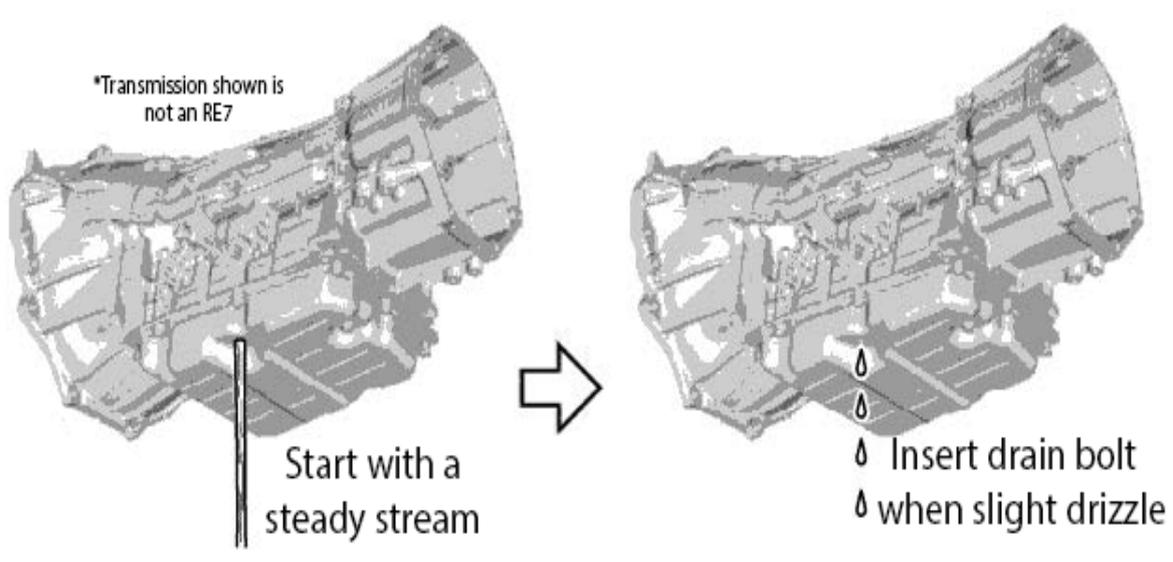
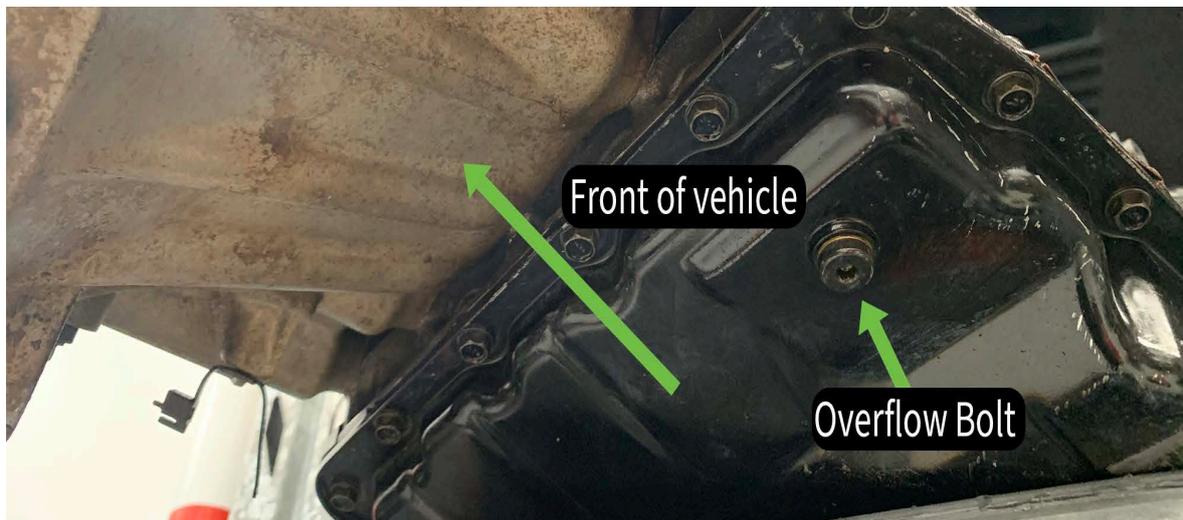


3.39. If there is no fluid flowing/dribbling from the overflow OR there was a small amount of fluid to start with but then stops, this indicates you need to add transmission fluid before going on the test drive.

3.40. To add fluid, remove the M6 bolt holding a cap over the fill hole just above the front of the pan on the drivers side. Add fluid until there is a light but steady dribble out of the overflow tube. If you add too much and you get a stream of fluid, wait until it slows to a dribble.



- 3.41. Retighten the overflow tube 5mm hex bolt, and reinstall the fill cap and M6 bolt. Tighten both.
- 3.42. Take vehicle for a road test to get the transmission fluid up to the correct operating temperature and flush out any air bubbles. Try to cover as many different conditions as possible and also ensure that you have driven in every gear. Road testing should last at least 10 minutes.
- 3.43. After road test, recheck transmission fluid level is correct. Move a drain tin into place under the overflow outlet and then remove the 5mm hex bolt.
- 3.44. If the transmission fluid starts to flow out of the overflow tube in a light but steady stream then there is sufficient fluid inside the transmission. Wait until it slows to a dribble and re-install the overflow bolt. Re-install the fill cap and bolt if these were removed during this process.



- 3.45. If there is no fluid flowing/dribbling from the overflow OR there was a small amount of fluid to start with but then stops, you have most likely cleared some air pockets and will need to add more transmission fluid. Return to step 3.40.
- 3.46. Finally, check again for any leaks from any of the fittings and from the bypass housing. If you do find a leak you may need to tighten or adjust the clamps.
- 3.47. Cleanup any spilled fluid and refit any other items removed to perform the installation.
- 3.48. You have now completed the installation of the Nissan Patrol Y62 RE7 Dual External Transmission Oil Cooler with Bypass Valve.

# This completes the installation of the Dual External Transmission Oil Cooler with Bypass Valve to Suit: Nissan Patrol Y62 with RE7 7 Speed Automatic Transmission

Please remember ALL automatic transmission have a service interval of 2 years or 40,000km to improve the longevity of the transmission.

---

## Please Provide us with Feedback

If you have a minute to provide us with some feedback about your experience with Wholesale Automatic Transmissions and our products, that would be greatly appreciated.

Using your smart phone or device's camera app, point at the QR code below to take you straight to our feedback page for you to choose the most appropriate feedback method.

