COOLMASTER OFFROAD

Fitting Instructions

Part № 49486K

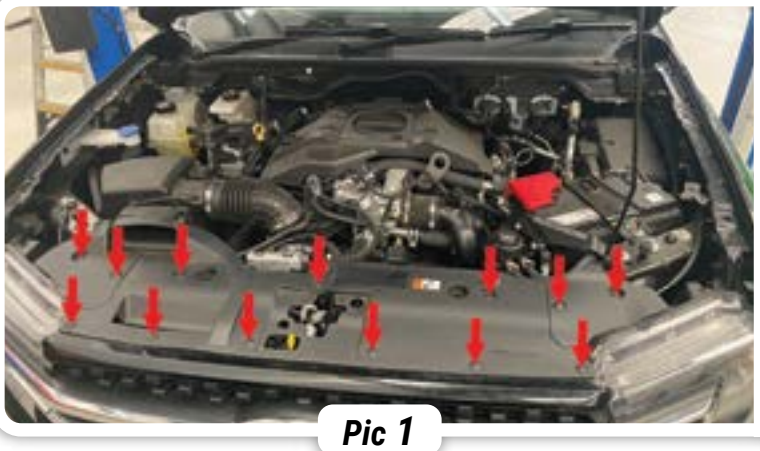
Kit contains:

- *2 x 3/8" Cross Flow Oil Coolers*
- *4.5m x 3/8" High Temp Cooler Line Hose*
- *0.50m x 3/8" Cooler Joining Hose Conduit*
- *1 x "L" pipe and 1 x 'J' pipe with rubber lined 'P' clamp*
- *2 x 6R80/10R80 Cooler Unions with O-rings*
- *1 x Union Clamping Bracket*
- *1 x Plate with Nutsert*
- *6 x 14-16mm Hose Clamps*
- *3 x M6 x 25 SEMS Bolts*
- *6 x 300mm Cable Ties*
- *2 x 14-27mm Hose Clamps*
- *Instructions*

FOR AMAROK: THE INSTRUCTIONS FOR THIS KIT DO NOT INCLUDE DETAILED NOTES ON REMOVAL OF THE COVERS AND GRILL, ALL OTHER INSTRUCTIONS APPLY .

1. *Open bonnet.*

2. *Remove the top cover above the radiator. There are 13 plugs that need to be removed as shown on* ***Pic 1****. Unscrew the center from the plug body and remove both parts.*

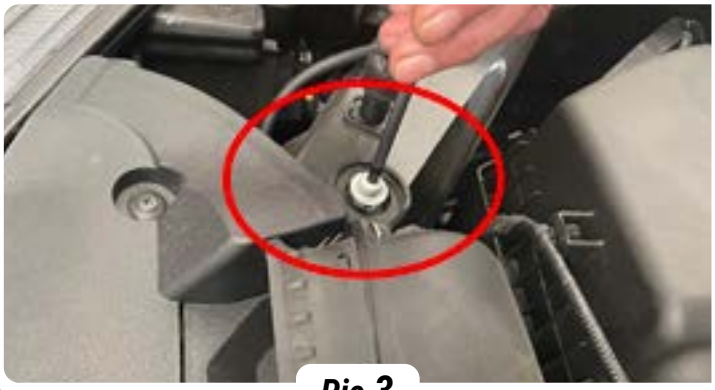


Pic 1

Pic 2

3. *To remove plugs use a larger Phillips screwdriver to remove the center plug. Once the center plug is removed the outer plug body can be removed.* ***(Pic 2)***

4. *Using a T30 Torx bit, remove the screw holding the air inlet manifold to allow you to easily remove and reinstall the radiator cover.* ***(Pic 3)***



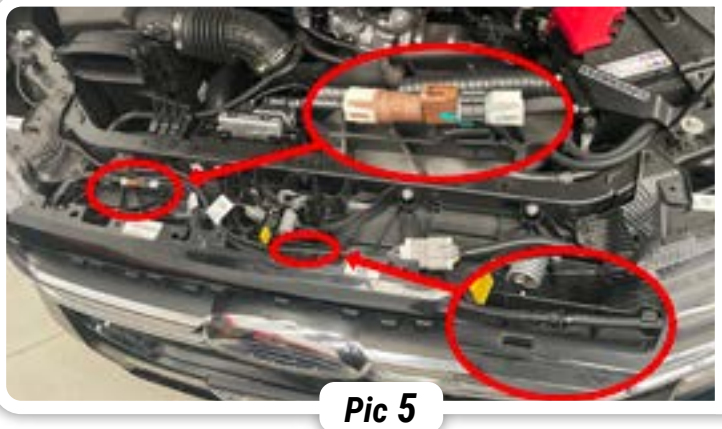
Pic 3

Pic 4

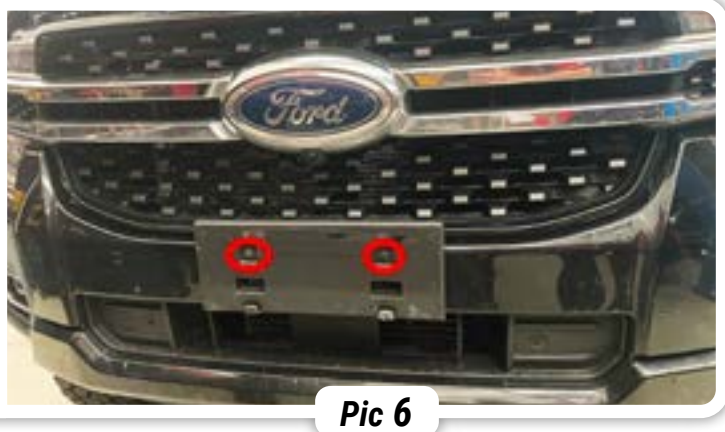
5. *Remove the two 10mm bolts holding the top of the grill in place as shown in* ***Pic 4****.*

6. *Disconnect the brown plug on the driver's side of the vehicle, and the water pipe in the center. Be sure to position the pipe ends so as to minimise loss of water.* ***(Pic 5)***

7. *Remove the number plate and the 2 x 10mm bolts retaining the number plate holder to gain access to the front grill.* ***(Pic 6)***

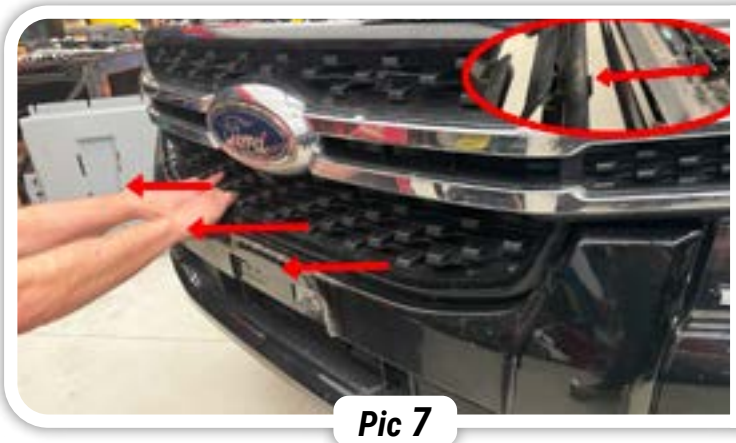


Pic 5

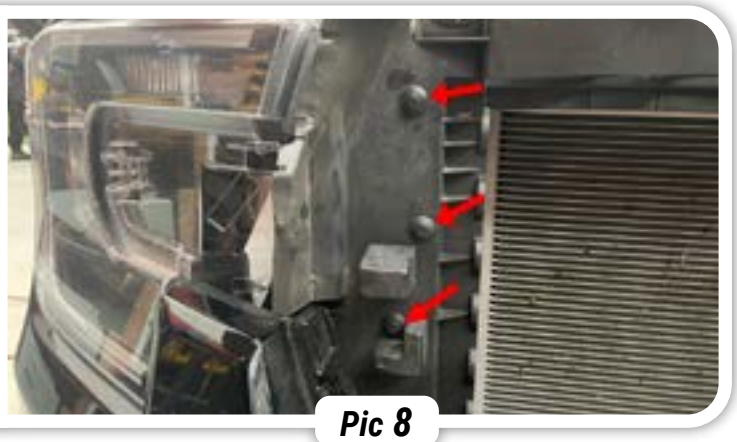


Pic 6

8. *Working along the base of the grill, pull forward as shown in* ***Pic 7*** *to dislodge the clips holding it in place. Clips can be difficult to dislodge and may need to be released from behind the grill.*



Pic 7



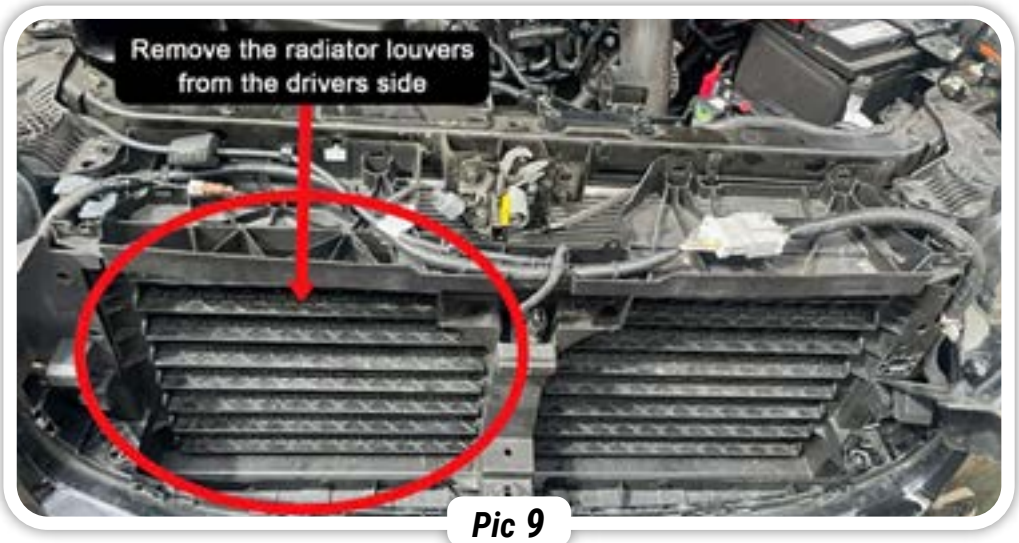
Pic 8

9. *Remove the 3 plugs holding the plastic cover on the driver's side of the vehicle. Remove the cover and place it out of the way for now.* ***(Pic 8)***

10. *Remove the 4 bolts holding the bash plate under the front of the vehicle and place them safely out of the way.*

11. ***For Everest only:*** *Some Everest versions may have louvers or flaps in front of the radiator, which will need to be removed to fit the transmission oil cooler* ***(Pic 9)****. If your vehicle doesn't have these flaps then skip to step 13.*

12. *These louvers are installed on both the driver and passenger side of the vehicle, but we only need to remove the driver's side to fit the cooler. We removed both sides in the following steps to make it easier to see, but the passenger side louvers can be left installed.*

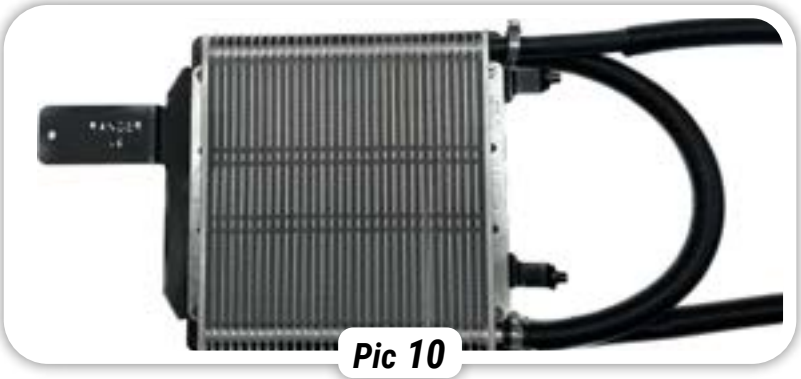


Pic 9

13. *Remove the cooler from the packaging and place on a flat bench. Connect the 500mm joining hose to the bottom barb of the front cooler and the other to the top barb of the rear cooler. Secure with hose clamps supplied.*

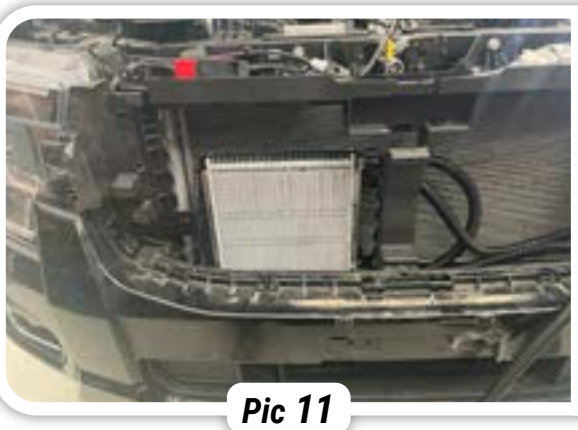
Coolers are omnidirectional, so the direction of flow is not important. However, for maximum efficiency and effectiveness, we recommend the hot oil enter the rear cooler first.

14. *Connect the 4m hose to the remaining barbs and secure it with the hose clamps provided. Cut the 4m length of the hose in half.* ***(Pic 10)***

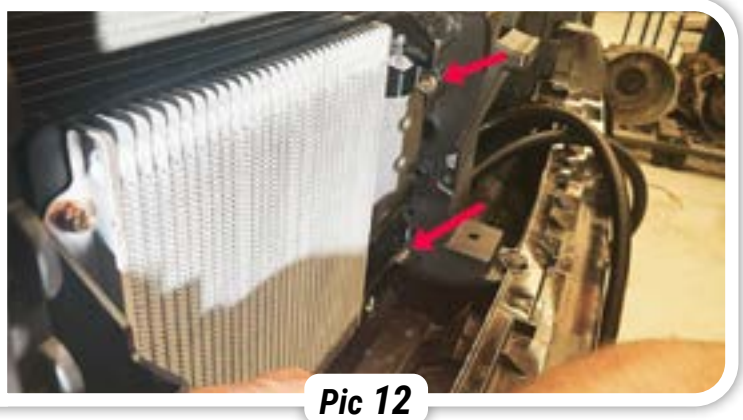


Pic 10

15. *Position the cooler in the vehicle with the hoses running behind the center support towards the passenger side.* ***(Pic 11)***



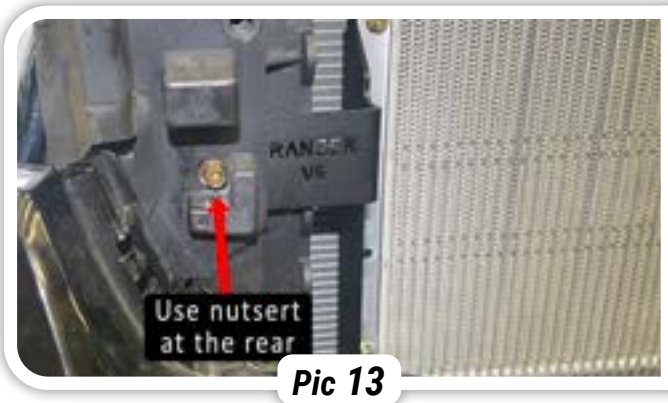
Pic 11



Pic 12

16. *Using the M6 X 25 SEMS bolts supplied, mount the passenger side cooler bracket as shown in* ***Pic 12****.*

17. *Use the remaining M6 bolt and the tab with the Nutsert to secure the driver's side mount to the vehicle. The bracket should sit between the plastic guard and the support beam.* ***(Pic 13)***

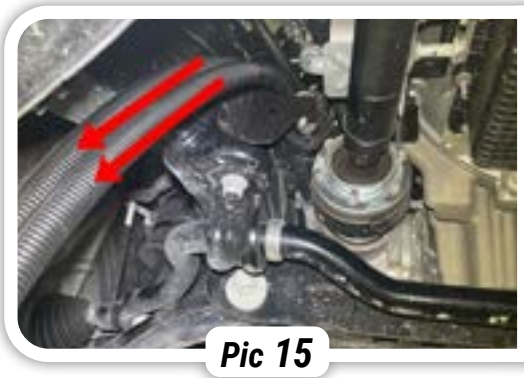


Pic 13

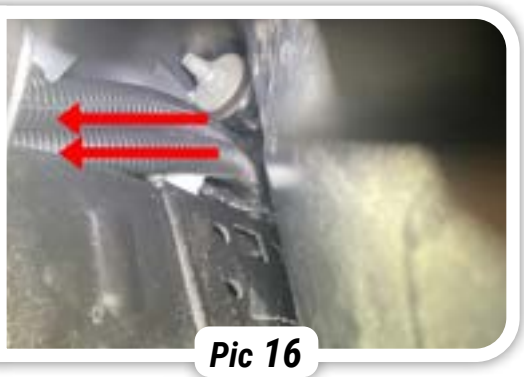
Pic 14

18. *Feed the two cooler hoses under the air conditioning condenser.* ***(Pic 14)***

19. *From under the car, run the hoses along the chassis rail and through to the transmission.*

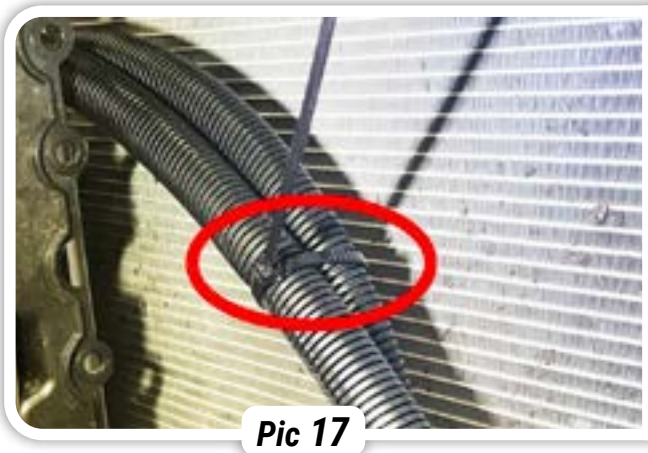


Pic 15



Pic 16

20. *Check to ensure you have not put excess strain on the cooler and the hoses are free of kinks that may restrict flow. Hoses can be cable-tied to each other as shown in* ***Pic 17*** *to prevent movement.*



Pic 17

Pic 18

21. *Locate the Heat Exchanger on the side of the transmission. The Heat Exchanger is redundant and will be removed, however, you must first clamp the hoses to reduce fluid loss.* ***(Pic 18)***

22. *For easy access to clamp the hoses, remove the small plastic panel inside the passenger side wheel arch. There are four trim clips to be removed.* ***(Pic 19)***

Pic 19

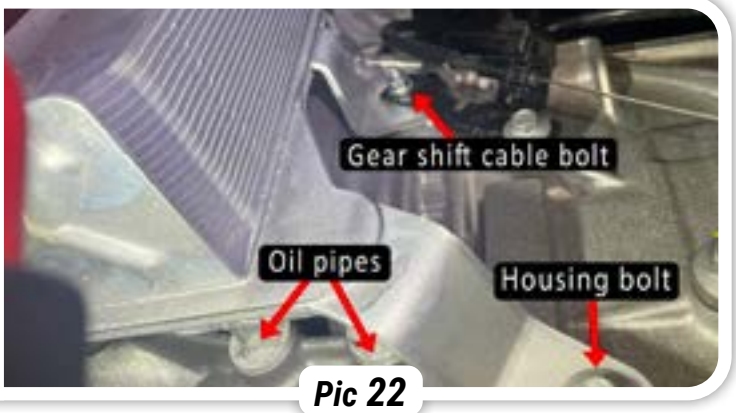
Pic 20

23. *Use clamps to restrict the flow of coolant through the 2 hoses to be disconnected from the heat exchanger* ***(Pic 20)****. Note: you may need to clamp the hoses in multiple places beyond the 'T' piece. We had 3 clamps in place past the 'T' piece before disconnecting the water pipes. If you don't have clamps, the cooling system must now be drained; refill and bleed the cooling system after completing the installation. Ensure you have sufficient coolant to re-fill the coolant system.*

Only follow steps 24 to 30 if your car has a 2.0L Turbo Diesel Engine. If your car has a 3.0L Turbo Diesel Engine, skip to step 31 on page 9.

24. *Carefully remove the water pipes by squeezing the plastic clips. Be careful to not damage the plastic clip in the '**T**' piece, which will be reused to connect this hose to the '**L**' pipe supplied. You may need to unbolt the heat exchanger to disconnect the '**T**' piece.* ***(Pic 21)***

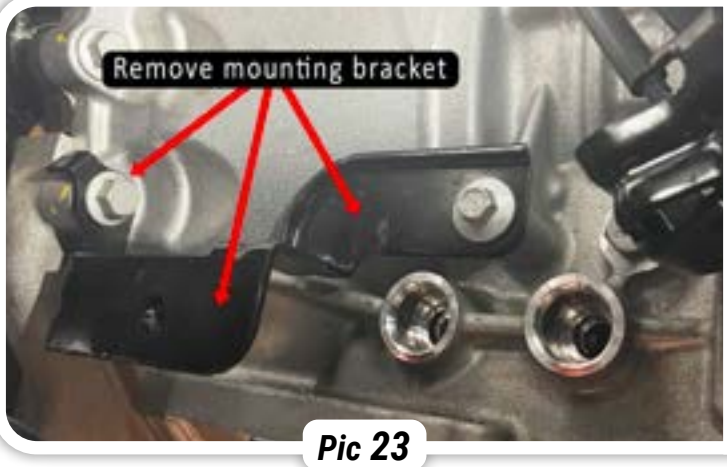
Pic 21



Pic 22

25. *Unbolt the heat exchanger and remove it from the transmission by pulling the oil pipes out of the transmission housing. Note that there will be some transmission fluid loss. Three bolts are holding it in place, including beneath the gear shift cable bracket.* ***(Pic 22)***

26. *The heat exchanger bracket can also be removed and discarded, however, retain and replace the bolts.* ***(Pic 23)***



Pic 23

Pic 24

27. *Reconnect the gear shift cable using the two (2) M10 washers as spacers where the heat exchange bracket was removed.* ***(Pic 24)***

28. *Connect the '**L**' pipe's longer end to the '**T**' piece with the plastic clip and the short end to the other hose to create a heat exchange by-pass. Secure using one 14-27mm hose clamps supplied, and the factory plastic clip. Ensure the twisted hose does not restrict flow.* ***(Pic 25)***

Pic 25

Pic 26

29. *Install the supplied custom cooler unions. Check that each union has two (2) o-rings fitted prior to installation, and apply a small amount of transmission fluid to both o-rings on both unions to provide lubrication. Install the unions by carefully inserting them into the empty fittings on the side of the transmission left behind by the removal of the heat exchanger. Secure the new unions with the supplied bracket, using one of the T40 Torx bolts previously removed from the heat exchanger.* ***(Pic 26)***

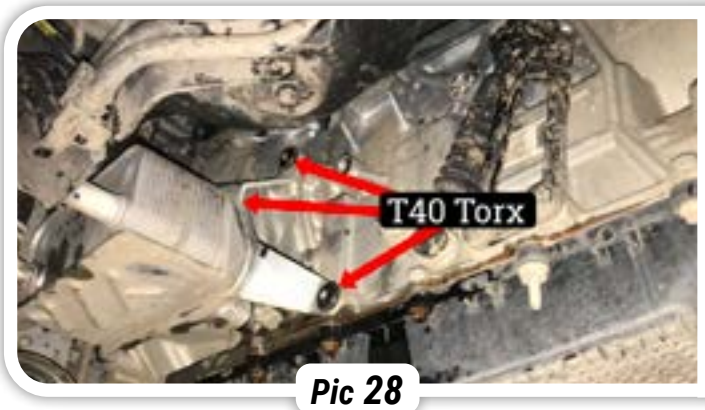
30. *Route cooler lines to the unions and trim to the correct length. Secure using the hose clamps provided. For the best cooling performance, we recommend the hottest oil (from the rear union) goes through the rear cooler first. Ensure that hoses are secure away from moving parts with no kinks that may impede flow.* ***(Pic 27)***

Pic 27

Only follow steps 31 to 38 if your car has a 3.0L Turbo Diesel Engine. If your car has a 2.0L Turbo Diesel Engine, skip to step 39 on page 11.

31. *Carefully remove the coolant hoses by removing the factory spring clamps and pulling the hoses off the heat exchanger fittings. Note even with clamps installed or the coolant drained there will still be some coolant leaking from these fittings.*

32. *Unbolt the heat exchanger and remove it from the transmission by pulling it horizontally out and away from the transmission. Have a drain pan or bucket underneath as some transmission fluid may leak from the removed fittings.* ***(Pic 28)***



Pic 28


Pic 29

33. *Install the supplied custom cooler unions. Check that each union has two (2) o-rings fitted prior to installation, and apply a small amount of transmission fluid to both o-rings on both unions to provide lubrication. Install the unions by carefully inserting them into the empty fittings on the side of the transmission left behind by the removal of the heat exchanger. Secure the new unions with the supplied bracket, using one of the T40 Torx bolts previously removed from the heat exchanger.* ***(Pic 29)***

34. *Fit the 'J' pipe to the coolant hoses removed from the heat exchanger, pushing the hoses as far as possible onto the 'J' pipe. Test that you can easily maneuver this assembly near one of the vacant heat exchanger bolt holes for securing the 'J' pipe after assembly. Secure the coolant hoses using the two (2) larger 14 - 27mm hose clamps.*

35. *Secure the 'J' pipe to one of the vacant heat exchanger bolt holes using the supplied rubber-lined 'P' clamp and one of the previously removed T40 Torx bolts.* ***(Pic 30)***

Pic 30

Pic 31

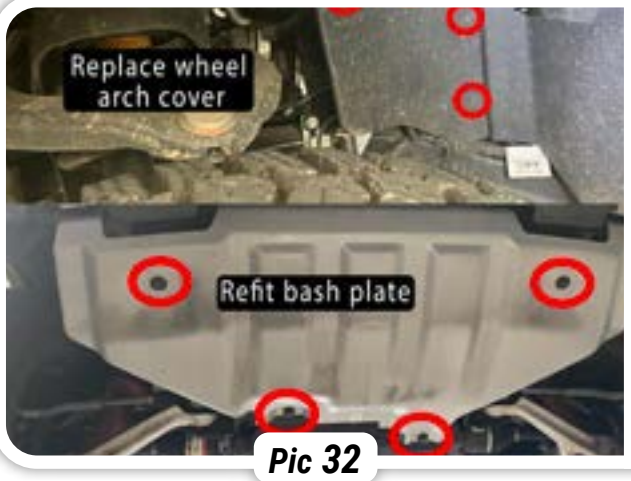
36. *Check the routing of the transmission cooler lines prior to cutting them to length to ensure they will not impact any part of the vehicle or become jammed or pinched. Cable tie them out of the way, paying careful attention that there is sufficient clearance around the engine oil filter for ease of engine maintenance.*

37. *Measure where the transmission cooler lines need to be cut for the unions while allowing for some slack between the unions and the first cable tie point.*

38. *Cut the transmission cooler lines to length and pull back the conduit. Slide one (1) smaller hose clamp onto each cooler hose and then install the hoses onto the unions. Do not use any lubricant on the barbed fittings. Re-fit the conduit into place, trimming it to length if necessary. For the best cooling performance, we recommend the hottest oil (from the rear union) goes through the rear cooler first.* ***(Pic 31)***

Please follow these steps
regardless of whether your car has a 2.0L or 3.0L Turbo Diesel Engine.

39. *Secure using cable ties provided. Remove all clamps and replace the plastic panel that was removed from the wheel arch and refit the bash plate.* ***(Pic 32)***

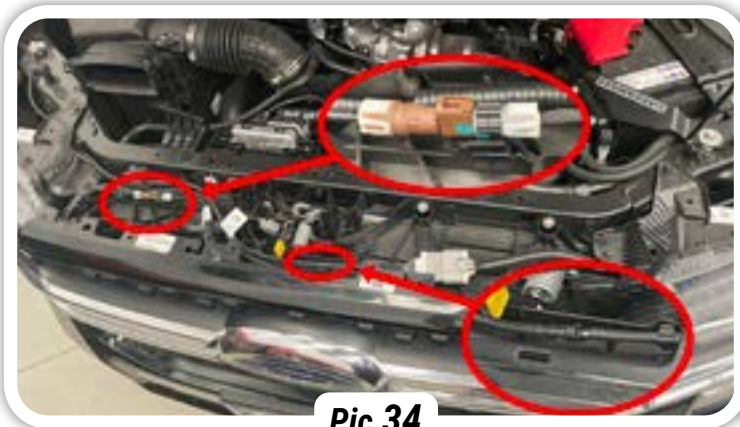


Pic 32


Pic 33

40. *Replace the front grill and bolt in place.* ***(Pic 33)***

41. *Reconnect the 2 plugs above the grill for the front-facing camera and washer. Don't forget to top up the washer bottle!* ***(Pic 34)***


Pic 34

Pic 35

42. *Reinstall the number plate holder and number plate.* ***(Pic 35)***

43. *Reinstall the top cover using the 13 clips previously removed and secure the air inlet using the T30 Torx bit.* ***(Pic 36)***

Pic 36

44. *Start the vehicle, check for oil leaks, and top up transmission oil (to the manufacturer's specification).*

45. *Check the engine coolant level and top up if required.*

46. *Road-test the vehicle and recheck the above.*

47. *Replace all covers and ensure no rubbing on hoses and pipes.*

48. *This concludes fitment of the cooler kit, please adhere to the owner's manual regarding service intervals.*