

SERVICE CAMPAIGN BULLETIN

TITLE: Clutch Oil Cooler and Coolant Hoses Replacement

CAMPAIGN REFERENCE: 03C

DOCUMENT NUMBER: 11 G 012

AFFECTED VEHICLES: McLaren 12C, 650S and 625C Coupe and Spider

SITUATION: Quality Engineering at McLaren Automotive have identified that a number of McLaren vehicles have left production fitted with a clutch oil cooler that is potentially at risk of failing due to an internal manufacturing defect, which will result in contamination of the oil and coolant. Also, the clutch cooler return and feed hose may not be able to withstand the pressure and heat required which will result in a split at the hose and loss of coolant.

PROCEDURE: Please follow the procedure outlined in this document to replace the necessary parts.

Preparation work:

1. Please refer to AA-RM-02A04-04-007 - Lift vehicle on lifting platform
2. Please refer to AA-RM-02A04-04-008 - Remove/Install Floor Panel – Transmission
3. Please refer to AA-RM-02A04-04-001 - Remove/install Floor panel – Engine/fuel tank
4. Please refer to AA-RM-02A04-04-004 - Remove/install Floor panel – Rear Diffuser

Care Point: When the coolant fluid is drained it is not required to drain the coolant from the front LTR circuit, therefore please ignore Steps 3-5 of the Drain fluid – coolant instructions.

Care Point: The coolant drained from the coolant circuit should be re-used therefore it has to be handled correctly to avoid contamination. Please use clean catchment container and check fluid is clean and clear before reuse.

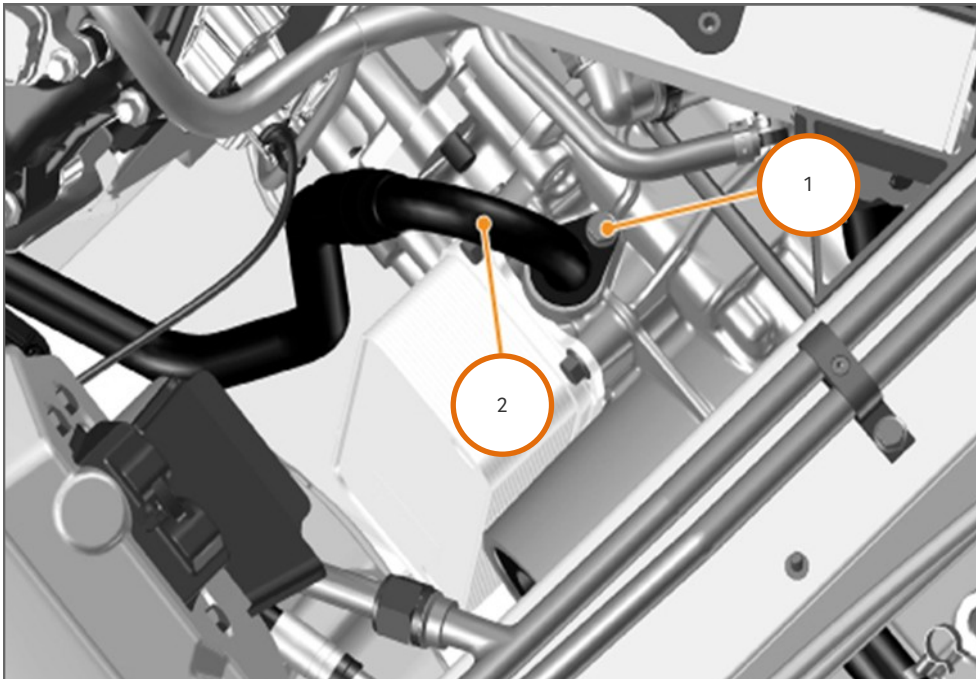
Care Point: If there is residue at the bottom of the container after drain or the coolant is discoloured or the vehicle has experienced overheat or contaminated with oil, then the coolant must be replaced.

5. Please refer to AA-RM-03L01-01-005 - Drain/fill fluid – Coolant

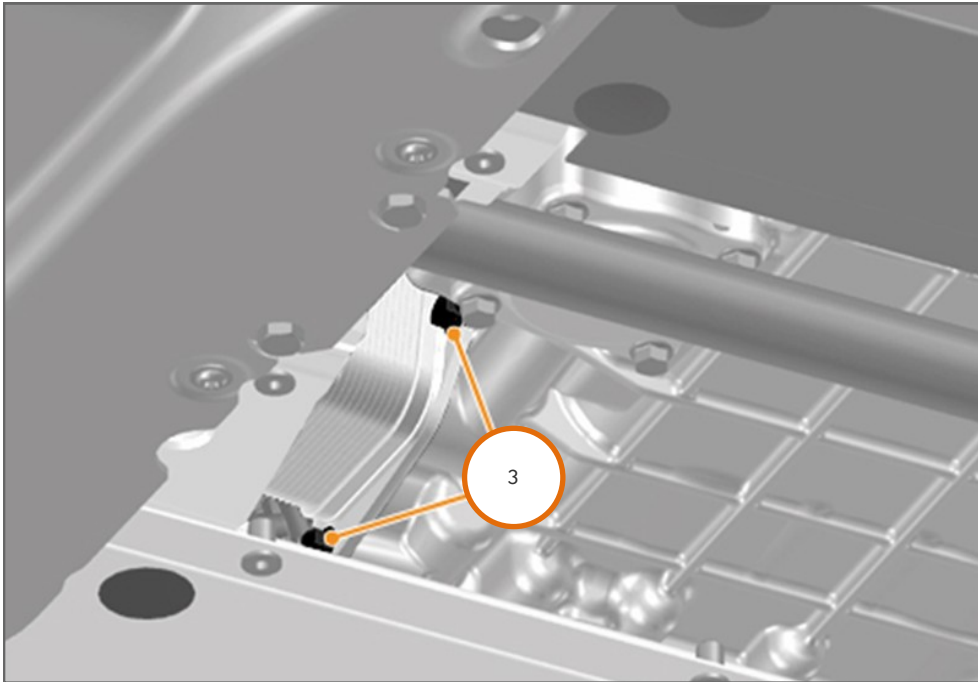
Removal - Clutch Oil Cooler:

Care Point: It is not required to drain the clutch fluid to replace the clutch oil cooler. Once the clutch oil cooler is removed, use a container to catch and measure the amount of clutch fluid that will come out from the transmission (approximately 500ml). Top-up the clutch fluid that has been lost with new clutch fluid.

6. Remove bolt (1) M6 x 16 6Nm.
7. Detach the clutch cooler return hose (2) from the transmission. Note, this hose will be removed and replaced as part of this campaign.



8. Remove lower bolts (3) M6 x 16 10Nm from underneath.

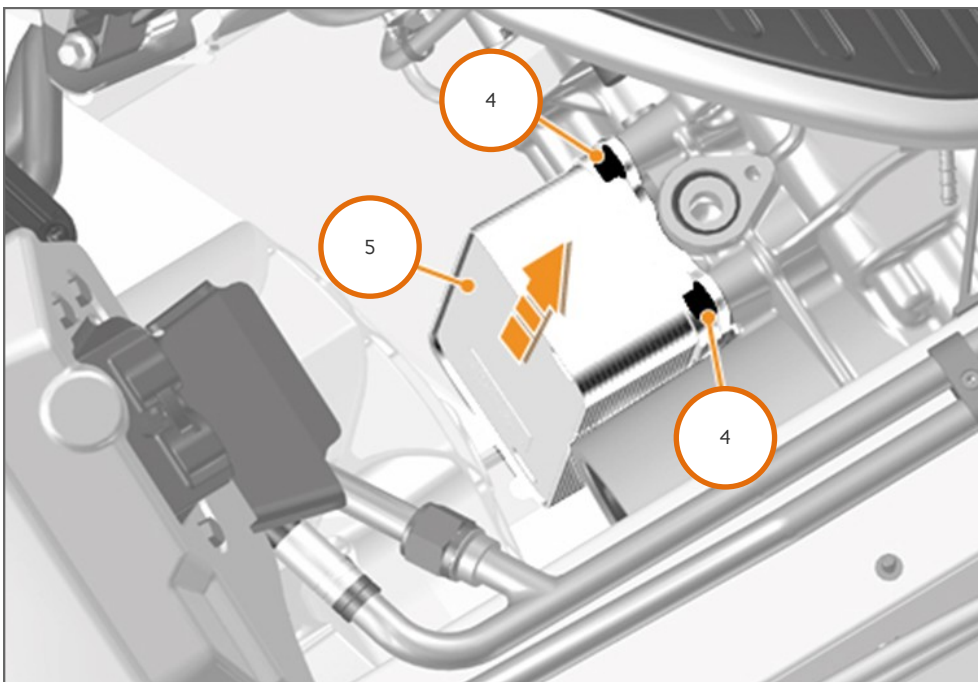


Care Point: The picture below is for illustration purposes only. The upper bolts should be removed from below.

9. Remove upper bolts (4) M6 x 16 10Nm from underneath.

Care Point: Use a container to catch and measure the amount of clutch fluid that will come out from the transmission (approximately 500ml).

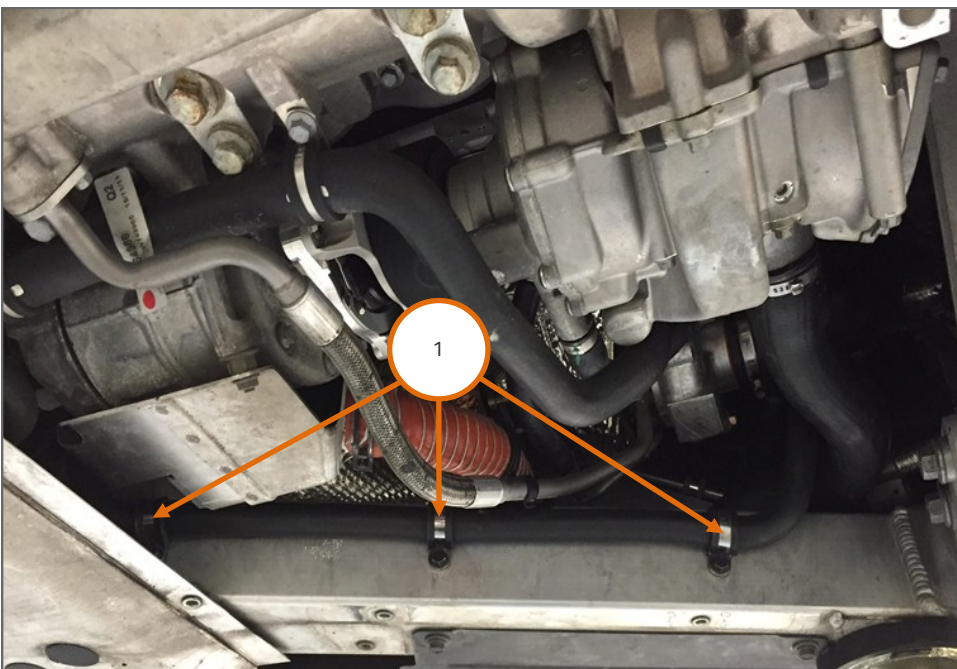
10. Remove the clutch oil cooler by rotating it on its side (5) and then bring it over the driveshaft (6).



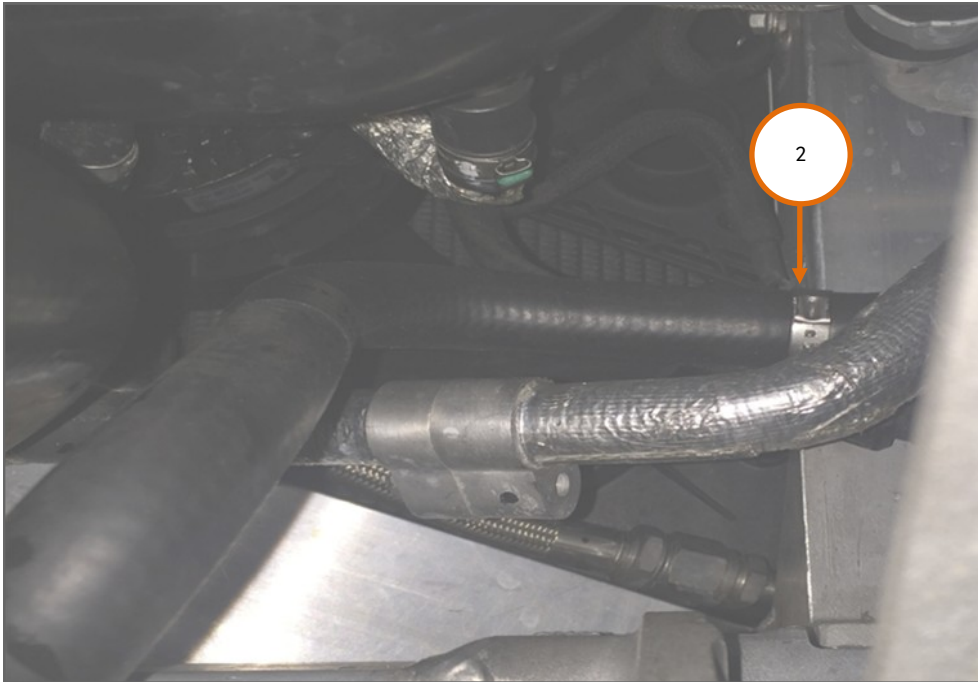


Removal - Clutch Cooler Return Hose:

- 11. The clutch cooler return hose is already removed from the transmission side as part of the clutch oil cooler removal procedure.
- 12. Un-do the bolts of all P-clips bolted to the frame (1).

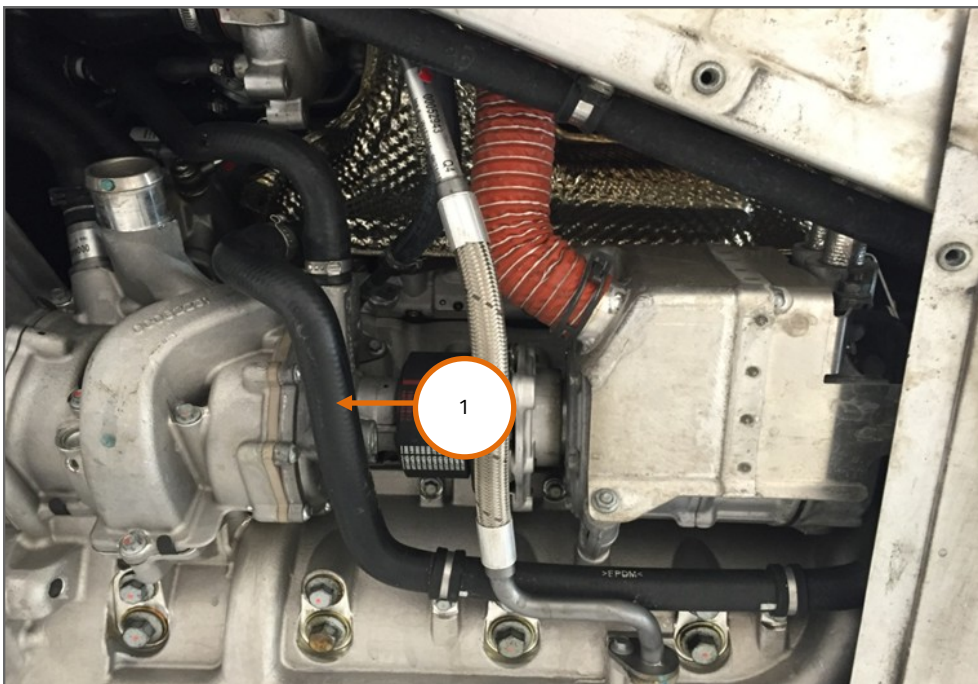


13. Remove the Oetiker clip from the other end of the hose (2) and detach the clutch cooler return hose.



Removal - Clutch Cooler Feed Hose:

14. Locate the clutch cooler feed hose (1).



Care Point: The serial number of the hose must be photographed and attached to the Work Package.

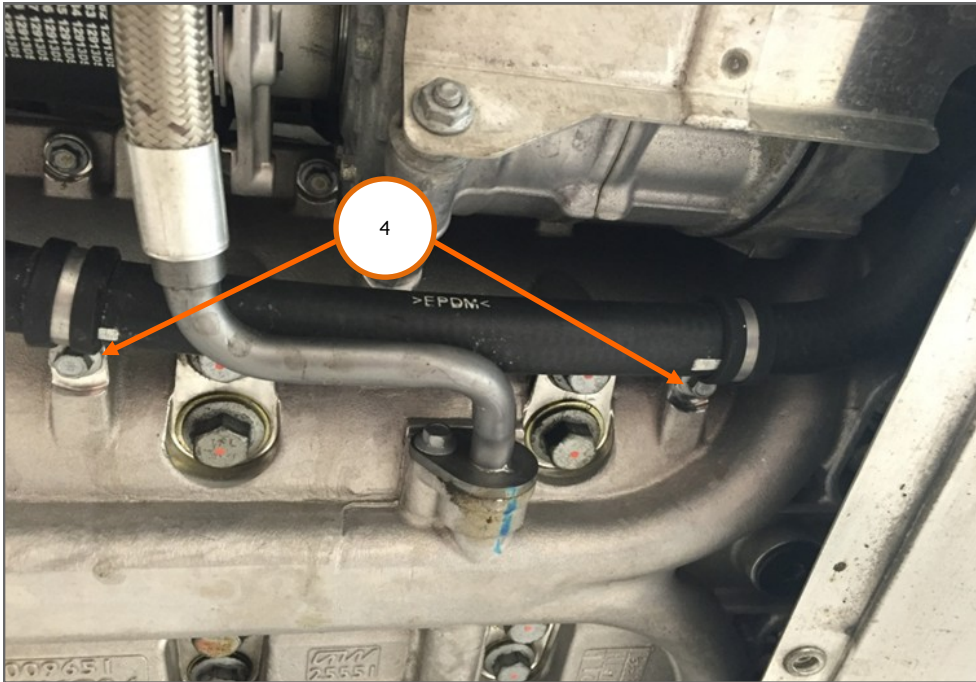
Care Point: The serial number of the hose might be covered by one of the Oetiker clips and as a result the last four digits will not be visible to read. If you are not able to read the last four digits proceed to Step 16 to remove the hose from the vehicle.

15. Search for the embossed serial number of the hose. The position of the serial number varies, but it is always present. The serial number is a ten digit long number (2).

- If the last four digits of the serial number (3) are 1029 the hose has to be replaced. Proceed to Step 16 of this document.
- If the last four digits of the serial number (3) are anything different to 1029 no further action is required with this hose.

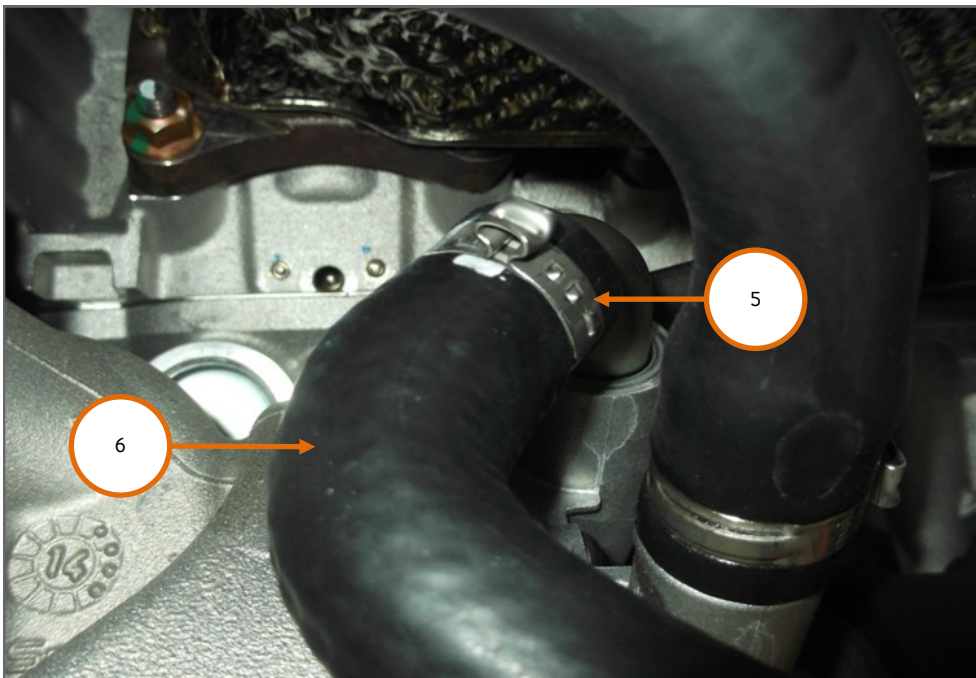


16. Un-do the bolts of both P-clips (4).

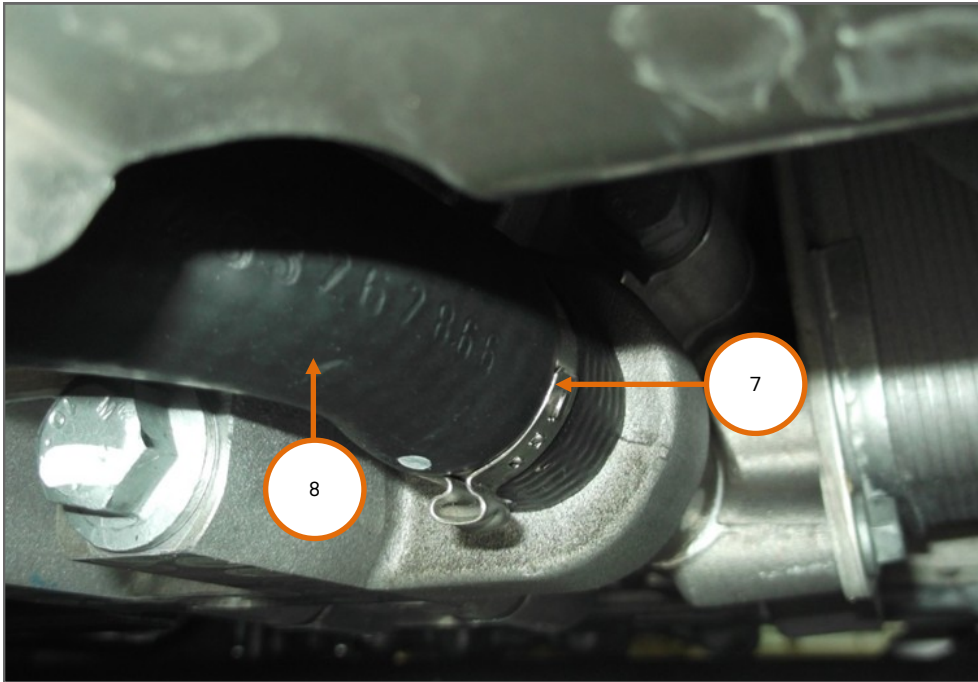


Care Point: Do not use excessive force to remove the hose from the water pump spigot. If necessary cut the hose to release it from the spigot. Excessive force can dislodge the spigot and cause a leak.

17. Remove the Oetiker clip (5) from the water pump spigot and detach the clutch cooler feed hose (6).



18. Remove the Oetiker clip (7) at the other end of the hose and detach the clutch cooler feed hose (8).



19. Remove the hose from the vehicle and search for the embossed serial number. Please photograph the serial number and attach to the Work Package (9).

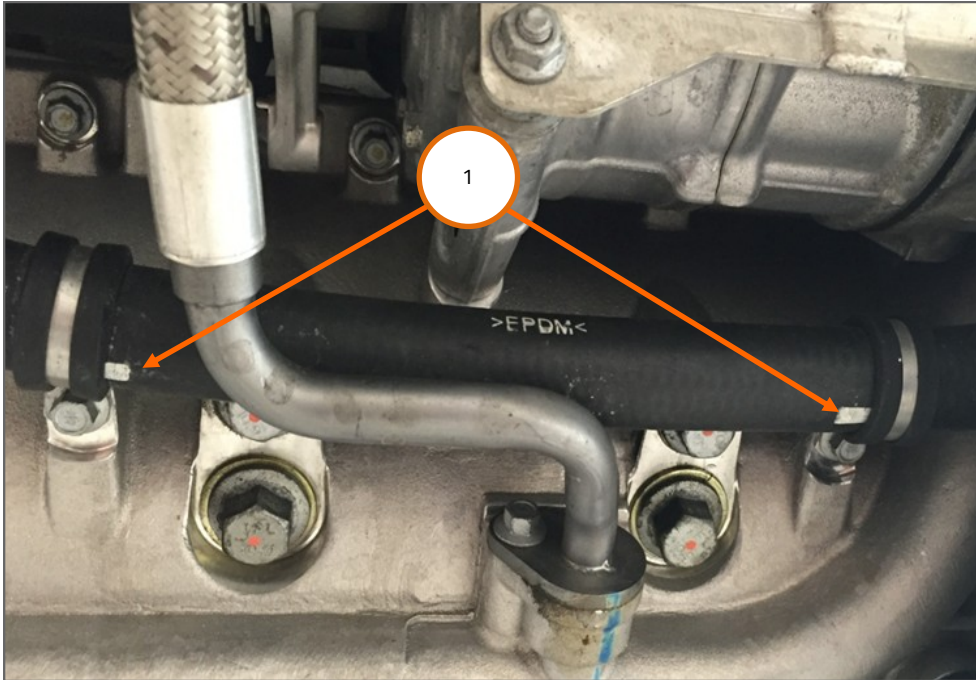


Installation - Clutch Cooler Feed Hose:

- 20. Slide two new Oetiker clips (supplied in the kit) to the new clutch cooler feed hose.
- 21. Install the new hose to the vehicle.

Care Point: Ensure that the white timing marks (1) are aligned and that the hose sits correctly.

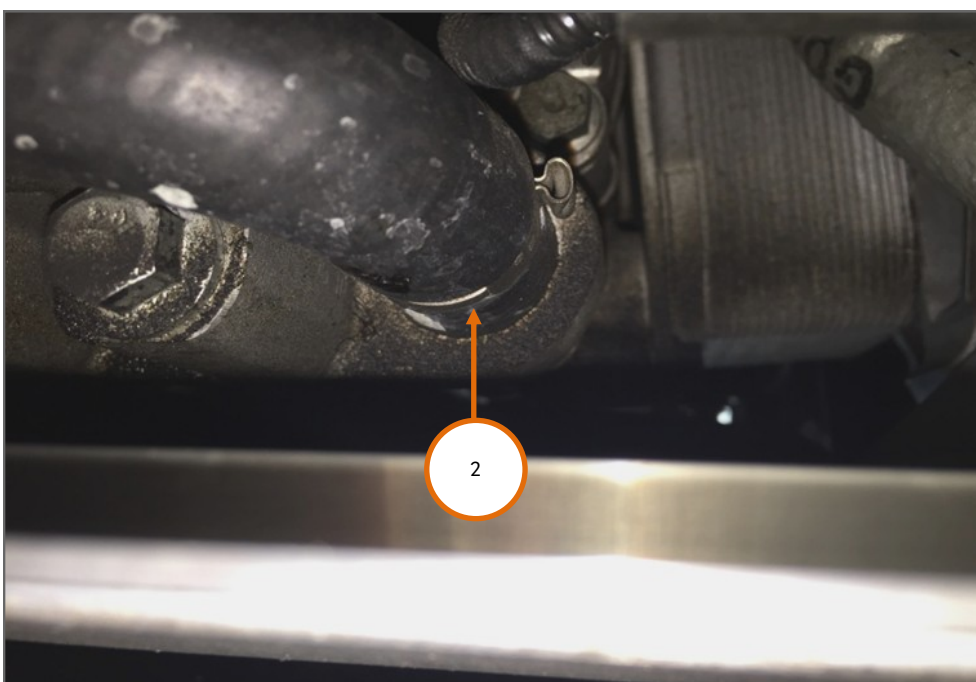
- 22. Install the P-clips and torque the bolts to 10Nm.



Care Point: The size of the Oetiker clip is 27.1 mm and the recommended orientation of the clip is at 3 o'clock (2).

Care Point: The hose should be pushed fully home.

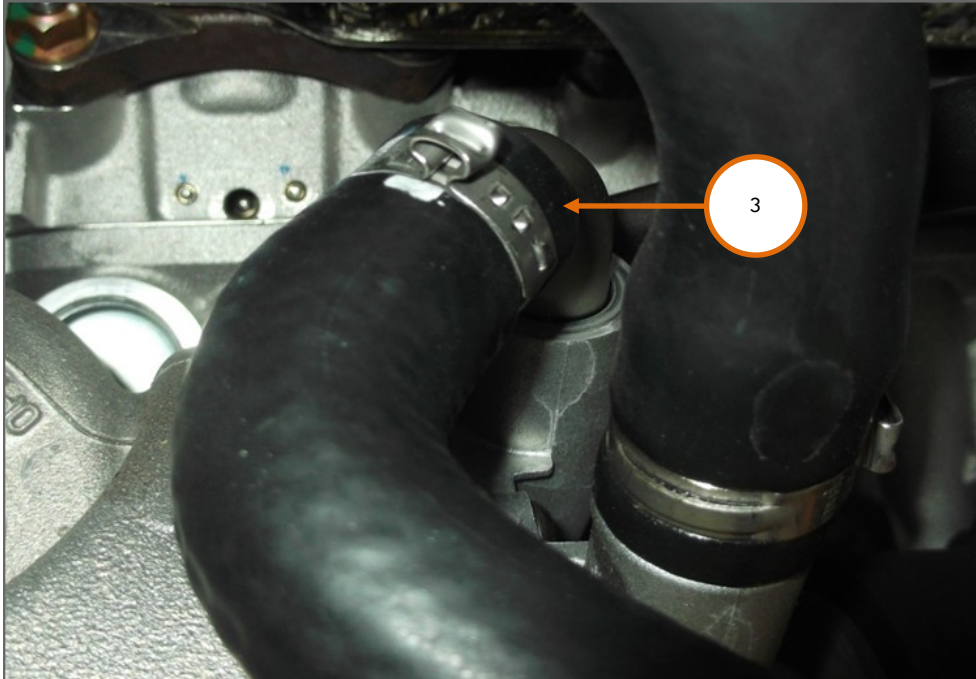
- 23. Install the hose to the ladder frame side (2) and crimp the Oetiker clip.



Care Point: Ensure that the paint mark on the hose is positioned behind the bead on the spigot and the Oetiker clip is crimped in the middle of the paint mark.

Care Point: The size of the Oetiker clip is 24.1mm.

24. Install the hose to the water pump spigot (3).



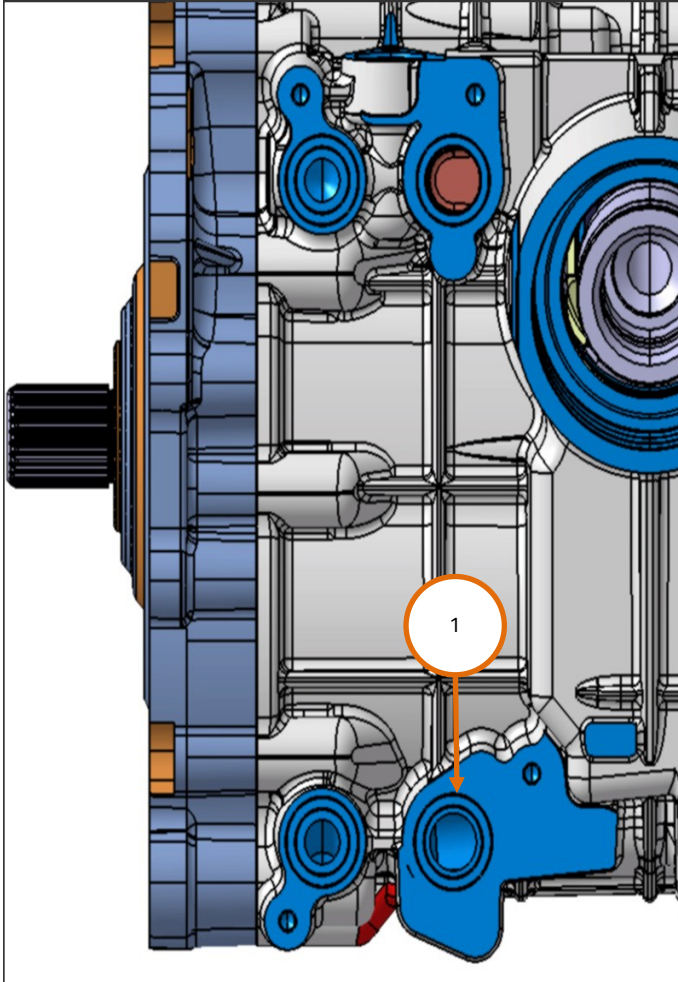
Installation - Oil Clutch Cooler:

Care Point: There are four O-rings in total included in the clutch oil cooler service kit. The single different O-ring (11G0234CP) of the four is the largest one and should only be mounted in the lower right hand groove (1).

Care Point: Always replace and lubricate the new O-rings with P80 THX.

Care Point: O-rings should be mounted in the grooves of the transmission before fitting the clutch oil cooler.

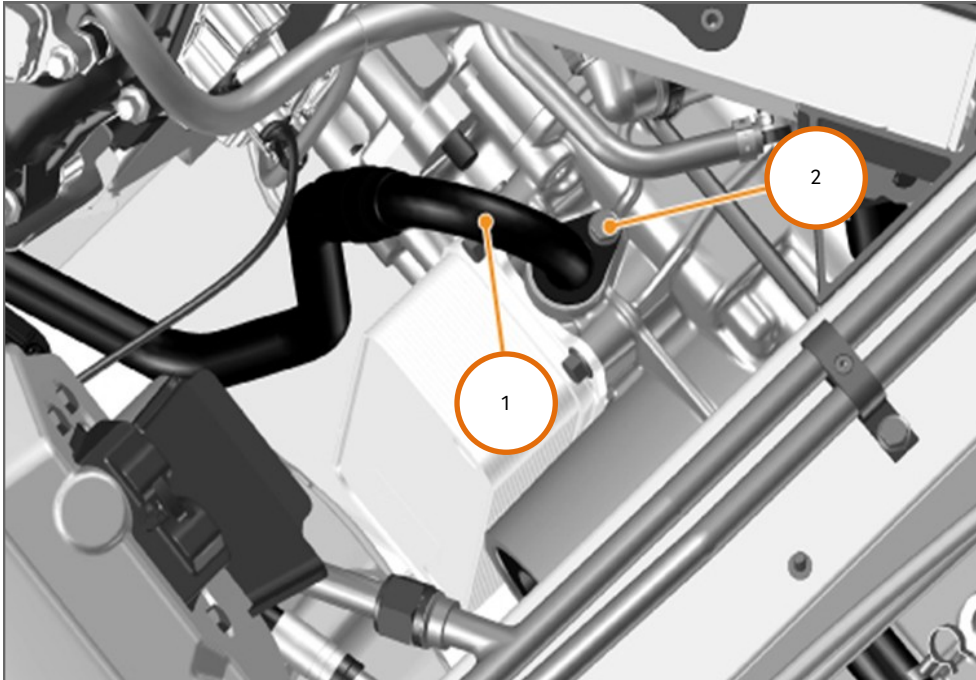
25. Install the new clutch oil cooler in the reverse order.



Installation - Clutch Cooler Return Hose:

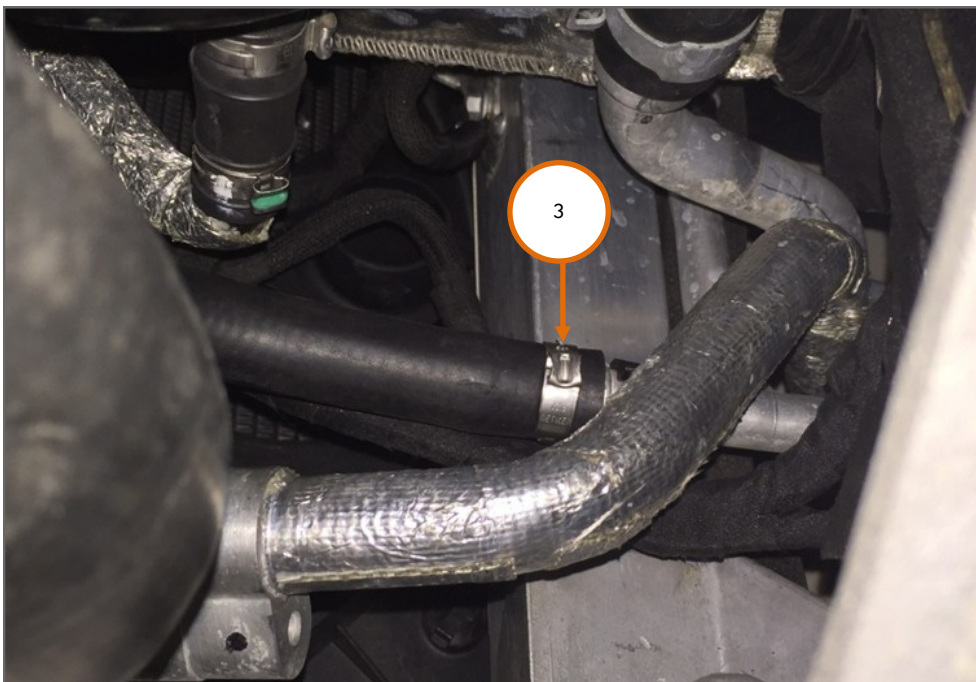
Care Point: Always lubricate the end of the hose with P80 THX during installation.

26. Install the new clutch cooler return hose (1) to the transmission (2) and torque to 6Nm.

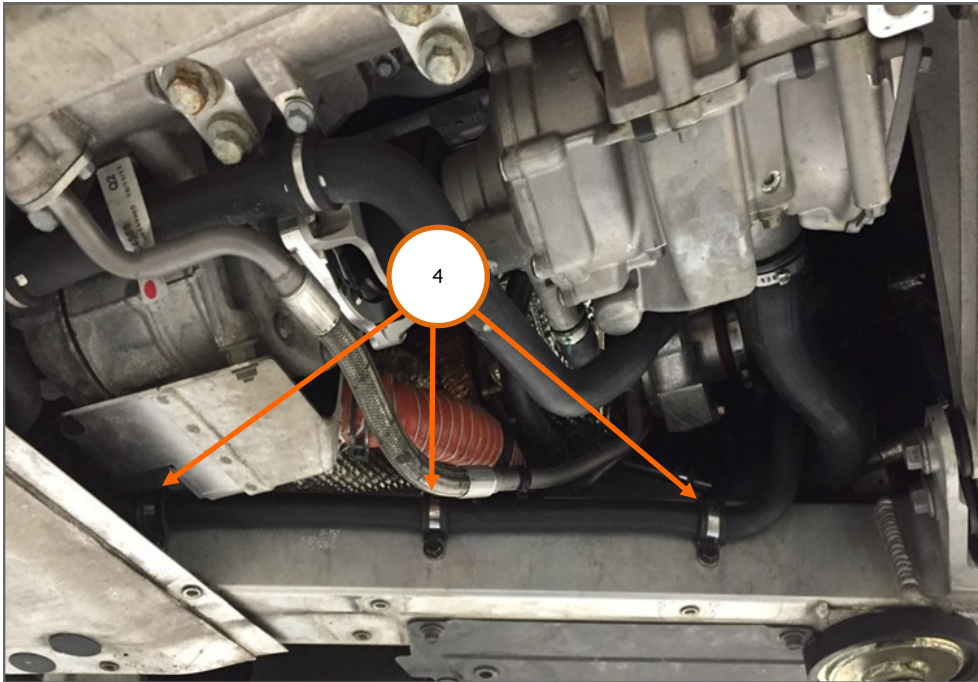


Care Point: The size of the Oetiker clip is 23.5mm.

27. Install the clutch cooler return hose to the solid LTR hose (3).



28. Install the P-clips to the frame (4) and torque to 8Nm.

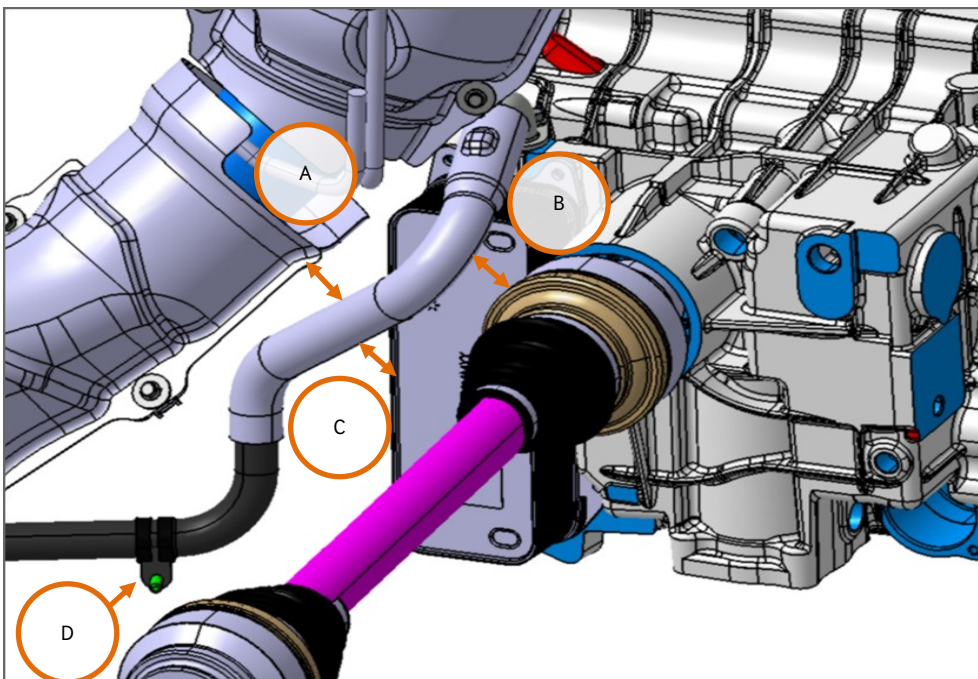


29. When installing the clutch cooler return hose it is mandatory to check and measure the clearances in three different locations.

A– Between the clutch cooler return hose and link pipe heatshield. The minimum clearance should be 15mm. If this cannot be achieved by adjusting the hose clips and end of the hose, please contact McLaren Technical Helpdesk.

B– Between the clutch cooler return hose and the left hand driveshaft. The minimum clearance should be 15mm. If this cannot be achieved by adjusting the hose clips and end of the hose, please contact McLaren Technical Helpdesk.

C– Between the clutch cooler return hose and the edge of the clutch oil cooler. The minimum clearance should be 15mm. A clash here may occur when there is too much hose rear warded of the p-clip at point D. If this cannot be achieved by adjusting the p-clip, please contact McLaren Technical Helpdesk.



30. Please refer AA-RM-03L01-01-005 – Drain/fill fluid – coolant to vacuum fill the coolant.
31. Check for external leaks. If none found no further action is required.
32. Please refer to AA-RM-04G01-01-015 – Drain/fill fluid – Clutch
33. Install components in reverse order.

Please contact your Regional Aftersales Manager should you have any questions relating to the information contained within this bulletin.

WARRANTY INFORMATION

DESCRIPTION	RESOLUTION CODE	TOTAL REPAIR TIME
Clutch Oil Cooler and Coolant Hoses Replacement	EOG10156A11A9901	2.6 hours

PARTS INFORMATION

DESCRIPTION	PART NUMBER	QUANTITY	ORDER PROCESS
Clutch Oil Cooler Service Kit	11G0288CP	1	Unipart
Clutch Cooler Feed Hose Service Kit	11F2326CP	1	Unipart