McLaren Artura HVAC TXV Block Inspection and Troubleshooting Guide

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Document Information

Location: Chassis / Electrical / Interior

Topic: Troubleshooting guide supporting diagnosis of potential leaks from the HVAC TXV block

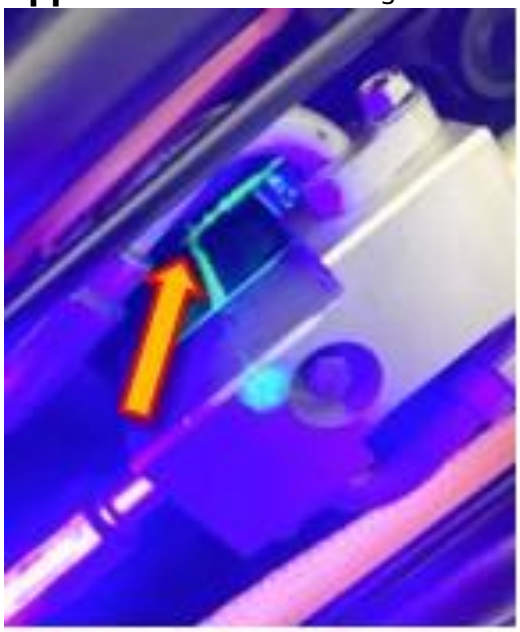
Condition: N/A

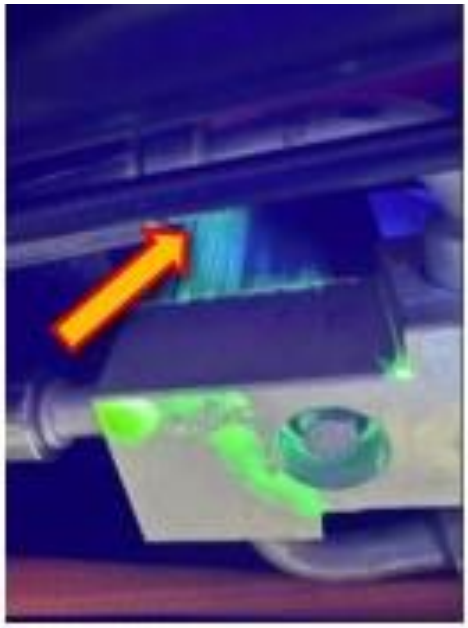
Diagnostic Trouble Codes: N/A

Measure

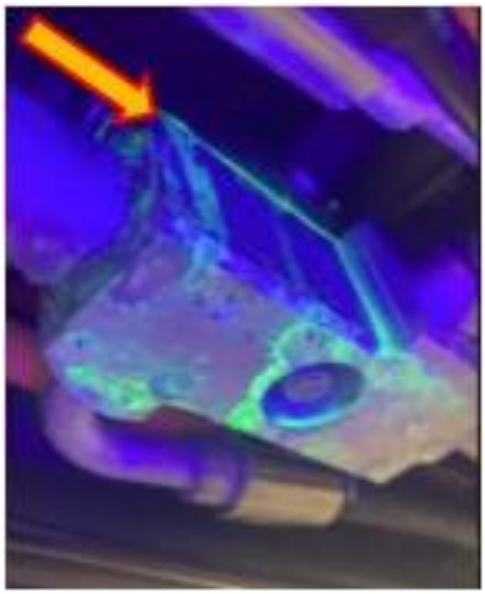
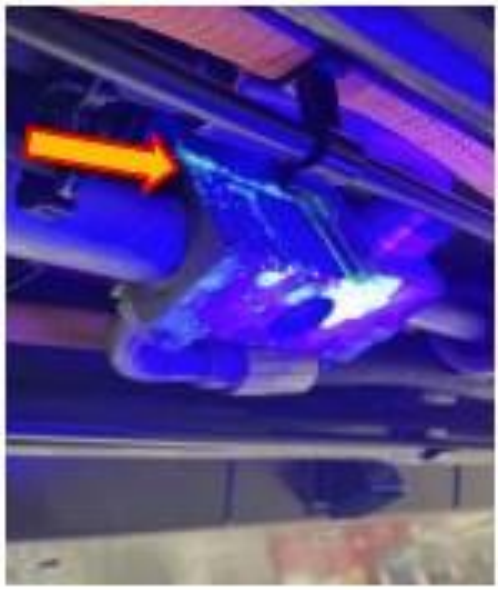
In the event of a leak being identified at the HVAC TXV block on an Artura, there are 3 different leak possibilities to explore.

Upper TXV leak - Leaking from above the TXV between HVAC and TXV interface.

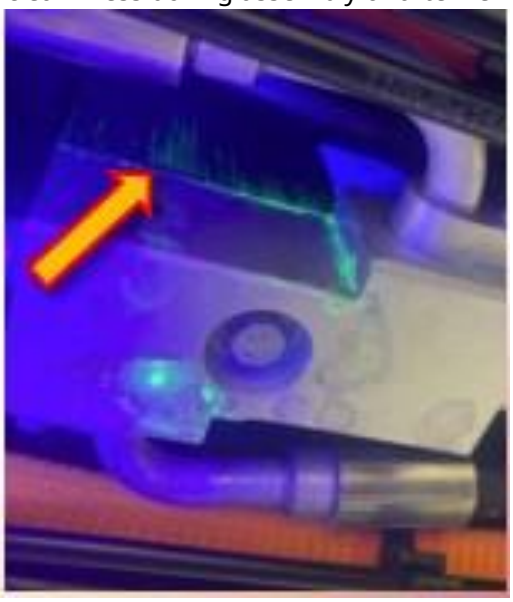




Lower TXV/Block Interface Leak - Leaking from in between TXV and pipe block.

Residual Dye Marks / Not Cleaned - Faint residual marks, smudges, or condensate water carrying residual dye into channels. Due to poor cleanliness during assembly or after rework.

The following procedures highlight the steps to be taken when inspecting a P16 HVAC TXV block following a detected leak.

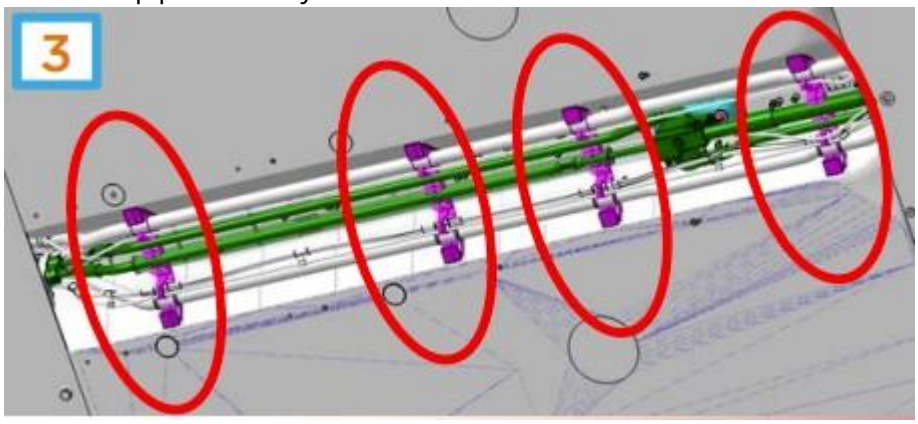
Using a UV torch, inspect the leak path and capture images. Please follow the respective instructions for the leak identified on your vehicle.

Upper TXV leak

1. De-gas system noting refrigerant/oil recovered. Nominal Gas fill = 650grams ± 10grams (R1234YF) Note: Expected refrigerant loss rate due to system porosity = 35grams per year

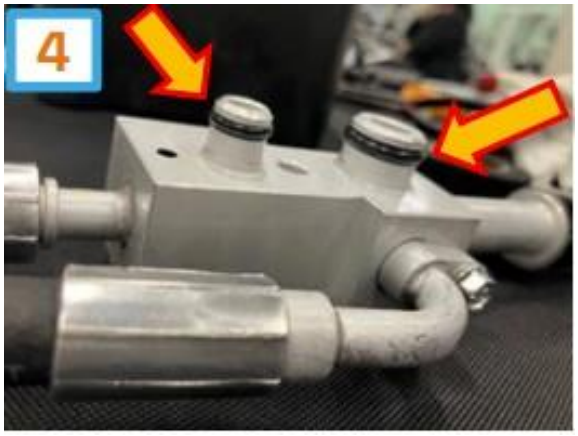
2. Prior to removal, check torque value of pipe block bolt (6Nm)

3. Remove the pipes from the support clips in the tunnel as shown. Lower the block to allow for the rework Ensure pipe assembly is of latest **PN 16LA697CP**

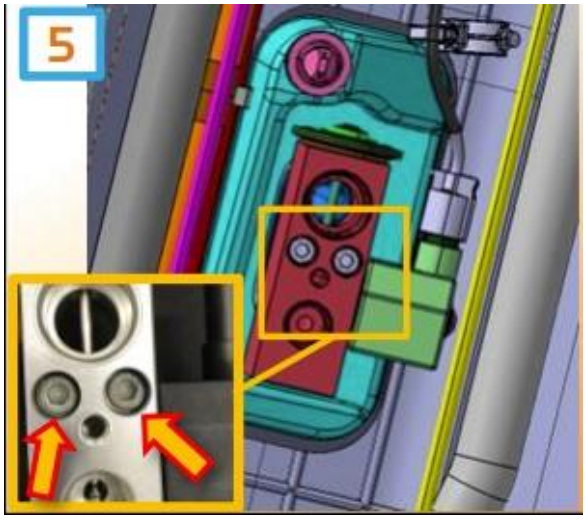


4. Inspect the black o-rings for damage and replace with new

- **16LA716CP**: Larger Spigot: 12.5mm ID x 3mm CSD, Material: CR
- **16LA717CP**: Smaller Spigot: 8.92mm ID x 1.83mm CSD, Material: CR



5. Prior to removal, check TXV bolts torque value of 6Nm is achieved

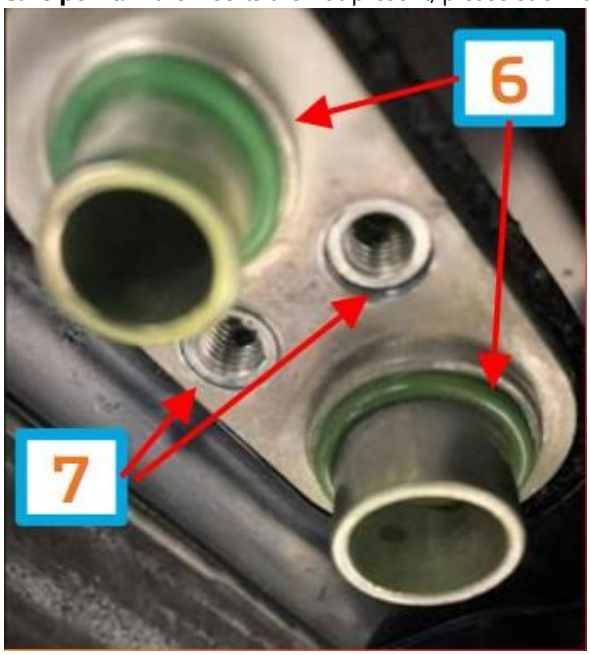


6. Remove TXV and inspect green o-rings for damage. Replace with new o-rings:

    - **16LA621CP**: 10.82mm ID X1.78mm CSD, Material: HNBR
    - **16LA622CP**: 14mm ID X1.78mm CSD, Material: HNBR

7. Check the underside of the HVAC distribution box for the presence of inserts

Care point: If the inserts are not present, please submit a Technical Request and await further guidance.



8. Wipe off/clean all residual liquids and dye from the TXV and pipe block with a dry cloth only, including all surrounding areas toensure there are no liquids or dye present

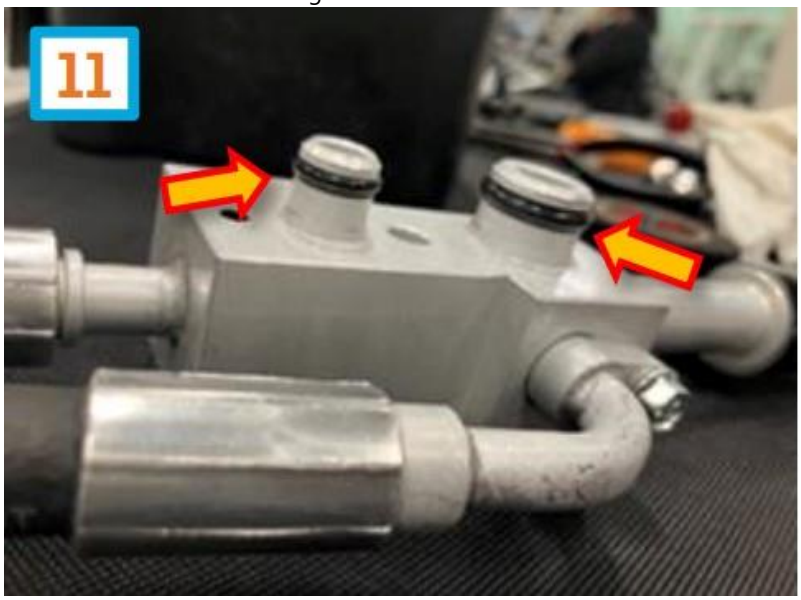
9. Lubricate new green o-rings with PAG oil and reassemble TXV

10. Assemble TXV and torque bolts to 6Nm

Care point: If bolts do not torque up to nominal value, then it suggests an issue with the HVAC distribution box inserts. Replacement of the HVAC distribution box will be required with part number **16LA709CP** or newer

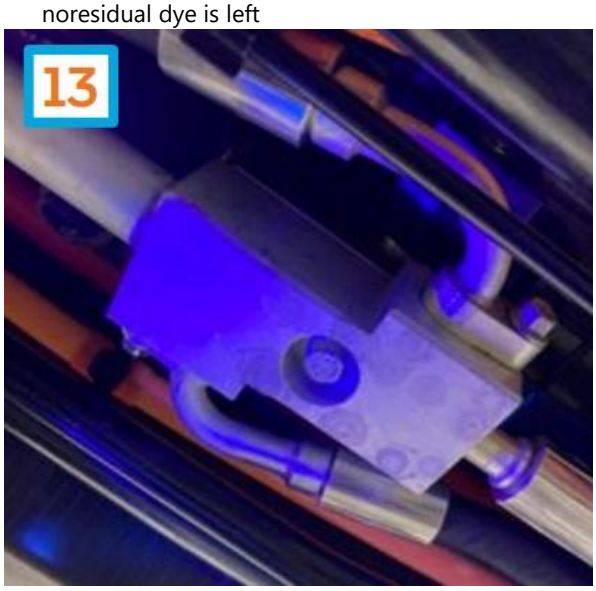
Please submit a Technical Request for parts release purposes.

11. Lubricate new black o-rings with PAG oil and assemble on to TXV



12. Reassemble pipe block and torque bolt to 6Nm

13. Thoroughly clean the block assembly and surrounding areas with solvent cleaner. Inspect again with UV light to ensure noresidual dye is left



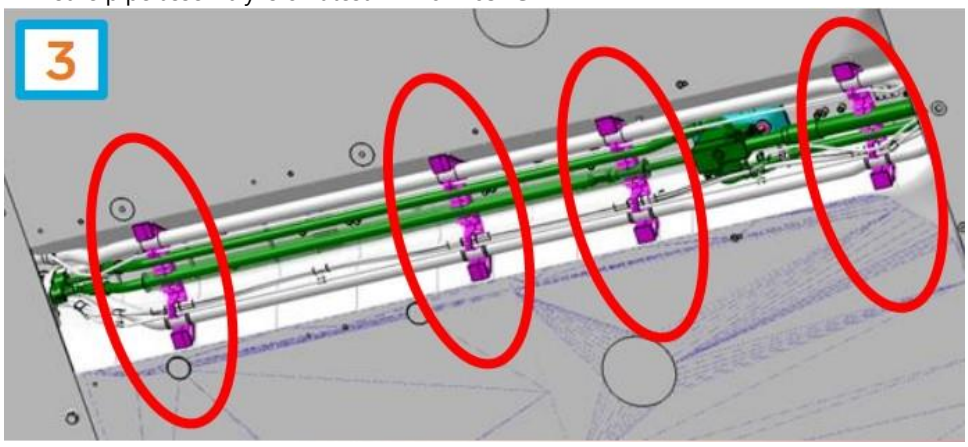
14. Replenish system with refrigerant and run the vehicle A/C on Quick Cool for 30 mins. Inspect for any reoccurring dye with UVtorch. If after 30mins no dye is visible, no further action is required

Lower TXV/Block Interface Leak

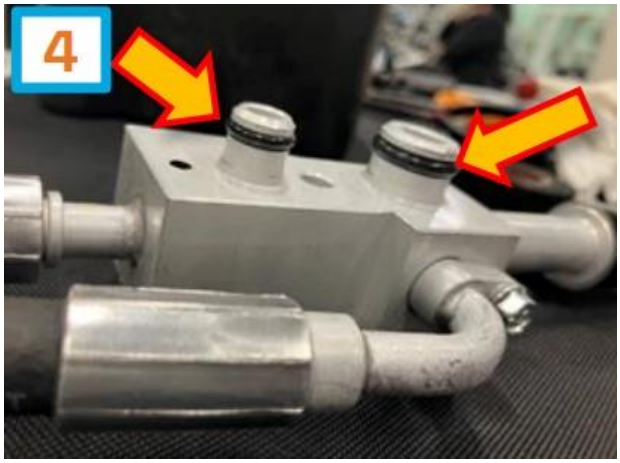
1. De-gas system noting refrigerant/oil recovered. Nominal Gas fill = 650grams ± 10grams (R1234YF)
   Note: Expected refrigerant loss rate due to system porosity = 35grams per year

2. Prior to removal, check torque value of pipe block bolt (6Nm)

3. Remove the pipes from the support clips in the tunnel as shown. Lower the block to allow for the rework
   Ensure pipe assembly is of latest PN **16LA697CP**



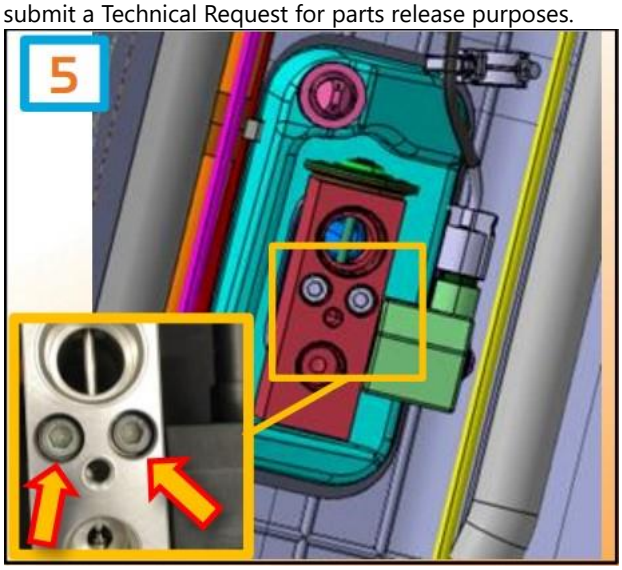
4. Inspect the black o-rings for damage and replace with new
   - **16LA716CP**: Larger Spigot: 12.5mm ID x 3mm CSD, Material: CR
   - **16LA717CP**: Smaller Spigot: 8.92mm ID x 1.83mm CSD, Material: CR



5. Prior to removal, check TXV bolts torque value of 6Nm is achieved

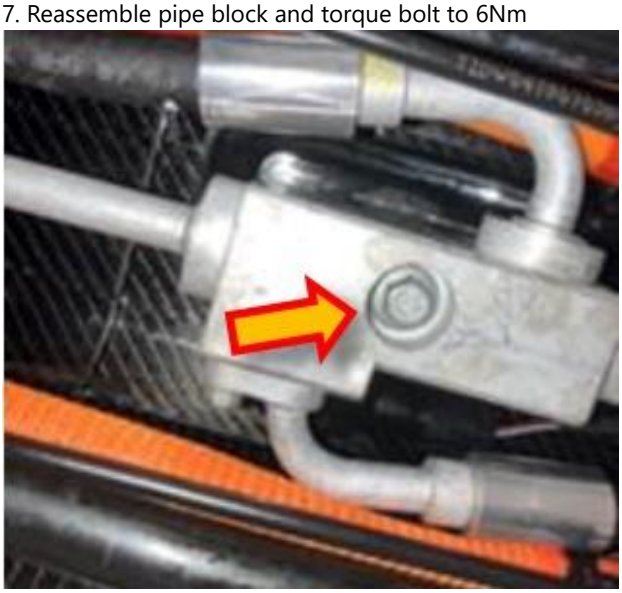
Care point: If bolts do not torque up to the nominal value, then it suggests an issue with the HVAC distribution box inserts. If the inserts are not present, please submit a Technical Request and await further guidance.

If the inserts are present, replacement of the HVAC distribution box will be required with part number **16LA709CP** or newer. Please submit a Technical Request for parts release purposes.

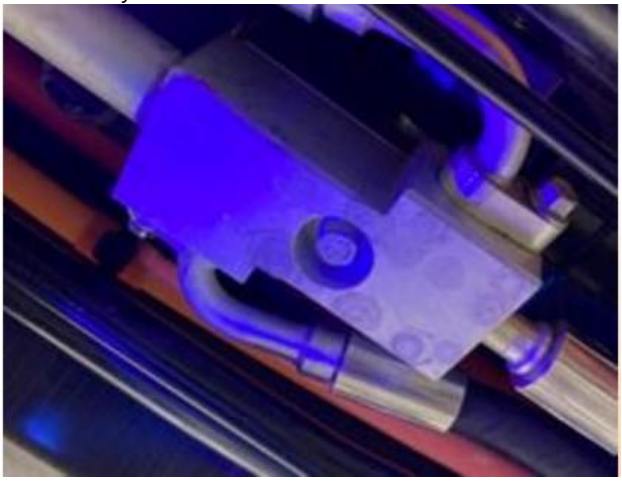


6. Wipe off/clean all residual liquids and dye from the TXV and pipe block with a dry cloth only, including all surrounding areas toensure there are no liquids or dye present

7. Reassemble pipe block and torque bolt to 6Nm



8. Thoroughly clean the block assembly and surrounding areas with solvent cleaner. Inspect again with UV light to ensure no residualdye is left



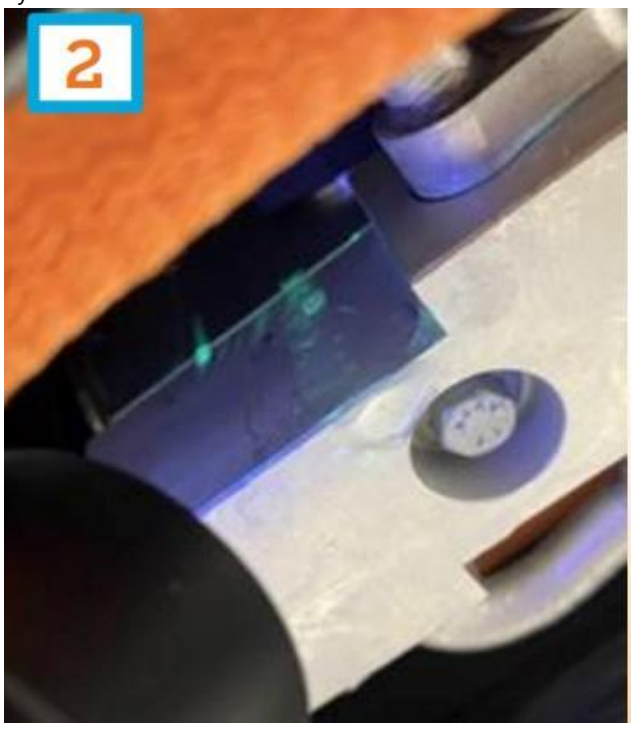
9. Replenish system with refrigerant and run the vehicle A/C on Quick Cool for 30 mins. Inspect for any reoccurring dye with UVtorch. If after 30 mins no dye is visible, no further action is required

Residual Dye Marks / Not Cleaned

1. Inspect thoroughly with UV torch for any potential leak paths

2. If faint marks, smudges or witness lines are visible, this suggests condensate water could have carried residual dye down the TXVblock

Thoroughly clean the block assembly and surrounding areas with solvent cleaner. Inspect again with UV light to ensure no residual dye is left



3. De-gas system noting refrigerant/oil recovered. Nominal Gas fill = 650grams ± 10grams (R1234YF)

Care point: Expected refrigerant loss rate due to system porosity = 35grams per year. If gas recovered equates to expected amount then it further suggests residual marks only

4. Replenish system with refrigerant and run the vehicle A/C on Quick Cool for 30 mins. Inspect for any reoccurring dye with UVtorch. If after 30 mins no dye is visible, no further action is required

Parts Information

Care point: Only the below part numbers should be ordered. Superseded part numbers should not be used.

16LA709CP ASSY-HVAC UNIT

16LA697CP ASSY-TUNNEL-PIPES

16LA716CP: Larger Spigot: 12.5mm ID x 3mm CSD, Material: CR

16LA717CP: Smaller Spigot: 8.92mm ID x 1.83mm CSD, Material: CR

16LA621CP: 10.82mm ID X1.78mm CSD, Material: HNBR

16LA622CP: 14mm ID X1.78mm CSD, Material: HNBR

Attachments

N/A

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