

VNRe Coolant and Heater System Upgrade

Service Category Service

Section Function Group 262

Technician Skill Level A

Market North America

Applicability

VOLVO

Year	Models
2021	VNRE

Introduction

Volvo Trucks has developed coolant system upgrades for certain VNRe model vehicles. These upgrades will improve cab heat, ESS temperature control, and overall performance and reliability of the coolant and heating system. Upgrades will include new hoses and piping, bracketry, and coolant heaters. Follow repair instruction below to complete the coolant system upgrades.

Production Change Information

This bulletin applies to vehicles built within the specified production changes below.

Brand	Engine	Emissions Level	Starting Build Date	Ending Build Date
Volvo	BEV	EM-ZE	31-March-2020	18-September-2020

Warranty Information

This repair is covered by an authorized Service Program. Reimbursement is obtained through the normal claim handling process.		
Claim Type (used only when uploading from the Dealer Bus. Sys.)		B
Main Labor Code	Description	Hours
2609-01-01-04	Coolant Draining	1.1
2609-02-01-01	Coolant Filling	1.3
3222-03-02-05	Charging Switch Replacement	2.9
1720-16-09-01	Campaign General 0.1 x 62	6.2
Causal Part	23800428	
SCC Authorization Code	S2968	
Expiration Date	May 30, 2025	

Parts Information

Parts can order through Parts LinQ (DFS), using the normal process.

Part Numbers	Part Names	Quantity
23800428	Heater	4
21078879	Hose Clamp	1
24052962	Coolant Hose	1
24052964	Check Valve	1
24052967	Coolant Pipe	1
24056986	Coolant Pipe	1
24078779	Coolant Hose	1
24052018	Coolant Pipe	1
20885497	Double Tie Retainer	1
24052977	Bracket	1
24052174	Coolant Pipe	1
24078777	Coolant Hose	1
24078783	Bracket	1
24078785	Support	1
24107729	Support	6
24110412	Support	1
24110414	Support	1
24112754	Bracket	1
24111822	Support	1

**DANGER****Risk of electrical discharge.**

Damaged traction voltage cables can cause electric shocks and arcs resulting in serious burns or death.

- ▶ Check that the traction voltage cables are in good condition before any operation is carried out.
- ▶ Report to the responsible person if any damaged traction voltage cables are found.

**DANGER****Risk of electrical discharge.**

Incorrect handling of the traction voltage system (>60 V DC) can cause electric shocks and arcs resulting in serious burns or death.

- ▶ Decommissioning and commissioning must only be carried out by personnel with adequate certification according to **Safety regulations, electric vehicles**, in function group 30.
- ▶ The steps described in the instruction are minimum requirements.
- ▶ Always comply with the local legislation or regulations with stricter safety requirements, including but not limited to, measuring tools and personal protective equipment to be used.

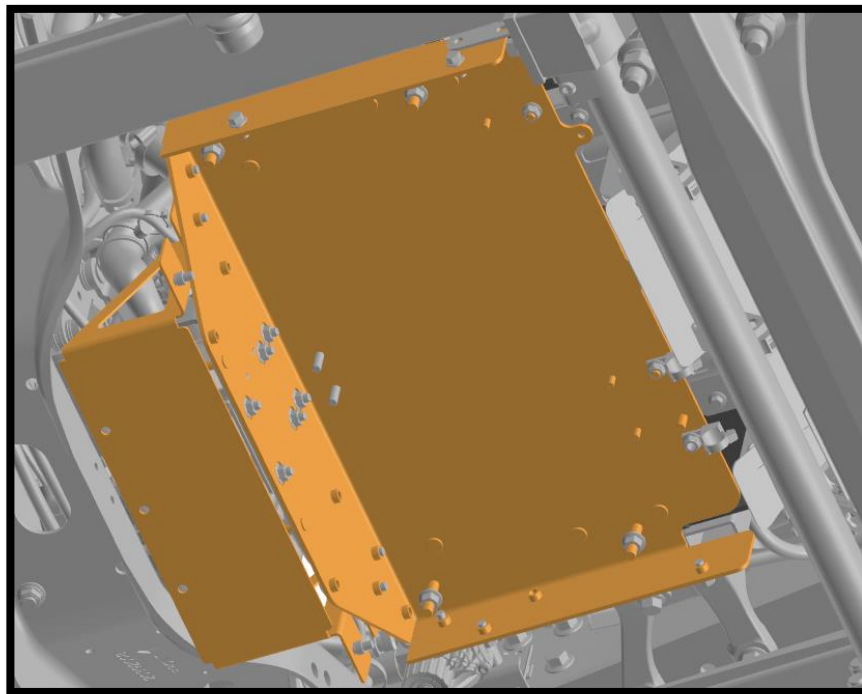
**DANGER****Risk of electrical discharge.**

Defective gloves can result in electric shocks resulting in serious burns or death.

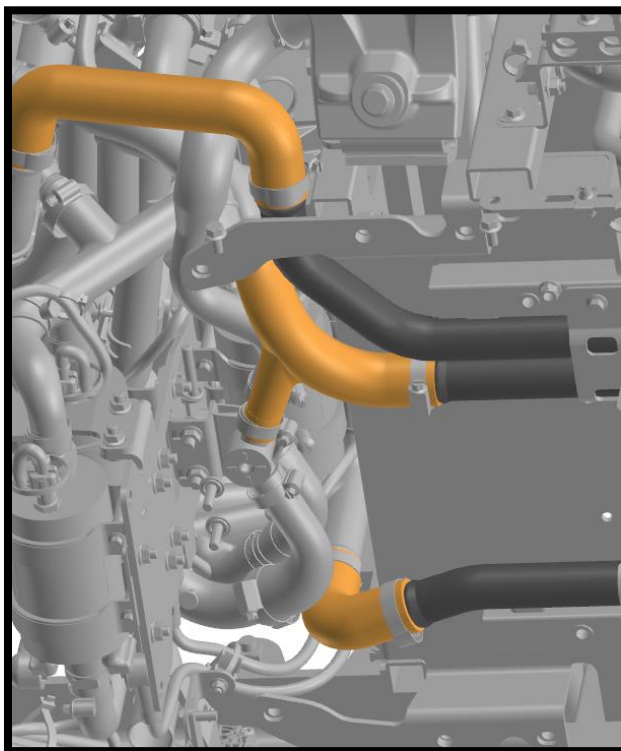
- ▶ Always use the gloves described in the instruction.
- ▶ Check gloves for leakage and damage before use, even if they are new.
- ▶ Ensure that gloves are completely dry before use.

Repair Instructions

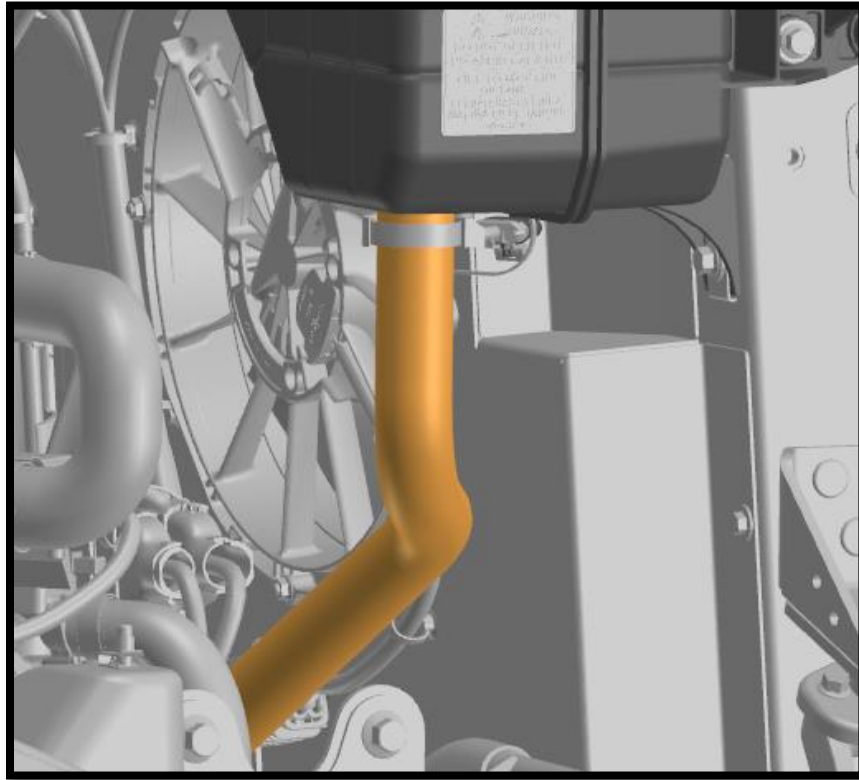
1. Follow steps 1 through 76 in Impact operation 3222-03-02-05 to decommission the traction voltage and remove the Charging Switch Unit.
2. Follow instruction in Impact operation 2609-01-01-04 to drain the coolant.
3. Remove the brackets.



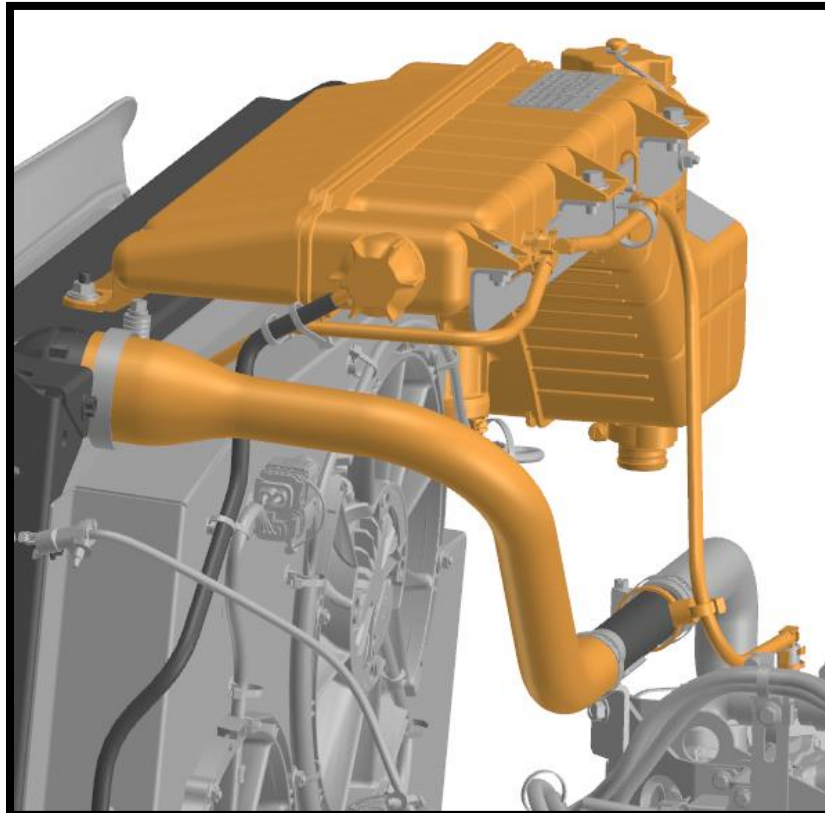
4. Disconnect the hoses.



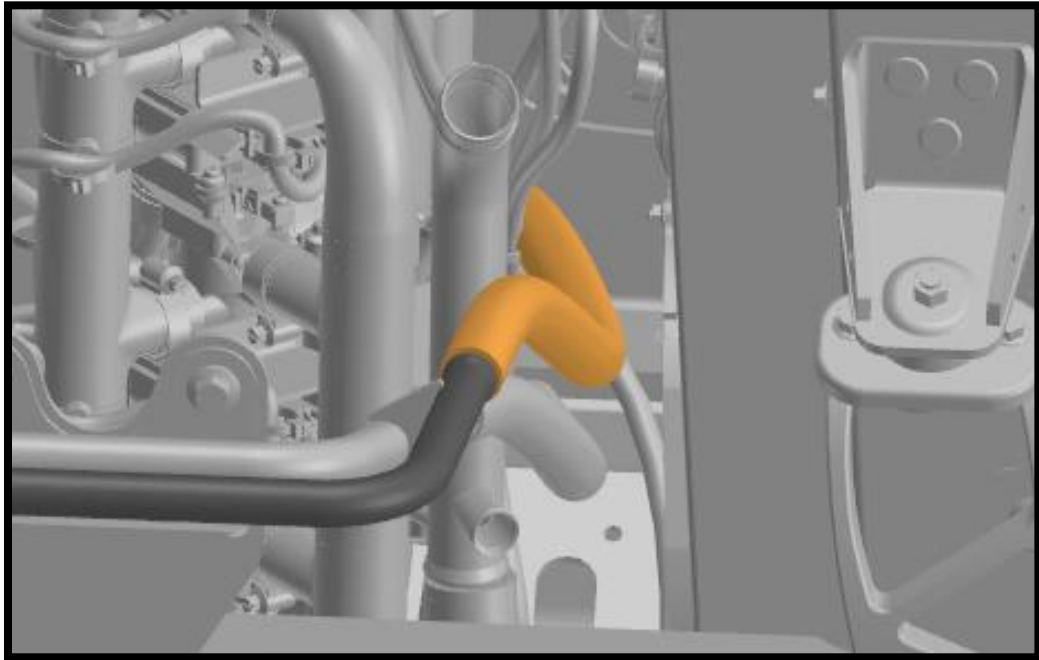
5. Remove and discard the hose.



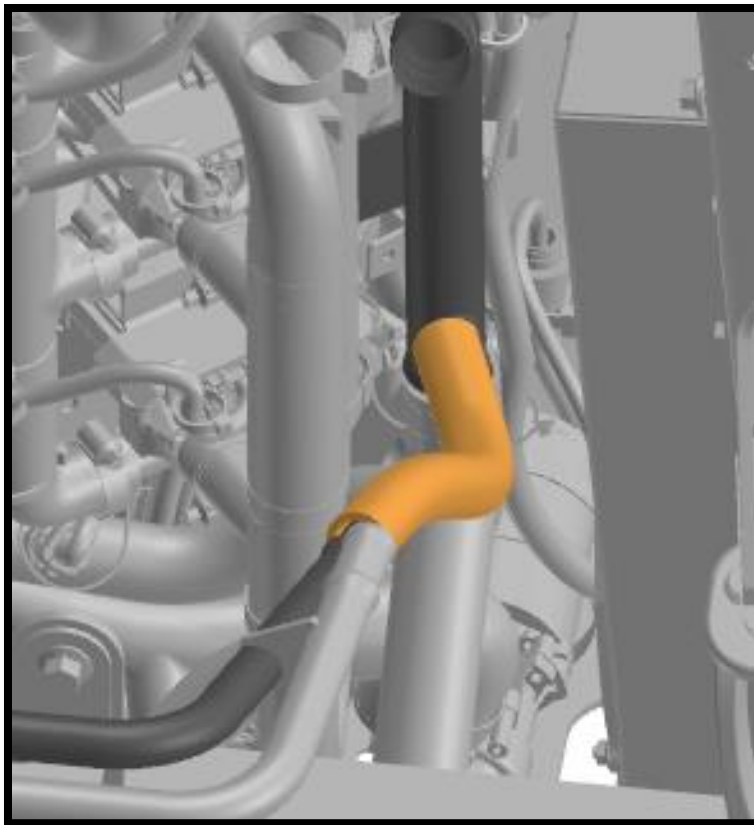
6. Remove the expansion tank and hoses.



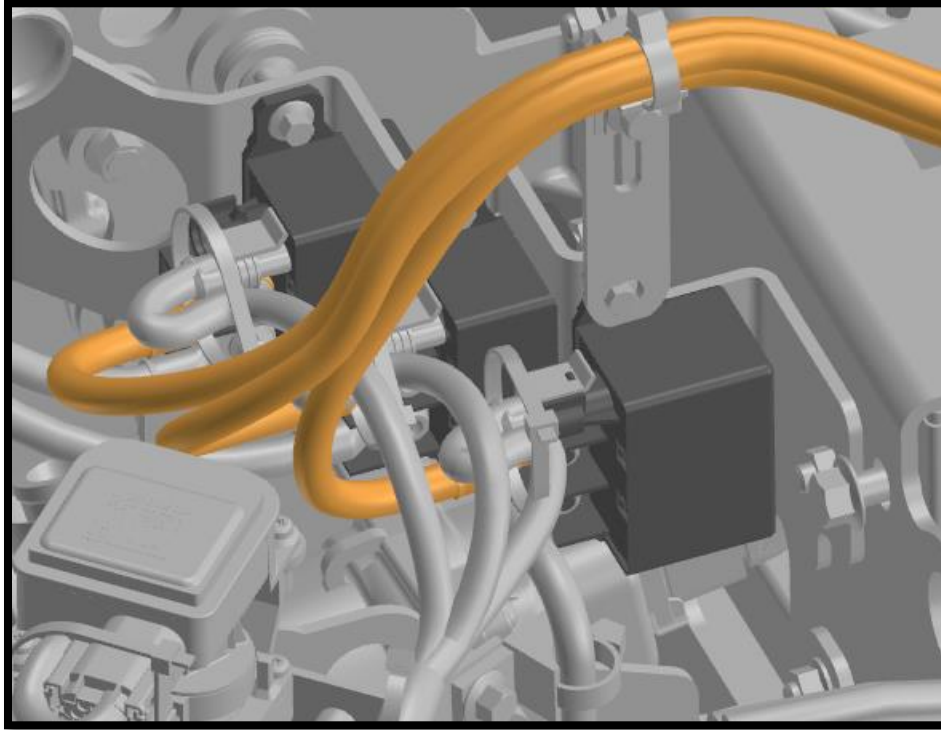
7. Disconnect the heater hose.



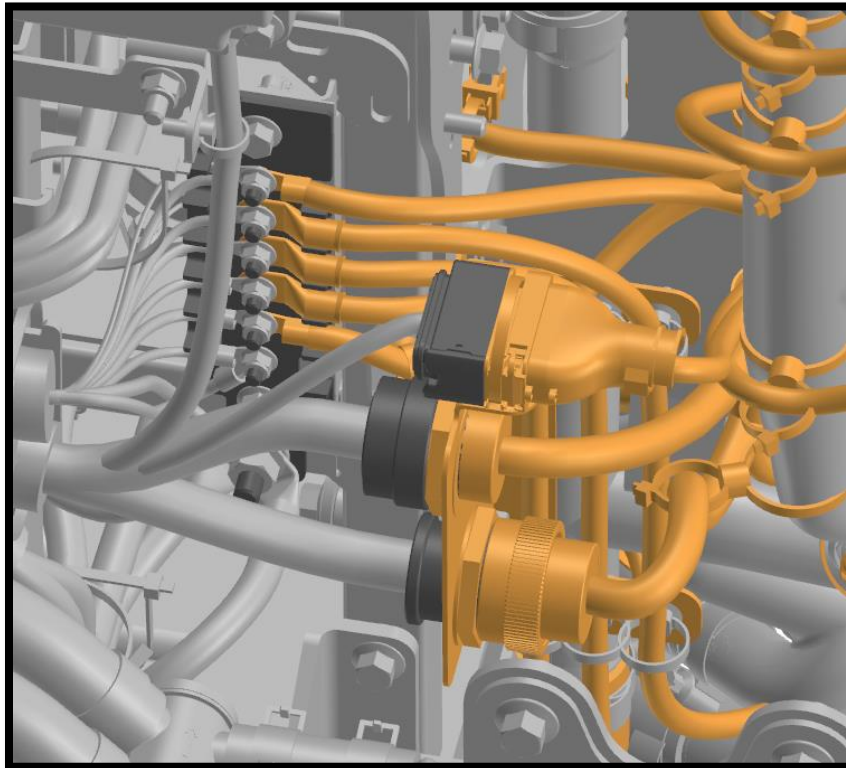
8. Remove and discard the hose.



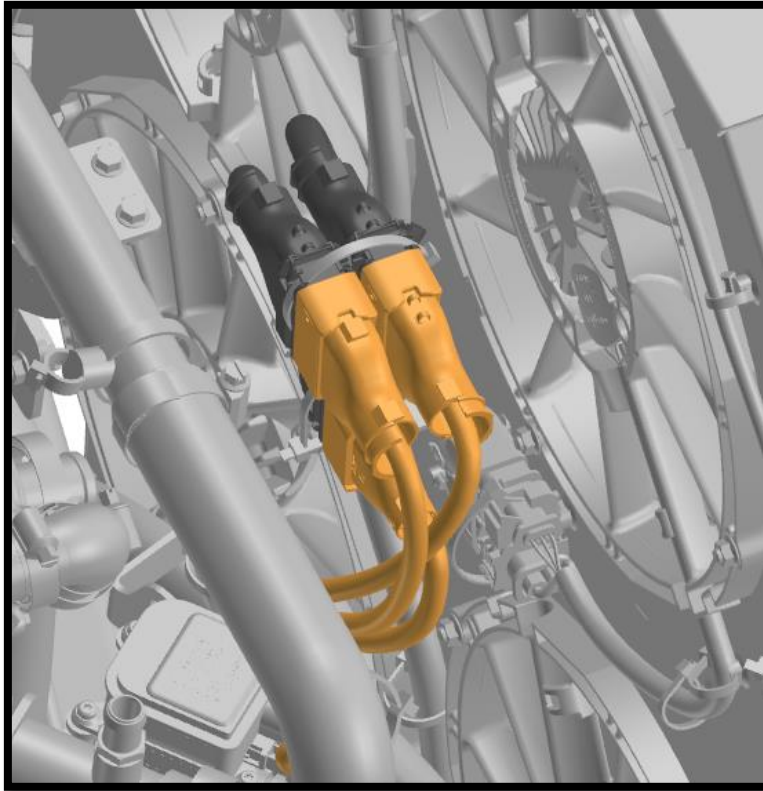
9. Disconnect the heater relay power wires.



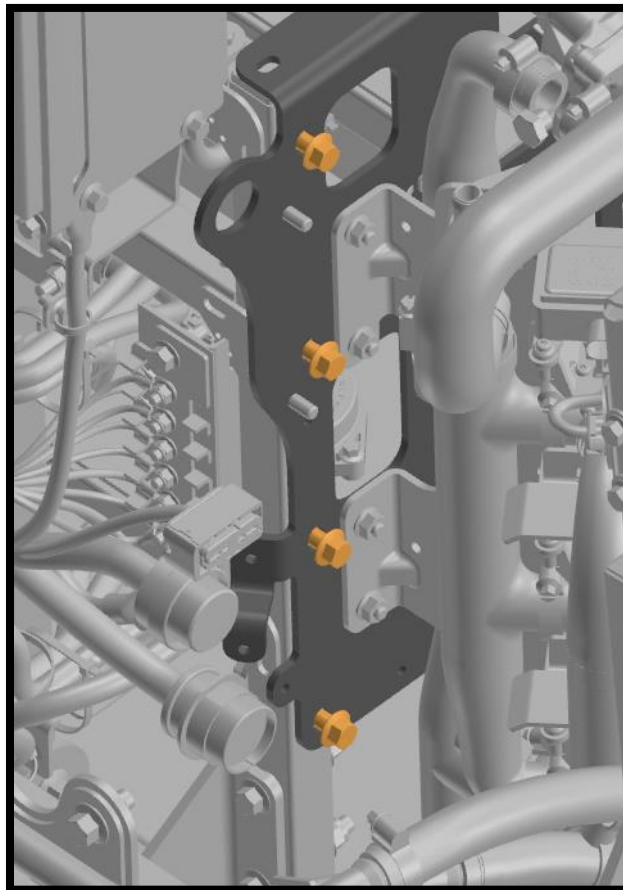
10. Disconnect the cooling box harness. Remove the cooling box grounds.



11. Disconnect the fan harness.



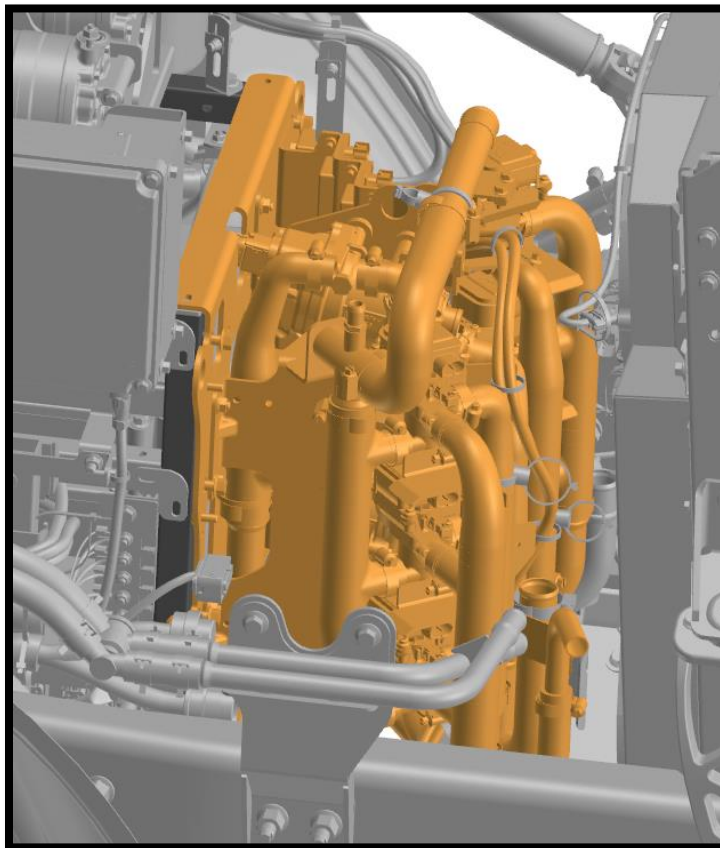
12. Install lifting equipment using the lifting eyes. Remove the screws.



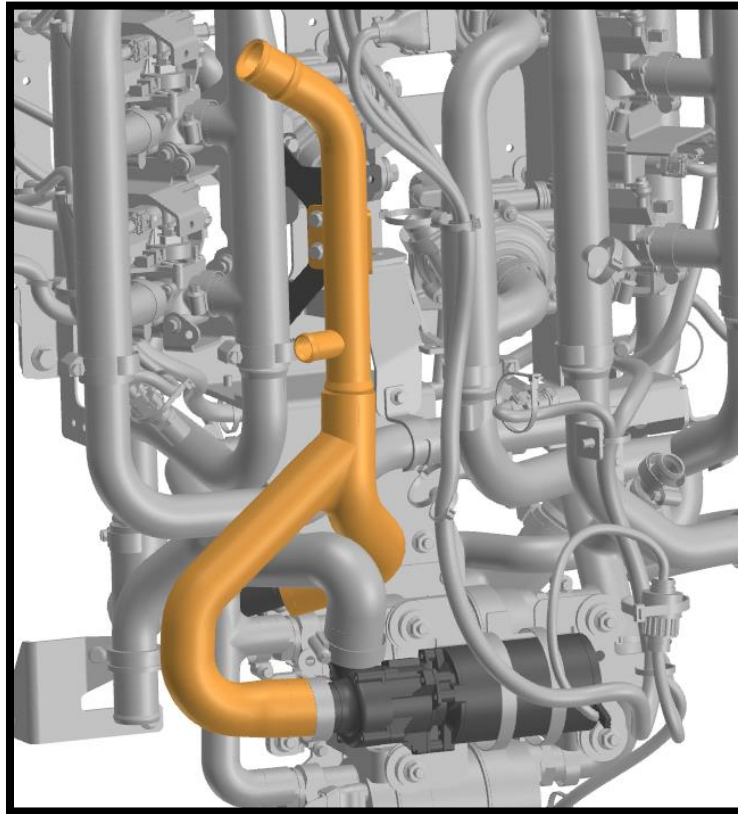
13. Remove the screws.



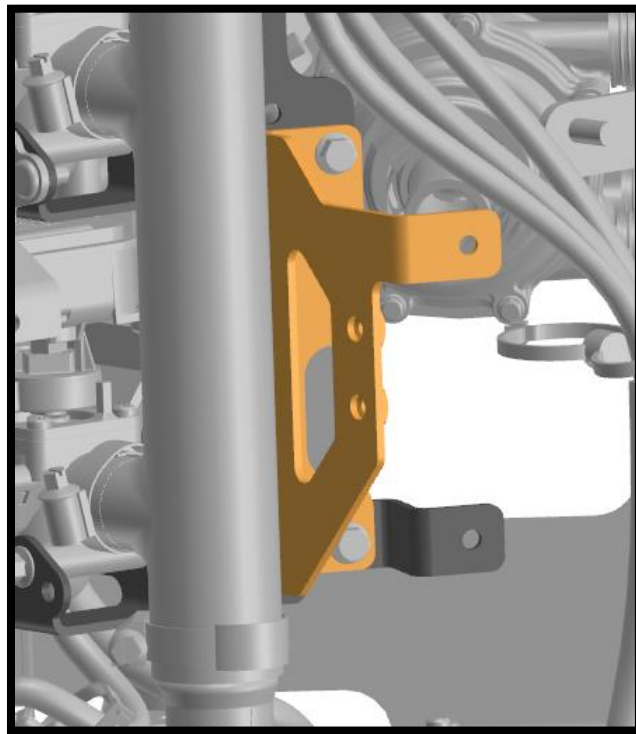
14. Remove the cooling box.



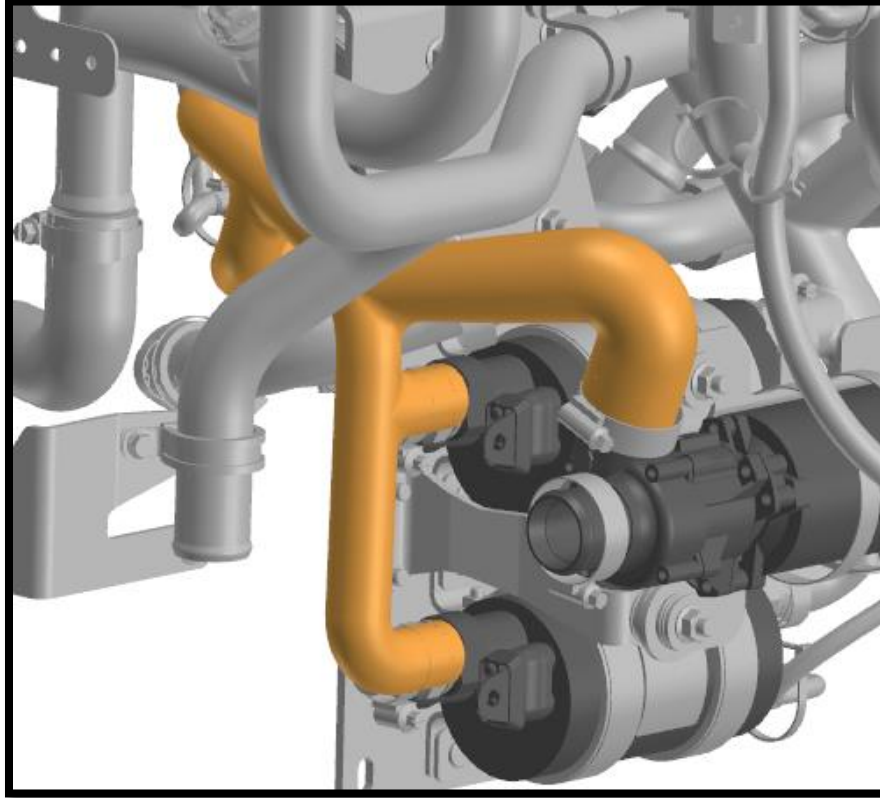
15. Remove and discard the hose and pipe.



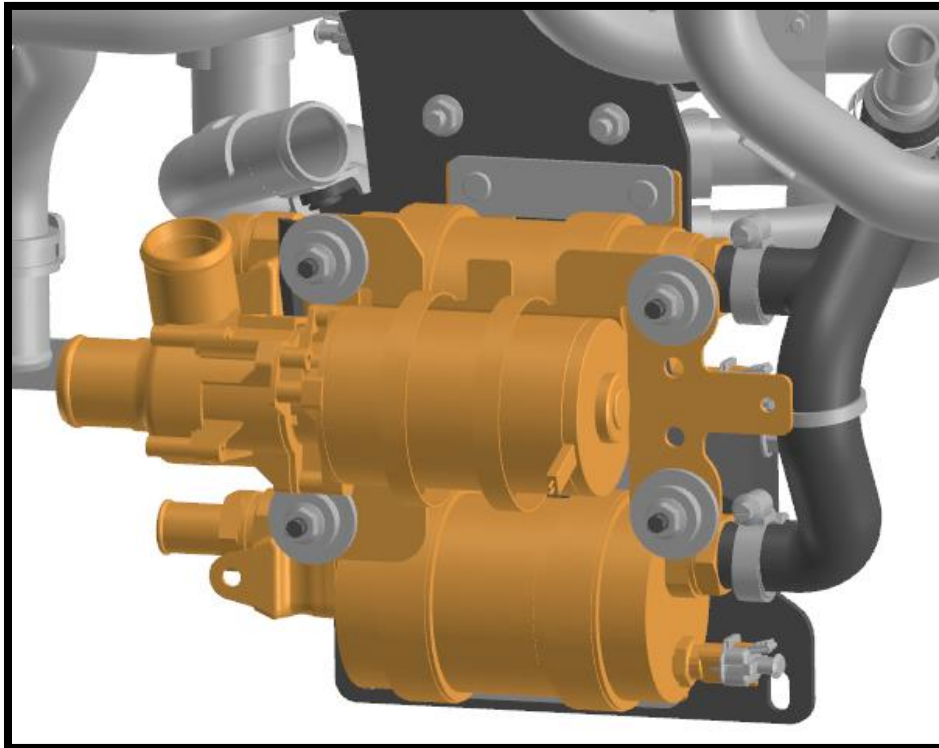
16. Remove and discard the bracket.



17. Remove and discard the hose.

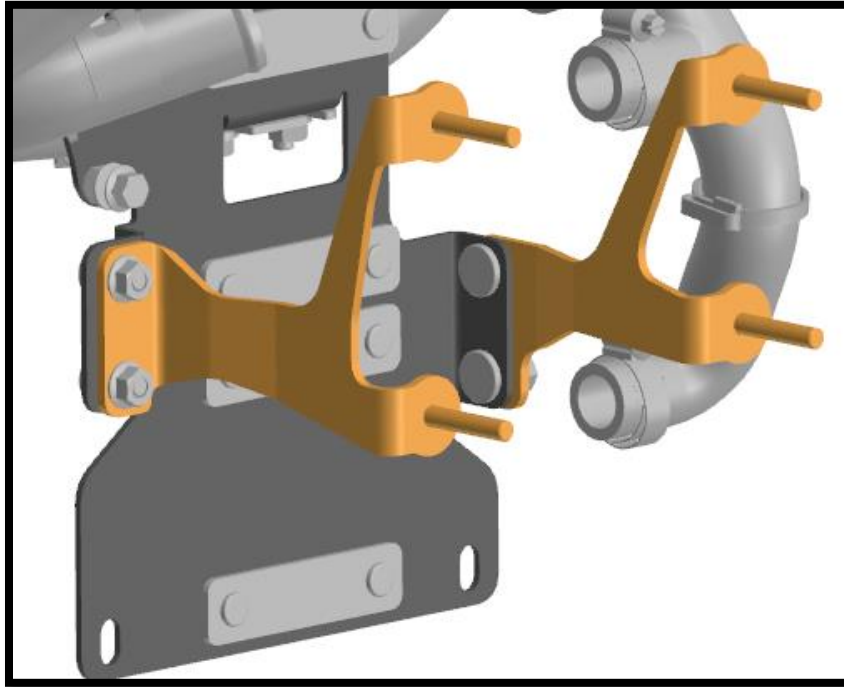


18. Remove the pump and heaters.

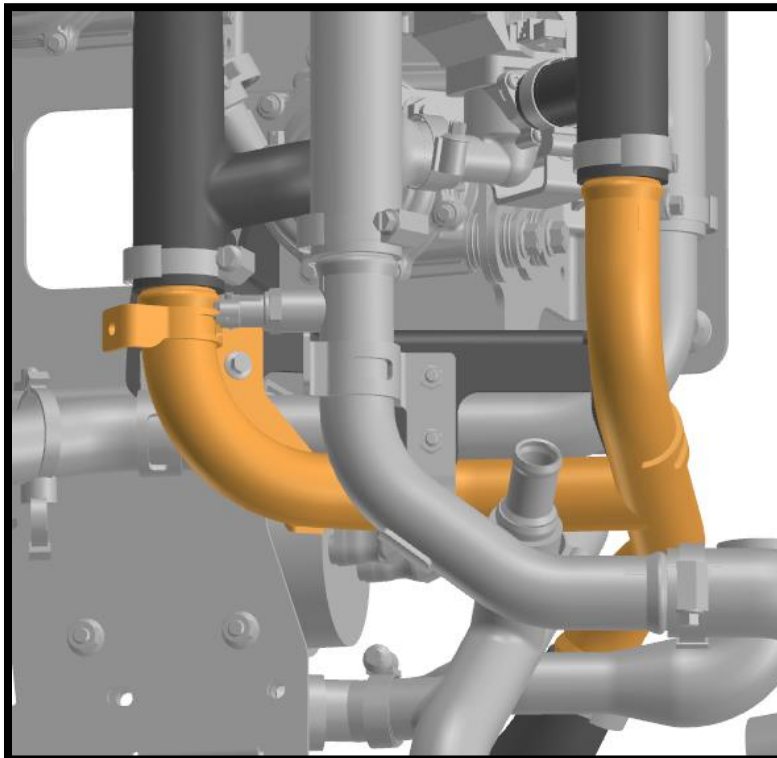


19. Discard both removed heaters. Retain the pump.

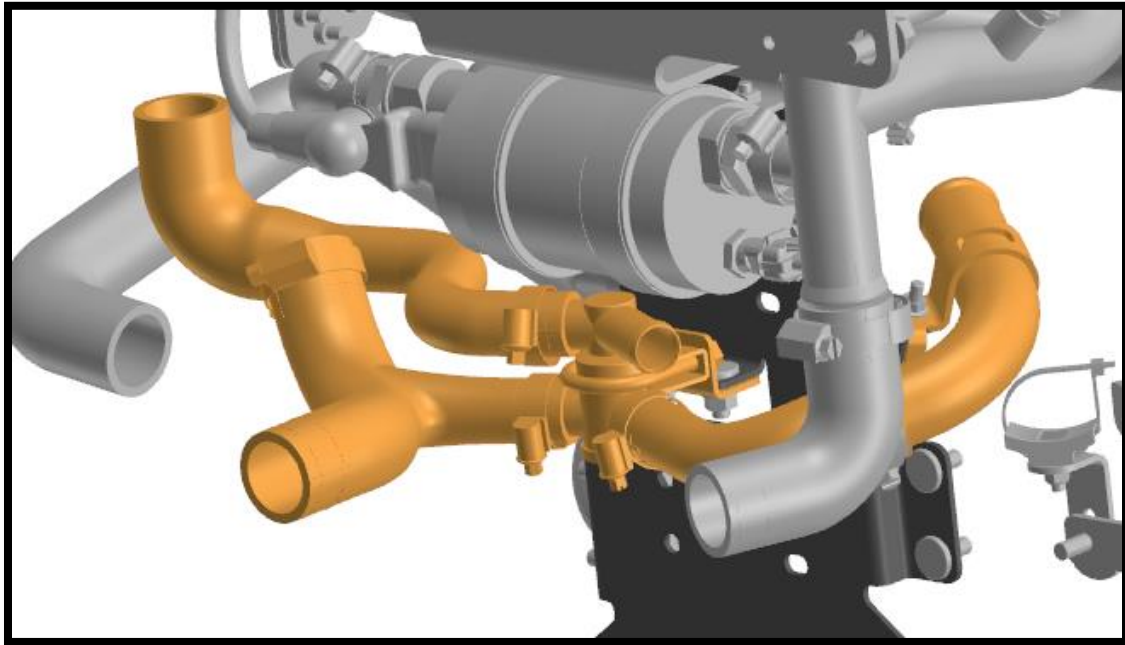
20. Remove and discard the brackets.



21. Remove and discard the pipe.

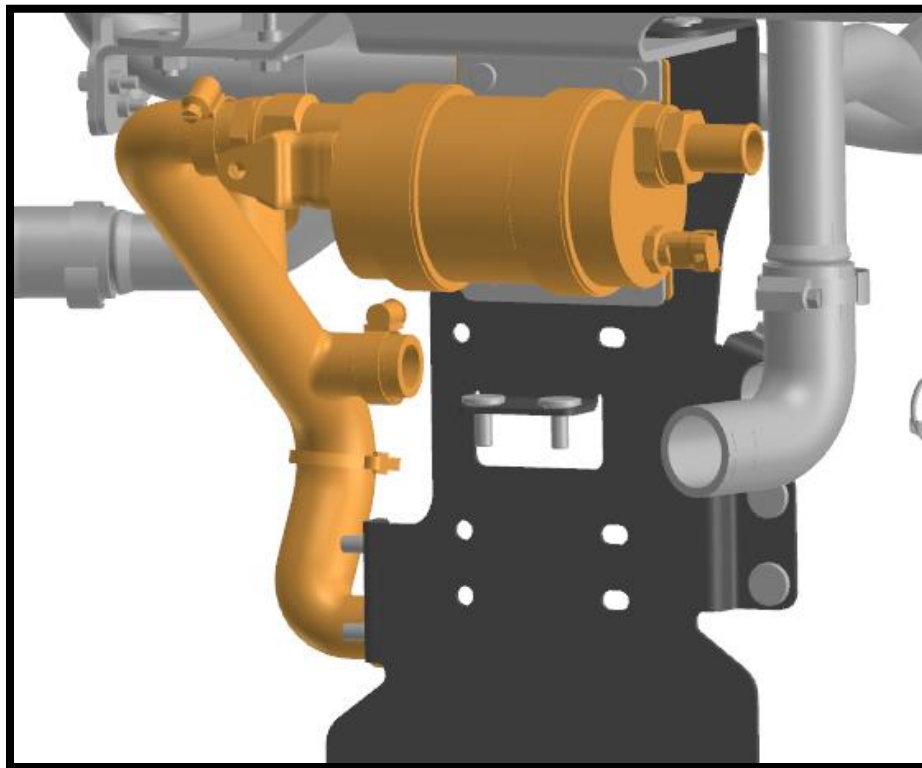


22. Remove the valve and hose assembly.

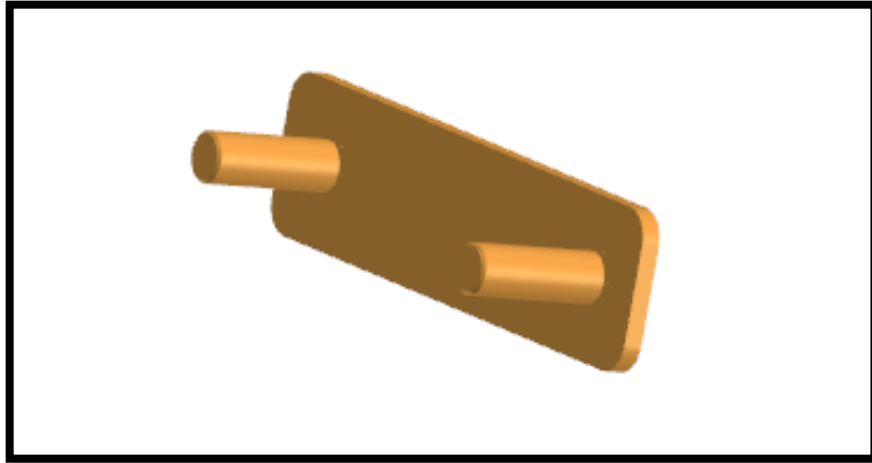


23. Remove the heater and hose assembly.

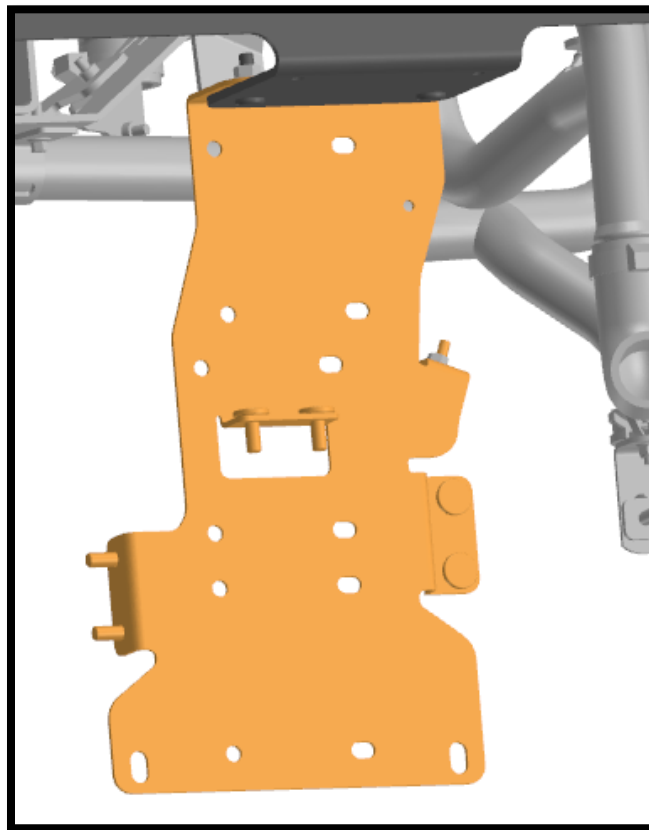
24. Remove the hose and discard the heater. Retain the hose.



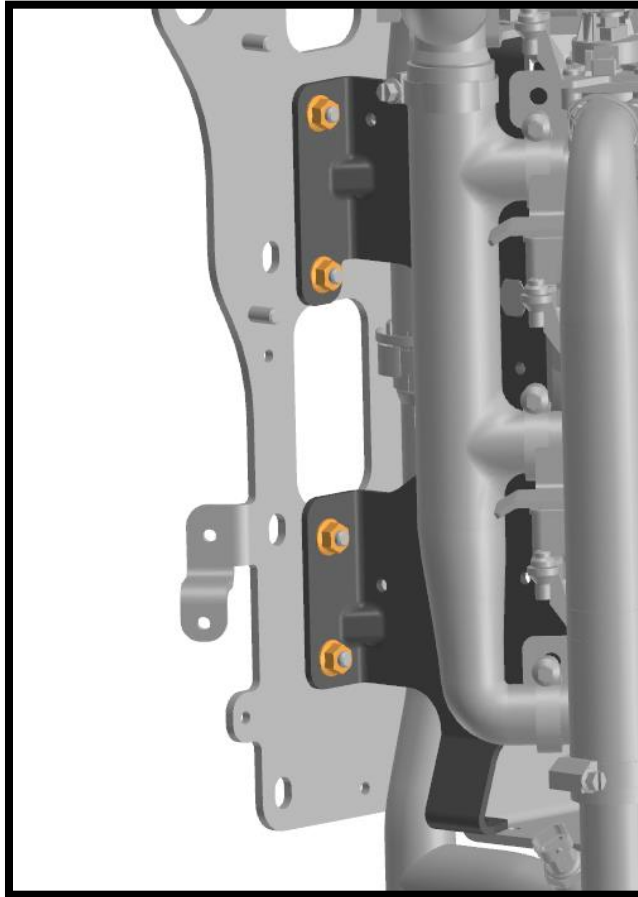
25. Discard all 6 heater mounting stud plates.



26. Remove and discard the bracket.



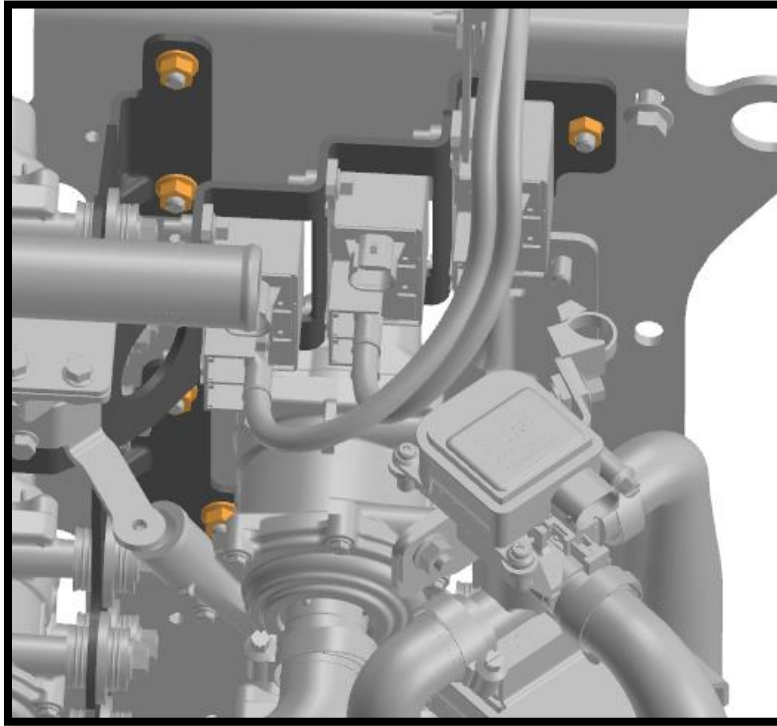
27. Remove the nuts.



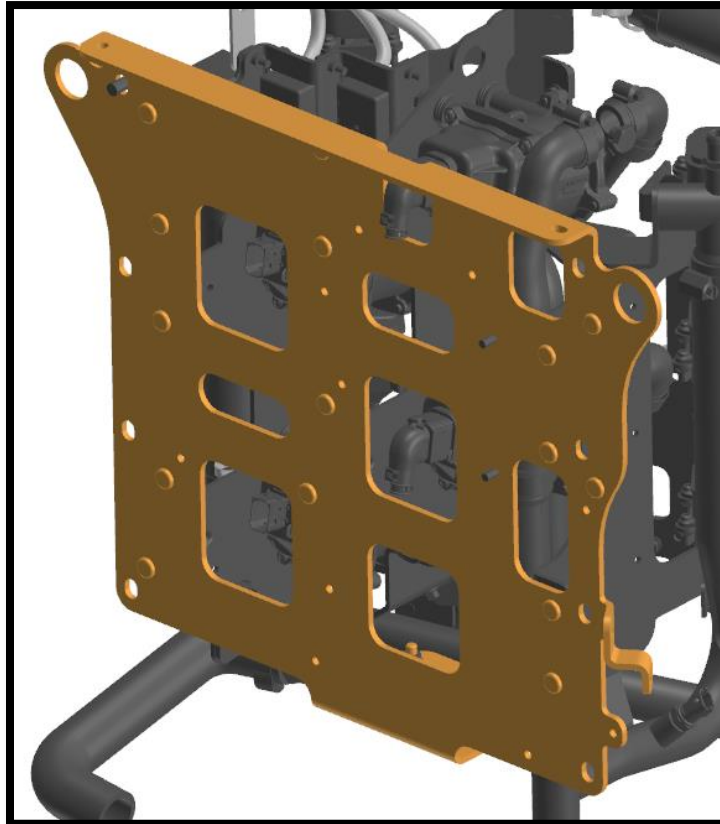
28. Remove the nuts.



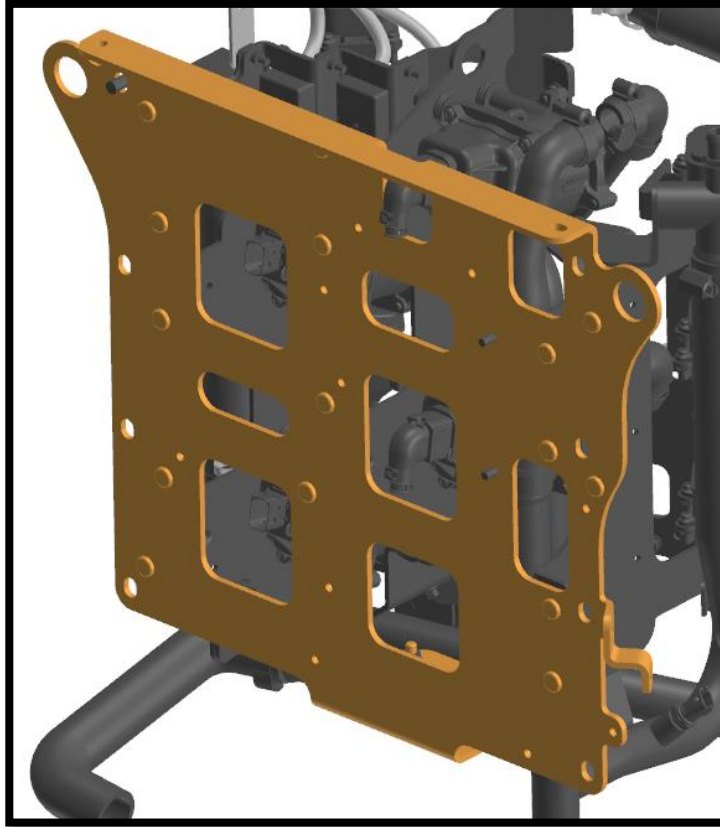
29. Remove the nuts.



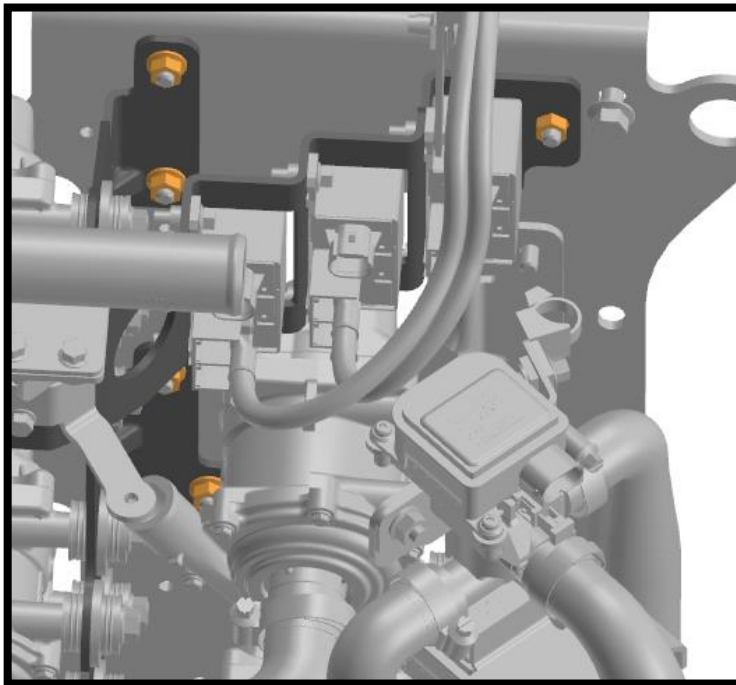
30. Remove and discard bracket.



31. Install new bracket P/N 24110414.



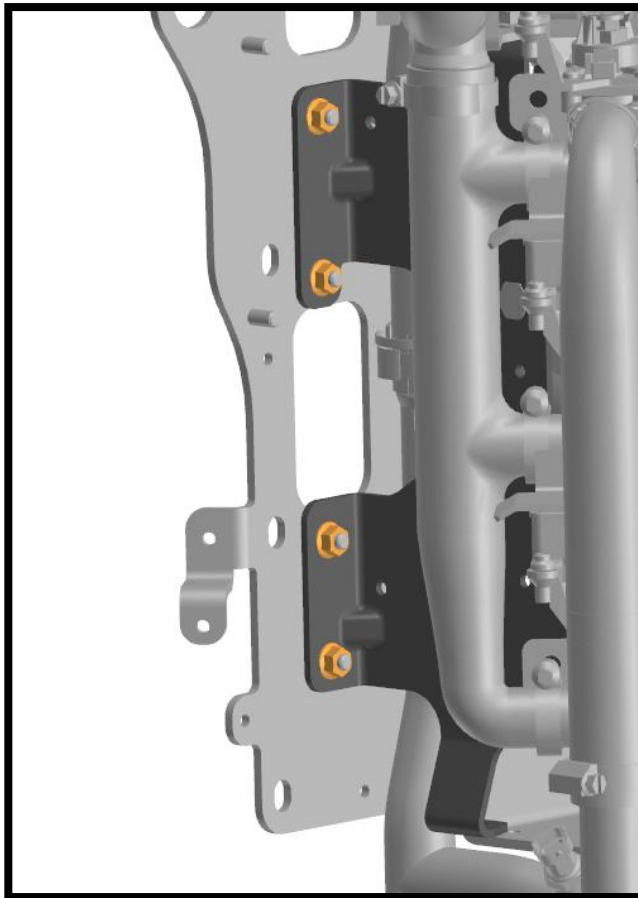
32. Install the nuts.



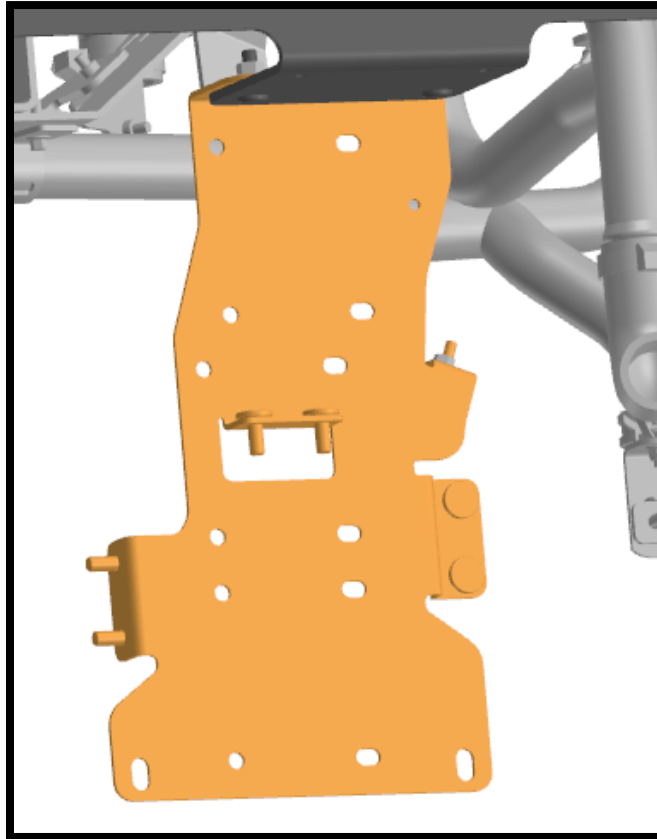
33. Install the nuts.



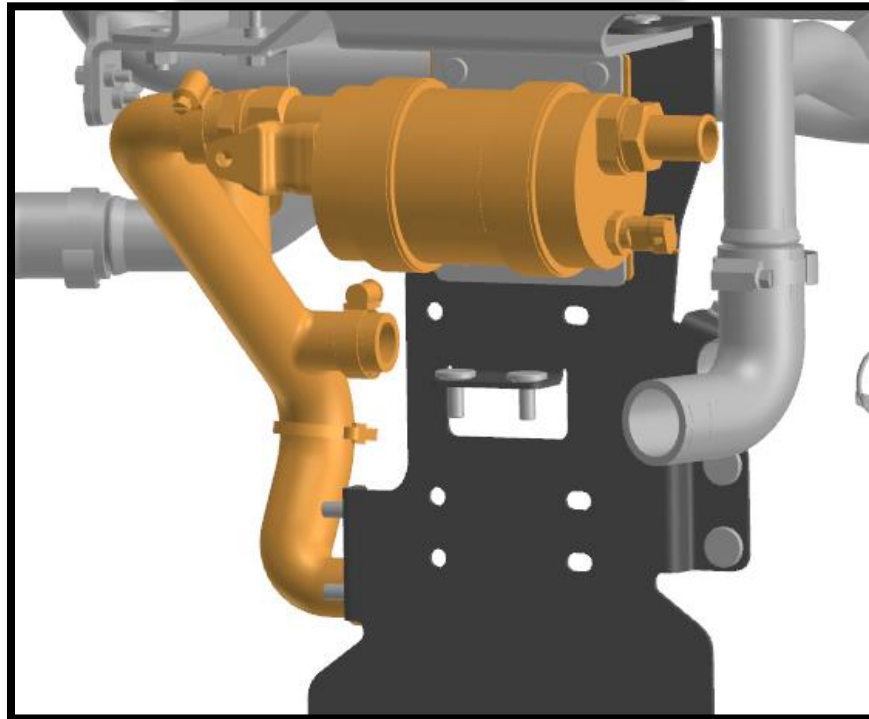
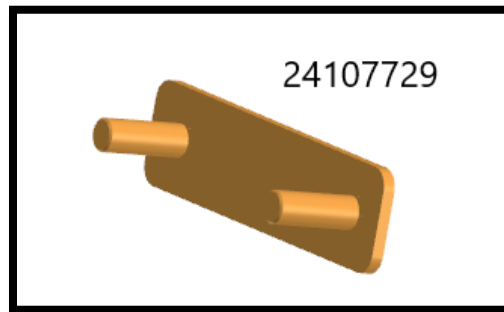
34. Install the nuts.



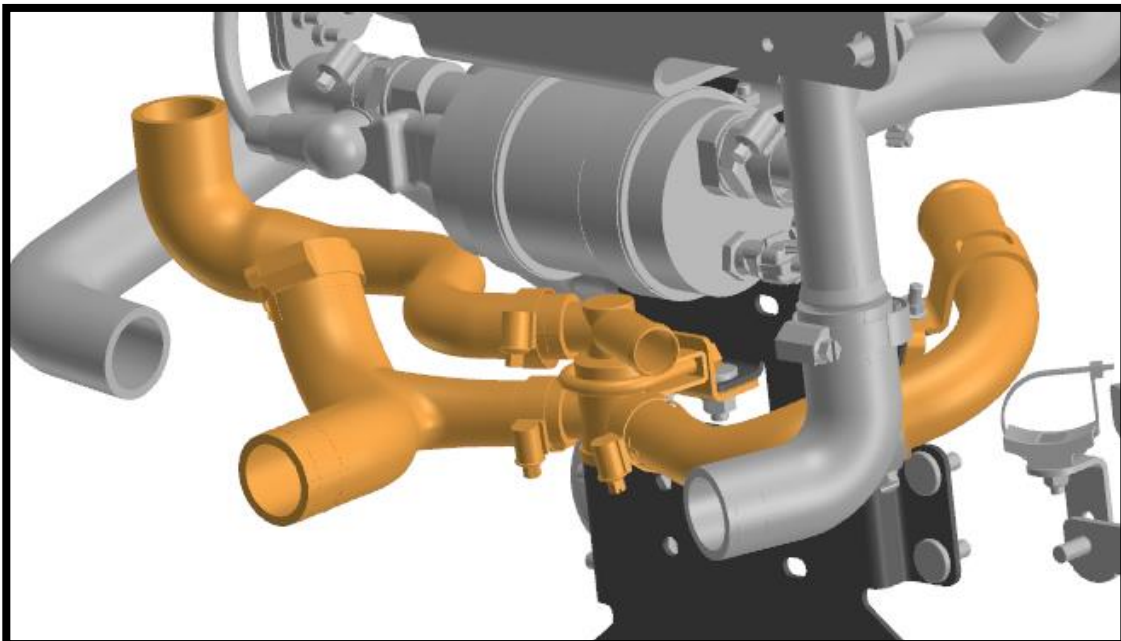
35. Install the new bracket P/N 24110412.



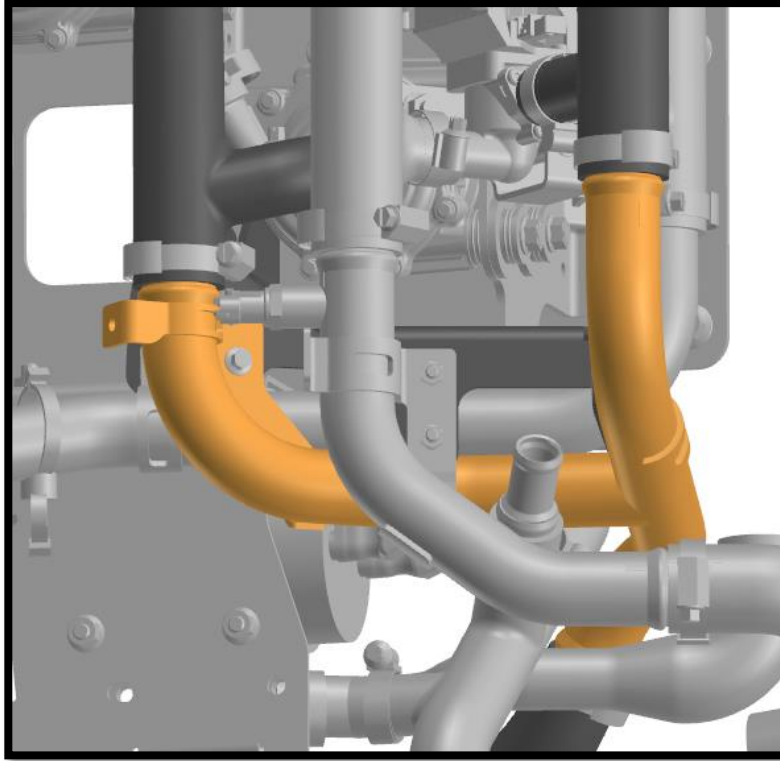
36. Using two of the new stud plates P/N 24107729, install a new heater P/N 23800428 with the retained hose assembly.



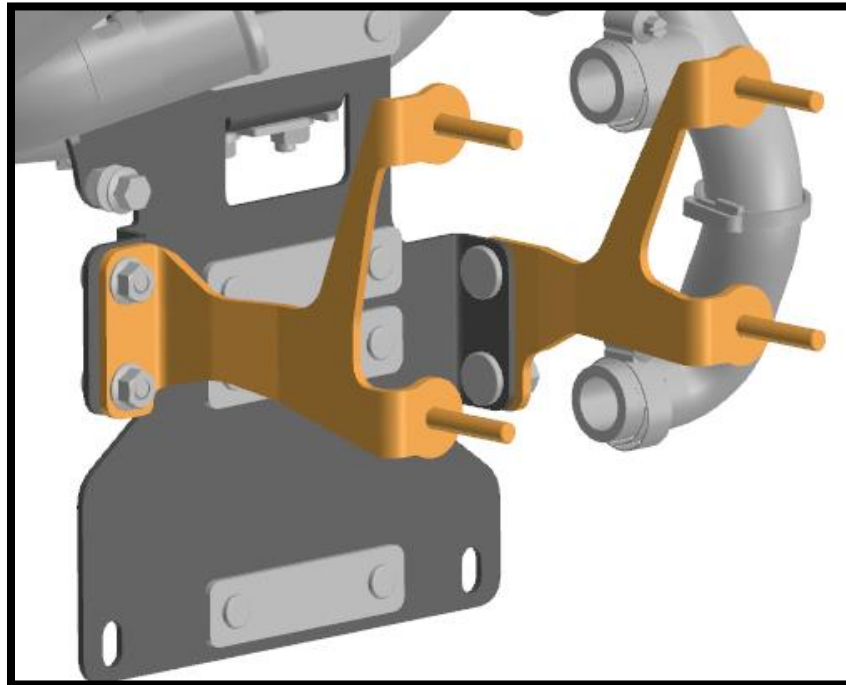
37. Install the valve and hose assembly.



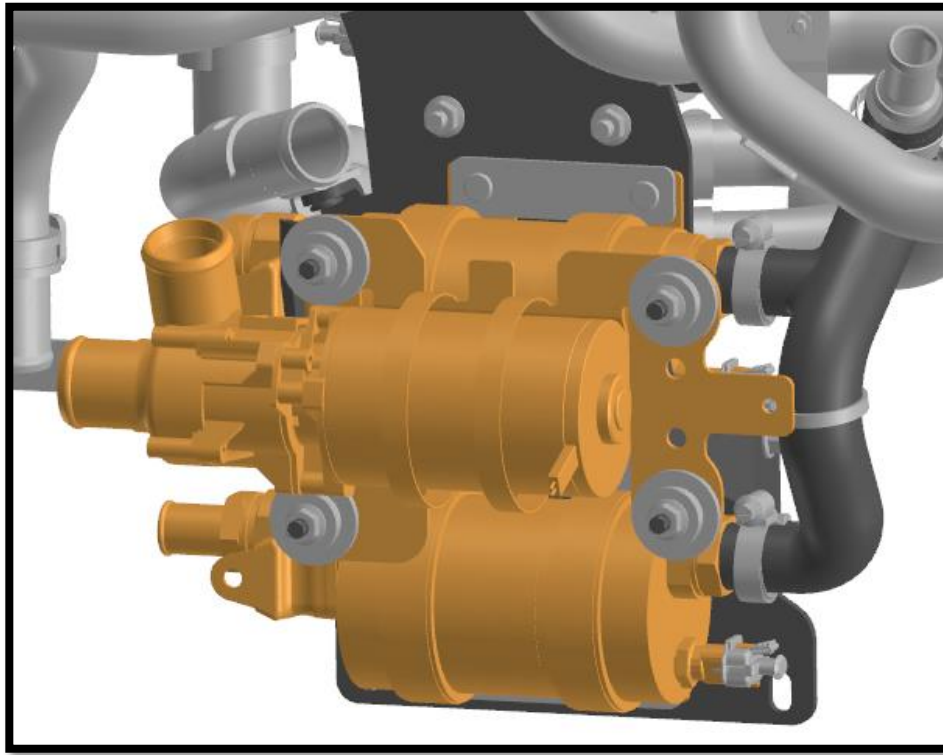
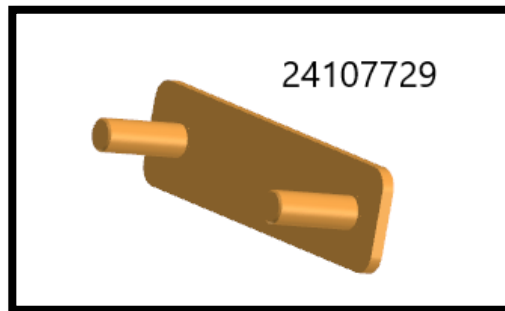
38. Install the new pipe P/N 24052967.



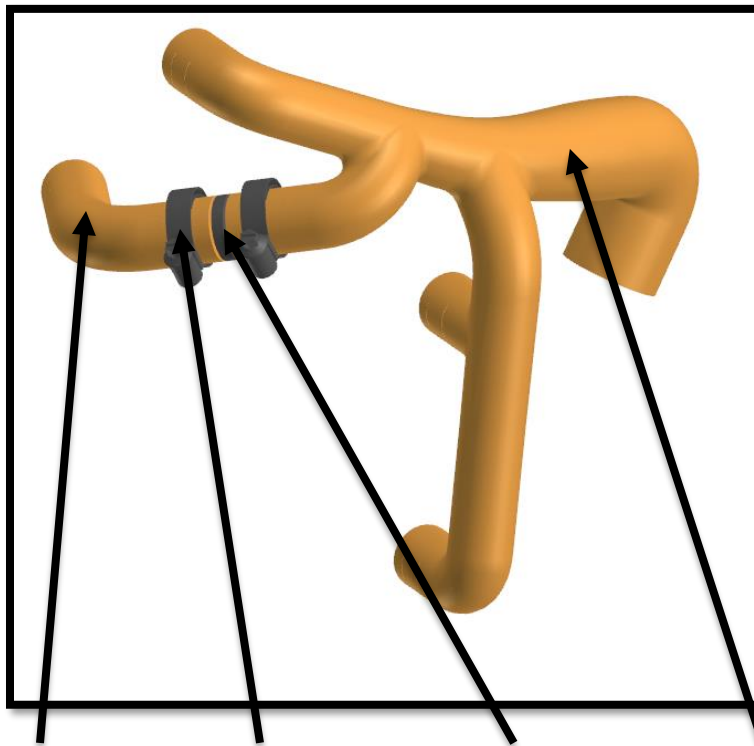
39. Install the new brackets P/N 24078783 and P/N 24078785.



40. Using four new stud plates P/N 24107729, install two new heaters P/N 23800428 and the retained water pump.



41. Assemble the hoses and check valve.



P/N 24052962

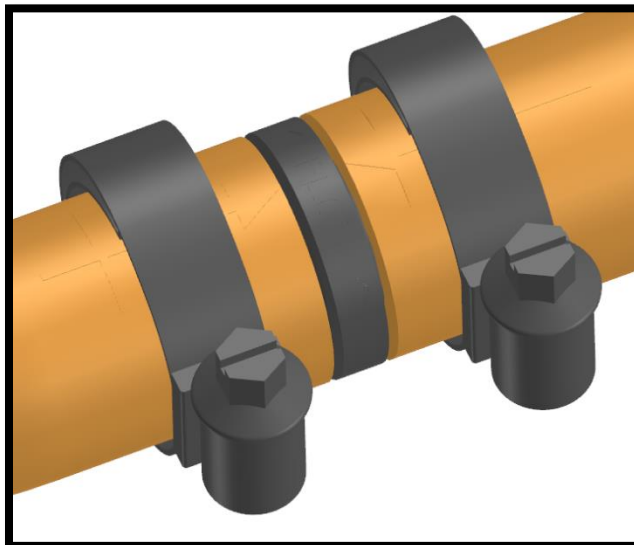
P/N 21078879 x 2

P/N 24052964

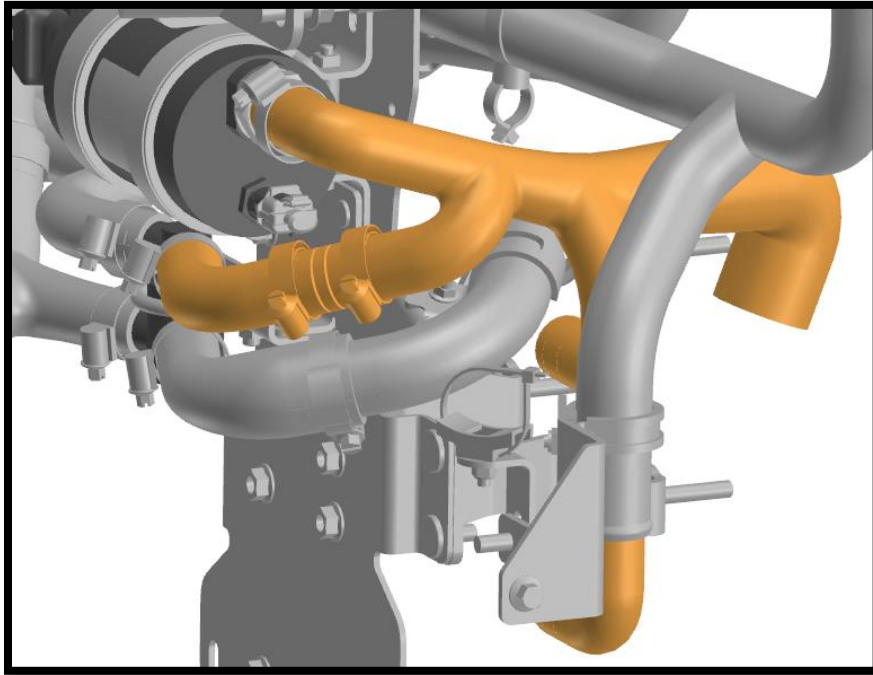
P/N 24078779

Important Note

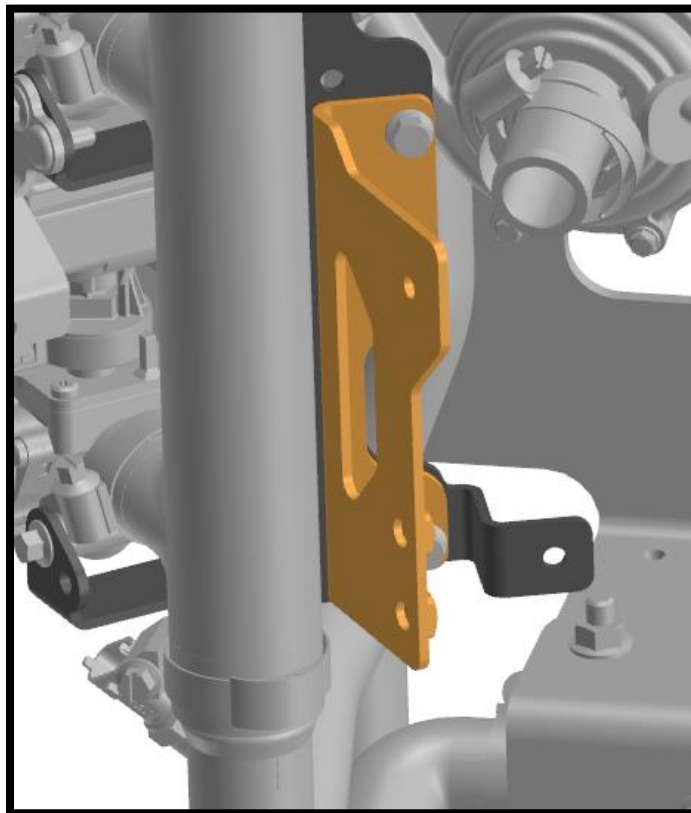
Please ensure that the check valve P/N 24052964 is correctly oriented with the flow direction arrow pointing away from the heater.



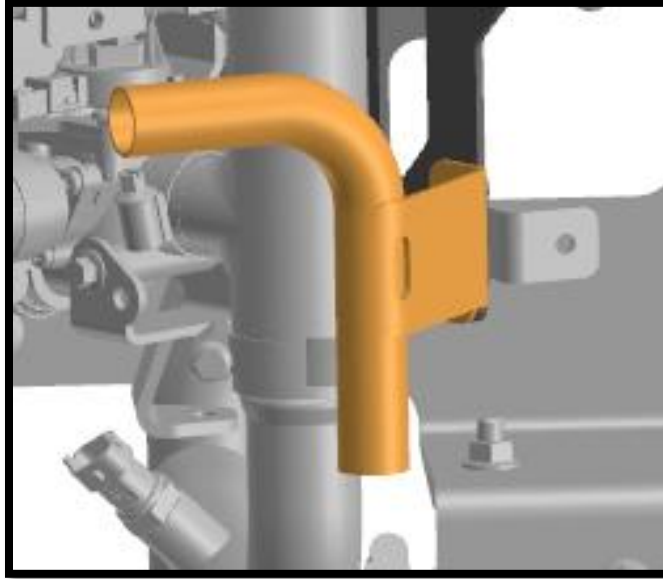
42. Install the hose assembly.



43. Install the new bracket P/N 24052977.



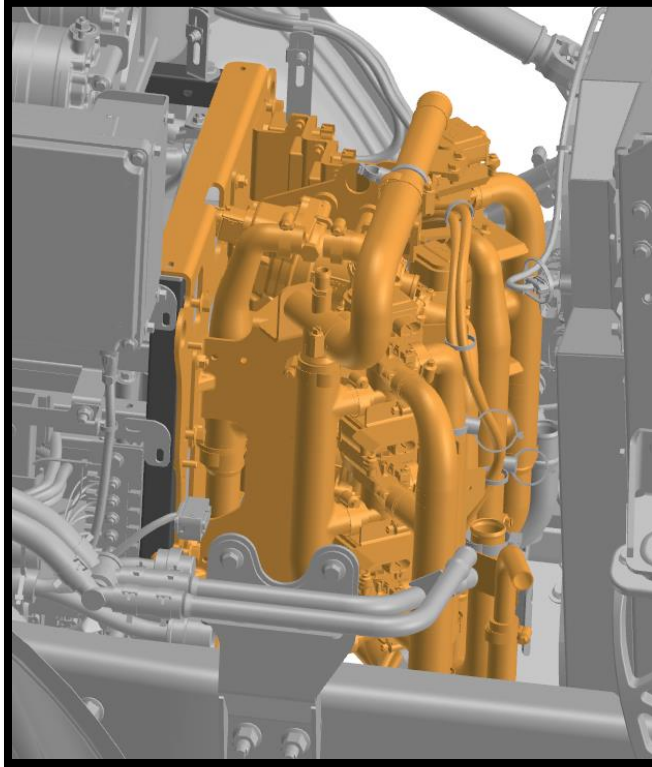
44. Install the new static fill pipe P/N 24052174.



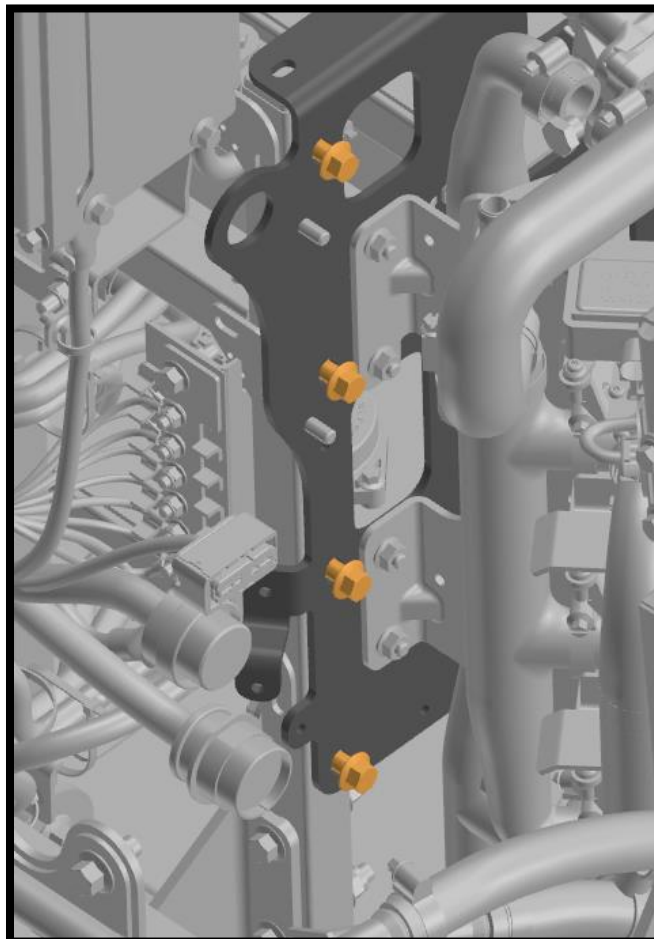
45. Install the new hose P/N 24078777.



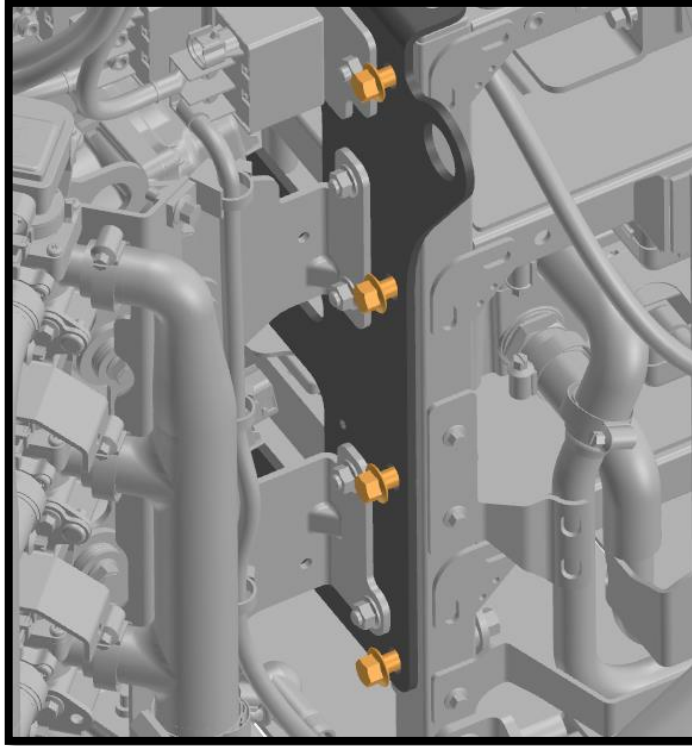
46. Install the cooling box.



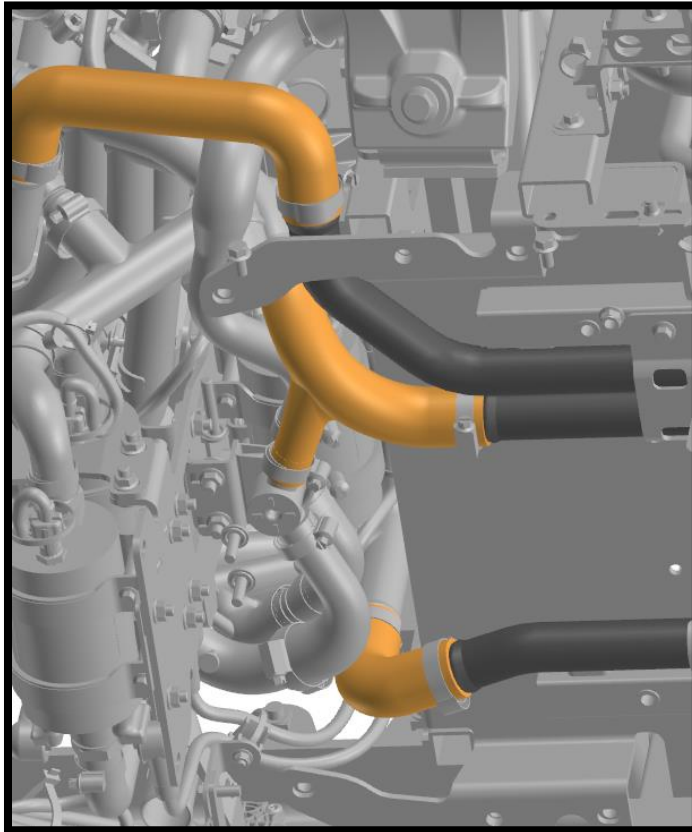
47. Install the screws.



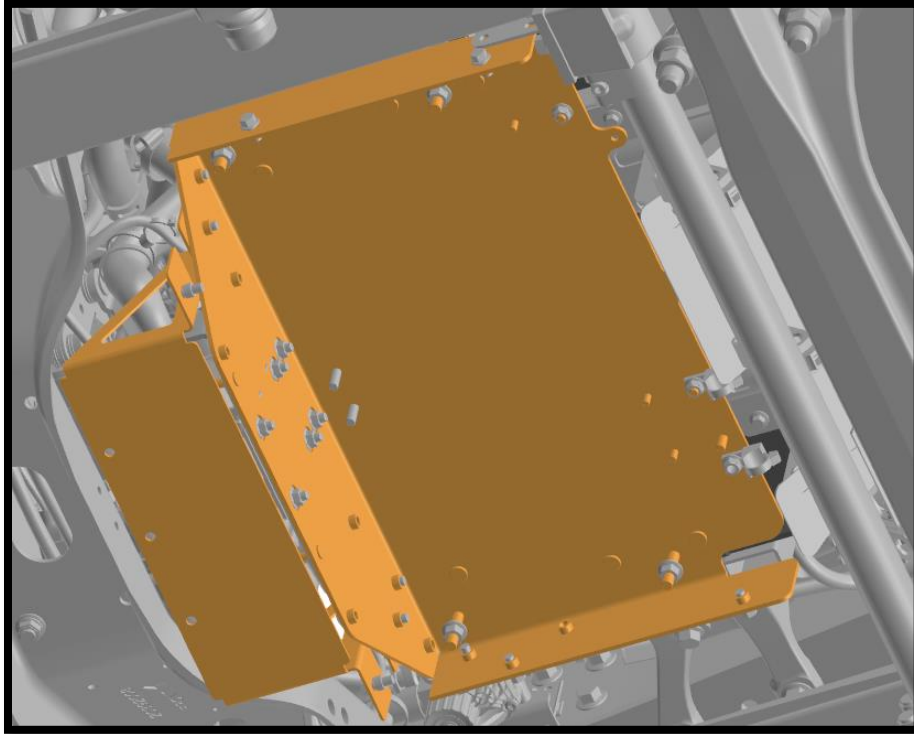
48. Install the screws.



49. Connect the hoses.

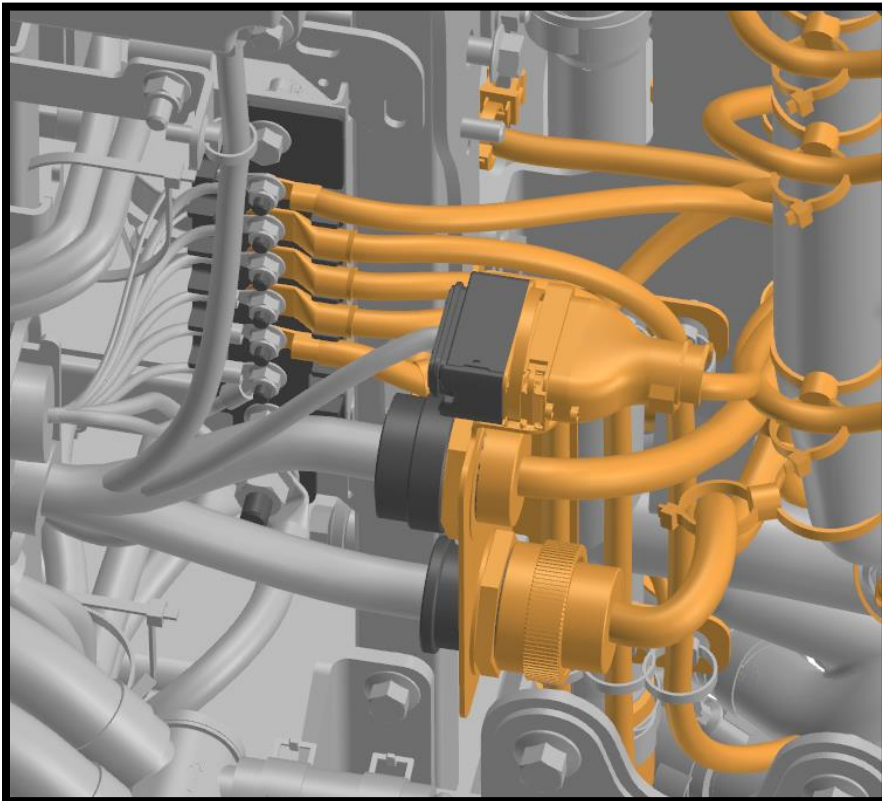


50. Install the bracket.

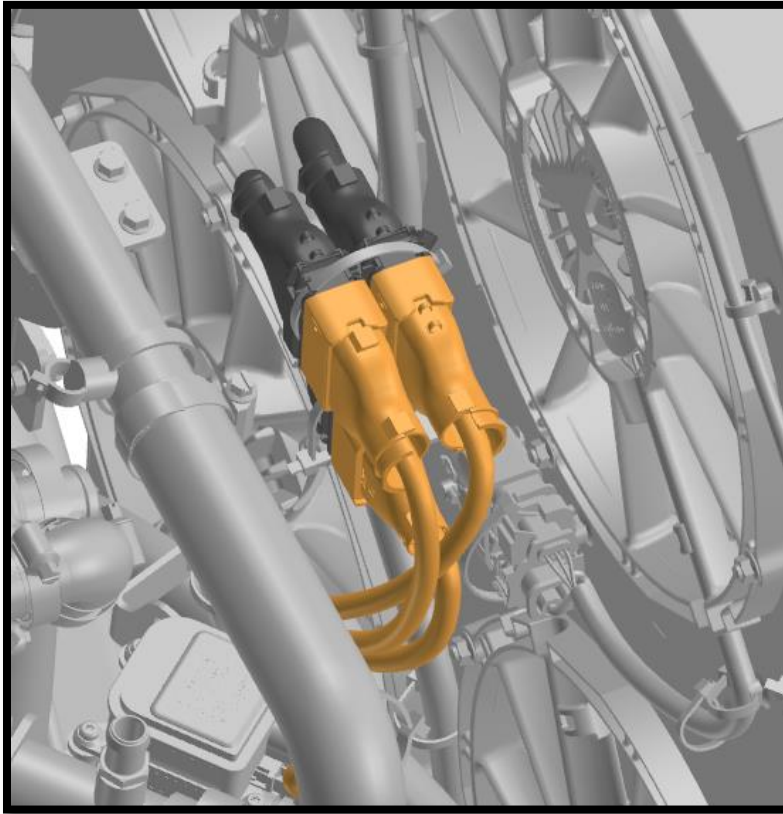


51. Install the ground terminals.

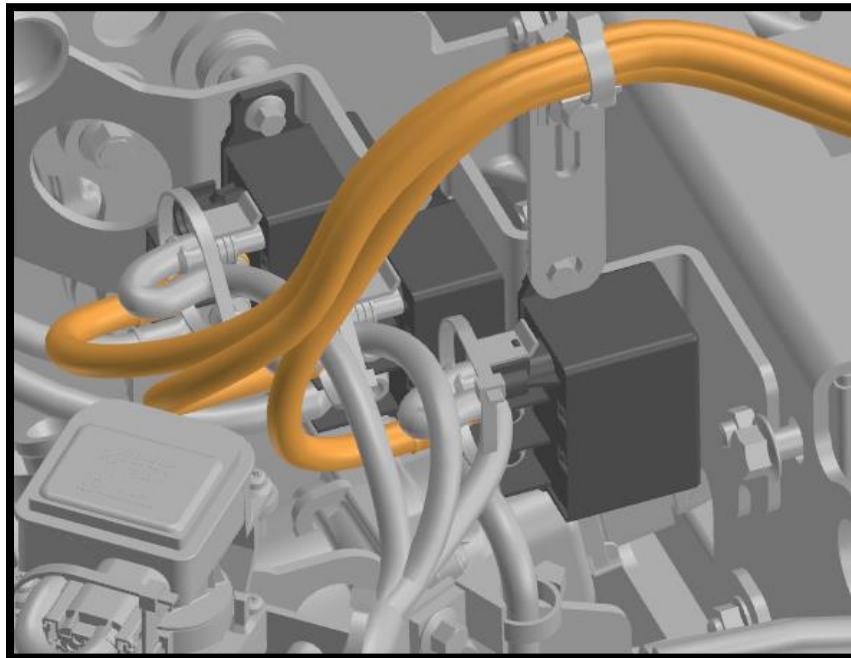
52. Connect the connectors.



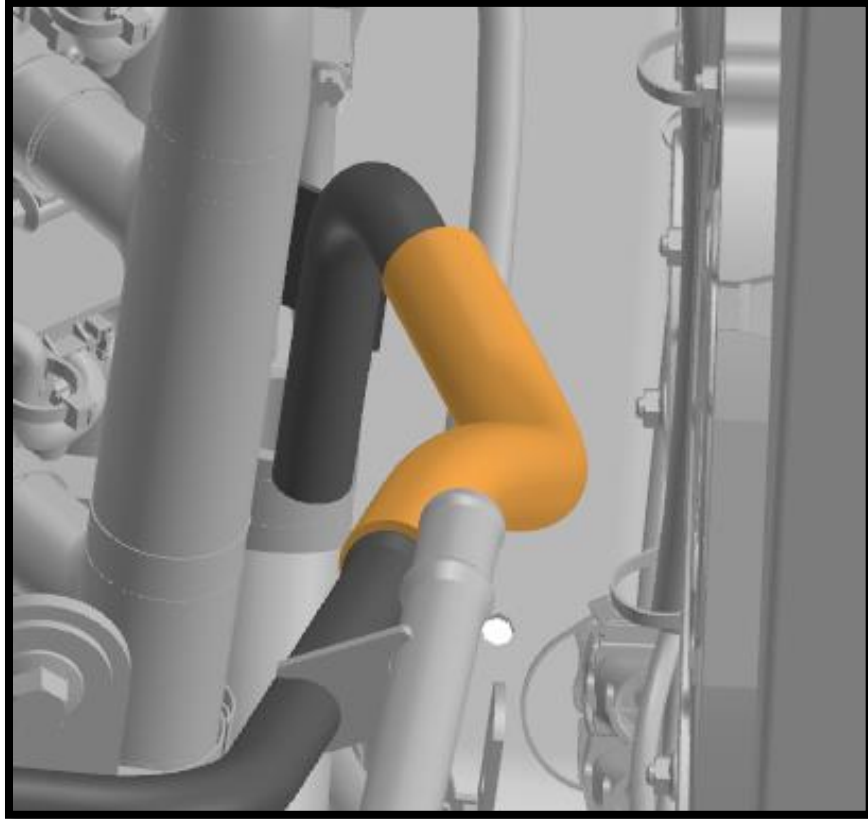
53. Connect the harness.



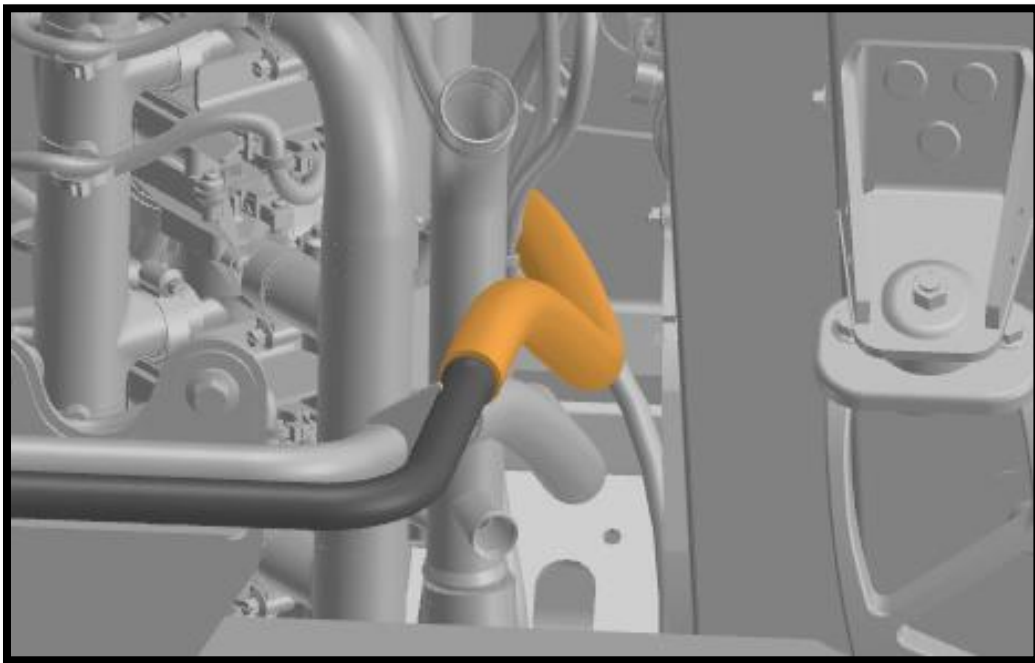
54. Connect the heater relays.



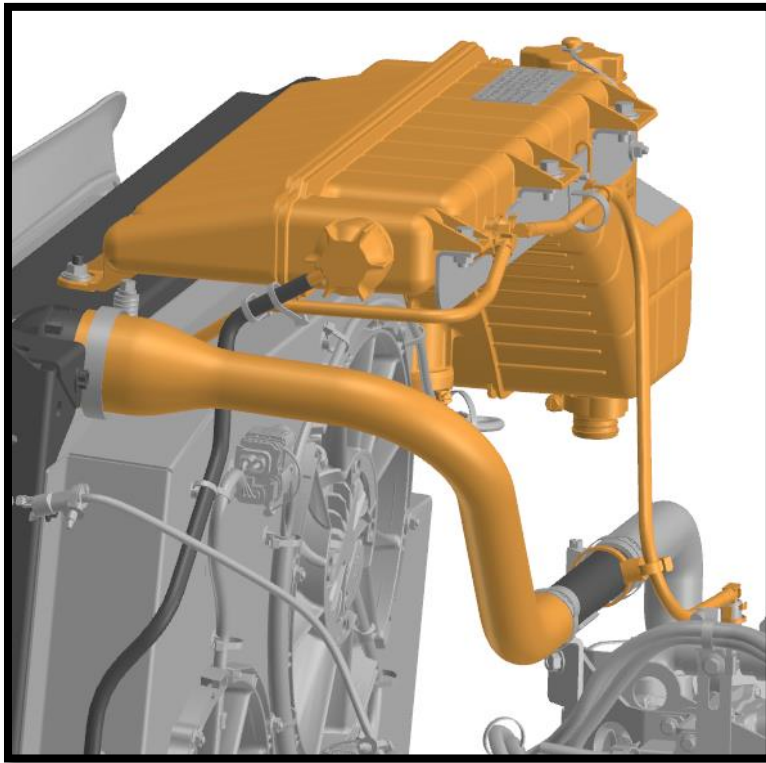
55. Install the new heater hose P/N 24056986.



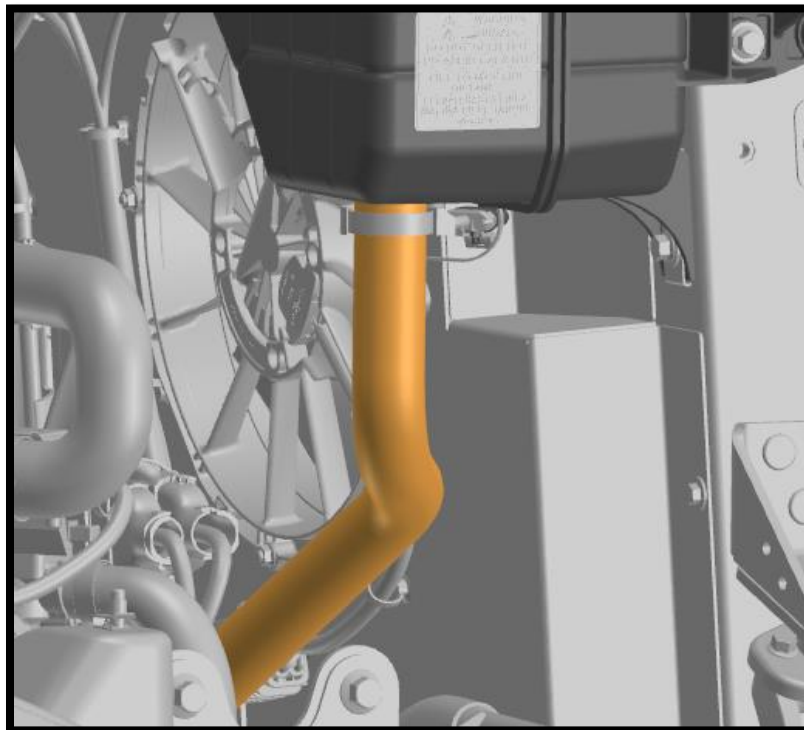
56. Install the heater hose.



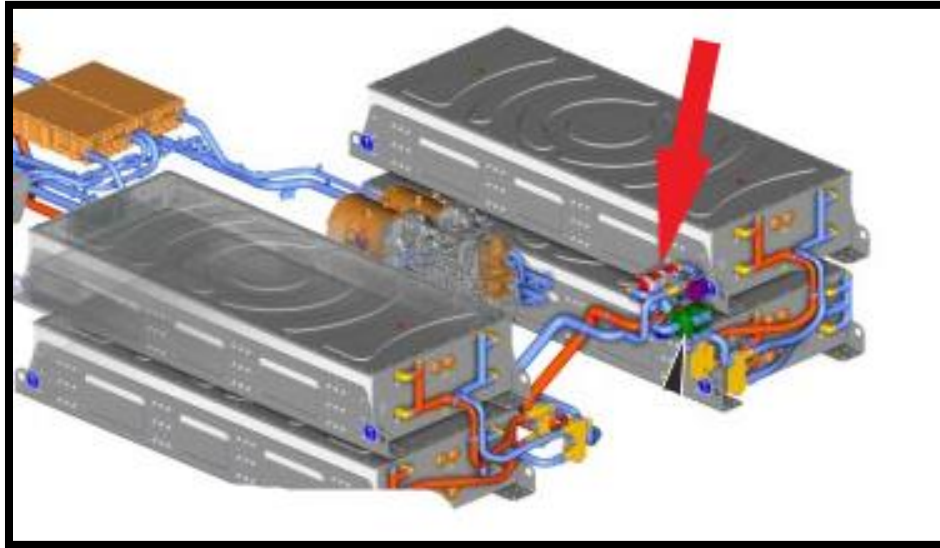
57. Install the expansion tank and hoses.



58. Install the new hose P/N 24052018.



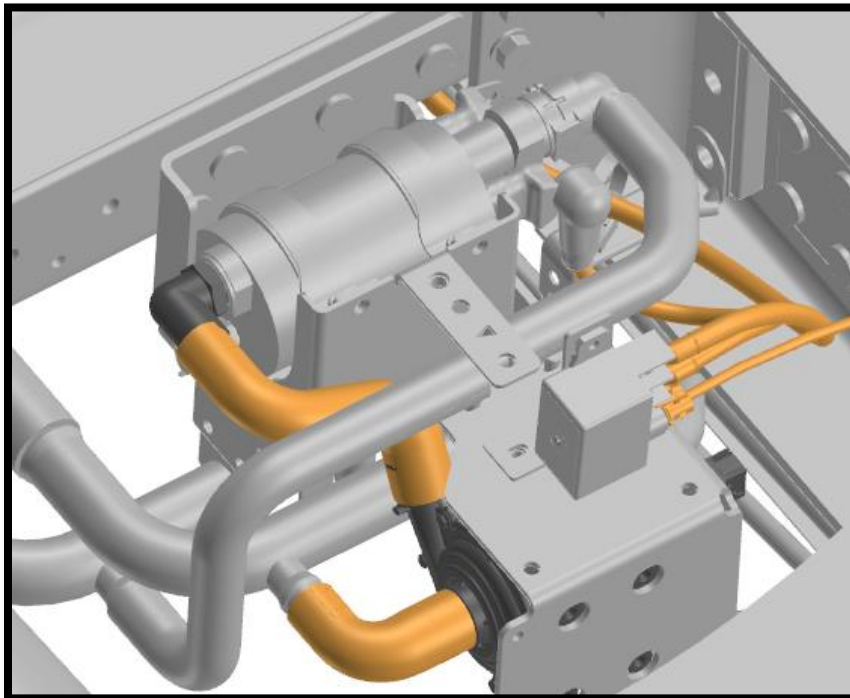
59. Locate the rear ESS heater.



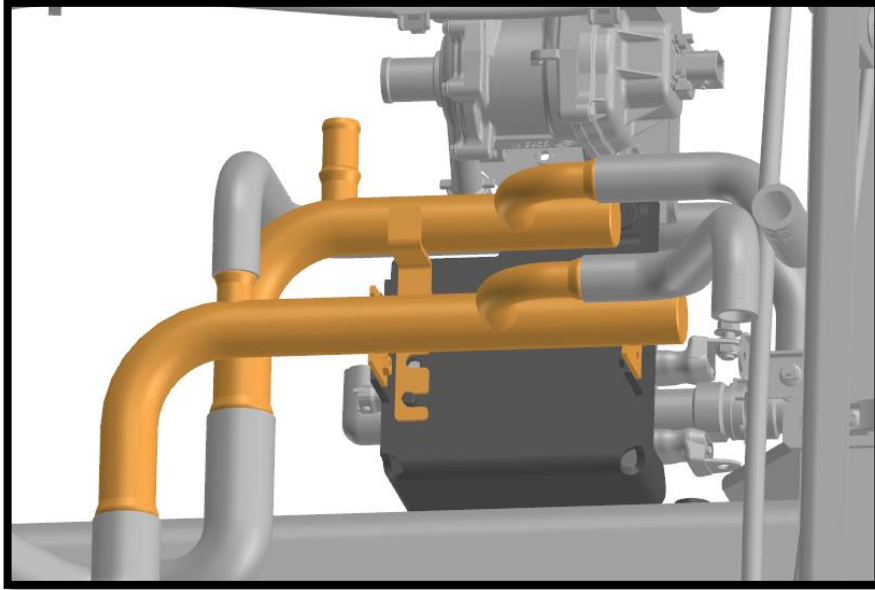
60. Remove electrical connectors from both the heater, heater relay, and water pump.

61. Position a drain container.

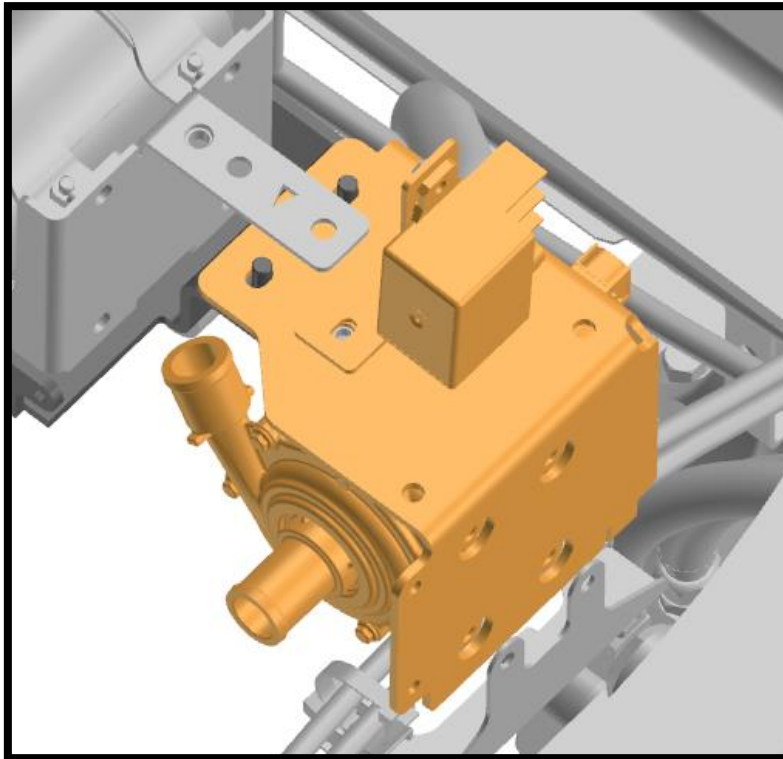
62. Remove clamps and remove hose from both the heater and the water pump.



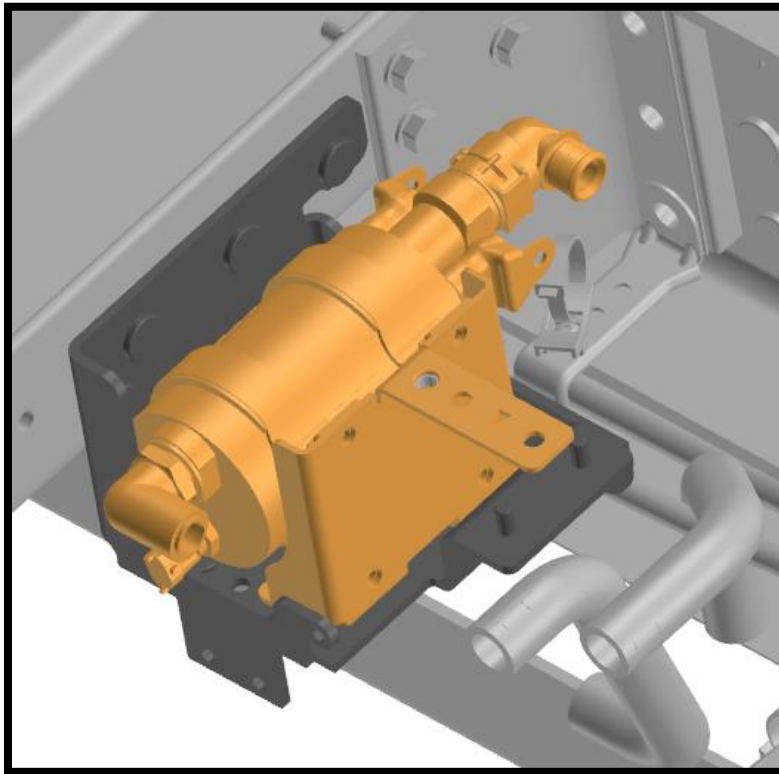
63. Remove pipes from the heater bracket.



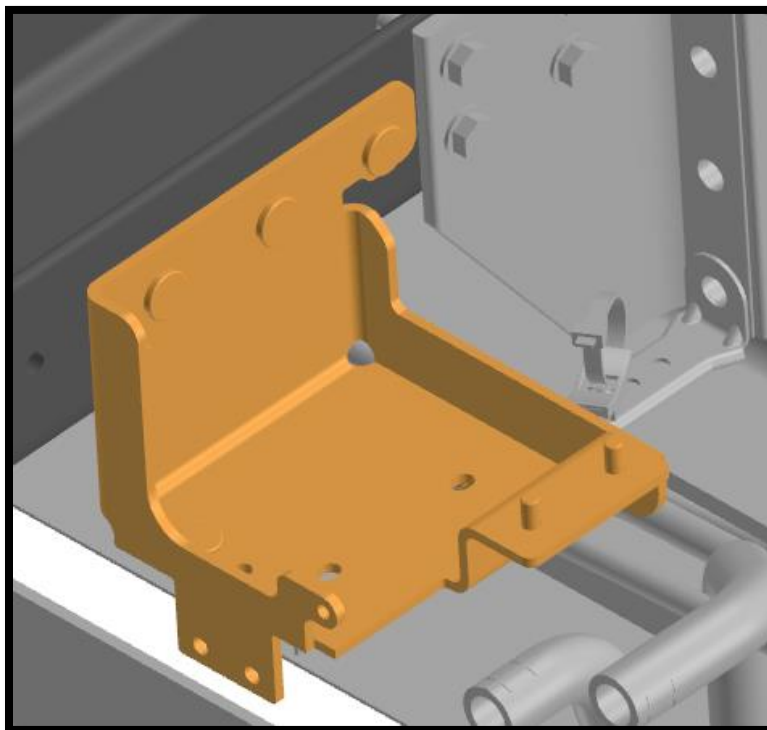
64. Remove the pump and relay assembly.



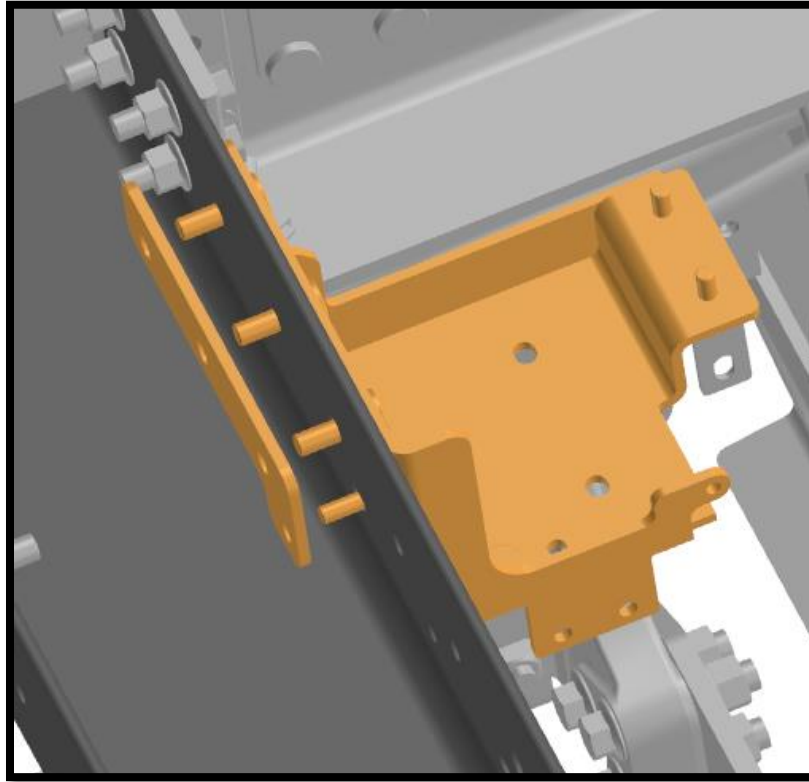
65. Remove the heater assembly. Disassemble the heater assembly and discard the heater.



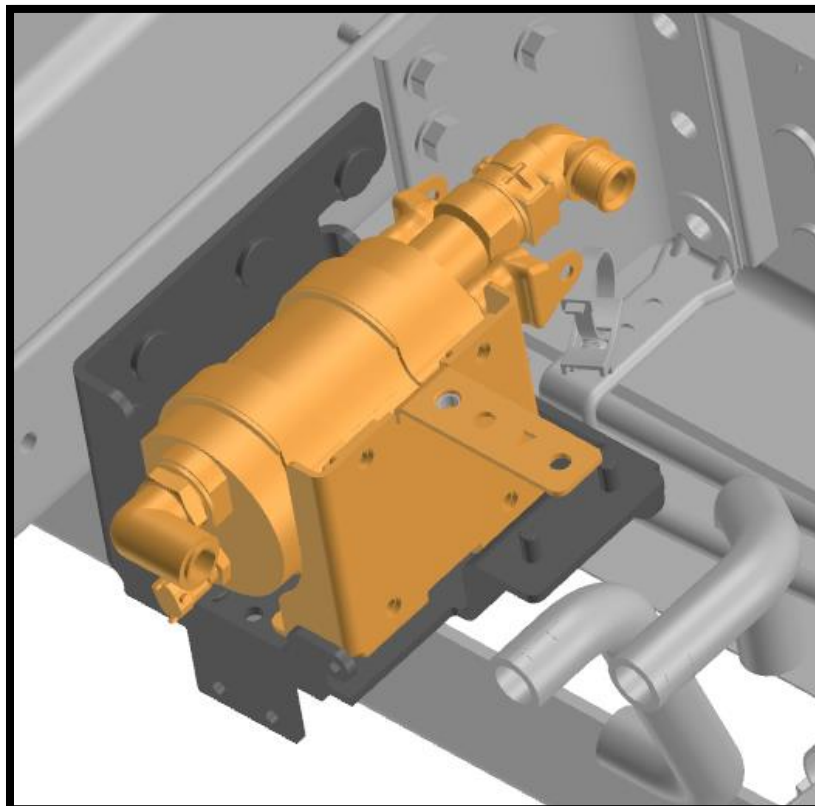
66. Remove and discard the heater bracket.



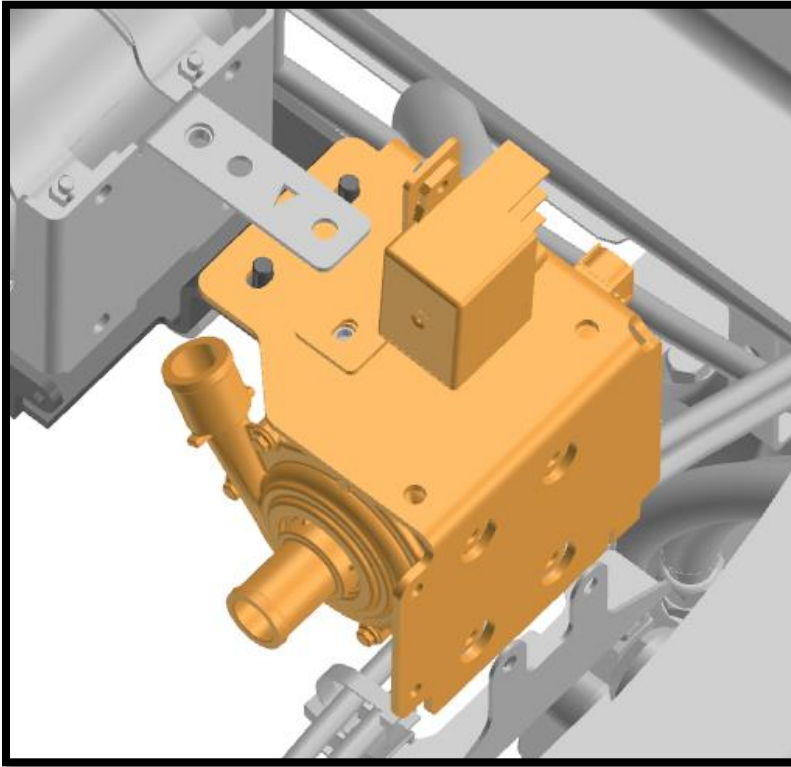
67. Install the new heater bracket and support bracket.



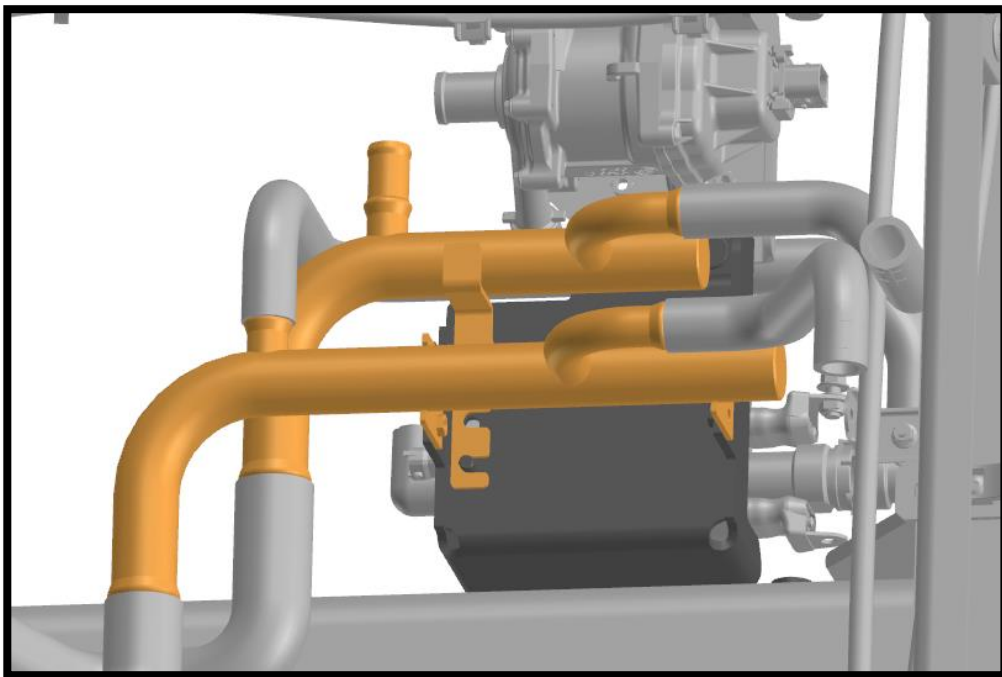
68. Install the new heater assembly P/N23800428.



69. Install the pump and relay assembly.

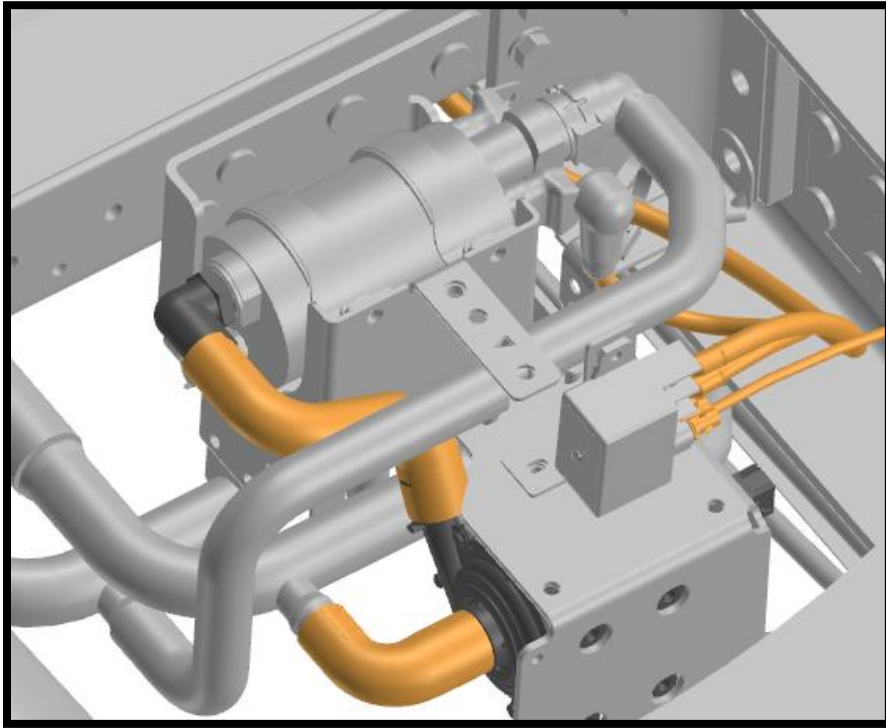


70. Install pipes onto heater bracket.



71. Install hose and clamps.

72. Connect all electrical connectors.



73. Follow instruction in Impact operation 2609-02-01-01 to fill the coolant.

74. Follow steps 77 to 169 in Impact operation 3222-03-02-05 to install the charge switch unit and commission the truck.