



TECHNICAL SERVICE BULLETIN

ISSUE DATE:	09/19/2023
SERVICE BULLETIN SUBJECT:	35' Valeo Pack 7 Temperature Imbalance Retrofit
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SC-23-128
LABOR OPERATION CODE:	VA57Z

<u>Labor Table</u>				
	Operation	Number of Technicians	Hours	Labor Time (T x H)
1	Step 1 – Step	1	3	3
		Total Labor Time		3

35' Valeo Pack 7 Temperature Imbalance Retrofit

Description:

The procedure describes the process of rerouting the rooftop coolant lines so the expansion tank is downstream of the HVAC chiller and lowers the pressure drop between expansion tank and pump inlet.

Tools/Parts Required:

Tools and Supplies Required:

Spring Clamp Pliers	
Hose Cutter	
Scissors	
Hose Clamps	

Kit Parts Required:

065453	SERVICE KIT, 35' VALEO PACK COOLANT IMBALANCE		
012108	SWIVEL BUNDLE, SPACER		1
012138	CABLE TIE, HEAVY DUTY .5WIDE 9.1" BLACK		12 EA
017011	HOSE, COOLANT, EPDM. SAE J20R3 D2. 1.0 ID"		70 in
017073	HOSE, COOLANT, EPDM, SAE J20R3 D2 .63 ID		40 in

Part Denotations:

Parts are split into three categories based on origination and labeled by installation process. Blue designates flex hose and elbows while Red designates hardlines.

Labeled New Parts:

1	5/8" Flex Hose	017073	40 in *
3	1" Flex Hose	017011	10 in*
4	1" Flex Hose	017011	50 in*

Labeled Removed and Reused Parts:

2	"T" Hardline		18 in
5	"L" Hardline		30 in
9	"L" Hardline		50 in

Labeled Reused Parts (Not Removed):

6	Elbow Hose to Battery		6 in
7	Flexible Hose from Expansion Tank		20 in
8	Flexible Hose to Expansion Tank		10 in
10	Flexible Hose from HVAC		18 in

Procedure:

1. Run bus in High Voltage and confirm Low Voltage batteries are charged.
2. Turn the Bus off to deactivate High Voltage and Turn off the low voltage disconnect at the rear of the bus.
3. At the rear of the bus, drain coolant from the Battery system to drop the level just below the battery sight glass in the rear cage to ensure there is no coolant in the rooftop lines.

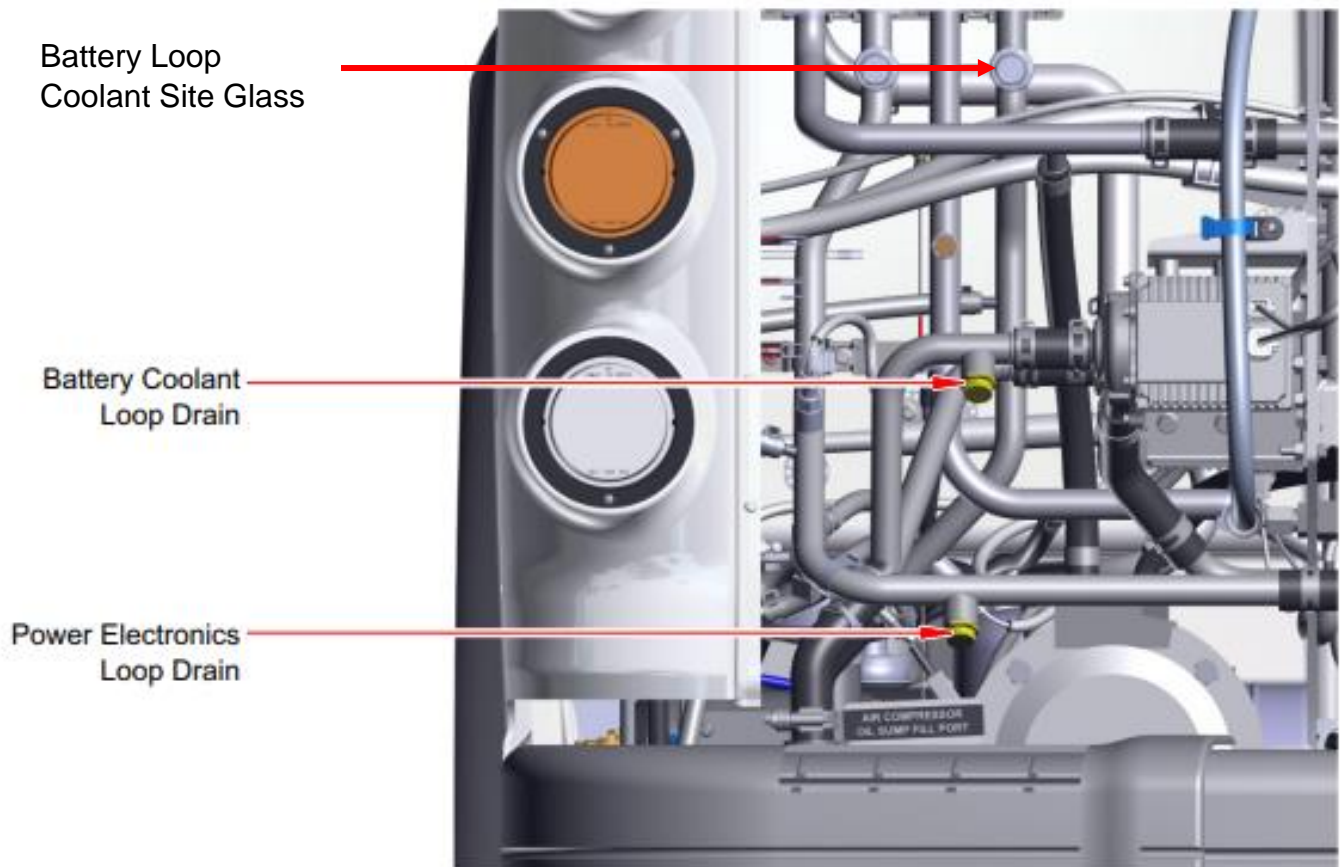


Figure 1

4. Using the Proterra approved practices for rooftop work, gain access to the rooftop coolant lines.

5. Review the current routing of the rooftop coolant lines as shown in Figure 2. Review the final retrofit routing shown in Figure 2.
NOTE: Disregard the wires and instrumentation shown in Figure 3.

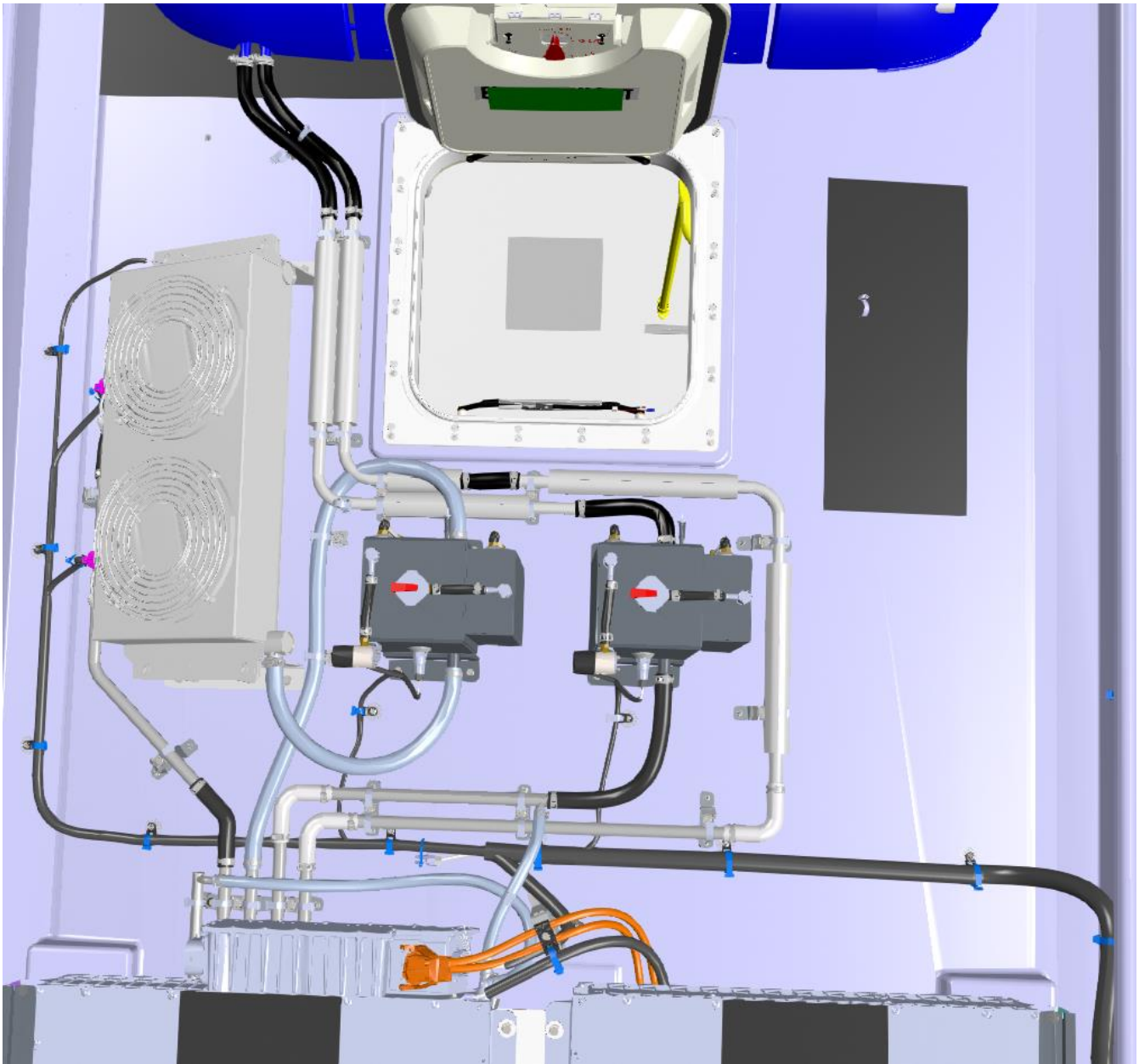


Figure 2

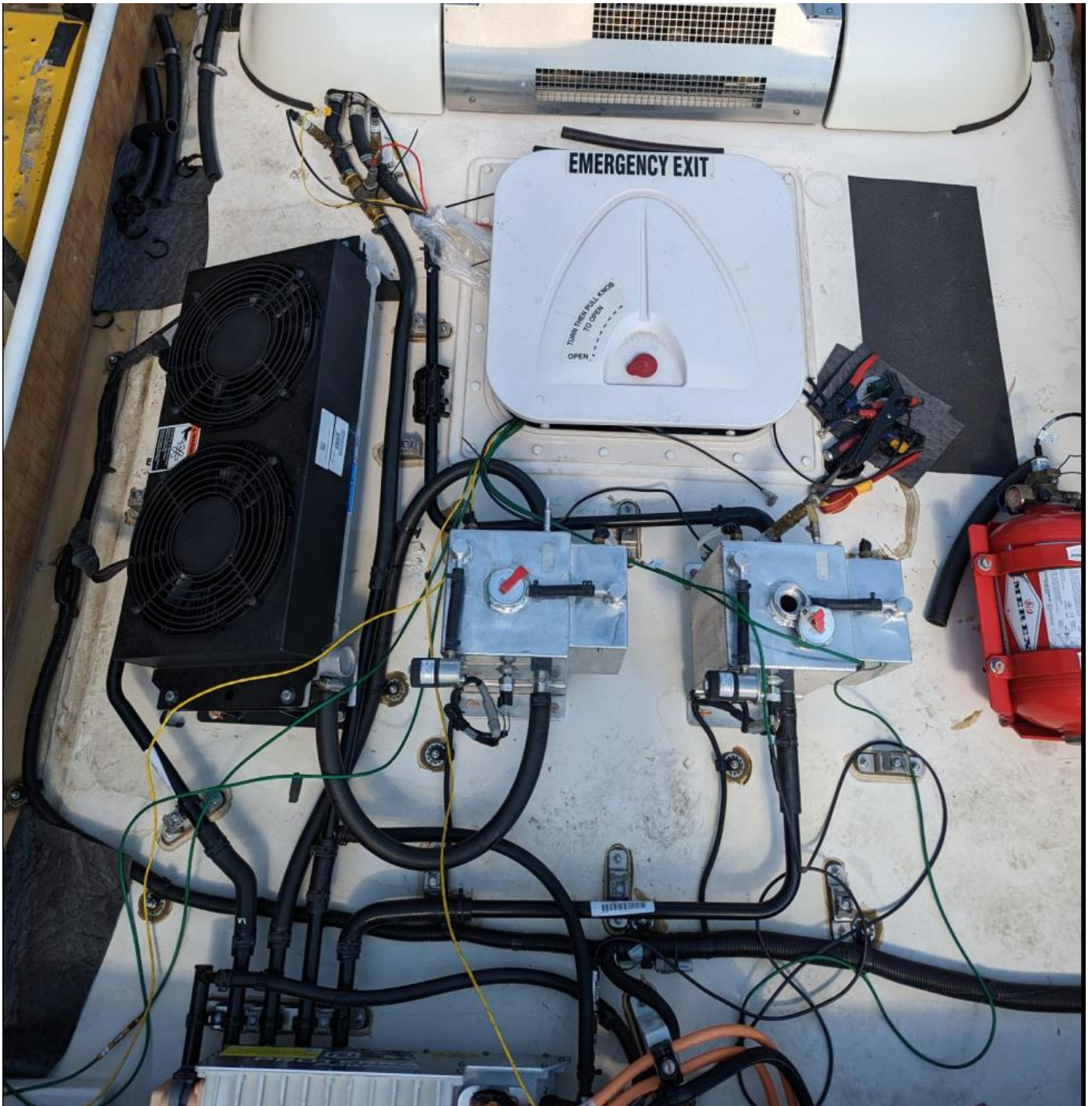


Figure 3

6. Remove ONLY the highlighted coolant lines shown in Figure 4. Label the hardlines as shown in Figure 3 according to the *Labeled Removed and Reused Parts Table*. Any flexible lines attached to hardlines can be disconnected if highlighted. Retain the hardlines and spring clamps for reuse.

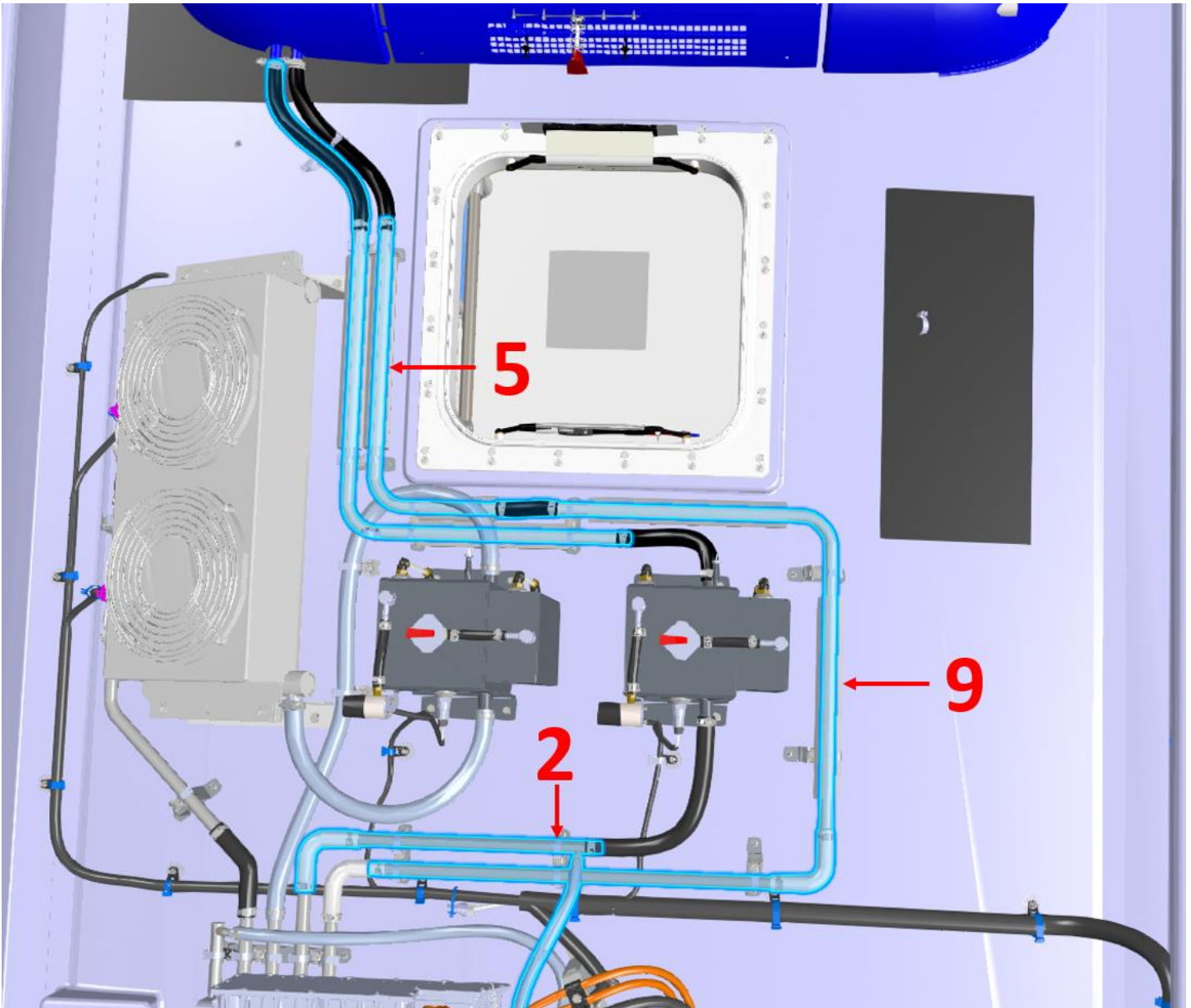


Figure 4

7. Reference Figure 5 for part callouts. Attach the #1 5/8" diameter flexible hose (PN: 017073) to the battery and secure with retained spring clamp. Attach #1 flexible hose to the perpendicular opening of the #2 labeled hardline so that the long part of the hardline runs towards the HVAC system and secure with a spring clamp. Measure and cut the 1" flexible hose (PN: 017011) shown as #3 so that the bend radius of #1 is similar to what is shown in Figure 4. Install the #3 flexible hose to the hardline and the battery and to the #2 "T" hardline. Clamp both ends to secure. Measure and cut the 1" flexible hose (PN: 017011) shown as #4 to be connected to the HVAC system and end of the #2 "T" hardline. Apply spring clamp to both ends of #4. Secure the coolant lines with zip ties and double mounting base circled in green.

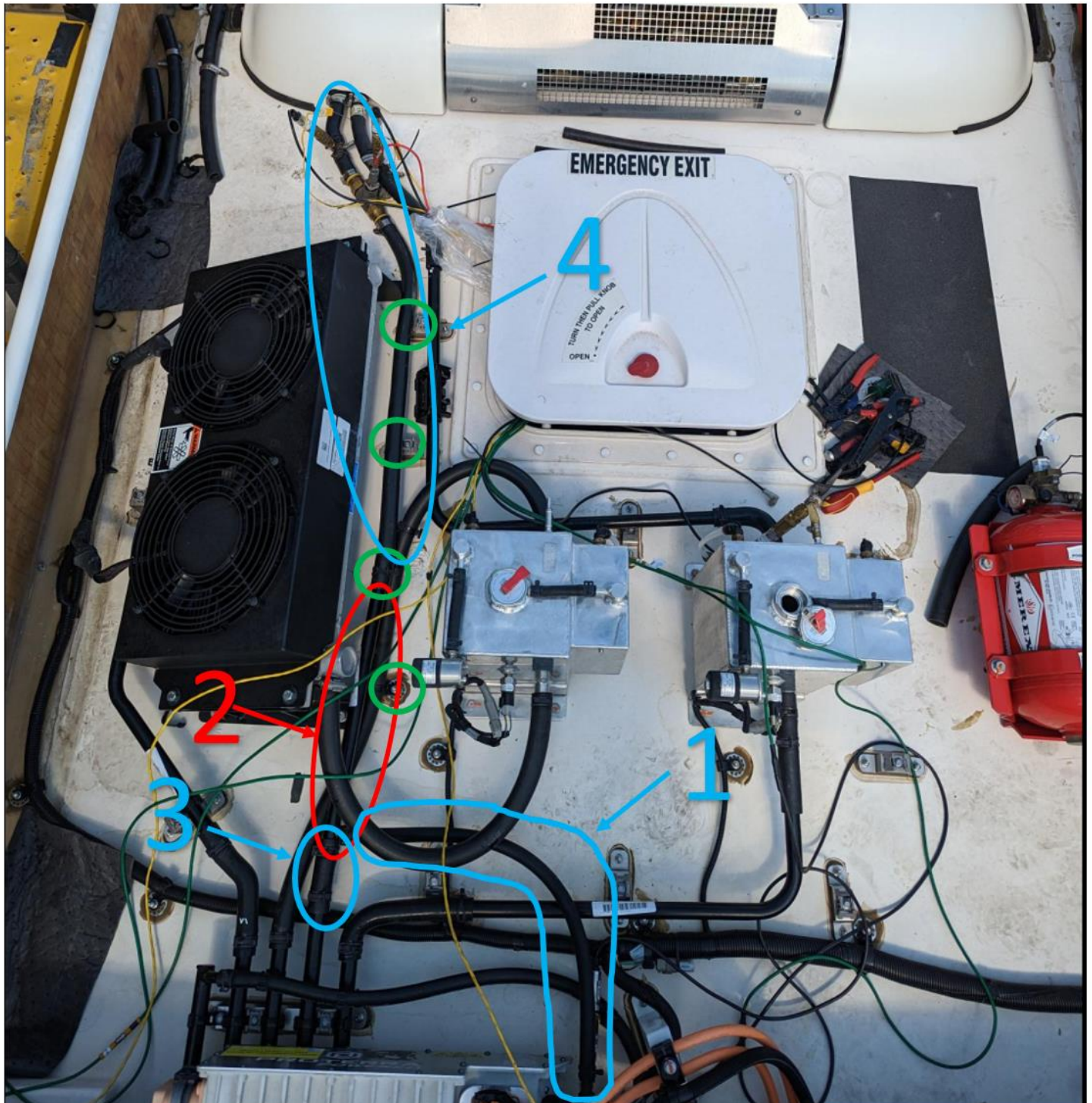


Figure 5

- Reference Figure 6 for part callouts. Attach the #5 "L" hardline to the #6 flexible hose still attached to the battery so that the short end of the "L" points towards the battery chiller and secure with a spring clamp. Measure and cut the #7 flexible hose attached to the expansion tank and connect to the short end of the #5 hardline. Secure with a spring clamp. Secure the the coolant lines with zip ties circled in green.

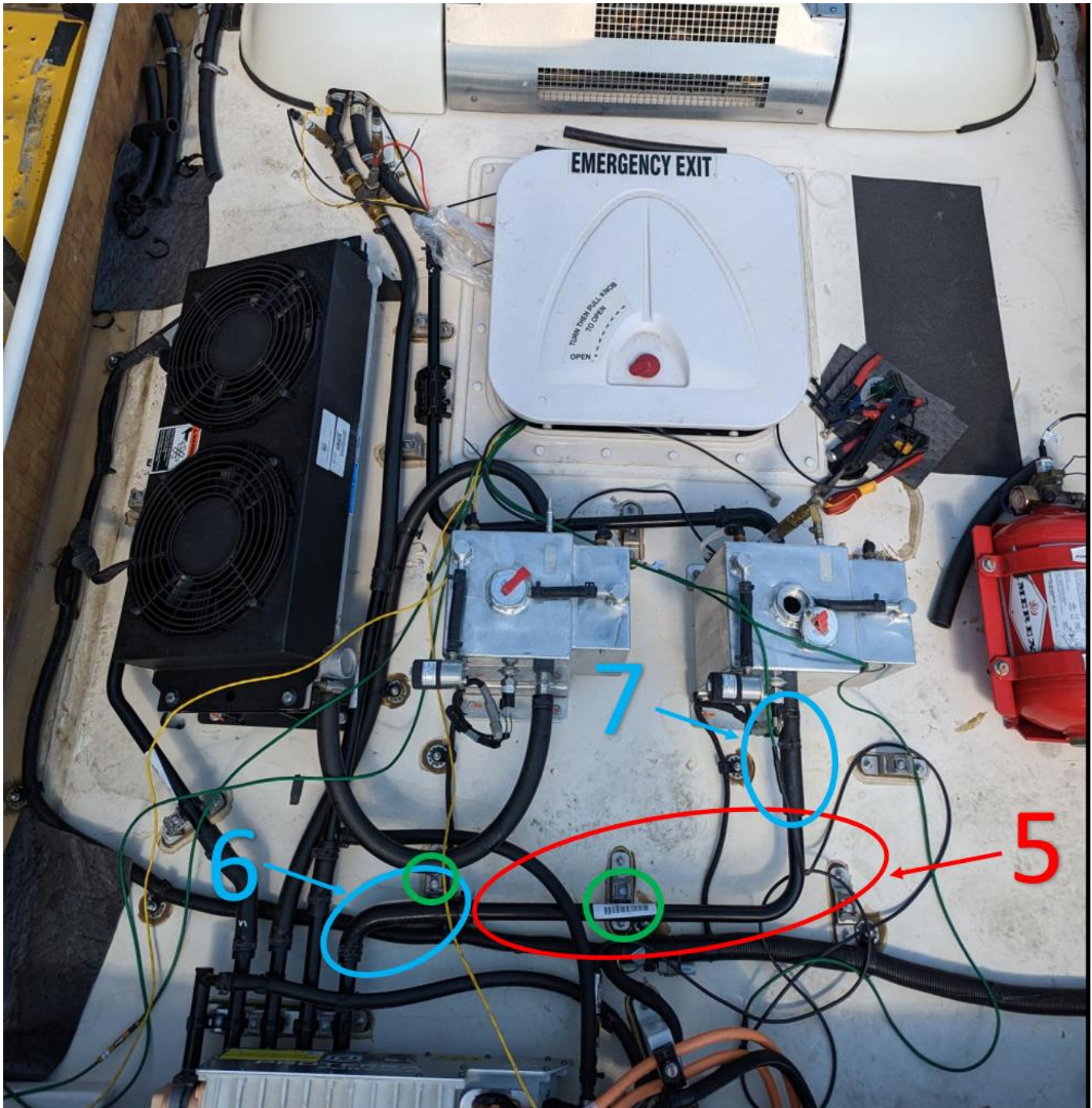


Figure 6

- Reference Figure 7 for part callouts. Attach the #9 "L" hardline to the #8 flexible hose connected to the expansion tank. Secure with a spring clamp. Measure and cut (if necessary) the #10 flexible hose attached to the HVAC system and connect to the end of the #9 hardline. Secure with a spring clamp.

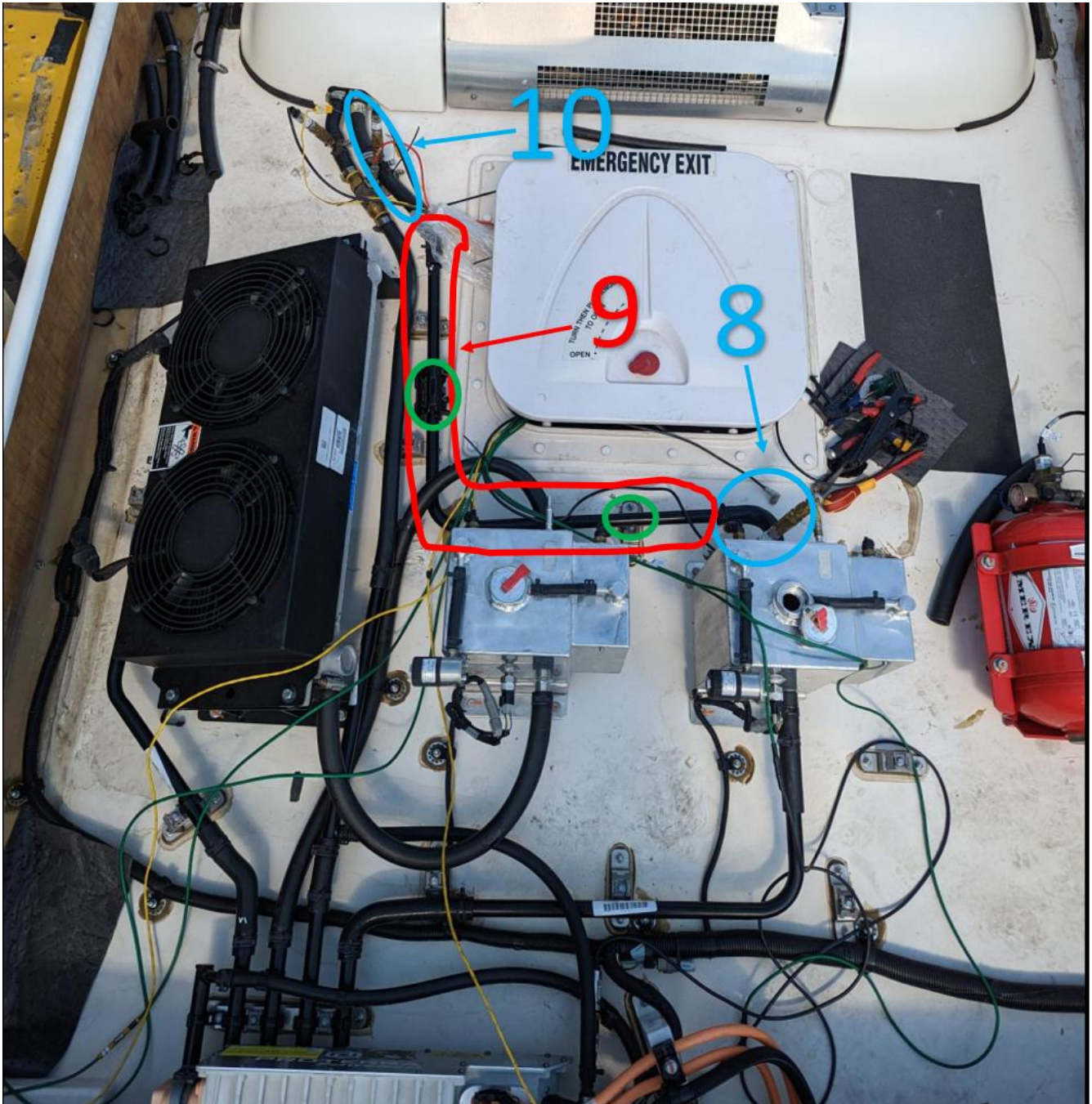


Figure 7

10. Figure 8 shows the updated coolant flow path through the coolant lines.

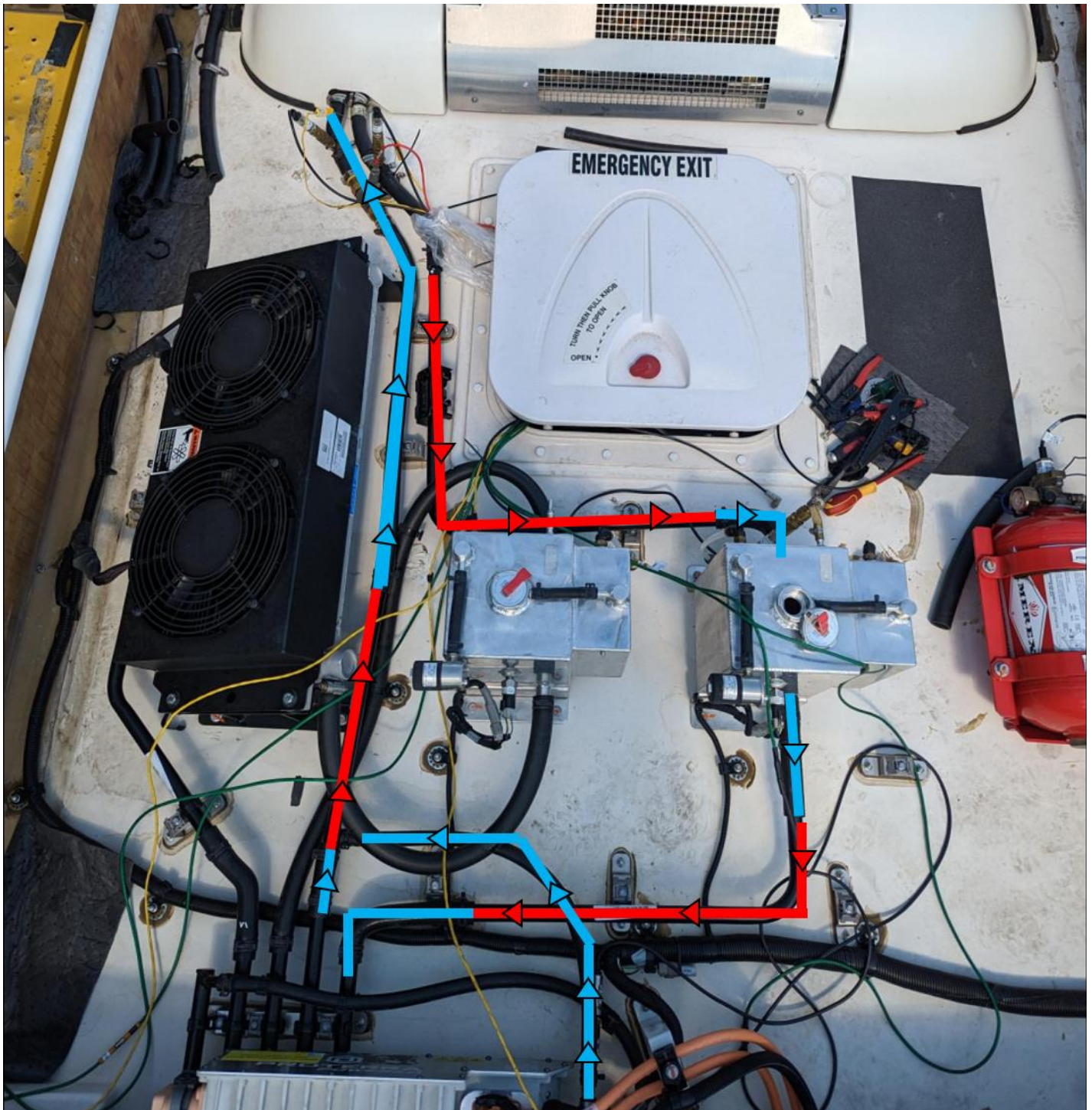


Figure 8

11. Fill battery loop using the charge plate fill control until the coolant level sensor light goes out. Confirm coolant is full on the site glass at the expansion tank on the roof.
12. Turn off fill switch and turn the bus ON to activate High Voltage so the coolant pumps can circulate.

13. Turn on the coolant fill pump and watch the battery coolant light until it turns off. Turn off the coolant fill pump a few seconds after the light turns off. Watch the coolant light and repeat when the coolant light turns on. Continue until Battery coolant light stays off for 5 minutes.
14. Drive the bus and top off after first trip. Monitor coolant level and top off as needed.
NOTE: Driving the bus shifts the air around in the system allowing more air to be purged through the expansion tank. Best practice would be to drive a route with rolling hills to get the best air circulation in the system.
15. Return the bus to service.