

**Title: Coolant Flush Procedure**

**Applicability:** MY20 Revero GT

**PURPOSE:**

Revero GT presenting with over temperature may have been assembled with some debris in the coolant system. To promote the best possible customer experience, a coolant flush is to be performed, Create a TSS case for this procedure.

**Preparation**

1. Place vehicle on lift. Remove all four (4) wheels and front wheel liners.
- 2 . At the front of the vehicle disconnect hoses from the two (2) low temperature electric coolant pumps. Drain coolant.



Prepare or work with the following:

- Water pump with minimum power of 1HP (example Utilitech-1-HP-Stainless-Steel-Lawn-Pump, 13 GPM flow rate )
  - Hose with Female quick-connect fitting x 2 (use P/N C131138102101 from Karma)
  - Hose with Male quick-connect fitting (use P/N C131138101301 from Karma)
- The hoses are important for fast flushing as these can connect to the vehicle without disassembly.

- Strainer for catching fluid and debris into a container.
- Several Large container buckets, a large screen for flushing and catching debris
- length of hose for the flush procedure



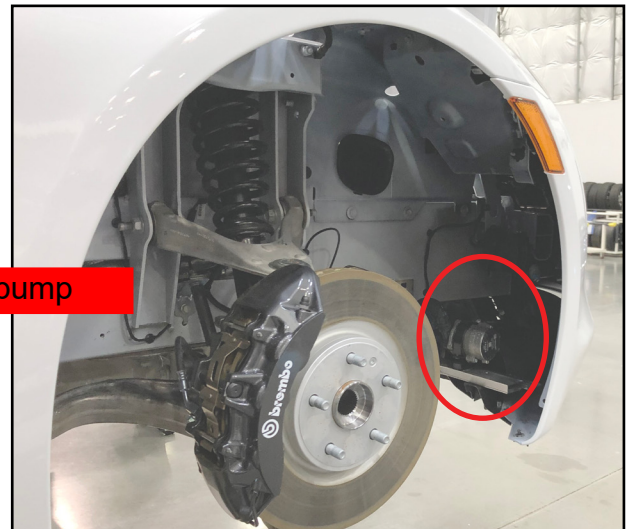
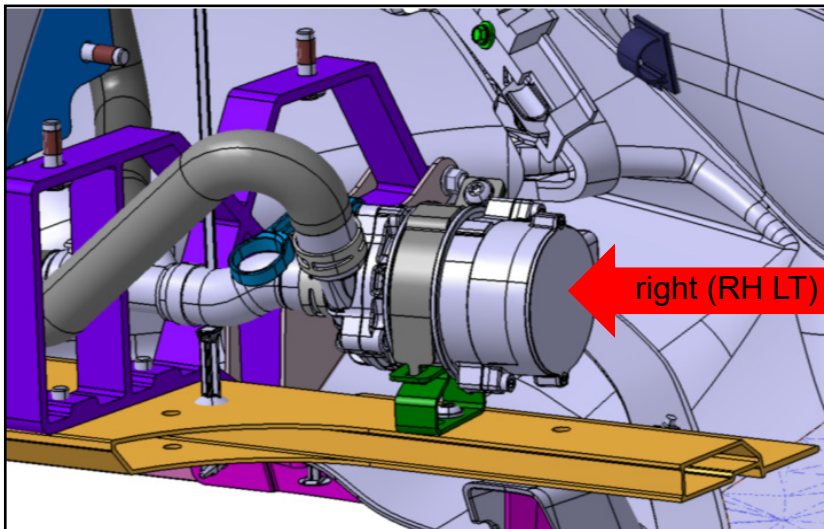
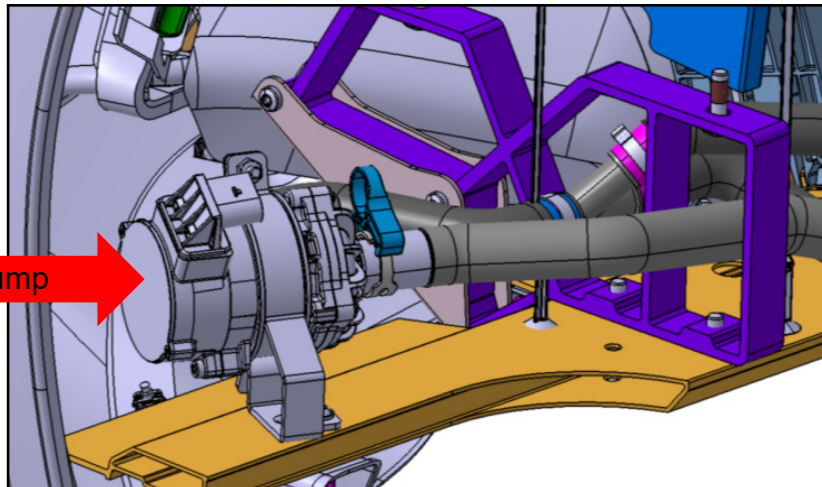
External water pump



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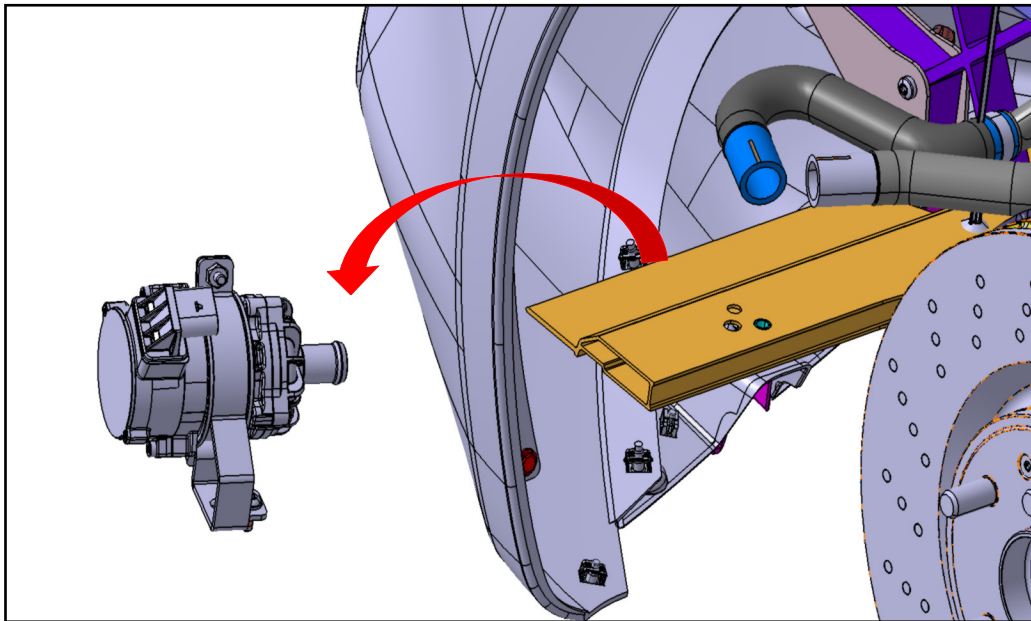
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**Pump Inspection**

3. Disconnect hoses connecting to 2 LT electric coolant pumps, remove both pumps from skid plate.



4. Inspect inside pump for metal shavings. If there is any visible metal shaving, it needs to be replaced. Take a photo or image to attach to the TSS case for this procedure



**Debris found - replace the pump**

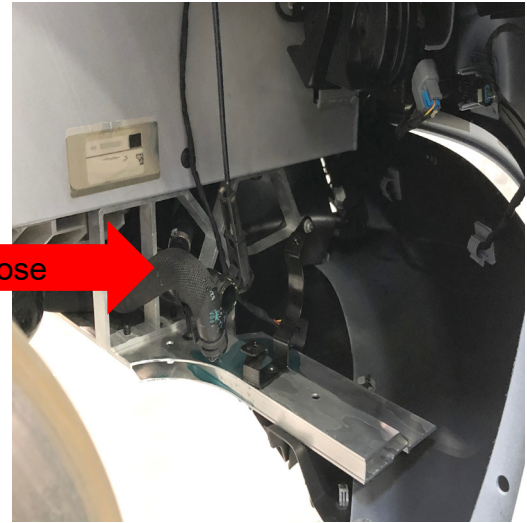
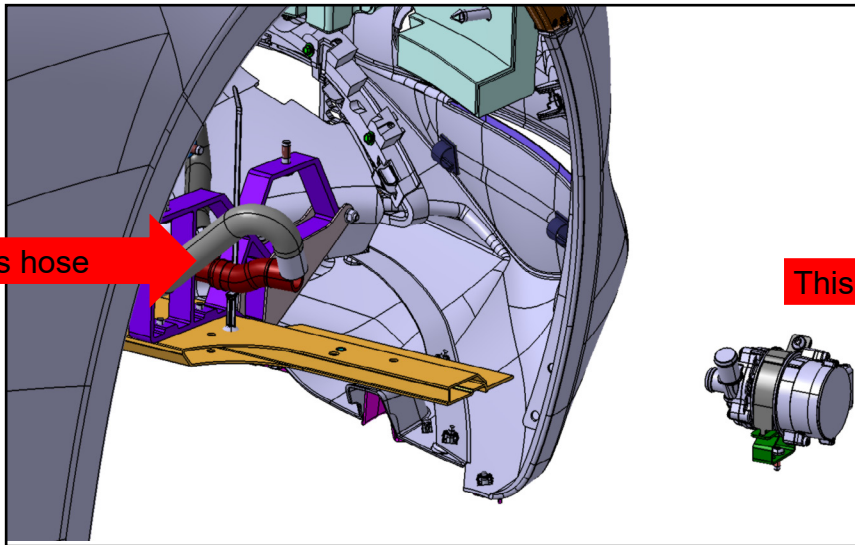
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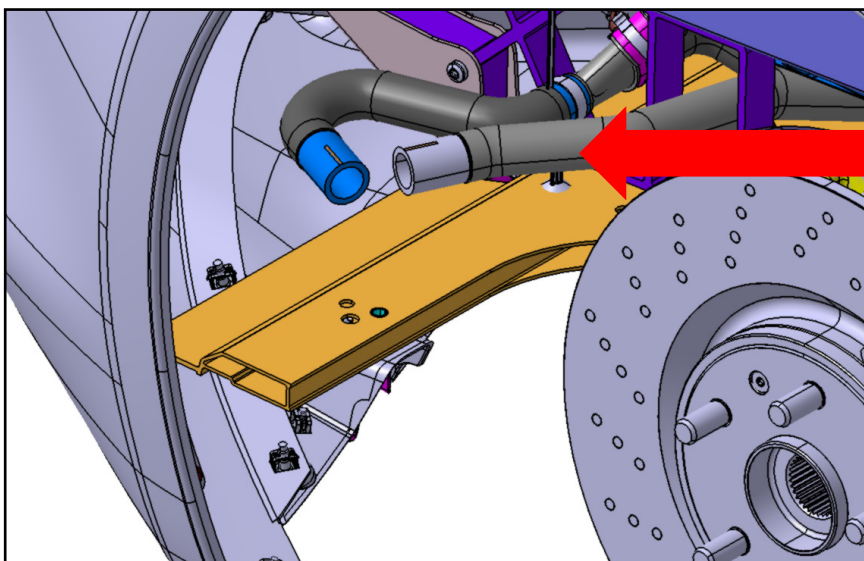
### LT-Cooling Loop FLUSH

5. Connect right side (RH) Pump Outlet Hose to high pressure side of coolant flush equipment



6. Connect left side (LH) Pump Inlet Hose to suction side of coolant flush equipment.  
Operate coolant flush equipment (follow manufacturer directions of your particular model) to circulate flush out water for minimum of two (2) minutes.

**Caution: Do not exceed maximum pressure of 30psi**

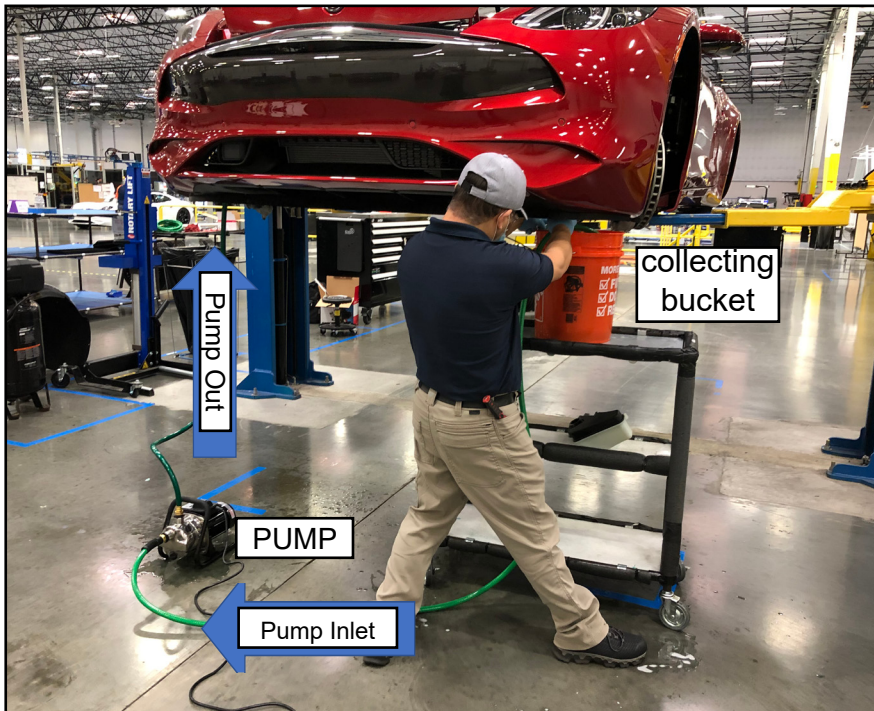


Hose shown clamped before draining.

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- Place strainer under LH LT Hose. This is remove debris from circulating water.
- Operate pump to circulate water for minimum of two (2) minutes
- Fresh water should be used during flushing



old coolant being collected to be disposed of, screening for debris

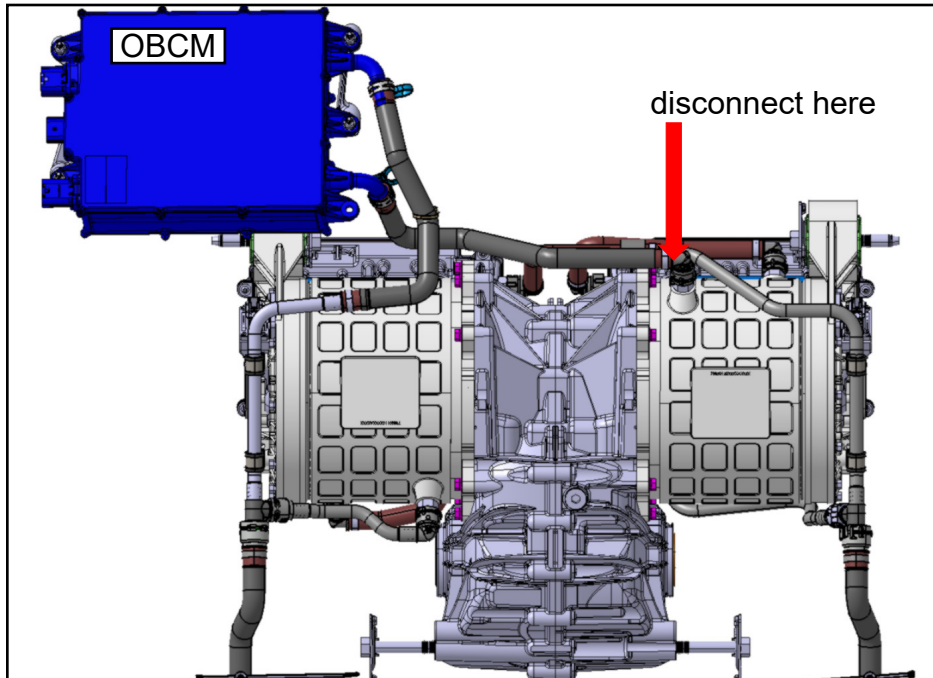
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### OBCM FLUSH

- Disconnect RH Traction Motor Coolant Outlet Hose.
- Attach a hose with male quick connect to the hose and connect it to water pump outlet.



View from Bottom



- Attach hose C131138101301 with male quick connect.
- Connect it to pump outlet

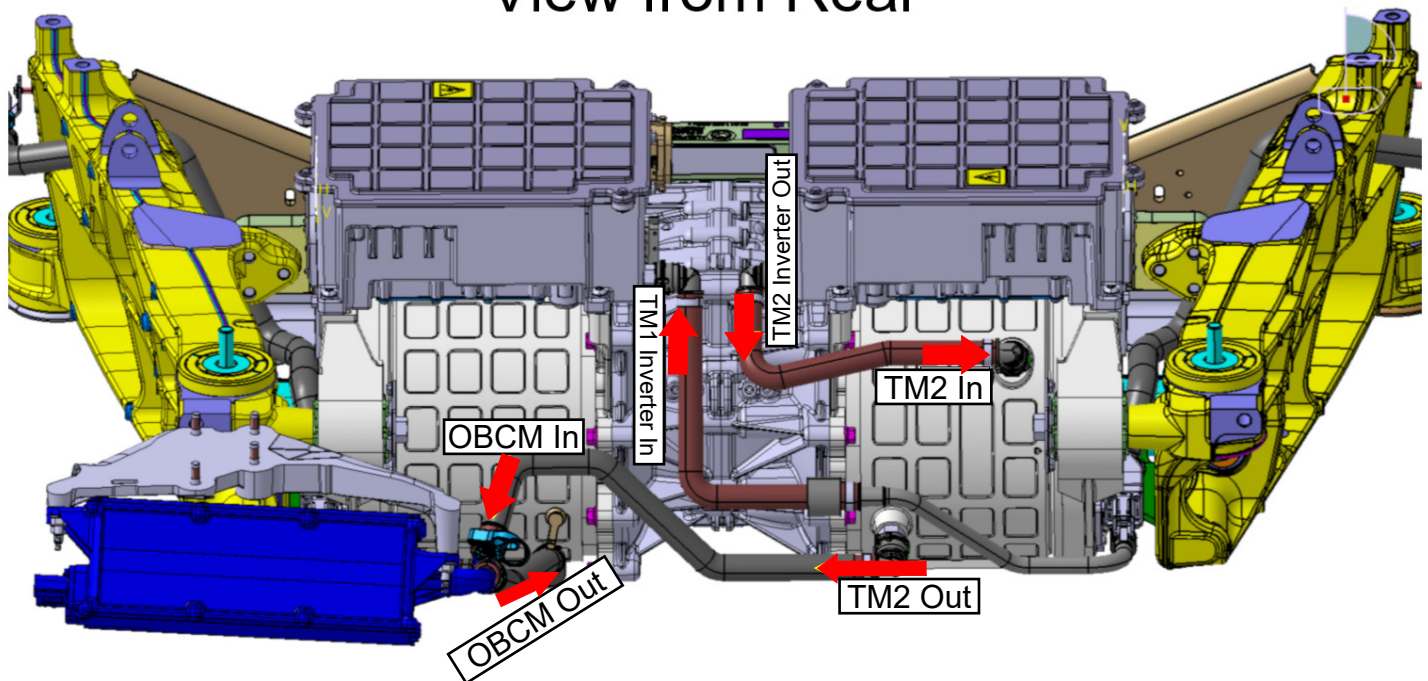
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The coolant will also be flushed from the rear. This includes the OBCM, and drive motor systems. The image below provides a map of flow for the rear.

## View from Rear

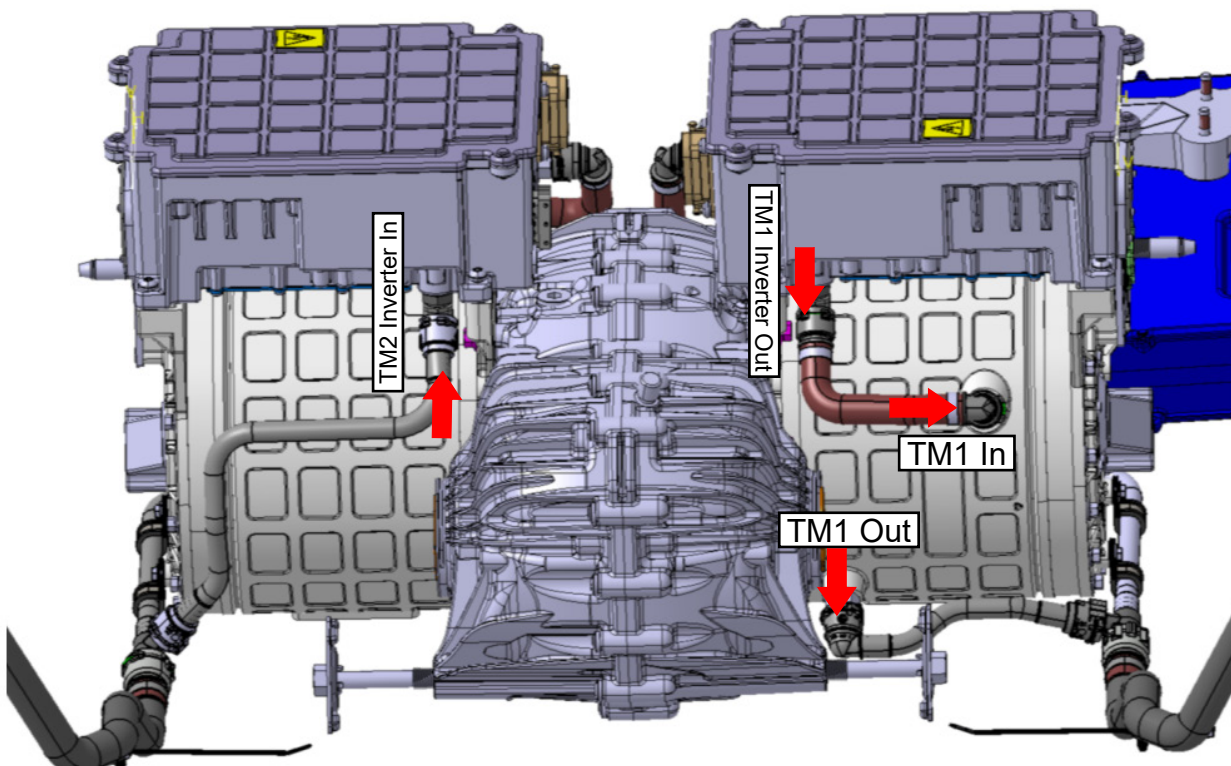


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The image below provides a map of flow for the rear as viewed from the front of the vehicle

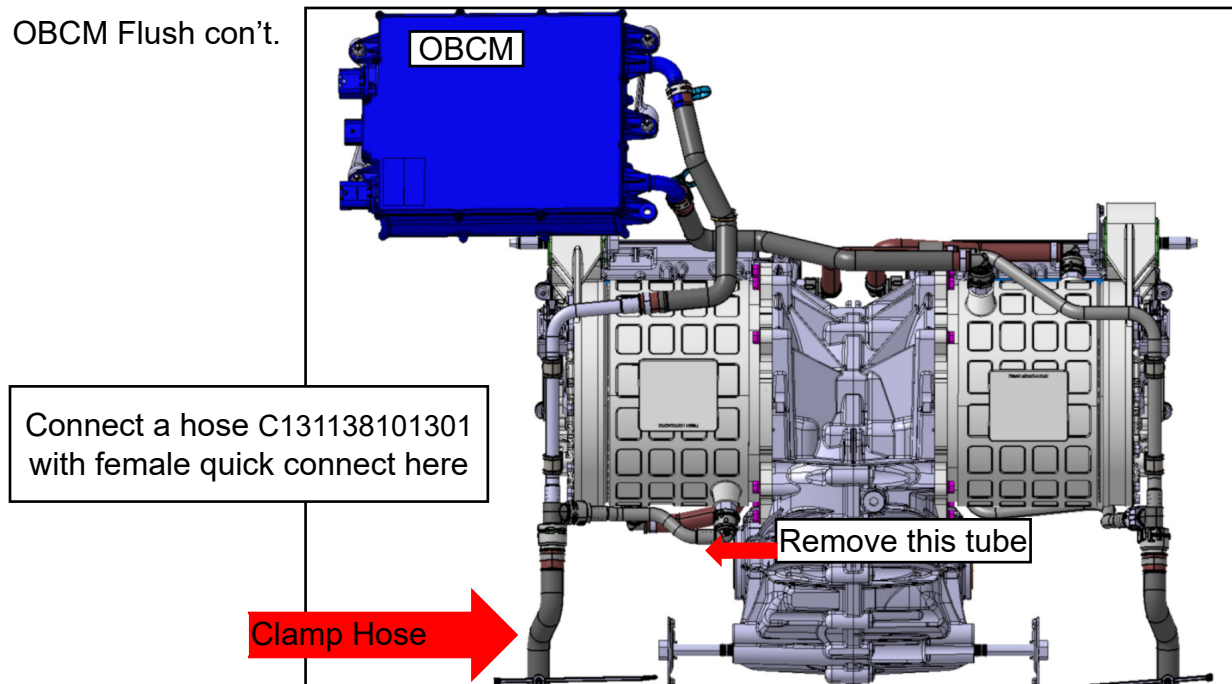


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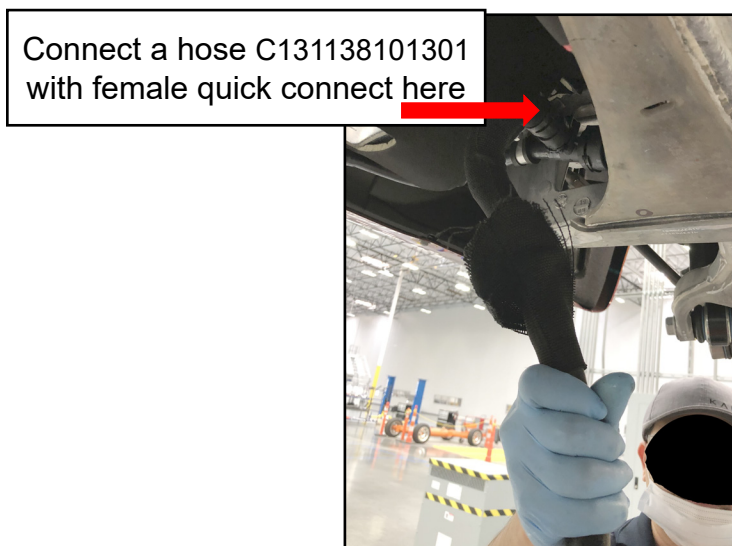
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OBCM Flush con't.



- Remove Left hand (LH) traction motor outlet tube
- Clamp off LH Coolant hose to stop flow
- Connect a hose with female quick connect to plastic tee.
- This hose is for the draining



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Type: Technical Bulletin

Year: 2020

System: Cooling (20)

Sequence: 02

**Title: Coolant Flush Procedure****Applicability:** MY20 Revero GT

- Place strainer below with this hose and operate the pump for minimum of 2 minutes



- Reverse connections to pump outlet and drain hose.
- Operate pump for minimum of two (2) minutes to back flush OBCM

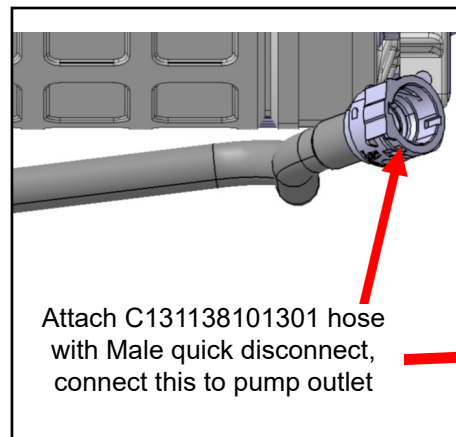
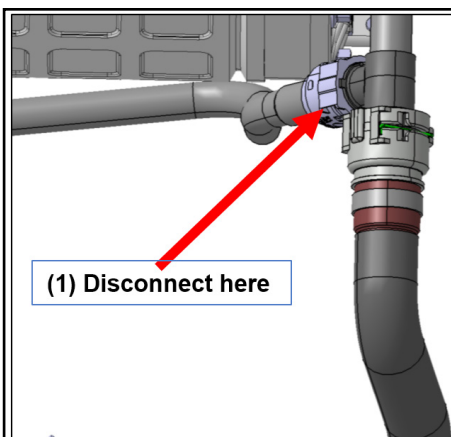
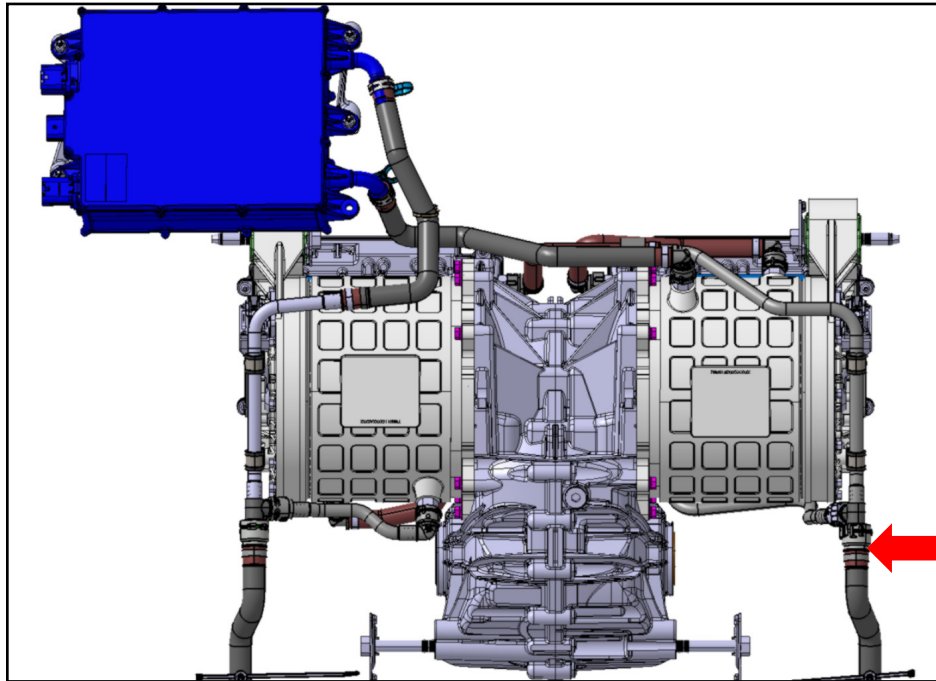


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**RH Traction Motor (TM2) Flush**

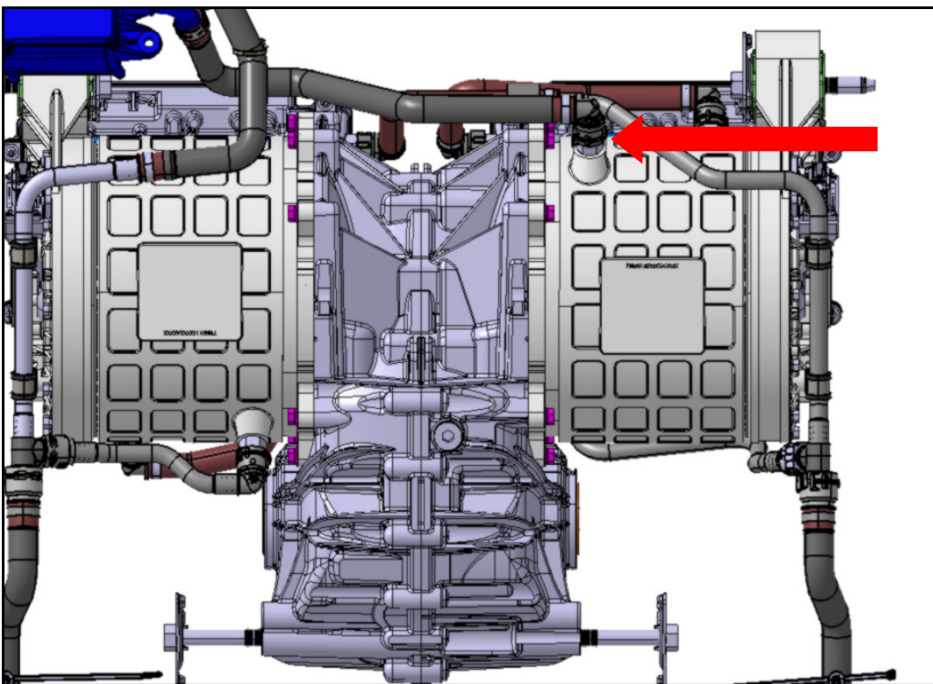


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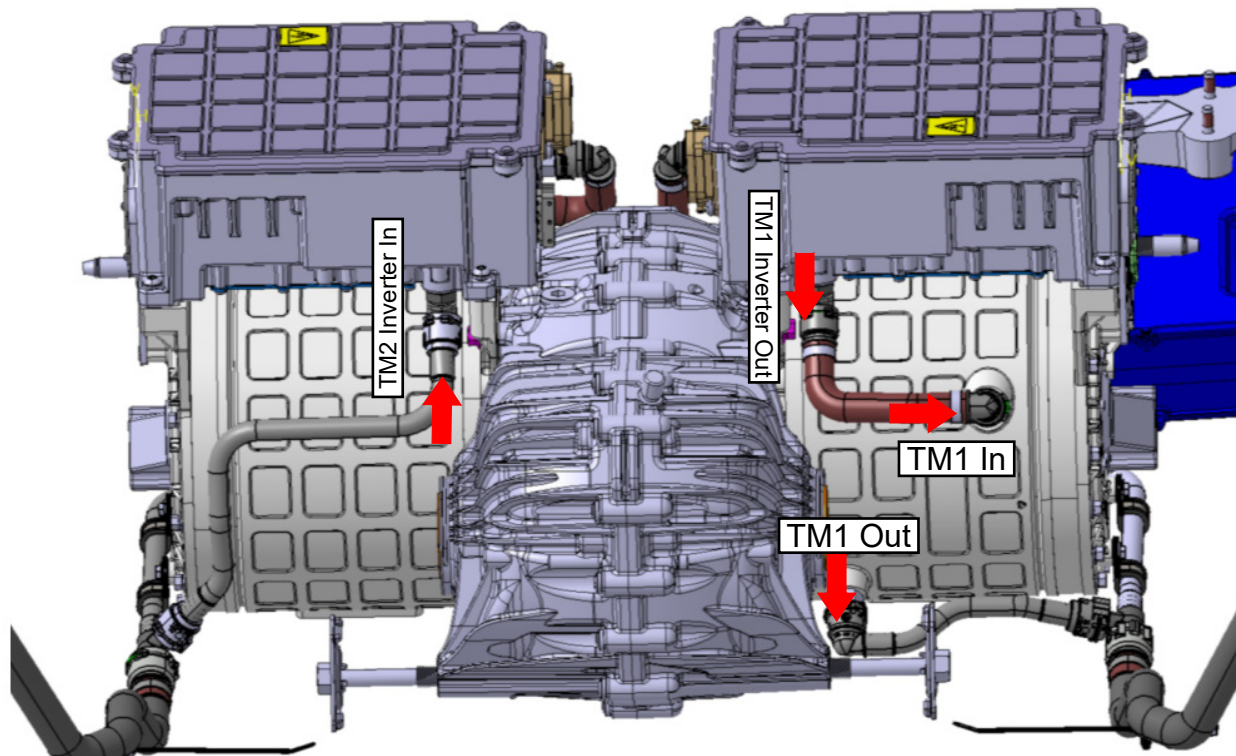
## RH Traction Motor (TM2) Flush part 2

- Disconnect RH Traction Motor Coolant Outlet hose
- Attach hose C131138101301 with female quick connect here and connect it for draining
- Place strainer below with this hose and operate the pump for minimum of 2 minutes
- Reverse connections to pump inlet and outlet.



- Operate pump for minimum of 2 minutes to back flush TM2

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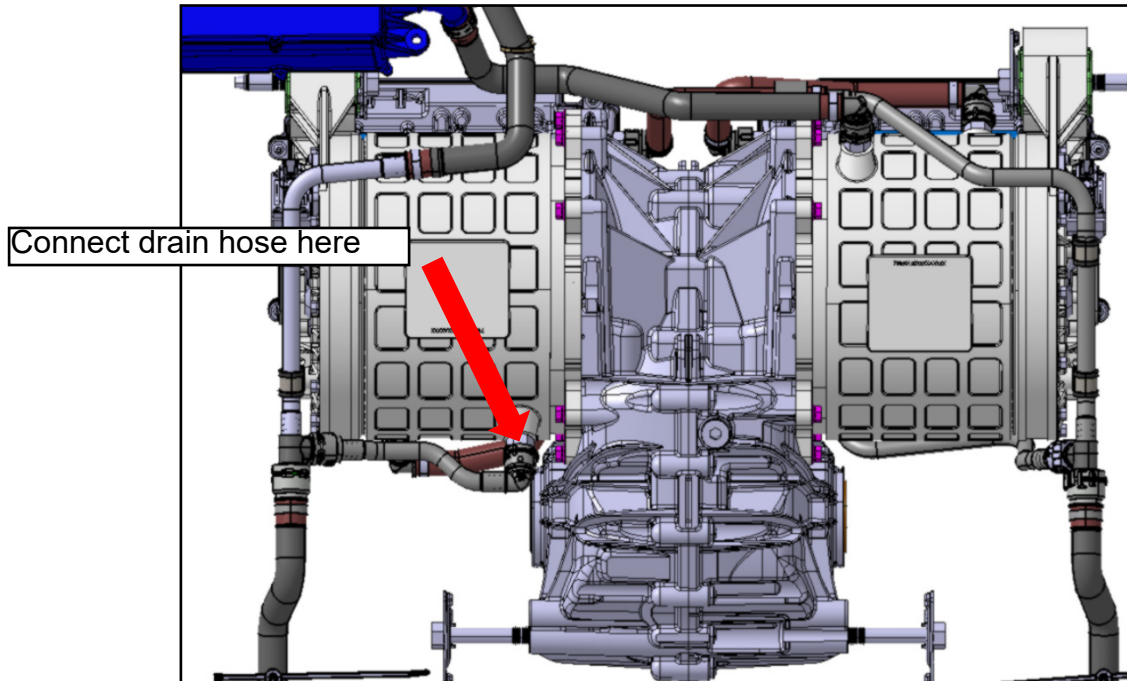
- Disconnect LH Traction Motor Inverter Coolant **Inlet**
- Attach C131138101301 hose with female quick connect to the hose and connect it to water pump outlet.
- Clamp off the LH supply hose

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### LH Traction Motor (TM1) Flush



- Disconnect LH Traction Motor Coolant Outlet hose
- Attach C131138101301 hose with female quick connect to the hose for drain
- Place strainer below with this hose and operate the pump for minimum of 2 minutes
- Reverse connections to pump inlet and outlet.
- Operate pump for minimum of 2 minutes to back flush TM1

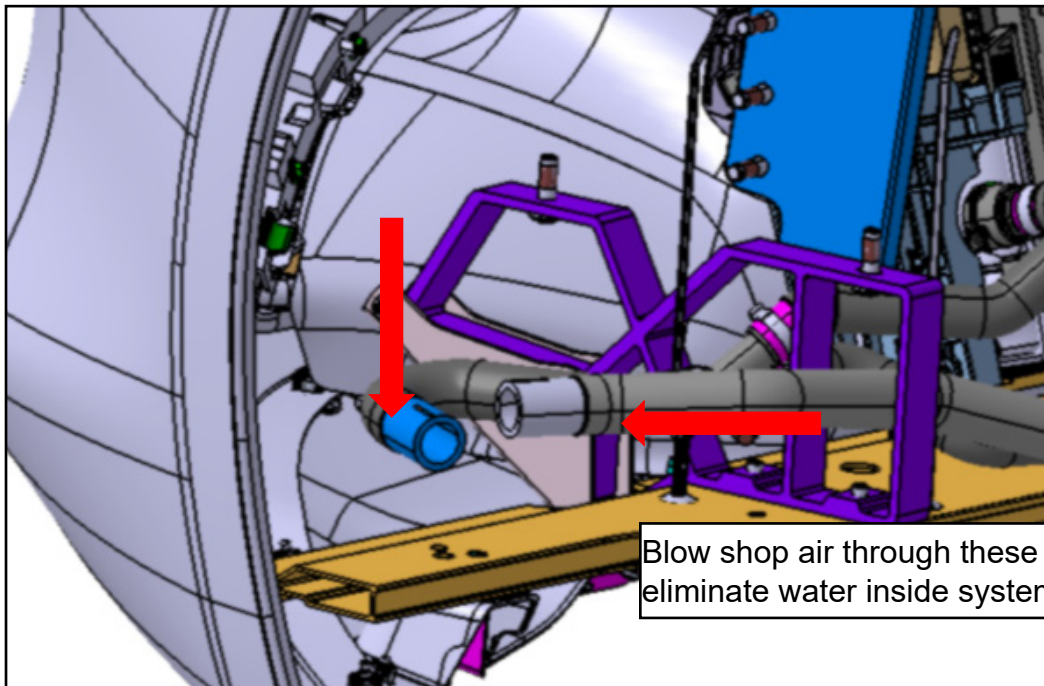


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**REINSTALL**



- Reinstall all coolant tubes and hoses on rear drive module
- From front driver (LH) side, blow shop air on both hoses to completely remove water from the cooling system
- Reinstall two (2) coolant pumps
- Fill coolant with vacuum equipment.
- Apply vacuum for 30 minutes minimum before re-filling coolant.

Pull 25 in. vacuum for more than 30 minutes before coolant fill.



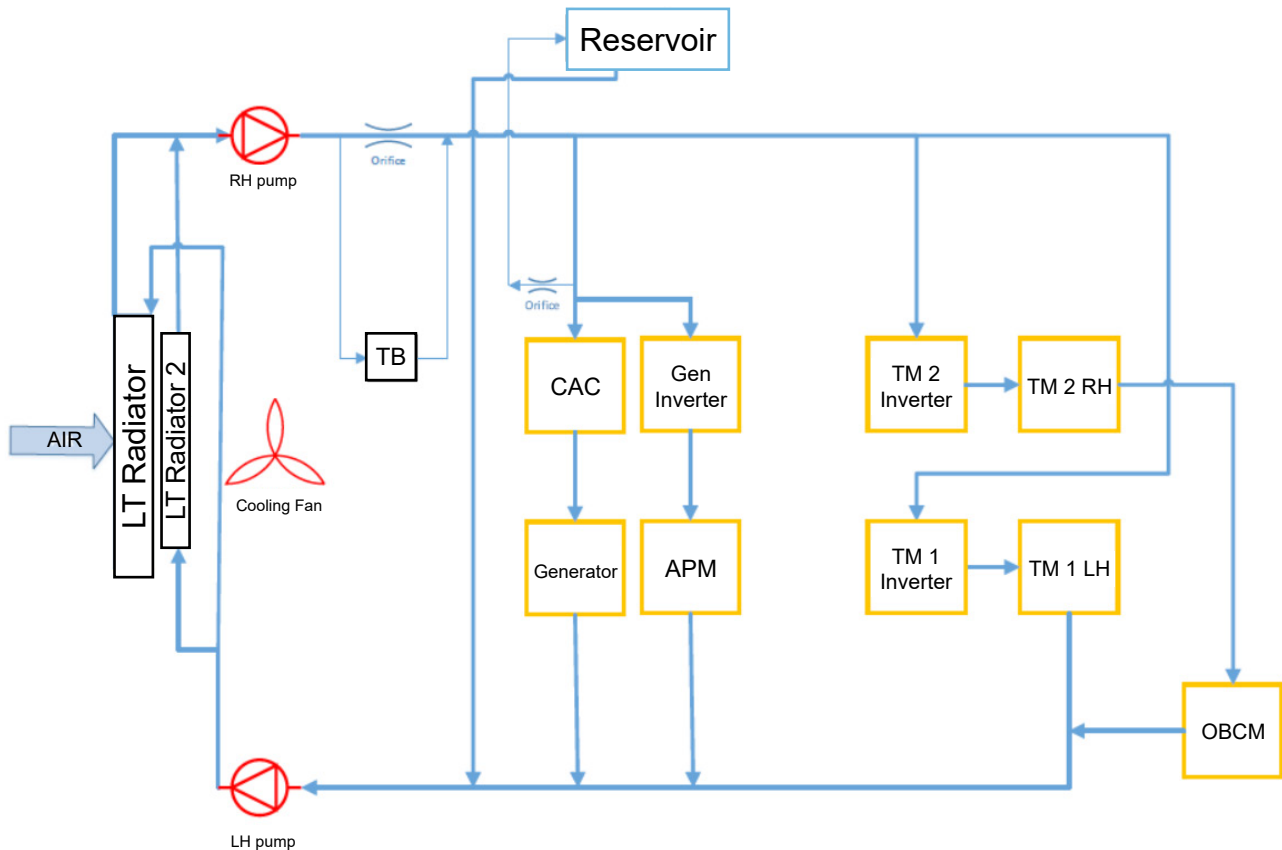
- Reinstall coolant pumps & Reconnect all coolant hoses.
- Refill LT cooling system using Vacuum fill equipment. Coolant fill volume is 10 liters.

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### Low Temp (LT) Powertrain Cooling System



Arrows indicate direction of coolant flow.

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**PARTS REQUIRED:**

PART NUMBER	DESCRIPTION	QUANTITY
N/A		

**SHOP SUPPLIES if Required:**

PART NUMBER	DESCRIPTION	QUANTITY
SUBLET		

**SPECIAL TOOLS:**

DESCRIPTION
N/A

**CAUSAL PART:**

PART NUMBER	DESCRIPTION
C131138300100	LT Coolant Pump CWA100-3

**LABOR CODES:**

CODE	DESCRIPTION	TIME	DEFECT CODE
20-10-07-07	Coolant Flush	3.0	20-10-05-48

**SUBLET:**

CODE	DESCRIPTION	AMOUNT
FLU-001	Coolant	25.00

**WARRANTY DISPOSITION:** This repair is covered under the New Vehicle Limited Warranty, in effect for four (4) years from the in-service date with no mileage limitation.

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