
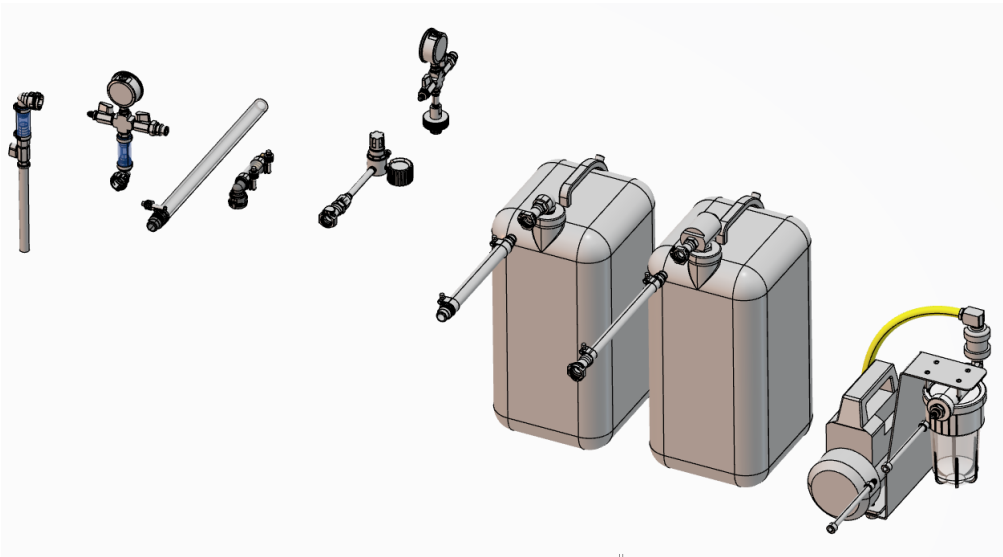


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|  | TOOL USE INSTRUCTION | |
| | TOOL NUMBER: TSN00787 | DATE: 09/20/24 |
| | TITLE: COOLANT EVAC & FILL KIT | DOC REV: 1 |



Tool Function:

To fully evacuate, recover, and fill coolant into Rivian Vehicles.
The recovery tank system filters incoming and outgoing coolant to allow it to be re-used rather than discarded

Labor Code: 262850024 Coolant (Drain and Refill)

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OVERVIEW

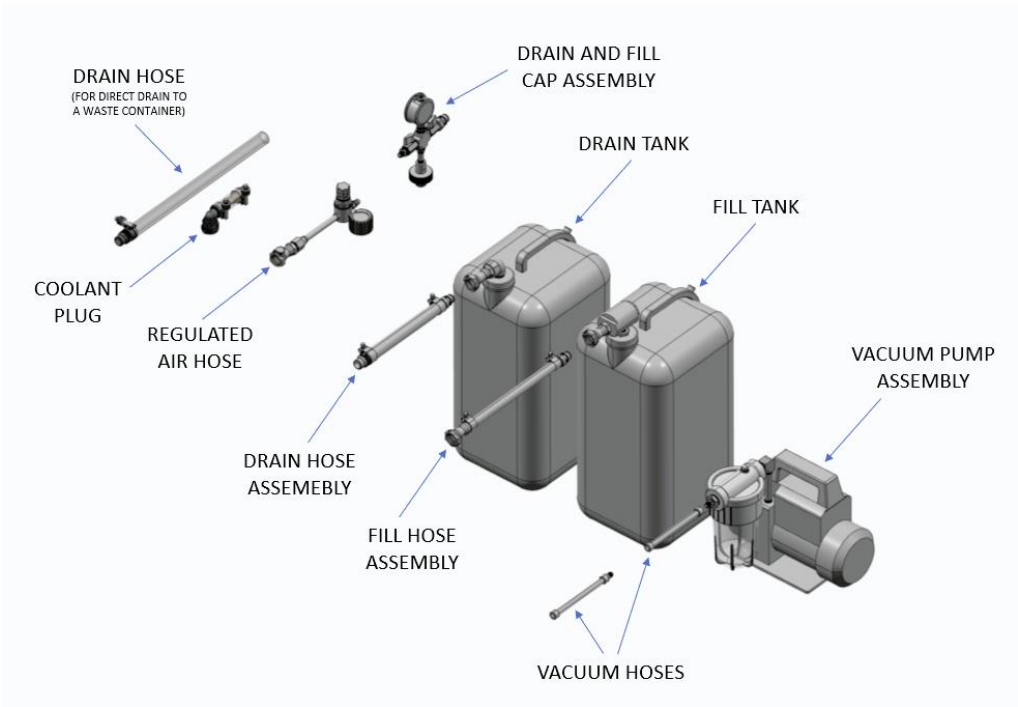
Tool Storage/Assembly

- All items from the kit should be stored on a Uline narrow utility cart.
- Place the tanks on the lower shelf.
- Place the vacuum pump assembly, and all other hoses and assembly on the top shelf.
- If you did not receive or have a cart available one can be ordered from the Uline punchout catalog
Uline Utility Cart - Narrow, 40 x 18 x 33", Black, H-2503BL

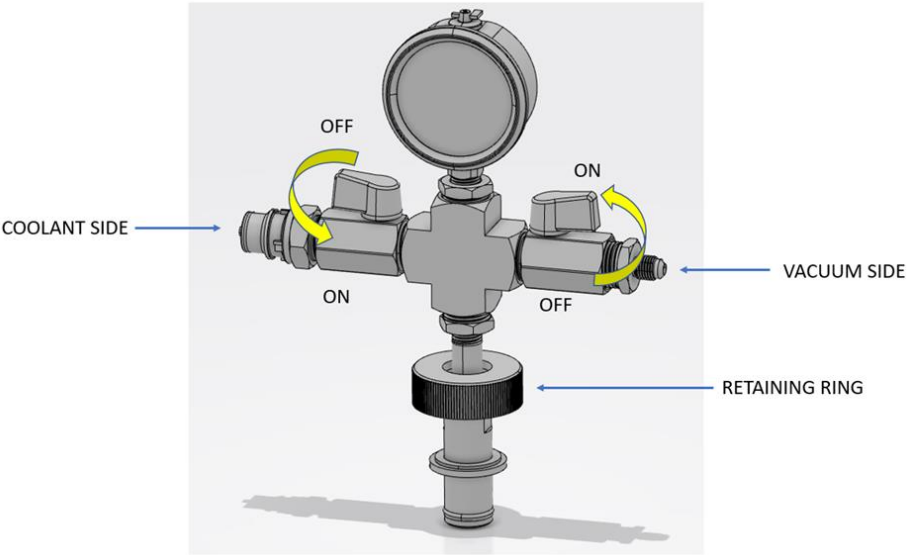


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Tool Parts



Drain and Fill Cap Assembly





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SAFETY GUIDELINES

⚠ WARNING ⚠

BE AWARE OF THE TOTAL COOLANT CAPACITY OF THE SPECIFIC VEHICLE BEING SERVICE.
STOP AND DIAGNOSE IF FILL VOLUME GOES BEYOND INTENDED CAPACITY

COOLANT FLUID CAPACITIES

R1T


| | |
|---|---|
| Vehicles built before late-May 2023 | 18.3 L (4.8 gal) |
| Model year 2023-2024 vehicles built after late-May 2023 | Vehicles with Origin Drive Unit: 17.4 L (4.6 gal) |
| | Vehicles with Enduro Drive Unit: 16.6 L (4.4 gal) |
| Model year 2025+ vehicles | 15.5 L (4.1 gal) |
| | |

R1S

| | |
|---|---|
| Vehicles built before late-May 2023 | 18.3 L (4.8 gal) |
| Model year 2023-2024 vehicles built after late-May 2023 | Vehicles with Origin Drive Unit: 17.2 L (4.5 gal) |
| | Vehicles with Enduro Drive Unit: 16.3 L (4.3 gal) |
| Model year 2025+ vehicles | 15 L (4.0 gal) |
| | |

EDV

| |
|--|
| Vehicles with LFP 100 kWh HV battery: 12.5 L (13.2 qt) |
| Vehicles with NCA 135 kWh HV battery: 12.2 L (12.9 qt) |


| | | |
|---|---------------------------------------|-----------------------|
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Vacuum Intake Catch Bowl



⚠ WARNING ⚠



ALWAYS CHECK THE VACUUM INTAKE CATCH BOWL BEFORE, DURING AND AFTER OPERATION OF THE VACUUM PUMP

| | | |
|---|--------------------------------|----------------|
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Float Operated Check Valve

IF THE VACUUM INTAKE CATCH BOWL BECOMES FULL AND LETS FLUID PASS, THE FLOAT CHECK VALVE WILL STOP ALL VACUUM FLOW FROM THE VACUUM PUMP. THIS PROTECTS THE PUMP FROM INGESTING COOLANT.

IF THIS OCCURS FOLLOW THE STEPS BELOW TO CLEAR THE SYSTEM:

| Step | Description | |
|------|---|--|
| 1 | Disconnect the check valve by unscrewing the top and bottom portions. |   |
| 2 | Empty all fluid out of the valve body. | |

3

Re-install the valve by screwing the top and bottom portions back together.

Note the orientation of the body during installation. There is an arrow that should be facing upward when installed.





TOOL USE INSTRUCTION

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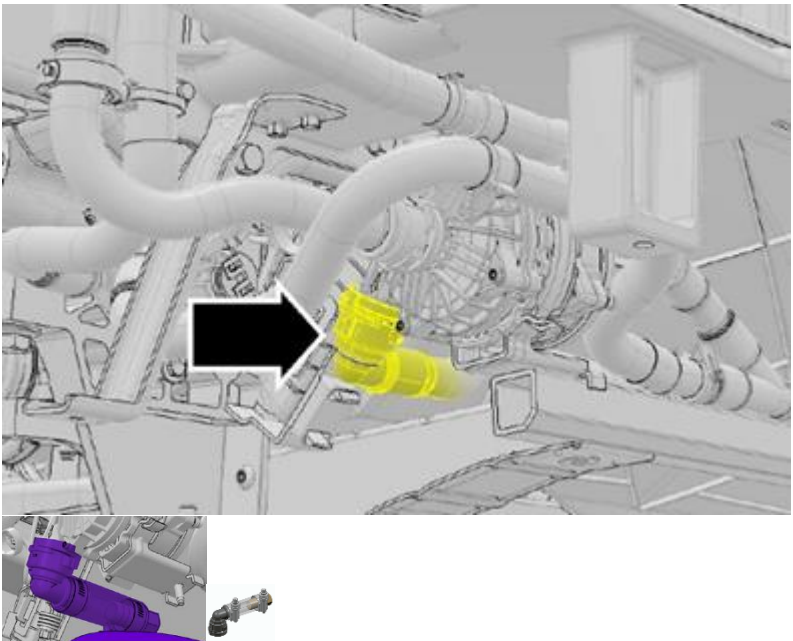
DATE: 09/20/24

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TOOL USAGE

Draining and Evacuating Coolant

| Step | | |
|------|---|--|
| 1 | Follow the service manual procedure to prepare the vehicle for coolant draining & refilling. | |
| 2 | <p>Push the drain and fill cap onto the coolant degas bottle. Ensure both valves are in the OFF position.</p> <ul style="list-style-type: none">• Push the tool into the degas bottle until it fully seats on the rim.• Thread the retaining ring onto the bottle. The tool must be seated before attempting to thread the retaining ring <p>The tool must be fully seated before attempting to thread the retaining ring</p> |  |
| 3 | Disconnect the coolant line at the powertrain pump. Install the coolant plug onto the pump. |  |



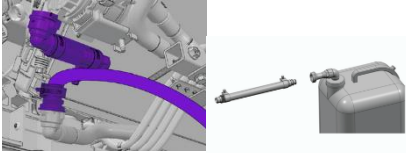

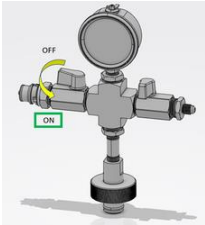


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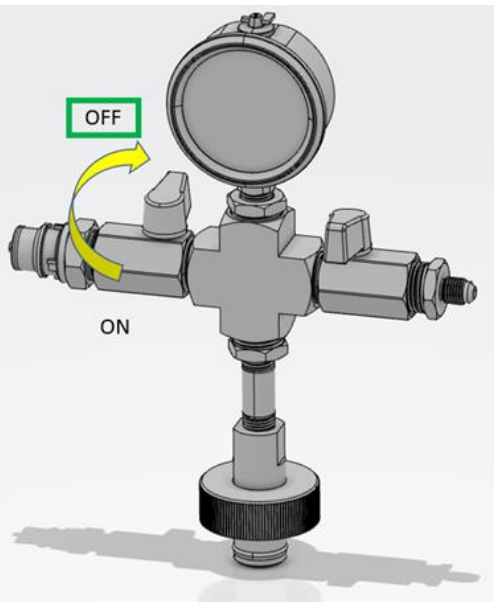
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| | | |
|---|---|---|
| 4 | Connect one end of the drain hose assembly to the coolant line previously connected to the coolant pump. Attach the other end to the top of the drain tank. |  |
| 5 | Remove the vent cap on the top of the drain tank. | |
| 6 | Attach shop air to the regulated air hose. Attach the other end of the air hose to the coolant side of the drain and fill cap. |  |
| 7 | Turn the valve on the coolant side of the drain and fill cap to the ON position. |  |
| 8 | Slowly increase pressure to ~10psi by adjusting the regulator. (Turn clockwise) |  |
| 9 | Coolant will drain into the tank. Continue to run air through the system until coolant stops flowing through the lines. |  |

10

Once draining is complete, turn the coolant side valve the drain and fill cap to the **OFF** position.



11

Remove the drain hose assembly, coolant plug and reconnect the coolant pump.

12

Repeat for the ESS coolant loop.

13

Once both the Powertrain and ESS loops have been evacuated, continue to pressure test the system.



TOOL USE INSTRUCTION


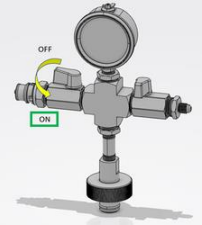

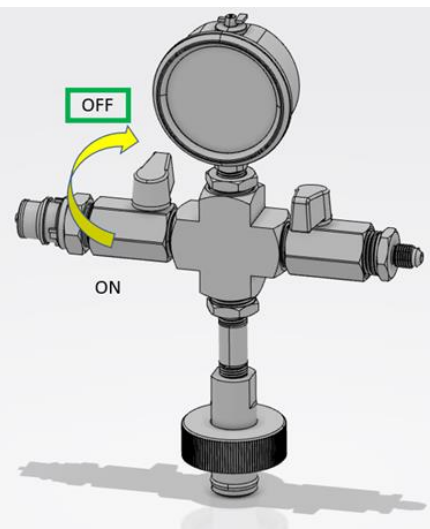
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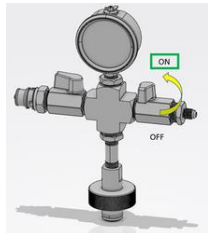

DOC REV: 1

Pressure Leak Testing

| Step | | |
|------|--|---|
| 1 | Ensure that the valves on the drain and fill cap are in the OFF position. | |
| 2 | Attach shop air to the regulated air hose. Attach the other end of the air hose to the coolant side of the drain and fill cap. |  |
| 3 | Turn the valve on the coolant side of the drain and fill cap to the ON position. |  |
| 4 | Slowly increase pressure to ~10 psi by adjusting the regulator. (Turn clockwise) Monitor the pressure reading using the gauge on the drain and fill cap . |  |
| 5 | Once 10 psi is reached, turn the valve on the the coolant side of the drain and fill cap to the OFF position and disconnect shop air. |  |
| 6 | Monitor the pressure for 90 seconds. If there is a drop in pressure, the coolant system may be compromised. Flag the vehicle for investigation | |
| 7 | If the vehicle passes the pressure test, move on to the filling procedure. | |

| | | |
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Filling

| Step | | |
|------|---|---|
| 1 | Follow the service manual procedure for to prepare the vehicle for coolant refilling. | |
| 2 | <p>Important:</p> <ul style="list-style-type: none"> • Empty any residual coolant after each use • Monitor the catch bowl during operation • Do not allow the catch bowl to fill up; this will cause damage to the vacuum pump |  |
| 3 | Ensure the fill tank is filled up with at least ~20L (5.3 gallons) of coolant. | |
| 4 | Ensure that the valves on the drain and fill cap are in the OFF position. | |
| 5 | Screw the vacuum hose onto the vacuum intake filter. Screw the other side of the vacuum hose onto the vacuum side of the drain and fill cap. |  |
| 6 | Attach the fill hose assembly to the fill tank. Attach the other end of the fill hose assembly to the coolant side of drain and fill cap. |  |
| 7 | Remove the vent cap at the top of the fill tank. | |
| 8 | Turn the vacuum side valve on the drain and fill cap to the ON position. |  |
| 9 | Turn on the vacuum pump. | |
| 10 | <p>Run the vacuum pump until the gauge reaches 28-30 inHg.</p> <ul style="list-style-type: none"> • Monitor the catch bowl to ensure it is not filling with coolant. |  |



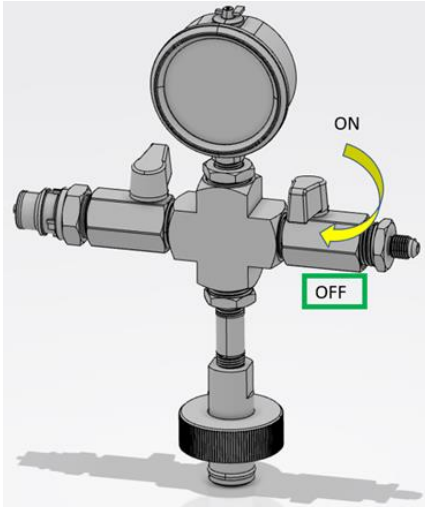
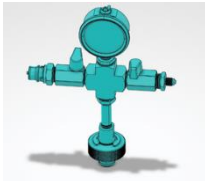
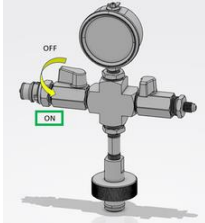

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| | | |
|----|--|---|
| 11 | Turn the valve on the drain and fill cap to the OFF position, and turn off the vacuum pump. |  |
| 12 | <p>Monitor the vacuum gauge for 90 seconds to ensure that the system holds vacuum.</p> <p>NOTE: if the vacuum level drops, there is a possible leak in the system. Recheck all tooling connections and test again.</p> <p>Flag the vehicle for inspection if you suspect a leak in the vehicle system.</p> |  |
| 13 | Bleed any air out of the fill hose assembly by quickly opening and closing the coolant side valve once coolant has filled the hose up to the valve. | |
| 14 | With the coolant valve closed, run a quick vacuum again until the system reaches 28-30 inHg . You are now prepared to fill the system. | |
| 15 | Turn the coolant side valve on the drain and fill cap to the ON position. |  |
| 16 | The system will begin to fill with coolant. | |
| 17 | Once filling is complete, turn the coolant side valve to the OFF position. Disconnect all hoses and remove the drain and fill cap. | |
| 18 | Check the intake filter catch bowl. If it has captured fluid, unscrew it and discard the coolant. |  |



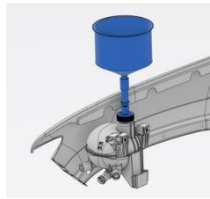
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| | | |
|----|---|---|
| 19 | Attach the funnel to the degas bottle. |  |
| 20 | Fill the funnel half-way with coolant. | |
| 21 | Continue with the next steps per the service manual Procedure to run the pumps and burp the system. | |

| | | |
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APPENDIX

Draining Directly into an External Container

| Step | | |
|------|--|---|
| 1 | Use the other Drain Hose included with this kit if you want to drain directly into another waste container, tank etc. This drain hose is open on one end |  |
| 2 | Aim the drain hose into a waste container and hold it steady during coolant evacuation | |

Re-Using Coolant

| Step | |
|------|--|
| 1 | After capturing coolant into the drain tank it should be inspected. |
| 2 | Visually check the coolant for signs of contamination. |
| 3 | Use a refractometer to ensure that the coolant mix is still acceptable. |
| 4 | Transfer the coolant to be re-used into the fill tank. |
| 6 | Top off the fill tank until it has at least ~20L (5.3 gallons) of coolant. |
| 7 | Continue with the fill procedure as outline in these instructions. |

| | | |
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REVISION LOG

| REV | REASON FOR CHANGE | DATE |
|-----|-------------------|---------|
| 1.0 | Initial Release | 9-20-24 |
| | | |
| | | |