TOOL USE INSTRUCTION

RIVIAN		
	TOOL NUMBER	TSN01500-300-A
	TITLE	AC FLUSH KIT
	REV - DATE	B - 05/20/25

CONTENTS

TOOL FUNCTION

Allows to flush the AC system on the R1 (T/S) when used alongside RiDE service procedure: 264651017 - Flush Refrigerant System

Use this document in conjunction with TUI for AC machines used for flushing.

AC machine flush setup TUI

WARNING

Do not perform procedure if tool is damaged or missing parts. Consult the Rivian Service Tool Catalog for replacement components.

Failure to follow guidelines outlined in this document could result in injury and/or property damage.

SAFETY GUIDELINES

1	**WARNING** Risk of minor injury: • eye injury if proper PPE is not used due to pressurized system • Fingers being pinched due to tight locations in which the adaptors will need to be installed.	
2	**DANGER** Risk of major injury such as • fire due to pressurized R1234yf. DO NOT work near an open flame! • chemical burn due to PAG oil and freon under pressure • death if proper caution is not taken when working on system that is under a lot of pressure	
3		

SPECIFICATIONS

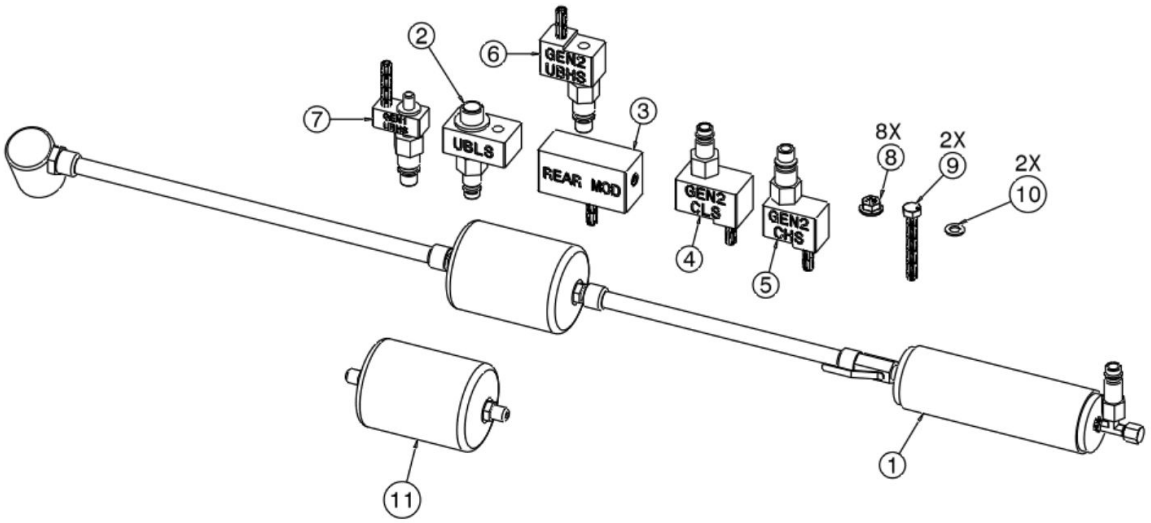
Weight: 10 lbs

LABOR CODES

264651017- FLUSH REFRIGERANT SYSTEM

OTHER TOOLS REQUIRED

TSN01461-300 AC DESICCANT HOUSING REMOVAL TOOL
RiDE DIAGNOSTIC TOOL



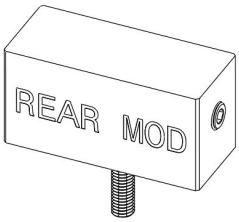
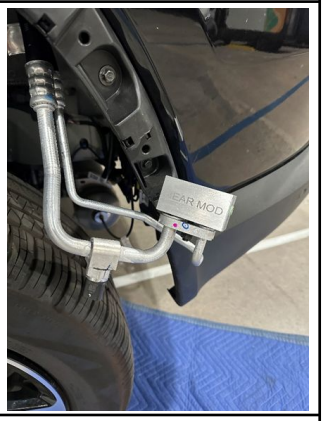
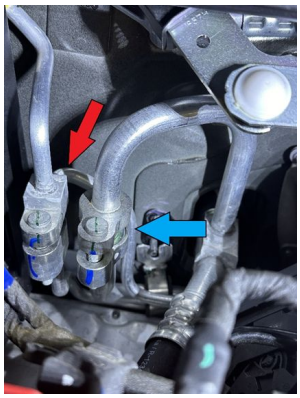
COMPONENT GUIDE

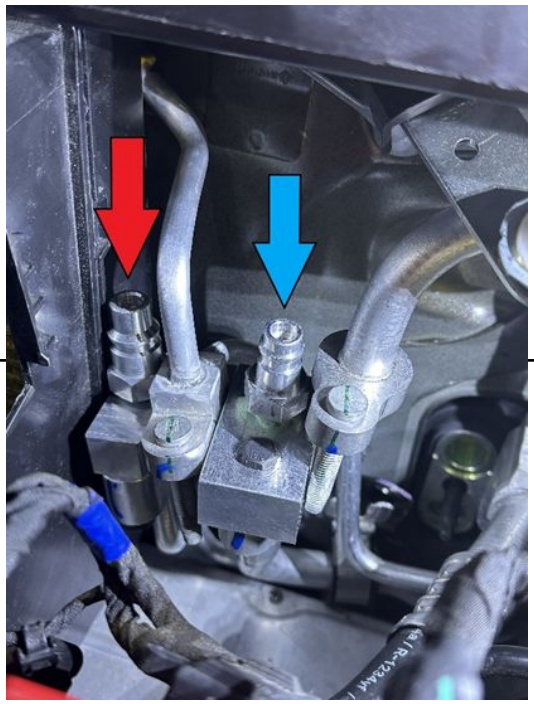
ITEM	QTY	RIVIAN TOOL ID	DESCRIPTION
1			
2			
3			

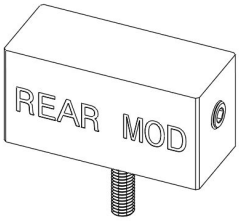
COMPONENT GUIDE

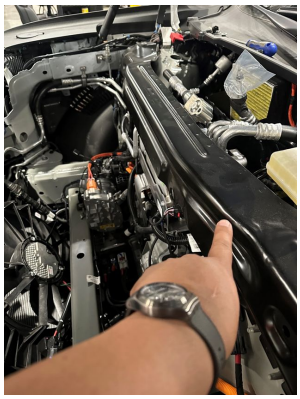
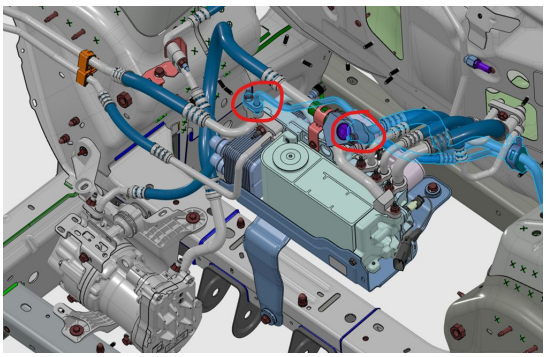
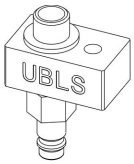
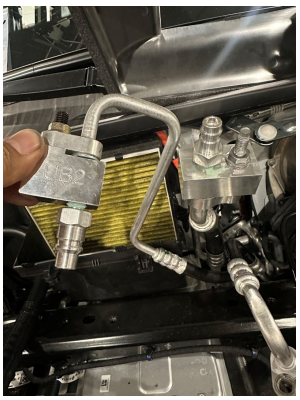
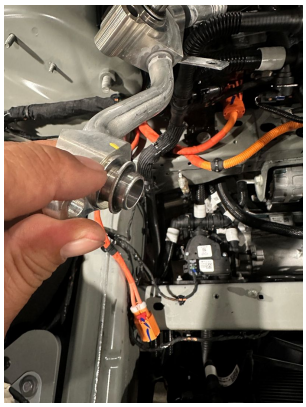
ITEM	QTY	TOOL ID (RIVIAN/SUPPLIER)	ADAPTER IDENTIFIER CODE	DESCRIPTION
1	1	TSN01500-200-A	N/A	AC FLUSH FILTER ASSEMBLY
2	1	TSN01500-201-A	UBLS	FRONT UB (UNDERBODY) LINE FLUSH ADAPTER LS (LOW SIDE), R1S
3	1	TSN01500-203-A	REAR MOD	REAR HVAC MODULE FLUSH JUMPER, R1S
4	1	TSN01500-204-A	GEN2 CLS	GEN 2 COMPRESSOR LS (LOW SIDE) FLUSH ADAPTER
5	1	TSN01500-205-A	GEN2 CHS	GEN 2 COMPRESSOR HS (HIGH SIDE) FLUSH ADAPTER
6	1	TSN01500-202-A	GEN2 UBHS	GEN 2 UB (UNDERBODY) LINE FLUSH ADAPTOR HS (HIGH SIDE), R1S
7	1	TSN01500-208-A	GEN1 UBHS	Origin Front UB Line flush Adapter HS, R1S
8	8	90374A114 McMaster	N/A	M8 X 1.25 Flange Nut
9	2	91280A090 McMaster	N/A	M8 X 1.25 X 60, Cap Screw
10	2	98689A116 McMaster	N/A	M8 Washer
11	1	Parker LLD-052 (GRAINGER) or Dena MG111 14NM CD9951	N/A	PARKER LLD-052 INLINE FILTER DRYER or DENA Filter Drier

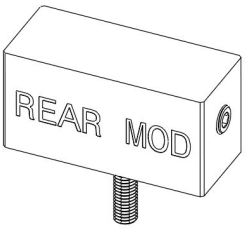
1	1. Visually inspect the complete kit for any damage that may affect tool operation 2. Inspect sightglass for any cracks. **DO NOT USE** if damaged and replace component immediately. 3. Verify operation of the shutoff valve works as intended (lever has smooth sweeping operation) 4. Verify presence of all adaptors prior to usage of the kit on the vehicle	
2	Ensure vehicle is on **2024.27.0 (Customer facing software) and newer** or **release-2024.30.0-3067d4e0 (development software) and newer** before performing the full vehicle flush. This will ensure the valves operate in each phase as required.	ONLY NEEDED FOR FULL VEHICLE FLUSH PROCEDURE
3	Perform: 264650024 Refrigerant Evacuate and Recharge	
4	Inspect the drier/filter on the AC flush kit (TSN01500-300) for the amount of flush routines it has been used on and replace as needed. Refer to SLIDE 22 for when to replace the drier/filter.	

1	Remove the x2 13mm bolts holding the rear suspension air compressor bracket to allow you to drop the rear AC line and disconnect it from the rear EVAP assembly. Disconnect the line on the driver side left at the rear EVAP assembly	
2	Once the lines are disconnected from the rear EVAP assembly, connect the two lines to:**TSN01500-203-A REAR HVAC MODULE FLUSH JUMPER, R1S.** The line only fits one way. Tighten the provided nut to secure the rear AC lines to the adapter block.	 
3	Gain access to the underbody AC lines underneath the cowl cover (next to the cabin filter housing. RED is the HIGH side BLUE is the LOW side	
4	Disconnect the upper lines to gain access to attach the adaptors	

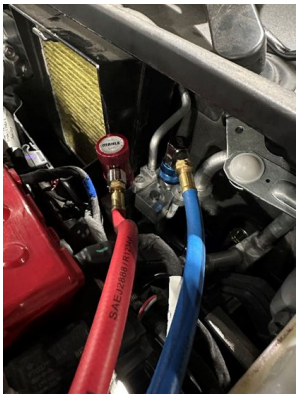
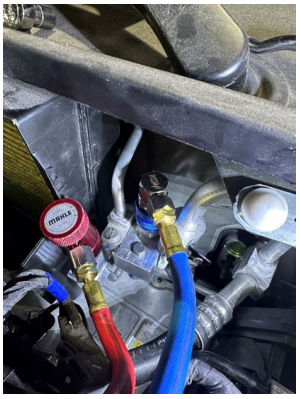
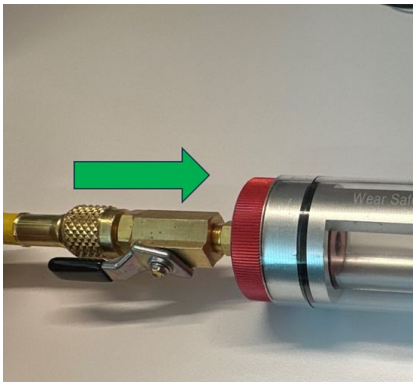
5	Use the washer on the line to connect the adaptor (GEN 1 UBHS) to ensure that there is no leak . **IMPORTANT:** replace the O-Ring **NEW SEAL:** Seal Washer 9.5mm PT00100519-A	
6	Use the washer on the line to connect the adaptor (UB1- Low Side) to ensure that there is no leak. **IMPORTANT:** replace the O-Ring **NEW SEAL:** Seal Washer 19mm PT00100521-A	
7	Connect the adaptors on the corresponding underbody lines on vehicle. BLUE is LOW SIDE (UB1 Low Side) RED is HIGH SIDE (GEN1 UBHS)	
8	For the BLUE (UB1 Low Side) use the provided long bolt (M8x1.25x60 Cap Screw), nut (M8x1.25 Flange Nut) and washer (M8 Washer) to connect the adaptor to the line. Tighten the adaptors to the underbody lines using the provided hardware.	

1	This is a separate process from the Full vehicle system flush. This DOES NOT need to be performed when you are able to run Phases 1-4 (R1S) with RiDE:	
2	This process allows you to flush only the rear AC lines on R1S to avoid having to separate the body from the frame for replacement. This is only to be used when you are not able to perform a full vehicle flush. All other major A/C components would be replaced in this case. RiDE is not needed to flush only the underbody lines on R1S.	
3	Remove the x2 13mm bolts holding the rear suspension air compressor bracket to allow you to drop the rear AC line and disconnect it from the rear EVAP assembly. Disconnect the line on the driver side left at the rear EVAP assembly	
4	Once the lines are disconnected from the rear EVAP assembly, connect the two lines **TSN01500-203-A REAR HVAC MODULE FLUSH JUMPER, R1S**. **NOTE:** The line only fits one way Tighten the provided nut to secure the rear AC lines to the adapter block.	 

5	In the front of the vehicle, remove the structural strut brace to gain access to the rear AC lines on the HVAC bundle.	
6	Once the structural strut brace is removed, disconnect the rear AC lines from the HVAC bundle assembly (circled in RED).	
7	Connect: A)**TSN01500-201-A FRONT UB (UNDERBODY) LINE ADAPTER LS (LOW SIDE), R1S** to the larger diameter hose with the stud that is on the line and B) **TSN01500-202-A GEN2 UB (UNDERBODY) LINE FLUSH ADAPTOR HS (HIGH SIDE), R1S** will connect to the smaller diameter line and tightened with the provided nut.	  
8	**TSN01500-201-A FRONT UB (UNDERBODY) LINE ADAPTER LS (LOW SIDE), R1S**, use the washer that is on the existing line to provide a seal. **IMPORTANT:** Replace with new seal on the line on the vehicle during the re-assembly process. **Washer: PT00100521-A**	

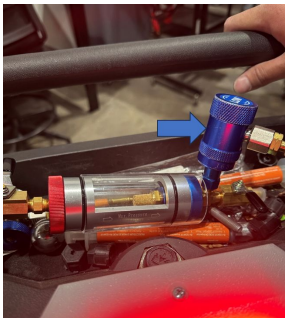
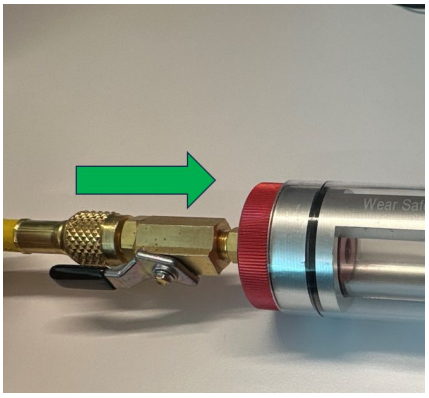
1	Disconnect High Side and Low Side AC lines from AC compressor. You may need to keep the old compressor plugged in on the HV side to perform the flush on the vehicle. Unplug any LV connectors to the compressor and ensure the HVAC system is turned off on the CID	
2	Connect **TSN01500-204-A GEN 2 COMPRESSOR LS (LOW SIDE) FLUSH ADAPTER** to Low Side line from the compressor. The compressor adaptors can only fit on specific lines based on shape and design. Tighten the adapter to the lines with the provided hardware.	 
3	Connect **TSN01500-205-A GEN 2 COMPRESSOR HS (HIGH SIDE) FLUSH ADAPTER** to High Side line from the compressor. The compressor adaptors can only fit on specific lines based on shape and design. Tighten the adapter to the lines with the provided hardware.	 
4	**R1S specific (Install prior to performing Phase 4 flush ONLY!):** Disconnect the rear AC lines from the Rear EVAP to take the rear TXV valve out of the loop. Install **TSN01500-203-A REAR HVAC MODULE FLUSH JUMPER, R1S**. Tighten the provided nut to secure the rear AC lines to the adapter block. Replace the rear EVAP assembly (R1S) after the AC flush is performed	  **This step is not applicable for R1T**

5	**NOTE:** Leave the old desiccant bag in the accumulator bundle during the flushing process to allow it to collect any debris during the flushing process. You will only replace the desiccant after the flushing process is fully completed on the vehicle	

1	Connect the **BLUE** flush line **from the AC flush kit** to **UB1 Low Side**	
2	Connect the **HP line (RED)from the AC machine** to the **GEN1 UBHS**. Open the valve on the hose by turning the knob to allow flow within the line	
3	Connect the **LP (BLUE)** line **from the AC machine** to the **BLUE** LP R1234yf connector on the Mastercool Sight glass unit. Open the valve on the **LP BLUE** hose **from the AC machine** by turning the top of the coupler to compress against the Shrader.	 
4	**OPEN** the valve on the incoming flow side (RED cap side on Mastercool sight glass) to allow refrigerant to flow through the unit. The valve lever will be straight indicating that the valve is open	

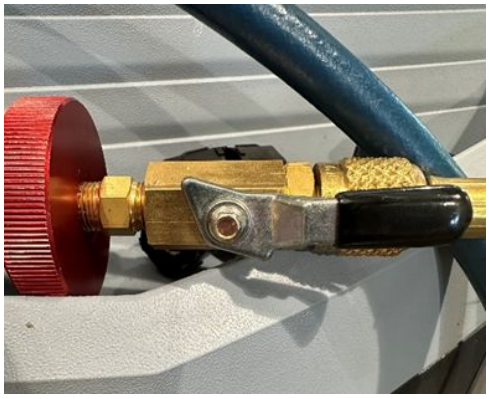
5	Once the AC machine is connected to the vehicle, you are ready to perform the line flush.	
6	**NOTE:** Flushing of the Underbody lines **DOES NOT** require the use of RiDE. You will need to follow the screen prompts on the AC machine to initiate the flush on the vehicle	
7	**NOTE:** Most AC machines will not request for a specified flush amount. • If required use 1.0 kg (2.2 lb.) to flush through the lines. • If a time is required, input 30 min flush time	**The flush procedure is 3 cycles (Mahle and Snap On units)** **DO NOT disconnect from vehicle between cycles!**
8	After the AC flush is performed on the vehicle, perform **264650024 - Refrigerant Evacuate and Recharge** to ensure that there is no refrigerant left in the vehicle whenever disconnecting AC machine and removing adaptors!	

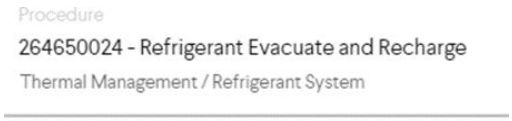
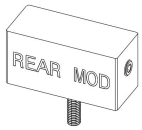
9	After the flush is performed, replace all necessary components including the **Rear EVAP assembly**. It is not possible to effectively flush the Rear EVAP assembly due to inline manual TXV valves.	

1	Connect the **HP line (RED) from the AC machine** to the **TSN01500-202-A GEN2 UB (UNDERBODY) LINE FLUSH ADAPTOR HS (HIGH SIDE), R1S** . Open the valve on the hose by turning the knob to allow flow within the line	
2	Connect the **BLUE** flush line **from the AC flush kit** to **TSN01500-201-A FRONT UB (UNDERBODY) LINE ADAPTER LS (LOW SIDE), R1S**	
3	Connect the **LP (BLUE)** line **from the AC machine** to the **BLUE** LP R1234yf connector on the Mastercool Sight glass unit. Open the valve on the **LP BLUE** hose **from the AC machine** by turning the top of the coupler to compress against the Shrader.	 
4	**OPEN** the valve on the incoming flow side (RED cap side on Mastercool sight glass) to allow freon to flow through the unit. The valve lever will be straight indicating that the valve is open	

5	Once connected on the vehicle and AC machine, you are now ready to perform the flush on the lines on the vehicle.	
6	Flushing of the Underbody lines **DOES NOT** require the use of RiDE. Follow the screen prompts on the AC machine to initiate the flush on the vehicle	
7	**NOTE:** Most AC machines will not request for a specified flush amount. if required, use 1.0 kg (2.2 lb.) to flush through the lines. If a time is required, input 30 min flush time.	**The flush procedure is 3 cycles (Mahle and Snap On Units)** **DO NOT disconnect from vehicle between cycles!**
8	After the flush is performed, replace all necessary components including the rear EVAP assembly. It is not possible to effectively flush the rear EVAP assembly due to inline manual TXV valves.	

9	After the AC flush is performed on the vehicle, perform **264650024 - Refrigerant Evacuate and Recharge** to ensure that there is no refrigerant left in the vehicle whenever disconnecting AC machine and removing adaptors!	

1	Connect the High side (RED) of the AC machine to **TSN01500-205-A GEN 2 COMPRESSOR HS (HIGH SIDE) FLUSH ADAPTER** on the vehicle.	
2	Connect the Low side (BLUE) on the **AC flush kit** to **TSN01500-204-A GEN 2 COMPRESSOR LS (LOW SIDE) FLUSH ADAPTER** on the vehicle.	
3	You will connect the **LP (BLUE)** line **from the AC machine** to the **BLUE** LP R1234yf connector on the Mastercool Sight glass unit. You will need to open the valve on the **LP BLUE** hose **from the AC machine** by turning the top of the coupler to compress against the Shrader	 
4	Ensure all couplers are open (screw down) and valve on the Sight glass is **OPEN** to allow flow through it	

5	Utilizing RiDE, run service procedure: **264651017 - Flush Refrigerant System** and follow phases and steps to actuate the valves and solenoids on the the HVAC system to flush the system.	
6	Note: This only actuates the valves and solenoids to open/close to route refrigerant in specific loops in the system. Make sure that the valve/solenoid actuation listed in each phase matches the signals in the Dashboard (bottom of the routine)	
7	**Phases 1-3** are to be performed on both R1 (T/S) with R1S needing to have **Phase 4** performed to flush the rear AC lines using **TSN01500-203-A REAR HVAC MODULE FLUSH JUMPER, R1S**. 	**Keep in mind there are 3 cycles (Mahle and Snap On units) to every phase of flush!** • Phase 1 (3 cycles) • Phase 2 (3 cycles • Phase 3 (3 cycles) • Phase 4 for R1S Only ((3 cycles) **DO NOT disconnect from vehicle between cycles!**
8	In conjunction with the RiDE routine, you will need to utilize the AC SYSTEM FLUSH routine on the AC machine being used. You will need to follow the screen prompts on the AC machine to initiate the flush on the vehicle	

9	**NOTE:** Most AC machines will not request for a specified flush amount but if they do, use **5.0 kg (11.0 lb.)** for **Phase 1, 2 and 4** to flush through the lines. **Phase 3 requires 3.0 kg (6.6lbs)**. If a time is required, input 30 min flush time.	
10	After the AC flush is performed on the vehicle, perform **264650024 - Refrigerant Evacuate and Recharge** to ensure that there is no refrigerant left in the vehicle whenever disconnecting AC machine and removing adaptors!	Procedure 264650024 - Refrigerant Evacuate and Recharge Thermal Management / Refrigerant System
11	You will need to replace the dessicant in the accumulator bundle after the flush is performed. TSN01461-300-A: R1 AC DESICCANT HOUSING REMOVAL TOOL **Be sure to lubricate the O-rings on the desiccant bag assembly prior to installation with approved POE oil**	
12	**NOTE:** Replace the rear EVAP assembly (R1S only) You cannot flush the rear EVAP assembly effectively (hence the use of the rear HVAC manifold jumper).	

Inspection and Preparation:

1. Visually inspect the complete kit for any damage that may affect tool operation
2. Inspect sightglass for any cracks. DO NOT USE if damaged and replace component immediately
3. Verify operation of the shutoff valve works as intended (lever has smooth sweeping operation)
4. Verify presence of all adaptors prior to usage of the kit on the vehicle

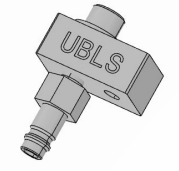
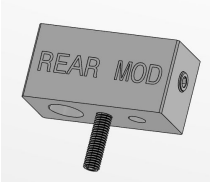
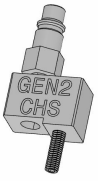
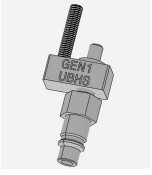
Storage:

Always return components to the appropriate location in the included case.

BASIC MAINTENANCE GUIDE

TASK	FREQUENCY
Replace inline filter Parker LLD-052 Filter Dryer can be purchased through GRAINGER	Every 8-10 Flushes 
Alternative Filter: The DENA INLINE FILTER DRYER (MG111 14NM CD9951)	Every 8-10 Flushes 
Always verify refrigerant flow through the sight glass. If you find the refrigerant is not flowing the filter may need replacement.	
NOTE: Disassembly and cleaning the inside of the sightglass is NOT needed! DO NOT disassemble the sightglass assembly!	

FOR OTHER ITEMS NOT SHOWN, CONTACT RIVIAN SERVICE TOOL ENGINEERING

ITEM	DESCRIPTION	SUPPLIER + PART NUMBER	PHOTO
1	FRONT UB LINE FLUSH ADAPTER LS, R1S	AGA TSN01500-201-A	
2	PEREGRINE FRONT UB LINE FLUSH ADAPTER HS, R1S	AGA TSN01500-202-A	
3	REAR HVAC MODULE FLUSH JUMPER, R1S	AGA TSN01500-203-A	
4	PEREGRINE COMPRESSOR LS FLUSH ADAPTER R1	AGA TSN01500-204-A	
5	PEREGRINE COMPRESSOR HS FLUSH ADAPTER ,R1	AGA TSN01500-205-A	
6	ORIGIN FRONT UB LINE FLUSH ADAPTER HS, R1S	AGA TSN01500-208-A	
7	AC DRIER FILTER	PARKER LLD-052 (GRAINGER 6X506)	

FOR OTHER ITEMS NOT SHOWN, CONTACT RIVIAN SERVICE TOOL ENGINEERING

ITEM	DESCRIPTION	SUPPLIER + PART NUMBER	PHOTO
8	M8 X 1.25 FLANGE NUT	MCMASTER 90374A114	
9	M8 X 1.25, 60mm LONG CAP SCREW	MCMASTER 91280A090	
10	M8 WASHER	MCMASTER 98689A116	

PROBLEM	SOLUTION
Flush cannot be initiated via the AC machine	● Check tank level on AC machine to ensure it is sufficient for a flush ● Check filter on AC machine for service interval
Liquid Freon is not flowing through the sight glass during the flush process	● replace in-line filter (possibly clogged) ● Make sure valve is open before the sightglass
Vacuum cannot be achieved	● Check all connections to ensure they are tight ● Make sure all screw down couplers are OPEN when doing a vacuum test
Pressure fill cannot be performed	● Check all connections to ensure they are tight ● Make sure all screw down couplers are OPEN when doing a vacuum test ● Check quantity amount used for the flush
Adapters are leaking	● Replace factory O-ring ● Check for flush mounting to surface of the adapter ● Check the securing nut for tightness

DANGER

Risk of electrocution or electric shock

WARNING

Risk of minor injury

DANGER

Risk of major injury such as

- fire
- chemical or poison
- crushing / maiming
- death

CAUTION

Risk of

- damage to vehicle or property
- data disruption
- voiding warranty

CAUTION

Risk of Pinch Point

- keep hands and fingers clear of all moving parts.

PPE REQUIRED

IMPORTANT

Instructions to successfully complete a task

NOTE

Useful information

REV	DATE	CHANGE DESCRIPTION
A	11/08/2024	Initial release