Technical Service Bulletin

Audi

87 Cleaning of the air conditioning refrigerant circuit

87 14 55 2018162/4 August 28, 2014. Supersedes Technical Service Bulletin Group 87 number 11-23 dated September 20, 2011 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
All	2004 - 2016	All	Not Applicable

Condition

REVISION HISTORY		
Revision	**Date**	**Purpose**
4	-	Revised header data (Added model years) Revised Service (Additional tools, generic description of climate systems equipped) Revised Warranty (Elimination of the warranty table for a statement on claiming requirements) Revised Parts and Tools (Additional tools)
3	9/20/2011	Revised header data (Added model years)
2	12/5/2008	Revised header data (Revised title to include Repair Group)
1	8/13/2008	Original publication

There have been repeat repairs of air conditioning system. Debris was dispersed throughout the refrigerant circuit after air conditioning component damage. During the first repair, the refrigerant circuit was not thoroughly cleaned. The debris has contaminated the new components.

Technical Background

In cases where an air conditioning system component (such as a compressor or other system component) has failed and debris from the compressor or component is circulated throughout the refrigerant circuit, the refrigerant circuit must be cleaned of any and all debris. If the refrigerant circuit is not cleaned of debris, damage to the replacement components will result.

The cleaning method, until now, has included disassembling each part of the refrigerant circuit, blowing out the debris with compressed air, and drying the components with nitrogen. This method has been ineffective for this purpose, and is labor-intensive. A more thorough and less time-consuming cleaning method is to flush the circuit with refrigerant.

Production Solution

Not applicable.

Service

Tools

ROB134APF Air Conditioning Service System with VAS 6337/1A Air Conditioning System Flushing Device (Figure 1). Used for effective refrigerant handling and air conditioning circuit flushing after air conditioning component failure.

Now air conditioning system refrigerant recovery, evacuation, recharge, *and* refrigerant circuit cleaning after component failure can be performed with a single servicing station.

Figure 1. *The ROB134APF Air Conditioning Service System with VAS 6337/1A Air Conditioning System Flushing Device.*

VAS 6338/1 Adapter Set for Refrigerant Circuits. This adapter set, along with additional adapters VAS6338/33, VAS6338/36, VAS6338/38, VAS6338/40, VAS6338/41, and VAS6338/42, contains the adapters necessary to complete a thorough flush operation of a contaminated circuit.

Elsa contains the technical information for each model regarding the necessary adapter applications and connections of the servicing station for the flush operation. See *Elsa Pro >> Heating, Ventilation Air Conditioning >> Refrigerant R134A-Servicing >> 87 Air Conditioning >> Refrigerant Circuit >> Refrigerant Circuit, Flushing with Refrigerant R134A*.

All other refrigerant recovery, evacuation and recharge operations are performed with the usual procedure specified in Elsa Pro. An operations manual will accompany each servicing station that will describe operation of the unit.

Procedure

1. If an air conditioning component has been diagnosed as the root cause of the failure and the component is suspected of releasing debris through the circuit, continue diagnosis to determine if this is the case.

2. Turn the power to the servicing station on and begin by recovering the refrigerant from the system through the

normal service fittings.

Tip: During the entire process, avoid interrupting the power to the station. The station's internal memory will keep a log of all operations and can conveniently be recalled and printed. If the power is interrupted, the station will lose the memory of the process, and the oil volume recovered, oil volume added, refrigerant volume recovered, etc. will have to be manually determined.

3. Disconnect the service hoses. The refrigerant circuit adapters will be used to bypass the following:
   - Compressor.
   - Receiver drier (depending on model).
   - Expansion valve.

   If vehicle is equipped with a restrictor, remove the restrictor and reconnect the line.

4. Once the appropriate adapters are in place, connect the service station to the vehicle through the air conditioning compressor hoses. The flushing attachment ports are labeled on the flusher (Figure 2 and Figure 3).

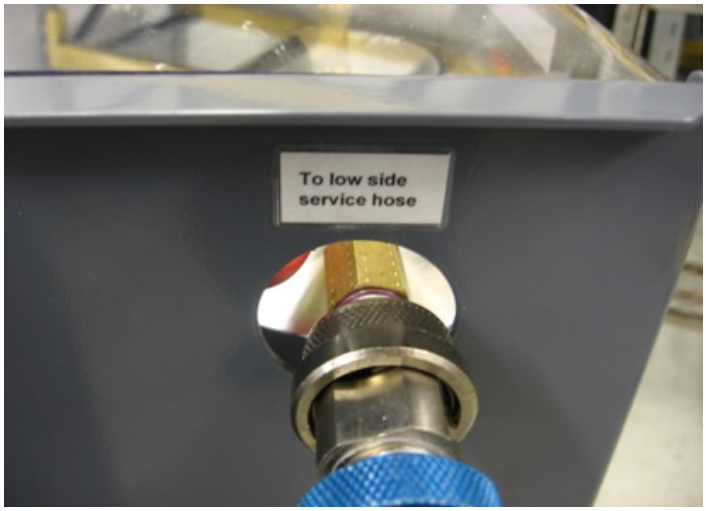

Figure 2. *A flushing attachment port.*

Figure 3. *A flushing attachment port.*

This connection strategy allows for a system flush *in the opposite* direction of the normal refrigerant flow (Figure 4).

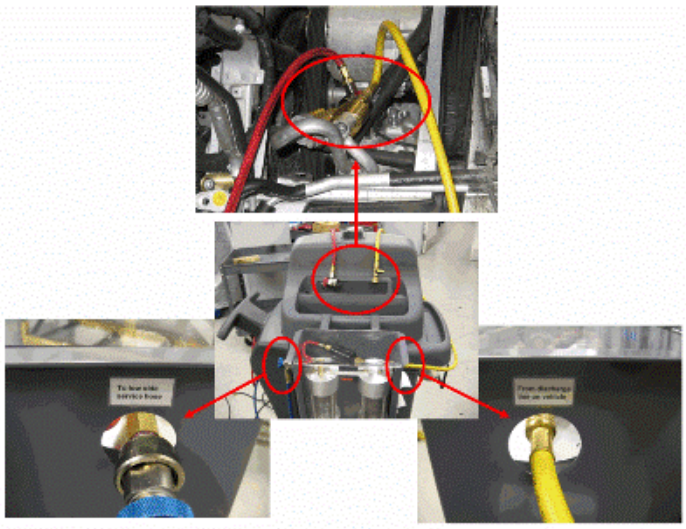

Figure 4. *Connection strategy: Vehicle to service station to flushing device.*

The flush program will begin with an evacuation of the system and a rate of rise test. This is necessary to test the integrity of the connections before the flush cycles begin. If the rate of rise test passes, the program will proceed into the flush cycles (Figure 5, Figure 6, and Figure 7). These cycles will occur automatically in succession.

Figure 5. *The first cycle.*

Figure 6. *The second cycle.*

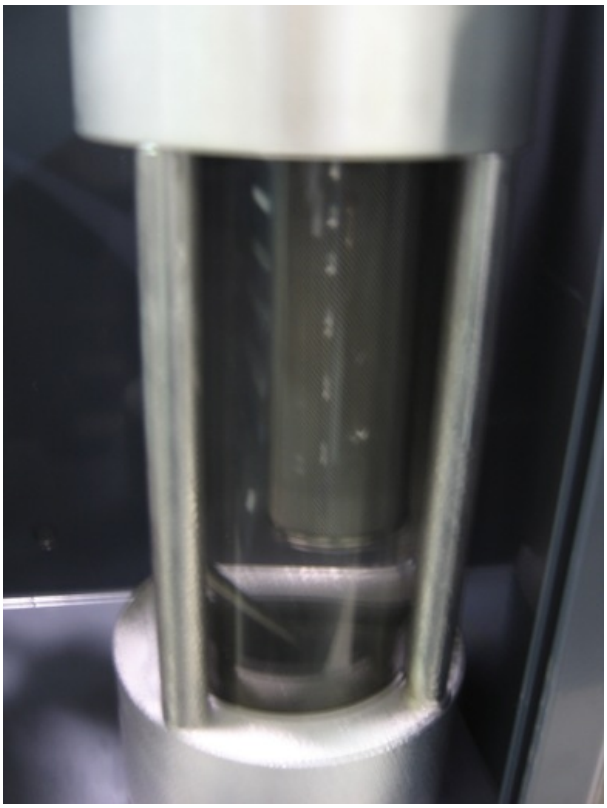

Figure 7. *The third cycle.*

The debris is then rinsed from the circuit and contained within the filtration in the flusher. After the flush program, the system will be evacuated.

5. After the system is evacuated, disconnect the station.

Vehicles with four zone climate control (two evaporator circuit)

If the vehicle is equipped with four zone climate control, the flush process will be repeated for the additional air conditioning unit in the rear according to the repair information in Elsa Pro. The following illustrations use the Audi Q7 with a four zone system as an example.

1. Separate the front and rear air conditioning systems for individual rinse operations (Figure 8).

   The refrigerant circuit adapters allow for separation of the front and rear systems for the individual rinse operations.

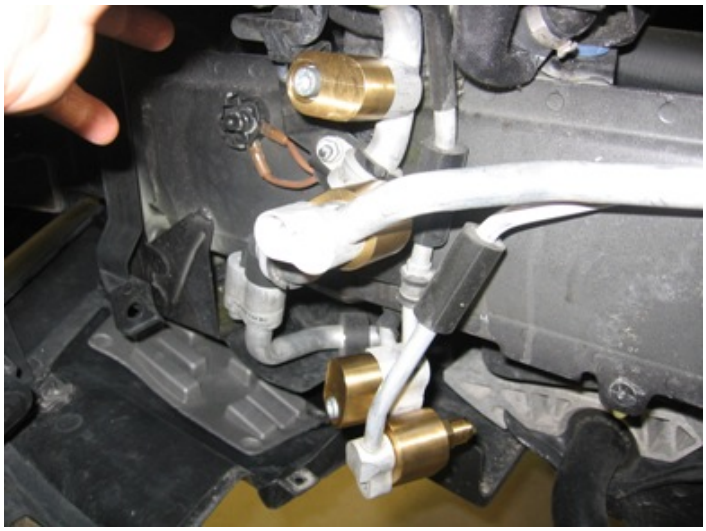

Figure 8. *The location of the connections inside the left front wheelhouse on a Q7 with four zone climate control.*

2. Bypass the rear expansion valve with an adapter Figure 9).

Figure 9. *Location of rear air conditioning unit and expansion valve.*

3. When complete, remove any adapters that were installed.
4. Install components in need of replacement.
5. Connect the station in the usual manner through the service fittings and perform the normal evacuation, oil fill, and refrigerant recharge operations.
6. Recall and print a log of the job. Attach the log to the repair order.

Warranty

This TSB is informational. Refer to Elsa for the specific repair operations, labor operations, and SRTs based on the vehicle being serviced for the documentation required in the warranty claim.

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Required Parts and Tools

Tool Number	Tool Description	Quantity
ROB134APF	 Air Conditioning Service System	1
VAS 6337/1A	 Air Conditioning System Flushing Device	1

VAS 6338/1	 Adapter set for refrigerant circuits	1
VAS6338/33	 Refrigerant circuit adapter	1
VAS6338/36	 Refrigerant circuit adapter	1

VAS6338/38	 Refrigerant circuit adapter	1
VAS6338/40	 Refrigerant circuit adapter	1
VAS6338/41	 Refrigerant circuit adapter	1
VAS6338/42	 Refrigerant circuit adapter	1

Additional Information

All parts and service references provided in this TSB (2018162) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.