

Technical Service Bulletin



87 Air conditioning does not cool and / or compressor is noisy

87 14 56 2038023/1 September 12, 2014.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A3 Sedan	2015	All	Not Applicable

Condition

- One or more of the following conditions are exhibited:
 - The air conditioning does not cool, or the cooling performance is very weak.
 - The air conditioning system cools, but the compressor is noisy. The noise is characterized as a grinding or groaning noise.
 - Either symptom may be intermittent.
- No DTCs are stored.

Technical Background

The condition may be caused by a faulty N280 valve. The internal components of the valve can be obstructed and incapable of full function. This loss of refrigerant regulation from N280 can cause noise from the air conditioning compressor and/or affect the HVAC cooling.

Production Solution

Not applicable. The root cause of the N280 valve failure is under investigation.

Service

Since either symptom may be intermittent, the diagnostic process can affect the reproducibility of the condition. Begin the diagnosis by isolating the cause before performing the basic checks.

Cases of noise:

When diagnosing cases of noise, use chassis ears or a technician's stethoscope to make sure that the root cause of the noise is from the air conditioning compressor. The noise can change or may be absent depending on the setting on the HVAC control unit. In many cases, the noise is more pronounced with the system switched off.

Cases of low or no cooling performance:

Perform the following diagnostic steps:

1. Connect a manifold gauge set to monitor the refrigerant circuit pressures.
2. With the engine at idle, switch the climate control unit to full cold and full fan.

- Using the diagnostic tester, monitor the measuring value for the air conditioner compressor regulating valve N280 signal. The actual and specified values will be plausible and will show a normal regulating range of current for cooling request (0.600 A – 0.680 A). However, there will be equalized pressure readings on the high and low sides of the circuit (no pressure generation from the compressor).
- Evacuate the refrigerant circuit to determine the refrigerant volume. The refrigerant volume will likely be in specification. Should the refrigerant volume be too low, investigate a potential refrigerant leak in the circuit. It is not likely that the refrigerant level will be too great since this should store a DTC.
- If the air conditioning compressor is found to be the root cause of either of these conditions, it will be necessary to replace it because the N280 regulating valve is not available as a replacement part apart from the compressor assembly.

Air conditioning compressor replacement:

The originally installed compressor on the MY 2015 A3 is manufactured by Sanden (Figure 1). The replacement compressor is manufactured by Denso (Figure 2).



Figure 1: Sanden compressor identification tag.



Figure 2: Denso compressor identification tag.

When replacing the original Sanden compressor with a Denso compressor, be aware that while the refrigerant volume is the same regardless of the compressor installed, the PAG oil type and volume is not. Sanden and Denso compressors have specific PAG oils that must be used. The original PAG oil that will be in the refrigerant circuit must be flushed out completely with the air conditioning service station with flushing equipment, as specified in the repair manual.



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- The flushing procedure can be found in Elsa at: Heating, Ventilation & Air Conditioning>>Refrigerant R134a Servicing>>87 Air Conditioning>>Refrigerant Circuit>>Refrigerant Circuit, Cleaning (Flushing), with Refrigerant R134a. The procedure is also described in TSB 2018162.
- The correct adapters for the 2015 A3 can be found in Elsa at: Heating, Ventilation & Air Conditioning>>Refrigerant R134a Servicing>>87 Air Conditioning>>Refrigerant Circuit>> Refrigerant Circuit, Cleaning (Flushing), with Refrigerant R134a>>Adapter for Assembling Flushing Circuit.

The replacement compressor will come with the specified type of PAG oil for the compressor (Figure 3). The amount of PAG oil supplied with the replacement compressor may not be the exact amount required to replenish the refrigerant circuit. Drain and measure the PAG oil in the replacement compressor to determine the required amount. If the amount needs to be adjusted, do so using the correct type of PAG oil specified in ETKA. Refer to Elsa for the correct oil capacity for the compressor being installed.



Figure 3: Compressor manufacturer specific PAG oils.

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Warranty

Claim Type:	Use applicable claim type. If vehicle is outside any warranty, this Technical Service Bulletin is informational only.		
Service Number:	8734		
Damage Code:	0010		
Labor Operations:	Refrigerant drain and fill	8703 1700	50 TU
	A/C compressor remove and reinstall	8734 1915	110 TU
	Front bumper cover remove and reinstall	6329 1900	90 TU
	Receiver drier replace	8755 5565	70 TU
	Expansion valve remove and reinstall	8770 1900	40 TU
	Air conditioner clean	8701 2950	110 TU
Diagnostic Time:	GFF	0150 0000	Time stated on diagnostic protocol (Max 20 TU)
	Road test prior to service procedure	0121 0002	10 TU
	Road test after service procedure	0121 0004	10 TU
	Technical diagnosis at dealer's discretion (Refer to Section 2.2.1.2 and Audi Warranty Online for DADP allowance details)		
Claim Comment:	As per TSB #2038023/1		

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

Part Number	Part Description	Quantity
ROB134APF	 <p>Robinair A/C Service Unit</p>	1
VAS 6337/1A	 <p>Air Conditioning Flush Tool</p>	1
VAS 6338/3	 <p>Refrigerant Circuit Adapter 3</p>	1

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<p>VAS 6338/12</p>	 <p>Refrigerant Circuit Adapter 12</p>	<p>1</p>
<p>VAS 6338/38</p>	 <p>Refrigerant Circuit Adapter 38</p>	<p>1</p>
<p>G 052300A2</p>	 <p>Oil for refrigerant compressor - Denso</p>	<p>0.2</p>

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G 052154A2		0.2
	Oil for refrigerant compressor - Sanden	
5Q0820803	Air conditioner compressor	1
4D0260749B	Seal ring	1
4E0260749A	Seal ring	1
8E0260749C	Seal ring	1
4E0260749B	Seal ring	1
5Q0298403	Drier insert with mounting parts	1
-or- (depending on condenser version)		
5Q0298403A	Drier insert with mounting parts	1
-or- (depending on condenser version)		
5Q0298403B	Drier insert with mounting parts	1

Additional Information

All parts and service references provided in this TSB (2038023) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.