



Sedan Range

DATE 8/97  
Amended 10/98

14-13

SERVICE

## TECHNICAL BULLETIN

### Poor Heater Performance – Coolant Specification Change – Replace Coolant **With** Heater Core

MODEL 1995-97 MY  
Sedan Range  
VIN 720001-803241

Remove and destroy Bulletin 14-13, amended 10/97.  
Replace with this Bulletin.  
Revised text is marked with a bar and in **bold text**.

#### ISSUE:

Some Sedan Range vehicles within the above VIN range which were filled with the blue-green coolant in production, may experience reduced coolant flow through the heater core as a result of deterioration of the coolant.

Starting with VIN 803242 an improved coolant Jaguar D542, which is yellow in color has been used in production to correct this condition.

#### ACTION:

In case of a customer complaint **only** of reduced heater output temperature on a Sedan Range vehicle within the above VIN range, perform the following procedure:

- Verify the Customer's concern by performing the Heater Core Coolant Circulation Test described below.
- Drain and discard the existing antifreeze as described on the next page.
- Flush out the cooling system twice with plain clean water **to prepare for heater core replacement**.
- **Then, replace** the heater core.
- Refill the cooling system, using Jaguar Antifreeze D542.

#### HEATER CORE COOLANT CIRCULATION TEST

Perform the following test to verify that the climate control system is unable to produce a heater outlet duct air temperature exceeding 40°C (104°F) before replacing the heater core.

1. Run the engine at approximately 2000 rpm until 'Normal' coolant temperature is reached.
2. Press red arrow on the climate control system panel repeatedly until the display changes to HI. Turn the fan knob clockwise until the fan speed bar graph shows the maximum fan speed.

3. Move the driver seat fully rearward, and place the probe of an electronic thermometer in the left hand footwell outlet duct, ensuring that the probe is fully in the hot air stream and not in contact with the duct (Illustration 1).

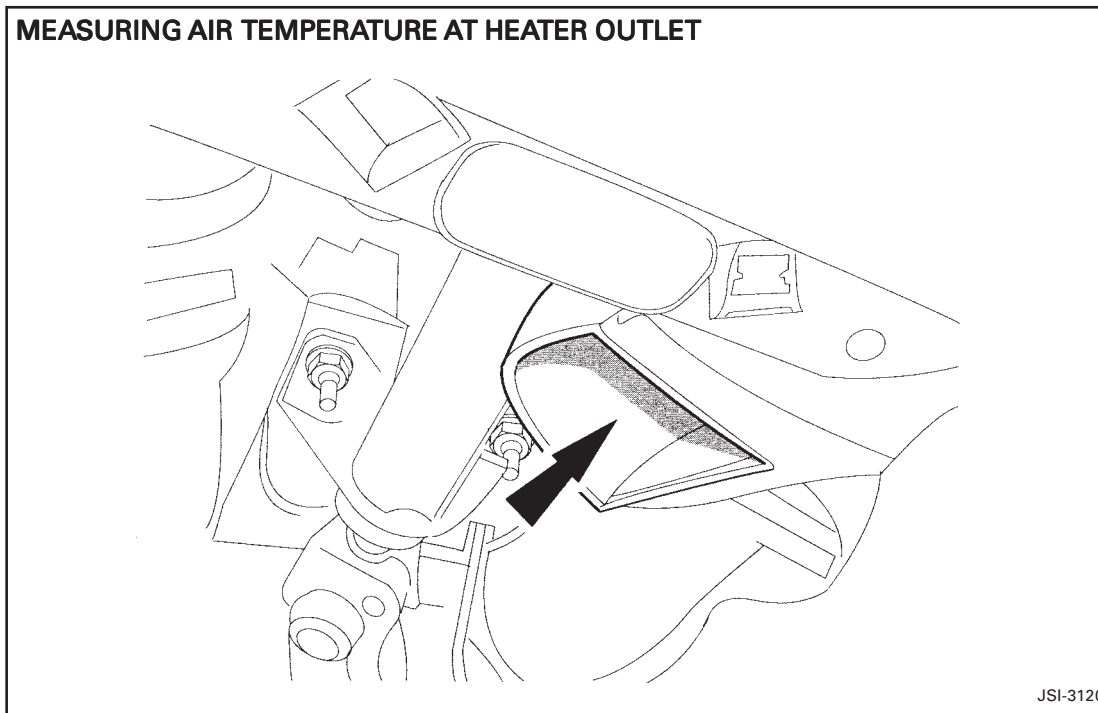


ILLUSTRATION 1

4. Maintain the engine speed at 2000 rpm, allow the temperature reading to stabilize.
5. Switch off the engine, return the seat to its normal position.  
If the output air temperature reading is **less** than 40°C (104°F), the coolant circulation rate through the heater core is unsatisfactory. Continue with **all** the procedures detailed below.  
If the output air temperature exceeds 40°C (104°F), the heater core performance is satisfactory - stop, do not continue.

#### DRAINING COOLANT AND FLUSHING THE COOLING SYSTEM

1. Drain and discard the existing coolant in the engine, radiator, and coolant reservoir, via the radiator drain plug.

**⚠ WARNING:** The coolant may be hot.

2. Loosen the hose clip and disconnect the bottom hose to assist in draining trapped coolant.
3. Reinstall the bottom hose and hose clip.
4. Refill the cooling system with PLAIN CLEAN water. Do NOT reinstall the pressure cap.

5. Start and run the engine at 2000 rpm for 5 minutes, with climate controls set to AUTO and temperature setting set to HI. Top off with plain clean water if necessary as air is purged from the cooling system.
6. Drain and discard the water as above.

 **WARNING:** The water will be hot.

7. Again refill the cooling system with **plain clean** water as above, run the engine at approximately 2000 rpm for 5 minutes with the Climate controls set as previously, and again drain the water.

 **WARNING:** The water will be hot.

8. Reinstall the radiator drain plug and reconnect the bottom hose. Do **not yet** refill the cooling system, which at this point has been drained of the original coolant, and then flushed twice with plain water. **Proceed with the “Heater Core Replacement” procedure below.**

**Note: The heater core must be replaced to perform this repair correctly. Flushing alone will not permanently clean the existing heater core.**

#### HEATER CORE REPLACEMENT

1. Disconnect the battery.
2. On the driver’s side, remove the dash liner.
3. Displace and remove the footwell outlet duct.
4. Disconnect the connectors for the steering column control modules, fascia switchpack harnesses, and instrument pack harnesses.
5. Remove the nuts and bolts at the steering column lower mounting, and the nuts at the upper mounting. Partially lower the column, remove the cruise control module and then lower the column fully, providing a suitable support.
6. Remove the screws from the heater core clamps to the heater unit.
7. Disconnect the connector to the footwell vent servo motor harness.
8. Place suitable shop towels around the core supply and return joints to absorb any remaining coolant that will spill.
9. Remove the pipe clamps, disconnect the pipes and remove and discard the O-rings. Install suitable blanking plugs in the supply and return pipes and in the core connections to prevent further spillage of remaining coolant.
10. Remove the securing screw and remove the heater core retaining plate.
11. Remove the heater core.
12. Install the replacement heater core, and reassemble in the reverse order of disassembly, paying particular care to lubricate and install the **new** O-ring seals (supplied with the heater core assembly) to the heater supply and return pipe joints.
13. After reconnecting the battery, set the clock. **Continue with the “Refilling Cooling System” procedure.**

## REFILLING COOLING SYSTEM

1. Pour in the appropriate quantity of undiluted D542 Antifreeze into the coolant reservoir:  
4.0 Liter Naturally Aspirated Models: 6.5 liters  
4.0 Liter Supercharged XJR Models: 7.0 liters  
6.0 Liter XJ12 Models: 8.75 liters  
Continue to fill the system fully, using **plain clean** water, until the level reaches MAX.
2. Without installing the coolant reservoir pressure cap, and with the Climate Control switched OFF, start and run the engine at idling speed. Check the level of coolant in the coolant reservoir as air is purged from the cooling system. Top off with plain clean water as necessary.
3. Increase the engine speed to approximately 2000 rpm to promote more rapid heating of the coolant, until normal running temperature is attained.
4. Switch the Climate Control to ON, temperature to HI and fan speed to a 'Medium' setting. Run the engine at approximately 2000 rpm for a further 4 minutes. Ensure that the heater outlet temperature at the footwell ducts is now **hot** or **very hot**.
5. Switch off the engine and allow it to stand for 1 minute. Add plain water to the coolant reservoir to bring the level to 10 mm above MAX marking. Run the engine at idling speed for 30 seconds to circulate coolant.
6. Take a coolant sample from the coolant reservoir. Using a temperature-compensated coolant tester, check that the concentration of coolant now corresponds to: 50%  $\pm$  5% Antifreeze by volume, or that the coolant provides protection to -35°C (-31°F). If necessary, drain a quantity of coolant and add antifreeze to the system to adjust the concentration.
7. Install a coolant reservoir label (Part No. MNA 7698AA) on the neck of the coolant reservoir and reinstall the filler cap.

**NOTE:** Ensure that **ONLY** Jaguar D542 antifreeze is used in any subsequent topping up, should this be necessary, on any vehicle which has been reworked by the above procedure, or where the antifreeze has been changed to D542 specification during the course of some other repair operation. Jaguar D542 antifreeze may be recognized by its **yellow** color. It is permissible to use it to top off vehicles filled with the earlier D985 antifreeze, which may be recognized by its **blue/green** color. D985 antifreeze, however, must **NEVER** be used to top off a cooling system filled with the yellow D542 solution.

## PARTS INFORMATION:

The necessary Parts should be ordered via Jaguar Parts Operations, as required.

<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>APPLICATION</u>	<u>QTY/VEH</u>	<u>PRO-RATE</u>
Heater Core	JLM 11949	All Models	1	-
Coolant reservoir Label	MNA 7698AA	All Models	1	-
D 542 Antifreeze	JLM 20404/3	4.0L NA	2 (6.5 liters)	65%
D 542 Antifreeze	JLM 20404/3	4.0L SC	2 (7.0 liters)	70%
D 542 Antifreeze	JLM 20404/3	V12	2 (8.75 liters)	88%

## WARRANTY INFORMATION:

<u>FAULT CODE</u>	<u>R.O. NUMBER</u>	<u>MODEL</u>	<u>DESCRIPTION</u>	<u>TIME ALLOWANCE</u>
JB GB 49	26.91.05	4.0L NA	Flush cooling system, <b>replace heater core,</b> install D 542 coolant	2.60 hrs.
JB GB 49	26.91.05	4.0L SC	Flush cooling system, <b>replace heater core,</b> install D 542 coolant	2.80 hrs.
JB GB 49	26.91.05	6.0L	Flush cooling system, <b>replace heater core,</b> install D 542 coolant	2.45 hrs.