

LTB00693NAS3



TECHNICAL BULLETIN

27 NOV 2017

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NOTE: The information in Technical Bulletins is intended for use by trained, professional Technicians with the knowledge, tools, and equipment required to do the job properly and safely. It informs these Technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by 'do-it-yourselfers'. If you are not a Retailer, do not assume that a condition described affects your vehicle. Contact an authorized Land Rover service facility to determine whether this bulletin applies to a specific vehicle.

INFORMATION

This reissue replaces all previous versions. Please destroy all previous versions.

Changes are highlighted in blue

SECTION:

412-01 / -03: Climate Control System

SUBJECT/CONCERN:

A/C Performance Not As Expected

AFFECTED VEHICLE RANGE:

MODEL:	MODEL YEAR:	VIN:	ASSEMBLY PLANT:
Discovery Sport (LC)	2018	722882-722883	Halewood
Discovery (LR)	2017	000532-033195	Solihull
Range Rover Evoque (LV)	2018	268471-268472	Halewood
Range Rover Velar (LY)	2018	700125-716744	Solihull
Range Rover Sport (LW)	2014	001154-001205	Solihull
Range Rover Sport (LW)	2014-2015	300003-399999	Solihull
Range Rover Sport (LW)	2014-2016	500023-599999	Solihull
Range Rover Sport (LW)	2016-2017	100000-166050	Solihull
Range Rover Sport (LW)	2015-2017	600188 Onwards	Solihull
Range Rover (LG)	2013-2017	001204-366239	Solihull
LR2 (LF)	2010-2012	165970-321214	Halewood
LR4 (LA)	2010-2016	513326-847658	Solihull
Range Rover Sport (LS)	2010-2013	215623-814822	Solihull
Range Rover (LM)	2010-2012	306627-393639	Solihull

MARKETS:

NORTH AMERICA

CONDITION SUMMARY:**SITUATION:**

One or more of the following Air Conditioning (A/C) system symptoms may be evident:

- Vent temperatures 'cycle' (blowing warm and then cold);
- Windshield, rear window, and/or door windows mist up in cool (15°C or lower) ambient temperatures;
- Poor cooling performance of the Air Conditioning (A/C) system; and/or
- Warm, damp or musty smells coming from the vents.

CAUSE:

This may be caused by the low pressure recorded on the high pressure system; high pressure recorded on the low pressure system; A/C compressor clutch (where applicable) not working properly; and/or A/C compressor electronic control valve worn out or sticking.

ACTION:

Should a customer express this concern, follow the appropriate Diagnostic Procedure -- 'A' or 'B' -- and, if necessary, Service Instruction outlined below.

PARTS:

PART NUMBER	DESCRIPTION	QUANTITY
LR061463	Compressor / Direct Pressure Sensing (DPS) Valve kit - LR2 (L359); LR4 (L319) 5.0L V8 Petrol; Range Rover Sport (L320); Range Rover (L322)	1
LR086045	Compressor / Direct Pressure Sensing (DPS) Valve kit - All other vehicles	1

TOOLS:

Refer to Workshop Manual for any required special tools.

WARRANTY:

NOTES:

- Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to JLR claims submission system to obtain the latest repair time.
- The JLR Claims Submission System requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.

DESCRIPTION	SRO	TIME (HOURS)	CONDITION CODE	CAUSAL PART
Air conditioning diagnostic allowance - All	82.90.15	0.2	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - Discovery Sport (L550)	82.30.02	0.4	63	LR061464
Direct Pressure Sensing valve - Renew - Discovery Sport (L550)	82.10.12	1.5	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - Discovery (L462)	82.30.02	0.5	63	LR061464
Direct Pressure Sensing valve - Renew - Discovery (L462) TDV6 3.0L Diesel	82.10.12	1.8	63	LR061464
Direct Pressure Sensing valve - Renew - Discovery (L462) V6 3.0L S/C Petrol	82.10.12	1.3	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - Range Rover Evoque (L538)	82.30.02	0.5	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Evoque (L538; Ingenium I4 2.0L Petrol)	82.10.12	1.5	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - Range Rover Velar (L560)	82.30.02	0.5	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Velar (L560; Ingenium I4 2.0L Diesel)	82.10.12	2.3	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Velar (L560; Ingenium I4 2.0L Petrol)	82.10.12	2.2	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Velar (L560; V6 3.0L S/C Petrol)	82.10.12	1.3	63	LR061464

DESCRIPTION	SRO	TIME (HOURS)	CONDITION CODE	CAUSAL PART
Air Conditioning - Recover, Recycle And Recharge System - Range Rover Sport (L494)	82.30.02	0.5	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Sport (L494; TDV6 3.0L Diesel)	82.10.12	2.1	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Sport (L494; V8 5.0L Petrol)	82.10.12	1.1	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover Sport (L494; V6 3.0L S/C Petrol)	82.10.12	1.1	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - Range Rover (L405)	82.30.02	0.5	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover (L405; TDV6 3.0L Diesel)	82.10.12	2.5	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover (L405; V8 5.0L Petrol)	82.10.12	1.1	63	LR061464
Direct Pressure Sensing valve - Renew - Range Rover (L405; V6 3.0L S/C Petrol)	82.10.12	1.1	63	LR061464
Air Conditioning - Recover, Recycle And Recharge System - LR2 (L359; up to 2012MY)	82.30.02	0.9	63	LR061463
Direct Pressure Sensing valve - Renew - LR2 (L359)	82.10.12	1.1	63	LR061463
Air Conditioning - Recover, Recycle And Recharge System - LR4 (L319)	82.30.02	1.1	63	LR061463
Direct Pressure Sensing valve - Renew - LR4 (L319; V6 3.0L S/C Petrol)	82.10.12	2.7	63	LR061464
Direct Pressure Sensing valve - Renew - LR4 (L319; V8 5.0L Petrol)	82.10.12	2.8	63	LR061463
Air Conditioning - Recover, Recycle And Recharge System - Range Rover Sport (L320)	82.30.02	1.1	63	LR061463
Direct Pressure Sensing valve - Renew - Range Rover Sport (L320)	82.10.12	3.0	63	LR061463
Air Conditioning - Recover, Recycle And Recharge System - Range Rover (L322)	82.30.02	0.5	63	LR061463

DESCRIPTION	SRO	TIME (HOURS)	CONDITION CODE	CAUSAL PART
Direct Pressure Sensing valve - Renew - Range Rover (L322; V8 5.0L Petrol)	82.10.12	3.8	63	LR061463
Direct Pressure Sensing valve - Renew - Range Rover (L322; V8 5.0L S/C Petrol)	82.10.12	3.7	63	LR061463

NOTE:

Normal Warranty procedures apply.

DIAGNOSTIC PROCEDURE 'A': SDD

This Diagnostic Procedure is only for vehicles requiring the Jaguar Land Rover-approved diagnostic tool with Symptom Driven Diagnostics (SDD).

CAUTION:

A Jaguar Land Rover-approved Midtronics battery power supply must be connected to the vehicle battery during diagnosis / module programming.

- 1 Connect the Jaguar Land Rover-approved Midtronics battery power supply to the vehicle battery.

2

NOTE:

The Jaguar Land Rover-approved diagnostic tool must be loaded with DVD151.04 Calibration File 282 (or later).

Connect the Jaguar Land Rover-approved diagnostic tool to the vehicle and begin a new session.

3

NOTE:

The Jaguar Land Rover-approved diagnostic tool will read the correct Vehicle Identification Number (VIN) for the current vehicle and automatically take the vehicle out of 'Transportation mode' if required.

Follow all on-screen instructions, allowing the diagnostic tool to read the VIN, identify the vehicle, and initiating the data collect sequence.

-
- 4 Select **Measurement Applications** from the Session Type screen.

 - 5 Run the '**Complete vehicle - datalogger**' option.

 - 6 Select **412-00 Climate control system**.

 - 7 Select and monitor the following datalogger signals:
 - '**Evaporator temperature**'
 - '**Compressor/Motor current**'

Detailed Diagnostic Information: note the following when monitoring the diagnostic information:

Condition 1

PID	RESULT
Evaporator temperature - 995A	Reading up to 8°C
Compressor/motor current - 99AB	Value increasing

Condition 2

PID	RESULT
Evaporator temperature - 995A	Reading -4°C or below
Compressor/motor current - 99AB	Value decreasing to 0 mA

- 8 If any of the conditions in the Detailed Diagnostic Information tables above are identified, go to Step 9.
- If none of the above conditions are identified, go to Step 10.

9

NOTE:

If the Air Conditioning (A/C) system has lost more than 50g of refrigerant, the root cause of the leak must be investigated (as a separate claim [see TOPIx Workshop Manual section 412-00: Climate control system - General information - Diagnosis and testing - Climate control system]).

Recover the Air Conditioning (A/C) system (see TOPIx Workshop Manual section 412-00: Climate Control System - General Information - Air Conditioning System Recovery, Evacuation and Charging).

- 1 Record the total refrigerant recovered from the A/C system.
- 2 Compare the quantity of refrigerant recovered against the vehicle specifications (see TOPIx Workshop Manual section 412-00: Climate Control System - General Information - Specification).
 - If the A/C system has lost more than 50g of refrigerant, recharge the system and repeat the appropriate Diagnostic Procedure.
 - If the A/C has lost less than 50g of refrigerant, go to the Service Instruction below.

10 Exit the current session.

- 1 Select the **Session** tab.
- 2 Select the **Close Session** option.

11 Disconnect the diagnostic tool and battery power supply from the vehicle.

DIAGNOSTIC PROCEDURE 'B': PATHFINDER

This Diagnostic Procedure is only for vehicles requiring the Jaguar Land Rover-approved diagnostic tool with PATHFINDER.

CAUTION:

A Jaguar Land Rover-approved Midtronics battery power supply must be connected to the vehicle battery during diagnosis / module programming.

-
- 1 Connect the Jaguar Land Rover-approved Midtronics battery power supply to the vehicle battery.

2

NOTE:

The Jaguar Land Rover-approved diagnostic tool must be loaded with PATHFINDER version 114 (or later).

Connect the Jaguar Land Rover-approved diagnostic tool to the vehicle and begin a new session.

3

NOTE:

The Jaguar Land Rover-approved diagnostic tool will read the correct Vehicle Identification Number (VIN) for the current vehicle and automatically take the vehicle out of 'Transportation mode' if required.

Follow all on-screen instructions.

-
- 4 Select **ECU Diagnostics**.

-
- 5 Select **HVAC Control Module (HVAC)**.

6 Select **Live data**.

7 Select the following signals:

- 'Evaporator temperature'
 - 'Compressor/Motor Current'
-

8 Select **Start graphical** to monitor the selected signals.

Detailed Diagnostic Information: note the following when monitoring the diagnostic information:

Condition 1

PID	RESULT
Evaporator temperature - 995A	Reading up to 8°C
Compressor/motor current - 99AB	Value increasing

Condition 2

PID	RESULT
Evaporator temperature - 995A	Reading -4°C or below
Compressor/motor current - 99AB	Value decreasing to 0 mA

9 If any of the conditions in the Detailed Diagnostic Information tables above are identified, go to Step 10.

- If none of the above conditions are identified, go to Step 11.
-

10

NOTE:

If the Air Conditioning (A/C) system has lost more than 50g of refrigerant, the root cause of the leak must be investigated (as a separate claim [see TOPIx

Workshop Manual section 412-00: Climate control system - General information - Diagnosis and testing - Climate control system]).

Recover the Air Conditioning (A/C) system (see TOPIx Workshop Manual section 412-00: Climate Control System - General Information - Air Conditioning System Recovery, Evacuation and Charging).

- 1 Record the total refrigerant recovered from the A/C system.
- 2 Compare the quantity of refrigerant recovered against the vehicle specifications (see TOPIx Workshop Manual section 412-00: Climate Control System - General Information - Specification).
 - If the A/C system has lost more than 50g of refrigerant, recharge the system and repeat the appropriate Diagnostic Procedure.
 - If the A/C has lost less than 50g of refrigerant, go to the Service Instruction below.

11 Exit the current session.

- 1 If required, reset the vehicle to **Transit mode**.
- 2 Select the **Exit** icon.

12 Disconnect the diagnostic tool and battery power supply from the vehicle.

SERVICE INSTRUCTION:

- 1 Remove the Air Conditioning (A/C) compressor:
 - 1 **LR4 (L319), Range Rover Sport (L320), Range Rover (L322):** (see TOPIx Workshop Manual section 412-03: Air conditioning - Removal and installation - Air conditioning compressor).
 - 2 **LR2 (L359), Discovery Sport (L550), Discovery (L462), Range Rover Evoque (L538), Range Rover Velar (L560), Range Rover Sport (L494), Range Rover**

(L405): (see TOPIx Workshop Manual, section 412-01: Air conditioning - Removal and installation - Air conditioning compressor).

2 Place the A/C compressor on a clean flat work surface.

3

NOTE:

Make sure to avoid foreign materials entering the Direct Pressure Sensing valve hole on the cylinder head when removed.



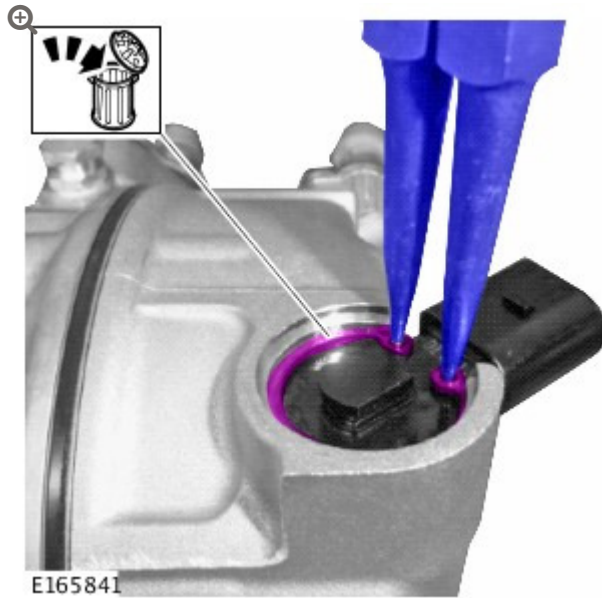
E165840

Using compressed air or similar, remove all foreign materials from around the Direct Pressure Sensing valve A/C compressor cylinder head.

4

CAUTION:

Do not damage the circlip housing in the A/C compressor cylinder head.

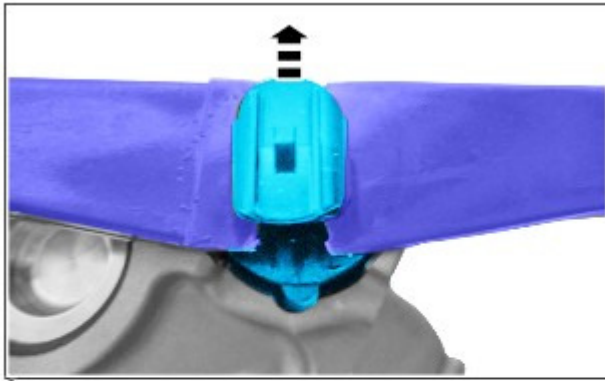


Use a suitable tool to remove and discard the circlip that retains the Direct Pressure Sensing valve in the A/C compressor cylinder head.

5

CAUTION:

Do not damage the housing in the A/C compressor cylinder head.



Use suitable tools to release the Direct Pressure Sensing valve.

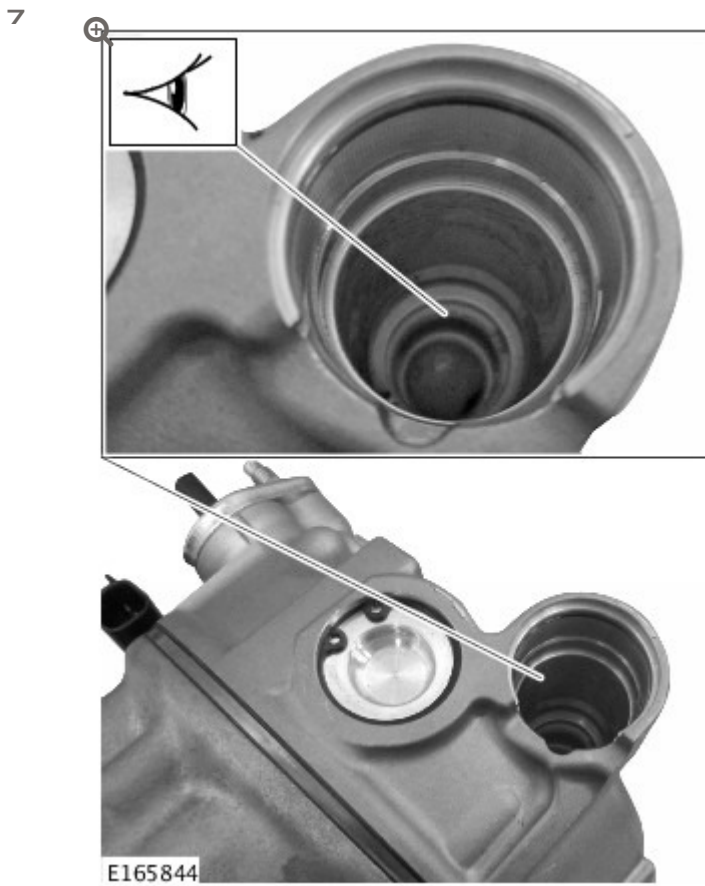
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CAUTION:

Take care to remove the Direct Pressure Sensing valve in a vertical direction to avoid damage to the inside wall of the A/C compressor cylinder head.

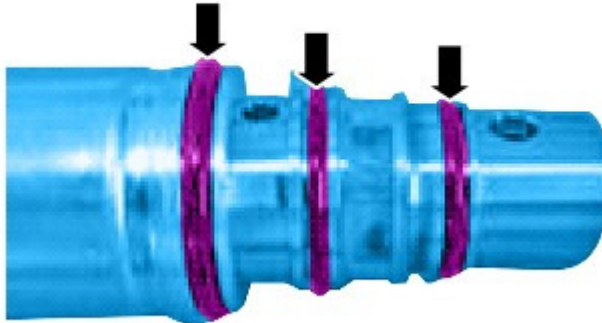


Remove and discard the Direct Pressure Sensing valve.



Inspect the inside wall of the A/C compressor cylinder head for scratches, scoring, or foreign material.

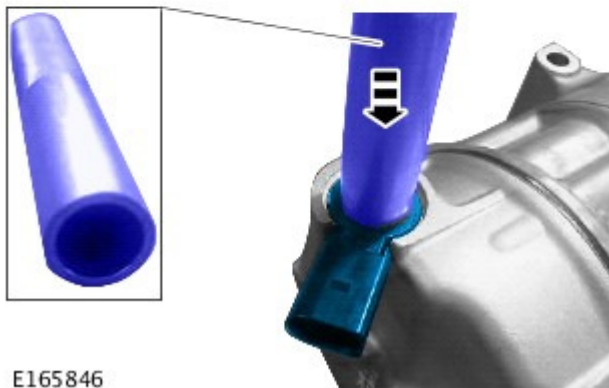
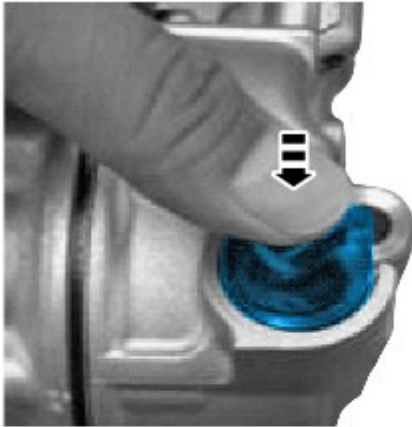
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Apply compressor oil (Polyalkylene Glycol (PAG SPA2 oil) to the O-ring seals on the new Direct Pressure Sensing valve.

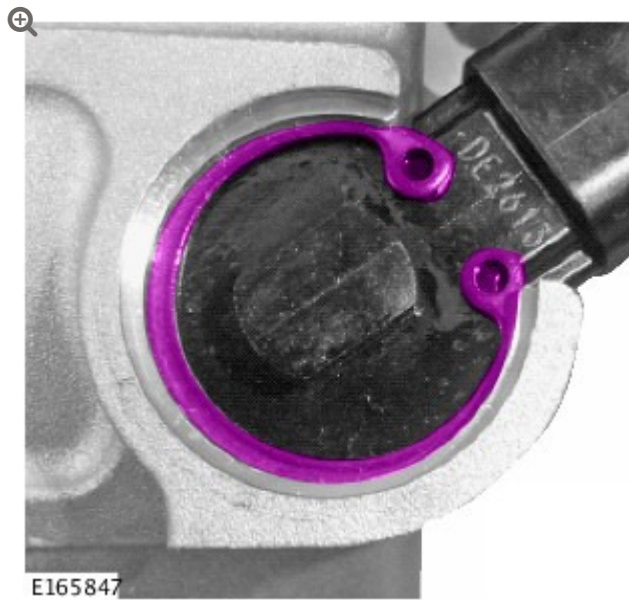
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E165846

Install the Direct Pressure Sensing valve.

- 1 Apply downward pressure by hand.
 - If required, use a suitable tool to press fully into position to allow installation of the new circlip.



Use a suitable tool to install the new circlip supplied in the kit.

11 Install the A/C compressor:

- 1 LR4 (L319), Range Rover Sport (L320), Range Rover (L322):** (see TOPIx Workshop Manual section 412-03: Air conditioning - Removal and installation - Air conditioning compressor).
- 2 LR2 (L359), Discovery Sport (L550), Discovery (L462), Range Rover Evoque (L538), Range Rover Velar (L560), Range Rover Sport (L494), Range Rover (L405):** (see TOPIx Workshop Manual, section 412-01: Air conditioning - Removal and installation - Air conditioning compressor).

12 Repeat the appropriate Diagnostic Procedure to confirm the issue is resolved.