

TECHNICAL TOPICS

BODY/CHASSIS



Air Conditioning Operation

16 - 21MY Range Rover, RR Sport

Customer Voice:

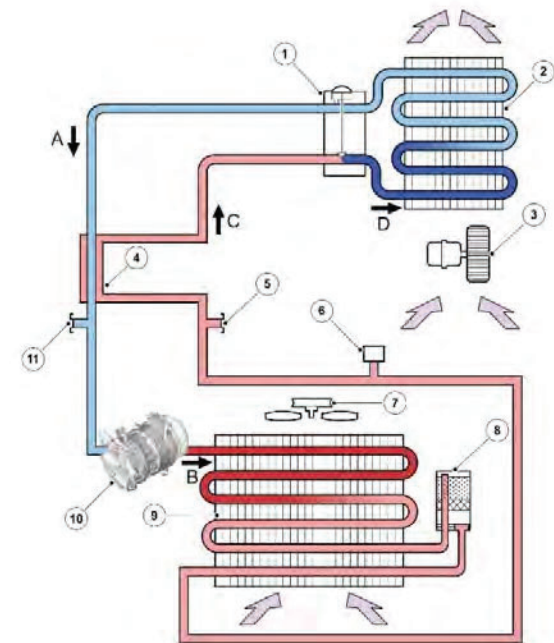
- A customer may report the air conditioning system is not cooling properly.

Technical Description:

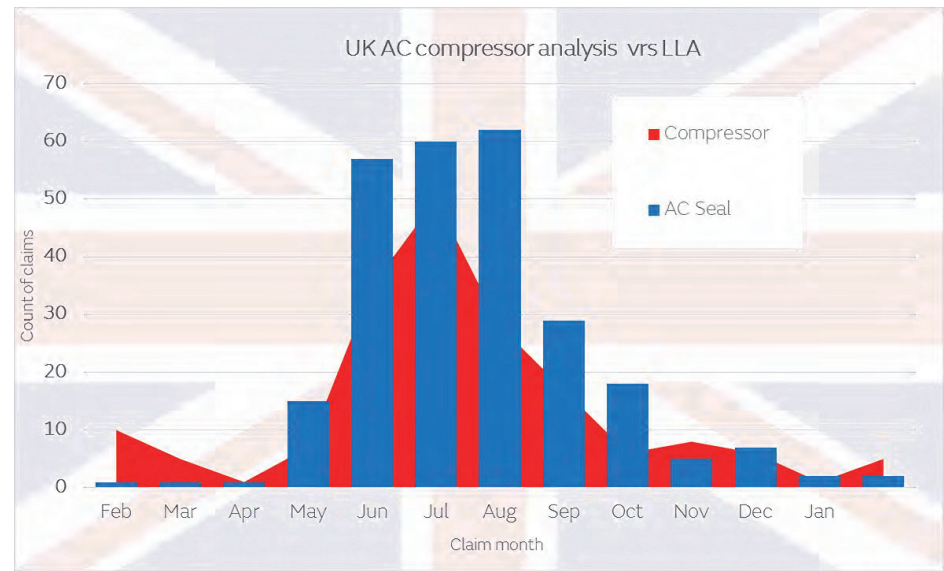
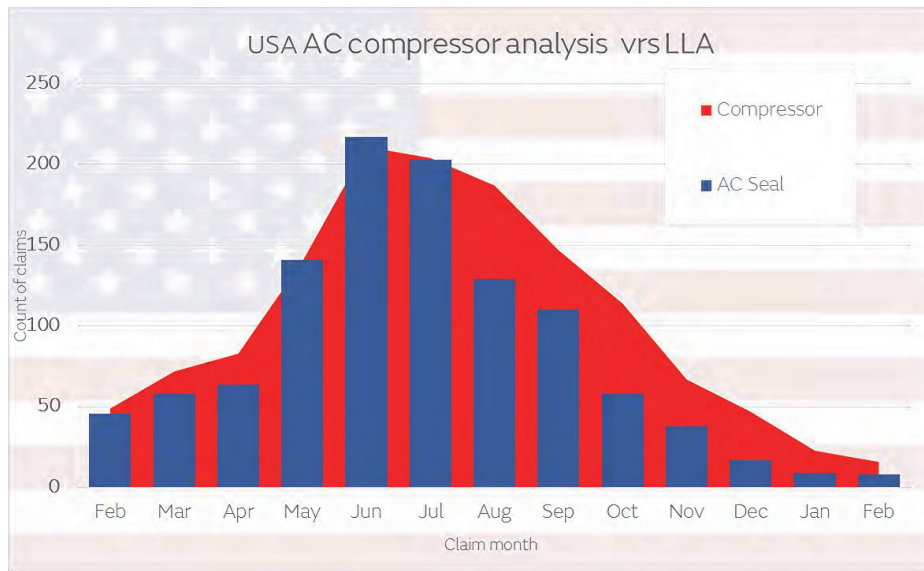
- This may be caused by a vehicle that is in a low state of refrigerant charge or compressor control solenoid fault.
- A/C compressor have been replaced and return of the compressors for analysis has found no fault with the compressor unit.

Status:

- **Guided Diagnostics** has been updated and symptom driven pinpoint tests are available on **TOPIx> Workshop Manual> Section 412-00> Diagnosis and Testing** to aid in properly diagnosing HVAC system performance concerns and should be followed to ensure a correct first time diagnosis/ repair is made.
- If further support is required, please submit a TA case so diagnostic support can be provided.



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- The amount of air conditioning compressor replacements versus low level air conditioning repairs in the USA market is much higher than other markets globally.
- The utilization of Guided Diagnostics for air conditioning related repairs is much lower than other markets globally.
- If this trend continues, air conditioning compressors will be placed on FRED and require prior approval before a compressor can be replaced under warranty.



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The Workshop Manual Diagnosis & Testing Section has been enhanced to assist proper diagnosis of air conditioning related concerns.

Microsoft Office Home | WSM-38064 - Workshop manual | topic.landrover.jirex.com/topic/content/document/view?d=993143&groupId=1577#GZ797674:GZ97675151926

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WSM-38064 - Workshop manual Range Rover (LG) 2020

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No refrigerant in air conditioning system (no pressure registered on gauges)	<ul style="list-style-type: none"> Refrigerant leak: <ul style="list-style-type: none"> Charge point caps/valves Compressor inlet connection seal Compressor outlet connection seal Air conditioning pipes Air conditioning pipe flare or crimp Compressor to bulkhead pipe seal Bulkhead to condenser pipe seal Condenser to compressor pipe seal Receiver Drier seals: <ul style="list-style-type: none"> Refrigerant pressure sensor seal Internal heat exchanger (if installed) Evaporator inlet pipe seal Evaporator outlet pipe seal Thermostatic expansion valve pipe seals Compressor casting joints, shaft seal, electronic control valve 	<p>NOTES:</p> <ul style="list-style-type: none"> If there is a leak evident in the air conditioning system, all seals, pipe joints and unions must be checked before condemning the air conditioning compressor. Make sure the system is depressurized before disconnecting any system pipe work or connections. Lubricate the seals prior to installation. <p>GO to Pinpoint TestA.</p>
Air conditioning compressor clutch not engaging / Air conditioning pressures not changing	<ul style="list-style-type: none"> Check the air conditioning compressor clutch operation. Air conditioning compressor clutch circuit short circuit to ground, open circuit, high resistance Clutch solenoid fault Pressure sensor fault or reading incorrect Refrigerant undercharged 	<ul style="list-style-type: none"> Using the Jaguar Land Rover approved diagnostic equipment, check the following datalogger signal: <ul style="list-style-type: none"> Air Conditioning Status - Air Conditioning Clutch Engaged (D6807) Refer to the electrical circuit diagrams and check the air conditioning compressor clutch circuit for short circuit to ground, open circuit, high resistance. Repair the wiring harness as necessary. GO to Pinpoint TestB.
Both high and low pressure system pressure gauges read too low	<ul style="list-style-type: none"> Refrigerant undercharged Low pressure pipe damaged/restricted 	<ul style="list-style-type: none"> GO to Pinpoint TestC.
Air conditioning inoperative (no change in pressure when setting the air conditioning to on)	<ul style="list-style-type: none"> Climate control system fault Air conditioning compressor clutch circuit short circuit to ground, short circuit to power, open circuit, high resistance Air conditioning compressor internal failure 	<ul style="list-style-type: none"> Using the Jaguar Land Rover approved diagnostic Equipment, check the HVAC control module for related DTCs and refer to the relevant DTC index. Refer to the electrical circuit diagrams and check the air conditioning compressor clutch circuit for short circuit to ground, short circuit to power, open circuit, high resistance. Repair the wiring harness as necessary. GO to Pinpoint TestB.
Air conditioning operates briefly on 'Low' / Low setting and then switches	<ul style="list-style-type: none"> Electric cooling fan inoperative 	<ul style="list-style-type: none"> Using the Jaguar Land Rover approved diagnostic equipment, check the powertrain control module and HVAC control module for related DTCs and refer to the relevant DTC index.

