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2020.0 DEFENDER (LE), 310-03B

SPEED CONTROL - INGENIUM I6 3.0L PETROL (G2417008)

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PRINCIPLES OF OPERATION

For a detailed description of the Speed Control system, refer to the relevant Description and Operation section in the workshop manual. REFER to: [Speed Control](#) (310-03A Speed Control - INGENIUM I4 2.0L Petrol/INGENIUM I4 2.0L Petrol - PHEV, Description and Operation).

INSPECTION AND VERIFICATION

 CAUTION:

Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault, and may also cause additional faults in the vehicle being tested and/or the donor vehicle.

 NOTES:

- If a control module or a component is not to specification and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval program is in operation, prior to the installation of a new module/component.
- Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the Jaguar Land Rover approved diagnostic equipment).
- When performing voltage or resistance tests, always use a digital multimeter that has the resolution ability to view 3 decimal places. For example, on the 2 volts range can measure 1 mV or 2 kΩ range can measure 1 Ω. When testing resistance always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.
- Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.
- If Diagnostic Trouble Code(s) (DTC)s are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.

1. Verify the customer concern
2. Visually inspect for obvious signs of damage and system integrity

Visual Inspection

MECHANICAL	ELECTRICAL
■ Cruise control module (CCM) ■ Front radiator grille ■ Obstructions to the cruise control module (for example rain, ice, mud or after market accessories)	■ Fuses ■ Wiring harnesses and connectors ■ Cruise control module (CCM) ■ Steering wheel switches ■ Brake pedal switch ■ Accelerator pedal position sensor ■ Electric throttle

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step
4. If the cause is not visually evident, verify the symptom and refer to the Symptom Chart, alternatively check the Cruise Control Module (CCM) for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index REFER to: [Diagnostic Trouble Code Index - DTC: Cruise Control Module \(CCM\)](#) (100-00 General Information, Description and Operation).
5. Check JLR claims submission system for open campaigns. Refer to the corresponding bulletins and SSMs which may be valid for the specific customer complaint and complete the recommendations as required

CRUISE CONTROL MODULE (CCM) ADJUSTMENT (VEHICLES WITH ADAPTIVE SYSTEM INSTALLED)



NOTES:

- If there are no DTCs set in the CCM, contact Jaguar Land Rover technical assistance before replacing the CCM
- If any DTCs are set that indicate a fault with the speed sensor/radar or with the adaptive cruise control system both the adaptive cruise control module sensor and the front radiator grille should be inspected for damage. If damage is evident to either the sensor or the front radiator grille, the damaged component should be replaced
- If a new cruise control module (CCM) is installed, make sure that the sensor is aligned after installation as described in the adaptive cruise control module sensor adjustment procedure. Make sure that all diagnostic trouble codes (DTCs) have been cleared/resolved following the road test

An incorrectly aligned cruise control module can cause incorrect system operation. Before starting any repair work on the speed control system, on vehicles with the adaptive system installed, check adaptive cruise control module sensor for correct vertical and horizontal alignment, and complete the cruise control module adjustment procedure using the "Activate Forward Radar Service Alignment" application which can be accessed through Pathfinder (ECU Diagnostics > Cruise Control Module (CCM) > ECU Functions.

For a detailed description of the cruise control module (CCM) adjustment procedure, refer to the relevant sections in the workshop manual. REFER to: [Cruise Control Module Adjustment](#) (310-03B Speed Control - INGENIUM I6 3.0L Petrol, General Procedures).

SYMPTOM CHART

SYMPTOM	POSSIBLE CAUSES	ACTION
Speed control inhibited or disabled	- Adaptive cruise control module power or ground circuit open circuit, high resistance - Steering wheel right switchpack switches faulty or switchpack circuit (s) short circuit to ground, short circuit to power, open circuit, high resistance - Brake pedal switch fault - Engine system fault - Anti-lock brake system fault	- Refer to the electrical circuit diagrams and check the adaptive cruise control module power and ground circuits for open circuit, high resistance. Repair the wiring harness as necessary - Check the operation and integrity of the steering wheel right switchpack switches and rectify as required. Refer to the electrical circuit diagrams and check the steering wheel right switchpack circuit(s) for short circuit to ground, short circuit to power, open circuit, high resistance. Repair the wiring harness as necessary. Using the Jaguar Land Rover approved diagnostic equipment, check the body control module for related DTCs and refer to the relevant DTC index - Check the operation and integrity of the brake pedal switch and rectify as required. Refer to the electrical circuit diagrams and check the brake pedal switch circuit for short circuit to ground, short circuit to power, open circuit, high resistance. Repair the wiring harness as necessary - Using the Jaguar Land Rover approved diagnostic equipment, check the powertrain control module for related DTCs and refer to the relevant DTC index - Using the Jaguar Land Rover approved diagnostic equipment, check the anti-lock brake system control module for related DTCs and refer to the relevant DTC index
Unable to regulate/adjust vehicle speed	Steering wheel right switchpack switches faulty or switchpack circuit (s) short circuit to ground, short circuit to power, open circuit, high resistance	Check the operation and integrity of the steering wheel right switchpack switches and rectify as required. Refer to the electrical circuit diagrams and check the steering wheel right switchpack circuit(s) for short circuit to ground, short circuit to power, open circuit, high resistance. Repair the wiring harness as necessary. Using the Jaguar Land Rover approved diagnostic equipment, check the body control module for related DTCs and refer to the relevant DTC index
Unable to cancel speed control from steering wheel	Steering wheel right switchpack switches faulty or switchpack circuit (s) short circuit to ground, short circuit to power, open circuit, high resistance	Check the operation and integrity of the steering wheel right switchpack switches and rectify as required. Refer to the electrical circuit diagrams and check the steering wheel right switchpack circuit(s) for short circuit to ground, short circuit to power, open circuit, high resistance. Repair the wiring harness as necessary. Using the Jaguar Land Rover approved diagnostic equipment, check the body control module for related DTCs and refer to the relevant DTC index
Unable to cancel speed control from brake pedal	Brake pedal switch installed incorrectly	- Check the brake pedal switch installation. Rectify as necessary - Check the brake pedal switch adjustment. Rectify as necessary

SYMPTOM	POSSIBLE CAUSES	ACTION
	■ Brake pedal switch maladjusted ■ Brake pedal switch circuit short circuit to ground, short circuit to power, open circuit, high resistance	■ Using the Jaguar Land Rover approved diagnostic equipment, check the anti-lock brake system control module for related DTCs and refer to the relevant DTC index
■ Adaptive cruise control not available, autonomous emergency braking not available, forward alert not available over 80 km/h (50 mph), DTCs C1A67-78 or C1A67-54 set in the cruise control module or minor damage to the front bumper	■ The front radiator grille may be damaged in the case of a minor collision. This means that it can be susceptible to minor collisions with walls, fences or bollards	 NOTE: Pathfinder guided diagnostics will be updated to run the orientation check when DTCs C1A67-78 or C1A67-54 are in the cruise control module ■ Check the front radiator grille for damage, straightness and correct mounting. Refer to the relevant section of the workshop manual and check the adaptive cruise control module adjustment. REFER to: Cruise Control Module Adjustment (310-03B Speed Control - INGENIUM I6 3.0L Petrol, General Procedures).

DTC INDEX

For a list of Diagnostic Trouble Codes (DTCs) that could be set on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code Index - DTC: Cruise Control Module \(CCM\)](#) (100-00 General Information, Description and Operation).