PUBLISHED: 11-MAY-2011 2017.0 F-TYPE (X152), 100-00

GENERAL INFORMATION

ABOUT THIS MANUAL (G836098)

DESCRIPTION AND OPERATION

INTRODUCTION

This manual covers diagnosis and testing and repair procedures.

It is structured into groups and sections, with specific system sections collected together under their relevant group.

A group covers a specific portion of the vehicle. The manual is divided into five groups, General Information, Chassis, Powertrain, Electrical and Body and Paint. The number of the group is the first number of a section number.

Within Etis, the navigation tree will list the groups. After selecting a group the navigation tree will then list the sections within that group. Each section has a contents list detailing Specifications, Description and Operation, Diagnosis and Testing, General Procedures, Disassembly and Assembly, Removal and Installation.

REFERENCES TO LH (LEFT-HAND) AND RH (RIGHT-HAND)

All LH and RH references to the vehicle are taken from a position sitting in the driver seat looking forward.

Vehicle LH and RH definition



ITEM	DESCRIPTION
1	LH
2	RH

All LH and RH references to the engine are taken from a position at the flywheel looking towards the crankshaft front pulley.

Powertrain LH and RH definition

B1495- 24	Front Upper Squab Recline Switch - Signal stuck high	 Front upper squab recline switch stuck active 	 Refer to the electrical circuit diagrams and test the operation of the front upper squab recline switch 		
B1B86- 11	Seat Height Motor Relay - Circuit short to ground	 Seat height motor circuit short circuit to ground 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat height motor circuit for short circuit to ground. Repair circuit as required. Clear the DTCs and retest 		
B1B86- 15	Seat Height Motor Relay - Circuit short to battery or open	 Seat height motor circuit short circuit to power, open circuit, high resistance 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat height motor circuit for short circuit to power, open circuit, high resistance. Repair circuit as required. Clear the DTCs and retest 		
B1B87- 31	Seat Height Motor Speed/Position Sensor - No signal	 No signal from sensor Sensor/motor failure Harness/connector failure 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat height motor sensor circuit. Repair circuit as required. Clear the DTCs and retest 		
B1B88- 11	Seat Slide Motor Relay - Circuit short to ground	 Seat slide motor relay circuit short circuit to ground 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat slide motor relay circuit for short circuit to ground. Repair circuit as required. Clear the DTCs and retest 		
B1B88- 15	Seat Slide Motor Relay - Circuit short to battery or open	 Seat slide motor relay circuit short circuit to power, open circuit, high resistance 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat slide motor relay circuit for short circuit to power, open circuit, high resistance. Repair circuit as required. Clear the DTCs and retest 		
B1B89- 31	Seat Slide Motor Speed/Position Sensor - No signal	 No signal from sensor Sensor/motor failure Harness/connector failure 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat slide motor speed sensor circuit. Repair circuit as required. Clear the DTCs and retest 		
B1B90- 11	Seat Tilt Motor Relay - Circuit short to ground	 Seat tilt motor relay circuit short circuit to ground 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat tilt motor relay circuit for short circuit to ground. Repair circuit as required. Clear the DTCs and retest 		
B1B90- 15	Seat Tilt Motor Relay - Circuit short to battery or open	 Seat tilt motor relay circuit short circuit to power, open circuit, high resistance 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat tilt motor relay circuit for short circuit to power, open circuit, high resistance. Repair circuit as required. Clear the DTCs and retest 		
B1B91- 31	Seat Tilt Motor Speed/Position Sensor - No signal	 No signal from sensor Sensor/motor failure Harness/connector failure 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat tilt motor speed sensor circuit. Repair circuit as required. Clear the DTCs and retest 		
B1B92- 11	Seat Recline Motor Relay - Circuit short to ground	 Seat recline motor relay circuit short circuit to ground 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat recline motor relay circuit for short circuit to ground. Repair circuit as required. Clear the DTCs and retest 		
B1B92- 15	Seat Recline Motor Relay - Circuit short to battery or open	 Seat recline motor relay circuit short circuit to power, open circuit, high resistance 	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat recline motor relay circuit for short circuit to power, open circuit, high resistance. Repair circuit as required. Clear the DTCs and retest 		

B1B93- 31	Seat Recline Motor Speed/Position Sensor - No signal	No signal from sensorSensor/motor failureHarness/connector failure	 Check the seat wiring harness/connectors for security/integrity Refer to the electrical circuit diagrams and check the seat recline motor speed sensor circuit. Repair circuit as required. Clear the DTCs and retest
B1B94- 24	Seat Height Up Switch - Signal stuck high	Signal stuck highSwitch failure	 Check the switch function. Check the seat wiring harness/connectors for security /integrity Refer to the electrical circuit diagrams and check the switch circuit. Repair circuit as required. Clear the DTCs and retest
B1B95- 24	Seat Height Down Switch - Signal stuck high	Signal stuck highSwitch failure	 Check the switch function. Check the seat wiring harness/connectors for security /integrity Refer to the electrical circuit diagrams and check the switch circuit. Repair circuit as required. Clear the DTCs and retest
B1B96- 24	Seat Slide Forward Switch - Signal stuck high	Signal stuck highSwitch failure	 Check the switch function. Check the seat wiring harness/connectors for security /integrity

GENERAL INFORMATION

DIAGNOSTIC TROUBLE CODE INDEX - DTC: INTEGRATED AUDIO MODULE (IAM) (GI799401)

DESCRIPTION AND OPERATION
INTEGRATED AUDIO MODULE (IAM)
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 the control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval programme 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 manufacturer-approved diagnostic system)
- When performing voltage or resistance tests, always use a digital multimeter accurate to three decimal places and with a current calibration certificate. 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 codes 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
- Where an 'on demand self-test' is referred to, this can be accessed via the 'diagnostic trouble code monitor' tab on the manufacturers approved diagnostic system
- Check DDW for open campaigns. Refer to the corresponding bulletins and SSMs which may be valid for the specific customer complaint and carry out the recommendations as required

The table below lists all Diagnostic Trouble Codes (DTCs) that could be logged in the integrated audio module, for additional Diagnosis and Testing information refer to the relevant Diagnosis and Testing Section. For additional information, refer to: (415-00)

Information and Entertainment System (Diagnosis and Testing), Navigation System (Diagnosis and Testing).

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
B119F- 11	GPS Antenna - Circuit short to	NOTE:	 Confirm that the navigation antenna is connected to the integrated audio module Refer to the electrical singuit diagrams and test the paying tion antenna singuit for short singuit to
	ground	Circuit reference - GPS SIG / GPS SCRN	ground

		 to the integrated audio module Navigation antenna circuit short circuit to ground 	
B119F- 13	GPS Antenna - Circuit open	NOTE:	NOTE:
		Circuit reference - GPS SIG / GPS SCRN Navigation antenna not connected	This DTC may be set even though no fault condition is present and should be ignored unless the customer has reported a navigation system concern. Clear the DTCs and retest. Verify the customer concern prior to diagnosis
		 to the integrated audio module Navigation antenna circuit open circuit 	 Confirm that the navigation antenna is connected to the integrated audio module Refer to the electrical circuit diagrams and test the navigation antenna circuit for open circuit
B11A3- 49	Gyroscope - Internal electronic failures	 Integrated audio module gyroscope failure 	 Clear the DTCs and retest. If the DTC returns, suspect integrated audio module fault
B121C-	Hard Drive - Circuit		



Using the indicated sequence, make sure that all the wheel retaining nuts are at the correct torque value (125 Nm).

If a wheel is removed and refitted, follow the three-stage torque sequence.

Three-stage torque sequence

- Stage 1: 15 Nm
- Stage 2: 70 Nm
- Stage 3: 125 Nm

Place the locking wheel retaining nut in the emergency equipment kit.

Spare wheel clamp security

The spare wheel clamp must be checked before the road test (where applicable).

The spare wheel clamp must be secured 'hand tight' and must **NOT** be loose.

Jaguar tire repair system



Place the Jaguar Tire Repair System fluid container in the correct position shown, making sure it is secure and not loose.

VEHICLE TOWING EYES, FRONT TOWING EYE COVER, AND JACKING EQUIPMENT

CAUTION:

Using a suitable soft drift, strike the joint in the area indicated to release it from the shaft.

△ NOTE:

Clean the constant velocity (CV) joint, removing as much of the old grease as possible.







Remove and discard the circlip.

△ NOTE:

Clean all the mating faces and reusable parts thoroughly and check for damage.



Remove the inner CV joint boot.

WARNING:

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.



Refer to: Air Deflector (501-02 Front End Body Panels, Removal and Installation).

Drain the engine oil.

Refer to: Engine Oil Vacuum Draining and Filling (303-01 Engine - V6 S/C 3.0L Petrol, General Procedures). Refer to: Engine Oil Vacuum Draining and Filling (303-01 Engine - V8 S/C 5.0L Petrol, General Procedures).

4.

CAUTION:

Before disconnecting any components, make sure the area is clean and free from foreign material. When disconnected all openings must be sealed.





Torque: 12 Nm



INSTALLATION



CAUTION:

Make sure the wiring harness and electrical connectors are not damaged during this operation.



Torque: 63 Nm







Torque: 48 Nm





1. To install, reverse the removal procedure.

WARNING:

Release the cooling system pressure by slowly turning the coolant expansion tank cap a quarter of a turn. Cover the expansion tank cap with a thick cloth to prevent the possibility of scalding.

CAUTIONS:

- Be prepared to collect escaping coolant.
- Since injury such as scalding could be caused by escaping steam or coolant, make sure the vehicle cooling system is cool prior to carrying out this procedure.



Remove the coolant expansion tank cap.

10



Use the pipette to extract a coolant sample.



Raise the cover plate.

PUBLISHED: 19-APR-2018 2017.0 F-TYPE (X152), 303-14B ELECTRONIC ENGINE CONTROLS - V8 S/C 5.0L PETROL (G1426657)

DIAGNOSIS AND TESTING

PRINCIPLES OF OPERATION

For a detailed description of the Electronic Engine Controls, refer to the relevant Description and Operation section in the workshop manual. REFER to: Electronic Engine Controls (303-14D, Description and Operation).

INSPECTION AND VERIFICATION

WARNINGS:

- Wait at least 30 seconds after stopping the engine before commencing any repair to the high pressure fuel system. Failure to follow this instruction may result in personal injury.
- Place the vehicle in a well ventilated, quarantined area and arrange 'No Smoking' / 'Fuel Fumes' signs around the vehicle. Failure to follow this instruction may result in personal injury.
- Before working on the fuel system, ground the vehicle to earth and maintain the ground connection until the work is complete. Failure to follow this instruction may result in personal injury.
- Do not perform any repairs to the high pressure fuel system whilst the engine is running. The fuel pressure can be extremely high. Failure to follow this instruction may result in personal injury.
- Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable vapours are always present and may ignite. Failure to follow this instruction may result in personal injury.
- After making repairs, the fuel system must be checked visually for leaks. Failure to follow this instruction may result in personal injury.
- If taken internally do not induce vomiting, seek immediate medical attention. Failure to follow these instructions may result in personal injury.
- If fuel is taken internally, do not induce vomiting. Seek immediate medical attention. Failure to follow this instruction may result in personal injury.
- If fuel contacts the eyes, flush the eyes with cold water or eyewash solution and seek medical attention. Failure to follow this instruction may result in personal injury.
- Wash hands thoroughly after handling fuel, as prolonged contact may cause irritation. Should irritation develop, seek medical attention. Failure to follow this instruction may result in personal injury.
- This procedure involves fuel handling. Be prepared for fuel spillage at all times and always observe fuel handling precautions. Failure to follow this instruction may result in personal injury.

CAUTIONS:

- Before disconnecting any part of the fuel system, it is imperative that all dust, dirt and debris is removed from around components to prevent ingress of foreign matter. Failure to follow this instruction may result in damage to the vehicle.
- It is essential that absolute cleanliness is observed when working with fuel system components. Always install blanking plugs to any open orifices or lines. Failure to follow this instruction may result in damage to the vehicle.
- 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.

\triangle NOTES:

- If a control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval programme is in operation, prior to the installation of a new module/component.
- When performing voltage or resistance tests, always use a digital multimeter accurate to three decimal places, and with an up-to-date calibration certificate. 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.

1. Verify the customer concern

2. Visually inspect for obvious signs of damage and system integrity

Visual Inspection

1.

Disconnect the battery ground cable.

Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

WARNING:

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

Remove the transfer case.

Refer to: Transfer Case (307-07 Transfer Case - Vehicles With: 8HP70 8-Speed Automatic Transmission AWD/8HP70 8-Speed Automatic Transmission RWD, Removal).

4.

CAUTION:

Care must be taken to avoid damage to the seal register and running surface.



Special Tool(s): 100-012 , 100-012-01 , 308-375

△ NOTE:

Remove and discard the O-ring seal.



INSTALLATION

The warning indicators are located in various positions in the Instrument Cluster (IC). The warning indicators can be split into two groups; self-controlled and externally controlled.

Self-controlled warning indicators are dependent on software logic within the IC for activation. The IC software controls the warning indicator check illumination at ignition on and all indicators whose operation is controlled by the IC for example: the low fuel level warning indicator.

Externally controlled indicators are supplied with current from another system control module or illuminated by the IC on receipt of a bus message from another system control module. Some indicators are activated by an external system control module but the IC contains the control logic.

When 'V-MAX' mode is selected (if fitted), a message is displayed in the message center and a symbol is displayed on the Instrument Cluster.

ANALOGUE INSTRUMENTS

The analogue speedometer and tachometer are located in the IC. The speedometer and tachometer are each driven by an electronic stepper motor. The characteristics of this type of motor produce damping of the pointer needle. Both of the gauges return to their respective zero positions when the ignition is switched off.

The speedometer is driven by square wave signals derived from the wheel speed sensors and the Anti-lock Brake System (ABS) control module. The PCM receives the signal on the High Speed (HS) Controller Area Network (CAN) powertrain system bus from the ABS control module.

The tachometer is driven by an engine speed signal transmitted from the PCM. The signal is derived from the Crankshaft Position (CKP) sensor.

SYSTEM OPERATION

The IC receives a permanent battery voltage supply via fuses in the Battery Junction Box (BJB) and the Passenger Junction Box (PJB).

The IC receives information from other systems for IC functions:

- High Speed (HS) Controller Area Network (CAN) powertrain system bus
- Medium Speed (MS) Controller Area Network (CAN) comfort system bus

The Electric Steering Column Lock (ESCL) is connected directly to the IC. The IC provides a controlled ground to the ESCL; the PJB controls the operation of the ESCL. For additional information, refer to: Steering Column (211-04 Steering Column, Description and Operation).

The PCM receives the Ambient Air Temperature (AAT) signal from the AAT sensor which is located in the door mirror. The PCM processes the AAT sensor signal and passes the information to the IC on the HS CAN powertrain system bus.

The Security system status indicator Light Emitting Diode (LED) is controlled by the PJB which is connected on a hardwired connection with the IC. The flashing Security system status indicator LED in the IC shows the system status.

CONTROL DIAGRAM



A = HARDWIRED; AN = HIGH SPEED (HS) CONTROLLER AREA NETWORK (CAN) POWERTRAIN SYSTEM BUS; AP = MEDIUM SPEED (MS) CONTROLLER AREA NETWORK (CAN) COMFORT SYSTEM BUS.

ITEM	DESCRIPTION
1	Instrument Cluster (IC)
2	Passenger Junction Box (PJB)
3	Anti-lock Brake System (ABS) control module
4	Powertrain Control Module (PCM)

		Some functions are inhibited when the vehicle is moving.
		Store a channel to the relevant Preset # soft key and retest
DVD player inoperative	 Incompatible/damaged compact disc 	
	 Incorrect region set Integrated audio module internal failure 	 Some functions are inhibited when the vehicle is moving. Insert a known good disc and retest Change region setting Using the manufacturer approved diagnostic system, check the integrated audio module for related DTCs and refer to the relevant DTC index
Unable to pair mobile phone to vehicle via Bluetooth $\ensuremath{\mathbb{R}}$	Incompatible mobile phone	▲ NOTE:
		Installing new components will not improve connectivity with an incompatible mobile phone.
		 Check mobile phone compatibility by referring to: www.landrover.com/Owners/Bluetooth and following the instructions on the page
Echo when using a mobile phone via Bluetooth®	 Noise cancelling set to On in mobile phone and vehicle 	 Set noise cancelling to Off in mobile phone
Navigation system inoperative (integrated navigation system)	 Navigation antenna fault Integrated audio module internal failure 	 Using the manufacturer approved diagnostic system, check the integrated audio module for related DTCs and refer to the relevant DTC index
Navigation system inoperative (with navigation control module)	 Navigation antenna fault Navigation control module internal failure 	 Using the manufacturer approved diagnostic system, check the navigation control module for related DTCs and refer to the relevant DTC index
Traffic message channel inoperative	 FM/TMC antenna fault VICS antenna fault 	▲ NOTE:
	 Integrated audio module internal failure 	Vehicle Information and Communication System (VICS) is a type of Traffic Message Channel system used in the Japan market only.
		 Using the manufacturer approved diagnostic system, check the integrated audio module for related DTCs and refer to the relevant DTC index
Poor/no image displayed from rear view camera	Touch screen faultRear view camera fault	 Using the manufacturer approved diagnostic system, check the touch screen for related DTCs and refer to the relevant DTC index For further camera diagnostics please refer to section 413-13 Diagnosis and Testing - Proximity Camera in the workshop manual. REFER to: Proximity Camera (413-13, Diagnosis and Testing).

USB/CD DATA DISK AUDIO FILE COMPATIBILITY

△ NOTE:

Before attempting a repair to the in-vehicle infotainment system following concerns regarding no playback of audio files stored either on a USB

data storage device or on a CD data disc, check below to ensure that the audio files in question are encoded in a compatible format

There are a number of variables that can be set (either automatically or by the user) at the point of creating the audio file that may contribute to an audio file being encoded in an incompatible format. These include:

- The type of audio file created (MP3/WMA/AAC)
- The specification of Variable Bit Rate (VBR) or Constant Bit Rate (CBR) encoding
- If CBR encoding is being used, then a particular **bit rate** value (measured in kilobits per second kbps) may be selected
- The rate of **sampling frequency**, measured in kilohertz (kHz), may also be selected

Diagnostic Procedures For Audio Files

Identify File Type: if a customer reports issues with audio file playback, first confirm that the data source is operating normally and is not locked or corrupted. This may be achieved by reading the USB storage device or data disk via a PC and confirming that the audio files can be seen/accessed as expected. If the storage device/data disk appears to be operating normally, the next step is to ascertain the file type of those files that will not play through the infotainment system. There are three types of compatible audio file, either **MP3** (which must have a file extension of .mp3); or **WMA** (which





5.



6.



	1. Check the interior door bondle release cable for correct installation to the door latch
	I Check the interior door handle release cable for correct installation to the door latch.
2100	
O) Land	53
E189122	
	Is the interior door handle release cable correctly installed to the door latch?
	Yes GO to D3 .
	No Install the interior door handle release cable to the door latch. If the interior door handle release cable is damaged, install a
	new interior door handle release cable. GO to D4 .
	D3: INTERIOR DOOR HANDLE TEST 3
	1 Check the interior door handle release cable retaining clip and housing at the door latch for damage.
	Is the retaining clip and/or housing damaged?
	Yes Install a new door latch as necessary. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems,
	Removal and Installation). No
	GO to D4 .
	D4: INTERIOR DOOR HANDLE TEST 4
	1 Open the door.
	2 Using a suitable tool, close the door latch claw to the fully latched position.
	3 Using the interior door handle, attempt to open the door latch.
	Did the door latch open? Yes
	GO to D5 .
	Install a new door latch as necessary. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation)
	1 Check the operation of the interior door handle and door latch:
	 Close the door fully.
	Using the smart key, double lock the vehicle.
	▲ NOTE:
	The door should not open during this sub-step.
	 Using the interior door handle, attempt to open the door.
	Lising the smart key, unlock the vehicle
	- Using the smart key, unlock the vehicle.
	NOTE:
	The door should open during this sub-step
	 Using the interior door handle, attempt to open the door.
	2 Perform step 1 a total of five times
	Tenorin step 1 a total or live tilles.
	Yes
	No
	Install a new door latch as necessary. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

PINPOINT	TEST E :	DOOR A	JAR TESTS
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