PINPOINT TEST G256924p20 : C1889, C1891; LEFT-HAND FRONT HEIGHT SENSOR SIGNAL CIRCUIT FAULT

G256924t59 : CHECK THE LEFT-HAND FRONT SIGNAL CIRCUIT FOR SHORT TO B+

1. Disconnect the left-hand front height sensor electrical connector, EC45. 2. Measure the voltage between EC45, pin 04 (GU) and GROUND.

- **Is the voltage greater than 3 volts?**

-> Yes
REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

-> No
GO to Pinpoint Test G256924t60.

G256924t60 : CHECK THE LEFT-HAND FRONT SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Measure the resistance between EC45, pin 04 (GU) and GROUND.

- **Is the resistance less than 10,000 ohms?**

-> Yes
REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

-> No
GO to Pinpoint Test G256924t61.

G256924t61 : CHECK THE LEFT-HAND FRONT SIGNAL CIRCUIT FOR HIGH RESISTANCE

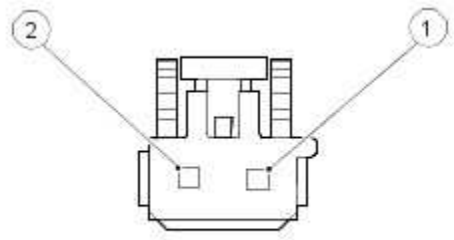
1. Disconnect the battery negative terminal. 2. Disconnect the ASU electrical connector, CR90. 3. Measure the resistance between CR90, pin 02 (GU) and EC45, pin 04 (GU).

- **Is the resistance greater than 5 ohms?**

-> Yes
REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

G531320t99 : CHECK THE BRAKE SWITCH CIRCUIT FOR SHORT CIRCUIT TO POWER IN THE HARNESS

1.



E55108

Brake pressure sensor (BPS) connector disconnected. 2. Measure the resistance between:

CR32 connector, harness side	Vehicle battery
Brake switch - signal - Pin 07	Positive terminal

- **Is the resistance greater than 100 Kohms?**

-> Yes

INSTALL a new BPS.

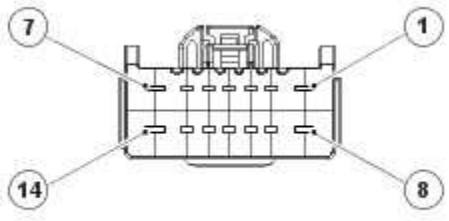
-> No

REPAIR the short circuit. For additional information, refer to the wiring diagrams.

PINPOINT TEST G531320p24 : ACTUATOR OUTPUT OPEN CIRCUIT

G531320t102 : CHECK THE ACTUATOR CIRCUIT RESISTANCE

1. Key off. 2.



E55103

Electric parking brake module connector 1 (CR50) disconnected. 3. Key on, engine off. 4. Measure the resistance between:

CR50 connector, harness side	CR50 connector, harness side

Pin 03	Pin 41

- **Is the resistance less than 10 ohms?**

-> Yes
GO to Pinpoint Test G531322t59.

-> No
REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation by turning the steering from the center position to full right hand lock, to full left hand lock and back to the center position before road testing the vehicle on roads requiring steering input.

G531322t59 : CHECK THE STEERING WHEEL ROTATION SENSOR SIGNAL B CIRCUIT FOR HIGH RESISTANCE

1. Measure the resistance between:

FH110, harness side	EC030, harness side
Pin 02	Pin 41

- **Is the resistance less than 10 ohms?**

-> Yes
GO to Pinpoint Test G531322t60.

-> No
REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation by turning the steering from the center position to full right hand lock, to full left hand lock and back to the center position before road testing the vehicle on roads requiring steering input.

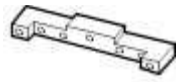
G531322t60 : CHECK THE STEERING WHEEL ROTATION SENSOR SIGNAL A AND B CIRCUITS FOR SHORT CIRCUIT TO EACH OTHER

1. Measure the resistance between:

FH110, harness side	FH110, harness side
Pin 02	Pin 03

Camshafts RH - VIN Range: G45704->G99999 (12.13.18)

Special Service Tools



303-530

Camshaft setting/locking tool
303-530

303-532

Timing chain tensioning tool
303-532

303-645

Crankshaft setting, main tool
303-645

Removal

1 Remove the engine front cover.
. For additional information, refer to Engine Front Cover - VIN Range: G45704->G99999 (12.65.01)

2 . Raise the vehicle.

3 . Disconnect the crankshaft position (CKP) sensor electrical connector.

result in personal injury.

 **WARNING: Do not carry out any repairs to the fuel injection system with the engine running. The fuel pressure within the system can be as high as 1650 bar. Failure to follow this instruction may result in personal injury.**

 **CAUTION: Make sure the workshop area in which the vehicle is being worked on is as clean and as dust free as possible. Foreign matter from work on clutches, brakes or from machining or welding operations can contaminate the fuel system and may result in later malfunction.**

 **CAUTION: Always carry out the cleaning process before carrying out any repairs to the fuel injection system components. Failure to follow this instruction may result in foreign matter ingress to the fuel injection system.**

 **CAUTION: Diesel fuel injection equipment is manufactured to very precise tolerances and fine clearances. It is therefore essential that absolute cleanliness is observed when working with these components. Always install blanking plugs to any exposed ports.**

 **CAUTION: Make sure that the colored links on the secondary timing chain align with the dots and scribed line on the sprocket shoulder. Failure to follow this instruction may result in damage to the engine.**

Install the camshafts.

- Install the secondary timing chain onto the camshafts.

Supercharger Belt Idler Pulley - VIN Range: G45704->G99999 (18.50.09)

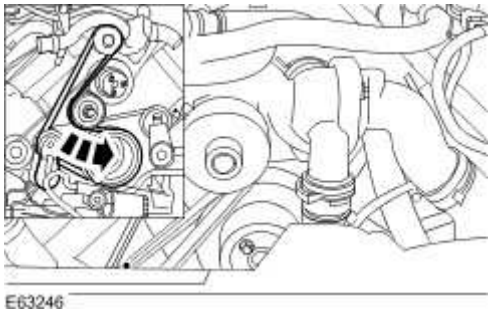
Removal

1 . Disconnect the battery ground cable.
For additional information, refer to Battery Disconnect and Connect

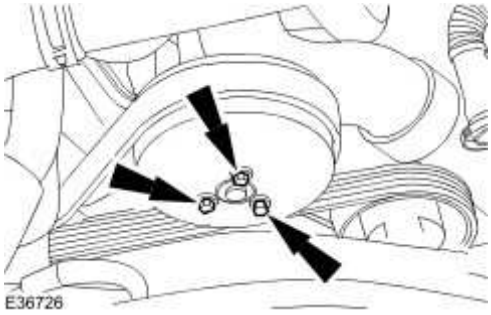
2 . Remove the air cleaner outlet pipe.
For additional information, refer to Air Cleaner Outlet Pipe (19.10.31)

3 . Remove the coolant expansion tank.
For additional information, refer to Coolant Expansion Tank (26.15.01)

4 . Using the special tool, detach the supercharger belt.



5 . Loosen the water pump pulley retaining bolts.



6 Detach the accessory drive belt.
.

	small leak)		Evaporative Emissions - VIN Range: G45704->G99999
P045800	Evaporative emission (EVAP) system purge control valve circuit low	Purge valve control circuit: short circuit to ground Purge valve control circuit: high resistance EVAP canister purge valve failure	For evaporative emissions tests, Evaporative Emissions - VIN Range: G45704->G99999
P045900	Evaporative emission (EVAP) system purge control valve circuit high	Purge valve control circuit: short circuit to power	For evaporative emissions tests, Evaporative Emissions - VIN Range: G45704->G99999
P046129	Fuel level sensor A circuit range/performance - signal invalid	Fuel level sensor to rear electronic module (REM) circuits; intermittent short circuit or high resistance Fuel level sensor failure REM fault (incorrect fuel level data)	For fuel level sensor circuit tests, Fuel Tank and Lines - 4.2L NA V8 - AJV8/4.2L SC V8 - AJV8/3.0L NA V6 - AJ27/3.5L NA V8 - AJV8, VIN Range: G45704->G99999
P04612F	Fuel level sensor A circuit range/performance - signal erratic	Fuel level sensor to rear electronic module (REM) circuits; intermittent short circuit or high resistance Fuel level sensor failure REM fault (incorrect fuel level data)	For fuel level sensor circuit tests, Fuel Tank and Lines - 4.2L NA V8 - AJV8/4.2L SC V8 - AJV8/3.0L NA V6 - AJ27/3.5L NA V8 - AJV8, VIN Range: G45704->G99999
P046200	Fuel level sensor A circuit low input	Fuel level sensor to rear electronic module (REM) circuits; intermittent short circuit to ground or high resistance Fuel level sensor failure REM fault (incorrect fuel level data)	For fuel level sensor circuit tests, Fuel Tank and Lines - 4.2L NA V8 - AJV8/4.2L SC V8 - AJV8/3.0L NA V6 - AJ27/3.5L NA V8 - AJV8, VIN Range: G45704->G99999

G549822t2 : CHECK THE ECT PID VALUE DURING WARM UP

1. Key on, engine running. 2. Access the OBDII-engine coolant temperature PID using the Jaguar approved diagnostic system or a scan tool. 3. Increase the engine speed to 2,000 rpm and monitor the ECT reading until the engine is at full operating temperature.

Did the ECT reading rise smoothly to a value of between 80 and 95 degrees C (176 and 203 degreees F)?

-> Yes

An intermittent fault may be present in the wiring harness. Visually check for chaffed wires or other physical damage to the harness.

-> No

GO to Pinpoint Test G549822t3.

G549822t6 : CHECK FOR AN INTERMITTENT FAULT CONDITION

1.

Were there any sudden or unexpected changes in the PID readings?

-> Yes

Key off. GO to Pinpoint Test G549822t3.

-> No

GO to Pinpoint Test G549822t7.

G549822t3 : CHECK THE ECT PID VALUE

1. Key on, engine off. 2. Access the OBDII-engine coolant temperature PID using the Jaguar approved diagnostic system or a scan tool. 3. Check the ECT harness wiring and connectors for loose connections and water ingress. Monitoring the temperature readings for sudden changes while handling the harness and connectors may help in isolation of these types of fault.

Did you identify any loose connections or water ingress in the ECT harness wiring or connectors?

-> Yes

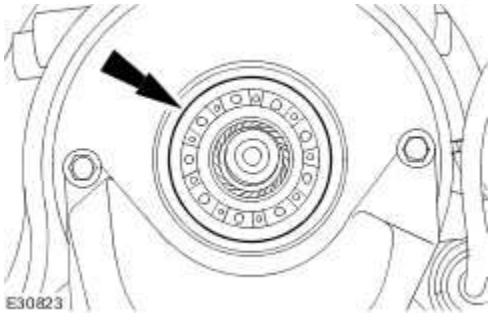
REPAIR the fault as necessary. For additional information, refer to the wiring diagrams. Clear any DTCs, test the system for normal operation.

-> No

GO to Pinpoint Test G549822t7.

Using a suitable metal surface cleaner meeting Jaguar specification, clean the seal face on the housing before installing the new seal.

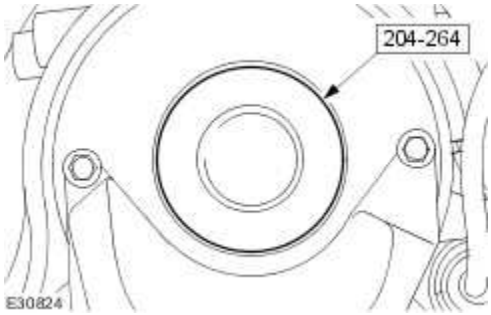
Clean and inspect the transmission housing seal face.



Installation

All vehicles

1 . Using the special tool, install the extension housing seal.



2 . Using the special tools install a new output shaft flange retaining nut.

- Install the output shaft flange spacing shim.
- Install the output shaft flange.
- Tighten to 60 Nm.

 **WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable vapors are always present and may ignite. Failure to follow these instructions may result in personal injury.**

 **WARNING: The fuel system remains pressurized for a long time after the ignition is switched off. The fuel pressure must be relieved before attempting any repairs. Failure to follow these instructions may result in personal injury.**

 **WARNING: After carrying out repairs, the fuel system must be checked visually for leaks. Failure to follow these instructions may result in personal injury.**

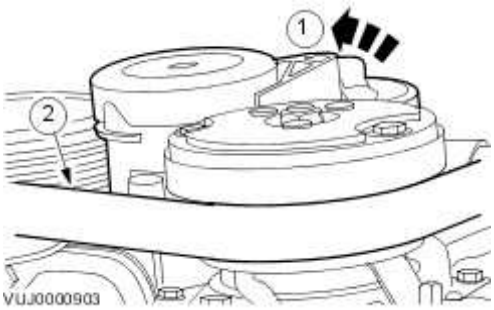
 **WARNING: This procedure involves fuel handling. Be prepared for fuel spillage at all times and always observe fuel handling precautions. Failure to follow these instructions may result in personal injury.**

 **WARNING: If taken internally do not induce vomiting, seek immediate medical attention. Failure to follow these instructions may result in personal injury.**

 **WARNING: If fuel contacts the eyes, flush the eyes with cold water or eyewash solution and seek medical attention.**

 **WARNING: Wash hands thoroughly after handling, as prolonged contact may cause irritation. Should irritation develop, seek medical attention.**

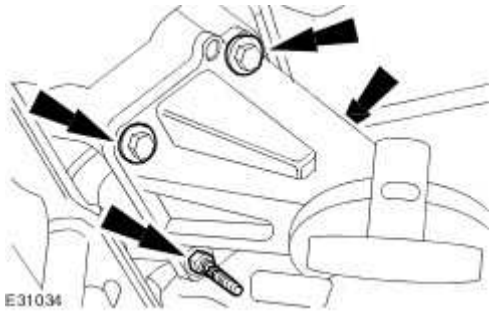
 **CAUTION: Diesel fuel injection equipment is manufactured to very precise tolerances and**



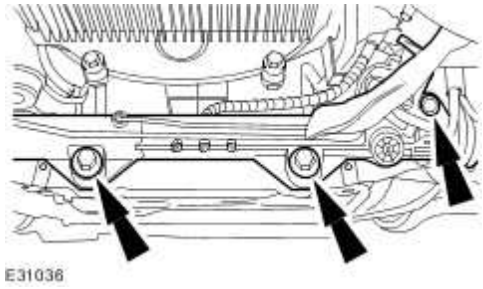
11 . Install the air cleaner.
For additional information, refer to Air Cleaner (19.10.05)

12 . Connect the battery ground cable.
For additional information, refer to Battery Connect (86.15.15)

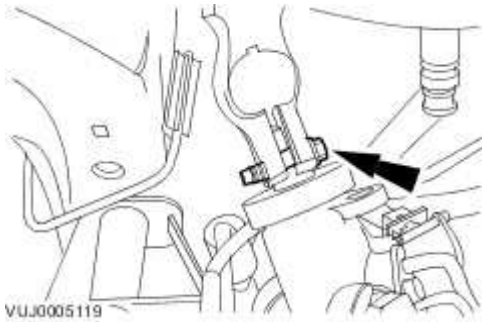
13 Carry out the A/C system evacuation and charging procedure.
. For additional information, refer to Air Conditioning (A/C) System Recovery, Evacuation and Charging (82.30.30)



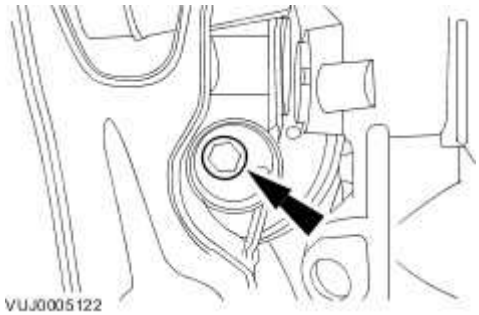
4 . Tighten to 100 Nm.



5 . Tighten to 35 Nm.



6 . Tighten to 63 Nm.



 **CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage may result.**

 **CAUTION: When probing connectors to take measurements in the course of the pinpoint tests, use the adaptor kit, part number 3548-1358-00.**

NOTE:

When performing electrical voltage or resistance tests, always use a digital multimeter (DMM) accurate to 3 decimal places, and with an up-to-date calibration certificate. When testing resistance, always take the resistance of the DMM leads into account.

NOTE:

Where indicated in the tests, use a suitable oscilloscope. The Jaguar approved diagnostic tester has an oscilloscope function in the "toolbox" menu.

NOTE:

Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

7 . If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

8 . If the cause is not visually evident, verify the symptom and refer to the diagnostic trouble code (DTC) index.

Power Supply and Ground table

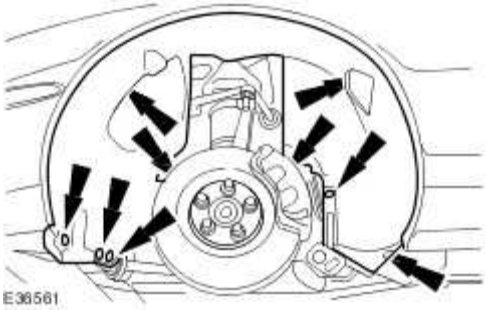
Module	Action
Instrument cluster (IC)	GO to Pinpoint Test G239843p23. .
J-Gate module (JGM)	GO to Pinpoint Test G239843p31. .
Air conditioning control module (A/CCM)	GO to Pinpoint Test G239843p32. .

Fender Splash Shield (76.10.90)

Removal

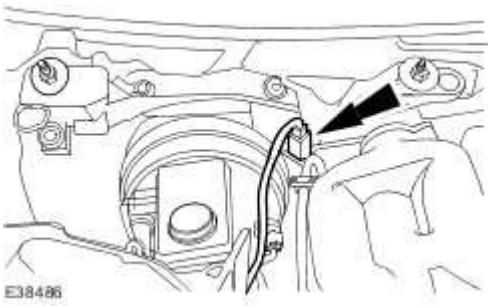
1 . Remove the front wheel and tire assembly. <<204-04>>

2 . Remove the fender splash shield.



Installation

1 . To install, reverse the removal procedure.

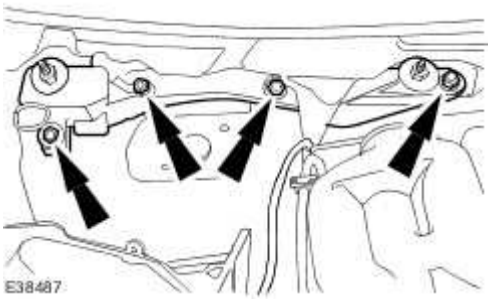


12 Remove the brake master cylinder.

. For additional information, refer to Brake Master Cylinder - 4.2L NA V8 - AJV8/4.2L SC V8 - AJV8/3.0L NA V6 - AJ27/3.5L NA V8 - AJV8 (70.30.08)
For additional information, refer to Brake Master Cylinder - 2.7L V6 - TdV6 (70.30.08)

13 . Remove the brake booster.
For additional information, refer to Brake Booster (70.50.17)

14 . Detach the wiper mounting arm and pivot shaft assembly.



15 . Remove the windshield wiper motor.