

TECHNICAL BULLETIN  
R176NAS5  
18 AUG 2014



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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 Jaguar service facility to determine whether this bulletin applies to a specific vehicle.

**SECTION: 310-01**

Safety Recall: Fuel Tank Replacement

**AFFECTED VEHICLE RANGE:**

**S-TYPE (X200)**  
**Model Year:** 2005  
**VIN:** N05049-N52047

**MARKETS:**

NAS

**CONDITION SUMMARY:**



**NOTE: Changes are significant and therefore not highlighted.**

**Situation:** A concern has been identified with fuel tanks fitted to 2005MY Jaguar S-TYPE (X200) vehicles specified with the Low Emission Vehicle Stage II (LEV II) evaporative emissions system. Affected vehicles may contain the fuel delivery module (FDM), jet pump module (JPM), and/or cluster valve seals located on top of the tank that are not properly retained due to fuel tank manufacturing variability and/or excessive clamp loads. If the sealing is inadequate, the On Board Diagnostic leak detection system may sense an evaporative system hole of greater than 0.5mm diameter and illuminate the amber Malfunction Indicator Lamp (MIL) on the Instrument Cluster. If the fuel tank is full or the vehicle is parked on a hill with a leak path present, the driver may notice fuel odor or fuel leakage.

**Action:** Retailers are required to **HOLD** all affected vehicles that are within your control until completion of the appropriate Service Instruction (A or B) outlined below to replace the fuel tank.

**PARTS:**

**TABLE 1 - 4.2L V8 Supercharged Vehicles Only**

PART No. / SUNDRY CODE	'ITEM' No.	DESCRIPTION	QTY. / VALUE
C2Z29212	1	Fuel tank	1
C2D25079	2	Fuel pump module	1
C2D25076	3	Flange	1
C2Z7361	4	Gasket	1
C2Z7352	5	Retaining ring	1
C2Z8500	6	Pipe - fuel feed	1
C2Z21711	7	Strap - tank - left-hand	1

C2Z21684	8	Strap - tank - right-hand	1
C2Z10210	9	Heatshield	1
C2Z4771	10	Hose - fuel filler	1
XR858662	11	Heat-sleeve	1
XR858628	12	Evaporator pipe	1
XR858660	13	Fuel pump control module (ECU)	1
XR858670	14	Fuel tank harness	1
AAU5884J	15	Cable tie - 50mm (L) X 2mm (W)	8
C2C8870	16	M6 nut with flange	2
C2D13865	17	M5 nut with flange	2
XR858671	18	Cabin overlay wiring harness	1
-	19 20 -	Suitable tape (locally sourced) RTV silicon sealant (locally sourced) Four (4) 150mm-length cable ties (locally sourced)	*\$5.00

\*An allowance of \$5.00 has been allocated to cover the cost of locally sourced tape, RTV silicon sealant, and four (4) 150mm-long cable ties.

Displaced tanks **MUST** be rendered unusable and safely disposed of in accordance with local policies and procedures. For reimbursement of disposal costs, please refer to the Related Damage section within the Warranty information.

**TABLE 2 - 3.0L V6 / 4.2L V8 Naturally Aspirated Vehicles Only**

PART No. / SUNDRY CODE	'ITEM' No.	DESCRIPTION	QTY. / VALUE
C2Z29213	1	Fuel tank	1
C2Z23192	2	Fuel pump module	1
C2D25076	3	Flange	1
C2Z7361	4	Gasket	1
C2Z7352	5	Fuel pump retaining ring	1
C2Z8500	6	Pipe - fuel feed	1
C2Z21711	7	Strap - tank - left-hand	1
C2Z21684	8	Strap - tank - right-hand	1
C2Z10210	9	Heatshield	1
C2Z4771	10	Hose - fuel filler	1
XR858662	11	Heat-sleeve	1
XR858628	12	Evaporator pipe	1
XR858626	13	Fuel tank wiring harness	1
AAU5884J	14	Cable tie - 50mm (L) X 2mm (W)	8
XR857854	15	M6 nut with flange (ground wire fixing)	1
XR858627	16	Ground lead	1
-	17	Suitable tape (locally sourced)	*
XR858630	18	Instrument Cluster	1

XR858629	19	Resistor box	1
-	20	RTV silicon sealant (locally sourced) Four (4) 150mm-length cable ties (locally sourced)	*\$5.00

\*An allowance of \$5.00 has been allocated to cover the cost of locally sourced tape, RTV silicon sealant, and four (4) 150mm-long cable ties.

Displaced tanks **MUST** be rendered unusable and safely disposed of in accordance with local policies and procedures. For reimbursement of disposal costs, please refer to the Related Damage section within the Warranty information.

### **SPECIAL TOOLS:**

Refer to Workshop Manual / Service Instruction for any required tools

### **WARRANTY:**





**NOTE: Check DDW to ensure that a vehicle is affected by this program prior to undertaking any rework action. Repair procedures are under constant review, and therefore times / prices are subject to change; those quoted here must be taken as guidance only. Refer to TOPIX to obtain the latest repair time. At the time of confirming a booking for vehicle repair, ensure that all outstanding Service Actions are identified to ensure the correct parts are available and adequate workshop time is allocated for repairs to be completed at one visit.**

Warranty claims must be submitted quoting Program Code '**R176**' together with the relevant Option Code from the table. The SRO and part information listed have been included for information only. The Option Code(s) that allows for the drive in / drive out allowance may only be claimed if the vehicle is brought into the workshop for this action alone to be undertaken.

Warranty claims must be submitted for payment within 30 calendar days of completion of the repair.

PROGRAM CODE	OPTION CODE	DESCRIPTION	SRO	TIME (HOURS)	PARTS / SUNDRY CODE	QTY. / VALUE
R176	U	<b>NOTE: 4.2L V8 Supercharged vehicles only</b>  Fuel tank - Renew	19.92.08	5.0	C2Z29212	1
					C2D25079	1
					C2D25076	1
					C2Z7361	1
					C2Z7352	1
					C2Z8500	1
					C2Z21711	1
					C2Z21864	1
					C2Z10210	1
					C2Z4771	1
					XR858662	1
					XR858628	1
					XR858660	1
					XR858670	1
					AAU5884J	8
C2C8870	2					
C2D13865	2					
XR858671	1					
Other	\$5.00					
		<b>NOTE: 4.2L V8 Supercharged vehicles only</b>  Fuel tank - Renew	19.92.08 10.10.10	5.0 0.1	C2Z29212	1
					C2D25079	1
					C2D25076	1
					C2Z7361	1
					C2Z7352	1
					C2Z8500	1

R176	V	Drive in/drive out			C2Z21711 C2Z21864 C2Z10210 C2Z4771 XR858662 XR858628 XR858660 XR858670 AAU5884J C2C8870 C2D13865 XR858671 Other	1 1 1 1 1 1 1 1 8 2 2 1 \$5.00
R176	W	 <b>NOTE: 3.0L V6 / 4.2L V8 naturally aspirated vehicles only</b>  Fuel tank - Renew	19.92.08	5.3	C2Z29213 C2Z23192 C2D25076 C2Z7361 C2Z7352 C2Z8500 C2Z21711 C2Z21864 C2Z10210 C2Z4771 XR858662 XR858628 XR858626 AAU5884J XR857854 XR858627 XR858630 XR858629 Other	1 1 1 1 1 1 1 1 1 1 1 1 1 8 1 1 1 1 \$5.00
R176	Y	 <b>NOTE: 3.0L V6 / 4.2L V8 naturally aspirated vehicles only</b>  Fuel tank - Renew Drive in/drive out	19.92.08 10.10.10	5.3 0.1	C2Z29213 C2Z23192 C2D25076 C2Z7361 C2Z7352 C2Z8500 C2Z21711 C2Z21864 C2Z10210 C2Z4771 XR858662 XR858628 XR858626 AAU5884J XR857854 XR858627 XR858630 XR858629 Other	1 1 1 1 1 1 1 1 1 1 1 1 1 8 1 1 1 1 \$5.00

An allowance of \$5.00 has been allocated to cover the cost of locally sourced duct tape, RTV silicon sealant, and four (4) 150mm-long cable ties.

Displaced tanks MUST be rendered unusable and safely disposed of in accordance with local policies and procedures. For reimbursement of disposal costs, please refer to the Related Damage section within the Warranty information.

### **RELATED DAMAGES:**

Supplementary claims for fuel tank disposal costs can only be made once the Recall claim has been accepted for payment. Claims should be submitted quoting Program Code '**R176**' and by clicking the 'Related Damage' radio button on the claim submission screen. Use Option Code '**X**', enter the actual disposal costs against Sundry Code

'Other', and quote the value in local currency.

PROGRAM CODE	OPTION CODE	DESCRIPTION	SRO	TIME (HOURS)	PARTS / SUNDRY CODE	QTY. / VALUE
R176	X	Reimbursement of fuel tank disposal	-	-	Other	Dealer entered value


Normal Warranty policies and procedures apply

### **SERVICE INSTRUCTION A - 4.2L V8 Supercharged Vehicles Only**

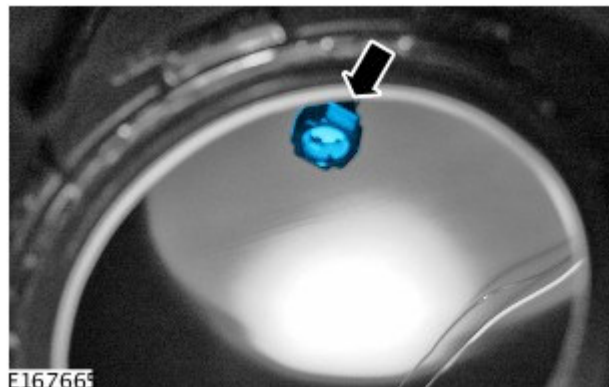



**NOTE: Refer to Parts for 'Item' information.**


1. Remove the rear seat cushion (see TOPIx Workshop Manual, Section 501-10).
2. Remove the rear seat right-hand bolster (see TOPIx Workshop Manual, Section 501-10).
3. Remove the floor aperture cover.
4. Remove the existing fuel tank assembly (see TOPIx Workshop Manual, Section 310-01).
5. Remove fuel tank supply pipe from existing tank assembly and retain for reinstallation.
6. Remove and discard the fuel tank heat shield.
7. Remove and discard the fuel tank securing straps.
8. Remove and discard the fuel filler link hose.

9.  **NOTE: To achieve correct reading on the Instrument Cluster, make sure to connect to the new fuel pump module. Failure to do this will give a false or incorrect reading on the Instrument Cluster.**

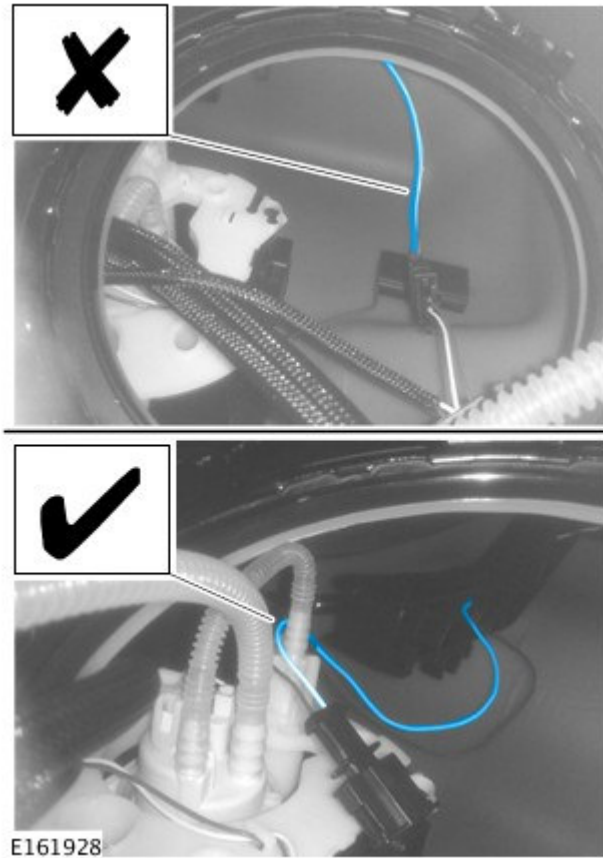
Install the new fuel pump (Item 2) to the new tank (Item 1).



10.  **NOTE: A new gasket MUST be installed (Item 4).**

 **NOTE: Note the route of the wiring harness when fitting the new fuel pump; failure to do this may give a false or incorrect reading on the Instrument Cluster.**

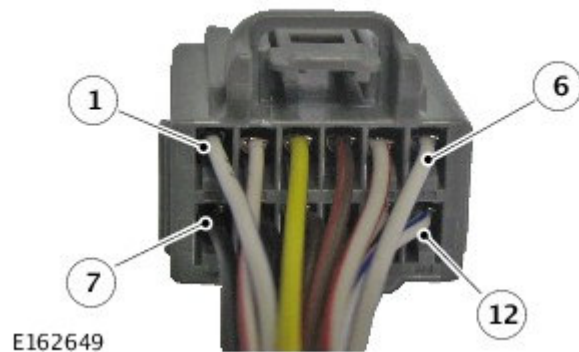
Connect the fuel pump wiring harness electrical connector to the flange electrical connector (Item 3).



11. Using special tool 310-123, secure fuel tank retaining ring (Item 5) to the fuel tank flange (Item 3).

12.  **NOTE: pin location as viewed from the rear of the electrical connector.**

Carry out a fuel tank sender unit resistance test.



13. Carry out an electrical test to make sure the

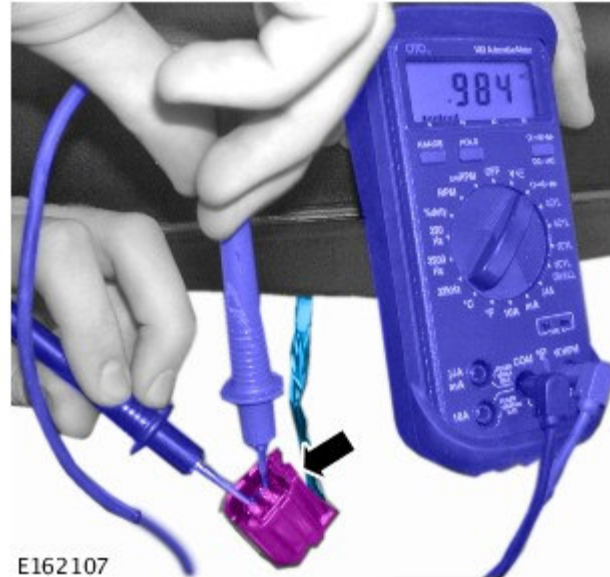
fuel tank sender unit reads correctly.

- Temporarily connect the wiring harness electrical connector to the fuel tank flange.
- Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 5 White/Red; approximately 50 Ohms with an empty tank.
- Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 6 White/Blue; approximately 50 Ohms with an empty tank.



**14.** Turn the tank upside down to fully extend the fuel level sender float.

**15.** Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 5 White/Red; approximately 984 Ohms with an empty tank.



**16.** Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 6 White/Blue; approximately 460 Ohms with an empty tank.

- Once the resistance checks have been



completed, disconnect the fuel tank wiring harness connector from the fuel tank flange; this will be connected in step 60.

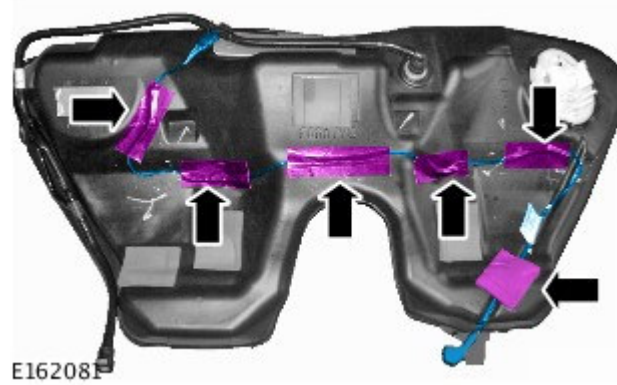


- 17.** Install the new evaporator pipe (Item 12) to the new fuel tank (Item 1).

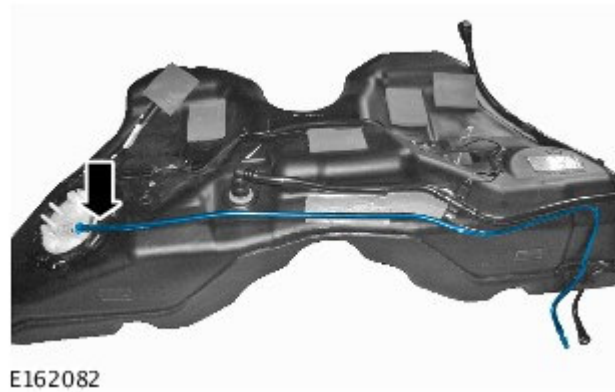


- 18.** Install the new fuel tank wiring harness (Item 14).
- Using suitable tape (Item 19), secure the fuel tank wiring harness to the fuel tank (Item 14).

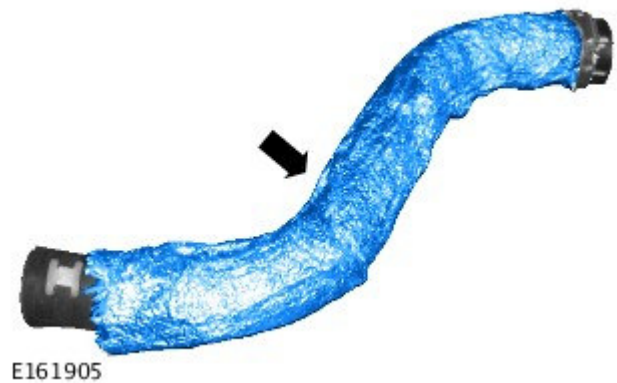




**19.** Install the existing fuel feed pipe to the new fuel tank (Item 1).

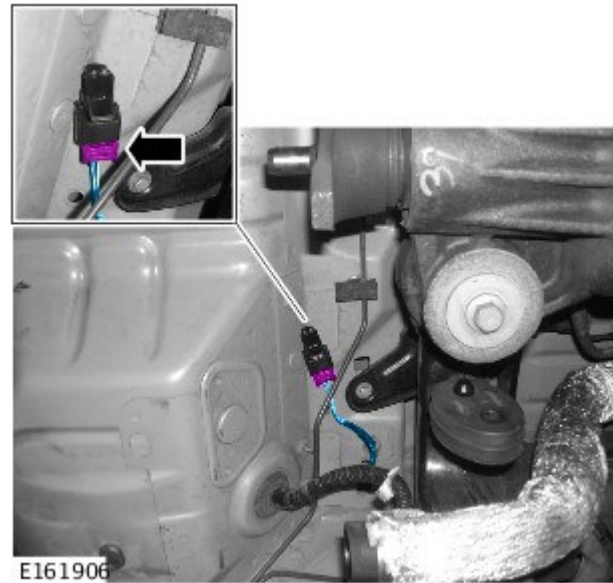


**20.** Install heat sleeve (Item 11) over the fuel tank filler hose (Item 10).



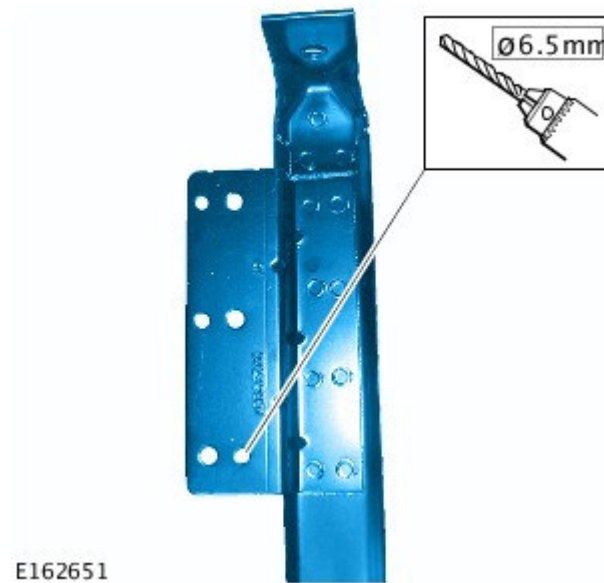
**21.** Install the new fuel tank filler hose to fuel filler neck.

- 22.** Install harness blanking plug (supplied with item 14) to the existing redundant connector and secure to the body.



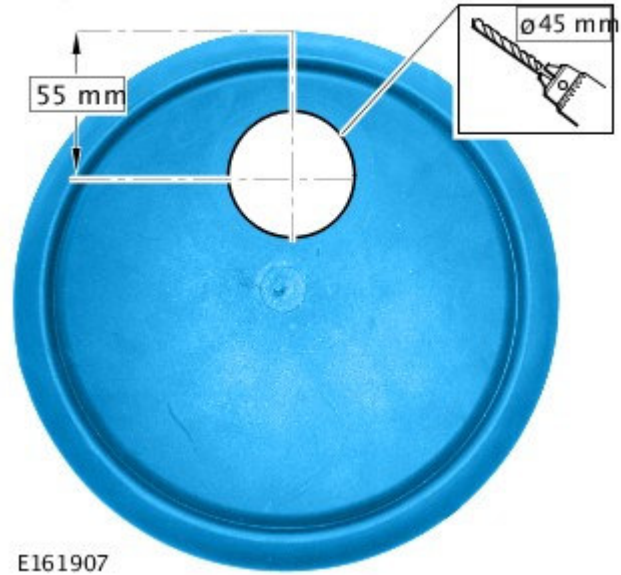
- 23.** Take the new fuel tank strap brackets (Items 7 and 8) and:

- using a suitable 6.5mm drill bit, drill the right-hand strap bracket (Item 8);
- loosely fit both straps to the heelboard and allow to hang.



- 24.** Install the new fuel tank heat shield (Item 9).

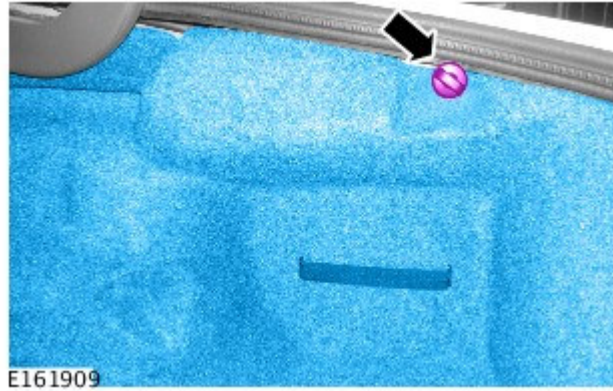
- 25.** Using a suitable tool, make a hole 45mm in the floor aperture cover.



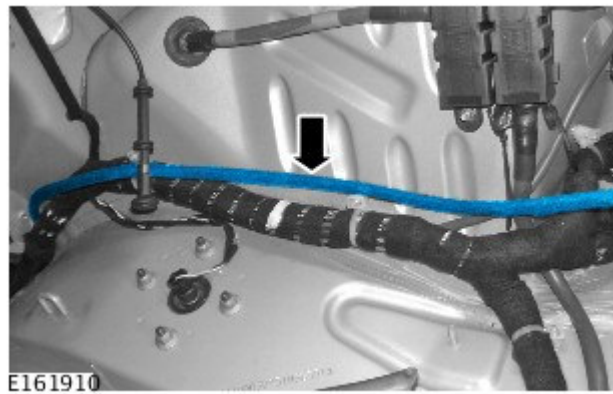
26. Remove the rear seat right-hand bolster bracket.



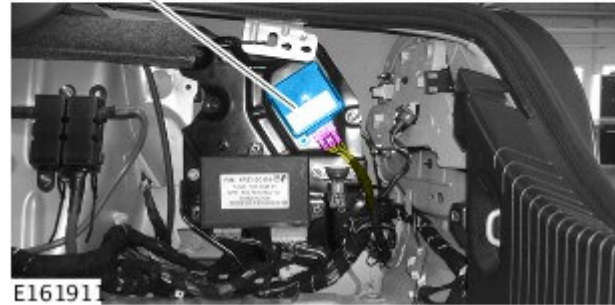
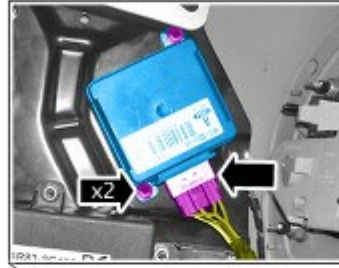
27. Remove the luggage compartment rear right-hand trim.



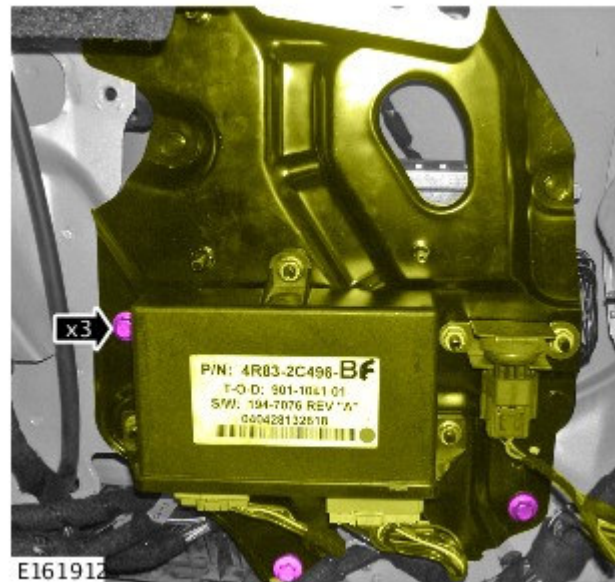
**28.** Position cabin overlay wiring harness loosely in position (Item 18).



**29.** Remove the existing fuel pump ECU.

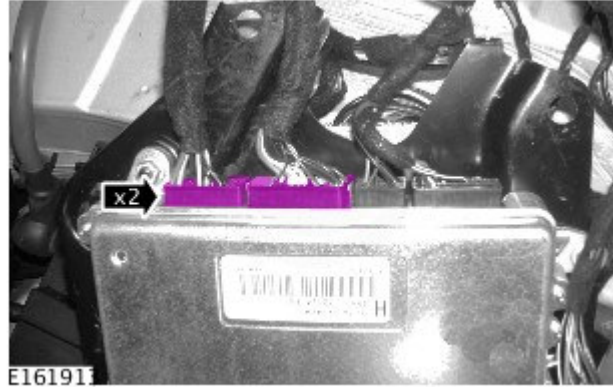


30. Remove for access the fuel pump ECU mounting bracket.




31. Disconnect the harness connectors from Rear Electronic Module (REM).





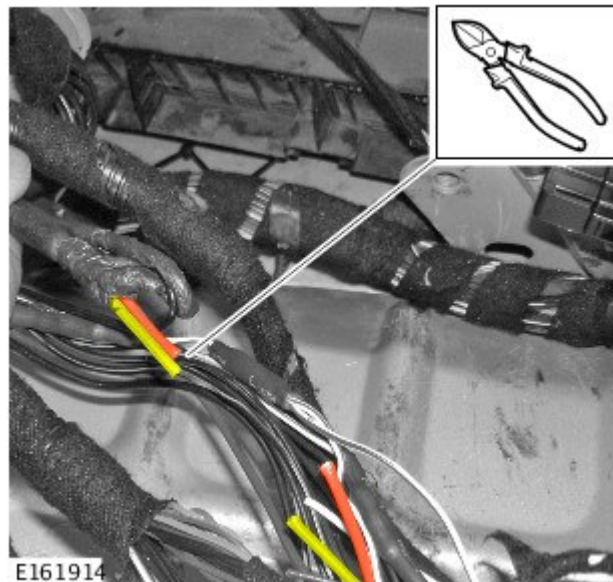
**32.** Splice new overlay harness to existing vehicle harness (see TOPIX Workshop Manual, Section 418-02).

- Carry out steps 32-46.

**33.**  **NOTE: Remove only a suitable amount of wiring harness insulation as required to access the wiring.**

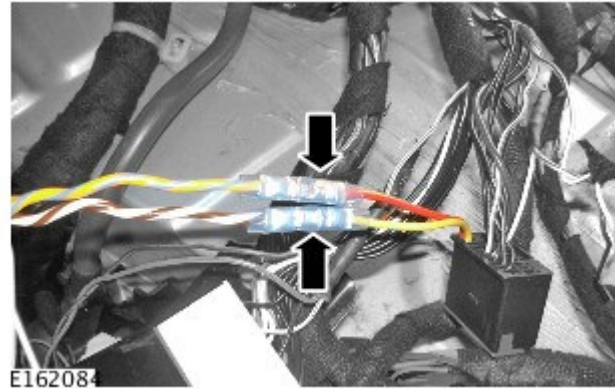
 **NOTE: Make the cut as close to the base as possible to give maximum length to carry out the splice.**

Cut Red wire (CA101 pin 11).



**34.** Using the supplied butt connector, connect the Red wire (CA101 pin 11) to the new overlay harness Grey/Yellow wire.

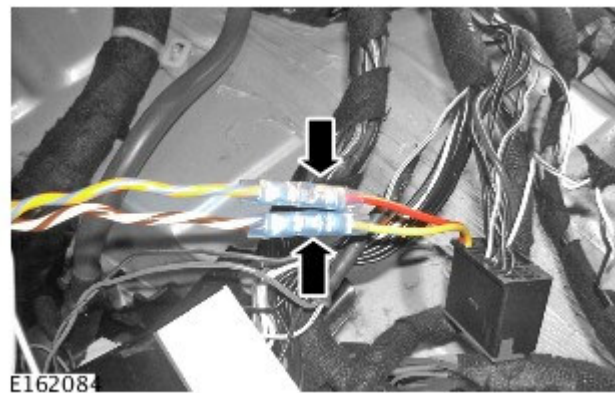
- Using a suitable tool, crimp the connector for Grey/Yellow to Red (pin 11 in CA101).



**35.** Cut Yellow wire (CA101 pin 12)

**36.** Using the supplied butt connector, connect the Yellow wire (CA101 pin 12) to the new overlay harness Brown/White wire.

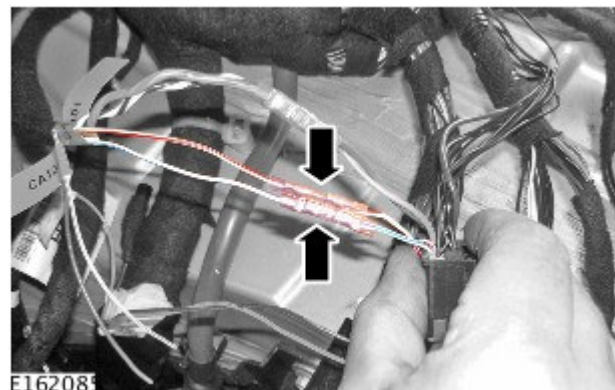
- Using a suitable tool, crimp the connector for Yellow to Brown/White (pin 12 in CA101).



**37.** Cut White/Red wire (CA101 pin 15).

**38.** Using the supplied butt connector, connect the White/Red wire (CA101 pin 15) to the new overlay harness White/Red (labeled for the CA101 connector) wire.

- Using a suitable tool, crimp the connector for White/Red to White/Red (pin 15 in CA101).

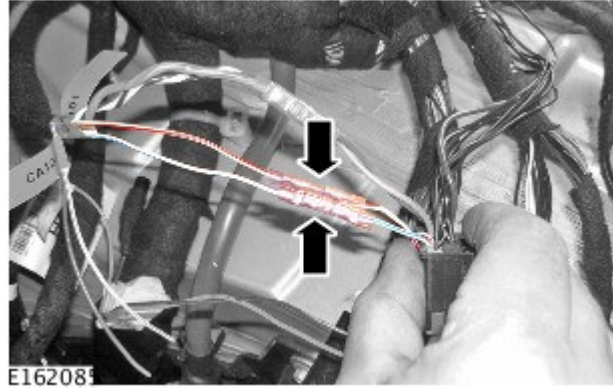




**39.** Cut White/Blue wire (CA101 pin 16).

**40.** Using the supplied butt connector, connect the White/Blue wire (CA101 pin 16) to the new overlay harness White/Blue (labeled for the CA101connector) wire.

- Using a suitable tool, crimp the connector for White/Blue to White/Blue (pin 16 in CA101).



**41.** Cut Brown/Red wire (CA103 pin 23).

**42.** Using the supplied butt connector, connect the Brown/Red wire (CA103 pin 23) to the new overlay harness Brown/Red (labeled for the CA103 connector) wire.

- Using a suitable tool, crimp the connector for Brown/Red to Brown/Red (pin 23 in CA103).

**43.**  **NOTE: 'T' splice connection; both ends of the original harness must be connected to the overlay harness.**

Remove a section of insulation from the White/Blue wire (CA103 pin 19) to make a 'T' splice.

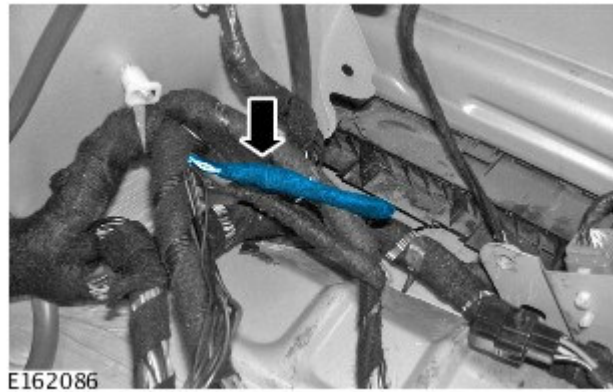
**44.** Remove a section of insulation from the White/Blue wire (CA103 pin 19) to make a 'T' splice.

**45.** Using the supplied butt connector, connect the White/Red wire (CA109 pin 19) in a 'T' splice to the new overlay harness White/Red (labeled for the CA103connector) wire.

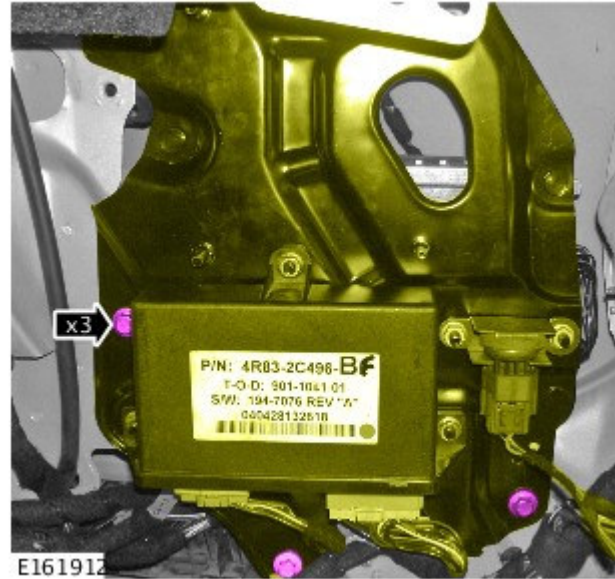
- Using a suitable tool, crimp the connector for White/Red to White/Red (pin 19 in CA103).



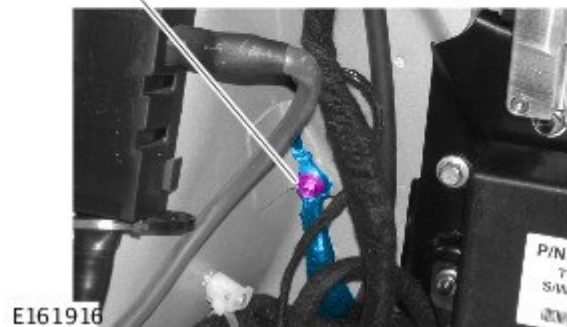
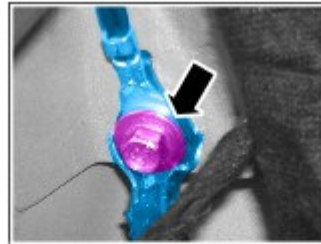
**46.** Using suitable electrical tape, insulate the wiring harness and position the wiring harness to one side.



**47.** Install the fuel pump ECU mounting bracket.



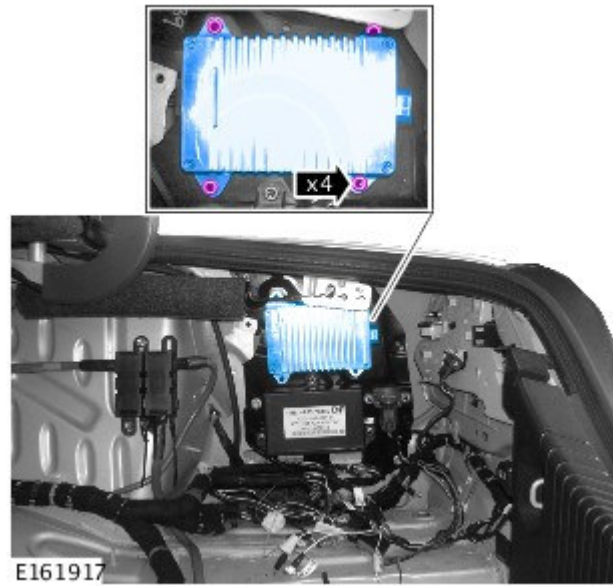
48. Connect ground lead from overlay harness (Ground C156).



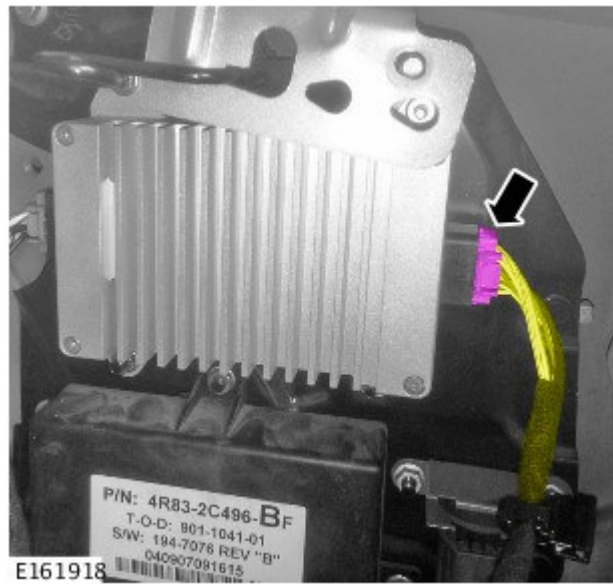
49.  **NOTE: Fixings are different sizes 5mm and 6mm.**

Install new ECU module.

- Secure using 2 x M5 nuts (Item 17) and 2 x M6 nuts (Item 16).
- Torque to 5Nm.



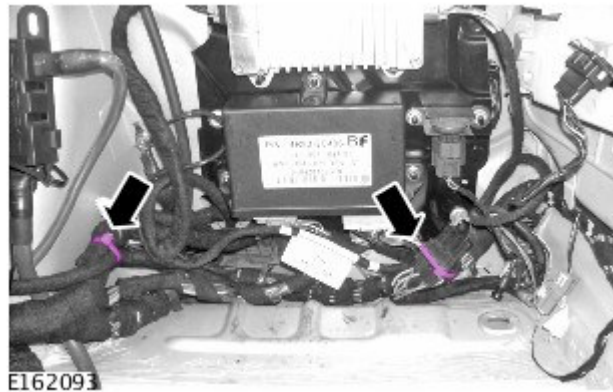
**50.** Connect Link harness to the new fuel pump ECU (Item 18).



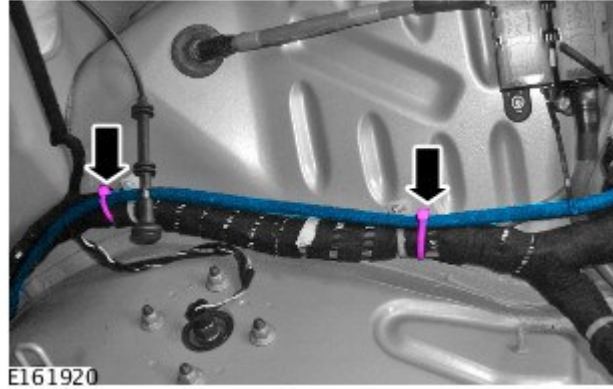
**51.** Connect Link harness (male connector) to the original fuel pump ECU harness connector (CA283).



52. Make sure that all of the harnesses are secured.



53. Using suitable cable ties (Item 15), install the cabin overlay wiring harness (Item 18).



**54.** Install the rear seat right-hand bolster bracket.

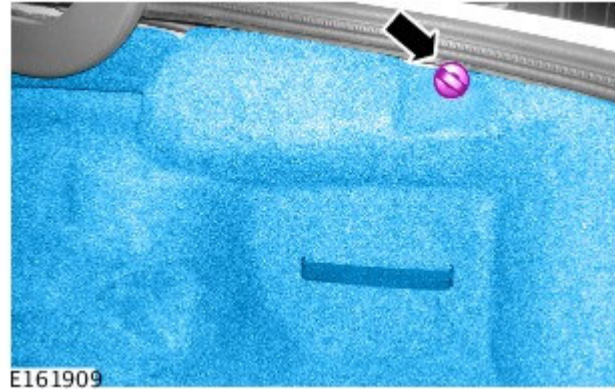
- Torque to 11Nm




**55.** Install the rear seat right-hand bolster (see TOPIx Workshop Manual, Section 501-10).

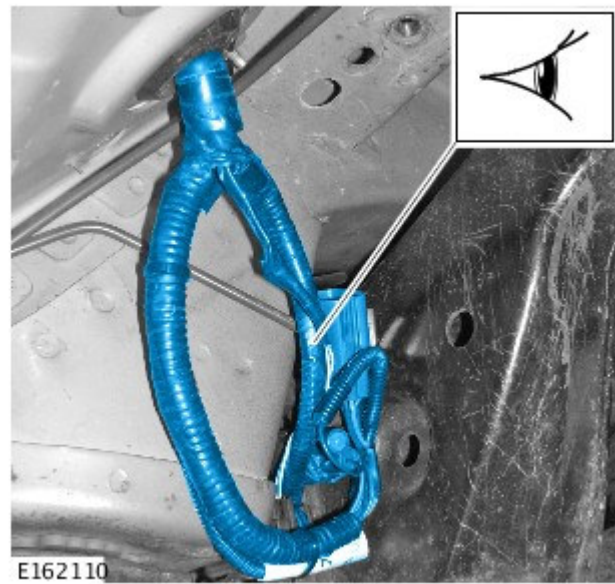
**56.** Install the luggage compartment rear right-hand trim.





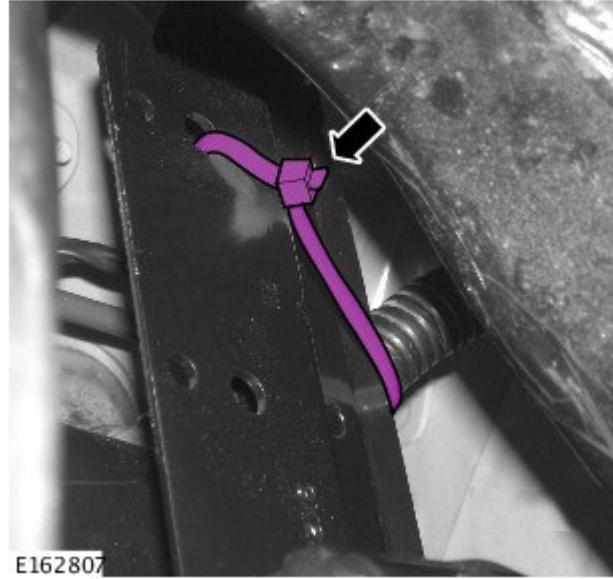
57.  **NOTE: Position the wiring harness to one side prior to the installation of the new fuel tank.**

Install fuel tank (see TOPIX Workshop Manual, Section 310-01).



58. Using a suitable cable tie (Item 15), secure the existing vehicle harness to the right tank strap bracket (Item 8).

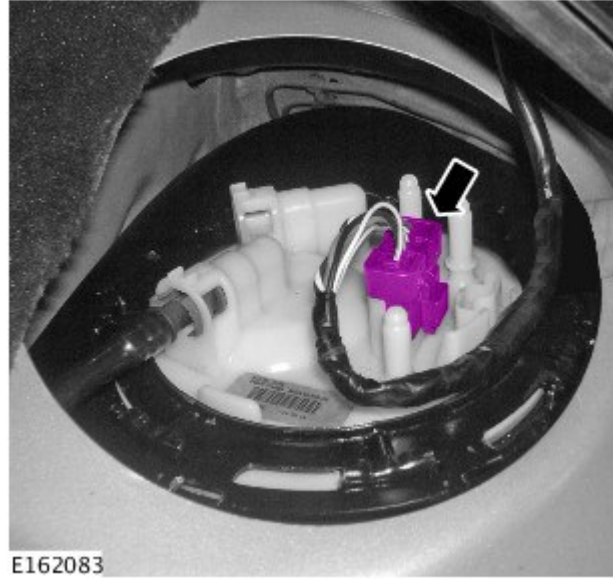




**59.** Secure the electrical connectors to the right tank strap bracket (Item 8).



**60.** Connect the fuel tank sender unit electrical connector to the fuel tank sender unit.



**61.** Install overlay wiring harness and wiring harness grommet to floor aperture cover.

- Using a suitable adhesive (Item 20), glue the wiring harness grommet to the floor aperture cover.



**62.** Install the rear seat cushion (see TOPIx Workshop Manual, Section 501-10).


**63.** Add fuel to the fuel tank and confirm fuel pump and fuel gauge operation.

**SERVICE INSTRUCTION B - 3.0L V6 / 4.2L V8 Naturally Aspirated Vehicles Only**



**NOTE: Refer to Parts for 'Item' information.**

1. Remove the rear seat cushion (see TOPIx Workshop Manual, Section 501-10).
2. Remove the floor aperture cover.
3. Remove existing fuel tank assembly (see TOPIx Workshop Manual, Section 310-01).
4. Remove fuel tank supply pipe from existing tank assembly and retain for reinstallation.
5. Remove and discard the fuel tank heat shield.
6. Remove and discard the fuel tank securing straps.
7. Remove and discard the fuel filler link hose.

8.  **NOTE: To achieve correct reading on the Instrument Cluster, make sure to connect to the new fuel pump module. Failure to do this will give a false or incorrect reading on the Instrument Cluster.**

Install the new fuel pump (Item 2) to the new tank (Item 1).

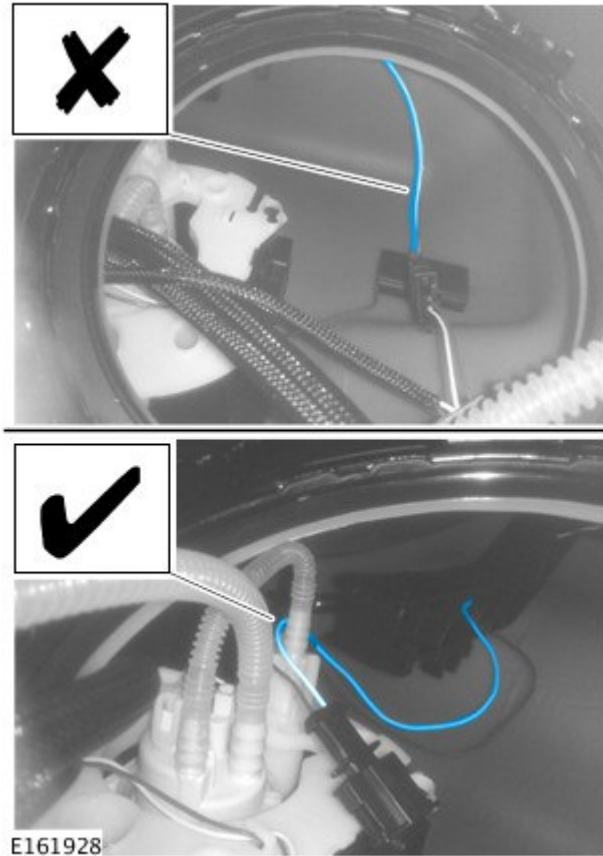


9.  **NOTE: A new gasket MUST be installed (Item 4).**



**NOTE: Note the route of the wiring harness when fitting the new fuel pump; failure to do this may give a false or incorrect reading on the Instrument Cluster.**

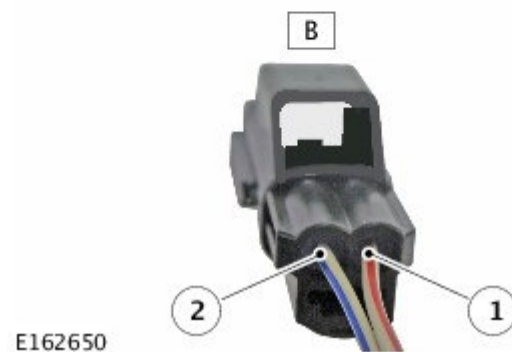
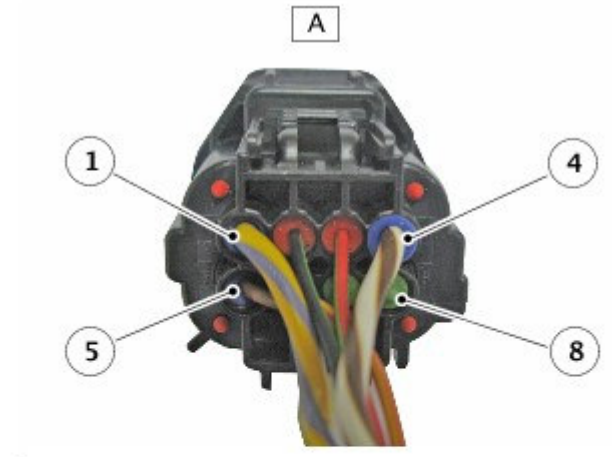
Connect the fuel pump wiring harness electrical connector to the flange electrical connector (Item 3).



10. Using special tool 310-123, secure fuel tank retaining ring (Item 5) to the fuel tank flange (Item 3).

11.  **NOTE: pin location as viewed from the rear of the electrical connector.**

Carry out a fuel tank sender unit resistance test.



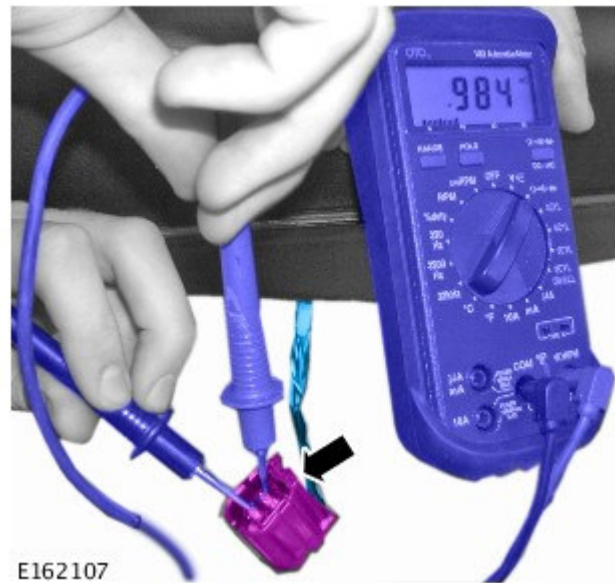
**12.** Carry out an electrical test to make sure the fuel tank sender unit reads correctly.

- Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 5 White/Red; approximately 50 Ohms with an empty tank.
- Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 6 White/Blue; approximately 50 Ohms with an empty tank.

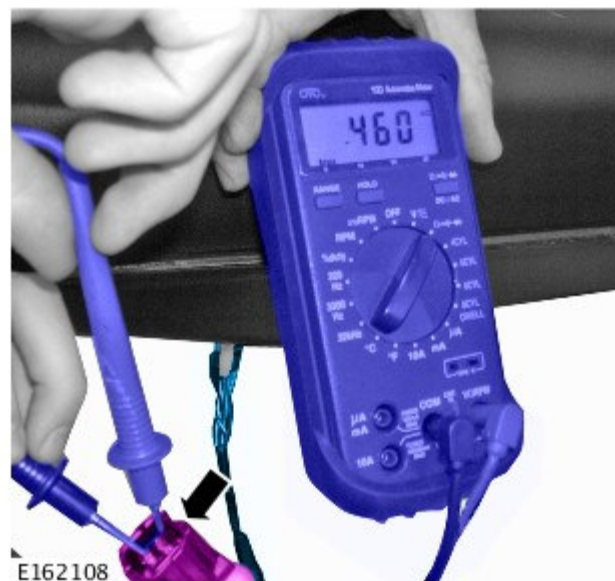


**13.** Turn the tank upside down to fully extend the fuel level sender float.

**14.** Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 5 White/Red; approximately 984 Ohms with an empty tank.



**15.** Using a suitable multi-meter, check the resistance between pin 9 Brown/Red and pin 6 White/Blue; approximately 460 Ohms with an empty tank.



**16.** Install the new evaporator pipe (Item 12) to the new fuel tank (Item 1).

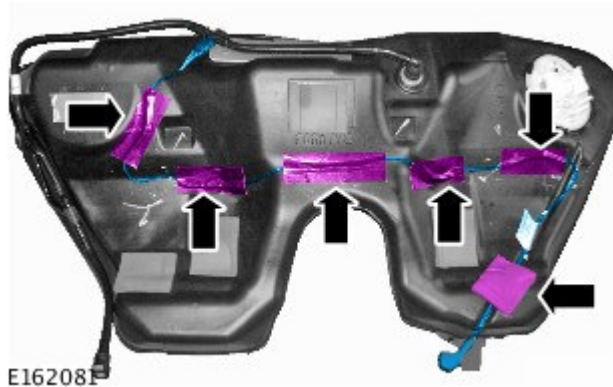




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**17.** Install the new fuel tank wiring harness (Item 13).

- Using suitable tape (Item 17), secure the fuel tank wiring harness to the fuel tank (Item 13).
- Connect the fuel tank sender unit electrical connector (Item 13) to the fuel tank sender unit (Item 3).



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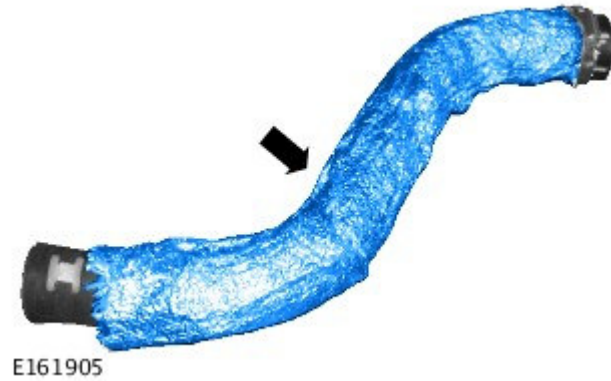
**18.** Install the existing fuel feed pipe to the new fuel tank (Item 1).



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**19.** Install heat sleeve (Item 11) over the fuel tank filler hose (Item 10).

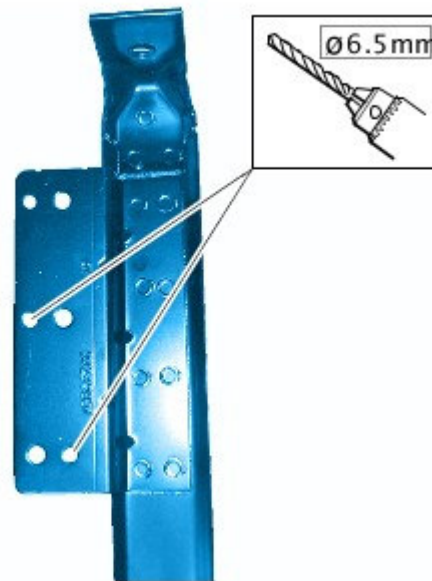




**20.** Install the new fuel tank filler hose to fuel filler neck.

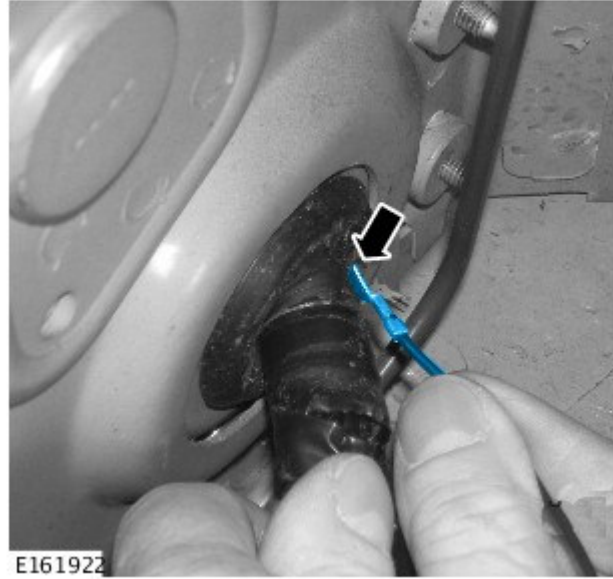
**21.** Take the new fuel tank strap brackets (Items 7 and 8) and:

- using a suitable 6.5mm drill bit, drill the right-hand strap bracket (Item 8);
- loosely install both straps to the heelboard and allow to hang.

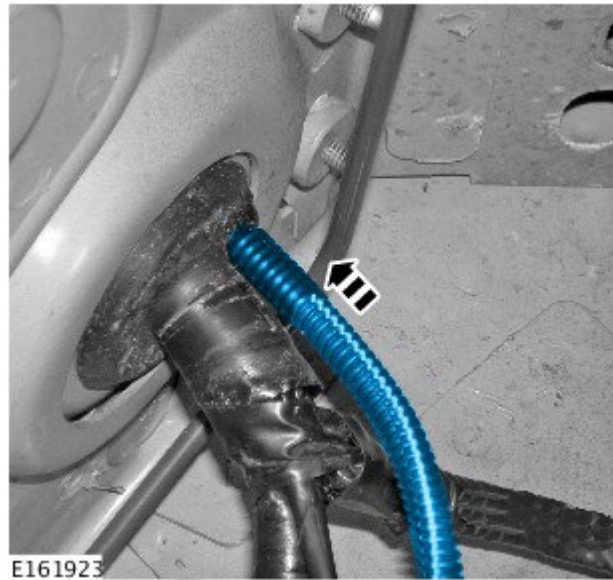


**22.** Install the new fuel tank heat shield (Item 9).

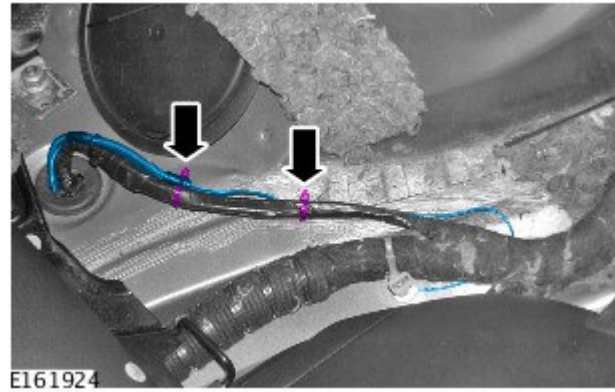
**23.** Using a suitable tool, make a small cut in the existing body grommet to allow the ground lead (Item 16) to pass through.



- 24.** Pass the ground lead (Item 16) through the existing body grommet into the vehicle.

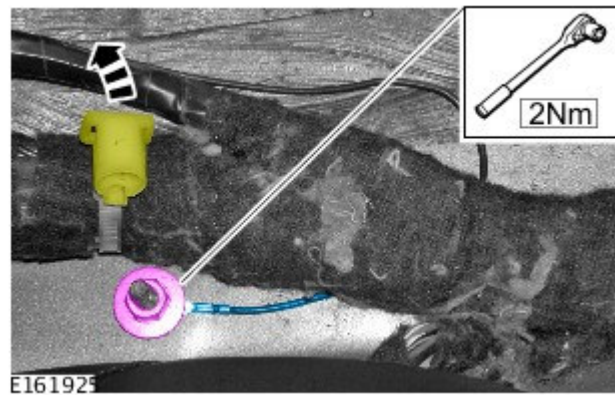


- 25.** Using a suitable cable tie (Item 14), secure the ground lead.

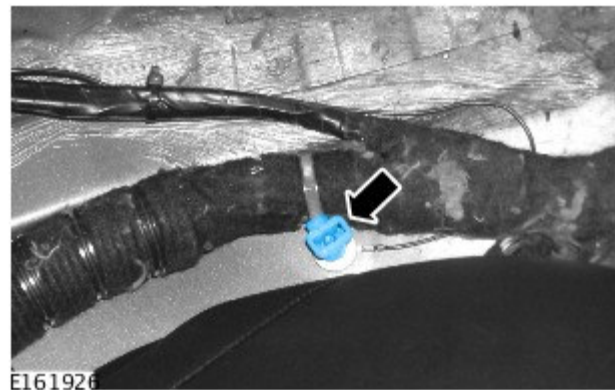


**26.** Remove the wiring harness clip.

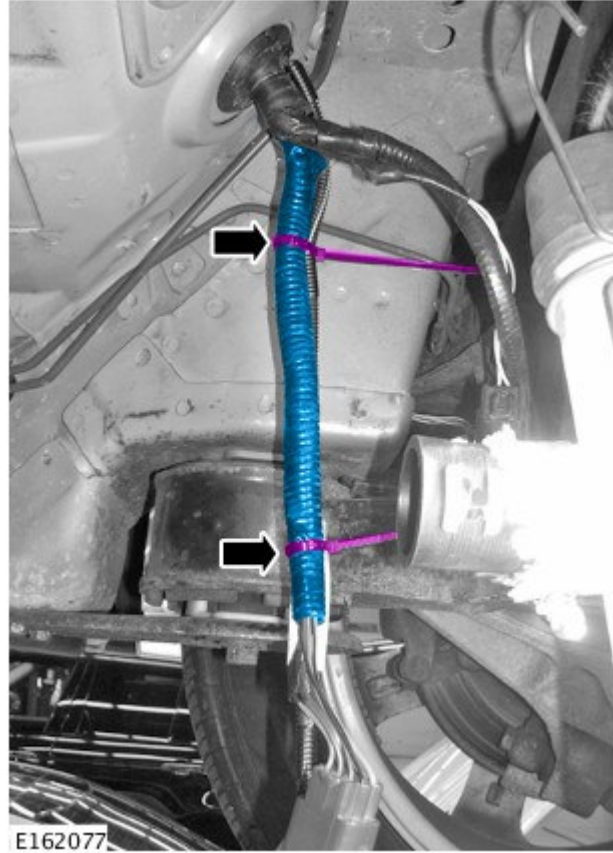
- Secure ground lead eyelet using M6 nut (Item 15).
- Torque to 2Nm.



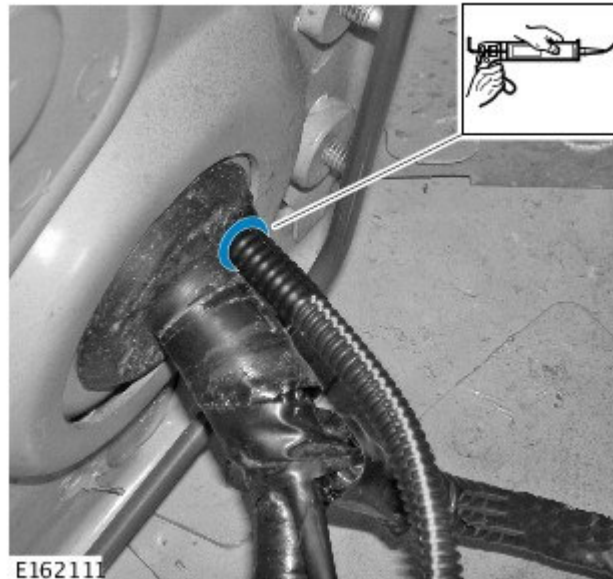
**27.** Install the wiring harness clip.



**28.** Using suitable cable ties (Item 14), secure the wiring harness.

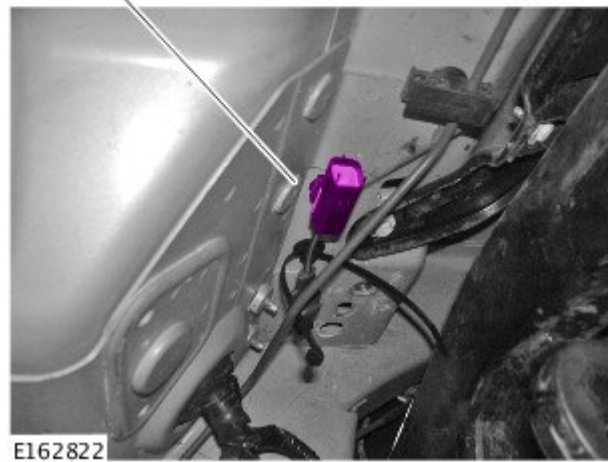
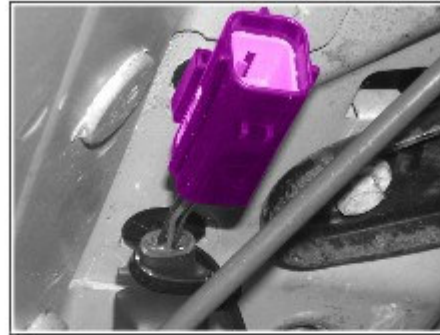


**29.** Using a suitable sealant (Item 20), seal the wiring harness to the body grommet.



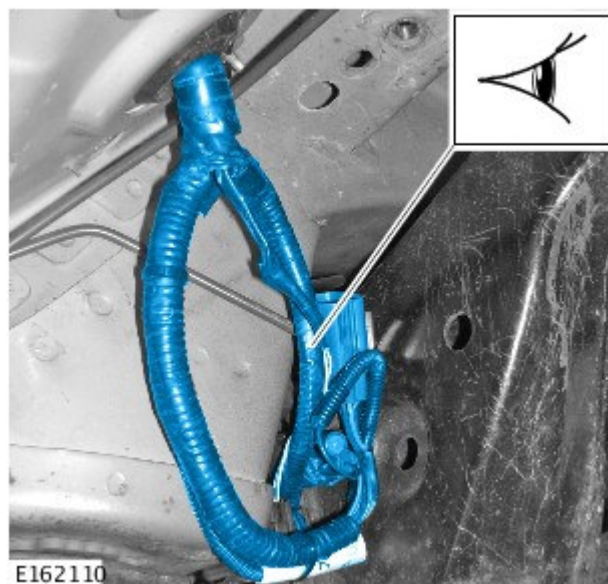
30. Install the Resistor box (Item 19) secure to the body using the clip attached to the electrical connector.

- Connect Resistor box (Item 19) to Fuel tank wiring harness (Item 13).



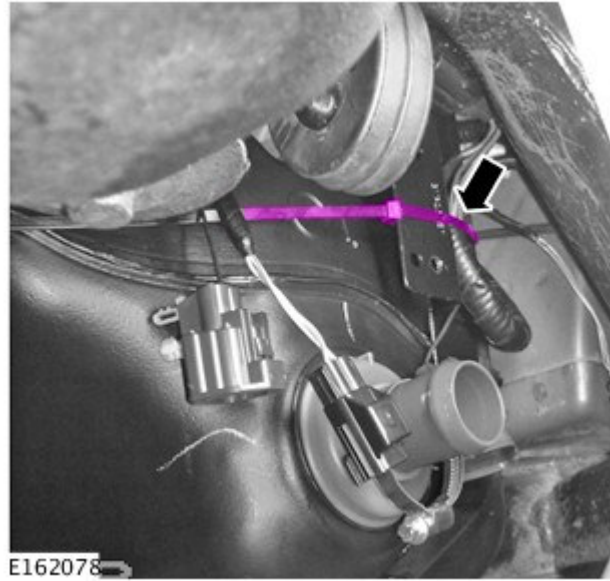
31.  **CAUTION: Position the wiring harness to one side prior to the installation of the new fuel tank.**

Install the new fuel tank (see TOPIx Workshop Manual, Section 310-01).





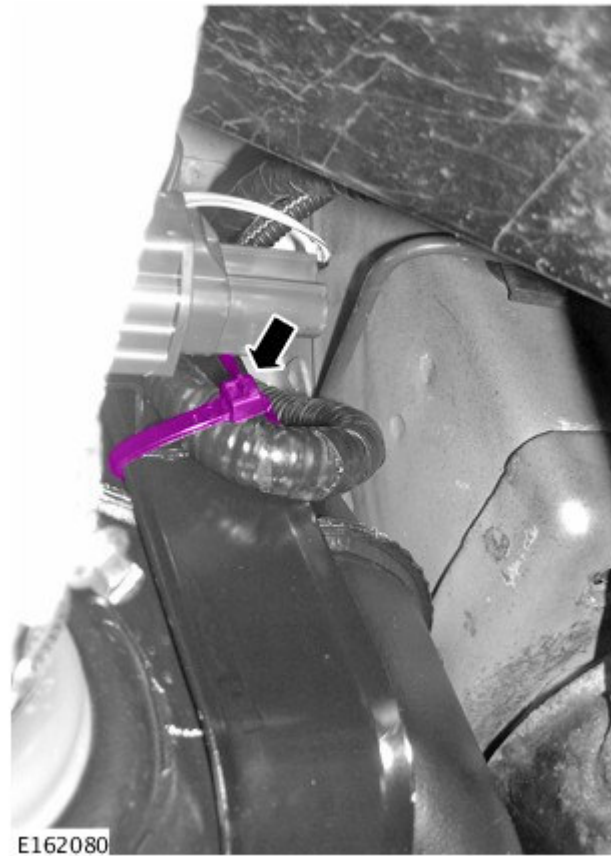
- 32.** Using a suitable cable tie (Item 14), secure the vehicle wiring harness to the right-hand fuel tank strap bracket (Item 8).



- 33.** Install the fuel tank connectors to the right-hand fuel tank strap (Item 8).



34. Using a suitable cable tie (Item 14), secure the wiring harness.



35. Install floor aperture cover.

36. Install the rear seat cushion (see TOPIx Workshop Manual, Section 501-10).

37.  **NOTE: Note the current vehicle mileage prior to installing the new Instrument Cluster (IC); this must be uploaded into the new Instrument Cluster.**

Install new Instrument Cluster (see TOPIx Workshop Manual, Section 413-01).

38. Add fuel to the fuel tank and confirm fuel pump and fuel gauge operation.