Drivability Issues – Diagnostic Checks – Check Sheet

MODEL 2000 MY-ON S-TYPE

VIN L00001-ON

Issue:

Some owners of 2000 MY-ON S-TYPE vehicles may experience drivability issues including stalling. This Technical Bulletin provides check sheets to follow with diagnostic information for all S-TYPE vehicles with drivability issues including stalling.

Action:

Complete a customer questionnaire and the check sheets to help assist in the identification of a drivability/stalling issue. The questionnaire and check sheet is a 3-page document; 1-page customer questionnaire and a 2-page Workshop Procedure/ diagnostic check sheet. Copy the forms on the last 3 pages of this bulletin.

The following pages take the technician through the check sheet in more detail by section.

It is vital that the customer is lead through the questionnaire with the service advisor and that the dealer technician completes every stage of the diagnostic check sheet.

> **Note:** If the dealer technician finds a fault/error in the early stages of the check sheet, it is mandatory that the remainder of the check sheet be completed.

1. Connect the WDS to the vehicle's DLC and select the PCM data read application. Select the tab with the car with the wrench. From the Vehicle Configuration Main Menu, select Special Applications, then select Powertrain control module data read application.

VALUE 0X094d

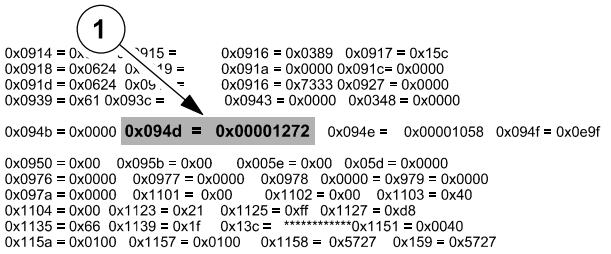


ILLUSTRATION 1

1.2 Record value 0x094d, as shown in Illustration 1.

VALUE 0X094e

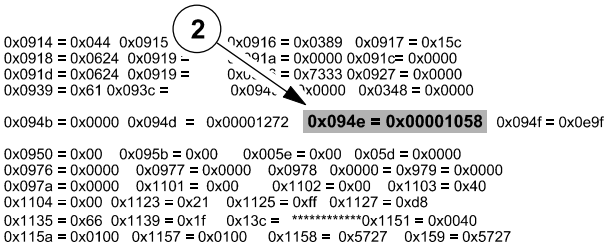


ILLUSTRATION 2

1.2 Record value 0x094e, as shown in Illustration 2.

2. In the luggage compartment:

2.1 Check battery lead to rear body ground point fixing bolt, as shown in Illustration 3. (Torque tighten to 12 Nm ± 1.8 Nm)

REAR BODY GROUND POINT

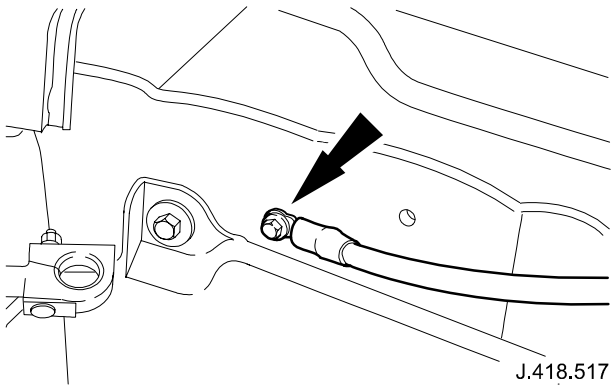
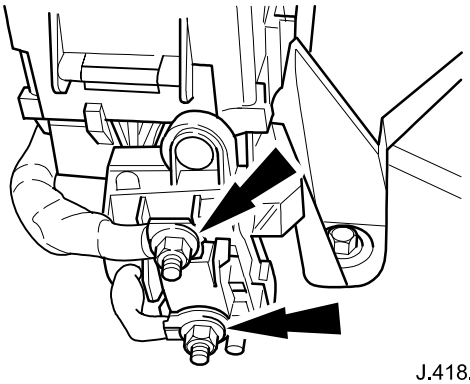


ILLUSTRATION 3

MEGAFUSE

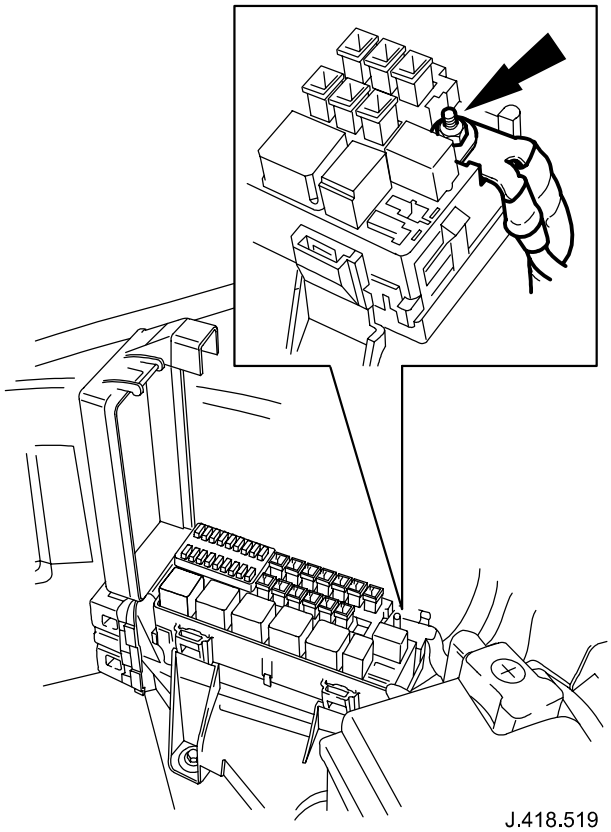


J.418.518

ILLUSTRATION 4

2.2 Check mega fuse, as shown in Illustration 4. (Torque tighten to 12 Nm ± 1.8 Nm)

FUSE BOX POWER LEAD



J.418.519

ILLUSTRATION 5

2.3 Check fuse box power lead, as shown in Illustration 5. (Torque tighten to 12 Nm ± 1.8 Nm)

3. Vehicle interior:

3.1 Check that all connections at secondary junction box are pushed fully home and are not damaged i.e. bent/backed-out (Illustration 6). Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved.

SECONDARY JUNCTION BOX

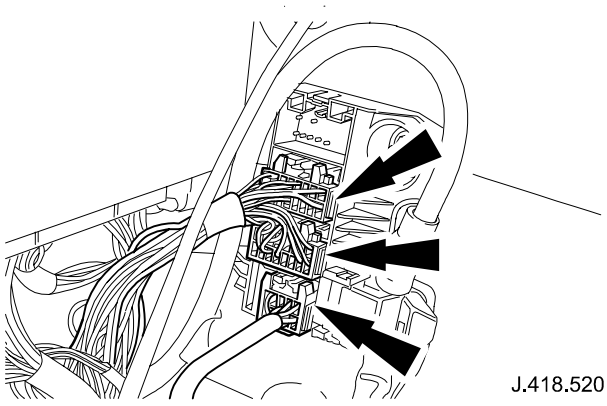


ILLUSTRATION 6

3.1 Check secondary junction box power lead connections, as shown in Illustration 7. (Torque tighten to 4.1 Nm ± 0.7 Nm)

SECONDARY JUNCTION BOX POWER LEAD

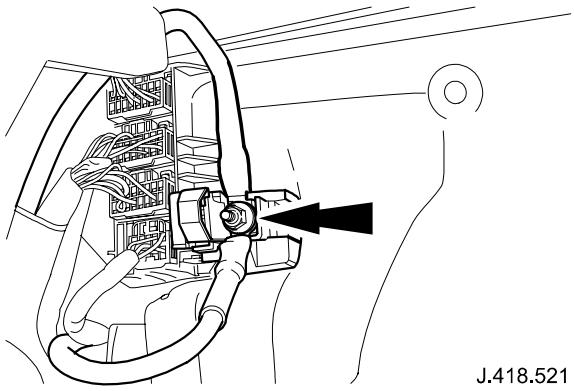


ILLUSTRATION 7

INERTIA SWITCH

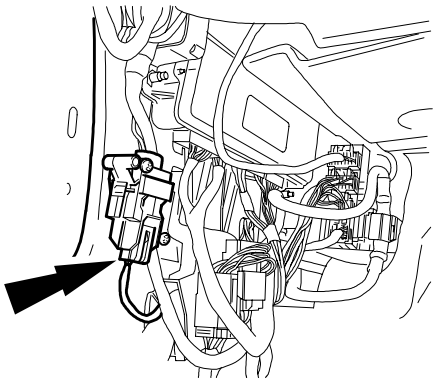


ILLUSTRATION 8

3.2 Check inertia switch connections are pushed fully home and are not damaged i.e. bent/backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved (Illustration 8). On vehicles prior to VIN L63474 check that the harness is not pulled tight, putting strain on the inertia switch connector.

3.3 Check the PCM for signs of water entry. Ensure that leak paths are rectified if signs of water ingress are evident.

Caution: Do not open the case to check for internal water entry, as this will invalidate the warranty.

Note: Replace the PCM only if it can be proven that it is faulty.

PRIMARY JUNCTION BOX CONNECTIONS

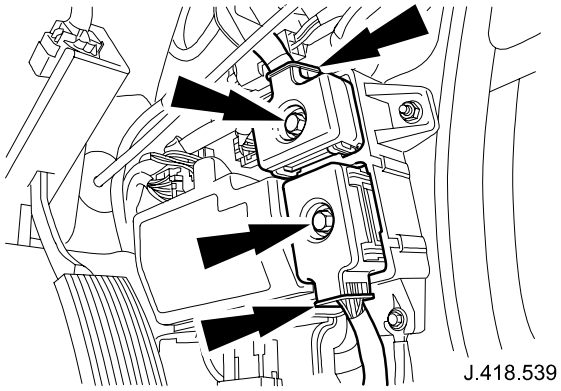


ILLUSTRATION 9

3.4 Check primary junction box connections (located in right-hand side A-post fuse box), as shown in Illustration 9. (Torque tighten to 3.2 Nm ± 0.5 Nm) Wiggle block connectors to ensure they are sufficiently clamped to fuse box i.e. tight.

PRIMARY JUNCTION BOX CONNECTIONS

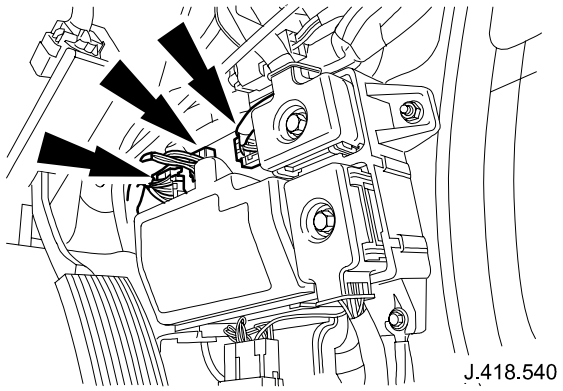


ILLUSTRATION 10

3.4 Check primary junction box connections (located in right-side A-post fuse box) are pushed fully home and are not damaged i.e. bent/backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved (Illustration 10).

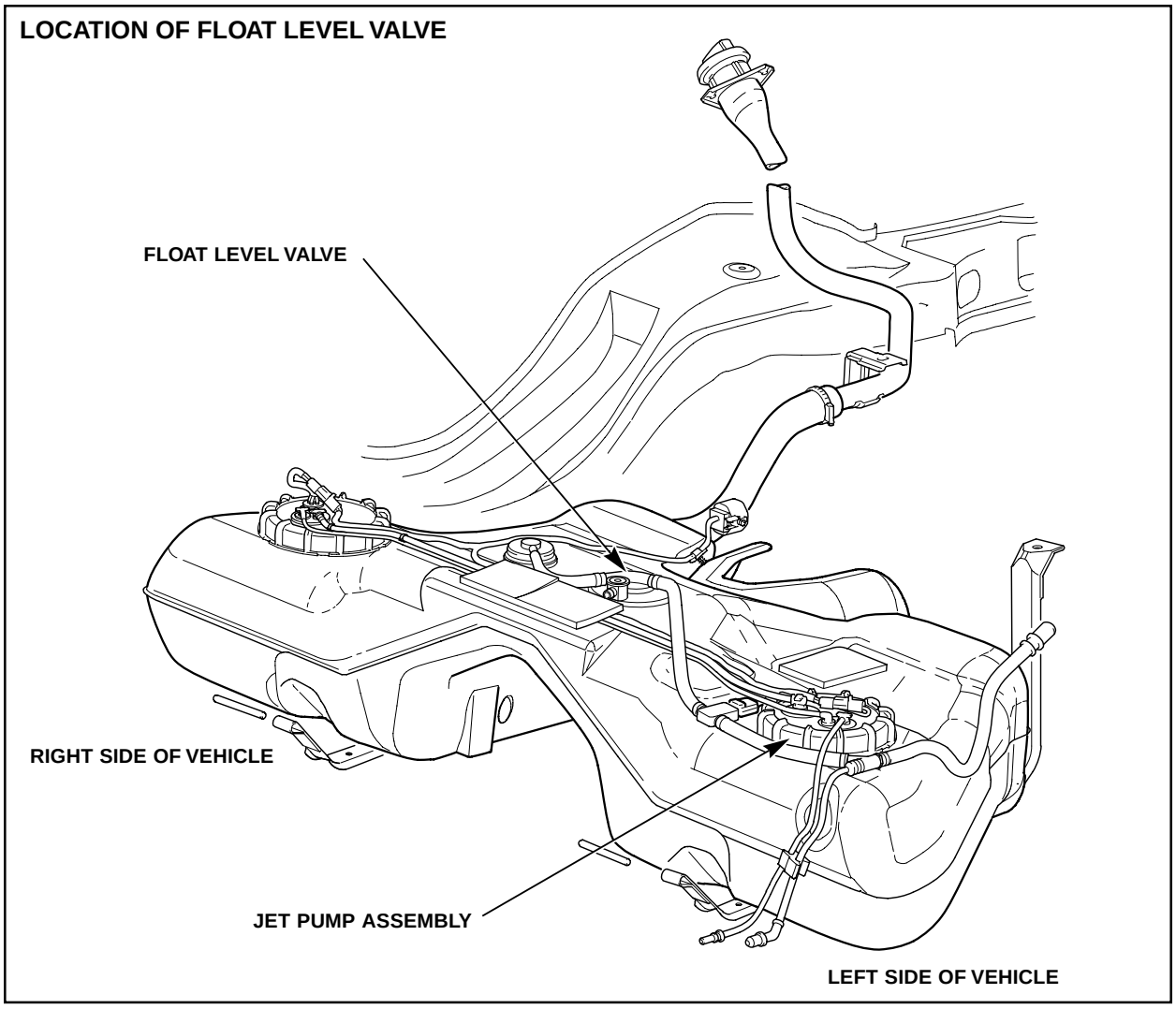


ILLUSTRATION 11

3.7 After removing the jet pump assembly from the left side of the fuel tank (Illustration 11), drain the fuel and feel inside that the disk is present and secure in the float level valve (Illustration 12). The valve is welded into the tank and cannot be viewed directly. Loose components may be floating on the surface on the fuel.

3.7 Illustration 12 shows complete and defective float level valves. A defective valve can result in stalling immediately after the fuel tank has been fully filled. Under these conditions, fuel can saturate the charcoal canisters which causes an overly rich condition when the PCM attempts to purge the canisters.

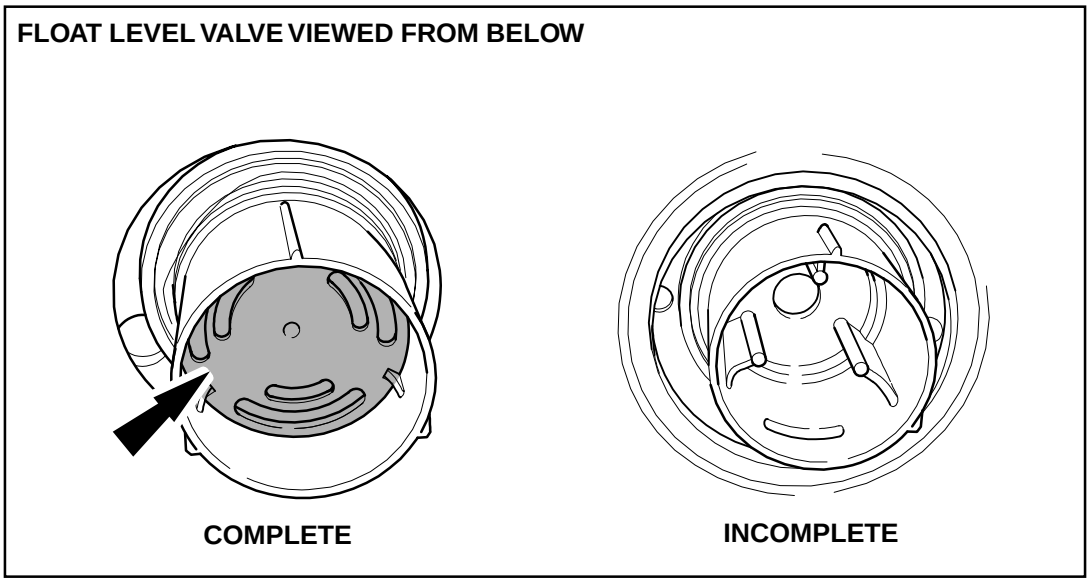


ILLUSTRATION 12

4 Under the hood:

4.1 Record the Mass Air Flow Sensor (MAFS) date stamp code, as shown in Illustration 13.

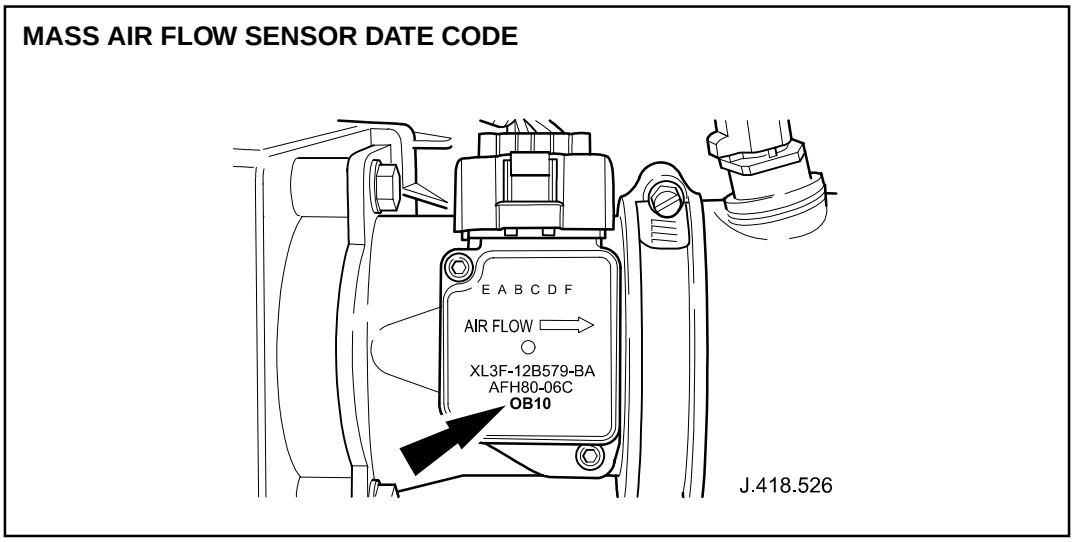


ILLUSTRATION 13

CHECK FOR ENGINE HARNESS CHAFING

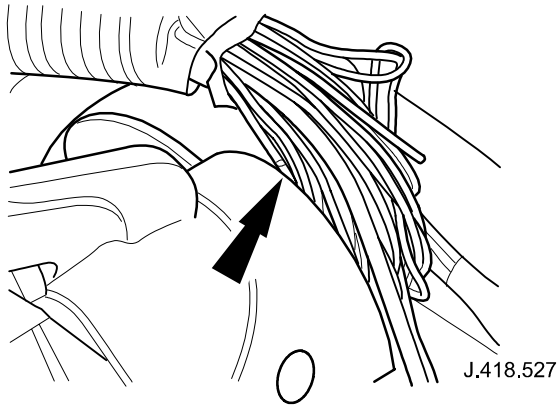


ILLUSTRATION 14

4.2 Check for chafing of the engine harness on the injector pressure sensor bracket, as shown in Illustration 14.

CHECK FOR ENGINE HARNESS CHAFING

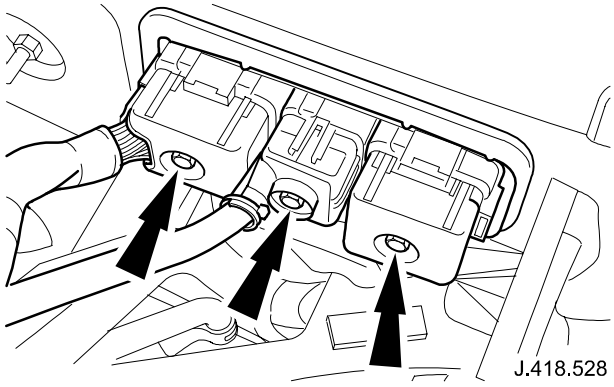


ILLUSTRATION 15

4.3 Check PCM connectors, as shown in Illustration 15. (Torque tighten to 4.8 Nm ± 0.8 Nm). Wiggle block connectors to ensure they are sufficiently clamped to PCM i.e. tight.

Note: Removal of pollen filter housing allows easier access to PCM connectors.

CHECK HARNESS CONNECTORS FOR WATER ENTRY

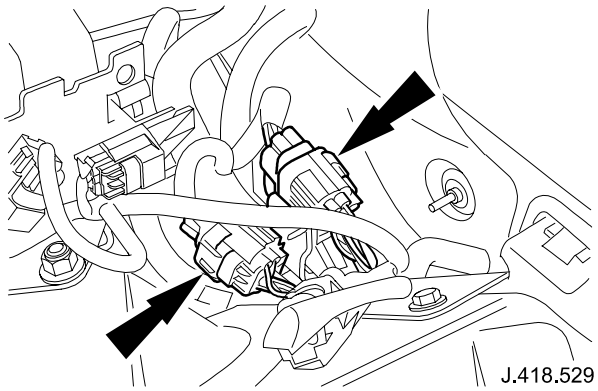


ILLUSTRATION 16

4.4 Check engine harness to body harness connectors PI46 and PI2 for signs of water entry. Ensure the connectors are pushed fully home and are not damaged i.e. bent/ backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved (Illustration 16).

MEASURE SPARK PLUG RESISTANCE

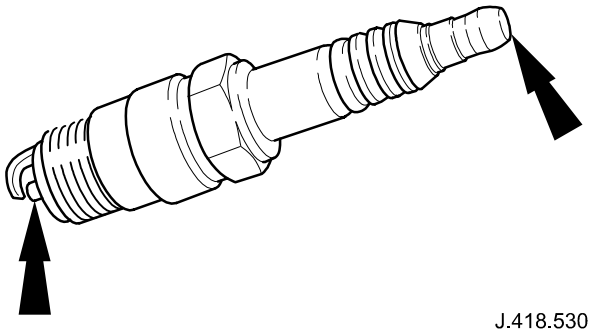


ILLUSTRATION 17

4.5 Measure spark plug resistance between the spark electrode and the coil end of the plug, using a standard ohmmeter (Illustration 17).

4.5.1 Check the spark plugs, wells and coils for signs of water ingress. If signs of water ingress are visible, clean and dry the affected area. (For V8 vehicles only, if signs of water ingress are visible, replace coil covers)

CHECK HARNESS CONNECTOR FOR WATER ENTRY

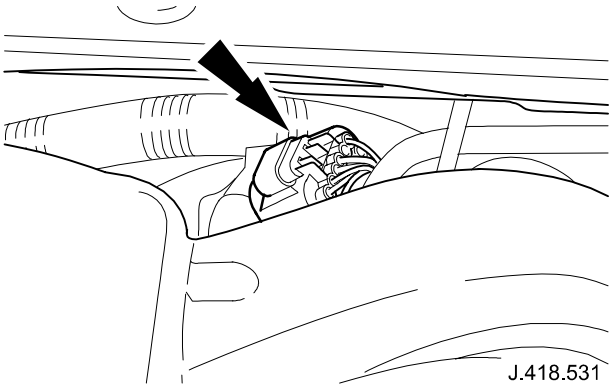


ILLUSTRATION 18

4.6 Check in-line connector from engine harness to injector harness for signs of water ingress (Illustration 18). Ensure the connectors are pushed fully home and are not damaged i.e. bent/backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved.

AIR CLEANER SECURING CLIPS

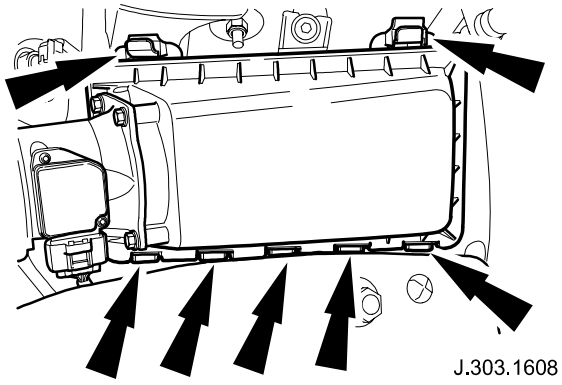


ILLUSTRATION 19

4.7 Check that the air cleaner lid securing clips are secure, as shown in Illustration 19. If the clips are loose, check the air cleaner (intake to engine side) for dirt ingress. Clean/replace as necessary and re-install lid ensuring that the securing clips are fastened correctly.

ENGINE COMPARTMENT FUSE BOX POWER LEAD

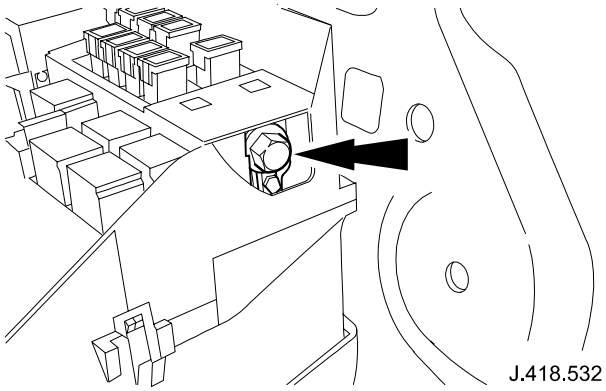


ILLUSTRATION 20

4.8 Check the engine compartment fuse box power lead, as shown in Illustration 20. (Torque tighten to 12 Nm ± 1.8 Nm)

PCM RELAY BASE CONNECTIONS

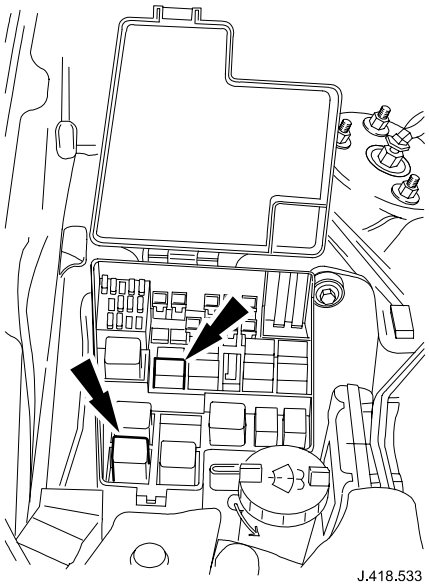


ILLUSTRATION 21

4.9 Check the PCM relay base connections (relays number 4 and 14 in engine compartment fuse box) are pushed fully home and are not damaged i.e. bent/ backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved (Illustration 21).

FH42 GROUND POINT SECURING NUT

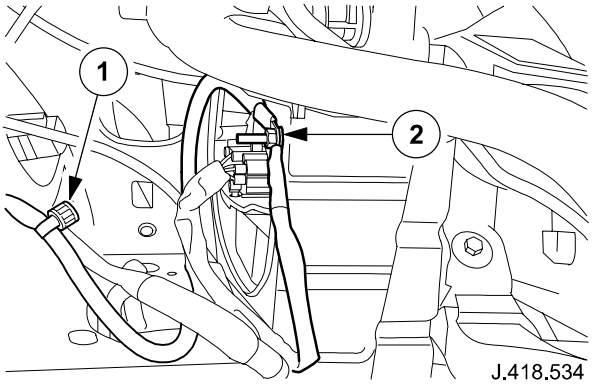


ILLUSTRATION 22

4.9.1 Remove the harness-retaining clip (1, Illustration 22) from FH42 ground point. Check that the FH42 grounding point securing nut (2, Illustration 22) is tight (torque tighten to 12 Nm ± 1.8 Nm). Reinstall harness-retaining clip.

5 Under the vehicle:

5.1 Check ground point FH049 (located under front passenger side wheel arch liner), as shown in Illustration 23. (Torque tighten to 12 Nm ± 1.8 Nm)

GROUND POINT FH049

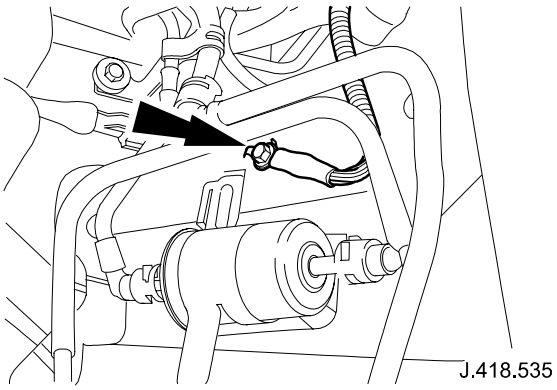


ILLUSTRATION 23

5.2 Check power lead connection B03/B04 (located under front right-hand wheel arch liner), as shown in Illustration 24 (Torque tighten to 12 Nm ± 1.8 Nm).

POWER LEAD CONNECTION B03/B04

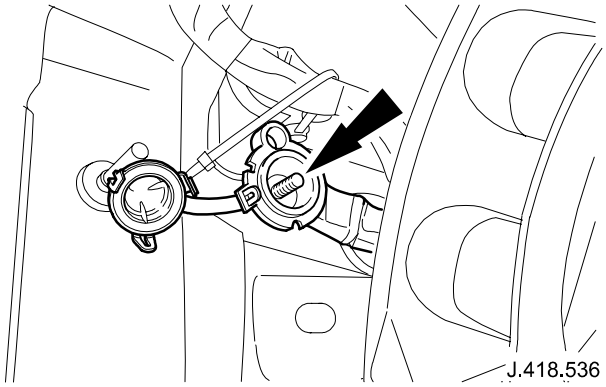


ILLUSTRATION 24

5.3 Check the crank position sensor and its connector/wiring (PI40) for signs of water/ oil ingress. Ensure the connectors are pushed fully home and are not damaged i.e. bent/backed-out. Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved. The crank position sensor can be found at the rear of the engine for V8 vehicles and at the front of the engine for V6 vehicles.

Note: If after completing the Questionnaire and Check Sheet the problem is still present, contact Technical Hotline for further assistance.

Parts Information:

When proceeding with engine stalling check sheet, utilize harness repair kits 418-S411 and 418-S065.

Warranty Information:

The check sheet can be claimed for against the following R.O. Number and Fault Code. If a fault is found and can be rectified, it should be claimed for against its own R.O. Number and Fault Code.

FAULT CODE	R.O. NUMBER	DESCRIPTION	TIME ALLOWANCE
FX DC 82	12.92.04	Complete Stall Check Sheet	6.4 hrs.

S-TYPE Engine Stalling Questionnaire

To be completed by Service Advisor with customer

Dealer Code: **Dealer Name:**

Customers Name:				**Date:**		
VIN:						
Model (Check as appropriate õ)	V8		V6 Auto		V6 Manual	

Please describe the condition and symptoms when the problem occurred, along with details of previous stall issues, including what rectification action were taken:

(Check as appropriate õ)

Mileage at last stall: Km/Miles			**Current mileage:** Km/Miles		
Frequency of stall	Once		Constantly		Times per week:

Previously repaired?	**YES**		**NO**	

Weather conditions	Dry		Wet		Other (please specify):			
Ambient temperature	Hot		Warm		Cold		**Approx Temp:**	**°C/°F**

Driving conditions	Urban		Motorway/Freeway		Other:	
Vehicle speed (approx):	Km/h / Miles/h					
Transmission gear (Auto only)	(Circle) **P R N D 4 3 2**			Normal		Sport

Fuel level in tank	Full		3/4		1/2		1/4		Very low	

Re-starting	Re-starts only with key (stationary)		Re-starts after prolonged cranking		
	Will not re-start		Re-starts immediately		

Engine stalling information	Stalls at steady throttle		Stalls after starting			
	Stalls shifting into DRIVE		Stalls when accelerating			
	Loses power then stalls		Stalls when slowing down			
	Stalls when maneuvering at low speed		Stalls when turning left		Stalls when turning right	

Has the vehicle had any non-approved devices installed? (I.e. Alarm, Tracker, Radio, Telephone etc…)	**YES**		**NO**	
If YES, please specify:				

S-TYPE Engine Stalling Check Sheet

To be completed by Dealer Technician

VIN: Mileage: Km/Miles

(Check as appropriate ō)

1	**Connect WDS:**					
1.1	Record **all** logged DTC Codes:					
1.2	Download ECM DATA READ APPLICATION using WDS. Note values as identified on page 2 0x094d = 0x094e =					
1.3	Record Calibration ID (found at top left-hand side of download screen):					
1.4	Has battery been disconnected, or PCM re-flashed since last stall incident?					
	YES		**NO**		**Unsure**	

2	**In the luggage compartment:**					
2.1	Are battery leads (including the body earth point)…					
	Tight?			Loose?		
2.2	Is the mega fuse…					
	Tight?		Loose?		Corroded?	
2.3	Is fuse box power lead…					
	Tight?		Loose?		Corroded?	

3	**Vehicle interior:**					
3.1	Are secondary junction box connections (in LH foot well) and power lead…					
	Good condition and tight?		Poor condition?		Loose?	
3.2	Is inertia switch connector/harness (ONLY vehicles prior to VIN L63474)…					
	Functioning correctly?		Faulty?		Outside VIN range?	
3.3	Check PCM case and bracket for signs of water ingress (do not open PCM case). Are there…					
	Water marks on case?			No signs of water ingress		
3.4	Are primary junction box connections (RH side A-post fuse box)…					
	Good condition?		Poor condition/faulty?		Loose?	
3.5	Is wiring behind rear squab area (see S120) (ONLY vehicles prior to VIN L24665)…					
	Good condition and tight?		Poor condition/faulty?		Outside VIN range?	
3.6	Is in-tank fuel pump hose (see TSB S310-01v2) (ONLY vehicles prior to VIN L27500)…					
	Good condition?		Poor condition/faulty?		Outside VIN range?	

Only check step 3.7 if the stall occurs after re-fuelling and the vehicle exhibits severe misfire.

3.7	Is fuel tank fill level valve…					
	Functioning correctly?			Faulty?		

S-TYPE Engine Stalling Check Sheet (Cont.)

4	**Under the hood:**
4.1	Record the Mass Air Flow Sensor (MAFS) date stamp code:
4.2	**V6 ONLY**, Is the engine harness chaffing on the Injector Pressure Sensor bracket? **YES** ☐ **NO** ☐
4.3	Are PCM connectors secure? **YES** ☐ **NO** ☐
4.4	Are engine harness connectors PI46 & PI2 (by passenger side front suspension turret)… Good condition? ☐ Damaged? ☐
4.5	Remove spark plugs and record their resistances (both V6 and V8 engines). Cylinder 1 = KΩ Cylinder 2 = KΩ Cylinder 3 = KΩ Cylinder 4 = KΩ Cylinder 5 = KΩ Cylinder 6 = KΩ Cylinder 7 = KΩ Cylinder 8 = KΩ **Replace those below 1KW**
4.5.1	Check spark plugs and coils for signs of water ingress (both V6 & V8 engines). Are they… Dry? ☐ Wet? ☐ Corroded? ☐
4.6	**V6 ONLY**, Is in-line connector (IL10) from engine harness to injector harness… Good condition? ☐ Damaged? ☐
4.7	Are the air cleaner lid securing clips… Secure? ☐ Loose? ☐
4.8	Is the engine compartment fuse box power lead… Tight? ☐ Loose? ☐
4.9	Are PCM relay base connections (relays number 4 & 14 in engine compartment fuse box)… Good condition? ☐ Poor condition/faulty? ☐
4.9.1	Is the ground point FH42 (located behind the RH headlamp)… Tight? ☐ Loose? ☐

5	**Under the vehicle:**
5.1	Is ground point FH049 (under front passenger side wheel arch liner)… Tight? ☐ Loose? ☐
5.2	Is power lead connection B03/B04 (under right-hand side wheel arch liner)… Tight? ☐ Loose? ☐
5.3	Are the crank position sensor (PI40) and its connector/wiring… Good condition? ☐ Contaminated with oil? ☐ Poor condition/faulty? ☐

Only check step 5.4 if the stall issue was at less than 32 Km/hr (20 Miles/hr).

5.4	**Automatic vehicles only**, is the transmission oil filter seal (JTIS CD ROM, section 307-01)… Installed correctly? ☐ Faulty? ☐