



TECHNICAL BULLETIN

S303-07v2

01/2004

Subject

Drivability Issues Check Sheet

Model: S-TYPE

Year: 1999.25 to 2002

VIN L00600 to M45254

Section: 303-00

Engine System - General Information

Summary

S303-07: This Technical Bulletin has been issued to provide diagnostic information, for vehicles with stalling issues, should a customer express concern.

This Technical Bulletin has been issued due to the addition of a finish VIN and changes from Warranty Code to Causal Part and is a replacement for Technical Bulletin S303-07. Please destroy all copies of S303-07 and replace it with this Technical Bulletin S303-07v2.

Action

It is required that Dealer Receptionist and customer complete a questionnaire and the Dealer Technician completes the check sheet to assist in the identification of a stalling issue. The questionnaire and check sheet is a 3-page document; 1-page customer questionnaire and a 2-page stalling check sheet. The Additional Information is included to assist the Dealer Technician in completing the check sheet.

It is vital that the customer is led through the questionnaire with the Dealer receptionist and that the Dealer Technician completes every stage of the diagnostic check sheet.

Note: If the Dealer Technician finds a fault in the early stages of the check sheet, it is mandatory that the remainder of the check sheet be completed.

Note: If after completing the Questionnaire and Check Sheet the problem is still present, contact Dealer Technical Support 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 SRO and Causal Part. If a fault is found and can be rectified, it should be claimed for against its own SRO and Causal Part.

Description	SRO	Labor Time Allowance			Causal Part
		3.0L Manual	3.0L Auto	4.0L Auto	
Stall Check Sheet left hand drive	12 92 04	5.1 Hours	6.2 Hours	6.2 Hours	XR8 17821
Stall Check Sheet right hand drive	12 92 04	5.1 Hours	6.2 Hours	6.2 Hours	XR8 14252

S-TYPE Engine Stalling Questionnaire

Page 1 to be completed by Dealer Receptionist with customer

Dealer Code:

Dealer Name:

Customer's Name:				Date:		
VIN:						
Model (Tick as appropriate ✓)	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 actions were taken:

(Tick as appropriate ✓)

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

Previously repaired?	YES	NO
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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
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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:

Pages 2 & 3 to be completed by Dealer Technician

Km/Miles

1	Connect WDS:
1.1	Record all logged Diagnostic Trouble Codes (DTC):
1.2	Download ECM DATA READ APPLICATION using WDS. Note values as identified in Additional Information 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? <div> <div>YES</div> <div></div> <div>NO</div> <div></div> <div>Unsure</div> <div></div> </div>

2	In the luggage compartment:			
2.1	Are battery leads (including the body ground point)...			
	Tight?	<input type="checkbox"/>	Loose?	<input type="checkbox"/>
2.2	Is the mega fuse...			
	Tight?	<input type="checkbox"/>	Loose?	<input type="checkbox"/>
			Corroded?	<input type="checkbox"/>
2.3	Is fusebox power lead...			
	Tight?	<input type="checkbox"/>	Loose?	<input type="checkbox"/>
			Corroded?	<input type="checkbox"/>

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

Only check step 3.6 if the stall occurs after re-fuelling and the vehicle exhibits severe misfire.

3.6	Is fuel tank fill level valve...		
	Functioning correctly?	<input type="checkbox"/>	Faulty? <input type="checkbox"/>

S-TYPE Engine Stalling Check Sheet (Cont.)

4	Under the hood:		
4.1	Record the Mass Air Flow (MAF) Sensor date stamp code:		
4.2	V6 ONLY , Is the engine harness chafing on the Injector Pressure Sensor bracket?		
	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
4.3	Are PCM connectors secure?		
	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
4.4	Are engine harness connectors PI46 & PI2 (by passenger side front suspension turret)...		
	Good condition?	<input type="checkbox"/>	Damaged? <input type="checkbox"/>
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 1KΩ
4.5.1	Check spark plugs and coils for signs of water ingress (both V6 & V8 engines). Are they...		
	Dry?	<input type="checkbox"/>	Wet? <input type="checkbox"/> Corroded? <input type="checkbox"/>
4.6	V6 ONLY , Is in-line connector (IL10) from engine harness to injector harness...		
	Good condition?	<input type="checkbox"/>	Damaged? <input type="checkbox"/>
4.7	Are the air cleaner lid securing clips...		
	Secure?	<input type="checkbox"/>	Loose? <input type="checkbox"/>
4.8	Is the engine compartment fusebox power lead...		
	Tight?	<input type="checkbox"/>	Loose? <input type="checkbox"/>
4.9	Are PCM relay base connections (relays number 4 & 14 in engine compartment fusebox)...		
	In good condition?	<input type="checkbox"/>	In poor condition/faulty? <input type="checkbox"/>
4.9.1	Is the ground point FH42 (located behind the RH headlamp)...		
	Tight?	<input type="checkbox"/>	Loose? <input type="checkbox"/>

5	Under the vehicle:		
5.1	Is ground point FH049 (under front passenger-side wheel arch liner)...		
	Tight?	<input type="checkbox"/>	Loose? <input type="checkbox"/>
5.2	Is power lead connection B03/B04 (under right-hand side wheelarch liner)...		
	Tight?	<input type="checkbox"/>	Loose? <input type="checkbox"/>
5.3	Are the crank position sensor (PI40) and its connector/wiring...		
	In good condition?	<input type="checkbox"/>	Contaminated with oil? <input type="checkbox"/> In poor condition/faulty? <input type="checkbox"/>

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?	<input type="checkbox"/>	Faulty? <input type="checkbox"/>

Additional Information

Connect WDS:

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

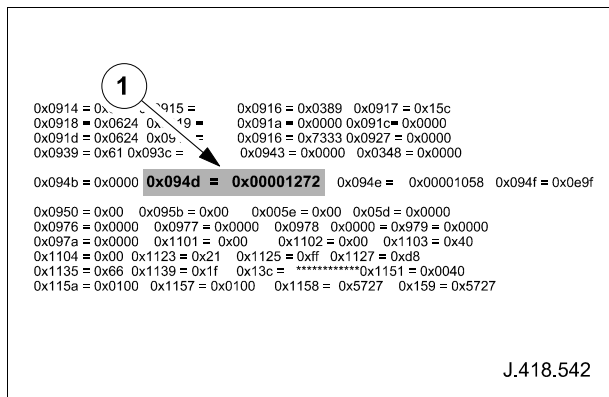


Fig. 1

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

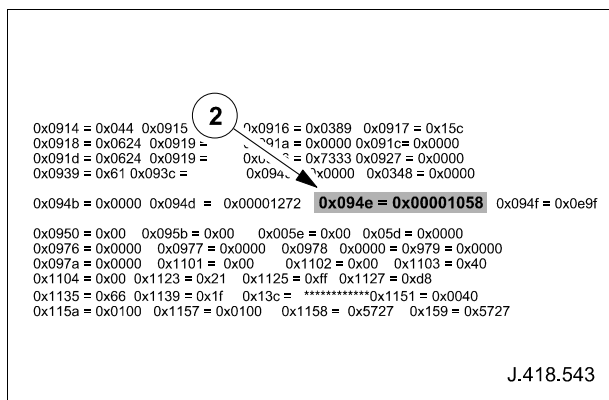


Fig. 2

In the luggage compartment:

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

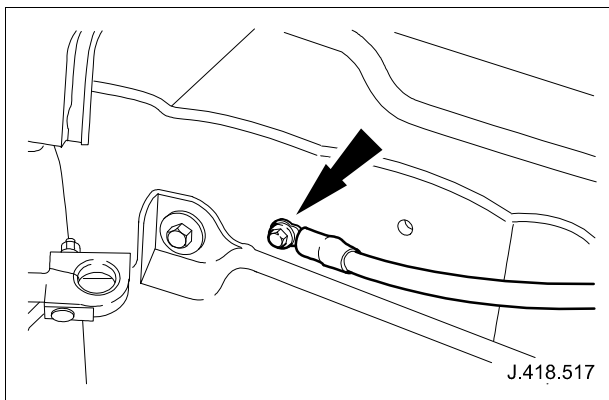


Fig. 3

- 2.2 Check mega fuse, as shown in Fig. 4.
(Torque tighten to $12\text{Nm} \pm 1.8\text{Nm}$)

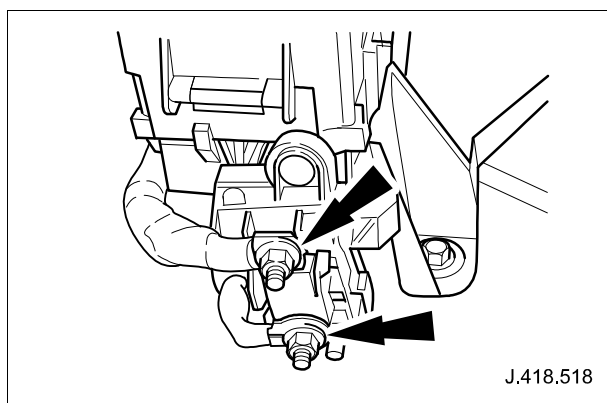


Fig. 4

- 2.3 Check fuse box power lead, as shown in Fig. 5. (Torque tighten to $12\text{Nm} \pm 1.8\text{Nm}$)

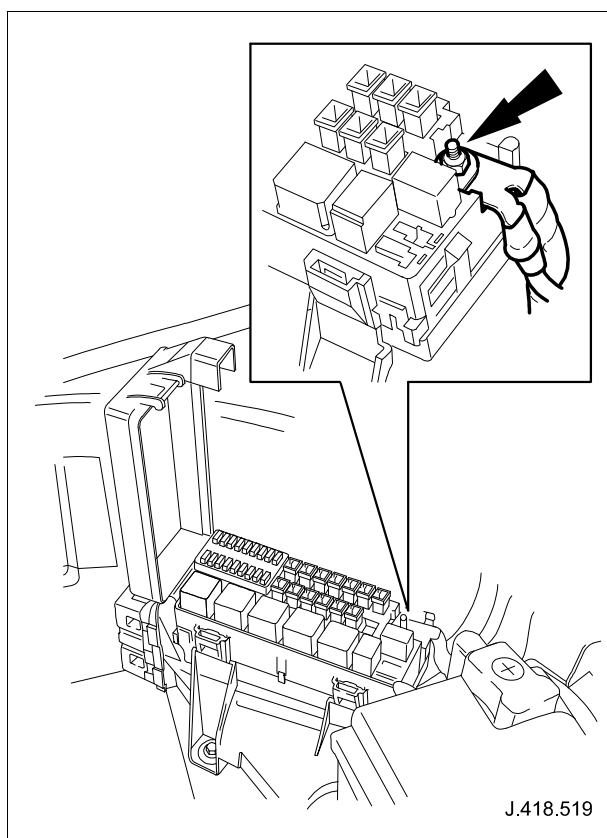


Fig. 5

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 (see Fig. 6). Where available, utilize opposing pins from the harness repair kit and insert into populated pins to ensure a good/tight fit is achieved.

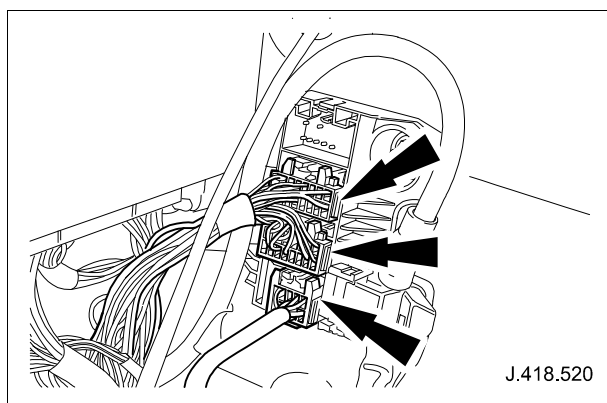


Fig. 6

- 3.1 Check secondary junction box power lead connections, as shown in Fig. 7. (Torque tighten to $4.1\text{Nm} \pm 0.7\text{Nm}$)

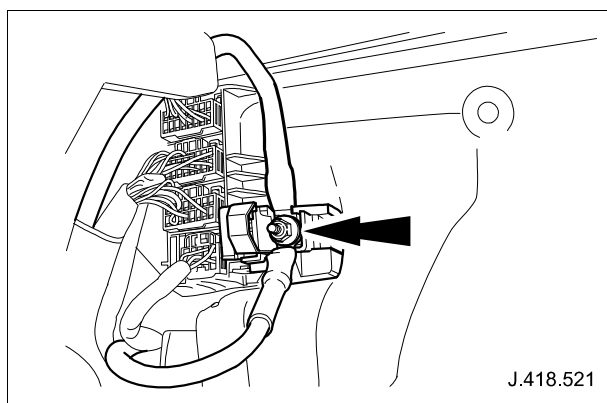


Fig. 7

- 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. (See Fig. 8)

Vehicles prior to VIN L63474 check that the harness is not pulled tight, putting strain on the inertia switch connector.

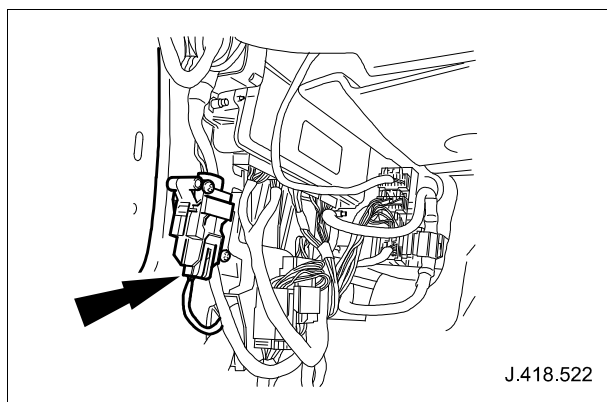


Fig. 8

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

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

Note: Only replace PCM if it can be proven that it is faulty.

- 3.4 Check primary junction box connections (located in right-hand side A-post fusebox), as shown in Fig. 9. (Torque tighten to $3.2\text{Nm} \pm 0.5\text{Nm}$)

Attempt to move connectors from side to side to ensure that they are clamped sufficiently tightly to the fusebox.

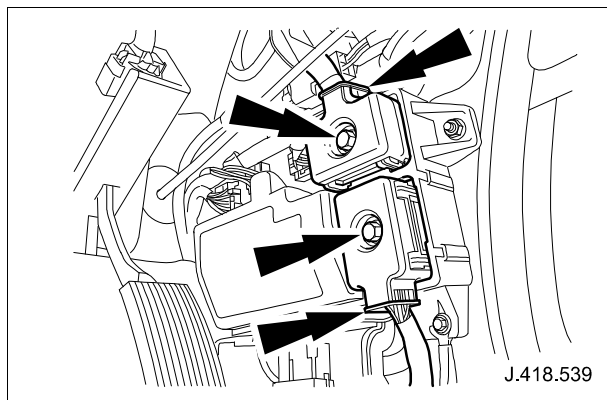


Fig. 9

- 3.4 Check primary junction box connections (located in right-hand side A-post fusebox) 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. (See Fig. 10)

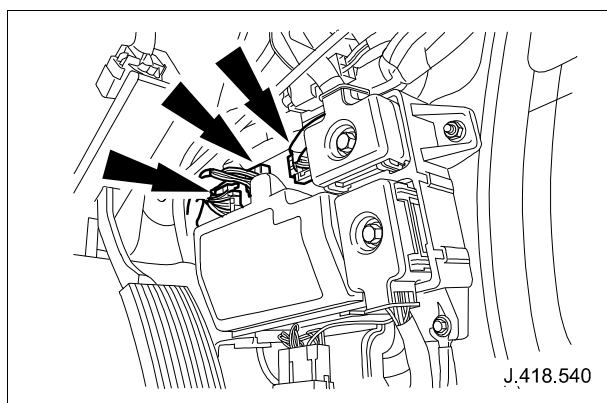


Fig. 10

- 3.6 After removing jet pump assembly from left side of fuel tank, drain-off fuel and feel inside for the presence/security of the fuel tank fill level valve.

Fig. 11 Shows a complete fuel tank fill level valve that **will function correctly**.

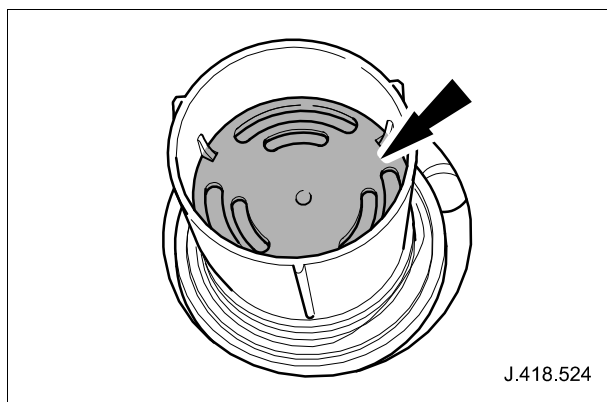


Fig. 11

- 3.6 Fig. 12 Shows an incomplete fuel tank fill level valve that **will not function correctly**.

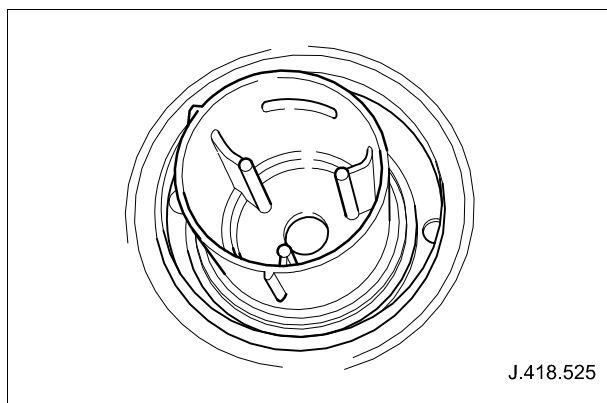


Fig. 12

Under the hood:

- 4.1 Record the Mass Air Flow (MAF) Sensor date stamp code, as shown in Fig. 13.

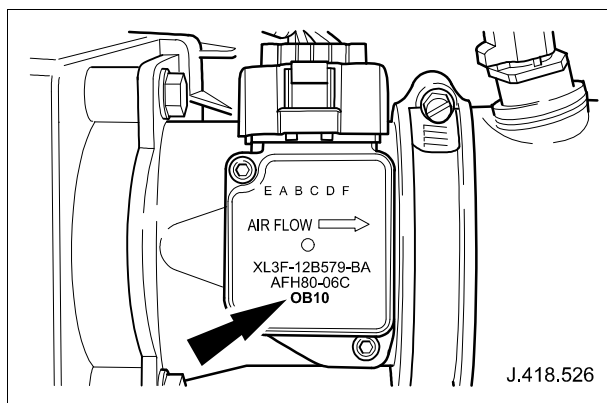


Fig. 13

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

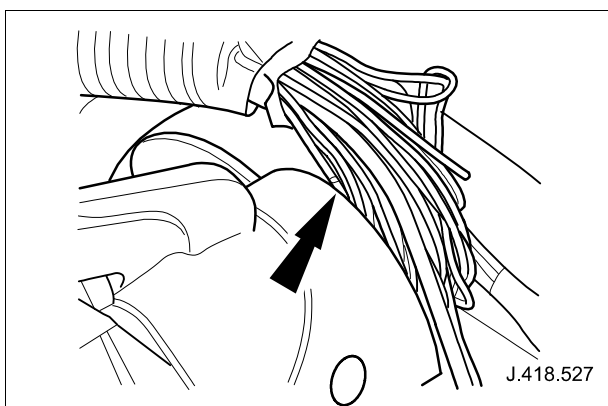


Fig. 14

- 4.3 Check PCM connectors, as shown in Fig. 15. (Torque tighten to $4.8\text{Nm} \pm 0.8\text{Nm}$)

Attempt to move connectors from side to side to ensure that they are clamped sufficiently tightly to the fusebox.

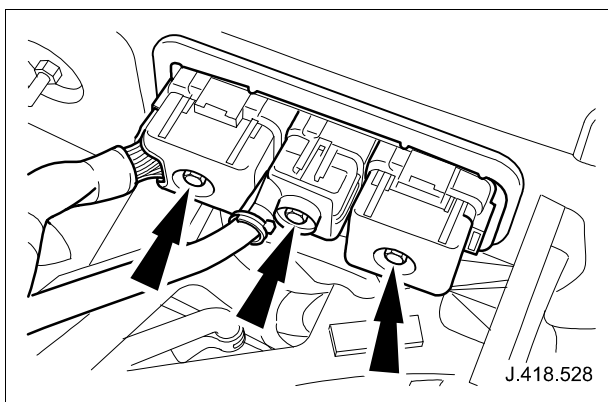


Fig. 15

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

- 4.4 Check engine harness to body harness connectors PI46 and PI2 for signs of water 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. (See Fig. 16)

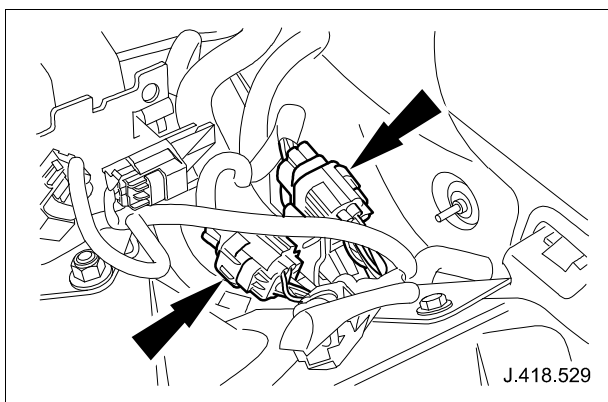


Fig. 16

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

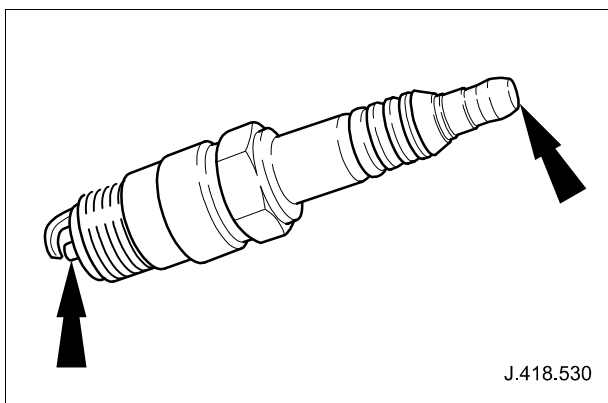


Fig. 17

- 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, install new coil covers)

- 4.6 Check in-line connector from engine harness to injector harness for signs of water 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. (See Fig. 18)

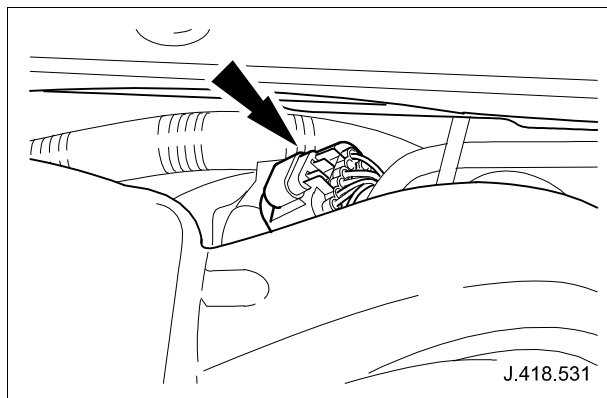


Fig. 18

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

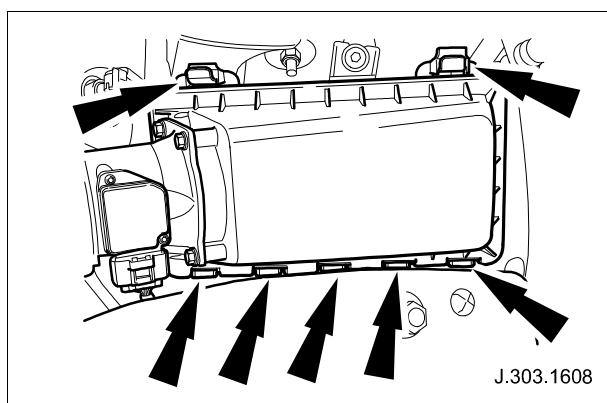


Fig. 19

- 4.8 Check the engine compartment fuse box power lead, as shown in Fig. 20. (Torque tighten to 12Nm \pm 1.8Nm)

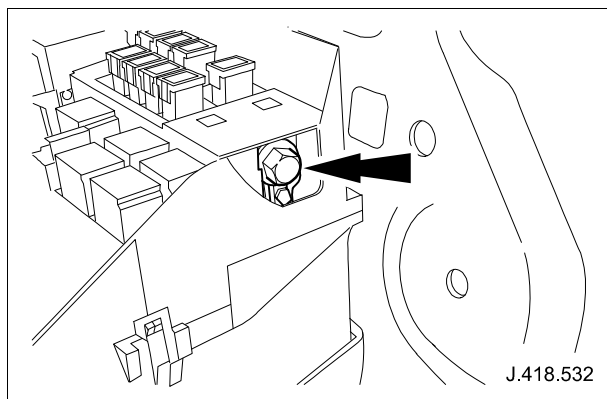


Fig. 20

- 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. (See Fig. 21)

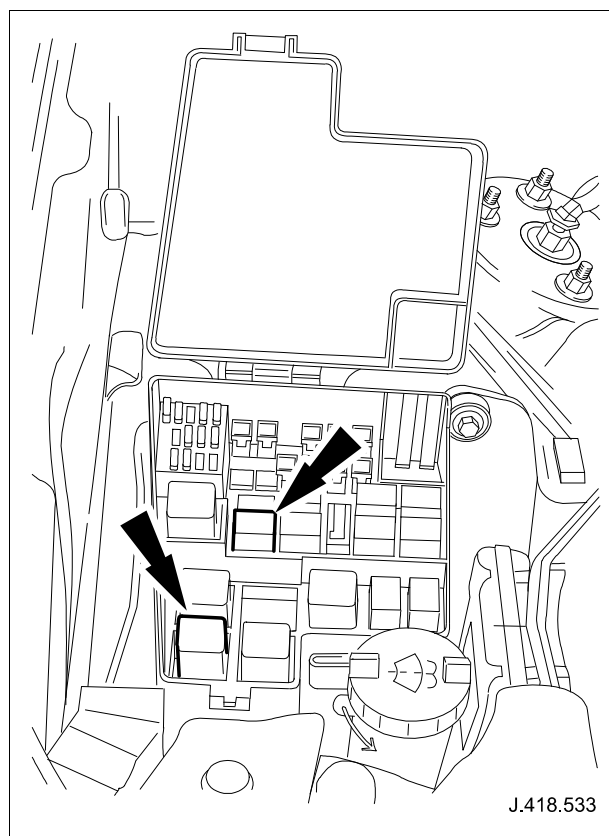


Fig. 21

- 4.9.1 Remove harness-retaining clip (item 1, Fig. 22) from FH42 ground point. Check FH42 grounding point securing nut (item 2, Fig. 22) is tight (torque tighten to 12Nm \pm 1.8Nm). Re-install harness-retaining clip.

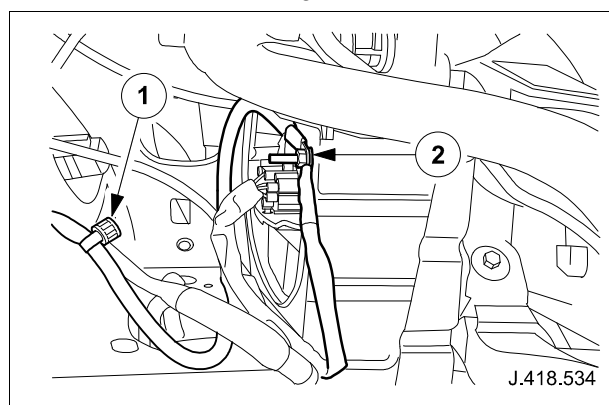


Fig. 22

Under the vehicle:

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

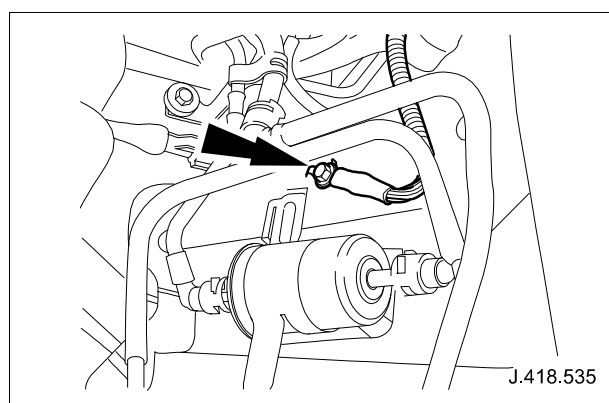


Fig. 23

- 5.2 Check power lead connection B03/B04 (located under front right-hand wheel arch liner), as shown in Fig. 24. (Torque tighten to $12\text{Nm} \pm 1.8\text{Nm}$)

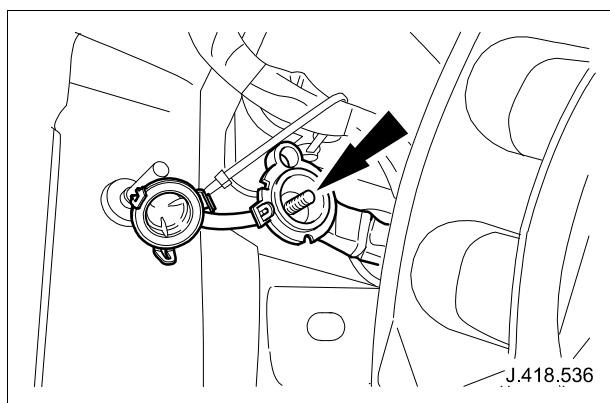


Fig. 24

- 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.