

# Z SERVICE

<b>S-TYPE</b>	Date <b>08/2000</b>	<b>S910-03</b>
<b>TECHNICAL BULLETIN</b>		

Subject <b>SQUEAKS AND RATTLES DIAGNOSTICS</b>	Model S-TYPE Year All VIN
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## ISSUE: S910-03 - SQUEAKS AND RATTLES DIAGNOSTICS

This bulletin has been issued to assist in the diagnostic process on a customer complaint basis only, relating to vehicles with squeaks and rattles issues.

### Background Information

Vehicle noise is inevitable when a vehicle is in use. Current development efforts are aimed at reducing noise levels created by components such as engine, driveline and tires, but, the quieter these become, the more evident any other unwanted noises will be.

Squeaks are generated through frictional contact of parts. The severity of the noise is a function of contact velocity, material properties, angle of contact etc.

Rattles are generated through part impact contact between two or more components. The severity of the noise is dependent upon velocity, clearance (between the components), local stiffness of components etc.

Listed below are descriptions of the types of noises from either a Squeak or a Rattle.

Noise type	Description of noise
Creak	Metallic squeak - Like a seatback frame flexing, or two pieces of material against one another.
Squeak	High-pitched sound - Like rubbing a clean window.
Buzz	Low-pitched sound - Usually associated with vibrations. Often metallic or hard plastic humming.
Click	Light sound - Like a ballpoint pen being clicked.
Knock	Heavy sound - Like a knock on a door.
Rattle	A sound suggesting looseness - Like marbles rolling round in a can.

### ACTION

To identify the source of the concern, it must first be established where the noise is generated. To assist with this, the customer can provide important information in helping diagnose the noise in question.

For all Squeaks and Rattles concerns and to ensure the correct root cause is identified and repaired, follow the Workshop Procedure below and see the Squeaks and Rattles Verification Process. (Appendix 1)

A Squeaks and Rattles Diagnostic Check sheet has been produced, that should be completed with the customer to help identify where the noise is, and under what conditions it happens. (See Appendix 2)

## Workshop Procedure

**NOTE: Before carrying out any repairs, check Technical Service Bulletins for any related issues.**

If after checking the Diagnostic Check Sheet information the issue is known, investigate, repair and verify. (See Appendix 1 route **A**)

Once the area where the noise is being generated has been identified, follow the procedure listed below. (See Appendix 1 route **B**)

- 1 Check the quality of fit, clearance or bonus material and security.
- 2 Manipulate the assembly parts to see if a noise is produced.
- 3 Remove the part (if necessary) and rectify.
- 4 Re-test the vehicle to verify fix.

If the noise is still present, consider the following questions:

- What information has the customer provided?
- What is the possible cause?
- What is the purpose and function of the component concerned?
- What type of testing can be done?
- How does it fit and what is it next to?
- What equipment is available to me?
- What is the remedial action?
- What raw materials do we have to rectify the component?

## Road Testing

The Road Test should be conducted under the same conditions as described by the customer to identify the concern accurately.

The test is better conducted by two people. Whilst one concentrates on driving, the other can work on the component from where the noise is emanating.

**NOTE: It is a good idea that the two people change places to compare their results as appropriate.**

Apply a load to see if the noise is affected. If the noise changes or is eliminated, re-test without the item fitted. If the noise is no longer present, examine the part and treat with anti-rattle materials or refit as appropriate. (See Technical Service Bulletin S910-02 for Squeaks and Rattles Service Kits)

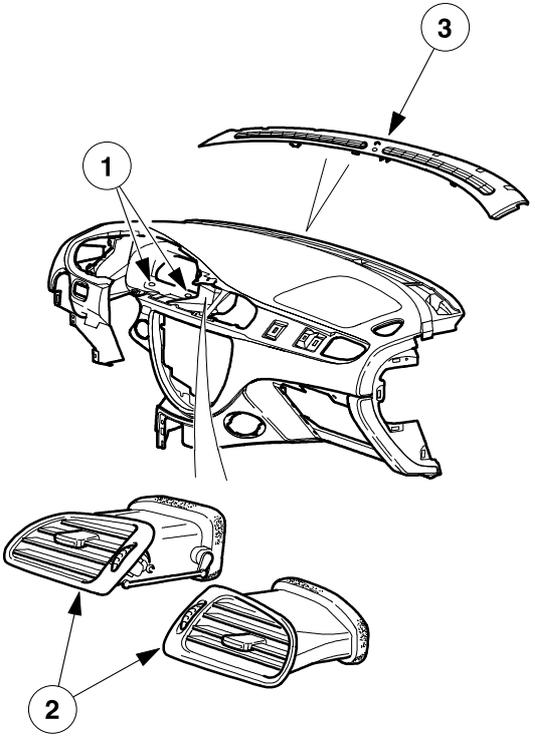
If the noise cannot be isolated, consider adjacent locations and investigate.

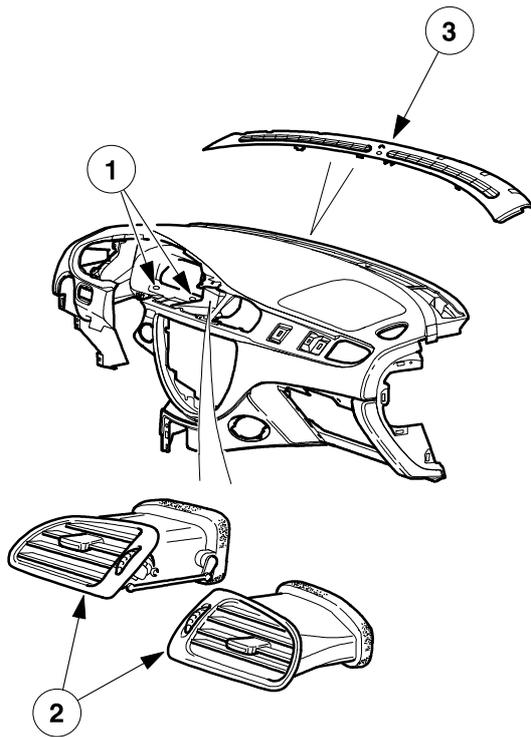
Removing parts and re-testing should be undertaken to isolate the affected component.

**Possible areas of concern**

The following tables depict areas around the vehicle that could possibly cause a Squeak or Rattle.

**Area of concern: Front of vehicle**

 <p data-bbox="635 1187 746 1214">J.501.2009</p> <p data-bbox="422 1220 502 1249"><b>Fig. 1</b></p>	<p data-bbox="821 398 1181 459"><b>Description</b> Instrument sight tube rattle.</p> <p data-bbox="821 499 1364 600"><b>Root Cause</b> Instrument cluster sight tube touching the bottom of the instrument panel.</p> <p data-bbox="821 633 1452 772"><b>Action</b> Fit two felt pads between the bottom of the sight tube and the instrument panel. (See item 1, Fig. 1)</p> <p data-bbox="821 806 1053 873"><b>Affected VINs</b> L00001 – L50500</p>
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J.501.2009

Fig. 2

**Description**

Center vent rattle.

**Root Cause**

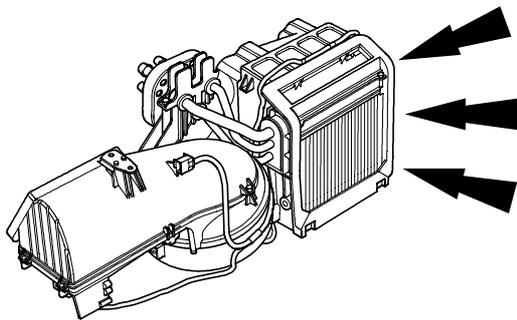
Center vent rattle against the instrument panel.

**Action**

Tighten vent as appropriate, or apply anti-squeak tape to the top/bottom of the vent and re-fit. (See item 2, Fig. 2)

**Affected VINs**

L00001 – L63000



J.501.2016

Fig. 3

**Description**

Air conditioning unit creak.

**Root Cause**

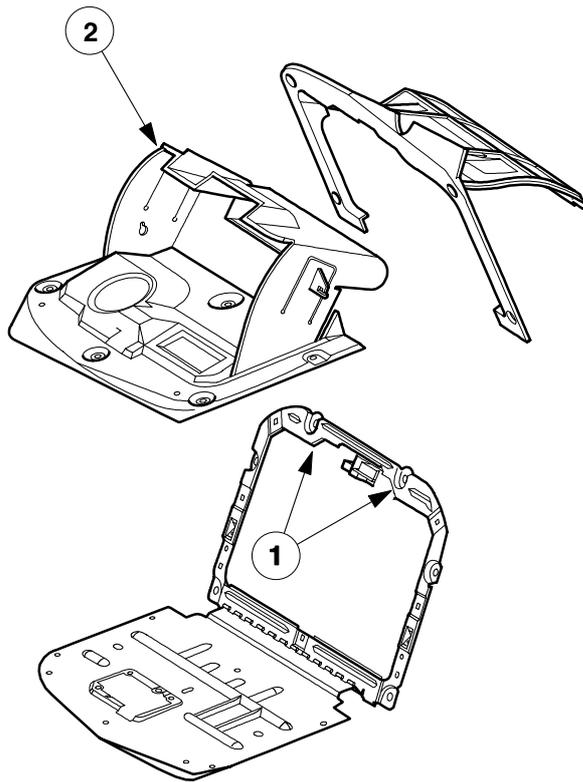
Contact between the air conditioning unit and the instrument panel.

**Action**

Increase the clearance between the two components, or insulate the area. (See Fig. 3)

**Affected VINs**

L00001 – L48000



J.501.2017

Fig. 4

**Description**

Glovebox knocking.

**Root Cause**

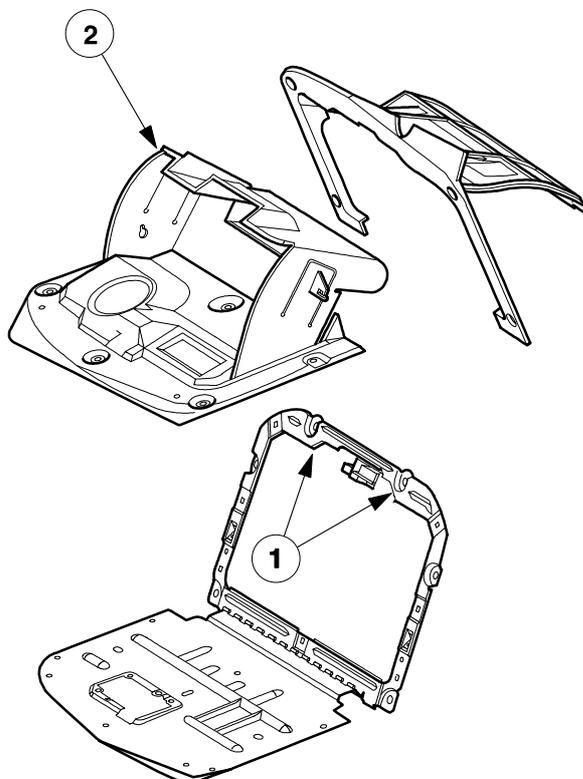
Glovebox knocks when opening due to pressure on the latch.

**Action**

Affix two buffer stops, one either side of the latch mechanism on the glovebox frame. (See item 1, Fig. 4)

**Affected VINs**

L00001 – L41871



J.501.2017

Fig. 5

**Description**

Glovebox stay creaking.

**Root Cause**

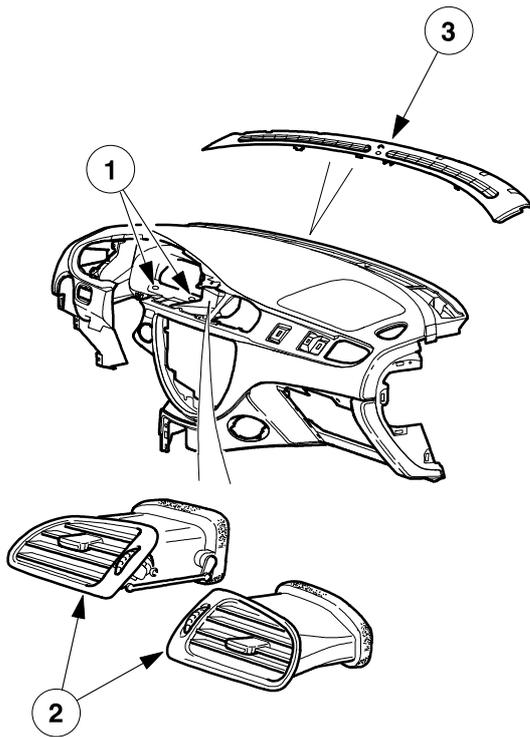
Creaking noise emanating from the lid rubbing on the glovebox interior.

**Action**

Lubricate with Krytox<sup>®</sup> as required. (See item 2, Fig. 5)

**Affected VINs**

L00001 – L60500



J.501.2009

Fig. 6

**Description**

De-fogger panel rattle.

**Root Cause**

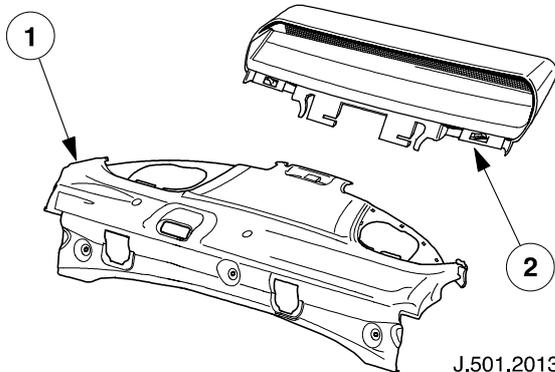
The panel is insufficiently fixed.  
Sometimes identified as coming from the glovebox area.

**Action**

Ensure that the panel is securely fixed and not fouling the screen. If all clips are intact, fit tape along the edges of the panel and re-install. (See item 3, Fig. 6)

**Affected VINs**

L00001 – L67844

**Area of concern: Rear of vehicle**

J.501.2013

Fig. 7

**Description**

Luggage compartment lock security bracket rattle.

**Root Cause**

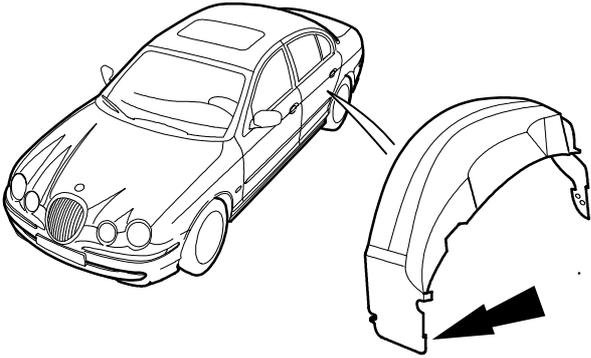
Rattle on closing the luggage compartment lid.

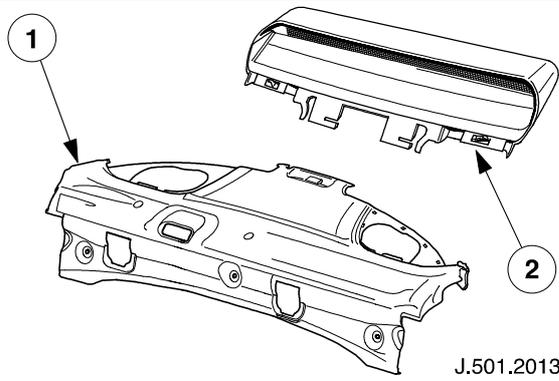
**Action**

Affix anti-rattle felt at each end of the security bracket where it mounts into the luggage compartment panel. (See item 1, Fig. 7)

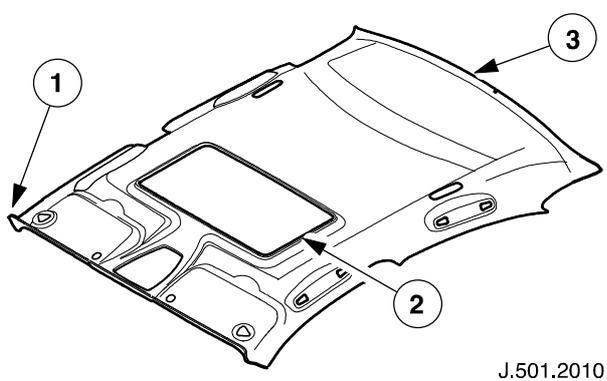
**Affected VINs**

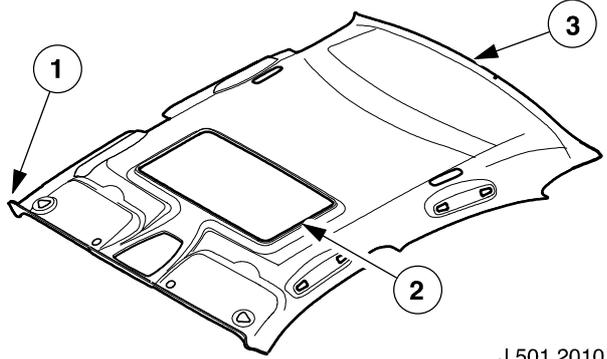
L00001 – L35474

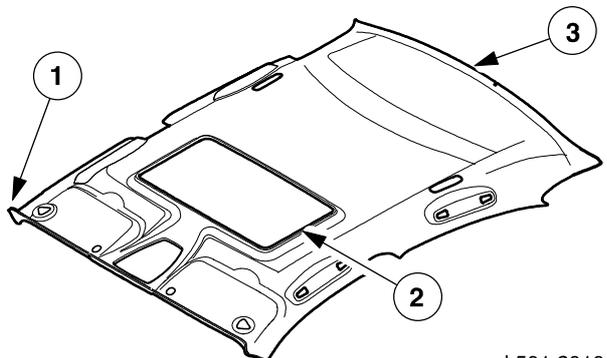
 <p style="text-align: center;"><b>Fig. 8</b></p>	<p><b>Description</b> Rear wheel arch liner rattle.</p> <p><b>Root Cause</b> Rattle caused by the wheel arch liner touching the rocker panel appliqué.</p> <p><b>Action</b> Apply a foam block between the two components to stop them touching. (See Fig. 8)</p> <p><b>Affected VINs</b> L00001 – L66780</p>
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 <p style="text-align: center;"><b>Fig. 9</b></p>	<p><b>Description</b> High mounted stop lamp (HMSL) rattle.</p> <p><b>Root Cause</b> Rattle between the HMSL and the parcel shelf/rear screen.</p> <p><b>Action</b> Affix a foam block between the parcel shelf and the HMSL. Check for contact between the screen and HMSL and insulate if necessary using tape. Also, Check for an internal rattle between the LED assembly and casing, apply tape where necessary. (See item 2, Fig 9)</p> <p><b>Affected VINs</b> L00001 – L02272</p>
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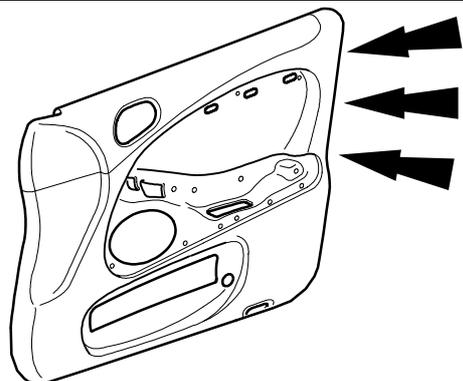
### Area of concern: Roof

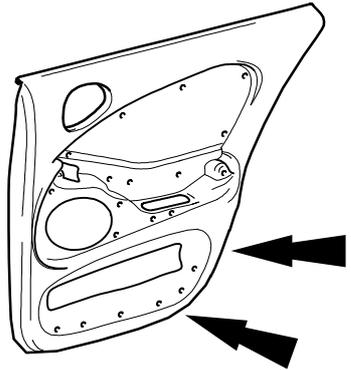
 <p style="text-align: center;"><b>Fig. 10</b></p>	<p><b>Description</b> Headlining - creaking noise.</p> <p><b>Root Cause</b> Contact between the headlining and the windshield, causing clicking noise.</p> <p><b>Action</b> Affix a small foam block between the headlining and the roof, to provide a clearance between the glass and the headlining. (See item 1, Fig.10)</p> <p><b>Affected VINs</b> L00001 – L50300</p>
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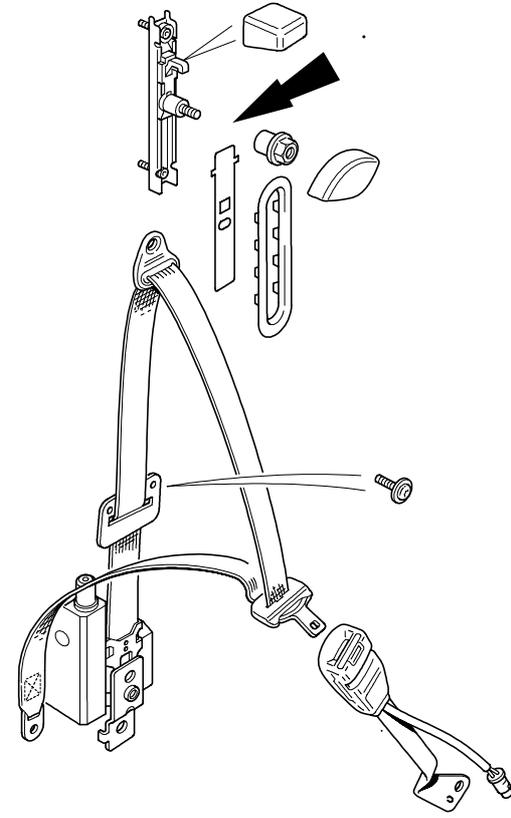
 <p style="text-align: right;">J.501.2010</p> <p style="text-align: center;"><b>Fig. 11</b></p>	<p><b>Description</b> Creaking emanating from the sliding roof.</p> <p><b>Root Cause</b> Velcro fasteners not fully secured around the front and rear of the sliding roof aperture.</p> <p><b>Action</b> Secure the Velcro fasteners around the sliding roof. (See item 2, Fig. 11)</p> <p><b>Affected VINs</b> L00001 – L56335</p>
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 <p style="text-align: right;">J.501.2010</p> <p style="text-align: center;"><b>Fig. 12</b></p>	<p><b>Description</b> Headlining rattle.</p> <p><b>Root Cause</b> Rear harness rattle between the headlining and the roof (at the rear only).</p> <p><b>Action</b> Insulate the harness using a foam wrap. (See item 3, Fig. 12)</p> <p><b>Affected VINs</b> L00001 – L48645</p>
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#### Area of concern: Sides of vehicle

 <p style="text-align: center;"><b>Fig. 13</b></p>	<p><b>Description</b> Door casing to instrument panel creak.</p> <p><b>Root Cause</b> Caused by the door casing fouling the instrument panel.</p> <p><b>Action</b> Check for contact between the bottom of the instrument panel and the door panel. Pack or open the gap as appropriate. Check for excess foam. (See Fig. 13)</p> <p><b>Affected VINs</b> L00001 – L42100</p>
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 <p>J.501.2011</p> <p><b>Fig. 14</b></p>	<p><b>Description</b> Rear door casing creak.</p> <p><b>Root Cause</b> Contact between the door body panel and the door casing.</p> <p><b>Action</b> Check the rear edge around the wheel arch for contact between the inner panel and the door panel. Apply anti-squeak tape or Krytox® (ensure a discreet application down the rear edge). (See Fig. 14)</p> <p><b>Affected VINs</b> L00001 – L78601</p>
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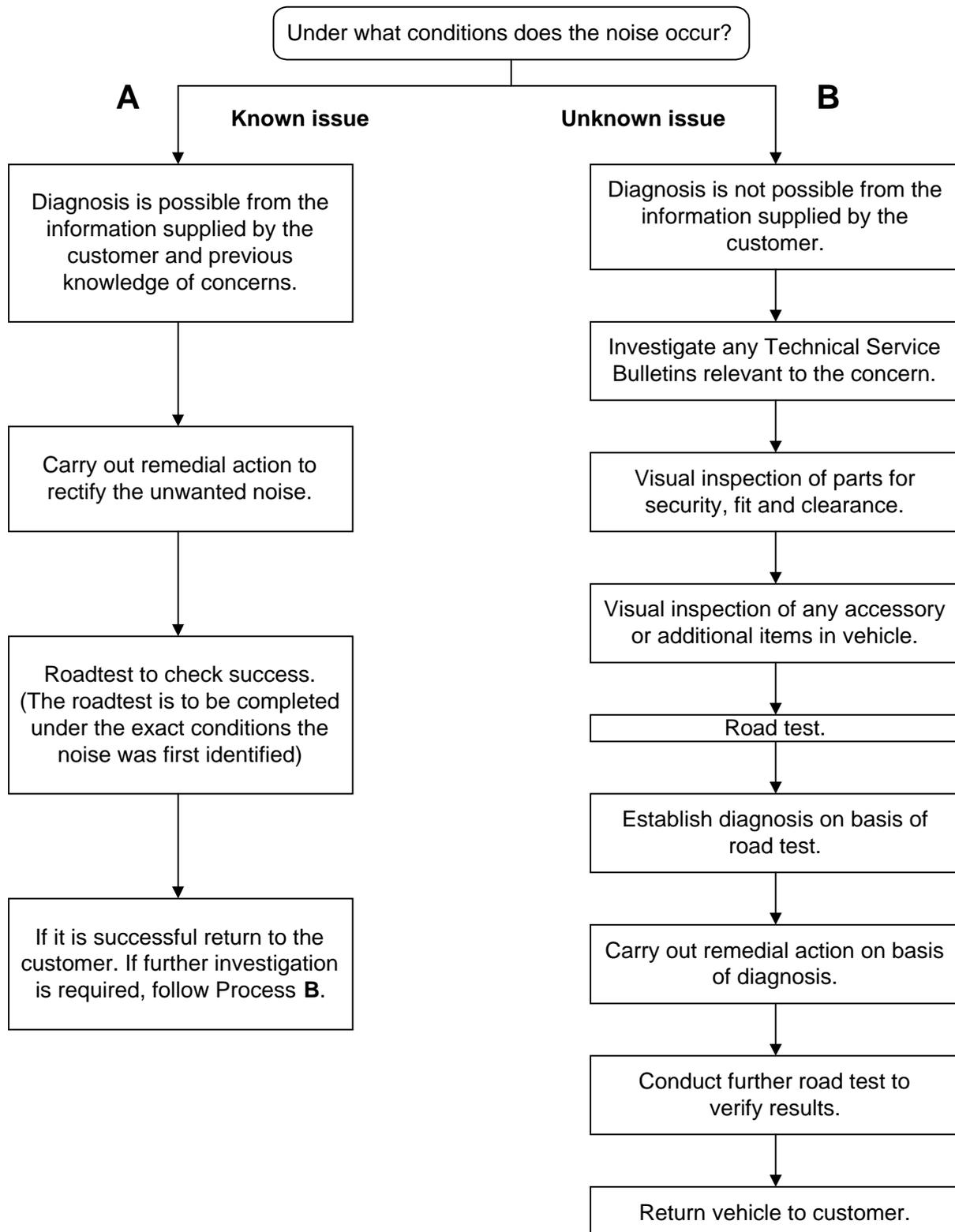
 <p><b>Fig. 15</b></p>	<p><b>Description</b> Front safety belt upper anchorage plate rattle.</p> <p><b>Root Cause</b> Safety belt anchorage bolt rattle against the anchorage plate.</p> <p><b>Action</b> Apply a felt washer behind the safety belt anchorage bolt. (See Fig. 15)</p> <p><b>Affected VINs</b> L00001 – L69500</p>
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### Further Assistance

In some cases it may not be possible to identify the cause of the noise, or it could have re-occurred. If this is the case, contact Dealer Technical Support for assistance.

Please fax your completed Squeaks and Rattles Diagnostic Check Sheet (Appendix 2) to Dealer Technical Support on fax number 0044 (0) 24 7640 4014 and call 0044 (0) 24 7620 3990 for assistance.

## Appendix 1 Squeaks and Rattles Diagnostics



**Note:** If the road test does not provide cause, fax the Squeaks and Rattles Diagnostic check sheet (Appendix 2) to Dealer Technical Support and then contact for further assistance.

Appendix 2



**SQUEAKS AND RATTLES DIAGNOSTIC CHECKSHEET**

Contact name ..... Date .....

<b>Vehicle Details:</b> Model ..... Variant ..... VIN Number ..... Date of Sale ..... Months of Service ..... Date Concern First Noticed .....	<b>Dealership Details - 'stamp'</b>   Tested Vehicle with Customer ? Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Description of Customer Concern</b>  	

<b>What Type/s of Road</b>	Country road/lane <input type="checkbox"/>	Motorway <input type="checkbox"/>	Carriage way <input type="checkbox"/>
	Side road <input type="checkbox"/>	Urban <input type="checkbox"/>	Main road <input type="checkbox"/>
<b>Road conditions</b>	Twisty <input type="checkbox"/>	Rough <input type="checkbox"/>	Smooth <input type="checkbox"/>
	Pot holes <input type="checkbox"/>	Cats eyes <input type="checkbox"/>	Undulating <input type="checkbox"/>
<b>Road surface</b>	Tarmac smooth <input type="checkbox"/>	Tarmac rough <input type="checkbox"/>	Concrete <input type="checkbox"/>
<b>Vehicle speed</b>	MPH .....	KPH .....	
<b>Vehicle temp.</b>	Engine .....	Cabin .....	
<b>Exterior temp./weather</b>	Temperature .....	Weather .....	
<b>Improve/Worse after time ?</b>	Better <input type="checkbox"/>	Worse <input type="checkbox"/>	
<b>Driving conditions</b>	Hard <input type="checkbox"/>	Steady <input type="checkbox"/>	Slow <input type="checkbox"/> Fast <input type="checkbox"/>
<b>Vehicle state</b>	Roll <input type="checkbox"/>	Pitch <input type="checkbox"/>	Stress <input type="checkbox"/> Acceleration <input type="checkbox"/>
	Twist <input type="checkbox"/>	Braking <input type="checkbox"/>	Flex <input type="checkbox"/> Deceleration <input type="checkbox"/>
<b>Tyre pressures</b>	RH-Front .....	LH-Front .....	RH-Rear ..... LH-Rear .....

**Type of noise**    Creak     Squeak     Buzz     Click     Knock     Rattle

<p style="text-align: right; font-size: small;">J.501.1883</p>	<b>Area of concern</b> <input type="checkbox"/> Structure <input type="checkbox"/> Doors <input type="checkbox"/> IP/console <input type="checkbox"/> Interior trim <input type="checkbox"/> Seat <input type="checkbox"/> Restraints <input type="checkbox"/> Front of vehicle <input type="checkbox"/> Top of vehicle <input type="checkbox"/> Rear of vehicle <input type="checkbox"/> Engine compartment <input type="checkbox"/> Powertrain <input type="checkbox"/> Closures <input type="checkbox"/> Electrical <input type="checkbox"/> Suspension <input type="checkbox"/> Underbody & Exhaust <input type="checkbox"/> Brakes <input type="checkbox"/> Steering <input type="checkbox"/> Fuel system  Other .....
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**Action undertaken to date**

Is further assistance required ?    Yes     No

**For service use only:**

Tracker cases reference .....    Product investigation engineer .....

DTS Engineers.....    FSE/Manager .....

JTP770