



# TECHNICAL BULLETIN

A100-02v2

08/2002

## Subject

**SQUEAKS AND RATTLES**

**Model: X-TYPE**

**Year: 2001 Onwards**

**VIN C00689 Onwards**

**Section: 100-04**

**Noise, Vibration and Harshness**

## Summary

This Technical Bulletin has been issued to assist the diagnostic process in case of a customer complaint of squeaks and rattles.

**Version 2 of this Technical Bulletin has been issued to improve the quality/clarity of the feedback form on the last page. Please discard Technical bulletin A100-02 and replace with A100-02v2.**

## 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. (See Appendix 1)

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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 X910-08 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.

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**Possible Areas of Concern:**

The following depict areas around the vehicle that could possibly cause a squeak or rattle.

**Area of concern: Chassis****Hand Brake Cable Clips****Description**

Squeak from the rear of the vehicle especially on uneven road surfaces. The noise could be perceived as coming from under the rear seat or from the exterior of the vehicle.

**Root Cause**

The handbrake cable clip is making excessive contact with the metal holding bracket.

**Action**

Install new handbrake cables, ref to Workshop Manual, JTIS CD ROM section 206-05.

**Affected VIN Range**

C00689 to C20146

**Springs and Isolators****Description**

Creak/Groan from rear of vehicle, especially when accelerating, braking and over speed bumps.

**Root Cause**

Rear spring is applying a point load to the isolator, causing a creak/groan.

**Action**

Install new rear springs and isolators, ref to Technical Bulletin A204-01. **(See Parts Information for superseded part numbers)**

**Affected VIN Range**

C00689 to C25834

**Front Lower Control Arm****Description**

Creak from front of the vehicle when braking, particularly over speed bumps.

**Root Cause**

Hydrobush

**Action**

Install new front lower control arm, ref to Workshop Manual, JTIS CD ROM section: 204-01. **(See Parts Information for superseded part numbers)**

**Affected VIN Range**

C00689 to C08050

## Area of concern: Interior Trim

### Ashtray Rattles

#### Description

Ashtray makes a 'buzzing' noise when closed. Scuffing marks may also be evident on the edge of the lid.

#### Root Cause

The left hand inner check arm is fouling the ashtray housing.

#### Action

Application of felt washer (trim to suit) underneath the check arm in the highlighted area will eliminate the noise. Lift check arm from lid pivot and apply washer over pivot. Replace check arm to lid pivot. (See Fig. 1)

#### Affected VIN Range

C00689 to C19875

### Center registers

#### Description

Center register buzz/rattle.

#### Root Cause

Two causes are possible. 1. Clipping between the top of the center housing and the veneer is not fully home. 2. Vertical vane free-play.

#### Action

1. Check the position of the center clip to engage fully into the housing. 2. Apply the foam pads to the top and bottom of the housing. (See Fig. 2)

#### Affected VIN Range

C00689 to C19567

### High Intensity Discharge (HID) Loom Rattle

#### Description

The HID loom is situated behind the instrument panel (IP) on the LH side of the vehicle regardless of hand drive. If the HID loom connector is not in use it rattles against the IP.

#### Root Cause

When fastened back the connector may rattle against the IP.

#### Action

Secure the connector using a tie-strap and foam wrap connection-using material from the squeaks and rattle kit.

#### Affected VIN Range

C00689 to C30484

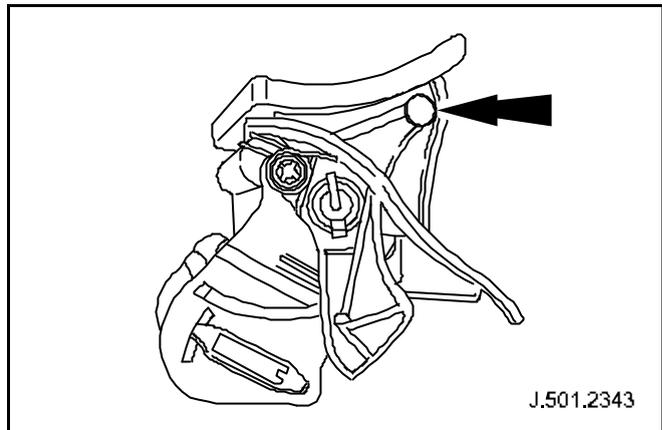


Fig. 1

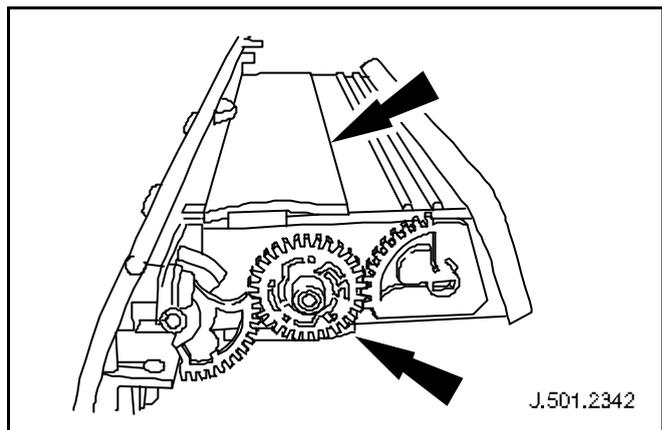


Fig. 2

## Door Pad Rattles

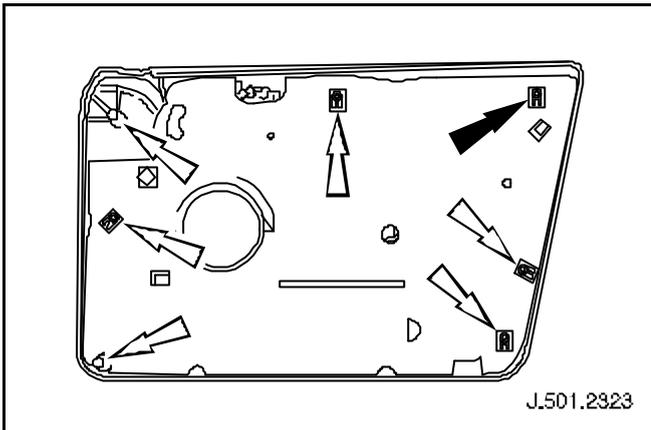


Fig. 3 (Front Door)

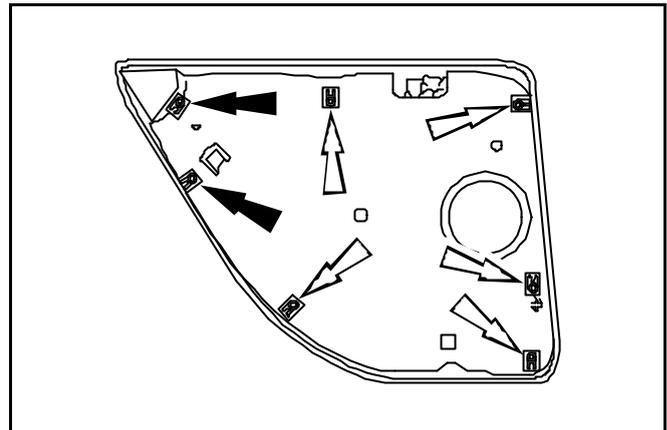


Fig. 4 (Rear Door)

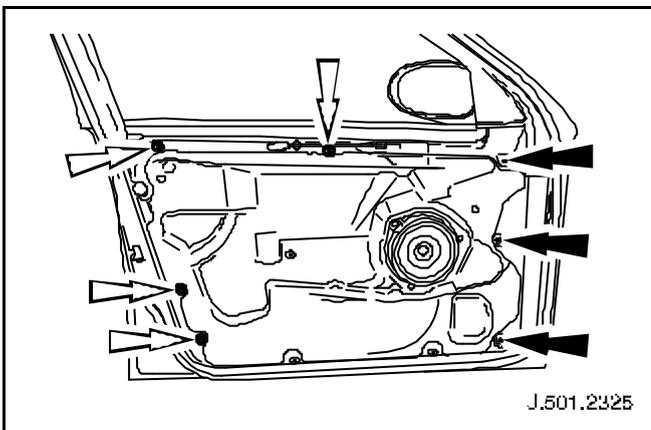


Fig. 5 (Front Door)

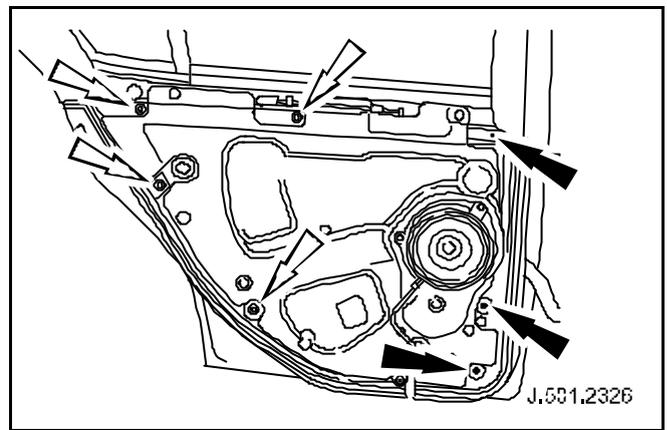


Fig. 6 (Rear Door)

### Description

Rattles/vibration (drumming sound) from the front and rear door pads.

### Root Cause

There are three root causes. 1. Freeplay in the pins and grommets. 2. Water blanket has been poorly applied. 3. The edge of the door casing is contacting the metal of the door.

### Actions

1. Install new pins noting the positions of the green fixing pins in Fig. 3 and Fig. 4 (shown by black arrows) install new grommets noting the positions of the black grommets in Fig. 5 and Fig. 6 (shown by black arrows). 2. Check good adhesion around water blanket butyl path, and install foam curtain into door trim pads. 3. Apply Krytox lubrication to front and rear edges of door trim pads.

**Note: To save excessive damage when removing grommets from Body-in-White (B-I-W), use suitable screwdriver and break wings into inside of B-I-W.**

### Affected VIN Range

C00689 to C18600

## End Registers

### Description

Buzzing emanating from the end vents-may be perceived as coming from the door pads.

### Root Cause

Freeplay in the horizontal vanes of the end registers.

### Action

Krytox the end of the horizontal vanes. The end register must be replaced if the lubrication process does not rectify the customers concern. (See Fig. 7)

### Affected VIN Range

C00689 to C55000

### Roof Console

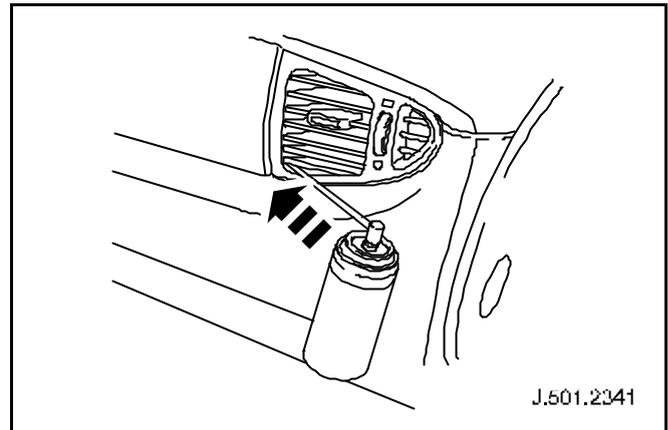


Fig. 7

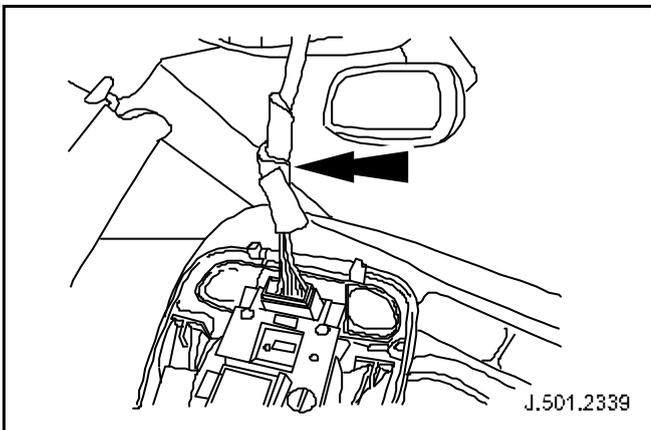


Fig. 8

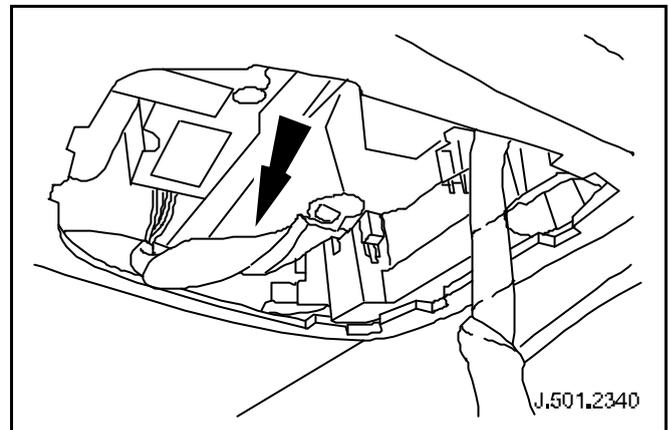


Fig. 9

### Description

The customer in this area may highlight three concerns.

- Light button rattles.
- Moon roof switch rattles.
- Loom rattle.

### Root Cause

- Button guides loose or free-play.
- Connector rattle or unused connector not strapped.
- Loom rattling against headlining/switchpack.

### Action

- Lift the guide guides and crimp in position using pliers.
- Replace moon roof switch.
- Foam wrap the looms. (See Fig. 8 and 9)

### Affected VIN Range

C00689 to C30484

## Instrument Panel Trinket Tray

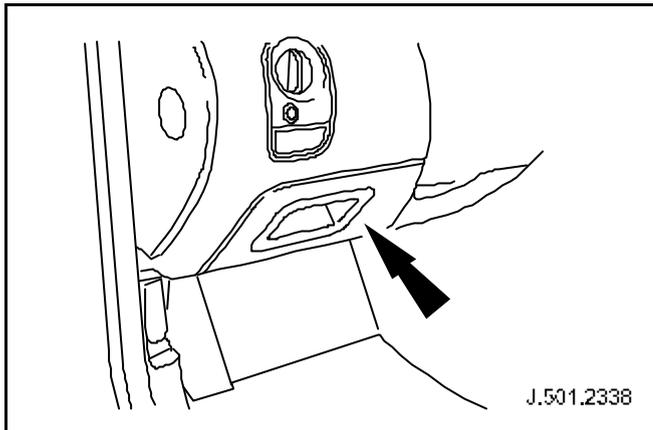


Fig. 10

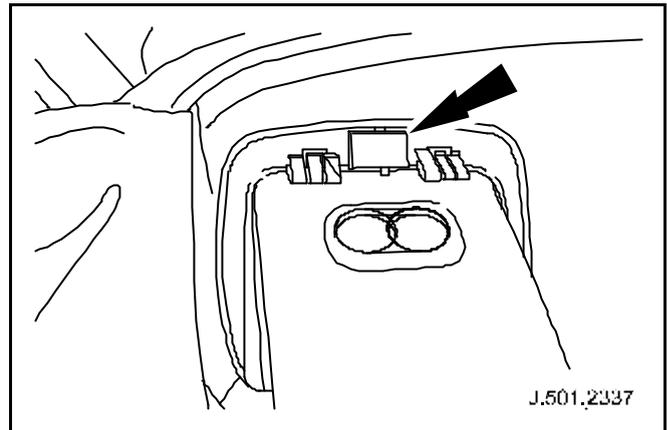


Fig. 11

### Description

Rattle/buzz from the lower driver side IP. May also be perceived as a register or door rattle.

### Root Cause

Drivers side stowage bin is loose in the aperture. (See Fig. 10)

### Action

Ensure the clips are providing maximum retention and modify if necessary. Apply foam in the area highlighted. (See Fig. 11)

### Affected VIN Range

C00689 to C25191

### 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 (or NSC/Importer) for assistance.

Please fax your completed Squeaks and Rattles Diagnostic Check Sheet (Appendix 2) to Dealer Technical Support on fax number +44 (0) 24 7640 4014 and call +44 (0) 24 7620 3990 for assistance, or to NSC/Importer.

### Warranty Information

This Technical Bulletin is issued for information only.

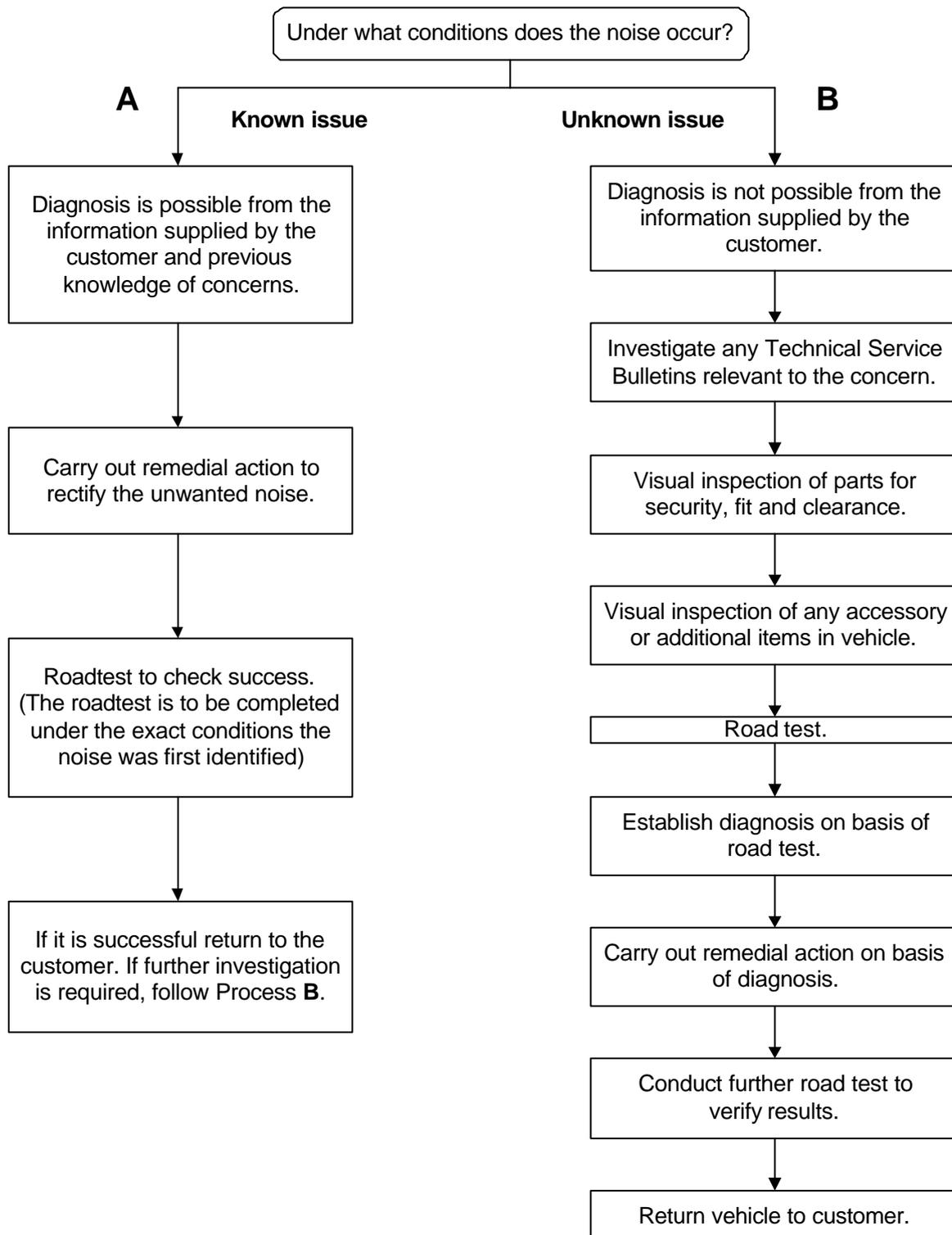
### Parts Information

The following parts must be ordered via Jaguar Cars Parts Operations (or through NSC/Importer).

Description	Part Number	Quantity
Hand brake cable	C2S 20569	2
Rear road spring comfort (low green)	C2S 20843	2
Rear road spring comfort (high green/green)	C2S 20845	2
Rear road spring sport (low violet)	C2S 20844	2
Rear road spring sport (high violet/violet)	C2S 20846	2
Rear road spring isolator	C2S 19793	2
Front lower control arm right-hand	C2S 19367	1
Front lower control arm left-hand	C2S 19368	1
Door pad rattle kit	JLM 21701	1

## 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: center; font-size: small;">J501.1883</p>	<b>Area of concern</b> <input type="checkbox"/> Structure <input type="checkbox"/> IP/console <input type="checkbox"/> Seat <input type="checkbox"/> Front of vehicle <input type="checkbox"/> Rear of vehicle <input type="checkbox"/> Powertrain <input type="checkbox"/> Electrical <input type="checkbox"/> Underbody & Exhaust <input type="checkbox"/> Steering  <input type="checkbox"/> Doors <input type="checkbox"/> Interior trim <input type="checkbox"/> Restraints <input type="checkbox"/> Top of vehicle <input type="checkbox"/> Engine compartment <input type="checkbox"/> Closures <input type="checkbox"/> Suspension <input type="checkbox"/> Brakes <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