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SQUEAKS AND RATTLES

Problem

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.

- 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)

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:

1. What information has the customer provided?
2. What is the possible cause?
3. What is the purpose and function of the component concerned?
4. What type of testing can be done?
5. How does it fit and what is it next to?
6. What equipment is available to me?
7. What is the remedial action?
8. 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.