



PRODUCT SERVICE INFORMATION

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BRAKE NOISE

This bulletin has been released to assist dealership service managers, service advisors and technicians in identifying factors which may contribute to brake system noise complaints.

Some noises are normal and no repair action should be taken by dealers. Noises not considered normal should be investigated and repaired according to approved methods (refer to applicable released Technical Service Bulletins). When necessary, dealers should request support from regional technical staff members.

• Brake Materials

During normal operation various noises may be emitted by the brake system whether equipped with disc brakes, drum brakes, with or without ABS.

Nissan, along with other automotive manufacturers, has significantly reduced the amount of asbestos used in its products. As a result, Nissan adopted semi-metallic brake linings with excellent performance.

However, because of the metal-to-metal contact with semi-metallic pads, the noises generated from the brake system are greater than vehicles equipped with the previous asbestos linings. Semi-metallic brake linings are characteristically more noisy under normal operation than were asbestos linings.

To reduce the noise level of the braking systems, especially for disc brakes, Nissan has begun introducing non-asbestos organic (NAO) brake pads on several models and will phase in additional models as soon as possible (refer to applicable Technical Service Bulletins).

• Brake Design

Brake designs must meet very tight operating specifications and Federally mandated requirements. And they must do this under a variety of operating conditions without compromising safety. A few of the factors considered when designing a brake system are:

- stopping distances
- extreme hot and cold temperature
- dry/dusty and wet/mud conditions
- pedal travel and effort
- front/rear brake proportioning
- parking brake effort/function
- pad/lining wear and service life
- road salt corrosion
- humidity, etc.

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Depending upon the local environment, weather conditions and customer driving patterns, there may be occurrences of noises from the braking system. The following section addresses some of the noises.

• **Common Brake Noises**

The following noises are normal and are considered generally characteristic of all braking systems (including competitors). These noises do not indicate any malfunction in the brake system or improper operation.

- **Loud Squeal Noise**

For disc brake pads with wear indicators, an audible continuous warning noise is made when the pads need replacement.

- **Grinding Noise**

Noise common primarily on rear brake drums and on some front disc brakes during first few stops. This is primarily due to formation of trace corrosion occurring at the metal surfaces during vehicle non-use or storage.

- **Trace Squeak/Squeal Noise**

Normally occurs with front semi-metallic brake linings at medium speeds with light/medium pedal force.

This can occasionally occur on rear brakes during the first few stops with cold brakes (especially morning) and/or high humidity.

- **Groan Noise**

On automatic transmission equipped vehicles, a slight groan may be heard when coming to an abrupt stop or when allowing the vehicle to creep forward slowly from a stop.

- **ABS Self Check**

This noise will occur when the vehicle is initially started and will be felt as a slight pulsation at the brake pedal.

• **Dealer Investigation**

In all of the above cases, dealer personnel must verify the customer complaints and fully understand the noise and the condition under which the noise occurs. The following factors should be considered:

- **Verify the Complaint**

Customers typically will complain of a brake noise and may not be able to distinguish whether it's from the front or rear. An unnecessary repair and unsatisfied customer will result if a mis-diagnosis occurs.

- **Inspect for Unusual Use**
Any unusual vehicle use should be identified. Presence of mud, excessive salt, flooding damage or other contaminants can be significant factors.

- **Collision Damage**
Inspect the vehicle for presence of related collision damage.
Advise customer if the noise results from a vehicle collision.

- **Improper Use**
If a rear noise complaint, inspect for evidence of heat effects from a hand brake (parking brake) inappropriately engaged or dragging during driving.

Handling Customer Comments

In all cases, dealers must verify the noise and establish whether it is normal or not. When the noise is considered normal and characteristic of that vehicle the customer should be carefully advised that the brakes are operating properly and provided with a careful explanation based on the information in this bulletin. Dealers should explain to the customer that Nissan brake materials have been carefully designed to provide optimum braking performance under various driving conditions and that this noise does not indicate a malfunction in brake system function or performance. There are no known repair procedures to eliminate these normal noises which are the result of removing asbestos from brake pads as required by current law.

When the noise is not one of the normal noises mentioned in this bulletin, appropriate repairs should be taken as required and/or regional staff advised.