

## **What makes my brakes squeak- and how do I fix it?**

High-pitched brake squeal is caused by a high-frequency vibration between the pad and the rotor. Brake noise is not caused solely by the brake pad. The brake rotor diameter, and stiffness of the disc are also factors in the offending noise. Metallic-Carbon pads (as opposed to organic (asbestos) pads) typically produce more inherent noise than the older organic pads. Different brake pad manufacturers use different and varying amounts of substances in their pads: Iron, Copper, Zinc, Other Alloys, Lead, Carbon, Ceramic compounds, Kevlar, and numerous other fillers. This variation in pad composition, geometric design of the pad, and the stiffness (density) of the pad material itself can also contribute to the noise. Lastly, all of these factors can be affected by environmental factors such as temperature and humidity.

Now, how do I fix it?

- #1: Make sure you have straight and true surfaces on your rotors and pads. Turn, or replace rotors as necessary- do the same with the pads.
- #2: Inspect calipers, caliper sliders, and all other mounting surfaces and metal-to-metal contact areas. (This includes the rotor to hub mounting surface which commonly becomes contaminated by rust and other debris!) Lubricate all metal-to-metal contact areas with moly grease or lube. Inspect complete system and make sure that rotors and pads are lining up 'true' when brakes are being applied.
- #3: Apply anti-squeal moly lube or similar to backing plate of the pads - or use an anti-squeal shim between the pad and the piston contact areas. This will change (dampen) the frequency of the vibration and will help reduce the noise.
- #4: Chamfering of the leading and trailing edge of the pads will also help to reduce noise levels.
- #5: Inspect related suspension components to make sure worn components are not placing undue stresses on the braking system, calipers, and pads.