Bulletin BES 05-14

Subject: Rotors and pads determine Brake Operating Temperature

Vehicle Involved: All

Condition: Maintaining Brake Temperature

Repair Procedure: Brake systems are designed to generate heat. The heat (energy) is then used to stop the vehicle. Brake pads and rotors are designed to be compatible to maximize both wear and generate heat. Consistent brake operating temperatures will eliminate many brake system problems and failures. Vehicle manufactures use a wide variety of different rib configurations in their rotors. These engineered designs are utilized to accomplish specific rotor surface operating temperature that is compatible with the designed friction material.

So even though the brakes may appear to be identical on two different models, one may require increased cooling because the vehicle is heavier, has a more powerful engine, or possibly less air flow around the brakes. Some aftermarket rotor manufacturers use the same rib design and configuration as the OEM rotors, while others do not. Some change the rib design to simplify the casting process or to reduce the number of different rotor SKUs in their product line.

The OEMs currently use over 135 different rib configurations in their rotors. The reason they use so many different rib patterns is to maximize heat dissipation and to reduce harmonics that contribute to brake squeal. Changing the rib design changes airflow, heat dissipation and noise characteristics of the rotor, which may cure noise and performance problems or create them.