



AutoCare

TechTips

TT Brake System Bulletin No. JO, TR-80-1R

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TO: ALL NAPA JOBBERS AND MECHANICS

PRODUCT: DISC BRAKES

SUBJECT: NOISE

A VIBRATION or PULSATION in the front end during braking has come to indicate to experienced brake mechanics a condition caused by warped disc brake rotors. This condition could more accurately be defined in terms of lateral runout and parallelism. **Lateral runout** is the movement of the rotor from side to side as it rotates. A rotor with excessive runout will wobble pushing the disc brake piston back into the bore. Additional brake pedal travel and vibration will result.

The symptoms of lateral runout on floating caliper brakes are somewhat less noticeable because their calipers will move from side to side with the rotor. There is, however, more wear to bushings on floating calipers due to the excessive movement created by an extreme lateral runout condition.

PARALLELISM refers to variations in the thickness of the rotor. This must not be confused with the minimum thickness specification or discard dimension now stamped on all disc brake rotors. The circumferential thickness variation or parallelism is a very close tolerance and generally must be within .0005 to .0007 in. (.01270 to .01778 mm). A thickness variation exceeding the specification can result in a **FRIGHTENING VIBRATION DURING BRAKING**. As the thin section of the rotor passes between the brake disc pads it allows them to move in closer together. Then as the thicker section of the rotor is forced past the pads it exerts a pressure against the pads. This momentarily creates a greater braking effort and at the same time pushes the pads back. Once the thick section of the rotor passes the pads, the thinner section rolls through more easily. This passing of thick and thin sections of the rotor creates a **VIBRATION** or pulsation of the brake. This condition can also be felt as a short **SLIDE** before the car comes to a dead stop.

It is interesting to note that the effects of thickness variation are more noticeable to the driver than the effects of lateral runout. IT IS NOT UNUSUAL WHEN A MECHANIC JUST REPLACES A SET OF DISC BRAKE PADS ONLY TO HAVE THE CUSTOMER BACK IN A FEW HOURS OR DAYS, COMPLAINING OF A STRANGE NOISE. NEVER JUST HANG DISC PADS BEFORE A COMPLETE CHECK OF EVERY CALIPER AND ROTOR IS MADE.

Yours truly,
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Product Manager