Technical Assistance: 401
Disc Judder problem - Cause/rectification.

Symptoms: Vibrations are felt through the car with a pulsating pedal when braking. If the steering wheel vibrates also, this tends to indicate the problem is with the front brakes.

Cause: Usually due to variations in disc thickness - DTV.

Note

These variations in thickness are usually the result of excessive disc run-out, caused by mating the disc to dirty or distorted hubs. When driving (brakes off), the pads are normally in close contact to the disc. However, when there is excessive disc run-out, the pads scuff the 'high' parts of the disc on every rotation. This scuffing gradually wears the disc thinner where most contact is made.

Imagine a buckled bicycle wheel, the brake blocks would catch the wheel rim (braking surface) at the same 'high' points on every rotation. Disc run-out is similar, but the rotation speeds on cars are slightly quicker and brake pads are far more abrasive than a bike's rubber blocks. So when you've driven 2,000 miles, the pads have scuffed the same 'high' spots over two million times. Eventually the disc becomes thinner in two parts and causes a judder under braking. Simply replacing the discs without rectification will lead to the problem re-occurring.

Solution: Replace the damaged discs; but when doing so inspect the hubs properly and use a dial gauge to ensure disc run-out is less than 0.1mm (0.004"). This will avoid damaging the new discs. Alternatively, if the discs are only slightly worn, they can be machined on the car so that they run perfectly true.

Facts: If you fit new discs and they're great for the first 1,000-2,000 miles and then you start to notice a very slight judder developing, you've probably got DTV caused by run out.

If you fit new discs and they immediately judder, then it's probable (although very rare) that they have been machined incorrectly or there was a flaw in the casting.

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