

# Technical Bulletin

Model  
All

Group  
4

**Subject:** Brake Disc and Wheel Hub Run-Out

**Part Identifier**  
4064/68  
4650/53

**Number**  
9203

**ATTENTION: Service Manager/Service Technician**

**Models Affected:** *All*

**Concern:** Brake pedal pulsation /vibration. Checking brake disc and wheel hub run-out.

**Repair Information:** When repairing brake pedal pulsation or vibration, the brake disc and wheel hub lateral run-out must be measured.

**Work Procedure:**

1. Check, and if necessary, adjust wheel bearing play.
2. Remove wheel and install adaptor plate tool number 9510 or steel spacers. Torque wheel lug nuts to 130 Nm (96 ft. lbs.).
3. Install dial gauge with suitable gauge holder. Use a dial gauge pin with a large base. Place gauge pin on largest diameter of brake surface. Set gauge with approximately 2mm pre-load, rotate disc and record run-out.

**Maximum assembled permissible run-out: 0.10mm.**

If disc run-out is more than 0.10mm, remove disc and measure run-out on inside **and** outside brake disc surface, on a brake lathe.

Maximum permissible run-out with disc removed: 0.05mm

Measure also wheel hub lateral run-out. Install dial gauge with suitable gauge holder. Place gauge pin on largest diameter of wheel hub. Set gauge with approximately 2mm pre-load. Rotate wheel hub and record run-out.

**Maximum permissible run-out: 0.05mm**

4. If necessary, machine brake disc and /or replace wheel hub. Refer to specifications and wear limits published in the Workshop Manuals (Repair Group 46).

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