

Brake Roughness Diagnosis (continued)

5. If no brake roughness is experienced, repeat the procedure three times.

- Roughness usually intensifies as the brakes heat up.
- Do not overheat the brakes.
- Do not skid the tires during the road test. This will put flat spots on the tires and cause tire roughness which can be mistaken for brake roughness.



CAUTION: Do not perform the following procedure on vehicles equipped with push-to-release parking brake systems unless equipped with a manual release handle. During application of parking brakes the brake lamps do not activate.



CAUTION: Do not perform the following procedure on vehicles equipped with rear disc brakes that utilize drum brake shoes inside the rotor hat to engage the parking brake. This can severely damage the parking brake. Applying the parking brake on this type of system does not test the rear service brakes and may cause the rear wheels to lockup on some vehicles.

NOTE: Isolation of brake roughness to the front or rear brakes will reduce repeat repairs.

6. If brake roughness was experienced, bring the vehicle back to the speed at which roughness occurs and lightly apply the parking brake one time with the release activated to prevent rear wheel lock up.

- Verify parking brake operation before performing the road test.
- This step can help isolate the concern between the front and rear brake systems.
- Check for damaged wheel bearings and loose or missing wheel hub bolts.
- Ensure that wheels and tires are balanced and that tire wear is even.
- Inspect the rotor for cracks, scoring, and heat checks.
- Inspect for damaged brake pads and/or shoes.
- Inspect for grease or fluid on the pads and/or shoes.
- Inspect the caliper slides or pins for corrosion and/or poor lubrication.
- Measure lateral runout of the hub and rotor assembly using a dial indicator.
 - Rotor runout should be less than 0.05 mm (0.002 in). If it is greater than this specification, determine if the runout is caused by the rotor or the hub, and repair as necessary.

NOTE: This procedure requires the use of a micrometer that can measure in 0.01mm or 0.001 in. increments.

- Measure disc thickness variation using a micrometer in eight places (twelve on some vehicles) around the rotor approximately 25.4 mm (1 in) from the outer edge.
 - Maximum rotor thickness variation should be less than 0.025 mm (0.001 in).
- Measure brake drum diameter at four places.
 - Compare your measurements with the drum diameter variation specifications listed in the workshop

7. If the vehicle still exhibits brake roughness turn the rotors using the Rotunda Pro-Cut On-Car Brake Lathe.