

Bulletin BES 02-24

Subject: Brake Lathe Maintenance Tips.

Brake service and repair is profitable, it can also be a source of frustration for the customer and for your shop. The following “Brake Lathe Maintenance Tips” if utilized may help you prevent those dreaded time consuming comebacks.

It should be noted at the onset, our Premium Rotors do not need to be resurfaced out of the box. Resurfacing is not necessary and only reduces the thickness of the rotor, which ultimately shortens the rotor’s useful service life. Many low-end offshore rotors however are not held to strict manufacturing tolerances. Additionally subtle metallurgy differences can result in measurable noise and reduced long term performance.

Our job as technicians now includes educating our customers to product differences, but ultimately our job is to restore our customers vehicle braking to “Like new Performance” That process may begin right at your lathe utilizing fundamental lathe maintenance procedures.

- Lathe arbor runout, no more than .001”. (Refer to the specific lathe manufacture’s specification.) Secure a dial indicator to a solid location. When possible, rotate the arbor by hand observing the arbor runout. The arbor should also be clean and free of nicks. Verify that the witness mark on the arbor aligns with the witness mark on the lathe spindle. See Figure 1.
- Lathe adapters as well must be clean and free of nicks or burrs. Centering cones that have been nicked can be cleaned up with a fine stone. Excessive damage requires replacement of centering cone.
- Floating adapters need to be inspected for runout and nicks, and must be clean. With sandpaper on a solid flat surface, the back of the adapter can be dressed as in figure 3. Then mount the adapter with its back against the arbor face.
Align the arbor witness mark with the adapter’s witness mark. Important, use the self-aligning spacer against the inside surface of the adapter. Fill the arbor shaft with the necessary amount of spacers. Runout can now be carefully measured at the contact surfaces of the adapter. If necessary you may now easily machine the contact surfaces of the adapter as illustrated in figure 4.
See Figure 2. Observe witness marks, floating adapter, and position of self-aligning spacer.

Despite our good intentions and efforts when machining rotors and drums, the foundation for proper resurfacing rests with the condition of the lathe and adapters. Consider the abuse this piece of equipment takes. I have witnessed drums and rotors literally being bounced on the arbor. I've found "lost" centering cones and floating adapters at the hydraulic shop press, not to mention the numerous times these adapters and cones are accidentally dropped in the normal course of operation.

Remember not to overlook the obvious when resurfacing. Consider referencing drums and rotors to hubs before removing from the vehicle. When measuring run-out, re-install all of the lug nuts and torque to specification. Run-out limit and thickness variation is vehicle specific. We recommend checking a current Disc and Drum Brake Specifications Manual. Thickness variation should be measured at least in five locations. Minimize stacked tolerances by thoroughly cleaning hub and hat sections of rust and corrosion. Use your drum/rotor silencer bands; these are necessary to minimize vibration. Evaluate tool bit condition, rotate cutting bits frequently replace as necessary. Refer to your lathe manufacture's operating manual for specific arbor and cross feed rates. Generally speaking, a fast arbor speed, and a slow cross feed rate produces the best rotor surface finish. Block sand rotor surfaces with 120 grit sandpaper for one minute both sides.

Prior to mounting the refinished rotor or drum, wash them in soap and water. This is the most effective way to remove metal particles from the machined surface. Last but not least, use torque sticks when tightening lug nuts, an absolute necessity with alloy wheels, composite rotors and drums.

Identifying and eliminating problems that can occur at the foundation of brake lathe operation will eliminate any doubts that you have with your lathe equipment. Help technicians minimize stacked tolerances, through regular adapter and lathe maintenance.

Figure 1

Figure 2

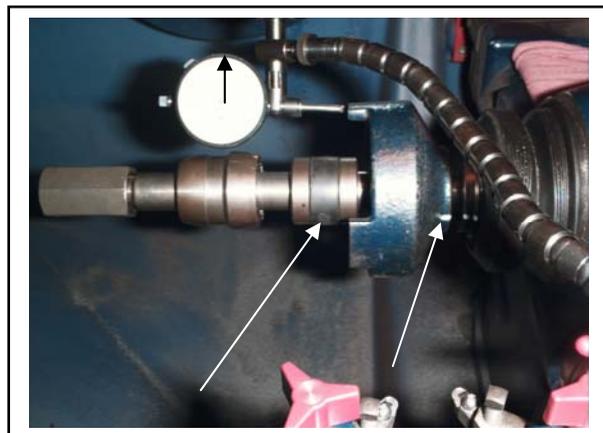
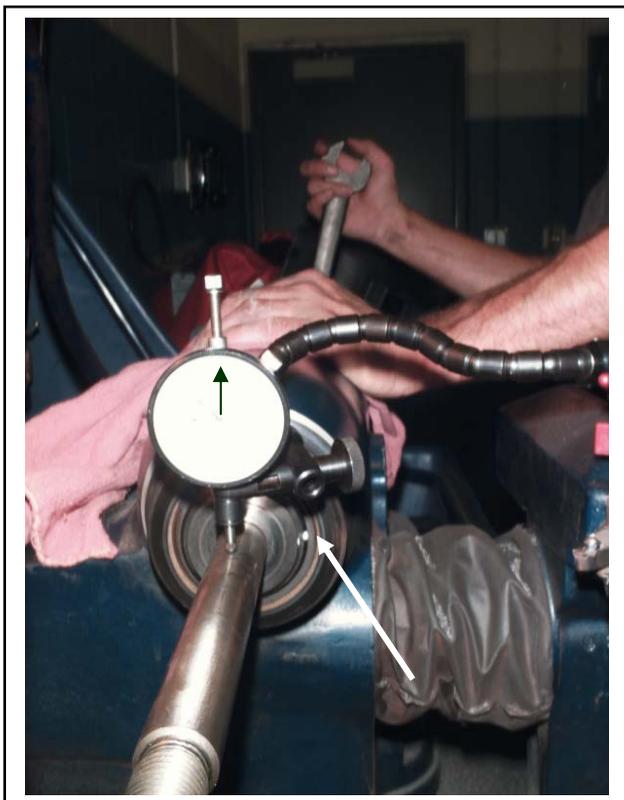


Figure 3



Figure 4

