The purpose of the following exercise is to demonstrate to users how the ORBITOOL™ deburring tool operates without tying up a piece of production machinery.

A manual lathe is chosen for this exercise simply because 1) most shops have one, and 2) it's usually not used for production. A manual lathe also serves to demonstrate the simplicity of deburring cross-drilled features with ORBITOOL.

ORBITOOL deburring tools are primarily intended for use on CNC lathes with live tooling and CNC mills and machining centers with helical interpolation capability. They can also be used manually.

Special attachments are available for lathes without live tools and transfer machines.

DEBURRING EXCERCISE
MANUAL LATHE SETUP

Components/Equipment

Manual lathe
Electric or air grinder.
Test part (Figure 1: Supplied by J.W. Done)
Orbitool™ deburring tool

1. Place the part (figure 1) into 3 jaw chuck on a manual lathe as shown in figure 2.

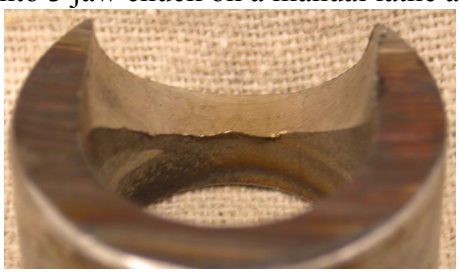

Figure 1

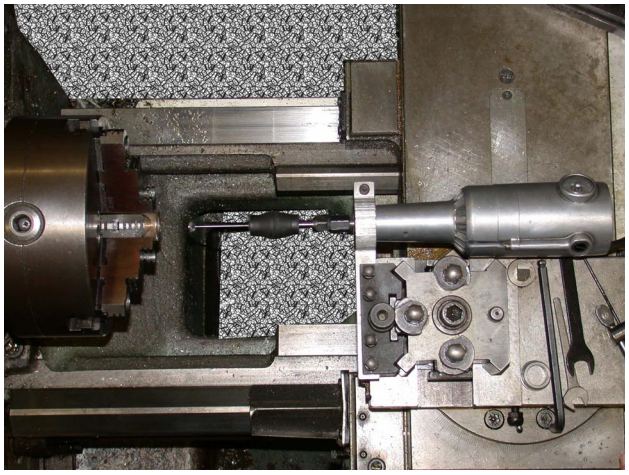

Figure 2

2. Mount the grinder onto the tool post of the lathe and ensure it is on center (Figure 3).

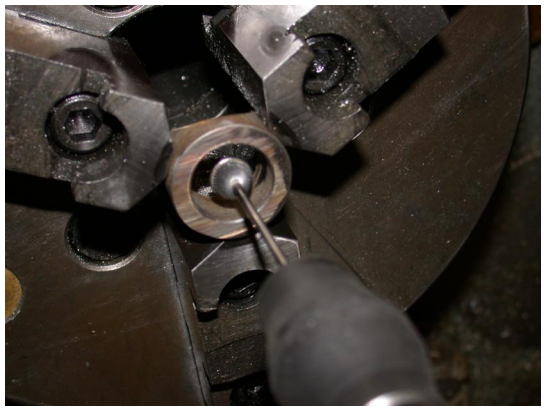

Figure 3

3. Advance the tool forward (Z axis) so it protrudes through the part. (Figure 4)

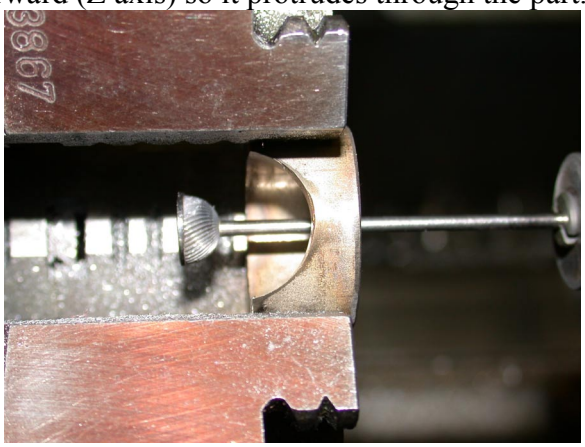

Figure 4

4. Move the tool post (X axis) until the shaft of the Orbitool touches the part (Figure 5). This will be the final position of the tool when deburring is complete.

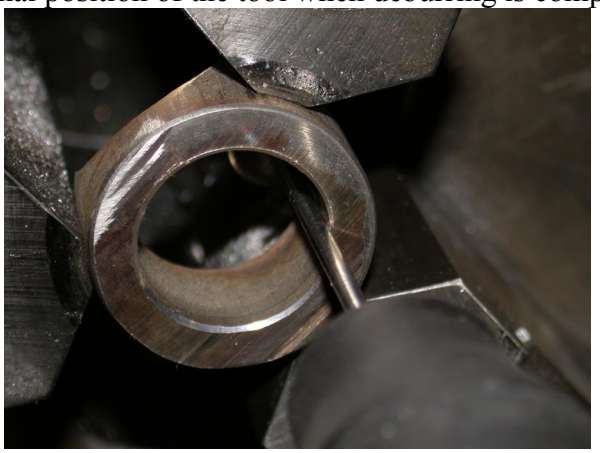

Figure 5

5. With a finger deflect the tool (Figure 6) and at the same time retract (Z axis) until the Protective Disk of the Orbitool rests on the inside surface of the part (Figure7).

Figure 6.

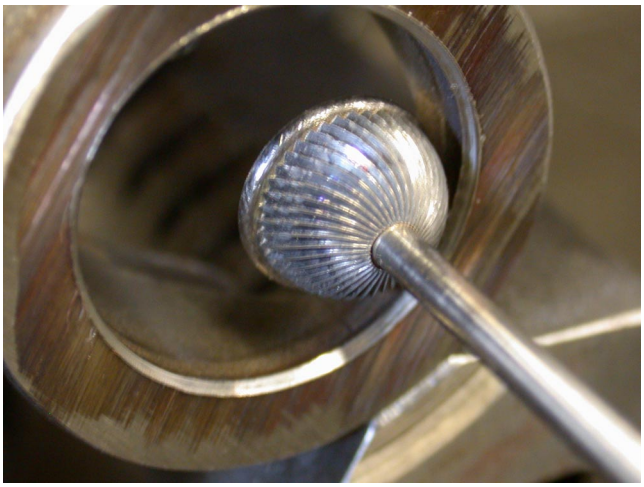

Figure 7

6. Set the spindle speed to about 130 rpm clockwise.
7. Adjust the grinder speed to approximately 5000 rpm.
8. Set the Z feed to .005 ipr. Set it to neutral position.
9. Start grinder and spindle rotation.
10. Start Z feed.
11. Stop Z feed when tool protrudes through part (Figure 5). Stop grinder and spindle.
12. Return the tool to center and back it out of the part (Figure 3).

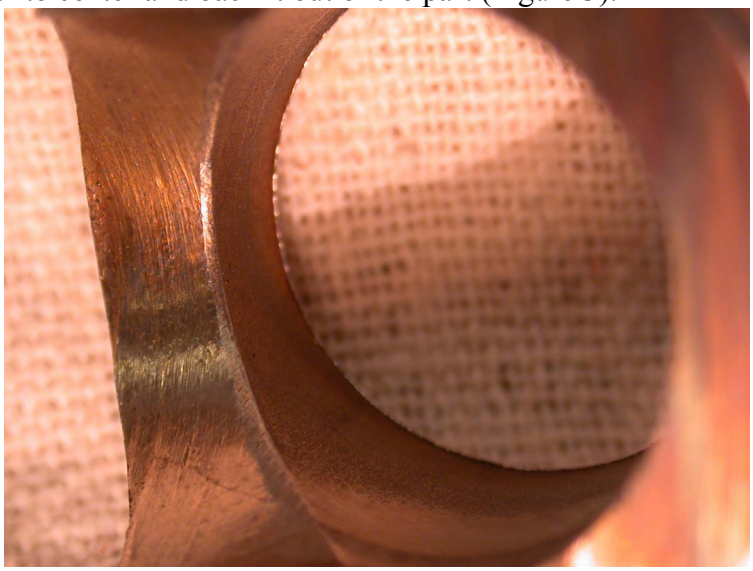

Figure 8

13. Remove part from chuck and inspect (Figure 8).