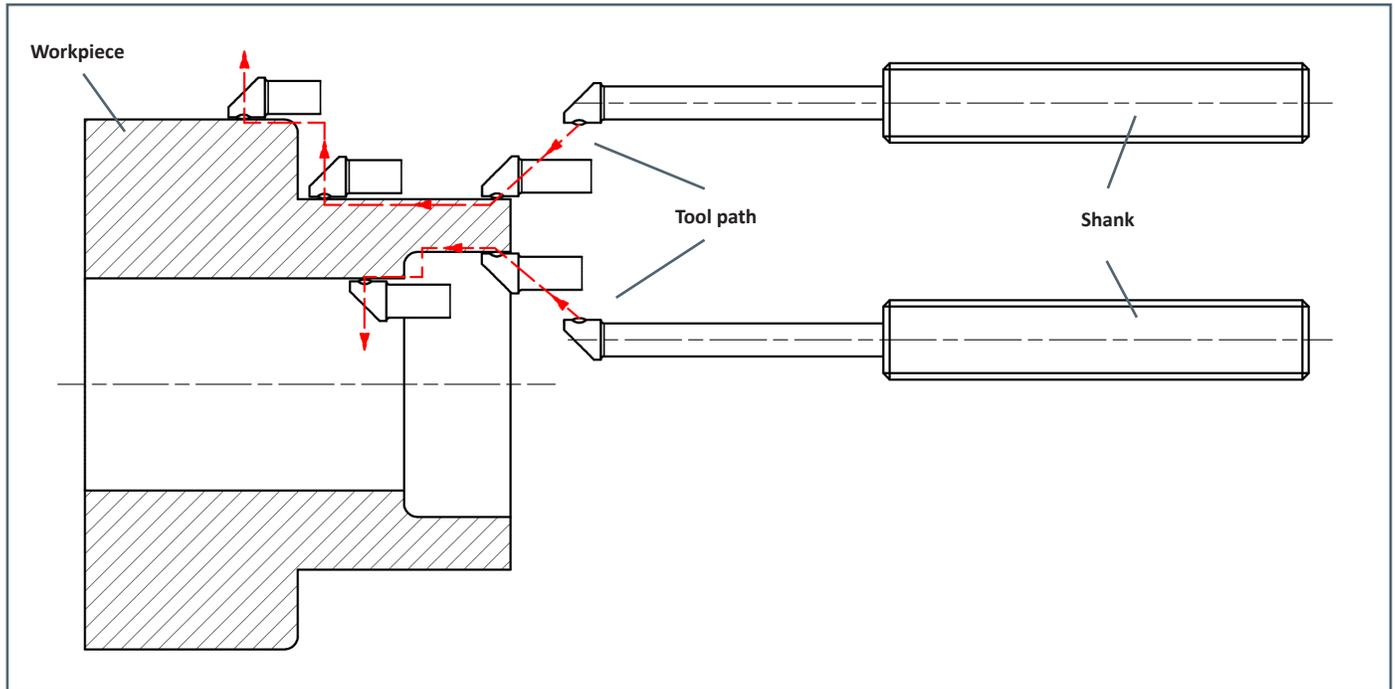


# ELLIOTT DIAMOND BORING BAR STYLE BURNISHING TOOL

## INSTALLATION AND OPERATING INSTRUCTIONS



### Operating Instructions:

Part preparation: 80-100  $\mu$ -inch Ra (2.0-2.5  $\mu$ -m Ra)

Part hardness: 40Rc or under. Consult factory for harder materials.

Feed Rate: .003"/.004" IPR (0.076-.100mm/rev)

Speed: 200-500 SFM, 750 Max SFM (60-150 meters/min, 230 meters/min Max)

Coolant Required: Water soluble or oil

Maximum Tool Reach: 2.860" (72.6mm)

Minimum Hole Diameter: .500" (12.7mm)

Minimum Clearance Requirement: .140" (3.6mm)

The Elliott Boring-Bar Style Diamond Burnishing Tool is designed for lathes or similar turning machines to provide an improved surface finish on a manufactured part.

This burnishing tool can be used on most metals with a hardness below HRC40.

### Tool Set Up and Operation:

Mount the burnishing tool so that the center of the diamond is on-center and perpendicular to the wall of the hole being burnished.

Flood coolant on the part that is going to be burnished. Turn the machine on and feed the diamond stem into the hole. Position the diamond so that it contacts the wall of the hole.

Once the diamond is in contact with the wall, move the diamond approximately .020" to .030" (0.51mm to 0.76mm) toward the wall. This will apply tool-to-part pressure required to displace the material in the burnishing process. (The amount of pressure required will vary from application to application.)

Feed the burnishing tool forward into the hole (see suggested feed rate on other side). Continue flooding the tool with plenty of coolant.

Once you have achieved the required depth, move the diamond away from the wall and then remove it from the hole.

Once the burnishing tool has been removed from the hole, stop the machine and check the finish. If the result is not to the required specification, repeat the above steps on another part.\* On the next part, move the stem 0.003" (0.076mm) against the wall. This will apply more pressure on the surface being burnished.

\*Note: Burnishing is a one pass process. Repeated burnishing on the same surface will not give you accurate feed, speed and pressure data needed for burnishing other parts.

**Tool Tips:**

If you cannot get enough tension on the stem, try the following:

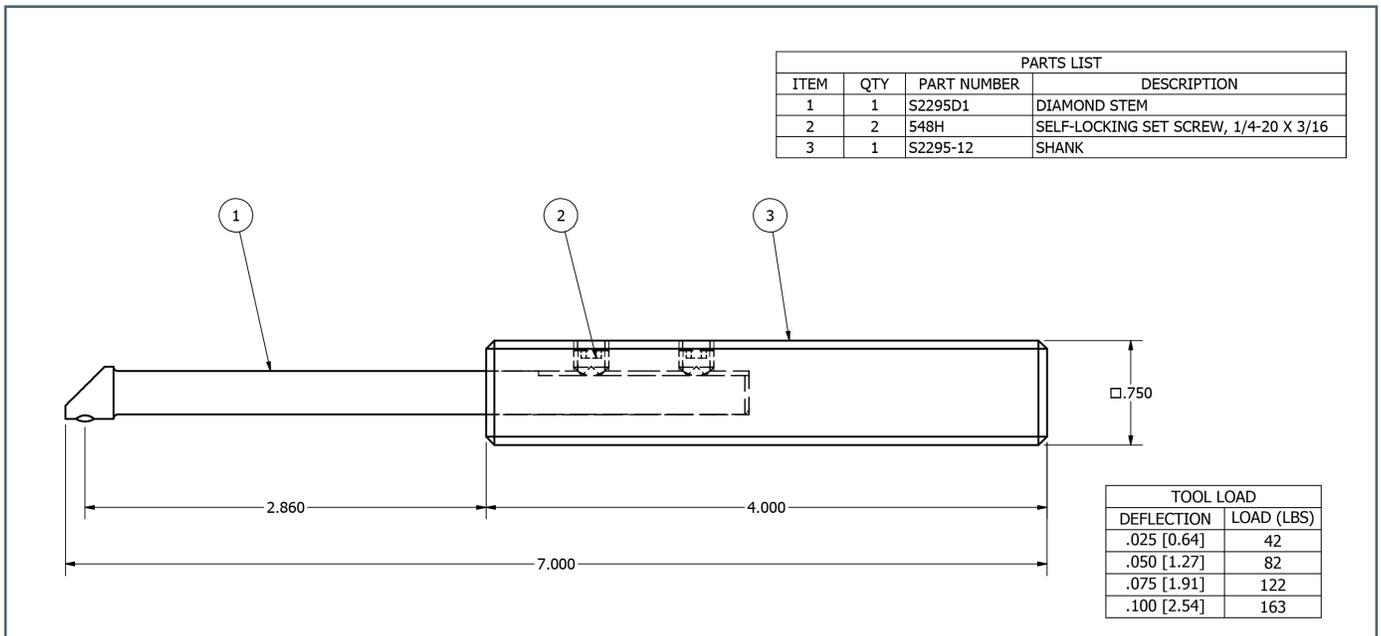
1. Angle the tool slightly. This will provide more clearance for the tool to flex.
2. Cut the stem off at a desired length. This will increase your tension, but decrease your reach.

**Caution!:**

1. Do not deflect the stem any more than .120" (3.0mm) after you have made contact with the wall. More than .120" (3.0mm) may cause the stem to break or permanently bend.
2. Do not feed the tool on or off the part that is being burnished.
3. Do not burnish intermittent part surfaces.
4. Use coolant at all times. The diamond's precision ground surface can be damaged if the tool is used without a flood of coolant on the diamond.

**Tool Maintenance**

To replace the diamond stem, loosen the two set screws on the shank with 1/8" hex key and pull the diamond stem out. Insert the new diamond stem into shank, and tighten the two set screws firmly.



For additional technical support:

