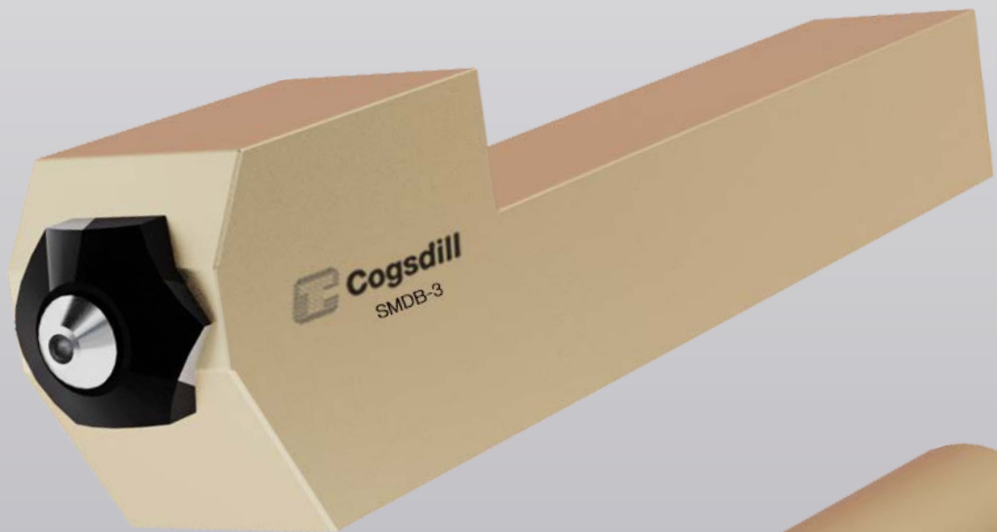




Diamond Burnishing Tools





Diamond burnishing

Overview

The **Cogsdill** Diamond Burnishing Tool is designed to produce high quality, low microinch burnished finishes on shafts, large bores, and faces. With most metals, a turned or ground part with a properly prepared 40 to 60 microinch finish can be burnished to a 4 to 8 microinch finish in seconds. Cast iron can usually be burnished to an 8 to 15 microinch finish.

Cogsdill Diamond Burnishing Tools can burnish virtually any size stock; from carbon steels to tool steels, cast iron to alloys, and most ferrous and non-ferrous metals. The premium quality diamond burnishing insert is polished and contoured to provide superior finishes and excellent tool life.

Since set up and operation is relatively simple, no special operator skills are required. Diamond Burnishing Tools are versatile . . . various models are designed for use in the tool post of a manual lathe, automatic, or in CNC equipment. The tools can be used on both large and small diameters, and are ideal for short production runs.

The Diamond Burnishing Tool can produce quality finishes on interrupted surfaces, such as a shaft with a keyway or the face of a flange having a series of bolt holes.

While the tool must be used with coolant, no special coolant is required. Straight oils, soluble oils, and synthetic coolants can be used to provide the necessary lubrication.



Replaceable diamond insert is polished and contoured for superior finishes and long tool life.

burnishing tools

diamond



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How it works

The Cogsdill Diamond Burnishing Tool is mounted in the tool post of the desired machine. The diamond burnishing point is brought into contact with the workpiece at the centerline of the part and perpendicular to the surface being finished. The tool is then fed into the workpiece an additional .002 or .003 inch (.05 or .08mm) to allow the diamond insert to become disengaged from the stop in the holder. The spring, with its preload, forces the diamond against the workpiece. The tool is then fed along the surface of the rotating workpiece to produce a mirrorlike finish.

As a recommended starting point the adjusting screw should be tightened (turn clockwise) until all clearance between the push rod and the spring is removed. Then tighten the screw another 1 to 2 turns which will compress the spring to provide the necessary preload to the diamond insert.

This is the recommended starting point for mild steel. Slight adjustments in the burnishing pressure can be made, if necessary, to achieve the optimum finish. To adjust the burnishing pressure, tighten the adjustment screw to increase pressure or loosen the screw (turn counterclockwise) to reduce the pressure.

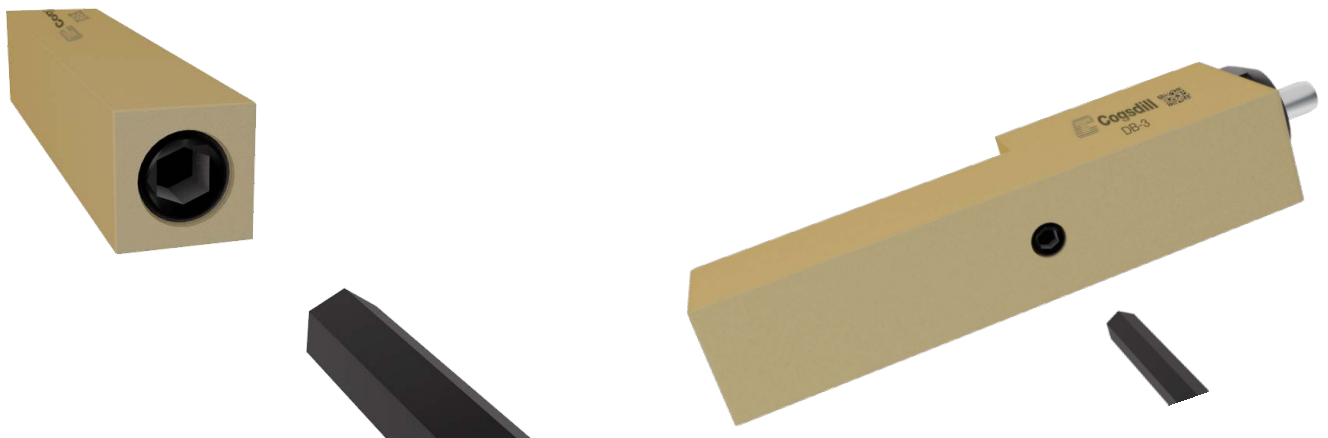
The prefinish on most metals should be approximately 40 to 60 R.M.S. for best results. A feed rate of .003 to .004 inches (.076 to .102mm) per revolution at speeds up to 750 surface feet per minute (229 surface meters per minute) is generally recommended when using the Cogsdill Diamond Burnishing Tool.

Normally, after the tool has been set to provide the .002 to .003 inch (.05 to .08mm) "interference", it can be fed onto the rotating work-piece and allowed to feed off.

The slight radius of the diamond tip is sufficient to cause the tool to "climb over" the edge of the part and begin its burnishing action. Likewise, if an interrupted surface is burnished, such as a shaft with a keyway or a flange with bolt holes, the tip of the tool will drop into the interruption but "climb up" the other edge due to the radius on the diamond.

CAUTION: It is important NOT to exceed the recommended amount of interference. An excessive projection of the diamond insert into any surface interruption could cause tool breakage, as the diamond insert could not perform its "climbing" action. (Note: Adjustment of the burnishing force does not affect the amount of interference.)

Note: Diamond burnishing tools do not have the advantage of an overlapping effect as with multi-roll tools, and for this reason slower feed rates and/or multiple passes over the part may be required in order to produce the desired finish.

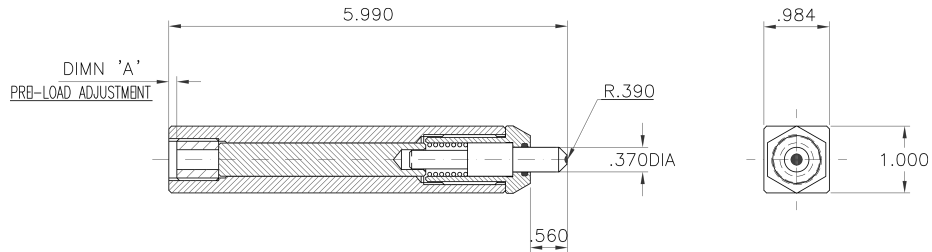


Diamond Burnishing Tools are adjustable for optimum burnishing pressure. For the DB-1 and DB-2 models, the adjustment screw is located in the end of the tool. For models DB-3 and DB-4, the adjustment screw is located on the side of the tool.

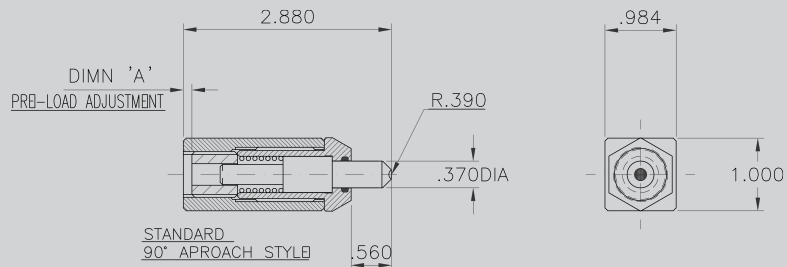


Diamond burnishing

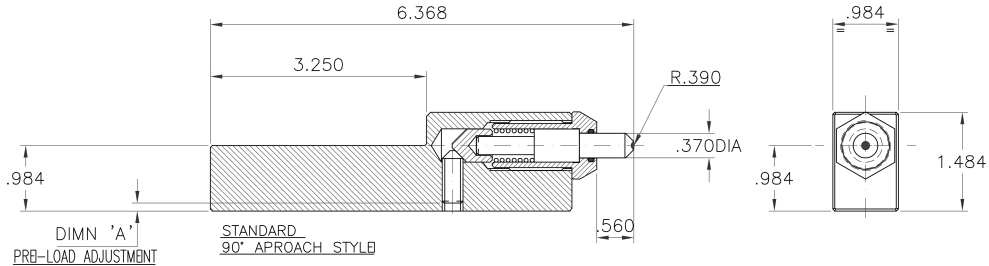
Standard tool specifications



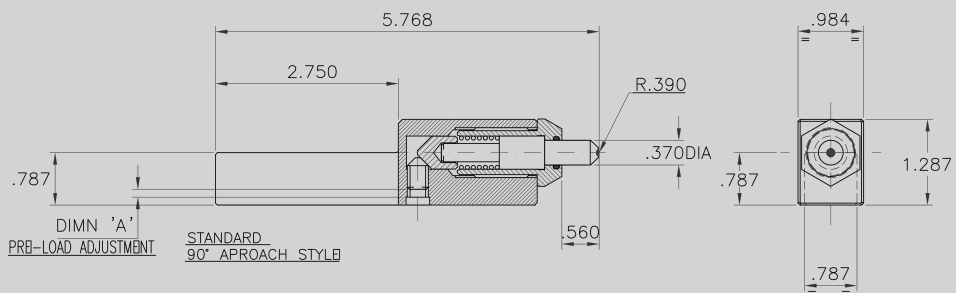
DB-1



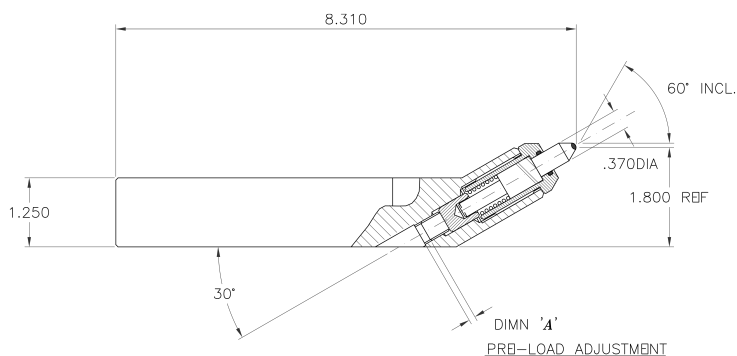
DB-2



DB-3



DB-4



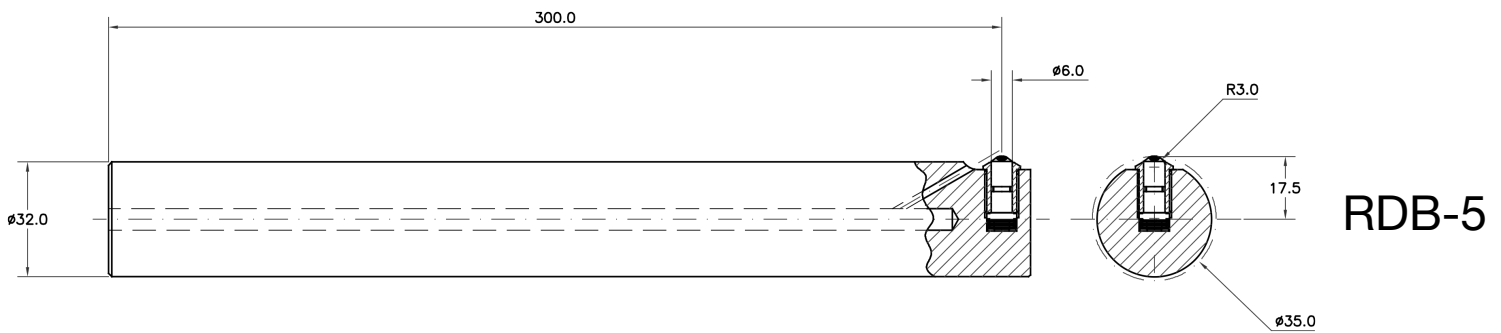
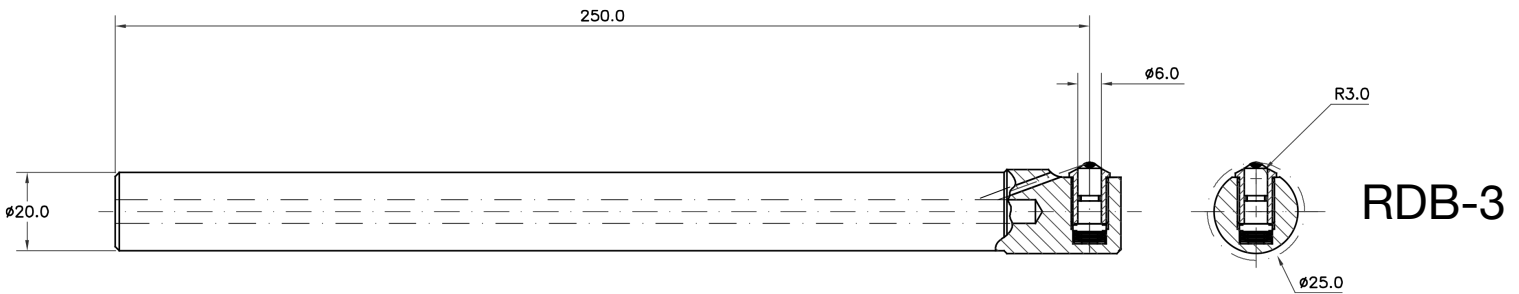
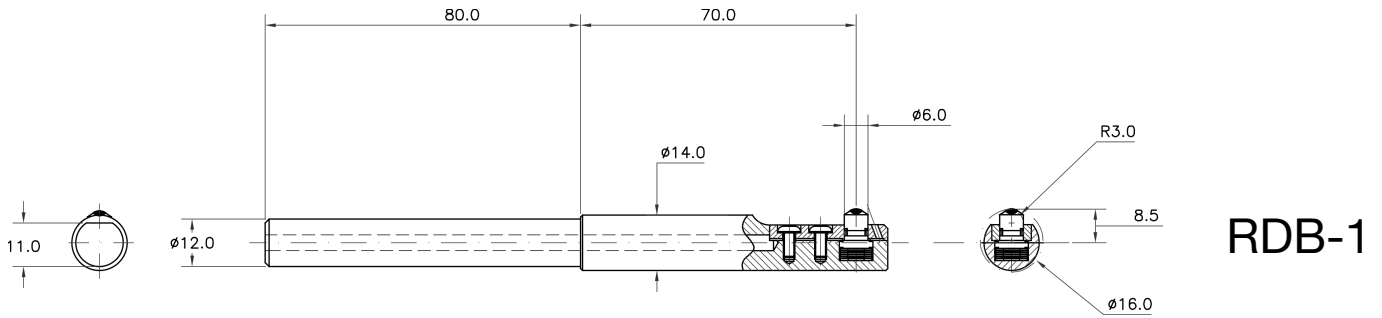
DB-5 (R/H)

DB-6 (L/H)



Diamond burnishing

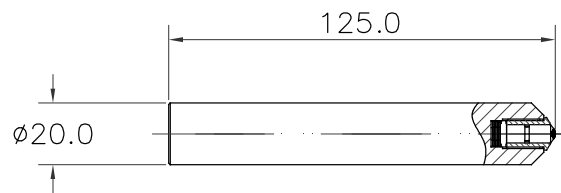
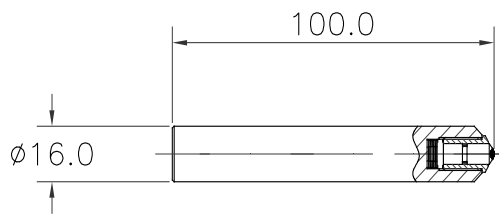
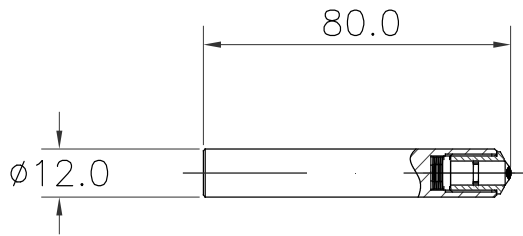
Standard tool specifications





Diamond burnishing

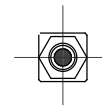
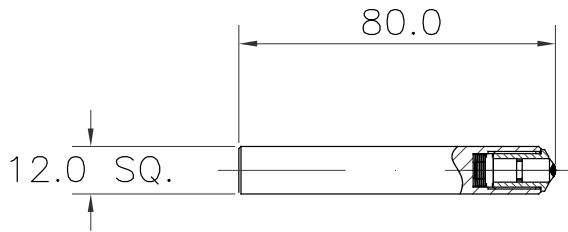
Standard tool specifications



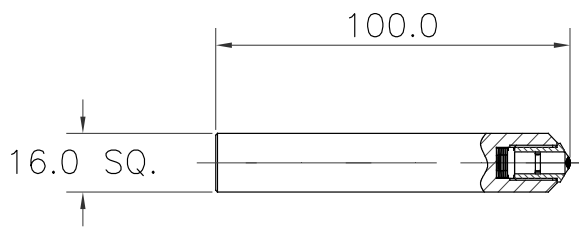


Diamond burnishing

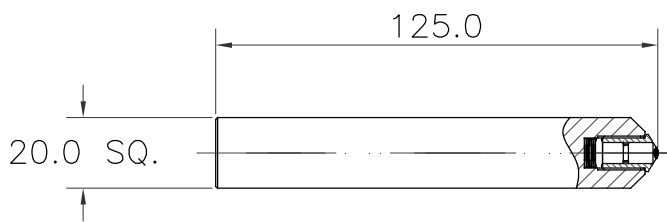
Standard tool specifications



SMDBS-1



SMDBS-2



SMDBS-3





Cogsdill

Burnishing
ZX Tooling System

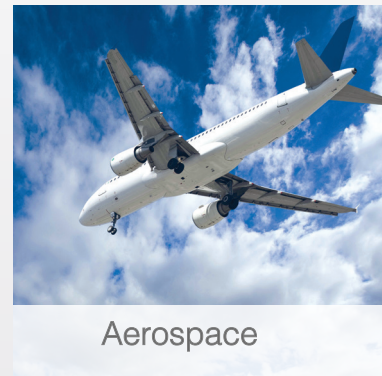
Recessing and Grooving

Shefcut Deburring

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Support
Network



Oil & Gas



Aerospace



Heavy Engineering



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For
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Power Generation



Marine

Cogsdill-Nuneaton Limited

St George's Way
Bermuda Industrial Estate
Nuneaton, Warwickshire
CV10 7JS, UK
Tel +44(0)2476383792
Fax +44(0)2476344433
Email sales@cogsdill.co.uk
Web www.cogsdill.co.uk

Cogsdill Tool Products, Inc

P.O. Box 7007
Camden, SC, USA 29021-7007
Tel (803) 438-4000
Fax (803) 4385263
Email cogsdill@cogsdill.com
Web www.cogsdill.com

Cogsdill Asia Pacific Pte Ltd

Tel +65 9769 5658
Email office@cogsdill.sg
Web www.cogsdill.sg

Cogsdill Austria GMBH

Tel +43(0)7665 6024040
Email office@cogsdill.at
Web www.cogsdill.at



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