



The Grinding Doc's

Grinder's Toolbox

**Optimizing your grinding, dressing
and cooling parameters for high-
performance grinding.**

www.TheGrindingDoc.com

What's is The Grinder's Toolbox®?

The Grinder's Toolbox® is a program for calculating optimum grinding, dressing and cooling parameters. It was developed by Dr. Jeffrey Badger, *The Grinding Doc*, and runs in Excel.

- Calculation of the *Specific Material Removal* rate;
- Calculation of the Grit Penetration Depth to find the Sweet-Spot of the wheel;
- Use it to quickly choose appropriate grinding parameters for new part geometries;
- Predict grinding temperatures;
- Determine if your dressing parameters are correct or not, and if you're making the wheel sharp or dull;
- Determine if your cylindrical grinding parameters are poorly chosen and likely to cause waviness;
- Determine the correct sticking grit size and sticking velocity;
- Calculate your coolant velocities, pressures and flowrates and determine if your nozzle is correctly sized;

Hundreds of Dr. Badger's customers are using *The Grinder's Toolbox* daily and find it an invaluable tool for optimizing and improving their grinding operations.

It is highly recommended to take one of Dr. Badger's courses or clinics to learn how to realize the full benefit of The Grinder's Toolbox.

The Grinding Viking

The Grinding Viking gives straightforward, hard-hitting (and not always polite) advice on your grinding, dressing and cooling parameters.

A Grit Penetration Depth of 1.4 μm . Excellent work, Joe. You're in the sweet-spot of your wheel. Well done.

An RPM Ratio of 6.00037? Joe, that's so close to an integer value that your workpiece is probably going to be egg-shaped, like your head!

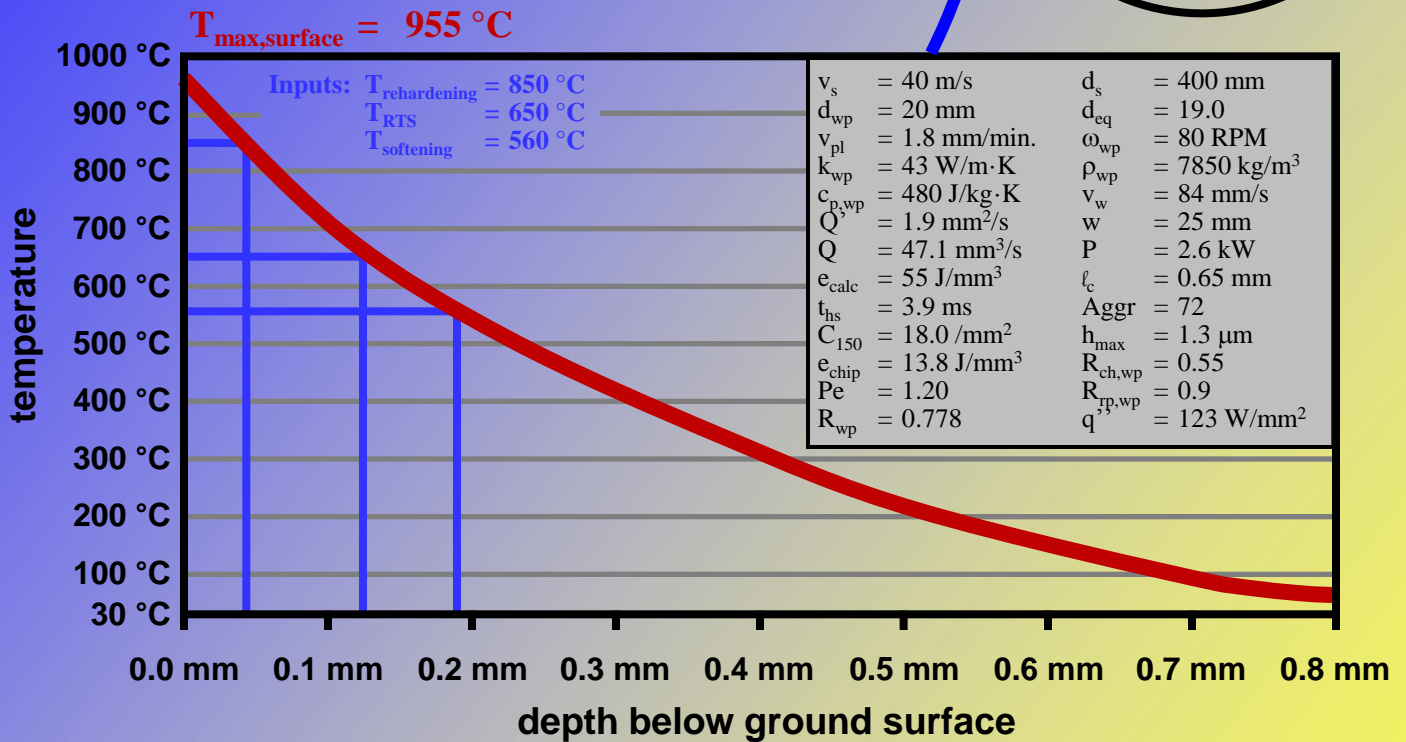
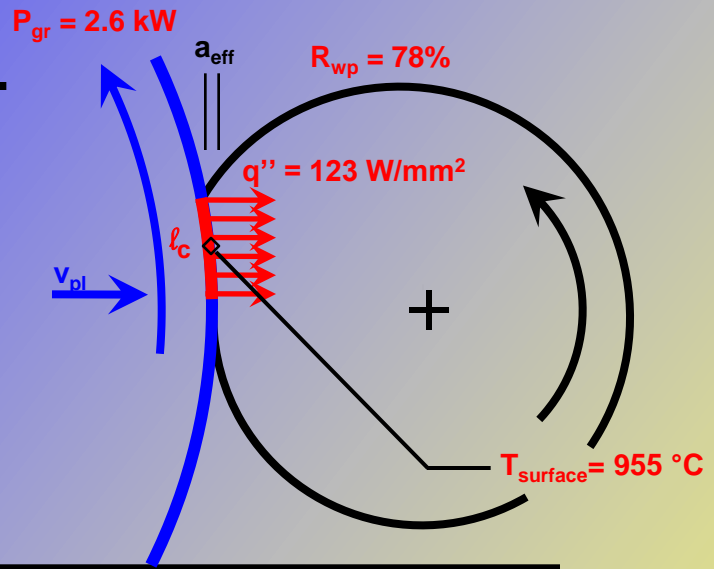
A speed ratio of -0.75 ? Joe, even you shouldn't screw up this badly. You're going anti-directional, which is a sure-fire recipe for chatter and burn. Change the direction of your roll to uni-directional.



The Grinding Viking

Temperature Predictions

If the grinding power or *specific energy* is input, The Grinder's Toolbox® will predict grinding surface temperature and the depth of grinding burn using the well-established concept of the Jaeger Model. And even if power and specific energy are not know, The Grinder's Toolbox® can be used to estimate relative temperatures, enabling the end-user to find the grinding parameters that give the lowest temperatures.



Cost

Surface & Creep-Feed Grinding	\$850
Cylindrical-plunge grinding	\$1500
Cylindrical-traverse grinding	\$1200
Cooling	\$1200
Single-point, blade & Cluster dressing	\$900
Rotary plunge diamond roll dressing	\$900
Rotary traverse diamond disc & roll dressing	\$850
Wheel conditioning or "sticking" with superabrasives	<u>\$300</u>
Complete Set	\$4500
Cost to course attendees	Free

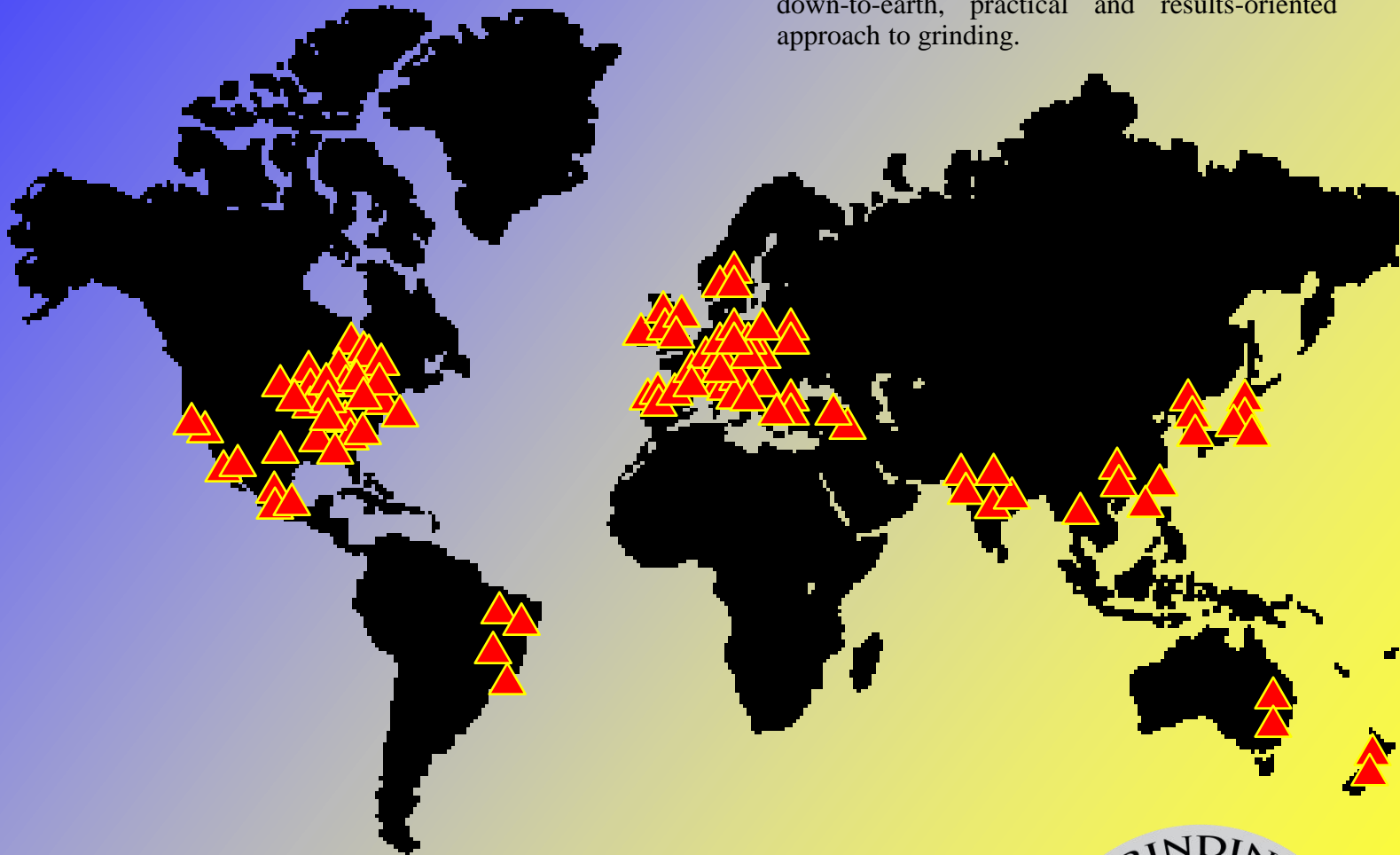
Trial Version available from www.TheGrindingDoc.com

About *The Grinding Doc*



The Grinding Doc: Dr. Jeffrey Badger has a degrees in Mechanical Engineering from The University of Texas at Austin, Pennsylvania State University and Trinity College in Dublin, Ireland. He is known as “The Grinding Doc” from his question/answer column in *Cutting Tool Engineering*. He works independently as an expert consultant in grinding.

Jeff Badger has worked in grinding facilities around the world and brings a no-nonsense, down-to-earth, practical and results-oriented approach to grinding.



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