The Grinding Doc's

five-day in-house *Grinding Boot Camp*

Five intense days that will revolutionize the grinding operations in your factory.

www.TheGrindingDoc.com

Goal

Give your company the knowledge, tools and techniques to take control of your grinding operations and make steady, long-term, significant improvements via shorter cycle times, reduced grinding costs, improved quality and overall better grinding, along with the knowledge to troubleshoot grinding problems.

Schedule & Content

Day 1 & Day 2 – on the shop floor:

During the first two days I evaluate your grinding processes. I examine regular production on three or four of your machines to see what you're doing right and you're doing wrong. I look at:

- **Grinding-wheel specification:** whether the specification is appropriate for the job, if the correct grit size is chosen for the desired surface finish and part radius, if wheel grade is correct, etc.
- **Grinding parameters:** speeds and feeds, typical material-removal rates, what your grit penetration depth is and whether your grinding in the sweet-spot of the wheel, your estimated grinding temperatures, whether your realizing the full potential of the operation.
- **Cooling:** flowrates and pressures, whether your pressure is appropriate; whether your pump is sized correctly; nozzles, if your nozzle is correctly designed, correctly aimed, correctly sized.
- **Dressing:** speeds & feeds, whether the dresser is appropriate for the operation, whether the dressing parameters are making the wheel sharp or dull.
- **Loading, Chatter, Burr, Burn:** If the company is facing problems with these issues, the root causes are investigated, whether the methods to test burn are correct, etc.
- **Grindometer® measurements:** Dr. Badger will hook up *The Grindometer* to determine how your wheel is behaving, if it is self-sharpening or dulling, and if your cycle time is being used efficiently.

The first two days are critical to the visit because, during Day 3, Day 4 and Day 5, we won't be analyzing and discussing grinding situations in general, we'll be analyzing and discussing <u>your</u> grinding operations.

Day 3, Day 4 & Day 5 – In the classroom:

The next three days are spent in the classroom discussing your grinding operations. These days follow the same general format as the *High Intensity Grinding Course*®. However, there is one key difference. During the case studies, instead of discussing a general grinding example, we discuss <u>your</u> particular grinding situation. We analyze it from first principles and discuss how it can be improved. These discussions are always lively.

And, because the classroom portion is focused solely on <u>your</u> grinding operations, we can skip irrelevant sections from the High Intensity Grinding Course and spend additional time on relevant topics. Also, attendees come up with case studies of their own grinding operations and these are analyzed together using *The Grinder's Toolbox*®.

Day 6 – Post-visit technical support:

Off-site technical support via conference calls or Skype to maintain progress and stay focused.

Included in the visit

The Book of Grinding®

Each attendee[3] will receive a personalized, electronic pdf version of *The Book of Grinding*, 2000 pages of practical grinding information that they will use long after the course is over.

The Grinder's Toolbox®

Each attendee[3] will receive *The Grinder's Toolbox*, a program for calculating optimum grinding, cooling, dressing and sticking parameters, including grinding-temperature predictions.

- surface & creep-feed grinding
- cylindrical-plunge grinding
- cylindrical-traverse grinding
- single-point/cluster/blade dressing
- rotary plunge roll dressing
- rotary diamond-disc dressing
- cooling
- superabrasive wheel sticking

Eligible companies

Candidate grinding operations and materials:

Surface grinding, creep-feed grinding, cylindrical-plunge grinding, cylindrical-traverse grinding, cup-wheel grinding. Grinding of hardened steels, bearing steels, gear steels, high-speed steels, stainless steels, tungsten-carbide, cermets, ceramics, nickel alloys, Inconels.

Non-candidate grinding operations and materials:

Grinding operations using electrolytic in-process dressing; electrochemical grinding, coated-abrasive grinding, grinding of PCD, grinding of aluminum; factories doing *only* centerless grinding.

Cost

in North America[1]:

Five-day in-house Grinding Boot Camp	$ 24,500
Five-day in-house Grinding Boot Camp + Grindometer[2]	$ 33,200

in Europe[1]:

Five-day in-house Grinding Boot Camp[2]	€ 20,300
Five-day in-house Grinding Boot Camp + Grindometer[2]	€ 28,400

Cost elsewhere:

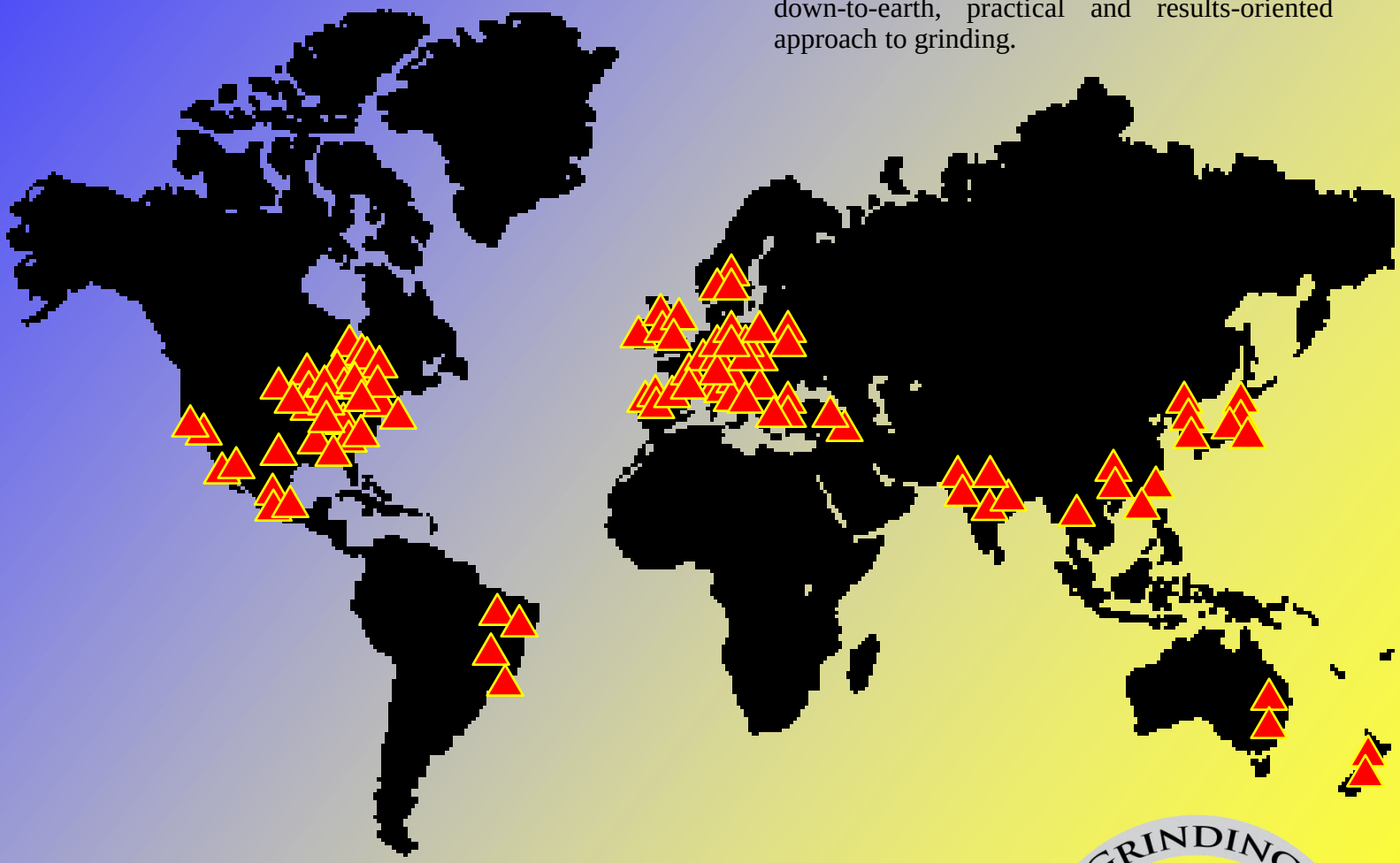
Email Dr. Badger.

1. Flat cost. Dr. Badger pays his own travel & hotel.
2. Significant reduction from standard price; *Grindometer* includes two days post-visit on-site or off-site technical assistance; *Grindometer* available in 110V or 220V with U.S., UK, Australian or European plug.
3. Up to 20 attendees.

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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THE GRINDING DOC

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