



MACHINE TOOL VIBRATIONS | MODAL TESTING | HIGH SPEED MACHINING

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Endmill Optimization: 2 day Class

Who:

Dr. David Dilley, owner of D3 Vibrations Inc., will demonstrate how to apply machine dynamic optimization techniques for improved cutting tool performance. The MetalMax and Harmonizer techniques have over 500 product users and over 1000 consulting customers world-wide since 1988.

Your machinists, programmers, and engineers will learn new methods and ways to apply the latest "shop floor friendly" techniques for optimizing tool parameters (RPM, Feed, DOC).

What:

1. Introduction to High-speed Machine Tool Optimization (1 hours)
 2. Basic Spindle Analysis for bearing/machine health (1-2 CNC machine, 1 hour)
 3. Introduction to Cutting Tool Parameter Optimization (2 hours)
 4. Tool optimization using MetalMax™ TXF (2-5 mills, 2 hours)
 5. Wrap-up Session and recommendations for Day 2 (30 minutes)
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- A. Introduction to Harmonizer-Acoustic Chatter Recognition (2 hours)
 - B. Test cutting using Harmonizer (same 2-5 mills, 2 hours)
 - C. How to make money using process Planning with final parameters (2 hours)
 - D. Wrap-up Session (30 minutes)

Where:

Your facility on 1-2 of your CNC milling machines with 2-5 of your roughing or semi-finish endmills, ski-carbs, or shell mills.

When:

2-4 weeks ARO

Why:

Most aluminum and steel milling operations at job, die and mold shops, and prototype shops are running more than 30% inefficient. Most shops tool inventory is 25% too high. Spindle life is typically 50% of designed life due to high vibration cutting. Dynamic techniques are necessary for virtually every machine capable of running over 8000 rpm to be productive.

To compete in the global market, better methods to utilize tools and machines are required.

How:

Contact David Dilley (248) 259-7808, dilley@d3vibrations.com

Return on Investment (ROI):

Most customers will see a ROI of two months depending on productivity gains and customer's implementation timing.

Cost Savings Questions:

- How many endmills do shops typical use to remove 50% of Metal for all part types? 8
- What is the average improvement using endmill optimization? 30%
- How much does a typical CNC machine cost per hour? \$100
- How much time can be saved per shift (30% * 50% * 8 hours)? 1.2 hours
- How much savings per month with 2 shifts (2*1.2*\$100*20 days)? \$4,800

**You can save \$4,800/month per machine
when optimizing your 8 most utilized mills**



Ask one of our Customers:

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