Ten Things We Learned at Horn Technology Days 2025

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Horn Technology Days 2025 is an exposition that both teaches and demonstrates technology so you can experience the entire process. It is far more than an open house. The best way to describe it is a partnership between Horn and partners to share best practices using the latest technology.

Here are 10 things we learned at the 2025 Horn Technology Days:

1. Climb milling is the preferred process, not conventional milling. Conventional milling was traditionally utilized because of backlash. Modern equipment compensates for backlash allowing climb milling, which reduces heat and horsepower needed and improves tool life.

2. Y-axis cutoff reduces chatter and allows cutting forces to more efficiently be pushed into the toolholder, allowing for faster feeds and increased tool life.

3. Utilize turn milling on thin wall parts and long stick outs. Lower clamp pressure is required because spindle is rotating slowly while the tool provides the speed for cutting.

4. Even though they were machining tool steels, the chips that we checked in the chip buckets were in control, showed signs of heat and seemed to be just as well managed as the final parts produced.

5. Turn-milling breaks chips more effectively in long-chipping, difficult-to-machine alloys. With 3D-machining techniques and multifluted tools, chips are easily managed in superalloys.

6. Tool geometry is the key to running automated production. One key factor in running unattended production is chip control. Having the correct tool geometry is the first step in controlling chips.

7. A single-flute mill with appropriate coating and geometry can achieve ground-like finishes. We saw milled parts that we could not distinguish with our eyes that they were not ground.

8. Incremental improvement in our shops and processes is necessary, but insufficient for achieving major innovation. Continuous improvement is more of a "healing system" for sustaining existing processes. Major innovation is how we grow our capabilities to meet ever-changing market demands. "Hunker down" is not a business strategy; it is capitulation.

9. The move to unleaded steel and brass materials in our shops has finally arrived in full force. Tools are available with geometries to help meet the production levels that have been met using leaded materials. The biggest potential problem to solve is no longer lower productivity due to the absence of lead; it is the potential loss of recovered value from scrap if the various varieties of unleaded brass are mixed or intermingled. Maintaining separation of scrap streams is critical. Mixing different grades will prevent recovery of expected scrap value. Segregate chips, bar ends and actively manage a process for maintaining material identity throughout your process.

10. Immaculate housekeeping is not only possible but is a critical factor in making the process visible, eliminating wasted time, motion and materials and ensuring equipment maintenance is on track.

How much money and time could your shop save if you implemented these lessons? Where can you and your team go to learn the latest to sustain your competitiveness?