Technology

Industry Trends Steer Cutting Tool Development

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High-performance threading solutions are another need for customers in the oil and gas industry
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Manufacturing trends – such as the softening or growth of certain industry segments, the use of technologies like 3D printing or processes like near net shape manufacturing – all have direct impacts on cutting tool product development. As a leading cutting tool manufacturer, we strive to not only keep pace with the natural progression of the industry, but also to set new standards in tool development and performance.

Aerotek, a leading provider of industrial staffing services, recently released its second annual list of "Opportunities in Manufacturing" that includes the top 10 fast growing U.S. industries for manufacturing employment. Topping the list is Oil and Gas Field Machinery Equipment with seven percent employment growth in 2015-2016, which coincides with a recent uptick in activity from our oil and gas customers who have shown increased interest in our patented long reach Steadyline® shell mill holders. These tools excel at reaching difficult-to-access machining areas, such as large, complex workpieces and deep cavities, and oil and gas manufacturers use them for pipe and coupling manufacturing.

High-performance threading solutions are another need for customers in the oil and gas industry. We recently introduced new Thread Chaser inserts for pitch-perfect threading. The inserts provide the speed, reliability, accuracy and precision gauging of threads needed to meet the demanding requirements of the oil and gas industry and other industry segments requiring special threads such as API and common licensed thread types.

The versatile Thread Chaser tool features inserts for both push and pull threading of ID features and push for OD threading using multi-tooth patterns for fast two-pass threading. The system's multi-tooth inserts have precise thread patterns that quickly and reliably generate high-accuracy, consistently perfect thread pitches for couplings and pipe materials in a wide range of hardness.

Thread Chaser inserts increase productivity by reducing threading passes and decreasing cycle time. The tools use a special substrate and coating, and feature through-coolant holes and chip formers to direct high-pressure (up to 210 bar) coolant precisely to cutting edges to optimize chip formation/evacuation and extend insert life. Inserts are available in push or pull and push sets of one, two or three sets on pipe to accommodate various thread machine types.

In addition to the development of new tool technology to meet these types of specialized needs, we are continuing to meet the needs created by the use of different materials in new applications. Sticking with the oil and gas industry for illustration, manufacturers are now switching from steel to stainless steel in the manufacturing of the giant valves in fracking pumps to extend the life of the valves.

This change means more opportunities for the development of products featuring our Duratomic® technology which achieves the elusive balance of toughness and hardness when machining steel alloys and other workpiece materials such as cast irons and stainless steels.

Duratomic technology has been proven to improve productivity by at least 20 percent in average turning applications. Furthermore, it features an innovative used-edge detection technology that uses an approximately 0.1µm-thick chrome-colored coating that clearly identifies a used insert edge when black aluminum oxide shows through. These high-contrast used-edge marks allow operators on busy shop floors to easily spot them and do not impact tool performance or machining-related parameters such as cutting data. As a result, manufacturers can process more parts per edge, limit production interruptions and reduce waste.

These are just a few examples of how we are at the forefront of cutting tool development. In addition to responding to current market trends with more advanced cutting tools, we also provide custom design services to meet customers' unique needs. So, whatever your tooling need, please give us a call. We'd love to help you find the right solution.

Key Takeaways

- Manufacturing trends are changing which is causing cutting tool manufacturers to keep evolving with the industry.
- There has become a focus on the need for industry specific solutions.
- Increasing demand in industry verticals has also paved the way for product technology to increase productivity and ease of use.