



# Technology: SmoothContricity®

## HSM's New Best Friend



**SmoothContricity®**

Maximized Tool Concentricity Exclusively by Tool Alliance®

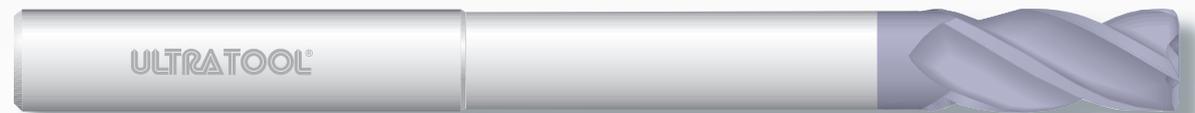
### The Tooling Process

All the best physical ingredients are wasted unless they are all pulled together in a comprehensive system that maximizes their respective attributes. Tool Alliance calls this process SmoothContricity®. Our customer base represents the leading edge of machine tool utilization, and SmoothContricity ensures that optimum results can be obtained in a variety of ways; minimized run-out (TIR), industry-leading tolerances on diameter & radius, and 100% Shrink Fit Ready (SFR) shanks. Combined, these attributes allow our consumers to reach full machining potential and position the cutting tool as a systematic contributor to process consistency and repeatability. Not only is tool life extended, but measurable increases in work piece RMS finish & spindle life can be obtained, and other critical characteristics not typically related to cutting tool performance are enhanced. SmoothContricity represents "The Features that make The Difference" in machining.



## Shrink Fit Ready

Look for this logo throughout the Tool Alliance product groups for assurance that our shanks have the tolerance, roundness, and finish to be "shrink fit ready."

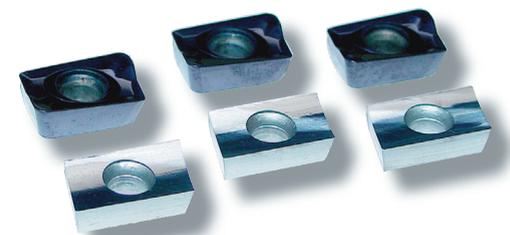


The Monolith Series

At Tool Alliance we still do the majority of our own centerless and OD grinding. This allows us to continually lead the industry in diameter tolerance and run out characteristics. For example, our solid carbide twist drills feature a .0003 maximum size deviation, 40% tighter than industry standards. Solid carbide reamers? Maximum .0002 off the shelf. Similarly, we devote great attention to tool holding during the grinding process, realizing that any TIR from our factory will only be compounded when held again within yours. So for critical reach & length combinations, like Ultra-Tool's exclusive Monolith Series of solid carbide end mills, we utilize hydraulic chucks for absolute precise accuracy (max .0003 on a 12" long end mill!).



Tool Alliance indexable milling systems sold by Mil-Tec feature 100% precision ground geometries, lending a more "solid carbide-like" milling experience and tolerances than those typically associated with indexable milling (like APKT).



Sintered APKT geometry (top) vs. Mil-Tec precision ground (bottom)

**SmoothContricity®**