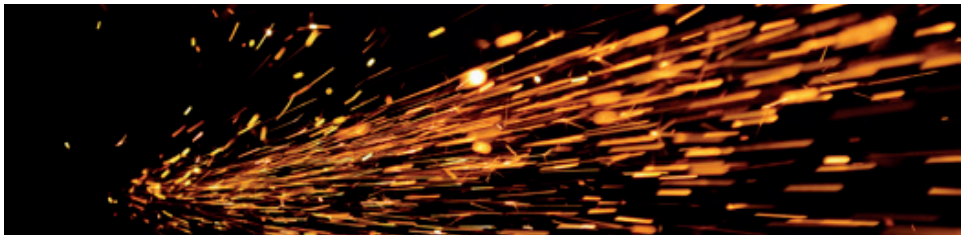
Highlights in brush technology developments!

Exceeding original objectives

BOTECH was in the process of fulfilling customer expectations for increasingly effective brushing tools offering superior material removal rates. That was the specific objective. Unexpected results were observed during the initial trials using innovative brush developments. Test, material and workpiece parameters jointly generated with Hans WEBER Maschinenfabrik GmbH really got the sparks flying as the BOTECH innovations even surpassed the expected superior removal rates!
The reaction of all the engineers involved to these significant results was immediate enthusiasm. On second thoughts, the flying sparks generated threw up more practical considerations. Had the development team just observed a superior material removal rate, or simply a machine related failure?

Clearly BOTECH will need to carefully explain to users what they are about to witness when deploying this new product. After all, this visual phenomenon highlights the innovative energy of BOTECH in continuously improving its product range. In a first phase, these tools of the Supercut Series will be thoroughly tried and tested on WEBER NLCA machines to accurately evaluate the workpiece edge rounding process. The primarily emulsion cooled deburring processes used on WEBER machines allow optimal and repeatable setting combinations, ideal for long-term trials to assess tool life results. Should those tool life improvements match the enhanced removal rates achieved to date, the inevitable question will be just how far BOTECH can continue to exceed its own and customer objectives.



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The Original

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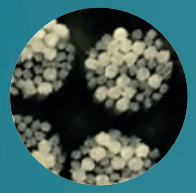
Excellence in miniature formats!

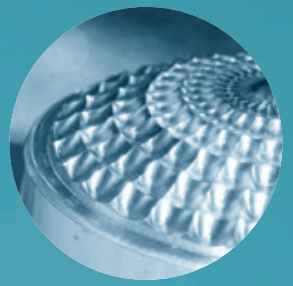
Over the years BOTECH has become recognized as a technology leader for industrial brushes; the brand is well established in the wet deburring market. Swiss engineers demonstrate their innovative capabilities particularly when challenged to generate solutions in the mass production of high quality automotive components.

The company's latest developments have opened up an entirely new field of potential applications: special brushes for use in machining centers. In modern high-speed machining centers, the cutting edges of today's best high-performance chamfering tools will ultimately wear slightly through protracted use. Such blunting leads to microscopic bulging at each end of the workpiece chamfer or even extremely fine burr formation. By contrast, brushes do not become blunt and simply continue to remove material, whereby the only issue may be the geometry of the workpiece edge rounding.
On fineblanking and stamping tools it is well known that perfect and defined radiuses will result in consistently positive finishes on produced workpieces. Typically, punch chipping is reduced, resulting in extended service life between regrinds, while fineblanked and stamped components will exhibit consistent and repeatable burr formation. Last but not least, brushed tool elements are ideally prepared for successful wear reduction surface coating. A simple adapter allows brushing tools to be inserted directly into the tooling magazines of machining centers. Data such as filament length and rotation speed settings of the brushes are keyed into the machine's existing tooling programs. Now, deburring and edge rounding processes can be achieved in a single clamping within the machining center, either by tracing the contour of the workpiece or simply via a linear motion pattern. The innovation lies in the design of the brush filaments which must be capable of withstanding the higher rpm levels. Moreover, they cannot be either too hard or too soft to ensure that material removal rates will not be higher or lower than the workpiece production specifications.
Thanks to the proprietary filaments that BOTECH is continuously developing and improving, small and even tiny brushes can be precisely matched to customer specifications. Excellence in miniature formats!

Brush geometries:



Brushing offers precise deburring in addition to chamfering by grinding, even on more complex shapes!



Time reduction guaranteed when finishing most complex geometries. No additional pass with a milling bit, a touch with a selected brush will do.

Following the contours or simply run across the entire surface. Choices are left open when using a BOTECH brush.