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**Speed-Forming**

The productive way to make deep and narrow grooves

Paul Horn GmbH has developed a set of Speed-Forming tools for machining grooves into cubic workpieces with maximum productivity. To create deep and narrow grooves (with a width of two to three millimetres), tool and mould makers generally use milling cutters with a large length-to-diameter ratio. Due to the high risk of breakage, relatively low feed rate and infeed settings have to be selected. But thanks to its new tools, HORN now allows you to create grooves with a depth of up to 20 mm (0.787") quickly and cost-effectively using the Speed-Forming technique. The tools are based on the Supermini 105 system. As with broaching, the tool travels along a programmed path with a fixed tool spindle orientation. The maximum infeed for the individual strokes is  0.3 mm (0.012")with a fast feed rate setting (maximum 60 m/min).

Not only that, but the tool can also be combined with a cycle for producing curved or undulating grooves. This makes it a highly productive solution for creating cooling fins or reinforcing ribs on a casing, for example.  When used with appropriate machines and components, the tools achieve shorter machining times because the droplet shape of the Supermini system is able to withstand higher loads, thereby allowing infeed in the direction of cutting. Some machine manufacturers are already developing appropriate cycles for curved grooves. As for programming straight grooves, experienced CNC programmers will find it fairly straightforward.

To start with, Horn is offering the tool system in cutting widths of 1.5 (0.059") to 4 mm (0.157") and lengths of 12 (0.472") to 35 mm (1.378"). The tool holders are available with an HSK 63 interface and as a round shank with a diameter of 25 mm (0.984"). All versions feature internal coolant supply.

*1.826 characters incl. spaces*

**Image captions:**

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**Image:** The tool is based on the Supermini 105 and offers certain advantages compared with the standard milling of deep and narrow grooves.

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