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**PCD drilling tools for non-ferrous metals**

Paul Horn GmbH presents its expanded portfolio of tools with cutting edges tipped with polycrystalline diamond (PCD). Following on from PCD parting-off tools, Horn also offers users PCD-tipped step drills. The tool system allows greater drilling precision and better surface quality thanks to the sharp cutting edges. It is designed for drilling, boring and countersinking in non-ferrous metals, such as for the production of aluminium wheels. The tools allow high cutting parameters during machining, which makes it possible to reduce the cost per component in series production, as well as the process time.

Horn only offers the PCD-tipped step drill as a special tool. The PCD tip is available on tools with a diameter of 4 mm (0.157") and above. The bodies are available in all common DIN shank dimensions from 6 mm (0.236") to 25 mm (0.984") diameter as a carbide monobloc version. The carbide shank provides good vibration damping during machining. All variants have an internal coolant supply. The monobloc tool body is available as a steel variant from a diameter of 32 mm (1.259").

The cutting material PCD is a synthetically produced, extremely hard, intergrown mass of diamond particles with random orientation in a metal matrix. It is produced by sintering together selected diamond particles at high pressure and temperature. The affinity of the iron for the carbon in the diamond only permits economical machining of steel in rare cases. As the temperature increases, the carbon from the diamond diffuses into the steel, which severely limits the tool life. For this reason, this cutting material is mainly used for machining non-ferrous metals.

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**Photos:**



**photo caption:** The PCD-tipped step drills enable high drilling precision.

Source: Horn/Sauermann



**photo caption:** All variants of the PCD-tipped step drills are equipped with internal coolant supply.

Source: Horn/Sauermann

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