



Machining

Kennametal Introduces New Line of PCD Tools

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Polycrystalline diamond round tools, available with short lead times, enable high-efficiency aluminum machining.

Kennametal has introduced a new line of PCD round tools for aluminum machining that delivers up to 10 times higher productivity than carbide tooling. The new line of drills, reamers and end mills provides exceptional tool life and wear resistance even in very abrasive aluminum alloys and are available with very short lead times.



A broad selection of PCD end mills in diameters up to 50 mm are available as standard.

“Our new PCD round tools line enables our customers to machine aluminum significantly faster, for greater productivity on the shop floor,” says Michael Hacker, Product Manager, Kennametal. “In drilling and reaming operations, these tools consistently perform at cutting speeds of up to 900 m/min (3,000 SFM). Milling operations can be performed at an incredible 6.000 m/min (20,000 SFM)—far higher than non-PCD tooling.”

Long tool life, high productivity gains

With through-the-tool coolant capabilities and an MQL-ready interface, these PCD round tools are ideal for both rough and finish machining. Extremely sharp cutting edges and low-friction rake surfaces eliminate concerns over built-up edge. Low-friction machining also produces superior surfaces in finishing operations, such as reaming. Surface roughness of Ra 0,1–0,8 μm (0.0025–0.02 $\frac{\text{in}}$) is achievable – far superior to conventional carbide tooling.

PCD grade KD1410 assures extended tool life and is particularly beneficial in the high-silicon content aluminum used to make automotive parts like engine blocks or cylinder heads.



The PCD round tool line includes a range of holemaking and hole finishing options, including modular reaming heads up to 42 mm in diameter.

The offering at a glance

The line of PCD end mills features:

- 6 to 50 mm diameter tools
- Cutting depths up to 50 mm
- Center-cutting, roughing, and finishing geometries
- Various rake angles

The PCD drill offering features:

- 6 to 20 mm diameter in 0.5 mm increments
- Up to 5 x D
- Inch and metric sizes

The PCD reaming portfolio offers:

- 6 to 20 millimeter in diameter in 1 mm increments
- Through and blind hole versions
- For larger diameters up to 42 mm, the PCD modular reaming system with KST coupling is available.

Watch this short video for a real-time demonstration of Kennametal's PCD tools and see how you can increase your productivity up to 10 times compared to carbide solutions.

"Many of these PCD round tools can also be requested as custom solutions to fit specific customer needs while still maintaining short lead times," says Hacker. "Kennametal is leveraging its decades of experience with PCD tooling in the automotive industry to make this technology readily available to any manufacturer looking for a cost-competitive and highly productive solution for aluminum

machining.”

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