

## THE CUTTING EDGE

# KOMET® PCD drilling tool with chip guiding inserts

The tool solution for preventing chips remaining in the component



Drilling tools with an internal cooling supply are usually used for producing blind holes. These tools flush the chips backwards out of the finished hole through the chip grooves.

The situation is different with a through-hole, where the chips fall out through the opening when the drilling tool exits the hole, as there is no back-flushing effect in this case.

If the through-hole ends in a cavity – as in the example shown of a freeze plug in water-cooled engines – time-consuming cleaning and checking are necessary to remove the resultant residual chips from the cavities in the component.

It is possible to prevent this with a new tool concept.

Special chip guiding inserts are fitted in the drilling tool's chip grooves for this purpose. These inserts cannot be manufactured using conventional processes.

The special design of the chip guiding groove and the cooling channel with back-flushing can only be produced using 3D printing laser melting technology.

**BENEFITS for you:**

- No chips remaining in the component
- Optimised cooling channel design
- Also suitable for operation with minimum quantity lubrication (MQL)

Production of through-holes in cavities and chambers  
Produce a hole without chips remaining in the component

## Conventional machining

Example: Freeze plug

Figure 1  
Conventional PCD drilling tool with internal coolant supply

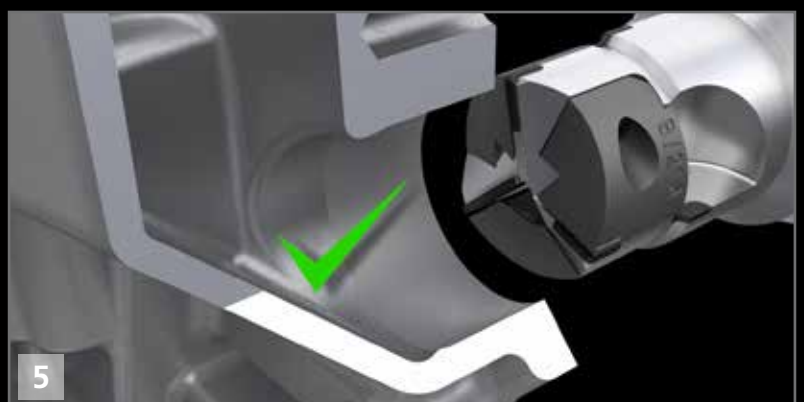
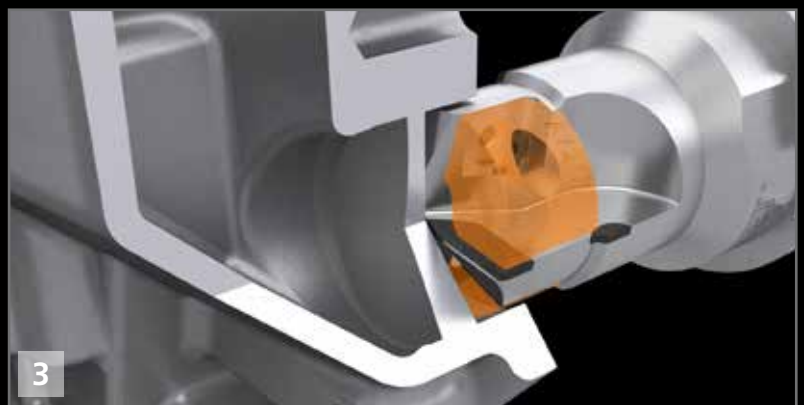
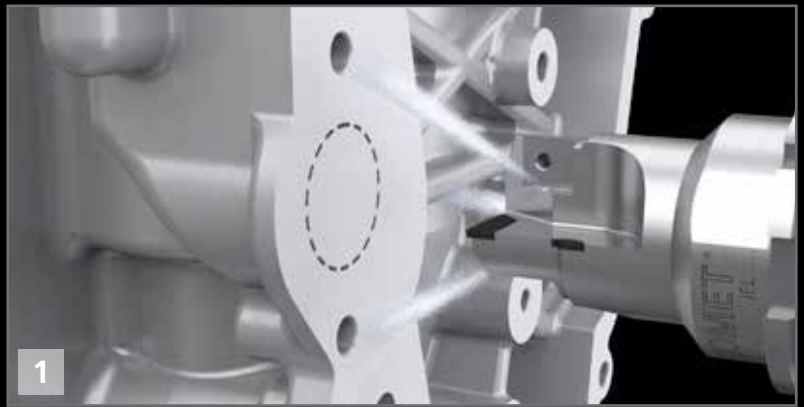
Figure 2  
When the drilling tool breaks through into the cavity, the chips fall into the component, which entails time-consuming cleaning and checking

## KOMET® solution: PCD drilling tool with 3D-printed chip guiding inserts

Figure 3  
Tool concept with chip guiding inserts fitted

Figure 4  
The special design of the chip guiding inserts with integrated back-flushing channel ensures reliable chip removal throughout the entire drilling process

Figure 5  
Result: No chips remaining in the component



Watch entire  
machining sequence

KOMET GROUP GmbH  
Zeppelinstraße 3 · 74354 Besigheim · GERMANY  
Tel. +49 7143 3730 · Fax +49 7143 373233  
info@kometgroup.com · www.kometgroup.com

39901 81002-06/17 · © 2017 KOMET GROUP GmbH  
We reserve the right to make modifications.