

THE CUTTING EDGE PCD.CVD-D.CBN

A diverse range of tools with diamond and CBN cutting materials

Tools with diamond cutting materials play a key role in efficient and effective machining processes – especially when working on composites and metal lightweight construction materials. Tools equipped with PCD indexable inserts have become established for series machining of such materials in recent years.

The KOMET GROUP is backing this trend with an extensive range comprising more than 4000 different ISO PCD, CVD-D and even CBN indexable inserts. It includes a wide range of geometries (CC, CP, DC, RC, RD, TC, VB, VC, etc.) and different versions – e.g. as a corner blank or full-sided blank, full face, wiper, with 3D finishing and roughing chip breakers, etc.



Expertise in special tools

Engine bloc

Material:
3.2581 (GAlSi12)

Tool:
2-Step PCD-Reamer
Ø 84 NZ6 IKS HSK-A63

Machining:
Exit hole crank shaft
Casted part –stock 2-3mm/side

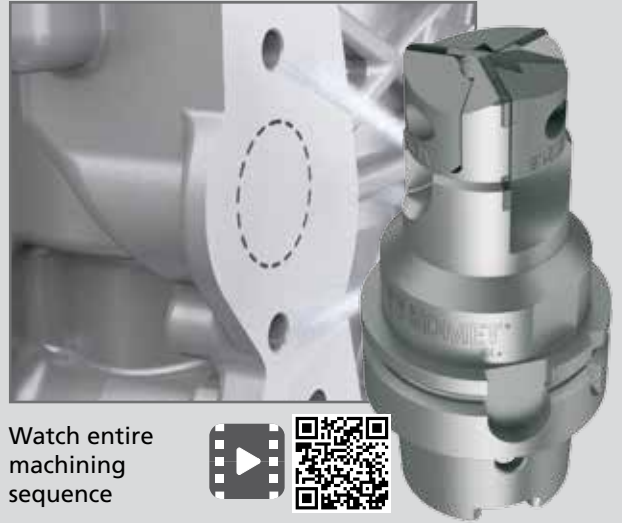
Cutting data:
 $v_c = 500$ m/min
Reaming feed:
 $f_z = 0,1$ mm/tooth



Component-specific solutions

Through-holes in cavities and chambers

Produce a hole without chips remaining in the component



Watch entire
machining
sequence

Bearing Bracket

Material:
3.2163 (GD AlSi9Cu3)

Tool:
PCD-Spherical Milling Cutter
Ø 22-85 NZ3 IKS HSK-A40

Machining:
Finish of der bearing aisle Ø45,7
twin spindle machine, pre-casted
part, stock 1mm, parts clamped
in line

Cutting data:
 $v_c = 600$ m/min
 $f_z = 0,12$ mm/tooth



Slab milling | Chips removed by suction effect

Cutting data:
 $v_c = 2236$ m/min | $f_z = 0,2$ mm/rev
with conventional PCD milling cutter



with "chip-free" PCD milling cutter



Master Brake Cylinder

Material:
3.2371 (G-AlSi7Mg)

Tool:
PCD-Bell Milling Cutter
Ø 50 IKS NZ4 HSK-A63

Machining:
Contour groove front face

Cutting data:
 $v_c = 850$ m/min = 5539 rpm
Drilling and chamfering feed:
 $f = 0,5$ mm/rev
Cycle time: $t_h = 1,0$ s



Counterboring with the Z 5 high-feed finishing boring bar

Specially shaped cutting edge
for defined surface roughness
 $R_z 20 - 30 \mu m$
with $150 \mu m$ shaft spacing

