

UDCLRS

Mirror Finishing of Cemented Carbide

Milling condition

Tool: 2-flute long neck radius UDCLRS $\phi 2 \times CR0.05 \times L2$
 (Used 1 pc. each for roughing & finishing)

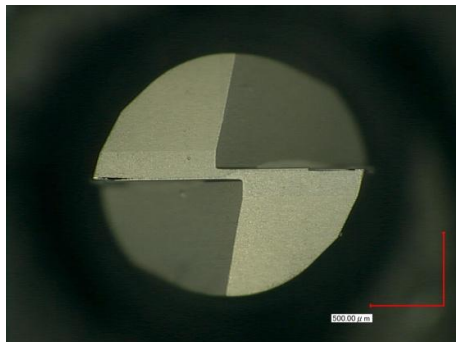
Work material: Cemented carbide VM-40 (90HRA)

Process	Roughing	Finishing
Spindle Speed (min^{-1})	20,000	20,000
Feed Rate (mm/min)	750	100
a_p (mm)	0.9	0.01 (Bottom) 0.9 (Side)
a_e (mm)	0.01	0.01
Coolant	Air blow	Oil mist

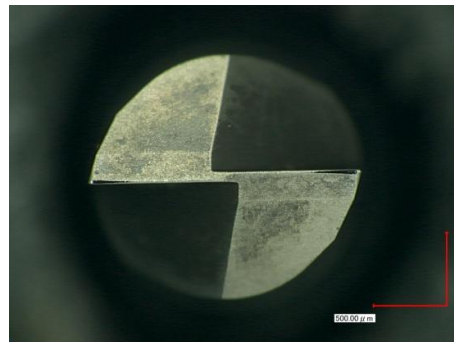
MRV: 144mm^3

Tool damage

After roughing



After finishing



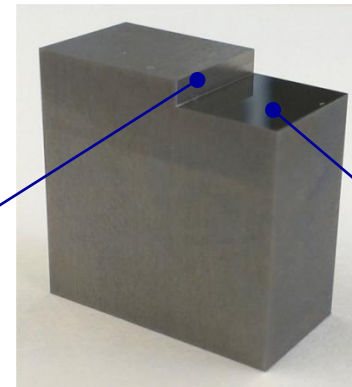
Milling shape

Side milling

Size: 10 x 8 x Depth 1.8 mm

Surface roughness

Side surface
 R_a : $0.069 \mu\text{m}$
 R_z : $0.535 \mu\text{m}$
 Cutoff: 0.25 mm



Bottom surface
 R_a : $0.010 \mu\text{m}$
 R_z : $0.078 \mu\text{m}$
 Cutoff: 0.08 mm

Bottom surface appearance

