

Diamond Milling Tools

A complete range of milling tools to meet the requirements of today's users. Cylindrical milling cutters for milling IOLenses and micro structures; Ball End or Toric milling tools for free form machining of moulds and/or structures. Contour Fine Tooling can supply the Diamond Milling Tools as well in Mono Crystalline Natural Diamond as in Poly Crystalline CVD Diamond.



Diamond Milling Tools

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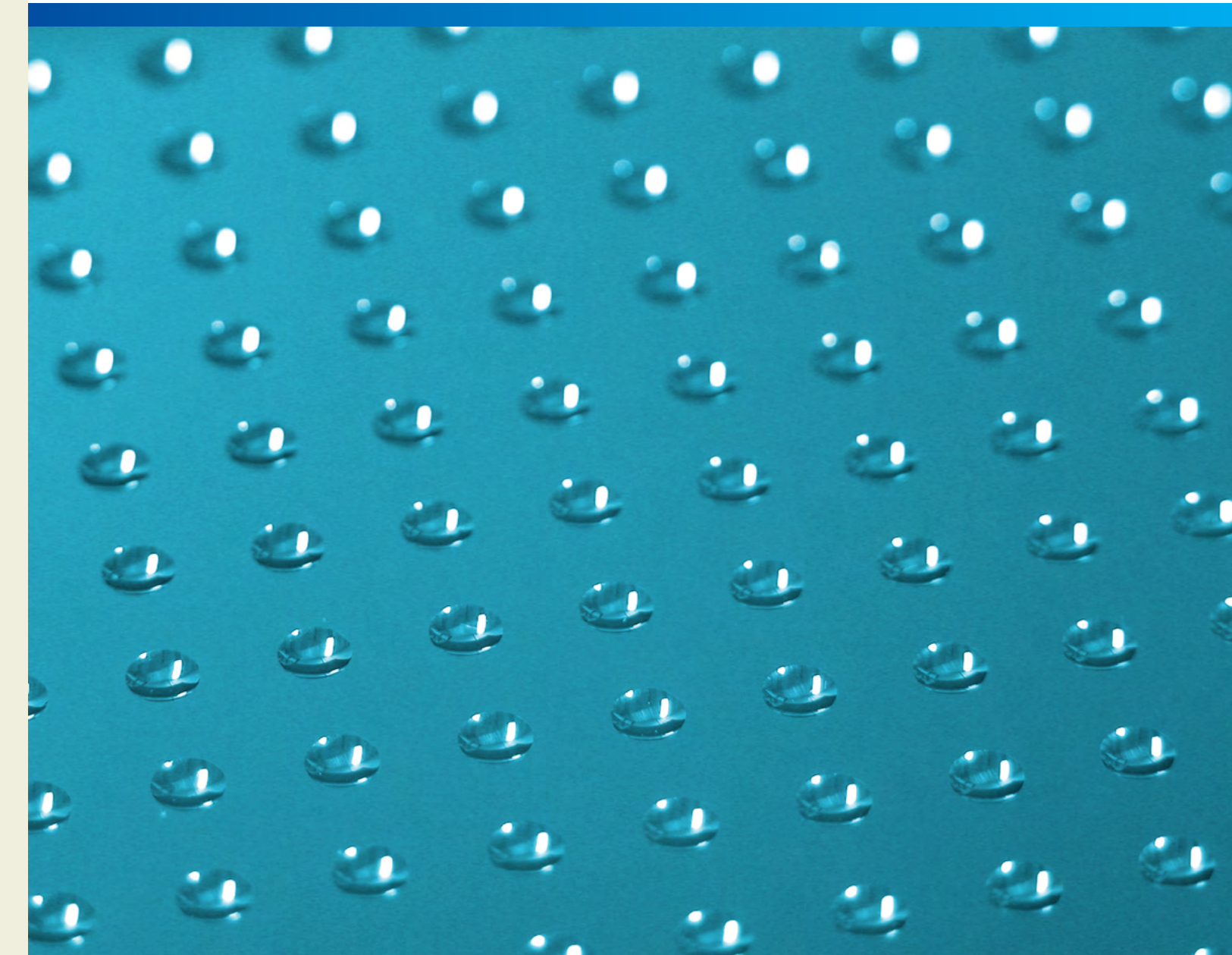
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IOL Milling tools

AVAILABILITY

- From $\varnothing 0.3$ mm cutting diameter and larger
- Working Length 2x cutting diameter
- Shank dimension standard $\varnothing 3.0$ mm. Other dimensions on request

Compared to conventional tungsten carbide or steel milling cutters, Single Crystal Milling Tools for IOL's offer the following

- Much longer tool life (10,000 - 15,000 IOL Lenses)
- Dramatic reduction of machine (at least 150 times less) downtime in replacing conventional cutters
- Higher accuracy
- Superior surface finish, less polishing
- Perfectly balanced

Contour IOL diamond milling tools can be used on PMMA and foldable materials, fixed with wax, vacuum or ice. Only use on air bearing machine with a spindle which is perfectly balanced.

Not recommended for drilling. Theoretically it is possible, but because of possible problems with chip-congestion the tool can break. So therefore always ramp down in material at an angle.

Milling at normal temperature: The feed (mm/min) should not exceed the spindle speed (RPM) divided by 1000 (example: RPM 40,000 then feed maximum 40mm/min)

Milling in freezing device: The feed (mm/min) should not exceed the spindle speed (RPM) divided by 300 (example: RPM 40,000 then speed maximum 130mm/min)



Ball End Milling tools & Toric Milling tools

Ball End Milling tools

The position of the ball end milling cutter is of main importance. Contour Fine Tooling can guarantee the position of the cutting point being within 0.001 mm of rotation axis as well as in height as lateral position.

AVAILABILITY

- Radius 0.1 - 3.0 mm.
- Shank dimensions $\varnothing 3$ to $\varnothing 6.35$ mm
- Form accuracy on radius is standard $< 2\mu\text{m}$, but can be specified down to $< 0.05\mu\text{m}$



Toric Milling tools

AVAILABILITY

- Corner radius 0.05 - 3.0 mm
- Shank dimensions $\varnothing 3$ to $\varnothing 6.35$ mm
- Form accuracy on corner radius is standard $< 2\mu\text{m}$, but can be specified down to $< 0.05\mu\text{m}$



CVD Milling tools

With CVD Diamond nearly any shape of tool can be manufactured. Parabolic forms, multiple radii, multiple profiles, etc. Contour Fine Tooling is happy to design a special CVD milling tool for your application.

