Diamond tools for Electro Optics

Contour Fine Tooling has developed a complete range of tools to meet the requirements of today’s electro optics manufacturers. For optimum cutting efficiency the correct tool geometry and diamond material must be used for any given material. Available with either natural or synthetic single crystal diamond, a range of radius size and rake angle is offered. Tools can either be solid shank or insert style. Contour orientates the diamond to maximise the wear-resistant characteristics.

FEATURES
• Certificate of conformance
• Chip free at 500x Nomarski
• Guaranteed quality
• Optimum tool life

OPTIONS
• Natural or synthetic single crystal diamond
• Various geometries
• Solid shank/insert system

POSSIBILITIES
• Diffractive tools
• Fresnel tools
• Facet tools
• Milling tools
• Form tools
• Half-radius tools
• Unusual shanks
• and many more!

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Pre-finishing & Single Axis turning tools

Contour Fine Tooling is a pioneer in the development and manufacture of controlled-waviness tools.

These tools can be supplied in the same geometry as the required finishing tool, but having a more open tolerance on radius shape (controlled waviness is only necessary on the finishing tool) so it is an economical tool for the removal of material prior to finishing for two axis applications. Since the point of contact between the tool and the workpiece remains static, a larger radius can be used to give benefits in surface texture.

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Characteristics of these tools are a cylindrical clearance and a larger radius. Since the point of contact between the tool and the workpiece remains static, a larger radius can be used to give benefits in surface texture.

Contour Fine Tooling is a pioneer in the development and manufacture of controlled-waviness tools. We have developed a wide range of tools which are available with conical or cylindrical clearance. “Controlled waviness” dictates that the radius shape deviates from a true circle by a guaranteed value. The standard waviness value for the Electro-Optics tools is <0.5 μm. However, Contour Fine Tooling can offer an extensive range from <1.0 μm down to <0.05 μm.

These tools come complete with a ‘controlled-waviness’ certificate showing the actual radius measurement and the deviation from the nominal radius. They are available with natural or synthetic single crystal diamond and with the traditional solid shank or the insert system.

When using an ultra precision two-axis machining method, the type of tool utilized requires careful consideration. First work-piece accuracy is diminished by several error sources, including the machine’s inherent precision, tool length, tool setting, environmental conditions, and tool waviness. While many error sources remain random in nature, Contour Fine Tooling is able to provide predictably high accuracy controlled-waviness tools that eliminate that source of error allowing to focus on other aspects of process optimization. In addition, production costs can be dramatically reduced by effective tool selection, usage and planning.

Fly-cutting

Characteristics of these tools are a cylindrical clearance and a larger radius. Since the point of contact between the tool and the workpiece remains static, a larger radius can be used to give benefits in surface finish.