

surface  finishes  
bringing precision  
to the surface

# Single-Point Diamond Machining



Specialists in Micro-Precision

SURFACE FINISHES™ specializes in

# SINGLE-POINT DIAMOND MACHINING

Outstanding results on a variety of soft materials

## EXPERT WORKMANSHIP

Surface Finishes' single-point diamond fly cutting machines are custom designed to produce accurate and precisely controlled flat surfaces and geometries involving combinations of flat surfaces. Our specialty machines are well suited for applications such as heat sinks, lithography reticle transfer cases and precision mirrors.

The precision mirrors we produce come in a variety of configurations ranging from large area planar mirrors for beam steering and positioning systems to multi-faceted spin mirrors for defense and aerospace applications.

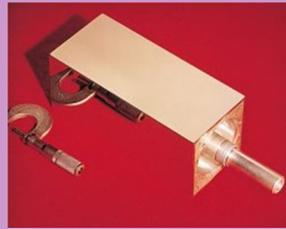
If your applications require a low scatter mirror, we offer our ScatterStop™ polishing technology which delivers single Angstrom level surface finishes on materials such as SiC, molybdenum,



## SINGLE-POINT DIAMOND MACHINING CHALLENGES?

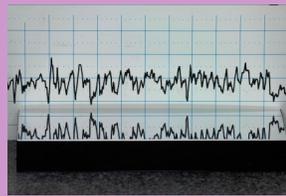
Our experts will help you. Solving challenging problems is our specialty. Send details or a sample of the work to us for analysis and our recommendations.

**Other Services:** We also provide precision lapping, grinding, honing, polishing, and metrology services.



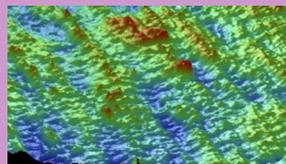
## SPIN MIRRORS

When flatness, parallelism, perpendicularity and surface finish are all critical parameters for your precision mirror applications our fly cutting process will meet or exceed your expectations.



## FLATNESS, PERPENDICULARITY & ANGULARITY

Our fly cutting process typically yields flatness on the order of  $\lambda/4$  (5 microinches) and perpendicularity of less than 50 microinches. We can accommodate parts up to 11-3/4 X 11-3/4 inches in size.



## SURFACE ROUGHNESS

The typical surface roughness yielded by our fly cutting process is 50-100 Å  $R_a$ . If a higher reflectivity, protected or smoother surface is required, we can often follow up the fly cutting process with an optical coating and or polishing process.



## TYPICAL APPLICATIONS

Our fly cutting process is used in applications where flatness, perpendicularity and angularity are critical. Examples include scan mirrors, IR optics, reticle transfer cases heat sinks, and precision knives.



## SUITABLE MATERIALS

Single-point diamond machining is effective on relatively soft metals, plastics and alloys. Examples of suitable materials include aluminum, copper, electroless nickel, ABS, PVC, plexi acrylic, phenolic sheet and alloys such as brass and CuCrZn.

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