General Dynamics provides lapping and grinding capabilities for high-performance materials including Beryllium and its alloys, Titanium, Aluminum, Quartz, Sapphire, machineable glass and ceramics. With more than 50 years of expertise and state-of-the-art turning equipment, we are able to achieve virtually unmatched tolerances.

General Dynamics Mission Systems designs and manufactures a full portfolio of high-performance electrooptical/infrared (EO/IR) systems and components that provide our customers the clarity, accuracy and reliability to successfully complete their mission.
Ultra-Precision Tolerances

10” beryllium gimbals with bore alignment tolerances of .0001”
Angularity and profile callouts of less than .000020” on hard anodize coated aluminum components
2” diameter optically polished quartz gyro components with flatness of .0000020”
Aluminum and beryllium gas and air bearing components with tolerances of .0000010”

Surface Finishes

Metal surface finishes of 1 micro-inch
Aluminum oxide coated ground, lapped finished to within .1 micro-inch
Ground finishes of 5–6 micro-inches on lenses, mirror substrates and similar components
Etched quartz surfaces, lapped and/or ground to achieve customer’s requirement within a 20 micro-inch tolerance

Matched Tolerances

1/4” diameter matched diametrical gap of .000020” and standardized within .000005”, between 2-1/4” diameters
10” mating surfaces are matched lapped and thermally assembled while maintaining the finish diameter and faces with a runout of less than .0004”
Matched lapped components of same and different materials for both diametrical and axial fits