



DRAKE
PLASTICS INC. CO.

Machining Guidelines – PEEK

Machining Tidbits...

- PEEK shapes are stronger and stiffer than most plastics but considerably softer than most metals meaning fixturing is critical.
- All PEEK grades but especially those reinforced with glass and carbon fiber are abrasive on tooling. Carbide tooling can be used for short runs. Polycrystalline (PCD) tooling should always be considered long runs, tightly tolerance parts and for reinforced grades.
- Although PEEK has a very high melting temperature sufficient coolant is required during machining to avoid overheating and localized surface melting.

Turning

Positive geometries with ground peripheries are suggested for inserts. Fine grained C-2 carbide or PCD inserts are best.

360° chuck pressure is suggested to avoid distortion. Pie jaws and or soft jaws should be used when turning thin walled tubular shapes.

Drilling

Low helix drill bits and flood coolant are best for holes below 1" diameter. Peck drilling is suggested for swarf removal.

Larger diameter holes are best approached using a 2-step process incorporating a drilled pilot hole (1/2" diameter max) and a boring to finish diameter.

Threading

Single point inserts with flood coolant should be used for threading. Two fluted, coated taps and suggested for tapped holes. Tapping should be done with coolant.

Milling

Part fixturing is critical for milling as high spindle speeds and fast travel are preferred to minimize frictional heat buildup and material pullout. Cutters should be designed with positive geometry. Climb milling is recommended over conventional milling.