

# Macor Ceramic Guide

## Machining

Key factors for successful machining are proper machining speeds and coolant. **MACOR Machinable Glass Ceramic** can be machined with high speed steel tools, but carbide tools are recommended for longer wear.

Achieve the best results by using a water-soluble coolant, such as **Cimstar 40 - Pink**, especially formulated for cutting and grinding glass or ceramics.

No post firing is required after machining.

### Grinding

Diamond, silicon-carbide or aluminium-oxide grinding wheels can be used.

### Sawing

Use a carbide grit blade at a band speed of 100 fpm. An alternative is a silicon carbide or diamond cut-off wheel.

### Polishing

Start with loose 400-grit silicon carbide on a steel wheel. For the final polish, use cerium oxide or alumina on a polishing pad for glass or ceramics.

A 0.5  $\mu$ in.-AA finish can be achieved.

### Tapping

Make clearance holes one size larger than those recommended for metals. Chamfer both ends of the hole to reduce chipping. Run the tap in one direction only. (Turning the tap back and forth can cause chipping.) Continuously flush with water or coolant to clear chips and dust from the tap.

Milling	Cutting speed(sfm)	Chip Load(ipt)	Depth of cut(in.)
	20-35	.002	.150-.200 in.
Turning	Cutting speed(sfm)	Feed Rate(ipr)	Depth of cut(in.)
	30-50	.002-.005	.150-.250
Drilling	Drill size(in.)	Spindle Speed(rpm)	Feed Rate(ipr)
	1/4	300	.005
	1/2	250	.007
	3/4	200	.010
	1	100	.012
2	50	.015	

Allow at least .050" of extra material on the back side for breakout. This excess can be removed after drilling.