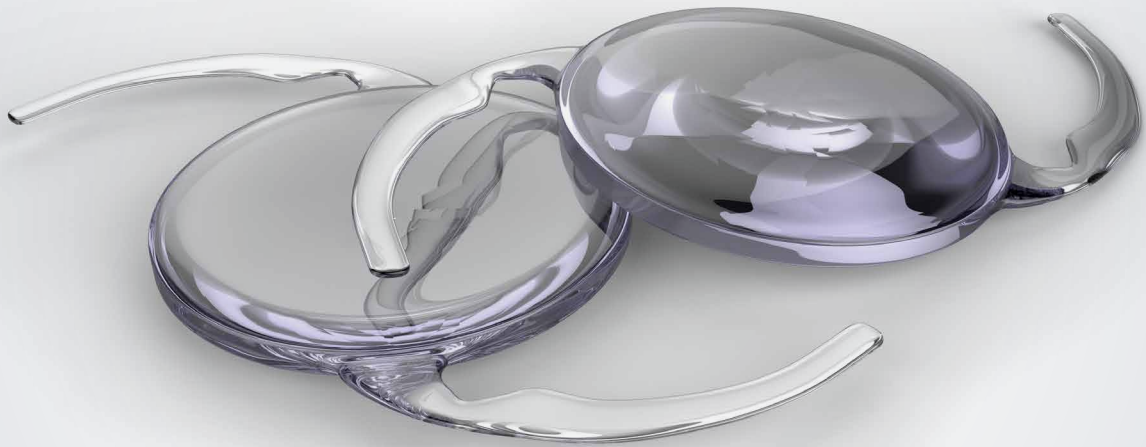




INTRAOCULAR LENS

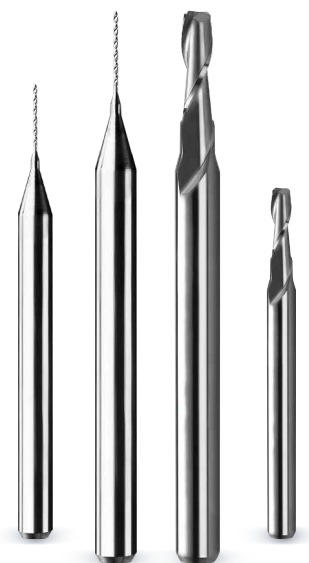
Precision Tooling Solutions



Providing Optimal Tooling Solutions for Intraocular Lens Manufacturers

Custom tooling available for various IOL shapes and styles:

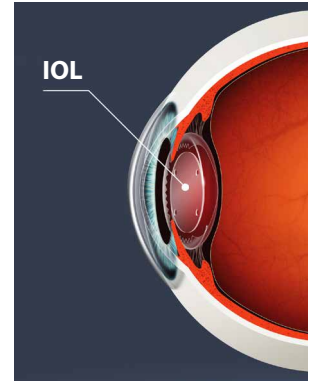
- 3-Piece
- 1-Piece
- Aspheric
- Monofocal
- Multifocal
- Toric



INTRAOcular LENS

An IOL is an artificial replacement for the lens in the eye. IOLs have been used in cataract surgery for many years to replace the cloudy lens in older patients. IOLs are now seeing increased use to treat poor vision as an alternative to LASIK or in cases where normal contact lenses are unable to correct vision. IOLs are considered a permanent solution for cataracts as the natural lens has been completely replaced.

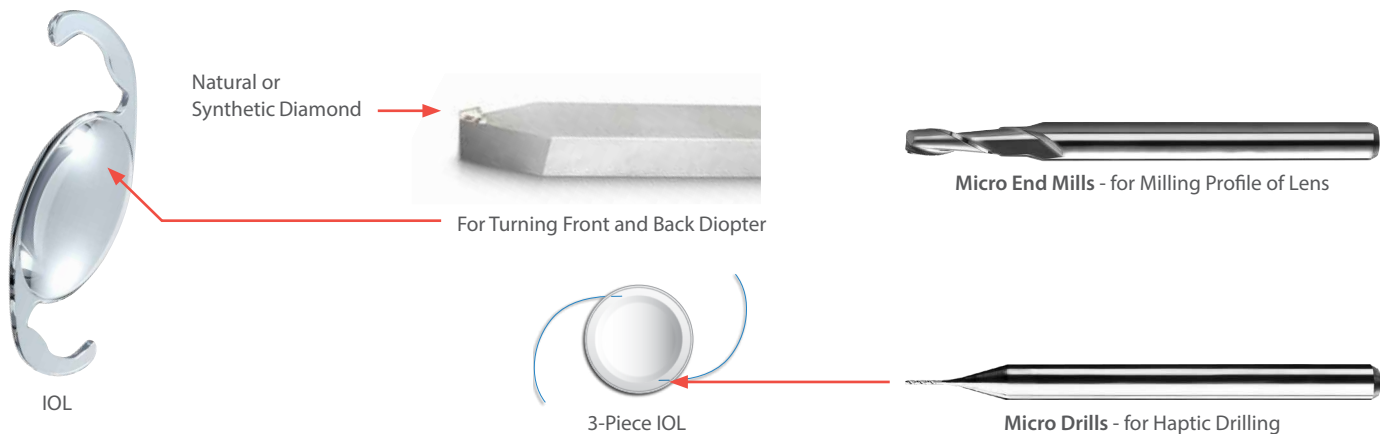
Most IOLs currently on the market are either monofocal (like glasses, correcting either near or farsightedness) or multifocal (like bifocals or progressive lenses). Accommodating IOLs are a newer technology. These lenses are flexible and can be focused at different distances, eliminating the need for glasses. Toric IOLs are used to correct astigmatism (notice the alignment marks).



IOL Machining Applications & Tooling

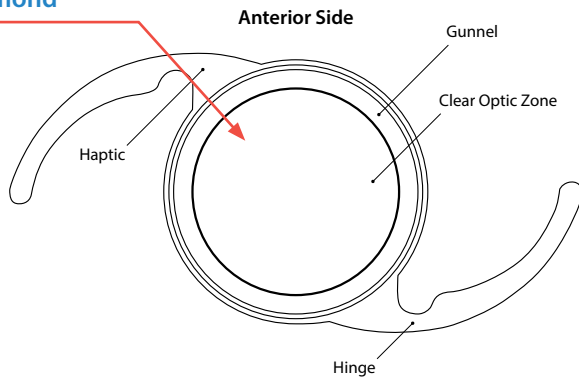
Applications and Solutions

- End mills for cutting profile of lens and haptic
- Drills for haptic attachment or alignment marks
- Form tools for high performance lenses
- Single crystal diamond turning tool (**coming soon**)

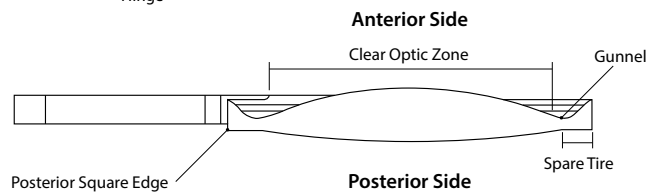
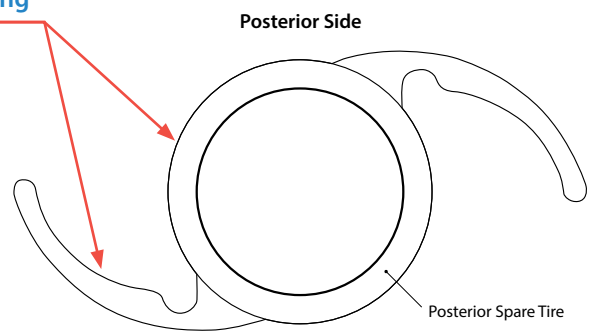


One-piece IOL Example

Turning with Natural Diamond



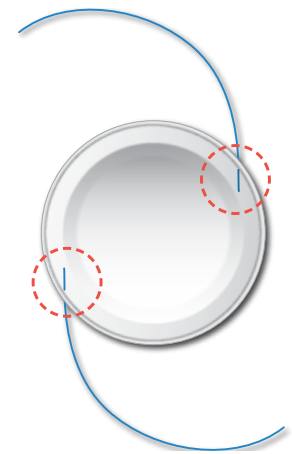
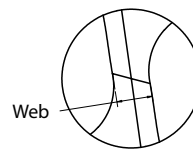
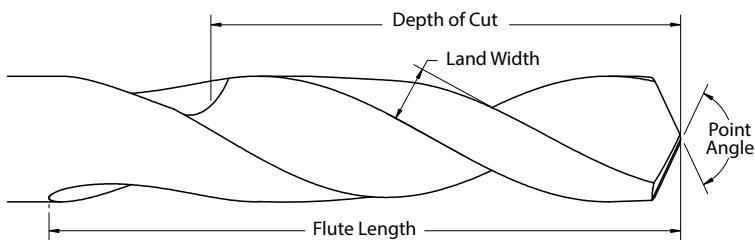
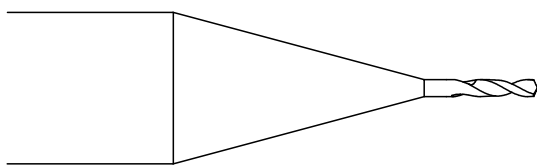
Milling Profiling



Custom Tooling Solutions

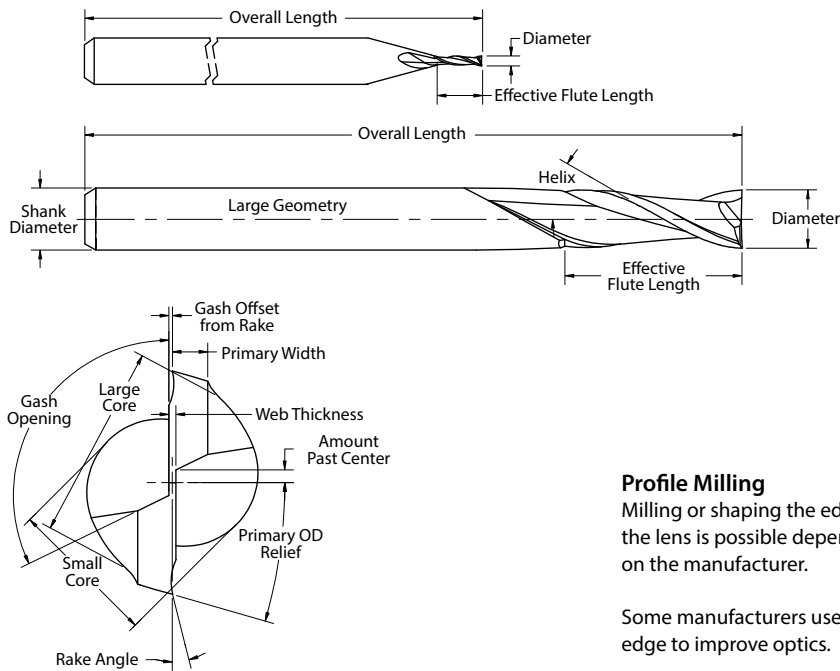
Customized Haptic Drill Solutions

- Typical diameter range from 0.0039" - 0.0079" (0.10mm - 0.20mm) - tolerance $\pm 0.00005"$ (± 0.001 mm)
- Typical flute length 10xD to 15xD depending on IOL haptic requirements
- Web thickness and web taper customized for specific IOL material and drilling process



Profile Milling Tool (2-Flute)

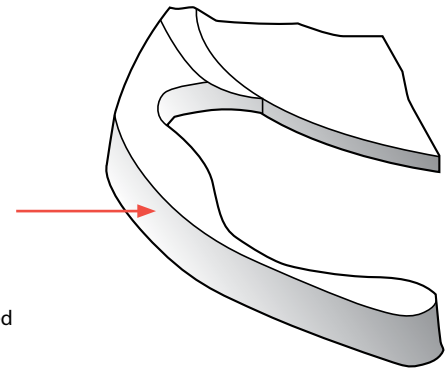
- Typical diameter range: 0.0059" - 0.0236" (0.15mm - 0.60mm) - dependant on profile radii's
- Flute length per custom requirement of fixturing and IOL thickness
- Large and small core ratio customized to specific IOL material and manufacturing process



Profile Milling

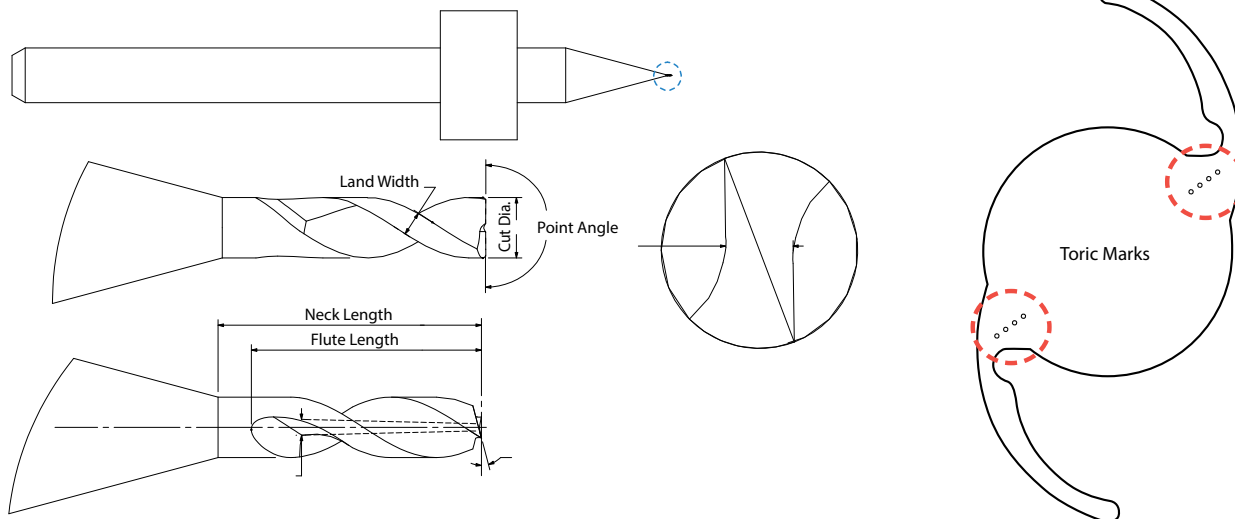
Milling or shaping the edge of the lens is possible depending on the manufacturer.

Some manufacturers use curved edge to improve optics.



Toric Mark Tool

- Smallest diameters 0.0025" (0.0635mm) - with depicted endstyle
- Custom point angle per customer requirement
- Custom flute length per custom requirement



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