



Levicron High Speed Air-Bearing Tooling Spindle

Goal:

Demonstrate the surface finish results achievable with local spiral milling of a brass pin using Levicron's 80K RPM high speed air-bearing tooling spindle.

Process Step:

- Program using Diffsys lens array utility
- Finish in one pass

Part Details:

- **Material:** Brass
- **Lenslet diameter:** 1.8 mm
- **Spherical radius:** 1.2 mm
- **Depth:** 0.406 mm
- **Mar Slope:** 49°

Process Details:

- **Tool:** Chardon Tool diamond ball end mill
- **Radius:** 0.50 mm
- **Spindle speed:** 80,000 RPM
- **Surface speed:** 400 mmpm
- **Feed rate:** 5 micron/rev
- **Spiral Pitch:** 5 μ m
- **Coolant:** Odorless Mineral Spirits (OMS)

Results:

- **Total process time:** 90 sec/lenslet
- **Finish:** 1.494 nm Ra
(Gaussian filter, .08 mm)
- **Form:** 300 nm PV

(taken on Taylor Hobson CCI)

