

## Application Report Spiral Milling



**Precitech Feeform 700A**



Copper sphere  
generated with  
spiral milling



**Application:**  
Spiral milling of a 3 dimensional continuous surface.

**Form Accuracy**  
0.130  $\mu\text{m}$  P/V  
(5.2  $\mu\text{m}$  P/V)

**Process:**  
Using 3 axes of contouring motion (X,Z,C) in combination with a high speed milling spindle, flycut a convex optical surface in copper.

**Part Configuration:**  
20mm diameter, 15mm radius, convex, copper part mounted in work holding fixture on the C-axis vacuum chuck

**Surface Roughness**  
4.3nm Ra

**Machining Parameters:**  
Tooling spindle speed: 10,000 rpm  
Work holding spindle speed: 500 rpm  
Feed per revolution: 45 $\mu\text{m}$ .

**Tool Configuration:**  
0.75mm radius tool on 65mm swing diameter.

