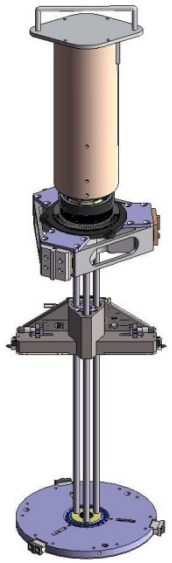
BEE 3-D

Bore Evaluation Equipment

C-K Engineering, Inc.

BEE 3-D System Components and Software Features

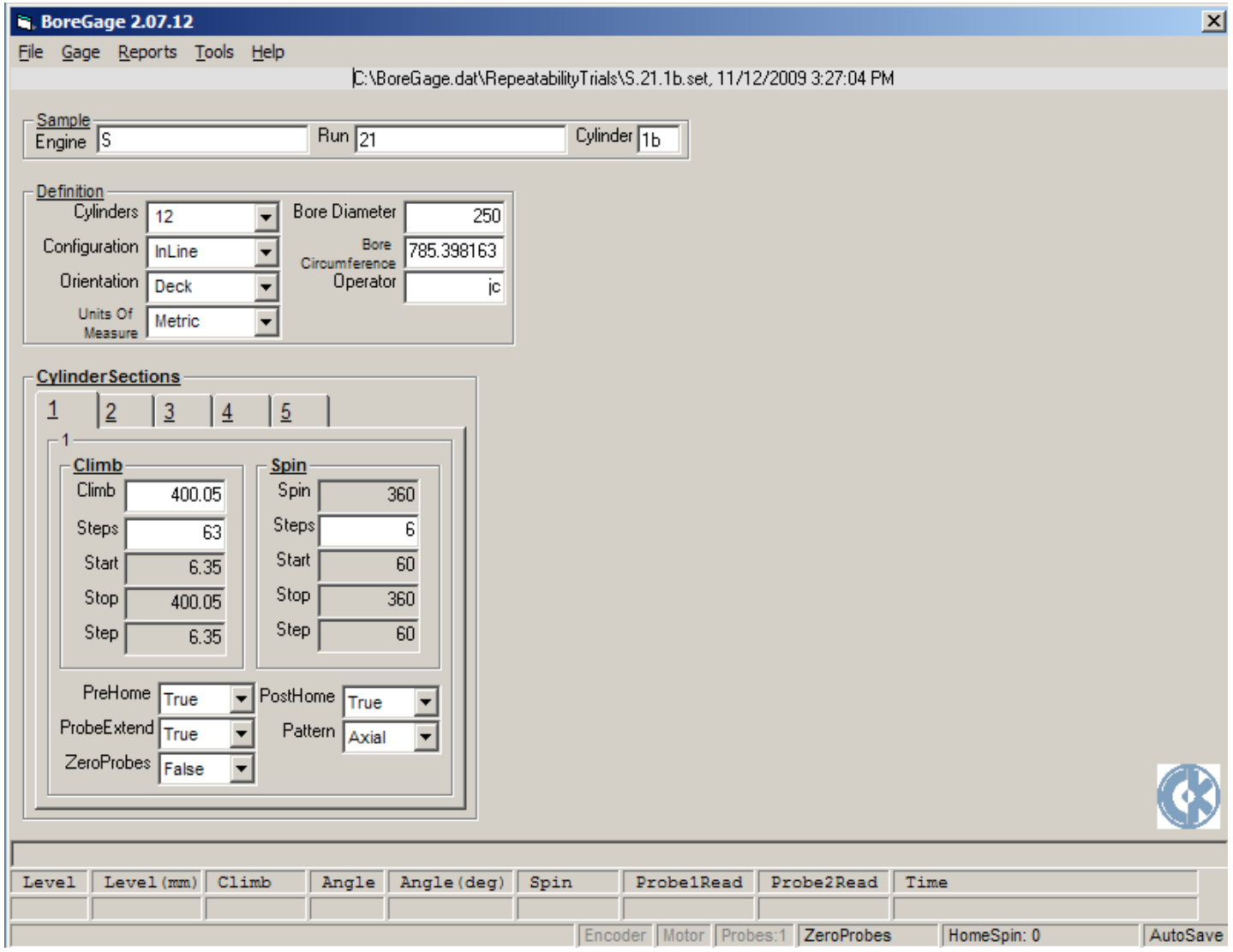


Software controls:

- **Length of travel**
- **Number of levels**
- **Rate of probe holder rotation**
- **Rate of probe traverse**
- **Location of vertical traverse**

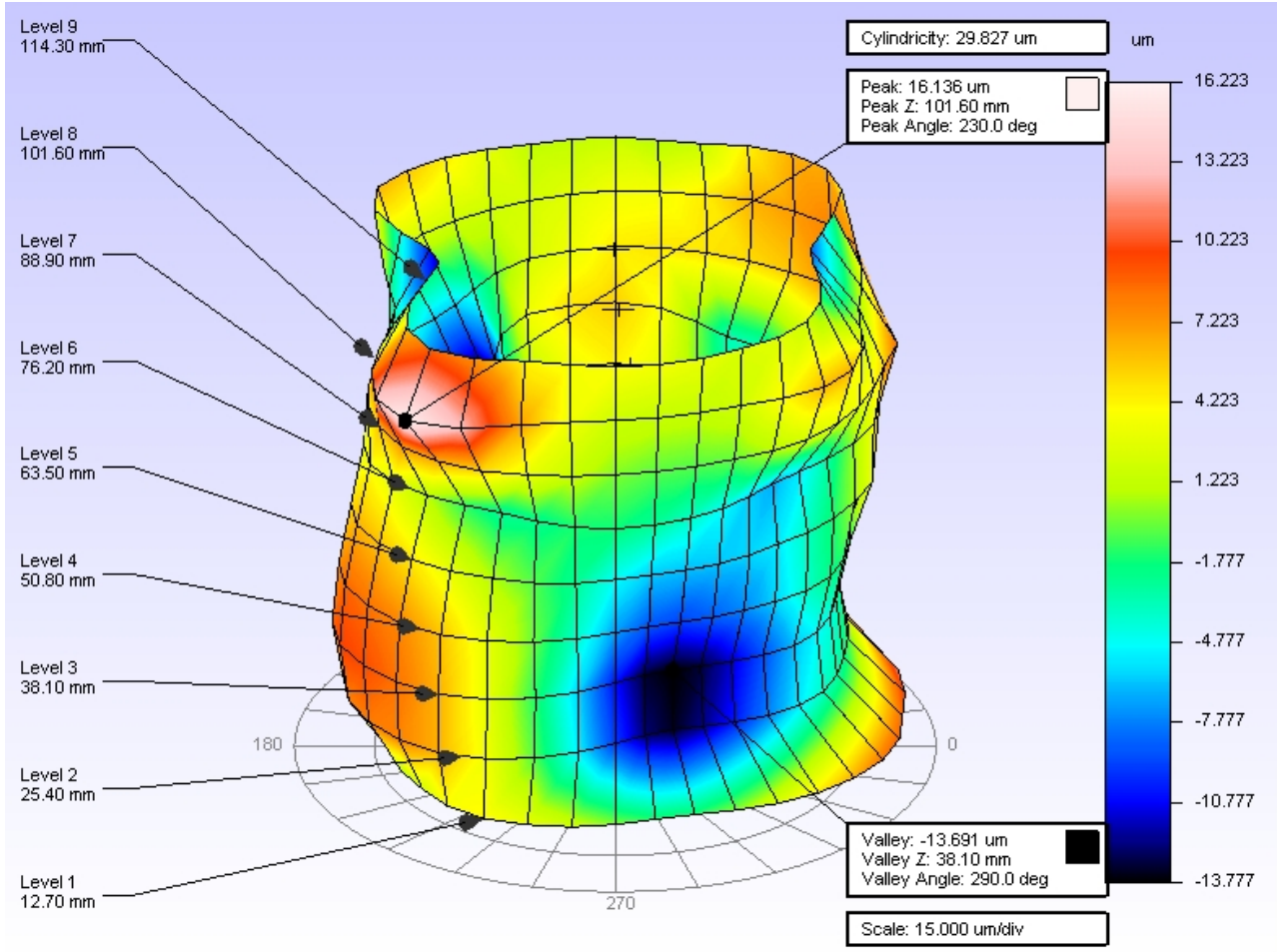
BEE 3-D Computer Screen

What the Operator Sees



BEE 3-D Output

Tiltable, Rotatable 3-D Wire Form

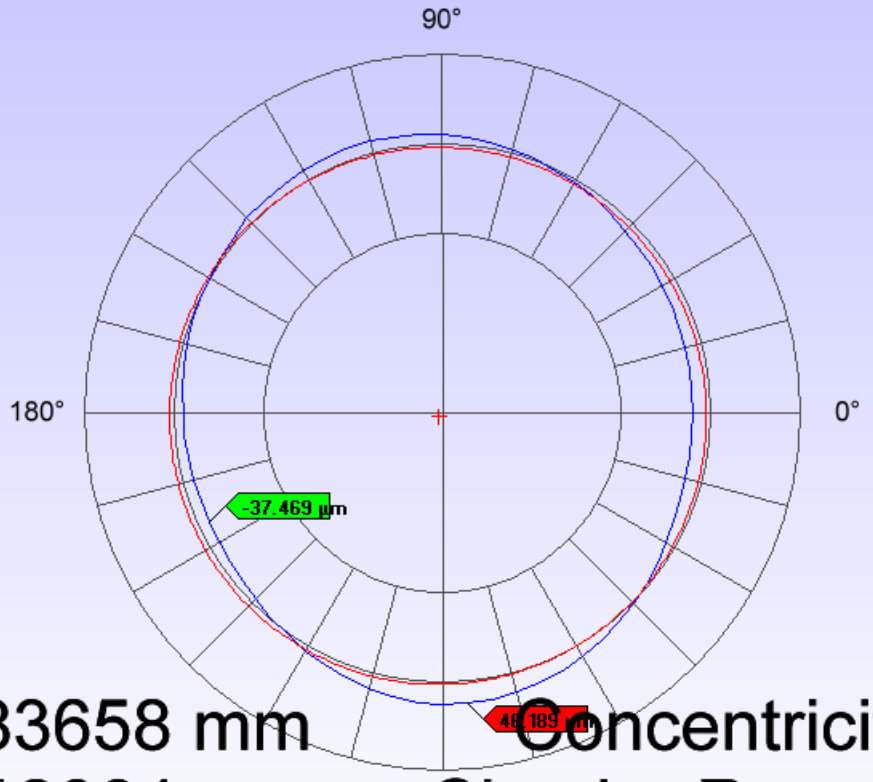


BEE 3-D Output

2-D Roundness at Selectable Level

Level 22
Z: 410.00 mm

200.000 µm/div

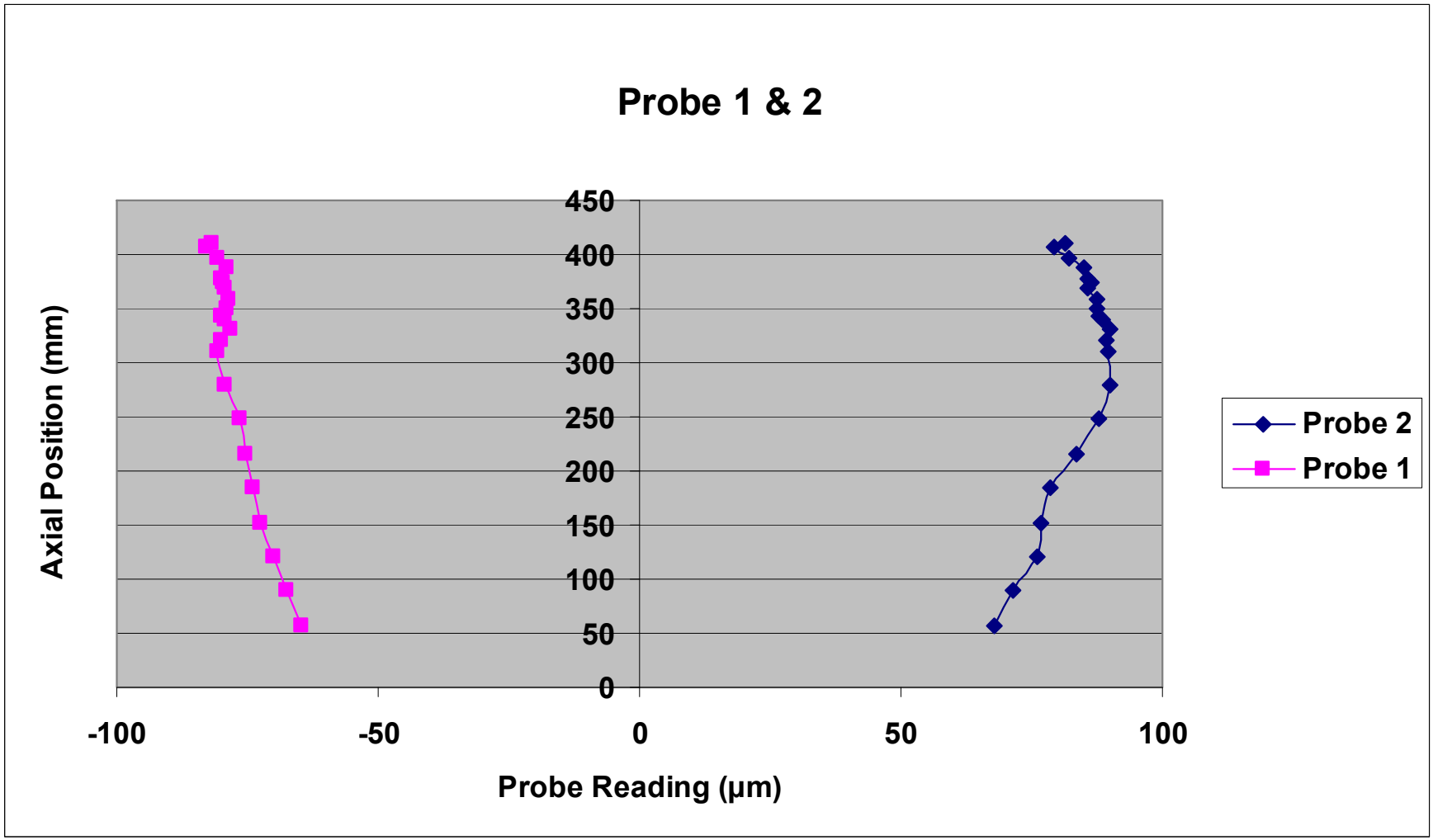


Roundness: 0.083658 mm
Eccentricity: 0.012064 mm
Ecc. Angle: 215.1°

Concentricity: 0.024127 mm
Circular Runout: 0.093164 mm
Sector Roundness: NC

BEE 3-D Output

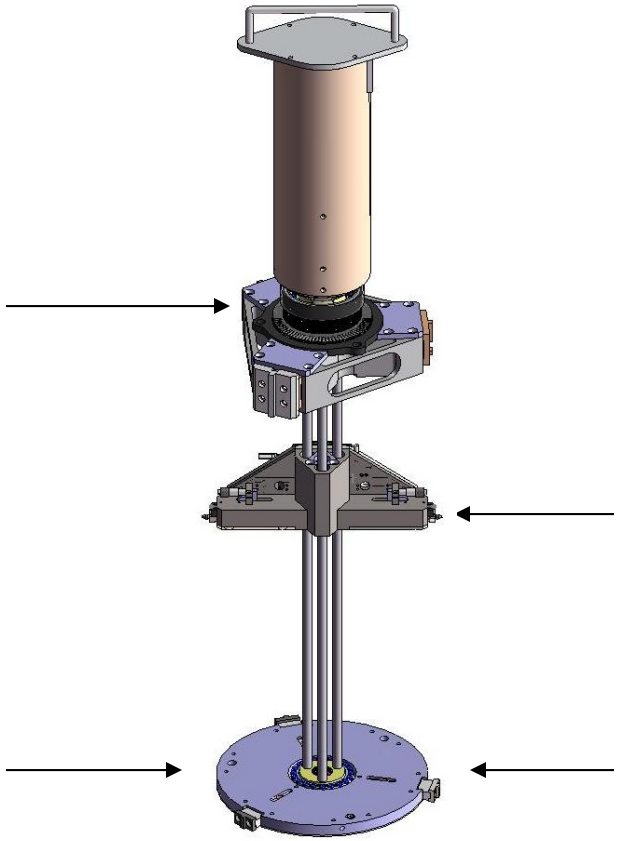
Dual-Probe Vertical Straightness at Specified Locations



BEE 3-D
User Friendly Features

Two-position locating clamp:

- **3-point self-centering clamp**
- **Adjustable height**
- **Diameter range 228-355mm**



Dual probes:

- **Replaceable probe tips**
- **12mm total adjustable travel**
- **Signal transmitted by telemetry (no signal leads to fail)**

3-point self-centering clamp:

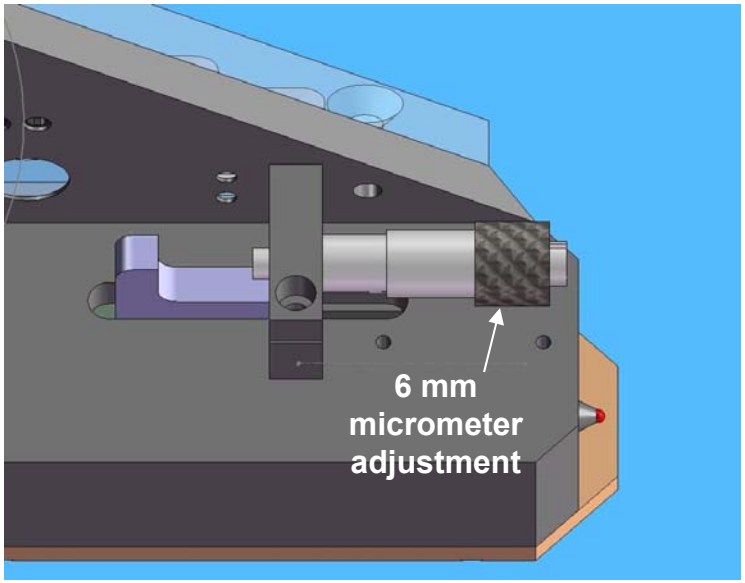
- **Diameter range 228-355mm**

Bottom locating clamp:

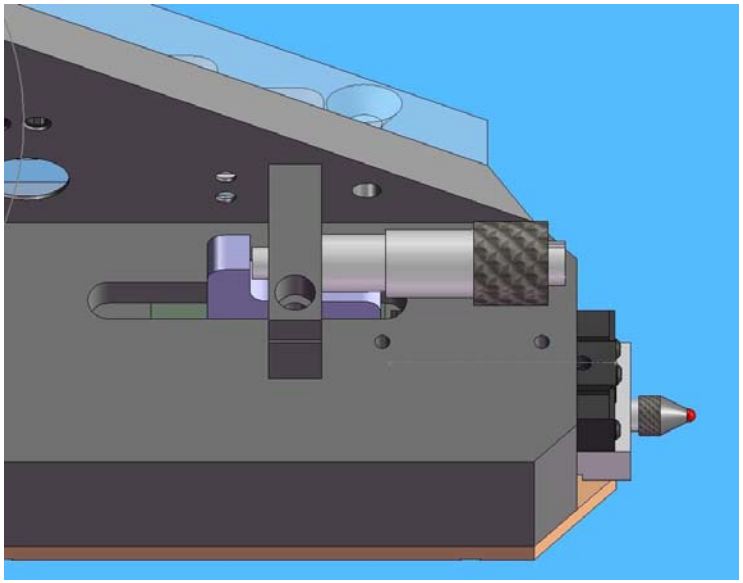
- **Measures within 19mm top of bore without head modification**

BEE 3-D
Probe Tip Protection

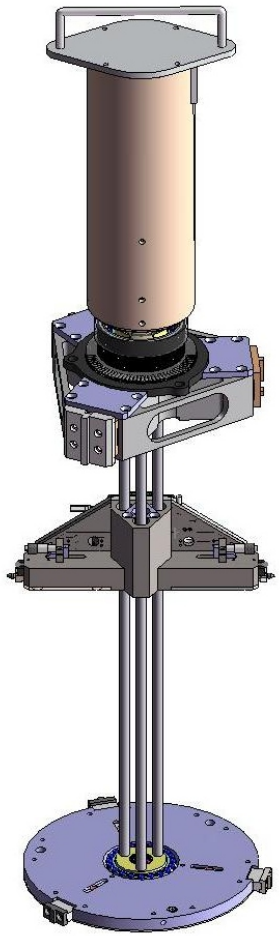
- **Probe tip is protected from damage during installation**



- **Probe tip is extended automatically after mechanical installation in the bore**



BEE 3-D System Components
Measuring Assembly



- **Integrated stepper motor & clutch**
- **Programmable number of levels and circumferential points to be measured**
- **Probes traverse top to bottom for overall liner straightness**
- **Optional continuous measurement for even faster cycle time**