

# On-Site Calibration Quick Reference Guide

Download online at [www.ACIQuality.com/CheatSheet](http://www.ACIQuality.com/CheatSheet)

**All Accredited Calibrations must have some sort of Variance or Repeatability listed.**

## **Brinell Hardness Test (Indirect Verification) - CP-44** – Accredited and Non

- 3 readings on 2 or 3 hardness blocks

## **Brinell Measuring Scope - CP-50** – Accredited and Non

- Test point per every mm

## **Calipers - CP-2** – Accredited and Non

- Accuracy Verification - OD .125, .250, .375, .500, 1.000, 2.000, 4.000, 6.000, 8.000, then at 4.000" intervals up to 24.000". 12.000" intervals for the remainder of the range.
- ID 1" / Depth 1"

## **Depth Gages - CP-53** – Accredited and Non

- Same test points as Micrometers

## **Force Gages - CP-33** – Accredited and Non

- Checkpoints approximately 10, 40, 60, 80 and 100%. Record Zero reading.
- Repeat these test points for two Complete sets of Readings
- Repeat for both Tension and Compression if applicable

## **Height Gage - CP-5** – Accredited and Non

- .125, .250, .375, .500, 1.000, 2.000, 4.000, 6.000 and additional test locations (lengths) as indicated on the data/work sheet.

## **Indicators / Linear Transducers - CP-4** – Accredited and Non

- 8 total readings spread out across range – making sure that one is in each 4 quarters and 1 at full range

## **Knoop Vickers Hardness Tester - CP-46** – Accredited and Non

- 5 readings on at least 2 test blocks

## **Leeb Portable Hardness Tester - CP-47** – Accredited and Non

- 2 readings for each hardness block

## **Linear Tables - CP-51** – Accredited and Non

- Readings at 8", 18", 30" and 47" (adjustable based on blocks available)
- Straightness of X Axis
- X to Y Squareness

## **Micrometers - CP-3** – Accredited and Non

- Inch micrometer: 0.000, 0.105, 0.315, 0.420, 0.500, 0.710, 0.815, and 1.000 in.
- Metric micrometer: 0.0, 2.5, 7.7, 10.3, 12.9, 17.6, 20.2, and 25.0 mm.
- All sizes checked at these ranges, for example 1" to 2" micrometer would be checked at: 1.000, 1.105, 1.315, 1.420, 1.500, 1.710, 1.815, and 2.000 in.
- Larger Micrometers with multiple ranges – 8 test points at low range, and 1 reading at each additional full range
- Check Customer Notes for Custom Test Points

**Optical Comparators - CP-19 – Accredited and Non**

- Magnification Check
- X-Y Travel Squareness Check
- Table Accuracy (Digital Counter) – In increments of 1" record reading, deviation from master, tolerance =  $\pm 0.0003$ " per 4"
- Table Accuracy (w/ Vernier Counter) – Check Vernier at .100" increments on both axis for first 1" - In increments of 1" record reading, deviation from master, tolerance =  $\pm 0.0003$ " per 4"

**Ovens & Temperature Controllers - CP-52 – Accredited and Non**

- Test points at 20% increments through full range or Customer requested points
- 3 different methods can be used (Source Method, Direct Comparison, Uniformity Verification)

**Pressure Gages - CP-39**

- Accuracy Grade B, C, D – Minimum 3 Test Points
- Accuracy Grade 3A, 2A, 1A, A – Minimum 5 Test Points
- Accuracy Grade 4A, 4AR – Minimum 10 Test Points
- Accuracy Grade 5A, 5AR – Minimum 15 Test Points
- **Accredited - Test up and down two times**

**Rockwell Hardness Tester - CP-45 – Accredited and Non**

- 3 readings on 3 hardness blocks per scale measured

**Scales, Balances & Comparators - CP-43**

- Test 0, then divide full scale by 5 to get your other testpoints. (they can be modified slightly)
- **Accredited – additionally need 10 repeat readings at 0%, either 40 or 60%, and 100%**

**Surface Analyzer - CP-22 – Accredited and Non**

- 5 Readings on 2 different standards, 1 Reading on 16.1  $\mu$ in standard

**Surface Plates - CP-24 – (Autocollimator can only be used from 18"x18" – 6'x20')**

- Flatness Condition reading
- Repeatability of Full Indicator Movement reading
- **Accredited – also need Temperature readings for Top and Bottom**

**Thickness Gage - CP-55 – Accredited and Non**

- 2 test points in each quadrant, 1 test point in center
- Average of all test points

**Torque Wrenches - CP-41**

- Test points at 20%, 60%, 100% - 3 readings at each point – Repeat CCW if needed
- **Accredited**
  - o **Type 2- Test points at 20%, 60%, 100% - 3 readings at each point– Repeat CCW if needed**
  - o **Type 3 (Screwdriver type) - Test points at 20%, 60%, 100% - 6 readings at each point– Repeat CCW if needed**

**Thread Micrometer - CP-58 – Accredited and Non**

- Inch micrometer: 0.000, 0.105, 0.315, 0.420, 0.500, 0.710, 0.815 and 1.000 in.
- Metric micrometer: 0.0, 2.5, 7.7, 10.3, 12.9, 17.6, 20.2, and 25.0 mm.