SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

HOUSTON PRECISION, INC.
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CALIBRATION

Valid To: February 28, 2013 Certificate Number: 2155.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Mechanical

Parameter/Equipment	Range	CMC[2] (±)	Comments
Indirect Verification of Rockwell Hardness Testers[3]	HRA Low Middle High HRB Low Middle High HRC Low Middle High	 0.65 HRA 0.38 HRA 0.40 HRA 1.4 HRB 0.72 HRB 0.61 HRB 0.78 HRC 0.57 HRC 0.54 HRC	Indirect verification per ASTM E18

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Parameter/Equipment	Range	CMC[2,4] (±)	Comments
Optical Comparator[3] –			Master magnification scale, ball checker and glass scale
Linear Axis	Up to 30 in	1100 µin	
Magnification	10x, 20x, 31.25x, 50x, 62.5x, 100x	560 µin	
Video Measuring Systems[3] –			
X, Y Axis	Up to 36 in	340 µin + (62 + 0.63*L)* µin	Glass scale
Surface Plate Flatness[3] –			
Flatness	44 in x 32 in	41 µin + (190 + 0.012*L)* µin	Electronic level system
Repeatability		41 µin	Repeat-o-meter

[1] This laboratory offers commercial calibration service and field calibration service.

[2] Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

[3] Field calibration service is available for this calibration and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

[4] In the statement of CMC, *L* is the length of the unit under test in inches.