

Certificate of Calibration

**THIS IS TO CERTIFY THAT UNITED TESTING SYSTEMS CANADA LTD., HAS CALIBRATED
THE FOLLOWING BRINELL HARDNESS TESTER IN ACCORDANCE WITH
ASTM-E10-XX INDIRECT VERIFICATION AND UTS SOP-4127-Rev XX-XXXX.**

CERTIFICATION IS VALID FOR THE SCALE(S) LISTED BELOW AND MEETS THE
REQUIREMENTS OF ASTM-E10.

CERTIFICATE NUMBER: CR#0008
CERTIFICATE ISSUED: June 5, 2019

CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

COMPANY:	ANY COMPANY
ADDRESS:	123 ANY STREET
CITY/PROVINCE:	ANY CITY, ANY PROVINCE
SYSTEM LOCATION:	MECHANICAL TESTING
MANUFACTURER:	WILSON
MODEL:	J
SERIAL NUMBER:	XXXX
ASSET NUMBER:	BBBBB
BRINELL SCOPE / (TYPE A OR B):	B.O.S.S MODEL OS100 S/N XXXXX / TYPE A
SCOPE RESOLUTION:	0.01 mm
INDENTER BALL TYPE:	TUNGSTEN CARBIDE
INDENTER BALL DIAMETER:	10 mm
TEMPERATURE / HUMIDITY:	22.5 °C 44%
SYSTEM CONDITION:	GOOD
READINGS AS FOUND:	IN TOLERANCE
READINGS AS LEFT:	IN TOLERANCE
CALIBRATION TECHNICIAN:	TECHNICIAN

CERTIFIED SCALES:

HBW 500 kgf, HBW 3000 kgf

TRACEABILITY AND UNCERTAINTY:

THE REFERENCE BLOCKS USED FOR VERIFICATION ARE TRACEABLE TO DAVID L ELLIS CO INC. HARDNESS LABORATORY. UNCERTAINTIES EXPRESSED IN THIS CERTIFICATE USE A COVERAGE FACTOR OF 2 ($K = 2$). UNCERTAINTY ANALYSIS RESULTS ARE VALID ONLY FOR THE RESULTS OF THIS CALIBRATION.

HT-1 ENVIRONMENT RECORDER: LASCAR, S/N TH20124-283, TRACEABILITY NO. AC15121328-TH20124,
DUE DATE: Month Day, Year, $U_n = 0.3\text{ °C} / 2\text{ \%RH}$.

CALIBRATED BY

AUTHORIZED SIGNATORY

United Testing Systems Canada Limited

21 - 225 Bradwick Drive, Concord, Ontario L4K 1K7
Tel.: (905) 669-5327 Fax: (905) 738-5051
E-mail: service@utscanada.com

ISO/IEC 17025 ANSI/NCSL Z540-1-1994; Part 1

Accredited by:



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.
This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP

Calibration Report

CERTIFICATE NUMBER: CR#0008
CERTIFICATE ISSUED: June 5, 2019

CALIBRATION DATE: June 5, 2019
REQUESTED DUE DATE: June 5, 2020

CALIBRATION & CUSTOMER INFORMATION:

COMPANY: ANY COMPANY
MODEL: J
SERIAL NUMBER: XXXX

INDIRECT VERIFICATION OF MEASURING DEVICE:

TEST BLOCK S/N	BALL DIA. (mm)	REFERENCE DIAMETER (mm)	MEASURED DIAMETER (mm)	ERROR (mm)	ERROR (%)	PASS FAIL
403511	10	1.936	1.93	-0.006	-0.31	PASS
747423	10	4.182	4.17	-0.012	-0.29	PASS

ONSITE INDIRECT VERIFICATION OF READINGS:

APPLIED FORCE	TEST BLOCK S/N	NOMINAL VALUE(HBW)	BLOCK TOL(HBW)	BLOCK UC(HBW)	AS FOUND(mm)		AS LEFT (mm)			AVG (mm)	BIAS (mm)
					1	2	1	2	3		
500 kgf	0403511	167	5	2.6	1.95	1.93	1.93	1.94	1.94	1.937	-0.006
3000 kgf	0747423	207	6	1.9	4.16	4.16	4.17	4.16	4.17	4.167	-0.028

ONSITE INDIRECT VERIFICATION OF READINGS (BRINELL):

APPLIED FORCE	TEST BLOCK S/N	NOMINAL VALUE(HBW)	BLOCK TOL(HBW)	BLOCK UC(HBW)	AS FOUND(HBW)		AS LEFT (HBW)			AVG (HBW)	BIAS (HBW)
					1	2	1	2	3		
500 kgf	0403511	167	5	2.6	166	169	169	168	168	168.3	1.3
3000 kgf	0747423	207	6	1.9	211	211	210	211	210	210.3	3.3

UNCERTAINTY ANALYSIS FOR ONSITE INDIRECT VERIFICATION AS LEFT:

APPLIED FORCE	TEST BLOCK S/N	REPEAT TOL(mm) %	REPEAT (mm) %	ERROR TOL(HBW) %	ERROR (HBW)%	$u_{R\&N_u}$ (mm)	u_{Resol} (mm)	$u_{MACH} (k=2)$ (mm)	$u_{MACH} (k=2)$ (HBW)
500 kgf	0403511	2.5	0.52	3	0.80	0.0033	0.0029	0.017	3.0
3000 kgf	0747423	2.5	0.24	3	1.61	0.0033	0.0029	0.020	2.1

NOTES:

PAGE 2 OF 2

ISO/IEC 17025

ANSI/NCSL Z540-1-1994; Part 1

Accredited by:



NVLAP Lab Code: 200311-0

Certificate and report shall not be reproduced, except in full, without the written approval of UNITED TESTING SYSTEMS CANADA LIMITED.
This report is not to be used to claim product certification, approval, or endorsement by United Testing Systems Canada Limited, NVLAP, NIST, or any government agency.

UNITED CALIBRATION GROUP