PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

HUMANETICS INNOVATIVE SOLUTIONS JAPAN NAGOYA TECHNICAL CENTER

93 Terano-Motomachi Kiyosu, Aichi 452-0908

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Calibration of potentiometer, load cell and tilt sensor
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
July 16, 2019	April 5, 2021	April 5, 2023
Revision Date:	*Accreditation No.:*	*Certificate No.:*
January 31, 2022	94011	L21-209-R1

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

HUMANETICS INNOVATIVE SOLUTIONS JAPAN
NAGOYA TECHNICAL CENTER
93 Terano-Motomachi Kiyosu, Aichi 452-0908
Contact Name: Takuya Iwamura Phone: 052-401-7501

Accreditation is granted to the facility to perform the following testing:

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
String potentiometer [F]	0 mm 45 mm	0.011 mm/mm + 0.5 mm	String Potentiometer Calibration Procedure (CL-PR-10016N(J)) IH-170
Linear potentiometer [F]	0 mm 72 mm	0.012 mm/mm + 0.84 mm	Linear Potentiometer Calibration Procedure (CL-PR-10017N(J)) 180-3881
	0 mm 105 mm	0.029 mm/mm + 3.0 mm	IR-TRACC Calibration Procedure (CL-PR-10020N(J)) 472-4750-R4
Chest potentiometer [F]	-10mm 90 mm	0.006 8 mm/mm + 0.61 mm	H3 Chest Potentiometer Calibration Procedure (CL-PR-10014N(J)) 880995-365
Rotary potentiometer [F]	0 ± 75 °	0.008 0 deg/deg + 1.2 deg	Rotary Potentiometer Calibration Procedure (CL-PR-10019N(J)) RP3670-12/RP6790
Tilt sensor [F]	0 ± 45 °	0.005 1 deg/deg + 0.23 deg	Tilt Sensor Calibration Procedure (CL-PR-10036N(J)) IES3120

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93 Terano-Motomachi Kiyosu, Aichi 452-0908
Contact Name: Takuya Iwamura Phone: 052-401-7501

Accreditation is granted to the facility to perform the following testing:

Mass, Force, and Weighing Devices

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Load cell [F]	Force 200 lbf to 6 000 lbf	0.002 1 lbf /lbf + 13 lbf	Load Cell Calibration Procedure (CL-PR-10012N(J)) 1610 ARC-2k (lbf) 1610 ARC-5k (lbf) 1610 AJH-10k (lbf)
	Moment of force 200 in·lbf to 6 000 in·lbf	0.004 2 in-lbf/in-lbf + 26 in-lbf	
	Force 200 lbf to 6 000 lbf	0.001 9 lbf/lbf + 12 lbf	Load Cell Calibration Procedure (CL-PR-10032N(J)) 1110 FMQ-2K(lbf)-T 1110 FMQ-5K(lbf)-T 1110 FMQ-10K (lbf)-T
	Moment of force 200 in·lbf to 6 000 in·lbf	0.005 3 in·lbf/in·lbf + 32 in·lbf	

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor *k* (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.

2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer[F] would mean that the laboratory performs this calibration at its fixed location.