Issue date: 5 July 2024
Valid until: 16 April 2025

NO: SAMM 592
(Issue 3, 5 July 2024 replacement
of SAMM 592 dated 30 August 2023)

LABORATORY LOCATION:
(PERMANENT LABORATORY)

G CALIBRATION SDN. BHD.
NO.19, JALAN GEMILANG 10
TAMAN PERINDUSTRIAN CEMERLANG
81800 ULU TIRAM
JOHOR
MALAYSIA

FIELDS OF CALIBRATION: **PRESSURE, FORCE, MASS, TEMPERATURE & DIMENSIONAL**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

*** The expanded uncertainties are based on an estimated confidence probability of approximately 95% and have a coverage factor of *k*=2 unless stated otherwise.**

SCOPE OF CALIBRATION: PRESSURE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Pressure Measuring Device: Hydraulic	100 psi to 300 psi 300 psi to 1000 psi 1000 psi to 3000 psi 3000 psi to 5000 psi 5000 psi to 10,000 psi	0.06 psi 0.2 psi 0.6 psi 0.9 psi 2 psi	Calibrate using dead weight tester as standards with reference to DKD-R 6-1 sequence A, C

SCOPE OF CALIBRATION: PRESSURE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Pressure Measuring Device: Pneumatic	0 bar to 2 bar 2 bar to 20 bar 20 bar to 70 bar	0.001 bar 0.01 bar 0.03 bar	Calibration using digital pressure test gauges as standards with reference to DKD-R 6-1 sequence A, C
Vacuum	-1 bar to 0 bar	0.005 bar	
Hydraulic	0 psi to 1000 psi 1000 psi to 5000 psi 5000 psi 10,000 psi	0.4 psi 2.4 psi 4 psi	

SCOPE OF CALIBRATION: PRESSURE

SITE:

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Pressure Measuring Device: Pneumatic	0 bar to 2 bar 2 bar to 20 bar 20 bar to 70 bar	0.001 bar 0.01 bar 0.03 bar	Calibration using digital pressure test gauges as standards with reference to DKD-R 6-1 sequence A, C
Vacuum	-1 bar to 0 bar	0.005 bar	
Hydraulic	0 psi to 1000 psi 1000 psi to 5000 psi 5000 psi 10,000 psi	0.4 psi 2.4 psi 4 psi	

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SCOPE OF CALIBRATION: FORCE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Push pull gauge / digital force gauge / tension gauge	0 kgf to 0.5 kgf 0.5 kgf to 1 kgf 1 kgf to 3 kgf 3 kgf to 50 kgf 50 kgf to 100 kgf	0.001 kgf 0.002 kgf 0.005 kgf 0.01 kgf 0.1 kgf	Calibrate using standard weight and poise weights. Calibrations may be given in other units by conversion from SI units.

SCOPE OF CALIBRATION: MASS

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Standard weight	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.04 mg 0.05 mg 0.06 mg 0.07 mg 0.09 mg 0.10 mg 0.17 mg 0.4 mg 0.002 g 0.006 g 0.02 g 0.03 g 0.2 g 0.4 g	Calibrate using reference standard weight by comparison method according to ABBA weighing scheme

SCOPE OF CALIBRATION: MASS

SITE:

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Electronic balance	Up to 50 g Up to 100 g Up to 200 g Up to 600 g Up to 1000 g Up to 2000 g Up to 4000 g Up to 10000 g Up to 25000 g Up to 30000 g Up to 60 kg Up to 100 kg Up to 300 kg Up to 500 kg Up to 700 kg Up to 1200 kg Up to 1500 kg	0.0002 g 0.0004 g 0.001 g 0.002 g 0.01 g 0.02 g 0.04 g 0.1 g 0.4 g 0.5 g 0.02 kg 0.04 kg 0.05 kg 0.1 kg 0.2 kg 0.4 kg 0.5 kg	Calibrate using standard weights as standards based on ASTM E898- 20

SCOPE OF CALIBRATION: TEMPERATURE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Temperature indicating instrument			
Type K	-100 ˚C to 1300 ˚C	1.0 ˚C	Calibrated by electrical simulation using temperature calibrator
Type J	-100 ˚C to 1100 ˚C	0.9 ˚C	
Type E	-100 ˚C to 990 ˚C	0.9 ˚C	
Type T	-100 ˚C to 390 ˚C	1.0 ˚C	
Type S	0 ˚C to 1700 ˚C	1.4 ˚C	
Type R	0 ˚C to 1700 ˚C	1.3 ˚C	
Pt100	-100 ˚C to 800 ˚C	0.3 ˚C	
Temperature sensor with display unit	-30°C to 140°C 141°C to 600°C	0.3°C 0.7°C	Calibrate by comparison method using PT100 as reference standard In liquid bath and temperature block calibrator
Thermohygrograph/ Thermohygrometer and Humidity Related Equipment	30% RH to 90% RH 20°C to 35°C	3.5% RH 0.7°C	Calibrate by comparison method using thermohygrometer in humidity chamber

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SCOPE OF CALIBRATION: TEMPERATURE

SITE:

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Temperature indicating instrument			Calibrated by electrical simulation using temperature calibrator
Type K	-100 ˚C to 1300 ˚C	1.0 ˚C	
Type J	-100 ˚C to 1100 ˚C	0.9 ˚C	
Type E	-100 ˚C to 990 ˚C	0.9 ˚C	
Type T	-100 ˚C to 390 ˚C	1.0 ˚C	
Type S	0 ˚C to 1700 ˚C	1.4 ˚C	
Type R	0 ˚C to 1700 ˚C	1.3 ˚C	
Pt100	-100 ˚C to 800 ˚C	0.3 ˚C	
Temperature sensor with display unit	-30°C to 140°C 141°C to 600°C	0.3°C 0.7°C	Calibrate by comparison method using PT100 as reference standard In liquid bath and temperature block calibrator

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SCOPE OF CALIBRATION: DIMENSIONAL

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Caliper	**External measurement** 0 mm to 300 mm 300 mm to 600 mm	0.01 mm 0.02 mm	Calibrate using gauge blocks as standards with reference to JIS B 7507:2016 • Partial Measuring face contact error • Repeatability of partial measuring face contact error • Parallelism of jaws • Full measuring face contact error • Scale shift error
	Internal measurement 0 mm to 300 mm	0.01 mm	
External micrometer	25 mm travel range **Frame size** Up to 100 mm `100 mm to 225 mm 225 mm to 425 mm 425 mm to 500 mm	1 µm 1 µm 2 µm 3 µm 4 µm	Calibrate using gauge blocks as standards with reference to JIS B 7502:2016 • Full surface contact error • Flatness • Parallelism