



Instrument Calibration

AND WHY IT'S IMPORTANT FOR YOUR BUSINESS

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WHAT IS INSTRUMENT CALIBRATION

Two of the most common questions we get asked are “what is instrument calibration?” and “why is instrument calibration important?”. The answers are relatively simple, so we thought we’d explain in this short article.

Instrument calibration is the process of comparing a scientific measurement instrument to a standard of known accuracy, to determine the reliability of the data the device is capturing. There are two common types of calibration, field calibration and laboratory calibration.

Field calibration is the process of using a calibration source to verify an instrument’s accuracy before and after a series of measurements are taken. Laboratory calibration is often mandated by regulations and requires an instrument to be sent to a dedicated calibration centre for more in-depth and accurate verification.

A calibration certificate is made available once a device has been laboratory calibrated to show the measured results for the instrument versus the measured results from the standard of known accuracy.

TYPES OF CALIBRATION INSTRUMENTS

Now, let's take a look at some of the most common types of calibration instruments you might have to use.

Humidity and Temperature

If you work with thermal cameras, thermometers, humidity generators, weather stations, and other devices that work with temperature and humidity, you'll need to get them calibrated.

This type of calibration needs to happen in a controlled environment, so outside changes can't affect the results.

Mechanical

Mechanical calibration calibrates for factors like force, mass, vibration, or torque. For example, you might need to get a scale calibrated to measure weight accurately. Torque wrenches, micrometers, and balances can also need this kind of calibration.

Electrical

Devices that measure frequency, voltage, or resistance will need electrical calibration. The equipment that might need electrical calibration

can include clamp meters, data loggers, and insulation testers.

In addition to these common calibration types, you might need to get many different implements calibrated in different ways. Each calibration type involves using different methods to get results.



Pressure

Transmitters, test gauges, and barometers may all need pressure calibration. In this process, the spectrum of hydraulic and gas pressure gets measured. The equipment usually needs to get calibrated to a national or international standard.



WHY IS INSTRUMENT CALIBRATION IMPORTANT?

Instrument calibration, as described above, compares the accuracy of an instrument against a known standard and so reflects the accuracy and quality of measurements that that instrument takes. An instrument's accuracy tends to 'drift' over time, especially when measuring particular parameters such as temperature and humidity.

In order to be confident in the accuracy of your results and the data your instruments produce, it's incredibly important to have the accuracy of your instruments checked at regular intervals throughout its lifetime.

This will help guarantee reliable, accurate and repeatable measurements. Instrument calibration aims to minimise any uncertainty within your measurement dataset by ensuring the accuracy of measurement equipment. It's particularly important in industries where strict standards and regulations are in place, such as food/catering and manufacturing.



INSTRUMENT CALIBRATION IN THE FOOD AND CATERING INDUSTRY

Within the food and catering industry, especially in commercial kitchens for hotels, restaurants, bars and food manufacturing/processing facilities, the implications of using a piece of equipment that is recording inaccurate data due to improper calibration could be that critical food temperature is incorrectly measured; which could lead to:

- A food safety issue
- Breach of HACCP and consumer illness
- Environmental Health Officer notices of closure
- Litigation

These things could damage your reputation, and when you consider the possible implications of not calibrating, it's often not worth the risk of ignoring it.

In the manufacturing industry, any equipment that is used should be calibrated at multiple points across its operating range to ensure that reliable and accurate information is fed to system-critical critical alarms, warning systems and fail-safes.

Failing to calibrate or inaccurate calibration has been known to cause injury, death and even major environmental disasters.



HOW OFTEN SHOULD YOU CALIBRATE YOUR MEASUREMENT INSTRUMENTS?

The frequency of instrument calibration often depends on the industry and type of instrument. However, the majority of sectors and industry-specific standards and regulations suggest annual calibration as the norm.

It's essential to think of the cost of calibrating your instruments in terms of investing money to avoid potential errors or mistakes caused by not calibrating.

Most calibration laboratories, including HKC's, supply an official calibration certificate for you to retain as proof of that your instruments meet the required standards.

HKC CALIBRATION CERTIFICATES

The calibration certificate is the official document of record for instrument calibration and provides traceability to the National Institute of Standards and Technology. The accuracy and completeness of the calibration certificate itself is reflective of the validity and credibility of the calibrating organization.

Both **Accredited Calibrations** and **Traceable Calibrations** include a Calibration Certificate that accompanies the instrument when it is returned to its owner.

The calibration certificate documents essential information about the instrument's condition, and also provides details about out-of-tolerance conditions, special measurement conditions, and more.

Each certificate includes a serial number that associates one calibration with one instrument.

This document may be required by the end-users of products tested with the instrument, especially in the case of government contracts.

Calibration certificate formats will vary by geographical location and local government regulations.





CERTIFICATE OF REGISTRATION

This is to certify that:

HK Calibration Technologies Pty Ltd

ABN 84 152 274 014

Unit 3 No 27 Daking St North Parramatta NSW 2151 AUSTRALIA

Unit 8, 87 Kelliher Road RICHLANDS QLD 4077 AUSTRALIA

Suite 5, 296 Bay Road Cheltenham VIC 3192 AUSTRALIA

Unit 8, 8 Aspiration Circuit Bibra Lake WA 6163 AUSTRALIA

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2015

for the following scope

The sales and rental of test and measuring instrumentation including provision of calibration services for weighing, dimensional, pressure, vacuum, temperature, force, electrical and electronics equipment and gas detection and monitoring.

Certificate No: QEC25094

Issued: 10 August 2021

Originally Certified: 4 September 2006

Expires: 3 September 2024

Current Certification: 7 August 2021

Frank Camasta
Global Head of Technical Services
SAI Global Assurance



WWW.JAS-ANZ.ORG/REGISTER

Registered by:

SAI Global Certification Services Pty Ltd (ACN 108 716 669) 680 George Street Sydney NSW 2000 Australia with SAI Global Pty Limited 680 George Street Sydney NSW 2000 Australia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification register at <http://register.saiglobal.com/>



MOST HK CALIBRATIONS CERTIFICATES WILL INCLUDE THE FOLLOWING INFORMATION:

Returned Condition

- In tolerance/
meets all
specifications
- Meets limited
or special
specifications
(customer
request only)

Identification of the standards

used during calibration. Associates specific traceable instruments with this certificate.

Received Condition

- In tolerance/meets all specifications
- Operational failure, includes a description of the failure
- Out of tolerance, includes a description of the out of tolerance condition

Calibration interval and source of recommendation:

HKC or customer
Accredited calibration certificates do not identify a calibration due date.

**Contact
information** for
inquiries about this
Certificate

**Calibration
procedure
used**, including
revision level if
applicable.

**Dates and
environmental
conditions**
at the time of
calibration

**Traceability
Statement**

WHAT IS THE DIFFERENCE BETWEEN A STANDARD (TRACEABLE) CALIBRATION CERTIFICATE AND ACCREDITED CALIBRATION CERTIFICATE?

Standard (Traceable) Calibration Certificate: Instrumentation is calibrated to specifications with traceable standards. A full data report is optional with the calibration certificate.

Accredited Calibration Certificate: meets the requirements of ISO/IEC 17025 and the lab's accrediting body.

The unit under test is calibrated in accordance with ISO/IEC 17025 within the supplier's approved scope of accreditation. Accredited calibrations provide a certificate of calibration with the accrediting body's logo on the document.

The calibration date is on the certificate; the calibration due date is only placed on the document when specified by the customer or contractually agreed. A traceability statement is provided as well as measurement data and uncertainty data for each parameter tested during the calibration.



WHY IS UNCERTAINTY IN MEASUREMENT IMPORTANT?

It's about risk. All measurements (ruler, electrometer, thermometer, etc.) have some degree of uncertainty in the measurement. What variability in measurement is acceptable? If a measurement tolerance is .01 and the level of uncertainty in measurement is .001, the risk is relatively low.

If the tolerance and uncertainty were reversed, the calibration would be inadequate and would provide a high level of risk to the user.

The level of uncertainty allows an informed decision to be made about the acceptability of measurements.

INSTRUMENTS WE CALIBRATE

- » Avionic test equipment
- » Bio-Medical
- » Civil Engineering
- » Data Loggers
- » Discharge to sewer flow meters
- » Electrical Safety Appliances
- » Fibre Optics
- » Gas detectors
- » Gas monitoring
- » Hand Dynamometers
- » High Voltage Testing
- » Hydraulic Flow Meters
- » Laboratory equipment
- » Laser levels & Theodolites
- » Medical Imaging Services
- » Metrology/Dimensional
- » NDT equipment
- » Network Analysers
- » Occupational Therapy
- » Power meters
- » Radiation Monitors
- » Service Locators
- » Ship Instrumentation
- » Sterilisers, Autoclaves, Furnaces, Ovens, Baths
- » Subsea Instrumentation
- » Telecommunications
- » Thermal Imaging

Our calibration services include but are not limited to the following:-

METERS

- » Ammeters
- » Current Transducers
- » Decade Boxes
- » Digital Storage Instruments
- » Energy Meters
- » Graphical Chart Recorder
- » LCR Meter
- » Multi-Meters
- » Oscilloscopes (Multi Channel)
- » Power Meters
- » Power Analysers
- » Process Instrumentation
- » Process Meters
- » Scope Meters
- » Signal Generators
- » Volt Meters
- » Watt Meters

ELECTRICALS

- » Appliance Testers
- » Current Transducers
- » Earth Resistance Testers
- » Electrical Safety Testers
(portable appliance testers)
- » Hi-pot Testers
- » Insulation Testers
- » Mega ohm Meters
- » Meggers
- » Power Meters
- » Voltage Transducers

FORCE AND TORQUE

- » Dynamometers
- » Force gauges
- » Torque screwdrivers
- » Torque wrenches

CABLE TRANSMISSION TESTERS

- » ADSL testers
- » CAT 6 to 8 testers
- » Ethernet/IP Testers
- » PDH/SDH/SONET testers

PRESSURE AND VACUUM

- » Analogue & digital gauges
- » Digital and fluid manometers
- » Switches & relief valves

Miscellaneous Electrical/Electronic

- » Cable locator
- » Cable Tester
- » Calibrator
- » Clamp meter
- » Current Supply
- » Digital Multimeter
- » Earth Tester
- » Electrical safety tester
- » Energy Meter
- » Flash Point Tester
- » Flash Tester
- » Frequency counters
- » Frequency Generator
- » Frequency Meter
- » Insulation Tester
- » Insulation testers
- » LCR Meter
- » Loop Calibrator
- » PAT Tester
- » Phase rotation meter
- » Portable & desktop Multimeters
- » Power Analyzer
- » Power Factor Meter
- » Power Meter
- » Power Supply
- » Process Calibrator
- » RCCD tester
- » RCD Tester
- » Resistance Box
- » Safety kits
- » Signal Analyzer
- » Testing and Tagging Unit
- » Tong Tester
- » Voltage Supply

SCALES, BALANCES AND MASSES

- » Counting scales
- » Masses
- » Mechanical dials
- » Platform load cells
- » Precision balances

FIBRE OPTICS TESTERS & TOOLS

- » Hand held optical testers
- » Light meters
- » Loss test sets
- » Multi-wavelength
- » Optical spectrum analysers
- » Optical fusion splicers/cleavers
- » OTDRs
- » Power meters

TEMPERATURE MEASUREMENT

- » Cold storage facilities
- » Data loggers and vaccine temperature monitors
- » Dry heat ovens
- » Data loggers for temperature, humidity and industrial temperature controls
- » Food safety probe thermometers
HACCP certified thermometers
- » Furnaces
- » Glass thermometers
- » Handheld non-contact thermometers
- » Heat exchangers
- » Hydrometers
- » Hydrothermographs
- » IR thermometers
- » Medical thermometers, blood, and vaccine storage monitors and loggers
- » Mercury in glass bulb thermometers
- » Medical freezers
- » Medical storage fridges
- » Medical autoclaves
- » Medical sterilisers
- » Medical incubators
- » Optical pyrometers
- » Pasteurisers
- » Plastics extrusion thermocouple temperature controllers
- » Refrigerated trucks
- » Soldering stations
- » Steam autoclaves and medical sterilisers
- » Switchboard heat distribution analysis
- » Temperature controllers for process plants
- » Thermocouples
- » Water baths
- » Weather stations

DIMENSIONAL

- » Dial gauges and indicators
- » Digital protractors & levels
- » Micrometers
- » Rules & tape measures
- » Verrier callipers & feeler gauges

SURVEY

- » Clinometer & inclinometers
- » Laser levels & distance wheels
- » Level staffs
- » Long synthetic & surveyors tapes
- » Service locators
- » Theodolites
- » Ultra sonic all makes & types

GAS DETECTION

- » Alcohol breath-testing equipment
- » Ammonia plant leakage monitors
- » Car Park Gas Detectors
- » Central control systems
- » CO2
- » CO2 detection
- » Enclosed space monitors
- » Fixed gas detection instruments
- » Gas alert clips
- » H2S Gas
- » Multi Gas Detectors
- » NH4 Gas
- » O2 depletion detectors
- » PcwI Compact Dc Porosity Detectors
- » PcwI Compact Pulse Detectors
- » Personal Gas Detectors
- » Porosity (Holiday) Detectors
- » Portable four and two gas monitors
- » Refrigerant plant gas monitoring

HIGH VOLTAGE TESTING & INSPECTION OF SAFETY EQUIPMENT

- » Electrical appliances
- » Extension Leads
- » Elevated Work Platforms
- » Fiberglass and LV Insulated Tools
- » Height safety equipment
- » HV Phasing Devices
- » HV Testers
- » Hydraulic Tool Hoses
- » Insulating Gloves & Sleeves
- » Ladders
- » Lifting Equipment
- » Live Line Temporary Bridges
- » Mats & Blankets
- » Pole Leakage Detectors
- » Pole, LV and Tower Rescue Kits
- » Pole Platforms
- » Soft and Hardcover Line Hoses

TEMPERATURE AND HUMIDITY

- » Analogue / digital thermometers
- » Black body calibrators
- » Data Loggers and Recorders
- » Dry block calibrators & baths
- » Hygrometers
- » Indicators and controllers
- » Infra-red thermometers
- » Surface temperature sensors
- » Thermal imagers
- » Thermocouples and RTDs



INSTRUMENTS WE SELL



TELECOMMUNICATION CALIBRATIONS

Telecommunication is the transmission of information over significant distances to communicate. In earlier times, telecommunications involved the use of visual signals, such as beacons, smoke signals, semaphore telegraphs, signal flags, and optical heliographs, or audio messages via coded drumbeats, lung-blown horns, or sent by loud whistles, for example.



In the modern age of electricity and electronics, telecommunications now also includes the use of electrical devices such as the telegraph, telephone, and teleprinter, as well as the use of radio and microwave communications, as well as fibre optics and their associated electronics, plus the use of the orbiting satellites and the Internet.

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- » Anritsu MS2711A
- » Anritsu S331B
- » Anritsu S331D
- » Anritsu S810A
- » Arohde & Schwarz CMS 54
- » Attenuator Calibration
- » Bird 4304
- » Bird 4304A
- » Bird APM-16
- » Bird SA-2500A
- » Bit Error Rate Detectors
- » Cell Site Test Sets
- » Cellular Radio Interface Testers
- » Communication Service Monitors
- » Communication Analyzer
- » CDMA Cellular Adapters
- » Digital Modulation Signal Generators
- » Distortion and Noise Meter Calibration
- » DTS-1800
- » Fluke 196
- » Fluke PM6685
- » HP 37721A
- » Logic Analyzer Calibration
- » Network Analyzer Calibration
- » Marconi Instruments 2955
- » Marconi Instruments 2955
- » Multi-wavelength Meter Calibration
- » Omnibers
- » Optical OTDR Calibration
- » Pattern Generators
- » Power Sensor Calibration
- » Receiver Seaward PAC 500
- » RMotorolar 32200
- » Rohde & Schwarz EMI TEST

- » S-Parameter Test Set Calibration
- » SONET Test Sets
- » Signal Generator Calibration
- » Sonet Test Sets through 10G
- » Spectrum Analyzer Calibration
- » Sunset SDH
- » Transmission Impairment Measuring Sets
- » Vector Signal Generators
- » Wandel & Goltermann PFA-35
- » WWG EDT-135

No matter if it's a sound level meter or a pressure gauge calibration, we provide a 48 hour turnaround on our services. HKCT has seven laboratories that are located Australia-wide and we also provide an on-site service. Our technicians are all highly qualified and come from various engineering backgrounds.

HKCT's varied clientele represent a cross-section of industries and range from small business to large corporations.

For more information about HKCT's services phone **1300 309 881** or [enquire online](#).

BIO-MEDICAL INSTRUMENT CALIBRATION

The health of the patient is always paramount in all aspects of the services provided by the medical industry. As part of the process to ensure that proper patient care is provided, the equipment used to measure, monitor and treat the patients must be working properly. A key part of this is the calibration of the medical instruments used in this process.

We can calibrate medical instruments such as

- » Blood Pressure Monitors
- » ECG devices
- » Electrosurgical Analysers
- » Infusion
- » NIBP
- » Patient Simulators
- » Pump Analysers
- » Respiratory Analysers

HK Calibration Technologies Pty Ltd (HKCT) is fully certified and has many years of experience in bio-medical instrument calibration. We can also assist in the development of a schedule to ensure that the regulatory requirements for the periodic calibration of equipment are satisfied.

HKCT have best practice processes and have worked with a number of health care providers to take on their calibration requirements. We support a number of different defibrillator analysers as an example. These life-saving bio medical



instruments are only effective if they are correctly calibrated. For most of the bio-medical instruments the manufacturer provides recommended tests that should be carried out to ensure correct working of the devices.

Our bio-medical instrument calibration services include:

DEFIBRILLATOR ANALYSERS

- » Biotek QED III
- » Biotek QED4
- » Biotek QED5
- » Biotek QED6
- » DNI Nevada PEI 3100
- » DNI Nevada Impulse 3000
- » DNI Nevada Impulse 4000
- » Metron QA-45
- » Metron QA-40M
- » Netech Delta 1000

ELECTRO SURGICAL ANALYSERS

- » Biotek RF 301
- » Biotek RF 302
- » Biotek RF 303 rs
- » DNI Nevada 402A
- » DNI Nevada 402A
- » DNI Nevada 454A (w/ modules)
- » MetronQA-ES

INFUSION PUMP ANALYSERS

- » Biotek IDA
- » Biotek IDA 2
- » Biotek IDA 4 (plus)
- » DNI Nevada 404A (w/ chambers)
- » DNI Nevada 404 Chambers (35A / 3x5A)

NIPB ANALYSERS

- » Biotek BP Pump (2)
- » CDC Smart Arm
- » DNI Nevada Cufflink
- » MetronQA1290

RESPIRATORY ANALYSERS

- » Biotek VT-1
- » Biotek VTPlus
- » Metron QA-VTM
- » Timeter RT200

PRESSURE METERS

- » Biotek DPM I
- » Biotek DPM II
- » Biotek DPM III
- » DNI Nevada 207 A / B
- » Metron DP-10
- » MetronDP-PT
- » Netech DigiMano (all pressures)
- » Netech DigiMano 2000 (2-100psi)
- » Netech UniMano (30-100 psi)

PATIENT SIMULATORS

- » Biotek ECG I
- » Biotek ECG II / Plus
- » Biotek ECG II / Plus
- » Biotek Lionheart I
- » Biotek Lionheart II
- » Biotek Lionheart III
- » DNI Nevada ECG 200
- » DNI Nevada 212 A/B
- » DNI Nevada 213 A
- » DNI Nevada 214 A/B
- » DNI Nevada 215 A
- » DNI Nevada 217 A (w/ 21A)
- » DNI Nevada Medsim 300 / B (w/ controller)
- » DALEEHS10
- » DALEEHS12
- » Fluke MPS450
- » MDE DataSim 1000
- » MDE DataSim 2000
- » MDE DataSim 4000
- » MDE DataSim 6000 (w/ controller or module)
- » MDE DataSim 6100
- » Metron PS416M
- » Metron PS410
- » Metron PS420
- » Metron PS440
- » Netech Microsim (ECG / ARR / COS)
- » Netech Minisim (ver 1.0-1.3 / EEG)

ELECTRICAL SAFETY ANALYZERS

- » Biotek 170 (180)
- » Biotek 270
- » Biotek 370
- » Biotek 501 PRO
- » Biotek 601 PRO / XL
- » Biotek 505 PRO
- » Dale601
- » Dale612 S
- » Dale612 SE
- » Dale LT544D series
- » Dale 600 series
- » DNI Nevada 231D
- » DNI Nevada 234A
- » DNI Nevada 235
- » DNI Nevada 232D
- » DNI Nevada 260
- » DNI Nevada 423HD
- » DNI Nevada 431F
- » DNI Nevada PEI 2000B
- » DNI Nevada u-Test 2000
- » DNI Nevada medTester
- » DNI Nevada medTester 1000

- » DNI Nevada medTester 1000 B
- » DNI Nevada medTester 5000
- » DNI Nevada medTester 5000 B
- » DNI Nevada medTester 5000 C
- » DNI Nevada medTester 6000 IEC
- » Metron QA-90
- » MetronQA-ST
- » Netech LKG 1000
- » Netech Multipro 2000
- » Ohmic 300

ULTRASOUND METERS

- » Biotek UW II
- » Biotek UW III
- » iotek UW 4
- » NetechUMT-2A/ -3D / -4C
- » Ohmic UPM 30
- » Ohmic UPM DT1
- » Ohmic UPM DT10
- » Ohmic UPM DT10E

Just as with our more [general calibration services](#) for equipment such as air flow meters or pressure gauges, HKCT provides a 48 hour turnaround to get the job done.

For more information about HKCT's services phone **1300 309 881** or [enquire online](#).



MISCELLANEOUS CALIBRATION SERVICES



Light Meters



Sound Level Meters



Anemometers



IR Thermometers



Dew Point Meters



Pressure Transducers/
Transmitters



Discharge to Sewer
Flow Meters



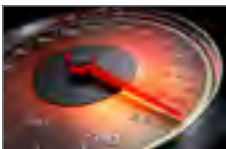
Laser Levels &
Theodolites



Similar to Radman
Narda & Fieldsence



Multimeters.Network
Analysers



Tachometers



Vernier Calipers/
Micrometers etc



Power Meters



Pyrometers



Sterilisers, Autoclaves,
Furnaces, Ovens, Baths



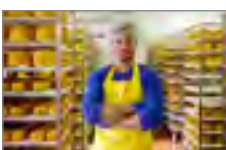
Gas Detectors &
Monitoring



Avionic Test Equipment



Shipping



Food Process Plants



Medical Surgeries
and Facilities



Subsea Instruments

[View All Calibration Services >>](#)

KEEP YOUR TORQUE WRENCHES ACCURATE WITH HK CALIBRATION TECHNOLOGIES

It is natural for torque wrenches to go out of calibration with time and regular use. Whatever type of torque wrench you're using, regular calibration will ensure that your tools are as accurate and effective as possible.

Putting in place a regular schedule for verifying and calibrating your torque wrench will mean less room for error. At HK Calibration Technologies Pty.

Ltd., we recommend having your tools calibrated every 12 months. We can provide both on-site and in-house services to ensure your tools are always performing at optimal levels.

Being able to verify a tool's accuracy is the first step in our calibration services at HKCT. If the torque is out, then our expert technicians will calibrate or adjust it to the highest standards.



Using laboratory grade instruments, HKCT can accurately test, calibrate and repair your tools with a 48-hour turnaround so you can get back to work quickly.

HKCT adheres to Australian standards and we guarantee nothing but the best of outcomes when we calibrate your working tools.

HK CALIBRATION TECHNOLOGIES: SPECIALISTS IN THERMAL IMAGING

A tried and proven way to help ensure a business stays on track, thermal imaging should be a key part of your preventative maintenance plan.

Thermal imaging allows you to locate electrical or mechanical faults before they become major problems, saving

you both time and money.

There's also no guess work with this type of process. Thermal images are very precise and provide a very clear indication if any of your components, such as electrical switches or mechanical parts, are running too hot.



Thermal imaging can also identify cold air loss in refrigeration systems.



Low cost yet effective, thermal imaging is one of the services that HK Calibration Technologies Pty Ltd (HKCT) provides from our seven offices and laboratories Australia-wide.

In the hands of our skilled technicians, thermal imaging can expose any faults in your equipment that aren't evident to the naked eye.

When you make use of our thermal imaging service we don't disrupt your operations. It's a very non-intrusive process and it's ideally done when your operations are in full mode.

The important thing with this process is to ensure you have experienced and qualified people doing the scanning work and that's what we provide.

ON-SITE CALIBRATIONS

HK Calibration Technologies Pty Ltd (HKCT) is the national market leader in mobile testing and calibration services with a network of technicians covering six states of Australia and islands within the Pacific rim.

HKCT's comprehensive scope allows us to test and/or calibrate a large range of equipment at your sites. We aim to be the only call you need to make for all your mobile testing and calibration service needs.

We have dedicated technicians who provide solutions suited to your operations. HKCT's technicians are backed up by our electronic repair laboratory, allowing us to look after many items requiring attention.

Our service includes data management of your full testing and calibrating history and a scheduling service to close the circle ensuring your equipment remains within test and you remain compliant.



HKCT is certified to provide confidence, quality and stability across your business wherever you are in Australia. Our regional managers give you a single point of contact for each area and ensure that we understand any local issues or requirements. This allows us to provide a flexible service to deliver the product required exceeding your expectations.

EXPERT SERVICES

HKCT's customers come from a broad cross-section of industries, ranging from one-man electricians to international mining companies.

HKCT employs highly qualified technicians from numerous engineering disciplines. This expertise means we can provide quality calibration and repair services for all types of testing and measurement instruments. We provide a two working day turnaround on our calibration services at any of our seven offices Australia-wide.

Among our services we can perform:

HKCT provides on-site and in-house calibration services for all sorts of test and measurement equipment at our seven state offices which are Australia-wide. From air flow meter to thermometer calibration, we handle the calibration requirements for a number of industries such as:

- » Flow meter calibration
- » Gas monitor calibration
- » Light meter calibration
- » Multimeter calibration
- » Pressure gauge calibration
- » Thermometer calibration

OCCUPATIONAL THERAPY

In order to ensure correct and accurate measurement of a patient's ability and improvement over time, it is vital that the devices used to measure their progress are correctly calibrated. Not only is it important to get a correct reading but even more important is consistency across instruments given that a patient may be tested using different devices during different visits. The only way to measure change is to have a consistent set of instruments to use.

One common family of occupational therapy devices that are supported by HK Calibration Technologies Pty Ltd (HKCT) are a set of hand strength measurement devices. These are used with patients that have carpal tunnel syndrome, hand nerve and tendon injuries as well as neurological disorders that affect the hands.

HKCT has a fully equipped laboratory so that we can accurately calibrate/repair your occupational therapy instruments. We will provide certification documentation so that you have a record of the calibration being



performed. Not only do we perform calibration services but we will also repair your OT instruments.

The hand grip dynamometer (e.g. Jamar) and pinch strength gauge is repaired and calibrated by HKCT. We offer an Australia wide service through our offices located around Australia.

Our occupational therapy instrument calibration services extend to:

- » Audiometers
- » Hand Dynamometers
- » Patient Weighing Chairs
- » Pinch Gauges

THE CALIBRATION SPECIALISTS

HKCT also sells a large array of German made WIKA pressure gauges which are known for their exceptional calibration integrity. WIKA products are the prime choice for the monitoring of

large capital equipment investments. Each pressure gauge can be delivered with a calibration certificate (Australian National Standards) within 24 hours of the order being made.

ELECTRICAL APPLIANCE TESTERS



Moreover, maintaining the integrity of your mains and having an understanding of how much power your appliances use is also just good practice.

Types of tests that you may need to perform are those related to current leakage and insulation (500v and 250 v). Other applications which testers can be used for include analysing class one and two equipment, extension leads, safety switches and your overall mains power supply.

But no matter what the test is you're performing, you need to guarantee that your portable electrical appliance testing equipment (also known as PAT testers) are accurate and working reliably in the first place.

To ensure this, you need to have your portable electrical appliance testers calibrated. We advise that you have it done annually, which is typically in accordance with the manufacturer's instructions.

Exceptional Service Available Australia-Wide



Through our seven locations Australia wide, the team at HK Calibration Technologies Pty. Ltd., (HKCT) provides an exceptional professional calibration service.

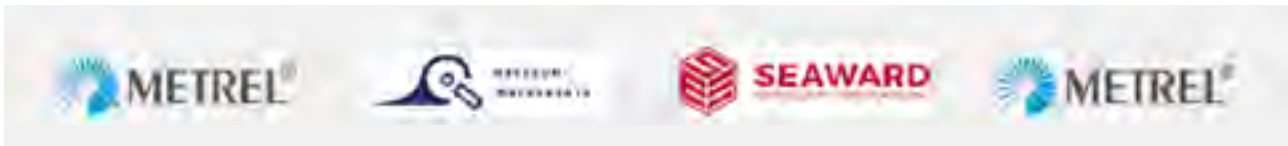
We have a quick turnaround time and can offer our calibration service to most electrical appliance testing equipment on the Australian market.

To National standards



Our calibration services are traceable to Australian national standards by way of an unbroken chain of reference standards calibration. As stated in AS/NZS:3760:2010: “The equipment required to carry out the tests detailed in this Standard (AS/NZS3760) should be subjected to routine verification at regular intervals to ensure it is working correctly and its accuracy is maintained.” This procedure is audited by our third party certification body (SAI Global) to the premier ISO 9001-2008 standard.

We can calibrate leading brands such as:



CALIBRATION OF PRESSURE GAUGE

Looking for a service provider to assist with high-precision calibration of pressure gauge equipment? HK Calibration Technologies Pty Ltd (HKCT) provides exceptional pressure gauge calibration services to clients Australia-wide.



- » Within a 48 hour turnaround, our expert technicians are able to calibrate:
- » Pressure gauges, indicators, safety relief valves and switches
- » Pressure transducers, controllers and transmitters
- » Pressure safety valves, transducers and pressure vessels integrity checks
- » Barometric pressure gauges and vacuum gauges

Be it for industrial, general purpose or non-standard pressure gauges, HKCT has the certified calibration laboratories and experienced technicians to ensure that we can provide calibration of surface profile gauges of almost any kind.

THE PRESSURE GAUGE PROFESSIONALS

The importance of a properly calibrated pressure gauge cannot be understated. Not only does it give you the most accurate reading possible, but a properly calibrated pressure gauge can also reduce the risk of hazardous incidents, as it will identify pressure readings that are too high or too low. HKCT can help you maintain a safe workplace by providing:

- » Calibration of Diaphragm Sealed Pressure Gauges
- » Calibration of Electric Contact Gauges
- » Calibration of Magnehelic Differential Pressure Gauges
- » Calibration of Surface Profile Gauges
- » Calibration of Pawi Digital Surface Profile Gauges
- » Calibration of Pawi Dial Gauge for Testex Tape
- » Calibration of Defelsko Positector SPG Series Surface Profile Gauges
- » Calibration of Dakota Vx Ultrasonic Velocity Gauge
- » Calibration of Center 307 Digital Thermometer Temperature Gauge

HKCT also sells a large array of German made WIKA pressure gauges which are known for their exceptional calibration integrity. WIKA products are the prime choice for the monitoring of large capital equipment investments. Each pressure gauge can be delivered with a calibration certificate (Australian National Standards) within 24 hours of the order being made.

CALIBRATION SPECIALISTS

More than just specialists in the calibration of pressure gauges, HKCT repairs and calibrates all types of test and measurement instrumentation such as fluke digital multimeters and sound level meters.

HKCT provides on-site and in-house calibration services for a broad cross section of clients such as those involved in the bio-medical, mining, petro-chemical and food manufacturing industries.

No matter if you need calibration of a gas monitor or a flow meter, our highly qualified technicians are able to provide a 48 hour turnaround. With their observance to accreditations, HKCT's clients have full compliance to their particular industry's standards.

TEMPERATURE MEASUREMENT

Italian scientist Galileo Galilei was one of the many thinkers who contributed to the development of the thermometer. Other greats such as Isaac Newton and Daniel Gabriel Fahrenheit followed with their own contributions to what has become one of the most common instruments used in measurement today.

Contemporary times see the use of both electrical and mechanical temperature measurement systems.

Either way, it is important for these devices to be correctly calibrated to known fixed points so to ensure their accuracy. While thermometers are comparatively simple instruments, the consequences of a badly calibrated thermometer can result in freezers being too warm or furnaces not being hot enough.

HK Calibration Technologies Pty Ltd (HKCT) has the equipment to calibrate thermometers from -85 to 1350 degrees Celsius. Our technicians not only calibrate thermometers but also thermocouples and data loggers connected to sensing devices.

From plastics extrusion thermocouple temperature controllers through to temperature controllers at a processing plant, HKCT's thermometer calibration services can assist. Other examples of our services include:



- » Dry heat ovens
- » Furnaces
- » Glass thermometers
- » Hydrometers
- » Hydrothermographs
- » IR thermometers
- » Steam autoclaves and medical sterilisers
- » Temperature gauges and controllers
- » Thermocouples
- » Data loggers and vaccine temperature monitors
- » Food safety probe thermometers
- » HACCP certified thermometers
- » Data loggers for temperature, humidity and industrial temperature controls
- » Medical thermometers, blood, and vaccine storage monitors and loggers
- » Handheld non-contact thermometers
- » Mercury in glass bulb thermometers
- » Plastics extrusion thermocouple temperature controllers
- » Optical pyrometers
- » Medical freezers
- » Medical storage fridges
- » Cold storage facilities
- » Refrigerated trucks
- » Medical autoclaves
- » Medical sterilisers
- » Medical incubators
- » Water baths
- » Dry heat ovens
- » Furnaces
- » Heat exchangers
- » Pasteurisers
- » Weather stations
- » Switchboard heat distribution analysis
- » Soldering stations
- » Temperature controllers for process plants

To assist with your thermometer calibration needs, HKCT has offices and laboratories in Sydney, Melbourne, Perth, Brisbane, Adelaide, Hobart and Gladstone. We also provide an on-site calibration service to reduce down-time.

All temperature measurement calibrations are performed as per the following Australian standards and HACCP standards:

- » AS 1006-1995
- » AS 2853-1986
- » AS 2487-2002
- » AS 2190-1995
- » AS 2819-1985
- » AS 2931-1985
- » AS/NZS ISO 10012:2004
- » ASTM E230-93 012:2004

METROLOGY/ DIMENSIONAL

Our team at HK Calibration Technologies Pty Ltd (HKCT) does not just have the skill to repair and calibrate electronic measurement instruments; we also have the experience and equipment to perform repairs of these instruments.



Hard gauges are the primary standards for dimensional metrology which allows us to calibrate instruments such as micrometers and screw plug gauges.

As with all of our calibration services, when we perform a hard gauge calibration we provide certification for your records. We can also develop a calibration program for your business to ensure that all your measurement devices are recalibrated within the manufacturer's recommended time period. This will ensure that you're getting the best from your hard gauge instrument investment.

Our hard gauge calibration services include:

recalibrated within the manufacturer's recommended time period. This will ensure that you're getting the best from your hard gauge instrument investment.

Our hard gauge calibration services include:

- » Dial Gauges
- » Dial Test Indicators
- » Gauge Blocks
- » Paint Thickening Gauges
- » Screw Ring Gauges
- » Screw Plug Gauges
- » Engineers Squares
- » Dumpy Levels
- » Theodolites
- » Steel Rules
- » Vernier Calipers
- » Height Gauges
- » Outside Micrometers
- » Inside Micrometers
- » Bore Micrometers

The calibration of micrometers and screw plug gauges meets various Australian standards such as:

- » AS/NZS ISO 10012:2004 Metrological confirmation system for measurement equipment
- » AS 2102-1989 Micrometer callipers for external measurement
- » 25.3.02 AS 1984 -1977 Vernier callipers

HKCT provides on-site and in-house calibration services for all sorts of test and measurement equipment at our seven state offices which are Australia-wide. From air flow meter to thermometer calibration, we handle the calibration requirements for a number of industries such as:

- » Bio-Medical
- » Avionics/AviationMining
- » Petro-Chemical
- » Telecommunications
- » Electronic and Electrical
- » Occupational Therapy
- » Food Manufacturing
- » Pharmaceutical
- » We welcome any measurement/ calibration challenge

HKCT has a 48 hour turnaround policy for its calibration services, ensuring you can get your measurement equipment back in service as soon as possible.



DATA LOGGER CALIBRATION

A data logger is an electronic tool which automatically observes and logs environmental and atmospheric factors over a pre-determined or ongoing time period. It allows for the measurement, documentation, analysis and validation of existing conditions. Data logging machines feature a sensor that receives the information as well as a computer chip that stores the data. That information is then transferred to a computer to be analysed. For the most accurate analysis of information, it's crucial that the data logger has been correctly and properly calibrated.

HK Calibration Technologies Pty Ltd (HKCT) can calibrate many types of data loggers and also sell or hire you the logger to perform your monitoring Australia wide. Whether you require calibration of a Logging 309 Thermometer “K” Type Temperature Data Logger or you need calibration of a PcwI Batch Oven Temperature Datalogger, you can rest assured that we can give you the precision you’re looking for.

CALIBRATION SPECIALISTS

Data logging applications include:

- » Unattended weather station recording (such as wind speed /direction, temperature, relative humidity, solar radiation).
- » Unattended gas pressure recording.
- » Measure temperatures (humidity, etc.) of perishables during shipments: Cold chain.
- » Process monitoring for maintenance and troubleshooting applications.
- » Process monitoring to verify warranty conditions.
- » Measure vibration and handling shock (drop height) environment of distribution packaging.
- » Tank level monitoring.
- » Environmental monitoring.
- » Monitoring of relay status in railway signalling.
- » Recording trend data at regular intervals in veterinary vital signs monitoring.
- » Load profile recording for energy consumption management.
- » Temperature, Humidity and power use for heating and air conditioning efficiency studies.
- » Water level monitoring for groundwater studies.
- » Digital electronic bus sniffer for debug and validation.
- » Remote temperature and humidity monitoring of warehouse facilities and the like.



Different data loggers are best suited to particular actions, for example if you needed calibration of a PCWI Batch Oven Temperature DataLogger it would likely be to gauge the temperature in something like a commercial oven or industrial freezer, while calibration of a Logging 309 Thermometer “K” Type Temperature Data Logger would best serve you for more general applications.



WHAT DO DIFFERENT MEASUREMENT TEST DATA TYPES MEAN

(ie: “as found”, “before” data, “as left” and “after” data)?

There are several different measurement test data types that can be included on a calibration certificate, the primary ones being: “As Found” or “Before” Data: Calibration data that is documented during the calibration and before the unit is adjusted and/or repaired.

This data is critical to support any necessary customer investigation in the event that Out of Tolerance conditions are detected during the calibration. “As Left” or “After” Data: Calibration data that is documented during the calibration performed after the unit is adjusted and/or repaired.



WHY CHOOSE HKC FOR YOUR CALIBRATION SERVICES

To sum up, instrument calibration is incredibly important wherever measurements are incredibly important. Instrument calibration enables users and businesses to have confidence in the data that your instruments capture, and subsequently control.

HKC Instruments offer a comprehensive instrument calibration service that covers a range of measurement instruments, including thermometer calibration, manometer calibration, hygrometer calibration and digital gauge calibration.

All our calibration work is traceable to NATA and with more than 25 years' experience in the business; we're incredibly well-placed to provide your business with the confidence and peace-of-mind you need to carry out your operations safely, effectively and reliably. In addition, we provide the following;

- Calibration services for equipment from 1,000-plus manufacturers - far more than just HKC!
- Extensive global service network - more than 5 points of service.
- Superior quality - ISO 9001:2015 & ISO/IEC 17025:2017 parameters.
- 20-plus associates - highly skilled technicians and sales representatives.

WHAT IS NATA ACCREDITATION

To understand what NATA accreditation means, let's get technical for a moment. After all, calibration is all about ensuring technical accuracy. In NATA's vocabulary, the word "accreditation" has the following very specific meaning:

A procedure by which an authoritative body gives formal recognition that a body is competent to carry out specific tasks.

Put simply, NATA Accreditation is a process of recognising competencies. And, at its core, it's a third party, objective, peer assessment process at a scientific and technical level that provides assurance of the laboratory's capability to produce reliable data from particular measurements.





WHY BOTHER

At its essence, NATA Accreditation is really about confidence: both yours and your customers or stakeholders. If you rely on technical data to make important decisions, you'll need to trust the results you're using. NATA Accreditation is intended to enhance your trust in the activities that produce your technical data and information. That is, you can trust that the calibrations have been performed by competent staff using sound procedures as verified by NATA's peer assessment processes.

But that's not the only purpose of accreditation. It also means you can outsource to an independent, objective authority (read: don't have to worry about) the monitoring of laboratory performance. It means there can be global recognition of data produced by laboratories. And it means you have a resource to resolve disputes regarding accredited laboratory services.

What activities does NATA-accreditation cover?

NATA accredits calibration activities undertaken in across a range of disciplines, such as:

- Dimension metrology (Length)
- Speed Mass & weighing equipment
- Electrical low frequency metrology
- Volume and Density Magnetism
- Pressure Communications, EMR and EMC
- Temperature metrology
- Time and frequency
- Acoustics
- Force
- Chemical metrology
- Flow
- Torque
- Optics
- Ultrasonics
- Biological metrology

AVOIDING MISTAKES: NATA ACCREDITATION V NATA-ACCREDITED CALIBRATION



Here's where some organisations can get tripped up: there's an important distinction between NATA accreditation vs NATA calibration.

Some organisations have quality systems that simply require their equipment to be calibrated by a calibration company that holds a NATA accreditation. Which means that the calibration company's quality system must of course meet ISO17025 standards.

However, this is different from a NATA-accredited calibration. Just because a company holds NATA accreditation does not necessarily mean all their calibrations are NATA-accredited calibrations. NATA Calibrations can only be undertaken by companies who hold NATA Accreditation AND have been accredited to carry out NATA calibrations for a particular accredited scope. Which is why only accredited calibrations can use the NATA emblem on calibration reports.

Practically, this means you need to be clear on what you actually need: NATA Accreditation vs NATA-Accredited Calibration? There's often a significant difference, so understand your required carefully and don't get tripped up.



CALIBRATION

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Call us today for pricing and availability, and learn how our newly certified laboratory can streamline your calibration and testing processes.

To find out more about our instrument calibration service, please get in touch with a member of our team today.

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