

# CalBench™

CalBench Overview and Customer List



# Presentation Agenda

- About Time Electronics
- About CalBench
- CalBench Case Studies
- CalBench Customers

# About Time Electronics

Established in 1967 Time Electronics Ltd is an UK based company that designs and manufactures calibration and metrology instruments. Our comprehensive range of products provides users with solutions for test and measurement applications within their respective industries.



# Time Electronics Product Range



## Calibration Benches

Multi-purpose test benches covering electrical, pressure and process calibration work, R&M and service applications.

## Laboratory Calibrators and Multimeters

High performance multifunction calibrators, electrical test calibrators and precision digital multimeters.

## Portable Test Instruments

Handheld electrical and electronic calibrators, and sources. Portable process calibrators and temperature simulators.

## Pressure Calibration Instruments

Pneumatic and hydraulic calibrators, digital gauges, benchtop and handheld pumps.

## Decade Boxes

Resistance, capacitance and inductance decade boxes for industry and education.

## Calibration Software

Calibration software to automate and optimise the calibration process. Covering all aspects of calibration work and management.

## Calibration Labs and Workshops

Turnkey design and supply service for customers requiring an efficient and ergonomic on-site calibration laboratory.

# About CalBench

## Calibration Benches

### CalBench: The Ultimate Multifunction Calibration Station



CalBench is a system that provides users with a compact working environment to cover multiple applications in test and measurement.

It is ideal for companies looking to implement an ergonomic and organised calibration process, with a primary workstation covering the bulk of the testing workload.

When utilised in workshops within industrial plants, CalBench provides a turnkey solution to enable users to achieve compliance with quality standards.

CalBench provides an integrated approach to housing master instruments as modules into a console mounted above the work bench.

The system is a unified solution that replaces the requirement for multiple benchtop and portable test instruments.

CalBenches are built to cover the parameters common to industrial sectors, primarily electrical, pressure, temperature, process and frequency.

# About CalBench



## Custom Configurations for Your Workload Coverage.

CalBench systems can be configured to cover a wide range of test and measurement applications:

- **Pressure:** Gauges, calibrators, transducers, transmitters, indicators, switches, valves, controllers, manometers, chart recorders.
- **Temperature:** Sensors, transmitters, indicators, RTDs, thermocouples, recorders, controllers, thermometers, process calibrators, PRTs, thermistors.
- **Electrical and Electronic:** Multimeters, AC/DC signal sources, clamp meters, data loggers, tachometers, continuity testers, decade boxes, RCL meters, power meters, conductance meters, RCD/loop/earth/ground testers, insulation testers, multifunction installation testers, micro ohm meters, portable appliance testers, power supplies.
- **Frequency:** Oscilloscopes, frequency meters, frequency counters, timer counters, current probes.
- **Dimensional and Mechanical:** Torque wrenches, pulse tools, power tools, verniers, calipers, micrometers, depth gauges, plug gauges, analytical balances, scales, laboratory balances.

# About CalBench



## The Benefits of Using CalBench.

CalBenches provide an ergonomic platform for a comprehensive calibration program. They are designed for flexibility and wide workload.

The modules deliver precision and performance for their dedicated use, and accompanying products complete the package to ensure coverage of all end user requirements.

Automating test applications is a key benefit of CalBench. Control and readback functionality enables rapid calibration work to be performed. Software driven calibration allows users to control the process from start to finish, from scheduling to certificate issuance.

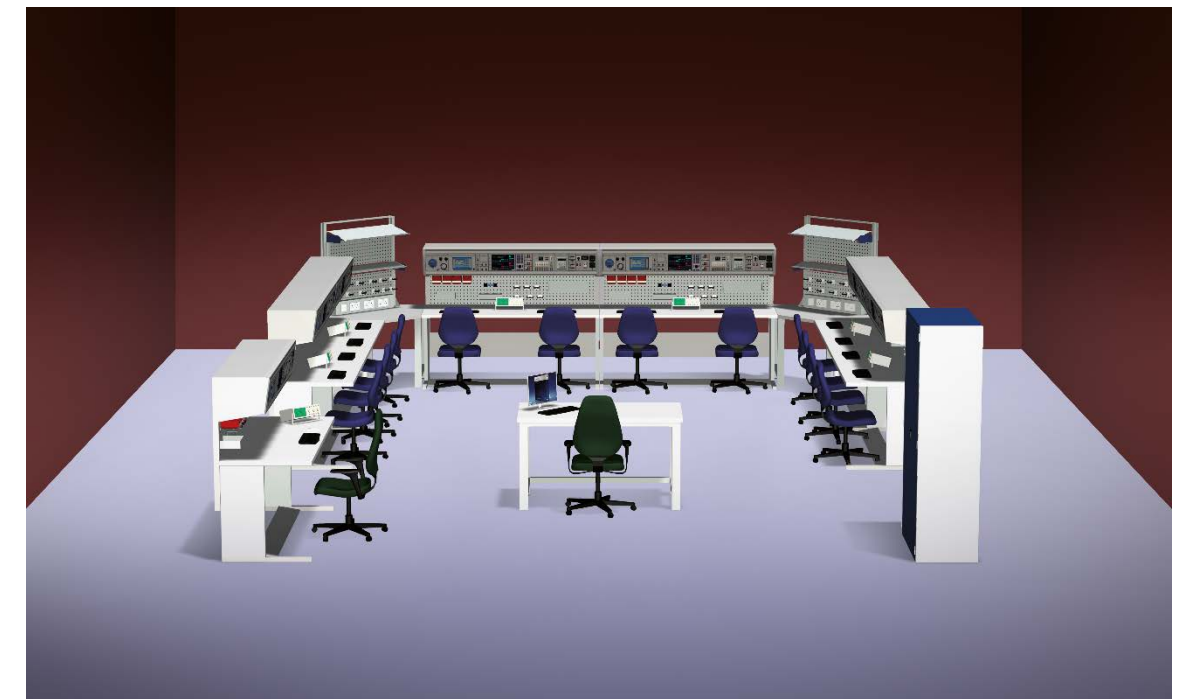
- Fully customised solution for end user requirements
- Wide selection of modules and extras to choose from
- Instant organisation of master instruments as modules
- Creates a compact working environment
- Calibrate and maintain a wide range of instruments and devices
- High performance system offering versatility and precision
- Automated calibration and testing

# About CalBench

## Turnkey Laboratory and Workshop Design and Supply

Time Electronics also provide a turnkey design and supply service for customers requiring an efficient and ergonomic on-site calibration laboratory. Each solution is configured and created virtually, then supplied complete including all specified test instruments, tools, and furniture.

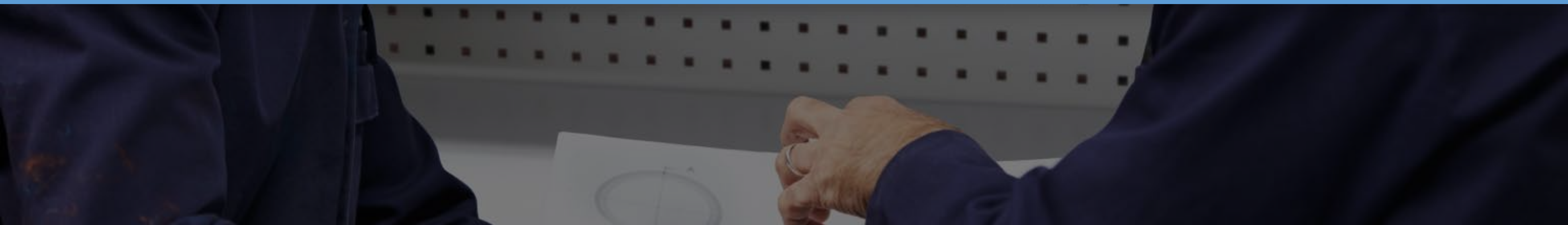
**CalBenches** typically feature as the primary workstations of the laboratory or workshop, for the main testing and verification workload, R&M and service applications.







# CalBench Case Studies



## CalBench Case Studies



Umm Lulu Development Project and  
Nasr/Al-Nasr Field Development,  
Abu Dhabi, United Arab Emirates

Customer: Adma Opco / Adnoc

CalBench Project Overview:

Two projects specified from 2014 for “Universal CalBench Systems”.  
Both sites completed delivery in Q1 2017.

Each CalBench features automated testing modules for electrical,  
temperature and pressure applications. Each CalBench has a primary and  
secondary consoles for the housing of the modules selected by the end user.

The packages also included accompanying products such as pressure pumps,  
adaptors, fittings and extras.

Each CalBench included EasyCal software running on a 7051+ multifunction  
calibrator module, to enable automatic calibration of electrical test tools, as  
well as communication and readback from compatible modules.



# CalBench Case Studies

TAQA Atrush B.V., Iraq.

Customer: TAQA

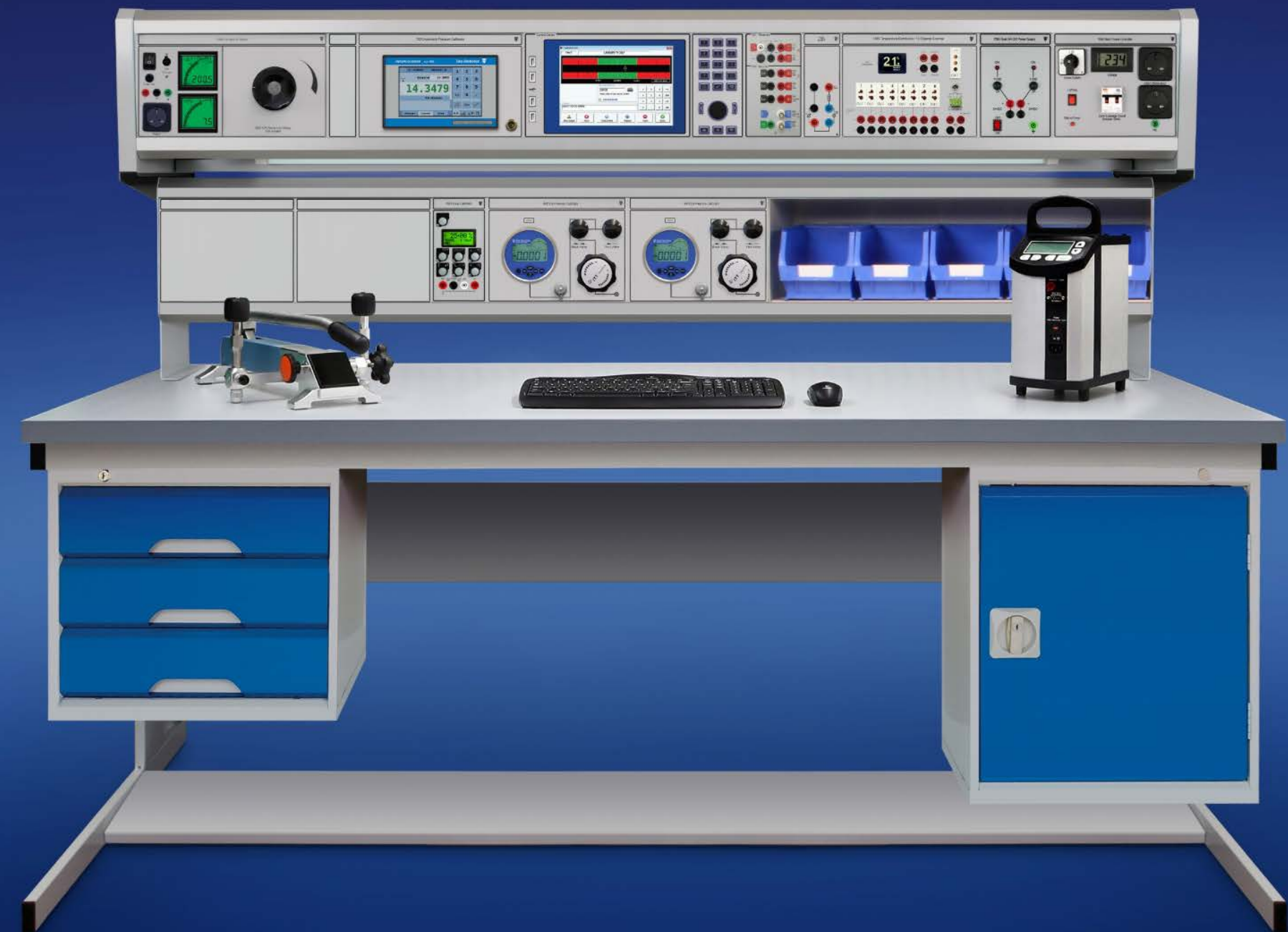
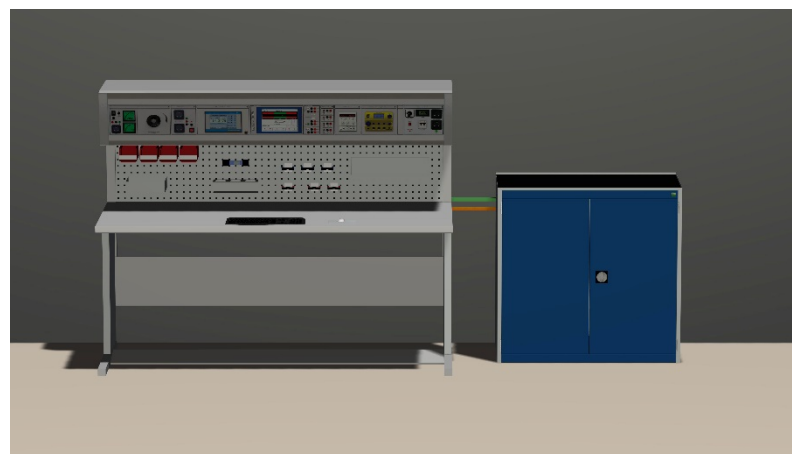
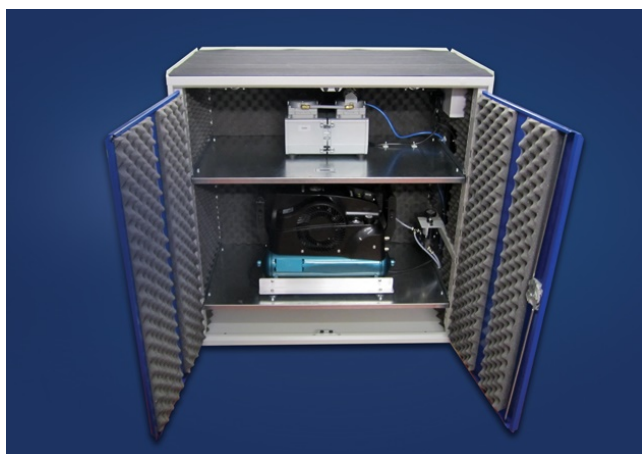
CalBench Project Overview:

TAQA required an CalBench situated on-site for testing of plant instrumentation and engineers test tools. Delivery was Q4, 2016, with full installation, commissioning and training on-site in Erbil.

The CalBench supplied was a custom solution featuring the 7051+ module for electrical and electronics calibration work, an auto pressure controller and regulated pressure calibrator modules for high range pneumatic work.

Dry block calibrators, pumps, adaptors and extras were included.

In addition a custom built pressure cabinet was supplied, housing a 24bar compressor and vacuum pump, supplying the pressure controller module.



## CalBench Case Studies



### Al Khaleej Sugar, Dubai, United Arab Emirates

#### Customer: Al Khaleej Sugar

##### CalBench Project Overview:

Al Khaleej Sugar required a solution for testing of process, temperature and pressure instrumentation.

This system was acquired over a time period with modules retro-fitted for completion in Q2, 2017.

The CalBench features the 8060 process calibrator module with EasyCal software running on the control centre section. A selection of regulated pressure calibrator modules provides the precision outputs for their pressure applications.



## CalBench Case Studies

Adma-Opco Electrical CalBenches,  
Abu Dhabi, United Arab Emirates  
(various sites).

### Customer: Adma-Opco

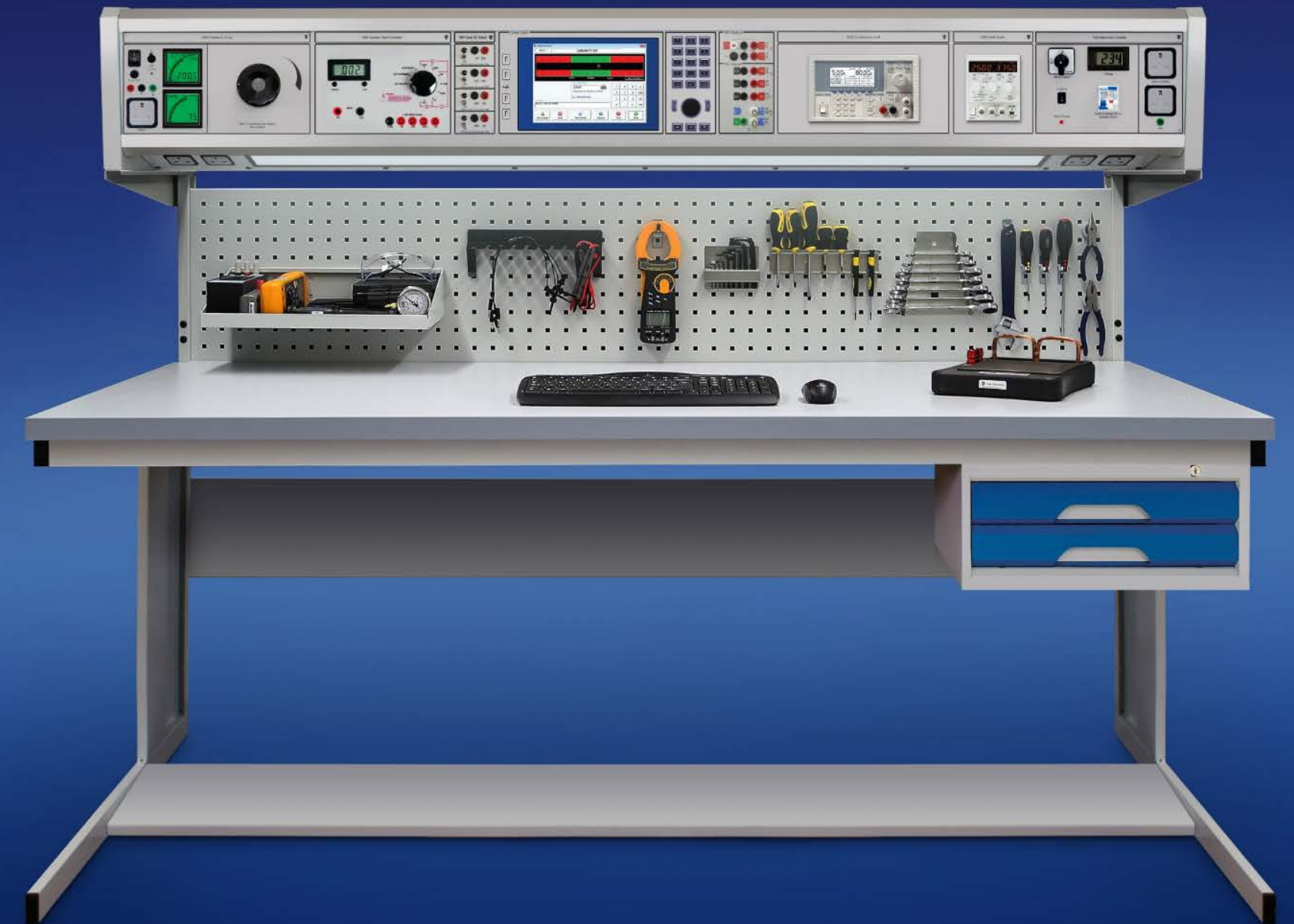
#### CalBench Project Overview:

Adma-Opco have 2 electrical/electronic CalBench systems that were delivered in Q4, 2015. A third bench of the same exact specification was purchased in Q4, 2017. The end users are at separate sites.

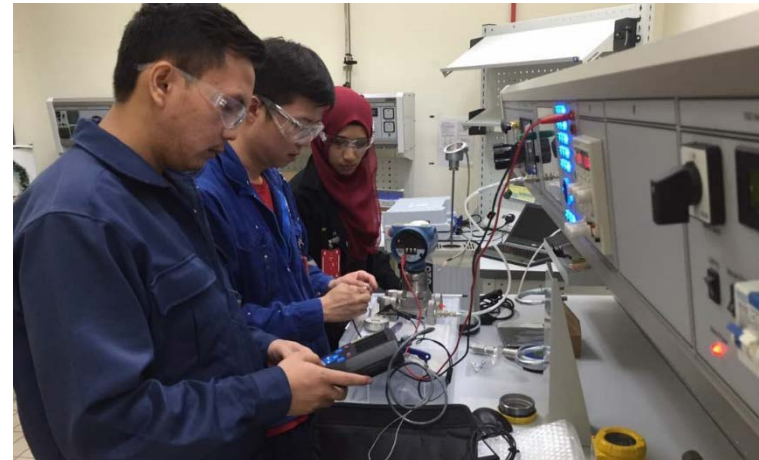
The CalBenches supplied have a focus on electrical and electronic calibration work, and R&M applications. A 7051+ module provides source and measure capabilities for calibration of multimeters, clamp meters, oscilloscopes and more.

Also featured is a dedicated 5068B module enables insulation testers to be calibrated, and an electronic load module for DC power supply calibration and diagnostics.

All accessories included for use with the 7051+ module, such as a clamp meter adaptor, tachometer adaptor. The EasyCal supporting products include a printer & connectivity kit, bar code reader, and label printer. Also in the package is a high performance soldering/de-soldering/rework station, for repairs on the bench.



## CalBench Case Studies



Shell MDS I&E Workshop, Malaysia.  
Time Electronics Asia

### Customer: Shell MDS

#### CalBench Project Overview:

A small workshop installation with two CalBenches and a corner unit. The requirement was for process instrumentation calibration, plus a basic R&M bench.

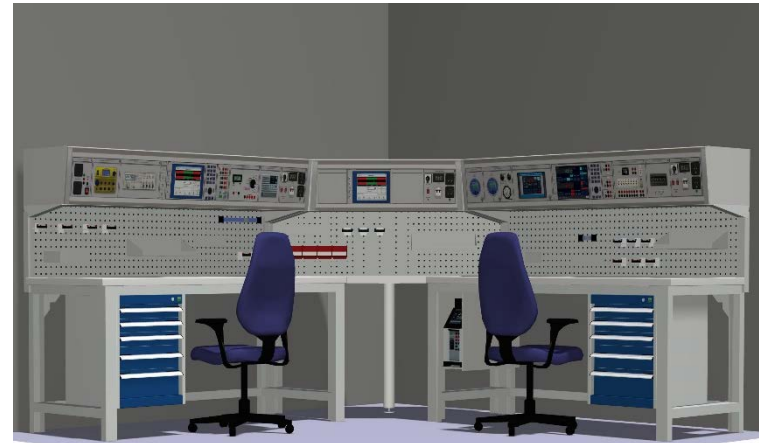
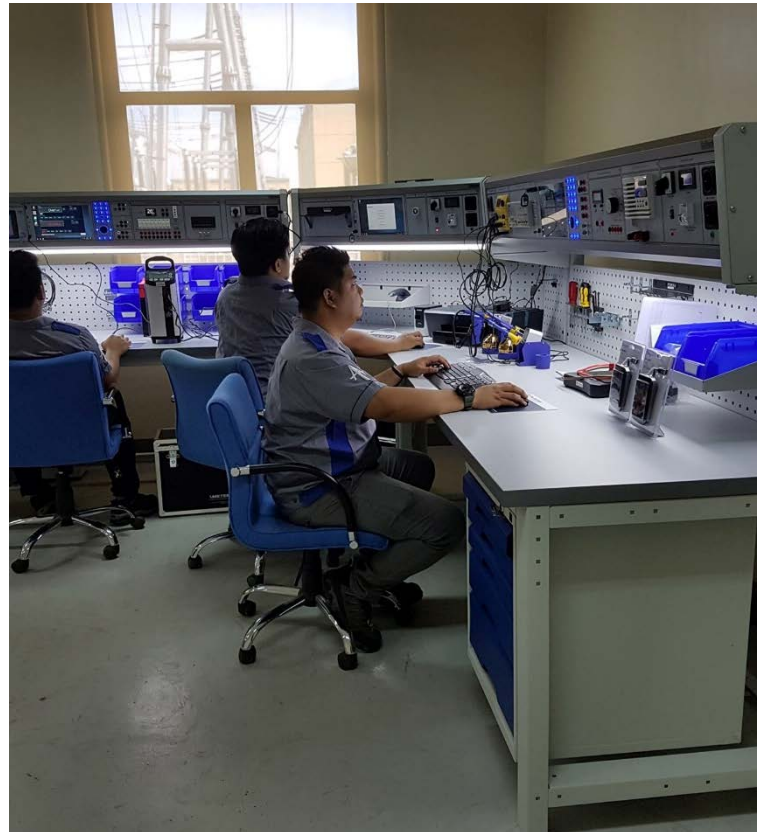
The project was supplied, installed and commissioned in Q2, 2017.

The CalBenches included the 8060 module with EasyCal software. A 7030B pressure controller also featured. They customer now performs automated calibrations of pressure transmitters using this set up with EasyCal software on the 8060 control centre.

The R&M CalBench featured a variable AC power supply, soldering station module, decade box module and 24V DC solenoid test module.

The workshop was designed by Time Electronics, fully built up prior to shipment in out staging area.

# CalBench Case Studies



FDC Utilities, Philippines  
Agent: ATEX Automation

## Customer: FDC Utilities

CalBench Project Overview:

A workshop installation with two CalBenches and a corner CalBench. The requirement was for comprehensive electrical, process, temperature and pressure calibration.

The project was supplied, installed and commissioned in Q3, 2017. Prior to this the end user sent a team of three engineers to the Time Electronics UK for factory acceptance testing, and training on their systems.

The CalBenches included a wide range of modules for the various testing applications. These included the 8060+ process calibrator module, 7051+ electrical multifunction calibrator module, 8030B pressure controller module, RMTEG pressure modules.

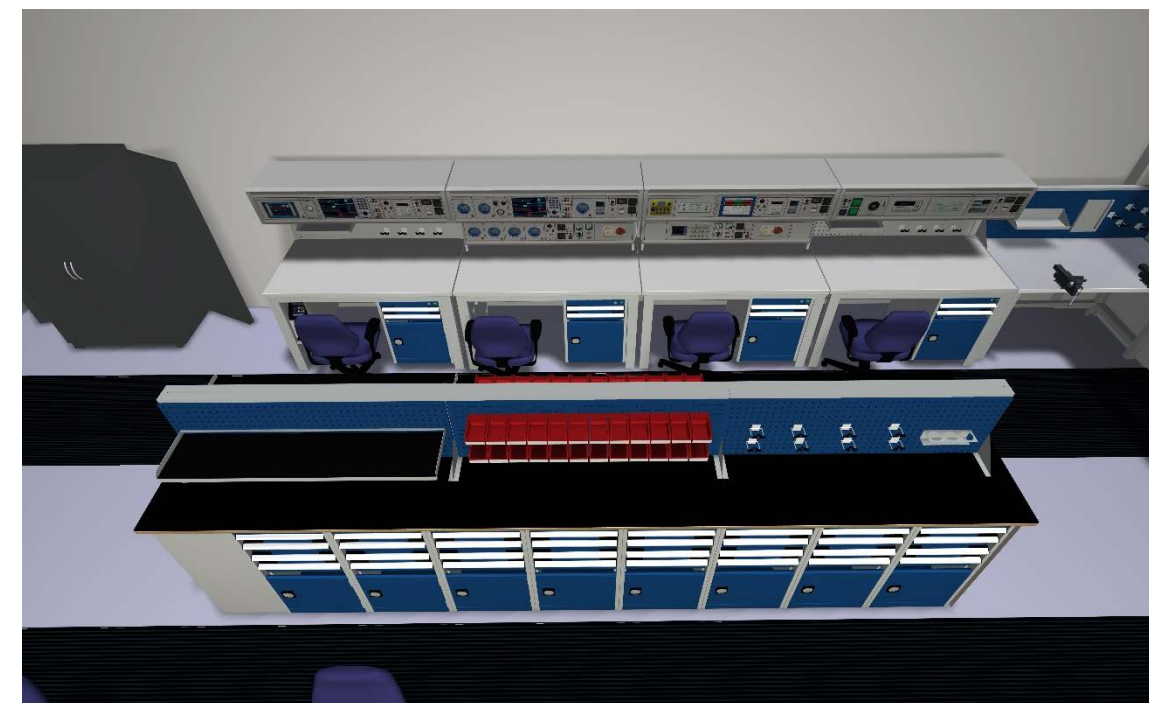
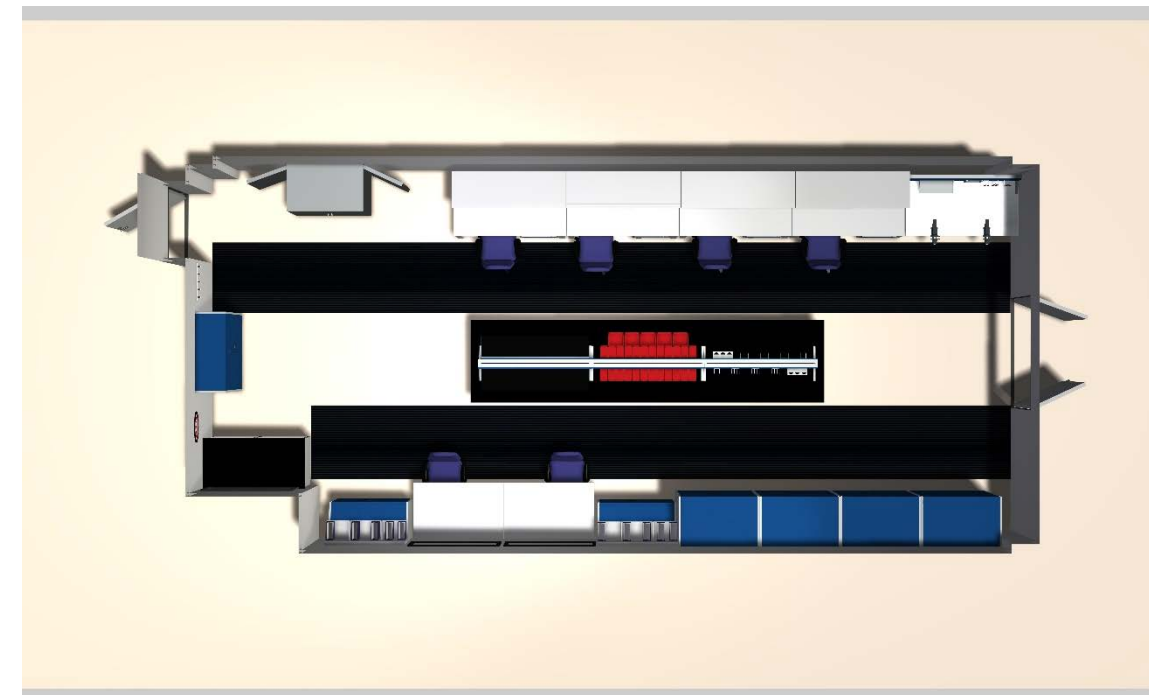
All three benches had a control centre module (8060+, 7051+, CC12). This set up allowed them to create an internal network bridging each bench, that enabled a unified solution to database management and administration of their calibration program. EasyCal software provides the platform for all their workload, with excellent automated testing capabilities that will speed up calibration runs.

The R&M features included variable DC power supplies, AC power supplies, function generators, control centre oscilloscope, and soldering/rework module.

# CalBench Case Studies

## Maersk Oil – Culzean Fields Clean Workshop

A complete design, manufacture and installation project for the Culzean Field platform to be situated in the North Sea. The workshop consists of four 7080-HD15 CalBenches (1500mm wide systems). Coverage is mainly process and pressure calibration, with repair and maintenance capabilities for the engineers working around the platform.





# CalBench Customers – Oil & Gas



Petronas (various), Malaysia



BP (worldwide sites)



Nigeria LNG (x2), Nigeria



Dragon Oil, Turkmenistan



Aramco (various), Saudi Arabia

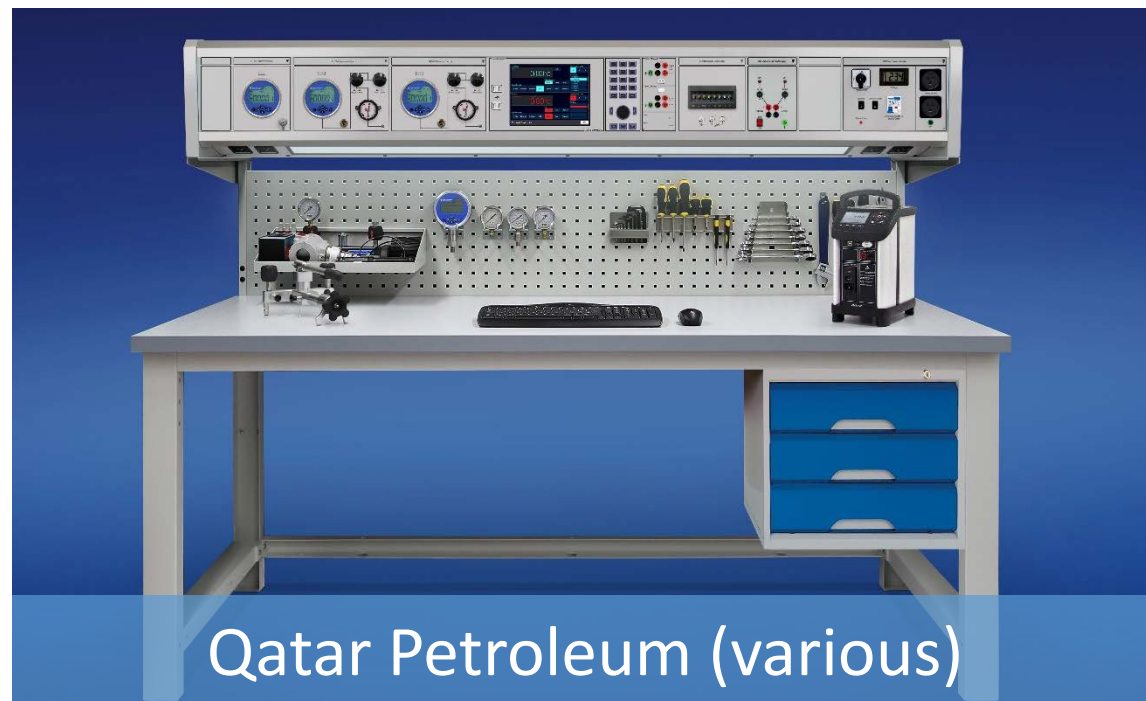


Shell (worldwide sites)

# CalBench Customers – Oil & Gas



ESSO Canada



Qatar Petroleum (various)



Takreer, UAE



PTT (various), Thailand



Lukoil (worldwide sites)



Shell (worldwide sites)

# CalBench Customers – Power & Utilities



Sarangani Energy, Philippines



SWCC (various), Saudi Arabia



Saudi Electricity (various), KSA



DEWA, Dubai UAE



Aboitiz Power Corp, Philippines



Ashuganj Power, Bangladesh

# CalBench Customers – Mining



Chirano Gold Mines, Ghana



Debswana Diamand Mines, Botswana



Kamoto Copper Mines, DRC



Vale Aluminium, Oman



Ashanti Gold Mines, Ghana



Citic Pacific Mining, Australia

# CalBench Customers – Food & Beverage



Ambev Brewery, Dominican Republic



Coca Cola (worldwide sites)



Nzoia Sugar, Kenya



Golden Pasta, Nigeria



Labatts Canada (InBev)



Al Khaleej Sugar, UAE

# CalBench™



Thank You