

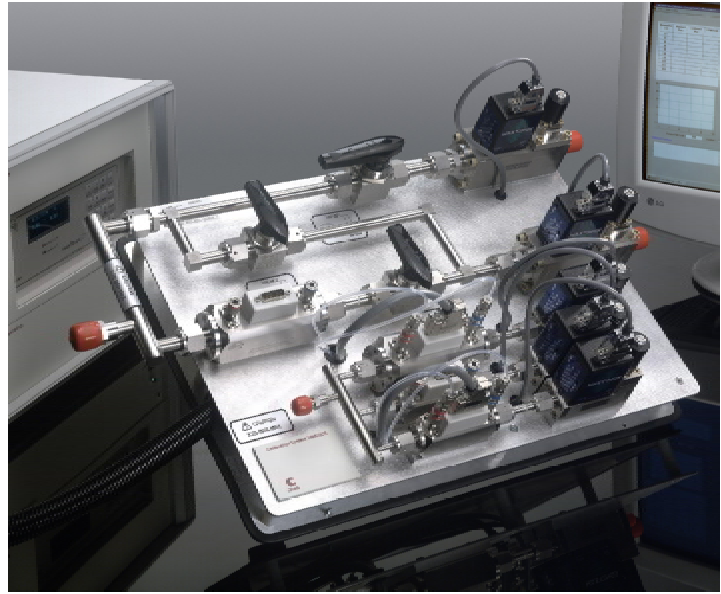


Custom Calibration & Test Systems

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ruments

Chell has a wealth of experience designing and building custom Audit, Calibration, Test, Leak Rate and Production process systems. All are based on the measurement and control of Pressure, Vacuum and Gas Flow using the latest technologies - many have bespoke software supported by our own in-house team.

Due to the nature of this type of work, we do not produce brochures on each system - this leaflet gathers a number of examples that demonstrate the breadth of our experience.



Automated Gas Flow Calibration Systems



Superplastic Forming Press Control System

The Gas Flow calibration system above was developed to meet a need for MoD to calibrate instrumentation measuring strategic gas flows on armed forces equipment.

The SPF press control system shown left combines pressure control with flow measurement (or vice versa) and has dramatically improved our customer's yields. A programme to implement control on further presses, complete with full network access is currently being formulated.

Over the years, Chell has built a host of high-integrity Leak Test Sets for specific applications. The example shown right is a portable, battery-powered local leak rate monitor designed to satisfy ANSI Standards for the Power generation industry.

The leak rate is measured using Mass Flow Meters and test conditions are standardised by the operator who adjusts a pressure regulator in order to read the prescribed pressure conditions.

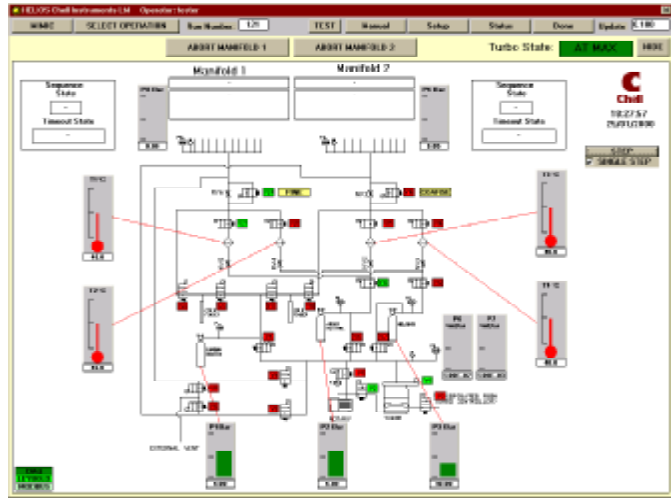
This basic design has been adapted many times to specific applications and very economic changes may be made as a result.



Leak Rate & Other Portable Test Sets

Bespoke Software

Our engineers write software for use by engineers - it is always effective and allows for easy implementation of safety interlocks & customer requested features. Shown right is a "mimic" screen for a component backfilling system working from Ultra-High Vacuum up to 30bar. The project commenced with an agreed Flowchart, which was then fleshed out into many layers of engineering screens with the simplest of operator level providing all the functionality requested.



Product Test & Inspection Systems



Chell's brief was to produce a computer controlled rig to test the performance of an automatic safety shut-down valve being used in a very high integrity application. The system generates controlled ramping differential pressures across the valve seats and plots the resulting valve performance in a plant failure situation. Apart from controlling the sequence of operation, the on-board rugged PC also logs the data from each channel and creates a test certificate complete with a performance plot whilst the system is returning to atmosphere after a test. The PC also communicates with other dimensional test instruments so that data is collated on just one document.

National Gas Flow Audit Standard

Custodian of the UK's national Standard for flow, the National Engineering Laboratory commissioned Chell to produce this Gas Flow Audit standard. The standard is used by UKAS to audit the performance of each accredited gas flow laboratory in the UK and there are plans to open the service up to overseas laboratories. Chell combined its knowledge of the performance of DH Instrument's molbloc with Hastings Instrument's 300 series Mass Flow Controller.



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