



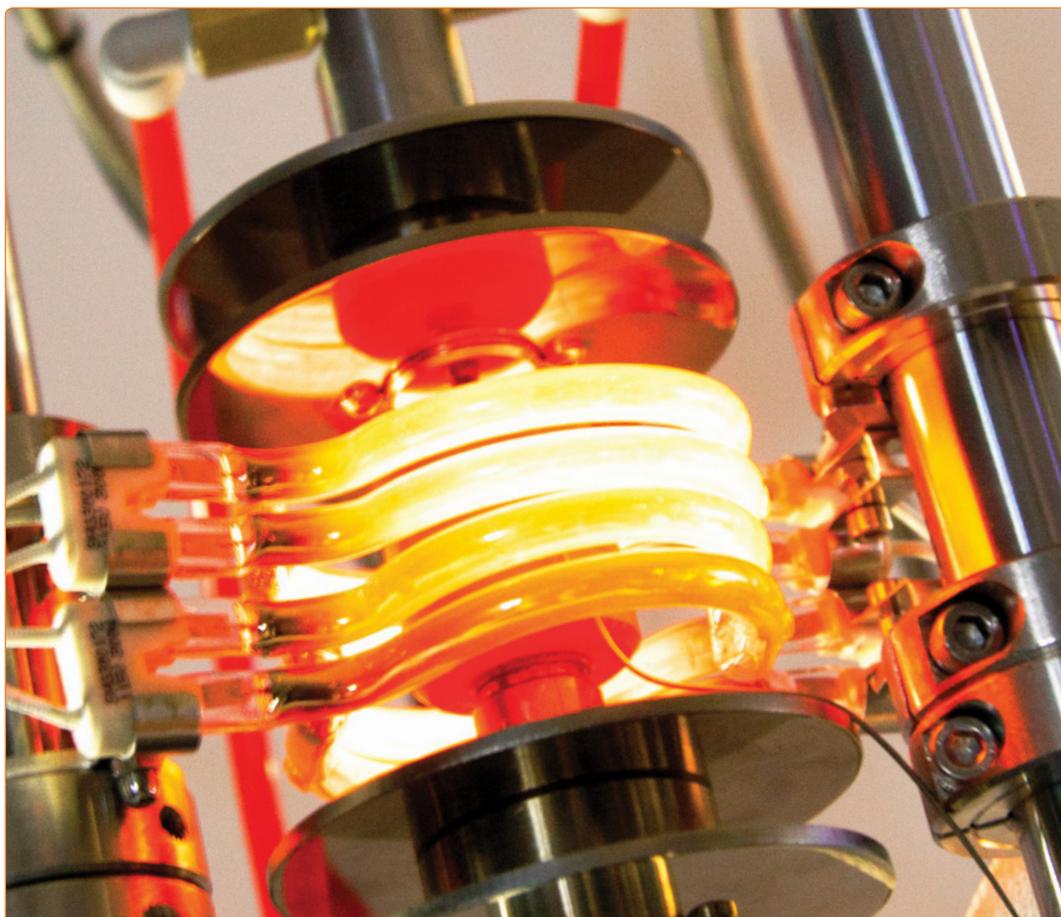
Phoenix
MATERIALS TESTING

RO

ROTECH
LABORATORIES

RUBERY OWEN

The Total Testing Solution



The Total Testing Solution

Rotech Laboratories and Phoenix Materials Testing are working together, within the Rubery Owen Materials Testing Division, to offer a West Midlands based testing hub which will include metallographic work, chemical analysis, corrosion testing, routine mechanical testing, alongside advanced fatigue, environmental and thermo-mechanical testing of components, assemblies and machined samples.

Between the two laboratories we can carry out routine and bespoke testing. The bespoke testing services are supported by Phoenix engineers who can offer consultancy and advice on test assemblies and programmes, design and build fixtures and environmental chambers as well as writing specific programmes to control the machines and capture the data being generated to suit the exact customer needs.

The remit of the labs is to ensure we have the versatility, expertise and capability to support our customers in getting the data they need to make decisions and recommendations for their own product or material as quickly and effectively as possible.

Quality

The reliability of the data is of paramount importance to our customers working in sectors which include aerospace, automotive, universities, nuclear power and power generation, pharmaceutical, petrochemical and geotechnical research.

Rotech and Phoenix hold key approvals and certification to give our customers confidence in the service and results they are receiving.



Large samples? No problem!

The Phoenix lab includes our 1600kN test machine with a clearance of 550mm x 750mm and up to 1750mm of daylight. The machine can operate in tension, compression and through zero with a fatigue capability.

Phoenix can design and manufacture grips and fixtures to suit your samples or products.

Typical tests on this system include UKAS accredited testing on Bolts & Nuts up to M42, Axial Tensile (No proof stress) to ISO 898-1 2013 and Wedge Testing to ISO 898-1 and ASTM A320 up to M42 size (1400kN).

We have also carried out testing on products and assemblies for the rail industry, construction industry, marine applications and civil engineering.

Small samples? No problem!

At the opposite end of our range of machines is the Phoenix 2kN test machine. This has the full range of capabilities of any of the larger systems in terms of software, control, static and dynamic capability and compatibility with a full range of instrumentation.

The system can operate at over 100Hz, or can be fitted with a specially designed manifold to carry out single shot testing at up to 7ms⁻¹.

Tests carried out on this machine include biomedical testing on pre-filled syringes, high rate testing of connectors for a defence application, small punch sample testing at elevated temperatures and fatigue testing of thin foils.





Rotech Laboratories testing activities

Mechanical Testing

- Tensile testing, Impact testing, Hardness testing

Chemical Analysis

- Optical Emission Spectroscopy (OES), ICP-OES, Leco carbon, sulfur and nitrogen analysis
- Positive Material Identification testing (PMI testing) using XRF

Corrosion Testing

- Pitting and crevice corrosion testing, Intergranular corrosion tests

Finish Testing

- Neutral Salt Spray Test, Humidity resistance tests
- Coating thickness, adhesion, coating weight and hardness testing
- Paint, phosphate, electroplate and plastic coating testing and assessments

Metallography

- Metallurgical investigations
- Hydrogen embrittlement assessment using SEM
- Microstructure evaluation
- Cleanliness verification of components
- Weld assessments

Environmental control

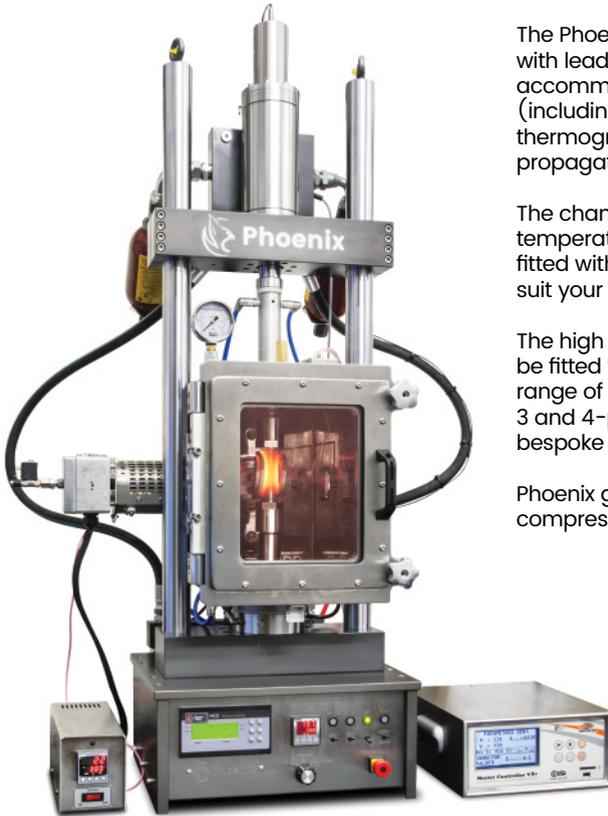
Phoenix specialises in the accurate measurement and control of complex environments. Our systems are equipped with the latest sensors for temperature, pressure, atmosphere, force and strain, combined with the Alpha Digital Control System's 20kHz control loop rate, we offer accurate and reliable closed loop control and measurement of all the key test parameters.

The Phoenix chambers are equipped with lead throughs and ports to accommodate strain measurement (including DIC), pyrometry, thermography, LVDTs and PD (crack propagation) systems.

The chambers are designed to work at temperatures up to 2000°C, and can be fitted with different heating systems to suit your testing requirements.

The high temperature loading bars can be fitted with adapters to accept a full range of sample geometries including 3 and 4-point bend, CT, LCF, HCF and bespoke customer design.

Phoenix grips are suitable for tension, compression and through zero testing.



Thermo Mechanical Fatigue

Phoenix offers sub contract TMF testing using the Phoenix Thermo Mechanical Fatigue software, which is written to the latest international TMF standard, plus additional features to allow tailored TMF research.

The Phoenix TMF system includes a dedicated 160kN hydraulic test machine, induction heating, forced air cooling, an emissivity compensating pyrometer, thermal imaging, high temperature extensometry, and environmental control.

The heating and cooling profiles can be phased in sync or out of sync with other modes of control (load, strain) as required.

Test Specification Consultancy

Phoenix engineers work with the customer to ensure that any test or test programme is as close to service conditions as possible, to avoid generating inaccurate or misleading data.

Where a customer does not have a detailed test specification Phoenix will offer expert advice and guidance on defining the test, in order to achieve the most appropriate and accurate data from any test carried out, including designing fixtures and instrumentation.

UKAS Flexible Scope

The Phoenix test laboratory has UKAS accreditation (flexible scope), this means that where results fall within the scope, regardless of whether the test has been defined by the customer, by an international standard, or agreed with by Phoenix, the results will be issued on a UKAS test certificate.

Any results which are traceable, but are not covered by the UKAS scope will be included in the report, but will be identified as not coming under the UKAS flexible scope accreditation.



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