



High Pressure Air Test Rig

Data Sheet

This piece of equipment was designed to **destructively test a component** (typically a small diameter pin) **in double shear**. Data is collected on the test piece chamber pressure and movement of a small piston through the test piece chamber.

Tests last for only a fraction of a second (typically 0.2 s but with a zone of interest of around 0.03 s) but a high sample rate means that there is **approximately 20,000 data points per test**.

Using the pressure and time data a **failure point could be accurately determined** by an algorithm in the software. There is also the option of taking a direct result from a small optical displacement device which looks at the movement of a piston when the test piece fails. Provision for micro-switch detection was also included to suit our customers' existing fixtures.

A range of test pressures and rates of rise can be achieved on the test rig. The equipment includes a **pressure boosting system** meaning that a **normal shop air supply can be used**. The system can take a regulated low pressure supply (approximately 5.5 bar) and boost it to just over 200 bar. This pressurised air is then stored in an on-board pressure vessel ready for testing.

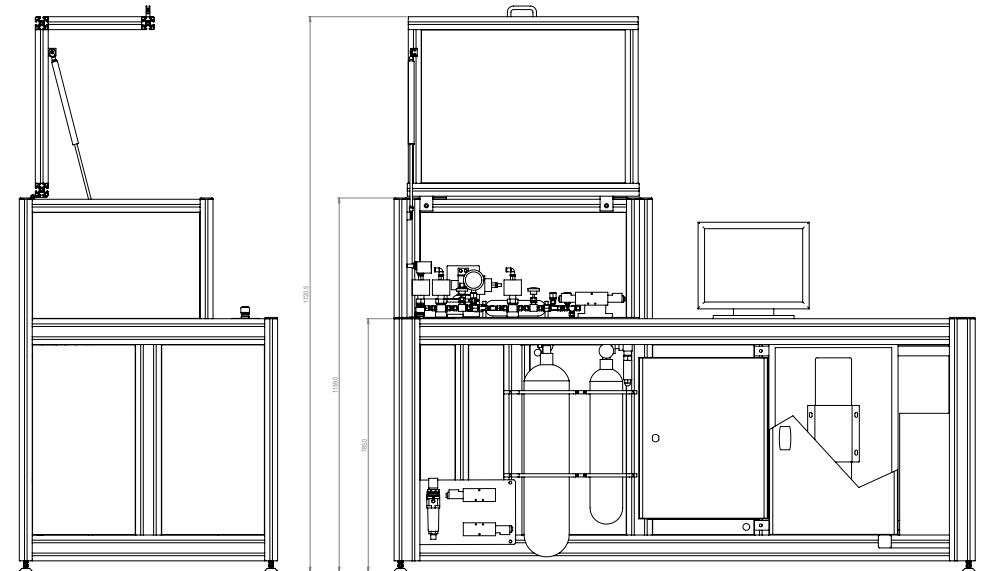
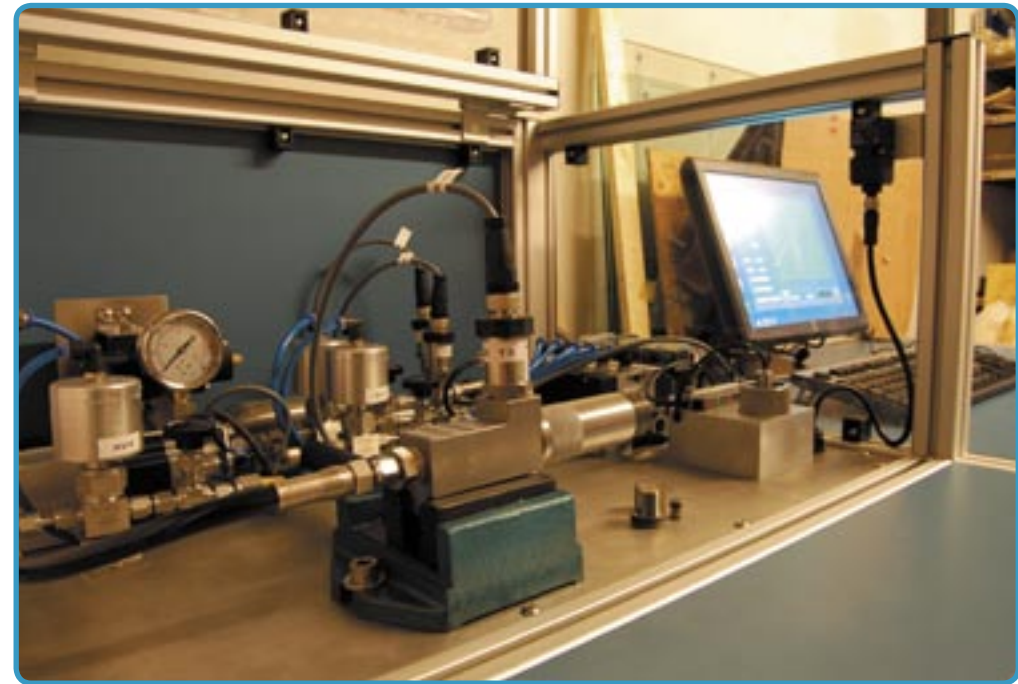
The rate of rise of pressure to the test piece can be controlled by a custom-built flow restrictor, which can be set via software automatically.

All the **control is through low pressure pneumatics** and the software **contains multifunction tests and tool wear analysis**.

This test rig was originally manufactured for testing aerospace components but could be used in any application where component performance against pressure and rate of rise of pressure are required. Applications include; seal and joint testing, shock loading, air bag components, pressurised valves, pipes and fittings, threaded connections and pump components.

Equipment capabilities:

- Maximum test pressure of 207 bar (3,000 psi)
- Maximum ramp rate of 3,400 bar/s (50,000 psi/s)
- Sampling rate of 100 kHz
- Tool wear analysis software



Contact us now for
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