



Multi-Purpose Aerospace Component Test Rig

Description

The test rig comprised of 3 main test fluids / mediums: air, water and vacuum. The air was supplied as dry, compressed bottled air through a standard regulator with an anti-whip hose connection and was mounted in the main test rig.



Pressurised Valve Torque Measurement

Maximum pressure was regulated using a 250 psig Fairchild regulator and displayed on a 290 psig (20 barg) 200 mm Budenberg pressure gauge, as with all 3 pressures. Air flow rate was measured using an MPB variable flowmeter, up to a maximum flow of 250 LPM. Water can be supplied at 2 distinct pressure ranges, mains pressure (approx. 2 barg) or up to 200 psig (15 barg) by way of a water pressure amplifier.

Vacuum is provided by an ejector design. This reduces down to a minimum pressure of -10 psig. The complete test rig was then mounted to an aluminium extrusion framework along with the associated valves, pressure gauges and items necessary to undertake all the various tests required.

Specification Summary

- Max air pressure = 20 bar
- Max air flowrate = 250 LPM
- Max water pressure = 15 bar
- Max vacuum = -10 psig
- Aluminium extrusion framework
- Central instrumentation & control panel
- Mains water connection & water tank
- Numerous jigs / fixtures to suit product variants



Test Rig

Disciplines Used

- Conceptual & mechanical design, stress FEA, manufacture and assembly