

Fluid Power Design Solutions are delighted to announce that they are authorised by the British Fluid Power Association (BFPA) to deliver on their behalf a one day, '**Hydrostatic Proof Pressure Testing Course**'. This adds to the suite of BFPA courses which **Fluid Power Design Solutions** have been successfully delivering since 2010. During the course delegates will be taught the theoretical and practical aspect of hydrostatic pressure testing with each delegate being trained to an assessed level, the following elements are covered:

Chapter 1 – Associated Dangers

- dangers associated with pressure testing
- fluid injection injuries
- a typical situation of trapped pressure
- different types of pressure tests and their definitions
- commonly referred to publications relating to pressure testing
- legionella and the possible contamination of pressure testing equipment when water is the test medium

Chapter 2 – A Safe System of Work

- what duty holders (the employer) involved in pressure testing must comply with under the Health & Safety at Work Act
- a safe system of work
- hierarchy for segregating items under test as identified in HSE document GS4
- examples of typical 'good practice' when undertaking a pressure test
- identification of 'controls measures' as identified in HSE document GS4 covering; test procedures, the maintenance and selection of pressure test equipment, test fittings, test hose assemblies, and physical safeguarding
- inspection of test hose assemblies (including common failure modes and discard criteria)
- air hose connections
- whip checks
- burst sleeving

Chapter 3 – Equipment and Supporting Information

- typical pressure test rigs
- methods of pressure generation
- the elements included within a typical pressure test rig
- pressure gauges, including what factors should be considered in order to select the correct pressure gauge
- recording the test results; chart recorders and data loggers

FLUID POWER DESIGN SOLUTIONS LTD

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ISO 9001 : 2015 Certificate Number 290302018 and ISO 14001 : 2015 Certificate Number 290312018

Chapter 4 – Selection, Storage and Maintenance of Components

- 'good and bad practice' for the storage of hose assemblies used for pressure testing purposes
- examples of factors that can adversely affect hose and hose assemblies in storage
- inspection of hose assemblies used for pressure testing purposes
- storage of test adaptors and related components
- pressure rating of test adaptors and related components
- damage to test adaptors and related components through repeated use

Chapter 5 – Threaded Connectors and Sealing

- methods of sealing and O-ring selection including; adjustable elbows with no 'retaining ring', adjustable elbows with a 'retaining ring', bonded seals with self centralising web, bonded seal without self centralising web, O-ring, copper washer and elastomeric seal
- correct measuring of O-rings
- bonded seals including factors which influence their burst pressure
- understanding how to correctly identify an end termination by following 8 steps using a range of measuring instruments and gauges in conjunction with tabulated data to positively identify a range of end terminations
- understand the main characteristics and geometry of the male and female end termination along with how it seals for a range of end terminations including BSP (60° cone O-ring and non O-ring, elastomeric and metal to metal sealing), BSPT, JIC, SAE 45° flare, Flange, ORFS, Metric (light and heavy), Metric port/stud end, French GAZ, NPT/NPTF, BSP – Japanese, SAE port/stud end, Metric – Komatsu, and Staple type connectors
- the differences between NPT/NPTF and BSPT threads
- application of PTFE Sealing Tapes, thread sealants and anaerobic adhesives
- 'medium pressure' (20k) and high pressure (up to 60k) cone and threaded connectors; tubing, sealing methods, identification, and assembly

Chapter 6 – The Pressure Test

- International Standard and scope relating to pressure testing
- Containment (GS4)
- Hierarchy of control measures (GS4)
- testing of hose assemblies having a volumetric capacity greater than that of the pressure test rig reservoir
- typical durations of the pressure test
- common pressure test ratios (based on working pressure of the hose/hose assembly)

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- common test fluids
- pressure testing procedure, including a practical element for each delegate
- reporting the results

On completion of the course each candidate receives a copy of the spiral bound course material, a certificate of attendance and is registered with the BFPA as having completed the course.

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