

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, '**Small Bore Tubing Integrity Course Using Twin Ferrule Compression Fittings**'.

This is a one day course covering the various theoretical and practical elements involved in the management of integrity for Small Bore Tubing (up to and including 2" and 50mm) Assemblies using twin ferrule compression fittings.

The content is designed to meet the requirements of Maintenance Personnel, Technicians & Instrumentation Engineers involved with the installation and maintenance of Small Bore Tubing systems.

Chapter 1 – Twin Ferrule Compression Fittings

- correct tightening, including the use of gap gauges
- pre-swaging
- disassembly and reassembly
- common installation problems
- visual identification of metric and imperial fittings
- recommendations for clamping of small bore tube
- tube fitting identification marks
- twin ferrule fitting sealing areas
- different profiles of the ferrules used by different manufacturers
- installation procedures for port connectors
- assembly procedures for plugs and caps
- assembly procedures for tube insert and plastic tubing

Chapter 2 – Tube Versus Pipe

- definition of tube and pipe
- the advantages of tubing over pipe
- bending quality tube and the use of less fittings
- tube selection
- tube hardness
- surface condition
- gas services
- good and bad tube storage
- tube materials, wall thickness and typical working pressures
- temperature reduction factors

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

Chapter 3 – Tube Preparation

- correct handling of tube
- common tools and how they should be used in the preparation of tube

Chapter 4 – Tube Bending Principles

- main parts of a tube bender
- spring back during the bending process
- defective bends
- recommended free tubing length
- tube gain
- tube line fabrication
- basis for measurement when producing a bend
- managing the change to the plane of bending
- marking the tube
- positioning the tube
- producing an offset bend

Chapter 5 – Planning the Route

- good and bad practice for tube runs
- working to a sample drawing considering tube gain and offset bend allowance in order to calculate the correct length

Chapter 6 – Associated Threads

- understand how to correctly identify an end termination by following 8 steps
- use 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 along with how it seals for the following end terminations: BSP port/stud, BSPT, JIC, Metric port/stud, NPT and SAE port/stud
- understand how to correctly tighten adjustable (positional) elbows

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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