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THE FPDA 
MOTION & CONTROL NETWORK

Introduction to Industrial Fluid Power Concepts and Components

Course Description: This course is designed to introduce the student to how fluid power is used in industry and show students the major components that can be found in fluid power systems. Hydraulic components and systems will be discussed in general as the instructor builds a hands-on working tabletop model of a complete hydraulic system.

Prerequisites: None

Textbook: ITZ 3-Ring with Additions + Womack Fluid Power Data Booklet

Learning Objectives:

- List advantages and disadvantages of a hydraulic system vs. a pneumatic system.
- Define flow rate and the term GPM & LPM.
- Define force and the term PSI.
- Describe the main function of reservoirs.
- Describe the main function of pumps and list different types.
- Describe the main function of cylinders and motors.
- Describe the main function directional controls.
- Describe the main function of pressure controls.
- Describe the main function of flow controls.
- Define the term and concept of filtration.
- Describe the main function of accumulators.
- Describe the main function of flow dividers, flow meters, gauges, and pressure taps.
- List the terms and uses of fittings, tube, pipe & hoses.
- Explain the use and look of schematics.
- Outline hydraulic safety including lockout tag-out procedures.