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Troubleshooting using Industrial Hydraulic Schematics

Course Description: This course begins with a brief review of fundamental fluid power principles and hydraulic schematic symbols. Various types of hydraulic circuits are explained so the students develop a broader understanding of symbol (component) arrangements and feel comfortable explaining them. Troubleshooting methodology is provided using the hydraulic circuit, to group and isolate the potential problems when symptoms such as improper speed, pressure, heat, noise, leaks, and specific failures have been identified. It then covers reasons for failure of cylinders, pressure relief valves, flow controls, directional controls, hydraulic pumps and motors, and other hydraulic accessories.

Prerequisites: Understanding of basic fluid power physics and knowledge of component construction and operation.

Textbook: Custom Binder, Lightning Reference Book

Learning Objectives:

- Relate the fundamental concepts of pressure, and flow.
- Know basic characteristics of hydraulic fluid.
- Review the 7 Basic symbols
- Introduce assorted symbols and legends
- Learn how to build simple and complex symbols from the Basics
- Understand how to read simple and complex circuits
- Draw simple circuits
- Troubleshooting Techniques
- Divide and Conquer technique
- Grouping and Isolation
- Organizing sequence of actual diagnostic procedure
- Making economic choices when several possibilities are analyzed