SNO-MOTION SOLUTIONS

Industrial Hydraulic Technology

I. Program Description

SNO-Motion's Industrial Hydraulic Technology course is a 4 1/2 day overview of industrial hydraulic components and circuits. This hands-on course consists of about 25% lab time as students gain a working knowledge of hydraulic equipment.

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A. Aims/Objectives

In this course students will:

- Learn where and why hydraulics are used in industrial machinery
- Understand how and why hydraulic systems and components work
- Learn to read and draw hydraulic schematics

B. Major Topics Covered

- A practical study of pumps, flow valves, pressure valves, directional valves, hydraulic motors, filters, cylinders and accumulators
- Hands-on experience, designing and building hydraulic circuits on system simulators
- Some trouble shooting tactics
- A practical study of hydraulic flids

II. Who Should Participate

Maintenance or non-engineering personnel and anyone who desires to increase their basic knowledge of hydraulic components and systems.

III. Session Information

Classes are conducted several times per year. For scheduled dates, contact our offices.

SNO-Motion Solutions
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Fax: 801.263.6404

To Apply forTraining Class on Line:
http:www.sno-motion/trainingsignup
and choose the appropriate class title.

Course Outline

Note: This course outline is presented to show the areas of discussion contained in the 3-day training program. During the course, variations in the outline may occur - this would be left up to the instructor's discretion and would only be made to improve the class.

A. Monday

1. Introductions
2. Definitions of some basic fluid power terms and discussion of some physical concepts as they apply to industrial machinery.
3. Explanation of the basic operation of transmitting force an energy through a hydraulic system.
4. A discussion of the how and why of cavitation with examples; how it differs from entrained air, and how it can be prevented.
5. A discussion of hydraulic fluids.
6. An introductory discussion of hydraulic actuators and basic calculations of force, speed, torque and power.

B. Tuesday

1. An introduction to hydraulic valves, presentation and discussion of hydraulic symbols.
2. Review of previous day's material and an in-depth activity of developing a simple hydraulic system (log splitter).
3. Movie entitled "Hydraulic Transmission of Power." An introduction to hydraulic applications.
4. Detailed discussion of check valves, cylinders and accumulators - - how they work, how they are used in applications, and potential problems.

C. Wednesday

1. Detailed discussion of flow control valves. Discussion will involve how they work, how they are applied in circuits, and potential problems.
2. Detailed discussion of directional control valves regarding types, applications and some basic troubleshooting.
3. Participants connect and operate hydraulic circuits on trainer stands.

D. Thursday

1. Detailed discussion of pressure control valves such as system relief, counterbalance, sequence, unloading and pressure reducing valves. The description of operation and typical applications are discussed.
2. Detailed discussion of pilot operated pressure control valves. The description of operation and typical application are discussed.
3. Participants connect and operate hydraulic circuits on trainer stands.

E. Friday

1. Various standard types of hydraulic pumps, their operation and energy saving applications are discussed.
2. Hydraulic motor types, their application and operation are discussed.
3. Discussion of filtration, sources of dirt and its harmful effects upon hydraulic circuits.
4. Course review.