



DOHS

Design of Hydraulic Systems

5-Day Course

Advanced maintenance technicians and hydraulic project engineers learn to properly select hydraulic components that will produce efficient hydraulic circuits and hydraulic circuits that properly control the machine or process.

What you will learn –

- The concepts of “fast” and “slow” hydraulic systems
- The principles of speed control (throttle valve speed control systems)
- The proper use of energy (power) in a hydraulic system to achieve optimal performance
- The use of energy (power) in a hydraulic system to achieve optimal efficiency
- Hydraulic valve performance characteristics through proper interpretation of valve catalog data
- Sizing of hydraulic valves through proper interpretation of valve catalog data
- Calculation of pressure requirements – calculation of actuator and total system flow requirements
- Calculation of system power requirements
- The proper control of pressure spikes and hydraulic related shock
- Evaluating the load and calculate the reflected mass at the hydraulic actuator
- Analyze the static and dynamic load requirements and convert these calculations to pressure, flow rates and a possible hydraulic control circuit type
- Concepts of minimum acceptable acceleration and deceleration times
- Introduction to the use and calculation of natural frequency
- Considerations of appropriate pump systems

This 5 day training course is a must for plant personnel tasked with hydraulic system improvement or with the development of initial design concepts for a new hydraulic application. Students receive the tools they need to properly evaluate the load to be moved and controlled and to select appropriate hydraulic valves for this purpose. Classroom lecture and discussion will be balanced with various system component selection and sizing problems. Note: *Students are required to bring calculators to this training course*

Prerequisites: Students will gain admittance to DOHS only after their successful completion of the FOH seminar. Students must have the ability to manipulate and transpose various hydraulic related algebraic equations.

Classroom lecture, discussion and student work problems

Tuition: \$1,600.00 (includes seminar fee, all student materials, text book, daily lunch & refreshments)