Hands on Hydraulics

HOH

Topical Outline

- Review of hydraulic principles – pressure, flow, power, throttle valve speed control
- Using relief valves as…
  1. System relief valves with fixed pumping equipment
  2. Spike pressure reliefs with pressure compensated pumps
  3. Protecting cylinders – port reliefs
  4. Protecting hydraulic motors – crossport reliefs
  5. Standard or proportional relief for remote pressure control for a variable displacement pressure compensated pump
- Relief valve lab exercises – demonstrate proper setup procedures for relief applications
- Using reducing valves as
  1. Motor torque control
  2. Cylinder force control
  3. Circuit pressure reducing with a sandwich reducing valve
- Reducing valve lab exercises – demonstrate proper setup and adjustment with subplate mounted valves and with sandwich style valves
- Understanding load control with counterbalance valves
- Using directional control valves – understanding spool types uses with various circuit functions
- Understanding pilot operated directional control valves
- Evaluating a pilot operated D.C.V. model code
- Pilot operated D.C.V. lab exercise – disassemble, compare to the model code, assemble, and place into an operating circuit
- Using pressure regulating variable displacement pumps
- Understanding remote pressure control with pressure compensated pumps
- Understanding load sensing control with pressure compensated pumps
- Using HP control with pressure compensated pumps
- Pressure regulating pump pressure compensation and spike pressure relief lab exercise
- Pressure regulating pump lab exercises – remote pressure control & load sensing control
- Understanding the operation and use of bladder type accumulators
- Checking and setting accumulator precharge pressure
- Reading and interpreting industrial machine hydraulic schematics