

Corporate Office

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Troubleshooting Mobile Hydraulic Systems

Course Description: This course covers the fundamentals and principles of troubleshooting mobile hydraulics. Review of basic fluid power principles and common symbols set the foundation. Safety, followed by leak prevention and proper installation of hoses and conductors is explained. Over 80% of all hydraulic failures are due to the oil condition. Filtration and oil handling is explained. Adjustment procedures of pump controls, speed controls, and pressure valves are reviewed and explained. Troubleshooting and review of several machine circuits is included. Customers are encouraged to send copies of machines they would like reviewed in place of those provided by instructor.

Prerequisites: None

Textbook: Handouts are provided

Learning Objectives:

- Explain the adjustment, construction, operation and application of actuators, pressure controls, flow controls, directional controls, pumps, cartridge valves, reservoirs, accumulators, heat exchangers, filtration units, flow meters and gauges used on mobile equipment
- Compare pressure compensated vs. non-compensated flow control function
- Distinguish between meter-in verses meter-out operations and effects
- Explain the different types of pump controls and power steering units
- Explain how hydrostatic systems work and the logical way to troubleshoot
- Identify schematic symbols of hydraulic components covered in class
- State the relationship between hydraulic pressure and flow
- State and explain the terms GPM and PSI
- Compare area ratios for speed and force output
- Explain how to prevent leaks using proper seals and seal materials
- Explain how to determine if a component has failed