DCHM
Design Considerations for Mobile Hydraulic Systems

Bosch Rexroth Canada
490 Prince Charles Drive South
Welland, ON L3B 5X7
info@boschrexroth.ca
www.boschrexroth.ca/training

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

Format:
Classroom lecture, discussion and student work challenges

Tuition Includes:
Seminar fee,
All student materials,
Text book,
Daily lunch & refreshments

Who should attend?
Advanced maintenance technicians and hydraulic project engineers learn to properly select hydraulic components that will produce efficient hydraulic circuits that properly control mobile equipment.

This 5 day training course ...

is a must for mobile hydraulics technicians and engineers tasked with hydraulic system improvement or with the development of initial design concepts for a new mobile 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 for various mobile hydraulic systems:

- Review of hydraulic principles – calculation of required pressure, required flow and required power
- Hydraulic actuator (cylinder or motor) speed control – throttle valve principle or displacement controlling pumps
- Open pump loop verses closed pump loop with displacement controlled pumps
- Selection of relief valves for system pressure control, cylinder port relief, motor cross port relief applications
- Selection and sizing of pressure reducing valves
- Selection and sizing of standard directional control valves and mobile modular directional control valves of various spool types
- The use of hydraulic proportional directional controls with reducing type pilot control units (foot pedal and joy stick)
- Load sensing/compensation type directional controls
- Flow dividers for unequal loads on multiple actuators
- Directional control valve circuits
- The operation and possible requirement for load holding and load control circuits
- Pressure controlled variable displacement open loop pumps operation, application/selection and sizing
- Displacement controlled pumps in open pump loop operation, application/selection and sizing
- Displacement controlled pumps in closed pump loop operation (hydrostatic drive) with hydraulic motor/s
- Application and sizing of fixed displacement and variable displacement hydraulic motors
- Student sizing and selection work problems
- Fluid conductor sizing – the proper use of pressure rated h ose and other fluid conductors
- 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

Note:
Students are required to bring calculators to this training course