

Technical Workshop:

Title: TWP 503 – Design of Electrohydraulic Motion Control Systems

Duration: 20 hours

Content:
1. Hydraulic and electrohydraulic control system concepts and historical review.
2. Fundamental physical principles of hydraulic power: Pascal's law, conservation of mass and energy (Bernoulli's equation), analogy between hydraulic and electrical systems.
3. Electro-hydraulic control system components: pumps (gear, axial and radial piston, vane types), motors and cylinders.
4. Electro-hydraulic control system components: valves (ON/OFF, proportional, seervo valves), flow rate controlled valves, pressure regulating valves, pressure compensators, relief valves.
5. Hydraulic reservoirs, accumulators, filters, coolers.
6. Component sizing in hydraulic systems: pump, valve, motor/cylinder, accumulators, reservoirs.
7. Open center versus closed center hydraulic systems
8. Load sensing hydraulic systems.
9. Analysis of electrohydraulic control systems: closed loop control, bandwidth limitations.
10. Examples of electrohydraulic circuits: wheel loader examples from Caterpillar, Komatsu, John Deere and Volvo models.
11. Examples of electro hydraulic circuits: excavator examples.
12. Examples from flight control systems: Airbus A320 flight control systems.
13. Design analysis with Matlab/Simulink/xPC.

Registration Information:

Dates:
Location:
Cost : $1450.00 /person, 10% discount for each additional person from the same company.

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