

Simulation Case Study

Simulation
Services

Analysis &
Optimization

Component
Testing

Hardware
Development

Energy efficient luffing gear hydraulic for mobile harbour cranes

The luffing jib of Konecranes's mobile harbour cranes is moved hydraulically.

Due to the high handling performance, this motion task is characterised by high dynamic forces.

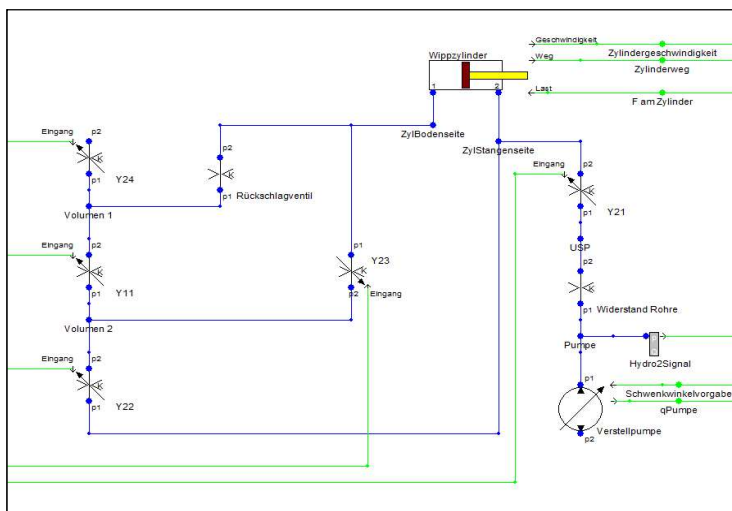
To reduce energy consumption, a new hydraulic system for the luffing cylinder control has been developed.



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Task

- Comparison of energy efficiency between current and new hydraulic system
- Analysis of component requirements in a typical load cycle



Realization

- Modelling of hydraulic components
- Integration of the kinematic and kinetic formulas for calculating the force on the cylinder
- Development of control strategies
- Integration of a typical load cycle into the simulation models
- Evaluation of component requirements and comparison of energy efficiency