

Engineering Case Study

Simulation Services

Analysis & Optimization

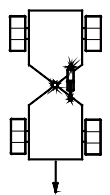
Component Testing

Hardware Development

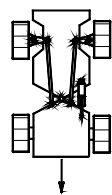
Task

➔ Investigations on the steering dynamics of wheel loader

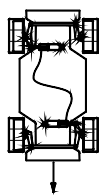
Examined wheel loaders with different steering concepts



articulated steering

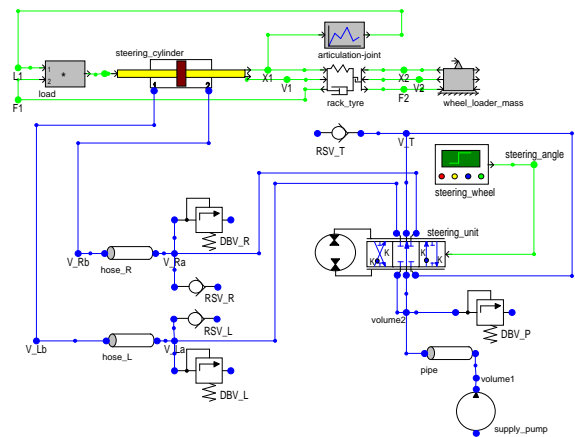


combined kingpin/articulated



kingpin steering

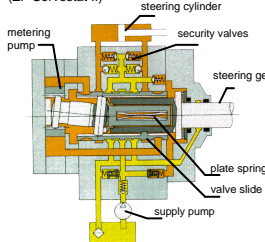
General simulation model of a wheel loader steering unit



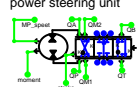
Setup of the power steering with DSHplus

The power steering unit

Cross-sectional drawing of a power steering unit (ZF-Servostat II)

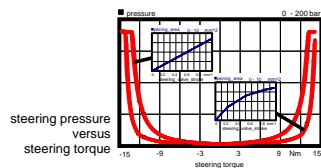


Symbol of the power steering unit



Required geometric parameters

- displacement volume of the metering pump
- opening profiles of the metering edges
- torsion spring stiffness
- maximal stroke
- thread pitch



Comparison of measurement and simulation

