



Accurate · Fast · Robust · Versatile

SIMPACK ENGINE

Application

What is SIMPACK?

SIMPACK is a general-purpose multi-body simulation (MBS) software tool which is used to aid the development of any mechanical or mechatronic device, ranging from single components through to complete systems (e.g. from single valve train and timing mechanism up to complete engine systems). All SIMPACK products are 100% compatible.

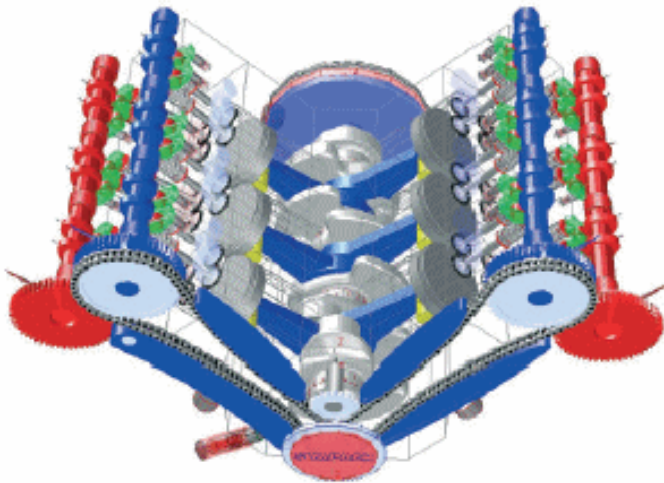
SIMPACK Engine is an add-on module tailored to the specific requirements of the engine simulation sector.

Applications:

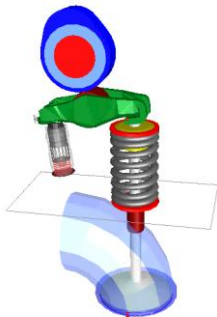
- Single valve train simulations
- Complete valve train simulations
- Crank train simulations
- Timing mechanism analysis
- Accessory drive
- Complete system behavior

Highlights:

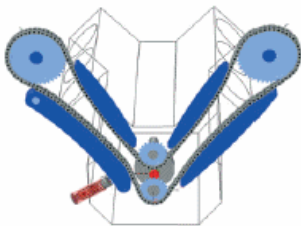
- Pre-defined and fully parameterized database models of all common engine types
- Scalable level of model detail and complexity (e.g. flexible bodies)
- Substructure technique
- Re-use of verified components in SIMPACK
- Complete system simulations
- Extreme non-linear system behavior
- Unlimited modeling flexibility
- Reasonable computation times due to SIMPACK specialized solvers and relative coordinate algorithm
- Batch jobs
- Interfaces to third party software



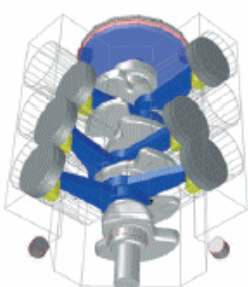
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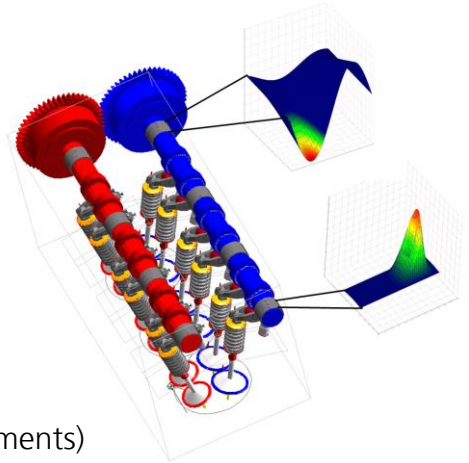


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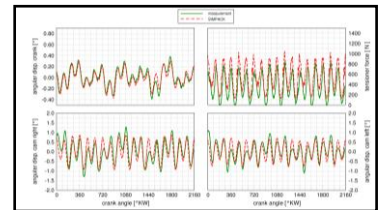
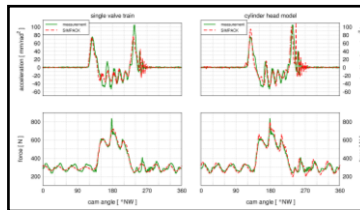
Features:

- Rigid and flexible bodies from FEM codes
- Flexible body generation within SIMPACK
- 2D and 3D contacts (incl. flex body contact)
- Easy implementation of user specific code
- Hertzian contact and friction
- Detailed dynamic spring modeling
- High level engine specific MBS elements (hydraulic lash adjuster, hydrodynamic bearings, frequency and amplitude dependent elements)
- Detailed chain modeling (roller-, silent- and SMART chain)
- Detailed gear pair modeling



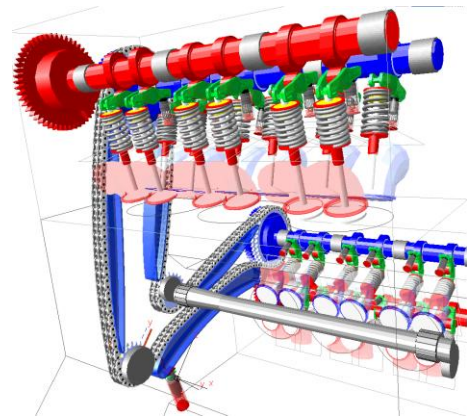
Interfaces to:

- CAD software
- FEM software
- Control software
- Hydraulic and Fluid dynamics software
- Fatigue analysis software
- Optimization tools



Operating systems:

- Windows and Linux.
- See: www.SIMPACK.com/platforms.html



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