

Introducing...



MBD for ANSYS

Multi-Body Dynamics

Powered by RECURDYN

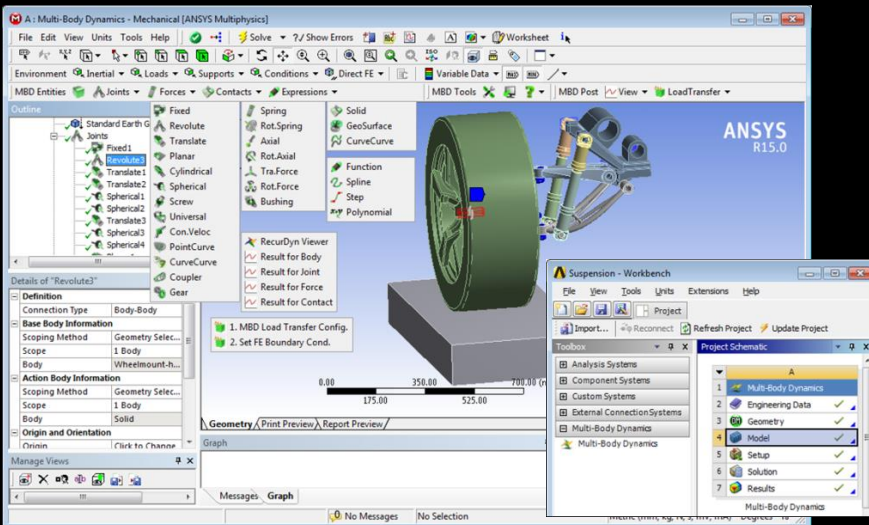
You love ANSYS! But have you ever wanted access to a strong Multi-Body Dynamics (MBD) capability from within Workbench? It would be great to simulate the motion and all of the related physics of your mechanical assemblies. You could understand the behavior of your assembly up-front and you could generate the loads needed for your component-level FEA.

A strong MBD capability in Workbench:

- Models contacts easily and quickly solves models with contacts,
- Defines load cases by selecting output points from the work cycle and automatically defines the static structural systems for the selected component,
- Provides MBD-specific advanced post processing, and
- Provides a way to transfer your full MBD model to an advanced MBD tool when needed.

We conceived and developed MBD for ANSYS after considering the requirements and potential benefits just listed. As the group of people who develop and provide the RecurDyn line of MBD software we have a unique ability to create and maintain a powerful MBD tool for the ANSYS community.

Fully-Functional MBD Software Embedded in Workbench

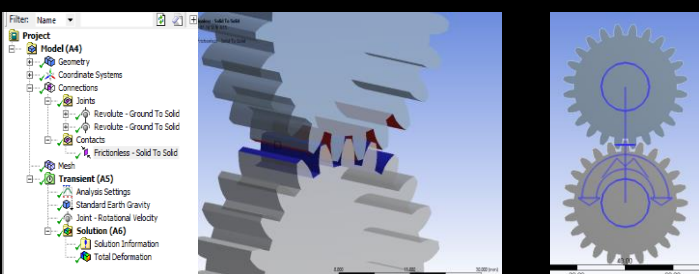


MBD for ANSYS is tightly integrated into Workbench with capabilities for

- MBD Model Development
- Editing and Analysis
- Post Processing

All of the MBD for ANSYS menus fit in the bottom row of the Mechanical window shown in the figure, and selected menus are expanded. A new Multi-Body Dynamics system is defined in the Workbench window as shown.

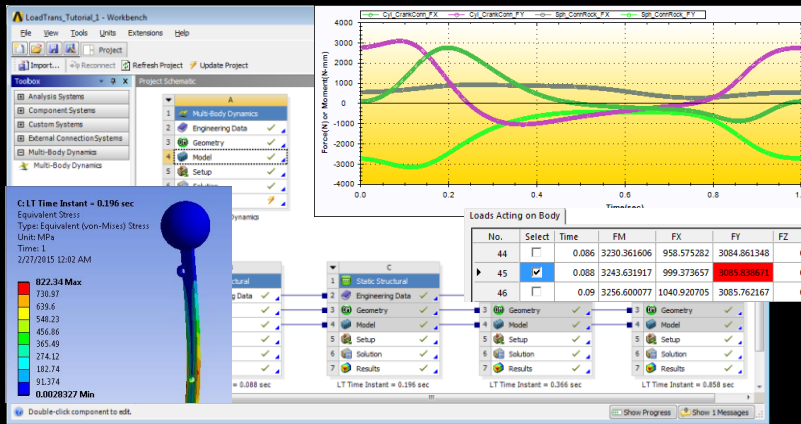
High Performance Contact Modeling



MBD for ANSYS uses RecurDyn technology to solve contacts efficiently.

For example, the gear pair shown has many surfaces on each gear that can contact each other. The gear pair rotates at a high speed for 0.1 seconds and is simulated in 12 seconds.

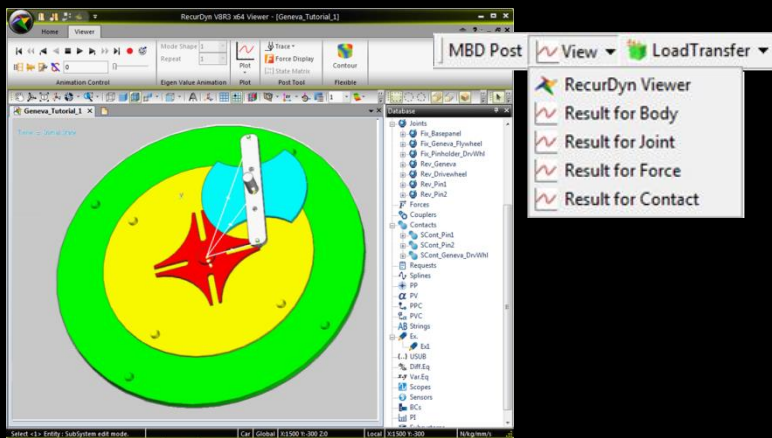
Automated, Intelligent Load Transfer Function



Load transfer consists of these steps:

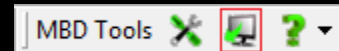
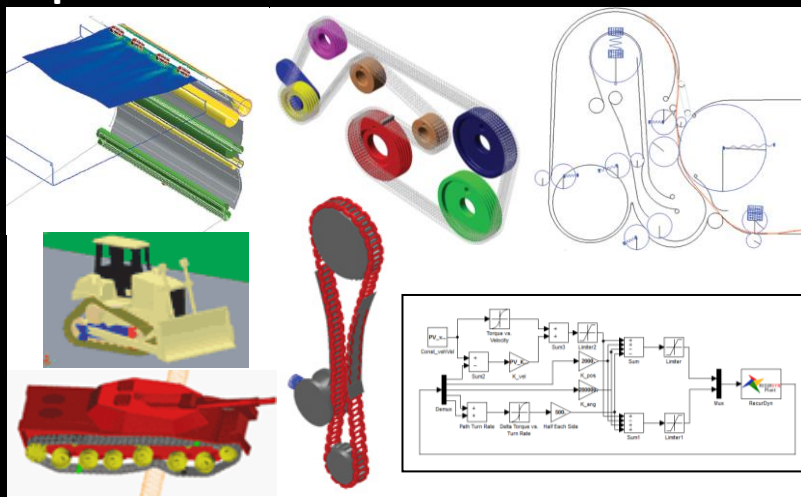
1. The user runs the MBD simulation.
2. A body is selected.
3. Forces on the body are plotted and the user selects output times in the simulation that have loads of interest.
4. A static structural system is created in the project schematic window for each load case, including connections.
5. The body loads are mapped to regions on the body geometry.
6. The loads cases are analyzed.

Advanced MBD Post Processing Tool



- Plot output forces within Mechanical.
- Run animation and advanced plotting with a click on the RecurDyn Viewer command.
- Define combined views of animations / plots.
- Animations can be saved to an avi file.
- Curve data can be mathematically processed and filtered.
- Plot data can be exported to a text file that can be imported by Excel.

Export the MBD Model to the Standalone RecurDyn Software



- A single command exports MBD models and the resulting files into standalone RecurDyn/Professional.
- All geometry, joints, forces and contacts are retained.
- Add controllers, belts, chains, bearings,
- Add flexible media (paper/film).
- Add track assemblies for construction equipment and military vehicles.
- Do system-level optimization and more.

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Product trials are available



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