IX Generative Part Structural Analysis
Perform Fast and Accurate Part Stress Analysis

IX Generative Part Structural Analysis permits designers to perform fast and accurate part stress and displacement analysis. Its transparent and automated approach to part stress analysis is based solely on interactions with the physical definition of the part and its environment (as opposed to interacting with a Finite Element Model (FEM) model). It permits more design/analysis iterations of part behavior, earlier in the design cycle, to improve product performance. As a result of a common interface and unique integration with the IX V5 geometric modeler, IX Analysis provides an easy-to-use and easy-to-learn scalable environment for designers and design engineers.

Features:

· Promotes designer assessment of parts' mechanical behavior and sizing

· Unique native and associative CAD/CAE integration

· Fast and accurate stress and displacement results

· Easy to learn and use

· Tightly integrated with knowledge-based engineering

Key Benefits:

No boundary between design and analysis. IX Analysis is an easy-to-use tool aimed at designers and design engineers. Due to native CAD/CAE integration, you can easily perform stress and displacement analyses of designs at any time in the design process. Structural analysis can be performed on solid, surface and wire frame geometry. The association of the analysis specifications, such as loads and restraints, with the design ensures your ability to work quickly and consistently. You can size and validate your designs early in the development cycle, saving time and improving quality.

Straightforward definitions. Through a simple selection of geometric features, designers can define how a part is restrained and loaded. These specifications are, then, automatically incorporated in the Finite Element Model (FEM), freeing you from dealing with a complex FEM definition. In addition, a panel is available to help you understand how the FEM is related to the design and to check its consistency. The restraint types include clamps for completely fixed parts and sliders that represent sliding surfaces. Loads can include pressure, traction, moment of inertia, gravity, body forces, centrifugal forces and mass.
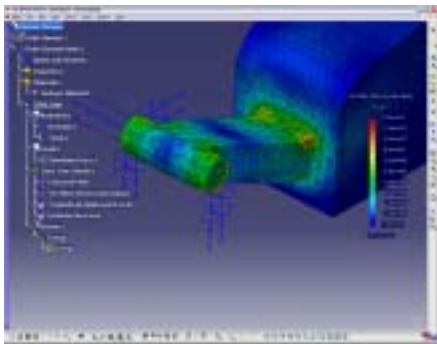
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High performance. Using the latest version of the Elfini sparse solver tool, you can minimize the amount of consumed memory, gain time and therefore perform large analyses quickly.

Productive analysis through easy and fast computation on large models. Launch simultaneous computations on different processes easily, without having to go through complex Microsoft® Visual Basic macro definitions. Simultaneously perform large model computations while continuing to work on other processes, greatly increasing your productivity.

Direct and dynamic results review. IX Analysis helps designers understand the results of an analysis by graphically displaying areas of high stress and large displacement. Detailed analyses on complex parts can be handled in an intuitive and interactive manner. This includes producing cross-sectional displays of contours, which can be manipulated dynamically. Values such as Von Mises stress criteria, displacement, and principal stresses are mapped onto the deformed 3D part and displayed as color contours. Results can also be displayed as arrows mapped onto part surfaces. Accuracy of results can be assessed by displaying a color contour plot that helps support decisions on further analysis refinement.

Controlled accuracy. If needed, you have the ability to create, modify and remove the finite elements and their properties, which are automatically generated. You control the size of the mesh on the entire part or on a specific area. You also can employ linear or parabolic elements based on the required precision.

Knowledge-based technology. You can capture the knowledge associated with your design analysis and perform optimization. The generative analysis specifications are recognized as knowledge parameters called sensors, providing measures that can be reused. So you will be able to set rules, checks, and formulas to use best practices and ensure compliance to corporate standards.

Report generation. Automatically generate reports in HTML format. These reports provide clear and detailed information about the results of the analysis, including images associated with computations. This information is structured in a format which is easy to understand.

Data management. You have the ability to manage the external storage and the temporary data directory. In addition to interactive analysis, you can use a batch method to launch its analysis computation, enabling the concurrent engineering.

Prerequisite:

IX Design V5

IX Generative Part Structural Analysis means that detailed analyses on complex parts can be handled in an intuitive and interactive manner.

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