



StressCheck® Handbook Increases Productivity and Serves as a Repository for Corporate Design Knowledge – With a Confirmation of Reliability

StressCheck Handbook gives you the power of all the technology and functionality that is built into StressCheck. The hierarchical element formulation and modeling framework gives you confidence that the results are reliable.

StressCheck Handbook was designed to provide standard solutions for routine design and analysis tasks in a highly user-friendly environment, with confirmation of reliability. Parameterized models of complex parts and details developed by qualified analysts are delivered in a very convenient and highly reliable handbook environment for use by designers and analysts.

StressCheck Handbook serves as a repository for standardization and corporate design knowledge. You are no longer constrained by the limitations of classical handbooks. Automated reports and results in graphical or tabular form let you assess the solution quality and focus on the appropriate criteria for design or certification. Whether you are an analyst or a designer – StressCheck Handbook is an important tool for you.

“The handbook functionality of StressCheck allows skilled engineers to develop reusable models of typical joints. ... This commercially available structural analysis tool is being used across the DoD and the commercial aircraft industry. ... This software and associated handbooks are saving substantial cost and time across the industrial base. ... In essence, these handbook models have captured the knowledge of expert ... analysts so that it is automatically applied in future joint designs of advanced ... systems.”

**Air Force SBIR/STTR
Transition Story**

“[StressCheck] includes an FEM-based handbook format which allows non-experts to utilize models prepared by specialists. The handbook problems include built-in failure criteria, geometric and material nonlinearities, and the modern FEM technology provides better error control and the treatment of very large aspect ratios.”

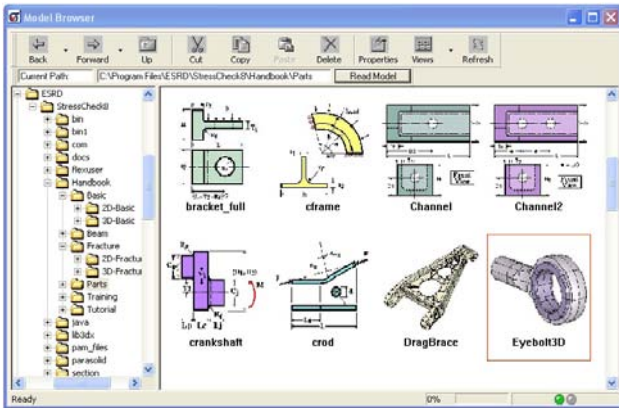
Lockheed Martin



A powerful, reliable tool for detailed stress analysis of parametric models and complex structures – from unique modeling capabilities, to advanced analysis technology, to powerful post-processing functions. Only StressCheck® brings this power to you in an easy to use framework. See why StressCheck Handbook can be one of the most important tools in your design and analysis toolbox. Try StressCheck today!

STRESSCHECK HANDBOOK

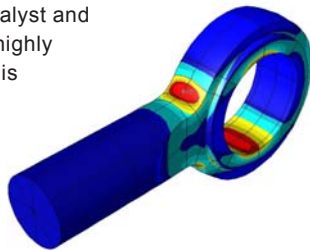
StressCheck Handbook provides standard solutions for routine design and analysis tasks in a user-friendly environment – with confirmation of reliability. StressCheck Handbook is not only a library of parametric models, it is also a framework for the creation of new component models, for the standardization of design and analysis procedures, and serves as a repository preserving the corporate knowledge of experts.



StressCheck Handbook supplements classical handbook solutions and legacy tools in various ways:

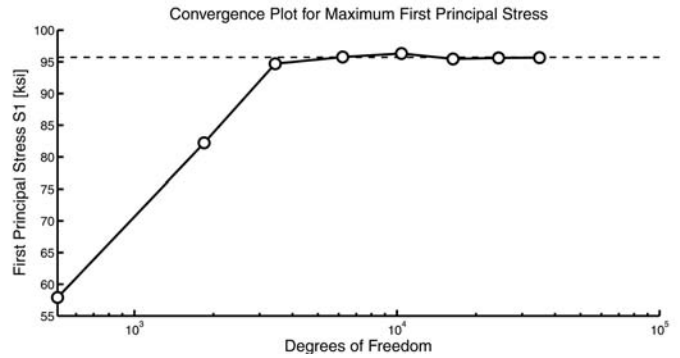
- StressCheck Handbook allows for a much greater variety of parametric models than classical handbooks. This is because the analysis is powered by an advanced FEA technology.
- You are no longer constrained by over-idealizations typical of classical handbooks that do not accurately describe real world problems.
- Anisotropic materials, orthotropic materials, elastic-plastic materials are analyzed with ease.

Parameterized models of complex structures can be developed by a qualified analyst and delivered in a very convenient and highly reliable handbook environment. This corporate knowledge can be used by designers and analysts, experts and non-experts. StressCheck Handbook models can include virtually all relevant design variables necessary to

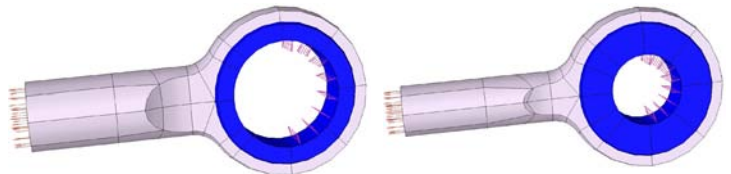


define the configuration. Importantly, the StressCheck Handbook framework enables you to store all relevant results. A report is generated automatically and includes an assessment of the solution quality, based on convergence estimates and specified failure criteria. All of StressCheck's powerful post-processing options are available to StressCheck Handbook users.

Error In Global Energy Error Norm		
DOF	% Error	
510	36.71	
1845	16.08	
3438	5.40	
6213	2.65	
10398	1.34	
16341	0.88	
24390	0.63	
34893	0.47	



StressCheck Handbook capitalizes on the parametric features of StressCheck. The geometric objects are parameterized and the mesh is associative with the geometric objects. You can establish limits on the range of parameters to ensure that the integrity of the model is preserved as the parameters are changed. The material properties, loads and constraints can be defined parametrically as well. For example, when the hole and pin diameters of an eyebolt model are changed, the loads applied in that region will automatically update to match the new geometry. Users need to be concerned only with the design parameters, not with the details of finite element analysis. The



data of interest, together with accuracy estimates are presented to the user in a format that can be conveniently inserted into a stress report. And of course, all of StressCheck's features are available, should analysis be required in addition to that stored with the model.

StressCheckHandbook entries can be constructed utilizing all of StressCheck's advanced capabilities, such as linear and nonlinear analysis; fracture mechanics; modal and buckling analysis; heat transfer; cold working analysis; and margin of safety computations.

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314-744-5021