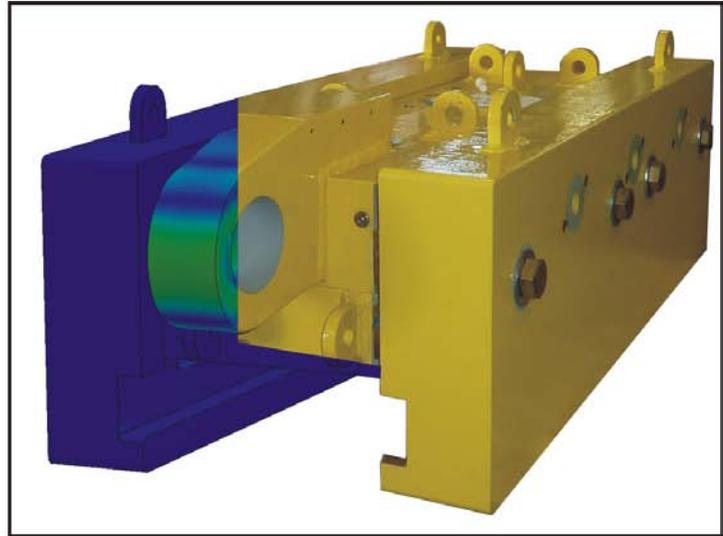
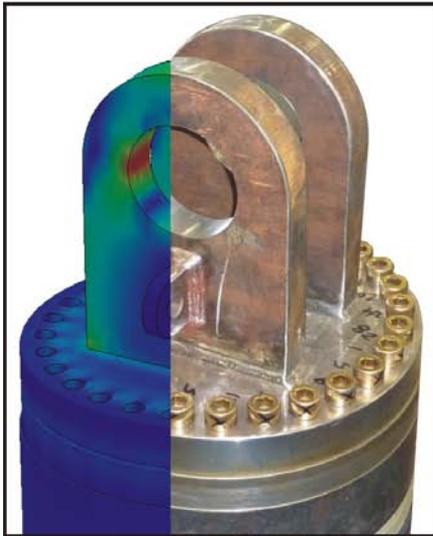


Bardex Engineering Tools – FEA

Finite Element Analysis (FEA) is a technique that is used to predict and analyze stresses in a design. FEA software enables an engineer to quickly set up a model, run a simulation and display the results graphically.



Bardex engineers use FEA to evaluate designs; an engineer can open a 3D solid model (we currently use SolidWorks) and run virtual stresses against it. Forces can be directed at the 3D model at the same angles and strengths that the part or assembly will see in use. Based on the results, the engineer can make modifications to the component and/or assembly to optimize the design.

The FEA program works by breaking up a complicated shape, like a Bardex Chain Jack, into a collection of many simple shapes or finite elements (called a mesh). Rather than solving one very complicated vector equation, the computer solves a series of simpler equations for each of the elements.

FEA computer programs calculate deflection by using the engineer's inputs of geometry, material properties, and constraints (locations where the part is fixed). Engineers use the deflection results to evaluate product performance, and the stress results to check for failure against the structure or compliance to safety factors.

Stress or strain results, together with variations in loading and cyclic material properties, help identify areas of concern within the design. The design can then be modified to minimize or eliminate these concerns.

FEA programs allow Bardex engineers to test new designs and modify existing designs, which reduces the cost of testing, and accelerates the design cycle. And, because designs can be optimized and thoroughly tested using FEA, the overall quality of the product is improved and warranty costs are reduced.

This new technology does not mean that just anyone can create a new mooring or rig skidding design, run it through an FEA program, and have it become a popular seller. Finite Element Analysis is just one of many tools available to complement the engineer's knowledge and experience. And there's more to creating a good design than just eliminating structural and mechanical stresses. Heat transfer and fluid flow will affect a design as well. While the benefits of using an FEA program are numerous, the end result is typically a superior product and a reduction in costs.

Exhibitions



OTC 6-9 May 2013 Houston Texas

Founded in 1969, OTC is the world's foremost event for offshore resources. Last year the show hosted almost 90,000 visitors from 110 countries. If you plan to attend, please visit our booth to meet some of our senior staff and discuss our products with us. **Bardex will be at - Booth 4063**



Oil and Gas Conference and Exhibit 3-6 September 2013, Aberdeen, UK

SPE Offshore Europe conference and exhibition is a multi-faceted event showcasing innovation, solutions and tools for Exploration and Production. The show attracts a global audience of engineers, technical specialists, and industry leaders.



Bardex Corporation is pleased to announce that it has recently won an order for four gripper assemblies each of 550 tonnes capacity from Drillmec S.p.A of Piacenza, Italy. The grippers will be used in conjunction with other Drillmec equipment for skidding the drilling facilities that Drillmec is designing and supplying for use on a fixed drilling/wellhead platform for a development in the Russian sector of the Caspian Sea. The grippers are designed in accordance with the relevant Russian regulatory requirements including being able to operate in the extreme cold conditions experienced in the Northern Caspian winter.

Last month Bardex won an order to design and build a mooring system that will have 14 chain jacks to pull-in the 171 mm top mooring chain. One main HPU will power the Chain Jacks to a stall capacity of almost 7500 kN. Not surprising, this project will take a number of months to build and test.

Editor: Alastair Brennan (abrennan@bardex.com)

For past issues of Gripping News please look under "Literature" or "News" on our website (www.bardex.com)

For more information, or if you have any comments you'd like to share with us, please contact us:

Bardex Corporation

Headquarters: Goleta, California
Tel: +1-805-964-7747
Email: abrennan@bardex.com

Houston, Texas
Tel +1-832-912-8300
Email: lreed@bardex.com

Bardex UK Ltd.

High Wycombe, UK
Tel: +44-1494-464138
Email: sjones@bardex.com