

FINITE ELEMENT ANALYSIS (FEA)

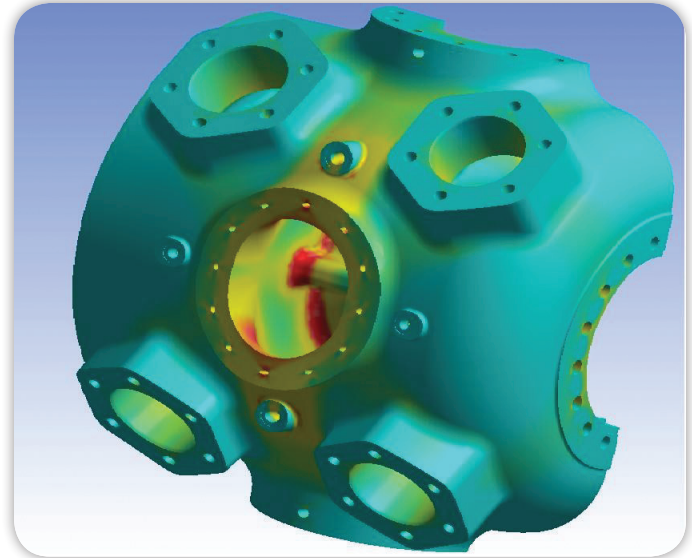
ACI's extensive experiences with reciprocating compressors, 3D modeling and FEA analyses provide advantages such as:

- Shortened development-to-design time
- Evaluation of new concepts
- Failure avoidance
- Field problem trouble shooting
- Weight reduction
- Material savings

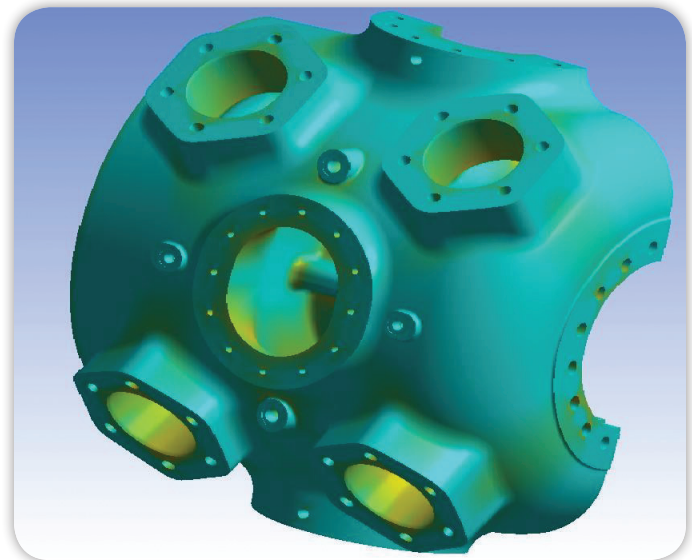
ACI's FEA capabilities are used to provide customers with both efficient and cost-effective designs. The two adjacent images show the BEFORE and AFTER stress models from FEA simulations of a customer's existing cylinders and the final ACI-designed replacement cylinders.

The new cylinders were designed to not only increase cylinder throughput, but also to reduce, or eliminate, existing stress areas – shown in red.

As seen in the AFTER image, the final cylinder design completely eliminated the high-stress regions that were concentrated around the gas passageways, valve ports and internal ribbing. Moreover, the detailed FEA analysis permitted reduction of maximum deformation by almost 50%.



BEFORE



AFTER

