Diaphragm Fabrication Method / Cost Reduction

Overview
Dresser-Rand has hired our consulting team to research and propose alternative fabrication methods for diaphragm manufacturing to reduce cost and process time. The industrial compressors Dresser-Rand creates include many diaphragms of different sizes. It is important to find ways to reduce the cost and time while keeping the quality, geometry, and tolerances at or above the current levels.

Objectives
Investigate alternative fabrication methods for producing diaphragms while working to:

- Reduce Cost
- Reduce Cycle Time
- Maintain or Improve Quality
- Maintain Strict Tolerance Requirements

Approach
- Site Visit to Dresser Rand Facilities in Olean, NY.
- Weekly meetings with project advisor and weekly conference calls with Dresser-Rand contact.
- Collection of cost, time, and process data on current fabrication method.
- Investigation into alternative fabrication method with emphasis on casting processes.
- Contact with industry casting suppliers.
- Collection of cost and time data on alternative processes.
- Analysis of alternative(s) with the current process.
- Final conclusions drawn from data.
- Recommendations made based on time and cost.

Outcomes
- For now keep with original CNC cutting process
- If manufacturing quantities increase (more than 18 compressors), conventional sand casting might be cheaper
- Keep close look to Rapid Printing sand casting, flexible pattern sand casting and hybrid core sand casting, this might be the trend