

## Senior Design Project Data Sheet

Project #	Project Name	Project Track	Project Family
P13458	Compressor Material Handling System	Process Innovation	
Start Term	Team Guide	Project Sponsor	Doc. Revision
2012-2	John Kaemmerlen	Dresser-Rand	-

### Project Description

#### **Project Background:**

Dresser-Rand, a manufacturer of heavy duty 5 to 30 ton air compressors currently builds each compressor at a stationary workstation with test and paint stations in another area. An overhead crane and cart with forklift are used to transport this through the assembly area and to test and paint before shipping.

#### **Problem Statement:**

The goal of the project is to design a system for the compressor to be loaded onto a cart or other means of ground transportation, which can move between assembly stations while the workers remain stationary. This system would be able to handle multiple orientations and models.

#### **Objectives/Scope:**

1. Design a safe, easy to use, feasible material handling system for transporting the compressor down the line.
2. Integrate our design with current and planned features of the new assembly line.

#### **Deliverables:**

- Detailed design of material handling system with drawings, models
- Estimated quote for system with economic analysis
- Possible prototype build

#### **Expected Project Benefits:**

- Reinforcement of one-piece flow and lean manufacturing techniques
- Safer and more efficient method of transporting compressor

- Support strategic plan for improved on-time delivery, increase in sales volume, and new product release

#### **Core Team Members:**

- Lauren Kraft – IE, Project Manager
- Nick Feng - IE
- Shawn Moseley - ME
- Cole Bowden - ME
- Alex Peterson - ME
- Jordon Boggs - ME

### Strategy & Approach

#### **Assumptions & Constraints:**

1. The system must allow for flexible, movable parts. No monuments are allowed that would cause irreversible damage to the building.
2. Design solution should minimize the use of overhead cranes and physical worker exertion.
3. The process flow is set by Dresser-Rand, we are providing the means of making the process flow possible.

#### **Issues & Risks:**

- The Painted Post facility is 1 hour 30 minutes away, which will affect the amount of time we spend as a team on the project and could potentially cause project delays due to travel during winter weather.
- Implementation of a working prototype is still to be determined as a course of action, depending on project progress, cost of materials, and readiness of the facility.
- Dresser-Rand is a make-to-order company, therefore the assembly process flow is unique and could cause the design to not capture a critical process step if overlooked.