



Ergo Analysis of Equipment Design

Evaluated fabrication press using Digital Human

Client:

Appliances Fabrication and Manufacturing Company

Objectives:

1. Provide equipment specifications to suppliers about maximum operating effort.
2. Review supplier designs to determine optimum location of HMI, light curtains and part drop.
3. Confirm efficient load-and-pick process, Total Productive Maintenance access, and material handler routes in client facility.

Project Description:

Client purchased custom fabrication equipment from supplier. Due to multiple build locations, supplier was unable to provide physical review of equipment before installation. Sandalwood evaluated operator interaction with fabrication equipment in CAD. Provided feedback allowing for safer and more efficient use and maintenance.

Used supplier CAD and simple AutoCAD layouts with digital human model

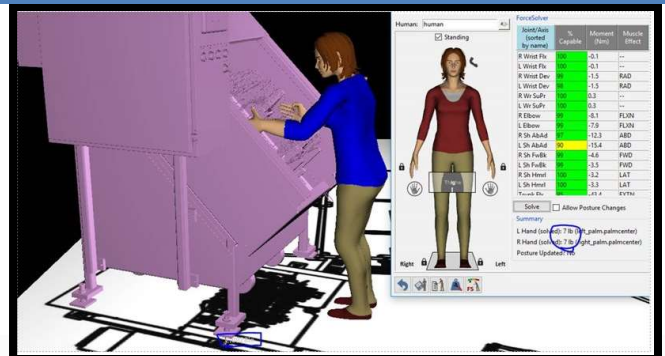


Safe and efficient load and pick points evaluated in virtual environment

Results:

- Quantified equipment specifications and provided design guidance to ensure safe operating efforts.
- Identified Human-machine inefficiency. Interaction corrected. **Saved 2.4 sec/cycle.**
- Identified clearance (pinch points) and space constraints between equipment design and factory layout. **Saved ~\$30,000 in modifications.**
- Determined most efficient trajectory of parts from pick point to rack. Provided feedback to rack manufacturers about preferred part orientation. Saved time and money in prototype builds.

Similar results have been produced in other design areas to assist advanced manufacturing engineering teams with ergonomically sound equipment designs.



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