



Ergonomic Analysis of Production Process

Ergonomic Analysis for an Automotive OEM Improves Job Safety

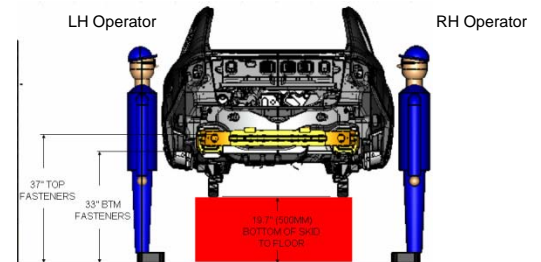
Client:
Automotive Original Equipment Manufacturer

Objectives:

1. Identify & eliminate injury risk to production operators
2. Use Digital Human Modeling to review production operator assembly tasks
3. Identify ergonomic risk factors for potential injury
4. Provide specific recommendations to eliminate ergonomic risk factors

Project Description:

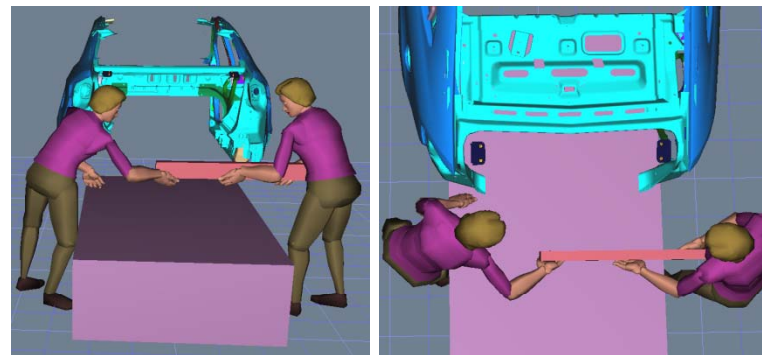
Client's drive to reduce on-the-job injuries requires pre-screening of operator assignments for ergonomic risk factors. Sandalwood was commissioned to evaluate the ergonomic risk to lift and install the Bumper Beam. The Digital Human Model JACK v6.0 software was used. Partial vehicle CAD were imported in to the software, and the Digital Human Model was positioned to mimic the posture of the actual production operator. The risk of injury was then quantified in the software.



Process End View



Bumper Beam Lift from Dunnage



Passing the Bumper Beam across the raised conveyor

Results:

- The RH operator's task of obtaining the bumper beam from it's dunnage with two hands was found acceptable and within ergonomic guidelines.
- The RH operator's task of passing the bumper beam across the raised conveyor to the LH operator was found unacceptable (i.e. increased risk of injury to this operator), given the asymmetrical posture and weight distribution of the beam while passing it.
- Once the bumper beam was passed to the LH operator both operators supported half the weight of the bumper beam, which was deemed acceptable.
- Recommendation provided to improve this operation was to move the bumper beam install to a different area where the raised conveyor is not present.
- An additional recommendation was to install a lift assist to pass the bumper beam to the LH operator across the raised conveyor

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