

# Andersen Windows - Outfeed Flip and Stack Assist

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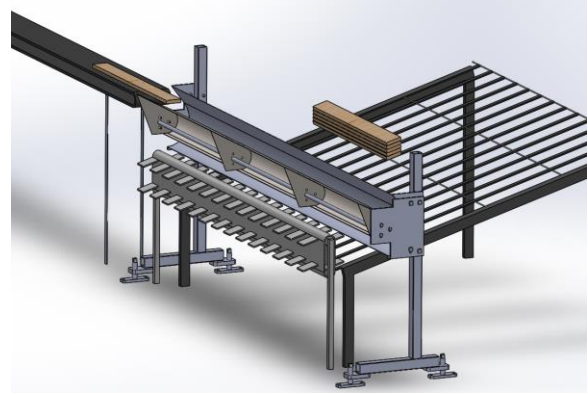
## Project Summary:

400 Series Double Hung is the highest volume product line in the Andersen window portfolio, selling well over a half million units annually. The frame for each of these units is constructed using three solid wood components called jambs. One fabrication cell comprised of two pieces of high speed milling equipment and an in-line water based treat system is responsible for producing roughly two million jambs each year to meet this demand. This translates into an average production of 8,000 parts each shift. This project will focus on the outfeed operation of the cell and will eliminate the ergonomic hazards associated with repetitive, manual offloading by providing a process to assist the employee.



## Design Goal:

The goal of this project is to design a system that performs two distinct part movements and delivers a stack of parts to the operator for final offload.



## Design Constraints:

- Design must meet current cycle time of 1 second per part.
- Parts must flip 180° from their orientation as they exit the in-line treat system.
- Parts must arrive at operator in stacks.
- Design will deliver parts to operators at ergonomically preferred height of 42".
- The design must not pose a safety risk to those around it while it is running.
- Design must be a medium or less ergonomic risk based off of Humantech standards.
- Design must account for damp parts (excess treat is removed in-line but parts remain damp for approx. 24hrs).
- Jamb fabrication cell produces 8,000 parts per shift.
- Design must accommodate parts from 12" to 96" in length.
- Must utilize Andersen standard electrical and mechanical components when possible.