



REVERSE ENGINEERING DOCUMENTATION PACKAGE INCREASES PRODUCTION EQUIPMENT PERFORMANCE AND REDUCES DOWNTIME

- SITUATION:** A manufacturing manager in the packaging industry was experiencing critical downtime issues.
- CRITICAL ISSUE:** The client was experiencing excessive and unscheduled down time with a machine that glued, formed and cut to length a product referred to as “edge protectors” that are widely used in packaging. This was a 24/7 operation.
- REASONS:** The original documentation (engineering drawings, bills of materials etc.) was lost. Without knowing what parts and components were used in the machine, it was difficult to inventory wear and spare parts, or know if the client was obtaining correct parts. The client was also planning a second line and wanted to clone the first machine with some improvements.
- VISION:** To document or reverse engineer the entire machine. Provide the fieldwork to take measurements and identify purchased components from the point at which the product entered the “pre-form rollers” to the point just before the product entered the cutting module.
- PROVIDED:** Sterling Engineering Inc. provided the machine as it existed, and showed in phantom the connections to components upstream and downstream of the forming station. Sterling Engineering executed fieldwork after hours and on weekends to obtain measurements to accurately depict the Line 2 machine. Sterling Engineering created CAD drawings to document this machine. These consisted of ballooned assembly drawing, Bill of Materials, and details sufficient to fabricate the machine. Reasonable engineering assumptions were made as to any unknown materials used in fabricating the machine. Purchase parts were identified and when necessary, modified and detailed, as a separate project, Sterling quoted a design package to incorporate this unit into the client’s other Line 1.
- RESULT:** The client was able to implement preventive maintenance procedures, which improved uptime; and, with the complete documentation, the client was able to better plan design improvements to enhance the overall performance of the machine.
- SEI PROJECT #:** (129-DOC-012-(V1R1-CASE STUDY Machine Design))