



## **AUTOMATION SOLUTION INCREASES THE EFFICIENCY OF AN ELECTRICAL OUTLET ASSEMBLY PROCESS**

- SITUATION:** A manufacturing engineer in the electrical components industry wanted to increase the efficiency of automatically assembling I/O volt wall outlets.
- CRITICAL ISSUE:** There are 15 assembly varieties, 15 parts, screw insertion, torque specifications, screw back-out distance, cold forming, shearing, code stamping, and hot stamping requirements. The line speed is 50 per minute.
- REASONS:** The assembly of the wall outlets had to improve current assembly line performance from approximately 85% efficiency to 95%. The new line was required to increase production capacity.
- VISION:** The client needed an efficient use of floor space and the ability to run the entire product line on one line. This would allow more flexibility in meeting marketing needs.
- PROVIDED:** Sterling Engineering Inc. designed the required 30 plus assembly, part modifying, inspection, transfer, and reject stations in addition to all required fixtures and tooling. Some of these stations integrated standard customer modules, commercially available servo pick and place units, hot stamp machines, bowl feeders, screw insertion machines, and conveyors wherever possible. Many of the stations required completely custom designed forming, staking, transferring, shearing, inspecting, and rejecting stations. Sterling supplied kinematic, stress, and deflection calculations in conjunction with timing diagrams, assembly drawing, detail drawing, and bill of materials. Commercial machine specifications and quotes were also obtained by Sterling Engineering Inc.
- RESULT:** The assembly machine line is in production and running at a 50 per minute cycle rate.
- SEI PROJECT #:** 7989, 7992 & 7993 (129-DOC-009-(V1R1-CASE STUDY Wall Outlet Assembly Machine))