

Unscheduled Changeover Reduction

- The Conlon Group was brought in to improve the production line uptime for a sandwich manufacturer. One of the main issues for downtime was not having the correct material when it was needed it
- A team was formed to determine what the causes for material shortages were. The data showed that packing material was 85% of the cause for the unplanned changeovers due to material shortages. We then brainstormed the causes of the shortages – lack of cycle counting, poor counting and allocation in the system were the 3 main causes
- The company was utilizing bar coding for the food products but not for the packaging materials (wrappers, labels, inner and outer packs)
- We invited all the vendors to our facility and discussed our requirement for barcoded components, as well as, barcoded pallet tags and the specifications for each
- They all agreed to have the appropriate barcoding on all products within a month

- The process was mapped out highlighting points in the process where the material would be recorded
- The barcoding allowed for the implementation of scanning for all material movements in, out and within the process
- Standardized procedures were developed and all operators trained . System changes were made and tested
- When material was returned from production, the inventory was validated at that time
- Along with a robust cycle counting procedure, we were able to reduce line changeovers from 30 to 3 unplanned changeovers/month within a few months

Vendor Quality Improvement

- Our client is a therapeutic table manufacturer that uses high end polyurethane fabric for our upholstery. Historically - the business practice was to charge back for upholstery that did not meet the criteria – 5%-10%
- The main defect was tiny pinholes in the fabric. They suddenly experienced an increase in pinhole defects. The Chinese vendor claimed that nothing had changed and they were becoming more critical
- We went to China to meet with the vendor bringing along defective samples, test results and a piece of the qualifying sample fabric. During the meeting we all agreed there was a growing quality issue
- The stretch results of the fabric showed that the fabric was within specification, yet mean stretch was larger. The vendor analyzed the backing and thought that may be the cause

- The Chinese vendor invited his vendor to the meeting and their vendor admitted to changing the base material. Our vendor also thought the backing was causing the pinholes
- We reviewed the process and their quality control practices. They monitored the process but did not utilize control charts for speed, thickness and the number of allowable pinhole measurements. We set those in place and defined the practice for their utilization
- The Chinese vendor had a few rolls of the original backing and we validated the original material and process

- We brainstormed how to remove all pinholes from the fabric with our vendor, along with his vendor. They suggested a slightly denser backing that was within our stretch criteria
- The vendor trialed the new backing, reset their process, set up new charts, sampling plan and submitted samples
- The results were exceptional. We went back to monitor the next production run and approved the process. Our client accepted every roll they sent, with no charge backs, from that point on

Design of Experiments

- Our Client had an urgent need to produce a high end processor, which was two small substrates pinned to each other in plastic chassis. The chassis had to hold a flatness of .003” from corner to corner after the pinning process. The heated pinning process would create enough stress within the substrate to cause it to warp beyond allowable flatness limits
- We developed and performed a DOE on the pinning press
- 3 key parameters controlled the process – heat, pressure and time
- We calibrated the equipment with respect to these input and measures
- We determined that the press held temperature consistently in an inner 12 inch square

- We started with what we considered to be acceptable midrange settings. We adjusted the temperature and pressure 10 degrees each way until failure while holding the other variable constant. 5 samples were run at each setting.
- Ran the experiment again at each extreme setting while adjusting the other variable until failure. Time remained centered.
- Maximum and minimum settings were set for Temperature and Pressure. Then next step was to incrementally reduce time until failure.
- Process parameters were set and a sample of 50 pieces were produced to set up control charts for the input and output measurements.
- Sampling plans were set up at the press (inputs and outputs) and after final assembly.
- Every single part that came out of the press was good.