

Wegmans

Batch Prep Project

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Mission Statement

The Batch Prep process is where the ingredients for soups and sauces are batched and prepped for cooking. Currently, ergonomic and safety are major concerns, along with capacity constraints of the work area. Wegmans has no room to expand the current facility.

Project Deliverables

- Analyze and make necessary improvements to address ergonomic issues and to meet OSHA recommended levels
- Develop Rate of Expectancy (RE) in lbs/hour for each product to assist in scheduling needs
- Develop standard work procedures
- Develop a layout to facilitate standard work procedures

Ergonomics & Safety

- Using NIOSH, some observational points (x-axis) pose high risk for injury when compared with industry standard Recommended Lifting Index (RLI). If the RLI (y-axis) is: <1 then no risk, 1-3 some risk, and 3+ is a high risk of injury. Figure 1 shows some of the calculated lifting indexes for Batch Prep Employees.
- Due to the high risk calculations, a scissor lift cart was determined to be the best solution. A sample of the proposed cart can be seen in Figure 2.
- Due to the high volume of knife usage, it was determined that cut proof gloves would save Wegmans from medical bills and lost time.

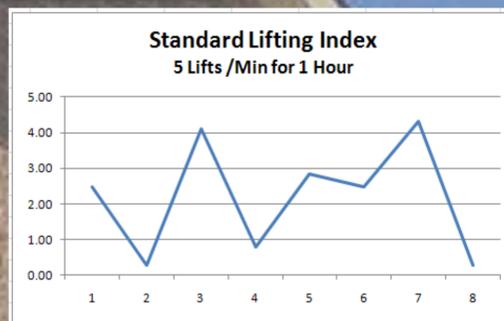


Figure 1: Calculated Lifting Indexes for the Batch Prep area



Figure 2: Proposed Electric Lift Cart

Layout

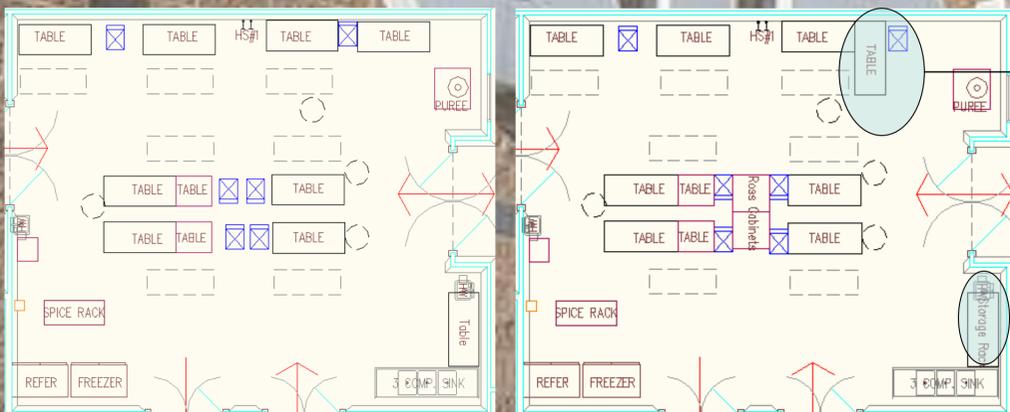


Figure 3: Original Layout

Figure 4: Current Layout

•By turning this table, a puree work station was created. It creates a 6-ft aisle around the puree machine which was a request from management.

•An unused work station was replaced by a new storage rack of various bins, lids, and utensils. This addition saves the employees approximately 48-ft of walking per trip for supplies which happens multiple times throughout every day. This rack is being restocked by the dishwasher throughout the day.

Standard Work Procedures

Pump & Totalizer:

•**Goal** – Find a pump and volume measurement system to increase accuracy, reduce prep., use, and clean up times, while improving safety and ergonomic factors.

Materials:

•Wilden PX2 Pump, Signet Flow Totalizer & Tap, Waterproof Electrical Connectors, 316SS Ferrules

Fabrication/Implementation:

•Welding of the sensor tap to the ferrules, clamping to the pump outlet; calibrate the system, and determine limitations for wider usage of all pumped fluids.



Figure 5: Current manual pump system

Pourer

•**Goal** - Design a tool to hold ingredient container(s) while draining, allowing the employees to utilize their time more effectively.

Materials

•The prototype was steel. The final product will be stainless steel.

Fabrication/ Implementation:

•The tool was designed in Pro-E and ANSYS so that any interferences could be found as well as stress calculations. Only a prototype will be presented due to sanitation reasons.

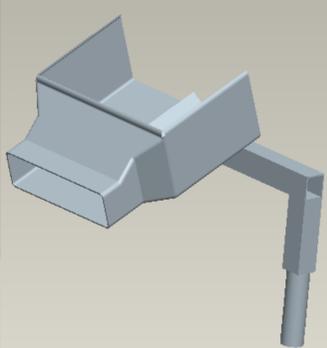


Figure 6: Pro E Drawing of pourer

Rate of Expectancy

- Lbs/Hour was not possible calculation due to different units used between ingredients and batches
- Two new approaches have been identified:

Option 1: Creating a formula

Time/Batch = Constant + [K(Ingredients)] + [W(Weight)]

Option 2: Determining the Upper Limit of the Room

Statistical analysis to see if there is an upper capacity limit to the room in terms of labor hours

For additional information visit our site at:
<http://edge.rit.edu/content/P10713/public/Home>

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