

“Cookie Machine”

Description

A cookie machine has several stations for each part of its process: a dosing unit, a mixer, a dispenser, a roller, a stamper, and a heater. Please see Figure 1 below for more detail.

The process is as follows:

1. The correct amounts of ingredients are dispensed into the mixer by the dosing unit.
2. The mixer stirs the ingredients for three minutes and then turns off. The heater pre-heats during this phase.
3. When mixing is completed, the dispenser portions out each piece of dough (1.5 seconds duration for each).
4. The first conveyor moves after each portion of dough is dispensed.
5. The dispenser turns off after twelve portions of dough are dispensed.
6. The second and third conveyors turn on when the first conveyor turns on initially. The two move continuously to carry the dough portions.
7. The roller moves freely when each portion of dough passes underneath.
8. The stamper stamps a shape into each dough portion.
9. The dough portions pass through the heater and become cookies!
10. The heater turns off after all 12 cookies have baked.
11. All conveyors turn off and slow to a stop.

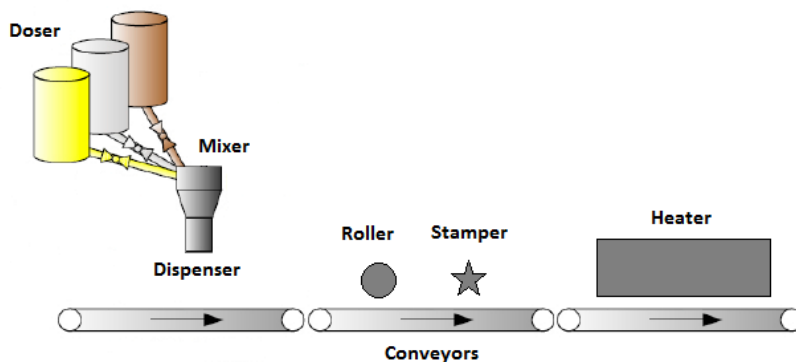


Fig 1: Cookie machine stations.

Deliverables for the project:

- Complete software design, including overview of tasks as well as each task in detail
- Complete list of variables used, organized within data structures and adhering to naming conventions
- Complete set of tasks, utilizing best practices for programming in Structured Text; organized logically
- Complete visualization with graphics that show cookie progress, machine status, machine layout, and all other relevant information
- Written test plan with at least 10 items to ensure functionality