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**STERLING**  
SYSTEMS & CONTROLS, INC.  
Automation ~ Batching ~ Process ~ Systems

# KITCHEN SYSTEMS



## CUSTOM KITCHEN SYSTEMS

### Benefits:

- Assures accurate weighments and batches
- Improves speed and overall efficiency of the ingredient batching process
- System Flexibility
- Operator interruptions no longer a problem (no more missed ingredients)

### Typical Features:

- Multiple ingredient bins/totes
- Stainless Steel Table(s)
- Moving weigh table w/ scale and touchscreen display
- PC Control Panel with weight instruments

A semi-automatic ingredient batching system for the food industry is often referred to as a Kitchen System. This multiple bin system requires operator involvement for the batching operation but it is also automated in the control of the human actions and assures accurate weighments and batches. The Kitchen System also improves speed and overall efficiency of the ingredient batching process over a manual process.

### Included in a customized Kitchen System are:

- Multiple ingredient bins/totes
- Stainless Steel Table(s)
- Moving weigh table w/ scale and touchscreen display
- PC Control Panel with weight instruments

## INGREDIENT BINS

Each Kitchen System is customized to include the maximum number of bins required by the customer's specific formulas. And the bin size can vary depending on the weighment size per ingredient required for each batch. Two size bins are often utilized. The larger bin has a nominal capacity of 2.75ft<sup>3</sup> and includes rugged casters for ease of movement in/out from underneath the Kitchen System tables. The small bin size has a nominal capacity of approximately 0.84ft<sup>3</sup> of bulk solid material and sits on the table top. The bins are manufactured of food grade material, have clear lids and integrated material scoops.

## TABLES

The Kitchen System tables are sized to fit with the number of ingredient bins, and for operator comfort. The quantity of tables depends upon the number of bins required in the system. The tables are manufactured of stainless steel material, typically grade 304. The ingredient tables are of rugged construction and are designed to be stationary. The scale platform is also constructed of 304 stainless steel. However, the scale platform table is designed to smoothly

travel between the two ingredient tables. The operator simply moves the scale platform table as needed to reach the next ingredient bins. The scale platform table is attached to the ingredient tables by a roller system. The scale and the operator interface touchscreen are mounted to the top of the scale platform table. The cabling from the scale and touchscreen display is mounted within a flexible cable carrier and is routed between the scale platform table and an adjacent ingredient table.

## CONTROL PANEL W/ TOUCHSCREEN DISPLAY

We know electrical controls and automation technology and can customize a system for our customers using standard control and automation components. For the Kitchen System we have used a PC (control panel mounted) and an industrial touchscreen monitor (scale platform table mounted). The control panel encloses the PC and other electrical components, and interfaces with the touchscreen and scale located on the traveling platform table. A weight indicator is also included mounted in the front door of the enclosure. A barcode scanner can also be provided for operation with the lot tracking part of the control system to assure batch validation.

## OPERATION

The Kitchen System is a semi-automated control system using a Hand Prompt process. The main concept of the Hand Prompt process is to guide an operator through the steps necessary to weigh up the required ingredients for a given formula. Once the system is started, it will start at the first line in the formula and ask the operator to locate and weigh the specified ingredient. The system will automatically take tare weights as appropriate while it runs, and will enforce a set of programmable tolerances which are maintained on each ingredient.

The system will watch the net weight on the scale and will not allow the operator to continue on to the next ingredient until the current net weight is within the acceptable tolerance band and the operator has pressed the continue button to acknowledge the addition of the ingredient. The Hand Prompt system captures actual weight information and records it into a database along with ingredient lot information (if enabled) making it easy to track, enforce, and confirm that the correct ingredients are getting into each and every batch.

From an operator's perspective, the system is very easy to operate in that all he or she has to do is press the start button, read the screen, and follow the instructions. Virtually all manual calculations are eliminated as the system automatically calculates and computes target weights, bag counts, and tare weights.

The Hand Prompt system is capable of tracking raw ingredient lot numbers and storing this information with historical batch data for later traceability and tracking. Lot Tracking can be easily enabled by setting the "General - Ingredient Lot Tracking" system parameter to either "Validate" or "Prompt". When set to "Prompt" the system will stop and ask the operator to scan or enter a lot number before weighing each ingredient, but the lot number will not be validated. It will simply be stored in the database with the historical information. When this parameter is set to "Validate" the system will prompt the operator to either scan the barcode of a valid lot or pick a valid lot from a list. Lots must be entered on the Ingredient Lot Table screen and the system will validate the lot number to be sure it is the correct ingredient from the correct lot. After the operator provides a valid lot number, the system will then proceed to prompt the operator to weigh the required ingredient. The system will not allow the operator to continue until a valid lot has been entered or scanned.

