Food and Beverage Industry Notification

Application Pack

Delta Automatic Brewing Stereoscopic Warehouse Solution

IABG Global Solution Center

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Automatic Brewing Stereoscopic Warehouse Solution

Introduction

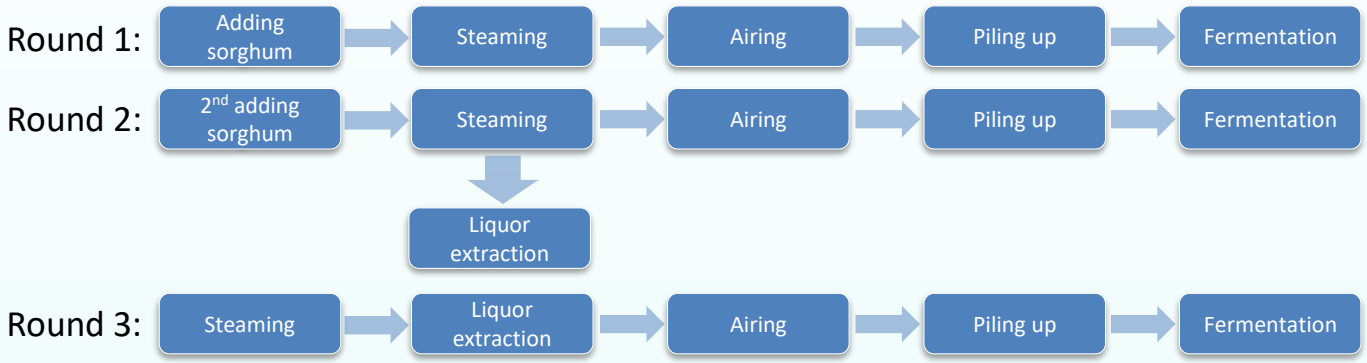
Traditional brewing: Moistening is required before brewing. Firstly, pour hot water at 98 °C into the sorghum manually and stir it continuously, then place it on the ground after it is thoroughly mixed. This process is time and effort consuming.

Automatic brewing: The automatic brewing stereoscopic warehouse and the sorghum moistening machine are introduced to replace manual work with the machine, and store wetted sorghum with the automatic brewing stereoscopic warehouse, saving footprint and manpower in sorghum handling.

- Sorghum moistening machine: Pours hot water into the sorghum, stirs and soaks the sorghum, until the previous process of putting it into the steamer.
- Stereoscopic warehouse: Can add sorghum into the hopper repeatedly for wetting and steaming, achieving automatic dispatching and storage of hoppers.

Brewing Process

1. Adding sorghum (round 1): The sorghum is moistened with hot water for 3 times, then soaked for 17 hours to get the raw sorghum; The sorghum is steamed and mixed with the starter then fermented to get the prepared sorghum.
2. 2nd adding sorghum (round 2): Mix 1 part of the raw sorghum to 1 part of the prepared sorghum and steam, add the starter and ferment to get the fermented grain, which is then placed into the cellar.
3. Liquor extraction (round 3): Take the fermented grain out of the cellar and place it into a hopper below the rolling cage; Meanwhile, place steamed sorghum into the other hopper, mixed with the fermented grain at a certain mixing ratio, and distilled by the steamer, this is called liquor extraction.



Application

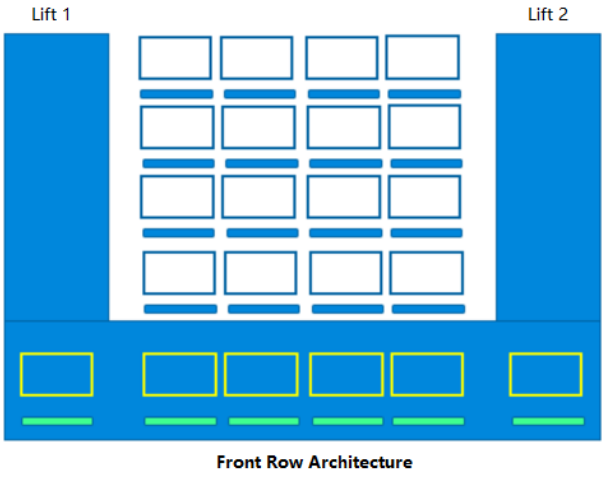
Dedicated solution for brewing, using automatic brewing to replace the ancient manual way of brewing:

Add sorghum → soak sorghum → store sorghum → dispatch hoppers → steam sorghum

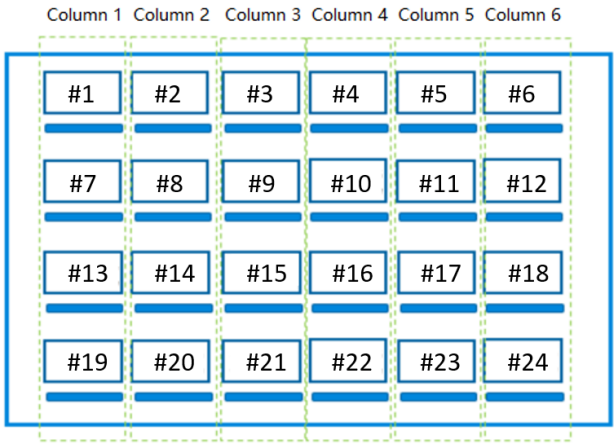
Process

1. The front row of the stereoscopic warehouse: 5 tiers in total. 4 storage spaces on each of the first 2 tiers, totally 8, used to store hoppers; Tier 3 and tier 4 are used to store the conveying unit for fermented grain and sorghum; Tier 5 is a rolling cage, used to dump the sorghum from the hopper into the conveying unit in tier 3 and tier 4; Column 1 and column 6 are lifts.

2. The back row of the stereoscopic warehouse: 4 tiers in total. 6 storage spaces on each tier, used to store hoppers; Each column is equipped with a left-right conveying channel (controlled by the brushless DC motor); In addition, there is also a front-back conveying channel and a jacking device both in column 1 and column 6, used to transfer the hoppers to the lifts in the front row.



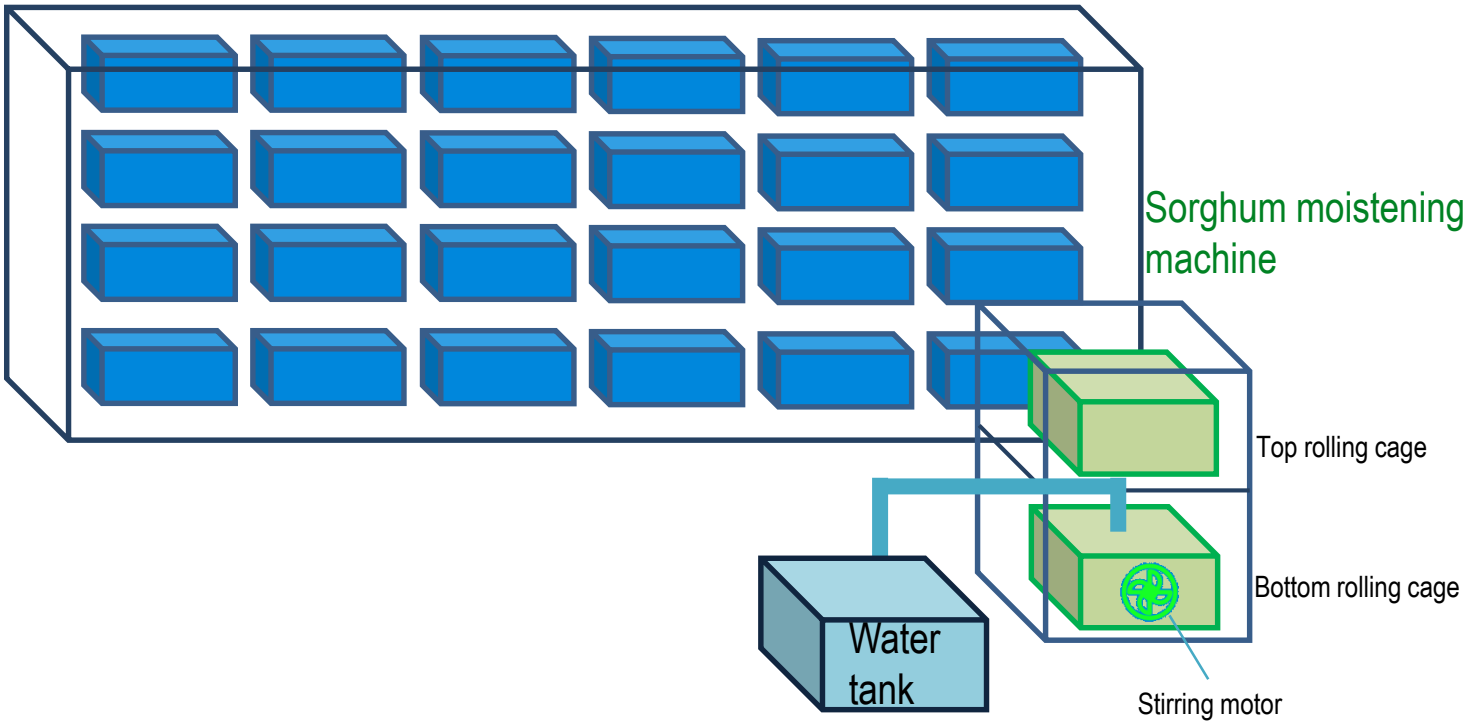
Front Row Architecture



Back Row Architecture

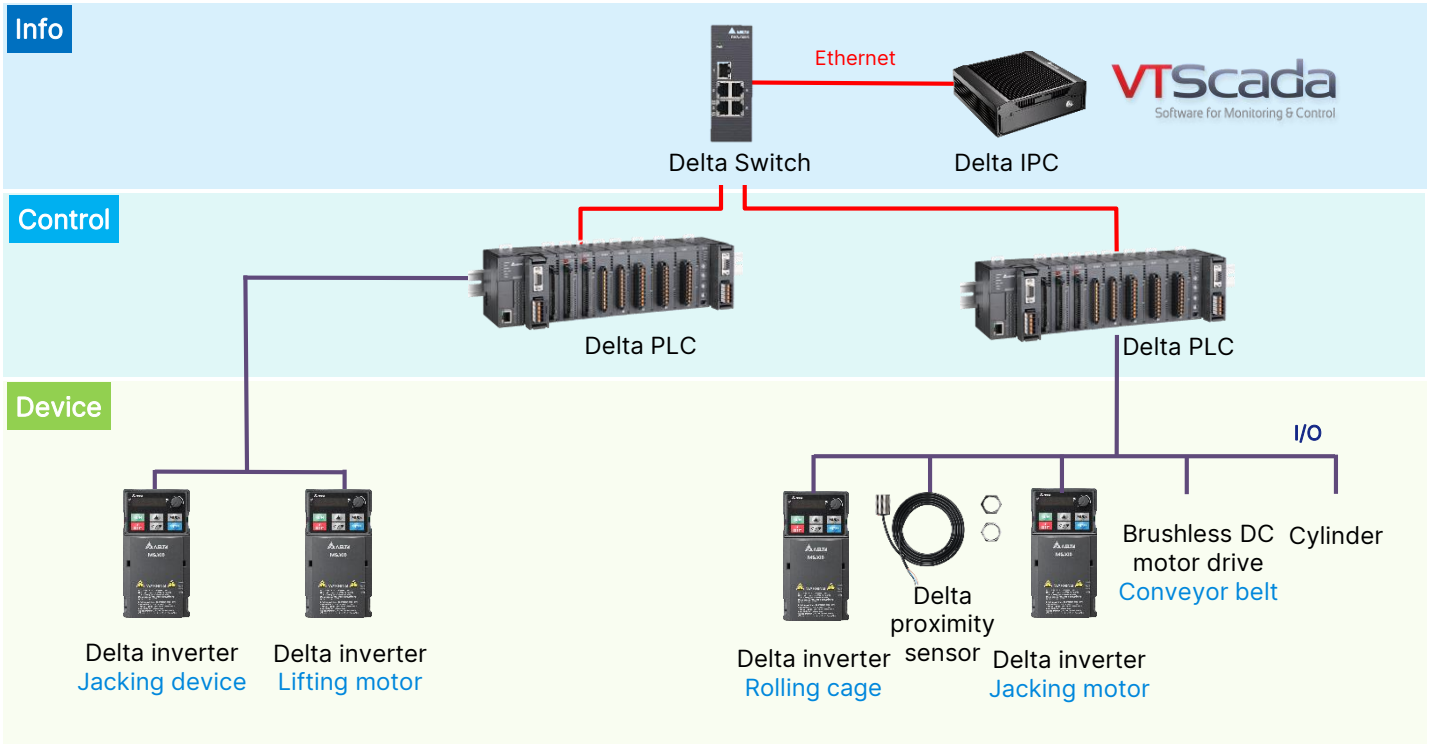
Process

Brewing stereoscopic warehouse

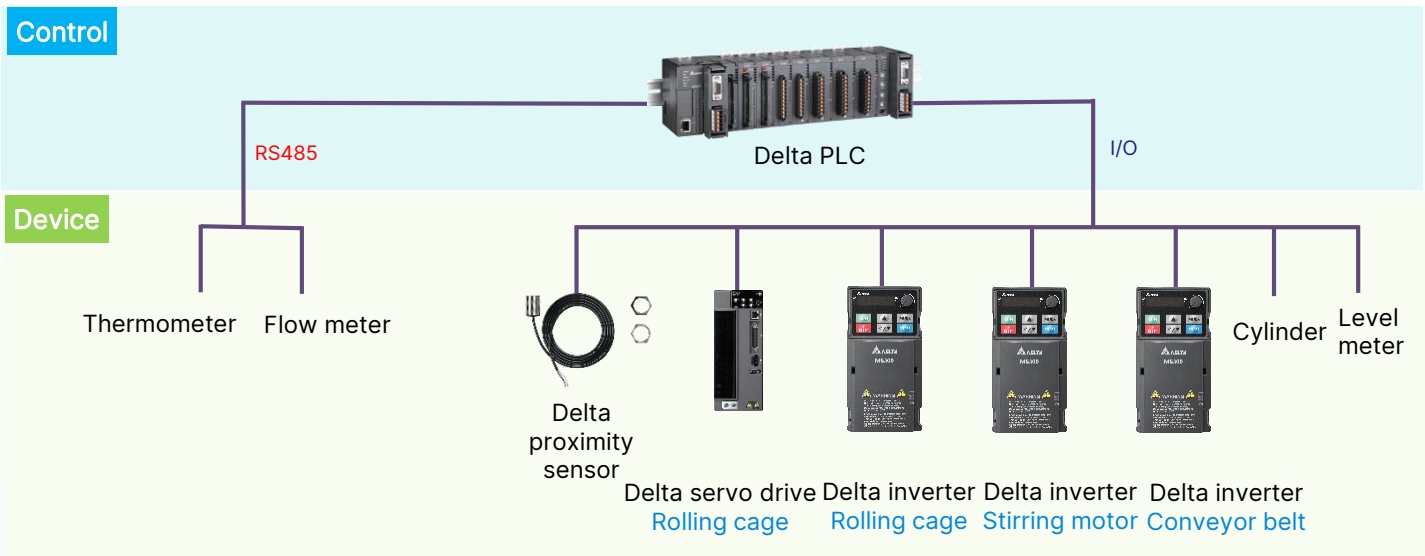


Solution Architecture

Stereoscopic warehouse architecture



Sorghum moistening machine architecture



Customer Pain Points

The traditional manual brewing is time and effort consuming, with a large footprint and low space utilization

Cannot record data automatically, and manual recording on site is required

Difficult to control the environment temperature, compromising the brewing quality

Features

- ### Strict Automatic Control

Automatic control of the key production parameters (temperature, humidity, etc.), with a more strict process, eliminating mistakes caused by manual operation and data recording, improving production capacity, brewing quality, and space utilization.

- ### VTScada Visualized Monitoring

Real-time collection and recording of production data, centralized monitoring of the production temperature, flow, and level, timely alarms, as well as flexible production reports, to help managers stay informed about the production status timely.

- ### Save System Construction Costs

It employs the photoelectric sensor to limit the hopper dispatching position, and the brushless DC motor to drive the conveyor belt, greatly saving construction costs.

Advantages

Higher productivity

Replace the traditional manual brewing with automatic brewing, significantly improving productivity and saving labor costs.

Easy operation

It offers an intuitive and concise HMI interface, enables start/stop with one click, and replaces the manual work with an automatic process; The remote monitoring configuration allows managers to stay informed about the production data without having to be on-site.

High integration of mechanical and electrical parts

The vertical design helps to reduce the footprint, combined with the concise electrical architecture for user-friendly operation and simple commissioning.

Solution Resource

	Automatic Brewing Stereoscopic Warehouse Solution includes:
PDF PPT	Promotion file: Automatic Brewing Stereoscopic Warehouse
PDF Word	Project file: Automatic Brewing Stereoscopic Warehouse (Device list, wiring diagram, IO table, parameter definition)
Program	Complete program: PLC AS228T
	Request for resource: Solution Contact TEL : +86 17625751544 E-Mail : L-CN-SC@deltaww.com