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Case Study: Munson's Rotary Batch Mixer Helps Henry P. Thomson Achieve Uniform Iced Tea Blends

Founded in 1912, Henry P. Thomson, Inc. (HPT) is one of the largest tea importers in the United States. For more than a century, the company has provided services from specialty blending to custom flavour creations and repacking, delivering premium tea and custom blends to its customers. HPT sells primarily to tea packagers, who in turn, supply restaurants, food chains and supermarkets in southern states.

"Approximately 85 percent of HPT blends are for iced tea, which Americans increasingly choose as an alternative to carbonated beverages with less or no sugar," says John Smith, Vice President and Managing Director, Henry P. Thomson. "Iced tea is consumed in restaurants, made at home, and bought in the refrigerated sections of grocery stores and convenience stores," he adds.

HPT attributes its 100-year success not only to a market fuelled by a strong consumer demand for tea, but also its ability to maintain tea blend consistency in its production — a difficult task due to sack-to-sack variations in imported tea. Mr. Smith explains using an example: "We receive 400 sacks of an African tea, and from sack to sack the tea may be lighter or darker in colour or vary in quality due to seasonal variations. Yet, the customer expects blends that have no variation in quality from batch to batch."



To deliver this consistency, HPT relies on a Munson 3.9 cu m capacity Rotary Batch Mixer.

Finding a Suitable Mixer

HPT previously outsourced its blending and packaging to a logistics company in New Orleans, but after the devastation of Hurricane Katrina in 2005, moved

its blending, packaging and distribution services to an Augusta, Georgia warehouse owned and operated by RBW Logistics.

HPT first tried using a ribbon blender, but found it "destroyed the tea" due to the ribbon blender's heavy action and high-shear rotation of the agitator, explains Mr. Smith. Next, HPT purchased a custom-built mixer, but due to design and construction



shortcomings, the machine did not manage to help reduce operating costs significantly. After consideration, HPT replaced that machine with the Rotary Batch Mixer.

In comparison, while the forward section of the previous mixer had to be tilted upward to promote evacuation from the discharge port, the Rotary Batch Mixer from Munson could be placed levelly for a full discharge, eliminating wasted product and allowing rapid cleaning. Also, the previous machine had a topside shaft that bore a large amount of weight, while the Munson is supported by two external trunnion rings riding on heavy-duty roller assemblies, eliminating the need for an internal shaft with bearings and seals that could contaminate material and prevent thorough cleaning.

In addition to the Munson mixer's superior design and no-fuss arrangement, it also occupies half the amount of space required by the previous mixer, is more efficient, and can mix larger batches. While the prior mixer processed a maximum of 816 kg/batch, the Rotary Batch Mixer can blend between up to 1180 kg/batch. With a faster processing rate, the Munson Machine is able to comfortably mix HPT's daily output of 18,160kg/day and if necessary, increase to 22,680kg/day.

Tea Blends Require Gentle, Rapid Mixing

Most blends consist of four to six teas, which HPT's suppliers process using either of two methods. One is a rolling process that twists the leaves, breaking them into sizes from 6.4 to 3.2 mm to powder. The other is a cut-tear-curl (CTC) approach that produces smaller, more uniform particles that yield more intense flavours and colours.



At the warehouse, tea is received from suppliers in sacks weighing between 41 to 64 kg, which are opened by dropping them onto serrated teeth positioned above a vibrating screen, which removes oversized objects. A conveyor, outfitted with magnets to remove any metallic particles, transports the tea into the mixer.

The stainless steel Rotary Batch Mixer uses a gravity-driven mixing process in which internal mixing flights and lifters create a gentle four-way mixing action — tumble, turn, cut and fold — to produce a 100 percent uniform batch in one to three minutes, while imparting minimal energy to the material. The tea is continuously mixed during loading through its stationary inlet, and discharging through its stationary outlet.

Internal flights lift and direct blended product to the discharge gate, evacuating the rotating mixing drum, which is free of dead spots and shaft seals that could trap materials. The blended tea is conveyed to a packaging station where a storage vessel holds one batch. While that batch is being filled into 409 to 1043 kg bulk bags or 48 kg sacks, the next batch is being mixed.

High Quality, High Efficiency

Today, some 70 percent of HPT's custom blends are purchased by restaurants, food chains, supermarkets and other smaller resellers. "To tea packers both large and small, our blending quality stands as one of HPT's core values," says Eugene Amici, President, Henry P. Thomson.

Steve Knauth, Marketing Manager, Munson Machinery Co. concludes, "Tea producers must reduce their costs of operation while maintaining tight flavour control and preventing degradation across an increasing number of blended tea products. The Munson Rotary Batch Mixer helps meet these challenges by homogenising dry teas, either leaf or cut, in only 2 to 3 minutes using little energy.

"It is also an ideal platform for uniformly adding liquid flavourings over a large moving bed of material, and offers total interior access and rapid dry or wet cleanout to eliminate the carrying over of flavours. In addition, its stationary inlet and outlet allow inline automation to lower operating costs. Since these benefits also apply to blending and/or flavouring of green, roasted and ground coffee of all kinds, tea producers who also produce coffee products can utilise one mixer for both product lines." **FBA**

