

Pastry Manufacturer Saves CAD\$90,000 Annually and Improves Product Quality with Heated Spray System



Problem:

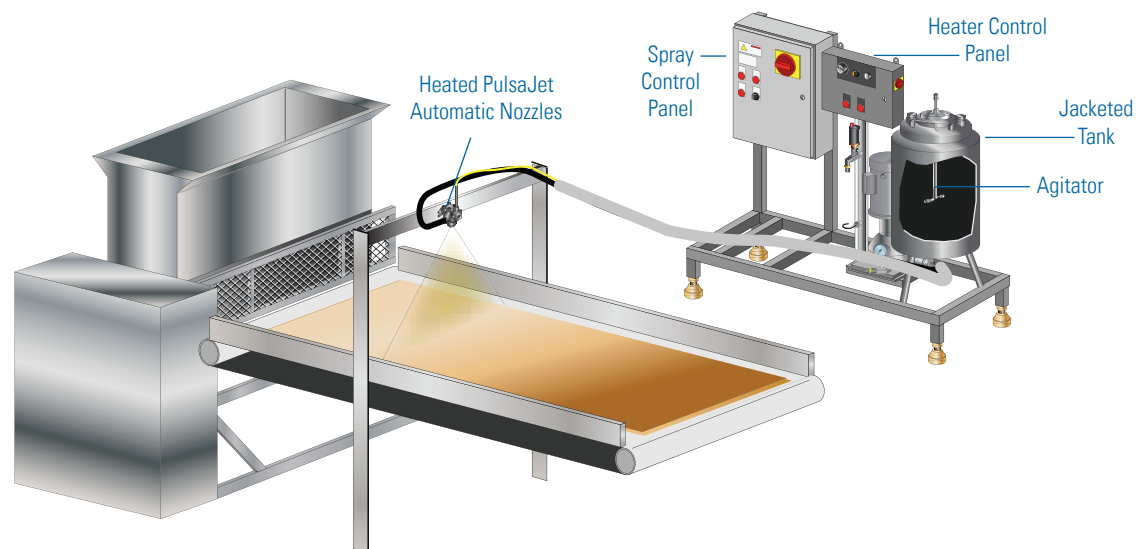
A manufacturer of baked goods needed to spray melted butter on a continuous strip of dough used for pies and other pastries. To ensure product quality, it was important to apply a uniform coating of butter across the width of the dough but spraying the butter proved difficult.

Previously, the butter was heated and sprayed on the dough using an air atomizing nozzle. The air atomizing nozzle created a great deal of mist, causing safety concerns in the production area. In addition, there was no way to maintain the proper temperature of the butter after heating and this resulted in inconsistent spray performance. Another problem with the system was the lack of automated control. An operator, positioned near the line, adjusted spray pressure manually. It was very difficult to maintain the proper coating weight when the line speed varied and excessive volumes of butter were often applied to the dough.

Solution:

An AccuCoat® Heated Spray System now applies a precise volume of melted butter to the sheet of dough using a hydraulic PalsaJet® automatic spray nozzle. An AutoJet® Spray Control Panel adjusts the electrically-actuated PalsaJet nozzle to increase or decrease flow rate when line speed changes.

The system includes a 10 gallon (38 liter) supply tank for the melted butter and a closed-loop temperature control system. The tank, the liquid supply line and the PalsaJet nozzle are jacketed to allow circulation of hot water to maintain the temperature of the butter between 175°F and 190°F (79°C - 88°C). An agitator in the pressure tank helps ensure the butter is heated consistently.





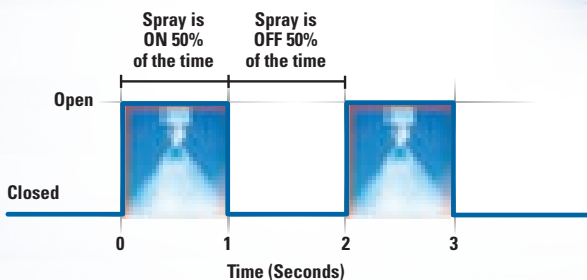
Pastry Manufacturer Saves CAD\$90,000 Annually and Improves Product Quality with Heated Spray System – Continued

Results:

The AccuCoat® Heated Spray System provides a constant application rate of butter coating on the dough and has reduced butter use by 15%. The hydraulic PulsaJet® nozzle has eliminated the misting problem, improving the cleanliness and safety of the production floor. The operator previously assigned to managing the spray system has been assigned to other duties. In addition, the reject rate for the dough has been reduced by 5%. All of these improvements have saved the bakery about CAD\$90,000 and provided a payback period of less than 4 months on the heated spray system.

A CLOSER LOOK AT THE SYSTEM

Precision Spray Control



Precision Spray Control (PSC) involves turning nozzles on and off very quickly to control flow rate. This cycling is so fast that the flow often appears to be constant. With traditional nozzles, flow rate adjustments require a change in liquid pressure, which also changes the nozzle's spray angle/coverage and drop size. With PSC, pressure remains constant enabling flow rate changes without changes in spray performance. PSC requires the use of electrically-actuated spray nozzles and an AutoJet spray controller.



AA10000AUH-72400 heated PulsaJet® nozzle applies the butter to the dough.

AccuCoat Heated Spray System includes a Spray Control Panel for convenient control of spray pressure and cycle times along with a separate Heater Control Panel to ensure proper liquid temperature. All liquid delivery components are fully jacketed to maintain consistent temperature of the butter from tank to spray target.



10 gallon (38 liter) pressure tank is fully jacketed and is fitted with an agitator.



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