

INCREASED RELIABILITY AND ACCURACY OF A DOSING PUMP SMOOTHS OVERALL OPERATION

PUMP CASE STUDY

JBT Foodtech

Visalia, California

Dosing Pump Installation

CUSTOMER APPLICATION AND KEY CHALLENGES

JBT FoodTech designs and manufactures technically sophisticated equipment systems for food processing and is the premier provider of service and solutions to citrus packing houses. From preparation to preservation, through conveying and packaging, JBT FoodTech offers a comprehensive range of technologies to capture the freshness, taste, texture, appearance, and nutritional value of fruit and vegetable products.

To perform this service, JBT FoodTech was utilizing solenoid style dosing pumps to apply a wax coating on fruit products to preserve freshness and protect the produce. The pumps were prone to pulsations that cause uneven coating and lead to frequent maintenance downtimes. Since packing houses are so dependent on the reliable performance of their machines, JBT FoodTech needed a way to improve the flow of the packing line by upgrading the dosing pumps.



JBT FoodTech provides equipment that helps preserve and protect fresh produce

THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

JBT FoodTech asked R.F. MacDonald Co. to evaluate their current situation and provide a solution that would increase the reliability of their production process. Their existing pumps contained solenoid driven diaphragms, causing them to pulsate. Because of the problems originating from these pulsations, R.F. MacDonald Co. recommended upgrading to a more reliable and sophisticated Grundfos Digital Dosing pump.

Grundfos Digital Dosing pumps use a camshaft to drive the diaphragm, which ensures an optimum mixing ratio of the liquid chemical dose while providing a significant reduction of pressure peaks within the system. This prevents mechanical stress and wear on parts such as the diaphragm, tubing, and connections, resulting in a lowered maintenance requirement.



The Grundfos Digital Dosing pumps deliver precise dosing from a single digital interface

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In addition to increased reliability, Grundfos Digital Dosing pumps are extremely easy to calibrate; requiring only a sample test run. After the results of the test run are entered into the digital control display, the pump automatically corrects itself to the desired output. Competitor dosing pumps take substantially longer to calibrate because they lack the ability to auto-calibrate like the Grundfos pumps.

PROJECT RESULTS

The installed Grundfos dosing pumps are now performing more reliably with less downtime than production with the previous pumps. The increased consistency of the wax application has not only lowered the input cost, but has also improved the quality of the fruit by applying a more even coating of wax.

For this particular application, R.F. MacDonald Co. replaced the plastic ball bearings in the check valves with stainless steel. The heavier bearings cut through the viscosity of the wax much better, enhancing productivity by eliminating pump flow restrictions.

JBT FoodTech is very satisfied with the increased reliability of the new Grundfos Digital Dosing Pumps, appreciating the decreased downtime and higher quality dosing that is a direct result of the new installation.



Dosing materials shown here are housed below the cabinet of pumps (top photo) where they can be easily monitored and maintained. Notice the yellow and orange feed tubes that connect to the pumps and can be seen in the previous photo