

Wood Pellet Manufacturer Saves More than CAD\$11,000 Annually Spraying Oil with Automated Spray System



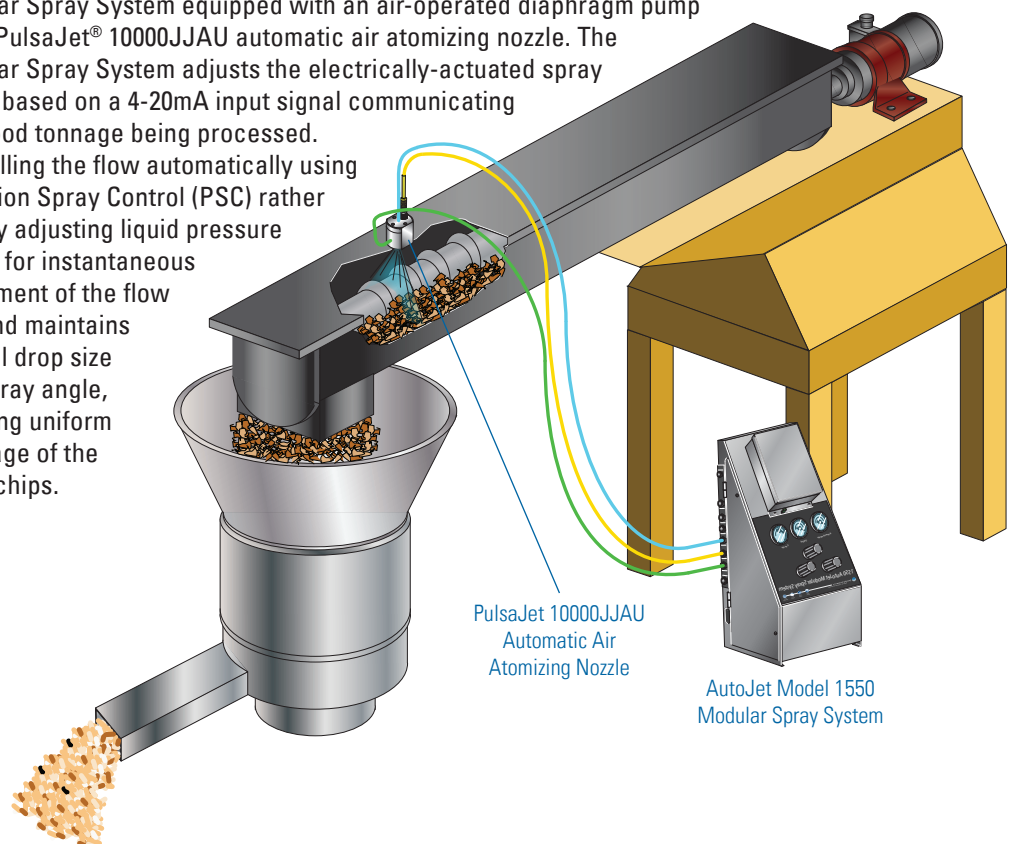
Problem:

A manufacturer of wood pellets needed to spray oil on wood chips being pressed into pellets. The pellets, made from sawdust and wood chips, are mechanically formed into a consistent shape at high pressure to create a high-density heating fuel source. The oil acts as a binder for the pellets and also as a lubricant during the pressing operation.

A high pressure pump and a fine spray hydraulic nozzle were previously used, but the viscosity of the oil being sprayed resulted in a poor spray pattern and uneven distribution of the oil across the wood chips. Over-application of the oil was a problem as well since the system was unable to adjust flow rate based on the tonnage of wood chips being processed.

Solution:

The Spraying Systems Co. solution consists of an AutoJet® Model 1550 Modular Spray System equipped with an air-operated diaphragm pump and a PulaJet® 10000JJAU automatic air atomizing nozzle. The Modular Spray System adjusts the electrically-actuated spray nozzle based on a 4-20mA input signal communicating the wood tonnage being processed. Controlling the flow automatically using Precision Spray Control (PSC) rather than by adjusting liquid pressure allows for instantaneous adjustment of the flow rate and maintains optimal drop size and spray angle, ensuring uniform coverage of the wood chips.





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Results:

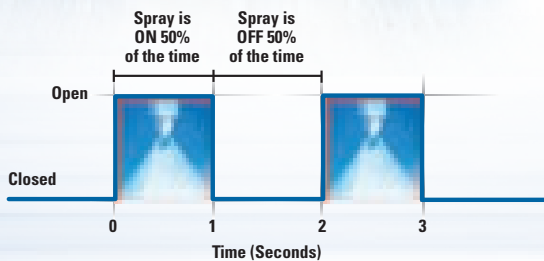
Better control of the spray application using the AutoJet® Modular Spray System has reduced the volume of oil used by 20%. More consistent lubrication of the wood chips has also resulted in fewer broken wood pellets and has greatly reduced the maintenance required on the press equipment. Together, these productivity improvements have saved the manufacturer more than CAD\$11,000 annually. The payback period for the system was less than six months.

A CLOSER LOOK AT THE SYSTEM



PulsarJet® 10000JAU nozzle is an electrically-actuated air atomizing nozzle. It applies a precise volume of oil uniformly on the wood chips.

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.



AutoJet Model 1550 Modular Spray System provides easy control of nozzles and cycle times up to 10,000 cycles per minute.



Spraying Systems Co.®
Experts in Spray Technology

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