



**Spraying Systems Co.®**  
Experts in Spray Technology



Spray  
Nozzles



Spray  
Control



Spray  
Analysis



Spray  
Fabrication



## **PanelSpray™ System**

Increase Quality and Throughput  
for Your Engineered Wood Products

# Precision Spray Technology Improves Your Production

The patented PanelSpray™ System can help improve the quality of OSB, MDF, plywood and other engineered wood products while decreasing production costs and reducing maintenance time.

Whether you need to apply release agent or add moisture to the mat surface, the PanelSpray System uses closed-loop application control to ensure even coverage no matter how much your line speeds may vary. The result is increased throughput and structural board with a smoother and harder surface finish.

## Benefits

- Prevents board from sticking to belts and presses by applying release agent accurately and uniformly
- Reduces cure time and speeds press cycles by applying moisture to the mat surface evenly and quickly
- Automatically maintains optimal flow rate based on board type and line speed
- Enables low flow application without the use of compressed air
- Provides independent flow control for top and bottom spray headers
- Less expensive and more reliable than spinning disks
- Proprietary spray integrity software verifies performance and detects plugged nozzles
- Turnkey system is easily integrated into existing production lines

## Options

- Mixing and dosing unit allows adjustments in chemical concentrations at the touch of a button
- In-line liquid heating improves the flow of viscous liquids
- Liquid recirculation ensures proper mixing of chemicals and uniform temperature
- Rinsing cycle cleans nozzles and entire system between spray cycles

## Other Helpful Resources

### PulsaJet® Automatic Spray Nozzles Bulletin 603A

Eight-page bulletin details the PulsaJet family of automatic spray nozzles for unmatched precision in a wide range of applications.

### A Guide to Pulse Width Modulated Flow Control Technical Manual 414

Twelve-page manual provides the technical details and benefits of using PWM flow control and electrically-actuated spray nozzles in applications requiring precise coating and/or dosing.

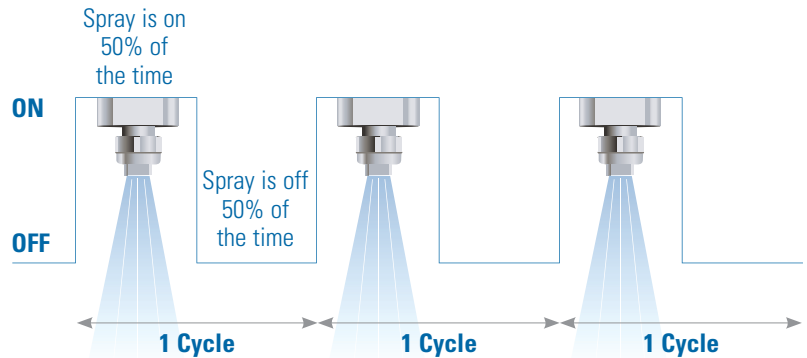


## Pulse Width Modulated (PWM) Flow Control – What It Is and Why It's Important

Using an AutoJet® spray controller, flow rate can be controlled very precisely by cycling PulsaJet® spray nozzles on and off quickly at a controlled frequency. For a duty cycle of 50%, the nozzle sprays half the time and the flow will be 50% of the maximum flow rate at a given pressure for the nozzle.

### With PWM flow control:

- Misting and overspray are eliminated
- Flow rate can be changed almost instantaneously
- Extremely high flow turndown ratios can be achieved at a single pressure
- Very low flow rates can be generated with larger, clog-resistant spray tips
- Chemical consumption can be reduced



### CASE STUDY

## PanelSpray™ System Solves Quality Problems and Eliminates the Need for Compressed Air

In order to boost production, a major manufacturer of particleboard decided to modernize one of its production lines. A state-of-the-art spray system was a critical component of the upgrade. Plant personnel determined the amount of release agent to be applied directly on the chipboard and the conveyor to eliminate recurring quality problems with board thickness, surface finish and bursts and bubbles in the board. They also wanted a spray system that didn't require costly compressed air so operating costs could be significantly reduced.



### The PanelSpray System satisfied all the manufacturer's requirements and yielded extra benefits as well:

- The closed-loop system precisely applies release agent despite changes in line speed
- The use of hydraulic, electrically-actuated PulsaJet nozzles eliminates the need for compressed air
- Board quality problems have been eliminated
- Precision application of the release agent has reduced waste, the amount of chemical being used and odor
- System price was 1/3 the cost of systems using rotating discs
- Installation went smoothly; the system was easily integrated with the manufacturer's PLC-based control system
- Commissioning and training was completed in just one day
- The system operates 24 hours per day except for monthly maintenance

# How the PanelSpray™ System Works

## PulsaJet® nozzles

can achieve cycle speeds up to 10,000 cycles per minute for precise flow control using Pulse Width Modulation (PWM). PWM flow control enables almost instantaneous flow rate changes without changing the liquid pressure.



## AutoJet® spray controller

provides closed-loop system control. Flow rate adjustments are based on conveyor belt speed so the volume of liquid applied remains consistent despite changes in line speed. Flow rate adjustments can also be made independently to the top and bottom layers of the board.

A 'System Integrity' feature checks each nozzle on the headers for blockage. If a reduction in flow is detected, the system generates an alarm in the control room and displays the location of the header with the fault.

AutoJet spray controllers are easily integrated into most plant control systems.





**PulsaJet® spray headers**

ensure proper liquid flow and nozzle placement and position. Headers are easily installed around belts and screens.



## PanelSpray™ System Specifications

### Application Control

- Spray nozzles: PulsaJet® electrically-actuated automatic spray nozzles
- Control unit: AutoJet® Model 2250 spray controller using PWM flow control

### Liquid Specifications

- Maximum flow rate: 0.66 gpm at 73 psi (2.5 l/min at 5 bar) for each header
- Maximum chemical dosing rate: 35 gph (132.5 l/h) with a viscosity of 500 cP

### Enclosure Specifications

- Dimensions (l x w x h): 63" x 20" x 75" (1600 x 508 x 1905 mm)
- Material: Stainless steel
- IP rating: IP54
- Power supply: 230 VAC/50 Hz (3x 400 VAC/50 Hz when heating option used)
- Power consumption: 1.5 kW (7.5 kW when heating option used)
- Temperature: 40°F to 105°F (4.4°C to 40.5°C)
- Humidity: Max 90% RH



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