DispenseJet® DJ-2200 Spray Valve

**Features and Benefits**

- Dispenses precise lines and dots of flux for passive and active components
- Changes in part layouts can be accommodated without downtime and tooling changes
- Reduces flux waste and improves material utilization with minimal maintenance
- Separates flux and chip placement operations for higher throughput
- Improves quality of flip chip soldering with lower residues
- Provides micro-dispensing of thin layers of fluid as low as 5 µm (0.2 mils) thick for thin flux materials

Flux application using the DispenseJet DJ-2200 spray valve is a superior alternative to dipping and screen printing for flip chip assembly operations. Jetting offers both speed and accuracy, and eliminates contamination and material waste associated with conventional methods. Jetting allows 100% coverage with a minimal amount of flux (typically 5 µm), producing less residue after reflow. Less residue results in better package reliability.

**How it works:** The DJ-2200 spray valve uses a patented high-precision mechanism to control exact volumes of flux dispensed directly from the nozzle into the substrate. During each dispensing cycle, solenoid-driven air pressure retracts an internal plunger and an exact amount of material is fed into the fluid chamber under controlled pressure. Then, the spring-driven plunger returns to its seat with an impact force that ejects the fluid onto the substrate. Dot consistency is aided by a built-in heater that controls fluid temperature to facilitate the jetting process. The syringe/reservoir is completely sealed, allowing constant, full pressure at all times. This allows high-speed, non-contact jetting of low-viscosity materials like rosin and no-clean fluxes with sharp, clean cut-off.

Jetting replaces the high-maintenance dipping that is often performed with pick and place equipment. By separating the fluxing and chip placement operations, significant throughput can be achieved in flip chip assembly operations. The jet can also be used for coating with other fluid materials, like photo resist for non-round substrates.

Jetting lets you accommodate changes in part styles or substrates without costly downtime and tooling changes. Dispensing parameters can be changed quickly and easily using programmed patterns stored in a computer.

In the jetting process, the jet moves in an X, Y plane to dispense a variety of pre-programmed patterns, which create a uniform film of flux. There is no movement required in the Z-axis during or between the dispense cycles. Time elapsed between cycles is minimized, increasing your throughput and productivity.

The jet is capable of dispensing precise dots and coaxial air-assisted lines and dots. When equipped with the coaxial air option, jetted flux is followed by a pulse of air, which aids flux flow and helps overcome the surface tension present on some substrates and parts.
Specifications: DispenseJet® DJ-2200 Spray Valve

Valve
Operating voltage: 24 VDC
Weight: 380 g (without syringe)
Syringe: 5, 10 or 30 cc
Reservoir: 6 or 20 oz.

Electrical
Solenoid: 24 VDC, 12.7 Watts
Heater: 8.5 Watts

Pressures
Air solenoid pressure: 6.9 Bar (100 psi)
Fluid pressure: 0-2 kg/cm² (0-28 psi)

Nozzle
Orifice diameter:
- 0.2-1.2 mm (0.008-0.05 in.)

Standard jet nozzles dispense lines typically 3 mm (0.125 in.) wide. Wide nozzles are available for lines 10 mm (0.4 in.) wide.

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nordsonasymtek.com
info@nordsonasymtek.com

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