ASYMTEK DispenseJet DJ-2200 Spray Valve

Jetting Technology for Precise Flux Applications

The DispenseJet® DJ-2200 spray valve is a superior alternative to dipping and screen printing for flip chip assembly flux applications. Jetting offers speed and accuracy and eliminates contamination and material waste associated with conventional methods. It allows 100% coverage with a minimal amount of flux (typically 5 µm), producing less residue after reflow and delivering 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 feeds a precise amount of material 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. A built-in heater aids dot consistency that controls fluid temperature to facilitate jetting. A fully sealed syringe/reservoir provides constant pressure, allowing high-speed, non-contact jetting of low-viscosity materials like rosin and no-clean fluxes with sharp, clean cut-offs.

Jetting replaces the high-maintenance dipping 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 coat non-round substrates with other fluids, like photoresist.

Benefits

- **Micro-dispense thin layers of flux material as low as 5 µm (0.2 mils) thick.**
- **Lower residues improve flip chip soldering quality.**
- **Separates flux and chip placement operations for higher throughput.**
- **Reduces flux waste and improves material utilization with minimal maintenance.**
- **Dispenses precise lines and dots of flux for passive and active components.**
- **Part layout changes are accommodated without downtime and tooling changes.**

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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 and Y plane to dispense various pre-programmed patterns, creating a uniform film of flux. No movement is required in the Z-axis during or between the dispense cycles, minimizing process time to increase throughput and productivity.

The jet can dispense precise dots and coaxial air-assisted lines and dots. When equipped with the coaxial air option, an air pulse follows the jetted flux, aiding flux flow, and helping overcome the surface tension present on some substrates and parts.

Valve

Operating voltage: 24 VDC
Weight: 380 g (without syringe)

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/cm^2 (0-28 psi)

Nozzle

Standard jet nozzles dispense lines typically 3 mm (0.125 in.) wide.

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