

DJ-2100 DispenseJet® Valve

Non-Contact Jetting Technology for Electronic Applications

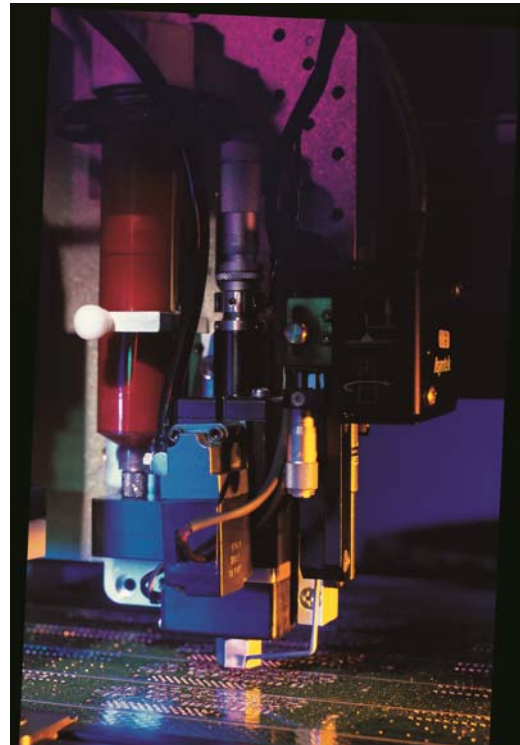
Features and Benefits

- **Jets a wide range of surface mount adhesives, silver epoxies, and other low-abrasion fluids**
- **Eliminates z-axis motion during dispensing and virtually eliminates height sensing**
- **Tolerates greater variations in PCB planarity**
- **Offers a range of dot sizes from a single DispenseJet head**
- **Provides threefold improvement in consistency over needle-based systems**
- **Adaptable for use from prototype to high-volume, in-line production**
- **Dot diameter down to 0.33 to 0.35 mm (0.013 to 0.014 in.) for 0402 components**

Nordson ASYMTEK's DispenseJet valve is a non-contact, drop-on-demand valve providing fast fluid dispensing. The jet can deliver up to 100 dots per second. In actual use, the jet delivers more than 50,000 dots per hour of industry-standard surface mount adhesive when mounted on the Millennium M-2010 dispensing system. For electronics assembly requiring speed, dot consistency, and tight process control, the jet is ideal.

System	Dots per hour
C-718	18,000
X-1010	30,000
M-2010	50,000

Non-contact jetting eliminates Z-axis motion between dots, significantly increasing speed. Jetting eliminates the need for a mechanical needle standoff (foot). Problems disappear: no expensive needles that wear out, no worrying about touching the board with a footed needle, no change to dot size due to variations on PCBs, and no expense and problems associated with underboard support. Cost of ownership is reduced.



The jet “flies” over the substrate at dispense gaps between 0.5 and 3.5 mm (0.02 and 0.14 in.). Using a patented high-speed mechanism, the jet shoots precise volumes of fluid with dot volume repeatability of $\pm 3\%$ on line and patterns. Repeatability of $< \pm 10\%$ is typical for dot diameters. Dispense cycles of 8 to 15 milliseconds per dot offer improved throughputs over systems that have longer valve-on times and Z-axis motion. The jet goes faster and provides better shot size accuracy.

Different sized dots are applied by jetting multiple shots in the same location. Lines and complex shapes are constructed from adjacent dots. New “jet-on-the-fly” features achieve dot cycle rates of up to 100 dots per second. Dispensing consistency is improved due to built-in heater controls.

The DispenseJet® valve has been adapted from applications with 0402 components and electrically and thermally conductive adhesives. Contact Nordson ASYMTEK for the latest applications information.

How it works: Fluid is fed into a chamber where it is heated and temperature controlled to achieve optimal and consistent viscosity. Using a ball and seat design, fluid fills the void left by the ball as it retracts from the seat. As the ball returns, the force due to acceleration breaks the stream of fluid, which is jetted through the nozzle. The broken stream of fluid strikes the substrate and forms a dot.



Valves come complete with carrying case, cleaning kit and spare parts.

Fluids:

Fluids Typically Used in Jetting Applications:

- High-speed dispensable surface mount adhesives (SMA)
- Underfill encapsulate
- Die attach materials
- Conductive adhesives and epoxies
- Thermal interfaces
- Stacked die adhesives
- UV cure adhesives
- Opto-electronics adhesives

Contact Nordson ASYMTEK for the latest list of jettable fluids.

Model Number	Component Size	Seat Size	Nozzle Selection (Typical)
DJ-2111	0402 (1005) or larger	0.4 mm (0.015 in.)	0.102 and 0.127 mm (0.004 and 0.005 in.)
DJ-2112	0603 (1608) or larger	0.75mm (0.030 in.)	0.127 and 1.152 mm (0.005 and 0.006 in.)
DJ-2114	0805 (2012) or larger	1.5 mm (0.060 in.)	0.152, 0.200, 0.254, 0.330, 0.406 mm (0.006, 0.008, 0.010, 0.013, 0.016 in.)

* Dimensions are in millimeters (inches).

Specifications: DJ-2100 DispenseJet

Service:

Offline Cleaning: 60 minutes every 1 to 2 weeks

Cleaning fluids for SMA: Acetone or MEK-based solvent recommended.

Do not use alcohol, water or water-based solvents.

Valve:

Operating Voltage: 24 VDC

Weight: 380 g (without syringe)

Syringe: 5, 10 or 30 cc

Compatibility: All Asymtek platforms built since 1998

Electrical:

Solenoid: 24 VDC, 5.4 Watts

Heater: 8.5 Watts

Valve Pressure:

Air Solenoid Pressure:

6.5 Bar (100 psi) max.

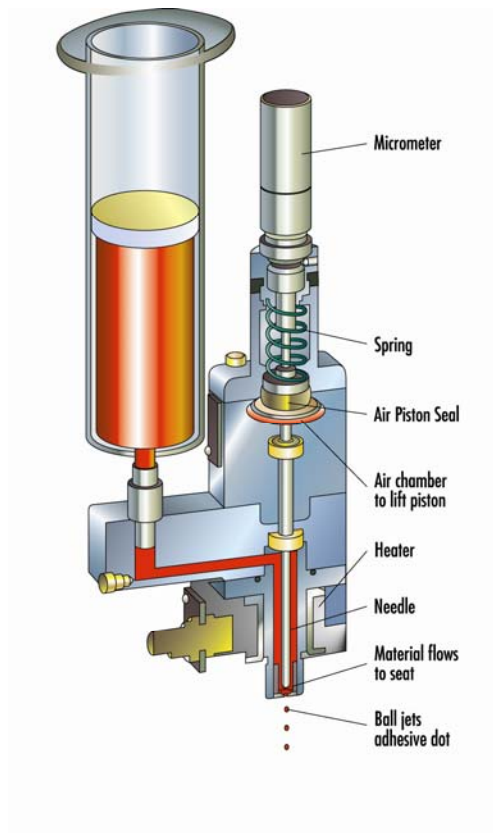
4.8 Bar (70 psi) min.

Fluid Pressure:

Fluid Pressure: 0.3-2 Bar (5-30 psi)

Nozzle:

Orifice Diameter: 0.102 to 0.406 mm (0.004 to 0.016 in.) > 0.012 μ l



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speak with your local
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your regional office.**

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