

Tilt Dispensing Options

Dispensing Fluids into Challenging Applications

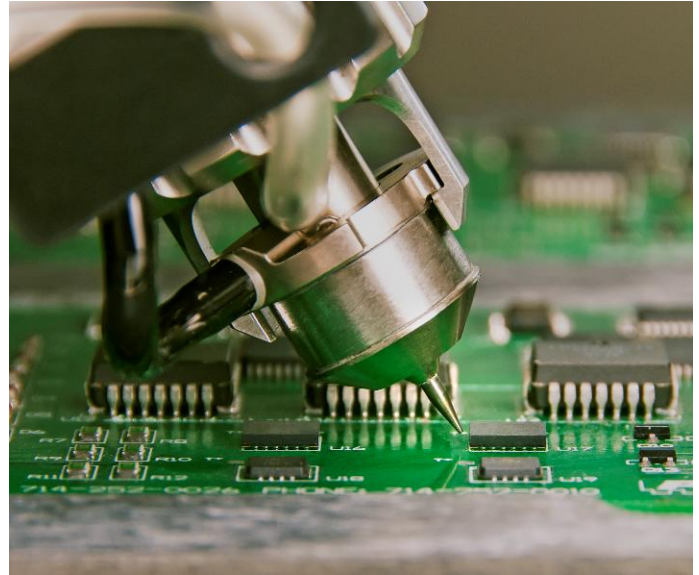
Features and Benefits

- Enables dispensing around tall substrate components
- Allows moving the nozzle tip closer to a target location, such as a vertical wall, for precision fluid delivery
- Improves capillary underfill for 3D IC packages by reducing wet-out distance from the die edge and ensuring sufficient underfill at the top layer of the die stack
- Available in two versions: Single-Axis or Programmable Tilt + Rotate

Dispensing into tight corners has never been easier or more accurate. Nordson ASYMTEK introduces its line of Tilt Dispensing options to meet the dispensing challenges created by new types of advanced packages and high board-density applications.

Advanced Packaging. New packaging and PC boards continue to stretch the capabilities of dispensers to accurately place fluid in locations that are more difficult to access while maintaining a smaller wet-out area. 3D IC packages challenge the ability to provide sufficient fluid to upper layers of the die stack to get complete underfill penetration. New mobile phones require thin lines of fluid to be dispensed into tight corners of the cases for touch panel assembly. High density PC boards require dispensing around tall components and into tight gaps between devices. Tilt dispensing allows you to place the fluid right where you need it and to avoid those places where you don't.

Automatic Actuation. Control of our tilt dispensing options is integrated into the feature-

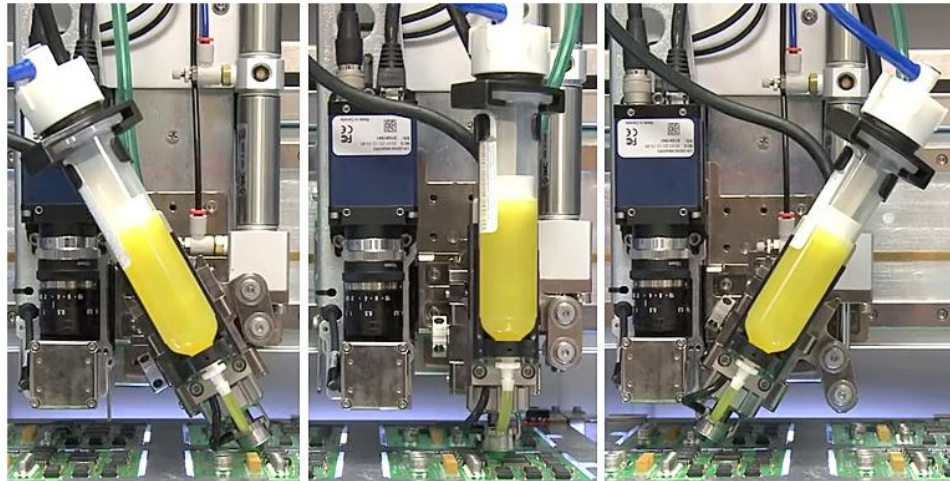


rich Fluidmove[®] software suite for automatic actuation of the tilt function during production, reducing equipment downtime associated with manual valve position adjustments. For dispensing along a vertical surface, on one side of a package, two sides, four sides, or at multiple angles, Nordson ASYMTEK's tilt dispensing options are easily set up and programmed for high-volume manufacturing.

One Axis or Two? Whether your application requires tilt dispensing in one axis or two, we have a solution. The Single-Axis tilt option can be mechanically configured to tilt in either X or Y axis. The Programmable Tilt + Rotate option extends this capability with controls to tilt in both X and Y axes using an integrated rotation function for the motorized tilt arm.

Precision. Coupled with our award-winning Spectrum[™] II platform, tilt dispensing achieves unparalleled accuracy and precision in X, Y, and Z axes for thin lines and small dots; delivering your fluid precisely and consistently, right where you want it.

Tilt Dispensing Options



Single-Axis Tilt Bracket

Feature/Capability	Single-Axis Tilt	Programmable Tilt + Rotate
Tilt Actuation	Software-Controlled Pneumatic Cylinder	Software-Controlled Stepper Motor
Tilt Axis	Manually-Adjusted X or Y	Software-Controlled X and Y
Wet Dispense Accuracy *	$\pm 150\mu\text{m}$ @ 2mm Dispense Gap	$\pm 150\mu\text{m}$ @ 2mm Dispense Gap
Maximum Tilt Angle	$\pm 30^\circ$	$\pm 30^\circ$
Tilt Angle Resolution	10°	1°
Tilt Angle Setting	Manually-Adjusted Hard Stop	Programmed in Software
Valve Compatibility	DJ-9000, DJ-9500, DV-7000, DV-8000	DJ-9000, DJ-9500
Platform Compatibility**	Spectrum I, Spectrum II	Spectrum II

* Wet Dispense Accuracy is measured using a DJ-9500 with Stinger Nozzle at $\pm 30^\circ$ tilt; accuracy improves with smaller dispense gap

** For additional platforms, consult the Factory

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