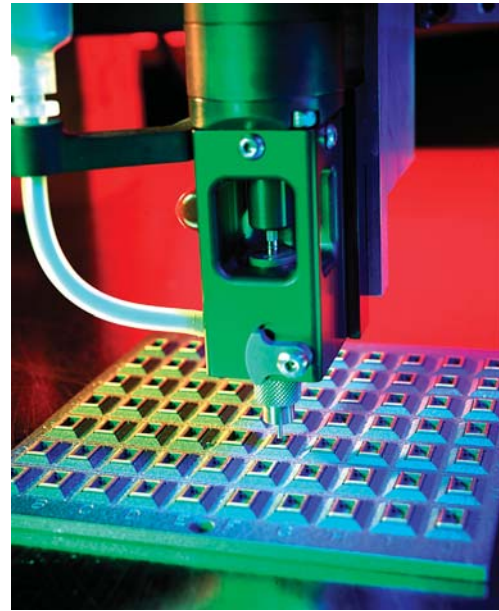
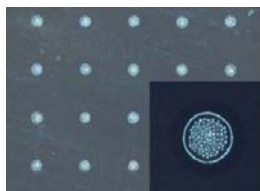


# Micro-Dot Valve

## Small Volume Dispensing Perfected

**MicroVolume** relates to material deposits less than 0.010" (250 micron). Dispensing these previously impossible volumes requires enhancements to an already proven dispense technology. Precise components, control, and years of testing have been logged to successfully dispense materials at the MicroVolume level.

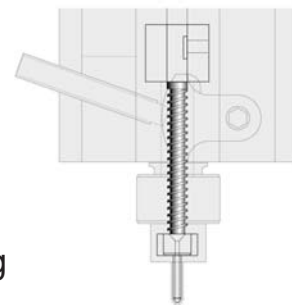
- Conductive Adhesives
- Solder Pastes
- SMT Adhesive
- Thermal Greases
- Plus many more...



## VALVE TECHNOLOGY

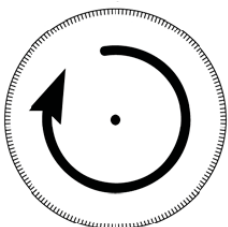
*Material is dispensed through a precision auger screw, cartridge, and needle assembly*

- Material is fed to the auger under low air pressure
- Air pressure is not used to dispense material
- Material is dispensed to the substrate through a precision dispense tip specifically designed for MicroVolume dispensing
- Auger-to-Cartridge tolerances are  $\pm 0.0002$ " (5 micron)



Auger, Cartridge, & Needle

57,000 Counts per Revolution

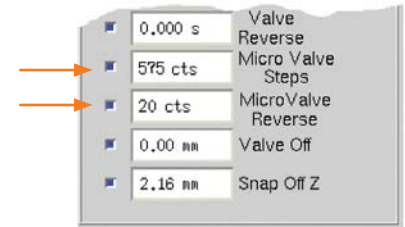
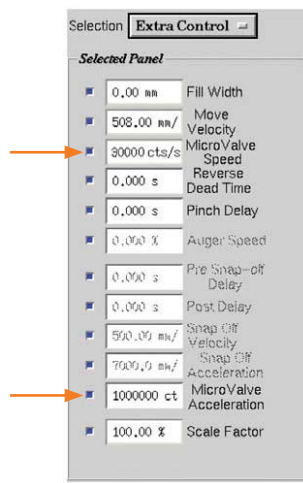


*Valve motion controlled via FLOWare<sup>®</sup> software*

- Valve is equipped with a 57,000 count rotational encoder
- Allows for accurately controlled rotational movement of the auger screw

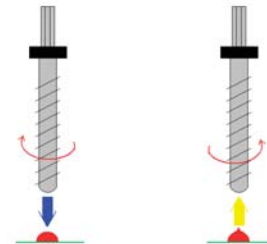
## *FLOware® software controls all aspects of valve motion*

- Acceleration and deceleration
- Rotational speed via counts/second



## *Forward and Reverse Auger Motion*

- Reduces pressure build up when using small needle gauges
- Controls stringing of some materials



## *Various auger configurations available for customized process control*

- Manufactured from Carbide
- Ultra Shallow to Ultra Deep groove configurations
- Other auger materials available for materials that bleach carbide



## *Many needle sizes and types available for specific dispense requirements*

- Precision taper tips for low material-to-needle surface tension
- Slim cut tips for underfill minimize distance from die or CSP
- Needles feature a large, constant diameter material path for enhanced dispense capability

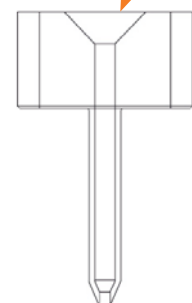


Precision Underfill Needle



Precision Needle

High-Flow Material Pathway



Final Dispense Diameter only at tip

Rev 02/08

**GPD Global**