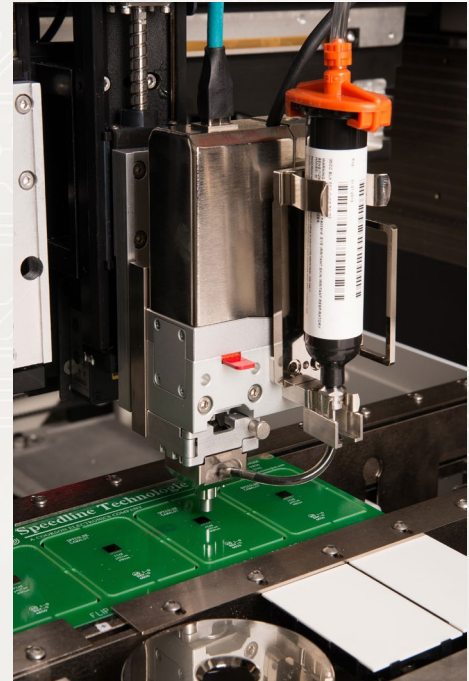


NanoShot™ Next Generation Jetting Technology

NanoShot is the most advanced pump technology to emerge that addresses the growing challenges of faster, smaller and more precise fluids dispensing. Its patented next-generation technology is the product of best-in-class CAMALOT design engineering.

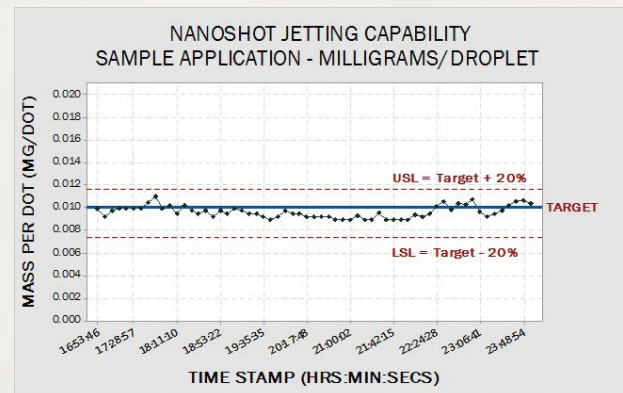
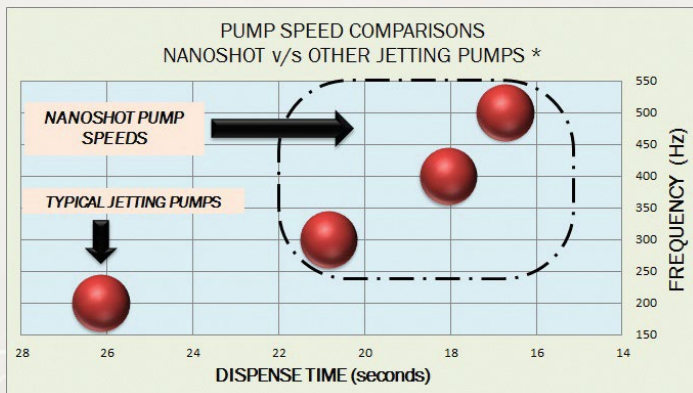
NanoShot takes jetting to a new level with high speed, up to 600 Hz, and ultra-fine resolution with dot sizes < 300 microns, this patented pump features state-of-the-art motion control technology, simple maintenance, quick changeover, and a low cost of ownership.

- Speeds up to 600 Hz
- Dot sizes < 300 microns
- Low cost of ownership
- Auto-tune for automatic calibration
- Quick change fluidics less than 1 minute



Closed-loop architecture results in >30% improved repeatability over current pump technology. This translates directly into higher yields and throughput through tighter process control. Patent-pending controls use real-time feedback from every piston cycle to ensure accurate and repeatable strokes with micron-level resolution. This level of process control is perfectly matched to NanoShot's high speeds and micro dot sizes for outstanding process capability, repeatability, and optimum throughput.

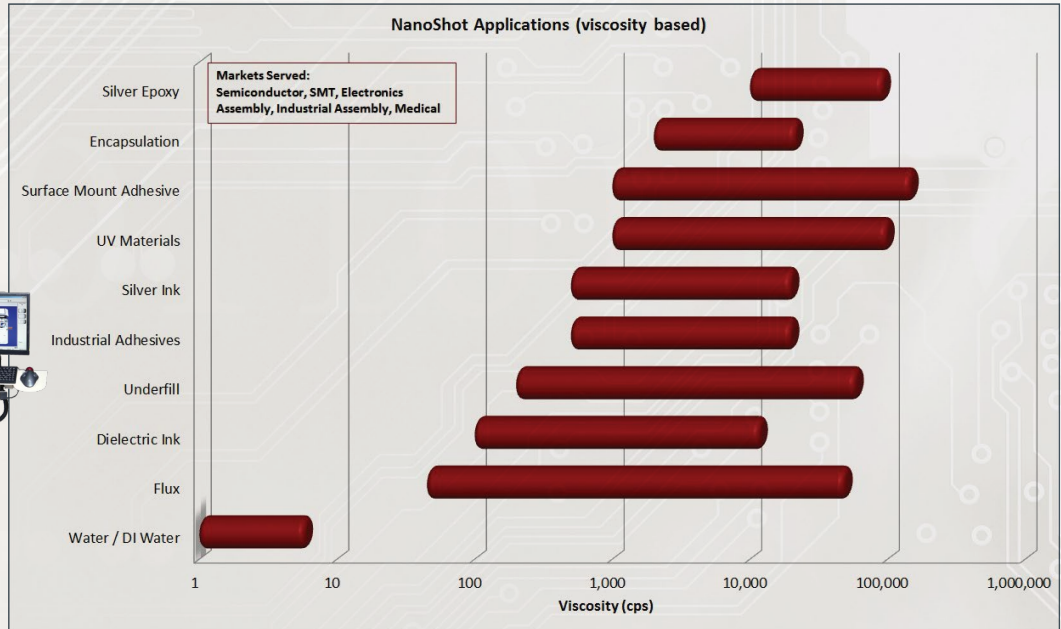
Proprietary software controls calibrate the pump and enable targeting dot volumes per program with a single hardware set and no operator hardware manipulation.



- Results on dispense times for actual product pattern
- Wet dispense at different pump speed
- NanoShot shows capability to jet fluids at 500Hz

- Results on mass per dot from NanoShot
- Actual wet dispense conducted for duration of 8 hours
- Typical UF fluids used for the trials

NanoShot™ Next Generation Jetting Technology



Call your local representative for further details.

NANOSHOT SPECIFICATIONS

Frequency	Up to 600Hz
Drive motor type	Piezo
Piston stroke	Automatic (software driven)
Piston material	Carbide
Material air supply	0 - 60 PSI
Viscosity range	> 150cps - 400,000cps
Nozzle material	Ceramic or Carbide
Nozzle diameter	75 to 400 microns
Nozzle heat	Up to 70°C
Syringe size	5cc - 55cc
Syringe size (optional)	6oz or 12oz direct mount
Material low level sensor	Included
Minimum pitch (DDH)	42 mm
Syringe Cooler	Compatible

ITW EAE is a division of Illinois Tool Works, Inc. It is a consolidation of all of its Electronic Assembly Equipment and Thermal Processing Technology. The group includes world-class products from MPM, Camalot, Electrovert (Speedline), Vitronics Soltec and Despatch.

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Camalot

Electronic Assembly Dispensers

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