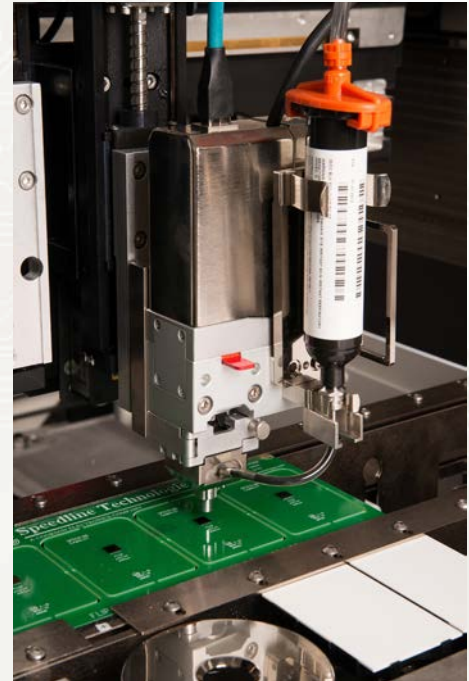


NanoShot™ Next Generation Jetting Technology

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.

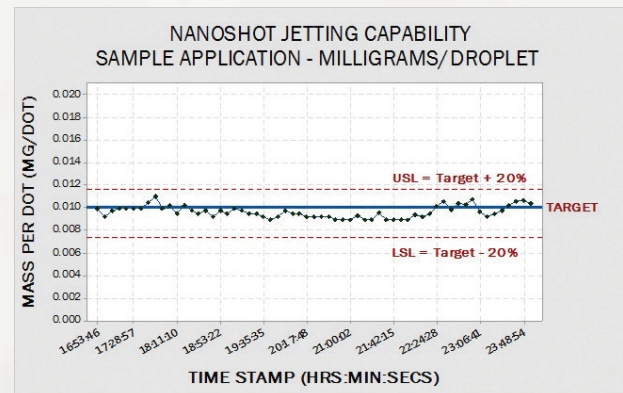
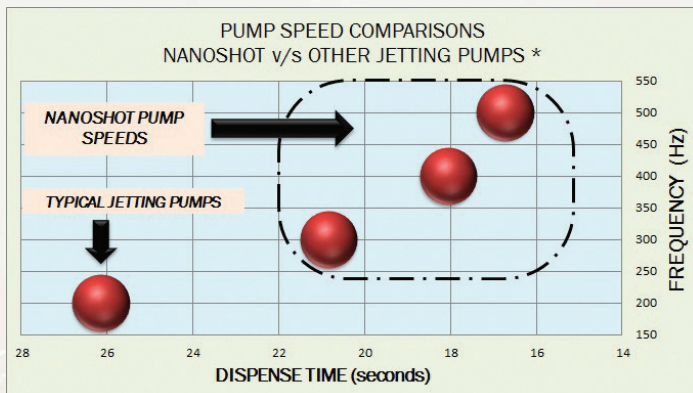
NanoShot takes jetting to a new level with high speed, up to 600 Hz, and ultra-fine resolution with dot sizes < 300 microns, this patented pump features state-of-the-art motion control technology, simple maintenance, quick changeover, and a low cost of ownership.

- 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.

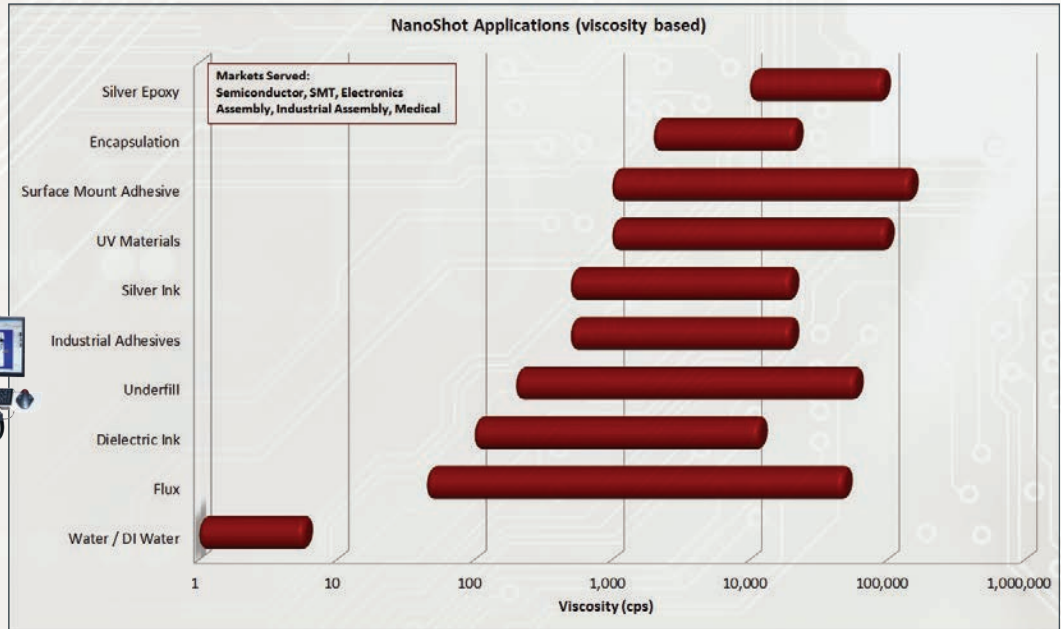
Proprietary software controls calibrate the pump and enable targeting dot volumes per program with a single hardware set and no operator hardware manipulation.



- 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

Air Supply	0 - 40 PSI
Piston Stroke	Closed-loop, microprocessor controlled
Encoder	Linear glass scale, 5 Nanometer resolution
Dispense Rate	Up to 600 Hz
Piston Material	Carbide
Nozzle Heat	Up to 70°C
Material Level Sensor	Standard
Nozzle Material	Steel, Ceramic, Carbide
Nozzle Diameters	40 - 200µm
Maintenance Time	<10 mins
Direct Mount Syringe Sizes	10cc, 30cc, & 55cc cartridges
Platform compatibility	Prodigy

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.