

..HYPERDOT™



HYPERDOT Features



- Non-Contact Jetting
- Up to 300 drops/sec
- Jet-on-the-Fly
- Adjustable jet velocity
- Integrated heater
- Easy-to-Clean
- Replaceable diaphragm
- No seals to wear or leak
- Robust construction

Value to Customers



- Non-contact jet dispensing is fast and accurate
- Small drop size allows:
 - Jetting into tight spaces
 - High density drops
- Line Mode (Jet-on-the-Fly) allows high throughput
- Viscosities Up to 50,000cps
- Easy to clean saves time

Jetting Methods

Stop and Shoot

Move to position



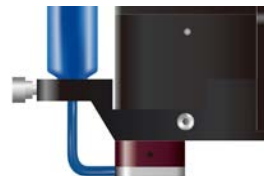
Move to next position



Surface Mount
Adhesives



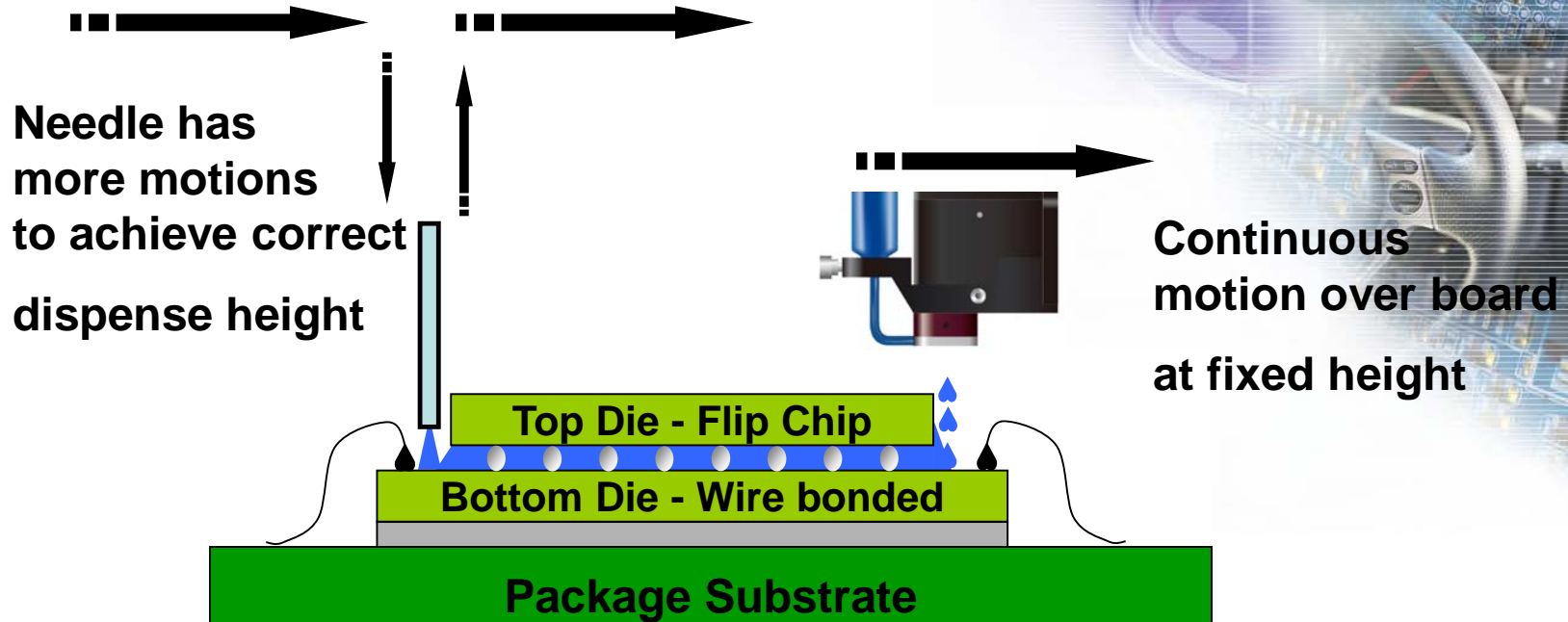
Jet on the fly (JOF)



Underfills &
UV adhesives



Stacked Die



Needles have wall thickness and must have a separation between the die to avoid die clipping or getting fluid on the top die

Jet nozzles can be positioned above the die to precisely position the jet stream to the side of the die.

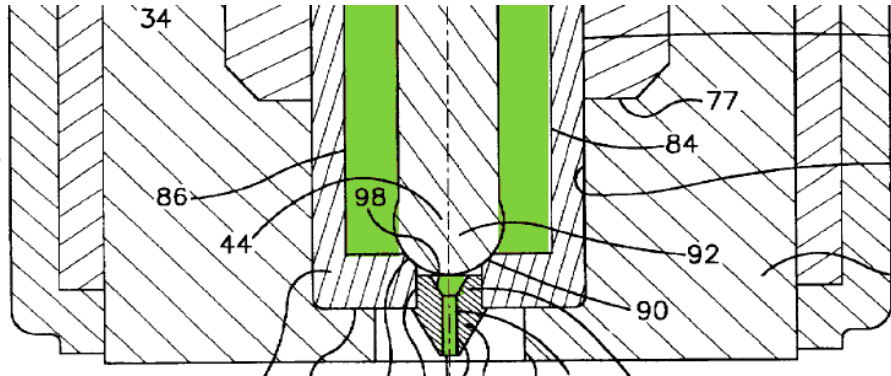
Key Selling Points

- The Hyperdot has some important advantages!
 - Ease of Cleaning
 - Robust Design
 - 2X Faster in continuous mode



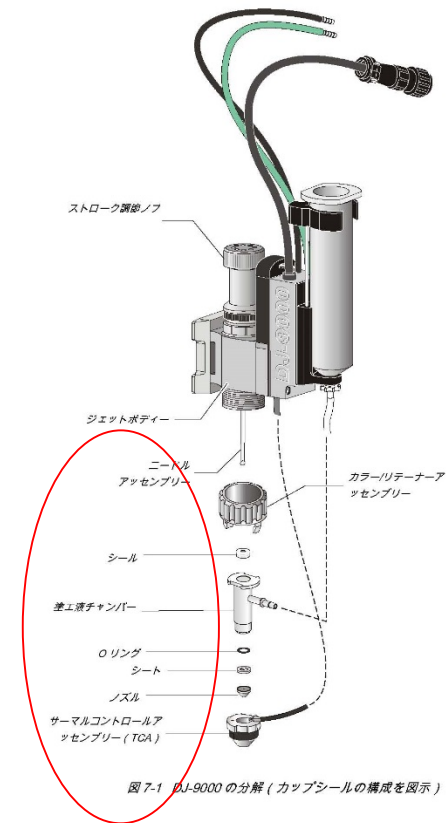
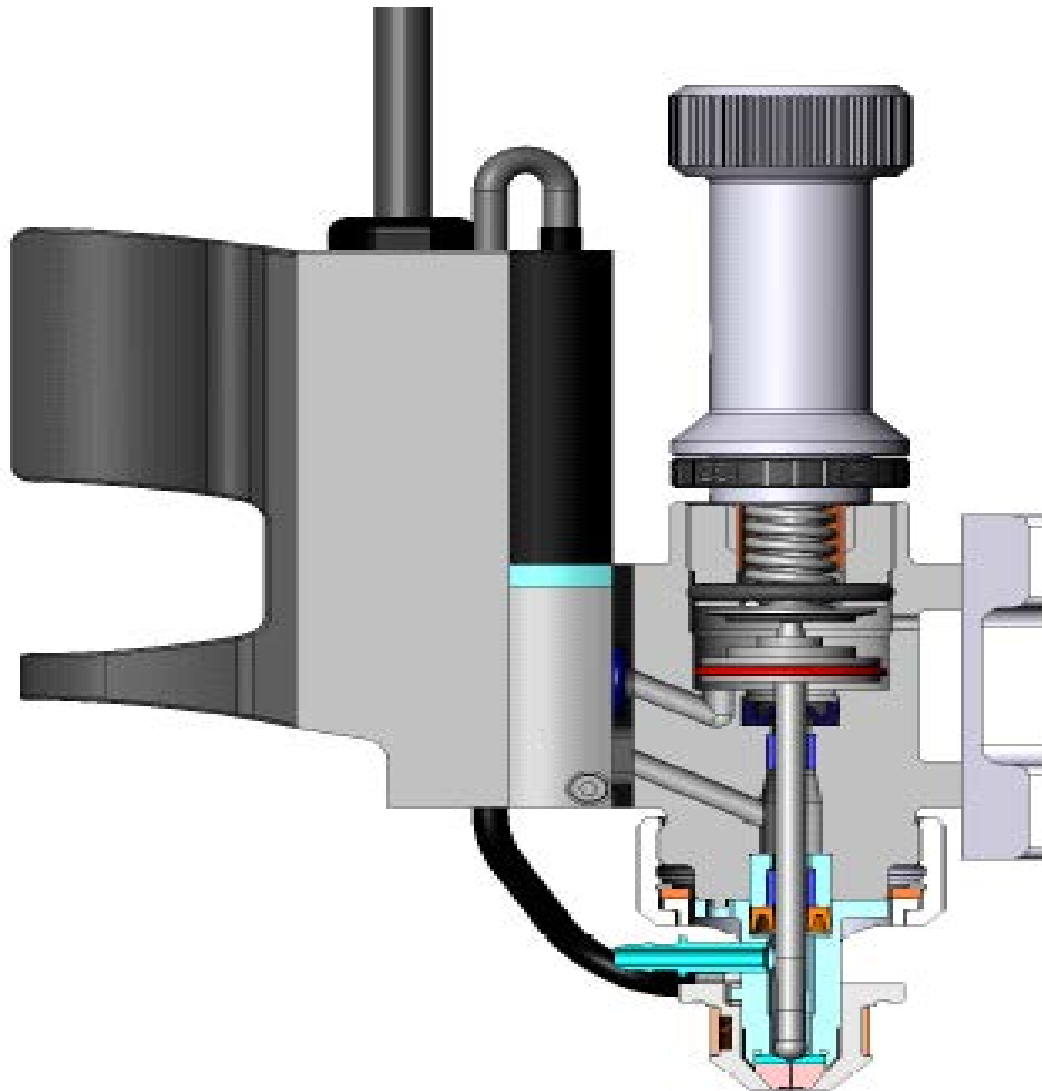
Comparison with other jet

DJ-9000/AeroJet

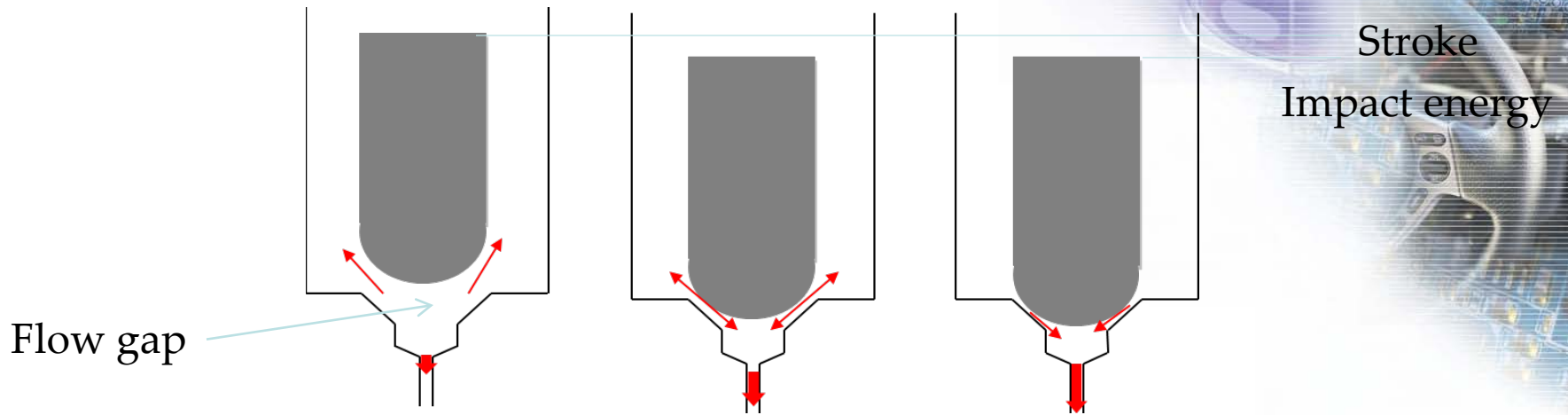


- DJ-9000/AeroJet
- Ball and Seat with piston
- Large moving piston
- Faster – pneumatic solenoid
- Higher energy by spring
- Dynamic fluid seals
- Single ball size – requires major rework to change ball diameter

Theory of DJ-9000 Operation

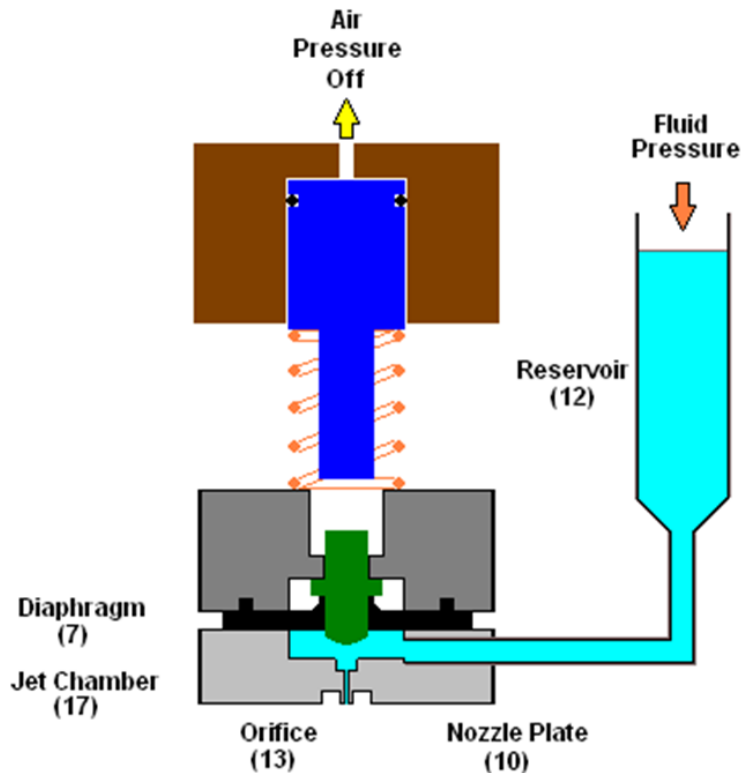


Standard Ball and Seat Design



- Raise the piston to generate impact
- To generate higher velocity, the piston must **go higher using stroke adjustment**
- ***Flow gap and impact energy are connected !***

Advantage of HYPERDOT



- Moving diaphragm
- No moving fluid seals
- Molded in ball
- Easy to replace
- Impact vs. spring force
- High speed
- No Stroke Adjustment
- Low-cost replaceable parts

Asymtek Application Report - Namics U8439

Mean = 6.09mg, $3\sigma = .17\text{mg}$, $Cpk = 1.2$

Configuration #2 - Unitized

Valve 2	DJ-9000
Valve 2 Seat Type	
Valve 2 Nozzle Type	15-4 (0.380-0.100mm) 0.015-0.004in Unitized 7201384-44
Valve 2 Needle Size	2.40MM (0.094") Long Needle For Unitized Nozzle 7200580-26
Valve 2 Seal Type	SEAL,PEEK,313 X .125 pn-7200581
Valve 2 Feed Tube	Standard pn- 210785
Valve 2 Cartridge Type	
Valve 2 Flux Air Cap	
Valve 2 On/Off Time (ms)	5/5
Valve 2 Stroke Setting	20
Valve 2 Line Speed (mm/sec)	
Valve 2 Dispense Gap (mm)	1.000
Valve 2 Fluid Pressure	12.0
Valve 2 Nozzle/Needle Temp	75 C
Valve 2 Valve Pressure	90.0 PSI

100HZ

75C

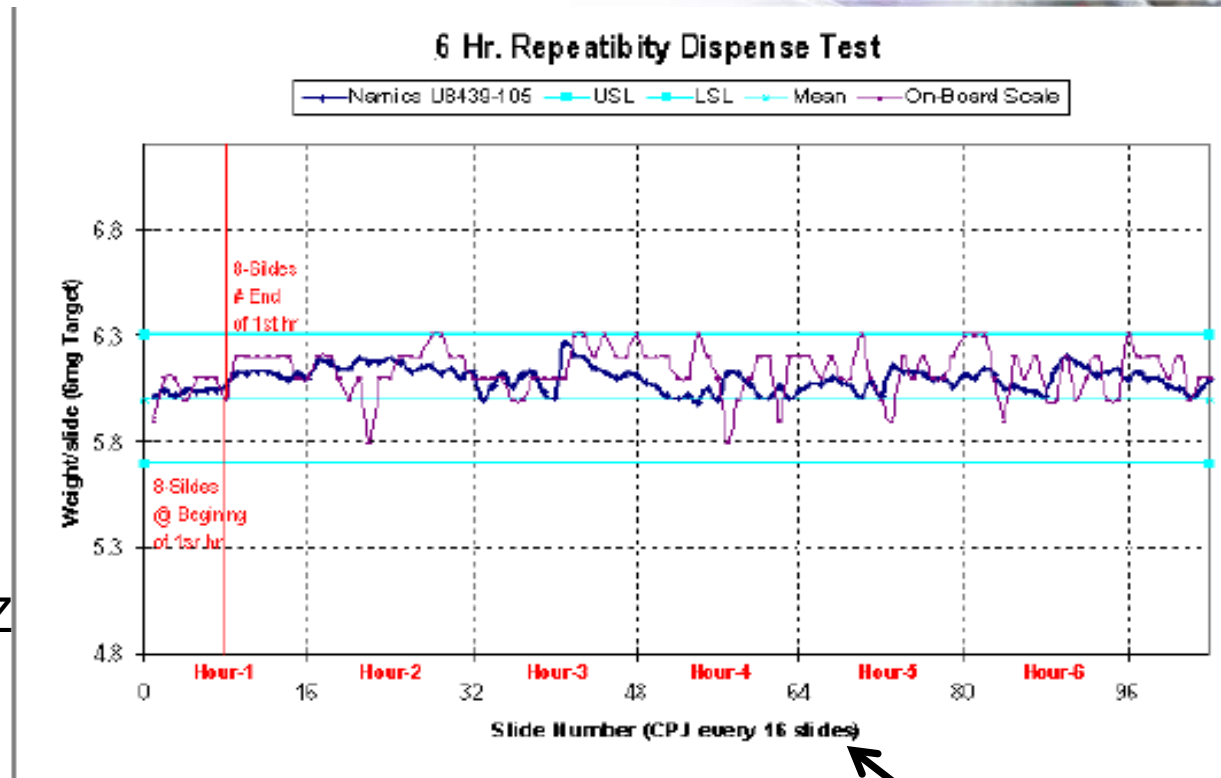


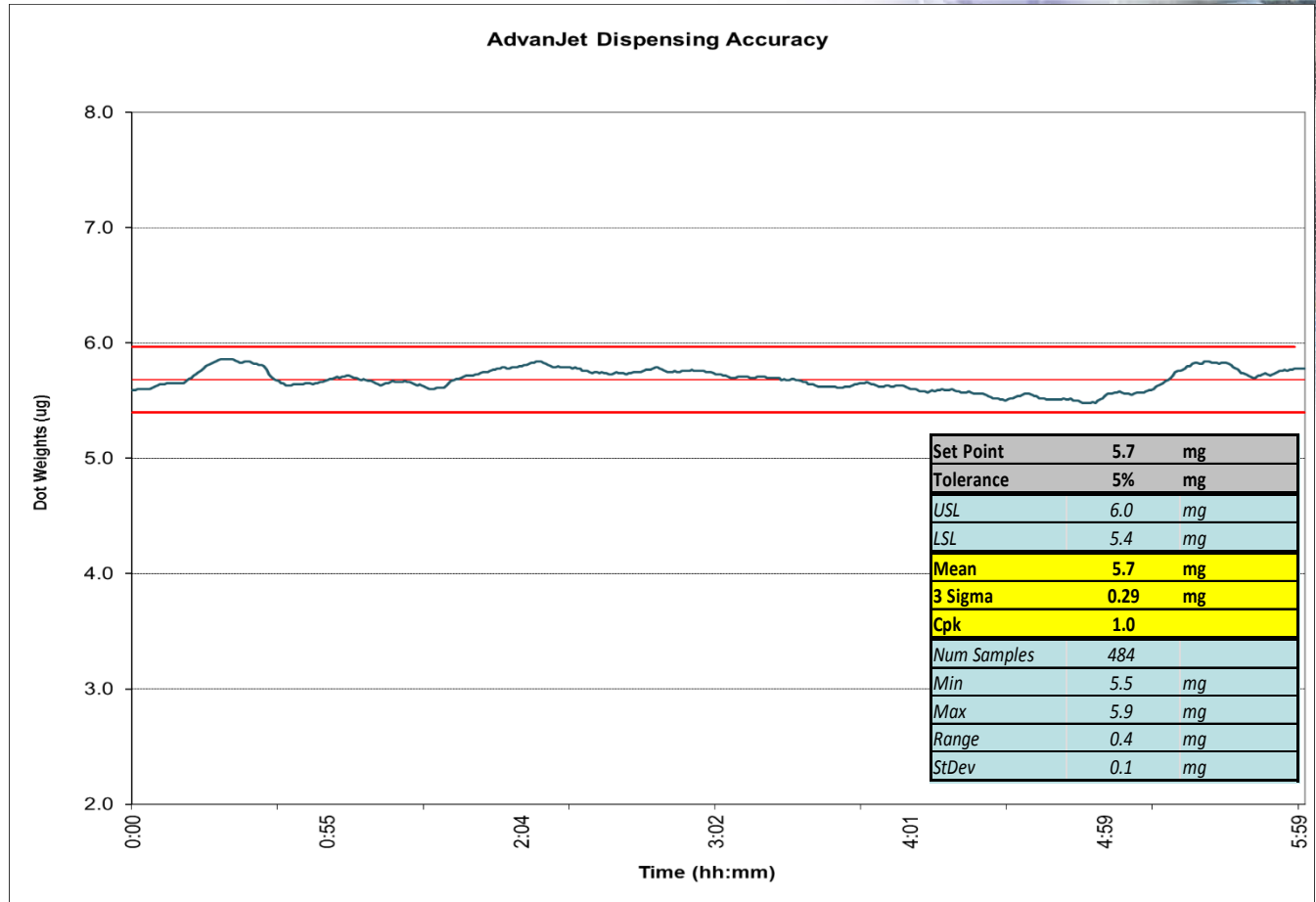
Figure 2: Configuration #2 Results

Calibration

Namics 8439-1– 6 Hour Test

Mean = 5.7mg, 3σ = 0.29mg, Cpk = 1.0 (5% Process)

Experiment		
ID	Run 3	
Date	2012-Sep-24	14:00
Operator	Margaret	
Fluid	Namics U8439-1	
Configuration		
Jet S/N	#249	
Nozzle S/N	#117 (5 mils)	
Nozzle Size		
Seat	Carbide	
Stroke		
Diaphragm	white F	
Return Spring	no spring	
Controller		
Settings		
Fluid Temp	54.9C	
Air Pres.	0.330	MPa
	48.0	psi
Fluid Pres.	0.160	
	23.0	psi
Refill	1.7	ms
Dwell	1.6	ms
Duty Cycle	303	Hz
Jet Mode	JOF	
Strike Gap	0.035	inch
Dispense Ht	2.5	mm
Dispense Wt	28.1	ug
# Dots/Sample	200	dots/sample
Interval	44	secs/sample
Test Duration	6:00	h:mm
Total Dots	291,200	dots



Namics 8439 Test Summary

- The Hyperdot performed the 6 hour test with a **Cpk =1** based on a 5%, 3 σ process
- The Hyperdot ran at 55C which was **20C cooler** than DJ-9000
- The Hyperdot ran **accumulation-free** for 18 hours eliminating the need for frequent purges
- The Hyperdot ran at 300 dots/sec – **3X faster** than the DJ-9000

Summary

- Hyperdot is simpler, faster and much easier to clean
- Our cost of ownership is much less

 SAN-EI TECH

**NEW
Product**

Ultra High-speed Non-contact Jet Dispenser

..HYPERDOT..



HYPERDOT provides non-contact, high-speed jetting at a rate up to 300 drops/sec and exceptional volumetric control for various fluids ranging from middle to high viscosity.

Features

- Applicable to high viscosity fluids up to 50,000cps
- No dynamic fluid seal to leak
- Only two parts touch the fluid - nozzle plate and diaphragm
- Easy to clean

Specifications

Size	Jet valve (without mounting bracket)	Jet controller
Width	25.4 mm	164.0 mm
Height	90.0 mm	162.5 mm
Depth	22.0 mm	241.4 mm
Weight	248 g	2200 g
Nozzle size	125 µm, 150 µm, 200 µm	
Speed	Up to 300-2, dependent on materials	
Viscosity range	1-5000 cP (50Kcps)	
Fluid syringes	5, 10, 30 and 55 cc	
Air pressure	Jet: 0.04 Mpa (60 psi) - Min 0.04 Mpa (60 psi) - Max	
Gas, dry air required	Jet: 0.02 Mpa (40 psi) - Max	
40µm filter required	Source: 0.59 Mpa (100 psi) - Max	
Nozzle heater	Heating up to 70°C - Max	
Operating temperature	Up to 50°C	
Power	100-250 VAC, 50/60Hz	
Input consumption	0.9A/100VAC 0.6A/115VAC	
current	0.05A/60VAC	
Controller interface	LCD Display with keypad RS-232C Serial Port	
Input/Output	25 pin D3 connector, data inputs pulled to GND	
Software	Windows XP/Vista and Windows 7 Fluid boxes with pre-programmed drop recipes	



SEI



Fluid dispensing Boundless Solution

SAN-EI TECH serves customers in resolving any problems associated with dispensing with our unique technical expertise.