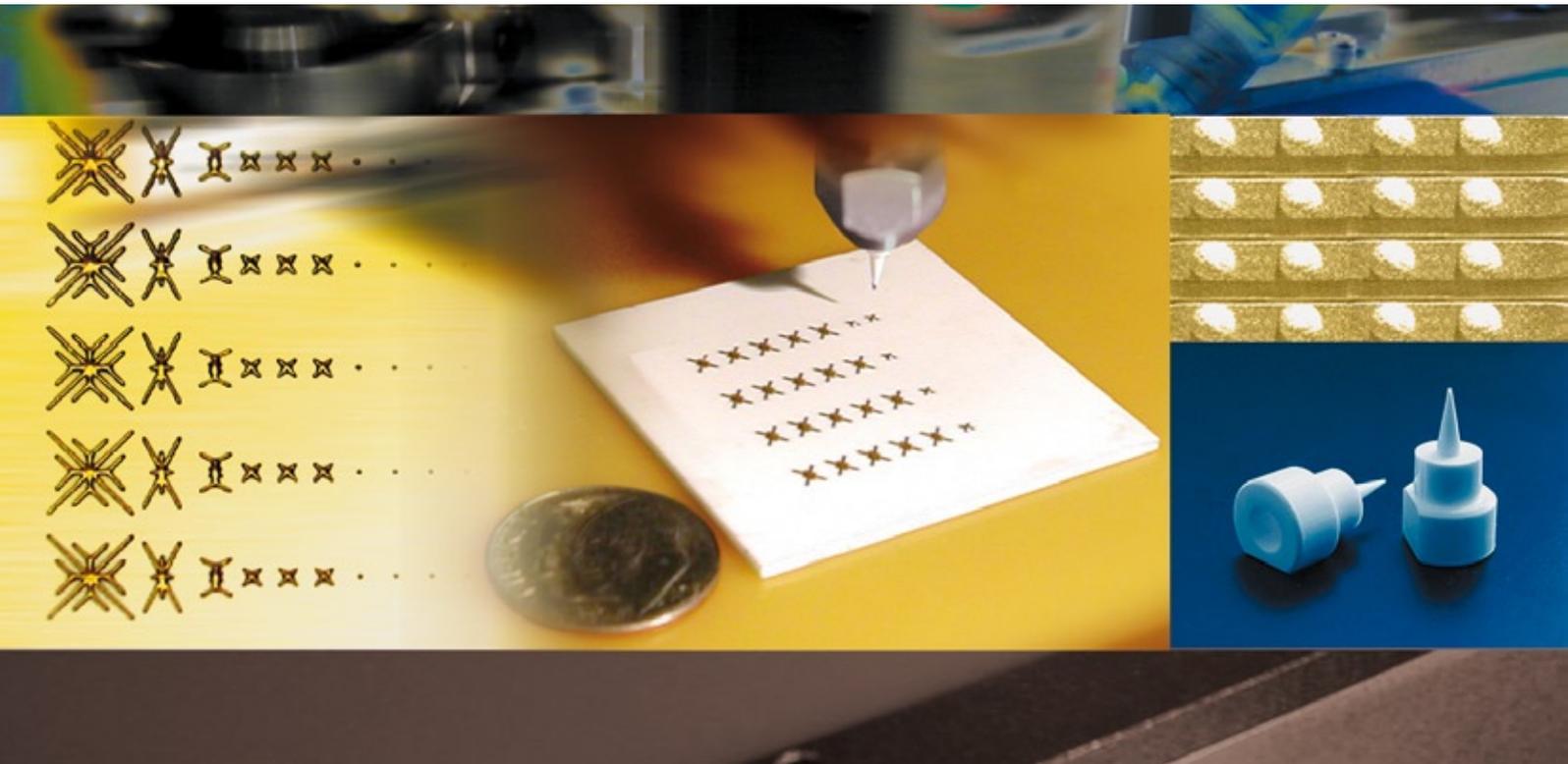


# Ceramic $\mu$ •Nozzle



**Breaking The Limits Of Fluid Micro-Dispensing**

## MDN : MICRO DISPENSING NOZZLE

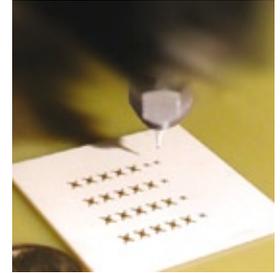


In today's electronics industry, there are various methods that have evolved to keep up with the rapid development of manufacturing need for adhesives and conductive epoxies in a wide array of packaging assemblies. Over the years, dispensing applications have expanded to other areas needed for new types of packaging encapsulation techniques. A wide variety of fluid materials with different viscosity are being used, from solder paste, conductive adhesives and damming compound to fluxes, thermal paste and underfills. Various dispensing platforms with programmable pumps have been developed to achieve unique patterns or volumes using single needle or special tapered nozzle.

In most programmable dispensing pumps, typical nozzle designs have been optimized to dispense consistent pattern and volume. Most of these standard nozzles have a distinct chamfered feature that reduces surface tension between the needle and material at the point of separation, therefore less probable to tailing or bridging.

In the realm of micro-dispensing application, the challenge takes place on methods to achieve small volumes or dots of 200 microns (8mils) and below with high repeatability. Among the methods that have been developed, the ideal approach at present would still be dispensing nozzle using auger screw or piston pumps. As for the nozzle, micro-dispensing requires small orifice with tight tolerance. Smooth internal finishing is also an important factor to enhanced fluid flow.

Small Precision Tools (SPT) positioned itself in meeting the challenge by introducing ceramic dispensing nozzles. Utilizing the ceramic injection molding technology, the nozzles are fully molded as opposed to inserted rolled tubing and stainless steel machining. Different bodies and outer tip configurations are available.



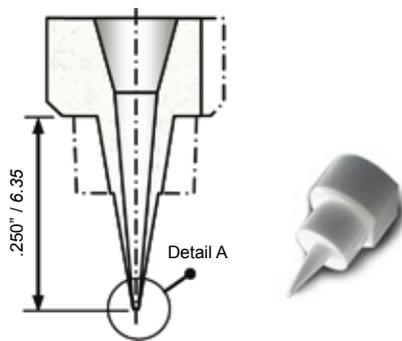
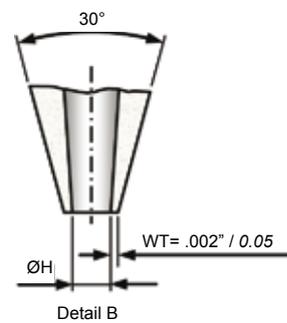
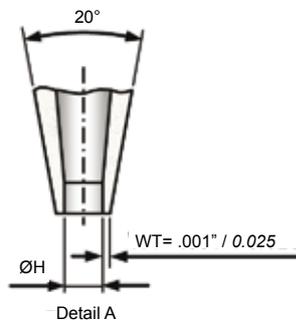
Courtesy of Datacon

**Advantages:**

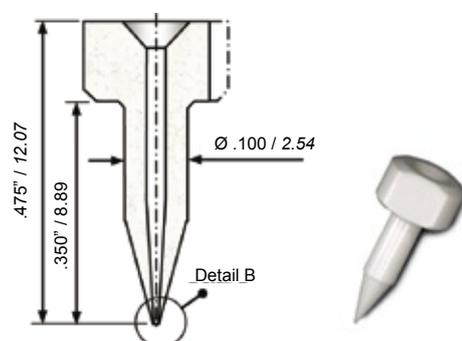
- Micro-dots dispensing: Capabilities that surpass machined stainless steel needles.
- Higher MTBA: Internal taper design with ultra-smooth surface finish for reduced clogging.

**Features:**

- Hole diameters from .010" to .002" (G25-G34).
- Body design that fits most auger pumps.
- Custom design available to your specification.



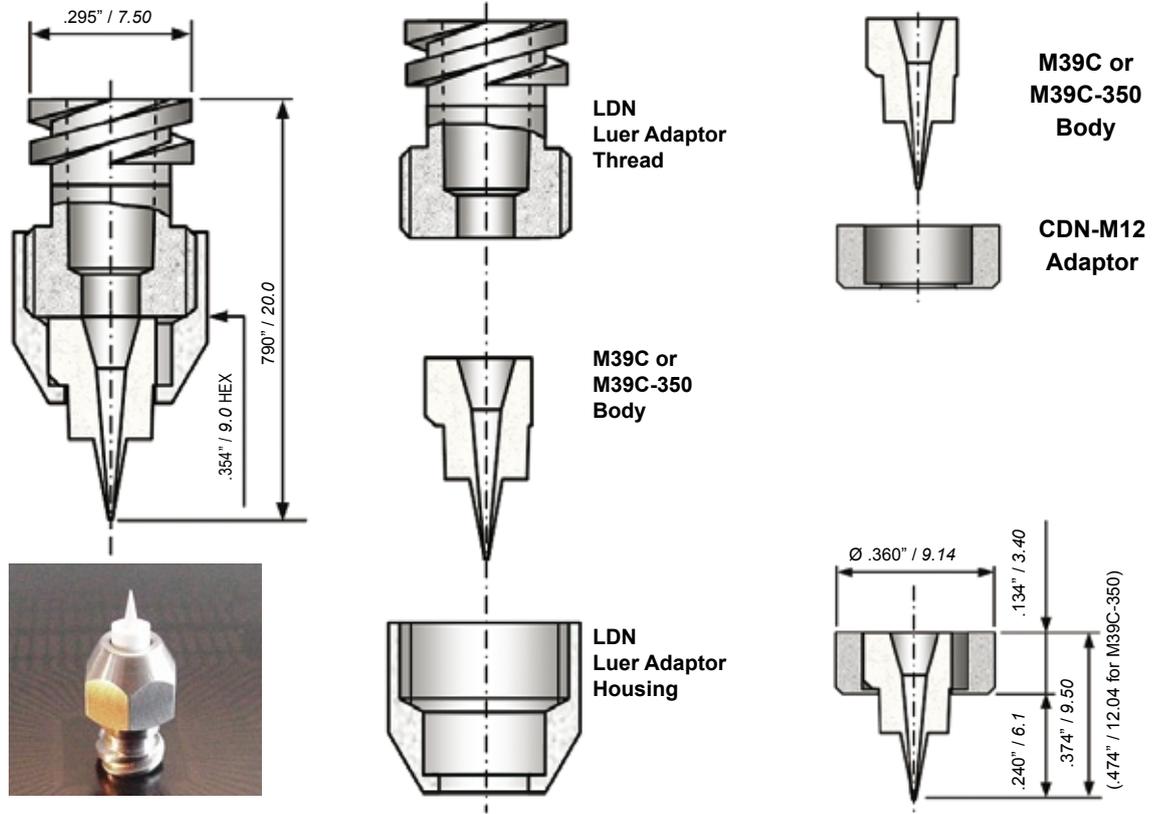
Body :M39C  
Option :TAPER RELIEF



Body :M39C-350

# ADAPTOR: LDN & CDN ADAPTOR FOR MICRO DISPENSING NOZZLE

The Micro Dispenser can be advantageously used together with a Luer or CDN Adaptor for those dispensing equipments that use corresponding attachment. The housing nut secures the ceramic MDN tool against the adaptor. The Luer Adaptor is composed of a thread and a housing can also host a CDN-M39S metal nozzle.



How To Order : LDN & M12 Adaptor			
	Tool Style	Body	Item
EXAMPLE :	LDN	- M39	- Luer Adaptor
	CDN	- M12	- Adaptor For M39

Available Hole Size	
Inner Ø H inch / mm	Gauge Size Equivalent
.010 / 0.25	G25
.008 / 0.20	G27
.007 / 0.18	G28
.006 / 0.15	G30
.005 / 0.13	G31
.004 / 0.10	G32
.003 / 0.08	G33
.002 / 0.05	G34

How To Order : MDN					
	Tool Style	Body	Mat'l	Ø H	Option
EXAMPLE :	MDN	- M39C	- C	- .008"	
	MDN	- M39C	- C	- .005"	
	MDN	- M39C	- C	- .007"	With Taper Relief
	MDN	- M39C-350	- C	- G27	