

Solder Paste Dispensing for Aerospace and Defense

Case Study

A global aerospace and defense leader requested a capability test of small volume solder paste dispensing on FR4 circuit boards.

Recommended Dispensing Process:

A precision dispensing system, MAX Series was utilized for this testing. The MAX automated dispense system was equipped with standard features including automatic vision alignment, contact surface sensor (laser is an alternative), automatic nozzle calibration and nozzle cleaning. The application specialist recommended the Precision Auger dispensing pump. The .062 diameter / 32Pitch auger along with 31G Precision needle (0.133mm ID) was chosen for this project.

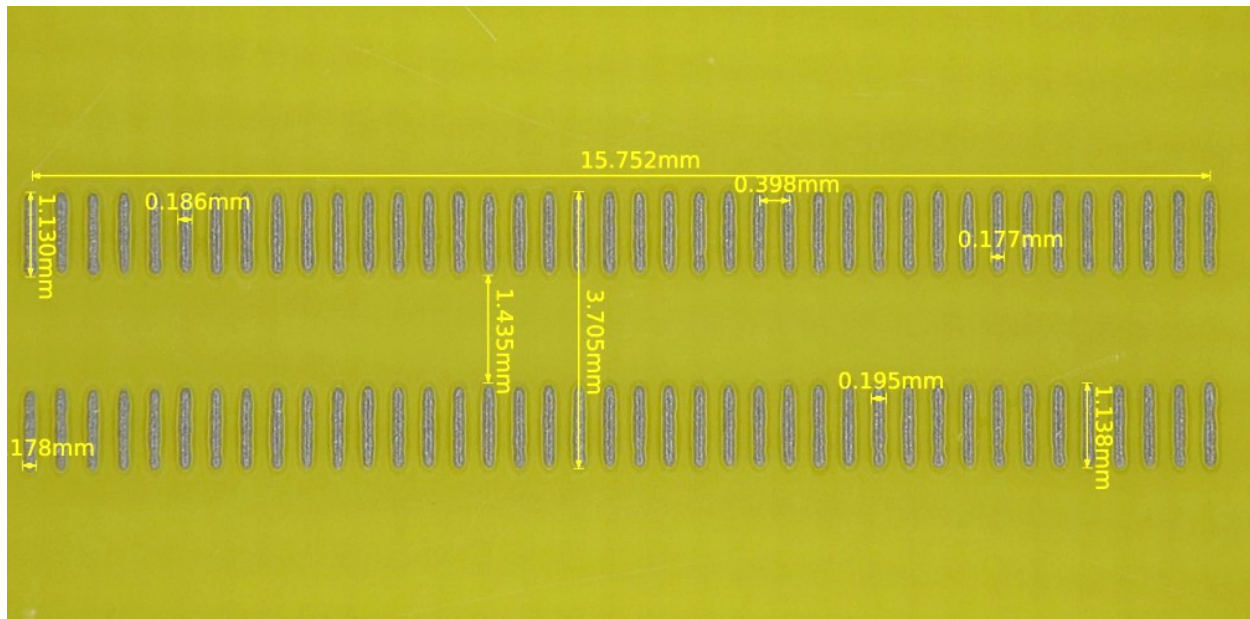
Dispense Parameters:

The information table below displays the key process parameters utilized for capability testing.

Pump	:	Precision Auger
Auger	:	.062 Diameter / 32Pitch auger
Needle	:	31G Precision (0.133mm ID), 6mm long
Syringe Pressure	:	10 psi
Dispense Height (Z)	:	0.0762mm
Settle/Snap-off Z	:	0.762mm
Dispense Velocity	:	7.62mm/sec
Pump Speed	:	10,000 cts/sec
Snap-off Velocity	:	1 in/sec
Pump Reverse	:	750 steps
Early Valve Off	:	0.178mm
Pre Snap-off Delay	:	0.050 sec

Conclusions: Solder Paste Dispensing for Aerospace and Defense

As shown in the example below, the results were consistent and achieved the desired cycle time.



Final Dispensing Equipment Recommendations:

- Dispense System** : [MAX Series System](#) with auto vision, contact surface sensor, automatic nozzle calibration and automatic nozzle cleaning.
- Dispense Pump** : [Precision Auger](#)
- Material** : Indium 12.8HF T6 Solder Paste
- Needle Size and Type** : 31G Precision Needle (0.133mm ID), 6mm long

GPD Global offers [dispensing system](#) customization and [in-house application evaluations](#). Call 1.970.245.0408 or email request@gpd-global.com .

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