Camalot

Electronic Assembly Equipment

ITW EAE

# Syringe Cooler

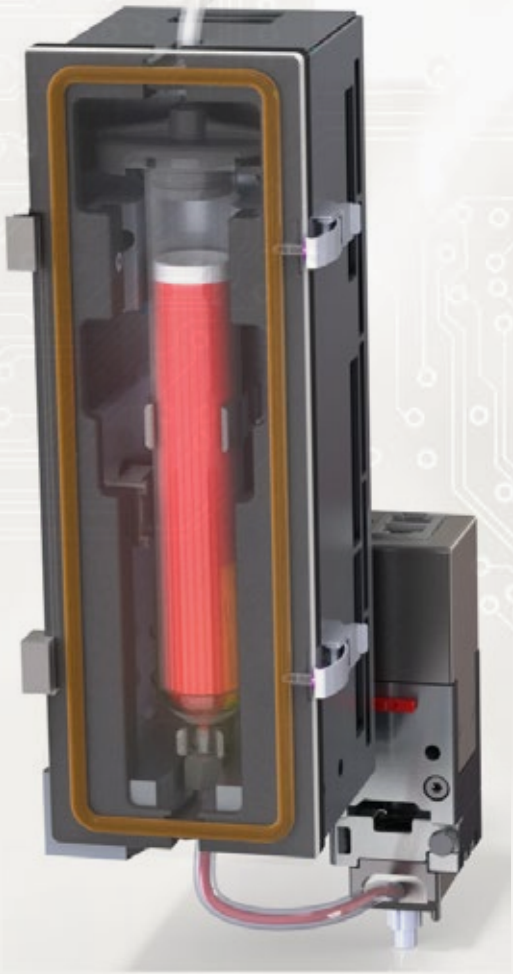
**Proprietary syringe cooling technology that increases the "pot-life" of underfill materials by maintaining the syringe at controlled temperature within the heated machine environment. This provides reduced material waste, less downtime and increased process stability.**

Underfill applications typically require that the PCB/Substrate is heated to a specified (topside) temperature prior to dispensing. The PCB/substrate temperature is dependent on the underfill material and can range from 60°C to 100°C. Heat is provided within the machine via heated chucks, these chucks can be set to 150°C and will raise the internal machine temperature, in some cases to >50°C when multiple chucks are used.

Underfill materials have a pot life to which they remain usable at an ambient temperature of 25°C. Increases to the ambient temperature reduce the pot-life. As an example, a material with a 48-hour "pot-life" can reduce to 8 hours if the machine environment is at 40°C.

Camalot's integrated closed-loop syringe cooling option controls the temperature of the underfill material in the syringe to maintain pot-life. This innovative solution is available as an option for the Prodigy dispensing system. The cooling unit can accommodate 10cc to 55cc syringes and includes a low-level sensor that alerts the operator through software when the syringe is empty.

The temperature of the cooler unit is set and monitored within the machines Benchmark operating system. The temperature setpoints are stored with the process program and allows different temperatures to be loaded if more than one type of material is used. As with all program parameters, the temperature data is logged and can be transferred via OpenApps™ to factory MES systems

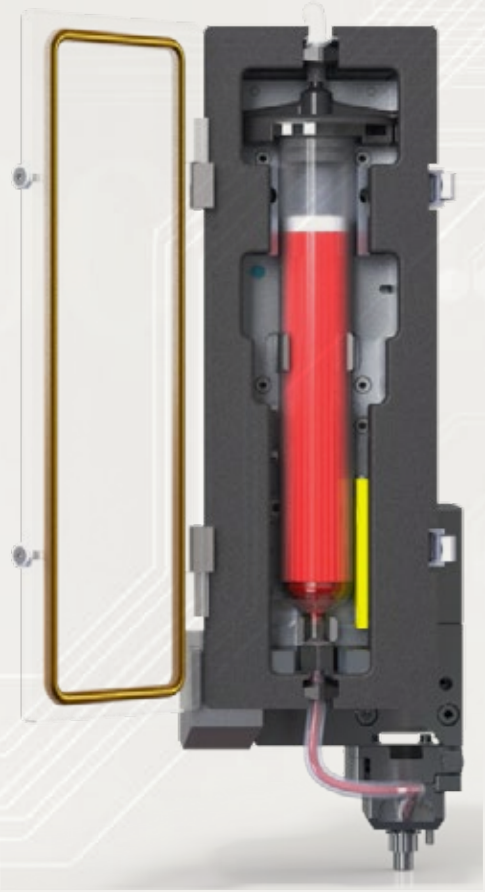


*The new syringe cooling system is proven to deliver an improved process, increased productivity and reduced cost of ownership.*

## Key Features

- **Extends underfill material life**
- **Proprietary cooling technology**
- **Fully integrated software controls**
- **Monitors material level in the syringe**
- **Reduced overall running costs**
- **Compatible with Camalot pump technology**

# Syringe Cooling



## FAQs

Q: How much longer will material last when using the syringe cooler?

A: That depends on the material properties and internal machine temperature but 3-5 times longer would be a good estimate.

Q: What is material "pot-life"?

A: Pot-life is the usable life of the material as determined by the supplier.

Q: Does the syringe cooler require any maintenance?

A: The syringe cooler only needs to be wiped clean if material spillage occurs.

Q: How is the unit programmed?

A: The unit is programmed through the operating software and settings save to the process program.

Q: Can the syringe cooling option be upgraded in the field?

A: Yes, the syringe cooler can be upgraded to existing Camalot Prodigy systems.

Q: What pumps is the syringe cooler compatible with?

A: The syringe cooler is compatible with Nanoshot and NuJet dispense pumps.

| SYRINGE COOLER SPECIFICATIONS | |
|---|---|
| Temperature Cooling Range | 24˚C to 30˚C |
| Tolerance | +/- 0.5 ˚C |
| Syringe Size | 10cc - 55cc |
| Material Low Level Sensor | Included |
| Programming | Within Prodigy Benchmark OS |
| Settings Storage | Setpoint saved in process program |
| Temperature Monitoring | Closed-loop control |
| Programmable Increments | 0.1 degrees |
| Weight | 1.3 kg |
| External Data Transfer | To factory MES through OpenApps module |
| Compatibility | NanoShot or NuJet pumps |
| Field Upgrade | Available - Prodigy platform only |



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