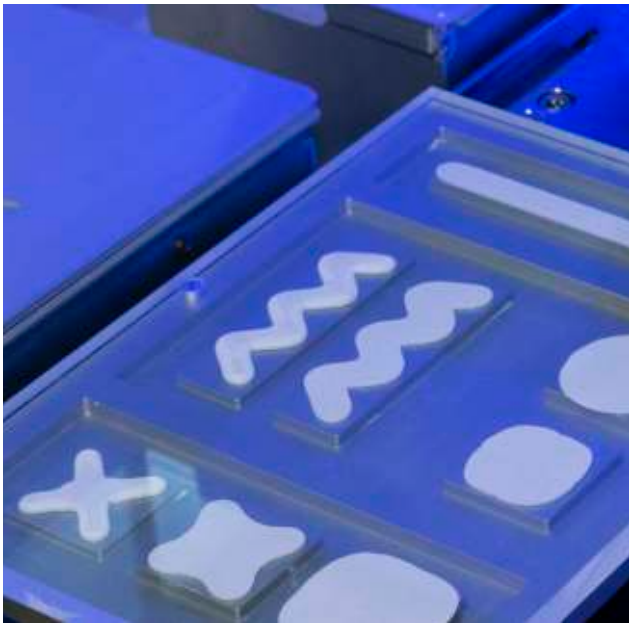
ASYMTEK Helios Series Solutions

A Comprehensive Solution for One-Component (1K) Thermal Interface Material (TIM) Dispensing

Platform, pump, and valve combine to dispense TIM materials for high-throughput batch and in-line automated assembly operations.

Solution Features and Benefits

- The conveyorized in-line and single-drawer ASYMTEK Helios® SD-960 Series features a 420 x 440 mm dispense area (maximum), and the dual-drawer Helios configuration for batch processes offers a 210 x 380 mm (left drawer) and 200 x 380 mm (right drawer) maximum.
- The FS-EP1 one-gallon pail pump is an easy-to-operate, low-maintenance closed-hydraulic system that supports the transfer of dispensable materials from one-gallon metal pails, minimizing downtime with a unique pail change and loading system.
- The 245 No-Drip Series valve is a high-pressure carbide ball-in-seat valve that offers easy maintenance and is ideal for dispensing abrasive TIM materials.



Heat presents a significant challenge for electronics packaging and can, in part, limit further miniaturization. As electronic devices continue to get smaller and the amount of heat they generate increases, cooling and temperature control have become critical. Thermal interface materials of various forms are applied between two surfaces to improve heat transfer, for example, between an integrated circuit and a heat sink. The Helios Series offers complete dispensable TIM solutions that enable outstanding thermal conductivity in a range of applications and provide greater process flexibility when compared to thermal pads.

The Helios Series 1K TIM dispensing solution includes three main elements: the Helios SD-960 Series dispensing system, the FS-EP1 one-gallon pail pump, and the 245 No-Drip Series dispense valve.

Helios SD-960 Series. Designed for medium- and large-volume dispensing applications, the Helios SD-960 Series supports many single- (1K) and two-component (2K) applications, including highly abrasive TIM. Helios Series processes are controlled by dedicated Fluidmove® fluid dispensing software that includes user-programmable dispense geometries.

FS-EP1 One-Gallon Pail Pump. The FS-EP1 pushes material through the feeding line to the dispense valve using a closed-hydraulic system. Low shearing of the material ensures that highly-conductive thermal gap fillers do not separate, and that material properties remain unaffected. There are no moving parts on the outside of the pump enclosure, not even the fluid line. Moving parts do not contact materials during dispensing, and the standard pressure configuration is set up to support 1K TIM dispensing right out of the box.

245 No-Drip Series Valve. The piston actuated 245 no-drip valve is suitable for high pressure dispensing up to 3500 psi (maximum). The unrestricted internal design enables the free flow of high viscosity materials, and wear-resistant seals and hardened components support a longer lifespan. The short-stroke and no-drip features provide immediate on/off dispensing control and material shut-off for accuracy and consistency.

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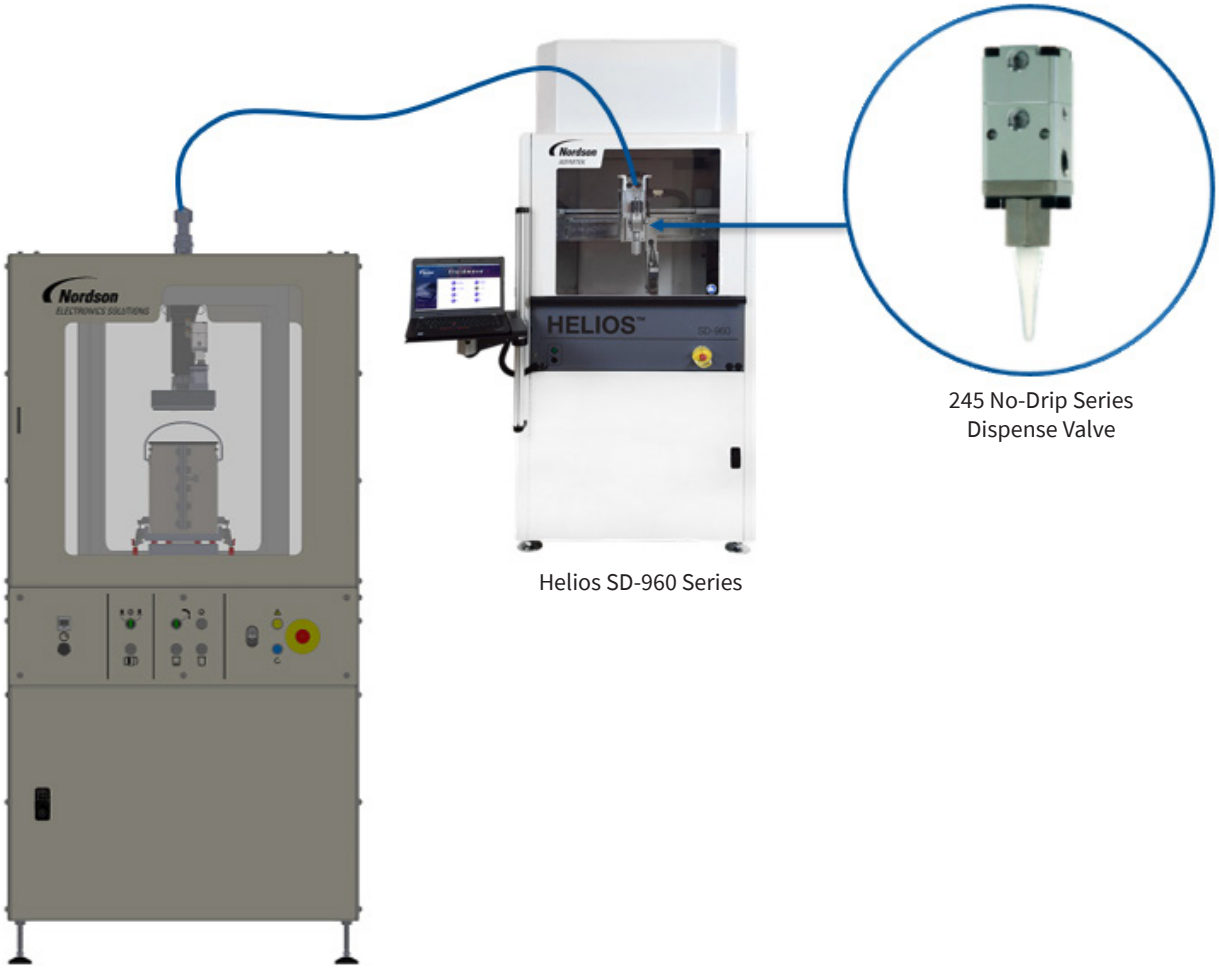
ASYMTEK Helios Series Solutions — 1K TIM Dispensing

One-component TIMs are often highly viscous and abrasive, making them difficult to transfer from the original packaging to the dispense valve. Facility air pressure and chunk pumps are commonly used to transfer these thick materials. Still, these are not robust long-term solutions because the air pressure that's achieved is usually insufficient, or the pump wears out faster, leading to premature failure.

Nordson Electronics Solutions provides the ideal long-term solution with the patent-pending, 1K TIM dispensing configuration that delivers:

- High performance
- Reduced downtime
- Low cost of ownership
- Simple operation
- Low maintenance

Complete 1K TIM Dispensing Solution Overview



245 No-Drip Series Dispense Valve

Helios SD-960 Series

FS-EP1 One-Gallon Pail Pump

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ASYMTEK Helios Series Solutions — 1K TIM Dispensing

Specifications — FS-EP1 One-Gallon Pail Pump

The following specifications are for the FS-EP1 one-gallon pail pump. Your local representative can provide specifications for the Helios SD-960 Series and the 245 No-Drip Series dispense valve.

Supported Materials	The FS-EP1 one-gallon pump is designed to pump high viscosity thermal paste materials. Contact your local sales representative to discuss specific materials.	
Facilities	System Footprint	918 mm width x 883 mm depth [36.14 x 34.76 in.] Lower door requires 855 mm [33.7 in.] clearance to open in the front 1000 mm clearance in the rear is recommended
	Main Power Supply	200-240 VAC, 50/60 Hz, 16A Short Circuit Current Rating (SCCR) 1.5kA
	Facility Circuit Requirement	16 A
	Minimum Fluid Viscosity	250,000 cps
	Maximum Material Pressure	100 bar max (1450 psi)
	Air Supply	586 to 620 kPa [85 to 90 psi.], up to 0.34 m3/min [12 SCFM]
	Ambient Air Temperature	5-40 °C
	Relative Humidity	20-95%
	Altitude	Up to 1000 meters
	Energy Consumption Idle	0.04 kWh, Average: 0.08 kWh, Peak: 0.12 kWh
	Current Consumption Base	1A max
	Air Consumption Idle	1.0 SCFM, Avg: 1.1 SCFM, Max: 3.0 SCFM
	System Noise	<76 dB(A) peak, <70.7 dB(A) average
	System Weight	630 Kg [1388.91 lb. max]
Compliance	International	CE Marked EN ISO 4413 EN ISO 13849-1
Machine Status	Sensors	Low and empty fluid level (standard) Safety controller
	Interface	Illuminated status lights on operator interface
	Communication	FS-EP1 sends *ready for production* status to the Helios Series dispensing system
	Pressure Accuracy Monitoring	Digital pressure gage on the operator interface
Safety	Interlock Switches	On the pump cabinet front- and rear- door
	System Lighting	Interior
Maintenance and Setup	Changeover	Quick, tool-free seal changeover
	Priming Valve	A semi-automated air-bleed routine with priming valve is controlled from the operator panel

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nordsonasymtek.com/global-locations

info@nordsonasymtek.com

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