

# Cerno™ Series: Model 102IL

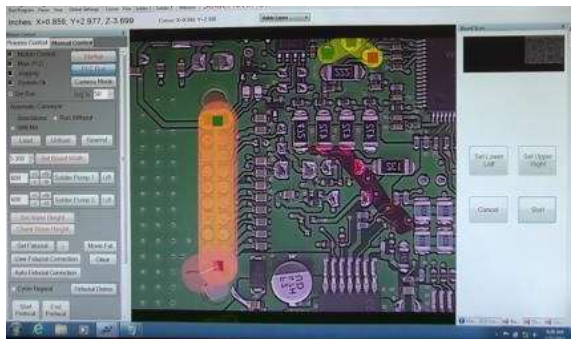
## Selective Soldering System for Batch or In-Line Production

### Features and Benefits

- Selective soldering of printed circuit boards as large as 406 x 406 mm (16.0 x 16.0 in.)
- Interchangeable solder pots and pumps compatible with tin-lead, lead-free and HMP solder alloys
- Choice of single selective solder nozzle, dual selective nozzles with independent control or 75 mm wide wave soldering nozzle
- SWAK-OS graphics-based programming and machine control software enables fast and straightforward program creation
- Optional in-line flux and preheat module with concurrent fluxing and preheating provides increased throughput

The Cerno™ 102IL is a robust selective soldering system delivering an exceptional combination of versatility, productivity and value. The Cerno™ 102IL has many unique features, including high speed Z-axis motion for faster processing time and reduced soldering cycle.

**Flexibility.** With its feature rich, graphics-based programming and machine control software, the Cerno™ 102IL is specially designed for demanding selective soldering applications. Set-up and time to first article is significantly reduced to within 10-15 minutes. The SWAK-OS software features seamless fiducial recognition, live teach cameras, real time data collection, SQL backend data extraction and complete FIS capability for shop floor integration.



SWAK-OS graphics-based programming software



**Soldering Technology.** With its flexible configuration, the Cerno™ 102IL is a versatile selective soldering system capable of processing tin-lead, lead-free or HMP solder alloys. Interchangeable solder pots and pumps are available with either single selective solder nozzle, dual selective nozzles with independent control or 75 mm (3.0 in.) wide wave soldering nozzle. The nitrogen inerted dual nozzle system enables the use of multiple size nozzles within the same program further enhancing flexibility and productivity.

**Process Control.** Nordson SELECT's closed-loop rotary encoders and other advanced process control capabilities have been incorporated into the Cerno™ 102IL, enhancing solder quality, precision and yield capabilities.

**Value.** With a reputation for innovation, comprehensive process solutions from Nordson SELECT ensure a maximum return on investment and low cost of ownership. From initial process development through full-scale production, you are supported by our experienced worldwide engineering, applications development and technical service network.

## Cerno™ 102IL Features

The Cerno™ 102IL is a fully configured SMEMA compatible selective soldering system and is a reliable and cost-effective solution for many demanding through-hole and SMT mixed-technology soldering applications including:

- Printed circuit board assemblies and other solderable substrates
- Interchangeable tin-lead and lead-free soldering

**Interchangeable solder pots**  
and pumps for tin-lead, lead-free and HMP solder alloys



Single solder nozzle



Dual solder nozzles



75 mm wave nozzle

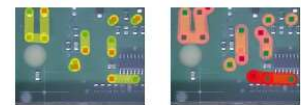


Standard atomizing spray flux applicator and available FluxJet precision drop-jet dispenser

**In-line flux and preheat module**  
available with concurrent fluxing and preheating for increased throughput

**Dual monitors** for simultaneous viewing of process camera and all soldering functions

**SWAK-OS** graphics-based programming and machine control software



Seamlessly creates true-to-scale image of entire board

Paint flux and solder paths to create and edit programs

**SMEMA edge conveyor** with program controlled width adjustment and PCB flattening

### Standard Features

SMEMA edge conveyor with program controlled width adjustment, positive PCB location and PCB flattening

Conveyor direction left-to-right

High speed Z-axis motion

Closed-loop rotary encoders

Atomizing spray flux applicator

Tin-lead solder pot and pump assembly with full set of quick change magnetically coupled bullet nozzles

Automatic solder pot level monitoring and fill system

Automatic wave height monitoring and adjust system

Solder alloy verification system

Heated nitrogen inerting system

Programming and fiducial alignment look-up camera

Dual process witness cameras

SWAK-OS graphics-based programming and machine control software

- Automatic fiducial alignment
- Board warp compensation
- On-board help videos
- Remote machine diagnostics
- Complete FIS capability

Off-line programming software

Dual monitors

### Optional Features

Right-to-left conveyor direction

FluxJet precision drop-jet dispenser

In-process flux verification system for drop-jet

Dual flux heads, 2 atomizing spray heads, 2 drop-jet flux dispensers or one of each

Topside infrared preheater with closed-loop control

In-line flux and preheat module with concurrent fluxing and preheating

Automatic solder nozzle tinning system

Lead-free solder pot and pump assembly (titanium)

HMP solder pot and pump assembly

Dual nozzle solder pot and pump assembly, tin-lead or lead-free (titanium)

3-25 mm bullet nozzles or 4-25 mm mini-wave nozzles

75 mm (3.0 in.) wide wave nozzle and pump assembly, tin-lead or lead-free (titanium)

Solder pot exchange cart with warming controls

Bottom-side nitrogen spot preheater

Nitrogen de-bridging knife

Single monitor

Six channel thermal data logging system

Barcode reader

# Specifications: Cerno™ 102II

## Motion System

Z accuracy	±50 µm (0.002 in.)
Z repeatability <sup>(1)</sup> :	±50 µm (0.002 in.), 3 sigma
Z velocity:	0.15 m/s peak (6 in./s)
X-Y accuracy	±50 µm (0.002 in.)
X-Y repeatability <sup>(1)</sup> :	±50 µm (0.002 in.), 3 sigma
X-Y velocity:	0.2 m/s peak (8 in./s)

## Computer

PC with Windows® operating system

## Software

SWAK-OS graphics-based programming and machine control software

## Solder Pot Capacity and Weight

Capacity <sup>(2)</sup>: Approx. 13.6 kg (30.0 lbs.)  
Total weight of tin-lead solder together with solder pot and pump assembly <sup>(2)</sup>: Approx. 24.0 kg (53.0 lbs.)  
Total weight of lead-free solder together with solder pot and pump assembly <sup>(2)</sup>: Approx. 21.3 kg (47.0 lbs.)

## Solderable Area (X-Y)

Single bullet, dual bullet or mini-wave nozzles <sup>(3,4)</sup>:  
Max. 406 x 406 mm (16.0 x 16.0 in.)  
Min. 50 x 50 mm (2.0 x 2.0 in.)

## Board Handling Capability

Max. board size: 406 x 406 mm (16.0 x 16.0 in.)  
Min. board size: 50 x 50 mm (2.0 x 2.0 in.)

## Conveyor

Max. board/carrier length: 406 mm (16.0 in.)  
Min. board/carrier length: 50 mm (2.0 in.)  
Max. board/carrier width: 406 mm (16.0 in.)  
Min. board/carrier width <sup>(4)</sup>: 50 mm (2.0 in.)  
Max. board/carrier thickness: 7.6 mm (0.3 in.)  
Max. overboard clearance: 102 mm (4.0 in.)  
Max. underboard clearance: 102 mm (4.0 in.)  
Edge clearance <sup>(5)</sup>: 3 mm (0.12 in.), edge conveyor including on-rail clamps  
Transport height: Conforms to SMEMA standard for conveyor height; height adjustable from 940-965 mm (37.0 - 38.0 in.) from floor to bottom of board  
Load capacity <sup>(6)</sup>: 4.5 kg (10.0 lbs.)  
Operation modes: Automatic (SMEMA), manual or pass-through

## Facilities Requirements

System footprint: 1371 x 1411 mm (53.9 x 55.5 in.)  
Air supply: Less than 10 CFH @ 90-100 psi  
Power (mains) <sup>(7)</sup>: Power supply accommodates 120VAC, 60 Hz, 15 A standard or 208/220-240VAC, 60 Hz single phase, 15 A optional 30 A with topside preheating <sup>(8)</sup>  
Nitrogen <sup>(9)</sup>: 99.999% pure @ 60-100 psi, 30-60 CFH consumption  
Ventilation: Rear 250 CFM recommended, two 100 mm (4.0 in.) dia. ducts  
System weight <sup>(10,11)</sup>: 409 kg (900 lbs.)

- (1) Repeatability is measured at full rated system speed.
- (2) Solder capacity and total weight of solder pot and pump assembly varies depending on solder alloy.
- (3) Substrates as small as 50 x 50 mm (2.0 x 2.0 in.) are possible without the need for fixturing or other tooling.
- (4) Contact factory regarding smaller boards/carriers.
- (5) Edge conveyor conforms to SMEMA standards.
- (6) Total weight of all parts on conveyor at any one time. Contact factory regarding requirements for greater load capacity.
- (7) Electrical power varies depending on configuration.
- (8) Topside preheating only available with 208/220-240VAC, 60 Hz, single phase power supply.
- (9) Nitrogen consumption is solder nozzle dependent and machine configuration dependent.
- (10) System weight varies depending on configuration.
- (11) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

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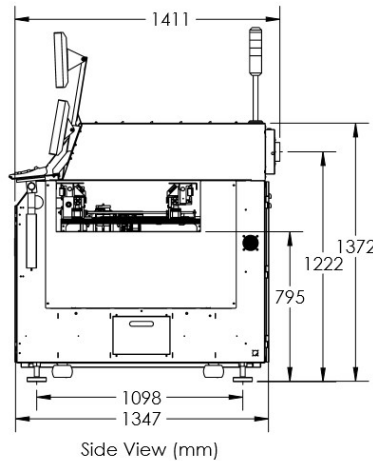
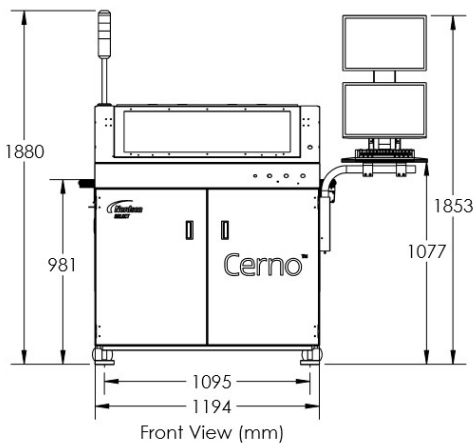
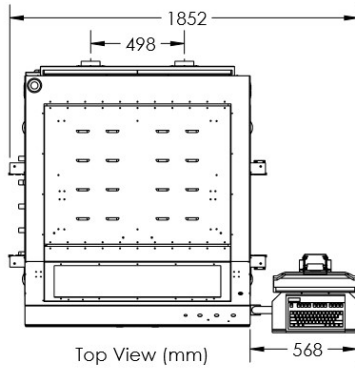
## Standards Compliance

SMEMA

**Additional options may be available: contact Nordson SELECT for further information.**

# Cerno™ 1021L

Dimensions are in millimeters



For more information, speak  
with your local representative  
or contact your regional office.

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