

Cerno™ Series: Model 103IL

Selective Soldering System with Advanced Process Controls

Features and Benefits

- Selective soldering of printed circuit boards as large as 610 x 457 mm (24.0 x 18.0 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™ 103IL is a robust selective soldering system delivering an exceptional combination of versatility, productivity and value. The Cerno™ 103IL 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™ 103IL 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™ 103IL 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™ 103IL, 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™ 103IL Features

The Cerno™ 103IL 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™ 103II

Motion System

Z accuracy	±50 µm (0.002 in.)
Z repeatability ⁽¹⁾ :	±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 ⁽¹⁾ :	±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 ⁽²⁾: Approx. 13.6 kg (30.0 lbs.)
Total weight of tin-lead solder together with solder pot and pump assembly ⁽²⁾: Approx. 24.0 kg (53.0 lbs.)
Total weight of lead-free solder together with solder pot and pump assembly ⁽²⁾: Approx. 21.3 kg (47.0 lbs.)

Solderable Area (X-Y)

Single bullet, dual bullet or mini-wave nozzles ^(3, 4):
Max. 610 x 457 mm (24.0 x 18.0 in.)
Min. 50 x 50 mm (2.0 x 2.0 in.)

Board Handling Capability

Max. board size: 610 x 457 mm (24.0 x 18.0 in.)
Min. board size: 50 x 50 mm (2.0 x 2.0 in.)

Conveyor

Max. board/carrier length:	610 mm (24.0 in.)
Min. board/carrier length:	50 mm (2.0 in.)
Max. board/carrier width:	457 mm (18.0 in.)
Min. board/carrier width ⁽⁴⁾ :	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:	76 mm (3.0 in.)
Edge clearance ⁽⁵⁾ :	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 ⁽⁶⁾ :	4.5 kg (10.0 lbs.)
Operation modes:	Automatic (SMEMA), manual or pass-through

Facilities Requirements

System footprint:	1701 x 1421 mm (66.9 x 55.9 in.)
Air supply:	Less than 10 CFH @ 90-100 psi
Power (mains) ⁽⁷⁾ :	Power supply accommodates 120VAC, 60 Hz, 15 A standard or 208/220-240VAC, 60 Hz single phase, 15 A optional 50 A with topside preheating ⁽⁸⁾
Nitrogen ⁽⁹⁾ :	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 ^(10, 11) :	431 kg (950 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.

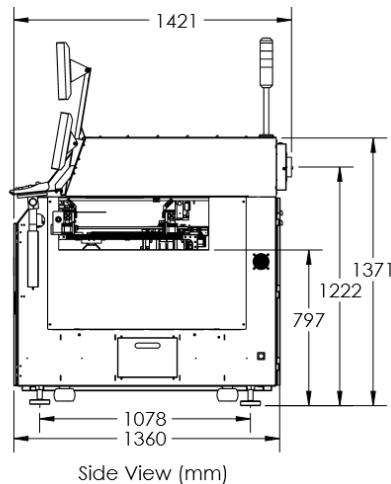
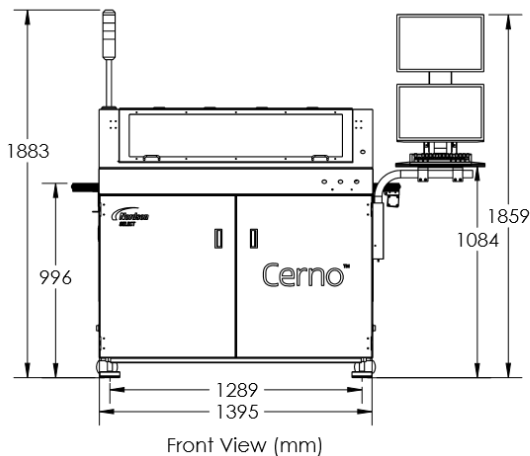
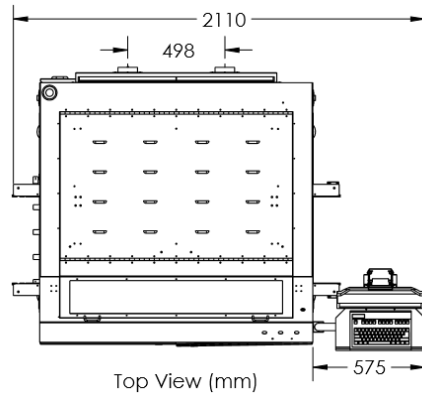
Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Standards Compliance

SMEMA

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

Dimensions are in millimeters



Nordson SELECT, Inc.
+1.509.924.4898 Phone
sales.usa@nordsonselect.com Email
3010 North First Street
Spokane Valley, WA USA 99216-5085
www.nordsonselect.com

Published 2017-27-11

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

Nordsonselect.com

North America

Headquarters

Spokane Valley, WA, USA

+1.509.924.4898

info@nordsonselect.com

China

Email:

info@nordsonselect.com

Shanghai

+86.21.3866.9166

Beijing

+86.10. 8453.6388

Guangzhou

+86.20.8554.9996

Europe

Maastricht, Netherlands

+31. 43.352.4466

info@nordsonselect.com

Japan

Tokyo

+81.3.5762.2801

Info@nordsonselect.com

Korea

Seoul

+82.31.765.8337

info@nordsonselect.com

India

Chennai

+91. 44.4353.9024

info@nordsonselect.com

S.E. Asia/Australia

Singapore

+65.6796.9514

info@nordsonselect.com

Taiwan

+886.229.02.1860

info@nordsonselect.com