

Cerno® Series: Model 103IL

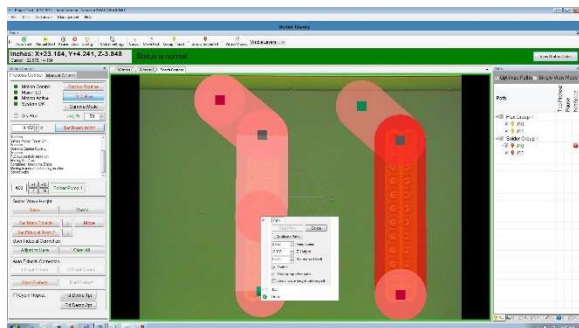
Selective Soldering System with Advanced Process Controls

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 4.0 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 4.0 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 4.0 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

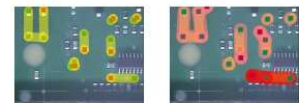
In-line flux and preheat module

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

Fiducial alignment and programming camera

Dual process viewing cameras

SWAK-OS 4.0 graphics-based programming and machine control software

- Fully-automated fiducial alignment and board mapping
- Board warp compensation
- On-board help videos
- Remote machine diagnostics
- Complete FIS capability

Offline 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)

2.27 kg (5.0 lbs.) solder feeder

Solder pot exchange cart with warming controls

Nitrogen de-bridging knife

Six channel thermal data logging system

Barcode reader

Specifications: Cerno® 1031I

Motion System

Z accuracy ⁽¹⁾ :	±50 µm (0.002 in.)
Z repeatability ⁽²⁾ :	±50 µm (0.002 in.), 3 sigma
Z velocity:	0.15 m/s peak (6 in./s)
X-Y accuracy ⁽¹⁾ :	±50 µm (0.002 in.)
X-Y repeatability ⁽²⁾ :	±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 4.0 graphics-based programming and machine control software

Solder Pot Capacity and Weight

Capacity ⁽³⁾ :	Approx. 13.6 kg (30.0 lbs.)
Total weight of tin-lead solder together with solder pot and pump assembly ⁽³⁾ :	Approx. 24.0 kg (53.0 lbs.)
Total weight of lead-free solder together with solder pot and pump assembly ⁽³⁾ :	Approx. 21.3 kg (47.0 lbs.)
Max. tin-lead/lead-free temperature:	350°C
Max. HMP temperature:	400°C

Solderable Area (X-Y)

Single bullet, dual bullet or mini-wave nozzles ^(4, 5, 6) :	
Max.	610 x 457 mm (24.0 x 18.0 in.)
Min.	50 x 50 mm (2.0 x 2.0 in.)

Preheating

Scalable infrared preheating from 1.0 kW to 6.0 kW

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 ⁽⁵⁾ :	50 mm (2.0 in.)
Max. board/carrier thickness:	7.6 mm (0.3 in.)
Max. overboard clearance:	76 mm (3.0 in.)
Max. underboard clearance:	102 mm (4.0 in.)
Edge clearance ⁽⁷⁾ :	3 mm (0.12 in.), edge conveyor including on-rail clamps
Transport height ⁽⁸⁾ :	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 ⁽⁹⁾ :	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.)
Compressed Air:	6 bar (90 psi.) min., 7 bar (100 psi) max.
Power (mains) ⁽¹⁰⁾ :	Power supply accommodates 208/220-240VAC, 60 Hz single phase, 50 A
Nitrogen ⁽⁸⁾ :	99.999% (5.0) pure, 4-7 bar (60-100 psi) 1.2 m ³ /hour consumption
Ventilation:	595 m ³ /hour (350 SCFM), two 100 mm (4.0 in.) dia. ducts
System weight ^(12, 13) :	431 kg (950 lbs.)

- (1) Accuracy as measured at extremes of travel.
- (2) Repeatability is measured at full rated system speed.
- (3) Solder capacity and total weight of solder pot and pump assembly varies depending on solder alloy.
- (4) Substrates as small as 50 x 50 mm (2.0 x 2.0 in.) are possible without the need for fixturing or other tooling.
- (5) Contact factory regarding smaller boards/carriers.
- (6) 2.27 kg (5.0 lbs.) solder feeder is not compatible with dual nozzle solder pot and pump assembly.
- (7) Edge conveyor conforms to SMEMA standards.
- (8) 900 mm (35.4 in.) non-SMEMA conveyor height available upon request.
- (9) Total weight of all parts on conveyor at any one time. Contact factory regarding requirements for greater load capacity.
- (10) Electrical power varies depending on configuration.
- (11) Nitrogen consumption is solder nozzle dependent and machine configuration dependent.
- (12) System weight varies depending on configuration.
- (13) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

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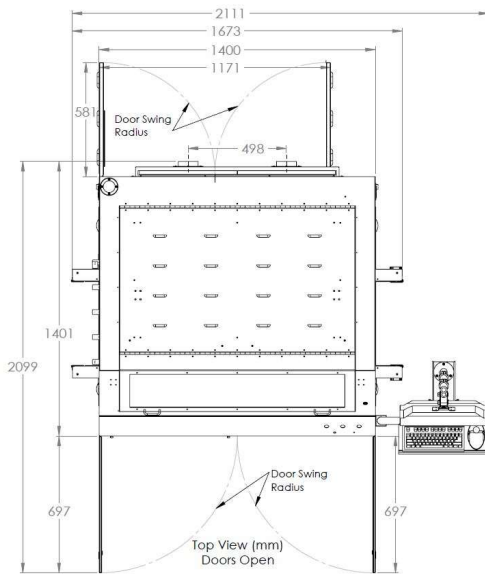
Standards Compliance

SMEMA

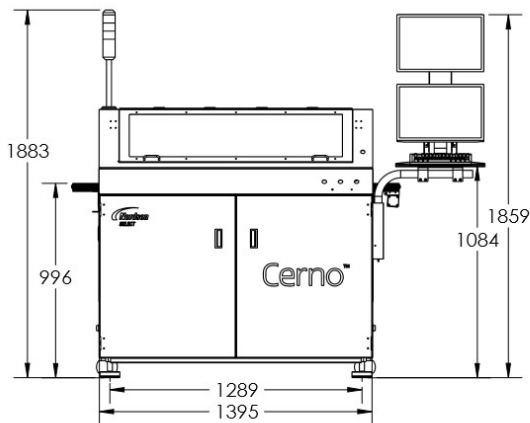
Additional options may be available: contact Nordson SELECT for further information.

Cerno® 1031L

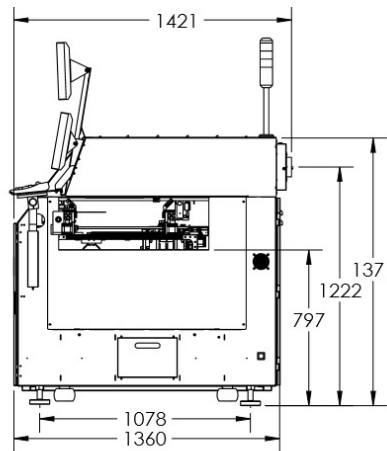
Dimensions are in millimeters



Top View (mm)



Front View (mm)



Side View (mm)

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

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