

Cerno™ Series: Model 105IL

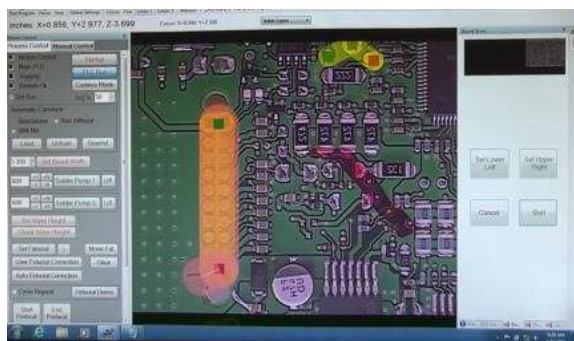
Selective Soldering System for Large Board and Backplane Soldering

Features and Benefits

- Selective soldering of printed circuit boards as large as 914 x 711 mm (36.0 x 28.0 in.) with the included carriers
- Heavy duty non-SMEMA edge conveyor to support added weight of large backplanes, PCBs or tooling fixtures
- 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

The Cerno™ 105IL is a robust selective soldering system delivering an exceptional combination of versatility, productivity and value. The Cerno™ 105IL 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™ 105IL 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 camera, 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™ 105IL 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™ 105IL, 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™ 105IL Features

The Cerno™ 105IL is an in-line 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

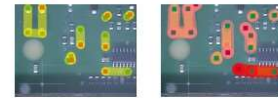
Dual solder nozzles

75 mm wave nozzle

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



SWAK-OS 4.0 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



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

Heavy duty non-SMEMA edge conveyor
to support weight of large backplanes, PCBs or tooling fixtures

SMEMA edge conveyor available upon special request

Standard Features

Heavy duty non-SMEMA edge conveyor to support weight of heavy backplanes, PCBs or tooling fixtures
Required carriers to transport boards (2 included)
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 4.0 graphics-based programming and machine control software

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

Offline programming software
Dual monitors

Optional Features

SMEMA edge conveyor available upon special request
Right-to-left conveyor direction
FluxJet precision drop-jet flux dispenser
In-process flux verification system for drop-jet
Dual flux heads, 2 atomizing spray heads, 2 FluxJet drop-jet flux dispensers or one of each
Topside infrared preheater with closed-loop control
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™ 105II

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 4.0 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.: 914 x 711 mm (36.0 x 28.0 in.)

Min.: 50 x 50 mm (2.0 x 2.0 in.)

Board Handling Capability

Heavy duty non-SMEMA edge conveyor ⁽³⁾:

Max. board/carrier length:	914 mm (36.0 in.)
Min. board/carrier length ^(4,5) :	50 mm (2.0 in.)
Max. board/carrier width:	711 mm (28.0 in.)
Min. board/carrier width ^(4,5) :	50 mm (2.0 in.)
Edge clearance ⁽⁶⁾ :	20 mm (0.8 in.)
Load capacity ⁽⁷⁾ :	22.7 kg (50.0 lbs.)

Optional SMEMA edge conveyor:

Max. board/carrier length:	914 mm (36.0 in.)
Min. board/carrier length ⁽⁵⁾ :	50 mm (2.0 in.)
Max. board/carrier width:	711 mm (28.0 in.)
Min. board/carrier width ⁽⁵⁾ :	50 mm (2.0 in.)
Edge clearance:	3 mm (0.12 in.)
Load capacity ⁽⁷⁾ :	8.9 kg (19.5 lbs.)

Conveyor general:

Max. board/carrier thickness:	12.0 mm (0.5 in.)
Max. overboard clearance:	102 mm (4.0 in.)
Max. underboard clearance:	102 mm (4.0 in.)

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

Operation modes ⁽⁸⁾: Automatic (SMEMA), manual or pass-through

Facilities Requirements

System footprint: 2061 x 1716 mm (81.1 x 67.5 in.)

Air supply: 6-7 bar (90-100 psi)

Power (mains) ⁽⁹⁾: Power supply accommodates 208/220-240VAC, 60 Hz single phase, 15 A
60 A with topside preheating

Nitrogen ⁽¹⁰⁾: 99.999% (5.0) pure, 4-7 bar (60-100 psi)
1.2 m³/hour consumption

Ventilation: 420 m³/hour recommended, two 100 mm (4.0 in.) dia. ducts

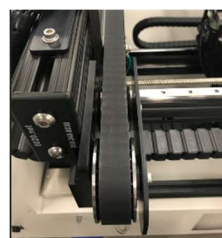
System weight ^(11,12): 570 kg (1250 lbs.)

- (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) Heavy duty non-SMEMA edge conveyor must use supplied carrier for all board sizes.
- (4) Substrates as small as 50 x 50 mm (2.0 x 2.0 in.) are possible with the supplied carrier.
- (5) Contact factory regarding smaller boards/carriers.
- (6) Edge clearance of non-SMEMA edge conveyor does not conform to SMEMA standards.
- (7) Total weight of all parts on conveyor at any one time. Contact factory regarding requirements for greater load capacity.
- (8) Machine is complaint with SMEMA height and communications protocol.
- (9) Electrical power varies depending on configuration.
- (10) Nitrogen consumption is solder nozzle dependent and machine configuration dependent.
- (11) System weight varies depending on configuration.
- (12) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.
- (13) Leadtime and availability of optional SMEMA edge conveyor to be determined at time of order.

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Standards Compliance

SMEMA ⁽⁸⁾



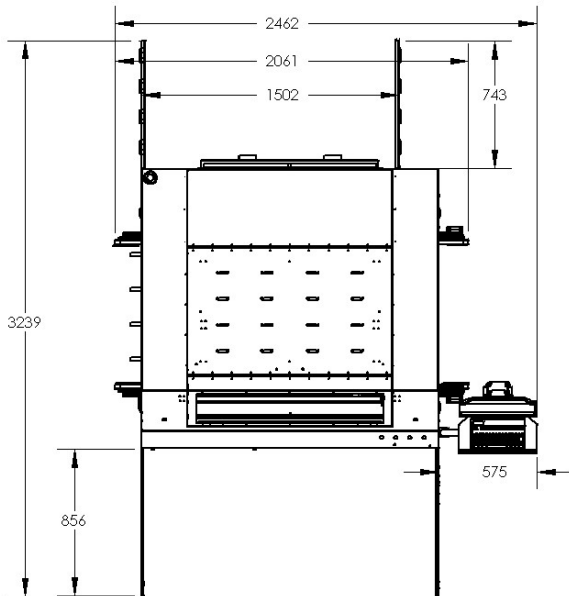
20 mm belt width non-SMEMA edge conveyor



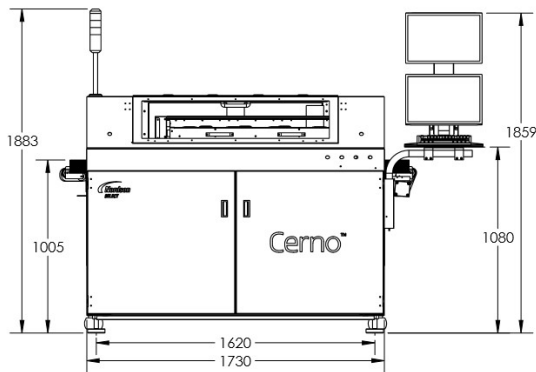
3 mm belt width optional SMEMA edge conveyor

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

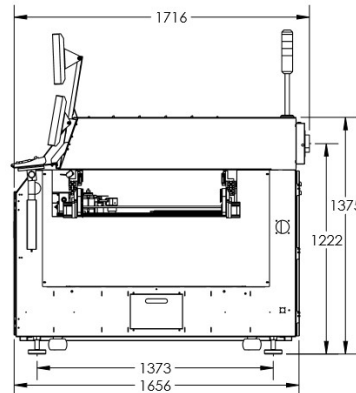
Dimensions are in millimeters



Top view with doors open (mm)



Front View (mm)



Side View (mm)

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

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