

# Cerno™ Series: Model 105IL

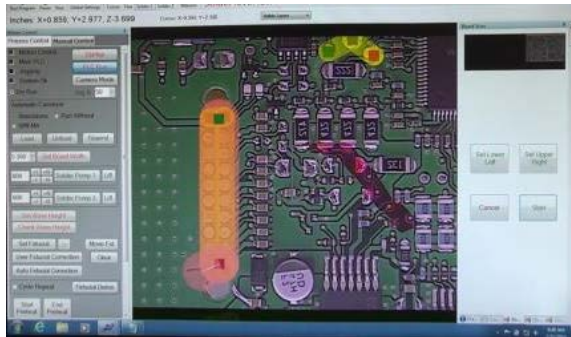
## Selective Soldering System for Large Board and Backplane Soldering

### 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 conveyor to support added weight of large backplanes, PCBs or tooling fixtures up to 22.7 kg (50.0 lb.)
- 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

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 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™ 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



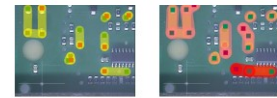
Standard precision atomizing flux applicator and available FluxJet drop-jet flux dispenser

**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

**Heavy duty conveyor** to support weight of large backplanes, PCBs or tooling fixtures

### Standard Features

- Heavy duty conveyor to support added weight of heavy backplanes, PCBs or tooling fixtures
- Required carriers to transport all board sizes (2 included)
- Conveyor direction left-to-right
- High speed Z-axis motion
- Closed-loop rotary encoders
- Precision atomizing 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 drop-jet flux 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™ 105II

## 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. <sup>(5)</sup>: 914 x 711 mm (36.0 x 28.0 in.)  
Min. <sup>(5)</sup>: 50 x 50 mm (2.0 x 2.0 in.)

## Board Handling Capability

Max. board size <sup>(5)</sup>: 914 x 711 mm (36.0 x 28.0 in.)  
Min. board size <sup>(5)</sup>: 50 x 50 mm (2.0 x 2.0 in.)

## Conveyor

Max. board/carrier length <sup>(5)</sup>: 914 mm (36.0 in.)  
Min. board/carrier length <sup>(5)</sup>: 50 mm (2.0 in.)  
Max. board/carrier width <sup>(5)</sup>: 711 mm (28.0 in.)  
Min. board/carrier width <sup>(4,5)</sup>: 50 mm (2.0 in.)  
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  
Load capacity <sup>(6)</sup>:  
Heavy duty conveyor: 22.7 kg (50.0 lbs.)  
Operation modes: Automatic (SMEMA), manual or pass-through

## Facilities Requirements

System footprint: 1981 x 1716 mm (78.0 x 67.5 in.)  
Air supply: Less than 10 CFH @ 90-100 psi  
Power (mains) <sup>(7)</sup>: Power supply accommodates 208/220-240VAC, 60 Hz single phase, 15 A 60 A with topside preheating  
Nitrogen <sup>(8)</sup>: 99.999% pure @ 60-100 psi, 30-60 CFH consumption  
Ventilation: Rear 350 CFM recommended, two 100 mm (4.0 in.) dia. ducts  
System weight <sup>(9,10)</sup>: 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) Substrates as small as 50 x 50 mm (2.0 x 2.0 in.) are possible with the supplied carrier.
- (4) Contact factory regarding smaller boards/carriers.
- (5) Must use supplied carrier for all board sizes
- (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) Nitrogen consumption is solder nozzle dependent and machine configuration dependent.
- (9) System weight varies depending on configuration.
- (10) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

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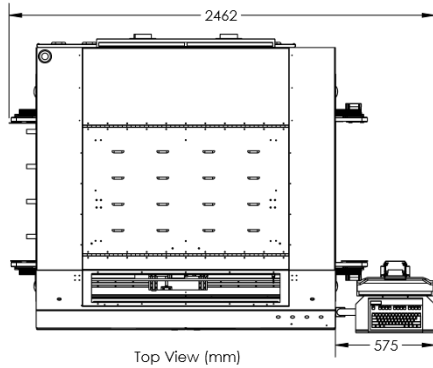
## Standards Compliance

SMEMA

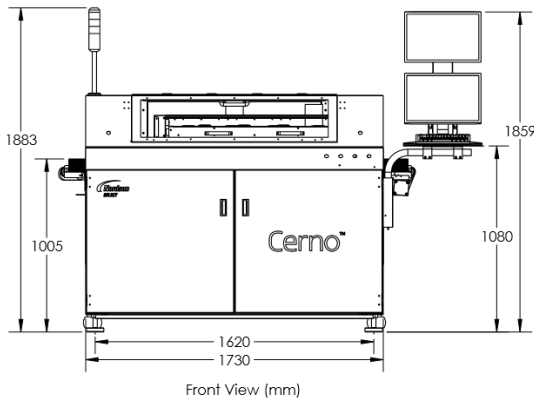
**Additional options may be available: contact Nordson SELECT for further information.**

# Cerno™ 105II

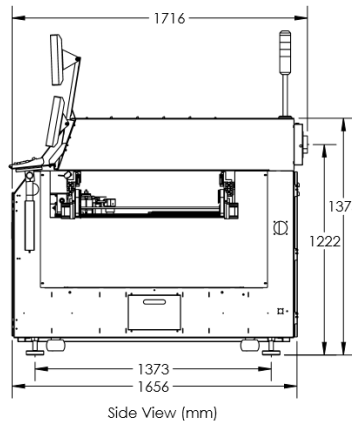
Dimensions are in millimeters



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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