

# Cerno™ Series: Model 508.1

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

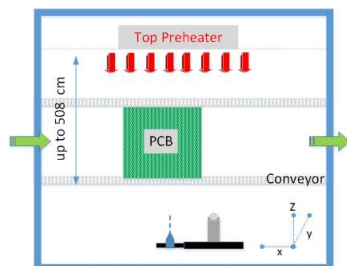
### Features and Benefits

- Batch or in-line platform with combined fluxing, preheating and soldering for highest possible process flexibility
- Choice of single or dual drop-jet fluxers and solder pots for either simultaneous parallel or independent double processing modes
- Parallel processing significantly increases machine throughput while double processing broadens soldering flexibility
- Full titanium solder pots compatible with all solder alloys plus easy tool-free maintenance
- Software control between different solder alloys without changing solder pots



The Cerna™ 508.1 is a robust selective soldering system delivering the optimum balance between flexibility, throughput and large board size. The Cerno™ 508.1 has many unique features, including combined fluxing, preheating and soldering for easy integration into batch or in-line production.

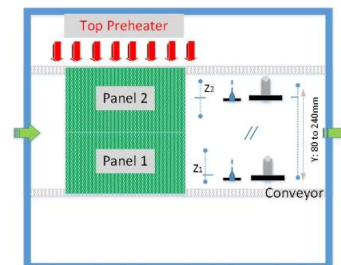
**Versatility.** With its flexible configuration, the Cerno™ 508.1 is a versatile selective soldering platform and can be equipped for either single, parallel or double processing. Use of a single drop-jet fluxer and solder pot allows soldering of printed circuit boards as large as 508 x 508 mm (20.0 x 20.0 in.).



Cerno™ 508.1S flux, preheat and solder configuration

When configured with dual drop-jet fluxers and dual solder pots, the Cerno™ 508.1 can be used in two different modes and is capable of processing up to 4 boards at one time. The parallel processing mode enables fluxing and soldering of two printed

circuit boards at the same time doubling machine productivity.



Cerno™ 508.1PD flux, preheat and solder configuration

The double processing mode allows soldering with multiple size nozzles within the same program enhancing flexibility and increasing productivity. A single drop-jet fluxer and dual solder pots can be used in the double processing mode and is ideally suited for the use of two different solder alloys without requiring physical changing of solder pots.

**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™ 508.1 Features

The Cerno™ 508.1 is a fully configured SMEMA compatible selective soldering platform and is a reliable and cost-effective solution for many demanding through-hole and SMT mixed-technology soldering applications including:

- Double-sided TH/SMT assemblies
- TH selective and mini-wave soldering
- Multiple solder alloy soldering without changing solder pots

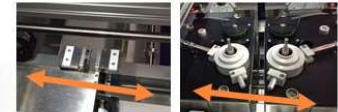
**Parallel or double processing** modes with dual fluxers and solder pots for simultaneous or independent soldering



Parallel mode solders two boards at same time, double mode allows multiple size nozzles in one program

**Full titanium solder pots** and pump assemblies compatible with all solder alloys

**Single or dual fluxers** and solder pots for increased productivity and flexibility



Automatically adjustable nozzle distance between 80-240 mm

**Integrated platform** with combined fluxing, preheating and soldering for high process flexibility

**MicroDrop drop-jet fluxer** standard and available dual MicroDrop drop-jet fluxers

**SMEMA chain conveyor** with automatic width adjustment



### Standard Features

Integrated platform with combined fluxing, preheating and single selective soldering station (508.1S)  
 SMEMA chain conveyor with positive PCB location  
 Automatic conveyor width adjustment  
 MicroDrop drop-jet fluxer  
 Flux level sensing system  
 All titanium solder pot and pump assembly  
 Quick change magnetically coupled solder nozzle  
 Automatic solder pot level monitoring  
 Automatic wave height monitoring  
 Heated nitrogen inerting system  
 Process viewing camera  
 PhotoScan editor and machine control software

- Easy “point-and-click” programming
- Remote machine control
- Remote machine maintenance
- Network and FIS capability

TFT monitor

### Additional Configurations

Dual MicroDrop drop-jet fluxers and dual solder pot and pump assemblies for parallel or double soldering modes (508.1PD)

### Optional Features

In-process, closed-loop flux verification system for drop-jet control  
 Full surface topside infrared preheating  
 Full surface bottom-side infrared preheating  
 Closed-loop pyrometer control  
 Board warpage sensing system  
 Dual process viewing camera and second monitor  
 Automatic solder wire feeding system  
 Automatic solder level sensing system  
 Wave height control sensing system  
 Automatic solder nozzle cleaning system  
 Data logging system with traceability of all process parameters  
 Barcode reader

## Specifications: Cerno™ 508.1

### Motion System

Z accuracy	±50 µm (0.002 in.)
Z repeatability <sup>(1)</sup> :	±50 µm (0.002 in.), 3 sigma
Z velocity:	0.05 m/s peak (2 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

PhotoScan “point-and-click” programming editor and machine control software

### Solder Pot Capacity and Weight

Capacity <sup>(2)</sup>: Approx. 12.0 kg (26.4 lbs.)  
 Total weight of tin-lead solder together with solder pot and pump assembly <sup>(2)</sup>: Approx. 22.4 kg (49.2 lbs.)  
 Total weight of lead-free solder together with solder pot and pump assembly <sup>(2)</sup>: Approx. 19.7 kg (43.3 lbs.)

### Solderable Area (X-Y)

Single, parallel or double operating mode <sup>(3,4)</sup>:  
 Max. 508 x 508 mm (20.0 x 20.0 in.)  
 Min. 50 x 50 mm (2.0 x 2.0 in.)

### Board Handling Capability

Max. board size: 508 x 508 mm (20.0 x 20.0 in.)  
 Min. board size: 50 x 50 mm (2.0 x 2.0 in.)

### Conveyor

Max. board/carrier length: 508 mm (20.0 in.)  
 Min. board/carrier length: 50 mm (2.0 in.)  
 Max. board/carrier width: 508 mm (20.0 in.)  
 Min. board/carrier width <sup>(4)</sup>: 50 mm (2.0 in.)  
 Max. board/carrier thickness: 15.2 mm (0.6 in.)  
 Max. overboard clearance: 120 mm (4.7 in.)  
 Max. underboard clearance: 40 mm (1.5 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>: 7.5 kg (16.5 lbs.)  
 Operation modes: Automatic (SMEMA), manual or pass-through

### Facilities Requirements

System footprint: 1700 x 1700 mm (66.9 x 66.9 in.)  
 Compressed air: 6 bar min., 8 bar max.  
 Power (mains) <sup>(7)</sup>: Power supply accommodates 3 phase, 400VAC, 50-60 Hz, 2-12 kW, 9-20 A  
 Nitrogen: 99.99% (4.0) pure, 4-6 bar, 1.3 m<sup>3</sup>/hour (single pot), 2.6 m<sup>3</sup>/hour (dual pot)  
 Ventilation: Rear 150 m<sup>3</sup>/hour, 100 mm (4.0 in.) dia. duct  
 System weight <sup>(8,9)</sup>: 850 kg (1870 lbs.)

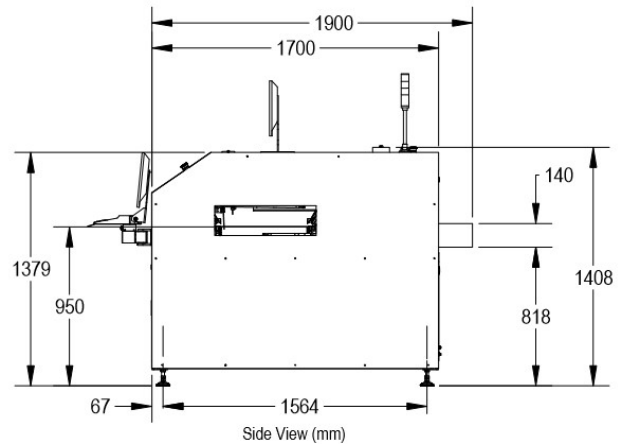
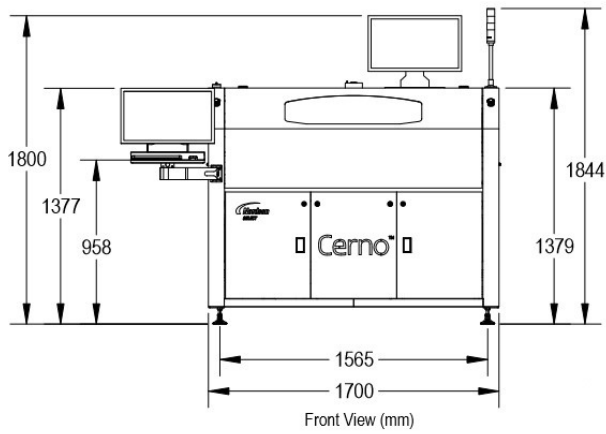
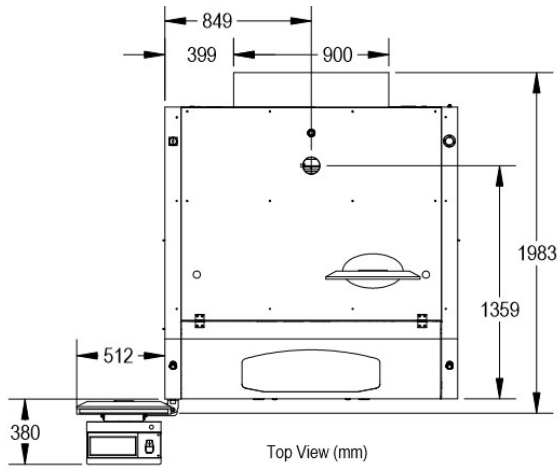
- (1) Repeatability is measured at full rated system speed.
- (2) Solder capacity and total weight of solder pot and pump assembly varies depending on solder alloy.
- (3) Board size is reduced when operating in parallel or double modes
- (4) Contact factory regarding smaller or larger boards/carriers.
- (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) System weight varies depending on configuration.
- (9) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

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### Standards Compliance

SMEMA, CE

Dimensions are in millimeters



Published 2017-15-08

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