

Cerno™ Series: Model 3MDX

Combined Wave Soldering and Dual Nozzle Selective Soldering System

Features and Benefits

- MDX solder pot with integrated 200 mm wide wave solder nozzle and dual selective soldering nozzles
- Wave nozzle can solder left-to-right or right-to-left and can solder around obstacles
- Dual selective soldering nozzles with independent control broadens flexibility and increases efficiency
- 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™ 3MDX is a robust selective soldering system delivering an exceptional combination of versatility, productivity and value. The Cerno™ 3MDX has many unique features, including combining wave soldering and selective soldering in one compact platform.

Soldering Technology. The patent pending MDX solder pot integrates a 200 mm (8.0 in.) wide wave nozzle with dual selective soldering nozzles. Individually programmable solder pumps allow solder volume and wave height to be independently optimized for each solder nozzle. The nitrogen inerted wave and selective solder nozzles speed up the soldering process, minimize changeovers and boost overall productivity.



MDX solder pot with wave and selective nozzles



Versatility. With its unique patent pending MDX solder pot, the Cerno™ 3MDX doubles your capabilities in wave soldering and selective soldering. The future of mixed-technology assembly belongs to those who can process any through-hole soldering application with absolute precision and unmatched speed. With the Cerno™ 3MDX you no longer have to sacrifice throughput for flexibility...or flexibility for throughput.

Process Control. Nordson SELECT's closed-loop rotary encoders and other advanced process control capabilities have been incorporated into the Cerno™ 3MDX, 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™ 3MDX Features

The Cerno™ 3MDX with Nordson SELECT's patent pending MDX solder pot and pump 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
- Through-hole selective soldering
- Nitrogen inerted wave soldering
- 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

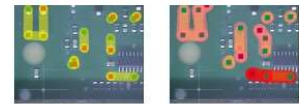


Standard atomizing spray flux applicator and available FluxJet precision drop-jet dispenser

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

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

Standard Features

SMEMA edge conveyor with program controlled width adjustment, positive PCB location and PCB flattening
Conveyor direction left-to-right

Closed-loop rotary encoders

Atomizing spray flux applicator

MDX tin-lead solder pot and pump assembly with integrated 200 mm (8.0 in.) wide wave nozzle in combination with dual quick change magnetically coupled selective soldering nozzles including solder pot service cart

Automatic solder pot level monitoring

Heated nitrogen inerting system

Programming and fiducial alignment look-up camera

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

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

MDX lead-free solder pot and pump assembly with integrated 200 mm (8.0 in.) wide wave nozzle in combination with dual quick change magnetically coupled selective soldering nozzles including solder pot service cart

3-25 mm bullet nozzles or 4-25 mm mini-wave nozzles

Nitrogen de-bridging knife for 200 mm wave nozzle

Six channel thermal data logging system

Barcode reader

Specifications: Cerno™ 3MDX

Motion System

Z accuracy	±50 µm (0.002 in.)
Z repeatability ⁽¹⁾ :	±50 µm (0.002 in.), 3 sigma
Z velocity:	0.07 m/s peak (3 in./s)
X-Y accuracy	±50 µm (0.002 in.)
X-Y repeatability ⁽¹⁾ :	±50 µm (0.002 in.), 3 sigma
X-Y velocity:	0.1 m/s peak (4 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. 31.8 kg (70.0 lbs.)

Total weight of solder together with solder pot and pump assembly ⁽²⁾: Approx. 63.6 kg (140.0 lbs.)

Solderable Area (X-Y)

200 mm (8.0 in.) wave nozzle ^(3, 4):
Max. 610 x 457 mm (24.0 x 18.0 in.)
Min. 203 x 203 mm (8.0 x 8.0 in.)
Dual bullet or mini-wave nozzles ^(3, 4):
Max. 508 x 457 mm (20.0 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: 102 mm (4.0 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: 1981 x 1716 mm (77.9 x 67.5 in.)
Air supply: Less than 10 CFH @ 90-100 psi
Power (mains): Power supply accommodates 208/220-240VAC, 60 Hz single phase, 15 A 60 A with topside preheating
Nitrogen ⁽⁷⁾: 99.999% pure @ 60-100 psi, 60-100 CFH consumption
Ventilation: Rear 350 CFM recommended, two 100 mm (4.0 in.) dia. ducts
System weight ^(8, 9): 665 kg (1465 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 when used with bullet or mini-wave nozzles. Substrates as small as 50 x 50 mm (2.0 x 2.0 in.) may require custom wave nozzle adaptable to 200 mm (8.0 in.) wave nozzle.
- (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) Nitrogen consumption is solder nozzle dependent and machine configuration dependent.
- (8) System weight varies depending on configuration.
- (9) Configuration dependent. Other configurations may be available. Contact Nordson SELECT.

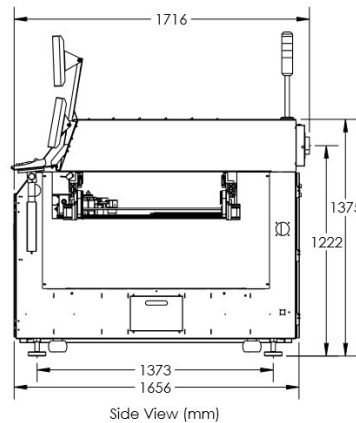
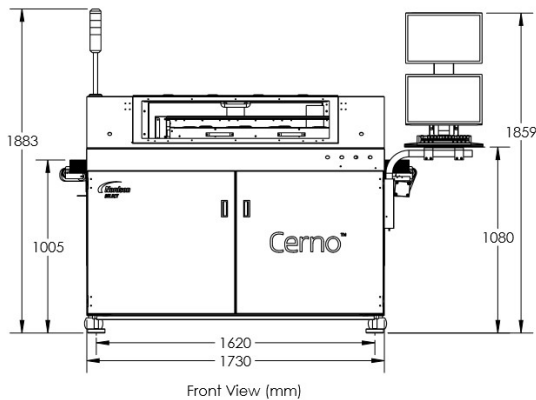
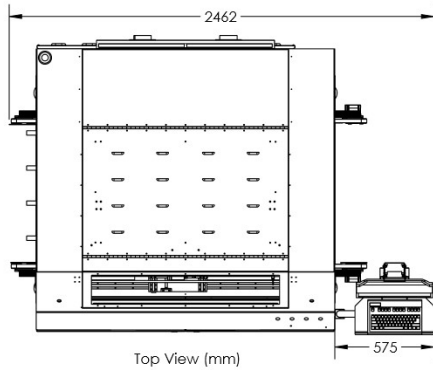
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Standards Compliance

SMEMA

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

Dimensions are in millimeters



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

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