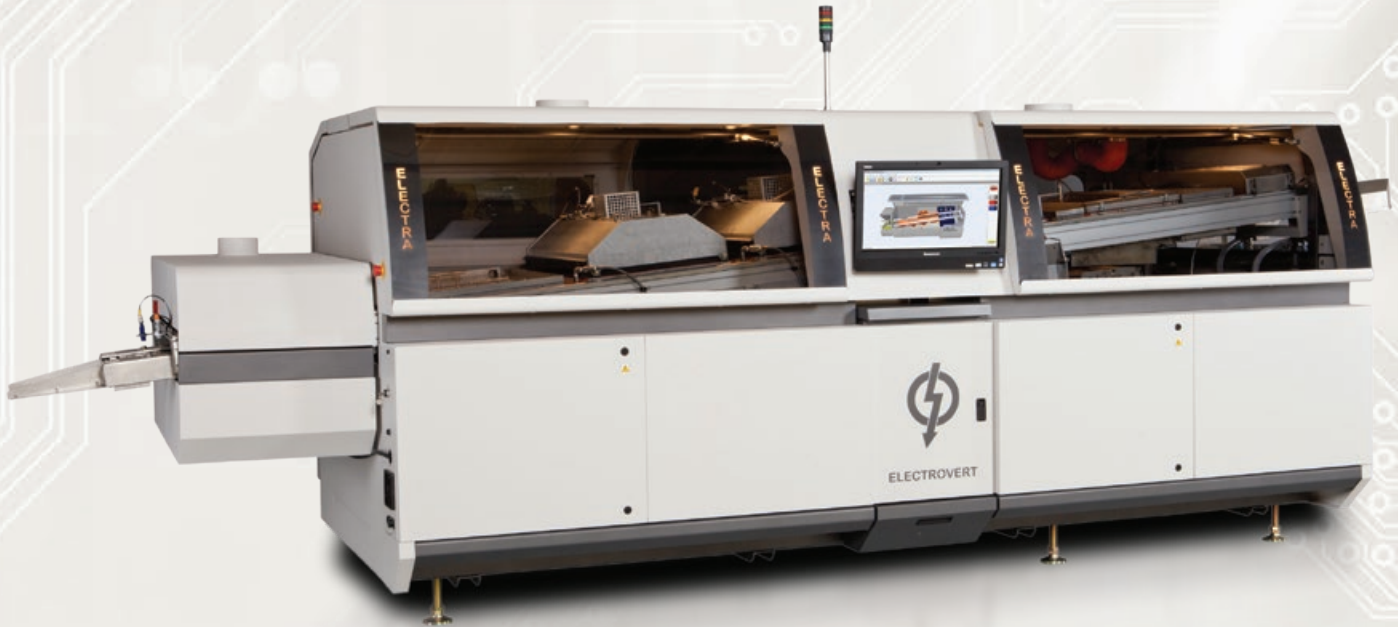


# Electrovert

Electronic Assembly Equipment

**TW EAE**

## Electra<sup>®</sup> Wave Soldering System



The Electrovert Electra is an advanced, precision engineered wave soldering system designed for high-mass and high-volume manufacturers.

**Technology + Performance + Reliability**



# Electrovert Electra

## Electra:

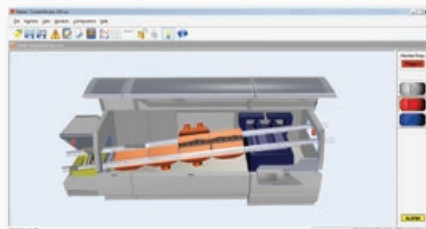
Electra's proven performance has provided the electronics assembly industry with world-class soldering results. The Electra system is designed with computerized, closed-loop controls that deliver the required accuracy and repeatability for demanding production environments.



## Proven Performance, World-Class Results

**The Electra is the most advanced wave soldering system available.**

- Originally launched in 1996, the Electra has outperformed and outlasted all competitive soldering systems.
- Process control, process capability, and process flexibility are all competitive advantages to Electrovert wave soldering.
- All-in-one touchscreen PC with Windows 10 (64 bit) based operating system. The PC is mounted on an articulating arm.
- Intuitive graphical user interface that makes set-up and operation easy.
- Data logging of all critical machine parameters and trending are standard in the machine software.
- The ethernet based I/O system is common across all Electrovert wave, reflow and cleaning products (commonality of spare parts).
- The Electra is UL Listed for Factory Automation as standard.
- All Electrovert systems are made in the USA.

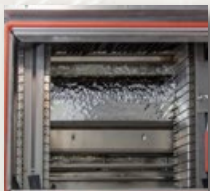


# Electrovert Electra

## Features and Options:



DwellMax Plus



DwellFlex 4.0 Adjustable Wave Contact Nozzle



Optional Dual Head ServoJet



IsoThermal Convection Preheat (ICP)

### Wave Solder Nozzles

- DwellMax Plus provides excellent topside hole fill and throughput. Ideal for high thermal mass boards.
- DwellFlex 4.0 provides process flexibility with an on-the-fly adjustable wave contact length. At maximum offers the most contact length in the industry for high thermal mass circuit boards and at minimum is ideal for low mass wave circuit boards.

### Lead Free Applications

- All Electrovert waves are lead free qualified and optimized as standard

### Fluxer Types

- ServoSpray spray fluxer (single head or dual head)
- ServoJet jetted spray fluxer (available in single head, dual head, OA types and with selective fluxing features)
- ServoSonic ultrasonic type spray fluxer

### Preheat

- All preheaters are wired with quick connect plugs and can be moved to any position or location
- The IsoThermal convection preheat utilizes heat on intake technology. The heating uniformity is very effective and efficient across the entire heating area.



Rolled out Solder pot



Front step with storage

### Solder Module

- All Electrovert wave systems have a lifetime warranty on the solder pot casting (applies to original owner)
- See the specifications section for the comprehensive list of features for every soldering process and application
- For N2 soldering applications, the available features include:
  - N2 boundary soldering (inerts at the waves)
  - Short N2 tunnel (inerts the entire solder module area and wave)
  - Full N2 tunnel (inerts all preheat sections, the entire solder module and at the waves)
  - Integrated fume extraction into back hood

### Accessibility

- A single rear door allows complete access to all modules from the rear of machine
- Integrated pull-out step across entire front of machine

### Conveyor

- Single continuous finger type conveyor through the entire length of machine
- No limitation on board length (min and max)
- Robust conveyor design capable of 100 lbs (43.4 kg) evenly distributed throughout the conveyor length



View from back with rear door open.

## ELECTRA SPECIFICATIONS

| Feature                  |                                     |                                                                                             |   | Electra (EC-4)            |
|--------------------------|-------------------------------------|---------------------------------------------------------------------------------------------|---|---------------------------|
| Process                  | Alloy Type                          | Lead Free (Qualified and Optimized)                                                         |   | S                         |
|                          | Process Width                       | Maximum PCB Width                                                                           | S | 20" (508 mm)              |
|                          |                                     |                                                                                             | O | 24" (610 mm)              |
| Physical Characteristics | Machine Length                      | Length of machine with rail guides (Load/Unload)                                            | S | 187.9" (4.77 m)           |
|                          |                                     |                                                                                             | O | 213.1" (5.4 m)            |
|                          | Conveyor                            | Maximum Load Weight                                                                         |   | 100 lb (45 kg)            |
|                          |                                     | Motorized Width                                                                             |   | S                         |
| Preheat                  | Preheat Type                        | IR Platen                                                                                   |   | S                         |
|                          |                                     | IsoThermal Forced Convection                                                                |   | S                         |
|                          |                                     | Fast Response IR                                                                            |   | O                         |
|                          | Preheat Length                      | Bottom                                                                                      | S | (Qty. 2) at 4' (1.2 m)    |
|                          |                                     |                                                                                             | O | (Qty. 4) at 8' (2.4 m)    |
|                          |                                     | Top                                                                                         | O | (Qty. 3) at 6' (1.8 m)    |
| Solder                   | Soldering Environment               | Environment                                                                                 | S | Air                       |
|                          |                                     |                                                                                             | O | N <sub>2</sub>            |
|                          | Main Wave                           | UltraFill Air                                                                               |   | S                         |
|                          | Dual/Adjustable Wave Contact Length | Chip Wave                                                                                   |   | S                         |
|                          |                                     | DwellMax Plus                                                                               |   | O                         |
|                          |                                     | DwellFlex 4.0                                                                               |   | O                         |
|                          | Nozzle Material                     | Melonite Coated, Stainless Steel                                                            |   | S                         |
|                          |                                     | Titanium                                                                                    |   | O                         |
|                          | N <sub>2</sub> Soldering            | UltraFill N <sub>2</sub> (Boundary Type)                                                    |   | O                         |
|                          |                                     | Short Tunnel (Inerts entire solder pot area)                                                |   | O                         |
|                          |                                     | Full Tunnel (Inerts entire solder pot and ALL preheat areas)                                |   | O                         |
|                          | Wave                                | Wave Height                                                                                 | S | 12.7 mm                   |
|                          |                                     |                                                                                             | O | Up to 25 mm               |
|                          |                                     | ExactaWave (Automatic wave height control)                                                  |   | O                         |
| Fluxer                   | Fluxer Types and Options            | ServoSpray                                                                                  |   | S                         |
|                          |                                     | ServoJet                                                                                    |   | O                         |
|                          |                                     | OA ServoJet                                                                                 |   | O                         |
|                          |                                     | ServoSonic                                                                                  |   | O                         |
|                          |                                     | Flux Spray Start/Delay                                                                      |   | S (ServoSpray/ServoSonic) |
|                          |                                     | Precision Selective Fluxing (includes flux spray start/delay)                               |   | S (ServoJet)              |
|                          |                                     | Dual Flux Capability                                                                        |   | ServoSpray/ServoJet       |
|                          |                                     | Windows 10 - 64 bit                                                                         |   | S                         |
| Operating System         | Software and Controls               | Ethernet Based I/O                                                                          |   | S                         |
|                          |                                     | UL Listed for Factory Automation Equipment                                                  |   | S                         |
|                          | UL                                  | UL Listed for Factory Automation Equipment                                                  |   | S                         |
| Country of Origin        | Made in USA                         | Factory based R&D and Software Engineering, Manufacturing/Assembly and Applications Support |   | Camdenton, MO USA         |

O = Optional; S = Standard; RFQ = Request Factory Quote



### Process Knowledge and Support

At ITW EAE, we deliver world-class products, performance, and unparalleled service and support programs. With the Electra comes the proficiency of our Electrovert process experts that allows us to solve real-world applications issues. *Knowledge in Process* for superior performance.

ITW EAE is a division of Illinois Tool Works, Inc. It is a consolidation of all of its Electronic Assembly Equipment and Thermal Processing Technology. The group includes world-class products from MPM, Camalot, Electrovert, Vitronics Soltec and Despatch.