

- Removes native oxide from metallic and semiconductor surfaces
  - Removes residual organic contamination films
  - Passivates surfaces against re-oxidation
  - Fast, non-toxic, dry, atmospheric process
  - Downstream radical chemistry - CMOS safe



### Do you have a surface problem ?

Native oxides and organic contamination on surfaces can disrupt subsequent processes such as solder bonding, wire bonding, thin film deposition, hybrid assembly, plating operations, wicking of underfill, and related processes.

### Fast, simple solution

Ontos7 utilizes a fast, atmospheric process to reduce oxides and organic contamination, providing advantages over traditional methods such as wet etching, fluxes, or vacuum plasma treatment. The tool can also create a few monolayers of modified surfaces which Passivate against re-oxidation while not interfering with subsequent processes.

### Clean and Green

Ontos7's patented process and equipment utilize commonly available semiconductor-grade gasses and an atmospheric plasma source to provide local chemistry right at the surface of your part, with zero hazardous by-products or waste.

# Ontos 7

## Surface Preparation

### SYSTEM DESCRIPTION/SPECIFICATIONS:

- Uniquely-designed atmospheric plasma source with 25mm-wide process zone. The glow discharge-type plasma is entirely contained inside the source.
- Computer-controlled X-Y-Z stage. In the standard version, the vacuum chuck accommodates die or flat substrate from 2 to 200 mm (others upon request). The substrate thicknesses up to 20 mm.
- 300 W RF generator has a wide-range auto-tune network, system computer control and monitoring of forward and reflected power. Safety interrupts.
- 3 Mass Flow controllers provide precise digital control of gas to the plasma source. A 4th MFC is user definable.
- ESD-safe, interlocked enclosure; Exhaust for process gases (no scrubber required).
- Fully automatic system with ergonomically-mounted touchscreen display. Software developed in LabVIEW™. Menu-driven interface with user-configurable recipe libraries.

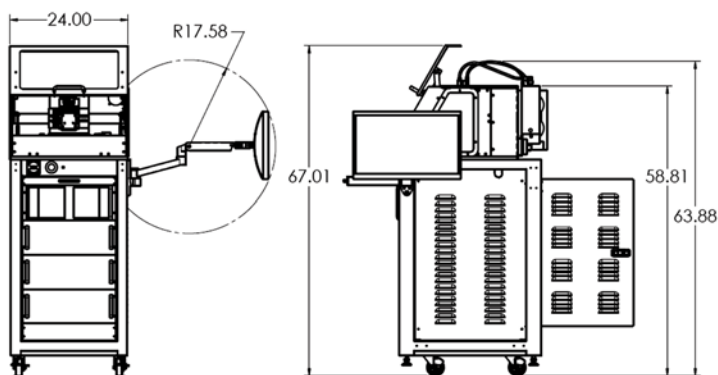
### Facilities required:

- Power: 110-220VAC single-phase, 15A.
- Gases: 4 channels of gas supply by ¼" stainless or Teflon tubing; Swagelok compression fittings. (All gases are non-toxic, non-flammable.)
- Exhaust: <1 cfm (no scrubbing required).
- Lab vacuum: 20-25" Hg for stage vacuum.



### APPLICATIONS:

- Reduction of oxides and contamination to promote adhesion and/or ohmic contact for flip-chip, thin-film deposition, wire bonding, adhesive bonding, soldering, hybridization. Shown effective on: Nickel, Copper, Tin, Indium, Gold, Silver, and alloys of these metals, hybridization, aqueous plating, wicking of underfill.
- Preparation of sensitive semiconductor surfaces to reduce metastable oxides and active contaminants prior to passivation.
- Removal of thin photoresist "scum" without oxygen – ideal for lift-off metallization, ohmic contact.
- Surface activation for direct bonding.
- Enable new metallurgies for room-temperature and low-temperature "soldering". Contact us for details.



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