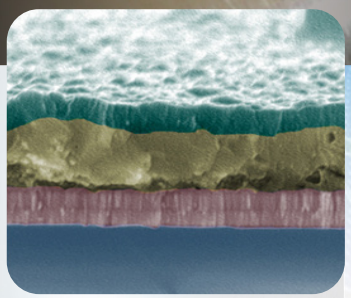
Exacta•Coat SC for TCO



Programmable R&D Coating System for TCO Layer Deposition

ULTRASONIC COATING SYSTEM

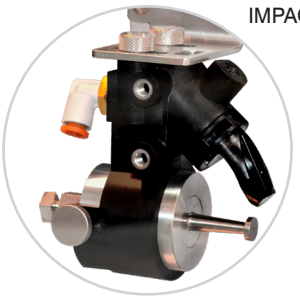
A fully enclosed XYZ tabletop ultrasonic spraying system designed for depositing TCO chemistries such as ITO, ZnO, SnO, FTO and CdO.

Ideal for Transparent Conductive Oxide layer R&D coating processes, the ExactaCoat SC for TCO is designed with many unique features to allow for the high temperatures and corrosive acid based solutions often necessary for these applications.

The ExactaCoat SC for TCO features:

- Precise substrate uniformity with repeatability down to ±2%
- Compact benchtop design that favors portability
- 400 x 400 x 100mm (15.75 x 15.75 x 3.94") range of motion
- Pathmaster® Windows®-based programming software
- Remote trackball teach pendant
- Coordinated motion in all three axes simultaneously
- Cooling of ultrasonic nozzle
- Protective bellows and covers over XYZ slides and motors
- Cooling of XYZ motors
- Teflon coated wetted surfaces
- 7.5x7.5" (190x190mm) 550°C heat plate with 6x6" (152x152 mm) active area *or* 250°C 14x14" (356x356mm) active area

IMPACT

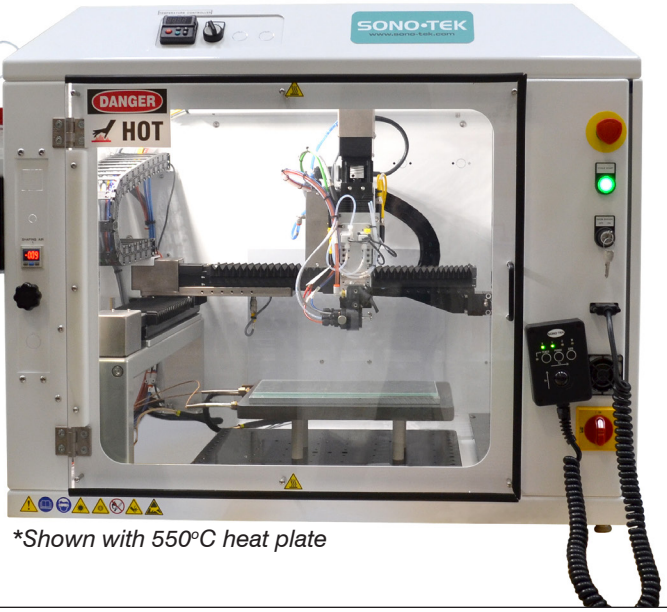


VORTEX

Sono-Tek ultrasonic nozzles feature:

- Ultrasonic atomization allows for low velocity spray resulting in minimal cooling of substrate during deposition
- Non-clogging design results in minimal servicing and downtime
- No moving parts to wear out
- Cobalt A12 Series corrosive resistant nozzle (typical)
- Proprietary materials of construction protect wetted paths from TCO acid solutions

Compact benchtop design is perfect for R&D environments



**Shown with 550°C heat plate*

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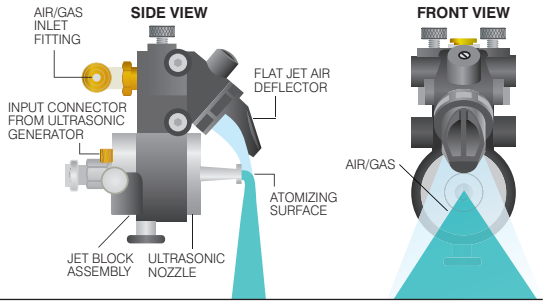
Operating Principle

The Impact System combines Sono-Tek's unique ultrasonic atomizing nozzle with a controlled jet of air from the flat jet air deflector. The ultrasonically produced spray at the atomizing surface is immediately entrained in the air stream, creating a fan-shaped spray pattern (10 - 50mm). The velocity of the air stream is controllable, allowing low or high-impact of the atomized spray onto the product or substrate.

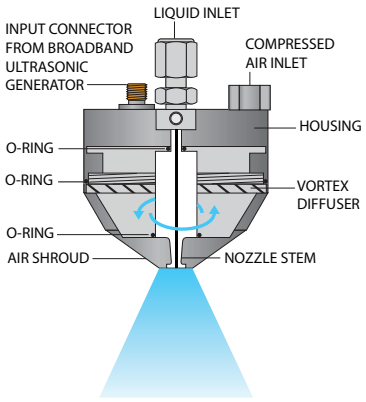


The Vortex System combines Sono-Tek's unique Microspray ultrasonic atomizing nozzle with low pressure, rotational air to produce a conical-shaped spray pattern.

Compressed air, typically at 1-10 psi, is introduced into the diffusion chamber of the air shroud, which produces a uniformly distributed flow of air around the nozzle stem.

The velocity of the air stream is controllable, allowing low or high-impact of the atomized spray onto the substrate.

The diameter of the spray pattern is controlled by the nozzle size (frequency) and distance to the substrate. The uniformity of the spray pattern is +/- 1% if using a reciprocator or robotic platform such as the ExactaCoat system.



Sono-Tek Laboratory Services

Sono-Tek's in-house laboratory services offer the expertise of our engineering and technical staff in resolving process issues and tailoring our technology to meet the needs of our customers.

EXACTACOAT SC FOR TCO PROGRAMMABLE SYSTEM SPECIFICATIONS

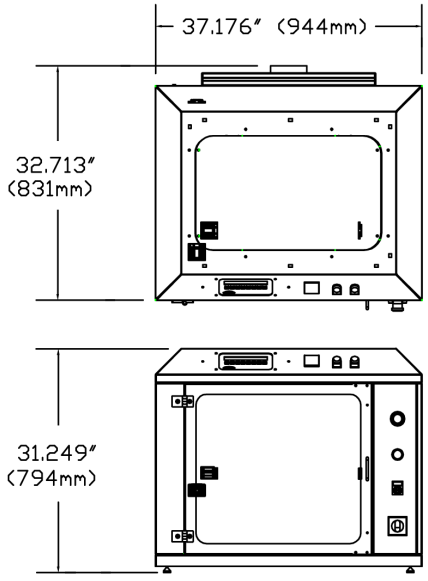
Enclosure Specifications

XYZ Motion Area*	400 x 400 x 100 mm (15.75 x 15.75 x 3.94 in)

*NOTE: Coating area may be reduced depending on nozzle configuration, options and accessories

Repeatability	0.025 mm (0.001 in)
Resolution	0.015 mm (0.0006 in)
Motor	Brushless DC servo
Drive Mechanism	Ball screw drive
Work Payload	11.4 kg (25 lbs.)
Inputs/Outputs	52
Software	Pathmaster® Windows-based
Power	220V, +/- 10%, 50-60Hz
Air	80 PSI dry unlubricated air
Certification	CE certified

Dimensions 37.2" W x 31.2" H x 32.7" D



SONO•TEK Corporation
leadership through innovation

Corporate Headquarters:
2012 Rte. 9W, Milton, NY 12547 USA
Phone: (845)795-2020
Fax: (845)795-2720

E-mail: info@sono-tek.com
Web: www.sono-tek.com

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