



ELECTRIC SPIN COATER

Electric Spin Coater – ToronSC™ 100

ToronSC™ 100 is a compact, entry-level electric spin coater designed for fast, straightforward thin film formation on flat substrates using liquid or sol-gel coating solutions. Unlike vacuum chuck spin coaters, the ToronSC™ 100 uses a direct mechanical substrate holder rather than vacuum suction — making it a simpler, more accessible spin coating machine for applications where vacuum infrastructure is not available or not required. It is compatible with use inside a glovebox under argon gas atmosphere, supporting inert-atmosphere spin coating workflows.

With a maximum spin speed of 8,000 rpm and a maximum substrate diameter of 4 inches (100 mm), the ToronSC™ 100 delivers precise rotary speed control for uniform thin film deposition on silicon wafers, glass slides, and similar flat substrates. Its compact footprint and straightforward operation make it an ideal first spin coater for university laboratories, R&D groups, and teaching environments beginning thin film research programs.

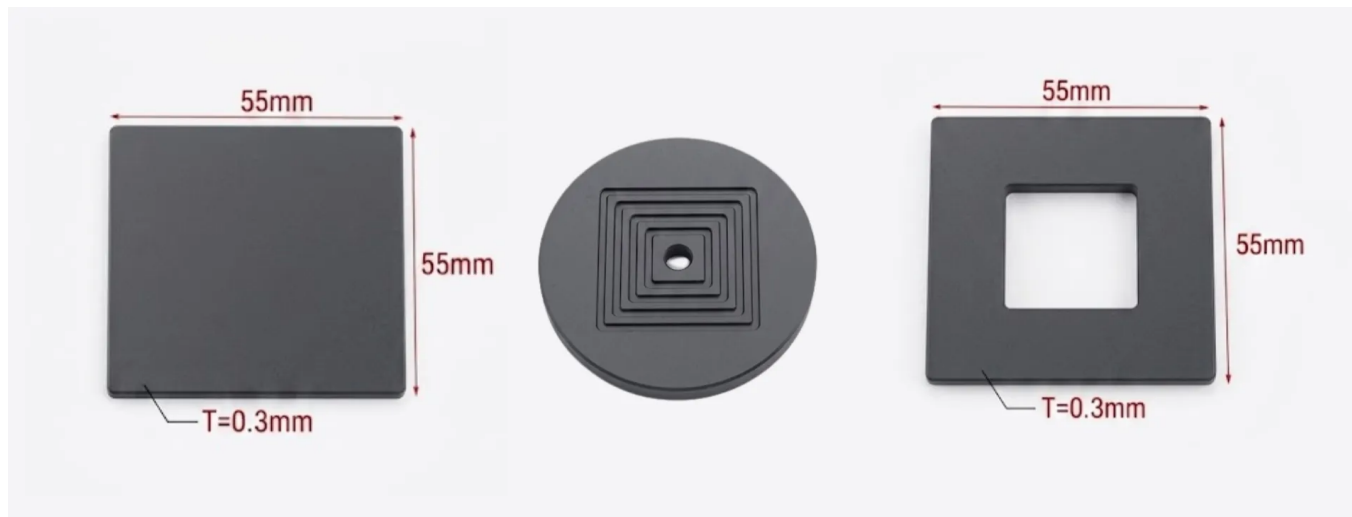
APPLICATIONS

Electric Spin Coater – ToronSC™ 100 Applications



The ToronSC™ 100 electric spin coater is designed for spin coating applications involving chemically aggressive solutions:

- Sol-gel thin film deposition: spin coating of metal oxide precursor solutions on silicon wafers and glass substrates for functional film research
- Photoresist application: application of photoresist layers on wafers up to 4" for academic photolithography research and process development
- Polymer thin film coating: spin coating of polymer solutions for encapsulation, dielectric, or functional film applications
- Teaching and training environments: entry-level spin coater for student laboratory courses in materials science, physics, and chemistry departments
- Glovebox spin coating: inert-atmosphere coating of air-sensitive organic or perovskite materials under argon
- Small substrate screening: rapid spin coating trials on small substrates (glass slides, small wafer pieces) for formulation development



FEATURES

Electric Spin Coater – ToronSC™ 100 Key Features

1. Vacuumless Mechanical Substrate Holder

The ToronSC™ 100 uses a mechanical substrate holder rather than vacuum suction, eliminating the need for a vacuum pump. This simplifies the instrument setup and makes it accessible for labs without vacuum infrastructure.

2. Argon Atmosphere Glovebox Compatible

Compatible with argon gas atmosphere for use inside a sealed glovebox, supporting inert-atmosphere spin coating of moisture-sensitive and oxygen-sensitive materials.

3. Variable Speed 500–8,000 rpm with Precise Control

Continuously variable spin speed from 500 to 8,000 rpm with precise electric motor speed control for reproducible film thickness across sequential spin coating runs.

4. Compact Benchtop Footprint

Designed as a compact tabletop spin coating machine suitable for small-bench laboratory environments, fume hoods, and glovebox integration without requiring a large dedicated workspace.

5. Substrates up to 4" (100 mm)

Accommodates flat substrates up to 4 inches (100 mm) in diameter, covering the most commonly used wafer and substrate sizes in academic and R&D spin coating applications.

6. Simple Direct Operation

Straightforward speed and time setting via the digital control interface, making this spin coater easy to operate for users with minimal equipment training.

THEORY & METHOD

Theory and Method

The ToronSC™ 100 spin coater deposits thin films by centrifugal spreading of liquid coating solutions on a rotating substrate. The substrate is placed on the spin chuck and secured mechanically, after which the coating solution is dispensed onto the substrate center using a syringe. The motor accelerates the substrate to the programmed spin speed, and centrifugal force spreads the solution radially outward across the substrate surface, expelling excess liquid off the edges and leaving a thin, uniform coating layer.

Film thickness is governed by spin speed, acceleration, spin time, and solution properties (viscosity and concentration). The ToronSC™ 100's electric DC motor delivers consistent, repeatable spin speed control — ensuring run-to-run reproducibility of film thickness. The vacuumless design simplifies operation by eliminating the need for a vacuum pump connection, while the argon compatibility allows the instrument to be used in glovebox environments for coating of air-sensitive materials.

TECHNICAL SPECIFICATIONS

Electric Spin Coater - ToronSC™ 100 Technical Specifications

Parameter	Specification
Model	ToronSC™ 100
Substrate Holding Method	Mechanical holder (vacuumless)
Maximum Substrate Size	4" (100 mm) diameter
Spin Speed Range	500 - 8,000 rpm

Parameter	Specification
Motor Type	Precision DC electric motor
Atmosphere Compatibility	Argon gas (glovebox compatible)
Vacuum Pump Required	No (vacuumless design)
Voltage	AC 110/220V, 50/60 Hz
Certification	CE



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