



SPIN COATERS

Spin Coaters

Thin Film Coating Solutions

A spin coater is one of the most widely used instruments in materials science, semiconductor research, photovoltaics, and thin film technology. The spin coating process deposits highly uniform, reproducible thin films on flat substrates through centrifugal spreading — making the spin coater an indispensable tool in laboratories, universities, and industrial facilities where controlled, repeatable thin film deposition is required.

The ToronSC™ series is a family of five CE-certified spin coaters designed to cover the full spectrum of spin coating applications — from entry-level electric spin coaters for student laboratories, to programmable high-speed models for advanced semiconductor and photovoltaic research, to large-format vacuum chuck instruments for 8-inch wafer coating. Every ToronSC™ spin coating machine is engineered for precision, reproducibility, and practical daily use in research and quality-control environments.

Whether you need a basic spin coater for polymer film deposition, an anti-corrosion spin coating machine for aggressive chemical precursors, or a programmable multi-recipe instrument for complex multilayer coating sequences, the ToronSC™ series has a model matched to your application, substrate size, and process requirements.

Ready to Configure Your Spin Coating Solution?

The ToronSC™ series gives research laboratories, university departments, and industrial R&D facilities a complete, CE-certified spin coater lineup for every thin film coating application. Contact Torontech to discuss substrate requirements, process chemistry, optional accessories, and pricing for the ToronSC™ spin coating machine that best fits your workflow.

APPLICATIONS

Applications

The ToronSC™ spin coater series serves thin film deposition applications across a broad range of research and industrial fields:

Semiconductor & Photolithography

- Photoresist spin coating on silicon wafers for academic and industrial photolithography research and process development
- Dielectric and passivation film deposition by sol-gel spin coating for semiconductor device fabrication research
- Anti-reflection and protective layer application on optical and photonic device substrates

Photovoltaics & Energy Research

- Perovskite absorber layer spin coating for next-generation solar cell research and efficiency optimization
- Electron and hole transport layer deposition from sol-gel or nanoparticle solutions for photovoltaic device stacks
- Battery electrode functional coating — spin coating of active material slurries and protective coatings on current collector substrates

Materials Science & Chemistry Research

- Metal oxide thin film deposition from sol-gel precursors for catalysis, sensing, and optoelectronic applications
- Polymer thin film coating for encapsulation, dielectric, and electroactive layer research in printed electronics
- Nanoparticle suspension spin coating for functional surface modification and nanostructured thin film fabrication

Specialty & Controlled Atmosphere Coating

- Anti-corrosion spin coating with strong acid and alkali solutions using the PP-chamber ToronSC™ 2000C and ToronSC™ 1000P models
- Inert atmosphere glovebox spin coating under argon for air-sensitive organic, perovskite, and battery material film deposition
- Large-format substrate coating (up to 8" wafer or 5"×5" panels) using the ToronSC™ 350P for advanced device research

FEATURES

Why Choose the ToronSC™ Series for Your Thin Film Coating?

Selecting a spin coater is a decision that affects film quality, process reproducibility, operational safety, and long-term laboratory productivity. The ToronSC™ spin coating machine series was designed to address all of these considerations across a range of application needs and budget levels.

1. A Spin Coater for Every Application and Substrate Size

Most spin coater suppliers offer one or two models and leave researchers to adapt their process to the instrument's limitations. The ToronSC™ series spans five purpose-built spin coating machines — from a 4" vacuumless electric spin coater to a programmable 8" large-format vacuum chuck model — so you can select the instrument that fits your substrate, your process chemistry, and your programming requirements without compromising.

2. Anti-Corrosion Design for Aggressive Chemistry

Standard spin coaters use aluminum chambers that corrode rapidly when exposed to strong acids, alkalis, and reactive sol-gel precursors. The ToronSC™ 2000C and ToronSC™ 1000P use full polypropylene chambers that are chemically inert to aggressive coating solutions, including the strong acid and alkali precursors used in perovskite, metal oxide, and electrolyte thin film research.

3. Glovebox and Inert Atmosphere Compatibility

Multiple models in the ToronSC™ series are designed for use inside a glovebox under argon or nitrogen atmosphere, enabling spin coating of air-sensitive and moisture-sensitive materials without exposing the substrate or solution to ambient humidity or oxygen. The ToronSC™ 1000P also features a built-in gas inlet port on the cover for atmospheric control without requiring a full glovebox enclosure.

4. Programmable Multi-Step Spin Coating Recipes

The ToronSC™ 1000P delivers the most advanced programming capability in the series: 12 stored programs, each with up to 6 independent speed/time segments. This level of recipe storage and multi-step control is essential for reproducible multilayer spin coating, photoresist profile optimization, and complex sol-gel process sequences that require more than a simple two-step dispense-and-spread protocol.

5. Vacuum Chuck Fixation for Film Uniformity

Four of the five ToronSC™ models use vacuum chuck substrate fixation — holding the substrate firmly centered on the chuck during the full spin cycle. Vacuum fixation eliminates substrate movement, reduces centrifugal-force-induced substrate warping, and ensures the substrate remains level during spin coating, all of which directly improve film thickness uniformity across the substrate.

6. CE Certified Across the Full Series

Every ToronSC™ spin coater is CE certified, confirming compliance with European safety, electromagnetic compatibility, and environmental protection requirements. CE certification supports use in regulated laboratory and industrial environments in North America, Europe, and internationally, and provides assurance of product quality and design standards.

7. Complete Ready-to-Use Packages

Each ToronSC™ spin coating machine ships as a complete package: oilless vacuum pump, appropriate vacuum chucks, 20 mL syringe, wastewater filter, and all connections — ready for immediate deployment without sourcing additional accessories. Optional accessories including heating covers, additional chuck sizes, and centering tools extend the

instrument's capability as your application requirements grow.

TECHNICAL SPECIFICATIONS

Product Comparison

The table below provides a side-by-side comparison of all five ToronSC™ spin coater models. Use the 'Best For' column to match the right spin coating machine to your application.

Model	Product Name	Max Substrate	Speed Range	Programs	Chamber	Best For	CE
ToronSC™ 100	Electric Spin Coater	4" (100 mm)	500–8,000 rpm	Adjustable	Aluminum/PP disk	Entry-level; vacuumless; glovebox Ar use	✓
ToronSC™ 350	Vacuum Spin Coater	4" (100 mm)	500–8,000 rpm	2 segments	Aluminum cast / PP disk	Standard lab vacuum spin coating; sol-gel & photoresist	✓
ToronSC™ 350P	Programmable Vacuum Spin Coater	8" (200 mm) / 5"×5"	500–6,000 rpm	2 segments	Polypropylene (PP)	Large wafer & panel coating; sol-gel; optional heating	✓
ToronSC™ 1000P	Programmable Hi-Speed Spin Coater	5" (127 mm)	500–10,000 rpm	12 programs × 6 segments	Polypropylene (PP)	Complex multi-step recipes; semiconductor & PV research	✓
ToronSC™ 2000C	Anti-Corrosion Spin Coater	6" (152 mm)	500–8,000 rpm	2 segments	Polypropylene (PP)	Corrosive acid/alkali coatings; glovebox Ar use	✓

Select the Right ToronSC™ Spin Coater

Use the quick selection guide below to match the right spin coater to your application:

ToronSC™ 100 — Entry-Level Electric Spin Coater

- Choose this model when you need a simple, affordable spin coating machine without vacuum infrastructure
- Ideal for: student labs, first-time spin coating users, and glovebox deployment for inert-atmosphere coating

ToronSC™ 350 — Vacuum Spin Coater

- Choose this model for standard sol-gel and photoresist spin coating on 4" and smaller substrates with vacuum chuck precision
- Ideal for: general-purpose research labs, university groups, and routine thin film deposition workflows

ToronSC™ 350P — Programmable Vacuum Spin Coater

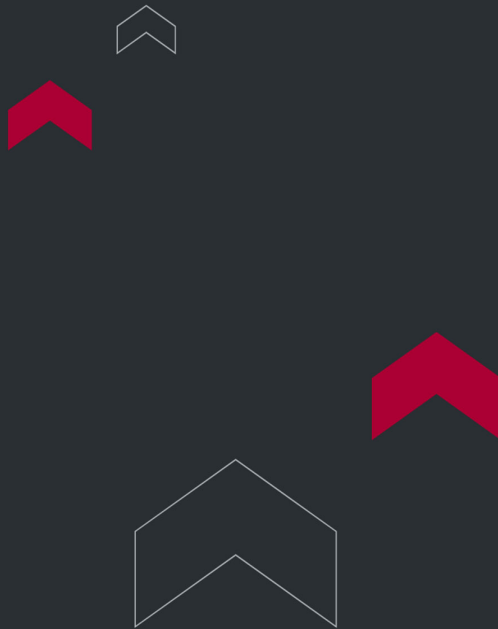
- Choose this model for large-format spin coating on 8" wafers or 5"×5" panels with sol-gel and functional coating solutions
- Ideal for: scaled-up thin film research, pilot production evaluation, and large substrate coating with optional in-situ heating

ToronSC™ 1000P — Programmable Hi-Speed Spin Coater

- Choose this model when your process requires multi-step programming, speeds up to 10,000 rpm, or corrosive coating chemistry
- Ideal for: advanced semiconductor research, photovoltaic absorber layers, and multilayer spin coating with complex recipes

ToronSC™ 2000C — Anti-Corrosion Spin Coater

- Choose this model when coating solutions are strongly acidic, alkaline, or require argon atmosphere glovebox use
- Ideal for: perovskite research, metal oxide sol-gel, battery electrode coating, and other corrosive chemistry applications



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