



VACUUM SPIN COATER

Vacuum Spin Coater - ToronSC™ 350

ToronSC™ 350 is a compact vacuum spin coater designed for reliable, uniform thin film deposition on substrates up to 4 inches (100 mm) in diameter. Engineered for research laboratories, universities, and light industrial coating applications, the ToronSC™ 350 spin coating machine delivers reproducible thin films from sol-gel solutions, photoresists, polymer solutions, and other liquid coatings using vacuum-chuck substrate fixation for stable, centered spin performance.

The cast aluminum housing provides structural rigidity and low-vibration operation for consistent coating uniformity. The polypropylene liquid disk within the chamber is chemically resistant to most coating solvents, allowing straightforward solvent cleaning between runs. The instrument includes an oilless vacuum pump and a full set of accessories for immediate deployment, making the ToronSC™ 350 one of the most field-ready vacuum spin coaters in its class.

APPLICATIONS

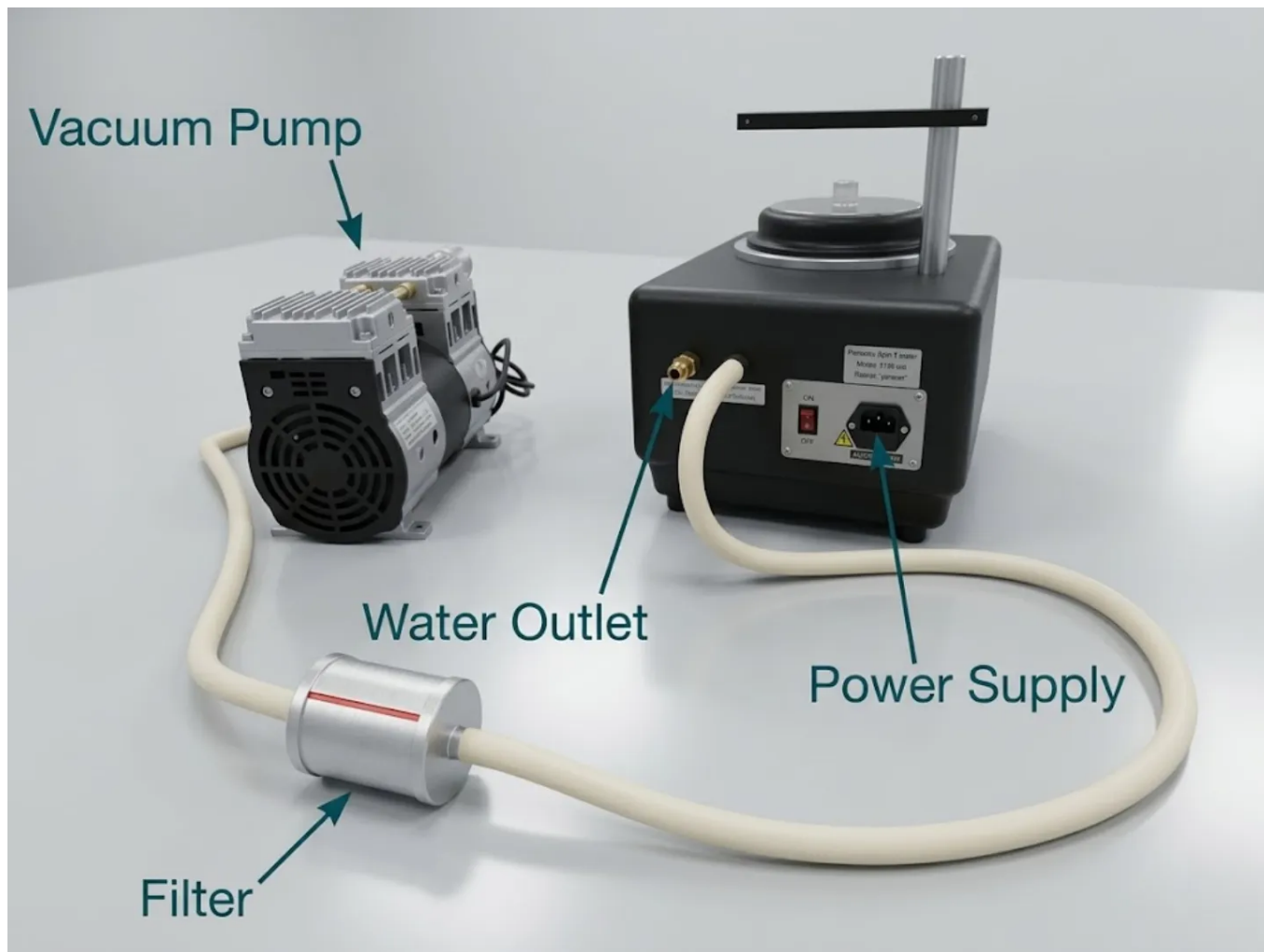
Vacuum Spin Coater - ToronSC™ 350 Applications



The ToronSC™ 350 vacuum spin coater is designed for spin coating applications involving chemically aggressive solutions:

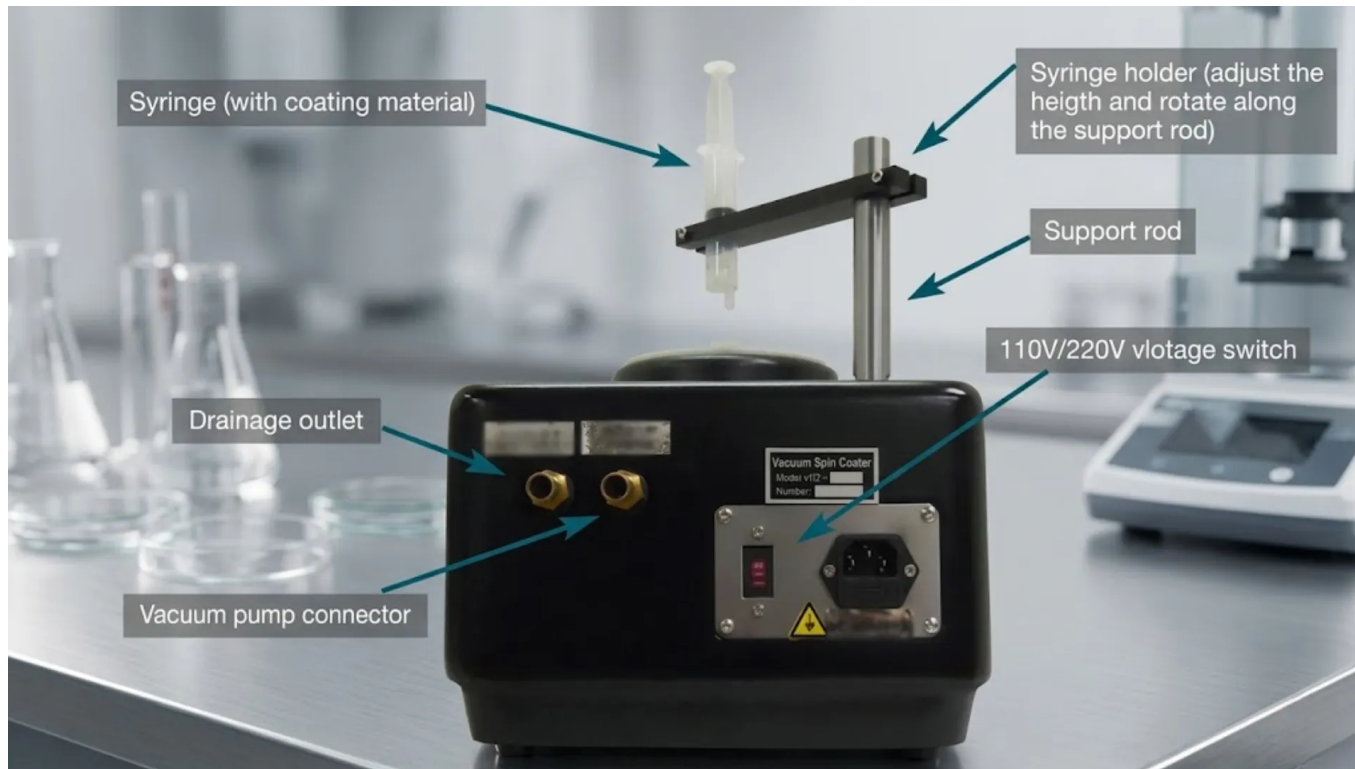
- Sol-gel thin film deposition: uniform coating of metal oxide and functional precursor solutions on 4" and smaller silicon and glass substrates
- Photoresist spin coating: standard photolithography resist application on semiconductor wafers for academic and R&D processes
- Polymer film coating: spin coating of polymer solutions for dielectric, encapsulant, or electroactive film applications in research
- Nanoparticle suspension coating: deposition of nanoparticle-loaded solutions for functional coating research on flat substrates
- Research laboratories and universities: trusted vacuum spin coater for materials science, chemistry, physics, and engineering research groups
- Optical coating research: deposition of anti-reflection, filter, or functional optical thin films on flat glass or wafer substrates





FEATURES

Vacuum Spin Coater - ToronSC™ 350 Key Features



1. Vacuum Chuck Substrate Fixation

Substrates are held by vacuum suction for stable, centered placement during the spin cycle. This prevents substrate movement, vibration, and off-center coating that can occur with mechanical holders, delivering superior film uniformity across the substrate.

2. Two-Segment Programmable Speed Control

Two independently programmable segments — each with its own spin speed and spin time — enable the standard two-phase spin coating protocol (dispense at low speed, spread at high speed) in a single automated cycle.

3. Aluminum Casting Case for Low-Vibration Operation

The aluminum casting housing keeps the spin coater mechanically rigid and stable at high speeds, minimizing vibration that would otherwise compromise film uniformity across the substrate.

4. Polypropylene Chemical-Resistant Liquid Disk

The liquid disk within the chamber is made of polypropylene, providing chemical resistance to most common spin coating solvents and enabling thorough solvent rinse cleaning between coating runs.

5. Oilless Vacuum Pump with Wastewater Filter

The included oilless vacuum pump delivers clean, oil-free suction for substrate fixation. A filter between the coater and the pump prevents liquid from entering and damaging the pump.

6. Drainage Outlet and Rear-Panel Connections

The drainage outlet and vacuum pump connector are positioned on the back panel, keeping the working area clean and organized for routine laboratory spin coating workflows.

THEORY & METHOD

Theory and Method

The ToronSC™ 350 operates on the centrifugal thin film deposition principle. The substrate is held on the vacuum chuck by suction from the oilless vacuum pump, ensuring it remains centered and secured during the full spin cycle. Coating solution is dispensed onto the stationary or slowly rotating substrate, and the motor accelerates to the programmed speed. Centrifugal force distributes the liquid uniformly outward from the substrate center, with excess solution expelled into the surrounding polypropylene liquid disk.

The two-segment programmable control allows a low-speed dispense step followed by a high-speed spread step — the standard two-phase spin coating protocol used for most photoresist and sol-gel applications. The drainage outlet on the back panel and vacuum pump connector allow clean operation and simple solvent recovery. A filter between the pump and coater prevents wastewater from entering the vacuum pump, extending pump service life.

TECHNICAL SPECIFICATIONS

Vacuum Spin Coater - ToronSC™ 350 Technical Specifications

Parameter	Specification
Model	ToronSC™ 350
Maximum Substrate Size	4" (100 mm) diameter
Spin Speed Range	500 – 8,000 rpm
Programmable Segments	2 segments (speed + time each)
Substrate Fixation	Vacuum chuck
Chamber Material	Aluminum casting (housing); Polypropylene liquid disk
Vacuum Pump	Oilless vacuum pump (included)
Wastewater Filter	Included (pump protection)
Drainage	Rear drainage outlet
Voltage	AC 110/220V, 50/60 Hz
Certification	CE



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