



COMPACT SLIDE STAINER & COVERSLIPPER

Compact Slide Stainer & Coverslipper - ToronSSC™ 700

ToronSSC™ 700 Compact Slide Stainer & Coverslipper brings automated H&E staining and glass coverslipping together in a single benchtop unit under one meter wide. Torontech built this platform for hospital pathology labs and histology departments that need complete slide finishing without dedicating a large footprint to two separate instruments. The system carries 27 stations, stains at least 160 slides per hour, and coverslips at 800 slides per hour. Slides move from reagent to cover glass with no operator transfer step.

Continuous loading lets technicians add baskets at any point during a run, so urgent cases do not wait for a batch to finish. An intelligent staining control system adjusts step timing against reagent age and basket count, which holds color intensity steady as solutions accumulate use. A reagent management function tracks days in service and baskets processed, then prompts replacement before quality drifts. The 10.4-inch touchscreen stores 200 programs of up to 100 steps each.

A fully enclosed cabinet with activated carbon adsorption and fume extraction keeps xylene and alcohol vapors away from the bench. Remote monitoring through a web browser or mobile app shows run status from outside the lab, and a USB port exports quality control records as Excel files. Power-loss memory recalls the interrupted step and asks the operator whether to resume or restrain. Standard glass coverslips and common mountants keep running costs predictable.

APPLICATIONS

Compact Slide Stainer & Coverslipper - ToronSSC™ 700 Applications

The ToronSSC™ 700 suits laboratories that process routine stained slides daily and want staining and coverslipping handled on one bench.

- Hospital Pathology Laboratories: routine H&E staining and coverslipping of surgical and biopsy sections, with continuous loading so urgent cases enter the queue without stopping a run

- Histology Laboratories: end-to-end slide finishing after sectioning, covering deparaffinization, staining, dehydration, clearing, and glass coverslipping in one programmed sequence
- Cytology Screening: automated processing of gynecologic and non-gynecologic smears where uniform nuclear detail supports faster screening
- Digital Pathology and Whole Slide Imaging: bubble-free, evenly seated cover glass produces clean scans and reduces rejected tiles during automated slide capture
- Academic and Teaching Laboratories: stored programs let students run standardized protocols and compare results without variation from individual technique
- Research and Biotechnology: repeatable staining of animal and cell-block sections for morphology studies, toxicology work, and preclinical tissue review
- Veterinary Diagnostic Laboratories: routine tissue and cytology staining for companion animal and livestock diagnostics on a bench with limited space



FEATURES

Compact Slide Stainer & Coverslipper - ToronSSC™ 700 Key Features

The ToronSSC™ 700 combines staining, coverslipping, reagent tracking, and fume containment in one cabinet, with controls built around walk-away operation.

- Integrated Staining and Coverslipping: one instrument covers the full sequence from deparaffinization to sealed cover glass, removing the manual transfer between two machines and the queue that builds between them
- Sub-One-Meter Footprint: overall length stays below 1 m, so the unit fits standard bench runs and small satellite labs where a two-instrument line will not go
- Continuous Sample Loading: baskets can be added while a run is in progress, letting STAT slides enter the sequence without interrupting scheduled work
- 10.4-Inch Color Touchscreen: large display shows live station status and step timing, with a quick-start button beside the loading station for single-press program launch
- Adaptive Staining Control: the control system adjusts staining time against reagent service life and the number of baskets processed, holding intensity consistent from the first rack of the day to the last
- Reagent Management with Replacement Alerts: tracks days in use and basket count per station, then flags solutions that have reached their limit before staining quality falls off
- 27 Working Stations: sufficient station count for full H&E protocols plus special stains without reloading reagents between methods
- 200 Programs, 100 Steps Each: deep program memory covers routine H&E, special stains, and site-specific variants so protocols do not need re-entry
- Arc-Press Glass Coverslipping: linear mountant dispensing with post-push arc placement and flat press produces an even resin layer, limits overflow, and reduces bubble formation
- Standard Glass Coverslip Format: classic glass covering gives the clarity and long-term stability pathologists expect for archival slides and digital scanning

- Intelligent On-Demand Water Supply: valves open and close according to protocol steps and flow adjusts to incoming line pressure, cutting water consumption during idle stations
- Power-Loss Memory: the instrument stores the interrupted step and prompts the operator to resume or restrain once power returns, protecting slides already in process
- Remote Monitoring and Alarms: run status and fault alerts reach the operator through a web browser or mobile app, so a technician can leave the room during long runs
- USB Quality Control Export: staining records download as Excel files for accreditation documentation and internal QC review
- Voice Prompts and Audible Alarms: spoken cues and alarms direct operator attention to the station that needs action instead of a silent screen message
- Enclosed Cabinet with Carbon Filtration: full enclosure plus activated carbon adsorption and fume extraction treats xylene and alcohol vapor at source, improving bench air quality
- No Proprietary Consumables: the unit runs on standard glass coverslips and common mounting media, keeping cost per slide low and supply sourcing open

THEORY & METHOD

Theory and Method

Hematoxylin and eosin staining works on charge attraction between dyes and tissue components. Hematoxylin, oxidized to hematein and complexed with an aluminum mordant, carries a net positive charge that binds the phosphate backbone of nucleic acids. Nuclei therefore take on blue-purple color. Eosin Y is an anionic dye that binds positively charged amino groups in cytoplasmic and extracellular proteins, producing pink to red tones. The contrast between the two lets pathologists read tissue architecture under transmitted light.

Reproducible color depends on time, temperature, and reagent concentration at every step. The transport arm moves each basket through deparaffinization, graded rehydration, hematoxylin, bluing, acid differentiation, eosin, dehydration, and

clearing on a fixed schedule. Manual staining drifts because dwell times vary between technicians and reagents weaken with use. The ToronSSC™ 700 addresses both sources of variation: the program controls dwell time to the second, and adaptive scheduling compensates for reagent depletion across the working day.

Coverslipping protects the section and completes the optical path. Stained tissue and glass both refract light near an index of 1.5, so the mountant must fall in the same range to avoid scattering at each interface. The system dispenses mountant along a line, then lowers the cover glass in an arc so the resin spreads as an advancing front and pushes air ahead of it. Trapped bubbles and edge overflow drop sharply, which matters for whole slide scanning.

TECHNICAL SPECIFICATIONS

Compact Slide Stainer & Coverslipper - ToronSSC™ 700 Technical Specifications

Parameter	Specification
Staining Throughput (Routine H&E)	≥ 160 slides per hour, continuous loading
Coverslipping Throughput	800 slides per hour
Total Stations	27
Editable Programs	200 sets
Editable Steps per Program	100 steps
Slide Size	25 × 75 mm
Cover Glass Size	20 × 40 mm to 20 × 60 mm
Coverslipping Mode	Glass cover slip, linear mountant dispensing with arc press and flat push

Parameter	Specification
Display	10.4-inch color touchscreen
Data Export	USB port, Excel-format quality control records
Remote Monitoring	Web browser and mobile application
Water Supply	Intelligent on-demand supply, automatic valve control, pressure-adaptive flow
Fume Treatment	Fully enclosed cabinet, activated carbon adsorption with exhaust gas extraction
Maximum Power	1,400 W
Voltage	110 to 220 V AC, 50/60 Hz
Dimensions (W × D × H)	970 × 670 × 650 mm
Weight	95 kg



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