



Semi Automatic Microtome - ToronTome™ 530

Semi Automatic Microtome ToronTome™ 530 is a precision Microtome built for controlled trimming and sectioning of embedded specimens in pathology, histology, research, and laboratory sample-preparation workflows. This Rotary Microtome combines manual sectioning control with electronic thickness setting, touchscreen operation, specimen retraction, and a rocking function for faster, more controlled trimming.

The system uses an advanced stepper motor to support smooth and quiet motion while maintaining repeatable sectioning performance. It is designed for labs that need flexible operation, stable blade handling, convenient clamp options, and safer day-to-day use.

ToronTome™ 530 also includes practical workflow features such as one-touch memory return, adjustable blade positioning, a removable waste tray, and handwheel locking at any position. These functions help support cleaner sectioning, easier maintenance, and better operator control across routine laboratory work.

APPLICATIONS

Semi Automatic Microtome - ToronTome™ 530 Applications

- Histology and pathology sectioning: this Microtome is suitable for routine paraffin sectioning in pathology and histology labs. It can be used to prepare thin tissue sections for microscopic examination, staining, and diagnostic review.
- Research laboratories: the instrument fits research environments that need stable trimming and repeatable section thickness for biological, medical, or related specimen preparation. The touchscreen controls and programmable return functions are useful when multiple blocks are processed in sequence.
- Teaching and training labs: a semi-automatic Rotary Microtome is often preferred in teaching environments because it gives users direct handwheel control while still offering digital setup for thickness adjustment and feed-related

functions. This balance can help new operators learn sectioning techniques with more control over the process. This is an application-based inference from the machine's operating design.

- General laboratory specimen preparation: ToronTome™ 530 is also suitable for laboratories handling routine embedded sample preparation where users need controlled trimming, flexible clamp choices, blade compatibility, and repeatable sectioning across different specimen sizes.



Standards

- **ISO 9001:2008** is a foundational international standard for quality management systems that mandates strict process control and comprehensive documentation to ensure manufacturing consistency. Within the industrial testing sector, it established the rigorous framework for quality manuals and corrective actions required to guarantee that equipment consistently meets exact technical specifications and global regulatory compliance.

FEATURES

Semi Automatic Microtome - ToronTome™ 530 Key Features

- Semi-automatic dual-control operation: ToronTome™ 530 combines digital control functions with manual handwheel-based sectioning. The two manual sectioning styles: rocking mode and conventional manual trimming or sectioning with full handwheel rotation.
- High-precision stepper motor: an advanced stepper motor supports smooth, quiet, and accurate slicing performance. This helps the instrument maintain consistent motion during routine sectioning work.
- Touchscreen control interface: the integrated touchscreen displays section thickness, trimming thickness, counter values, and clamp feed distance. Operators can adjust sectioning or trimming parameters directly on the screen, and an optional external manual control box is available.
- Sample retraction and memory positioning: a specimen retraction function and one-touch memory return. Together, these features help reduce reverse blade contact, support smoother cuts, and shorten repetitive repositioning work.
- Rocking mode for controlled trimming: this Rotary Microtome includes a rocking mode that allows short back-and-forth handwheel motion without completing a full turn. That gives the operator a faster trimming method while keeping the retraction function active.
- Safety-focused operation: built-in alarms, overload protection, and automatic sleep mode support safer routine operation. A customizable emergency-stop function that returns the system to its original position with a single button press.

- Quick-release specimen clamp system: the instrument includes a quick-release specimen clamp and supports both standard and universal cassette clamps. This gives labs more flexibility when handling different embedded sample formats.
- Optimized blade holder design: the blade holder uses a treated surface to help reduce section sticking and curling. A rigid dovetail blade holder that keeps the blade firmly positioned, which is especially useful when sectioning harder tissue.
- Broad blade compatibility: ToronTome™ 530 supports both high-profile and low-profile disposable blades. An optional blade carrier for traditional steel knives is also available.
- Adjustable blade positioning system: the blade positioning system includes an adjustable cutting angle from 0 to 15 degrees, an integrated blade guard, a blade remover, and three lateral shift positions. This helps users use more of the blade edge before replacement.
- Flexible handwheel control: the handwheel supports slow feed at 350 µm per revolution and fast feed at 1000 µm per revolution, with customizable feed direction. The handwheel can also be locked at any position, including a dedicated highest-point lock for safer specimen handling.
- Balanced handwheel design: the handwheel uses counterweights rather than springs. This supports lighter, smoother, and more stable rotation during manual operation.
- Low-maintenance internal structure: imported rails and bearings with long-term lubrication design reduce the need for frequent oiling. This helps lower maintenance demands over time.
- Easy cleaning and organized workspace: a removable top-mounted specimen or tool holder and a large anti-static waste tray simplify daily cleanup and support a cleaner working area around the Microtome.

THEORY & METHOD

Theory and Method

A Rotary Microtome works by advancing a specimen block toward a fixed blade in controlled increments so thin sections can be cut for microscopic analysis. The operator mounts the specimen, sets trimming or section thickness, aligns the block, and uses the handwheel to move the specimen through the cutting path.

ToronTome™ 530 adds semi-automatic control to this method through electronic thickness selection, touchscreen setup, and a stepper-motor-assisted system. A specimen retraction function that pulls the sample back slightly during return travel, which helps reduce reverse blade contact and supports smoother cutting.

The rocking mode allows short back-and-forth handwheel motion without a full rotation. This method is useful during trimming because it gives the operator faster control while keeping the retraction function active. The system also includes programmable memory return, which helps the user return the sample clamp to a saved position during repeated trimming tasks.

Blade angle, specimen orientation, feed distance, and clamp stability all affect section quality. That is why this Microtome includes adjustable blade positioning, X/Y specimen orientation, different feed behaviors, and clamp options for different cassette and specimen formats.

TECHNICAL SPECIFICATIONS

Semi Automatic Microtome - ToronTome™ 530 Technical Specification

Parameter	ToronTome™ 530
Product type	Semi Automatic Microtome / Rotary Microtome
Section thickness range	0.25-999 µm
Minimum section increment	0.25 µm
Trimming thickness range	0.5-1000 µm

Parameter	ToronTome™ 530
Minimum trimming increment	0.5 µm
Section thickness increments	0.25–0.5 µm in 0.25 µm steps; 0.5–2 µm in 0.5 µm steps; 2–10 µm in 1 µm steps; 10–20 µm in 2 µm steps; 20–50 µm in 5 µm steps; 50–100 µm in 10 µm steps; 100–200 µm in 20 µm steps; 200–600 µm in 50 µm steps; 600–999 µm in 100 µm steps
Trimming thickness increments	0.5–2 µm in 0.5 µm steps; 2–10 µm in 1 µm steps; 10–20 µm in 2 µm steps; 20–50 µm in 5 µm steps; 50–100 µm in 10 µm steps; 100–200 µm in 20 µm steps; 200–600 µm in 50 µm steps; 600–1000 µm in 100 µm steps
Positioning system	Sample clamp with zero-position indicator
Specimen orientation	X/Y-axis universal 8° adjustment with zero-scale marking
Maximum horizontal displacement	20 mm or 28 mm ±1% customizable
Maximum vertical displacement	60 mm or 70 mm ±1% customizable
Feed speed	300 µm/s and 800 µm/s
Sample retraction	0–999 µm, adjustable or disable selectable
Maximum cutting area	50 × 70 mm
Cutting angle adjustment	0–15°
Handwheel feed	Slow mode 350 µm/rev; fast mode 1000 µm/rev

Parameter	ToronTome™ 530
Power input	AC 110-230 V
Frequency	50/60 Hz
Precision error	±5%
Net weight	30 kg
Dimensions	520 × 450 × 300 mm



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