TORONTECH

STAINLESS STEEL ULTRASONIC CLEANER

Stainless Steel Ultrasonic Cleaner – ToronUC™ SS Series

ToronUC™ SS Series Stainless Steel Ultrasonic Cleaner is a premium benchtop ultrasonic cleaning system engineered for precision cleaning of delicate and intricate items across laboratory, optical, dental, and industrial environments. Built around a titanium-black mirror-finish stainless steel exterior and an advanced plexiglass smart touch panel, the SS Series delivers a compelling combination of sophisticated aesthetics, operational durability, and high-performance ultrasonic cleaning in compact bench-top footprints from 2 to 9 liters.

Each model in the ToronUC™ SS Series operates at 40 kHz ultrasonic frequency, generating dense cavitation fields across the full tank volume to ensure thorough, consistent ultrasonic cleaning of jewelry, eyeglasses, optical lenses, dental instruments, laboratory glassware, electronic components, and precision mechanical parts. The smart capacitive touch interface provides intuitive timer and temperature control, while the integrated ceramic heating element maintains bath temperature from 30°C to 80°C for cleaning chemistry optimization.

Designed and validated for the North American market, the ToronUC™ SS Series is the ideal ultrasonic cleaner for optical retail shops, dental offices, jewelry stores, university laboratories, and industrial quality control benches seeking professional-grade ultrasonic cleaning performance in a sleek, fingerprint-resistant enclosure.

40 kHz FREQUENCY	**2–9 L** TANK VOLUME	**200 W** MAX US POWER	**30–80°C** TEMP. RANGE	**1–99 min** TIMER RANGE

APPLICATIONS

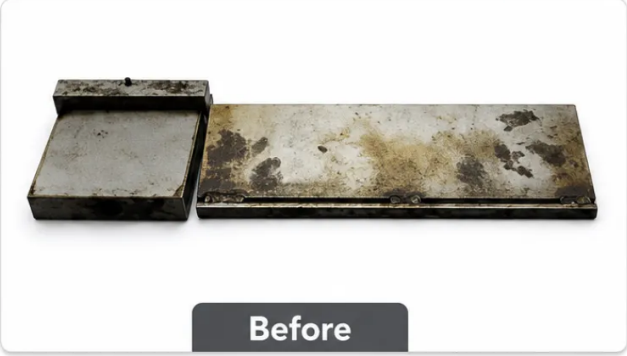
Stainless Steel Ultrasonic Cleaner – ToronUC™ SS Series Applications

The ToronUC™ SS Series ultrasonic cleaner is optimized for precision and delicate-item cleaning across the following application sectors:

- Jewelry Cleaning: The ultrasonic jewelry cleaner function removes tarnish, body oils, polishing compounds, and embedded grime from rings, necklaces, bracelets, earrings, and watch components. Safe for gold, silver, platinum, and most gemstones — delivering professional ultrasonic cleaner jewelry results in minutes.
- Optical & Eyeglasses: Functions as a high-performance ultrasonic glasses cleaner, removing skin oils, makeup, dust, and cleaning residues from eyeglass frames, lenses, sunglasses, optical components, and contact lens accessories. The gentle 40 kHz cavitation is safe for coated lenses.
- Dental Instruments: Serves as a professional dental ultrasonic cleaner for pre-sterilization cleaning of dental instruments, mirrors, scalers, forceps, and other reusable dental tools. Removes biological debris and contamination prior to autoclave sterilization.
- Laboratory Glassware: Thoroughly cleans beakers, flasks, pipettes, test tubes, and analytical equipment used in biochemistry, pharmaceutical, and research laboratory applications, removing residues that compromise experimental accuracy.
- Electronic Components: Removes flux residues, solder paste, and contamination from PCBs, connectors, and precision electronic assemblies using compatible cleaning solvents. The ultrasonic cleaning action penetrates under components and into tight pitches.
- Watch & Precision Parts: Ideal for ultrasonic cleaning of watch movements, gears, springs, and micro-precision parts, restoring factory cleanliness to serviced timepieces without risk of damage from mechanical cleaning.

Before & After Cleaning

Comparison of sample surfaces before and after treatment.



TORONTECH
ToronUC™ SS Series
Stainless Steel Ultrasonic Cleaner
°C
MIN
SEC
ON/OFF
TEMP+
TEMP-
TIME+
TIME-

FEATURES

Stainless Steel Ultrasonic Cleaner – ToronUC™ SS Series Key Features

- Titanium Black Mirror Finish: The exterior panels are constructed from titanium-black mirror-finish stainless steel, providing exceptional scratch resistance, a fingerprint-resistant surface, and a premium aesthetic appropriate for customer-facing retail and clinical environments.
- Fingerprint-Resistant Surface: The mirror-black surface treatment resists fingerprint adhesion and smudging, keeping the ultrasonic cleaner looking clean and professional with minimal maintenance — a key advantage in retail jewelry and optical shop settings.
- Advanced Plexiglass Touch Panel: The capacitive smart touch panel is constructed from durable plexiglass, providing a stable, moisture-resistant interface with superior longevity compared to conventional membrane keypads. Designed for safe, reliable daily operation.
- Super-Sensitive Touch Response: Touch button response time is under 150 ms, providing immediate and responsive control feedback — eliminating the lag and missed inputs common with conventional membrane-switch panels.
- Optimal Control Board Design: The internal control board uses a vibration-resistant mounting design with secured component attachment, preventing component shedding and electrical failure during long-distance shipping and in high-vibration environments.
- 40 kHz Ultrasonic Frequency: The 40 kHz operating frequency delivers the optimal balance of cavitation bubble size and energy density for effective ultrasonic cleaning of both delicate items (jewelry, eyeglasses) and precision mechanical parts without surface damage.
- Adjustable Heat (30–80°C): The integrated ceramic heating element maintains bath temperature within the 30°C to 80°C range, enabling temperature optimization for different cleaning chemistries and contamination types.
- 1–99 Minute Programmable Timer: The digital timer is programmable from 1 to 99 minutes, providing the flexibility to run quick cleaning cycles for delicate items or extended ultrasonic cleaning programs for heavily contaminated parts.
- Compact Multi-Model Range: Available in four tank sizes from 2L to 9L, allowing selection of the right capacity for the application — from compact dental office and jewelry counter units to larger laboratory and light industrial ultrasonic cleaners.

Theory & Ultrasonic Cleaning Method

Ultrasonic cleaning is based on the physical phenomenon of acoustic cavitation. When high-frequency sound waves, typically 40 kHz are transmitted through a liquid cleaning solution, they generate millions of microscopic vacuum bubbles that form and violently implode at rates corresponding to the ultrasonic frequency. Each implosion releases an intense local jet of energy reaching temperatures of several thousand degrees Celsius and pressures exceeding 500 atmospheres but only at a microscopic scale, ensuring the parts being cleaned are unaffected by thermal or mechanical shock.

This cavitation process is the core mechanism of all ultrasonic cleaning. The energy released by each collapsing bubble penetrates into surface pores, blind holes, threads, crevices, and complex geometries that brushes, sprays, and manual wiping methods simply cannot reach. Contaminants including oils, greases, flux residues, machining chips, polishing compounds, biological debris, fingerprints, and corrosion products — are dislodged from the substrate surface and dispersed into the cleaning solution, leaving a thoroughly clean part surface in a fraction of the time required by conventional methods.

The heating function complements cavitation by reducing the viscosity of oily contaminants, improving the solubility of cleaning chemistry, and accelerating the overall cleaning reaction. The degas function (where available) purges dissolved gases from the cleaning solution during the initial warm-up phase, improving cavitation intensity and ensuring optimal ultrasonic cleaning performance from the first cycle.

Ultrasonic Cleaning Process Steps

— Fill the tank with an appropriate water-based cleaning solution or solvent compatible with the parts being cleaned. Add recommended cleaning chemistry at the manufacturer-specified dilution ratio.

2. Pre-Heat (if required) — Activate the heating function and set the target temperature. Allow the bath to stabilize before loading parts to ensure consistent cavitation intensity.

3. Degas (if available) — Run the degas cycle to purge dissolved gases from the cleaning solution, maximizing cavitation efficiency and cleaning effectiveness from the first production run.

4. Load & Run — Submerge parts in the basket or cleaning cradle, ensuring all surfaces are exposed to the cleaning solution. Set the timer and activate the ultrasonic transducers.

5. Rinse & Dry — Remove parts and rinse with clean water to remove residual cleaning chemistry and loosened contaminants. Dry with compressed air or a clean cloth as appropriate.

TECHNICAL SPECIFICATIONS

Stainless Steel Ultrasonic Cleaner – ToronUC™ SS Series Technical Specifications

Model	Tank Size L×W×H (mm)	Unit Size L×W×H (mm)	Volume (L)	Ultrasonic Power (W)	Freq. (kHz)	Heating Power (W)	Timer (min)	Temp. (°C)
ToronUC™ 50SS	150×140×100	175×165×230	2	50	40	100	1–99	30–80
ToronUC™ 100SS	240×140×100	330×165×230	3	100	40	100	1–99	30–80
ToronUC™ 150SS	300×150×150	400×175×305	6	150	40	300	1–99	30–80
ToronUC™ 200SS	300×235×150	400×265×305	9	200	40	300	1–99	30–80

TORONTECH.com

TORONTECH

Torontech Inc.
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com

USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia