TORONTECH

ULTRASONIC CLEANER (MANUAL)

Ultrasonic Cleaner (Manual) – ToronUC™ M Series

ToronUC™ M Series Manual Ultrasonic Cleaner is a mechanically controlled, all-stainless-steel benchtop ultrasonic cleaning system offering the simplicity, reliability, and value of analog knob control for timer and heater functions. Spanning ten models from an ultra-compact 0.7-liter pocket-sized unit through full-scale 27-liter production cleaners, the ToronUC™ M Series provides a complete range of manual ultrasonic cleaning solutions for diverse applications.

The ToronUC™ M Series is designed for environments where intuitive mechanical operation, minimal training requirements, and long-term reliability are the primary operational priorities. There are no digital displays or circuit boards to fail the mechanical timer and heater controls provide direct, tactile operation that technicians and operators can use immediately without training. The compact 0.7L and 1.3L models without heating are ideal portable ultrasonic cleaners for ultrasonic glasses cleaner and ultrasonic jewelry cleaner applications at service counters and retail locations.

Constructed from full 304 stainless steel, with ceramic heaters (on heated models), high-durability ultrasonic transducers, drainage and cooling fans on 6L and above, and OEM-ready fast delivery capability, the ToronUC™ M Series is a proven platform for automotive workshops, jewelry stores, dental offices, optical shops, and industrial maintenance departments across North America.

40 kHz FREQUENCY	**0.7–27 L** VOLUME RANGE	**500 W** MAX US POWER	**20–80°C** HEATED MODELS	**OEM** READY

APPLICATIONS

Ultrasonic Cleaner (Manual) – ToronUC™ M Series Applications

Here is the information formatted as a bulleted list:

- Eyeglasses & Optical: The compact 0.7L and 1.3L M Series models are ideal counter-top ultrasonic glasses cleaners for optical retail stores and optometry offices, quickly removing oils, cosmetics, and dust from frames and lenses while customers wait.
- Jewelry Cleaning: Versatile ultrasonic jewelry cleaner and ultrasonic cleaner jewelry polisher for jewelry retail counters, repair benches, and goldsmith workshops. Removes tarnish, body oils, and polishing residues from all metal types and settings.
- Dental Instruments: Operated as a dental ultrasonic cleaner for pre-sterilization cleaning of dental instruments in small dental practices and mobile dental clinics. Mechanical simplicity ensures reliable operation without electronic failure risk.
- Automotive Components: The larger ToronUC™ M Series models function as workshop-grade ultrasonic carburetor cleaner and parts washing systems for removing fuel gum, carbon, and grease from carburetors, injectors, and mechanical components.
- Industrial Parts Cleaning: Supports general industrial ultrasonic cleaner applications for metalworking shops, MRO facilities, and manufacturing quality control stations processing machined parts, fasteners, and precision assemblies.
- OEM & Bulk Supply: The ToronUC™ M Series is optimized for OEM customers requiring large quantities of reliable mechanical-control ultrasonic cleaners for resale, integration, or branded supply programs. Fast delivery times available.

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ToronUC™ M Series
Ultrasonic Cleaner (Manual)
OFF
80
20
30
40
50
60
°C
HEATER
Please read the instruction before using
ON
OFF
20
15
10
5
MIN
TIMER

FEATURES

Ultrasonic Cleaner (Manual) – ToronUC™ M Series Key Features

- Mechanical Knob Timer & Heater Control: Analog rotary knob controls for the cleaning timer and heating function provide direct, intuitive operation requiring no digital literacy or operator training. Long service life with no circuit board dependency.
- Full 304 Stainless Steel Construction: All external panels and the inner cleaning tank are manufactured from 304 stainless steel for corrosion resistance, durability, and compatibility with industrial cleaning solutions and disinfectants.
- Ultra-Compact Models Available (0.7L, 1.3L): The 0.7L and 1.3L models provide the smallest footprint in the ToronUC™ range, making them ideal portable ultrasonic cleaners for jewelry display cases, optical service counters, and mobile dental setups where bench space is limited.
- Drainage & Cooling Fan (6L+): Integrated drain valve on 6L and larger models enables in-place solution change. Cooling fans prevent component overheating during continuous operation in busy workshop and industrial ultrasonic cleaning environments.
- Ceramic Heaters (Heated Models): Ceramic heating elements on models with temperature control deliver efficient, reliable heating with superior chemical resistance compared to conventional metallic heaters.
- High-Performance Transducers: Premium bonded ultrasonic transducers provide powerful, consistent cavitation throughout the cleaning cycle, ensuring reliable and repeatable ultrasonic cleaning performance across all model sizes.
- OEM Fast Delivery Program: The M Series is designed with OEM customers in mind, with optimized production scheduling and packaging for fast delivery to resellers, distributors, and integrated equipment suppliers.
- Ten Model Sizes (0.7L–27L): The widest model range in the ToronUC™ family provides a matched solution for every application from portable counter-top jewelry and glasses cleaning to full-scale 27L industrial ultrasonic cleaning.

THEORY & METHOD

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

1. Solution Preparation — 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

Ultrasonic Cleaner (Manual) – ToronUC™ M Series Technical Specifications

Model	Tank Size L×W×H (mm)	Unit SizeL×W×H (mm)	Volume (L)	US Power (W)	Freq. (kHz)	Heating Power (W)	Timer (min)	Temp. (°C)
ToronUC™ M	150×85×65	190×170×185	0.7	50	40	—	—	—
ToronUC™ 1M	150×140×65	190×170×185	1.3	50	40	—	0–15	—
ToronUC™ 2M	150×140×100	190×170×220	2	50	40	—	0–15	—
ToronUC™ 3M	240×140×100	270×170×240	3	100	40	100	0–20	20–80
ToronUC™ 6M	300×155×150	330×180×310	6	150	40	300	0–20	20–80
ToronUC™ 9M	300×240×150	330×270×310	9	200	40	300	0–20	20–80
ToronUC™ 10M	505×135×150	530×165×310	10	200	40	400	0–20	20–80
ToronUC™ 13M	330×300×150	360×330×310	13	300	40	400	0–20	20–80

Model	Tank Size L×W×H (mm)	Unit SizeL×W×H (mm)	Volume (L)	US Power (W)	Freq. (kHz)	Heating Power (W)	Timer (min)	Temp. (°C)
ToronUC™ 20M	500×300×150	550×330×310	20	400	40	500	0–20	20–80
ToronUC™ 27M	500×300×200	550×330×360	27	500	40	500	0–20	20–80

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