TORONTECH

ULTRASONIC CLEANER (DIGITAL)

Ultrasonic Cleaner (Digital) – ToronUC™ DG Series

ToronUC™ DG Series Digital Ultrasonic Cleaner is a full-featured, digitally controlled benchtop ultrasonic cleaning system combining an LED digital display, degas function, power-off memory, and a sound-dampening lid into a single robust stainless steel platform. Available in seven tank sizes from 2 to 27 liters, the DG Series is designed for professional laboratory, medical, optical, dental, jewelry, and light industrial ultrasonic cleaning applications where digital precision and operational convenience are essential.

The DG Series is distinguished by its sound-proof lid with integrated SUS304 stainless steel cleaning basket, which significantly reduces the operational noise level during the ultrasonic cleaning cycle an important feature for customer-facing retail environments, dental reception areas, optical stores, and open-plan laboratory settings where excessive noise is unacceptable. The digital panel provides independent control of heating, degas function, timer, and ultrasonic power with a power-off memory function that restores the last-used settings on startup.

Equipped with LED temperature and timer displays, a 1–99 minute adjustable timer, 20–80°C temperature range, drain tap and cooling fan on 6L and above models, and 304 stainless steel basket included as standard, the ToronUC™ DG Series is a complete, out-of-the-box digital ultrasonic cleaning solution. It excels as a dental ultrasonic cleaner, ultrasonic jewelry cleaner, ultrasonic glasses cleaner, industrial ultrasonic cleaner, and ultrasonic carburetor cleaner platform across North American professional and industrial markets.

40 kHz FREQUENCY	**2–27 L** VOLUME	**500 W** MAX US POWER	**20–80°C** TEMP. RANGE	**Sound Proof** LID INCLUDED

APPLICATIONS

Ultrasonic Cleaner (Digital) – ToronUC™ DG Series Applications

The ToronUC™ DG Series digital ultrasonic cleaner serves professional and industrial ultrasonic cleaning applications where digital control, degas function, and reduced-noise operation are prioritized:

- Dental & Medical Instruments: The premier dental ultrasonic cleaner and ultrasonic dental cleaner for pre-sterilization instrument processing in dental offices, oral surgery practices, and dental laboratories. Degas function ensures optimal cleaning from cycle one; the sound-proof lid reduces operational noise.
- Jewelry & Precious Metals: High-performance ultrasonic jewelry cleaner and ultrasonic cleaner jewelry platform for professional jewelers, watch repair technicians, and pawn shops. Removes tarnish, polishing compounds, and soils from all precious metals and most gemstones.

- Eyeglasses & Optical: The sound-proof lid makes the DG Series an outstanding ultrasonic glasses cleaner for optical retail and optometry environments where customer-present operation requires minimal acoustic disturbance. Cleans frames and lenses thoroughly while customers wait.
- Industrial Parts Cleaning: Functions as a heavy-duty industrial ultrasonic cleaner for removing machining oils, flux residues, stamping compounds, and general soils from metal parts, tooling, and precision assemblies in manufacturing QC and maintenance environments.
- Automotive Components: Delivers effective ultrasonic carburetor cleaner and fuel system cleaning performance for removing varnish, gum, carbon, and corrosion deposits from carburetors, injectors, throttle bodies, and precision automotive components.
- Laboratory & Research: Used in university, pharmaceutical, and industrial research laboratories for cleaning analytical glassware, chromatography columns, sample vessels, and laboratory instruments requiring contamination-free surfaces.

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ToronUC™ DG Series
Ultrasonic Cleaner (Digital)
TEMP
MIN
TEMP
Heating
Degas
Time
Time
Please read the instructions before using!

FEATURES

Ultrasonic Cleaner (Digital) – ToronUC™ DG Series Key Features

- Sound-Proof Lid with SUS304 Basket: The integrated sound-dampening lid significantly reduces ultrasonic cleaning noise during operation, making the DG Series appropriate for customer-facing environments including dental receptions, jewelry counters, and optical stores. Includes a stainless steel cleaning basket as standard.
- Degas Function: The dedicated degas mode purges dissolved gases from the cleaning solution before each batch, maximizing cavitation formation and ultrasonic cleaning efficiency — critical for optimal dental instrument reprocessing and precision parts cleaning.

- LED Digital Temperature & Timer Display: Dual LED displays show real-time temperature and remaining timer simultaneously, providing continuous visibility of cleaning conditions. Clear, easy-to-read display visible from a normal operating distance.
- Power-Off Memory Function: Automatically saves and restores the last programmed temperature and timer values on power-up, eliminating repetitive reprogramming in high-throughput dental, laboratory, and industrial cleaning environments. Simpler and faster operation.
- 1–99 Minute Adjustable Timer: Wide digital timer range covers everything from 1-minute quick cleaning cycles for delicate items to 99-minute extended ultrasonic cleaning programs for heavily contaminated industrial parts.
- 20–80°C Temperature Control: Adjustable heating from 20°C to 80°C supports the full range of cleaning chemistries from room-temperature aqueous cleaning through hot enzymatic and alkaline solutions for dental and industrial applications.
- Drain Tap & Cooling Fan (6L+): Integrated drainage valve and cooling fan on 6L and larger models enable in-place bath change and reliable thermal management during continuous production ultrasonic cleaning operation.
- 304 Stainless Steel Tank & Case: Full 304 stainless steel construction throughout provides corrosion resistance, long-term chemical compatibility, and professional appearance for laboratory, dental, optical, and industrial deployment environments.
- Seven Capacity Options (2L–27L): A complete seven-model range from 2L to 27L allows precise capacity matching for every ultrasonic cleaning application, from single-instrument dental cleaning through high-volume industrial parts cleaning batches.

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.

The degas function of the ToronUC™ DG Series is particularly valuable in production environments where cleaning solutions are freshly prepared or replaced frequently. Degassing the bath before the first cleaning cycle of the day eliminates dissolved gas interference, ensuring maximum cavitation intensity and consistent ultrasonic cleaning results from the very first load. Combined with the power-off memory function, operators can configure the DG Series once and rely on consistent, repeatable cleaning conditions every shift.

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 (Digital) – ToronUC™ DG Series Technical Specifications

Model	Tank Size L×W×H (mm)	Unit Size L×W×H (mm)	Volume (L)	US Power (W)	Freq. (kHz)	Heating Power (W)	Timer (min)	Temp. (°C)
ToronUC™ 2DG	150×140×100	190×170×220	2	50	40	100	1–99	20–80
ToronUC™ 3DG	240×140×100	270×170×240	3	100	40	100	1–99	20–80
ToronUC™ 6DG	300×155×150	330×180×310	6	150	40	300	1–99	20–80
ToronUC™ 9DG	300×240×150	330×270×310	9	200	40	300	1–99	20–80
ToronUC™ 13DG	330×300×150	360×330×310	13	300	40	400	1–99	20–80
ToronUC™ 20DG	500×300×150	550×330×310	20	400	40	500	1–99	20–80
ToronUC™ 27DG	500×300×200	550×330×360	27	500	40	500	1–99	20–80

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