

# Ультразвуковые очистители UC-100, лотки, сетки, цифровые, аналоговые рефрактометры

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Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: [cen@nt-rt.ru](mailto:cen@nt-rt.ru) || сайт: <http://coleparmer.nt-rt.ru/>

# Cole-Parmer® Handheld Refractometers



## Quick and easy operation with reliable measurements

- Convenient, compact design fits in pocket or palm of hand
- Easy and immediate calibration via zero adjustment for precise results all the time
- No more worrying about temperature fluctuations on models with built-in automatic temperature compensation (ATC)

## Analog Refractometers

- Many Brix range options available including models with multiple Brix scales
- Easy calibration via the calibration screw for enhanced accuracy

## Digital Refractometers

- No more reading errors with easy-to-read LCD
- Fast performance—never wait for readings again
- Rugged, waterproof design with IP65 rating

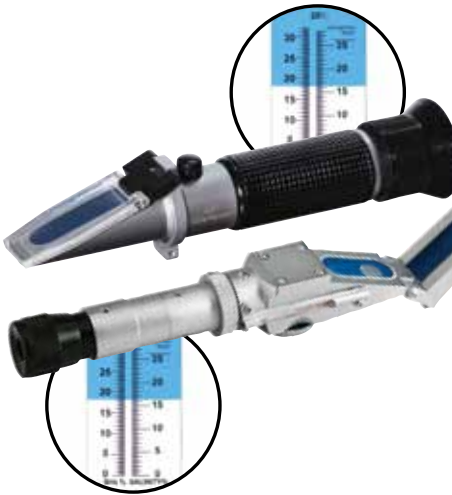
Digital Refractometers

Range	Resolution	Accuracy	ATC	Catalog number
0 to 45% Brix, 1.3330 to 1.4098 RI	0.1, 0.0001	±0.2, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-48</a>
0 to 85% Brix, 1.3330 to 1.5100 RI	0.1, 0.0001	±0.2, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-55</a>
0 to 95% Brix, 1.3330 to 1.5400 RI	0.1, 0.0001	±0.2, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-56</a>
0 to 28% salinity, 1.330 to 1.4100 RI	0.1, 0.0001	±0.2, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-49</a>
0 to 45% Brix, 0 to 28% salinity, 1.3330 to 1.4100 RI	0.1, 0.1, 0.0001	±0.2, ±0.1, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-57</a>
0 to 14 g/dl serum protein, 1.3330 to 1.3900 RI	0.2, 0.0001	±0.2, ±0.0003	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-51</a>
0 to 60% v/v, w/w ethyl alcohol	0.1	±0.3	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-52</a>
0 to 60% v/v, w/w isopropyl alcohol; -58 to 32°F (-50 to 0°C)	0.1	±0.5	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-53</a>
0 to 75% ethylene glycol, -58 to 32°F (-50 to 0°C)	0.1	±0.3, ±1°F, °±0.5°C	41 to 104°F (5 to 40°C)	<a href="#">ML-81150-54</a>



Analog Refractometers

Range	Resolution	Accuracy	ATC	Catalog number
0 to 10% Brix	0.10%	±0.1%	—	<a href="#">ML-81150-23</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-34</a>
0 to 18% Brix	0.10%	±0.1%	—	<a href="#">ML-81150-24</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-35</a>
0 to 32% Brix	0.20%	±0.2%	—	<a href="#">ML-81150-25</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-36</a>
0 to 60% Brix	0.50%	±0.3%	—	<a href="#">ML-81150-29</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-26</a>
28 to 62% Brix	0.20%	±0.2%	—	<a href="#">ML-81150-26</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-37</a>
0 to 80% Brix	0.50%	±0.3%	—	<a href="#">ML-81150-31</a>
0 to 50%, 50 to 80% Brix	0.50%	±0.3%	—	<a href="#">ML-81150-30</a>
45 to 82% Brix	0.50%	±0.3%	—	<a href="#">ML-81150-27</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-38</a>
0 to 90% Brix	0.50%	±0.3%	—	<a href="#">ML-81150-32</a>
0 to 42%, 45 to 71%, 71 to 90% Brix	0.20%	±0.2%	—	<a href="#">ML-81150-33</a>
58 to 92% Brix	0.20%	±0.2%	—	<a href="#">ML-81150-28</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-39</a>
0 to 28% salinity	0.20%	±0.2%	—	<a href="#">ML-81150-41</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-45</a>
0 to 28% salinity; 0 to 32% Brix	0.20%	±0.2%	—	<a href="#">ML-81150-43</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-47</a>
0 to 100% salinity; 1.000 to 1.070 RI	1%; 0.005	±0.5%; ±0.001	—	<a href="#">ML-81150-40</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-44</a>
0 to 100% salinity; 1.000 to 1.070 RI; 0 to 10% Brix	1%; 0.005; 0.10%	±0.5%; ±0.001; ±0.1%	—	<a href="#">ML-81150-42</a>
			50 to 86°F (10 to 30°C)	<a href="#">ML-81150-46</a>



Accessories

- [ML-06226-13](#) Transfer pipette, 1.5 mL. Box of 500
- [ML-09376-00](#) Replacement batteries for digital units, AAA. Pack of 12
- [ML-17105-00](#) NIST-traceable calibration with data for refractometers

Specifications for Digital Refractometers

- Operating temperature range:** 32 to 104°F (0 to 40°C)
- Temperature accuracy:** ±1°F (0.5°C)
- Sample volume:** 0.3 mL
- Response time:** ≤3 seconds
- Power:** two AAA batteries (included)

# Cole-Parmer® Ultrasonic Cleaners with Digital Timer and Heater



High-frequency 40 kHz sound waves provide greater cleaning power and increased reliability

- Sweep frequency provides uniform cleaning by creating overlapping sound waves
  - Can also be used for cell separation, sample preparation and degassing of liquids
- These cleaners transform low-frequency AC current into 40 kHz high-frequency sound waves.. via a piezoelectric transducer. The transducer creates sinusoidal waves, which in turn cause cavitation—the formation and violent collapse of minute vacuum bubbles in the solution. These implosions thoroughly scrub every surface with which the solution makes contact, yet are not harsh on delicate items. Cleaners also feature “sweep” frequency that provides uniform cleaning throughout the tank by creating overlapping ultrasonic waves and eliminating inconsistent cleaning due to areas of intense ultrasonic activity.

The leakproof housing features super-sealing double O-rings and recessed ventilation. The 304 stainless steel (SS) tank is surrounded by a durable, impact-resistant polypropylene housing. Sealed membrane control panel is impervious to splashes and spills.

## **Ultrasonic Cleaners with Digital Timer, Power Tracking, Sleep Mode and Degas Feature**





For critical cleaning applications up to 90 minutes or continuous operation. Our advanced digital models have the features needed to enhance control for those precision applications when required. Power tracking automatically adjusts to light or heavy loads by compensating for liquid level and temperature changes while maintaining the same ultrasonic power to the tank. Cleaners go into sleep mode once cycle is complete and no key has been touched for 15 minutes. The degas feature eliminates air bubbles from the solution for more efficient cleaning.

For the ultimate in critical cleaning these cleaners also feature an adjustable heater from 68 to 156°F (20 to 69°C) and a temperature sensor that prevents overheating. A high/low power feature lets you choose full power for ultimate cleaning or low (70%) for delicate applications. Auto ultrasonic activation turns the unit on once the set temperature is reached and starts timer countdown. Once cycle is complete, the heater and ultrasonics are turned off.

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item	Capacity (Gal)	Frequency Output (KHz)	Power (VAC)
 EW-08895-27	0.5	40	115
 EW-08895-35	0.5	40	230
 EW-08895-43	0.75	40	115

item	Capacity (Gal)	Frequency Output (KHz)	Power (VAC)
 EW-08895-51	0.75	40	230
 EW-08895-59	1.5	40	115
 EW-08895-67	1.5	40	230

item	Capacity (Gal)	Frequency Output (KHz)	Power (VAC)
 EW-08895-75	2.5	40	115
 EW-08895-83	2.5	40	230
 EW-08895-91	5.5	40	115
 EW-08895-99	5.5	40	230

# Cole-Parmer® Advanced High-Power Heated Digital Ultrasonic Cleaners



Handle both tough and gentle applications with these dual-frequency cleaning baths

- Operate at 37 kHz for difficult applications and 80 kHz for sensitive and small items
- Easily preselect run time and temperature with rotary dials
- Degas HPLC samples and solvents
- Obtain uniform sound waves and cleaning from the sweep function
- Activate the pulse function for 20% increase in ultrasonic power and soil removal
- Convenient digital display of set and operating parameters



The digital series of ultrasonic cleaners come in six different sizes and feature seven convenient operating modes. Normal mode is great for mixing, dissolving, and dispersing samples. Pulse-function increases power 20% for ultra-efficient cleaning—ideal for tough-to-remove pastes and soils. Activate the sweep function to ensure uniform sound and power throughout the entire bath. Degas mode is perfect for quickly removing air from HPLC samples and solvents. The dual-selection power control lets you choose 37 kHz operation for standard and industrial applications, or 80 kHz for smaller or more delicate cleaning needs. The pause function allows for temporary operation interruption, and auto-start mode will begin operation once the preselected temperature is reached.

Select heating temperature from 30 to 80°C, in 5° increments, with a rotary dial. Choose a maximum temperature for sensitive items and instruments—LED light illuminates if reached. Set to operate continuously or in timed runs, from 1 to 30 minutes, also selected with a dial. Safety features include auto-shutoff if running for 12 hours continuously or if bath temperature exceeds 90°C, and a sealed display and elevated feet to protect against splashes and spills.

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item	Capacity (Gal)	Frequency Output (KHz)	Power (VAC)
 EW-59989-49	0.75	37 or 80	120
 EW-59989-53	1.5	37 or 80	120
 EW-59989-55	2	37 or 80	120
 EW-59989-57	3.5	37 or 80	220

item	Capacity (Gal)	Frequency Output (KHz)	Power (VAC)
 EW-59989-59	4.75	37 or 80	120
 EW-59989-81	7.5	37 or 80	120

# Cole-Parmer® Ultrasonic Cleaners with Mechanical Timer



High-frequency 40 kHz sound waves provide greater cleaning power and increased reliability

- Sweep frequency provides uniform cleaning by creating overlapping sound waves
  - Can also be used for cell separation, sample preparation and degassing of liquids
- These cleaners transform low-frequency AC current into 40 kHz high-frequency sound waves via a piezoelectric transducer. The transducer creates sinusoidal waves, which in turn cause cavitation—the formation and violent collapse of minute vacuum bubbles in the solution. These implosions thoroughly scrub every surface with which the solution makes contact, yet are not harsh on delicate items. Cleaners also feature “sweep” frequency that provides uniform cleaning throughout the tank by creating overlapping ultrasonic waves and eliminating inconsistent cleaning due to areas of intense ultrasonic activity.

The leakproof housing features super-sealing double O-rings and recessed ventilation. The 304 stainless steel (SS) tank is surrounded by a durable, impact-resistant polypropylene housing. Sealed membrane control panel is impervious to splashes and spills.


## **Ultrasonic Cleaners with Mechanical Timer**

Our most economical and easy-to-operate cleaners—set the time with just one quick twist of the dial. Analog mechanical timer enables controlled cleaning cycles up to 60 minutes and can run continuously.

item	Capacity (Gal)	Power (VAC)
 EW-08895-21	0.5	115
 EW-08895-29	0.5	230
 EW-08895-37	0.75	115

item	Capacity (Gal)	Power (VAC)
 EW-08895-45	0.75	230
 EW-08895-53	1.5	115
 EW-08895-61	1.5	230

item	Capacity (Gal)	Power (VAC)
 EW-08895-69	2.5	115
 EW-08895-77	2.5	230
 EW-08895-85	5.5	115

item	Capacity (Gal)	Power (VAC)
<div data-bbox="126 253 256 376"></div> <div data-bbox="256 253 432 286">EW-08895-93</div>	5.5	230

# Cole-Parmer® Ultrasonic Cleaners with Mechanical Timer and Heater



High-frequency 40 kHz sound waves provide greater cleaning power and increased reliability

- Sweep frequency provides uniform cleaning by creating overlapping sound waves
  - Can also be used for cell separation, sample preparation and degassing of liquids
- These cleaners transform low-frequency AC current into 40 kHz high-frequency sound waves via a piezoelectric transducer. The transducer creates sinusoidal waves, which in turn cause cavitation—the formation and violent collapse of minute vacuum bubbles in the solution. These implosions thoroughly scrub every surface with which the solution makes contact, yet are not harsh on delicate items. Cleaners also feature “sweep” frequency that provides uniform cleaning throughout the tank by creating overlapping ultrasonic waves and eliminating inconsistent cleaning due to areas of intense ultrasonic activity.

The leakproof housing features super-sealing double O-rings and recessed ventilation. The 304 stainless steel (SS) tank is surrounded by a durable, impact-resistant polypropylene housing. Sealed membrane control panel is impervious to splashes and spills.

## Ultrasonic Cleaners with Mechanical Timer and Heater

Our most economical and easy-to-operate cleaners—set the time with just one quick twist of the dial. Analog mechanical timer enables controlled cleaning cycles up to 60 minutes and can run continuously. Maximum heater temperature is 156°F (69°C). Built-in temperature sensor prevents overheating, automatically shuts down heating and ultrasonics when solution temperature exceeds 158°F (70°C).

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item	Capacity (Gal)	Power (VAC)
 EW-08895-23	0.5	115
 EW-08895-31	0.5	230
 EW-08895-39	0.75	115

item	Capacity (Gal)	Power (VAC)
 EW-08895-47	0.75	230
 EW-08895-55	1.5	115
 EW-08895-71	2.5	115


item	Capacity (Gal)	Power (VAC)
 EW-08895-79	2.5	230
 EW-08895-87	5.5	115
 EW-08895-95	5.5	230


# Cole-Parmer® UC-100 Compact Ultrasonic Cleaner With Timer



Economical compact cleaner is perfect for cleaning small components

- Plug-in-anywhere operation
  - Ideal for small benchtop areas
  - Impact resistant plastic housing prevents leaks
- This 15-oz ultrasonic cleaner measures only 8 ¾"L x 4 ½"W (22.2 x 11.4 cm) — ideal for small benchtop areas. The stainless steel tank is sealed inside an impact resistant plastic housing to prevent leaks. The cleaner features a five-minute timer that shuts off automatically. Operates at a cleaning frequency of 40 kHz.

item	Capacity (Gal)	Power (VAC)
<div>EW-08848-10</div>	0.125	117

item	Capacity (Gal)	Power (VAC)
<div data-bbox="126 253 256 376"></div> <div data-bbox="256 253 585 376">EW-08848-15</div>	0.125	220

# Cole-Parmer® UC-200 Series Ultrasonic Cleaners Baskets










Provides optimal cleaning results

- Supports items that require indirect cleaning
- Legs suspend items safely away from bottom of tank
- Convenient handles allow for safe and easy repositioning of objects
- Mesh size opening: 10 x 10 mm

These wire mesh metal ultrasonic cleaner baskets are ideal for supporting materials, instruments, and parts that require indirect cleaning. Prevents damage by keeping items from touching bottom of the tank. Side handles allow you to easily reposition objects being cleaned during the ultrasonic cleaning cycle.

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item	Capacity (Gal)	Height (cm)	Length (cm)
 EW-08895-80	0.5	12.8	13.8
 EW-08895-82	0.75	12.5	22.9

item	Capacity (Gal)	Height (cm)	Length (cm)
  EW-08895-84	1.5	11.6	26.5
 EW-08895-86	2.5	20.4	26.4
 EW-08895-88	3.5	26.4	29.4
 EW-08895-90	5.25	26.3	45.8
  EW-08895-92	7.25	26.3	45.8

# Cole-Parmer® Beaker Positioning Covers for Ultrasonic Cleaners




Achieve optimal cleaning results




- Suspends beakers for increased ultrasonic activity
  - Ideal for cleaning small parts
  - Prevents damage to transducers
- Use these beaker positioning covers with beakers to clean small objects or for indirect cleaning. Cover suspends beakers above tank bottom for increased ultrasonic activity.




Ultrasonic activity is greatest about an inch from the bottom of the tank, so suspending your items provides the best cleaning possible and helps prevent damage to the transducers.

Order beakers separately.

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item	Material	Capacity (Gal)	Description
 EW-08890-50	Polypropylene	0.5	Beaker Positioning Cover for .5 Gal Ultrasonic Cleaner, 1 x 600 mL Beaker



item	Material	Capacity (Gal)	Description
 EW-08891-50	Polypropylene	0.75	Beaker Positioning Cover for .75 Gal Ultrasonic Cleaner, 2 x 600 mL Beakers
 EW-08892-50	Polypropylene	1.5	Beaker Positioning Cover for 1.5 Gal Ultrasonic Cleaners, 3 x 250 mL Beakers
 EW-08893-50	Polypropylene	2.5	Beaker Positioning Cover for 2.5 Gal Ultrasonic Cleaner, 4 x 600 mL Beakers
 EW-08894-50	Stainless Steel	5.5	Beaker Positioning Cover for 5.5 Gal Ultrasonic Cleaner, 6 x 600 mL Beakers

item	Material	Capacity (Gal)	Description
  EW-08898-25	Polypropylene	0.75	Beaker Positioning Cover for .75 Gal Ultrasonic Cleaners, 2 x 250 mL Beakers
  EW-08898-26	Polypropylene	1.5	Beaker Positioning Cover for 1.5 Gal Ultrasonic Cleaners, 2 x 600 mL Beakers
  EW-08898-27	Polypropylene	1.5	Beaker Positioning Cover for 1.5 Gal Ultrasonic Cleaners, 3 x 250 mL Beakers

# Cole-Parmer® Solid Stainless Steel Insert Trays for Ultrasonic Cleaners




## COLE-PARMER

Achieve optimal cleaning results

- Supports items that require indirect cleaning
- Prevents damage to transducers

Made of 304 stainless steel, these solid insert trays can be used to support items that require indirect cleaning. Ultrasonic activity is greatest about an inch from the bottom of the tank, so suspending your items provides the best cleaning possible and helps prevent damage to the transducers.

item	Capacity (Gal)	Height (InchShort)	Length (InchShort)
<div>EW-08850-41</div>	0.5	3	4 1/2

item	Capacity (Gal)	Height (InchShort)	Length (InchShort)
 EW-08851-41	0.75	3	8
 EW-08852-41	1.5	4	8
 EW-08853-41	2.5	6	11
 EW-08854-41	5.5	6	18




# Cole-Parmer® Mesh Insert Trays for Ultrasonic Cleaners



Achieve optimal cleaning results

- Supports items in tank for direct cleaning
- Prevents damage to transducers

Made of 304 stainless steel, these mesh trays can be used to support items in the tank that require direct cleaning. Ultrasonic activity is greatest about an inch from the bottom of the tank, so suspending your items provides the best cleaning possible and helps prevent damage to the transducers. Features #4 mesh with .25 inch openings.

item	Capacity (Gal)
 EW-08850-45	0.5
 EW-08851-45	0.75
 EW-08852-45	1.5

## Specifications

Parameter	Limits / Value
Operational temperature range	-5 to+ 40 °C
Storage temperature range	-20 to+ 60 °C
Relative Humidity	20 to 90 %
Maximum altitude	2000 m
Location	Indoor only
Pollution degree	II
Ingress Protection Level	IP20
Liquid Temperature (maximum)	+80 °C

Model	Overall Dimensions	Tank Dimensions	Capacity (litres)	Voltage/ Frequency (V/Hz)	Ultrasonic Power (W)	Heating Power (W)	Weight (kg)
08895-01	190x170x220	150x140x100	2	120/60	50	100	2.5
08895-03				230/50			
08895-05	275x170x240	240x140x100	3	120/60	100	100	3.6
08895-07				230/50			
08895-09	330x180x310	300x155x150	6	120/60	150	300	6.7
08895-11				230/50			
08895-13	330x270x310	300x240x150	9	120/60	200	300	8.6
08895-15				230/50			
08895-17	360x330x310	330x300x150	13	120/60	300	400	11.0
08895-19				230/50			
08895-72	550x330x310	500x300x150	20	120/60	400	500	14.0
08895-74				230/50			
08895-76	550x330x360	500x300x200	27	120/60	500	500	16.0
08895-78				230/50			

## COLE-PARMER UC-200 SERIES ULTRASONIC CLEANERS

### [USER MANUAL]



## FEATURES

'Normal' and 'Soft' operating modes

Degas function to increase the cleaning effect

Automatic tracking of ultrasonic frequency

Configurable temperature

User-friendly controls

LED indication of temperature and time values

Memory function

High performance transducers

**Thank you for purchasing the Cole-Parmer ultrasonic cleaner. Please take the time to read these operating instructions before use and retain them for future reference. Failure to follow these instructions may lead to serious personal injury and damage to property.**

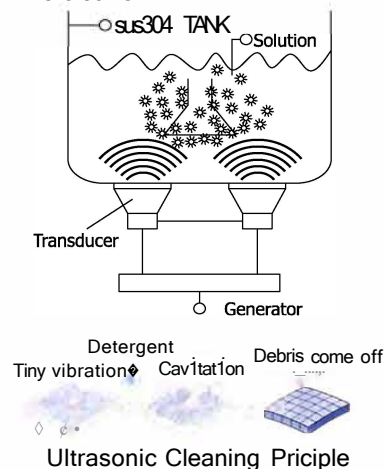
## INTRODUCTION

Ultrasonic cleaning works by transmitting high-frequency sound waves (40 kHz in this product) through a liquid. The sound waves agitate the liquid and create microscopic cavitation bubbles. These bubbles implode with sufficient force to scrub clean the surface of any item placed in the cleaner.

The microscopic bubbles will penetrate the smallest cavities in items which require cleaning, which makes ultrasonic cleaning much more efficient than manual processes.

Ultrasonic cleaning is suitable for cleaning a wide variety of materials including metals, glass, rubber, ceramics and some hard plastics.

Examples of contaminants which can be removed by ultrasonic cleaning are dust, dirt, oil, grease, pigments, flux agents, fingerprints and polishing compound.



## PREPARATION:

1. Unpack the ultrasonic cleaner and remove all packaging materials. Visually inspect the unit for any transit damage prior to use.

### Contents:

- |  |  |
|--|--|
| a: Ultrasonic cleaner  | b: Soundproof lid                                  |
| c: Power cord (US plug with 120 V a.c. models, EU and UK cords with 230 V a.c. models) |  |
| d: Outlet filter   | e: Mesh basket                      f: User manual |
2. Place the ultrasonic cleaner on a flat, clean surface and ensure that the cooling fans are unobstructed. Ensure the drain tap is in the closed position.
  3. Connect the power cord to the ultrasonic cleaner and then to a suitably rated electrical outlet. See specification table for the electrical requirements specific to your model.
  4. Carefully fill the tank to a minimum of  $\frac{1}{2}$  volume with the chosen solvent solution. Take care not to exceed the maximum fill level. For more demanding cleaning (of oil and grease), a small amount of washing up liquid can be added to the solution. The ultrasonic cleaner is now ready for use.

## & Attention

In normal use, the ultrasonic cleaner will emit a constant sound and the surface of the liquid will be stable other than a limited spray which is created by the cavitation bubbles.

If there are discontinuous surges in the liquid, add or remove solvent as required to ensure surface stability. This will aid in efficient cleaning.

**NOTE 1:** Degas, Normal and Soft modes cannot be operated simultaneously.

**NOTE 2:** To transfer from one mode to another, simply press the required button.

When the cleaning process is completed:

Turn the equipment off (on the unit and at the wall socket);

Remove the lid;

Carefully remove the basket. CAUTION - the lid, basket and cleaned items could be up to + 80 °C

## DRAINING AND CLEANING THE TANK

To drain the tank after use:

Isolate from the mains supply and remove the power cord














- Remove the lid and any items in the tank

Ensure that the liquid has cooled sufficiently and tip the unit to empty the tank. If the unit has a drain valve, this can also be used to empty the liquid. Ensure that the drain valve is closed immediately after draining.

Dispose of the liquid in accordance with local regulations

The tank should be cleaned with water and mild detergent. Do not use abrasive cleaning methods.

## OPERATION GUIDELINES

Step	Action
1.	Follow the instructions described in the PREPARATION section.
2.	Place the items which require cleaning into the basket. Slowly lower the basket into the tank Ensure that items are not touching each other or the bottom of the tank. Ensure items are fully submerged in the solution.
3.	Switch the equipment on at the electrical socket and on the back of the unit. The display will show the current ambient temperature. The time and temperature settings will default to their last values.
Timer 	Set the cleaning time by pressing the   buttons as required. The timer will count down to 00:00 at which point the cleaning function will stop. Note: Do not exceed the maximum continuous operating period of 60 minutes.
Heating 	Press  to start or stop the heating function. Use the   buttons to set the desired temperature. A temperature between 40 °C and 60 °C is recommended. If the selected temperature exceeds the current liquid temperature, the heating function will be active and the indicator above the button will be illuminated.
Degas 	The Degas function allows for rapid removal of air bubbles in the liquid by pulsing the ultrasonic transducers (6 seconds on, 2 seconds off). Press the  button to activate / deactivate the Degas function. When active, the LED above the button is illuminated.
Normal 	After setting the desired time and temperature, press the  button to activate / deactivate 'Normal' mode. When active, the indicator above the button will be illuminated and the timer will countdown. This mode uses maximum ultrasonic power.
Soft 	After setting the desired time and temperature, press the  button to activate/ deactivate 'Soft' mode. When active, the indicator above the button will be illuminated and the timer will countdown. This mode uses 60 % ultrasonic power.

## SAFETY PRECAUTIONS

**&** Please read the following instructions very carefully. Failure to follow this guidance may result in personal injury, property damage or invalidate the product warranty.

If the ultrasonic cleaner is not used in a manner described in this manual or is used with accessories which are not recommended by Cole-Parmer the protection provided may be impaired.

There are no user-serviceable parts inside the equipment. Do not remove the covers.

This equipment should only be operated by trained professionals.

### Electrical

#### THIS EQUIPMENT MUST BE EARTHED

Ensure that the mains electrical supply socket is located close to the unit and is easily identifiable and accessible to users.

If the power cord requires replacement, ensure that a suitably rated replacement is used. If In Doubt, Consult A Qualified Electrician.

Do not immerse the unit or power cord in water or any other liquid. If the equipment becomes wet, disconnect from the supply immediately.

Do not operate the unit or disconnect from the electrical supply with wet hands.

Always disconnect from the electrical supply prior to filling or emptying the tank.

### General

Only use water-based cleaning solutions. Never use alcohol, gasoline or other flammable solutions. Strongly acidic or alkaline cleaning agents could cause corrosion of the equipment. Dilute these substances to a low level before use.

Do not run the cleaner continuously for over 60 minutes.

Always operate with liquid in the tank between ½ full and the maximum fill level.

Do not drop items into the tank as this could cause damage or spillage. Use the basket to hold items and carefully lower into the liquid.

Do not overload the basket. To ensure an efficient cleaning process, items to be cleaned should not touch each other and should be fully surrounded by the liquid.

Always fit the lid during use to prevent splashes and evaporation.

The cleaning solution could be hot (up to + 80 °C) take care when adding or removing items.



Ensure that the equipment is placed on a stable, clean surface and that the ventilation openings are not blocked.

Always isolate the equipment from the electrical supply when the cleaning cycle is complete.

Drain the equipment of cleaning solution before moving. Always use the carrying handles if fitted to your specific model.

### Unit front view/side view



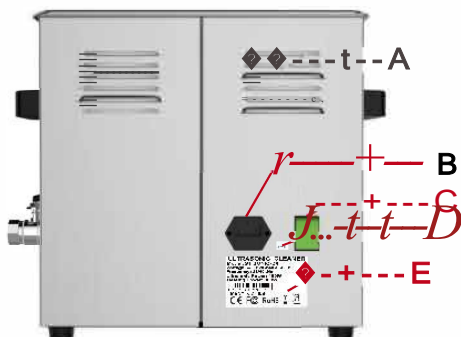
A: SUS304 tank  
D: Warning marking

B: Plastic carrying handles  
E: Soundproof lid

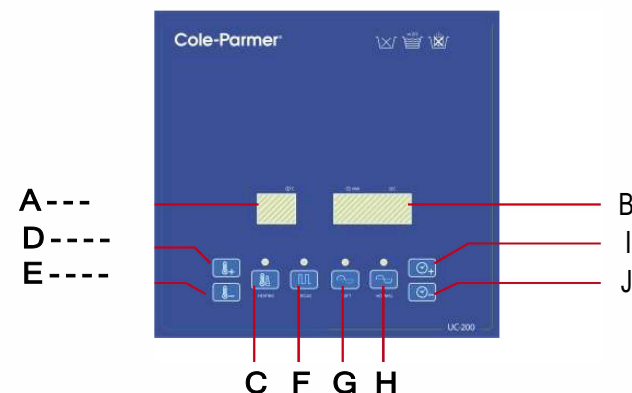
C: Draining  
F: Anti-slide feet

### Unit back view

A: Louver  
B: IEC connector  
(mains input)  
C: Power switch  
D: QC PASSED sticker  
E: Rating label



### Front panel



A: LED display temperature.

B: LED display cleaning time.

C: Heating button: Press this button for start/stop heating.

(Note: 1: The new machine will display the ambient temperature when first time use.)

D: Increase Temperature:

Press this button to set the temperature.

Press once to increase 1°C, holding the key to increase by 10°C

E: Temperature reduce:

Press this button to set the temperature.

Press once to reduce 1°C, holding the key to reduce by 10°C.

F: Degas: Press button to engage/ disengage Degas function.

G: Soft: Press button to engage/ disengage 'Soft' mode.

H: Normal: Press button to engage/ disengage 'normal' mode.

I: Timer increase: Press this button to set the cleaning time

Press once to increase 1 minute, holding the key to increase by 10 minutes.

J: Timer reduce:

Press once to reduce 1 minute, holding the key to reduce by 10 minutes.



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Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: [cen@nt-rt.ru](mailto:cen@nt-rt.ru) || сайт: <http://coleparmer.nt-rt.ru/>