



Ultrasonics.Steam.Ultraclean.



Industry

Ultrasonic and steam cleaning technology for industrial parts cleaning in service and workshops

- Up to date ultrasonic and steam jet cleaning technology
- Ultrasonic serial devices and modular ultrasonic cleaning lines
- Thoughtout accessories and suitable ancillaries
- Elma cleaning chemistry - developed for industrial applications

Industrial parts cleaning for workshops and service

During production and further processing of material goods or merchandise in factories and plants, a wide range of cleaning tasks apply. Precision is required here (as well). Only clean parts without residue can be coated, varnished, glued or soldered.

For this reason, professional parts cleaning before further machining or processing as well as final cleaning before delivery is required for the production of high-quality parts and assemblies. Even during component and assembly overhaul, our cleaning units and systems are being used before and after maintenance for quality control and conservation of value of the parts.



Contaminated and stained plastic sheaves



Cleaned plastic sheaves



Contaminated and corroded powdering equipment



Cleaned powdering equipment

Ultrasonic cleaning is a highly innovative and eco-friendly cleaning method replacing various established procedures. This is why Elma ultrasonic and steam cleaning technologies are used in different industrial fields and for different cleaning tasks.

Main focuses of precise and reliable parts cleaning

for **intermediate cleaning**

- after processing
- before coating, honing, lapping, passivation and polishing, etc.

for **final cleaning**

- before measuring,
- assembly and
- packaging.

Application example - Cleaning of carburetors and other engine parts

Ultrasonic cleaning restores your carburetor to renewed splendor. Combined with the specially developed, alkaline cleaning agent, Elma Tec Clean A5, even stubborn, burnt-in residues as oils, grease or even corrosion residues are removed precisely and gently with simultaneous optical brightening of aluminum and steel parts.

Even stubborn, burnt-in contaminants such as oil, grease or corrosion residues are removed in just few minutes.

The gentle ultrasonic cleaning extends the service life of carburetor and engine parts very much and spare costs can be saved.



Contaminated carburetor



With Elmasonic S 80 and Elma Tec Clean A5 cleaned carburetor



Elmasonic EASY

The easy way to clean.



Elmasonic EASY series

The Elmasonic EASY series includes 9 device sizes and is characterized by simple and user-friendly operation. With an ultrasonic frequency of 37 kHz, the devices are particularly suitable for cleaning industrial components.

Sensitive parts can be gently cleaned due to the integrated warning display with individually adjustable limit temperature indicating overtemperature in good time.

Tenacious, mineral contamination, polishing pastes, etc. can be easily removed with the switchable Pulse-function. In normal mode is the proven Sweep-function permanently integrated.

From Elmasonic EASY 30 H the devices are equipped as standard with heating and from Elmasonic EASY 60 H each device has a drain.



Elmasonic EASY 30 H



Functions and advantages:

- Clearly designed and splash-proof control unit
- Safe-to-run-dry heating
- Temperature setting from 30°C to 80°C
- More protection against splashing water with higher feet stand
- Cover as noise protection and as drip pan
- High user protection with automatic safety shutdown after 8 hours continuous operation or at 90°C bath temperature



More on Elmasonic EASY devices.



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Elmasonic S

Reliable ultrasonic technology



Elmasonic S series

Elmasonic S ultrasonic devices are available in 16 device sizes from 0.8 to 90.0 liters maximum tank capacity. Equipped with an ultrasonic frequency of 37 kHz and functions like Sweep, Degas and Auto-Start, Elmasonic S devices can be used in a variety of applications.

Functions and advantages:

- 37 kHz ultrasonic frequency
- Switchable Sweep-function for an optimum sound field distribution throughout the whole cleaning bath in order to achieve an even ultrasonic impact
- Degas-function for quick degassing of fresh cleaning solutions
- Pause-function for interrupting a current application
- Temperature-controlled Auto-Start starts the ultrasound automatically when the set temperature is reached
- Functional filling level mark
- Safe-to-run-dry heating (only devices with heating)
- Clearly designed and splash-proof control unit
- Individual control of the cleaning time with display of the set and remaining cleaning time



Elmasonic S 30 H with basket and cover

- Individual temperature setting from 30°C to 80°C with display of set and actual temperature for monitoring
- From Elmasonic S 30 (H) each device has a drain on the rear
- Elmasonic S devices have the „Elma Commitment to Quality“ (for more see <https://www.elma-ultrasonic.com/en/company/quality/>)



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More on Elmasonic S devices.



Elmasonic P

Multi-frequency units with strong power and exceptionally silent

The digital display of the Elmasonic P devices are self-explanatory, easy to handle and very user-friendly. All target and actual values are easily identifiable and clearly legible.

One instrument - Two frequencies

Each Elmasonic P has two frequencies integrated which - depending on the task - can be manually changed.

- 37 kHz frequency:
for coarse cleaning tasks or degassing of new cleaning baths.
- 80 kHz frequency:
ideal in silent workspaces with extension of the application time at the same time, ideal for the cleaning of inner areas of parts e.g. in capillaries.



Elmasonic P 30 H

Functions and advantages:

- Normal-Mode for all cleaning applications
 - Pulse-function:
activable extra power of about 20% through increased ultrasonic peak
 - Sweep-function for an even distribution of the ultrasonic power throughout the unit
 - Degas-function
for the quick degassing of new cleaning baths
 - Individual power regulation
for sensitive surfaces the ultrasonic power can be individually reduced
- Additional functions:
- Pause-function for interrupting a current application
 - Temperature-controlled auto-start
starts the ultrasound automatically when the set temperature is reached



Elmasonic P series



More on Elmasonic P devices.



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Elmasonic TI-H

Ultrasonic devices for different applications



Elmasonic TI-H series
in 4 different sizes

Elmasonic TI-H ultrasonic devices with multi-frequency can also be used in an industrial laboratory. The tanks are also made of cavitation-resistant steel and thus very durable even under rough conditions.

Due to the multi-frequency power various applications and cleaning tasks can be performed.

Functions and advantages:

- Sweep-function
for an even sound field distribution
- Degas-function
for quick and easy degassing
- Adjustable ultrasonic power
- Long service life and extended warranty period of 3 years on the tank due to the special cavitation proof stainless steel
- Timer
ultrasonic operation can be set between 0-15 min



Elmasonic TI-H 10 with cover with hole

- Interchangeable multi-frequencies - MF2 and MF3 version -
- 25/45 kHz - MF2-version:
 - 25 kHz: for coarse cleaning and removal of lapping or polishing media
 - 45 kHz: for fine cleaning and removal of oils and fats; ideally for hard surfaces like metal and glass
- 35/130 kHz - MF3-version:
 - 35 kHz: for the removal of oil and grease from hard surfaces such as metal and glass
 - 130 kHz: for the cleaning of sensitive surfaces



Elmasonic xtra TT

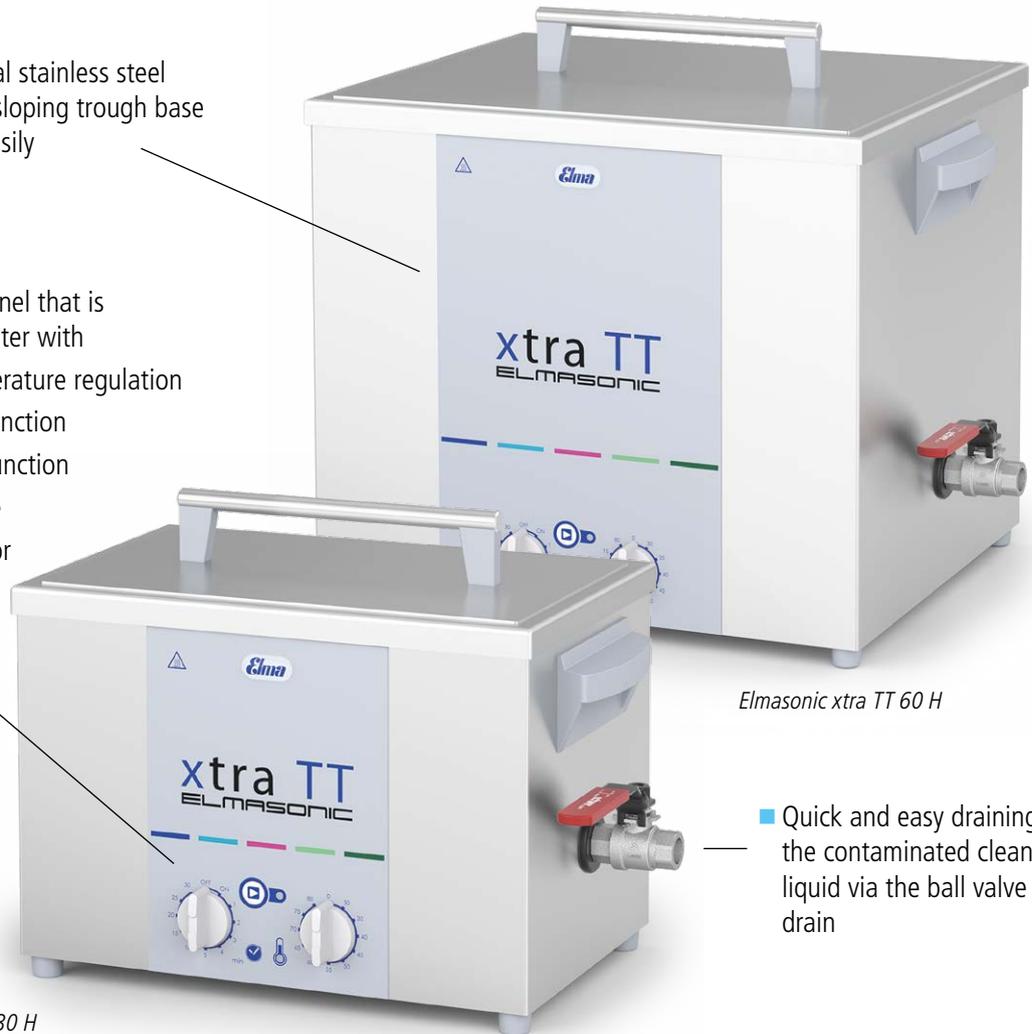
Robust tabletop ultrasonic devices for heavy-duty applications

Elmasonic xtra TT tabletop ultrasonic devices are designed for use in production environments, workshops and servicing. Features like the permanently integrated Sweep-function, the switchable Dynamic-function or the individually settable limit temperature with LED warning indicator make the cleaning of parts in day to day work much easier.

All functions and cleaning parameters like time and heating preselection and ultrasonic frequency are arranged user-friendly on the control panel on the front of the device where users can set and monitor them at a glance. With their ultrasonic performance of 35 kHz, Elmasonic xtra TT devices are rated for continuous heavy-duty operation. The tanks are made of special stainless steel, which makes them robust with a long service life. If they are used in single-shift operation, they are guaranteed for three years.

- Robust tank made of special stainless steel with fill level marking and sloping trough base to drain the device more easily

- Clearly arranged control panel that is protected from spraying water with
 - Individual time and temperature regulation
 - Tried and tested Sweep-function
 - Start/stop and Dynamic-function
 - Settable limit temperature with LED warning indicator



Elmasonic xtra TT 60 H

Elmasonic xtra TT 30 H

- Quick and easy draining of the contaminated cleaning liquid via the ball valve drain

Functions and advantages:

- Permanently integrated Sweep-function for uniform distribution of the ultrasonic effect in the entire ultrasonic bath.
- Switchable Dynamic-function increases the peak ultrasonic performance. This improves the effectivity of cleaning and makes it possible to remove even the most stubborn contaminants.
- Individually settable limit temperature with LED warning indicator on reaching the temperatur. Sensitive parts like jewellery or plastic parts are handled gently.
- Clearly arranged, control unit that is protected from spraying water.
- Temperature-controlled Auto-Start function: the ultrasound starts automatically when the preselected temperature is reached.
- User safety with safety shutdown



More on Elmasonic xtra TT devices.



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Accessories for Elmasonic ultrasonic cleaning devices



A wide range of thoughtout accessories for Elmasonic S units supports working in the lab and facilitates many laboratory applications.

The range includes, amongst others, a practical cover which not only reduces the noise level, but also serves as a drip tray for wet baskets. Furthermore there are different holders and bins, e.g. for Erlenmeyer flasks or test tubes.

There are also suitable baskets for different ultrasonic units

- in different dimensions and
- with different mesh size:
7x1 mm, 9x1 mm or 16x1,2 mm

The different baskets can be loaded with 1.0 - 30.0 kg.

Accessories for residual dirt analysis in workshops and service applications



Cover with 2 holes, made of stainless steel and glass beakers

For the residual dirt analysis the particles must be removed from the test item before the actual analysis is carried out. After removal, the dirt particles are filtered and analysed.

The right ultrasonic units with thoughtout accessories are crucial for a successful analysis. Ultrasound with its pre-defined parameters is a suitable and cost-saving method for this.



Test tube rack, made of stainless steel

Specifically the Elmasonic S 120 (H) ultrasonic device is suitable for residual dirt analyses. Covers with holes and plastic tubs, developed for residual dirt analyses in the Elmasonic S 120 (H), facilitate the work.

To prevent a recontamination, two glass beakers are inserted in the stainless-steel or PP-cover with holes. The ultrasound is transmitted through the liquid in the tank.



Elmasonic xtra ST

Powerful ultrasonic single-tank devices



Elmasonic xtra ST series

With 8 different tank sizes, the Elmasonic xtra ST series has been designed for heavy-duty applications in production, workshops and service. The stainless steel casing and the durable transducer tank are built for permanent operation. Thus Elma gives a 3-years warranty on the resistant, special stainless steel tank provided the unit is used properly and one-shift operated.

With the large number of features, the units can be easily and efficiently operated. All units are mounted on rollers and can easily be shifted to various workplaces in production or workshop. The up front arranged operating panel allows the quick and easy setting of all relevant parameters such as cleaning time, heating temperature or frequency.



Hinged basket for Elmasonic xtra ST

Functions and advantages:

- Multi-frequency at 25/45 kHz
individually settable frequencies depending on the cleaning job.
- 25 kHz for rough part cleaning and removing stubborn contaminants like lapping and polishing paste, for example.
- 45 kHz for cleaning sensitive parts and surfaces from contaminants like oils, drilling emulsions and greases. Also ideal for hard metal and glass surfaces in industrial and artisan environments as well as jewellery manufactures.
- Sweep-function for optimum sound field distribution and cleaning performance in the entire ultrasonic bath.
- Switchable Pulse-function increases the peak ultrasonic performance output. This uprating makes it possible to remove even the most stubborn contaminants.
- Dynamic-function: The Sweep- and Pulse-functions run alternately on an automatic basis. The ultrasonic performance is temporarily increased by up to 20%. At the same time, the even ultrasonic sound field distribution in the ultrasonic bath enhances the cleaning effect.
- Short heating times due to the high heating capacity with temperature regulation (30 - 80°C)
- High user safety with automatic safety shutdown
- Easy to service due to quick changing of the generator and operator control unit. This means that the devices are ready for use again very quickly and are highly available for users.



Elmasonic xtra ST 600H with hinged cover



Here you find more information on
Elmasonic xtra ST devices



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Elmasonic xtra basic 1900S

Cleaning filters with ultrasound

A high-performance ultrasonic cleaning system not only reduces your spare part costs but also ensures that your filters are cleaned quickly and thoroughly. Filter cleaning covers a vast range of applications:

- electrostatic filters
- grease filters
- hydraulic filters
- air filters
- fuel filters, ...

while contributing greatly to environmental protection through reusing your filters.

Over time, traditional filter cleaning reduces separation efficiency. But state-of-the-art ultrasonic cleaning in combination with the Elma cleaning solution provides gentle, fast and highly effective cleaning and regeneration of filters.

Ultrasonic filter cleaning has the following advantages:

- Time-Saving
- Cost Reduction
- Extension of filter life

Recommended process steps

- Pre-cleaning
- Cleaning in the ultrasonic bath with Elma Tec Clean A5
- Rinsing
- Drying
- Final inspection



Filter cleaning with Elmasonic xtra basic 1900S



Dirty filter



Cleaned filter



Additional benefits

- Reduced spare part costs
- No loss in separation efficiency of the filters
- Filters can be cleaned multiple times
- Low-cost, efficient filter cartridge regeneration using a purpose-designed device
- Great flexibility and response options through multifrequency and Pulse-mode
- Lateral ultrasound prevents cavitation damage on the tank floor
- Long operating and service life of the tank

Elmasonic X-tra line Flex 1 and 2

Manual ultrasonic cleaning lines



Elmasonic X-tra line Flex 2 (ultrasonic and rinsing tank)



Elmasonic X-tra line Flex 1 with rinsing station

Functions and advantages:

- 5 tank sizes available
- Multi-frequency for coarse and fine cleaning
- Pulse-function to intensify the ultrasonic power
- Sweep-function for the optimized and even sound field distribution
- Degas-function for the quick degassing of new cleaning baths
- Extensive range of ancillary components (filter pump aggregate, oil separator, pure water units, hand shower device, etc.)
- Complete module for pre-cleaning and follow-up rinsing before and after the intensive ultrasonic cleaning – perfectly for workshops and decentralizes workstations.
- Can be operated with tap water or DI-water
- No dilution of the cleaning bath due to separate rinsing water discharge
- Optionally available on support frame or with oscillation for supporting the ultrasonic cleaning bath

The easily pluggable rinsing station allows pre-cleaning by hand shower, subsequent ultrasonic fine cleaning and follow-up rinsing.



Elmasonic X-tra line Flex 1 with rinsing station

More on Elmasonic X-tra line Flex 1 devices.



Elmadry TD and Elmasonic X-tra pro WLT

Efficient drying of cleaned parts for best cleaning results

Elmadry TD

Elmadry TD (available in 3 unit sizes) are fitted with cold and hot air blower (70 °C), so even sensitive parts can also be dried gently. In cold air operation, the parts to be dried can also be cooled quickly.

Functions and advantages:

- Multiple machine loading with baskets
- The hot air function is activated while the cover is on. The cover reduces also energy consumption.
- The cover has ventilation slots, ensuring that the moist air is conducted to the outside.
- The dust filter on the underside is replaceable and prevents re-soiling of the cleaned parts by the dust in the room air.
- Very user-safe thanks to the safety shutdown upon reaching the limit temperature.



Elmadry TD 30

Elmadry TD 120

Elmasonic X-tra pro WLT -



Elmasonic X-tra pro WLT - warm-air-dryer

Elmasonic X-tra pro WLT warm air dryers are available in 5 sizes (300, 550, 800, 1200 and 1600). With an individually adjustable drying temperature between 30 and 120°C, these high-performance dryers achieve the best drying results in the shortest time possible.

Elmasonic X-tra pro WLT dryers complete the cleaning process of parts with Elmasonic X-tra line Flex 1 or Flex 2 units.

Functions and advantages:

- Individually adjustable drying temperatures from 30 to 120°C
- Clearly arranged operating unit with display of the set target temperature and the actual temperature
- Programmable time switch for day and time controlled start of the drying process and user-defined shutdown
- Throttle valve for regulating the internal air circulation
- High user safety due to built-in limit temperature monitor and automatic safety shutdown after 12 hours of operation

Elmasteam 8 and Elmasteam 4⁵

Cleaning, rinsing and drying - all with only one device!

Large quantities of oil, lubricants, polishing pastes and swarf occur frequently in industry and in workshops due to the processing with machinery. In order to clean the workpieces effectively, precleaning with steam is recommended. During the cleaning process with steam, no chemical cleaning agents are used. Thus the contaminations accrue as undiluted and concentrated as possible and less disposal costs occur. In order to clean the workpieces effectively, pre-cleaning and cleaning with Elmasteam 4⁵ basic or Elmasteam 8 basic steam jet cleaners is recommended.



Elmasteam 8 basic



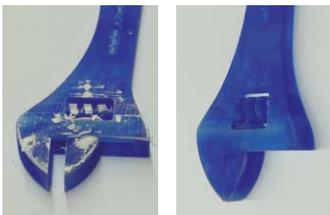
Elmasteam 4⁵ basic and basic HP

Functions and advantages:

- 4 or 8 bar steam pressure
- Ideally for pre-cleaning, rinsing and cleaning of workpieces and construction components
- Cleaning of sensible surfaces
- Cleaning of soft and sticky contaminations, oil, polishing pastes, residual glue, etc.
- High heating power
- Interchangeable between steam and compressed air (if compressed air function is integrated)
- Optional pump for continuous operation without interruptions
- Rinsing with steam for stainless surfaces
- Cost-efficient due to multiple applications
- Adjustable pressure modes "Soft" and "Strong"
- Individual regulation of moisture in the steam (wet or dry steam)
- Optional with Brita water filtering cartridge to reduce maintenance efforts and extent service intervalls

Application examples before and after cleaning

STL components



Removal of wax

Flange



Removal of grease and silicone

Gear drive



Removal of oil and swarf

More on Elmasteam devices.



With the Elmasteam steam jet cleaners, industrial contaminations such as pickling agents, adhesive wax and other residues can also be gently removed.

Qualification and re-qualification according to IEC TS 63001:2019

to verify the ultrasonic performance as part of process validation

Product quality and effective production are becoming increasingly important. After all, our customers also want to produce quality products continuously. With validated processes, you can always compare and check all production steps, procedures and methods with the specified requirements.

The **qualification** of ultrasonic devices serves the quantitative evaluation of parameters which are directly or indirectly relevant for the cleaning performance of the device. It enables the integration of the ultrasonic devices into existing, validated processes.

(Initial) Qualification

Evaluation of the following parameters:

- Cavitation noise level according to the standardised acoustic procedure IEC TS 63001:2019
- Ultrasonic functions sweep and pulse
- Bath temperature and heating curve
- Technical and mechanical properties (evaluation of ultrasonic tank, electrical connections, drain, etc.)

Re-qualification

All parameters of the initial qualification are measured again at Elma, documented in a checklist and current test certificates issued again.

- Re-qualifications take place cyclically at regular intervals (e.g. annually)
- Declining device performance can thus be detected and rectified at an early stage

The qualification of ultrasonic devices comprises three test certificates:

- for cavitation noise level
- for power consumption
- for bath temperature / heating curve



Elmasonic P 30 H during the cavimeter test

Advantages of (re-)qualification:

- Integration of ultrasonic cleaning devices in validated processes
- Ensuring the required cleaning performance
- Verification of the required product quality

To obtain very good, reproducible cleaning results in validated processes, a device qualification is indispensable.

The cavimeter test

We developed the acoustic procedure for qualification and re-qualification - the cavimeter test - in order to check performance-relevant parameters of ultrasonic devices. This allows an evaluation of the device performance. Relevant and measurable parameters are the cavitation noise level, the excitation frequency, the sound pressure at the determined excitation frequency, the ultrasonic modes (Sweep, Pulse) and the functionality of the heating based on the actual and set temperature.

On request, both the initial qualification and the re-qualification can be carried out under specific process conditions defined by you or under the standard parameters defined by Elma.

All tests are carried out with calibrated measuring instruments according to standard EN 10204:2004.

When purchasing an ultrasonic unit, you can have it **qualified** before delivery at a charge. The device test certificates for all tested parameters are then also provided. Existing devices are **re-qualified** at our premises or on request and, under certain conditions, also at your premises.

This allows you to ensure and prove that the original characteristics and performance of your device are still present.



Elma Tec Clean

Cleaning chemistry for industrial applications

Advantages of Elma Tec Clean chemistry:

- Powerful cleaning concentrates from acidic to alkaline
- Suitable for various cleaning tasks
- Easily to dispose and eco-friendly
- Gentle for most materials



Contamination	Surfaces	pH-value	Dosage proposal
Light oil, grease, fluxing agents, dust and finger prints.	Substrates in the electronics (PCB) and optics industries (glasses, fine optics), electro-mechanical components. For the overhaul cleaning of plastics.	~10	3 - 10 %
Polishing, lapping and grinding residues, grease and oil.	Nonferrous metals, precious metals, brass, nickel, titanium. Check Zn and Al for resistance before use. Non-ferrous and precious metals are brightened up.	~10	5 - 10 %
Grinding and polishing residues, punching oil, drawing grease, soot, tinder, high-performance cooling lubricants.	Stainless steel, steel and other iron materials, titanium and precious metals, gray cast iron. Check nonferrous heavy metals, brass, glass and quartz for resistance before use. Not suitable for Al and light metals.	~12	3 - 8 %
Oil, grease, soot, coking, forge, dust and finger prints, polishing and lapping agents.	Stainless steel, steel, iron, gray cast iron, aluminium and light metals, brass, nonferrous heavy metals, precious metals, nickel, zinc, plastics, ceramics, glass, quartz, rubber.	~12	Ultrasonic: 2 - 5 % without ultrasonic: 5 - 10 %
Forged and resinified oil and grease, lacquer and paint remnants, wax, grinding and polishing media.	Stainless steel, steel, iron, gray cast iron, Al- and light metals, nickel, stainless metals and Zn. Alkali-proof surfaces.	~12.5	3 - 5 %
Oil, grease, grinding, lapping and polishing media, dust, sweat and finger prints.	All metals, plastics, ceramics, glass, rubber. Check Mg for resistance before use.	~7	Ultrasonic: 5 % without ultrasonic: 10 %
Rust, lime, oxide films (e.g. verdigris), grease and oils.	Nonferrous metals, stainless steel, Al and light metals, brass, steel, plastics, glass. For the passivation of surfaces of stainless and chromium-containing steels.	~3	1 - 5 %
Mineral contaminations such as lime, rust and other oxides; films that can be removed with corrosives, mineral grease, oil, polishing and lapping agents.	Stainless steel, steel, brass, nickel, nonferrous and precious metals, glass, ceramics and acid-resistant plastics. Not suitable for Al and light metals.	~1	Ultrasonic: 1 - 5 %

About us

Ultrasonic and Steam Cleaning Technology · Cleaning Chemistry · Application Lab



Throughout equipment for industrial parts cleaning are pre-requisite for perfect cleaning results. With the extensive product range, Elma is offering sophisticated solutions for cleaning work-pieces and components.

With our core competencies ultrasonic and steam cleaning technologies and our process laboratory with its own cleaning agent development behind us, we provide competent and reliable advice and tailor-cut cleaning solutions for our customers for even the most difficult cleaning tasks.

We provide top quality in all manufacturing stages from design an development to service and after-sales-service.

Our process laboratory develops our own, for industrial applications optimized, cleaning agents which are produced in our plant.

A worldwide network of partners and distributors ensures high availability of devices and equipment with short response times.

Years of experience, innovative research and development as well as our industry-specific know-how make us the partner of choice for you. We consider trust and reliability to be the foundation of a sustainable partnership.

By providing you with Elma products and services, we want to contribute to your success as reliable, competent partner!



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