Watches and Jewellery

Ultrasonic and Steam Cleaning Technology
for cleaning watch parts and jewellery during production and service

- Efficient ultrasonic cleaning technology
  with proven cleaning modes and suitable accessories
- Modular and tailor-cut cleaning lines
- Elmasteam steam cleaning technology for efficient and gentle cleaning with 4.5 to 8 bar
- Elma cleaning chemistry developed for watch and jewellery cleaning tasks
- Watch winders, watch testing and servicing devices

www.elma-ultrasonic.com
Important cleaning tasks arise particularly in watch production and service. Watch cases, glass, metal straps and locks, for instance, need to be cleaned again and again in-between the production steps. Detailed specific-industry know-how in watch movement cleaning during production and in service involving ultrasonic and steam cleaning technologies has been in Elma’s hands now for over 60 years.

Elma ultrasonic and steam cleaning appliances as well as ultrasonic systems are indispensible in jewellery manufacture and in the jewellery studio. For in-between cleaning, repairs and final cleaning, Elma cleaning technology is the first choice for highly-pure surfaces and shining cleaning results.

That is why major brand manufacturers and international service points have full confidence in Elma technology.

Thanks to the 3 Elmasolvex watch cleaning machines, Elma provides market-leading technology for cleaning mechanical watch movements.

The Elmasolvex cleaning machines cover cleaning operations both with ultrasonics as well as rotation and oscillation operations. As such, they function fully automatically in the single and multiple-chamber process. With Elmasolvex SE, Elma also has a purely mechanical version in its portfolio for small workshops.

Elma’s xtra line 2 is a well-thought-out modular cleaning line concept for higher-throughput production. The most varied of aqueous processes can be reproduced here with ultrasonics followed by rinsing and parts drying.
Ultrasonics. Steam. Cleaning Chemistry.
Made by Elma for shining jewellery.

Depending on the cleaning appliances different ultrasonic cleaning units of various sizes, with proven cleaning modes as Sweep, Degas and Pulse as well as for heavy-duty applications are available. Application-adapted cleaning concentrates, fully demineralized water rinsing cartridges and dryers round off the cleaning operation.

The Elma Clean cleaning concentrates have been especially developed to support the mechanical cleaning effect in the ultrasonic bath. As a result, gold and silver jewellery can be brightened and/or de-oxidized easily. The new EC 95 - Polish Paste & Soil Remover and the tied-and-tested Elma Noble Clean even provide the jewellery pieces with a temporary anti-tarnish film.

The Elmadry TD drying units are available for gentle warm and cold air drying of jewellery pieces following the immersion or ultrasonic bath resp. the rinsing.

Steam cleaning devices of the Elmasteam range with 4-8 bar steam pressure are available for the non-chemical cleaning of delicate parts. Under certain circumstances, it is not advisable to clean finished jewellery made of various precious metals, precious and semi-precious stones, pearls and coral in the ultrasonic bath. Here the jewellery pieces should be gently cleaned with the Elmasteam steam cleaning devices.

A 4.5 to 8 bar steam pressure ensures that polishing pastes and wax residues as well as other residues brought about from wear are easily removed. The cleaning outcome is further enhanced by optional functions, such as compressed air, wet steam and individual pressure control. Within seconds, steam removes polishing agent residues and wear dirt without leaving any residues or stains. By using the optional compressed-air function, the jewellery can be dried straight away with Elmasteam.

The Elma Cleaning Concept

1. Pre-cleaning with Elmasteam
2. Ultrasonic Cleaning with Elmasonic and Elma Clean Cleaning Chemistry
3. Rinsing with Elmasteam
4. Drying with Elmasteam or Elmadry
Elmasonic S
Reliable ultrasonic technology

Elmasonic S units are available in 17 different sizes and have all technical features that are indispensable for industrial applications.

37 kHz ultrasonic frequency
Different cleaning applications are carried out reliably and thoroughly in the powerful units.

Degas function for quick degassing
The special Degas mode allows quick degassing of the cleaning liquid, particularly in freshly mixed ultrasonic baths.

Sweep function for sound field distribution
In Sweep mode the “electronic oscillation” cleans the immersed items independent of the filling level, and the ultrasonic power is the same throughout the tank.

This results in best cleaning results within shorter cleaning times.

Further functions of Elmasonic S
Elmasonic S ultrasonic units have also
- electronic time and temperature control,
- performance transducer,
- heating safe to run-dry and
- temperature-controlled auto-start function.

Elmasonic S units are thus reliable and cost-saving in daily use.
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 or for the cleaning of inner areas of parts e.g. in capillaries and of sensitive gemstones.

Functions of the Elmasonic P Line

- **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 xtra TT
Robust tabletop ultrasonic devices for heavy-duty applications

Elmasonic xtra TT tabletop ultrasonic devices are designed for heavy-duty 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 welded 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

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

Functions of Elmasonic xtra TT ultrasonic devices:
- 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 effectiveness of cleaning and makes it possible to remove even the most stubborn contaminants.
- Individually settable limit temperature with LED warning indicator on reaching the temperature.
- 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
Elmadry TD
Safe and efficient drying of watch and jewellery parts

Elmadry TD drying units are available in 3 sizes and designed for use in production, workshop and service. After ultrasonic cleaning, the parts are first rinsed in the basket with municipal water and then dipped into a bath of deionized or distilled water (needed for spotless drying).

The basket with the cleaned parts is then placed conveniently placed in the Elmadry TD drying unit. The hot air function is activated while the cover is on. The cover has ventilation slots, ensuring that maximum air turbulence is produced and the moist air is conducted to the outside.

At the same time, the cover reduces energy consumption. The dust filter on the underside is replaceable and prevents re-soiling of the cleaned parts by the dust in the room air.

Fitted with cold and hot air blower (70 °C), sensitive parts can be dried gently. In cold air operation, the parts to be dried can also be cooled quickly.

Elmadry TD units are very user-safe thanks to the safety shutdown upon reaching the limit temperature.

Drying units for small parts
- Hot air function with fixed temperature of 70 °C
- Cold air blower (ambient temperature) for drying sensitive parts
- High user safety through safety shutdown upon reaching the limit temperature
- 3 unit with 3 l, 12 l and 30 l for different baskets and holders
- Optional available silicone mats for protecting sensitive parts
- Simple and fast operation

Multiple machine loading with baskets
Cover with ventilation slots also serves as a grid tray
Stainless steel baskets suitable for use in Elmasonic ultrasonic bath
Automatic safety shutdown upon reaching the limit temperature
Switch for hot and cold air blower

Gentle drying of jewellery and watch parts
Heating and blower are integrated into the tank bottom
Elmasonic xtra ST
Powerfull ultrasonic single-tank devices

With 8 different tank sizes (30 - 250 l), 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.

Advantages of Elmasonic xtra ST series

- **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 noise protection cover and basket*
From manual to automatic ultrasonic cleaning systems

Designed for fine and ultra-fine cleaning tasks, the xtra line 2 can be flexibly deployed and extended due to the modular system concept (building block system) at any time.

The modular cleaning systems are equipped with multi-frequency with 25/45 or 37/130 kHz. Different tank sizes can even be easily accommodated in one system, so that individualised systems are conceptualised.

- **Multi-frequency technology** with 25/45 or 37/130 kHz
- **Sweep function** for optimal cleaning results
- **Degas function** for quick degassing, esp. of a fresh cleaning bath
- **Individually activatable Pulse function** for increased performance
- **Optional equipped** with lateral ultrasound technology
- **Different drying systems** for different material requirements
- **For fine and ultra-fine cleaning as „precision“ version** with rounded tank corners, electropolished surfaces and special pipework

- **Compact system design** for an easy integration into existing production processes and with easy-to-clean surfaces
- **Optional accessories** as baskets, covers or rinse stations
- **Integrated ancillaries** such as filters, oil separators, etc.
- **Equipped with floor tank as standard**
- **Cascaded, connected cleaning tanks for multiple use of water and to reduce water consumption**
- **Extremely service and maintenance friendly** thanks to the compact system design with easily accessible and swiftly replaceable components

The compact, closed system design enables easy system maintenance. Ancillaries for bath care, such as oil separators, filter units or similar, are positioned inside the system in order to save space. Removable back elements facilitate the easy maintenance and servicing of the xtra line 2.

All cleaning lines are ready for extensions with ancillaries as filter device, etc. and a wide range of accessories like baskets, etc. is available.

- **Easy to upgrade** for automatic cleaning
- **Highly cost-efficient cleaning line concept**
- **Process-controlled production** due to data-logger as well as OEE, trend analysis and energy management
- **Optional use of manual or automatic barcode/data-matrix code scanners or RFID-systems**
- **Connection to MES or customer IT-systems possible**
- **Touch panel with a user-friendly visualization and IPC-controlled surface**
Elma STC robot systems and Elma MTC lift and push installations

Cleaning systems made to measure

Both Elma STC and Elma MTC systems are available in different tank sizes. They are designed to meet high cleanliness requirements at high throughput.

- Cleaning processes include a great number of individually selectable options to meet cleaning requirements, materials and parts to be cleaned
- Various different drying systems are available (hot air, trough, continuous flow, IR or vacuum dryers)
- Systems are easily expandable with suitable accessories and ancillaries (loading and unloading conveyors, wet loading tanks, etc.)
- Optional bath care ancillaries (filter pump systems, oil separators, pure water systems)
- Process-controlled production through data-logger and sensors with calibration certificates for validated, consistent product quality
- Industrial-PC control with intuitive visualization
- Remote control and maintenance options
- Optional connection to MES or customer IT-systems
- Optional use of barcode/data-matrix code-scanners or RFID-systems

Customised Cleaning Systems

In close cooperation with our customers, we develop and provide tailor-cut cleaning solutions. We support our customers from cleaning tests in our process laboratory, to the development and design of individual cleaning processes and cleaning systems to system implementation and subsequent maintenance and servicing.

With Elma systems, customized and standardized cleaning solutions go hand in hand. Standardized ancillaries such as oil separators for extending the bath service life, filter pump devices or water processing units can be easily integrated into your cleaning system to meet even changed requirements.
Elmasteam 4ª basic
with fixed nozzle or flexible hand piece

Elmasteam 4ª is the ideal steam cleaning machine for watch and jewellery making workshops for the cleaning of worn and mounted jewellery as well as for watch straps, chains and rings with set stones.

Cleaned with steam and/or in combination with ultrasound, the cleaned jewellery shines again after just a very short time. During production steps, polishing pastes are easily cleaned off with Elmasteam 4ª basic.

Furthermore Elma gives 3 years warranty on its Elmasteam steam cleaners.

There are two versions of Elmasteam 4ª basic:

a. with fixed nozzle:
   This enables working with both hands. Ideal for holding chains or straps securely and also for detaching the smallest dirt particles from inside the chain links.

b. with flexible hand piece:
   For more flexibility when using the evaporating dish, when steaming into a sink or directly within larger parts.

Simple start-up of the steam jet cleaner

Fixed nozzle
for working with both hands

Indirect heating:
- Short heating-up time
- High steam availability
- Simple decalcification and tank cleaning
- Long service life

Application examples before and after the cleaning

With the Elmasteam 4ª basic, contaminations such as oils, adhesives and pickling agents can also be gently removed. The Elmasteam is used for degreasing the parts before galvanisation.
Elmasteam 8 basic
The environmentally friendly cleaning alternative

- Cleaning, rinsing and drying - all with one device
- Long steam availability with 8 bar steam pressure
- Individually adjustable pressure ranges “soft” and “strong”
- 3 years warranty
- Automatic “Eco-mode” saves costs and energy and is environmentally friendly
- Integrated decalcification programme

Simple filling with water

Fixed nozzle
for working with both hands

Steam regulation
as optional function:
- “wet” - wet steam
- “dry” - dry steam

Different settings and modes

Flexible handpiece
with 2 integrated functions:
- steam or
- compressed air for drying

Optional with
- automatic filling
or
- compressed air function

Compact design
Space-saving tabletop units with wall brackets

Cleaning with flexible handpiece
Parts can be held securely (also with tweezers) and sprayed all-round quickly and effectively.

Cleaning with fixed nozzle in the evaporating dish
Moisture and dirt are absorbed and can be easily disposed.
Polishing, watch testing and servicing devices
Useful devices for watch makers and jewellers

**Antimag**
Demagnetizer

Parts of watches and tools are easily demagnetized.

**Leak Controller 2000**
Watch testing unit

Vacuum testing unit for checking the water tightness of watches
- Easy operation
- Ideally for testing after battery exchange

**Cyclomatic-Due**
Design and functionality in harmony

The Cyclomatic-due keeps two watches running without producing any noise. A compact unit for the collector and lover of precious automatic watches. Due to the battery service life of up to one year the watches can be stored in a safe over longer periods. Mains supply unit available on request.

**Polini**
The reliable polishing machine

Powerful polishing unit with integrated dust suction.
- Number of revolutions set to 2800 rpm
- Transparent cover removable to allow the polishing of larger pieces
- Dirt collecting drawer with fine filter

**Unispeed**
Polishing machine with two speeds

Professional one-place polishing machine with integrated dust suction.
- Two speeds 1400/2800 rpm
- Dust protection cover removable to allow the polishing of larger pieces
- Polishing area is illuminated
- Dirt collecting drawer with fine filter

**Multispeed**
Polishing machine with two polishing brushes

Large polishing machine with two polishing brushes and integrated dust suction.
- Two speeds 1400/2800 rpm
- Dust protection covers removable to allow the polishing of larger pieces
- Polishing areas are illuminated
- Dirt collecting drawer with fine filter
**Cyclomotion**  
The watch winder for watch makers worldwide

**The professional watch winder**

The various possible options for watch mounting enable individual configuration of the watch winder tailored to the respective requirements. Different winding variants guarantee optimum winding and testing according to the respective requirements of the watch movements.

In particular, large and heavy mechanical watches can also be wound by the powerful motor. Due to its versatility, the Cyclomotion is designed for watch manufacturers and watchmakers.

**Functions and features:**

- For up to 24 watches (with or without straps)
- Mains supply unit 100 - 240 Volt, 50/60 Hz
- Powerful, silent motor with integrated safety clutch and holding torque (stand-by mode) for a reliable protection of the watches
- Adjustable speed (1 or 4 rpm) for continued testing and quick winding
- Change of rotation direction possible
- Individually selectable retaining bracket combination enables simultaneous winding on one or both sides of watch movements to be wound

**Accessories for Cyclomotion:**

- Lockable Protector hood for additional protection against dust and mechanical impacts
- Clip for 2 or 4 watches with straps
- Industrial clip for 4 watch cases (without straps)
- Wall brackets for wall mounting
- Watch box for up to 4 watches (without straps)
Elmasolvex VA
Watch movement cleaning with flammable solvents

The quality of the mechanical watches and thus the requirements in production and service for the movement cleaning have increased continuously. Complex design of the precision engineering and continually increasing requirements for materials and surfaces require a cleaning process which satisfies these most exacting demands.

With the Elmasolvex VA it is possible to clean with ultrasound and flammable solvents under vacuum. The cleaning process allows best cleaning results with at the same time short process times.

Elmasolvex VA has its own self-contained intrinsic Ex-protection due to the vacuum technology used and all the measures required by TÜV and the applicable technical regulations for explosion safety. This means that the explosion protection measures integrated in the machine already rule out any fire hazard in the primary zone, operation in compliance with the manual provided.

Elmasolvex VA
Single-chamber ultrasonic vacuum technology for cleaning with solvents TÜV-certified safety due to intrinsic Ex-protection

Function and advantages of Elmasolvex VA:
- Ex-certified solvent-based cleaning of watch movements (TÜV Rheinland) with flashpoint >= 12°C
- Operator protection against solvent vapours and odours due to extraction or self-contained filter system
- Maximum cleanliness due to vacuum and ultrasonic technology. Even difficult-to-access areas are reached and gas bubbles are removed from the movements.
- Cleaning and rinsing using multi-frequency ultrasound in rotation or oscillation process
- Machine can be completely rotated, media containers and connections are thus very easily accessible
- Integrated particle filter for increasing the service life of the cleaning and rinsing solutions
- Suitable cleaning chemistry (cleaning and rinsing solutions) Elma WF Pro and Elma Suprol Pro
- Wide range of practical accessories

Elmasolvex VA - processes and media

Ultrasound Oscillation Rotation Solvent 80 mm baskets 64 mm baskets

Easy changing of cleaning and rinsing solution canisters

Controlled exhaust air routing
Elmasolvex RM and SE
Watch movement cleaning with one and multiple chamber technology

Elmasolvex RM
Multiple-chamber technology for solvent and aqueous cleaning with certified TÜV Ex-protection

Functions and advantages of Elmasolvex RM:
- Ex-protection for solvents with flashpoint >= 23°C
- Cleaning with rotation and oscillation processes in 4 cleaning and one drying chamber (fine-filter warm-air technology)
- Completely automatic or alternatively with individually configurable parameters
- Service-friendly and easy-care design
- Maximum personnel safety due to connection of the machine to controlled exhaust air routing
- Basket frame for three baskets, optional holder for movements
- Suitable cleaning chemistry
  - for solvent cleaning: Elma WF Pro and Elma Suprol Pro
  - for semi-aqueous combination process:
    - Elma 1:9 and demineralised water

Elmasolvex SE
Multiple-chamber technology for solvent and aqueous cleaning with certified TÜV Ex-protection

Functions and advantages of Elmasolvex SE:
- TÜV certified Ex-protection for cleaning with solvents with flashpoint > 23°C
- Cleaning with rotation process in 4 cleaning and one drying chamber (fine-filter warm-air technology)
- Manual operation with latching in the working heights and above the media container positions
- Service-friendly and easy-care design
- Maximum personnel safety due to connection of the machine to controlled exhaust air routing
- Basket frame for three baskets, optional holder for movements
- Suitable cleaning chemistry
  - for cleaning with solvents: Elma WF Pro and Elma Suprol Pro
  - for semi-aqueous combination processes:
    - Elma 1:9 and demineralised water
Processes and chemistry from the Elma application laboratory
From professionals for professionals

The Elma application laboratory
In the Elma process laboratory, our process engineers develop together with our customers tailor-cut process solutions for individual cleaning tasks. A whole cleaning system concept is then developed and designed including cleaning processes and procedures as well as suitable cleaning chemicals.

Our process laboratory performs cleaning tests on a daily basis and verifies that the test results meet the cleanliness requirements. In the adjacent application laboratory, we optimize our cleaning chemicals and develop new cleaning agents.

Ecomized cleaning chemistry
Elma cleaning agents are developed for special applications. Furthermore Elma cleaning agents are highly efficient, environment friendly and achieve best cleaning results.

Economical and ecological. Elma Clean - The cleaning solution.

Elma Luxury Clean EC 95 - Polish & Soil Remover, Non-Ammoniated
The blue EC 95 is an aqueous, alkaline cleaning concentrate without ammonia. It is used to clean jewellery an watch parts (e.g. cases, straps, clasps, ...) during and after production and service. EC 95 removes reliably and easily polishing pastes and other contaminations arising from wearing and hygienically refreshs the parts-to-be-cleaned for shining cleaning results.

- Easy removal of polishing pastes and dirt arising from wearing
- Powerful brightening effect
- Very efficient cleaning concentrate:
  1 l concentrate results in 50 l cleaning solution
- Without toxic ammonia fumes
- Odourless
- Applicable in ultrasonic as well as in immersion bath at 25-75 °C

Silver ear rings before cleaning
Silver ear rings after cleaning
Effective and thoroughly jewellery cleaning agents
for ultrasonic cleaning or in immersion baths

The Elma Clean cleaning concept in combination with Elmasonic cleaning devices and Elmasolvex watch cleaning units guarantees top-quality cleaning results and ensures the longevity of the materials.

There is the suitable and especially developed cleaning agent range for the jewellery cleaning. If for cleaning or for brightening - Elma Clean cleaning agents are productive, clean thoroughly and are ready for jewellery cleaning tasks and materials.

<table>
<thead>
<tr>
<th>Surfaces</th>
<th>pH-Value</th>
<th>Dosage</th>
<th>Application parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elma Clean 85 - Neutral Cleaner</strong>&lt;br&gt;Concentrate for a very gentle removal of wear dirt and processing agents in the workshop and in manufacturing. For all metals - including light metals - plastics, soft stones, pearls and coral. No brightness comes from using Elma Clean 85.</td>
<td>8</td>
<td>Ultrasonic bath: 5 %</td>
<td>Ultrasonic bath: 1-5 min, 30-60 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immersion bath: 10 %</td>
<td>Immersion bath: 30 min, 50-75 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EC 95 - Polish &amp; Soil Remover - Intensive Cleaner</strong>&lt;br&gt;Highly concentrated with strong brightness effect for removing wear dirt, processing agents and oxidation in the workshop and industry (without ammonia). EC 95 contains a temporary anti-tarnish finish. For rapid cleaning of precious metals and non-ferrous metals as well as their alloys and jewellery with hard stones. Check costume jewellery and soft stones beforehand for stability. Not suitable for pearls and coral!</td>
<td>10</td>
<td>Ultrasonic bath: 2 %</td>
<td>Ultrasonic bath: 2-5 min, 25-75 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(up to 4 % given considerable soiling)</td>
<td>(For removing wear dirt: ambient temperature) (Polishing pastes &amp; waxes: 25-75 °C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immersion bath: 10 %</td>
<td>Immersion bath: 15 min, 25-75 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elma Ultra Clean - Sensitive Cleaner</strong>&lt;br&gt;Gentle cleaning concentrate for delicate gold jewellery and also that with soft stones. Ensures the gold gleams brightly. For precious and non-ferrous metals as well as their alloys, jewellery with stones and costume jewellery. Check pearls for stability. Not for coral!</td>
<td>10,5</td>
<td>Ultrasonic bath: 5-10 %</td>
<td>Ultrasonic bath: 2-5 min, 30-60 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immersion bath: 10-20 %</td>
<td>Immersion bath: 30-60 min, 30-60 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elma Noble Clean - De-oxidation Cleaner</strong>&lt;br&gt;Extremely rapid and pronounced de-oxidation and brightening, especially for silver and silver alloys. Available in the wide-neck bottle for direct immersion. Elma noble clean contains a temporary anti-tarnish film. Not for costume jewellery, jewellery with soft stones, pearls and coral!</td>
<td>1-2</td>
<td>Ultrasonic bath: 50 %</td>
<td>Ultrasonic bath: 30-45 s, ambient temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immersion bath: non-diluted</td>
<td>Immersion bath: 10-15 s, ambient temperature</td>
</tr>
</tbody>
</table>
Here you find the right Elma Clean cleaning chemistry for the different applications and material for cleaning watch parts and watch movements.

From non-aqueous to aqueous rinsing and cleaning solutions to lubricants - the Elma chemistry is available in different package sizes.

<table>
<thead>
<tr>
<th>Surfaces</th>
<th>pH-Value</th>
<th>Dosage</th>
<th>Application Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elma Reinigungskonzentrat 1:9 - Cleaning Concentrate</td>
<td>10</td>
<td>Ultrasonic bath: 10 % (1 part concentrate to 9 parts water)</td>
<td>Cleaning time: 3-10 min</td>
</tr>
<tr>
<td>Elma WF Pro - Cleaning Solvent</td>
<td>-</td>
<td>Ready-to-use solvent</td>
<td>Cleaning time: 2-10 min</td>
</tr>
<tr>
<td>Elma Suprol Pro - Rinsing Solvent</td>
<td>-</td>
<td>Ready-to-use solvent</td>
<td>Rinsing time: approx. 3 min</td>
</tr>
<tr>
<td>Elma Spirol - Degreasing Agent</td>
<td>-</td>
<td>Ready to use for the immersion bath</td>
<td>Cleaning time: approx. 3 min</td>
</tr>
<tr>
<td>Elma Unimix - Lubricant</td>
<td>-</td>
<td>Ready to use</td>
<td>Dwelling time: approx. 3 min</td>
</tr>
<tr>
<td>Elma VACU-Proof - Sealing Liquid</td>
<td>-</td>
<td>Ready to use</td>
<td>Apply droplets oneself to the sealing faces or seals</td>
</tr>
</tbody>
</table>
The Elma success story started in 1948 with an idea and two engineers. Back then the new watch cleaning machine - the Super Elite - took the world by storm. This success continues to this day and makes Elma one of the leading international companies for cleaning technology, thanks in part to our latest development - the Elmasolvex.

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 a development to service and after-sales-service.

With our highly motivated and international team of experts, we support our customers competent and solution-focused. For us, customer contact does not depend on physical proximity, but on attitude.

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

Years of experience in industrial precision cleaning, innovative research and development 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!