



Ultrasonics.Steam.Ultraclean.



High Precision Cleaning

Ultrasonic technology in industrial precision cleaning

- Modular ultrasonic cleaning lines
- Customer-specific cleaning lines
- Extensive range of accessories and suitable ancillaries
- Elma cleaning chemistry developed for precision cleaning

Innovative ultrasonic technology for industrial precision cleaning

Not only clean, but pure!

For precision parts, even the tiniest contaminants will affect production capacity and quality. Our multi-frequency systems for aqueous and solvent-based cleaning (solvent flammability class AIII) can be used to gently remove contaminants from sensitive assemblies and parts at high frequencies.

An alternative to ultrasonic cleaning is pressure flooding which can help to prevent damage to delicate structures and surfaces.

Together with our customers, our process laboratory experts develop and optimize tailor-made cleaning processes to match component materials and the desired cleaning quality.

Each cleaning process is checked and tested through our process laboratory in various testings as even the tiniest process details are crucial for perfect cleaning results.



Industrial precision cleaning of sensitive components, also under clean room conditions or with laminar flow

Our services range from

- **Micromechanics,**
- **Watch manufacturing and service,**
- **Optical applications,**
- **Aviation industry,**
- **Automotive industry,**
- **Electronics industry to**
- **High-vacuum applications.**



Intermediate cleaning of precision optics and ready-for-coating cleaning systems.



Elma multi-frequency systems gently remove flux and solder residue from electronic assemblies.

The focus is on precise and reliable parts cleaning after processing, before coating, honing, lapping, passivating and polishing (intermediate cleaning) and prior to measurements, assembly and final product packaging.

Our systems come with laminar flow-boxes and with the corresponding clean room equipment to suit particle-sensitive production environments (PVD, CVD, PECVD, etc.). It is also possible to quickly and easily upgrade our systems with additional accessories and optional ancillaries at any time.



Our systems perform reliably for turning and SAV (service après-vente) applications.



Elma cleaning systems are used both before and after FPT-esting.



Cleaning of various materials (ceramics, aluminium, copper, etc.) after honing, lapping, polishing and before coating.



Designed to clean after milling, turning and grinding or before the measurement, assembly and packaging of workpieces.



Elmasonic X-tra line

Semi-automatic or manual ultrasonic cleaning systems

Our modular concept consists of standardized components – from ultrasound equipment, transport systems and enclosures to ancillary devices. Thus these modular systems are easily and quickly upgradeable in response to changed cleaning requirements.



*X-tra line pro manual
with 3 ultrasonic units and 1 rinsing unit*



*X-tra line pro manual
with rinsing station*

- Multi-frequency technology:
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 with difficult cleaning tasks
- Cleaning lines have a compact design and can be easily integrated into existing production processes
- Matching accessories, such as baskets and rinse station
- Optional ancillaries such as oil separator, filter pump units, etc.
- Easy to upgrade for automatic cleaning
- Highly cost-efficient cleaning line concept



Elmasonic X-tra line

Fully-automated and optionally enclosed cleaning systems

The modular Elmasonic X-tra pro and precision series are multi-frequency systems with 25/45 or 37/130 kHz, offering 5 tank sizes. Ideally for fine and ultra-fine cleaning of industrial precision parts.

All cleaning lines are ready for extensions as loading and unloading conveyors, etc. Furthermore a wide range of accessories like baskets, etc. is available. Accessories may also be added later on to adapt the system to changed requirements.

Equipped with sophisticated technology

- Ultrasonic units are basically equipped with bottom ultrasound; optionally units with additional lateral ultrasound are available
- Individual power control integrated
- Individually activatable **Pulse-function** for increased performance with difficult cleaning tasks
- **Sweep-function** for an even sound field distribution and optimal cleaning results
- **Degas-function** for quick degassing, esp. of a fresh cleaning bath
- **Rounded tank corners, electropolished tank surfaces** and specially designed hard piping for optimised drainage and to prevent entrainments



Sustainable energy efficiency

- All units are sound and heat insulated
- Automated systems have a weekly time switch for starting and shutting down the system automatically
- Cascaded, connected cleaning tanks to reduce water consumption

Modular software and user-friendly visualization

- IPC-based control
- Data-logger, OEE, trend analysis, SMS messenger 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 for a user-friendly visualization of the control 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 5 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.



Smart accessories and ancillaries

Customer-specific baskets and inserts



Depending on requirements and cleaning tasks, there are

- standardized and
- customized options.

Bath care systems



- Oil separators
- Filter pump units for surface or bottom skimming

Water treatment systems



- Water softening
- Re-osmosis
- Demineralised water circuit

Automatic dosing units



For the dosage of the cleaning agents

- Volumetric
- Guide value-based
- Based on the measurement of surfactants

Rotation units



For rotating the parts for cleaning

- Lift rotation
- Vertical rotation
- Rotary baskets



Cleaning chemicals, laboratory procedures and worldwide service

One-stop-shopping at Elma

Elma Clean cleaning chemicals

Optimal cleaning processes include the right cleaning chemicals for the required tasks and demands. Due to the many years of experience, our industry know-how and detailed knowledge of production procedures, we are able to develop and produce tailor-made chemicals for industrial precision cleaning.

The use of ultrasound ensures that the cleaning products can be used sparingly, making Elma Clean cleaning solutions highly efficient and economical. All our cleaning concentrates are biodegradable, and proper disposal is easy. All Elma cleaning products have been registered with the German Federal Environment Agency.



*Elma Clean 260 d&s
Neutral cleaner*



*Elma Clean 310
Mildly alkaline cleaner*



*Elma KS
Corrosion protection*



*Elma Clean 110
Alkaline cleaner*

Elma process 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.



Worldwide service and consulting

A global network of service centres and sales partners ensures high system availability and fast response times for all Elma products.

- Worldwide service and sales partners
- Call center for technical advise and service
- Remote maintenance and support via VPN or RAS
- Targeted service training for customer technicians and service personnel
- Optional regular user trainings
- Fast and easy delivery of spare parts



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About us

Ultrasonic Cleaning Technology · Cleaning Chemistry · Process Laboratory



Perfect cleaning results and high quality products are the measure of all things. With the large and thought-out product range, Elma is offering sophisticated solutions for high precision cleaning tasks.

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

Furthermore we provide top quality in all manufacturing stages from design and 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 equipment and systems 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!

