



Aerospace



Ultrasonic Cleaning Lines for Aerospace Applications

- Cleaning of engine components
- MRO
- Cleaning before vacuum coating
- Precleaning, intermediate cleaning and final cleaning
- NDT/FPT

Elma Service – worldwide

- service department at Elma HQ in Singen, Germany
- dedicated technicians covering worldwide service and maintenance
- local support service in the USA, UK and Thailand; additional support centers planned
- additional support available from specialist technical departments (R&D, software, electrical and mechanical design)
- 24 h telephone hotline
- standard remote software support by VPN or RAS
- standard parts on stock at Elma, ready for immediate dispatch
- specific spare parts packages available for independent projects
- maintenance and spare parts lists are part of the standard documentation
- specific training for customer technicians and engineers



Product Range Serial Units

Elmasonic serial units for ultrasonic cleaning

- product range from 0.8 litres to 90 litres tank capacity
- high power, up to 3.2 kW
- Sweep and Degas mode
- multi-frequency technology for P line



Elmasonic S 30



Elmasonic P line



Ultrasonic Serial Units

Multi-frequency units

Ultrasonic cleaning based on the latest technologies for industrial cleaning tasks
Welded tanks for a long service life



X-tra basic (25 litres – 250 litres)

- simple and robust ultrasonic units
- welded tank
- noise protection cover
- multi-frequency technology with Pulse mode



X-tra XL (120 litres – 360 litres)

- welded tank
- noise protection cover
- multi-frequency technology with Pulse mode
- phase control
- 2-side or 3-side ultrasound
- integrated oscillation system for loads up to 100 kg



Modular (standard) lines

X-tra line

Modular cleaning systems for manual or automatic processes



X-tra pro 1600-3

Type: manual X-tra line

Cleaning product: turbine parts after mechanical refurbishing

Cleaning result: intermediate cleaning

Process: cleaning, DI rinsing cascade

Cleaning chemical: Henkel Turco Liquid/Sprayeeze NP-LT



X-tra pro 1200-4-WLT-R-Rot

Type: automatic X-tra line

Cleaning product: turbine parts after mechanical refurbishing

Cleaning result: final cleaning before and after FPT (Fluorescent Penetrant Testing)

Process: cleaning, DI rinsing cascade, warm air drying

Cleaning chemical: Henkel Turco Liquid/Sprayeeze NP-LT

Extras: rotation basket for critical parts



X-tra pro 1200-2-WLT

Type: automatic X-tra line

Cleaning product: turbine parts after wire eroding (EDM = Electrical Discharge Machining)

Cleaning result: intermediate cleaning

Process: cleaning, rinsing, drying, warm air drying

Cleaning chemical: Ardrex

Extras: rotation basket for critical parts



X-tra pro 1200-2-WLT

Type: manual X-tra Flex 1 with manual rinsing
Cleaning product: turbine parts after wire eroding (EDM=Electrical Discharge Machining)
Cleaning result: intermediate cleaning
Process: cleaning, manual rinsing, manual blowing off
Cleaning chemical: not specified
Extras: rotation basket for critical parts



X-tra pro 1200-2-WLT

Type: automatic X-tra line
Cleaning product: intermediate cleaning prior to FPT and final cleaning after FPT
Cleaning result: intermediate and final cleaning
Process: cleaning, rinsing, DI rinsing, warm air drying
Cleaning chemical: Henkel Turco Liquid Sprayeeze NP-LT
Extras: rotation basket for critical parts



X-tra XL 2700

Type: automatic X-tra line
Cleaning product: turbine parts after wire eroding (EDM = Electrical Discharge Machining)
Cleaning result: intermediate cleaning
Process: cleaning, rinsing, drying, warm air drying
Cleaning chemical: Ardrox
Extras: rotation basket for critical parts



Accessories and Special Equipment

Dryers WLT, VTD, IR

Hot air dryer, vacuum dryer, infrared dryer



- hot air dryers with or without HEPA filter
- user-friendly loading from the top
- digital display of set and actual temperature
- very safe due to integrated limit temperature monitor
- casing and inner chamber made of stainless steel
- extremely short drying period

Oil separators

ÖA100 and ÖA200



- bath care for oil emulsions
- prolonged service life
- increased cleaning power
- stable bath quality, therefore constant cleaning results
- lower consumption of fresh water and energy
- low consumption of chemicals
- increased bath capacity

Elmapur

Water processing units



Water processing units for the generation of DI water, re-osmosis water or pure water for recirculation systems in various sizes between 100 – 2400 l/h

Pump-filter aggregates

FP250 A / B / C



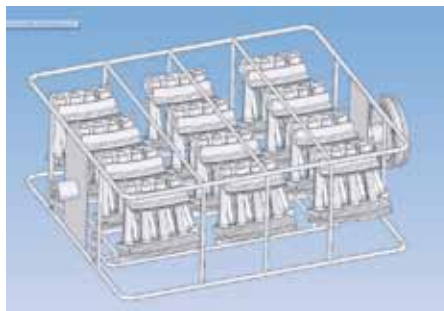
- dirt particle separator for a prolonged service period of cleaning baths
- increased cleaning power
- stable bath quality
- cost minimization due to reduced waste water quantities and low energy consumption
- suitable for various media
- available in 3 standard versions

Flow under immersion

Integrated stainless-steel jet juzzles for pressure flushing and turbulence rinsing for applications without ultrasound



Customer-specific fixtures



What Elma offers

Experience Many years of experience with ultrasonic cleaning for different applications

Worldwide Sales & Service Centers Constantly growing network of dealers and service centers

Widest range of products Serial units (table top tanks, stand alone units, manual cleaning process)
Modular standard cleaning systems (X-tra line)
Customer specific cleaning solutions (tailor-made systems)

**Process knowlegde
Process R&D** Elma cleaning chemicals but also validated chemicals can be used;
application laboratory for cleaning tests; process warranty

**R&D for ultrasonic
acoustic systems
Multifrequenz-Technology** multi-frequency technology
specialized ultrasonic modes (Sweep, Degas, Pulse)
microprocessor-controlled generator
devices to measure ultrasonic efficiency (Kavimeter)
control of cavitation field (phase control)

About us

Perfection and quality are highly important, not only for Elma but also and particularly so in the aerospace industry. To meet the high standards we provide top quality in all manufacturing stages from design and development to service and after sales service for our customers.

With our core competencies ultrasonic and steam cleaning technologies and our proprietary cleaning agents behind us we provide competent and reliable advice and tailor-cut cleaning solutions to our customers for even the most difficult cleaning tasks.

Our highly motivated international team of experts offers competent, solution-focused advice. For us, customer contact does not depend on physical proximity. It is an attitude.

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

Years of experience, innovative research and development and industry-specific know-how make us the partner of choice for you. Customer focus and understanding the needs of our clients are our basis for good and effective cooperation. We consider trust and reliability to be the foundation of a sustainable partnership.

We are hoping that by providing you with Elma products and services we are contributing to your success as reliable, competent partners.

