Elmasolvex®

Watch cleaning with certified Ex-protection



Elmasolvex® VA · Elmasolvex® RM · Elmasolvex® SE
elma wf pro · elma suprol pro

www.elma-germany.com

Elmasolvex® VA

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









Elmasolvex® VA with wide range of accessories

The new standard for the use of flammable solvents in watch movement cleaning.

- Ex-certified solvent-based cleaning of watch movements (TÜV Rheinland).
- Protection against solvent vapours and odours using extraction or self-contained filter system.
- Vacuum technology also reaches difficult-to-access places and removes gas bubbles 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 very easily accessible.
- Media containers are easy to replace and rinse out. Integrated particle filter for increasing the service life of the cleaning and rinsing solutions.
- Wide range of practical accessories; see accessories catalogue.

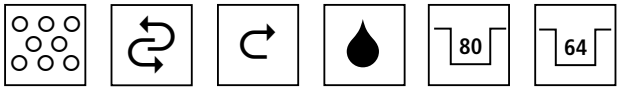
Ultrasonic and vacuum technology guarantees.

- maximum cleanliness due to removal of interfering gas bubbles.
- explosion safety due to the Ex-protection measures integrated in the machine.

Process:
Ultrasonic / vacuum process for solvents in the rotation or oscillation process

Solvent cleaning:
ex-certified for flammable solvents with flashpoint >= 12 °C;
e.g. elma wf pro, 3 x elma suprol pro, drying

Processes and media



Ultrasound | Oscillation | Rotation | Solvent | 80 mm baskets | 64 mm baskets



Filling cleaning and rinsing solution



Installing media containers



Connecting media containers



Controlled exhaust air routing

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.
Ultrasound achieves excellent cleaning results requiring only very short process times. However, technically, ultrasound must be considered as a heater which makes explosion protection a difficult technical requirement.

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. The use of ultrasound is thus legally possible and permitted. The TÜV test performed confirms the requirements for the use of the prescribed CE mark.



Filling baskets with watch parts



Selecting and starting program



Vacuum is established



Removing cleaned and dried baskets

Elmasolvex® RM - Automatic

Multiple-chamber technology for solvent and aqueous cleaning. TÜV-certified Ex-protection.









Elmasolvex® RM with wide range of accessories

Can proven technology be improved?

- TÜV-certified Ex-protection.
- Now with 4 cleaning chambers and one drying chamber (fine filter warm air technology).
- Completely automatic or alternatively with individually configurable parameters.
- Service-friendly and easy-to-care for design.
- Maximum personnel safety due to connection of the machine to controlled exhaust air routing.
- Basket frame for three baskets, optional holder for movements.
- Wide range of practical accessories; see accessories catalogue.

Process:
Rotation and oscillation process

Solvent cleaning:
flashpoint >= 23 °C; e.g. elma wf, 3 x elma suprol pro, drying

Semi-aqueous combination process:
e.g. elma 1:9, demineralised water, 2 x elma suprol pro, drying

Processes and media



Oscillation | Rotation | Solvent | Aqueous | 64 mm baskets



Filling and inserting media containers



Inserting basket with watch parts



Connection to controlled exhaust air routing



Starting program


INTENSITY
STEP TIME
Elmasolvex RM
05

Elmasolvex® SE - Manual

Multiple-chamber technology for solvent and aqueous cleaning









Elmasolvex® SE with wide range of accessories

Can a classic be invented again?

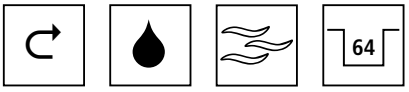
- TÜV-certified explosion safety.
- Now with 4 cleaning chambers and one heating chamber (fine filter warm air technology).
- Manual operation with latching in the working heights and above the media container positions.
- Service-friendly and easy-to-care for design.
- Basket frame for three baskets, optional holder for movements.
- Wide range of practical accessories; see accessories catalogue.

Process:
Rotation process

Solvent cleaning:
flashpoint from > 23 °C; e.g. elma WF pro, 3 x elma suprol pro, drying

Semi-aqueous combination process:
e.g. Elma 1:9, demineralised water, 2 x elma suprol pro, drying

Process and media





Inserting basket frame



Connecting to exhaust air routing



Preselecting setting



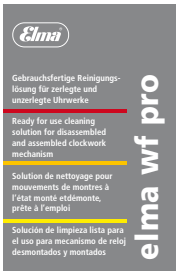
Raising, lowering and closing



elma wf pro and elma suprol pro

Cleaning and rinsing solutions. Reformulated, optimised for watch movement cleaning with ultrasound.

In addition to the requirements for optimum cleaning, the cleaning and rinsing solutions must also satisfy the requirements for environmental compatibility and proper disposal.
The reformulated „elma wf pro" and „elma suprol pro" characteristics for cleaning, deoxidation, rinsing and fast redrying have been optimised and thus have improved action and stability.





elma wf pro cleaning solution

- Stable microemulsion, particularly with regard to heating caused by ultrasound, entrainment of moisture and effects caused by vacuum.
  No milky or unwanted precipitation even after long usage.
- Optimised for ultrasonic cleaning.
- Tried and tested in vacuum cleaning.
- Strong deoxidising action and clear brightening for non-ferrous and precious metal alloys.
- Removes even highly resinified oils.
- Very high stability for water absorption with respect to humidity in tropical and subtropical climates or in the case of moisture traces on the parts to be cleaned.
- The moisture is removed from the workpieces. They are absolutely free of water after the cleaning and rinsing.

elma suprol pro rinsing solution

- New formula.
- Rinses off all residues of cleaning solution and removed contamination.
- Excellent distribution characteristics, fast drying.

Container sizes: 2.5 L, 10 L, 25 L • Refer to the safety data sheet for transport specifications and disposal instructions.

Technical Data	Elmasolvex VA	Elmasolvex RM	Elmasolvex SE
Dimensions and weights			
Machine external dimensions (mm)	Ø 600 mm, H 610 mm	WxDxH: 515 x 542 x 650 mm	WxDxH: 502 x 516 x 650 mm
Weight including media containers (kg)	39	28	19
Media container capacity / number of media containers	2.5 litre / 4	0.6 litre / 4	0.6 litre / 4
Cleaning basket diameter (mm)	80 or 64	64	64
Exhaust air connection	2x DN 6 mm (passive)	DN75 (passive) and R1" (active)	DN75 (passive)
Operating noise sound pressure level (LpAU)	< 70 dB		
Electrical Data			
Mains voltage variant (V AC / Hz)		230/50/60 or 115/60 or 100/50/60	
Total maximum power consumption (W)	220	260	260
Power consumption in standby (W)	20	5	10
Ambient temperature max. (°C)	30	30	30
Operation			
Number of programs	7 fixed, 13 freely definable	2 freely definable	1 freely definable
Ultrasound			
Switchable ultrasound frequencies (kHz)	40 / 80	-	-
Effective ultrasound power (W)	50, can be regulated 30% to 100%	-	-
Usable ultrasound	all process steps (cleaning, rinsing)	-	-
Cleaning media	Solvent	Solvent, aqueous	Solvent, aqueous
Rotation speed range in cleaning / rinsing mode (rpm)	1 to 20	visually adjustable	visually adjustable
Frequency rate oscillation/vibration (1/s)	1–14	visually adjustable	-
Deflection oscillation/vibration mode (°)	1–60	visually adjustable	-
Spinning speed range freely adjustable up to max. (rpm)	1400	1200	1200
Drying process	Vacuum, heater-supported	Warm air	Warm air
Accessories			
Individual basket external dimensions D/H (mm)	80/10 and 64/12	64/12	64/12
Number of individual baskets in the basket holder	5 or 3	3	3
Cleaning basket load capacity (all individual baskets together) max. (g)	100 or 60	60	60
Movement holder for partially dismantled movements max. capacity	12	6	6
Activated carbons unit	passive	active	active

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We reserve the right to make technical and visual modifications - ESVARMSE_GB_04/2013