

CLEANING · PASSIVATION · POLISHING · MARKING

METOX[®] 500 / 600

Electrochemical weld cleaning machines. They remove weld discolouration from stainless steel in seconds and passivate at the same time.



Seconds
TO A CLEAN SURFACE

One step
CLEANING +
PASSIVATION

100%
MADE IN TÜRKİYE

2 years
WARRANTY

ELECTROCHEMICAL WELD CLEANING

Remove weld discolouration in seconds and passivate at the same time

METOX weld cleaning machines are portable professional devices that remove heat tint after TIG/argon, MIG, laser and spot welding of stainless steel by an electrochemical process. They passivate the surface while cleaning and, depending on the model, also perform electropolishing and marking.

**The problem: heat tint**

Welding heat damages the chromium oxide layer that protects stainless steel and leaves blue–purple–yellow tint in the weld zone. This zone has lower corrosion resistance; rusting starts here first.

**The solution: controlled current + solution**

With controlled low voltage and METOX KTS 501 solution, the heat oxide layer is removed; the same reaction re-forms the chromium oxide layer.

Key features

**Instant cleaning**

Removes heat tint in seconds and restores the original colour.

**Passivation**

Restores corrosion resistance in the same step as cleaning.

**No marks**

No shade differences, swirl marks or dulling.

**Permanent marking**

Marks logos, serial numbers and CE marks on the surface.

**No HF acid**

A safer and more environmentally friendly method than acid gels.

**Portable**

7.4 / 11.2 kg; easy to use on site and in the workshop.

WORKING PRINCIPLE

How does it work?

- 1 Earth connection.** The METOX 508 earth clamp is attached to the workpiece, closing one side of the circuit.
- 2 Solution.** The carbon brush is dipped in METOX KTS 501, which acts as the electrolyte.
- 3 Contact.** The brush is moved over the weld; a low-voltage (14 V) current flows between brush and workpiece.
- 4 Reaction.** An instant electrochemical reaction dissolves the heat oxide layer at the contact point.
- 5 Passivation.** The same reaction re-forms the chromium oxide layer on the cleaned surface.
- 6 Rinsing.** The surface is rinsed with water; a neutraliser is applied if necessary.



METOX 500 / 600 with accessories and solutions

No surface damage: Grinding removes material and leaves swirl marks; electrochemical cleaning only removes the oxide layer and preserves the original finish.

AC and DC operation

AC

Cleaning and marking

As the current alternates, no material is removed; a colour change is produced. Surface roughness does not change, so it is preferred for food and pharmaceutical equipment. Available on METOX 500 and 600.

DC

Electropolishing and etching

Direct current removes material in a controlled way: electropolishing levels micro-peaks for a bright, smooth surface; etching produces a recessed permanent mark. METOX 600 only.

THE CORE MODEL

METOX 500

METOX 500 cleans welded stainless steel and saves time, labour and consumables. It instantly removes heat-tint stains from TIG (argon) welds and restores the original colour without shade differences or dulling.

Its marking system produces high-quality marks on stainless, galvanised, chrome and carbon steel, aluminium, brass, copper and titanium at a lower cost than laser systems.

- ✓ Weld cleaning and passivation
- ✓ Marking (AC)
- ✓ Light and portable: 7.4 kg



Technical specifications

Property	Value
Input	220 V, 50–60 Hz
Output	14 V AC
Protection class	IP23
Weight	7.40 kg
Dimensions (L×W×H)	260 × 142 × 120 mm
Functions	Weld cleaning · Passivation · Marking
Warranty	2 years

Set contents

Item	Qty
METOX 503 brush holder (1.5 m cable)	1
METOX 508 earth clamp (1.5 m cable)	1
METOX 502 carbon brush	3
METOX KTS 501 weld cleaning solution, 1 kg	1
METOX MS 505 marking solution, 1 kg	1
METOX 506 marking carbon	1
METOX 507 marking pad	1
METOX 510 marking O-ring	1



2-year warranty

Spare parts and consumables remain available beyond the warranty.



Made in Türkiye

Technical service and spare parts from Istanbul.



220 V

Runs on 50–60 Hz mains or a suitable generator.

THE NEW, MORE POWERFUL MODEL

METOX 600

METOX 600 cleans more powerfully than METOX 500. Its instant electrochemical reaction provides weld cleaning and surface passivation on all stainless steels without delay, swirl marks or dulling.

Thanks to DC current it electropolishes in seconds. Marking is done with an AC reaction and etching with a DC reaction.

- ✓ More powerful weld cleaning and passivation
- ✓ Electropolishing (DC)
- ✓ Marking (AC) and etching (DC)



Technical specifications

Property	Value
Input	220 V, 50–60 Hz
Output	14 V AC/DC
Protection class	IP23
Weight	11.2 kg
Dimensions (L×W×H)	330 × 230 × 200 mm
Functions	Weld cleaning · Passivation · Electropolishing · Marking · Etching
Warranty	2 years

Set contents

Item	Qty
METOX 503 brush holder (1.5 m cable)	1
METOX 508 earth clamp (1.5 m cable)	1
METOX 502 carbon brush	3
METOX KTS 501 weld cleaning solution, 1 kg	1
METOX POL 511 polishing solution, 1 kg	1
METOX MS 505 marking solution, 1 kg	1
METOX 506 marking carbon	1
METOX 507 marking pad	1
METOX 510 marking O-ring	1



2-year warranty

Spare parts and consumables remain available beyond the warranty.



Made in Türkiye

Technical service and spare parts from Istanbul.



220 V

Runs on 50–60 Hz mains or a suitable generator.

MODEL SELECTION

METOX 500 or METOX 600?

	METOX 500	METOX 600
Weld cleaning	✓	✓ (more powerful)
Passivation	✓	✓
Marking (AC)	✓	✓
Electropolishing (DC)	—	✓
Etching (DC)	—	✓
Output	14 V AC	14 V AC/DC
Weight	7.40 kg	11.2 kg
Dimensions	260 × 142 × 120 mm	330 × 230 × 200 mm
Polishing solution in set	—	✓ (POL 511)
Warranty	2 years	2 years

METOX 500**Choose it if...**

- ✓ Your welds are short and volume is low
- ✓ Cleaning, passivation and marking are sufficient
- ✓ You need a light, compact machine (7.4 kg)

METOX 600**RECOMMENDED****More powerful, faster, more versatile**

- ✓ Your welds are long and volume is high
- ✓ You want stronger, faster cleaning
- ✓ You need electropolishing and etched marking
- ✓ You want every function in one machine

Rule of thumb

METOX 500 is sufficient for short welds and low volume. For long welds, high volume and the best result we recommend METOX 600: stronger cleaning, electropolishing and etching in one machine.

APPLICATION

Operating steps · METOX 500

- 1 Surface preparation.** Remove oil, dust and coarse dirt; the reaction does not work properly on oily surfaces.
- 2 Connections.** Attach the METOX 508 earth clamp to a clean metal spot on the workpiece and connect the METOX 503 brush holder to the machine.
- 3 Brush preparation.** Fit the METOX 502 carbon brush to the METOX 503 holder; use the METOX 504 PTFE sleeve in narrow areas.
- 4 Switching on.** Plug in and switch on the machine. The METOX 500 on/off switch is on the rear panel, just above the power cable inlet.
- 5 Solution.** Dip the brush in METOX KTS 501 weld cleaning solution.
- 6 Cleaning.** Move the brush evenly over the weld; do not press, contact is enough. Dip the brush in the solution frequently.
- 7 Rinsing.** Rinse the surface with plenty of water.
- 8 Marking.** Fit the METOX 506 carbon, place the METOX 507 pad and the stencil, fix with the METOX 510 O-ring and use METOX MS 505.
- 9 After work.** Switch off the machine; clean the brush and accessories with water and store them dry.

**On/off switch**

On the rear panel, just above the power cable inlet.

**No training required**

The welder can use it after a short introduction.

APPLICATION

Operating steps · METOX 600

- 1 Surface preparation.** Remove oil, dust and coarse dirt; the reaction does not work properly on oily surfaces.
- 2 Connections.** Attach the METOX 508 earth clamp to a clean metal spot on the workpiece and connect the METOX 503 brush holder to the machine.
- 3 Brush preparation.** Fit the METOX 502 carbon brush to the METOX 503 holder; use the METOX 504 PTFE sleeve in narrow areas.
- 4 Switching on.** Plug in and switch on with the red on/off switch on the right of the front panel.
- 5 Mode selection.** Turn the rotary mode switch on the left of the front panel to the left for weld cleaning / marking (AC). The centre position is standby.
- 6 Solution.** Dip the brush in METOX KTS 501 weld cleaning solution.
- 7 Cleaning.** Move the brush evenly over the weld; do not press, contact is enough. Dip the brush in the solution frequently.
- 8 Rinsing.** Rinse the surface with plenty of water.
- 9 Polishing.** Turn the mode switch to the right for polishing / marking (DC), use METOX POL 511 polishing solution and apply in the same way.
- 10 Marking / etching.** With the mode switch on the left (AC) for surface marking, on the right (DC) for etched marking; use the METOX 506 carbon, 507 pad, 510 O-ring and METOX MS 505.
- 11 After work.** Switch off the machine; clean the brush and accessories with water and store them dry.



Front panel

Red on/off switch on the right. Rotary mode switch on the left (red or green): left – cleaning / marking (AC), centre – standby, right – polishing / marking (DC).



Mains and generator

220 V, 50–60 Hz; can be used on site with a suitable generator.

COMPARISON

Grinding, pickling and electrochemical cleaning

	Grinding / brushing	Chemical pickling	METOX 500 / 600
Method	Mechanical abrasion	Acid dissolution	Controlled current + solution
Removes tint	Yes (visually)	Yes	Yes
Removes Cr-depleted layer	Partly	Yes	Yes
Passivation	Separate step	Separate step	Same step
Surface finish	Swirls, shade differences	Uniform matt	Original finish
Material loss	Yes	Micron level	Negligible
Waste	Dust	Acidic waste water	Limited solution waste
Portability	High	Low (bath)	High
Spot work / site repair	Suitable	Difficult	Best
Running cost	Discs, wheels	Chemicals + waste	Solution + brush

Conclusion: Chemical pickling (METOX S-3000 / M-1000) suits large-surface series production; electrochemical cleaning suits spot work and site repairs. Grinding alone is not sufficient where corrosion resistance is required.

Which metals?

Material	Weld cleaning and passivation
304 / 304L	Heat tint fully removed
316 / 316L	The most common application
Duplex (2205), super duplex	Applicable; different parameters
904L, 254 SMO	Applicable; longer time
Ferritic (430)	Applicable

MARKING

Permanent, low-cost marking

METOX 500 and 600 permanently mark logos, text, serial numbers, material grades and CE marks on metal surfaces using a stencil prepared for your company — at much lower investment and running cost than laser systems.

1 · Stencil

A stencil is prepared for your logo or text.

**2 · Set-up**

Fit METOX 506 carbon, 507 pad and 510 O-ring; use MS 505 solution.

**3 · Marking**

The stencil is placed on the surface and the tool held on it for a few seconds.

**AC marking (500 / 600)**

Produces a dark mark without removing material or changing roughness; suitable for food and pharmaceutical equipment.

**DC etching (600)**

The mark is recessed into the surface and is more resistant to wear and cleaning.

Markable materials

Stainless steel

Galvanised steel

Chrome steel

Carbon steel

Aluminium

Brass

Copper

Titanium

Marking kit

506

Marking carbon

507

Marking pad

510

Marking O-ring

MS 505

Marking solution

Typical uses: Product logos, permanent marks instead of rating plates, serial and batch numbers, material grade (e.g. AISI 316L), CE marks, direction and warning symbols.

CONSUMABLES

METOX solutions

The only recurring costs are the solutions and occasional carbon brush replacement. The solutions are supplied in 1 kg and 5 kg packages; shelf life is 12 months in the original packaging.



METOX KTS 501

Electrochemical Weld Cleaning Solution

METOX KTS 501 is a phosphoric acid-based weld cleaning solution specially formulated for use with METOX 500 and METOX 600 electrochemical weld cleaning machines.

Appearance	Red, clear liquid
pH	< 1
Relative density (20 °C)	≈ 1.1 – 1.25 g/cm ³
Compatible machines	METOX 500, METOX 600
Shelf life	12 months in original packaging



METOX MS 505

Electrolytic Marking Solution

METOX MS 505 is an electrolytic marking solution developed for permanent marking of logos, text, serial numbers and CE marks on metal surfaces with METOX 500 and METOX 600 machines..

Appearance	Colourless, clear liquid
Relative density (20 °C)	≈ 1.10 g/cm ³
Marking type	AC (colour change) / DC (etching)
Compatible machines	METOX 500, METOX 600
Shelf life	12 months in original packaging



METOX POL 511

Electropolishing Solution

METOX POL 511 is a phosphoric acid-based polishing solution developed for electropolishing stainless steel surfaces and welds with the METOX 600 electrochemical weld cleaning machine in DC mode..

Appearance	Blue, clear liquid
pH	< 1
Relative density (20 °C)	≈ 1.6 g/cm ³
Compatible machine	METOX 600 (DC)
Shelf life	12 months in original packaging

ACCESSORIES

Spare parts and accessories

All spare parts and accessories are available individually. Supply of spare parts and consumables continues independently of the warranty period.

**METOX 502**

Carbon brush

**METOX 503**

Brush holder

**METOX 508**

Earth clamp

Code	Item	Description
METOX 502	Carbon brush	Cleaning tip; 3 pcs in set
METOX 503	Brush holder (1.5 m cable)	Hand tool carrying the carbon brush
METOX 504	PTFE sleeve	Prevents short circuits in narrow corners and concentrates cleaning power
METOX 506	Marking carbon	Marking tip
METOX 507	Marking pad	Carries the solution during marking
METOX 508	Earth clamp (1.5 m cable)	Closes the circuit on the workpiece
METOX 509	Power cable	Spare connection cable
METOX 510	Marking O-ring	Fixes pad and stencil

BENEFITS

Benefits of weld cleaning machines

Electrochemical weld cleaning replaces grinding and pickling gels with a faster, cleaner and more economical method. The welded surface is cleaned and protected against corrosion again.

SecondsCLEANING AND
PASSIVATION**One step**

CLEAN + PASSIVATE

0SWIRLS, SHADING,
DULLING**2 yrs**

WARRANTY

**Saves time**

Cleaning and passivation in one pass; no waiting, second process or extra rinse.

**Flawless finish**

No material removal; the original finish is preserved and no rework is needed.

**Lasting corrosion protection**

The chromium oxide layer re-forms in the same step, reducing rust risk.

**Low running cost**

No grinding discs or acid waste; only solution and an occasional brush.

**Use anywhere**

Portable for workshop, site and installation work. No bath or crane needed.

**Safer working**

No need for HF-containing gels; minimal chemical use.

Industries

Food, dairy and beverage

Pharma and chemical

Stainless fabrication

Machinery and energy

Purchasing and support

Request a quotation for current prices and set contents. Machines and all consumables are also available in our online shop. METOX 500 and 600 carry a two-year warranty.



We support your weld cleaning.

Contact our technical team for model selection, trial applications, marking stencils and consumables supply.

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METOX 500

Cleaning · passivation · marking

METOX 600

+ electropolishing · etching

METOX KTS · MS · POL

Machine solutions