

Ontbraammachine/Entgratanlage/ Deburingmachine

€	-	prijs per stuk / each		
€	10.000,00	totaalprijs / total amount		prijs / price
code 1732-3			excl.	TRANSPORT / BTW / VAT/as is where is
Omschrijving/description	CAT A	GLD		Holland

Elektrolitische Ontbraammachine voor complexe productgeometrie en moeilijk toegankelijke delen zoals inwendige schroefdraad en achtersnijdingen. Daarbij wordt gebruikgemaakt van de ECM - technologie(electro chemical machining).Type machine ECM 400-30-E. Documentatie en manuals zijn beschikbaar.

Elektrochemische Bearbeitungsanlage zur entgraten und feinbearbeiten von komplexe werkstücke auf Basis van Elektrolytische Metallbearbeitung. Type ECM 400-30- E. Technische Unterlagen stehen zur verfügung

Electrolytic Machining, Deburing and Polishing machine, Type ECM 400-30-E. Complete documentation and manuals are available

www.extrudehone.de





Electrolytic Machining ECM

We do more than just deburr.

*Selective Deburring,
Contouring and
Polishing to the Highest
Surface Quality.*



Electrolytic Machining, Deburring, and Polishing (ECM/ECD/ECP)

Extrude Hone's electrolytic technology provides fast, accurate, and highly controllable surface finish improvements for your precision workpieces. Our electrolytic process can machine, deburr, and polish surface locations previously unreachable by other methods, including manual work.

The electrolytic process removes metal without direct contact between the tool and workpiece through the dissolution of surface atoms. In adhering to Faraday's law of electrolysis, this selective metal removal process ensures the amount of material removed is proportional to the time and intensity of an electrical current flowing between the tool and workpiece.

While ECM, ECD, and ECP are essentially the same process, they are used to achieve slightly different results or objectives depending upon your workpieces:

Process Features at a Glance:

- High-precision deburring and edge radiusing at pre-defined points
- Straightforward machining at hard-to-reach areas
- Deburring and contouring in a single operation

• ECM – Electrolytic Machining:

Used to machine workpieces with unique contours or specific edge geometries that normally cannot be produced by conventional machining methods, such as the internal galleries of diesel fuel injector nozzles, recesses in gear teeth of synchronizers, and rifling inside gun barrels.

ECM Calibration

Our ECM process is also capable of calibrating flow resistance. Example: Break-through edges of drilled cross-holes are deburred and radiused while flow-volumes through the bores are simultaneously metered – two important and necessary operations performed in a single step!



The fuel gallery of a diesel fuel injector is machined using ECM. The unique ability to precisely machine fixtures to isolate passages makes ECM a valuable tool for many industries.

• ECD – Electrolytic Deburring:

Used to deburr holes and edges in difficult to reach locations on such workpieces as drilled break-through holes on the interior surface of air bag propellant systems and cross-drilled holes inside manifold blocks or to radius edges on gear teeth.

Provides high-quality polishing of complex 3D contour milled surfaces such as found on medical implants and biopharmaceutical diaphragm valves.



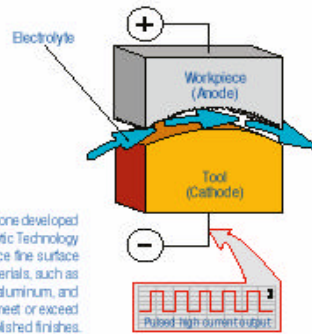
ECM processing can produce exceptional surface finishes on a wide variety of materials. This aerospace sample with its 5° chamfer was machined on a cast – and CNC cut – non-ferrous alloy using Electrolytic Polishing (ECP). The finish went from an R_a of 2.0 µm to 0.5 µm in 25 seconds.



The deburring fixture plays a major role in ECM processing and is matched to the workpiece to be machined. Finally, it is the fixture which determines the deburring result.

Designing deburring fixtures is one of our core competences, based on many years of experience, as well as practical know-how. Deburring fixtures are designed and manufactured in-house and tested until they produce results which meet our customer's expectations. The result: **Quality without compromise.**





Electrolytic Machining ECM



We do more than just deburr.



Interior bore intersections can be perfectly ECM-machined.

The Electrolytic Process

In electrolytic machining, metal is removed without direct contact between the tool and workpiece. The electrolytic equipment uses a programmed, low-voltage direct current (DC) while a conductive electrolyte solution flows between the tool (cathode -) and workpiece (anode +).

The exchange of charge between the poles leads to material removal, atom by atom, in precisely defined areas.

Auxiliary Equipment and Accessories

Our customers can obtain everything they need from a single source: complete deburring and surface finishing systems with all the necessary peripherals such as pre and post-treatment systems, chamber filter presses, industrial coolers and chillers, gauging, workpart handling and much more. Precision aqueous cleaning systems for post-processing complement our product range.

Automated Systems – Tailored to Customer's Requirements

Automated Standard Solutions

Extrude Hone's ECM equipment is very flexible and can easily be configured with robots and other automation equipment to achieve extremely high production rates.

"SysLine" Series

For high-volume production we also supply automated systems with integral process technology comprising pre-treatment, EC processing, post-treatment and media conditioning in a totally-enclosed system.



Fully automated ECM system, "SysLine" series, for high-volume production.

ECM Machines

Extrude Hone offers a broad selection of ECM machines to cover a full range of applications and customer needs.

EcoLine

This space-saving ECM machine with a single workstation is suitable for batch production and incorporates maximum economy with minimum machine space, providing an outstanding cost-benefit ratio.

ECLine

With its modular configuration, the ECLine series offers a broad array of options. The unit contains all of the functions required for deburring and contour machining of precision metal parts. Various automation configurations also make the system suitable for high-volume production.

The series is also available with two working stations.

ECM provides a highly controllable, yet cost-effective method of machining and polishing high quality surfaces and edges.



The ECM processing is also available through our Contract Finishing Services.

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CoolPulse™ ECM

We create perfection in detail.

*Fast Surface Polishing
and Removal of
Micro-Burrs Without
Impairing Part Integrity.*



"CoolPulsed"
bone plate

Process Features at a Glance:

- Low operating costs – no conformal tooling required
- Fast set-up – typically in minutes
- Safe operation – no harmful chemicals or acids
- Consistent production finishing – thousands of parts
- Repeatable and reliable results – easy-to-control process
- Simple operation – no special skills required

Perfect Finishing

CoolPulse is a unique electrolytic deburring and polishing process that allows manufacturers of small, complex, or delicate parts to greatly improve product quality. The process delivers micro-burr removal and electropolish-like results on small parts without the need for unstable, heated acid solutions.

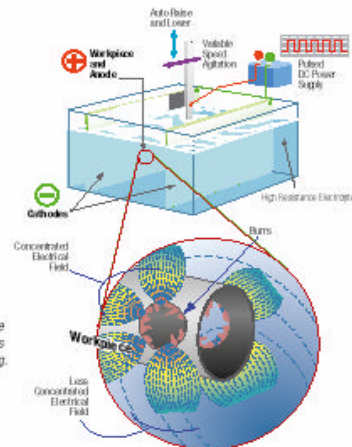
This innovative process provides surface finishing free from stresses, abrasion and distortion because no close-fitting electrodes are used. The process is therefore especially suitable for precision deburring and polishing of small and fragile parts such as medical/ surgical instruments and other high-precision components.

The CoolPulse Process

The unique CoolPulse process uses a specially formulated electrolyte solution with a computer-controlled DC pulse power source. The electrolyte is chilled, non-fuming/ odourless and near pH neutral.

This electrolyte solution has a high electrical resistance. When a machined workpiece is immersed in the solution and a pulsed, low DC voltage charge is applied between the part and a stationary cathode, an electrostatic charge is concentrated at any sharp features – i.e. the burrs of the workpiece.

The CoolPulse ECM processing is also available through our Contract Finishing Services.



CoolPulse is an innovative electrolytic process for surface finishing.

In the area of concentrated electrical field, burrs are dissolved and flushed away by the electrolyte. By applying the voltage in controlled pulses, it is possible to provide a polishing effect concentrating on the edges only, or over the entire workpiece.

CoolPulse is compatible with most workpiece materials such as mild steel, cast iron, stainless steel, aluminium, magnesium, etc.

Normally, the process duration lies in the range 15 seconds to 3 minutes.

CoolPulse – Five Key Functions:

Deburring, polishing, stress-relieving, cleaning and passivating – all in a single finishing process:

- Selective removal of micro-burrs, also on internal surfaces and edges, without impairing part integrity
- Material stress relief through overall surface improvement
- Super polishing of surfaces
- Surface cleaning through elimination of free-iron (rust) particles
- Stainless steel passivation as rust and corrosion inhibitor



before after