

# ELECTRO FINISHING TECHNOLOGY

## A SHINING SUCCESS WITH SUSTAINABLE TECHNOLOGY



SURFACE PERFECTION REINVENTED

OTEC's latest-generation machines take surface processing to a whole new gloss level. For complex geometries and additively manufactured parts, the OTEC Electro Finishing Technology offers the perfect complement to the established mass finishing processes. Delivering high-gloss results even in hard-to-reach areas. With over 25 years of experience for perfect surfaces, stainless steel, steel, brass, silver, cobalt chrome and titanium are efficiently polished.



More information

### OTEC Electro Finishing – the Perfect Finishing Solution

#### Delicate components

- Low mechanical stress on workpieces
- No bending or breakage
- Lightweight and delicate holder design possible due to the low forces acting in this process
- Uniform smoothing and minimal edge abrasion

#### Sensitive and soft materials

- No micro-scratches
- Improved corrosion resistance thanks to Electro Finishing
- No impact on microstructure
- Clean, neat surfaces after processing

#### Complex geometries

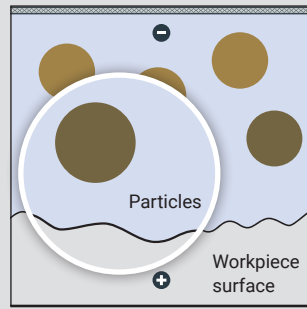
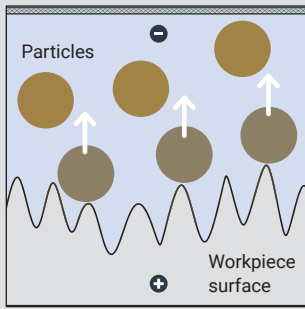
- Reaches deep areas of the workpiece, even with complex geometries
- Minimal media jamming thanks to tiny spherical finishing particles and/or pure liquid
- Achieves roughness values as low as Ra 0.01  $\mu\text{m}$

### OTEC Electro Finishing – leading-edge innovation

- Low per-component energy consumption
- Custom process definition with efficient parameters
- Suitable for use by non-specialist personnel as it is not irritating to the skin
- No high currents or voltages (up to 60 V)
- Easy, ergonomic machine handling
- Replaces manual work, thereby covering costs quickly
- OTEC as a worldwide, reliable partner with a partner network



## Operating principle



In the electrolyte, functional particles move in an electrolytic (conductive) liquid. By applying an electrical voltage between the cathode (-) and anode (+), metal ions are dissolved out of the workpiece surface in the liquid. The functional particles and the electrolyte absorb the dissolved ions.

### Result:

**The metal surface of the workpiece is gradually smoothed to perfection, right down to the tiniest radii.**

## The OTEC Electro Finishing Process

Unlike conventional electrochemical polishing, this technology involves the workpieces moving (rotating) through the abrasive, thereby ensuring that the abrasive is circulated uniformly around them. The OTEC Electro Finishing Process uses special polymer particles suspended in an ionically conductive liquid.



Jewellery (brass)



Bone plates (titanium)



Knee joint (cobalt chromium)



Valve balls (stainless steel)

**See the OTEC high-gloss results for yourself!**

**We develop custom solutions to suit your specific requirements in our Finishing Center.**

Your local  
OTEC Partner



As a trusted global partner for perfect surfaces, OTEC builds innovative finishing machines which set high standards and achieve perfect process reliability. Revolutionising manual processing applications results in precise and consistent quality in the shortest possible process time.

Smooth surfaces every time, defined rounding results, the removal of burrs and a perfect sheen are decisive competitive advantages in almost all industrial sectors. In particular that means saving energy as well as extending the service life and increasing the durability of parts.

**OTEC machines with the "Made in Germany" seal of quality stand for dependable technology, high-quality workmanship, reliable operation and a long service life.**

**OTEC**  
PRECISION FINISHING SOLUTIONS

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