

## ELECTROLYTIC POLISHING VS. PLASMA POLISHING

	<b>Electrolytic Polishing</b>	<b>Plasma Polishing</b>
<b>Electrotechnical/ physical attributes</b>	<ul style="list-style-type: none"> <li>• Operating voltage 0V - 20V DC</li> <li>• Current density 0.05 - 0.5 A/cm<sup>2</sup> adjustable</li> <li>• 24KW with a bath volume of 600l</li> <li>• Bath temperature 40 - 65°C</li> </ul>	<ul style="list-style-type: none"> <li>• Operating voltage &gt; 200V DC</li> <li>• Current density 0.12 A/cm<sup>2</sup> not adjustable</li> <li>• 100 KW with a bath volume of 600l</li> <li>• Bath temperature 85 - 95°C</li> </ul>
<b>Chemical characteristics</b>	<ul style="list-style-type: none"> <li>• Use of a highly concentrated acid as electrolyte (phosphoric and sulphuric acid)</li> <li>• pH value: approx. 1</li> </ul>	<ul style="list-style-type: none"> <li>• Use of non-toxic compounds in low concentrations</li> <li>• The electrolytes are environmentally friendly</li> <li>• pH values: 3.5 - 7.5</li> </ul>
<b>Pretreatment</b>	<ul style="list-style-type: none"> <li>• The parts must be cleaned and degreased</li> <li>• In some cases pickling is necessary</li> </ul>	<ul style="list-style-type: none"> <li>• No cleaning required</li> <li>• No pickling required</li> </ul>
<b>Polishing time</b>	<ul style="list-style-type: none"> <li>• 5 - 20 min</li> </ul>	<ul style="list-style-type: none"> <li>• 1 - 5 min</li> </ul>
<b>Material removal rate and surface modification</b>	<ul style="list-style-type: none"> <li>• 15 - 60 µm/minute</li> <li>• Rounding of edges and cut surfaces</li> <li>• Improvement of corrosion resistance</li> </ul>	<ul style="list-style-type: none"> <li>• 3 - 6 µm/minute</li> <li>• Minimal rounding of edges and cut surfaces</li> <li>• Very good geometric precision</li> <li>• Improvement of corrosion resistance</li> </ul>
<b>Achievable roughness RA (µm)</b>	<ul style="list-style-type: none"> <li>• Reduction of roughness RA up to 50 %</li> <li>• approx. 0.2 µm realizable</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of roughness RA up to 85 %</li> <li>• approx. 0.03 µm realizable</li> </ul>
<b>Aftertreatment</b>	<ul style="list-style-type: none"> <li>• The parts must be freed from acid residues</li> </ul>	<ul style="list-style-type: none"> <li>• The parts are rinsed with water</li> </ul>