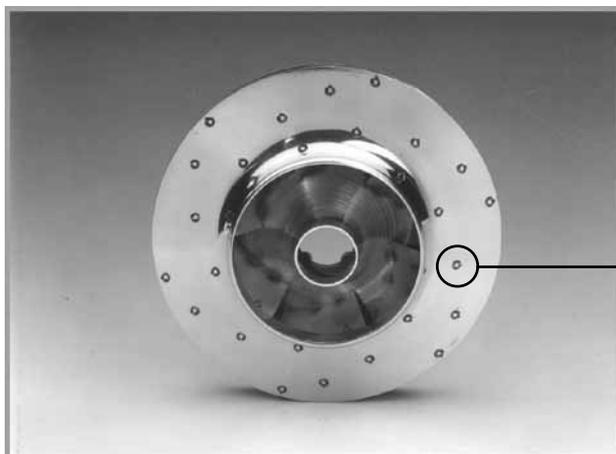
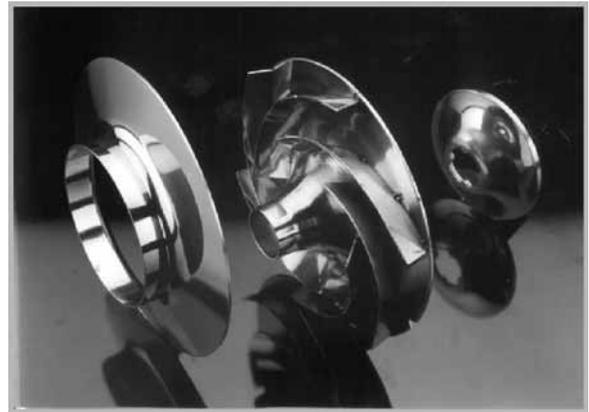
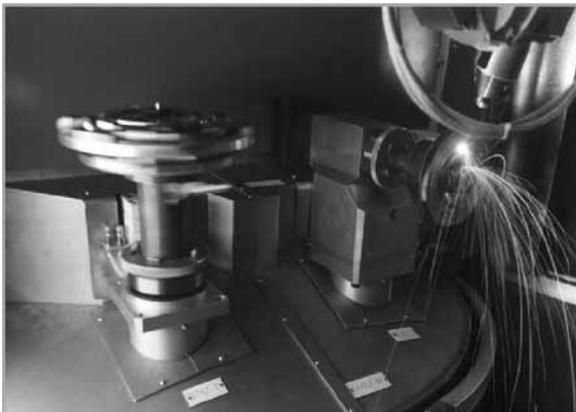


## e-SV™ Series

# e-SV™ Advantage: Laser Welding

### Features

- Less deformation of welded components, due to lower thermal energy needed for the welding procedure (compared to other appropriate welding manufacturing processes).
- Reduced thickness of weld area, which means lower change of the material properties; the result is a lower surface area exposed to the attack of chemical/aggressive agents
- Better mechanical resistance (bending, torsion) in joints and flanges Milliseconds long pulses are used to weld thin materials such as razor blades while continuous laser systems are employed for deep welds.
- Extremely small technical deformations in the welding areas.



*Laser welding on  
46SV impeller:  
spot welding  
follows impeller  
blades all along  
the profile*

# e-SV™: versions for Applications Requiring Special Material Treatment

## **Electropolishing of Stainless Steel**

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Electropolishing is used as a replacement for mechanical finishing, polishing, buffing and mass finishing. In addition to making a part's surface smoother, it also eliminates damaged surface areas and those that have been contaminated by foreign metals, as well as the stresses and micro-cracks contained in them, thus improving the physical characteristic of the metals and alloys.

Process starts with metal part is immersed in a liquid media and subjected to Direct Current. The metal part is made anodic (+). The Direct Current flows from the anode to the cathode removing metal ions at a controlled rate. Electropolishing removes metal from the surface producing a unidirectional pattern that is stress-free, microscopically smooth and often highly reflective.

### **Benefits**

- Passivity of base material
- Deburrs – easily cleaned after repeated use
- Remove surface defects – prolonged service life
- Smooths – lower surface friction
- Brightens – almost perfect decorative finish
- Stress relief of welded areas
- Redefines oxide layer – improves corrosion resistance
- Removes surface contaminants – cleans the material

## **Passivation of Stainless Steel**

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Passivation is the chemical treatment of stainless steel with a mild oxidant, such as a nitric acid solution, for the purpose of enhancing the spontaneous formation of the protective passive film. The protective passive film mainly comprises chromium oxides and hydroxides, it is self-repairing and guarantees metal protection.

The passivation process begins with a cleaning cycle, the removal of oils, greases, lubricants, coolants, cutting fluids and other undesirable organic and metallic residues generated by the fabrication and machining processes. General degreasing and cleaning can be accomplished many ways, including vapor degreasing, solvent cleaning and alkaline soaking. After removing organic and metallic residues, the parts are placed into a nitric-acid-based solution.

### **Benefits**

- Brightens – improves decorative finish
- Stress relief of welded areas
- Limits the oxide layer – improves corrosion resistance
- Removes surface contaminants – cleans the material

*For more information,  
visit us at:  
[www.lowara.com](http://www.lowara.com)*