



**Machine design**

## Robot Polishing Machine / RAP

The industrial acknowledgement of functional surfaces has never been higher, and this includes surface polishing. STRECON A/S has developed a new type of machine system, which is designed for semi-automatic polishing of tools and machine components that require consistent, repetitive, and high-quality surface finishing. The technology is marketed as RAP® and stands for Robot Assisted Polishing. The skilled craftsman is setting and controlling the polishing equipment for the different parts as opposed to doing the polishing work by hand. The process programming is based on read-in capabilities of CAD files, and RAP polishing is programmed specifically for the selected geometrical surfaces.

The machine system is offered with two different polishing methods, namely oscillation (pulsation) or rotation (rotating spindles). The contact between the workpiece and the polishing tool is pneumatically controlled. For the method of pulsation used for polishing of rotation-symmetric parts, the polishing module has a speed up to 2000 strokes/min. and a variable stroke length up to 2 mm. The pulsation module with a variable stroke length up to 5 mm has a speed limit of 400 strokes/min. For spindle polishing the speed can be up to 10.000 rpm.

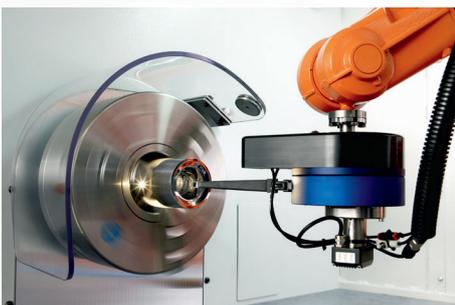
The RAP machine can polish surfaces as fine as Ra 0,02-0,04 µm, and Rz below 0,1 µm. The machine can principally polish all kinds of pre-machined surfaces and all kinds of materials. In other words, the equipment can fulfill the needs for high-quality surface polishing of a broad range of industrial parts.

### Use in Industry

The new RAP polishing equipment is intended for high-end companies, which has a need for a fully controlled, traceable, and quality consistent surface polishing process. The RAP technology reduces significantly the dependency on individual craftsmen, and offers the possibility to program and store the optimal polishing process for the individual part.

The RAP machine is applicable for polishing of tools used for various metal forming applications, molds for plastic injection, machine components like tubes, discs, etc.

The RAP machine is available for 2D polishing but still in development for parts with 3D geometry. There may apply restrictions of certain part sizes and geometry. For specific inquiries, please contact STRECON for further information.



*Robot polishing of a steel die for metal forging*



*Examples of parts polished by 2D pulsation*



*Specimen polished by 2D spindle polishing*