

Perfect surface finishing gives ceramic axles a long service life

Ceramic pins are now used in areas where metals were previously used. Just a few decades ago, applications that are taken for granted today were not considered to be possible. However, just because the more expensive product is chosen does not necessarily make it the best. Only the perfect Gerber finishing of the surface gives the material a long life and constant performance.

It is unbelievable in which sectors and areas of application ceramics are used today. The broad spectrum shows us the diversity of our enquiries. A clear sign that top material has to be increasingly chosen in order to meet the high demands of technology. However, it is also worth investing in more expensive where the service life is considerably longer.

In medical technology, ceramic materials have been used years as replacements for bones or even teeth. Here, the great mechanical strength and wear resistance as well as the high compatibility with living tissue are of great importance.

mands on components such as bearings, turbocharger turbine blades and engine parts are increasing. The best-known applications, however, are the components used as insulators, e.g. in spark plugs.

Ceramic materials also dominate in bearing and sealing technology. Ceramic materials can be used as bearing shells of gas turbines with speeds of several thousand revolutions per minute. In pumps, mechanical seals made of ceramic seal the shaft feedthroughs through the pump housing from the outside world against corrosive and abrasive media.

A major field of application for ceramic pieces are the so-called hot applications. These include firing systems, which withstand unimaginable operating temperatures of up to 2500 degrees without fatigue. Due to the ever-higher temperatures to be aimed for in combustion engines, development applications and de-

To name just a few fields of activity from the wealth of applications for ceramics. As you can see, ceramics are the new metal or carbide.

People invest in high-quality materials such as ceramics when they have to be perfect and the highest precision is required. Due to their

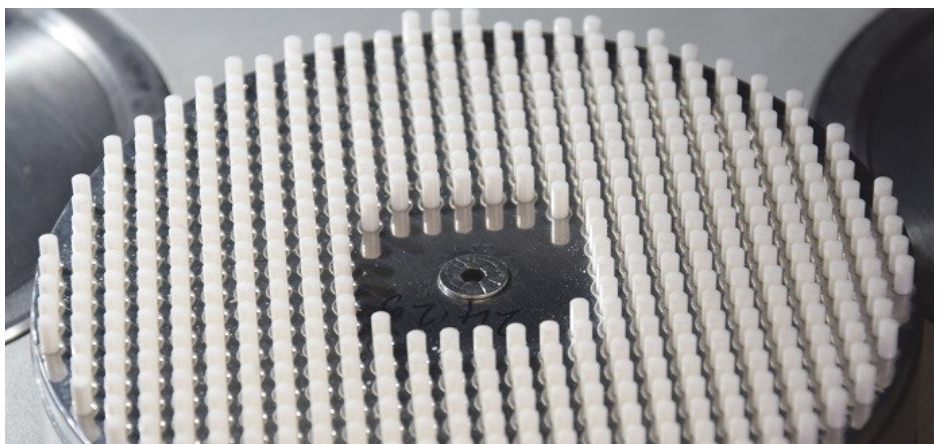
DIE RENÉ GERBER AG

The Gerber brush polishing machines and deburring systems are used when it is necessary to deburr flat workpieces or workpieces with indentations or pockets with high precision and to round them off in a defined narrow tolerance range. At the same time, the surface roughness is quite significantly improved by the process. This technology is incorporated in a large number of precision components where absolute absence of burrs and undamaged surfaces are a must.

With 65 years of experience, René Gerber AG is the technology leader in brush deburring, edge rounding and polishing and thus your trusted partner for processing ceramics.

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inorganic, non-metallic and crystalline nature, ceramic parts are extremely durable, wear less and offer consistent performance in engines at very high speeds.

The parts that we would like to introduce to you in this application report are axles that are used in small gearboxes and electric motors, mainly in medical technology.

The technical challenge of post-processing or finishing a ceramic component to create the perfect part increases with its size and shape. The task is difficult in that it requires perfect and targeted honing and polishing of the end faces and axle ends and not, as in barrel finishing, where all sides are machined. This is where the Gerber brushing process comes to the fore, because only a perfectly machined ceramic part beats high rotational speeds and the associated high friction.

The BP-MX brush polishing machine is ideally suited for achieving this goal and delivers outstanding results. Surfaces as well as slightly curved parts are machined on a planetary polishing table. The rotating movements of the polishing table, work-piece carriers and brushes ensure that the desired edges are evenly rounded. At the same time, the entire face swept by the brush is also polished,

Efficient and reliable edge preparation and polishing, these are the features of the BP-MX from René Gerber AG.

We are not just good at machining ceramic parts; we are very good at it! We are your partner in machining ceramics!

Task formulation: Perfect axle rounding and face polishing

Part designation	ceramic axles (pins)
Industry	Medical technology
Application	small gearboxes, electric motors, drives for dialysis machines
Machine	BP-MX (rotation in cages, individually equipped)
Capacity	2700 axles
Processing time	30 minutes, that is 0.66 seconds per part

