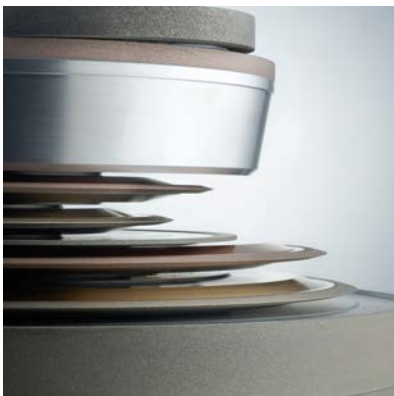


Grinding wheels and grinding pencils,  
diamond and CBN tools.

 **HAEFELI**  
— Swiss grinding tools —

The best Swiss quality – from the  
biggest orders to the finest details.





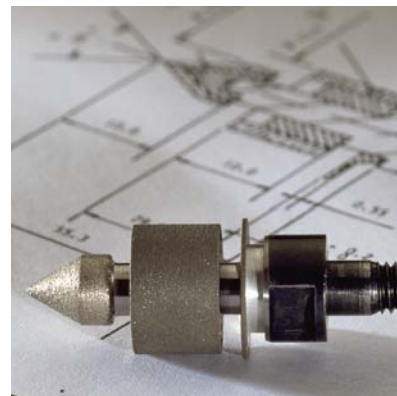
### Grinding wheels

We produce Haefeli precision grinding wheels in a wide range of diamond or CBN bonds. Depending on the model and intended use, we work with a range of diameters: between 6 mm for peripheral wheels and 400 mm for conical wheels. We'll provide you with the right grinding wheel for machining a highly diverse range of materials such as carbides, HSS, cermet, technical ceramic, quartz, glass and much more. Haefeli tools are available off-the-shelf as standard tools or can be custom made for internal or external grinding, surface or cylindrical grinding, profile or jig grinding. To make them, we rely on around 400 of our own bond formulas, in which we implement sintering processes with diamond or CBN granules. The result is Haefeli Swiss grinding tools, renowned for their precision and long lifespans.



### Grinding pencils

For over 60 years, users of Haefeli pencil grinders have relied on the uncompromising quality of our sintered grinding tools, which today we produce starting from a diameter of 0.18 mm. These miniature tools come into play wherever the smallest measurements and the greatest precision are necessary, for example in medical technology or the watchmaking industry. We have over 5,000 varieties of grinding pencils available for immediate delivery. But we can also provide you with custom tools for specific applications and tricky tasks, generally within 12 working days. It's in cases like these that you really get the benefit of decades-long experience in optimally fine-tuning abrasive grains and bonds.



### Custom-made tools

Some grinding problems seem unsolvable at first glance. We've created custom-made grinding tools for such tasks, available in small quantities as well as large. So when we talk about tools made specially for you, we really are talking about one-of-a-kind tools.

**Dressing tools:** For dressing grinding wheels and grinding pencils, we stock product-specific, stationary or rotating diamond dressing tools.

**Polishing tools:** We offer our customers various diamond polishing pastes and hand files.

**Regenerators:** Metal or resin bonded diamond and CBN grinding tools can be treated easily with our HACO-FLEX regenerators – their freshly restored bite is sure to impress.

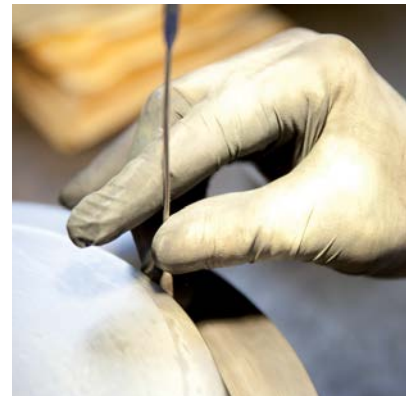
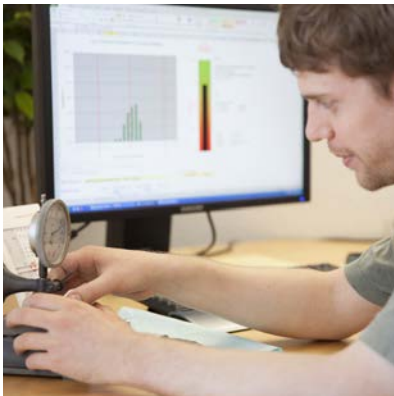
#### Experience doesn't come from a book

*It's no secret that grinding is among the oldest methods for reductively shaping material. The indigenous people of Australia were already grinding axes 35,000 years ago, probably with sandstone. Haefeli's origins aren't quite so ancient, but we can still be proud of our 60+ years of experience in the production of high-precision tools?*

*Founded in 1920, we've manufactured sintered diamond and CBN grinding tools in Zurich since 1949. Our tools enjoy a great reputation in all of the industries in which they're used, in particular the original Haefeli grinding pencils, with sintered versions as small as 0.18 mm (!) in diameter. How is that possible? That's our Swiss-toolmaking secret.*

Large product range.  
Short delivery time.





### Industries

Across a wide variety of industries, customers with high expectations depend on Haefeli — on our experience and our very special know-how, which we've gathered from our role as a manufacturer for countless grinding projects. Here is a selection of the areas in which we've played a leading role for many years:

- machining tools
- the watchmaking industry (haute horlogerie)
- the optical industry
- medical and dental technology
- the automotive industry
- the aerospace and aviation industries
- tool and mould construction
- die cutters and stamping tools
- machine and apparatus manufacture
- wear-protection parts

Your industry isn't listed? No problem, just talk to us about what you need to grind!

Either we'll be able to help you with our comprehensive range of standard products, or we'll develop the right grinding tool for your needs.

### Materials

If you want to develop a grinding tool for a specific material, you first have to be very familiar with that material's characteristics. Then you can decide which bond and which grinding agent should be used. Haefeli tools are used for grinding the following materials, among others:

- carbide
- carbide/steel combinations
- cermet
- technical ceramics (Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, SiNi)
- gemstones (sapphire, ruby) in technical applications
- carbide-based powder coating
- glass and quartz
- graphite
- HSS (high-speed steel)
- high-alloy tool-grade steel with min. 52 HRC
- chromium steels
- case-hardened steels
- iron-based powder coating
- stellite

### Grinding agents

We Haefelis have been working with diamonds since 1920; first as merchants and grinders, then as the developers and manufacturers of grinding agents. You can believe us when we say that we're just as familiar with the hardest grinding agent, diamond, as we are with CBN (cubic boron nitride).

### Types of bonds

Besides the type and quality of the granules and the concentration of the grinding agent, the bond plays a decisive role in the performance of the grinding tool. One of our secrets to making these tools lies in the correct composition of the bond from the various binding materials. Our databank contains over 400 bonds we developed ourselves for a diverse array of grinding applications — and we're always adding new ones. Each family of bonds is grouped around a specialised base material:

- synthetic Resin (universal)
- resin-ceramic (universal)
- diamond and CBN in ceramic bond (reacts well to dressing)
- metal (wear-resistant)
- metal hybrid (deep grinding)
- bakelite (polishing)
- galvanic surface layer

We put our trust in people,  
not just in machines.



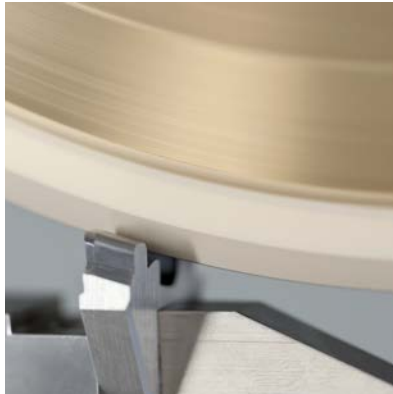


### Tools from the manufacturer

The difference between a tool supplier and a grinding tool manufacturer like us doesn't seem very significant at first glance. After all, both provide grinding tools. But if you take a closer look, it's not quite that simple. That's because those who manufacture the product themselves know what it's capable of and what it isn't. At Haefeli, we know from our own experience, as well as from our research and development, how a grinding wheel or pencil has to be made. We've been making grinding tools for over 60 years, and we can modify all bonds individually. Our customers appreciate that — it's Swiss quality they can depend on.

### Advice from specialists

If you need technical advice on a grinding job, we're always there for you: on the phone, via email or fax. Of course, we or a Haefeli representative will gladly come to you to speak in detail about your grinding project — because there's simply no substitute for a face-to-face talk about the technical aspects of your work, especially if the job is a complicated one.



### Expert offers

Based on our consultation, you'll receive a thoroughly thought-out offer developed with our grinding-tool experts. And to make things even more transparent for you, together with every offer and invoice you receive directly from us, you'll also get a standardised technical drawing of "your" tool.

### A sound sense for sintering

Sintering is among humanity's oldest technologies, dating back thousands of years. In sintering, various base materials bind together under heat and pressure to form a new material. In our case, we add diamond or CBN to the mixture. We've focused on sintered grinding tools for decades. Unlike galvanic grinding pencils and wheels with only a surface coating, our sintered products have a solid grinding coating. At the grinding machine, that means the longest possible lifetime, precision and grinding performance practically down to the last granule. Sintering doesn't just require good machines, but also a fine sense for filling the form and controlling the sintering process. We have both: good machines and experienced employees who know how to do the job right.



### Proven precision

After Sintering, Haefeli tools are lathed, ground and finely balanced. With continuous, strict quality controls in all manufacturing phases and modern machinery, we make sure that the only grinding tools that leave our premises are the ones that have earned the Haefeli name. That's a lot of work, but it's to your advantage as a customer, because you can put your complete trust in your Haefeli tools.

### High-tech with a human touch

We Swiss are sometimes known as over-achievers with a certain tendency to be a bit pedantic. Is there something to that? We'll let our customers be the judge, most of whom have been with us for many years. The fact is, however, that we place great value on providing faultless quality, the shortest delivery times and highly personalised service. Just as we have high expectations for the development of our grinding tools, we also expect a great deal from ourselves and our Haefeli representatives in our interactions with you. Respect, kindness and openness are our highest values, but you can judge Haefeli best for yourself!



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