

Company portrait and range of services

HARTMETALL ESTECH AG, seated in Hitzkirch in Switzerland, manufactures cemented carbide blanks and hard metal tools ground to tolerances for different markets such as automotive, aeronautics, mechanical engineering, packaging industry, plastic processing, communication, electronics, medical technology, food processing and chemical industry. Our cemented carbide grades are used in punching, die-cutting, forming and pressing tools, as slide rings, nozzles, bushings, guides, cutting and machining tools, for wear protection, and in special tools.



Our water-based spray drying process in the preparation of the cemented carbide powders is environmentally friendly and provides a very homogeneous and easy to press granulate.

Our company and its predecessors have concentrated on the technology of hard metal manufacturing for 60 years. We continuously develop our cemented carbide grades with regard to both metallurgy and shaping as well as industrial applications. We are thus constantly improving hardness and wear resistance on the one hand, and breaking resistance and fracture toughness on the other.

Particular specialties include our cemented carbide grades for EDM blocks with corrosion-inhibiting additives which allow the user to manufacture high-precision tools, and our corrosion-resistant and non-magnetizable cemented carbide grades on a nickel basis. For the latter, we obtained a certificate from the US FDA allowing their application in the food processing industry, see:



For many customers, Hartmetal Estech AG is much more than a common supplier. We are their partner. Our specialists find the right cemented carbide grade for each application and the suitable shaping so that the customer will get optimal results for his needs. We are proud of our globally active technical sales force. It is our goal to consult our customers personally and competently.

HARTMETALL ESTECH AG's vision «Our core competence are cemented carbides»

> We want to position ourselves as a manufacturer of hard metal products in a niche, being a partner to our customers in solving technically challenging tasks. We manufacture special forms and directly pressed parts in high precision and metallurgical quality. We are leaders in short delivery times, high flexibility and excellent customer service at fair prices. We continuously invest in new cemented carbide grades and applications, so we can offer our customers always something more than our competitors. To do so, we count on our qualified and motivated employees. Our processes comply with the newest standards in environmental protection and energy efficiency. The occupational health and safety of our employees are an important part of our policy.



The chamber and retort pre-sintering furnaces serve to dewax and pre-strengthen the pressed cemented carbide green blocks. The correct setting of temperatures, of ramp and dwell times, as well as of the gas atmosphere is the prerequisite of a stable carbon balance of the products.

The fabrication of cemented carbides is a special process in powder metallurgy. During this process, the components tungsten carbide as the hard material and cobalt or nickel as the binding agent are not combined by melting, but pressed as a powder and sintered at high temperatures and pressures (sinter HIP process). In addition, we add low amounts of different doping carbides and other metals to the mixtures to control the properties of the finished hard metals accordingly.

The manufacturing of precisely designed directly pressed parts in large series and of complex special forms already shaped in the green state according to customer drawings within strict tolerances, such as long knives and large rings with precisely placed holes and threads, are specialties of HARTMETALL ESTECH AG. In addition, we also manufacture extruded round rods and fixed lengths with and without holes. We produce T-slot milling cutter blanks and directly pressed cemented carbide disks. For standard products, we have an extensive finished goods warehouse with raw sintered and ground parts.

We place our focus on short delivery times of 4 to 5 weeks ex works for raw sintered individual parts and of small to medium series. In addition, in many cases, we can also offer our customers our EXPRESS LINES of

> 12 days

or

> 6 days

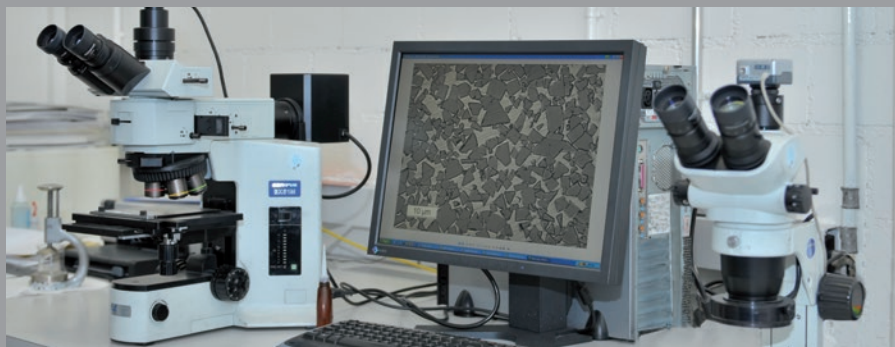
delivery times for raw sintered cemented carbide parts ex works. Just send a request!



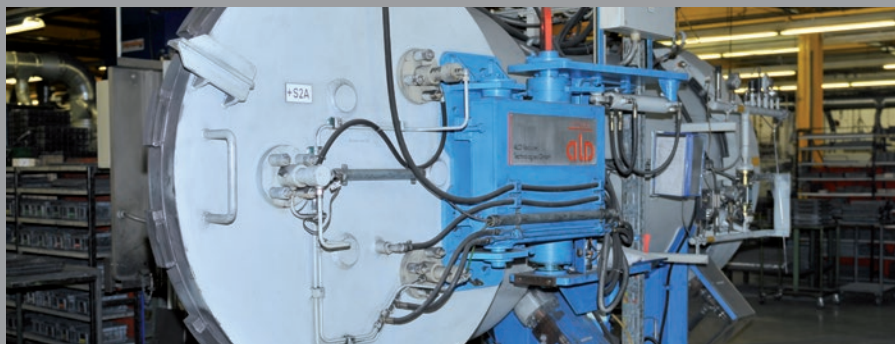
Our mechanics in the shaping department machine the pressed and pre-sintered green blanks on conventional turning lathes or on CNC-controlled machining centers by use of diamond and PCD tools. The precise shaping of the break-sensitive green parts requires a great deal of caution and a good understanding of technical drawings.



The finished green parts from shaping are waiting for the approval for sintering. This will be given after a positive control of all dimensions according to the drawings, of a test sintering and after the release by the metallurgical production control.



In the manufacturing process of cemented carbides, the quality assurance plays a major role. The metallurgical production control checks the conformity of the cemented carbides to the required specifications of the carbide grades during all process steps and before shipping of the sintered products. It also plays a role in the investigation of damages and in the R+D process.



HARTMETALL ESTECH AG owns three sinter-HIP furnaces. Here, the preformed green blanks are sintered at temperatures of about 1400°C and pressures of about 50 bars. During this process, the volume of the green blanks shrinks to half of its original volume. The precise forecast of their shrinking behavior is essential that the sintered parts reach the required dimensions.