



**WEDCO**  
Tool Competence

# PCD CUSTOM TOOLS

Customized special solutions for all applications



# With experience into the future

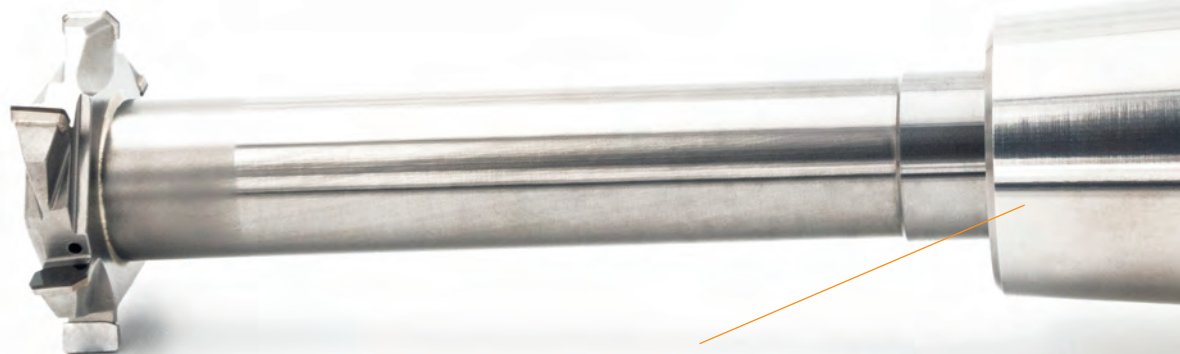
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In the more than 30 years of its existence, WEDCO Tool Competence has earned an excellent reputation as a tool manufacturer and supplier. The basis for this is the close and partner-like relationship with the companies and people working in the machining industry. The WEDCO professionals

also have their finger on the pulse of current developments. The PCD sector is becoming more and more important. WEDCO has been observing this trend very closely for some time and is therefore responding to it with particular commitment and professional know-how.



**Energy and mobility concepts of the future** require modern lightweight materials as well as correspondingly sophisticated machining strategies.



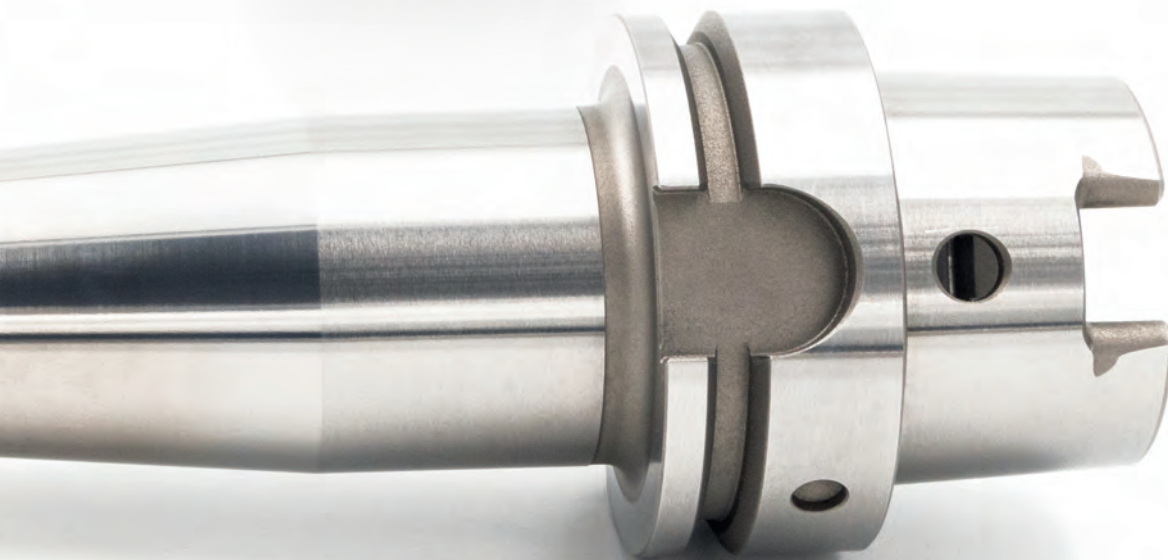
**Shrink fitting:**  
Highest clamping force and  
concentricity



At WEDCO, all PCD tools are developed as special tools, related to the respective application, by the in-house engineering team in close coordination with the customers. In this way, they offer optimal solutions for even the most demanding machining tasks.

### **CUSTOMER BENEFITS**

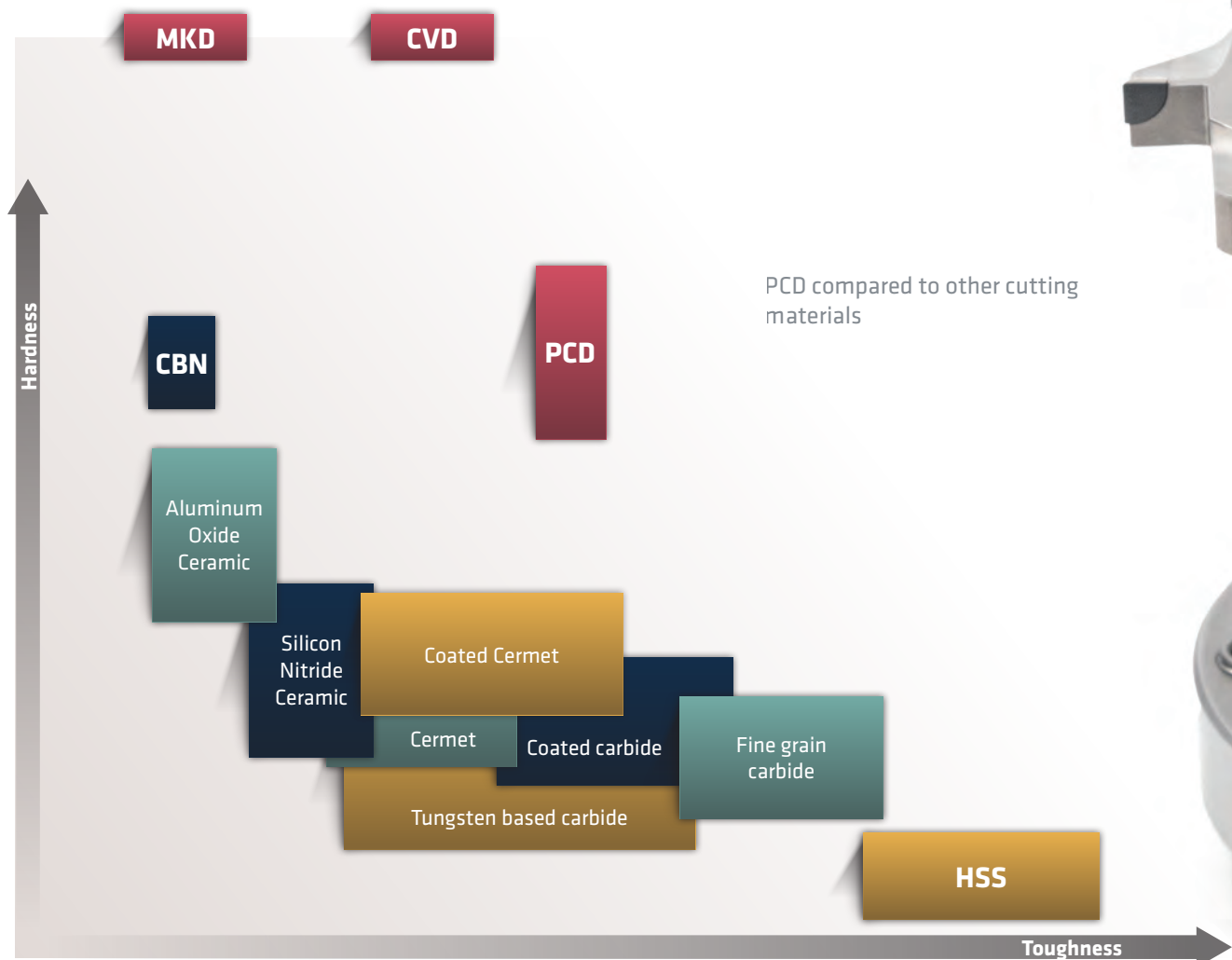
- + reduced machining costs
- + improved workpiece quality
- + release of production capacity
- + longer service life
- + increased process safety



# Diamond-based cutting materials

Wedco offers tailor-made diamond tools for all fields of application: Wedco Tool Competence is known for application-oriented tool development. Recently, the trend towards weight reduction and the steady growth of composite materials has been taken into

account once again. In addition to a comprehensive standard and special program of solid carbide precision tools, WEDCO also offers special tools made of PCD, MKD and CVD for machining non-ferrous metals, plastics, fiber-reinforced composites, wood, etc.







**Laser-cut PCD cutting materials**  
for high performance use



**PCD** – Polycrystalline Diamond is a synthetically produced mass of diamond crystals formed by sintering (a process used to produce materials) at very high temperatures and pressure. PCD is extremely hard and wear resistant.

**MKD** – Both natural diamond (ND) and synthetically manufactured diamond (MKD) are referred to as monocrystalline diamond. A special growth form and lattice structure results in a very high hardness. Since MKD is not interrupted by any bonding phase at the cutting edge, high-precision surfaces (polishing) as well as high-precision component geometries are possible.

**CVD** – CVD diamond is a thick film deposition obtained via the chemical vapor deposition (CVD) process. The basic process is the same as for CVD thin film deposition. But while diamond coating directly on a carbide substrate involves coating only a few  $\mu\text{m}$ , CVD thick film deposition allows coating thicknesses of 0.2 up to 1.0 mm.

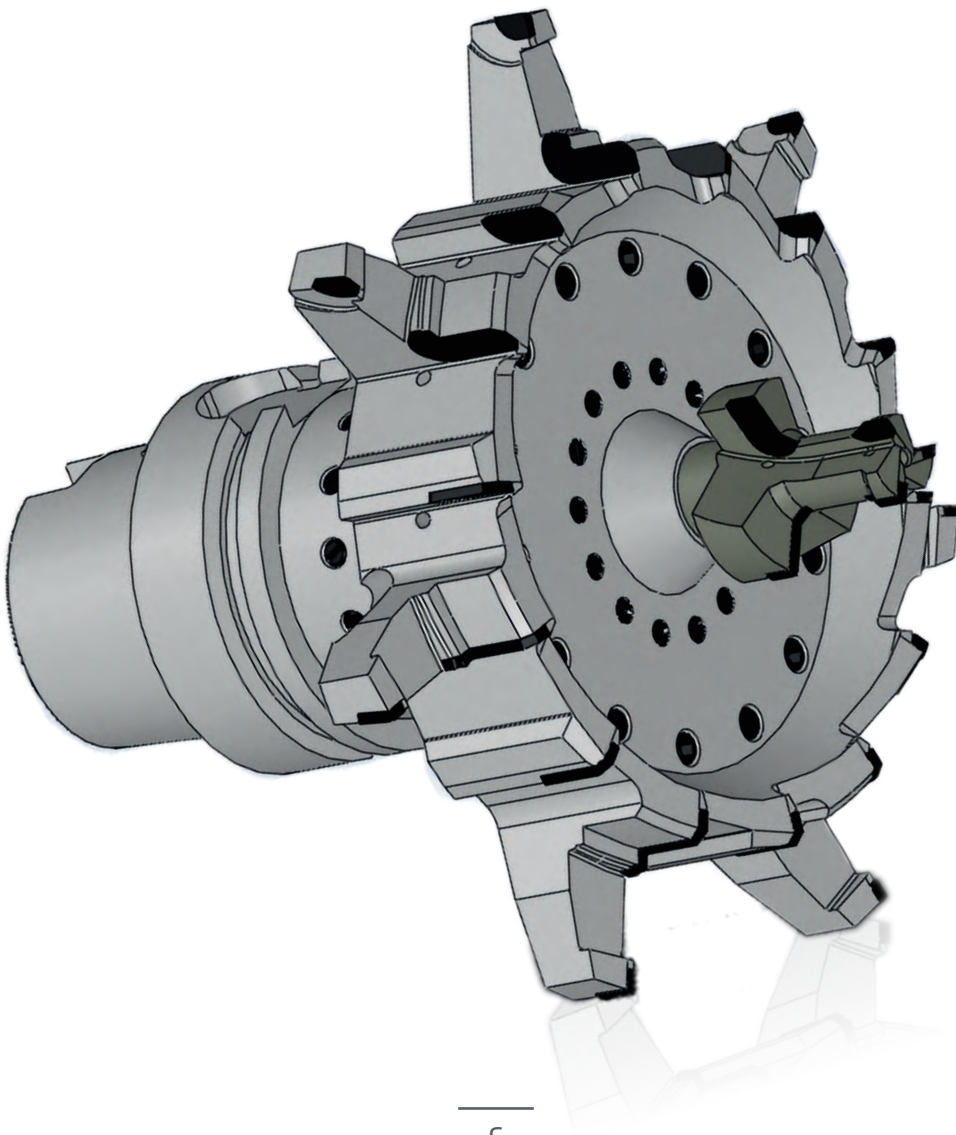
**Alignment adapter** -  
 $\mu\text{m}$ -precise alignment of the  
cutting edge in axial as well as  
radial direction

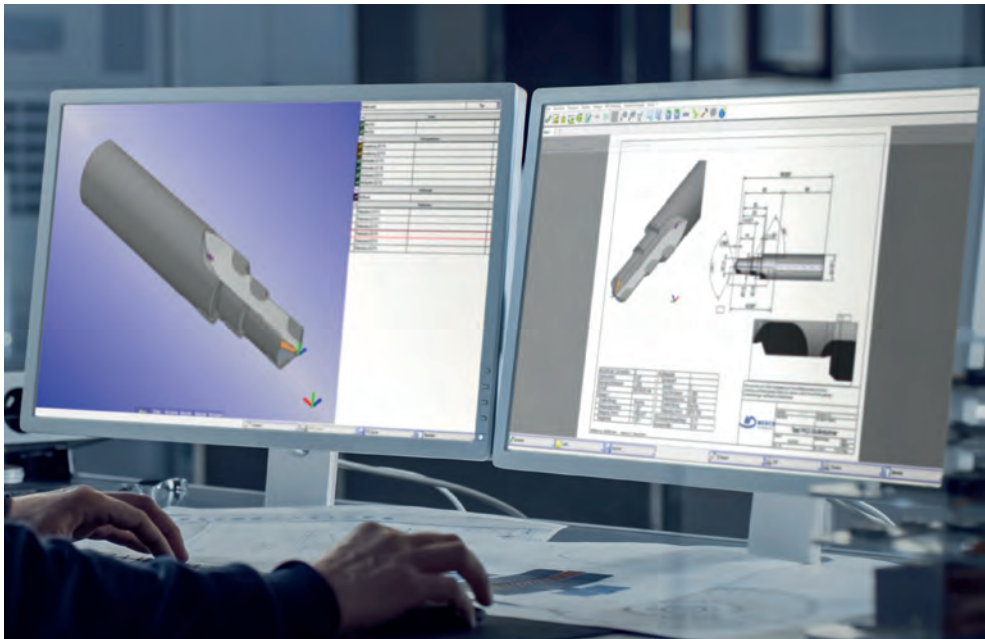
# PKD Custom Tools engineered by WEDCO

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Special tools are used where they help to optimize production processes and reduce manufacturing costs. The prerequisite for this is the right communication between customer and tool supplier - in the solid carbide sector as well as in the area of PCD special tools. Whether milling, turning or

drilling - WEDCO is at your side when it comes to finding the best possible solution for your application and ensuring optimum machining throughout the entire period of use. In this way, WEDCO supports you in gaining a decisive competitive advantage.





The development of a suitable PCD special tool is always preceded by a detailed analysis of the individual task. With a focus on your requirements, the WEDCO specialists create the appropriate machining strategy and develop the optimum solution with a focus on geometry, layout and cutting material. This

saves you work steps and tool change processes while optimizing machining quality.

Targeted, fast and professional:  
 Thanks to WEDCO Tool Competence, there are virtually no limits in the field of special tools.

**Special tools the easy way** - With the new inquiry forms it is possible to help our customers to get their customized tool in just a few steps.



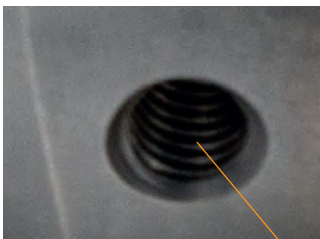
<https://www.wedco.at/downloads/formulare/>

# Manufactured by the PCD professional

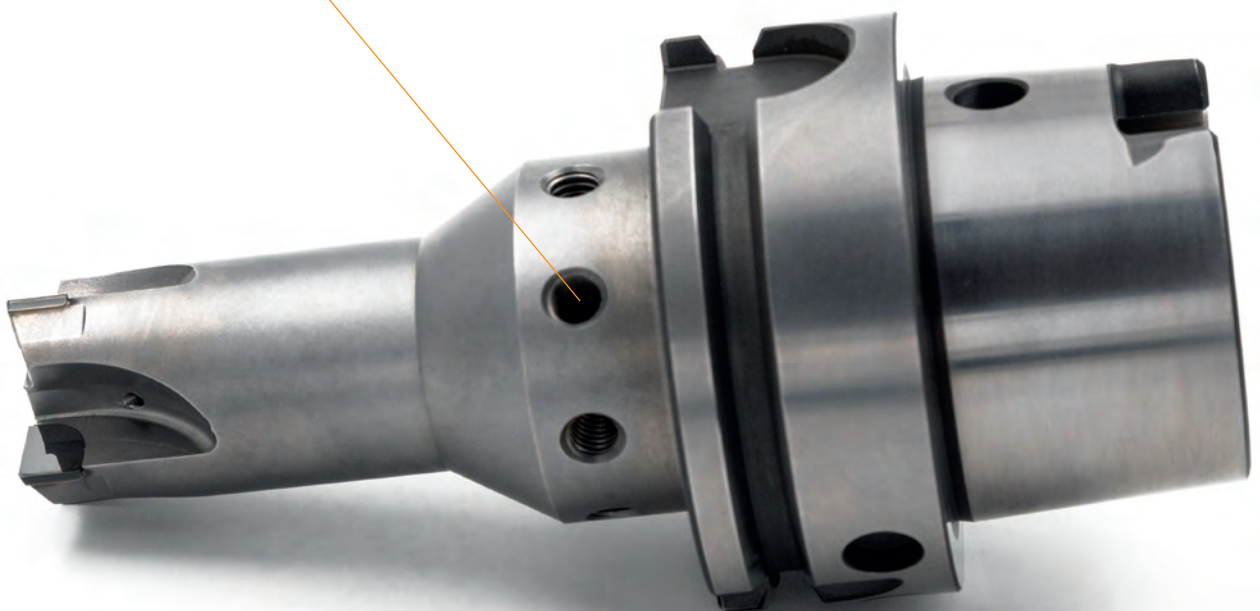
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Since 2020, Globevnik d.o.o. has been a strategic partner of WEDCO in the field of PCD special tools. Using the latest laser technology, Globevnik produces high-quality tools for machining non-ferrous metals, plastics, fiber-reinforced composites, wood, etc. In addition, professional solu-

tions are also offered for regrinding and retooling processes of in-house and third-party products. A pricing policy in line with the market as well as the shortest delivery times perfectly round off the competitiveness of our partner Globevnik for the benefit of our clients.



**Balanced bores** ensure the necessary concentricity at the highest speeds. The result is a better surface finish, longer tool life and a machining process that is gentler on the machine.

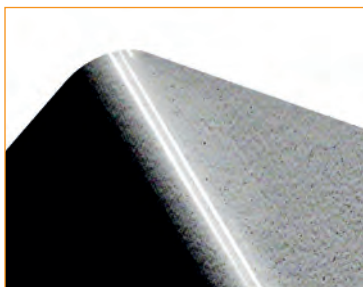




Globevnik d.o.o. started manufacturing PCD tools in 2005. Since then, more than 3000 different types of PCD tools have been manufactured, as well as the trust of many partners has been won, some of them established worldwide. Manufacturing PCD tools requires first-class machine equipment and highly qualified personnel - two areas in which Globevnik invests heavily in order to secure a decisive advantage in the market.



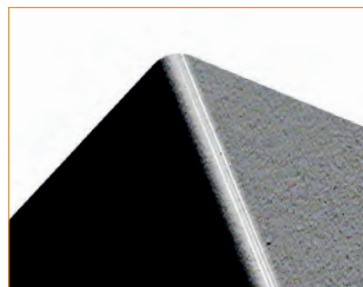
Globevnik is located in Kranj, Slovenia. This is where high-quality PCD special tools are manufactured according to the specifications of WEDCO's product developers and with the help of state-of-the-art production facilities.



#### **EDM machining**

Edge rounding approx. 7 – 15  $\mu\text{m}$

- Pure diamond (MKD, CVD) cannot be eroded or EDMed (non-conductive)
- Good quality requires 2-3 times the eroding process
- High wire costs
- Chip groove not possible



#### **Grinding**

Edge rounding approx. 5 – 8  $\mu\text{m}$

- Grinding wheel breaks or dislodges diamond grains on cutting edge
- Chip groove not possible



#### **Laser cutting**

Edge rounding approx. 0,5 – 1  $\mu\text{m}$

- Laser cuts through diamond and bond material
- Perfect cutting edge
- No chipping
- Cutting edge radius 0.5  $\mu\text{m}$  possible
- Chip groove possible in one clamping

# From practice for practice

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Polycrystalline diamond is used today where alternative materials such as non-ferrous metals, aluminum, plastics, etc. have to be machined in large quantities and to the highest surface quality, including in the automotive sector, in the aerospace industry or in the medical sector.

PCD has already displaced carbide in many high-performance applications. Due to their outstanding tool life combined with high productivity, the higher tool costs can be quickly compensated and the machining costs per workpiece can be significantly reduced. Particularly in the all-important supplier sector of the automotive industry, which is cur-

rently undergoing an unprecedented change scenario - keyword electromobility - alternative drive concepts demand completely new components, materials and machining strategy. To keep pace with this development, the use of PCD special tools will point the way to future competitiveness.

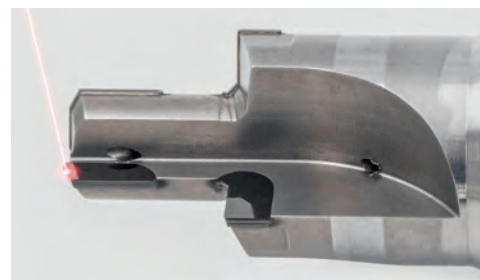


**Advanced propulsion concepts** also require advanced materials and processing strategies. E-motor housings, for example, are made of aluminum alloys.

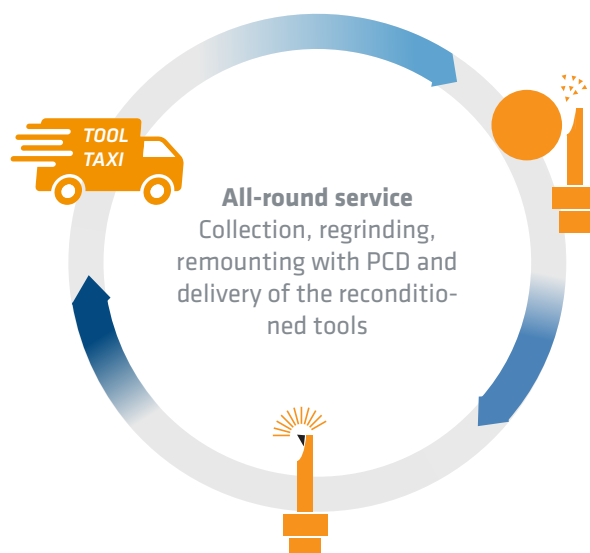
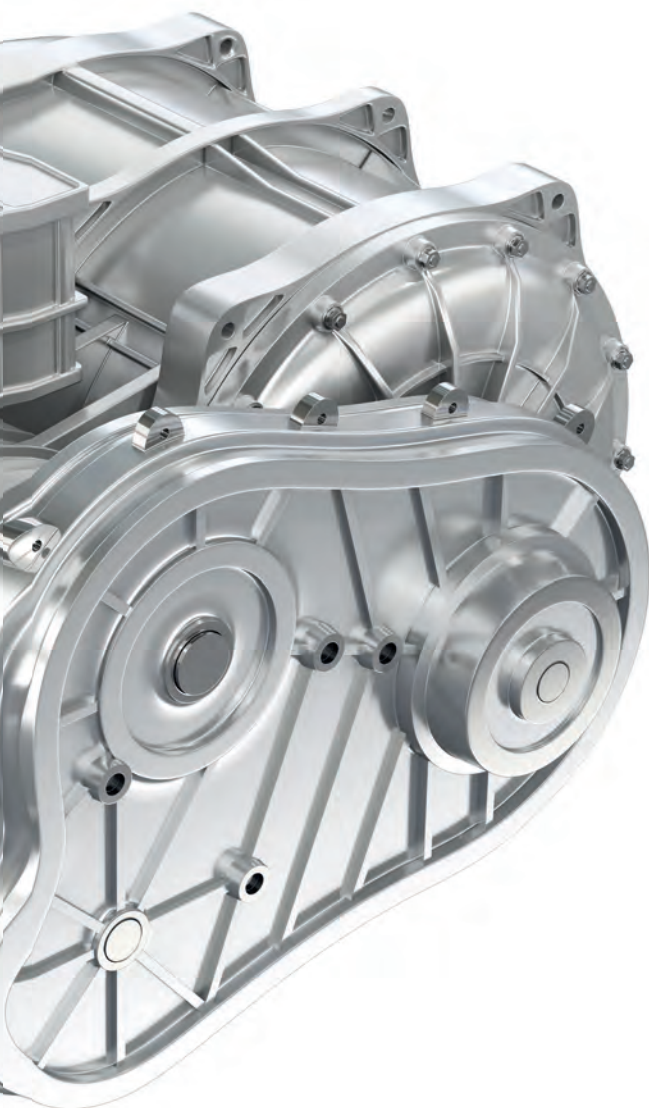
# Reconditioning to original

Your tool is of central importance and consequently of great value to your production. Thus it makes sense to use it as long as possible. The usual wear and tear does not mean the end of the life of a PCD tool. However, regrinding only makes sense if it is really carried out professionally and ef-

ficiently. The WEDCO Regrinding Service therefore includes all services for the rapid reconditioning of worn PCD tools in original quality, also for tools from other manufacturers. This significantly extends the service life of the tools and saves costs. The reconditioning is carried out at our



high-quality partner Globevnik, on the same state-of-the-art machining centers on which the new WEDCO PCD special tools are produced. This, and with the help of the strict control and documentation process, guarantees absolutely professional reconditioning - the tools achieve the same machining quality as well as 100% of tool life, compared to new tools.







16,15  $\pm 0,05$



**WEDCO**  
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