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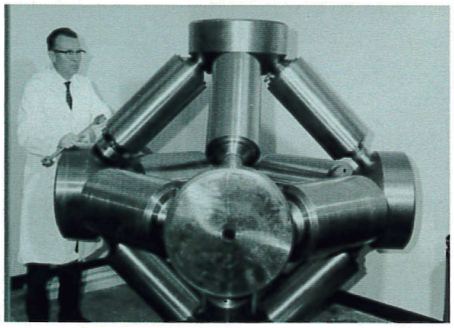
LACH DIAMANT reflects on the past and looks to the future at AMB

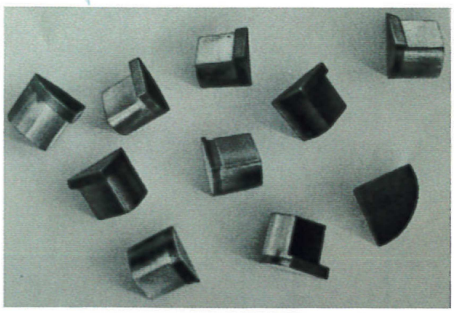
Horst Lach, chief executive officer and general manager of Jakob Lach GmbH & Co. KG., looks back on the the first twelve months after introducing the first polycrystalline cutting tools

Where do we come from and what is our destination? This was the question after the first introduction of this new cutting material Polycrystalline Diamonds (PCD) at the Hannover Trade Show in 1973.

Despite the word poly, the basis here is diamond, naturally created from carbon in the depths of the earth under heat and pressure over millions of years. Diamond, in its monocrystalline form, is still the hardest of all things. Even before people discovered its beauty, they made use of the hardness of this indomitable material in the earliest archaeological sites in India, for the turning and levelling of mill stones.



The industrial revolution, starting in England around 1770 and its powerful continuation in Germany in the mid 19th century would not have been possible without diamonds. They were instrumental especially for the production of steam engines and locomotives. More precise grinding machines, studded with wheels for steel grinding, had to be developed, and without diamond dressing tools, only geometrically distorted surfaces would have resulted. The demand for natural diamonds, from Brazil and Africa, skyrocketed during the following 100 years and gained strategic importance due to both World Wars.

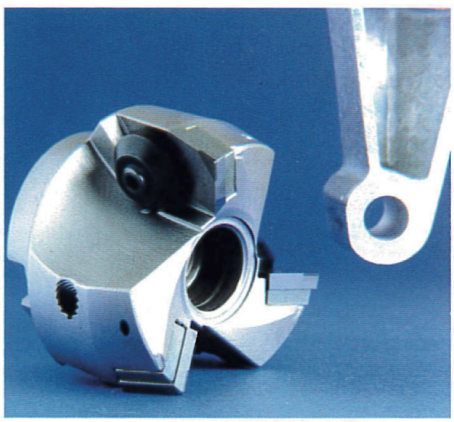


It is no surprise that in 1954 engineer Tracy Hall was the first who succeeded in growing synthetic "man-made" diamonds in the United States, using a specially developed high-pressure press.

Once again, it was Tracy Hall who, in 1967/68, implemented the idea to bake very fine diamond grains with carbide as a carrier material during synthesis. He was successful. The first step towards a so-called polycrystalline synthetic diamond cutting material had been accomplished. Electrical Discharge Grinding (EDG), for dividing the round plates which at first had a diameter of approximately 3.2 mm, had not yet been discovered. Therefore, the carbide had to be scored with electro-plated diamond cutting discs in order to be able to break off either 90 or 60-degree segments afterwards.

What to do with this new innovation? General Electric's management must have been faced with the same question at that time. Nevertheless, the up-and-coming managers under the leadership of Louis Kapernaros must have prevailed within the big GE family. It was decided to provide samples of the new cutting material to three or four selected diamond companies, including LACH DIAMANT. Apparently, GE was curious to see whether the company, known as "Borazon Pioneer" since the introduction of the CBN grinding wheel in 1969, would once again come up with a lot of new ideas.

It was in the spring of 1974, shortly before the Hanover Trade Show, the second year after the first PCD presentation. Since the introduction of PCD for manufacturing copper commutators, we had practiced PCD turning instead of grinding and had tried to win new customers among aluminum processing companies such as Westinghouse, Voith, Solex and Oechsle, an enthusiastic PCD customer that is still



surprising to me today. The company worked with polyamide synthetic materials and produced small gears with imprinted numbers for the production of vehicle odometers.

At that time, the grinding wheel production moved into a neighbour building, a large facility which happened to become vacant, and stayed there until 1984 when we moved to Donaustrasse in Hanau.

Rapid growth, combined with the demand for shorter delivery times, forced the company to find better conditions for grinding this "beastly material", as our former master diamond cutter Konrad Wagner dubbed it at that time.

After a search for a suitable machine, we finally found it at the Kelch Company, In the following years, this machine was further adjusted to the particularities of PCD grinding. After taking over the license and construction, LACH DIAMANT is still building this machine, referred to as pcd-100/300.

It was therefore perfectly prepared for the manufacturing of so-called "single-tipped" tools for the trade show in 1974.

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