



## high precision tooling

Machine Tools, PCD, PVD, CVD, CBN, Hard Metal

2022-3

### materials & tools

#### LACH DIAMANT looks back on 100 years – 13<sup>th</sup> part **Poly – poly – or what?**

#### Forty years of spark erosion for efficient PCD machining – utilizing sparks over grinding

■ Horst Lach, managing director and CEO of LACH DIAMANT, agreed to write an ongoing series of articles about the development of diamond and CBN tools and grinding wheels in modern industries.

Horst Lach is known as a true industry veteran, and we are excited to have this pioneer of technology share some insights from his over 62 years of professional experience in the diamond tool business. This time our focus is on "using sparks instead of grinding".

In 1978 Horst Lach had a truly sparkling idea. Initially, it led to efficient machining and forming of polycrystalline diamonds. Thanks to this revolutionary invention it was possible to implement new technologies, based on newly created diamond tools. For example the machining of wood and plastics in the furniture and kitchen cabinet industry, as well as laminate and parquet flooring, circuit board, automobile and automotive accessories industries and in many other areas.

#### Controlled impact

Up to 1978 it was traditionally thought, that only diamonds could be used for machining diamonds. The discovery of spark erosion and of the so-called EDG grinding method (rotation procedure – electrical discharge grinding) by Horst Lach, ignited a new, until then unimaginable, and much wider distribution and use of PCD – a material introduced to the market in 1973.



Example: grinding of diamond saw blades with a programme for multi-production



Horst Lach had a sparkling idea

Horst Lach utilized a mere 0.5% of traceable cobalt present in this polycrystalline compact material which otherwise consists of 99.5% pure diamond (during diamond synthesis, single diamond grains with a size of 0 to for example 35 µ are compressed under high pressure and heat and thus stimulated to grow). Under the controlled impact from electric sparks, single diamond grains are stimulated to break free from the grip of the electrically conductive cobalt.

#### Pioneering PCD tools

LACH DIAMANT, having its 100<sup>th</sup> anniversary, since Horst Lach's father, Jakob Lach, founded the company, did not only use electric sparks for the development of pioneering PCD tools. In order to create an efficient, precise procedure for forming functional cutting edges on tools, the electric spark had to be integrated with the diamond blade or the tool-moving axes and edge controllers, respectively.

This was the beginning of LACH DIAMANT as a machine manufacturer. Today, in 2022, automatic LACH DIAMANT grinding machines for the production and sharpening of polycrystalline diamond tools can be found all over the world. A new generation of superior automatic LACH DIAMANT grinding machines – capable of using graphite and/or copper as the respective ideal rotation electrode – are now part of the LACH DIAMANT machine programme.

#### Individual presentations available

At GrindingHub in Stuttgart it was possible to see all innovations and extras of the LACH DIAMANT EDG-plus-spark-sharpening-machines at the tradeshow – e.g. the «Dia-2200-mini» and the special «contour-profiled» model for superior profiling of metal-bond diamond and CBN grinding wheels. For this reason, LACH DIAMANT invites all interested diamond grinding companies to an individual presentation at our grinding center in Hanau.

Horst Lach

further information: [www.lach-diamant.de](http://www.lach-diamant.de)