**Diamond tool inserts**

HPHT diamonds: it is possible to recreate the pressure and temperature conditions, causing carbon to form diamond in the earth, using a press that squeeze a carbon source, graphite, inside a chamber; this will then be heated at a high temperature. This technique — high pressure, high temperature, or HPHT — is still the most common method used today. HPHT diamonds are used mainly for cutting tools.

LMJ used for:
- Pre-cutting of diamond inserts

**Perfect cut on the hardest material on earth**

The challenge was to remove 99% of the diamond material at high speed before a final polishing step.

Main processing criteria:
- Straight walls
- No HAZ
- Little carbonization
- No cracks
- Low roughness
- Narrow tolerances
- High speed

Machining technologies able to reach these criteria:
- Grinding
- Laser MicroJet (LMJ) - water jet guided laser technology

**Higher productivity thanks to combined laser-polishing process**

LMJ advantages versus grinding:
- Much faster
- High flexibility
- Low consumables
- No mechanical damages

Installed machine type:
- 1 x LCS 50
- 50 W green laser