

CASE STUDY



New Diamond Technology, Russia

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PRODUCT

Lab Grown Diamonds for Jewellery Industry

HPHT created diamonds

HPHT (High Pressure High Temperature) rough diamonds are either used for polishing diamonds out of it or as basis material for genuine and fresh diamond seeds for CVD growing processes

LMJ used for:

- Slicing diamond seeds out of a HPHT crystal in cassette for mass production
- General diamond cutting applications
- Fancy shaping



CHALLENGE

Perfect thin and parallel cuts

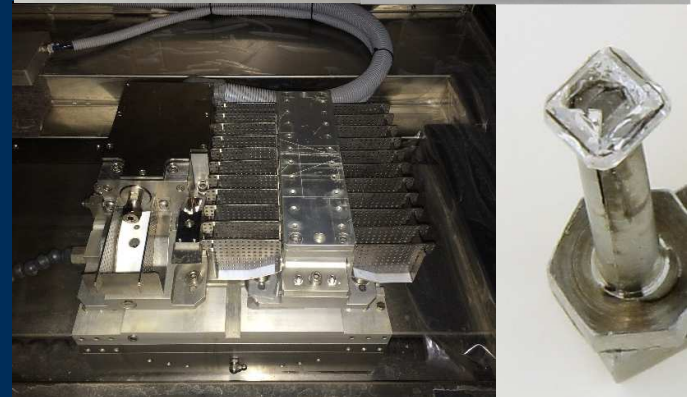
High Quality slicing and general diamond cutting processes

Main processing criteria:

- Variable thicknesses ranging up to 12 mm
- Cut thin slices with thickness of 250 µm
- Smooth surfaces that requires minimal post treatments
- Getting max. number of slices out of HPHT crystals
- Stable and repeatable cutting process ready for mass production

Machining technologies able to reach these criteria:

- Dry laser
- Laser MicroJet (LMJ) - water jet guided laser technology



SOLUTION

Perfect parallel cuts, production-proven process, higher yield

LMJ advantages versus dry laser:

- 2-3 times faster cutting process
- Perfect thin and parallel slices
- No V-profile in the slices and in kerfs
- Smoother surfaces
- Flexible use of the LMJ process and DCS machine for variable diamond cutting processes

Installed machine type:

- 1 x DCS 300
- 100 W green laser



DCS 300