CASE STUDY

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PRODUCT

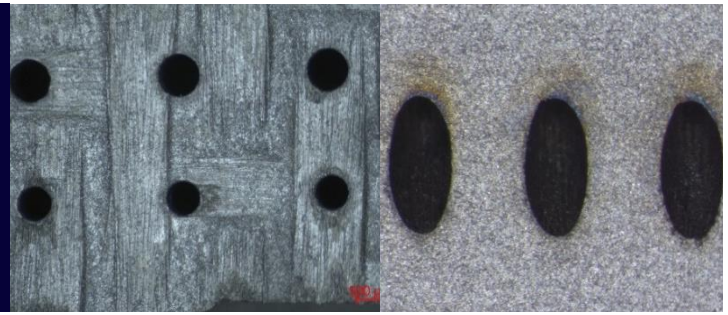
Various new materials and approaches for future, more efficient engines

Mainly components located in the high-pressure turbine (most critical)

By changing strategies and materials, the target remains to build a lighter engine inducing less consumption

LMJ used for processing combustors, vanes, shrouds, blades etc.:

- Ceramic Matrix Composite (CMC) cutting
- CMC pocketing
- Ni superalloy drilling (with or without TBC)



CHALLENGE

Gentle, precise, and fast processing for new aero applications

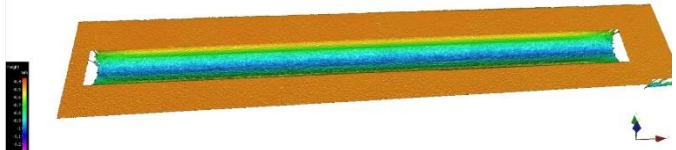
Drilling-milling-cutting of up to few mm thickness

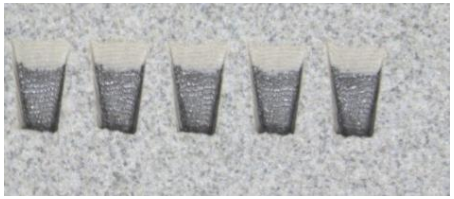
Main processing criteria:

- Low/no HAZ & very low/no recast
- High throughput requisite
- Low consumable costs
- Flexible tool
- Minimized taper

Machining technologies able to reach these criteria:

- Grinding
- EDM
- Laser MicroJet (LMJ) - water jet guided laser Technology





SOLUTION

Fact, clean, flexible – ready for production

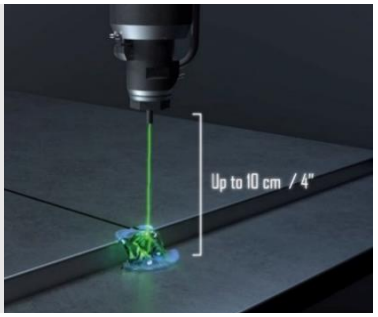
LMJ advantages versus EDM and grinding:

- Faster and most gentle on CMCs
- Low consumables costs
- Most flexible non-conventional machining solution

Installed machine type:

- 1 x LCS 305
- 400 W green laser

LCS 305



Sources: MTC websites, Synova