CASE STUDY

GE Aviation

GE Aviation, Asheville, NC, USA

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SYNOVA S.A.
Route de Genolier 13
1266 Duillier
Switzerland
www.synova.ch

PRODUCT

LEAP open shrouds processing by LMJ

High pression turbine shrouds for the CFM International's LEAP Engine

LMJ used for:

- Ceramic Matrix Composite (CMC) shrouds processing: new material generation (lighter, stronger, generating less consumption)

CHALLENGE

Gentle, precise, and high-volume processing for an exigent aero application

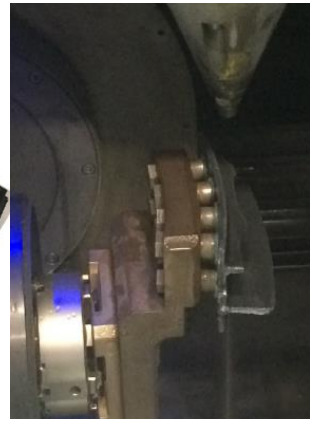
Small blades, up to 5.6mm thickness
0.4mm diameter holes (1:14 drilling ratio)

Main processing criteria:

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

Machining technologies able to reach these criteria:

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



SOLUTION

No HAZ, production-proven, better ROI

LMJ advantages versus EDM:

- 24% faster
- Low consumables costs
- Production-proven (36k shrouds in 2020)

Installed machine type:

- 1 x MCS 500-5
- 200 W green laser
- Robot interface

MCS 500-5

Sources: GEA, wiki,CFM websites , Synova