Tag Heuer, Switzerland

Watch case-03 Date: 30.07.2020

**Oscillating monolithic parts (powered the DEFY Inventor sold by Zenith-LVMH)**
- Watch unique oscillators made of steel or copper
- Various functional watch parts (springs, escape wheels etc.)
- High tech regulation system made of 1 single part

LMJ used for:
- Development and prototyping (0.2-2.0mm thicknesses)
- Small series (1 to 100 pcs)
- Prototyping & small series for LVMH brands of mechanical parts

**Flexible & stable tool for production**

Main processing criteria:
- No force / No deformation
- Capacity to cut very thin bridges (30µm large, 300 µm thick, 30mm long)
- Complex shapes
- No burrs
- No heat affected zone & Low roughness Ra
- Narrow tolerances

Machining technologies able to reach these criteria:
- UV LIGA (photolithography+electroforming) for larger series
- Laser MicroJet (LMJ) - water jet guided laser technology

**Best flexibility, unique cutting solution to reach expectations (shape-HAZ-tolerances-volumes) & ease to use**

LMJ advantages versus LIGA:
- Faster and cheaper for prototyping
- Low cost for small series

Installed machine type:
- 1 x LCS 300
- Dual laser equipped: 100 W green laser and 20 W short pulse green laser

Sources: LVMH group, Synova, hautehorlogerie.org