Supplementary Materials: 2D and 3D Triangulation Are Suitable In Situ Measurement Tools for High-Power Large Spot Laser Penetration Processes to Visualize Depressions and Protrusions before Perforating

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Caption for video SI_Crosssection.avi:
Temporal profile change of three laser penetration processes with spot diameters $D4\sigma =$ 16 mm, 22 mm and 31 mm from left to right, respectively. Besides the temporal scaling, the melt pool dynamics for the two larger spot sizes is comparable. The molten area enlarges mainly around the laser impact point. With the small spot size, however, the melt pool enlarges mainly upwards. For more details, see main text.

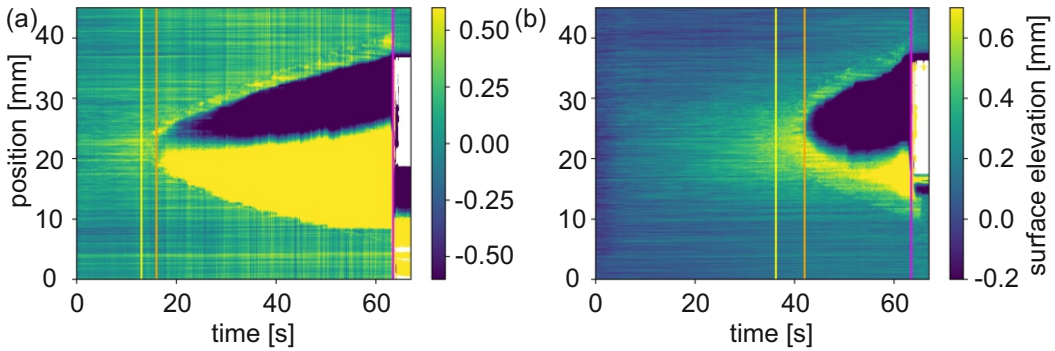

Figure S1. Temporal change of the surface on the front (a) and back side (b) with a color range highlighting small changes compared to the origin. Around the area of strong surface changes (protrusion and indentation), an area of constant small changes is observed. This area starts earlier (yellow lines) than the surface melt (orange line) and develops further outside the melted area.