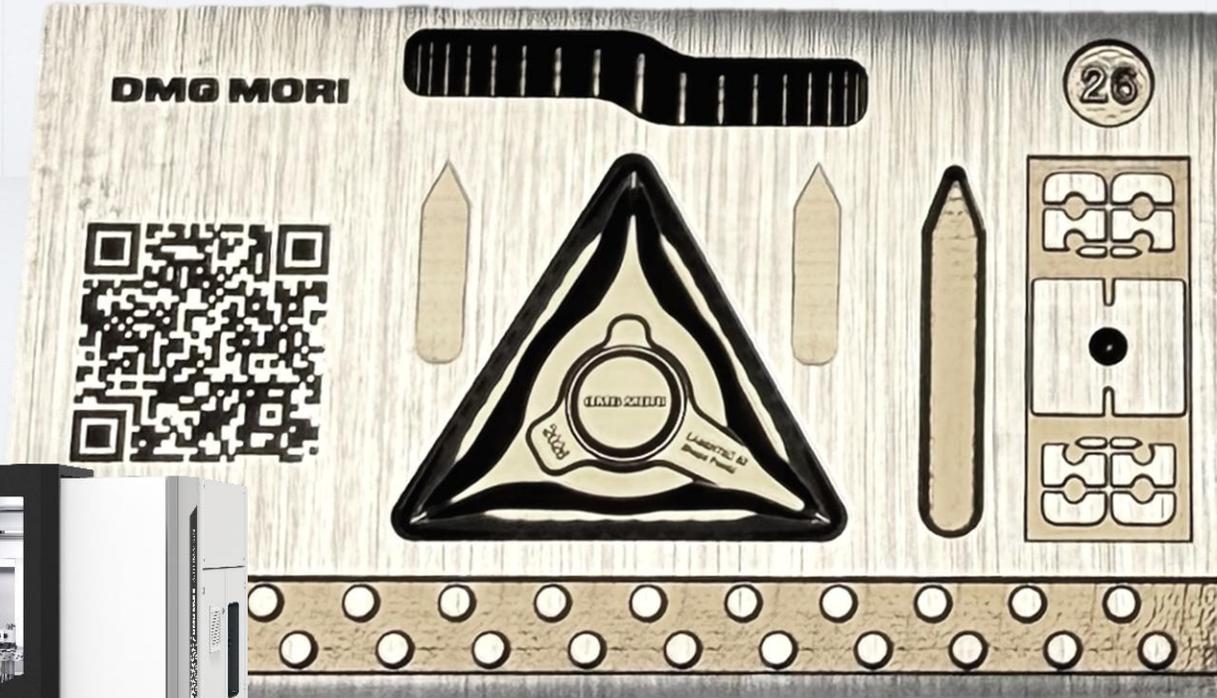


LASERTEC 50 Shape Femto - THE NEXT GENERATION OF 3D-LASER ABLATION



DMG MORI



HIGHLIGHT APPLICATION OH 2026

TECHNOLOGY: LASERTEC Shape Femto

Industry: Die & Mold

Material: CF-H40s (Tungsten Carbide)

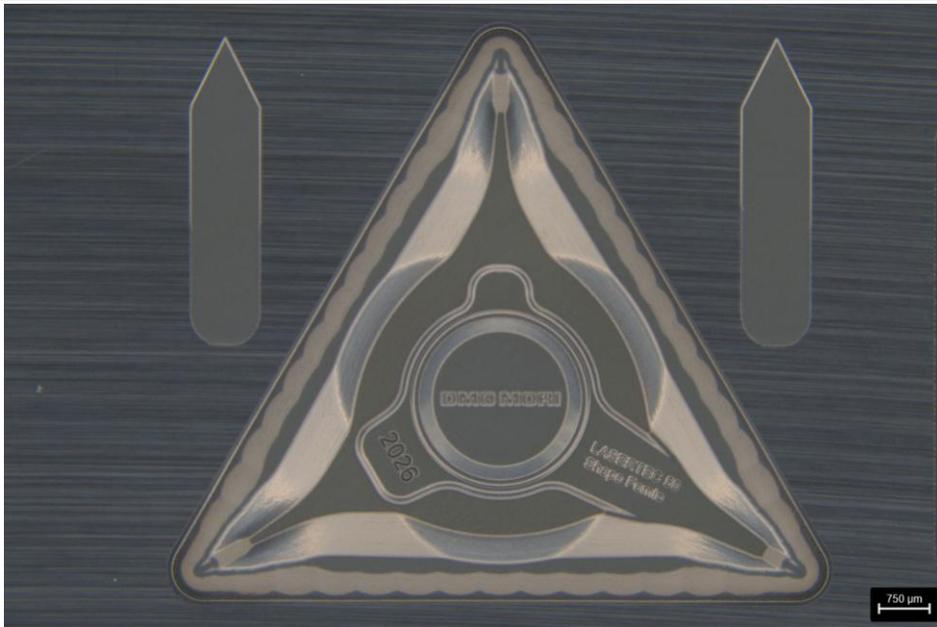
Dimension: 15 x 25 x 2 mm

Cycle Time: 1h 32 min



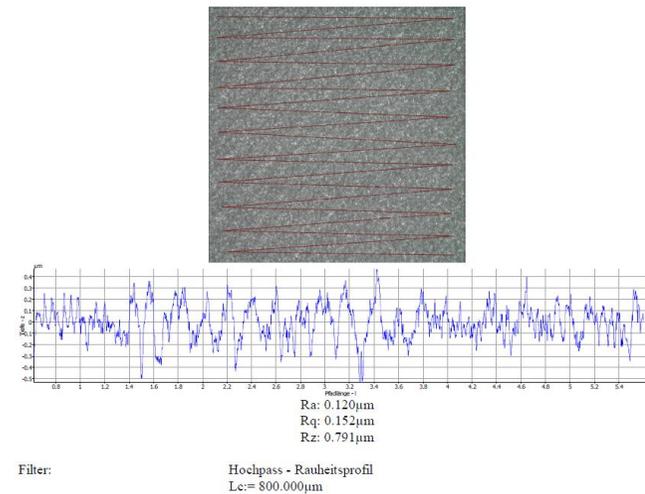
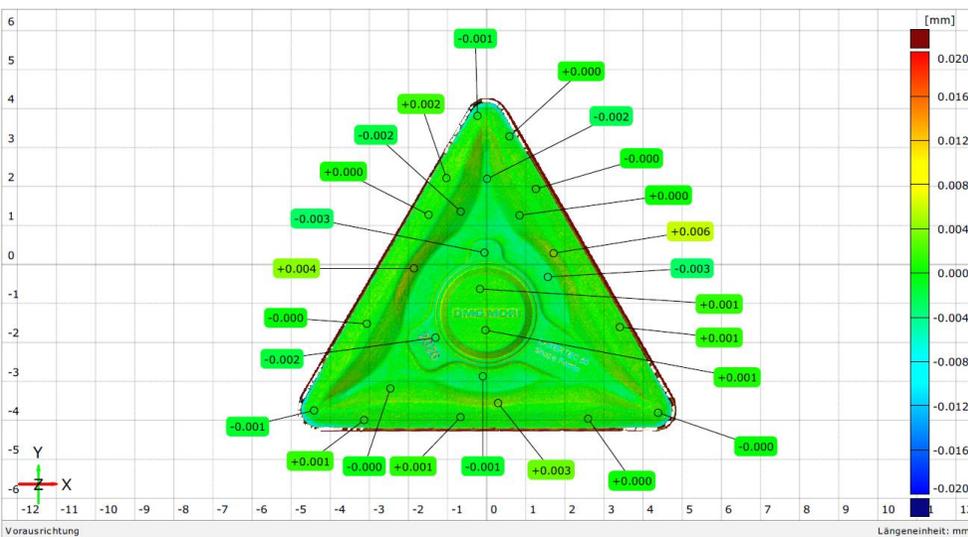
BENEFITS:

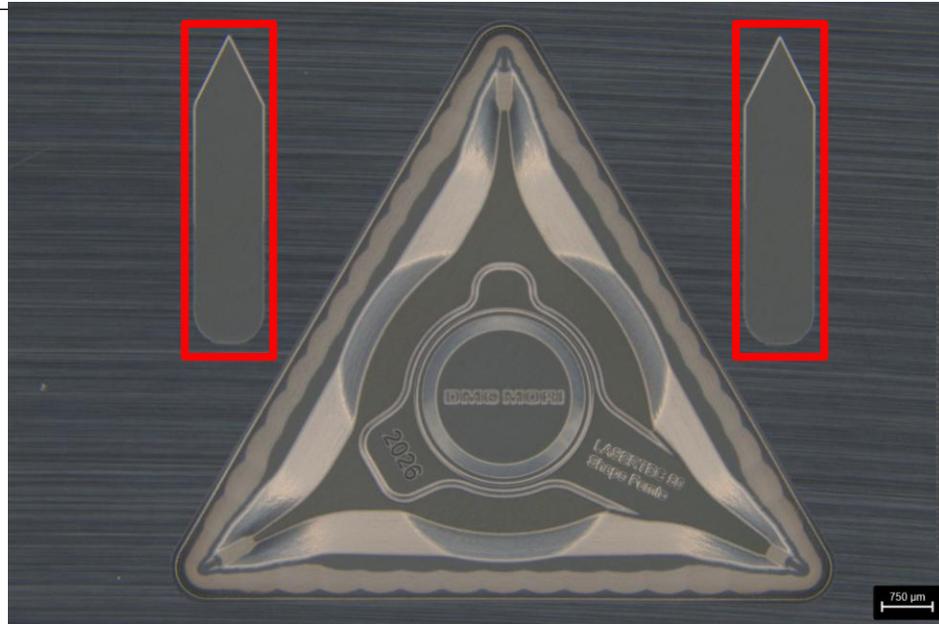
- + Contact-free laser machining without tool wear
- + Femtosecond laser for “cold” and slag free ablation with surface finishes of $Ra \leq 0.1 \mu m$
- + Machinability of Advanced Materials (tungsten carbide, ceramics, PCD ...)
- + 24/7 automation with PH 50



APPLICATION REPORT

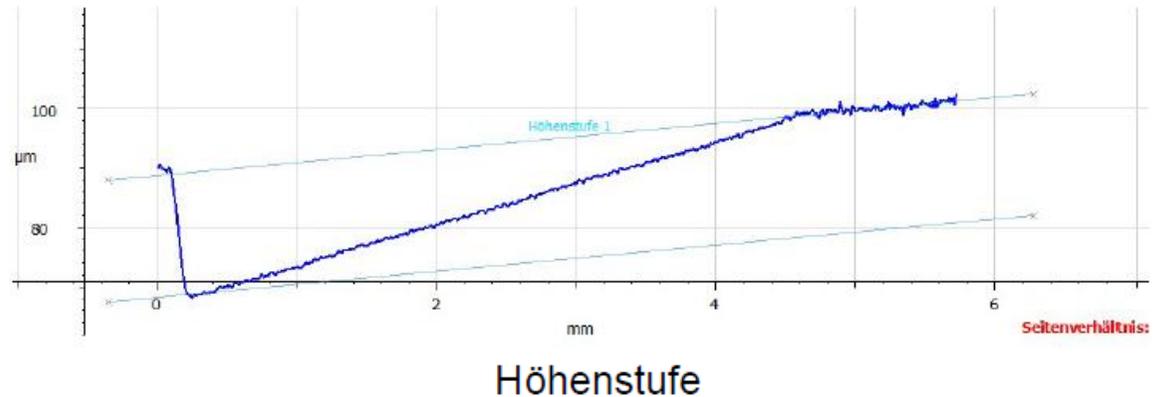
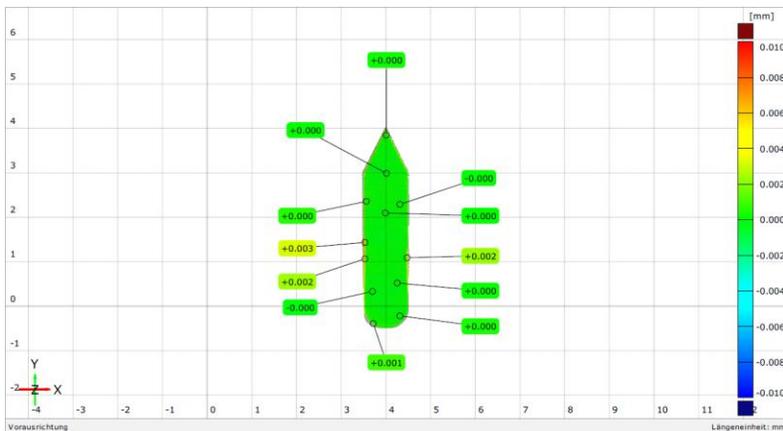
Machining time:	31 min 21 sek
Deviation from target:	7 µm
Flatness	5 µm
Edge radius	<10 µm
Ra surface finish:	0,120 µm
Rz surface finish:	0.791 µm



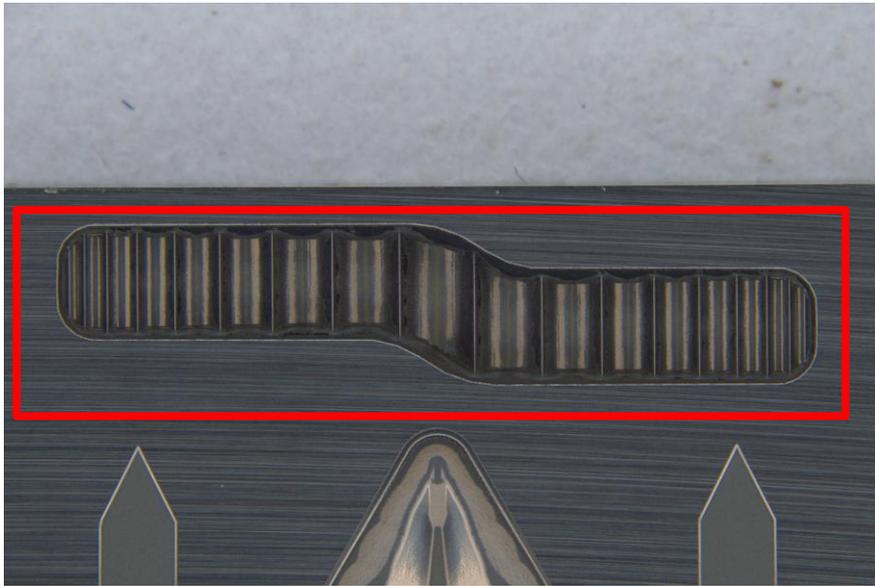


APPLICATION REPORT

Machining time: 19 sek
 Total contour depth: 20 μm / xx μm
 Ra surface finish: 0,166 μm
 Rz surface finish: 1,525 μm



	Winkel / °	Distanz / μm	P1.x / μm	P1.y / μm	P2.x / mm	P2.y / μm	P3.x / μm	P3.y / μm	P4.x / mm	P4.y / μm
Höhenstufe 1	0.126	20.628	-359.869	87.939	6.281	102.589	-359.869	67.310	6.281	81.961



APPLICATION REPORT

Machining time: 15 min 02 sek

Total contour depth: 750 μm

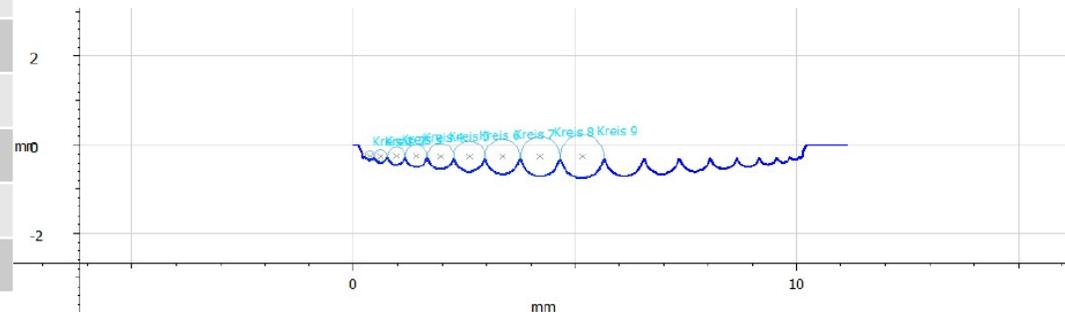
Achievable wall angle: 8°

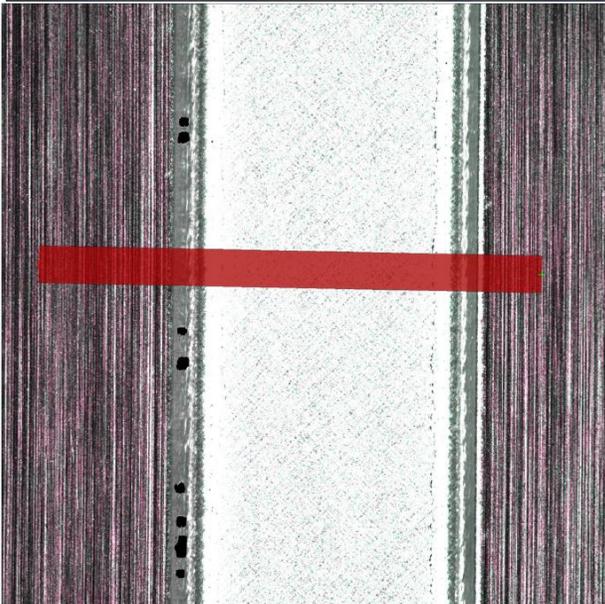
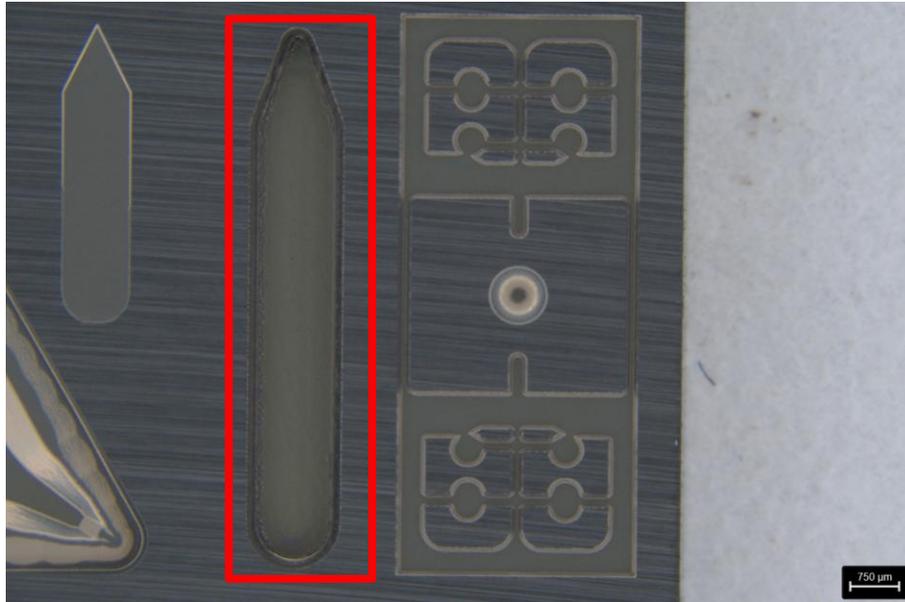
Radius: xx μm (dev 2 μm)

Ra surface finish: 0,154 μm

Rz surface finish: 1,386 μm

Element	Target Value	Measurement value
Kreis 1	100 μm	104,502 μm
Kreis 2	150 μm	145,247 μm
Kreis 3	200 μm	198,361 μm
Kreis 4	250 μm	247,275 μm
Kreis 5	300 μm	295,404 μm
Kreis 6	350 μm	348,123 μm
Kreis 7	400 μm	393,011 μm
Kreis 8	450 μm	446,227 μm
Kreis 9	5000 μm	493,383 μm





APPLICATION REPORT

Machining time: 12 min 22 sek

Total contour depth: 520 µm / xx µm

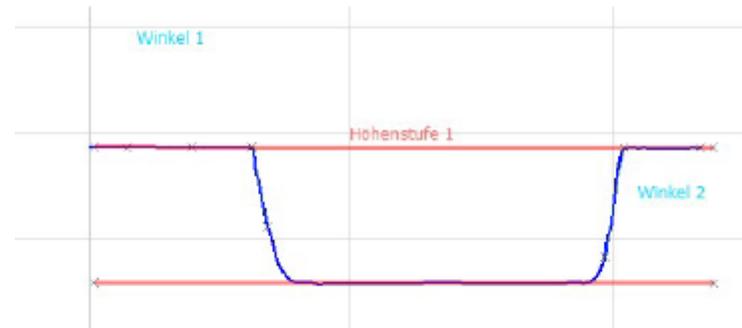
Achievable wall angle: 10°

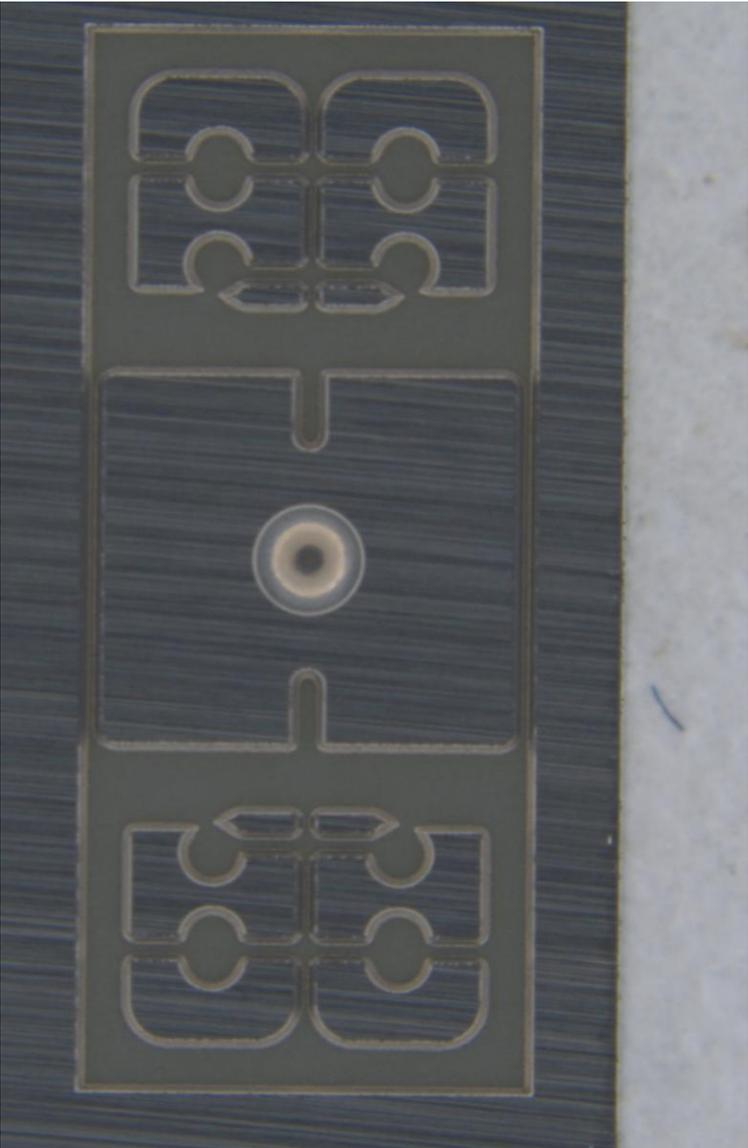
Radius: xx µm (dev 2 µm)

Ra surface finish: 0,166 µm

Rz surface finish: 1,525 µm

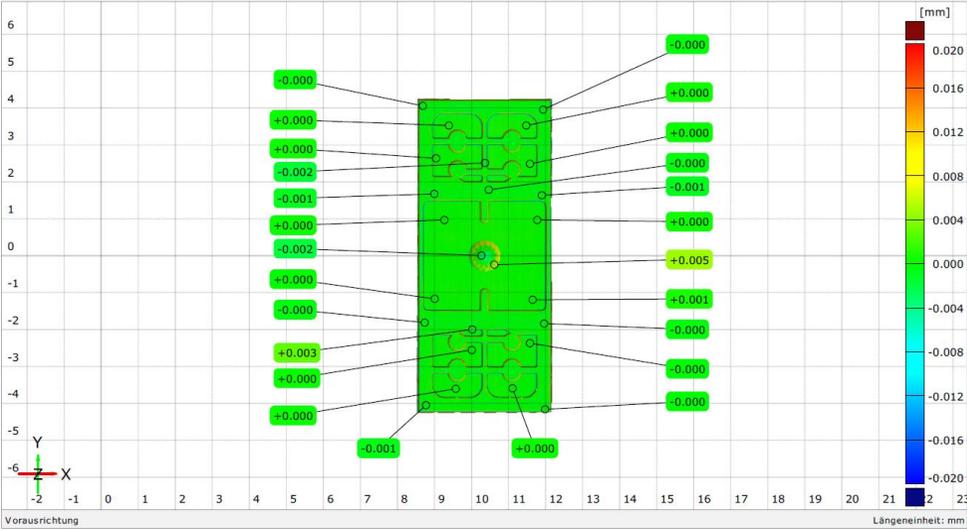
Element	Target value	Measurement value
Depth	520 µm	519,946 µm
Angle 1	10°	10.505 °
Angle 2	10°	9,724°

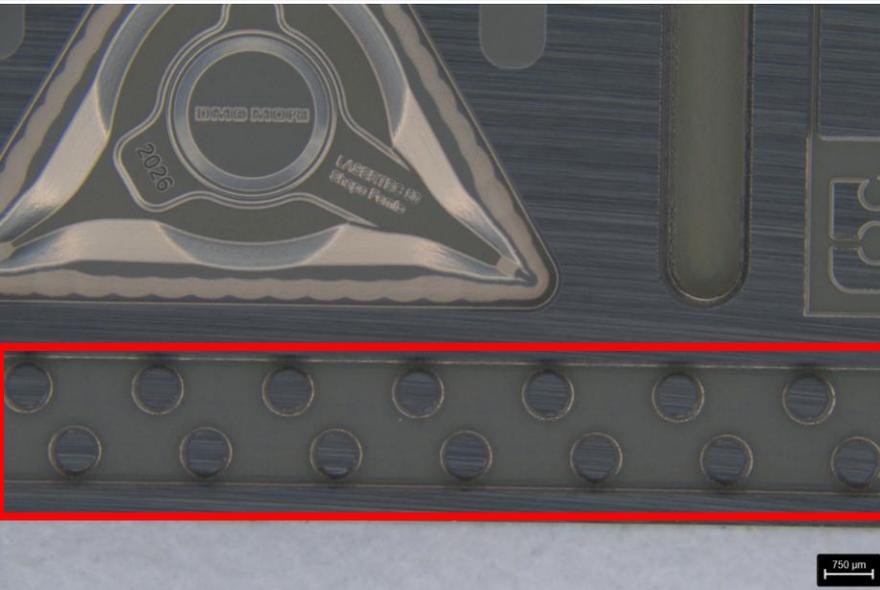




APPLICATION REPORT

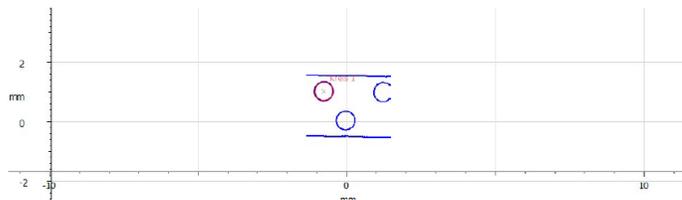
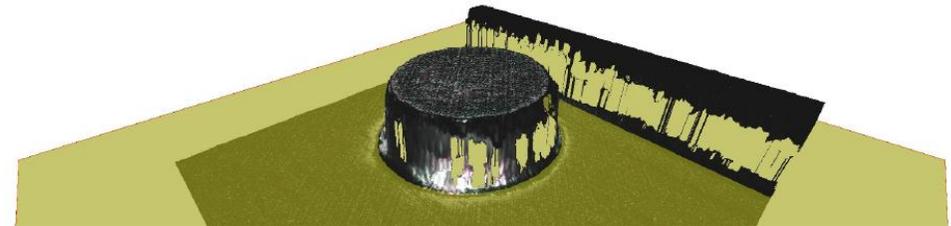
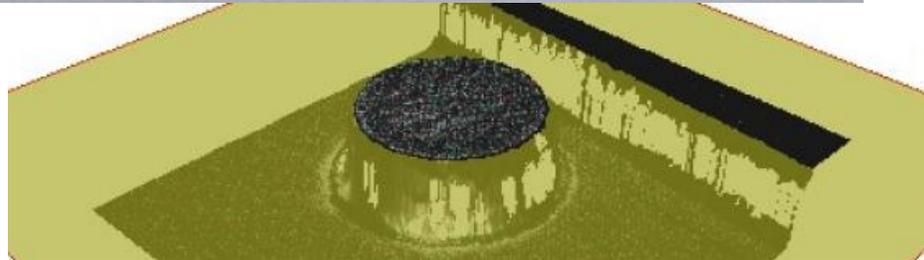
Machining time:	7 min 58 sek
Total contour depth:	464 μm / xx μm
Achievable wall angle:	10°
Radius:	xx μm (dev 2 μm)
Ra surface finish:	0,166 μm
Rz surface finish:	1,525 μm





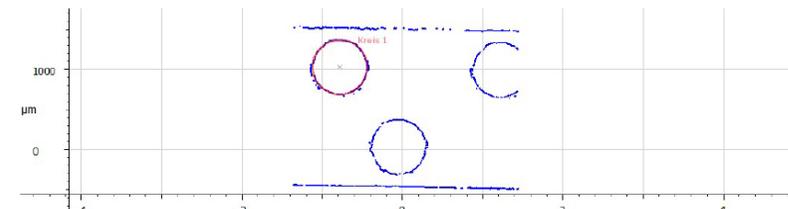
APPLICATION REPORT

Machining time: 19 min 24 sek
 Radius: 314.89 µm (target 315 µm)
 Achievable wall angle: 10°
 Pin height: 252 µm (target 250 µm)
 Ra surface finish: 0,166 µm
 Rz surface finish: 1,525 µm



Kreis

	Radius / µm	C.x / µm	C.y / mm	mittlere Abweichung / µm	min. Abweichung / µm	max. Abweichung / µm	Umfang / mm	Fläche / µm ²
Kreis 1	314.892	-782.724	1.025	5.163	-6.031	24.836	1.979	311511.304



Kreis

	Radius / µm	C.x / µm	C.y / mm	mittlere Abweichung / µm	min. Abweichung / µm	max. Abweichung / µm	Umfang / mm	Fläche / µm ²
Kreis 1	340.777	-780.733	1.033	10.280	-13.028	40.734	2.141	364829.627