FOIL PRESSING
&
FOIL MILLING

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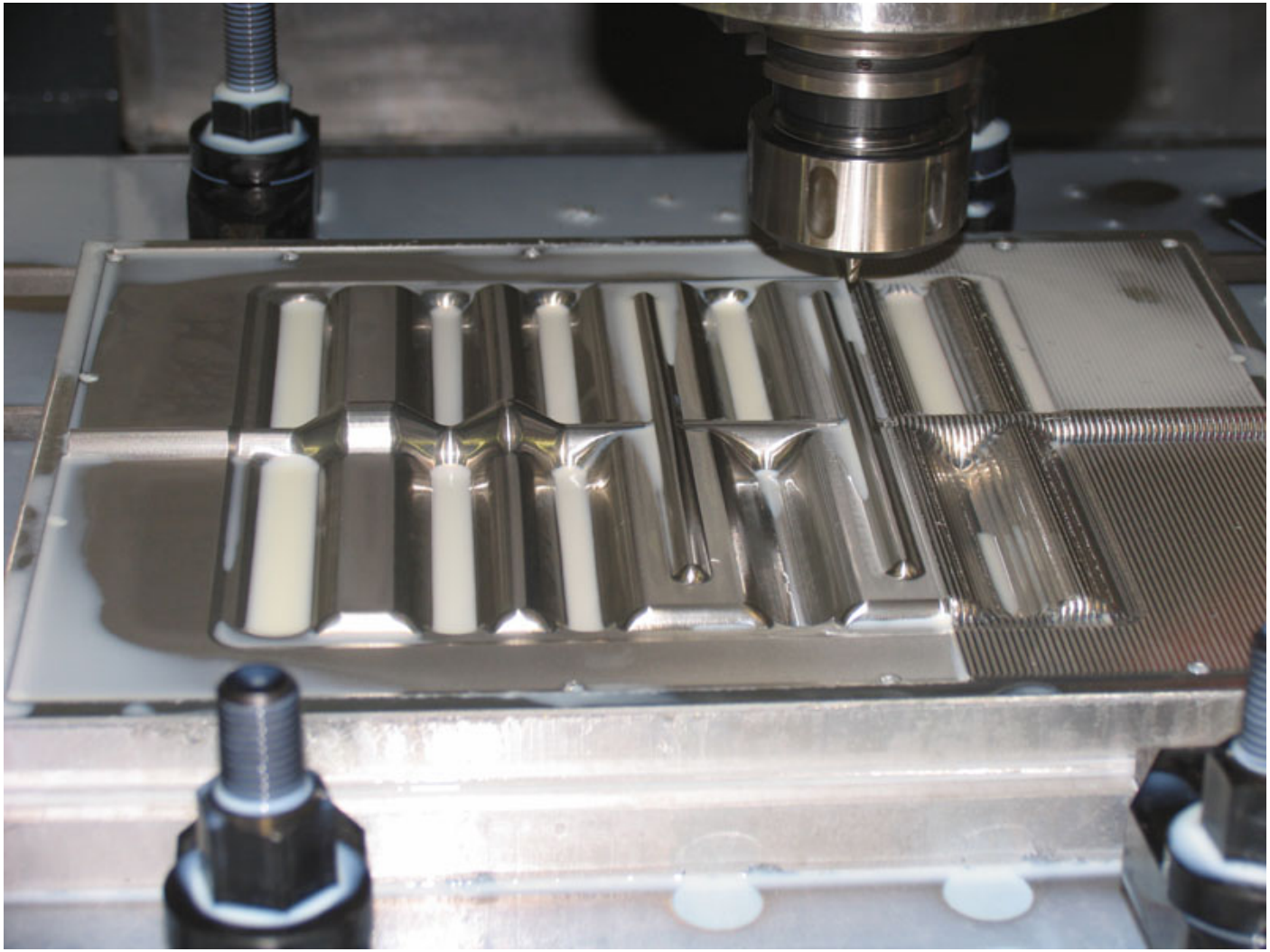
Stuk weggelaten

Milling process



Milling results

Milling tools

Convex cutter Ø 5 mm carbide tool type SC 2 FL SE BN EM
Convex cutter Ø 12 mm carbide tool (Phantom)

Beam side milling
Pre milling:
Convex cutter Ø 12 mm
Speed 5000 r/min
Milling feed 550 m/min

Fine milling:
Convex cutter Ø 5 mm
Speed 5000 r/min
Milling feed 275 m/min

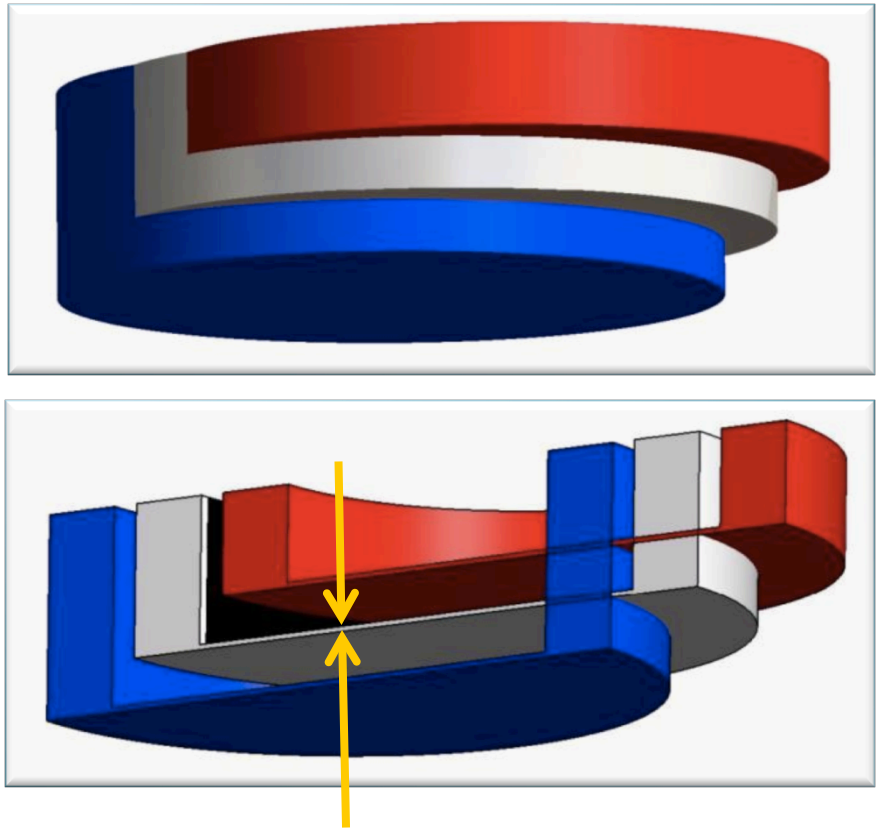
Detector side milling (vacuum mold)
Pre milling:
Convex cutter Ø 12 mm
Speed 5000 r/min
Milling feed 400 m/min

Fine milling:
Convex cutter Ø 5 mm
Speed 5000 r/min
Milling feed 250 m/min

DATE	PROCES	MATERIAL	LENGHT	WIDTH	THICKNESS	FOIL THICKNESS
22-09-2008	milling	ACP 5080"S"	330 mm	260 mm	25 mm	0.2mm-0.35mm

LEAK-RATE	QUALITY	LEAK TEST
< 3x10-8 mbar l/sec	usable	He Surface tested
1.4x10-9 mbar l/s	usable	Differential tested

Material survey by turning on 3 levels

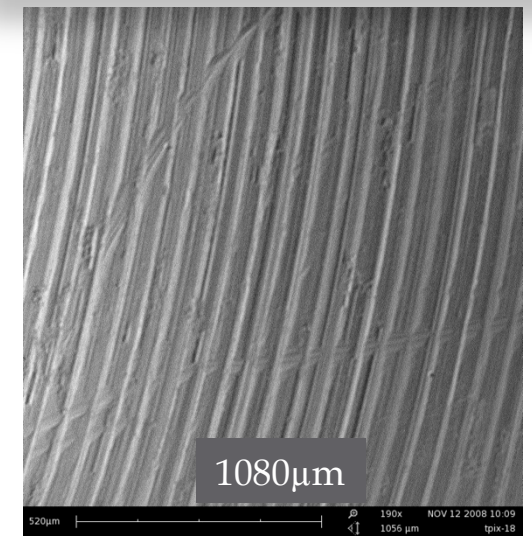


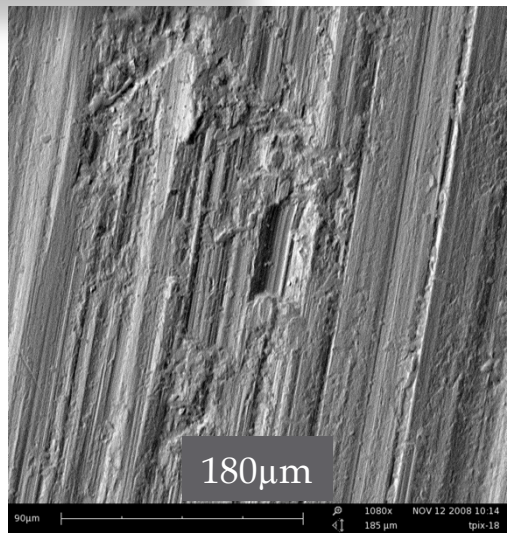
Vacuum test on different levels in a ACP 5080"S" plate

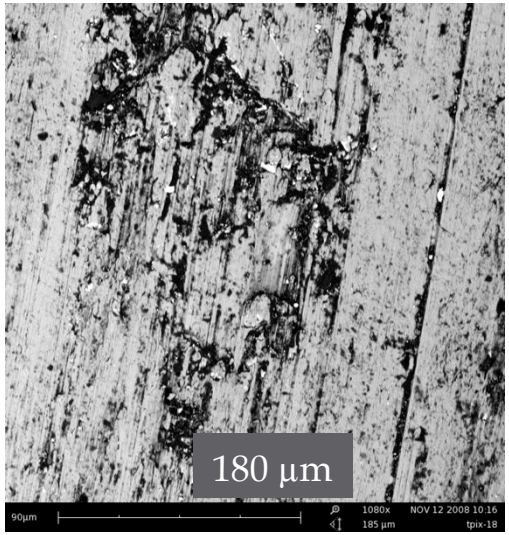
25 % good

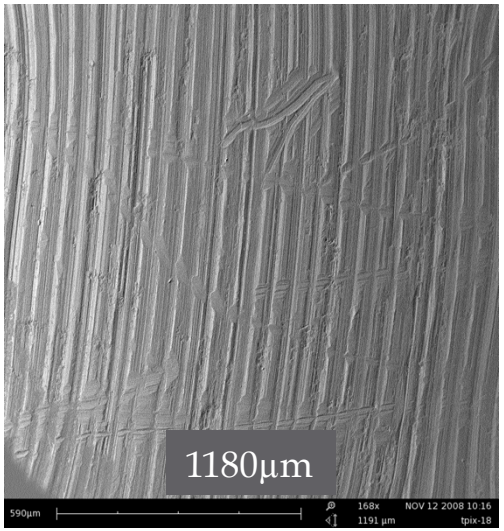
level	Leak rate
10.1	5 x10-7 mbar l/s
10.2	8.9 x10-4 mbar l/s
10.3	4.5x10-4 mbar l/s
10.4	00 x10^{-10} mbar l/s
10.5	2.7 x10-4 mbar l/s
10.6	4.5 x10-4 mbar l/s
15.1	3.6 x10-4 mbar l/s
15.2	3.5 x10-4 mbar l/s
15.3	leak
15.4	5.3 x10-6 mbar l/s
15.5	6.2 x10-7 mbar l/s
15.6	8.4x10-4 mbar l/s
20.1	00 x10^{-10} mbar l/s
20.2	7.3 x10-7 mbar l/s
20.3	00 x10^{-10} mbar l/s
20.4	5.3 x10-6 mbar l/s
20.5	00 x10^{-10} mbar l/s
20.6	2.7 x10-4 mbar l/s

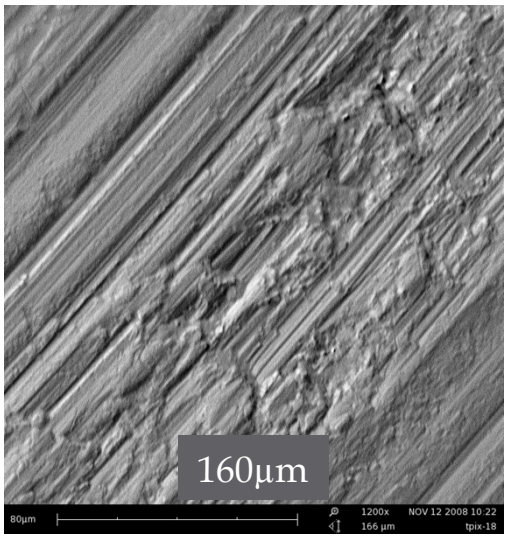
Electron microscope ACP 5080”S” test

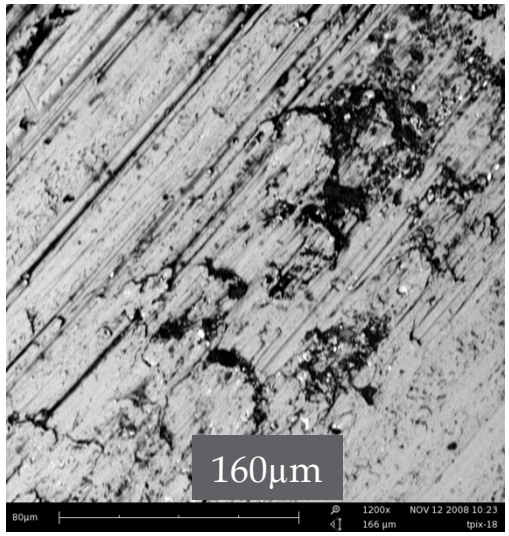




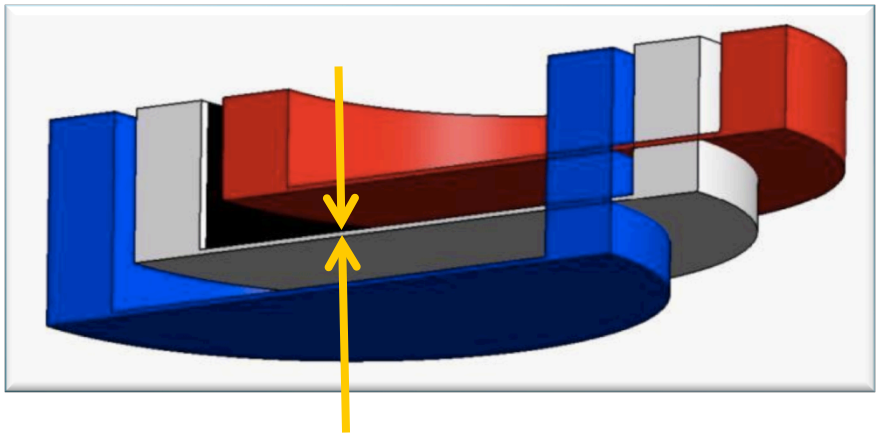








Material survey by milling on 3 levels



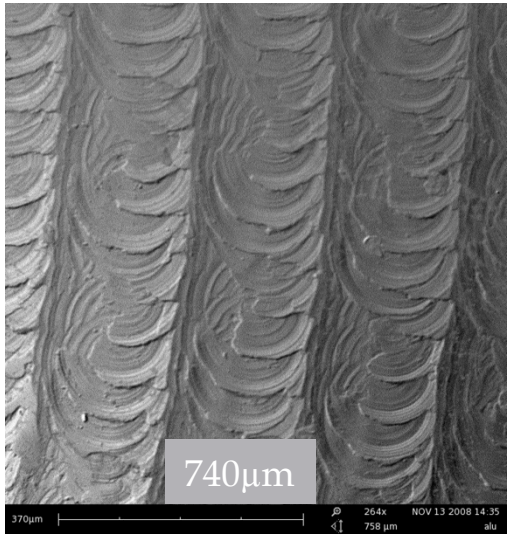
Milling:
Convex cutter Ø 12 mm
Speed 5000 r/min
Milling feed 250 m/min

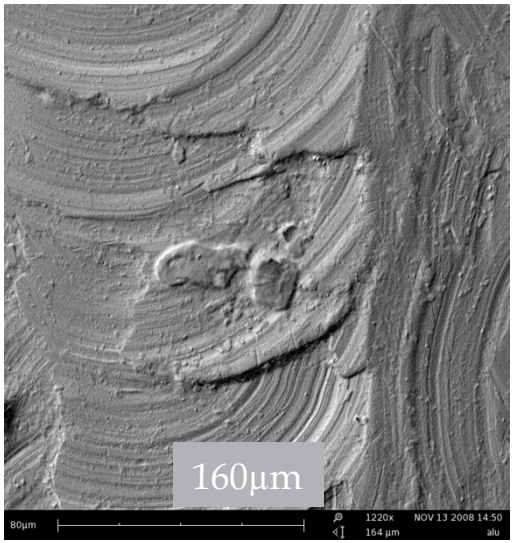
Vacuum test on different levels in a ACP 5080"S" plate

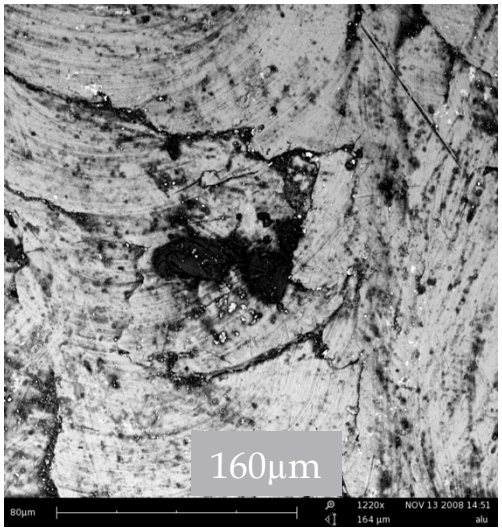
100% good

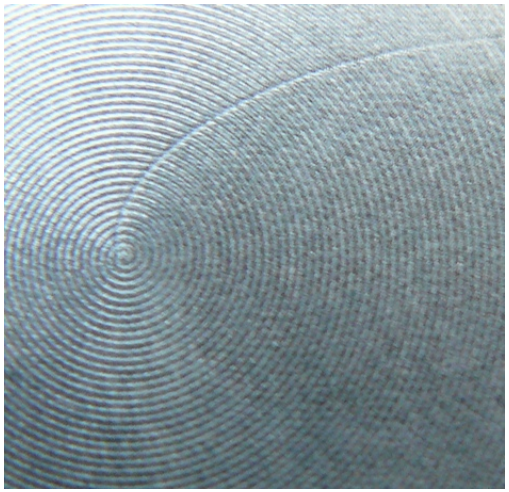
level	Leak rate
10.1	00X10^{-9} mbar l/s
15.1	00X10^{-9} mbar l/s
20.1	00X10^{-9} mbar l/s
20.2	00X10^{-9} mbar l/s

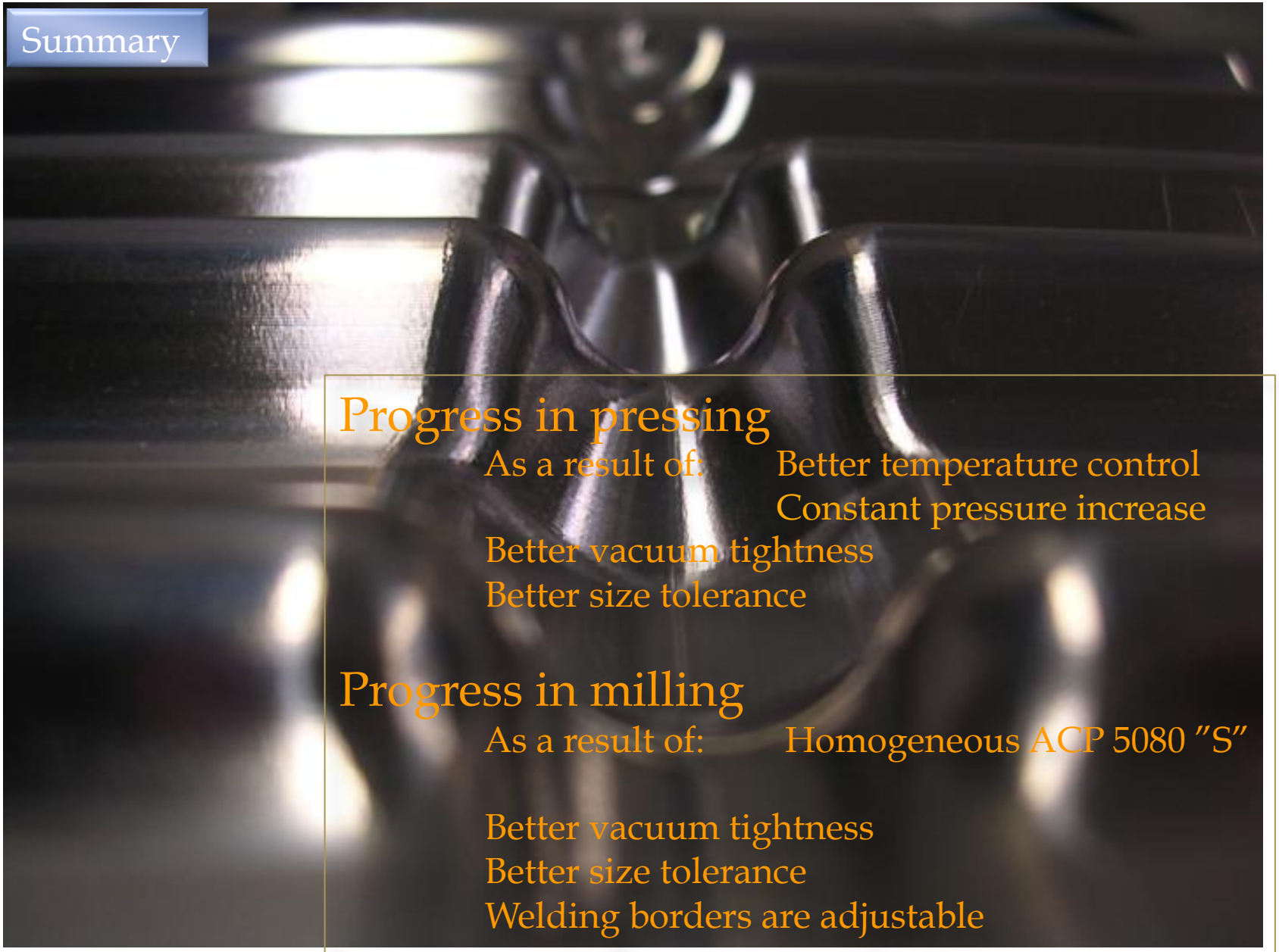
Electron microscope ACP 5080”S” test











Summary

Progress in pressing

As a result of: Better temperature control
Constant pressure increase
Better vacuum tightness
Better size tolerance

Progress in milling

As a result of: Homogeneous ACP 5080 "S"

Better vacuum tightness
Better size tolerance
Welding borders are adjustable