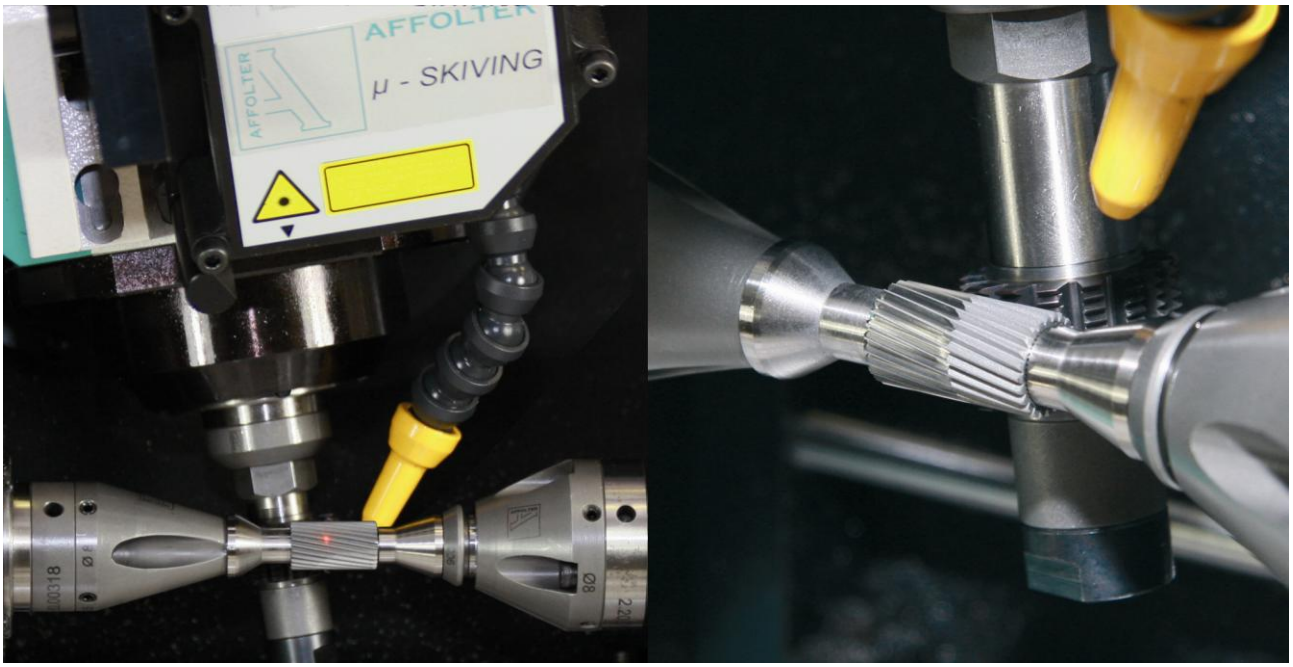
μ-Skiving

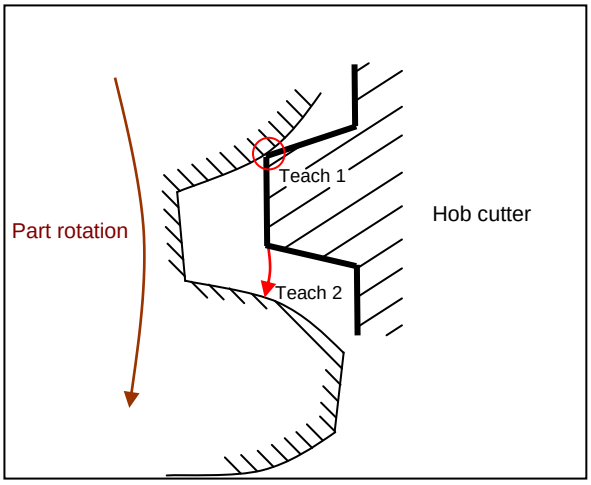
Finishing of hardened small pitch gears

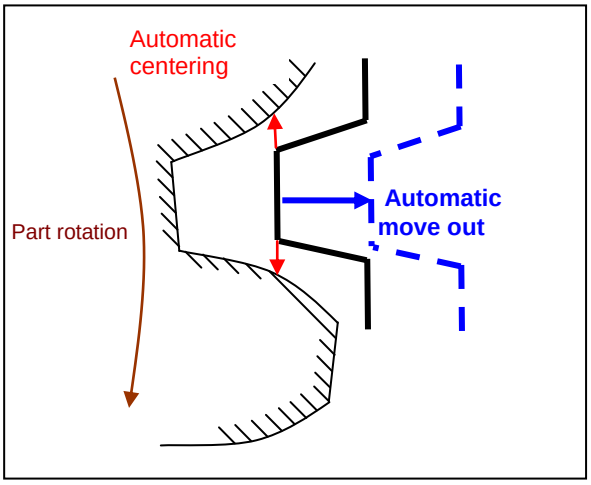
As an alternative to the gear grinding operation, Affolter offers on the AF100 gear hobbing center the option μ-Skiving :

- High precision re-positioning of pre-cut components in the module-range 0.1 to 1.0mm (254 to 25.4 DP) with a laser sensor
- Skive-hobbing with profile optimized and coated carbide hob cutters
- Dry cutting: air cooling and chips aspiration
- Machining of hardened materials at 60~65 HRC
- The gear quality is usually DIN 3~5 (AGMA 14~15 / JIS 0)



The setup operation for the alignment of the hob inside the tooth space is performed with a simple and semi-automatic procedure on the CNC-control:





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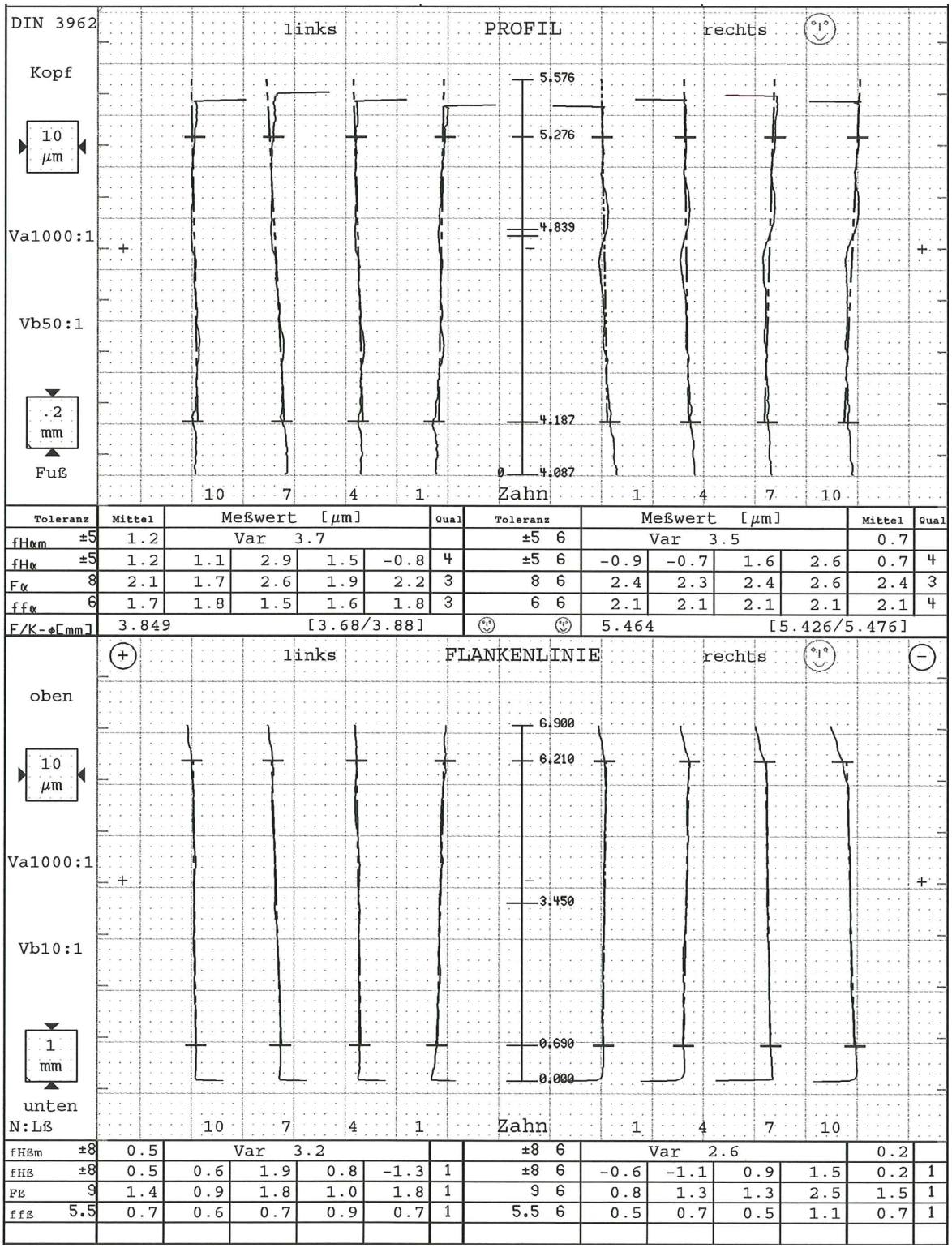
µ-Skiving

Application example: Pinion (helical gear)

Normal module / DP	m_n:	0.35 / 72.57 DP
Number of teeth	z:	32
Pressure angle	α:	20°
Helix angle	β:	11.5°
Hardness	HRC:	61~63



Toleranz	Mittel	Meßwert [µm]				Qual	Toleranz	Meßwert [µm]				Mittel	Qual
fHαm ±5	1.2	Var 3.7					±5 6	Var 3.5				0.7	
fHα ±5	1.2	1.1	2.9	1.5	-0.8	4	±5 6	-0.9	-0.7	1.6	2.6	0.7	4
Fα 8	2.1	1.7	2.6	1.9	2.2	3	8 6	2.4	2.3	2.4	2.6	2.4	3
ffα 6	1.7	1.8	1.5	1.6	1.8	3	6 6	2.1	2.1	2.1	2.1	2.1	4
F/K-ϕ[mm]	3.849	[3.68/3.88]						5.464	[5.426/5.476]				

fHßm ±8	0.5	Var 3.2					±8 6	Var 2.6				0.2	
fHß ±8	0.5	0.6	1.9	0.8	-1.3	1	±8 6	-0.6	-1.1	0.9	1.5	0.2	1
Fß 9	1.4	0.9	1.8	1.0	1.8	1	9 6	0.8	1.3	1.3	2.5	1.5	1
ffß 5.5	0.7	0.6	0.7	0.9	0.7	1	5.5 6	0.5	0.7	0.5	1.1	0.7	1

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