Workpiece number	**hob_example**		
Drawing number		Operator	
Order number		Company	
Part number incr.		Department	
CMM			

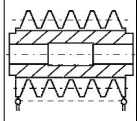
ZEISS

GEAR® PRO hob

Module	**2,500** mm	Pressure angle	**20,000** °	Hob length	**200,000** mm
Threads	**2**	Lead angle	**03°54'00"** °	Reference circle	**73,500** mm
Flutes	**20**	Lead direction	**right**	Tip circle D_{nom}	**80,500** mm
Teeth	**244**	tooth thickness	**4,075** mm	Tip circle D_{mean}	**80,514** mm
		Tooth depth	**5,500** mm	Tool face distance	**0,000** mm

u_{act} **-0,062** mm

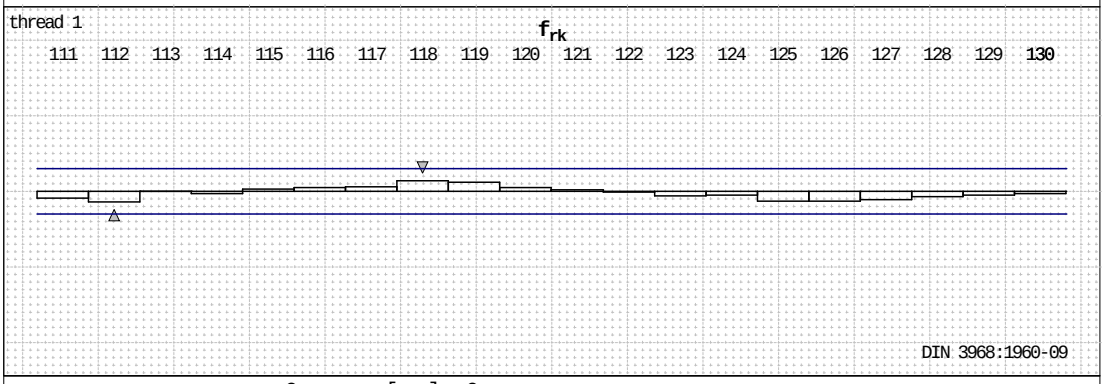
6 Radial runout on tooth tip



f_{rk}

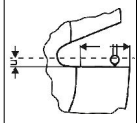
20 µm

500:1



		Q_a	[...]	Q_n		
f_{rk}		5	3A	12	AA	
D_{mean}	80,514	80,489 / 80,500		D_{nom}	80,500	
D_{max}	80,521	80,489 / 80,500				
D_{min}	80,510	80,489 / 80,500				
$D_{a\_ref\ (ref=121)}$	80,516	80,489 / 80,500				

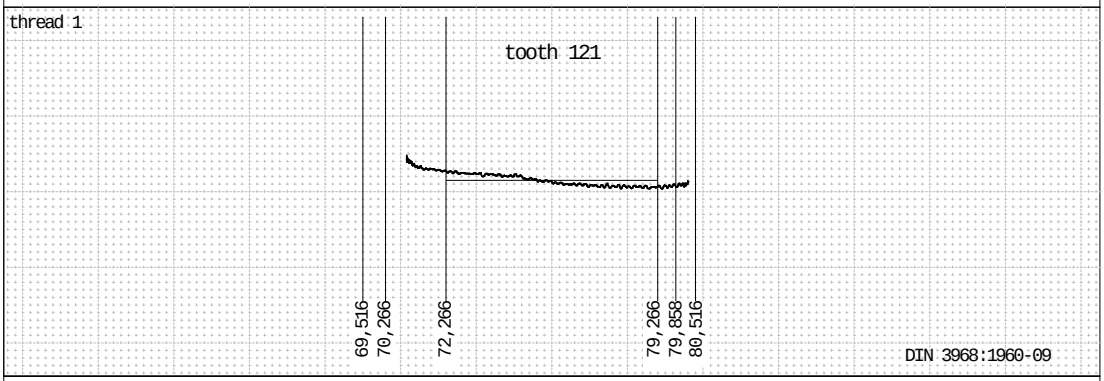
7 Form and positional deviation of tool faces



F_{fN}

20 µm

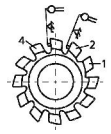
500:1



	Q_a	[...]	Q_n
F_{fN}	14 A	12	AA
FfN_{mean}	10		

Calculation by nominal tool face distance

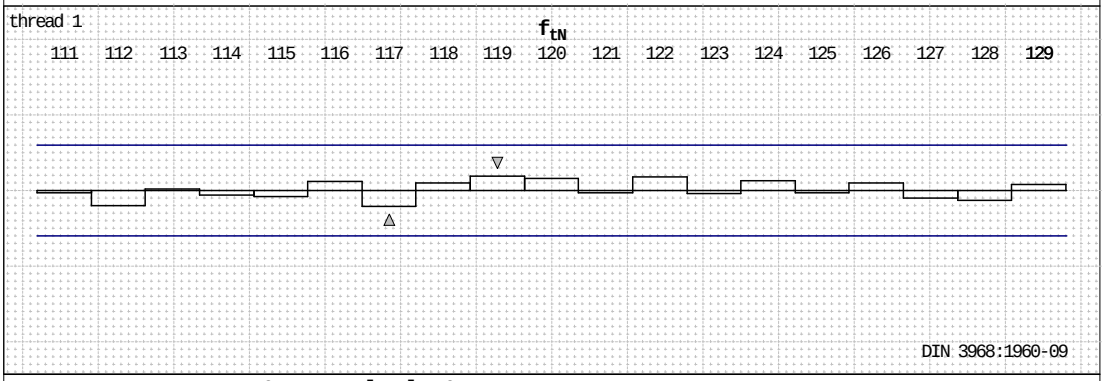
8 Individual pitch of flutes



f_{tN}

20 µm

500:1



	Q_a	[...]	Q_n
f_{tN}	-4 3A	±12	AA

Workpiece number **hob_example**			
Drawing number		Operator	
Order number		Company	
Part number incr.		Department	
CMM			

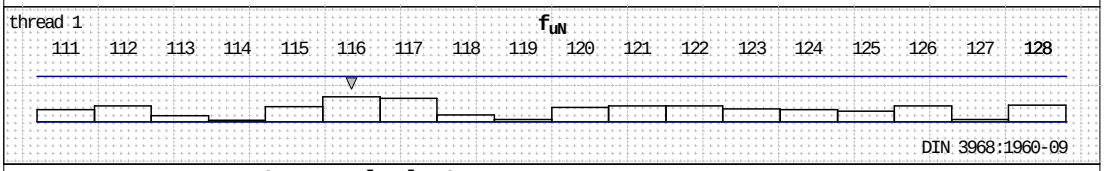
GEAR® PRO hob

Module	2,500 mm	Pressure angle	20,000 °	Hob length	200,000 mm
Threads	2	Lead angle	03°54'00" °	Reference circle	73,500 mm
Flutes	20	Lead direction	right	Tip circle D_{nom}	80,500 mm
Teeth	244	tooth thickness	4,075 mm	Tip circle D_{mean}	80,514 mm
		Tooth depth	5,500 mm	Tool face distance	0,000 mm

u_{act} -0,062 mm

9 Tooth to tooth pitch of flutes

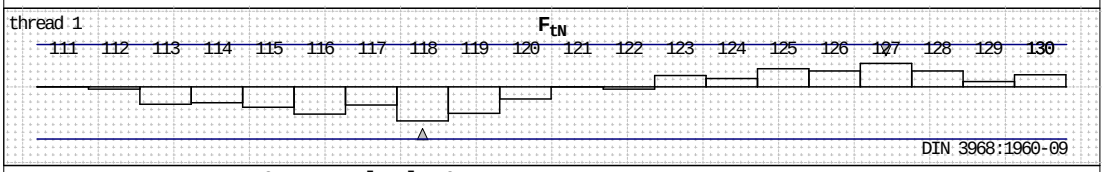
f_{uN} — 20 µm — 500:1



	Q_a	[...]	Q_n
f_{uN}	7 3A		12 AA

10 Cumulative pitch of flutes

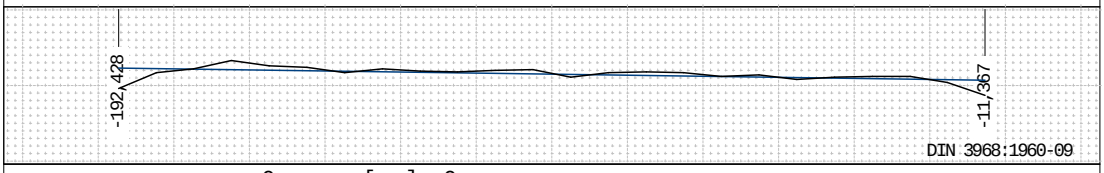
F_{tN} — 20 µm — 500:1



	Q_a	[...]	Q_n
F_{tN}	15 AA		25 AA

11 Flute lead over 100 mm hob length

f_{HN} — 20 µm — 500:1



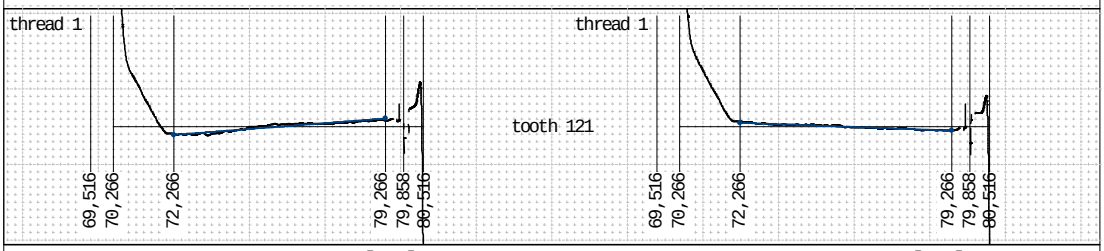
	Q_a	[...]	Q_n
f_{HN}	2 3A	±50	AA

Calculation from axial pitch measurement

12 Profile-Total Deviation

left — right

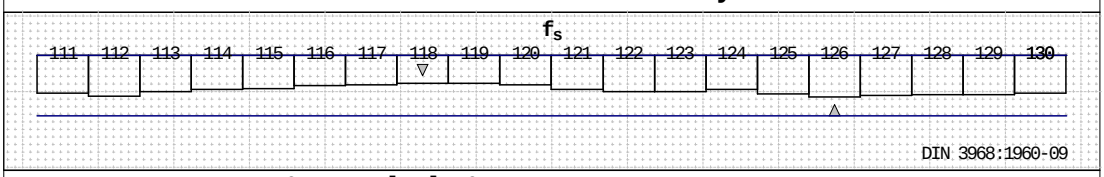
F_{fS} — 20 µm — 500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
F_{fS}	8 A	6	AA	F_{fS}	4 AA	6	AA
F_{fS_ref} (ref=121)	4	6		F_{fS_ref} (ref=121)	2	6	

13 Tooth thickness on reference cylinder

S_S — 20 µm — 500:1



	Q_a	[...]	Q_n		
f_s	-11 AA	0 / -16	AA		
$S_{s\ max}$	4,063	4,070 / 4,086		$S_{s\ nom}$	4,070 mm
$S_{s\ min}$	4,059	4,070 / 4,086			
S_{s_ref} (ref=121)	4,061	4,070 / 4,086			

Calculation at pitch diameter with radial correction (by difference Da_ref to Dnom): 73,529

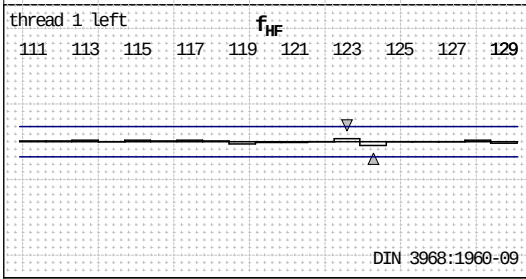
Workpiece number	**hob_example**		
Drawing number		Operator	
Order number		Company	
Part number incr.		Department	
CMM			

GEAR® PRO hob

Module	**2,500** mm	Pressure angle	**20,000** °	Hob length	**200,000** mm	
Threads	**2**	Lead angle	**03°54'00"** °	Reference circle	**73,500** mm	
Flutes	**20**	Lead direction	**right**	Tip circle D_{nom}	**80,500** mm	
Teeth	**244**	tooth thickness	**4,075** mm	Tip circle D_{mean}	**80,514** mm	
		Tooth depth	**5,500** mm	Tool face distance	**0,000** mm	u_{act} **-0,062** mm

14 Hob lead from edge to edge in the direction of hand

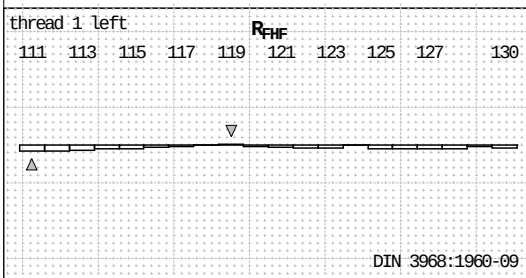
f_{HF} | 20 µm | 500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
f_{HF}	-1 3A		±4 AA	f_{HF}	1 3A		±4 AA

15 Hob lead in direction of hand between edges on same thread

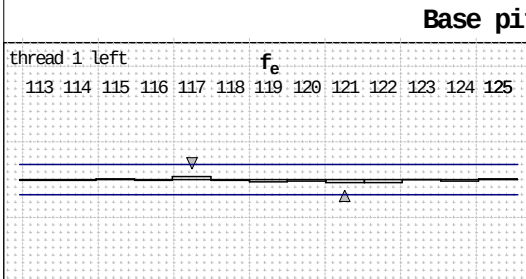
F_{HF} | 20 µm | 500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
F_{HF}	2 3A		6 AA	F_{HF}	3 3A		6 AA
R_{FHF}	2			R_{FHF}	3		

16 Base pitch element

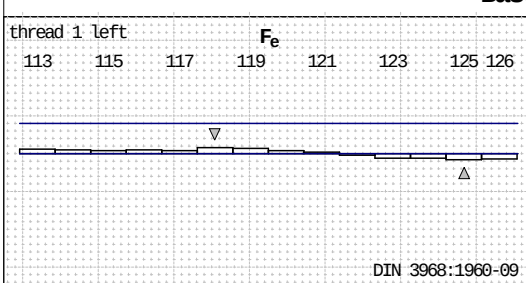
f_e | 20 µm | 500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
f_e	-1 3A		±4 AA	f_e	-1 3A		±4 AA

17 Base pitch

F_e | 20 µm | 500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
F_e	3 3A		8 AA	F_e	4 3A		8 AA

Calculation from a intersection of a line of action with profile measurements

Calculation with radial correction of nominal profile by difference Da_ref to Dnom

Workpiece number **hob_example**			
Drawing number		Operator	
Order number		Company	
Part number incr.		Department	
CMM			

ZEISS

GEAR® PRO hob

Module	**2,500** mm	Pressure angle	**20,000** °	Hob length	**200,000** mm
Threads	**2**	Lead angle	**03°54'00"** °	Reference circle	**73,500** mm
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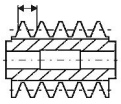
Teeth	**244**	tooth thickness	**4,075** mm	Tip circle D_{mean}	**80,514** mm
		Tooth depth	**5,500** mm	Tool face distance	**0,000** mm

u_{act} **-0,062** mm

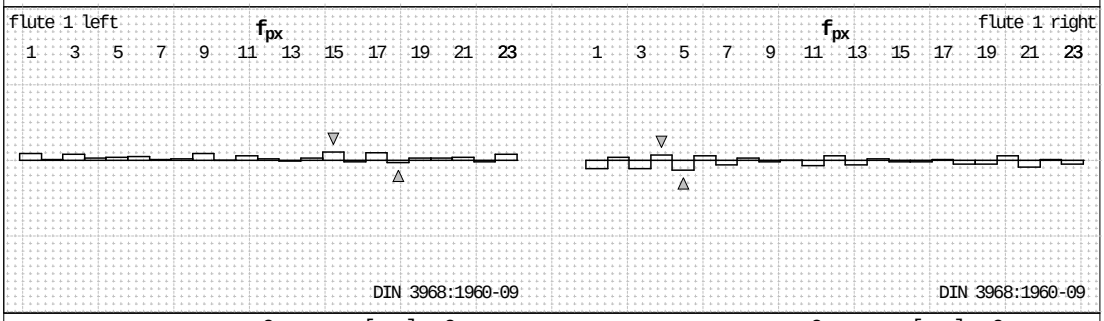
Single axial pitch deviation



f_{px}

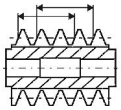
20 µm

500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
f_{px}	2			f_{px}	3		

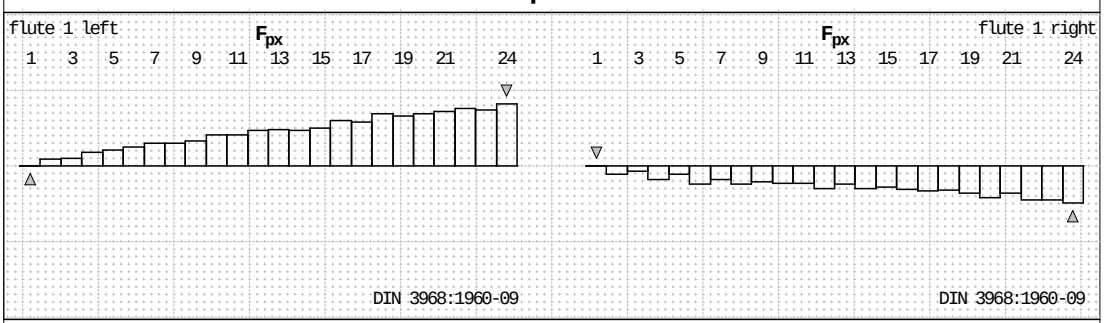
Total axial pitch deviation



F_{px}

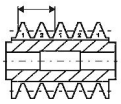
20 µm

500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
F_{px}	16			F_{px}	10		
F_{px3}	4			F_{px3}	4		

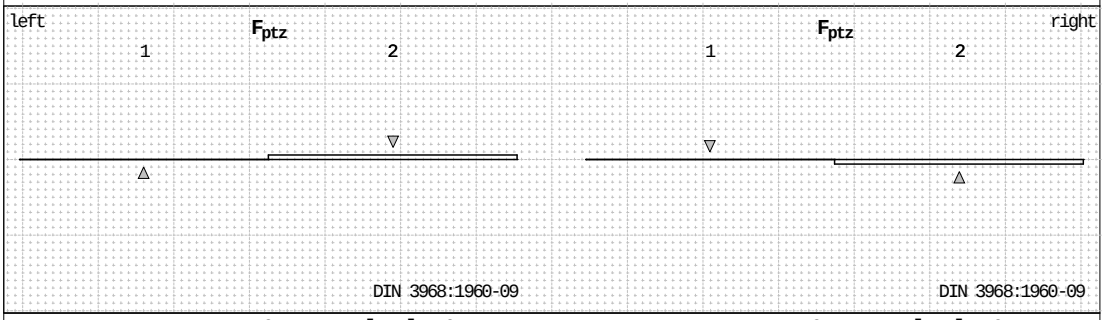
Total thread spacing deviation between threads



F_{ptz}

20 µm

500:1



	Q_a	[...]	Q_n		Q_a	[...]	Q_n
F_{ptz}	1			F_{ptz}	1		
f_{ptz}	1			f_{ptz}	1		