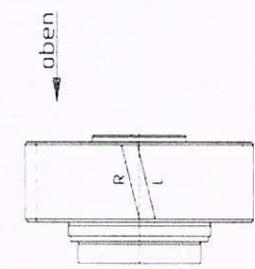


STIRNRAD GEAR		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978) gültig für Werte am Einzelzahn Tolerances of gearing (DIN 3961 of Aug. 1978) valid for values at individual tooth		(7)	
außenverzahnt external	z	linke Fl. left flank	rechte Fl. right flank	linke Flanke left flank	rechte Flanke right flank
29				18.54 18.08	18.54 18.08
2.000000	m_n	0.005		$C_{tr,LF1} = 0.001$	$C_{tr,RF1} = 0.010$
17° 30' 0"	α_n				
33° 0' 0"	β	0.000 ± 0.008	0.000 ± 0.008		
LINKS	Hand of helix	0.000 ± 0.008	0.000 ± 0.008		
0.000	Profilverstärkungsfaktor Addendum modification coeff.	0.000 ± 0.008	0.000 ± 0.008		
69.157	Teilkreisdurchmesser Pitch diameter	0.000 ± 0.008	0.000 ± 0.008		
75.20 -0.26	Kopfkreisdurchmesser Outside diameter	0.005			
74.60	Kopfnutkreis, theo. max. d_{ka} Tip diam. usable theo.	0.032			
74.15	Kopfnutkreis, theo. min. d_{ka} Tip diam. usable theo.				
61.52 -0.35	Fußkreisdurchmesser Root diameter				
65.26	Fußnutkreisdurchmesser Root diameter usable				
32.367	Grundkreisdurchmesser Base circle radius				
64.734	Grundkreisdurchmesser Base diameter				
3.142	Normalzahnstärke Normal tooth thickness				
3.112	Normalzahnstärke Normal tooth thickness				
5	Meßzähnezahl Number of teeth spanned				
27.870	Zahnweite Base tangent length				
27.841	Zahnweite Base tangent length				
3.0000	Meßkugeldurchmesser Ball diameter				
72.068	Diam. Zweikugelmaß Measurement o. balls				
71.973	Diam. Zweikugelmaß Measurement o. balls				
0.069	Verdrehfankensspiel Circumferential backlash				
0.170	Circumferential backlash				



#Waviness evaluation (fitted sine) in profile and helix direction until 4th gear order to be documented according to G_00_05_S_0012
Order referenced to the considered gear

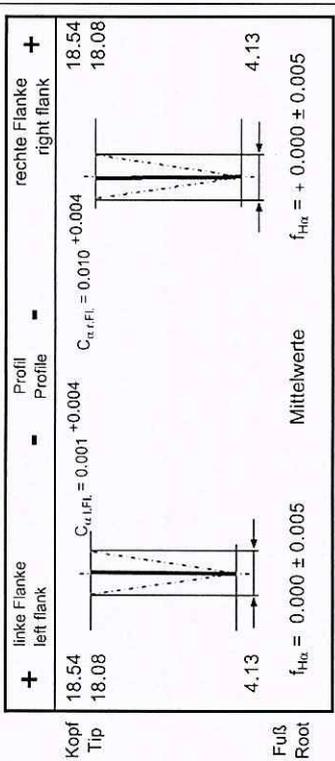
rechte Flanke=ZUG

Bezugsprofil-Schleifscheibe
Grinding tool data
Schleifscheibenkopfhöhe $h_{apos} = 3.800$
Grinding wheel tip height
Schleifscheibenkopfradius $\rho_{apos} = 0.508$
Grinding wheel tip radius
Schleifdurchmesser = 64.90 -0.30 ≈ 2.32
grinding diameter

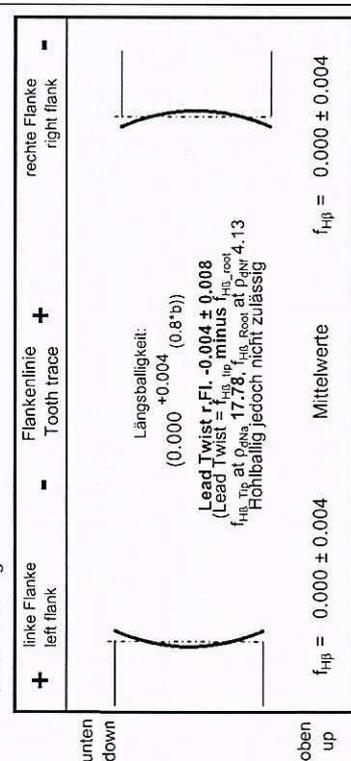
2

Vorbereitungsdaten siehe Verzahnungsblatt Vorbearbeitung gleicher Nr.
For pre-machining dimensions, see gear data sheet same number

Wkz-Profil siehe Werkzeugdatenblatt Nr. 251.1.1255.50
For Tooth profile, see tool data sheet number



* Schreibbeginn $\varnothing = 64.90 -0.30 \approx 2.32$
* Start of checking

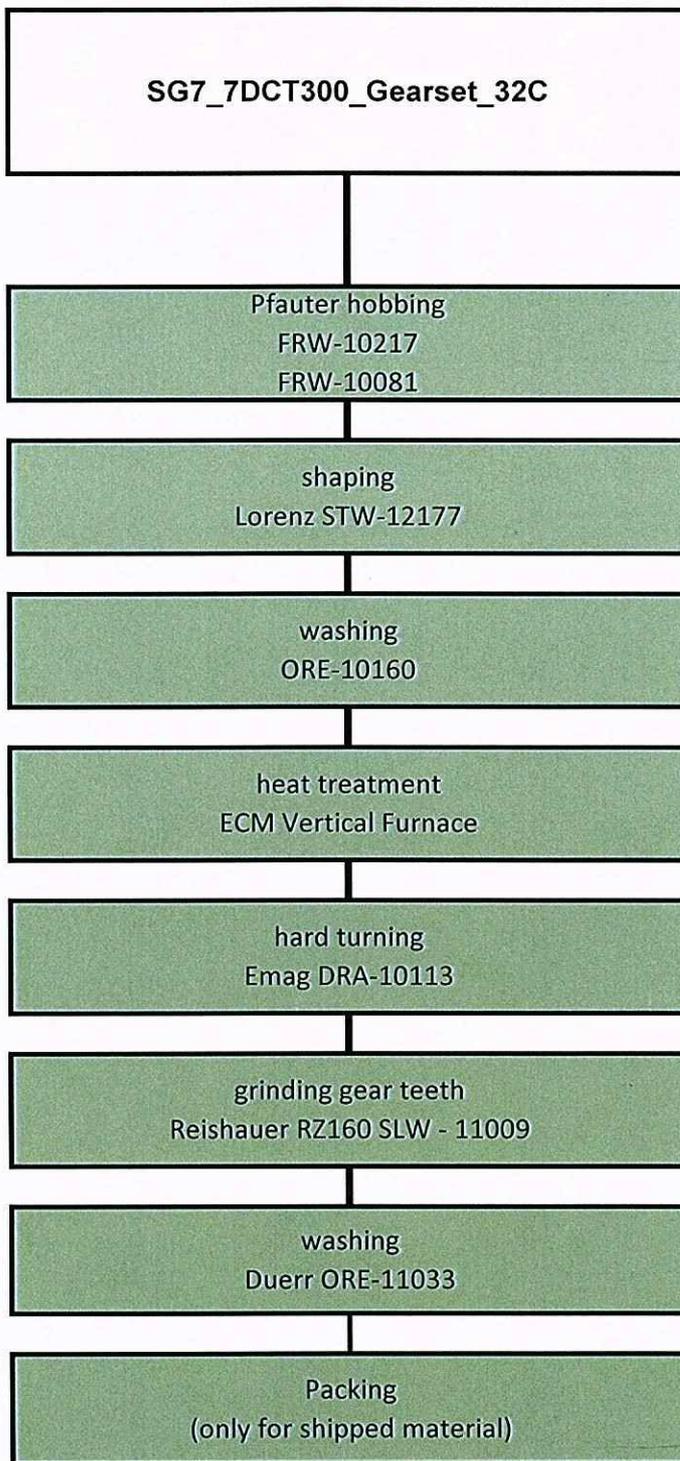


* f_{ff} (zwischen dnf und dem Schreibbeginn ds) max ffa/2, jedoch 0.003 zulässig
* f_{ff} (between dnf and start of checking ds) max ffa/2, 0.003 allowable.

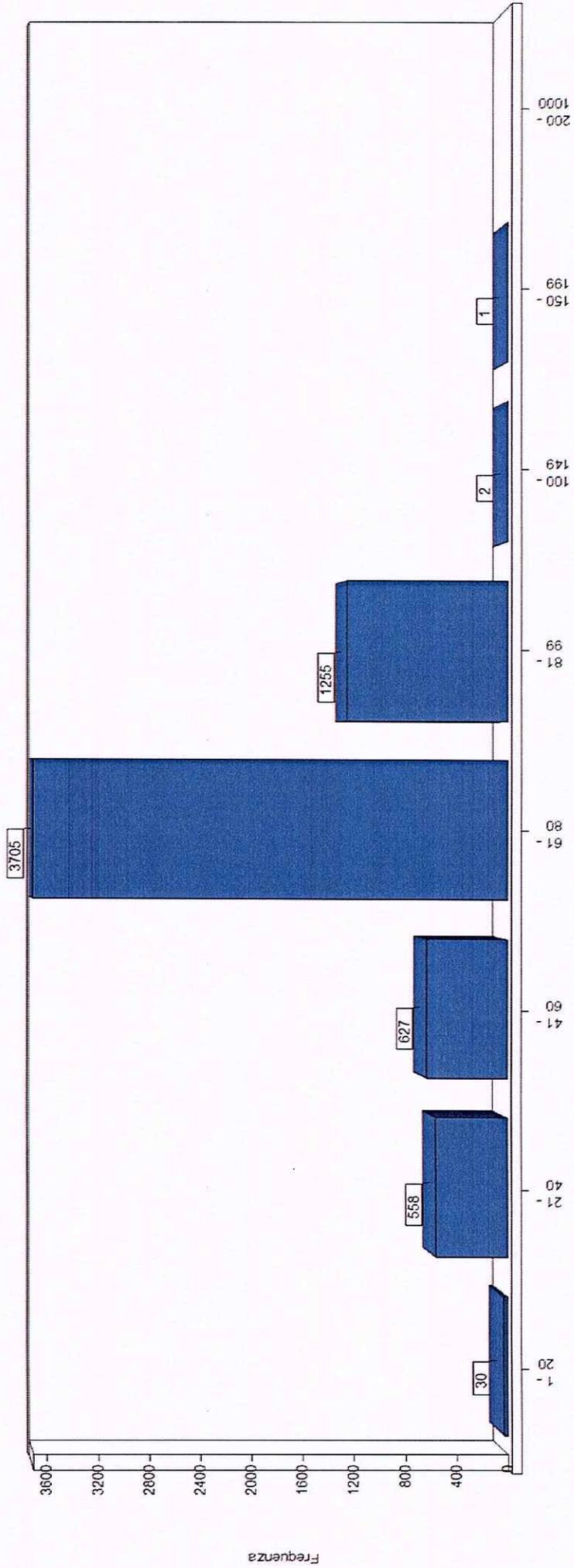
Profil- und Flankenlinienmessung nach G_808006 und VDI/VDI 2612
Flankenlinienprüfbereich L_p = 0.8*b hochgerechnet auf 1.0*b
Begriffe für Stirnräder nach DIN 888, 3960, 3998

Profile and helix checking according to G_808006 and VDI/VDI 2612
Tooth trace testing area L_p = 0.8*b calculated to 1.0*b
Terms of the tooth system according to DIN (German Industrial Standards) No. 888, 3960, 3998

Verteiler:		Schutzvermerk nach ISO 16016 beachten Protection per ISO 16016	
Buch.	Anz.	Datum	Name
a	1	20171108	Cricenti
Abbildungen sind unmaßstäblich. Diagrams not to scale.		Ersatz für	
Datum		Erstverwendung bei Getriebeart:	
gez. 23.03.2017		251	
gepr.		Verzahnungsblatt Endkontrolle Final Check Gear Data	
Benennung: Naming:		Zeilenummer: Drawing number:	
Schaltrrad 7.Gg.		251.1.1255.50	



		F M E A Processo		Numero: Pagina:	1.2.1.1.1.1
Tipo/Modello/Produzione/Lotto: 7DCT300		Numero Disegno: Gearset 1A + 21A + 21H + 32C Stato modifica:	Responsabile: Getrag Ditta: Getrag	Emesso: 31/08/2015	
FMEA/Elemento: GEARSET 7DCT300		Codice dell'operazione: Tutte Stato modifica:	Responsabile: Papagna, Oscuro, Nitti, Cicirelli, Tanzi T., Terlizese, Landriscina, Guerra, Sinibaldi, Caponio, Vicenti, Picerno, Pierro, Cacciapaglia, Sisto. Ditta:	Emesso: Modificato: 13/01/2017 14/05/2018	



Record Owner: Vicenti D.	Date Issued: 06.03.2017	GIS1 Item Number: 28.04	Page: 1 / 2
Dept.: WLP	Date Revised: 14.05.2018	GIS2 Classification: Confidential	Retention Start Date (Year): 2017

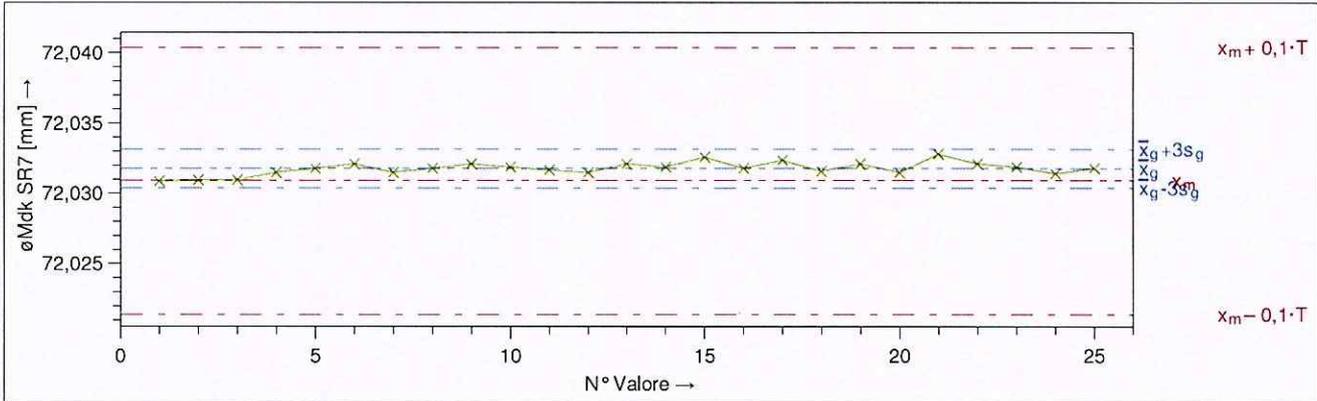
Actions ongoing for RPN > 100:

Chr. Classification	Project	Component	Operation	Chr. Description	Actual RPN			Action	Resp.	Due date	Min. RPN expected				
					S	O	D				RPN	S	O	D	RPN
<M>	DCT300	SG1	Hard Turning	Clutch body Height	7	4	4	112	Final drawing tolerance review + Dogbody height review on EP	Pierro	31-May-18	7	2	5	(70)
<M>	DCT300	SGRv	Hard Turning	Clutch body Height	7	3	5	105	Final drawing tolerance review + Dogbody height review on EP (100% Check --> Sampling check)	Pierro	30-Jun-18	7	2	5	(70)
std	DCT300	IS2	Diam. Grinding	Spline Fr	8	6	4	192	New operation implementation in order to ground new clamping surface for Diam. grinding operation (100% Check --> Sampling check)	Cacciapaglia	31-Jul-18	8	3	5	(120)
									New machine Junker implementation for Diam. grinding operation		31-Aug-18	8	2	5	(80)



Capacità strumenti di misura

Data/ora	26/04/2018	Nome oper.	mario.bozza	Reparto/Area/Prod.	WLQ	Posto di prova	Dentatura SR7
Calibro		Master			Caratteristica		
Desc. calibro	Banchetto in acciaio	Desc. mast.	SR7	Desc. Car.	øMdk SR7		
N° calibro	MVZ 406001 020	N° master	MVZ 400657 002	N° Caratt.	2511125550_32C		
Ris. calibro	0,0001	Valore reale mast.	72,031	Val. Nom.	72,0205	LSS	72,0680 $\hat{=} 0,0475$
Caus. Pr.	Cg CgK	Unità di misura	mm	Unità di r mm	LSI	71,9730	$\hat{=} -0,0475$
Nota							



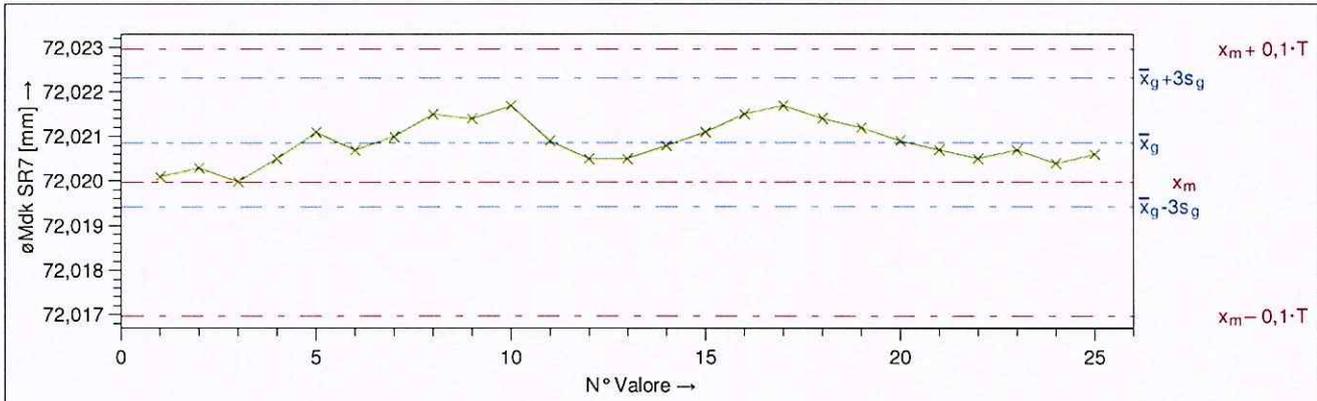
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	72,0309	6	72,0321	11	72,0317	16	72,0318	21	72,0328
2	72,0310	7	72,0315	12	72,0315	17	72,0324	22	72,0321
3	72,0310	8	72,0318	13	72,0321	18	72,0316	23	72,0319
4	72,0315	9	72,0321	14	72,0319	19	72,0321	24	72,0314
5	72,0318	10	72,0319	15	72,0326	20	72,0315	25	72,0318

Valori a disegno		Valori Calcolati		Statistiche	
x _m +0,1·T	= 72,040500	x _{maxg}	= 72,0328	\bar{x}_g+3s_g	= 72,033180
x _m	= 72,031000	x _{min g}	= 72,0309	\bar{x}_g	= 72,031792
x _m -0,1·T	= 72,021500	R _g	= 0,0019	\bar{x}_g-3s_g	= 72,030404
0,2·T	= 0,019000	n _{tot}	= 25	6s _g	= 0,002776
T	= 0,0950			s _g	= 0,000463
Unità di misura	= mm			Bi	= 0,00079200
				n _{eff}	= 25
Test per Bias				Risultati del test : significativo (α ≤ 0,1%)	
Bias		=	0,83%	Minimo riferimento per sistema di misura capace	
Risoluzione	%RE = 0,11%			T _{min} (%RE)	= 0,00200
$C_g = \frac{0,2 \cdot T}{4 \cdot s_g}$	= 7,38 ≤ 10,27 ≤ 13,15			T _{min} (C _g)	= 0,0123
$C_{gk} = \frac{0,1 \cdot T - \bar{x}_g - x_m }{2 \cdot s_g}$	= 6,74 ≤ 9,41 ≤ 12,07			T _{min} (C _{gk})	= 0,0202
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
□ GETRAG MSA 2017: Capability of measuring system (Type-1 Study)					



Capacità strumenti di misura

Data/ora	12/06/2018	Nome oper.	mario.bozza	Reparto/Area/Prod.	WLQ	Posto di prova	Dentatura SR7
Calibro		Master			Caratteristica		
Desc. calibro	Banchetto in acciaio	Desc. mast.	SR7	Desc. Car.	øMdk SR7		
N° calibro	MVZ 406001 019	N° master	MVZ 400657 001	N° Caratt.	2511125550_32C		
Ris. calibro	0,0001	Valore reale mast.	72,02	Val. Nom.	72,7000 LSS	72,7150	$\hat{=} 0,0150$
Caus. Pr.	Cg CgK	Unità di misura	mm	Unità di rr mm	LSI	72,6850	$\hat{=} -0,0150$
Nota							



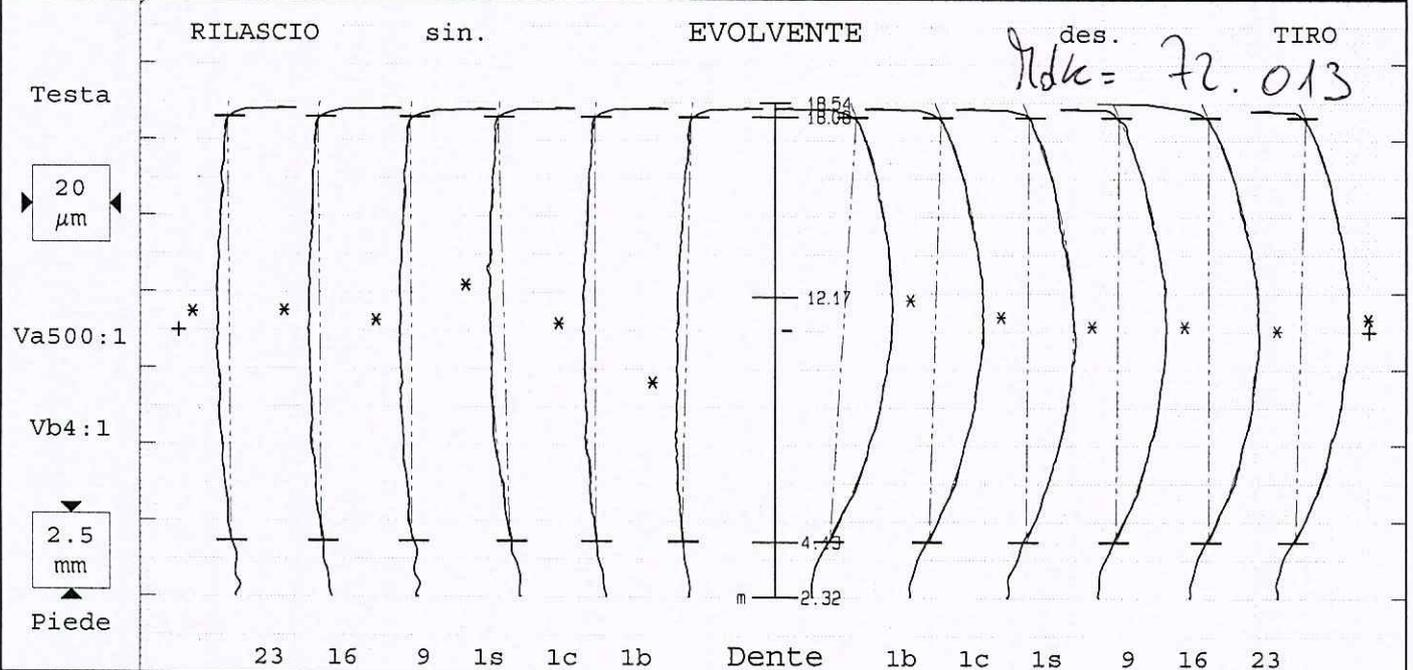
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	72,0201	6	72,0207	11	72,0209	16	72,0215	21	72,0207
2	72,0203	7	72,0210	12	72,0205	17	72,0217	22	72,0205
3	72,0200	8	72,0215	13	72,0205	18	72,0214	23	72,0207
4	72,0205	9	72,0214	14	72,0208	19	72,0212	24	72,0204
5	72,0211	10	72,0217	15	72,0211	20	72,0209	25	72,0206

Valori a disegno		Valori Calcolati		Statistiche	
x _m +0,1·T	= 72,023000	x _{maxg}	= 72,0217	$\bar{x}_g + 3s_g$	= 72,022314
x _m	= 72,020000	x _{ming}	= 72,0200	\bar{x}_g	= 72,020868
x _m -0,1·T	= 72,017000	R _g	= 0,0017	$\bar{x}_g - 3s_g$	= 72,019422
0,2·T	= 0,006000	n _{tot}	= 25	6s _g	= 0,002892
T	= 0,0300			s _g	= 0,000482
Unità di misura	= mm			Bi	= 0,00086800
				n _{eff}	= 25
Test per Bias				Risultati del test : significativo (α ≤ 0,1%)	
Bias		=	2,89%		
Minimo riferimento per sistema di misura capace					
Risoluzione	%RE =	0,33%		T _{min} (%RE)	= 0,00200
$C_g = \frac{0,2 \cdot T}{4 \cdot s_g}$	=	2,24 ≤ 3,11 ≤ 3,99		T _{min} (C _g)	= 0,0128
$C_{gk} = \frac{0,1 \cdot T - \bar{x}_g - x_m }{2 \cdot s_g}$	=	1,57 ≤ 2,21 ≤ 2,85		T _{min} (C _{gk})	= 0,0215
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
☐ GETRAG MSA 2017: Capability of measuring system (Type-1 Study)					

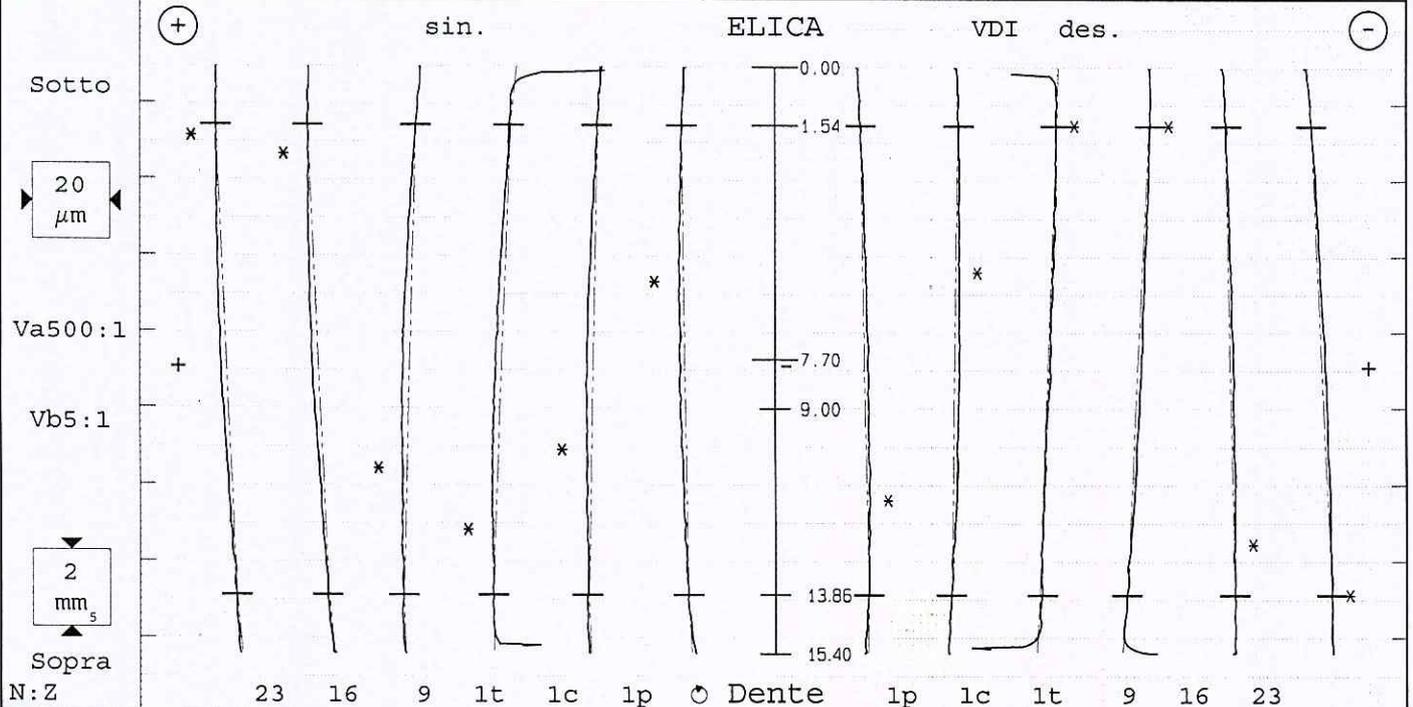
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno B	Data: 23.04.2018 11:38
Denominazione: SR7		Numero denti z 29	Largh. fasc. dent. b 15.4mm
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Tratto evolv. La 13.95mm
Commessa/serie nr.: 3 - A		Angolo pressione 17°30'00"	Tratto elica L& 12.32mm
Masch. Nr.: M001	Spindel: Formine	Angolo elicale -33°00'00"	Inizio elab. M1 4.13mm
Untersuchungszweck: Laufende Messung		Ø Base db 64.7335mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base -31°17'39"	Fat. scor. pr. x 0



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual		
		Var a									Var a										
fHqm	±5	0.7	0.7								±5	3.3							1.6		
fHa	±8	0.7	1.0	0.9	0.5	3.1	0.3	-2.4		±8	6.9	3.1	0.7	0.8	-0.2	2.6	1.6				
Fa		3.0	3.1	3.1	3.1	5.7	2.8	4.0			8.0	5.2	3.9	4.1	4.3	5.3	4.7				
ffa	5	1.2	1.0	1.3	1.7	1.3	0.9	1.1		5	1.4	1.5	1.6	1.5	1.4	1.3	1.4				
ca	1/5	2.9	3.0	2.8	2.9	3.7	3.0	2.4		10/14	12.6	12.5	11.9	12.5	13.1	12.7	12.7				
ffaF	3	0.4	0.8	0.1	0.8	0.1	0.0	0.0		3	3.7	2.6	2.3	3.1	2.8	3.1	2.9				
P/T-Ø [mm]		61.282	[61.17/61.52]									74.951	[74.94/75.2]								



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual		
		Var β									Var β										
fHβm	±4	1.7	11.0								±4	14.2							0.0		
fHβ	±8	1.7	6.8	6.9	-4.1	-5.9	-3.0	2.1		±8	2.7	-2.2	-5.8	-7.5	3.0	6.7	0.0				
Fβ		4.4	5.4	5.2	3.9	4.7	2.9	2.4			2.4	2.4	4.1	6.3	2.5	5.5	4.2				
ffβ	5	0.7	0.6	0.7	0.7	0.9	0.7	0.7		5	0.5	0.8	1.1	0.7	0.7	0.5	0.7				
cβ	0/4	1.6	1.4	1.6	1.7	1.6	1.6	1.3		0/4	0.9	1.2	0.4	0.9	0.8	0.8	0.9				
FV		-8.0										-4±8									-8.5

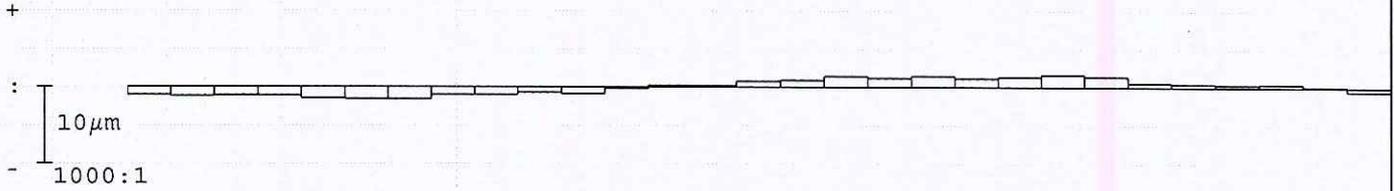


Ruota cilindrica Divisione

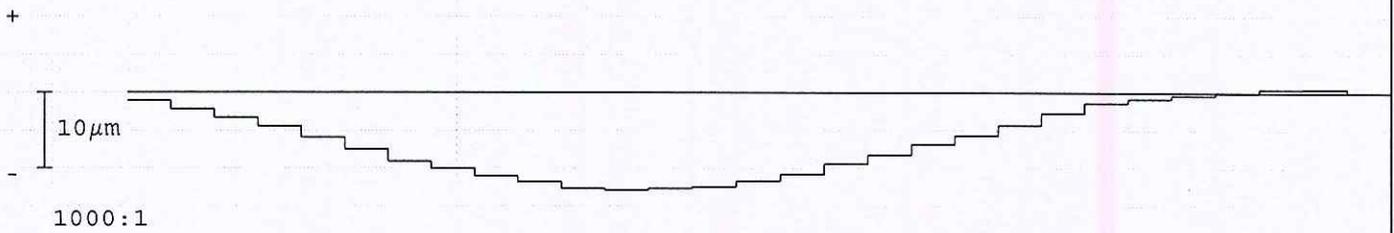


Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno B	Data: 23.04.2018 11:38
Denominazione: SR7		Numero denti z 29	Angolo pressione 17°30'00"
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Angolo elica -33°00'00"
Commessa/serie nr.: 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelwerkzeug	Charge:	

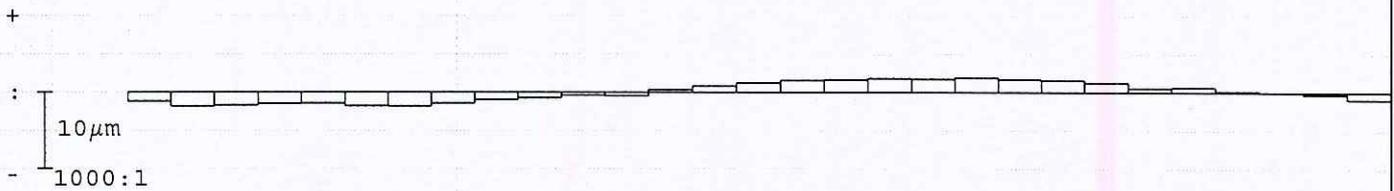
Errori singoli di divisione fp fianco sinistro



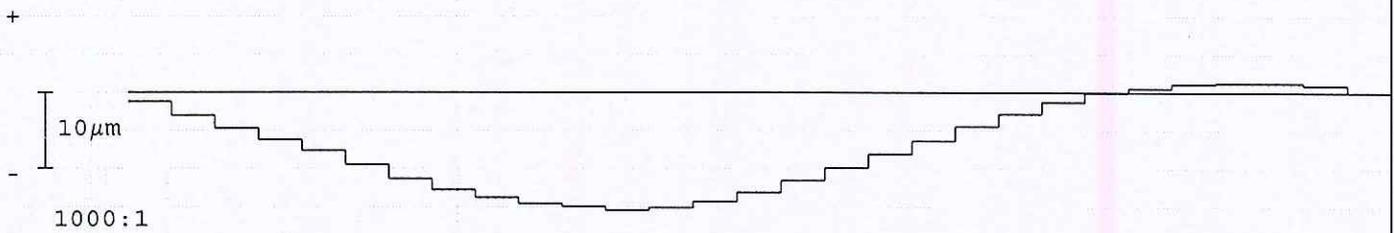
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



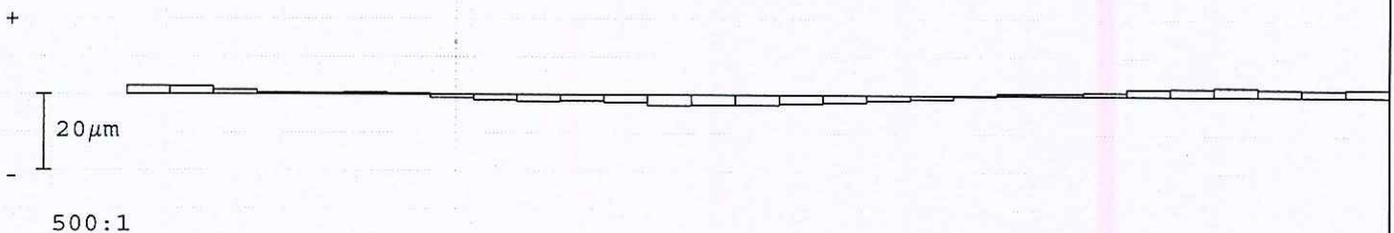
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 69.158 z=9mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1.6		10.0		1.9		10.0	
Gr. salto di passo fu max	0.8		12.0		0.8		12.0	
Scarto di divisione Rp	3.2				3.7			
Err. globale di divisione Fp	13.4		32.0		16.7		32.0	
Err. cordale di divisione Fpz/8	5.8				7.1			

Centricità Fr (Ø-sfera =3mm)

⊙ : 4.7µm



Err. di concentricità Fr	5.2	22.0	
Variáz. spessore dente Rs			

Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria

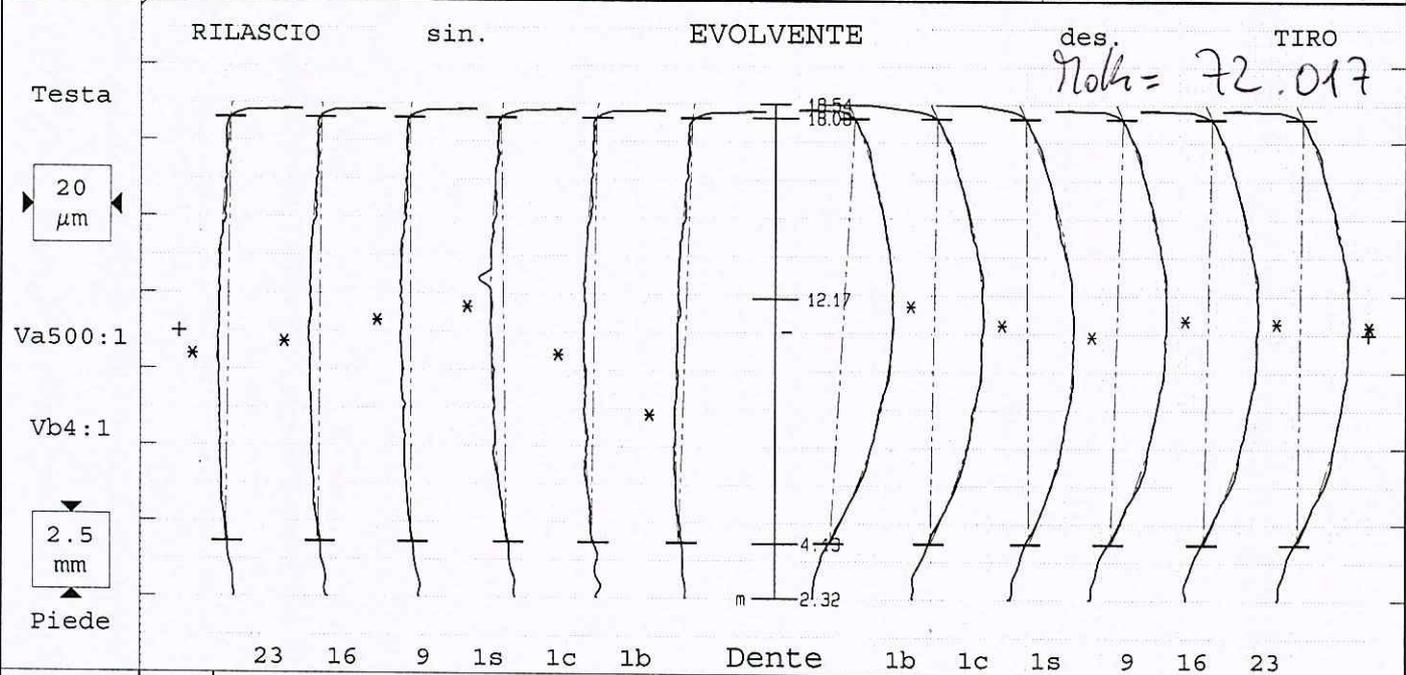
Copyright (c) Klingelberg GmbH



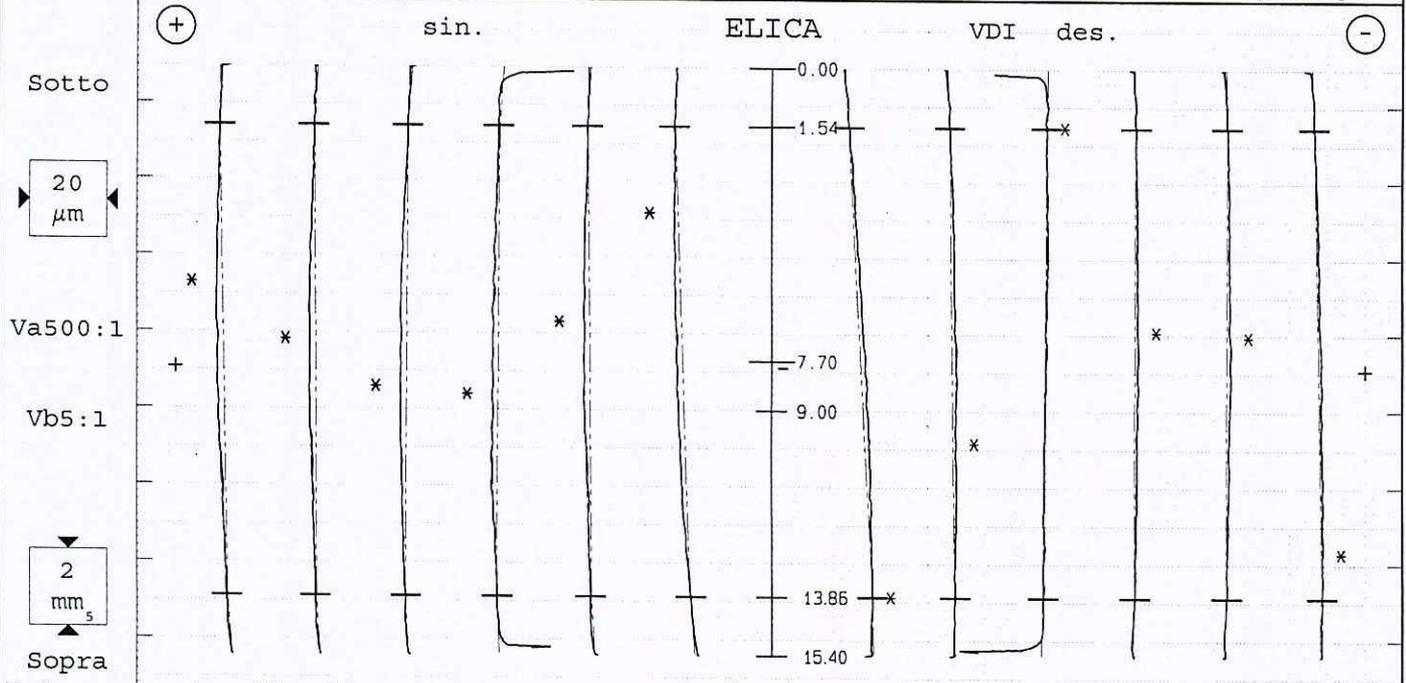
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 14:26
Denominazione: SR7		Numero denti z 29	Largh.fasc.dent. b 15.4mm
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Tratto evolv. La 13.95mm
Comessa/serie nr.: 14 - 2		Angolo pressione 17°30'00"	Tratto elica L8 12.32mm
Masch.Nr.: M001	Spindel: Formel	Angolo elica -33°00'00"	Inizio elab. M1 4.13mm
Untersuchungszweck: Laufende Messung		Ø Base db 64.7335mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base -31°17'39"	Fat.scor.pr. x 0



	Tolerance	Medio	Val. misur [µm]					Qual	Tolerance	Val. misur [µm]					Medio	Qual	
			Var a 1.6							Var a 1.6							
fH _{am}	±5	-0.6							±5						2.1		
fH _a	±8	-0.6	-1.1	-0.6	0.5	1.5	-1.1	-3.5	±8	6.3	1.7	-1.0	3.0	2.1	1.4	2.1	
F _a		2.5	2.5	2.3	2.5	7.0	2.6	5.0		7.9	5.0	3.3	5.8	5.3	5.0	5.3	
ff _a	5	1.5	1.6	1.5	1.3	4.1	1.5	1.5	5	1.2	1.4	1.6	1.6	1.5	1.7	1.6	
ca	1/5	2.5	2.5	2.6	2.4	3.5	2.5	2.2	10/14	13.0	12.9	12.1	12.9	13.0	12.9	12.9	
ff _{af}	3	0.1	0.0	0.0	0.0	0.2	0.3	0.0	3	3.8	3.3	2.0	2.7	3.2	2.6	3.0	
P/T-Ø [mm]		61.281	[61.17/61.52]							74.959	[74.94/75.2]						



	Tolerance	Medio	Var β 3.6					Qual	Tolerance	Var β 3.2					Medio	Qual	
			Var β 3.6							Var β 3.2							
fH _{sm}	±4	0.9							±4						0.9		
fH _β	±8	0.9	2.7	0.7	-0.9	-1.1	1.2	4.8	±8	7.9	1.6	-1.6	-0.5	-0.4	2.7	0.9	
F _β		2.1	2.8	1.7	1.9	1.9	1.9	4.3		6.2	2.0	1.5	1.1	1.3	2.4	1.7	
ff _β	5	0.8	0.9	0.8	0.6	0.9	0.8	0.6	5	0.7	0.6	0.7	0.5	0.6	0.5	0.6	
c _β	0/4	1.5	1.6	1.5	1.6	1.5	1.4	1.5	0/4	1.1	0.9	0.3	0.8	0.8	0.7	0.8	
FV		-5.9								-4±8							-9.5

GCG 808006

Copyright (c) Klingelberg GmbH

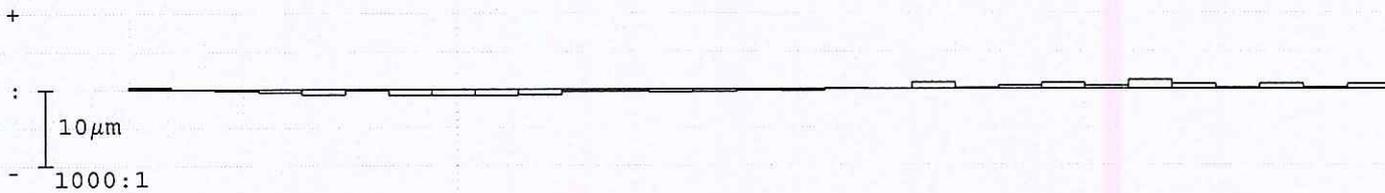


Ruota cilindrica Divisione

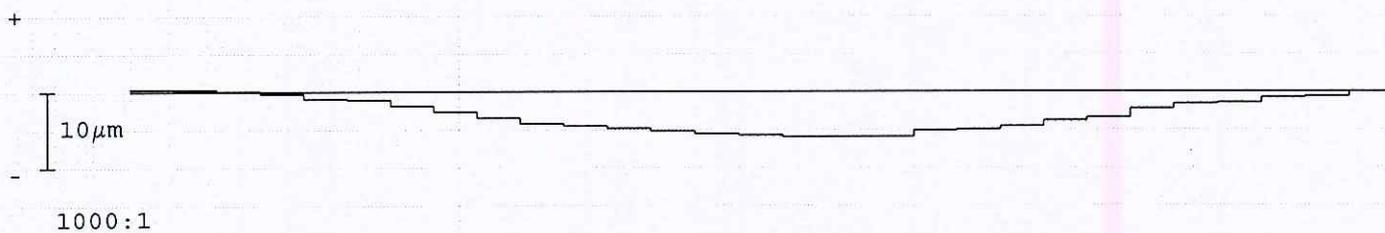


Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 14:26
Denominazione: SR7		Numero denti z 29	Angolo pressione 17°30'00"
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Angolo elica -33°00'00"
Comessa/serie nr.: 14		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Form	Kegel:	Charge:

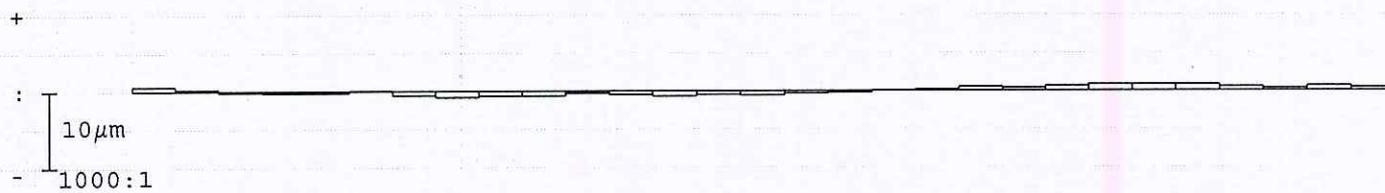
Errori singoli di divisione fp fianco sinistro



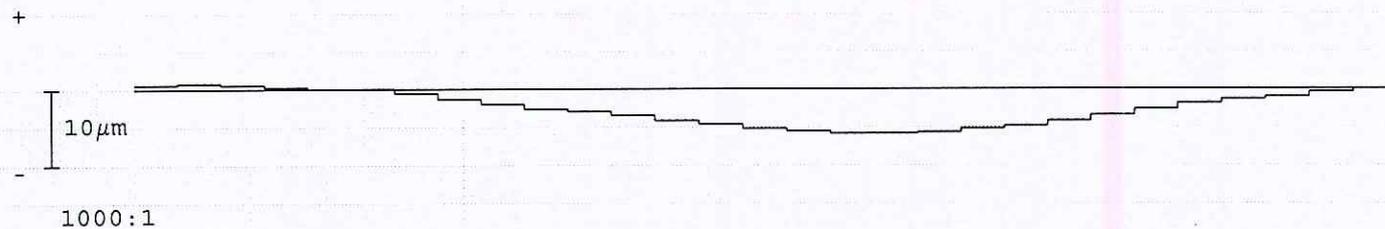
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



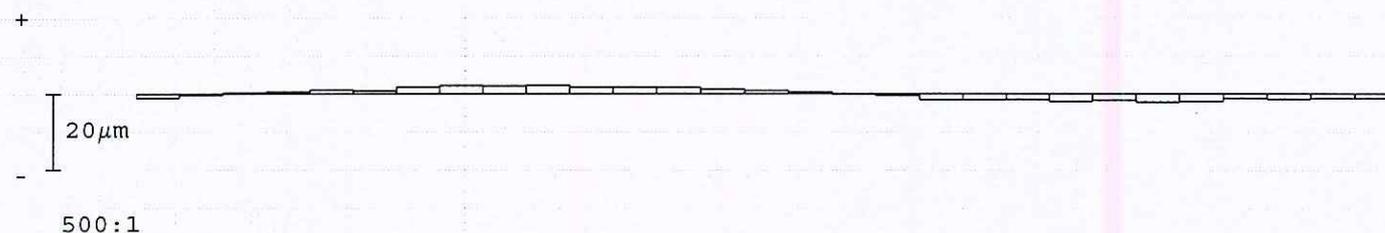
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 69.158 z=9mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1.2		10.0		0.8		10.0	
Gr. salto di passo fu max	0.9		12.0		0.6		12.0	
Scarto di divisione Rp	2.0				1.6			
Err. globale di divisione Fp	6.4		32.0		6.6		32.0	
Err. cordale di divisione Fpz/8	3.1				2.9			

Centricità Fr (Ø-sfera =3mm)

⊙ : 4.1µm

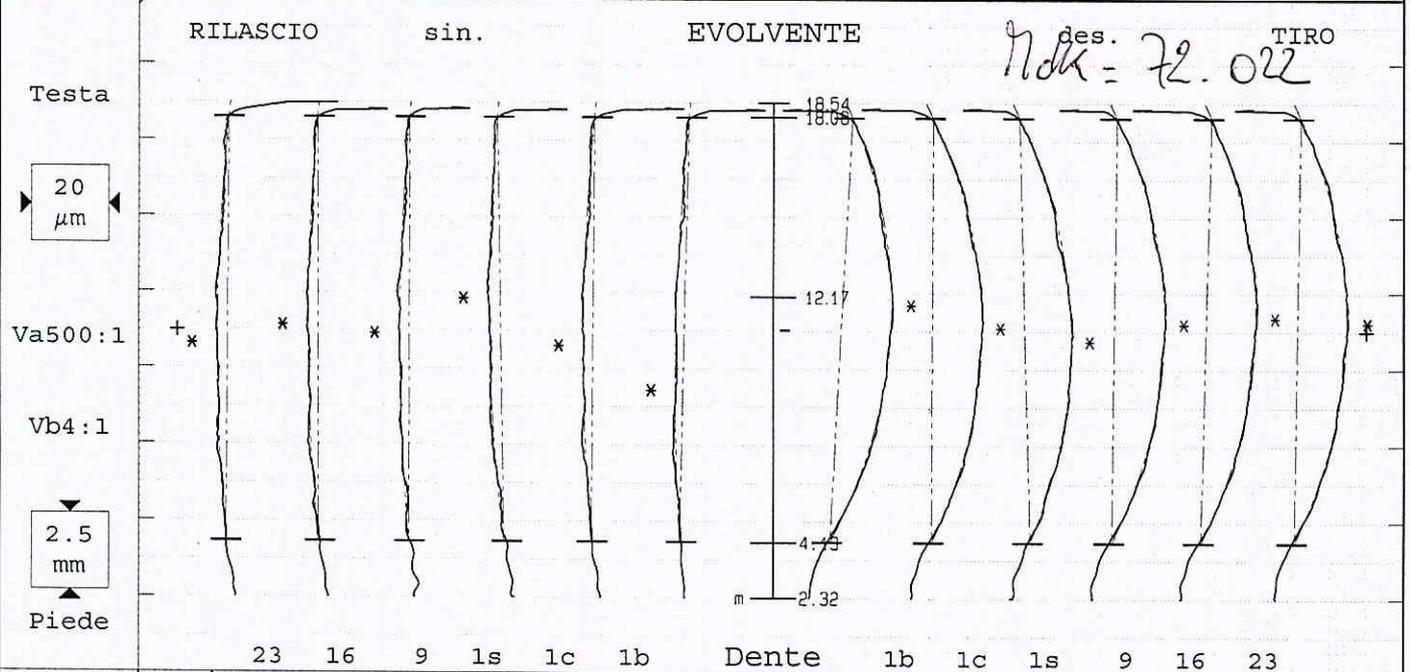


Err. di concentricità Fr	4.5	22.0	
Variaz. spessore dente Rs			

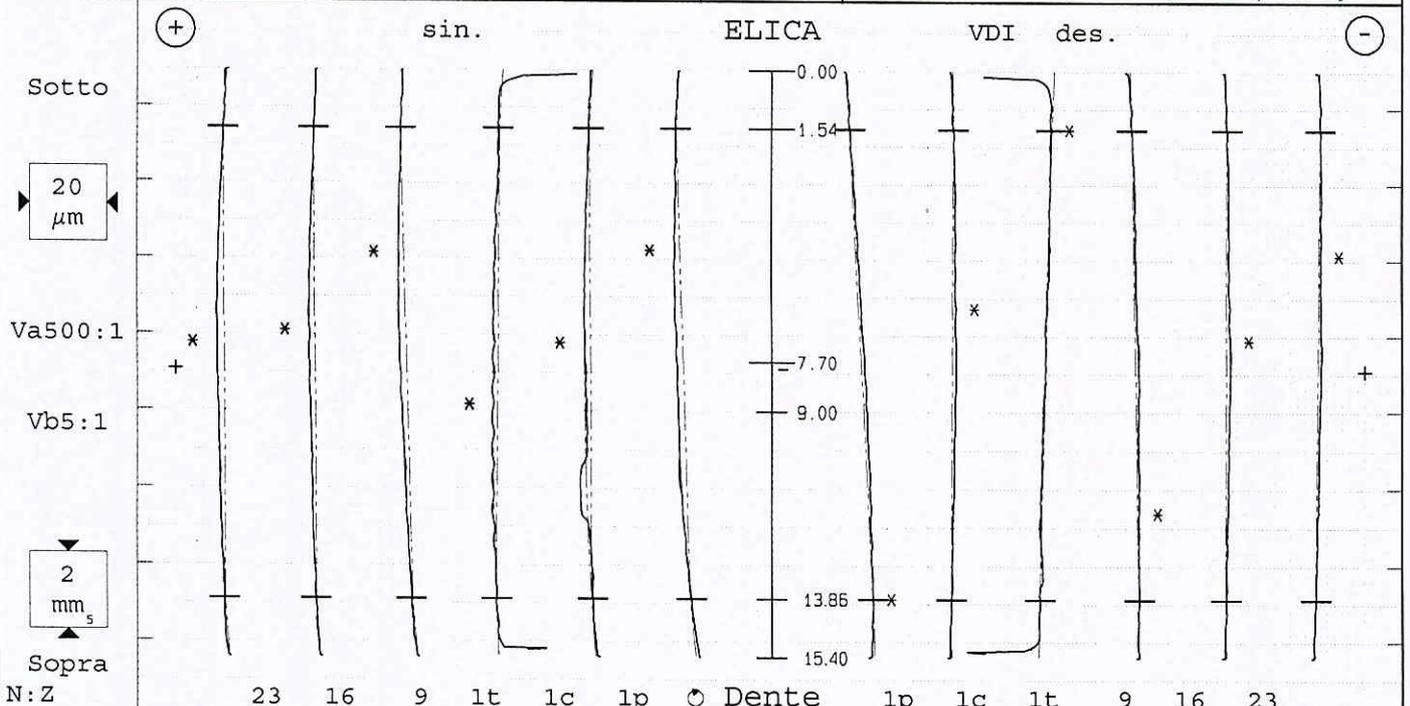
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 14:32
Denominazione: SR7		Numero denti z 29	Largh. fasc. dent. b 15.4mm
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Tratto evolv. La 13.95mm
Comessa/serie nr.: 15 - 3		Angolo pressione 17°30'00"	Tratto elica L& 12.32mm
Masch. Nr.: M001	Spindel: Formm. 51	Angolo elica -33°00'00"	Inizio elab. M1 4.13mm
Untersuchungszweck: Laufende Messung		Ø Base db 64.7335mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base -31°17'39"	Fat. scor. pr. x 0



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual		
fH _{om}	±5	-0.4	Var a 1.0								±5	Var a 2.4							1.6		
fH _a	±8	-0.4	-0.8	0.2	-0.2	1.7	-0.8	-2.5		±8	5.9	0.4	-2.8	1.4	2.8	1.7	1.6				
F _a		2.7	2.5	2.5	2.4	4.2	3.3	4.2			8.1	4.5	4.5	5.2	5.7	5.0	5.1				
ff _a	5	1.5	1.4	1.4	1.5	1.4	1.7	1.7		5	1.6	1.4	1.5	1.4	1.4	1.3	1.4				
ca	1/5	2.5	2.6	2.5	2.5	3.0	2.5	2.2		10/14	13.1	13.1	12.2	13.2	13.0	13.0	13.1				
ff _{af}	3	0.0	0.1	0.0	0.1	0.0	0.0	0.0		3	3.1	2.5	2.3	2.9	3.0	3.0	2.9				
P/T-Ø [mm]		61.283	[61.17/61.52]									74.960	[74.94/75.2]								



N: Z		23	16	9	1t	1c	1p	Ø Dente	1p	1c	1t	9	16	23				
fH _{sm}	±4	1.6	Var β 3.3							±4	Var β 3.8							-0.2
fH _s	±8	1.6	0.7	1.0	4.0	-1.2	0.7	4.4	±8	7.7	-0.9	-4.2	2.1	-0.4	-1.7	-0.2		
F _β		2.8	2.2	2.0	3.5	2.0	3.4	4.4		6.1	1.4	3.1	2.1	1.4	1.7	1.7		
ff _β	5	1.1	0.6	0.6	0.8	0.9	2.4	0.9	5	0.5	0.5	1.2	0.6	0.6	0.5	0.6		
c _β	0/4	1.7	1.8	1.5	1.7	1.3	1.6	1.9	0/4	0.8	0.8	-0.2	0.7	0.9	0.7	0.8		
FV		-5.6								-4±8								-11.9

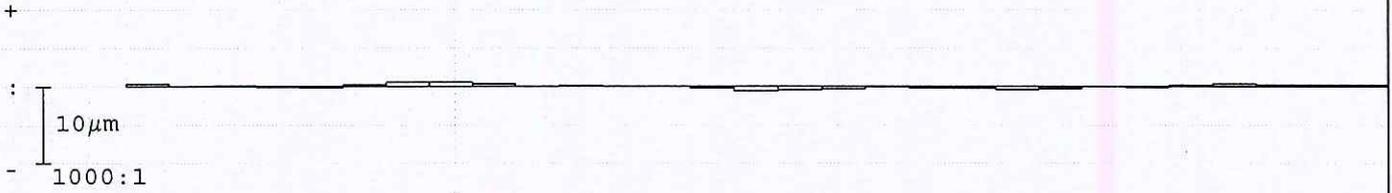


Ruota cilindrica Divisione

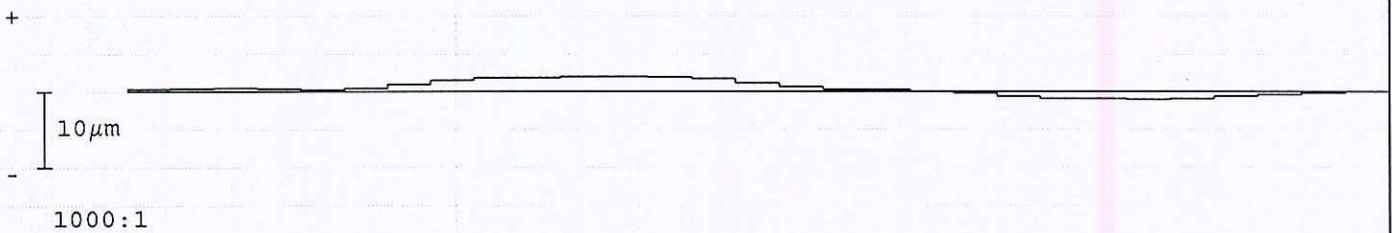


Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 14:32
Denominazione: SR7		Numero denti z 29	Angolo pressione 17°30'00"
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Angolo elica -33°00'00"
Comessa/serie nr.: 15		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Form	Werkzeug:	Charge:

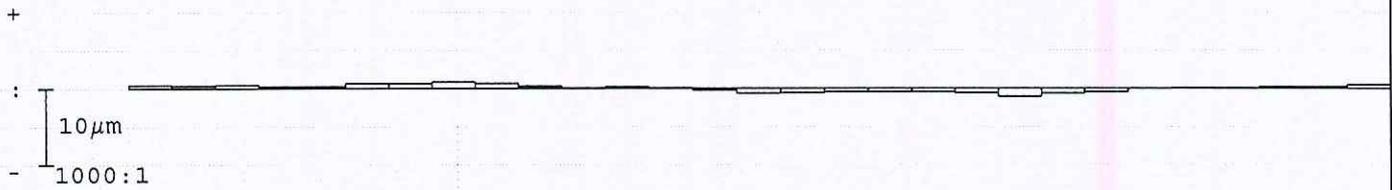
Errori singoli di divisione fp fianco sinistro



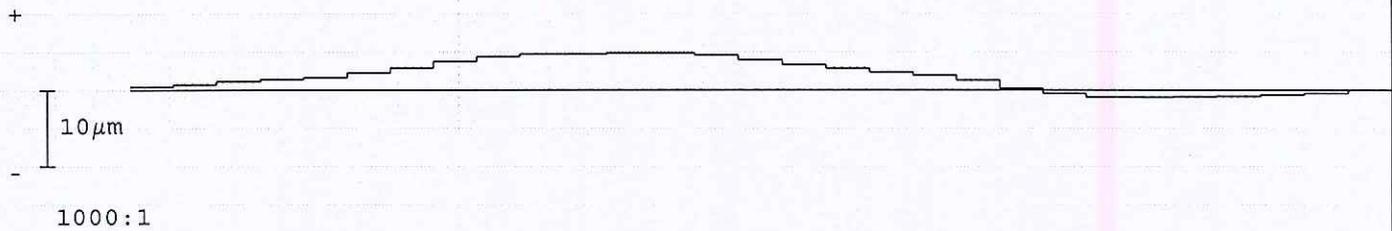
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

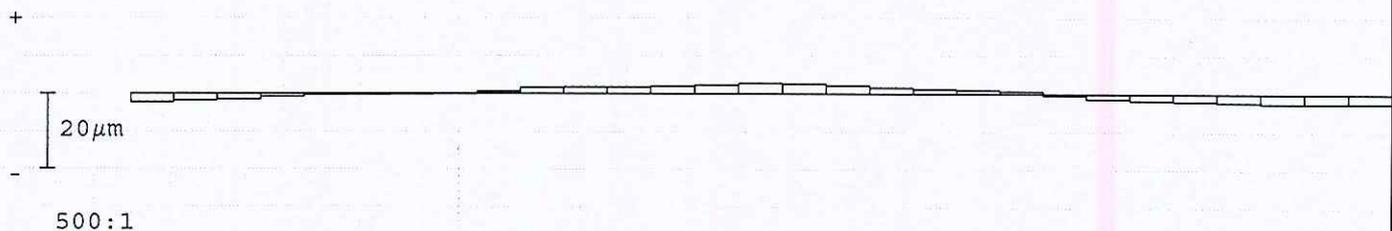


Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 69.158 z=9mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	0.6		10.0		1.1		10.0	
Gr. salto di passo fu max	0.4		12.0		0.5		12.0	
Scarto di divisione Rp	1.2				1.9			
Err. globale di divisione Fp	3.1		32.0		5.8		32.0	
Err. cordale di divisione Fpz/8	1.7				2.8			

Centricità Fr (Ø-sfera =3mm) Ⓞ : 4.8µm



Err. di concentricità Fr	5.2	22.0	
Variab. spessore dente Rs			

Copyright (c) Klingelberg GmbH

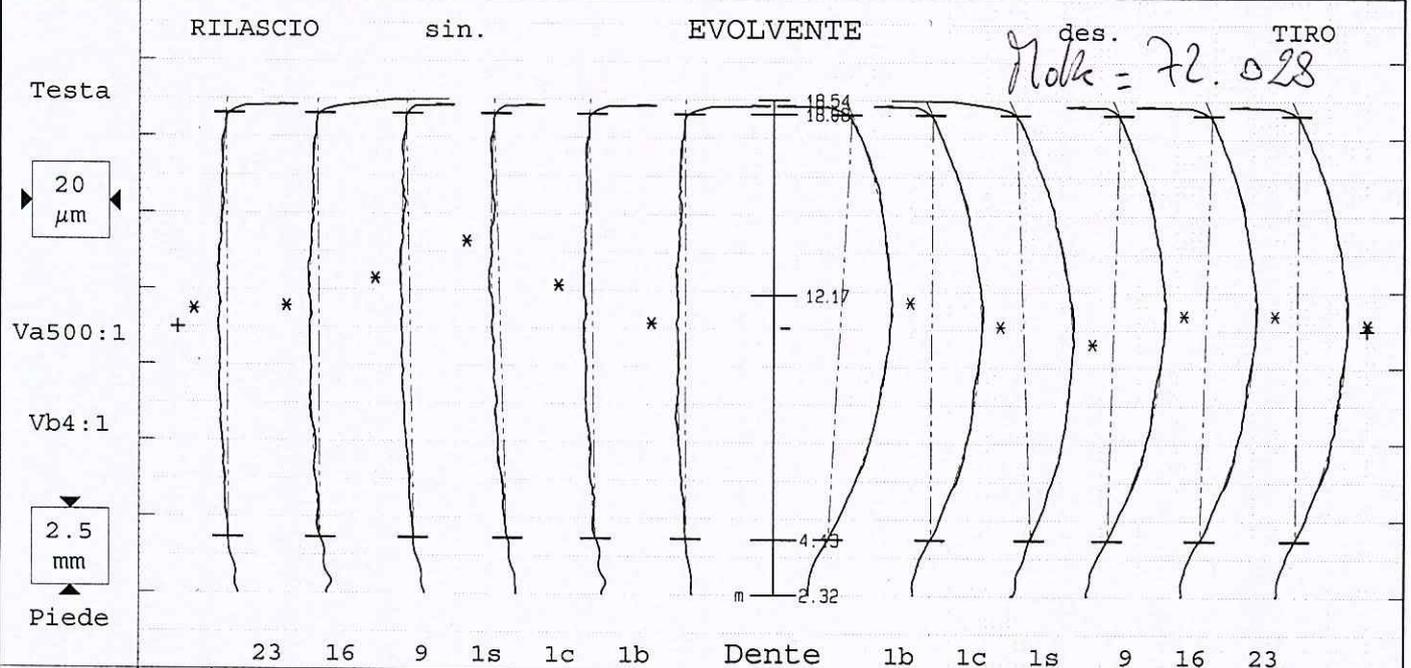
Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria



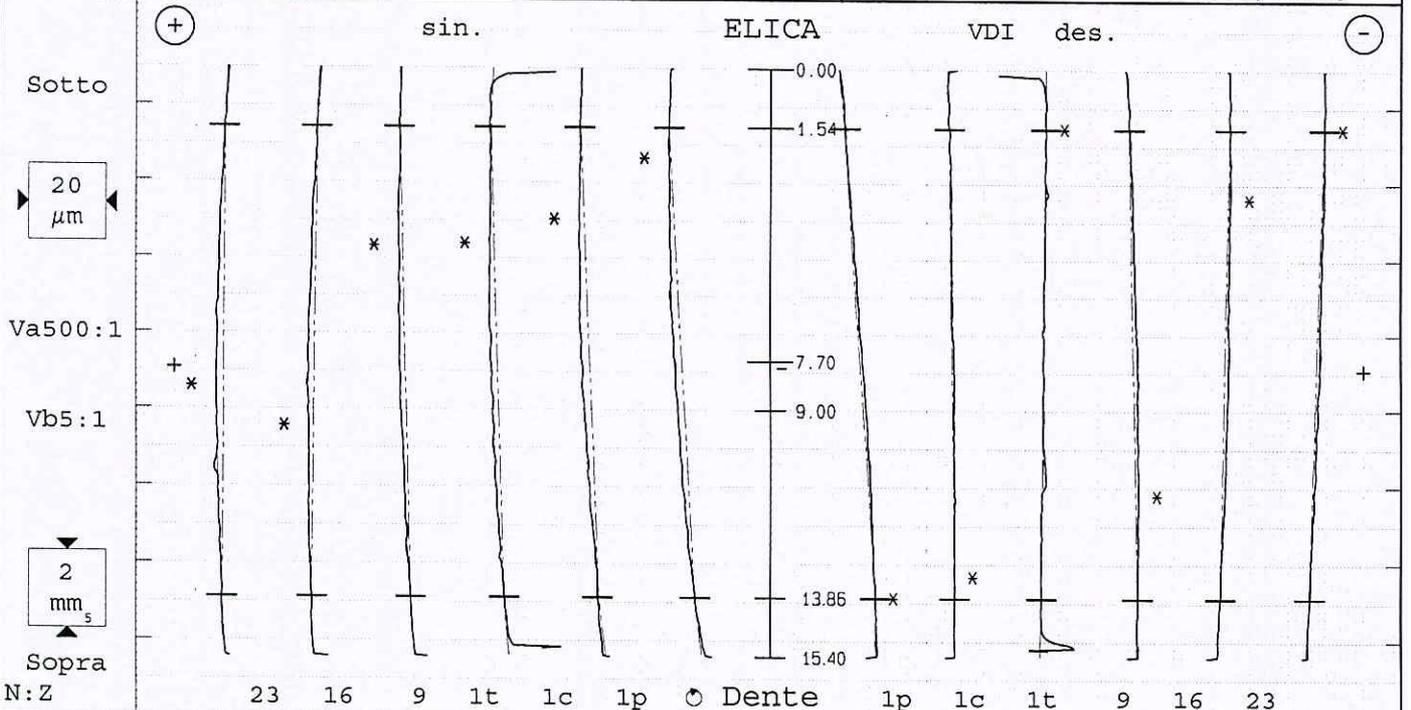
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 15:08
Denominazione: SR7		Numero denti z 29	Largh. fasc. dent. b 15.4mm
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Tratto evolv. La 13.95mm
Commissa/serie nr.: 18 - 4		Angolo pressione 17°30'00"	Tratto elica Ls 12.32mm
Masch. Nr.: M001	Spindel: Formner	Angolo elica -33°00'00"	Inizio elab. M1 4.13mm
Untersuchungszweck: Laufende Messung		Ø Base db 64.7335mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base -31°17'39"	Fat. scor. pr. x 0



	Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual
			Var a								Var a							
fHsm	±5	1.3	1.3							±5	2.8						1.9	
fHa	±8	1.3	0.7	0.9	2.0	3.4	1.6	0.2		±8	6.2	0.4	-3.8	3.2	3.1	1.0	1.9	
Fa		2.5	2.2	2.4	2.9	4.3	2.5	2.7			7.8	4.2	5.6	5.6	5.3	4.4	4.9	
ffa	5	1.4	1.5	1.4	1.5	1.7	1.2	1.9		5	2.1	1.3	1.0	1.3	1.4	1.4	1.4	
ca	1/5	2.2	2.2	2.3	2.2	2.1	2.0	2.1		10/14	13.1	13.1	12.8	13.2	12.9	13.1	13.1	
ffaF	3	0.1	0.1	0.0	0.3	0.0	0.0	0.0		3	3.6	3.0	2.4	3.1	3.1	2.8	3.0	
P/T-Ø [mm]		61.285	[61.17/61.52]								74.970	[74.94/75.2]						



	Tolerance	Medio	Var β						Qual	Tolerance	Var β						Medio	Qual	
			Var β								Var β								
fHβm	±4	1.6	8.2							±4	7.9						-0.9		
fHβ	±8	1.6	-1.0	-2.1	3.4	4.3	6.1	8.3		±8	10.3	1.8	-1.6	2.8	-3.2	-5.1	-0.9		
Fβ		3.4	2.8	2.6	3.4	3.9	4.9	7.0			8.0	1.7	2.0	2.5	2.8	3.9	2.7		
ffaβ	5	0.8	1.3	0.6	0.7	0.7	0.7	0.8		5	0.6	0.6	1.3	0.5	0.6	0.6	0.6		
cβ	0/4	1.7	1.9	1.5	1.4	1.7	2.0	1.9		0/4	0.7	0.4	0.2	1.0	0.9	0.7	0.8		
FV		-4.0									-4±8							-11.9	

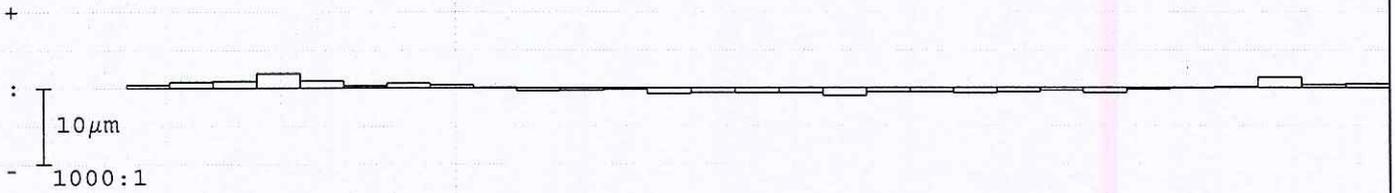


Ruota cilindrica Divisione



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 15:08
Denominazione: SR7		Numero denti z 29	Angolo pressione 17°30'00"
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Angolo elica -33°00'00"
Commessa/serie nr.: 18		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formel	Bestellg:	Charge:

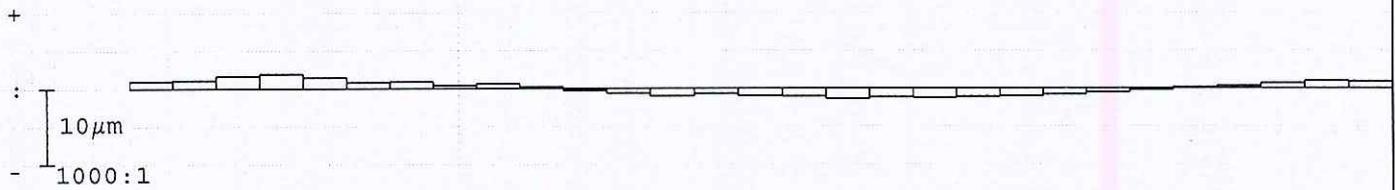
Errori singoli di divisione fp fianco sinistro



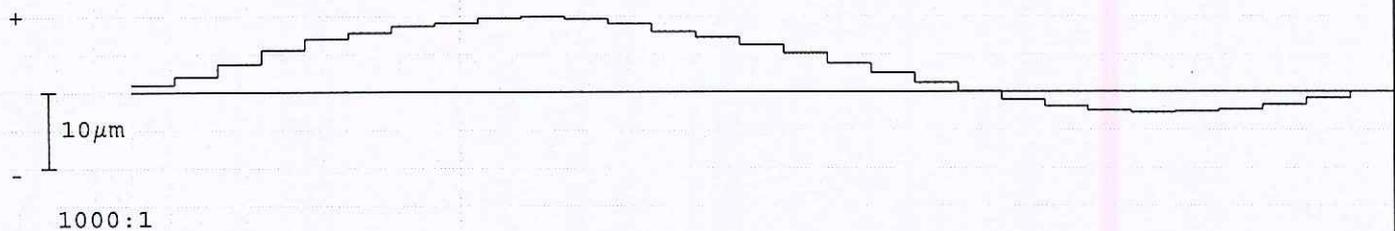
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



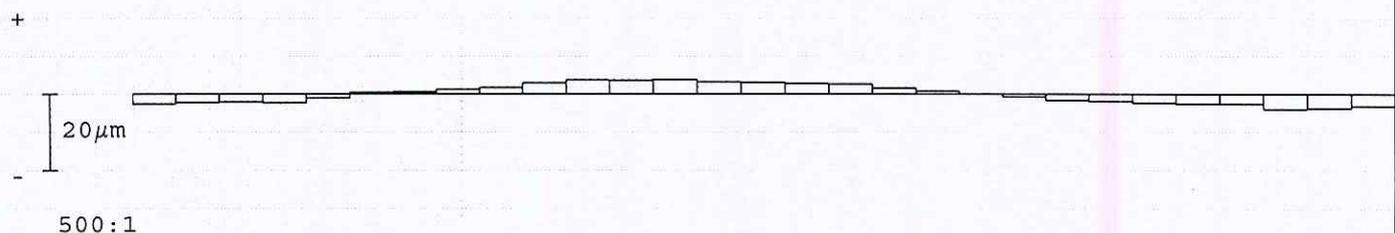
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 69.158 z=9mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1.9		10.0		1.9		10.0	
Gr. salto di passo fu max	1.2		12.0		0.7		12.0	
Scarto di divisione Rp	3.0				3.3			
Err. globale di divisione Fp	8.6		32.0		12.6		32.0	
Err. cordale di divisione Fpz/8	4.5				6.0			

Centricità Fr (Ø-sfera =3mm)

⊙ : 7μm



Err. di concentricità Fr	7.8	22.0	
Variab. spessore dente Rs			

Copyright (c) Klingelberg GmbH

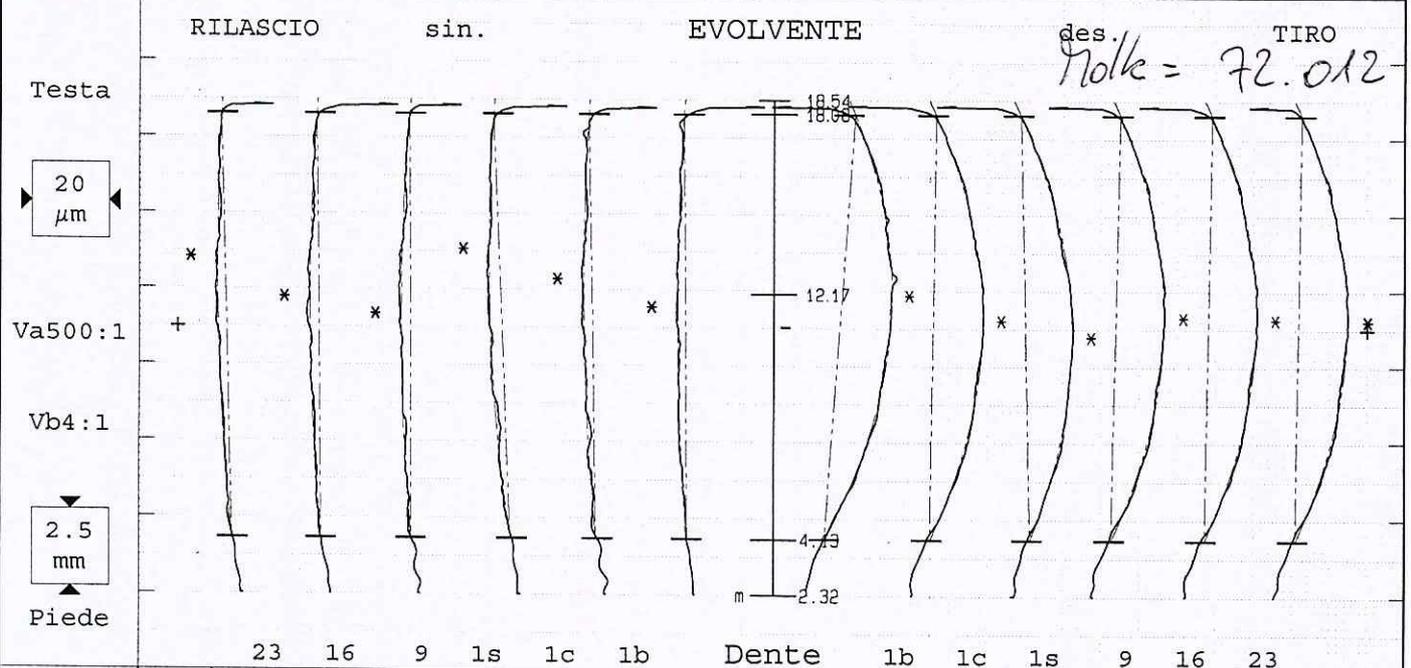
Docum. archiviato elettronicamente. Archiviazione cartacea non necessaria



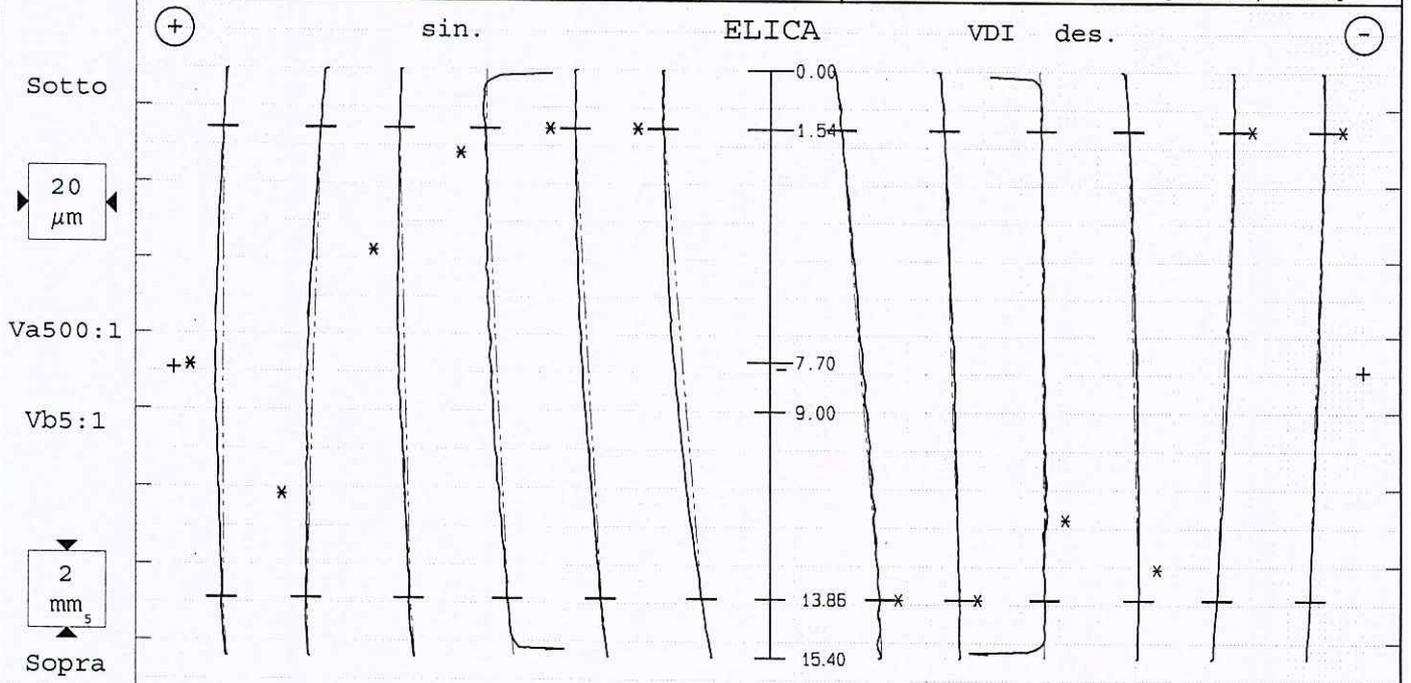
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 15:20
Denominazione: SR7		Numero denti z 29	Largh. fasc. dent. b 15.4mm
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Tratto evol. La 13.95mm
Commissa/serie nr.: 20 - 5		Angolo pressione 17°30'00"	Tratto elica Ls 12.32mm
Masch. Nr.: M001	Spindel: Formata	Angolo elica -33°00'00"	Inizio elab. M1 4.13mm
Untersuchungszweck: Laufende Messung		Ø Base db 64.7335mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base -31°17'39"	Fat. scor. pr. x 0



	Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
			Var a									Var a									
fHm	±5	1.6	2.2								±5	0.8							1.9		
fHa	±8	1.6	2.8	1.2	0.6	4.5	1.9	0.7		±8	8.0	1.6	-2.3	2.4	2.0	1.7	1.9				
Fa		3.2	3.7	2.9	2.3	5.8	3.7	2.5			9.6	5.3	4.7	4.9	5.2	4.8	5.1				
ffa	5	1.8	1.5	1.7	1.6	1.7	2.5	2.4		5	3.1	1.4	1.4	1.4	1.6	1.5	1.5				
ca	1/5	2.3	2.2	2.3	2.5	3.1	2.2	2.1		10/14	13.3	13.1	12.3	12.6	12.6	12.9	12.8				
ffaF	3	0.0	0.0	0.1	0.1	0.4	0.0	0.1		3	4.2	3.2	2.8	3.1	2.7	2.3	2.8				
P/T-Ø [mm]		61.276	[61.17/61.52]									74.959	[74.94/75.2]								



	Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
			Var β									Var β									
fHβm	±4	1.9	13.0								±4	10.6							-0.6		
fHβ	±8	1.9	-0.2	-4.4	3.6	7.2	8.6	12.2		±8	12.5	4.9	1.3	3.3	-5.7	-4.8	-0.6				
Fβ		4.0	2.1	3.9	3.2	6.0	6.6	10.1			10.2	4.2	1.8	2.8	4.5	3.8	3.8				
ffβ	5	0.8	0.7	0.8	1.0	0.8	0.6	0.6		5	0.8	0.7	1.3	0.6	0.5	0.6	0.6				
cβ	0/4	1.6	1.9	1.6	1.5	1.6	1.5	2.3		0/4	0.7	0.5	0.4	0.7	0.8	0.5	0.6				
FV		-5.0										-4±8								-11.2	

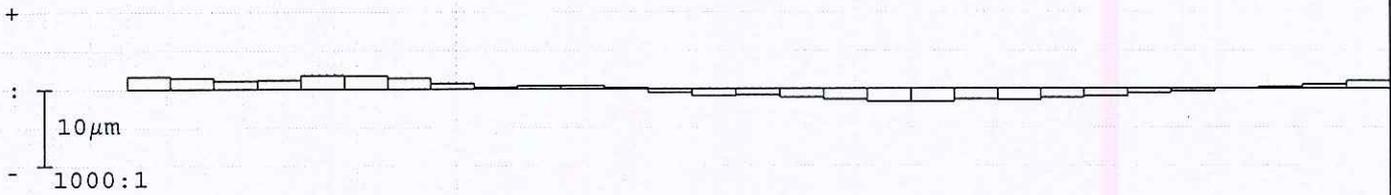


Ruota cilindrica Divisione

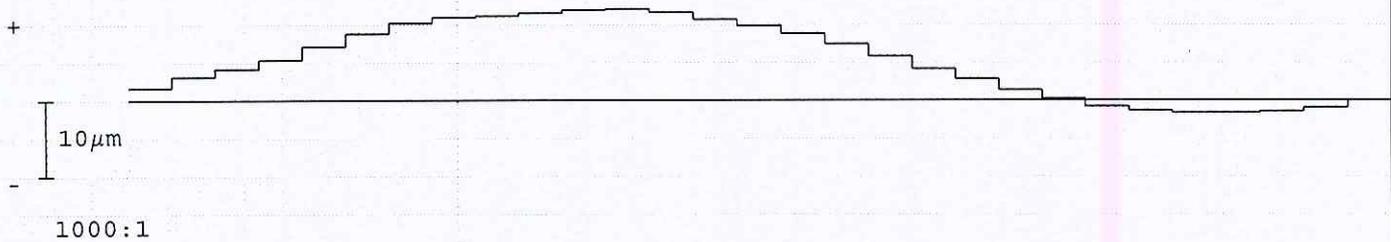


Nr. prog.: STI0416b04 0	P26 601265	Controllore: Turno C	Data: 23.04.2018 15:20
Denominazione: SR7		Numero denti z 29	Angolo pressione 17°30'00"
Numero disegno.: D51.1.1255.50-IF		Modulo m 2mm	Angolo elica -33°00'00"
Comessa/serie nr.: 20		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formnerzelg:		Charge:

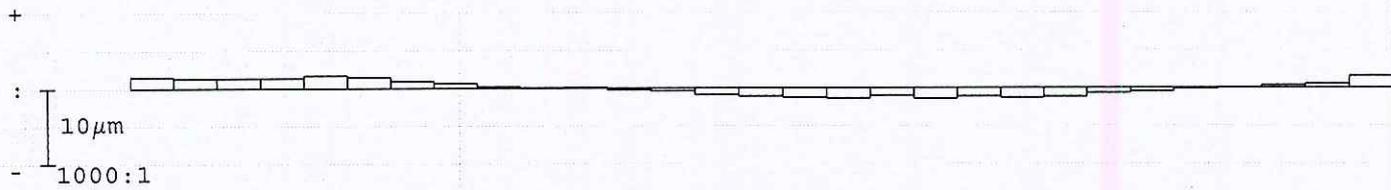
Errori singoli di divisione fp fianco sinistro



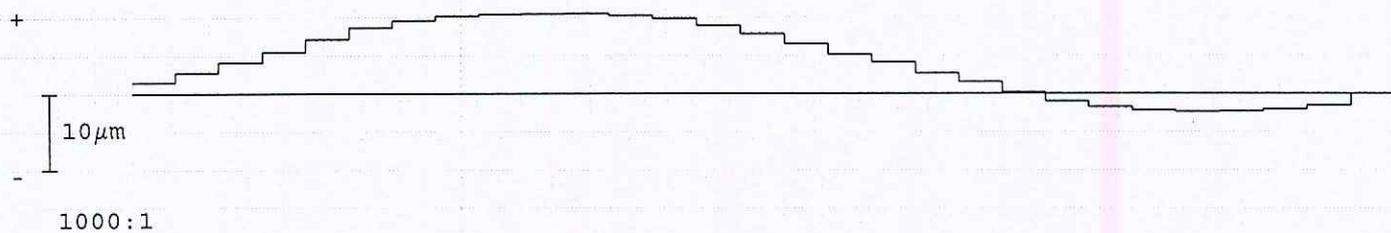
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



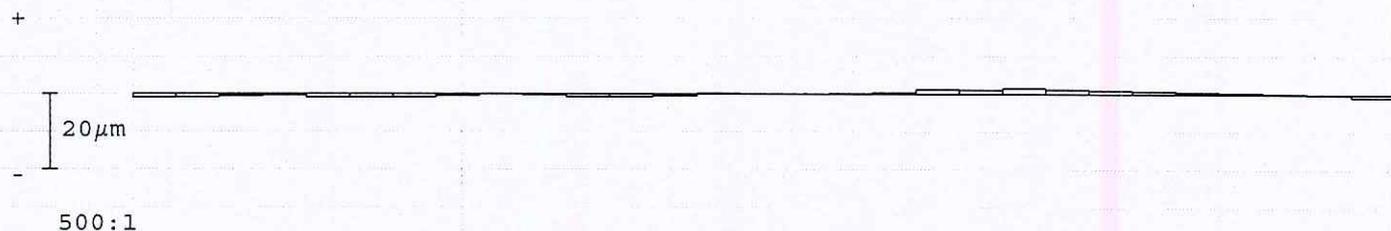
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 69.158 z=9mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1.8		10.0		1.7		10.0	
Gr. salto di passo fu max	0.7		12.0		1.0		12.0	
Scarto di divisione Rp	3.4				3.1			
Err. globale di divisione Fp	13.8		32.0		12.9		32.0	
Err. cordale di divisione Fpz/8	6.1				5.9			

Centricità Fr (Ø-sfera =3mm)

⊙ : 1.8µm



Err. di concentricità Fr	2.4	22.0	
Variab. spessore dente Rs			

Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria

Copyright (c) Klingelberg GmbH



REPORT 18/069

Date: 03/05/2018
Author: G. Borracci

Reason for analysis: PPAP
Motivo dell'indagine:

Requester: ME - M. Vicenti
Richiedente:

Part Name: SG7
Nome particolare:
Material: GCG_805000 Part 2
Materiale:
State of part: Finito
Stato del particolare:

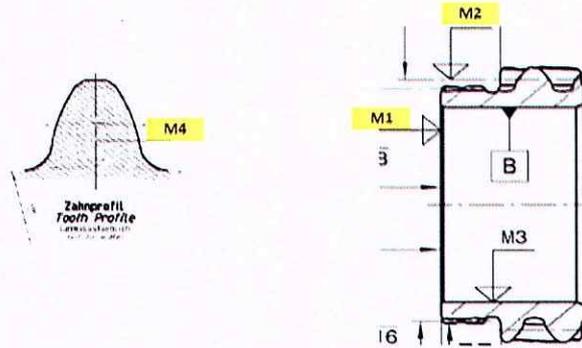
P/N: 251.1.1255.50
S/N: -
Customer: Renault
Cliente:

Result: OK
Risultato:

Distribution list: ME - M. Vicenti
Lista di distribuzione:

Notes: Gearset 32C
Note:

Drawing (disegno)



Picture 1: posizioni di misura a disegno.

Surface hardness verification (verifica durezza superficiale)

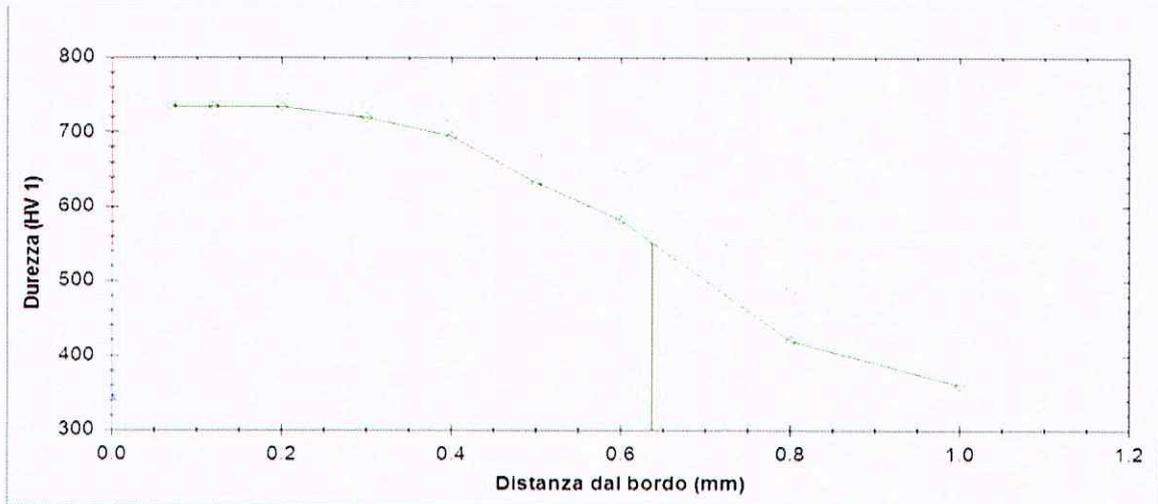
Component	Scale	Position	Measured Value	Range
Gear	HRC	M1	59.1	-
Gear	HRA	M1	81.4	80.5 + 2.5

CHD and core hardness verification (verifica CHD e durezza a cuore)

Component	Scale	Sample #	Position	Measured Value	Range
Gear	CHD 550 HV1	2013/18	M2 (tooth flank)	0.72	0.50+0.40 mm
Gear	CHD 550 HV1	2013/18	M3 (Bore)	0.64	0.30 mm min.
Gear	Core hardness HV10	2013/18	M4 (tooth core)	345	≥ 300

REPORT 18/069

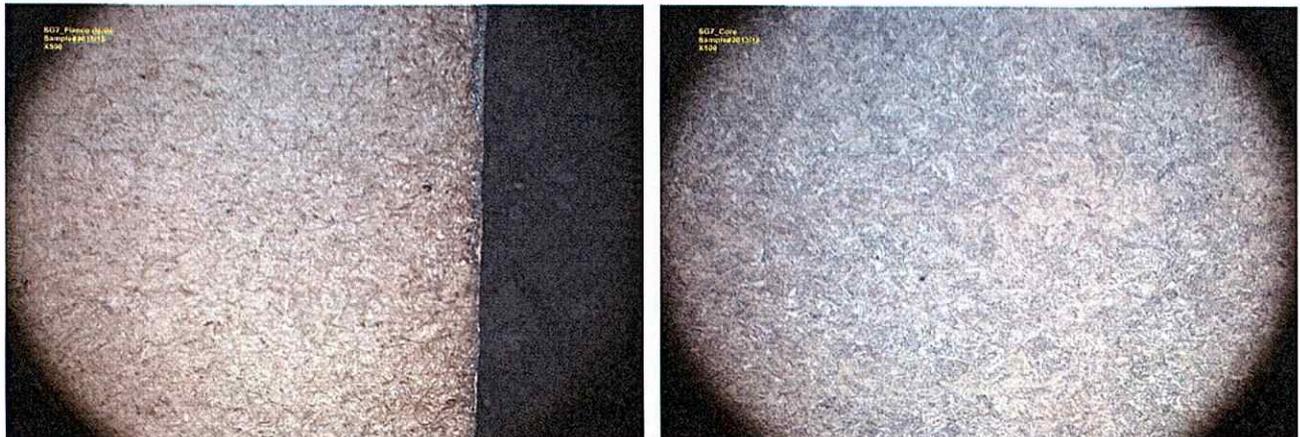
Date: 03/05/2018
Author: G. Borracci



Picture 2: profili di durezza

Microstructure analysis (analisi della microstruttura)

Sample #	2013/18
Gear - Tooth flank surface structure:	Martensite e austenite residua (5%)
Gear - Tooth base core structure:	Martensite, bainite



Picture 3: Microstruttura sul fianco dente (a sinistra) ed a cuore sulla base dente (a destra).

Analisi di similitudine Ppk

Formular Nr:
Datum:
Status: Entwurf
Formular Eigner / Fachbereich:
Prozess-/VA-verweis:

Macchina da confrontare: SLW11009
Capability da confrontare Nr.: 03/03/2017

Data: 18/05/2018
Owner: G.Sette
Abt.: WLQ1

Codice Pezzo di riferimento: 251.1.1093.50

Partnumber in esame: 251.1.1255.50

	Si	No	
Il grezzo è uguale?	X		Stesso grezzo
Stesso processo di TT?	X		Stesso processo di trattamento termico
Stesso clamping system?	X		Stesso sistema di serraggio
Gli uomini sono gli stessi?	X		Stessi uomini
Il metodo è uguale?	X		Stesso metodo applicato
MSA eseguita e ok?	X		MSA eseguita e ok
Condizioni ambientali ok?	X		Condizioni ambientali adeguate

Esito Correlazione: **Il processo è paragonabile
capacità di processo confermata**

Deviazione Std. Ammessa: ± 25 %

Componente di riferimento					Componente in esame						
DIMENSIONEN					DIMENSIONEN						
Merkmal	Einheit	Nominale		Deviazione ammessa in %	Nominale		Deviazione %	i.O./n.i.O.			
numero denti Z	---	30			29			i.O.			
diam.primitivo - Ø	mm	60.767			64.734			i.O.			
Altezza dentatura	mm	5.85			6.84			i.O.			
diam.testa - Ø (da)	mm	69.70			75.20			i.O.			

Studio delle specifiche					Studio delle specifiche						
Merkmal	Einheit	Nominale	Toleranz T ₁	P _p	P _{pk} (solo per caratteristiche unilaterali)	Nominale	Toleranz T ₂	Taregt (1,00/1,33/1,67)	i.O./n.i.O.	Min. P _p	Min. P _{pk}
Mdk - Ø	mm	68.26	0.09	3.64		71.973	0.095	1.67	i.O	3.84	
Fr (Eccentricità)	µm	0	22	1.67		0	22	1.67	i.O	1.67	
	µm								---		
	µm								---		
	µm								---		
	µm								---		
	µm								---		
...									---		

Part Submission Warrant



Part Name <u>Schaltrad 7.Gang</u>		Cust. Part Number <u>251.1.1255.80</u>	
Shown on Drawing No. <u>251.1.1255.80</u>		Org. Part Number _____	
Engineering Change Level <u>- / T72596</u>		Dated <u>16. Okt 17</u>	
Additional Engineering Changes <u>SEI No. 0 72561 - 90A Index: -</u>		Dated <u>03. Jan 18</u>	
Safety and/or Government Regulation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Purchase Order No. <u>5500040248 / 04.12.2017</u>	
Checking Aid No. _____		Weight (kg) <u>0,410 kg</u>	
Checking Aid Engineering Change Level <u>-</u>		Dated <u>-</u>	
ORGANIZATION MANUFACTURING INFORMATION		CUSTOMER SUBMITTAL INFORMATION	
<u>SEISSENSCHMIDT GmbH</u>		<u>Getrag B.V & Co.KG</u>	
Organization Name & Supplier/Vendor Code		Customer Name/Division	
<u>DAIMLERSTRASSE 11</u>		<u>Frau Petra Braun</u>	
Street Address		Buyer/Buyer Code	
<u>PLETTENBENRW</u>	<u>58840</u>	<u>GERMANY</u>	<u>251er Getriebe</u>
City	Region	Postal Code	Country
		Application	
MATERIALS REPORTING			
Has customer-required Substances of Concern information been reported? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a			
Submitted by IMDS or other customer format: <u>IMDS</u>			
<u>72610527</u>			
Are polymeric parts identified with appropriate ISO marking codes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> n/a			
REASON FOR SUBMISSION (Check at least one)			
<input checked="" type="checkbox"/> Initial Submission	<input type="checkbox"/> Change to Optional Construction or Material		
<input type="checkbox"/> Engineering Change(s)	<input type="checkbox"/> Supplier or Material Source Change		
<input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional	<input type="checkbox"/> Change in Part Processing		
<input type="checkbox"/> Correction of Discrepancy	<input type="checkbox"/> Parts Produced at Additional Location		
<input type="checkbox"/> Tooling Inactive > than 1 year	<input type="checkbox"/> Other - please specify below		
REQUESTED SUBMISSION LEVEL (Check one)			
<input type="checkbox"/> Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.			
<input type="checkbox"/> Level 2 - Warrant with product samples and limited supporting data submitted to customer.			
<input checked="" type="checkbox"/> Level 3 - Warrant with product samples and complete supporting data submitted to customer.			
<input type="checkbox"/> Level 4 - Warrant and other requirements as defined by customer.			
<input type="checkbox"/> Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.			
SUBMISSION RESULTS			
The results for <input checked="" type="checkbox"/> dimensional measurements <input checked="" type="checkbox"/> material and functional tests <input type="checkbox"/> appearance criteria <input type="checkbox"/> statistical process package			
These results meet all drawing and specification requirements: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "NO" - Explanation Required)			
Mold / Cavity / Production Process <u>B 800</u>			
DECLARATION			
I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of <u>1500 / 8</u> hours.			
I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from the declaration below.			
EXPLANATION/COMMENTS: _____			
Is each Customer Tool properly tagged and numbered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a <input type="checkbox"/> Photo attached <input type="checkbox"/> Yes			
Organization Authorized Signature <u>i.A. B...</u>		Date <u>05. Mrz 18</u>	
Print Name <u>B.Jungwirt / A. Suliani</u>		Phone No. <u>0049 2391 915-2103</u>	
		Fax No. <u>0049 2391 915-197</u>	
Title <u>Quality Management</u>		E-mail <u>a.suliani@seissenschmidt.com</u>	
FOR CUSTOMER USE ONLY (IF APPLICABLE)			
Part Warrant Disposition: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Other _____			
Customer Signature <u>W. Tefke</u>		Date <u>19.03.18</u>	
Print Name <u>Wadim Tefke</u>		Customer Tracking Number (optional) <u>18-00360</u>	

based on CFG-1001 PPAP Version 4



GETRAG B.V. & Co. KG

Hermann-Hagenmeyer-Straße

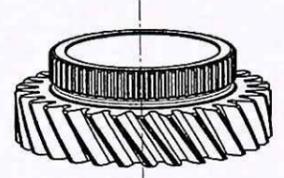
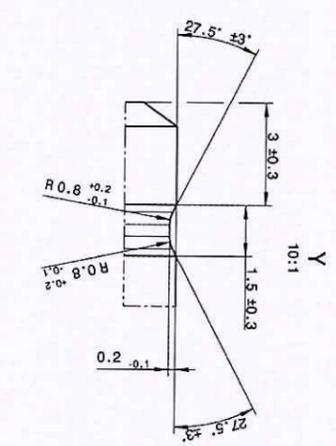
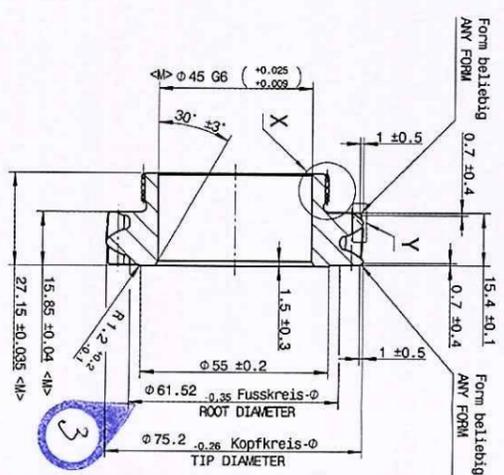
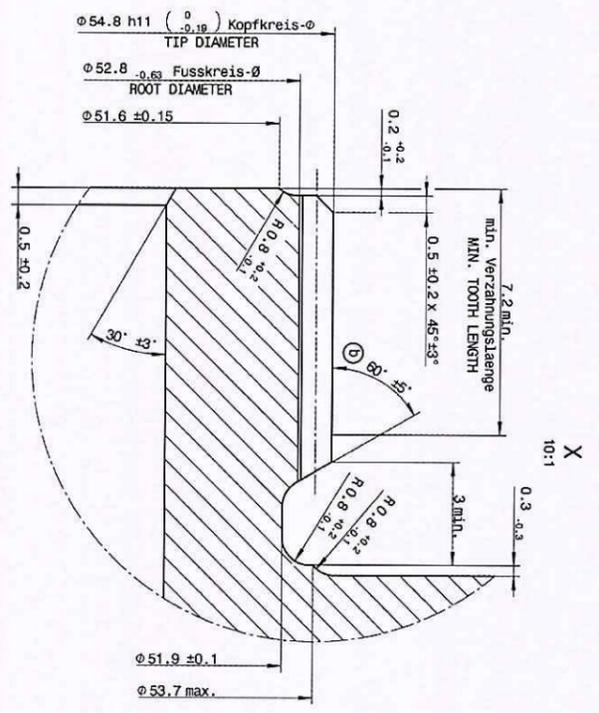
Date Issued: 19.03.2018

Date Revised: DD.MM.YYYY

GCG_F11_2213_00 2007-05
VBoerkewitz/Q E Management

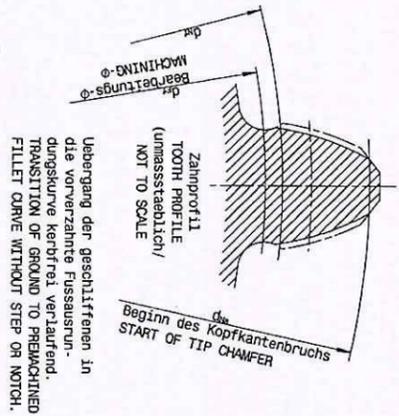
Retention: GIS 28.01/15
Security Class: Confidential

Keep free for release information



Technische Sauberkeit / TECHNICAL CLEANLINESS:
 Bauteiloberfläche fuer Pruefung / SURFACE TO PROVE:
 siehe Zeichnungskopf / SEE DRAWING TITLE BLOCK
 Sauberkeitsanforderung / CLEANLINESS REQUIREMENT:
 G-2.5mg / 1000cm²
 Pruefung an Hand der Anweisung / EXAMINATION BASED ON DIRECTIVE:
 G 304340-2

Naechere Angaben zur Verzahnung
 siehe Verzahnungsdatenblatt gleicher Nummer
 FURTHER GEAR DATA SEE
 DATA SHEET SAME NUMBER

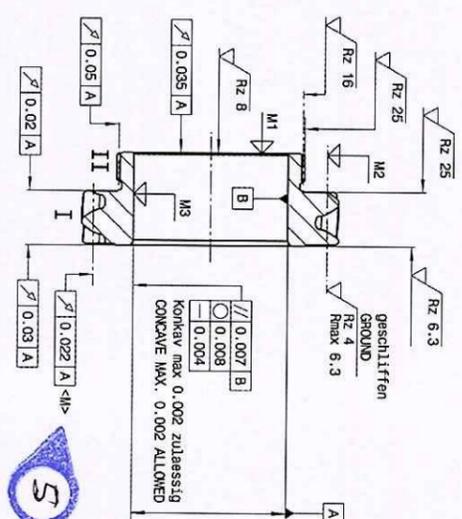
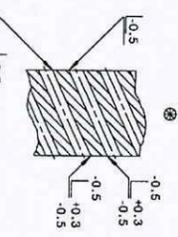


Kanten an Laufverzahnungen / Tooth chamfers
 ummassstablich / NOT TO SCALE

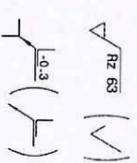


① VERZÄHNUNG OPTIONAL, ENTGERTET NACH G 908101 / CHAMFERING OPTIONAL ON GEAR ACC. TO G 908101
 FORM SD - Grösse siehe ② / FORM SD - Size SEE ②

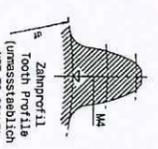
Aussenverzahnung / EXTERNAL GEAR		I	II
Zahnwelle / SPLINE DATA EXTERNAL			
Bezugsdurchmesser / REFERENCE DIAMETER d_f	DIN 5480- WIS5X1.00X54X36	55.000	1.000
Modul / MODUL m		2.000	1.000
Zahnzahl / NUMBER OF TEETH z		29	54
Eintrittswinkel / NORMAL PRESSURE ANGLE α_n		17.5°	30.0°
Steigungswinkel / HELIX ANGLE β		33.0°	0°
Richtung / HAND OF HELIX		LEFT, Links	STRAIGHT, gerade
Bezugsprofil / BASIC BACK			
Profilverzahnung / PROFILE TOOTH		0.000	DIN 5480
Profilverzahnung / PROFILE TOOTH		0.050	DIN 5480
Profilverzahnung / PROFILE TOOTH		7	9
Profilverzahnung / PROFILE TOOTH		1.480	1.454
Profilverzahnung / PROFILE TOOTH		3.112	1.409
Profilverzahnung / PROFILE TOOTH		3.00	2.00
Profilverzahnung / PROFILE TOOTH		<M> 72.068	<M> 57.048
Profilverzahnung / PROFILE TOOTH		<M> 71.973	<M> 56.974



<M> Kurzwelligigkeit ausgewertet mit Fourier-Analyse,
 Auswertung 5. bis 300. Ordnung
 RfA-Toleranzband
 SHORT WAVINESS INTERPRETED USING FOURIER-ANALYSIS,
 EVALUATION 5. TO 300. ORDER
 RfA-TOLERANCE RANGE
 n0 = 0.7
 K = 0.6
 R = 8
 Nadellaufbahn
 NEEDLE TRACK
 Rz 3
 Rz 4



einsetzgehardet und angelassen nach G 804002
 CASE HARDENED AND TEMPERED ACCORDING TO G 804002
 M1 (Oberflaechenhaertheit/CASE HARDNESS) : 80.5+2.5 HRA
 M2 (Zahnflanke/TOOTH FLANK) : CHD (EHT) 550 HV1=0.5+0.4
 M3 (Bohrung/BORE) : CHD (EHT) 550 HV1=0.3min.
 M4 (Kernhaertheit/CORE HARDNESS) : 300min. HV10



b 1 0011247_MIP 1		K 60750	
Teil No.	0011247_MIP 1	Material	20180227
Zeichnung	0011247_MIP 1	Version	1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_MIP 1	Geprüft	0011247_MIP 1
Freigegeben	0011247_MIP 1	Freigegeben	0011247_MIP 1
Gezeichnet	0011247_MIP 1	Gezeichnet	0011247_MIP 1
Geprüft	0011247_M		