



Part Name: Double Gear 3 - 5/7 Cust. Part No.: 251.1.1236.35
 Shown on Drawing No.: 251.1.1236.35 Org. Part No.: 251.1.1236.35
 Engineering Change Level: 3 Index "a" (C009912_MIP_1) Dated: 27/06/2017
 Additional Engineering Changes: na Dated: na
 Safety and/or Government Regulation: Yes No Purchase Order No.: _____ Weight (kg): 1.137
 Checking Aid No.: na Checking Aid Engineering Change Level: na Dated: na

ORGANIZATION MANUFACTURING INFORMATION

Getrag S.p.A.
 Organization Name & Supplier / Supplier Code
Via dei Ciclamini, 4
 Street Address
Modugno (Ba) Puglia 70026 Italy
 City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

Bari assembly line (GPS4)
 Customer Name / Division
na
 Buyer / Buyer Code
DCT300
 Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? Yes No n/a
 Submitted by IMDS or other customer format: _____
 (IMDS=International Material Data System)
 Are polymeric parts identified with appropriate ISO marking codes? Yes No n/a

REASON FOR SUBMISSION (Check at least one)

- Initial Submission
- Engineering Change(s)
- Tooling: Transfer, Replacement, Refurbishment, or additional
- Correction of Discrepancy
- Tooling Inactive > than 1 year
- Change to Optional Construction or Material
- Supplier or Material Source Change
- Change in Part Processing
- Parts Produced at Other or Additional Location
- Other - please specify below (e.g. additional specific customer requirement or e.g. change of EP parts)

REQUESTED SUBMISSION LEVEL (Check one)

- Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- Level 2 - Warrant with product samples and limited supporting data submitted to customer.
- Level 3 - Warrant with product samples and complete supporting data submitted to customer.
- Level 4 - Warrant and other requirements as defined by customer.
- Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS

The results for: dimensional measurements material and functional tests appearance criteria statistical process package
 These results meet all drawing and specification requirements: Yes No (If "NO" - Explanation Required)
 Mold / Cavity / Production Process na

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 163 / 8 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: - First PPAP Submission (only differences from variant 251.1.1074.35).
- Identification grooves according with change C006077

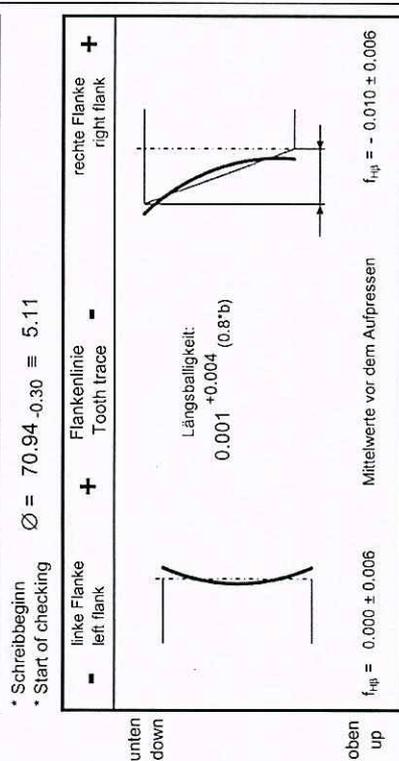
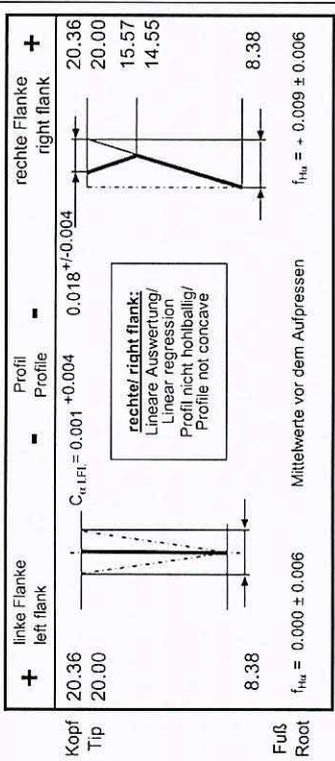
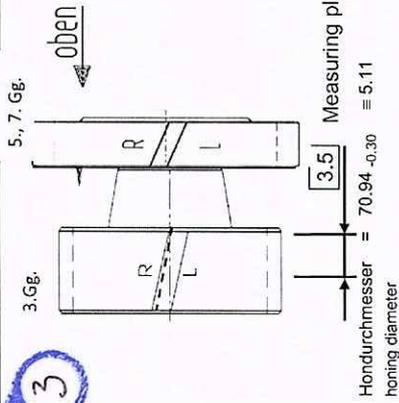
Is each Customer Tool properly tagged and numbered? Yes No n/a

Organization Authorized Signature: _____ Date: 18/05/2018
 Print Name: Tursi Dario Maria Phone No.: +39 0805858360 Fax No.: _____
 Title: 7DCT300 Launch Manager E-Mail: dario.tursi@magna.com

FOR CUSTOMER USE ONLY (If applicable)

Part Warrant Disposition: Approved Rejected Other _____
 Customer Signature: F. SPEDICATO Date: 18.05.18
 Print Name: F. SPEDICATO Customer Tracking No.: _____

STIRNRAD		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978)		(8)	
GEAR		gültig für Werte am Einzelzahn		Tolerances of gearing (DIN 3961 of Aug. 1978)	
external		valid for values at individual tooth			
Zähnezahl	z	linke Fl.	rechte Fl.		
Number of teeth	33	left flank	right flank		
Modul	m_n	Profil-Formabweichung	f_{fa}	Eingriffsteilungs-Abweich.	f_{pa}
Normal module	1.950000	Profile form error	0.004	Normal pitch error	0.014
Eingriffswinkel	α_n	Profil-Gesamtabweichung	F_{α}	Teilungs-Einzelabweichung	f_p
Normal pressure angle	17° 30' 0"	Total profile error	0.000	Adjacent pitch error	0.014
Schrägungswinkel	β	Profil-Winkelabweichung	$f_{H\alpha}$	Teilungssprung	f_u
Helix angle	30° 36' 0"	Profile angle error	± 0.011	Diff. bet. adjacent pitches	0.018
Steigungsrichtung	RECHTS	Flankenl.-Winkelabweich.	$f_{H\beta}$	Teilungs-Summenabweich.	F_{pk}
Hand of helix		Tooth alignment error	± 0.013	Cumulative circ. pitch error	
Profilverschiebungsfaktor	x	Flankenl.-Gesamtabweich.	F_{β}	Rundlaufabweichung	F_r
Addendum modification coeff.	0.350	Total alignment error	0.004	Radial run-out	0.032
Teilkreisdurchmesser	d	Flankenl.-Formabweich.	f_{fp}	Zahndickenschwankung	R_s
Pitch diameter	74.761	Longitudinal alignment err.	0.050	Range of tooth thckn. error	
Kopfkreisdurchmesser	d_a	Teilungs-Gesamtabweich.	F_p		
Outside diameter	81.60 -0.26	Cumulative pitch error			
Kopfnutzkreisd. theo. max.	d_{a1}	Einfl.-Wälzabweichung	F_r	Zweifl.-Wälzabweichung	F_r
Tip diam. usable theo.	81.15	Tangential composite error		Radial composite error	0.040
Kopfnutzkreisd. theo. min.	d_{a2}	Einflanken-Wälzsprung	f_r	Zweifl.-Wälzsprung	f_r
Tip diam. usable theo.	80.80	Tang. tooth to tooth comp. err.		Radial tooth to tooth comp. err.	0.016
Fußkreisdurchmesser	d_f	Radbreite im Meßkreis d_M	b	Meßkreis Krümmungsradius ρ_{M1}	13.54
Root diameter	68.95 -0.30	Facewidth in meas. diam.	14.80	Radius of curvature meas. diam.	
Fußnutkreisdurchmesser	d_{f1}				
Root diameter usable	72.17				
Grundkreisradius	r_b				
Base circle radius	35.100				
Grundkreisdurchmesser	d_b				
Base diameter	70.199				
Normalzahnstärke max.	s_n				
Normal tooth thickness	3.415				
Normalzahnstärke min.	s_n				
Normal tooth thickness	3.385				
Meßzähnezahl	k				
Number of teeth spanned	6				
Zahnweite max. W_k					
Base tangent length	33.402				
Zahnweite min. W_k					
Base tangent length	33.373				
Meßkugeldurchmesser	D_M				
Ball diameter	3.0000				
Diam. Zweikugelmaß max. M_{ak}					
Measurement o. balls	78.975				
Diam. Zweikugelmaß min. M_{ak}					
Measurement o. balls	78.890				
Verdrehflankenspiel theo.	0.071				
Circumferential backlash	0.114				



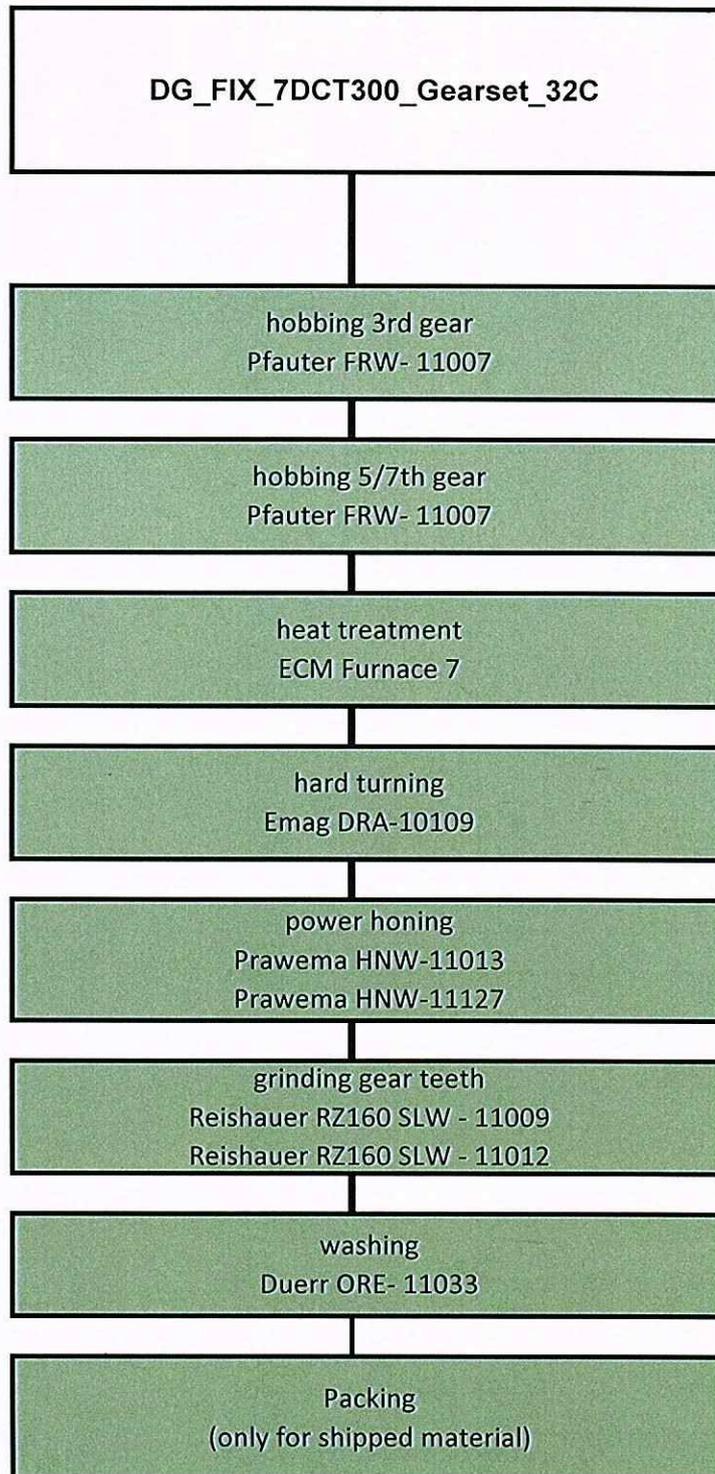
• f_{Hr} (zwischen dnf und dem Schreibbeginn ds) max $f_{Hr/2}$, jedoch 0.003 zulässig
 • f_{Hl} (between dnf and start of checking ds) max $f_{Hl/2}$, 0.003 allowable.
 Profil- und Flankenlinienmessung nach G_808006 und VDI/VDI 2612
 Flankenlinienprüfbereich $L_{\beta} = 0.8 \cdot b$ hochgerechnet auf $1.0 \cdot b$
 Begriffe für Stirnräder nach DIN 868, 3960, 3998
 Profile and helix checking according to G_808006 and VDI/VDI 2612
 Tooth trace testing area $L_{\beta} = 0.8 \cdot b$ calculated to $1.0 \cdot b$
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

#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
 (a)

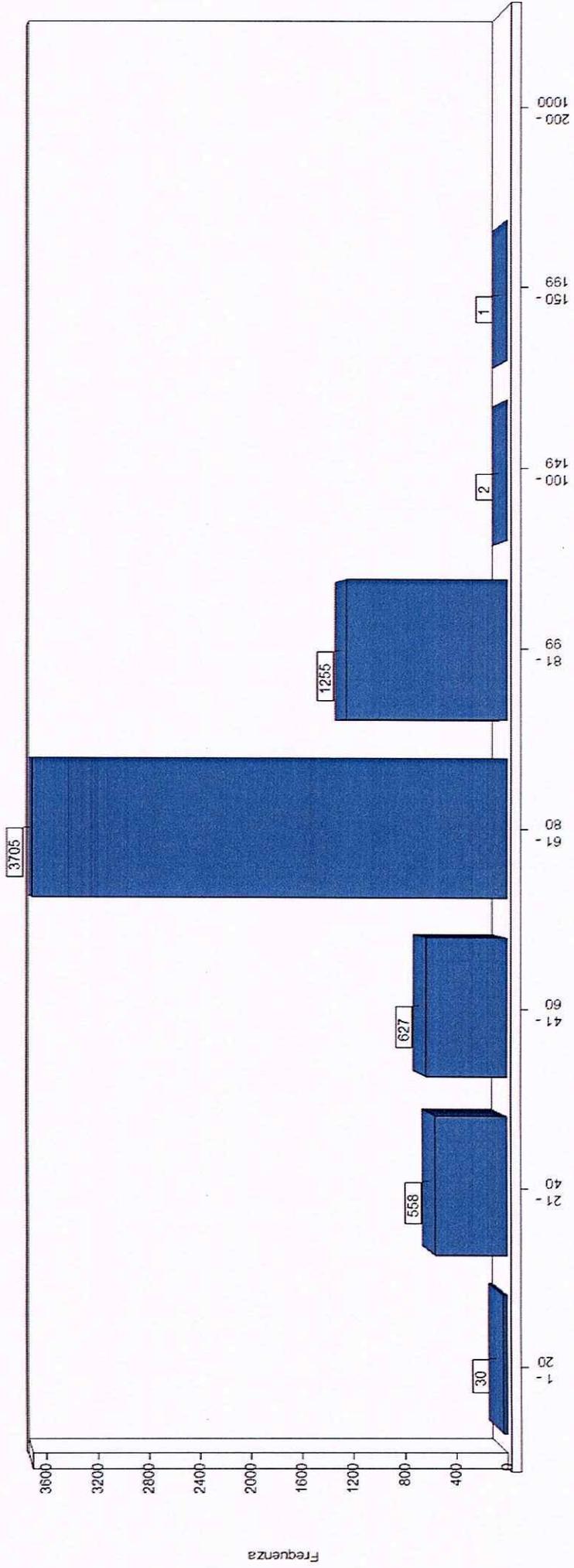
Verteiler:		
Schutzvermerk nach ISO 16016 beachten Protection per ISO 16016		
■ ■ ■ GETRAG		
GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG		
Remark:		
Ersatz für		
Erstverwendung bei Getriebeart:	251	
Datum	Name	
23.03.2017	Cricenti, Fabrizio	
gez.	Verzahnungsblatt Endkontrolle	
gepr.	Final Check Gear Data	
	Benennung:	
	Naming:	
	DG 3. Gg.	
	Zeichnungsnummer:	251.1.1236.35
	Drawing number:	

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

W/kz-Profil siehe Werkzeugdatenblatt Nr.
 For Tooth profile, see tool data sheet number 251.1.1236.35



		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	



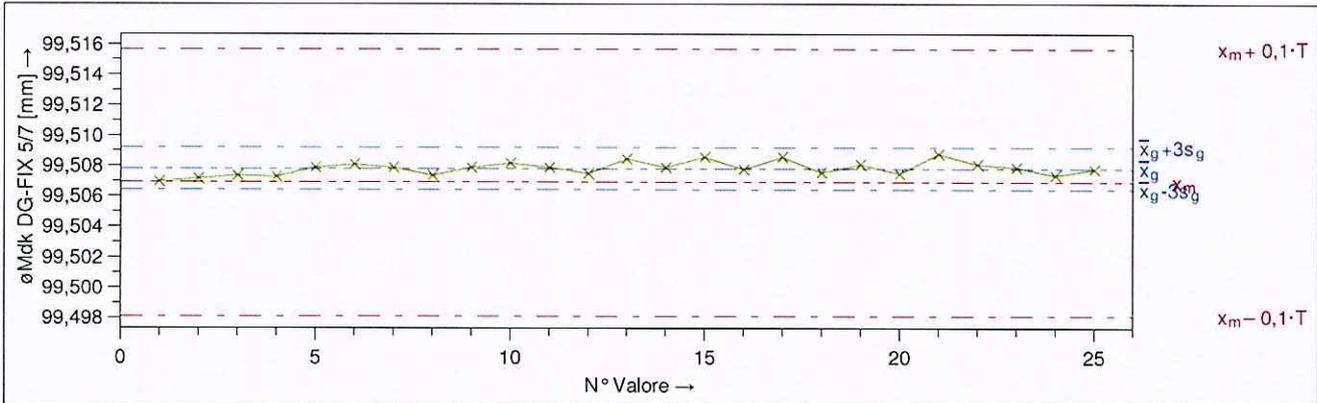
Record Owner: Vicenti D.	Date Issued: 06.03.2017	GIS1 Item Number: 28.04	Page: 1 / 2
Dept.: WLP	Date Revised: 14.05.2018	GIS2 Classification: Confidential	Retention Start Date (Year): 2017

Actions ongoing for RPN > 100:

Chr. Classification	Project	Component	Operation	Chr. Description	Actual RPN			Action	Resp.	Due date	Min. RPN expected			
					S	O	D				S	O	D	RPN
<M>	DCT300	SG1	Hard Turning	Clutch body Height	7	4	4	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	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	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)



Data/ora	26/04/2018	Nome oper.	mario.bozza	Reparto/Area/Prod.	WLQ	Posto di prova	Rettifica denti C EV 5/7
Calibro		Master			Caratteristica		
Desc. calibro	Banchetto in acciaio	Desc. mast.	Master Mdk DG-FIX 5/7		Desc. Car.	øMdk DG-FIX 5/7	
N° calibro	MVZ 406001 020	N° master	MVZ 400570 002		N° Caratt.	2511123635_32C	
Ris. calibro	0,0001	Valore reale mast.	99,507		Val. Nom.	99,4750	LSS 99,5190 $\hat{=} 0,0440$
Caus. Pr.	Cg CgK	Unità di misura	mm		Unità di r	mm	LSI 99,4310 $\hat{=} -0,0440$
Nota							



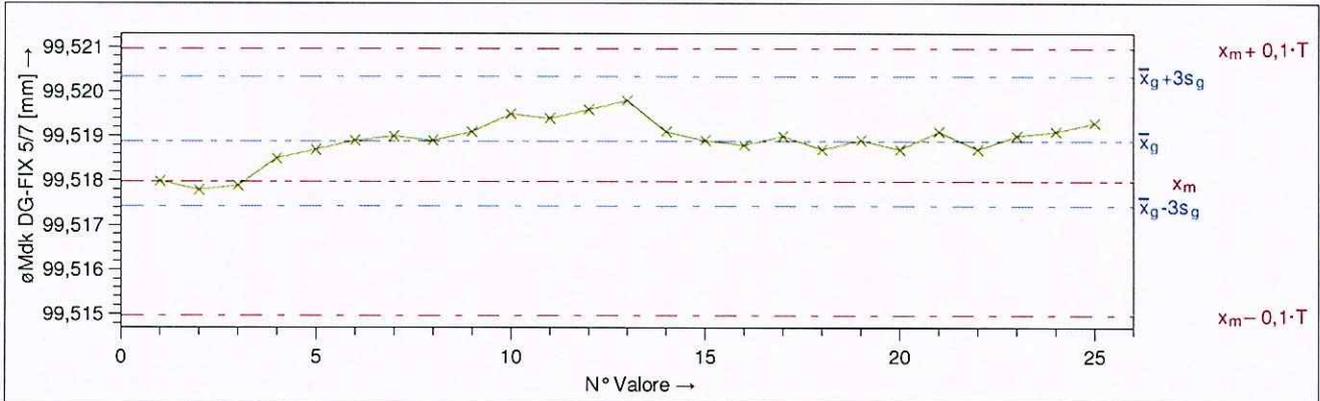
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	99,5070	6	99,5081	11	99,5079	16	99,5078	21	99,5088
2	99,5072	7	99,5079	12	99,5075	17	99,5086	22	99,5081
3	99,5074	8	99,5074	13	99,5085	18	99,5076	23	99,5079
4	99,5073	9	99,5079	14	99,5079	19	99,5081	24	99,5074
5	99,5079	10	99,5082	15	99,5086	20	99,5075	25	99,5078

Valori a disegno		Valori Calcolati		Statistiche	
x _m +0,1·T	= 99,515800	x _{maxg}	= 99,5088	\bar{x}_g+3s_g	= 99,509241
x _m	= 99,507000	x _{ming}	= 99,5070	\bar{x}_g	= 99,507852
x _m -0,1·T	= 99,498200	R _g	= 0,0018	\bar{x}_g-3s_g	= 99,506463
0,2·T	= 0,017600	n _{tot}	= 25	6s _g	= 0,002777
T	= 0,0880			s _g	= 0,000463
Unità di misura	= mm			Bi	= 0,00085200
				n _{eff}	= 25
Test per Bias				Risultati del test : significativo (α ≤ 0,1%)	
Bias		=	0,97%		
Minimo riferimento per sistema di misura capace					
Risoluzione	%RE =	0,11%		T _{min} (%RE)	= 0,00200
$C_g = \frac{0,2 \cdot T}{4 \cdot s_g}$	=	6,83 ≤ 9,51 ≤ 12,17		T _{min} (C _g)	= 0,0123
$C_{gk} = \frac{0,1 \cdot T - \bar{x}_g - x_m }{2 \cdot s_g}$	=	6,15 ≤ 8,59 ≤ 11,02		T _{min} (C _{gk})	= 0,0208
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
<input type="checkbox"/> 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 DC FIX 5/7
Calibro		Master			Caratteristica		
Desc. calibro	Banchetto in acciaio	Desc. mast.	DG FIX 5/7		Desc. Car.	øMdk DG-FIX 5/7	
N° calibro	MVZ 406001 004	N° master	MVZ 400658 001		N° Caratt.	2511123635_32C	
Ris. calibro	0,0001	Valore reale mast.	99,518		Val. Nom.	100,2400 LSS	$100,255 \hat{=} 0,0150$
Caus. Pr.	Cg CgK	Unità di misura	mm		Unità di rr mm	LSI	$100,225 \hat{=} -0,0150$
Nota							



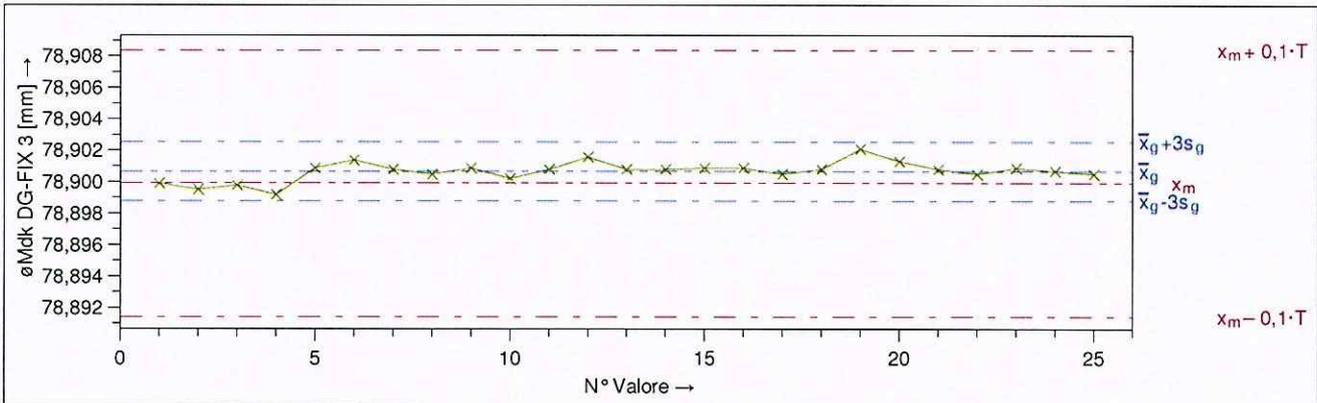
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	99,5180	6	99,5189	11	99,5194	16	99,5188	21	99,5191
2	99,5178	7	99,5190	12	99,5196	17	99,5190	22	99,5187
3	99,5179	8	99,5189	13	99,5198	18	99,5187	23	99,5190
4	99,5185	9	99,5191	14	99,5191	19	99,5189	24	99,5191
5	99,5187	10	99,5195	15	99,5189	20	99,5187	25	99,5193

Valori a disegno		Valori Calcolati		Statistiche	
$x_{m+0,1\cdot T}$	= 99,521000	x_{maxg}	= 99,5198	$\bar{x}_g + 3s_g$	= 99,520346
x_m	= 99,518000	x_{ming}	= 99,5178	\bar{x}_g	= 99,518896
$x_{m-0,1\cdot T}$	= 99,515000	R_g	= 0,0020	$\bar{x}_g - 3s_g$	= 99,517446
$0,2\cdot T$	= 0,006000	n_{tot}	= 25	$6s_g$	= 0,002901
T	= 0,0300			s_g	= 0,000483
Unità di misura	= mm			$ Bi $	= 0,00089600
				n_{eff}	= 25
Test per Bias				Risultati del test : significativo ($\alpha \leq 0,1\%$)	
Bias		=	2,99%		
Minimo riferimento per sistema di misura capace					
Risoluzione	%RE =	0,33%		$T_{min}(\%RE)$	= 0,00200
$C_g = \frac{0,2\cdot T}{4\cdot s_g}$	=	$2,23 \leq 3,10 \leq 3,97$		$T_{min}(C_g)$	= 0,0129
$C_{gk} = \frac{0,1\cdot T - \bar{x}_g - x_m }{2\cdot s_g}$	=	$1,55 \leq 2,18 \leq 2,81$		$T_{min}(C_{gk})$	= 0,0218
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
<input type="checkbox"/> GETRAG MSA 2017: Capability of measuring system (Type-1 Study)					



Capacità strumenti di misura

Data/ora	15/06/2018	Nome oper.	mario.bozza	Reparto/Area/Prod.	WLQ	Posto di prova	Levigatura DCT 300
Calibro		Master			Caratteristica		
Desc. calibro	Calibro a forcilla	Desc. mast.	Master Mdk DG-FIX 3		Desc. Car.	øMdk DG-FIX 3	
N° calibro	MAR 402090 112	N° master	MVZ 400668 002		N° Caratt.	2511123635_32C	
Ris. calibro	0,0001	Valore reale mast.	78,9		Val. Nom.	78,9325	LSS 78,9750 $\hat{=} 0,0425$
Caus. Pr.	Cg CgK	Unità di misura	mm		Unità di rr mm	LSI	78,8900 $\hat{=} -0,0425$
Nota							



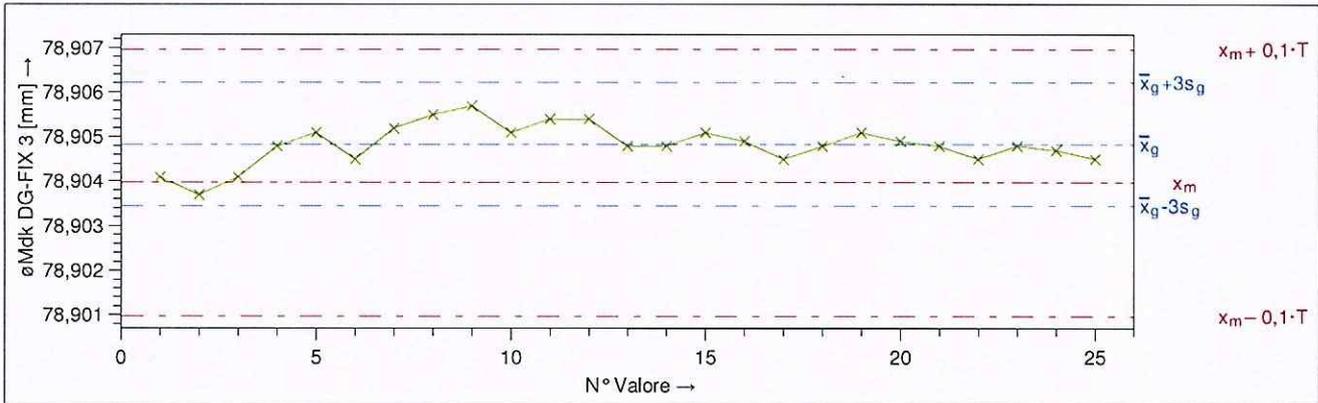
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	78,8999	6	78,9014	11	78,9008	16	78,9009	21	78,9008
2	78,8995	7	78,9008	12	78,9016	17	78,9005	22	78,9005
3	78,8998	8	78,9005	13	78,9008	18	78,9008	23	78,9009
4	78,8992	9	78,9009	14	78,9008	19	78,9021	24	78,9007
5	78,9009	10	78,9002	15	78,9009	20	78,9013	25	78,9005

Valori a disegno		Valori Calcolati		Statistiche	
$x_m + 0,1 \cdot T$	= 78,908500	x_{maxg}	= 78,9021	$\bar{x}_g + 3s_g$	= 78,902559
x_m	= 78,900000	x_{ming}	= 78,8992	\bar{x}_g	= 78,900680
$x_m - 0,1 \cdot T$	= 78,891500	R_g	= 0,0029	$\bar{x}_g - 3s_g$	= 78,898801
$0,2 \cdot T$	= 0,017000	n_{tot}	= 25	$6s_g$	= 0,003759
T	= 0,0850			s_g	= 0,000626
Unità di misura	= mm			$ Bi $	= 0,00068000
				n_{eff}	= 25
Test per Bias				Risultati del test : significativo ($\alpha \leq 0,1\%$)	
Bias		=	0,80%		
Minimo riferimento per sistema di misura capace					
Risoluzione	%RE =	0,12%		$T_{min} (\%RE)$	= 0,00200
$C_g = \frac{0,2 \cdot T}{4 \cdot s_g}$	=	$4,88 \leq 6,78 \leq 8,69$		$T_{min} (C_g)$	= 0,0167
$C_{gk} = \frac{0,1 \cdot T - \bar{x}_g - x_m }{2 \cdot s_g}$	=	$4,47 \leq 6,24 \leq 8,01$		$T_{min} (C_{gk})$	= 0,0235
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
<input type="checkbox"/> GETRAG MSA 2017: Capability of measuring system (Type-1 Study)					



Capacità strumenti di misura

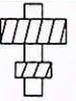
Data/ora	11/06/2018	Nome oper.	mario.bozza	Reparto/Area/Prod.	WLQ	Posto di prova	Dentatura DG-FIX 3
Calibro		Master			Caratteristica		
Desc. calibro	Banchetto in acciaio	Desc. mast.	DG FIX 3		Desc. Car.	øMdk DG-FIX 3	
N° calibro	MVZ 406001 004	N° master	MVZ 400668 001		N° Caratt.	2511123635_32C	
Ris. calibro	0,0001	Valore reale mast.	78,904		Val. Nom.	79,2450 LSS	$\hat{=} 0,0150$
Caus. Pr.	Cg CgK	Unità di misura	mm		Unità di r	mm LSI	$\hat{=} -0,0150$
Nota							



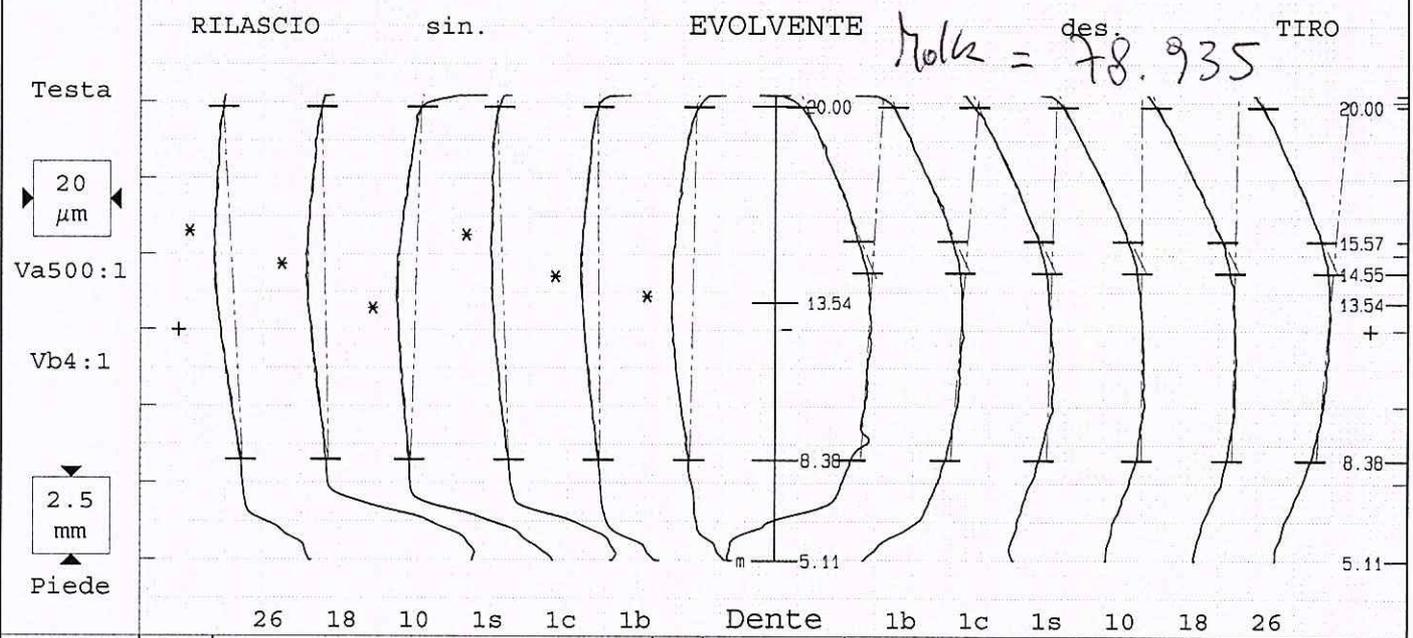
i	x _i	i	x _i	i	x _i	i	x _i	i	x _i
1	78,9041	6	78,9045	11	78,9054	16	78,9049	21	78,9048
2	78,9037	7	78,9052	12	78,9054	17	78,9045	22	78,9045
3	78,9041	8	78,9055	13	78,9048	18	78,9048	23	78,9048
4	78,9048	9	78,9057	14	78,9048	19	78,9051	24	78,9047
5	78,9051	10	78,9051	15	78,9051	20	78,9049	25	78,9045

Valori a disegno		Valori Calcolati		Statistiche	
$x_{m+0,1\cdot T}$	= 78,907000	x_{maxg}	= 78,9057	\bar{x}_g+3s_g	= 78,906214
x_m	= 78,904000	x_{ming}	= 78,9037	\bar{x}_g	= 78,904832
$x_{m-0,1\cdot T}$	= 78,901000	R_g	= 0,0020	\bar{x}_g-3s_g	= 78,903450
$0,2\cdot T$	= 0,006000	n_{tot}	= 25	$6s_g$	= 0,002764
T	= 0,0300			s_g	= 0,000461
Unità di misura	= mm			$ Bi $	= 0,00083200
				n_{eff}	= 25
Test per Bias				Risultati del test : significativo ($\alpha \leq 0,1\%$)	
Bias		=	2,77%		
Minimo riferimento per sistema di misura capace					
Risoluzione	%RE =	0,33%		$T_{min} (\%RE)$	= 0,00200
$C_g = \frac{0,2\cdot T}{4\cdot s_g}$	=	$2,34 \leq 3,26 \leq 4,17$		$T_{min} (C_g)$	= 0,0122
$C_{gk} = \frac{0,1\cdot T - \bar{x}_g - x_m }{2\cdot s_g}$	=	$1,67 \leq 2,35 \leq 3,03$		$T_{min} (C_{gk})$	= 0,0206
Sistema di misura capace (%RE,min,C _g ,C _{gk})					
<input type="checkbox"/> GETRAG MSA 2017: Capability of measuring system (Type-1 Study)					

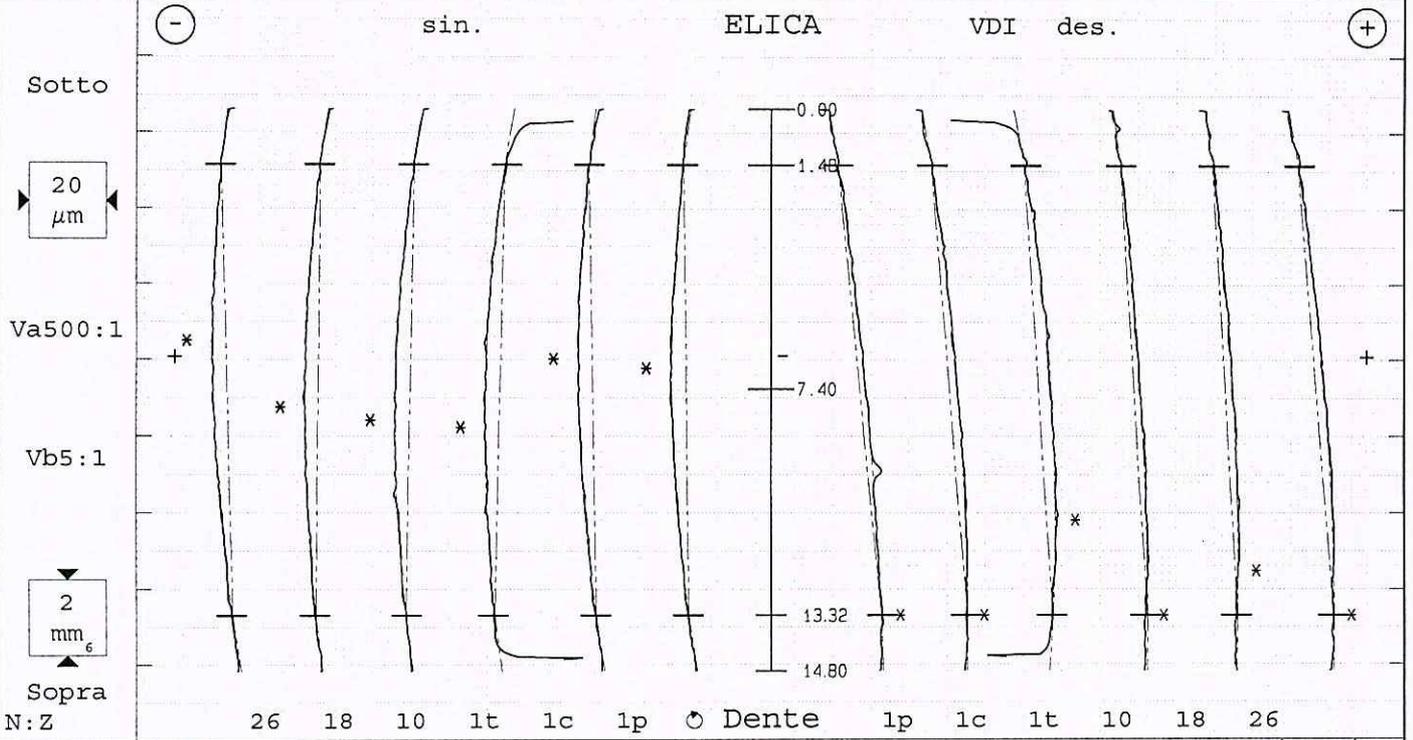
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:54
Denominazione: DG 3 Gg		Numero denti z 33	Largh.fasc.dent. b 14.8mm
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Tratto evolv. La 11.62/6.17mm
Commessa/serie nr.: 1		Angolo pressione 17.5°	Tratto elica L8 11.84mm
Masch.Nr.: M001	Spindel: Forme	Angolo elicale 30.6°	Inizio elab. M1 8.38mm
Untersuchungszweck: Laufende Messung		Ø Base db 70.1995mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 29.044°	Fat.scor.pr. x .35



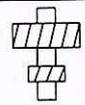
Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
		Var a 7.7									Var a 8.2									
fH _{am}	±6	1.3									9±6									4.2
fH _a	±11	1.3	5.1	1.9	-2.6	3.0	0.7	-1.7		9±11	5.5	7.1	2.3	0.0	1.6	8.2	4.2			
F _a		5.0	6.1	4.2	5.9	3.9	3.7	6.1			4.8	2.8	5.1	5.4	4.8	2.4	3.9			
ffa	4	1.1	1.0	1.2	1.2	1.0	1.0	1.1	4	4.6	2.4	3.4	2.1	2.0	2.4	2.2				
Ca	1/5	4.4	4.3	4.4	4.7	2.7	4.3	5.3			1.6	2.1	2.8	1.9	1.7	2.0	1.9			
Ca									-18±4	-20.0	-21.9	-20.4	-20.1	-20.9	-22.1	-21.3				
ffa _f	3	1.8	2.2	1.6	1.4	0.4	2.0	2.6	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
P/T-Ø [mm]		68.839 [68.65/68.95]								81.489 [81.34/81.6]										



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
		Var β 6.6									Var β 3.8								
fH _{sm}	±6	-0.5	Bd	4.4				6.6		-10±6	Bd	4.4				3.8	-10.3		
fH _β	±13	-0.5	-3.8	1.4	2.8	3.2	-2.4	-1.7		-10±13	-14.2	-12.0	-9.4	-8.9	-8.2	-11.9	-10.3		
F _β		4.0	4.3	3.5	4.4	5.0	3.8	3.7			5.4	2.6	3.4	2.4	2.5	2.6	2.5		
ffa _β	4	1.0	1.1	0.8	1.0	1.2	0.9	0.8	4	2.7	1.0	1.2	1.1	1.2	1.2	1.1			
CR	1/5	3.6	3.5	3.4	3.9	3.8	3.6	3.8	1/5	1.6	2.2	3.3	1.7	2.0	2.3	2.1			

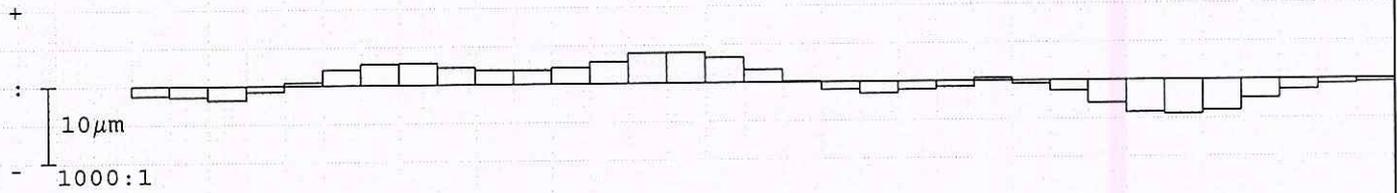


Ruota cilindrica Divisione

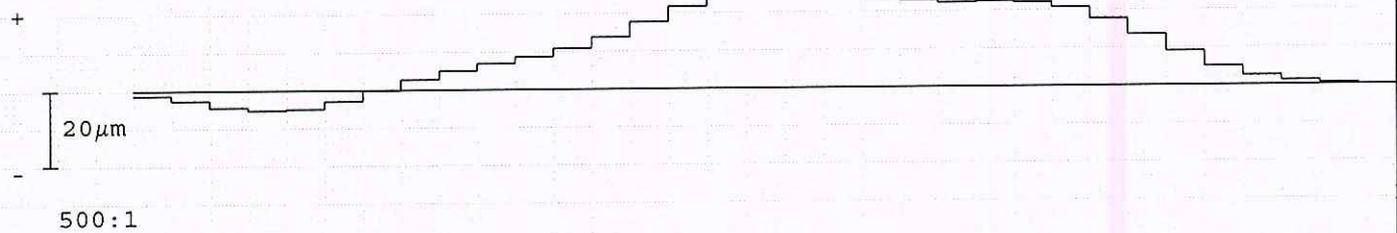


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:54
Denominazione: DG 3 Gg		Numero denti z 33	Angolo pressione 17.5°
Numero disegno: D51.1.1236.35-IF		Modulo m 1.95mm	Angolo elica 30.6°
Comessa/serie nr.: 1		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelgetzdg:	Charge:	

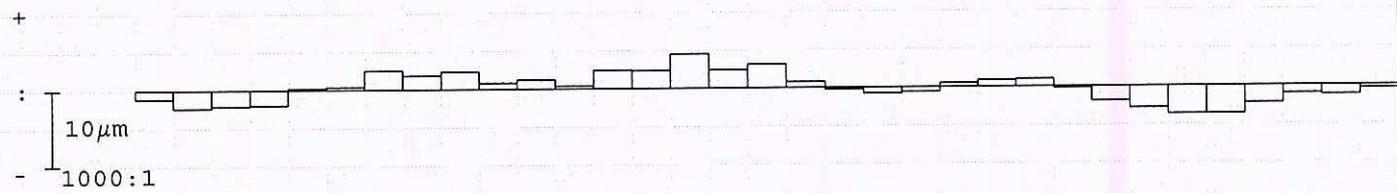
Errori singoli di divisione fp fianco sinistro



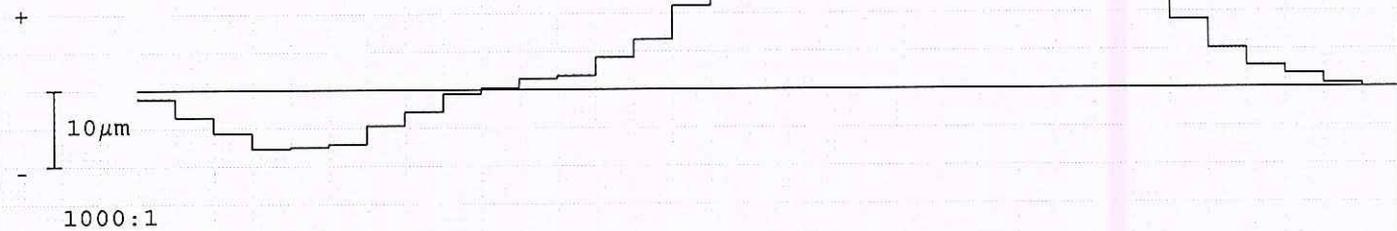
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



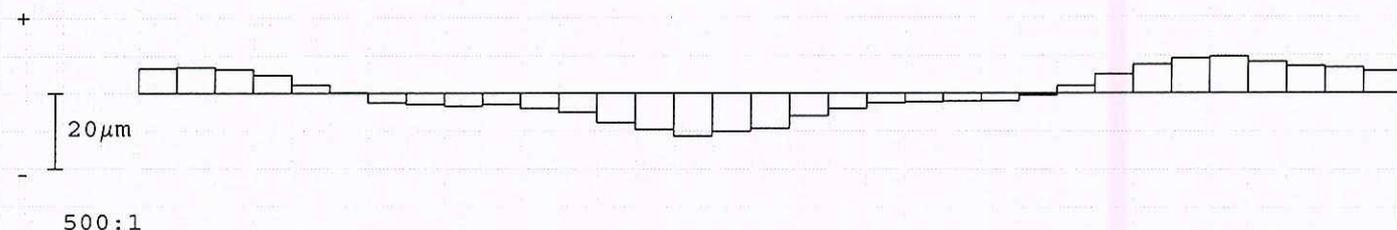
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 75.242 z=7.4mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	4.4		14.0		4.5		14.0	
Gr. salto di passo fu max	1.6		18.0		2.3		18.0	
Scarto di divisione Rp	8.4				8.2			
Err. globale di divisione Fp	31.8		50.0		25.3		50.0	
Err. cordale di divisione Fpz/8	15.7				12.6			

Centricità Fr (Ø-sfera =3.5mm)

⊙ : 16.8µm



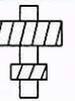
Err. di concentricità Fr	21.0	32.0	
Variaz. spessore dente Rs			

Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria

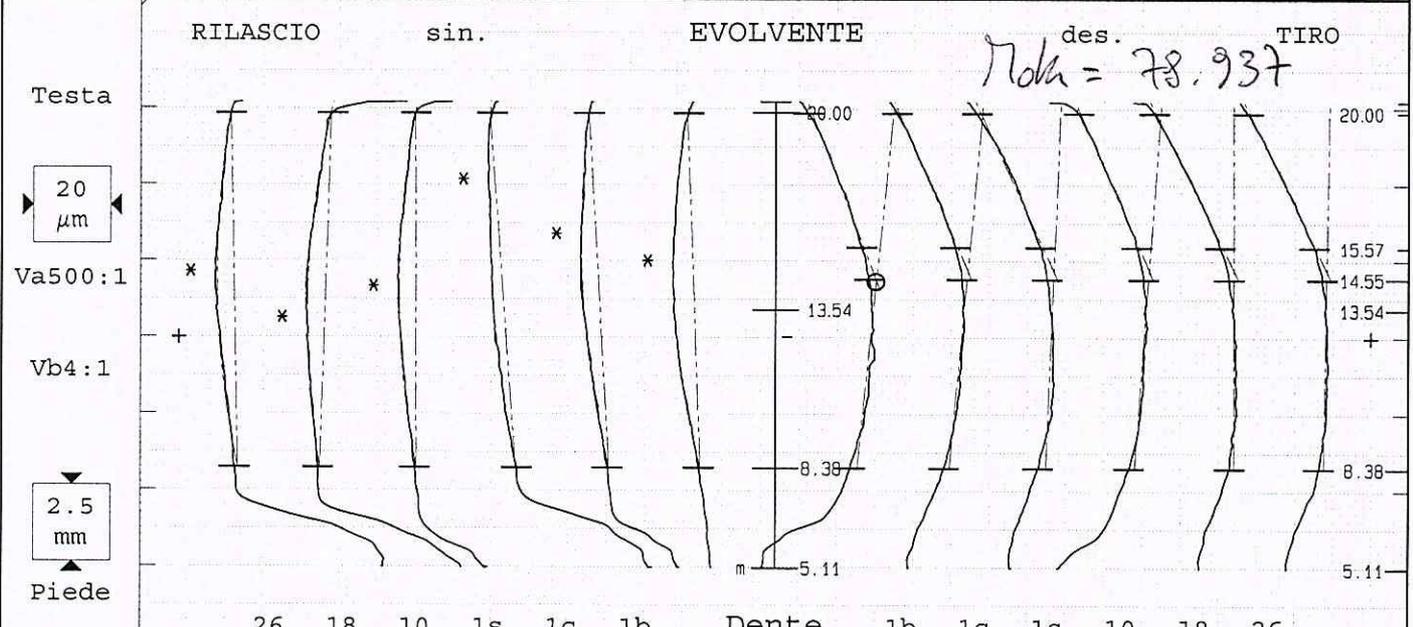
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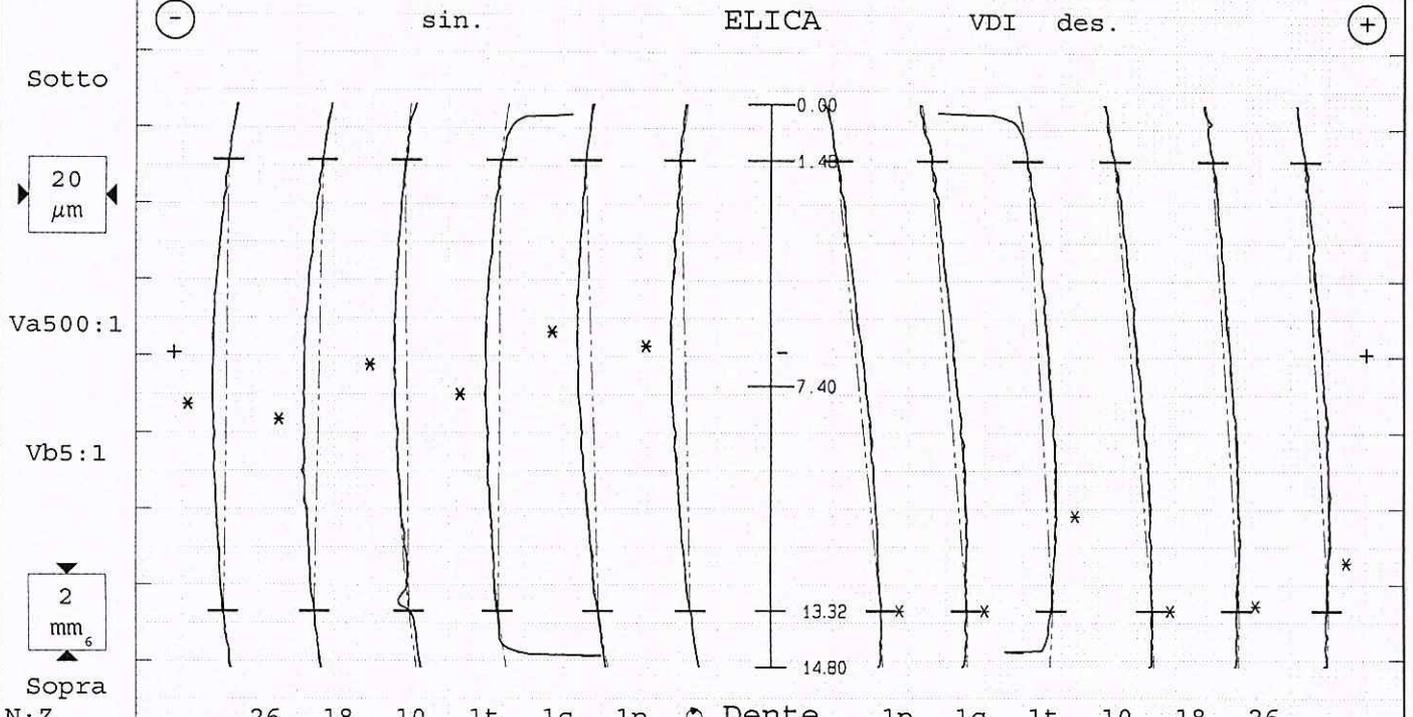
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 15:20
Denominazione: DG 3 Gg		Numero denti z 33	Largh.fasc.dent. b 14.8mm
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Tratto evolv. La 11.62/6.17mm
Comessa/serie nr.: 2		Angolo pressione 17.5°	Tratto elica L8 11.84mm
Masch.Nr.: M001	Spindel: Formm. 51	Angolo elica 30.6°	Inizio elab. M1 8.38mm
Untersuchungszweck: Laufende Messung		Ø Base db 70.1995mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 29.044°	Fat.scor.pr. x .35



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
fH _{am} ±6	1.2	Var a 8.3								9±6	Var a 8.7							4.1	
fH _a ±11	1.2	1.9	-2.9	0.3	6.8	5.4	3.4		9±11	9.4	8.5	3.7	6.6	-0.2	1.5	4.1			
F _a	5.1	4.2	6.0	3.8	7.3	6.2	5.8			3.7	2.4	4.8	2.9	5.4	4.7	3.9			
ff _a 4	1.1	1.4	1.1	0.9	1.1	1.0	0.8		4	3.5	2.4	3.3	2.4	2.0	2.1	2.2			
Ca 1/5	4.5	4.5	4.7	4.4	2.7	4.2	5.2			2.9	2.0	3.0	1.9	2.0	1.8	1.9			
Ca									-18±4	-21.4	-22.0	-20.9	-21.0	-20.2	-21.0	-21.1			
ff _{af} 3	1.8	1.7	1.6	1.9	0.3	2.1	5.7		3	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
P/T-Ø [mm]	68.834 [68.65/68.95]								81.487 [81.34/81.6]										



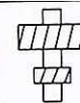
N:Z	26 18 10 1t 1c 1p							Dente	1p 1c 1t 10 18 26						
fH _{Bm} ±6	-0.3	Bd 3.	Var β 7.0					-10±6	Bd 6.	Var β 4.6				-10.3	
fH _B ±13	-0.3	1.5	2.9	-1.4	0.7	-4.1	-3.0	-10±13	-14.4	-12.0	-8.2	-12.6	-8.7	-8.0	-10.3
F _B	3.9	3.3	4.5	3.0	3.4	4.6	4.2		3.5	2.8	3.3	2.7	2.4	2.8	2.7
ff _B 4	1.5	0.7	0.9	3.4	0.9	0.9	1.0	4	0.9	1.1	1.0	1.0	1.2	1.2	1.1
CB 1/5	3.5	3.5	3.9	3.0	3.6	3.5	3.5	1/5	1.7	2.2	2.8	1.9	1.8	2.0	2.0

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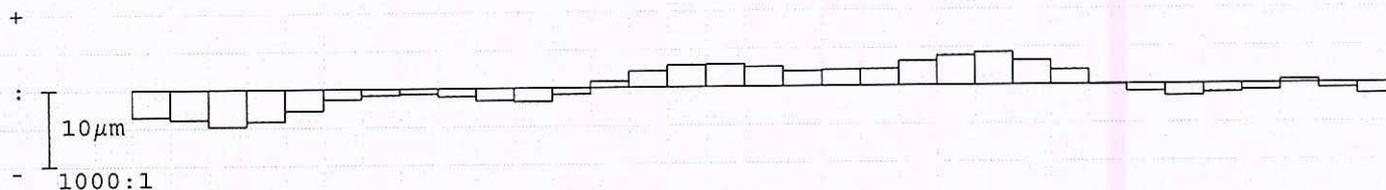


Ruota cilindrica Divisione

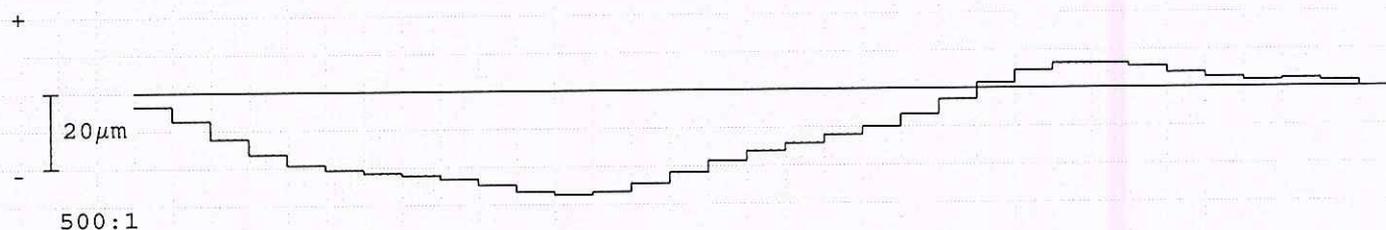


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 15:20
Denominazione: DG 3 Gg		Numero denti z 33	Angolo pressione 17.5°
Numero disegno: D51.1.1236.35-IF		Modulo m 1.95mm	Angolo elica 30.6°
Comessa/serie nr.: 2		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelgetz	Charge:	

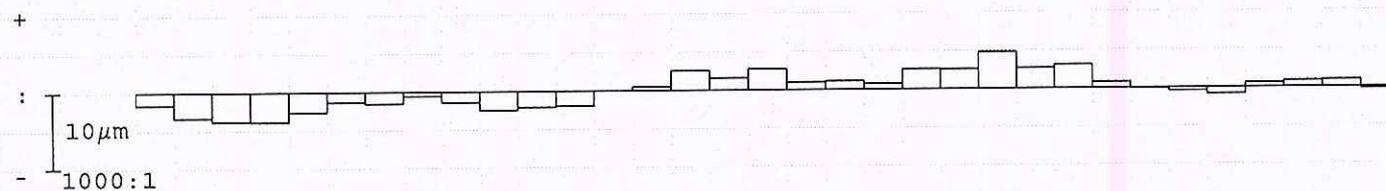
Errori singoli di divisione fp fianco sinistro



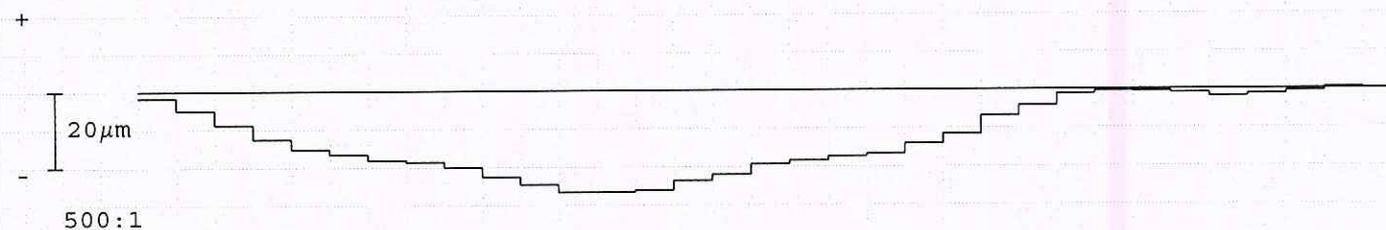
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

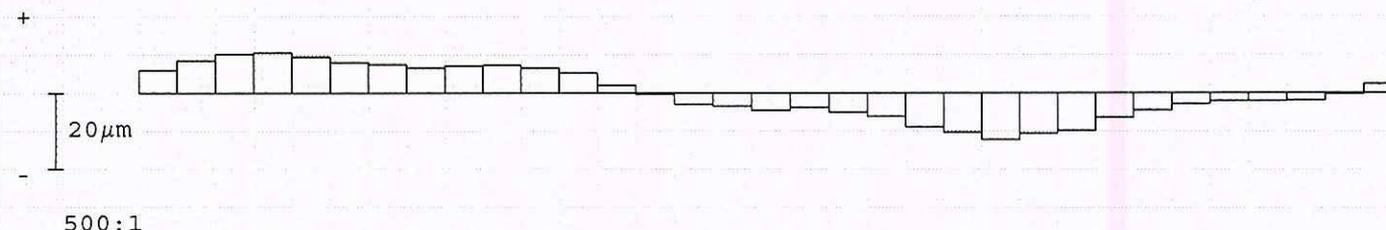


Corsa per misura divis.: 75.242 z=7.4mm

	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	4.8		14.0		4.7		14.0	
Gr. salto di passo fu max	2.1		18.0		2.3		18.0	
Scarto di divisione Rp	9.1				8.6			
Err. globale di divisione Fp	33.9		50.0		27.0		50.0	
Err. cordale di divisione Fpz/8	16.5				13.6			

Centricità Fr (Ø-sfera =3.5mm)

⊙ : 18.5µm



Err. di concentricità Fr	22.8	32.0	
Variab. spessore dente Rs			

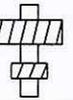
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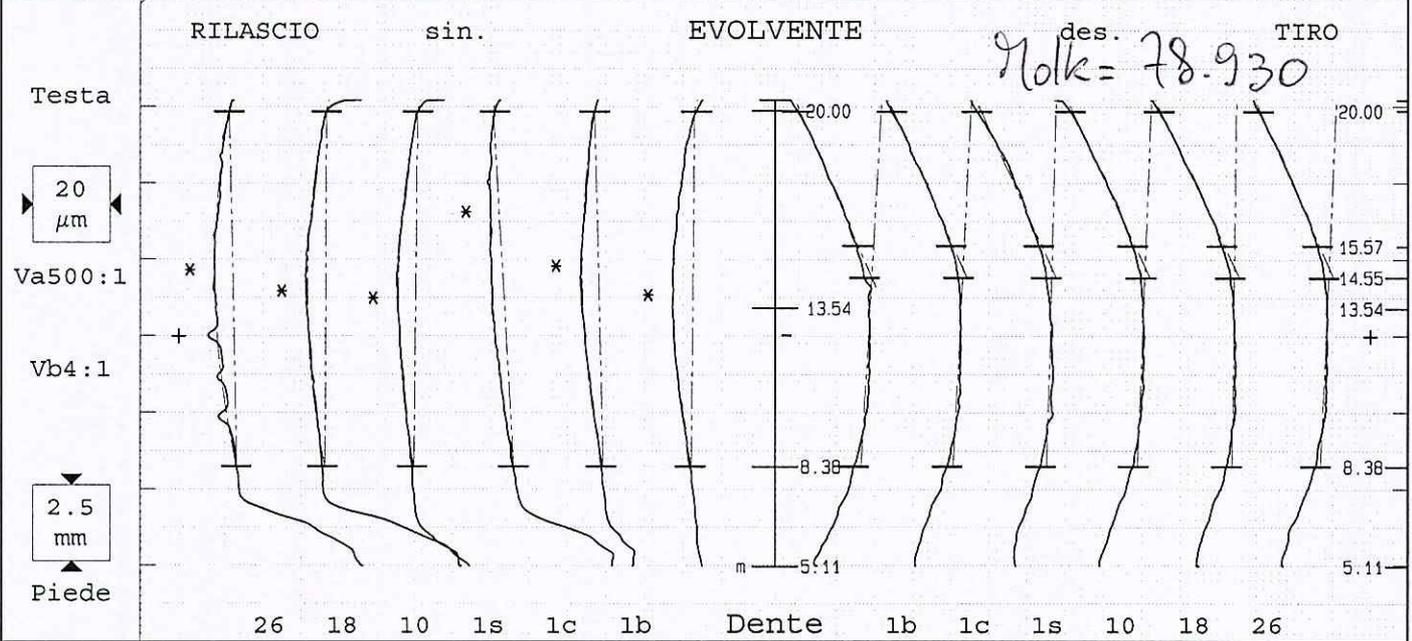
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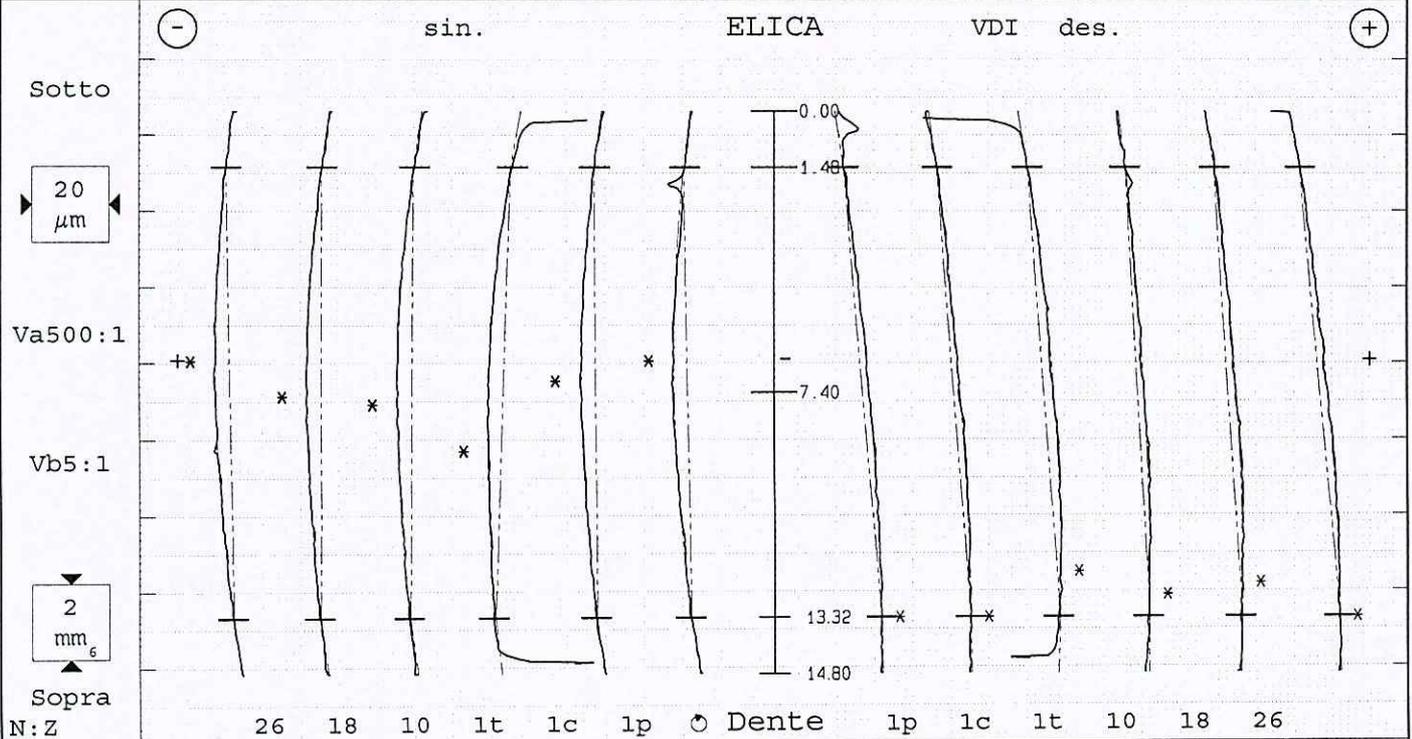
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno A	Data: 09.05.2018 16:51
Denominazione: DG 3 Gg		Numero denti z 33	Largh. fasc. dent. b 14.8mm
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Tratto evolv. La 11.62/6.17mm
Commessa/serie nr.: 3		Angolo pressione 17.5°	Tratto elica Ls 11.84mm
Masch.Nr.: M001	Spindel: Formnet	Angolo elica 30.6°	Inizio elab. M1 8.38mm
Untersuchungszweck: Laufende Messung		Ø Base db 70.1995mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 29.044°	Fat. scor. pr. x .35



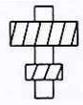
Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual
		Var a 3.2								Var a 3.4							
fH _{am}	±6	0.7							9±6								
fH _a	±11	0.7	2.0	-0.3	-1.0	5.3	2.2	-0.8	9±11	5.3	4.6	2.4	3.5	1.2	4.0	3.3	
F _a		5.0	6.5	4.6	4.6	6.1	4.4	5.3		4.1	3.5	5.2	3.5	4.8	3.9	3.9	
ff _a	4	1.6	3.2	1.2	1.1	1.1	0.9	0.9	4	2.9	2.5	2.9	2.0	2.2	2.2	2.2	
C _a	1/5	4.6	4.7	4.8	4.6	3.0	4.3	5.2		2.1	1.9	2.5	1.7	1.8	1.8	1.8	
C _a									-18±4	-21.3	-20.3	-19.6	-20.6	-19.8	-19.9	-20.2	
ff _{af}	3	1.8	1.0	1.9	2.2	0.3	2.1	4.7	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
P/T-Ø [mm]		68.873 [68.65/68.95]								81.496 [81.34/81.6]							



N:Z		26	18	10	1t	1c	1p	Ø Dente	1p	1c	1t	10	18	26		
fH _{sm}	±6	-0.6	Bd 7.4	Var β	3.6			-10±6	Bd 1.7	Var β	5.6			-10.4		
fH _B	±13	-0.6	-2.6	0.3	1.0	5.0	-0.9	-2.4	-10±13	-12.5	-11.2	-10.6	-7.8	-9.3	-13.4	-10.4
F _β		3.5	4.0	3.2	3.7	5.6	3.1	5.6		5.0	1.6	2.4	3.4	2.6	3.1	2.7
ff _β	4	1.0	1.4	0.9	0.8	1.0	0.7	4.3	4	0.8	1.0	1.1	1.8	1.2	1.1	1.3
CR	1/5	3.7	3.7	3.8	3.8	3.8	3.6	3.5	1/5	1.7	1.7	2.6	1.7	2.2	2.0	1.9

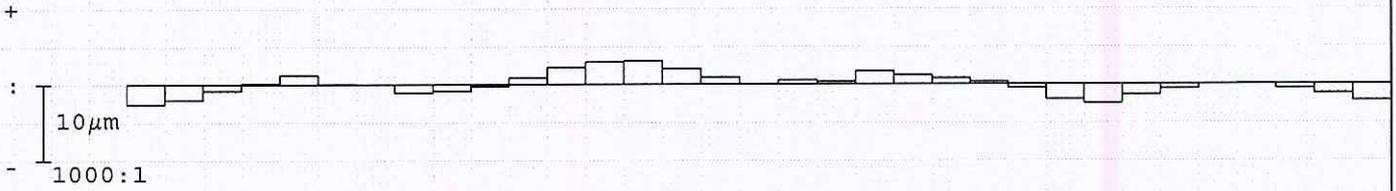


Ruota cilindrica Divisione

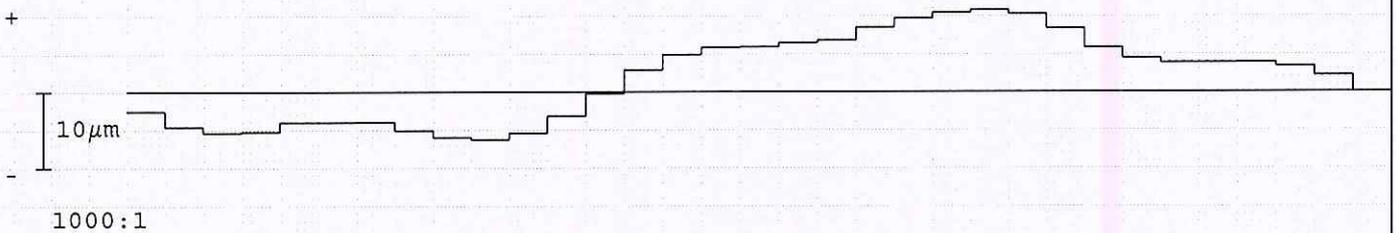


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno A	Data: 09.05.2018 16:51
Denominazione: DG 3 Gg		Numero denti z 33	Angolo pressione 17.5°
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Angolo elica 30.6°
Comessa/serie nr.: 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formnerkerz	Charge:	

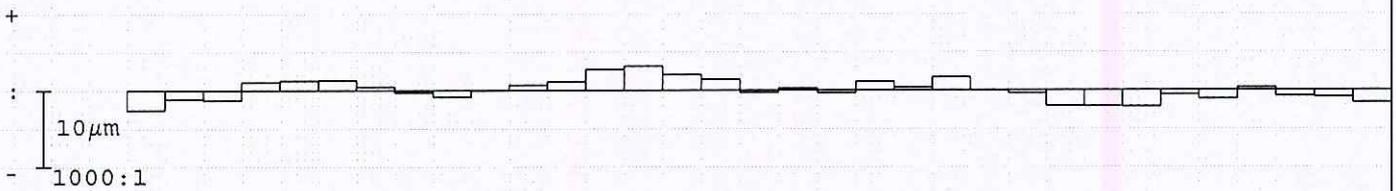
Errori singoli di divisione fp fianco sinistro



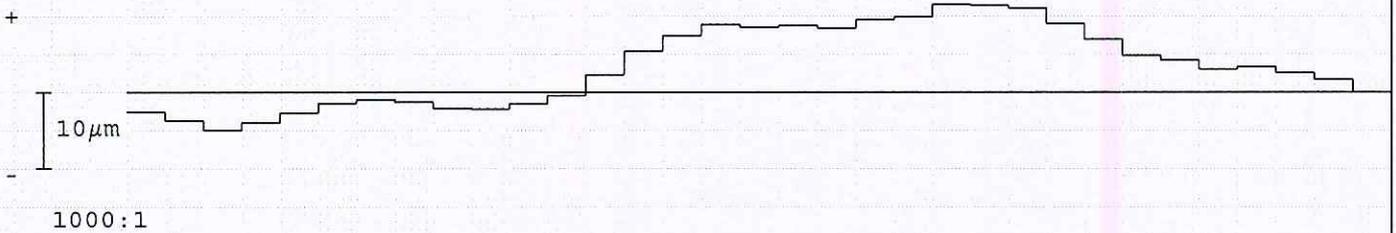
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



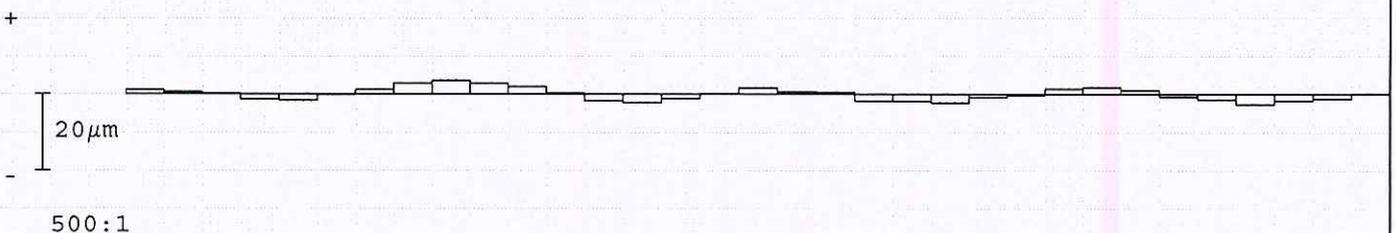
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 75.242 z=7.4mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3.1		14.0		3.1		14.0	
Gr. salto di passo fu max	1.4		18.0		2.3		18.0	
Scarto di divisione Rp	5.7				5.7			
Err. globale di divisione Fp	17.0		50.0		16.5		50.0	
Err. cordale di divisione Fpz/8	10.3				9.2			

Centricità Fr (Ø-sfera = 3.5mm)

⊙ : 1.5µm



Err. di concentricità Fr	6.1	32.0	
Variaz. spessore dente Rs			

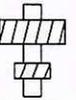
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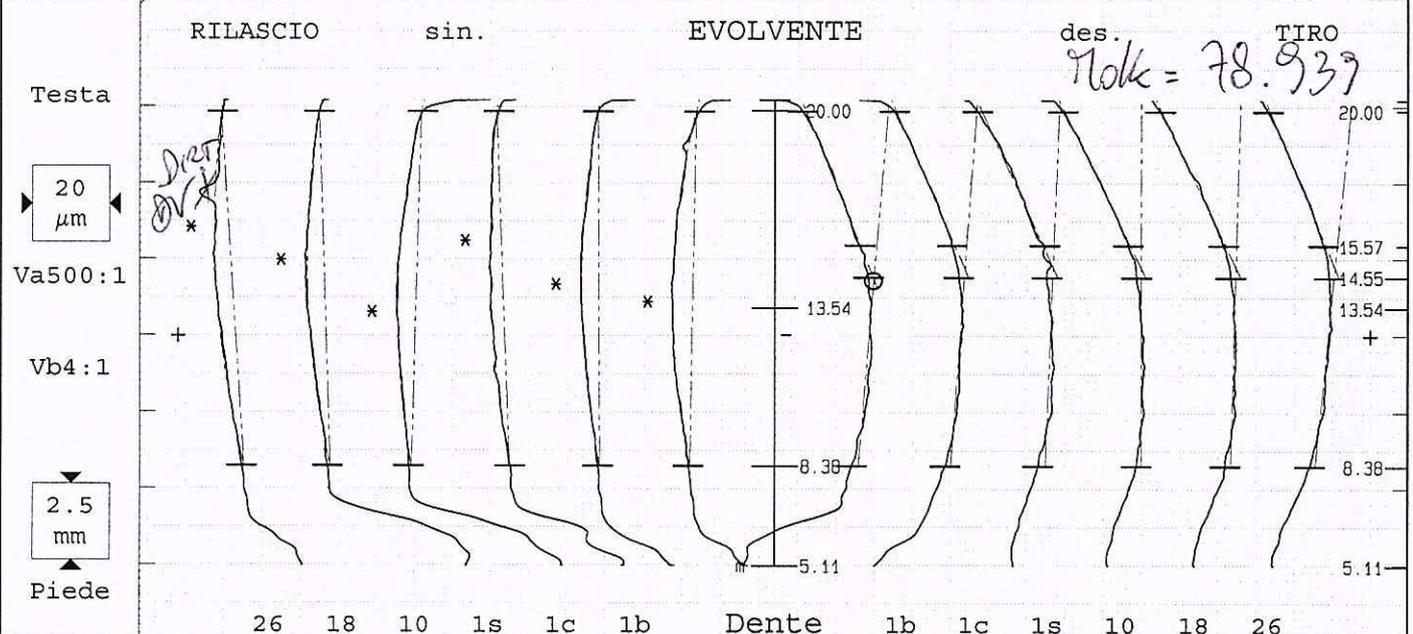
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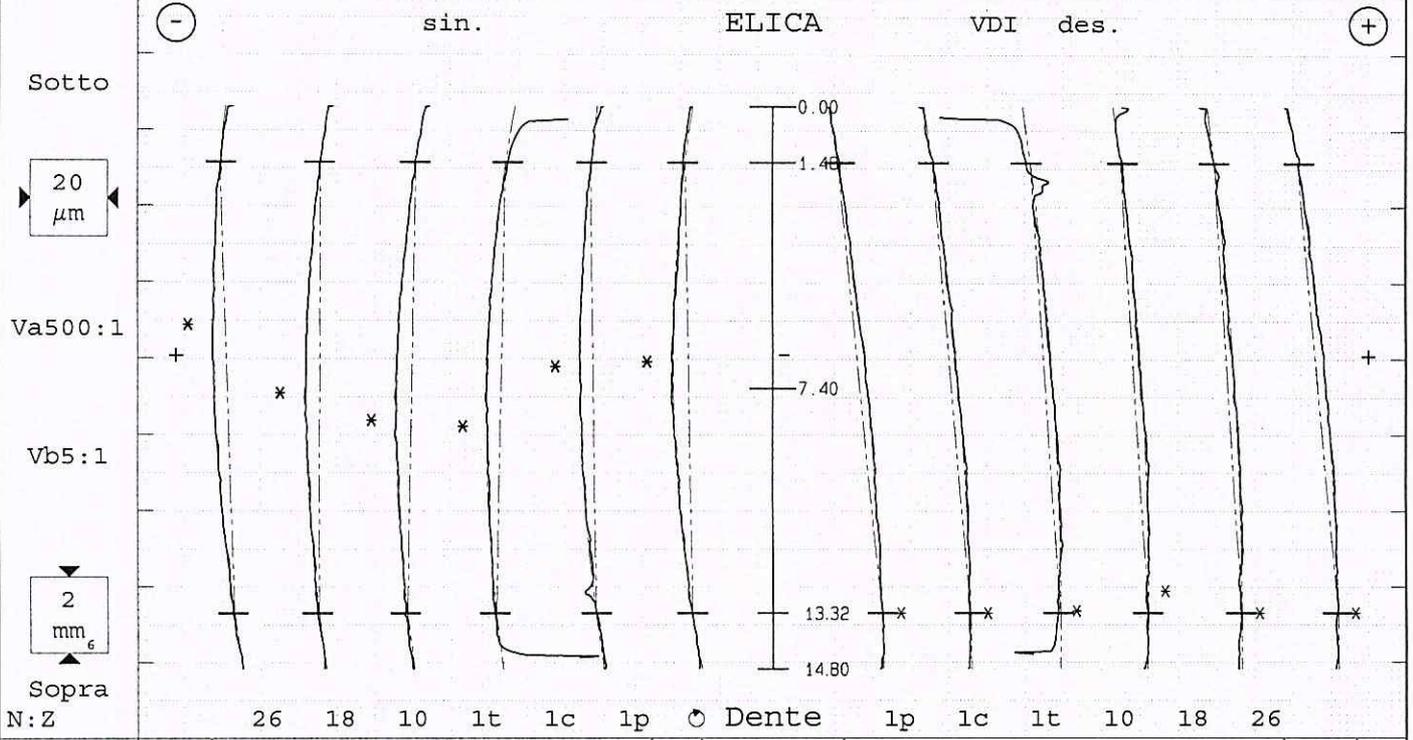
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:46
Denominazione: DG 3 Gg		Numero denti z 33	Largh.fasc.dent. b 14.8mm
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Tratto evolv. La 11.62/6.17mm
Comnessa/serie nr.: 4		Angolo pressione 17.5°	Tratto elica L& 11.84mm
Masch.Nr.: M001	Spindel: Formata	Angolo elicale 30.6°	Inizio elab. M1 8.38mm
Untersuchungszweck: Laufende Messung		Ø Base db 70.1995mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 29.044°	Fat.scor.pr. x .35



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fH _{am}	±6	1.7	Var a 8.5								9±6	Var a 9.4							4.6	
fH _a	±11	1.7	6.0	2.9	-2.5	3.4	0.4	-1.6		9±11	7.7	6.7	3.6	0.0	2.4	9.4	4.6			
F _a		6.2	10.4	4.9	5.9	4.4	3.6	6.1			3.0	3.0	4.8	5.4	4.7	2.5	3.9			
ff _a	4	2.0	4.9	1.1	1.1	1.3	0.9	2.2		4	3.0	2.3	3.3	2.2	2.3	2.4	2.3			
Ca	1/5	4.5	4.3	4.5	4.8	3.2	4.4	5.3			2.5	1.9	2.9	1.8	2.0	1.9	1.9			
Ca										-18±4	-21.5	-21.2	-20.4	-20.0	-20.5	-21.3	-20.8			
ff _a f	3	1.8	2.1	1.7	1.6	0.6	1.9	2.0		3	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
P/T-Ø [mm]		68.839 [68.65/68.95]									81.485 [81.34/81.6]									



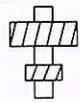
Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
fH _{sm}	±6	-0.8	Bd	5.5	Var	β	7.5			-10±6	Bd	4.4	Var	β	4.4		-10.9		
fH _s	±13	-0.8	-4.7	0.4	2.8	3.1	-1.6	-2.4		-10±13	-14.4	-12.5	-9.8	-9.0	-8.9	-13.3	-10.9		
F _β		3.9	4.5	3.2	4.5	4.9	3.4	4.4			3.6	2.6	5.4	4.8	2.3	3.2	3.2		
ff _β	4	1.5	0.9	1.0	1.1	1.2	2.8	1.1		4	0.8	1.1	5.3	1.5	1.6	0.9	1.3		
C _β	1/5	3.6	3.4	3.6	4.0	3.7	3.4	4.0		1/5	1.9	1.9	2.0	2.0	1.7	2.1	1.9		

GCG 808006

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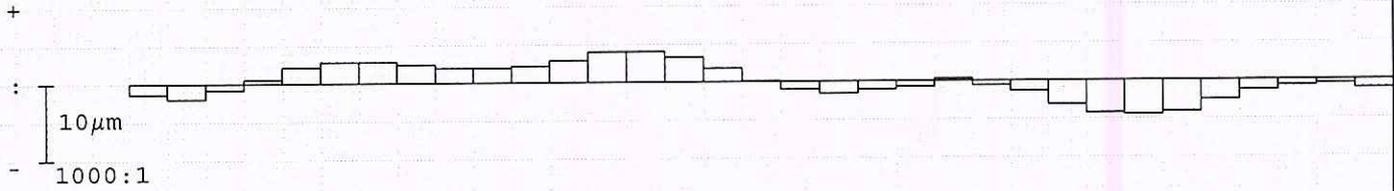


Ruota cilindrica Divisione

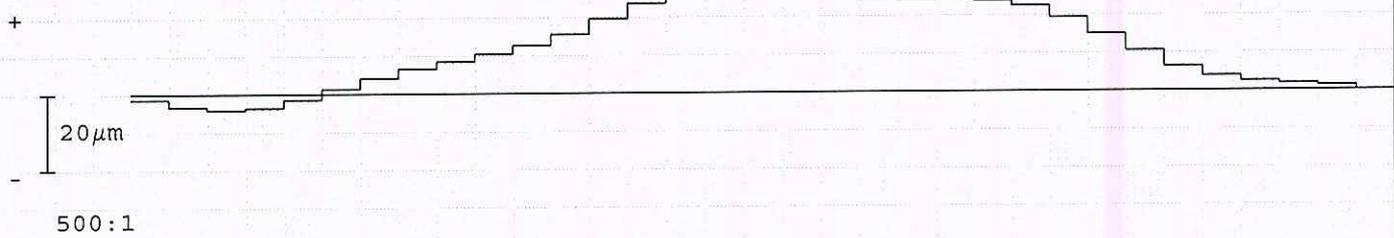


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:46
Denominazione: DG 3 Gg		Numero denti z 33	Angolo pressione 17.5°
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Angolo elica 30.6°
Comessa/serie nr.: 4		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelwerkzeug	Charge:	

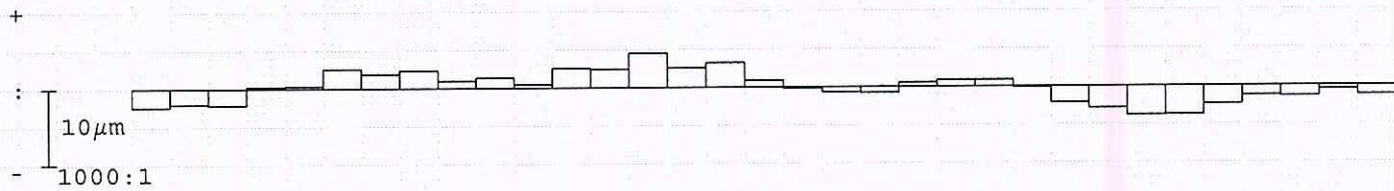
Errori singoli di divisione fp fianco sinistro



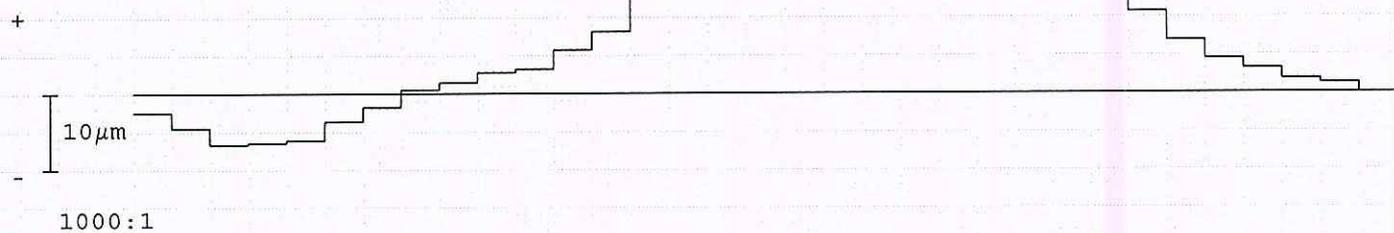
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



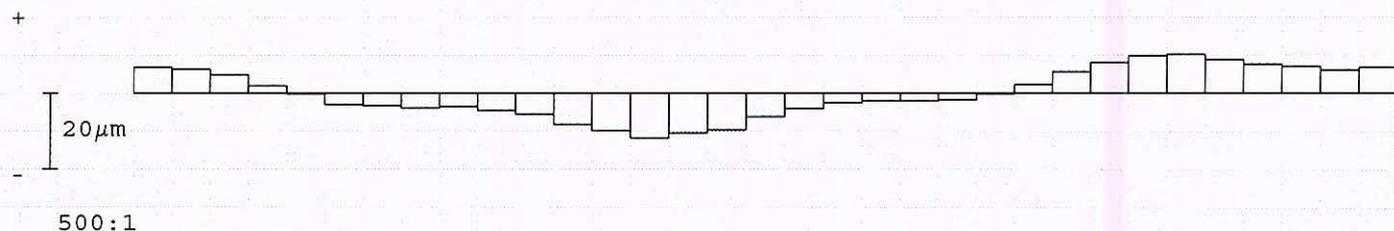
Errore somma di divisione Fp fianco destro



	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	4.5		14.0		4.5		14.0	
Gr. salto di passo fu max	1.8		18.0		2.4		18.0	
Scarto di divisione Rp	8.5				8.3			
Err. globale di divisione Fp	32.8		50.0		26.4		50.0	
Err. cordale di divisione Fpz/8	16.1				12.9			

Centricità Fr (Ø-sfera = 3.5mm)

⊙ : 17.6µm

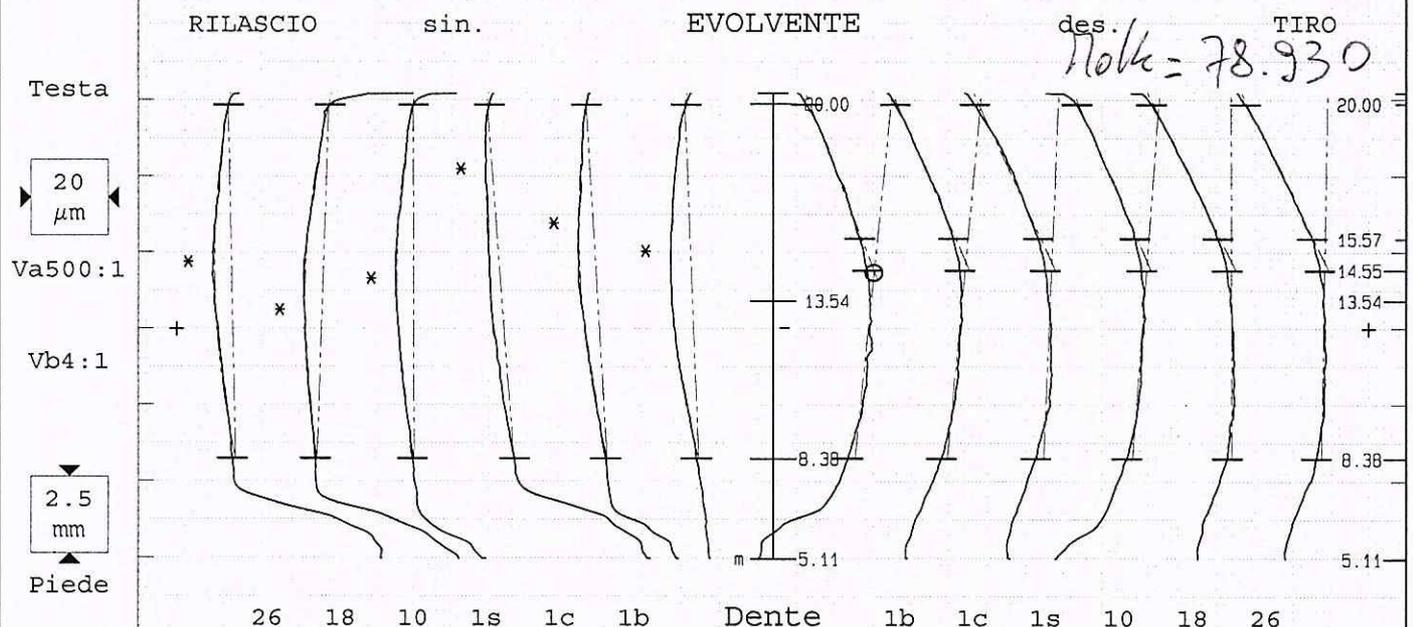


Err. di concentricità Fr	21.8	32.0	
Variaz. spessore dente Rs			

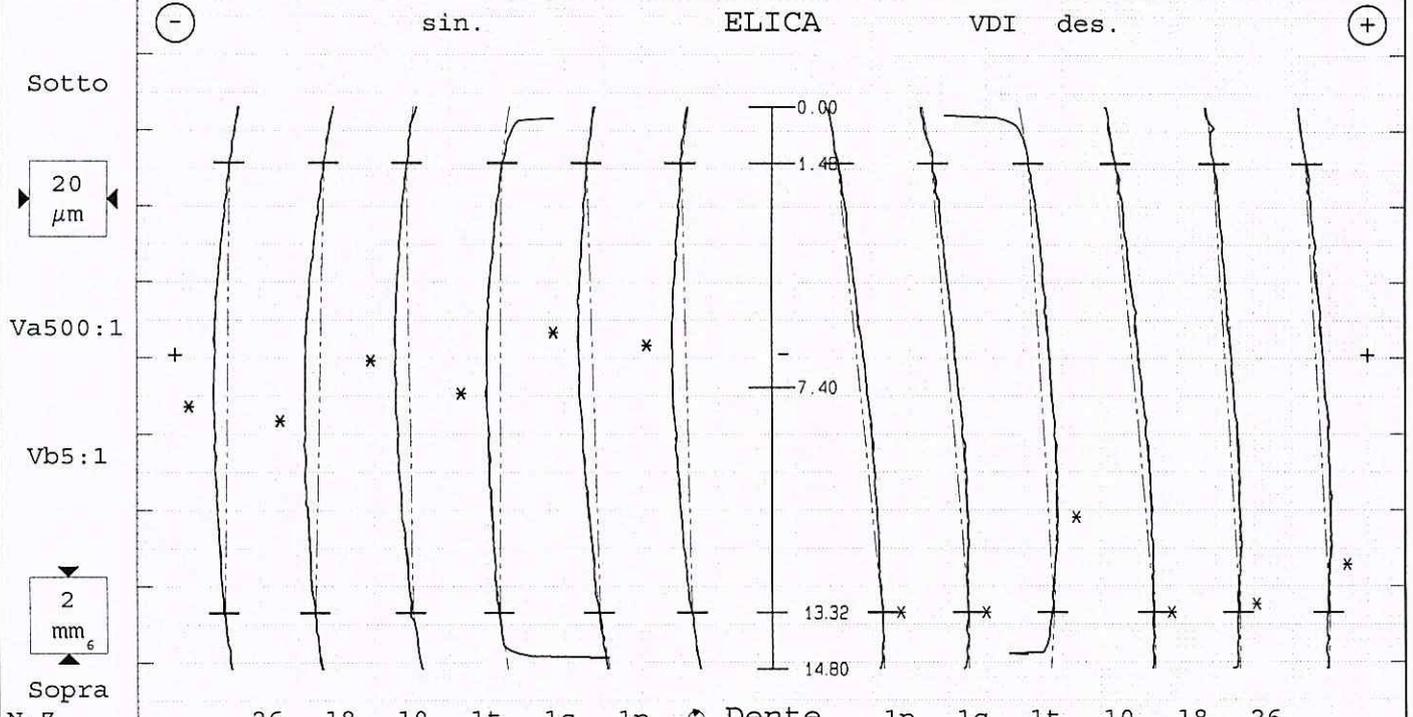
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 15:27
Denominazione: DG 3 Gg		Numero denti z 33	Largh.fasc.dent. b 14.8mm
Numero disegno.: D51.1.1236.35-IF		Modulo m 1.95mm	Tratto evolv. La 11.62/6.17mm
Commessa/serie nr.: 5		Angolo pressione 17.5°	Tratto elica Lg 11.84mm
Masch.Nr.: M001	Spindel: Formant	Angolo elicale 30.6°	Inizio elab. M1 8.38mm
Untersuchungszweck: Laufende Messung		Ø Base db 70.1995mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 29.044°	Fat.scor.pr. x .35



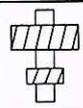
Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual	
fHam	±6	1.2	Var a 8.5							9±6	Var a 9.0						4.2	
fHa	±11	1.2	1.9	-3.0	0.3	7.0	5.5	3.6	9±11	9.4	8.7	3.8	6.8	-0.3	1.5	4.2		
Fa		5.1	4.2	6.0	3.8	7.4	6.3	5.8		3.6	2.3	4.8	2.9	5.4	4.8	3.9		
ffa	4	1.1	1.3	1.1	0.9	0.9	1.0	0.9	4	3.4	2.4	3.3	2.4	2.0	2.2	2.3		
Ca	1/5	4.4	4.4	4.7	4.4	2.7	4.2	5.2		2.9	2.0	3.0	1.9	1.9	1.8	1.9		
Ca									-18±4	-21.4	-22.0	-20.9	-21.0	-20.2	-21.1	-21.1		
ffaf	3	1.8	1.7	1.6	1.9	0.3	2.1	5.8	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
P/T-Ø [mm]		68.834 [68.65/68.95]							81.487 [81.34/81.6]									



N:Z		26	18	10	1t	1c	1p	Ø Dente	1p	1c	1t	10	18	26		
fHβm	±6	-0.5	Bd	3.	Var β	7.2		-10±6	Bd	6.	Var β	4.8		-10.4		
fHβ	±13	-0.5	1.5	2.9	-2.1	0.5	-4.3	-3.2	-10±13	14.4	-12.1	-8.3	-12.7	-8.7	-7.9	-10.4
Fβ		3.9	3.3	4.3	3.5	3.4	4.5	4.3		3.6	2.8	3.2	2.8	2.7	2.8	2.8
ffβ	4	0.9	0.8	0.7	1.1	1.0	1.0	0.9	4	0.9	1.1	1.0	1.0	1.3	1.3	1.2
Cβ	1/5	3.7	3.5	3.9	3.7	3.6	3.5	3.5	1/5	1.7	2.2	2.9	1.9	1.8	2.0	2.0

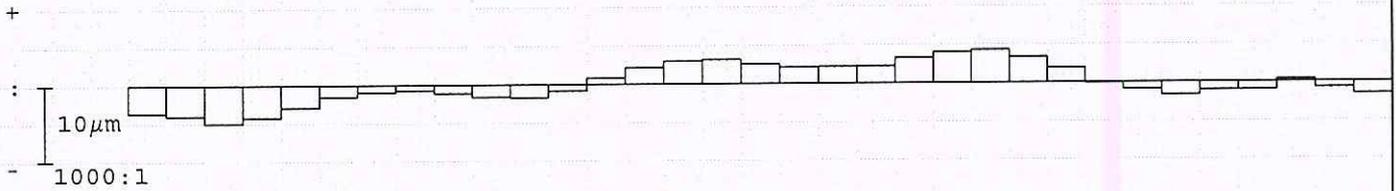


Ruota cilindrica Divisione

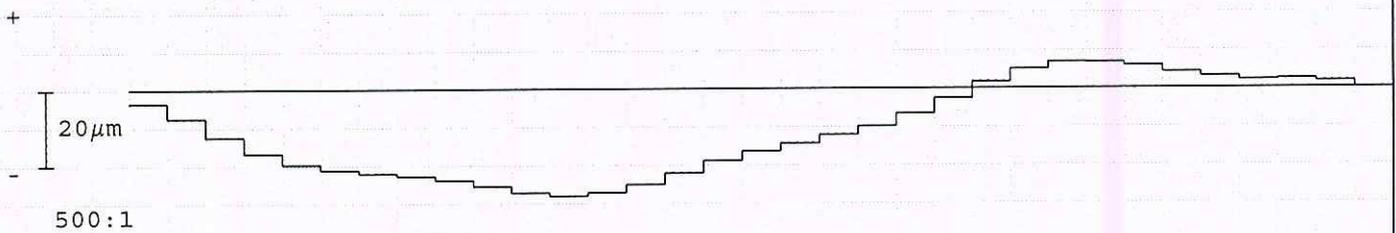


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 15:27
Denominazione: DG 3 Gg		Numero denti z 33	Angolo pressione 17.5°
Numero disegno: D51.1.1236.35-IF		Modulo m 1.95mm	Angolo elica 30.6°
Comessa/serie nr.: 5		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formnest	Charge:	

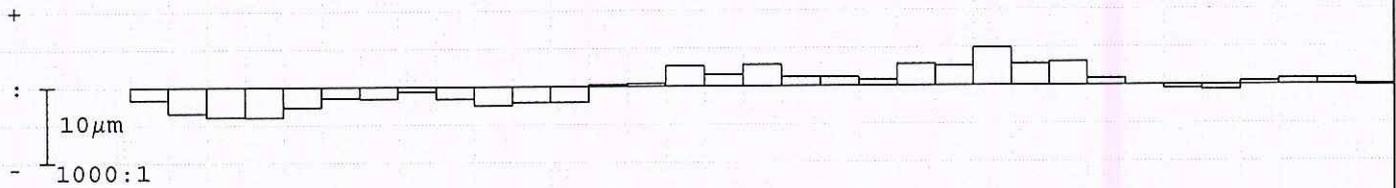
Errori singoli di divisione fp fianco sinistro



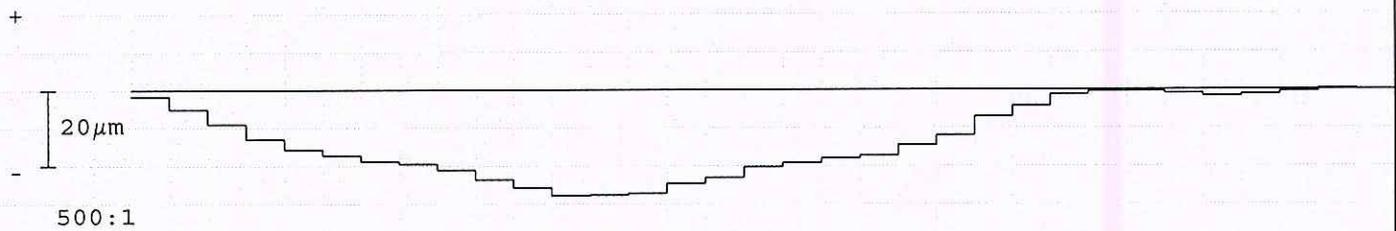
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



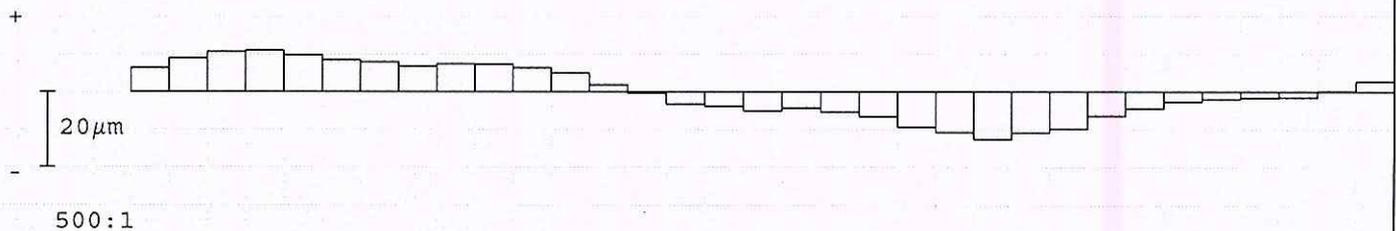
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 75.242 z=7.4mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	5.0		14.0		4.9		14.0	
Gr. salto di passo fu max	2.0		18.0		2.4		18.0	
Scarto di divisione Rp	9.3				8.9			
Err. globale di divisione Fp	34.8		50.0		28.0		50.0	
Err. cordale di divisione Fpz/8	16.8				14.1			

Centricità Fr (Ø-sfera = 3.5mm)

⊙ : 19.3µm



Err. di concentricità Fr	23.6	32.0	
Variaz. spessore dente Rs			

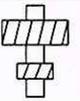
Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria



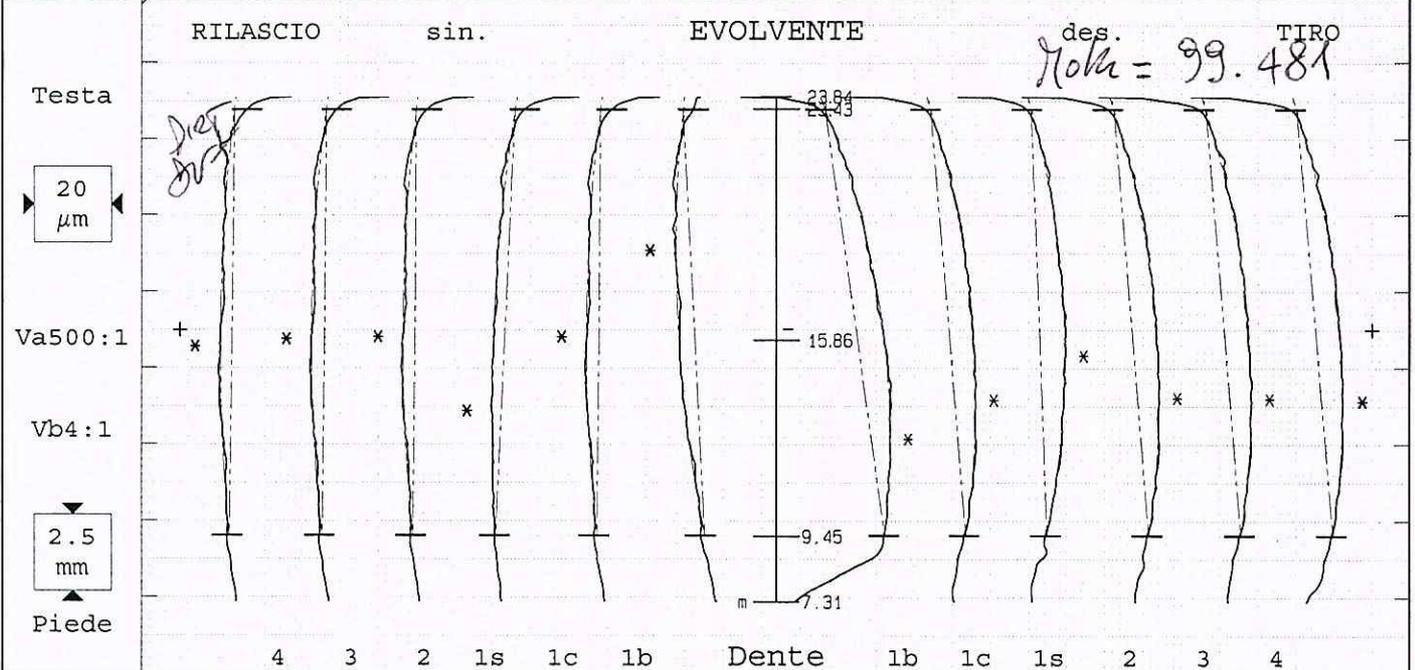
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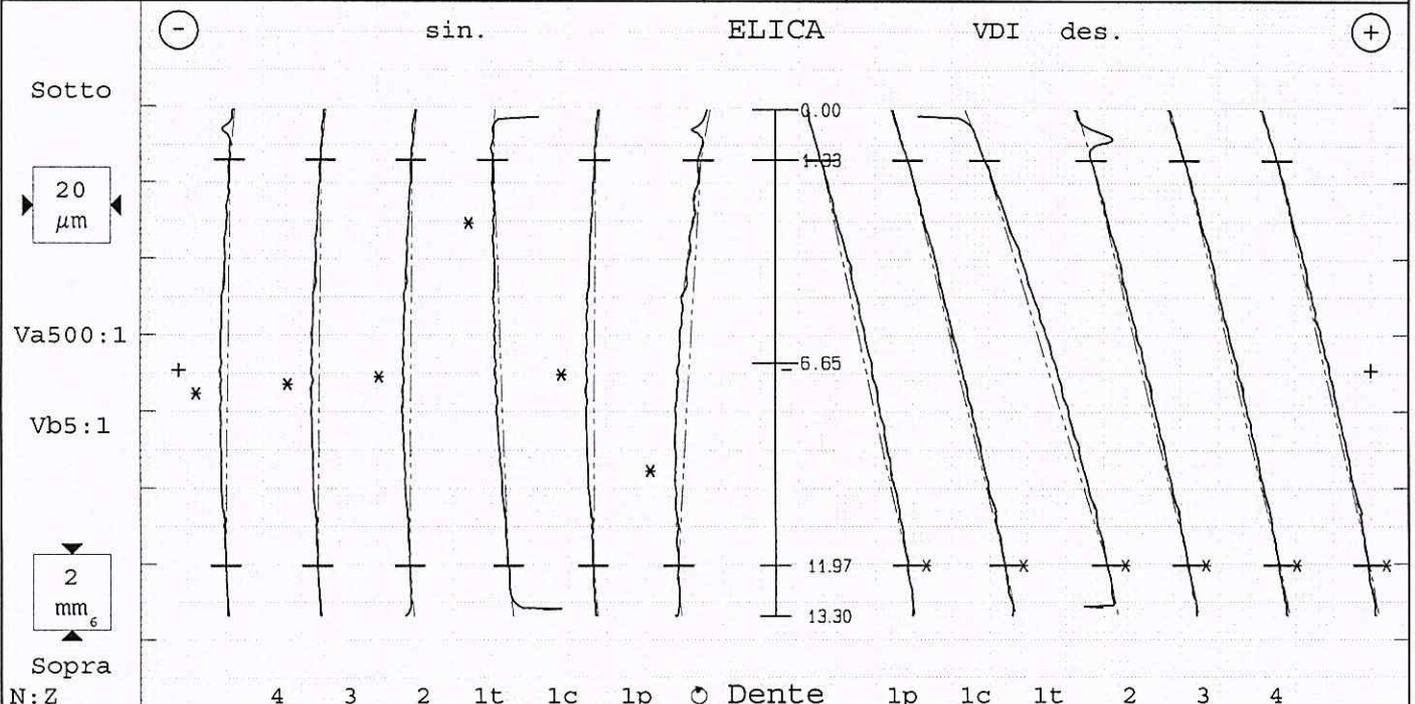
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:31
Denominazione: DG 5 7 Gg		Numero denti z 41	Largh. fasc. dent. b 13.3mm
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Tratto evolv. La 13.98mm
Comessa/serie nr.: 1		Angolo pressione 17.5°	Tratto elica Ls 10.64mm
Masch. Nr.: M001	Spindel: Formant	Angolo elica 33°	Inizio elab. M1 9.45mm
Untersuchungszweck: Laufende Messung		Ø Base db 91.5198mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 31.294°	Fat. scor. pr. x - .228



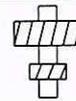
Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
		Var a 0.4									Var a 0.4								
fHam	±6	-1.1								-10±6									
fHa	±8	-1.1	-1.3	-1.1	-0.9	-5.1	-0.9	5.7		-10±8	-15.6	-9.3	-4.1	-9.2	-9.3	-9.6	-9.4		
Fa		6.3	6.9	6.2	5.9	8.0	6.1	6.9			8.4	3.7	7.6	3.9	4.0	4.1	3.9		
ffa	5	4.6	6.1	4.0	4.0	3.7	4.1	3.8		5	2.1	2.0	2.0	2.2	3.0	2.6	2.5		
Ca	1/5	3.2	3.0	3.4	3.2	3.1	3.3	4.2		4/8	7.1	6.4	6.6	6.5	6.4	6.5	6.5		
ffaf	3	1.0	0.8	1.1	1.1	0.5	0.9	1.3		3	0.0	0.2	0.9	0.1	0.0	0.0	0.1		
P/T-Ø [mm]		89.741 [89.55/89.87]									103.442 [103.34/103.6]								



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
		Var β 0.9									Var β 1.7								
fHβm	±4	1.0								-35±4									
fHβ	±8	1.0	1.5	1.1	0.7	-4.8	0.6	7.5		-35±8	-28.3	-32.1	-40.0	-31.7	-31.0	-30.4	-31.3		
Fβ		2.4	2.5	2.5	2.3	4.3	2.3	6.5			5.8	3.0	5.2	3.5	3.8	4.4	3.7		
ffβ	5	0.9	0.8	0.9	1.0	0.8	0.7	1.4		5	1.0	0.9	0.8	0.8	0.7	1.2	0.9		
CB	0/4	2.0	1.9	2.0	2.0	1.4	2.1	2.8		0/4	1.6	0.9	2.1	0.9	0.9	1.0	0.9		
Bd		-12.3									-4±8								

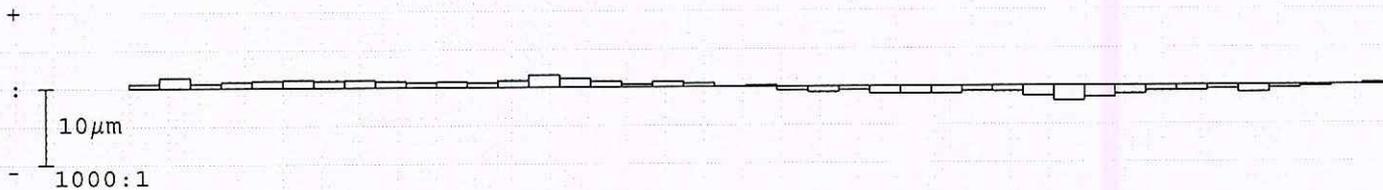


Ruota cilindrica Divisione

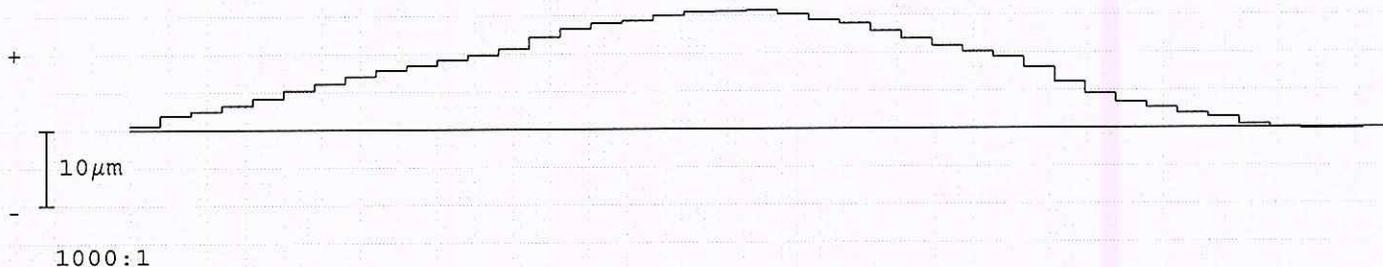


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:31
Denominazione: DG 5 7 Gg		Numero denti z 41	Angolo pressione 17.5°
Numero disegno: D51.1.1236.35-IIF		Modulo m 2mm	Angolo elica 33°
Comessa/serie nr.: 1		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelget	Erzeug:	Charge:

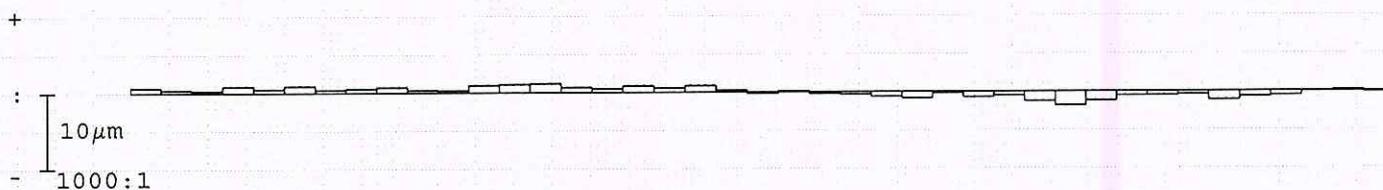
Errori singoli di divisione fp fianco sinistro



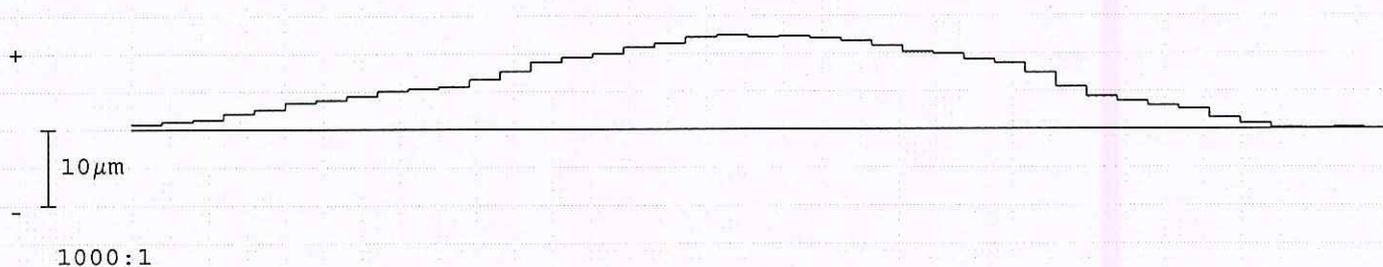
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

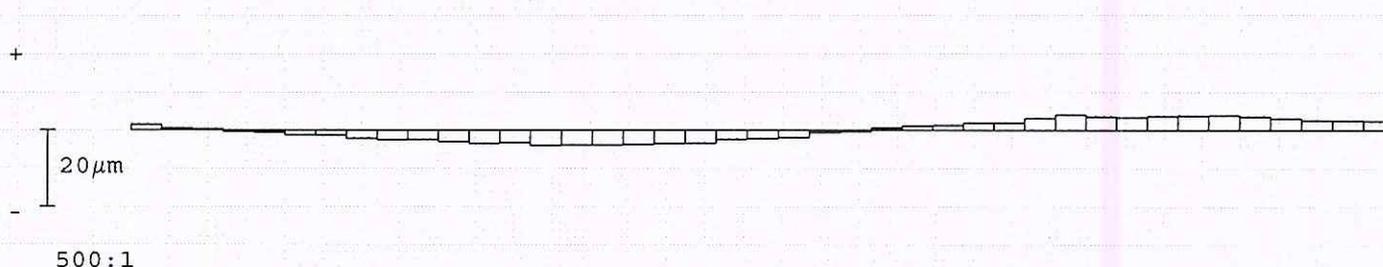


Errore somma di divisione Fp fianco destro



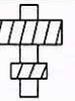
Corsa per misura divis.: 96.861 z=6.7mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	2.0		10.0		1.9		10.0	
Gr. salto di passo fu max	0.8		12.0		0.8		12.0	
Scarto di divisione Rp	3.6				3.1			
Err. globale di divisione Fp	15.8		32.0		12.4		32.0	
Err. cordale di divisione Fpz/8	6.8				5.7			

Centricità Fr (Ø-sfera = 3.25mm) © : 7.6µm

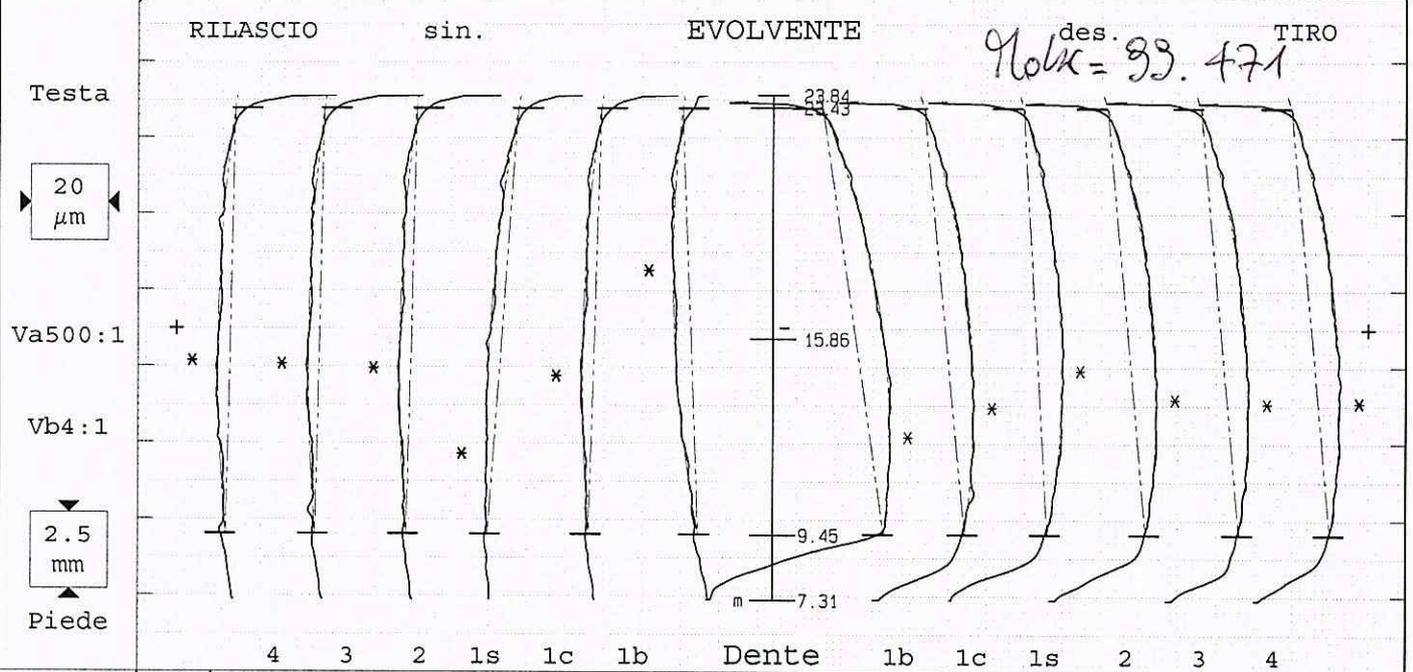


Err. di concentricità Fr	8.1	22.0	
Variab. spessore dente Rs			

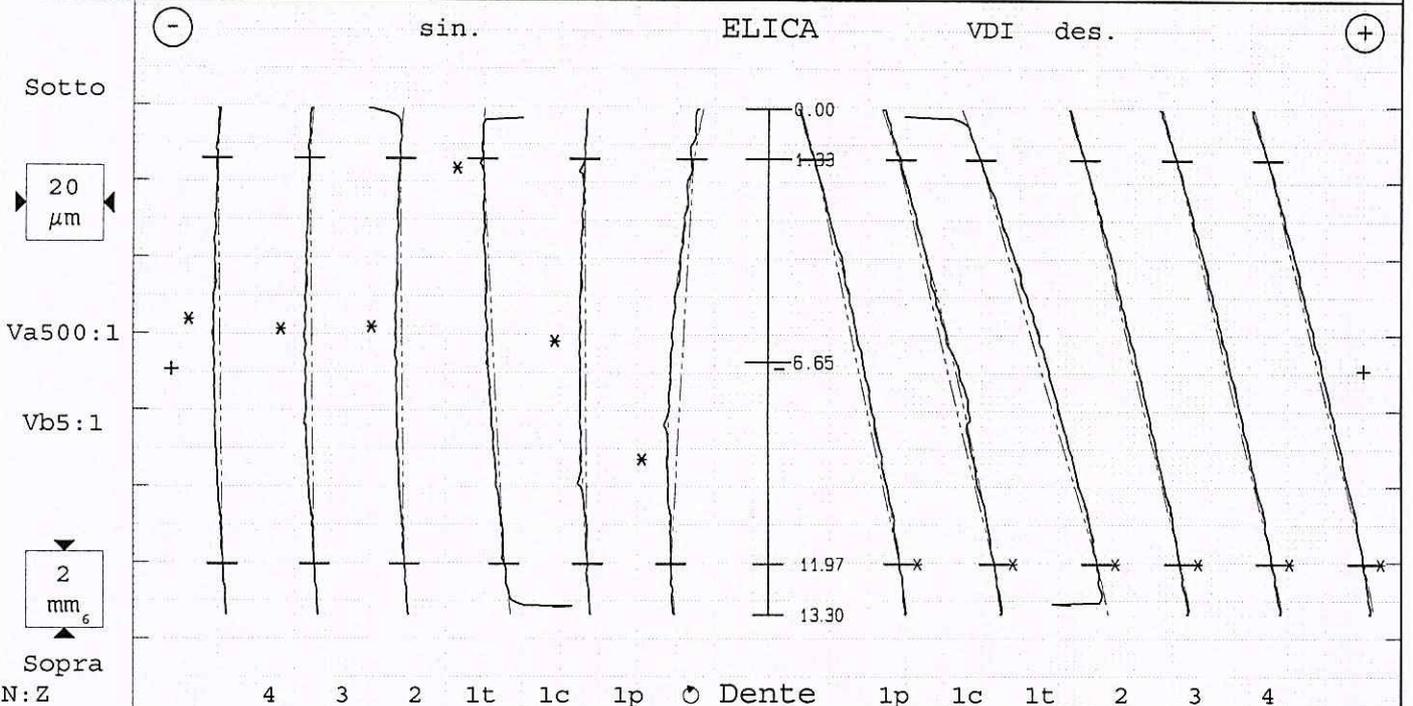
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:42
Denominazione: DG 5 7 Gg		Numero denti z 41	Largh.fasc.dent. b 13.3mm
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Tratto evolv. La 13.98mm
Comessa/serie nr.: 2		Angolo pressione 17.5°	Tratto elica Ls 10.64mm
Masch.Nr.: M001	Spindel: Formata	Angolo elica 33°	Inizio elab. M1 9.45mm
Untersuchungszweck: Laufende Messung		Ø Base db 91.5198mm	Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 31.294°	Fat.scor.pr. x -.228

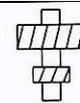


Tolerance	Medio	Val.misur [µm]							Qual	Tolerance	Val.misur [µm]							Medio	Qual	
fH _{om}	±6	-2.7	Var a 0.8								-10±6	Var a 0.6							-10.3	
fH _a	±8	-2.7	-2.4	-2.4	-2.7	-8.0	-3.2	4.0		-10±8	-16.1	-10.7	-6.3	-10.1	-10.1	-10.2	-10.3			
F _a		7.2	7.2	7.1	7.0	11.1	7.3	5.7			11.7	6.3	6.0	7.4	6.0	7.1	6.7			
ff _a	5	4.4	4.7	4.5	4.3	3.9	4.1	3.9		5	4.9	4.5	5.0	4.9	4.0	4.8	4.6			
C _a	1/5	3.1	3.2	2.9	3.0	3.2	3.1	4.3		4/8	7.4	6.6	6.8	6.9	6.5	6.7	6.7			
ff _a f	3	1.1	1.5	1.0	1.0	0.9	0.9	1.3		3	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
P/T-Ø [mm]		89.665 [89.55/89.87]									103.372 [103.34/103.6]									



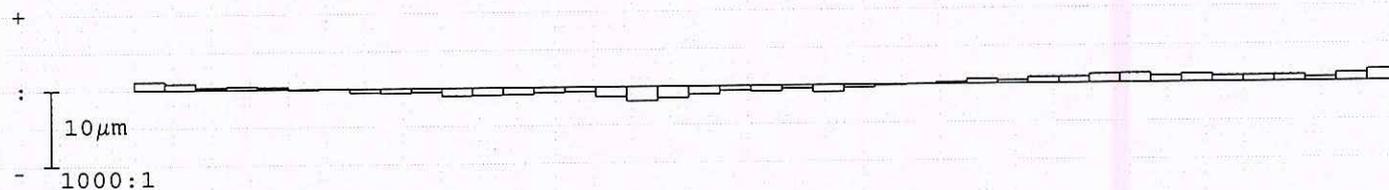
N:Z	Tolerance	Medio	Val.misur [µm]							Qual	Tolerance	Val.misur [µm]							Medio	Qual
fH _{sm}	±4	-1.3	Var β 0.9								-35±4	Var β 0.5							-31.4	
fH _β	±8	-1.3	-1.7	-1.4	-1.4	-7.0	-0.8	7.2		-35±8	-27.9	-31.3	-38.4	-31.2	-31.3	-31.7	-31.4			
F _β		2.6	2.6	2.7	2.4	6.3	2.6	7.0			6.3	4.6	3.7	3.6	3.8	3.5	3.9			
ff _β	5	1.1	0.9	1.0	0.6	1.3	1.9	1.6		5	1.1	2.4	0.9	0.8	0.8	0.8	1.2			
C _β	0/4	1.6	1.6	1.8	1.6	1.5	1.5	3.0		0/4	1.5	2.1	1.8	0.9	0.9	1.0	1.2			
B _d		-14.2										-4±8							-10.5	

Ruota cilindrica Divisione

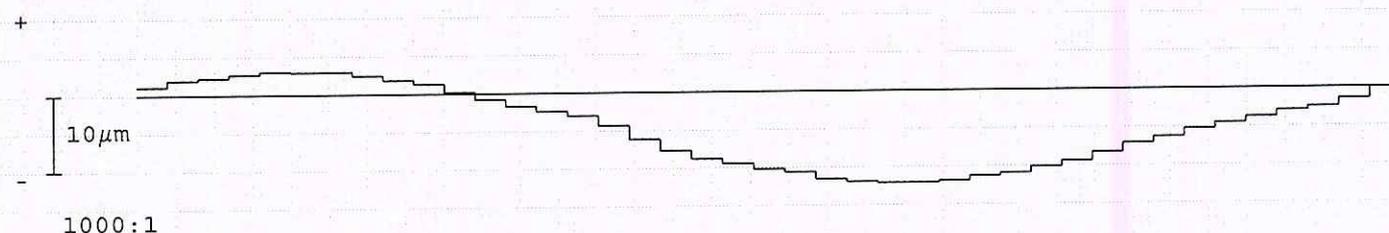


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:42
Denominazione: DG 5 7 Gg		Numero denti z 41	Angolo pressione 17.5°
Numero disegno: D51.1.1236.35-IIF		Modulo m 2mm	Angolo elica 33°
Comessa/serie nr.: 2		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelgetriebe	Charge:	

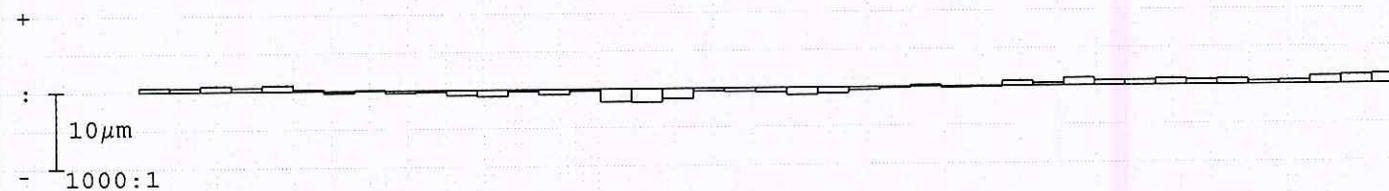
Errori singoli di divisione fp fianco sinistro



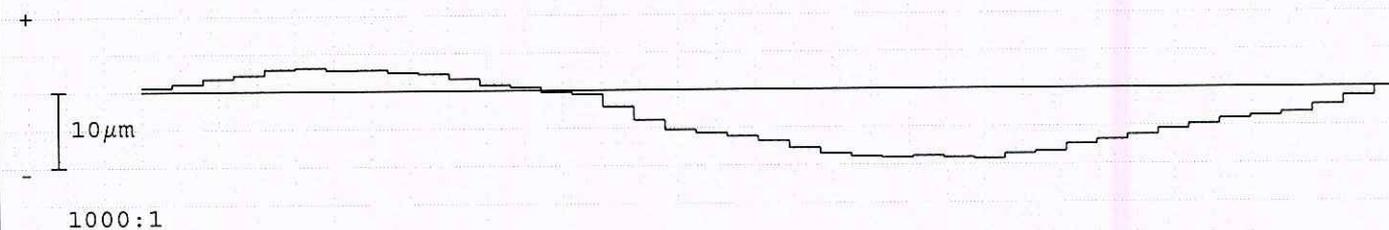
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

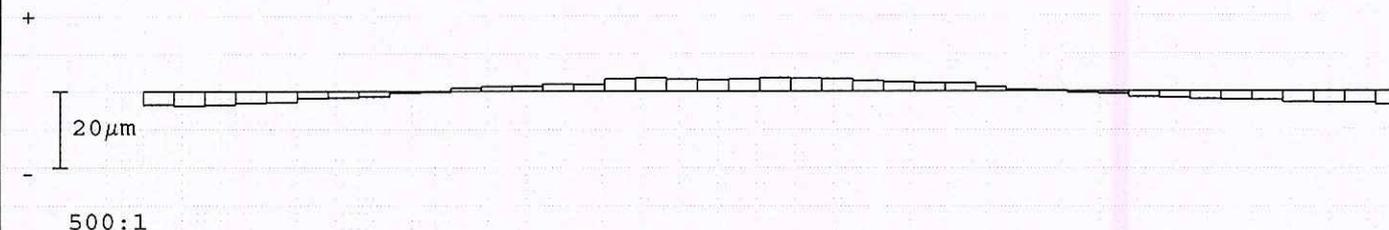


Corsa per misura divis.: 96.861 z=6.7mm

	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		1.7		10.0	
Gr. salto di passo fu max	0.7		12.0		1.4		12.0	
Scarto di divisione Rp	3.4				2.9			
Err. globale di divisione Fp	15.1		32.0		12.3		32.0	
Err. cordale di divisione Fpz/8	6.5				5.7			

Centricità Fr (Ø-sfera = 3.25mm)

⊙ : 7µm



Err. di concentricità Fr	7.4	22.0	
Variaz. spessore dente Rs			

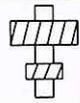
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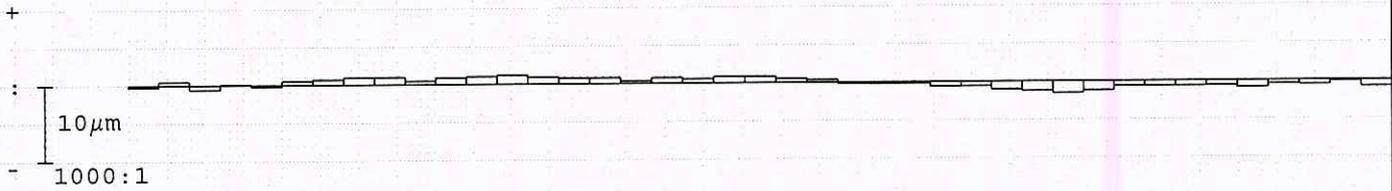
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Ruota cilindrica Divisione

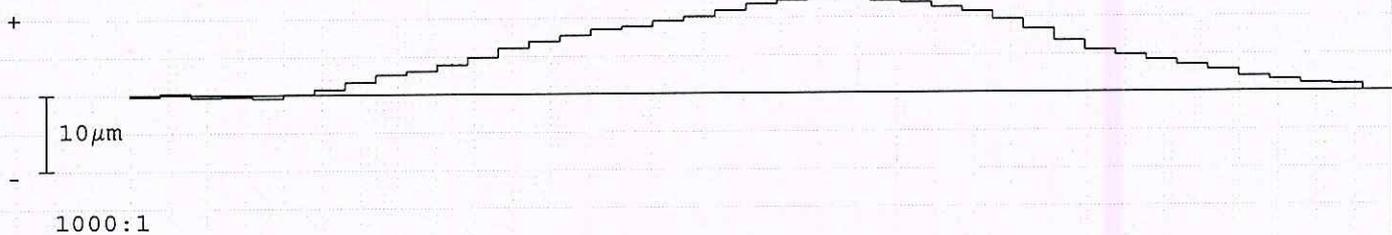


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Denominazione: DG 5 7 Gg		Numero denti z 41	Angolo pressione 17.5°
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Angolo elica 33°
Comessa/serie nr.: 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formnerker	Charge:	

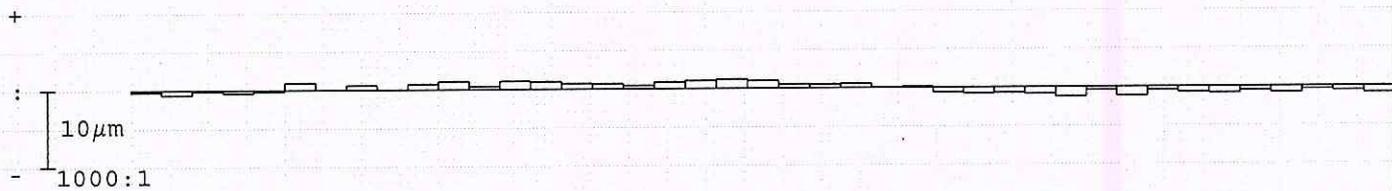
Errori singoli di divisione fp fianco sinistro



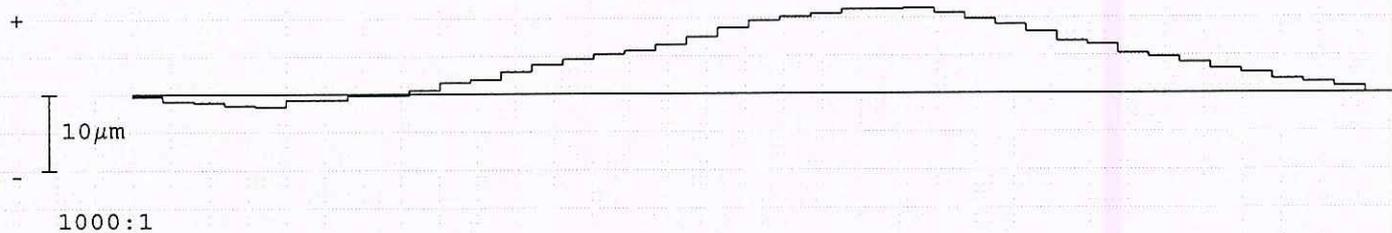
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

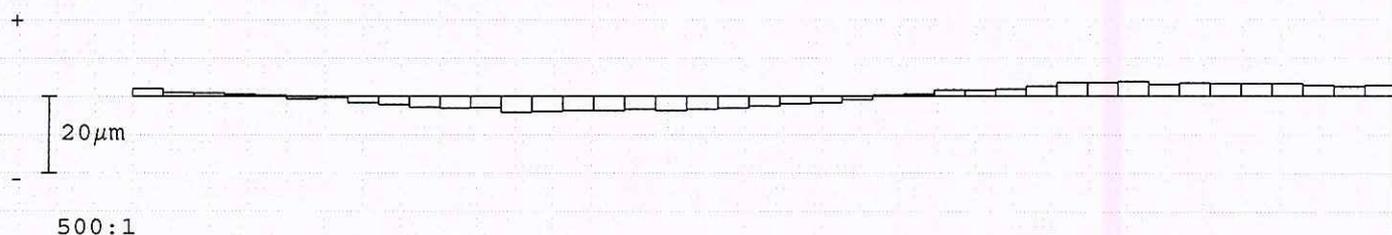


Corsa per misura divis.: 96.861 z=6.7mm

	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		1.3		10.0	
Gr. salto di passo fu max	1.0		12.0		1.1		12.0	
Scarto di divisione Rp	2.8				2.5			
Err. globale di divisione Fp	13.1		32.0		12.9		32.0	
Err. cordale di divisione Fpz/8	5.8				4.6			

Centricità Fr (Ø-sfera =3.25mm)

⊙ : 7.4µm



Err. di concentricità Fr	7.9	22.0	
Variac. spessore dente Rs			

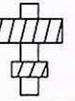
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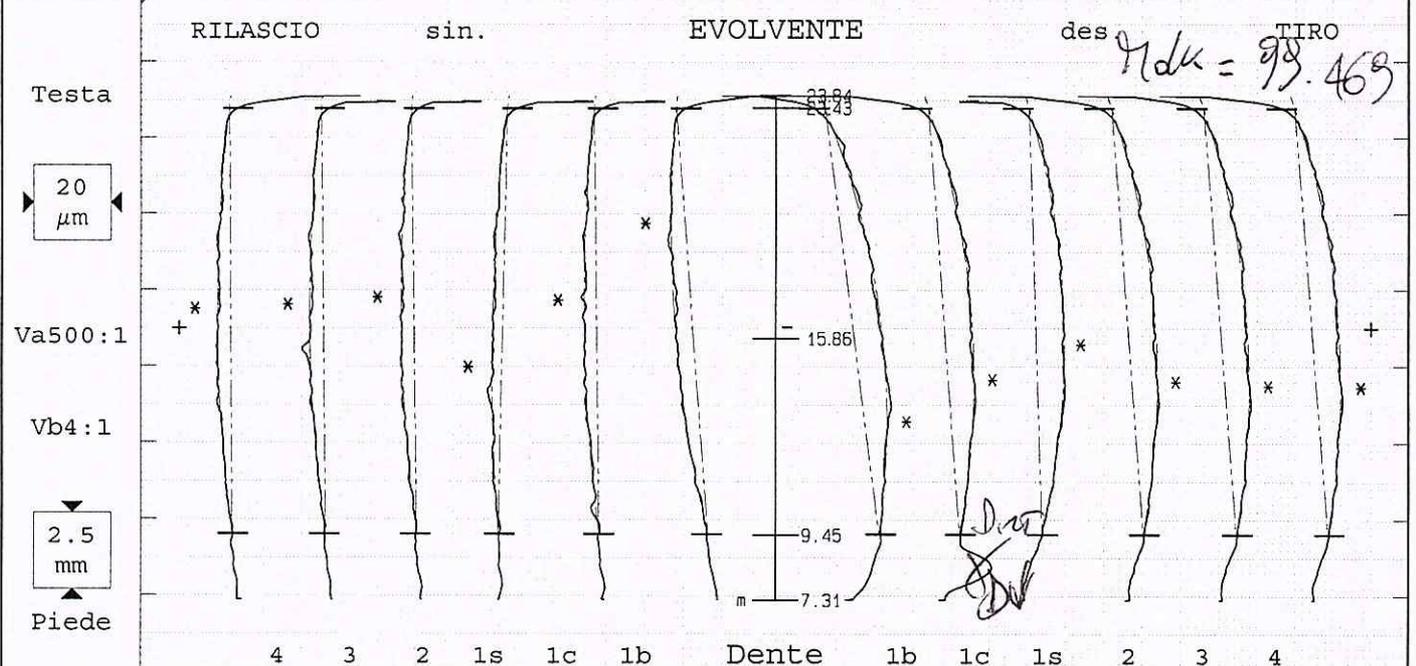
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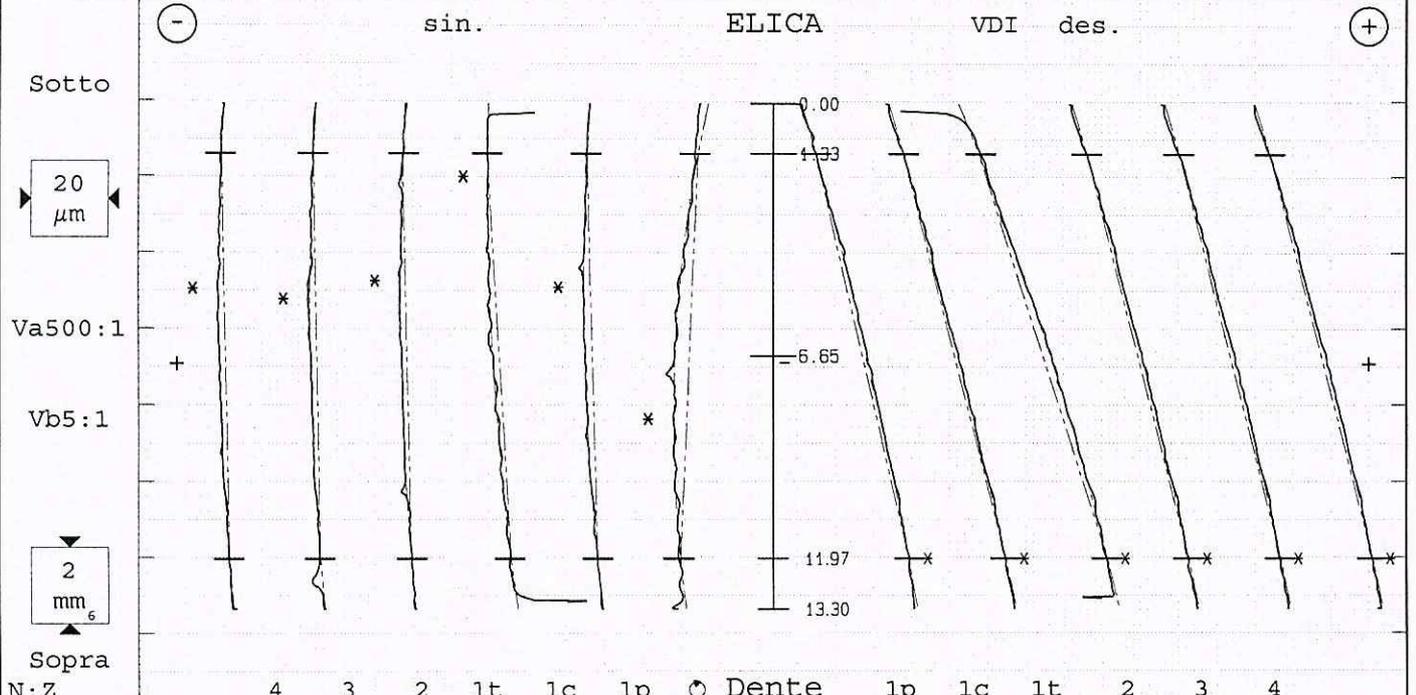
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:55
Denominazione: DG 5 7 Gg		Numero denti z 41	Largh.fasc.dent. b 13.3mm
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Tratto evolv. La 13.98mm
Commessa/serie nr.: 4		Angolo pressione 17.5°	Tratto elica Ls 10.64mm
Masch.Nr.: M001	Spindel: Formelettrolitica	33°	Inizio elab. M1 9.45mm
Untersuchungszweck: Laufende Messung	Ø Base db 91.5198mm		Palpatore Ø (#2) 1mm
Werkzeug:	Charge:	Ang. Base 31.294°	Fat.scor.pr. x -.228



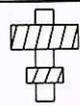
Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual								
		Var a 0.8									Var a 0.7																
fHam	±6	1.2								-10±6																	
fHa	±8	1.2	0.7	1.1	1.5	-2.4	1.3	8.1		-10±8	-14.2	-8.1	-3.4	-8.2	-8.6	-8.8	-8.4										
Fa		5.0	4.7	6.2	4.5	7.0	4.6	9.3			9.9	6.2	8.1	6.5	6.0	6.5	6.3										
ffa	5	3.4	3.0	4.2	2.9	3.9	3.5	3.4		5	4.2	3.9	3.8	4.1	4.0	4.2	4.1										
Ca	1/5	3.5	3.5	3.6	3.4	2.7	3.3	4.4		4/8	7.5	7.3	7.5	7.2	7.0	7.1	7.2										
ffa	3	1.5	1.4	1.2	1.6	1.7	1.8	2.0		3	0.8	10.3	0.3	0.6	0.5	0.4	2.9										
P/T-Ø [mm]		89.688 [89.55/89.87]									103.390 [103.34/103.6]																



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual								
		Var β 1.0									Var β 0.8																
fHβm	±4	-2.9								-35±4																	
fHβ	±8	-2.9	-2.7	-2.4	-2.9	-7.8	-3.4	5.7		-35±8	-30.4	-33.6	-42.1	-33.1	-33.0	-33.8	-33.4										
Fβ		3.6	3.0	3.2	3.5	6.1	4.8	7.6			4.3	2.1	6.0	2.6	2.6	2.1	2.4										
ffβ	5	1.5	1.0	1.2	2.1	1.6	1.6	3.0		5	1.1	0.8	1.3	1.0	0.9	0.8	0.9										
Cβ	0/4	1.7	1.6	1.7	1.6	1.8	2.0	3.7		0/4	1.3	0.8	1.9	1.0	1.0	1.0	1.0										
Rd		-13.5									-4±8																

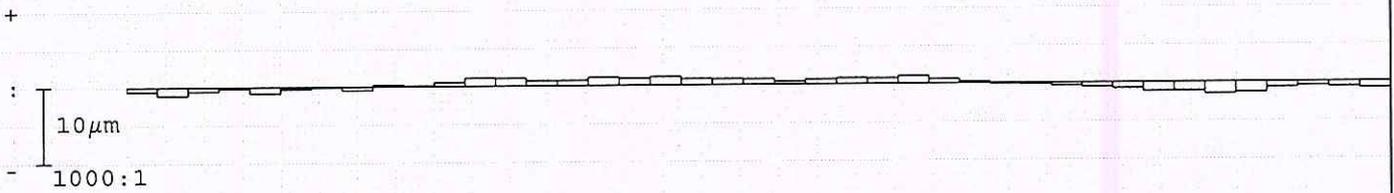


Ruota cilindrica Divisione

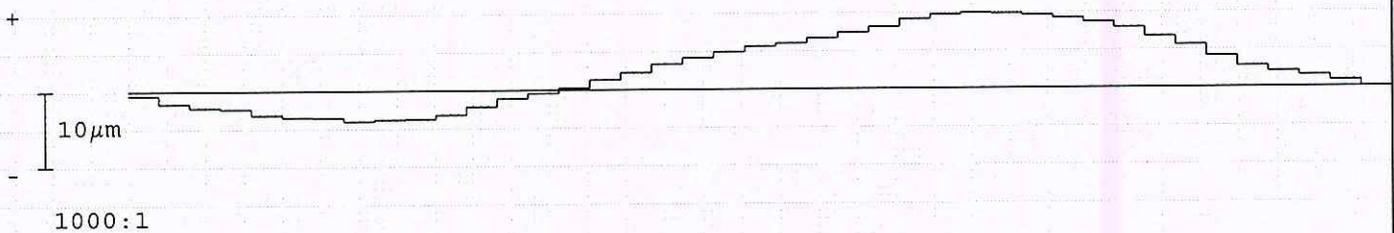


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 12:55
Denominazione: DG 5 7 Gg		Numero denti z 41	Angolo pressione 17.5°
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Angolo elica 33°
Comessa/serie nr.: 4		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formel	Skizze: g	Charge:

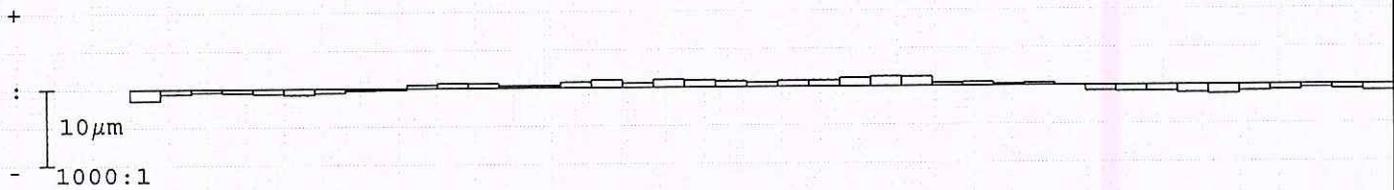
Errori singoli di divisione fp fianco sinistro



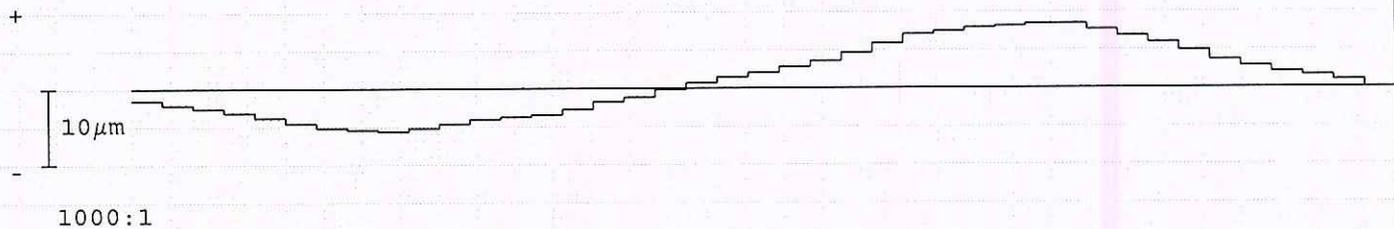
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



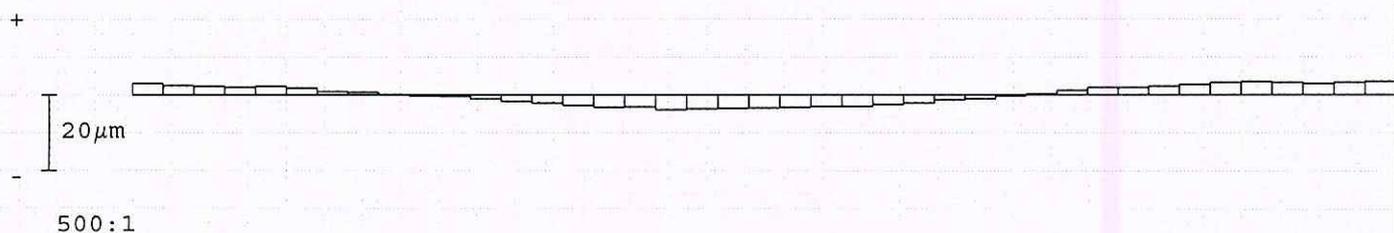
Errore somma di divisione Fp fianco destro



Corso per misura divis.: 96.861 z=6.7mm		fianco sinistro / RILASCIO				fianco destro / TIRO			
		Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione	fp max	1.5		10.0		1.5		10.0	
Gr. salto di passo	fu max	0.6		12.0		0.8		12.0	
Scarto di divisione	Rp	2.6				2.7			
Err. globale di divisione	Fp	13.9		32.0		14.0		32.0	
Err. cordale di divisione	Fpz/8	5.9				5.1			

Centricità Fr (Ø-sfera = 3.25mm)

⊙ : 7µm



Err. di concentricità	Fr	7.5	22.0	
Variation spessore dente	Rs			

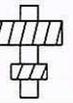
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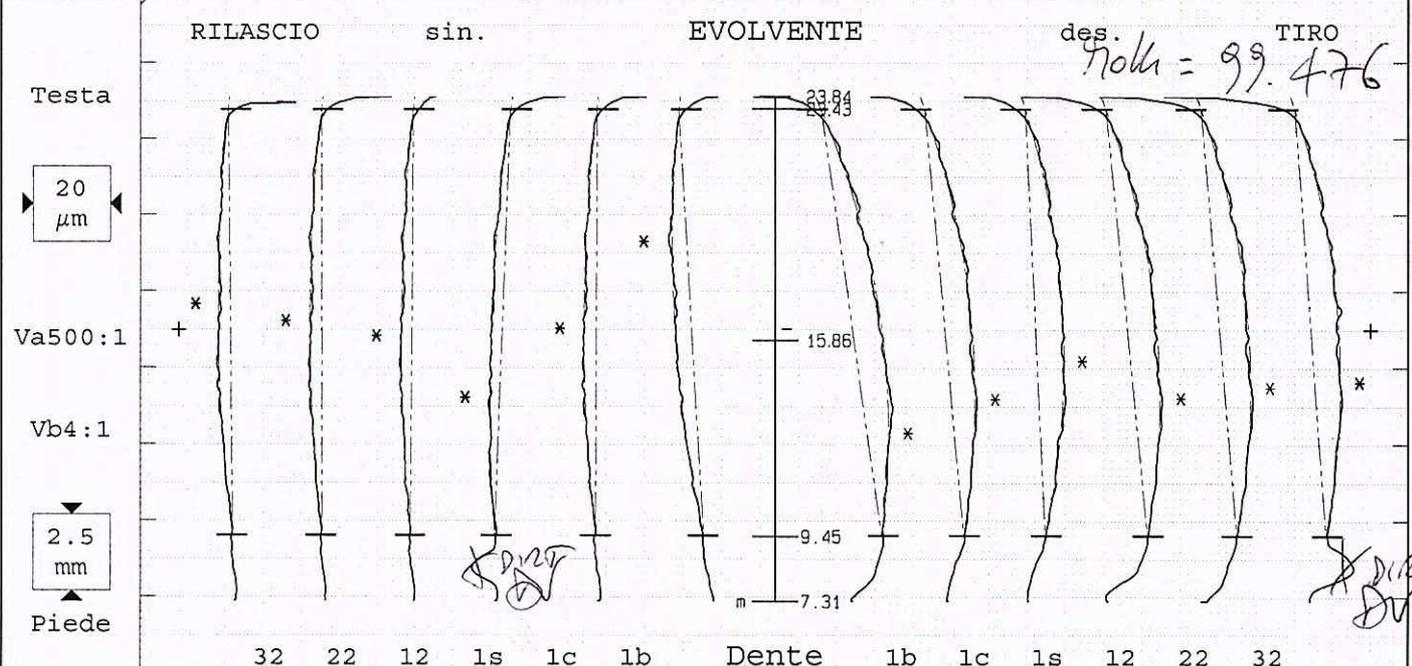
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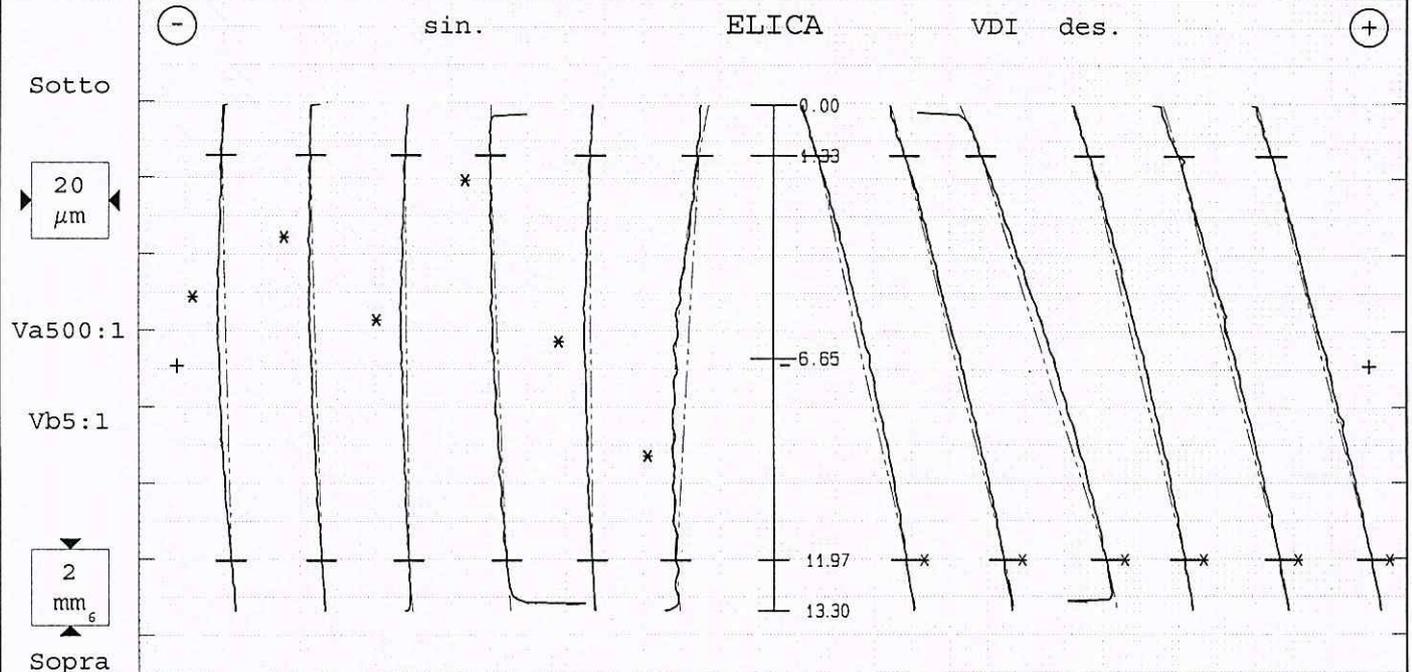
Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:31
Denominazione: DG 5 7 Gg		Numero denti z 41	Largh.fasc.dent. b 13.3mm
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Tratto evolv. La 13.98mm
Commessa/serie nr.: 5		Angolo pressione 17.5°	Tratto elica L β 10.64mm
Masch.Nr.: M001	Spindel: Formner	Angolo elica 33°	Inizio elab. M1 9.45mm
Untersuchungszweck: Laufende Messung		ϕ Base db 91.5198mm	Palpatore ϕ (#2) 1mm
Werkzeug:	Charge:	Ang. Base 31.294°	Fat.scor.pr. x -.228



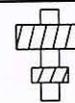
Tolerance	Medio	Val. misur [μ m]							Qual	Tolerance	Val. misur [μ m]							Medio	Qual							
		Var a 1.8									Var a 2.6															
fH α m	± 6	0.0								-10 ± 6																
fH α	± 8	0.0	1.1	0.1	-0.7	-4.2	-0.4	6.5		-10 ± 8	-16.0	-10.3	-5.3	-10.9	-9.4	-8.3	-9.7									
F α		4.2	4.1	4.1	4.2	6.6	4.4	8.1			10.7	6.3	6.3	7.0	6.7	6.7	6.7									
ff α	5	2.3	2.7	2.3	2.2	2.2	2.1	2.8		5	3.4	3.2	3.3	3.2	3.7	4.2	3.6									
C α	1/5	3.1	3.2	3.0	2.8	3.0	3.2	4.3		4/8	7.8	7.2	7.3	7.7	7.7	7.4	7.5									
ff α f	3	1.5	2.0	1.3	1.1	6.7	1.8	1.5		3	0.7	0.5	0.3	0.3	0.2	9.2	2.5									
P/T- ϕ [mm]		89.741 [89.55/89.87]									103.445 [103.34/103.6]															



Tolerance	Medio	Val. misur [μ m]							Qual	Tolerance	Val. misur [μ m]							Medio	Qual							
		Var β 3.2									Var β 1.9															
fH β m	± 4	-2.2								-35 ± 4																
fH β	± 8	-2.2	-3.0	-3.8	-1.3	-5.2	-0.6	7.4		-35 ± 8	-29.2	-32.6	-41.1	-31.1	-33.0	-32.8	-32.4									
F β		2.8	3.5	3.4	2.2	4.5	2.2	6.6			5.4	2.7	5.7	3.7	3.1	2.3	3.0									
ff β	5	0.7	0.8	0.6	0.6	0.8	0.7	1.3		5	0.7	0.8	0.8	0.7	1.7	1.1	1.1									
C β	0/4	1.6	2.0	1.3	1.4	1.2	1.6	3.1		0/4	1.7	1.1	2.3	1.5	1.3	0.9	1.2									
R β		-12.6									-4 ± 8															

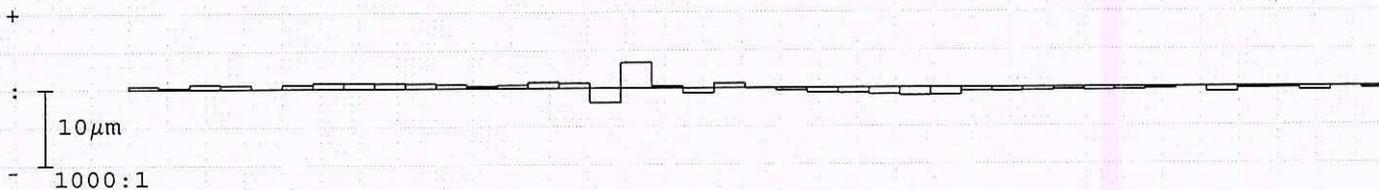


Ruota cilindrica Divisione

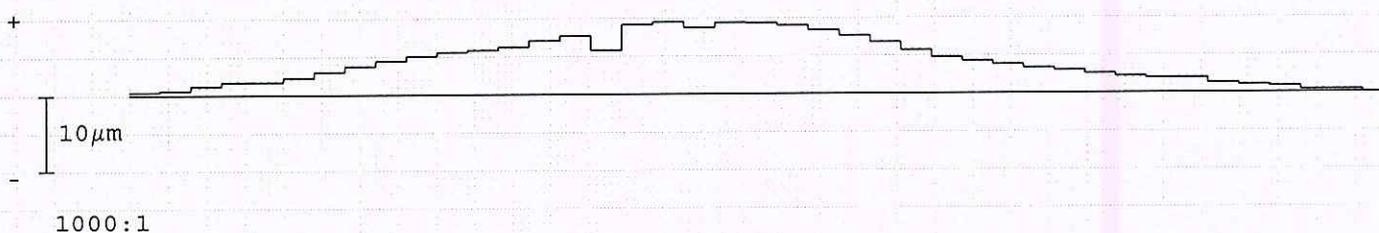


Nr. prog.: STI0416b04 0	P26 B7590	Controllore: turno a	Data: 10.05.2018 14:31
Denominazione: DG 5 7 Gg		Numero denti z 41	Angolo pressione 17.5°
Numero disegno.: D51.1.1236.35-IIF		Modulo m 2mm	Angolo elica 33°
Comessa/serie nr.: 5		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formnet	Erzeug:	Charge:

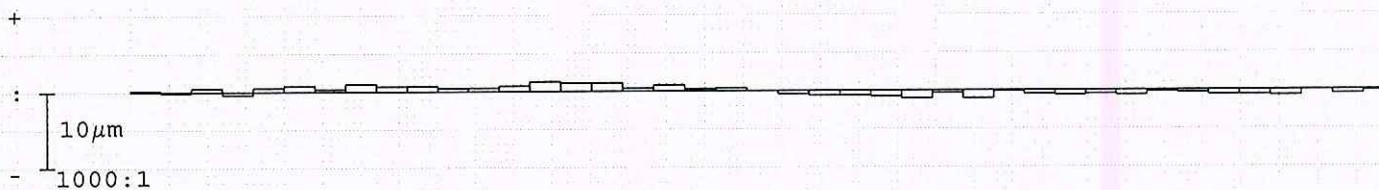
Errori singoli di divisione fp fianco sinistro



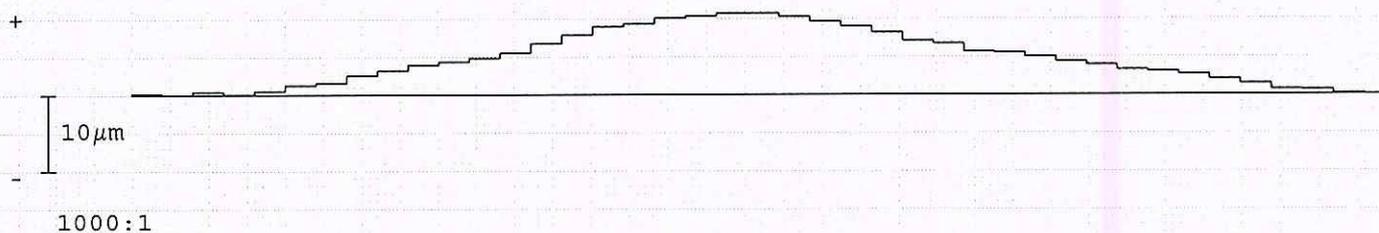
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

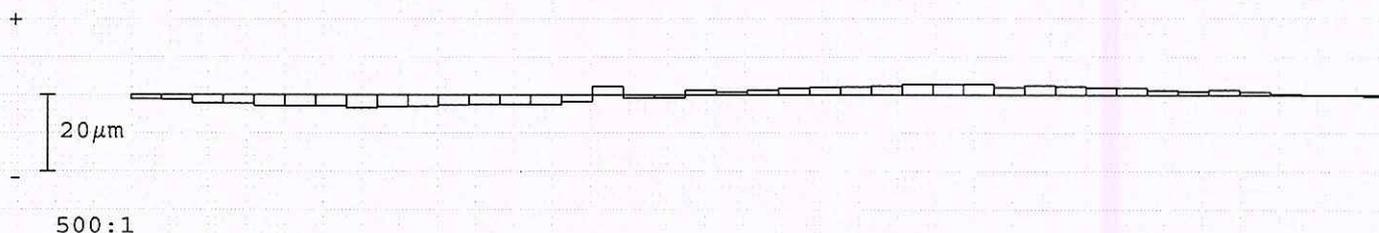


Corsa per misura divis.: 96.861 z=6.7mm

	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3.4		10.0		1.2		10.0	
Gr. salto di passo fu max	5.3		12.0		1.0		12.0	
Scarto di divisione Rp	5.3				2.3			
Err. globale di divisione Fp	9.4		32.0		10.7		32.0	
Err. cordale di divisione Fpz/8	4.3				4.6			

Centricità Fr (\emptyset -sfera = 3.25mm)

⊙ : 5.7μm



Err. di concentricità Fr	6.4	22.0	
Variation spessore dente Rs			

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REPORT 18/074

Date: 11/05/2018
Author: V.BUONAROTA

Reason for analysis: <i>Motivo dell'indagine:</i>	PPAP
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Requester: <i>Richiedente:</i>	ME - M. Vicenti
-----------------------------------	-----------------

Part Name: <i>Nome particolare:</i>	DGF3-5/7
Material: <i>Materiale:</i>	GCG_805000 Part 2
State of part: <i>Stato del particolare:</i>	Finito

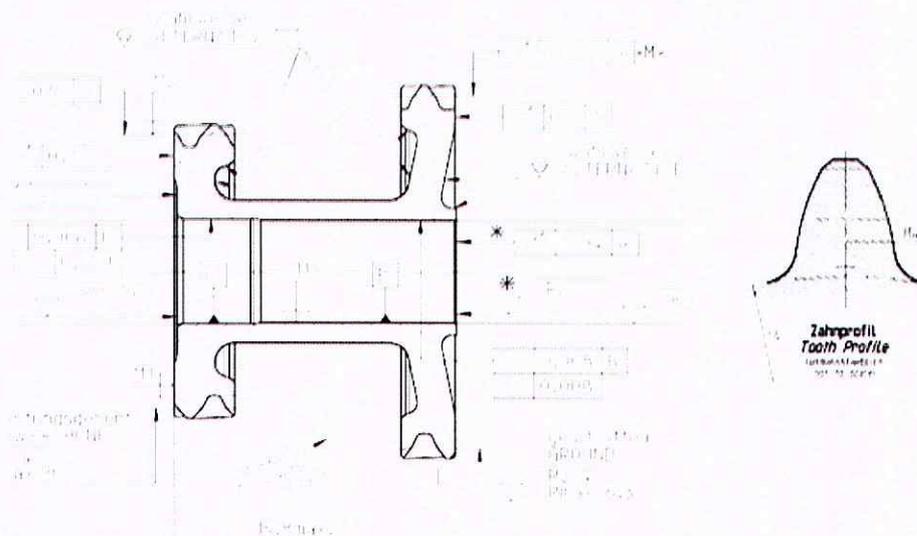
P/N:	251.1.1236.35
S/N:	-
Customer: <i>Cliente:</i>	Renault

Result: <i>Risultato:</i>	OK
------------------------------	-----------

Distribution list: <i>Lista di distribuzione:</i>	ME - M. Vicenti
--	-----------------

Notes: <i>Note:</i>	Gearset 32C
------------------------	-------------

Drawing (disegno)



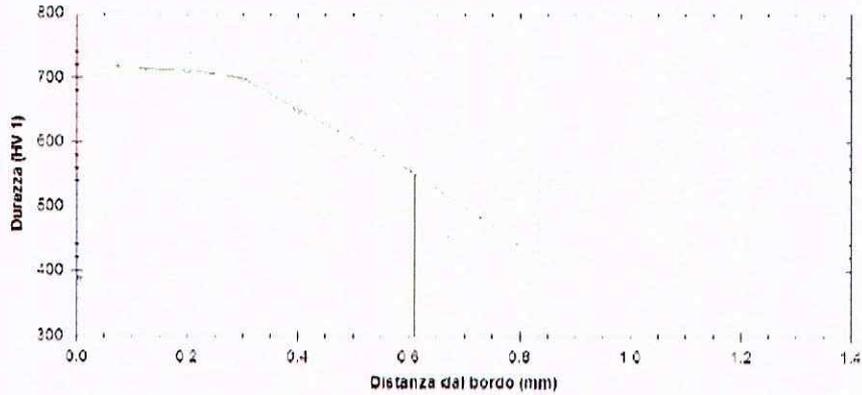
Picture 1: posizioni di misura a disegno.

Surface hardness verification (verifica durezza superficiale)

Component	Scale	Position	Measured Value	Range
SHAFT	HRC	M1	61.5	-
SHAFT	HRA	M1	81.9	80.5 + 2.5

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

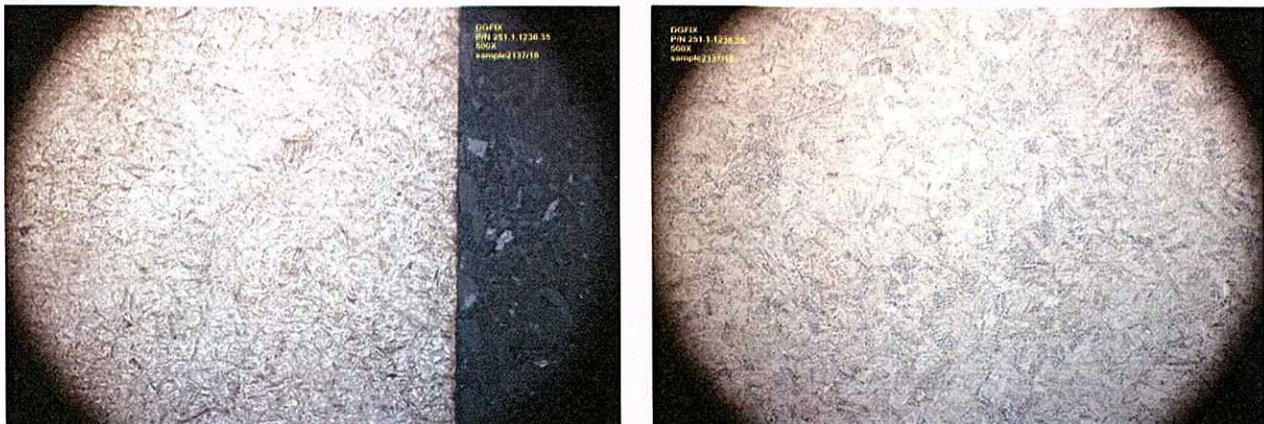
Scale	Sample #	Position	Measured Value	Range
CHD 550 HV1	2137/18	M2 (tooth flank)	0.83mm	0.5+0.4
CHD 550 HV1	2137/18	M3 (bore)	0.61mm	> 0.3
Core hardness HV10	2137/18	M4 (tooth core)	388HV10	> 300



Picture 2: profili di durezza

Microstructure analysis (analisi della microstruttura)

Sample # 2137/18	
Gear - Tooth flank surface structure:	Martensite e austenite residua (5÷10%)
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:

Processo da confrontare: **HNW11013**
Analisi preliminare da confrontare Nr.: **27/02/2017**

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

Codice Pezzo di riferimento: **251.1.1074.35**

Partnumber in esame: **251.1.1236.35**

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

	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

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	---	32			33			i.O.			
diam.primitivo - Ø	mm	68.072			70.199			i.O.			
Altezza dentatura	mm	12.3			6.325			i.O.			
diam.testa - Ø (da)	mm	79.6			81.60			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	77.271	0.069	1.67		78.890	0.085	1.67	i.O.	2.06	
Fr (Eccentricità)	µm	0	32	1.67		0	32	1.67	i.O.	1.67	
	µm								---		
	µm								---		
	µm								---		
	µm								---		
	µm								---		
...									---		

Analisi di similitudine Ppk

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

Macchina da confrontare: SLW11009
Capability da confrontare Nr.: 22/02/217

Data: 18/05/2018

Owner: G.Sette

Abt.: WLQ1

Codice Pezzo di riferimento: 251.1.1074.35

Partnumber in esame: 251.1.1236.35

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

	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

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	--	47			41			i.O.			
diam.primitivo - Ø	mm	95.202			91.52			i.O.			
Altezza dentatura	mm	11.4			6.865			i.O.			
diam.testa - Ø (da)	mm	107			103.60			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	104.8625	0.077	2.52		99.431	0.088	1.67	i.O.	2.88	
Fr (Eccentricità)	µm	0	22	1.67		0	22	1.67	i.O.	1.67	
	µm								---		
	µm								---		
	µm								---		
	µm								---		
...	µm								---		

Part Submission Warrant

PSWNr.: 005/18



Part Name <u>Double Gear 3.-5./7. Gear</u>		Cust. Part Number <u>251.1.1236.80</u>	
Shown on Drawing No. <u>251.1.1236.80</u>		Org. Part Number <u>25.5.00652.00</u>	
Engineering Change Level <u>a/16.02.2018</u>		Dated <u>16.02.2018</u>	
Additional Engineering Changes <u>n/a</u>		Dated <u>n/a</u>	
Safety and/or Government Regulation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Purchase Order No. <u>5500040224</u>	
Weight (kg) <u>1,3460</u>		Checking Aid No. <u>Höhenreißer</u>	
Checking Aid Engineering Change Level <u>n/a</u>		Dated <u>01.05.2016</u>	
<u>Std. Messmittel</u>		<u>01.05.2017</u>	
<u>Contour measuring</u>		<u>20.03.2017</u>	
<u>Sirio 688</u>		<u>09.03.2017</u>	
ORGANIZATION MANUFACTURING INFORMATION		CUSTOMER SUBMITTAL INFORMATION	
<u>Cotarko GmbH</u> <u>DCZSA</u>		<u>Getrag Ford Transmission GmbH</u>	
Organization Name & Supplier/Vendor Code		Customer Name/Division	
<u>Henry-Ford-Str. 1</u>		<u>Petra Braun</u> <u>MATC</u>	
Street Address		Buyer/Buyer Code	
<u>Köln</u> <u>NRW</u> <u>50725</u> <u>Germany</u>	<u>DCT 300</u>	Application	
City Region Postal Code Country			
MATERIALS REPORTING			
Has customer-required Substances of Concern information been reported? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> n/a			
Submitted by IMDS or other customer format: <u>IMDS-Nr. : 727193118 / 1</u>			
Are polymeric parts identified with appropriate ISO marking codes? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 checked="" 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>External Machining</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>200 / 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: <u>Full PSW Neuteil - externe Zerspanung</u>			
Is each Customer Tool properly tagged and numbered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a Photo attached <input type="checkbox"/> Yes			
Organization Authorized Signature <u>[Signature]</u>		Date <u>06. Mrz 18</u>	
Print Name <u>Gerd Nöthen</u>	Phone No. <u>+49 221 90 10337</u>	Fax No. <u>+49-221-76803205</u>	
Title <u>QS Manager</u>	E-mail <u>gnoethe1@cotarko.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>[Signature]</u>		Date <u>16.3.18</u>	
Print Name <u>Wadim Tefke</u>	Customer Tracking Number (optional) <u>18-00241</u>		

