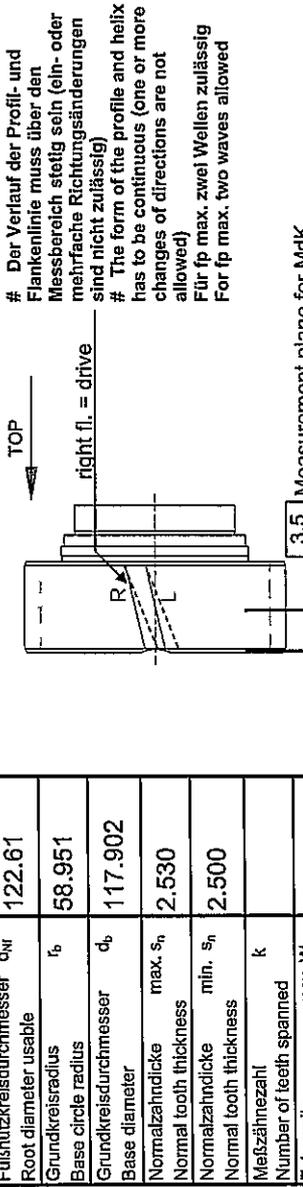


Part Name <b>Speed Gear SR1</b>		Customer Part Number <b>250.1.4308.76</b>	
Shown on Drawing No. <b>250.1.4308.76</b>		Organization Part # _____	
Engineering Change Level <b>a 35670</b>		Dated <b>24-lug-14</b>	
Additional Engineering Changes _____		Dated _____	
Safety and/or Government Regulation <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Purchase Order No. _____	
Weight (kg) <b>1,5160</b>		Checking Aid No. _____	
Checking Aid Engineering Change Level _____		Dated _____	
<b>ORGANIZATION MANUFACTURING INFORMATION</b>		<b>CUSTOMER SUBMITTAL INFORMATION</b>	
<b>GETRAG MODUGNO</b>		<b>FORD</b>	
Organization Name & Supplier/Vendor Code _____		Customer Name/Division _____	
<b>VIA DEI CICLAMINI N°4</b>		Buyer/Buyer Code _____	
Street Address _____		<b>TYP 250</b>	
<b>MODUGNO BARI 70026 ITALY</b>		Application _____	
City	Region	Postal Code	Country
MODUGNO	BARI	70026	ITALY
<b>MATERIALS REPORTING</b>			
Has customer-required Substances of Concern information been reported?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a	
Submitted by IMDS or other customer format: _____			
Are polymeric parts identified with appropriate ISO marking codes?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a	
<b>REASON FOR SUBMISSION (Check at least one)</b>			
<input type="checkbox"/> Initial Submission	<input type="checkbox"/> Change to Optional Construction or Material		
<input checked="" 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		
<b>REQUESTED SUBMISSION LEVEL (Check one)</b>			
<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.			
<b>SUBMISSION RESULTS</b>			
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 _____			
<b>DECLARATION</b>			
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 _____ / _____ hours.			
I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.			
<b>EXPLANATION / COMMENTS: New documentation for first PPAP lost</b>			
Is each Customer Tool properly tagged and numbered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a			
Organization Authorized Signature _____		Date <b>14 Jan 2015</b>	
Print Name <b>Pennacchia Vincenzo</b>	Phone No. <b>tel 390805858580</b>	Fax No. _____	
Title <b>GPS Leader</b>	E-mail <b>vincenzo.pennacchia@getrag.com</b>		
<b>FOR CUSTOMER USE ONLY (IF APPLICABLE)</b>			
Part Warrant Disposition: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Other			
Customer Signature _____		Date <b>14-01-15</b>	
Print Name _____	Customer Tracking Number (optional) _____		



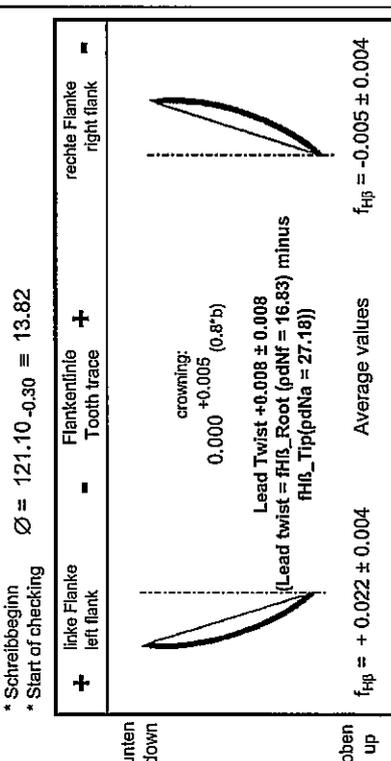
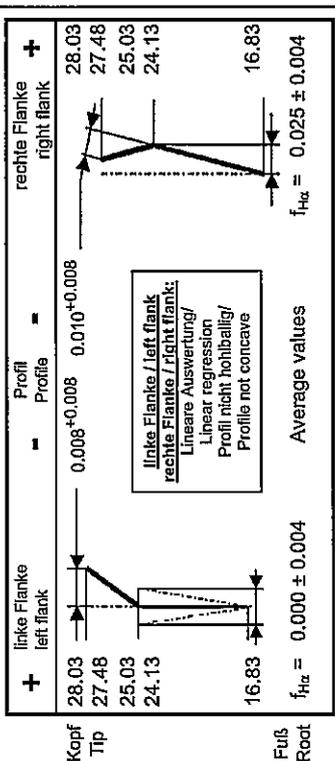
font

STIRNRAD		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978)		(7)	
GEAR		gültig für Werte am Einzelzahn		Tolerances of gearing (DIN 3961 of Aug. 1978)	
valid for values at individual tooth		linke Fl. left flank	rechte Fl. right flank	linke Flanke left flank	rechte Flanke right flank
Zähnezahl	z				
Number of teeth	47				
Modul	$m_n$	# 0.005		Eingriffsteilungs-Abweich. $f_{po}$	0.011
Normal module	2.450000			Normal pitch error	
Eingriffswinkel	$\alpha_n$			Teilungs-Einzelabweichung $f_p$	0.011
Normal pressure angle	20° 0' 0"			Adjacent pitch error	
Schraubungswinkel	$\beta$	0.000	0.025	Teilungssprung $f_u$	0.014
Helix angle	LEFT	$\pm 0.007$	$\pm 0.007$	Diff. bet. adjacent pitches $F_{pk}$	
Hand of helix		+ 0.022	- 0.005	Teilungs-Summenabweich. $F_{pk}$	
Profilverschiebungsfaktor	x	$\pm 0.008$	$\pm 0.008$	Cumulative circ. pitch error $F_r$	0.032
Addendum modification coeff.	-0.696	0.011	0.011	Rundlaufabweichung $R_s$	
Teilkreisdurchmesser	d	# 0.005		Zahnstärkenabweichung $R_s$	
Pitch diameter	127.054			Range of tooth thckn. error	
Kopfkreisdurchmesser	$d_a$				
Outside diameter	131.00 -0.30		0.045		
Kopfnutzkreis theo. max. $d_{ha}$	130.55			Zweifl.-Wälzabweichung $F_r$	0.036
Tip diam. usable theo.				Radial composite error	
Kopfnutzkreis theo. min. $d_{ha}$	130.08			Zweifl.-Wälzsprung $f_r$	0.016
Tip diam. usable theo.				Radial tooth to tooth comp. err.	
Fußkreisdurchmesser	$d_f$			Meßkreis Krümmungsradius $\rho_{ak}$	18.62
Root diameter	117.70 -0.45		21.00	Radius of curvature meas. diam.	
Fußnutzkreisdurchmesser	$d_{fk}$				
Root diameter usable	122.61				
Grundkreisradius	$r_b$				
Base circle radius	58.951				
Grundkreisdurchmesser	$d_b$				
Base diameter	117.902				
Normalzahnstärke max. $s_n$	2.530				
Normal tooth thickness					
Normalzahnstärke min. $s_n$	2.500				
Normal tooth thickness					
Meßzähnezahl	k				
Number of teeth spanned					
Zahnweite max. $W_k$					
Base tangent length					
Zahnweite min. $W_k$					
Base tangent length					
Meßkugeldurchmesser $D_M$	5.0000				
Ball diameter					
Diam. Zweikugelmaß max. $M_{gk}$	132.401				
Measurement o. balls					
Diam. Zweikugelmaß min. $M_{gk}$	132.320				
Measurement o. balls					
Verdrehflankenpiel theo. $0.066$					
Circumferential backlash	0.173				



# Der Verlauf der Profil- und Flankenlinie muss über den Messbereich stetig sein (ein- oder mehrfache Richtungsänderungen sind nicht zulässig)  
 # The form of the profile and helix has to be continuous (one or more changes of directions are not allowed)  
 Für  $f_p$  max. zwei Wellen zulässig  
 For  $f_p$  max. two waves allowed

Bezugsprofil-Schleifscheibe  
 Grinding tool data  
 Schleifscheibenkopfhöhe  $h_{ap05} = 2.800$   
 Grinding wheel tip height  
 Schleifscheibenkopfradius  $\rho_{ap05} = 1.292$   
 Grinding wheel tip radius  
 Schleifdurchmesser =  $121.00 -0.30 \approx 13.60$   
 grinding diameter  
 Horndurchmesser =  $121.00 -0.30 \approx 13.60$   
 honing diameter



\* Schreibbeginn  $\varnothing = 121.10 -0.30 \approx 13.82$   
 \* Start of checking

\*  $f_{H\alpha}$  (zwischen dNF und dem Schreibbeginn ds) max  $f_{H\alpha}/2$ , jedoch 0.003 zulässig  
 \*  $f_{H\beta}$  (zwischen dNF und start of checking ds) max  $f_{H\beta}/2$ , 0.003 allowable.

Profil- und Flankenlinienprüfung nach VDI/VDE 2612  
 Tabellenwerte für  $f_p$  und  $f_{H\beta}$  sind auf die gesamte Radbreite im Meßkreis  $d_M$  bezogen  
 Flankenlinienprüfbereich  $L_{\beta} = 0.8^*b$  hochgerechnet auf  $1.0^*b$   
 Begriffe für Stirnräder nach DIN 868, 3960, 3998

Profile and helix checking according to VDI/VDE 2612  
 Listed tolerance data for  $f_p$  and  $f_{H\beta}$  refers to the total face width in the meas. dia.  $d_M$   
 Tooth trace testing area  $L_{\beta} = 0.8^*b$  calculated to  $1.0^*b$   
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

Verteiler:		
Schutzvermerk nach ISO 18016 beachten Protection per ISO 18016		
III GETRAG		
GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG		
Remark:		
Ersatz für		
Erstverwendung bei Getriebetypen:	250	
Abbildungen sind unmaßstäblich. Diagrams not to scale.		
Datum	Name	
08.05.2014	Cricenti, Fabrizio	
Verzahnungsblatt Endkontrolle Final Check Gear Data		
Buch.	Anz.	Änd.Nr.
Benennung: Naming:		
Speed Gear 1st		
Zeichnungsnummer: Drawing number:		250.1.4309.76

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

Wkz-Profil siehe Werkzeugdatenblatt Nr. 250.1.4309.76  
 For Tooth profile, see tool data sheet number







# Istruzioni di controllo

**GETRAG**  
PP Produzione GPS

Materiale: 2501430875

Descrizione: Ruota dentata libera 1M com Stato: Rilasciato Produzione + Calcolo costi

Indice del disegno finito: 17.11.2014 / Donato Pietanza

Data emissione: 09.01.2015 / Rocco Tanzella

Operazione: 0230 Rettifica denti

Centro di lavoro: SLW14050 RETTIFICA DENTI SG1

Data aggiornamento:

№ pezzo	Caratteristica	Misura nom.	LTI	LTS	Strumento di controllo	Quantità	Frequenza Rk1:	Quantità	Frequenza Rk2:	Quantità	Frequenza Sala di misura	Cambio p.	Metodi di gestione / Documentazione
0004	Controllo 1° pz secondo Gear data 250.1.4309.7X				MVZ-400249 EVOLVENTIMETRO								CR1: controllo primo pezzo Misur: controllo primo pezzo
					MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		
					MZA-450311 Calcolatore di misura E9066						1° pz 2.3.1.1-R 2		
					Merposs								
0010	M Diametro Mdk	132,360 mm	132,320	132,401	MZA-450311 Calcolatore di misura E9066 Merposs	3	pz ogni 100 per macchina						Misur: calcolatore di misura
0020	DIAGRAMMA DI DENTATURA CON SVERGOLAMENTO DA GEAR TESTING				MVZ-400249 EVOLVENTIMETRO								Misur: diagramma di dentatura
0022	Svergolamento evolventi				MVZ-400249 EVOLVENTIMETRO								Misur: diagramma di dentatura
0030	SOMMA DI PASSO Fp	mm		0,045	MVZ-400249 EVOLVENTIMETRO								Misur: diagramma di dentatura
0040	M OSCILLAZIONE RADIALE Fr	mm		0,032	MVZ-400249 EVOLVENTIMETRO								Misur: diagramma di dentatura
0050	RUGOSITA' Rz	0,0 µm	0,0	4,0	MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		Misur: controllo primo pezzo
0060	RUGOSITA' Rmax	0,0 µm	0,0	6,3	MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		Misur: controllo primo pezzo
0070	Controllo chimico bruciature secondo procedura WTL 3.4.10.01					1	pz cambio mola rettifica						CR1: controllo primo pezzo
0080	CONTROLLO VISIVO RETTIFICA INCOMPLETA					3	pz ogni 100 per macchina						CR1: no documentazione

circuiti di controllo: 1 / 2 / sala di misura

# Istruzioni di controllo

**■ ■ ■ GETRAG**  
**PP Produzione GPS**

Materiale: 2501422437

Indice del disegno finito:

Descrizione: Ruota dentata libera 5.M com Stato: Rilasciato Produzione + Calcolo costi

Data emissione:

15.06.2011 / Stefano Billi

Operazione: 0150 Levigatura di potenza

Data aggiornamento:

09.01.2015 / Rocco Tanzella

Centro di lavoro: HNW14440 LEVIGATURA DI POTENZA SGS

№ SAP	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut.	Metodi di gestione / Documentazione
0004	Controllo 1° pz secondo Gear data 250.1.4225.3X				MVZ-400249 EVOLVENTIMETRO					1	1° pz 2.3.1.1-R 2		Misur: controllo primo pezzo
					MOA-416121 RUGOSIMETRO TIPO PRK					1	1° pz 2.3.1.1-R 2		
					MZA-450311 Calcolatore di misura E9066 Marposs					1	1° pz 2.3.1.1-R 2		
0010	M Diametro Mdk	75,166 mm	75,116	75,217	MZA-450311 Calcolatore di misura E9066 Marposs	3	pz ogni 100 per macchina						CR1: calcolatore di misura
0020	M Evolverte ed elica sec.G.D. con svergolamento				MVZ-400249 EVOLVENTIMETRO					1	pz ogni 100 per macchina		Misur: diagramma di dentatura
0022	M Svergolamento evolverti				MVZ-400249 EVOLVENTIMETRO					1	Ultimo Pz. prima ravviatura		Misur: diagramma di dentatura
0030	M Errore globale di divisione Fp	0,000 mm	0,000	0,050	MVZ-400249 EVOLVENTIMETRO					1	pz. p. turno		Misur: diagramma di dentatura
0040	M Oscillazione radiale dentat. Fr	0,000 mm	0,000	0,032	MVZ-400249 EVOLVENTIMETRO					1	pz. p. turno		Misur: diagramma di dentatura
0042	M Rugosità dente Rz	0,000 mm	0,000	0,004	MOA-416121 RUGOSIMETRO TIPO PRK					1	1° pz 2.3.1.1-R 2		Misur: controllo primo pezzo
0044	M Rugosità dente Rmax	0,000 mm	0,000	0,008	MOA-416121 RUGOSIMETRO TIPO PRK					1	1° pz 2.3.1.1-R 2		Misur: controllo primo pezzo
0046	Aspetto, privo di bava, senza danni					10	pz per rack						CR1: no documentazione
0070	Sup. dente completamente levigata Controllo visivo					10	pz per rack						CR1: no documentazione

Trattare i prodotti non conformi secondo procedura 2.3.5 del Manuale dei Processi

Gli audit di prodotto sono stati eseguiti secondo il piano annuale

circuiti di controllo: 1 / 2 / sala di misura

# Istruzioni di controllo

**■ ■ ■ GETRAS**  
**PP Produzione GPS**

Materiale: 2501430975

Descrizione: Ruota dentata libera 1M

Stato: Rilasciato Produzione + Calcolo costi

Indice del disegno finito:

Data emissione:

18.11.2014 / Vito Fiore

Operazione: 0110 Pallinatura

Centro di lavoro: OKU15476 PALLINATURA MISMT

Data aggiornamento:

19.01.2015 / Gaetano Carciapaglia

n. SAP Dizionario	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut.	Metodi di gestione / Documentazione
0022	aspetto visivo					3	pz per rack						CR1: no documentazione
0032	controllo presenza marcatura					1	100%						CR1: no documentazione
0042	M Intensità di pallinatura (Almen)	0,550 mm	0,500	0,600	MHM-432101 COMPARAT. DIGITALE 0-25; 1/1000	1	pz a giorno/ma schina						CR1: Tabella di registrazione dati

Trattare i prodotti non conformi secondo  
procedura 2.3.5 del Manuale dei Processi

Gli audit di prodotto sono stati eseguiti secondo il piano annuale

Point	Characteristic	Tolerance	Part 1	Part 2	Part 3	Part 4	Part 5	Controllo piastrina
4	MDK	132,401/132,320	132,344	132,337	132,342	132,343	132,345	
5	Pallinatura	0,6/0,5						0,51

valore misurato (gradi Almen) il 09 12 2014

**Manual measures by Marposs**

**SR1 2501 4308 76**

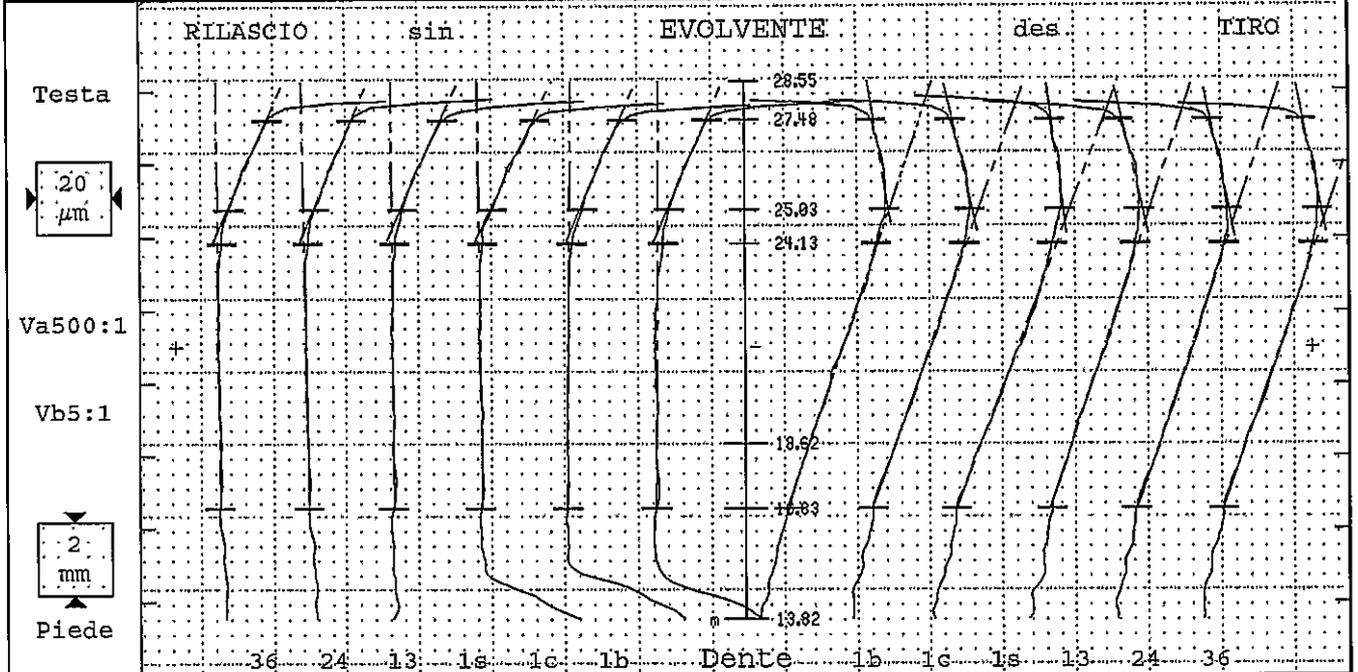
07, Jan, 2015

**GETRAG**

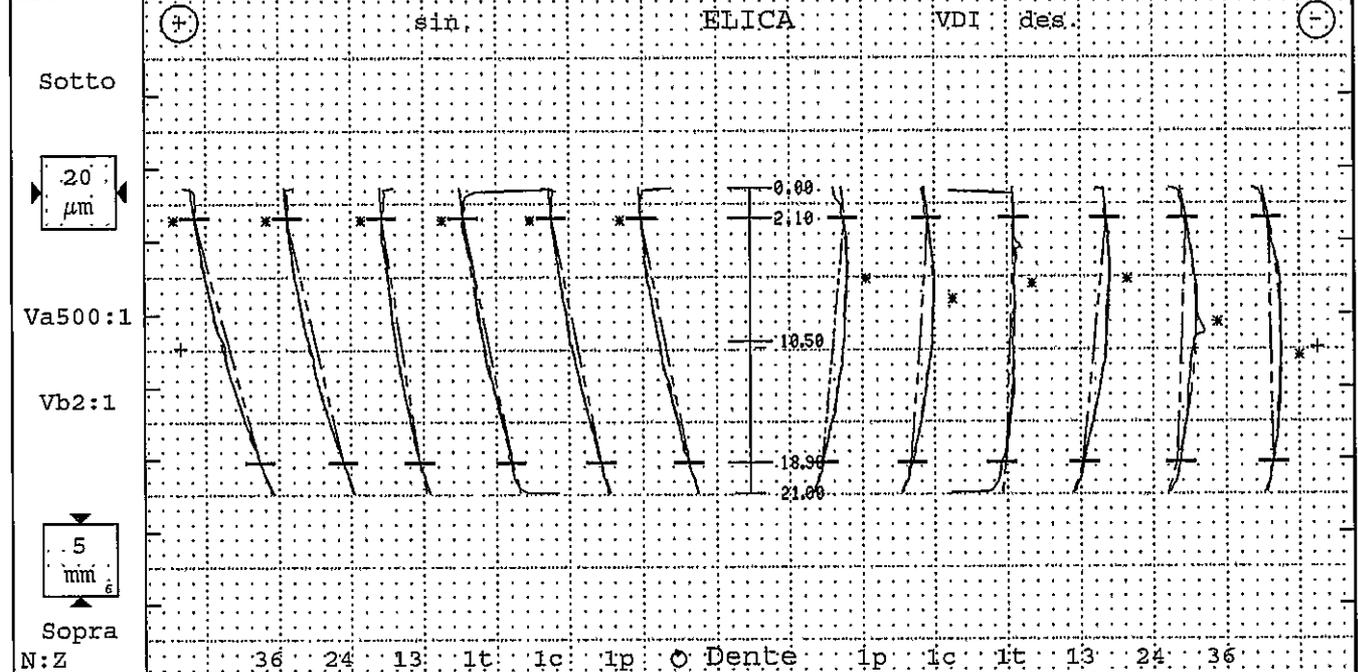
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllora:	TURNO c	Data:	10.01.2015 16:30
Denominazione:	SRL		Numero denti z	47	Largh.fasc.dent. b	21mm
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolv. La	7.3mm
Commissa/serie nr.:	PPAP 1		Angolo pressione	20°	Tratto elica LB	16.8mm
Masch.Nr.:	M001	Spindel: Form. cilindrica	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		Ø Base db	117.9016mm	Palpatore Ø	(#1)1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat.scor.pr. x	-.696



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fH <sub>am</sub>	±4	0	Var 2								25±4	Var 2							25	
fH <sub>a</sub>	±7	0	1	1	0	1	-1	-1		25±7	25	26	28	25	24	26	25			
F <sub>a</sub>		2	1	2	1	1	2	2			1	2	3	2	1	1	2			
f <sub>fα</sub>	5	1	1	2	1	1	1	2		5	1	1	2	1	1	1	1			
fK <sub>o</sub> -16/-8		-14	-14	-14	-14	-15	-13	-13		-18/-10	-13	-16	-14	-16	-16	-15	-16			
P/T-φ[mm]		117.469	[117.25/117.7]								130.730	[130.7/131]								



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fH <sub>sm</sub>	22±4	18	Var 9								-5±4	Var 9							-4	
fH <sub>s</sub>	22±8	18	22	19	14	17	17	16		-5±8	-8	-6	-3	-8	-3	1	-4			
F <sub>B</sub>	11	4	2	4	7	5	4	6		11	4	4	3	4	8	7	6			
f <sub>fβ</sub>	5	1	1	1	1	2	1	2		5	1	1	3	1	4	1	2			
CB	0/5	2	2	2	1	1	1	2		0/5	3	3	1	3	4	3	3			
Bd	8±8	1															5			



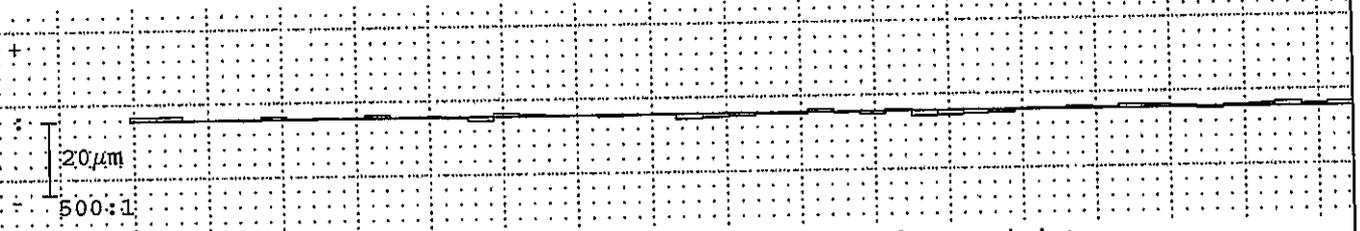
**GETRAG**

## Ruota cilindrica Divisione

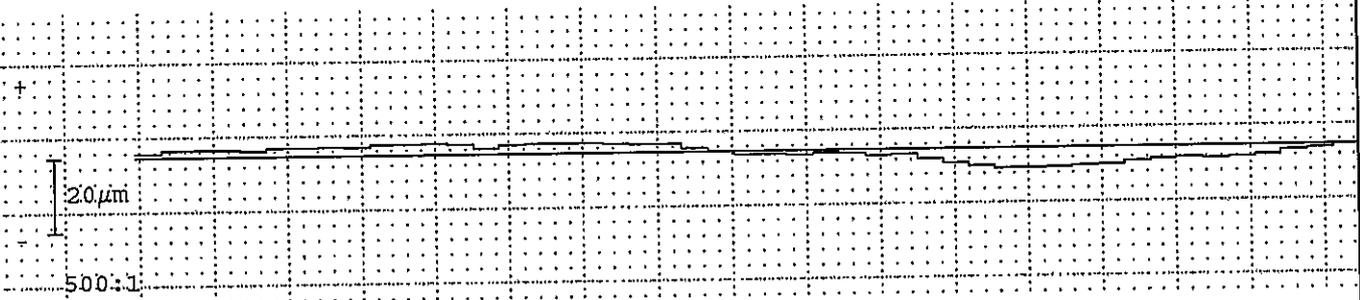


Nr. prog.: STI0410005 0	PNC35 B4784	Controllore: TURNO c	Data: 10.01.2015 16:30
Denominazione: SR1		Numero denti z 47	Angolo pressione 20°
Numero disegno.: 250.1.4309.75-IF		Modulo m 2.45mm	Angolo elicita -25°
Commessa/sarie nr.: PPAP 1		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: FORMULAZIONE	Caricatore:	

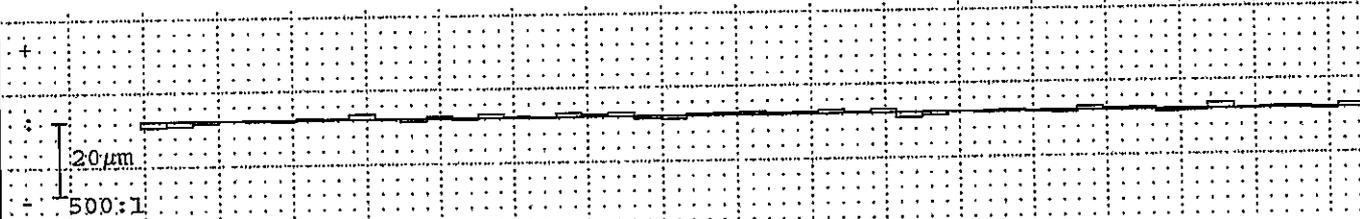
## Errori singoli di divisione fp fianco sinistro



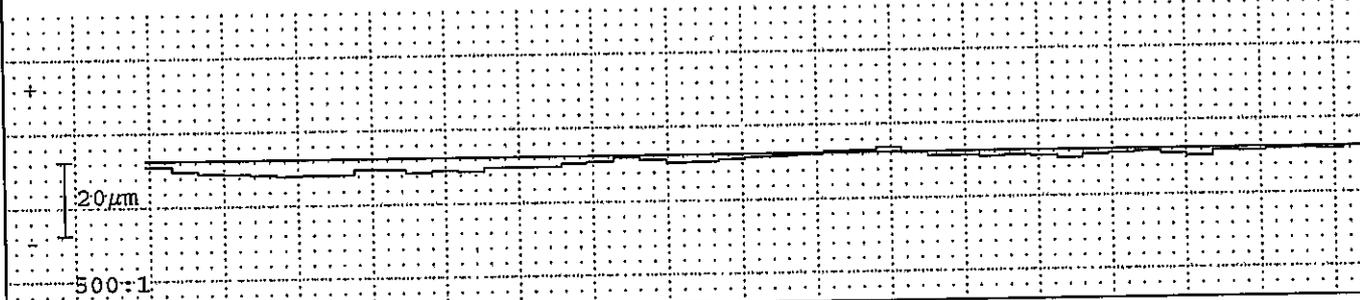
## Errore somma di divisione Fp fianco sinistro



## Errori singoli di divisione fp fianco destro



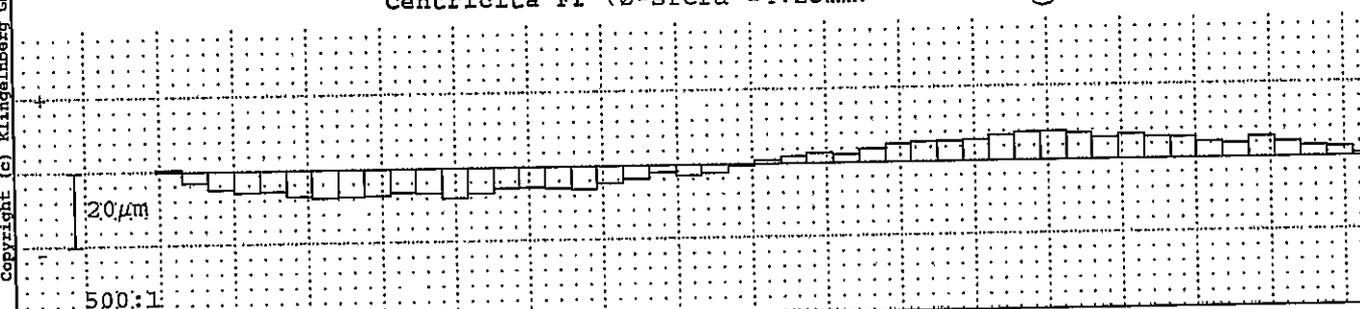
## Errore somma di divisione Fp fianco destro



Corso per misura divis. i123.643 z=10.5mm	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		11		2		11	
Gr. salto di passo fu max	2		14		2		14	
Scarto di divisione Rp	2				3			
Err. globale di divisione Fp	8		45		6		45	
Err. cordale di divisione Fpz/B	5				4			

Centricità Fr (Ø-sfera =4.25mm)

⊙ : 15µm



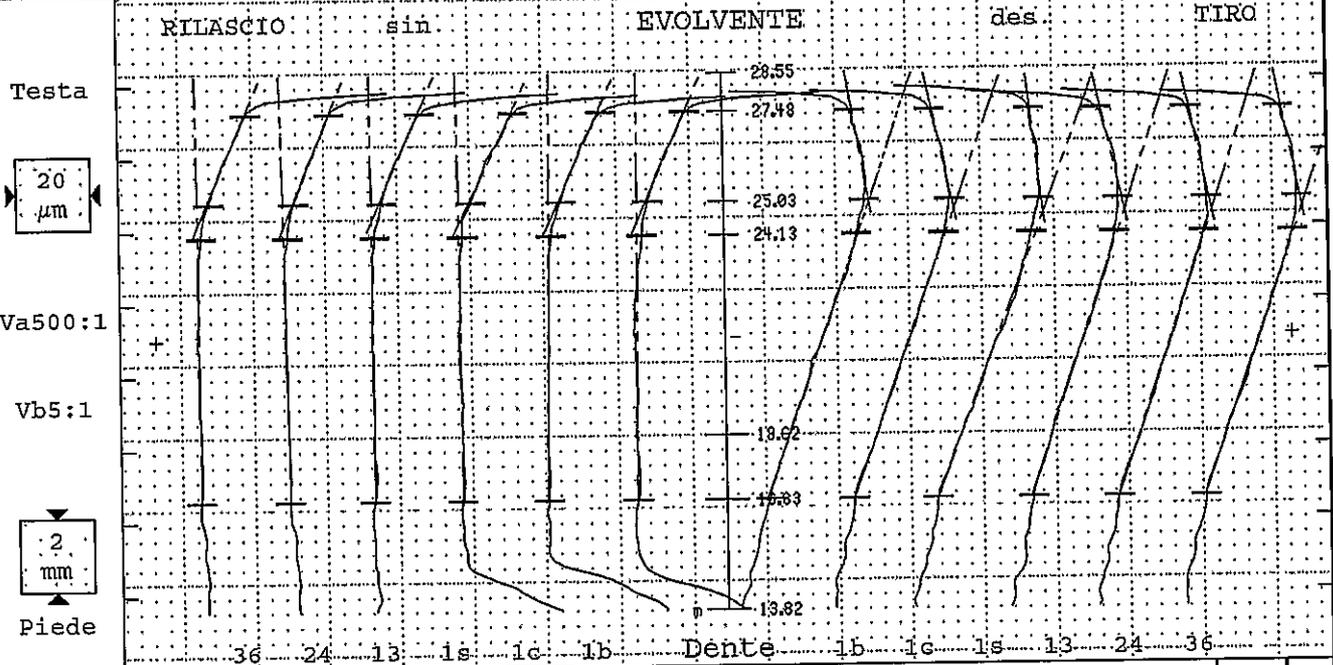
Err. di concentricità Fr	16	32	
Variaz. spessore dente Rs			

**GETRAG**

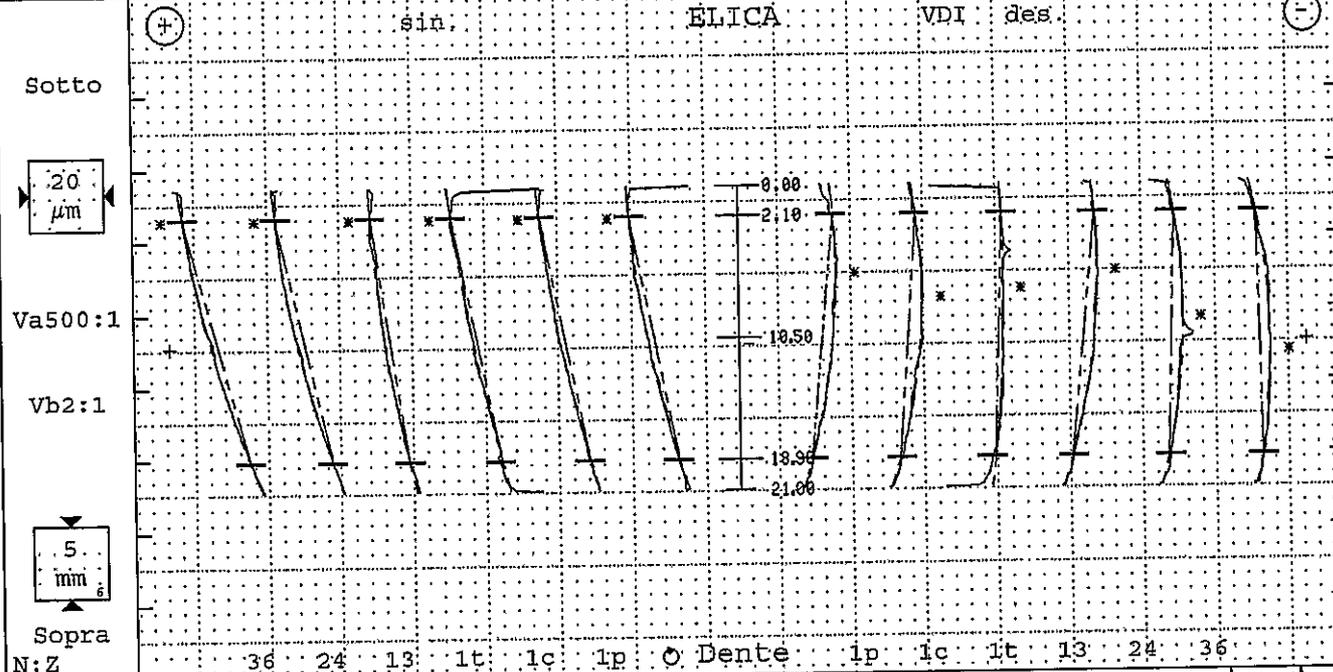
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 16:39
Denominazione:	SR1		Numero denti z	47	Largh. fasc. dent. b	21mm
Numero disegno:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolv. La	7.3mm
Commessa/serie nr.:	PPAP 2		Angolo pressione	20°	Tratto elica L8	16.8mm
Masch.Nr.:	M001	Spindel: FORM	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		Ø Base db	117.9016mm	Paipatore Ø	(#1)1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat. scor. pr. x	-.696



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual		
		Var 2									Var 2										
fHm	±4	0								25±4								25			
fHσ	±7	0	0	1	0	0	-1	-1		25±7	26	26	28	25	24	26	25				
Fα		1	1	1	1	1	2	2			2	2	3	2	1	1	2				
ffα	5	1	1	1	1	2	1	2		5	2	1	2	1	1	1	1				
fKo	-16/-8	-14	-14	-14	-13	-15	-13	-13		-18/-10	-13	-15	-14	-15	-15	-15	-15				
P/T-φ[mm]		117.468	[117.25/117.7]									130.729	[130.7/131]								



fHm	fHσ	Fα	ffα	CB	Bd	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
						Var 10									Var 10								
22±4	22±8	11	5	0/5	8±8	18	23	19	14	17	17	16		-5±4	-8	-6	-3	-8	-2	2	-4		

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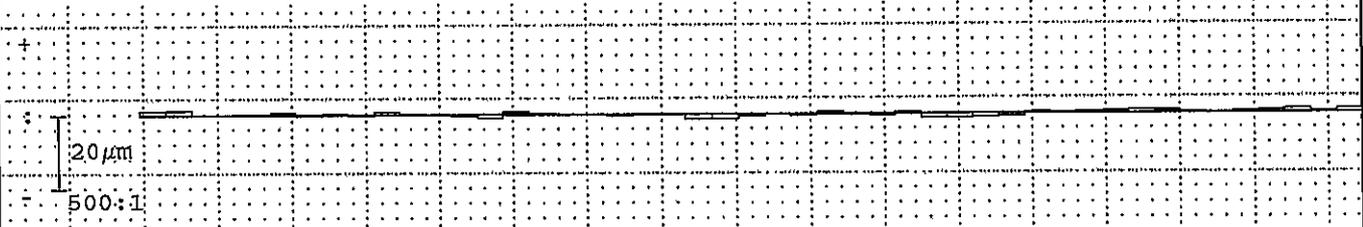
**GETRAG**

## Ruota cilindrica Divisione

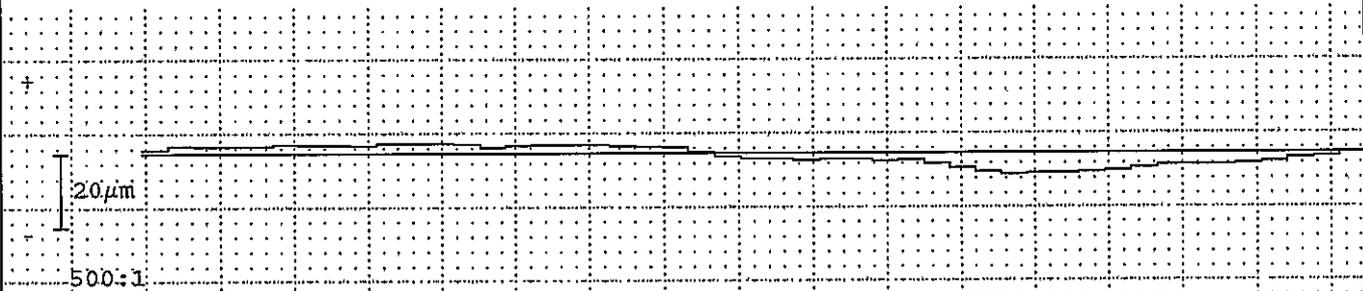


Nr. prog.:	STI041005 0 PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 16:39
Denominazione:	SR1	Numero denti z	47	Angolo pressione	20°
Numero disegno.:	250.1.4309.75-IF	Modulo m	2.45mm	Angolo elica	-25°
Commessa/serie nr.:	PPAP 2	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORM 04	Erzeug:	Charge:	

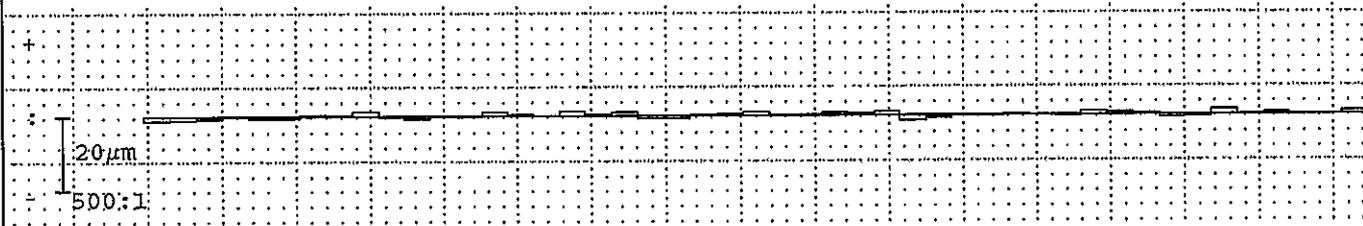
## Errori singoli di divisione fp fianco sinistro



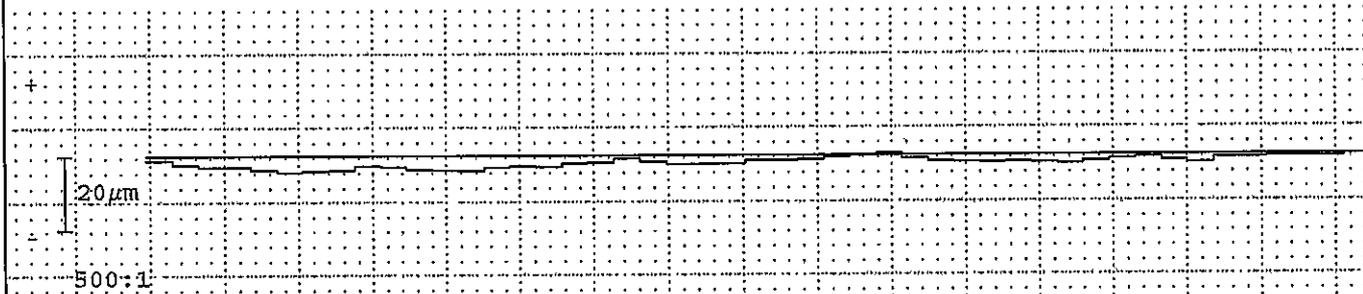
## Errore somma di divisione Fp fianco sinistro



## Errori singoli di divisione fp fianco destro



## Errore somma di divisione Fp fianco destro



Correa per misura divis.: 123.643 z=10.5mm

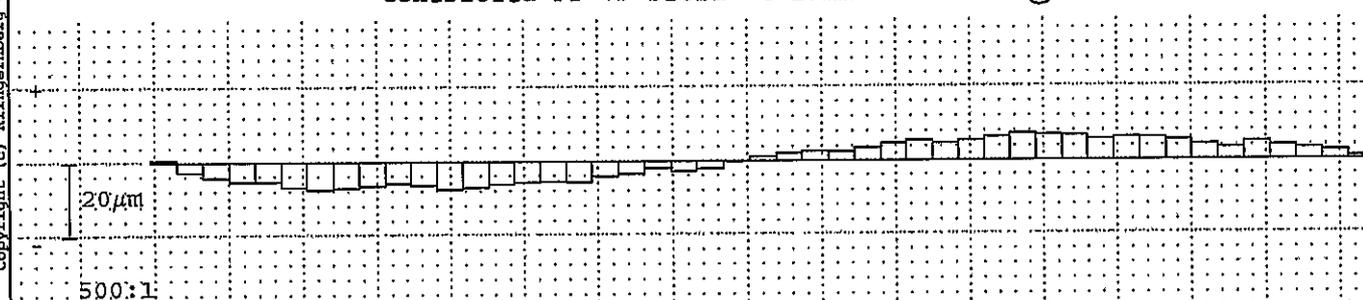
fianco sinistro / RILASCIO

fianco destro / TIRO

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1		11		2		11	
Gr. salto di passo fu max	1		14		2		14	
Scarto di divisione Rp	2				3			
Err. globale di divisione Fp	8		45		5		45	
Err. cordale di divisione Fpz/8	5				4			

Centricità Fr (Ø-sfera =4.25mm)

⊙ : 14 μm



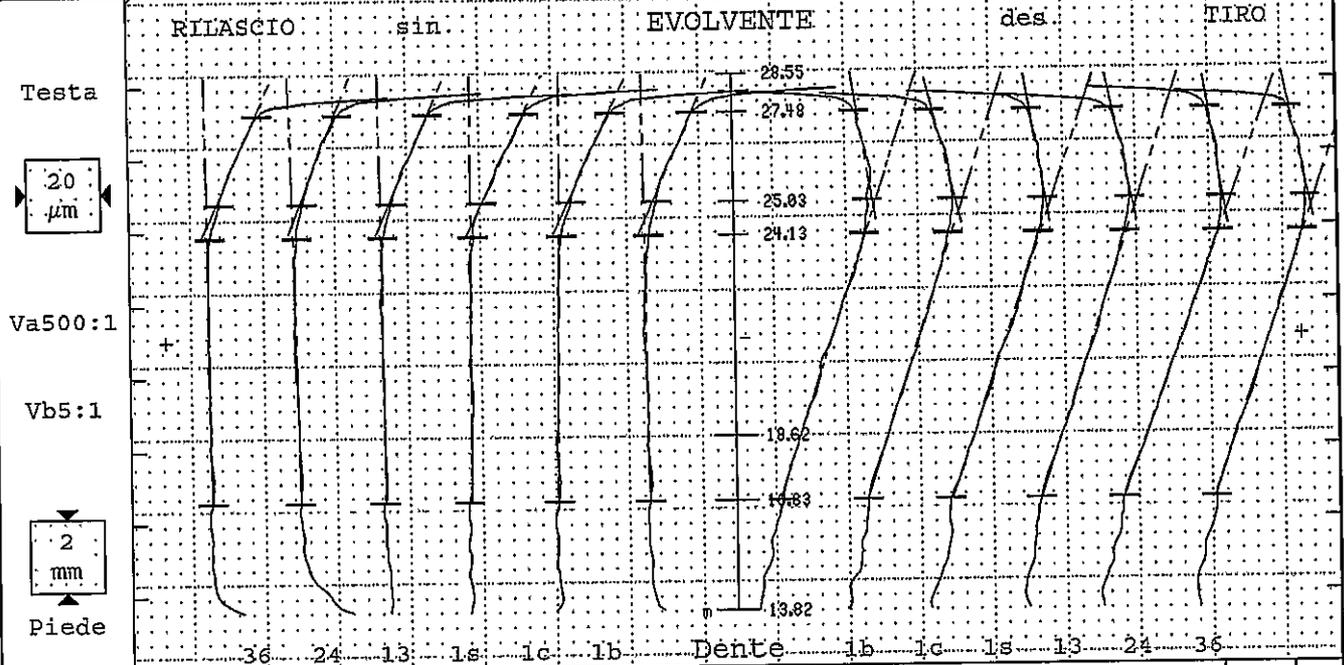
Err. di concentricità Fr	15	32	
Variac. spessore dente Rs			

**GETRAG**

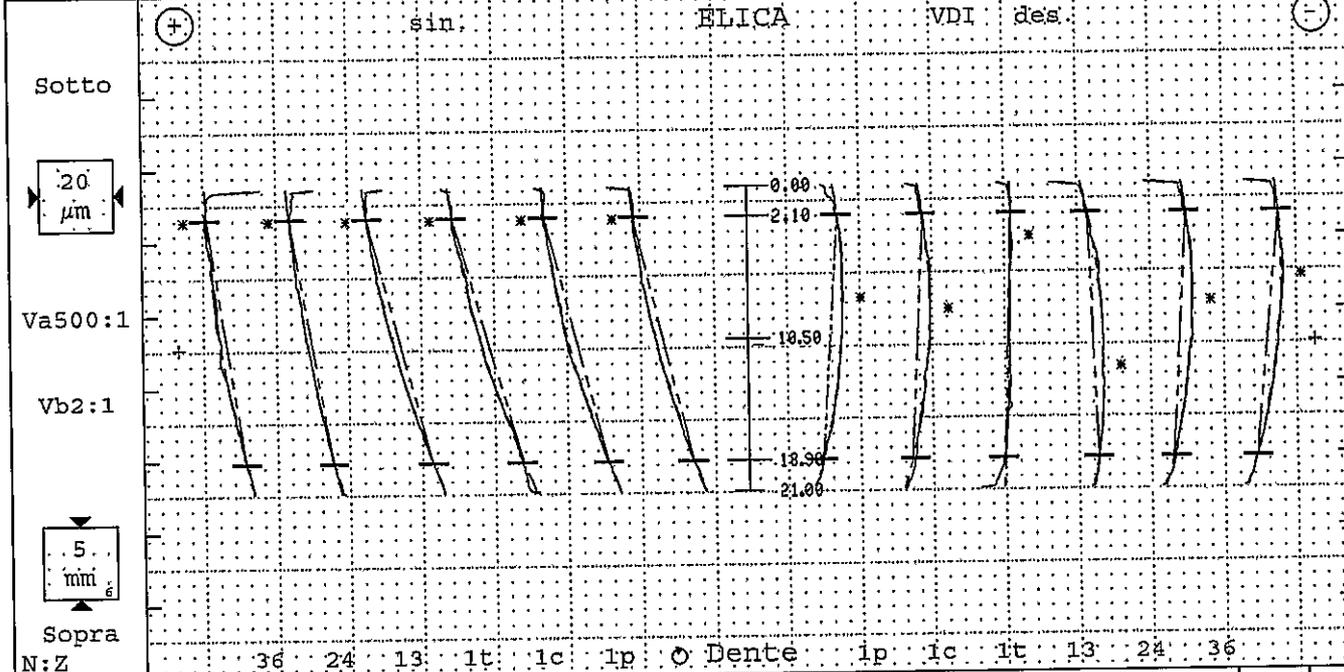
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 16:45
Denominazione:	SR1		Numero denti z	47	Largh.fasc.dent. b	21mm
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolvent. La	7.3mm
Comessa/serie nr.:	PPAP 3		Angolo pressione	20°	Tratto elica Lb	16.8mm
Masch.Nr.:	M001	Spindel: Formr. cilindrica	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		Ø Base db	117.9016mm	Palpatore Ø	(#1)1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat.scor.pr. x	- .696



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
		Var		2						25±4		Var		3			25			
fHm	±4	1								25±7	24	24	25	24	27	25	25			
fHr	±7	1	1	1	1	0	-1	1			2	2	1	2	2	1	2			
Fa		2	1	2	2	2	2	2		5	2	2	1	1	1	1	1			
ffa	5	1	1	1	1	1	1	2												
fKo -16/-8		-14	-14	-13	-14	-15	-13	-13		-10/-10	-13	-16	-14	-15	-15	-15	-15			
P/T-φ[mm]		117.483	[117.25/117.7]								130.744	[130.7/131]								



Tolerance	Medio	Val. misur [µm]									Qual	Tolerance	Val. misur [µm]									Medio	Qual
		Var		9								-5±4		Var		11			-4				
fHm	22±4	18										-5±8	-5	-4	-2	3	-5	-8	-4				
fHr	22±8	18	14	15	22	24	21	20				11	4	5	3	8	4	5	6				
FB	11	5	7	6	2	3	3	3			5	1	1	2	1	1	1	1	1				
ffa	5	1	2	1	1	1	1	1															
CB	0/5	2	2	1	2	2	2	2		0/5	3	3	1	3	3	3	3	3	3				
Bd	8±8	4																					

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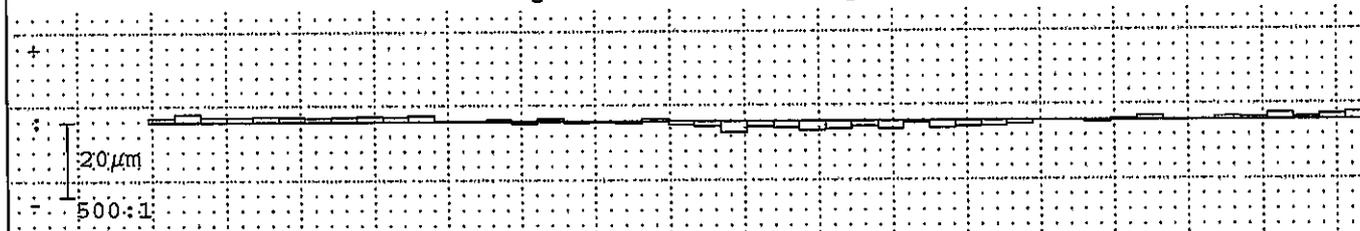
**GETRAG**

## Ruota cilindrica Divisione

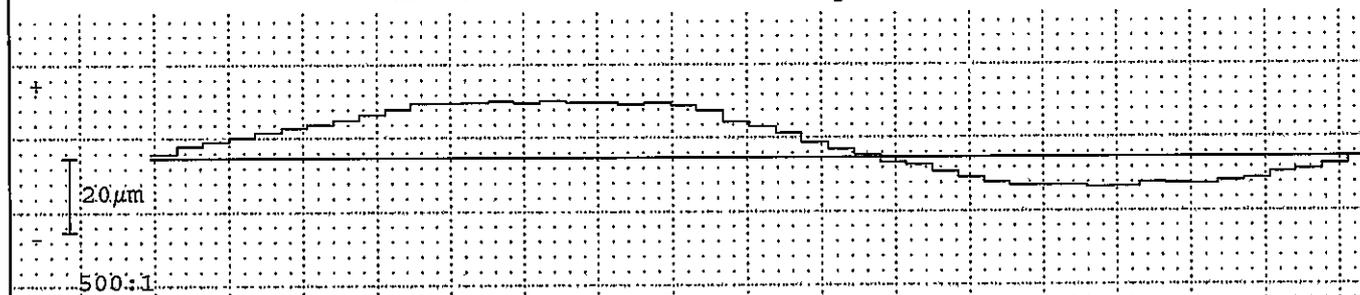


Nr. prog.:	STI041005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 16:45
Denominazione:	SR1		Numero denti z	47	Angolo pressione	20°
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Angolo elica	-25°
Commessa/serie nr.:	PPAP 3		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORMULAZIONE	Caricatore:	Charge:		

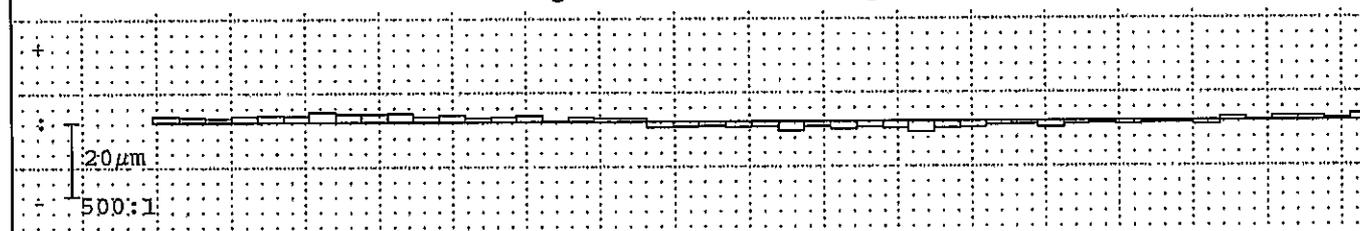
## Errori singoli di divisione fp fianco sinistro



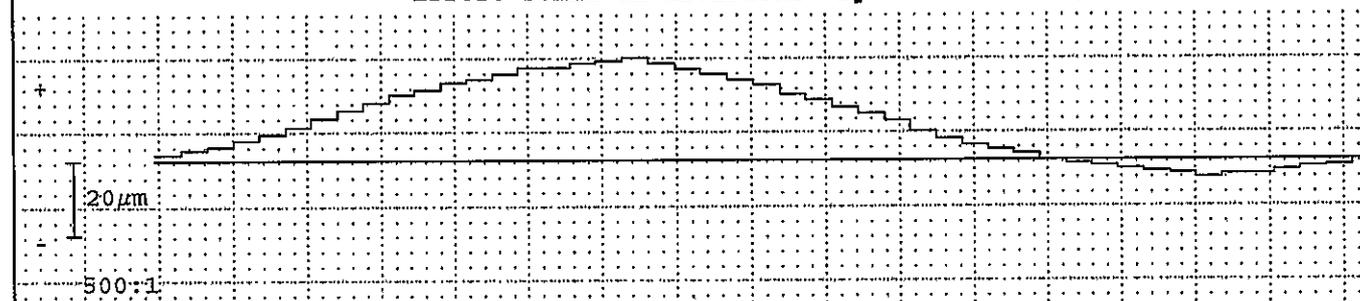
## Errore somma di divisione Fp fianco sinistro



## Errori singoli di divisione fp fianco destro



## Errore somma di divisione Fp fianco destro



Correa per misura divis.: 123.643 z=10.5mm

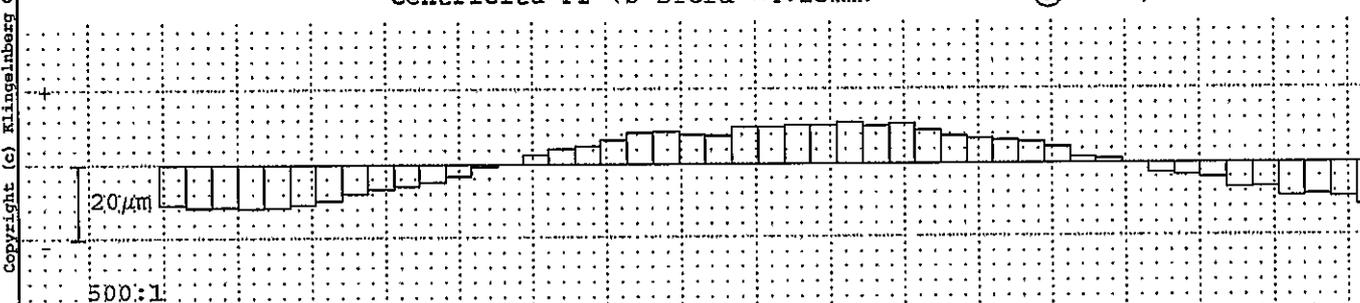
fianco sinistro / RILASCIO

fianco destro / TIRO

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3		11		3		11	
Gr. salto di passo fu max	2		14		2		14	
Scarto di divisione Rp	5				6			
Err. globale di divisione Fp	24		45		33		45	
Err. cordale di divisione Fpz/8	12				13			

Centricità Fr (Ø-sfera = 4.25mm)

⊙ : 22µm



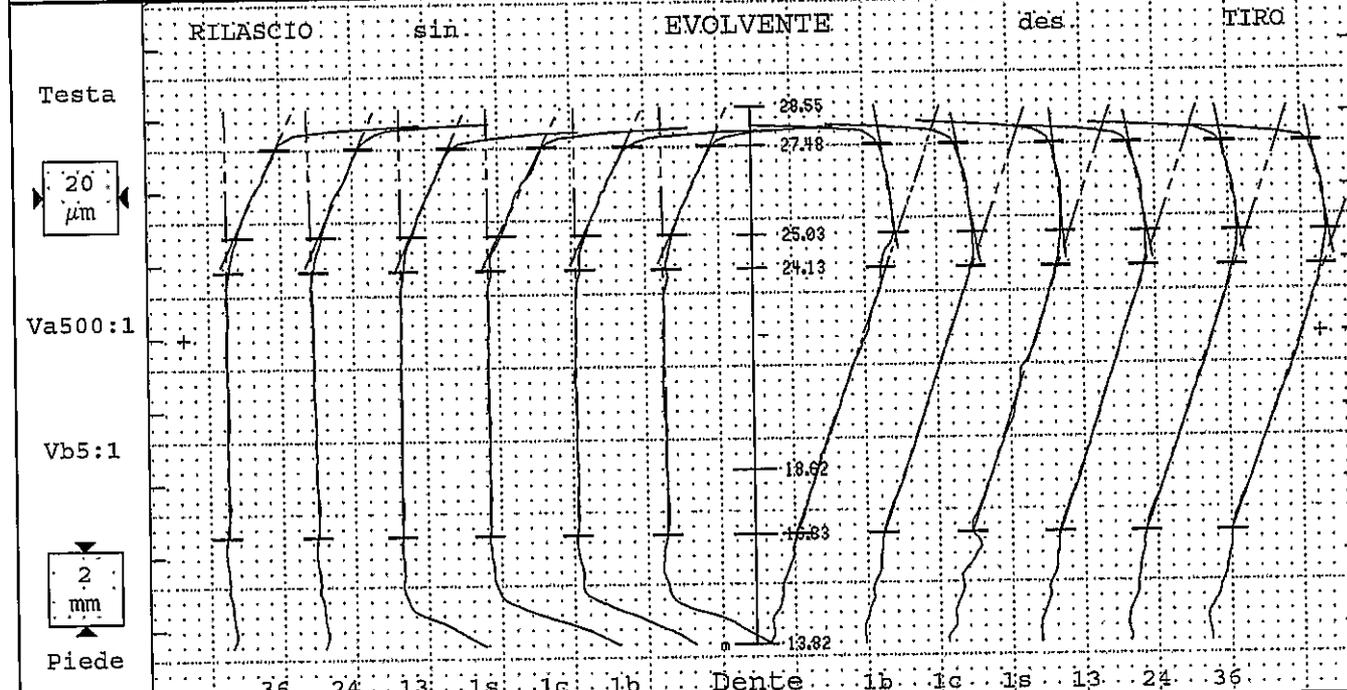
Err. di concentricità Fr	23	32	
Variaz. spessore dente Rs			

**GETRAG**

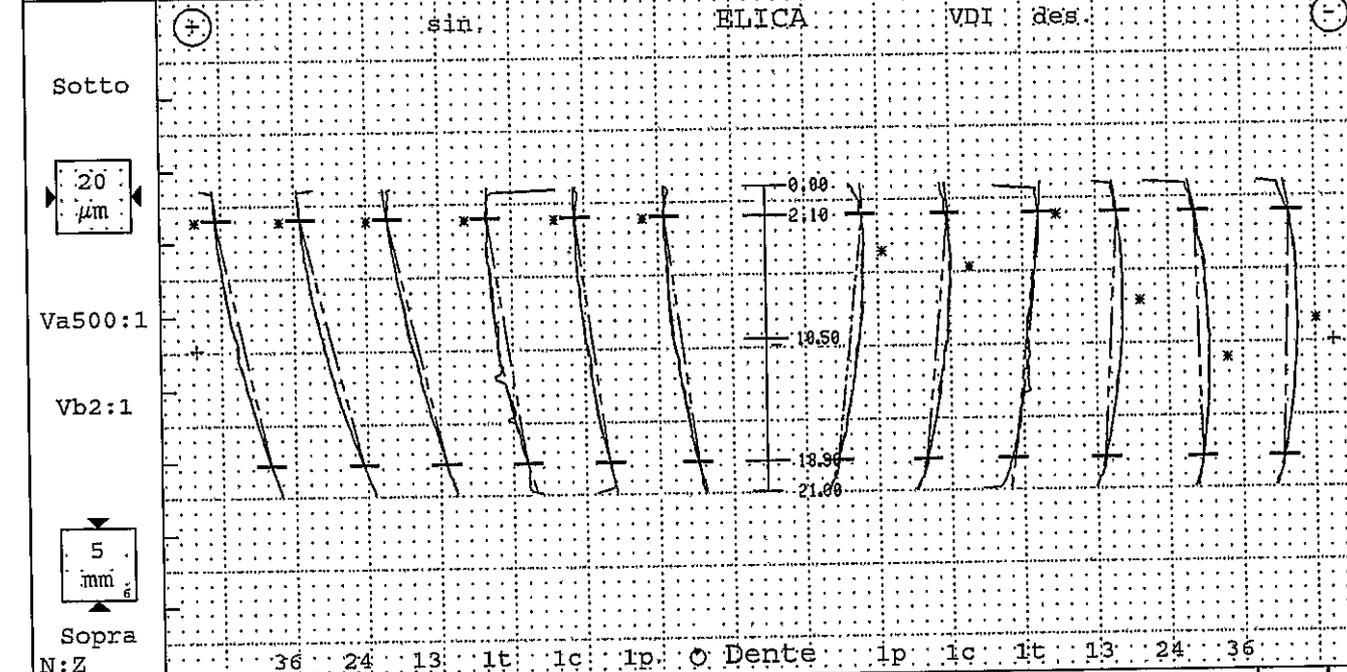
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 16:53
Denominazione:	SR1		Numero denti z	47	Largh.fasc.dent. b	21mm
Numero disegno:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolv. La	7.3mm
Comessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica LB	16.8mm
Masch.Nr.:	M001	Spindel: Forme	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		β Base db	117.9016mm	Palpatore β	(#1)1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat.scor.pr. x	- .696



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual	
fH <sub>sm</sub>	±4	0	Var 1							1	25±4	Var 2							25	
fH <sub>z</sub>	±7	0	0	1	0	0	0	0	1	25±7	26	25	24	24	25	26	25			
F <sub>α</sub>	2	1	2	1	1	2	2	2		2	1	2	2	1	2	2				
ff <sub>α</sub>	5	1	1	1	1	1	2	2	5	2	1	2	1	1	2	1				
fK <sub>o</sub> -16/-8	-14	-14	-14	-13	-15	-14	-13		-18/-10	-13	-15	-12	-15	-15	-16	-15				



fH <sub>sm</sub>	22±4	18	Var 10								-5±4	Var 10							-3
fH <sub>z</sub>	22±8	18	19	21	20	13	14	11		-5±8	-9	-8	-9	-5	2	-2	-3		
F <sub>B</sub>	11	5	4	3	3	10	9	9	11	5	4	4	4	7	5	5			
ff <sub>B</sub>	5	1	1	1	1	4	1	1	5	1	1	3	1	1	1	1			
CB	0/5	2	2	3	2	3	2	2	0/5	3	3	1	3	3	3	3			
Bd	8±8	2														0			

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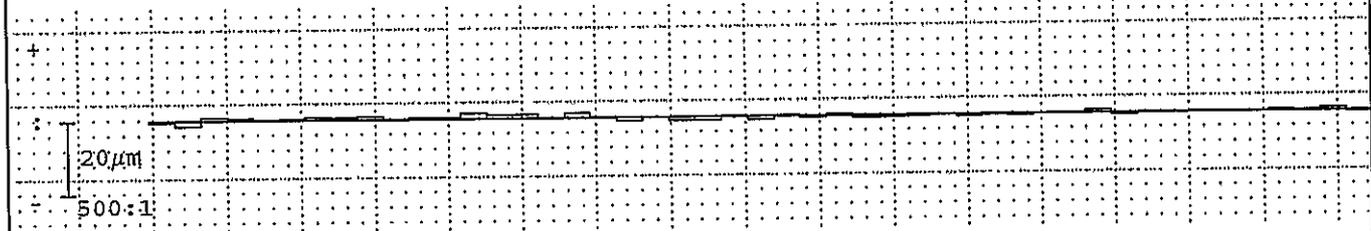
**GETRAG**

## Ruota cilindrica Divisione

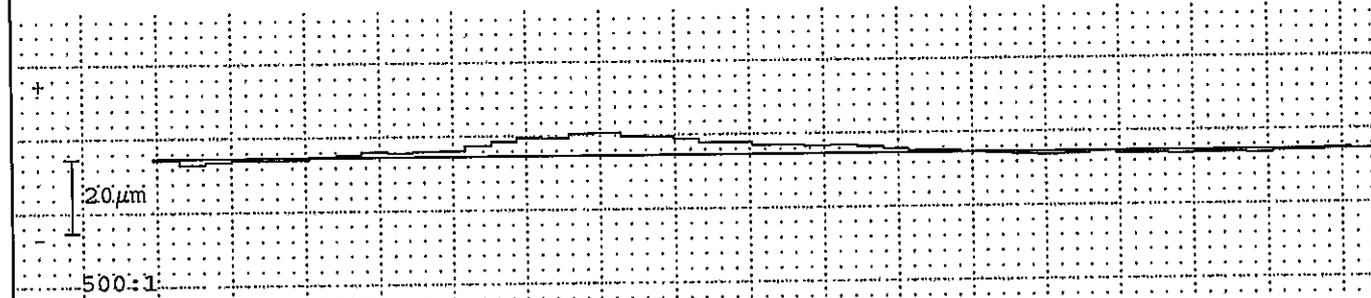


Nr. prog.: STI041005 0	PNC35 B4784	Controllore: TURNO c	Data: 10.01.2015 16:53
Denominazione: SRI		Numero denti z 47	Angolo pressione 20°
Numero disegno: 250.1.4309.75-IF		Module m 2.45mm	Angolo elicita -25°
Comessa/serie nr.: PPAP 4		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	spindel: FORM	Getrag:	Charge:

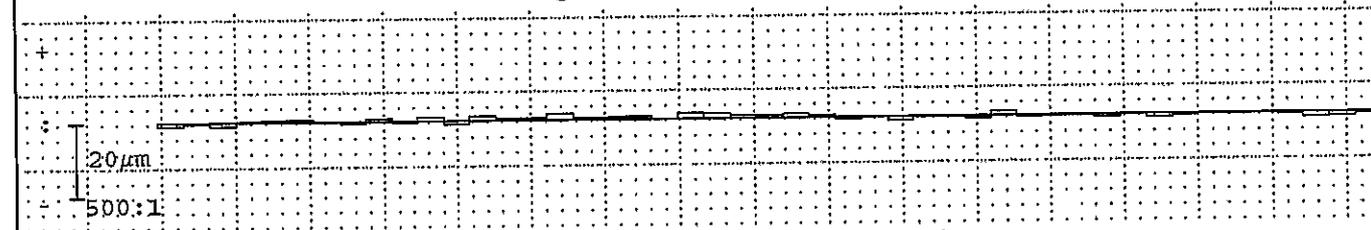
## Errori singoli di divisione fp fianco sinistro



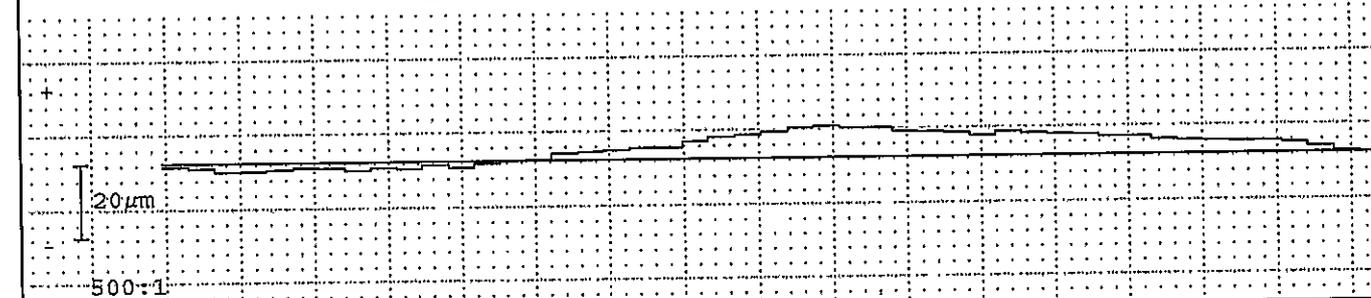
## Errore somma di divisione Fp fianco sinistro



## Errori singoli di divisione fp fianco destro



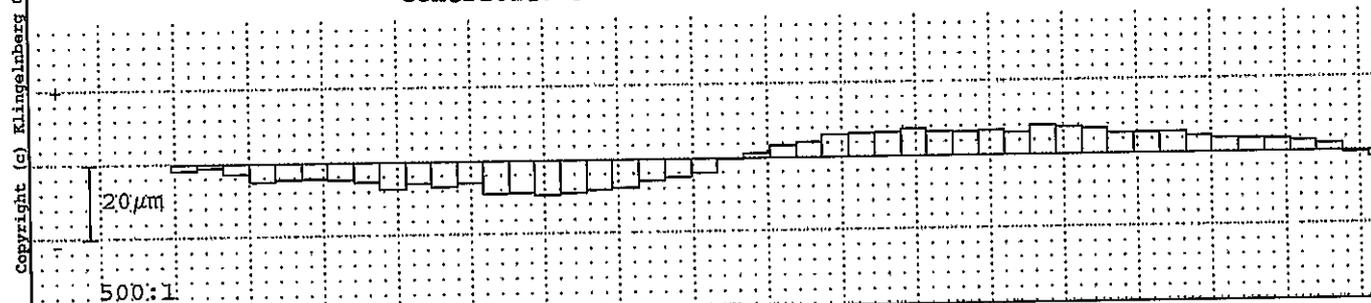
## Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 123.643 z=10.5mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. arr. singoli divisione fp max	1		11		2		11	
Gr. salto di passo fu max	2		14		2		14	
Scarto di divisione Rp	2				3			
Err. globale di divisione Fp	8		45		11		45	
Err. cordale di divisione Fpz/8	5				5			

## Centricità Fr (Ø-sfera =4.25mm)

⊙ : 15 μm



Err. di concentricità Fr	17	32	
Variac. spessore dente Rs			

GETRAG

Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	10.01.2015 16:58
Denominazione:	SRI		Numero denti z	47	Largh.fasc.dent. b	21mm
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolv. La	7.3mm
Commessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica LS	16.8mm
Masch.Nr.:	M001	Spindel: Formm	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		Ø Base db	117.9016mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat.scor.pr. x	-.696

RILASCTO

TIRO

Piede-Ø: 117.462mm [117.25/117.7]

Testa-Ø: 130.735mm [130.7/131]

VDI

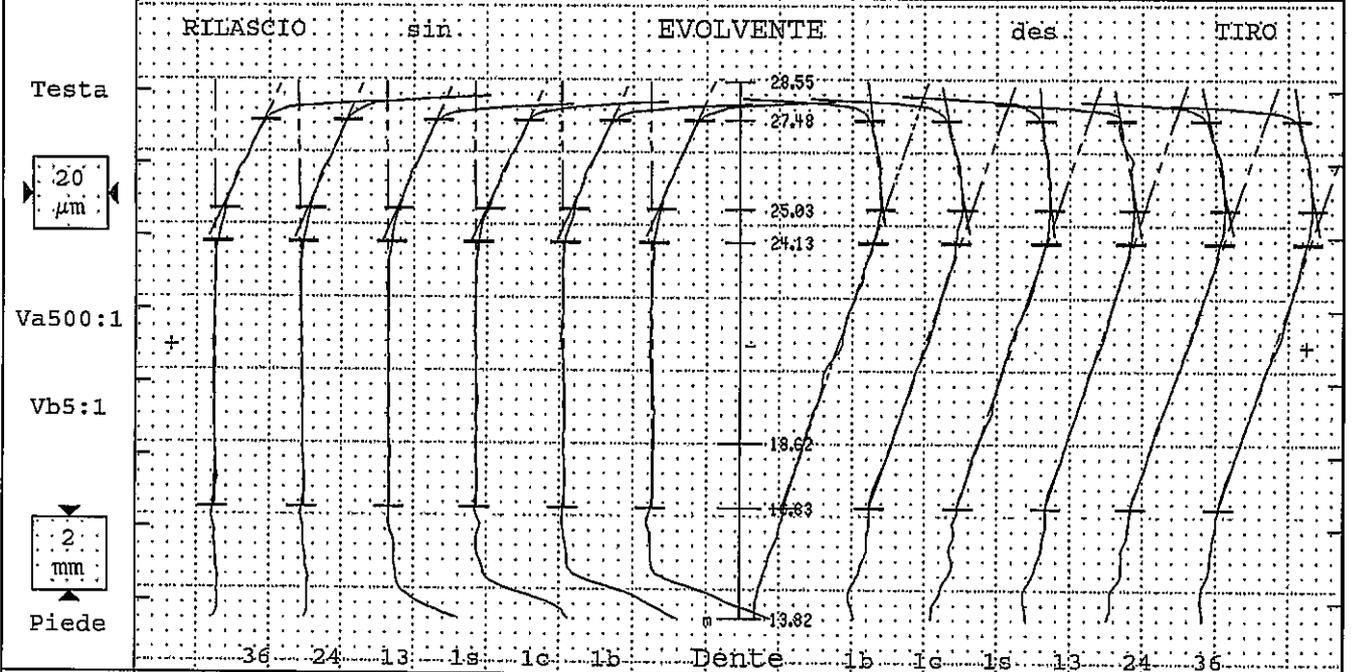


**GETRAG**

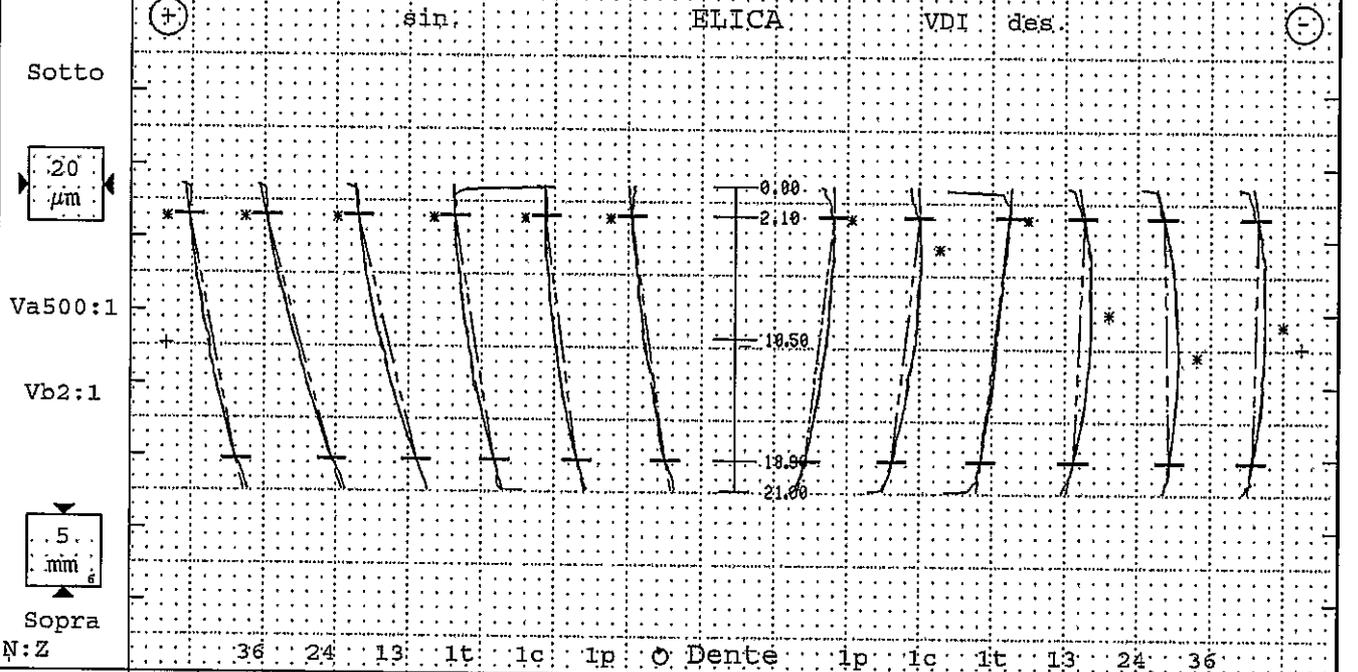
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 17:07
Denominazione:	SR1		Numero denti z	47	Largh.fasc.dent. b	21mm
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Tratto evolv. La	7.3mm
Commessa/serie nr.:	PPAP 5		Angolo pressione	20°	Tratto elica Lβ	16.8mm
Masch.Nr.:	M001	Spindel: Form	Angolo elica	-25°	Inizio elab. M1	16.83mm
Untersuchungszweck:	Laufende Messung		∅ Base db	117.9016mm	Palpatore ∅	(#1)1mm
Werkzeug:	Charge:		Ang. Base	-23.399°	Fat.scor.pr. x	- .696



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual		
fHm	±4	1	Var 1								25±4	Var 2							25		
fHr	±7	1	0	1	0	0	1	0		25±7	25	25	25	24	25	26	25				
Fα		1	1	2	1	1	1	1			2	2	2	2	1	2	2				
ffα	5	1	1	1	1	1	1	1		5	2	2	2	1	1	2	2				
fKα	-16/-8	-14	-13	-13	-14	-15	-14	-13		-10/-10	-12	-15	-13	-15	-15	-15	-15				
P/T-∅[mm]		117.478	[117.25/117.7]									130.741	[130.7/131]								



N:Z		36	24	13	1t	1c	1p	∅ Dente	1p	1c	1t	13	24	36					
fHSm	22±4	18	Var 12								-5±4	Var 12							-4
fHs	22±8	18	16	23	20	14	14	12		-5±8	-10	-10	-10	-4	2	-2	-4		
Fβ	11	5	5	2	3	7	9	9		11	5	5	4	4	7	5	5		
ffβ	5	1	1	1	1	1	1	1		5	1	1	1	1	1	1	1		
Cβ	0/5	2	1	1	2	2	2	1		0/5	2	3	1	3	3	3	3		
Bd	8±8	2															0		



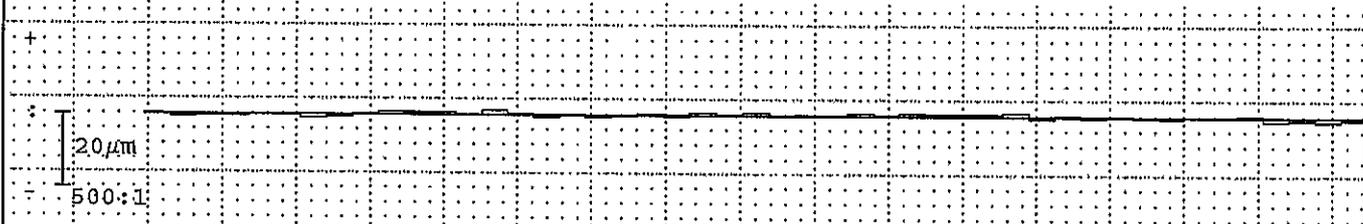
**GETRAG**

## Ruota cilindrica Divisione

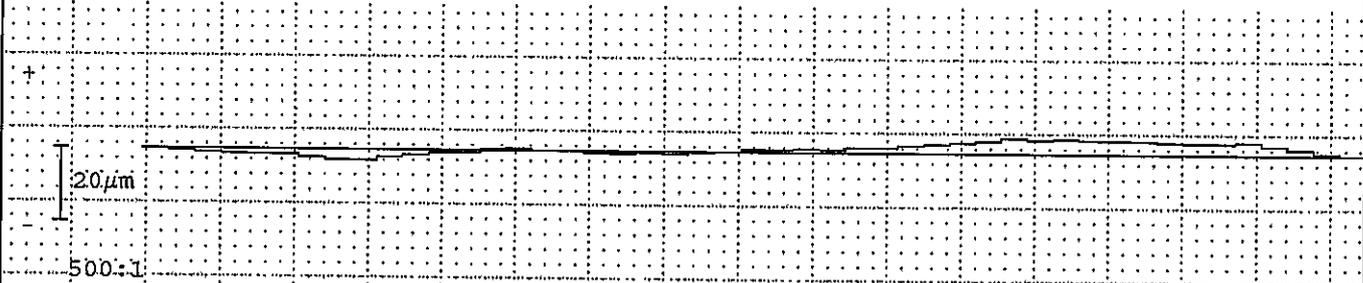


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	10.01.2015 17:07
Denominazione:	SRI		Numero denti z	47	Angolo pressione	20°
Numero disegno.:	250.1.4309.75-IF		Modulo m	2.45mm	Angolo elica	-25°
Commessa/serie nr.:	PPAP 5		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORMULAZIONE	Caricatore:	Charge:		

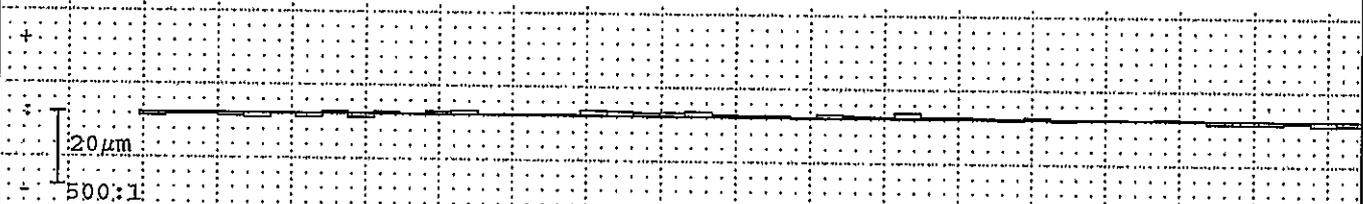
## Errori singoli di divisione fp fianco sinistro



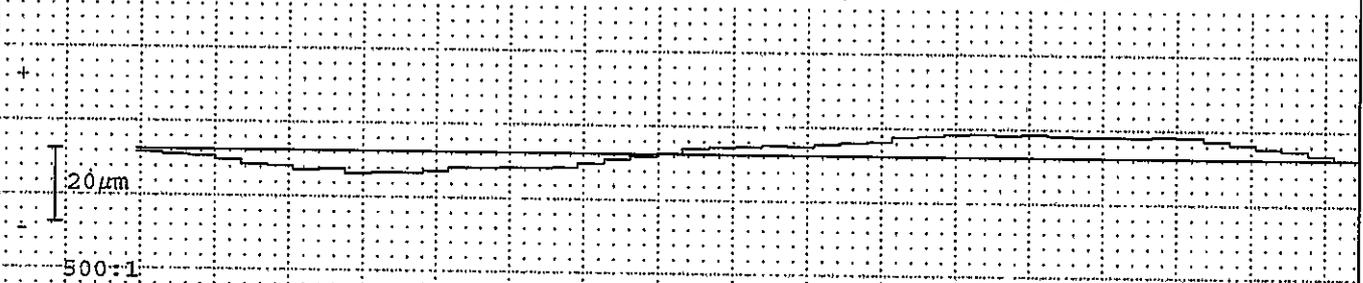
## Errore somma di divisione Fp fianco sinistro



## Errori singoli di divisione fp fianco destro



## Errore somma di divisione Fp fianco destro



Corso per misura divis.:123.643 z=10.5mm

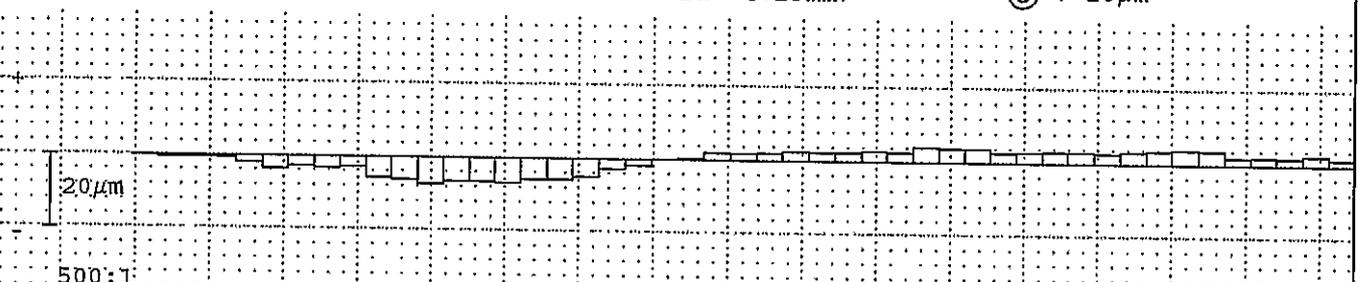
fianco sinistro / RILASCIO

fianco destro / TIRO

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1		11		2		11	
Gr. salto di passo fu max	1		14		2		14	
Scarto di divisione Rp	2				3			
Err. globale di divisione Fp	7		45		12		45	
Err. cordale di divisione Fp2/8	4				6			

## Centricità Fr (Ø-sfera =4.25mm)

⊙ : 10µm



Err. di concentricità Fr	12	32	
Variaz. spessore dente Rs			