

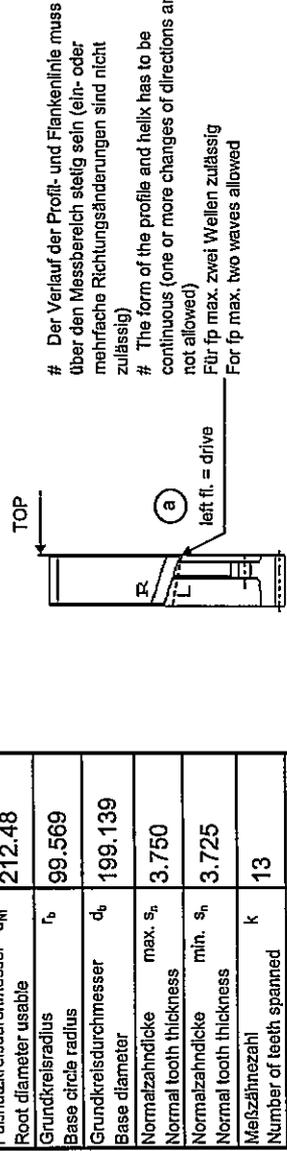
Part Name <b>Ring Gear</b>		Customer Part Number <b>250.1.3773.50</b>	
Shown on Drawing No. <b>250.1.3773.50</b>		Organization Part # _____	
Engineering Change Level <b>d 35426</b>		Dated <b>05 Dec 2011</b>	
Additional Engineering Changes _____		Dated _____	
Safety and/or Government Regulation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Purchase Order No. _____	
Weight (kg) <b>3,375</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>MODUGNO BARI</b>	<b>70026</b>	<b>ITALY</b>	<b>TYP 250</b>
City	Region	Postal Code	Country
_____	_____	_____	_____
<b>MATERIALS REPORTING</b>		Application _____	
Has customer-required Substances of Concern information been reported? Submitted by IMDS or other customer format: _____		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a	
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 checked="" 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.			
EXPLANATION / COMMENTS: <b>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>12 01 2015</b>	
Print Name <b>Pennacchia Vincenzo</b>		Phone No. <b>tel 390805858580</b>	
Title <b>GPS 1 Leader</b>		Fax No. _____	
_____		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>12.01.15</b>	
Print Name _____		Customer Tracking Number (optional) _____	



**STIRNRAD**  
**GEAR**

**Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978)**  
 gültig für Werte am Einzelzahn  
**Tolerances of gearing (DIN 3961 of Aug. 1978)**  
 valid for values at individual tooth

external außenverzahnt	linke Fl. left flank	rechte Fl. right flank	Eingriffsstellungs-Abweich. Normal pitch error	$f_{po}$	(7)
Zähnezahl Number of teeth				0.005	0.011
Modul Normal module					0.011
Eingriffswinkel Normal pressure angle					0.014
Schrägungswinkel Helix angle					0.032
Steigungsrichtung Hand of helix					
Profilverschiebungsfaktor Addendum modification coeff.					
Teilkreisdurchmesser Pitch diameter					
Kopfkreisdurchmesser Outside diameter					
Kopfnutkreis, theo. max. $d_{hs}$ Tip diam. usable theo.					
Kopfnutkreis, theo. min. $d_{ha}$ Tip diam. usable theo.					
Fußkreisdurchmesser Root diameter					
Fußnutkreisdurchmesser $d_{fr}$ Root diameter usable					
Grundkreisradius Base circle radius					
Grundkreisdurchmesser $d_b$ Base diameter					
Normalzahn dicke max. $s_n$ Normal tooth thickness					
Normalzahn dicke min. $s_n$ Normal tooth thickness					
Meßzähnezahl Number of teeth spanned					
Zahnweite max. $W_k$ Base tangent length					
Zahnweite min. $W_k$ Base tangent length					
Meßkugeldurchmesser $D_M$ Ball diameter					
Diam. Zweikugelmäß max. $M_{k1}$ Measurement o. balls					
Diam. Zweikugelmäß min. $M_{k2}$ Measurement o. balls					
Verdrehflankenspiel Circular backlash					

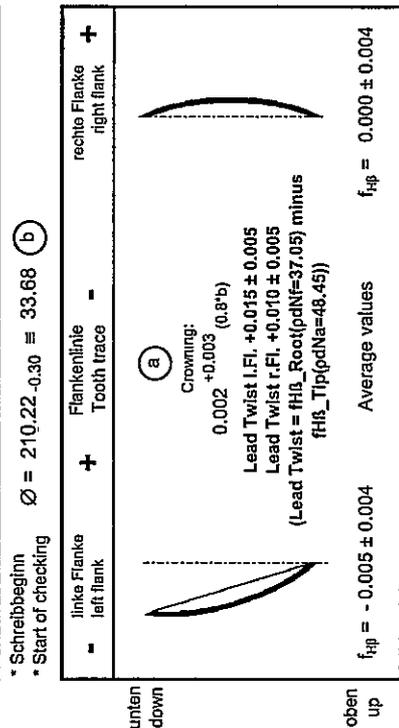
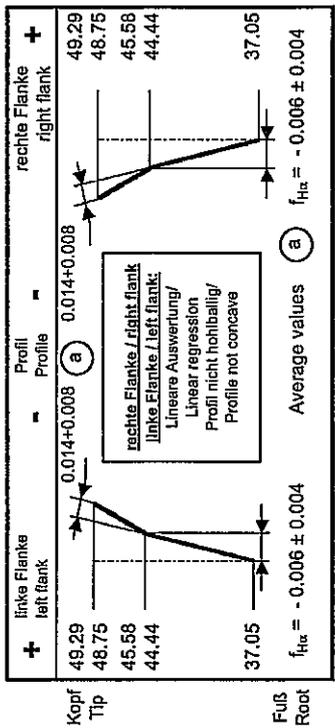


**Bezugsprofil-Schleifscheibe**  
**Grinding tool data**

Schleifscheibenkopfhöhe  $h_{p0.05} = 3.650$   
 Grinding wheel tip height

Schleifscheibenkopfradius  $R_{p0.05} = 0.850$   
 Grinding wheel tip radius

Schleifdurchmesser =  $209.82 - 0.30 = 33.05$   
 grinding diameter



\* Schreibbeginn  $\varnothing = 210.22 - 0.30 = 33.68$   
 \* Start of checking

$f_{H\beta} = -0.005 \pm 0.004$   
 Average values

$f_{H\beta} = 0.000 \pm 0.004$   
 Average values

unten down  
 oben up

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

Profil- und Flankenliniendruck nach VDI/VDE 2612  
 Tabellenwerte für  $F_p$  und  $f_{H\beta}$  sind auf die gesamte Radbreite im Meßkreis  $d_M$  bezogen  
 Flankenliniendruckbereich  $L_p = 0.8 \cdot b$  hochgerechnet auf  $1.0 \cdot b$   
 Begriffe für Stirnräder nach DIN 868, 3960, 3998

Profil und 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  $L_p = 0.8 \cdot b$  calculated to  $1.0 \cdot b$   
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

Verteiler:		Schutzvermerk nach ISO 16016 beachten Protection per ISO 16016	
b	3	35329	See change report
a	6	36262	See change report
Buch.	Antz.	Änd.Nr.	Datum
Abbildungen sind unverändert. Diagrams not to scale.			
Ersatz für Erstverwendung bei Getriebeprüf:			
250			
Name		Verzahnungsblatt Endkontrolle	
Datum		2009-05-13	
Name		Fabricant	
Name		Geprüft	
Name		Zeichnungsnummer	
Name		Drawing number	
Name		250.1.3773.50	

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

Witz-Profil siehe Werkzeugdatenblatt Nr. 250.1.3773.50  
 For Tooth profile, see tool data sheet number



## Istruzioni di controllo



PP Produzione GPS

Materiale: 2501377350

Descrizione: Corona

Operazione: 0230 Rettifica dentatura

Centro di lavoro: SLW14850 RETTIFICA DENTI RG

Indice del disegno finito:

Data emissione:

Data aggiornamento:

25.11.2014 / Vito Fiore

09.01.2015 / Rocco Tanzella

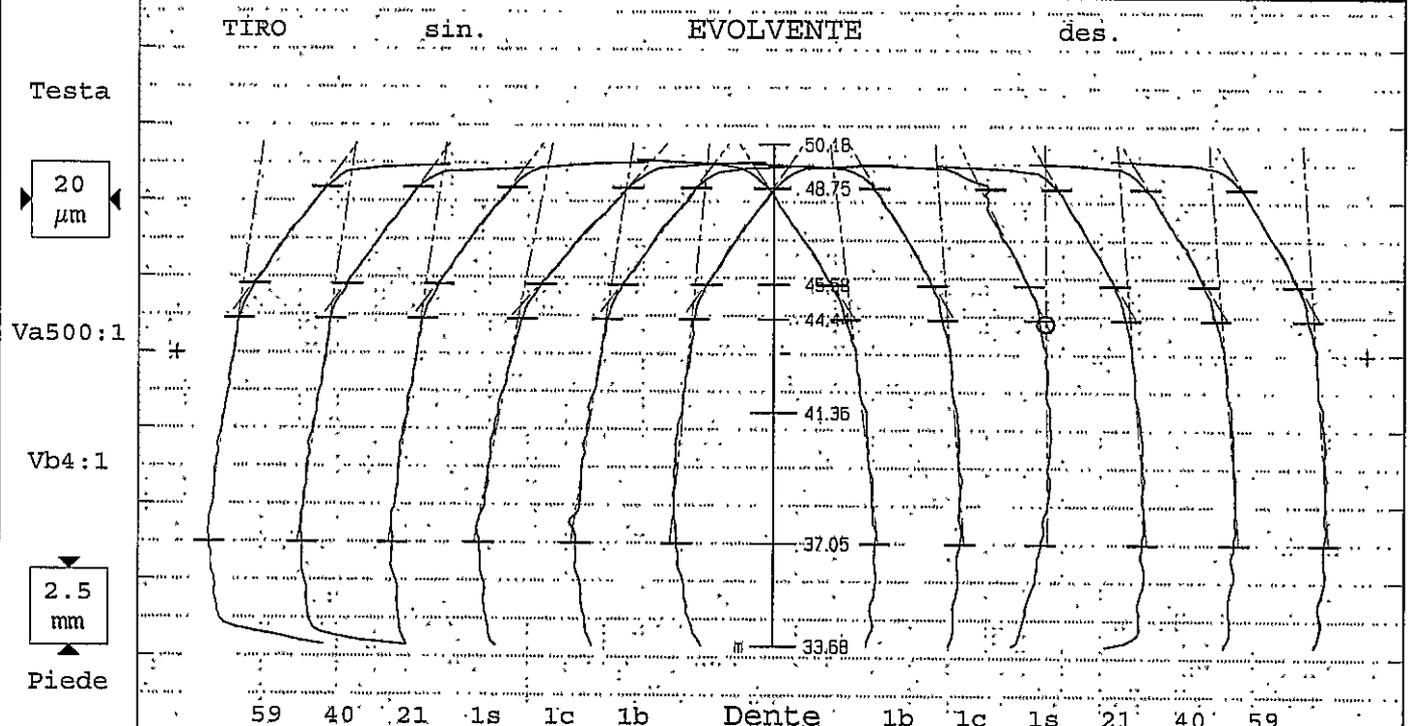
GN 3010	Caratteristica	Misura nom.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio fr	Metodi di gestione / Documentazione
0002	Controllo 1° pz secondo Gear data 250.1.3773.5X				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		CR1: controllo primo pezzo
0010	Diametro Mdk	220,456 mm	220,422	220,490	MOA-416121 RUGOSIMETRO TIPO PRK MZA-450311 Calcolatore di misura E9066 Marposs MZA-450311 Calcolatore di misura E9066 Marposs	3	pz ogni 100 per macchina				1° pz 2.3.1.1-R 2 1° pz 2.3.1.1-R 2 1° pz 2.3.1.1-R 2		CR1: calcolatore di misura
0020	Evolvente ed elica sec.G.D. con svegliamento				MVZ-400249 EVOLVENTIMETRO					1	pz ogni 100 per macchina		Misu: diagramma di dentatura
0030	SOMMA DI PASSO Fp	mm		0,045	MVZ-400249 EVOLVENTIMETRO					1	pz a turno/mac.		Misu: diagramma di dentatura
0040	OSCILLAZIONE RADIALE Fr	mm		0,032	MVZ-400249 EVOLVENTIMETRO					1	pz a turno/mac.		Misu: diagramma di dentatura
0042	Controllo ammacature del materiale da rettificare con ingranometro automatico (RZ303C)	mm		0,300	MRA-450155 Ingranometro automatico Reishauer RZ303C	1	100% di pezzi						CR1: calcolatore di misura
0050	RUGOSITA' Rz	0,0 µm	0,0	4,0	MOA-416121 RUGOSIMETRO TIPO PRK					1	1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo
0060	RUGOSITA' Rmax	0,0 µm	0,0	6,3	MOA-416121 RUGOSIMETRO TIPO PRK					1	1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo
0070	Controllo chimico bruciature secondo procedura WTL 3.4.10.01					1	pz cambio mola rettificata						CR1: controllo primo pezzo
0080	PRESENZA RETTIFICA INCOMPLETA					4	pz. per rack / macchina						

**GETRAG**

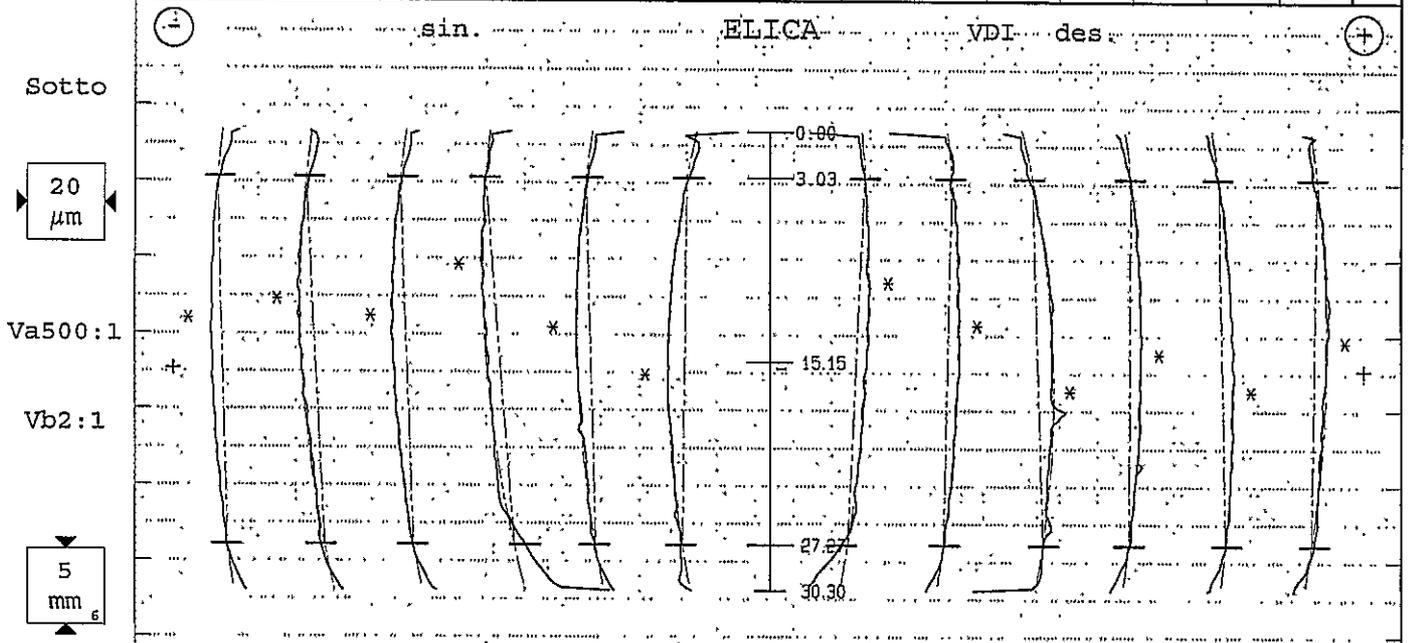
**Ruota cilindrica Evolvente/Elica**



Nr. prog.:	STI0410c05 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 14:57
Denominazione:	ring gear	Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF	Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 1	Angolo pressione	20°	Tratto elica L&	24.24mm
Masch.Nr.:	M001	spindel: Form. elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung	Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:	Ang. Base	27.102°	Fat.scor.pr. x	-.012



Tolerance	Medio	Val.misur [µm]							Qual	Tolerance	Val.misur [µm]							Medio	Qual	
fHm	-6±4	-9	Var 1								-6±4	Var 0							-4	
fHa	-6±7	-9	-8	-9	-9	-11	-9	-6		-6±7	-7	-4	-1	-4	-4	-4	-4	-4		
Fa	3	3	2	3	3	6	4	3		3	3	7	3	3	3	3	3			
ffa	5	2	2	2	2	2	3	3		5	3	2	3	2	2	2	2			
fko	-22/-14	-18	-18	-18	-18	-22	-18	-18		-22/-14	-17	-17	-17	-16	-17	-17	-17			



N:Z			Var 3								Var 5							
fHm	-5±4	-4	Var 3							±4	Var 5							1
fHb	-5±8	-4	-3	-6	-4	-9	-3	2		±8	6	3	-3	1	-2	2	1	
Fb	3	3	2	3	3	7	4	8		6	3	8	2	3	4	3		
ffb	5	2	1	2	1	4	2	1		5	3	1	4	2	1	2		
Cb	2/5	4	3	4	4	4	3	4		2/5	3	3	4	3	3	3		
Bd	15±5	11								10±5							9	





Nr. prog.:	STI0410005 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 14:57
Denominazione:	ring gear	Numero denti z	77	Angolo pressione	20°
Numero disegno.:	250.1.3773.50-IF	Modulo m	2.45mm	Angolo elicita	29°
Comessa/serie nr.:	PPAP 1	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel:	FORMA	Charge:	

**Errori singoli di divisione fp fianco sinistro**



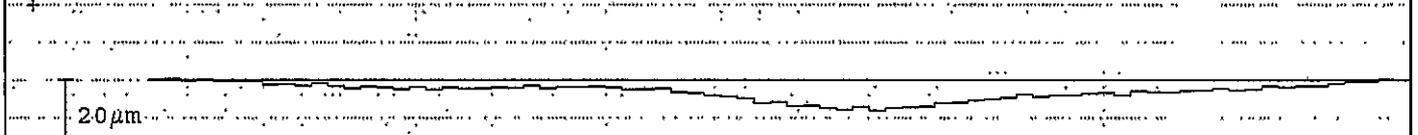
**Errore somma di divisione Fp fianco sinistro**



**Errori singoli di divisione fp fianco destro**



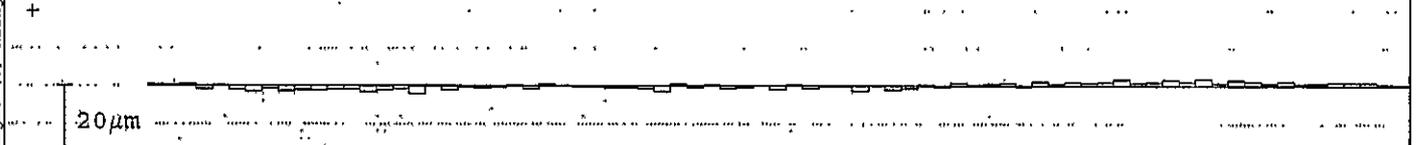
**Errore somma di divisione Fp fianco destro**



500:1

Corso per misura divis. : 215.636 z=15.2mm	fianco sinistro / TIRO				fianco destro			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1		11		1		11	
Gr. salto di passo fu max	2		14		2		14	
Scarto di divisione Rp	2				2			
Err. globale di divisione Fp	8		45		8		45	
Err. cordale di divisione Fpz/8	5				5			

**Centricità Fr (Ø-sfera =4.25mm)      ⊙ : 2µm**



Err. di concentricità Fr	4	32		
Variaz. spessore dente Rs				

GETRAG

Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 16:02
Denominazione:	ring gear		Numero denti z	77	largh. fasc. dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. Ia	7.39mm
Commessa/serie nr.:	PPAP 1		Angolo pressione	20°	Tratto elica L8	24.24mm
Masch.Nr.:	M001	Spindel: Formel	Angolo elicale	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat. scor. pr. x	- .012

TIRO

Piede-Ø: 207.717mm [207.65/208.1]

Testa-Ø: 222.817mm [222.7/223]

VDI

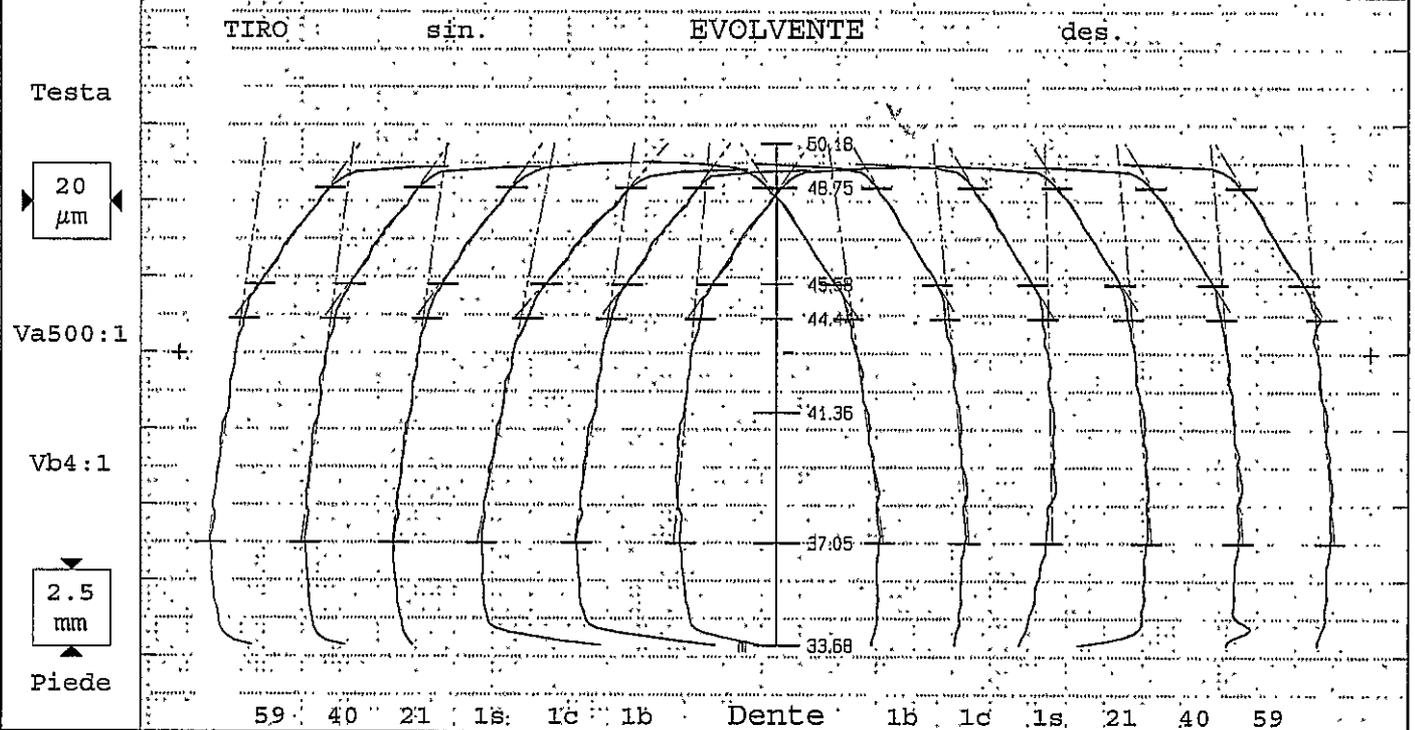


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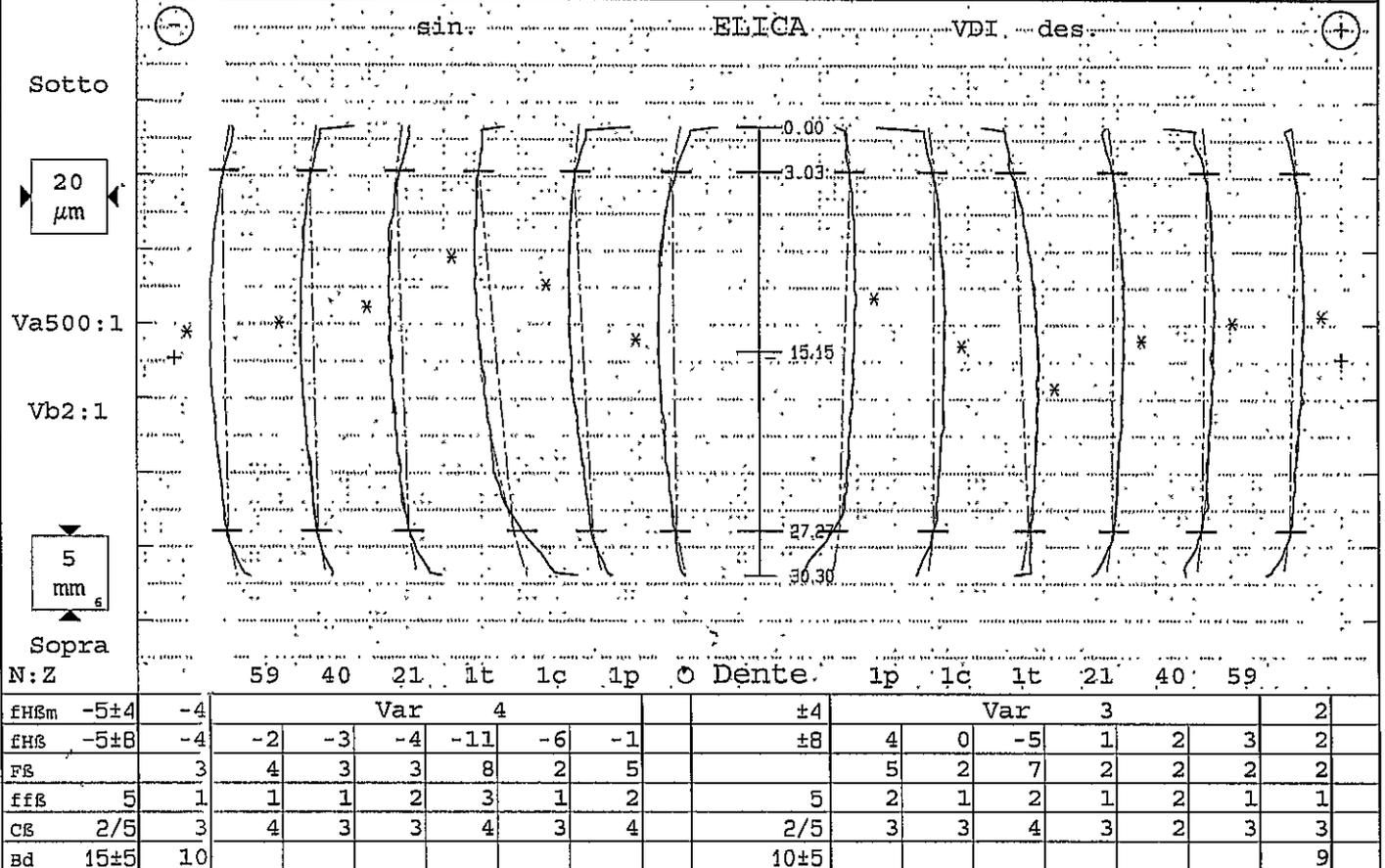
**Ruota cilindrica Evolvente/Elica**



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 15:49
Denominazione:	ring gear		Numero denti z	77	Largh. fasc. dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 2		Angolo pressione	20°	Tratto elica Ls	24.24mm
Masch.Nr.:	M001	Spindel: Form	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat. scor. pr. x	- .012



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fHcm	-6±4	-8	Var 1								-6±4	Var 0							-5	
fHc	-6±7	-8	-8	-8	-11	-9	-5		-6±7	-8	-5	-1	-5	-5	-5	-5				
Fa	3	3	3	3	6	3	3			4	2	6	3	3	4	3				
ffa	5	2	2	2	3	2	3		5	2	2	3	2	2	3	2				
fXo	-22/-14	-18	-18	-18	-22	-18	-19		-22/-14	-17	-16	-19	-16	-16	-16	-16				



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fHBm	-5±4	-4	Var 4								±4	Var 3							2	
fHB	-5±8	-4	-2	-3	-4	-11	-6	-1		±8	4	0	-5	1	2	3	2			
FB	3	4	3	3	8	2	5			5	2	7	2	2	2	2				
ffb	5	1	1	1	2	3	1	2		5	2	1	2	1	2	1				
CB	2/5	3	4	3	3	4	3	4		2/5	3	3	4	3	2	3				
Bd	15±5	10									10±5									9





Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 15:49
Denominazione:	ring gear		Numero denti z	77	Angolo pressione	20°
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Angolo elica	29°
Commessa/serie nr.:	PPAP 2		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORMER	Werkzeug:		Charge:	

**Errori singoli di divisione fp fianco sinistro**

20µm  
500:1

**Errore somma di divisione Fp fianco sinistro**

20µm  
500:1

**Errori singoli di divisione fp fianco destro**

20µm  
500:1

**Errore somma di divisione Fp fianco destro**

20µm  
500:1

	Corsa per misura divis.: 215.636 z=15.2mm							
	fianco sinistro / TIRO				fianco destro			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1		11		8		11	
Gr. salto di passo fu max	1		14		16	X	14	
Scarto di divisione Rp	2				16			
Err. globale di divisione Fp	12		45		16		45	
Err. cordale di divisione Fpz/8	6				10			

**Centricità Fr (Ø-sfera =4.25mm) Ⓞ : 12µm**

20µm  
500:1

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

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GETRAG

Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 16:01
Denominazione:	ring gear		Numero denti z	77	largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 2		Angolo pressione	20°	Tratto elica LE	24.24mm
Masch.Nr.:	M001	spindel: Form	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Pat.scor.pr. x	- .012

TIRO

Piede-Ø: 207.717mm [207.65/208.1]

Testa-Ø: 222.828mm [222.7/223]

VDI

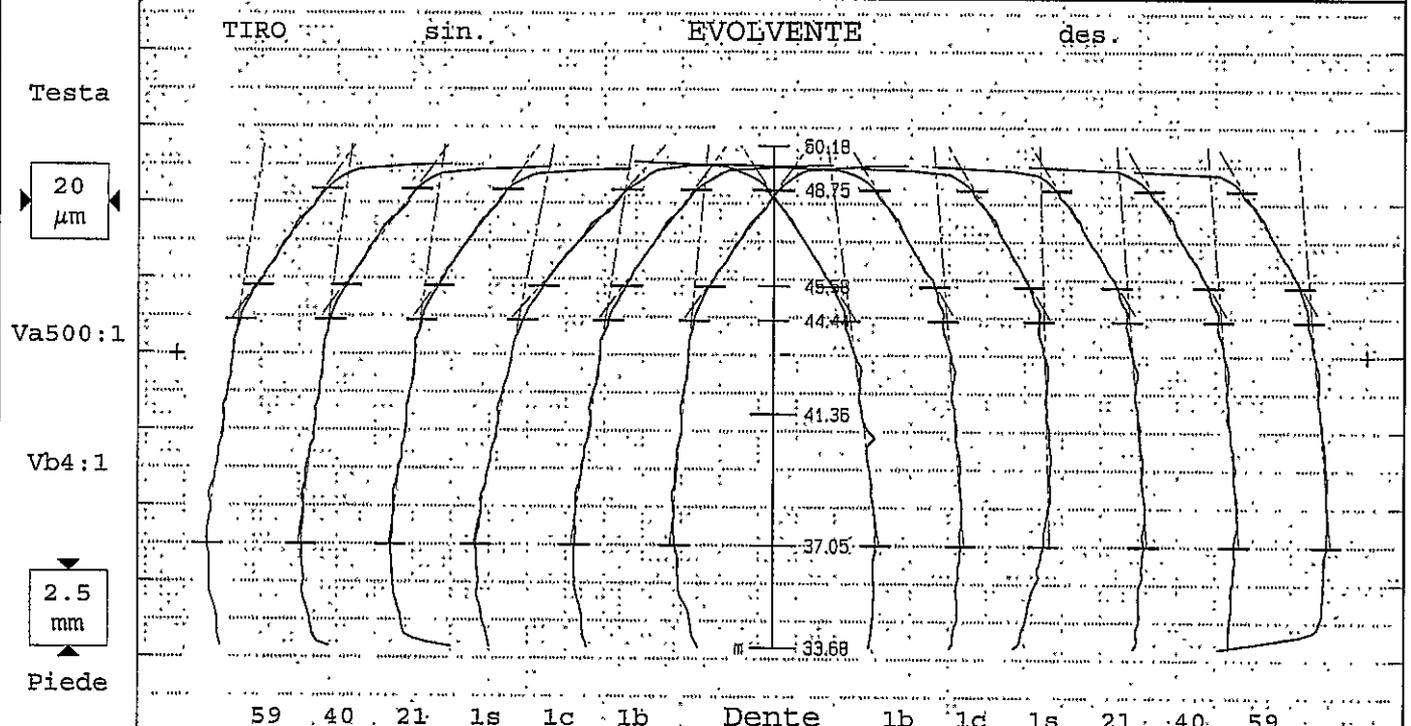


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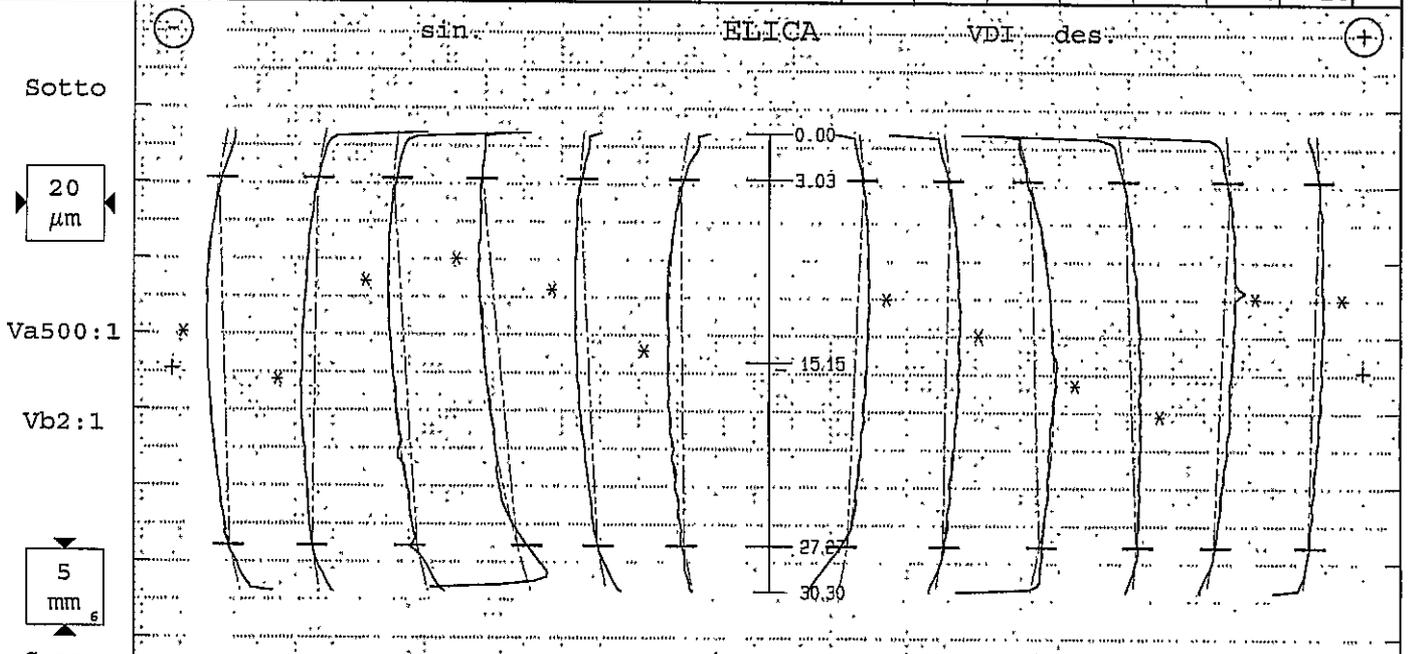
**Ruota cilindrica Evolvente/Elica**



Nr. prog.:	STI0410c05 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 15:40
Denominazione:	ring gear		Numero denti z	77	Largh. fasc. dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 3		Angolo pressione	20°	Tratto elica Ls	24.24mm
Masch.Nr.:	M001	Spindel: Form	Ang. elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat. scor. pr. x	- .012



Tolerance	Medio	Val. misur [ $\mu$ m]							Qual	Tolerance	Val. misur [ $\mu$ m]							Medio	Qual	
fHm	-5 $\pm$ 4	-9	Var 1								-5 $\pm$ 4	Var 1							-5	
fHa	-6 $\pm$ 7	-9	-9	-8	-8	-12	-9	-5		-6 $\pm$ 7	-8	-5	-2	-4	-5	-5	-5			
Fa	4	4	4	3	3	6	4	2		5	3	6	3	3	3	3				
ffa	5	1	1	1	1	2	2	2		5	4	3	3	2	2	2				
fRo	-22/-14	-18	-18	-18	-18	-21	-18	-19		-22/-14	-17	-16	-18	-16	-15	-15				



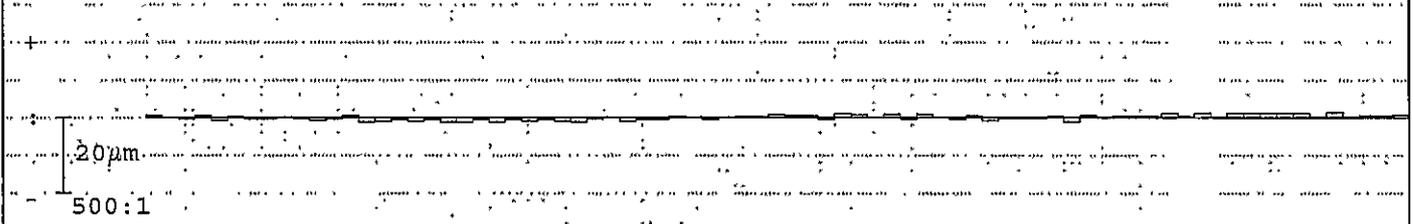
N: Z		Var 10								Var 9								
fHm	-5 $\pm$ 4	-4	Var 10								Var 9							2
fHB	-5 $\pm$ 8	-4	-3	2	-8	-11	-6	-1		$\pm$ 4	Var 9							2
FB	4	4	4	6	3	37	2	5		$\pm$ 8	5	3	-3	-4	5	4		
ffb	5	2	1	1	3	4	1	2		5	6	3	6	4	6	3		
CB	2/5	4	4	3	4	4	3	4		5	2	1	2	1	4	1		
Bd	15 $\pm$ 5	10								2/5	3	3	5	3	3	2		
										10 $\pm$ 5						8		



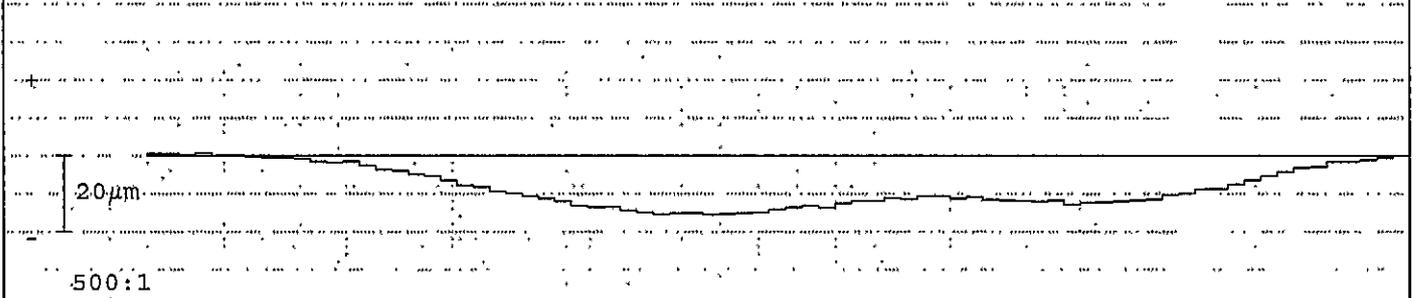


Nr. prog.:	STI0410005 0 PNC35 B4784	Controllatore:	TURNO C	Data:	07.01.2015 15:40
Denominazione:	ring gear	Numero denti z	77	Angolo pressione	20°
Numero disegno.:	250.1.3773.50-IF	Modulo m	2.45mm	Angolo elica	29°
Comessa/serie nr.:	PPAP 3	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel:	Formn	Charge:	

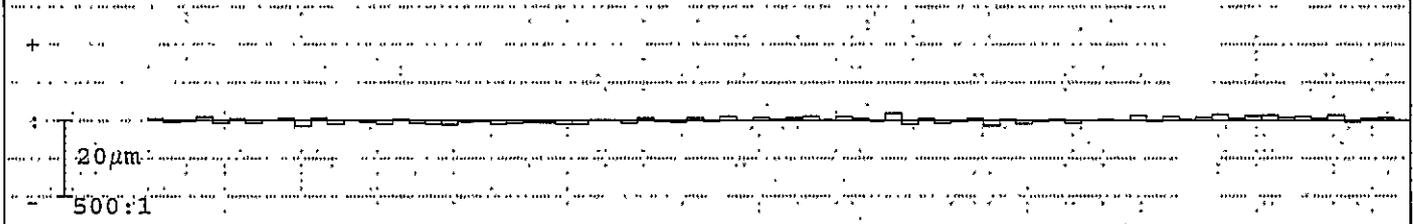
**Errori singoli di divisione fp fianco sinistro**



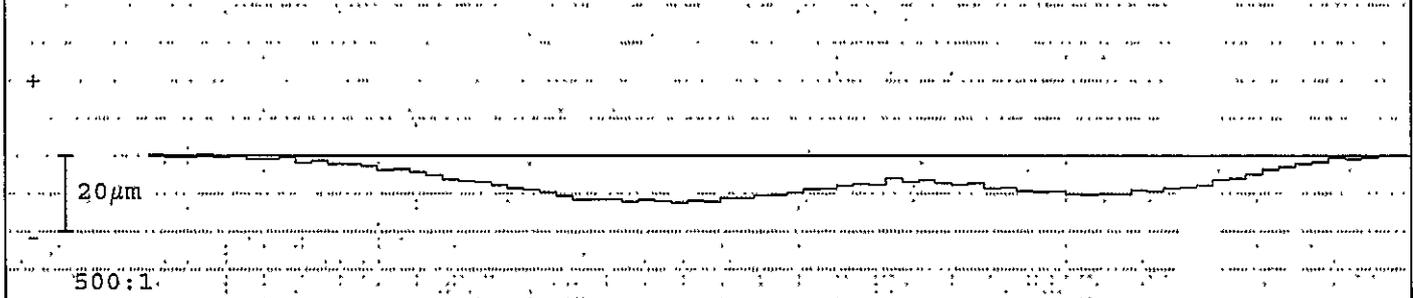
**Errore somma di divisione Fp fianco sinistro**



**Errori singoli di divisione fp fianco destro**

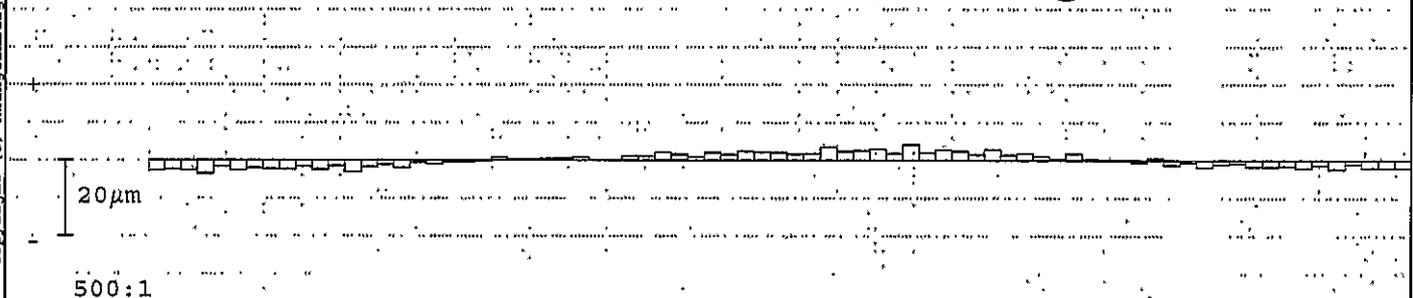


**Errore somma di divisione Fp fianco destro**



Corsa per misura divis.: 215.636 z=15.2mm	fianco sinistro / TIRO				fianco destro			
	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		3		14	
Scarto di divisione Rp	2				3			
Err. globale di divisione Fp	16		45		13		45	
Err. cordale di divisione Fpz/8	9				8			

**Centricità Fr (Ø-sfera =4.25mm) Ⓞ : 5µm**



Err. di concentricità Fr	8	32		
Variatz. spessore dente Rs				

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Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410o05 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 16:04
Denominazione:	ring gear		Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 3		Angolo pressione	20°	Tratto elica LS	24.24mm
Masch.Nr.:	M001	Spindel: Forming	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat.scor.pr. x	- .012

TIRO

Piede-Ø: 207.717mm [207.65/208.1]

Testa-Ø: 222.888mm [222.7/223]

VDI

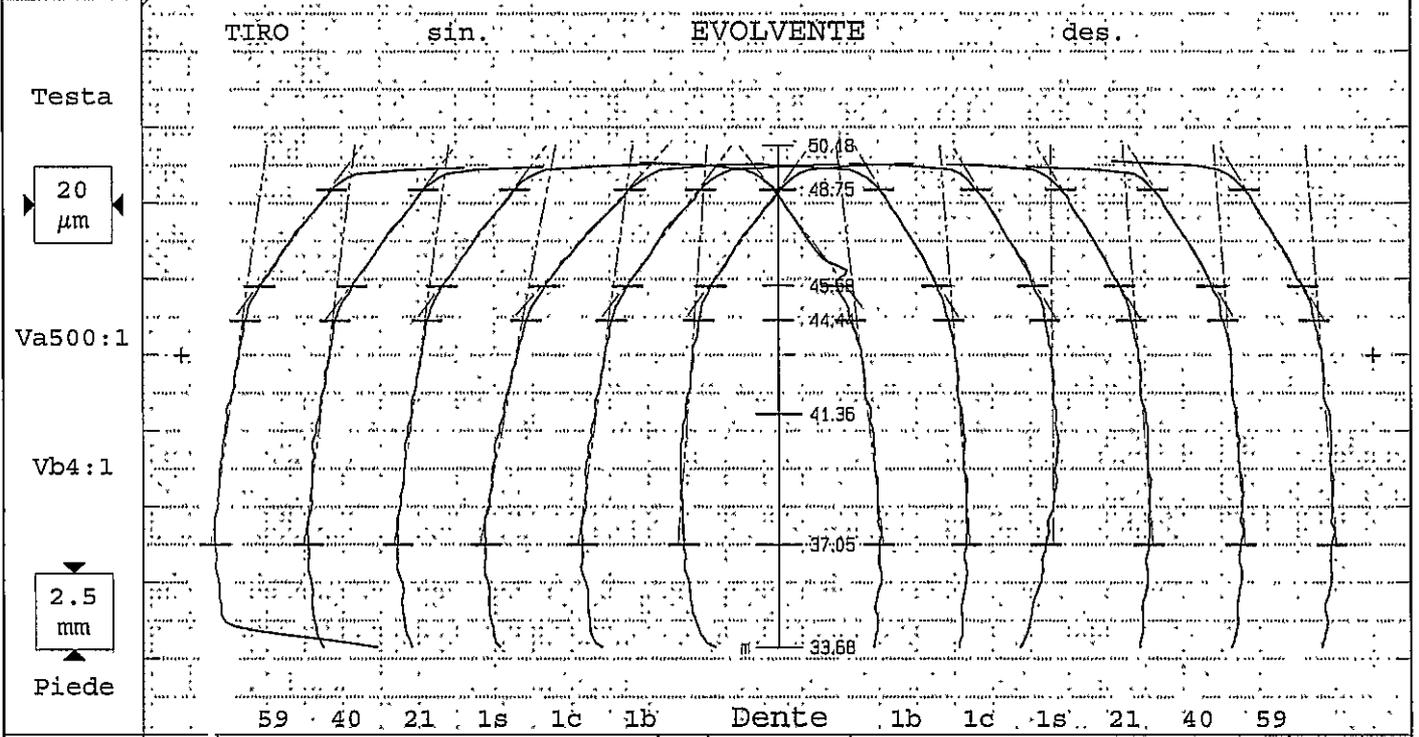


**GETRAG**

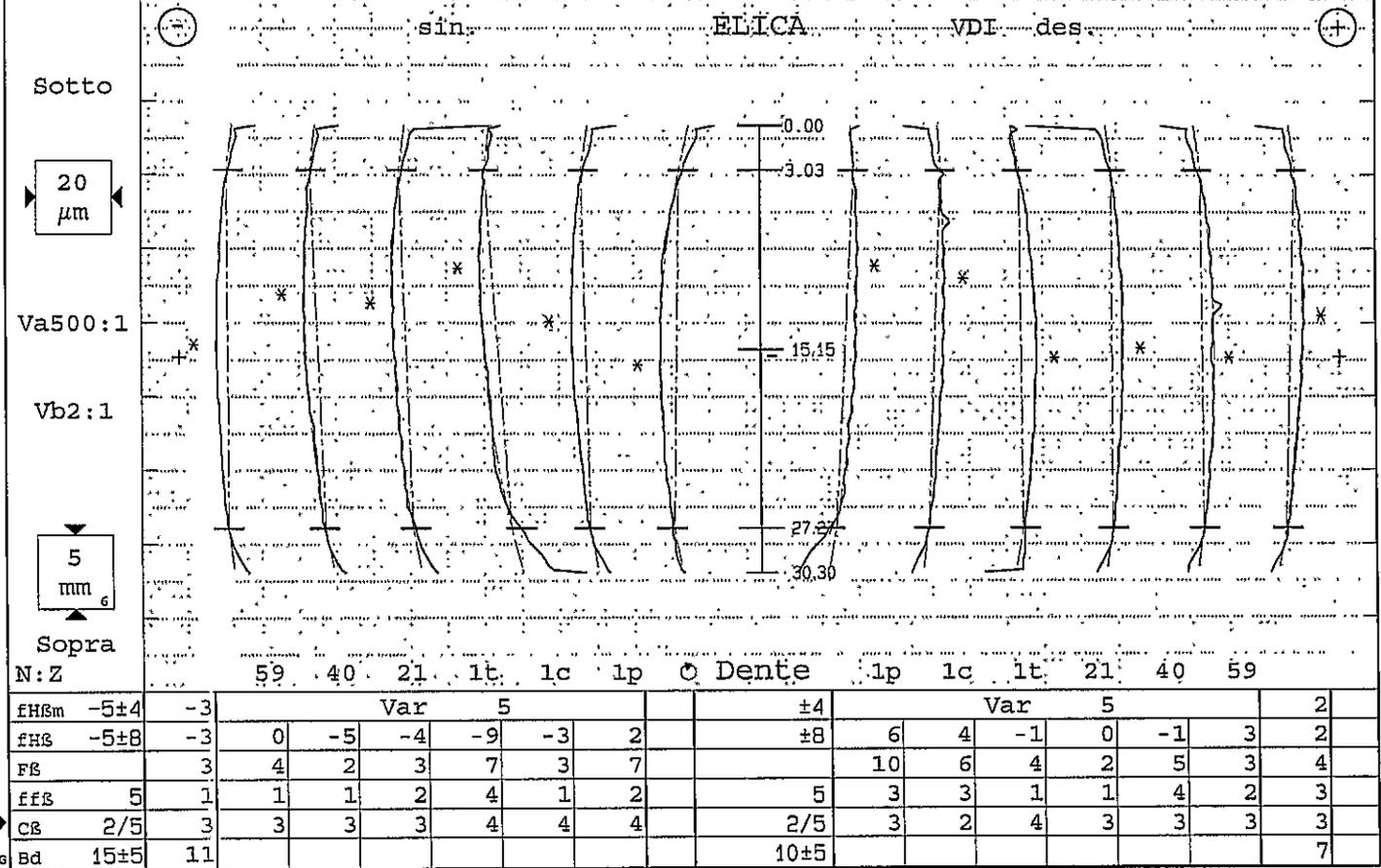
**Ruota cilindrica Evolvente/Elica**



Nr. prog.:	STIO410o05 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 15:04
Denominazione:	ring gear		Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica L&S	24.24mm
Masch.Nr.:	M001	Spindel: Forming	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat.scor.pr. x	-.012



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fH <sub>om</sub>	-6±4	-8	Var 0								-6±4	Var 1							-4	
fH <sub>a</sub>	-6±7	-8	-8	-8	-11	-8	-4		-6±7	-7	-4	0	-4	-5	-4	-4				
F <sub>a</sub>	3	3	3	3	6	3	4		3	3	7	3	3	3	3					
ff <sub>a</sub>	5	2	2	2	2	3	2	3	5	3	2	4	2	2	2					
fK <sub>o</sub>	-22/-14	-19	-18	-19	-18	-21	-19	-19	-22/-14	-18	-16	-19	-17	-16	-17					



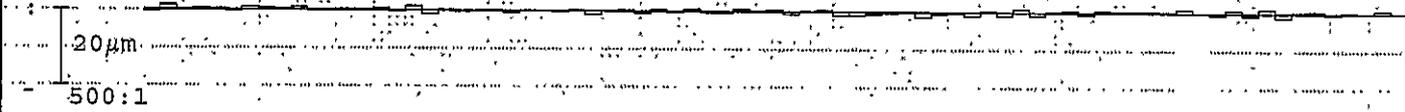
Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fH <sub>sm</sub>	-5±4	-3	Var 5								±4	Var 5							2	
fH <sub>S</sub>	-5±8	-3	0	-5	-4	-9	-3	2	±8	6	4	-1	0	-1	3	2				
F <sub>β</sub>	3	3	4	2	3	7	3	7	10	6	4	2	5	3	4					
ff <sub>β</sub>	5	1	1	1	2	4	1	2	5	3	3	1	1	4	2					
C <sub>β</sub>	2/5	3	3	3	3	4	4	4	2/5	3	2	4	3	3	3					
B <sub>d</sub>	15±5	11							10±5						7					



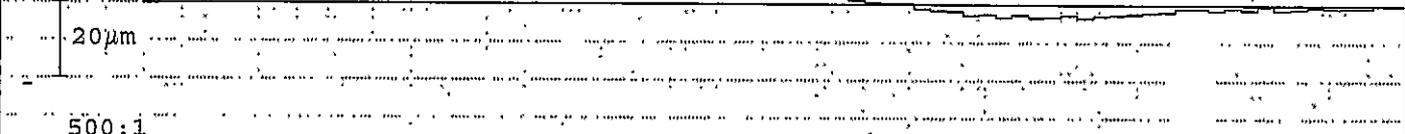


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 15:04
Denominazione:	ring gear		Numero denti z	77	Angolo pressione	20°
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Angolo elica	29°
Comessa/serie nr.:	PPAP 4		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Formelersatz	Charge:			

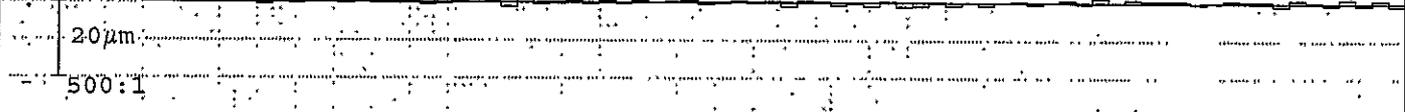
**Errori singoli di divisione fp fianco sinistro**



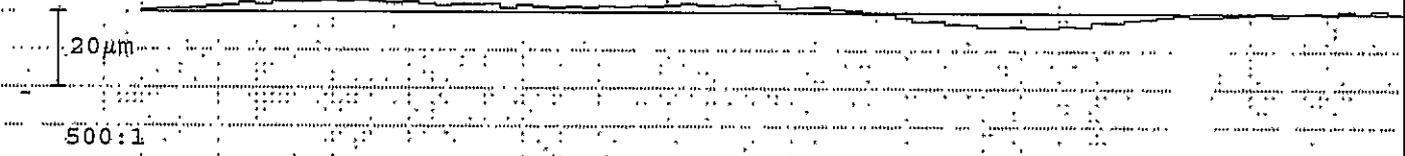
**Errore somma di divisione Fp fianco sinistro**



**Errori singoli di divisione fp fianco destro**

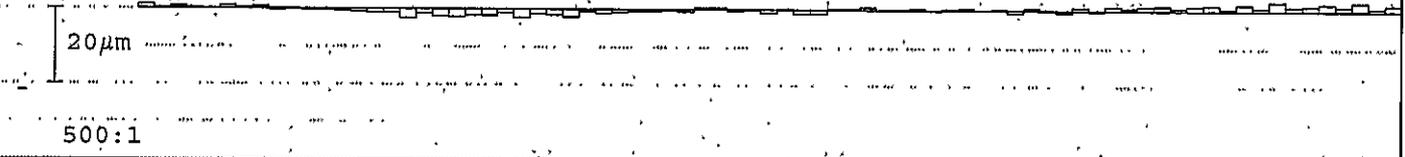


**Errore somma di divisione Fp fianco destro**



Corsa per misura divis.:	fianco sinistro / TIRO								fianco destro			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	1		11		1		11		1		11	
Gr. salto di passo fu max	2		14		2		14		2		14	
Scarto di divisione Rp	2				2				2			
Err. globale di divisione Fp	9		45		7		45		7		45	
Err. cordale di divisione Fpz/8	5				5				5			

**Centricità Fr (Ø-sfera =4.25mm) Ⓞ : 2µm**



Err. di concentricità Fr	5	32		
Variaz. spessore dente Rs				

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GETRAG

Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 16:06
Denominazione:	ring gear		Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica LS	24.24mm
Masch.Nr.:	M001	Spindel: Form. Sg. Elica		29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat.scor.pr. x	- .012

TIRO

Piede-Ø: 207,717mm [207,65/208,1]

Testa-Ø: 222,883mm [222,7/223]

VDI

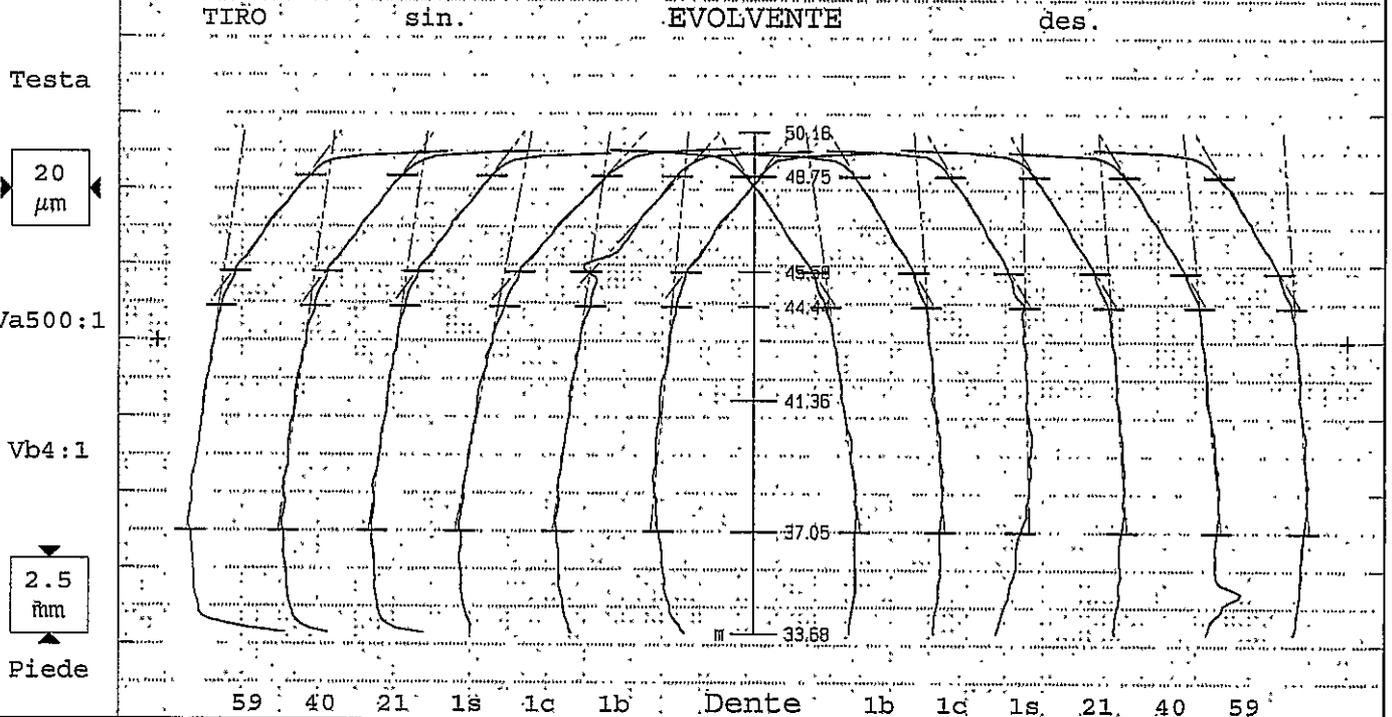


**GETRAG**

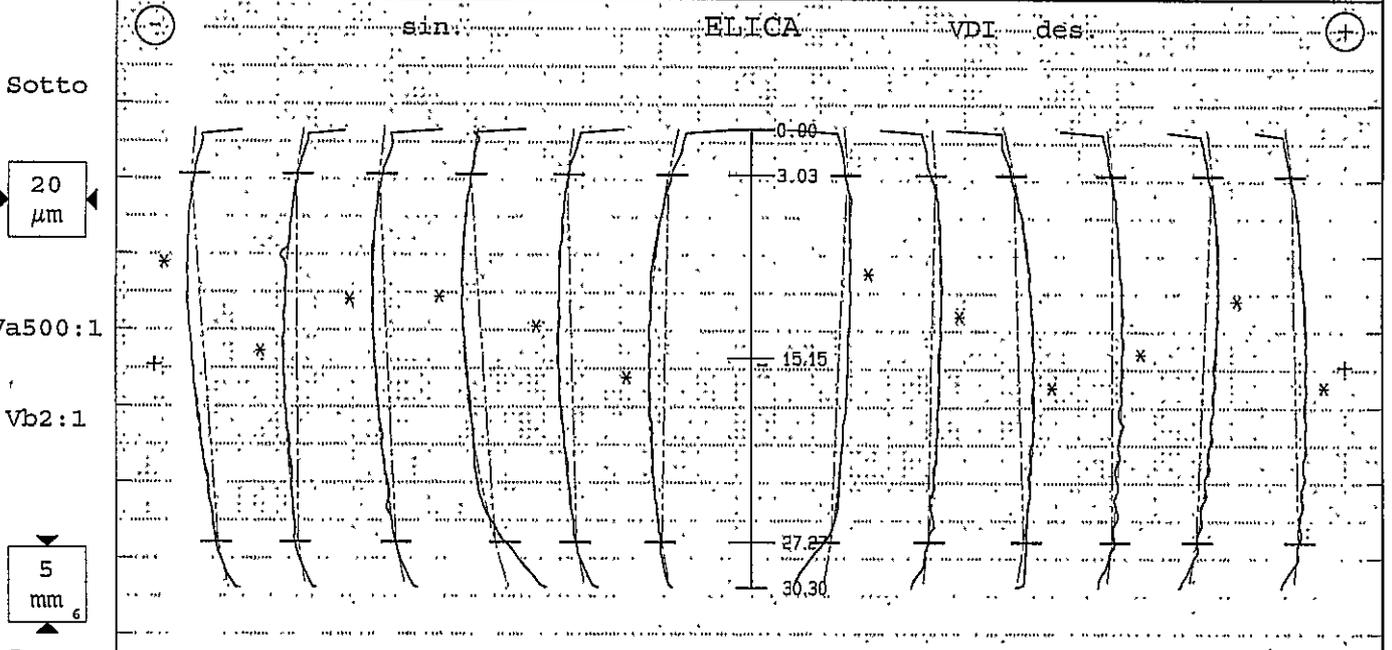
**Ruota cilindrica Evolvente/Elica**



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 14:33
Denominazione:	ring gear		Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evolv. La	7.39mm
Comessa/serie nr.:	PPAP 5		Angolo pressione	20°	Tratto elica Ls	24.24mm
Masch.Nr.:	M001	Spindel: Formn	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Falpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat.scor.pr. x	- .012



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fHm	-6±4	-9	Var 1								-6±4	Var 2							-5	
fHa	-6±7	-9	-9	-8	-9	-11	-8	-5		-6±7	-8	-5	-1	-4	-6	-4	-5			
Fa		4	3	4	4	6	4	3			3	3	7	3	2	3	3			
ffa		5	2	2	2	3	4	3		5	3	2	4	2	2	2	2			
fko	-22/-14	-19	-18	-19	-18	-21	-20	-20		-22/-14	-17	-16	-19	-17	-16	-17	-17			



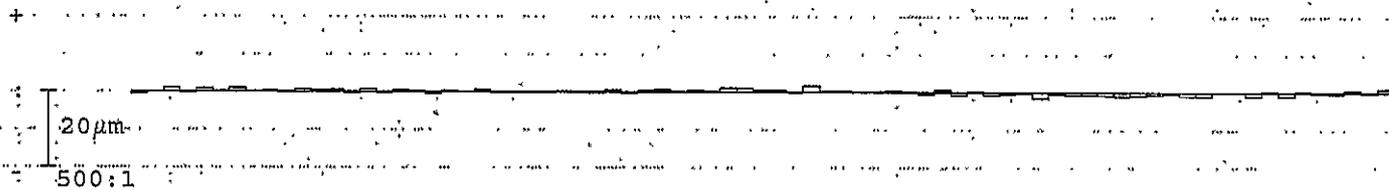
N:Z			Var 8									Var 7								
fHm	-5±4	-5	Var 8								±4	Var 7								2
fHb	-5±8	-5	-9	-1	-5	-8	-3	2		±8	6	3	-3	0	5	-2	2			
Fb		3	3	5	2	7	3	7			7	3	5	2	5	3	3			
ffb		5	1	3	2	4	1	2		5	2	3	1	2	2	1	2			
Cb	2/5	3	3	3	3	5	3	4		2/5	3	2	4	3	3	3	3			
Bd	15±5	10									10±5									9



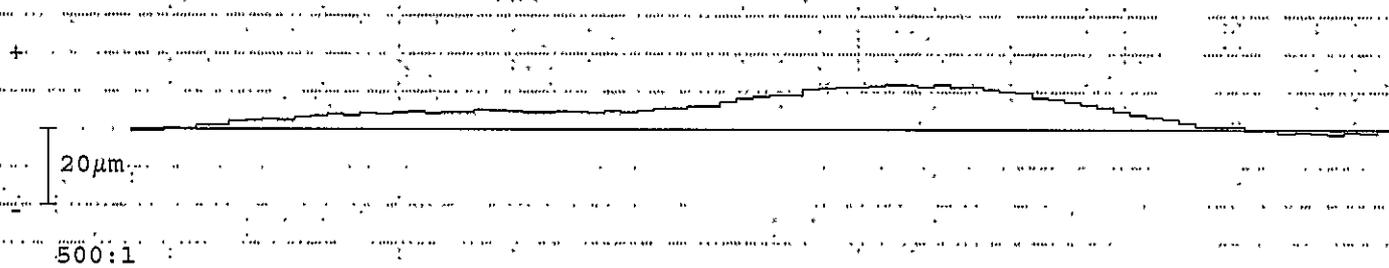


Nr. prog.:	STI0410005 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 14:33
Denominazione:	ring gear	Numero denti z	77	Angolo pressione	20°
Numero disegno.:	250.1.3773.50-IF	Modulo m	2.45mm	Angolo elica	29°
Comessa/serie nr.:	PPAP 5	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel:	FORMA	Charge:	

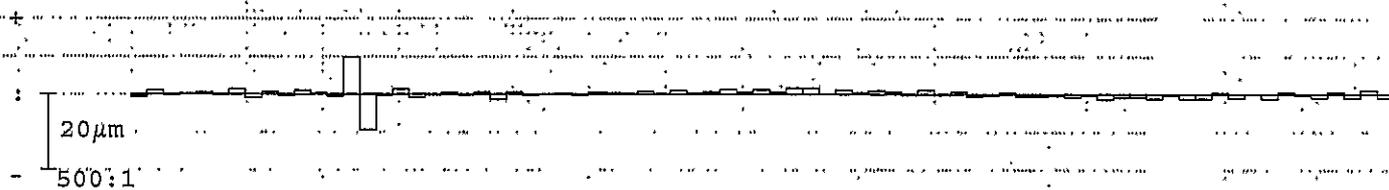
**Errori singoli di divisione fp fianco sinistro**



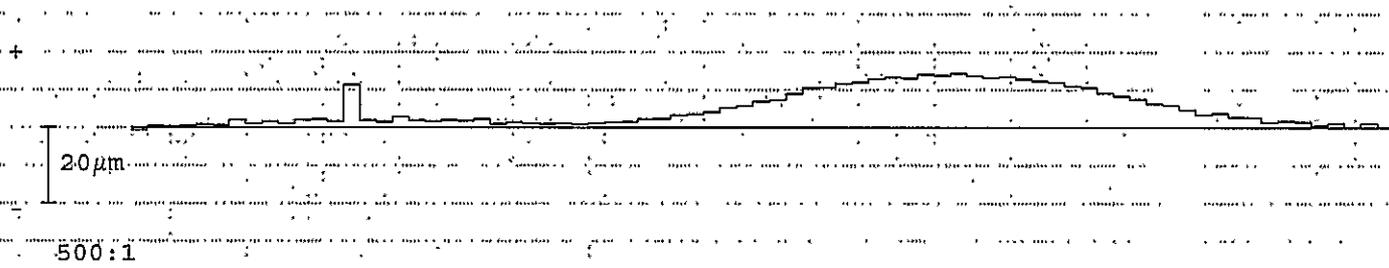
**Errore somma di divisione Fp fianco sinistro**



**Errori singoli di divisione fp fianco destro**

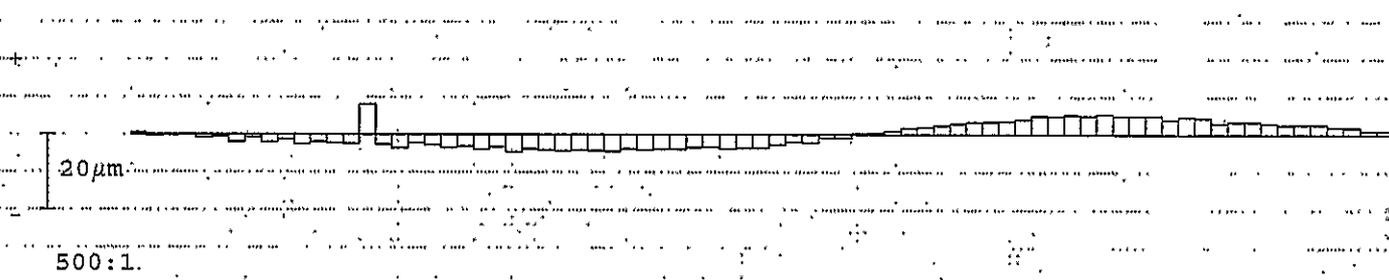


**Errore somma di divisione Fp fianco destro**



Corsa per misura divis.:	215.636 z=15.2mm	fianco sinistro / TIRO				fianco destro			
		Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione	fp max	2		11		10		11	
Gr. salto di passo	Fu max	2		14		19	x	14	
Scarto di divisione	Rp	3				19			
Err. globale di divisione	Fp	13		45		15		45	
Err. cordale di divisione	Fpz/8	8				11			

**Centricità Fr (Ø-sfera =4.25mm) Ⓞ : 8µm**



Err. di concentricità	Fr	13	32		
Variab. spessore dente	Rs				

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**GETRAG****Ruota cilindrica Evolvente/Elica**

Nr. prog.:	STI041005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 16:08
Denominazione:	ring gear		Numero denti z	77	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.3773.50-IF		Modulo m	2.45mm	Tratto evol. La	7.39mm
Commessa/serie nr.:	PPAP 5		Angolo pressione	20°	Tratto elica Lb	24.24mm
Masch.Nr.:	M001	Spindel: Form	Angolo elica	29°	Inizio elab. M1	37.05mm
Untersuchungszweck:	Laufende Messung		Ø Base db	199.1387mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	27.102°	Fat.scor.pr. x	- .012

TIRO

Piede-Ø: 207.717mm [207.65/208.1]

Testa-Ø: 222.894mm [222.7/223]

VDI

<b>Point</b>	<b>Caracteristic</b>	<b>Tolerance</b>	<b>Part 1</b>	<b>Part 2</b>	<b>Part 3</b>	<b>Part 4</b>	<b>Part 5</b>
4	MDK	220,490/220,422	220,439	220,435	220,431	220,439	220,43

## **Manual measures by Marposs**

**RG 250 1 3773 50**

12,Jan 2015