

Part Name **Ring Gear** Customer Part Number **250.1.6465.00**

Shown on Drawing No. **250.1.6465.00** Organization Part # _____

Engineering Change Level **a 35624** Dated **11 Dec 2013**

Additional Engineering Changes _____ Dated _____

Safety and/or Government Regulation Yes No Purchase Order No. _____ Weight (kg) **3,181**

Checking Aid No. _____ Checking Aid Engineering Change Level _____ Dated _____

ORGANIZATION MANUFACTURING INFORMATION **CUSTOMER SUBMITTAL INFORMATION**

GETRAG MODUGNO **RENAULT**

Organization Name & Supplier/Vendor Code _____ Customer Name/Division _____

VIA DEI CICLAMINI N°4 _____

Street Address _____ Buyer/Buyer Code _____

MODUGNO BARI 70026 ITALY **TYP 250**

City Region Postal Code Country Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? Yes No n/a

Submitted by IMDS or other customer format: _____

Are polymeric parts identified with appropriate ISO marking codes? Yes No n/a

REASON FOR SUBMISSION (Check at least one)

Initial Submission Change to Optional Construction or Material

Engineering Change(s) Supplier or Material Source Change

Tooling: Transfer, Replacement, Refurbishment, or additional Change in Part Processing

Correction of Discrepancy Parts Produced at Additional Location

Tooling Inactive > than 1 year Other - please specify below

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 _____

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 _____ / _____ 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: **New documentation for first PPAP lost**

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

Organization Authorized Signature _____ Date **12 Jan 2015**

Print Name **Pennacchia Vincenzo** Phone No. **tel 390805858580** Fax No. _____

Title **GPS 1 Leader** E-mail **vincenzo.pennacchia@getrag.com**

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: Approved Rejected Other

Customer Signature _____ Date **12.01.15**

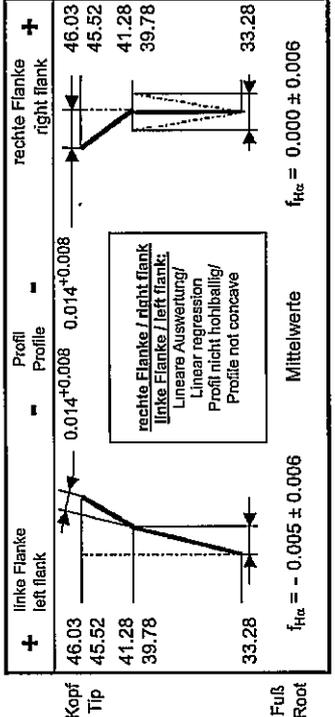
Print Name _____ Customer Tracking Number (optional) _____

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

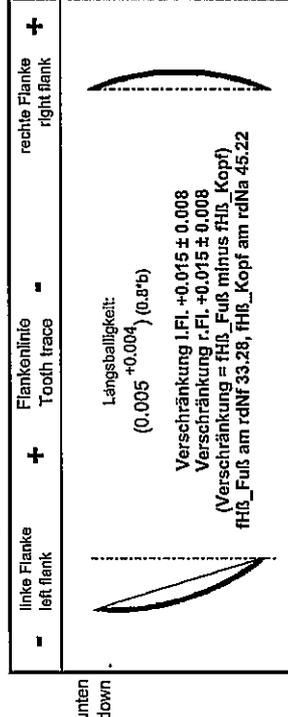
ausßenverzahnung external	(7)	
Zähnezahl Number of teeth	79	
Modul Normal module	2.300000	
Eingriffswinkel Normal pressure angle	20° 0' 0"	
Schrägungswinkel Helix angle	26° 42' 0"	
Steigungsrichtung Hand of helix	RECHTS	
Profilverschiebungsfaktor Addendum modification coeff.	-0.082	
Teilkreisdurchmesser Pitch diameter	203.387	
Kopfkreisdurchmesser Outside diameter	210.10 -0.30	
Kopfnutkreisrad. theo. max. d_{Na}	209.65	
Kopfnutkreisrad. theo. min. d_{Nb}	209.20	
Fußkreisdurchmesser Root diameter	196.30 -0.45	
Fußnutkreisdurchmesser d_{Nf}	199.77	
Grundkreisradius Base circle radius	94.177	
Grundkreisdurchmesser	188.355	
Normalzahnstärke max. s_n	3.398	
Normalzahnstärke min. s_n	3.373	
Meßzähnezahl Number of teeth spanned	k	
Zahnweite max. W_k		
Zahnweite min. W_k		
Meßkugeldurchmesser Ball diameter	4.000	
Diam. Zweikugelmäß max. M_{dk}	208.506	
Measurement o. balls		
Diam. Zweikugelmäß min. M_{dk}	208.440	
Measurement o. balls		
Verdrehfankenspiel theor.	0.066	
Circumferential backlash	0.172	

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

Wkz-Profil siehe Werkzeugdatenblatt Nr. 250.1.4247.55
 For Tool profile, see tool data sheet number



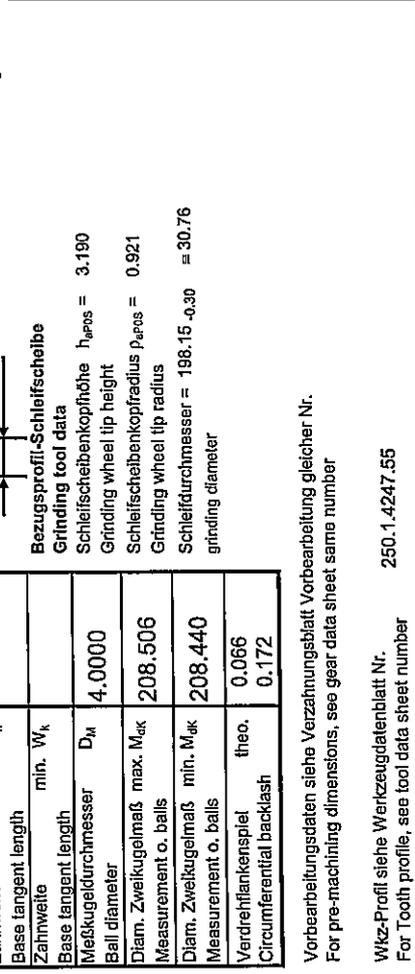
$f_{Hc} = -0.005 \pm 0.006$ Mittelwerte
 $f_{Hc} = 0.000 \pm 0.006$
 * Schreibbeginn $\varnothing = 198.20 -0.30 \approx 30.84$
 * Start of checking



$f_{Hp} = -0.015 \pm 0.006$ Mittelwerte
 $f_{Hp} = 0.000 \pm 0.006$
 * Plusabweichung des bis zum Schreibbeginn verlängerten vermittelnden Ist-Profiles max f_{pZ}
 * Plus deviation of the average profile, extended to the start of checking, max f_{pZ}

Profil- und Flankenlinienprüfung nach VDI/VDE 2612
 Tabellenwerte für F_p und f_{Hp} sind auf die gesamte Radbreite im Meßkreis d_m bezogen
 Flankenlinienprüfbereich $L_{pB} = 0.8*b$ 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_{Hp} refers to the total face width in the meas. dia. d_m
 Tooth trace testing area $L_{pB} = 0.8*b$ calculated to $1.0*b$
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

Verteiler:	
Schutzvermerk nach DIN 34 beachten	
■■■ GETRAG	
GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG	
Remark:	
Ersatz für Abbildungen sind unverändert. Diagrams not to scale.	250.0.0004-17
Erstverwendung bei Getriebetyp:	Verzahnungsblatt Endkontrolle
Datum	26.06.2013
Name	Cricenti, Fabrizio
gez.	Final Check Gear Data
gepr.	Benennung: Naming:
Buch.	Anz.
Änd.Nr.	
Zahnkranz	
250.1.4247.55	



Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646500 Stato: Rilascio in generale (ciclo alternativo)

Descrizione: Chart Corona

Indice del disegno finito:

Data emissione:

Operazione: 0230 Rettifica dentatura con RZ303C

25.11.2014 / Vito Fiore

Data aggiornamento:

13.03.2014 / Vito Fiore

Centro di lavoro: SLW14850 RETTIFICA DENTI RG

Identificativo	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
0002	Controllo 1° pz secondo Gear data 250.1.4247.53				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		CR1: controllo primo pezzo Misu: controllo primo pezzo
0010	Diametro Mdk (RZ303C e RZF)	208,473 mm	208,440	208,506	MOA-416121 RUGOSIMETRO TIPO PRK MZA-450311 Calcolatore di misura E9066 Marpos						1° pz 2.3.1.1-R 2		
0020	Evolverte ed elica sec.G.D. con svergolamento(RZ303C)				MZA-450311 Calcolatore di misura E9066 Marpos	3	pz ogni 100 per macchina						CR1: calcolatore di misura
0022	Evolverte ed elica sec.G.D. con svergolamento(RZF)				MVZ-400249 EVOLVENTIMETRO						pz ogni 100 per macchina		Misu: diagramma di dentatura
0030	SOMMA DI PASSO Fp (RZ303C)	mm		0,045	MVZ-400249 EVOLVENTIMETRO						ogni 50 pz prodotti /macchina		Misu: diagramma di dentatura
0032	SOMMA DI PASSO Fp (RZF)	mm		0,045	MVZ-400249 EVOLVENTIMETRO						pz a turno/mac.		Misu: diagramma di dentatura
0040	OSCILLAZIONE RADIALE Fr (RZ303C)	mm		0,032	MVZ-400249 EVOLVENTIMETRO						ogni 50 pz prodotti /macchina		Misu: diagramma di dentatura
0042	OSCILLAZIONE RADIALE Fr (RZF)	mm		0,032	MVZ-400249 EVOLVENTIMETRO						pz a turno/mac.		Misu: diagramma di dentatura
0044	Controllo ammacature del materiale da rettificare con ingranometro automatico (RZ303C)	mm		0,300	MRA-450155 Ingranometro automatico Reishauer RZ303C	1	100% di pezzi				ogni 50 pz prodotti /macchina		CR1: calcolatore di misura
0050	RUGOSITA' Rz	0,0 µm	0,0	4,0	MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646500
 Descrizione: Chart Corona
 Stato: Rilascio in generale (ciclo alternativo)
 Indice del disegno finito: -
 Data emissione: 25.11.2014 / Vito Fiore
 Centro di lavoro: SLW14850 RETTIFICA DENTI RG
 Operazione: 0230 Rettifica dentatura con RZ303C
 Data aggiornamento: 13.03.2014 / Vito Fiore

Identificativo	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
0060	RUGOSITA' Rmax	0,0 µm	0,0	6,3	MOA-416121 RUGOSIMETRO TIPO PRK						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					3	pz ogni 100 per macchina						CR1: no documentazione

Point	Caractheristic	Tolerance	Part 1	Part 2	Part 3	Part 4	Part 5	Controllo con piastrina
4	MDK	208,506/208,440	208,464	208,46	208,459	208,449	208,453	
5	Pallinatura gradi Almen	0,7/0,6			rilievo del 16 12 2014			0,65

Manual measures by Marposs

RG 250 1 6465 00

12,Jan 2015 2014

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646500 Stato: Rilasciato Produzione + Calcolo costi Indice del disegno finito: *
 Descrizione: Chart Corona Data emissione: 26.02.2014 / Vito Fiore
 Operazione: 0110 Pallinatura Data aggiornamento: 26.02.2014 / Vito Fiore
 Centro di lavoro: OKU15476 PALLINATURA M5MT

Id. Sost.	GN 3010	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ft.	Metodi di gestione / Documentazione
0010		aspetto visivo					3	pz per rack						CR1: no documentazione
0012		controllo presenza marcatura					1	100%						CR1: no documentazione
0020	M	Intensità di pallinatura (Atmen)	0,665 mm	0,625	0,700		1	pz a giorno/ma cchina						CR1: Tabella di registrazione dati

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646500
 Descrizione: Chart Corona
 Operazione: 0110 Pallinatura
 Centro di lavoro: OKU15476 PALLINATURA M5MT
 Stato: Rilasciato Produzione + Calcolo costi
 Indice del disegno finito: -
 Data emissione: 26.02.2014 / Vito Fiore
 Data aggiornamento: 23.01.2015 / Gaetano Cacciapaglia

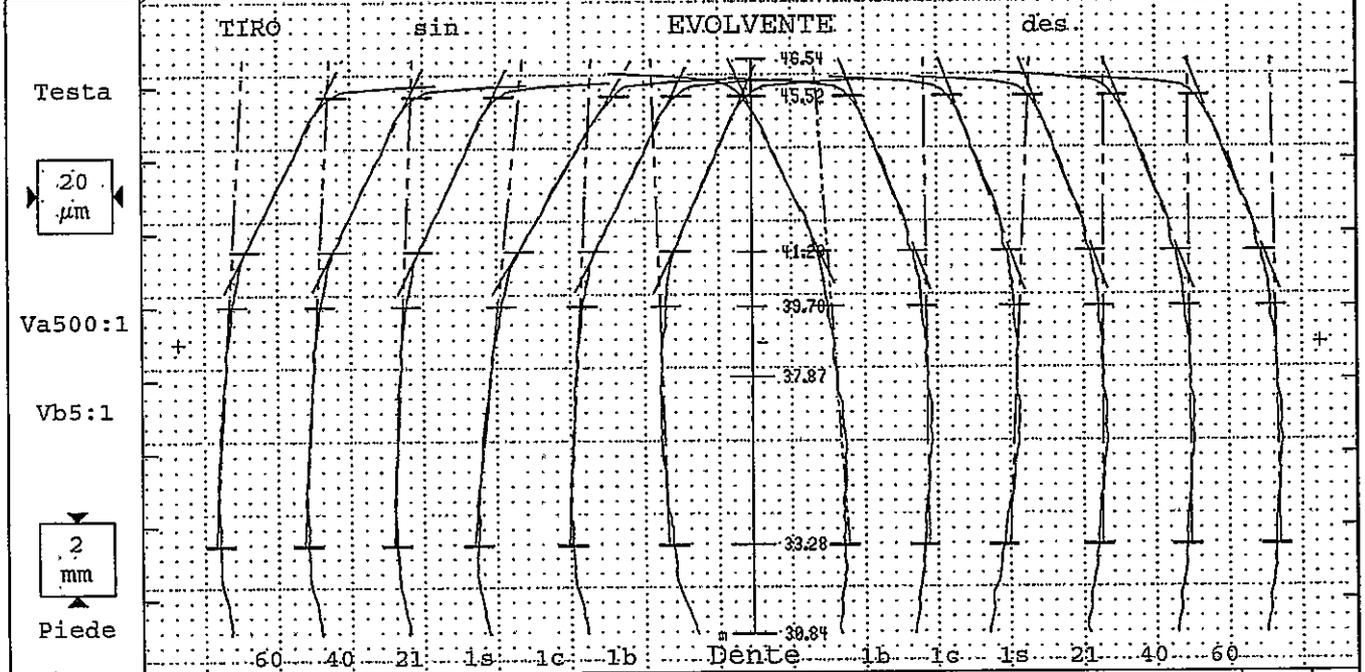
ID	GN 3010	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio F.	Metodi di gestione / Documentazione
0010		aspetto visivo					3	pz per rack						CR1: no documentazione
0020		controllo presenza marcatura					1	100%						CR1: no documentazione
0030	M	Intensità di pallinatura (Aimen)	0,650 mm	0,600	0,700		1	pz a giorno/machina						CR1: Tabella di registrazione dati

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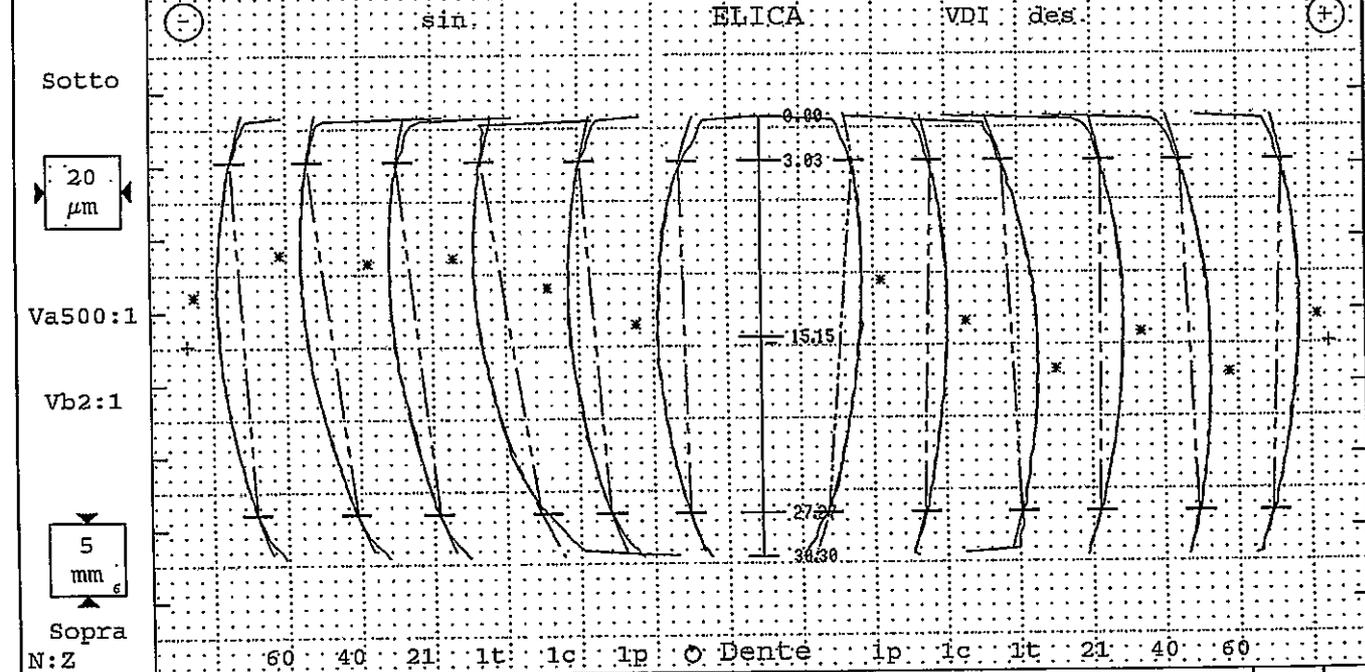
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllere:	TURNO C	Data:	07.01.2015 13:58
Denominazione:	ring gear		Numero denti z	79	Largh. fasc. dent. b	30.3mm
Numero disegno.:	250.1.4247.54-IF		Modulo m	2.3mm	Tratto evolv. La	6.5mm
Commessa/serie nr.:	PPAP 1		Angolo pressione	20°	Tratto elica Lb	24.24mm
Masch.Nr.:	M001	Spindel: Formu	Angolo elic	26.7°	Inizio elab. M1	33.28mm
Untersuchungszweck:	Laufende Messung		Ø Base db	188.3547mm	Paipatore β	(#1)1mm
Werkzeug:	Charge:		Ang. Base	24.975°	Fat. scor. pr. x	- .082



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual	
fHm	-5±6	-3	Var 1							2	±6	Var 1							-1	
fHα	-5±5	-3	-4	-3	-3	-7	-3	2	±5	-4	-1	3	0	0	-1	-1				
Fα		3	3	3	3	3	3	7		5	3	5	3	3	3	3				
ffα	6	1	2	1	1	2	1	2	6	3	3	3	3	3	3	3				
fKo	-22/-14	-22	-22	-22	-22	-25	-22	-24	-22/-14	-19	-19	-21	-19	-19	-19	-19				
P/T-φ[mm]	196.087	[195.85/196.3]								209.858	[209.8/210.1]									



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual	
fHsm	-15±6	-12	Var 8							8	±6	Var 10							1	
fHs	-15±8	-12	-8	-16	-14	-19	-10	-3	8	±8	9	3	-6	1	-6	4	1			
FS	11	4	6	2	3	7	5	11	11	7	2	7	2	6	3	3				
ffs	7	1	1	1	1	3	1	1	7	2	1	2	1	1	1	1				
CB	5/9	7	7	7	6	8	7	7	5/9	5	5	7	6	6	6	6				
Bd	15±8	16									15±8									15

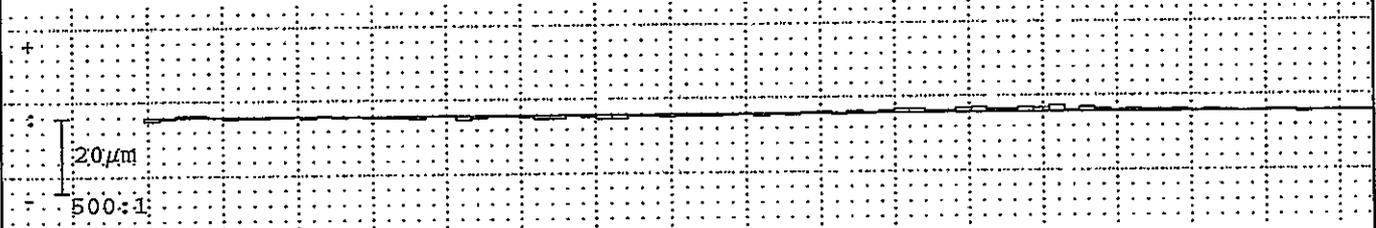
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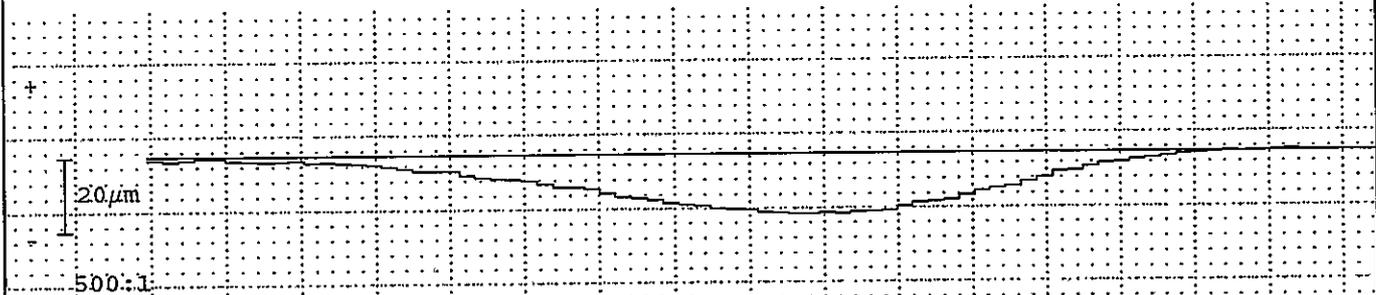


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:58
Denominazione:	ring gear		Numero denti z	79	Angolo pressione	20°
Numero disegno:	250.1.4247.54-IF		Modulo m	2.3mm	Angolo elica	26.7°
Commessa/serie nr.:	PPAP 1		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Form	Getrag	Charge:		

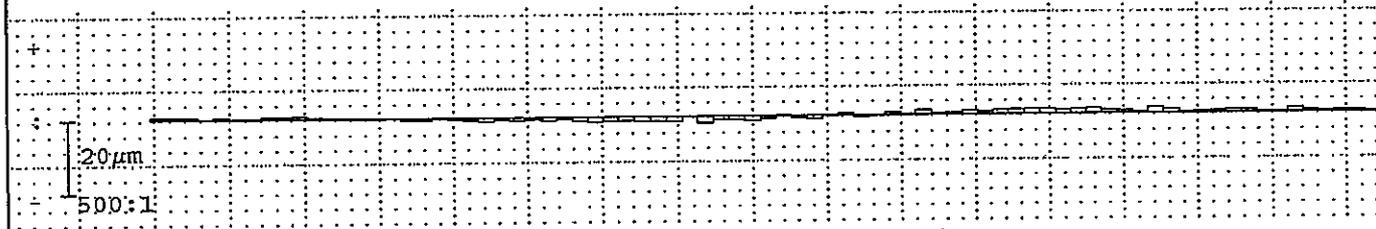
Errori singoli di divisione fp fianco sinistro



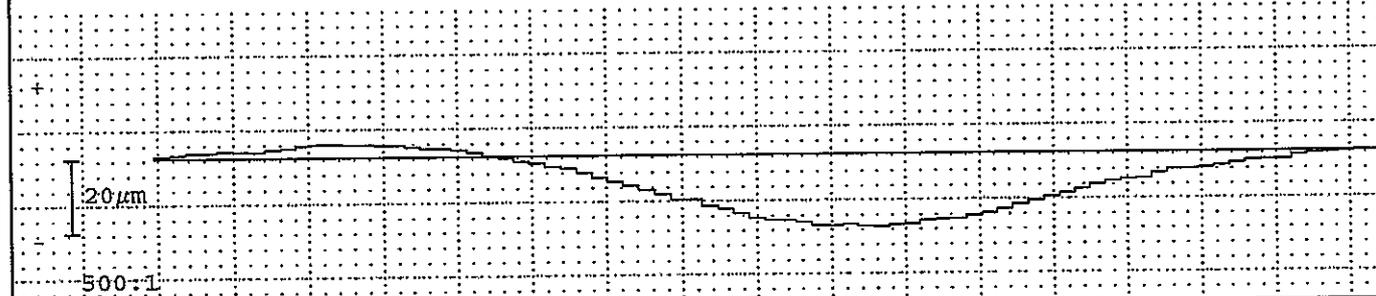
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

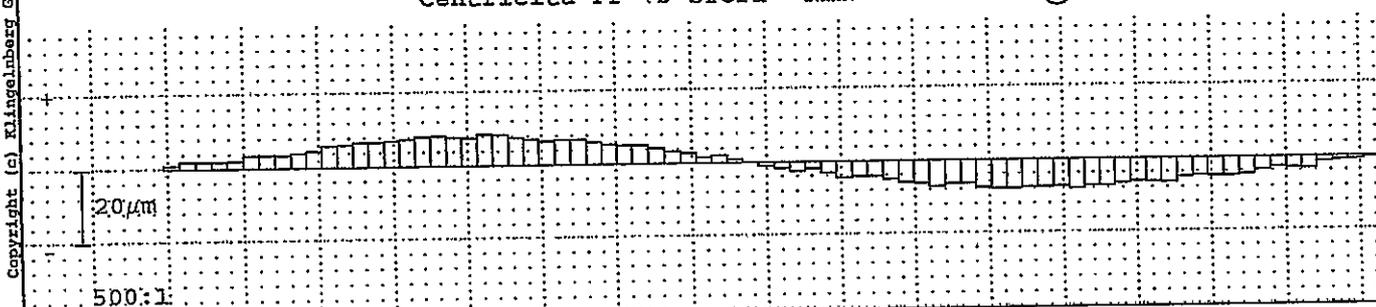


Corsa per misura divis.: 203.012 z=15.2mm

	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		2		11	
Gr. salto di passo fu max	1		14		2		14	
Scarto di divisione Rp	3				3			
Err. globale di divisione Fp	17		45		23		45	
Err. cordale di divisione Fpz/8	9				11			

Centricità Fr (Ø-sfera =4mm)

⊙ : 15µm



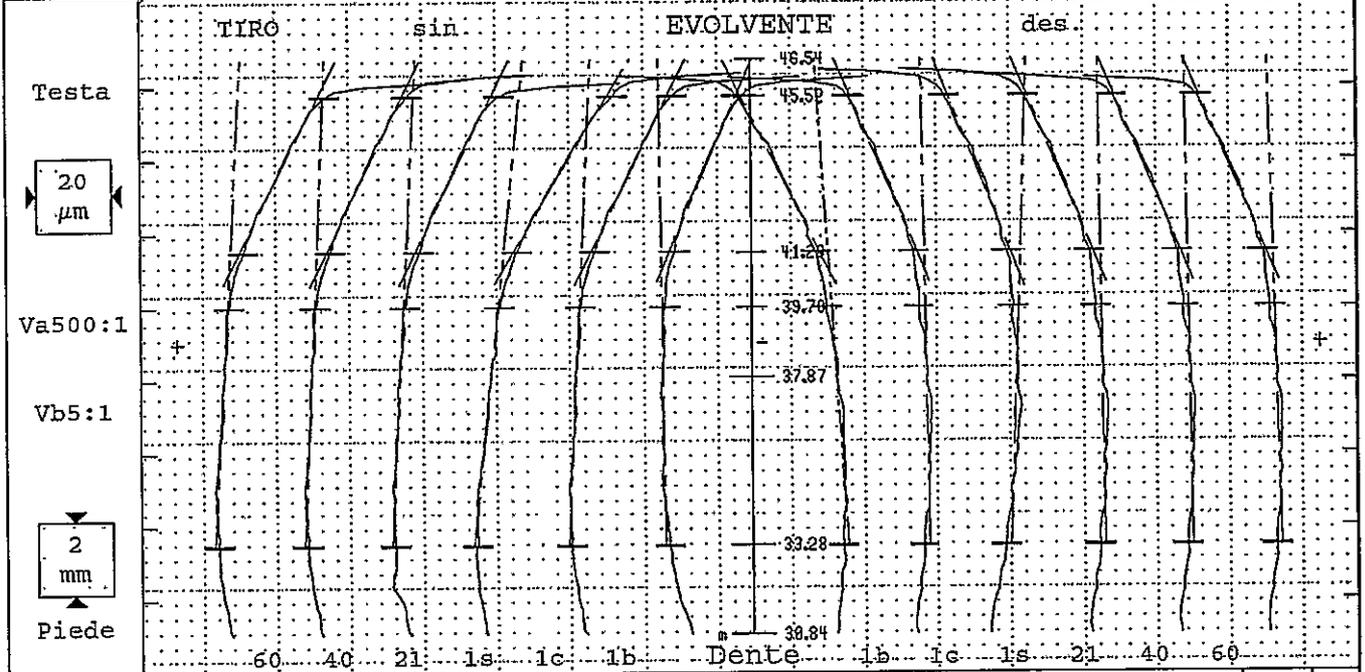
Err. di concentricità Fr	16	32	
Variaz. spessore dente Rs			

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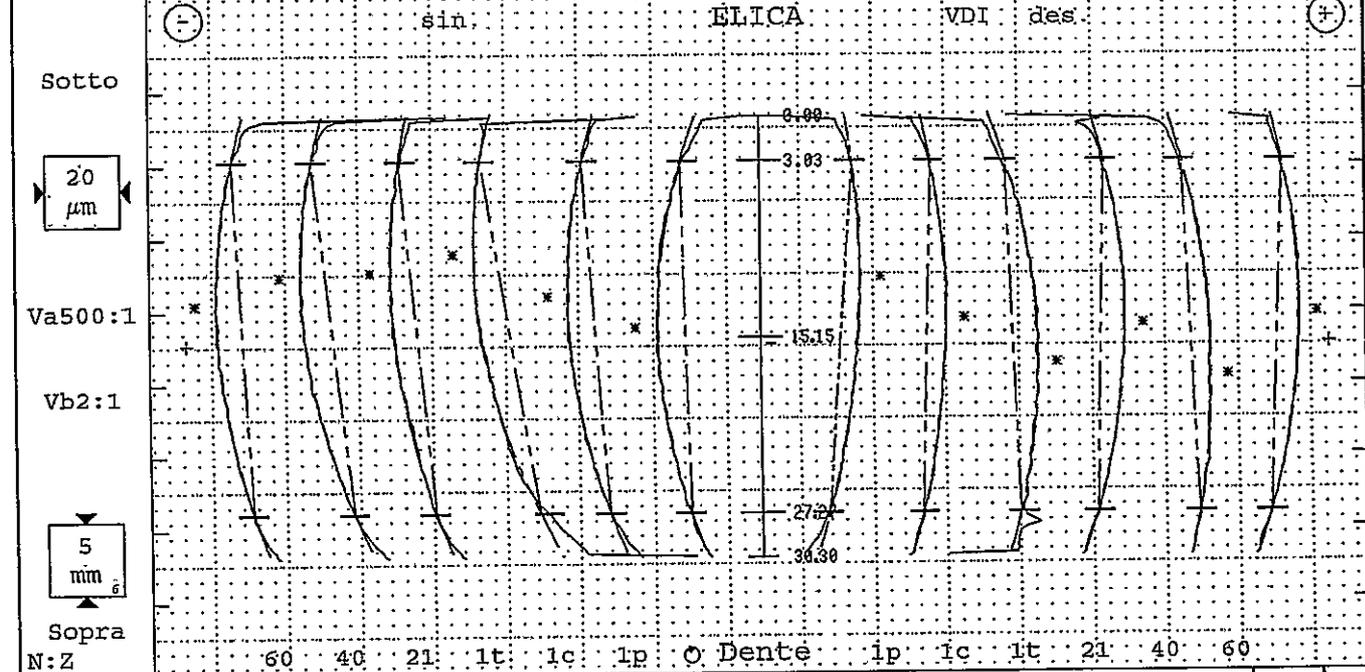
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 12:59
Denominazione:	ring gear	Numero denti z	79	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.4247.54-IF	Modulo m	2.3mm	Tratto evolv. La	6.5mm
Commessa/serie nr.:	PPAP 2	Angolo pressione	20°	Tratto elica Ls	24.24mm
Masch.Nr.:	M001	Spindel: Formu	Angolo elica	Inizio elab. M1	33.28mm
Untersuchungszweck:	Laufende Messung	Ø Base db	188.3547mm	Palpatore Ø	(#1)1mm
Werkzeug:	Charge:	Ang. Base	24.975°	Fat.scor.pr. x	-.082



Tolerance	Medio	Val.misur[µm]							Qual	Tolerance	Val.misur[µm]							Medio	Qual
		Var									Var								
fH _{om} -5±6	-3	1							1	±6	1							-1	
fH _{or} -5±5	-3	-4	-3	-3	-7	-3	1	1	±5	-4	-1	2	-1	-1	-2	-1			
F _α	3	3	3	3	2	3	6	3	5	4	5	3	3	3	3				
ff _α	6	2	2	2	2	2	1	2	6	3	3	4	3	3	3				
fK _o -22/-14	-21	-21	-22	-21	-24	-21	-21	-21	-22/-14	-21	-19	-21	-19	-19	-19				
P/T-φ[mm]	196.126	[195.85/196.3]								209.893	[209.8/210.1]								



Tolerance	Medio	Val.misur[µm]							Qual	Tolerance	Val.misur[µm]							Medio	Qual	
		Var									Var									
fH _{Sm} -15±6	-11	7							7	±6	9							9	1	
fH _{Sr} -15±8	-11	-7	-14	-12	-19	-9	-3	7	±8	8	3	-5	3	-5	4	1				
F _S	11	5	7	4	4	7	6	11	11	7	3	11	11	6	4	7				
ff _S	7	1	1	1	1	3	1	1	7	1	1	2	1	1	1	1				
CB	5/9	7	7	8	6	8	7	8	5/9	5	5	7	7	5	6	6				
Bd	15±8	16									15±8									13

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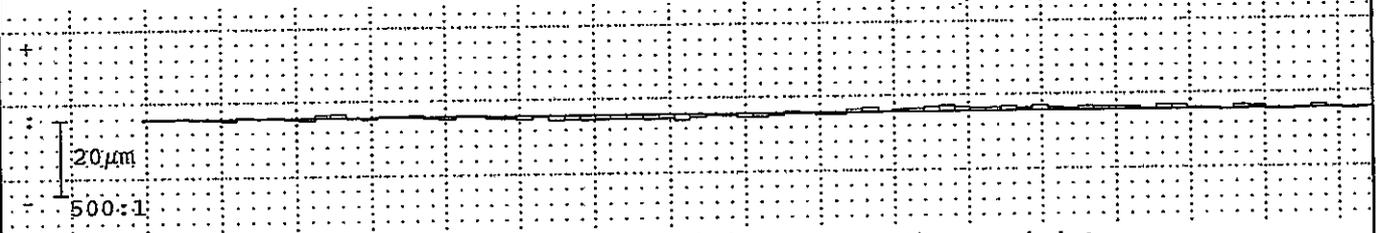
GETRAG

Ruota cilindrica Divisione

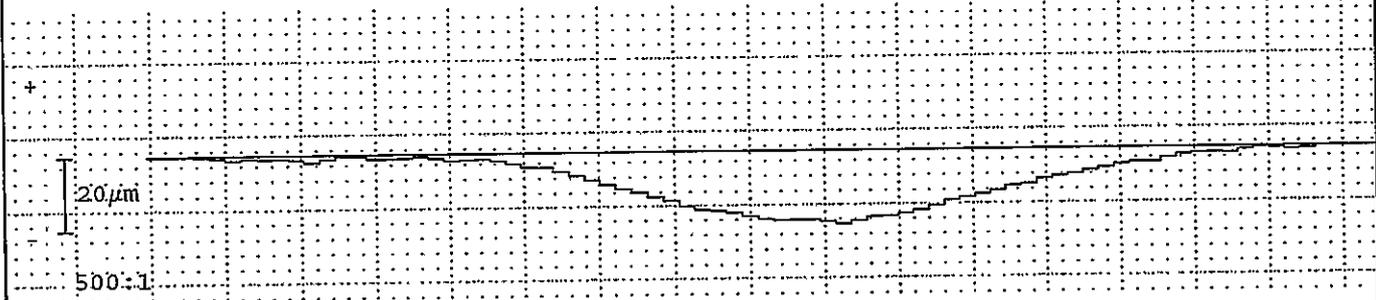


Nr. prog.: STI041005 0	PNC35 B4784	Controllore: TURNO C	Data: 07.01.2015 12:59
Denominazione: ring gear	Numero denti z	79	Angolo pressione 20°
Numero disegno: 250.1.4247.54-IF	Modulo m	2.3mm	Angolo elicca 26.7°
Comessa/serie nr.: PPAP 2	Untersuchungszweck: Laufende Messung		
Masch.Nr.: M001	Spindel: Form	Charge:	

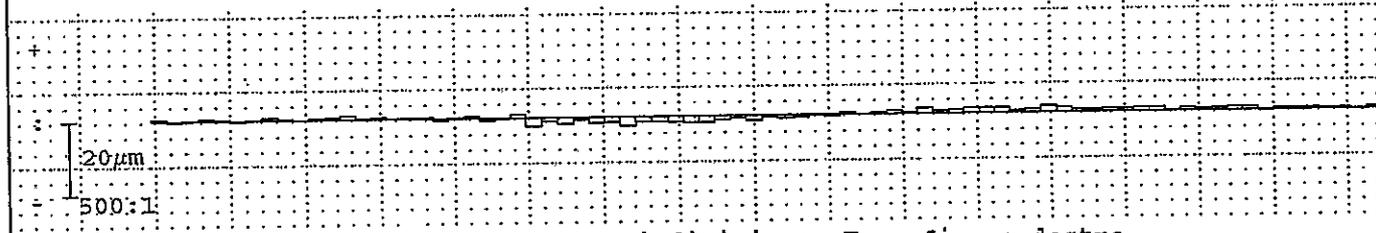
Errori singoli di divisione fp fianco sinistro



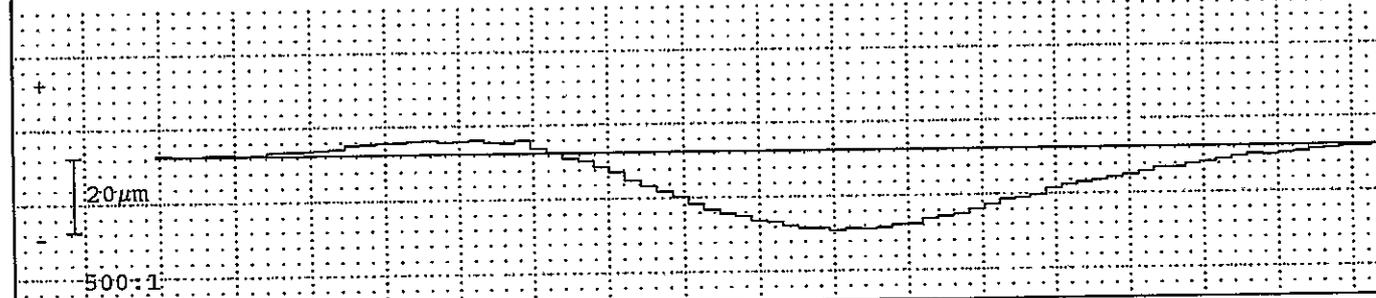
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



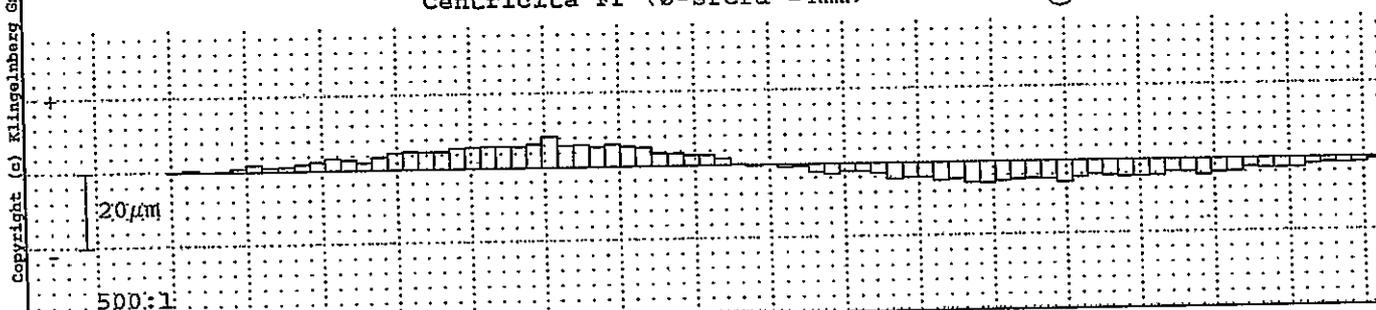
Errore somma di divisione Fp fianco destro



Corso per misura divis.: 203.012 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		2		11	
Gr. salto di passo fu max	2		14		3		14	
Scarto di divisione Ep	3				4			
Err. globale di divisione Fp	20		45		25		45	
Err. cordale di divisione Fpz/8	12				16			

Centricità Fr (Ø-sfera =4mm)

⊙ : 11µm



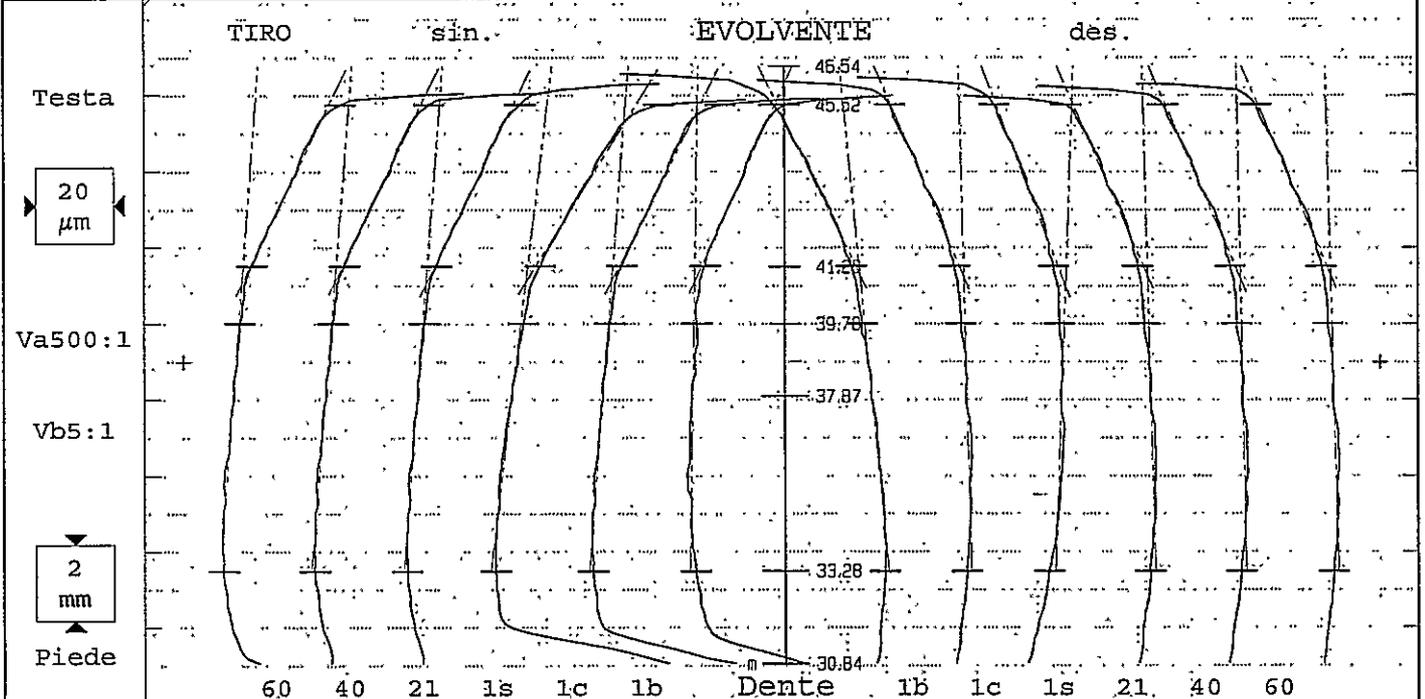
Err. di concentricità Fr	14	32	
Variab. spessore dente Rs			

GETRAG

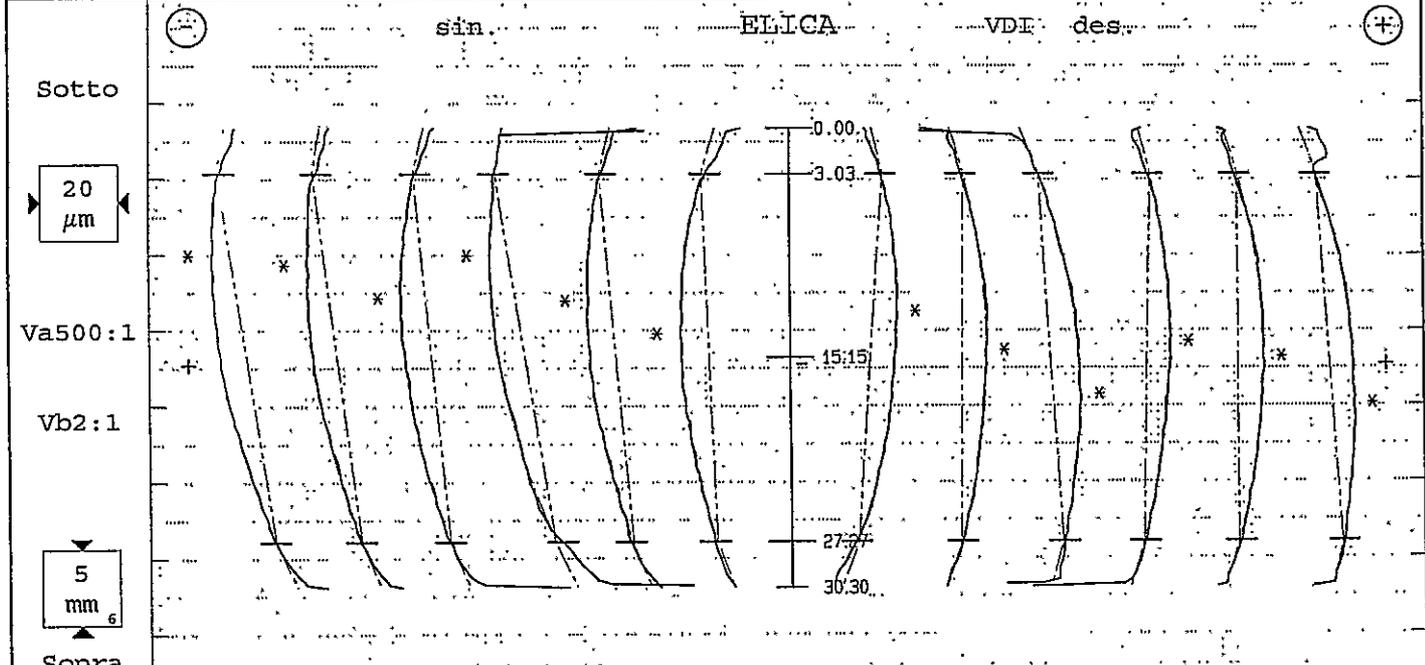
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:27
Denominazione:	ring gear		Numero denti z	79	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.4247.54-IF		Modulo m	2.3mm	Tratto evolv. La	6.5mm
Commessa/serie nr.:	PPAP 3		Angolo pressione	20°	Tratto elica L8	24.24mm
Masch.Nr.:	M001	Spindel: Formm	Angolo elicica	26.7°	Inizio elab. M1	33.28mm
Untersuchungszweck:	Laufende Messung		Ø Base db	188.3547mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	24.975°	Fat.scor.pr. x	-.082



Tolerance	Medio	Val.misur [µm]						Qual	Tolerance	Val.misur [µm]						Medio	Qual	
		Var								Var								
fHm	-5±6	-5	0							±6	1						-2	
fHa	-5±5	-5	-5	-5	-8	-5	-1		±5	-6	-2	2	-2	-1	-2	-2		
Fa	2	2	1	1	3	2	5		6	3	4	3	3	3	3			
ffa	6	2	2	2	2	2	3		6	2	2	3	2	2	2			
fKo	-22/-14	-19	-19	-19	-23	-19	-20		-22/-14	-17	-18	-20	-18	-19	-18			
P/T-φ [mm]	196.079	[195.85/196.3]							209.832	[209.8/210.1]								



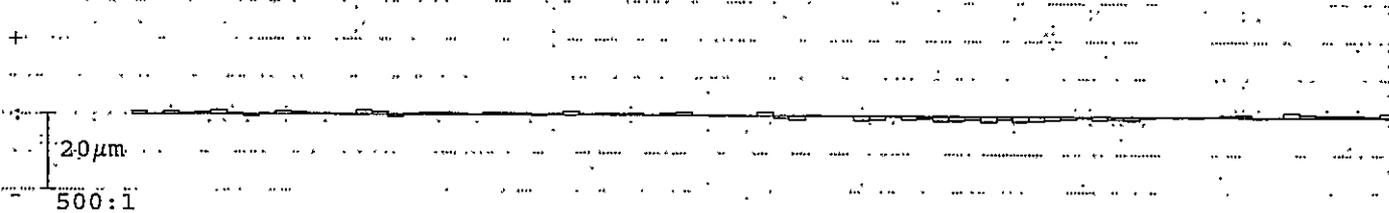
N:Z		Var						Qual	Tolerance	Var						Medio	Qual	
		9								11								
fHSm	-15±6	-14	9							±6	11						-1	
fH8	-15±8	-14	-19	-16	-12	-19	-10	-5	±8	8	1	-7	3	0	-8	-1		
FB	11	4	3	2	4	6	5	10	11	7	2	7	2	3	7	4		
ffB	7	1	1	1	1	3	1	2	7	1	1	1	1	1	1	1		
CS	5/9	7	7	6	7	7	7	7	5/9	7	7	7	6	7	6	7		
Bd	15±8	14								15±8								15



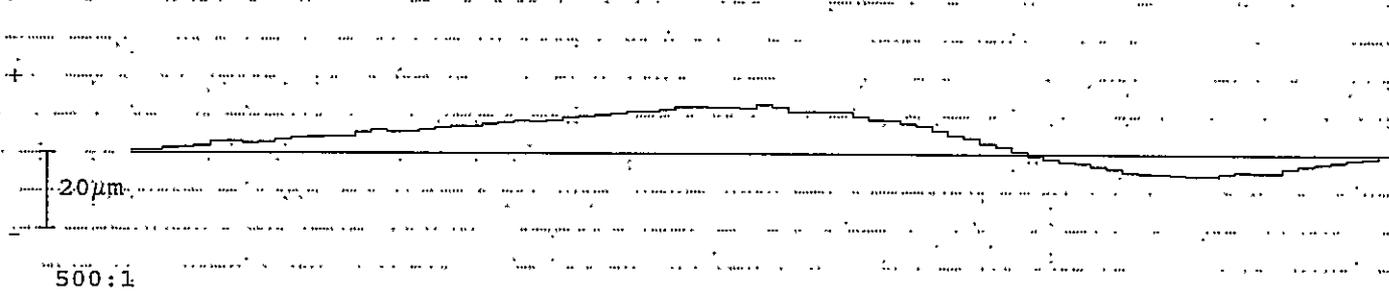


Nr. prog.:	STI0410005 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:27
Denominazione:	ring gear	Numero denti z	79	Angolo pressione	20°
Numero disegno.:	250.1.4247.54-IF	Modulo m	2.3mm	Angolo elica	26.7°
Comessa/serie nr.:	PPAP 3	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel:	FORMULAZIONE	Charge:	

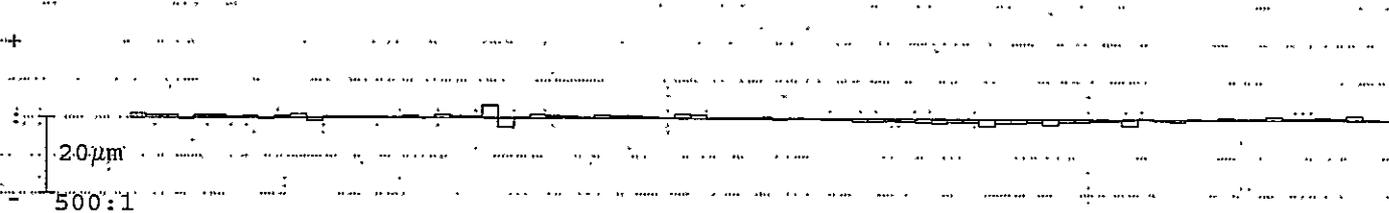
Errori singoli di divisione fp fianco sinistro



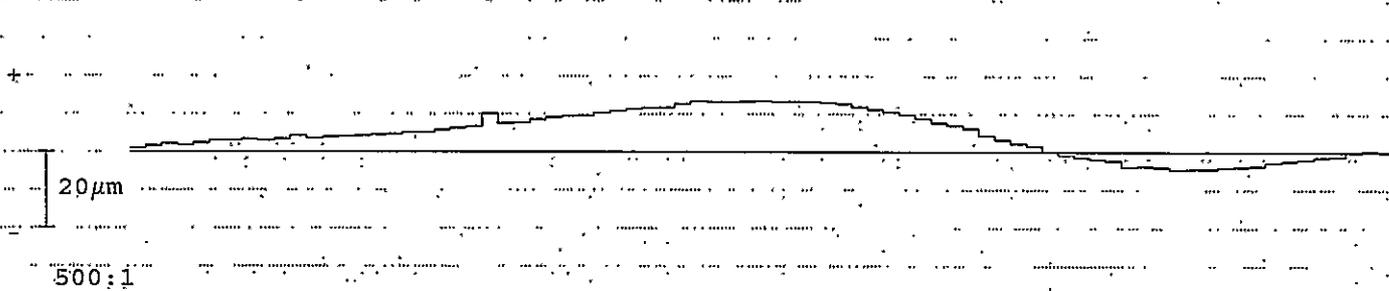
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

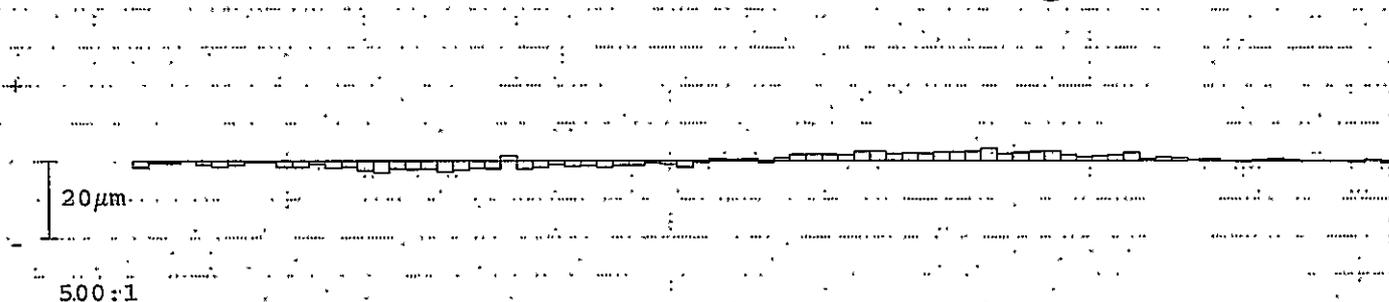


Errore somma di divisione Fp fianco destro



	Corso per misura divis.: 203.012 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		3		11	
Gr. salto di passo fu max	2		14		6		14	
Scarto di divisione Rp	2				5			
Err. globale di divisione Fp	18		45		18		45	
Err. cordale di divisione Fpz/8	10				10			

Centricità Fr (Ø-sfera =4mm) ⊙ : 4µm



Err. di concentricità Fr	6	32		
Variaz. spessore dente Rs				

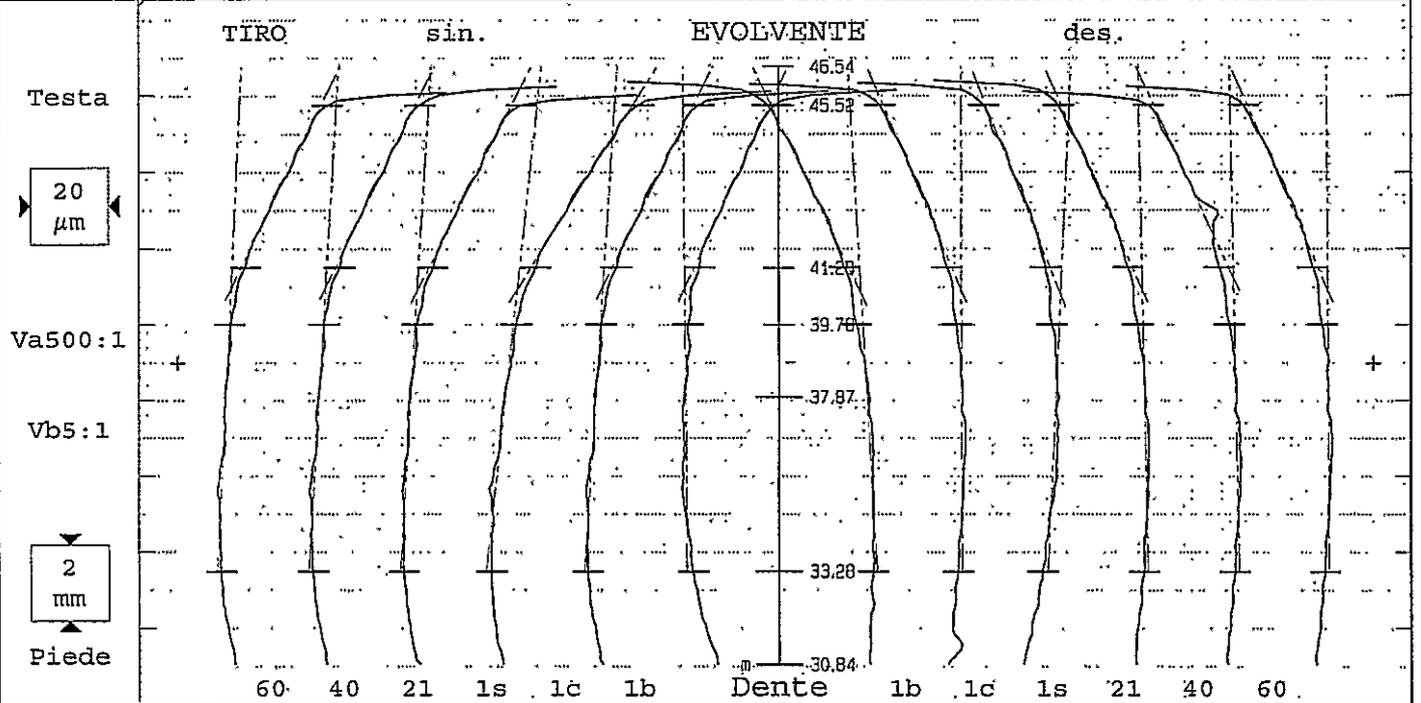


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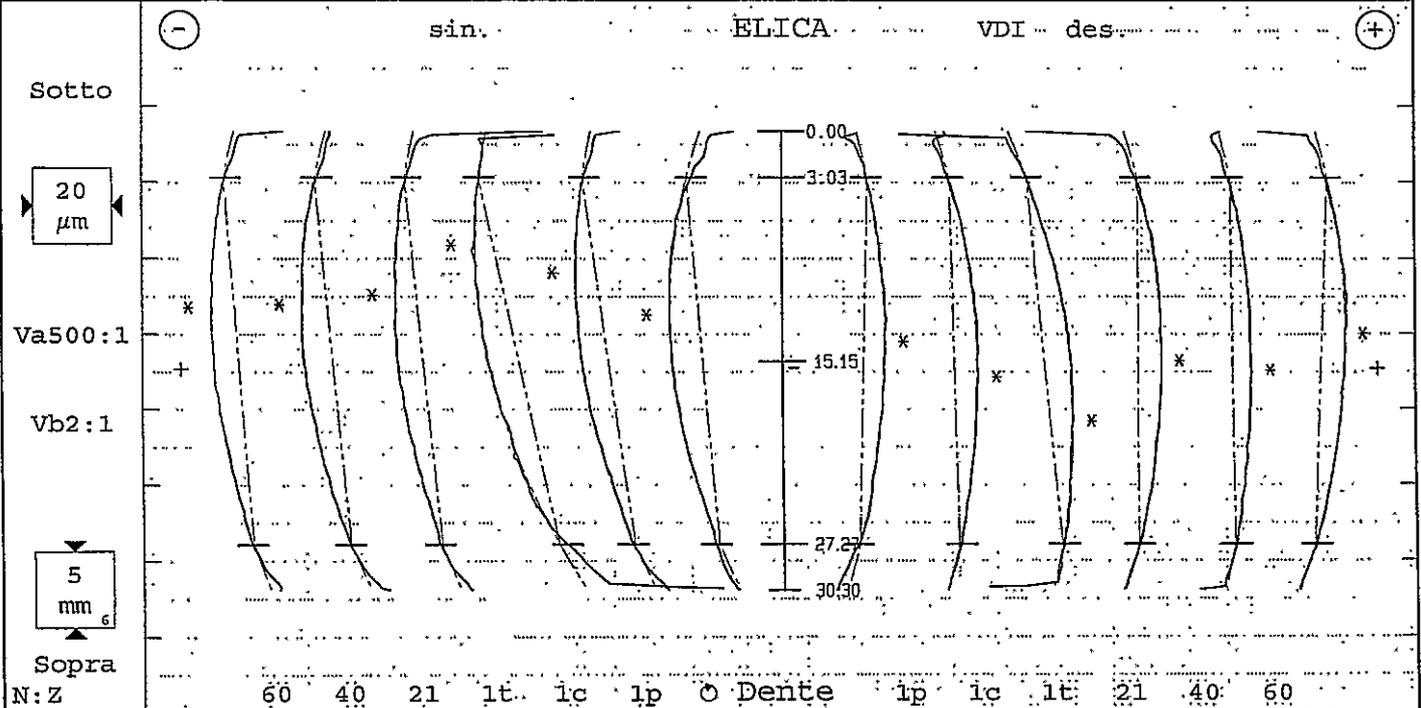
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410o05 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:19
Denominazione:	ring gear		Numero denti z	79	Largh.fasc.dent. b	30.3mm
Numero disegno.:	250.1.4247.54-IF		Modulo m	2.3mm	Tratto evolv. La	6.5mm
Commessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica L8	24.24mm
Masch.Nr.:	M001	Spindel: Form	Angolo elica	26.7°	Inizio elab. M1	33.28mm
Untersuchungszweck:	Laufende Messung		Ø Base db	188.3547mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	24.975°	Fat.scor.pr. x	- .082



Tolerance	Medio	Val.misur [µm]							Qual	Tolerance	Val.misur [µm]							Medio	Qual	
		Var 1									Var 1									
fHm	-5±6	-4								±6								-1		
fHa	-5±5	-4	-3	-4	-4	-7	-4	0		±5	-4	0	3	-1	-1	0	-1	-1		
Fa		3	3	3	2	4	2	7			5	2	4	3	3	3	3	3		
ffa	6	2	2	2	2	3	2	3		6	3	2	3	2	2	2	2	2		
fKo	-22/-14	-21	-21	-21	-22	-25	-20	-22		-22/-14	-21	-20	-22	-20	-20	-20	-21	-20		
P/T-φ [mm]	196.084		[195.85/196.3]								209.848	[209.8/210.1]								



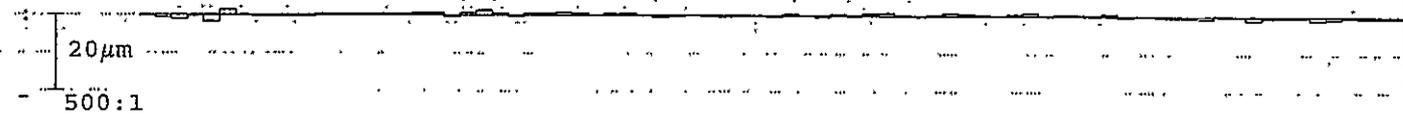
Tolerance	Medio	Val.misur [µm]							Qual	Tolerance	Val.misur [µm]							Medio	Qual
		Var 7									Var 8								
fHm	-15±6	-12								±6								0	
fHs	-15±8	-12	-9	-11	-12	-26	-16	-10		±8	3	-3	-11	0	-1	5	0	0	
F8	11	4	5	5	4	12	2	6		11	13	7	10	2	2	4	4	4	
ff8	7	1	1	1	1	3	1	2		7	1	1	1	1	1	1	1	1	
C8	5/9	7	6	7	7	8	7	8		5/9	6	6	7	6	5	6	6	6	
Bd	15±8	16								15±8								14	



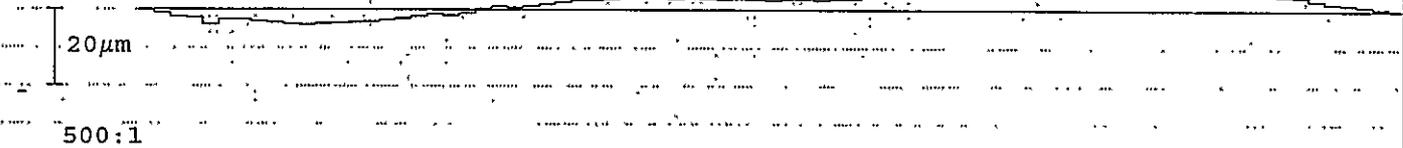


Nr. prog.: STI0410o05 0	PNC35 B4784	Controllore: TURNO C	Data: 07.01.2015 13:19
Denominazione: ring gear	Numero denti z 79	Angolo pressione 20°	
Numero disegno: 250.1.4247.54-IF	Modulo m 2.3mm	Angolo elica 26.7°	
Comessa/serie nr.: PPAP 4	Untersuchungszweck: Laufende Messung		
Masch.Nr.: M001	Spindel: FORMER	Charge:	

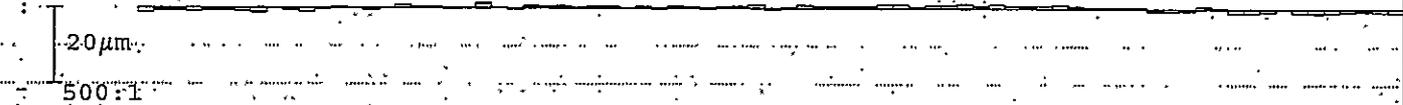
Errori singoli di divisione fp fianco sinistro



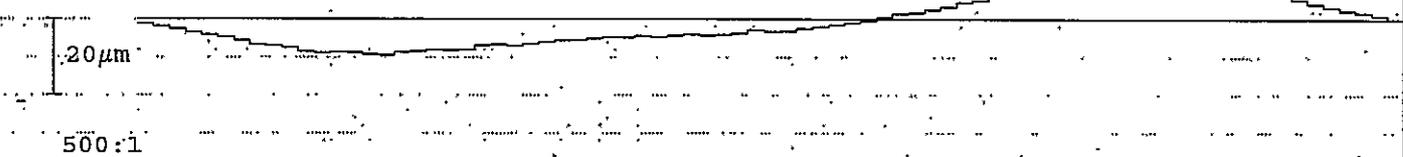
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

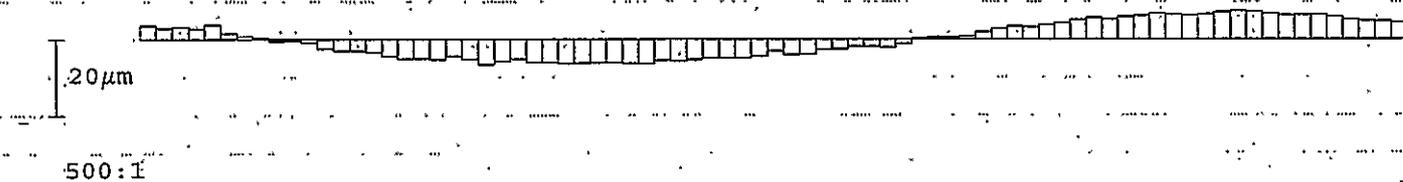


Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 203.012 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		1		11	
Gr. salto di passo fu max	3		14		1		14	
Scarto di divisione Rp	3				2			
Err. globale di divisione Fp	12		45		20		45	
Err. cordale di divisione Fpz/8	6				9			

Centricità Fr (Ø-sfera =4mm) \odot : 13µm



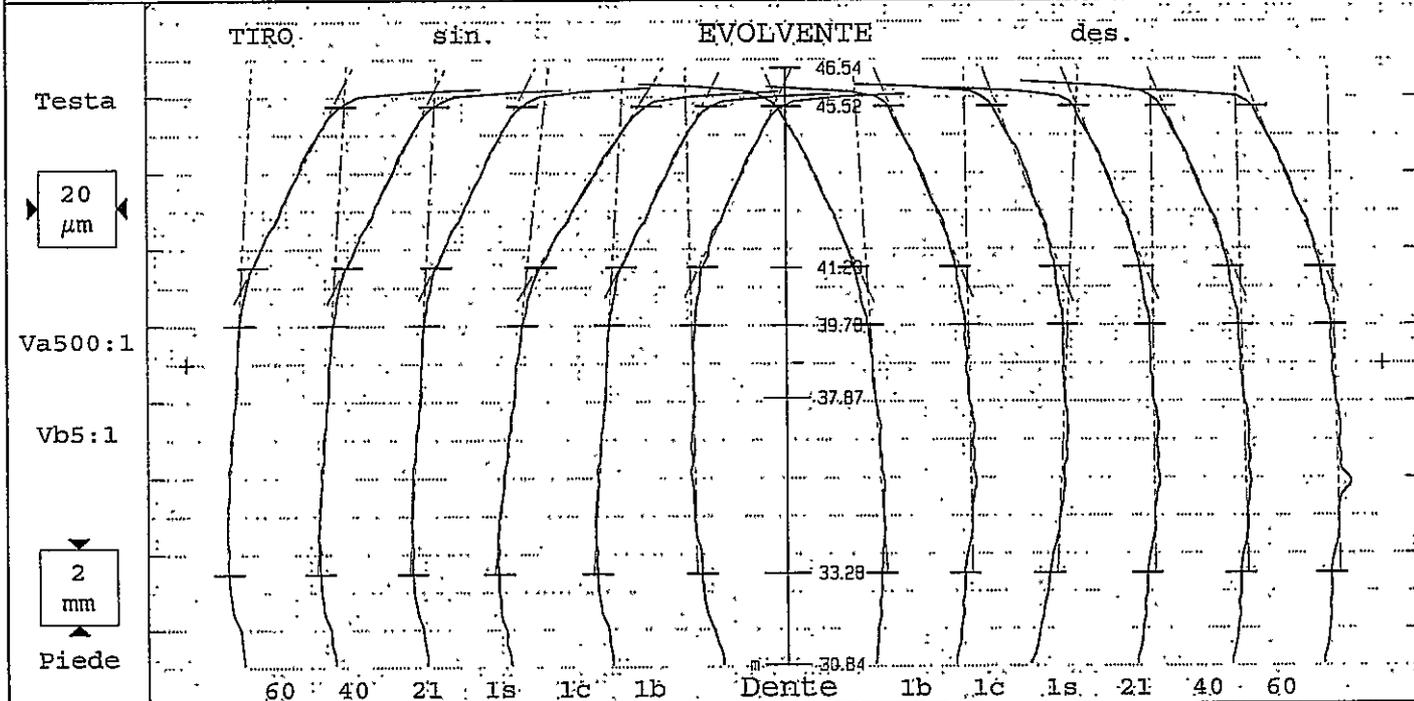
Err. di concentricità Fr	14	32	
Variaz. spessore dente Rs			

GETRAG

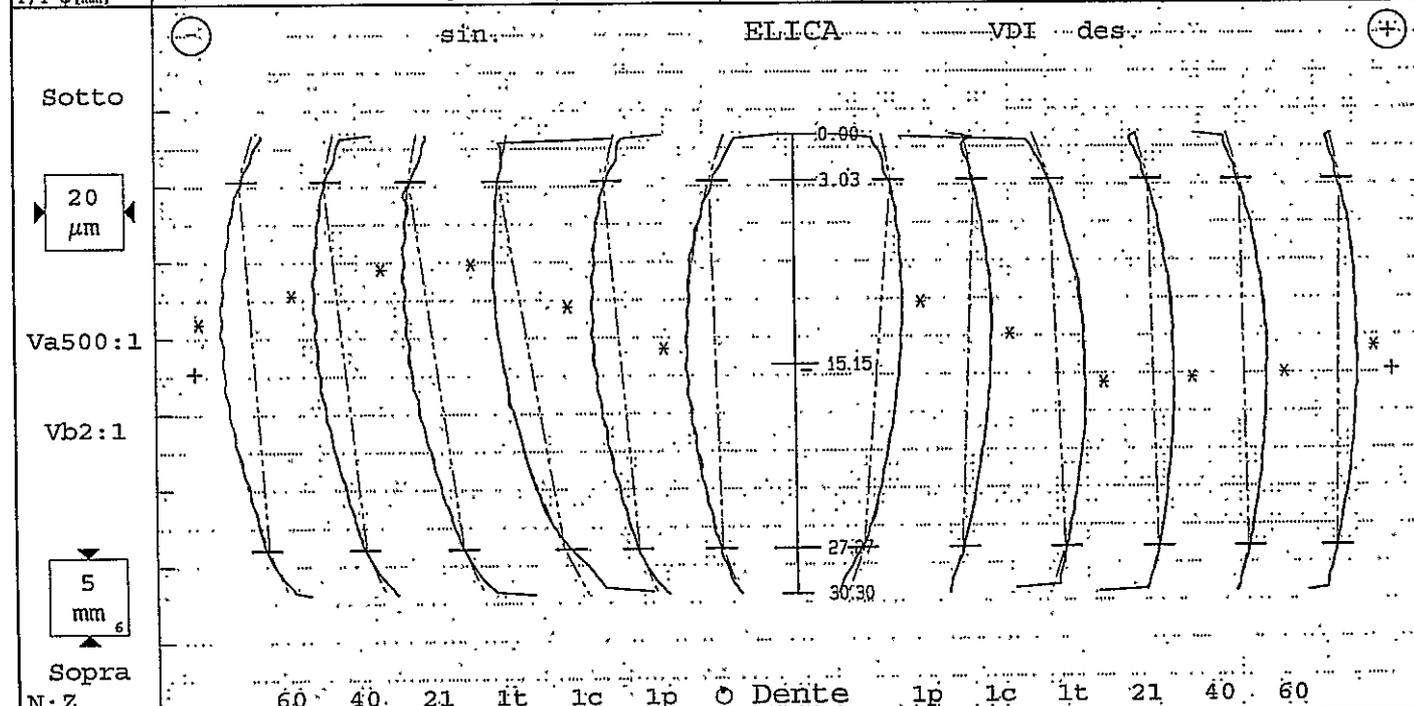
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:11
Denominazione:	ring gear		Numero denti z	79	Largh. fasc. dent. b	30.3mm
Numero disegno.:	250.1.4247.54-IF		Modulo m	2.3mm	Tratto evolv. La	6.5mm
Commessa/serie nr.:	PPAP 5		Angolo pressione	20°	Tratto elica LS	24.24mm
Masch.Nr.:	M001	spindel: Form. evolutiva	Angolo elica	26.7°	Inizio elab. ml	33.28mm
Untersuchungszweck:	Laufende Messung		Ø Base db	188.3547mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	24.975°	Fat. scor. pr. x	- .082



Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual	
fHm	-5±6	-4	Var 0							±6	Var 2						-1	
fHa	-5±5	-4	-4	-4	-7	-4	1		±5	-4	-1	3	0	-2	-1	-1		
Fa		2	2	2	3	2	7			4	3	5	4	3	5	4		
ffa	6	2	1	1	2	2	2		6	2	4	3	4	3	6	4		
fKo	-22/-14	-21	-22	-21	-21	-24	-21	-23	-22/-14	-20	-19	-21	-19	-19	-19	-19		
P/T-φ (mm)	196.098	[195.85/196.3]								209.867	[209.8/210.1]							



N:Z	Medio	Var 8						Qual	Tolerance	Var 7						Medio	Qual	
fHm	-15±6	-12	Var 8							±6	Var 7						1	
fHs	-15±8	-12	-9	-13	-17	-20	-10	-3	±8	10	5	-4	-2	-2	2	1		
Fs	11	5	7	4	3	7	5	11	11	8	10	5	3	3	2	5		
ffs	7	1	1	1	2	2	1	2	7	1	1	1	1	1	1	1		
Cs	5/9	7	8	7	7	7	7	7	5/9	6	6	7	5	6	5	6		
Bd	15±8	17								15±8								14



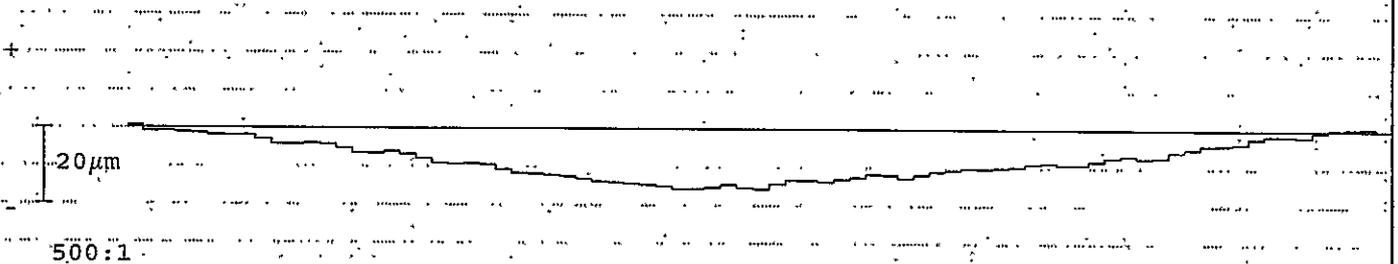


Nr. prog.: STI0410005 0 PNC35 B4784	Controllore: TURNO C	Data: 07.01.2015 13:11
Denominazione: ring gear	Numero denti z 79	Angolo pressione 20°
Numero disegno.: 250.1.4247.54-IF	Modulo m 2.3mm	Angolo elica 26.7°
Comessa/serie nr.: PPAP 5	Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formwerkzeug	Charge:

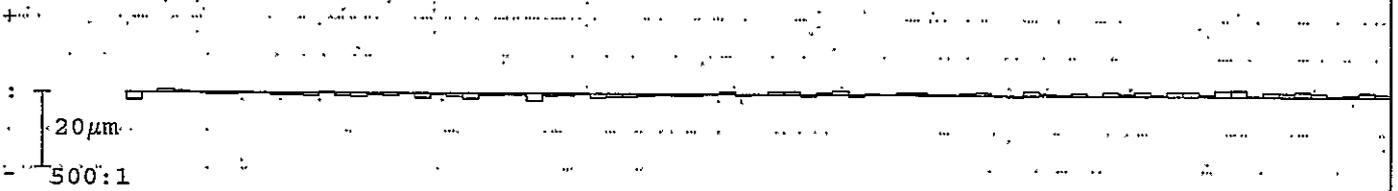
Errori singoli di divisione fp fianco sinistro



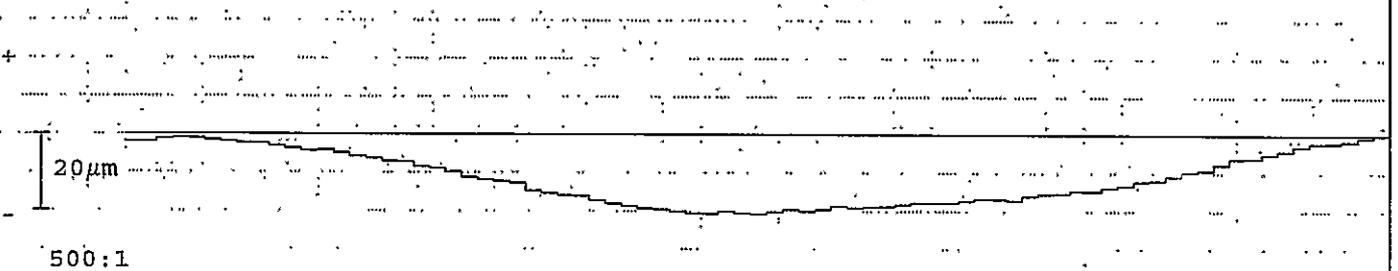
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



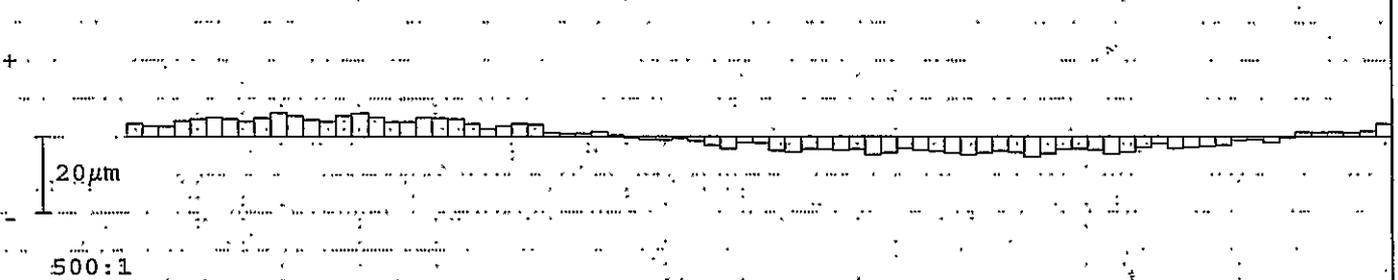
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 203.012 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		2		11	
Gr. salto di passo	fu max	2		14		3		14	
Scarto di divisione	Rp	3				4			
Err. globale di divisione	Fp	16		45		21		45	
Err. cordale di divisione	Fpz/8	7				10			

Centricità Fr (Ø-sfera =4mm)

⊙ : 10µm



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