

Part Name Ring Gear		Customer Part Number 250.1.6464.00	
Shown on Drawing No. 250.1.6464.00		Organization Part # _____	
Engineering Change Level a 35624		Dated 11 Dec 2013	
Additional Engineering Changes _____		Dated _____	
Safety and/or Government Regulation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Purchase Order No. _____	
Weight (kg) 3,172		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		Buyer/Buyer Code _____	
Street Address _____		TYP 250	
MODUGNO BARI	70026	ITALY	Application _____
City	Region	Postal Code	Country
MATERIALS REPORTING			
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	
REASON FOR SUBMISSION (Check at least one)			
<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	
REQUESTED SUBMISSION LEVEL (Check one)			
<input type="checkbox"/> Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.			
<input type="checkbox"/> Level 2 - Warrant with product samples and limited supporting data submitted to customer.			
<input checked="" type="checkbox"/> Level 3 - Warrant with product samples and complete supporting data submitted to customer.			
<input type="checkbox"/> Level 4 - Warrant and other requirements as defined by customer.			
<input type="checkbox"/> Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.			
SUBMISSION RESULTS			
The results for <input checked="" type="checkbox"/> dimensional measurements <input checked="" type="checkbox"/> material and functional tests <input type="checkbox"/> appearance criteria <input checked="" type="checkbox"/> statistical process package			
These results meet all drawing and specification requirements: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO (If "NO" - Explanation Required)			
Mold / Cavity / Production Process _____			
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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a			
Organization Authorized Signature _____		Date 12 Jan 2015	
Print Name Pennacchia Vincenzo		Phone No. tel 390805858580	
Title GPS 1 Leader		Fax No. _____	
E-mail vincenzo.pennacchia@getrag.com		_____	
FOR CUSTOMER USE ONLY (IF APPLICABLE)			
Part Warrant Disposition: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Other			
Customer Signature _____		Date 12.01.15	
Print Name _____		Customer Tracking Number (optional) _____	

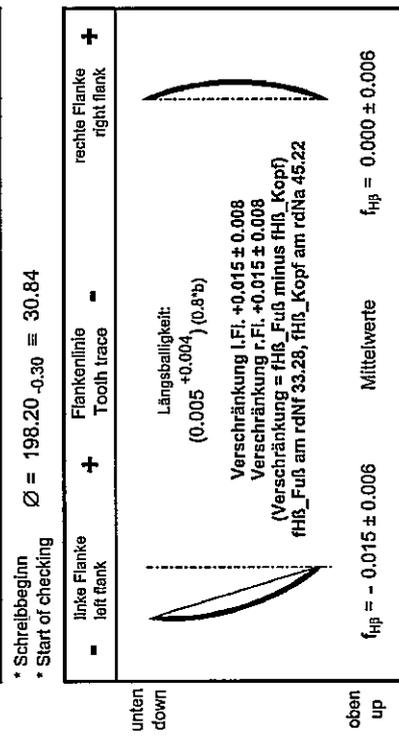
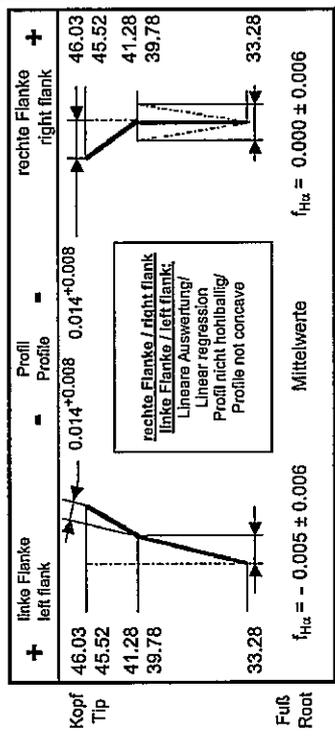
Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646400 Stato: Rilascio in generale (ciclo alternativo) Indice del disegno finito: 25.11.2014 / Vito Fiore
 Descrizione: Chart Corona Data emissione: 25.11.2014 / Vito Fiore
 Operazione: 0230 Rettifica dentatura con RZ303C Data aggiornamento: 13.03.2014 / Vito Fiore
 Centro di lavoro: SLW14850 RETTIFICA DENTI RG

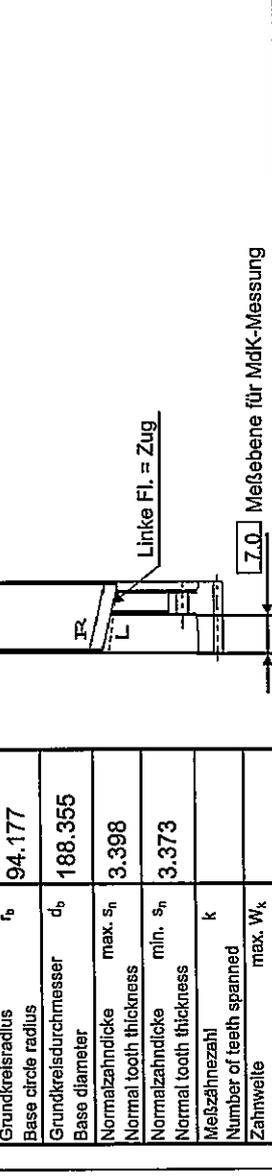
Identificativo	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut.	Metodi di gestione / Documentazione
0060	RUGOSITA' Rmax	0,0 µm	0,0	6,3	MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		Misu: 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 INCOMPLETEA					3	pz ogni 100 per macchina						CR1: no documentazione



* Plusabweichung des bis zum Schreibbeginn verlängerten vermittelnden Ist-Profiles max f_{H2}
 * Plus deviation of the average profile, extended to the start of checking, max f_{H2}
 Profil- und Flankenlinienprüfung nach VDI/VDE 2612
 Tabellenwerte für F_r und f_{H2} sind auf die gesamte Radbreite im Maßkreis d_m bezogen.
 Flankenlinienprüfbereich $L_p = 0.8^b$ 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_r and f_{H2} refers to the total face width in the meas. dia. d_m
 Tooth trace testing area $L_p = 0.8^b$ calculated to 1.0^b
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

STIRNRAD GEAR		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978) gültig für Werte am Einzeizahn Tolerances of gearing (DIN 3961 of Aug. 1978) valid for values at individual tooth	
Zähnezahl Number of teeth	79	linke Fl. left flank	rechte Fl. right flank
Modul Normal module	2.30000	f_{H2}	0.006
Eingriffswinkel Normal pressure angle	20° 0' 0"	Profil-Formabweichung F_a	
Helixwinkel Helix angle	26° 42' 0"	Profil-Gesamtabweichung F_{α}	
Steigungsrichtung Hand of helix	RECHTS	Profil-Winkelabweichung $f_{H\alpha}$	- 0.005 ± 0.005
Profilverschiebungsfaktor Addendum modification coeff.	-0.082	Flanken-Winkelabweichung $f_{H\beta}$	- 0.015 ± 0.008
Teilkreisdurchmesser Pitch diameter	203.387	Flanken-Gesamtabweichung F_{β}	0.011
Kopfkreisdurchmesser Outside diameter	210.10 -0.30	Flanken-Formabweichung f_{Hf}	0.007
Kopfnutzkreis, theo. max. d_{ha} Tip diam. usable theo.	209.65	Teilungsgesamtabweichung F_p	0.045
Kopfnutzkreis, theo. min. d_{ha} Tip diam. usable theo.	209.20	Einf.-Wälzabweichung F_r	
Fußkreisdurchmesser Root diameter	196.30 -0.45	Einfanken-Wälzabweichung f_r	
Fußnutkreisdurchmesser Root diameter usable	199.77	Tang. tooth to tooth comp. err.	
Grundkreisradius Base circle radius	94.177	Radbreite im Maßkreis d_m Facewidth in meas. diam.	30.30
Grundkreisdurchmesser Base diameter	188.355		
Normalzähndicke Normal tooth thickness	3.398		
Normalzähndicke Normal tooth thickness	3.373		
Meßzähnezahl Number of teeth spanned	k		
Zahnweite max. W_k			
Base tangent length Zahnweite min. W_k			
Base tangent length Meßkugeldurchmesser D _M	4.000		
Diam. Zweikugelmessung max. M_{2k}	208.506		
Measurement o. balls min. M_{2k}	208.440		
Diam. Zweikugelmessung Measurement o. balls			
Verdrehflankenpiel theo. Δ	0.066		
Circumferential backlash	0.172		

Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978) gültig für Werte am Einzeizahn Tolerances of gearing (DIN 3961 of Aug. 1978) valid for values at individual tooth	
Eingriffsteilungs-Abweichung Normal pitch error	f_{β}
Teilungs-Einzelabweichung Adjacent pitch error	f_p
Teilungssprung Diff. bet. adjacent pitches	f_u
Teilungs-Summenabweichung Cumulative circ. pitch error	F_{pk}
Rundlaufabweichung Radial run-out	F_r
Zahnflankenschwankung Range of tooth thickn. error	R_s
Zweifl.-Wälzabweichung Radial composite error	F_r
Zweifl.-Wälzabweichung Radial tooth to tooth comp. err.	f_r
Meßkreis Krümmungsradius Radius of curvature meas. diam.	$R_{\alpha m}$



Bezugsprofil-Schleifscheibe Grinding tool data	
Schleifscheibenkopfhöhe Grinding wheel tip height	$h_{\text{Kops}} = 3.190$
Schleifscheibenkopfradius Grinding wheel tip radius	$R_{\text{Kops}} = 0.921$
Schleifdurchmesser grinding diameter	$\Phi = 198.15 \pm 0.30 \approx 30.76$
Honddurchmesser honing diameter	$\Phi = 198.15 \pm 0.30 \approx 30.76$

Verarbeitungsdaten siehe Verzahnungsblatt Vorbearbeitung gleicher Nr.
 For pre-machining dimensions, see gear data sheet same number
 Wkz-Profil siehe Werkzeugdatenblatt Nr. 250.1.4247.78
 For Tooth profile, see tool data sheet number 250.1.4247.78

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501646400
 Descrizione: Chart Corona
 Operazione: 0230 Rettifica dentatura con RZ303C
 Centro di lavoro: SLW14850 RETTIFICA DENTI RG

Stato: Rilascio in generale (ciclo alternativo)
 Indice del disegno finito: 25.11.2014 / Vito Fiore
 Data emissione: 13.03.2014 / Vito Fiore
 Data aggiornamento:

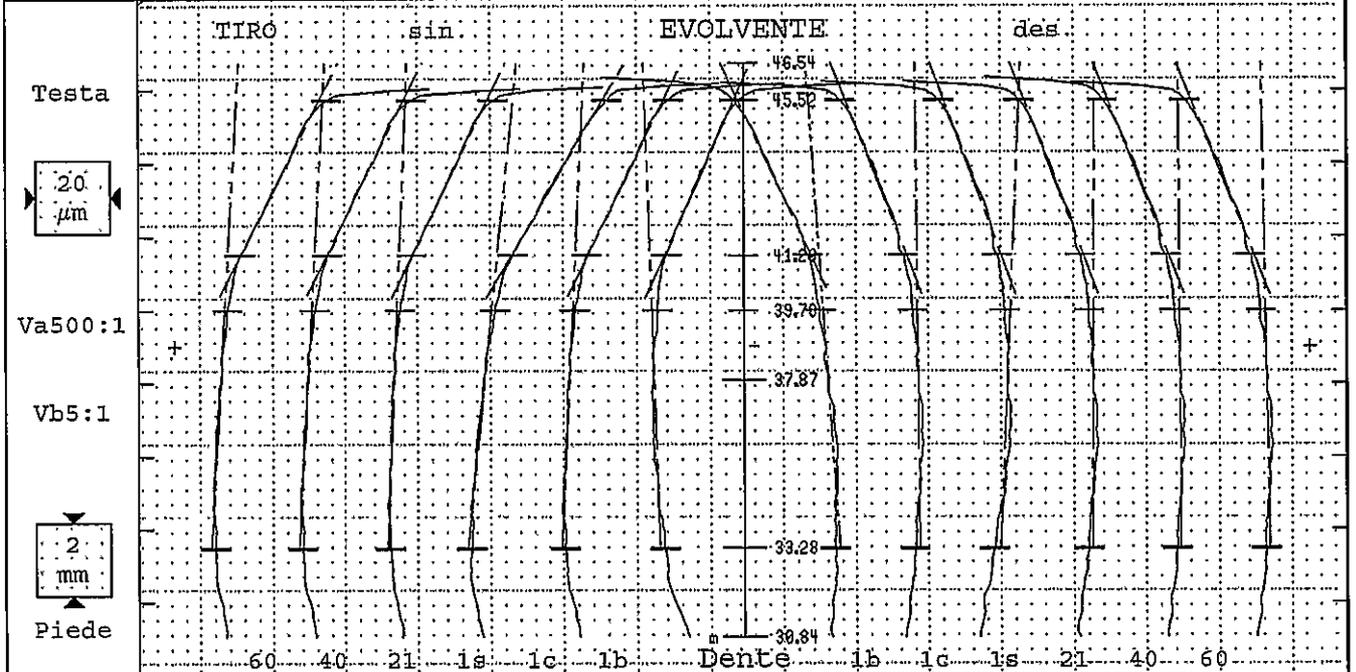
Pos. lavoro	GN 3010	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut	Metodi di gestione / Documentazione
0002		Controllo 1° pz secondo Gear data 250.1.4247.51				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		CR1: controllo primo pezzo Misu: controllo primo pezzo
0010	M	Diametro Mdk (RZ303C e RZF)	208,473 mm	208,440	208,506	MOA-416121 RUGOSIMETRO TIPO PRK MZA-450311 Calcolatore di misura E9066 Marposs						1° pz 2.3.1.1-R 2		
0020		Evolvente ed elica sec.G.D. con svergolamento (RZ303C)				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		Misu: diagramma di dentatura
0022		Evolvente ed elica sec.G.D. con svergolamento (RZF)				MVZ-400249 EVOLVENTIMETRO						ogni 50 pz prodotti /macchina		Misu: diagramma di dentatura
0030		SOMMA DI PASSO Fp (RZ303C)	mm		0,045	MVZ-400249 EVOLVENTIMETRO	3	pz ogni 100 per macchina				pz a turno/mac .		Misu: diagramma di dentatura
0032		SOMMA DI PASSO Fp (RZF)	mm		0,045	MVZ-400249 EVOLVENTIMETRO						ogni 50 pz prodotti /macchina		Misu: diagramma di dentatura
0040	M	OSCILLAZIONE RADIALE Fr (RZ303C)	mm		0,032	MVZ-400249 EVOLVENTIMETRO						pz a turno/mac .		Misu: diagramma di dentatura
0042	M	OSCILLAZIONE RADIALE Fr (RZF)	mm		0,032	MVZ-400249 EVOLVENTIMETRO						ogni 50 pz prodotti /macchina		Misu: diagramma di dentatura
0044		Controllo ammassature 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° pz 2.3.1.1-R 2		Misu: controllo primo pezzo

GETRAG

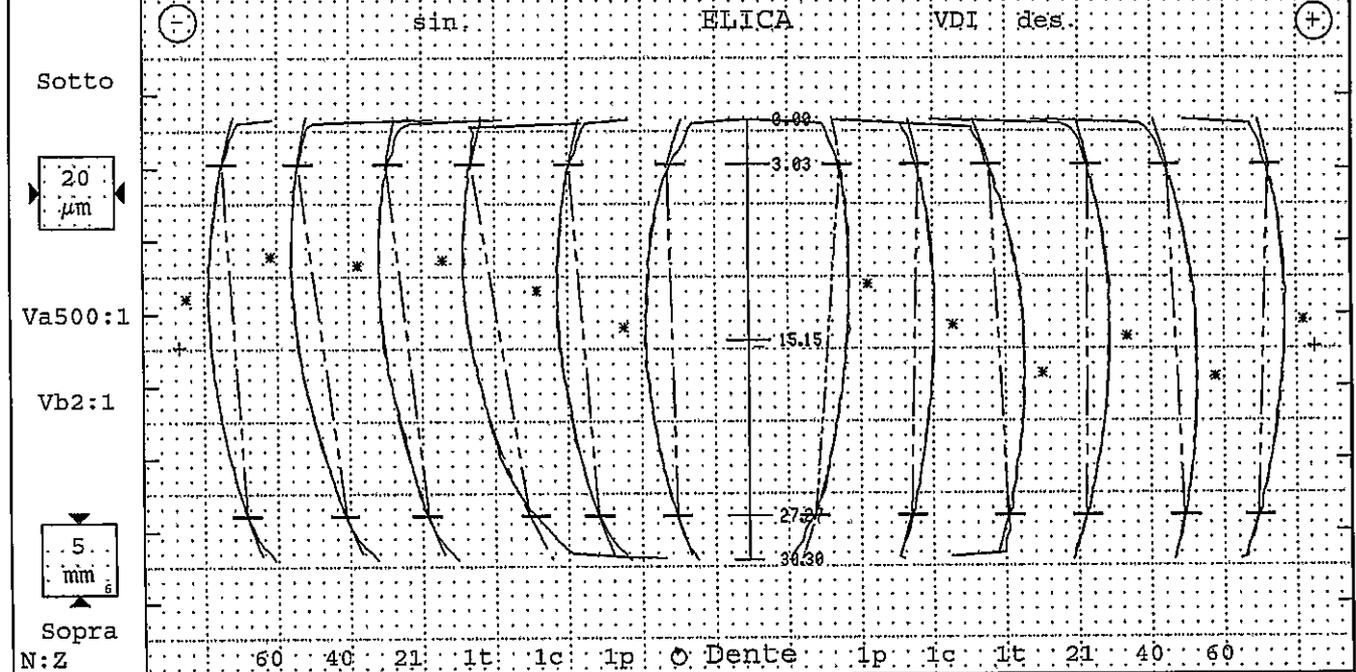
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410o05 0 PNC35 B4784	Controllora:	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 L8	24.24mm	
Masch.Nr.:	M001	Spindel: Forme	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									Var										
fHm	-5±6	-3	1								±6	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				
fKα	-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]								



fHm	Medio	Var							Qual	Tolerance	Var							Medio	Qual	
		8									10									
fHm	-15±6	-12	8								±6	10							1	
fHα	-15±8	-12	-8	-16	-14	-19	-10	-3		±8	9	3	-6	1	-6	4	1			
Fβ	11	4	6	2	3	7	5	11		11	7	2	7	2	6	3	3			
ffβ	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

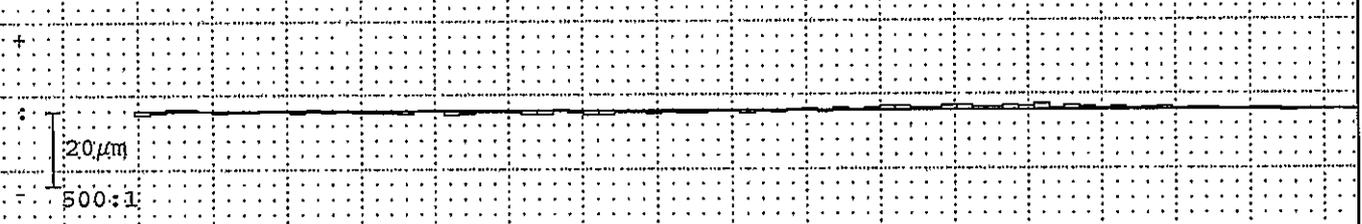
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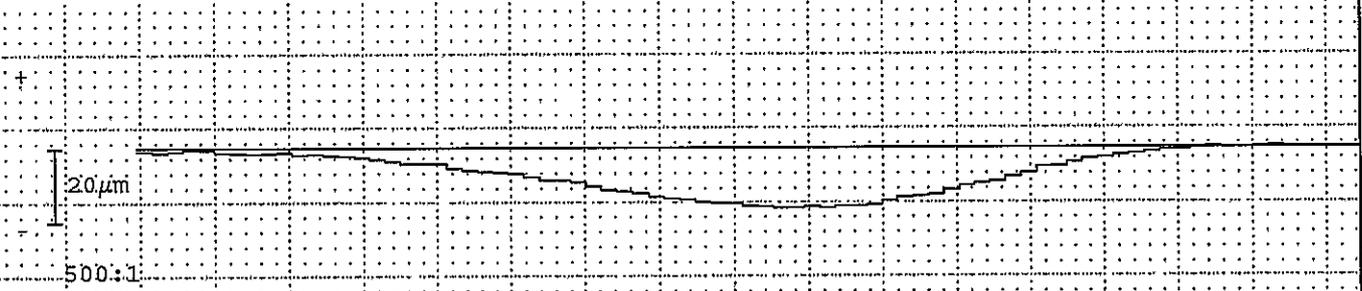


Nr. prog.:	STI0410005 0 PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:58
Denominazione:	ring gear	Numero denti z	79	Angolo pressione	20°
Numero disegno.:	250.1.4247.54-IF	Modulo m	2.3mm	Angolo elicita	26.7°
Commessa/serie nr.:	PPAP 1	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: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

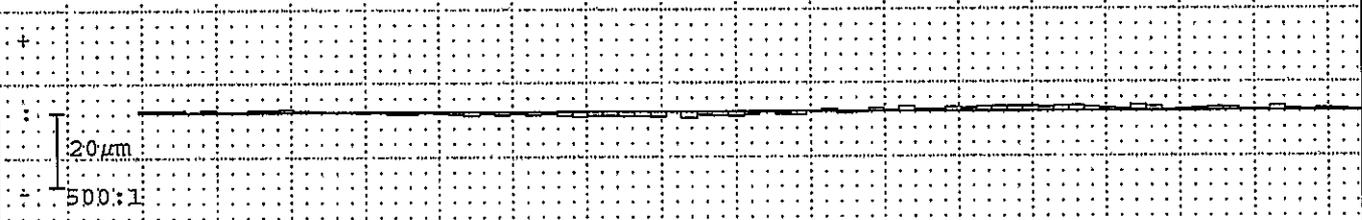
Errori singoli di divisione fp fianco sinistro



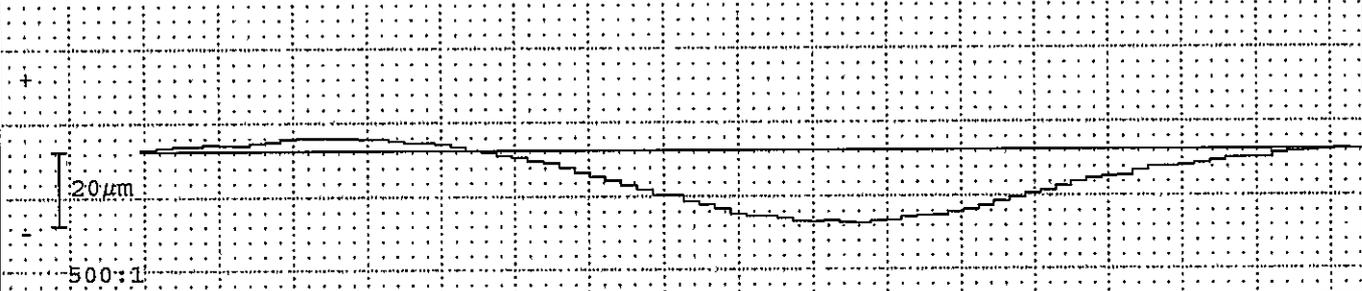
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

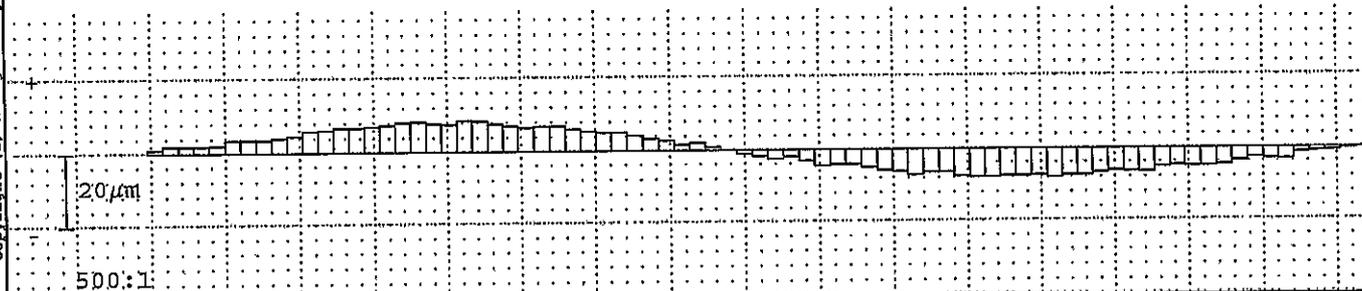


Errore somma di divisione Fp fianco destro



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	
Variatz. spessore dente Rs			

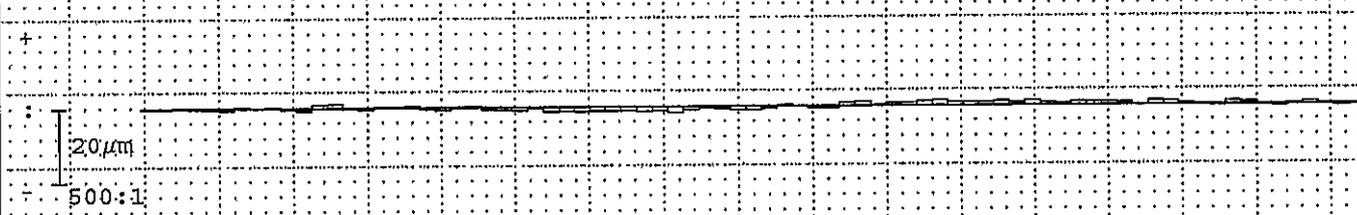
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Ruota cilindrica Divisione

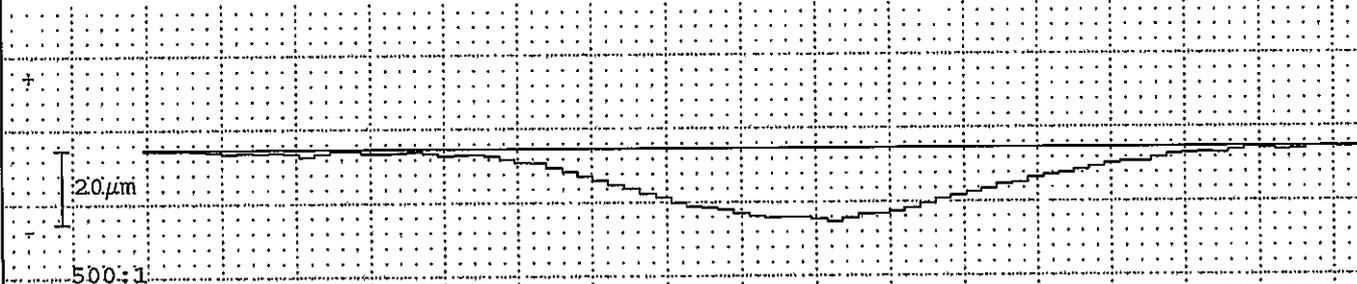


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Denominazione:	ring gear	Numero denti z	79	Angolo pressione	20°
Numero disegno.:	250.1.4247.54-IF	Modulo m	2.3mm	Angolo elica	26.7°
Commessa/serie nr.:	PPAP 2	Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORM	Erzeug:	Charge:	

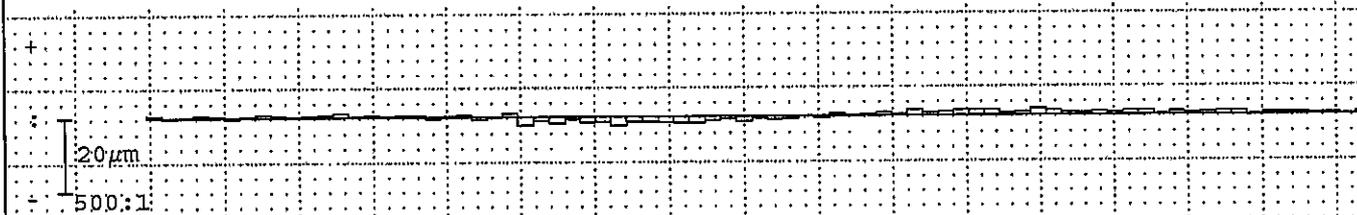
Errori singoli di divisione fp fianco sinistro



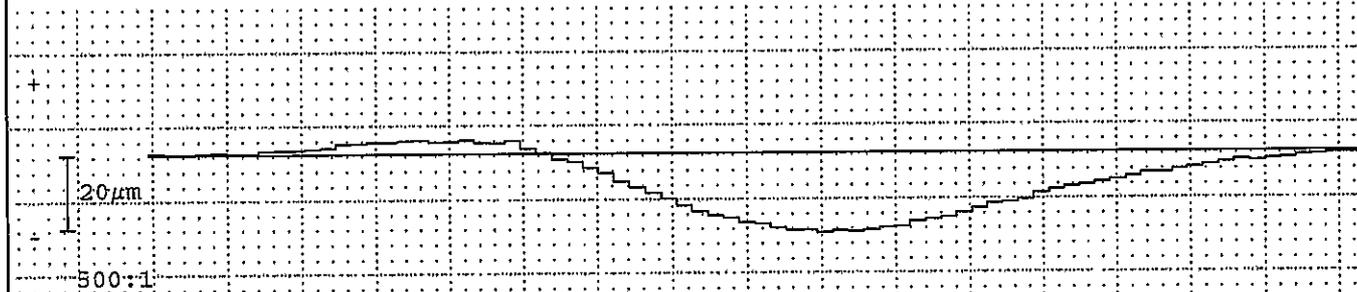
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



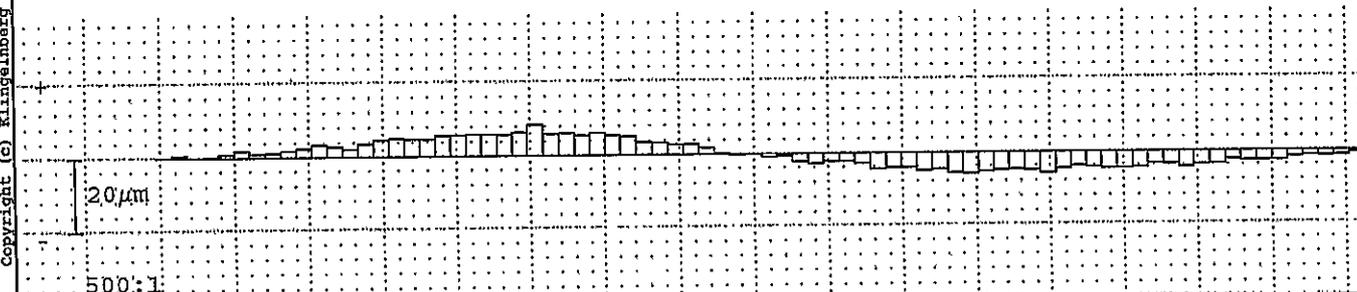
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 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	20		45		25		45	
Err. cordale di divisione Fpz/8	12				16			

Centricità Fr (Ø-sfera =4mm)

⊙ : 11µm



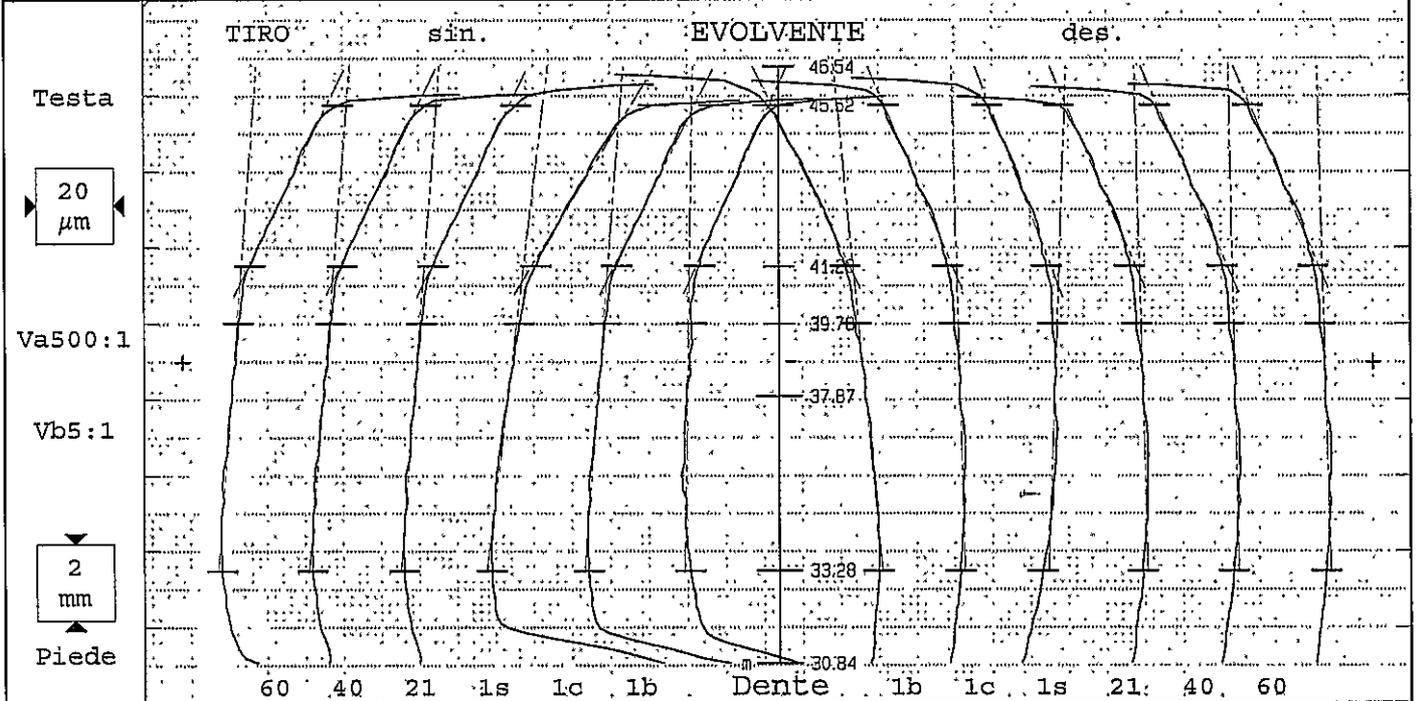
Err. di concentricità Fr	14	32	
Variaz. spessore dente R6			

GETRAG

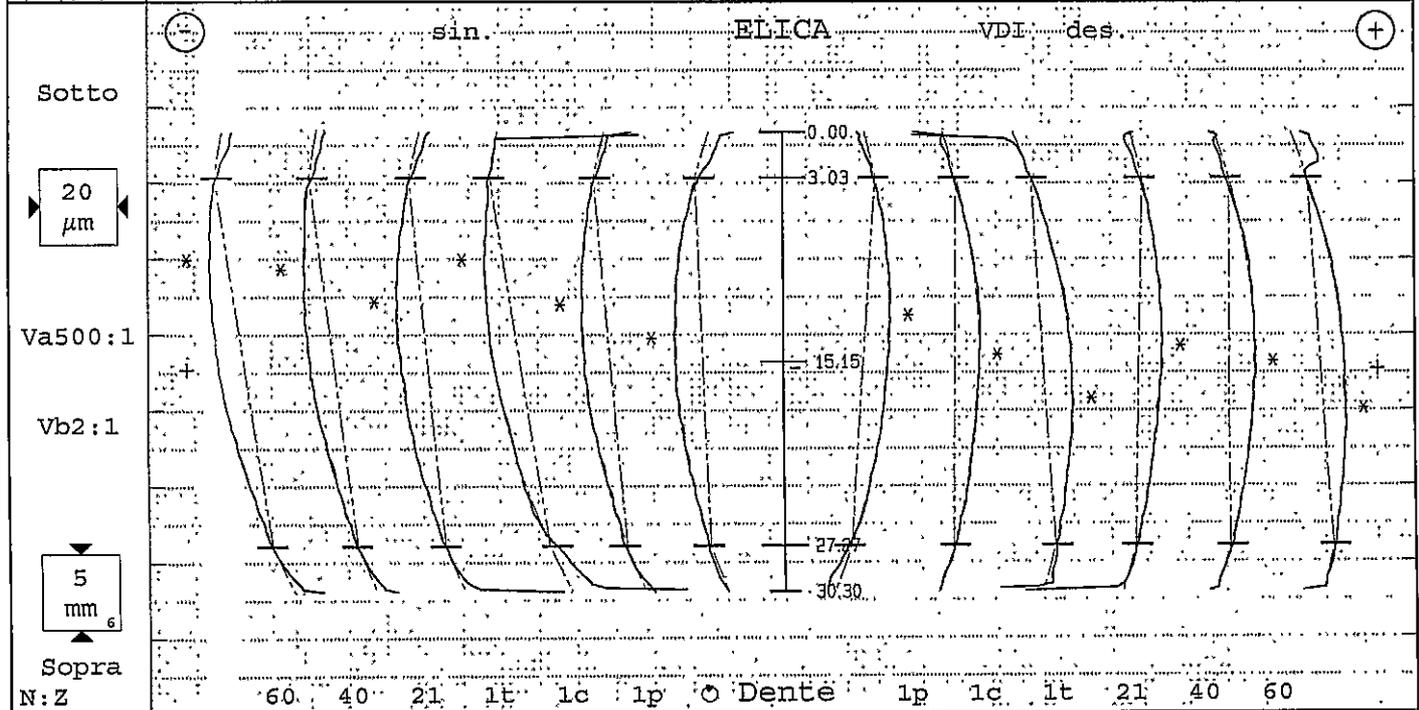
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STIO410005 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 L6	24.24mm
Masch.Nr.:	M001	Spindel: Forme	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 0								Var 1							
fHm	-5±6	-5							±6								
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]							



Tolerance	Medio	Var 9						Qual	Tolerance	Var 11						Medio	Qual
fHm	-15±6	-14							±6								
fHa	-15±8	-14	-19	-16	-12	-19	-10	-5	±8	8	1	-7	3	0	-8	-1	
Fa	11	4	3	2	4	6	5	10	11	7	2	7	2	3	7	4	
ffa	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	

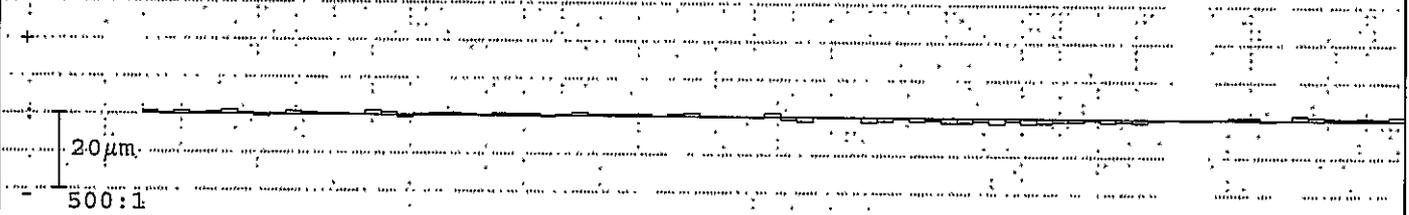
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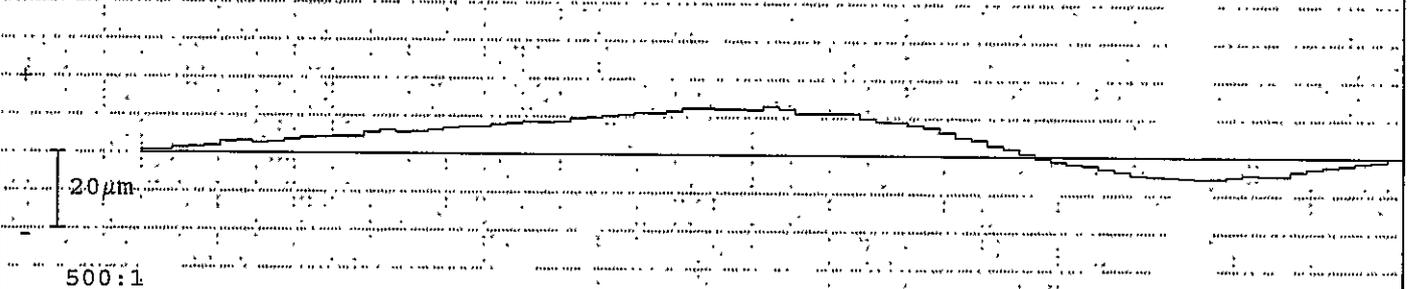


Nr. prog.: STI0410005 0	PNC35 B4784	Controllore: TURNO C	Data: 07.01.2015 13:27
Denominazione: ring gear	Numero denti z 79	Angolo pressione 20°	
Numero disegno.: 250.1.4247.54-IF	Modulo m 2.3mm	Angolo elica 26.7°	
Commessa/serie nr.: PPAP 3	Untersuchungszweck: Laufende Messung		
Masch.Nr.: M001	Spindel: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

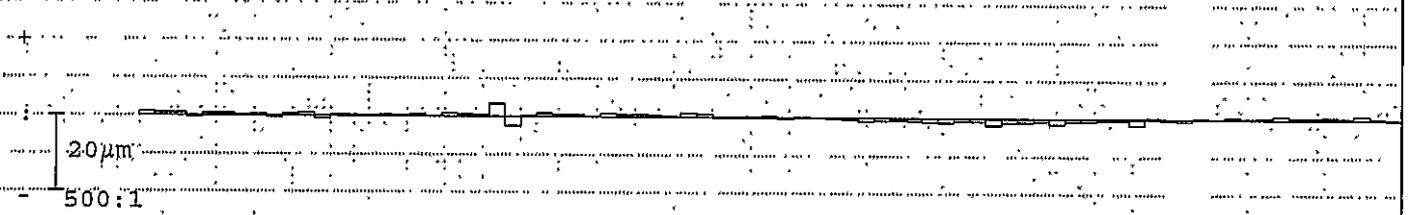
Errori singoli di divisione fp fianco sinistro



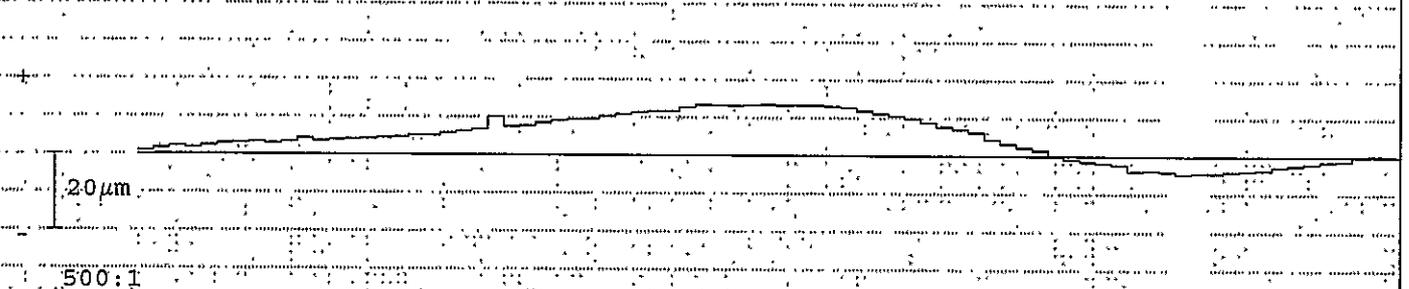
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

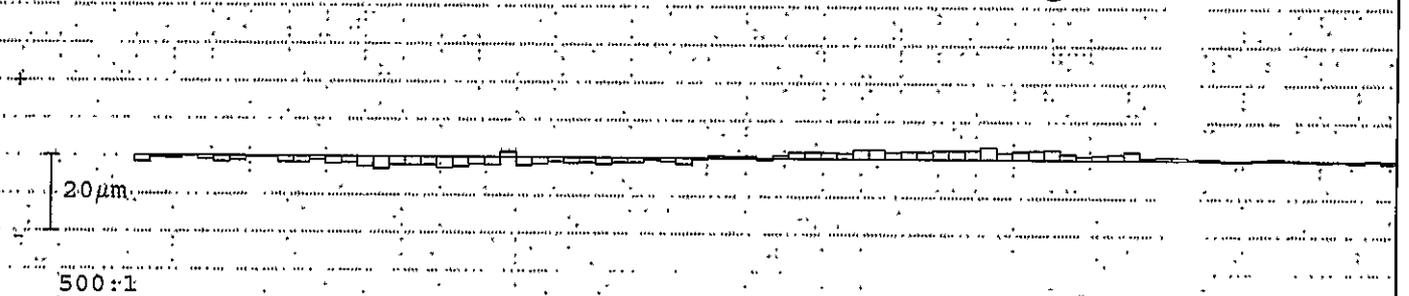


Errore somma di divisione Fp fianco destro



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	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		
Variab. spessore dente Rs				

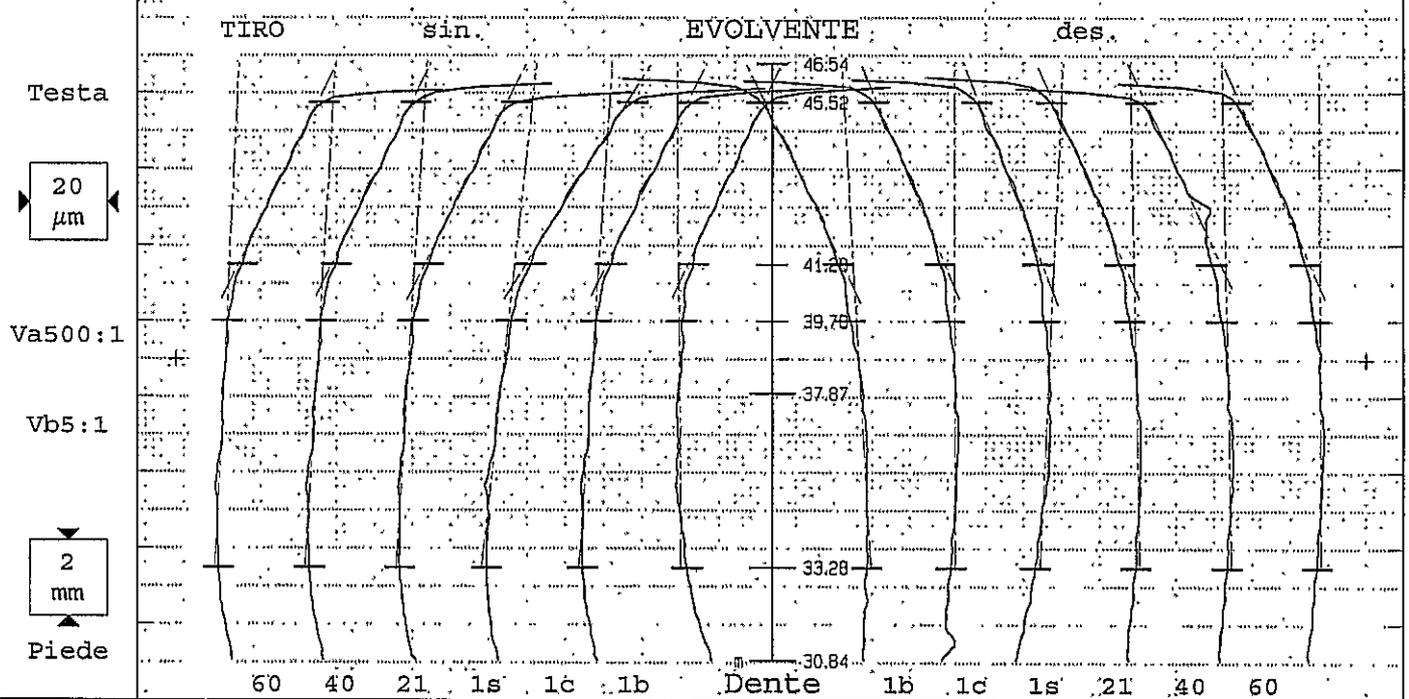
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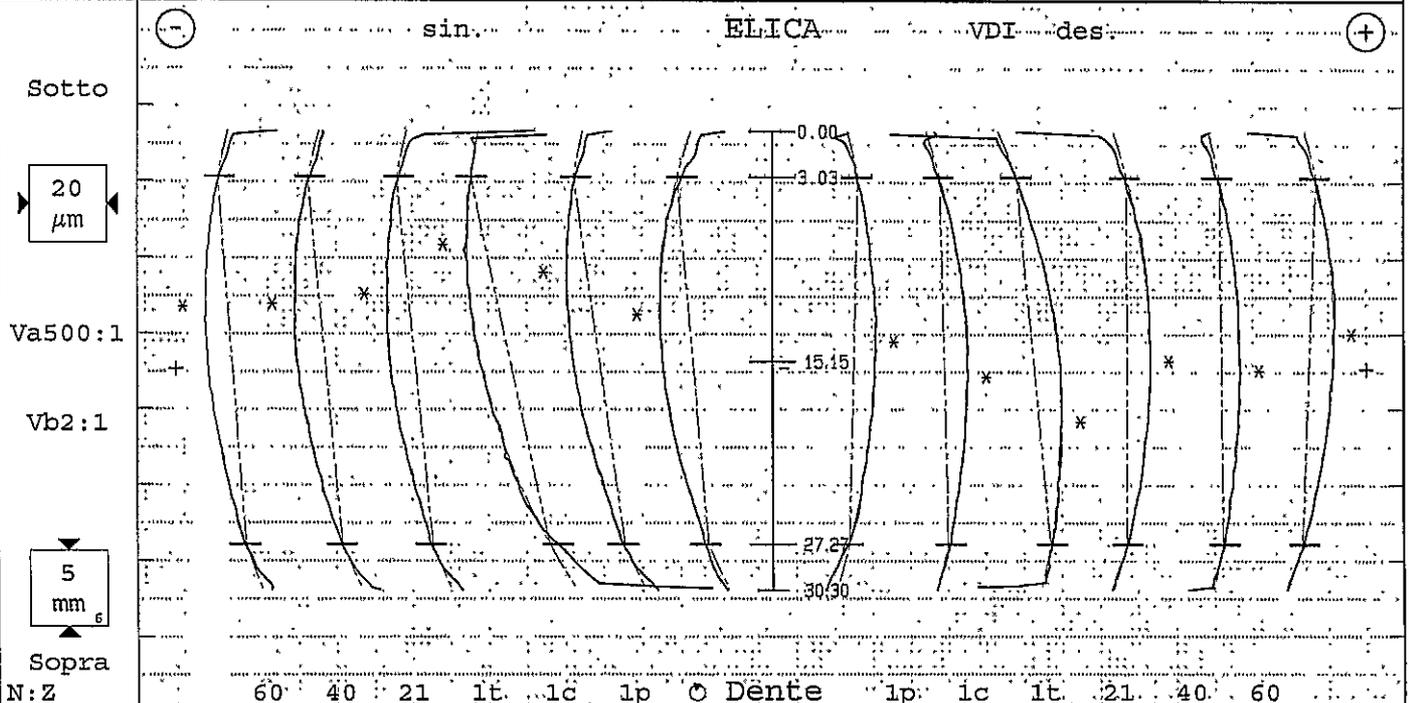
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 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
Comessa/serie nr.:	PPAP 4		Angolo pressione	20°	Tratto elica L3	24.24mm
Masch.Nr.:	M001	Spindel: Formel	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									Var								
fHm	-5±5	-4								±5								-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	-21	-20	-20	
P/T-φ (mm)	196.084	[195.85/196.3]									209.848							[209.8/210.1]	



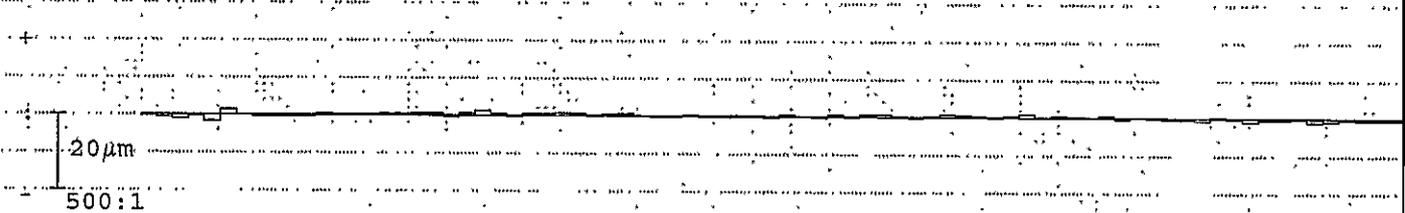
Tolerance	Medio	Var							Qual	Tolerance	Var							Medio	Qual
fHm	-15±6	-12								±6								0	
fHs	-15±8	-12	-9	-11	-12	-26	-16	-10		±8	3	-3	-11	0	-1	5	0	0	
Fβ	11	4	5	5	4	12	2	6		11	13	7	10	2	2	4	4	4	
ffβ	7	1	1	1	1	3	1	2		7	1	1	1	1	1	1	1	1	
CK	5/9	7	6	7	7	8	7	8		5/9	6	6	7	6	5	6	6	6	
Bd	15±8	16								15±8								14	



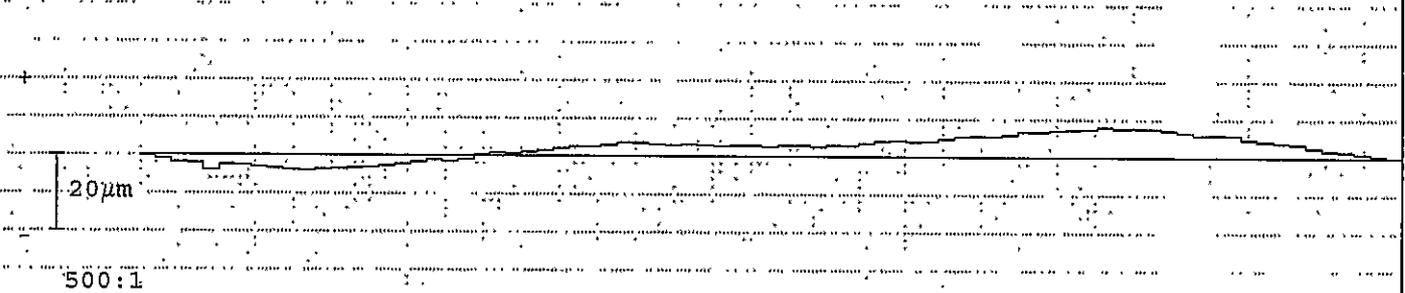


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:19
Denominazione:	ring gear		Numero denti z	79	Angolo pressione	20°
Numero disegno.:	250.1.4247.54-IF		Modulo m	2.3mm	Angolo elica	26.7°
Commessa/serie nr.:	PPAP 4		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Formel	Skizze:		Charge:	

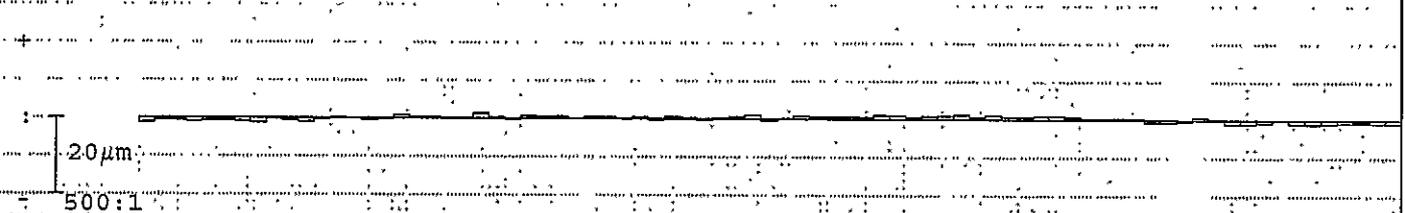
Errori singoli di divisione fp fianco sinistro



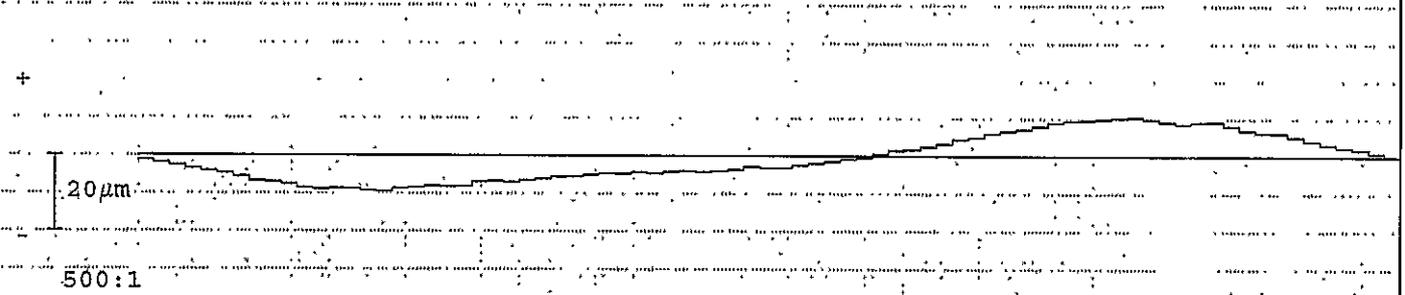
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

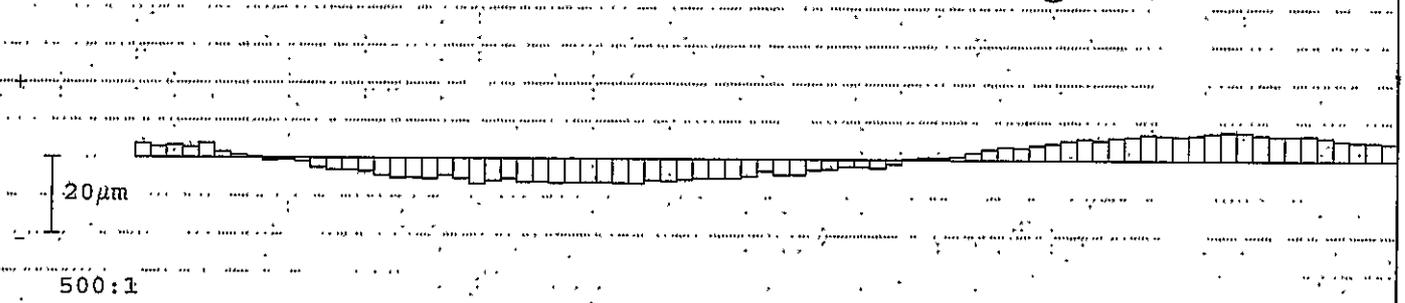


Corsa per misura divis.: 203.012 z=15.2mm

	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/B	6				9			

Centricità Fr (Ø-sfera =4mm)

⊙ : 13µm



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

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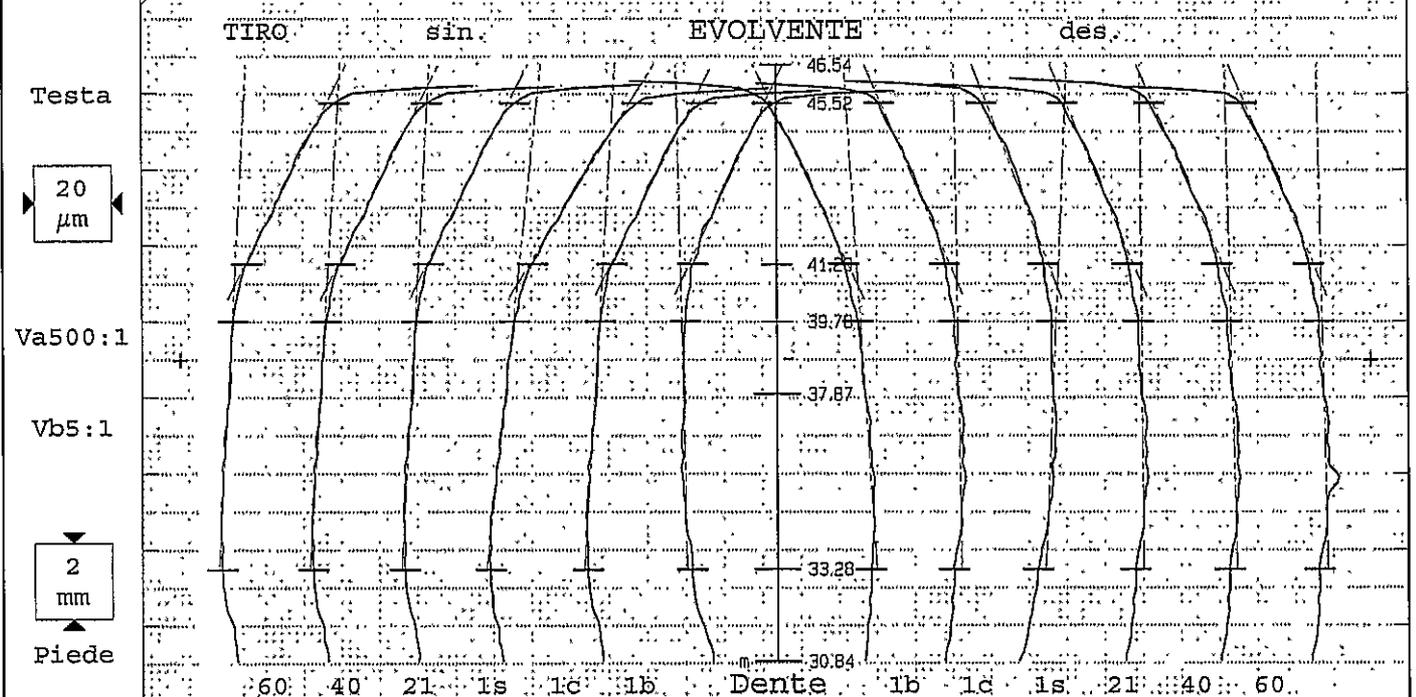


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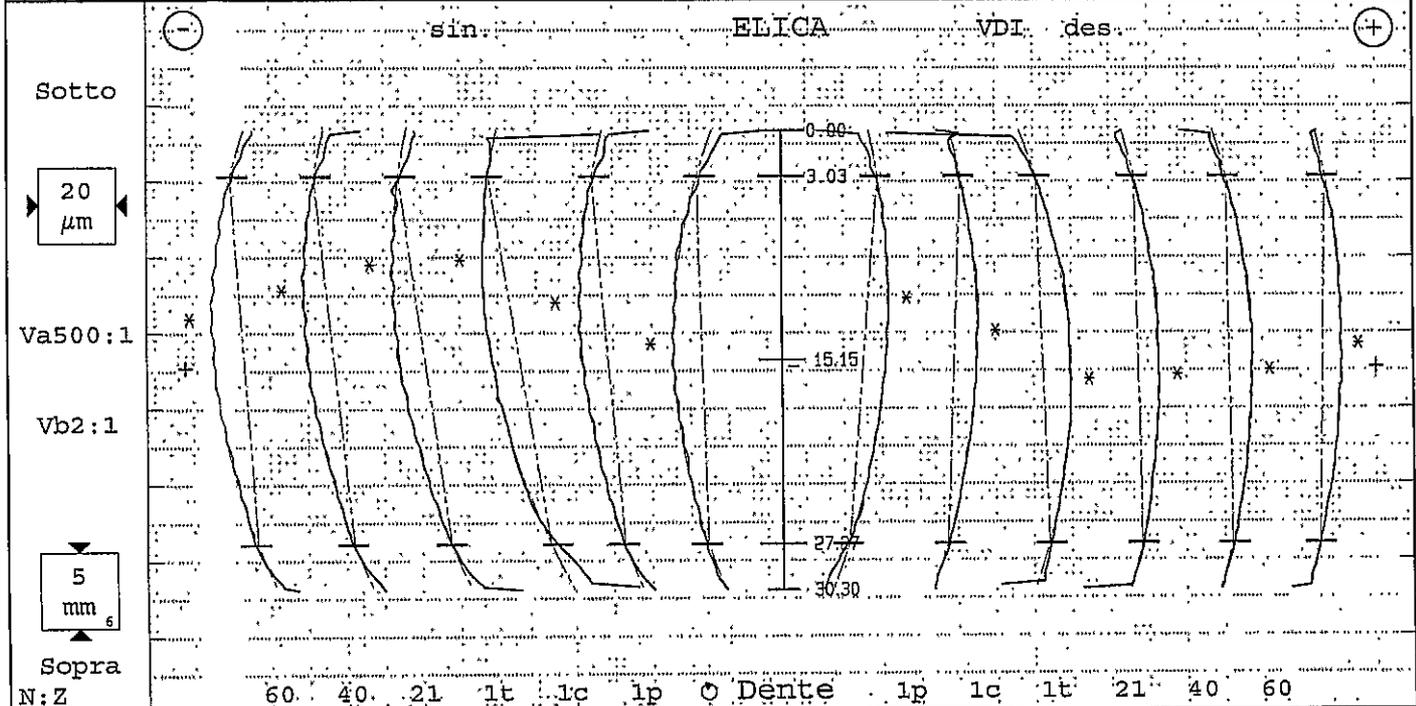
Ruota cilindrica Evolvente/Elica



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 Lb	24.24mm
Masch.Nr.:	M001	Spindel: Forme	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	
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				
P/T-φ [mm]	196.098	[195.85/196.3]								209.867	[209.8/210.1]									



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual	
fHSm	-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	

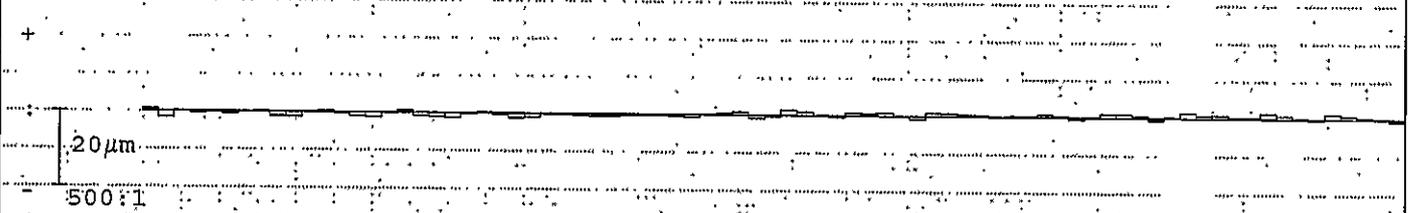
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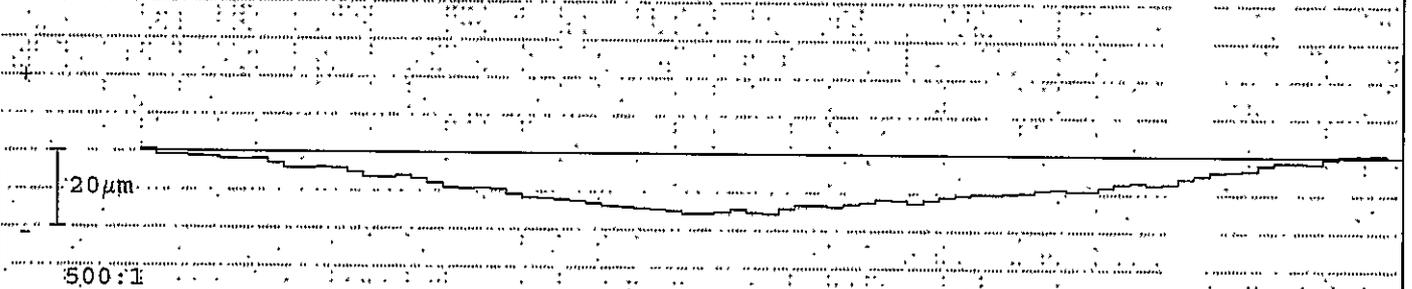


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	07.01.2015 13:11
Denominazione:	ring gear		Numero denti z	79	Angolo pressione	20°
Numero disegno:	250.1.4247.54-IF		Modulo m	2.3mm	Angolo elica	26.7°
Commessa/serie nr.:	PPAP 5		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: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

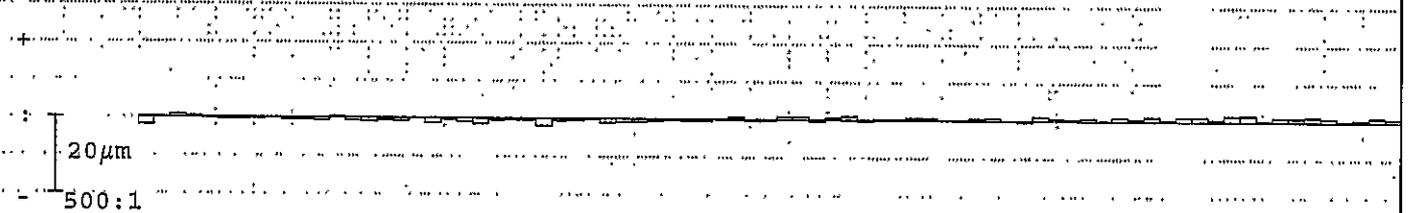
Errori singoli di divisione fp fianco sinistro



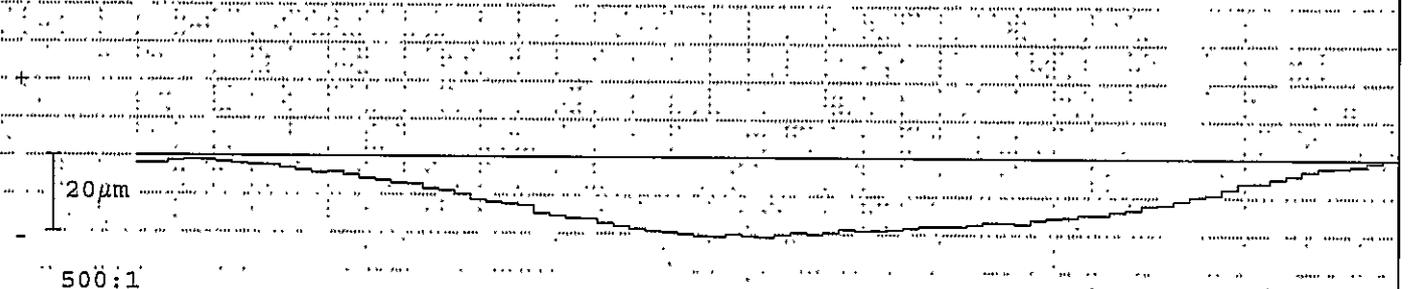
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

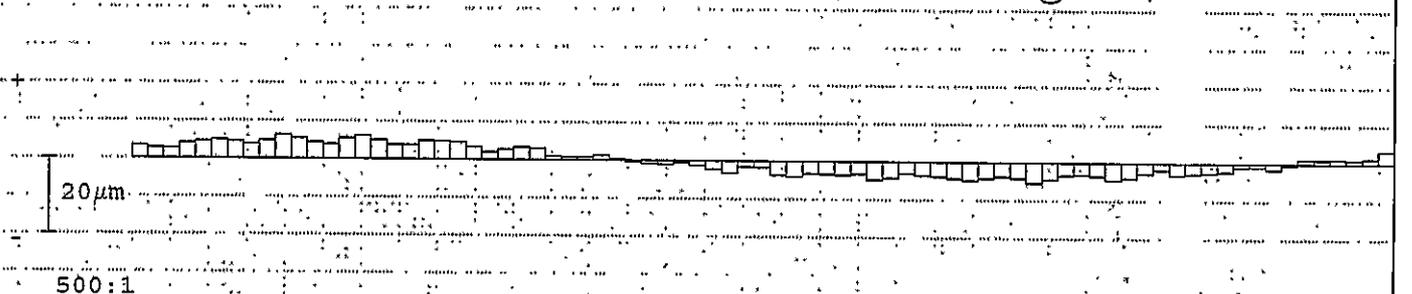


Errore somma di divisione Fp fianco destro



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	fp	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		
Variáz. spessore dente	Rs				

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Point	Caracteristic	Tolerance	Part 1	Part 2	Part 3	Part 4	Part 5
4	MDK	208,506/208,440	208,464	208,46	208,459	208,449	208,453

Manual measures by Marposs

RG 250 1 6464 00

12,Jan 2015 2014