

Part Name	Speed Gear 3 RD	Customer Part Number	250.1.3641.77
Shown on Drawing No.	250.1.3641.77	Organization Part #	
Engineering Change Level	a 35670	Dated	31 07 2014
Additional Engineering Changes		Dated	
Safety and/or Government Regulation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Purchase Order No.	
Checking Aid No.		Weight (kg)	1,445
Checking Aid Engineering Change Level		Dated	

ORGANIZATION MANUFACTURING INFORMATION	CUSTOMER SUBMITTAL INFORMATION
GETRAG MODUGNO	RENAULT/FORD
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)

<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)

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 **15 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 **15.01.15**

Print Name _____ Customer Tracking Number (optional) _____

Point	Caracteristic	Tolerance	Part 1	Part 2	Part 3	Part 4	Part 5
4	MDK	114,655/114,569	114,594	114,595	114,593	114,598	114,588

Manual measures by Marposs

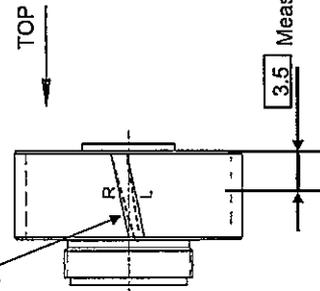
SR3 2501 3641 77

07, Jan, 2015

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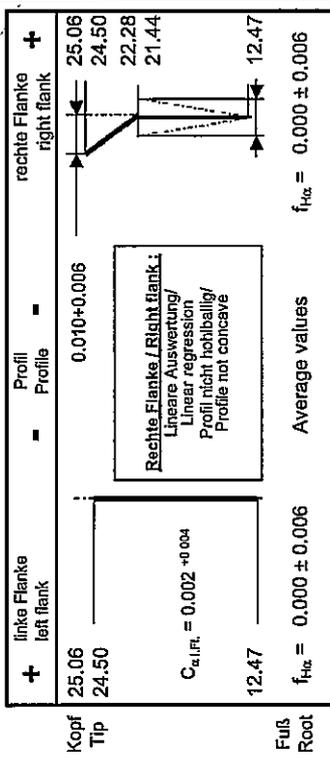
STIRNRAD GEAR		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978) gültig für Werte am Einzelzahn Tolerances of gearing (DIN 3961 of Aug. 1978) valid for values at individual tooth	
außenverzahnt external		linke Fl. left flank	rechte Fl. right flank
Zähnezahl Number of teeth	56		
Modul Module	1.750000	f_{α}	f_{β}
Eingriffswinkel Normal pressure angle	17° 30' 0"	0.005	0.010
Helixwinkel Helix angle	30° 0' 0"		0.010
Steigungsrichtung Hand of helix	LEFT		0.012
Profilverschiebungsfaktor Addendum modification coef.	-0.091		
Teilkreisdurchmesser Pitch diameter	113.161		0.032
Kopfkreisdurchmesser Outside diameter	118.00 -0.26		
Kopfnutkreisrad. Tip diam. usable theo.	117.55		0.028
Kopfnutkreisrad. Tip diam. usable theo.	117.08		0.012
Fußkreisdurchmesser Root diameter	106.65 -0.45		16.90
Fußnutkreisdurchmesser Root diameter usable	109.22		
Grundkreisradius Base circle radius	53.166		
Grundkreisradius Base diameter	106.333		
Normalzahnstärke Normal tooth thickness	2.570		
Normalzahnstärke Normal tooth thickness	2.545		
Melzähnezahl Number of teeth spanned	k		
Zahnweite Base tangent length	max. W_k		
Zahnweite Base tangent length	min. W_k		
Melzkugeldurchmesser Ball diameter	D_M		
Diam. Zweikugelmaß Measurement o. balls	max. M_{2k}		
Diam. Zweikugelmaß Measurement o. balls	min. M_{2k}		
Verdrehflankenspiel Circumferential backlash	theo. 0.072 0.172		

Measuring plane for M_{2k}	
right fl. = drive	
Bezugsprofil-Schleifscheibe Grinding tool data	
Schleifscheibenkopfhöhe Grinding wheel tip height	$h_{\text{ap05}} = 3.000$
Schleifscheibenkopfradius Grinding wheel tip radius	$r_{\text{ap05}} = 0.584$
Schleifdurchmesser grinding diameter	$108.57 -0.30 \approx 10.96$
Honddurchmesser honing diameter	$108.57 -0.30 \approx 10.96$

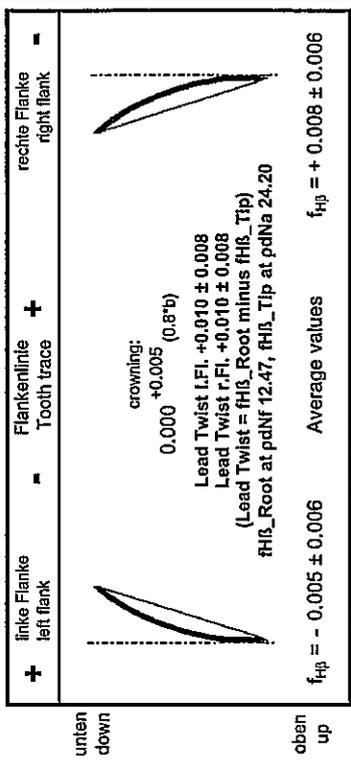


Vorbearbeitungsdaten siehe Verzahnungsblatt Vorbearbeitung gleicher Nr.
For pre-machining dimensions, see gear data sheet same number

Wkz-Profil siehe Werkzeugdatenblatt Nr. 250.1.3641.77
For Tooth profile, see tool data sheet number



* Schreibbeginn $\varnothing = 108.57 -0.30 \approx 10.96$
* Start of checking



* ffd (zwischen dNF und dem Schreibbeginn ds) max ffd/2, jedoch 0.003 zulässig
* ffof (between dNF and start of checking ds) max ffof/2, 0.003 allowable.
Profil- und Flankenliniennprüfung nach VDI/VDI 2612
Tabellenwerte für F_p und f_{Hp} sind auf die gesamte Radbreite im Meßkreis d_M bezogen
Flankenliniennprüfbereich $L_p = 0.8 \cdot b$ hochgerechnet auf $1.0 \cdot b$
Begriffe für Stirnräder nach DIN 888, 3960, 3998
Profile and helix checking according to VDI/VDI 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 $L_p = 0.8 \cdot b$ calculated to $1.0 \cdot b$
Terms of the tooth system according to DIN (German Industrial Standards) No. 888, 3960, 3998

Verteiler:	
Schutzvermerk nach ISO 16016 beachten Protection per ISO 16016	
■ ■ ■ GETRAS	
GETRAS Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Co KG	
Remark:	
Ersatz für bet. Getriebeayer:	250.0.0003.10
Verzahnungsblatt-Engkontrollle Final Check Gear Data Benennung: Naming:	Speed Gear 3rd
Buchh. Anz.	Änd.Nr.
Abbildungen sind unmaßstäblich. Diagrams not to scale.	
Datum	Name
gez. 08.05.2014	Criceni, Fabrica
gepr.	

Zeichnungsnummer
Drawing number
250.1.3641.77

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501364177 Stato: Rilasciato Produzione + Calcolo costi
 Descrizione: Ruota libera 3M
 Operazione: 0230 Rettifica denti
 Centro di lavoro: SLW14250 RETTIFICA DENTI SG3
 Indice del disegno finito: 11.11.2014 / Vito Fibre
 Data emissione: 09.01.2015 / Rocco Tanzella
 Data aggiornamento:

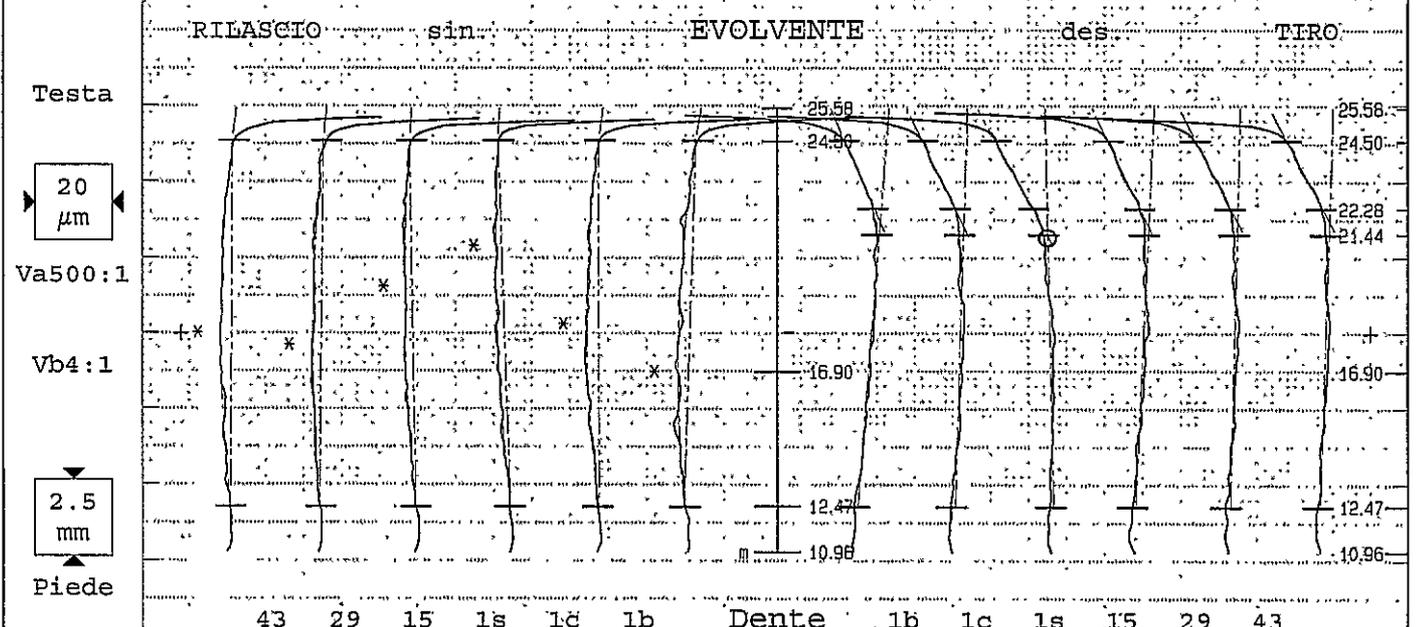
Numero Rack	Caratteristica	Misura nomin.	LTI	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut	Metodi di gestione / Documentazione
0014	Controllo 1° pz secondo Gear data 250.1.3641.7X				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo
0024	Diametro Mdk sfere 2.5	114,612 mm	114,569	114,655	MZA-401071 CALCOLATORE DI MISURA E9066 MARPOSS MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		
0034	Evolvente ed elica sec.G.T. con svergolamento				MZA-401071 CALCOLATORE DI MISURA E9066 MARPOSS	3	pz ogni 100 per macchina						CR1: calcolatore di misura
0036	Svergolamento evolventi				MVZ-400249 EVOLVENTIMETRO								Misu: diagramma di dentatura
0044	Errore globale di divisione	0,000 mm	0,000	0,050	MVZ-400249 EVOLVENTIMETRO								Misu: diagramma di dentatura
0056	Oscillazione radiale dentat. Fr	0,000 mm	0,000	0,032	MVZ-400249 EVOLVENTIMETRO								Misu: diagramma di dentatura
0058	Rugosità dente Rz	µm	0,000	4,000	MOA-416121 RUGOSIMETRO TIPO PRK								Misu: controllo primo pezzo
0064	Rugosità dente Rmax	µm	0,0	6,3	MOA-416121 RUGOSIMETRO TIPO PRK								Misu: controllo primo pezzo
0076	Controllo chimico bruciature secondo procedura WTL 3.4.10.01					1	pz cambio mola retifica						CR1: controllo primo pezzo
0084	Sup. dente completamente rettificata Controllo visivo					10	pz per rack						CR1: no documentazione

GETRAG

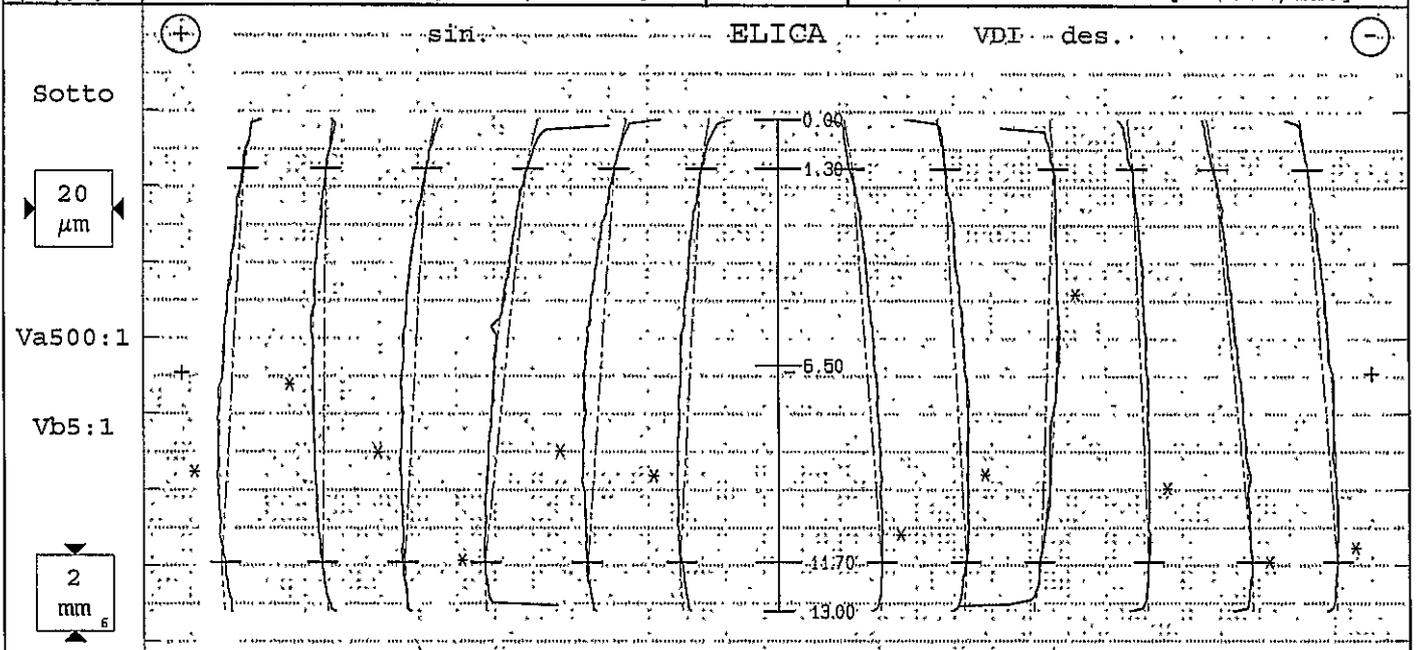
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllers:	TURNO C	Data:	14.01.2015 06:20
Denominazione:	SR3		Numero denti z	56	Largh. fasc. dent. b	13mm
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Tratto evolv. La	12.03/8.97mm
Commessa/serie nr.:	PPAP 1		Angolo pressione	17.5°	Tratto elica Lb	10.4mm
Masch.Nr.:	M001	Spindel: Forme	Angolo elica	-30°	Inizio elab. M1	12.47mm
Untersuchungszweck:	Laufende Messung		Ø Base db	106.3326mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-28.48°	Fat. scor. pr. x	-.091



Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual
fHm ±6	0	Var 3							±6	Var 1						2	
fHa ±10	0	-1	-1	2	3	0	-3		±10	6	2	-2	3	2	2	2	
Fa	2	2	2	2	3	2	5			6	4	3	4	4	3	4	
ffa	5	2	2	1	1	1	2		5	2	2	2	3	2	2	2	
Ca 2/6	3	3	2	2	2	3	3										
fKo	0	0	0	0	0	0	0										
fKo									-16/-10	-11	-12	-13	-12	-11	-12	-12	
P/T-φ [mm]	106.481	[106.2/106.65]								117.935						[117.74/118]	



Tolerance	Medio	Val. misur [µm]						Qual	Tolerance	Val. misur [µm]						Medio	Qual
fHm -5±6	-6	Var 8							8±6	Var 7						9	
fHb -5±13	-6	-8	-1	-7	-14	-9	-7		8±13	9	7	-5	5	12	10	9	
FB	5	4	5	5	8	6	4			4	3	11	4	5	3	4	
ffb	5	2	1	1	3	1	1		5	1	1	2	1	1	1	1	
CS 0/5	3	3	3	3	3	4	3		0/5	2	2	3	2	1	2	2	
Bd 10±8	7								10±8							14	





Nr. prog.: STI0410005 0	PNC35 B4784	Controllore: TURNO c	Data: 14.01.2015 06:20
Denominazione: SR3	Numero denti z 56	Angolo pressione 17.5°	
Numero disegno: 250.1.3641.75-IF	Modulo m 1.75mm	Angolo elica -30°	
Comessa/serie nr.: PPAP 1	Untersuchungszweck: Laufende Messung		
Masch.Nr.: M001	Spindel: FORMER	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

	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3		10		2		10	
Gr. salto di passo fu max	3		12		3		12	
Scarto di divisione Rp	5				4			
Err. globale di divisione Fp	16		50		17		50	
Err. cordale di divisione Fpz/8	11				8			

Centricità Fr (Ø-sfera =2.5mm) © : 9µm

20µm
500:1

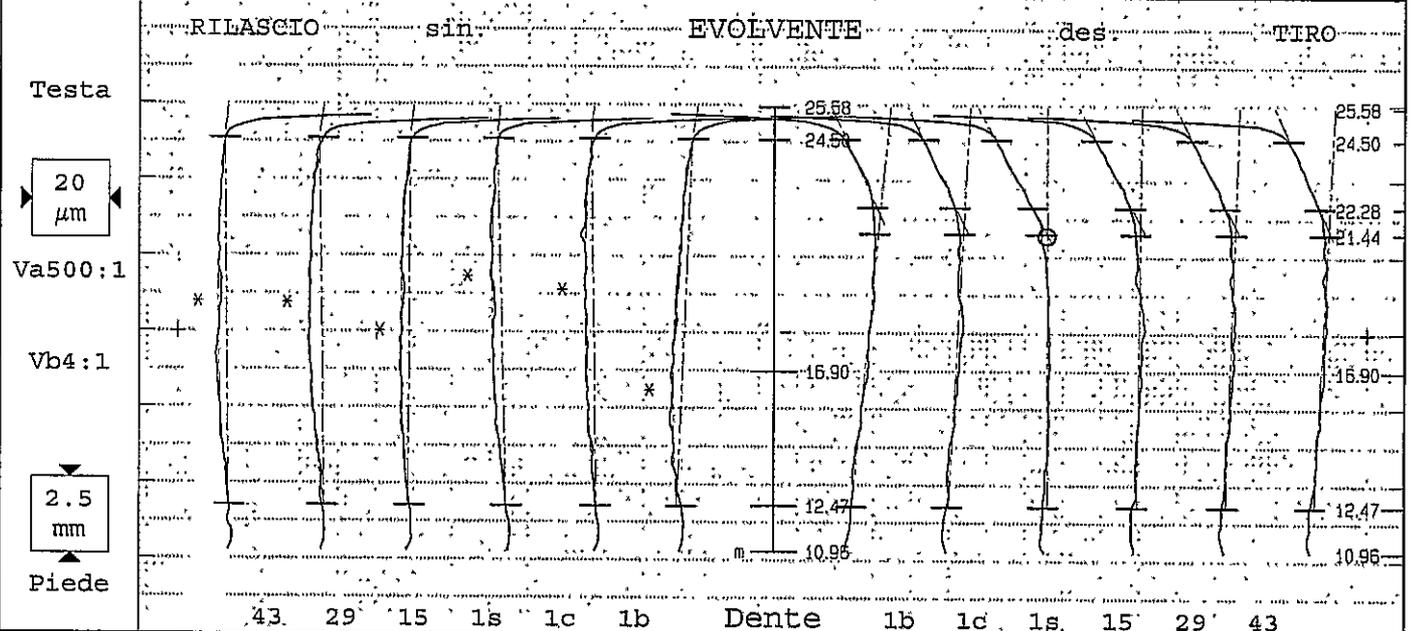
Err. di concentricità Fr	15	32	
Variaz. spessore dente Rs			

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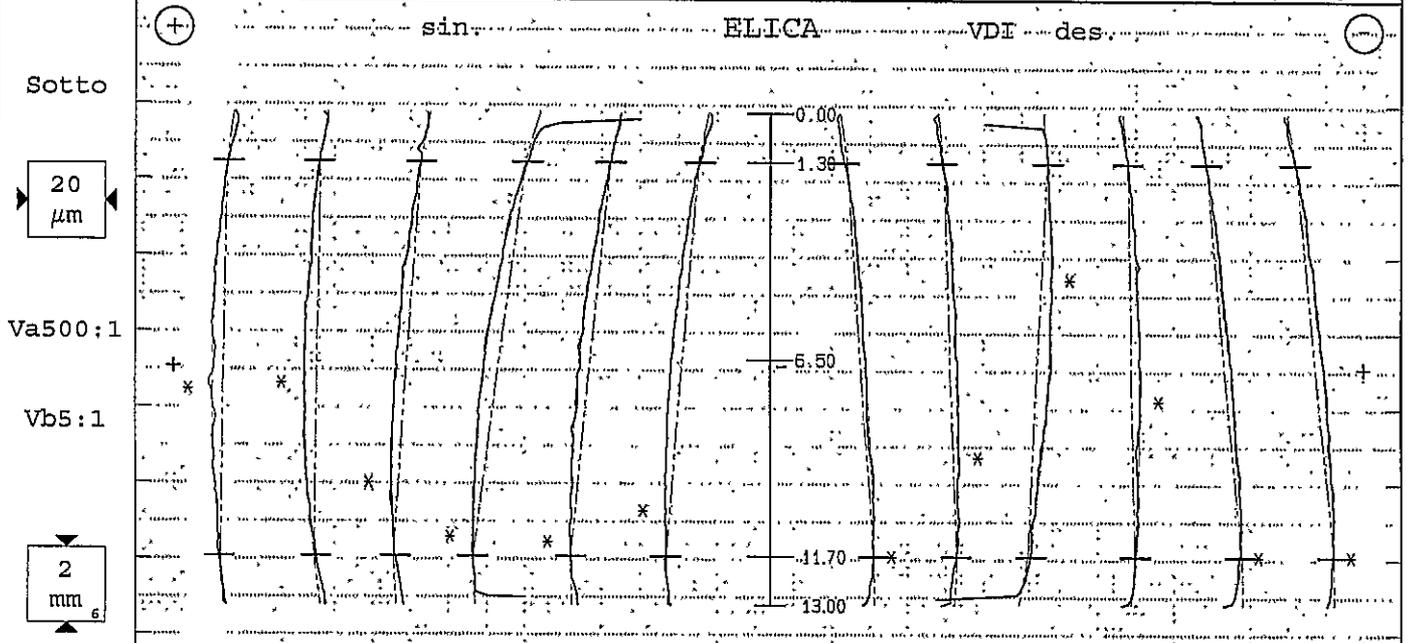
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	14.01.2015 06:27
Denominazione:	SR3		Numero denti z	56	Largh.fasc.dent. b	13mm
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Tratto evol. Ia	12.03/8.97mm
Commessa/serie nr.:	PPAP 2		Angolo pressione	17.5°	Tratto elica L2	10.4mm
Masch.Nr.:	M001	Spindel: Formant	Angolo elica	-30°	Inizio elab. M1	12.47mm
Untersuchungszweck:	Laufende Messung		Ø Base db	106.3326mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-28.48°	Fat.scor.pr. x	-0.091



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
fHm ±6	1	Var 2								±6	Var 3								3
fHa ±10	1	1	1	0	2	2	-4		±10	7	4	0	1	2	4	3		3	
Fa	2	2	2	1	3	3	4			6	4	2	4	3	5	4		4	
ffa 5	2	2	2	1	2	2	2		5	2	2	2	3	2	2	2		2	
Ca 2/6	2	2	3	2	2	2	3												
fKo	0	0	0	0	0	0	0												
fKo									-16/-10	-11	-12	-14	-12	-12	-12	-12			
P/T-φ [mm]	106.464	[106.2/106.65]									117.916								[117.74/118]



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
fHsm -5±6	-7	Var 11								8±6	Var 11								8
fHs -5±13	-7	-2	-2	-9	-17	-13	-11		8±13	9	4	-6	2	12	13	8		8	
FS	5	4	5	5	11	7	6			3	4	11	6	4	5	5		5	
ffs 5	1	2	1	1	1	1	1		5	1	1	1	2	1	1	1		1	
CS 0/5	3	3	3	3	4	3	3		0/5	1	2	3	2	2	2	2		2	
Bd 10±8	6								10±8									15	

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Nr. prog.: STI0410005 0	PNC35 B4784	Controllora: TURNO C	Data: 14.01.2015 06:27
Denominazione: SR3	Numero denti z	56	Angolo pressione 17.5°
Numero disegno.: 250.1.3641.75-IF	Modulo m	1.75mm	Angolo elica -30°
Commessa/serie nr.: PPAP 2	Untersuchungszweck:	Laufende Messung	
Masch.Nr.: M001	Spindel: Formel	Kesselg:	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.: 111.575 z=6.5mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3		10		4		10	
Gr. salto di passo fu max	3		12		3		12	
Scarto di divisione Rp	5				7			
Err. globale di divisione Fp	20		50		29		50	
Err. cordale di divisione Fpz/B	12				14			

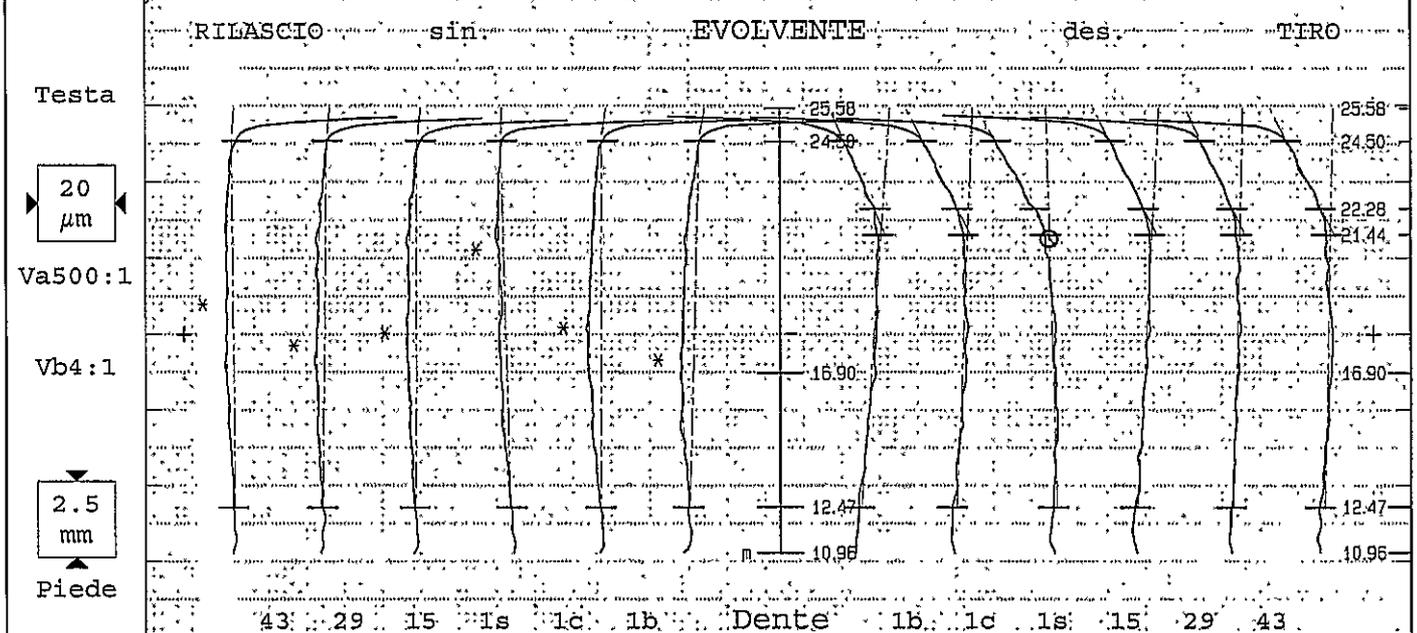
Centricità Fr (Ø-sfera =2.5mm) © : 15µm

20µm
500:1

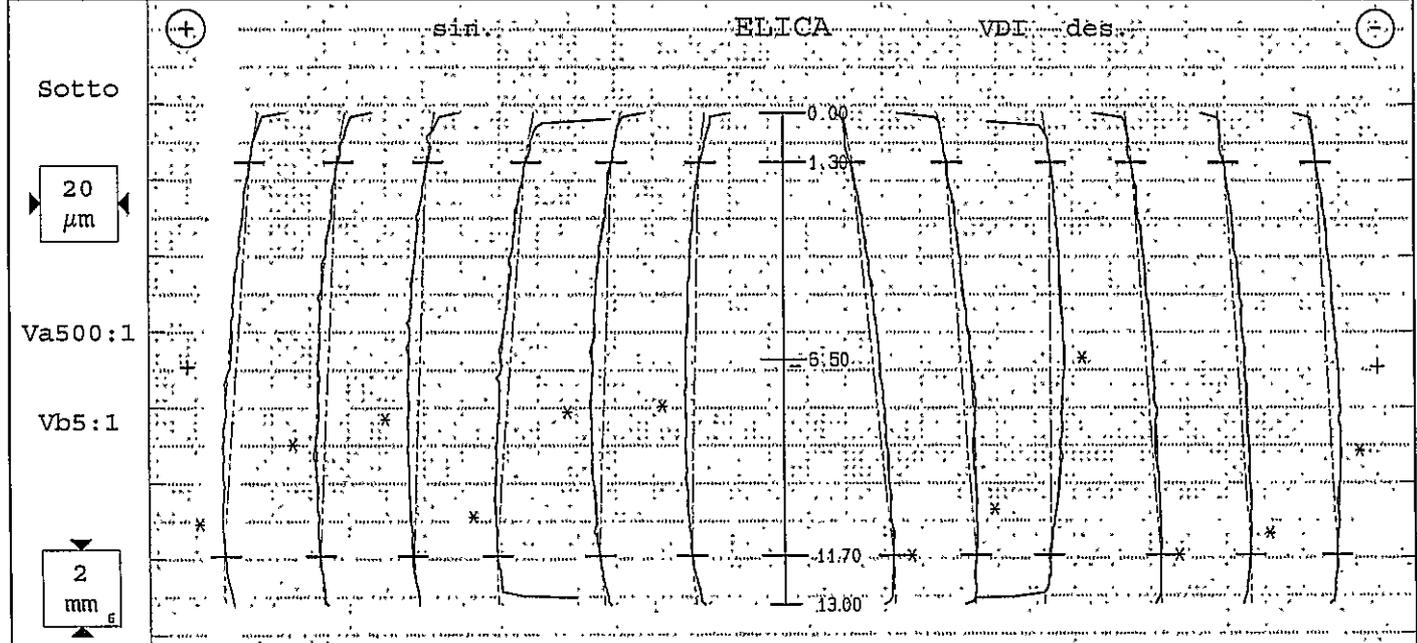
Err. di concentricità Fr	18	32	
Variaz. spessore dente Rs			

GETRAG Ruota cilindrica Evolvente/Elica

Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	14.01.2015 06:56
Denominazione:	SR3		Numero denti z	56	Largh.fasc.dent. b	13mm
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Tratto evolv. La	12.03/8.97mm
Comessa/serie nr.:	PPAP 3		Angolo pressione	17.5°	Tratto elica Ls	10.4mm
Masch.Nr.:	M001	Spindel: FORM	Angolo elica	-30°	Inizio elab. M1	12.47mm
Untersuchungszweck:	Laufende Messung		Ø Base db	106.3326mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-28.48°	Fat.scor.pr. x	-.091



Tolerance	Medio	Val.misur [µm]						Qual	Tolerance	Val.misur [µm]						Medio	Qual	
		Var		2						Var		2						
fHm	±6	0						±6								3		
fHa	±10	0	1	-1	0	3	0	-3	±10	5	3	-2	4	2	2	3		
Fa	2	2	2	2	3	2	4			5	4	3	4	3	4	4		
ffa	5	2	2	1	2	2	1	1	5	2	3	2	1	2	3	2		
Ca	2/6	2	2	2	2	2	3	3										
fKo	0	0	0	0	0	0	0	0										
fXo									-16/-10	-12	-13	-14	-12	-11	-12	-12		
P/T-φ [mm]	106.466		[106.2/106.65]							117.916		[117.74/118]						



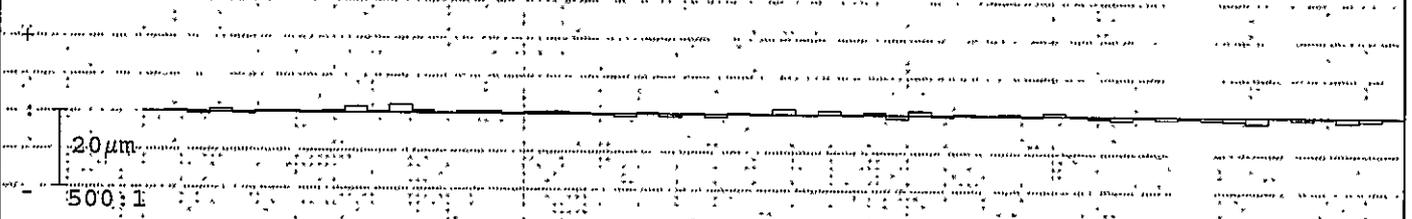
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		Var		4						Var		2					
fHm	-5±6	-6						8±6								8	
fHs	-5±13	-6	-9	-6	-5	-10	-5	-3	8±13	13	9	0	9	8	7	8	
Fs	4	4	5	4	4	6	4	4		5	4	8	3	2	4	3	
ffs	5	1	1	2	1	2	1	1	5	1	1	2	1	1	1	1	
Cs	0/5	3	2	3	3	2	3	2	0/5	2	2	3	2	2	3	2	
Bd	10±8	7							10±8							13	



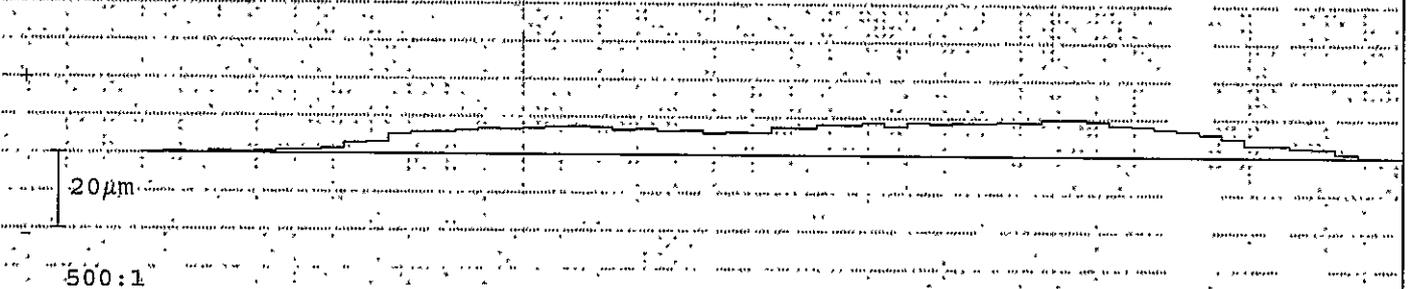


Nr. prog.: STI0410005 0	PNC35 B4784	Controllora: TURNO C	Data: 14.01.2015 06:56
Denominazione: SR3		Numero denti z 56	Angolo pressione 17.5°
Numero disegno.: 250.1.3641.75-IF		Modulo m 1.75mm	Angolo elica -30°
Comessa/serie nr.: PPAP 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Formelwerkzeug		Charge:

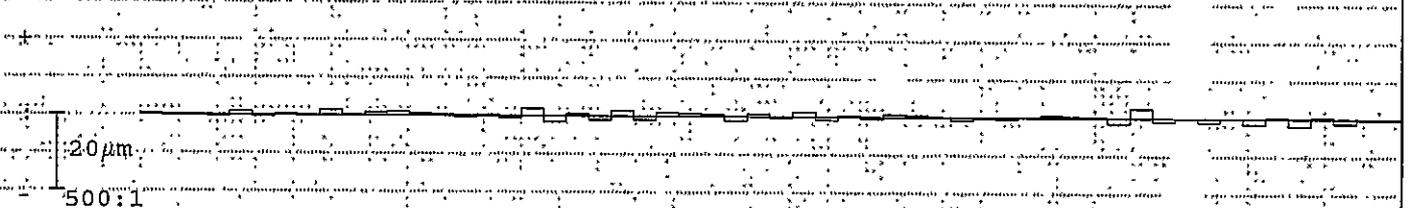
Errori singoli di divisione fp fianco sinistro



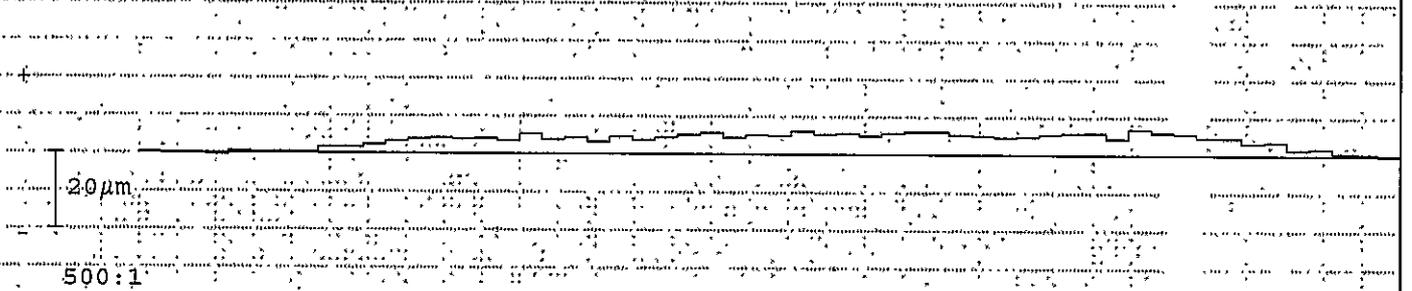
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

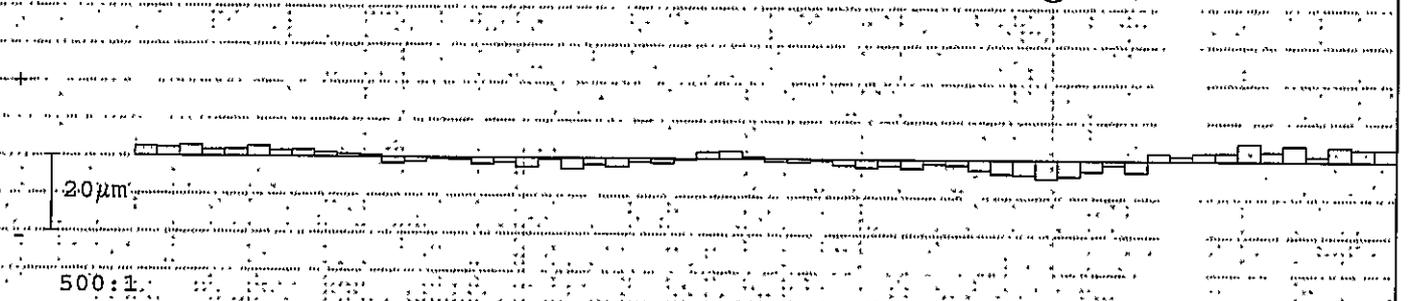


Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 111.575 z=6.5mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	2		10		2		10	
Gr. salto di passo fu max	2		12		4		12	
Scarto di divisione Rp	4				4			
Err. globale di divisione Fp	10		50		7		50	
Err. cordale di divisione Fpz/8	6				5			

Centricità Fr (Ø-sfera =2.5mm) © : 4µm



Err. di concentricità Fr	10	32
Variab. spessore denta Rs		

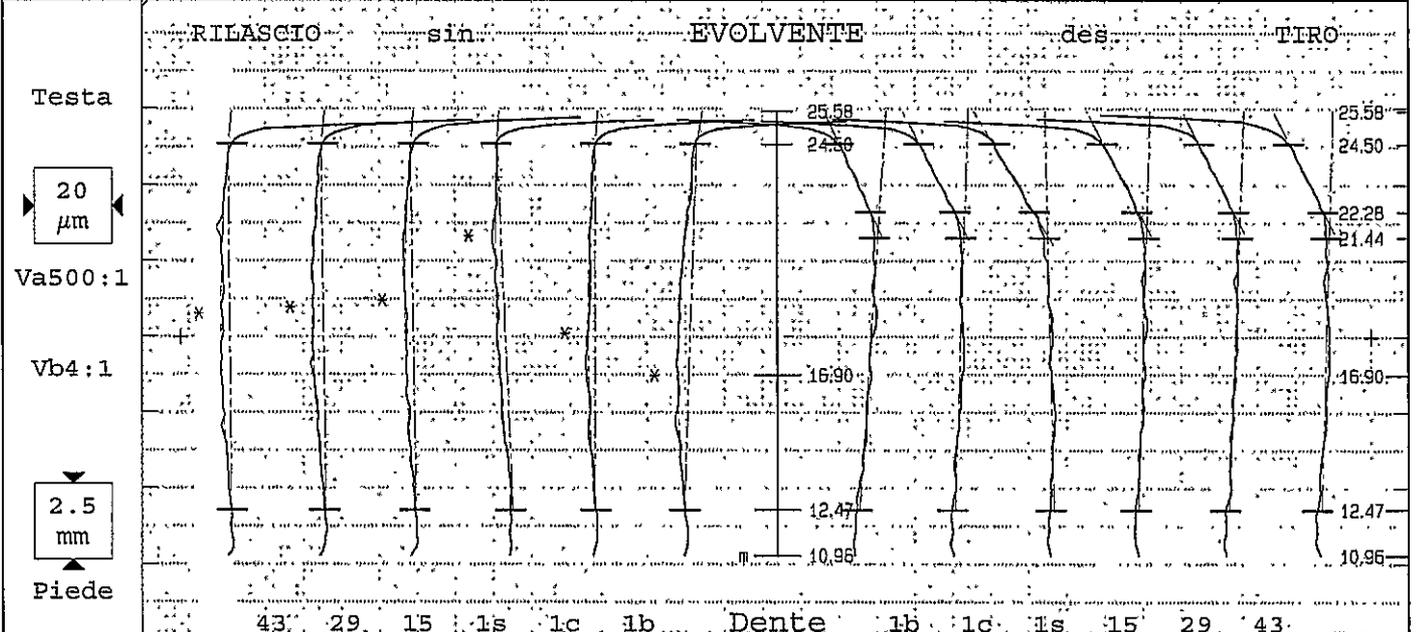


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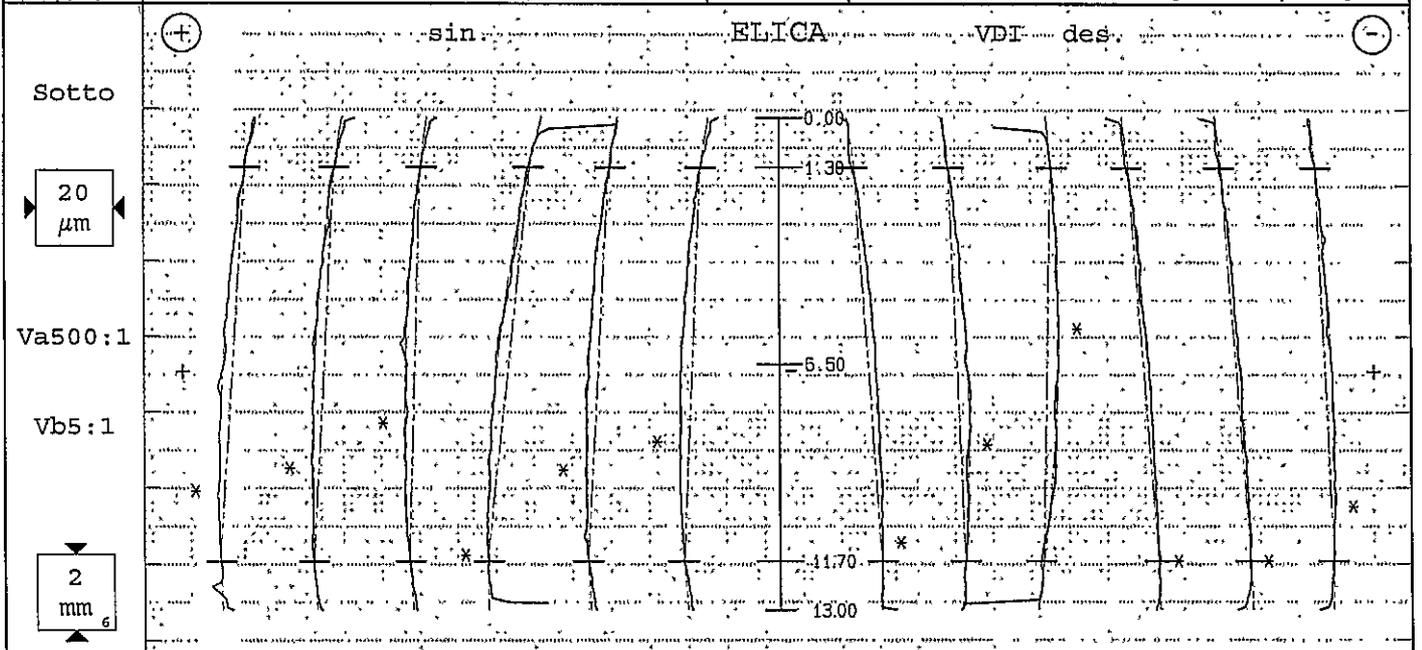
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllora:	TURNO C	Data:	14.01.2015 06:41
Denominazione:	SR3		Numero denti z	56	Largh.fasc.dent. b	13mm
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Tratto evolv. La	12.03/8.97mm
Commessa/serie nr.:	230PPAP 4		Angolo pressione	17.5°	Tratto elica LS	10.4mm
Masch.Nr.:	M001	spindel: Forme	Angolo elica	-30°	Inizio elab. M1	12.47mm
Untersuchungszweck:	Laufende Messung		Ø Base db	106.3326mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-28.48°	Fat.scor.pr. x	-.091



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual		
		Var									Var										
fHm	±6	1								±6								2			
fHa	±10	1	1	1	1	4	0	-3		±10	5	2	-2	2	3	2	2	2	2		
Fa		2	3	2	2	4	2	4			5	3	3	3	4	4	4	4	4		
ffa	5	2	3	1	1	2	1	2		5	2	2	2	2	2	2	2	2	2		
Ca	2/6	2	2	3	2	2	2	3													
fKo		0	0	0	0	0	0	0													
fKo										-16/-10	-12	-13	-14	-12	-11	-11	-12				
P/T-φ [mm]		106.481	[106.2/106.65]									117.936	[117.74/118]								



Tolerance	Medio	Val. misur [µm]							Qual	Tolerance	Val. misur [µm]							Medio	Qual
		Var									Var								
fHm	-5±6	-7								8±6								8	
fHb	-5±13	-7	-8	-7	-4	-14	-7	-6		8±13	9	5	-3	10	10	6	8	8	8
Fb		5	5	4	5	8	4	4			3	4	10	3	2	4	3	3	3
ffb	5	2	2	2	2	1	1	1		5	1	1	1	1	1	2	1	1	1
Cb	0/5	3	3	3	3	3	3	3		0/5	2	3	3	1	1	2	2	2	2
Bd	10±8	8								10±8							12		12

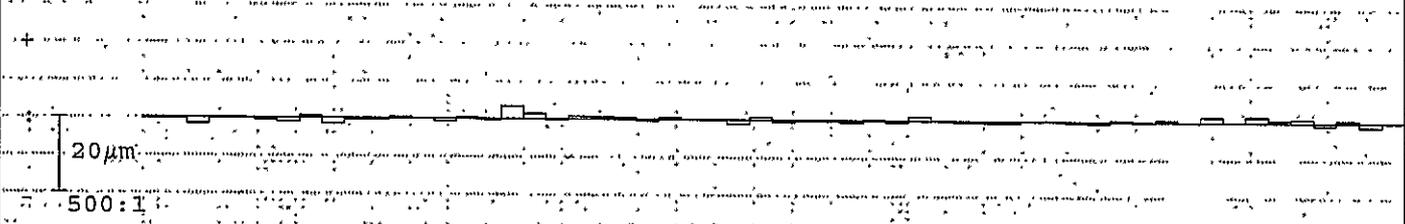
Copyright (c) Klingelberg GmbH



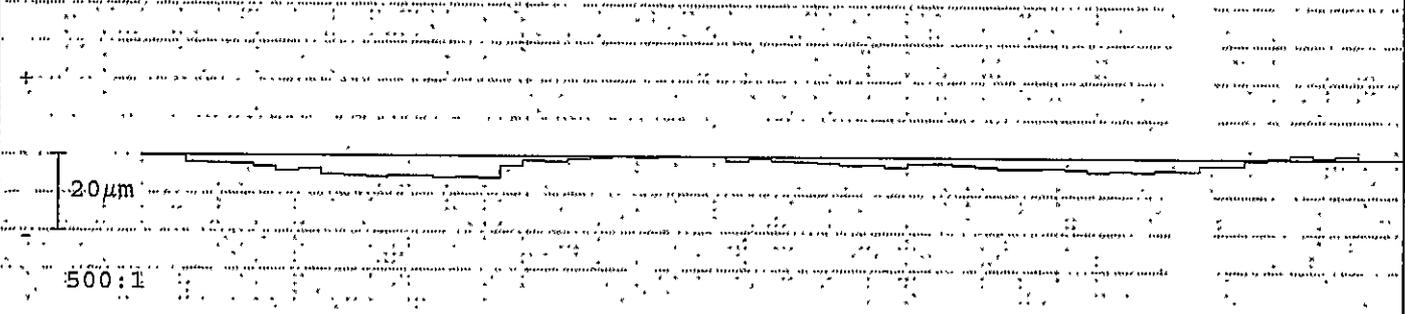


Nr. prog.:	STI0410o05 0	PNC35 B4784	Controllore:	TURNO c	Data:	14.01.2015 06:41
Denominazione:	SR3		Numero denti z	56	Angolo pressione	17.5°
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Angolo elica	-30°
Commessa/serie nr.:	230PPAP 4		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	spindel: FORM	Werkzeug:		Charge:	

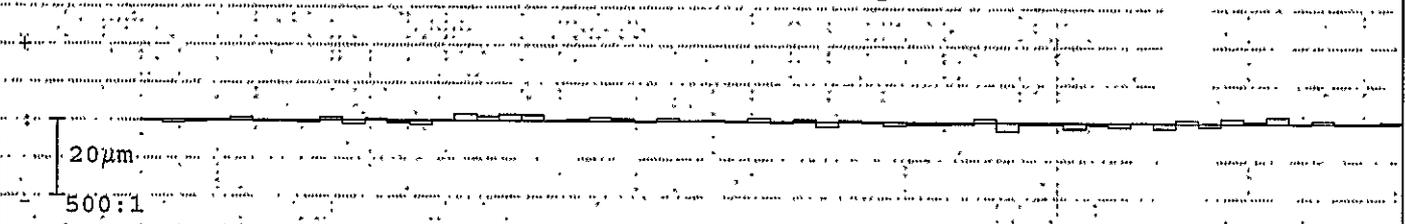
Errori singoli di divisione fp fianco sinistro



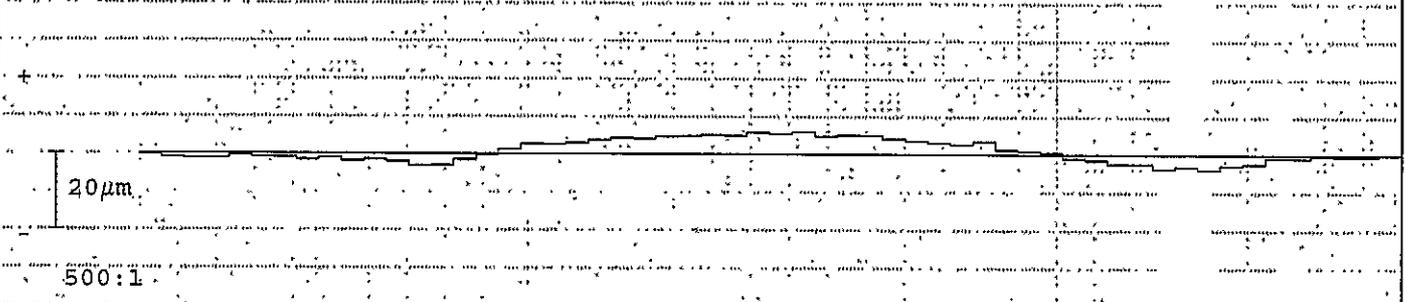
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



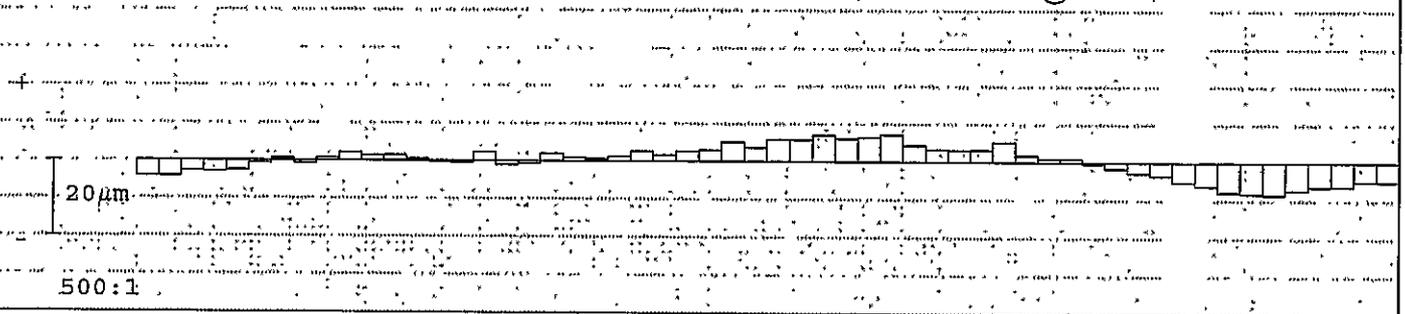
Errore somma di divisione Fp fianco destro



Corsa per misura divis.: 111.575 z=6.5mm	fianco sinistro / RILASCIO				fianco destro / TIR0			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	3		10		2		10	
Gr. salto di passo fu max	4		12		3		12	
Scarto di divisione Rp	5				4			
Err. globale di divisione Fp	7		50		10		50	
Err. cordale di divisione Fpz/8	6				7			

Centricità Fr (Ø-sfera =2.5mm)

© : 10µm



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

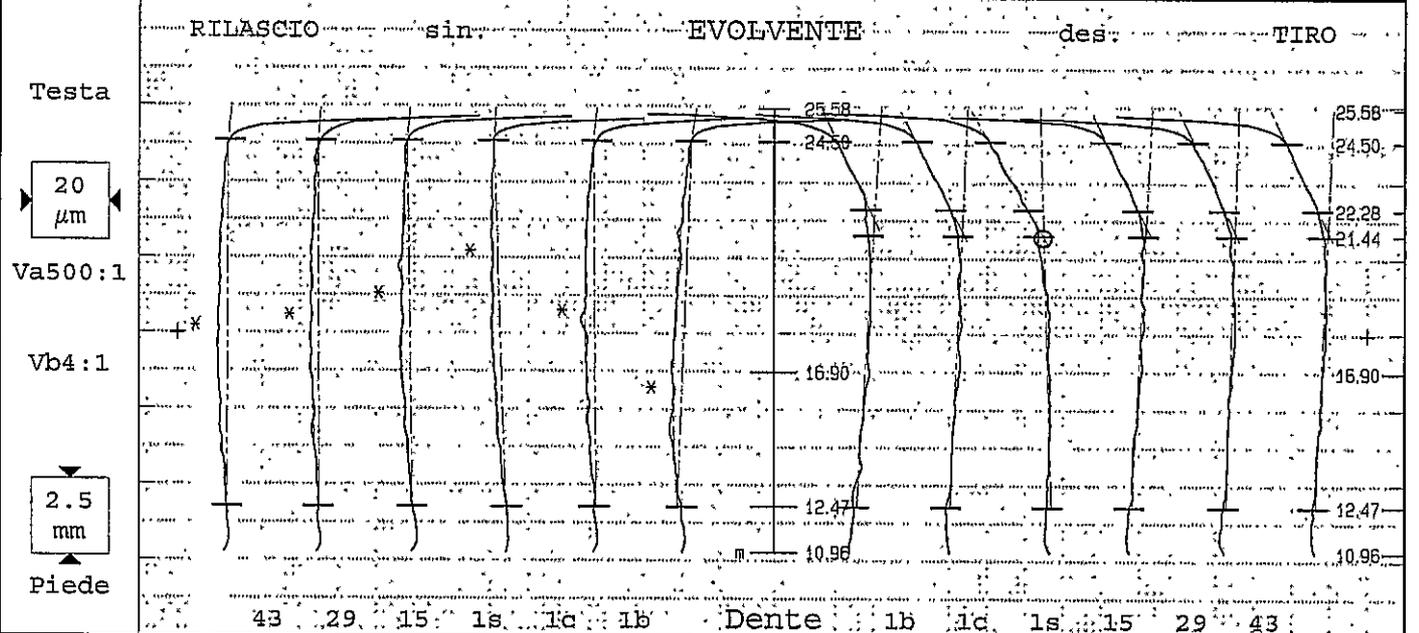


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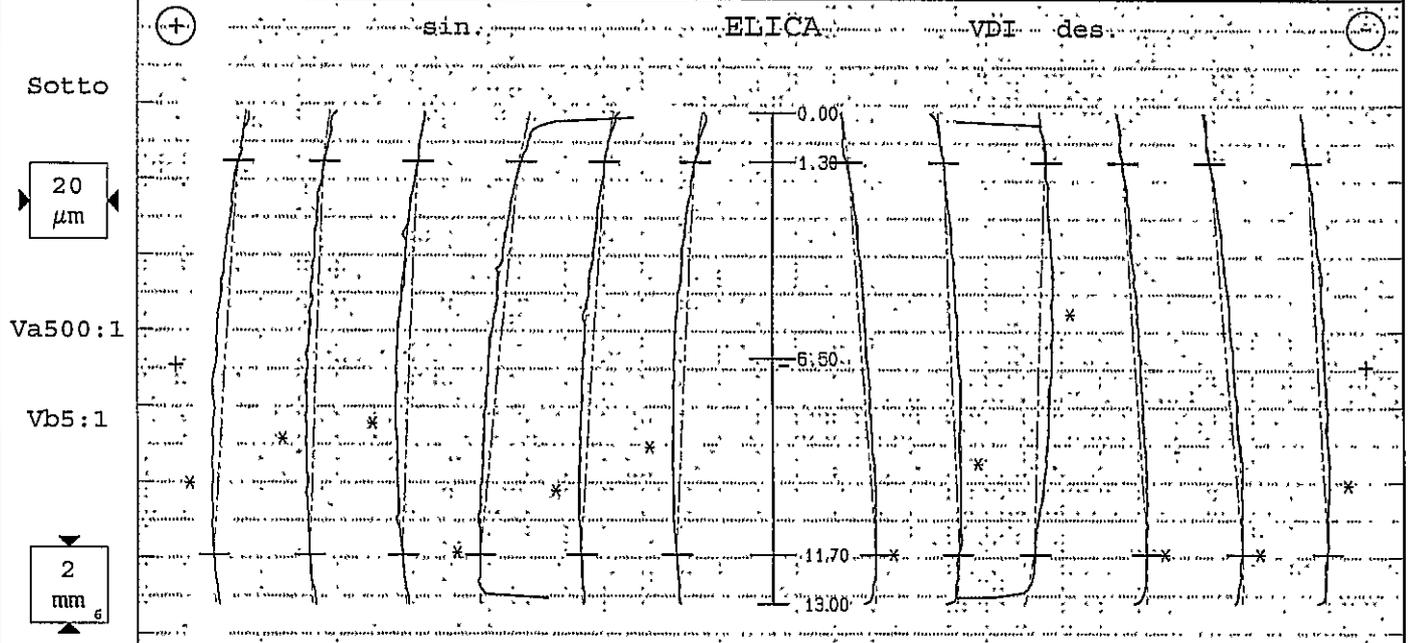
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	14.01.2015 06:49
Denominazione:	SR3		Numero denti z	56	Largh. fasc. dent. b	13mm
Numero disegno.:	250.1.3641.75-IF		Modulo m	1.75mm	Tratto evolv. La	12.03/8.97mm
Commessa/serie nr.:	PPAP 9		Angolo pressione	17.5°	Tratto elica L8	10.4mm
Masch. Nr.:	M001	Spindel: Forme	Angolo elica	-30°	Inizio elab. M1	12.47mm
Untersuchungszweck:	Laufende Messung		Ø Base db	106.3326mm	Palpatore Ø	(#1) 1mm
Werkzeug:	Charge:		Ang. Base	-28.48°	Fat. scor. pr. x	-0.091



Tolerance	Medio	Val. misur [μ m]							Qual	Tolerance	Val. misur [μ m]							Medio	Qual
fHm	± 6	Var 1								± 6	Var 2								
fHa	± 10	0	0	1	3	1	-4		± 10	4	3	-2	4	2	3	3			
Fa	2	1	1	2	4	2	4		5	4	3	4	3	4	4				
ffa	5	1	1	2	1	2	2		5	3	2	3	2	2	2				
Ca	2/6	2	2	2	2	3	3												
fKo	0	0	0	0	0	0	0												
fKo									-16/-10	-11	-13	-14	-12	-11	-12	-12			
P/T-q [mm]	106.485	[106.2/106.65]								117.940	[117.74/118]								



fHm	-5 \pm 6	-7	Var 3							8 \pm 6	Var 5							7
fHs	-5 \pm 13	-7	-8	-5	-5	-13	-8	-6	8 \pm 13	9	5	-4	8	10	6	7		
fB	4	4	5	3	4	8	4	4	3	4	10	2	4	3	3			
ffb	5	1	1	1	2	2	1	1	5	1	1	1	1	1	1			
cB	0/5	3	3	2	3	3	2	3	0/5	1	2	3	1	2	2			
Bd	10 \pm 8	7							10 \pm 8						13			



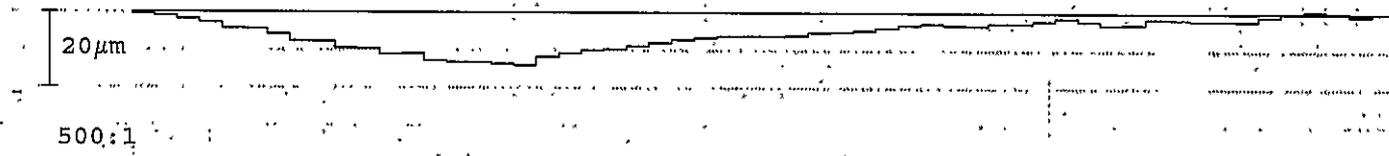


Nr. prog.: STI0410005 0	PNC35 B4784	Controllore: TURNO C	Data: 14.01.2015 06:49
Denominazione: SR3	Numero denti z 56	Angolo pressione 17.5°	
Numero disegno: 250.1.3641.75-IF	Modulo m 1.75mm	Angolo elica -30°	
Commessa/serie nr.: PPAP 4	Untersuchungszweck: Laufende Messung		
Masch.Nr.: M001	Spindel: FOXTM	Charge:	

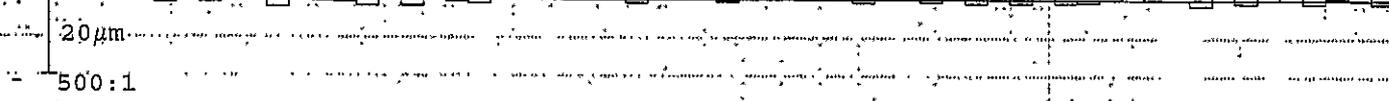
Errori singoli di divisione fp fianco sinistro



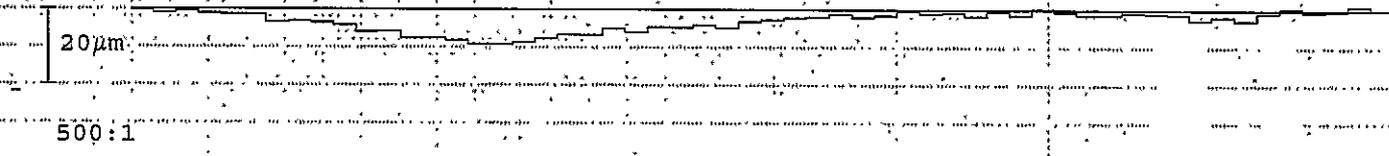
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro

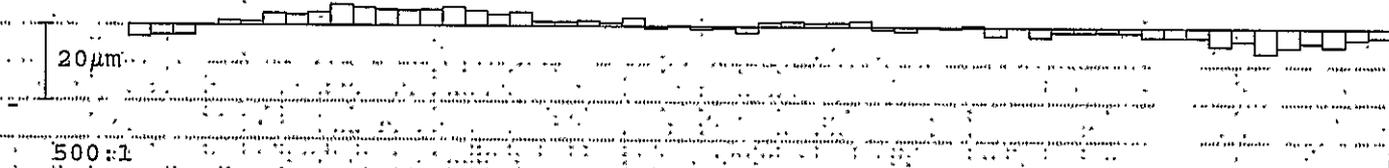


Errore somma di divisione Fp fianco destro



Corso per misura divis.: 111.575 z=6.5mm	fianco sinistro / RILASCIO				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	2		10		2		10	
Gr. salto di passo fu max	3		12		3		12	
Scarto di divisione Rp	4				4			
Err. globale di divisione Fp	15		50		10		50	
Err. cordale di divisione Fpz/8	8				6			

Centricità Fr (Ø-sfera =2.5mm) © : 6µm



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