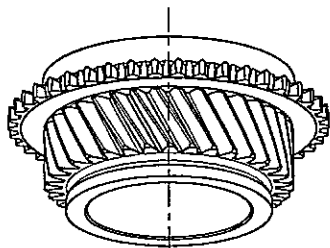


Part Name Speed Gear SR6		Customer Part Number 250.1.4226.38	
Shown on Drawing No. 250.1.4226.38		Organization Part #	
Engineering Change Level a 35670		Dated 11-ago-14	
Additional Engineering Changes		Dated	
Safety and/or Government Regulation ☒ Yes ☒ No	Purchase Order No.		Weight (kg) 0,4670
Checking 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	TYP 250	
City	Region	Application	
	Postal Code		
	Country		
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 14 Jan 2015	
Print Name Pennacchia Vincenzo	Phone No. tel 390805858580	Fax No.	
Title GPS Leader	E-mail vincenzo.pennacchia@getrag.com		
FOR CUSTOMER USE ONLY (IF APPLICABLE)			
Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other			
Customer Signature		Date 14.01.15	
Print Name		Customer Tracking Number (optional)	



DIMENSIONAL TEST RESULTS

[illegible]



Technische Sauberkeit / TECHNICAL CLEANLINESS:

Es gelten die Sauberkeitsanforderungen nach GN 4340-1
CLEANLINESS REQUIREMENTS OF THE GN 4340-1 HAVE TO BE ABIDED

Naechere Angaben zur Verzahnung
siehe Verzahnungsblatt
250.1.4227.37
FURTHER GEAR DATA SEE
DATA SHEET NUMBER
250.1.4227.37

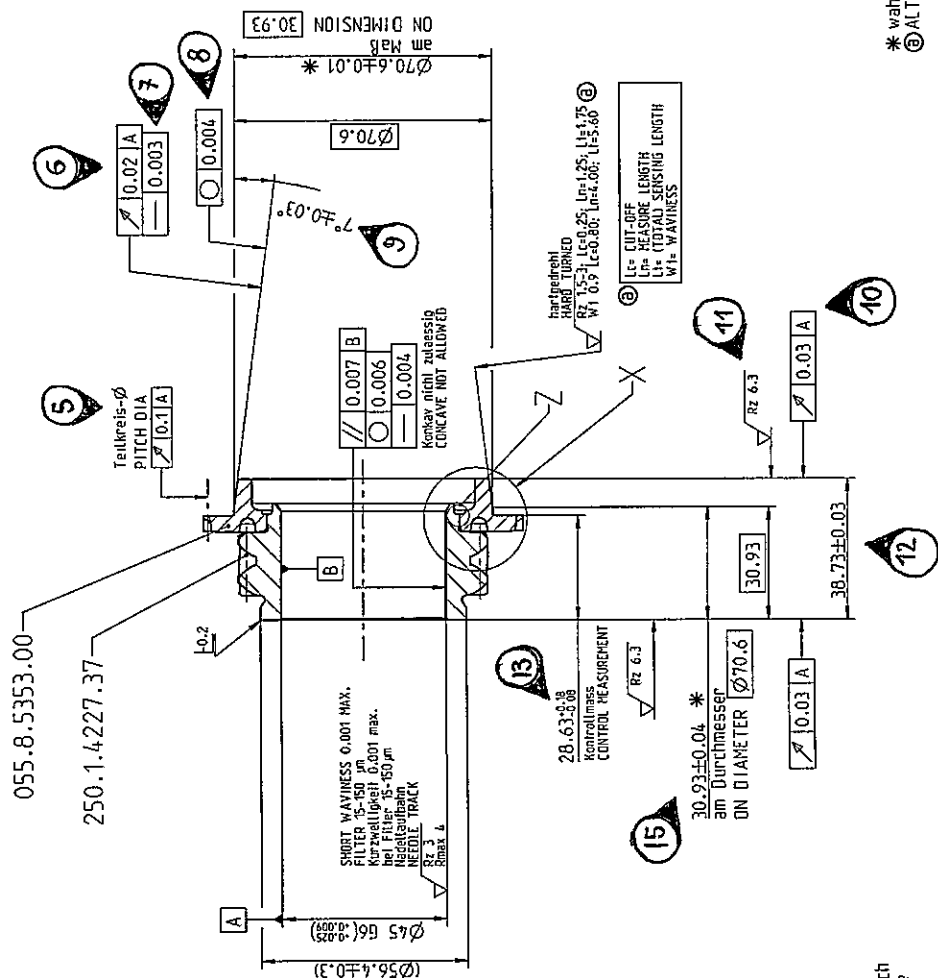
[illegible]

* wahlweise Messung
③ ALTERNATIVE MEASUREMENT

* Wahlweise Messung
 Ⓐ ALTERNATIVE MEASUREMENT

Der GETRAG Intern.
Dieses Bauteil ist Bestandteil der Gruppen Nummer 250.1.6+88.00
Lieferant/Hersteller: Barl
GETRAG INTERNAL ONLY:
THIS COMPONENT IS PART OF GROUP NUMBER 250.1.6+88.00
SUPPLIER/MANUFACTURER: Barl

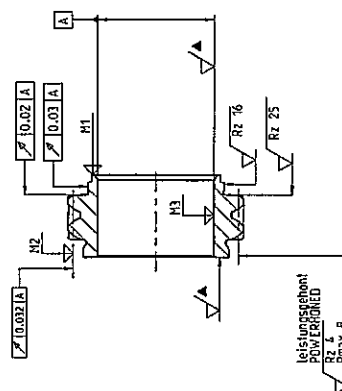
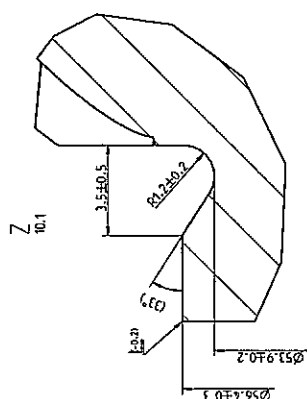
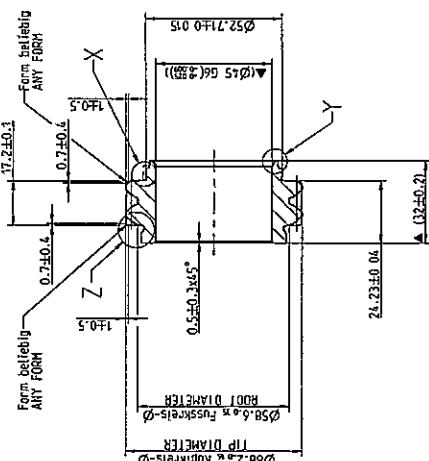
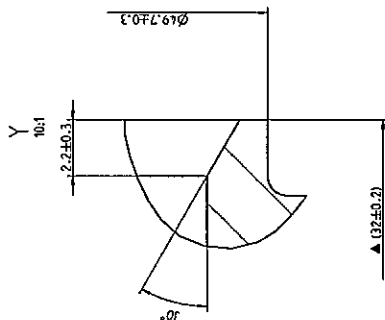
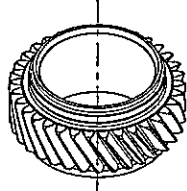
Über die Lieferung und Kennzeichnung im Data Matrix Code
Bauteil und/oder Verpackung
muss die Gruppennummer 250.1.6408.00 verwendet werden.
FOR SHIPMENT AND IDENTIFICATION WITHIN THE DATA MATRIX
COMPONENT AND/OR PACKAGING
THE GROUP NUMBER 250.1.6408.00 HAS TO BE USED.
PPAP nach / ACCORDING TO 250.1.4226.36



not to scale

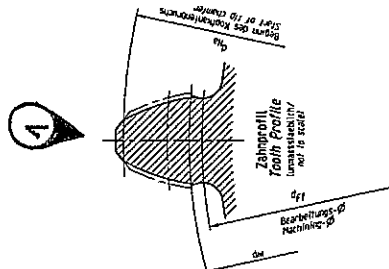
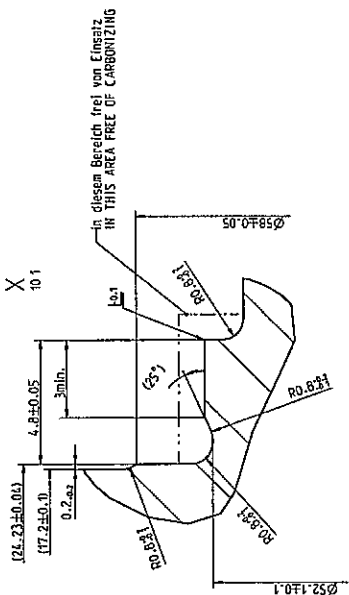


CHECKED ACCORDING ENGINEERING SPECIFICATION
S S 357R-7M161-AA, DEVIATION FROM THIS SPECIFICATION;
LONGITUDINAL MICRO CRACKS IN THE WELDING MATERIAL
PERMISSIBLE TO A TOTAL OF 2% AROUND THE CIRCUMFERENCE

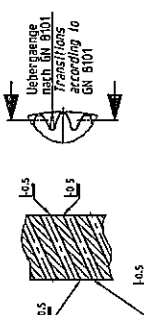


Einsatzgehalt und angelassen

11 (Zahnharz)	: 80-5% HRA
12 (Oberflächenharz)	: CHD [Eht] 550= 0,5-0,4
13 (Füllung)	: CHD [Eht] 550= 0,3 min.
14 (Kernharz)	: min. 300 HV _{0,05}



Karlen an Laufverzahnungen \Tooth chamfers
unmassgeblich \not to scale



Ausservermählung / EXTERNAL GEAR	
Zähne/teile / SPURNE DATA EXTERNAL	
Bezeichnetung / REFERENCE ELEMENT s_1	1.600
Teile / PARTS z_1	31
Verhältnis / RATIO OF TEETH i	17,5
Trichterzahl / NUMBER OF TEETH z_2	29,0
Verhältnis / RATIO OF TEETH i	LEFT / 1,048
Bezeichnetung / REFERENCE ELEMENT s_2	1.100
Teile / PARTS z_2	8
Verhältnis / RATIO OF TEETH i	RIGHT / 1,048
Bezeichnetung / REFERENCE ELEMENT s_3	3.129
Teile / PARTS z_3	2.059
Verhältnis / RATIO OF TEETH i	2,50
Bezeichnetung / REFERENCE ELEMENT s_4	66.757
Teile / PARTS z_4	66.579

[illegible]

vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.4226.38
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.4226.38

Nachere Angaben zur Verzahnung
siehe Verzahnungsblatt gleicher Nummer
FURTHER GEAR DATA SEE
DATA SHEET SAME NUMBER

Istruzioni di controllo



PP Produzione GPS

Materiale: 2501422638

Descrizione: Ruota dentata libera 6.M com Stato: Rilasciato Produzione + Calcolo costi

Indice del disegno finito:

Data emissione:

06.11.2013 / Vito Flore

Operazione: 0150 Levigatura di potenza

Data aggiornamento:

09.01.2015 / Rocco Tanzella

Centro di lavoro: HNW14540 LEVIGATURA DI POTENZA SG6

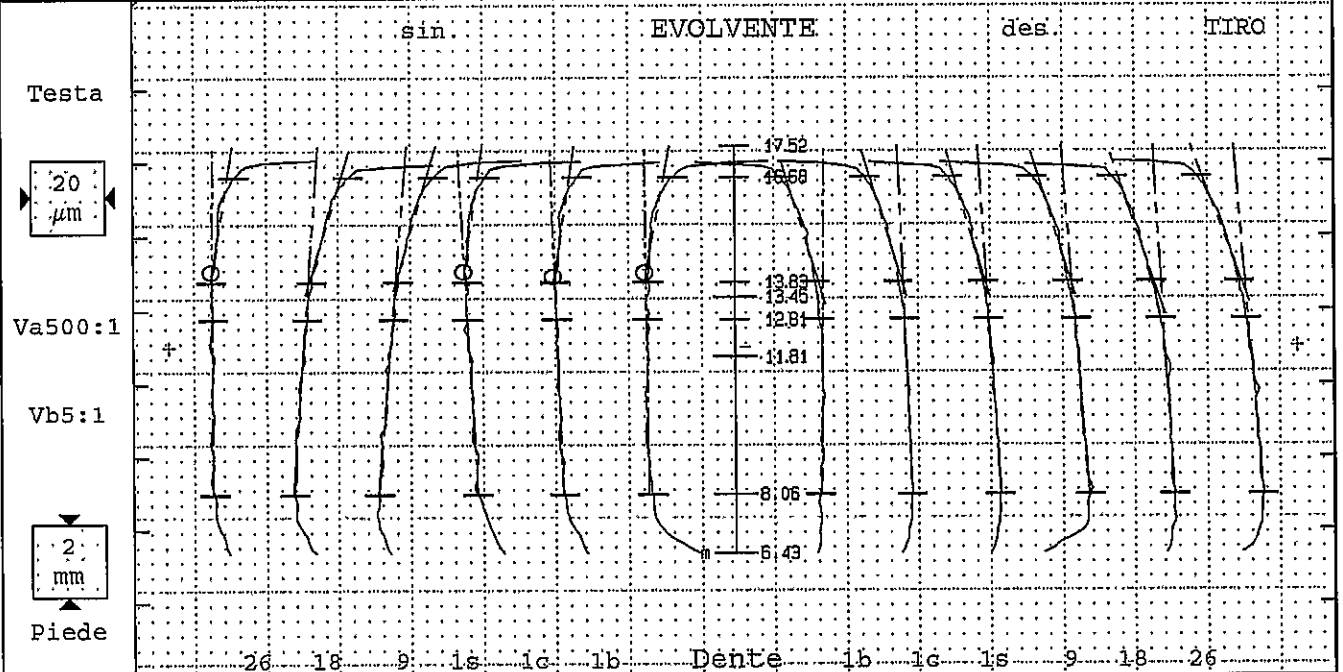
	Caratteristica	Misura nomin.	LTI.	LTS	Strumento di controllo	Quantità	Frequenza RK1:	Quantità	Frequenza RK2:	Quantità	Frequenza Sala di misura	Cambio ut	Metodi di gestione / Documentazione
0004	Controllo 1° pz secondo Gear data 250.1.4227.3X				MVZ-400249 EVOLVENTIMETRO						1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo
					MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		
					MZA-401071 CALCOLATORE DI MISURA E9066 MARPOSS						1° pz 2.3.1.1-R 2		
0010	Diametro Mdk	66,718 mm	66,679	66,757	MZA-401071 CALCOLATORE DI MISURA E9066 MARPOSS	3	pz ogni 100 per macchina						CR1: calcolatore di misura
0020	Evolvente ed elica sec.G.T. con svergolamento				MVZ-400249 EVOLVENTIMETRO						pz ogni 100 per macchina		Misu: diagramma di dentatura
0022	Svergolamento evolventi				MVZ-400249 EVOLVENTIMETRO						Ultimo PZ. prima ravnivatura		Misu: diagramma di dentatura
0030	Errore globale di divisione Fp	0,000 mm	0,000	0,050	MVZ-400249 EVOLVENTIMETRO						pz a turno/mac.		Misu: diagramma di dentatura
0032	Oscillazione radiale dentat. Fr	0,000 mm	0,000	0,032	MVZ-400249 EVOLVENTIMETRO						pz a turno/mac.		Misu: diagramma di dentatura
0040	Rugosità dente 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
0042	Rugosità dente Rmax	0,0 µm	0,0	8,0	MOA-416121 RUGOSIMETRO TIPO PRK						1° pz 2.3.1.1-R 2		Misu: controllo primo pezzo
0050	Aspetto, privo di bava, senza danni					10	pz per rack						CR1: no documentazione
0060	Sup. dente completamente levigata Controllo visivo					10	pz per rack						CR1: no documentazione

GETRAG B7590

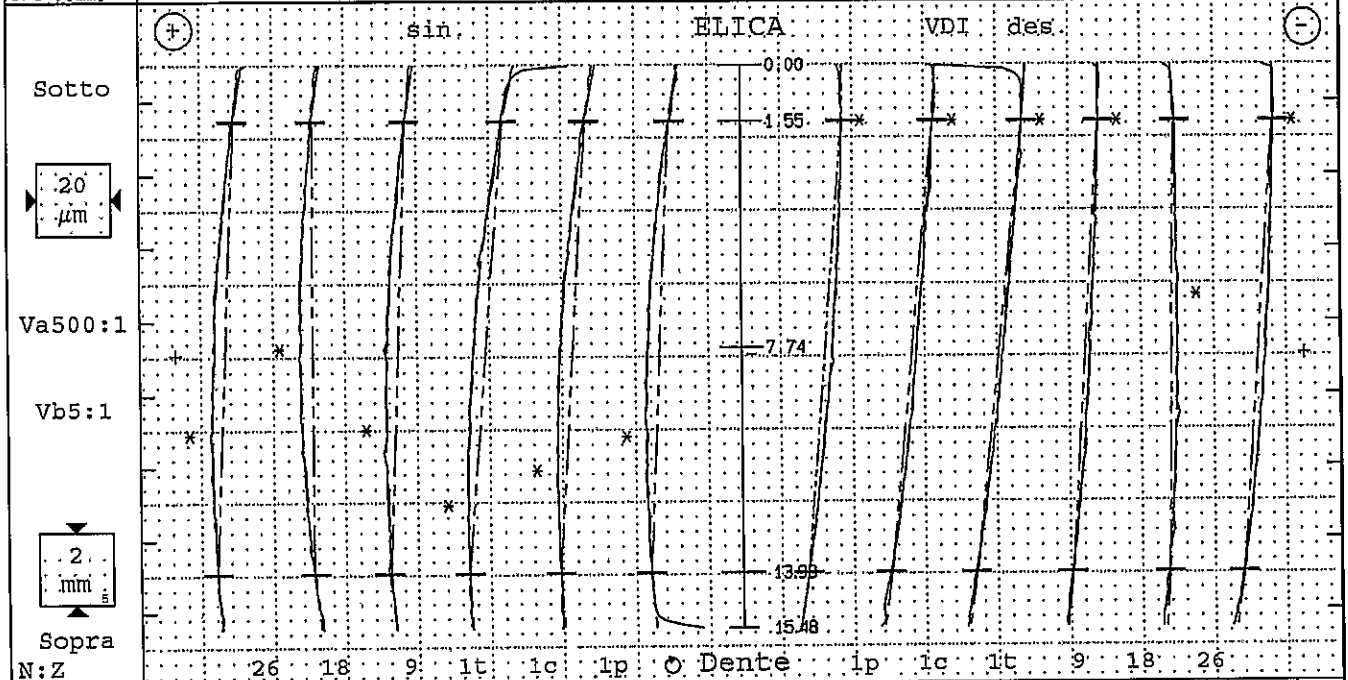
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	P26 B7590	Controllere:	turno D	Data:	18.12.2014 17:40
Denominazione:	SR6		Numero denti z	34	Largh. fasc. dent. b	15.48mm
Numero disegno:	250.1.4227.36-ICA		Modulo m	1.6mm	Tratto evol. La	4.75mm
Commessa/serie nr.:	1		Angolo pressione	17° 30' 00"	Tratto elica Ls	12.38mm
Masch.Nr.:	M001	Spindel: Form	Angolo elic. -29° 00' 00"		Inizio elab. Ml	8.06mm
Untersuchungszweck:	Laufende Messung		S Base db	58.5125mm	Palpatore Ø	(#2C) 1mm
Werkzeug:	Charge:		Ang. Base	-27° 32' 25"	Fat. scor. pr. x	.687



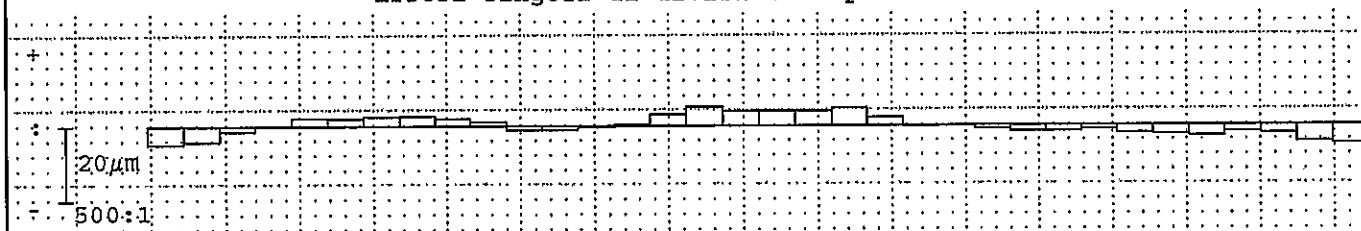
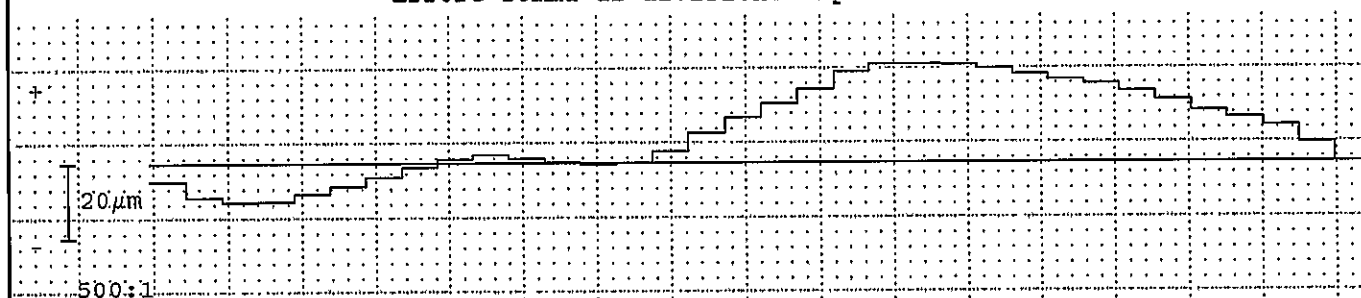
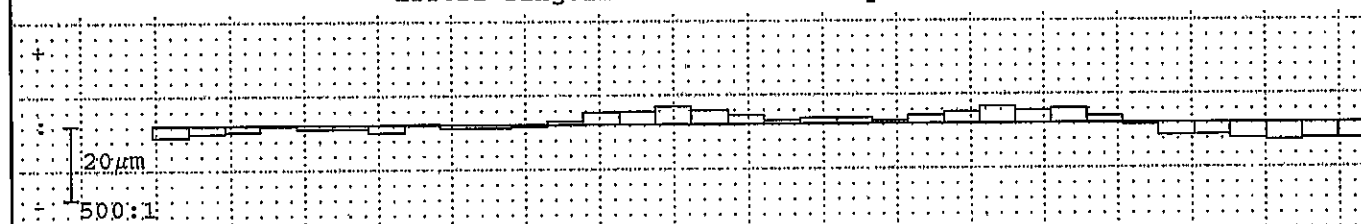
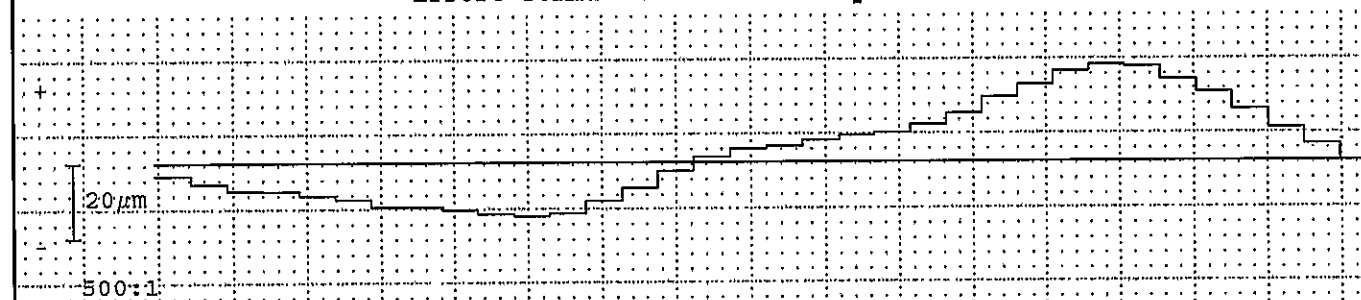
Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual
fH_m	± 6	-2	Var 6							± 6	Var 2							-3	
fH_a	± 7	-2	0	-4	-4	3	2	0		± 7	0	-2	-3	-4	-3	-4	-3		
F_a		3	1	4	4	4	2	2			1	2	3	4	4	5	4		
$f f_a$	9	1	1	1	1	2	1	2		9	1	1	1	1	2	2	2		
fK_o	-14/-6	-6	-6	-7	-6	-5	-6	-5		-16/-8	-10	-8	-7	-8	-10	-9	-9		
P/T- ϕ [mm]		58.440	[58.25/58.6]								68.072	[68.04/68.2]							



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Val. misur [μm]							Medio	Qual
fH_m	± 6	-5	Var 9							-15 $\pm$ 6	Var 13							-9	
fH_s	± 13	-5	-6	0	-6	-12	-9	-7		-15 $\pm$ 13	-12	-15	-16	-9	-2	-10	-9		
F_s	16	5	5	2	5	10	8	6		16	3	2	2	6	11	4	6		
$f f_s$	9	1	1	1	1	1	1	1		9	1	1	1	1	1	1	1		
C_s	2/5	3	3	4	3	3	3	3		2/5	2	2	1	2	2	2	2		
B_d	10 $\pm$ 8	5								10 $\pm$ 8								4	

GETRAG B7590**Ruota cilindrica Divisione**

Nr. prog.:	STI0410005 0	P26 B7590	Controllere:	turno D	Data:	18.12.2014 17:40
Denominazione:	SR6		Numero denti z	34	Angolo pressione	17° 30' 00"
Numero disegno.:	250.1.4227.36-ICA		Modulo m	1.6mm	Angolo elica	-29° 00' 00"
Commessa/serie nr.:	1		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Formm	Setzdg:	Charge:		

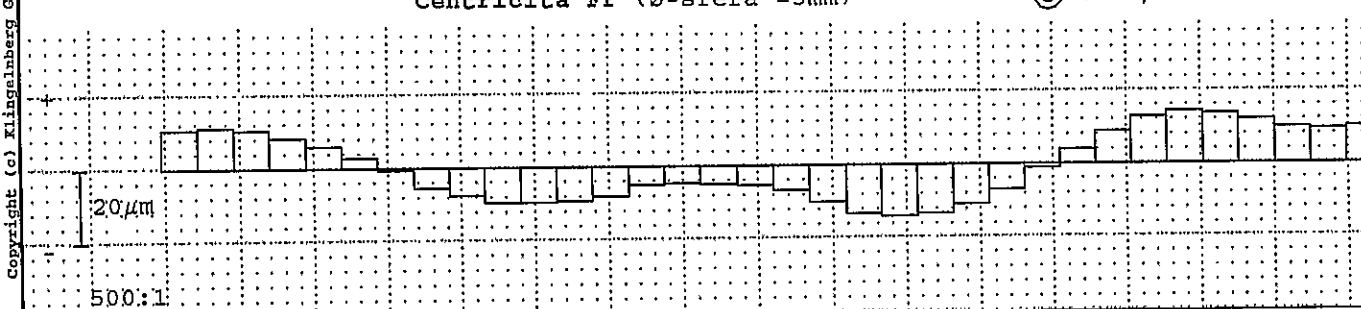
Errori singoli di divisione fp fianco sinistro**Errore somma di divisione Fp fianco sinistro****Errori singoli di divisione fp fianco destro****Errore somma di divisione Fp fianco destro**

Corso per misura divis.: 64.397 z=7.7mm

		fianco sinistro		fianco destro / TIRO			
		Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.
Gr. err. singoli divisione	fp max	5		14		5	14
Gr. salto di passo	fu max	3		18		3	18
Scarto di divisione	Rp	10				10	
Err. globale di divisione	Fp	37		50		40	50
Err. cordale di divisione	Fpz/8	19				18	

Centricità Fr (Ø-sfera =3mm)

© : 23µm



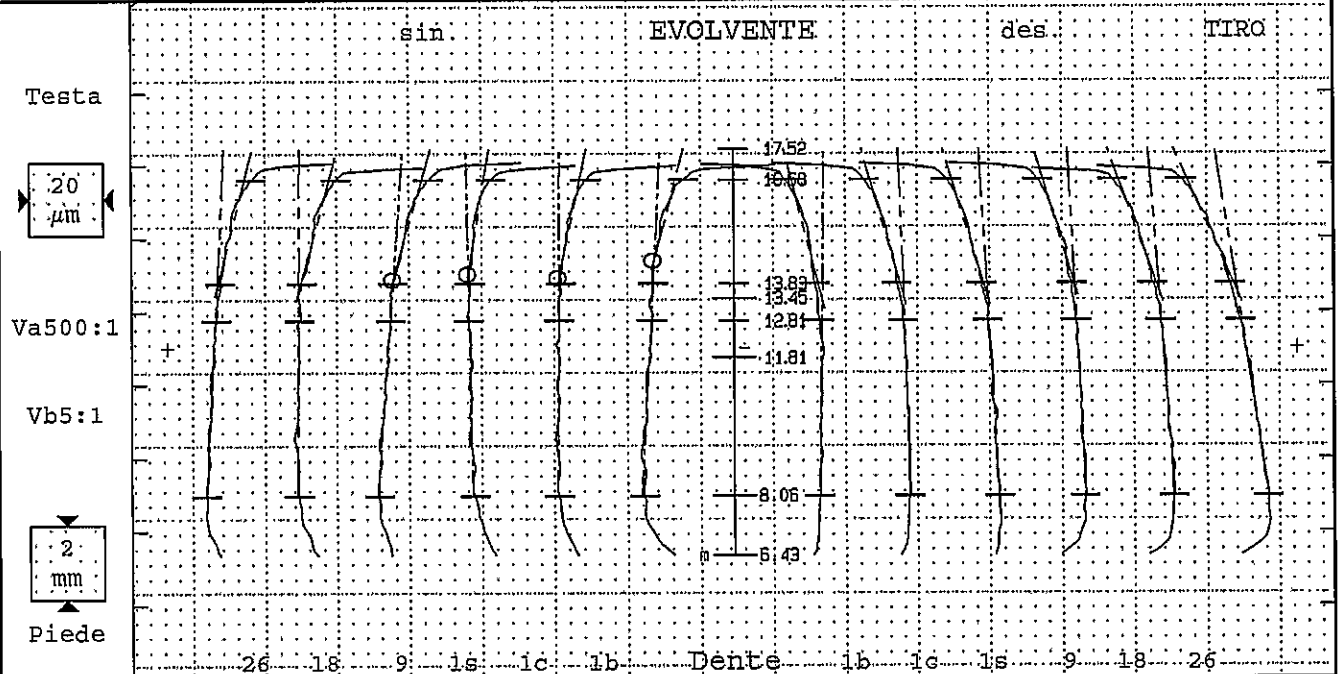
Err. di concentricità	Fr	28	32
Variaz. spessore dente	Rs		

GETRAG B7590

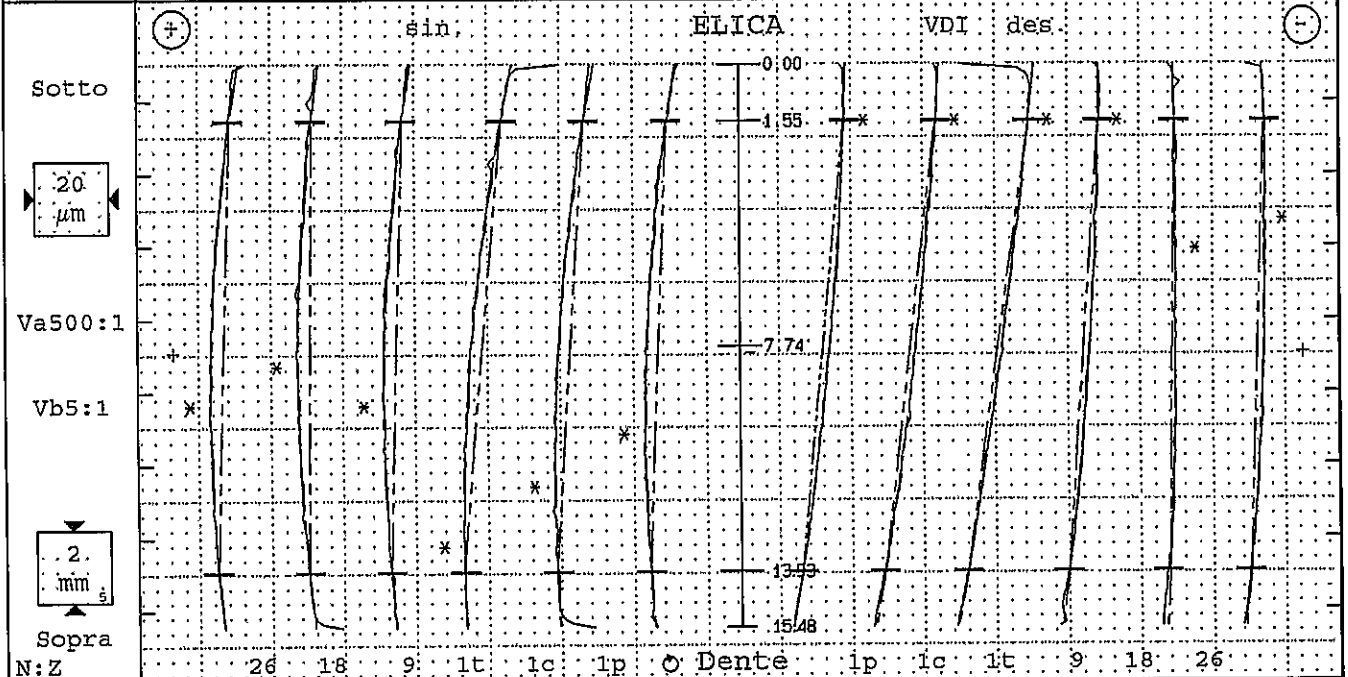
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	P26 B7590	Controllatore:	turno D	Data:	18.12.2014 17:47
Denominazione:	SR6		Numero denti z	34	Largh.fasc.dent. b	15.48mm
Numero disegno:	250.1.4227.36-ICA		Modulo m	1.6mm	Tratto evolv. La	4.75mm
Commessa/serie nr.:	2		Angolo pressione	17° 30' 00"	Tratto elica Ld	12.38mm
Masch.Nr.:	M001	Spindel: Form	Ang. elica	-29° 00' 00"	Inizio elab. M1	8.06mm
Untersuchungszweck:	Laufende Messung		Ø Base db	58.5125mm	Palpatore Ø	(#2C)1mm
Werkzeug:	Charge:		Ang. Base	-27° 32' 25"	Fat.scor.pr. x	.687



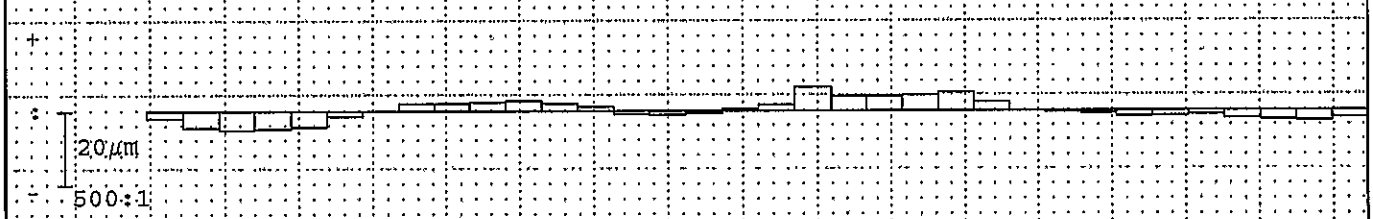
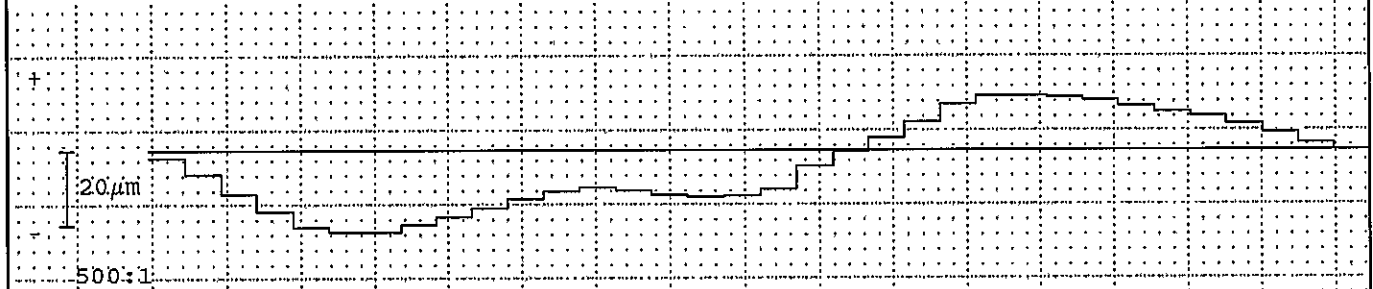
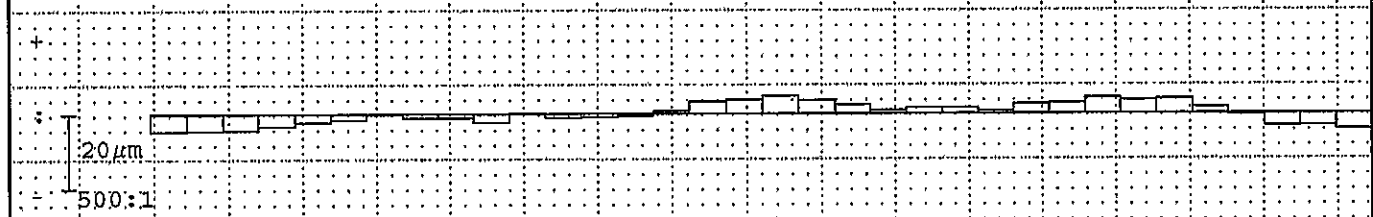
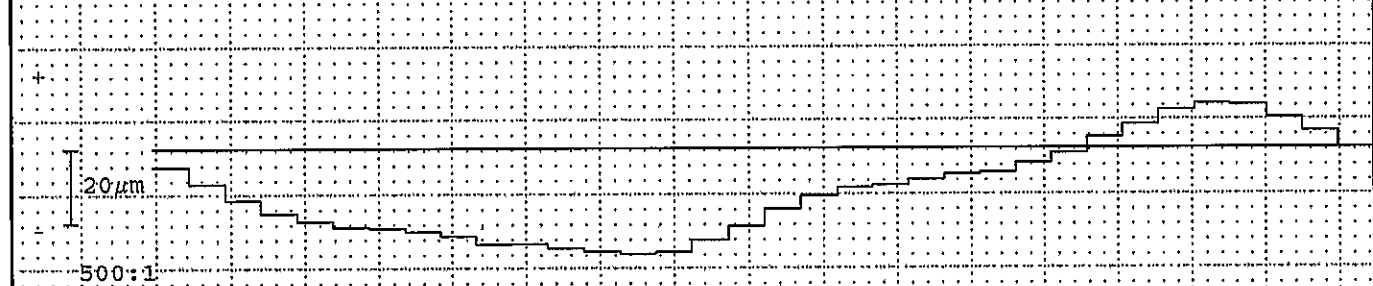
Tolerance	Medio	Val.misur[μm]							Qual	Tolerance	Val.misur[μm]							Medio	Qual
fH_m	± 6	-2	Var 4							± 6	Var 5							-4	
fH_a	± 7	-2	-3	0	-4	1	0	-3		± 7	1	-2	-3	-2	-4	-7	-4		
F_a		2	3	1	4	2	1	3			1	2	3	3	4	8	4		
$f f_a$	9	1	1	1	1	1	1	2		9	1	1	1	1	1	1	1		
fK_o	-14/-6	-7	-6	-8	-6	-5	-6	-5		-16/-8	-9	-8	-8	-8	-9	-9	-8		
P/T- ϕ [mm]		58.439	[58.25/58.6]								68.066	[68.04/68.2]							



Tolerance	Medio	Val.misur[μm]							Qual	Tolerance	Val.misur[μm]							Medio	Qual
fH_m	± 6	-5	Var 8							-15 ± 6	Var 16							-9	
fH_s	± 13	-5	-5	-2	-4	-13	-10	-6		-15 ± 13	-15	-18	-21	-11	-2	-5	-9		
F_s	16	5	4	2	4	11	8	6		16	1	3	6	5	11	8	7		
$f f_s$	9	1	1	1	1	2	1	1		9	1	2	1	1	1	1	1		
C_s	2/5	3	3	3	3	3	3	3		2/5	2	2	1	2	2	2	2		
Bd	10 ± 8	7								10 ± 8									

GETRAG B7590**Ruota cilindrica Divisione**

Nr. prog.:	STI0410005 0	P26 B7590	Controllere:	turno D	Data:	18.12.2014 17:47
Denominazione:	SR6		Numero denti z	34	Angolo pressione	17° 30' 00"
Numero disegno.:	250.1.4227.36-ICA		Modulo m	1.6mm	Angolo elica	-29° 00' 00"
Commessa/serie nr.:	1		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Form	Größe:	Charge:		

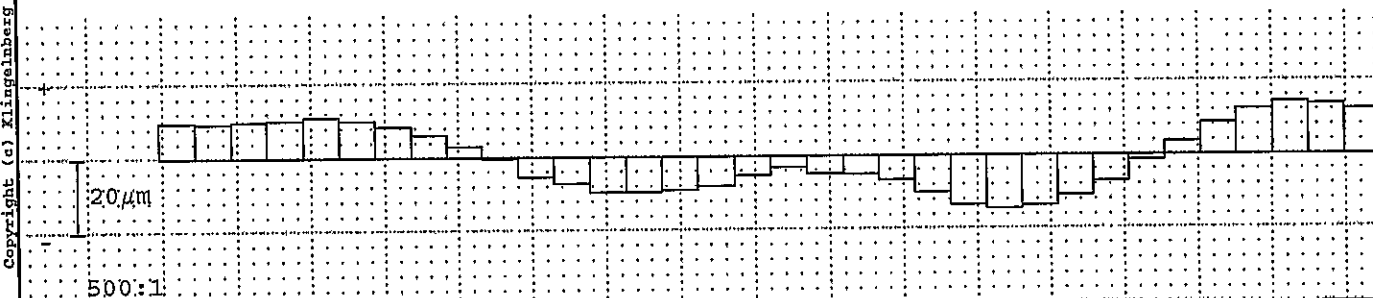
Errori singoli di divisione fp fianco sinistro**Errore somma di divisione Fp fianco sinistro****Errori singoli di divisione fp fianco destro****Errore somma di divisione Fp fianco destro**

Corso per misura divis.: 64.397 z=7.7mm

	fianco sinistro				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	6		14		5		14	
Gr. salto di passo fu max	5		18		3		18	
Scarto di divisione Rp	11				10			
Err. globale di divisione Fp	37		50		40		50	
Err. cordale di divisione Fpz/8	19				18			

Centricità Fr (Ø-sfera =3mm)

⊙ : 23µm



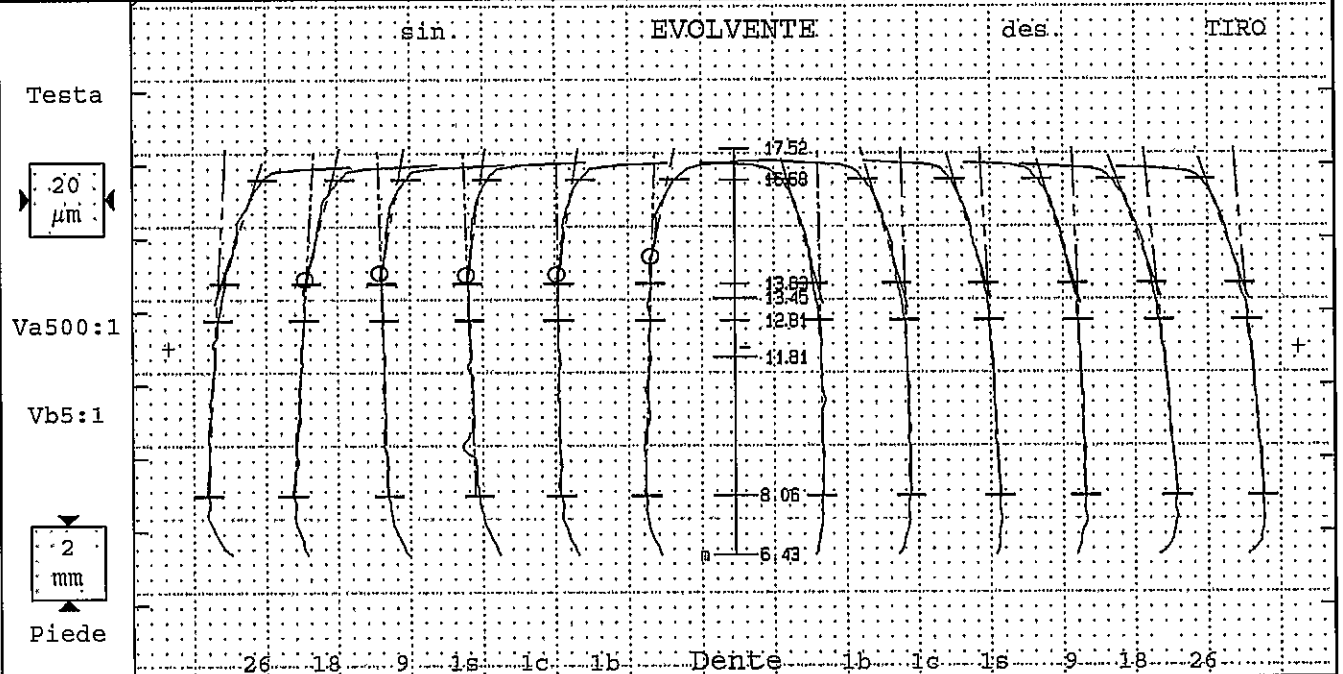
Err. di concentricità Fr	29	32	
Variaz. spessore dente Rs			

GETRAG B7590

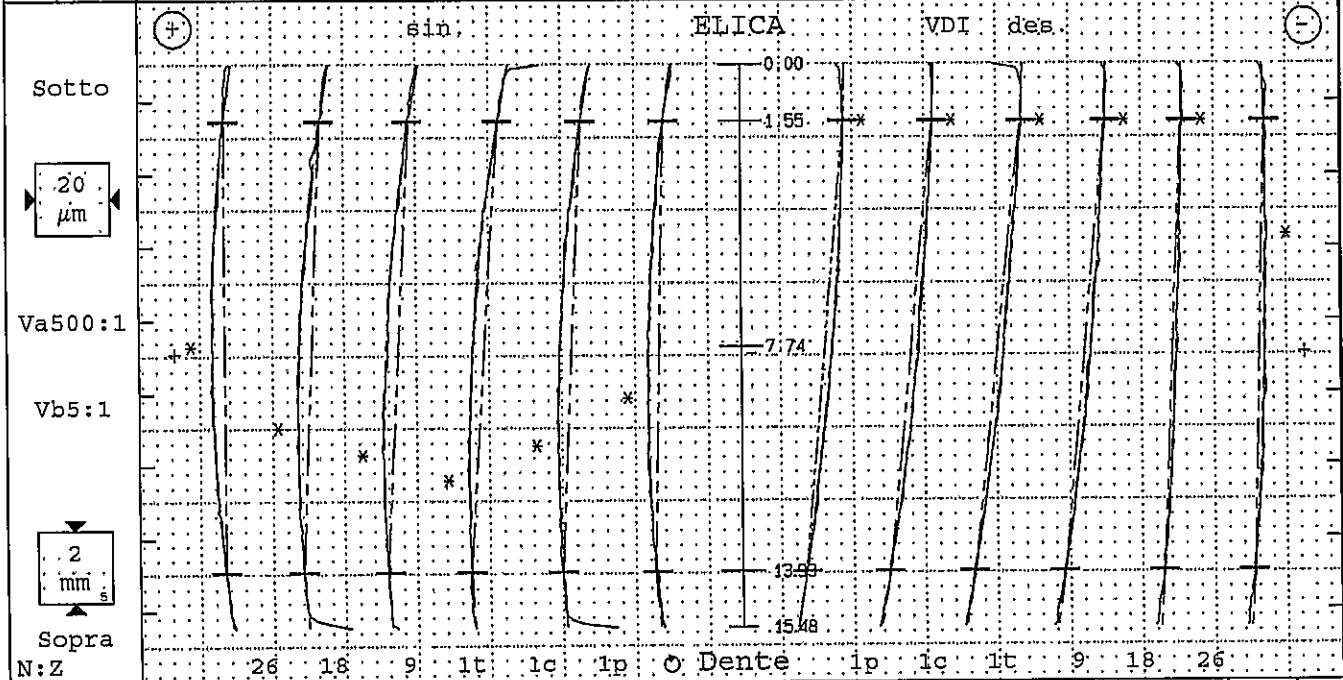
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	P26 B7590	Controllatore:	turno D	Data:	18.12.2014 17:52
Denominazione:	SR6		Numero denti z	34	Largh. fasc. dent. b	15.48mm
Numero disegno.:	250.1.4227.36-ICA		Modulo m	1.6mm	Tratto evolv. La	4.75mm
Commessa/serie nr.:	3		Angolo pressione	17° 30' 00"	Tratto elica Ls	12.38mm
Masch.Nr.:	M001	Spindel: Form	Ang. elica	-29° 00' 00"	Inizio elab. M1	8.06mm
Untersuchungszweck:	Laufende Messung		Ø Base db	58.5125mm	Palpatore Ø	(#2C)1mm
Werkzeug:	Charge:		Ang. Base	-27° 32' 25"	Fat. scor. pr. x	.687



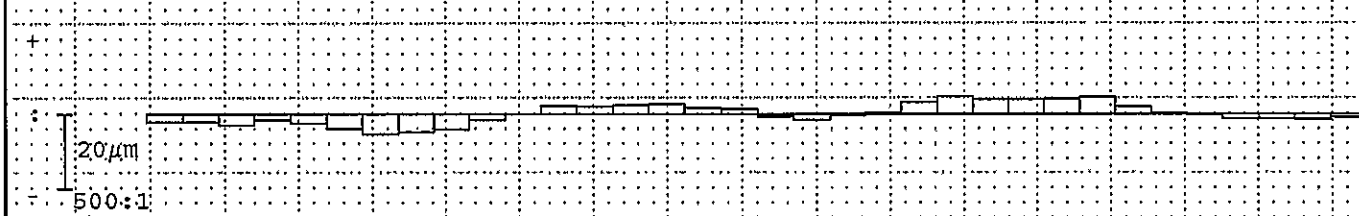
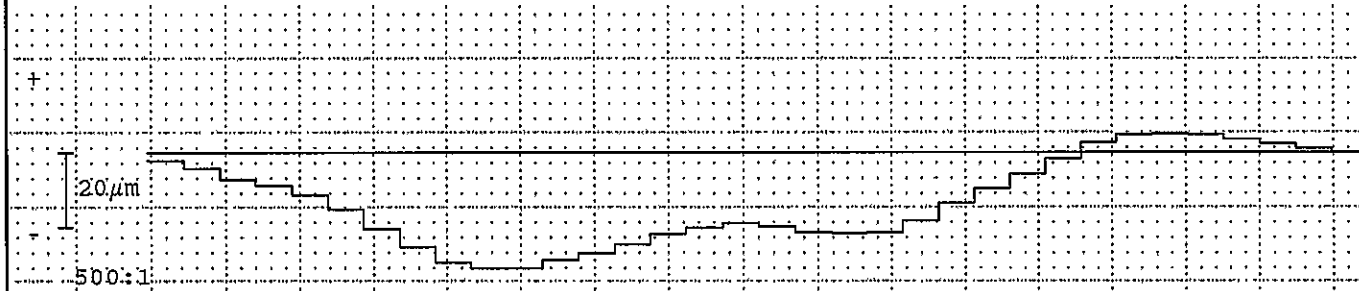
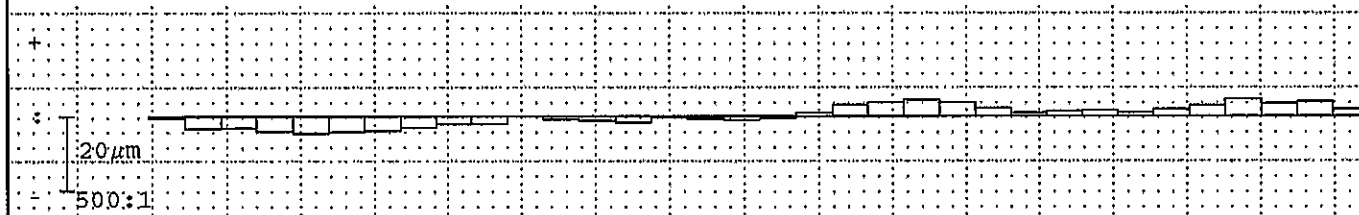
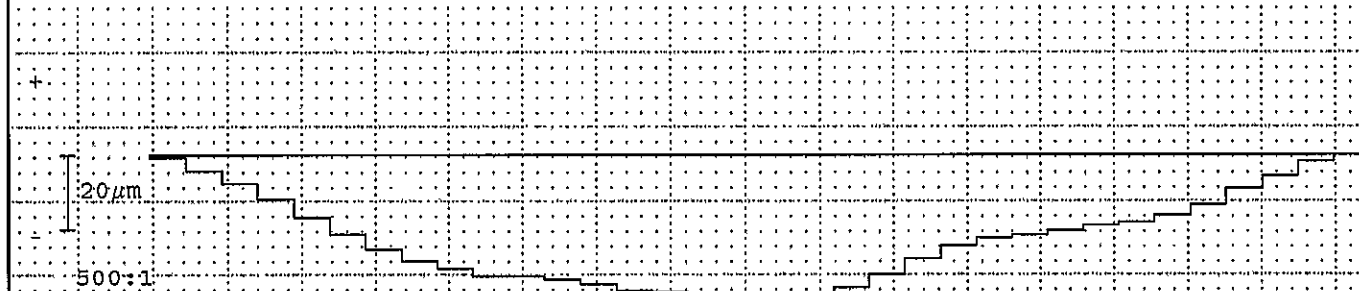
Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Medio	Val. misur [μm]							Qual
fH_m	± 6	-1	Var 4							± 6	-3	Var 4							-3
fH_a	± 7	-1	-3	-3	1	2	0	-1		± 7	-1	-1	-3	-2	-5	-4	-3		
F_a		2	3	3	2	5	1	2			2	2	3	2	5	4	3		
$f f_a$	9	1	2	1	1	4	1	1		9	1	1	1	1	1	1	1		
fK_o	-14/-6	-8	-9	-6	-6	-5	-6	-4		-16/-8	-9	-9	-8	-8	-8	-8	-8		
$p/T-\phi$ [mm]		58.442	[58.25/58.6]								68.068	[68.04/68.2]							



Tolerance	Medio	Val. misur [μm]							Qual	Tolerance	Medio	Val. misur [μm]							Qual
fH_m	± 6	-5	Var 8							-15 $\pm$ 6	-10	Var 11							-10
fH_s	± 13	-5	0	-6	-8	-10	-7	-3		-15 $\pm$ 13	-13	-15	-16	-14	-6	-4	-10		
F_s	16	5	2	5	6	9	6	3		16	2	1	2	1	8	10	5		
$f f_s$	9	1	1	2	1	1	1	1		9	1	1	1	1	1	1	1		
C_s	2/5	3	3	3	3	3	3	3		2/5	2	2	2	2	2	2	2		
B_d	10 $\pm$ 8	7								10 $\pm$ 8	3								3

GETRAG B7590**Ruota cilindrica Divisione**

Nr. prog.: STI0410005 0	P26 B7590	Controllore: turno D	Data: 18.12.2014 17:52
Denominazione: SR6		Numero denti z 34	Angolo pressione 17° 30' 00"
Numero disegno.: 250.1.4227.36-ICA		Modulo m 1.6mm	Angolo elic. -29° 00' 00"
Commessa/serie nr.: 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Form	Gr. Feilg:	Charge:

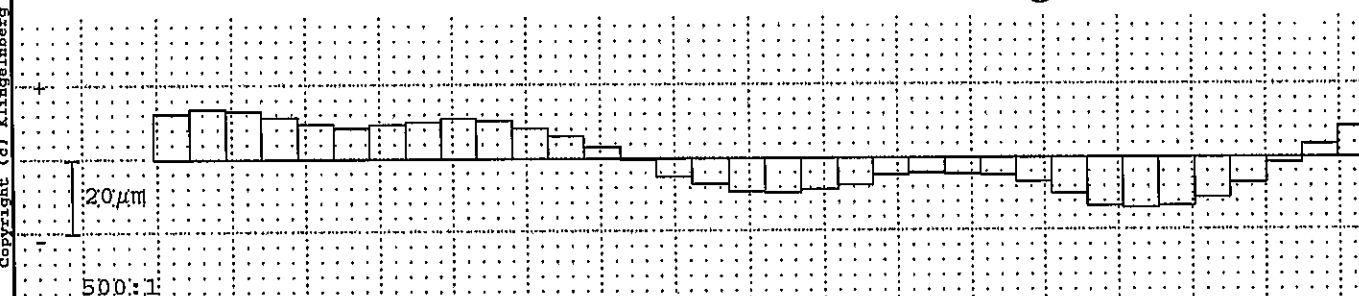
Errori singoli di divisione fp fianco sinistro**Errore somma di divisione Fp fianco sinistro****Errori singoli di divisione fp fianco destro****Errore somma di divisione Fp fianco destro**

Corso per misura divis.: 64.397 z=7.7mm

	fianco sinistro				fianco destro / TIRO			
	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	5		14		5		14	
Gr. salto di passo fu max	3		18		3		18	
Scarto di divisione Rp	10				9			
Err. globale di divisione Fp	36		50		40		50	
Err. cordale di divisione Fpz/8	18				18			

Centricità Fr (Ø-sfera =3mm)

⊙ : 22μm



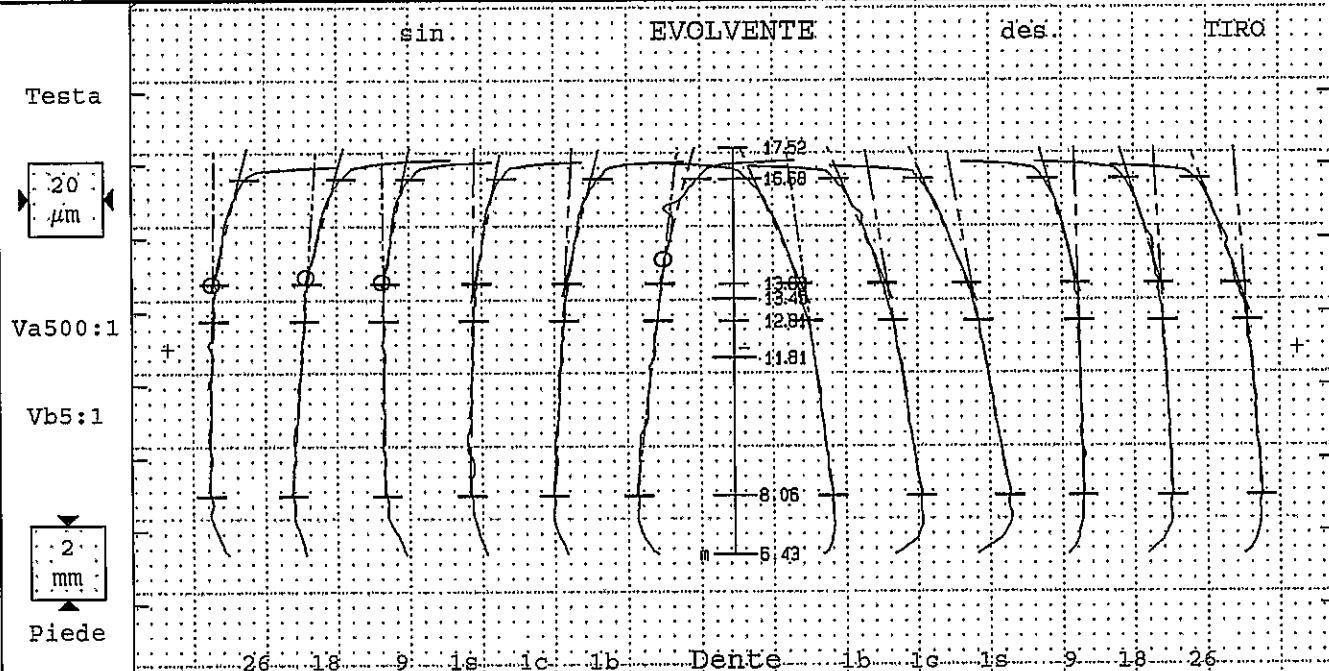
Err. di concentricità Fr	27	32	
Variaz. spessore dente Rs			

GETRAG B7590

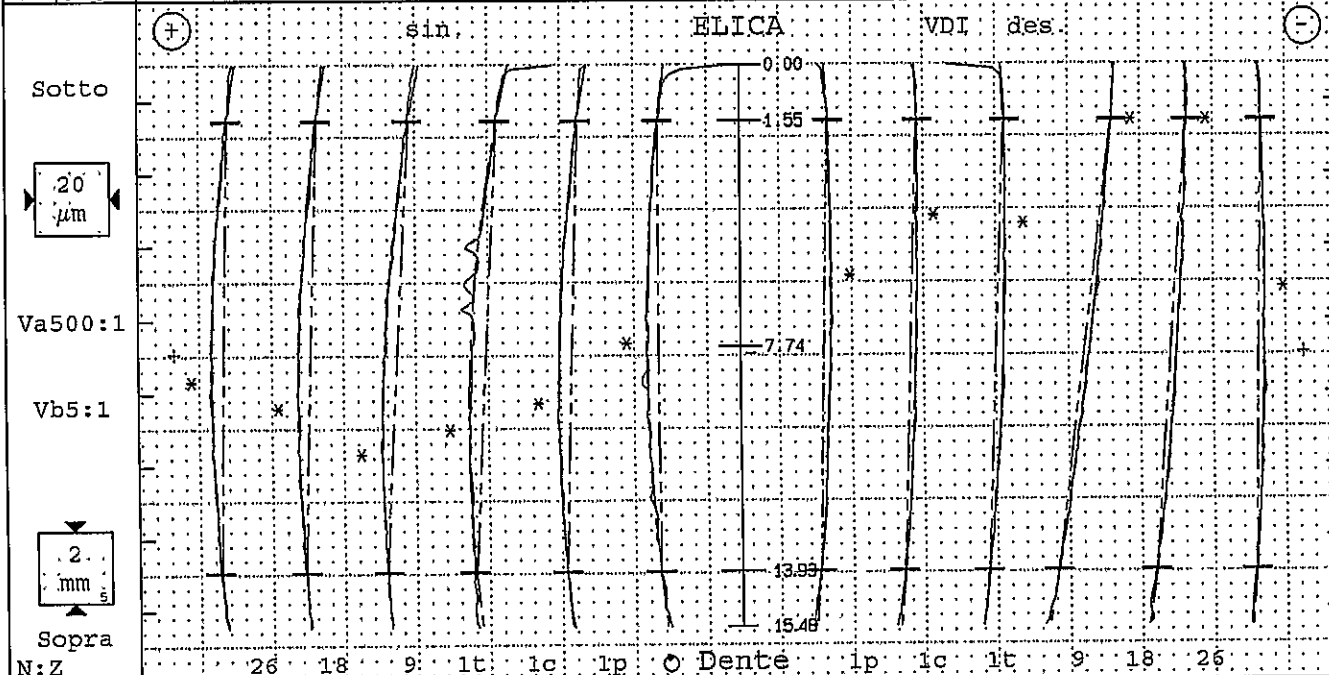
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	P26 B7590	Controllore:	turno D	Data:	18.12.2014 17:57
Denominazione:	SR6		Numero denti z	34	Largh.fasc.dent. b	15.48mm
Numero disegno:	250.1.4227.36-ICA		Modulo m	1.6mm	Tratto evolv. La	4.75mm
Commessa/serie nr.:	4		Angolo pressione	17° 30' 00"	Tratto elica Ls	12.38mm
Masch.Nr.:	M001	Spindel: Form	Angolo elicale	-29° 00' 00"	Inizio elab. Ml	8.06mm
Untersuchungszweck:	Laufende Messung		Ø Base db	58.5125mm	Palpatore Ø	(#2C)1mm
Werkzeug:	Charge:		Ang. Base	-27° 32' 25"	Fat.scor.pr. x	.687



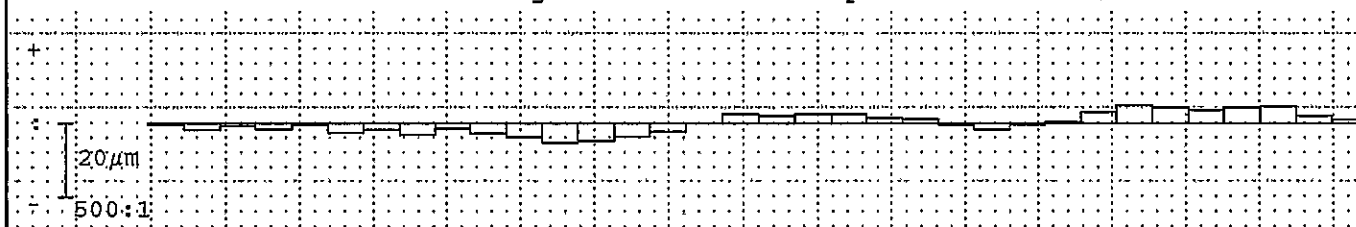
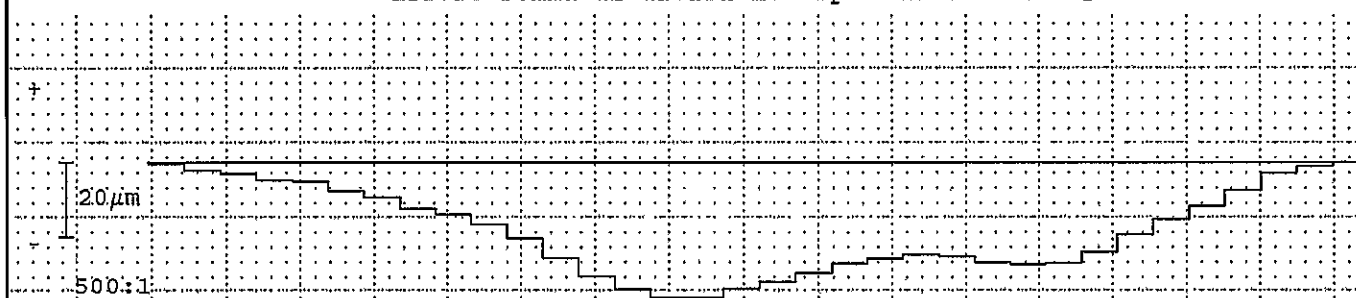
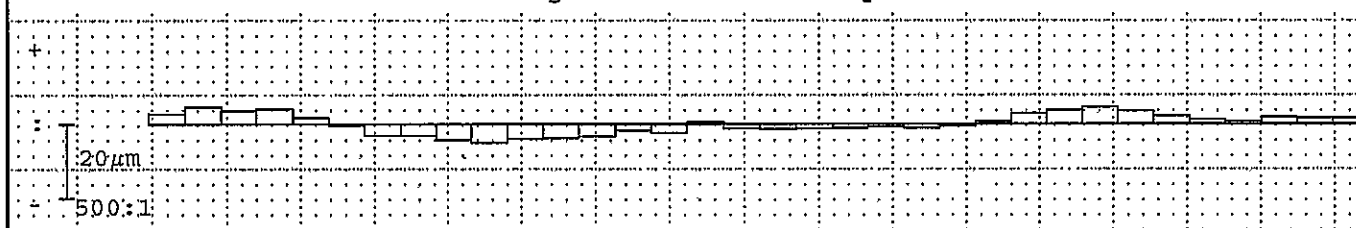
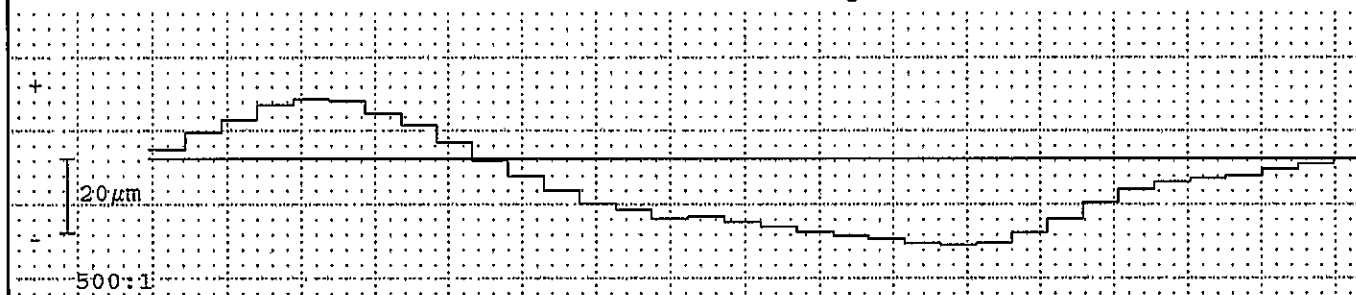
Tolerance	Medio	Val.misur[μm]							Qual	Tolerance	Val.misur[μm]							Medio	Qual		
fHm	±6	-2	Var 4								±6	Var 7							-4		
fHa	±7	-2	-1	-4	0	-1	-3	-6		±7	-6	-7	-9	-1	-3	-4	-4				
Fa		2	2	3	1	2	3	6			7	8	9	2	3	4	4				
ffa	9	1	1	1	1	2	1	3		9	1	1	1	1	1	1	1				
fKo	-14/-6	-6	-7	-6	-6	-6	-6	-3		-16/-8	-10	-8	-8	-8	-8	-10	-9				
P/T-φ[mm]		58.438	[58.25/58.6]									68.068	[68.04/68.2]								



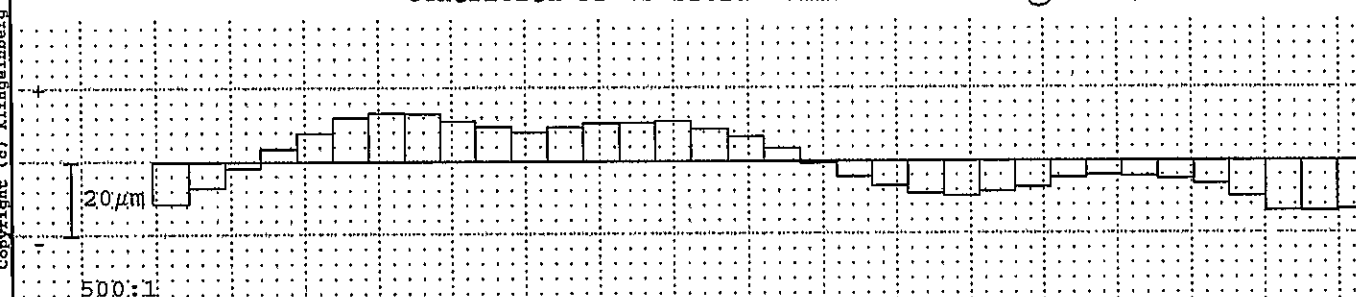
$\pm H_m$	± 6	-5	Var 5							-15 ± 6	Var 17							-9	
$\pm H_s$	± 13	-5	-3	-5	-8	-8	-4	0		-15 ± 13	-3	-5	-6	-19	-11	-2	-9		
F_s	16	5	3	4	7	8	4	3		16	10	8	8	4	5	11	7		
$f f_s$	9	1	1	1	1	5	1	2		9	1	1	1	1	1	1	1		
C_s	2/5	3	3	3	3	4	3	3		2/5	2	2	2	2	2	2	2		
B_d	10 ± 8	8								10 ± 8								3	

GETRAG B7590**Ruota cilindrica Divisione**

Nr. prog.: STI0410005 0	P26 B7590	Controllore: turno D	Data: 18.12.2014 17:57
Denominazione: SR6		Numero denti z 34	Angolo pressione 17° 30' 00"
Numero disegno: 250.1.4227.36-ICA		Modulo m 1.6mm	Angolo elica -29° 00' 00"
Commessa/serie nr.: 3		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: FORM	Gr. Fz: 1g	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.: 64.397 z=7.7mm		fianco sinistro		fianco destro / TIRO	
		Val. misur	Qual.	Val. misur	Qual.
Gr. err. singoli divisione	fp max	6		5	14
Gr. salto di passo	fu max	3		3	18
Scarto di divisione	Rp	11		10	
Err. globale di divisione	Fp	37	50	39	50
Err. cordale di divisione	Fpz/8	18		18	

Centricità Fr (Ø-sfera = 3mm)**⊙ : 22µm**

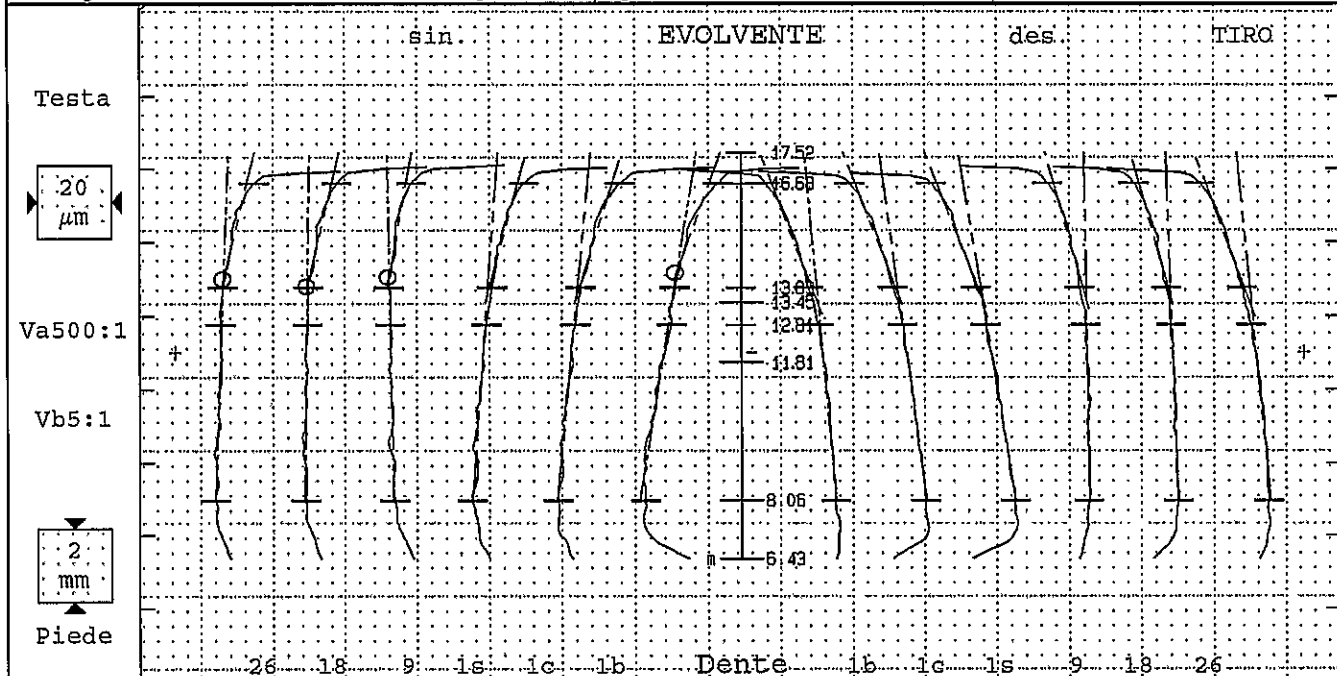
Err. di concentricità	Fr	27	32
Variaz. spessore dente	Rs		

GETRAG B7590

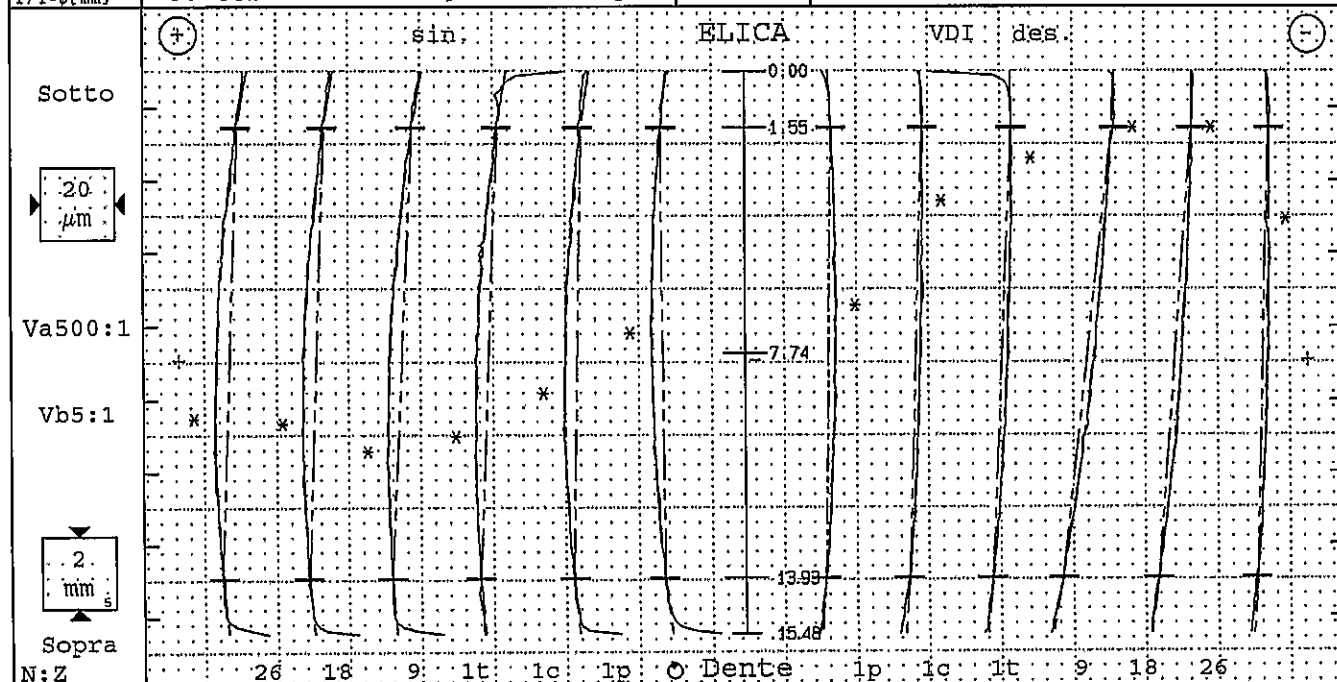
Ruota cilindrica Evolvente/Elica



Nr. prog.:	STI0410005 0	P26 B7590	Controllora:	turno D	Data:	18.12.2014 18:02
Denominazione:	SR6		Numero denti z	34	Largh.fasc.dent. b	15.48mm
Numero disegno:	250.1.4227.36-ICA		Modulo m	1.6mm	Tratto evolv. La	4.75mm
Commessa/serie nr.:	5		Angolo pressione	17° 30' 00"	Tratto elica Ls	12.38mm
Masch.Nr.:	M001	Spindel: Form	Angolo elica	-29° 00' 00"	Inizio elab. Ml	8.06mm
Untersuchungszweck:	Laufende Messung		Ø Base db	58.5125mm	Palpatore Ø	(#2C)1mm
Werkzeug:	Charge:		Ang. Base	-27° 32' 25"	Fat.scor.pr. x	.687



Tolerance	Medio	Val.misur[μ m]							Qual	Tolerance	Val.misur[μ m]							Medio	Qual
ϵH_{om}	± 6	-2	Var 6							± 6	-4	Var 6							-4
ϵH_{α}	± 7	-2	-2	-1	1	-3	-5	-8		± 7	-4	-7	-8	-1	-2	-5	-4		
ϵa		3	2	2	2	4	5	8			5	6	8	1	2	5	4		
ϵf_{α}	9	2	1	1	2	2	2	3		9	1	1	1	1	1	1	1		
ϵK_{α}	-14/-6	-6	-6	-6	-6	-6	-7	-5		-16/-8	-10	-8	-7	-9	-8	-9	-9		
P/T- ϕ [mm]		58.442	[58.25/58.6]								68.071	[68.04/68.2]							



N:Z	ϵH_{sm}	ϵH_s	ϵs	ϵf_s	ϵs	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd	ϵd
	± 6	± 13	16	9	2/5	10 ± 8													
	-5	-5	5	1	3	7													
	Var 4																		
	-15 ± 6	-15 ± 13	16	9	2/5	10 ± 8													
	-5	-2	11	1	2														
	Var 13																		
	-10	-10	6	1	2	5													

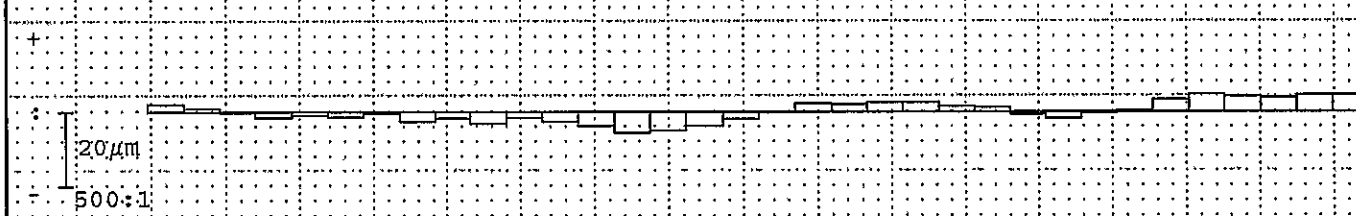
GETRAG B7590

Ruota cilindrica Divisione

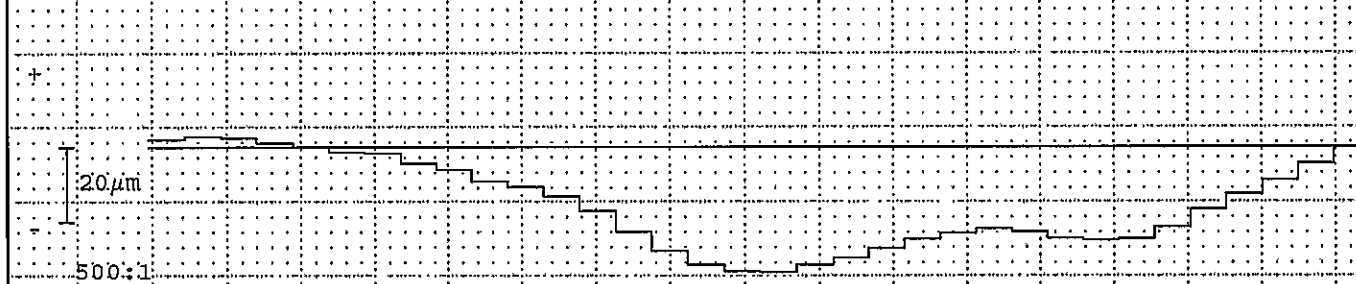


Nr. prog.: STI041005 0	P26 B7590	Controllore: turno D	Data: 18.12.2014 18:02
Denominazione: SR6		Numero denti z 34	Angolo pressione 17° 30' 00"
Numero disegno.: 250.1.4227.36-ICA		Modulo m 1.6mm	Angolo elica -29° 00' 00"
Commessa/serie nr.: 5		Untersuchungszweck: Laufende Messung	
Masch.Nr.: M001	Spindel: Form	Gr. Fz: 1g	Charge:

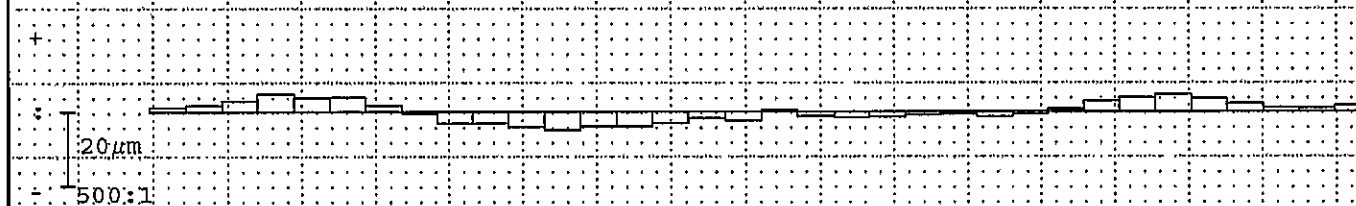
Errori singoli di divisione fp fianco sinistro



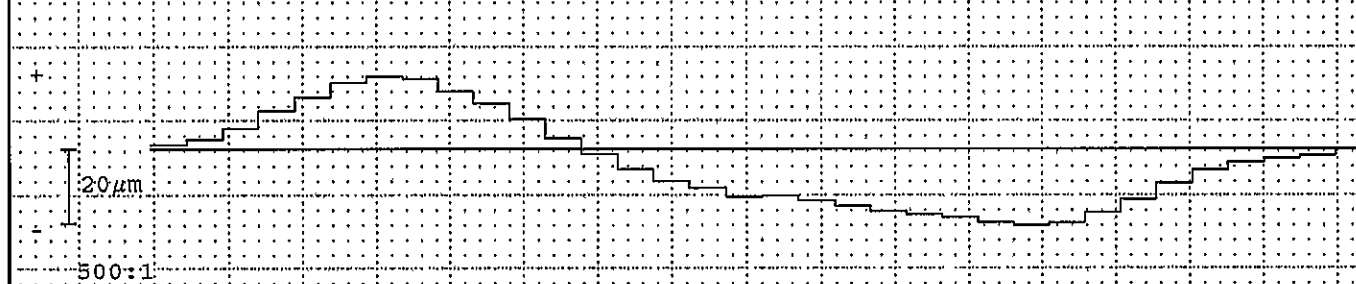
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro

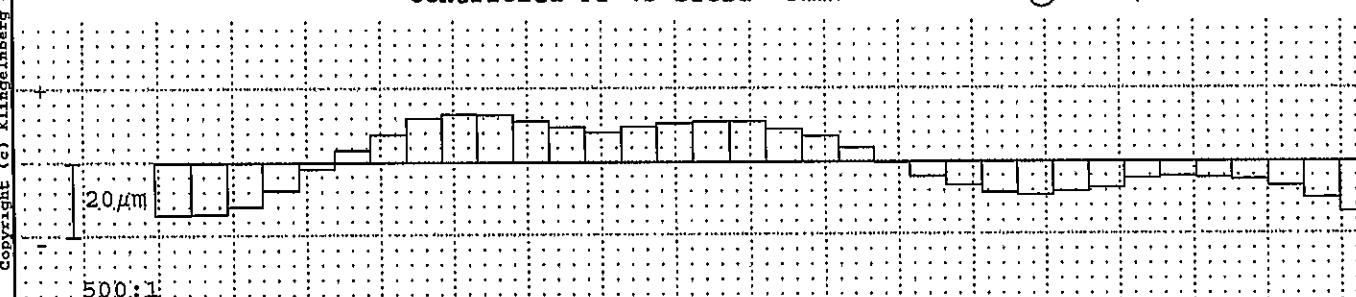


Corso per misura divis.: 64.397 z=7.7mm

	fianco sinistro				fianco destro / TIRO			
	Val. misur	Qual.	Val. amn	Qual.	Val. misur	Qual.	Val. amn	Qual.
Gr. err. singoli divisione fp max	6		14		5		14	
Gr. salto di passo fu max	3		18		3		18	
Scarto di divisione Rp	11				10			
Err. globale di divisione Fp	37		50		40		50	
Err. cordale di divisione Fpz/8	18				18			

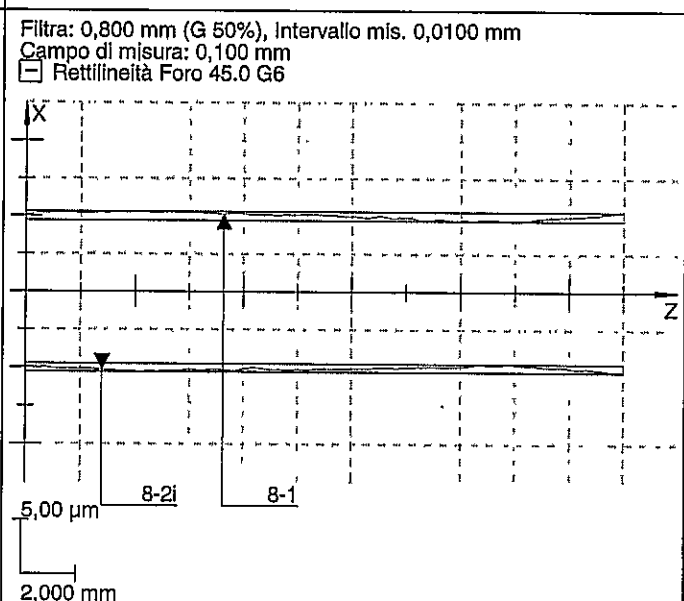
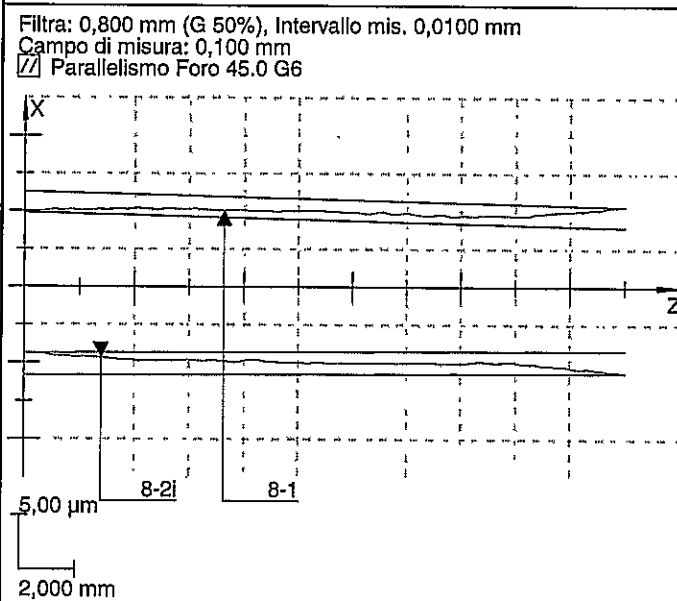
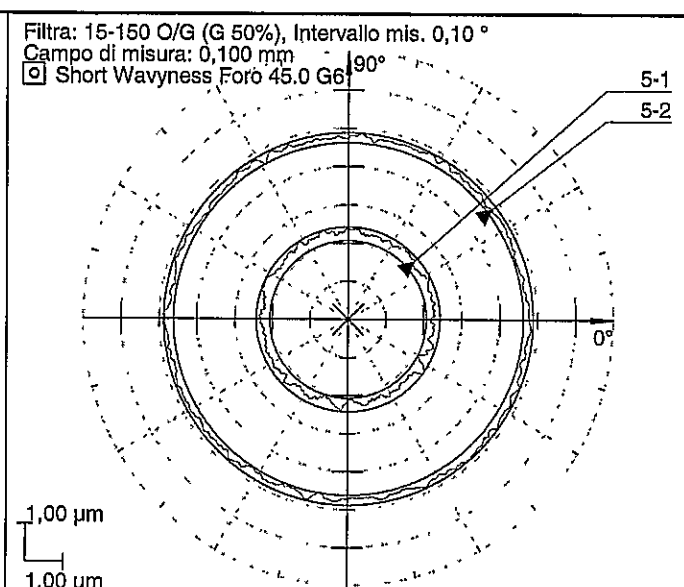
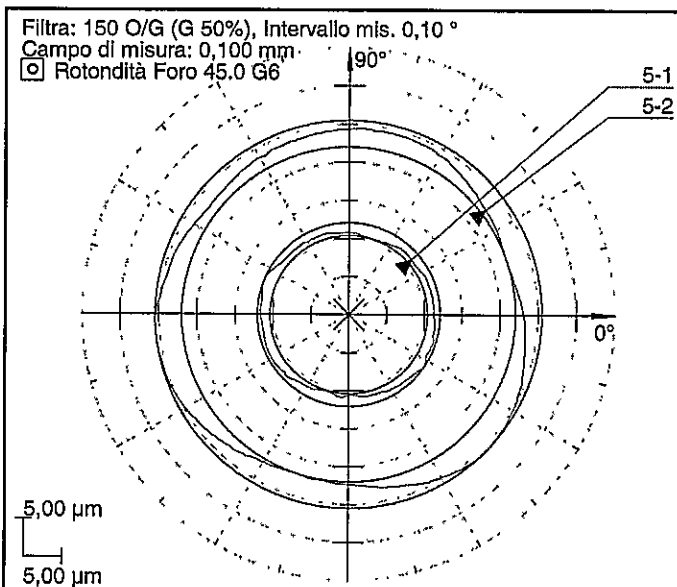
Centricità Fr (Ø-sfera =3mm)

⊙ : 23µm



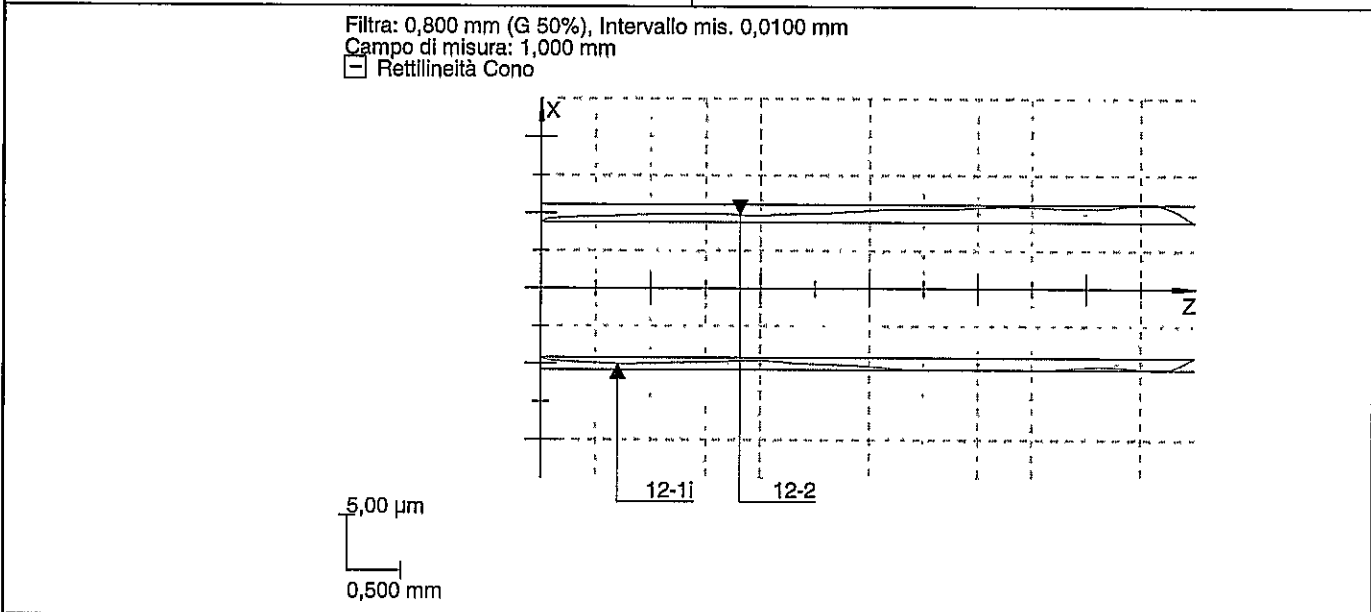
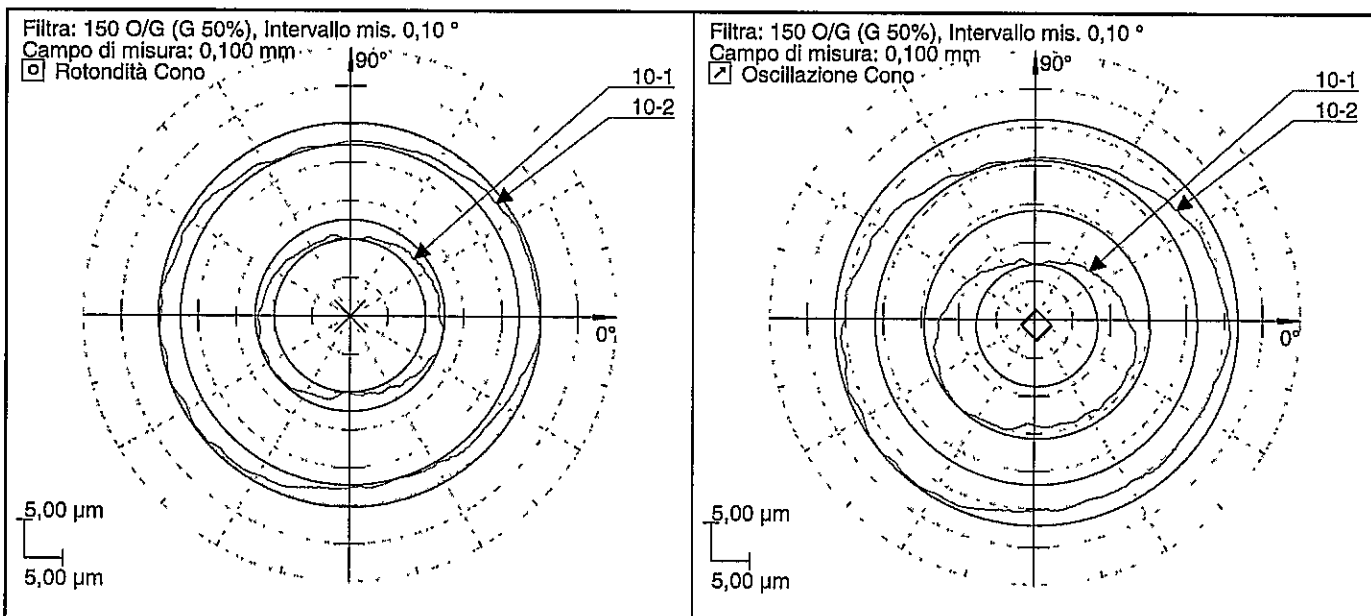
Err. di concentricità Fr	27	32	
Variaz. spessore dente Rs			

Mahr FORM-PC V4.28.7 SP15		GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:13:41 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		
Rapporto delle misure 1		Reporto: GPS 5		
Formtester: MMQ40		N. commessa:		N. lotto: 1
Commento ppap 1				1_4226_F.FPC

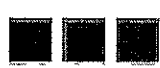


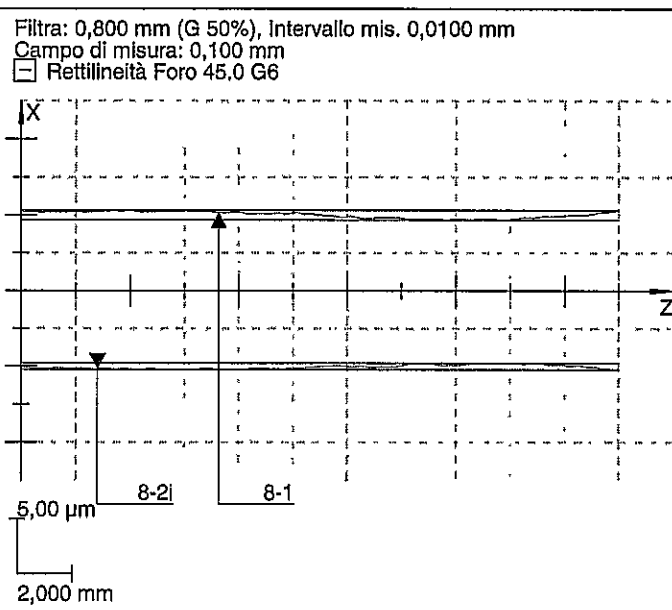
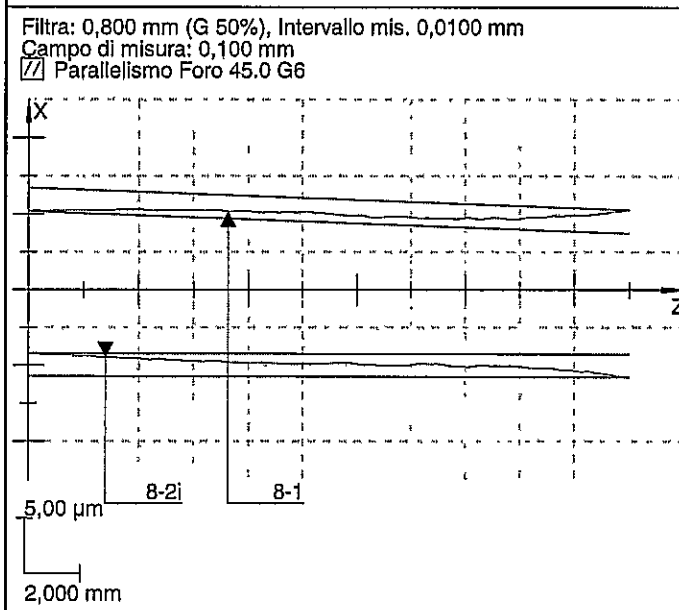
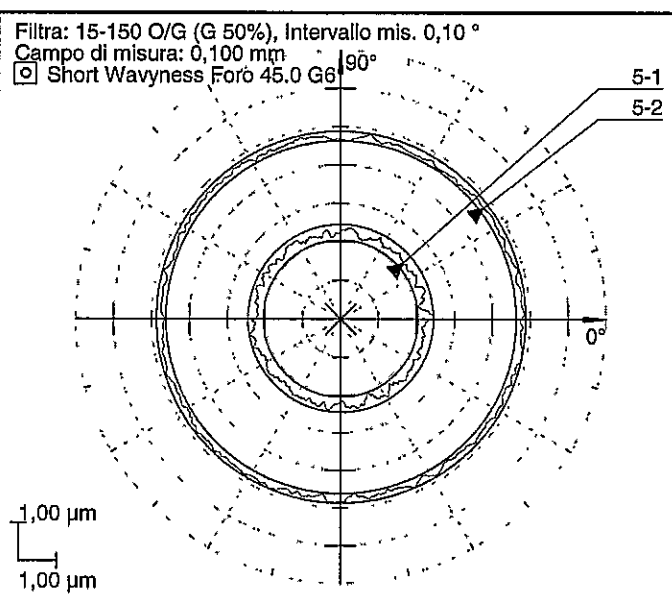
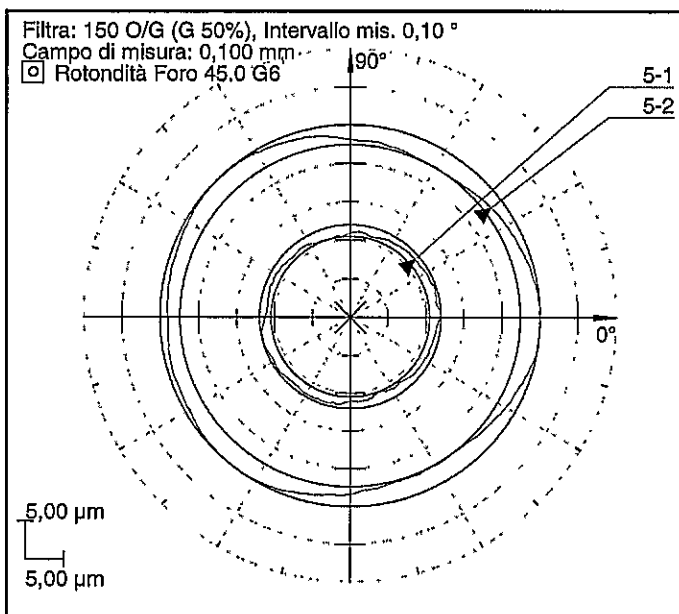
Profilo o Compito	Posizion [mm, °]	Risultato [µm] ☐ : [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
5-1	197,00	☐ 1,68		MZC		1,01	301,15
5-2	175,00	☐ 3,48		MZC		2,45	303,30
6:Compito 6		☐ 3,48	0,0060	MZC			
5-1	197,00	☐ 0,36		MZC		0,06	284,38
5-2	175,00	☐ 0,26		MZC		0,01	265,41
7:Compito 7		☐ 0,36	0,0010	MZC			
8-1	222,7	☐ 2,76		MZS	8-2		-63
8-2	42,7	☐ 2,93		MZS	8-1		-82
8:Compito 8		☐ 2,93	0,0070	MZS			
8-1	222,7	☐ 1,22		MZS			15
8-2	42,7	☐ 1,08		MZS			86
9:Compito 9		☐ 1,22	0,0040	MZS			

Mahr FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:13:41 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		N. lotto: 1 1_4226_F.PPC
Rapporto delle misure 1		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		
Commento ppap 1				

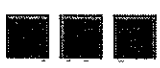


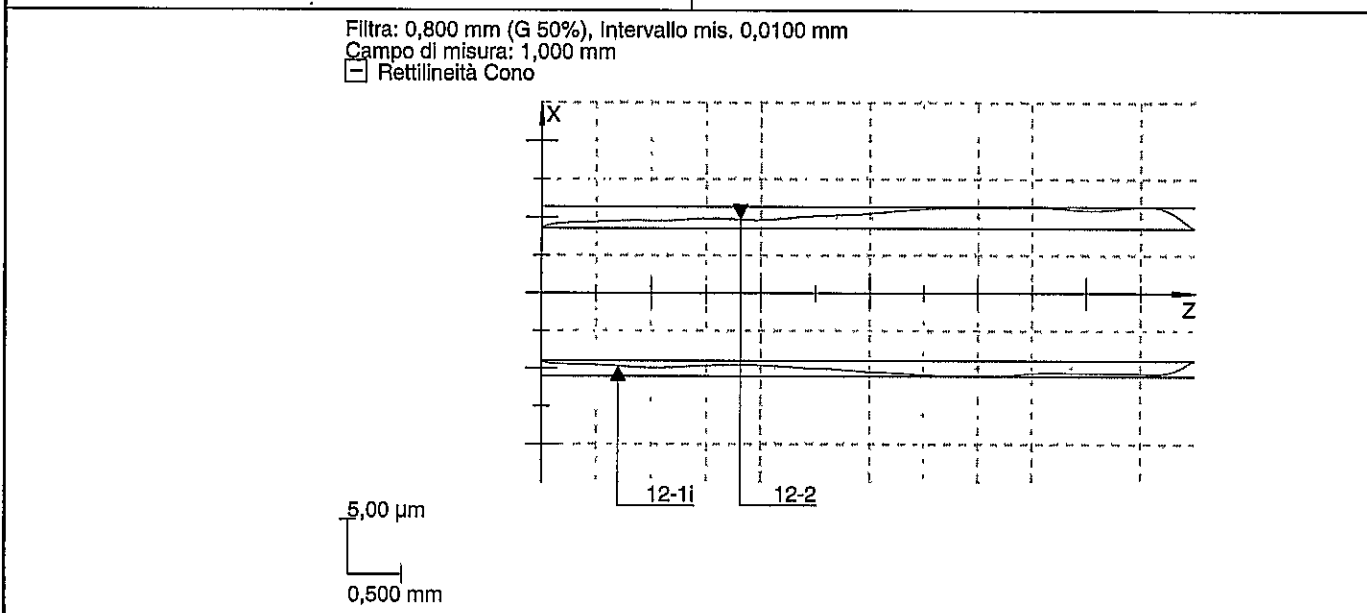
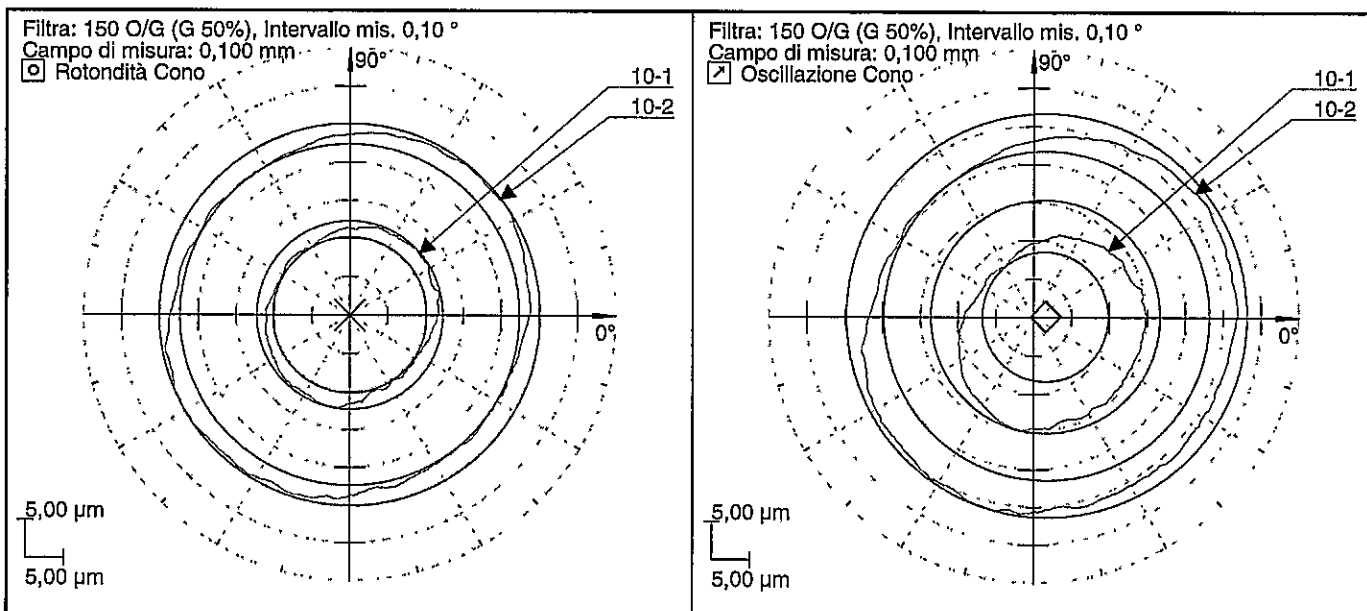
Profilo o Compito	Posizion [mm, °]	Risultato [µm] ☐ : [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
10-1	201,00	☒ 2,54		MZC		3,27	270,66
10-2	206,00	☒ 2,89		MZC		2,11	271,39
10:Compito 10		☒ 2,89	0,0040	MZC			
10-1	201,00	☒ 6,93			Asse [A]	0,86	291,57
10-2	206,00	☒ 5,34			Asse [A]	0,59	287,05
11:Compito 11		☒ 6,93	0,0200		Asse [A]		
12-1	49,0	☒ 1,60		MZS			-7,702°
12-2	229,0	☒ 2,32		MZS			-7,715°
12:Compito 12		☒ 2,32	0,0030	MZS			

 FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:23:21 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		
Rapporto delle misure 2		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		N. lotto: 1
Commento ppap 2				1_4226_F.FPC

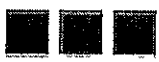


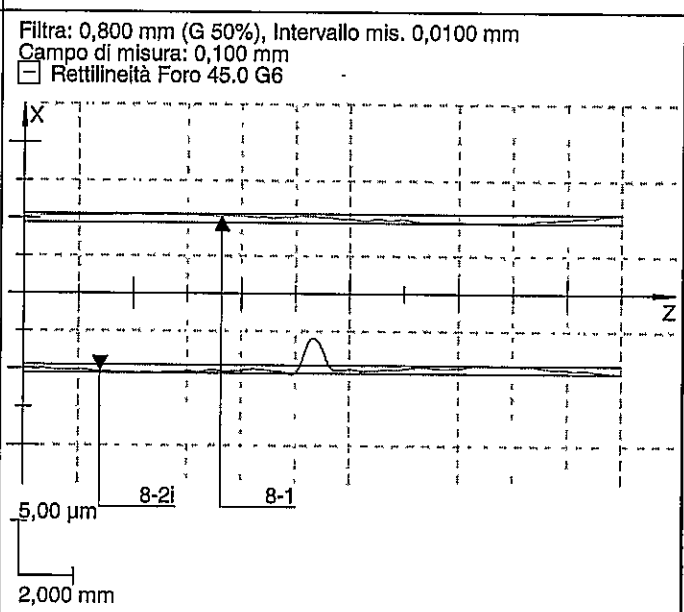
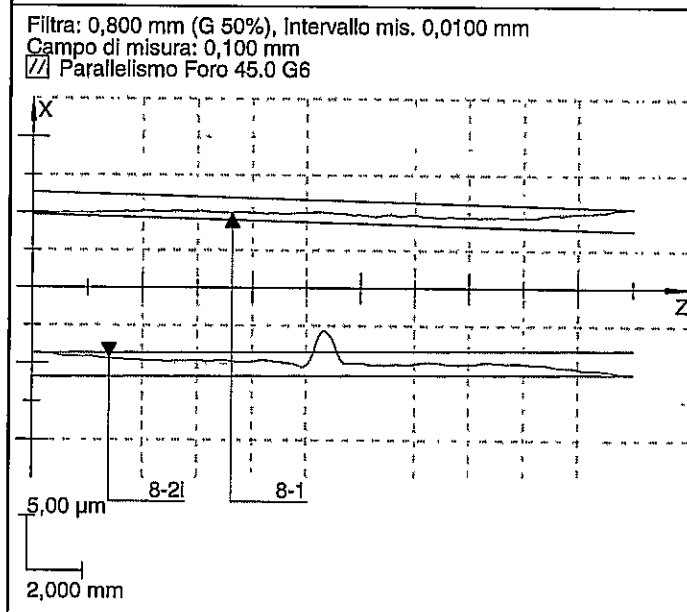
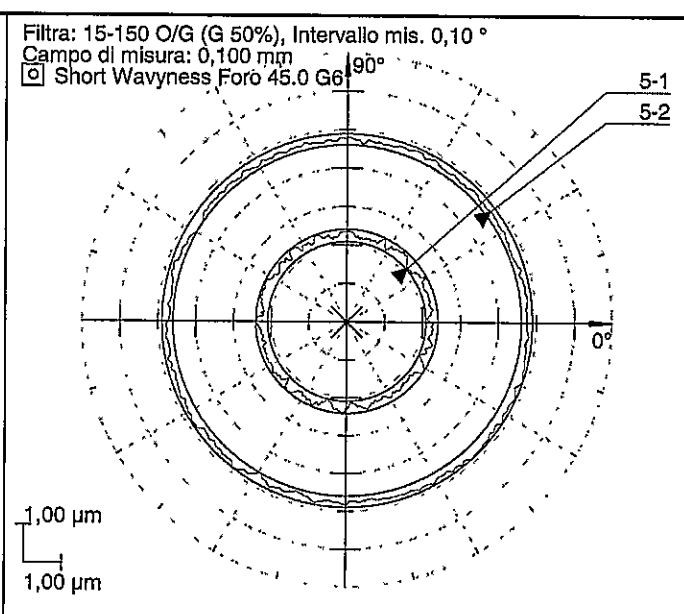
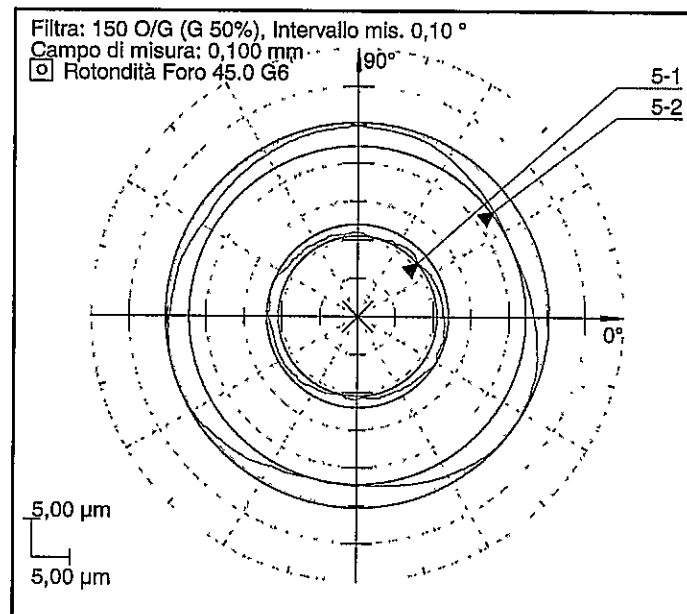
Profilo o Compito	Posizion [mm, °]	Risultato [µm] □: [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
5-1	197,00	□ 1,51	0,0060	MZC		1,45	7,87
5-2	175,00	□ 2,61		MZC		1,38	350,68
6:Compito 6		□ 2,61		MZC			
5-1	197,00	□ 0,40	0,0010	MZC	8-2	0,04	35,76
5-2	175,00	□ 0,25		MZC		0,02	92,98
7:Compito 7		□ 0,40		MZC			
8-1	222,6	// 3,08	0,0070	MZS	8-1		-82
8-2	42,6	// 3,04		MZS			95
8:Compito 8		// 3,08		MZS			
8-1	222,6	- 1,25	0,0040	MZS			-7
8-2	42,6	- 0,91		MZS			133
9:Compito 9		- 1,25		MZS			

 FORM-PC V4.28.7 SP15	 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1	13.01.2015 07:23:21 Operatore TURNO C Firma
		Particolare SR 6
Rapporto delle misure 2		Reparto: GPS 5
Formtester: MMQ40		N. commessa:
Commento ppap 2		N. lotto: 1 1_4226_F.FPC



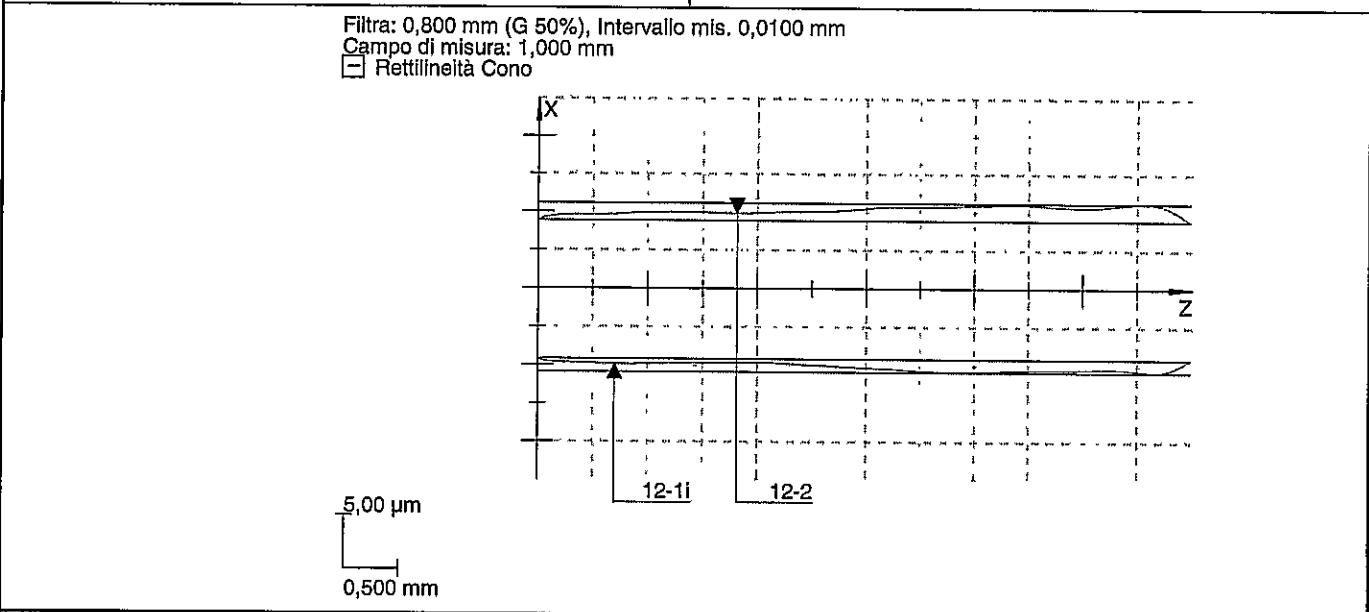
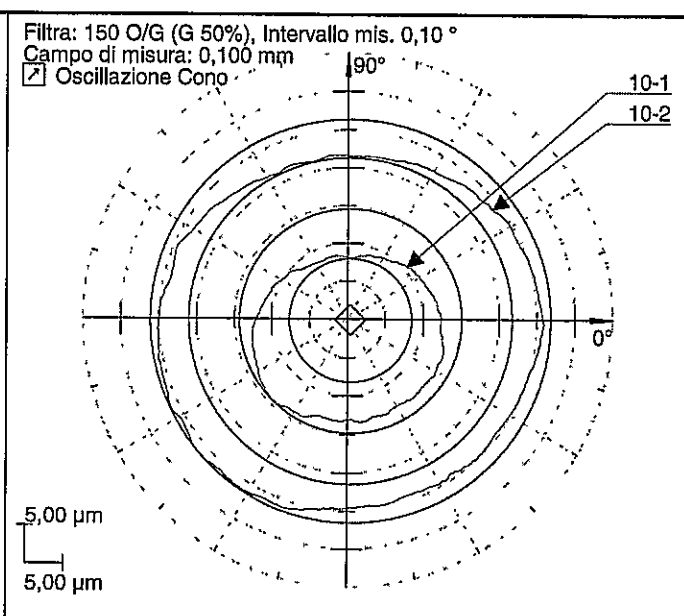
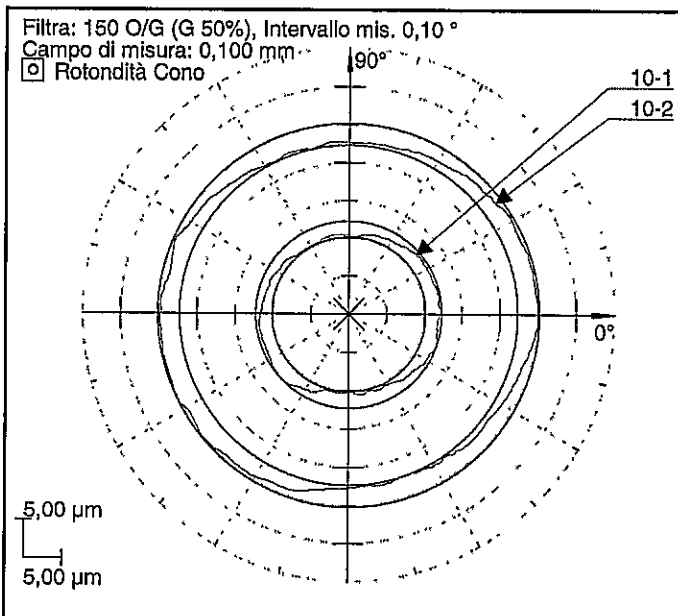
Profilo o Compito	Posizion [mm, °]	Risultato [µm] ☒ : [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
10-1	201,00	☒ 2,11	0,0040	MZC		3,40	317,15
10-2	206,00	☒ 2,70		MZC		2,75	333,76
10:Compito 10		☒ 2,70		MZC			
10-1	201,00	☒ 6,83	0,0200		Asse [A]	1,54	2,85
10-2	206,00	☒ 4,95			Asse [A]	1,67	4,68
11:Compito 11		☒ 6,83			Asse [A]		
12-1	49,5	☒ 2,09	0,0030	MZS			-7,699°
12-2	229,5	☒ 2,82		MZS			-7,711°
12:Compito 12		☒ 2,82		MZS			

Mahr FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:34:43 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		N. lotto: 1 1_4226_F.FPC
Rapporto delle misure 3		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		
Commento ppap 3				



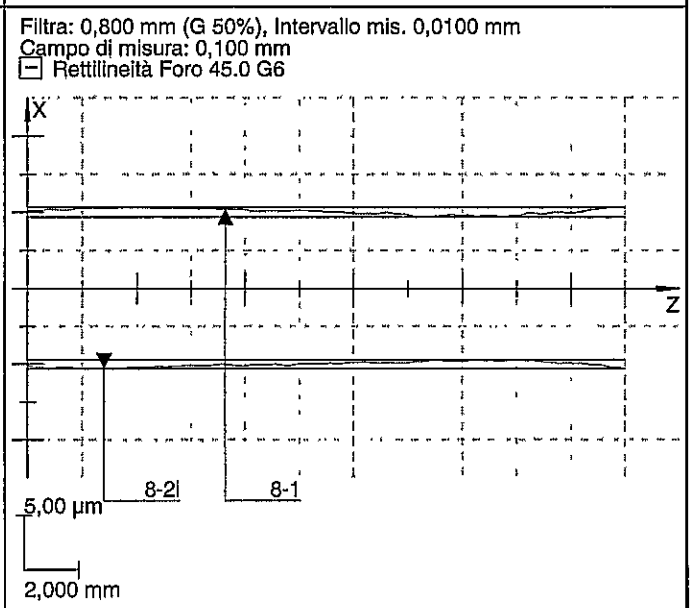
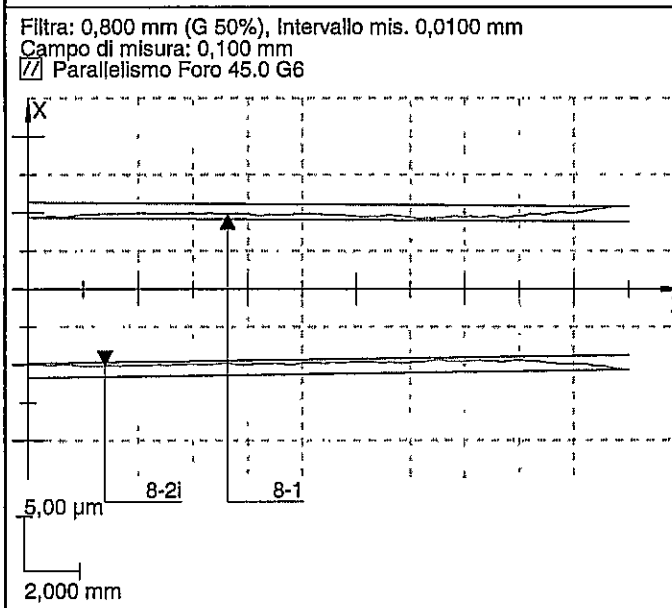
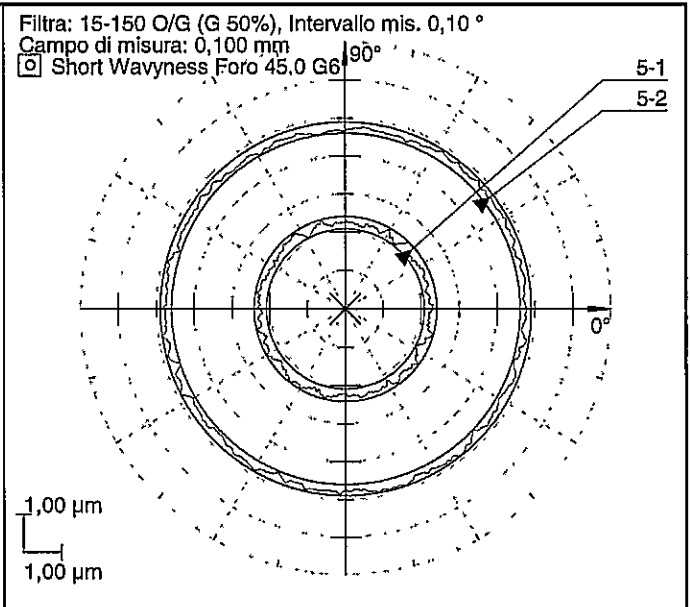
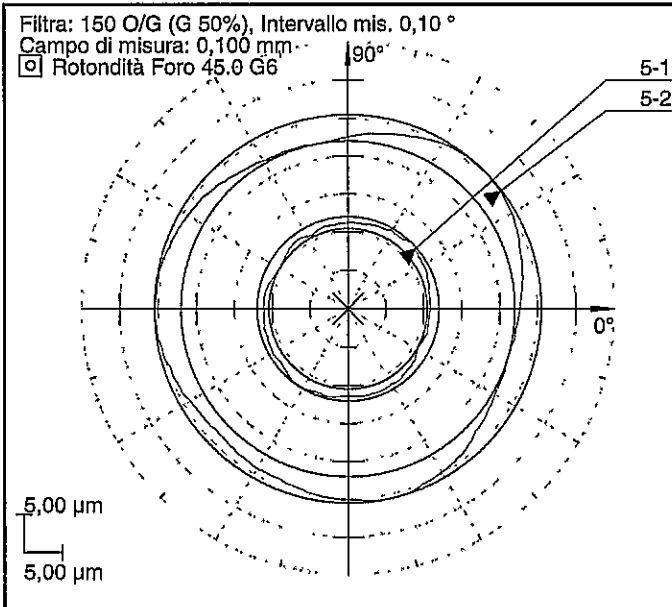
Profilo o Compito	Posizion [mm, °]	Risultato [µm] [Ø]:[mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
5-1	197,00	☒ 1,52		MZC		0,52	357,50
5-2	175,00	☒ 3,05		MZC		1,12	335,52
6:Compito 6		☒ 3,05	0,0060	MZC			
5-1	197,00	☒ 0,32		MZC		0,03	348,54
5-2	175,00	☒ 0,29		MZC		0,04	122,66
7:Compito 7		☒ 0,32	0,0010	MZC			
8-1	222,6	☒ 2,96		MZS	8-2		-75
8-2	42,6	☒ 3,14		MZS	8-1		-92
8:Compito 8		☒ 3,14	0,0070	MZS			
8-1	222,6	☒ 1,22		MZS			20
8-2	42,6	☒ 1,04		MZS			93
9:Compito 9		☒ 1,22	0,0040	MZS			

Mahr FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:34:43 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		N. lotto: 1 1_4226_F.FPC
Rapporto delle misure 3		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		
Commento ppap 3				



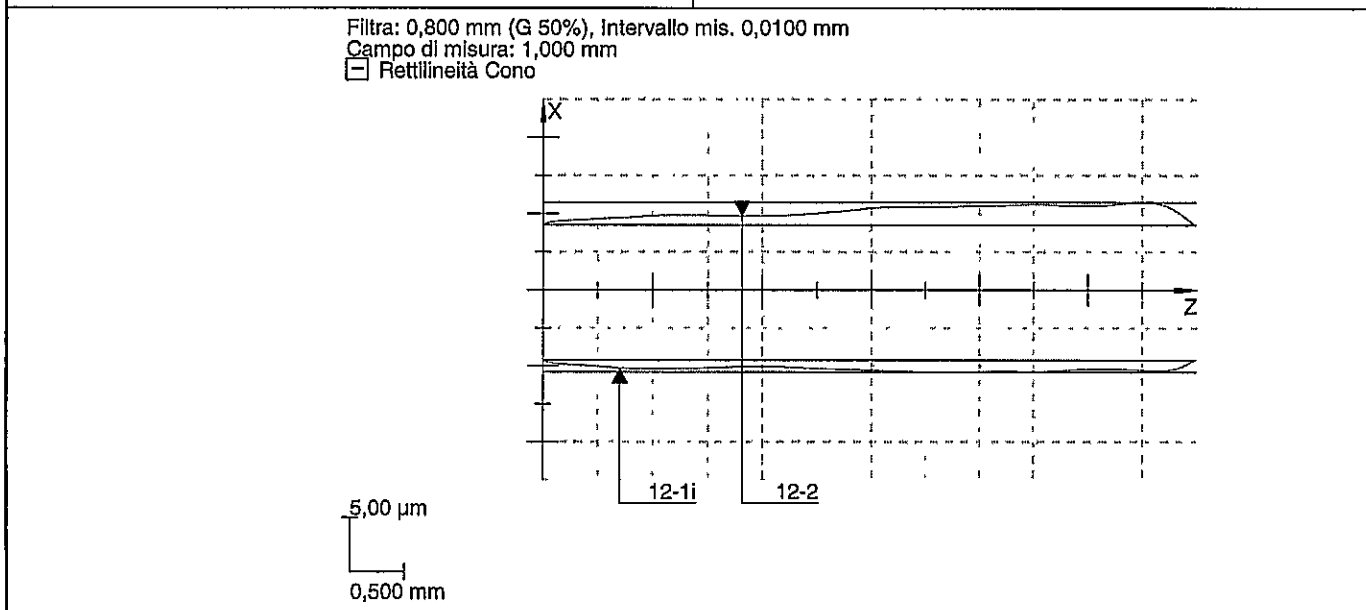
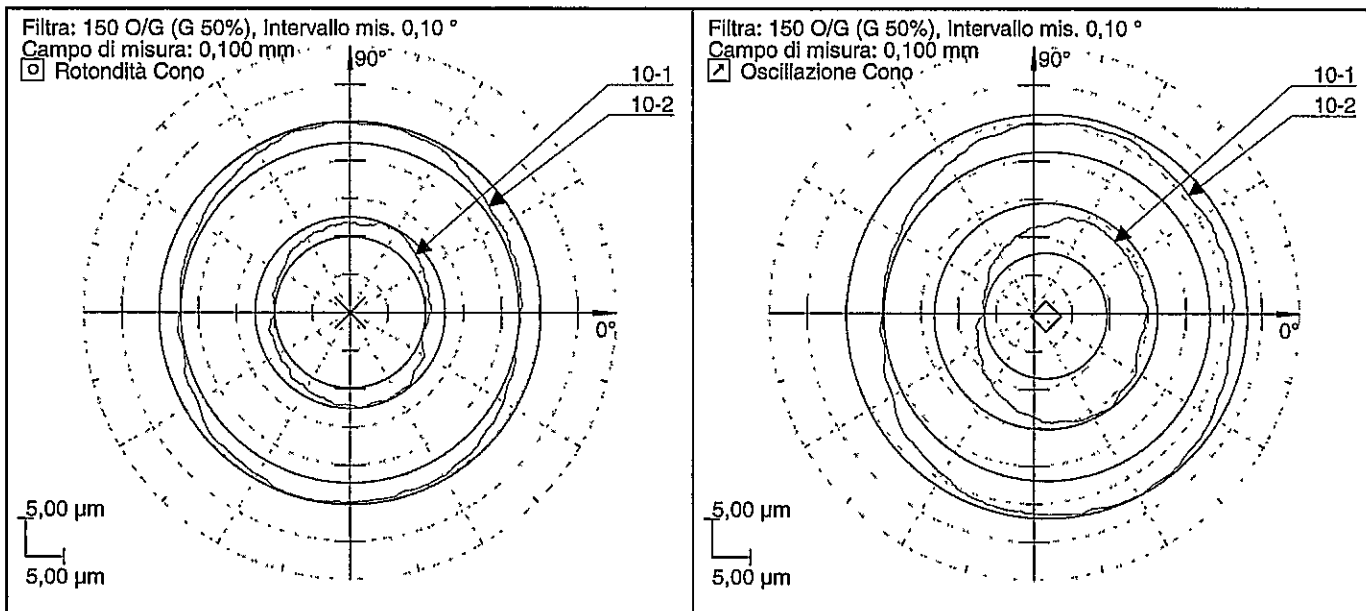
Profilo o Compito	Posizion [mm, °]	Risultato [µm] ☐ : [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
10-1	201,00	☒ 2,13	0,0040	MZC		2,54	268,75
10-2	206,00	☒ 2,86		MZC		1,51	279,12
10:Compito 10		☒ 2,86		MZC			
10-1	201,00	☒ 6,61	0,0200		Asse [A]	0,40	343,74
10-2	206,00	☒ 5,08			Asse [A]	0,35	346,16
11:Compito 11		☒ 6,61			Asse [A]		
12-1	49,1	☒ 1,70	0,0030	MZS			-7,700°
12-2	229,1	☒ 2,29		MZS			-7,711°
12:Compito 12		☒ 2,29		MZS			

	FORM-PC V4.28.7 SP15		GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1	13.01.2015 06:53:56 Operatore TURNO C Firma
	Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO	
Rapporto delle misure 4		Reparto: GPS 5		N. lotto: 1 1_4226_F.FPC
Formtester: MMQ40		N. commessa:		
Commento ppap 4				



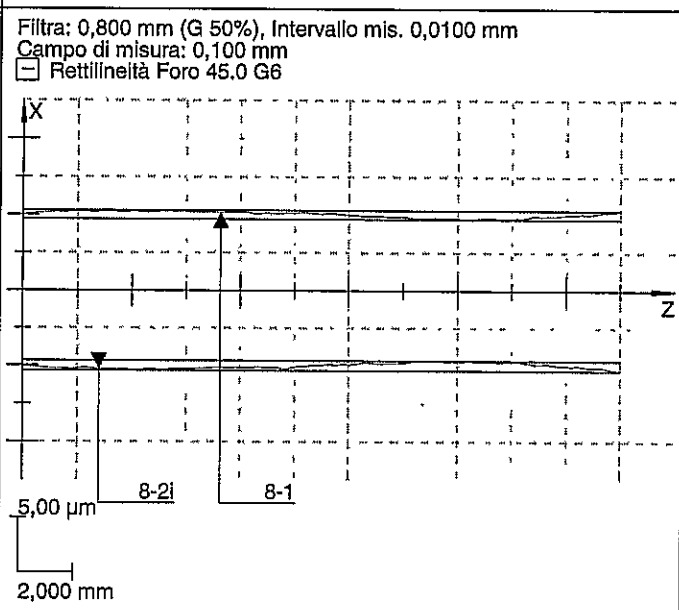
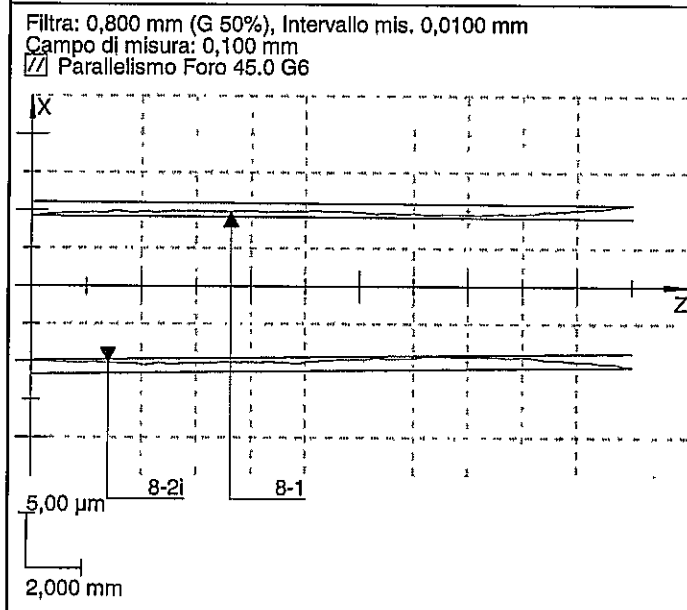
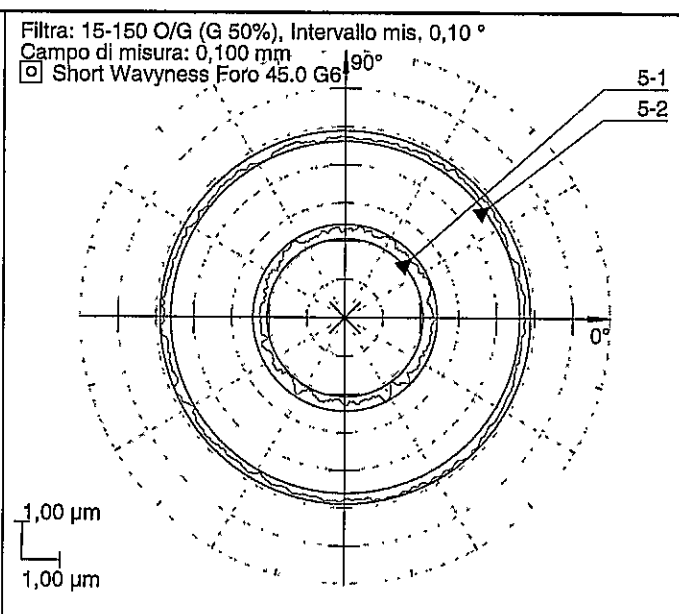
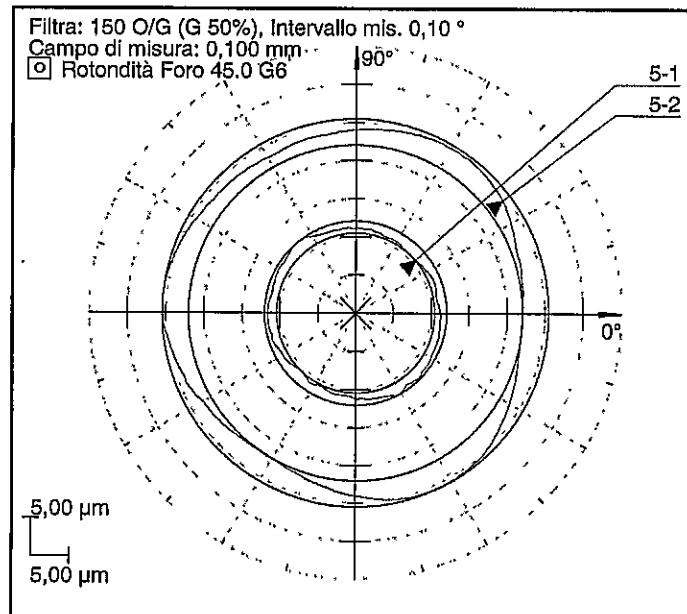
Profilo o Compito	Posizion [mm, °]	Risultato [µm] □: [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
5-1	197,00	□ 1,55	0,0060	MZC		1,48	353,11
5-2	175,00	□ 3,47		MZC		1,39	5,55
6:Compito 6		□ 3,47		MZC			
5-1	197,00	□ 0,33	0,0010	MZC	8-2	0,03	42,36
5-2	175,00	□ 0,30		MZC		0,03	99,14
7:Compito 7		□ 0,33		MZC			
8-1	222,6	// 2,00	0,0070	MZS	8-1		-36
8-2	42,6	// 1,93		MZS			-34
8:Compito 8		// 2,00		MZS			
8-1	222,6	— 1,30	0,0040	MZS			48
8-2	42,6	— 1,17		MZS			23
9:Compito 9		— 1,30		MZS			

	FORM-PC V4.28.7 SP15		GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1	13.01.2015 06:53:56 Operatore TURNO C Firma
	Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO	
Rapporto delle misure 4		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		N. lotto: 1 1_4226_F.FPC
Commento ppap 4				



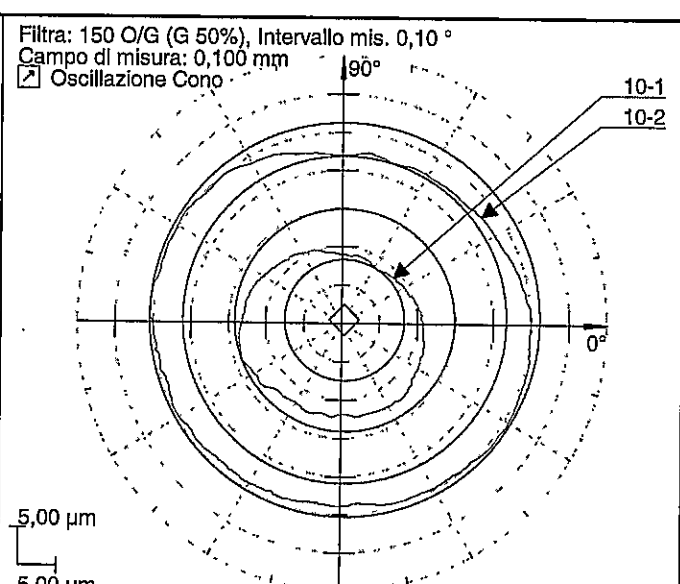
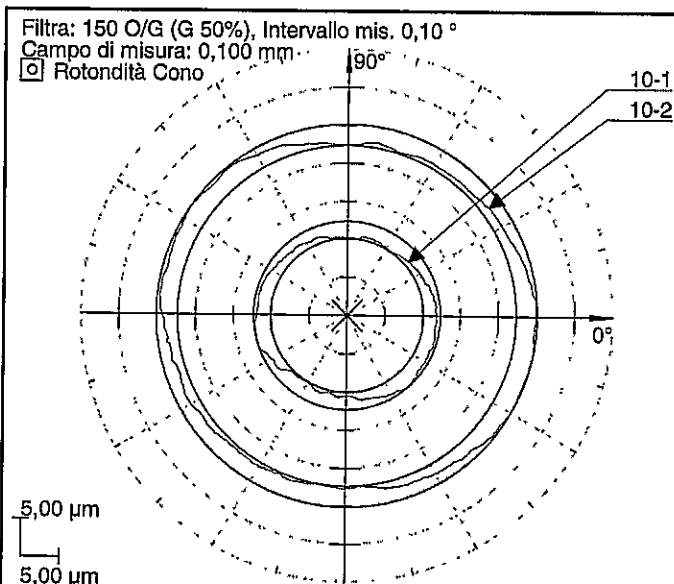
Profilo o Compito	Posizion [mm, °]	Risultato [µm] $\varnothing$: [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
10-1	201,00	☒ 2,61	0,0040	MZC	Asse [A]	3,93	346,13
10-2	206,00	☒ 2,84		MZC		3,16	345,79
10:Compito 10		☒ 2,84		MZC			
10-1	201,00	☒ 6,64	0,0200	MZS	Asse [A]	1,58	347,25
10-2	206,00	☒ 4,94			Asse [A]	1,68	347,43
11:Compito 11		☒ 6,64			Asse [A]		
12-1	49,0	☒ 1,58	0,0030	MZS			-7,705°
12-2	229,0	☒ 2,95		MZS			-7,710°
12:Compito 12		☒ 2,95		MZS			

Mahr FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:44:21 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		
Rapporto delle misure 5		Reparto: GPS 5		
Formtester: MMQ40		N. commessa:		N. lotto: 1
Commento ppap 5				1_4226_F.FPC

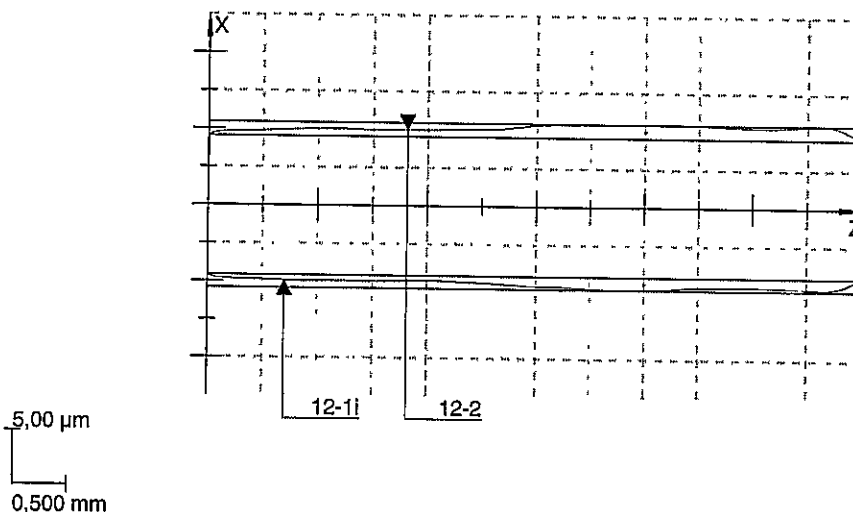


Profilo o Compito	Posizion [mm, °]	Risultato [µm] $\varnothing$: [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Ino [µm/m]
5-1	197,00	$\varnothing$ 1,59		MZC		0,64	41,33
5-2	175,00	$\varnothing$ 3,43		MZC		0,74	343,68
6:Compito 6		$\varnothing$ 3,43	0,0060	MZC			
5-1	197,00	$\varnothing$ 0,37		MZC		0,07	224,94
5-2	175,00	$\varnothing$ 0,28		MZC		0,04	89,83
7:Compito 7		$\varnothing$ 0,37	0,0010	MZC			
8-1	222,6	// 1,83		MZS	8-2		-24
8-2	42,6	// 1,82		MZS	8-1		-22
8:Compito 8		// 1,83	0,0070	MZS			
8-1	222,6	- 1,15		MZS			45
8-2	42,6	- 1,30		MZS			14
9:Compito 9		- 1,30	0,0040	MZS			

Mahr FORM-PC V4.28.7 SP15		 GETRAG S.p.a MODUGNO (BARI) SALA METROLOGICA - M1		13.01.2015 07:44:21 Operatore TURNO C Firma
Particolare SR 6	N. disegno 250.1.4226.35	Operazione FINITO		N. lotto: 1 1_4226_F.FPC
Rapporto delle misure 5		Reporto: GPS 5		
Formtester: MMQ40		N. commessa:		
Commento ppap 5				



Filtra: 0,800 mm (G 50%), Intervallo mis. 0,0100 mm
 Campo di misura: 1,000 mm
☒ Rettilinearità Cono



Profilo o Compito	Posizion [mm, °]	Risultato [µm] ☒ : [mm]	Tolleranza [mm]	Rif.	Rifer.	Eccentricità [µm]	Fase [°] Inc [µm/m]
10-1	201,00	☒ 2,24	0,0040	MZC	Asse [A]	1,78	226,65
10-2	206,00	☒ 2,77		MZC		0,90	244,51
10:Compito 10		☒ 2,77		MZC			
10-1	201,00	☒ 6,63	0,0200	MZS	Asse [A]	0,57	50,40
10-2	206,00	☒ 4,39			Asse [A]	0,62	56,45
11:Compito 11		☒ 6,63			Asse [A]		
12-1	49,0	☒ 1,68	0,0030	MZS			-7,705°
12-2	229,0	☒ 1,82		MZS			-7,707°
12:Compito 12		☒ 1,82		MZS			

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PROTOCOLLO DI MISURA ZEISS UMES

SR6G. 080_803460

CICLO CNC

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DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501422637	PRISMO SACC	GETRAG	T. HARD	-

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	14. 1.2015	PPAP		-

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IND	NOMI	/ IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
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14. 1.2015 8 ora 7 min 44. 0sec

15	SUPERF.SUP	GDT OSCILL. ASSIALE	t	0.014	0.030				++
18	SUPERF.C.A	GDT OSCILL. ASSIALE	t	0.070	0.100				+++
27	SUPERF.INF	GDT OSCILL. ASSIALE	t	0.009	0.030				++
300	DIAM.I.SUP	CERCHIO I	D	45.021	45.000	0.025	0.009	0.021	++
302	DIAM.I.INF	CERCHIO I	D	45.018	45.000	0.025	0.009	0.018	+
309	ALT.TOTALE	SUPERFICIE RICHIAMO (14) CON TRASFORMAZIONE	Z	38.731	38.730	0.030	-0.030	0.001	+
ALTEZZA INT. 30.93mm									
311	DIAM.CONO	DIAMETRO CONO	D	70.604	70.600	0.010	-0.010	0.004	++
DIAMETRO INT. 70.6mm									
312	ALT.CONO	COORDINATE CONO	Z	30.946	30.930	0.040	-0.040	0.016	++
313	ANGOL.CONO	FORMULA: AC(310)/2	AC	7.005	7.000	0.030	-0.030	0.005	+
319	ALT. C.A.	SUPERFICIE RICHIAMO (17) CON TRASFORMAZIONE	Z	28.671	28.630	0.180	-0.080	0.041	-
320	SUP.SUP.GR	SUPERFICIE RICHIAMO (23) CON TRASFORMAZIONE	Z	31.958	32.000	0.200	-0.200	-0.042	-
341	LIN. 180	GDT LINEARITA'	tx	0.002	0.010				+

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DATA :14. 1.2015 NOMEpz:SR6G      080_803460      PARTNO:      PPAP1- 2 -
IND|  NOMI  / IDF  |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV  | MAG
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343          GDT LINEARITA'
  LIN.  0          tx      0.001      0.010          +
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```
346          GDT PARALLELISMO
  PARALL.          tx      0.001      0.007          +
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0 ora 5 min 8.59sec

----- Trasferimento dati SAM concluso -----

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CNC - TERM.
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PROTOCOLLO DI MISURA ZEISS UMESS

SR6G 080_803460

CICLO CNC

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DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501422637	PRISMO SACC	GETRAG	T. HARD	-

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	14. 1.2015	PPAP 2		-

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IND	NOMI	/ IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
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14. 1.2015 8 ora 34 min 44. 0sec

15	SUPERF.SUP	GDT OSCILL. ASSIALE	t	0.007	0.030				+
18	SUPERF.C.A	GDT OSCILL. ASSIALE	t	0.051	0.100				+++
27	SUPERF.INF	GDT OSCILL. ASSIALE	t	0.010	0.030				++
300	DIAM.I.SUP	CERCHIO I	D	45.017	45.000	0.025	0.009	0.017	+-
302	DIAM.I.INF	CERCHIO I	D	45.016	45.000	0.025	0.009	0.016	-
309	ALT.TOTALE	SUPERFICIE RICHIAMO (14) CON TRASFORMAZIONE	Z	38.724	38.730	0.030	-0.030	-0.006	-
ALTEZZA INT. 30.93mm									
311	DIAM.CONO	DIAMETRO CONO	D	70.600	70.600	0.010	-0.010	-0.000	+-
DIAMETRO INT. 70.6mm									
312	ALT.CONO	COORDINATE CONO	Z	30.929	30.930	0.040	-0.040	-0.001	-
313	ANGOL.CONO	FORMULA: AC(310)/2	AC	6.997	7.000	0.030	-0.030	-0.003	-
319	ALT. C.A.	SUPERFICIE RICHIAMO (17) CON TRASFORMAZIONE	Z	28.641	28.630	0.180	-0.080	0.011	--
320	SUP.SUP.GR	SUPERFICIE RICHIAMO (23) CON TRASFORMAZIONE	Z	31.973	32.000	0.200	-0.200	-0.027	-
341	LIN. 180	GDT LINEARITA'	tx	0.001	0.010				+

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DATA :14. 1.2015 NOMEpz:SR6G      080_803460      PARTNO:PPAP 2      - 2 -
IND|   NOMI   / IDF  |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV  | MAG
=====
343          GDT LINEARITA'
    LIN.  0          tx      0.001      0.010          +

346          GDT PARALLELISMO
    PARALL.          tx      0.002      0.007          ++

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0 ora 5 min 3.60sec

----- Trasferimento dati SAM concluso -----

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CNC - TERM.
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PROTOCOLLO DI MISURA ZEISS UMESS

SR6G 080_803460

CICLO CNC

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DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501422637	PRISMO SACC	GETRAG	T. HARD	-

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	14. 1.2015	PPAP 3		-

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IND	NOMI	/ IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
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14. 1.2015 8 ora 18 min 32. 0sec

15	SUPERF.SUP	GDT OSCILL. ASSIALE	t	0.016	0.030				+++
18	SUPERF.C.A	GDT OSCILL. ASSIALE	t	0.062	0.100				+++
27	SUPERF.INF	GDT OSCILL. ASSIALE	t	0.014	0.030				++
300	DIAM.I.SUP	CERCHIO I	D	45.017	45.000	0.025	0.009	0.017	+-
302	DIAM.I.INF	CERCHIO I	D	45.015	45.000	0.025	0.009	0.015	--
309	ALT.TOTALE	SUPERFICIE RICHIAMO (14) CON TRASFORMAZIONE	Z	38.730	38.730	0.030	-0.030	0.000	+-
ALTEZZA INT. 30.93mm									
311	DIAM.CONO	DIAMETRO CONO	D	70.609	70.600	0.010	-0.010	0.009	++++
DIAMETRO INT. 70.6mm									
312	ALT.CONO	COORDINATE CONO	Z	30.968	30.930	0.040	-0.040	0.038	++++
313	ANGOL.CONO	FORMULA: AC(310)/2	AC	7.000	7.000	0.030	-0.030	0.000	+-
319	ALT. C.A.	SUPERFICIE RICHIAMO (17) CON TRASFORMAZIONE	Z	28.642	28.630	0.180	-0.080	0.012	--
320	SUP.SUP.GR	SUPERFICIE RICHIAMO (23) CON TRASFORMAZIONE	Z	31.951	32.000	0.200	-0.200	-0.049	-
341	LIN. 180	GDT LINEARITA'	tx	0.002	0.010				+

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DATA :14. 1.2015 NOMEpz:SR6G      080_803460      PARTNO:      PPAP - 2  -
IND|   NOMI   / IDF  |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV  | MAG
=====
```

```
343          GDT LINEARITA'
  LIN.  0          tx      0.002      0.010          +

346          GDT PARALLELISMO
  PARALL.          tx      0.004      0.007          +++
```

0 ora 5 min 4.12sec

----- Trasferimento dati SAM concluso -----

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CNC - TERM.
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PROTOCOLLO DI MISURA ZEISS UMESS

SR6G 080_803460

CICLO CNC

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DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501422637	PRISMO SACC	GETRAG	T. HARD	-

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	14. 1.2015	PPAP 4		-

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IND	NOMI	/ IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
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14. 1.2015 8 ora 23 min 54. 0sec

15	SUPERF.SUP	GDT OSCILL. ASSIALE	t	0.004	0.030				+
18	SUPERF.C.A	GDT OSCILL. ASSIALE	t	0.049	0.100				++
27	SUPERF.INF	GDT OSCILL. ASSIALE	t	0.010	0.030				++
300	DIAM.I.SUP	CERCHIO I	D	45.017	45.000	0.025	0.009	0.017	+-
302	DIAM.I.INF	CERCHIO I	D	45.017	45.000	0.025	0.009	0.017	+-
309	ALT.TOTALE	SUPERFICIE RICHIAMO (14) CON TRASFORMAZIONE	Z	38.726	38.730	0.030	-0.030	-0.004	-
ALTEZZA INT. 30.93mm									
311	DIAM.CONO	DIAMETRO CONO	D	70.601	70.600	0.010	-0.010	0.001	+
DIAMETRO INT. 70.6mm									
312	ALT.CONO	COORDINATE CONO	Z	30.933	30.930	0.040	-0.040	0.003	+
313	ANGOL.CONO	FORMULA: AC(310)/2	AC	7.000	7.000	0.030	-0.030	-0.000	+-
319	ALT. C.A.	SUPERFICIE RICHIAMO (17) CON TRASFORMAZIONE	Z	28.643	28.630	0.180	-0.080	0.013	--
320	SUP.SUP.GR	SUPERFICIE RICHIAMO (23) CON TRASFORMAZIONE	Z	31.975	32.000	0.200	-0.200	-0.025	-
341	LIN. 180	GDT LINEARITA'	tx	0.001	0.010				+

```
=====
DATA :14. 1.2015 NOMEpz:SR6G      080_803460      PARTNO:PPAP 4      - 2 -
IND|  NOMI  / IDF  |SY| VAL ATT  | VAL NOM  | TOL.S  | TOL.I  | DEV  | MAG
=====
```

```
343          GDT LINEARITA'
    LIN.  0          tx      0.001      0.010          +
```

```
346          GDT PARALLELISMO
    PARALL.          tx      0.001      0.007          +
```

0 ora 5 min 5.99sec

----- Trasferimento dati SAM concluso -----

```
=====
CNC - TERM.
=====
```

=====

PROTOCOLLO DI MISURA ZEISS UMES

SR6G 080_803460

CICLO CNC

=====

DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501422637	PRISMO SACC	GETRAG	T. HARD	-

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	14. 1.2015	PPAP 5		-

=====

IND	NOMI	/ IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
-----	------	-------	----	---------	---------	-------	-------	-----	-----

=====

14. 1.2015 8 ora 29 min 17. 0sec

15	GDT OSCILL. ASSIALE								
SUPERF.SUP	t	0.010	0.030						++
18	GDT OSCILL. ASSIALE								
SUPERF.C.A	t	0.029	0.100						++
27	GDT OSCILL. ASSIALE								
SUPERF.INF	t	0.003	0.030						+
300	CERCHIO I								
DIAM.I.SUP	D	45.019	45.000	0.025	0.009	0.019			++
302	CERCHIO I								
DIAM.I.INF	D	45.017	45.000	0.025	0.009	0.017			+ -
309	SUPERFICIE RICHIAMO (14) CON TRASFORMAZIONE								
ALT.TOTALE	Z	38.730	38.730	0.030	-0.030	0.000			+ -
ALTEZZA INT. 30.93mm									
311	DIAMETRO CONO								
DIAM.CONO	D	70.601	70.600	0.010	-0.010	0.001			+
DIAMETRO INT. 70.6mm									
312	COORDINATE CONO								
ALT.CONO	Z	30.936	30.930	0.040	-0.040	0.006			+
313	FORMULA: AC(310)/2								
ANGOL.CONO	AC	6.996	7.000	0.030	-0.030	-0.004			-
319	SUPERFICIE RICHIAMO (17) CON TRASFORMAZIONE								
ALT. C.A.	Z	28.676	28.630	0.180	-0.080	0.046			-
320	SUPERFICIE RICHIAMO (23) CON TRASFORMAZIONE								
SUP.SUP.GR	Z	31.966	32.000	0.200	-0.200	-0.034			-
341	GDT LINEARITA'								
LIN. 180	tx	0.001	0.010						+

```
=====
DATA :14. 1.2015 NOMEpz:SR6G      080_803460      PARTNO: PPAP 5      - 2 -
IND|  NOMI    / IDF  |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV   | MAG
=====
```

```
343          GDT LINEARITA'
  LIN.  0          tx      0.001      0.010          +
```

```
346          GDT PARALLELISMO
  PARALL.          tx      0.001      0.007          +
```

0 ora 5 min 3.16sec

----- Trasferimento dati SAM concluso -----

```
=====
CNC - TERM.
=====
```

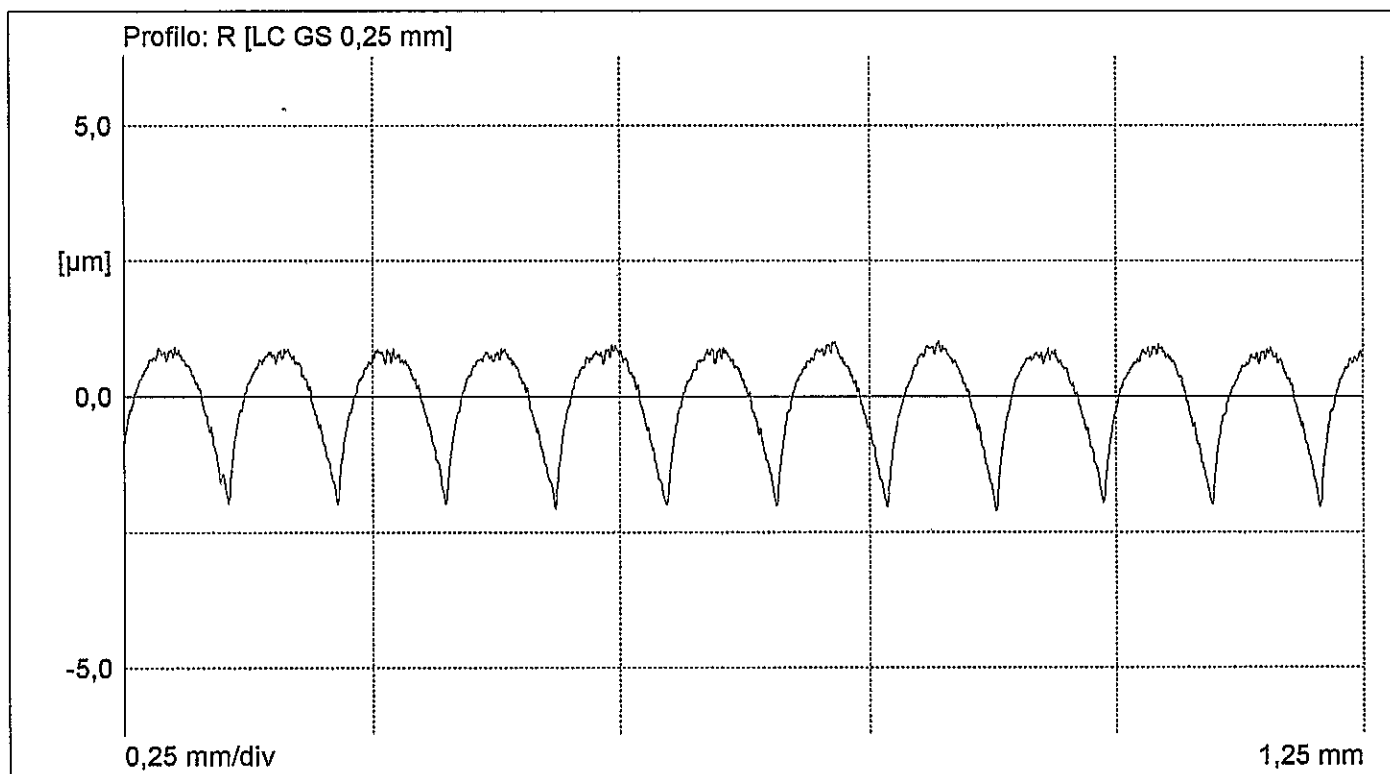


Via dei Ciclamini 4 Modugno Bari

Sala Metrologica GPS5

Oggetto: PPAP 1
Numero: 4226
Operatore: TURNO C
Data, ora: 14/01/2015, 07:47
Nota:
Tastatore: MFW-250 20

MACCHINA: MOA 416121 002



LC (GS)	0,25	mm
LT	1,75	mm
LM	1,25	mm
Z	5	
VB	±250	µm
Ra	0,69	µm
Rmax	3,12	µm
Rz	3,00	µm

PERTHOMETER CONCEPT

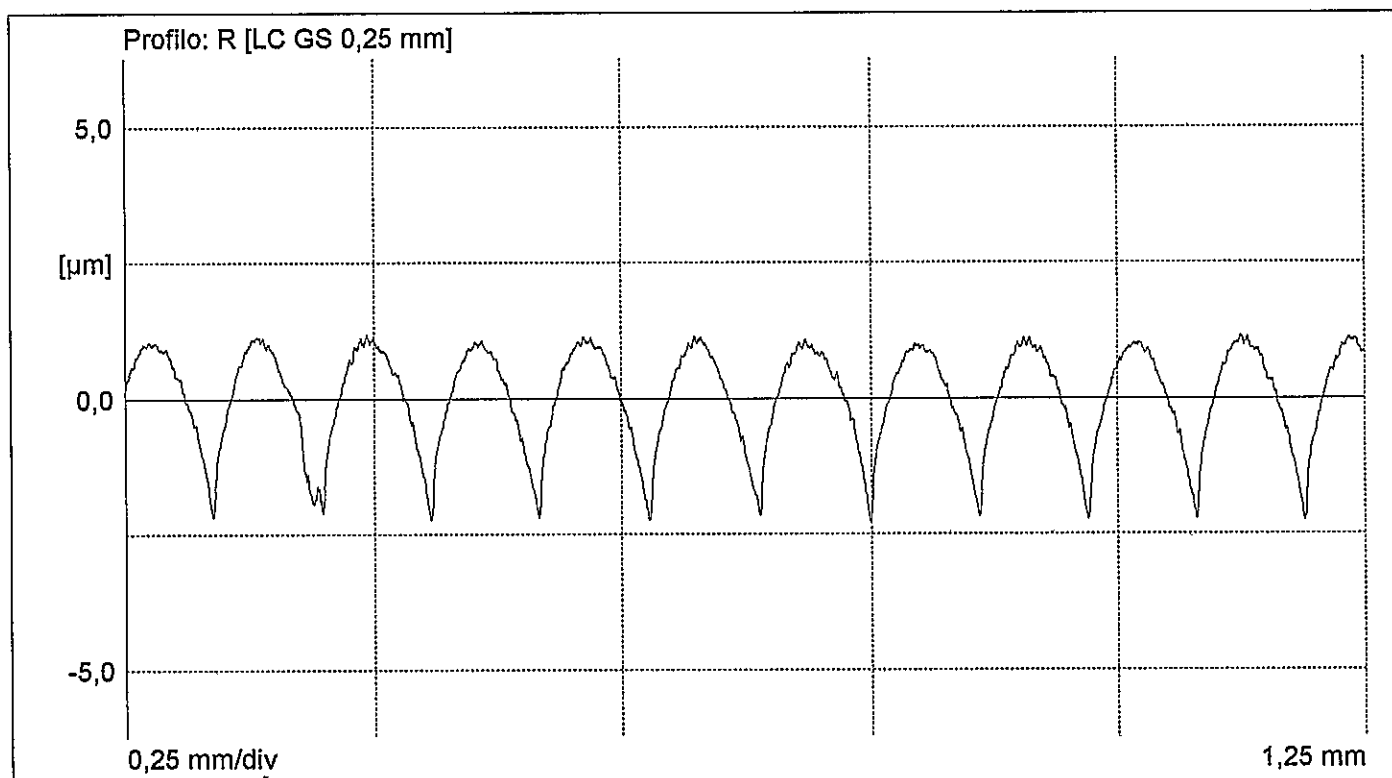


Via dei Ciclamini 4 Modugno Bari

Sala Metrologica GPS5

Oggetto: PPAP 2
Numero: 4226
Operatore: TURNO C
Data, ora: 14/01/2015, 07:47
Nota:
Tastatore: MFW-250 20

MACCHINA: MOA 416121 002



LC (GS)	0,25	mm
LT	1,75	mm
LM	1,25	mm
Z	5	
VB	±250	µm
Ra	0,78	µm
Rmax	3,40	µm
Rz	3,36	µm

PERTHOMETER CONCEPT

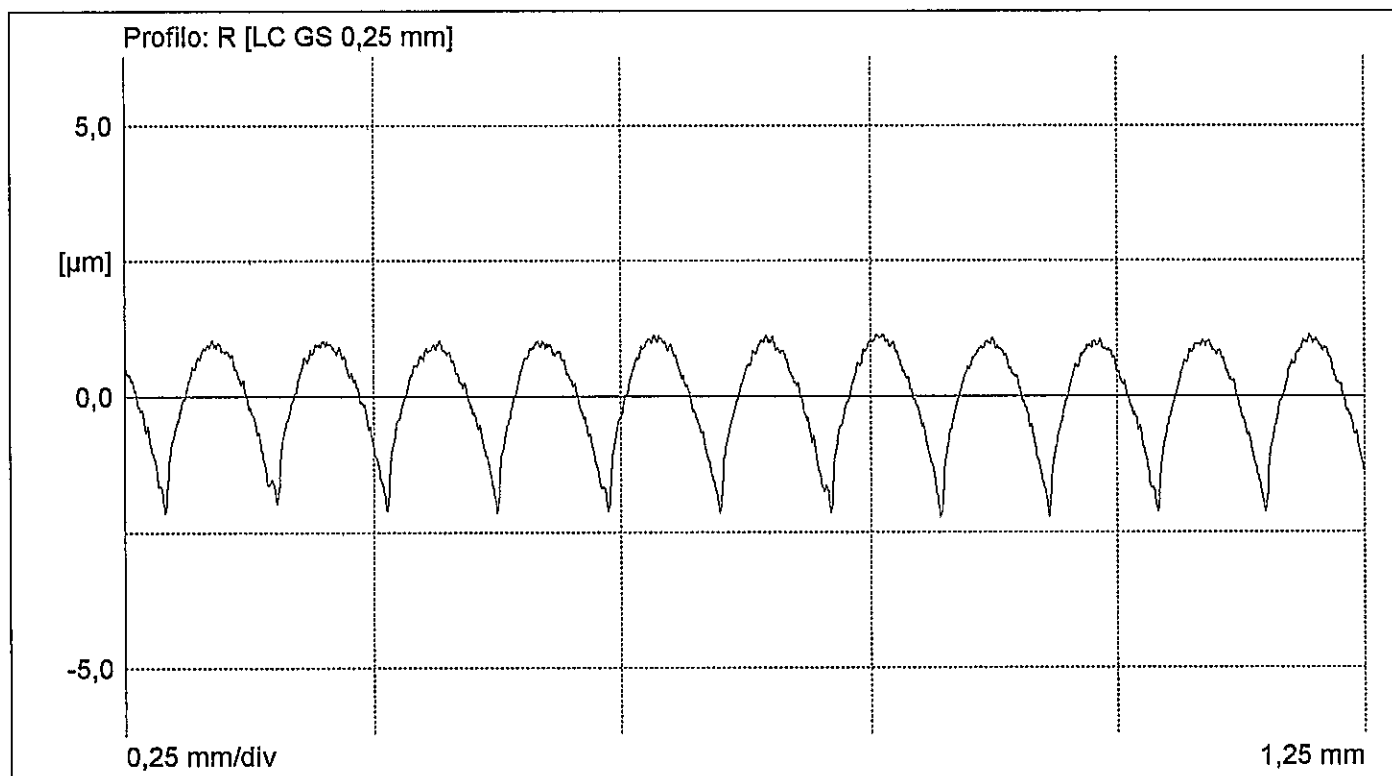


Via dei Ciclamini 4 Modugno Bari

Sala Metrologica GPS5

Oggetto: PPAP 3
Numero: 4226
Operatore: TURNO C
Data, ora: 14/01/2015, 07:48
Nota:
Tastatore: MFW-250 20

MACCHINA: MOA 416121 002



LC (GS)	0,25	mm
LT	1,75	mm
LM	1,25	mm
Z	5	
VB	±250	µm
Ra	0,76	µm
Rmax	3,33	µm
Rz	3,23	µm

PERTHOMETER CONCEPT

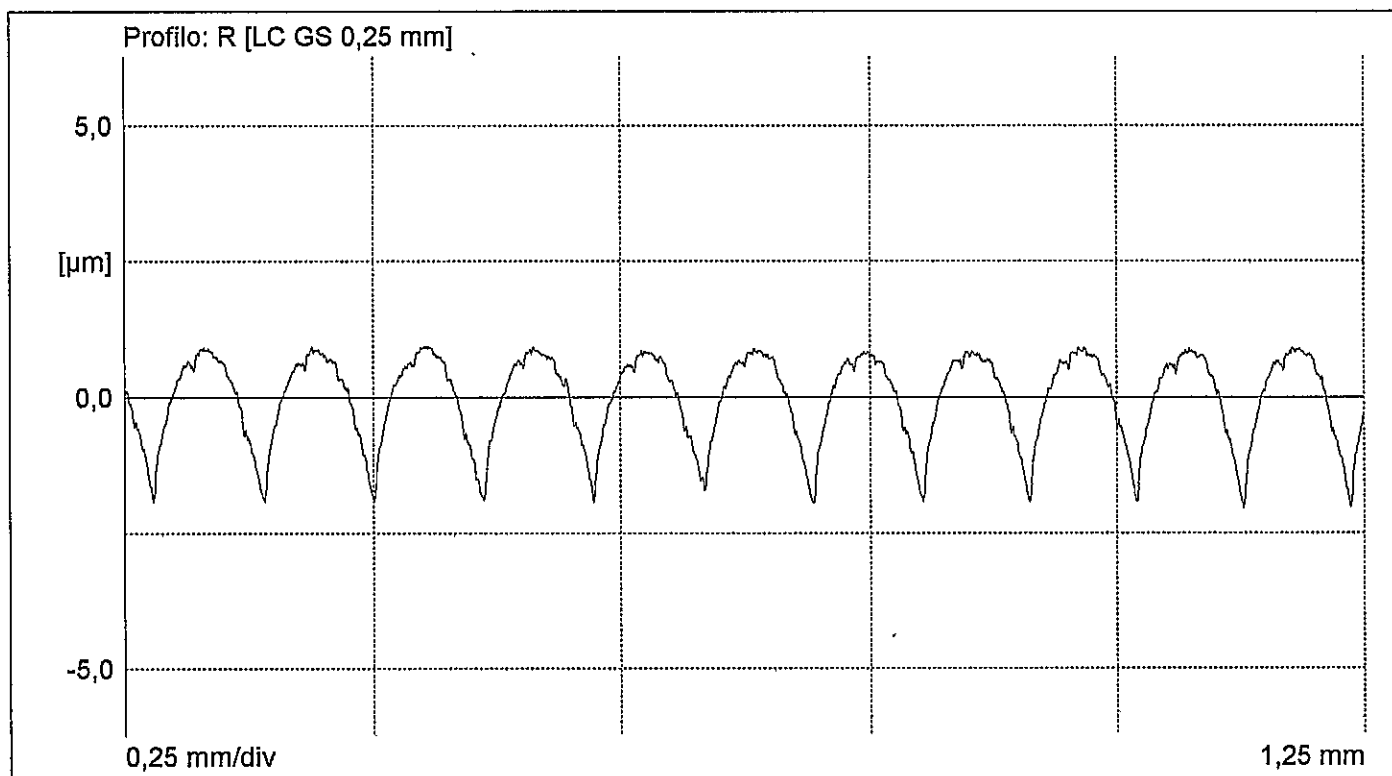


Via dei Ciclamini 4 Modugno Bari

Sala Metrologica GPS5

Oggetto: PPAP 4
Numero: 4226
Operatore: TURNO C
Data, ora: 14/01/2015, 07:49
Nota:
Tastatore: MFW-250 20

MACCHINA: MOA 416121 002



LC (GS)	0,25	mm
LT	1,75	mm
LM	1,25	mm
Z	5	
VB	±250	µm
Ra	0,68	µm
Rmax	2,92	µm
Rz	2,85	µm

PERTHOMETER CONCEPT

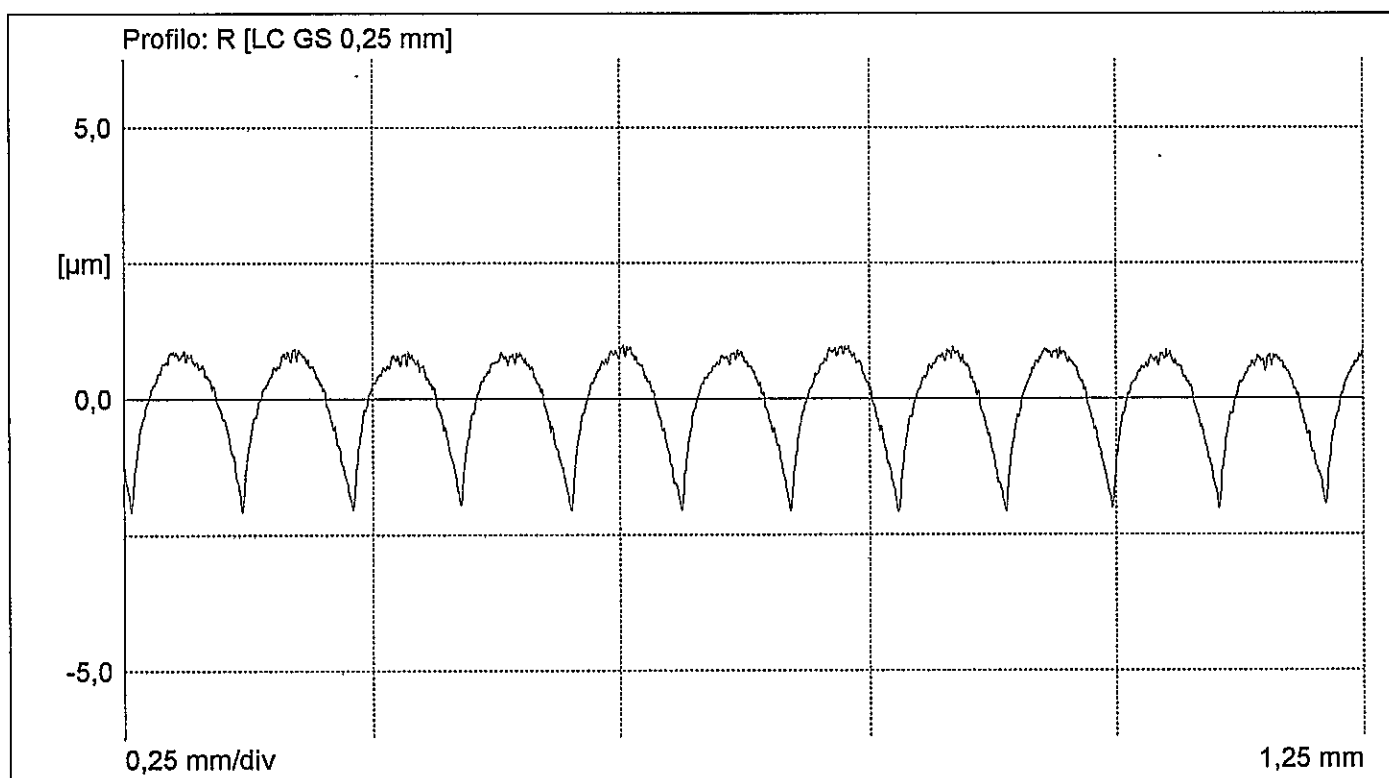


Via dei Ciclamini 4 Modugno Bari

Sala Metrologica GPS5

Oggetto: PPAP 5
Numero: 4226
Operatore: TURNO C
Data, ora: 14/01/2015, 07:49
Nota:
Tastatore: MFW-250 20

MACCHINA: MOA 416121 002



LC (GS)	0,25	mm
LT	1,75	mm
LM	1,25	mm
Z	5	
VB	±250	μm
Ra	0,69	μm
Rmax	3,03	μm
Rz	2,97	μm

PERTHOMETER CONCEPT

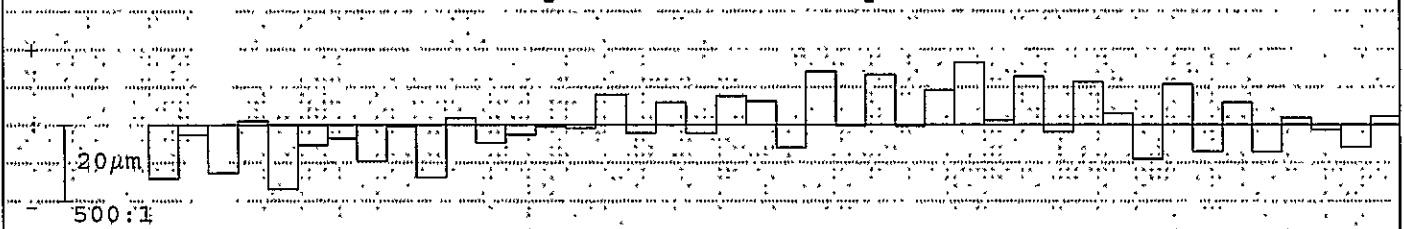
GETRAG

Ruota cilindrica Divisione

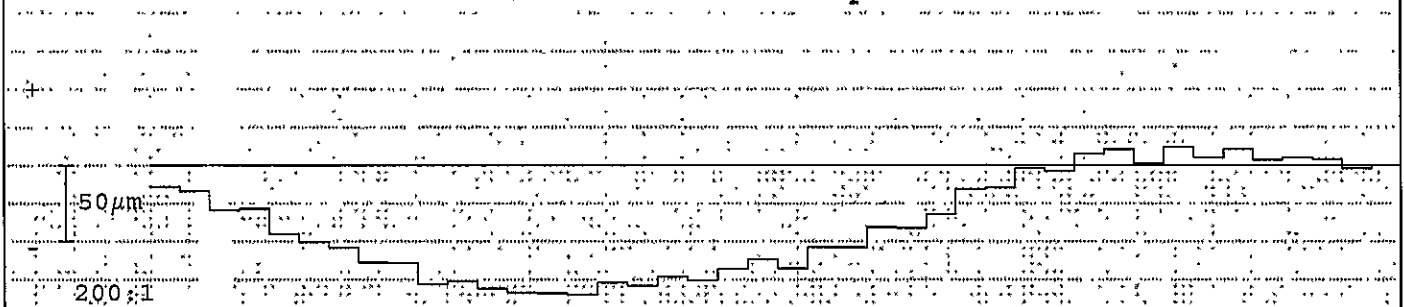


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllatore:	TURNO C	Data:	14.01.2015 08:46
Denominazione:	CA SR6 Rena-POST W		Numero denti z	42	Angolo pressione	30°
Numero disegno:	055.8.5353.POST W		Modulo m	2mm	Angolo elic	4.5/-4.5°
Commessa/serie nr.:	PPAP 1		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORM	Werkzeug:		Charge:	

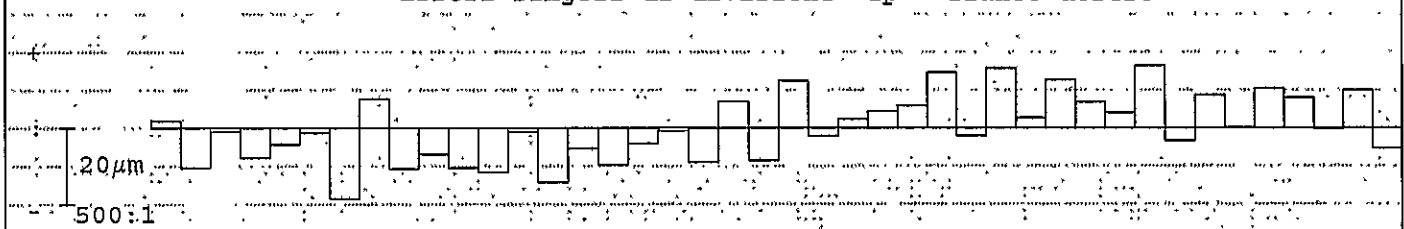
Errori singoli di divisione fp fianco sinistro



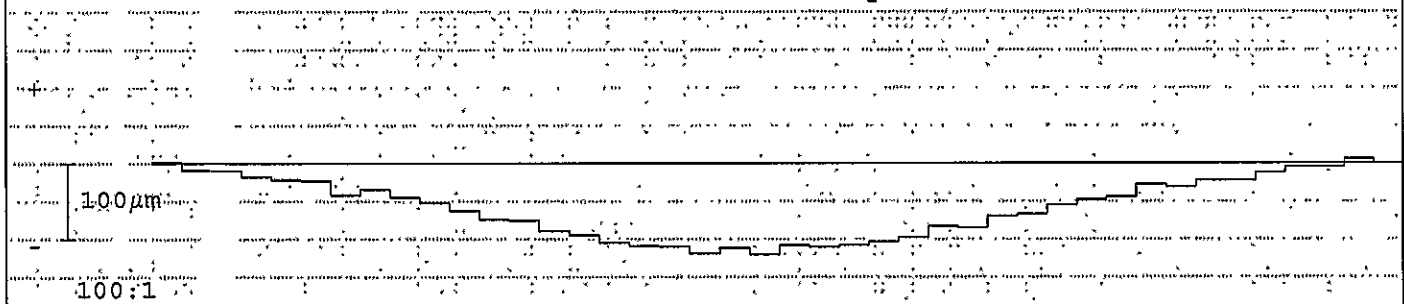
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro



Corso per misura divisa: 85.794 z=1.3mm

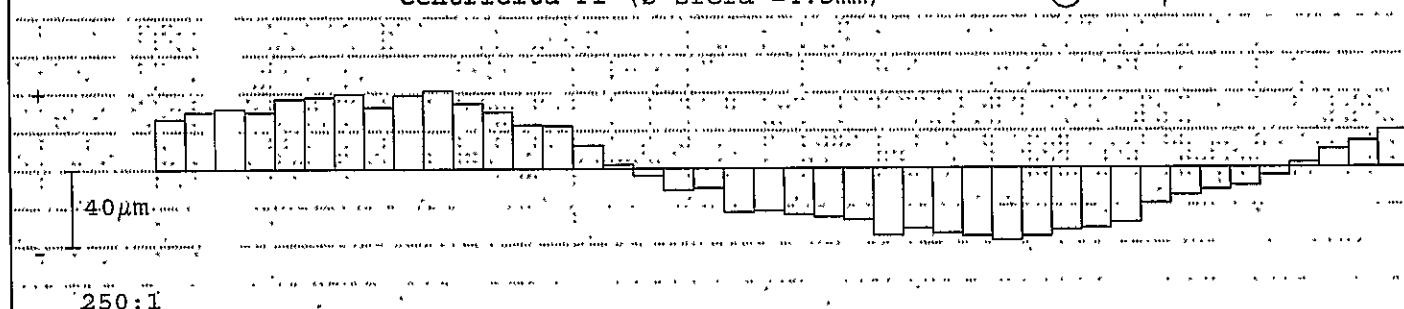
fianco sinistro

fianco destro

		Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione	fp max	17				19			
Gr. salto di passo	fu max	20				26			
Scarto di divisione	Rp	33				35			
Err. globale di divisione	Fp	97				125			
Err. cordale di divisione	Fpz/8	45				44			

Centricità Fr (Ø-sfera =4.5mm)

⊙ : 76µm

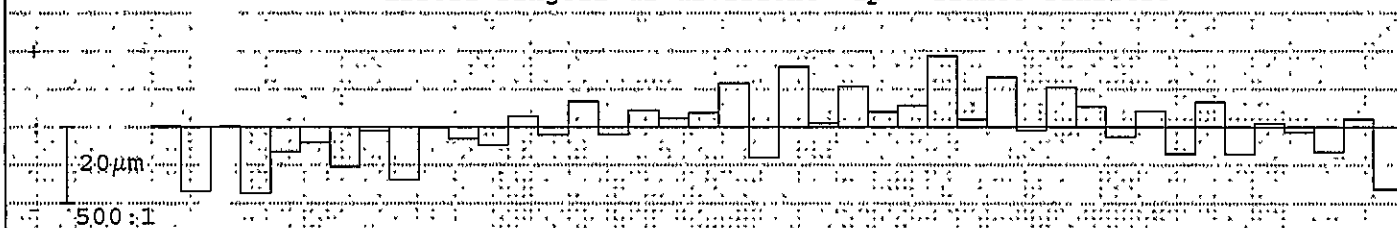


Err. di concentricità	Fr	80	100	
Variaz. spessore dente	Rs			

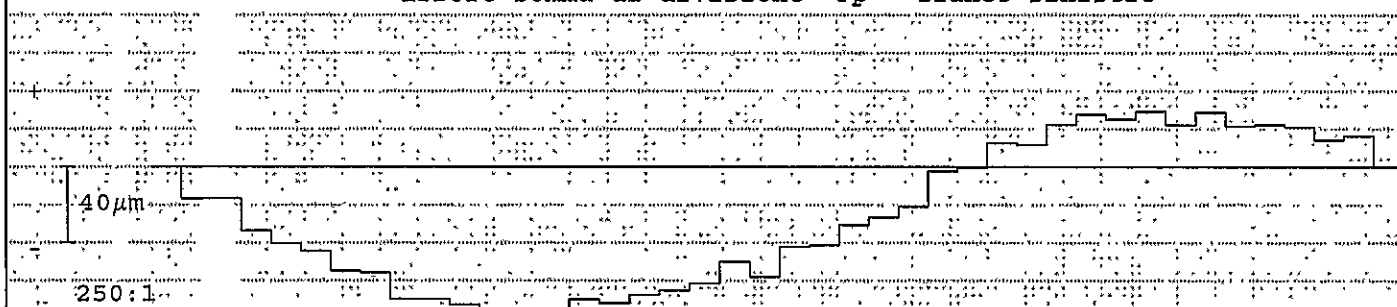


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllatore:	TURNO c	Data:	14.01.2015 09:05
Denominazione:	CA SR6 Rena-POST W		Numero denti z	42	Angolo pressione	30°
Numero disegno:	055.8.5353.POST W		Modulo m	2mm	Angolo elic	4.5/-4.5°
Commessa/serie nr.:	PPAP 2		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel:	Formelwerkzeug:	Charge:		

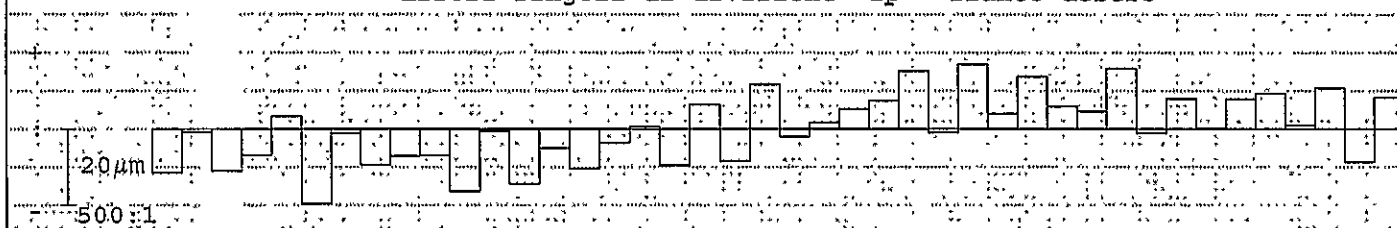
Errori singoli di divisione fp fianco sinistro



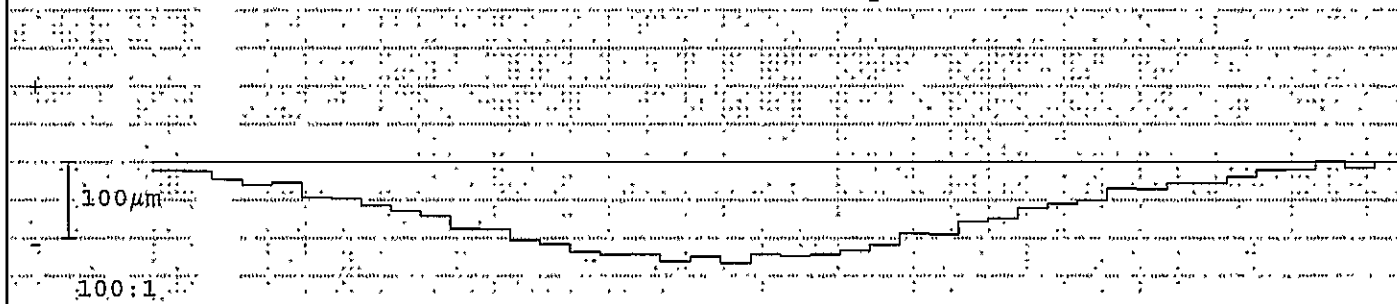
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro



Corso per misura divis.: 85.794 z=1.3mm

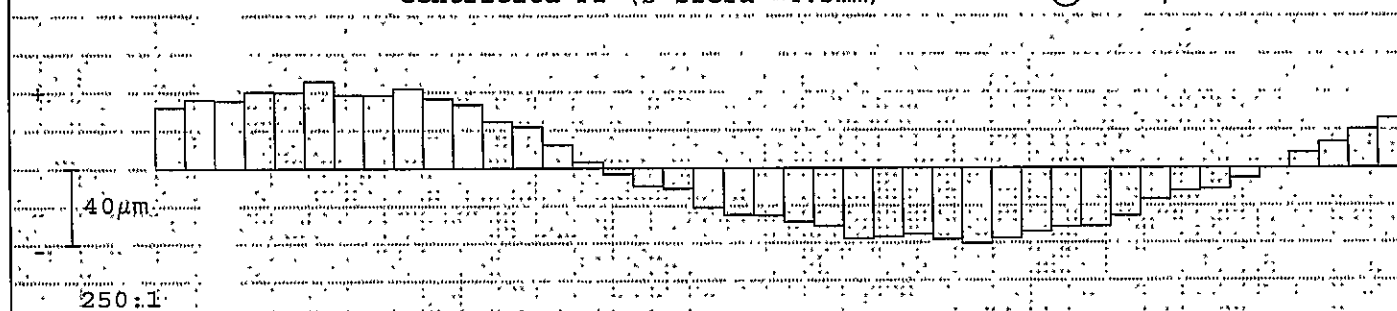
fianco sinistro

fianco destro

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	19		20					
Gr. salto di passo fu max	24		23					
Scarto di divisione Rp	36		37					
Err. globale di divisione Fp	107		134					
Err. cordale di divisione Fpz/8	50		48					

Centricità Fr (Ø-sfera =4.5mm)

⊙ : 81µm

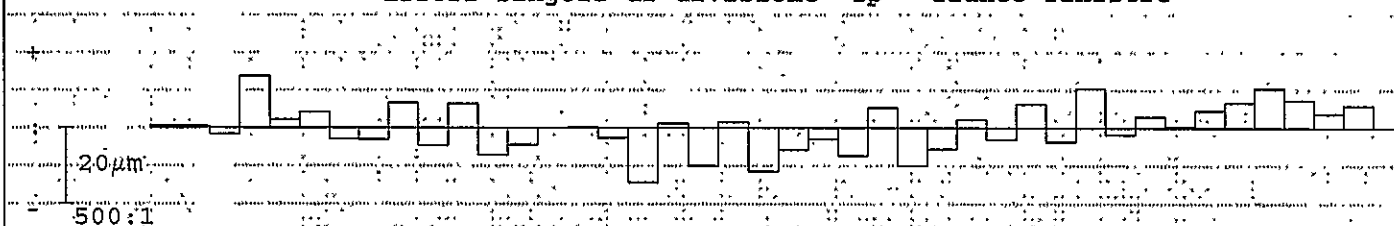


Err. di concentricità Fr	86	100		
Variaz. spessore dente Rs				

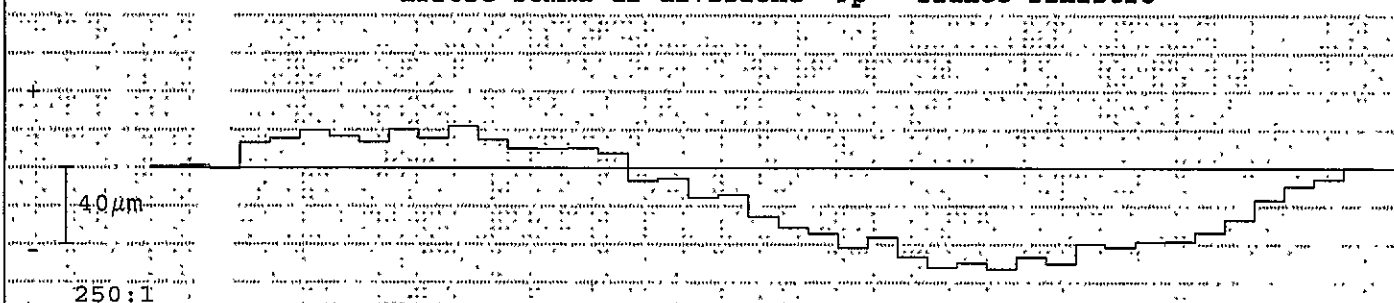


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO C	Data:	14.01.2015 08:53
Denominazione:	CA SR6 Rena-POST W		Numero denti z	42	Angolo pressione	30°
Numero disegno:	055.8.5353.POST W		Modulo m	2mm	Angolo elicica	4.5/-4.5°
Commessa/serie nr.:	PPAP 3		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORM	Carzeldg:	Charge:		

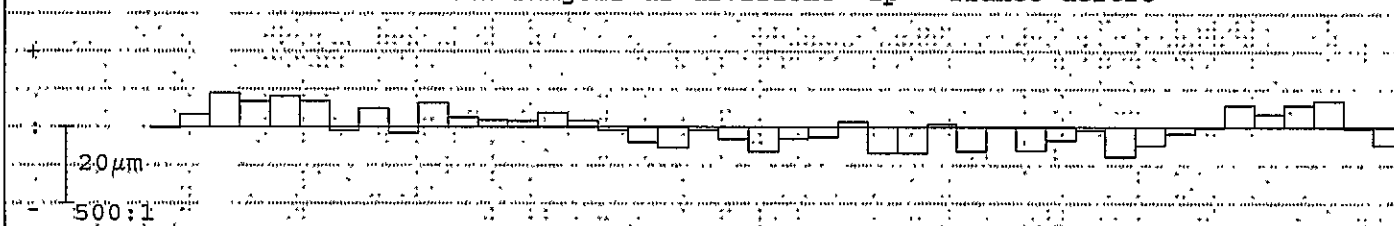
Errori singoli di divisione fp fianco sinistro



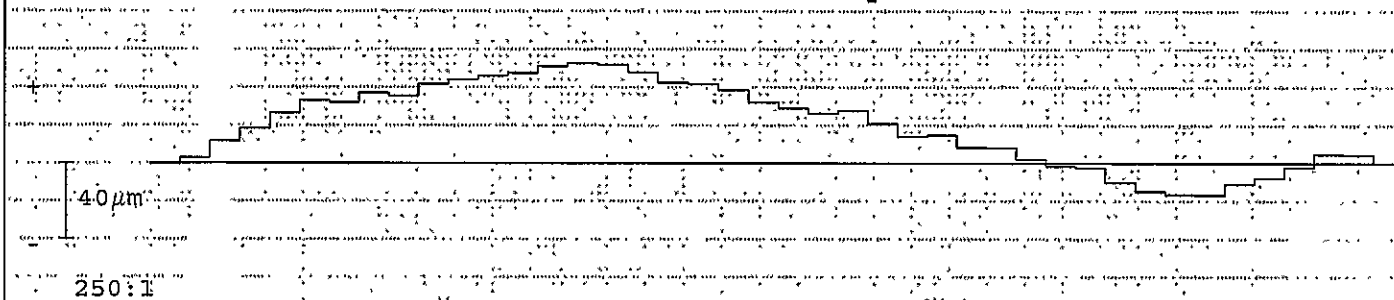
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro



Corso per misura divis.: 85.794 z=1.3mm

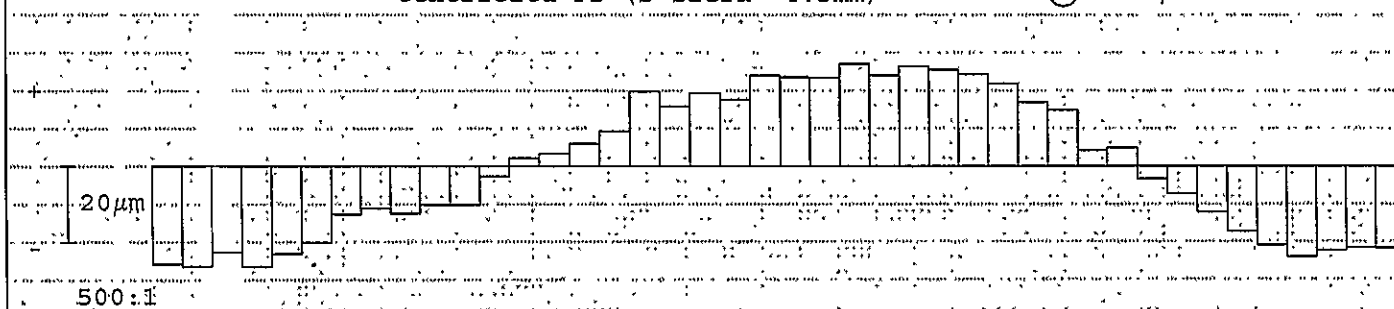
fianco sinistro

fianco destro

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	14				9			
Gr. salto di passo fu max	16				8			
Scarto di divisione Rp	28				17			
Err. globale di divisione Fp	75				69			
Err. cordale di divisione Fpz/8	34				33			

Centricità Fr (Ø-sfera =4.5mm)

⊙ : 52µm



Err. di concentricità Fr	54	100	
Variaz. spessore dente Rs			

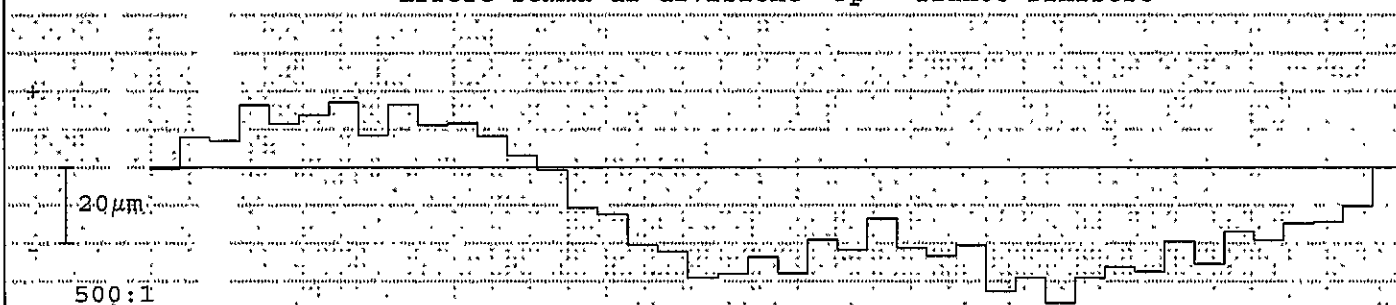


Nr. prog.:	STI0410005 0	PNC35 B4784	Controllore:	TURNO c	Data:	14.01.2015 08:59
Denominazione:	CA SR6 Rena-POST W		Numero denti z	42	Angolo pressione	30°
Numero disegno:	055.8.5353.POST W		Modulo m	2mm	Angolo elica	4.5/-4.5°
Commessa/serie nr.:	PPAP 4		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: FORM	Charge:			

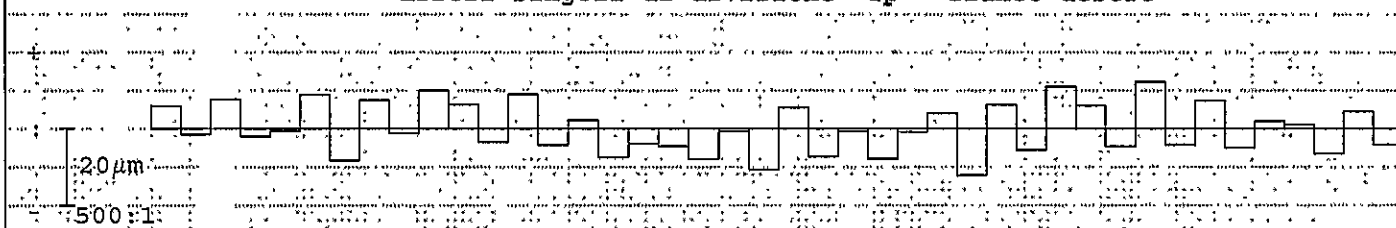
Errori singoli di divisione fp fianco sinistro



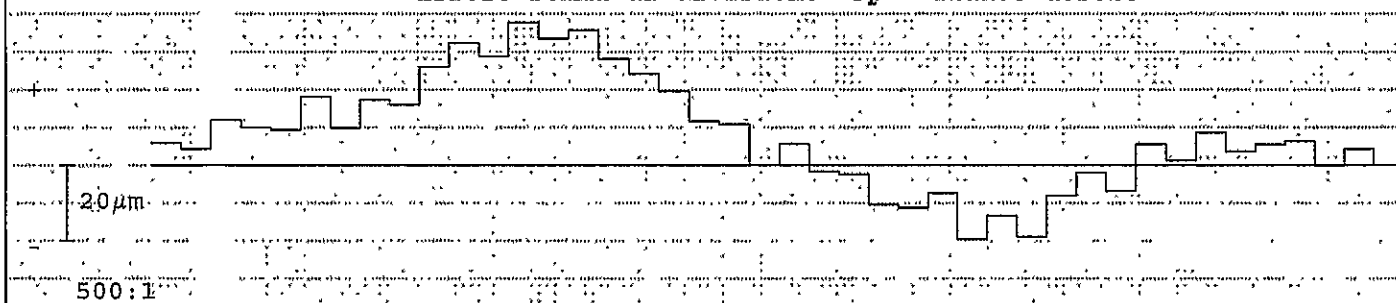
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro



Corso per misura divis.: 85.794 z=1.3mm

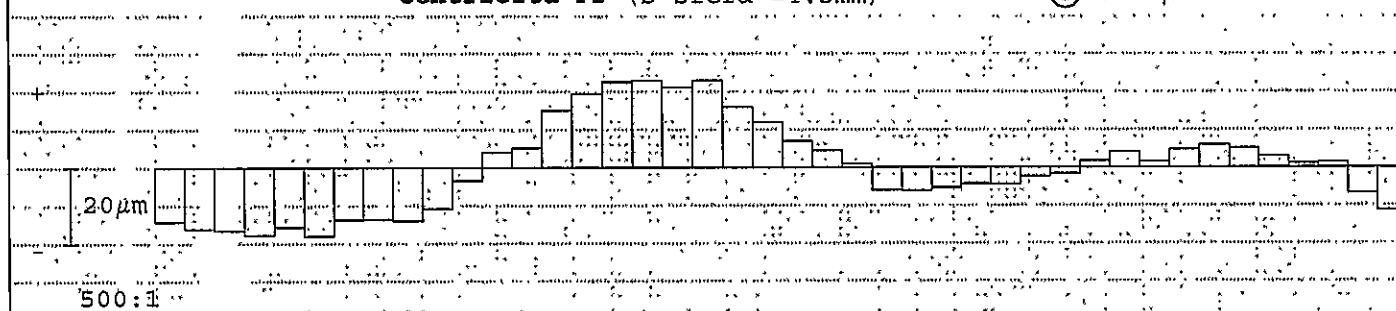
fianco sinistro

fianco destro

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	12				12			
Gr. salto di passo fu max	17				18			
Scarto di divisione Rp	22				24			
Err. globale di divisione Fp	53				57			
Err. cordale di divisione Fpz/8	29				28			

Centricità Fr (Ø-sfera =4.5mm)

⊙ : 21µm

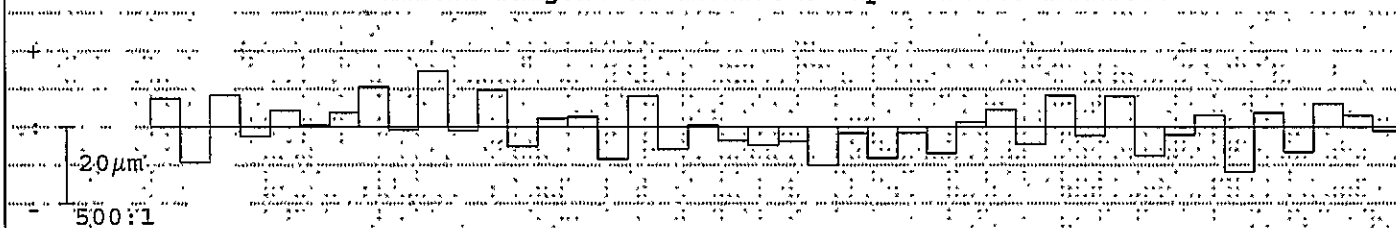


Err. di concentricità Fr	41	100
Variation, spessore dente Rs		

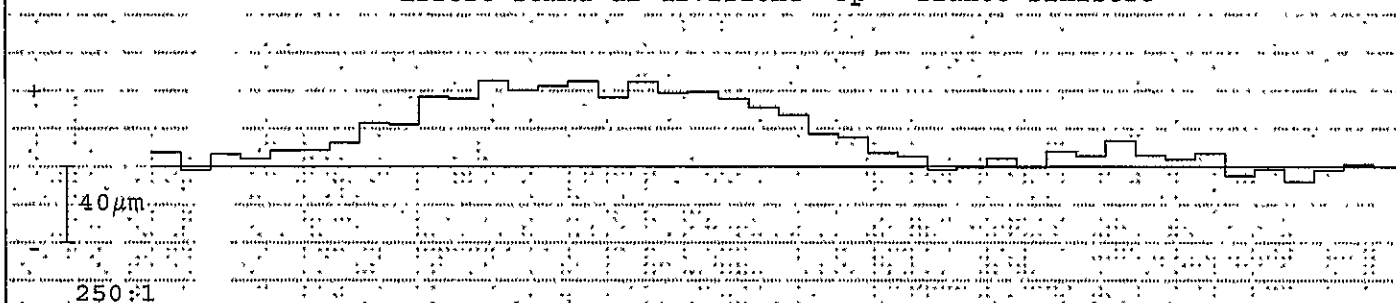


Nr. prog.:	STI04110005 0	PNC35 B4784	Controllore:	TURNO c	Data:	14.01.2015 09:02
Denominazione:	CA SR6 Rena-POST W		Numero denti z	42	Angolo pressione	30°
Numero disegno.:	055.8.5353.POST W		Modulo m	2mm	Angolo elica	4.5/-4.5°
Commessa/serie nr.:	PPAP 5		Untersuchungszweck:	Laufende Messung		
Masch.Nr.:	M001	Spindel: Formelwerkzeug:	Charge:			

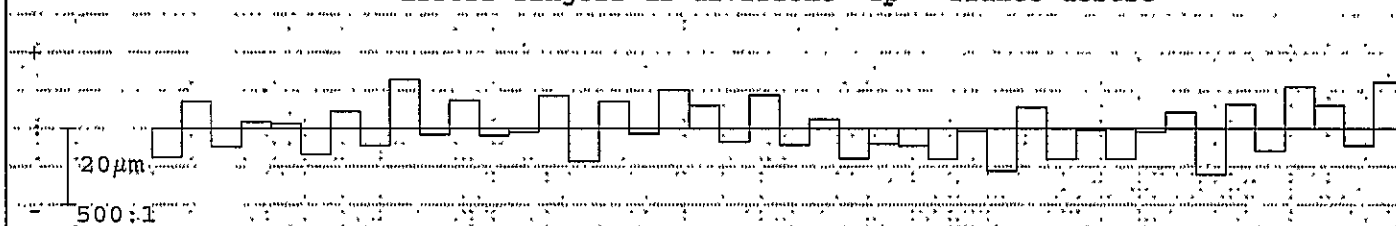
Errori singoli di divisione fp fianco sinistro



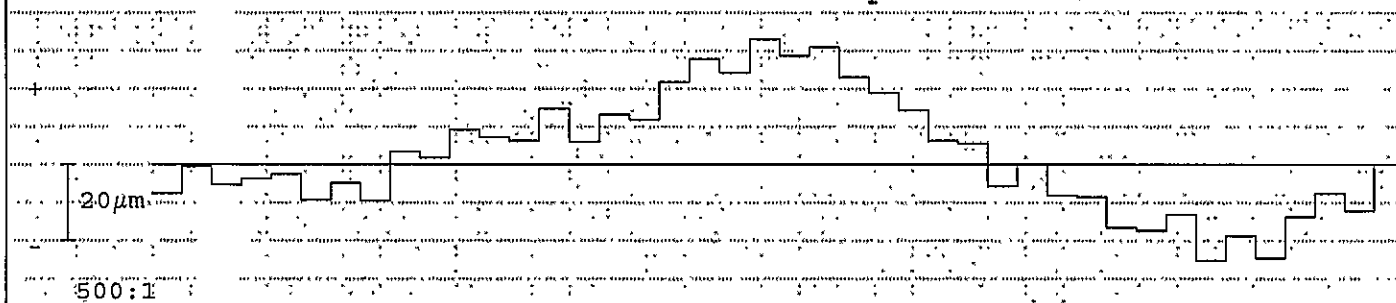
Errore somma di divisione Fp fianco sinistro



Errori singoli di divisione fp fianco destro



Errore somma di divisione Fp fianco destro



Corso per misura divis. 85.794 z=1.3mm

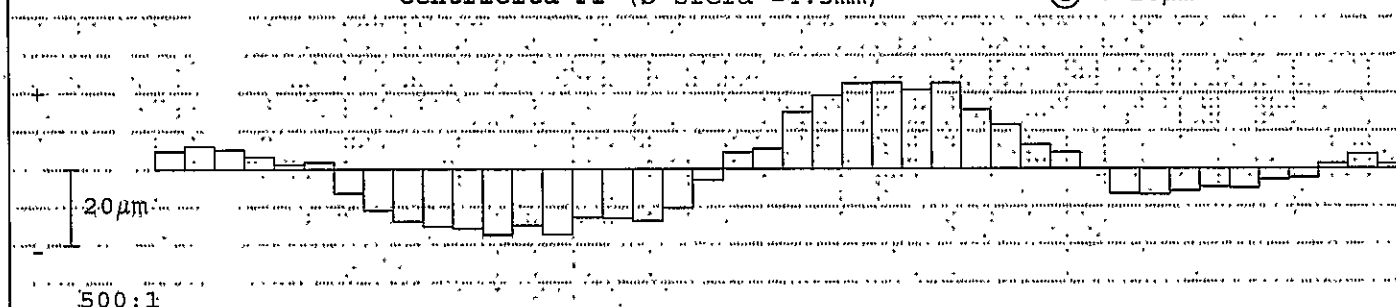
fianco sinistro

fianco destro

	Val. misur	Qual.	Val. amm	Qual.	Val. misur	Qual.	Val. amm	Qual.
Gr. err. singoli divisione fp max	15				13			
Gr. salto di passo fu max	18				20			
Scarto di divisione Rp	27				25			
Err. globale di divisione Fp	53				58			
Err. cordale di divisione Fpz/8	33				29			

Centricità Fr (Ø-sfera =4.5mm)

⊙ : 20µm



Err. di concentricità Fr	40	100		
Variat. spessore dente Rs				

Point	Caractheristic	Tolerance	Part 1	Part 2	Part 3	Part 4	Part 5
4	MDK	66,757/66,679	66,7	66,72	66,717	66,718	66,697
14	Distance	32,2/31,8	31,9	32,06	32,1	32,11	32,09

Manual measures

SR6 2501 4226 38

03 Jan 2015

Marposs,Altimetro