

Part Name **OUTPUT SHAFT 1** Customer Part Number **250.6.3976.35**

Shown on Drawing No. **250.6.3976.35** Organization Part # \_\_\_\_\_

Engineering Change Level **F Index (c)** Dated **29-lug-14**

Additional Engineering Changes \_\_\_\_\_ Dated \_\_\_\_\_

Safety and/or Government Regulation  Yes  No Purchase Order No. \_\_\_\_\_ Weight (kg) **1,911**

Checking Aid No. \_\_\_\_\_ Checking Aid Engineering Change Level \_\_\_\_\_ Dated \_\_\_\_\_

**ORGANIZATION MANUFACTURING INFORMATION**

**GETRAG MODUGNO**

Organization Name & Supplier/Vendor Code  
**VIA DEI CICLAMINI N°4**

Street Address  
**MODUGNO BARI 70026 ITALY**

City Region Postal Code Country

**CUSTOMER SUBMITTAL INFORMATION**

**FORD**

Customer Name/Division  
**FORD**

Buyer/Buyer Code  
**TYP 250 FORD**

Application

**MATERIALS REPORTING**

Has customer-required Substances of Concern information been reported?  Yes  No  n/a  
Submitted by IMDS or other customer format:

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

**REASON FOR SUBMISSION (Check at least one)**

Initial Submission  Change to Optional Construction or Material

Engineering Change(s)  Supplier or Material Source Change

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

Correction of Discrepancy  Parts Produced at Additional Location

Tooling Inactive > than 1 year  Other - please specify below

**REQUESTED SUBMISSION LEVEL (Check one)**

Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.

Level 2 - Warrant with product samples and limited supporting data submitted to customer.

Level 3 - Warrant with product samples and complete supporting data submitted to customer.

Level 4 - Warrant and other requirements as defined by customer.

Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

**SUBMISSION RESULTS**

The results for  dimensional measurements  material and functional tests  appearance criteria  statistical process package

These results meet all drawing and specification requirements:  Yes  NO (If "NO" - Explanation Required)

Mold / Cavity / Production Process \_\_\_\_\_

**DECLARATION**

I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of 2000 / 24 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: **ripetizione per smarrimento documentazione precedente**

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

Organization Authorized Signature \_\_\_\_\_ Date **20/01/2015**

Print Name **Dario Tursi** Phone No. **cell +39-393-9814554** Fax No. \_\_\_\_\_

Title **GPS 2 Leader** E-mail **dario.tursi@getrag.com**

**FOR CUSTOMER USE ONLY (IF APPLICABLE)**

Part Warrant Disposition:  Approved  Rejected  Other

Customer Signature \_\_\_\_\_ Date **20/01/2015**

Print Name \_\_\_\_\_ Customer Tracking Number (optional) \_\_\_\_\_

**DIMENSIONAL TEST RESULTS**

| Organization: <b>GETRAG</b>                 |                          |                        |        |           | Part Number: <b>250.6.3976.35</b>  |        |        |        |        |        |                  |    |        |
|---|--------------------------|------------------------|--------|-----------|--|--------|--------|--------|--------|--------|------------------|----|--------|
| Supplier/Vendor Code: <b>GETRAG Modugno</b> |                          |                        |        |           | Part Name: <b>Output Shaft 1</b>   |        |        |        |        |        |                  |    |        |
| INSPECTION FACILITY:<br><b>NA</b>           |                          |                        |        |           | Design Record Change Level: <b>F Index (c) 29/07/2014</b>                |        |        |        |        |        |                  |    |        |
|   |                          |                        |        |           | Engineering Change Documents:<br>Organization Measurement Results (Data) |        |        |        |        |        |                  |    |        |
| Item  | Dimension/Specification  | Specification / Limits |        | Test Date | Qty. Tested  | 1      | 2      | 3      | 4      | 5      | Test distruttivo | Ok | Not Ok |
| 1   | MDK l                    | 54,954                 | 55,019 |           | 5  | 54,959 | 54,968 | 54,956 | 54,958 | 54,963 |                  | ok |        |
| 2   | Root diameter l          | 42,900                 | 43,200 |           | 5  | 43,090 | 43,084 | 43,091 | 43,089 | 43,086 |                  | ok |        |
| 3   | Tip diameter l           | 56,770                 | 57,030 |           | 5  | 56,896 | 56,865 | 56,898 | 56,872 | 56,868 |                  | ok |        |
| 4   | Rz 4 dentatura Z19       | 0                      | 4 μ    |           | 5  | 1,70   | 2,13   | 1,97   | 1,96   | 1,95   |                  | ok |        |
|   | Rmax 8 dentatura Z19     | 0                      | 8 μ    |           | 5  | 2,41   | 2,43   | 2,39   | 2,41   | 2,41   |                  | ok |        |
| 5   | $\sqrt{0.032}$ A - B Z19 | 0                      | 32 μ   |           | 5  | 18     | 16     | 18     | 16     | 16     |                  | ok |        |
| 6   | Dettaglio "M"            | -                      | -      |           | 5  | OK     | OK     | OK     | OK     | OK     |                  | ok |        |
|   | Diametro Ø 56,5 -0,3     | 56,200                 | 56,500 |           | 5  | 56,319 | 56,334 | 56,348 | 56,312 | 56,308 |                  | ok |        |
|   |                          |                        |        |           |  |        |        |        |        |        |                  |    |        |
|   |                          |                        |        |           |  |        |        |        |        |        |                  |    |        |
|   |                          |                        |        |           |  |        |        |        |        |        |                  |    |        |
|   |                          |                        |        |           |  |        |        |        |        |        |                  |    |        |
|   |                          |                        |        |           |  |        |        |        |        |        |                  |    |        |

Tooling microgeometry validated by standard measurement report

|              |       |            |
|--------------|-------|------------|
| SIGNATURE    | TITLE | DATE       |
| G. Cicirelli | QPE   | 13/01/2015 |

| Item | Characteristic | Tolerance     | Part 1 | Part 2 | Part 3 | Part 4 | Part 5 | Device          |
|------|----------------|---------------|--------|--------|--------|--------|--------|-----------------|
| 1    | MDK I          | 54,954±55,019 | 54,959 | 54,968 | 54,956 | 54,958 | 54,963 | Calibro a sfere |

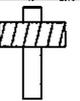
**Misurazioni Manuali**

**OS1 250 6 3976 35**

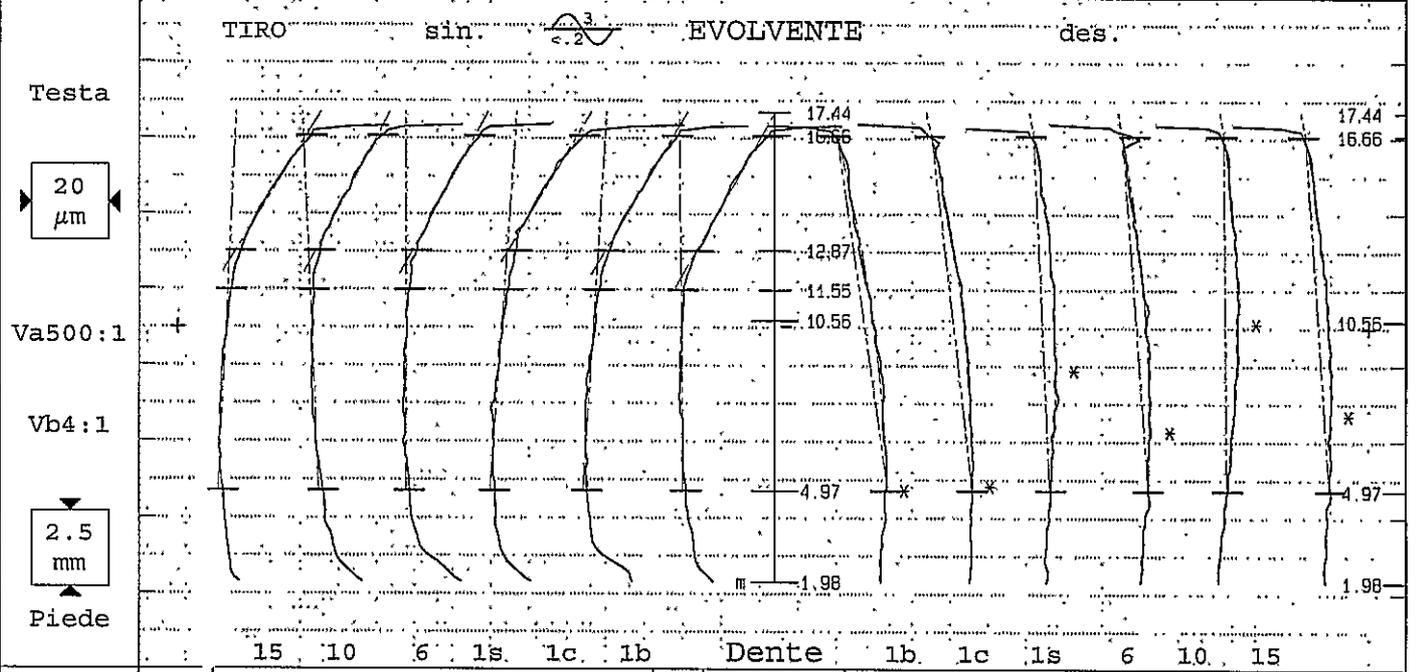
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**GETRAG**

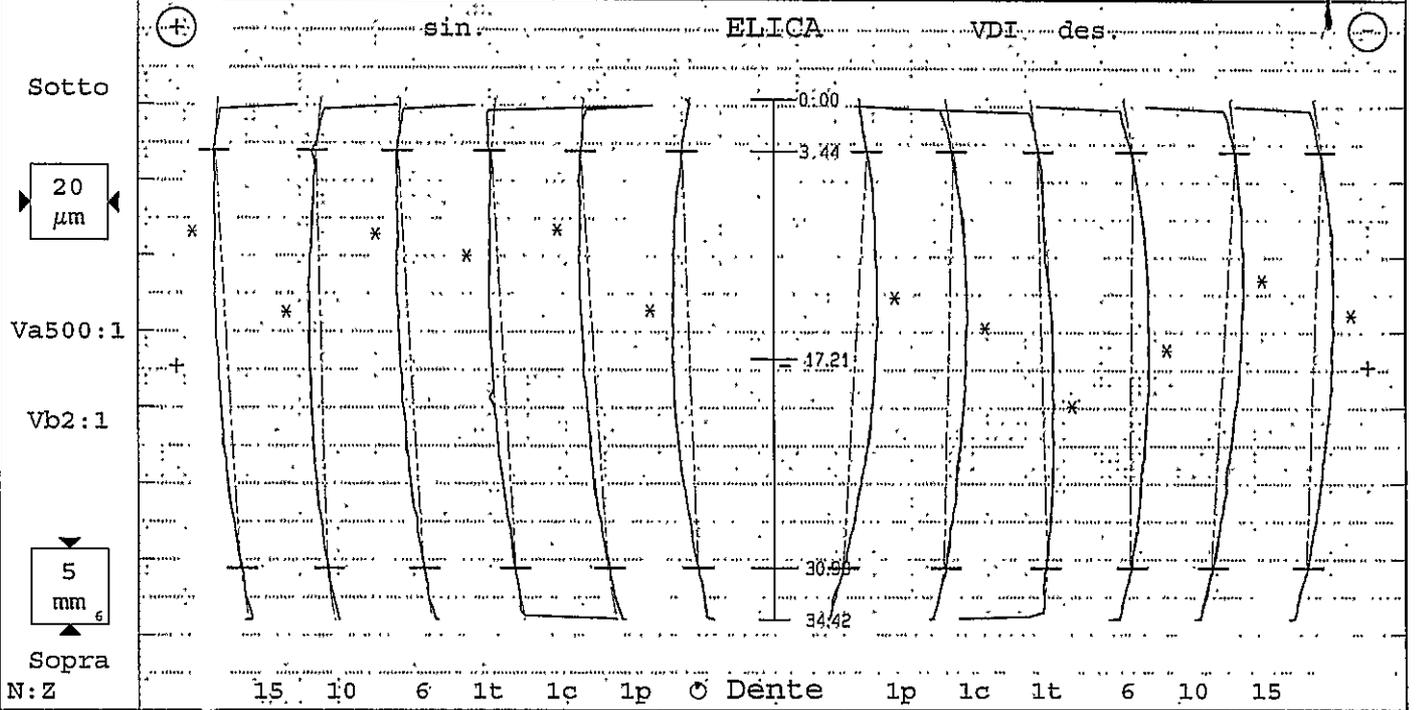
**Ruota cilindrica Evolvente/Elica**



|                     |                          |                  |           |                             |                  |
|---------------------|--------------------------|------------------|-----------|-----------------------------|------------------|
| Nr. prog.:          | STI0410c05 0 PNC35 B4784 | Controllore:     | turno D   | Data:                       | 19.12.2014 12:17 |
| Denominazione:      | Output Shaft 1           | Numero denti z   | 19        | Largh.fasc.dent. b          | 34.42mm          |
| Numero disegno.:    | 250.6.3976.35-IF         | Modulo m         | 2.25mm    | Tratto evolv. La            | 6.58/11.69mm     |
| Commessa/serie nr.: | PAPP PZ.1                | Angolo pressione | 20°       | Tratto elica L <sub>S</sub> | 27.54mm          |
| Masch.Nr.:          | M001 Spindel: Forme      | Angolo elica     | -29°      | Inizio elab. M1             | 4.97mm           |
| Untersuchungszweck: | Laufende Messung         | Ø Base db        | 45.1268mm | Palpatore Ø                 | (#1) 1mm         |
| Werkzeug:           | Charge:                  | Ang. Base        | -27.102°  | Fat.scor.pr. x              | .6               |



| Tolerance               | Medio  | Val.misur [µm] |     |     |     |     |     |  | Qual | Tolerance | Val.misur [µm] |    |    |    |    |    |  | Medio | Qual          |
|-------------------------|--------|----------------|-----|-----|-----|-----|-----|--|------|-----------|----------------|----|----|----|----|----|--|-------|---------------|
|                         |        | Var 5          |     |     |     |     |     |  |      |           | Var 10         |    |    |    |    |    |  |       |               |
| fH <sub>am</sub> ±6     | -1     |                |     |     |     |     |     |  |      | ±6        |                |    |    |    |    |    |  |       |               |
| fH <sub>a</sub> ±8      | -1     | -3             | 2   | 0   | -4  | -3  | 0   |  | ±8   | -13       | -11            | -4 | -7 | -1 | -6 | -6 |  |       |               |
| F <sub>a</sub>          | 3      | 3              | 3   | 2   | 5   | 4   | 2   |  |      | 14        | 12             | 7  | 8  | 5  | 8  | 8  |  |       |               |
| ffa 4                   | 2      | 2              | 2   | 2   | 3   | 2   | 2   |  | 4    | 2         | 2              | 2  | 5  | 1  | 1  | 2  |  |       |               |
| C <sub>a</sub> 0/4      | 2      | 2              | 2   | 1   | 1   | 2   | 1   |  | 0/4  | 2         | 3              | 3  | 3  | 3  | 3  | 3  |  |       |               |
| fK <sub>o</sub> -22/-14 | -19    | -19            | -19 | -18 | -16 | -18 | -21 |  |      | 0         | 0              | 0  | 0  | 0  | 0  | 0  |  |       |               |
| P/T-φ [mm]              | 43.090 | [42.9/43.2]    |     |     |     |     |     |  |      |           | 56.896         |    |    |    |    |    |  |       | [56.77/57.08] |



| Tolerance            | Medio | Val.misur [µm] |   |   |   |   |   |  | Qual | Tolerance | Val.misur [µm] |   |    |    |    |     |  | Medio | Qual |
|----------------------|-------|----------------|---|---|---|---|---|--|------|-----------|----------------|---|----|----|----|-----|--|-------|------|
|                      |       | Var 6          |   |   |   |   |   |  |      |           | Var 7          |   |    |    |    |     |  |       |      |
| fH <sub>Sm</sub> 8±6 | 7     |                |   |   |   |   |   |  |      | ±6        |                |   |    |    |    |     |  |       |      |
| fH <sub>S</sub> 8±13 | 7     | 8              | 3 | 8 | 8 | 9 | 5 |  | ±13  | -8        | -3             | 3 | -1 | -8 | -5 | -4  |  |       |      |
| F <sub>B</sub>       | 2     | 1              | 4 | 1 | 2 | 2 | 4 |  |      | 8         | 4              | 3 | 3  | 7  | 5  | 5   |  |       |      |
| ff <sub>B</sub> 4    | 1     | 1              | 2 | 1 | 2 | 1 | 1 |  | 4    | 1         | 1              | 1 | 1  | 1  | 1  | 1   |  |       |      |
| C <sub>S</sub> 2/6   | 3     | 3              | 3 | 3 | 3 | 3 | 4 |  | 2/6  | 5         | 5              | 3 | 5  | 4  | 5  | 5   |  |       |      |
| B <sub>d</sub>       | -3    |                |   |   |   |   |   |  |      |           |                |   |    |    |    | -11 |  |       |      |

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|                     |                          |                     |                  |                  |                  |
|---------------------|--------------------------|---------------------|------------------|------------------|------------------|
| Nr. prog.:          | STI0410005 0 PNC35 B4784 | Controllora:        | turno D          | Data:            | 19.12.2014 12:17 |
| Denominazione:      | Output Shaft 1           | Numero denti z      | 19               | Angolo pressione | 20°              |
| Numero disegno.:    | 250.6.3976.35-IF         | Modulo m            | 2.25mm           | Angolo elica     | -29°             |
| Commessa/serie nr.: | PAPP PZ.1                | Untersuchungszweck: | Laufende Messung |                  |                  |
| Masch.Nr.:          | M001                     | Spindel: FORMER     | Werkzeug:        | Charge:          |                  |



**Errori singoli di divisione fp fianco sinistro**

20µm

500:1

**Errore somma di divisione Fp fianco sinistro**

20µm

500:1

**Errori singoli di divisione fp fianco destro**

20µm

500:1

**Errore somma di divisione Fp fianco destro**

20µm

500:1

|                                   | Corso per misura divis. 149.825 z=17.2mm |       |          |       |               |       |          |       |
|-----------------------------------|--|-------|----------|-------|---------------|-------|----------|-------|
|                                   | fianco sinistro / TIRO                   |       |          |       | fianco destro |       |          |       |
|                                   | Val. misur                               | Qual. | Val. amm | Qual. | Val. misur    | Qual. | Val. amm | Qual. |
| Gr. err. singoli divisione fp max | 4  |       | 14       |       | 4             |       | 14       |       |
| Gr. salto di passo fu max         | 2  |       | 18       |       | 2             |       | 18       |       |
| Scarto di divisione Rp            | 7  |       |          |       | 7             |       |          |       |
| Err. globale di divisione Fp      | 17                                       |       | 40       |       | 17            |       | 40       |       |
| Err. cordale di divisione Fpz/B   | 8  |       |          |       | 7             |       |          |       |

**Centricità Fr (Ø-sfera =3.5mm)**

⊙ : 17µm

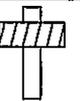
20µm

500:1

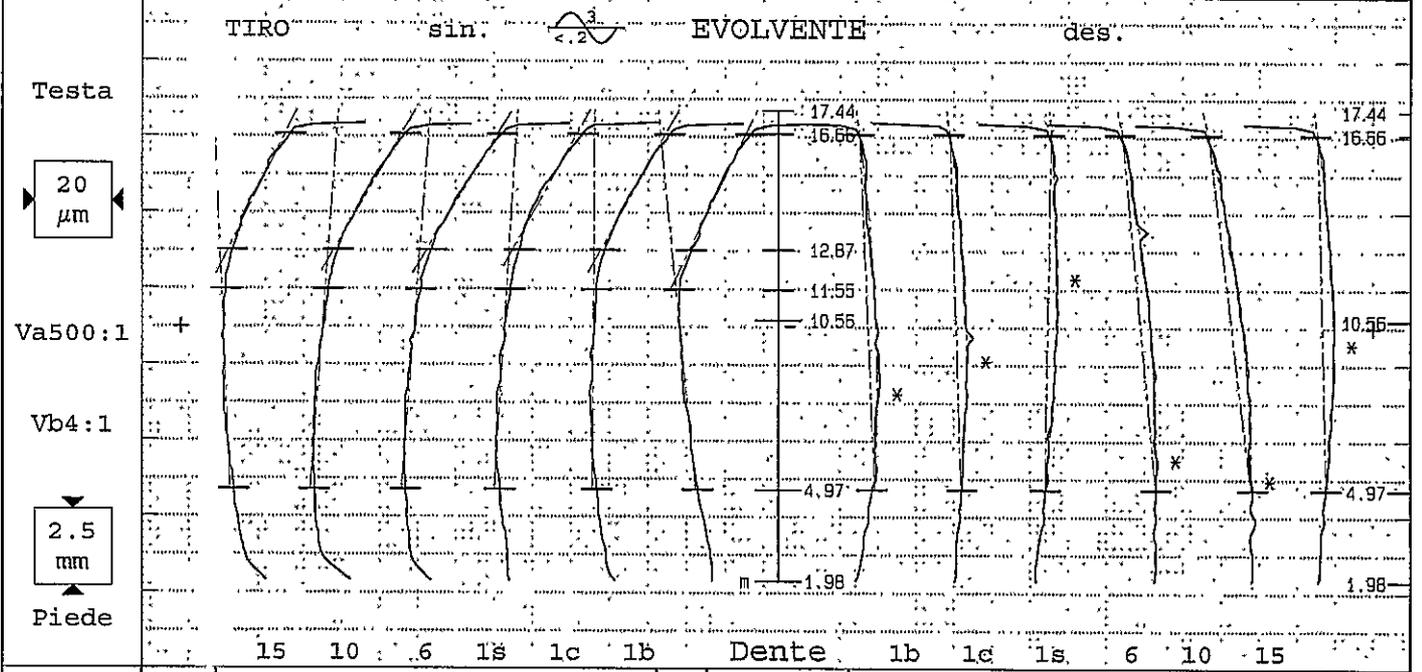
|                           |    |    |  |  |
|---------------------------|----|----|--|--|
| Err. di concentricità Fr  | 18 | 32 |  |  |
| Variaz. spessore dente Rs |    |    |  |  |

**GETRAG**

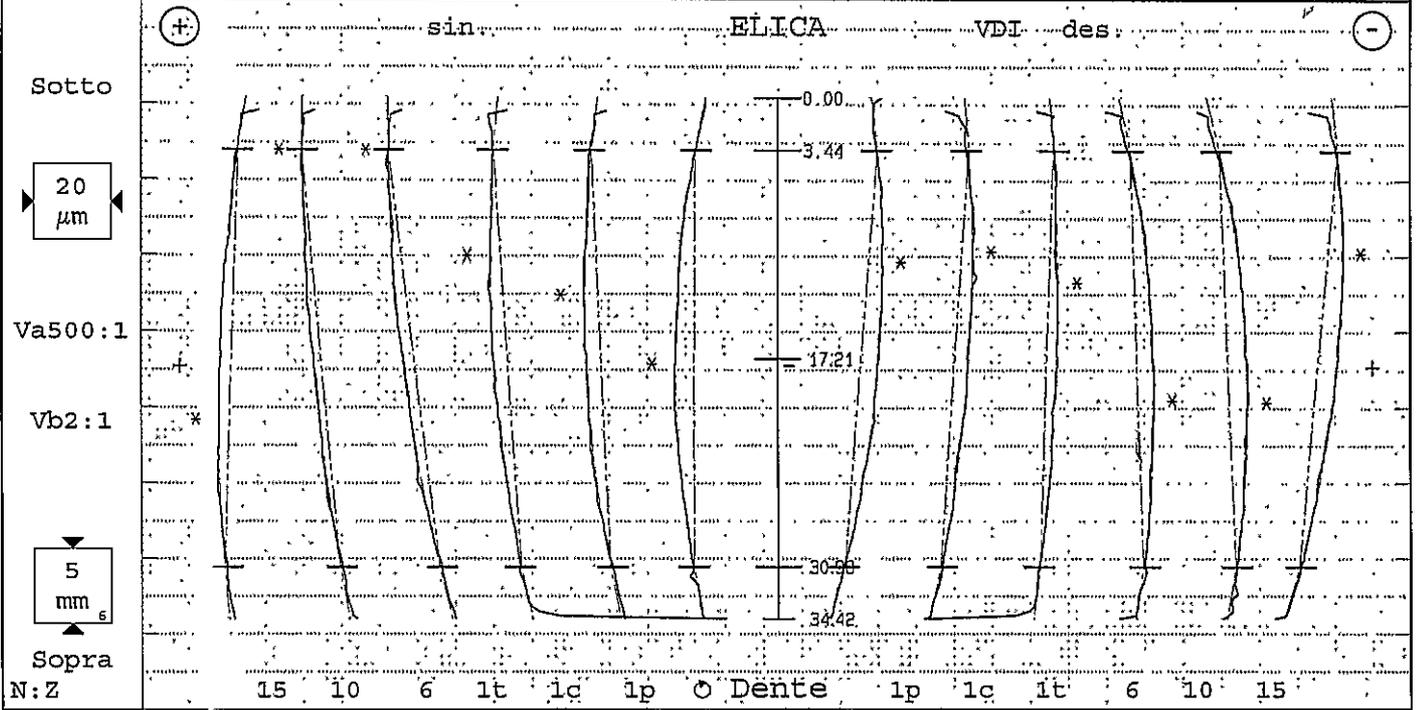
**Ruota cilindrica Evolvente/Elica**



|                     |                  |                |                  |           |                    |                  |
|---------------------|------------------|----------------|------------------|-----------|--------------------|------------------|
| Nr. prog.:          | STI0410005 0     | PNC35 B4784    | Controllore:     | turno D   | Data:              | 19.12.2014 12:22 |
| Denominazione:      | Output Shaft 1   |                | Numero denti z   | 19        | Largh.fasc.dent. b | 34.42mm          |
| Numero disegno.:    | 250.6.3976.35-IF |                | Modulo m         | 2.25mm    | Tratto evolv. la   | 6.58/11.69mm     |
| Commezza/serie nr.: | PAPP PZ.2        |                | Angolo pressione | 20°       | Tratto elica lS    | 27.54mm          |
| Masch.Nr.:          | M001             | Spindel: Forme | Angolo elica     | -29°      | Inizio elab. M1    | 4.97mm           |
| Untersuchungszweck: | Laufende Messung |                | Ø Base db        | 45.1268mm | Palpatore Ø        | (#1) 1mm         |
| Werkzeug:           | Charge:          |                | Ang. Base        | -27.102°  | Fat.scor.pr. x     | .6               |



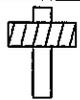
| Tolerance   | Medio  | Val.misur [µm] |     |     |     |     |     | Qual | Tolerance | Val.misur [µm] |               |   |    |     |    | Medio | Qual |  |
|-------------|--------|----------------|-----|-----|-----|-----|-----|------|-----------|----------------|---------------|---|----|-----|----|-------|------|--|
|             |        | Var 6          |     |     |     |     |     |      |           | Var 9          |               |   |    |     |    |       |      |  |
| fHm ±6      | -2     |                |     |     |     |     |     |      | ±6        |                |               |   |    |     |    | -6    |      |  |
| fHa ±8      | -2     | 2              | -4  | -4  | -3  | 0   | 5   |      | ±8        | -4             | -3            | 2 | -9 | -11 | -2 | -6    |      |  |
| Fa          | 3      | 3              | 4   | 4   | 4   | 2   | 5   |      |           | 6              | 6             | 3 | 10 | 12  | 5  | 8     |      |  |
| ffa 4       | 2      | 2              | 2   | 2   | 2   | 2   | 1   |      | 4         | 2              | 2             | 2 | 3  | 1   | 1  | 2     |      |  |
| Ca 0/4      | 2      | 2              | 2   | 2   | 2   | 2   | 1   |      | 0/4       | 2              | 3             | 2 | 3  | 3   | 3  | 3     |      |  |
| fKo -22/-14 | -18    | -18            | -17 | -18 | -16 | -18 | -22 |      |           | 0              | 0             | 0 | 0  | 0   | 0  | 0     |      |  |
| P/T-φ [mm]  | 43.084 | [42.9/43.2]    |     |     |     |     |     |      |           | 56.865         | [56.77/57.03] |   |    |     |    |       |      |  |



| Tolerance | Medio | Val.misur [µm] |    |    |   |   |    | Qual | Tolerance | Val.misur [µm] |    |    |   |   |     | Medio | Qual |
|-----------|-------|----------------|----|----|---|---|----|------|-----------|----------------|----|----|---|---|-----|-------|------|
|           |       | Var 21         |    |    |   |   |    |      |           | Var 18         |    |    |   |   |     |       |      |
| fHSm 8±6  | 8     |                |    |    |   |   |    |      | ±6        |                |    |    |   |   |     | -3    |      |
| fHS 8±13  | 8     | -4             | 12 | 17 | 9 | 6 | -1 |      | ±13       | -11            | -9 | -5 | 4 | 5 | -13 | -3    |      |
| FS 10     | 10    | 10             | 11 | 14 | 7 | 6 | 8  |      |           | 11             | 12 | 10 | 5 | 6 | 13  | 9     |      |
| ffS 4     | 1     | 1              | 1  | 2  | 1 | 1 | 1  |      | 4         | 1              | 2  | 1  | 1 | 1 | 1   | 1     |      |
| CS 2/6    | 3     | 3              | 2  | 3  | 4 | 4 | 5  |      | 2/6       | 5              | 4  | 2  | 4 | 5 | 5   | 5     |      |
| Bd        | -10   |                |    |    |   |   |    |      |           |                |    |    |   |   |     |       |      |

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|                                     |                                      |                        |
|-------------------------------------|--------------------------------------|------------------------|
| Nr. prog.: STI0410005 0 PNC35 B4784 | Controllore: turno D                 | Data: 19.12.2014 12:22 |
| Denominazione: Output Shaft 1       | Numero denti z 19                    | Angolo pressione 20°   |
| Numero disegno: 250.6.3976.35-IF    | Modulo m 2.25mm                      | Angolo elica -29°      |
| Commessa/serie nr.: PAPP PZ.2       | Untersuchungszweck: Laufende Messung |                        |
| Masch.Nr.: M001                     | Spindel: FORMERZEUG                  | 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.: 49.825 z=17.2mm | fianco sinistro / TIRO |       |          |       | fianco destro |       |          |       |
|--|------------------------|-------|----------|-------|---------------|-------|----------|-------|
|  | Val. misur             | Qual. | Val. amm | Qual. | Val. misur    | Qual. | Val. amm | Qual. |
| Gr. err. singoli divisione fp max        | 4                      |       | 14       |       | 4             |       | 14       |       |
| Gr. salto di passo fu max                | 6                      |       | 18       |       | 3             |       | 18       |       |
| Scarto di divisione Rp                   | 8                      |       |          |       | 8             |       |          |       |
| Err. globale di divisione Fp             | 26                     |       | 40       |       | 24            |       | 40       |       |
| Err. cordale di divisione Fpz/B          | 8                      |       |          |       | 8             |       |          |       |

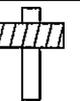
**Centricità Fr (Ø-sfera =3.5mm) © : 17µm**

20µm  
500:1

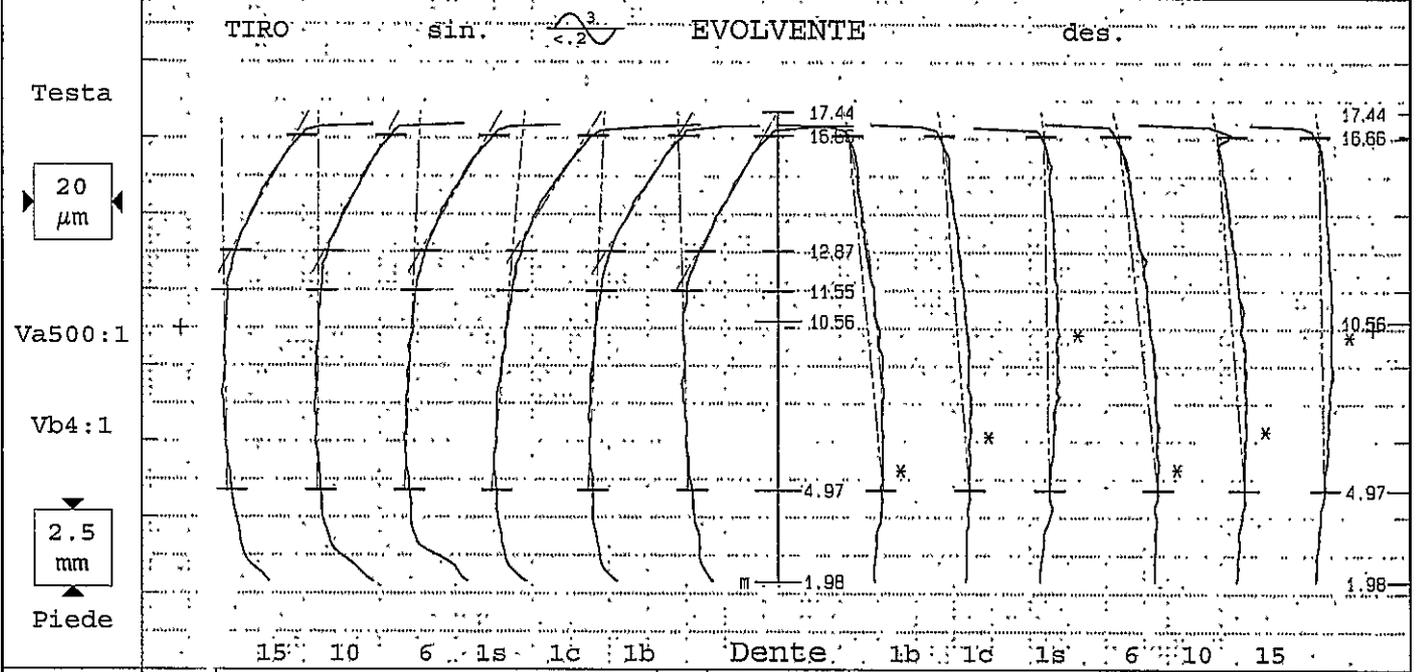
|                           |    |    |  |  |
|---------------------------|----|----|--|--|
| Err. di concentricità Fr  | 16 | 32 |  |  |
| Variaz. spessore denta Rs |    |    |  |  |

# GETRAG

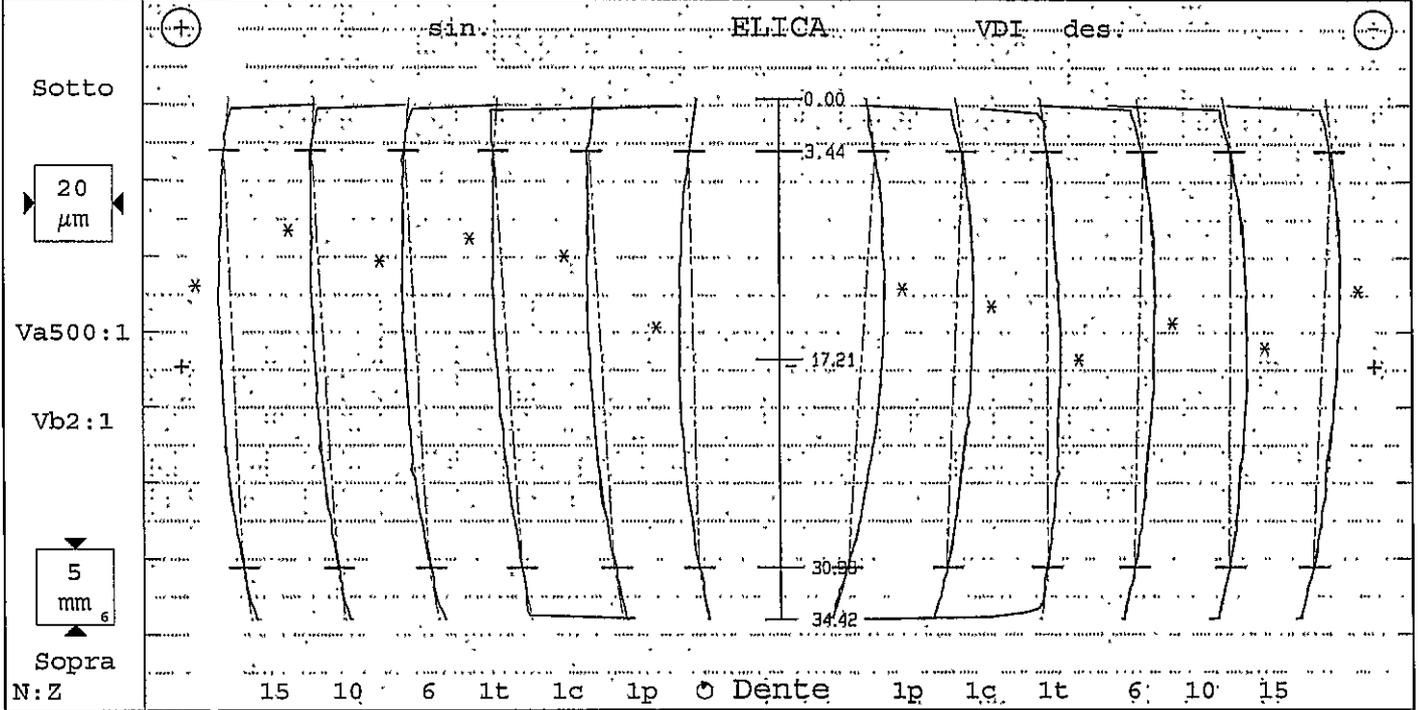
## Ruota cilindrica Evolvente/Elica



|                     |                  |                |                  |           |                    |                  |
|---------------------|------------------|----------------|------------------|-----------|--------------------|------------------|
| Nr. prog.:          | STI0410005 0     | PNC35 B4784    | Controllore:     | turno D   | Data:              | 19.12.2014 12:44 |
| Denominazione:      | Output Shaft 1   |                | Numero denti z   | 19        | Largh.fasc.dent. b | 34.42mm          |
| Numero disegno.:    | 250.6.3976.35-IF |                | Modulo m         | 2.25mm    | Tratto evolv. La   | 6.58/11.69mm     |
| Commessa/serie nr.: | PAPP PZ.3        |                | Angolo pressione | 20°       | Tratto elica Ls    | 27.54mm          |
| Masch.Nr.:          | M001             | Spindel: Forme | Angolo elica     | -29°      | Inizio elab. M1    | 4.97mm           |
| Untersuchungszweck: | Laufende Messung |                | Ø Base db        | 45.1268mm | Palpatore Ø        | (#1) 1mm         |
| Werkzeug:           | Charge:          |                | Ang. Base        | -27.102°  | Fat.scor.pr. x     | .6               |



| Tolerance  | Medio   | Val.misur [µm] |             |     |     |     |     | Qual | Tolerance | Val.misur [µm] |        |    |    |     |    | Medio | Qual          |  |
|------------|---------|----------------|-------------|-----|-----|-----|-----|------|-----------|----------------|--------|----|----|-----|----|-------|---------------|--|
| fHm        | ±6      | -1             | Var 3       |     |     |     |     |      |           | ±6             | Var 9  |    |    |     |    |       | -6            |  |
| fHa        | ±8      | -1             | 1           | 0   | -2  | -5  | -2  | 1    |           | ±8             | -9     | -7 | -1 | -10 | -7 | -1    | -6            |  |
| Fa         |         | 3              | 3           | 2   | 3   | 5   | 3   | 3    |           |                | 10     | 9  | 5  | 12  | 8  | 5     | 9             |  |
| ffa        | 4       | 2              | 2           | 2   | 2   | 2   | 2   | 2    |           | 4              | 2      | 2  | 2  | 2   | 5  | 2     | 3             |  |
| Ca         | 0/4     | 2              | 2           | 2   | 2   | 1   | 2   | 1    |           | 0/4            | 3      | 3  | 3  | 3   | 3  | 3     | 3             |  |
| fKo        | -22/-14 | -19            | -19         | -18 | -18 | -17 | -19 | -22  |           |                | 0      | 0  | 0  | 0   | 0  | 0     | 0             |  |
| P/T-φ [mm] |         | 43.091         | [42.9/43.2] |     |     |     |     |      |           |                | 56.898 |    |    |     |    |       | [56.77/57.03] |  |



| Tolerance | Medio | Val.misur [µm] |       |   |   |   |   | Qual | Tolerance | Val.misur [µm] |       |    |   |    |    | Medio | Qual |  |
|-----------|-------|----------------|-------|---|---|---|---|------|-----------|----------------|-------|----|---|----|----|-------|------|--|
| fHm       | 8±6   | 8              | Var 2 |   |   |   |   |      |           | ±6             | Var 6 |    |   |    |    |       | -4   |  |
| fR3       | 8±13  | 8              | 6     | 8 | 8 | 9 | 8 | 3    |           | ±13            | -9    | -6 | 0 | -3 | -1 | -7    | -4   |  |
| F3        |       | 2              | 3     | 2 | 2 | 2 | 2 | 5    |           |                | 9     | 6  | 2 | 4  | 3  | 6     | 5    |  |
| ff3       | 4     | 2              | 1     | 1 | 2 | 1 | 2 | 1    |           | 4              | 1     | 1  | 1 | 1  | 1  | 1     | 1    |  |
| C3        | 2/6   | 3              | 3     | 3 | 3 | 3 | 3 | 4    |           | 2/6            | 5     | 5  | 3 | 4  | 4  | 4     | 4    |  |
| Bd        |       | -6             |       |   |   |   |   |      |           |                |       |    |   |    |    |       | -9   |  |

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**GETRAG**

**Ruota cilindrica Divisione**



|                                   |                     |                      |                        |
|-----------------------------------|---------------------|----------------------|------------------------|
| Nr. prog.: STI0410005 0           | PNC35 B4784         | Controllore: turno D | Data: 19.12.2014 12:44 |
| Denominazione: Output Shaft 1     | Numero denti z      | 19                   | Angolo pressione 20°   |
| Numero disegno.: 250.6.3976.35-IF | Modulo m            | 2.25mm               | Angolo elica -29°      |
| Comessa/serie nr.: PAPP PZ.3      | Untersuchungszweck: | Laufende Messung     |                        |
| Masch.Nr.: M001                   | Spindel: Formelwerk | 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.: 49.825 z=17.2mm | fianco sinistro / TIRO |       |          |       | fianco destro |       |          |       |
|--|------------------------|-------|----------|-------|---------------|-------|----------|-------|
|  | Val. misur             | Qual. | Val. amm | Qual. | Val. misur    | Qual. | Val. amm | Qual. |
| Gr. err. singoli divisione fp max        | 5                      |       | 14       |       | 4             |       | 14       |       |
| Gr. salto di passo fu max                | 2                      |       | 18       |       | 2             |       | 18       |       |
| Scarto di divisione Rp                   | 8                      |       |          |       | 7             |       |          |       |
| Err. globale di divisione Fp             | 17                     |       | 40       |       | 17            |       | 40       |       |
| Err. cordale di divisione Fpz/8          | 8                      |       |          |       | 7             |       |          |       |

**Centricità Fr (Ø-sfera =3.5mm)**

⊙ : 17µm

20µm  
500:1

|                           |    |    |  |
|---------------------------|----|----|--|
| Err. di concentricità Fr  | 18 | 32 |  |
| Variab. spessore denta Rs |    |    |  |

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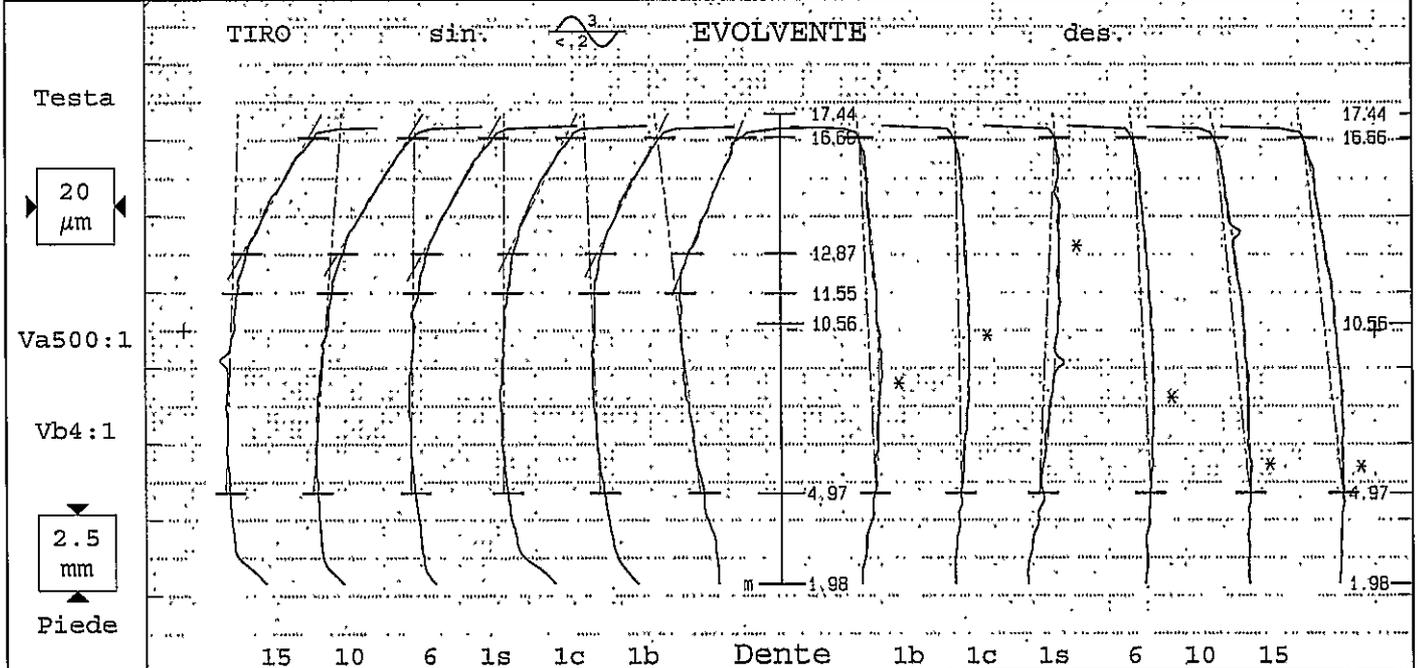


**GETRAG**

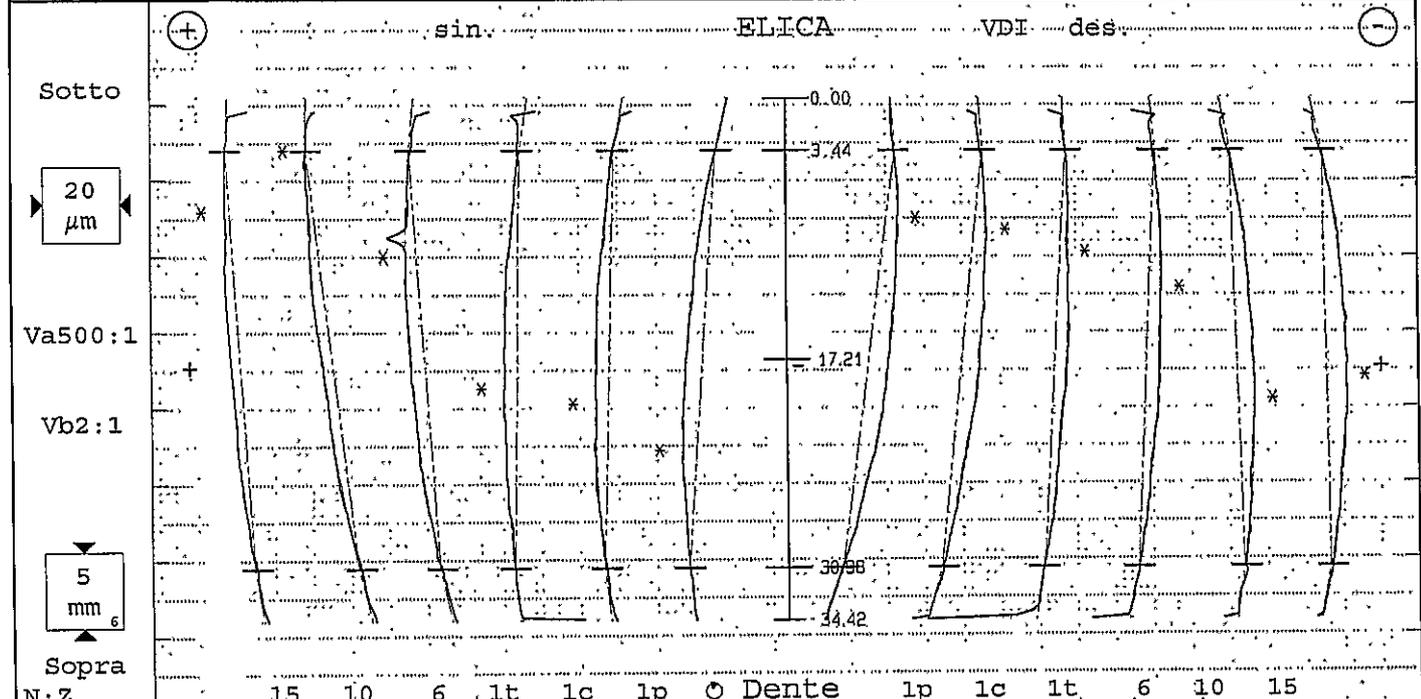
**Ruota cilindrica Evolvente/Elica**



|                     |                  |                  |                  |           |                    |                  |
|---------------------|------------------|------------------|------------------|-----------|--------------------|------------------|
| Nr. prog.:          | STI0410o05 0     | PNC35 B4784      | Controllore:     | turno D   | Data:              | 19.12.2014 13:01 |
| Denominazione:      | Output Shaft 1   |                  | Numero denti z   | 19        | Largh.fasc.dent. b | 34.42mm          |
| Numero disegno.:    | 250.6.3976.35-IF |                  | Modulo m         | 2.25mm    | Tratto evolv. La   | 6.58/11.69mm     |
| Comessa/serie nr.:  | PAPP PZ.4        |                  | Angolo pressione | 20°       | Tratto elica Ls    | 27.54mm          |
| Masch.Nr.:          | M001             | Spindel: FORMULA | Angolo elicale   | -29°      | Inizio elab. M1    | 4.97mm           |
| Untersuchungszweck: | Laufende Messung |                  | Ø Base db        | 45.1268mm | Palpatore Ø        | (#1) 1mm         |
| Werkzeug:           | Charge:          |                  | Ang. Base        | -27.102°  | Fat.scor.pr. x     | .6               |



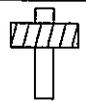
| Tolerance  | Medio   | Val.misur [µm] |             |     |     |     |     | Qual | Tolerance | Val.misur [µm] |        |               |   |    |    | Medio | Qual |  |  |
|------------|---------|----------------|-------------|-----|-----|-----|-----|------|-----------|----------------|--------|---------------|---|----|----|-------|------|--|--|
| fHm        | ±6      | -1             | Var 6       |     |     |     |     |      |           | ±6             | Var 9  |               |   |    |    |       | -6   |  |  |
| fHa        | ±8      | -1             | -2          | -4  | -1  | 0   | 2   | 6    |           | ±8             | -4     | -1            | 5 | -4 | -9 | -10   | -6   |  |  |
| Fa         | 4       |                | 5           | 5   | 3   | 2   | 3   | 6    |           | 4              | 6      | 4             | 6 | 6  | 10 | 11    | 8    |  |  |
| ffa        | 4       | 3              | 4           | 2   | 2   | 2   | 2   | 2    |           | 4              | 2      | 1             | 3 | 1  | 3  | 1     | 2    |  |  |
| Ca         | 0/4     | 2              | 2           | 2   | 2   | 2   | 2   | 1    |           | 0/4            | 3      | 3             | 3 | 2  | 3  | 3     | 3    |  |  |
| fXo        | -22/-14 | -19            | -19         | -18 | -19 | -16 | -18 | -20  |           |                | 0      | 0             | 0 | 0  | 0  | 0     | 0    |  |  |
| P/T-φ [mm] |         | 43.089         | [42.9/43.2] |     |     |     |     |      |           |                | 56.872 | [56.77/57.03] |   |    |    |       |      |  |  |



| N:Z | Tolerance | Medio | Var 21 |    |    |    |    |    | Qual | Tolerance | Var 18 |     |    |    |   |   | Medio | Qual |
|-----|-----------|-------|--------|----|----|----|----|----|------|-----------|--------|-----|----|----|---|---|-------|------|
| fHm | 8±6       | 8     | Var 21 |    |    |    |    |    |      | ±6        | Var 18 |     |    |    |   |   | -4    |      |
| fHs | 8±13      | 8     | 9      | 17 | 10 | -2 | -4 | -9 |      | ±13       | -18    | -14 | -8 | -6 | 4 | 2 | -4    |      |
| Fs  | 10        |       | 6      | 16 | 8  | 8  | 9  | 14 |      | 10        | 15     | 18  | 13 | 9  | 6 | 7 | 10    |      |
| ffs | 4         | 2     | 1      | 1  | 5  | 1  | 1  | 1  |      | 4         | 1      | 1   | 1  | 1  | 1 | 2 | 1     |      |
| Cs  | 2/6       | 4     | 3      | 3  | 4  | 3  | 4  | 4  |      | 2/6       | 5      | 5   | 3  | 4  | 4 | 5 | 5     |      |
| Bd  |           | -7    |        |    |    |    |    |    |      |           |        |     |    |    |   |   | -10   |      |

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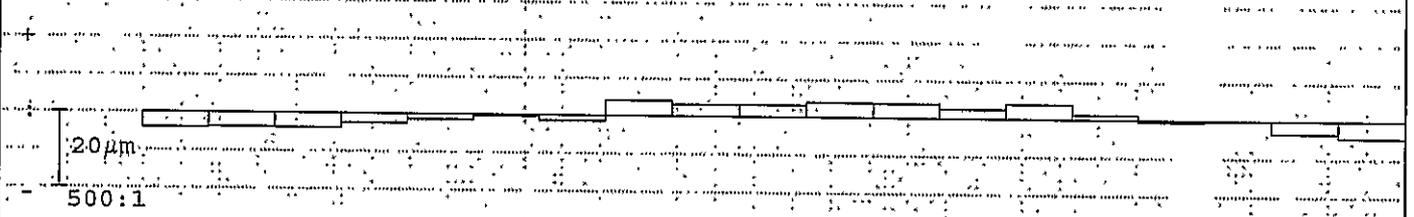




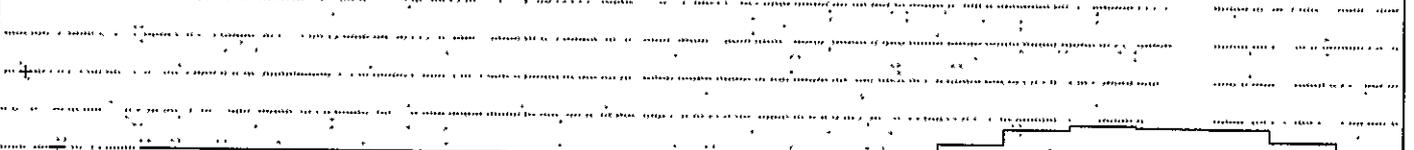
|                                   |                          |                      |                        |
|-----------------------------------|--------------------------|----------------------|------------------------|
| Nr. prog.: STI0410005 0           | PNC35 B4784              | Controllore: turno D | Data: 19.12.2014 13:01 |
| Denominazione: Output Shaft 1     | Numero denti z           | 19                   | Angolo pressione 20°   |
| Numero disegno.: 250.6.3976.35-IF | Modulo m                 | 2.25mm               | Angolo elica -29°      |
| Comessa/serie nr.: PAPP PZ.4      | Untersuchungszweck:      | Laufende Messung     |                        |
| Masch.Nr.: M001                   | Spindel: Formelwerkzeug: | Charge:              |                        |



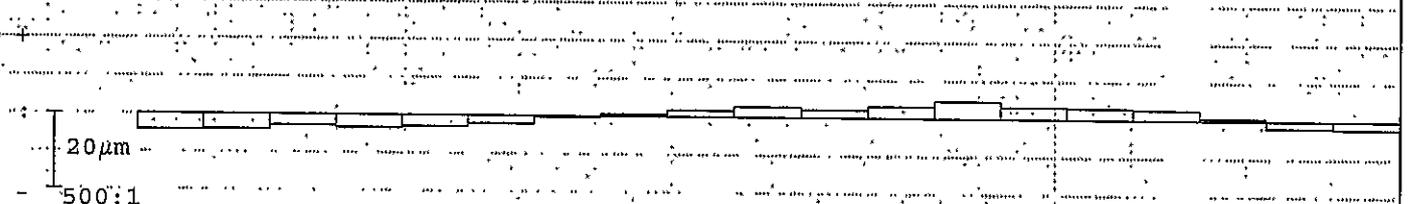
**Errori singoli di divisione fp fianco sinistro**



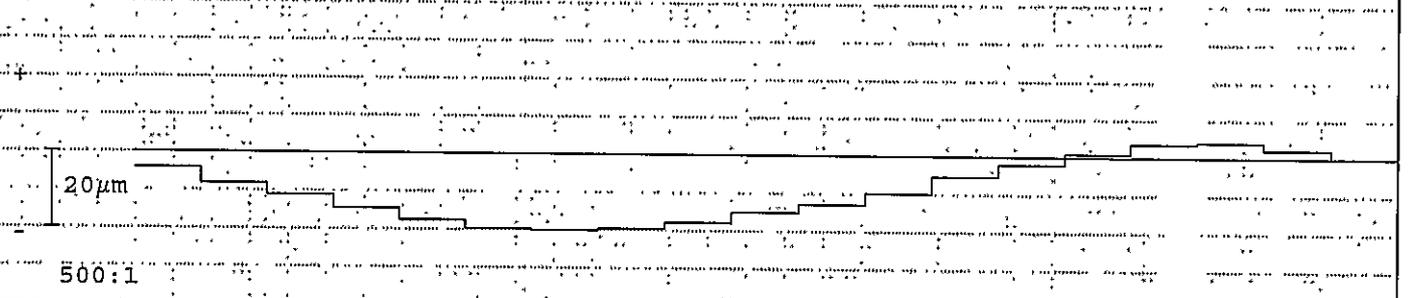
**Errore somma di divisione Fp fianco sinistro**



**Errori singoli di divisione fp fianco destro**



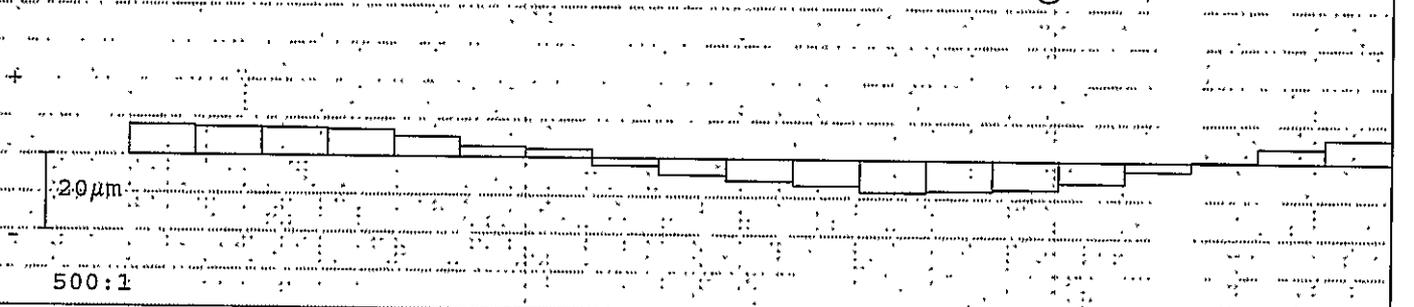
**Errore somma di divisione Fp fianco destro**



|                                   | Corso per misura divis.: 49.825 z=17.2mm |       |          |       |               |       |          |       |
|-----------------------------------|--|-------|----------|-------|---------------|-------|----------|-------|
|                                   | fianco sinistro / TIRO                   |       |          |       | fianco destro |       |          |       |
|                                   | Val. misur                               | Qual. | Val. amm | Qual. | Val. misur    | Qual. | Val. amm | Qual. |
| Gr. err. singoli divisione fp max | 4  |       | 14       |       | 5             |       | 14       |       |
| Gr. salto di passo fu max         | 6  |       | 18       |       | 2             |       | 18       |       |
| Scarto di divisione Rp            | 8  |       |          |       | 9             |       |          |       |
| Err. globale di divisione Fp      | 26                                       |       | 40       |       | 24            |       | 40       |       |
| Err. cordale di divisione Fpz/8   | 8  |       |          |       | 8             |       |          |       |

**Centricità Fr (Ø-sfera = 3.5mm)**

⊙ : 16µm



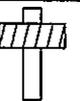
|                           |    |    |  |
|---------------------------|----|----|--|
| Err. di concentricità Fr  | 16 | 32 |  |
| Variaz. spessore dente Rs |    |    |  |

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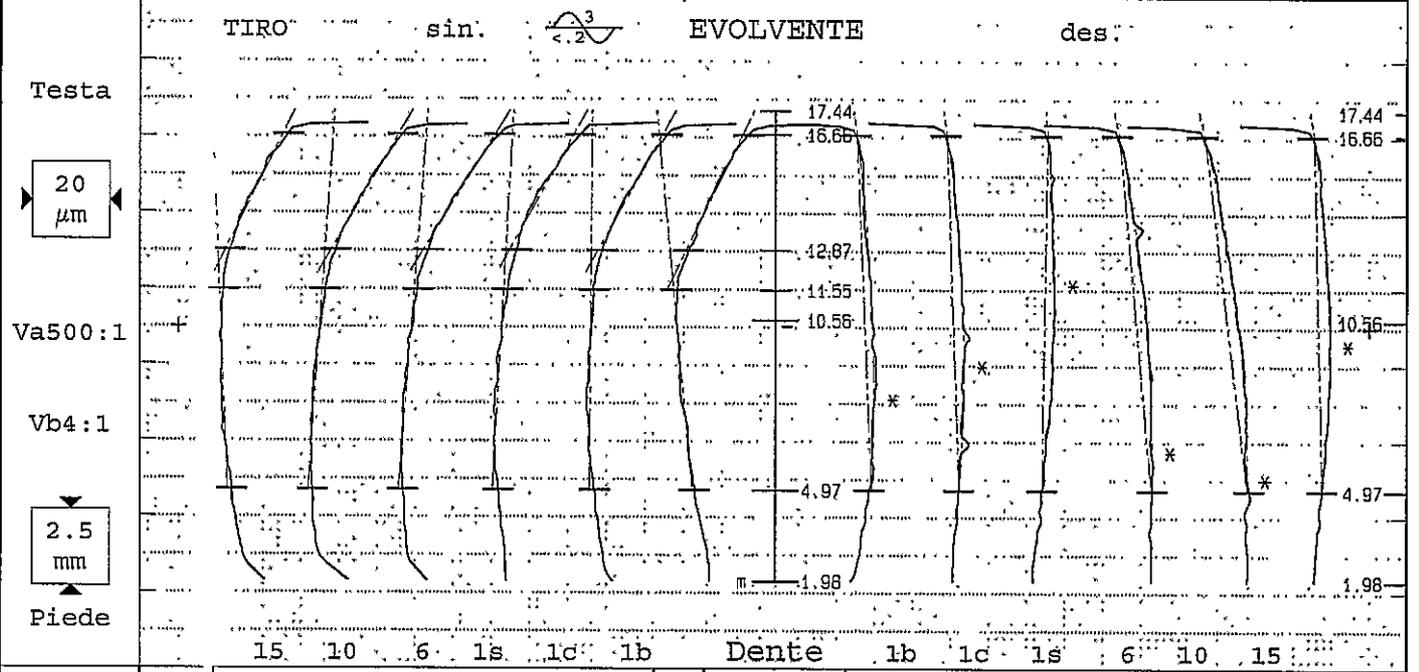


**GETRAG**

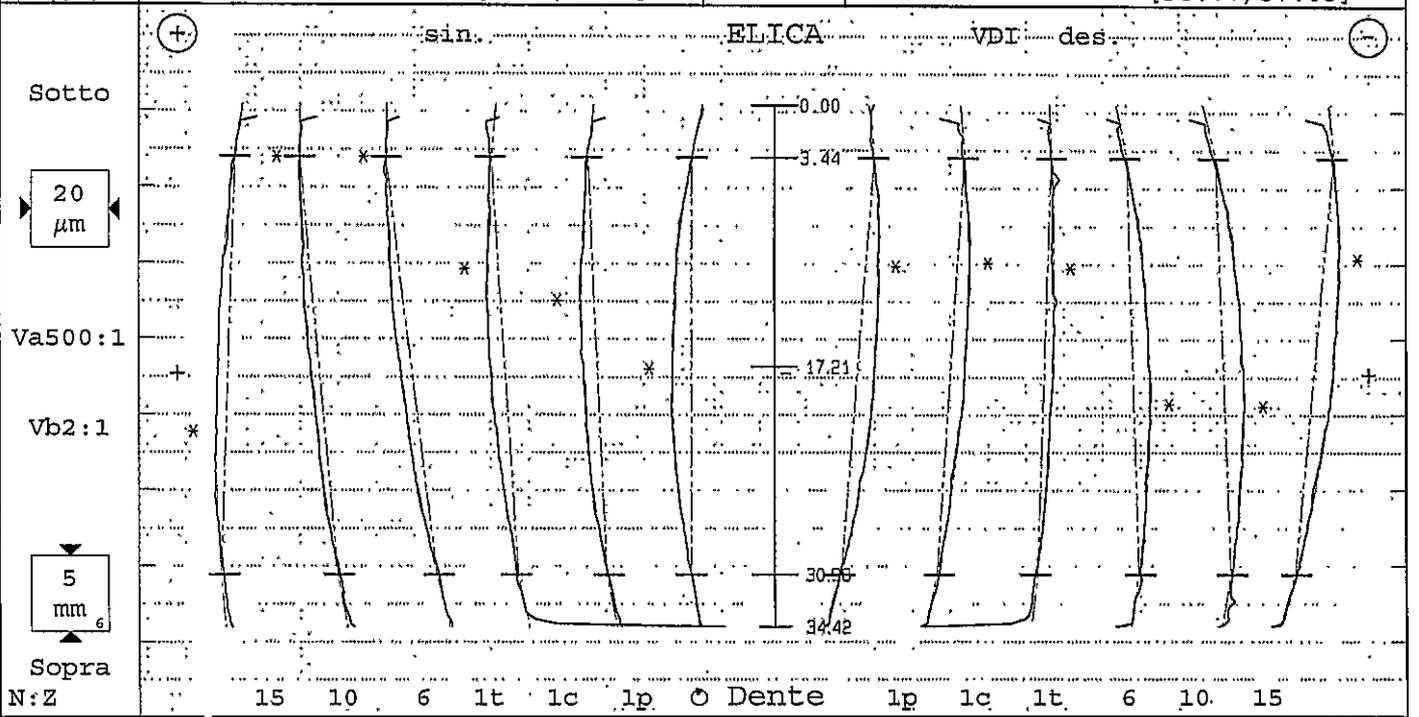
**Ruota cilindrica Evolvente/Elica**



|                     |                  |                  |                  |           |                    |                  |
|---------------------|------------------|------------------|------------------|-----------|--------------------|------------------|
| Nr. prog.:          | STI0410c05 0     | PNC35 B4784      | Controllore:     | turno D   | Data:              | 19.12.2014 13:31 |
| Denominazione:      | Output Shaft 1   |                  | Numero denti z   | 19        | Largh.fasc.dent. b | 34.42mm          |
| Numero disegno.:    | 250.6.3976.35-IF |                  | Modulo m         | 2.25mm    | Tratto evolv. la   | 6.58/11.69mm     |
| Commessa/serie nr.: | PAPP PZ.5        |                  | Angolo pressione | 20°       | Tratto elica LS    | 27.54mm          |
| Masch.Nr.:          | M001             | Spindel: Forming | Angolo elica     | -29°      | Inizio elab. M1    | 4.97mm           |
| Untersuchungszweck: | Laufende Messung |                  | Ø Base db        | 45.1268mm | Palpatore Ø        | (#1) 1mm         |
| Werkzeug:           | Charge:          |                  | Ang. Base        | -27.102°  | Fat.scor.pr. x     | .6               |



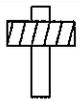
| Tolerance  | Medio   | Val. misur [µm] |             |     |     |     |     | Qual | Tolerance | Val. misur [µm] |        |               |   |    |     | Medio | Qual |  |
|------------|---------|-----------------|-------------|-----|-----|-----|-----|------|-----------|-----------------|--------|---------------|---|----|-----|-------|------|--|
| fHm        | ±6      | -2              | Var 6       |     |     |     |     |      |           | ±6              | Var 9  |               |   |    |     |       | -6   |  |
| fHa        | ±8      | -2              | 2           | -4  | -4  | -3  | 0   | 5    |           | ±8              | -4     | -3            | 1 | -8 | -11 | -2    | -6   |  |
| Fa         |         | 3               | 3           | 4   | 4   | 4   | 2   | 5    |           |                 | 6      | 7             | 4 | 10 | 12  | 5     | 9    |  |
| ffa        | 4       | 2               | 2           | 2   | 2   | 2   | 2   |      | 4         | 2               | 2      | 1             | 3 | 1  | 1   | 2     |      |  |
| Ca         | 0/4     | 2               | 2           | 2   | 1   | 2   | 2   | 1    | 0/4       | 2               | 3      | 2             | 3 | 3  | 3   | 3     |      |  |
| fKc        | -22/-14 | -18             | -18         | -17 | -18 | -16 | -18 | -22  |           | 0               | 0      | 0             | 0 | 0  | 0   | 0     |      |  |
| P/T-q [mm] |         | 43.086          | [42.9/43.2] |     |     |     |     |      |           |                 | 56.868 | [56.77/57.03] |   |    |     |       |      |  |



| Tolerance | Medio | Val. misur [µm] |        |    |    |   |   | Qual | Tolerance | Val. misur [µm] |        |    |    |   |   | Medio | Qual |  |
|-----------|-------|-----------------|--------|----|----|---|---|------|-----------|-----------------|--------|----|----|---|---|-------|------|--|
| fHSm      | 8±6   | 8               | Var 21 |    |    |   |   |      |           | ±6              | Var 18 |    |    |   |   |       | -3   |  |
| fHS       | 8±13  | 8               | -4     | 12 | 17 | 9 | 6 | 0    |           | ±13             | -11    | -9 | -5 | 4 | 5 | -13   | -3   |  |
| FS        |       | 10              | 10     | 10 | 14 | 8 | 5 | 8    |           |                 | 10     | 11 | 12 | 6 | 6 | 13    | 9    |  |
| ffS       | 4     | 1               | 1      | 1  | 1  | 1 | 1 | 1    | 4         | 1               | 1      | 3  | 1  | 1 | 1 | 1     |      |  |
| CS        | 2/6   | 3               | 3      | 2  | 3  | 4 | 4 | 5    | 2/6       | 5               | 4      | 2  | 4  | 5 | 5 | 5     |      |  |
| Bd        |       | -9              |        |    |    |   |   |      |           |                 |        |    |    |   |   | -6    |      |  |

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|                     |                          |                     |                  |                  |                  |
|---------------------|--------------------------|---------------------|------------------|------------------|------------------|
| Nr. prog.:          | STI0410005 0 PNC35 B4784 | Controllore:        | turno D          | Data:            | 19.12.2014 13:31 |
| Denominazione:      | Output Shaft 1           | Numero denti z      | 19               | Angolo pressione | 20°              |
| Numero disegno:     | 250.6.3976.35-IF         | Modulo m            | 2.25mm           | Angolo elica     | -29°             |
| Commessa/serie nr.: | PAPP PZ.5                | Untersuchungszweck: | Laufende Messung |                  |                  |
| Masch.Nr.:          | M001                     | Spindel:            | FORMULA          | 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

| Corso per misura divis. : 49.825 z=17.2mm | fianco sinistro / TIRO |       |          |       | fianco destro |       |          |       |
|---|------------------------|-------|----------|-------|---------------|-------|----------|-------|
|   | Val. misur             | Qual. | Val. amm | Qual. | Val. misur    | Qual. | Val. amm | Qual. |
| Gr. err. singoli divisione fp max         | 4                      |       | 14       |       | 5             |       | 14       |       |
| Gr. salto di passo fu max                 | 6                      |       | 18       |       | 2             |       | 18       |       |
| Scarto di divisione Rp                    | 8                      |       |          |       | 9             |       |          |       |
| Err. globale di divisione Fp              | 26                     |       | 40       |       | 24            |       | 40       |       |
| Err. cordale di divisione Fpz/8           | 8                      |       |          |       | 8             |       |          |       |

**Centricità Fr (Ø-sfera =3.5mm)**

⊙ : 16µm

20µm  
500:1

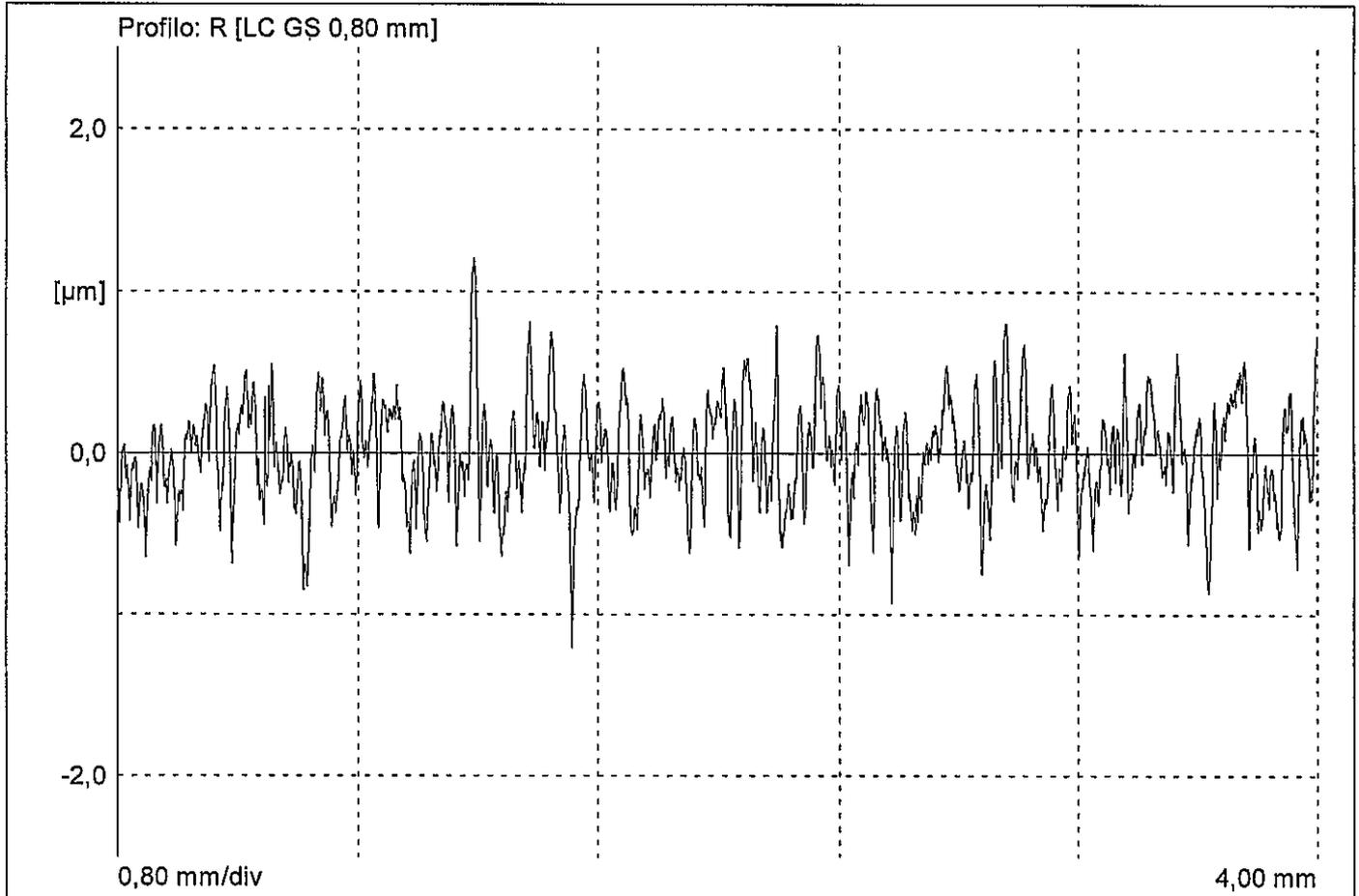
|                           |    |    |  |  |
|---------------------------|----|----|--|--|
| Err. di concentricità Fr  | 16 | 32 |  |  |
| Variaz. spessore dente Rs |    |    |  |  |

Via dei Ciclamini,4 Modugno (BA)

Sala Metrologica GPS5

|            |                   |
|------------|-------------------|
| Oggetto:   | OS 1              |
| Numero:    | 3976 PPAP PZ.1    |
| Operatore: | TURNO C           |
| Data, ora: | 18/12/2014, 11:39 |
| Nota:      | RZ DENTE          |
| Tastatore: | MFV-250 50        |

|           |                |
|-----------|----------------|
| MACCHINA: | MOA 416121 001 |
|-----------|----------------|



|      |        |    |
|------|--------|----|
| LT   | 5,60   | mm |
| LM   | 4,00   | mm |
| Z    | 5      |    |
| VB   | ±250,0 | µm |
| Ra   | 0,24   | µm |
| Rmax | 2,41   | µm |
| Rz   | 1,70   | µm |

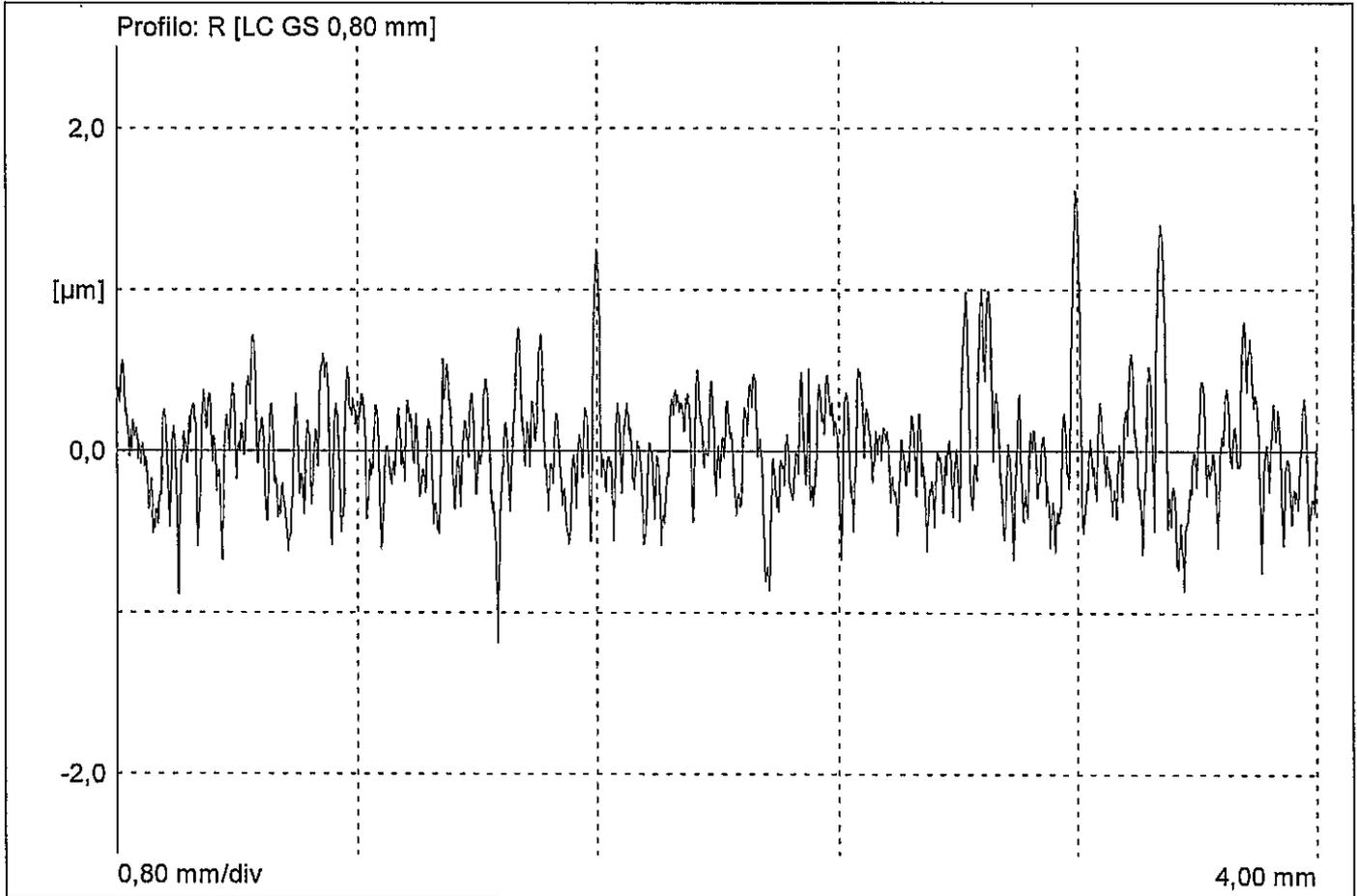
PERTHOMETER CONCEPT

Via dei Ciclamini,4 Modugno (BA)

Sala Metrologica GPS5

|            |                   |
|------------|-------------------|
| Oggetto:   | OS 1              |
| Numero:    | 3976 PPAP PZ.2    |
| Operatore: | TURNO C           |
| Data, ora: | 18/12/2014, 11:40 |
| Nota:      | RZ DENTE          |
| Tastatore: | MFV-250 50        |

|           |                |
|-----------|----------------|
| MACCHINA: | MOA 416121 001 |
|-----------|----------------|



|      |        |    |
|------|--------|----|
| LT   | 5,60   | mm |
| LM   | 4,00   | mm |
| Z    | 5      |    |
| VB   | ±250,0 | µm |
| Ra   | 0,26   | µm |
| Rmax | 2,43   | µm |
| Rz   | 2,13   | µm |

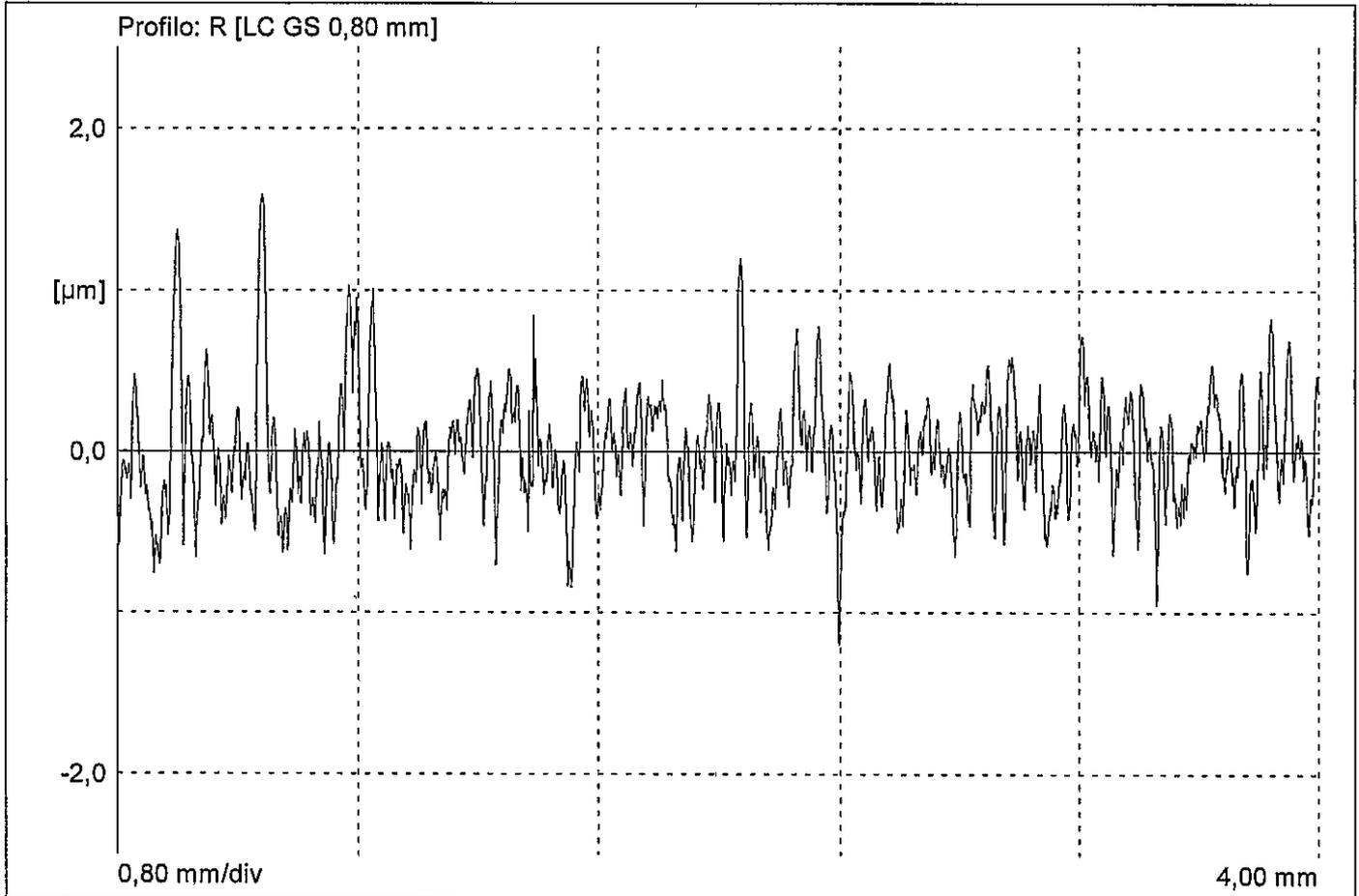
PERTHOMETER CONCEPT

Via dei Ciclamini,4 Modugno (BA)

Sala Metrologica GPS5

|            |                   |
|------------|-------------------|
| Oggetto:   | OS 1              |
| Numero:    | 3976 PPAP PZ.3    |
| Operatore: | TURNO C           |
| Data, ora: | 18/12/2014, 11:41 |
| Nota:      | RZ DENTE          |
| Tastatore: | MFW-250 50        |

|           |                |
|-----------|----------------|
| MACCHINA: | MOA 416121 001 |
|-----------|----------------|



|      |        |    |
|------|--------|----|
| LT   | 5,60   | mm |
| LM   | 4,00   | mm |
| Z    | 5      |    |
| VB   | ±250,0 | µm |
| Ra   | 0,26   | µm |
| Rmax | 2,39   | µm |
| Rz   | 1,97   | µm |

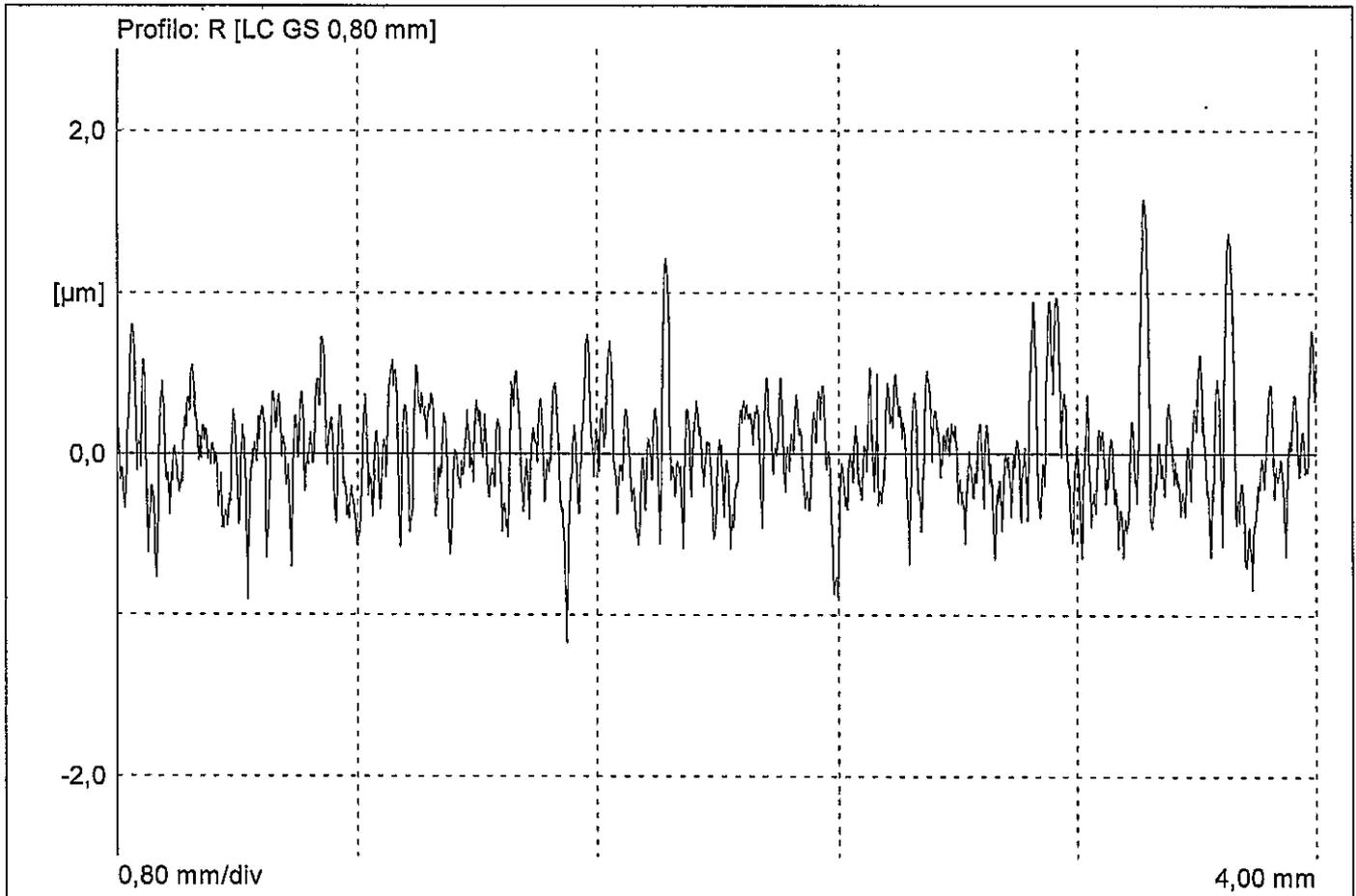
PERTHOMETER CONCEPT

Via dei Ciclamini,4 Modugno (BA)

Sala Metrologica GPS5

|            |                   |
|------------|-------------------|
| Oggetto:   | OS 1              |
| Numero:    | 3976 PPAP PZ.4    |
| Operatore: | TURNO C           |
| Data, ora: | 18/12/2014, 11:41 |
| Nota:      | RZ DENTE          |
| Tastatore: | MFV-250 50        |

|           |                |
|-----------|----------------|
| MACCHINA: | MOA 416121 001 |
|-----------|----------------|



|      |        |    |
|------|--------|----|
| LT   | 5,60   | mm |
| LM   | 4,00   | mm |
| Z    | 5      |    |
| VB   | ±250,0 | µm |
| Ra   | 0,26   | µm |
| Rmax | 2,41   | µm |
| Rz   | 1,96   | µm |

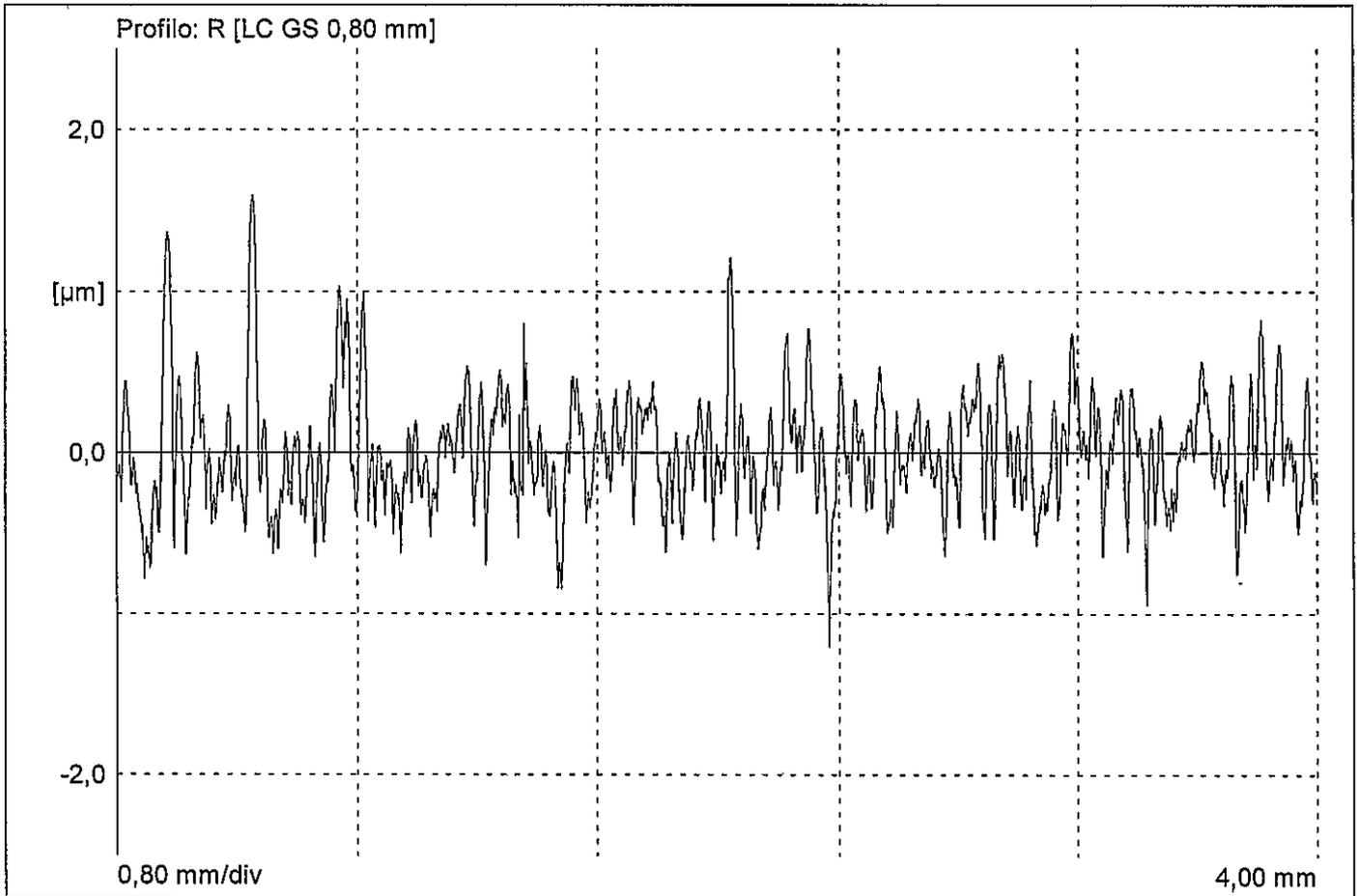
PERTHOMETER CONCEPT

Via dei Ciclamini,4 Modugno (BA)

Sala Metrologica GPS5

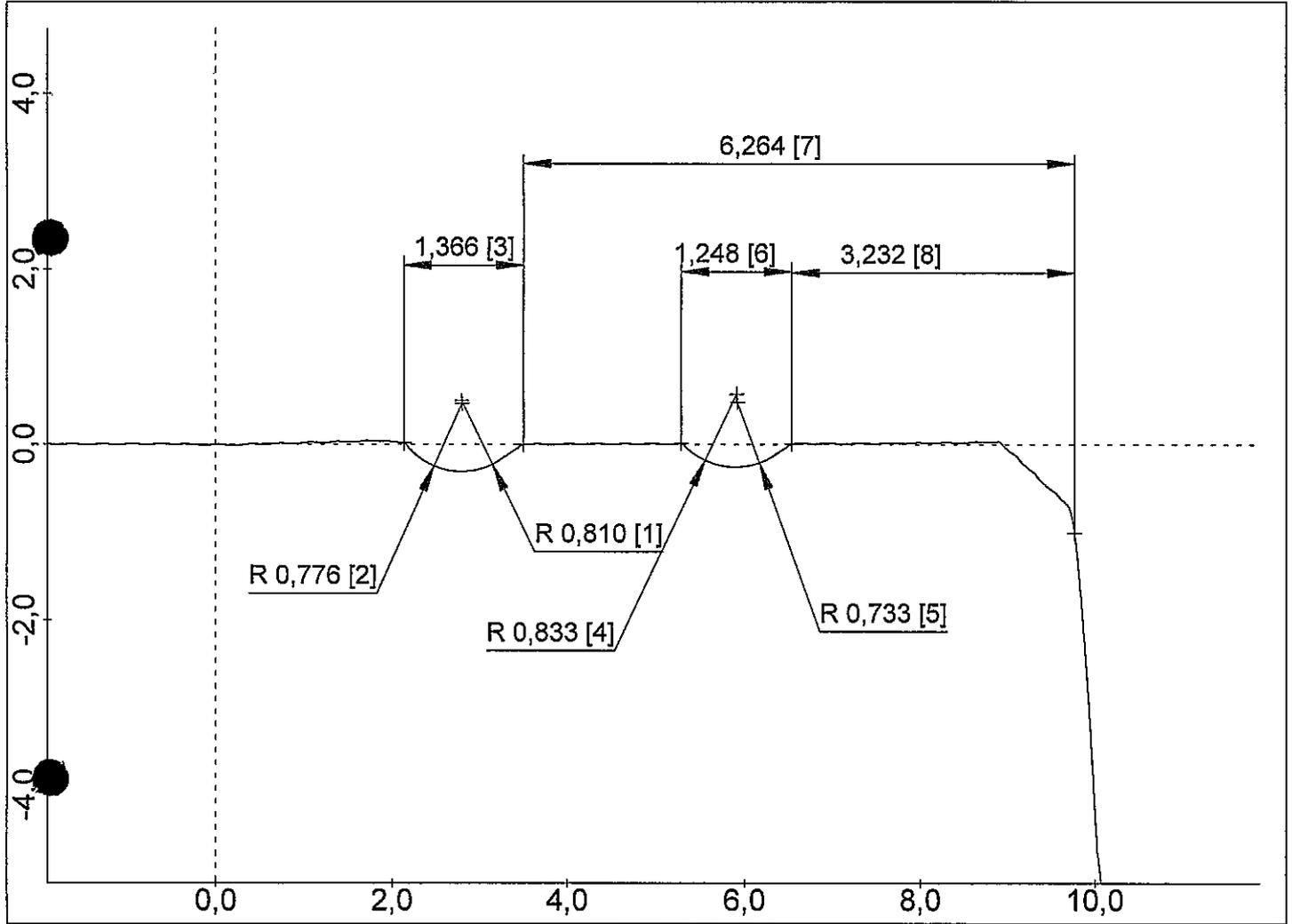
|            |                   |
|------------|-------------------|
| Oggetto:   | OS 1              |
| Numero:    | 3976 PPAP PZ.5    |
| Operatore: | TURNO C           |
| Data, ora: | 18/12/2014, 11:42 |
| Nota:      | RZ DENTE          |
| Tastatore: | MFV-250 50        |

|           |                |
|-----------|----------------|
| MACCHINA: | MOA 416121 001 |
|-----------|----------------|



|      |        |    |
|------|--------|----|
| LT   | 5,60   | mm |
| LM   | 4,00   | mm |
| Z    | 5      |    |
| VB   | ±250,0 | µm |
| Ra   | 0,26   | µm |
| Rmax | 2,41   | µm |
| Rz   | 1,95   | µm |

PERTHOMETER CONCEPT

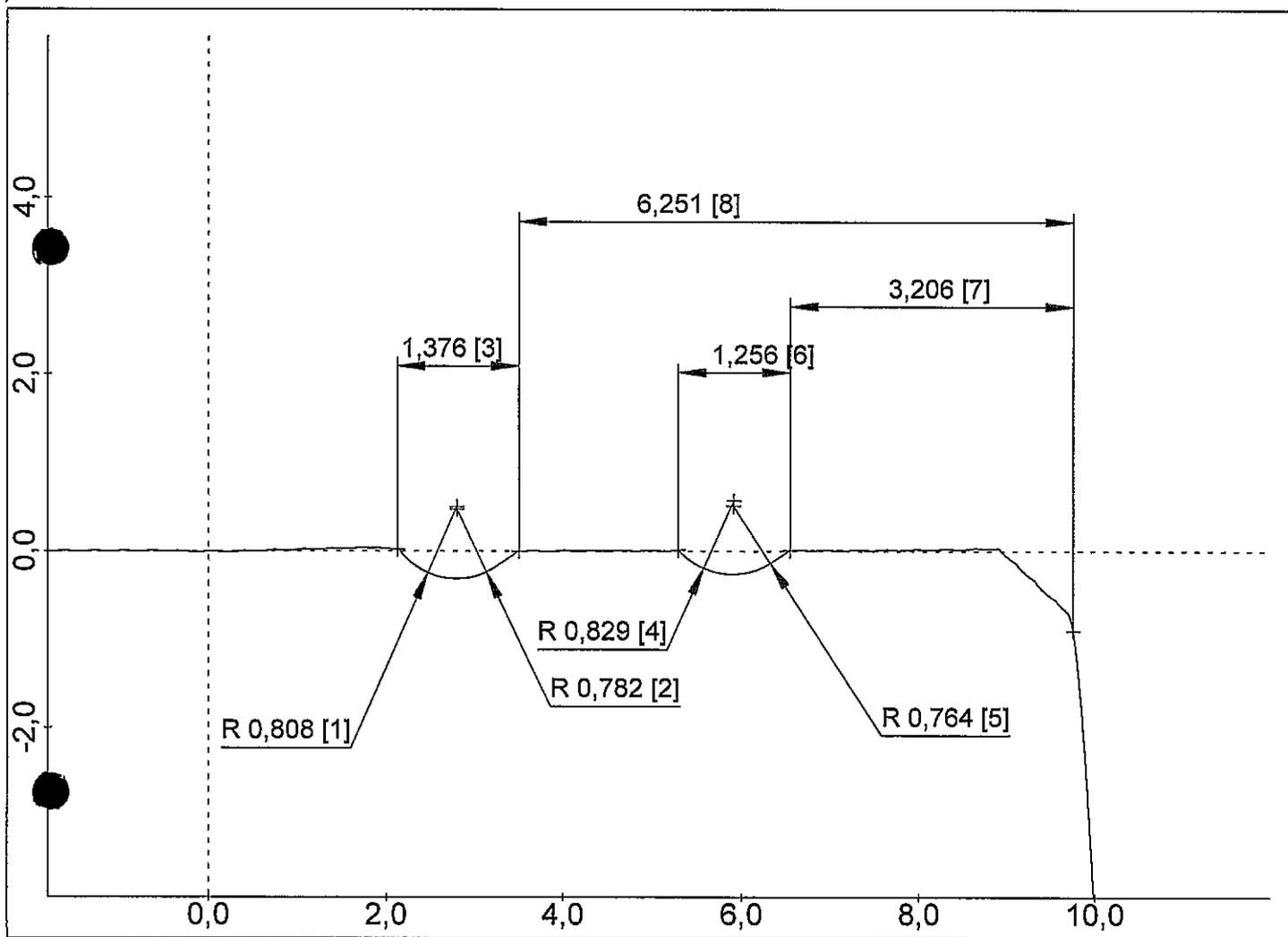


PERTHOMETER CONCEPT

Via dei Ciclamini 4, Modugno ( BA )

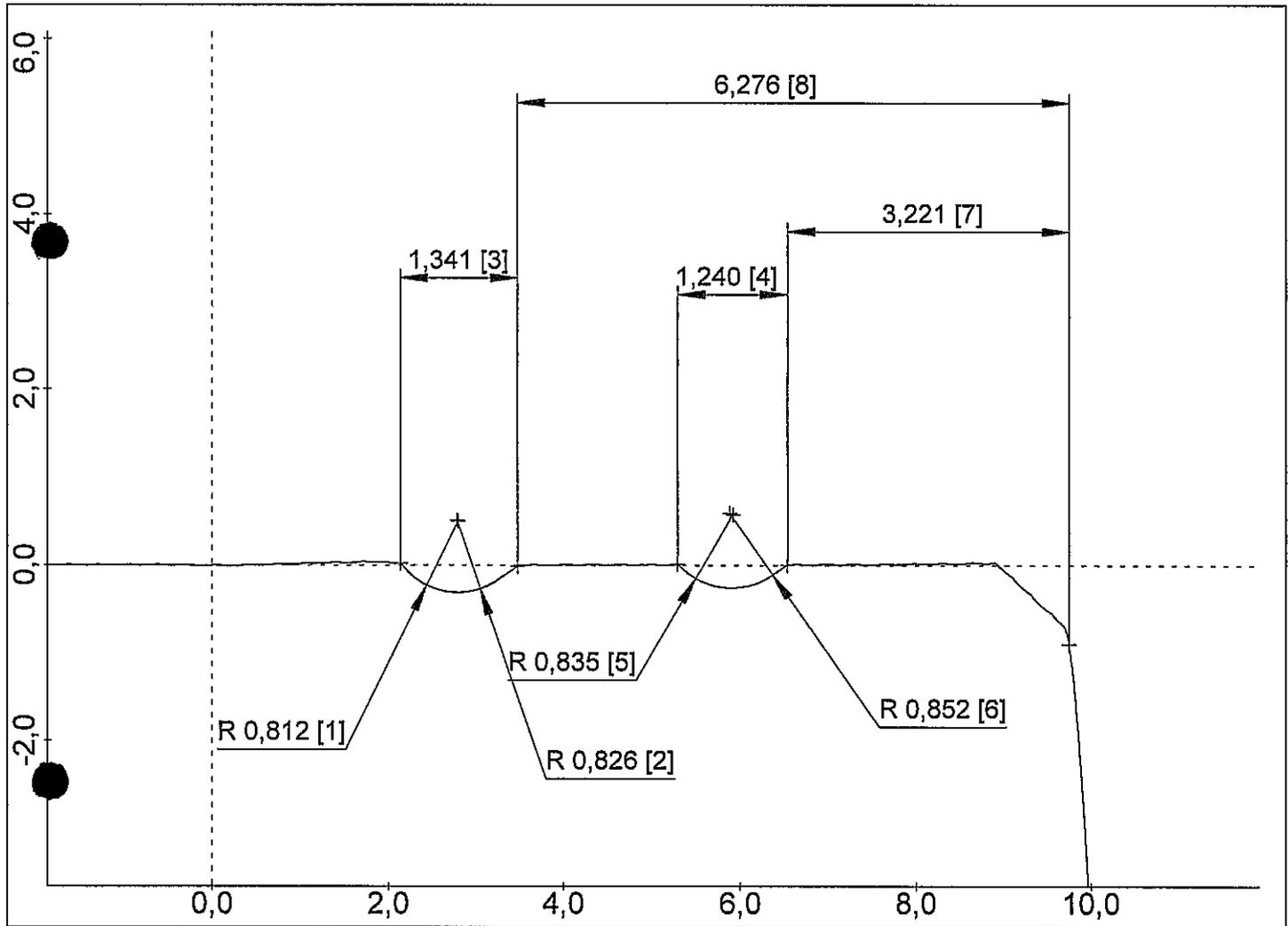
Oggetto: OS1  
Numero: 3976 N2  
Operatore: TURNO C  
Nota: PART M  
Tastatore: PCV 350 / 21 mm  
Data, ora: 13.12.2014,

Macchina: MOA 416120.001



PERTHOMETER CONCEPT

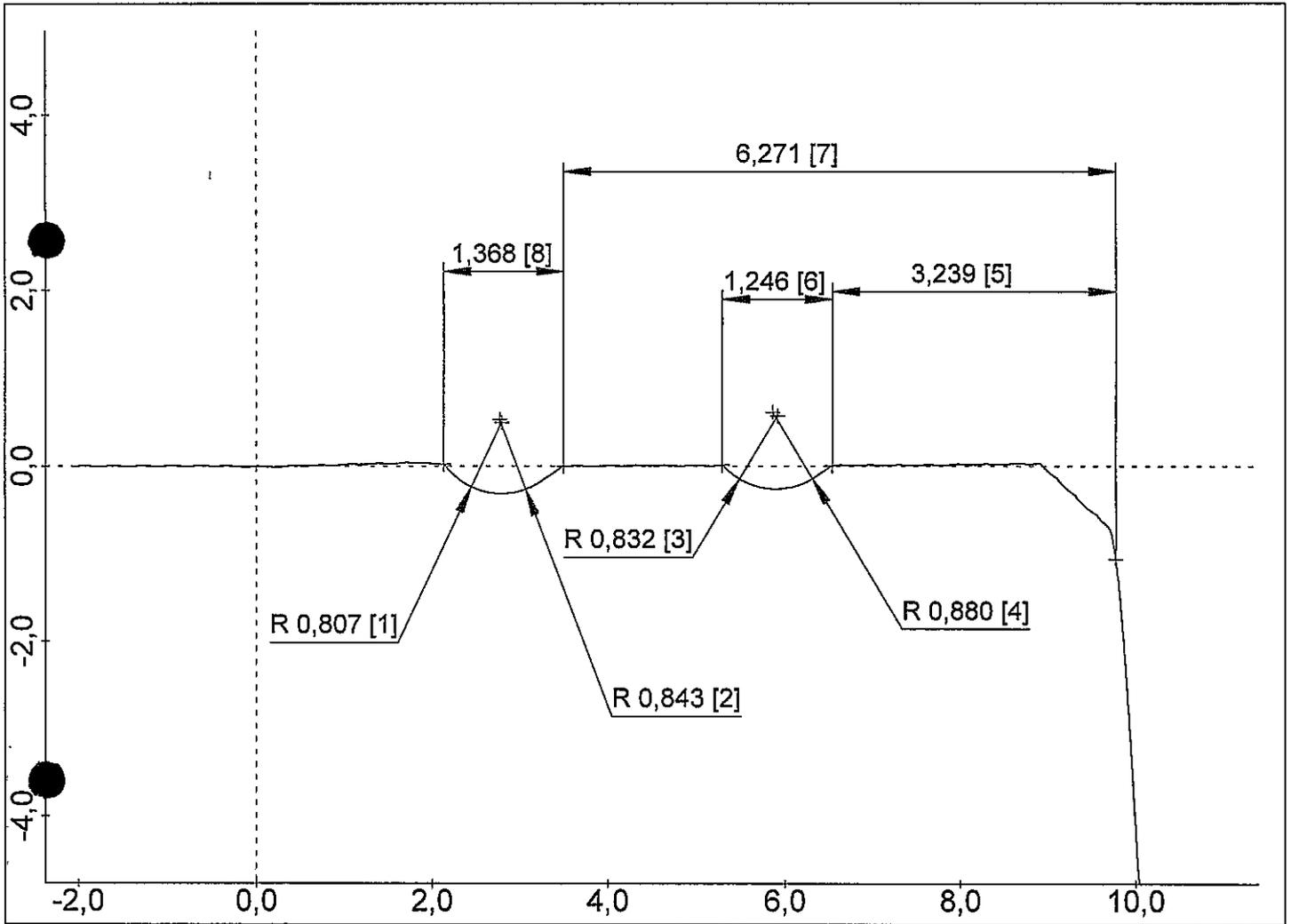
|            |                 |
|------------|-----------------|
| Oggetto:   | OS1             |
| Numero:    | 3976 N3         |
| Operatore: | TURNO C         |
| Nota:      | PART M          |
| Tastatore: | PCV 350 / 21 mm |
| Data, ora: | 13.12.2014,     |
| Macchina:  | MOA 416120 001  |



PERTHOMETER CONCEPT

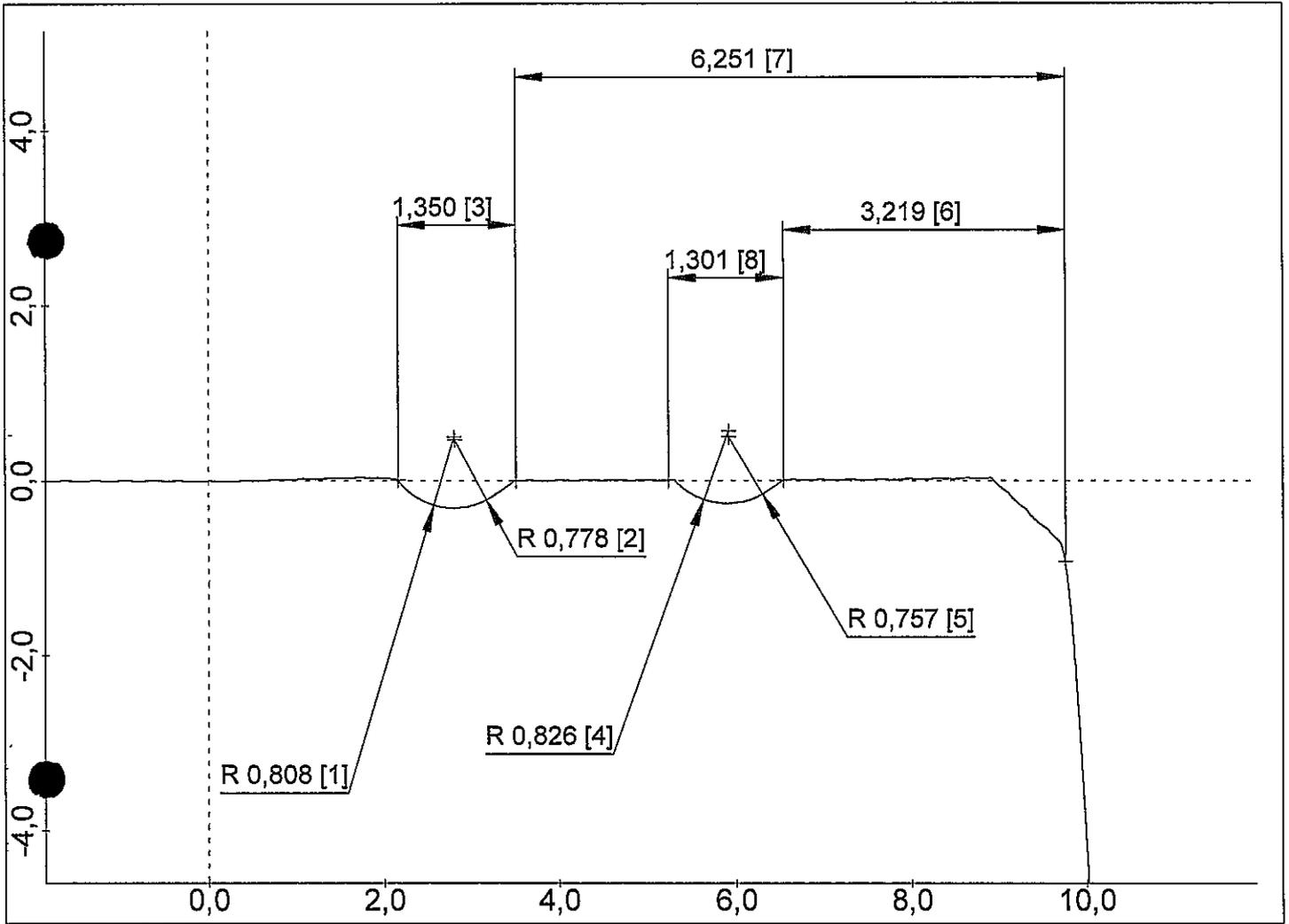
Oggetto: OS1  
Numero: 3976 N4  
Operatore: TURNO C  
Nota: PART M  
Tastatore: PCV 350 / 21 mm  
Data, ora: 13.12.2014,

Macchina: MOA 416120 001



PERTHOMETER CONCEPT

|            |                 |
|------------|-----------------|
| Oggetto:   | OS1             |
| Numero:    | 3976 N5         |
| Operatore: | TURNO C         |
| Nota:      | PART M          |
| Tastatore: | PCV 350 / 21 mm |
| Data, ora: | 13.12.2014,     |
| Macchina:  | MOA 416120.001  |



PERTHOMETER CONCEPT



|                                     |                              |                                 |       |   |
|-------------------------------------|------------------------------|---------------------------------|-------|---|
| Operatore:<br>Amministratore: super | Data:<br>16-12-2014<br>11:41 | Numero seriale di lotto:<br>Pz1 | Nr: 0 | Config. file: C:\Start\Archive\Z_PPAP\OS1_3976_EDISON\2506397635_Part M.mtl |
| Nota di programr                    |                              | Nota:                           |       |   |

| GRAP. | Descrizione  | Nominale | Misura | Scostamento | FUORI TOL. | TOL. INF. | TOL. SUP. |
|-------|--------------|----------|--------|-------------|------------|-----------|-----------|
| 11    | Part_M_D56.5 | 56.500   | 56.319 | -0.181      |            | -0.300    | 0.000     |



|                                     |                              |                                 |  |   |
|-------------------------------------|------------------------------|---------------------------------|--|---|
| Operatore:<br>Amministratore: super | Data:<br>16-12-2014<br>11:42 | Numero seriale di lotto:<br>Pz2 | Nr: 0  | Config. file: C:\Start\Archive\Z_PPAPIOS1_3976_EDISON\2506397635_Part M.mil |
| Nota di programm                    |                              | Unità di misura: [mm , °]       | Tipo: Z_PPAPIOS1_3976_EDISON<br>Modello: 2506397635_Part M |   |
| Nota:                               |                              |                                 |  |   |

| GRAP. | Descrizione  | Nominale | Misura | Scostamento | FUORI TOL. | TOL. INF. | TOL. SUP. |
|-------|--------------|----------|--------|-------------|------------|-----------|-----------|
| 11    | Part_M_D56.5 | 56.500   | 56.334 | -0.166      |            | -0.300    | 0.000     |



|                                     |                              |                                 |  |   |
|-------------------------------------|------------------------------|---------------------------------|--|---|
| Operatore:<br>Amministratore: super | Date:<br>16-12-2014<br>11:42 | Numero seriale di lotto:<br>Pz3 | Nr: 0  | Config. file: C:\Start\Archive\Z_PPAP\OS1_3976_EDISON\2506397635_Part M.mtl |
| Nota di programir                   |                              | Unità di misura: [mm , °]       | Tipo: Z_PPAP\OS1_3976_EDISON<br>Modello: 2506397635_Part M |   |
| Nota:                               |                              |                                 | Nota:  |   |

| GRAP. | Descrizione  | Nominale | Misura | Scostamento | FUORI TOL. | TOL. INF. | TOL. SUP. |
|-------|--------------|----------|--------|-------------|------------|-----------|-----------|
| 11    | Part_M_D56.5 | 56.500   | 56.348 | -0.152      |            | -0.300    | 0.000     |



|                                     |                              |                                 |       |  |
|-------------------------------------|------------------------------|---------------------------------|-------|--|
| Operatore:<br>Amministratore: super | Date:<br>16-12-2014<br>11:43 | Numero seriale di lotto:<br>Pz4 | Nr: 0 | Config. file: C:\Start\Archive\Z_PPAP\IOS1_3976_EDISON\2506397635_Part M.mtl |
|                                     |                              | Unità di misura: [mm , °]       |       | Tipo: Z_PPAP\IOS1_3976_EDISON<br>Modello: 2506397635_Part M                  |
| Nota di programr                    |                              |                                 | Nota: |  |

| GRAP. | Descrizione  | Nominale | Misura | Scostamento | FUORI TOL. | TOL. INF. | TOL. SUP. |
|-------|--------------|----------|--------|-------------|------------|-----------|-----------|
| 11    | Part_M_D56.5 | 56.500   | 56.312 | -0.188      |            | -0.300    | 0.000     |



|                                     |                              |                                 |       |   |
|-------------------------------------|------------------------------|---------------------------------|-------|---|
| Operatore:<br>Amministratore: super | Date:<br>16-12-2014<br>11:43 | Numero seriale di letto:<br>Pz5 | Nr: 0 | Config. file: C:\Start\Archive\Z_PPAP\OS1_3976_EDISON\2506397635_Part M.mtl |
|                                     |                              | Unità di misura: [mm, °]        |       | Tipo: Z_PPAP\OS1_3976_EDISON<br>Modello: 2506397635_Part M                  |

Nota di programr \_\_\_\_\_ Nota: \_\_\_\_\_

| GRAP.   | Descrizione  | Nominale | Misura | Scostamento | FUORI TOL. | TOL. INF. | TOL. SUP. |
|---|--------------|----------|--------|-------------|------------|-----------|-----------|
|  | Part_M_D56.5 | 56.500   | 56.308 | -0.192      |            | -0.300    | 0.000     |

## Istruzioni di controllo



PP Produzione GPS

Materiale: 2506397635  
 Descrizione: Albero di uscita 1 Stato: Rilasciato Produzione + Calcolo costi  
 Operazione: 0200 Levigatura di potenza Z= 19  
 Centro di lavoro: HNW15245 LEVIGATURA OS1

Indice del disegno finito:

24.11.2014 / Vito Fiore

Data emissione:

24.11.2014 / Vito Fiore

Data aggiornamento:

| Id. Sp. | Caratteristica                         | Misura nomin. | LTI    | LTS    | Strumento di controllo                               | Quantità | Frequenza RK1:           | Quantità | Frequenza RK2: | Quantità | Frequenza Sala di misura               | Cambio Ft. | Metodi di gestione / Documentazione |
|---------|--|---------------|--------|--------|--|----------|--------------------------|----------|----------------|----------|--|------------|-------------------------------------|
| 0002    | Controllo 1° pz sec. VBZ<br>450_804099 |               |        |        | MVZ-400249<br>EVOLVENTIMETRO                         |          |                          |          |                | 1        | 1° pz<br>2.3.1.1-R 2                   |            | Misu: controllo primo pezzo         |
| 0004    | aspetto, privo di bava, senza danno    |               |        |        | MOA-416121<br>RUGOSIMETRO TIPO PRK                   |          | pz per rack              |          |                | 1        | 1° pz<br>2.3.1.1-R 2                   |            | CR1: no documentazione              |
| 0012    | DIAMETRO MgK DA G. T. sfere 3.5 mm     | 54,986 mm     | 54,954 | 55,019 | MZA-401071<br>CALCOLATORE DI MISURA<br>E9066 MARPOSS | 3        | pz ogni 100 per macchina |          |                |          |  |            | CR1: calcolatore di misura          |
| 0020    | DIAGRAMMA COMPLETO CON SVERGOLAMENTO   | mm            |        |        | MVZ-400249<br>EVOLVENTIMETRO                         |          |                          |          |                | 1        | Ultimo PZ.<br>prima ravvivatu ra       |            | Misu: diagramma di dentatura        |
| 0022    | DIAGRAMMA COMPLETO CON SVERGOLAMENTO   | mm            |        |        | MVZ-400249<br>EVOLVENTIMETRO                         |          |                          |          |                | 1        | 1 pezzo ogni cambio parametri macchina |            | Misu: diagramma di dentatura        |
| 0030    | Oscillazione Fr                        | 0,000 mm      |        | 0,032  | MVZ-400249<br>EVOLVENTIMETRO                         |          |                          |          |                | 1        | pz a turno/mac.                        |            | Misu: diagramma di dentatura        |
| 0032    | Somma Passo Fp                         | 0,000 mm      |        | 0,040  | MVZ-400249<br>EVOLVENTIMETRO                         |          |                          |          |                | 1        | pz a turno/mac.                        |            | Misu: diagramma di dentatura        |
| 0042    | Sup. dente completamente levigata      |               |        |        |  | 8        | pz per rack              |          |                |          |  |            | CR1: no documentazione              |