

REPORT 16/254

Date: 02/11/16
Author: M. De Dato

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|---|------|
| Reason for analysis: <i>Motivo dell'indagine:</i> | PPAP |
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| Requester: <i>Richiedente:</i> | WLQ - Stefano Picerno |
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|--|---------------------|
| Part Name: <i>Nome particolare:</i> | Speed Gear 6th cpl. |
| Material: <i>Materiale:</i> | GCG_805000 Part 2 |
| State of part: <i>Stato del particolare:</i> | Finito |

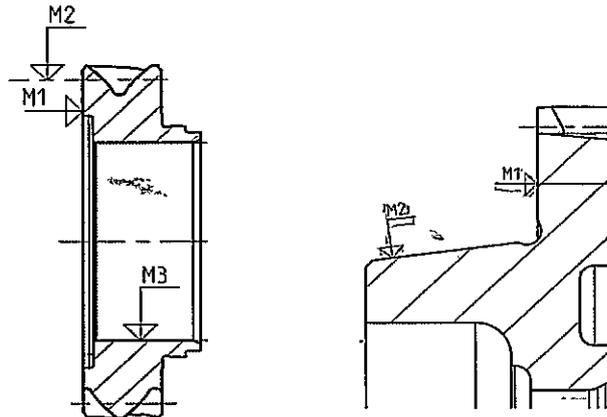
| | |
|-------------------------------------|---------------|
| P/N: | 251.1.1091.50 |
| S/N: | - |
| Customer: <i>Cliente:</i> | - |

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|-------------------------------------|----|
| Result: <i>Risultato:</i> | OK |
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| Distribution list: <i>Lista di distribuzione:</i> | WLQ - S. Picerno ELE - G. Pierro ME - L. Landriscina ME - G. Dachille |
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| Notes: <i>Note:</i> | |
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Drawing (Disegno)



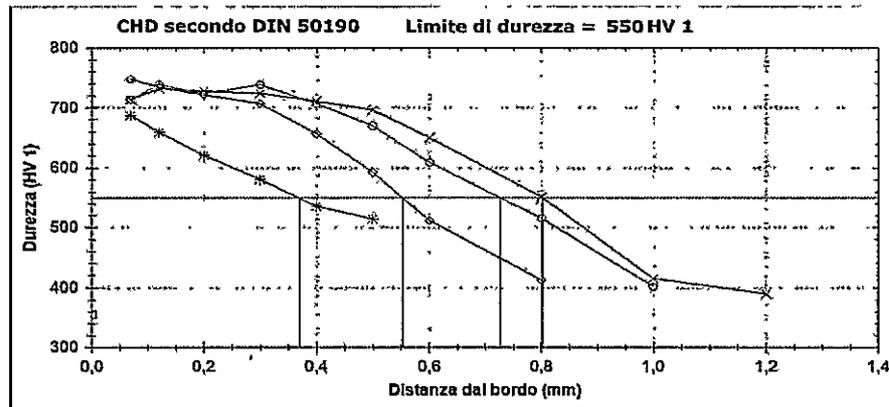
Picture 1: estratto del disegno dei particolari (ruota e corpo di aggancio), con posizione dei punti di misura per le caratteristiche metallurgiche.

Surface Hardness Verification (Verifica Durezza Superficiale)

| Scale | Position | Values [mm] | Range | Component |
|-------|----------|-------------|------------|-----------|
| HRC | M1 | 61,2 | - | Ruota |
| HRA | M1 | 81,5 | 80.5 + 2.5 | Ruota |

CHD and Core Hardness Verification (Verifica CHD e Durezza a Cuore)

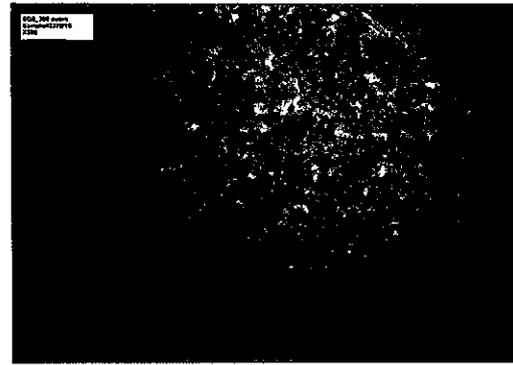
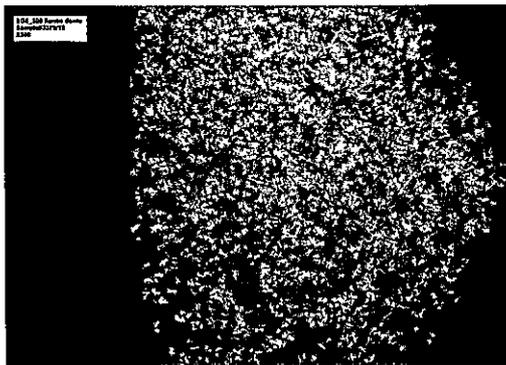
| | Sample | Position | Measured Value | Component | Range |
|--------------------|---------|----------|----------------|--------------|----------------|
| CHD 550 HV1 | 3375/16 | M2 | 0,73 | Ruota | 0.50 + 0.40 mm |
| CHD 550 HV1 | 3375/16 | M3 | 0,55 | Ruota | min 0.30 mm |
| Core hardness HV10 | 3375/16 | M4 | 355 | Ruota | ≥ 300 |
| CHD 550 HV1 | 3375/16 | M1 | 0,37 | Corpo d'agg. | 0.30 + 0.40 mm |
| CHD 550 HV1 | 3375/16 | M2 | 0,80 | Corpo d'agg. | min. 0.10 mm |



Picture 2: profili di durezza.

Analysis at Metallographic Microscope (Analisi al Microscopio Metallografico)

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|---------------------------------------|-----------------------|
| Sample # | |
| Gear - Tooth flank surface structure: | Austenite residua 10% |
| Gear - Tooth base core structure: | Martensite e bainite |



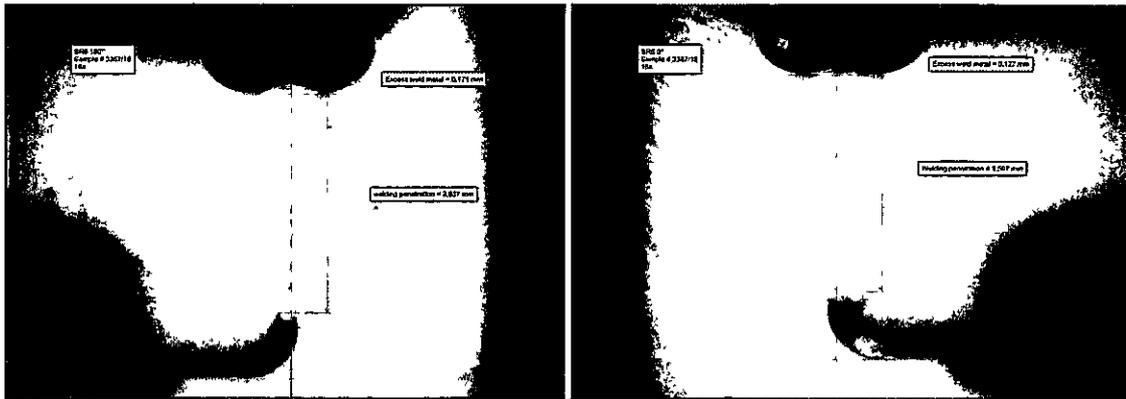
Picture 3: Microstruttura sul fianco dente (a sinistra) ed a cuore sulla base dente (a destra), ingrandimento 500x.

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Analysis at Stereomicroscope (Analisi allo Stereomicroscopio)

| Sample# | Penetration [mm] | | Excess weld metal [mm] | |
|---------|------------------|-------|------------------------|-------|
| | 0° | 180° | 0° | 180° |
| 3367/16 | 3,637 | 3,597 | 0,171 | 0,127 |
| | min 2.8 | | max 0,5 | |



Picture 4: Sezioni del giunto saldato a 180°.