■■■ GETRAG

Part Submission Warrant

312817

Part Name Speed Gear SR5	Customer Part Number	**250.1.4387.35**
Shown on Drawing No. 250.1.4387.35	Organization Part #	
Engineering Change Level c 002185 Maturity level 3	Dated	**16-nov-15**
Additional Engineering Changes	Dated	
Safety and/or Government Regulation ☑ Yes ☑ No	Purchase Order No.	Weight (kg) **0,4690**
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

RENAULT
Customer Name/Division

Buyer/Buyer Code

TYP 250
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
☐ Engineering Change(s)
☐ Tooling: Transfer, Replacement, Refurbishment, or additional
☐ Correction of Discrepancy
☐ Tooling Inactive > than 1 year

☐ Change to Optional Construction or Material
☐ Supplier or Material Source Change
☐ Change in Part Processing
☐ Parts Produced at Additional Location
☐ 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: **First PPAP**

Is each Customer Tool properly tagged and numbered?	☐ Yes ☐ No ☑ n/a	
Organization Authorized Signature *[signature]*		Date **18 May 2016**
Print Name **Maselli Vito Carlo**	Phone No. **tel 390805858300**	Fax No.
Title **Manifacturing Eng.Leader**	E-mail vitocarlo.maselli@magna.com	

FOR CUSTOMER USE ONLY (IF APPLICABLE)	
Part Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other	
Customer Signature *[signature]*	Date **27.05.16**
Print Name F. SPE 22A CAT8N23	Customer Tracking Number (optional)

March 2006   CFG-1001

Technische Sauberkeit / TECHNICAL CLEANLINESS:

Es gelten die Anforderungen nach GN 43-01
CLEANLINESS REQUIREMENTS OF THE GN 4340-1 HAVE TO BE ABIDED

Fuer Getrag internen Gebrauch / FOR GETRAG INTERNAL USE
Bauteiloberfläche fuer Pruefung / SURFACE TO PROVE:
249 cm²

Nähere Angaben zur Verzahnung
siehe Verzahnungsblatt
250.1.4388.35
FURTHER GEAR DATA SEE
DATA SHEET NUMBER
250.1.4388.35

Kugelgestrahlt nach GN 4110
SHOT PEENED ACCORDING TO GN 4110
in dem Bereich kugelgestrahlt, nach dem Schneuderrad-Verfahren
IN THIS AREA SHOT PEENED ACCORDING TO CENTRIFUGAL WHEEL-PROCESS

Prozessfolge
Verzahnung fraesen - haerten - strahlen - Verzahnungs-Hartbearbeitung
keine Spuren der Hartbearbeitung in der Zahnfußausrundung bzw.
im Zahnfuß zulaessig !
PROCESS SEQUENCE:
HOBBING OF TEETH - HARDENING - SHOT-PEENING - TEETH HARD MACHINING
NO MARKS OF HARD MACHINING IN THE ROOT FILLET RESPECTIVELY
ROOT PERMISSIBLE !

055.8.5373.00
250.1.4388.35

Teilkreis-∅
PITCH DIA
⌖ 0.1 A

SHORT WAVINESS 0.001 MAX.
FILTER 15-150 µm
Kurzwelligkeit 0.001 max.
bei Filter 15-150 µm
Nagellaufbahn
NEEDLE TRACK
Rz 3
Rmax 4

∅45.66 (-0.025 / -0.009)

// 0.007 B
○ 0.006
— 0.004

Konkav nicht zulaessig
CONCAVE NOT ALLOWED

(19.04±0.04)
23.44 (+0.03 / -0.08)
Kontrollmass
CONTROL MEASUREMENT
25.7±0.03

Rz 6.3
⌖ 0.03 A
⌖ 0.1 A

Rz 6.3
⌖ 0.03 A

Z
unmassstäblich
not to scale

0.5 max.
Schweissnahtlueberstand
Weld bead stand-off

360 -2°
S 2.8 TO FULL PENETRATION

Prozess ISO 4063 - 522

CHECKED ACCORDING ENGINEERING SPECIFICATION
S 3S7R-7M161-AA. DEVIATION FROM THIS SPECIFICATION:
LONGITUDINAL MICRO CRACKS IN THE WELDING MATERIAL ARE
PERMISSIBLE TO A TOTAL OF 2% AROUND THE CIRCUMFERENCE.

16

M 1:1 (--)

SPEED GEAR 5TH. CPL.
Schaltrad 5. Gang vst.

2501 38735

250438735
CAD-Modell: 2501 38735
3 A2

GETRAG

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Russo, Giacomo

Da:	Cacciapaglia, Gaetano
Inviato:	venerdì 8 aprile 2016 11:29
A:	Sette, Gianni; Selvaggio, Michelangelo; Russo, Giacomo; Cicirelli, Giacomo
Cc:	Mercadante, Vito
Oggetto:	nuova variante H5HT
Allegati:	2506438435_INPUTSHAFT_OUTER_Sheet_1_Change_Rev_20160119141843_ID_1.pdf; 2501438735_SPEED_GEAR_5TH_CPL_Sheet_1 _Change_Rev_20160119141013_ID_2.pdf; 2501438835_SPEED_GEAR_5TH_Sheet_1_Change_Rev_20160119141520_ID_3.pdf

Cari colleghi,
in giornata completiamo le ultime lavorazioni del lotto di SR5 e IS2 in oggetto. (allego nuovamente i rispettivi disegni)

Prego Gianni e Michelangelo di asicurarsi che il sistema delle richieste e i relativi programmi siano aggiornati.

@Giacomi's sentiamoci per le attività PPAP

Cordiali saluti / Best regards / Meilleures Salutations / Mit freundlichen Grüßen / Selamlar / 真挚问候

Gaetano Cacciapaglia
Manufacturing Process Engineer, GETRAG
Magna Powertrain

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SPEED GEAR 5TH

GETRAG

250/4 38835 3 A1

Aussenverzahnung / EXTERNAL GEAR
Zahnwelle/ SPLINE DATA EXTERNAL

Zahnprofil
Tooth Profile

Kanten an Laufverzahnungen\Tooth chamfers

Identification Mark 00 engraved on this surface
Dimensions guideline (not to be measured)
- Marking depth 0.5mm max.
- Allowed height of positive material: 0.2mm max.
- Distance from any chamfer 0.5mm min.

In diesem Bereich frei von Einsatz
IN THIS AREA FREE OF CARBURIZING

einsatzgehaertet und angelassen
CASE HARDENED AND TEMPERED

Aufwurf nicht zulaessig
BULGING NOT ALLOWED

LEFT_links

Aussenverzahnung / EXTERNAL GEAR
Zahnwelle / SPLINE DATA EXTERNAL

Bezugsdurchmesser / REFERENCE DIAMETER d_B				
Modul / NORMAL MODULE m_n			1.700	
Zaehnezahl / NUMBER OF TEETH z			38	
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n			17.5°	
Schrägungswinkel / HELIX ANGLE β			26.0°	
Bezugsprofil / BASIC RACK				
Richtung / HAND OF HELIX			LEFT, LINKS	
Profilverschiebungsfaktor / ADDENDUM MODIFICATION $x \cdot m_n$			-0.140	
Qualitaet / GEAR TOOTH QUALITY			8	
Toleranzklasse / TOLERANCE CLASS				
Zahnweite / TOOTH DIMENSION	effective	max.	2.582	
Zahnweite / TOOTH DIMENSION			2.552	
Zahndicke / TOOTH THICKNESS s_n	max.		2.50	2.552
	min.		75.116	75.277

Kanten an Laufverzahnungen / Tooth chamfers
unmassstäblich / not to scale

Uebergaenge nach GN 8101 / Transitions according to GN 8101

Zahnprofil / Tooth Profile (unmassstäblich / not to scale)

Beginn des Kopfkantenbruchs / Start of tip chamfer

in diesem Bereich frei von Einsatz / IN THIS AREA FREE OF CARBONIZING

Ø66±0.5
Ø55±0.3
4.5±0.05
(14.9±0.1)
3min
R0.8
X 10:1

Ø57.065±0.015
Ø45 G6
Form bei eb.g / ANY FORM
0.7±0.4
1±0.5
30°
5°
R1.5±0.5
1.5±0.3
19.04±0.1
14.9±0.1
(25.71±0.03)
2.5±0.1
Ø67.1 Fusskreis-Ø / ROOT DIAMETER
Ø78.05 Kopfkreis-Ø / TIP DIAMETER
Ø57±0.5

Rz16
Rz25
Rz40
Rmax 8
Leistungsgehont / POWERHONED
Aufwurf nicht zulaessig / BULGING NOT ALLOWED

Identification Mark '00' engraved on this surface.
- Dimensions guideline (not to be measured).
- Marking depth: 0.5mm max.
- Allowed height of positive material: 0.2mm max.
- Distance from any chamfer: 0.5mm min.

0.5x5°
(25.71±0.03)

Ø56.5
Ø55.7
R0.4
10°
Y 5:1

vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.4387.35
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.4387.35

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

einsatzgehaertet und angelassen
CASE HARDENED AND TEMPERED
M1 (Oberflaechenhaerte): 80.5-2.5 HRA
M1 (CASE HARDNESS): 80.5-2.5 HRA
M2 (Zahnflanke): CHD (Eht) 550= 0.5-0.4
M2 (TOOTH FLANK): CHD (Eht) 550= 0.5-0.4
M3 (Bohrung): CHD (Eht) 550= 0.3 min.
M3 (BORE): CHD (Eht) 550= 0.3 min.
M4 (Kernhaerte): min. 300 HV10
M4 (INSIDE BASE OF TOOTH): min. 300 HV10

SPEED GEAR 5TH
CG.805000.02.20M-CrS5
250143 8835
A1
GETRAG