312807

GETRAG

Part Submission Warrant

Part Name	Speed Gear 5	Customer Part Number	250.1.3779.35
Shown on Drawing No.	250.1.3779.35	Organization Part #	
Engineering Change Level	c C000911_MIP_1	Dated	14-apr-16
Additional Engineering Changes		Dated	

Safety and/or Government Regulation ☐ Yes ☑ No Purchase Order No. Weight (kg) 0.3600

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

City	Region	Postal Code	Country
MODUGNO	BARI	70026	ITALY

CUSTOMER SUBMITTAL INFORMATION

Customer Name/Division

Buyer/Buyer Code

DCT250

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 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: **Optional ID groove added (used only in case of EP parts)**

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

Organization Authorized Signature Date 27/05/2016

Print Name Camarda Ettore Phone No. tel 390805858220 Fax No.

Title Area 1 Manager E-mail ettore.camarda@magna.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other

Customer Signature Date 27/05/16

Print Name Customer Tracking Number (optional)

GETRAG

Part Submission Warrant

Part Name: Speed Gear 5 | Customer Part Number: 250.1.4225.37

Shown on Drawing No.: 250.1.4225.37 | Organization Part #:

Engineering Change Level: c C000911_MIP_1 | Dated: 14-apr-16

Additional Engineering Changes: | Dated:

Safety and/or Government Regulation: ☐ Yes ☑ No | Purchase Order No.: | Weight (kg): 0.3730

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

Customer Name/Division

Buyer/Buyer Code

DCT250

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 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: **Optional ID groove added (used only in case of EP parts)**

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

Organization Authorized Signature: Camarda | Date: 27/05/2016

Print Name: Camarda Ettore | Phone No.: tel 390805858220 | Fax No.:

Title: Area 1 Manager | E-mail: ettore.camarda@magna.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other

Customer Signature: [illegible] | Date: 27/05/16

Print Name: | Customer Tracking Number (optional):

COM

Part Submission Warrant

Part Name: RUOTA DENTATA LIBERA SM
Customer Part Number: 2501422580
Shown on Drawing No.:
Organization Part #:
Engineering Change Level: "A"
Dated: 28/05/2013
Additional Engineering Changes:
Dated:
Safety and/or Government Regulation ☐ Yes ☐ No
Purchase Order No.:
Weight (kg):
Checking Aid No.:
Checking Aid Engineering Change Level:
Dated:

ORGANIZATION MANUFACTURING INFORMATION

COM scpa
Organization Name & Supplier/Vendor Code

ss 168 Km 30+100
Street Address

Palazzo S.G. (PZ) | 85026 | Italy
City | Region | Postal Code | Country

CUSTOMER SUBMITTAL INFORMATION

GETRAG (BARI)
Customer Name/Division

ING. GIGLI
Buyer/Buyer Code

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:

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

Organization Authorized Signature: [signature] Date: 22/09/2015

Print Name: Rubino Michele Phone No. 0972/44539 Fax No. 0972/45713

Title: Resp. CQ E-mail: antonio.rubino@com-spa.it

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other

Customer Signature: [signature] Date: 30/09/2015

Print Name: GIACOMO RUSSO - QPE - GPS1 Customer Tracking Number (optional): B/WLQ4-250-LU-13-0009

GETRAG
GETRAG S.p.A.
Via degli Ciclamini, 4
70026 Modugno (Bari)
Tel. +39 080 5858...
Fax +39 080 5858...

March 2006 CFG-1001

GETRAG

Part Submission Warrant

Part Name	Speed Gear 5	Customer Part Number	250.1.3645.37
Shown on Drawing No.	250.1.3645.37	Organization Part #	
Engineering Change Level	d C000911_MIP_1	Dated	14-apr-16
Additional Engineering Changes		Dated	

Safety and/or Government Regulation ☐ Yes ☑ No Purchase Order No. Weight (kg) 0.3970

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

Customer Name/Division

Buyer/Buyer Code

DCT250

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 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: Optional ID groove added (used only in case of EP parts)

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

Organization Authorized Signature Date 27/05/2016

Print Name Camarda Ettore Phone No. tel 390805858220 Fax No.

Title Area 1 Manager E-mail ettore.camarda@magna.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other

Customer Signature Date 27/05/16

Print Name Customer Tracking Number (optional)

Drawing update from index "c" to "d"

Short description:

d	2x	C000911_MIP_1	Ansicht Y: Optionale Erkennungsrille hinzu/ VIEW Y: OPTIONAL ID GROOVE ADDED	20160414

	PPAP Requirements	Required	Note	PPAP Docs updated
1	Design Records	Yes		Yes
2	Authorized Engineering change documents	see dwg	see dwg	Yes
3	Customer Engineering approval			
4	DFMEA			
5	Process flow diagram(s)			
6	PFMEA	NO Groove on supplier PFMEA		
7	Control plan	NO Groove on supplier Control Plan		
8	Measurement system analysis studies			
9	Dimensional results	NO Groove on supplier Dim. Res.		
10	Records of Material / Performance test results			
11	Initial process studies			
12	Qualified laboratory documentation			
13	Appearance Approval Report (A.A.R.)			
14	Sample Production Parts	Yes		Yes
15	Master sample	Yes		Yes
16	Checking aids			
17	Customer-Specific Requirements			
18	Part Submission Warrant (PSW)	Yes		Yes

	Other requirements			
1	PSW Raw part			
2	PSW E.P. part	Yes		Yes
3	PSW Engagement Rings			

GETRAG

Part Submission Warrant

Part Name	Speed Gear 5	Customer Part Number	250.1.4388.35
Shown on Drawing No.	250.1.4388.35	Organization Part #	
Engineering Change Level	a C000911_MIP_1	Dated	14-apr-16
Additional Engineering Changes		Dated	

Safety and/or Government Regulation ☐ Yes ☑ No   Purchase Order No. ______   Weight (kg) 0.3720

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

______
Customer Name/Division

______
Buyer/Buyer Code

DCT250
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 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: Optional ID groove added (used only in case of EP parts)

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

Organization Authorized Signature Camarda   Date 27/05/2016

Print Name Camarda Ettore   Phone No. tel 390805858220   Fax No. ______

Title Area 1 Manager   E-mail ettore.camarda@magna.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other ______

Customer Signature ______   Date 27.05.16

Print Name ______   Customer Tracking Number (optional) ______

COM

Part Submission Warrant

Part Name: RUOTA DENTATA SRS - FORMIA Customer Part Number: 2501364580
Shown on Drawing No. Organization Part #
Engineering Change Level: IIC* - T72076 Dated: 28/05/2012
Additional Engineering Changes Dated
Safety and/or Government Regulation ☐ Yes ☐ No Purchase Order No. 5500030768 Weight (kg)
Checking Aid No. Checking Aid Engineering Change Level: C Dated: 28/5/13

ORGANIZATION MANUFACTURING INFORMATION

COM scpa
Organization Name & Supplier/Vendor Code

ss 168 Km 30+100
Street Address

Palazzo S.G. (PZ) 85026 Italy
City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

Customer Name/Division

GETRAG
Buyer/Buyer Code

ING. GIGLI
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
- ☐ Other - please specify below ....
- ☐ Change to Optional Construction or Material
- ☐ Supplier or Material Source Change
- ☐ Change in Part Processing
- ☐ Parts Produced at Additional Location

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:

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

Organization Authorized Signature: [signature] Date: 4/7/13
Print Name: Rubino Antonio Phone No. 0972/44539 Fax No. 0972/45713
Title: Resp. CQ E-mail: antonio.rubino@com-scpa.it

FOR CUSTOMER USE ONLY (IF APPLICABLE)

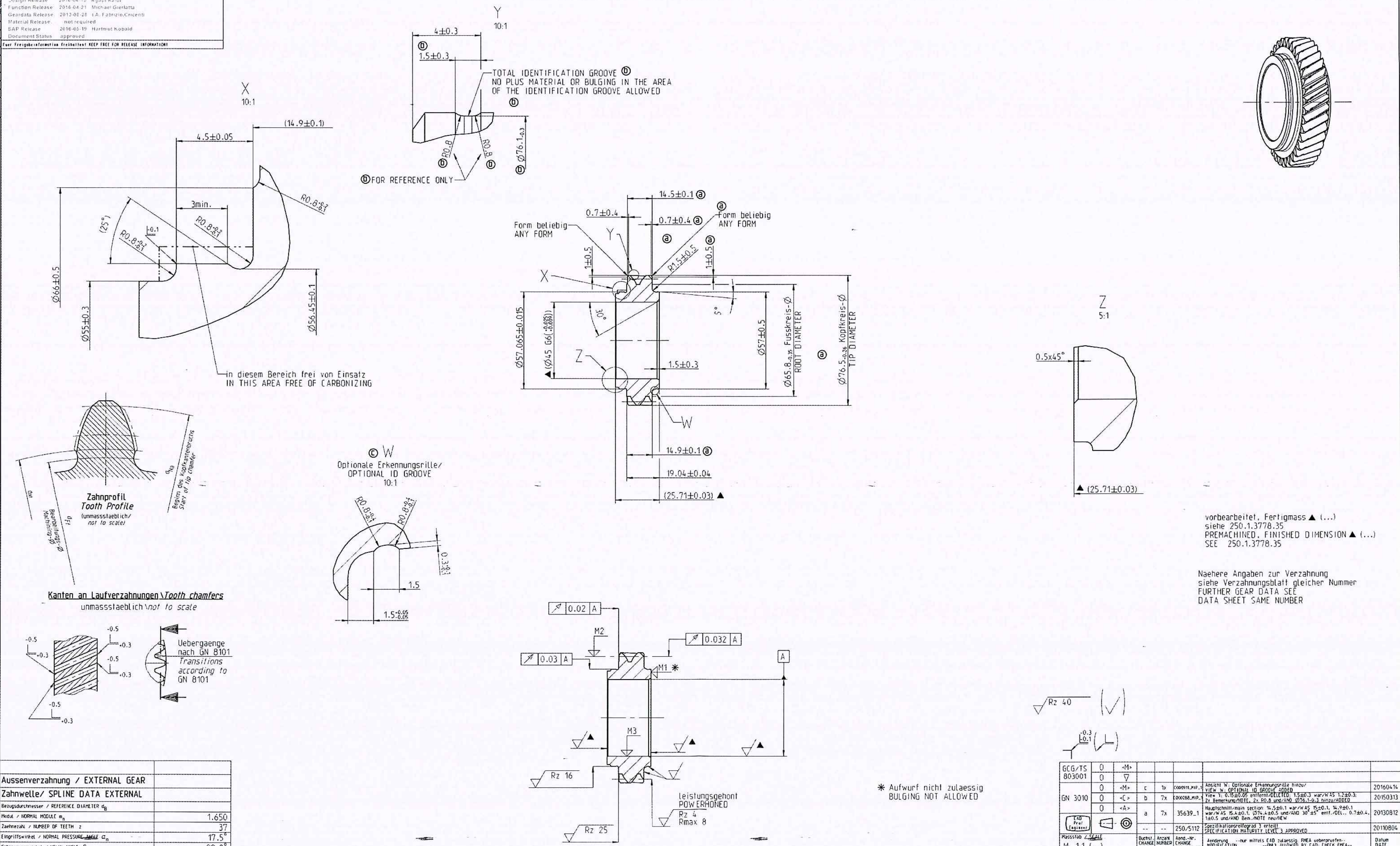
Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other
Customer Signature: [signature] Date: 26-09-2013
Print Name: GIACOMO RUSSO - QPG - GPS Customer Tracking Number (optional): B/WLQ4-250-LU-13-0004

GETRAG

GETRAG S.p.A. Via dei Ciclamini, 4 70026 Modugno (Bari)

March 2006 CFG-1001

Design Release 2016-04-15 Agapi Raidt
Function Release 2016-04-21 Michael Gierlatta
Geardata Release 2013-08-28 i.A. Fabrizio,Cricenti
Material Release not required
SAP Release 2016-05-19 Hartmut Kobald
Document Status approved
Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!



* Aufwurf nicht zulaessig
BULGING NOT ALLOWED

vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.3778.35
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.3778.35

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

einsatzgehaertet und angelassen
M1 (Oberflaechenhaerte) : 80.5+2.5 HRA
M2 (Zahnflanke) : CHD (Eht) 550= 0.5+0.4
M3 (Bohrung) : CHD (Eht) 550= 0.3 min.
M4 (Kernhaerte) : min. 300 HV10

CASE HARDENED AND TEMPERED
M1 (CASE HARDNESS) : 80.5+2.5 HRA
M2 (TOOTH FLANK) : CHD (Eht) 550= 0.5+0.4
M3 (BORE) : CHD (Eht) 550= 0.3 min.
M4 (INSIDE BASE OF TOOTH) : min. 300 HV10

Aussenverzahnung / EXTERNAL GEAR		
Zahnwelle/ SPLINE DATA EXTERNAL		
Bezugsdurchmesser / REFERENCE DIAMETER d_B		
Modul / NORMAL MODULE m_n		1.650
Zaehnezahl / NUMBER OF TEETH z		37
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n		17.5°
Schraegungswinkel / HELIX ANGLE β		29.0°
Richtung / HAND OF HELIX		LEFT. links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	1.100
Qualitaet / GEAR TOOTH QUALITY (DIN3961)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n (Lehrenmass / GAGE DIMENSION)	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	3.285
	min.	3.255
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	74.314
	min.	74.235

GCG/TS 803001	0	<M>					
	0	∇					
GN 3010	0	<M>	c	1x	C000911_MIP_1	Ansicht W: Optionale Erkennungsrille hinzu/ VIEW W: OPTIONAL ID GROOVE ADDED	20160414
	0	<C>	b	7x	C000268_MIP_1	View Y: 0.15±0.05 entfernt/DELETED; 1.5±0.3 war/WAS 1.2±0.3; 2x Bemerkung/NOTE, 2x R0.8 und/AND Ø76.1-0.3 hinzu/ADDED	20150313
	0	<A>	a	7x	35639_1	Hauptschnitt/main section: 14.5±0.1 war/WAS 15±0.1, 14.9±0.1 war/WAS 15.4±0.1, Ø74.4±0.5 und/AND 30°±5° entf./DEL., 0.7±0.4, 1±0.5 und/AND Bem./NOTE neu/NEW	20130812
CAD Prof Engineer			--	--	250/5112	Spezifikationsreifegrad 3 erteilt SPECIFICATION MATURITY LEVEL 3 APPROVED	20110804
Massstab / SCALE M: 1:1 (--)			Buchst. CHANGE INDEX	Anzahl NUMBER	Aend.-Nr. CHANGE REQUEST NO.	Aenderung --nur mittels CAD zulaessig, FMEA ueberpruefen-- MODIFICATION --ONLY ALLOWED BY CAD; CHECK FMEA--	Datum DATE

Allgemeintoleranzen fuer Laengenmasse, Form und Lage ISO 2768 - mH; gebrochene Kanten, Radien und Winkelmasse ISO 2768 - v
GENERAL TOLERANCES FOR LINEAR DIMENSIONS, FORM AND POSITION ISO 2768 - mH; CHAMFERS, RADII AND ANGULAR DIMENSIONS ISO 2768 - v

Informationen auf dieser Zeichnung sind ohne Angaben zu Verwendung und Freigabe unverbindlich.
INFORMATION ON THIS DRAWING PROVIDED WITHOUT OBLIGATION IF USAGE AND RELEASE ARE NOT SHOWN.

Auswertung der Durchmessermessung erfolgt nach der Gauss-Methode (Arithmetischer Mittelwert)
EVALUATION OF THE DIAMTER MEASUREMENT IS CARRIED OUT ACCORDING TO THE GAUSS METHOD (ARITHMETICAL MEAN VALUE)

Form- und Lagetolerierung FORM AND POSITION TOLERANCES EN ISO 1101	Tolerierung TOLERANCING ISO 8015	Oberflaechenangaben SURFACE TEXTURE GN 4005	Werkstueckkanten BREAK EDGES ISO 13715

Werkstoff / MATERIAL: GCG_805000_02_20MnCrS5

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG

Halbzeug SEMI-FINISHED: -
oelbenetzte Oberflaeche OIL WETTED SURFACE: 0 mm²
Gesamtoberflaeche SURFACE AREA: 18010 mm²
Masse MASS: 0.360 kg
Schutzvermerk nach ISO 16016 beachten PROTECTION PER ISO 16016

Benennung / ITEM NAME: SPEED GEAR 5th
Schaltrad 5.Gang
Artikel-Nr./ ITEM NO.: 2501377935
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY: 3
Format SIZE: A1
CAD-Modell: 2501377935

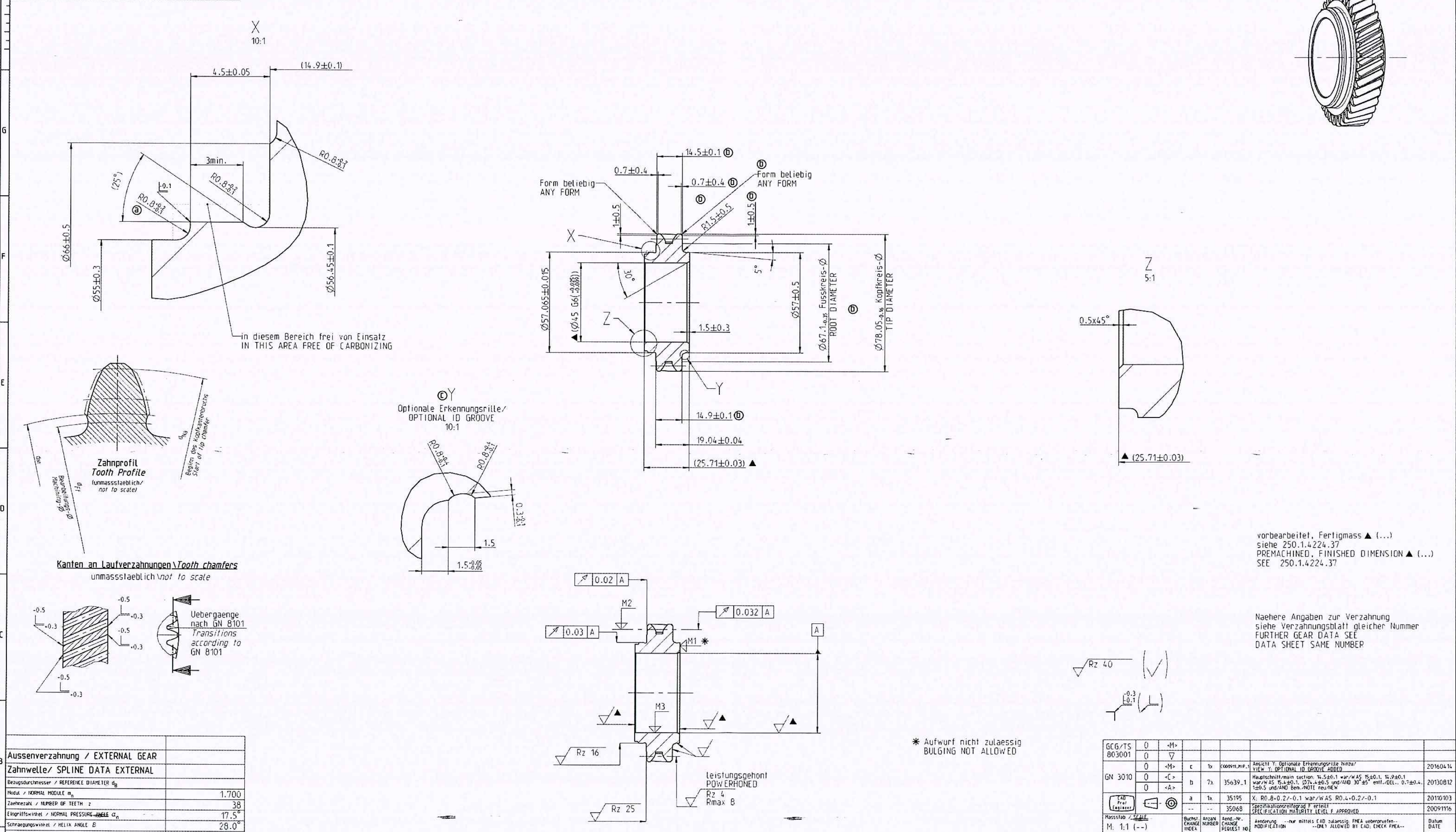
Ersatz fuer SUBSTITUTE FOR: -

INTRALINK DATA	CHECKED IN BY	CHECKED IN ON: dd.mm.yyyy hh:mm:ss	VERSION
Zchng / DRW:	Agapi.Raidt	15.04.2016 08:39:46	8
MODEL:	Agapi.Raidt	15.04.2016 08:39:46	16+

Document Revision: 20160415084016, printed on 2017-08-29 at 08:52 by Mirko.Vicenti

Design Release:	2016-04-15 Agapi Raidt
Function Release:	2016-04-21 Michael Gierlatta
Geardata Release:	2009-11-18 i.A. Holger.Paassen
Material Release:	not required
SAP Release:	2016-05-19 Hartmut Kobald
Document Status:	approved

Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!



vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.4224.37
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.4224.37

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

einsatzgehaertet und angelassen
M1 (Oberflaechenhaerte) : 80.5-2.5 HRA
M2 (Zahnflanke) : CHD (Eht) 550= 0.5-0.4
M3 (Bohrung) : CHD (Eht) 550= 0.3 min.
M4 (Kernhaerte) : min. 300 HV10

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

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°
Schraegungswinkel / HELIX ANGLE β		28.0°
Richtung / HAND OF HELIX		LEFT, links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	-0.140
Qualitaet / GEAR TOOTH QUALITY (DIN3961)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n (Lehrenmass / GAGE DIMENSION)	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	2.582
	min.	2.552
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	75.217
	min.	75.116

Buchst. CHANGE INDEX	Anzahl NUMBER	Aend.-Nr. CHANGE REQUEST NO.	Aenderung --nur mittels CAD zulaessig; FMEA ueberpruefen-- MODIFICATION --ONLY ALLOWED BY CAD; CHECK FMEA--	Datum DATE
c	1x	C000911_MIP_1	Ansicht Y: Optionale Erkennungsrille hinzu/ VIEW Y: OPTIONAL ID GROOVE ADDED	20160414
b	7x	35639_1	Hauptschnitt/main section: 14.5±0.1 war/WAS 15±0.1, 14.9±0.1 war/WAS 15.4±0.1, Ø74.4±0.5 und/AND 30°±5° entf./DEL., 0.7±0.4, 1±0.5 und/AND Bem./NOTE neu/NEW	20130812
a	1x	35195	X: R0.8+0.2/-0.1 war/WAS R0.4+0.2/-0.1	20110103
--	--	35068	Spezifikationsreifegrad F erteilt SPECIFICATION MATURITY LEVEL F APPROVED	20091116

GCG/TS 803001: 0 <M>, 0 ∇ — GN 3010: 0 <M>, 0 <C>, 0 <A> — CAD Pro/Engineer

Massstab / SCALE M: 1:1 (--)

Allgemeintoleranzen fuer Laengenmasse, Form und Lage ISO 2768 - mH gebrochene Kanten, Radien und Winkelmasse ISO 2768 - v
GENERAL TOLERANCES FOR LINEAR DIMENSIONS, FORM AND POSITION ISO 2768 - mH; CHAMFERS, RADII AND ANGULAR DIMENSIONS ISO 2768 - v

Informationen auf dieser Zeichnung sind ohne Angaben zu Verwendung und Freigabe unverbindlich.
INFORMATION ON THIS DRAWING PROVIDED WITHOUT OBLIGATION IF USAGE AND RELEASE ARE NOT SHOWN.

Auswertung der Durchmessermessung erfolgt nach der Gauss-Methode (Arithmetischer Mittelwert)
EVALUATION OF THE DIAMTER MEASUREMENT IS CARRIED OUT ACCORDING TO THE GAUSS METHOD (ARITHMETICAL MEAN VALUE)

Form- und Lagetolerierung FORM AND POSITION TOLERANCES EN ISO 1101	Tolerierung TOLERANCING ISO 8015	Oberflaechenangaben SURFACE TEXTURE GN 4005	Werkstueckkanten BREAK EDGES ISO 13715

Werkstoff / MATERIAL: GCG_805000_02_20MnCrS5

Halbzeug / SEMI-FINISHED: -

oelbenetzte Oberflaeche / OIL WETTED SURFACE: 0 mm²

Gesamtoberflaeche / SURFACE AREA: 18837 mm² — Masse / MASS: 0.373 kg

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG

Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016

Benennung / ITEM NAME
SPEED GEAR 5TH
Schaltrad 5. Gang

Artikel-Nr./ ITEM NO.: 2501422537 — Blatt/SHEET 1 von/OF 1 — Reifegrad MATURITY: F — Format SIZE: A1

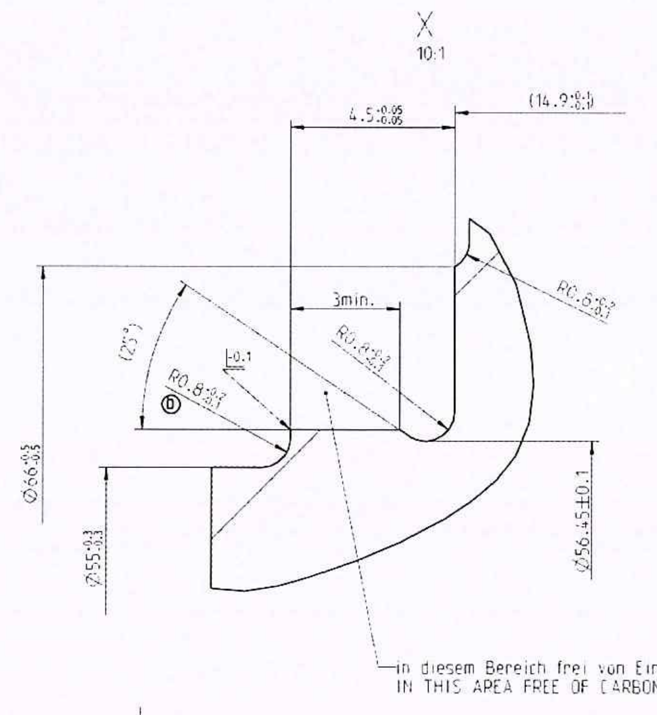
CAD-Modell: 2501422537

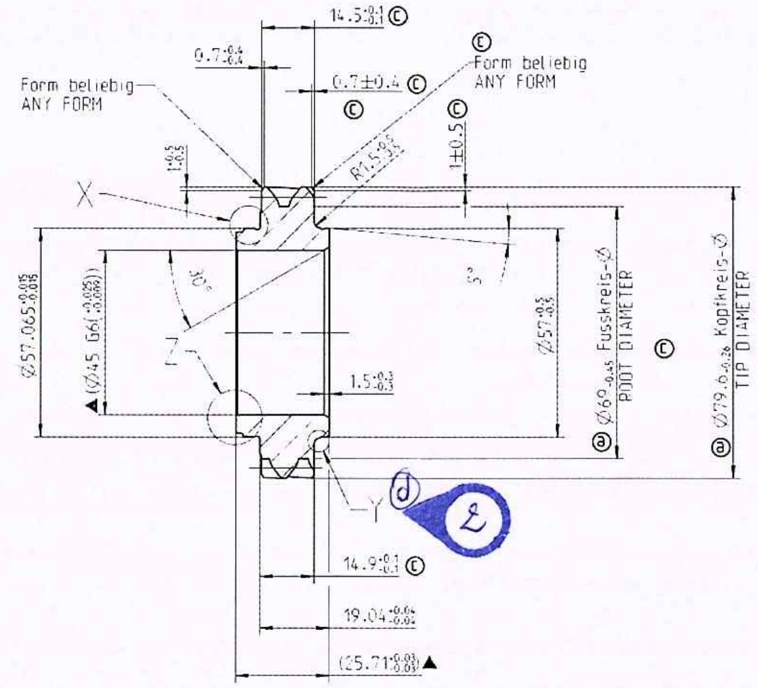
Ersatz fuer / SUBSTITUTE FOR: -

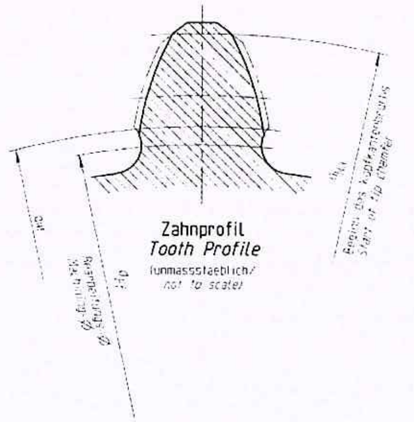
INTRALINK DATA	CHECKED IN BY	CHECKED IN ON: dd.mm.yyyy hh:mm:ss	VERSION
Zchng / DRW:	Agapi.Raidt	15.04.2016 08:38:10	4
MODEL:	Agapi.Raidt	15.04.2016 08:38:10	15+

Design Release	2016-04-14	Agapi Raidt
Function Release	2016-04-21	Michael Gierlatta
Geardata Release	2013-02-28	A. Fabrizio Ciccenti
Material Release	not required	
SAP Release	2016-05-19	Hartmut Kobald
Document Status	approved	

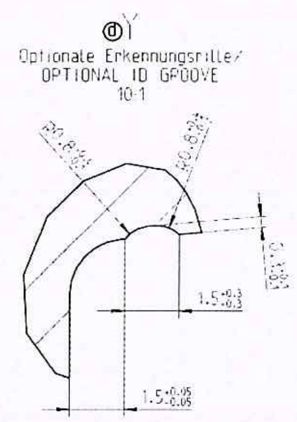
Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!



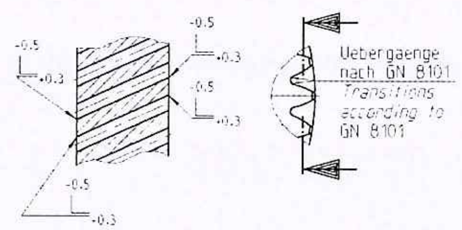


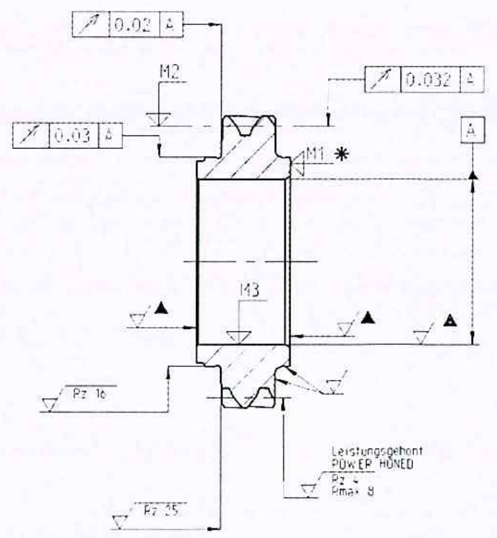


ⓓY
Optionale Erkennungsrille/
OPTIONAL ID GROOVE
10:1

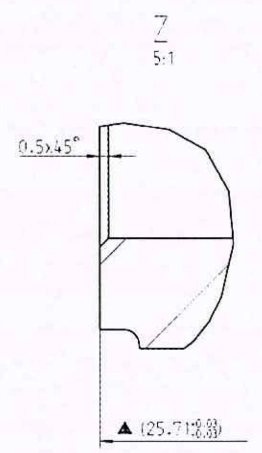


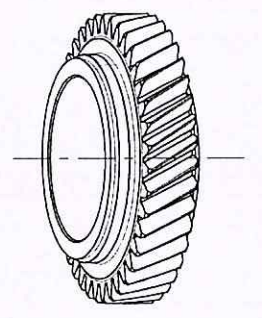
Kanten an Laufverzahnungen\Tooth chamfers
unmassstaeblich\not to scale





Z
5:1





ⓐ Technische Sauberkeit / TECHNICAL CLEANLINESS:

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

vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.3644.37
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.3644.37

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

Rz 40

* Aufwurf nicht zulaessig
BULGING NOT ALLOWED

einsatzgehaertet und angelassen
M1 (Oberflaechenhaerte) : 80.5-2.5 HRA
M2 (Zahnflanke) : CHD (Eht) 550= 0.5-0.4
M3 (Bohrung) : CHD (Eht) 550= 0.3 min.
M4 (Kernhaerte) : min. 300 HV10

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

Aussenverzahnung / EXTERNAL GEAR		
Zahnwelle/ SPLINE DATA EXTERNAL		
Bezugsdurchmesser / REFERENCE DIAMETER d_B		
Modul / NORMAL MODULE m_n		1.650
Zaehnezahl / NUMBER OF TEETH z		39
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n		17.5°
Schraegungswinkel / HELIX ANGLE β		29.0°
Richtung / HAND OF HELIX		LEFT, links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	0.513
Qualitaet / GEAR TOOTH QUALITY (DIN3961)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n (Lehrenmass / GAGE DIMENSION)	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	2.915
	min.	2.885
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	77.077
	min.	76.990

GCG/TS 803001	0	<M>					
	0	▽	d	2x	C00911_DIP_1	Ansicht Y: Optionale Erkennungsrille hinzu/ VIEW Y: OPTIONAL ID GROOVE ADDED	20160414
GN 3010	0	<M>	c	7x	35639_1	Hauptschnitt-main section: 14.5±0.1 war/WAS 15±0.1, 14.9±0.1 war/WAS 15.4±0.1, Ø74.4±0.5 und/AND 30°±5° entf./DEL., 0.7±0.4, 1±0.5 und/AND Bem./NOTE neu/NEW	20130812
	0	<C>					
	0	<A>	b	1x	35195	X: R0.8+0.2/-0.1 war/WAS R0.4+0.2/-0.1	20110103
CAD Pro/Engineer			a	3x	35252	Schnitt/SECTION: Ø79.6-0.26 war/WAS Ø79.6-0.16, Ø69-0.45 war/WAS Ø69-0.35; 03 Technische Sauberkeit/TECHNICAL CLEANLINESS neu/NEW	20101027
			--	--	35068	Spezifikationsreifegrad F erteilt SPECIFICATION MATURITY LEVEL F APPROVED	20091116
Massstab / SCALE M: 1:1 (--)			Buchst. CHANGE INDEX	Anzahl NUMBER	Aend.-Nr. CHANGE REQUEST NO.	Aenderung --nur mittels CAD zulaessig, FMEA ueberpruefen-- MODIFICATION --ONLY ALLOWED BY CAD; CHECK FMEA--	Datum DATE

Allgemeintoleranzen fuer Laengenmasse, Form und Lage ISO 2768 - mH gebrochene Kanten, Radien und Winkelmasse ISO 2768 - v
GENERAL TOLERANCES FOR LINEAR DIMENSIONS, FORM AND POSITION ISO 2768 - mH CHAMFERS, RADII AND ANGULAR DIMENSIONS ISO 2768 - v

Informationen auf dieser Zeichnung sind ohne Angaben zu Verwendung und Freigabe unverbindlich.
INFORMATION ON THIS DRAWING PROVIDED WITHOUT OBLIGATION IF USAGE AND RELEASE ARE NOT SHOWN.

Auswertung der Durchmessermessung erfolgt nach der Gauss-Methode (Arithmetischer Mittelwert)
EVALUATION OF THE DIAMTER MEASUREMENT IS CARRIED OUT ACCORDING TO THE GAUSS METHOD (ARITHMETICAL MEAN VALUE)

Form- und Lagetolerierung FORM AND POSITION TOLERANCES EN ISO 1101	Tolerierung TOLERANCING ISO 8015	Oberflaechenangaben SURFACE TEXTURE GN 4005	Werkstueckkanten BREAK EDGES ISO 13715

Werkstoff / MATERIAL: GCG_805000_03_20MnCrS5

Halbzeug SEMI-FINISHED: -

oelbenetzte Oberflaeche OIL WETTED SURFACE 0 mm²
Gesamtoberflaeche SURFACE AREA 19091 mm²
Masse MASS 0.397 kg

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG

Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016

Benennung / ITEM NAME: SPEED GEAR 5TH
Schaltrad 5. Gang

Artikel-Nr./ ITEM NO.: 2501364537
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY: F
Format SIZE: A1
CAD-Modell: 2501364537

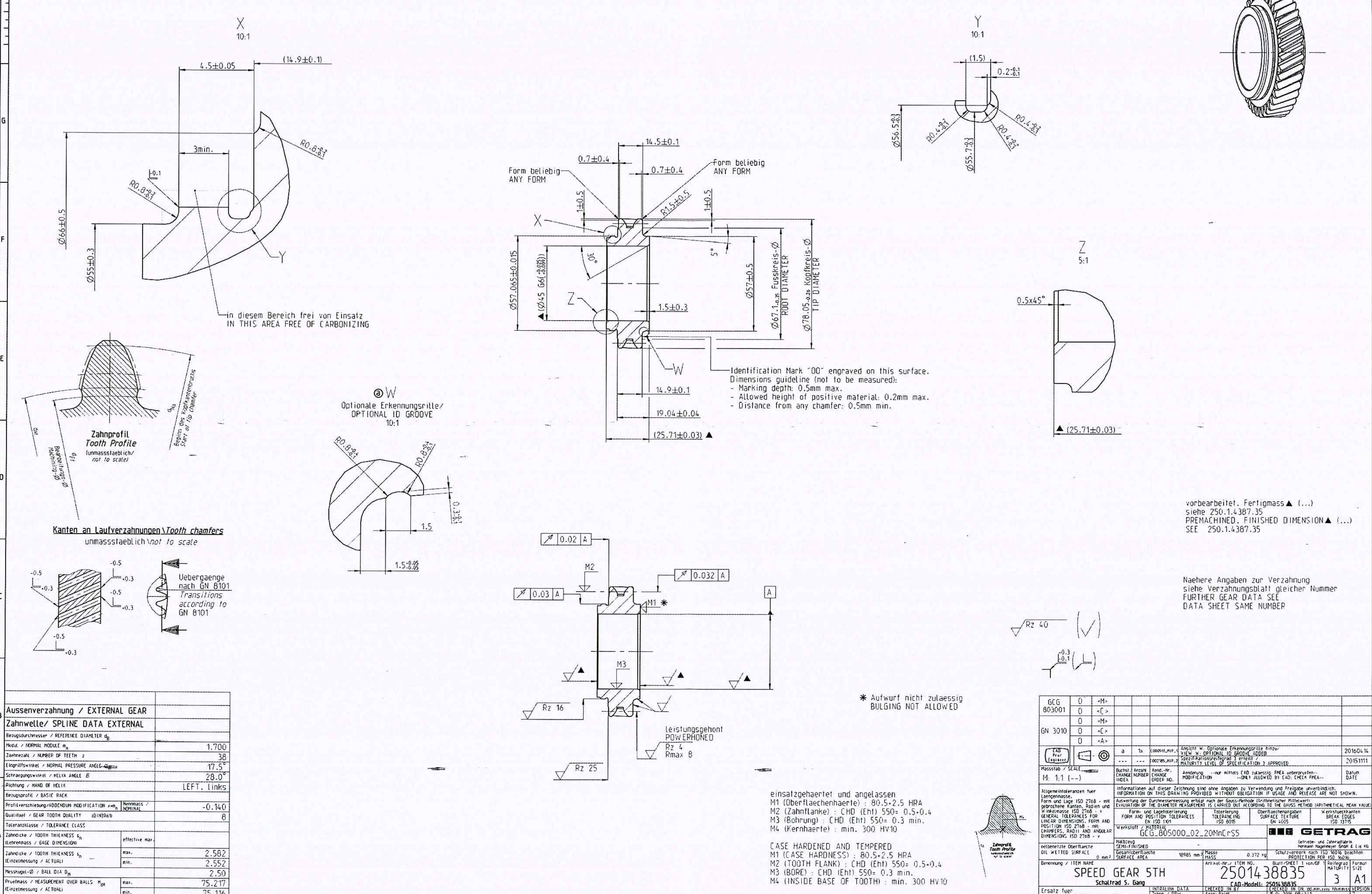
Ersatz fuer SUBSTITUTE FOR: -

INTRALINK DATA	CHECKED IN BY	CHECKED IN ON: dd.mm.yyyy hh:mm:ss	VERSION
Zchng / DRW	Agapi.Raidt	14.04.2016 13:03:22	5
MODEL	Agapi.Raidt	14.04.2016 13:03:22	15-

Document Revision: 20160414130440, printed on 2017-07-13 at 12:23 by Mirko.Vicenti

Design Release:	2016-04-15 Agapi.Raidt
Function Release:	2016-04-22 Michael.Gierlatta
Geardata Release:	2015-11-26 i.A. Holger.Paassen
Material Release:	not required
SAP Release:	2016-05-19 Hartmut.Kobald
Document Status:	approved

Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!



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°
Schraegungswinkel / HELIX ANGLE β		28.0°
Richtung / HAND OF HELIX		LEFT, links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	-0.140
Qualitaet / GEAR TOOTH QUALITY (DIN3961)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n (Lehrenmass / GAGE DIMENSION)	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	2.582
	min.	2.552
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	75.217
	min.	75.116

GCG 803001	0	<M>				
	0	<C>				
GN 3010	0	<M>				
	0	<C>				
	0	<A>				
CAD Pro/Engineer	a	1x	C000911_MIP_1	Ansicht W: Optionale Erkennungsrille hinzu/ VIEW W: OPTIONAL ID GROOVE ADDED		20160414
	---	---	C002185_MIP_2	Spezifikationsreifegrad 3 erteilt / MATURITY LEVEL OF SPECIFICATION 3 APPROVED		20151111
Massstab / SCALE M: 1:1 (--)	Buchst. CHANGE INDEX	Anzahl NUMBER	Aend.-Nr. CHANGE ORDER NO.	Aenderung --nur mittels CAD zulaessig, FMEA ueberpruefen-- MODIFICATION --ONLY ALLOWED BY CAD; CHECK FMEA--		Datum DATE

Allgemeintoleranzen fuer Laengenmasse. Form und Lage ISO 2768 - mH gebrochene Kanten, Radien und Winkelmasse ISO 2768 - v
GENERAL TOLERANCES FOR LINEAR DIMENSIONS, FORM AND POSITION ISO 2768 - mH; CHAMFERS, RADII AND ANGULAR DIMENSIONS ISO 2768 - v

Informationen auf dieser Zeichnung sind ohne Angaben zu Verwendung und Freigabe unverbindlich.
INFORMATION ON THIS DRAWING PROVIDED WITHOUT OBLIGATION IF USAGE AND RELEASE ARE NOT SHOWN.

Auswertung der Durchmessermessung erfolgt nach der Gauss-Methode (Arithmetischer Mittelwert)
EVALUATION OF THE DIAMETER MEASUREMENT IS CARRIED OUT ACCORDING TO THE GAUSS METHOD (ARITHMETICAL MEAN VALUE)

Form- und Lagetolerierung FORM AND POSITION TOLERANCES EN ISO 1101	Tolerierung TOLERANCING ISO 8015	Oberflaechenangaben SURFACE TEXTURE GN 4005	Werkstueckkanten BREAK EDGES ISO 13715

Werkstoff / MATERIAL: GCG_805000_02_20MnCrS5		GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
Halbzeug SEMI-FINISHED: -		
oelbenetzte Oberflaeche OIL WETTED SURFACE: 0 mm²	Gesamtoberflaeche SURFACE AREA: 18985 mm²	Masse MASS: 0.372 kg
		Schutzvermerk nach ISO 16016 beachten PROTECTION PER ISO 16016

Benennung / ITEM NAME	Artikel-Nr./ ITEM NO.	Blatt/SHEET 1 von/OF 1	Reifegrad MATURITY	Format SIZE
SPEED GEAR 5TH Schaltrad 5. Gang	2501438835 CAD-Modell: 2501438835		3	A1

Ersatz fuer SUBSTITUTE FOR	INTRALINK DATA	CHECKED IN BY	CHECKED IN ON: dd.mm.yyyy hh:mm:ss	VERSION
-	Zchng / DRW:	Agapi.Raidt	15.04.2016 08:41:41	7
	MODEL:	Agapi.Raidt	15.04.2016 08:41:41	12-

Document Revision: 20160415084225, printed on 2017-08-29 at 08:54 by Mirko.Vicenti