313071

GETRAG

Part Submission Warrant

Part Name: **Speed Gear 6**
Customer Part Number: **250.1.3647.38**
Shown on Drawing No.: **250.1.3647.38**
Organization Part #:
Engineering Change Level: **a C000911_MIP_1**
Dated: **15-apr-16**
Additional Engineering Changes:
Dated:
Safety and/or Government Regulation: ☐ Yes ☑ No
Purchase Order No.:
Weight (kg): **0.3700**
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: [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: L Spetteo
Date: 27.05.16

Print Name:
Customer Tracking Number (optional):

Part Submission Warrant

Part Name RUOTA GH. LIBERA TORNITA   Customer Part Number 2501364780
Shown on Drawing No.   Organization Part #
Engineering Change Level "B"   Dated 23/08/2013
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. GIGA
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
- ☐ 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.
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- ☐ 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

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EXPLANATION / COMMENTS: SI APPROVA ANCHE L'INDICE "A" DEL DISEGNO : AGGIUNTA DELLA NOTA

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

Organization Authorized Signature   Date 27/08/2013
Print Name Rubino Michele   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
Print Name GIACOMO RUSSO - QPE - GPS1   Date 11/12/2013
Customer Tracking Number (optional) B/WLR4-250-LU-13-0087

GETRAG S.p.A. Via dei Ciclamini, 70026 Modugno (BA) Tel. +39 080 5858-111 Fax +39 080 5858-

March 2006   CFG-1001

Drawing 3647 update from index "-" to "a"

Short description:

a	1x	C000911_HIP_1	Ansicht W: Optionale Erkennungsrille hinzu/ VIEW W: OPTIONAL ID GROOVE ADDED	20160415

	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 6** Customer Part Number **250.1.4227.37**

Shown on Drawing No. **250.1.4227.37** Organization Part #

Engineering Change Level **a C000911_MIP_1** Dated **15-apr-16**

Additional Engineering Changes Dated

Safety and/or Government Regulation ☐ Yes ☑ No Purchase Order No. Weight (kg) **0.2890**

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)

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- ☐ 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

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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 6** Customer Part Number **250.1.3878.36**

Shown on Drawing No. **250.1.3878.36** Organization Part #

Engineering Change Level **b C000911_MIP_1** Dated **14-apr-16**

Additional Engineering Changes Dated

Safety and/or Government Regulation ☐ Yes ☑ No Purchase Order No. Weight (kg) **0.2700**

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

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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)

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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 6	Customer Part Number	250.1.4322.35
Shown on Drawing No.	250.1.4322.35	Organization Part #	
Engineering Change Level	b C000911_MIP_1	Dated	19-apr-16
Additional Engineering Changes		Dated	

Safety and/or Government Regulation ☐ Yes ☑ No   Purchase Order No.   Weight (kg) 0.3690

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
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- ☐ Tooling Inactive > than 1 year
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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)

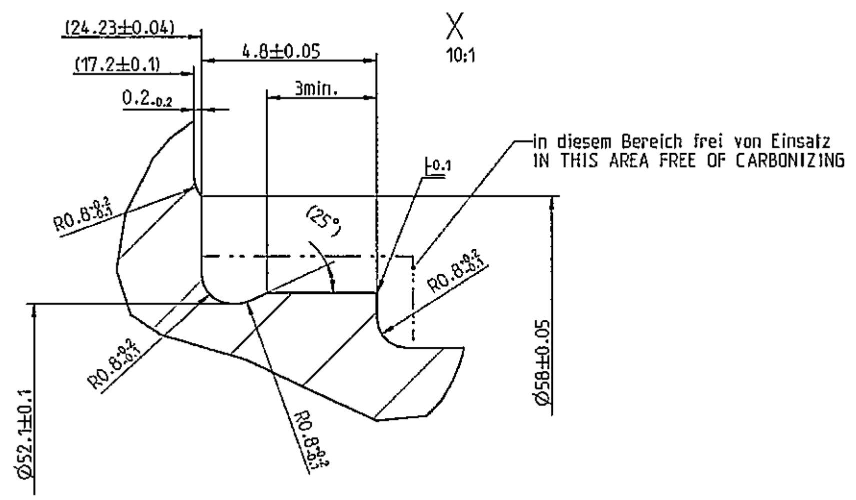
Part Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other

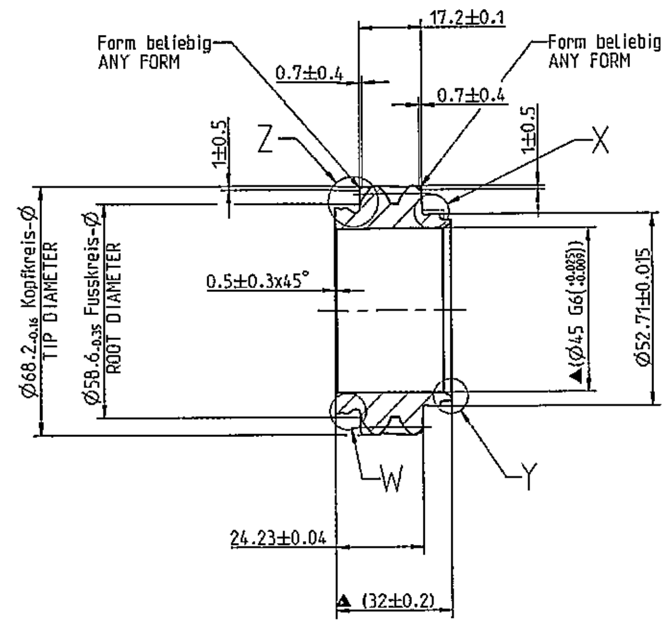
Customer Signature   Date 27.05.16

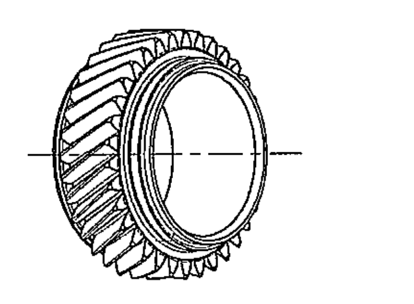
Print Name   Customer Tracking Number (optional)

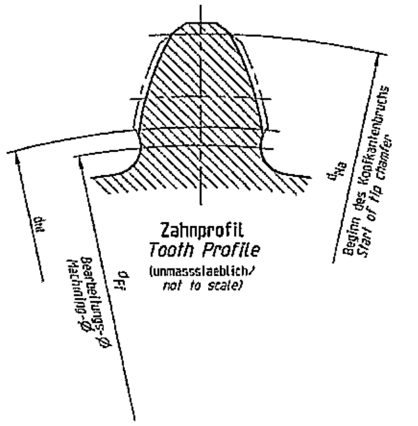
March 2006 CFG-1001

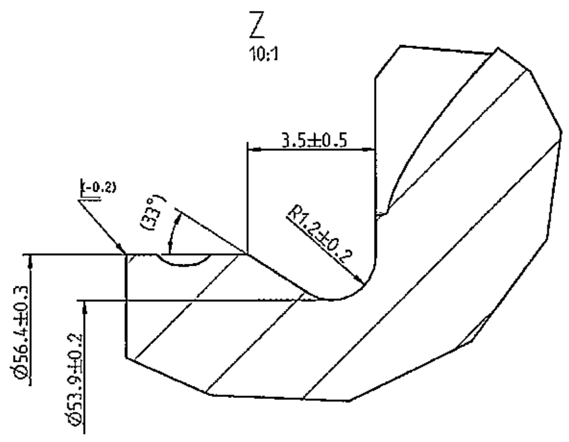
Design Release: 2016-04-15 Agapi.Raidt
Function Release: 2016-04-21 Michael.Gierlatta
Geardata Release: 2014-05-09 I.A. Fabrizio.Cricenti
Material Release: not required
SAP Release: 2016-05-19 Hartmut.Kobald
Document Status: approved
Fuer Freigabeinformation freihalten/ KEEP FREE FOR RELEASE INFORMATION

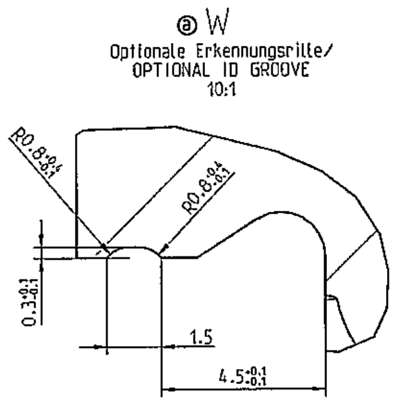


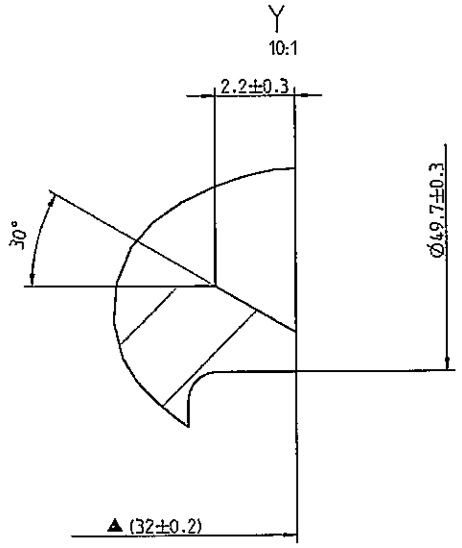






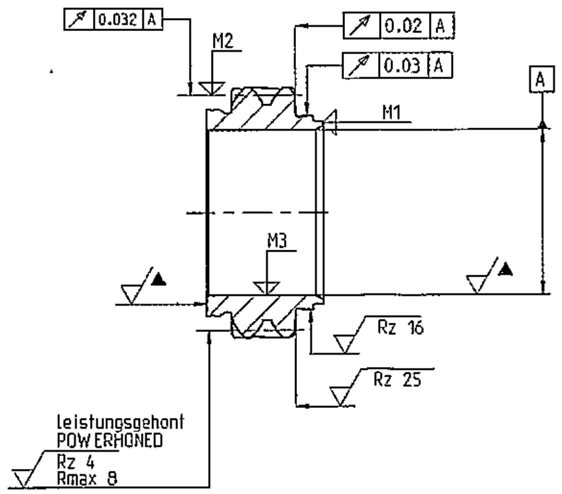






vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.4226.38
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.4226.38

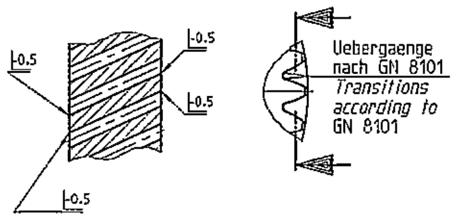
Naehere Angaben zur Verzahnung
siehe Verzahnungsblatt gleicher Nummer
FURTHER GEAR DATA SEE
DATA SHEET SAME NUMBER



Rz 40 (✓)

-0.3 -0.1 (⊥)

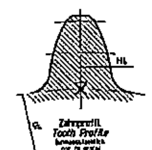
Kanten an Laufverzahnungen \ *Tooth chamfers*
unmassstaeblich \ *not to scale*



Aussenverzahnung / EXTERNAL GEAR		
Zahnwelle/ SPLINE DATA EXTERNAL		
Bezugsdurchmesser / REFERENCE DIAMETER d_B		
Modul / NORMAL MODULE m_n		1.600
Zaehnezahl / NUMBER OF TEETH z		34
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 (DIN3960)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n Lehrenmass / GAGE DIMENSION	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	3.129
	min.	3.099
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	66.757
	min.	66.679

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



See PPAP Doc.
3647.38 "2"

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	0	<C>					
GN 3010	0	<M>					
	0	<C>					
	0	<A>					
CAD Prof Engineer			a	1x	C000913_NIP_1	Ansicht W- Optionale Erkennungsrille hinzu/ VIEW W: OPTIONAL ID GROOVE ADDED	20160415
			---	---	35834	Spezifikationsreifegrad F erteilt / MATURITY LEVEL OF SPECIFICATION F APPROVED	20140403
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
Halbzeug / SEMI-FINISHED: -
oelbenetzte Oberflaeche / OIL WETTED SURFACE: 0 mm²
Gesamtoberflaeche / SURFACE AREA: 18100 mm²
Masse / MASS: 0.289 kg

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016

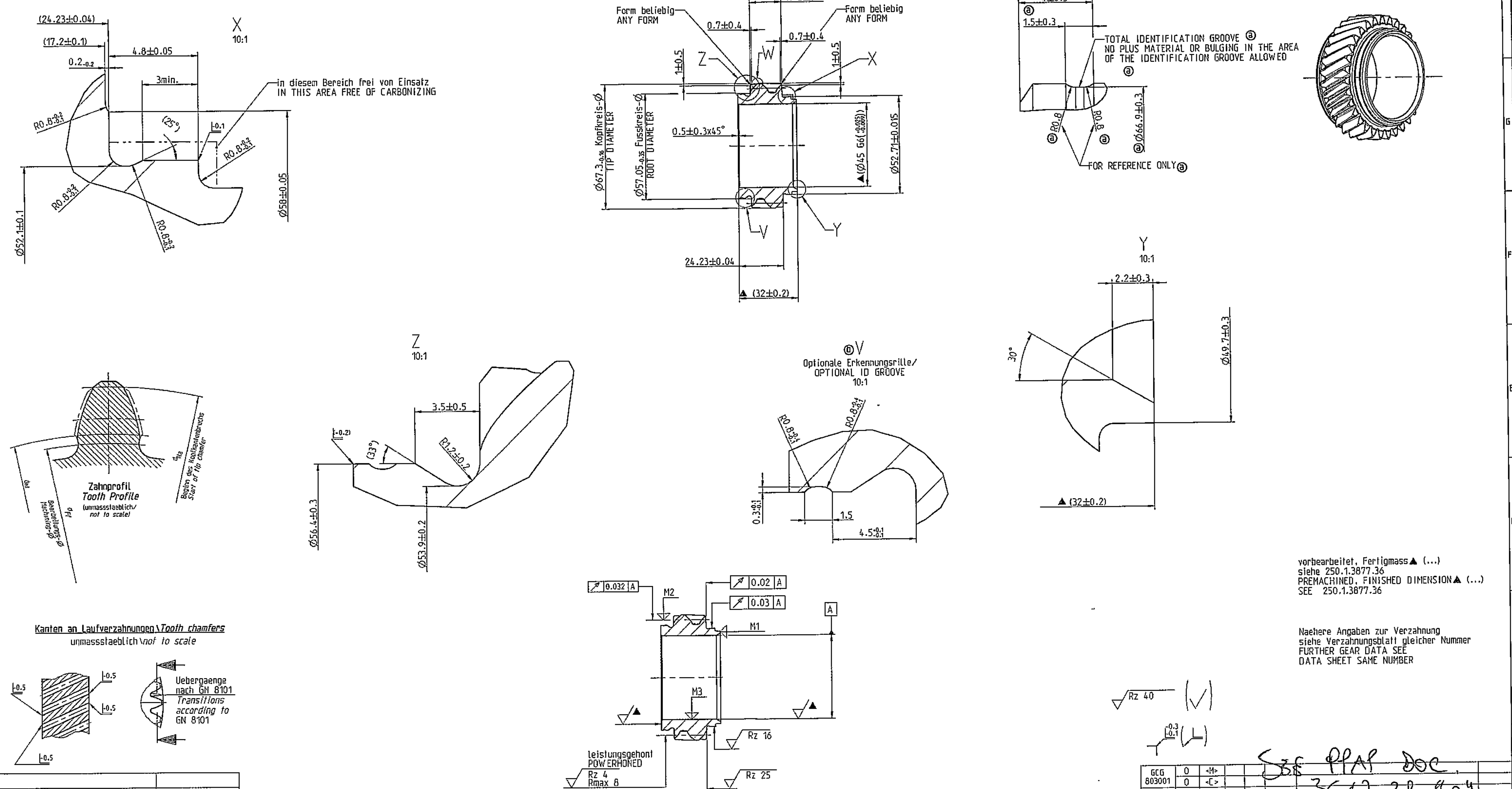
Benennung / ITEM NAME
SPEED GEAR 6TH
Schaltrad 6. Gang

Artikel-Nr./ ITEM NO.: 2501422737
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY: F
Format SIZE: A1
CAD-Modell: 2501422737

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 10:28:47	1
MODEL:	Agapi Raidt	15.04.2016 10:28:47	1-

Design Release: 2016-04-15 Agapi.Raldt
Function Release. 2016-04-21 Michael.Glorlatta
Geardata Release: 2014-05-08 I.A. Fabrizio.Criconti
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 250.1.3877.36
PREMACHINED, FINISHED DIMENSION▲ (...)
SEE 250.1.3877.36

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

Rz 40 (✓)

Aussenverzahnung / EXTERNAL GEAR		
Zahnwelle/ SPLINE DATA EXTERNAL		
Bezugsdurchmesser / REFERENCE DIAMETER d_B		
Modul / NORMAL MODULE m_n		1.800
Zaehnezahl / NUMBER OF TEETH z		31
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n		17.5°
Schraegungswinkel / HELIX ANGLE β		24.0°
Richtung / HAND OF HELIX		LEFT. links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	0.897
Qualitaet / GEAR TOOTH QUALITY (DIN3960)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n (Lehrenmass / GAGE DIMENSION)	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	3.315
	min.	3.290
Messkugel-Ø / BALL DIA D_M		2.5
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	64.348
	min	64.276

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

See PPAP Doc. 3647.38 "2"

GCG 803001	0	<M>				
	0	<C>				
GN 3010	0	<M>				
	0	<C>				
	0	<A>	b	1x	C00591_MIP_1	Ansicht V: Optionale Erkennungsrille hinzu/ VIEW V, OPTIONAL ID GROOVE ADDED	20160414
CAD Pro/Engineer			a	7x	C00288_MIP_1	View W: 0.15±0.05 entfernt/DELETED; 1.5±0.3 war/WAS 1.2±0.3, 2x Bemerkung/NOTE, 2x R0.8 und/AND Ø66.9-0.3 hinzu/ADDED	20150312
			---	---	35834	Spezifikationsreifegrad F erteilt / MATURITY LEVEL OF SPECIFICATION F APPROVED	20140404
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

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)

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

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: 17316 mm²
Masse / MASS: 0.270 kg

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016

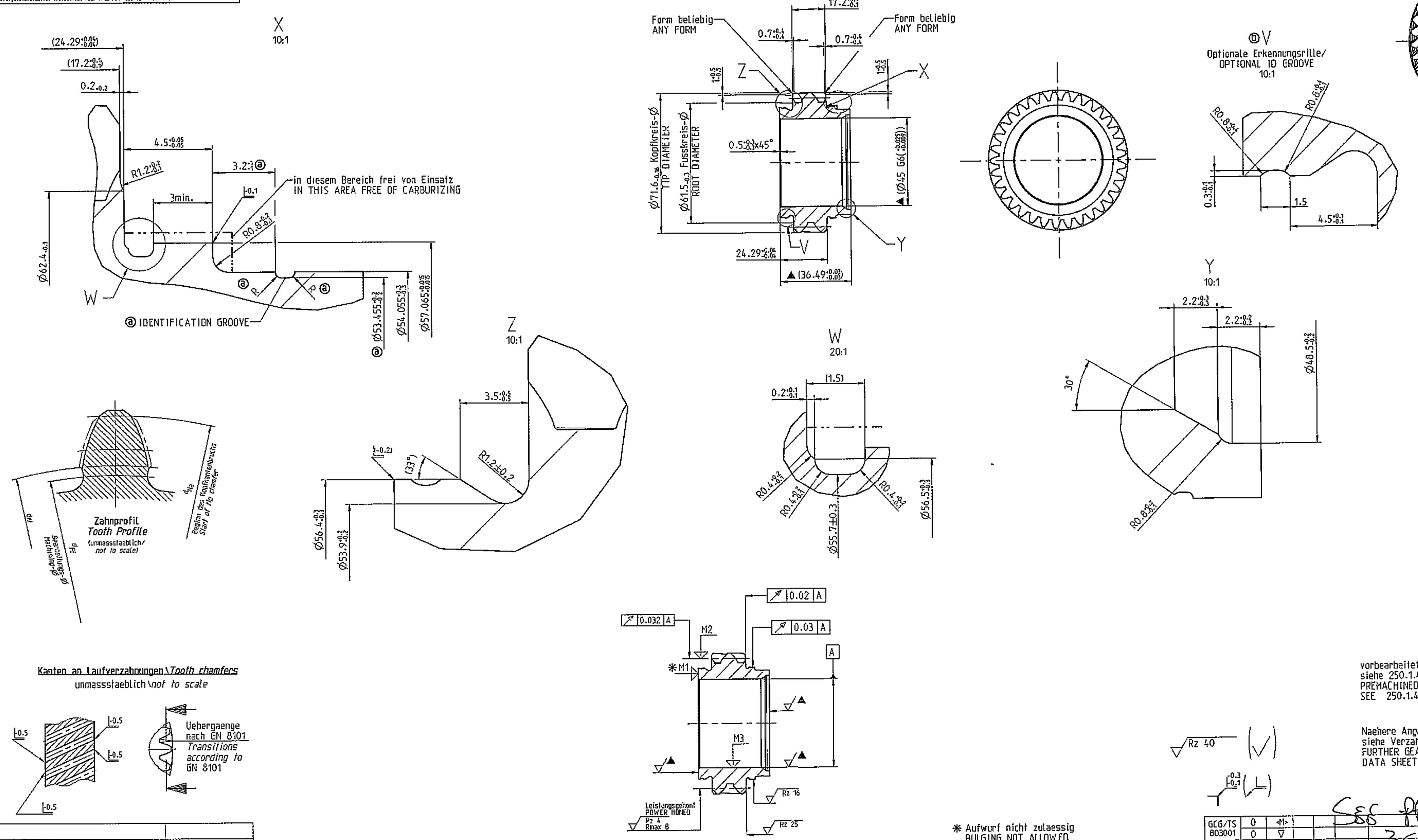
Benennung / ITEM NAME: SPEED GEAR 6TH
Schaltrad 6.Gang
Artikel-Nr./ ITEM NO.: 2501387836
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY: F
Format SIZE: A1
CAD-Modell: 2501387836

Ersatz fuer / SUBSTITUTE FOR: -

INITIALEN DATA	CHECKED IN BY	CHECKED IN ON dd.mm.yyyy hh:mm:ss	VERSION
Zchng / DRW:	Agapi.Raldt	15.04.2016 09:05:15	3
MODEL:	Agapi.Raldt	15.04.2016 09:05:15	6-

Design Release:	2016-04-21 Agapi.Raidt
Function Release:	2016-04-21 Michael.Gierlatta
Geardata Release:	2014-10-29 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!



Kanten an Laufverzahnungen\ *Tooth chamfers*
unmassstaeblich\ *not to scale*

Uebergaenge nach GN 8101
Transitions according to GN 8101

Aussenverzahnung / EXTERNAL GEAR		
Zahnwelle/ SPLINE DATA EXTERNAL		
Bezugsdurchmesser / REFERENCE DIAMETER d_B		
Modul / NORMAL MODULE m_n		1.750
Zaehnezahl / NUMBER OF TEETH z		33
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n		17.5°
Schraegungswinkel / HELIX ANGLE β		27.3°
Richtung / HAND OF HELIX		LEFT, links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	0.948
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.	3.269
	min	3.244
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	68.579
	min.	68.509

vorbearbeitet, Fertigmass ▲ (...)
siehe 250.1.4320.35
PREMACHINED, FINISHED DIMENSION ▲ (...)
SEE 250.1.4320.35

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

Rz 40 (✓)

-0.3 / -0.1 (⌊)

* 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

Zahnprofil
Tooth Profile

SEE PPAP DOC.
3647.38 "a"

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GN 3010	0	<M>					
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CAD Prof Engineer			--	--	36193_1	Spezifikationsreifegrad F erteilt SPECIFICATION MATURITY LEVEL F APPROVED	20141027
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

Halbzeug / SEMI-FINISHED: -

oelbenetzte Oberflaeche / OIL WETTED SURFACE: 0 mm²

Gesamtoberflaeche / SURFACE AREA: 20474 mm²

Masse / MASS: 0.369 kg

GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG

Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016

Benennung / ITEM NAME
SPEED GEAR 6TH
Schaltrad 6. Gang

Artikel-Nr./ ITEM NO. 2501432235 — Blatt/SHEET 1 von/OF 1 — Reifegrad MATURITY F — Format SIZE A1

CAD-Modell: 2501432235

Ersatz fuer / SUBSTITUTE FOR: -

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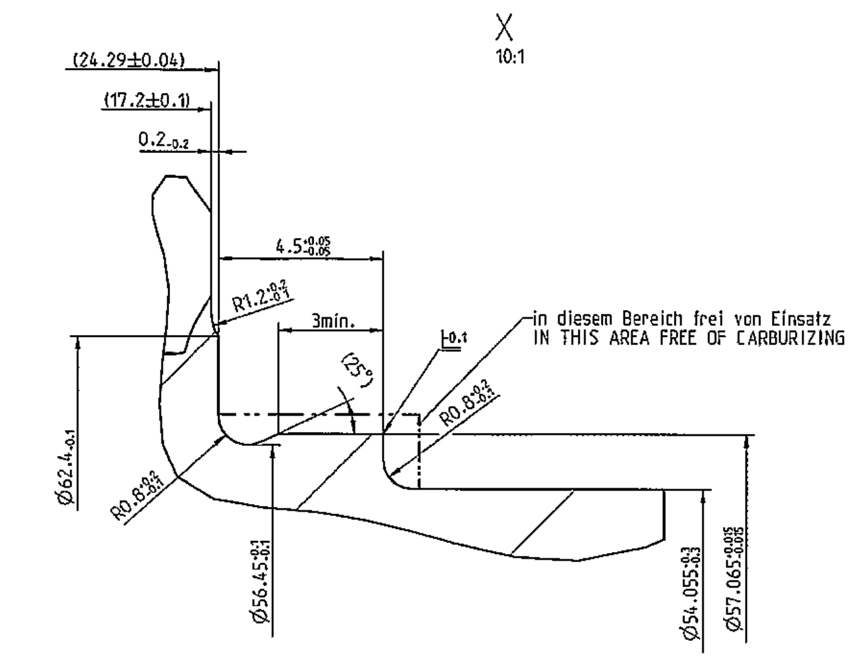
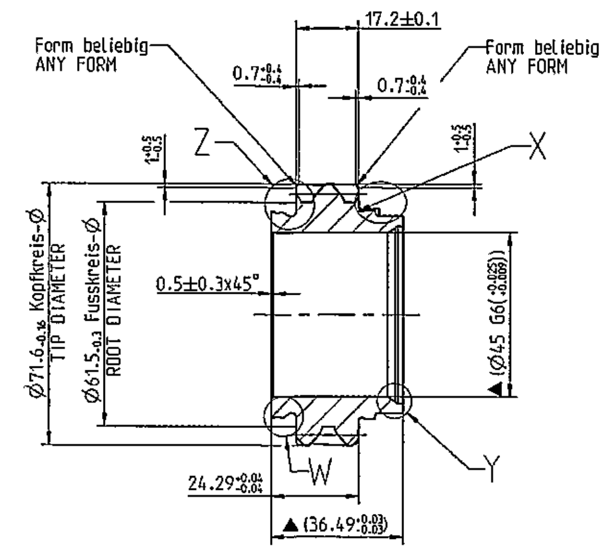
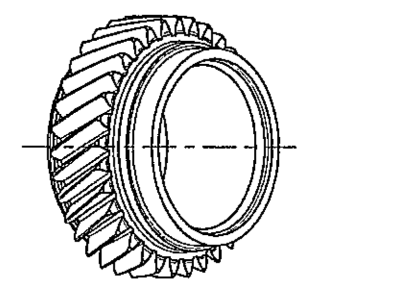
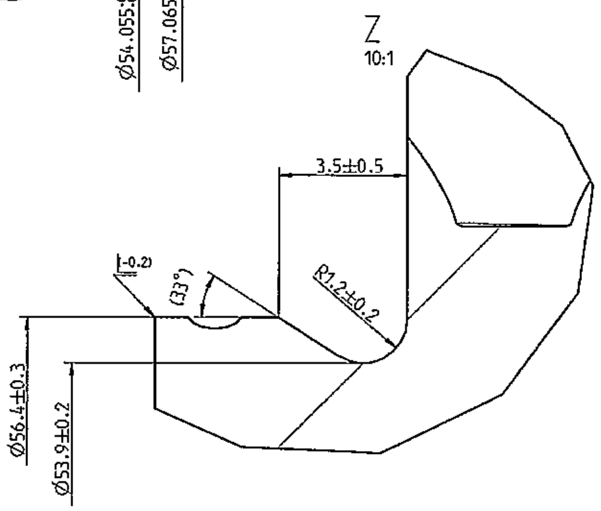
MODEL:	Agapi Raidt	21.04.2016 14-04-49	11-

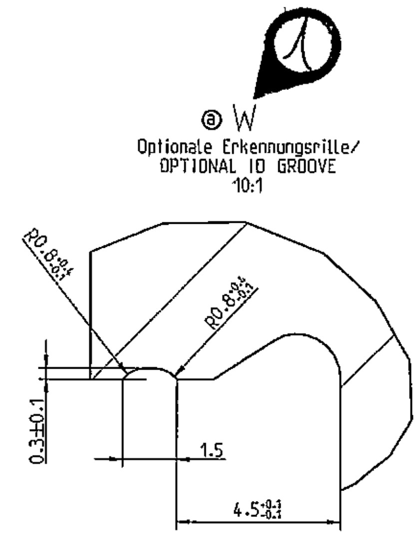
Design Release: 2016-04-15 Agapi.Raidt
Function Release: 2016-04-21 Michael.Glorlatta
Geardata Release: 2014-05-08 I.A. Fabrizio.Cricenti
Material Release: not required
SAP Release: 2016-05-19 Hartmut.Kobald
Document Status: approved
Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATIONS

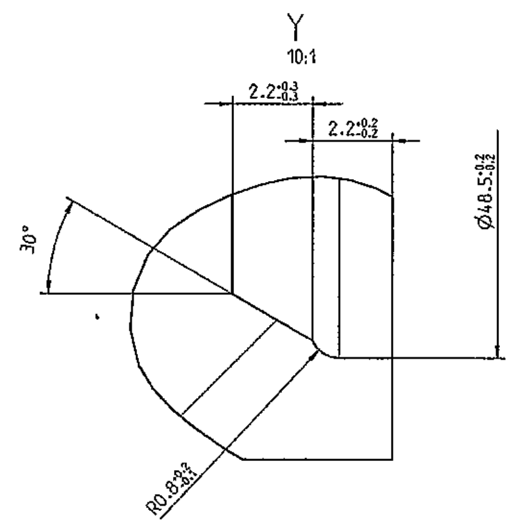


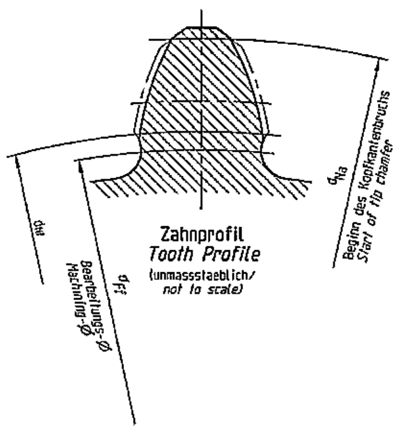


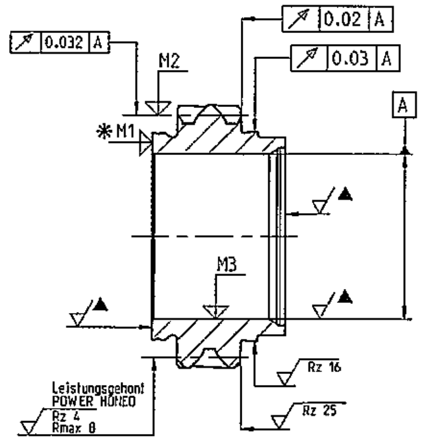




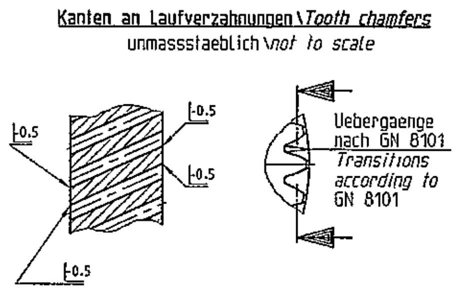






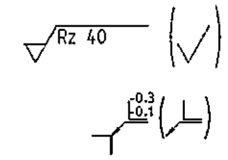


Kanten an Laufverzahnungen\Tooth chamfers
unmasstaeblich\not to scale



vorbearbeitet, Fertigmass▲ (...)
siehe 250.1.3646.39
PREMACHINED, FINISHED DIMENSION▲ (...)
SEE 250.1.3646.39

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

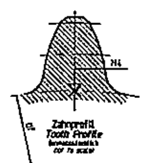


✱Aufwurf nicht zulaessig
BULGING NOT ALLOWED

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		1.750
Zaehnezahl / NUMBER OF TEETH z		33
Eingriffswinkel / NORMAL PRESSURE ANGLE α_n		17.5°
Schraegungswinkel / HELIX ANGLE β		27.3°
Richtung / HAND OF HELIX		LEFT, links
Bezugsprofil / BASIC RACK		
Profilverschiebung/ADDENDUM MODIFICATION $x \cdot m_n$	Nennmass / NOMINAL	0.948
Qualitaet / GEAR TOOTH QUALITY (DIN3960)		8
Toleranzklasse / TOLERANCE CLASS		
Zahndicke / TOOTH THICKNESS s_n Lehrenmass / GAGE DIMENSION	effective max.	
Zahndicke / TOOTH THICKNESS s_n (Einzelmessung / ACTUAL)	max.	3.269
	min.	3.244
Messkugel-Ø / BALL DIA D_M		2.50
Pruefmass / MEASUREMENT OVER BALLS M_{dK} (Einzelmessung / ACTUAL)	max.	68.579
	min.	68.509



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GN 3010	0	<M>					
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CAD Pro/Engineer			a	1x	C00911_MIP_1	Ansicht W: Optionale Erkennungsrille hinzu/ VIEW W: OPTIONAL ID GROOVE ADDED	20160415
			---	---	35834	Spezifikationsreifegrad F erteilt / MATURITY LEVEL OF SPECIFICATION F APPROVED	20140404
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

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EVALUATION OF THE DIAMETER MEASUREMENT IS CARRIED OUT ACCORDING TO THE GAUSS METHOD (ARITHMETICAL MEAN VALUE)

Form- und Lagetolerierung FORM AND POSITION TOLERANCES DIN 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: 20274 mm²
Masse MASS: 0.370 kg
Schutzvermerk nach ISO 16016 beachten PROTECTION PER ISO 16016

Benennung / ITEM NAME: SPEED GEAR 6TH
Schaltrad 6. Gang

Artikel-Nr./ ITEM NO.: 2501364738
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY: F
Format SIZE: A1
CAD-Modell: 2501364738

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 09:33:16	1
MODEL:	Agapi.Raidt	15.04.2016 09:35:27	5+