

312965



Part Submission Warrant

Part Name	Input shaft Inner	Customer Part Number	250.6.4287.35
Shown on Drawing No.	250.6.4287.35	Organization Part #	
Engineering Change Level	h C007260_MIP_1	Dated	10-gen-17
Additional Engineering Changes		Dated	
Safety and/or Government Regulation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Purchase Order No.	
Checking Aid No.		Weight (kg)	1.7900
Checking Aid Engineering Change Level		Dated	

ORGANIZATION MANUFACTURING INFORMATION

CUSTOMER SUBMITTAL INFORMATION

GETRAG MODUGNO

VIA DEI CICLAMINI N°4

MODUGNO BARI 70026 ITALY

DCT250

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

- | | |
|---|--|
| <input type="checkbox"/> Initial Submission | <input type="checkbox"/> Change to Optional Construction or Material |
| <input checked="" type="checkbox"/> Engineering Change(s) | <input type="checkbox"/> Supplier or Material Source Change |
| <input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional | <input type="checkbox"/> Change in Part Processing |
| <input type="checkbox"/> Correction of Discrepancy | <input type="checkbox"/> Parts Produced at Additional Location |
| <input type="checkbox"/> Tooling Inactive > than 1 year | <input type="checkbox"/> 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

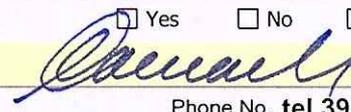
The results for dimensional measurements material and functional tests appearance criteria statistical process package
 These results meet all drawing and specification requirements: Yes NO (If "NO" - Explanation Required)
 Mold / Cavity / Production Process _____

DECLARATION

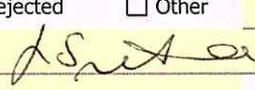
I hereby affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of **2000 / 24** hours. I 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: **Drawing correction with standard Tip diameter tolerance used for topping machining (increased)**

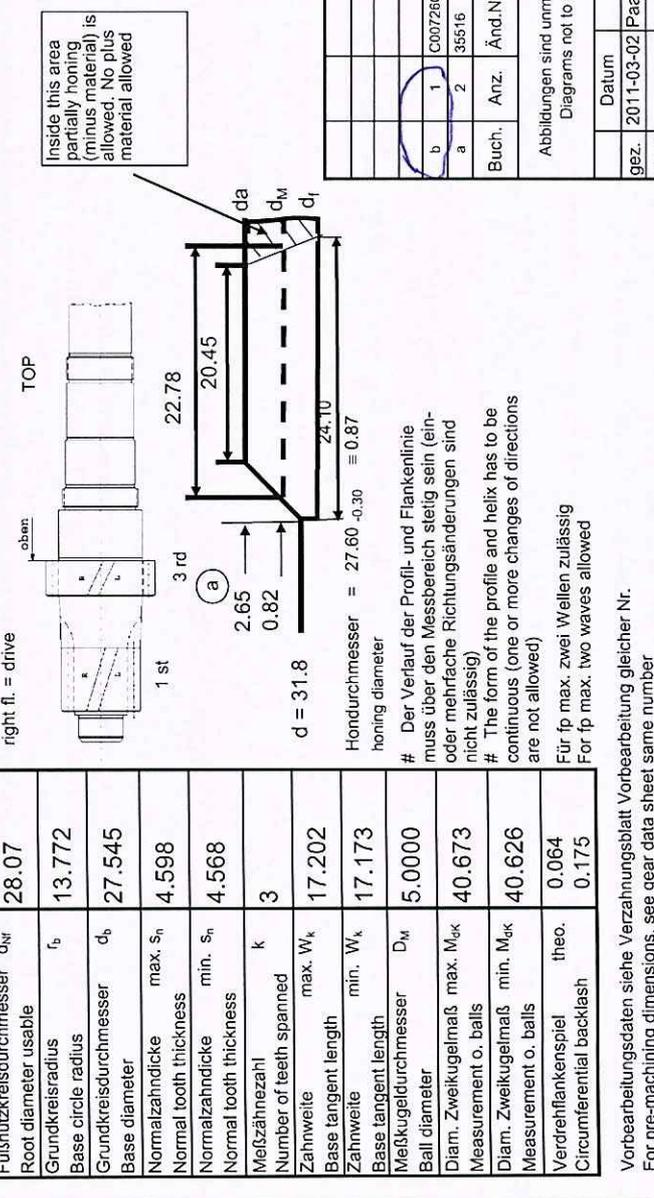
Is each Customer Tool properly tagged and numbered? Yes No n/a

Organization Authorized Signature  Date **24/01/2017**
 Print Name **Camarda Ettore** Phone No. **tel 390805858220** Fax No. _____
 Title **Area 1 Manager** E-mail **ettore.camarda@magna.com**

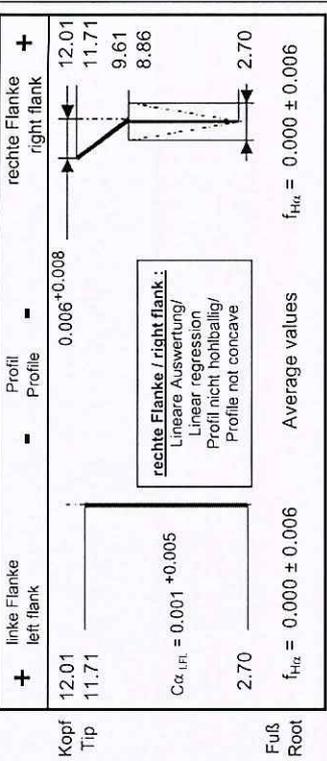
FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: Approved Rejected Other _____
 Customer Signature  Date **24.01.17**
 Print Name _____ Customer Tracking Number (optional) _____

STIRNRAD GEAR		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978) gültig für Werte am Einzelzahn Tolerances of gearing (DIN 3961 of Aug. 1978) valid for values at individual tooth		(8)	
external außenverzahnt		linke Fl. left flank	rechte Fl. right flank		
Zähnezahl Number of teeth	13	# 0.004	# 0.004	Eingriffsteilungs-Abweich. Normal pitch error	f_{pb} 0.014
Modul Normal module	2.100000			Teilungs-Einzelabweichung Adjacent pitch error	f_p 0.014
Eingriffswinkel Normal pressure angle	20° 0' 0"			Teilungssprung Diff. bet. adjacent pitches	f_u 0.018
Schrägungswinkel Helix angle	22° 48' 0"	0.000 ± 0.010	0.000 ± 0.007	Teilungs-Summenabweich. F_{pk} Cumulative circ. pitch error	F_r 0.032
Steigungsrichtung Hand of helix	RIGHT	0.000 ± 0.013	0.000 ± 0.013	Rundlaufabweichung Radial run-out	R_s Zahndickenschwankung Range of tooth thckn. error
Profilverstärkungsfaktor Addendum modification coefficient	0.850	# 0.004	# 0.004		
Teilkreisdurchmesser Pitch diameter	29.614				
Kopfkreisdurchmesser Outside diameter	37.00 -0.26		0.040		
Kopfnutzkreis. theo. max. d_{ka} Tip diam. usable theo.	36.55			Zweifl.-Wälzabweichung Radial composite error	F_r 0.036
Kopfkreis. theo. min. d_{kb} Tip diam. usable theo.	36.15			Zweifl.-Wälzsprung Radial tooth to tooth comp. err.	f_r 0.014
Fußkreisdurchmesser Root diameter	25.65 -0.35		22.78 (a)	Meßkreis Krümmungsradius ρ_{Mk} Radius of curvature meas. diam.	7.85
Fußnutzkreisdurchmesser Root diameter usable	28.07				
Grundkreisradius Base circle radius	13.772				
Grundkreisdurchmesser Base diameter	27.545				
Normalzahnstärke max. s_n	4.598				
Normalzahnstärke min. s_n	4.568				
Meßzähnezahl Number of teeth spanned	3				
Zahnweite max. W_k	17.202				
Zahnweite min. W_k	17.173				
Meßkugeldurchmesser Ball diameter	5.0000				
Diam. Zweikugelmaß max. M_{kK}	40.673				
Diam. Zweikugelmaß min. M_{kK}	40.626				
Verdrehfankenspiel Circumferential backlash	0.064 0.175				



right fl. = drive
Hondurchmesser = 27.60 -0.30 = 0.87 honing diameter
Der Verlauf der Profil- und Flankenlinie muss über den Messbereich stetig sein (ein- oder mehrfache Richtungsänderungen sind nicht zulässig)
The form of the profile and helix has to be continuous (one or more changes of directions are not allowed)
Für f_p max. zwei Wellen zulässig
For f_p max. two waves allowed

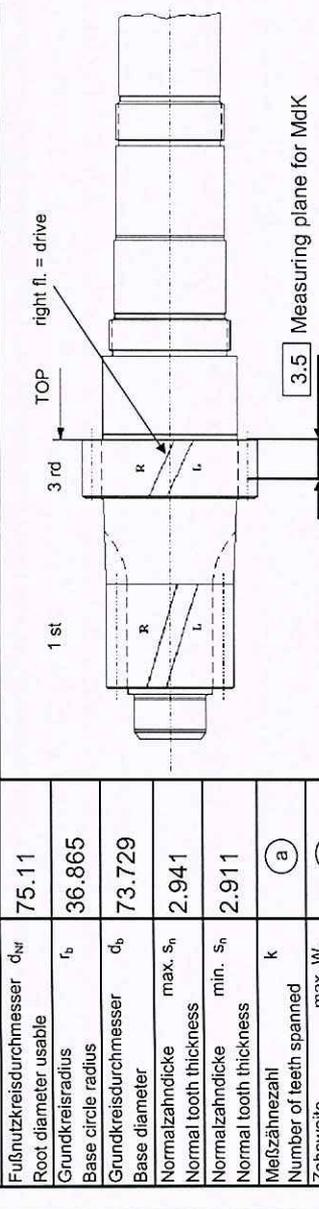


linke Flanke left flank
rechte Flanke right flank
Profil Profile
Average values
 $f_{Hk} = 0.000 \pm 0.006$
• Schreibbeginn
• Start of checking
 $\varnothing = 27.60 -0.30 \approx 0.87$
Flankenlinie Tooth trace
Crowning
 $0.001 +0.005 (0.8^*b)$
Average values
 $f_{Hfj} = 0.000 \pm 0.006$
 $f_{Hfj} = 0.000 \pm 0.006$

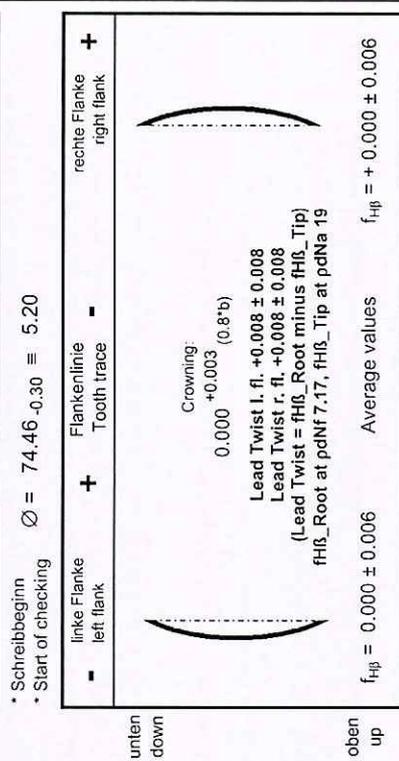
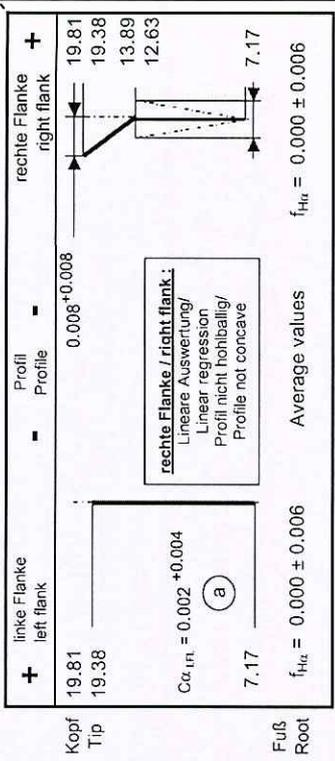
* f_{Hfj} (zwischen dNF und dem Schreibbeginn ds) max $f_{Hfj}2$, jedoch 0.003 zulässig
* f_{Hfj} (between dNF and start of checking ds) max $f_{Hfj}2$, 0.003 allowable.
Profil- und Flankenlinienprüfung nach VDI/VDE 2612
Tabellenwerte für F_p und f_{Hfj} sind auf die gesamte Radbreite im Meßkreis d_M bezogen
Flankenlinienprüfbereich $L_{\beta} = 0.8^*b$ hochgerechnet auf 1.0^*b
Begriffe für Stirnräder nach DIN 886, 3960, 3998
Profil- und helix checking according to VDI/VDE 2612
Listed tolerance data for F_p and f_{Hfj} refers to the total face width in the meas. dia. d_M
Tooth trace testing area $L_{\beta} = 0.8^*b$ calculated to 1.0^*b
Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

Verteiler:		
Schutzvermerk nach ISO 16016 beachten Protection per ISO 16016		
20170117	Cricenti	
20151111	Cricenti	
Buch. Anz.	Änd.Nr.	
Abbildungen sind unverändert. Diagrams not to scale.		
Datum	Name	250
gez. 2011-03-02	Paafsen, Holger	Verzahnungsblatt Endkontrolle Final Check Gear Data
gepr.	Benennung:	Naming: Input Shaft Inner 1st
Zeichnungsnummer: Drawing number: 250.6.4287.35		

STIRNRAD		Toleranzen der Verzahnung (DIN 3961 vom Aug. 1978)		(8)	
GEAR		gültig für Werte am Einzelzahn		Tolerances of gearing (DIN 3961 of Aug. 1978)	
valid for values at individual tooth		linke Fl. left flank	rechte Fl. right flank	linke Fl. left flank	rechte Fl. right flank
Zähnezahl Number of teeth	z				
Modul Normal module	m_n	# 0.004			
Eingriffswinkel Normal pressure angle	α_n				
Schrägungswinkel Helix angle	β	0.000 ± 0.010	0.000 ± 0.007		
Steigungsrichtung Hand of helix		0.000 ± 0.013	0.000 ± 0.013		
Profilschiebungsfaktor Addendum modification coeff.	x				
Teilkreisdurchmesser Pitch diameter	d	# 0.004			
Kopfkreisdurchmesser Outside diameter	d_s				
Kopfnutzkreisd. theo. max. d_{na}					
Kopfnutzkreisd. theo. min. d_{na}					
Fußkreisdurchmesser Root diameter	d_f				
Fußnutzkreisdurchmesser Root diameter usable	d_{nr}				
Grundkreisradius Base circle radius	r_b				
Grundkreisradius Base circle radius	r_b				
Normalzahnstärke Normal tooth thickness	max. s_n				
Normalzahnstärke Normal tooth thickness	min. s_n				
Meßzähnezahl Number of teeth spanned	k				
Zahnweite Base tangent length	max. W_k				
Zahnweite Base tangent length	min. W_k				
Meßkugeldurchmesser Ball diameter	D_M				
Diam. Zweikugelmaß Measurement o. balls	max. M_{dk}				
Diam. Zweikugelmaß Measurement o. balls	min. M_{dk}				
Verdriftflankenspiel Circumferential backlash	theo. 0.071				
	0.176				



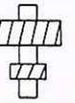
Handdurchmesser honing diameter	Hondurchmesser = 74.46 -0.30 ≈ 5.20
# Der Verlauf der Profil- und Flankenlinie muss über den Messbereich stetig sein (ein- oder mehrfache Richtungsänderungen sind nicht zulässig)	
# The form of the profile and helix has to be continuous (one or more changes of directions are not allowed)	
Für fp max. zwei Wellen zulässig	
For fp max. two waves allowed	



* Schreibbeginn $\varnothing = 74.46 -0.30 \approx 5.20$
 * Start of checking
 * $f_{Hk} = 0.000 \pm 0.006$
 * $f_{Hj} = 0.000 \pm 0.006$
 * $f_{Hk} = 0.000 \pm 0.006$
 * $f_{Hj} = 0.000 \pm 0.006$
 * f_{Hk} (zwischen dNF und dem Schreibbeginn ds) max f_{Hk2} , jedoch 0.003 zulässig
 * f_{Hj} (between dNF and start of checking ds) max f_{Hj2} , 0.003 allowable.
 Profil- und Flankenlinienprüfung nach VDI/VDE 2612
 Tabellenwerte für F_p und f_{Hj} sind auf die gesamte Radbreite im Meßkreis d_M bezogen
 Flankenlinienprüfbereich $L_p = 0.8 \cdot b$ hochgerechnet auf $1.0 \cdot b$
 Begriffe für Stirnräder nach DIN 868, 3960, 3998
 Profile and helix checking according to VDI/VDE 2612
 Listed tolerance data for F_p and f_{Hj} refers to the total face width in the meas. dia. d_M
 Tooth trace testing area $L_p = 0.8 \cdot b$ calculated to $1.0 \cdot b$
 Terms of the tooth system according to DIN (German Industrial Standards) No. 868, 3960, 3998

Verfasser:	
Schutzvermerk nach ISO 16016 beachten	Protection per ISO 16016
Logo: GETRAG	Logo: GETRAG
GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG	GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
Remark:	
Ersatz für	
Erstverwendung bei Getriebeartyp:	250
Verzahnungsblatt Endkontrolle	
Final Check Gear Data	
Benennung:	
Nennung:	
Input Shaft Inner 3rd	

Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06_0	P26 601265	Controllore: turno b	Data: 24.01.2017 13:35
Denominazione: Input Inner Z13	Numero denti z	13	Largh.fasc.dent. b 22.78mm
Numero disegno.: 250.6.4287.35-IF	Modulo m	2.1mm	Tratto evolv. La 9.01/6.16mm
Comnessa/serie nr.: 1	Angolo pressione	20°00'00"	Tratto elica L8 18.22mm
Masch.Nr.: M001	Spindel: Forme	Angolo elica	22°48'00"
Untersuchungszweck: Laufende Messung	Ø Base db	27.5448mm	Inizio elab. M1 2.7mm
Werkzeug:	Charge:	Ang. Base	21°21'18"
			Fat.scor.pr. x .85

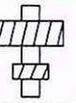
TIRO

Testa-Ø: 36.89mm [36.74/37]

VDI



Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:39
Denominazione: Input Inner Z13	Numero denti z: 13	Largh.fasc.dent. b: 22.78mm	
Numero disegno.: 250.6.4287.35-IF	Modulo m: 2.1mm	Tratto evolv. La: 9.01/6.16mm	
Commessa/serie nr.: 2	Angolo pressione: 20°00'00"	Tratto elica L _S : 18.22mm	
Masch.Nr.: M001	Spindel: Formel 65	Angolo elica: 22°48'00"	Inizio elab. M1: 2.7mm
Untersuchungszweck: Laufende Messung	Ø Base db: 27.5448mm	Palpatore Ø: (#2D) 1mm	
Werkzeug: Charge:	Ang. Base: 21°21'18"	Fat.scor.pr. x: .85	

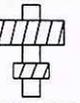
TIRO

Testa-Ø: 36.892mm [36.74/37]

VDI



Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:42
Denominazione: Input Inner Z13	Numero denti z: 13	Largh.fasc.dent. b: 22.78mm	
Numero disegno.: 250.6.4287.35-IF	Modulo m: 2.1mm	Tratto evolv. La: 9.01/6.16mm	
Commessa/serie nr.: 3	Angolo pressione: 20°00'00"	Tratto elica LE: 18.22mm	
Masch.Nr.: M001	Spindel: Formn. 36	Angolo elica: 22°48'00"	Inizio elab. M1: 2.7mm
Untersuchungszweck: Laufende Messung	Ø Base db: 27.5448mm	Palpatore Ø: (#2D) 1mm	
Werkzeug: Charge:	Ang. Base: 21°21'18"	Fat.scor.pr. x: .85	

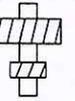
TIRO

Testa-Ø: 36.899mm [36.74/37]

VDI



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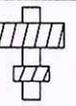
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Numero disegno.: 250.6.4287.35-IF	Modulo m: 2.1mm	Tratto evolv. La: 9.01/6.16mm	
Commessa/serie nr.: 4	Angolo pressione: 20°00'00"	Tratto elica L8: 18.22mm	
Masch.Nr.: M001	Spindel: Formn. 651	Angolo elica: 22°48'00"	Inizio elab. M1: 2.7mm
Untersuchungszweck: Laufende Messung	Ø Base db: 27.5448mm	Palpatore Ø (#2D): 1mm	
Werkzeug:	Charge:	Ang. Base: 21°21'18"	Fat.scor.pr. x: .85

Testa-Ø: 36.9mm [36.74/37]

TIRO

VDI

Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:50
Denominazione: Input Inner Z38		Numero denti z 38	Largh.fasc.dent. b 14.3mm
Numero disegno.: 250.6.4287.35-IIF		Modulo m 1.8mm	Tratto evolv. La 12.21/5.46mm
Commessa/serie nr.: 1		Angolo pressione 17°30'00"	Tratto elica L β 11.44mm
Masch.Nr.: M001	Spindel: Formm	Angolo elica 29°15'00"	Inizio elab. M1 7.17mm
Untersuchungszweck: Laufende Messung		\emptyset Base db 73.7292mm	Palpatore \emptyset (#2D) 1mm
Werkzeug:	Charge:	Ang. Base 27°46'31"	Fat.scor.pr. x .1

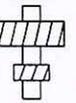
	TIRO
	Testa- \emptyset : 83.995mm [83.89/84.15]

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	VDI
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Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:52
Denominazione: Input Inner Z38	Numero denti z 38	Largh.fasc.dent. b 14.3mm	
Numero disegno.: 250.6.4287.35-IIF	Modulo m 1.8mm	Tratto evolv. La 12.21/5.46mm	
Commessa/serie nr.: 2	Angolo pressione 17°30'00"	Tratto elica L& 11.44mm	
Masch.Nr.: M001	Spindel: Formn. cat. elica 29°15'00"	Inizio elab. M1 7.17mm	
Untersuchungszweck: Laufende Messung	Ø Base db 73.7292mm	Palpatore Ø (#2D) 1mm	
Werkzeug:	Charge:	Ang. Base 27°46'31"	Fat.scor.pr. x .1

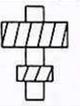
TIRO

Testa-Ø: 84.015mm [83.89/84.15]

VDI



Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06_0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:56
Denominazione: Input Inner Z38	Numero denti z	38	Largh. fasc. dent. b
Numero disegno.: 250.6.4287.35-IIF	Modulo m	1.8mm	Tratto evolv. La
Comessa/serie nr.: 3	Angolo pressione	17°30'00"	Tratto elica LS
Masch.Nr.: M001	Spindel: Formata	Angolo elica	29°15'00"
Untersuchungszweck: Laufende Messung	Ø Base db	73.7292mm	Palpatore Ø (#2D)
Werkzeug:	Charge:	Ang. Base	27°46'31"
			Fat. scor. pr. x
			.1

TIRO

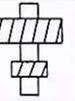
Testa-Ø: 83.993mm [83.89/84.15]

VDI



Docum.archiviato elettronicamente.Archiviazione cartacea non necessaria

Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412 06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 13:58
Denominazione: Input Inner Z38		Numero denti z 38	Largh.fasc.dent. b 14.3mm
Numero disegno.: 250.6.4287.35-IIF		Modulo m 1.8mm	Tratto evolv. La 12.21/5.46mm
Comessa/serie nr.: 4		Angolo pressione 17°30'00"	Tratto elica L8 11.44mm
Masch.Nr.: M001	Spindel: Formel	Angolo elica 29°15'00"	Inizio elab. M1 7.17mm
Untersuchungszweck: Laufende Messung		Ø Base db 73.7292mm	Palpatore Ø (#2D) 1mm
Werkzeug:	Charge:	Ang. Base 27°46'31"	Fat.scor.pr. x .1

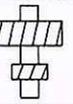
TIRO

Testa-Ø: 83.995mm [83.89/84.15]

VDI



Ruota cilindrica Evolvente/Elica



Nr. prog.: STI0412_06 0	P26 601265	Controllore: turno d	Data: 24.01.2017 14:01
Denominazione: Input Inner Z38	Numero denti z: 38	Largh.fasc.dent. b: 14.3mm	
Numero disegno.: 250.6.4287.35-IIF	Modulo m: 1.8mm	Tratto evolv. La: 12.21/5.46mm	
Comessa/serie nr.: 5	Angolo pressione: 17°30'00"	Tratto elica Lβ: 11.44mm	
Masch.Nr.: M001	Spindel: Forme 66	Angolo elicale: 29°15'00"	Inizio elab. M1: 7.17mm
Untersuchungszweck: Laufende Messung	Ø Base db: 73.7292mm	Palpatore Ø: (#2D) 1mm	
Werkzeug: Charge:	Ang. Base: 27°46'31"	Fat.scor.pr. x: .1	

TIRO

Testa-Ø: 84.001mm [83.89/84.15]

VDI



Drawing 4287 update from index "g" to "h"

Short description: | h | 2x | 0007260_MIP-1 | VIEW MAIN Kopfkreis-Ø77IP DIAMETER Ø84.15-0.26
wgr/w AS Ø84.15-0.16 und AND Ø37-0.26 wgr/w AS Ø37-0.16 | 20170110

PPAP Requirements		Required	Note for ind. "b"
1	Design Records	Yes	
2	Authorized Engineering change documents	Yes	see dwg
3	Customer Engineering approval	n.a.	
4	DFMEA	NO	
5	Process flow diagram(s)	NO	
6	PFMEA	NO	only drawing correction with increased tolerance
7	Control plan	Yes	Correlation sheet change
8	Measurement system analysis studies	NO	
9	Dimensional results	Yes	
10	Records of Material / Performance test results	NO	
11	Initial process studies	NO	
12	Qualified laboratory documentation	NO	
13	Appearance Approval Report (A.A.R.)	n.a.	
14	Sample Production Parts	Yes	
15	Master sample	Yes	
16	Checking aids	n.a.	
17	Customer-Specific Requirements	NO	
18	Part Submission Warrant (PSW)	Yes	

PPAP Docs updated
Yes
Yes
Yes
Yes
Yes
Yes

Other requirements		
1	PSW Raw part	NO
2	PSW E.P. part	NO
3	PSW Engagement Rings	NO

