GETRAG

Part Submission Warrant

Part Name **Double Gear** | Customer Part Number **250.1.3692.76**

Shown on Drawing No. **250.1.3692.76** | Organization Part #

Engineering Change Level **(d) 36088 and c)** | Dated **02 Sept 2015**

Additional Engineering Changes | Dated

Safety and/or Government Regulation ☐ Yes ☑ No | Purchase Order No. | Weight (kg) **1,400**

Checking Aid No. - | Checking Aid Engineering Change Level | Dated

ORGANIZATION MANUFACTURING INFORMATION	CUSTOMER SUBMITTAL INFORMATION
GETRAG MODUGNO	**EDISON**
Organization Name & Supplier/Vendor Code	Customer Name/Division
VIA DEI CICLAMINI N°4	
Street Address	Buyer/Buyer Code
MODUGNO BARI 70026 ITALY	**TYP 250**
City Region Postal Code Country	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: **Second Submission PPAP**

Updating done following point d-c reported on the drawing

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

Organization Authorized Signature | Date **03 11 2015**

Print Name **Pennacchia Vincenzo** | Phone No. **tel 390805858580** | Fax No.

Title **GPS 1 Leader** | E-mail vincenzo.pennacchia@getrag.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☑ Approved ☐ Rejected ☐ Other

Customer Signature | Date 03.11.2015

Print Name | Customer Tracking Number (optional)

GETRAG Production Part Approval

DIMENSIONAL TEST RESULTS

Organization:	GETRAG	Part Number:	250.1.3692.76
Supplier/Vendor Code:	GETRAG Modugno	Part Name:	Double gear
INSPECTION FACILITY:		Design Record Change Level:	d 36088 and c
NA		Engineering Change Documents:	

Organization Measurement Results (Data)

Item	Dimension/Specification	Specification / Limits		Test Date	Qty. Tested	1	2	3	4	5	test distruttivo	Ok	Not Ok
10	Height 33,74 +0,34	33,74	34,08		5	34,042	34,040	34,042	34,049	34,064		**ok**	
12	Height 33,74 +0,2/-0,1	33,64	33,94		5	33,786	33,777	33,787	33,789	33,793		**ok**	
29	Technical cleanliness	ok	nok		5	ok	ok	ok	ok	ok		**ok**	

SIGNATURE	TITLE	DATE
G. Russo	QPE	03/11/2015

PROTOCOLLO DI MISURA ZEISS UMESS

DR2R 080_803485 CICLO CNC

DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501429775	PRISMO SACC	GETRAG	T. HARD	

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	4. 9.2015	1		

IND	NOMI / IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
4. 9.2015 9 ora 54 min 32. 0sec								
18	GDT OSCILL. ASSIALE							
	SUP.CA.D80	t	0.046	0.100				++
21	GDT OSCILL. ASSIALE							
	SUP.CA.D65	t	0.042	0.100				++
228	MINIMO PLANARITA' RICHIAMO (24) CON TRASFORMAZIONE							
	H.CA.80MIN	Z	33.996	33.740	0.340	0.000	0.256	++++
229	MINIMO PLANARITA' RICHIAMO (25) CON TRASFORMAZIONE							
	H.CA.80MAX	Z	34.042	33.740	0.340	0.000	0.302	++++
236	MINIMO PLANARITA' RICHIAMO (265) CON TRASFORMAZIONE							
	H.CA.65MAX	Z	33.786	33.740	0.200	-0.100	0.046	--

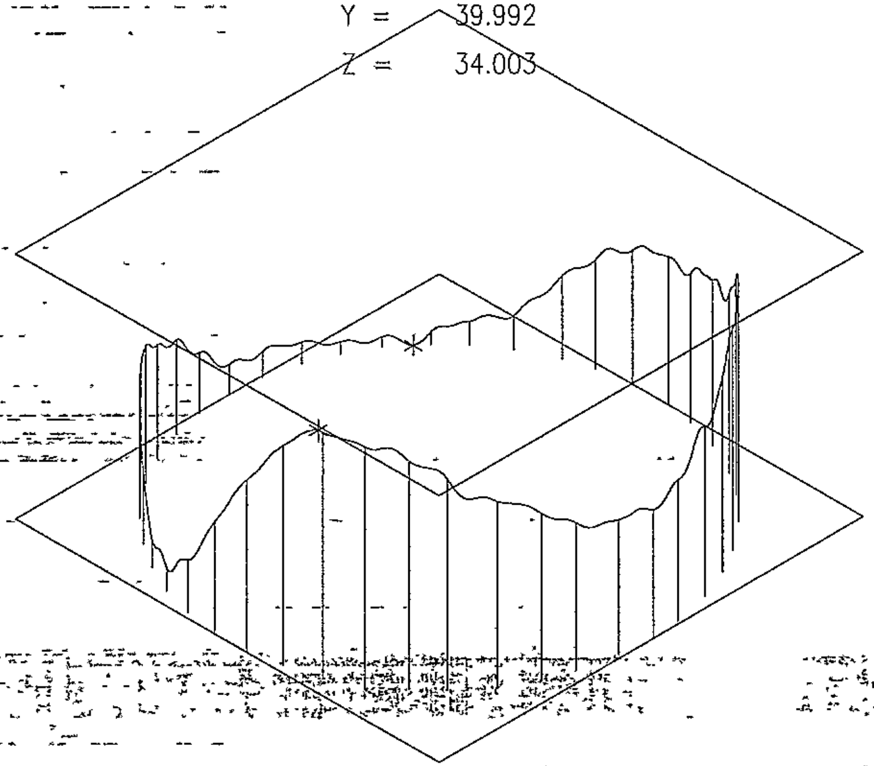
------ Trasferimento dati SAM concluso -------------------

CNC - TERM.

PLANAR.

X = 39.987
Y = 39.992
Z = 34.003

0.014



X = -40.007
Y = 39.992
Z = -34.003

X = 39.987
Y = -40.009
Z = 34.003

X = -40.007
Y = -40.009
Z = 34.003

COORDINATE ESTREME

	MIN.	MAX.
X	-37.802	-37.455
Y	13.086	14.068
Z	33.984	34.026

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro 0/O	50
No. DI PUNTI	2536

MIN. DISPERSIONE % MAX

18	9	7	9	21	13	8	16

INDIRIZZO 23 TOLLERANZA 0.050 DEV. STANDARD 0.009
ETICHETTA CA.80 ATTUALE 0.032 INGRANDIMENTO 700

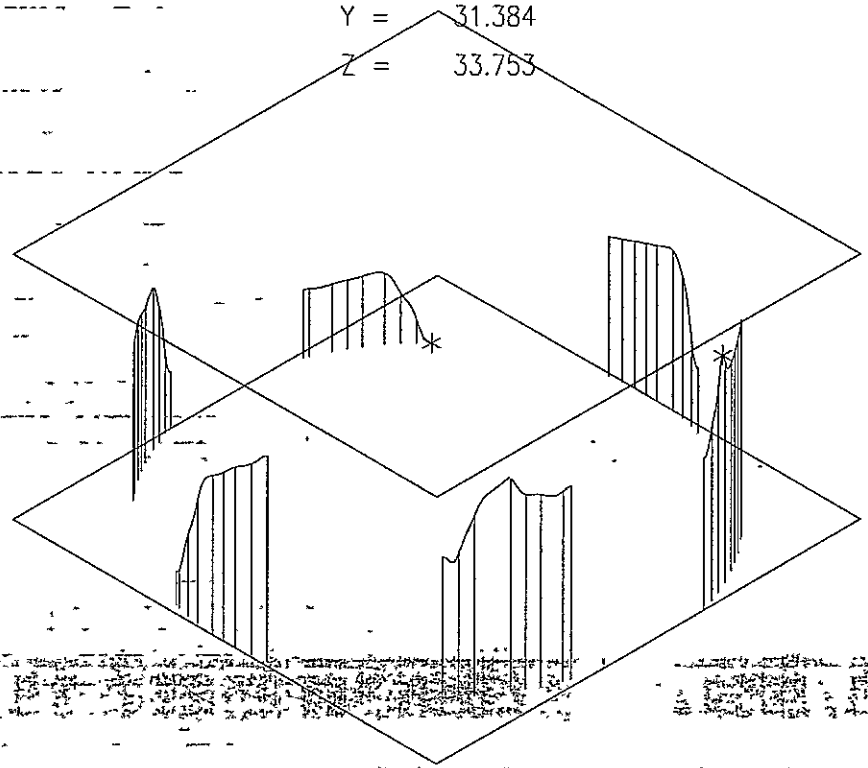
ZEISS — U-M-E S S G R A F . — Operolore:

1 | DR2R 080_803485 | 2501429775 | PRISMO | Doto : 4. 9.2015

PLANAR.

X = 32.489
Y = 31.384
Z = 33.753

0.014



X = −32.506
Y = 31.384
Z = 33.753

X = 32.489
Y = −31.392
Z = 33.753

X = −32.506
Y = −31.392
Z = 33.753

COORDINATE ESTREME

	MIN	MAX
X	−31.416	12.774
Y	8.352	29.880
Z	33.732	33.757

MIN:	DISPERSIONE %						MAX
2	5	16	3	9	33	17	14

VELOCITA' 8.000
DIAMETRO TASTATORE 4.999
INDIRIZZO 263 TOLLERANZA 0.050 DEV. STANDARD 0.007 Filtro O/G 50
ETICHETTA CA.65 ATTUALE 0.032 INGRANDIMENTO 700 No. DI PUNTI 872

ZEISS | U M E S S G R A F . | Operatore:
1 | DR2R 080_803485 | 2501429775 | PRISMO | Data : 4. 9.2015

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                    PROTOCOLLO DI MISURA ZEISS UMESS


DR2R    080_803485                                CICLO CNC
==================
DISEGNO No. |MACCHINA DI MIS.  | FORNITORE/CLIENTE | LAVORAZ.  | OPERAZIONE
2501429775  |PRISMO SACC       | GETRAG            | T. HARD   |

OPERATORE        | DATA         | NUMERO PART.  | COD. MACCH.  | EDIZ.DISEG.FIN.
                 |  4. 9.2015   | 2             |              |

==============================================================================
 IND|   NOMI    / IDF    |SY| VAL ATT   | VAL NOM   | TOL.S | TOL.I | DEV    | MAG
==============================================================================

 4. 9.2015  10 ora   2 min 44. 0sec

  18                      GDT OSCILL. ASSIALE
    SUP.CA.D80            t        0.078       0.100                              ++++

  21                      GDT OSCILL. ASSIALE
    SUP.CA.D65            t        0.048       0.100                              ++

 228                      MINIMO PLANARITA' RICHIAMO (  24) CON TRASFORMAZIONE
    H.CA.80MIN            Z       33.958      33.740   0.340    0.000    0.218   ++++

 229                      MINIMO PLANARITA' RICHIAMO (  25) CON TRASFORMAZIONE
    H.CA.80MAX            Z       34.040      33.740   0.340    0.000    0.300   ++++

 236                      MINIMO PLANARITA' RICHIAMO (  265) CON TRASFORMAZIONE
    H.CA.65MAX            Z       33.777      33.740   0.200   -0.100    0.037   -

          ------ Trasferimento dati SAM concluso -------------------
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                                  CNC - TERM.
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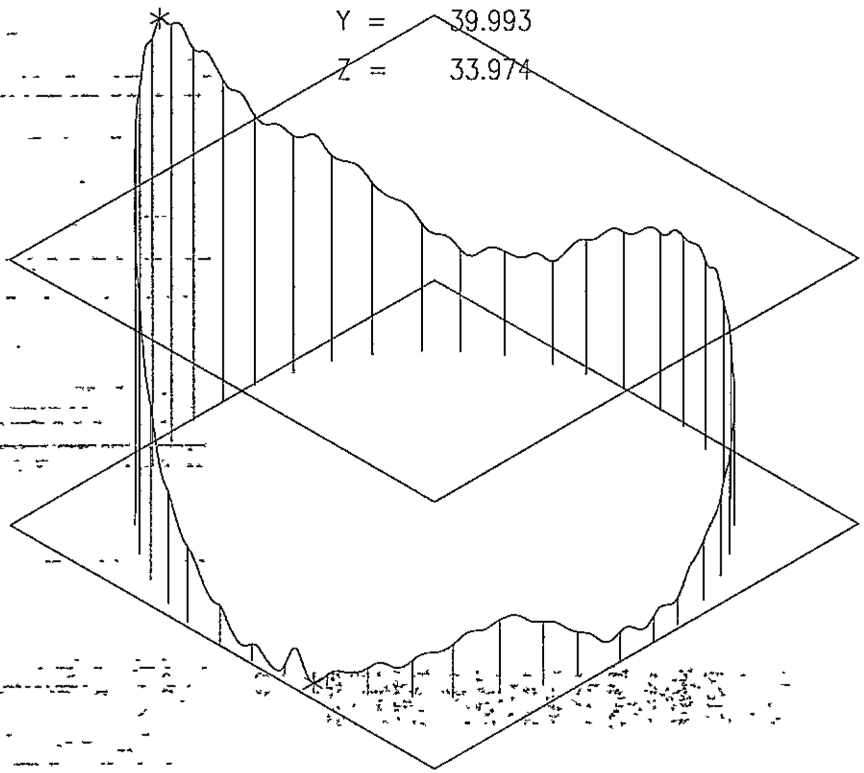
PLANAR.



X =	39.991
Y =	39.993
Z =	33.974

0.014

X =	-40.006
Y =	39.993
Z =	33.974

X =	39.991
Y =	-40.008
Z =	33.974

X =	-40.006
Y =	-40.008
Z =	33.974

COORDINATE ESTREME

	MIN	MAX
X	-31.301	-19.551
Y	24.882	34.890
Z	33.964	34.027

VELOCITA'	8.000
DIAMETRO TASTATORE.	4.999
Filtro O/G	50
No. DI PUNTI	2536

DISPERSIONE %

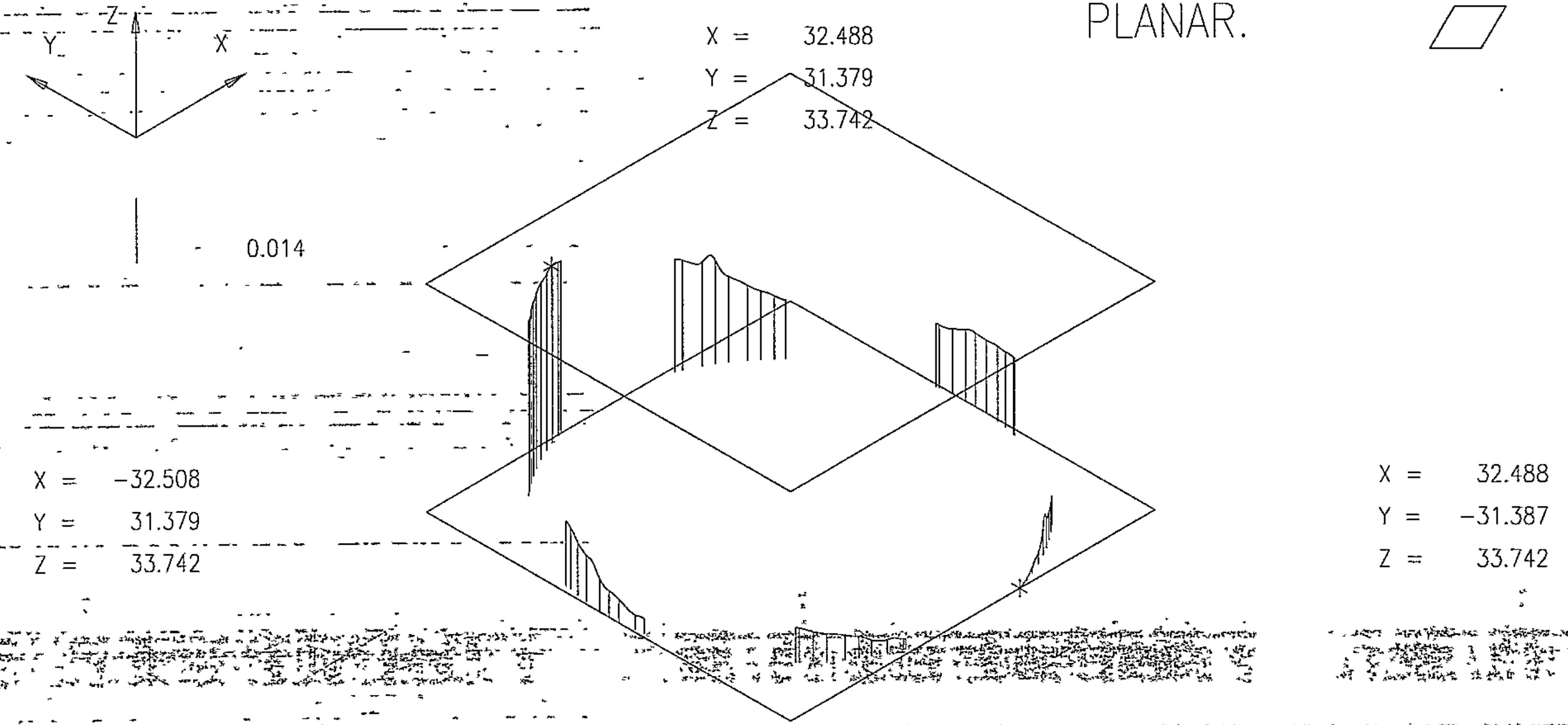
MIN.							MAX
25	21	16	15	6	4	4	9

INDIRIZZO 23 TOLLERANZA 0.050 DEV. STANDARD 0.015
ETICHETTA CA.80 ATTUALE 0.060 INGRANDIMENTO 700

ZEISS U-MESS GRAF.

2	DR2R	080_803485	2501429775	PRISMO	Operatore:
					Data : 4. 9.2015

PLANAR.



COORDINATE ESTREME

	MIN.	MAX
X	22.938	20.988
Y	23.019	24.830
Z	33.739	33.765

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro O/G	50
No. DI PUNTI	904

INDIRIZZO 263 TOLLERANZA 0.050 DEV. STANDARD 0.007
ETICHETTA CA.65 ATTUALE 0.024 INGRANDIMENTO 700

MIN.		DISPERSIONE %					MAX
19	24	12	19	6	1	0	17

ZEISS U M E S S G R A F .

Operatore:

2	DR2R	080_803485	2501429775	PRISMO	Data : 4. 9.2015

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                    PROTOCOLLO DI MISURA ZEISS UMESS

DR2R     080_803485                                 CICLO CNC
==================
DISEGNO No. |MACCHINA DI MIS.  | FORNITORE/CLIENTE | LAVORAZ.  | OPERAZIONE
2501429775  |PRISMO SACC       | GETRAG            | T. HARD   |

OPERATORE         | DATA         | NUMERO PART.  | COD. MACCH.  | EDIZ.DISEG.FIN.
                  |  4. 9.2015   | 3             |              |

================================================================================
 IND|   NOMI    / IDF    |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV    | MAG
================================================================================
 4. 9.2015  10 ora   7 min 44. 0sec

  18                     GDT OSCILL. ASSIALE
    SUP.CA.D80           t        0.064       0.100                           +++

  21                     GDT OSCILL. ASSIALE
    SUP.CA.D65           t        0.035       0.100                           ++

 228                     MINIMO PLANARITA' RICHIAMO (  24) CON TRASFORMAZIONE
    H.CA.80MIN           Z       33.967      33.740   0.340   0.000   0.227   ++

 229                     MINIMO PLANARITA' RICHIAMO (  25) CON TRASFORMAZIONE
    H.CA.80MAX           Z       34.042      33.740   0.340   0.000   0.302   ++++

 236                     MINIMO PLANARITA' RICHIAMO (  265) CON TRASFORMAZIONE
    H.CA.65MAX           Z       33.787      33.740   0.200  -0.100   0.047   -

          ------ Trasferimento dati SAM concluso ------------------
================================================================================
                              CNC - TERM.
================================================================================
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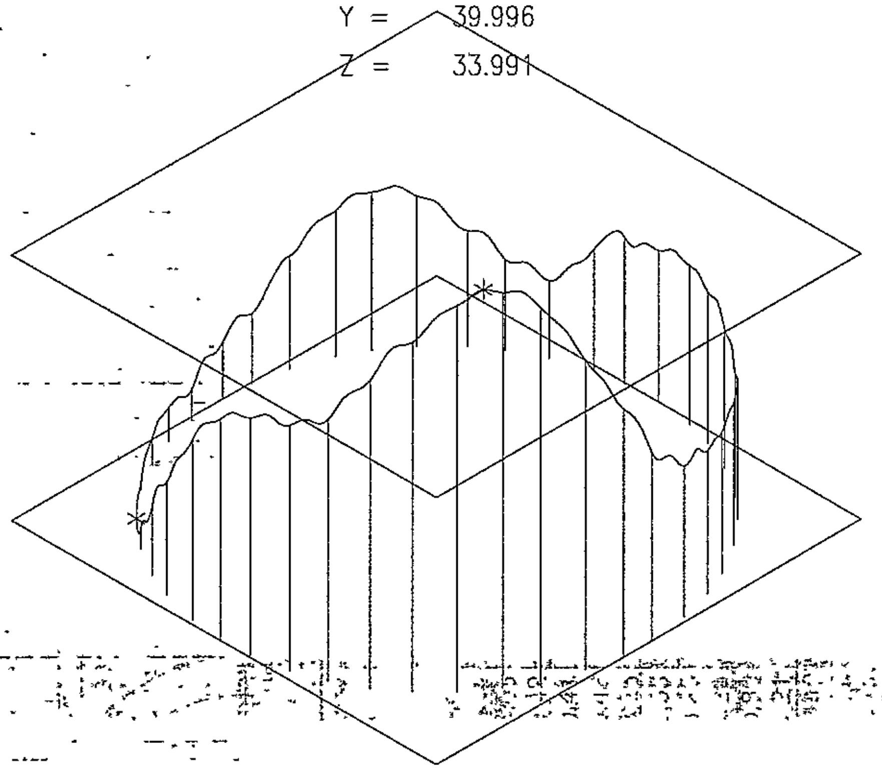
PLANAR.

Z Y X

0.014

X = 39.989
Y = 39.996
Z = 33.991



X = -40.004
Y = 39.996
Z = 33.991

X = 39.989
Y = -40.009
Z = 33.991

X = -40.004
Y = -40.009
Z = 33.991

COORDINATE ESTREME

	MIN.	MAX
X	-31.569	-23.674
Y	24.555	-32.250
Z	33.962	34.036

INDIRIZZO	23	TOLLERANZA	0.050	DEV. STANDARD	0.013
ETICHETTA	CA.80	ATTUALE	0.049	INGRANDIMENTO	700

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro O/G	50
No. DI PUNTI	2528

MIN. DISPERSIONE % MAX

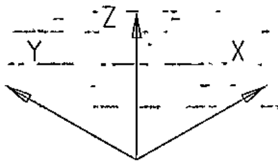
15	11	28	19	9	6	5	8

ZEISS

U M E S S G R A F .

Operatore:

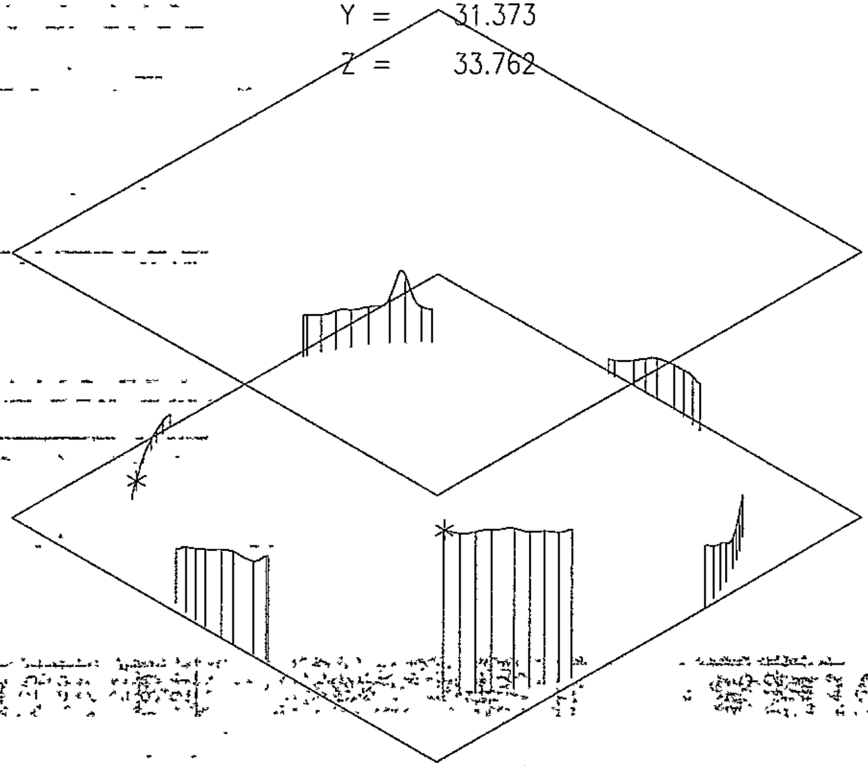
3 -	DR2R	080_803485	2501429775	PRISMO	Data : 4. 9.2015



PLANAR.

0.014

X = 32.489
Y = 31.373
Z = 33.762



X = -32.506
Y = 31.373
Z = 33.762

X = 32.489
Y = -31.386
Z = 33.762

X = -32.506
Y = -31.386
Z = 33.762

COORDINATE ESTREME

	MIN.	MAX
X	15.349	20.480
Y	-28.652	25.220
Z	33.756	33.764

MIN.	DISPERSIONE %						MAX
19	27	20	8	8	1	0	17

VELOCITA' 8.000
DIAMETRO TASTATORE 4.999
Filtro O/G 50
No. DI PUNTI 898

INDIRIZZO 263 TOLLERANZA 0.050 DEV. STANDARD 0.006
ETICHETTA CA.65 ATTUALE 0.022 INGRANDIMENTO 700

ZEISS	U-M-E-S S G R A F.			Operatore:
3	DR2R 080_803485	2501429775	PRISMO	Data : 4. 9.2015

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                    PROTOCOLLO DI MISURA ZEISS UMESS

DR2R    080_803485                                CICLO CNC
==================
DISEGNO No. |MACCHINA DI MIS.  | FORNITORE/CLIENTE | LAVORAZ.  | OPERAZIONE
2501429775  |PRISMO SACC       | GETRAG            | T. HARD   |

OPERATORE        | DATA        | NUMERO PART.  | COD. MACCH.  | EDIZ.DISEG.FIN.
                 |  4. 9.2015  | 4             |              |

==============================================================================
 IND|   NOMI   / IDF   |SY| VAL ATT  | VAL NOM  | TOL.S | TOL.I | DEV    | MAG
==============================================================================
 4. 9.2015  10 ora  12 min 44. 0sec

  18                    GDT OSCILL. ASSIALE
    SUP.CA.D80          t        0.059       0.100                            +++

  21                    GDT OSCILL. ASSIALE
    SUP.CA.D65          t        0.038       0.100                            ++

 228                    MINIMO PLANARITA' RICHIAMO (  24) CON TRASFORMAZIONE
    H.CA.80MIN          Z       33.988      33.740   0.340   0.000   0.248   ++

 229                    MINIMO PLANARITA' RICHIAMO (  25) CON TRASFORMAZIONE
    H.CA.80MAX          Z       34.049      33.740   0.340   0.000   0.309   ++++

 236                    MINIMO PLANARITA' RICHIAMO (  265) CON TRASFORMAZIONE
    H.CA.65MAX          Z       33.789      33.740   0.200  -0.100   0.049   -

          ------ Trasferimento dati SAM concluso ------------------
==============================================================================
                                 CNC - TERM.
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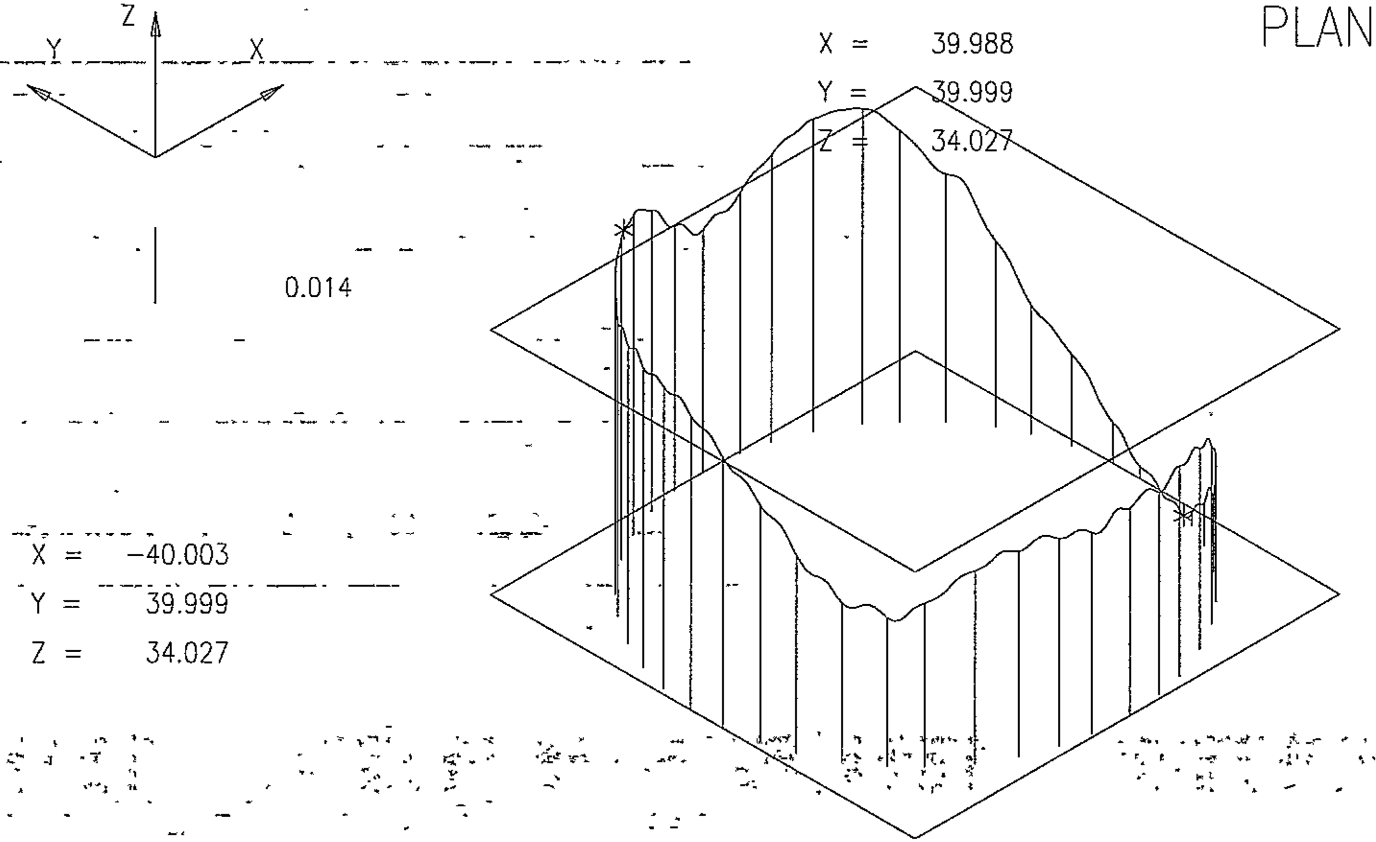
PLANAR.



COORDINATE ESTREME

	MIN.	MAX
X	-39.238	23.763
Y	-7.707	32.165
Z	33.987	34.047

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro O/G	50
No. DI PUNTI	2543

INDIRIZZO 23 TOLLERANZA 0.050 DEV. STANDARD 0.011
ETICHETTA CA.80 ATTUALE 0.041 INGRANDIMENTO 700

MIN. DISPERSIONE % MAX

9	4	4	9	14	17	13	30

ZEISS

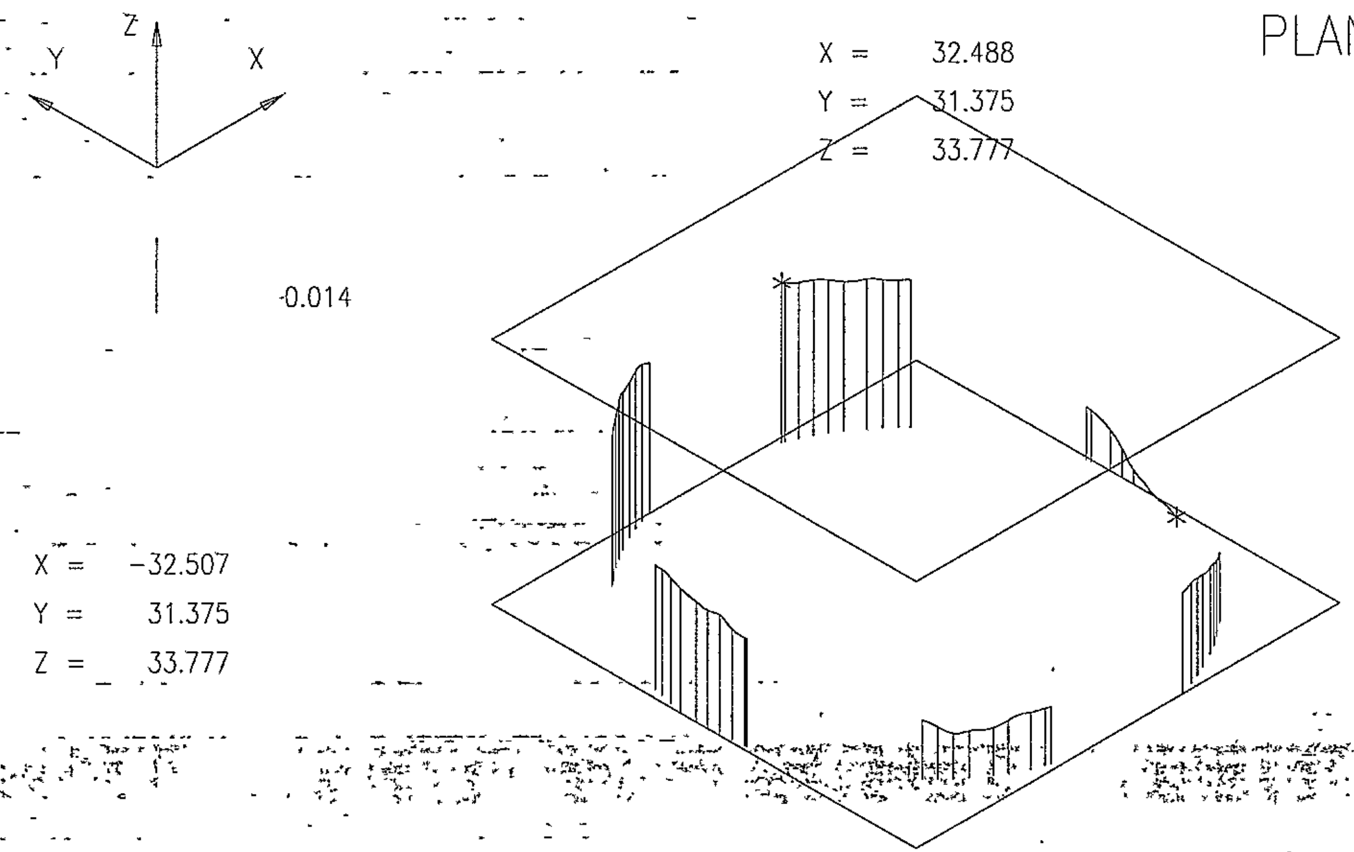
U M E S S G R A F .

Operatore:

4	DR2R	080_803485	2501429775	PRISMO

Data : 4. 9.2015

PLANAR.



X = 32.488
Y = 31.375
Z = 33.777

X = -32.507
Y = 31.375
Z = 33.777

X = 32.488
Y = -31.381
Z = 33.777

COORDINATE ESTREME

	MIN.	MAX
X	32.187	10.412
Y	-4.384	-30.792
Z	33.759	33.777

X = -32.507
Y = -31.381
Z = 33.777

VELOCITA' 8.000
DIAMETRO TASTATORE 4.999
Filtro O/G 50
No. DI PUNTI 889

INDIRIZZO 263 TOLLERANZA 0.050 DEV. STANDARD 0.006
ETICHETTA CA.65 ATTUALE 0.023 INGRANDIMENTO 700

MIN.		DISPERSIONE %					MAX
10	3	20	5	11	11	7	34

ZEISS U-MESS GRAF. Operatore:
-4 DR2R 080_803485 2501429775 PRISMO Data : 4. 9.2015

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PROTOCOLLO DI MISURA ZEISS UMESS

DR2R 080_803485 CICLO CNC

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DISEGNO No.	MACCHINA DI MIS.	FORNITORE/CLIENTE	LAVORAZ.	OPERAZIONE
2501429775	PRISMO SACC	GETRAG	T. HARD	

OPERATORE	DATA	NUMERO PART.	COD. MACCH.	EDIZ.DISEG.FIN.
	4. 9.2015	5		

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IND	NOMI / IDF	SY	VAL ATT	VAL NOM	TOL.S	TOL.I	DEV	MAG
4. 9.2015 10 ora 16 min 34. 0sec								
18		GDT OSCILL. ASSIALE						
	SUP.CA.D80	t	0.092	0.100				++++
21		GDT OSCILL. ASSIALE						
	SUP.CA.D65	t	0.047	0.100				++
228		MINIMO PLANARITA' RICHIAMO (24) CON TRASFORMAZIONE						
	H.CA.80MIN	Z	33.962	33.740	0.340	0.000	0.222	++
229		MINIMO PLANARITA' RICHIAMO (25) CON TRASFORMAZIONE						
	H.CA.80MAX	Z	34.064	33.740	0.340	0.000	0.324	++++
236		MINIMO PLANARITA' RICHIAMO (265) CON TRASFORMAZIONE						
	H.CA.65MAX	Z	33.793	33.740	0.200	-0.100	0.053	+

------ Trasferimento dati SAM concluso ------------------

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CNC - TERM.

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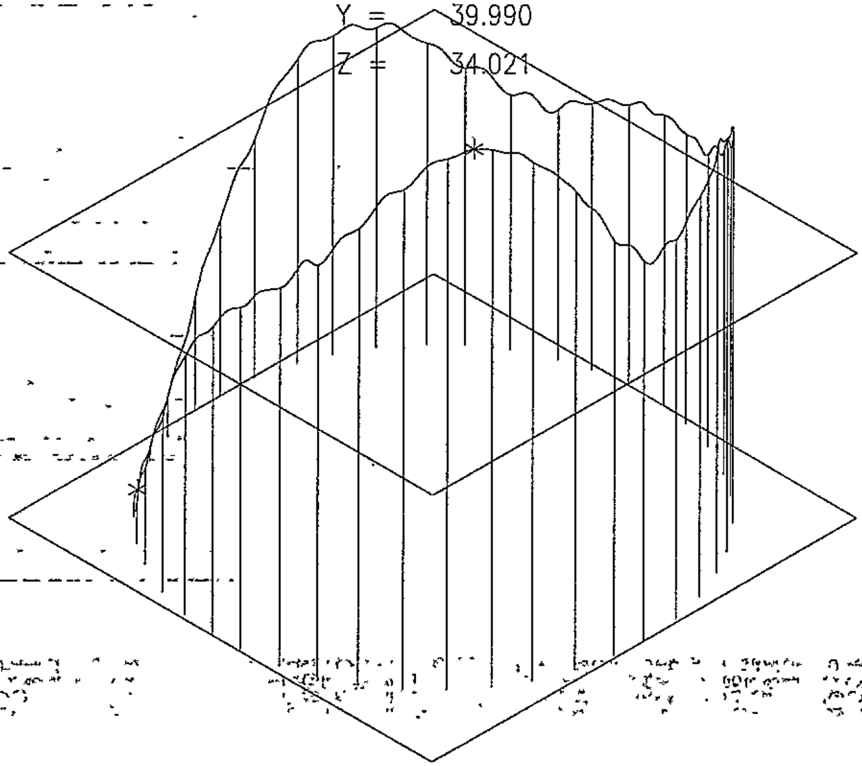
PLANAR.

Z Y X

0.014

X = 39.985
Y = 39.990
Z = 34.021



X = -40.009
Y = 39.990
Z = 34.021

X = 39.985
Y = -40.009
Z = 34.021

COORDINATE ESTREME

	MIN.	MAX.
X	-28.004	14.204
Y	28.559	37.377
Z	33.965	34.024

X = -40.009
Y = -40.009
Z = 34.021

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro O/G	50
No. DI PUNTI	2536

MIN.	DISPERSIONE %						MAX
12	5	4	11	28	16	13	11

INDIRIZZO 23 TOLLERANZA 0.050 DEV. STANDARD 0.017

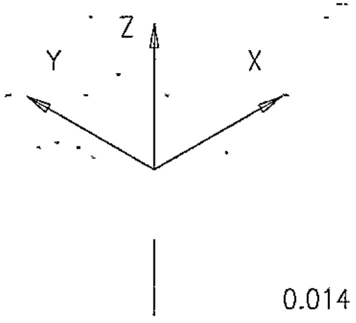
ETICHETTA CA.80 ATTUALE 0.063 INGRANDIMENTO 700

ZEISS

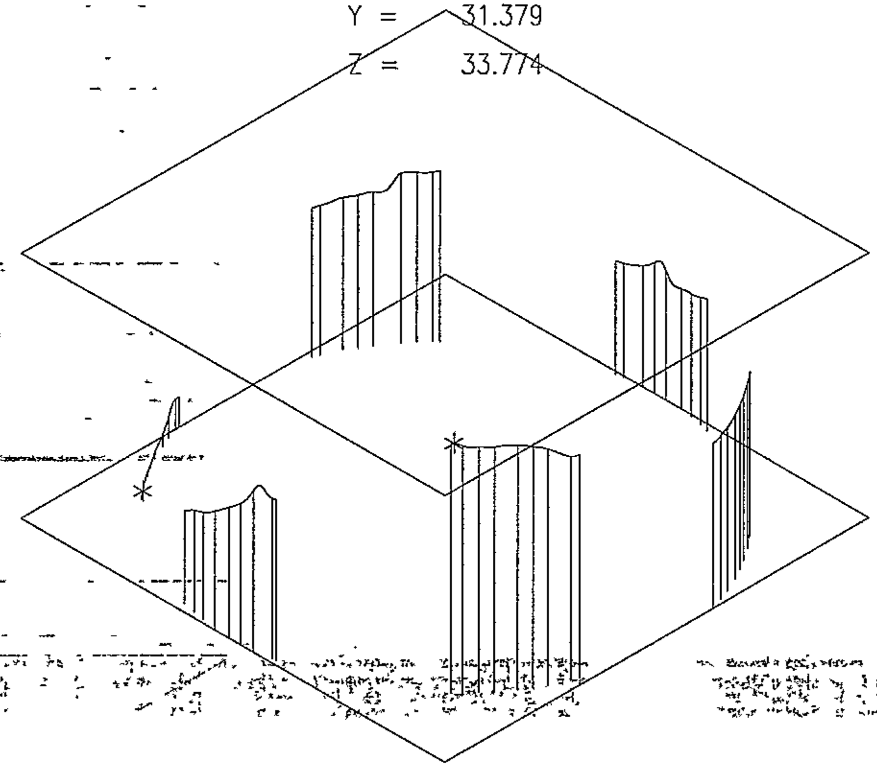
U M E S S G R A F .

Operatore:

5 | DR2R 080_803485 | 2501429775 | PRISMO | Data : 4. 9.2015



PLANAR.



X = 32.489
Y = 31.379
Z = 33.774

X = −32.511
Y = 31.379
Z = 33.774

X = 32.489
Y = −31.386
Z = 33.774

X = −32.511
Y = −31.386
Z = 33.774

COORDINATE ESTREME

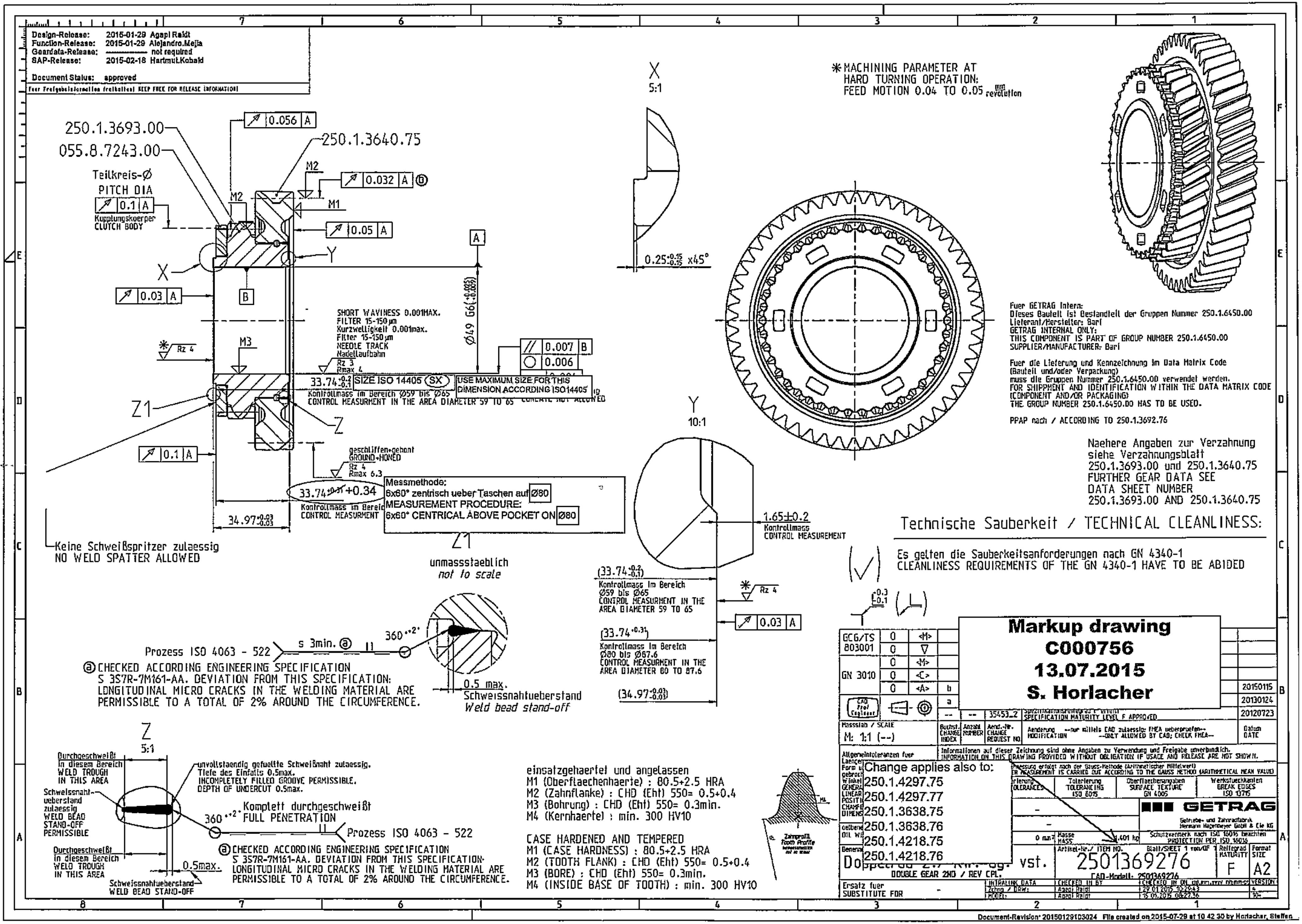
	MIN.	MAX
X	19.929	19.961
Y	25.666	25.630
Z	33.748	33.781

VELOCITA'	8.000
DIAMETRO TASTATORE	4.999
Filtro O/G	50
No. DI PUNTI	873

MIN.			DISPERSIONE %				MAX
16	0	0	17	23	26	0	17

INDIRIZZO 263 TOLLERANZA 0.050 DEV. STANDARD 0.009
ETICHETTA CA.65 ATTUALE 0.030 INGRANDIMENTO 700

ZEISS	U M E S S G R A F .				Operatore:
	5	DR2R 080_803485	2501429775	PRISMO	Data : 4. 9.2015


Design-Release: 2015-01-29 Agapi Raidt
Function-Release: 2015-01-29 Alejandro.Mejia
Geardata-Release: not required
SAP-Release: 2015-02-18 Hartmut.Kobald
Document Status: approved
Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!
250.1.3693.00
055.8.7243.00
250.1.3640.75
Teilkreis-Ø
PITCH DIA
Kupplungskoerper
CLUTCH BODY
0.056 A
0.032 A
0.05 A
0.03 A
0.1 A
M1
M2
M3
X
Y
Z
Z1
Ø49 G6(+0.025/+0.009)
SHORT WAVINESS 0.001MAX.
FILTER 15-150µm
Kurzwelligkeit 0.001max.
Filter 15-150µm
NEEDLE TRACK
Nadellaufbahn
Rz 3
Rmax 4
33.74-0.2/-0.1 SIZE ISO 14405 (SX)
USE MAXIMUM SIZE FOR THIS DIMENSION ACCORDING ISO14405
Kontrollmass im Bereich Ø59 bis Ø65
CONTROL MEASURMENT IN THE AREA DIAMETER 59 TO 65
0.007 B
0.006
geschliffen+gehont
GROUND+HONED
Rz 4
Rmax 6.3
33.74 +0.34
Kontrollmass im Bereich
CONTROL MEASURMENT
Messmethode:
6x60° zentrisch ueber Taschen auf Ø80
MEASUREMENT PROCEDURE:
6x60° CENTRICAL ABOVE POCKET ON Ø80
34.97+0.03/-0.03
Keine Schweißspritzer zulaessig
NO WELD SPATTER ALLOWED
unmassstaeblich
not to scale
Prozess ISO 4063 - 522
s 3min. ⓐ
360°+2°
ⓐ CHECKED ACCORDING ENGINEERING SPECIFICATION
S 3S7R-7M161-AA. DEVIATION FROM THIS SPECIFICATION:
LONGITUDINAL MICRO CRACKS IN THE WELDING MATERIAL ARE
PERMISSIBLE TO A TOTAL OF 2% AROUND THE CIRCUMFERENCE.
0.5 max.
Schweissnahtueberstand
Weld bead stand-off
Z
5:1
Durchgeschweißt
In diesem Bereich
WELD TROUGH
IN THIS AREA
Schweissnaht-ueberstand zulaessig
WELD BEAD STAND-OFF PERMISSIBLE
unvollstaendig gefuellte Schweißnaht zulaessig.
Tiefe des Einfalls 0.5max.
INCOMPLETELY FILLED GROOVE PERMISSIBLE.
DEPTH OF UNDERCUT 0.5max.
Komplett durchgeschweißt
FULL PENETRATION
0.5max.
Schweissnahtueberstand
WELD BEAD STAND-OFF
einsatzgehaertet und angelassen
M1 (Oberflaechenhaerte) : 80.5+2.5 HRA
M2 (Zahnflanke) : CHD (Eht) 550= 0.5+0.4
M3 (Bohrung) : CHD (Eht) 550= 0.3min.
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= 0.3min.
M4 (INSIDE BASE OF TOOTH) : min. 300 HV10
X
5:1
0.25+0.15/-0.15 x45°
Y
10:1
1.65±0.2
Kontrollmass
CONTROL MEASUREMENT
(33.74-0.2/-0.1)
Kontrollmass im Bereich
Ø59 bis Ø65
CONTROL MEASURMENT IN THE AREA DIAMETER 59 TO 65
(33.74+0.34)
Kontrollmass im Bereich
Ø80 bis Ø87.6
CONTROL MEASURMENT IN THE AREA DIAMETER 80 TO 87.6
(34.97+0.03/-0.03)
Rz 4
0.03 A
Zahnprofil
Tooth Profile
✻ MACHINING PARAMETER AT
HARD TURNING OPERATION:
FEED MOTION 0.04 TO 0.05 mm/revolution
Fuer GETRAG Intern:
Dieses Bauteil ist Bestandteil der Gruppen Nummer 250.1.6450.00
Lieferant/Hersteller: Bari
GETRAG INTERNAL ONLY:
THIS COMPONENT IS PART OF GROUP NUMBER 250.1.6450.00
SUPPLIER/MANUFACTURER: Bari
Fuer die Lieferung und Kennzeichnung im Data Matrix Code
(Bauteil und/oder Verpackung)
muss die Gruppen Nummer 250.1.6450.00 verwendet werden.
FOR SHIPPMENT AND IDENTIFICATION WITHIN THE DATA MATRIX CODE
(COMPONENT AND/OR PACKAGING)
THE GROUP NUMBER 250.1.6450.00 HAS TO BE USED.
PPAP nach / ACCORDING TO 250.1.3692.76
Naehere Angaben zur Verzahnung
siehe Verzahnungsblatt
250.1.3693.00 und 250.1.3640.75
FURTHER GEAR DATA SEE
DATA SHEET NUMBER
250.1.3693.00 AND 250.1.3640.75
Technische Sauberkeit / TECHNICAL CLEANLINESS:
Es gelten die Sauberkeitsanforderungen nach GN 4340-1
CLEANLINESS REQUIREMENTS OF THE GN 4340-1 HAVE TO BE ABIDED
Markup drawing
C000756
13.07.2015
S. Horlacher
GC6/TS 803001
GN 3010
35453_2
SPECIFICATION MATURITY LEVEL F APPROVED
20150115
20130124
20120723
Massstab / SCALE
M: 1:1 (--)
Change applies also to:
250.1.4297.75
250.1.4297.77
250.1.3638.75
250.1.3638.76
250.1.4218.75
250.1.4218.76
DOUBLE GEAR 2ND / REV CPL.
vst.
GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
Schutzvermerk nach ISO 16016 beachten
PROTECTION PER ISO 16016
Artikel-Nr. / ITEM NO.
2501369276
CAD-Modell: 2501369276
F
A2
Ersatz fuer
SUBSTITUTE FOR
Document-Revision: 20150129103024 File created on 2015-07-29 at 10 42 30 by Horlacher, Steffen

Russo, Giacomo

Da: Ferrara, Giuseppe
Inviato: martedì 3 novembre 2015 14:36
A: Russo, Giacomo
Oggetto: Analisi più recente Contamination DG

Giacomo,
di seguito il risultato dell'analisi più recente eseguita su n° 5 pz. DG.

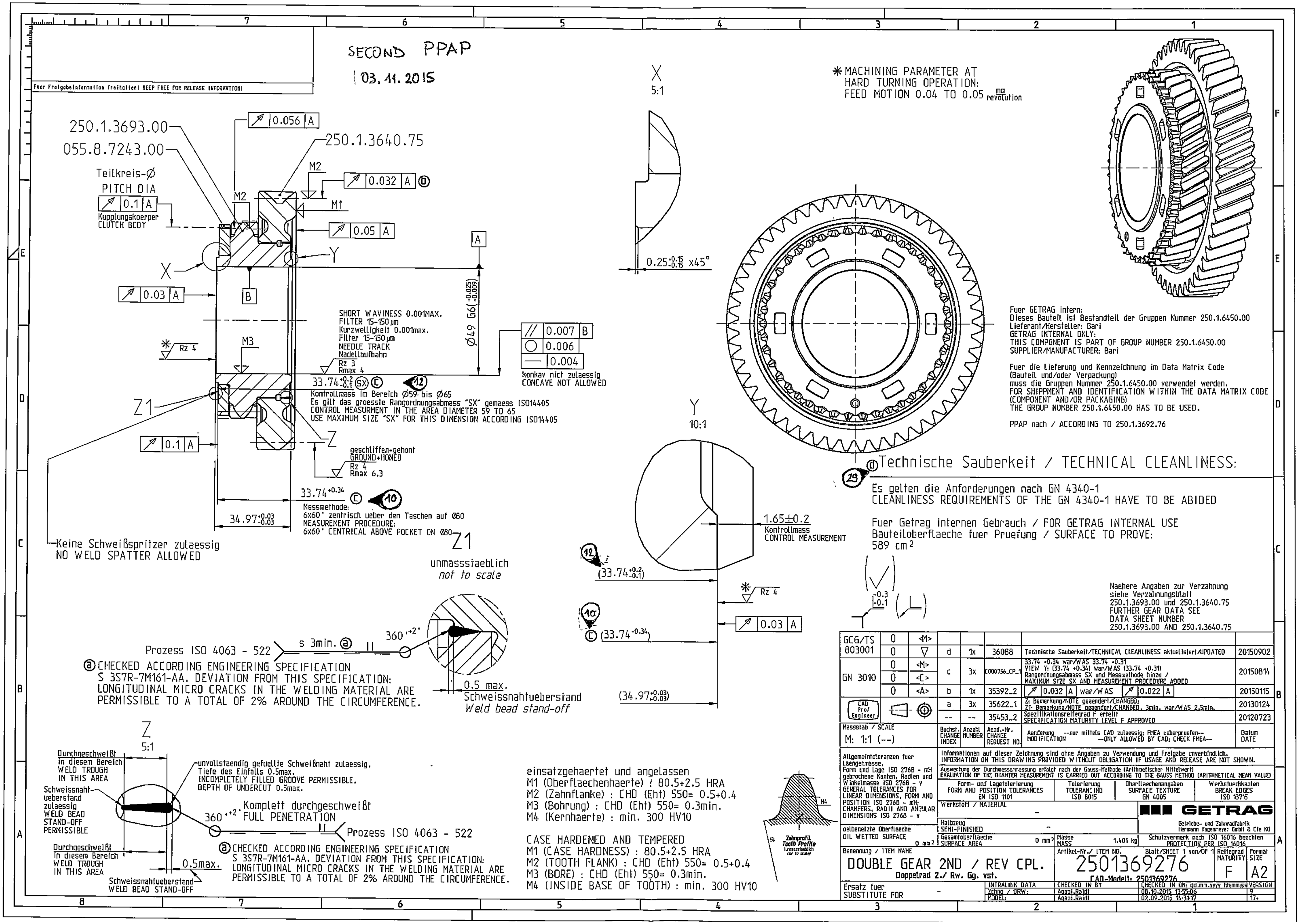
Monitoraggio Pulizia Gears

Data	Particolare	Campione	Residuo solido [mg/1000cm2]	Particella metallica più grande [micron]	Particella più grande (se non-metallica) [micron]	Note
26/10/2015	DG	5	0,67	944	-	CTU; 40 um Nylon,ORE 10160. Singola passata con lama d'aria rinforzata.

Cordiali saluti / With best regards

Giuseppe Ferrara
Laboratorio Metallurgico - Chimico

GETRAG S.p.A



SECOND PPAP
03.11.2015
Fuer Freigabeinformation freihalten! KEEP FREE FOR RELEASE INFORMATION!
250.1.3693.00
055.8.7243.00
Teilkreis-Ø
PITCH DIA
0.1 A
Kupplungskoerper
CLUTCH BODY
0.056 A
250.1.3640.75
M2
0.032 A
M1
0.05 A
X
Y
0.03 A
B
A
Ø49 G6(+0.025 +0.009)
SHORT WAVINESS 0.001MAX.
FILTER 15-150 µm
Kurzwelligkeit 0.001max.
Filter 15-150 µm
NEEDLE TRACK
Nadellaufbahn
Rz 3
Rmax 4
Rz 4
M3
0.007 B
0.006
0.004
konkav nicht zulaessig
CONCAVE NOT ALLOWED
33.74 +0.2 -0.1 (SX) (C)
12
Kontrollmass im Bereich Ø59 bis Ø65
Es gilt das groesste Rangordnungsabmass "SX" gemaess ISO14405
CONTROL MEASUREMENT IN THE AREA DIAMETER 59 TO 65
USE MAXIMUM SIZE "SX" FOR THIS DIMENSION ACCORDING ISO14405
Z1
0.1 A
Z
geschliffen+gehont
GROUND+HONED
Rz 4
Rmax 6.3
33.74 +0.34 (C)
10
Messmethode:
6x60° zentrisch ueber den Taschen auf Ø60
MEASUREMENT PROCEDURE:
6x60° CENTRICAL ABOVE POCKET ON Ø80
34.97 +0.03 -0.03
Keine Schweißspritzer zulaessig
NO WELD SPATTER ALLOWED
Z1
unmassstaeblich
not to scale
Prozess ISO 4063 - 522
s 3min. (a)
360° +2°
0.5 max.
Schweissnahtueberstand
Weld bead stand-off
(a) CHECKED ACCORDING ENGINEERING SPECIFICATION
S 3S7R-7M161-AA. DEVIATION FROM THIS SPECIFICATION:
LONGITUDINAL MICRO CRACKS IN THE WELDING MATERIAL ARE
PERMISSIBLE TO A TOTAL OF 2% AROUND THE CIRCUMFERENCE.
Z
5:1
Durchgeschweißt in diesem Bereich
WELD TROUGH IN THIS AREA
unvollstaendig gefuellte Schweißnaht zulaessig.
Tiefe des Einfalls 0.5max.
INCOMPLETELY FILLED GROOVE PERMISSIBLE.
DEPTH OF UNDERCUT 0.5max.
Schweissnaht-ueberstand zulaessig
WELD BEAD STAND-OFF PERMISSIBLE
360° +2°
Komplett durchgeschweißt
FULL PENETRATION
Prozess ISO 4063 - 522
Durchgeschweißt
In diesem Bereich
WELD TROUGH
IN THIS AREA
0.5max.
Schweissnahtueberstand
WELD BEAD STAND-OFF
(a) CHECKED ACCORDING ENGINEERING SPECIFICATION
S 3S7R-7M161-AA. DEVIATION FROM THIS SPECIFICATION:
LONGITUDINAL MICRO CRACKS IN THE WELDING MATERIAL ARE
PERMISSIBLE TO A TOTAL OF 2% AROUND THE CIRCUMFERENCE.
einsatzgehaertet und angelassen
M1 (Oberflaechenhaerte) : 80.5+2.5 HRA
M2 (Zahnflanke) : CHD (Eht) 550= 0.5+0.4
M3 (Bohrung) : CHD (Eht) 550= 0.3min.
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= 0.3min.
M4 (INSIDE BASE OF TOOTH) : min. 300 HV10
X
5:1
0.25 +0.15 -0.15 x45°
Y
10:1
1.65±0.2
Kontrollmass
CONTROL MEASUREMENT
12
(33.74 +0.2 -0.1)
Rz 4
0.03 A
10
(C) (33.74 +0.34)
(34.97 +0.03 -0.03)
Zahnprofil
Tooth Profile
M4
* MACHINING PARAMETER AT
HARD TURNING OPERATION:
FEED MOTION 0.04 TO 0.05 mm/revolution
Fuer GETRAG intern:
Dieses Bauteil ist Bestandteil der Gruppen Nummer 250.1.6450.00
Lieferant/Hersteller: Bari
GETRAG INTERNAL ONLY:
THIS COMPONENT IS PART OF GROUP NUMBER 250.1.6450.00
SUPPLIER/MANUFACTURER: Bari
Fuer die Lieferung und Kennzeichnung im Data Matrix Code
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muss die Gruppen Nummer 250.1.6450.00 verwendet werden.
FOR SHIPPMENT AND IDENTIFICATION WITHIN THE DATA MATRIX CODE
(COMPONENT AND/OR PACKAGING)
THE GROUP NUMBER 250.1.6450.00 HAS TO BE USED.
PPAP nach / ACCORDING TO 250.1.3692.76
29
(a) Technische Sauberkeit / TECHNICAL CLEANLINESS:
Es gelten die Anforderungen nach GN 4340-1
CLEANLINESS REQUIREMENTS OF THE GN 4340-1 HAVE TO BE ABIDED
Fuer Getrag internen Gebrauch / FOR GETRAG INTERNAL USE
Bauteiloberflaeche fuer Pruefung / SURFACE TO PROVE:
589 cm²
-0.3
-0.1
Naehere Angaben zur Verzahnung
siehe Verzahnungsblatt
250.1.3693.00 und 250.1.3640.75
FURTHER GEAR DATA SEE
DATA SHEET NUMBER
250.1.3693.00 AND 250.1.3640.75
GCG/TS 803001 | 0 | <M>
0 | ∇ | d | 1x | 36088 | Technische Sauberkeit/TECHNICAL CLEANLINESS aktualisiert/UPDATED | 20150902
GN 3010 | 0 | <M> | c | 3x | C000756_CP_1 | 33.74 +0.34 war/WAS 33.74 +0.31 VIEW Y: (33.74 +0.34) war/WAS (33.74 +0.31) Rangordnungsabmass SX und Messmethode hinzu / MAXIMUM SIZE SX AND MEASUREMENT PROCEDURE ADDED | 20150814
0 | <C>
0 | <A> | b | 1x | 35392_2 | 0.032 A war/WAS 0.022 A | 20150115
a | 3x | 35622_1 | Z: Bemerkung/NOTE geaendert/CHANGED; Z1: Bemerkung/NOTE geaendert/CHANGED, 3min. war/WAS 2.5min. | 20130124
-- | -- | 35453_2 | Spezifikationsreifegrad F erteilt SPECIFICATION MATURITY LEVEL F APPROVED | 20120723
CAD Pro/Engineer
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 -
GETRAG
Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie KG
oelbenetzte Oberflaeche OIL WETTED SURFACE 0 mm²
Halbzeug SEMI-FINISHED -
Gesamtoberflaeche SURFACE AREA 0 mm²
Masse MASS 1.401 kg
Schutzvermerk nach ISO 16016 beachten PROTECTION PER ISO 16016
Benennung / ITEM NAME
DOUBLE GEAR 2ND / REV CPL.
Doppelrad 2./ Rw. Gg. vst.
Artikel-Nr./ ITEM NO.
2501369276
CAD-Modell: 2501369276
Blatt/SHEET 1 von/OF 1
Reifegrad MATURITY F
Format SIZE A2
Ersatz fuer SUBSTITUTE FOR -
INTRALINK DATA
Zchng / DRW: Agapi.Raidl
MODEL: Agapi.Raidl
CHECKED IN BY
CHECKED IN ON: dd.mm.yyyy hh:mm:ss 06.10.2015 13:55:06
02.09.2015 14:31:17
VERSION 9 17+