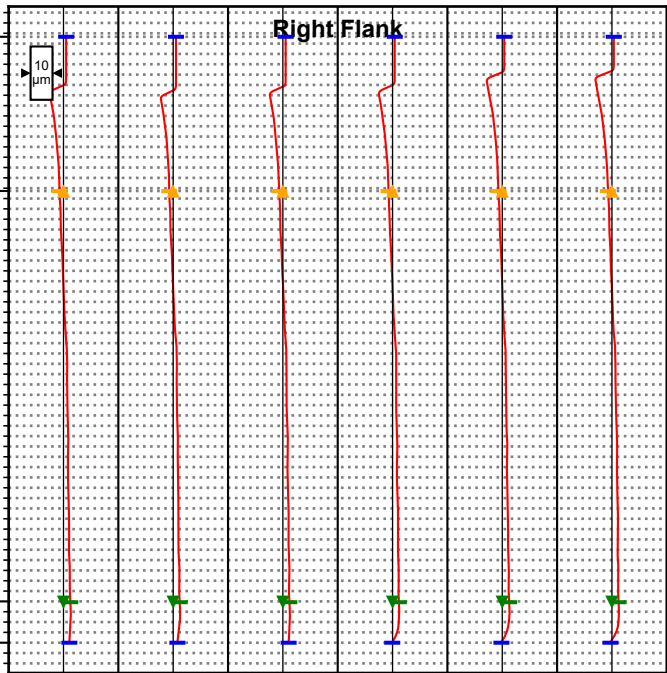
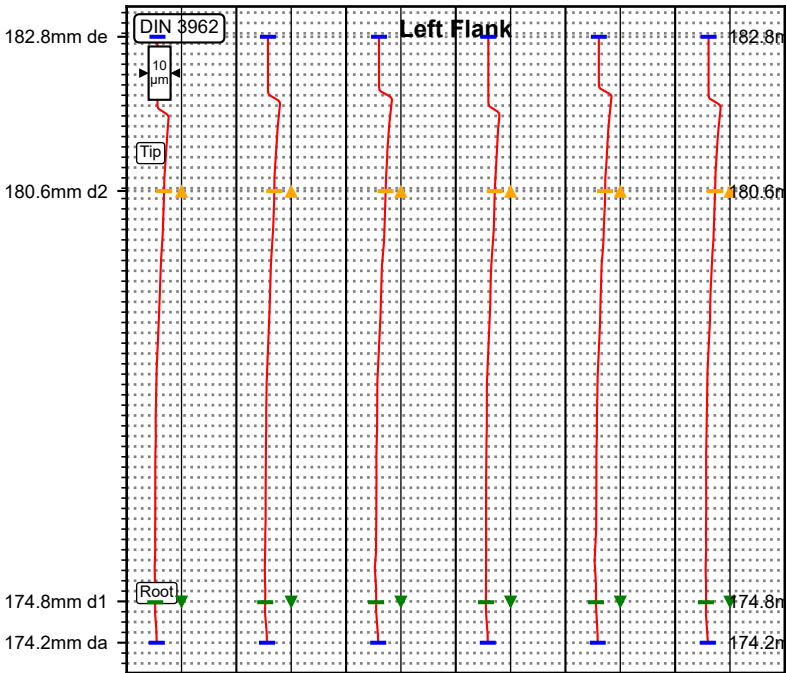
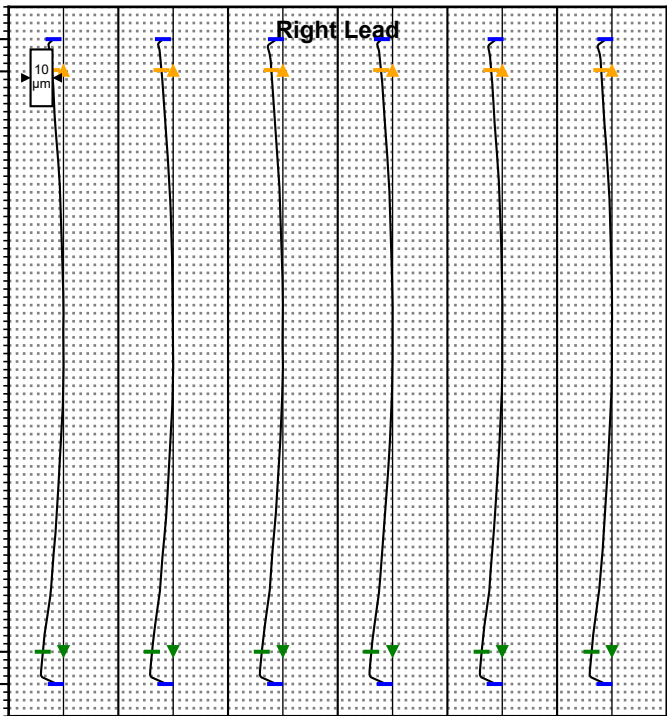
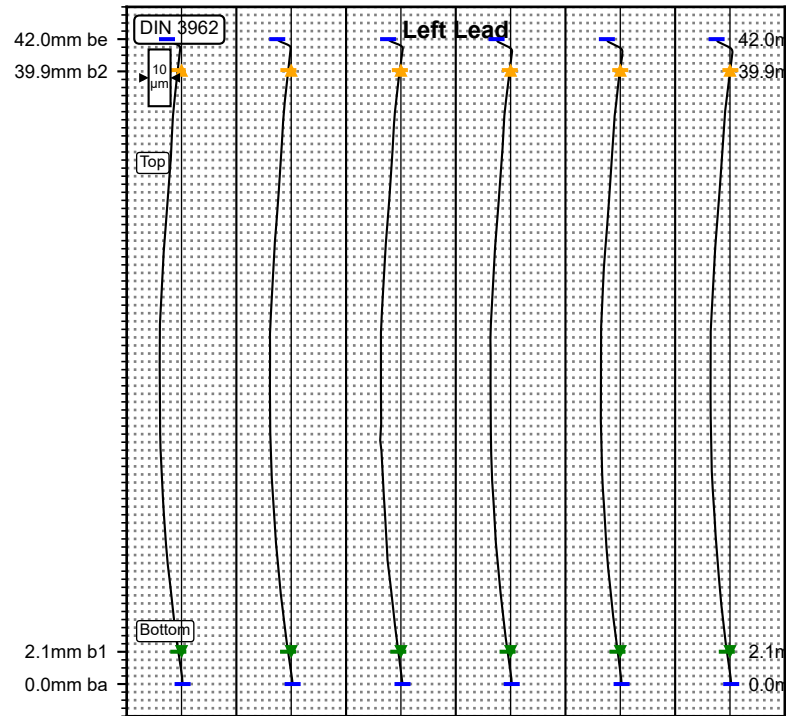


Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. L α :	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. L β :	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



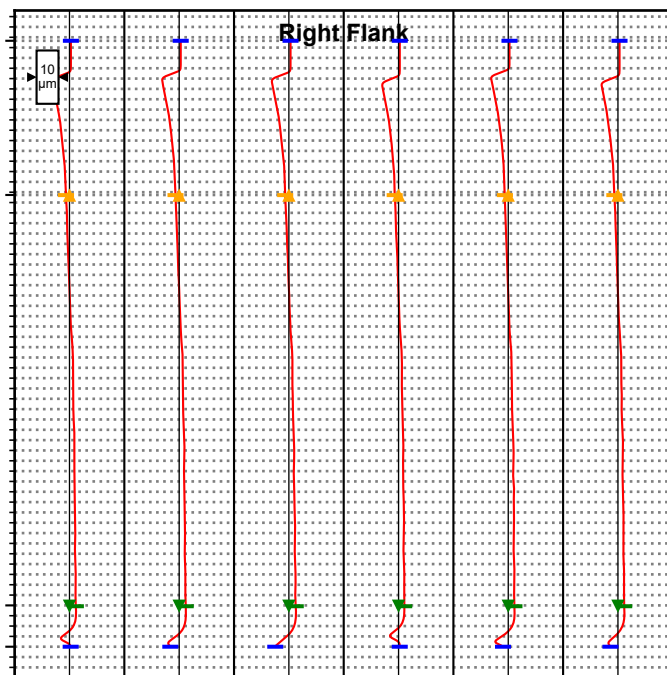
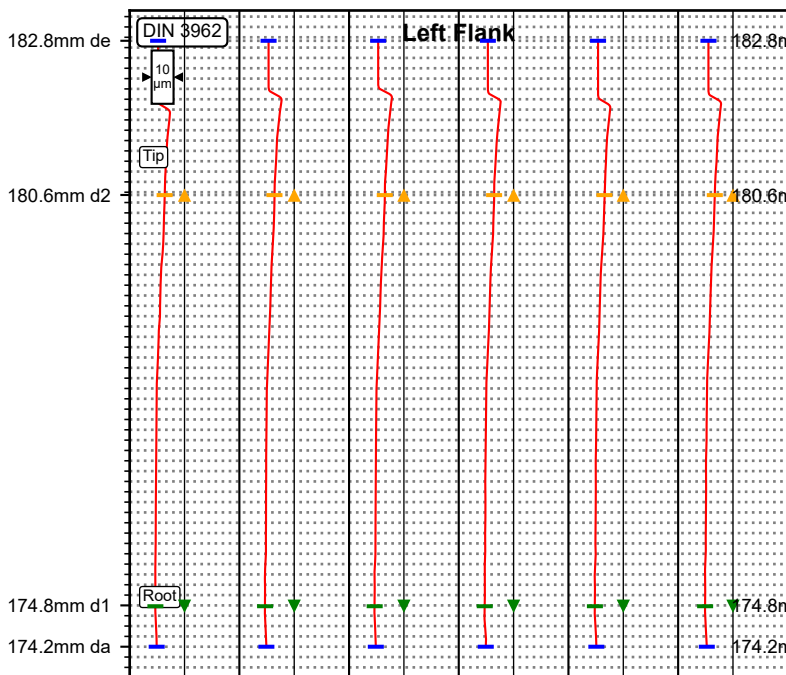
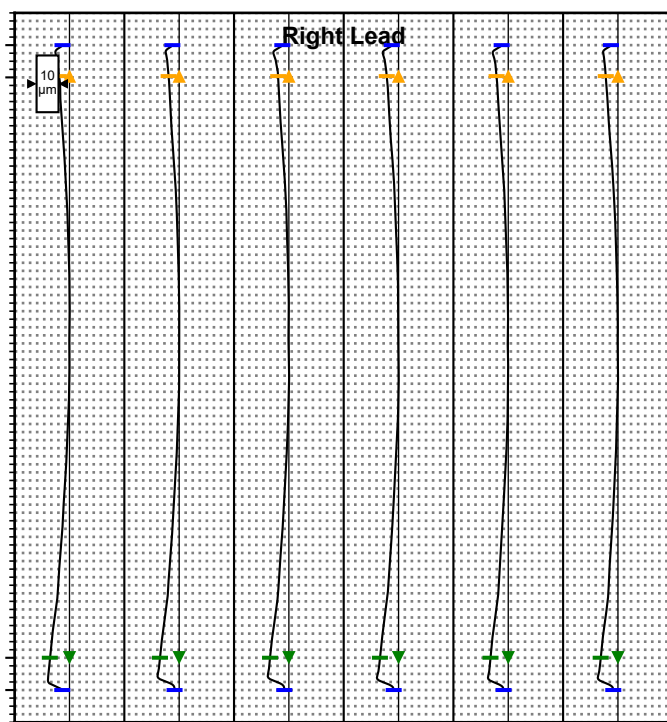
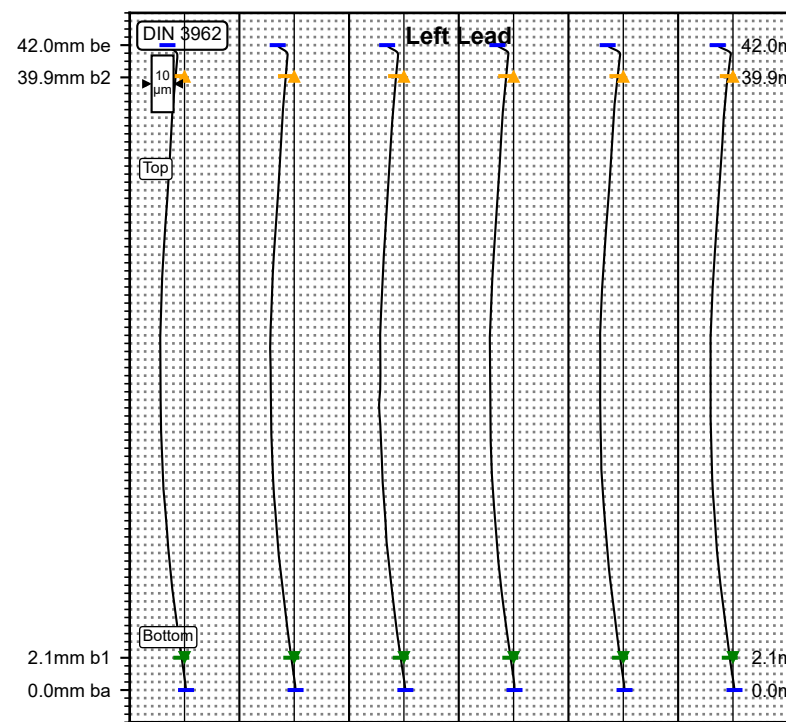
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fHam							±11 5		±11 5						
fHa							±11 5		±11 5						
fa							20 5		20 5						
ffa							16 5		16 5						
Ca	-1.6	-1.6	-1.7	-1.5	-1.7					1.3	1.3	1.2	1.4	1.1	



	6	5	4	3	2	1	Lim.value Qual.		Lim.value Qual.	1	2	3	4	5	6
fHbm							±8 5		±8 5						
fHb							±8 5		±8 5						
fb							12 5		12 5						
ffb							9 5		9 5						
Cb	-8.3	-8.2	-8.2	-8.1	-8.0					7.4	7.4	7.4	7.4	7.2	

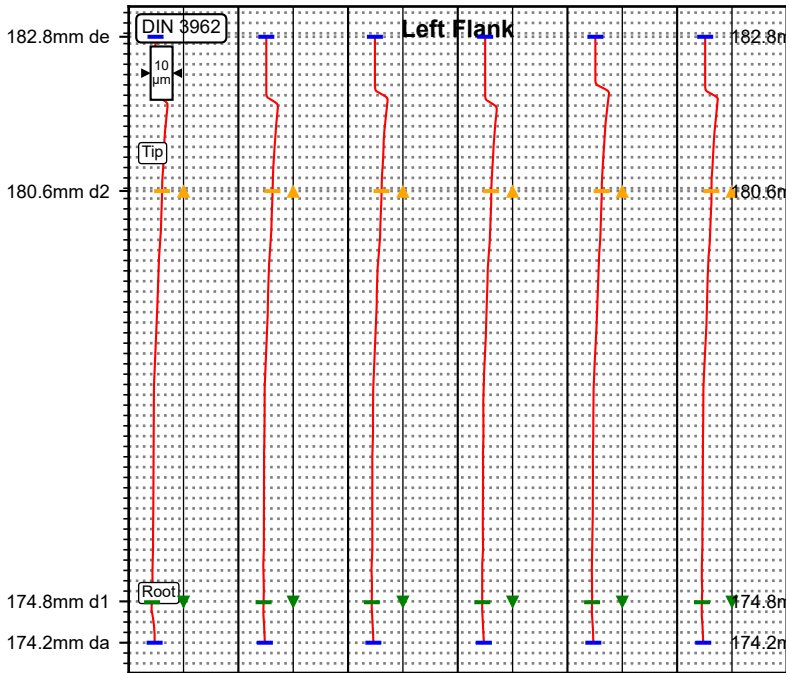
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. La:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

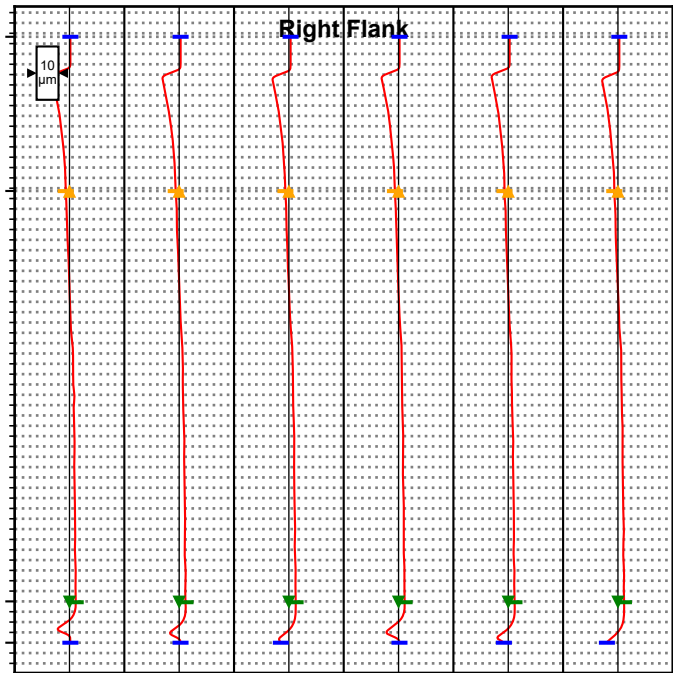
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Gear Profile/Lead

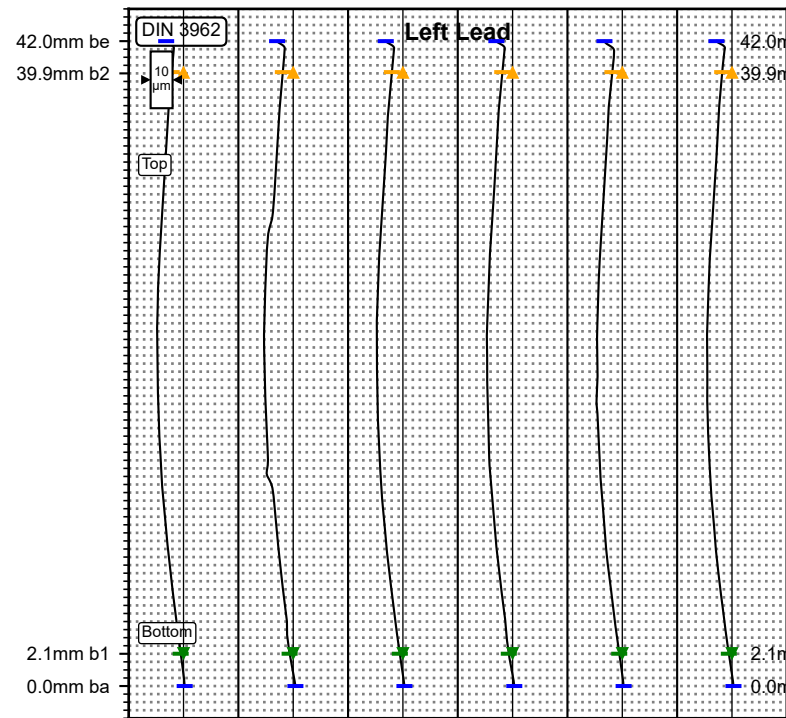
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Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



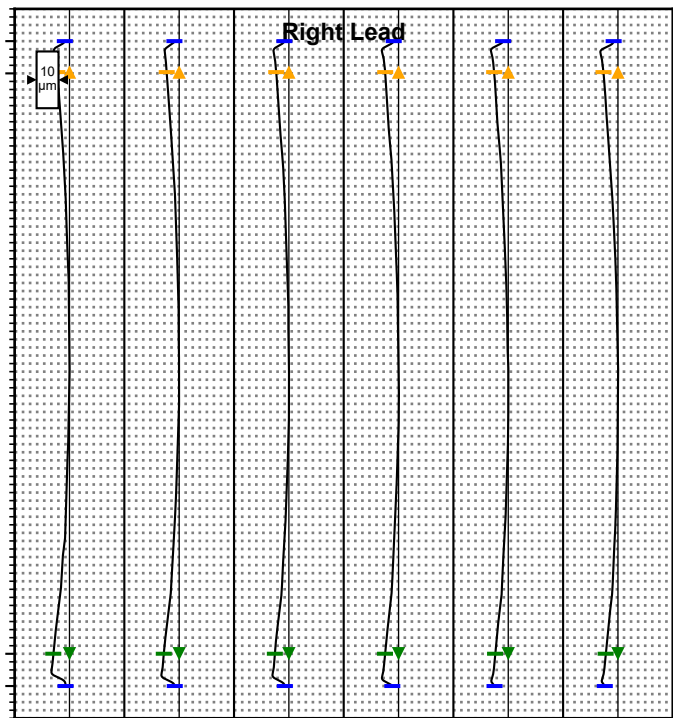
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fHam							±11 5
fHa							±11 5
fa							20 5
ffa							16 5
Ca							



Lim.value Qual.	1	2	3	4	5	6
±11 5						
±11 5						
20 5						
16 5						



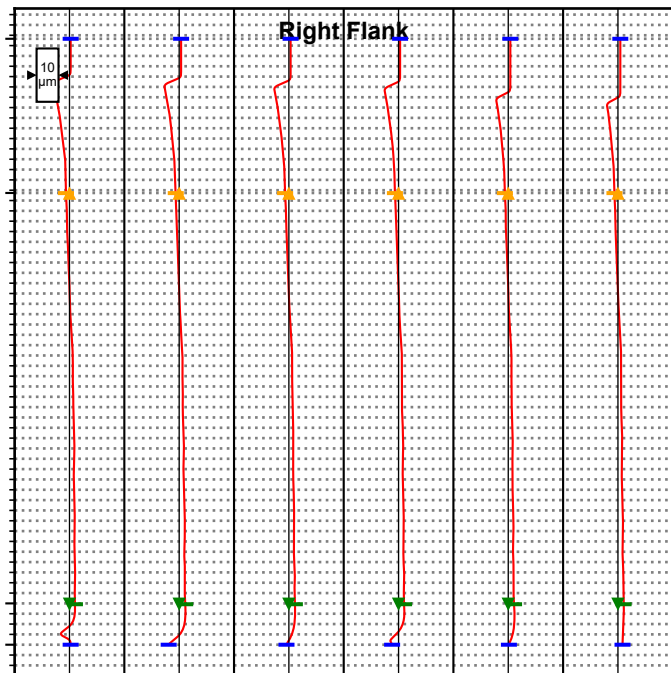
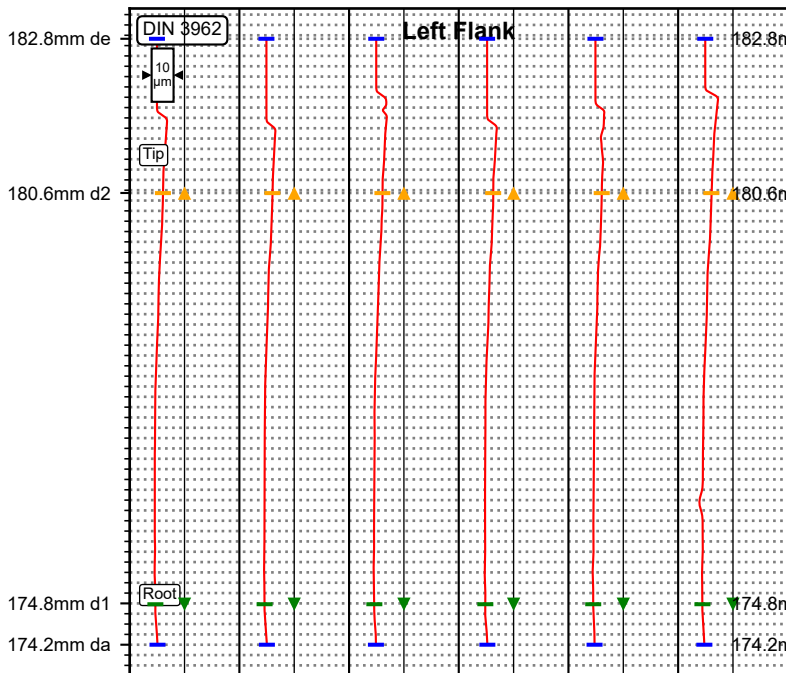
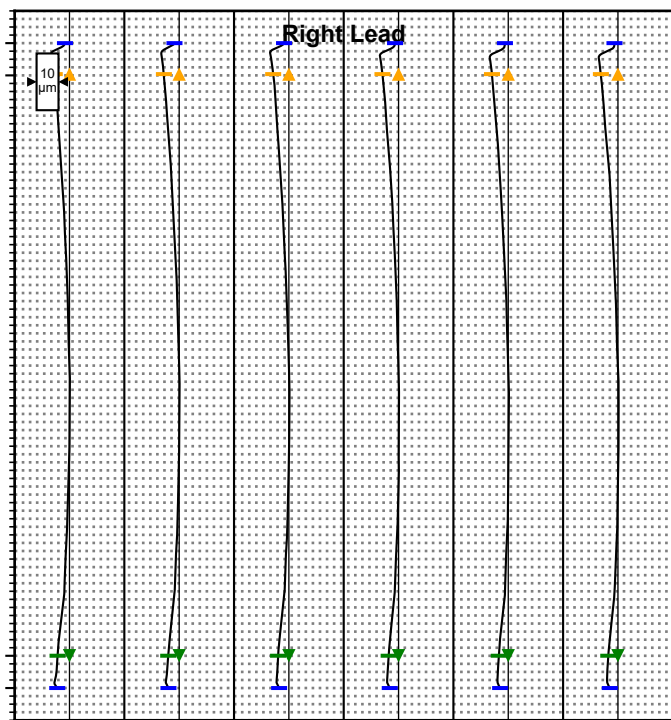
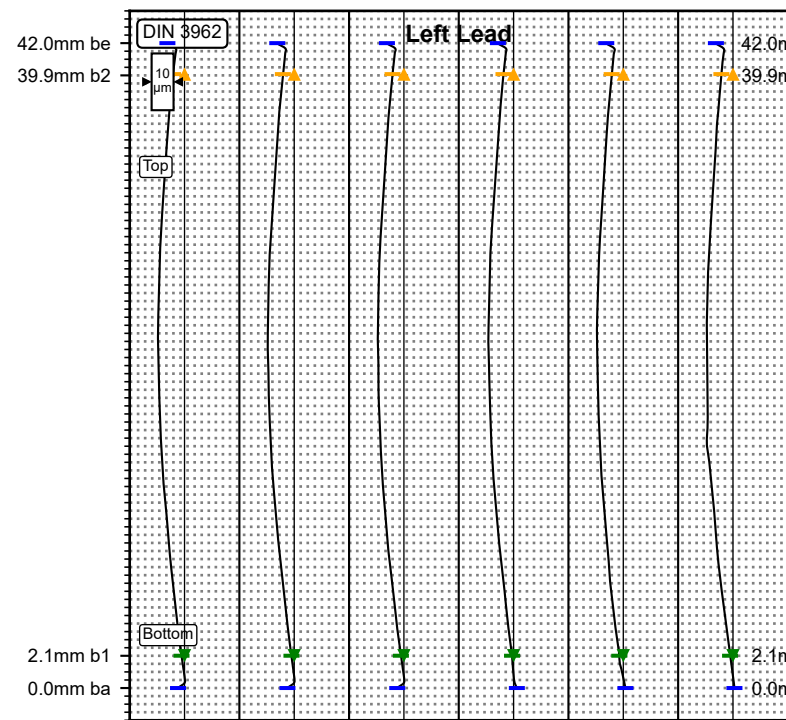
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fHbm							±8 5
fHb							±8 5
fb							12 5
ffb							9 5
Cb							



Lim.value Qual.	1	2	3	4	5	6
±8 5						
±8 5						
12 5						
9 5						

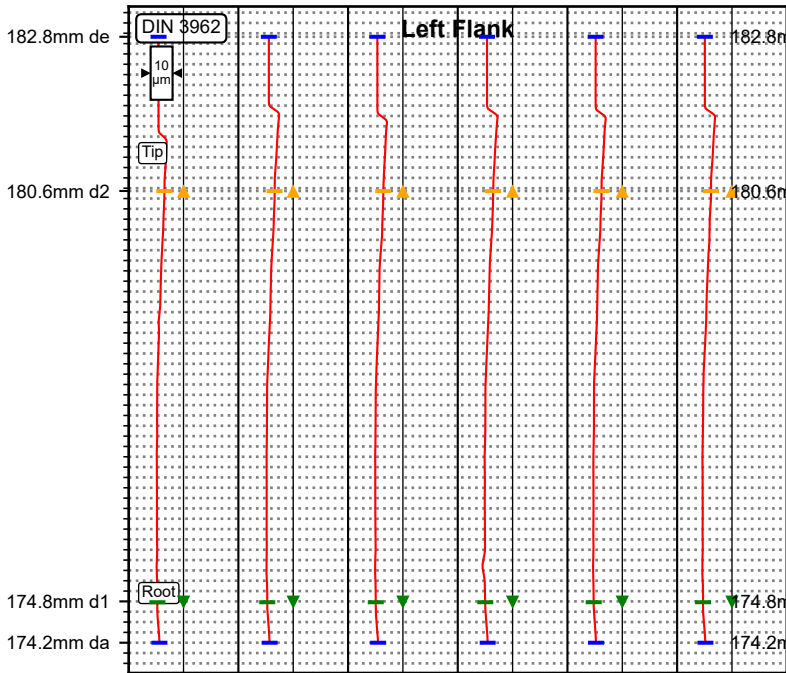
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

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Gear Profile/Lead

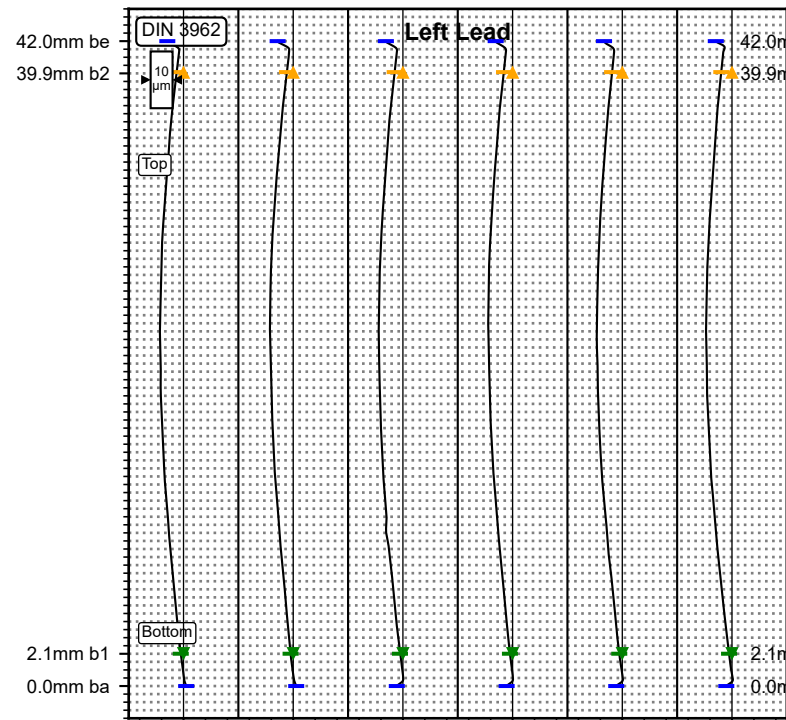
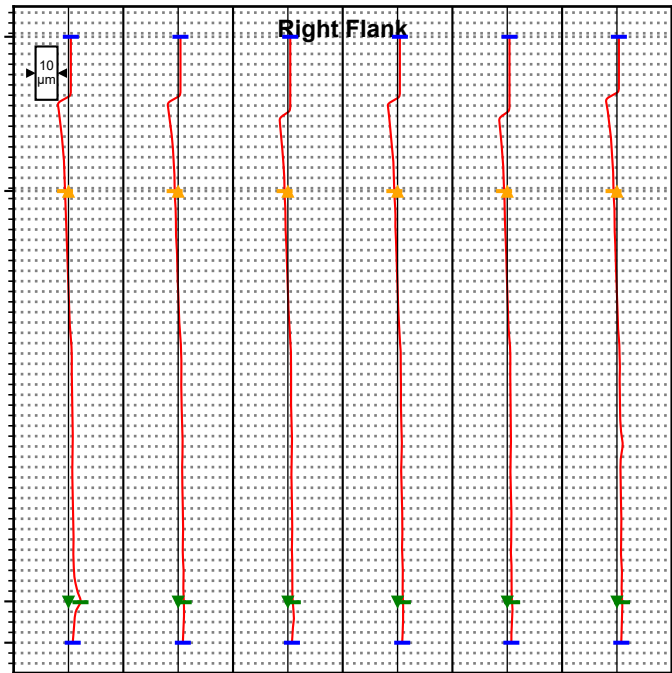
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Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



	6	5	4	3	2	1
fHam						
fHa						
fa						
ffa						
Ca						

Lim.value Qual.
±11 5
±11 5
20 5
16 5

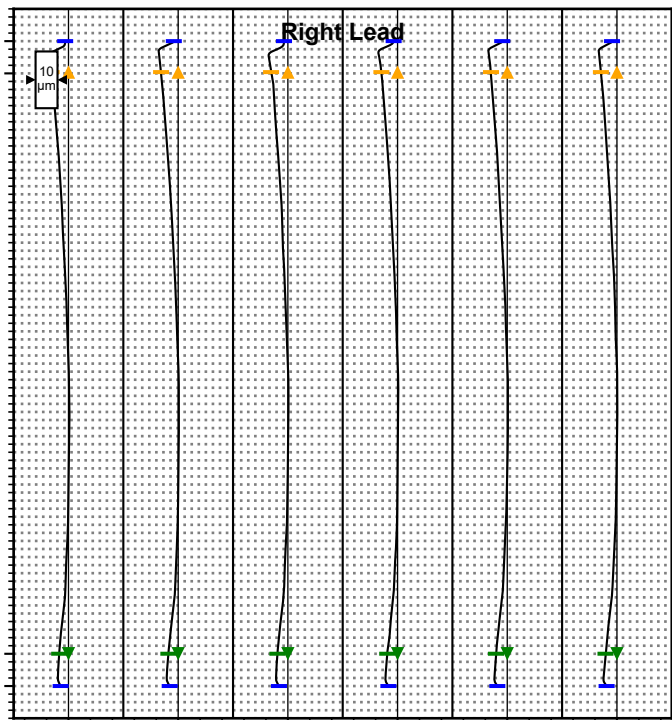
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±11 5						
±11 5						
20 5						
16 5						



	6	5	4	3	2	1
fHbm						
fHb						
fb						
ffb						
Cb						

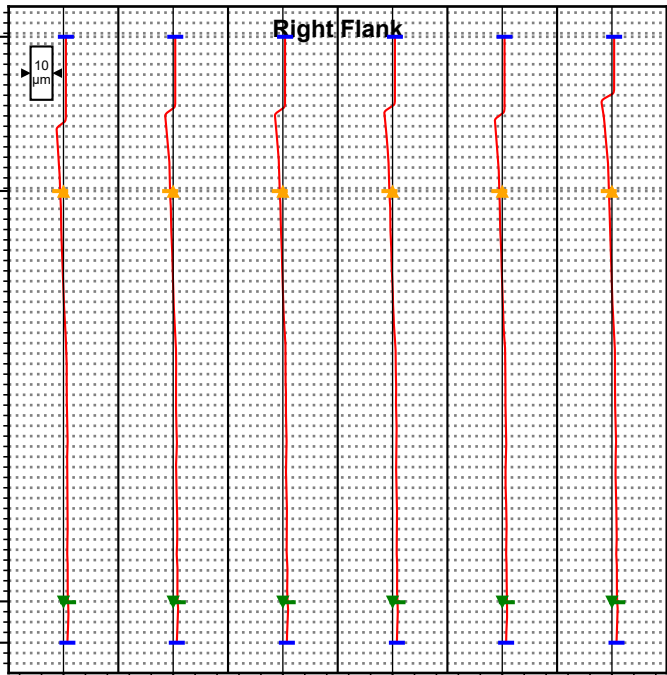
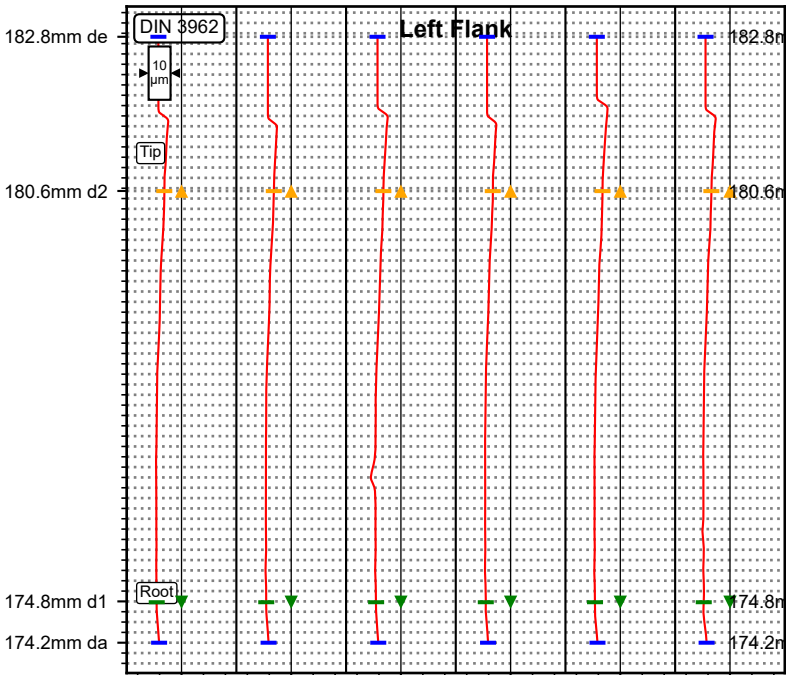
Lim.value Qual.
±8 5
±8 5
12 5
9 5

Lim.value Qual.	1	2	3	4	5	6
±8 5						
±8 5						
12 5						
9 5						

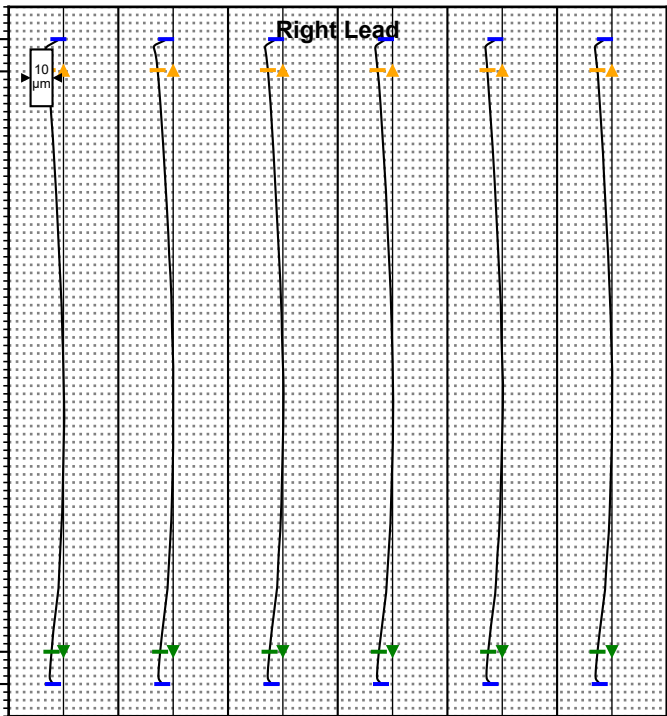
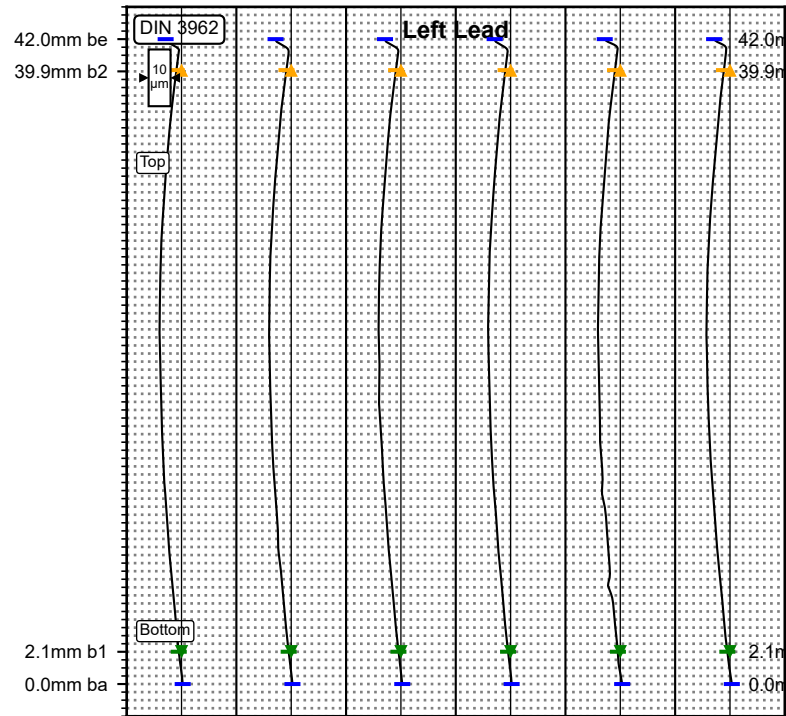


Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. L α :	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. L β :	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



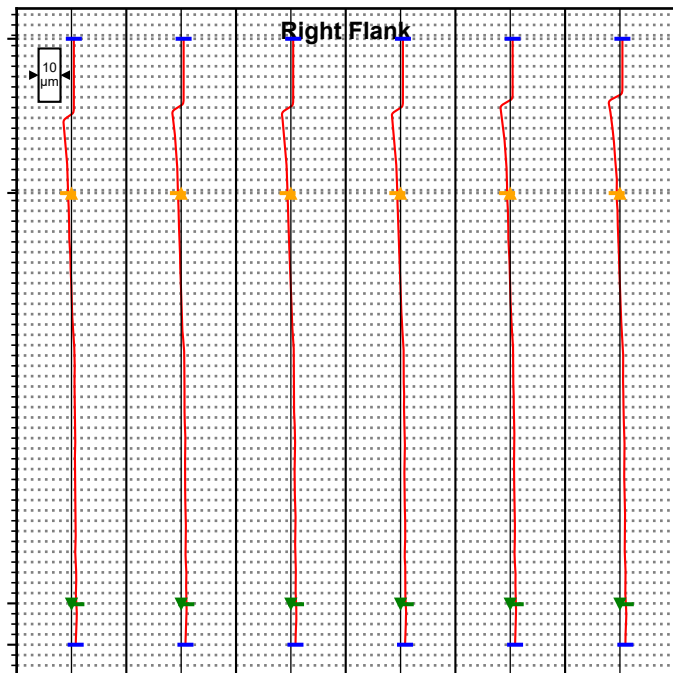
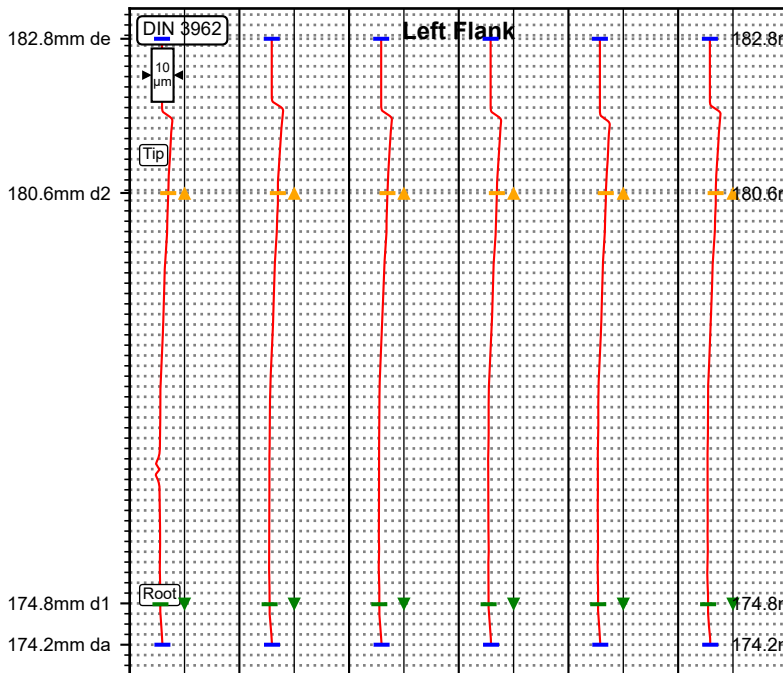
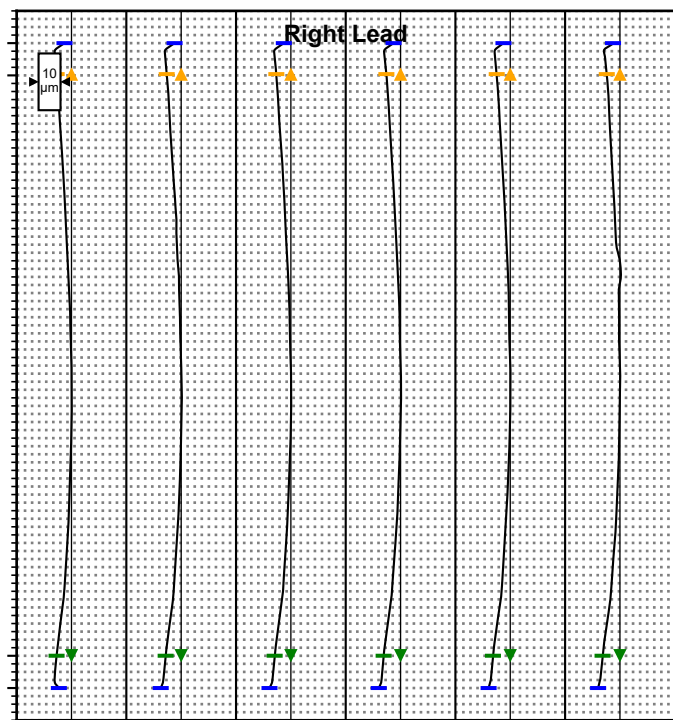
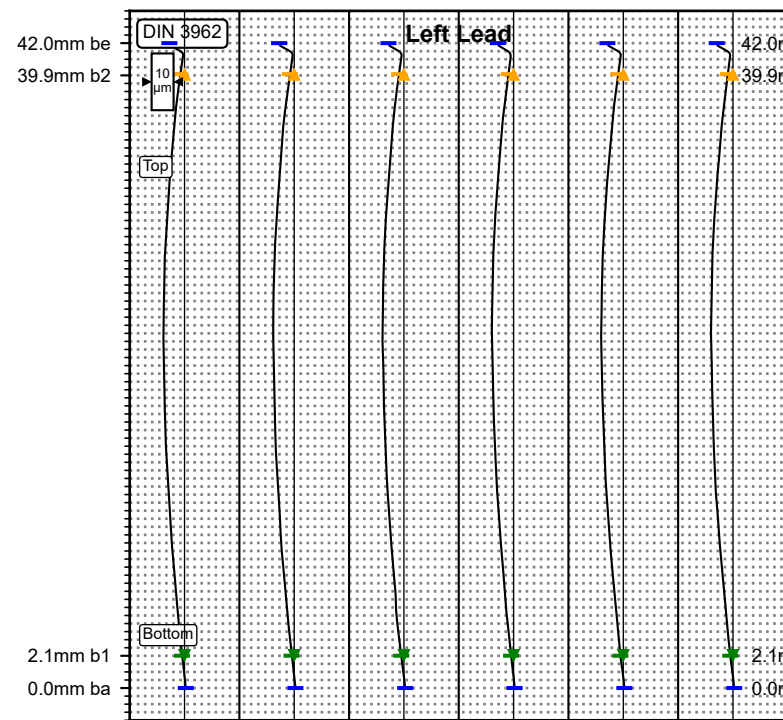
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fHam							±11 5						±11 5											
fHa							±11 5						±11 5											
fa							20 5						20 5											
ffa							16 5						16 5											
Ca																								



	6	5	4	3	2	1	Lim.value Qual.						Lim.value Qual.						1	2	3	4	5	6
fHbm							±8 5						±8 5											
fHb							±8 5						±8 5											
fb							12 5						12 5											
ffb							9 5						9 5											
Cb																								

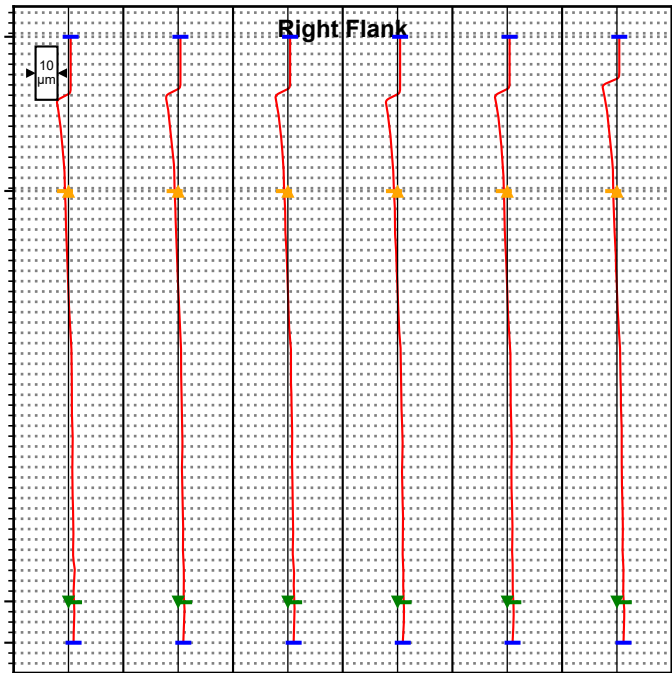
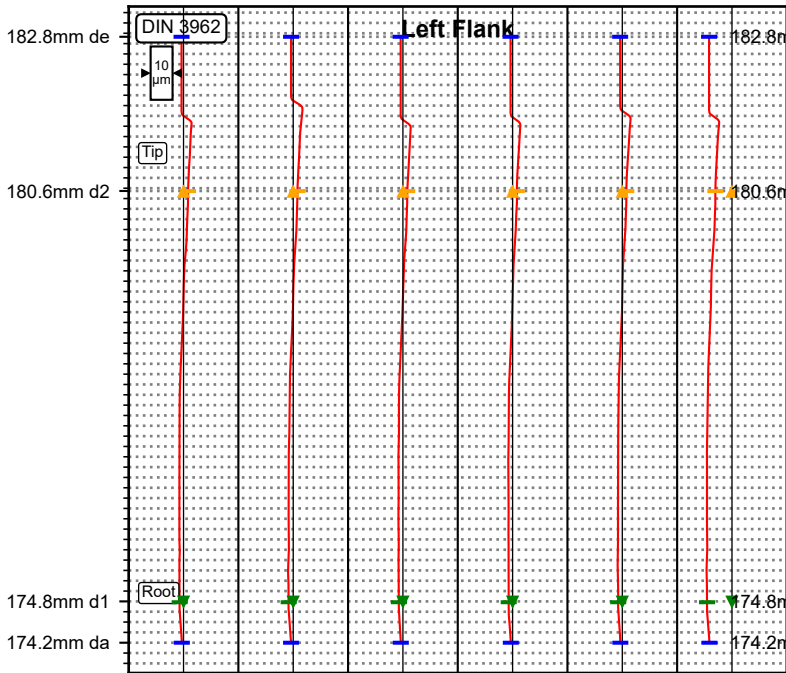
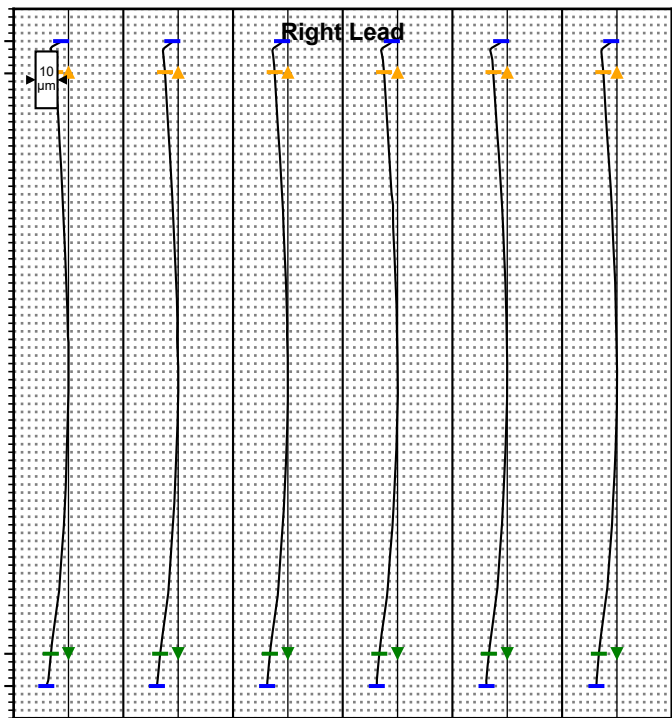
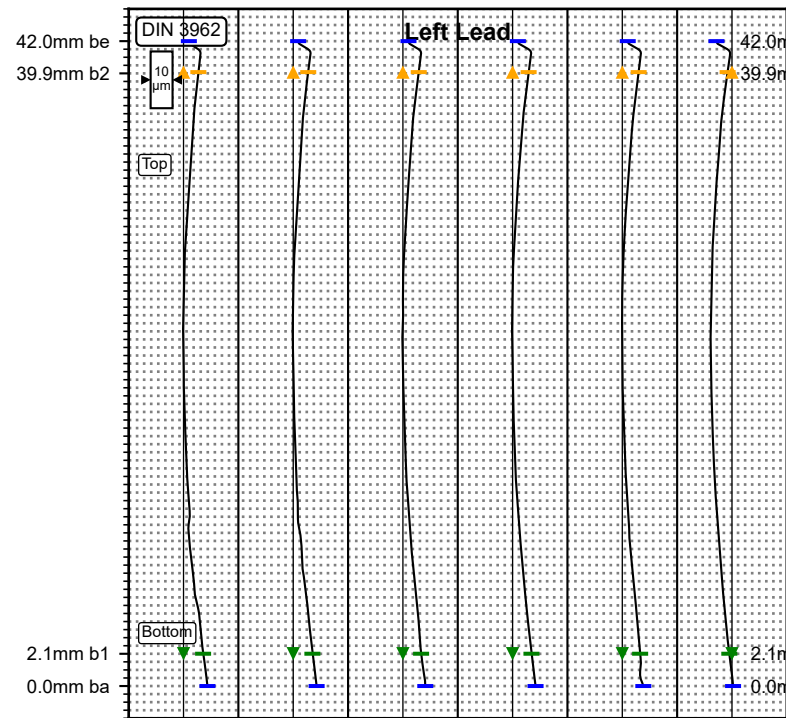
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

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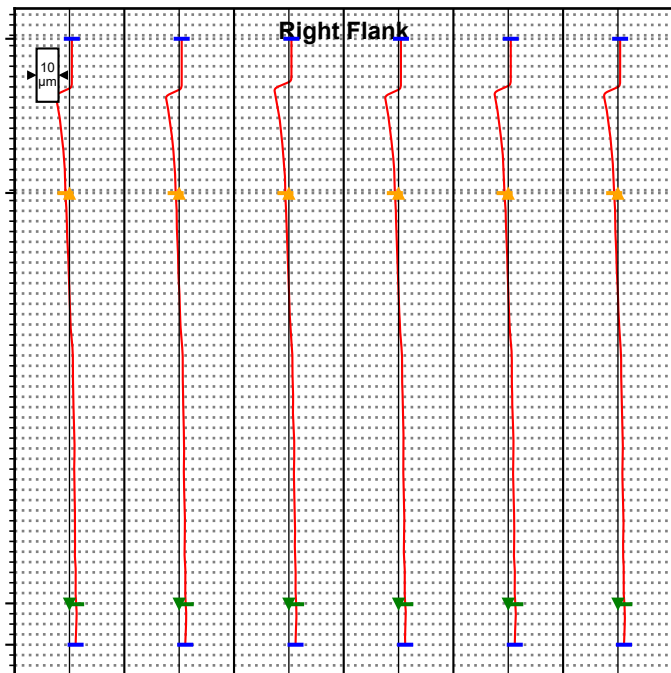
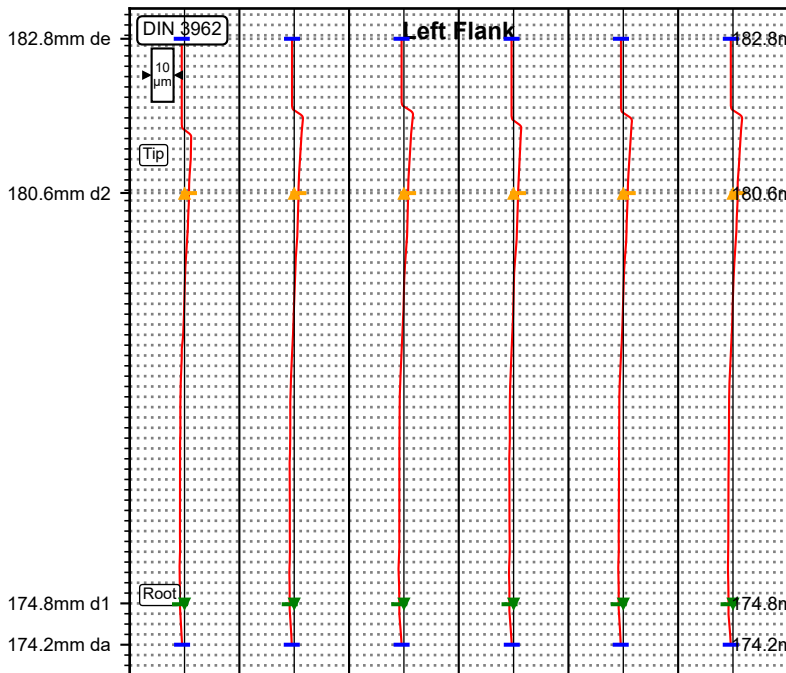
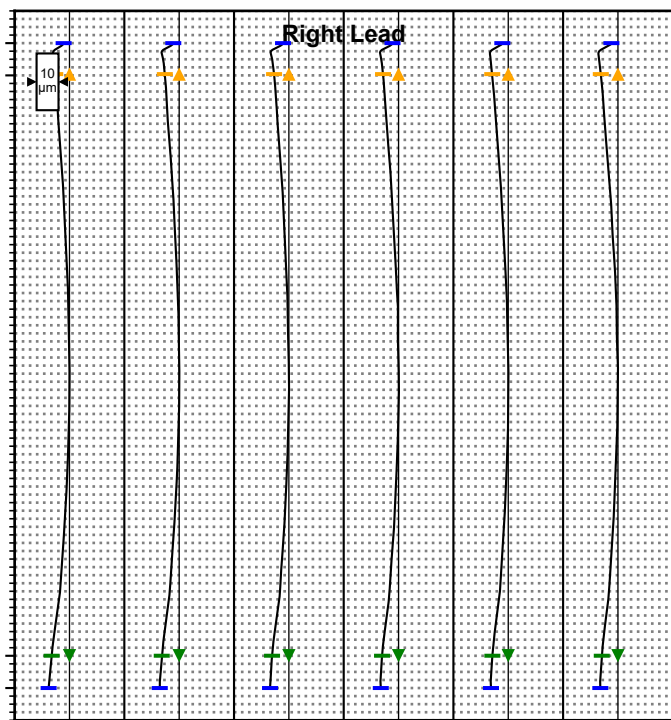
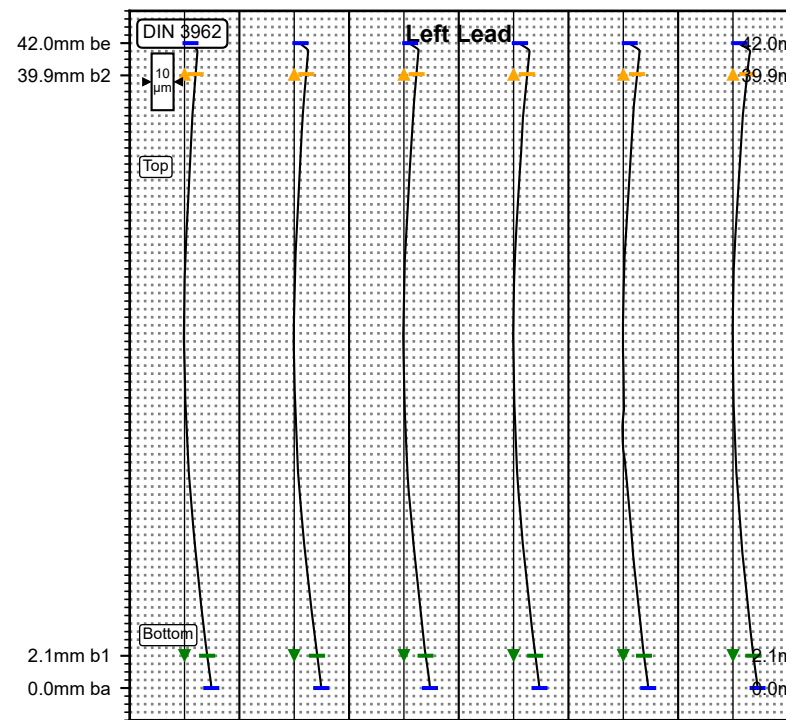
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

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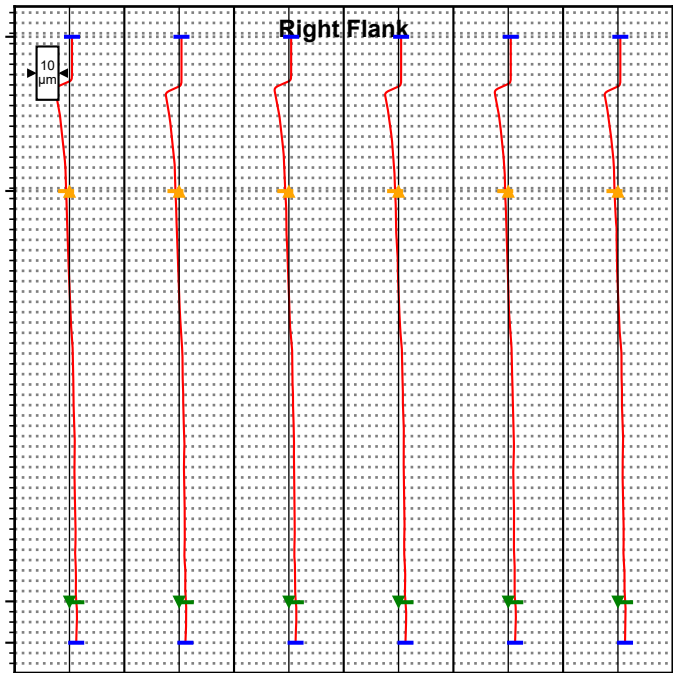
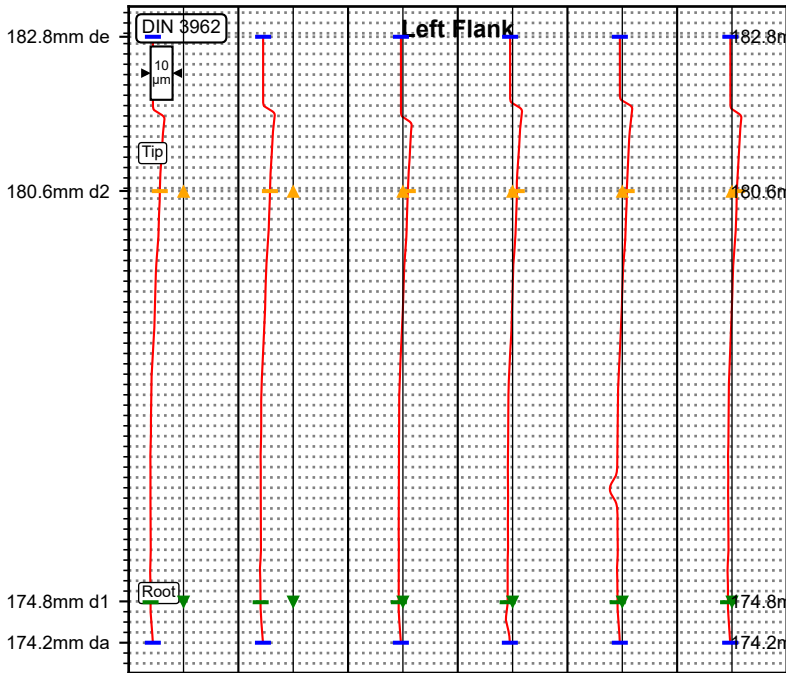
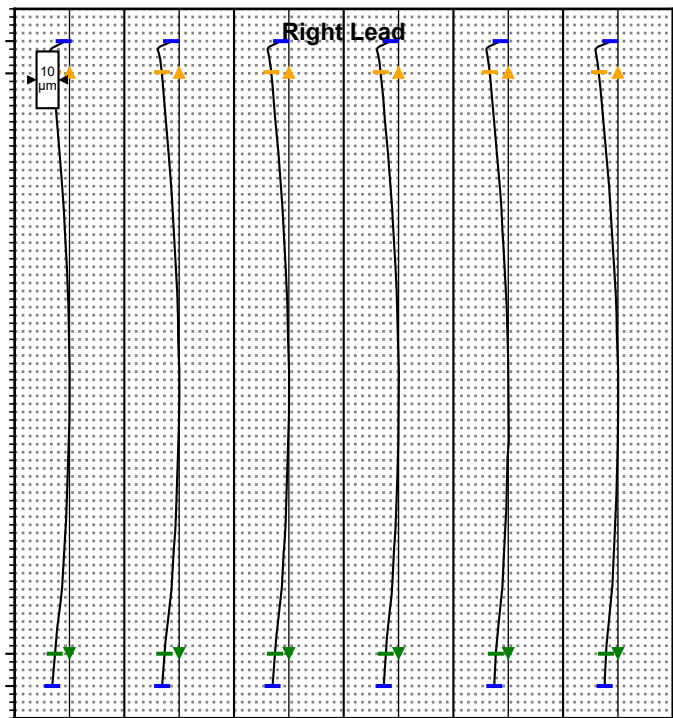
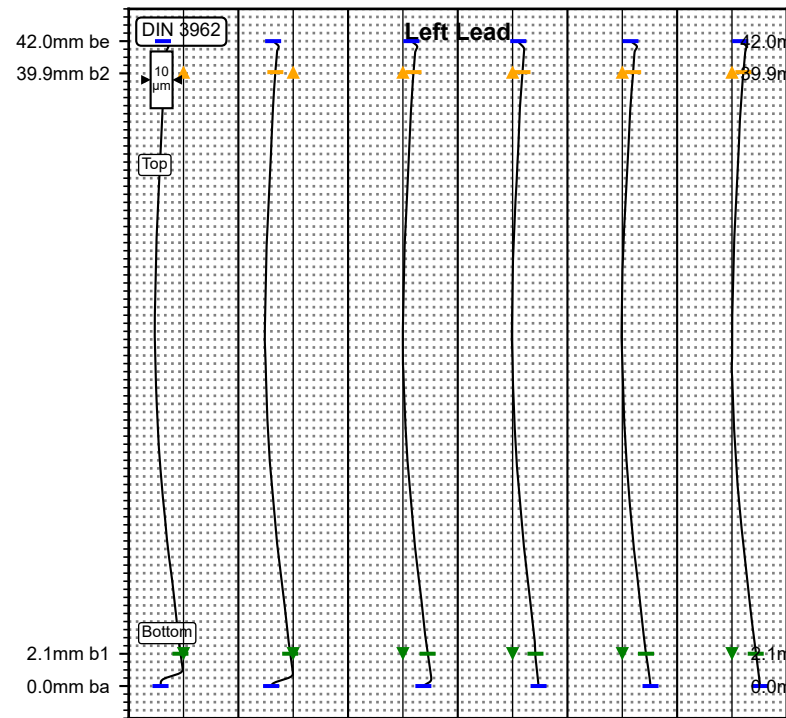
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

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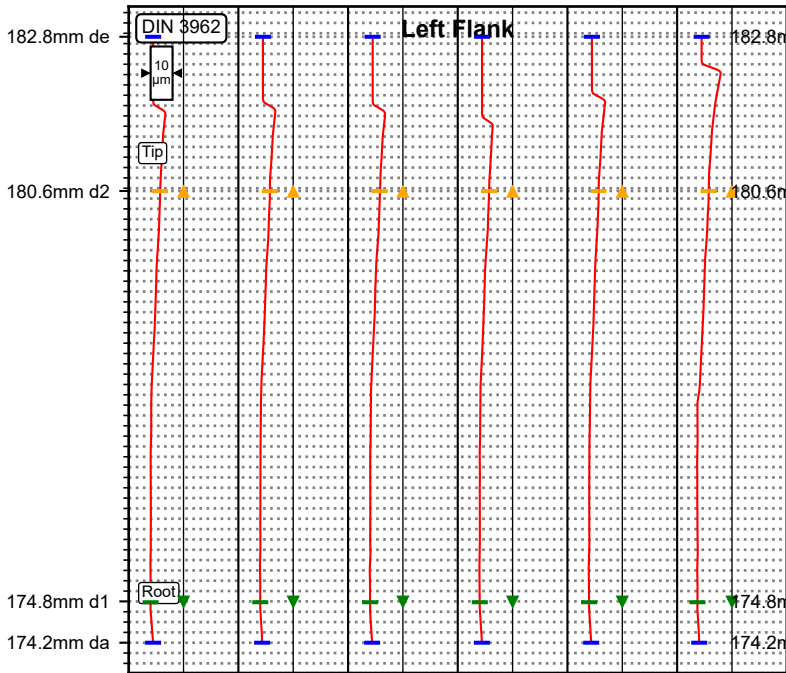
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

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Gear Profile/Lead

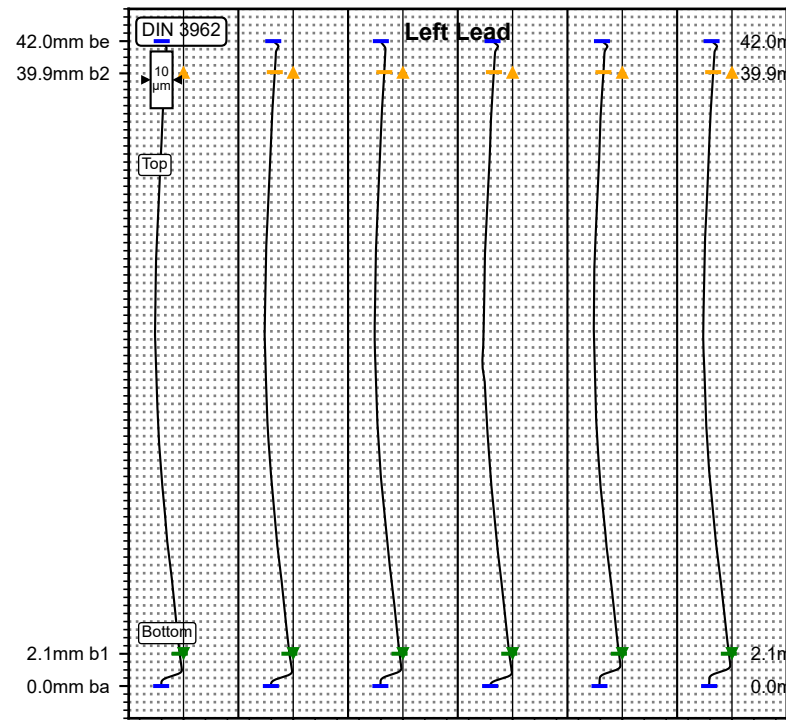
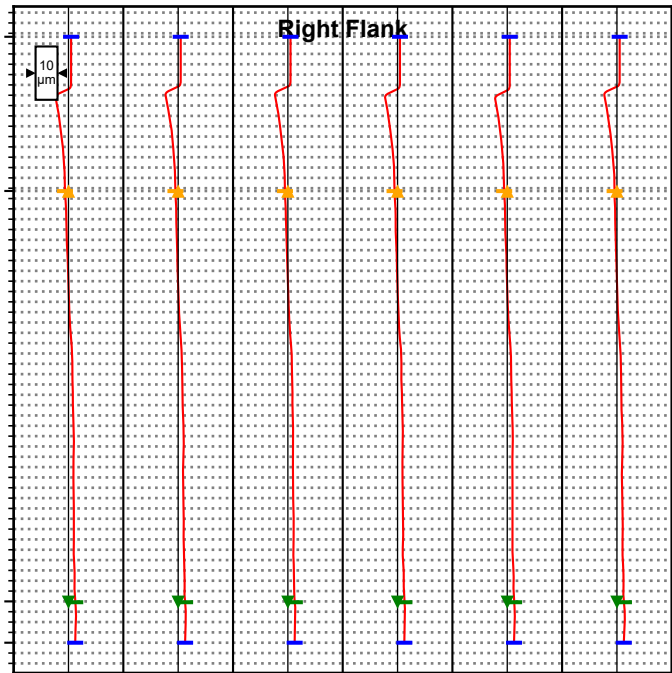
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Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



	6	5	4	3	2	1
fHam						
fHa						
fa						
ffa						
Ca						

Lim.value Qual.
±11 5
±11 5
20 5
16 5

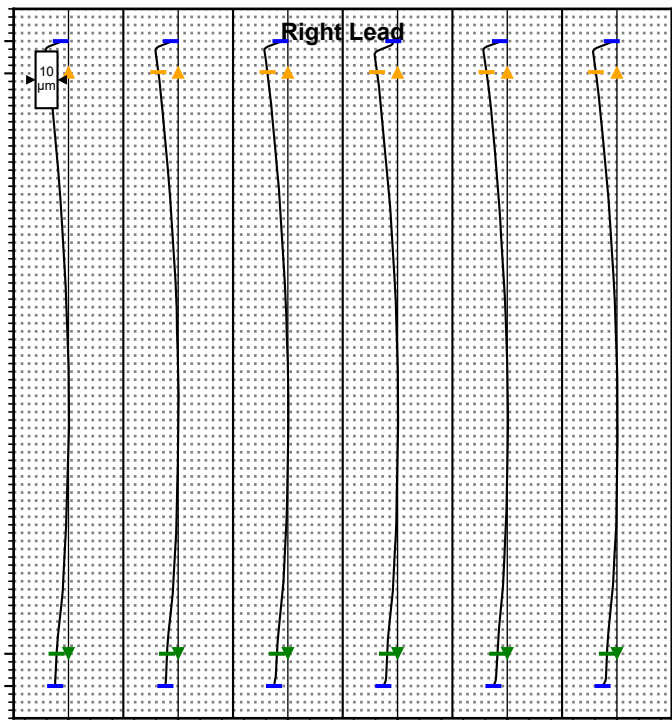
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±11 5						
±11 5						
20 5						
16 5						



	6	5	4	3	2	1
fHbm						
fHb						
fb						
ffb						
Cb						

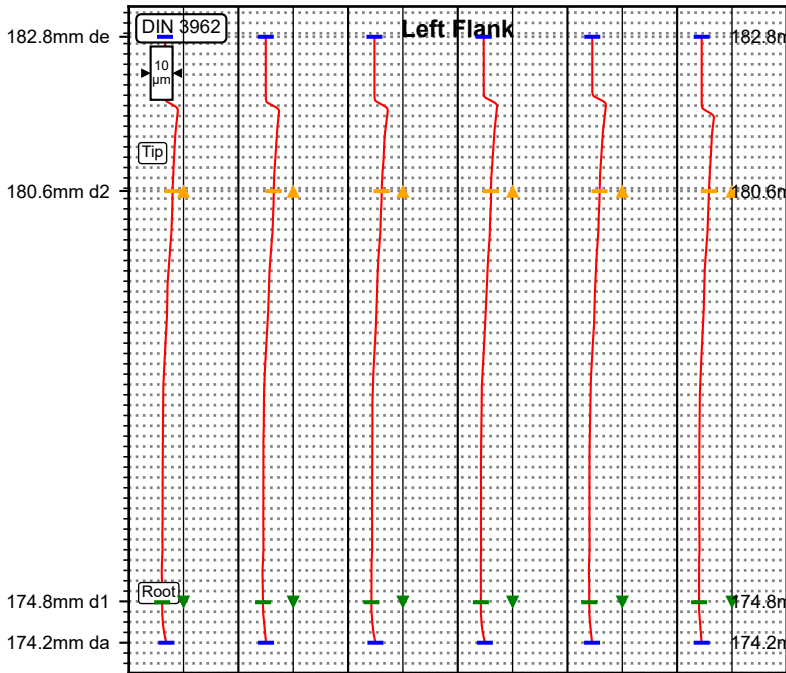
Lim.value Qual.
±8 5
±8 5
12 5
9 5

Lim.value Qual.	1	2	3	4	5	6
±8 5						
±8 5						
12 5						
9 5						



Gear Profile/Lead

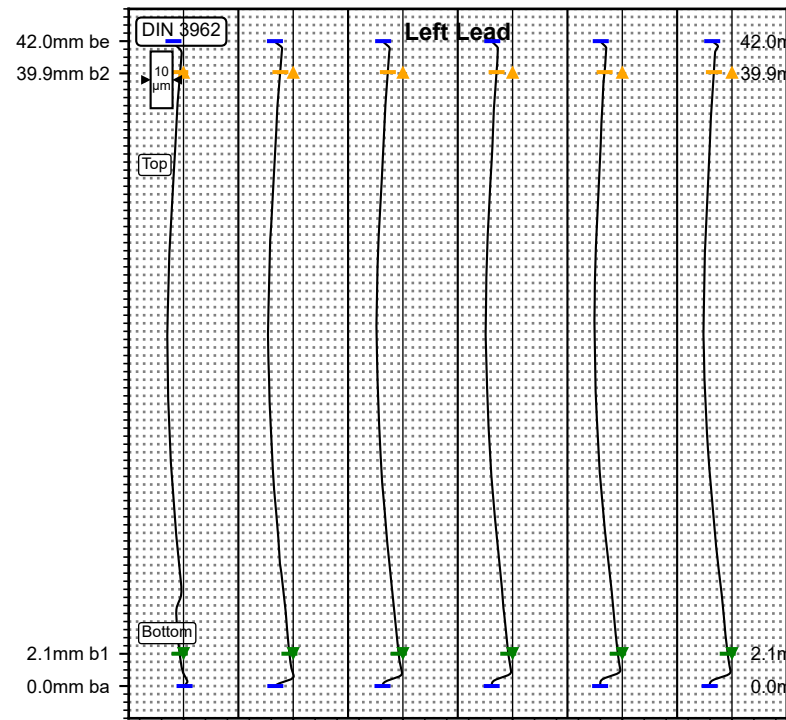
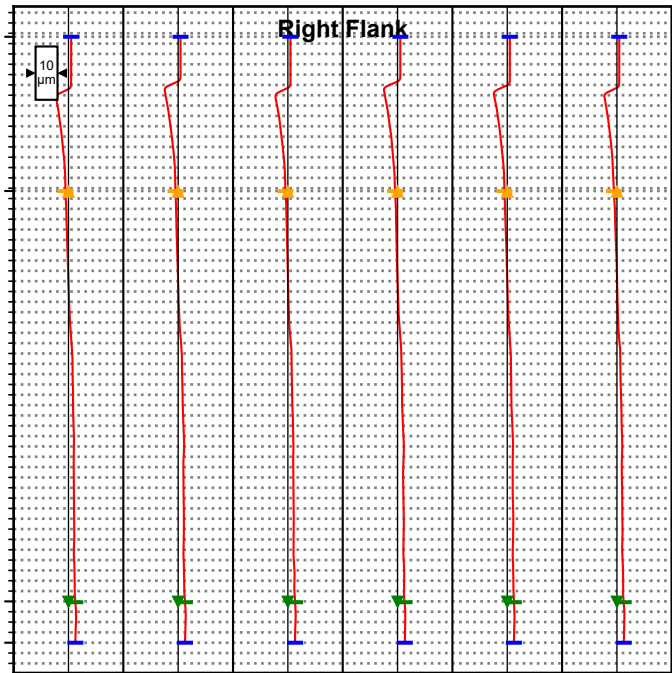
Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



	6	5	4	3	2	1
fHam						
fHa						
fa						
ffa						
Ca						

Lim.value Qual.
±11 5
±11 5
20 5
16 5

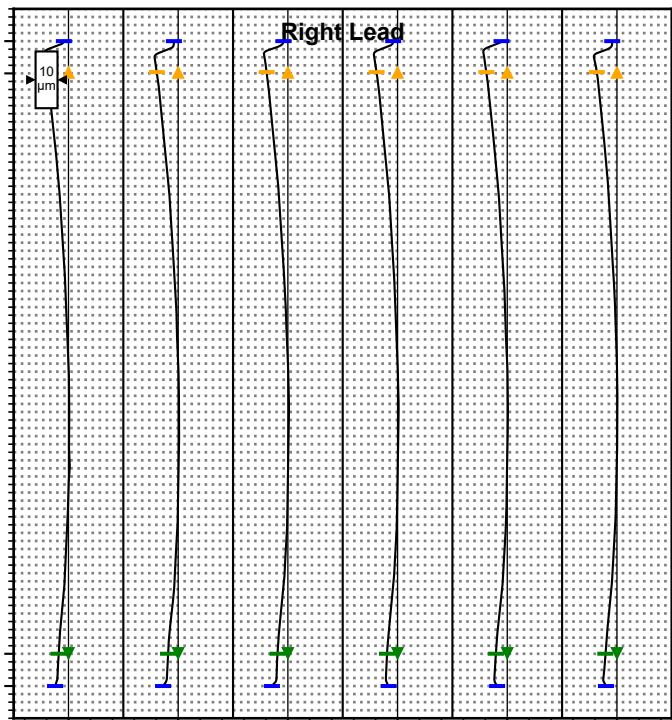
Lim.value Qual.	1	2	3	4	5	6
±11 5						
±11 5						
20 5						
16 5						



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fHbm						
fHb						
fb						
ffb						
Cb						

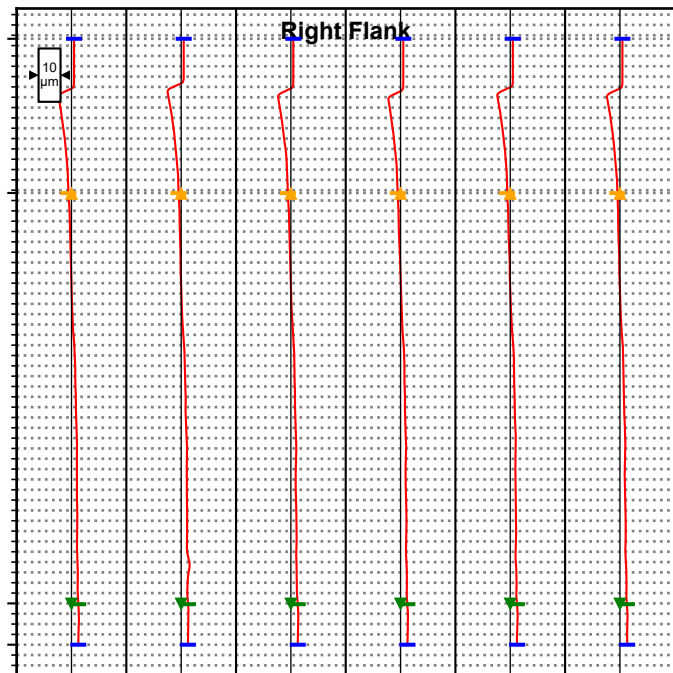
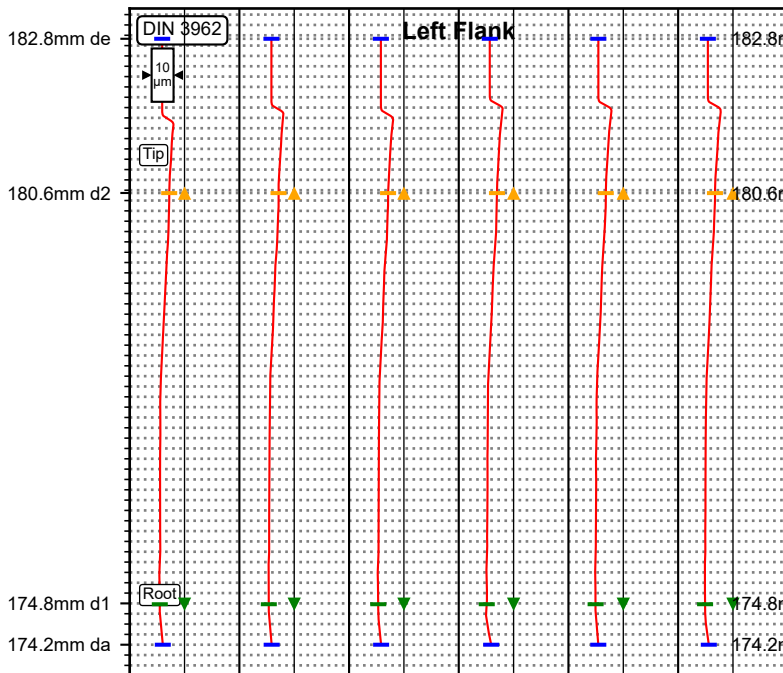
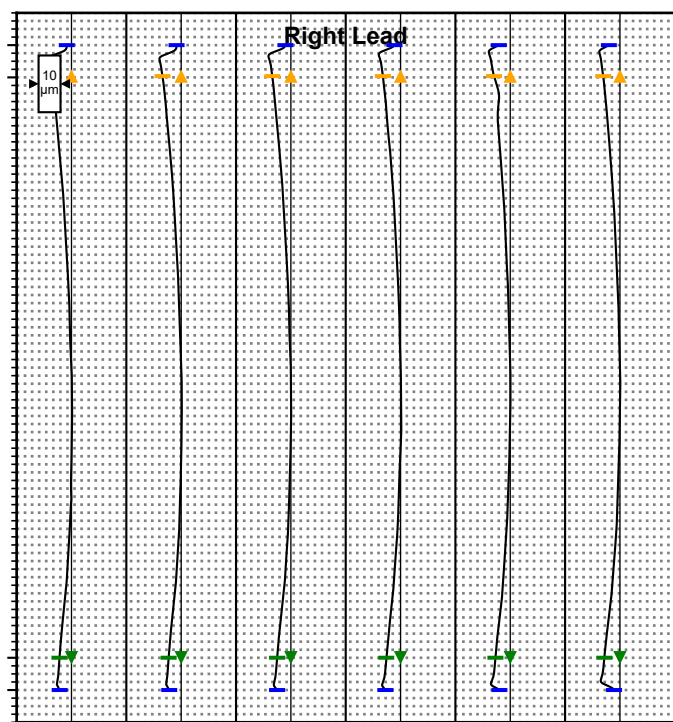
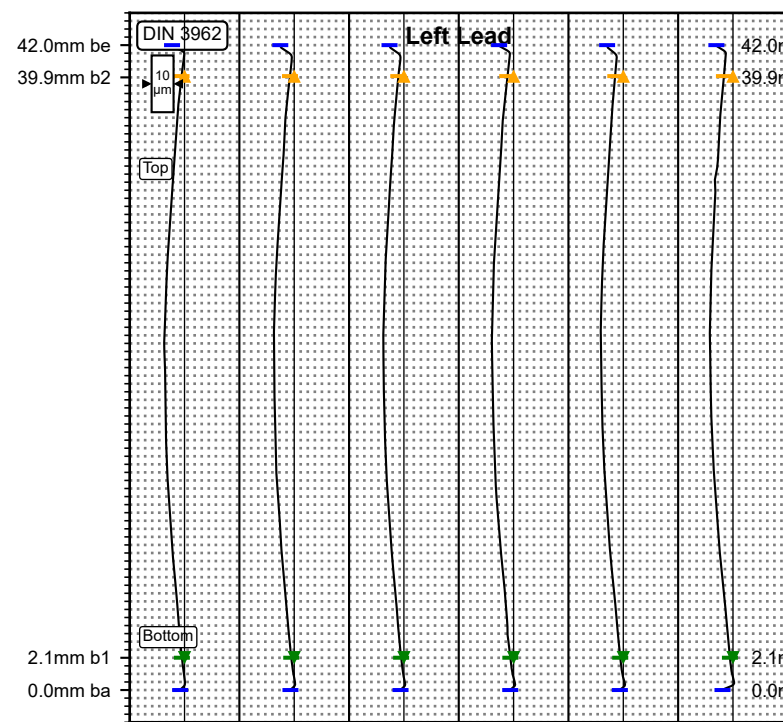
Lim.value Qual.
±8 5
±8 5
12 5
9 5

Lim.value Qual.	1	2	3	4	5	6
±8 5						
±8 5						
12 5						
9 5						



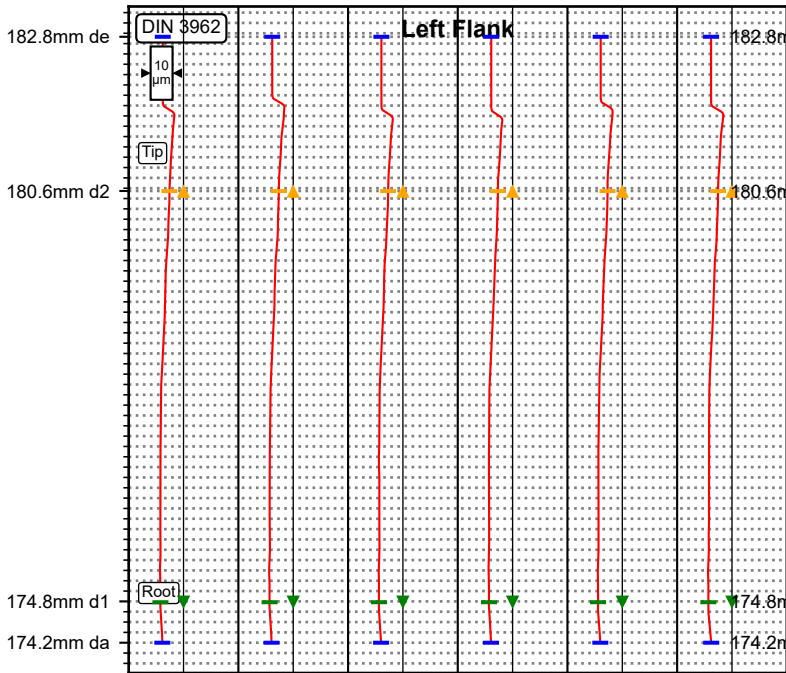
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. L α :	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. L β :	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

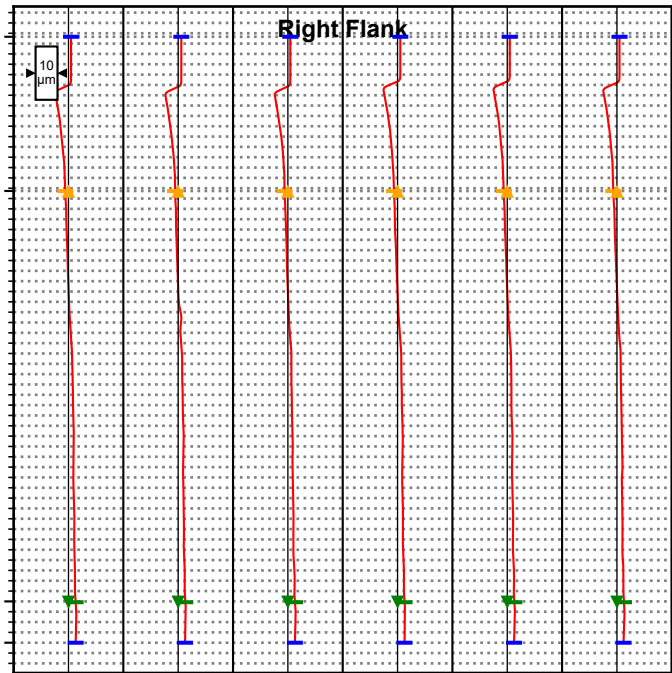
[illegible][illegible]

Gear Profile/Lead

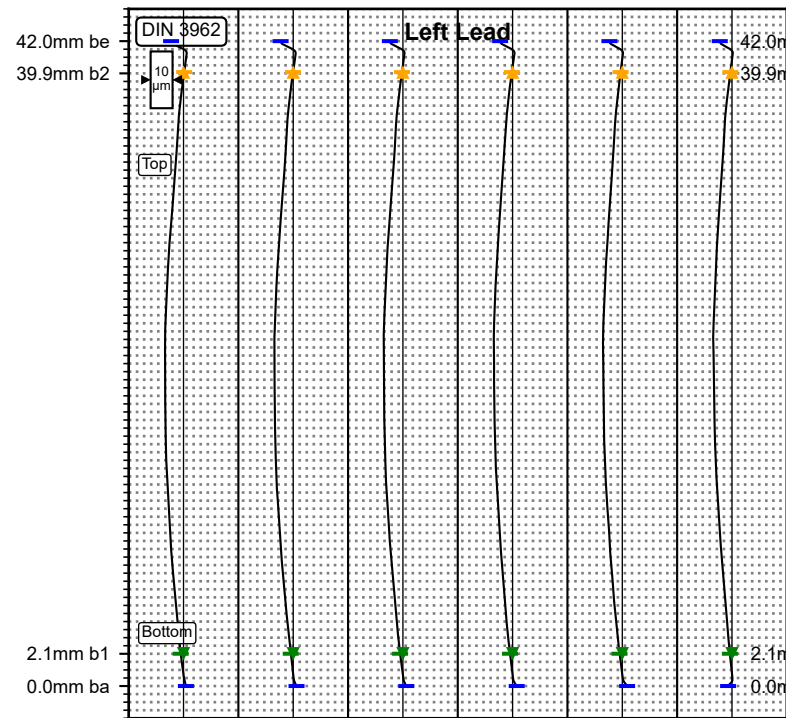
Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378



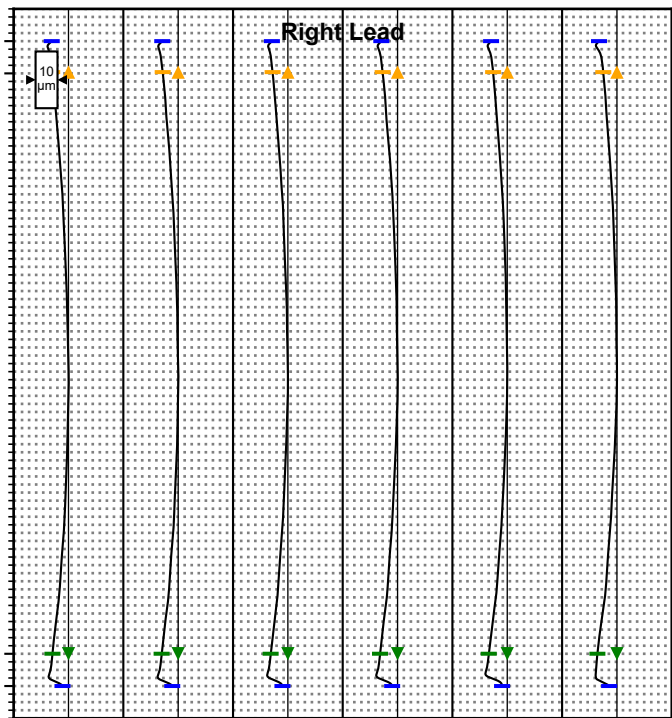
	6	5	4	3	2	1	Lim.value Qual.
fHam							±11 5
fHa							±11 5
fa							20 5
ffa							16 5
Ca							



Lim.value Qual.	1	2	3	4	5	6
±11 5						
±11 5						
20 5						
16 5						



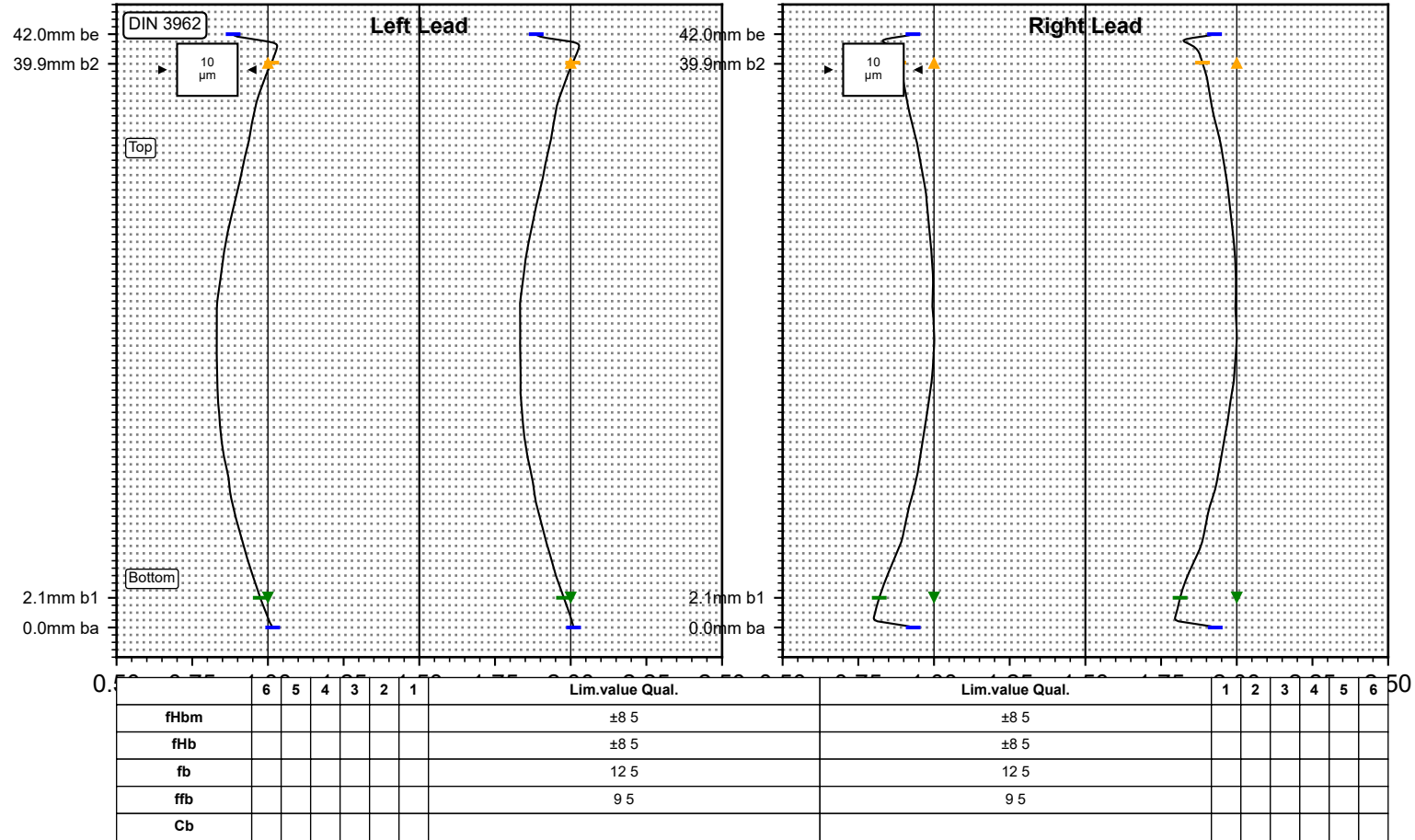
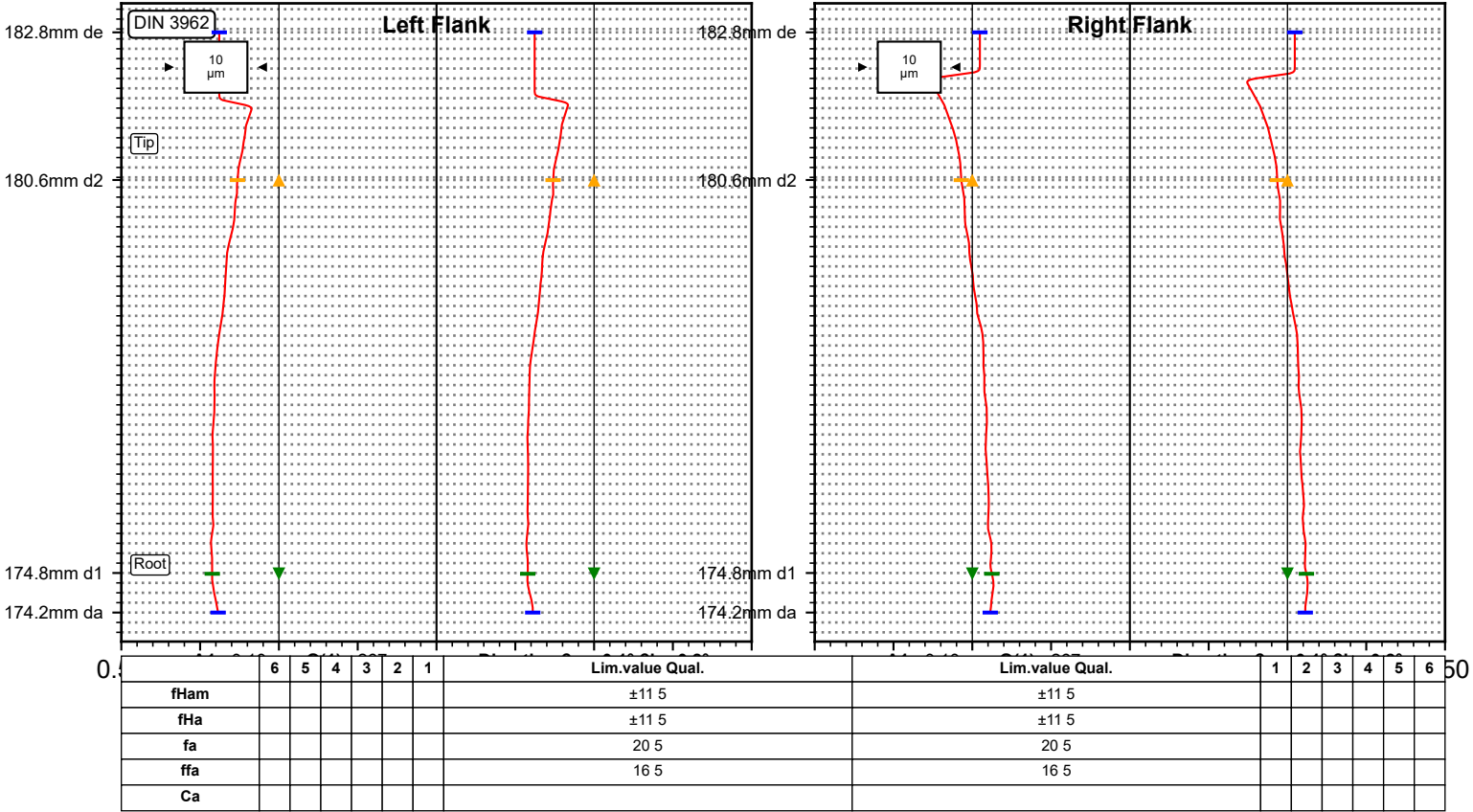
	6	5	4	3	2	1	Lim.value Qual.
fHbm							±8 5
fHb							±8 5
fb							12 5
ffb							9 5
Cb							



Lim.value Qual.	1	2	3	4	5	6
±8 5						
±8 5						
12 5						
9 5						

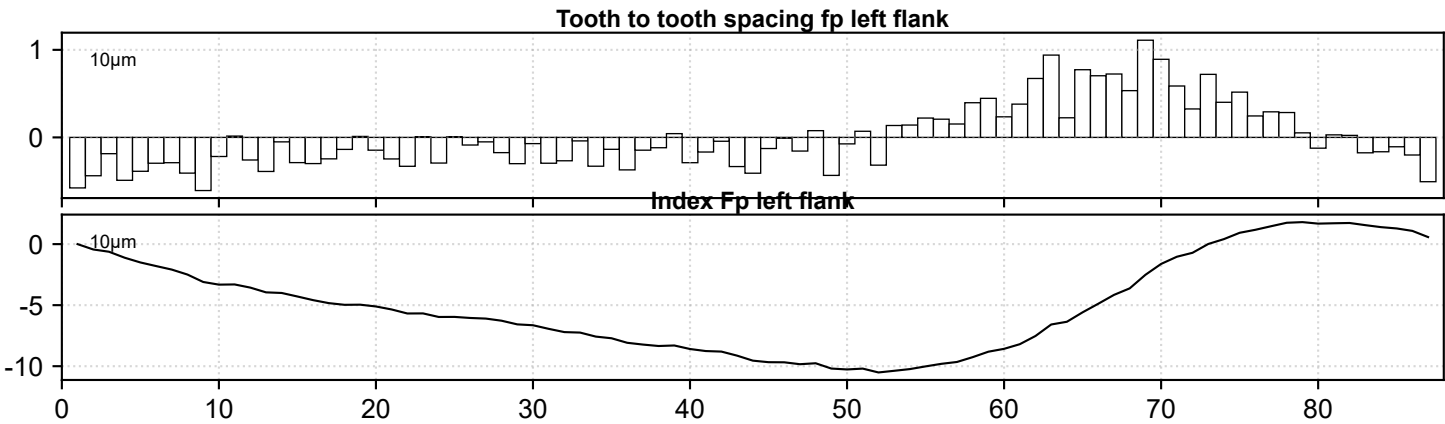
Gear Profile/Lead

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. Lα:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
Loc. of check:	Jintan	Base Cir.-Ø db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coe:	-0.378

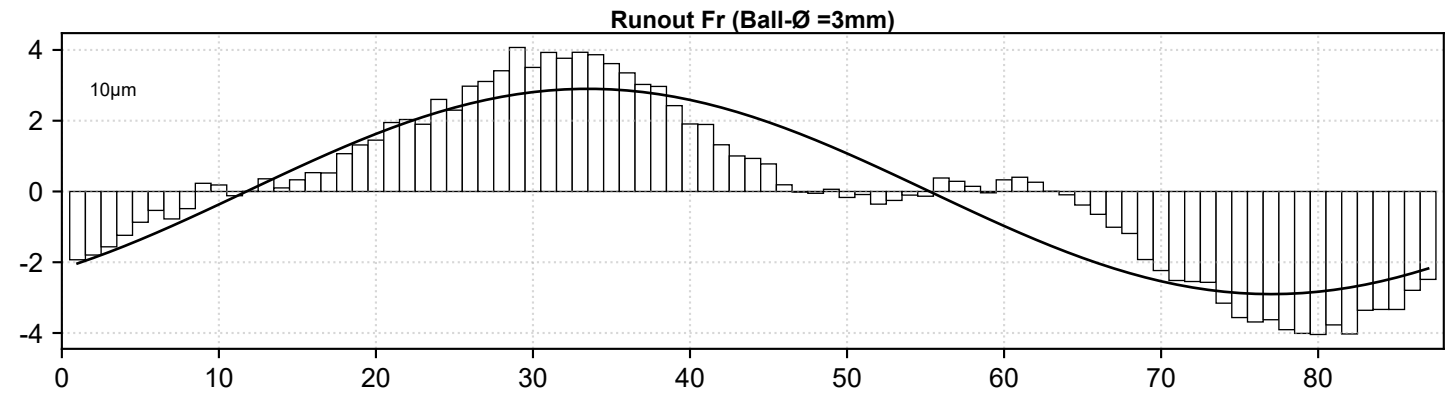


Gear Spacing

Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Pressure angle:	19°
Drawing No.:	84-T3.2.47.02.76-G-V	Module m:	1.86mm	Helix angle:	25°
Order No.:	263751-018-WAV	Loc. of check:	Jintan		
Cust./Mach. No.:	P26 -601418	Condition:	Grinding-0403		



Pitch measuring circle:	left flank				right flank			
	Act.value	Qual.	Lim.value	Qual.	Act.value	Qual.	Lim.value	Qual.
Worst single pitch deviation fp max	1.1		12	5	0.7		12	5
Worst spacing deviation fu max	0.7				0.8			
Range of Pitch Error Rp	1.7				1.4			
Total cum. pitch dev. Fp	12.3		36	5	9.8		36	5
Cum. pitch deviation Fp10	7.2				5.0			



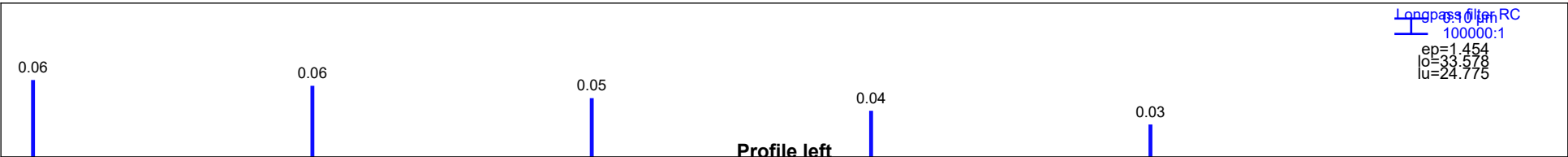
MdK 183.239[mm]/Ball-Ø 1								
Pitch Line Runout	Fr	8.1				Lim.value	183.239	183.239
Variation of tooth thickn	Rs					Act.	181.395	183.240 179.571

Way of evaluation: High orders

Analysis of ripple
Spectrum of the ripple

Serial no.: 263751-018-WAY
Part name: 0.10 rampass 100000:1
File: z= 87

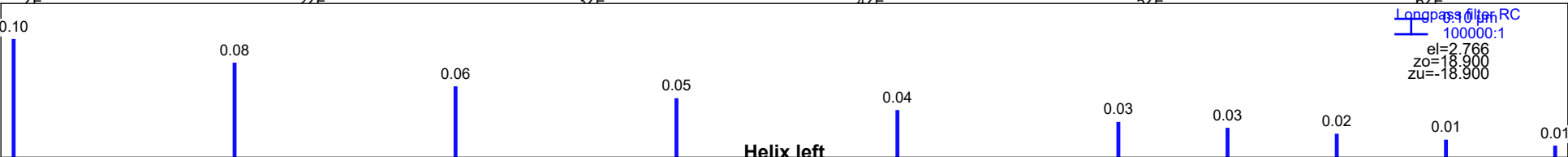
Profile right



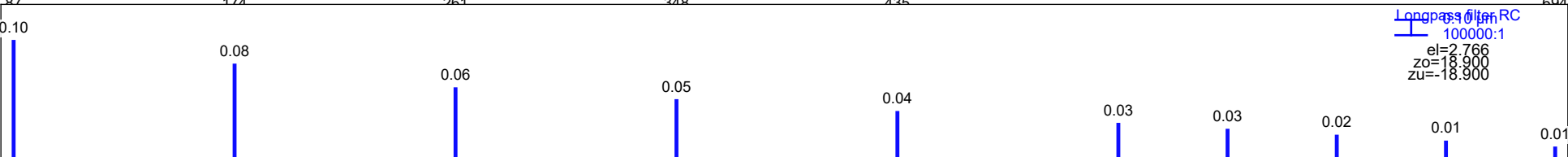
Profile left



Helix right

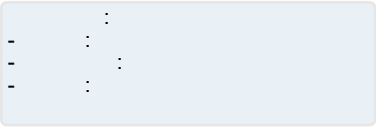


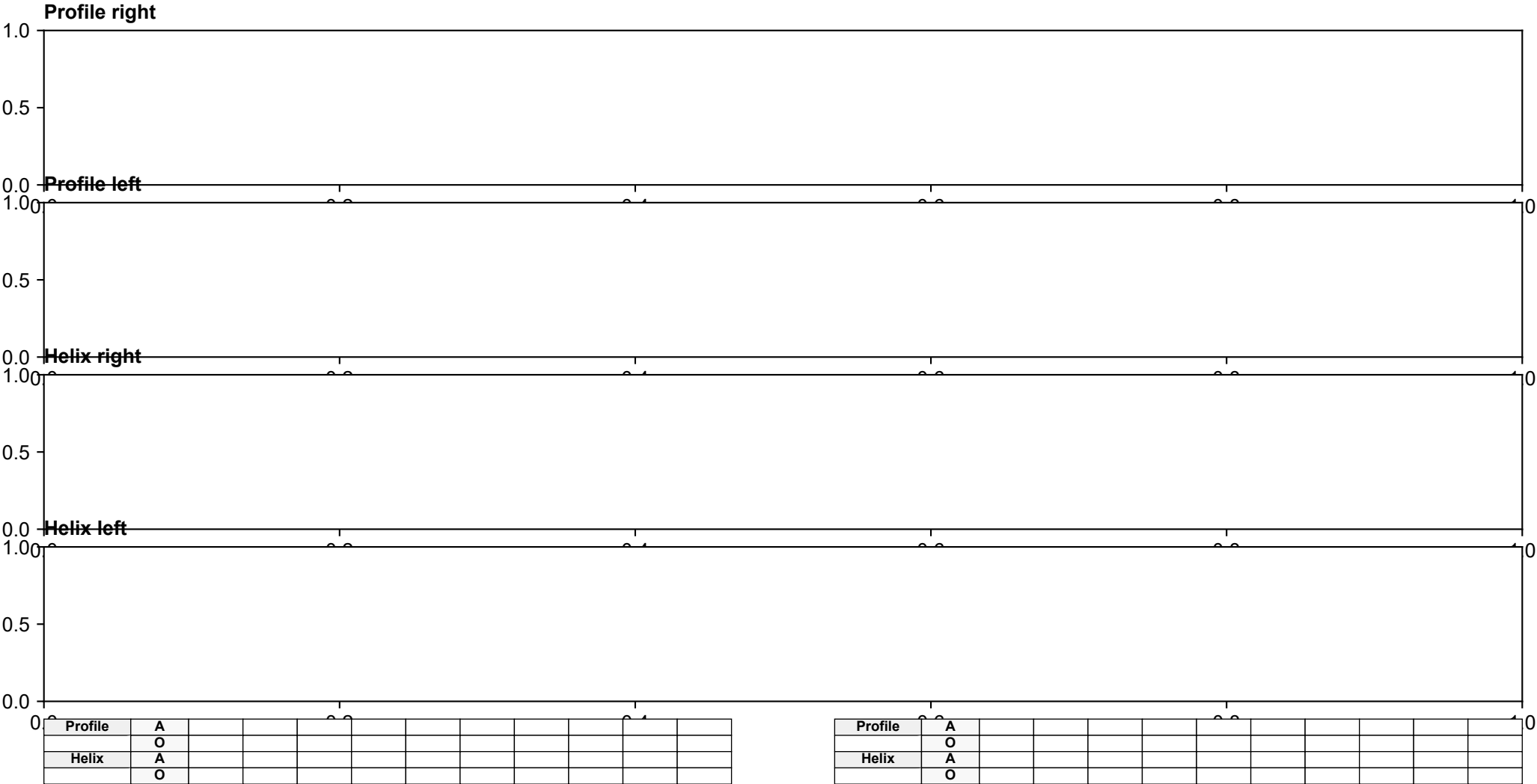
Helix left



Profile	Order	1ZE	174	27E	37E	47E	57E	67E	77E	87E	97E
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Profile	Order	1ZE	27E	37E	47E	57E	67E	77E	87E	97E
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Order	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Helix	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001





():

- :

- :

- :

- :

c

b

a

tooth

a

b

c

Analysis of deviations - Sine Wave Fitting

Drawing no.: 84-T3.2.47.02.76-G-WAV

Serial no.: 263751-018-WAV

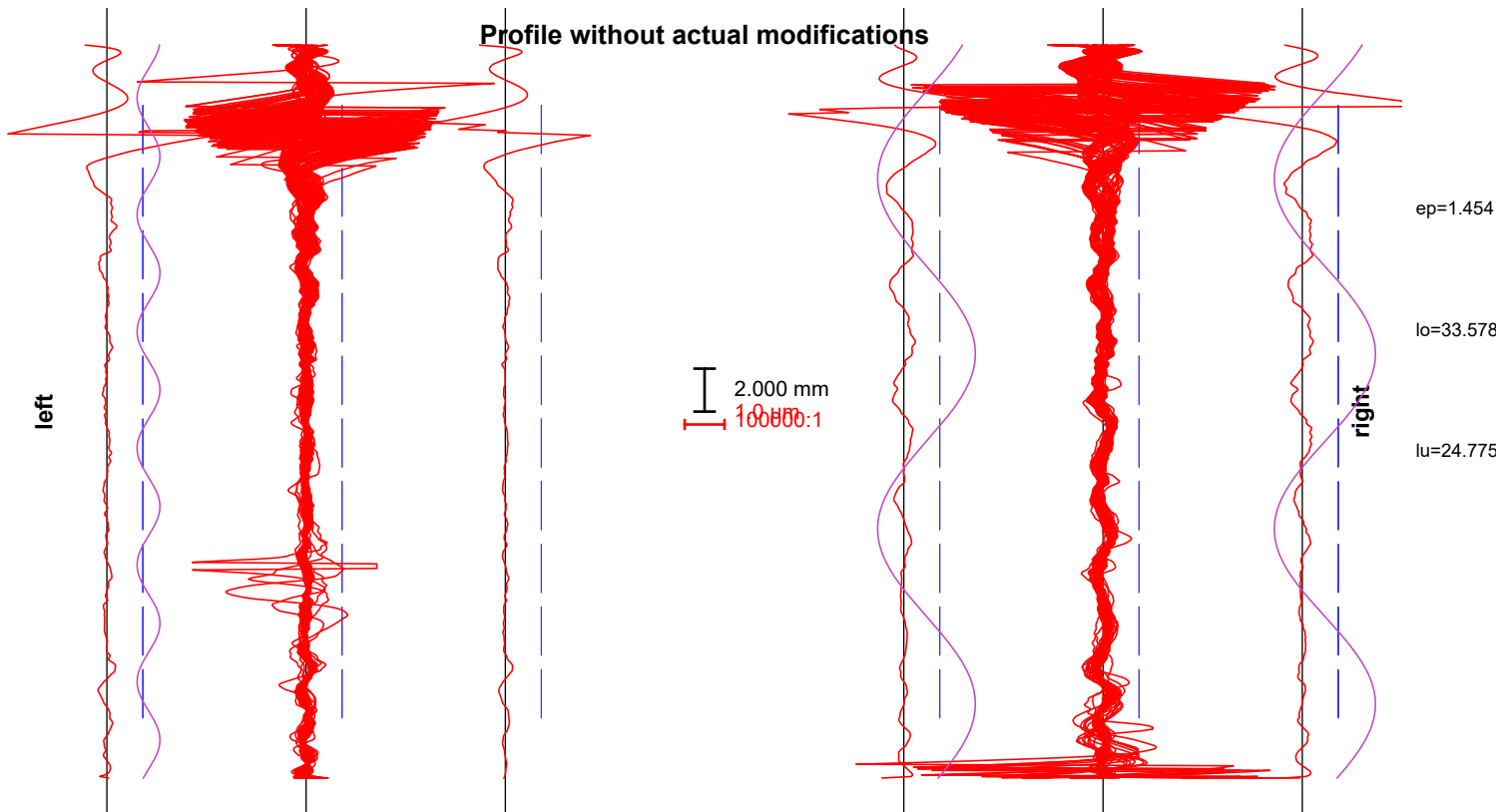
Module: 1.859

Date: 14.02.25

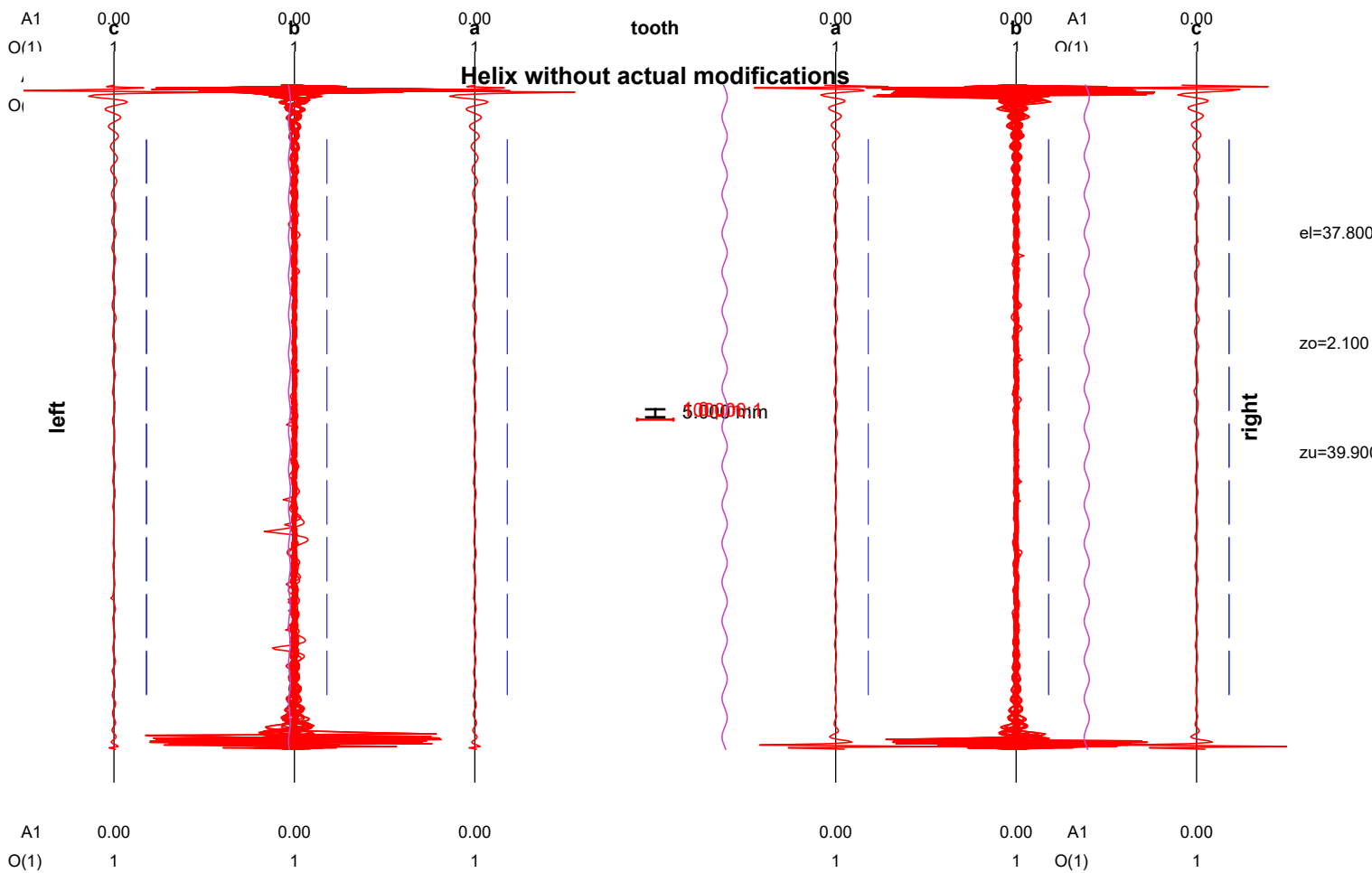
Teeth: 87

Machine:

Profile without actual modifications



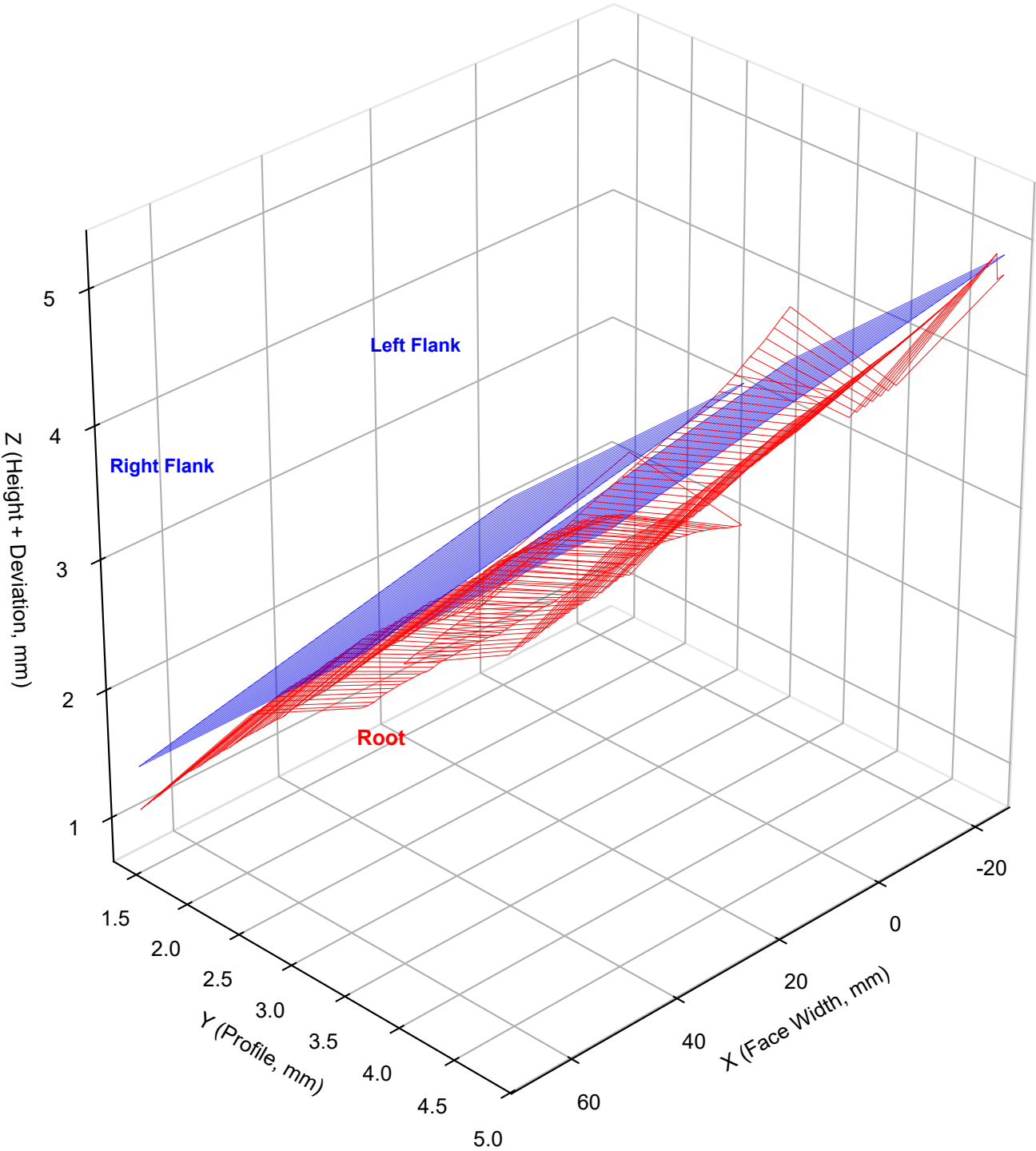
Helix without actual modifications



Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of Teeth:	87	Face Width:	42.0mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.86mm	Length Bv. Ia:	8.53mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. I4:	5.78mm
Cust./Mach. N:	P26 -601418	Helix angle:	25°	Appr. Length M:	0.58mm
Loc. of check:	Jintan	Base Cir.- db:	167.6532mm	Stylus-Ø:	1.000mm
Condition:	Grinding-0403	Base Helix ang:	23.893°	Add.Mod.Coeff x:	-0.378

Gear Topography

Tip
Single Tooth 3D View



Drawing no.: 84-T3.2.47.02.76-G-WAV

Analysis of deviations

Customer: P26-601418

Analysis of deviations

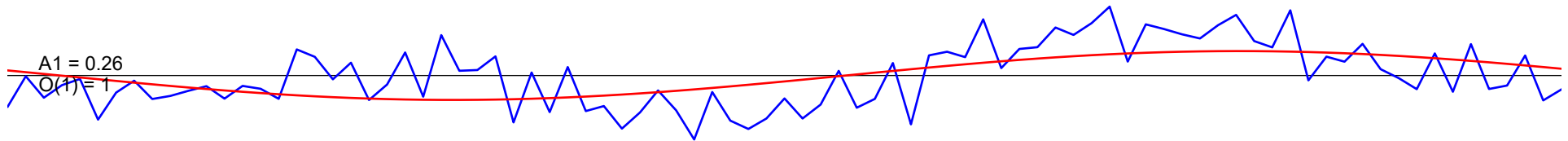
Part name: gear

File:

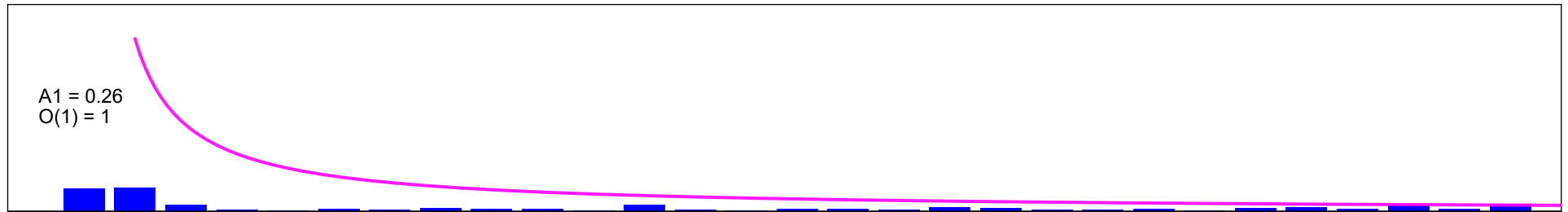
Serial no.: 263751-018-WAV

Limiting curve parameters: $R = 2.00$, $n_0 = 1.00$, $K = 0.00$, $z = 87$
14.02.25

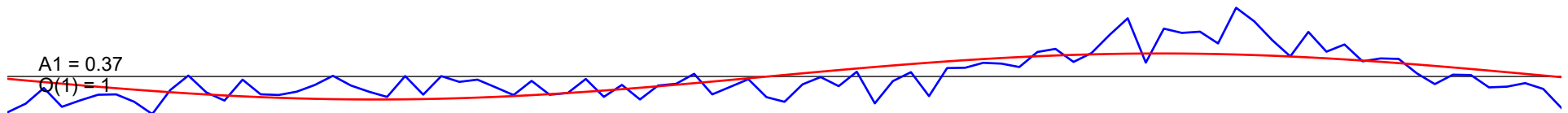
Ripple pitch right



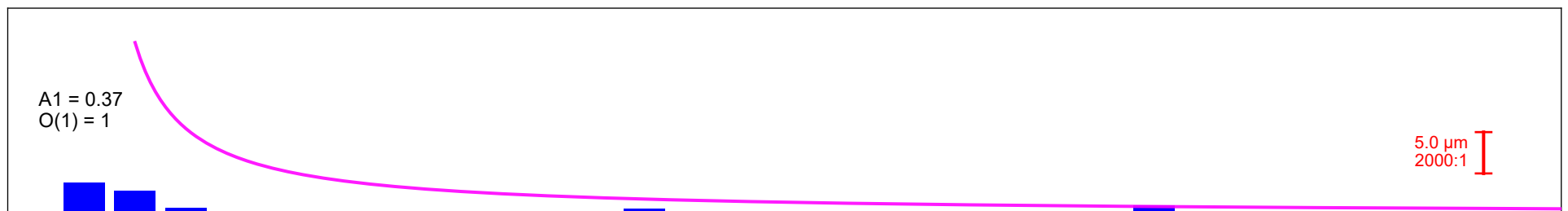
Spectrum pitch right



Ripple pitch left



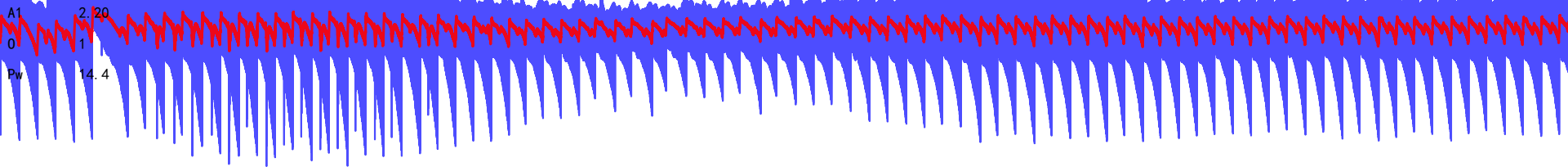
Spectrum pitch left



Waviness in Rotation Angle Range

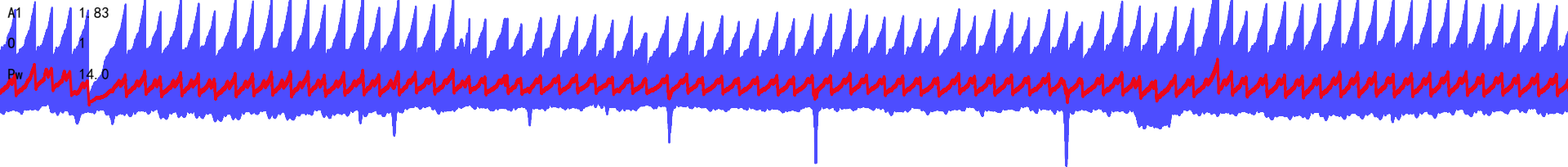
Profile right

A1
0
Pw



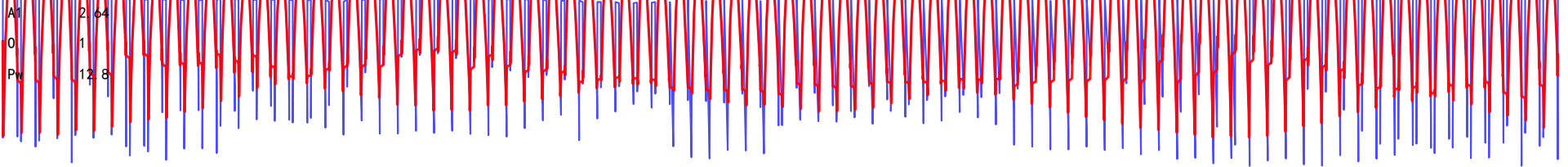
Profile left

A1
0
Pw



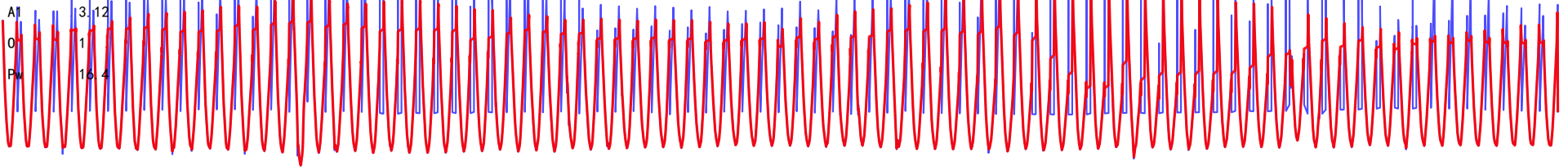
Helix right

A1
0
Pw



Helix left

A1
0
Pw



KLINGELNBERG

Way of evaluation: High orders

Analysis of ripple

Order no.: 263751-018-WAV

Drawing no.: 84-T3.247.02-Z6-6-WAV

Spectrum of the ripple Preprocessing Comparison (Before vs After)

Serial no.: 263751-018-WAV

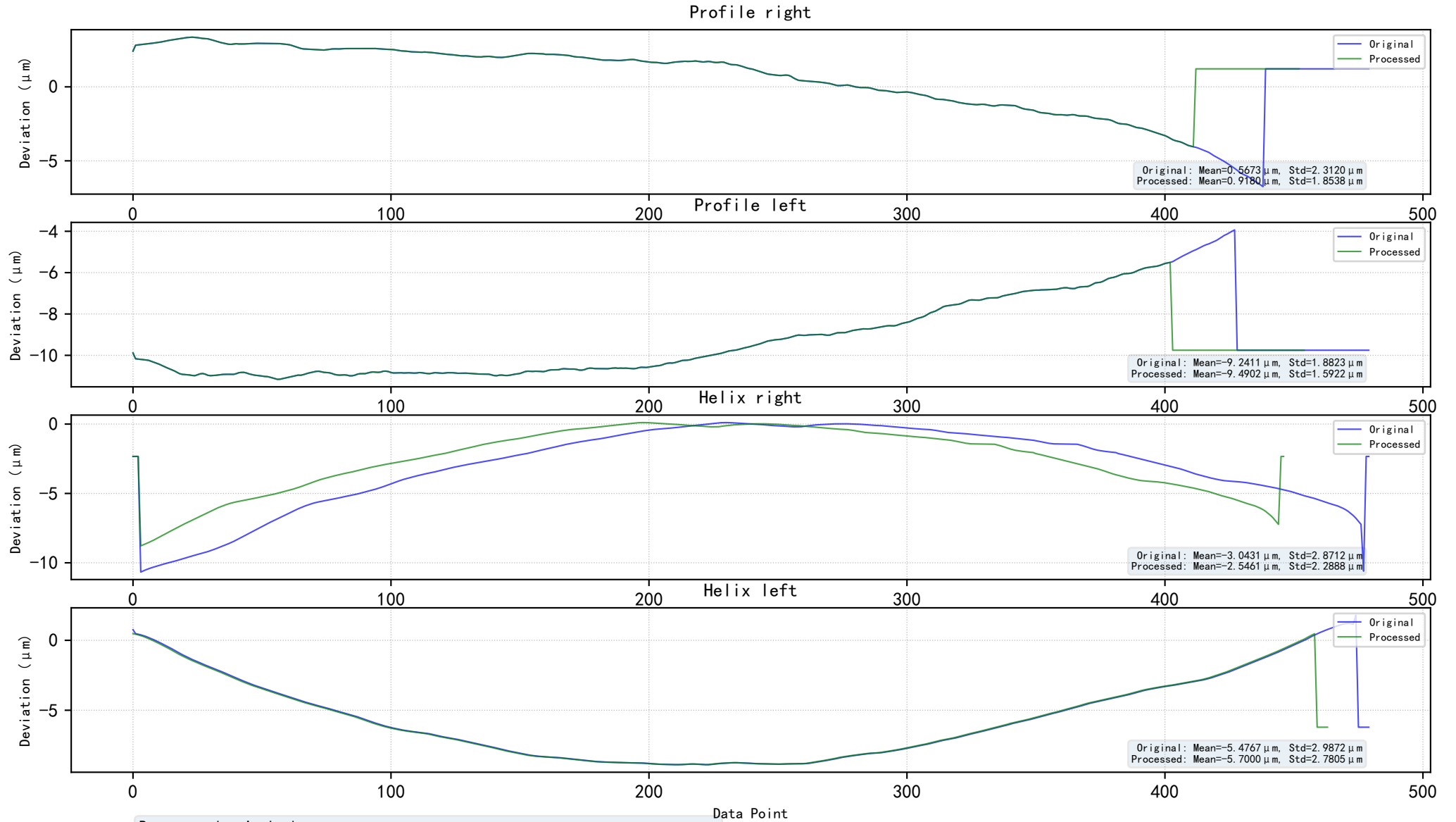
14.02.25

Part name:

100000:1

File:

Z= 87



Preprocessing Analysis:

- Outlier Removal: Uses Z-score method with threshold=2.0
- Slope Deviation Removal: Uses threshold=0.05
- The preprocessing helps reduce noise and improve spectrum analysis accuracy
- Processed data shows reduced variability and better signal-to-noise ratio