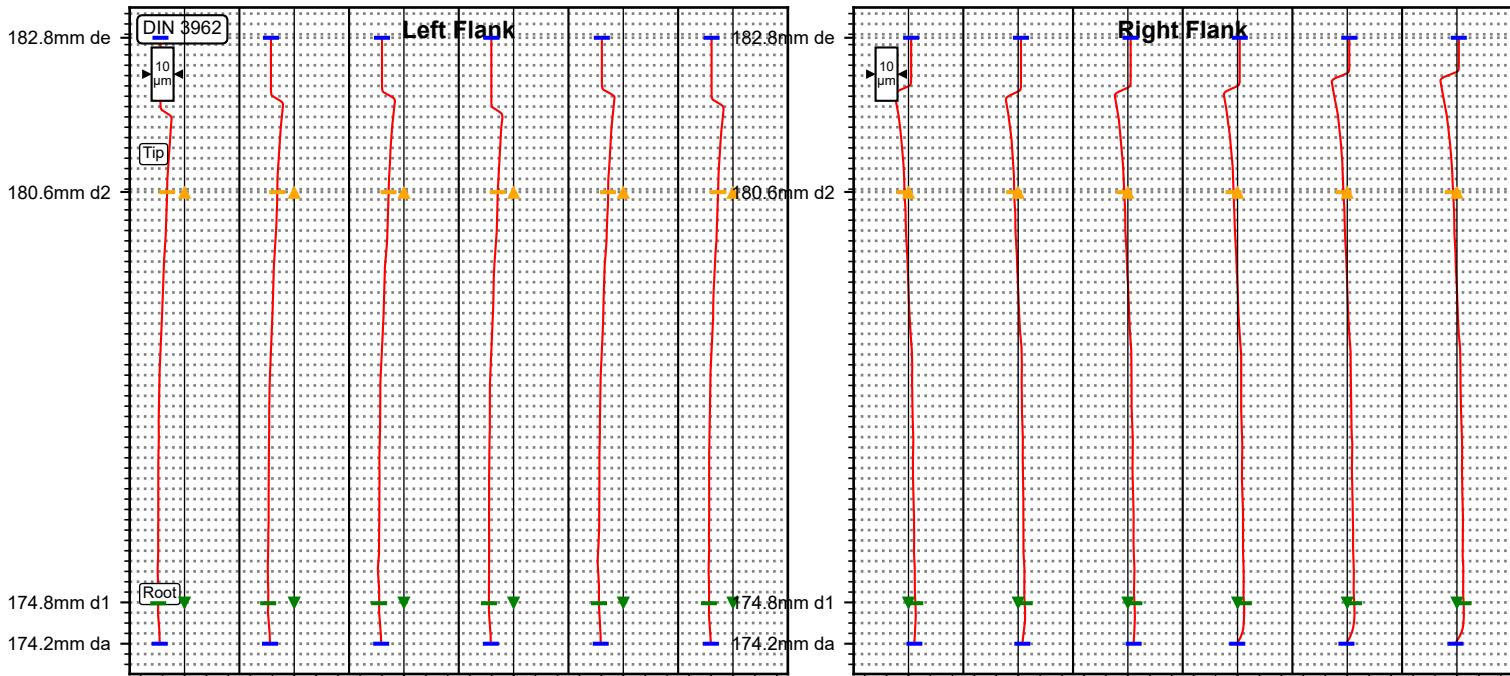
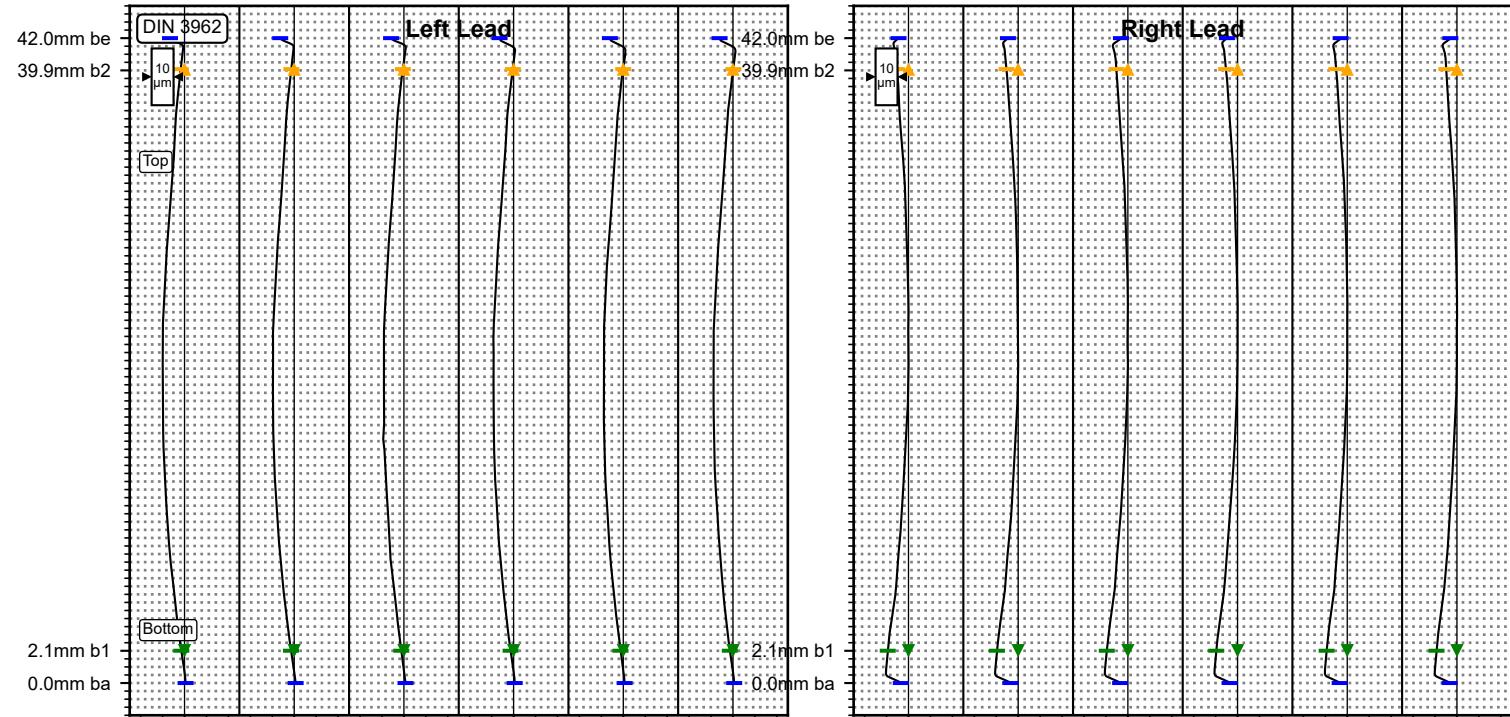


Gear Profile/Lead

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



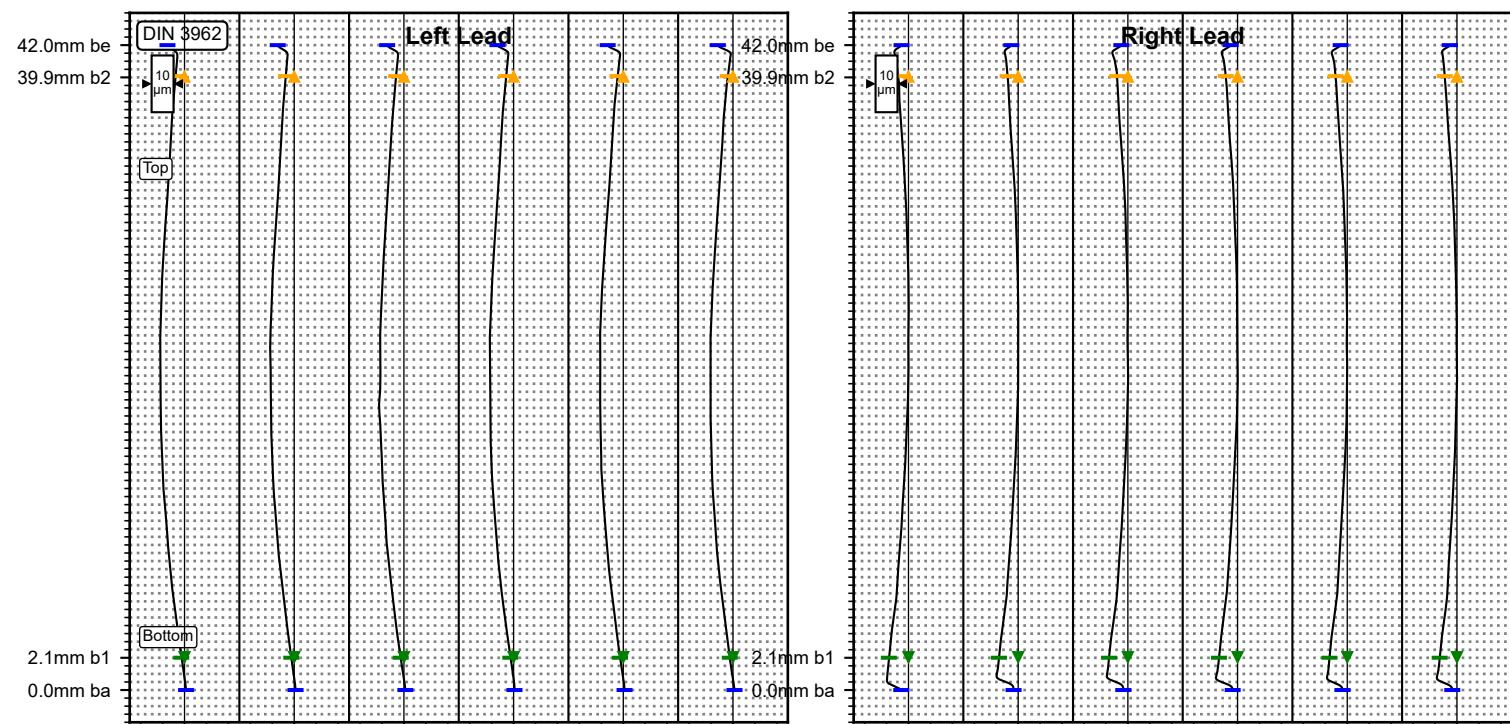
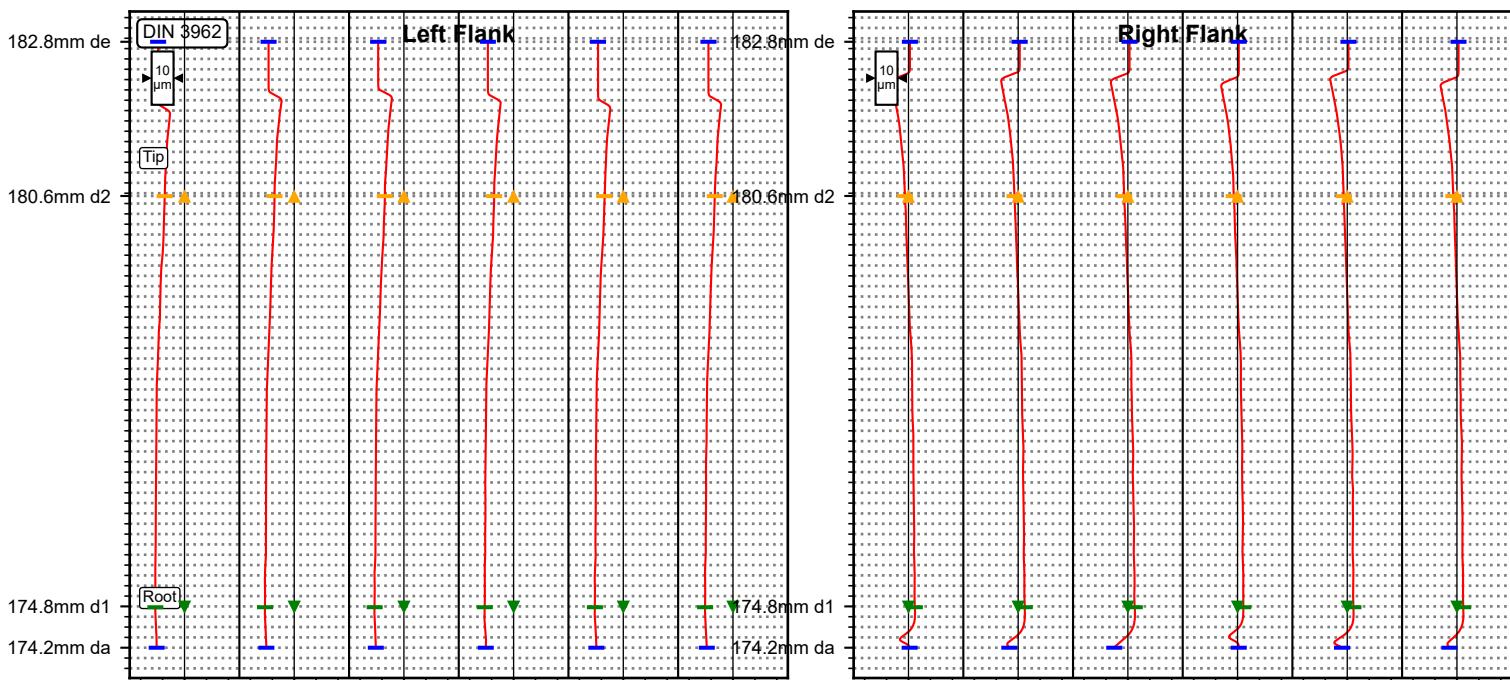
	6	5	4	3	2	1	Lim.value Qual.		1	2	3	4	5	6
fHam							±11.5							
fHa							±11.5							
fa							20.5							
ffa							16.5							
Ca	-1.6	-1.6	-1.7	-1.5	-1.7									
									1.3	1.3	1.2	1.4	1.1	



	6	5	4	3	2	1	Lim.value Qual.		1	2	3	4	5	6
fHbm							±8.5							
fHb							±8.5							
fb							12.5							
ffb							9.5							
Cb	-8.3	-8.2	-8.2	-8.1	-8.0				7.4	7.4	7.4	7.4	7.2	

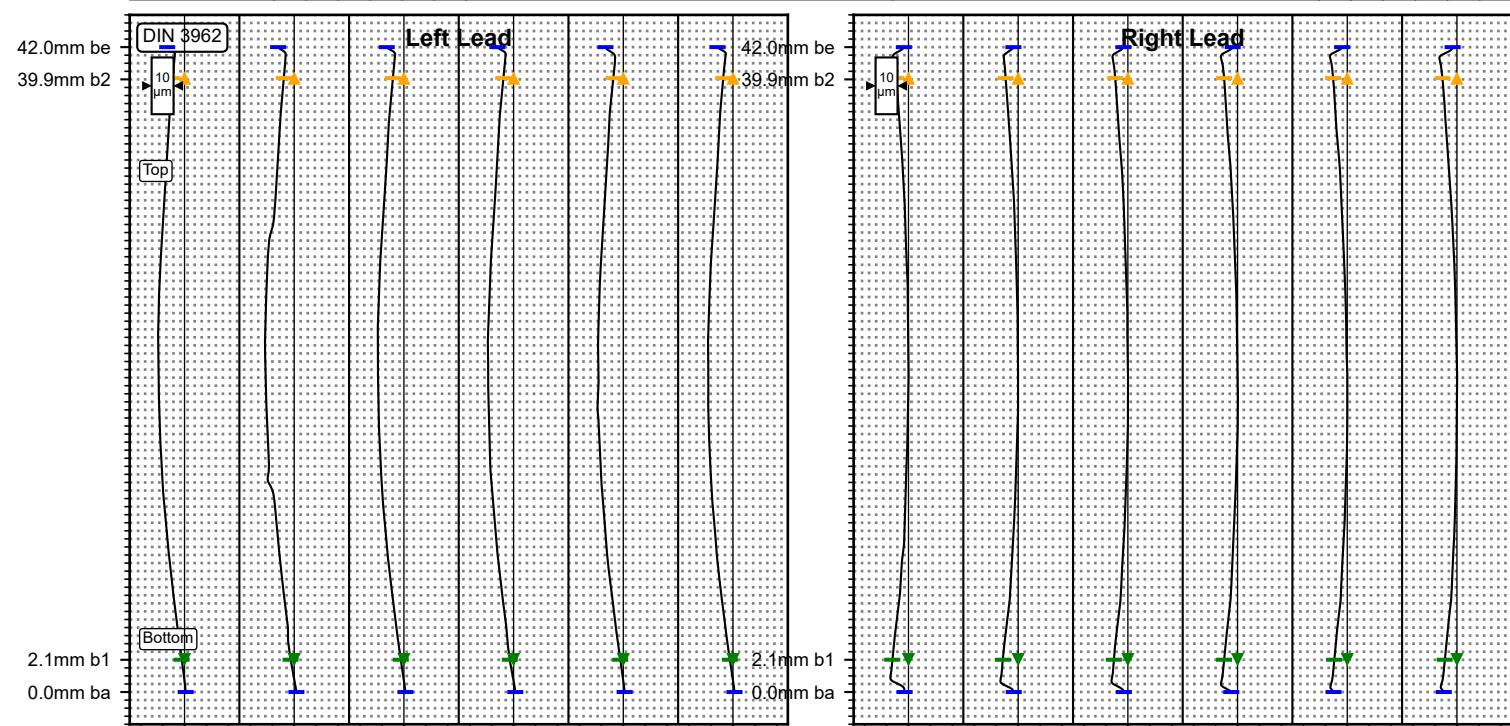
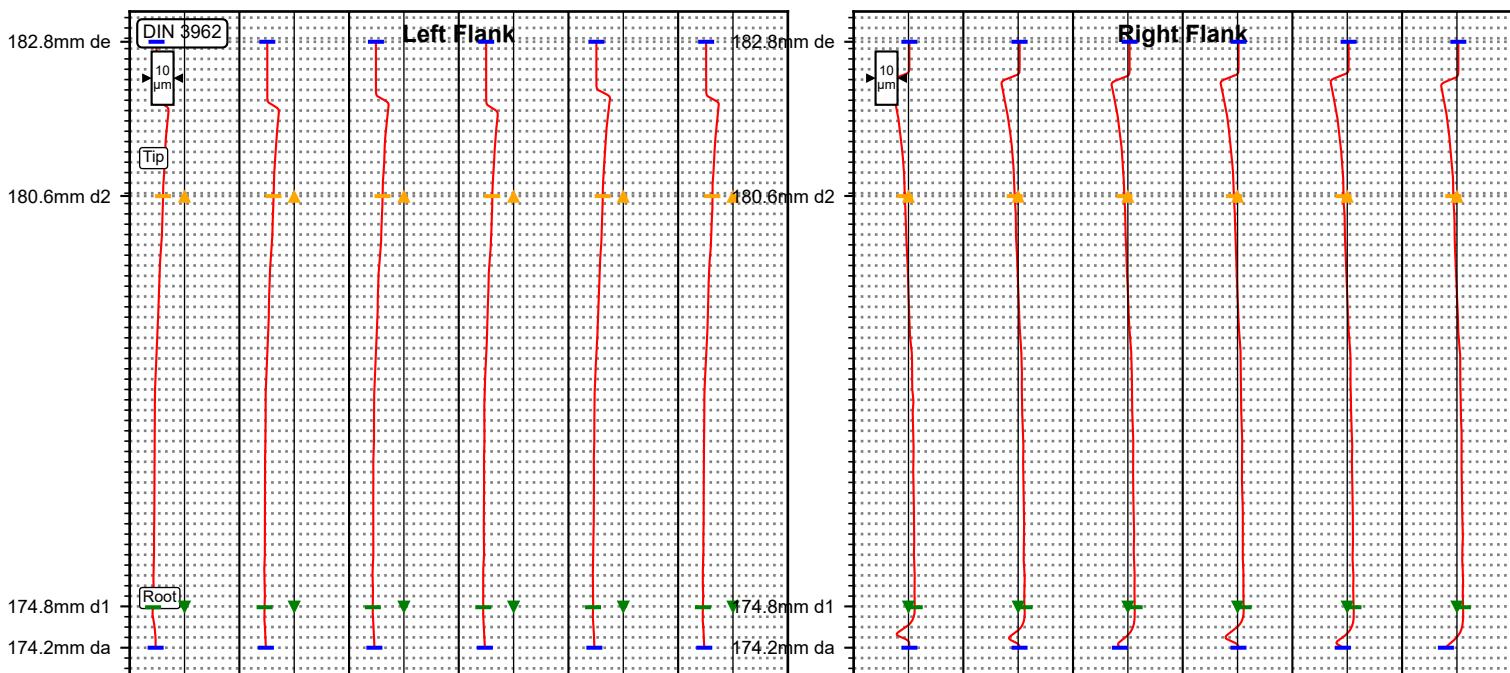
Gear Profile/Lead

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. 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



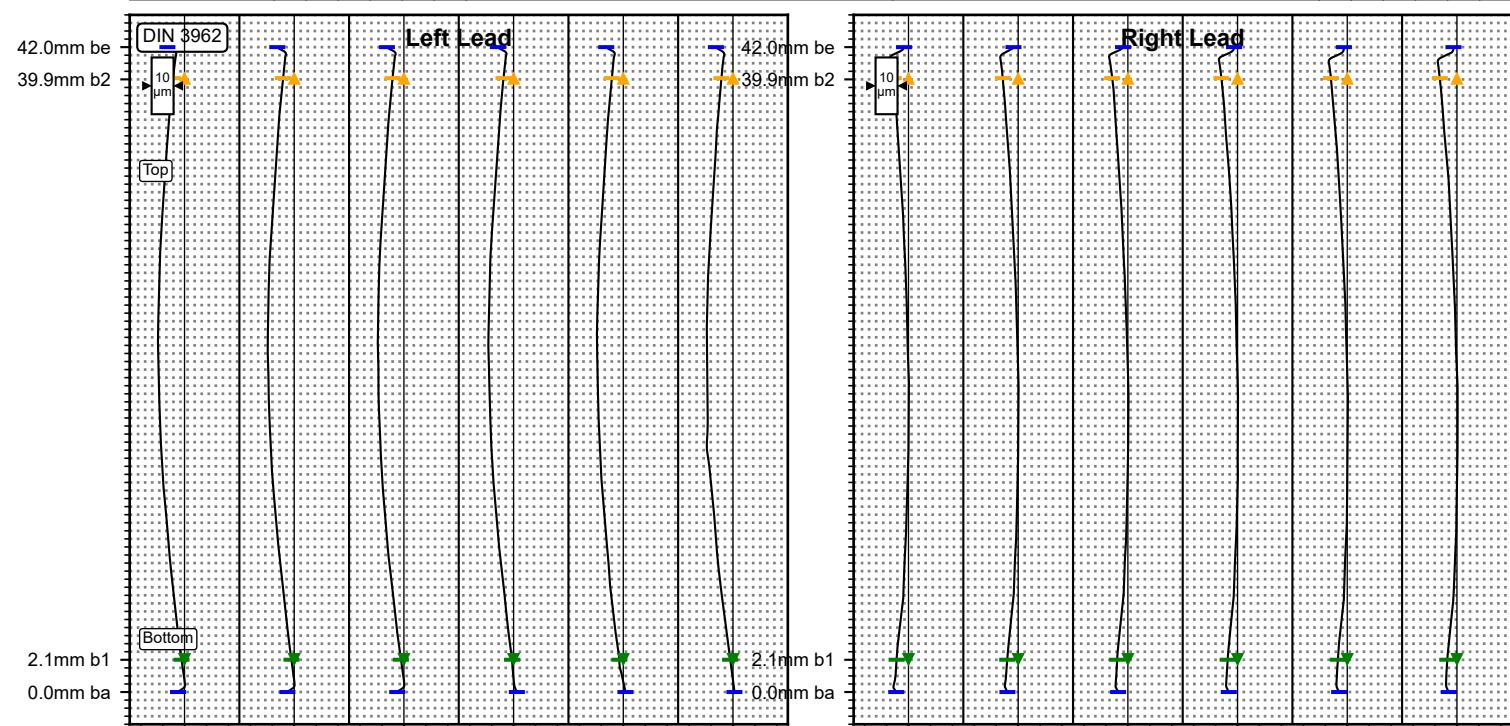
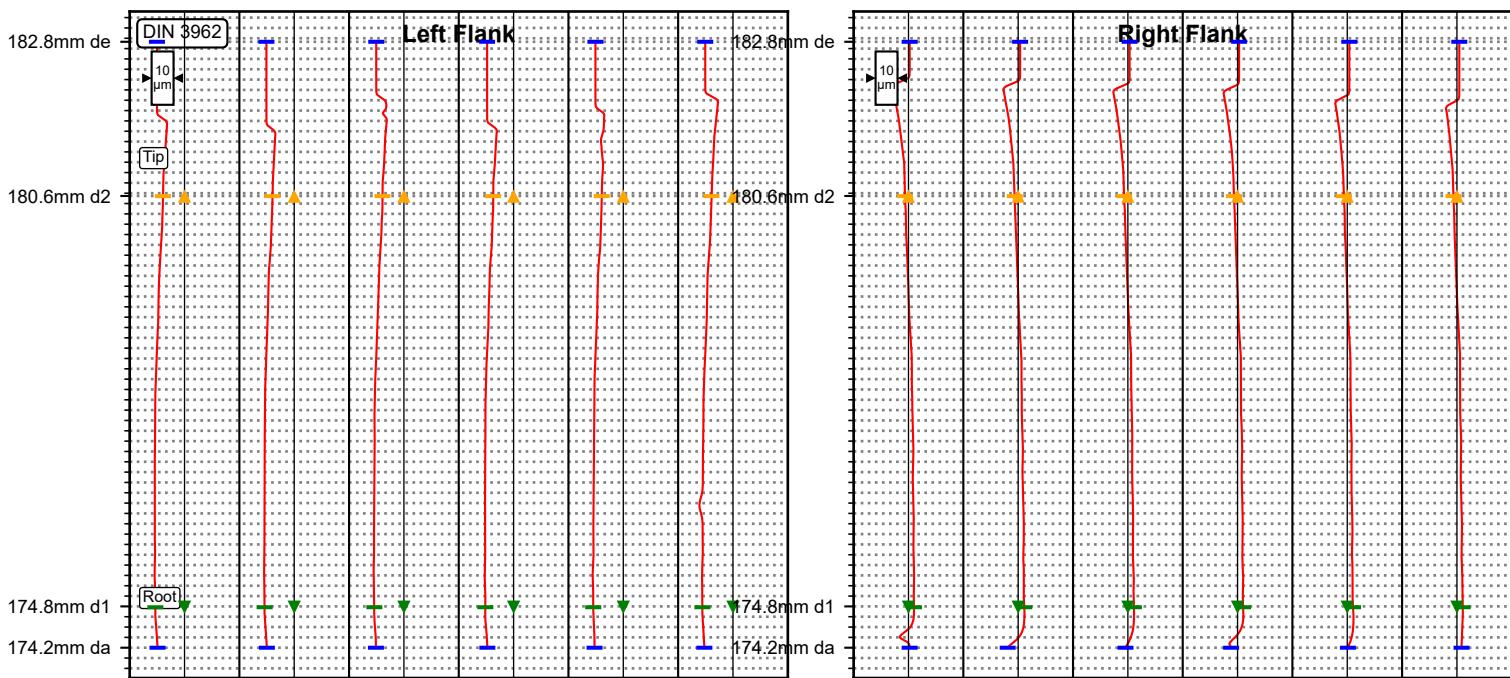
Gear Profile/Lead

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



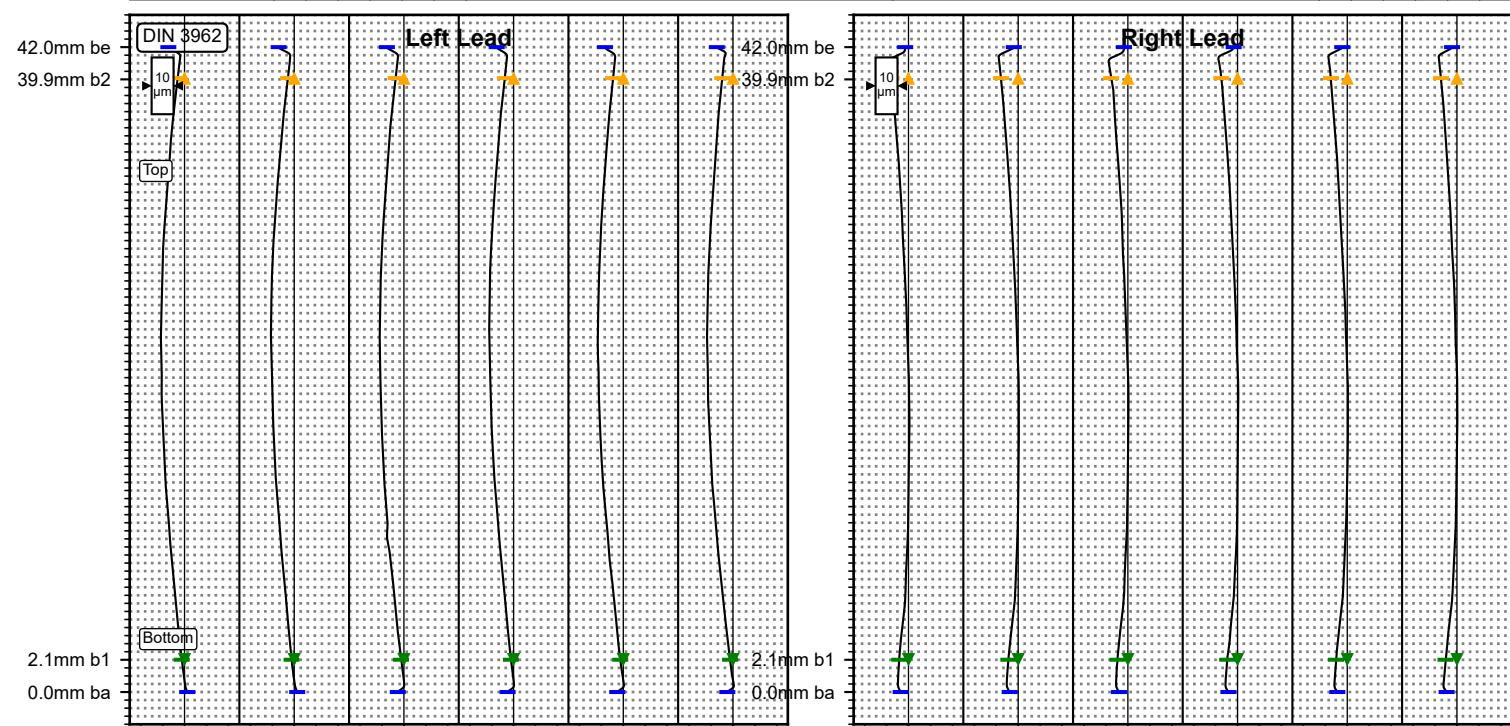
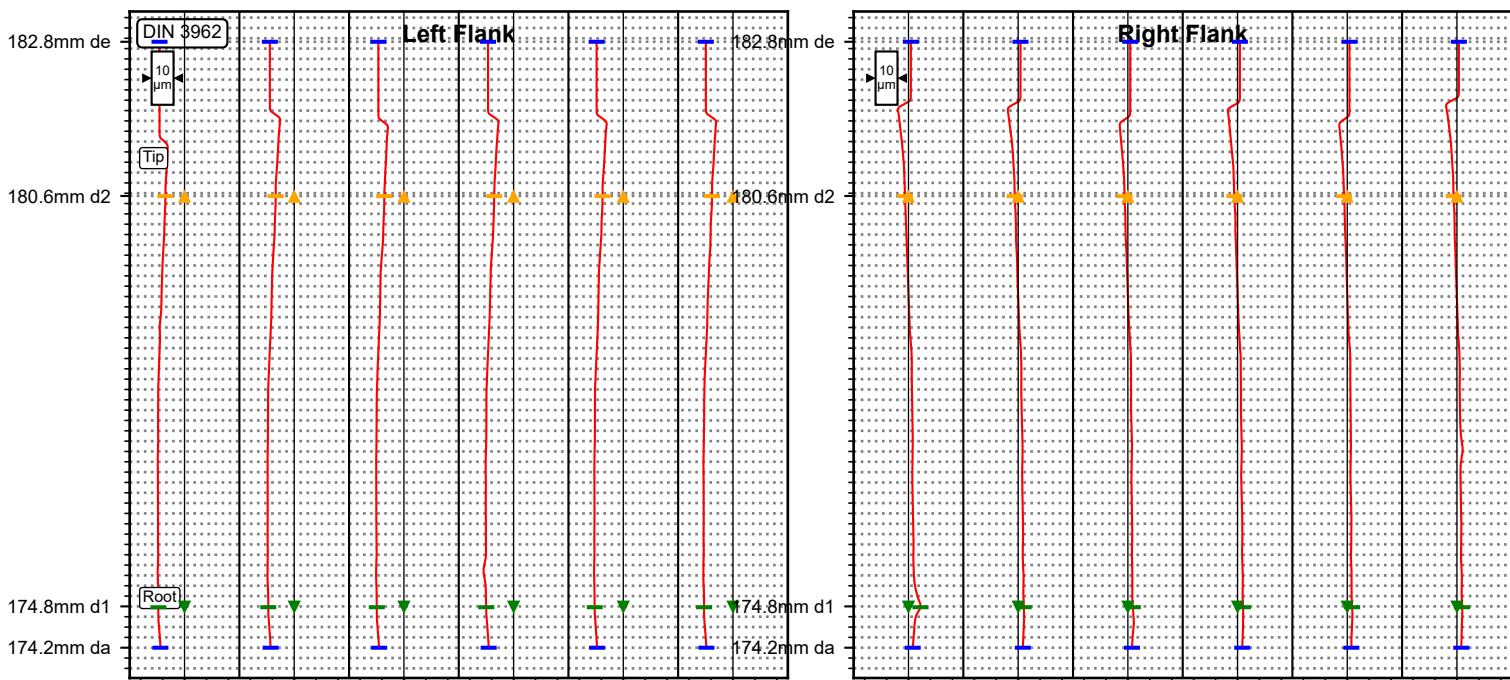
Gear Profile/Lead

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



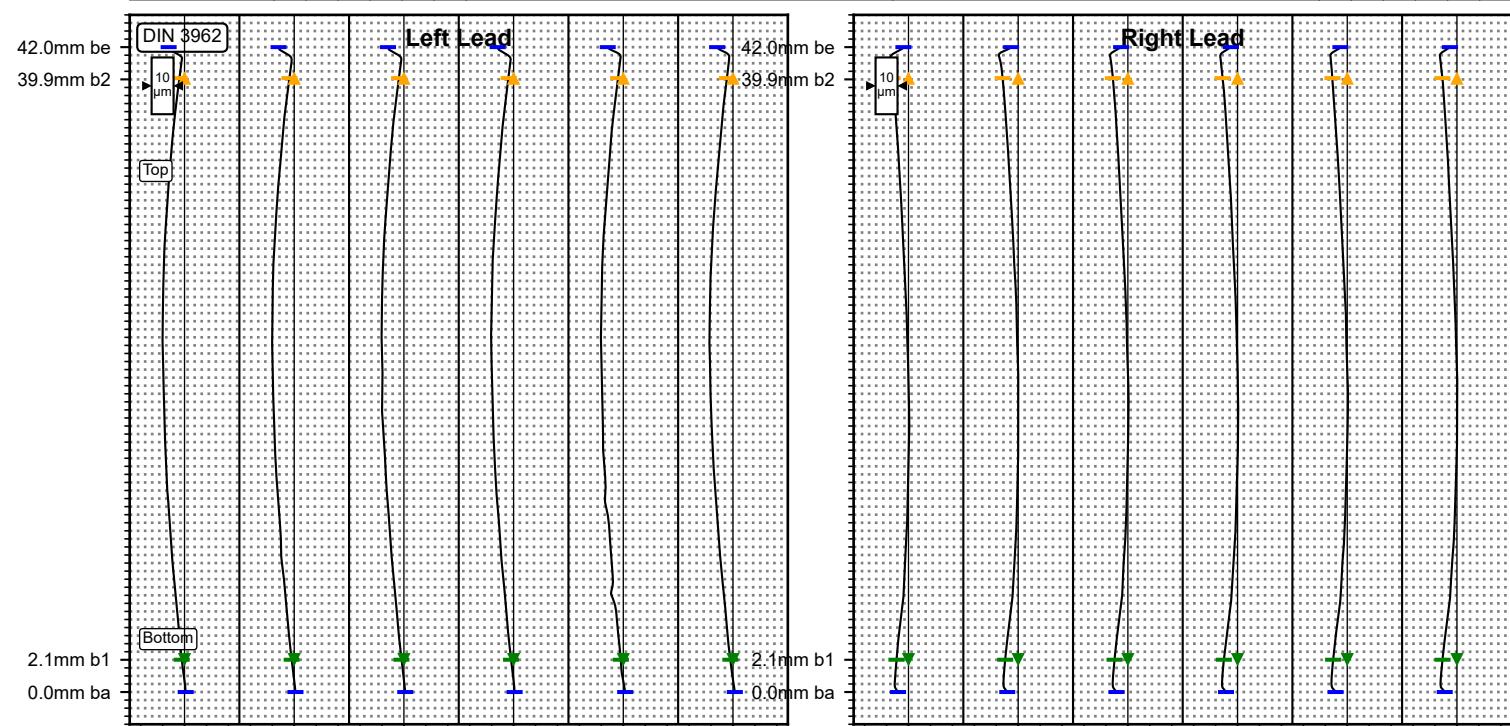
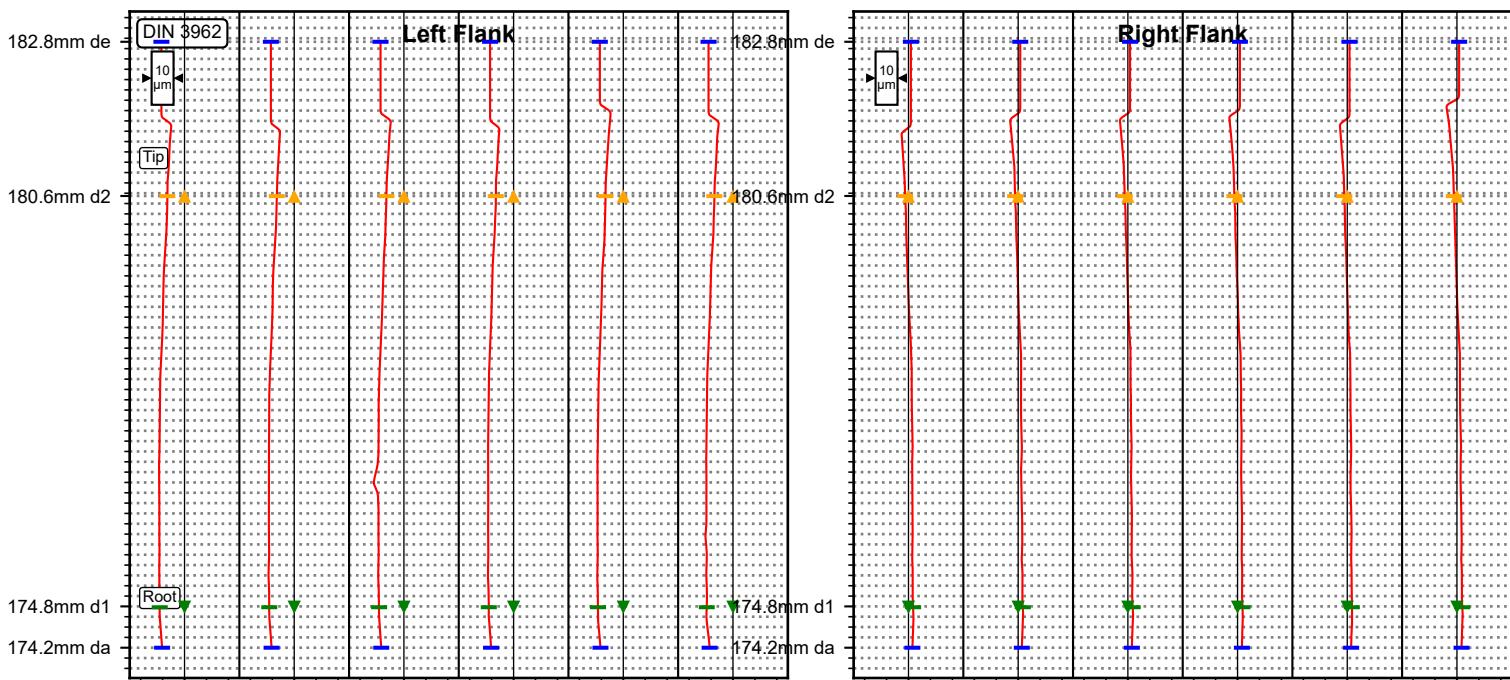
Gear Profile/Lead

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



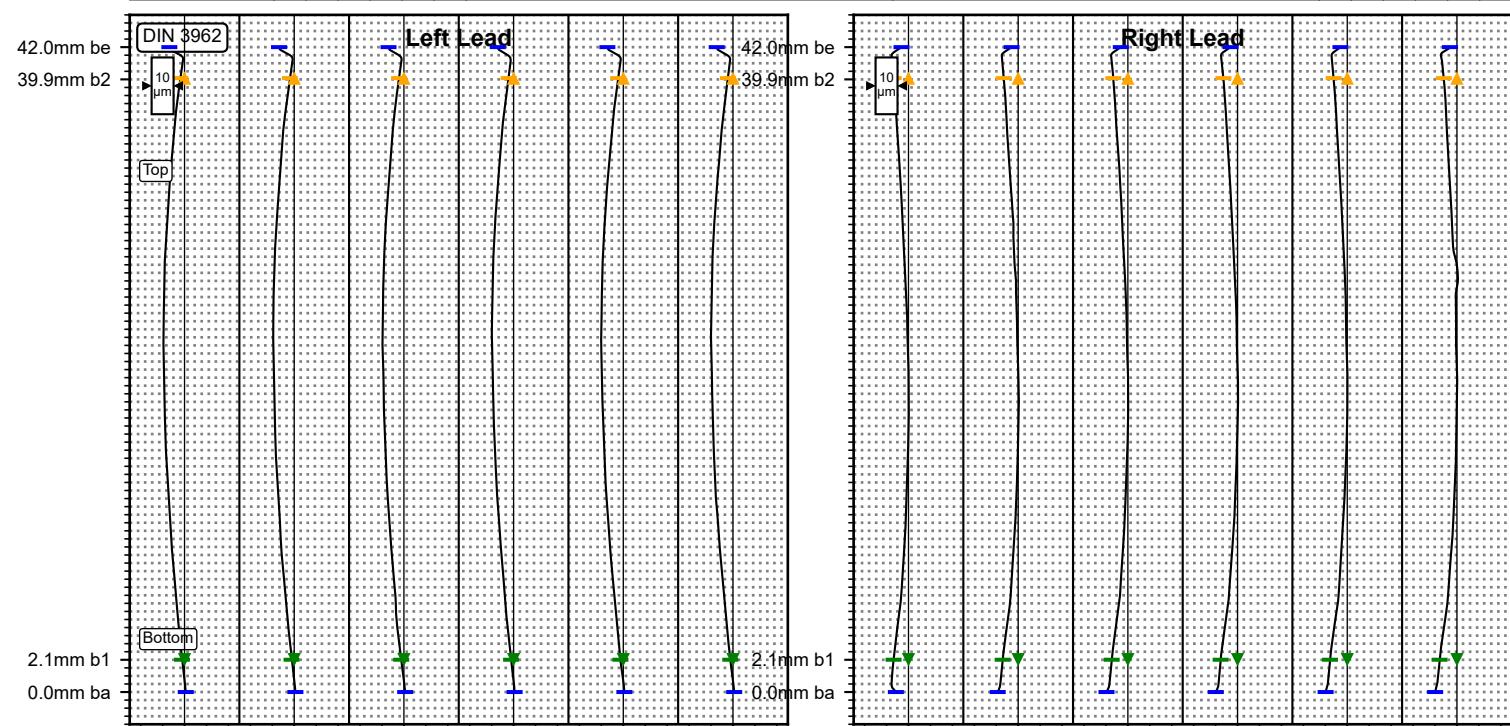
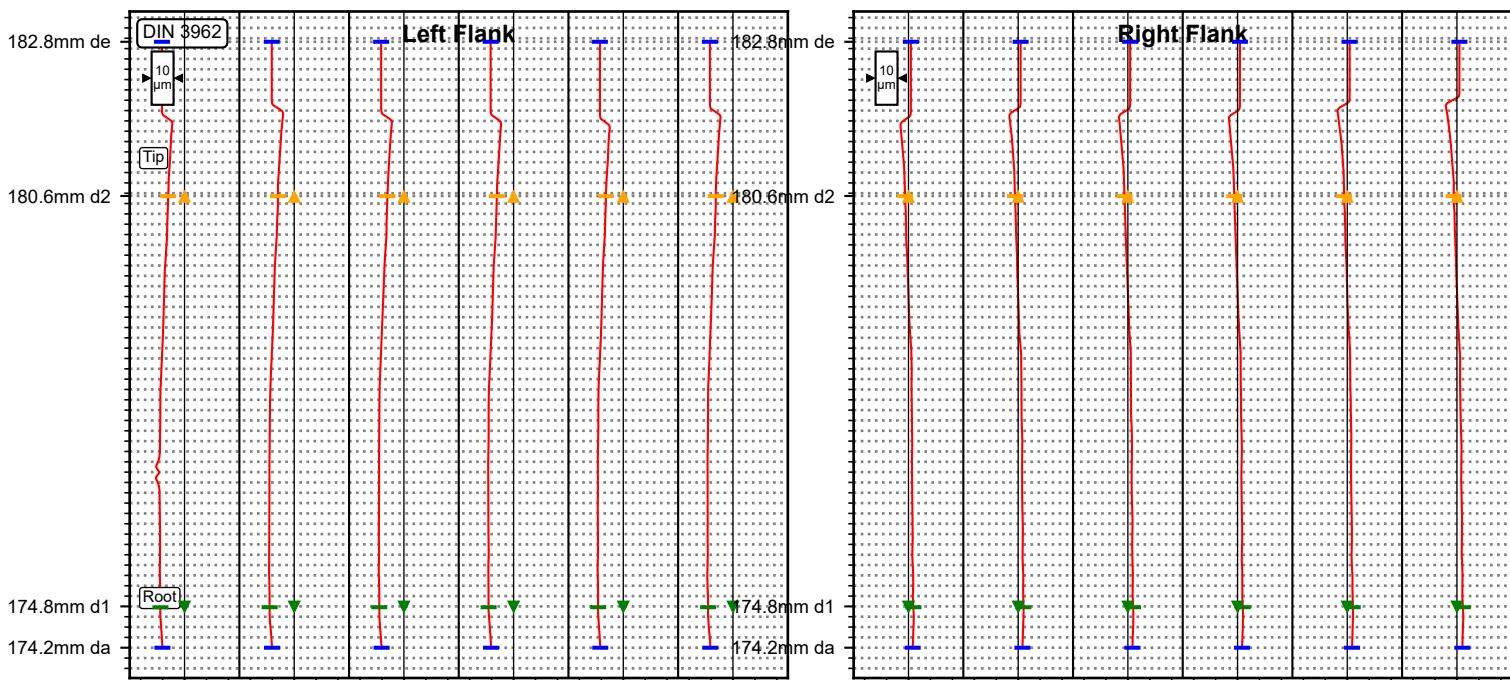
Gear Profile/Lead

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



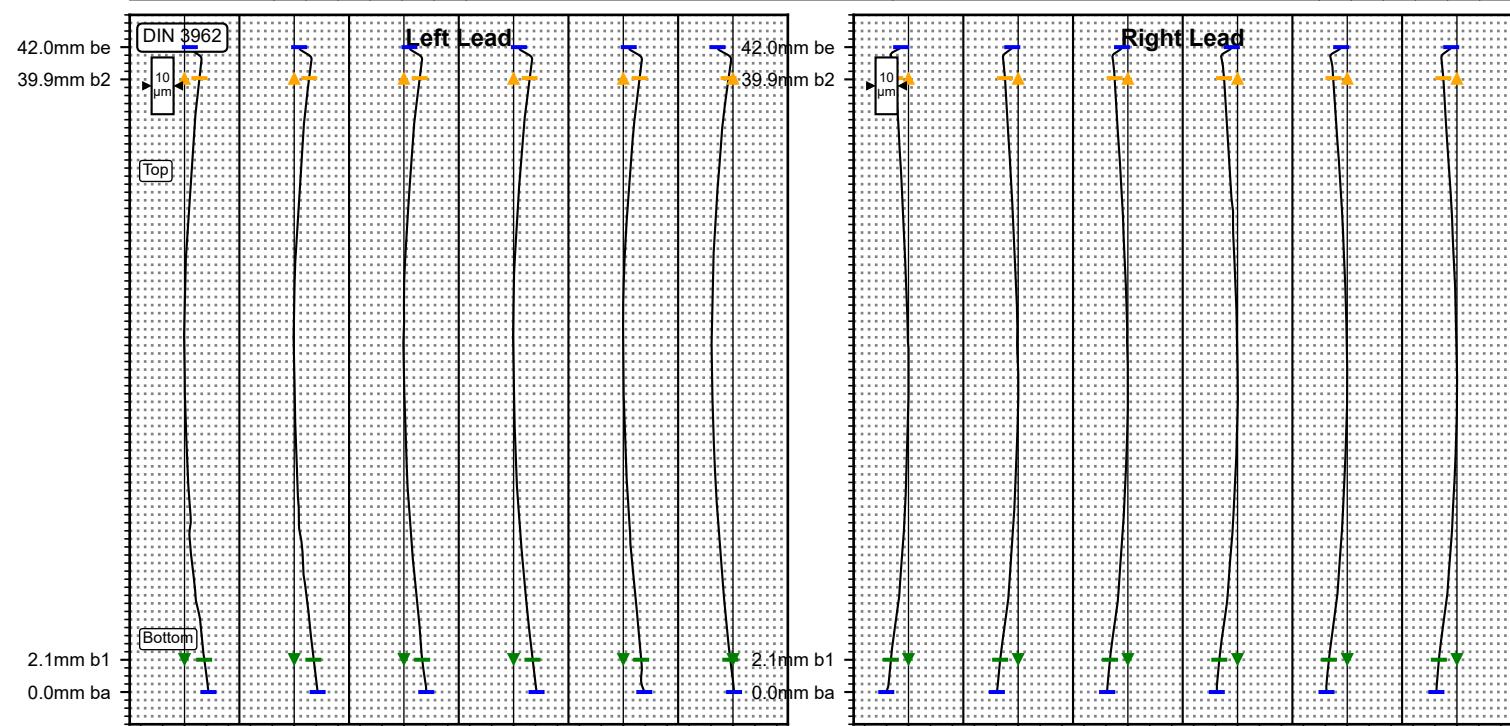
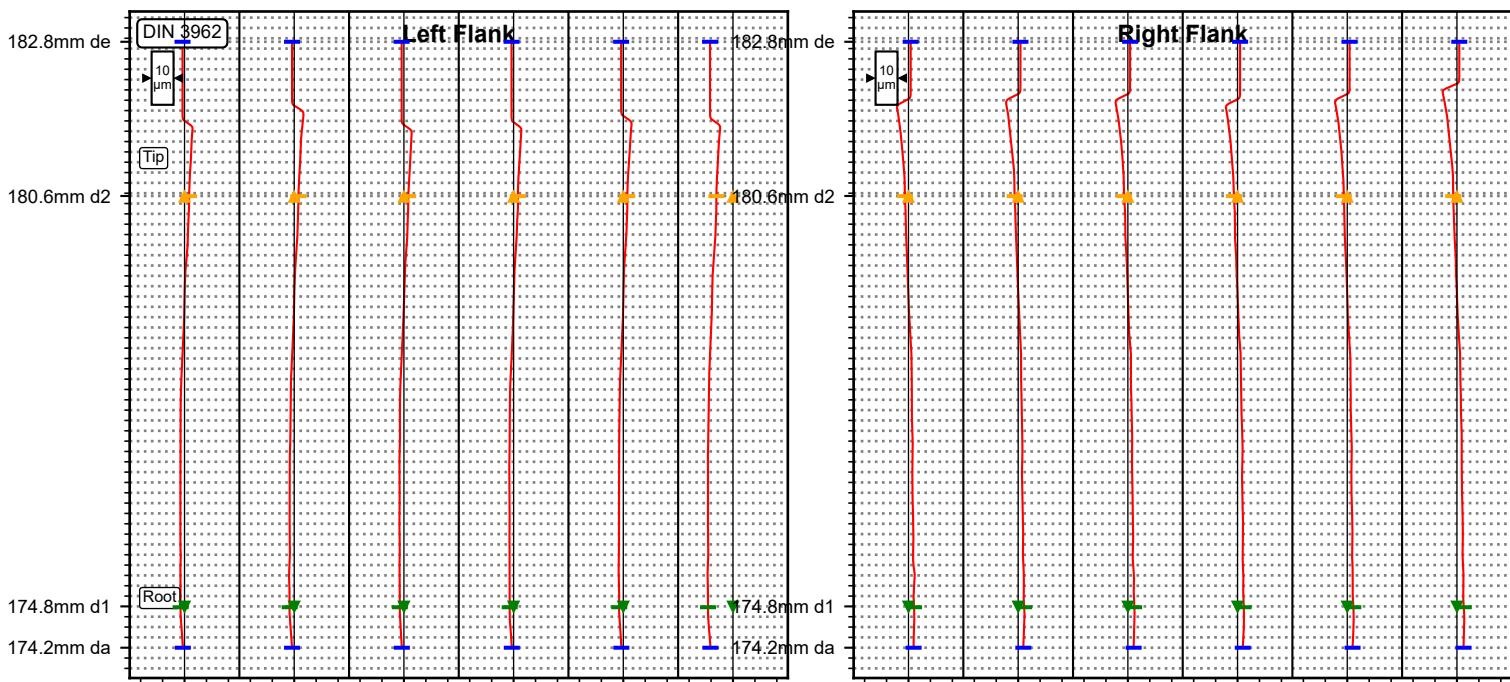
Gear Profile/Lead

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



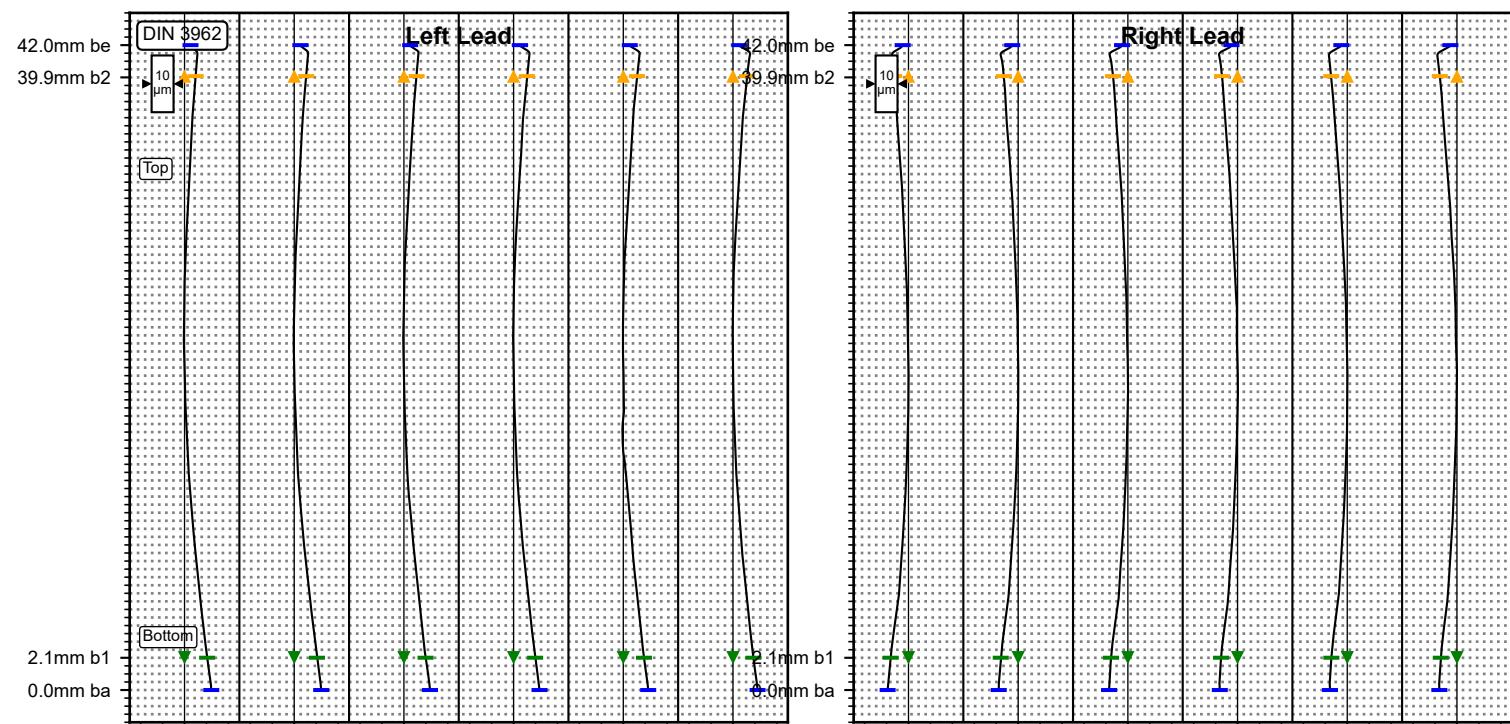
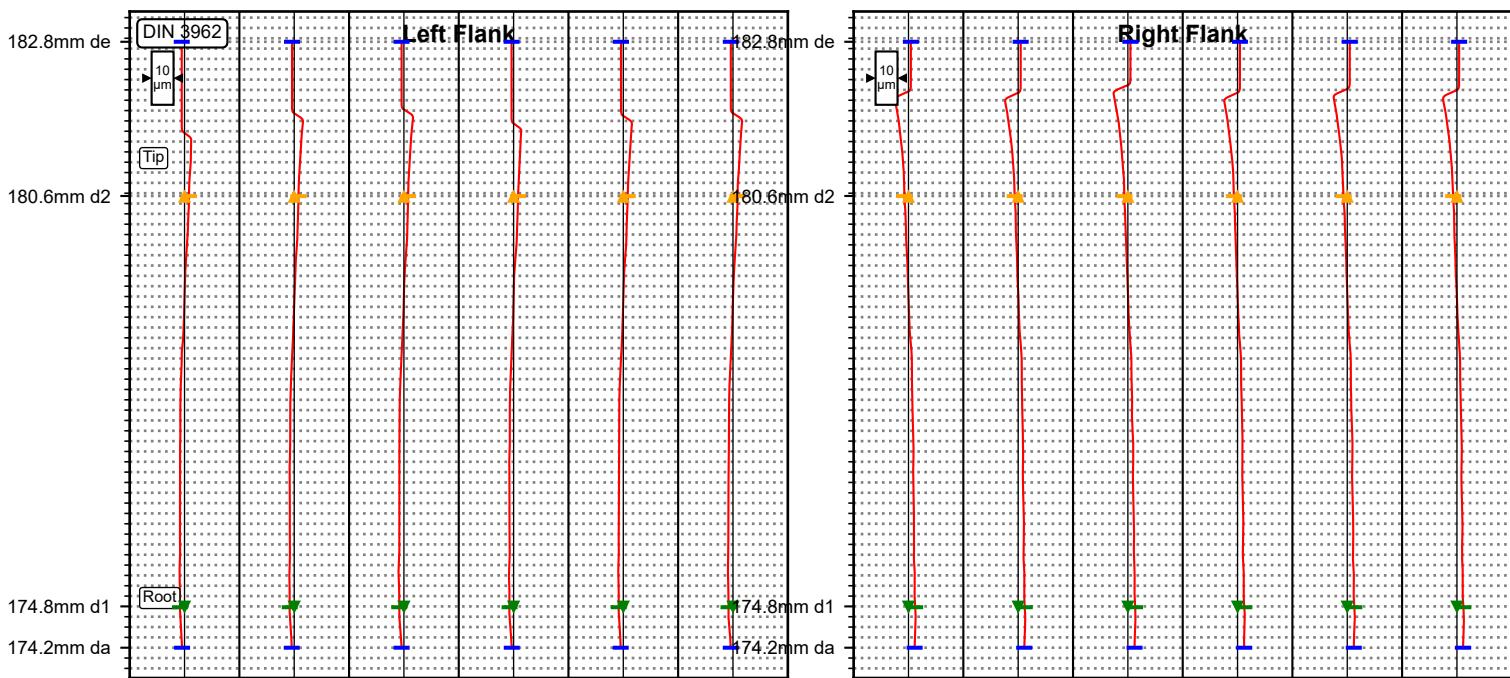
Gear Profile/Lead

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



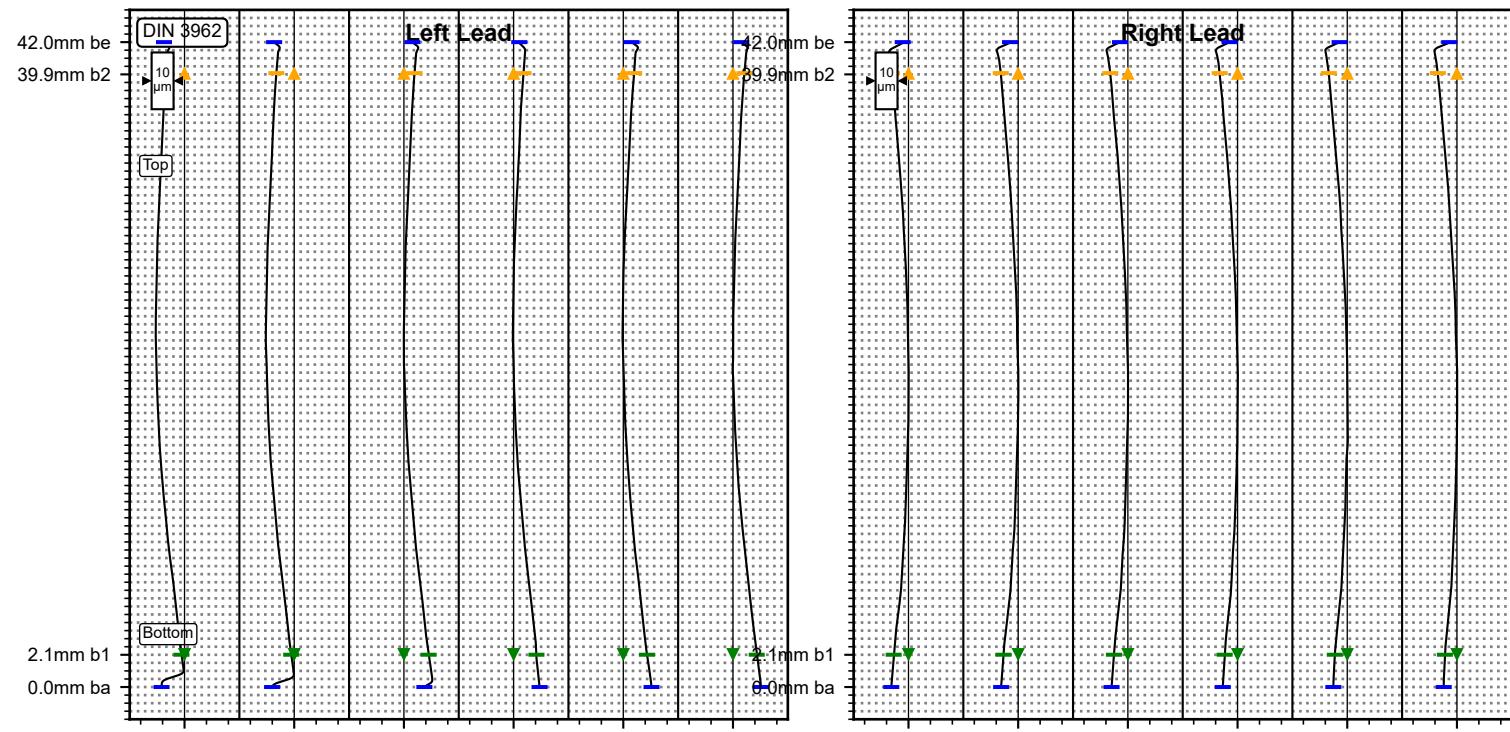
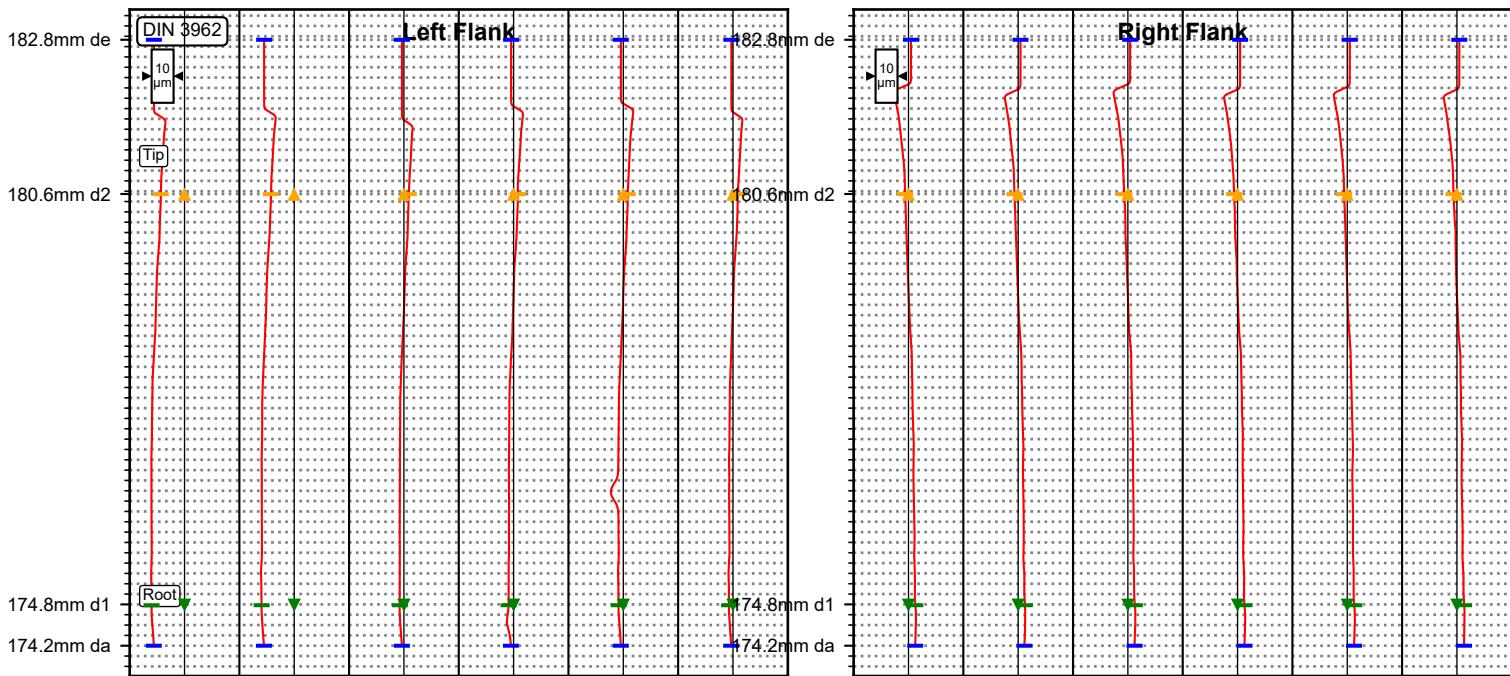
Gear Profile/Lead

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 Profile/Lead

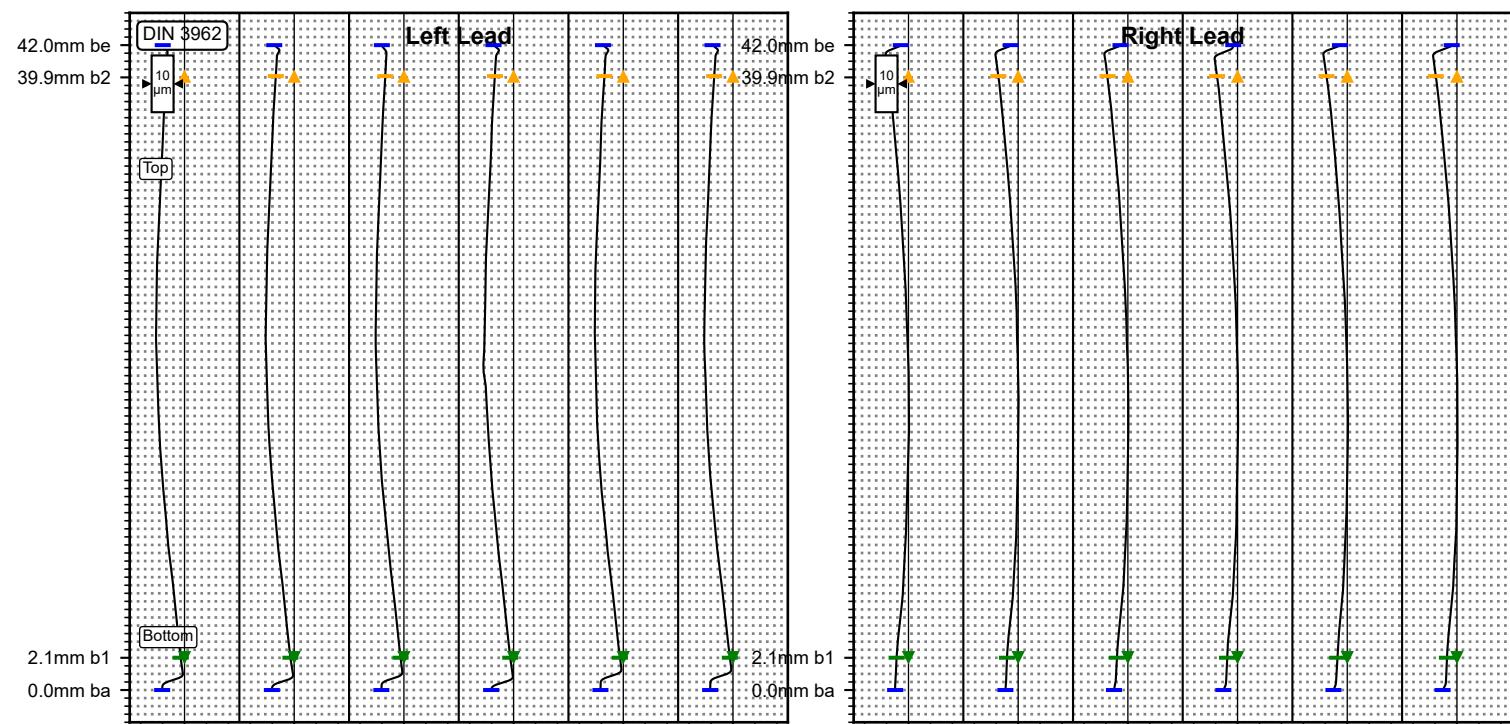
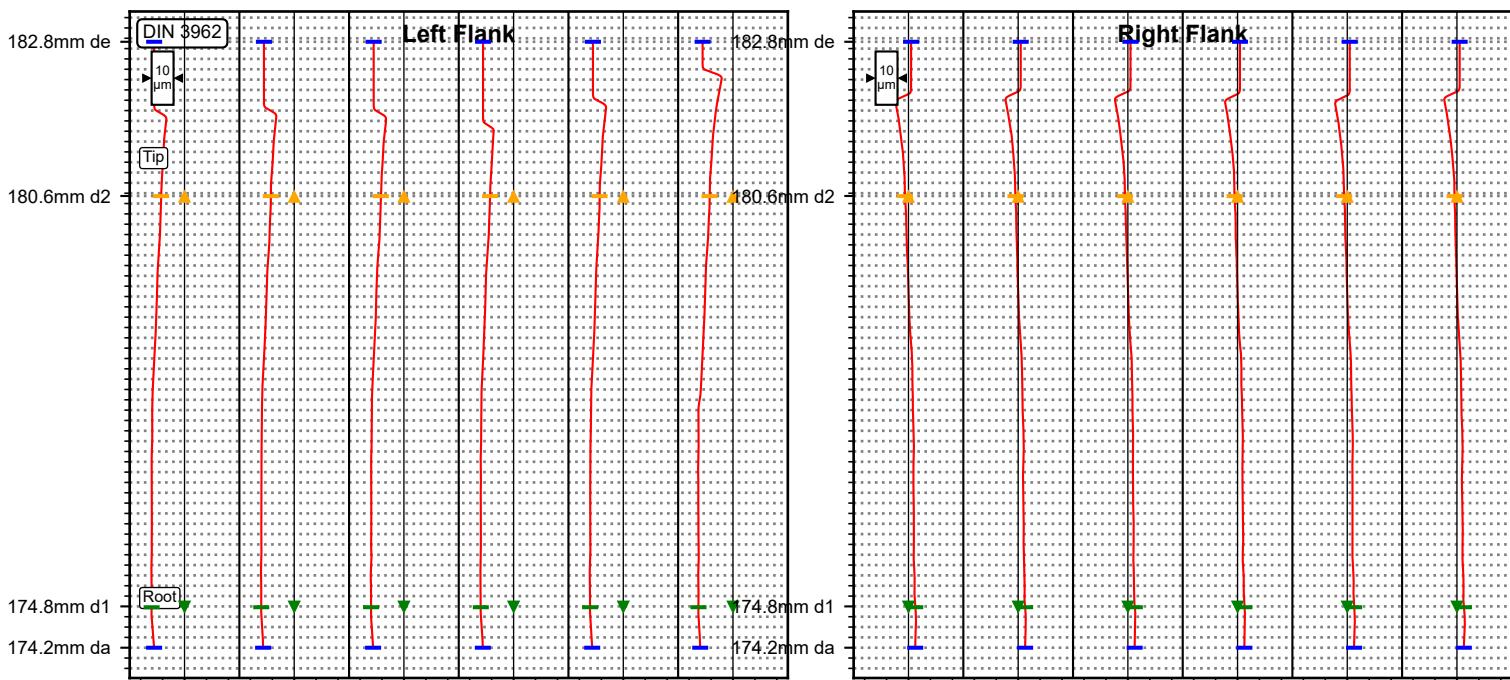
Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. L α :	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. L β :	37.80mm
Cust./Mach. N:	P26-601418	Helix angle:	25.30°	Appr. Length:	0.58mm
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



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

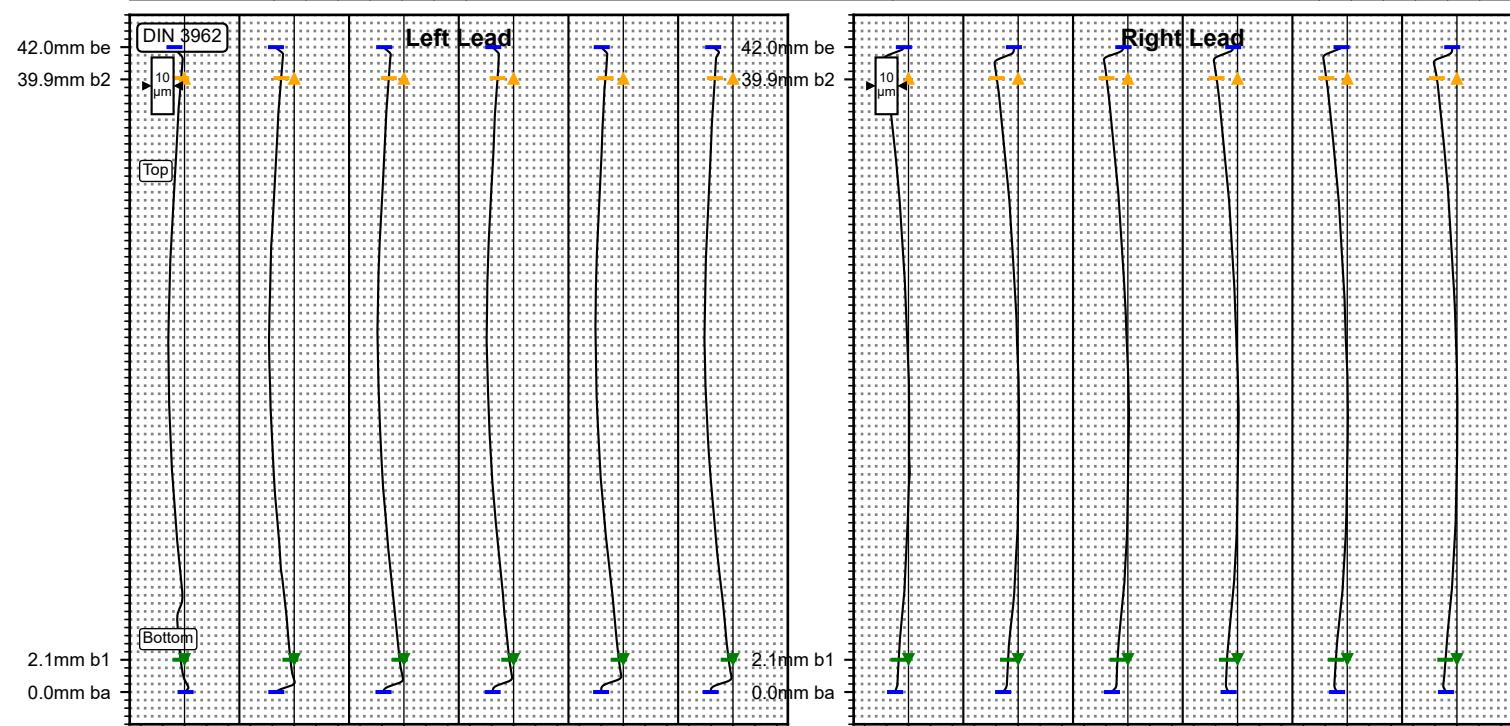
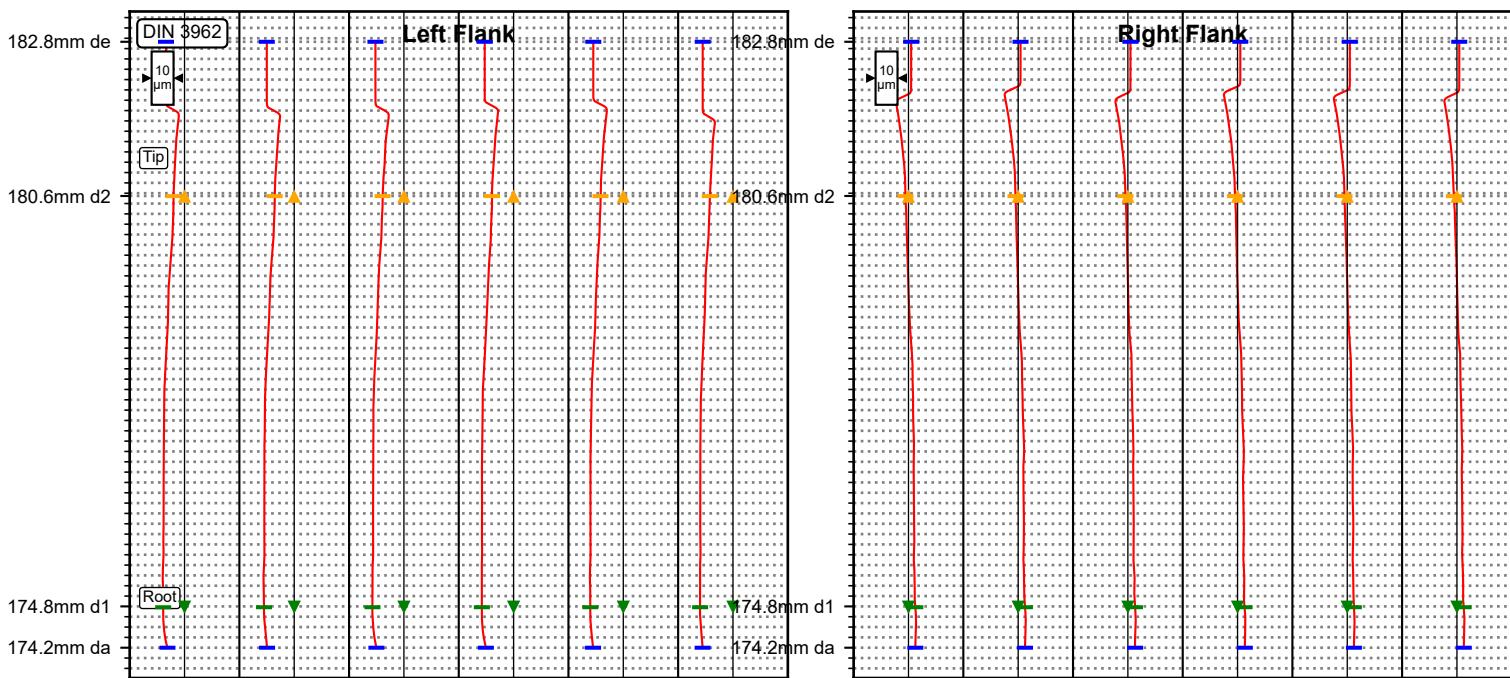
Gear Profile/Lead

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



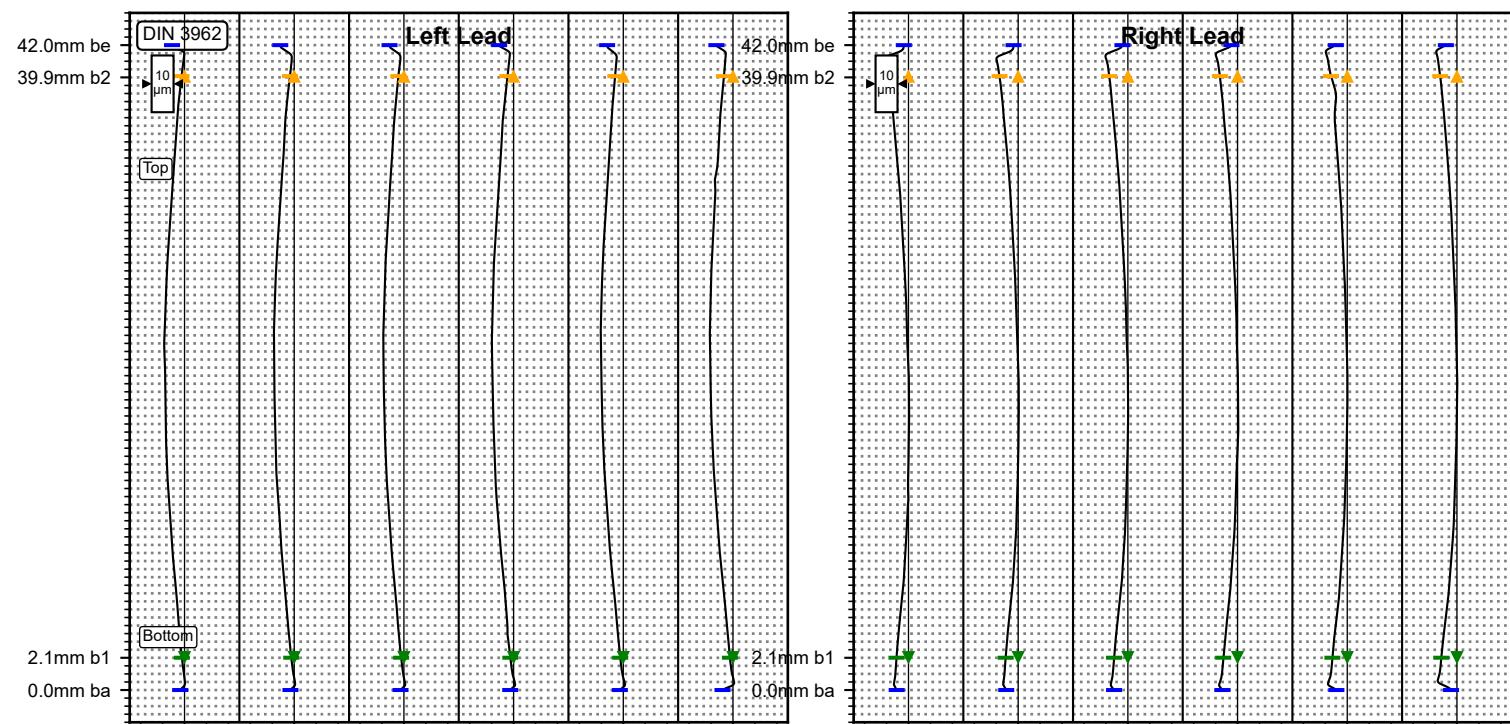
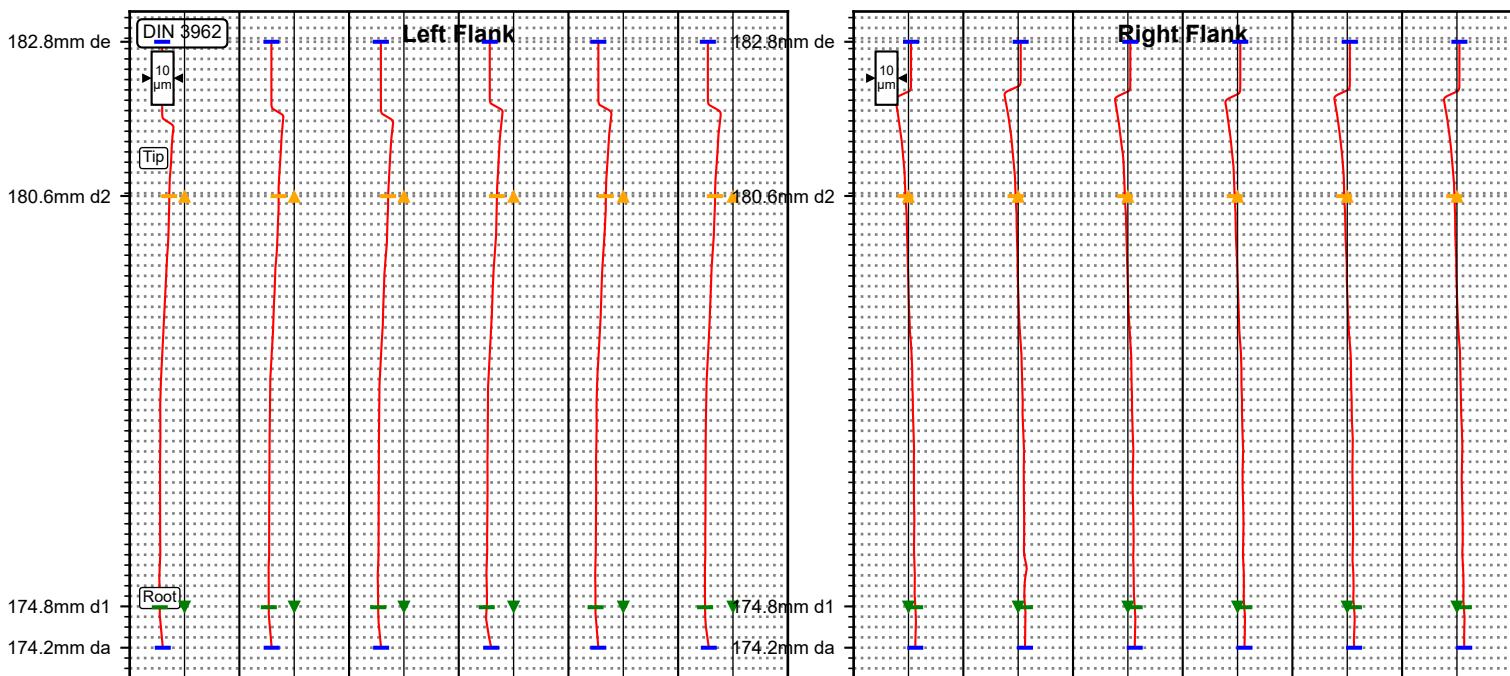
Gear Profile/Lead

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



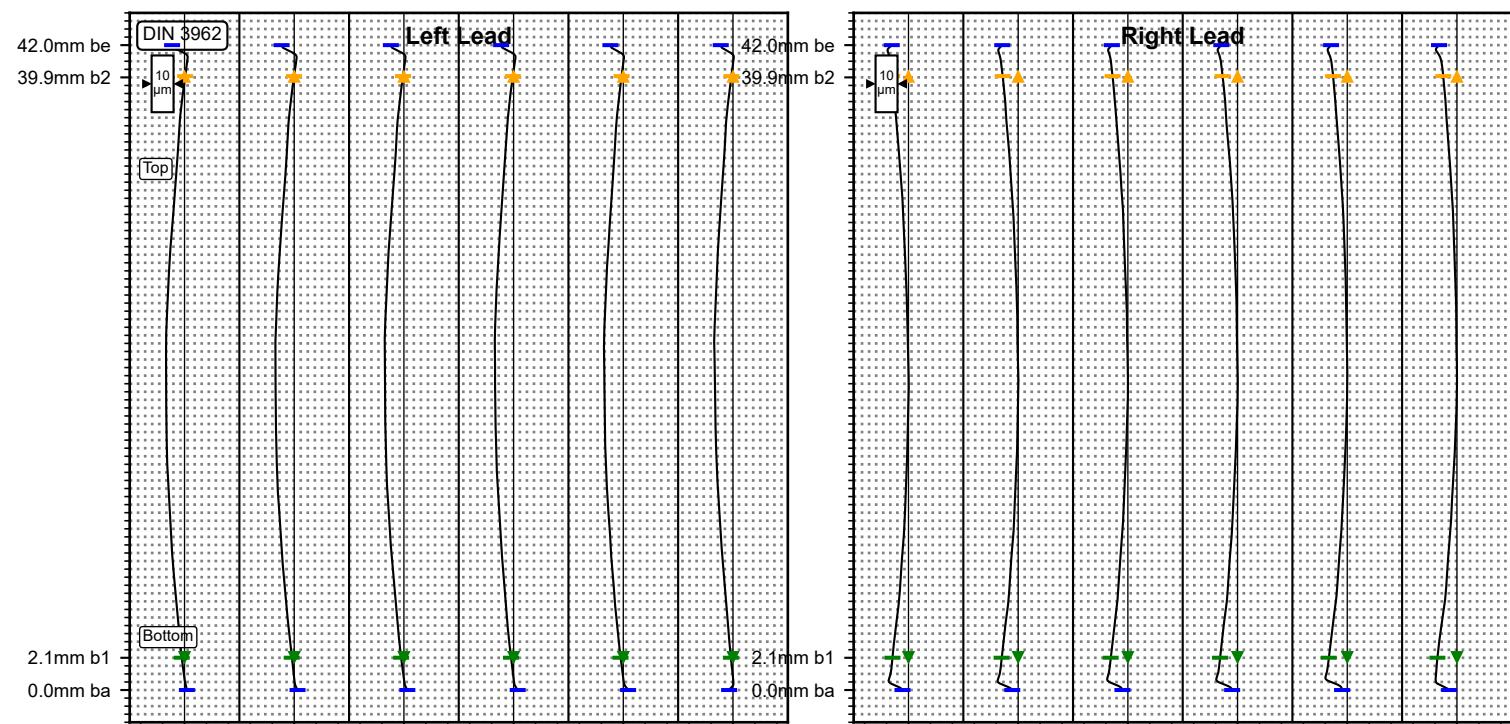
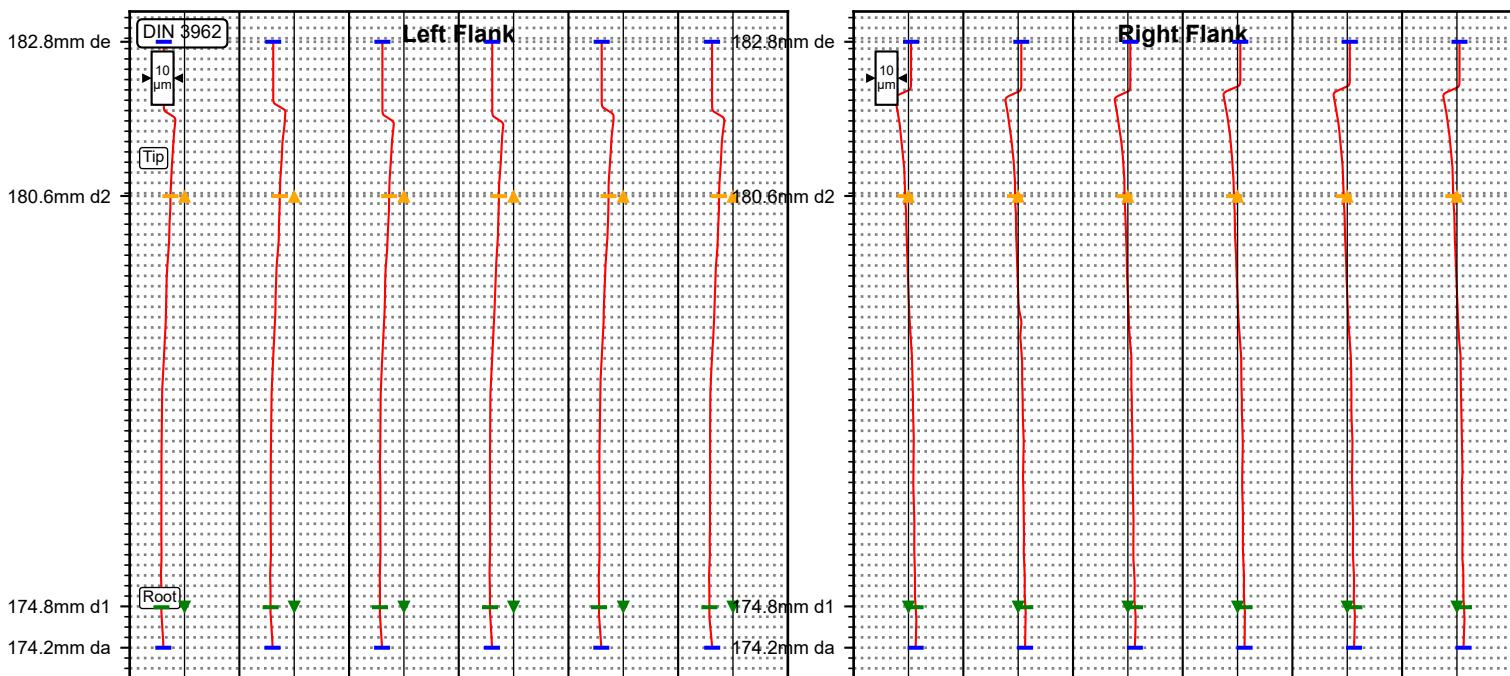
Gear Profile/Lead

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



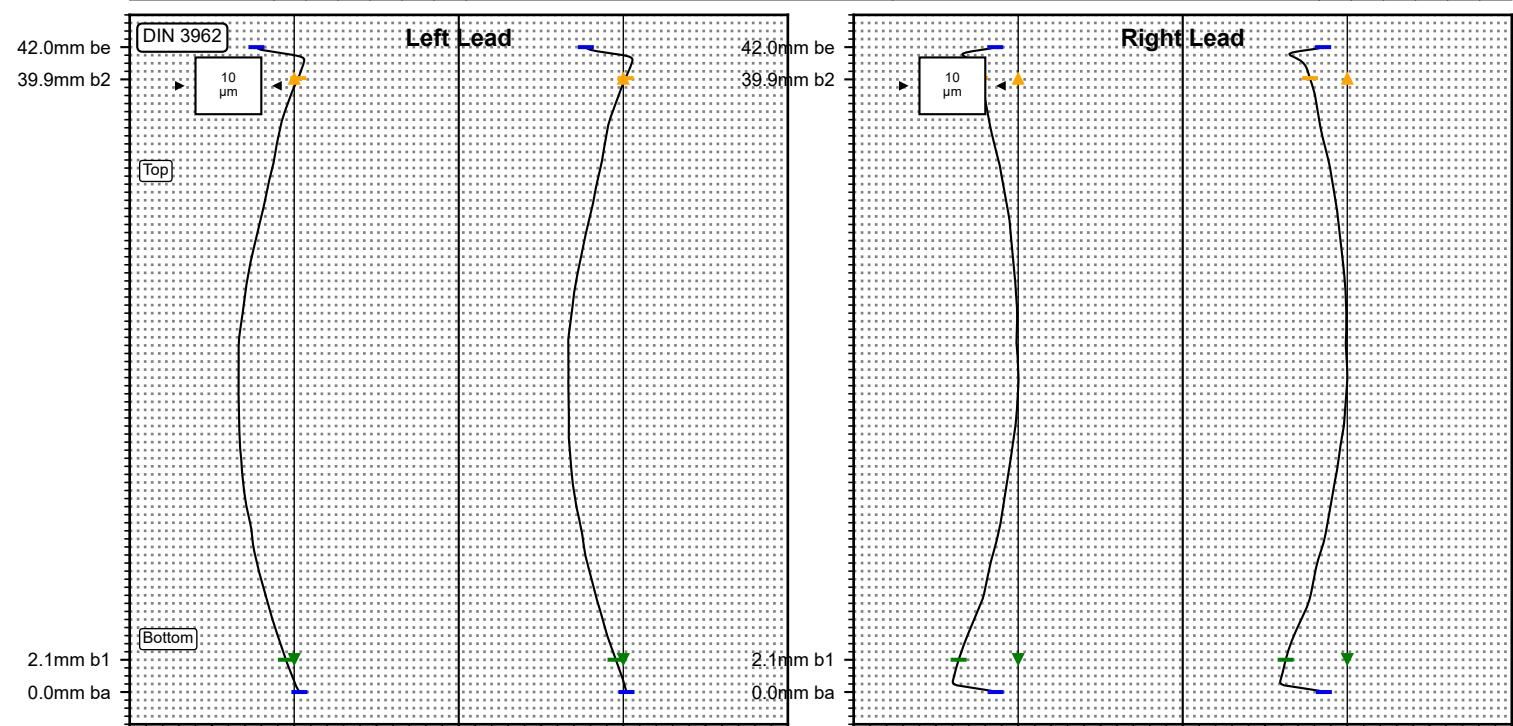
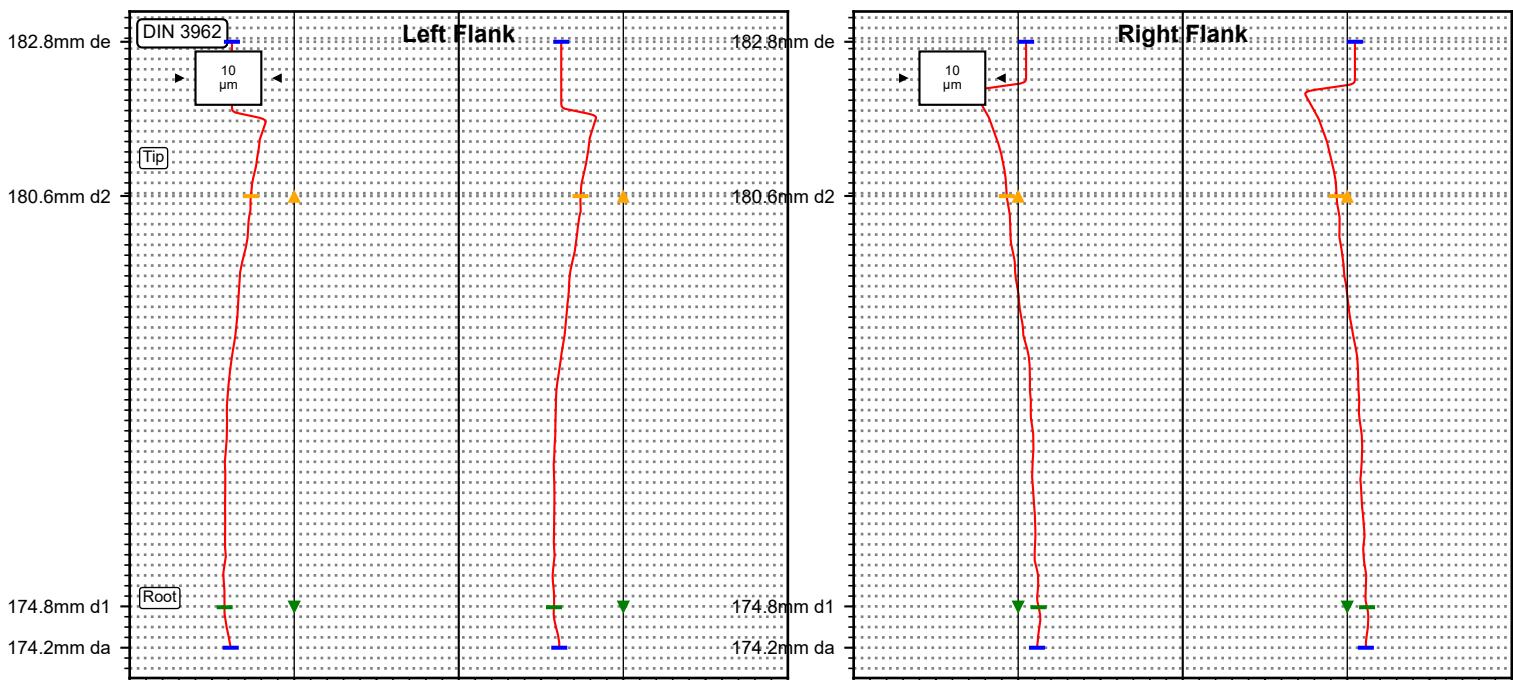
Gear Profile/Lead

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 Profile/Lead

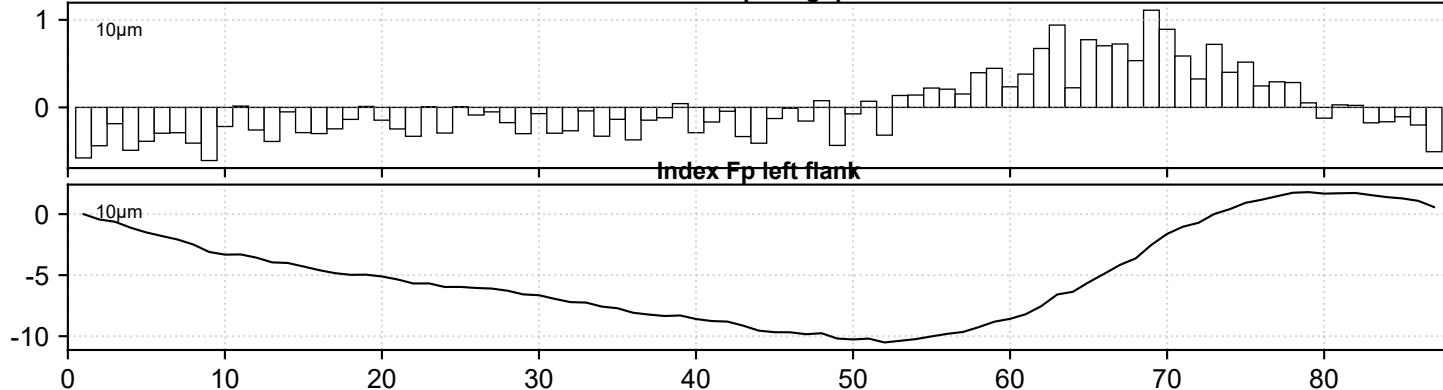
Prog.No.:		Operator:	xue	Date:	14.02.25
Type:	gear	No. of teeth:	87	Face Width:	42.00mm
Drawing No.:	84-T3.2.47.02.76-G-WAV	Module m:	1.859mm	Length Ev. La:	5.78mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. Lβ:	37.80mm
Cust./Mach. N:	P26 -601418	Helix angle:	25.30°	Appr. Length:	0.58mm
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



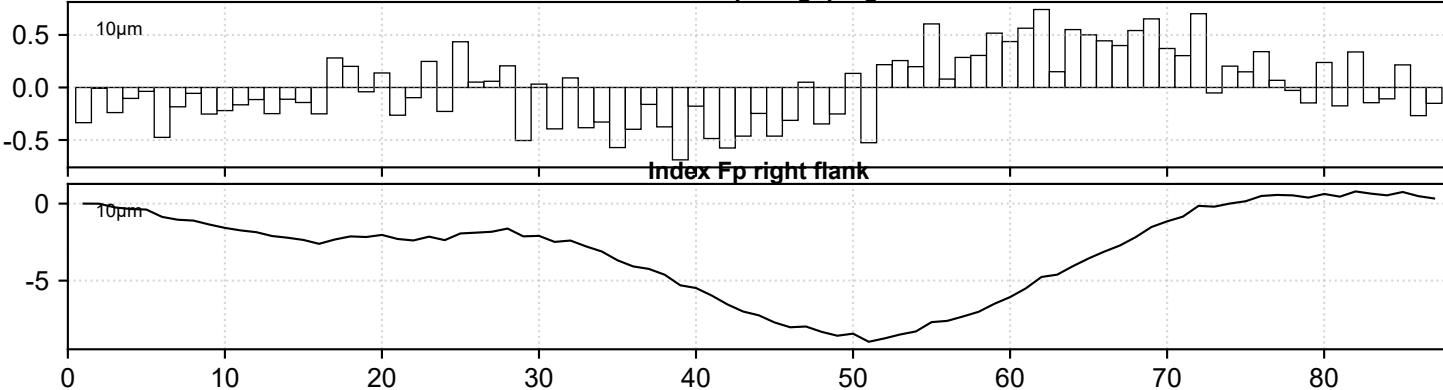
Gear Spacing

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		

Tooth to tooth spacing fp left flank



Tooth to tooth spacing fp right flank



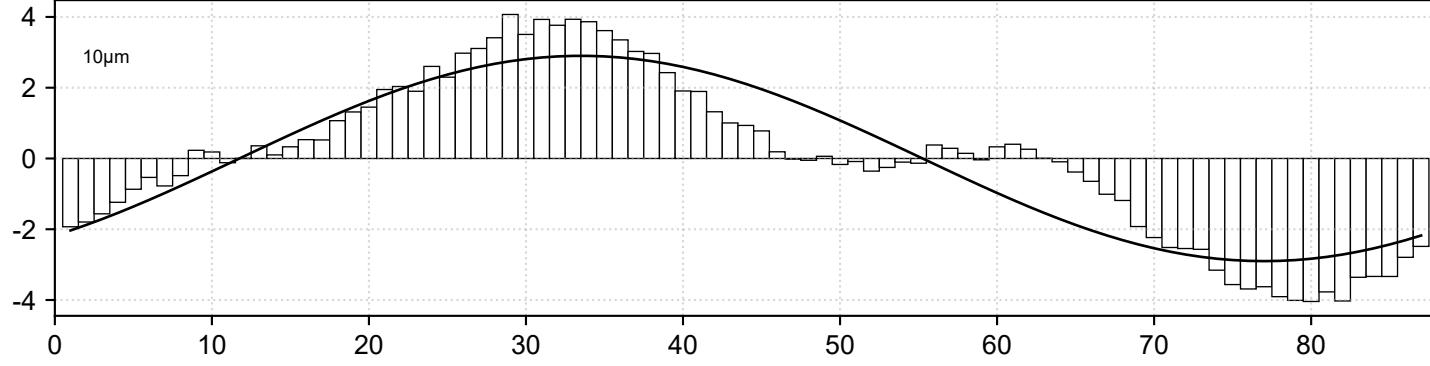
Pitch measuring circle:

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		

Runout Fr (Ball-Ø =3mm)



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

KLINGELNBERG

Analysis of ripple

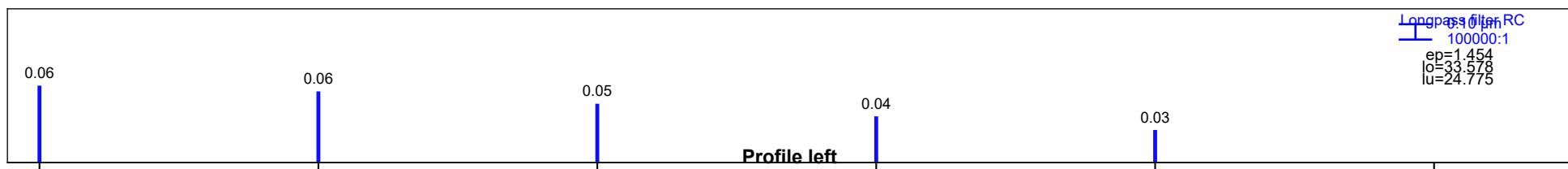
Drawing no.: 263751-018-WAV
Order no.: 84-T3.24-00276-G-WAY

Way of evaluation: High orders

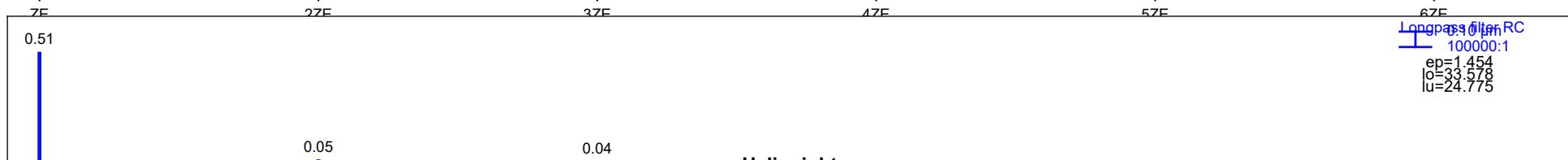
Serial no.: 263751-018-WAV
14.02.25
Partname:
010 compass filter RC
100000:1
File:
z=87

Spectrum of the ripple

Profile right



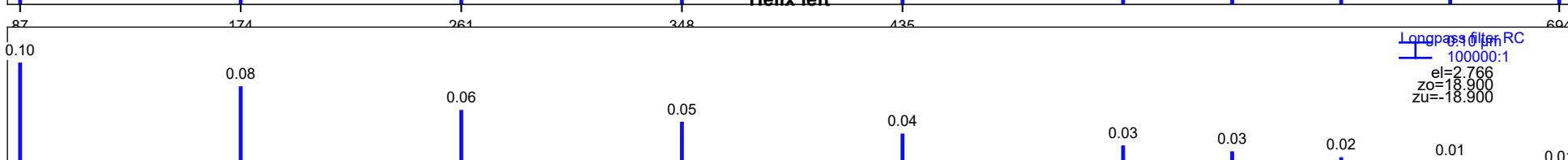
Profile left



Helix right

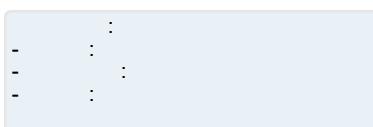


Helix left



Profile	Order	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Profile	Avg	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Helix	Order	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Helix	Avg	0.125	0.250	0.375	0.500	0.625	0.750	0.875

Profile	Order	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Profile	Avg	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Helix	Order	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Helix	Avg	0.125	0.250	0.375	0.500	0.625	0.750	0.875



KLINGELNBERG

Way of evaluation: High orders

Analysis of ripple

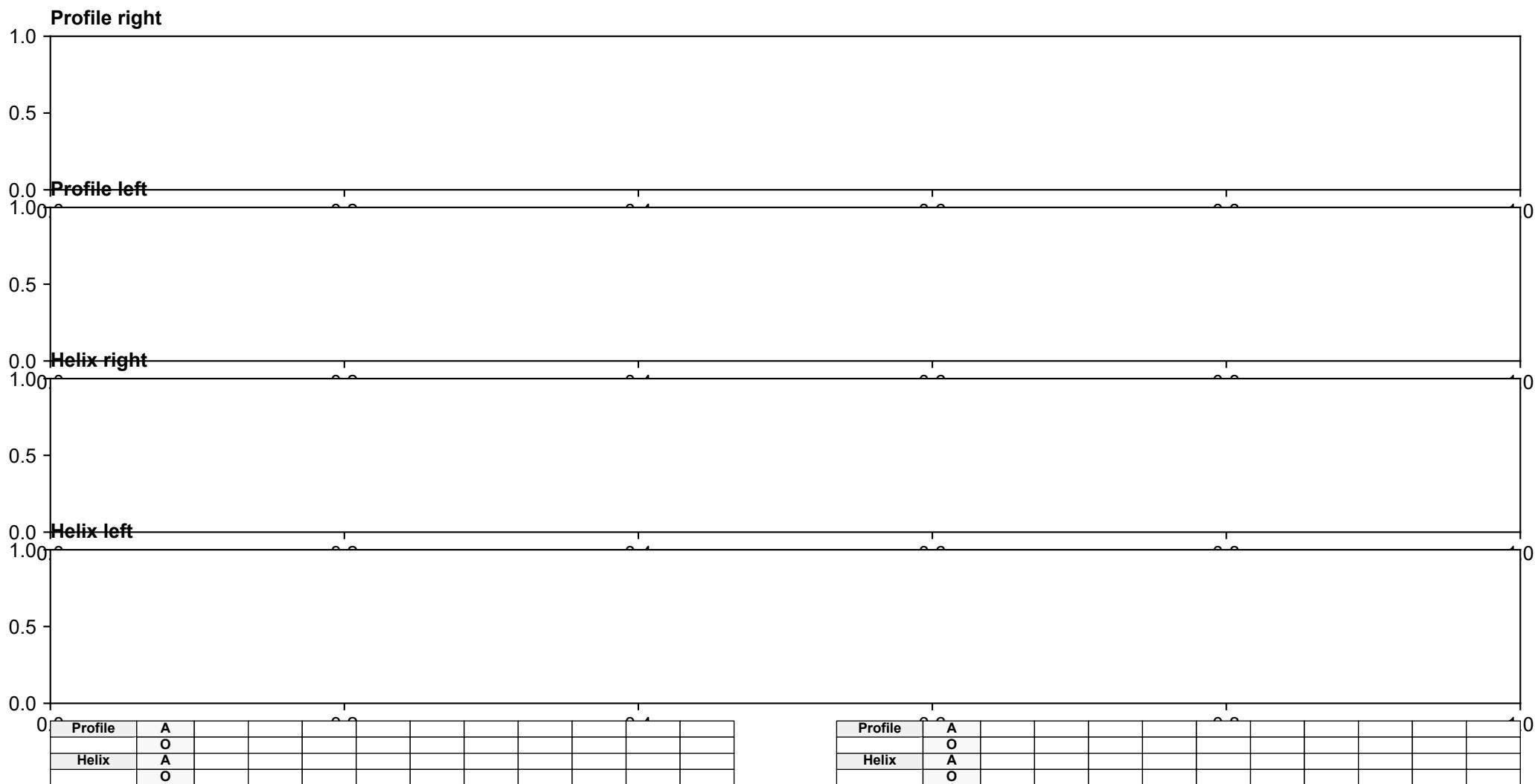
Analysis of Sample
Drawing No.: 84-13.2.47-276-C-WAY

Spectrum of the ripple

Serial no.: 263751-018-WAV
140325

Two-Way
10225

14.02.23
Part number:
21.40
File:
z= 87



()::

c

b

a

tooth

a

b

c

Analysis of deviations - Sine Wave Fitting

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

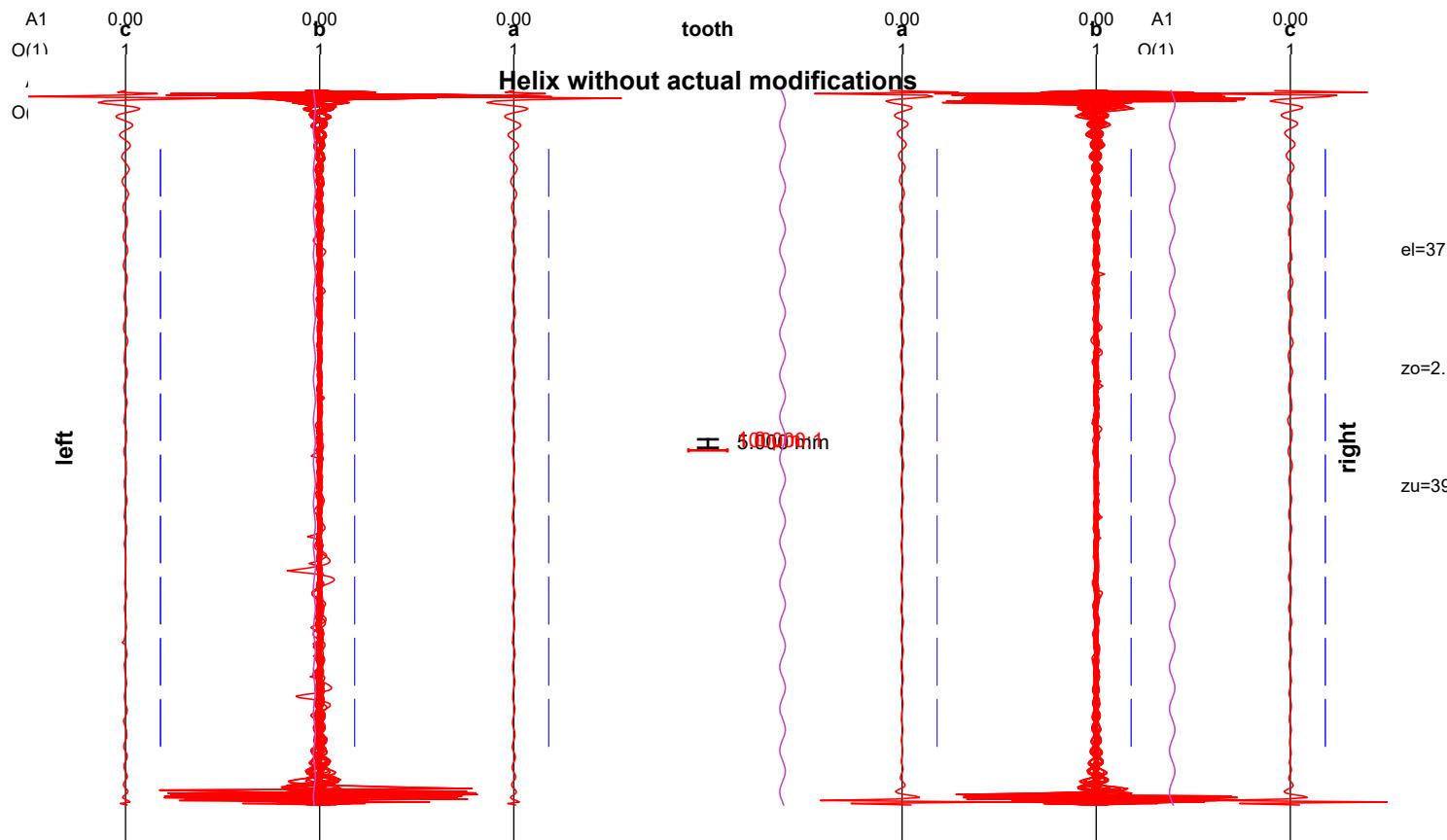
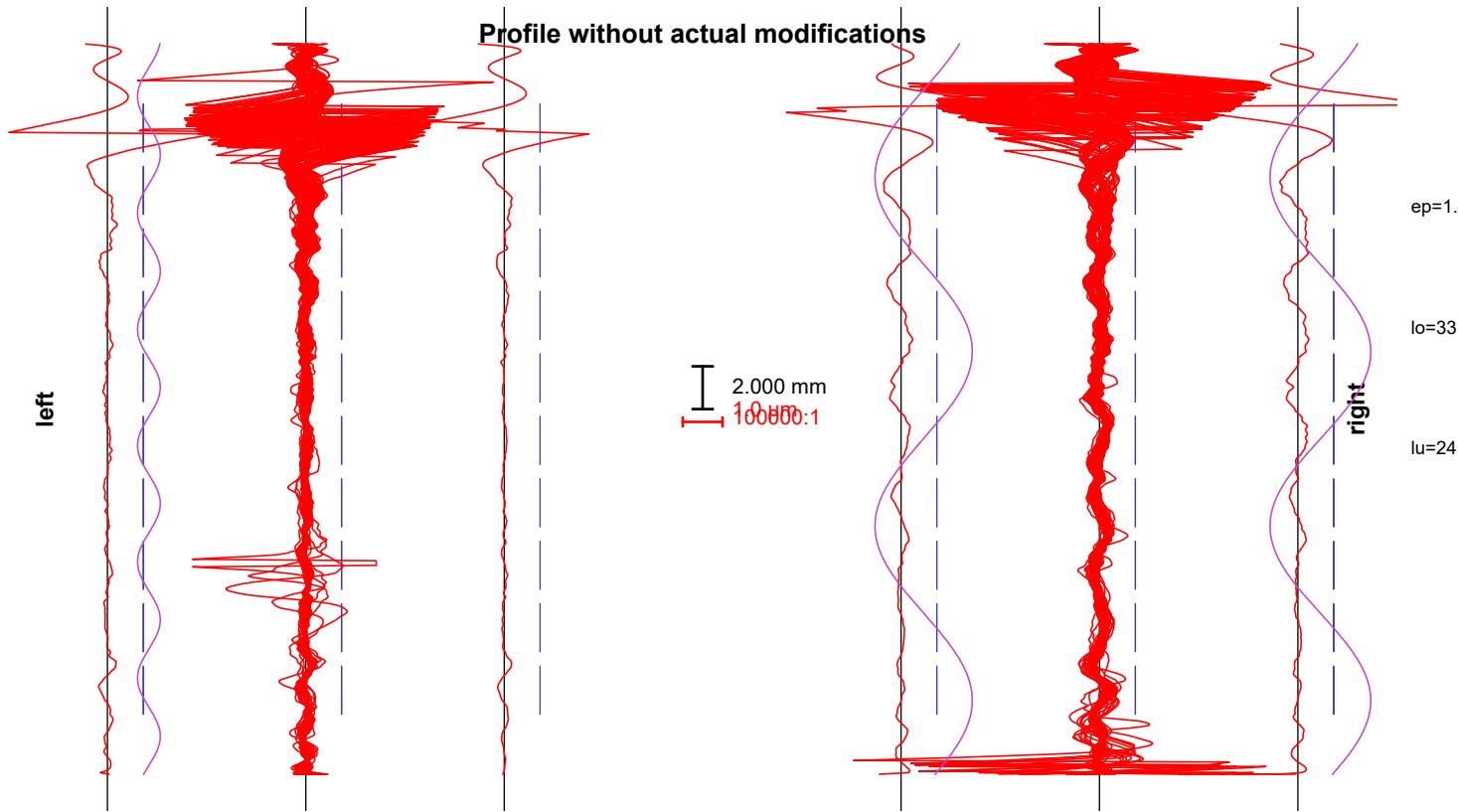
Serial no.: 263751-018-WAV

Module: 1.859

Date: 14.02.25

Teeth: 87

Machine:



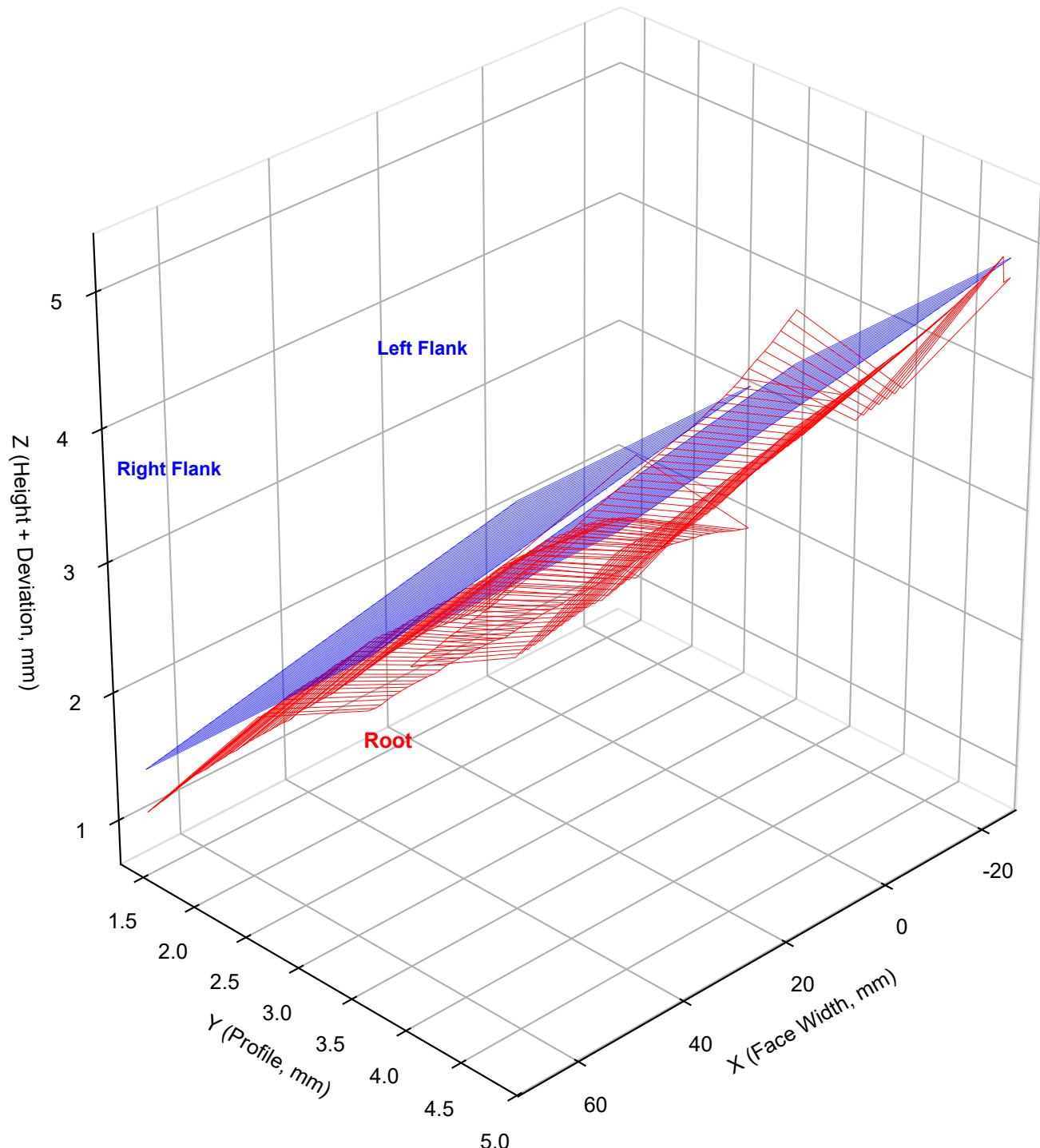
A1	0.00	0.00	0.00
O(1)	1	1	1

0.00	0.00	0.00	A1	O(1)	0.00
1	1	1	O(1)	1	1

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. la:	8.53mm
Order No.:	263751-018-WAV	Pressure angle:	19°	Length Ev. l4:	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

Single Tooth 3D View
Tip



Tooth no.: 1

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

14.02.25

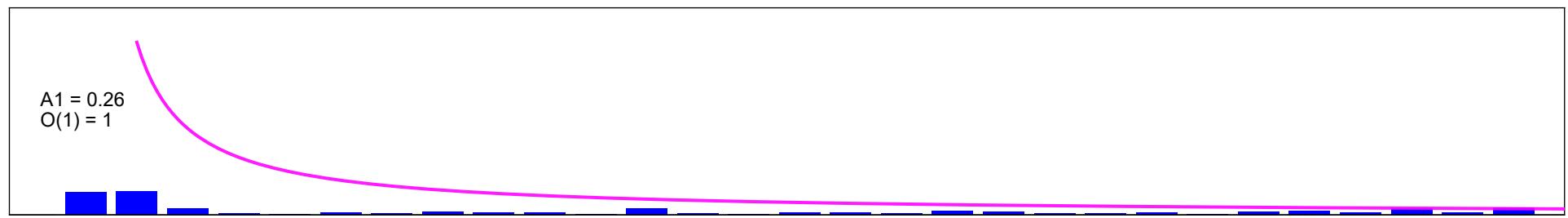
Limiting curve parameters: $R = 2.00$, $n_0 = 1.00$, $K = 0.00$

$z = 87$

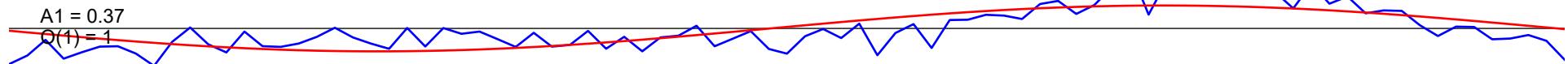
Ripple pitch right



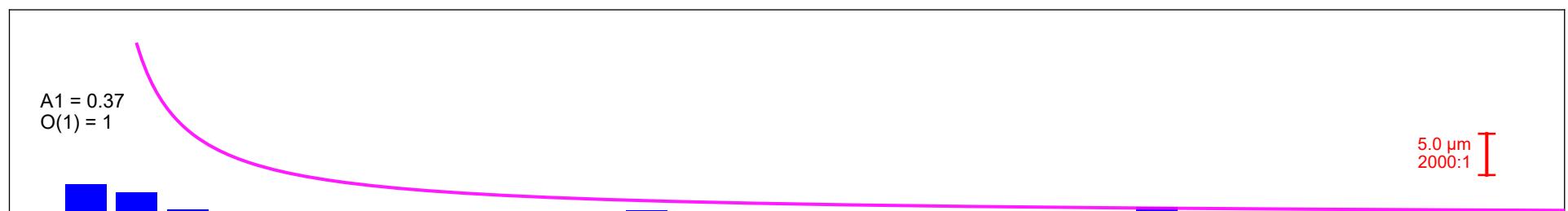
Spectrum pitch right



Ripple pitch left



Spectrum pitch left



Waviness in Rotation Angle Range

Profile right

A1 2.20
0 1
Pw 14.4

Profile left

A1 1.83
0 1
Pw 14.0

Helix right

A1 2.64
0 1
Pw 12.8

Helix left

A1 3.12
0 1
Pw 16.4

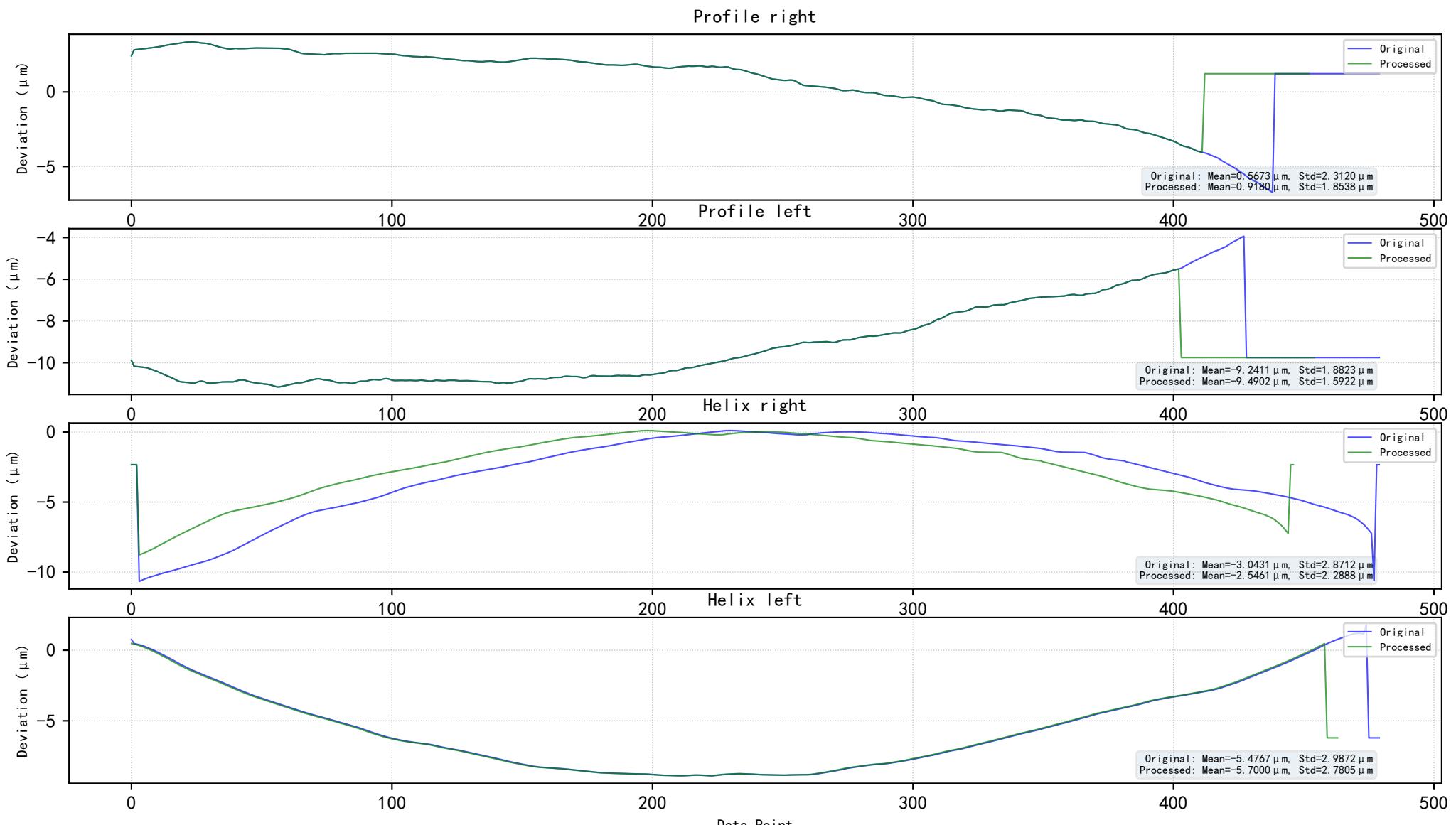
KLINGELNBERG

Way of evaluation: High orders

Analysis of ripple

Order no.: 263751-018-WAV

Drawing no.: 84-T3.2647.02.Z6-G-WAV

Spectrum of the ripple
Preprocessing Comparison (Before vs After)Serial no.: 263751-018-WAV
14.02.25Part name:
010-pars 12104.RC
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