



EXTERNAL IPP FORMAT

ISF-QA-026

INITIAL PRODUCTION PARTS

Part number	28111-KONA-D010	IPP Control No.	Map-ID 18181
Part name	GEAR PRIMARY DRIVEN		
Drawing Change No.	E-218	Total Qty.	130 nos
Lot No.	130 nos	No. of Lot	01 no
Issuing Date	16/2/19	Supplier	Map-BLR-ID

Items

Please Encircle the relevant item

1. SPEC. CHANGE	7. JIG/TOOL CHANGE
2. NEW SUPPLIER	8. DIE/MOLD CHANGE
3. MATERIAL CHANGE	9. INSPECTION METHOD CHANGE
4. MANUFACTURE METHOD CHANGE	10. TRANSPORTATION METHOD / TYPE OF PACKING CHANGE
5. MANUFACTURING PROCESS ORDER CHANGE	11. OTHERS
6. MACHINE CHANGE	

Details

Sample part Submission
Supplier : 1) Bhagwan Auto
 2) Amtech Auto.

Issued by
(FI-QA)

HOD

P
R

*Deliver Initial Production with Inspection Result Sheet

SIGNATURE OF RESPONSIBLE PERSON			PRODUCTION LINE SUPPLY JUDGEMENT	
① FOURTH SUPPLIER	② THIRD SUPPLIER	③ SECOND SUPPLIER	PASS	FAIL
① FIRST SUPPLIER	② MAP-ID RECEIPT/DATE	③ MAP-ID RECEIPT/DATE		

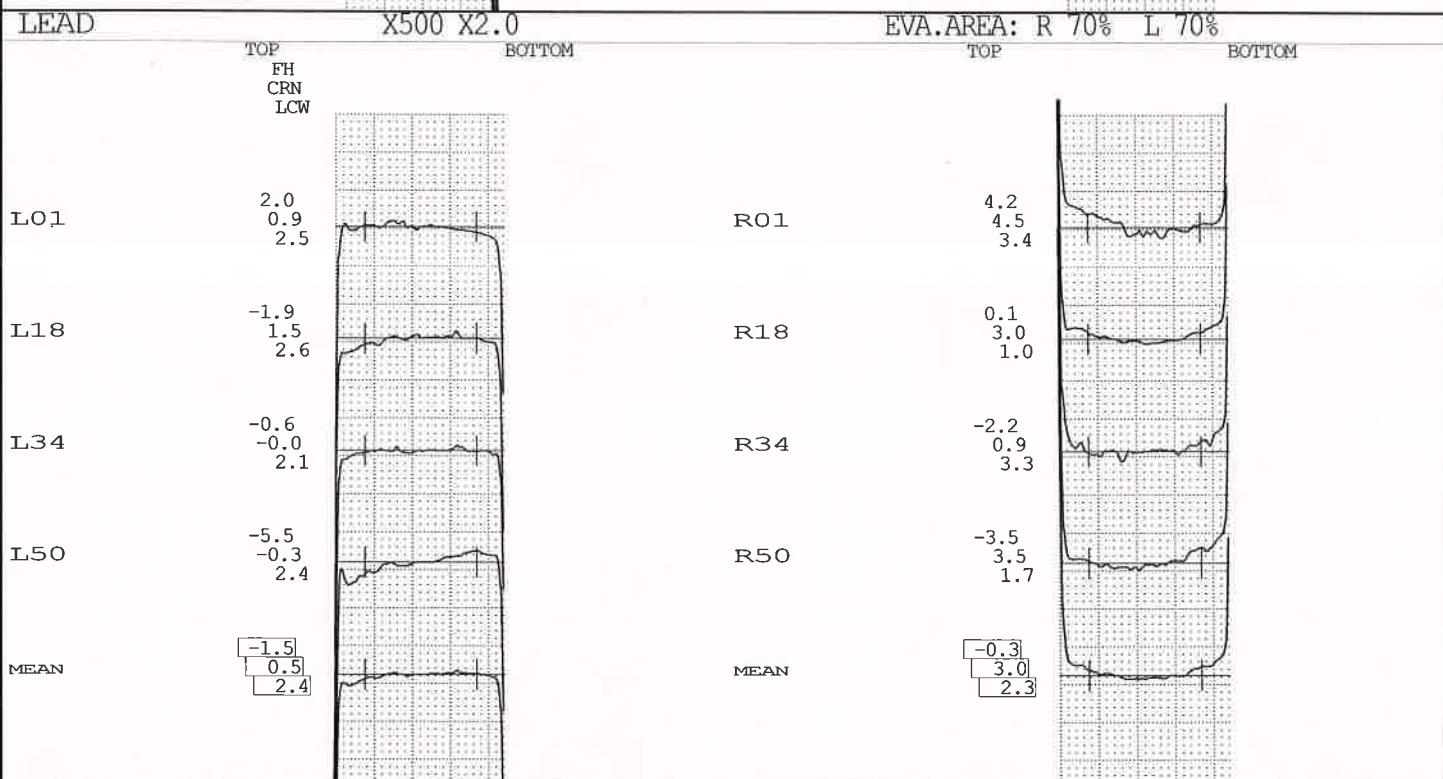
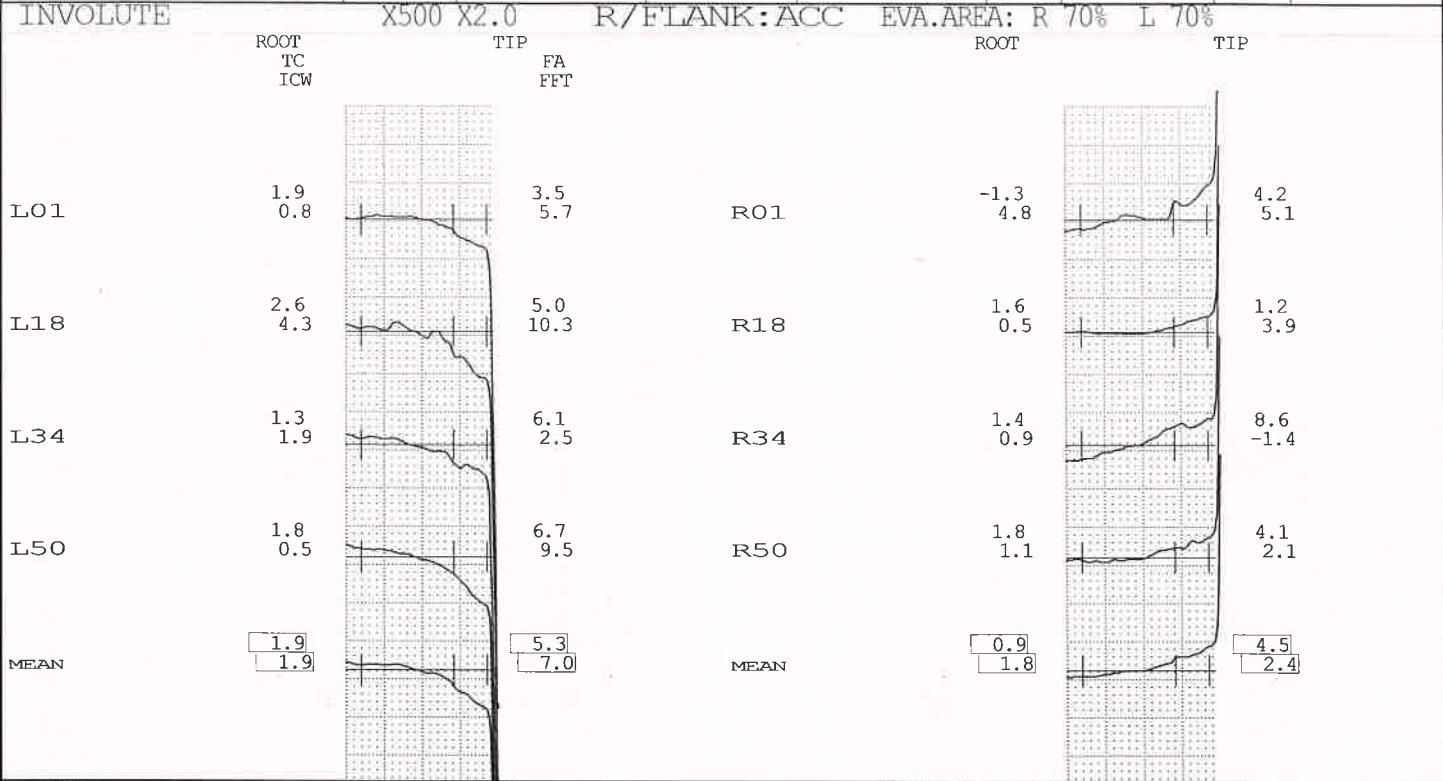
1. White Copy : (For Supplier or Dept. Issuing)
2. Yellow Copy : (For Inspection Dept.)
3. Pink Copy : (For IPP Control Dept.)

Manufacturer's Name: MUSASTI		Location: Bangalore		Event Applicable DCN no: E-218						
PART INSPECTION CRITERIA SHEET				Inspection Start Date: 6/3/19	Inspection End Date: 6/3/19					
				Time: 9:50	Page No. 01					
Part No.: 23111-KONA-D010-H1		Part Submission Level & Date		Review By						
Part Name: GEAR PRIMARY DRIVEN		1st <input type="checkbox"/>	Date:	Section Mgr Approval						
Invoice No.:		Lot Produced Size: 130	2nd <input type="checkbox"/>	Date:	Name:					
		No. of Lots: Produced Date:	3rd <input type="checkbox"/>	Date:	Sign:					
		Inspection Sample Qty: 05 Nos	4th <input type="checkbox"/>	Date:						
Die/Mold No.:	Die/Mold Maker Name:	Location:	Report Type	No. of Parts	Report No.	Inspected by				
Cavity No.:	No. of Cavities / Mold (Die):		Assy <input type="checkbox"/>			HMSI / Joint (with Supplier)				
Purpose of Measurement: KONA-PP1 / KONA-PP2 - joint inspection				L1 Part <input type="checkbox"/>		HMSI Name:				
				Child Part/L2 <input type="checkbox"/>		Sign:				
Process Flow (As per Attached & Maker Approved PQCS 1):						Supplier Name: Prashanth Sign: ST				
Pictorial Description / Remark: Sup:- Bhagwan, Amtek										
S.No.	Inspection Parameter	Inspection Method	Criteria / Specification	Mfg. Process	Actual Observation / Result					Parameter Judge Status
					Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	
1	Tooth specification	Gear tester	as per table	MIC	—	Report	attested	—	—	O -
2	Heat treatment	MET Lab	as per table		—	Report	attested	—	—	O -
3	angle	CMM	60° ± 20'	MIC	-0° 13'					O -
4	angle	CMM	60° ± 20'	MIC	-0° 06'					O -
5	Dimension	CMM	29 ± 0.2	MIC	-0.082	/ -0.098				O -
6	Tip diameter	DRC	119.2 -0.2	MIC	-0.06	-0.17	-0.16	-0.15	-0.16	O -
7	Bore ID	Bore gauge	23.00 ^{+0.021}	MIC	+0.010	+0.012	+0.010	+0.013	+0.012	O -
8	Roughness	Roughness tester	6.3 Rz	MIC	8.8 +1 Rz					O -
9	Dimension	H.G	8.8 -0.3	MIC	-0.148	-0.149	-0.147	-0.148	-0.147	O -
10	Dimension	DRC	10.5 -0.3	MIC	-0.07	-0.06	-0.06	-0.05	-0.04	O -
11	Total height	H.G	18 -0.1	MIC	-0.05	+0.03	-0.06	-0.03	-0.06	O -
11	Run out	PCD tester	0.04	MIC	0.032	0.038	0.035	0.030	0.030	O -
12	Roughness (Shaving)	Roughness tester	6.3	MIC	3.865 Rz					O -
13	Diameter	CMM	30 -0.030	MIC	-0.018	-0.013	-0.017	-0.020	-0.016	O -
14	Run out	Bentel Centr	0.17	MIC	0.030	0.042	0.040	0.052	0.030	O -
15	Flatness	H.G / Scrn	0.10	MIC	0.070	0.028	0.030	0.030	0.032	O -
16	Run out	Bentel Centr	0.12	MIC	0.030	0.016	0.014	0.020	0.018	O -
17	Dimension	mic.	8.1 ± 0.1	MIC	+0.02	+0.01	+0.02	+0.03	+0.02	O -
18	—	—	—	—	—	—	—	—	—	—
Parameter Judge Status Legends :-		Legend of Inspection Method for Attributes Parameters :						3D Data Requirement		
O →	OK (Part Parameter = Dwg/Spec/HES)	S --> Checked on Sozai						Yes		
X →	NG (Part Parameter ≠ Dwg/Spec/HES)	T --> Not Feasible to check on Part (Checked on Tool)						No		
Δ →	Part Parameter not made as per Dwg Requirement	C --> Checked with Master Comparator/Template (e.g. Chamfer Roughness, Gaskets Profile, etc.)								
DP →	Maker Data Pending	G --> Inspection Parameter checked on Inspection Guage								
LW →	HMSI Lab wait	Result Summary :								
Legend for S. No.										
• →	Appearance							Part Final Judgement		
•X• →	Based on 3rd Party Results							Approved		
# →	Based on Maker Data							Rejected		
D →	Destructive Testing (Checked on Other Sample)							Wait (DP / LW)		
3D →	3D Dimension	Measurement Unit is µ/mm unless specified specifically								

Status Legends for Judgement :- ○ → OK (Part Parameter = Dwg/Spec/HES) X → NG (Part Parameter ≠ Dwg/Spec/HES) △ → Part Parameter not made as per Dwg Requirement DP → Maker Data Pending LW → HMSI Lab wait	Remark / Illustration : S → Checked on Sozai T → Not Feasible to check on Part (Checked on Tool) C → Checked with Master Comparator/Template (e.g. Chamfer Roughness, Gaskets Profile, etc.) G → Inspection Parameter checked on Inspection Guage Result Summary : Legend for S. No. A → Appearance •X• → Based on 3rd Party Results # → Based on Maker Data D → Destructive Testing (Checked on Other Sample) 3D → 3D Dimension
	Measurement Unit is $\mu\text{m}/\text{mm}$ unless specified specifically

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

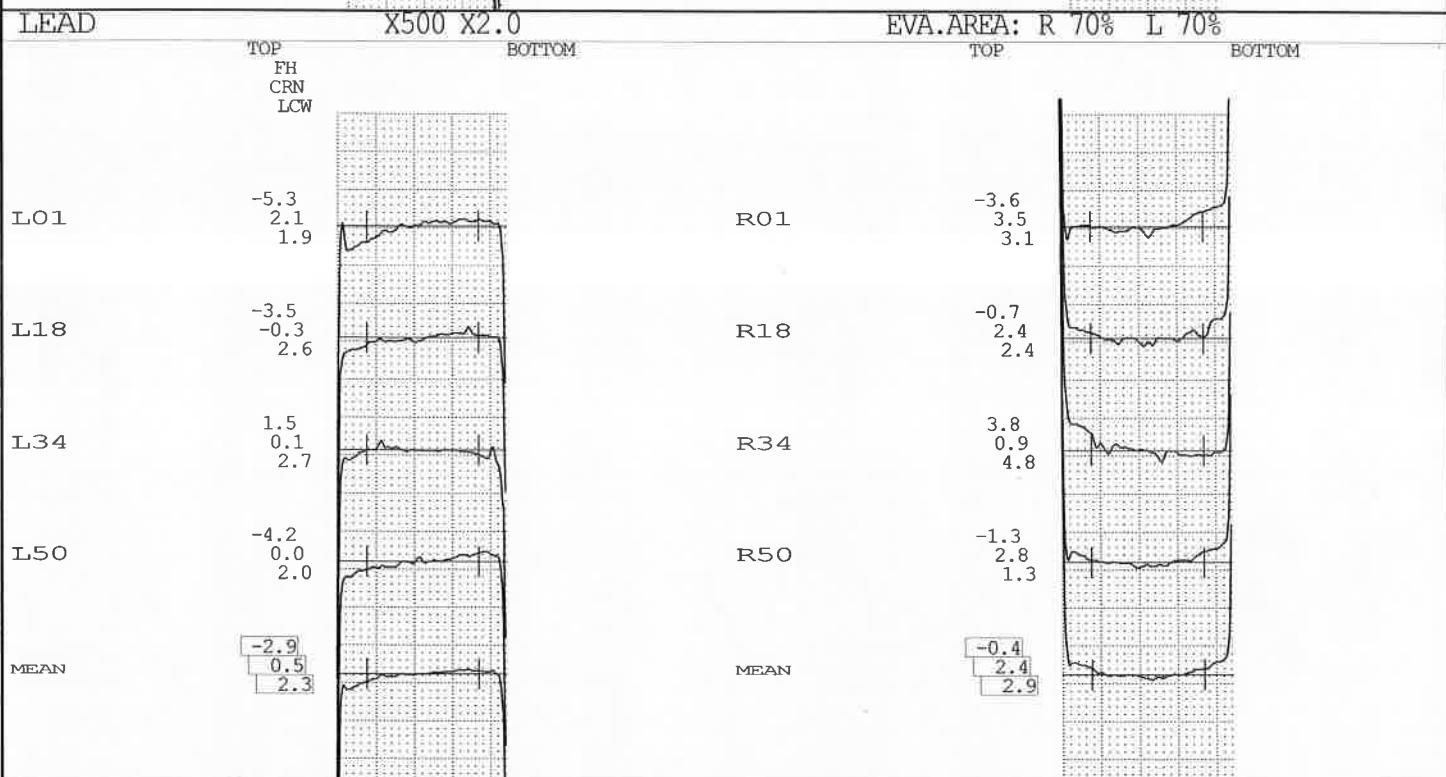
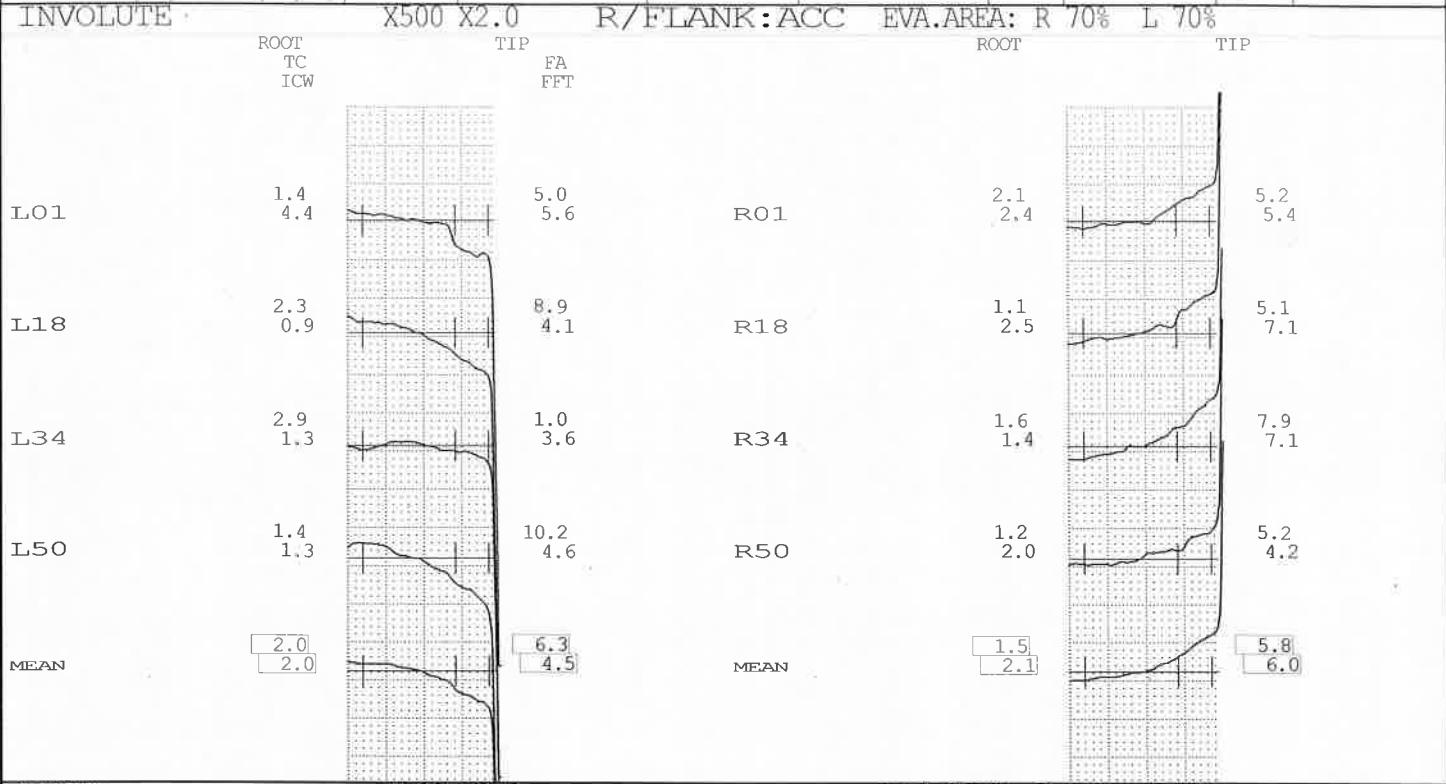
DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/06	OPERAT <i>Raj</i>	CONFIRMATION <i>OK NG</i>
LOT.No.	- 11	F/O:-0.022 P-2				09:38		
NOTE		PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	DF B EL _{MIN} I.L
Smooth(50, 5, 2)(50, 5, 2)								119.069 10.5 8.718 1.120



	INVOLUTE				LEAD		
	FA	TC	ICW	FFT	FH	CRN	LCW
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0
	MEAN	5.3 <i>0</i>	1.9 <i>0</i>	1.9 <i>0</i>	7.0 <i>0</i>	-1.5 <i>0</i>	0.5 <i>0</i>
	RANGE	3.1	1.3	3.8	7.8	7.4	1.8
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0
	MEAN	4.5 <i>0</i>	0.9 <i>0</i>	1.8 <i>0</i>	2.4 <i>0</i>	-0.3 <i>0</i>	3.0 <i>0</i>
	RANGE	7.4	3.1	4.3	6.6	7.6	3.6

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

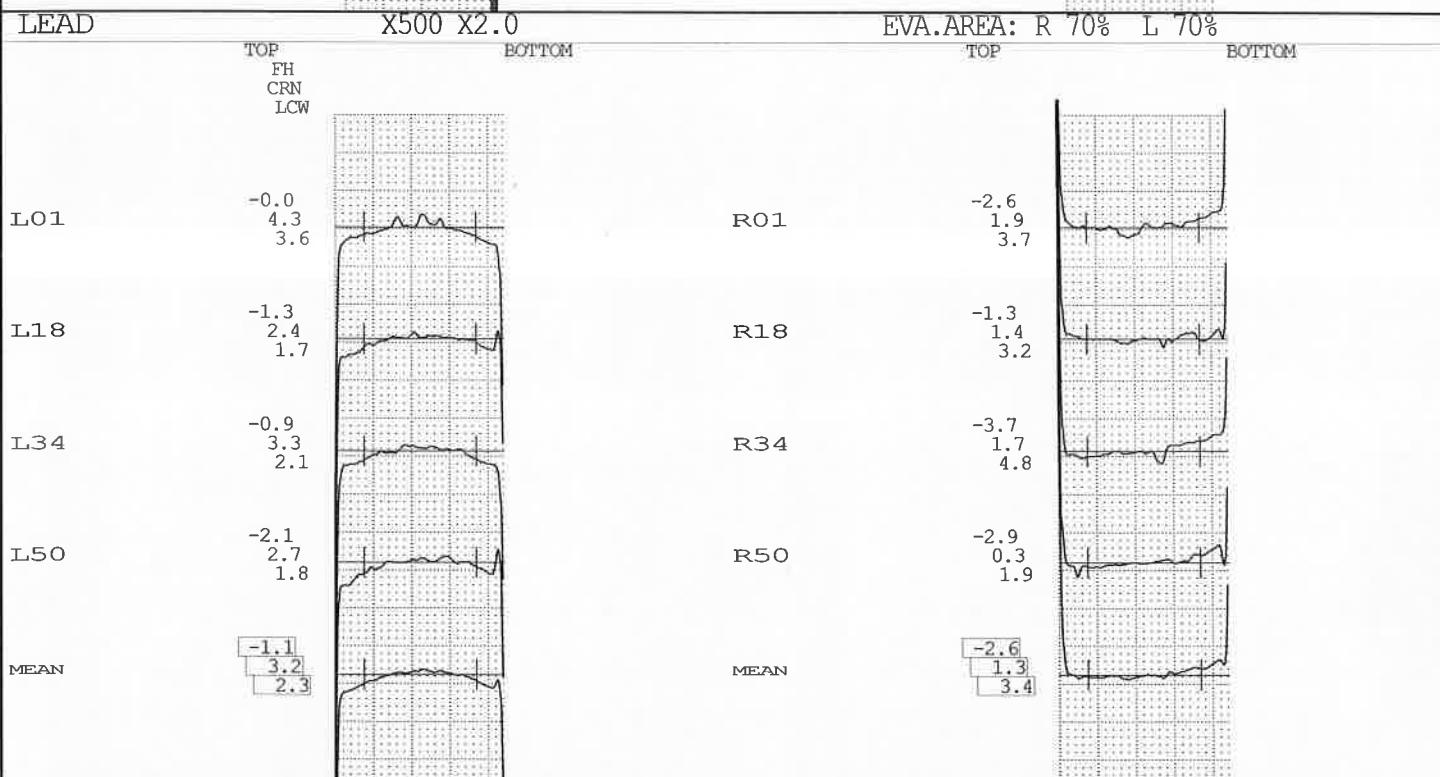
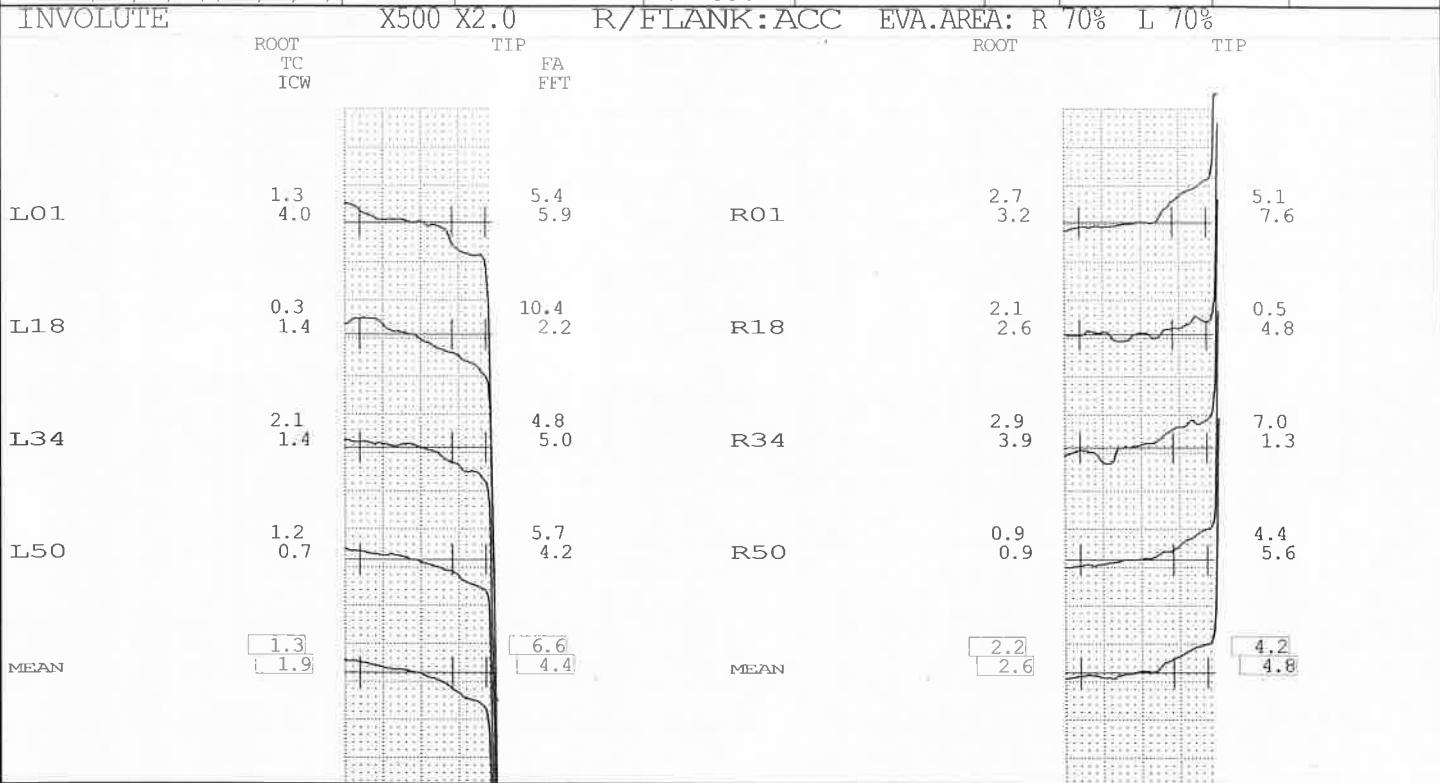
DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE	OPERAT	CONFIRMATION	
LOT.No.	- 12	F/O:-0.024 P-3				2019/07/06 09:43	<i>Puy</i>	(OK / NG)	
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	DF B EL _{MAX} I.L	119.069 10.5 8.718 1.120



		INVOLUTE				LEAD			
		FA	TC	ICW	FFT	FH	CRN	LCW	
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0	
	MEAN	6.3 <i>b</i>	2.0 <i>e</i>	2.0 <i>b</i>	4.5 <i>o</i>	-2.9 <i>e</i>	0.5 <i>e</i>	2.3 <i>e</i>	
	RANGE	9.2	1.5	3.5	1.9	6.8	2.4	0.8	
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0	
	MEAN	5.8 <i>b</i>	1.5 <i>o</i>	2.1 <i>e</i>	6.0 <i>o</i>	-0.4 <i>e</i>	2.4 <i>e</i>	2.9 <i>e</i>	
	RANGE	2.8	0.9	1.1	2.9	7.3	2.7	3.5	

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/06	OPERAT <i>Dny</i>	CONFIRMATION (OK / NG)
LOT.No.	- 16	F/O:-0.028 P-4				09:59		
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	Df B EL _{GR} I.L
								119.069 10.5 8.718 1.120



		INVOLUTE				LEAD		
		FA	TC	ICW	FFT	FH	CRN	LCW
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	6.6 Ø	1.3 Ø	1.9 Ø	4.4 Ø	-1.1 Ø	3.2 Ø	2.3 Ø
	RANGE	5.6	1.8	3.3	3.7	2.1	1.9	1.9
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	4.2 Ø	2.2 Ø	2.6 Ø	4.8 Ø	-2.6 Ø	1.3 Ø	3.4 Ø
	RANGE	6.5	2.1	3.0	6.3	2.4	1.6	2.9

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/06	OPERAT <i>[Signature]</i>	CONFIRMATION (OK / NG)																																										
LOT.No.	- 17	F/O:-0.020 P-5				10:03																																												
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	119.069 10.5 8.718 1.120																																										
INVOLUTE	X500 X2.0	R/FLANK:ACC EVA.AREA: R 70% L 70%				ROOT TIP	ROOT TIP																																											
<p>Root (TC) and Tip (FA) measurements for Involute profile. The graph shows data for teeth L01, L18, L34, L50, and Mean across three measurement methods (FFT, CRN, LCW).</p> <table border="1"> <thead> <tr> <th>Method</th> <th>L01</th> <th>L18</th> <th>L34</th> <th>L50</th> <th>Mean</th> </tr> </thead> <tbody> <tr> <td>TC (Root)</td> <td>0.0 1.8</td> <td>2.3 1.0</td> <td>1.0 2.1</td> <td>2.6 1.0</td> <td>1.5 1.5</td> </tr> <tr> <td>FA (Tip)</td> <td>9.2 2.6</td> <td>7.7 3.3</td> <td>5.2 3.3</td> <td>6.5 4.7</td> <td>7.2 3.5</td> </tr> <tr> <td>FFT (Root)</td> <td>R01</td> <td>R18</td> <td>R34</td> <td>R50</td> <td>MEAN</td> </tr> <tr> <td>FFT (Tip)</td> <td>2.1 0.7</td> <td>2.5 2.2</td> <td>1.4 1.5</td> <td>1.6 1.9</td> <td>1.9 1.6</td> </tr> <tr> <td>CRN (Root)</td> <td>1.9 6.4</td> <td>5.3 -0.6</td> <td>3.7 9.0</td> <td>4.3 6.3</td> <td>3.8 5.3</td> </tr> <tr> <td>LCW (Root)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Method	L01	L18	L34	L50	Mean	TC (Root)	0.0 1.8	2.3 1.0	1.0 2.1	2.6 1.0	1.5 1.5	FA (Tip)	9.2 2.6	7.7 3.3	5.2 3.3	6.5 4.7	7.2 3.5	FFT (Root)	R01	R18	R34	R50	MEAN	FFT (Tip)	2.1 0.7	2.5 2.2	1.4 1.5	1.6 1.9	1.9 1.6	CRN (Root)	1.9 6.4	5.3 -0.6	3.7 9.0	4.3 6.3	3.8 5.3	LCW (Root)					
Method	L01	L18	L34	L50	Mean																																													
TC (Root)	0.0 1.8	2.3 1.0	1.0 2.1	2.6 1.0	1.5 1.5																																													
FA (Tip)	9.2 2.6	7.7 3.3	5.2 3.3	6.5 4.7	7.2 3.5																																													
FFT (Root)	R01	R18	R34	R50	MEAN																																													
FFT (Tip)	2.1 0.7	2.5 2.2	1.4 1.5	1.6 1.9	1.9 1.6																																													
CRN (Root)	1.9 6.4	5.3 -0.6	3.7 9.0	4.3 6.3	3.8 5.3																																													
LCW (Root)																																																		
LEAD	X500 X2.0	EVA.AREA: R 70% L 70%				TOP BOTTOM	TOP BOTTOM																																											
<p>Lead profile measurements for teeth L01, L18, L34, L50, and Mean. The graph compares Top (FH) and Bottom (CRN, LCW) measurements across three measurement methods (FH, CRN, LCW).</p> <table border="1"> <thead> <tr> <th>Method</th> <th>L01</th> <th>L18</th> <th>L34</th> <th>L50</th> <th>Mean</th> </tr> </thead> <tbody> <tr> <td>FH (Top)</td> <td>3.9 4.5 3.2</td> <td>0.6 1.9 1.6</td> <td>-1.1 1.7 3.3</td> <td>-0.6 3.6 1.9</td> <td>0.7 2.9 2.5</td> </tr> <tr> <td>CRN (Bottom)</td> <td>R01</td> <td>R18</td> <td>R34</td> <td>R50</td> <td>MEAN</td> </tr> <tr> <td>LCW (Bottom)</td> <td>0.4 0.5 2.2</td> <td>-2.9 1.2 3.1</td> <td>0.1 0.3 1.5</td> <td>-2.1 2.0 1.6</td> <td>-1.1 1.0 2.1</td> </tr> </tbody> </table>									Method	L01	L18	L34	L50	Mean	FH (Top)	3.9 4.5 3.2	0.6 1.9 1.6	-1.1 1.7 3.3	-0.6 3.6 1.9	0.7 2.9 2.5	CRN (Bottom)	R01	R18	R34	R50	MEAN	LCW (Bottom)	0.4 0.5 2.2	-2.9 1.2 3.1	0.1 0.3 1.5	-2.1 2.0 1.6	-1.1 1.0 2.1																		
Method	L01	L18	L34	L50	Mean																																													
FH (Top)	3.9 4.5 3.2	0.6 1.9 1.6	-1.1 1.7 3.3	-0.6 3.6 1.9	0.7 2.9 2.5																																													
CRN (Bottom)	R01	R18	R34	R50	MEAN																																													
LCW (Bottom)	0.4 0.5 2.2	-2.9 1.2 3.1	0.1 0.3 1.5	-2.1 2.0 1.6	-1.1 1.0 2.1																																													
		INVOLUTE				LEAD																																												
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	FH	CRN	LCW																																										
	MEAN	7.2 0	1.5 0	1.5 0	3.5 0	0.7 0	2.9 0	2.5 0																																										
	RANGE	4.1	2.6	1.1	2.0	5.0	2.8	1.6																																										
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	FH	CRN	LCW																																										
	MEAN	3.8 0	1.9 0	1.6 0	5.3 0	-1.1 0	1.0 0	2.1 0																																										
	RANGE	3.4	1.1	1.5	9.6	3.3	1.6	1.6																																										

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351058)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL			DATE	OPERATOR	CONFIRMATION	
LOT.No.	- 15	F/O:-0.034 P-1			2019/07/06	09:12	OK / NG)	
NOTE		PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT	Mn Z PA HA	1.75 65 14.50 00.000	Df B EL _{AMB} I.L	119.069 10.5 8.718 1.120
INVOLUTE	X500 X2.0	R/FLANK:ACC						
ROOT TC ICW	MIDDLE	TIP FA FFT		ROOT TC ICW	MIDDLE	TIP FA FFT		
L01 0.5 0.8	7.0 4.1			R01 2.8 1.6	6.9 4.6			
L02 2.6 1.3	5.1 5.6			R02 0.4 1.2	8.4 4.0			
L03 0.9 1.7	2.6 5.2			R03 2.9 1.3	8.2 6.0			
L04 1.2 1.1	2.7 4.5			R04 1.6 1.5	5.9 5.5			
L05 1.5 1.4	5.0 4.2			R05 1.1 1.0	3.4 3.9			
L06 1.3 1.2	7.4 5.2			R06 1.7 1.3	2.2 3.2			
L07 1.3 1.2	9.3 3.6			R07 0.1 1.9	2.0 3.2			
L08 1.6 1.4	7.4 4.1			R08 2.2 1.9	4.3 3.9			
L09 1.7 0.9	7.2 5.2			R09 1.2 1.6	5.3 5.0			
L10 0.9 0.9	6.7 1.9			R10 1.1 1.5	6.8 3.0			
L11 0.5 0.9	5.7 3.1			R11 2.7 1.0	6.5 5.2			
L12 0.9 1.3	4.1 3.5			R12 1.5 2.0	6.0 5.0			
L13 1.1 1.0	2.9 2.0			R13 2.0 1.3	7.1 3.1			
L14 1.2 1.0	0.5 5.0			R14 1.1 1.4	4.2 7.1			
L15 0.8 1.0	3.1 2.5			R15 0.2 1.4	5.0 2.7			
L16 1.3 1.3	5.9 2.3			R16 1.8 1.0	1.9 4.7			
L17 1.8 1.0	7.0 4.3			R17 0.9 1.0	0.7 4.5			
L18 1.2 1.1	7.8 3.7			R18 1.9 1.3	2.4 2.5			
L19 0.9 0.9	7.7 4.3			R19 0.9 1.1	3.9 4.2			
L20 1.9 1.0	7.6 4.2			R20 1.5 1.5	5.0 4.8			
L21 1.2 0.7	6.8 4.1			R21 2.2 1.1	6.0 4.3			
L22 1.4 1.6	6.4 5.2			R22 2.1 1.2	5.7 4.2			
L23 1.0 0.7	7.4 2.2			R23 2.5 1.5	8.3 4.0			
L24 1.3 1.3	2.8 4.6			R24 1.3 1.1	5.4 5.2			
L25 1.8 1.0	2.1 4.4			R25 1.7 1.5	5.3 4.0			
L26 0.9 0.9	4.9 3.9			R26 1.5 0.9	4.9 4.3			
L27 1.1 0.9	7.2 5.3			R27 1.6 1.2	2.7 3.9			
L28 2.0 1.0	9.8 6.4			R28 2.5 1.3	2.8 4.7			
L29 1.6 0.8	11.5 5.4			R29 2.0 1.1	5.4 5.9			
L30 2.1 1.2	10.6 5.0			R30 2.1 1.7	8.0 4.2			
L31 0.8 1.0	7.7 5.8			R31 1.9 1.3	8.7 5.1			
L32 1.0 1.2	9.3 4.7			R32 1.8 1.2	8.7 4.5			
L33 1.9 0.8	9.2 6.4			R33 2.6 0.9	8.8 4.2			
L34 1.1 0.5	7.4 6.4			R34 2.0 1.3	10.1 5.9			

FF:profile error FA:angle error FFA:form error
 FO:lead error FH:angle error FOA:form error CRN:crownina

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351058)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL			DATE	OPERATOR	CONFIRMATION	
LOT.No.	- 15	F/O:-0.034 P-1			2019/07/06 09:12		(OK / NG)	
NOTE	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	Df B EL _{MIN} I.L	119.069 10.5 8.718 1.120
INVOLUTE	X500 X2.0	R/FLANK:ACC						
ROOT TC ICW	MIDDLE FA FFT	TIP FA FFT	ROOT TC ICW	MIDDLE FA FFT	TIP FA FFT			
L35 1.3 1.0	6.4 3.6		R35	1.3 1.1	10.9 4.3			
L36 1.5 0.6	4.9 5.1		R36	2.2 0.8	8.8 5.2			
L37 0.3	6.9 4.1		R37	1.9 2.2	5.5 6.4			
L38 1.7 0.8	9.4 4.8		R38	2.2 0.8	3.9 5.7			
L39 1.1 1.3	9.3 6.3		R39	1.8 1.6	2.9 4.2			
L40 1.9 1.1	10.1 5.9		R40	1.1 0.9	6.5 2.8			
L41 0.9 1.0	9.3 3.5		R41	2.1 1.8	7.7 5.7			
L42 1.0 0.6	6.3 3.1		R42	2.4 1.2	9.8 4.6			
L43 1.1 0.6	5.4 3.8		R43	2.4 1.1	7.6 6.3			
L44 1.1 0.7	7.2 2.8		R44	1.7 1.1	6.0 6.2			
L45 2.1 0.8	8.2 5.0		R45	2.2 1.9	4.8 6.6			
L46 1.1 1.2	9.0 5.3		R46	2.5 2.0	6.0 5.6			
L47 1.2 1.1	9.9 3.4		R47	2.2 1.3	8.0 6.8			
L48 1.6 0.8	8.4 4.7		R48	1.8 1.5	7.9 4.4			
L49 1.1 0.7	9.1 4.1		R49	0.8 1.3	7.0 5.2			
L50 1.9 1.1	9.3 4.2		R50	2.0 1.3	7.4 5.0			
L51 0.7 0.6	7.3 4.6		R51	2.8 1.9	7.6 4.3			
L52 0.7 0.8	7.6 4.4		R52	0.9 1.5	6.0 4.9			
L53 1.7 0.9	11.5 3.0		R53	2.3 1.6	5.1 4.5			
L54 1.6 0.9	10.2 5.9		R54	0.9 1.4	4.3 6.1			
L55 2.0 1.3	11.1 4.5		R55	1.5 1.4	7.0 3.8			
L56 0.9 1.2	7.6 3.3		R56	1.7 2.2	7.7 6.5			
L57 2.4 1.1	4.1 5.9		R57	2.1 1.1	6.6 7.0			
L58 1.6 1.1	5.1 4.4		R58	2.1 1.4	7.5 3.8			
L59 0.2 1.1	7.1 4.9		R59	1.4 1.9	3.5 7.4			
L60 3.2 1.1	10.1 5.0		R60	0.3 2.1	5.1 1.6			
L61 1.2 1.2	12.5 4.3		R61	2.5 1.9	4.0 4.0			
L62 1.3 0.7	12.2 4.6		R62	0.7 1.4	5.2 5.2			
L63 1.2 1.3	10.3 2.9		R63	2.1 1.6	8.1 4.2			
L64 1.2 0.9	8.0 5.6		R64	1.8 1.4	6.2 6.1			
L65 1.9 0.6	8.9 5.1		R65	0.8 0.9	8.5 2.7			
MEAN BIAS	1.3 1.0 11.4	7.4 4.4	MEAN BIAS	1.7 1.4	6.0 4.7			
			OK					
			NG					

GEAR ACCURACY INSPECTION SHEET M.A.P. India Pvt.Ltd. (2nd Plant) (351058)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/06	OPERATOR <i>[Signature]</i>	CONFIRMATION <i>(OK / NG)</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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NOTE	Smooth (50, 5, 2) (50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	DF B ELEM I.L	119.069 10.5 8.718 1.120																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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<table border="1"> <thead> <tr> <th></th> <th>TOP</th> <th>MIDDLE</th> <th>BOTTOM</th> <th></th> <th>TOP</th> <th>MIDDLE</th> <th>BOTTOM</th> <th></th> </tr> </thead> <tbody> <tr><td>L01</td><td>-9.8</td><td></td><td></td><td></td><td>R01</td><td>-3.9</td><td></td><td></td></tr> <tr><td></td><td>0.8</td><td></td><td></td><td></td><td></td><td>2.0</td><td></td><td></td></tr> <tr><td>L02</td><td>-9.3</td><td></td><td></td><td></td><td>R02</td><td>-4.3</td><td></td><td></td></tr> <tr><td></td><td>0.7</td><td></td><td></td><td></td><td></td><td>2.0</td><td></td><td></td></tr> <tr><td>L03</td><td>-10.9</td><td></td><td></td><td></td><td>R03</td><td>-3.9</td><td></td><td></td></tr> <tr><td></td><td>2.1</td><td></td><td></td><td></td><td></td><td>8</td><td></td><td></td></tr> <tr><td>L04</td><td>-11.3</td><td></td><td></td><td></td><td>R04</td><td>-4.0</td><td></td><td></td></tr> <tr><td></td><td>2.0</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></tr> <tr><td>L05</td><td>-10.2</td><td></td><td></td><td></td><td>R05</td><td>-4.7</td><td></td><td></td></tr> <tr><td></td><td>1.3</td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td></tr> <tr><td>L06</td><td>-12.6</td><td></td><td></td><td></td><td>R06</td><td>-5.3</td><td></td><td></td></tr> <tr><td></td><td>0.4</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L07</td><td>-11.3</td><td></td><td></td><td></td><td>R07</td><td>-6.1</td><td></td><td></td></tr> <tr><td></td><td>0.3</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L08</td><td>-11.6</td><td></td><td></td><td></td><td>R08</td><td>-6.0</td><td></td><td></td></tr> <tr><td></td><td>1.4</td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td></tr> <tr><td>L09</td><td>-9.9</td><td></td><td></td><td></td><td>R09</td><td>-5.5</td><td></td><td></td></tr> <tr><td></td><td>1.3</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></tr> <tr><td>L10</td><td>-7.2</td><td></td><td></td><td></td><td>R10</td><td>-4.1</td><td></td><td></td></tr> <tr><td></td><td>0.8</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> <tr><td>L11</td><td>-6.8</td><td></td><td></td><td></td><td>R11</td><td>-1.6</td><td></td><td></td></tr> <tr><td></td><td>0.4</td><td></td><td></td><td></td><td></td><td>8</td><td></td><td></td></tr> <tr><td>L12</td><td>-4.9</td><td></td><td></td><td></td><td>R12</td><td>-1.7</td><td></td><td></td></tr> <tr><td></td><td>0.0</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></tr> <tr><td>L13</td><td>-5.3</td><td></td><td></td><td></td><td>R13</td><td>-2.6</td><td></td><td></td></tr> <tr><td></td><td>1.1</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></tr> <tr><td>L14</td><td>-6.3</td><td></td><td></td><td></td><td>R14</td><td>-1.0</td><td></td><td></td></tr> <tr><td></td><td>1.1</td><td></td><td></td><td></td><td></td><td>6</td><td></td><td></td></tr> <tr><td>L15</td><td>-6.0</td><td></td><td></td><td></td><td>R15</td><td>-1.5</td><td></td><td></td></tr> <tr><td></td><td>1.3</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> <tr><td>L16</td><td>-6.8</td><td></td><td></td><td></td><td>R16</td><td>-1.6</td><td></td><td></td></tr> <tr><td></td><td>0.6</td><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td></tr> <tr><td>L17</td><td>-6.4</td><td></td><td></td><td></td><td>R17</td><td>-3.0</td><td></td><td></td></tr> <tr><td></td><td>0.8</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L18</td><td>-6.0</td><td></td><td></td><td></td><td>R18</td><td>-2.5</td><td></td><td></td></tr> <tr><td></td><td>0.2</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> <tr><td>L19</td><td>-3.6</td><td></td><td></td><td></td><td>R19</td><td>-3.3</td><td></td><td></td></tr> <tr><td></td><td>1.1</td><td></td><td></td><td></td><td></td><td>4</td><td></td><td></td></tr> <tr><td>L20</td><td>-2.1</td><td></td><td></td><td></td><td>R20</td><td>-4.1</td><td></td><td></td></tr> <tr><td></td><td>1.0</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L21</td><td>-1.1</td><td></td><td></td><td></td><td>R21</td><td>-1.7</td><td></td><td></td></tr> <tr><td></td><td>1.1</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></tr> <tr><td>L22</td><td>0.7</td><td></td><td></td><td></td><td>R22</td><td>1.6</td><td></td><td></td></tr> <tr><td></td><td>0.8</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></tr> <tr><td>L23</td><td>0.1</td><td></td><td></td><td></td><td>R23</td><td>0.7</td><td></td><td></td></tr> <tr><td></td><td>1.6</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></tr> <tr><td>L24</td><td>0.4</td><td></td><td></td><td></td><td>R24</td><td>2.3</td><td></td><td></td></tr> <tr><td></td><td>2.3</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L25</td><td>1.7</td><td></td><td></td><td></td><td>R25</td><td>5.7</td><td></td><td></td></tr> <tr><td></td><td>1.2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L26</td><td>1.0</td><td></td><td></td><td></td><td>R26</td><td>1.8</td><td></td><td></td></tr> <tr><td></td><td>0.5</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> <tr><td>L27</td><td>0.7</td><td></td><td></td><td></td><td>R27</td><td>5.3</td><td></td><td></td></tr> <tr><td></td><td>1.2</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></tr> <tr><td>L28</td><td>1.0</td><td></td><td></td><td></td><td>R28</td><td>1.7</td><td></td><td></td></tr> <tr><td></td><td>0.1</td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td></tr> <tr><td>L29</td><td>0.4</td><td></td><td></td><td></td><td>R29</td><td>5.1</td><td></td><td></td></tr> <tr><td></td><td>0.3</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></tr> <tr><td>L30</td><td>0.1</td><td></td><td></td><td></td><td>R30</td><td>2.5</td><td></td><td></td></tr> <tr><td></td><td>1.3</td><td></td><td></td><td></td><td></td><td>8</td><td></td><td></td></tr> <tr><td>L31</td><td>0.8</td><td></td><td></td><td></td><td>R31</td><td>4.5</td><td></td><td></td></tr> <tr><td></td><td>3.0</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td>L32</td><td>0.5</td><td></td><td></td><td></td><td>R32</td><td>2.9</td><td></td><td></td></tr> <tr><td></td><td>3.7</td><td></td><td></td><td></td><td></td><td>9</td><td></td><td></td></tr> <tr><td>L33</td><td>0.7</td><td></td><td></td><td></td><td>R33</td><td>4.4</td><td></td><td></td></tr> <tr><td></td><td>2.6</td><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td></tr> <tr><td>L34</td><td>0.5</td><td></td><td></td><td></td><td>R34</td><td>3.5</td><td></td><td></td></tr> <tr><td></td><td>2.9</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> <tr><td></td><td>0.9</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></tr> <tr><td></td><td>1.0</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td></td><td>/</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr> </tbody> </table>		TOP	MIDDLE	BOTTOM		TOP	MIDDLE	BOTTOM		L01	-9.8				R01	-3.9				0.8					2.0			L02	-9.3				R02	-4.3				0.7					2.0			L03	-10.9				R03	-3.9				2.1					8			L04	-11.3				R04	-4.0				2.0					3			L05	-10.2				R05	-4.7				1.3					7			L06	-12.6				R06	-5.3				0.4					2			L07	-11.3				R07	-6.1				0.3					2			L08	-11.6				R08	-6.0				1.4					7			L09	-9.9				R09	-5.5				1.3					3			L10	-7.2				R10	-4.1				0.8					5			L11	-6.8				R11	-1.6				0.4					8			L12	-4.9				R12	-1.7				0.0					1			L13	-5.3				R13	-2.6				1.1					3			L14	-6.3				R14	-1.0				1.1					6			L15	-6.0				R15	-1.5				1.3					5			L16	-6.8				R16	-1.6				0.6					0			L17	-6.4				R17	-3.0				0.8					2			L18	-6.0				R18	-2.5				0.2					5			L19	-3.6				R19	-3.3				1.1					4			L20	-2.1				R20	-4.1				1.0					2			L21	-1.1				R21	-1.7				1.1					1			L22	0.7				R22	1.6				0.8					1			L23	0.1				R23	0.7				1.6					1			L24	0.4				R24	2.3				2.3					2			L25	1.7				R25	5.7				1.2					2			L26	1.0				R26	1.8				0.5					5			L27	0.7				R27	5.3				1.2					1			L28	1.0				R28	1.7				0.1					7			L29	0.4				R29	5.1				0.3					3			L30	0.1				R30	2.5				1.3					8			L31	0.8				R31	4.5				3.0					2			L32	0.5				R32	2.9				3.7					9			L33	0.7				R33	4.4				2.6					0			L34	0.5				R34	3.5				2.9					5				0.9					3				1.0					2				/					2									5		
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FF:profile error FA:angle error FFA:form error
 FO:lead error FH:angle error FOA:form error CRN:crowning

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351058)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/06	OPERAT B	CONFIRMATION (OK / NG)
LOT.No.	- 15	F/O:-0.034 P1				09:12		
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (R.T.I..) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	DE B EL I.L
LEAD	X500 X2.0	R/FLANK:ACC						119.069 10.5 8.718 1.120
TOP MIDDLE BOTTOM				TOP MIDDLE BOTTOM				
L35	1.7 1.3 2.5	R35	7.0 1.7 7.95					
L36	1.5 0.9	R36	1.4 0.9					
L37	0.8 0.7	R37	2.7 7.45					
L38	0.8 -0.8	R38	2.9 5.80					
L39	-0.3 -0.6	R39	2.1 6.09					
L40	0.6 -0.2	R40	1.5 7.85					
L41	0.6 -0.3	R41	1.4 8.13					
L42	-0.0 -1.5	R42	1.7 7.5					
L43	0.8 -2.41	R43	1.6 8.03					
L44	0.7 -3.45	R44	2.6 6.58					
L45	0.0 -4.03	R45	3.1 6.15					
L46	0.6 -3.10	R46	3.0 5.18					
L47	0.5 -4.46	R47	2.9 5.55					
L48	0.5 -3.54	R48	2.5 5.10					
L49	1.0 -4.62	R49	1.9 4.72					
L50	0.5 -5.10	R50	2.9 4.51					
L51	1.0 -6.13	R51	2.4 4.17					
L52	0.3 -8.43	R52	2.2 2.16					
L53	-0.3 -7.90	R53	2.8 3.13					
L54	0.6 -9.51	R54	1.6 0.13					
L55	0.4 -8.76	R55	1.3 -0.49					
L56	0.6 -10.12	R56	1.3 -1.2					
L57	0.9 -10.57	R57	1.5 -1.2					
L58	1.5 -10.98	R58	1.6 -2.14					
L59	0.8 -11.09	R59	2.0 -2.1					
L60	0.6 -10.79	R60	2.6 -3.08					
L61	0.1 -9.71	R61	2.6 -3.19					
L62	0.2 -8.91	R62	2.5 -2.51					
L63	0.6 -9.59	R63	1.7 1.91					
L64	0.6 -9.07	R64	1.4 -2.03					
L65	1.0 -4.52	R65	2.0 -1.56					
MEAN	0.7 16.12	MEAN	2.2 15.3					
BIAS		BIAS						

FF:profile error FA:angle error FFA:form error
 FO:lead error FH:angle error FOA:form error CRN:crowning

MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
P-1	GPDN	LAYOUT	A
MODEL NAME	Date	PART NUMBER	REMARKS
KONA	06-07-2019	23111-KONA-D010-H1	OK

Pos#	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	BORE ID	23.0000	0.0210	0.0000	mm	23.0138	0.0138	----***----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:46:47	-0:13:13	----***----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:09:39	0:09:39	----***----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:11:52	0:11:52	----***----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:04:35	0:04:35	----**----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:53:18	-0:06:42	----***----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:53:48	-0:06:12	----***----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.9117	-0.0883	----***----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.9178	-0.0822	----***----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.9048	-0.0952	----***----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.9202	-0.0798	----***----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.9019	-0.0981	----***----
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9843	10.9843	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9949	10.9949	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9901	10.9901	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9828	10.9828	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	11.0076	11.0076	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	11.0045	11.0045	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9690	10.9690	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9837	10.9837	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9956	10.9956	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9919	10.9919	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	HOLE -1	9.3000	0.2000	0.0000	mm	9.3784	0.0784	----**-----
	HOLE -2	9.3000	0.2000	0.0000	mm	9.3791	0.0791	----**-----

54
CHECKED BY

MACHINE NAME

PART NAME

OPERATION NAME

SHIFT

P-1**GPDN****LAYOUT****A**

Pos#	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	HOLE -3	9.3000	0.2000	0.0000	mm	9.3692	0.0692	----***----
	HOLE -4	9.3000	0.2000	0.0000	mm	9.3750	0.0750	----**----
	DISTANCE	18.2000	0.1000	-0.1000	mm	18.1057	-0.0943	*****-----
	DISTANCE	18.2000	0.1000	-0.1000	mm	18.2406	0.0406	-----***---
	PD	83.0000	0.1500	-0.1500	mm	82.8812	-0.1188	-----*****-

OK
SLX

MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
01	GPDN POSITION		A
MODEL NAME	Date	PART NUMBER	REMARKS <i>(SS)</i>
KONA	06-07-2019		

Post	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	Circle	30.5000	-0.0100	-0.0300	mm	30.4812	-0.0188	----**----


CHECKED BY

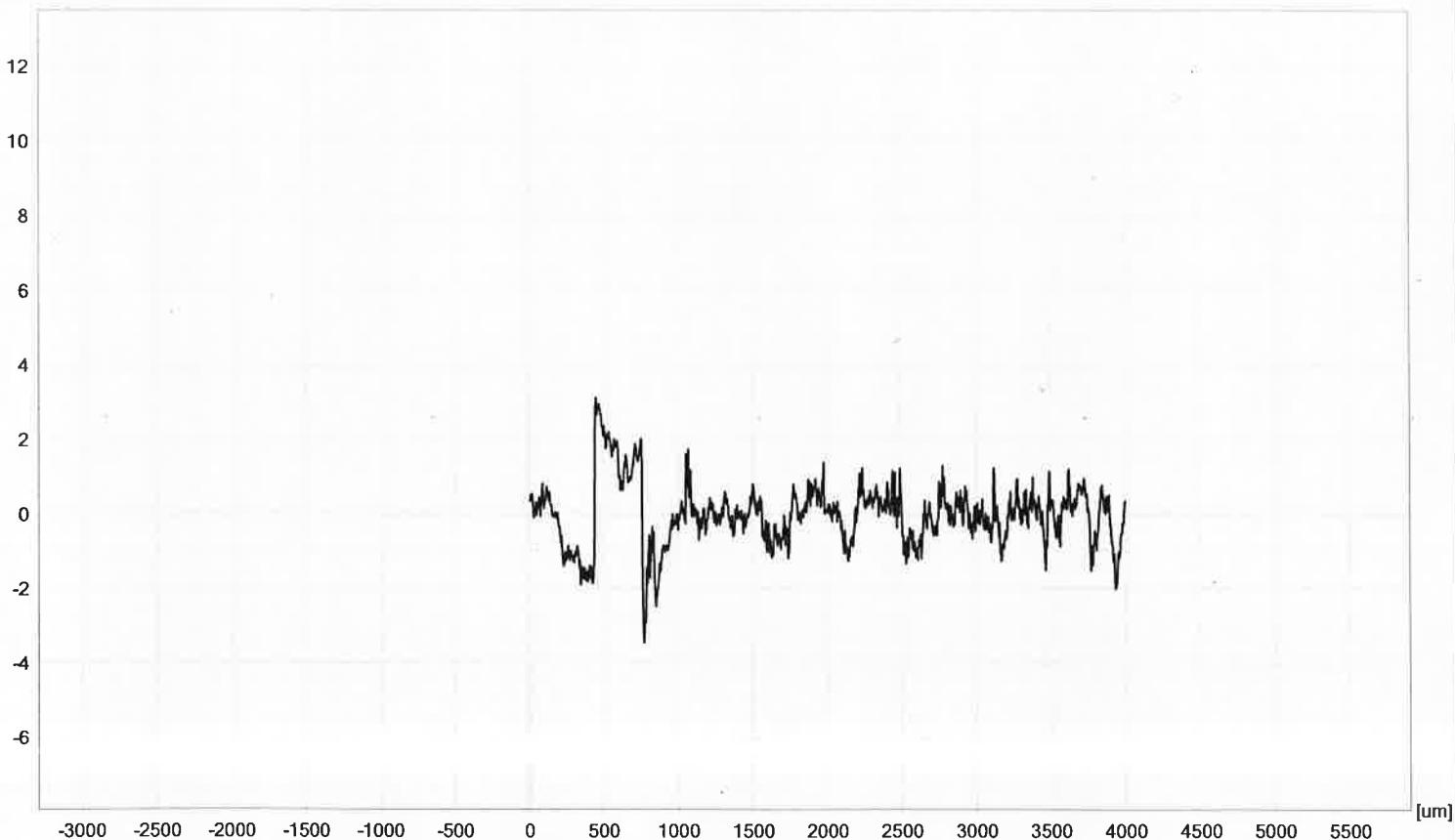
SURFACE ROUGHNESS SV -3100

Property

Title	KONA GPDN LAYOUT INSPECTION TEETH	Revised By	ADMIN
Subtitle	Roughness	Revision No.	2
Created By	ADMIN	Date/Time start	06-07-2019 12:04:46
Created Date/Time	06-07-2019 12:05:18	Date/Time end	06-07-2019 12:04:58
Revised Date/Time	06-07-2019 12:05:18		

Profile=R_J01 - Section=[1] X Mag: x20 Z Mag: x5000 Error Zoom: x1 <SurfAnalysis_1>

[um]



Calculation Result

Meas Cont	Meas Value	Meas Cont	Meas Value	Meas Cont	Meas Value
Roughness 2D<SurfAnalysis_1>	Profile=R_J01 - Section=[1]			Rz	3.865um

Evaluation Condition

Profile=R_J01 - Section=[1]	No of Smplg(nle):	5	Evltn Length(lm):	4000.0um	Compensation:	Off
Standard	JIS2001	Lc	800.0um	Pre-Travel:	400.0um	
Kind of Profile:	R_J01	Ls	2.5um	Post-Travel:	400.0um	
Smplg Length(lm):	800.0um	Kind of Filter:	Gaussian	Smooth Connection	Off	(OP)

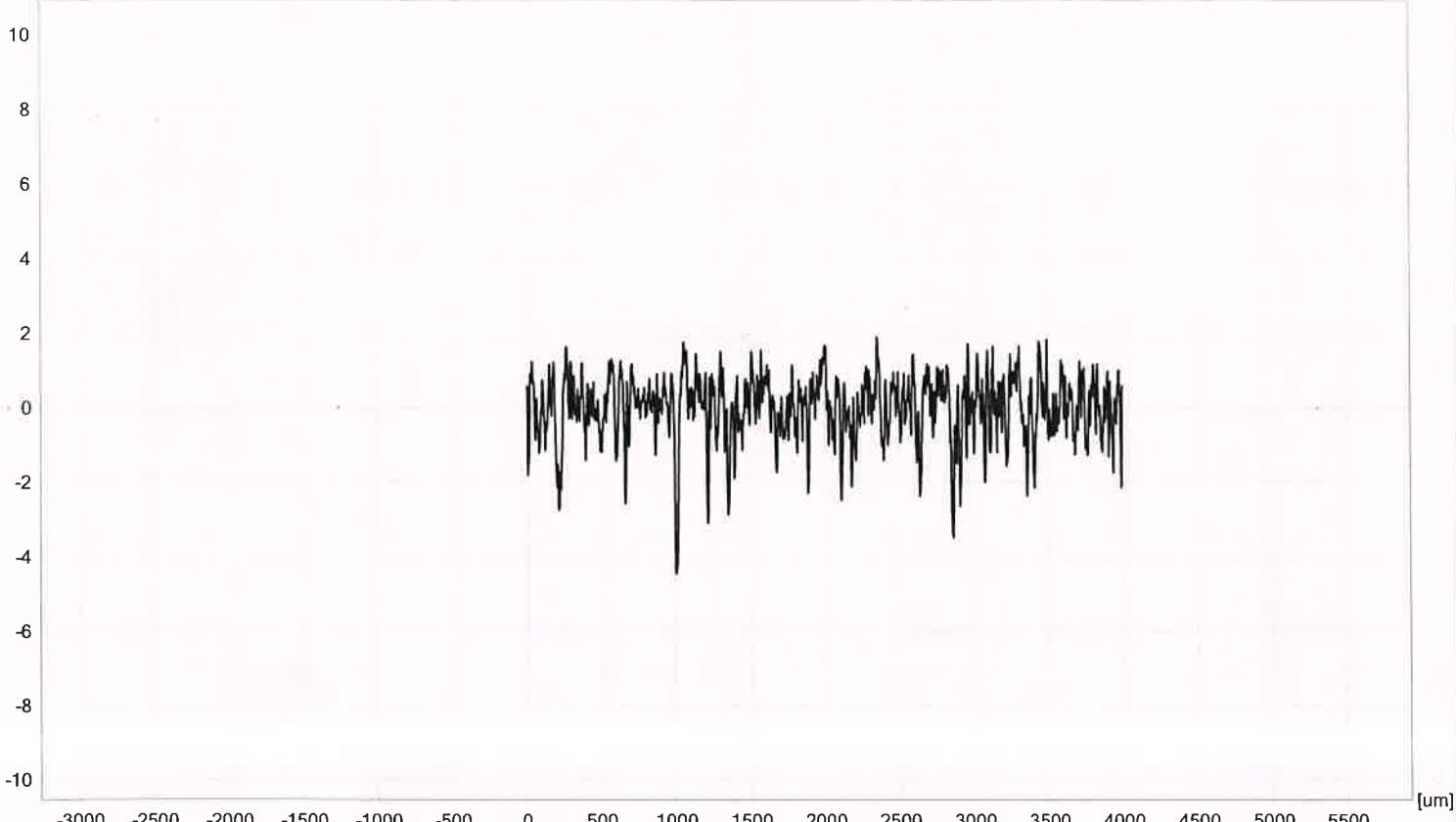
SURFACE ROUGHNESS SV -3100

Property

Title	KONA GPDN LAYOUT INSPECTION BOER ID	Revised By	ADMIN
Subtitle		Revision No.	2
Created By	ADMIN	Date/Time start	06-07-2019 11:08:14
Created Date/Time	06-07-2019 11:08:47	Date/Time end	06-07-2019 11:08:27
Revised Date/Time	06-07-2019 11:08:47		

Profile=R_J01 - Section=[1] X Mag: x20 Z Mag: x5000 Error Zoom: x1 <SurfAnalysis_1>

[um]



Calculation Result

Meas Cont	Meas Value	Meas Cont	Meas Value	Meas Cont	Meas Value
Roughness 2D<SurfAnalysis_1>	Profile=R_J01 - Section=[1]			Rz	4.879um

Evaluation Condition

Profile=R_J01 - Section=[1]	No of Smplg(nle):	5	Ev ltn Length(lm):	4000.0um	Compensation:	Off
Standard	JIS2001	Lc	800.0um	Pre-Travel:	400.0um	
Kind of Profile:	R_J01	Ls	2.5um	Post-Travel:	396.5um	
Smplg Length(le):	800.0um	Kind of Filter:	Gaussian	Smooth Connection	Off	(69)

(69)
2

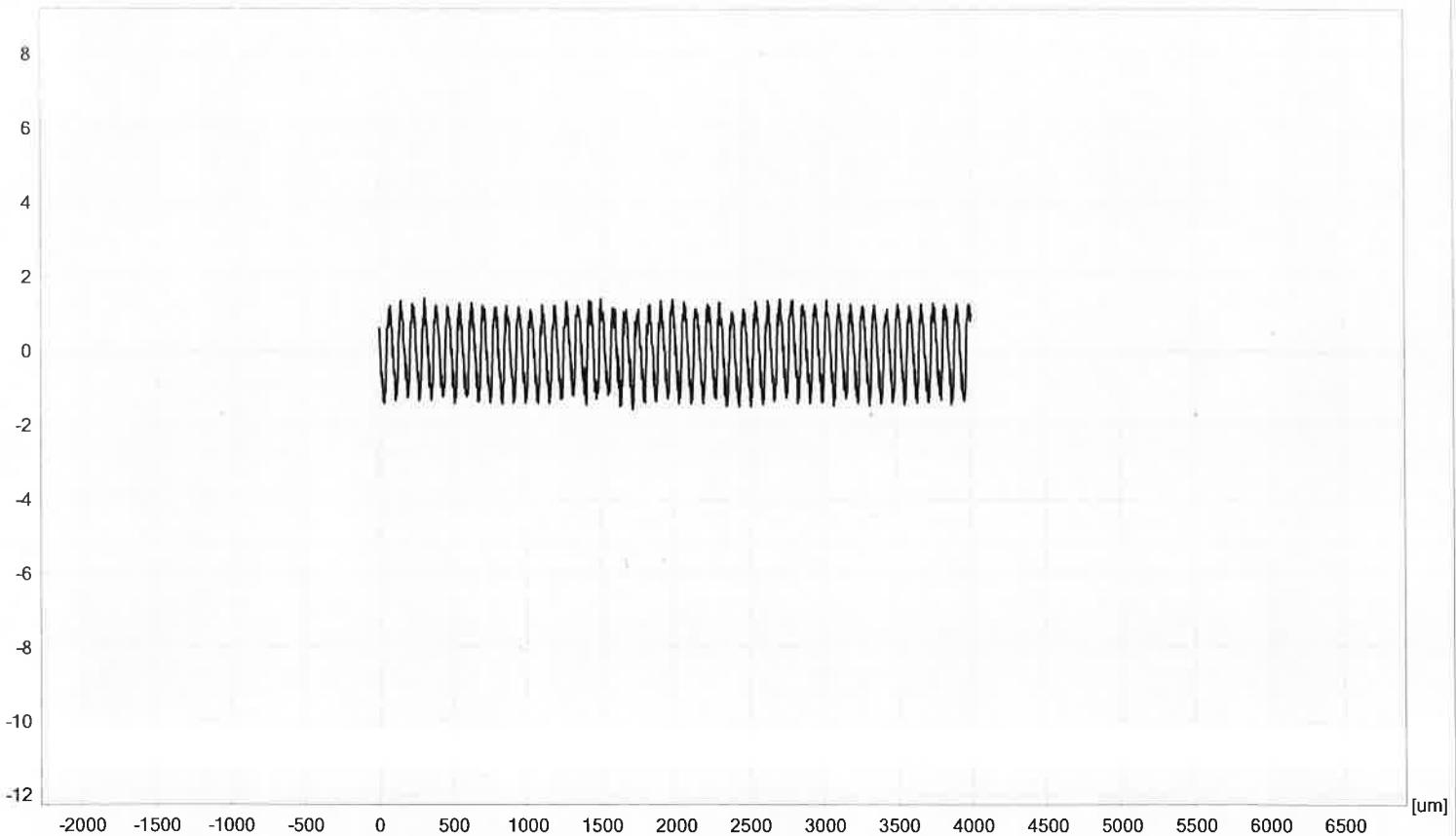
SURFACE ROUGHNESS SV -3100

Property

Title	KONA GPDN BORE ROUGHNESS-2	Revised By	ADMIN
Subtitle		Revision No.	2
Created By	ADMIN	Date/Time start	06-07-2019 19:09:18
Created Date/Time	06-07-2019 19:09:48	Date/Time end	06-07-2019 19:09:31
Revised Date/Time	06-07-2019 19:09:48		

Profile=R_J01 - Section=[1] X Mag: x20 Z Mag: x5000 Error Zoom: x1 <SurfAnalysis_1>

[um]



Calculation Result

Meas Cont	Meas Value	Meas Cont	Meas Value	Meas Cont	Meas Value
Roughness 2D<SurfAnalysis_1>	Profile=R_J01 - Section=[1]	Rz	2.871um		

Evaluation Condition

Profile=R_J01 - Section=[1]	No of Smplg(nle):	5	Evln Length(lm):	4000.0um	Compensation:	Off
Standard	JIS2001	Lc	800.0um	Pre-Travel:	400.0um	
Kind of Profile:	R_J01	Ls	2.5um	Post-Travel:	400.0um	
Smplg Length(le):	800.0um	Kind of Filter:	Gaussian	Smooth Connection	Off	



MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
01	GPDN	FINAL	A
MODEL NAME	Date	PART NUMBER	REMARKS
KONA	06-07-2019		

Pos\	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	Circle	30.5000	-0.0100	-0.0500	mm	30.4867	-0.0133	-----*****-
	Circle	30.5000	-0.0100	-0.0500	mm	30.4821	-0.0179	-----****--
	Circle	30.5000	-0.0100	-0.0500	mm	30.4798	-0.0202	-----***---
	Circle	30.5000	-0.0100	-0.0500	mm	30.4840	-0.0160	-----****--


CHECKED BY



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

DATE 2019/07/06 APPROVAL CONFIRM
11:05

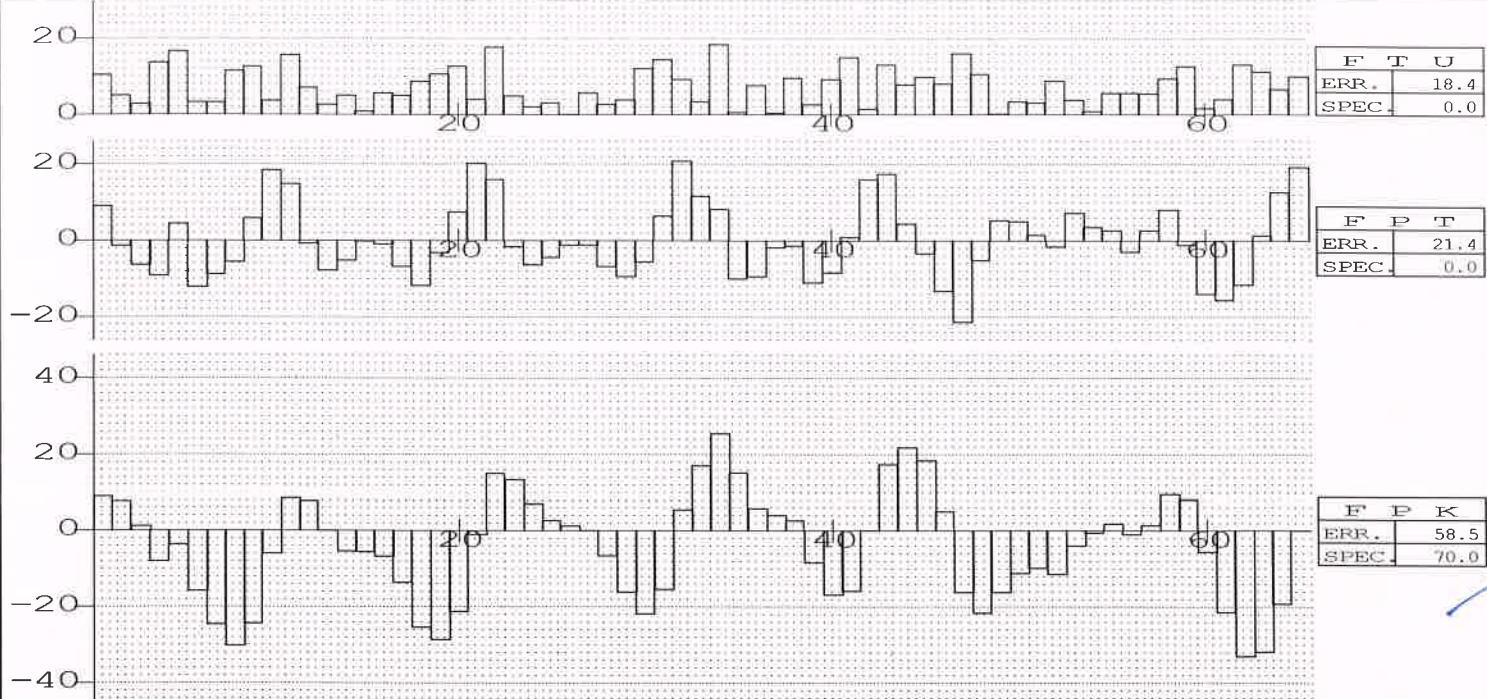
bx QY

PC.NO. 5
2nd Plant) (351058)
MEMO

M, P	M	1.75000	EXT./INT.	EXT.	ORFF	L	B
Z		65	DK	M.A.	P19.069	Pvt	
PA		14.5000		X	0.687	DG	110.127
HA	O	0.00000		B	10.500	DO	113.750

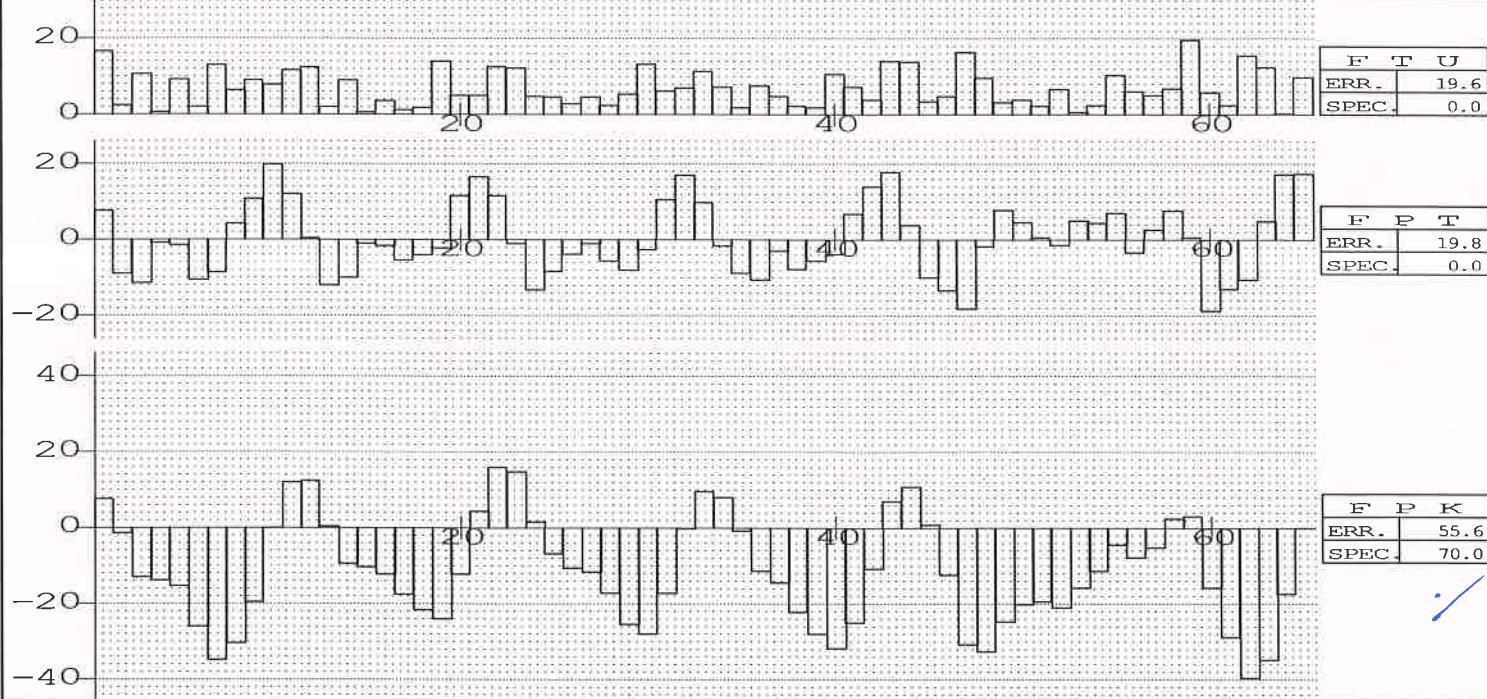
LEFT

500 X



RIGHT

500 X



RUNOUT

500 X

OK

X



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

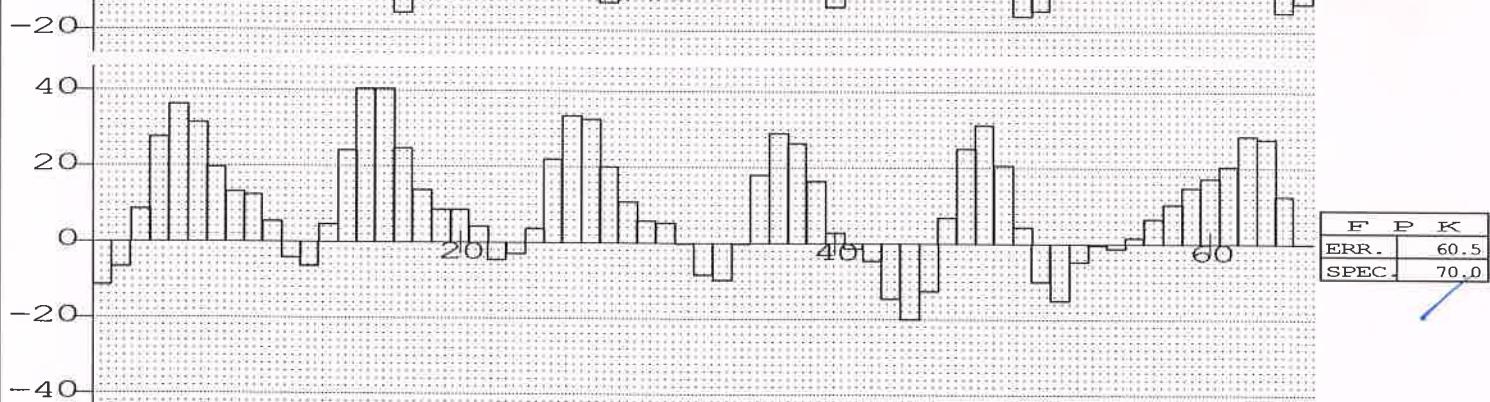
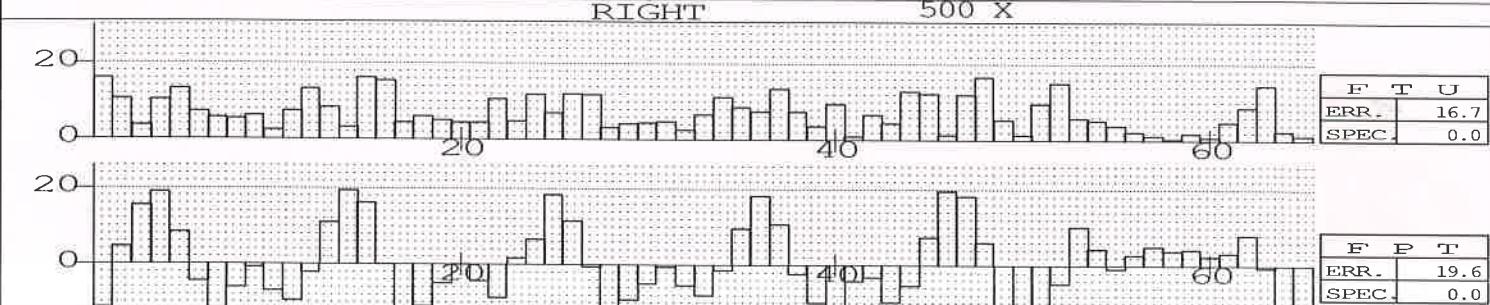
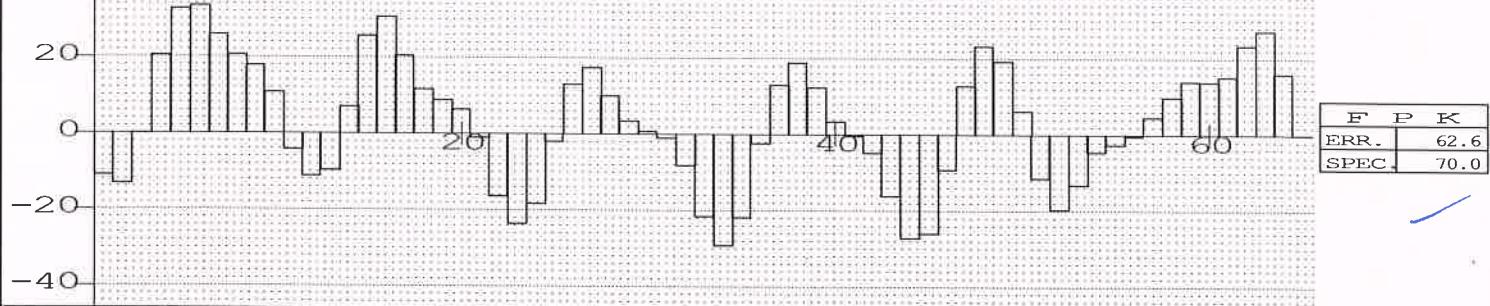
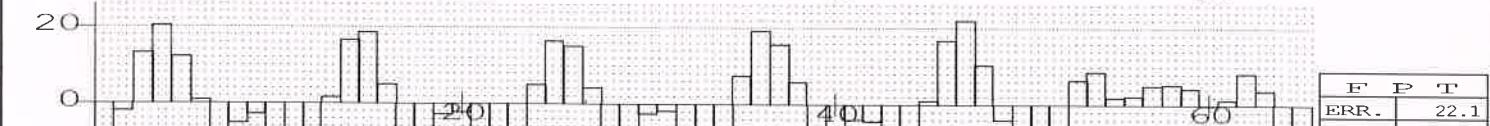
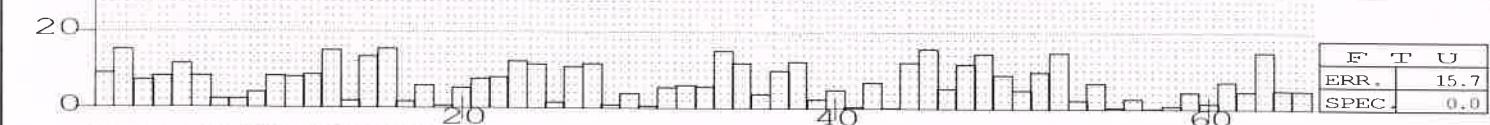
DATE	2019/07/06	APPROVAL CONFIRM	MEASURE
	10:44		

PC. NO.	3
MEMO	2nd Plant) (351058)

M, P	M	1.75000	EXT./INT.	M.A.	EXT.	ORFF	L	B
Z		65	DR	P	India	DF	Ltd	
PA		14.5000	X		0.687	DG	110.127	
HA	O	0.00000	B		10.500	DO	113.750	

LEFT

500 X



RUNOUT

500 X



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

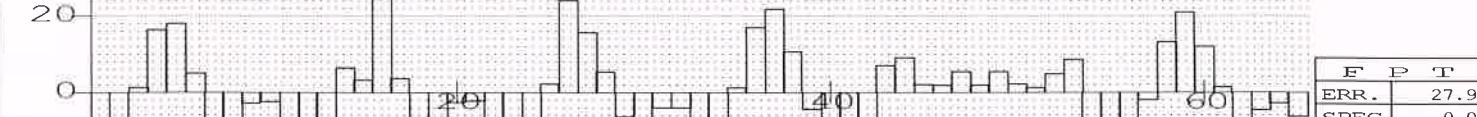
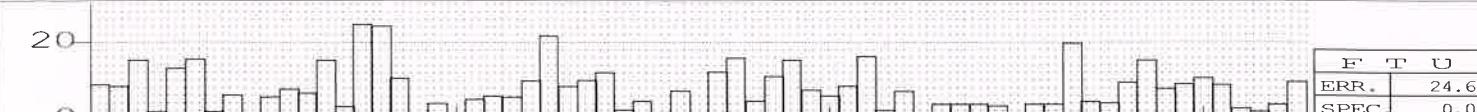
DATE	APPROVAL	CONFIRM	MEASURE
2019/07/06 10:34			<i>5X New</i>

PC. NO. 2
MEMO

M, P	M	1.75000	EXT./INT.	EXT.	ORFF	L	B
Z		65	DK	M.A.-P19.069	DF	1.500	
PA		14.5000	X		DG	110.127	
HA	O	0.00000	B	10.500	DO	113.750	

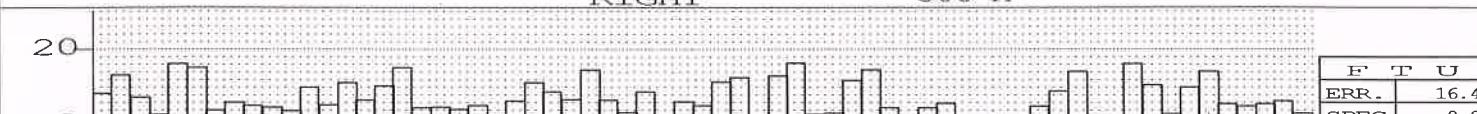
LEFT

500 X



RIGHT

500 X



RUNOUT

500 X

OK
Run



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

DATE 2019/07/06 APPROVAL CONFIRM MEASURE
09:23

PC.NO. 460

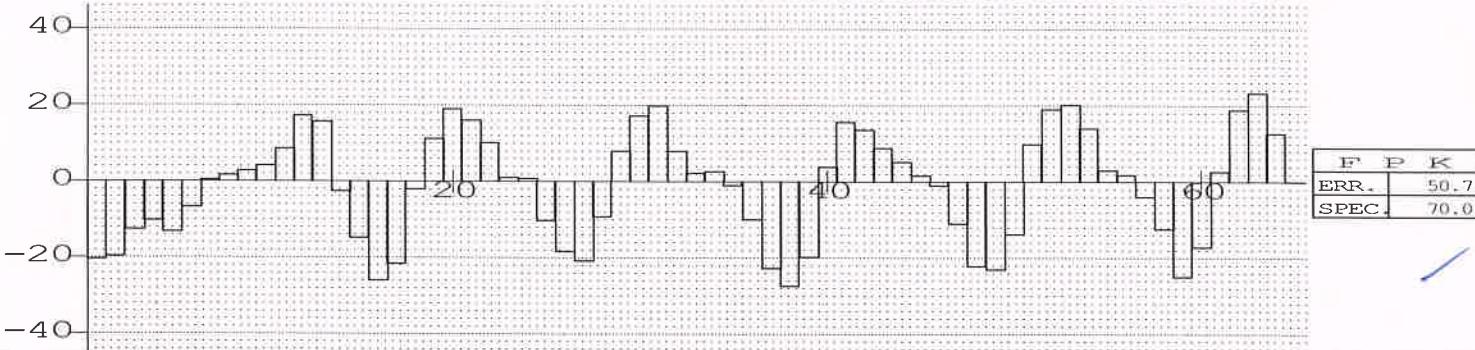
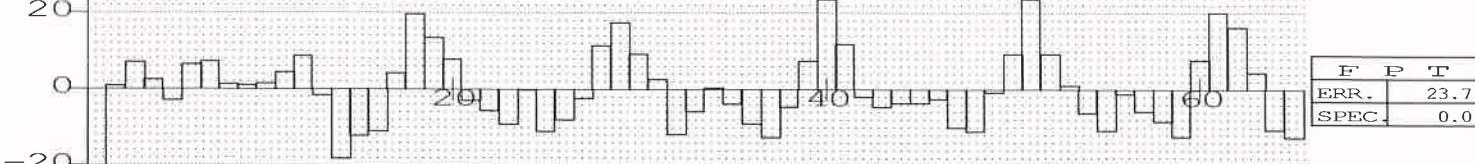
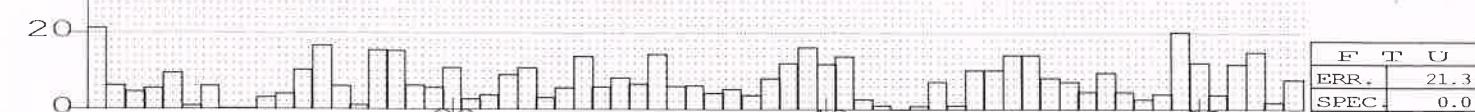
MEMO 2nd Plant) (351056)

bmx Raw

M, P
Z
PA
HAM 1.75000 EXT./INT. EXT. ORFF L B
65 M-A Re India Pvt. Ltd.
PA 14.5000 X 0.687 DG 110.127
HA 0 0.00000 B 10.500 DO 113.750

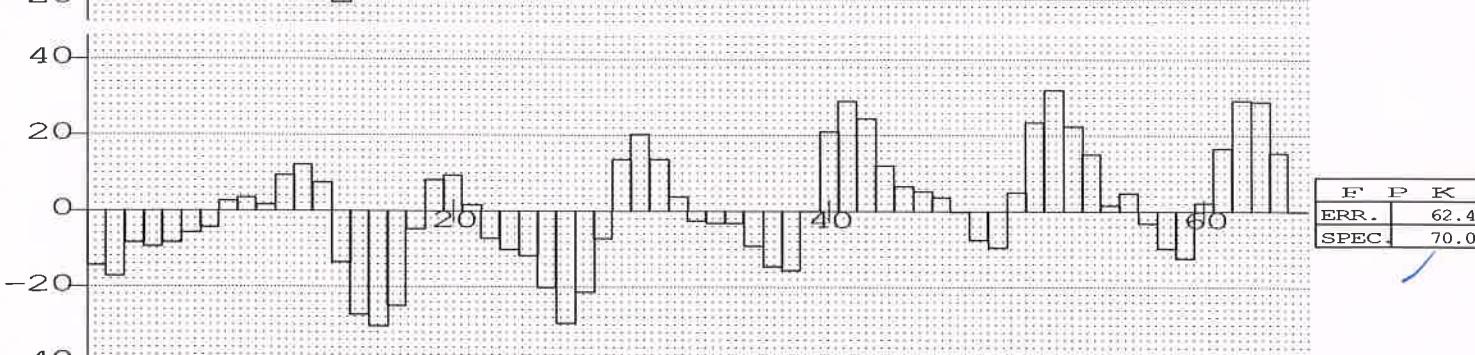
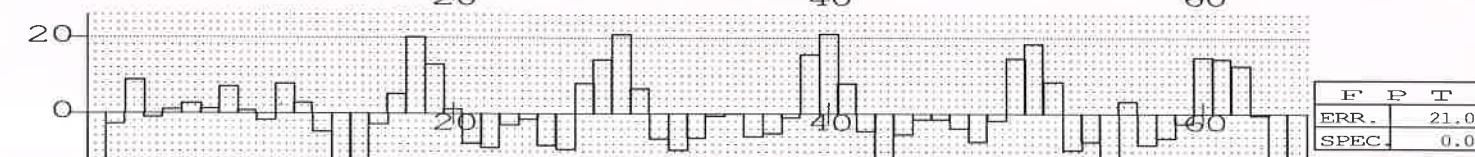
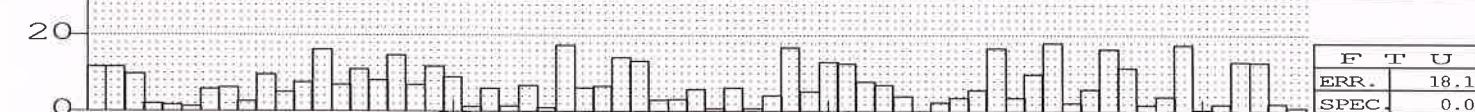
LEFT

500 X



RIGHT

500 X



RUNOUT

500 X

*(a)
Raw*

CONTOUR REPORT

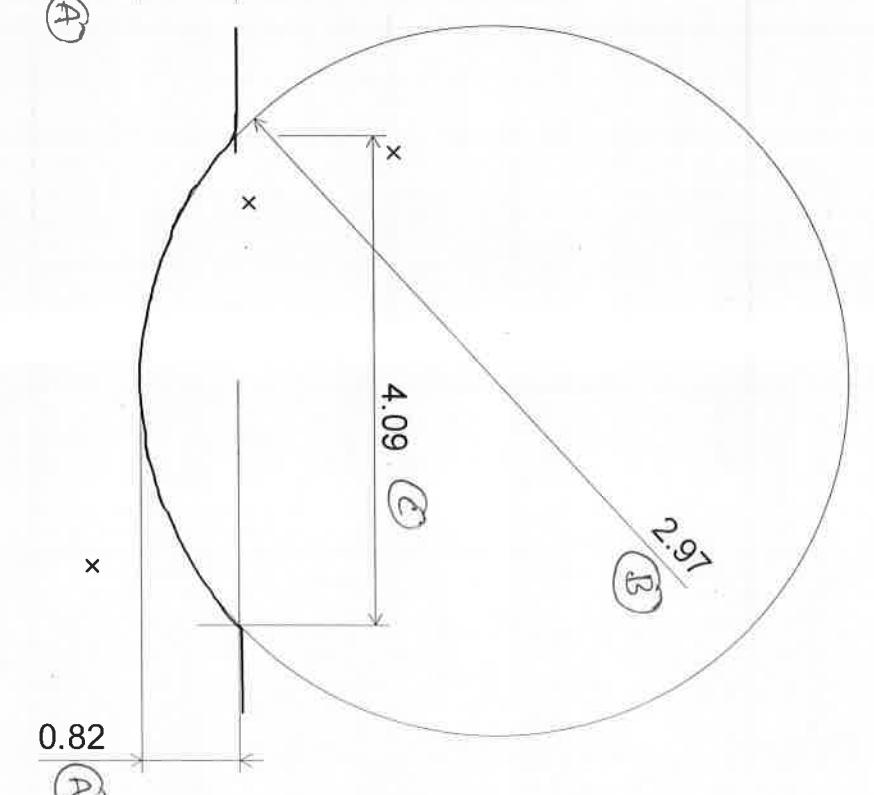
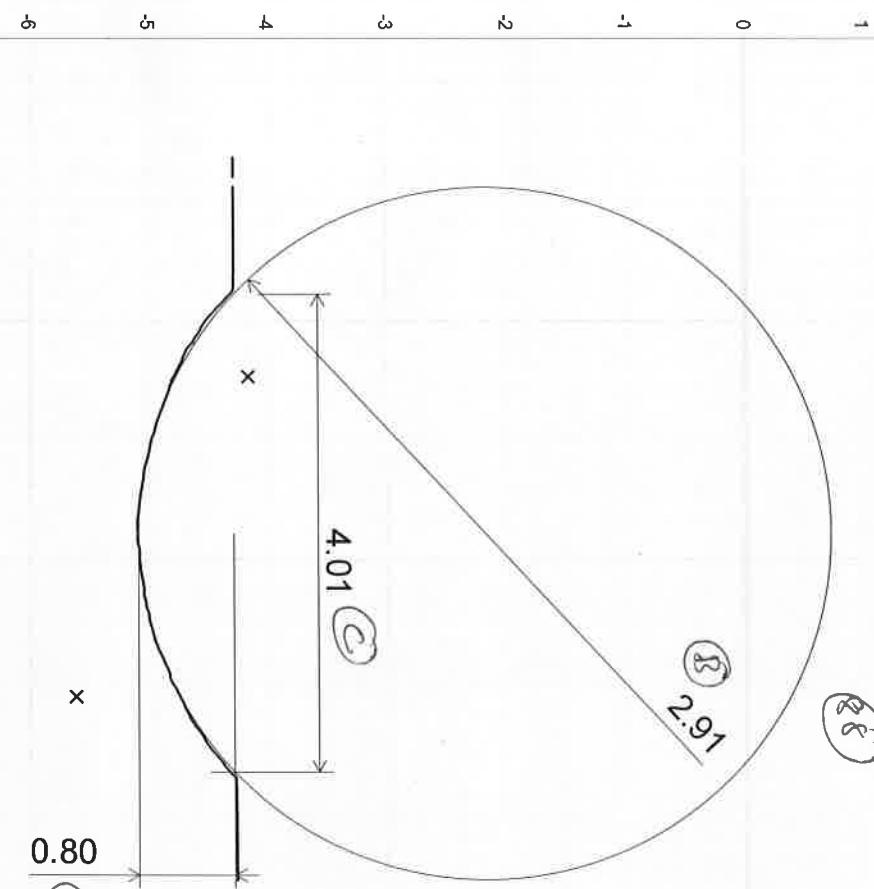
MAP-ID BLR

Property	GPDN KONA FINAL LAYOUT GROOVE	Revised By
Title		Musashi-BQA002
Subtitle		
Created By	Musashi-BQA002	
Created Date/Time	06-07-2019 12:32:15	Date/Time start
Reversed Date	06-07-2019 12:32:15	Date/Time end

Meas Result Geo Data X Mag: x15.7 Z Mag: x15.7 <Contour>
[mm]

GROOVE SIDE

OTHER SIDE ⑧



129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144

[mm]

Parts name	Point	Drawing	Max	Min	Ref number	1	2	3	4	5
234111K0NA-D014H1	ID	23 mm	0.021 mm	0 mm	1	- + 0.010	+ 0.012	+ 0.010	+ 0.013	+ 0.012 ✓
Gear Primary Driven	Run out on clutch side	0.12 mm	0.12 mm	0 mm	2	0.030	0.016	0.014	0.020	0.018 ✓
Run out & flatness on engine side	Teeth centre circle run out	0.1 mm	0.1 mm	0 mm	3	0.060	0.02	0.04	0.03	0.04 ✓
Hardness @ 6,7,8,9,10	Case Depth @ 6,7,8,9,10	0.04 mm			4	0.032	0.038	0.035	0.030	0.030 ✓
Tooth Profile	As per attached drawing	60 HRC	50 HRC	5 HRC	5	57.1 ~ 57.5	Report attached	— Report attached —		
CD of gear and master		120.07 mm	0.034 mm	-0.034 mm	13	-0.020 / +0.01	-0.010 / +0.020	+0.015 / -0.01	-0.020 / +0.02	-0.010 / +0.01 ✓



MUSASHI AUTO PARTS INDIA PVT LIMITED

Format. No: ISF-QA-063
Rev.No: 00
Date: 14-06-2018

Milipore Test Report.

1	Model	KONA	6	Lot Qty	
2	Part name	GEAR PRIMARY DRIVEN	7	Date	05-07-2019
3	Part Name/Part No. & Model	23111-K0NA-D010-H1	8	Shift	A
4	Sample Qty(As per SQM-HMSI)	1 Nos	9	M/c Name / no	810008
5	Part Weight	0.475Kgs		Lot No	05 / G19 /A

SAMPLE

Sl no	Sample No.	Before Weight - mgs	After Weight - mgs	Contamination Status		Status OK/NG	Remark
				Specification - mgs	Actual - mgs		
1	01	60.7	62.7	<3.2	2.00	OK	

COMMENT :

Inspected By

Verified By

Approved By



QUALITY ASSURANCE

PARTS INSPECTION REPORT - METALLURGICAL

MUSASHI

(Induction Hardening)

Customer	HMSI	Report No.	...
Model	KONA	Line no.	3
Part Name	GEAR PRIMARY DRIVEN	Sample Size	1 Nos
Part No.	23111-KONA-D010-H1	Material	S48C
Date	05-07-2019	Shift	B

SAMPLE

S.No.	Parameter	Specification	Scale	Inspection Method	Actual observation	OK/NG
1	Teeth Surface Hardness	50.0 ~ 60.0	HRC	RHT	57.1 / 56.8 / 57.2 / 57.5	OK ✓
2	Bore Surface Hardness	50.0 ~ 60.0	HRC	RHT	57.2 / 57.8 / 56.9 / 57.5	OK ✓
3	Case depth at KK section	0.5 Min	MM	MICROVICKER	0.67 ✓	OK ✓
4	Case depth at X section	0.5 Min	MM	MICROVICKER	2.09 ✓	OK ✓
5	Case depth at Y section	0.5 Min	MM	MICROVICKER	1.67 ✓	OK ✓
6	Case depth at Bore Top	0.5 Min	MM	MICROVICKER	2.92 ✓	OK ✓
7	Case depth at Bore Middle	0.5 Min	MM	MICROVICKER	1.86 ✓	OK ✓
8	Case depth at Bore Bottom	0.5 Min	MM	MICROVICKER	1.95 ✓	OK ✓
9	Case depth at Bore Height both side	2.5 Max	MM	MICROVICKER	NIL ✓	OK ✓

Remarks:- PP-2 PART.

DISPOSITION	INSPECTED BY	VERIFIED BY	APPROVED BY
OK	NG		

Web Site : www.sunflagsteel.com
E-mail address : sunflagsteel.com
Regd. Off. : 107, J-224661
Works : (07184) 265557
CIN : L27100MH1984PLC034003

UNFLAG IRON & STEEL CO. L.D.
(Apt. Office : 33, Mount Road, Aoder, Nagpur - 440011 India
Works : Bhandara Road, Bhandardara - 441 905 (Maharashtra))



SUNFLAG
STEEL

CUSTOMER : BHAGWAN AUTO PRODUCTS - NAGPUR

TEST CERTIFICATE

TC NO. : 0039197 DATE : 09.10.2016
INVOICE NO. : 182714562 | TRUCK NO. : PEDJAH3356
DELIVERY ORDER NO. : 81082465

PROCESS ROUTE
HEP-EAP-LREVD-CCM-RM

CUSTOMER SPECIFICATION NO.	HEAT No.	GRADE	SECTION IN (mm)	GRADE	SIZE (mm)	SUPPLY CONDITION	
						%LT/BIL	%BIL/BIL
M&T - 8-03 (HG) I-13 (NEW) - DAIMLER/29.05.2014	13320	E49C	PERD-50	HARD YELLOW+HALF PINK	210x232	AS ROLLED	5.100
							1.880

CHEMICAL COMPOSITION											
%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Ni	%Mo	%V	%Al	%Pb
SP-MIN 0.45	0.60	-	0.020	0.15	-	-	-	0.039	-	-	-
-MAX 0.51	0.90	0.010	0.040	0.35	0.20	0.30	0.25	-	0.035	-	-
ACTUAL 0.49	0.85	0.0100	0.0210	0.2200	0.1800	0.0160	0.0250	-	0.0260	-	-

MECHANICAL PROPERTIES

As Rolled / H.T. PS/VS (N/PHZ)	UTS (N/PHZ)	TEL (%)	VRB (%)	IMPACT HARDNESS (120V/CHARPY) (BRIN)		DI CE	CE	D1 CE	D2 CE	D3 CE	D4 CE
				IMPACT HARDNESS (120V/CHARPY) (BRIN)	VALUE						
SPEC-MIN 363.00	606.00	18.00	-	-	-	-	-	-	-	-	-
-MAX -	-	-	-	-	229	-	-	-	-	-	-
ACTUAL 603.60	784.40	19.60	-	-	221	-	-	-	-	-	-

METALLURGICAL PROPERTIES

INCLUSION RATING (ASTM-B-45 / IS:14163)						GRAIN SIZE (ASTM E-112)		SURFACE QUALITY		QUENCH HARDNESS		JISG0555		DECARBURIZATION (PPM)		MACRO ETC REDUCTION		RESULTS		RATIO
A	T	A	H	B	T	C	T	H	D	T	D	DA	DB+DC	D	Full/Partial Total	ASTM-B-381				
SPEC-MIN +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-MAX 1.50	2.00	1.00	1.00	1.00	1.00	1.50	1.50	1.50	-	-	-	-	-	-	-	-	-	-		
ACTUAL 1.50	0.50	-	-	10.00	-	11.30	-	7.7.5	-	-	-	-	-	-	-	0.600	0.25	0.26	C2R1	
REMARKS : 100% SAWK/SPECTRAL OK. STEP DOWN TEST: OR U.S.T. (100%) OR MICROSTRUCTURE: FERRITE + PERLITE.																				

For Sunflag Iron & Steel Co. Ltd.

SAI/H2-2 13

(X) / MM

We certify that the material described above conforms to the spec's

JUNFLAG IRON & STEEL CO. LTD.
 Regd. Office : 33, Mount Road, Sadar, Nagpur - 440 001 India
 Works : Bhandara Road, Bhandara - 441 905 (Maharashtra)

TEST CERTIFICATE

CUSTOMER : AMTEK AUTO LIMITED

PROCESS ROUTE
MBF-EAF-LRF-VD-CCM-RM

TC NO. : 0027362
 INVOICE NO. : 180206612
 DELIVERY ORDER NO. : 81070273

DATE : 30.06.2018
 DATE : 30.06.2018
 TRUCK NO. : TNBHS816

CUSTOMER SPECIFICATION NO.	HEAT NO.	GRADE	SECTION IN (mm)	GRADE	CHEMICAL COMPOSITION																						
					%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Ni	%Mo	%V	%Al	%Pb	%Ti	%B	%Sn	%W	%Nb	%Co	%Sb	%Ca	%Nb	O2	N2
SP-MIN	0.47	0.70	-	-	0.015	0.15	0.20	-	-	-	-	-	0.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-MAX	0.51	0.90	0.030	0.035	0.35	0.30	0.30	0.20	-	-	-	-	0.040	-	-	-	-	-	-	-	-	-	-	-	1.0	1.00	2.0
ACTUAL	0.52	0.83	0.0100	0.0200	0.2200	0.2400	0.0210	0.0150	-	-	-	-	0.0240	-	-	-	-	-	-	-	-	-	-	-	0.52	0.64	0.70

MECHANICAL PROPERTIES												TOMINTY VALUE													
AS Rolled / H.R.T.	UTS (kg/mm²)	Yield (kg/mm²)	EL (%)	IMPACT (KJ/M²) (30°C)	HARDNESS (HRc)	DIA. (mm)	CE	IMPACT VALUE (KJ/M²)	HARDNESS VALUE	CE	IMPACT VALUE (KJ/M²)	HARDNESS VALUE	DIA. (mm)	CE	IMPACT VALUE (KJ/M²)	HARDNESS VALUE	DIA. (mm)	CE	IMPACT VALUE (KJ/M²)	HARDNESS VALUE	DIA. (mm)	CE	IMPACT VALUE (KJ/M²)	HARDNESS VALUE	DIA. (mm)
SPEC-MIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-MAX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ACTUAL	-	-	-	-	-	-	-	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

METALLURGICAL PROPERTIES

IN-CUSTION RATING (ASTM-B-45 / IS:4163)												JISG0555											
A T	A H	B T	B H	C T	C H	D T	D H	E- 1112	SIZE (ASTM GRAIN	SURFACE QUALITY	QUENCH HARDNESS (HRc)	RESULTS	DECARBURIZATION (MM)	MACRO ETCH	REDUCTION	RESULTS	REDUCTION						
SPCC-MIN	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	Full	Partial	Total	ASTM-B-381	-	-	-	-
-MAX	2.00	1.50	2.00	2.00	2.00	1.00	2.00	2.00	5	-	-	-	-	-	-	0.50	0.50	0.50	C2R252	-	-	-	-
ACTUAL	1.00	-	0.50	-	0.00	-	1.00	-	7/7.5	-	-	-	-	-	-	0.000	0.25	0.15	C2R181	-	-	-	-

REMARKS : 100% SPARK/SPECTROM. OK. D.S.T. (100%) OK. M.P.T. (100%) OK. MICROSTRUCTURE: FERRITE + PEARLITE.

Verified

R. Kumar
 Date : 06/07/2018

For Sunflag Iron & Steel Co. Ltd.

SUNFLAG
 STEEL
 FA1604

SGAL

CHEMICAL ANALYSIS REPORT
SRI GURU ANALYTICAL LABORATORY



NABL Accredited Laboratory
Certificate No. TC-7359

4 of 4

Certificate No	TC735919000000376F	
Report No & Date	1174/6335	Date: 28/03/2019
Name & Address of client	M/s. AMTEK AUTO LTD., Plot No. 84-B, Sipcot, Phase-1, HOSUR – 635 126	
Customer Ref.	DC NO. 16056	Dated: 28/03/2019
Sample Received on	28/03/2019	
Procedure adopted	IS:8811:1998/ as per WP/SGAL/01	

RESULT

PARTY'S CODE	DIA 50 mm
	Heat No: 10902
C%	0.475 ✓
Mn%	0.822 ✓
Si%	0.234 ✓
P%	0.014 ✓
S%	0.028 ✓
Cr%	0.246 ✓
Ni%	0.009 ✓
Mo%	0.020 ✓
Al%	0.024 ✓

TC verified
OK
M.G

- Traceability: Spectrometer is calibrated using CRMs traceable to international Standard
- Sampling is not carried out by SGAL
- Collection of tested samples and reporting of discrepancies if any, shall be made within 30 days from the date of report.
- Liability of the Laboratory is limited to the invoiced amount.
- This report refers only to the samples supplied and may not be reproduced except in full without the written permission from QM, SGAL.

10, KEB Road, Newpet, Anekal, Bengaluru-562 106.

Ph : 080 27859221 | Mobile : 9341118032

E-mail : qualitygurulab@gmail.com | Visit us : www qlabguru.com

Leena
28.3
MAHADEVE GOWDA D.P.
AUTHORISED SIGNATORY



AMTEK AUTO LIMITED, HOSUR

STEEL CLEARANCE REPORT

Material : S48C

Heat no : 10902

Section : Ø 50 mm

Heat code : A43

Date : 31/10/18

Bar required Size	Min	Max	1	2	3	4	5	Ok / Not ok
Ø 50mm	50.00	50.80	50.33	50.24	50.42	50.38	50.59	50.10
								50.18
	50.17	50.36	50.61	50.63	50.13	50.84	50.21	50.22
								50.31
								50.16

Remarks : Nil

VISUAL INSPECTION REPORT

Defect Matrix	Oil bars in no's	Rust bars in no's	Short length bars in no's	Bend bars in no's	Gas cut bars in no's	Surface Quality(seam laps, segregation, shrink hole, scales, rust, blister, pitting, surface flaws, scratch, fold)	Ok / Not ok
Observation	-	Parallel Bend is acceptable	-	-	-	-	OK

Remarks : Nil

Inspected by: JC



AMTEK AUTO LIMITED

Plot No. 84, SIPCOT Phase - I, Hosur - 635 126

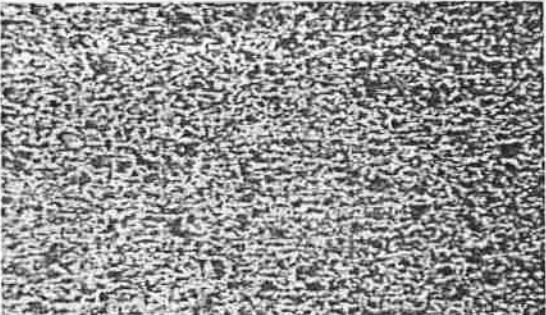
AMTEK

METALLURGICAL LAB

METALLURGICAL INSPECTION REPORTTo
QA Dept.Report No. : 04 - 2019 / 007
Date : 04.04.2019

Part No / Name : 23111 - KONA - D010 - H1 / GEAR PRIMARY DRIVEN
 Material Grade : S48C
 Heat Treatment Process : Normalizing
 Heat Treatment Batch No. / Date : N 312 / 04.04.2019
 Raw Material Code No. : A43
 Die Code No. : NIL

With reference to the above, the sample given were analyzed and the Observation are as follows.

Parameters	Specification	Observation			
Surface Hardness	85 ~ 98 HRB	Sample No.	Hardness Observation - HRB		
		1	89, 88, 91		
		2	90, 89, 90		
		3	89, 90, 88		
		4	88, 91, 88		
		5	91, 89, 88		
Core Hardness	85 ~ 98 HRB	89, 88, 88 HRB			
Microstructure	Uniform Distribution Of Ferrite & Pearlite	 Magnification - 100X Uniform Distribution Of Ferrite & Pearlite			
Result	Accepted				
Remarks	NIL				

Checked by		Approved by	
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AMTEK AUTO LIMITED

Plot No. 84, SIPCOT Phase - 1, Hosur - 635 126

AMTEK

METALLURGICAL LAB

RAWMATERIAL ANALYSIS REPORTTo
QA Dept.Report No. : 03 - 2019 / 019
Date : 28.03.2019

Heat Code A 43

Consignment Details:-

Material Grade / Size	S48C	Dia 50 mm
STR Reference No.	STR No. - 001 / Rev. No. - 001	
Supplier Name / Heat No.	SUNFLAG	10902
Quantity / Weight	NIL	28.590 MT
GRN Number / Date	241	30.10.2018
Chellan Number / Date	0906	28.10.2018

With reference to the above, the sample given were analyzed and the Observation are as follows,

Chemical Composition :-

Elements	Specification (%)	Mill TC Value (%)	Internal Observation (%)
Carbon	0.47 ~ 0.51	0.520	0.475 ✓
Silicon	0.15 ~ 0.35	0.220	0.234 ✓
Manganese	0.70 ~ 0.90	0.830	0.822 ✓
Phosphorous	0.030 max.	0.010	0.014 ✓
Sulphur	0.015 ~ 0.035	0.020	0.028 ✓
Chromium	0.20 ~ 0.30	0.240	0.246 ✓
Aluminium	0.020 ~ 0.040	0.024	0.024 ✓

Non-metallic Inclusion :-

Type	A		B		C		D					
	Thin	Thick	Thin	Thick	Thin	Thick	Thin	Thick				
Specification	2.0	1.5	2.0	1.0	2.0	1.0	2.0	1.5				
Observation	1.0	0.0	0.5	0.0	0.0	0.0	1.0	0.0				
Description	Specification				Observation							
Hardness	180 ~ 240 BHN				219							
Grain Size	5 ~ 8				7.0							
Microstructure	Ferrite, Pearlite				Ferrite, Pearlite							
Decarburization	1 % of Dia				0.10							
Macrostructure	Internal soundness ASTM, E-381				Better than C2R2S2							
Result	Accepted											
Remarks	C% value as per STR tolerance limit is ±0.02											

Checked by

Approved by



Parts - Final Inspection Report

Main aim of measurement :- Final parts Measurement etc.

Part No	23111-KONA-D010-H1	DCN	KONA-E-218	---	---	Approval
Part Name	GEAR PRIMARY DRIVEN	HT LOT NO		---	---	
Customer	HMSI	QTY	5Nos	DATE	21 06 2019	
Purpose of measurement	KONA PP2- LAYOUT INSPECTION REPORT					Incharge

SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Measurement Unit	Disposition (OK/NG)
				1	2	3	4	5		
1	WEIGHT	WEIGHT SCALE	0.475 kg	0.467	0.467	0.467	0.467	0.467	mm/microns	OK ✓
2	MATERIAL	MTC	S48C(NOT F)		REPORT ATTACHED					OK ✓
3	TOOTH SPECIFICATION	GEAR TESTER	AS PER DRAWING		REPORT ATTACHED					OK ✓
4	TOTAL CUMULATIVE PITCH ERROR	GEAR TESTER	0.07		REPORT ATTACHED					OK ✓
5	NUMBER OF TEETH	COUNT	65	65	65	65	65	65	mm/microns	OK ✓
6	FACE WIDTH	DVC	(10.5)		SAME AS SL NO 42					OK ✓
7	TIP DIAMETER	CMM	(119.2)		SAME AS SL NO 83					OK ✓
8	ROOT DIAMETER	CMM	(110.4)	110.127	REFERENCE DIMENSION					OK ✓
9	BASE TANGENT LENGTH	SPAN MIC	(35.810-0.012 -0.052)	-0.046/-0.110	REFERENCE DIMENSION					OK ✓
10	DIMENSION OVER BALLS	OBD MIC (Ø 3.5)	121.818(-0.033/-0.142)	-0.172/-0.194	REFERENCE DIMENSION					OK ✓
11	HEAT TREATMENT	MET LAB	AS PER DRAWING		REPORT ATTACHED					OK ✓
12	DIMENSION (INCLUDING DRAFT)	CMM	91+0.6 +0.4		+0.498					OK ✓
13	ROUGHNESS (2plcs)	ROUGHNESS TESTER	Rz50		9.525	5.746				OK ✓
14	DIMENSION (INCLUDING DRAFT)	CMM	48-0.4/-0.6		-0.559					OK ✓
15	ROUGHNESS	ROUGHNESS TESTER	Rz100		8.171					OK ✓
16	HOLE DIA (4plcs)	CMM	9.3+0.2		+0.103					OK ✓
17	PITCH DIA	CMM	P.D.83±0.15		-0.13					OK ✓
18	RADIUS	CONTOUR TESTER	R		10.959					OK ✓
19	RADIUS	CONTOUR TESTER	R		10.980					OK ✓
20	ROUGHNESS	ROUGHNESS TESTER	Rz50		9.419					OK ✓

Consideration / Remarks

Decision

Approved

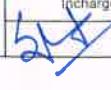
Rejected

Retention Period

Date

Parts - Final Inspection Report

Main aim of measurement - Final parts Measurement etc.

Part No	23111-KONA-D010-H1	DCN	K0NA-E-218	---	---	Approval
Part Name	GEAR PRIMARY DRIVEN	HT LOT NO		---	---	
Customer	HMSI	QTY	5No's	DATE	21.06.2019	
Purpose of measurement	KONA PP2- LAYOUT INSPECTION REPORT					Incharge 

SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Measurement Unit	Disposition (OK/NG)
				1	2	3	4	5		
21	DIMENSION(5 PLACS)	DVC	29±0.2	-0.14	-0.16	-0.12	-0.08	-0.1	mm/microns	OK ✓
22	RADIUS	CONTOUR TESTER	2 -0.4		-0.3					OK ✓
23	RADIUS	CONTOUR TESTER	2 -0.4		-0.23					OK ✓
24	RADIUS (2PLCS)	CONTOUR TESTER	2-0.4		-0.3	-0.29				OK ✓
25	RADIUS (2 PLCS)	CONTOUR TESTER	2-0.4		-0.39	-0.24				OK ✓
26	DIMENSION	CONTOUR TESTER	1.5±0.2		+0.07					OK ✓
27	DIMENSION	CMM	41±0.2		+0.135					OK ✓
28	ANGLE	CMM	60°±20'		-0°05'					OK ✓
29	ANGLE	CMM	60°±20'		-0°05'					OK ✓
30	ROUGHNESS	ROUGHNESS TESTER	Rz50		21.954Rz					OK ✓
31	DIMENSION	CMM	18.2±0.1		-0.071					OK ✓
32	DIMENSION	CMM	18.2±0.1		+0.043					OK ✓
33	DIMENSION	CMM	23-0.3		-0.151					OK ✓
34	DETAIL AREA E									
A	DIMENSION	CONTOUR TESTER	0.5 MAX		0.11 ~ 0.12					OK ✓
B	DIMENSION	CONTOUR TESTER	0.5 MAX		0.12 ~ 0.14					OK ✓
C	DIMENSION	CONTOUR TESTER	0.5 MAX		0.14 ~ 0.15					OK ✓
D	DIMENSION	CONTOUR TESTER	0.5 MAX		0.050 ~ 0.020					OK ✓
E	APPERANCE	VISUAL	CHAMFERED or MAY BE REMOVED BURRS BY HAND	OK	OK	OK	OK	OK	mm/microns	OK ✓
F	APPERANCE	VISUAL	CHAMFERED or MAY BE REMOVED BURRS BY HAND	OK	OK	OK	OK	OK		OK ✓

Consideration / Remarks

Decision

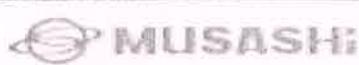
Approved

Rejected

Retention Period

Date

 MUSASHI		Parts - Final Inspection Report										
Main aim of measurement :- Final parts Measurement etc....												
Part No	23111-K0NA-D010-H1		DCN	KONA-E-218	---	---	Approval					
Part Name	GEAR PRIMARY DRIVEN		HT LOT NO		---	---						
Customer	HMSI		QTY	5No's	DATE	21.06.2019						
Purpose of measurement	K0NA PP2- LAYOUT INSPECTION REPORT						Incharge 					
SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Measurement Unit mm/microns	Disposition (OK/NG)		
				1	2	3	4	5				
35	CHAMFER	CONTOUR TESTER	2-2.5		2.45 ✓				OK ✓			
36	RADIUS	CONTOUR TESTER	R		3.69				OK ✓			
37	DIMENSION	CONTOUR TESTER	4±0.2		+0.04				OK ✓			
38	CHAMFER	CONTOUR TESTER	C0.1~0.3		0.21				OK ✓			
39	ROUGHNESS	ROUGHNESS TESTER	Rz12.5		9.383Rz				OK ✓			
40	DIMENSION	HEIGHT GAUGE	18-0.1	-0.02	-0.03	-0.02	-0.02	-0.03	OK ✓			
41	ROUGHNESS	ROUGHNESS TESTER	Rz12.5		10.405Rz				OK ✓			
42	DIMENSION	HEIGHT GAUGE	10.5-0.3	-0.09	-0.01	-0.07	-0.02	-0.09	OK ✓			
43	DIMENSION	HEIGHT GAUGE	0.85±0.8	-0.07	+0.02	-0.06	-0.01	+0.01	OK ✓			
44	DIMENSION	HEIGHT GAUGE	4±0.1	+0.09	+0.07	+0.02	+0.06	+0.04	OK ✓			
45	PCD	PCD TESTER	0.04H	0.030	0.030	0.030	0.028	0.032	OK ✓			
46	ROUGHNESS	ROUGHNESS TESTER	6.3Rz		3.543Rz				OK ✓			
47	A1.5-0.5 GRINDING UNDERCUT											
A	UNDER CUT LENGTH	CONTOUR TESTER	1.5±0.3		+0.24				OK ✓			
B	RADIUS	CONTOUR TESTER	0.5-0.2		-0.1				OK ✓			
C	RADIUS	CONTOUR TESTER	0.5-0.2		-0.15				OK ✓			
D	UNDERCUT DEPTH	CONTOUR TESTER	0.1±0.15		+0.08				OK ✓			
E	ANGLE	CONTOUR TESTER	30°±1°30'		+0°45'				OK ✓			
48	DIMENSION	HEIGHT GAUGE	1.2±0.1	+0.04	+0.05	+0.03	+0.01	+0.04	OK ✓			
Consideration / Remarks												
<table border="1" style="margin-left: auto; margin-right: 0;"> <tr> <td>Decision</td> </tr> <tr> <td>Approved</td> </tr> <tr> <td>Rejected</td> </tr> </table>										Decision	Approved	Rejected
Decision												
Approved												
Rejected												
Retention Period							Date					



Parts - Final Inspection Report

Main aim of measurement - Final parts Measurement etc....

Part No.	23111-KONA-D010-H1	DCN	KONA-E-218	---	---	Approval
Part Name	GEAR PRIMARY DRIVEN	HT LOT NO		---	---	
Customer	HMSI	QTY	5No's	DATE	21.06.2019	
Purpose of measurement	KONA PP2- LAYOUT INSPECTION REPORT					Incharge

SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Measurement Unit	Disposition (OK/NG)
				1	2	3	4	5		
49	ROUGHNESS	ROUGHNESS TESTER	Rz100		OK					OK ✓
50	CHAMFER	CONTOUR TESTER	C0.1~0.3		0.22 ~0.22					OK ✓
51	DIAMETER	DVC	Ø46MIN	47.10	47.13	47.12	47.13	47.12	mm/microns	OK ✓
52	ROUGHNESS	ROUGHNESS TESTER	Rz6.3		2.902Rz					OK ✓
53	CHAMFER	CONTOUR TESTER	0.5+0.2	+0.030 ~+0.010						OK ✓
54	ROUGHNESS	ROUGHNESS TESTER	Rz100		OK					OK ✓
55	DIAMETER	APG	Ø30.5-0.01/-0.03	-0.022	-0.026	-0.028	-0.024	-0.028	mm/microns	OK ✓
56	C OR R (BOTH SIDES)	CONTOUR TESTER	C or (R1-0.2)		-0.13	-0.12				OK ✓
57	ROUGHNESS	ROUGHNESS TESTER	Rz12.5		6.948Rz					OK ✓
58	RADIUS	CONTOUR TESTER	1-0.2		-0.13					OK ✓
59	RADIUS	CONTOUR TESTER	1-0.2		-0.18					OK ✓
60	ROUGHNESS(BOTH SIDE)	ROUGHNESS TESTER	Rz12.5		5.636Rz					OK ✓
61	RUNOUT	BENCH CENTER	0.17 H	0.04	0.03	0.03	0.04	0.03	mm/microns	OK ✓
62	FLATNESS	CMM	0.1		0.01					OK ✓
63	DIMENSION	HEIGHT GAUGE	8.1±0.1	-0.02	-0.03	+0.020	+0.01	+0.050	mm/microns	OK ✓
64	ROUN OUT	BENCH CENTER	0.12 H	0.028	0.02	0.024	0.026	0.022	mm/microns	OK ✓
65	ROUGHNESS(2pics)	ROUGHNESS TESTER	Rz100		OK					OK ✓
66	CHAMFER	CONTOUR TESTER	C0.5+0.2	+0.00 ~ + 0.030						OK ✓
67	CHAMFER	CONTOUR TESTER	C0.5+0.2	+0.06 ~ + 0.010						OK ✓
68	RADIUS	CONTOUR TESTER	1-0.2		-0.07					OK ✓

Consideration / Remarks

Decision

Approved

Rejected

Retention Period

Date

 MUSASHI		Parts - Final Inspection Report							
Main aim of measurement :- Final parts Measurement etc....									
Part No	23111-K0NA-D010-H1		DCN	KONA-E-218	---	---	Approval		
Part Name	GEAR PRIMARY DRIVEN		HT LOT NO		---	---			
Customer	HMSI		QTY	5No's	DATE	21.06.2019			
Purpose of measurement	KONA PP2- LAYOUT INSPECTION REPORT						Incharge 		
SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Disposition (OK/NG)
				1	2	3	4	5	
69	RADIUS	CONTOUR TESTER	1-0.2		-0.08				OK ✓
70	C or R	CONTOUR TESTER	0.5 +0.2	+0.050 ~ +0.040					OK ✓
71	C or R	CONTOUR TESTER	0.5 +0.2	+0.080 ~ +0.050					OK ✓
72	RADIUS	CONTOUR TESTER	0.5-0.2		-0.140				OK ✓
73	RADIUS	CONTOUR TESTER	0.5-0.2		-0.060				OK ✓
74	CHAMFER	CONTOUR TESTER	C0.5+0.2		+0.130 ~ +0.11				OK ✓
75	CHAMFER	CONTOUR TESTER	C0.5+0.2		+0.080 ~ +0.070				OK ✓
76	BORE ROUGHNESS	ROUGHNESS TESTER	Rz6.3		2.848Rz				OK ✓
77	ROUGHNESS (3 PLCS)	ROUGHNESS TESTER	Rz100		OK				OK ✓
78	BORE DIAMETER	BORE GAUGE	Ø23H7+0.021	+0.004	+0.007	+0.008	+0.012	+0.008	OK ✓
79	DIAMETER	DVC	Ø29.5±0.1	-0.06	-0.05	-0.08	-0.08	-0.05	OK ✓
80	DIAMETER	CONTOUR TESTER	Ø44+0.3		+0.13				OK ✓
81	DIAMETER	DVC	Ø95-0.3	-0.23	-0.24	-0.24	-0.24	-0.23	OK ✓
82	DIAMETER	DVC	Ø103+0.5	+0.050	+0.04	+0.04	+0.05	+0.05	OK ✓
83	DIAMETER	DVC	Ø119.2-0.2	-0.16	-0.14	-0.12	-0.16	-0.15	OK ✓
84	DIMENSION	HEIGHT GAUGE	1.2±0.1	-0.04	+0.010	-0.020	-0.01	-0.04	OK ✓
85	ROUGHNESS	ROUGHNESS TESTER	Rz100		OK				OK ✓
86	DIMENSION	HEIGHT GAUGE	8.8-0.3	-0.17	-0.16	-0.07	-0.17	-0.18	OK ✓
87	DISTANCE B/W AXES	GRT GAUGE	120.07±0.034	-0.020/+0.030	-0.020/+0.015	-0.015/+0.020	-0.030/+0.020	-0.030/+0.020	OK ✓
Consideration / Remarks								Decision Approved	
								Rejected	
								Date	



Parts - Final Inspection Report

Main aim of measurement :- Final parts Measurement etc....

Part No	23111-KONA-D010-H1	DCN	KONA-E-218	---	---	Approval
Part Name	GEAR PRIMARY DRIVEN	HT LOT NO		---	---	
Customer	HMSI	QTY	5No's	DATE	21 06 2019	
Purpose of measurement	KONA PP2- LAYOUT INSPECTION REPORT					Incharge

SI No.	Inspection Parameter	Inspection Method	Specification	Actual Observation					Measurement Unit	mm/microns	Disposition (OK/NG)
				1	2	3	4	5			
88	VIEW Z (4 PLCS) BOTH SIDES ϕ 29.5										
A	GROOVE DEPTH	CONTOUR TESTER	1 +1 -0.2	-0.1	-0.1	-0.11	-0.11			OK ✓	
B	RADIUS	CONTOUR TESTER	R	2.38	2.42	2.37	2.47			OK ✓	
C	GROOVE WIDTH	CONTOUR TESTER	4 +2.5	+0.47	+0.48	+0.46	+0.44			OK ✓	
VIEW Z (4 PLCS) BOTH SIDES ϕ 30.5											
A	GROOVE DEPTH	CONTOUR TESTER	1 +1 -0.2	-0.050	-0.06	-0.07	-0.06			OK ✓	
B	RADIUS	CONTOUR TESTER	R	2.54	2.71	2.67	2.71			OK ✓	
C	GROOVE WIDTH	CONTOUR TESTER	4 +2.5	+0.65	+0.66	+0.62	+0.68			OK ✓	
DETAILS OF CASE DEPTH											
89	CASE DEPTH	MAT LAB	0.5MIN		REPORT ATTACHED					OK ✓	
90	CASE DEPTH	MAT LAB	2.5 MAX		REPORT ATTACHED					OK ✓	
91	CASE DEPTH	MAT LAB	2.5 MAX		REPORT ATTACHED					OK ✓	
92	CASE DEPTH	MAT LAB	0.5MIN		REPORT ATTACHED					OK ✓	
93	CASE DEPTH	MAT LAB	0.5MIN		REPORT ATTACHED					OK ✓	
94	ANGLE B/W GEAR TEETH & DAMPER HOLES	VISUAL	OPTIONAL	OK	OK	OK	OK	OK		OK ✓	
95	TOLERANCE OF MARKED SHALL BE REFERENCE DIMENSION IT IS CONTROLLED BY DISTANCE B/W AXIS OF THIS GEAR	GRT	120.07±0.034	-0.020/+0.030	-0.020/+0.015	-0.015/+0.020	-0.030/+0.020	-0.030/+0.020		OK ✓	

Consideration / Remarks

Decision

Approved

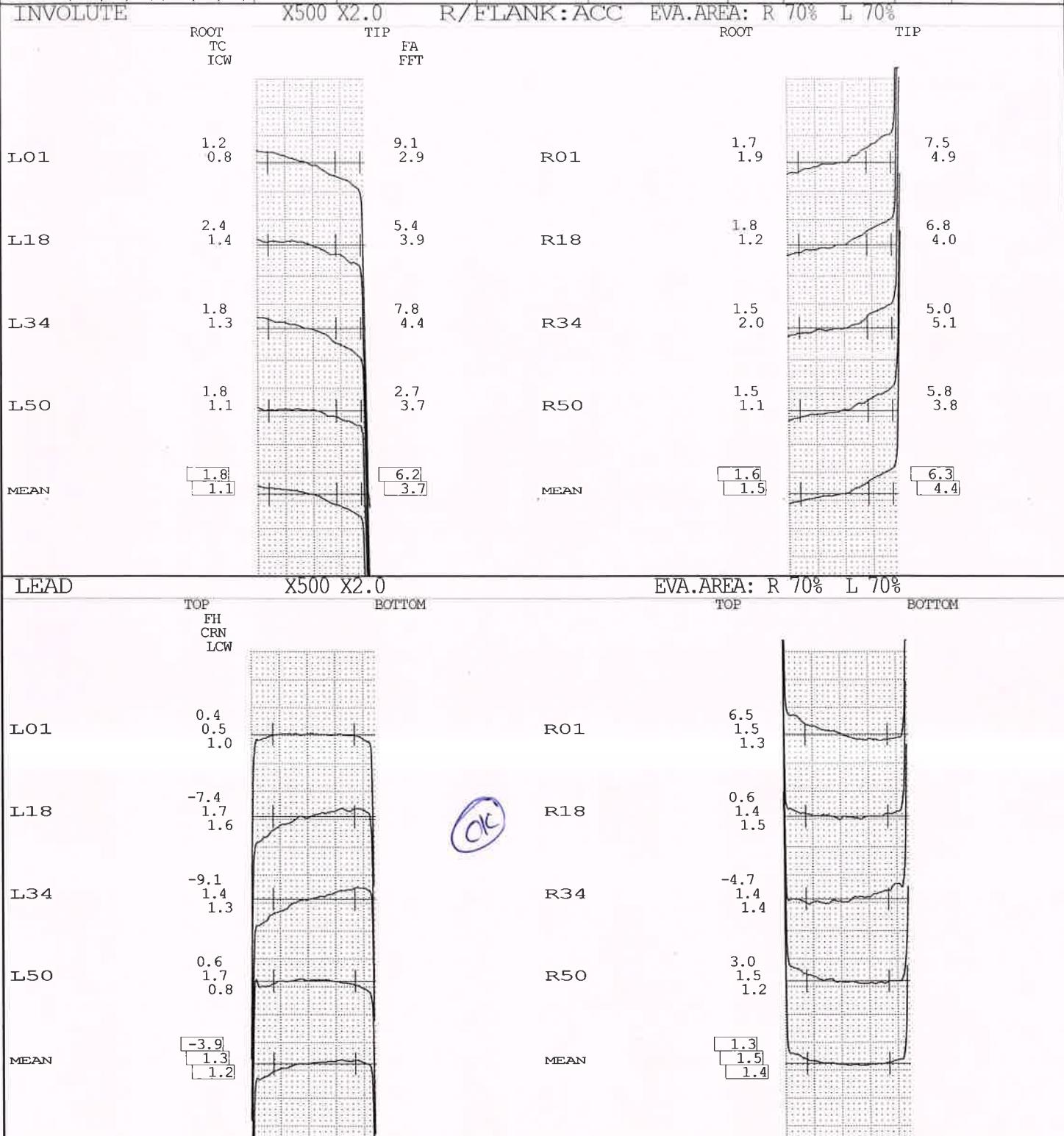
Rejected

Retention Period

Date

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN F				DATE	OPERAT	CONFIRMATION
LOT.No.	-438	F/O: 0.020 P-1				2019/07/05 18:01	<i>Parshuram</i>	(OK / NG)
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	Df B EL _{min} I.L
								119.069 10.5 8.718 1.120

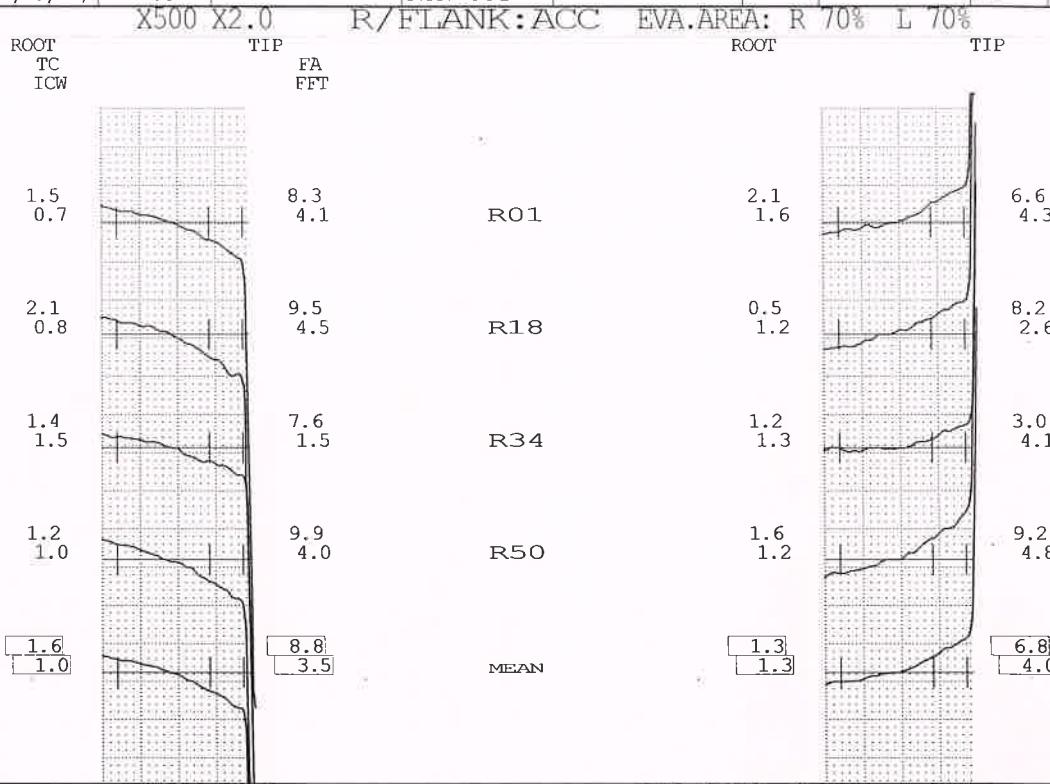


		INVOLUTE				LEAD		
		FA	TC	ICW	FFT	FH	CRN	LCW
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	6.2 <i>o</i>	1.8 <i>o</i>	1.1 <i>o</i>	3.7 <i>o</i>	-3.9 <i>o</i>	1.3 <i>o</i>	1.2 <i>o</i>
	RANGE	6.3	1.2	0.7	1.5	9.8	1.2	0.8
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	6.3 <i>o</i>	1.6 <i>o</i>	1.5 <i>o</i>	4.4 <i>o</i>	1.3 <i>o</i>	1.5 <i>o</i>	1.4 <i>o</i>
	RANGE	2.5	0.4	0.9	1.3	11.3	0.1	0.4

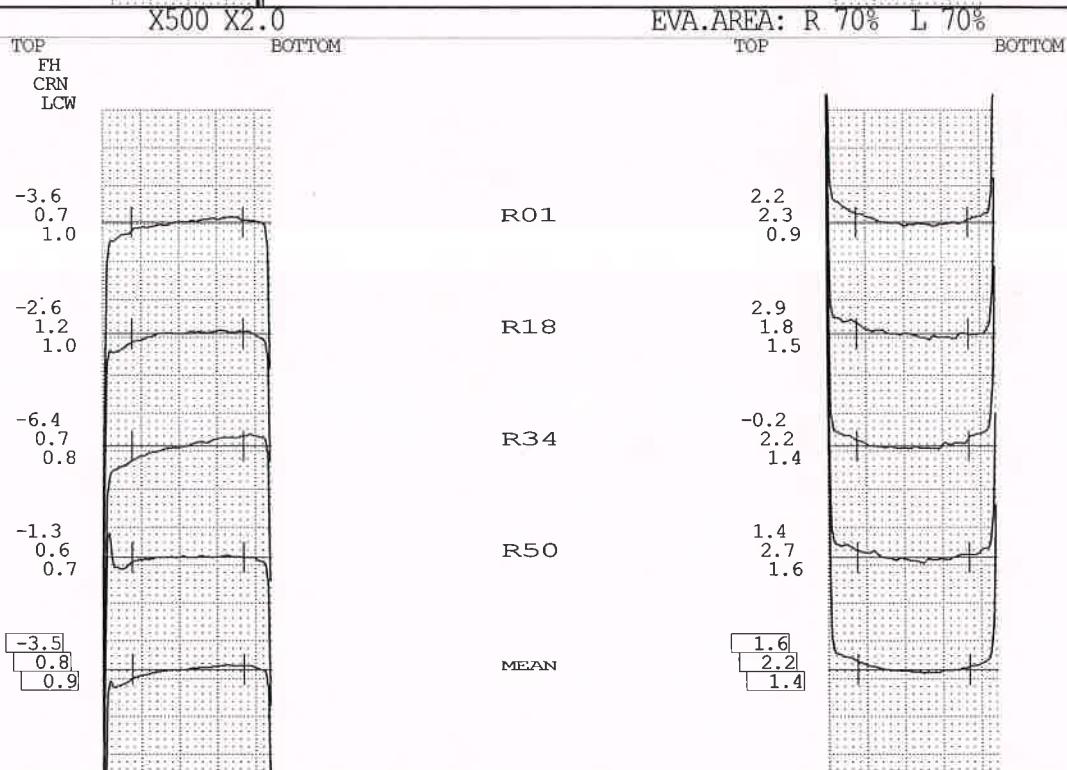
GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/05	OPERAT <i>Ram</i>	CONFIRMATION <i>OK / NG</i>	
LOT.No.	-436	F/O: 0.024 P-2				17:47			
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	Df B ELIM I.L	119.069 10.5 8.718 1.120
Smooth(50, 5, 2)(50, 5, 2)									

INVOLUTE

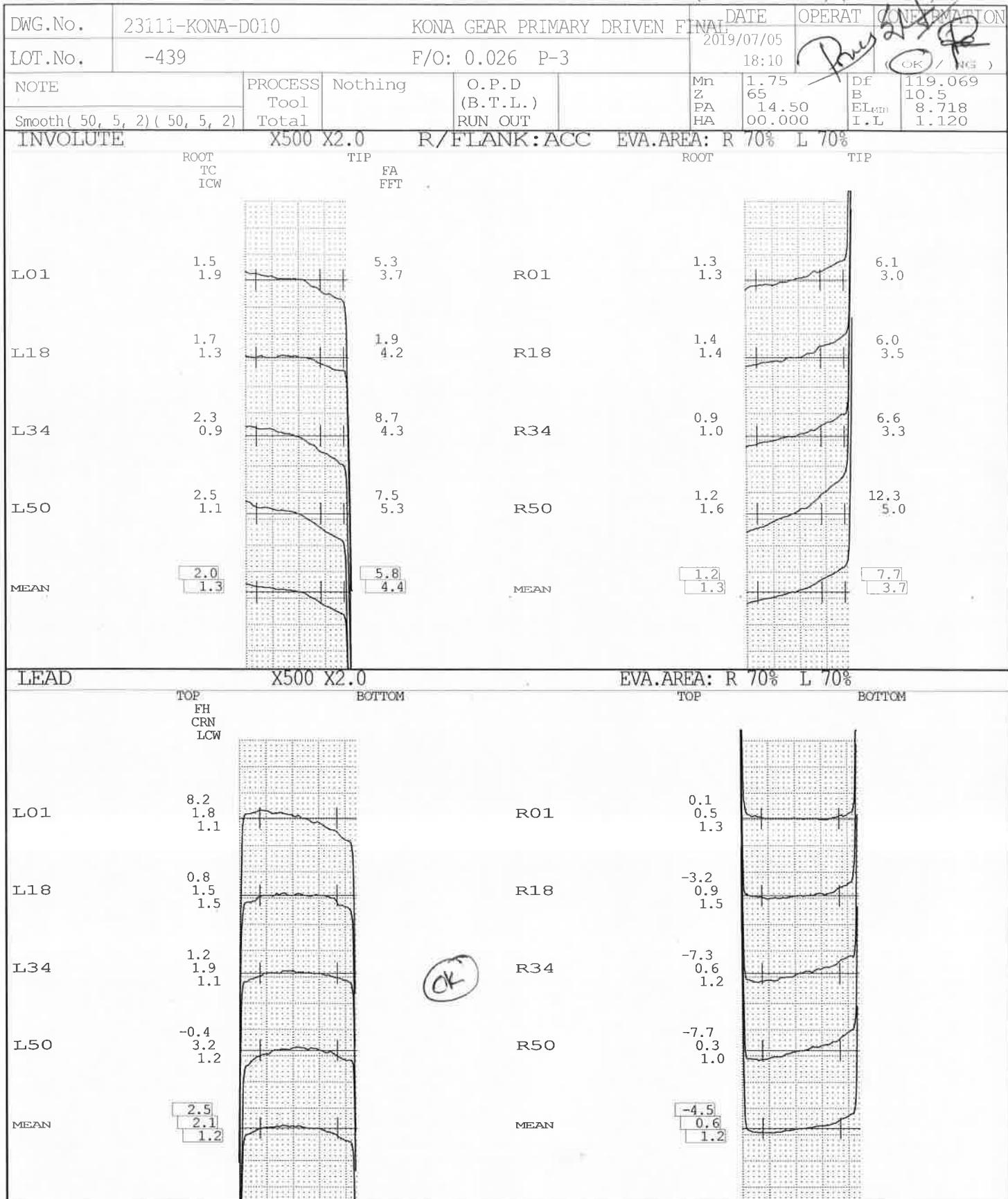


LEAD



		INVOLUTE				LEAD		
		FA	TC	ICW	FFT	FH	CRN	LCW
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	8.8 0	1.6 0	1.0 0	3.5 *	-3.5 0	0.8 0	0.9 0
	RANGE	2.3	0.9	0.8	3.0	5.2	0.6	0.3
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	6.8 0	1.3 0	1.3 0	4.0 0	1.6 0	2.2 0	1.4 0
	RANGE	6.2	1.6	0.4	2.3	3.1	0.9	0.6

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)



		INVOLUTE				LEAD		
		FA	TC	ICW	FFT	FH	CRN	LCW
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	5.8	2.0	1.3	4.4	2.5	2.1	1.2
	RANGE	6.8	1.0	1.0	1.5	8.6	1.8	0.4
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	7.7	1.2	1.3	3.7	-4.5	0.6	1.2
	RANGE	6.3	0.5	0.7	2.0	7.8	0.6	0.5

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/05	OPERAT <i>DPS/SP</i>	CONFIRMATION <i>OK</i>
LOT.No.	-440	F/O: 0.030 P-4				18:13		
NOTE		PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	Df B EL _{AM} I.L	119.069 10.5 8.718 1.120
Smooth(50, 5, 2)(50, 5, 2)								
INVOLUTE	X500 X2.0	R/FLANK:ACC EVA.AREA: R 70% L 70%				ROOT	TIP	
		ROOT TC ICW	TIP FA FFT					
L01	2.1 2.1	8.8 5.1		R01	1.6 1.0	5.7 1.4		
L18	2.3 0.8	5.1 2.2		R18	1.2 0.9	3.1 2.5		
L34	2.9 2.0	8.2 4.9		R34	1.4 0.8	8.9 3.8		
L50	1.8 1.4	8.8 4.7		R50	1.5 0.9	8.6 4.3		
MEAN	2.3 1.6	7.7 4.2		MEAN	1.4 0.9	6.6 3.0		
LEAD	X500 X2.0	EVA.AREA: R 70% L 70%				TOP	BOTTOM	
		TOP FH CRN LCW	BOTTOM					
L01	7.9 1.4 1.0			R01	1.1 0.7 2.1			
L18	0.9 2.1 1.5			R18	-2.5 0.8 1.1			
L34	-1.0 2.4 1.0			R34	-8.5 0.6 1.1			
L50	0.7 2.4 1.5			R50	-6.4 0.8 1.0			
MEAN	2.1 2.1 1.2			MEAN	-4.1 0.7 1.3			
		INVOLUTE				LEAD		
L	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	7.7 <i>0</i>	2.3 <i>0</i>	1.6 <i>0</i>	4.2 <i>0</i>	2.1 <i>0</i>	2.1 <i>0</i>	1.2 <i>0</i>
	RANGE	3.7	1.1	1.3	2.9	8.9	1.0	0.6
R	TOLERANCE	2.0:12.0	0.0:4.0	0.0:4.0	0.0:10.0	-5.0:5.0	0.0:5.0	0.0:4.0
	MEAN	6.6 <i>0</i>	1.4 <i>0</i>	0.9 <i>0</i>	3.0 <i>0</i>	-4.1 <i>0</i>	0.7 <i>0</i>	1.3 <i>0</i>
	RANGE	5.8	0.3	0.2	2.8	9.6	0.2	1.1

GEAR ACCURACY INSPECTION SHEET M.A.P.India Pvt.Ltd. (2nd Plant) (351056)

DWG.No.	23111-KONA-D010	KONA GEAR PRIMARY DRIVEN FINAL				DATE 2019/07/05	OPERAT <i>Ram</i>	CONFIRMATION <i>OK / NG</i>
LOT.No.	-441	F/O: 0.022 P-5				18:15		
NOTE	Smooth(50, 5, 2)(50, 5, 2)	PROCESS Tool Total	Nothing	O.P.D (B.T.L.) RUN OUT		Mn Z PA HA	1.75 65 14.50 00.000	DF B ELIM I.L
INVOLUTE	X500 X2.0		R/FLANK:ACC	EVA.AREA: R 70% L 70%			119.069 10.5 8.718 1.120	
	ROOT TC ICW	TIP FA FFT		ROOT TIP				
L01	2.8 1.6	8.2 6.2	RO1	1.3 1.1	7.4 4.3			
L18	0.9 1.2	10.5 2.8	R18	1.7 0.5	8.8 5.2			
L34	1.1 2.1	-0.4 5.2	R34	1.3 0.8	7.5 4.7			
L50	1.9 1.3	9.2 4.7	R50	1.7 0.8	5.2 2.9			
MEAN	[1.7] [1.6]	[6.9] [4.7]	MEAN	[1.5] [0.8]	[7.2] [4.3]			
LEAD	X500 X2.0		EVA.AREA: R 70% L 70%					
	TOP FH CRN LCW	BOTTOM	TOP	BOTTOM				
L01	0.3 2.8 1.1		RO1	0.2 0.0 1.2				
L18	-0.4 2.6 1.4		R18	0.7 0.2 1.4				
L34	-6.7 3.0 1.2		R34	-9.1 -0.5 0.8				
L50	-0.3 1.8 1.9		R50	-0.1 0.3 0.7				
MEAN	[-1.8] [2.6] [1.4]		MEAN	[-2.1] [-0.0] [1.0]				
	INVOLUTE				LEAD			
	FA	TC	ICW	FFT	FH	CRN	LCW	
L	TOLERANCE MEAN RANGE	2.0:12.0 6.9 0 10.9	0.0:4.0 1.7 0 1.9	0.0:4.0 1.6 0 0.9	0.0:10.0 4.7 0 3.4	-5.0:5.0 -1.8 0 6.9	0.0:5.0 2.6 0 1.2	0.0:4.0 1.4 0 0.8
R	TOLERANCE MEAN RANGE	2.0:12.0 7.2 0 3.6	0.0:4.0 1.5 0 0.5	0.0:4.0 0.80 0.5	0.0:10.0 4.3 0 2.3	-5.0:5.0 -2.1 0 9.7	0.0:5.0 -0.0 0 0.8	0.0:4.0 1.0 0 0.7



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

DATE

2019/06/27

APPROVAL CONFIRM

11:34

MEASURE

PC.NO.

97

MEMO

2nd Plant) (351056)

M, P

M

1.75000

EXT./INT.

EXT.

ORFF

Pvt.

L

B

Ltd.

1.500

2nd

Plant)

(351056)

Z

65

D.M.A.-P9.069

PA

14.5000

X

0.687

DG

110.127

HA

0.00000

B

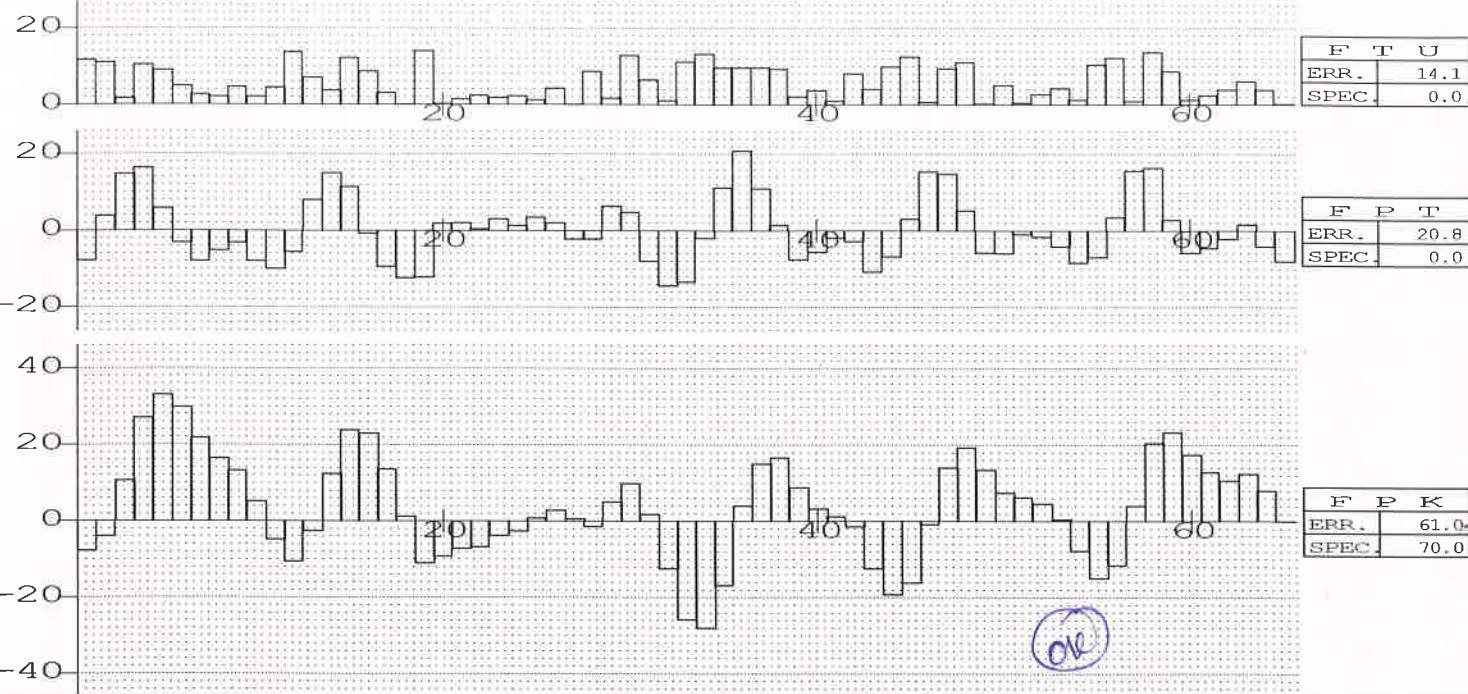
10.500

DO

113.750

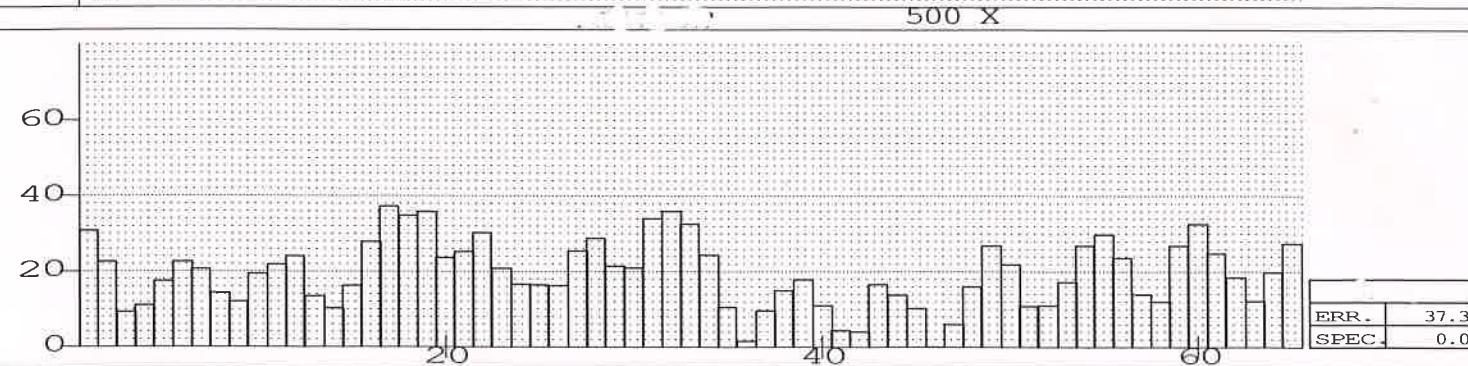
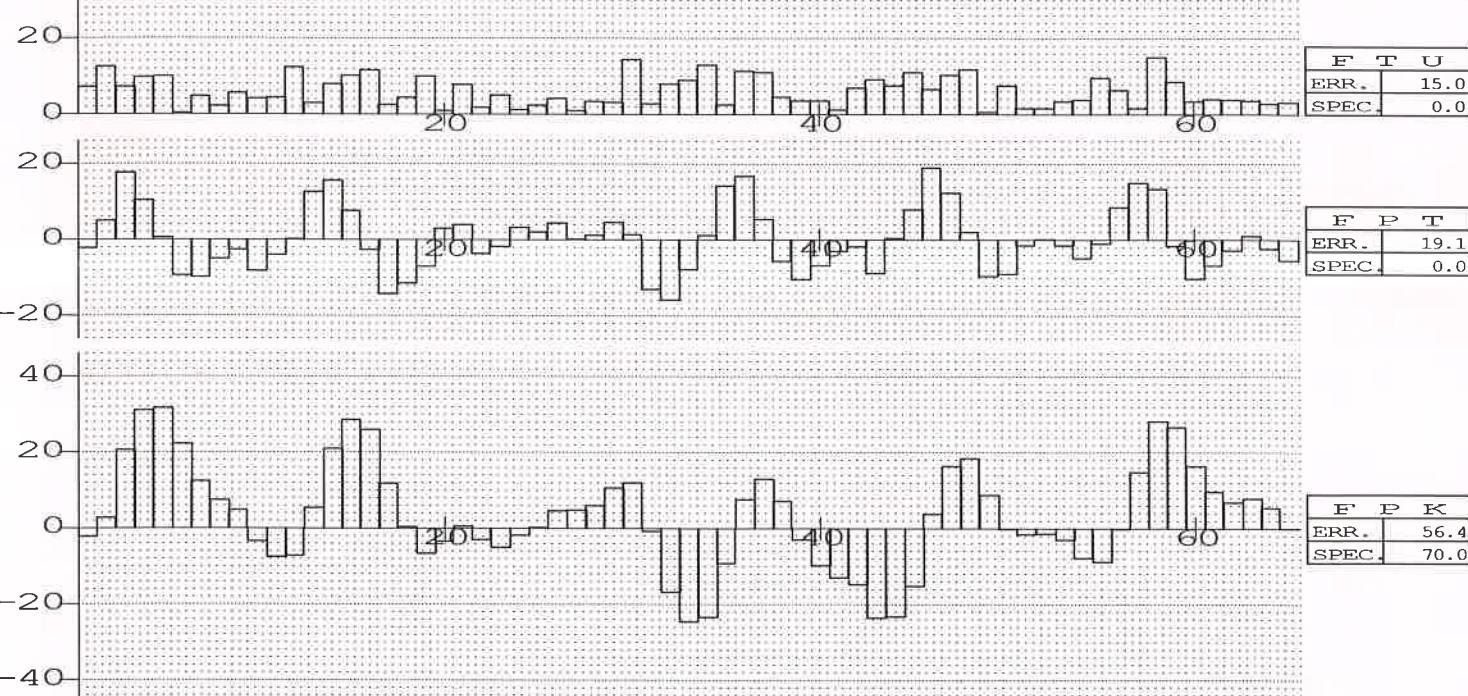
LEFT

500 X



RIGHT

500 X



FPK: accumulative pitch error FPT: pitch error FTU: pitch variation

FPE: accumulative pitch error except eccentricity fr: runout

(Unit: um)



PITCH INSPECTION SHEET

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

DATE 2019/06/27 APPROVAL CONFIRM
10:14PC.NO. 91
MEMO 2nd Plant) (351056)

M, P	M 1.75000	EXT./INT.	EXT.	ORFF	L B
Z	65	D.M.A.	H9 India	Pvt	Ltd
PA	14.5000	X	0.687	DG	110.127
HA	0 0.00000	B	10.500	DO	113.750

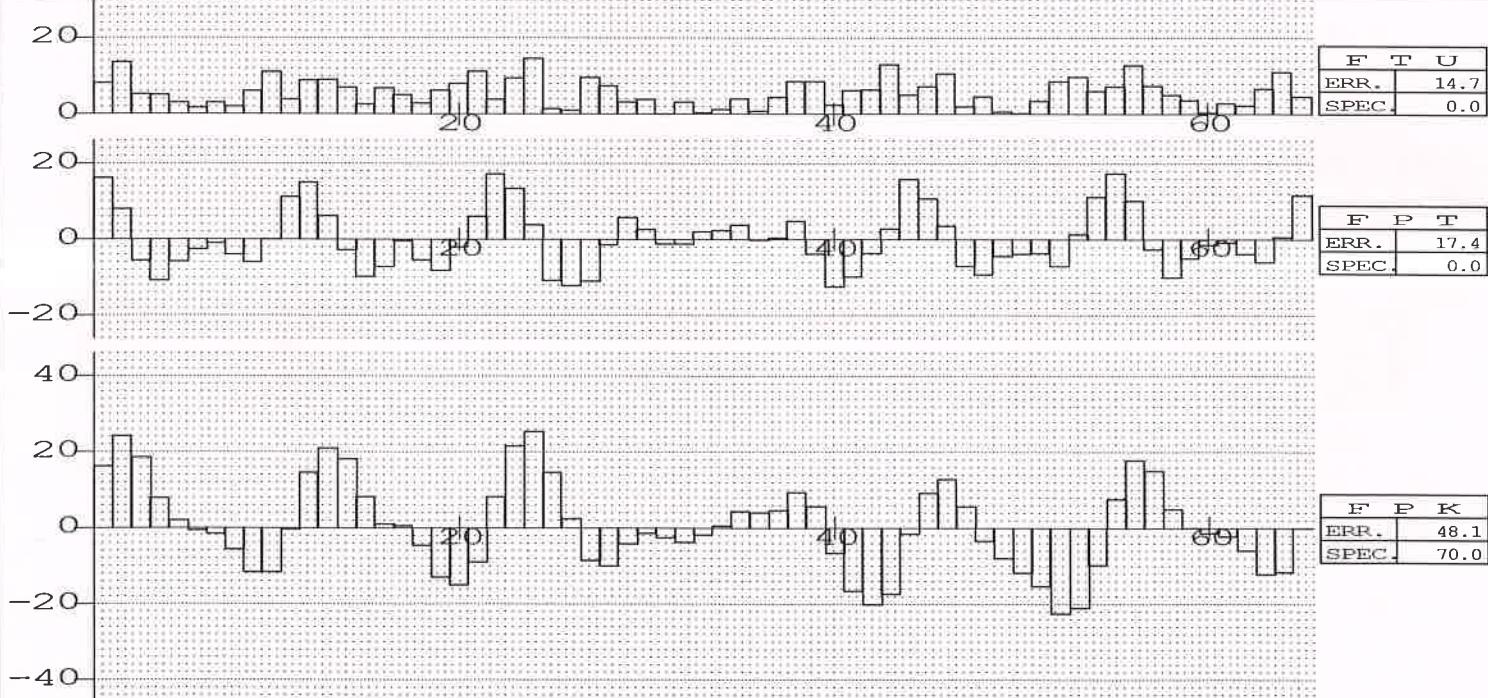
LEFT

500 X

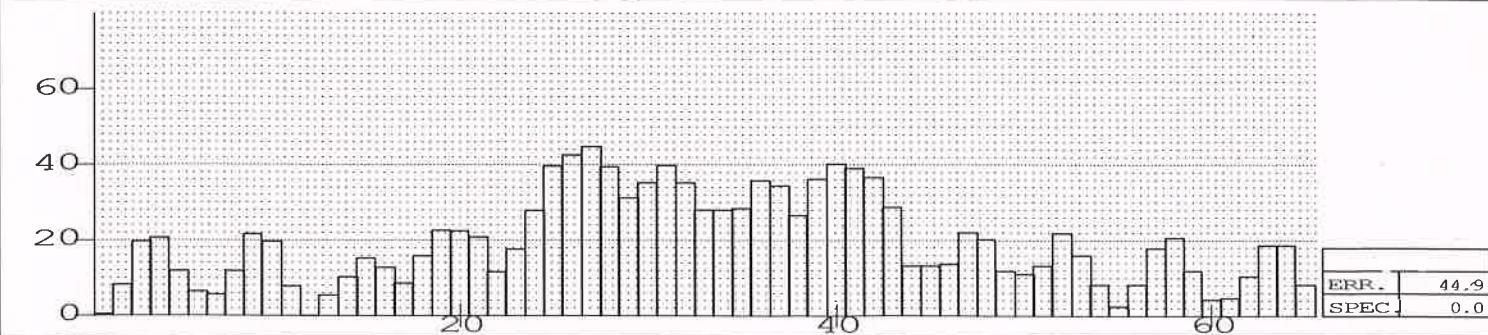


RIGHT

500 X



500 X





PITCH INSPECTION SHEET

DATE

2019/06/27 APPROVAL CONFIRM MEASURE

10:39

23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL

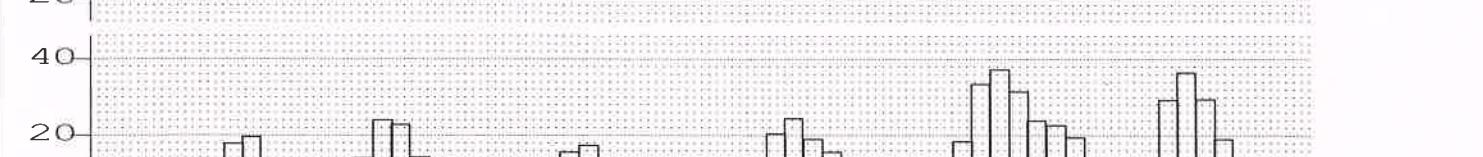
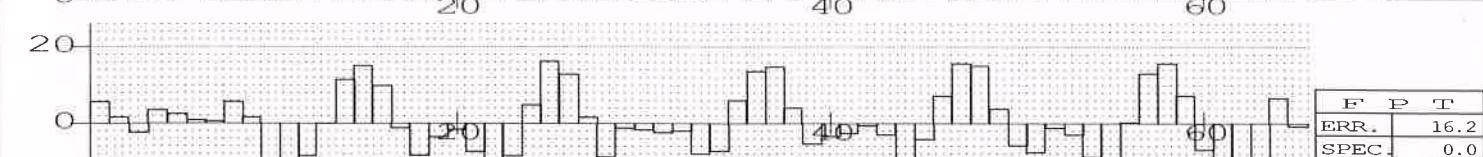
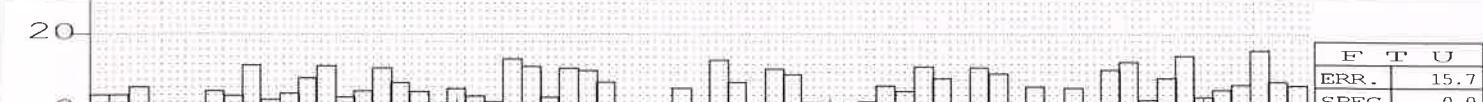
R
SX

R
OK

M, P	M 1.75000	EXT./INT.	EXT.	ORFF	L B	PC.NO.	93
Z	65	D.M.A. India Pvt. Ltd.	Rs. 10.69	Dr.	Ltd.	2nd Plant)	(351056)
PA	14.5000	X	0.687	DG	110.127		
HA	0 0.00000	B	10.500	DO	113.750		

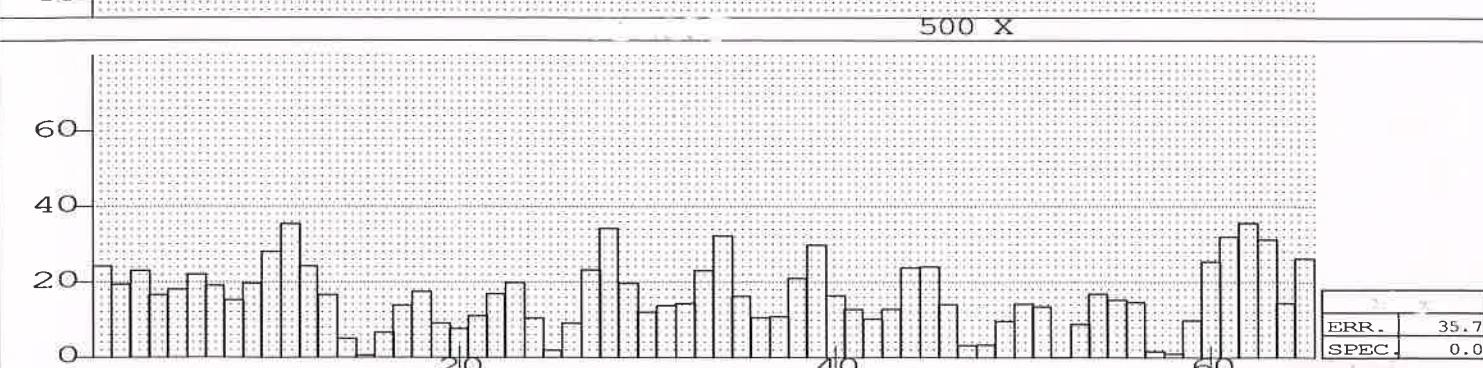
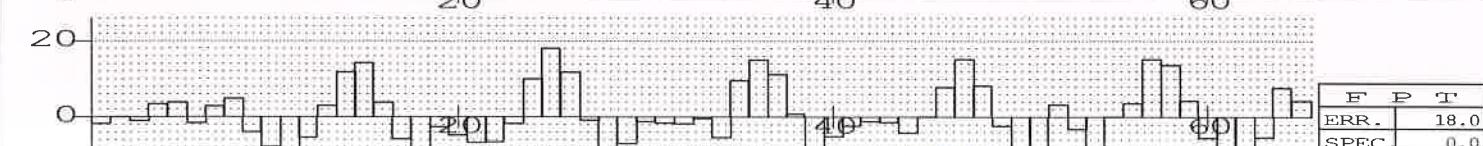
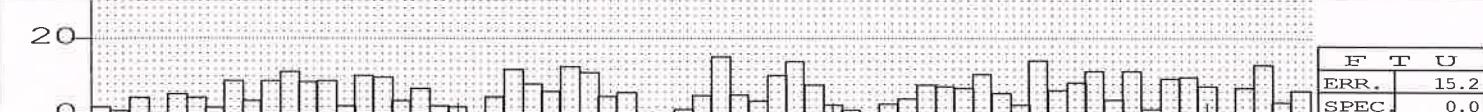
LEFT

500 X



RIGHT

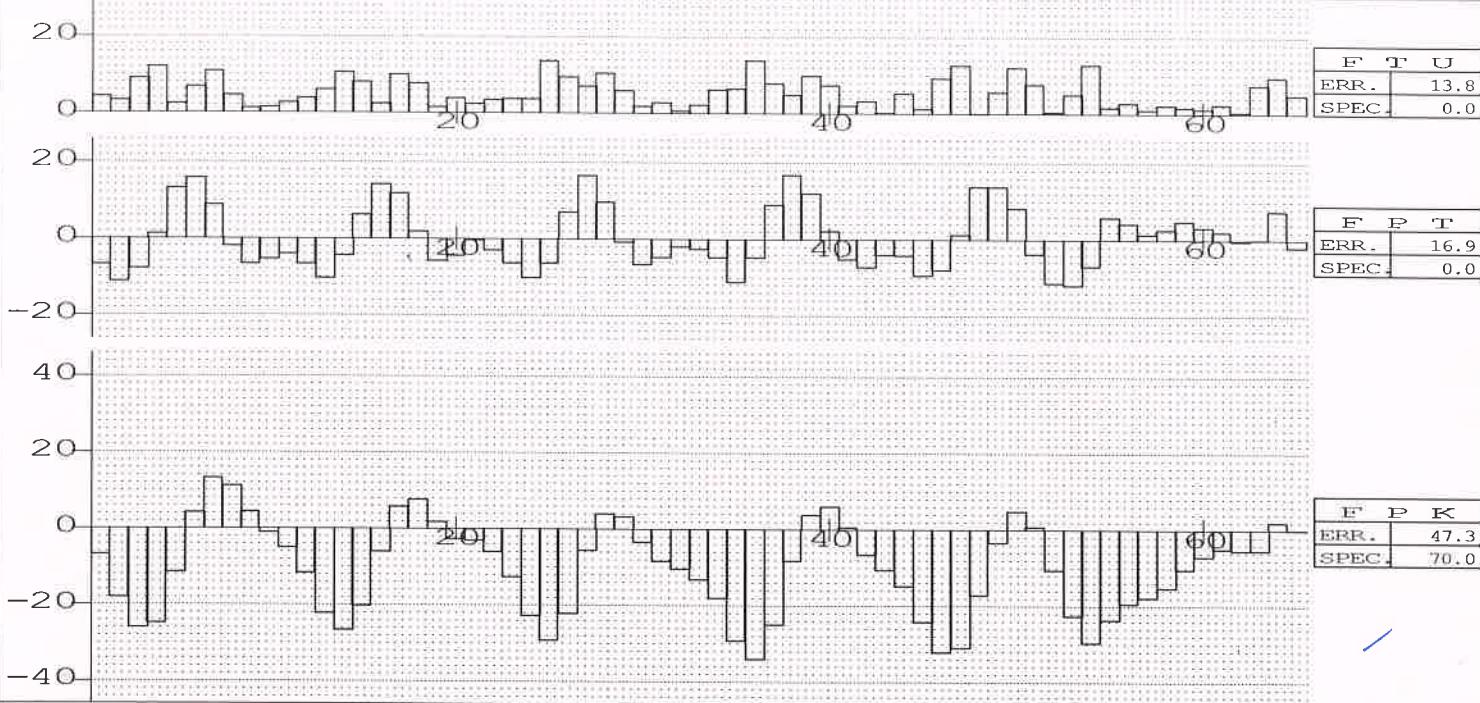
500 X



	PITCH INSPECTION SHEET						DATE 2019/06/27 15:07	APPROVAL CONFIRM MEASURE
	23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL							
M, P	M 1.75000	EXT./INT.	EXT.	ORFF	L B	PC.NO. 110		
Z	65	D.M.A.	R9.1089	Pvt	Ltd. 300	2nd Plant) (351056)		
PA	14.5000	X	0.687	DG	110.127			
HA	0 0.00000	B	10.500	DO	113.750			
						MEMO		

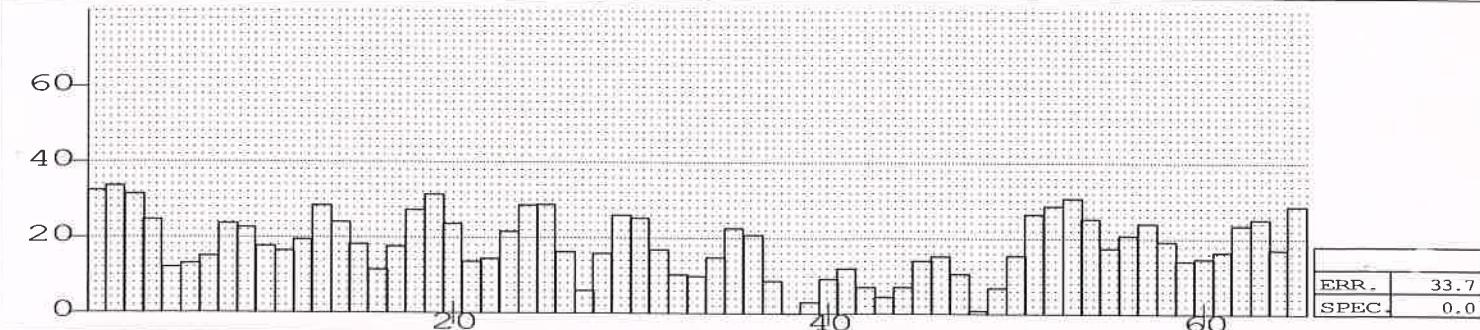
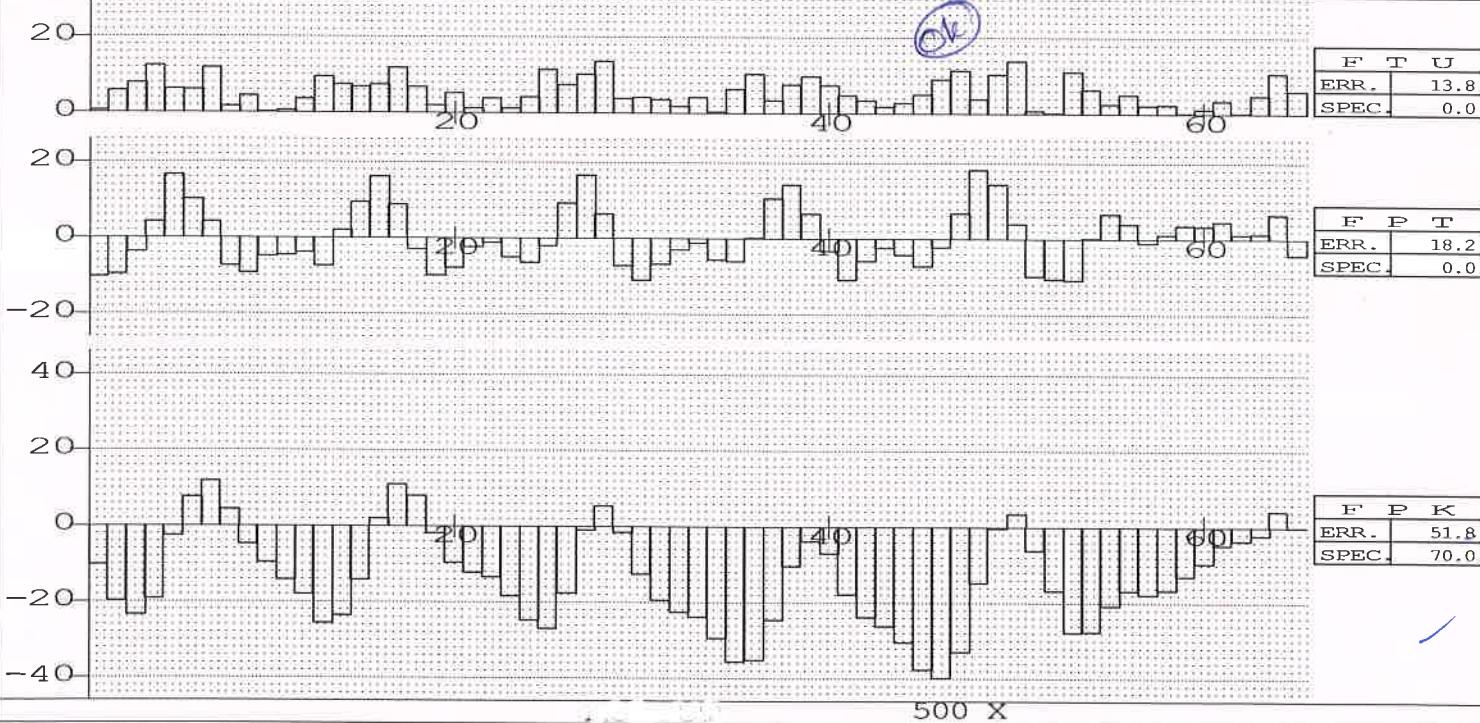
LEFT

500 X



RIGHT

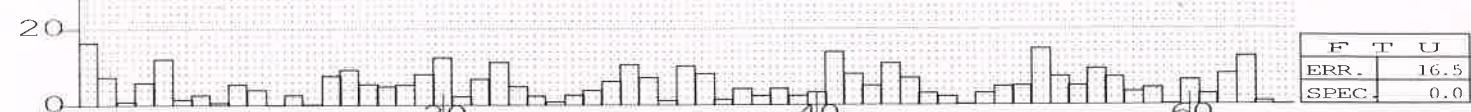
500 X



	PITCH INSPECTION SHEET						DATE 2019/06/27 15:22	APPLICABLE CONFIRM	MEASURE
	23111-KONA-D010 KONA GEAR PRIMARY DRIVEN FINAL								
M, P Z PA HA	M 1.75000 65 14.5000 0 0.00000	EXT./INT. M-A	EXT. R9.1089	ORFF India Pvt Ltd	L B 110.127 113.750	PC.NO. 111 2nd Plant (351056) MEMO			

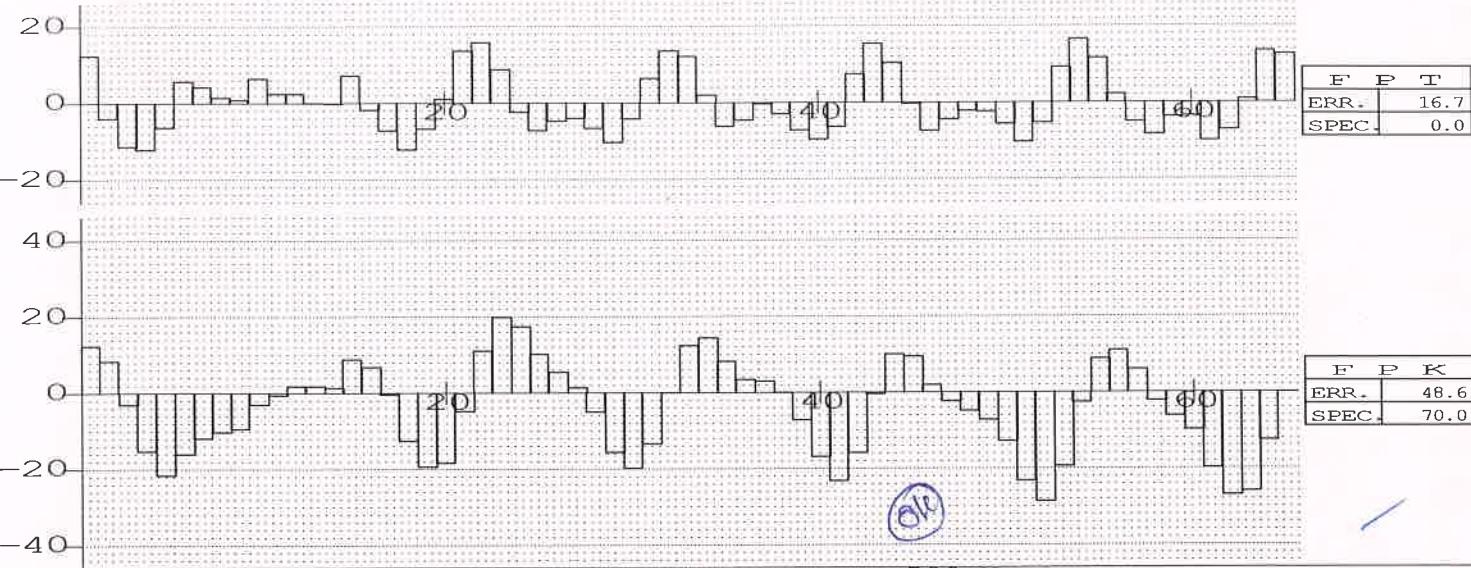
LEFT

500 X



RIGHT

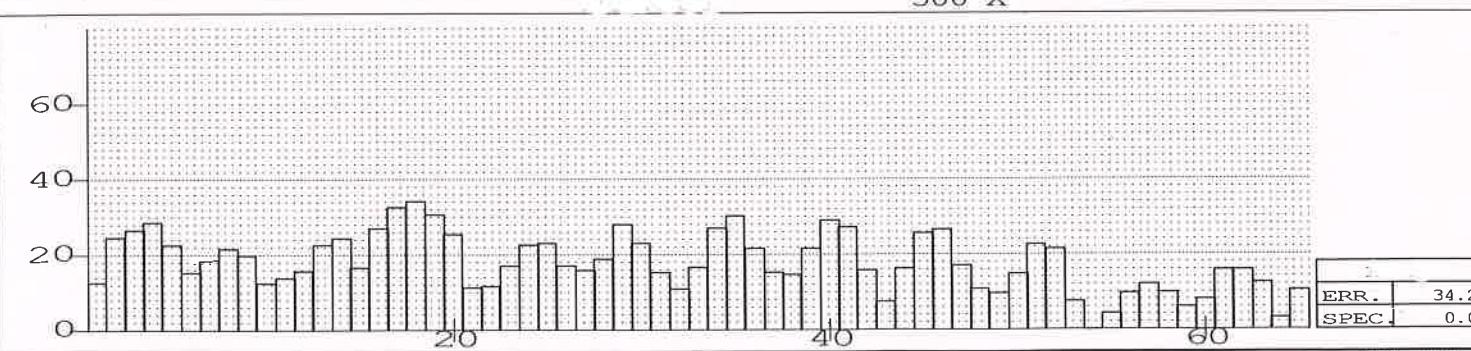
500 X



/



/



(Unit: um)

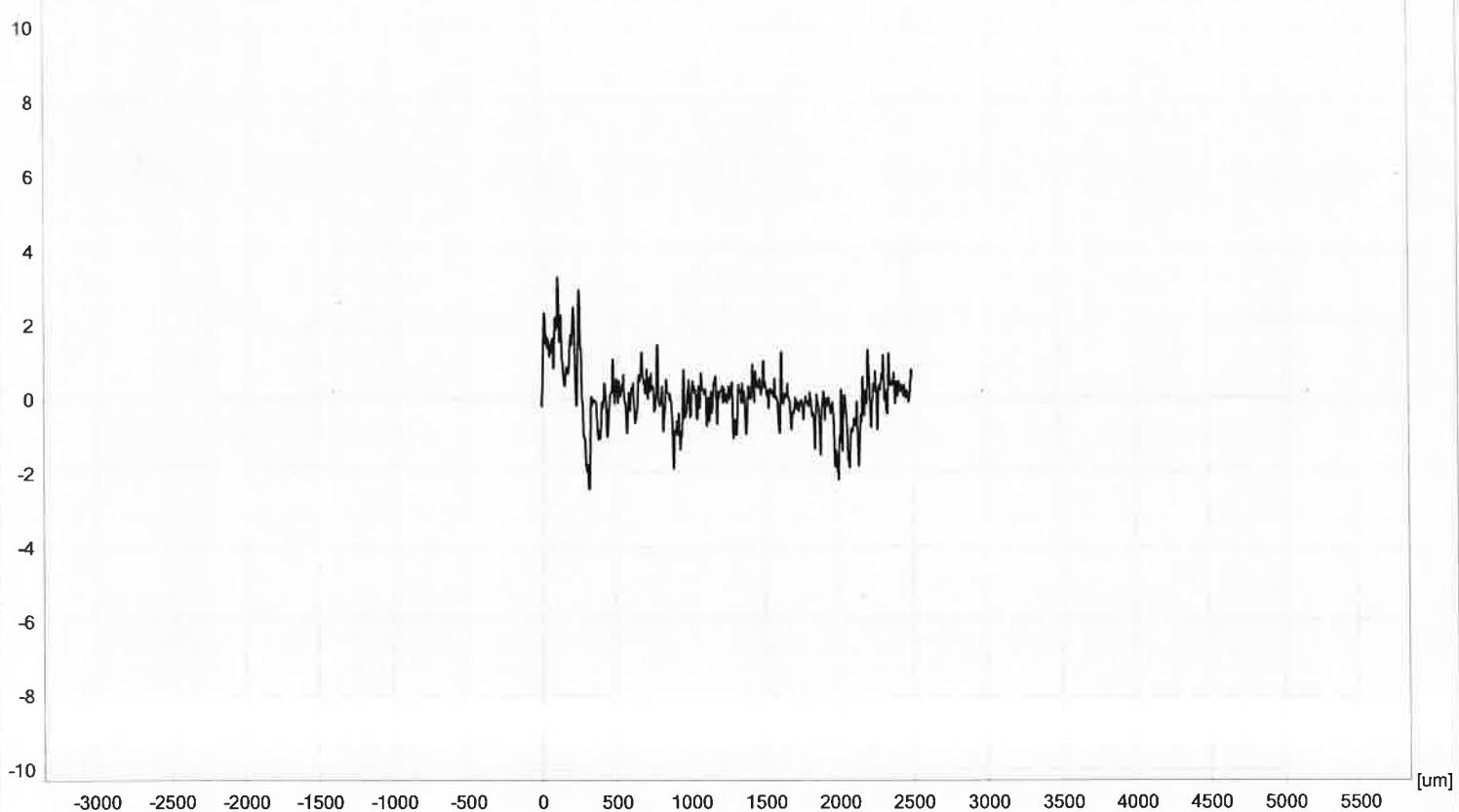
SURFACE ROUGHNESS SV -3100

Properties

Title	KONA GPDN LAYOUT D-13	Revised By	ADMIN
Subtitle		Revision No.	2
Created By	ADMIN	Date/Time start	05-07-2019 11:29:50
Created Date/Time	05-07-2019 11:30:23	Date/Time end	05-07-2019 11:30:03
Revised Date/Time	05-07-2019 11:30:23		

Profile=R_J01 - Section=[1] X Mag: x20 Z Mag: x5000 Error Zoom: x1 <SurfAnalysis_1>

[um]



Calculation Result

Meas Cont	Meas Value	Meas Cont	Meas Value	Meas Cont	Meas Value
Roughness 2D<SurfAnalysis_1>	Profile=R_J01 - Section=[1]	Rz1	5.746um		

Med

Evaluation Condition

Profile=R_J01 - Section=[1]	No of Smplg(nle):	1	Evln Length(lm):	2500.0um	Compensation:	Off
Standard	<u>JIS2001</u>	Lc	2500.0um	Pre-Travel:	1250.0um	
Kind of Profile:	R_J01	Ls	8.0um	Post-Travel:	1248.0um	
Smplg Length(lm):	2500.0um	Kind of Filter:	Gaussian	Smooth Connection	Off	



MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
	GPDN	LAYOUT	A
MODEL NAME	Date	PART NUMBER	REMARKS
KONA	21-06-2019	23111-KONA-D010-H1	

Post	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	BORE ID	23.0000	0.0210	0.0000	mm	23.0119	0.0119	----**----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:55:28	-0:04:32	----**----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:01:17	0:01:17	----*----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:04:06	0:04:06	----**----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:59:02	-0:00:58	----*----
	ANGLE	60:00:00	0:20:00	-0:20:00		60:04:35	0:04:35	----**----
	ANGLE	60:00:00	0:20:00	-0:20:00		59:55:31	-0:04:29	----**----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.8550	-0.1450	-----****-----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.8679	-0.1321	-----****-----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.8366	-0.1634	-----****-----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.8698	-0.1302	-----****-----
	DISTANCE	29.0000	0.2000	-0.2000	mm	28.8471	-0.1529	-----****-----
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9595	10.9595	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9807	10.9807	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9297	10.9297	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9620	10.9620	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	11.0037	11.0037	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9860	10.9860	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9061	10.9061	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9548	10.9548	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -2	0.0000	0.0000	0.0000	mm	10.9776	10.9776	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	XY CIRCLE -1	0.0000	0.0000	0.0000	mm	10.9593	10.9593	\$\$\$\$\$\$\$\$\$\$\$\$\$\$
	HOLE -1	9.3000	0.2000	0.0000	mm	9.4037	0.1037	----*----
	HOLE -2	9.3000	0.2000	0.0000	mm	9.3825	0.0825	----**----

CHECKED BY

MACHINE NAME

PART NAME

OPERATION NAME

SHIFT

GPDN**LAYOUT****A**

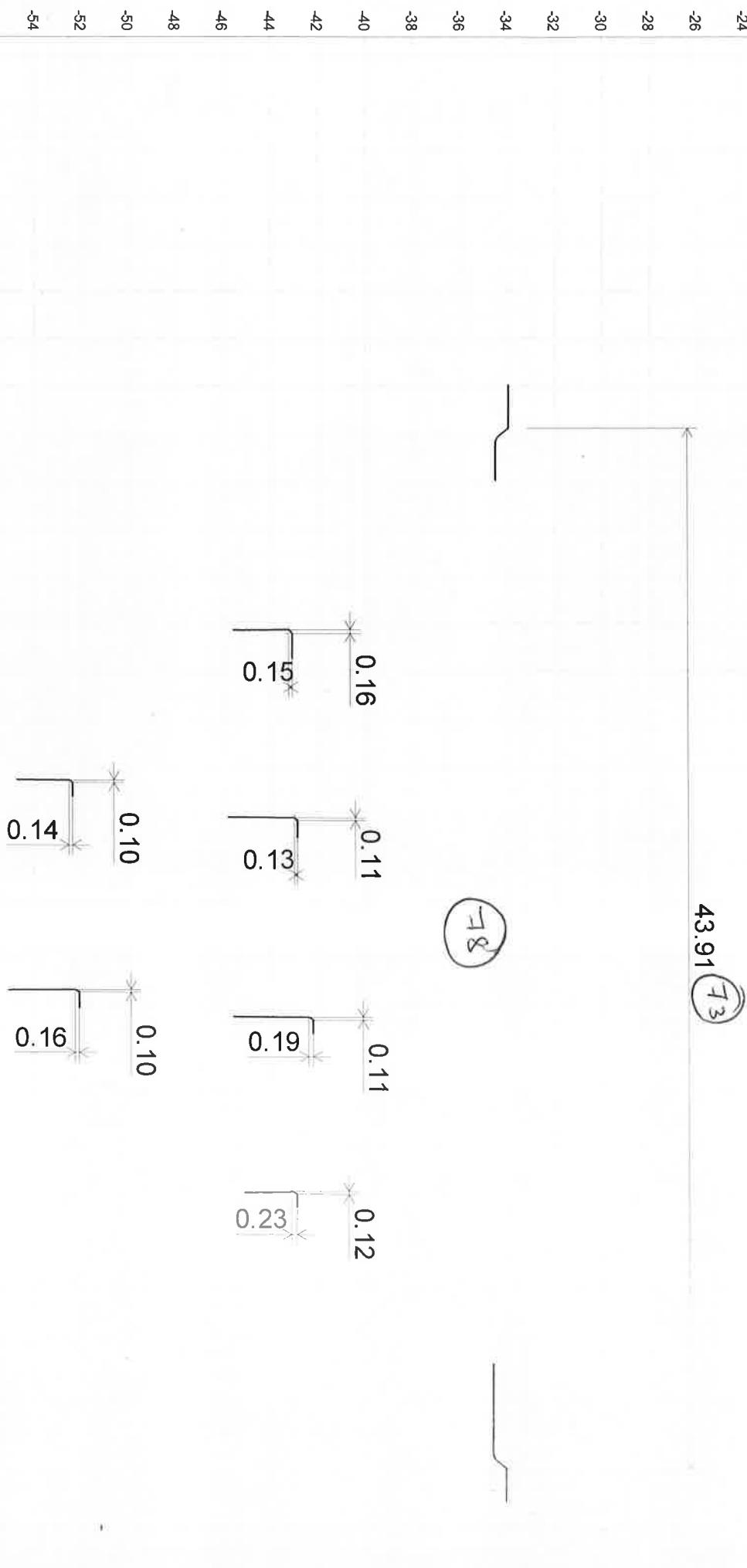
Post	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	HOLE -3	9.3000	0.2000	0.0000	mm	9.4141	0.1141	-----**-----
	HOLE -4	9.3000	0.2000	0.0000	mm	9.4110	0.1110	-----**-----
	DISTANCE	18.2000	0.1000	-0.1000	mm	18.1295	-0.0705	*****-----
	DISTANCE	18.2000	0.1000	-0.1000	mm	18.2430	0.0430	-----***-----
	PD	83.0000	0.1500	-0.1500	mm	82.8702	-0.1298	-----01-----01-----

CONTOUR REPORT

MAP-ID BLR

Meas Result Geo Data X Mag: x4.038 Z Mag: x4.038 <Contour>

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	6
SubTitle	Musashi-BQA002	Date/Time start	21-06-2019 18:43:42
Created DateTime	21-06-2019 18:45:59	Date/Time end	21-06-2019 19:01:53
Reversed Date	21-06-2019 20:29:54		

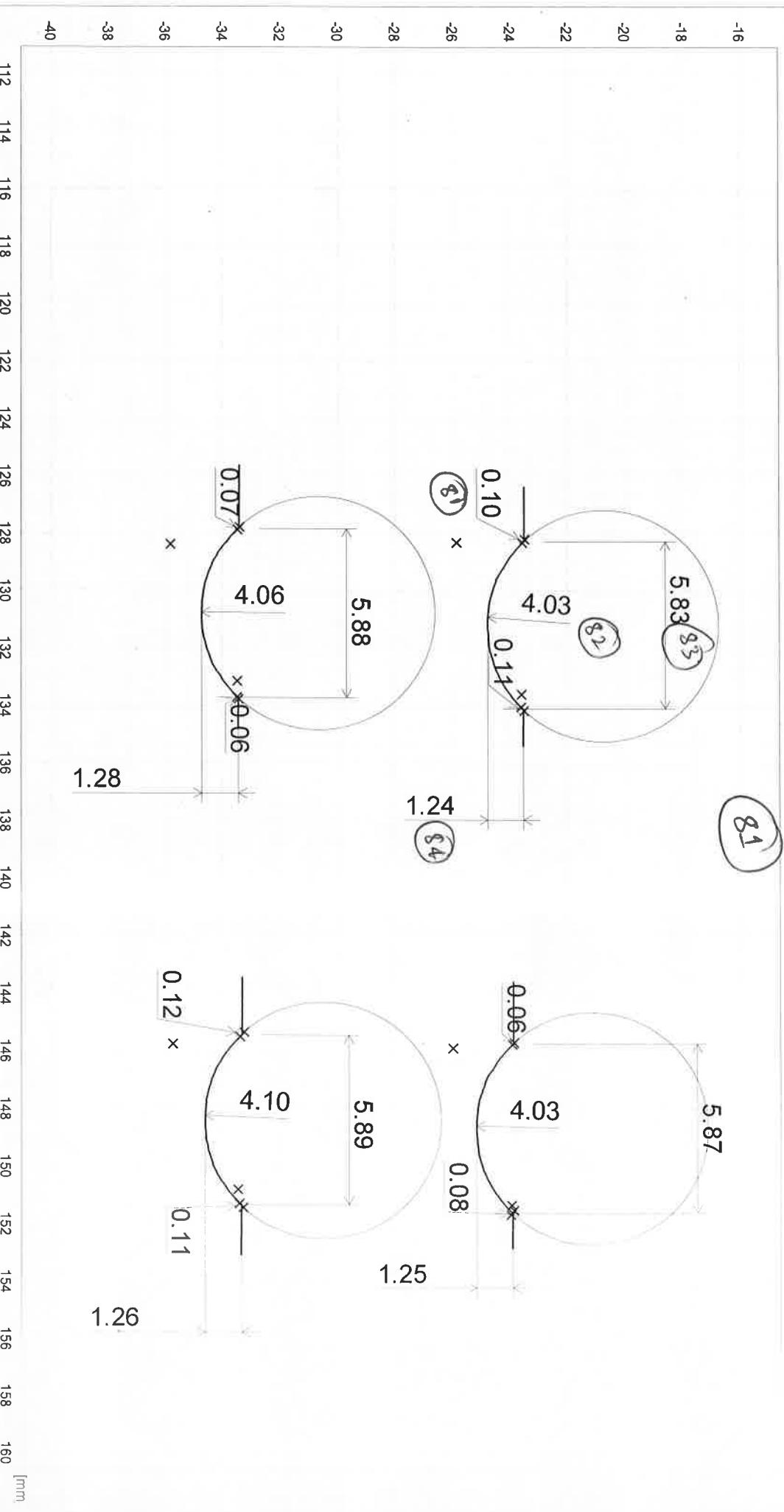


CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	2
Subtitle		Date/Time start	21-06-2019 18:07:26
Created By	Musashi-BQA002	Date/Time end	21-06-2019 18:20:04
Created Date/Time	21-06-2019 18:29:52		
Reversed Date	21-06-2019 18:29:53		

Meas Result Geo Data X Mag: x5.134 Z Mag: x5.134 <Contour>
[mm]

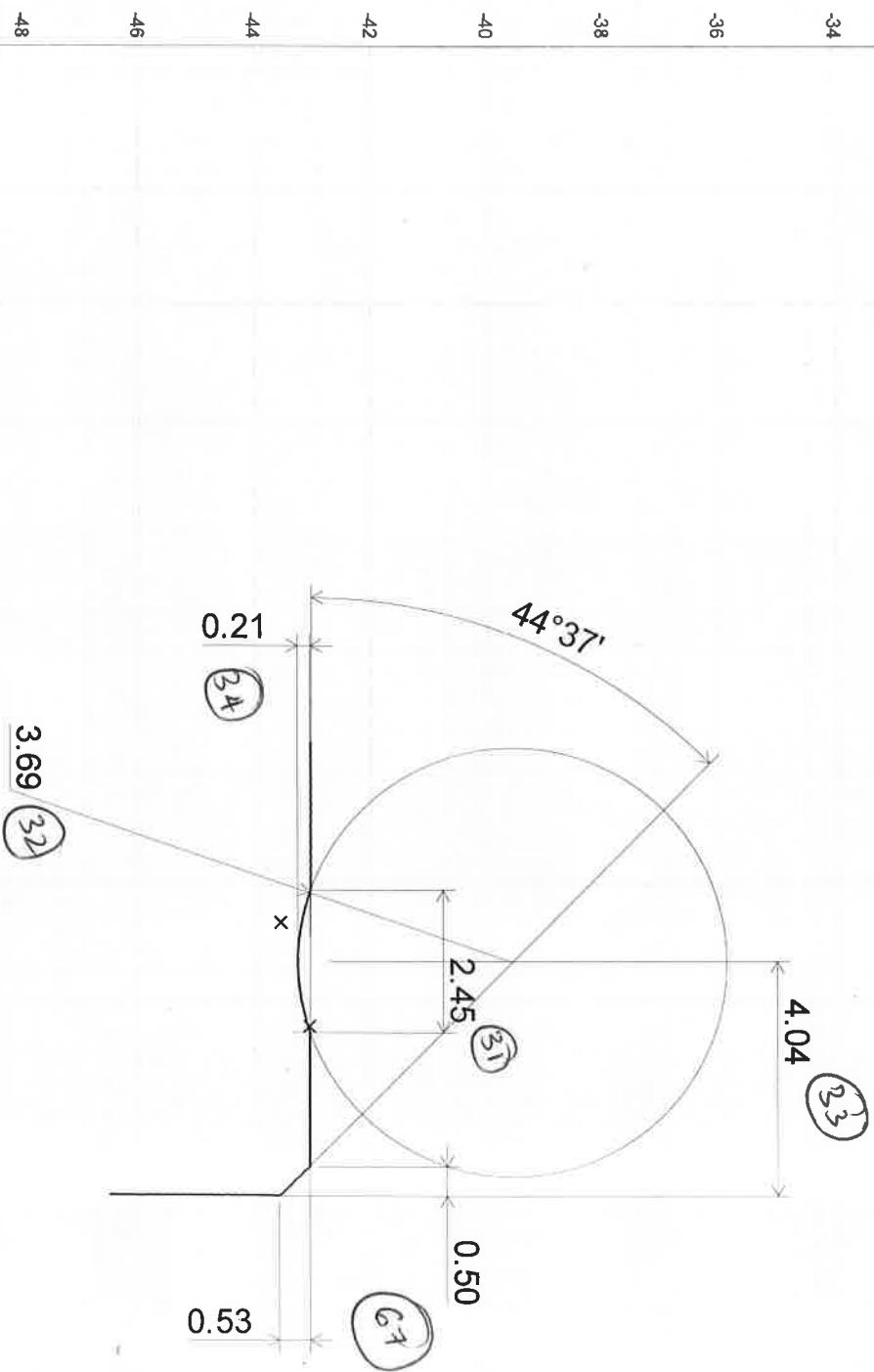


CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By/ Revision No.	Musashi-BQA002 17
Title		Date/Time start	21-06-2019 16:57:21
Subtitle		Date/Time end	21-06-2019 17:37:05
Created By	Musashi-BQA002		
Created Date/Time	21-06-2019 17:03:29		
Reversed Date	21-06-2019 17:43:09		

Meas Result Geo Data X Mag: x7.818 Z Mag: x7.818 <Contour>
[mm]

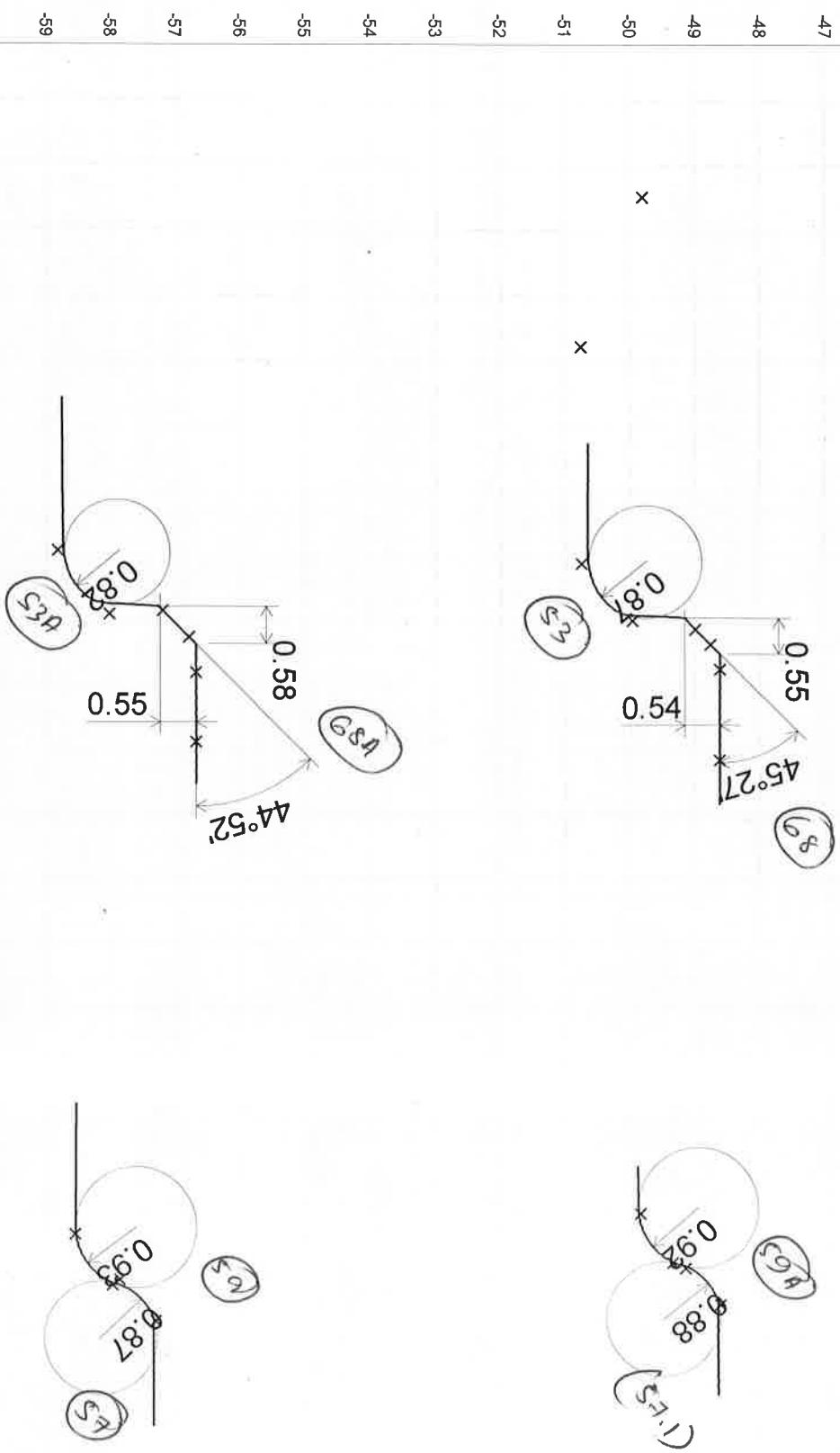


CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	17
Subtitle	Musashi-BQA002	Date/Time start	21-06-2019 16:57:21
Created By		Date/Time end	21-06-2019 17:37:05
Reversed Date			

Meas Result Geo Data X Mag: x9.512 Z Mag: x9.512 <Contour>
[mm]



117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142

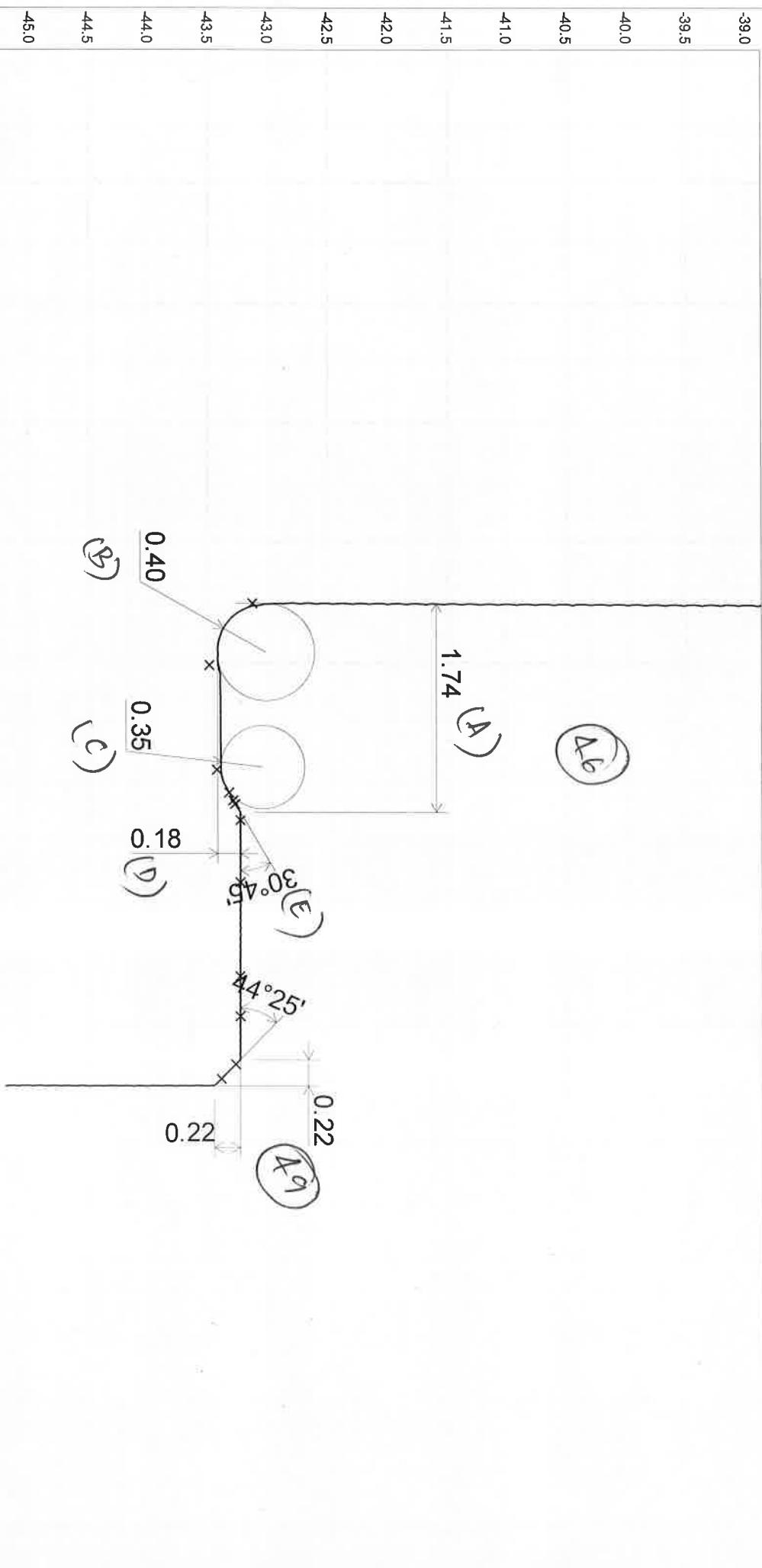
[mm]

CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	17
Subtitle		Date/Time start	21-06-2019 16:57:21
Created By	Musashi-BQA002	Date/Time end	21-06-2019 17:37:05
Created Date/Time	21-06-2019 17:03:29		
Reversed Date	21-06-2019 17:43:09		

Meas Result Geo Data: X Mag: x20.654 Z Mag: z20.654 <Contour>
[mm]

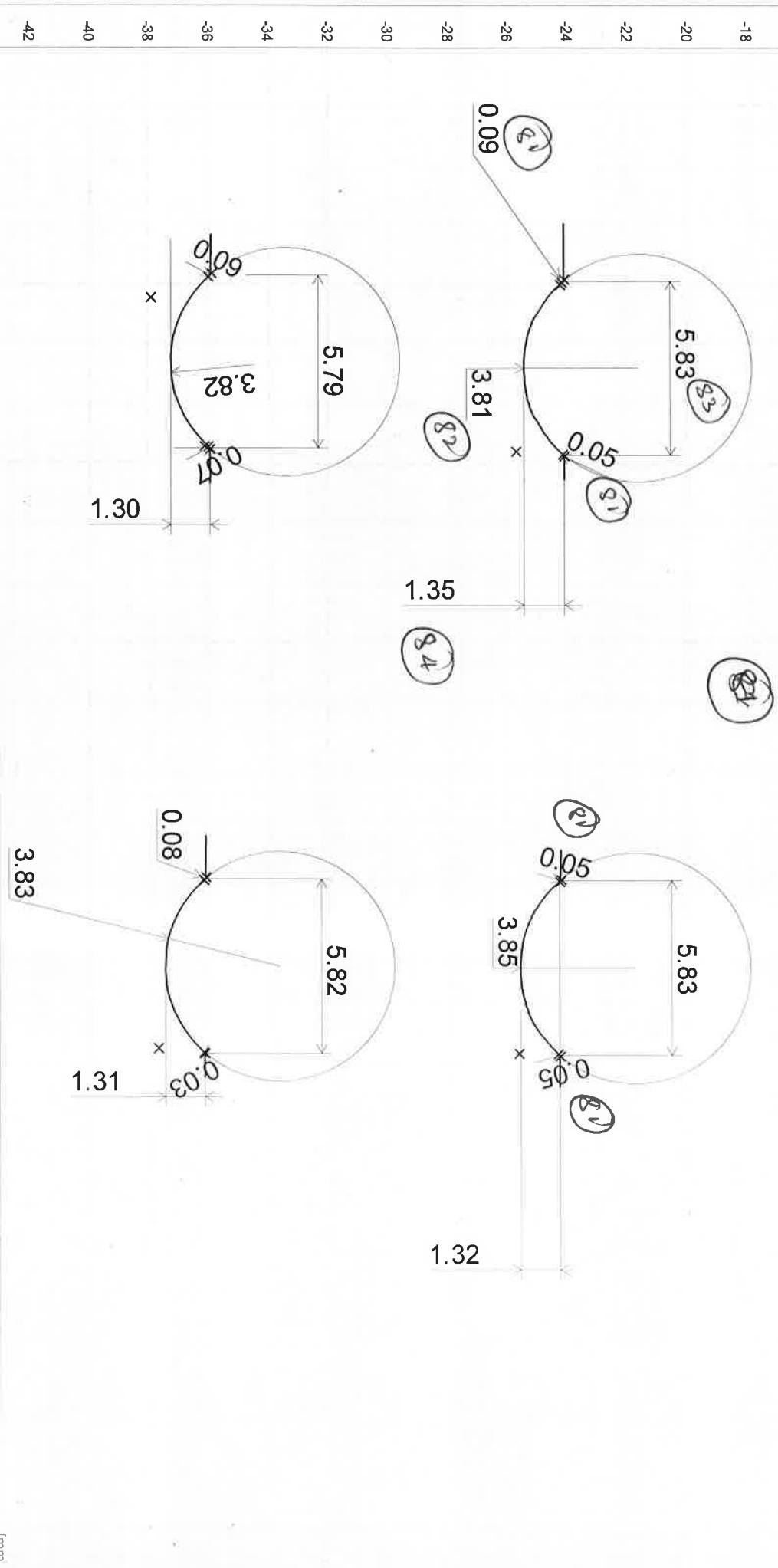


CONTOUR REPORT

MAP-ID BLR

Meas Result Geo Data X Mag: x5.134 Z Mag: x5.134 <Contour>
[mm]

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	2
Subtitle	Musashi-BQA002	Date/Time start	21-06-2019 18:07:26
Created Date/Time	21-06-2019 18:29:53	Date/Time end	21-06-2019 18:20:04

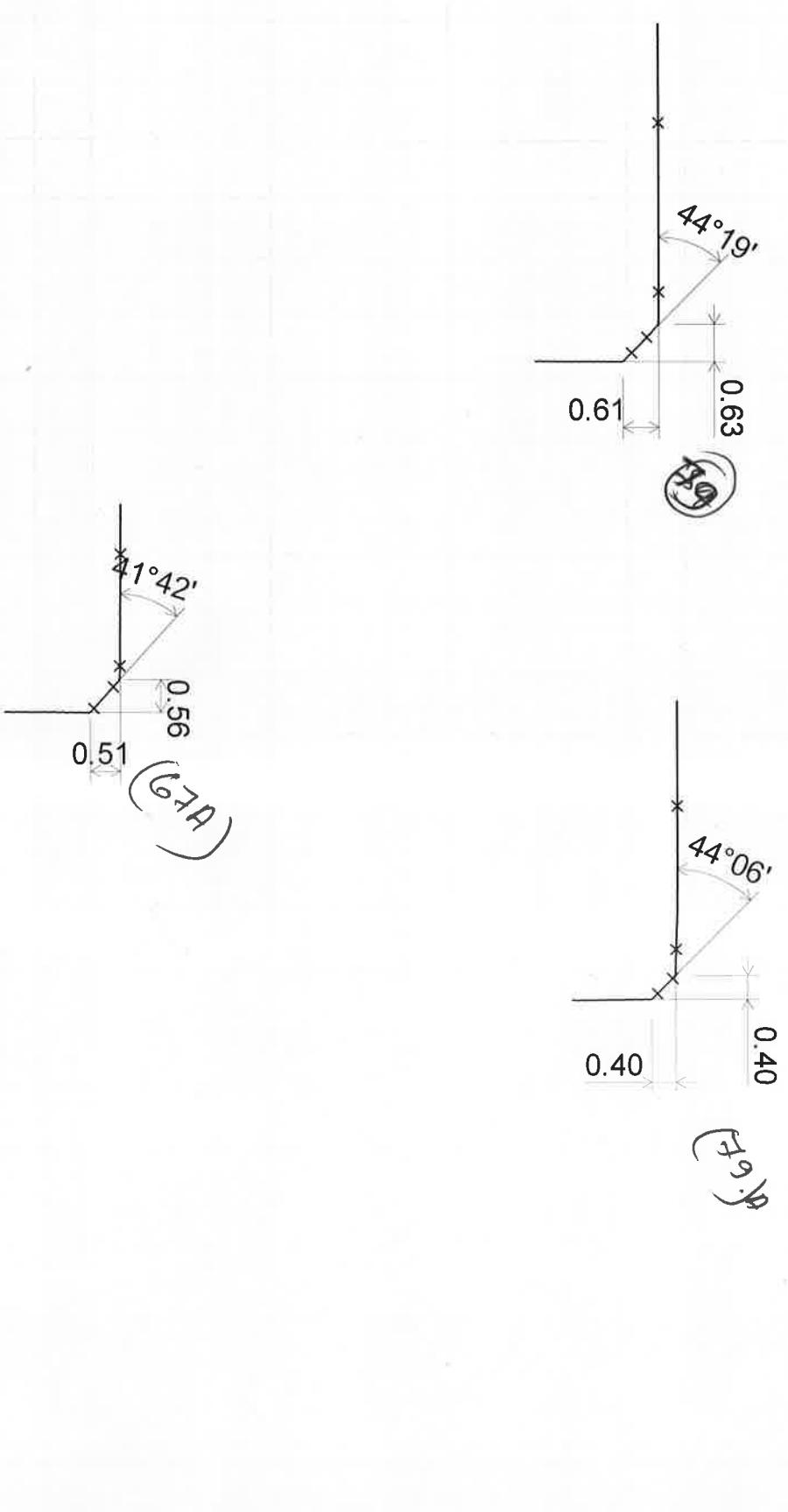


CONTOUR REPORT

MAP-ID BLR

Property	Value
Title	GPDN KONA LAYOUT
Subtitle	Mussashi-BQA002
Created By	Musashi-BQA002
Created Date/Time	21-06-2019 17:03:29
Reversed Date	21-06-2019 17:43:09
Revised By	Mussashi-BQA002
Revision No.	17
Date/Time start	21-06-2019 16:57:21
Date/Time end	21-06-2019 17:37:05

Meas Result Geo Data X Mag: x8.912 Z Mag: x8.912 <Contour>
[mm]

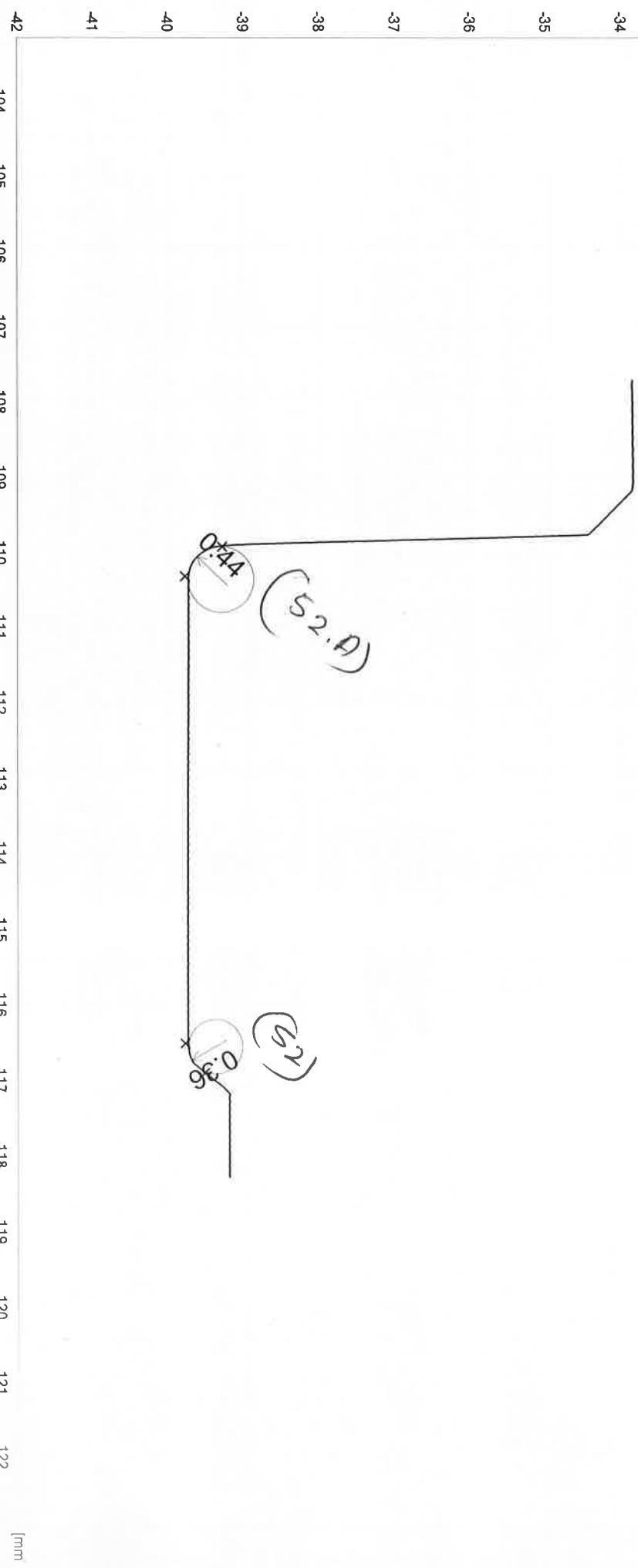


CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By/ Revision No.	Musashi-BQA002 17
Title			
Subtitle			
Created By	Musashi-BQA002	Date/Time start	21-06-2019 16:57:21
Created Date/Time	21-06-2019 17:03:29	Date/Time end	21-06-2019 17:37:05
Reversed Date	21-06-2019 17:43:09		

Meas Result Geo Data X Mag: x12.874 Z Mag: x12.874 <Contour>
[mm]

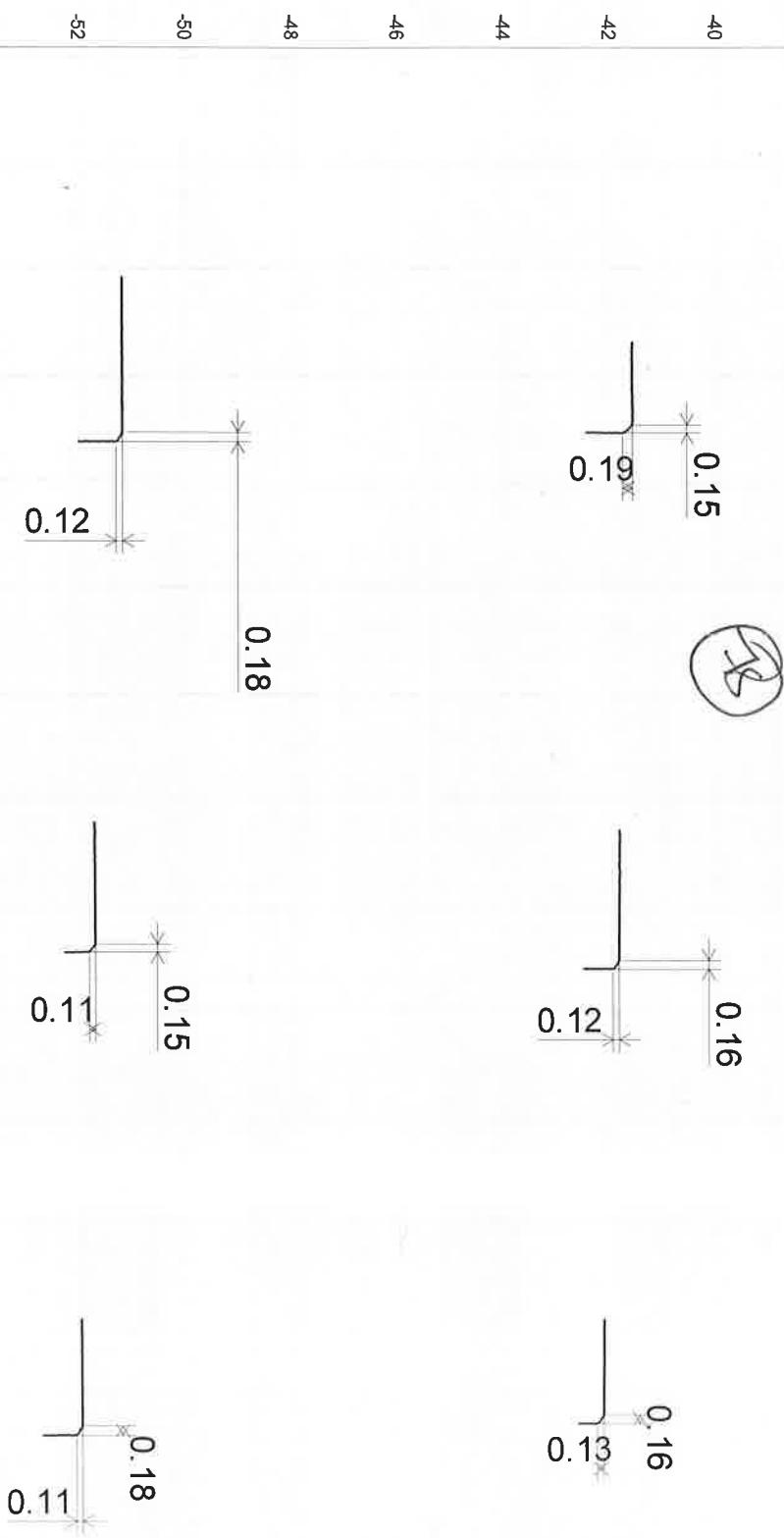


CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT	Revised By	Musashi-BQA002
Title		Revision No.	6
Subtitle	Musashi-BQA002	Date/Time start	21-06-2019 18:43:42
Created By		Date/Time end	21-06-2019 19:01:53
Created Date/Time	21-06-2019 20:29:54		
Reversed Date			

Meas Result Geo Data X Mag: x7.11 Z Mag: x7.11 <Contour>
[mm]



150 152 154 156 158 160 162 164 166 168 170 172 174 176 178 180 182 184 [mm]

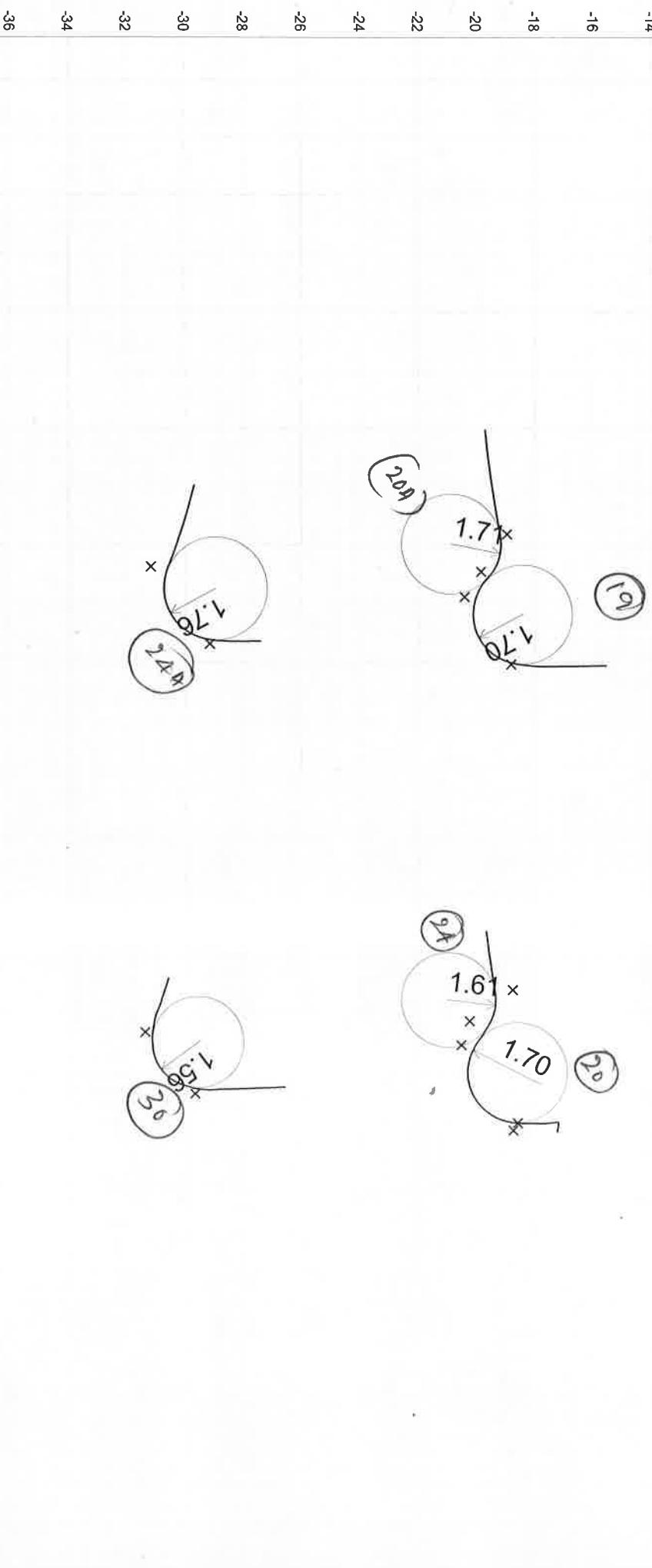
CONTOUR REPORT

MAP-ID BLR

Property	GPDN KONA LAYOUT...	Revised By	Musashi-BQA002
Title		Revision No.	1
Subtitle		Date/Time start	21-06-2019 20:40:47
Created By	Musashi-BQA002	Date/Time end	21-06-2019 20:44:29
Created Date/Time	21-06-2019 20:47:36		
Reversed Date			

Meas Result Geo Data X Mag: x5 Z Mag: x5 <Contour>

[mm]





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MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
	GPDN	LAYOUT	G
MODEL NAME	Date	PART NUMBER	REMARKS
KONA	22-06-2019	23111-KONA-D010-H1	OK

Post	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	Distance	23.0000	0.0000	-0.3000	mm	22.8499	-0.1501	----*----
	Plane	0.0000	0.1000	0.0000	mm	0.0167	0.0167	-----****-----

[Signature]
CHECKED BY



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MACHINE NAME	PART NAME	OPERATION NAME	SHIFT
	GPDN	LAYOUT	G
MODEL NAME	Date	PART NUMBER	REMARKS
KONA	22-06-2019	23111-KONA-D010-H1	(24) ✓

Pos	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	Circle	91.0000	0.6000	0.4000	mm	91.4982	0.4982	-----*
	Circle	48.0000	-0.4000	-0.6000	mm	47.4419	-0.5581	----****

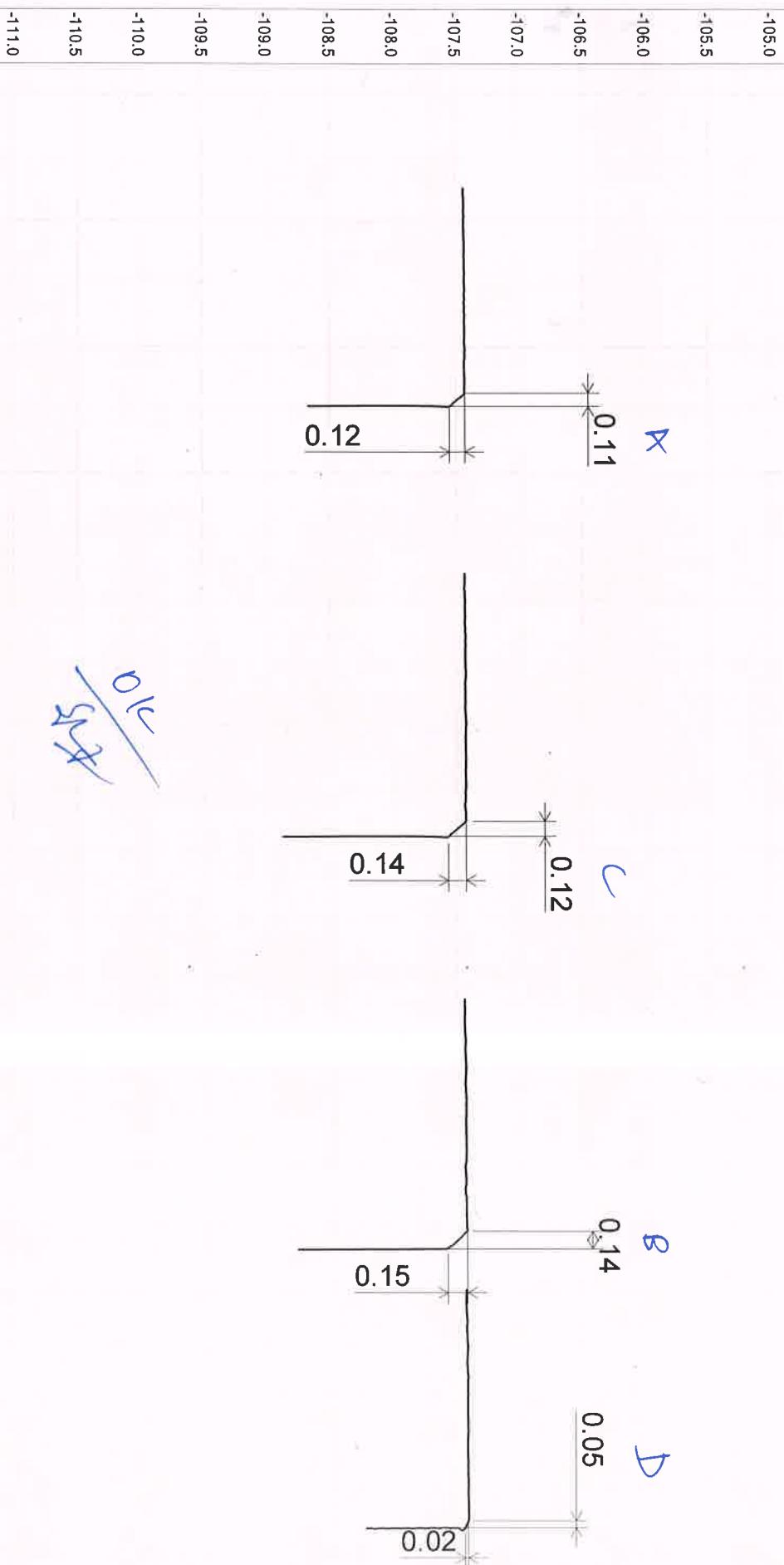
CHECKED BY

CONTOUR REPORT

MAP-ID BLR

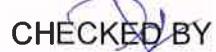
Property	KONA GPDN LAYOUT DETAIL	Revised By	Musashi-BQA002
Title		Revision No.	2
Subtitle	Musashi-BQA002	Date/Time start	04-07-2019 20:39:05
Created By	04-07-2019 20:44:51	Date/Time end	04-07-2019 20:43:45
Reversed Date	04-07-2019 20:45:18		

Meas Result Geo Data X Mag: x20 Z Mag: x20 <Contour>
[mm]



MACHINE NAME 01	PART NAME GPDN	OPERATION NAME FINAL	SHIFT RECEIVING (A)
MODEL NAME KONA	Date 22-06-2019	PART NUMBER	REMARKS OK

PosN	Element name	Nominal	UpperTol	LowerTol	Unit	Actual	Deviation	TolBar
	Distance	41.0000	0.2000	0.0000	mm	41.1357	0.1357	----***----


CHECKED BY