



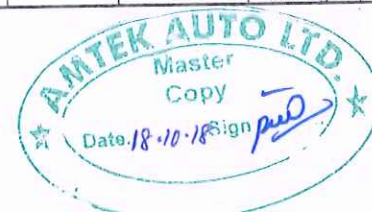
AMTEK AUTO LTD.,


CONTROL PLAN NO : IP/CP/051

F/PD/03-00

## CONTROL PLAN




★						KEY CONTACT: Mr. Chandrashekhar				Date (Org.) : 18-10-2018		Rev. No.: 00		
PROTO TYPE		PRE LAUNCH		PRODUCTION		C.F.T MEMBER: Mr.D.B. SINGH (FORGE), Miss.PRIYADHARSHINI (D.S / ENGG) Mr. SELVARAJ (HEAT TREATMENT), Mr. N.SRINIVASAN (QA), Mr.SIVAPRAKASAM (PPC), Mr. GIRISH (M.SHOP)				Date : 25.10.2018				
PART NUMBER/LATEST CHANGE LEVEL:				23431-KONA-D000		SUPPLIER CODE: A-0247				CUSTOMER ENGG. APPROVAL/DATE (IF REQUIRED):N.A				
PART NAME/ DESCRIPTION:				GEAR- M2		SUPPLIER/PLANT APPROVAL/DATE:N.A				CUSTOMER QUALITY APPROVAL/DATE (IF REQUIRED):N.A				
SUPPLIER/PLANT: AMTEK AUTO LTD.,						OTHER APPROVAL/DATE (IF REQUIRED):N.A				OTHER APPROVAL/DATE (IF REQUIRED):N.A				
PART/ PROCESS NUMBER	PROCESS NAME/ OPERATION DESCRIPTION	MACHINE, DEVICE,JIG, TOOLS FOR MFG.	CHARACTERISTICS			SPL. CHARG. CLASS	METHODS						REACTION PLAN	
			NO.	PRODUCT	PROCESS		PRODUCT/ PROCESS SPECIFICATION /TOLERANCE	EVALUATION MEASUREMENT TECHNIQUE	SAMPLE		Periodical Resp.	Resp		Control method
10	Receipt of raw material	Manually	1	Raw material grade		Ma	Scr 420HV	Verification of Supplier Test Certificate	Per lot		I	Store incharge	Mill TC	Hold the material & inform to the supplier
			2	Raw material section		Mn	Ø28mm	Verification of Supplier Test Certificate	Every lot		I	Store incharge	Mill TC	
			3	No mixing of two heats		Cr	Heat number & material grade	Visual	Per lot	100%	I	Store incharge	Mill TC	
			4	Colour code		Ma	As per colour code chart	Visual	Per lot	100%	I	Store incharge	Colour coding on all bars	
20	Storage of raw material		5	Storage		Ma	In coming storage area	Visual	Per lot	100%	I	Store incharge	Colour coding / Inspection Tag	Hold the material and inform to supplier
30	Raw Material Chemical Composition Inspection	Outside lab	1	Chemical composition		Cr	As Per STR -003	NABL-Outsource	Each heat	1 pcs	I	Lab incharge	Metallurgical test report	
			2	Surface Condition		Ma		Visual	Per lot	100%	I	Store incharge	Visually	
			3	Grain sizes		Ma		Verify Mill TC	Each heat	-	-	Lab incharge	Metallurgical test report	
			4	Decarb		Ma		Microscope	Every Heat	1 pcs	I	Lab incharge	Metallurgical test report	
			5	Inclusion Rating		Ma		Verify Mill TC	Every Heat	-	-		Metallurgical test report	
			6	Hardness		Cr		Hardness Tester	Each heat	1pcs	I	Lab incharge	Metallurgical test report	
			7	Microstructure		Cr		Microscope	Each heat	1pcs	I	Lab incharge	Metallurgical test report	
			8	Section size		Ma		Ø28mm	Vernier	5 bars	Per Heat	O	Quality Incharge	Metallurgical test report
40	Internal Heat code allocation & Marking		1	Heat code allocation		Ma	As per work instruction WI/QA/17	Visual	Every Lot	100%	O	Lab incharge		
			2	Heat code Marking		Ma						Store incharge		



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SUPPLIER/PLANT: AMTEK AUTO LTD.,						OTHER APPROVAL/DATE (IF REQUIRED):N.A				OTHER APPROVAL/DATE (IF REQUIRED):N.A				
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								SIZE	FREQ.					
50	Billet cutting	Manyo shearing machine (or) Bansaw cutting (s/c)	1	Weight	Billet Weight	Ma		Weighing scale	PER lot	2 pcs		I	As per setting approval report and Hourly monitoring report in house	If any problem hold the material & inform to supervisor
60	Billet heating	100KW induction heater	1	Temperature		Ma	1120 - 1180deg celsius	Pyrometer	Every shift	As per PC - AAL-MAP-001	I	I	PC-AAL-MAP-001	Stop the machine and inform supervisor
			2	Coil size		Mn	Dia 36	Verify the embos code				O		
70	Forging	600 Ton Press	1	Diameter		Mn	41.5+0.6-0.0	Vernier caliper	Every shift	As per PC - AAL-MAP-001		I	As per PC - AAL-MAP-001	
			2	Diameter		Ma	13.0+0.5 /-0.0	Vernier caliper				I		
			3	Thickness		Ma	15.5+0.6-0.0	Height Gauge				I		
			4	Depth		Mn	8.00	Vernier caliper				I		
			5	Apearance		Ma	LAPPING, UNDEDRFILLING DENT & PITTING NOT ALLOWED,	Visual			SUP	I		





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									SIZE	FREQ.					
90	Normalising	Gas and electric furnace	1	Temperature		Ma	As per heat treatment cycle WI / HT / 16	Automatic temp controller	1	Evey hour	O	I	AS PER H T CYCLE SHEET	Control temperature and cooling rate.If any problem stop the furnace and inform to supervisor	
			2	Frequncy		Ma	As per heat treatment cycle WI / HT / 16	Cycle Recorder	1	Evey hour	O	I	AS PER H T CYCLE SHEET		
			3	Quantity of loading		Ma	As per heat treatment cycle WI / HT / 15	Manual Counting	100%		O	I	AS PER H T CYCLE SHEET		
			4	Surface hardness		Cr	80-95 HRB	Rock well Hardness tester	5	Evey hour	O	I	Hardness report		
			5	Microstructure		Cr	Ferrite & pearlite+ <25% Bainite	Metallurgical microscope	1	Shift	O	I	Lab report		
100	Shot blasting	DISA machine	1	Scale removal	0.8mm MAX	Mn	No scaling	Visual	Lot	100%	O	I	Visual	Segregate the	
110	Visual Inspection	Manually	1	Appearance		Ma	LAPPING, UNDEDRFILLING DENT & PITTING NOT	Visual	Lot	100%	O	I	Visual	Segregate & Rework / Reject	
120	Machining	CNC machining	1	SUB CONTRACTOR										Supplier report	
130	Incoming Inspection	Measuring instruments	1	As Per Incoming Std		Ma	As Per Sampling plan	Measuring instruments	Per lot	AS PER F/QA/43		I	F/QA/02	Segregate & Rework / Reject	
140	Final inspection Visual + Dimensional	Measuring instruments and Visual	1	As per PDI Standard		Ma	As per PDI Standard	Measuring instruments	Lot	As per PDI Standard		I	PDI report F/QA/17	Segregate & Rework / Reject	
150	Oiling	Manually	1	Rust Preventive oil to be applied		Mn	Fully oiled	Visual	100%	100%	O	I		Segregate & Re oil	
160	Packing & dispatch	Manually	1	As per packing Std		Mn	As per packing Std	Manual	100%	100%	O	I			
<div style="display: flex; justify-content: space-between;"> <div>Prepared By </div> <div>Approved By</div> </div>															

