


CONTROL PLAN

Prototype 	Prelaunch 	Production 	Core team:	MR. L.M. Sharma, Mr. Balwant, Mr. Inderjeet singh, Nitin Goyal	Key contact/phone:	Mr. Rajiv Gupta 9212247615	Drg, Rev and Date:	C / 10-02-2021								
CONTROL PLAN No.:	ASM/CP/126		Customer Quality Approval Date (If Req'd)				(0) Critical to Quality parameters									
PART NAME :	CAP RESERVOIR COVER RAW		Supplier/Plant Approval Date				(01) Significant characteristics									
PART NO.:	520KN00173		Other Approval Date (If Req'd)				(0) Customer Complaint									
Process No.	Process Name/Operation Description	Machine Devices, Jig & Fixtures	Characteristics			Methods				Reaction Plan	Pokayoke status	Ref. Document	Risk	Contingency Plan		
			No.	Product	Process	Product/Process specification/ Tolerances	Evaluation/ Measurement Technique	Sample							Control Method	
								Size	Frequency							
10	Receipt of Raw Material	Spectro M/C	1	Raw Material Chemical Composition	Laboratory Testing	ADC-12	Spectra Testing for Chemical Analysis	Each & Every Lot	When Material Received	Check sheet	Reject the Material, Call Supplier, and Raise Debit Note	No	~	R.M. NG	Alternate Supplier (List of Approved Supplier)	
							Supplier MTC	Each & Every Lot	When Material Received							
							Third Party	Random Sample of Molten Metal	Once in 3 Month							
			2	Supplier Report	Mechanical testing	ADC-12	Supplier Report	Each & Every Lot	Material Receiving		inform to Supplier.					
20	Storage	~	1	Raw Material Color Code	Proper Color Coding	Blue	Visual	Every Supply	As & When Raw Material Received	Proper Color Coding & Identification and proper location	~	No	ASM/Q/WI/01	Color Code not available on Ingot	Color code in ASM Store	
30	Material Melting	Central Melting Furnace	1	Temperature	~	720°C ~750°C	Thermocouple (Hand Pyrometer)	Each Lot		-	-	No	~	Furnace in B'Down	Holding Furnace to be used as Melting cum Holding	
40	 Material Treatment Central melting furnace (Cleaning and degassing with coverall flux)	~	1	Coverall A-11	~	2.0 ~ 2.5.0 KG	By weightment	Once	In a shift	Supervisor Verification	Re-process	No	ASM/F/QC/31	N2 Degassing Unit in B'Down	Manual Degassing	
			2	 N2 Degassing	Cycle Time	~	2 ~ 3 Min.	Timer	Each Ladle	Each Ladle	check sheet	Re-process				Interlockin g with Machine
					N2 Pressure	~	4 ~ 5 Bar	Pressure Gauge	Each Ladle	Each Ladle						
					Granual (Grade A1L)	~	300 gm	Std. Packing	Every Ladle of Central Melting Furnace	Every Ladle						
					Low RPM	~	450±20	Screen Display	Each Ladle	Each Ladle						
					High RPM	~	550±20	Screen Display	Each Ladle	Each Ladle						
					Low LPM	~	15±4	Screen Display	Each Ladle	Each Ladle						
			High LPM	~	25±4	Screen Display	Each Ladle	Each Ladle								
3	Density	Density of Vaccum Sample	~	2.5 ~ 3.0 kg/m3	Density Index Meter	one Sample	Each Day	check sheet	Re-process	No						
		Density Index of Vaccum Sample	~	2.0 Max.	Density Index Meter	one Sample	Each Day									

50	Die Setting (Machine Parameter setting & Die Pre heating)	Pressure Die Casting Machine-180 TON ~	1	~	N2 Injection Pressure	70 ~ 80 Kg/Cm ²	Pressure Gauge	Once	In a Shift	~	Reset the machine Parameter	~	ASM/F/QC/10	Pressure Gauge Damage,N2 Gas Cylinder Empty	Pressure Gauge ,N2 Gas Cylinder in Advance (Store)
			2	~	System / High Pressure	110~130 Kg/Cm ²	Pressure Gauge	Once	In a Shift						
			3	~	Low Pressure	20~30 Kg/Cm ²	Pressure Gauge	Once	In a Shift						
			4	~	Ejector on Time	2~4 Sec	Timer	Once	In a Shift						
			5	~	Die Opening Time	4~8 Sec	Timer	Once	In a Shift						
			6	~	Die Temperature after Spray	140 °C~180 °C	Laser Gun	Once	In a Shift						
			7	~	Spray Time	1~3 Sec	Manual/ Timer	Once	In a Shift						
			8	~	Cover Flux	300 Gm	Weightment	Once	In a Shift						
			9	~	First Phase	3~5 Turns	Manual	Once	In a Shift						
			10	~	Second Phase	1~3 Turns	Manual	Once	In a Shift						
			11	~	Second Phase Time	0.5~1.0 Sec	Timer	Once	In a Shift						
			12	~	Intensification Pressure	280±20 Kg/Cm ²	Pressure Gauge	Once	In a Shift						
			13	~	Material Temperature	620 °C~650 °C	Thermocouple	Once in a shift by Hand Pyrometer (100% controlling with thermocouple)							
			14	~	Degassing	2 Tablet of 50 gm each	Manual	Every 3 Hrs.	In a shift						
60	Metal Pouring into sleeve and take shot	Pressure Die Casting Machine-180 TON	2	~	Spoon for Pouring	3"	Scale	Scale	100%	Supervisor Verification	Replace the Spoon	~	ASM/Q/WI/06	~	~
70	Casting First shot approval from Q.C. & Patrolling Inspection.	Pressure Die Casting Machine-180 TON	1	Dim.	~	54±0.2	DVC	Each Part 01 Cavity	Die Loading & every 3 Hrs.	check sheet	Stop Die Running till correction	No	ASM/F/QC/26 & ASM/F/QC/03	Part not as per specification	Unload Die & Sent to tool room for correction
			2	Dim.	~	36±0.2	DVC								
			3	Dim.	~	50.5±0.2	DVC								
			4	Dim.	~	32.5±0.15	DVC								
			5	Dim.	~	22.5±0.2	DVC								
			6	Dim.	~	35±0.2	DVC								
			7	Dia	~	2X Ø4.5 +0.2	DVC								
			8	Dim.	~	6 ±0.1	DVC								
			9	Dim.	~	2.5±0.1	DVC								

			10	Dim.	~	41±0.15	H.G.								
			11	Dim.	~	22.2±0.2	H.G.								
			12	Dim.	~	36±0.2	DVC								
			13	Engraving height	~	0.5 min.	DVC								
			14	Calender	~	as per current month & year code	Visual								
			15	Apperence	~	must be free from casting defects	Visual								
80	Lancing	Lancing Machine	01	Parting Line Flash	 ~	No Parting line flash	Visual	Each lot	Supervisor Verification	Inform to Production Supervisor to take corrective action	Stop Machine till correction	No	~	Machine in b'down	Spare Machine Available
90	Bufing	Buffing Machine	01	Parting Line Flash	~	No Parting line flash	Visual	Each lot	Supervisor Verification	Inform to Production Supervisor to take corrective action	Stop Machine till correction	No	~	Machine in b'down	Spare Machine Available
100	Drilling	Drilling M/C	01	Hole Dia Drilling	Drilling	2X Ø4.50 +0.2	P.G/DVC	2pcs/2HRS/Shift	Check Sheet	Inform to Production Supervisor to take corrective action	Stop Machine till correction	No	~	Machine in b'down	Spare Machine Available
110	Shot Blasting	Shot blasting m/c	01	Shot Size	~	Ø 0.5 mm	~	2pcs/lot	Operator Verification	Inform to Production Supervisor to take corrective action	Stop Machine till correction	No	~	Machine in b'down	Spare Machine Available
			02	Soaking Time	~	5-6 min	Wrist Watch								
120	Visual Inspection	Visual	01	Casting Defects	~	No casting defect allowed	Visual	100%	Inspector Verification	inspector verification	Recheck Material	No	~	~	~
130	PDOA		01	Dim.	~	54±0.2	DVC	5 pcs/Each Lot	Inspection Standard	PDI Report	Stop the supply & take	No	~	~	~
			02	Dim.	~	36±0.2	DVC								
			03	Dim.	~	50.5±0.2	DVC								
			04	Dim.	~	32.5±0.15	DVC								
			05	Dim.	~	22.5±0.2	DVC								
			06	Dim.	~	35±0.2	DVC								

			07	Dia	~	2X ϕ 4.5+0.2	DVC				corrective action				
			08	Dim.	~	6 \pm 0.1	DVC								
			09	Dim.	~	41 \pm 0.15	H.G.								
			10	Dim.	~	22.2 \pm 0.2	H.G.								
			11	Dim.	~	36 \pm 0.2	DVC								
			12	Apperence	-	must be free from casting defects	Visual								
140	Packing the material as per the work instruction	Manually	01	Corrogated Box	-	1000pcs/box	Counting	Each Bag	Supervisor Verification	Supervisor Verification	~	~	~	~	~
150	Dispatch	~	01	Vehicle	~	~	Transporation	Quantity as per schedule Invoice and other documents applicable inhouse.	Approved Transporter	Each supply	Each Supply	Maintain Dispatch Record	~	No	~
3	22.02.2020	Control Plan updated for Critical & Significant peremeters								Nitin Goyal	Ankur Singh	L.M. Sharma			
2	30.01.19	Control Plan Revised as :- 01. Central Melting Furnace 02. N2 Degassing								Nitin Goyal	Rajiv Dagar	L.M. Sharma			
1	25.11.17	Buffing Process added after lancing								Nitin Goyal	Rajiv Dagar	L.M. Sharma			
0	08.10.16	Initial release								Nitin Goyal	Rajiv Dagar	L.M. Sharma			
Rev.No.	Rev. Date	AMENDMENTS								PREPARED BY:	CHECKED BY:	APPROVED BY:			