



# Quality Engineering Management Table

Lost Wax Casting Process  
(investment casting)

Doc. No. 4-02-001

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Version: 1

Works		Management items		Management method				Ref. documents
No.	Station	Item	Quality request	Method/equipment	Timing	Duty	Inspection record	Check basis
1	Incoming material Inspection	As per "Incoming material inspection control standard"						3-10-001
2	Material in stock	As per "Moving, saving and packing management"						2-15-001
3	Dissolve and add wax	Wax quality	Clean	Visual	Once/2 weeks	Worker leader	Yes	4-09-003
4	Wax injection bar	Surface of wax bar	Smooth	Visual	Full	Worker	No	3-08-003
5	Wax injection	1、Letters	Clear, Correct	Visual	Full	Worker	No	Process control chart
		2、Appearance	No bubble, Smooth	Visual	Full	Worker	No	
		3、Internal holes	No deformation	Visual	Full	Worker	No	
		4、Q'ty	Process control chart	Calculation	Per lot	Worker	Process control chart	Process control chart
		5、Pressure	Process control chart	Wax injection pressure chart	Per lot	Worker	Process control chart	Process control chart
		6、Temperature	Process control chart	Wax injection temperature chart	Per lot	worker	Process control chart	Process control chart

			7、Time of wax injection	Process control chart	Time table of wax injection	Per lot	Worker	Process control chart	Process control chart
6	Wax repair		Burrs	De-burrs	Visual	Full	Worker	No	
7	Pattern assembly		1、Correct way for wax bar and pattern assembly	Wax pcs assemble smoothly to wax bar joint	Visual	Full	Worker	No	Process control chart 3-08-003
			2、Material mark	Correct	Visual	Full	Worker	No	Process control chart 3-08-004
			3、Q'ty calculation	Correct	Visual	Full	Worker	No	Process control chart
8	Hanging and clean wax pcs		1、Hanging	Iron slice stay close to wax bar	Visual	Full	Worker	No	
			2、Clean wax pcs	Clean fully	Visual	Full	Worker	No	
9	Dipping		1、Concentration	28-30secs	Stop watch and No.5 glass	Once/day	Worker leader	Shell temperature, humidity and thick liquid concentration check list	3-08-005
			2、Concentration	30-32secs	Stop watch and No.5 glass	Once/day	Worker leader	Shell temperature, humidity and thick liquid concentration check list	3-08-005
			3、Concentration	10-12secs	Stop watch and No.5 glass	Once/day	Worker leader	Shell temperature, humidity and thick liquid concentration check list	3-08-005
10	Wax removal								
11	Open furnace and material analysis		1、Shell Physics test	No	No	Process control chart	Worker leader	No	2-08-002

			2 · Temperature of pouring	Process control chart	Temperature tester	Per furnace	Worker	Process control chart	Process control chart
			3 · Material analysis	As per specification	Spectrometer	Per furnace	QC	Spectrometer list	3-08-006
12	Casting shake out Marking & tracking		Heat No.	Clear, Correct	Visual	Per furnace	Worker	4-10-004	3-07-001
13	Sand blasting		Surface roughness	Smooth	Visual	Full	Worker	No	
14	Gate cut off · Heat treatment · Physics property test		1 · Heat treatment	As per specification	Microscope	As per customer's request	QC	Heat treatment report	3-08-008
			2 · Physics property	As per specification	Tensile and Impact tester	As per customer's request	QC	Tensile and impact report	3-08-006
15	Grinding		In gate grinding	Moderate height	Visual	Full	Worker	No	
16	Acid wash		Change acid liquid	Shine	Visual	Daily	Worker		4-08-006
17	Final Inspection		1 · Appearance of casting	Clean, complete	Visual	Full	QC	Final inspection daily report	
			2 · Internal of casting	No shrinkage and defect	Visual	Full	QC	Final inspection daily report	
			3 · Letters of heat no.	Correct and Complete	Visual	Full	QC	Final inspection daily report	Process control chart
			4 · Dimensions check	As per customer's drawing	Caliper and Height gage	As per customer's request or new molding	QC	4-10-002	Customer's drawing and Incoming material inspection control standard
			5 · P.T.	DIN 1690-2	P.T. reagent	As per customer's	QC	4-10-005	DIN 1690-2

						request			
			6 · X-ray	DIN 1690-2	X-ray tester	As per customer's request	QC	4-10-006	DIN 1690-2
18	Repair								
19	Packing and Delivery								