

控制计划 Control Plan															
☒ 样件 Prototype		☐ 预生产 Pre-Launch		☐ 批量生产 Production		关键联系电话 Key Contact				日期(起草) Date (Orig)			供应商/工厂批准/日期 Supplier/Factory Approval/Date		
控制计划编号/版本号 Control Plan No./Rev No		CP20098635-1 A00				021-67763541 13564787030 (周先生)				2024.06.03			2024.06.03		
零件号码/最新更改水平 Part Number/Latest Revision Level						核心小组 Core Team				客户工程批准/日期 Customer Engineering Approval/Date					
20098635 REV B										NA					
零件名称/描述 Part Name/Description : FRONT COVER										客户质量批准/日期 Customer Quality Approval/Date					
供应商/工厂 Supplier/Plant Hansin Precision Engineering Shanghai				供应商编号 Supplier Code: NA		General Manager Engineering Manager QA Designer				Chew Ee Hang Lu Chuanhai Chu Libo Sheng HaiFeng Mao FeiFei		其他批准(如需要) Approval by Others (if required)			
										NA					
过程名称 Process Name		设备/工序 Equipment/Process	控制项目 Control Items	特性 Characteristics			特殊特性等级* Special Characteristics Class*	方法 Methods					负责部门 Responsible Department	反应计划 Response Plan	
操作描述 Operation Description	产品 Product			过程 Process	SPC	产品/过程的规范/公差 Product/ Process Specification / Tolerance		评价 / 测量技术 Evaluation & Measurement Technique	样本Sample		控制方法 Control Methods				
									容量 Size	频率 Frequency					
10	接收订单 Receive Purchase Order		订单内产品数量及型号 Purchase Order Quantity and Type	√			A	见订单一览表 Refer To Order Checklist	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	行政部 Administration Department	通知客户 Inform Customer	
20	下达生产指令 Issue Work Order		产品生产数量及型号 Production Quantity and Type	√			A	见工作指令号 Refer To Work Order Number	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	行政部 Administration Department	通知客户 Inform Customer	
30	原材料及配件采购 Purchase Raw Material and Accessories	1. Baydur 110 FR-2N 2. PC 240 + 0.505%TIO2 3. 20104332 4. 20104330 5. 20115710 6. LOCTITE AA 3106 LIGHT CURE ADHESIVE 7. 底漆：E61AP5027-020P1 固化剂V66VP5001-002P8 稀释剂R07KP1039-016P7 面漆：F63SP3805-18KG 固化剂V66VE0001-004P8 稀释剂R07KP1004-016P7	原材料及配件规格型号 Specification & Type of Raw Material and Accessories	√			A	见采购单与客户产品BOM表 Refer To BOM List	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	采购部 Purchasing Department	拒收或退换货 Reject or Return	
40	接受材料及配件 Receive material and components		原材料及配件规格型号 Specification & Type of Raw Material and Accessories	√			A	见采购单与送货单 Refer To PO and DO	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	采购部 Purchasing Department	拒收或退换货 Reject or Return	
50	IQC 进料检验	1. Baydur 110 FR-2N 2. PC 240 + 0.505%TIO2 3. LOCTITE AA 3106 LIGHT CURE ADHESIVE	供应商名称 Supplier Name	√			A	见“合格供应商名录” "Check "Qualified Supplier List"	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	IQC	拒收或退换货 Reject or Return	
			产品规格、型号 Part Specification, Type	√			A	见采购订单/送货单/BOM 表 Check Purchase Order / Delivery Order / BOM List	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	IQC	拒收或退换货 Reject or Return	
			化学品有效期 Shelf-life of Chemicals	√			A	见化学品标签 Check Label on Chemical Goods	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	IQC	拒收或退换货 Reject or Return	
			材质证明 Material Certification	√			A	IQC进料检验报告 IQC Report	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	仓管 Warehouse Management	拒收或退换货 Reject or Return	
		1. 20104332 2. 20104330	材质证明,尺寸报告 Material Certification, Dimension report	√			A	IQC进料检验报告 IQC Report	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	IQC	拒收或退换货 Reject or Return	
		底漆：E61AP5027-020P1 固化剂V66VP5001-002P8 稀释剂R07KP1039-016P7 面漆：F63SP3805-18KG 固化剂V66VE0001-004P8 稀释剂R07KP1004-016P7	颜色，光泽，性能测试 Color, Gloss, Performance test	√			A	1. 核对供应商提供的物性表，ROHS及测试油漆附带批次板色差，涂层性能检测。 1. Check the physical property table provided by the supplier, ROHS and test the production batches painted coupon and the performance test for the painted coupon. 2. 按照产品喷漆作业流程，试喷1件产品和1片色板。烤箱温度50℃±5℃，烘2小时。 2a. 检测产品颜色，光泽。 2b. 色板放置72小时后测颜色，光泽，硬度，酒精，耐磨及百格测试。色板背面贴好标签，记录色差，油漆批次及检测时间后存档。 2. Test spray one product and substrate coupon 75 x 150 x 4mm (for every batches), and then measure the color, gloss for Painted Part. For Painted coupon to measure the color, gloss and test the hardness, alcohol and hundred grid test after drying according to the product spray painting operation process, 3. ΔE≤2.0 Gloss: 25±5@60". 4. 百格测试允许脱落面积不超过10%。测试方法详见客户外观标准15019430_E 第11.4.2项 4. The 100-Grid Crosscut Test allows no more than 10% of the shedding area. The test method is as per Customer Appearance Standard 15019430_E item 11.4.2 5.耐醇性：70%乙醇500g力/cm²擦拭最少50次来回 5. Alcohol resistance: 70% ethanol with 500g force/cm² wipe at least 100 times back and forth 6.漆层硬度≥F (测试方法：Paint hardness test ≥F (Test method ASTM D3363) 7.磨损实验：大于50次每分钟，负荷为1.65kg，使用棉布磨损。Abrasion test：>50 rubs per minute with load of 1.65kg using cotton cheesecloth	1.色差仪 2. 光泽仪 3.美工刀 4.百格板 5.浓度70%酒精 6. 客户批准标准色板 7. 3M 250 胶带 8.棉布或棉签 9.摩擦实验机器。 #1 Color Spectrometer (KONICA MINOLTA) . #2 Gloss Meter. #3 Pen knife. #4 100-Grid Plate. #5 Alcohol 70% ethanol. #6. Customer signed Master Coupon. #7. 3M 259 Adhesive Tape. #8 Cotton Cloth or Cotton Swab. #9 Friction Machine.	每型号 Each Type	每批次 Each Batch	1桶油漆 1 bucket of paint	IQC/喷漆技术员 IQC/Painting Technician	拒收或退换货 Reject or Return	
		磅秤 Weighing Scale	数量/重量 Quantity / Weight	√			B	见原材料采购单/送货单 Check Raw Material Purchase Order/Delivery Order	目视/称重检测 Dimension Measurement	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	仓管 Warehouse Management	退货 Return Goods	
		白炽灯 Incandescent lamp	外观 Appearance	√			A	见相应图纸/检验规范 Check Drawings / Inspection Specification	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	IPQC	返工/报废 Rework / Scrap	
60	原材料及配件入库 Storage of Raw Materials and Accessories	叉车或液压车 Forklift or Hydraulic Lift		√			B	数量准确，无包装破损，标识正确 Correct Quantity, Packaging Intact and Correct Labels	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	IQC	返工或退货 Rework or Return Goods	
70	领料 Requisite Material	1. Baydur 110 FR-2N 2. 20104332 3. 20104330	批号，材料名称，数量 Lot Number, Name of Material and Quantity	√			B	领料记录表 Material Requisition Record Sheet	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	先进先出管理、领料单、工单 FIFO, Material Requisition Form, Work Order Form	生产/仓管 Production / Warehouse Management	拒收并通知相关部门 Reject and Inform Relevant Department	
80	成型前准备 Preparation before Molding	磅秤 Weighing Scale	材料规格/数量 Material Specification, Quantity		√		A	见相应的业务订单/图纸 Check Purchase Order and Drawing	目视/称重检验 Visual Check / Weighing Inspection	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	生产/仓管 Production / Warehouse Management	返工 Rework	
			化学品有效期 Chemical shelf life	√			A	见化学品标签 Check Chemical Goods Label	目视检验 Visual Check	每件 Each Piece	每批次 Each Batch	全检 Full Inspection	生产 Production	退回仓库 Return to Warehouse	
		搅拌系统 Mixing Barrel	PUPU剂混合比重 Desmodur 44P01,Bayder VP PU 1498 and Exolit AP422 Mixing Proportion	√			A	注塑工艺卡 Molding Card	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	生产 Production	返工 Rework	
90	成型灌注 Molding Injection		螺母/镶件 Screw/Insert		√		A	见作业指导书 See Operating Instructions	目视检验 Visual Check	每件 Each Piece	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
			灌注机系统设定 Control Parameters	注射量 Injection Volume		√		A	注塑工艺卡 Molding Card	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	生产 Production	报废 Scrap
			灌注机系统设定 Control Parameter	注射时间 Injection Time		√		A	注塑工艺卡 Molding Card	计时，目视检查 Calculate Time，Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap
100	PU固化 Curing	恒温机 Temperature Controller	模具温度 Mold Temperature		√		A	测量模具温度：60-65℃ Measure Mold Temperature 60-65℃	温度测量仪 Temperature Measurement	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
110	脱模 Ejection	Mould Release 脱模机 RIM Machine 注塑机 Press 合模机	外观 Appearance	√			B	无气泡，无空穴，无脱模拉痕，无接痕，无高飞边。 No voids, No unfilled cavity, No Dragging Marks, No Welding Lines, No Burr	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
		注塑员自检 Self Check by Molding Technician	外观 Appearance	√			B	螺母、镶件装配到位、无漏装，螺母内无进胶、表面无气泡、拉痕 Screw, Insert assembly in place, No Missing Insert, No overflow material in the Thread, No voids or dragging marks on the surface	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	

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过程名称 Process Name		设备/工序 Equipment/Process	控制项目 Control Items	特性 Characteristics			特殊特性等级* Special Characteristics Class*	方法 Methods						负责部门 Responsible Department	反应计划 Response Plan	
操作描述 Operation Description				产品 Product	过程 Process	SPC		产品/过程的规范/公差 Product/ Process Specification / Tolerance	评价 / 测量技术 Evaluation & Measurement Technique	样本 Sample		控制方法 Control Methods				
		容量 Size	频率 Frequency													
120	制程检验 In Process Quality Check First Time (IPQC)	首件检验/制程检验/末件检验 Inspection of 1st Article / In-process Production Inspection / Final Article Inspection	外观 Appearance	√		A	螺母、镶件装配到位、无漏装，表面无气泡、拉痕 Screw, Insert Assembly In Place, No Missing Insert, No voids and dragging marks on the Surface	目视检验, Visual Check	首件检验1pc / 制程检验1pc/ 末件检验1pc/ Inspection of 1st Article 1pc/ In-process Production Inspection 1pc /Final Article Inspection 1 PC	每批次 Each Batch	检验规范 Inspection Specifications	IPQC	返工/报废 Rework / Scrap			
			尺寸 Dimension	√		A	(30) 24.52±0.2	Control dimension/CMM								
		(46) 5X 374.02±0.50		Control dimension/CMM												
		(82) 2X 12.02±0.20		Control dimension/CMM												
		(133) 4X 84.10±0.30		Control dimension/CMM												
		(135) 24.52±0.2		Control dimension/CMM												
		白炽灯 Incandescent lamp	外观 Appearance	√		A	见相应图纸/检验规范/版号与注塑日期 Check Drawings / Inspection Specification / Revision Number & Date of Injection	目视检验 Visual Check						100%	每批次 Each Batch	全检 Full Inspection
130	CNC 铣料包和尺寸 CNC Milling Material	加工前准备 Preparation before processing	√		A	1. 检查治具是否完好。是否有影响使用的缺陷 1. Check whether the fixture is intact. Are there any defects that affect use? 2.检查程序是否正确，是否为最新版本，且符合最新产品加工要求，不得漏加工，多加工等问题 2. Check whether the program is correct, is the latest version, and meets the latest product processing requirements. There must be no missing processing, excessive 3. 治具在机台上螺丝锁紧，安装牢固。 3.The fixture is locked with screws on the machine table and installed firmly.	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap				
			产品加工调试 Product processing and debugging	√		A	1.将产品固定到治具上后，每个加工的料包小程序，进行单独加工调试。 1.Each processed material package is processed and debugged after the product is fixed to the jig, individually. 2.检查料包是否加工平整，过切，铣到螺母等不良。如有不合格，重新调试，直到产品合格为止 2.Check whether the material bag is processed flat, over-cut, milled to the nut, etc. If there is any failure, re-debug until the product is qualified.	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		正式生产 Official Production		√		A	加工产品合格后，把所有小程序串联一起。进行正式生产。 Official production will start after all the small programs are connected in series after the processed products are qualified	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		外观 Appearance		√		A	1. 根据料包加工规范及图纸要求检查外观。 1.Check the appearance according to the package processing specifications and drawing requirements 2.去除多余料包、进料口铣平整，不可多铣 2. Excess Material, remove the gate flush to the surface but overcutting is not allowed	目视检查 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		尺寸 Dimension		√		A	(46) 5X 374.02±0.50 MEASURE p1-p5	Control dimension/CMM	首件检验1pc / 制程检验1pc/ 末件检验1pc / Inspection of 1st Article 1pc/ In-process Production Inspection 1pc /Final Article Inspection 1pc	每批次 Each Batch	2D Drawing	IPQC	返工/报废 Rework / Scrap			
			√		A	(89) 6X 11.20+0.30/-0.10	Control dimension/CMM									
140	抛光部门加工 Polishing department processing	打磨机，锉刀，竹片 Sander, file, bamboo chip #240 , #320. #400砂纸	表面打磨 Surface polishing	√		A	表面抛光打磨（使用打磨机、锉刀，竹片包裹砂纸，内表面#240砂纸打磨，外表面#320或#400砂纸打磨） Surface polishing and grinding (use grinder, file, bamboo chips are wrapped with sandpaper, and the inner surface is polished with #240 sandpaper. Polish the outer surface with #320 or #400 sandpaper)	目视检查 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		专用堵孔螺丝 Special blocking hole screws	安装堵孔螺丝 Install blocking hole screws	√		A	1. 堵螺丝孔必须安排固定人员，通经过严格培训合格后上岗。以免操作不当造成螺纹损坏等问题。 1.To avoid problems such as thread damage caused by improper operation, Fixed personnel must be assigned to plug screw holes, and they must undergo strict training and pass the job 2. 根据螺母位置规格图，选取合适的堵孔螺丝，螺丝牙纹长度不得超过螺纹孔深度，以免螺丝拧入时产品被顶破。 2.According to the nut position specification diagram, select the appropriate hole blocing screw. The thread length of the screw must not exceed the depth of the threaded hole to prevent the product from being broken when the screw is screwed in 3. 所有螺丝孔遮蔽好，拧入螺丝时，螺丝与螺纹孔对正，对准，以免螺丝歪斜错位拧入造成螺母损坏。 3. Ensure all screw holes are well covered. When screwing in the screws, the screws should be aligned with the threaded holes to prevent the screws from being screwed in skewed and misaligned and causing damage to the nuts. 4. 堵孔后，螺帽与螺母平面全部贴合，避免喷砂时，砂粒进入螺纹，及后续喷漆时油漆进入螺纹。 4. After the hole is blocked, the nut and nut planes are all fitted together to prevent sand particles from entering the threads during sandblasting and paint from entering the threads during subsequent painting.	目视检查 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		喷砂机，#60砂，喷砂专用橡胶手套 Sandblasting machine, #60 sand, special rubber gloves for sandblasting	喷砂处理 Sand blasting	√		A	1. 喷砂要求：使用#60砂，喷砂压力50-65PSI 1. Sandblasting requirements: use #60 sand, sandblasting pressure 50-65PSI 2.产品内表面及外表面，角头处都进行全面喷涂，不得漏喷。 2. The inner and outer surfaces of the product and the corners are fully sprayed, and no spray is allowed to be missed.	目视检查 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		原子灰 Putty Filler	表面修补 Surface Repair	√		A	对产品表面凹坑，缺料，气孔，塌角等不良进行修补后，打磨平整，Polish to make it smooth after repairing defects such as pits, missing materials, pores, and sunken corners on the surface of the product	目视/手感检验 Visual / Hand Feel Inspection	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		检验 Inspection	外观 Appearance	√		A	根据抛光等级面区域图，图纸及客户外观标准检验产品外观和结构。 Inspect the appearance and structure of the product according to the polished grade surface area map, drawings and appearance standards of the Customer	目视检查 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		包装 Packaging	包装方式 Packaging Methods	√		B	见喷漆前包装作业指导书 Refer Work Instruction for Packaging before Painting	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap			
		作业前准备好防护用品 Prepare protective equipment before work	√		B	1. 防护口罩 2.防静电帽 3.橡胶手套 4.防静电服 5.防静电鞋套 1. Protective mask 2. Anti-static cap 3. Rubber gloves 4. Anti-static clothing 5. Anti-static shoe covers	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap				
		作业人员穿戴要求 Wearing requirements for staff	√		B	1. 拉链拉紧，2.领口扣紧，3.袖口扎紧。 4. 穿戴用品干净整洁，无灰尘，脏污等。 1. Tighten the zipper, 2. Fasten the collar, 3. Tie the cuffs tightly. 4. Wearing supplies are clean and tidy, free of dust, dirt, etc.	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap				

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零件号码/最新更改水平 Part Number/Latest Revision Level						核心小组 Core Team				客户工程批准/日期 Customer Engineering Approval/Date				
20098635 REV B										NA				
零件名称/描述 Part Name/Description：FRONT COVER										客户质量批准/日期 Customer Quality Approval/Date				
供应商/工厂 Supplier/Plant Hansin Precision Engineering Shanghai				供应商编号 Supplier Code: NA		General Manager Chew Ee Hang Engineering Manager Lu Chuanhai QA Chu Libo Designer Sheng HaiFeng Mao FeiFei				其他批准(如需要) Approval by Others (if required)				
										NA				
过程名称 Process Name		设备/工序 Equipment/Process	控制项目 Control Items	特性 Characteristics			特殊特性等级* Special Characteristics Class*	方法 Methods					负责部门 Responsible Department	反应计划 Response Plan
操作描述 Operation Description				产品 Product	过程 Process	SPC		产品/过程的规范/公差 Product/ Process Specification / Tolerance	评价 / 测量技术 Evaluation & Measurement Technique	样本Sample		控制方法 Control Methods		
150	喷漆 Painting	油漆调配及喷涂要求 Paint mixing and spraying requirements	√			A	1.防护用品穿戴完整后方可进入油漆房开始调配油漆。 1.Only allow to enter the paint room and start mixing paint after wearing complete protective equipment 2.底漆：E61AP5027-020P1 固化剂V66VP5001-002P8 稀释剂R07KP1039-016P7 面漆：F63SP3805-18KG 固化剂V66VE0001-004P8 稀释剂R07KP1004-016P7 配比:6比1比4-5 Primer:E61AP5027-020P1, hardener V66VP5001-002P8, thinner R07KP1039-016P7, ratio: 10:1:1 Topcoat: F63SP3805-18KG, curing agent V66VE0001-004P8, diluent R07KP1004-016P7 ratio: 6:1:4-5 2. 喷漆气压1-2KG/cm ² ，喷枪口径Ø0.8-1.5mm 喷漆距离15-25 cm 2. Spray painting air pressure 1-2KG/cm2, spray gun diameter Ø0.8-1.5mm, spray painting distance 15-25 cm	目视检验/电子称 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
		1. 素材检查 Material check 2. 部分区域贴纸遮蔽处理	√			A	1. 对素材进行外观检验，合格产品去除表面灰尘，同时准备喷漆批次色板（喷漆批次留样色板） 1. Conduct appearance inspection on materials and remove surface dust of qualified products. And prepare the substrate coupon (batches coupon) at the same time 2. 对产品Ø4±0.05定位柱进行贴纸遮蔽（4处），不需要喷漆（见尺寸#9和#21） 2. Mask the Ø4±0.05 positioning posts of the product with stickers (4 places), no need to spray paint (see dimensions #9 and #21) 3. 导光灯点胶装配区域不喷漆，进行贴纸遮蔽。 3. The light guide light dispensing assembly area is not spray-painted and is covered with stickers. 4. 外观等级要求参照内部喷漆区域图， 及illumina 外观标准要求。详见： 2000S0774 Windu仪器外观规格 4. For appearance grade requirements, refer to the internal painting area diagram and illumina Appearance standard requirements. For details, see: Redline 2000S0774 Windu Instrument Cosmetic Specification	目视检验/客户外观标准/喷漆区域图 Visual Check/Customer Appearance Standard/Painting Area Map	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
		喷漆作业 Painting operations	√			A	注意：正面及侧面喷漆，反面有些部分区域不喷漆，飞漆可接受，详见喷漆区域图 Note: The front and sides are spray-painted. Some areas on the back are not spray-painted. Flying paint is acceptable. See the spray-painting area map for details. 1. 喷底漆，烘烤50℃±5℃，1小时以上。 1. Spray with primer and bake at 50℃±5℃ for more than 1 hour. 2. 检查外观，补原子灰，抛光打磨。 2. Check the appearance, add putty, and polish. 3. 喷第一遍银色面漆，50℃±5℃烘烤半小时以上。 3. Spray the first coat of silver topcoat on the and bake at 50℃±5℃ for more than half an hour. 4. 检查外观/补原子灰，抛光打磨，喷第二遍面漆。烘烤50℃±5℃，1小时以上，静置1小时以上。 4. Check the appearance/add putty, polish and polish, and spray the second coat of topcoat. Bake at 50℃±5℃ for more than 1 hour and let stand for more than 1 hour. 5. 检验外观，色差和光泽。如有不良，则再次重复返修。 5. Check the appearance, color difference and gloss. If there is any defect, repair it again.	目视检验/喷漆区域图/喷漆作业指导书。 Visual Check/ Spray Painting Operation Instructions	100%	每批次 Each Batch	全检 Full Inspection	生产 Production	返工/报废 Rework / Scrap	
		1.Photo Spectrometer (KONICA MINOLTA) 2.Gloss Meter	喷漆颜色 Colour of Spray Paint	√			A	1. 发光银 LUMINOUS SILVER, POLANE 8300 2. Delta E <2 Gloss:25±5 gloss unit @60°	目视+样件色板 Visual + Color Chip Sample	100%	每批次 Each Batch	全检 Full Inspection	IQC	返工/报废 Rework / Scrap
		1.美工刀 2.百格板 3.浓度70%酒精 4. 客户批准标准色板 5. 3M 250胶带 6.棉布或棉签 7.摩擦实验机器。 1. Utility knife 2. Hundred grid board 3. 70% alcohol concentration 4. Customer-approved standard color plate 5. 3M 250 tape 6. Cotton cloth or cotton swab 7. Friction test machine.	油漆性能测试 Paint Performance Test	√			A	1. 百格测试允许脱落面积不超过10%。测试方法详见客户外观标准15019430_E 第11.4.2项 1. The allowed peeling area in the 100-grid test shall not exceed 10%. For details on the test method, please refer to item 11.4.2 of the customer's appearance standard 15019430_E 2.耐醇性：70%乙醇，500g力/cm ² 擦拭最少50次来回 2. Alcohol resistance: 70% ethanol, 500g force/cm ² wipe at least 50 times 3.漆层硬度≥F (测试方法：ASTM D3363) 3. Paint layer hardness ≥ F (Test method: ASTM D3363) 4. 磨损实验：>每分钟50次，载重1.65公斤，使用棉布摩擦 4. Wear test: >50 rubs per minute with load of 1.65kg using cotton cheesecloth	目视检验+批次色板 Visual Check+ batches coupon	每批 Each Box	每批次 Each Batch	1pc	IQC	返工/报废 Rework / Scrap
			外观检查 Appearance Inspection	√			B	见喷漆外观检验作业指导书 Refer Spray Painting Appearance Inspection Operation Instructions	目视检验 Visual Check	100%	每批次 Each Batch	全检 Full Inspection	IQC	返工/报废 Rework / Scrap
160	丝印 SILK	20098636	外观 Appearance	√			A	1.丝印标记颜色及附着力检测(丝网印刷 (PMS Cool Gray 6C 哑光) 1. Color of Silk Screen Print, Adhesive and Abrasion test (SCREEN PRINT, PMS Cool Gray 6C MATT) 2.丝印标记不可有残缺，多余，变形等不良。 2. Defects of Silk Screen Print Logo is not allow 3. 菲林片对比丝印字符位置及大小 3. Film comparison of screen printing character position and size	目视检验. 标准色卡，菲林片 Visual Check , Standard color card , Film	100%	每批次 Each Batch	见相应图纸/检验规范 Check Drawings / Inspection Specifications	QC	返工/报废 Rework / Scrap
170	检验 Inspection	外观/菲林片 Appearance/Film	外观/丝印LOGO位置及尺寸 Appearance / SILK Dimensions, Silk screen character position and size	√			A	喷漆检验作业指导书 Painting Inspection Work Instruction	目视检验. 标准色卡，菲林片 Visual Check , Standard color card , Film	100%	每批次 Each Batch	全检 Full Inspection	FQC	返工 Rework
180	领料 Requisite Material	20115710	批号，材料名称，数量 Lot Number, Name of Material and Quantity	√			B	领料记录表 Material Requisition Record Sheet	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	先进先出管理、领料单、工单票 FIFO, Material Requisition Form, Work Order Form	生产/仓管 Production / Warehouse Management	拒收并通知相关部门 Reject and Inform Relevant Department
190	贴保护膜 Apply protective film	20115710	贴膜外观及遮蔽效果管控 Film appearance and masking effect control	√			A	表面气泡直径不得大于25mm，零件边缘到保护膜边缘的平行距离最大2mm，每个零件褶皱≤2处，保护膜边缘从产品表面分离，拒收。具体详见客户贴膜外观标准。 The diameter of surface bubbles must not be greater than 25mm, the maximum parallel distance from the edge of the part to the edge of the protective film is 2mm, each part has ≤2 wrinkles, and the edge of the protective film is separated from the product surface and is rejected. For details, please refer to the customer's film appearance standards.	贴膜作业指导书/客户贴膜标准要求 Pasting of Film Instructions/Customer Filming Standard Requirements	100%	每批次 Each Batch	全检 Full Inspection	FQC	返工 Rework
200	放置于待装配货架 Placed on the shelf to be assembled		产品位置,外观 Parts Position, Appearance	√			B	产品在货架上摆放整齐，避免碰撞。 The products are neatly placed on the shelves to avoid collisions.	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	全检 Full Inspection	QC	返工 Rework
210	领料 Requisite Material	PC 240 + 0.505%TiO2	批号，材料名称，数量 Lot Number, Name of Material and Quantity	√			B	领料记录表 Material Requisition Record Sheet	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	先进先出管理、领料单、工单票 FIFO, Material Requisition Form, Work Order Form	生产/仓管 Production / Warehouse Management	拒收并通知相关部门 Reject and Inform Relevant Department
220	注塑件加工 Injection Parts Processing	20098961	外观 Appearance	√			A	1. 表面无拉痕 1. No dragging marks on the Surface 2. 无缺料、碰伤等不良 2. No Shortage of Material, Damage and Other Defects 3.料口加工平整 3. Remove the gate flush from part by machining process 4. 作业人员使用专用灯光治具全检外观，要求透光度均匀，良好，无缺料，损伤，飞边，异色点，油污等不良。 4. Operators use special lighting fixtures to fully inspect the appearance. The light transmittance is required to be uniform and good, and there are no defects such as missing materials, damage, flash, odd-colored spots, oil stains, etc.	目视检验. Visual Check	首件检验1pc / 制程检验1pc/ 末件检验1pc / Inspection of 1st Article 1pc/ In-process Production Inspection 1pc /Final Article Inspection 1 PC	开始时 4小时/次 结束时 Start by checking every 4 hours follow by 1 time for the last shot	见相应图纸/检验规范 Check Drawings / Inspection Specifications	IPQC	返工/报废 Rework / Scrap
			尺寸 Dimension	√			A	[1] 217±0.65	Control dimension/SS					
							A	[5] 344.00±0.575	Control dimension/SS					

控制计划 Control Plan																		
☒ 样件 Prototype		☐ 预生产件 Pre-Launch		☐ 批量生产 Production		关键联系电话 Key Contact				日期(起草) Date (Orig)			供应商/工厂批准/日期 Supplier/Factory Approval/Date					
控制计划编号/版本号 Control Plan No./Rev No		CP20098635-1 A00				021-67763541 13564787030 (周先生)				2024.06.03			2024.06.03					
零件号码/最新更改水平 Part Number/Latest Revision Level						核心小组 Core Team General Manager Chew Ee Hang Engineering Manager Lu Chuanhai QA Chu Libo Designer Sheng HaiFeng Mao FeiFei					客户工程批准/日期 Customer Engineering Approval/Date							
20098635 REV B											NA							
零件名称/描述 Part Name/Description : FRONT COVER											客户质量批准/日期 Customer Quality Approval/Date							
供应商/工厂 Supplier/Plant Hansin Precision Engineering Shanghai				供应商编号 Supplier Code: NA							其他批准(如需要) Approval by Others (if required)							
											NA							
过程名称 Process Name		设备/工序 Equipment/Process		控制项目 Control Items		特性 Characteristics			特殊特性等级* Special Characteristics Class*	方法 Methods					负责部门 Responsible Department		反应计划 Response Plan	
操作描述 Operation Description						产品 Product		过程 Process		SPC		产品/过程的规范/公差 Product/ Process Specification / Tolerance		评价 / 测量技术 Evaluation & Measurement Technique				
		容量 Size		频率 Frequency														
230	入半成品库 Storage of Semi-Finished Products			产品位置,外观 Parts Position, Appearance	√				B	入库记录表 Storage Record Sheet	包装规格/ 目视检验 Packing Specifications / Visual Check	100%	每批次 Each Batch	全检 Full Inspection	QC	返工 Rework		
240	领料 Requisite Material	1. 20098961 2. LOCTITE AA 3106 LIGHT CURE ADHESIVE		批号, 材料名称, 数量 Lot Number, Name of Material and Quantity	√				B	领料记录表 Material Requisition Record Sheet	目视检验 Visual Check	每型号 Each Type	每批次 Each Batch	先进先出管理、领料单、工单票 FIFO, Material Requisition Form, Work Order Form	生产/仓管 Production / Warehouse Management	拒收并通知相关部门 Reject and Inform Relevant Department		
250	组装 Assembly	20098635		点胶装配 Glue Dispensing assembly	√				A	1.准备好 20098961,20098636, 紫外线护目镜, 乐泰 3106 胶水, 手套, 无尘布, 点胶机。 1. Get ready 20098961, 20098636, UV goggles, Loctite 3106 glue, gloves, lint-free cloth, dispensing machine. 2.检查20098636外观, 要求无磕碰, 毛刺, 油污, 划痕等不良。使用灯光治具 2. Check the appearance of 20098636. It must be free of bumps, burrs, oil stains, scratches and other defects. Use lighting fixtures 检查20098961外观, 要求透光性均匀, 良好, 无缺料, 黑点, 飞边, 异色等不良。Check the appearance of 20098961. The light transmittance is required to be uniform and good, and there are no defects such as missing materials, black spots, flash edges, and abnormal colors. 3.自动点胶机安装好点胶治具, 戴好手套, 护目镜。检查治具表面贴纸, 要求干净, 平整, 无尖锐异物。胶水加入点胶机注射管内。 3. Install the dispensing fixture on the automatic dispensing machine, and wear gloves and goggles. Check the sticker on the surface of the fixture to ensure it is clean, flat and free of sharp foreign objects. Glue is added into the injection tube of the dispensing machine. 4. 将20098636固定到点胶机治具上, 开始点胶, 要求胶水滴落过程成线状, 无间断。点胶完成后, 装入导光灯, 双手将导光灯用力向下压, 使两件产品结合面所有卡扣相互卡住。 4. Fix 20098636 to the dispensing machine fixture and start dispensing glue. The glue dripping process is required to be linear without interruption. After dispensing is completed, install the light guide and press the light guide downward with both hands so that all the buckles on the joint surface of the two products are stuck with each other. 5. 检查正反两面是有胶水溢出, 如有, 用无尘布擦拭干净。 5. Check whether there is glue overflow on the front and back sides. If so, wipe it clean with a lint-free cloth.	目视检验 Visual Check	每批 Each batch	每批次 Each Batch	全检 Full Inspection	组装员工 The assembly workers	不合格品控制程序 Non-conforming Part Control Procedure		
				紫外灯照射 使胶水凝固 Ultraviolet light irradiation for glue solidify	√				A	1.准备干胶治具, 电动扳手, 9粒M8*40mm内六角螺丝。电动螺扳手扭力调至2档, 紫外灯箱(灯光规格要求: 紫外光波长395nm)。 1. Prepare the glue fixture, electric wrench, and 9 M8*40mm hexagon socket screws. Adjust the torque of the electric screw wrench to level 2, UV light box (lighting specification requirements: UV wavelength 395nm) 2. 将组装好的产品装入治具,用专用透明板压住, 装入固定22颗螺丝, 电动扳手将螺丝锁紧固定, 先锁中间一颗, 再锁四个对角, 最后锁其他螺丝。 2. Put the assembled product into the jig, press it with a special transparent plate, install and fix the 22 screws, lock the screws with an electric wrench, first lock the middle one, then lock the four opposite corners, and finally lock the others. screw. 3. 将产品推入紫外灯箱内, 盖好箱门挡板, 开启光源, 用秒表记时, 照射时间最少45s以上, 拉出治具, 卸下产品, 检查外观是否有划痕, 压痕, 磕碰, 胶水是否溢出等不良。 3. Push the product into the UV light box, cover the door baffle, turn on the light source, use a stopwatch to record the time, the exposure time is at least 45S, pull out the jig, remove the product, and check whether there are scratches or indentations on the appearance. Bumps, glue spillage, etc. 4. 将产品放到专用灯光治具上全检, 要求导光灯透光性良好, 均匀, 无杂质, 异色, 胶水无溢出等。 4. Place the product on a special lighting fixture for full inspection. The light transmittance of the light guide lamp is required to be good, uniform, free of impurities, different colors, and no glue spillage. 5. 产品组装完好, 无错位, 间隙, 脱落等不良 Part Assembly Completed, No Misalignment, Gap, Dropping and Other Defects	目视检验 Visual Check	每批 Each batch	每批次 Each Batch	全检 Full Inspection	组装员工 The assembly workers	不合格品控制程序 Non-conforming Part Control Procedure		
				尺寸 Dimension	√				A	(44) +0/-0.15(要求导光灯表面与产品外表面平齐或低于产品表面最大0.15mm)	Control dimension/HG	每批 Each batch	每批次 Each Batch	全检 Full Inspection	组装员工 The assembly workers	不合格品控制程序 Non-conforming Part Control Procedure		
260	包装入库 Packaging for Storage			产品位置,外观 Parts Position, Appearance	√				B	1. 成品包装作业指导书 Packaging after Spray Painting Work Instruction 2. 包装规格/目视检验(视频检查前, 包装人员拿起产品, 对所有的面进行仔细检查。(Before the video inspection, the packer picks up the part and carefully inspects all the sides. 零件必须以任何角度进行检查, 不会指定角度。No angle will be specified and parts are subject to check at any angles.)/视频拍摄检查 Packing Specifications / Visual Check/ Video Recording Check 3. 入库产品数量, 版本记录清楚, 登记到ERP系统 Ensure that the quantity of products in store, the version records are clear before registered in the ERP system 4. 将生产日期和测试结果记录在已涂漆的批次色板标签上, 并存档 4. For Painted substrate coupon (batches coupon), record the production date and test result on the Painted substrate coupon and keep into the Archive Room	包装规格/ 目视检验/ERP Packing Specifications / Visual /ERP	100%	每批次 Each Batch	全检 Full Inspection	OQC	返工 Rework		
			液压车 Hydraulic Lift		√				B	名称, 品号, 数量, 版号生产日期等标识正确 Ensure the Accurary and Consistency of Part Name, Part number , Quantity and Revised Production Date	目视/核对 Visual Check / Check Against	100%	每批次 Each Batch	入库单 Storage List	OQC	退回车间, 重新标识 Return to label again		
270	产品储存 Storage of Parts				√				B	产品库位、数量、编号标识清晰 Clear Identification of Parts Storage Location, Quantity and Parts Number	目视 Visual Check	100%	每批 Each Box	每批 Each Shipment	仓管 Warehouse Management	重新标识 Label Again		
280	出货 Outgoing	外观 Appearance		名称, 品号, 数量, 版本号, 生产日期等标识正确 Ensure the Accurary and Consistency of Part Name, Part number , Quantity and Revised Production Date	√				C	检验计划 Inspection plan	目视 Visual Check	一次 1 Time	每批 Each batch	每批 Each Shipment	OQC	不合格品控制程序 Non-conforming product control procedure		
290	发运 shipment			出货数量, 规格正确, 防护得当 Number of Shipments, Correct Specifications and Proper Protection	√				C	核对发货单 Check invoice	目视 Visual Check	每批 Each Box	每批 Each Box	每批 Each Shipment	仓管 Warehouse Management	不合格品控制程序 Non-conforming product control procedure		

特殊特性分类 Remarks for Special Features categories:

- A: 对于最终产品很重要, 是重要的过程控制等级 It is an important level of process control for the final part
- B: 影响最终产品的特性, 在生产过程中容易控制 Easy to control the production process that can affect the characteristics of the final part
- C: 对最终产品的特性稍有影响, 在生产过程中很容易控制 Slight impact on the characteristics of the final part and easier to control during the production