

# KOK Battery Manufacturing Process

NO.	Procedure	Method/ Measurement	Item	Sampling	Criteria	Handling
1	Cell Testing	AOV Meter	Voltage	5PCS/person/h	1.Test the voltage following technical standard strictly and record accurately. 2. The inspector check if there are low, zero, negative voltage cells.	Re-work the cells manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;keep record.
2	High Temperature Storage Test	Observation, thermometer	timing, temperature	1 time/h	1.Record the original state of the high temperature room, and keep the cells following the standard instruction within designated time. 2.No explosion, leakage, bulging or other anomalies during the process of storage.	Notice the inspector director or OQC director if abnormalities are found.
3	Cell Grouping	Battery internal resistance tester,AOV Meter	Internal resistance, voltage	5PCS/person/h	Group the cells according to the internal resistance and voltage	Re-work the cells manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;keep record.
4	Configuration	Observation	form factor, apperance	5PCS/person/h	1.The configuration, polarities,nickel tab direction are correct according to instructions. 2. Proper amount of glue applied to thecells 3. Neat array of the cells withoutdisorder	Re-work the battery pack manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;remind the worker and keep record.

5	Pasting Insulation Paper	Observation	Size, Appearance	5PCS/person/h	The pasted insulation paper is of correct size,position,stable and no missing out	Re-work the battery pack manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;remind the worker and keep record.
6	Pasting High Temperature Adhesive Tape	Observation	Position, Size, Appearance	5PCS/person/h	The high temperature adhesive is pasted at the right position,smooth without wrinkle.	Re-work the battery pack manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;TQC total inspection and spot out the failures.
7	Cutting Nickel Tab and Shrink the Heat Insulation Tube	Observation/Ruler	Appearance, Size	5PCS/person/h	1.The nickel tabs and heat insulation tubs are cut in righ size according to instruction. 2.The heat insulation tubs should be tightly holding the tabs without wrinkles.	Re-work the battery pack manufactured within the hour if 1 PC of failure out of the 5PCS samples is found;remind the worker and keep record.
8	Soldering and Wiring	Observation	Position, Appearance	5PCS/person/h	1.The soldering spot is smooth at the right position, of proper size and shape. 2.The soldering spot should cover the bare copper of the wire and should not burn other part of the wire.	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;TQC total inspection and spot out the failures.

9	Soldering the PCB	Observation	Position, Appearance	5PCS/person/h	1.The soldering spot is smooth at the right position, of proper size and shape. 2.The contact time of solder and the PCB should not exceed 5 seconds; and the solder should not touch other parts of the PCB, nor should the tin dripping at other part of the PCB.	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.
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10	Spot Welding	Observation	Position, Appearance, Direction, Stability	5PCS/person/h	1.The spot welding position,number,direction,length should follow the instruction. 2.The spot welding should be stable,without spark,burning,fracture,or dent.	If 1PC of failure is found out of the 5PCS samples, stop production and check the equipment;Re-work the battery packs made within the hour.
11	TQC spot welding	Observation	Position/Appearance/Direction/Stability	10PCS/person/h	Re-check the products approved by TQC according to order requirements and standards.	Re-work the products made within the hour approved by TQC if 1 PC of failure is found.
12	Paste EVA pads	Observation	Position/Appearance	5PCS/person/h	The EVA pads should be pasted in correct size,position,stable and no missing out	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.
13	Soldering the PCB to the Battery Pack	Observation	Position/Appearance	5PCS/person/h	1.Follow the soldering technical requirements. 2.The soldering should be stable and should not touch other parts of the	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.

14	Soldering the wires to the PCB	Observation	Size/Appearance	5PCS/person/h	PCB;no damage to PVC, wires,etc. 1.The wire model,plug type,wire length should be compliant with the technical requirements. 2.The direction of wire should be correct; the appearance of the wire	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.
15	Battery Fixing	Observation,Ruler	Position, Appearance, Direction, Model	5PCS/person/h	1. Fix the battery pack with customfixing tool. 2. The connection tabs should be intactwithout crack or fracture. 3. The battery pack should be in orderwithout damage.	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.

16	Connecting Tabs	Observation,Ruler	Size, Appearance	5PCS/person/h	1. The size,model of the connection tabsshould be compliant with the technical instruction and the standard spot welding procedure should be observed. 2. The spot welding should be solid, nospark.	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.
17	Fixing the Electronic Components	Observation	Appearance	5PCS/person/h	1.Fix the PCB and wires with tapes to make it more stable. 2.The position,direction should be right.	Re-work if 1 PC of failure out of the 5PCS samples is found;Remind the worker;Keep Record.

18	Plastic Casing	Observation	Appearance/ C onfiguration/ Position of Parts and Accessories	10PCS/person/h	<p>1.The case design and size should be exactly the same as the customer's requirements.</p> <p>2.No scratch,deformation,fracture or redundant materials.</p> <p>3.No oxidized or rust spots on the metal parts.</p> <p>4.The battery pack should be stably placed in the case.</p>	Re-work all the finished products if 1PC of failure is found out of 10PCS of samples;TOC to spot out the failures;Take adjustment measures timely.
19	Appearance inspection	Observation,Ruler	Appearance/ Wring/Spot Welding/Sold ering	10PCS/person/h	<p>1.The wire model,plug type, wire length should be compliant with the technical standards.</p> <p>2.The spot welding and soldering are solid.</p> <p>3.The insulation paper and EVA pads are pasted properly and stably.</p> <p>4.PVC is intact.</p> <p>5.No other hidden risks or abnormalities.</p>	Re-work all the finished products if 1PC of failure is found out of 10PCS of samples;TOC to spot out the failures;Take adjustment measures timely.

20	Battery Pack Voltage Test TQC	AOV Meter	Voltage/Appe arance	5PCS/person/h	<p>1.Test the voltage of the battery packs and make records.</p> <p>2.Re-check the products approved by TQC.</p>	Re-work the products made within the hour approved by TQC if 1 PC of failure is found.
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21	Charge and Discharge Test TQC	Charge-Discharge Tester	ChargeDischarge Performance	5PCS/person/h	1.Test the charge-discharge performance of the battery packs and make records of the data. 2.Re-check the products approved by TQC.	Re-work the products made within the hour approved by TQC if 1 PC of failure is found.
22	Heat-shrink the PVC of the Battery Pack	Observation	Appearance, Size	5PCS/Machine/h	1. The color, size of the PVC should becompliant with the standards. 2. Nowrinkles,deformation,scratch,damage of the PVC. 3. The negative/positive polars should beproperly covered with the PVC.	Re-check the fixing tools or shrinking time if 1 PC of failure is found; TQC to spot out all the failures.
23	Silk Screen	Observation	Contents, Position, Appearance	10PCS/台/h	1.The content,position,package should meet customer's requirements. 2.The printing is clear without blur.	Re-check the machine if 1PC of failure is found out of 10PCS of samples until no more failure is found.
24	Packaging	Observation,Ruler	Contents, Position, Appearance	1CTN/h	1.Correct Shipping Marks. 2.Cartan and gift box size and materials are of accordance with the order requirements. 3. No damage or dirt on the carton. 4. Right number and proper position ofthe battery packs.	Re-work all the finished products if 1CTN of failure is found;TOC to spot out the failures;Take adjustment measures timely.