

EV Manufacturing and Assembly Operations Checklist

Electric Vehicle & Charging Station Industry

CRITICAL - COMPONENT QUALITY INSPECTION

Incoming material inspection is performed for all major components (motor, battery, controller).

Yes No NA

Chassis weld joints are inspected visually and dimensionally.

Yes No NA

Brake systems undergo functional and hydraulic pressure testing.

Yes No NA

Steering system torque and play are tested before vehicle rollout.

Yes No NA

All fasteners are tightened using calibrated tools with traceable serial numbers.

Yes No NA

Visual inspection for paint finish, surface defects, and color match is performed.

Yes No NA

All lights, indicators, and horns are checked at the end-of-line (EOL).

Yes No NA

Functional testing of onboard display and dashboard systems is performed.

Yes

No

NA

All sensors and wiring harness connectors are secured properly.

Yes

No

NA

Drive motor mounting bolts are tightened as per torque specifications.

Yes

No

NA

DOCUMENTATION & RECORD KEEPING – QUALITY RECORDS

All inspection reports are stored digitally with VIN-based traceability.

Yes

No

NA

Deviations and reworks are logged and approved by quality head.

Yes

No

NA

Process control charts are maintained for torque, alignment, and current draw.

Yes

No

NA

END-OF-LINE TESTING – CRITICAL

Each EV undergoes functional testing including motor, brakes, lights, and battery.

Yes

No

NA

Noise, vibration, and harshness (NVH) testing is done before dispatch.

Yes

No

NA

PDI (Pre-Dispatch Inspection) checklist is completed for every vehicle.

Yes

No

NA

HYGIENE & SAFETY – FIRE & EMERGENCY PREPAREDNESS

Fire suppression system is installed near battery assembly lines.

Yes

No

NA

Emergency exit routes are illuminated and obstruction-free.

Yes

No

NA

First-aid kits are available and checked for expiry dates.

Yes

No

NA

HYGIENE & SAFETY – PERSONAL PROTECTIVE EQUIPMENT

Operators wear appropriate PPE (helmet, gloves, safety shoes, antistatic clothing).

Yes

No

NA

Eye wash and fire extinguishers are installed near high-risk zones.

Yes

No

NA

No unauthorized personnel in critical assembly areas.

Yes

No

NA

Safe lifting and handling practices are followed for motors and batteries.

Yes

No

NA

LOGISTICS & MATERIAL HANDLING – CRITICAL

Material movement is done using defined pathways and trolleys.

Yes No NA

Material identification tags and batch labels are clear and traceable.

Yes No NA

Kanban or FIFO practices are followed for component issuance.

Yes No NA

Rejected material is stored in a segregated and marked area.

Yes No NA

MAINTENANCE – EQUIPMENT & TOOLS

All production jigs, fixtures, and alignment tools are inspected daily.

Yes No NA

All assembly tools and machines have updated calibration tags.

Yes No NA

Air compressors and pneumatic lines are clean and moisture-free.

Yes No NA

Assembly floor has no oil spillage, metal scrap, or debris.

Yes No NA

Workstation lighting is adequate for visual inspection tasks.

Yes No NA

SUPER CRITICAL – PRODUCTION & PROCESS CONTROL

All EV assembly lines follow OEM-standard torque and fastening procedures.

Yes No NA

Powertrain alignment and mounting are verified using calibrated alignment tools.

Yes No NA

All electrical connectors and harnesses are properly routed and insulated.

Yes No NA

EV motors are tested for insulation resistance before final fitment.

Yes No NA

Software and firmware updates are validated before vehicle dispatch.

Yes No NA

TRAINING & COMPETENCY – WORKFORCE

All operators are trained and certified for assigned workstations.

Yes No NA

Refresher safety and quality training conducted every 6 months.

Yes No NA

New operators undergo induction and safety orientation before joining.

Yes

No

NA