

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