

Quality Assurance Plan (QAP) for the Computerized Automated Single Car Test Rig							
Sr. No.	Component / System	Characteristics to be Checked	Type of Check	Clause of Spec. / Ref. Doc	Sample Size / Frequency	Method of Testing / Acceptance Criteria	Agency (Mfr / TPI / Consignee)
1	Overall Design Compliance	Conformity to technical specifications & mobility requirement	Visual / Document	Clause 1, 2, 3	100%	Layout, general arrangement check	TPI
2	Touch Screen Interface & Panel	Minimum 10" screen, data acquisition, USB/Printer port	Visual / Functional	Clause 3	100%	Functional demo, layout check	TPI
3	Pneumatic System & Reservoir	Reservoir 40±5L, BP/FP blow at 8–10 Kg/cm ² , leakage test at 10 Kg/cm ²	Performance / Leak	Clause 3, 4	100%	Pressure check using calibrated gauges, leak test	TPI
4	Pressure Accuracy	±0.05 Kg/cm ²	Calibration	Clause 3	All sensors	Compare with master gauge	Mfr / TPI
5	Control System (Microcontroller)	Make: Danfoss/Festo/MicroPneumatic; Programmable	Visual / Functional	Clause 4	100%	Software test & diagnostics	TPI
6	Battery & Charger	4–6 Nos., ability to test 8 coaches, charging in 3–4 hrs with auto cut-off	Performance	Clause 4	100%	Capacity test, charging time validation	TPI
7	Hose Pipes, Quick Couplers	Length 20–25 m, durable material, connectors	Visual / Dimensional	Clause 3	100%	Measurement, connection fitment	TPI
8	Software Interface & Reports	Data capture, Coach ID, time stamp, customized reporting (ICF/LHB/pantry/gen etc.)	Software Test	Clause 5	100%	Functional verification against test scenarios	TPI
9	Safety Devices & Shutdown Features	Auto shutdown, overload protection, battery status indicators	Functional / Visual	Clause 6	100%	Test actual operation during fault simulation	TPI
10	IP Rating Compliance	IP68 Compliant	Environmental	Clause 3	100%	Verify certification & sealing arrangement	Mfr / TPI
11	Painting & Finish	2 coats primer + 2 coats paint	Visual	Clause 12	100%	DFT measurement, visual check	TPI
12	Manuals & Documentation	4 sets of O&M Manuals, circuit diagram, software license	Document Check	Clause 8.2, 5.9	100%	Manual completeness, verification of licensed software	TPI
13	Performance Test with Coach (ICF/LHB)	Functional demonstration with at least 10 coaches	Functional	Clause 11	10 coaches	Actual test at consignee premises	Consignee
14	Accessories & Completeness Check	All listed accessories, cables, hose pipes, printer	Visual	Clause 2, PO	100%	Checklist verification	TPI
15	Packing & Delivery	Safe for transit, shockproof & water-resistant	Visual	Clause 13	Each Unit	Inspection during dispatch	TPI

Coaching Depot Officer

Signature of N. Rly., H. Nizamuddin

Verified by चिंटिंग डिपो अधिकारी

Digitally signed by Ram Dular

Date: 2026.01.10 16:34:05+05'30

Reason: IRPS-CRIS Location: New Delhi

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