

Two Station Battery Cap Pressure Testing Machine For Cylindrical Cell Safety Vent And Disconnect Pressure Inspection

Item Number: DS16



Introduction

Engineered for battery production quality control, this dual station cap pressure testing machine accurately inspects CID disconnect and bursting pressure on 18 and 21 series cell caps using standard workshop compressed air and automated PLC data logging systems.

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Application	Description	Key Benefit
18650 & 21700 Cell Quality Control	In-line sampling and outgoing quality audits of finished cylindrical cell cap assemblies prior to final cell sealing.	Identifies defective CID membranes and scoring anomalies before irreversible cell assembly.
CID Disconnect Pressure Verification	Precision measurement of the exact internal gas pressure at which the internal aluminum flip-chip disconnects the electrical circuit.	Guarantees that the electrical circuit cuts off reliably within design specifications under thermal abuse conditions.
Safety Vent Burst Threshold Testing	Destructive pressure testing to determine the maximum rupture pressure of the notched safety exhaust membrane.	Prevents violent can rupture by ensuring controlled gas venting occurs within the mandated safety pressure envelope.
Incoming Quality Inspection (IQI)	Rapid verification of purchased cap components delivered by tier-two component suppliers against procurement specifications.	Prevents non-compliant safety components from entering the active electrode assembly workflow.
Battery Safety R&D & Failure Analysis	Empirical testing of experimental vent geometries, scoring depths, and alternative alloy foil materials for next-generation cells.	Accelerates development cycles with immediate, high-resolution pressure curve feedback and digital data export.
Pilot Line Process Optimization	Routine calibration and validation of cap welding, crimping, and laser notching parameters during production ramp-up.	Establishes statistical Cpk benchmarks for cap mechanical safety thresholds across production batches.

Specification Parameter	Technical Data (DS16)
Equipment Identification	DS16
Nominal Testing Pressure Range	0.0 – 5.0 MPa
Maximum Output Pressure	6.0 MPa
Input Air Supply Pressure	0.5 – 0.6 MPa (Standard compressed air; no nitrogen required)
Electrical Power Supply	AC 220V ±10%, 50/60 Hz
Total Power Consumption	500 W
Number of Test Stations	2 independent testing stations
Station 1 Compatibility	18-Series Cap Assemblies (e.g., 18650, customizable to client samples)
Station 2 Compatibility	21-Series Cap Assemblies (e.g., 21700, customizable to client samples)
Clamping Mechanism	Pneumatic cylinder dual-fixture clamping assemblies
Pressure Generation System	Single-stage pneumatic gas booster pump with optimized valve logic
Sensor Technology	High-precision digital pressure transmitter
Control & Display System	Industrial PLC controller with interactive color touchscreen interface

Specification Parameter	Technical Data (DS16)
Integrated Printer	Onboard micro dot-matrix stylus printer for immediate result slips
Data Export Interface	USB port for data transfer to flash drive and external PC analysis
Supplied Tooling	2 complete sets of precision-machined cap testing fixtures