

BIDIRECTIONAL BATCH TRACEABILITY MATRIX

双向批次追溯台账 · 正向受控与反向溯源映射表 (脱敏示例)

Document Ref. 文件编号	QF-TRC-SPEC-2026-V1	Effective Date 生效日期	14 Aug 2026
Sample Project Code 项目代号	[DEMO-SUP-2026-01]	Production Batch 适用批次	DEMO-BATCH-AUG-01
Product / SKU 产品型号	Touring SUP 11'6" (DEMO-TR-126)	Compliance System 质量体系	ISO 9001:2015 Clause 8.5.2 Traceability
Tracking Identifier 追溯标识	Laser QR & Serial Number System	Traceability Status 验证状态	100% AUDITABLE & LINKED

1. 正向控制链：从立项输入到出货交付 / Forward Traceability Chain (Input → Release)

Control Node	System Registered Reference (Demo)	Controlled Content & Verification Scope	Status
01 Project Spec	TS-DEMO-TR-126 Rev. B (Frozen)	Length, width, thickness, nose rocker, working & test pressure	LOCKED
02 BOM Approval	Customer BOM-DEMO Rev. C	Drop-stitch specs, PVC density, SS316 D-rings, pump/paddle models	LOCKED
03 Artwork Release	ART-DEMO Rev. B (Pantone 293C)	Logo orientation, scale, spelling proofing, ISO 25649 warning labels	LOCKED
04 Material Lot	LOT-DEMO-DS-0814 / LOT-GL-0812	150m woven drop-stitch roll, marine adhesive COA & REACH reports	IQC PASS
05 Process & Test	AIR-DEMO-AT-003 / FQC-DEMO-004	18.0 PSI 100% leak check, 24h pressure retention ($\Delta P \leq 0.50$ PSI), FQC check	TEST PASS
06 Packing & Release	PKG-DEMO-005 / SRA-DEMO-001	EAN-13 barcode readability (Grade $\geq$ B), sequential carton logging, SRA sign-off	RELEASED

2. 反向追溯能力：从成品或外箱逆向穿透 / Reverse Traceability (Finished Product → Source)

Starting Identifier	System Drill-Down Path	Auditable Historical Records Retrieved
Carton Barcode / Box No. (外箱条码或箱号)	Carton C/NO. → Packing List → Final Inspection (PSI)	Kit completeness checklist, carton drop test log, net/gross weight scale log.
Board Laser Serial Code (板体防伪激光序号)	Laser SN → Air-Tightness Log → In-Process FAI → Workstation	24h pressure-drop curve, digital gauge ID, station operator, ambient temp/humidity.
Sub-Component / Valve (气阀与原材料批号)	Raw Material Lot → IQC Inspection Report → Supplier COA	Drop-stitch roll test certificate, PVC fabric caliper/weight log, adhesive batch expiry.

Traceability System Verification Statement:

Governance Commitment: Qingdao Vatrads Group Co., Ltd. ensures that every finished inflatable SUP is traceable throughout its manufacturing lifecycle. Using any board serial code or carton barcode, authorized personnel can reconstruct the complete quality dossier within minutes.

Traceability Auditor: QC Auditor (ID: QC-012) Date: 14 Aug 2026	MES & Systems Lead: Systems Engineer (ID: IT-004) Date: 14 Aug 2026	QA/QC Director: QA Director (ID: QA-DIR) Date: 14 Aug 2026
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1. 7步不合格品控制闭环流程 / 7-Step Non-Conformance Control Workflow

Step / Stage	Standard Action Taken	System Control & Physical Segregation	Buyer Assurance
01 Identify	Detect defect during IQC, IPQC, Pressure Test, or FQC.	Log defect type, station ID, board serial/lot, and failure symptoms in MES.	Issue immediately logged.
02 Label	Affix controlled high-visibility status tags.	Apply physical yellow HOLD or red QUARANTINE label with tag number.	Zero unverified movement.
03 Quarantine	Move to physically designated quarantine zone.	Transport to physical Yellow-line Quarantine Bay; freeze batch status in ERP system.	Blocked from production.
04 Assess Scope	Engineering & QA cross-audit failure impact.	Review related boards sharing same fabric roll, adhesive mix, operator, or tooling die.	Prevent systemic risk.
05 Disposition	Issue approved MRB engineering instruction.	Authorized disposition: Approved Rework, Return to Vendor, or Scrap/Reject.	No unauthorized repair.
06 Re-Inspect	100% re-testing against full project criteria.	Execute full re-inspection on failed parameter (e.g. mandatory 24h pressure re-test).	Re-verified to standard.
07 Release/Close	QA Manager signs formal release closure.	Remove HOLD tag, issue Green Pass label, archive NCR & CAPA records in system.	Full closed-loop release.

2. 脱敏不合格品报告与复检记录示例 / Anonymized NCR & Re-Inspection Record Sample

NCR Report Field	Registered Information (Demonstration Value)	Engineering Action & Verification Findings
NCR Report ID & Date	NCR-DEMO-20260816-01 16 Aug 2026	Logged during Node 04 Inflation & Air-Tightness testing stage.
Affected Item & Serial	Touring SUP 11'6" SN-DEMO-023 (1 Unit)	Physical Yellow HOLD Tag affixed: HOLD-TAG-042.
Defect Description	Minor valve base micro-leakage (Soap bubble test)	Valve core torque loose; inner seal washer slightly misaligned.
Scope Assessment	Batch DEMO-BATCH-AUG-01 (Audited 10 units)	All other 9 units on same station verified tight (Isolated single-unit issue).
Approved Rework Action	Rework Work Instruction WI-REW-VLV-02	Disassemble valve core, replace silicone gasket, re-torque to 33.0 N·m.
100% Re-Inspection Result	24h Pressure-Drop Re-Test at 18.0 PSI	Initial: 18.00 PSI → Final: 17.88 PSI (ΔP = -0.12 PSI, Zero bubbles). PASS

Non-Conformance Closure & Quality Release Determination:

Closure Authorization: Non-conformance NCR-DEMO-20260816-01 has been successfully resolved. The affected unit underwent 100% mandatory re-inspection, achieved complete compliance with TS-DEMO-TR-126 Rev. B specifications, and is officially released for packaging.

Rework Inspector: QC Inspector (ID: QC-005) Date: 17 Aug 2026	Production Supervisor: Line Lead (ID: PR-002) Date: 17 Aug 2026	QA/QC Director: QA Director (ID: QA-DIR) Date: 17 Aug 2026
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