现场服务报告 Field Service Report

离场前填完，24 小时内回传 / Complete before leaving site; return within 24 h

A 受理 Intake

A01 工单号 Ticket ID	
A02 报修时间 Reported at	
A03 客户和站点 Customer & site	
A05 机型 Robot model	
A06 整机序列号 Robot serial number	
A08 固件/软件版本 Firmware / software version	
A11 影响等级 Severity	
A12 现象（客户原话） Symptom (customer words)	
A14 故障码 Fault codes	
A15 日志包 Log bundle	
A17 上门批准 On-site approval	

B 现场 On-site

B01 现场工程师 Field technician	
B02 到场时间 Arrived at	
B03 断电上锁/电池隔离 Lockout / battery isolation	
B06 诊断结果 Diagnosis	
B07 失效部位码 Failed unit code	
B08 失效模式码 Failure mode	
B09 已做操作 Actions taken	
B10 拆下件 Part removed	
B11 装上件 Part installed	
B12 作业后固件版本 Firmware after	
B13 功能测试 Function test	
B14 工时 Labour time	
B15 恢复运行时间 Restored at	
B17 根因分类 Root cause class	
B18 数据说明 Data note	

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坏件标签和 RMA 申请 Failed-Part Tag & RMA Request

每个坏件一张，贴在袋子和箱子上 / One per failed part, on the bag and the box

坏件标签 Failed-part tag

C01 RMA 号 RMA number	
C02 关联工单号 Linked ticket	
C03 料号/序列号/批次/日期码 Part no. / serial / lot / date code	
B07 失效部位码 Failed unit code	
B08 失效模式码 Failure mode	
C04 处置码 Disposition code	
C07 是否要失效分析 FA required	
C08 电池及状态 Battery & condition	
C09 含存储/数据处理 Storage & data handling	
C10 隔离位置 Quarantine location	

电池 Battery：状态不明按损坏处理，不可空运 / Unknown = damaged, never by air. 损坏电池不与其他件同箱 / Do not pack with other parts.
存储 Storage：寄出前擦除，或记录客户书面同意 / Wipe before shipping, or record written customer consent.

RMA 申请 RMA request

C05 处置理由 Disposition reason	
C06 决定人/规则版本 Decided by	
C11 批次和运输方式 Batch & mode	
C12 运单号 Tracking / B/L no.	
C13 出口申报号 Export declaration ref.	
C14 税号 HS code	
C15 价值和币种 Value & currency	

处置判断 Disposition guide

五个问题按顺序问 / Ask in order

1	是电池，或有烧蚀、进水、碰撞变形？→ 先隔离；电池默认数据寄回、电池当地回收；要实物只走陆运/海运 Battery, burn, water or crash damage? Quarantine first; send data not the battery; never by air
2	能用现场可更换单元恢复运行？能 → D1/D2/D3；不能 → D4 Can a field-replaceable unit restore operation? Yes → D1/D2/D3; no → D4
3	厂商要失效分析？要 → D2 Does the OEM need failure analysis? Yes → D2
4	件值得寄回？不值 → D3；值钱可修 → 授权当地维修或 D2 Worth shipping back? No → D3; valuable and repairable → authorised local repair or D2
5	仍判断不了 → D5（14 天超时） Still unclear → D5 (14-day timeout)

处置码 Disposition codes

代码 Code	什么时候 When	坏件去哪 Failed part goes
D1 本地修复 Repaired on site	调参、建图标定、清洁、换耗材即恢复 / Restored without removing a valuable part	无坏件 / No failed part
D2 换件，坏件返厂分析 Swap + return for FA	新失效模式、疑似批次、安全相关、保修需实物 / New mode, suspected batch, safety, claim needs part	隔离 → 攒批或加急寄回 / Quarantine → batch or expedite
D3 换件，坏件当地处理 Swap + local disposal	失效已知、价值低于寄回成本；损坏电池默认 / Known mode, low value; default for damaged batteries	报废、回收或授权维修回库，留记录 / Scrap, recycle or authorised repair, keep records
D4 整机返厂 Whole robot to factory	主框架变形、密封模组、工装标定、引导程序损坏 / Bent frame, sealed module, factory-jig calibration, bricked bootloader	出境修理申报 / Export for repair
D5 待厂商决定 Awaiting OEM decision	规则判断不了 / Rules do not decide	隔离，14 天超时提醒 / Quarantine, 14-day reminder

闭环 Feedback（国内质量部填 / OEM quality）

D01 到厂签收时间 Received at factory	
D02 失效分析结论 FA result	
D03 根因 Root cause	
D04 纠正措施编号 Corrective action / ECN	
D05 手册/故障树更新 Manual / fault tree update	
D06 30 天内复发 Repeat within 30 days	
D08 关单时间 Closed at	

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