

Process-instrument impulse tubing - JSA - A

en-SG · Basic task controls · v1.0 · 2026-10-14 · Sources: article section 9

Site: | Item ID: | Work area:

Approval	Work supervisor	Technical reviewer	Release / handover authority

1. Job details and team signatures

Date / time	Location / area			Assessor		Supervisor	
Team signatures							

2. Conditions and hold points

Stage	Time	Location / area	Environment / readings	Item / condition	Controls	Plant / tools	Approval / signature
HP-0 Start							
HP-1 Isolate and verify							
HP-2 Assemble and support							
HP-3 Test controlled boundary							
HP-4 Restore and transfer							

Complete after actual checks. Recheck after changes, defects or shift handover.

3. JSA risk assessment

Job stage	Hazards and effects	Failure factors	Technical and procedural controls	Site verification	P	S	R	A
1. Identify service	1. Wrong process opened 2. Hot-fluid burn 3. Toxic release	1. Hookup unidentified 2. Fluid data absent 3. High/low legs confused	1. Match P&ID and instrument 2. Identify fluid and conditions 3. Trace both impulse paths	1. Process/instrument IDs 2. Fluid/temperature data 3. Hookup and leg identity				
2. Isolate and verify	1. Trapped-pressure release 2. Hot residual liquid 3. Pressure reaccumulation	1. Gauge trusted alone 2. Vent path blocked 3. Valve leakage ignored	1. Isolate all sources 2. Vent/drain by approved route 3. Verify safe residual state	1. Operations isolation boundary 2. Vent/drain verification 3. Temperature/energy state				
3. Cut and form tube	1. Sharp-edge injury 2. Contaminated instrument 3. Tube cracks	1. Chips left inside 2. Bend forced 3. Wall/material wrong	1. Match specified tube 2. Cut/deburr by instructions 3. Use proper forming tools	1. Tube material/size/lot 2. Ends and cleanliness 3. Bend/support detail				
4. Assemble and support	1. Fitting separation 2. Fatigue leak 3. False pressure signal	1. Components mixed 2. Tube not seated 3. Supports omitted	1. Use matched fitting system 2. Follow new/reassembly method 3. Fit designed supports	1. Fitting identification 2. Assembly procedure 3. Supports/thermal movement				
5. Test controlled boundary	1. Test-pressure injury 2. Unseen leakage 3. Instrument damage	1. Boundary open 2. Leak felt by hand 3. Device unprotected	1. Define medium and limits 2. Exclude release paths 3. Protect instrument as specified	1. Test boundary/medium 2. Pressure and criteria 3. Instrument protection				
6. Restore and transfer	1. Wrong valve lineup 2. False process indication 3. Residual test medium	1. Valve order improvised 2. Loop test omitted 3. Drains left open	1. Follow defined restoration 2. Confirm required function 3. Check final boundary state	1. Final valve lineup 2. Instrument/loop response 3. Drain/vent disposition				

P/S/R/A: Complete only after actual site assessment using the site risk method.

4. Pre-work checklist

☐ Process/instrument IDs	☐ Operations isolation boundary	☐ Tube material/size/lot
☐ Fitting identification	☐ Test boundary/medium	☐ Final valve lineup
☐ Hookup and leg identity	☐ Supports/thermal movement	☐ Drain/vent disposition