

Centrifugal-pump mechanical seal replacement - JSA - C

en-SG · Supervision, records, handover · 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 drain and cool							
HP-2 Prepare opening support							
HP-3 Inspect and assemble seal							
HP-4 Dispose and hand over							

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. Process and seal basis	1. Hazardous-fluid release 2. Wrong seal selected 3. Unplanned rotation	1. SDS missing 2. Auxiliary line omitted 3. Automatic start overlooked	1. Identify fluid and seal 2. Trace all auxiliary supplies 3. Agree operations work boundary	1. Pump seal and fluid identity 2. Main and auxiliary diagram 3. Permit and authority scope				
2. Opening release	1. Trapped-liquid spray 2. Pressure returns 3. Backflow rotation	1. One gauge trusted 2. Drain path blocked 3. Return flow remains	1. Verify complete isolation 2. Drain decontaminate and cool 3. Prevent rotation and refill	1. Main and auxiliary isolations 2. Drain temperature and pressure 3. Maintained safe-state evidence				
3. Dismantling control	1. Component falls 2. Spring-force release 3. Contaminated fragments	1. Weight unsupported 2. Sequence changed 3. Broken faces loose	1. Support parts before release 2. Use exact removal procedure 3. Contain fluid and fragments	1. Part support and access 2. Stored-force and extraction 3. Waste and exposure controls				
4. Seal assembly acceptance	1. Face damage 2. Elastomer failure 3. Wrong working length	1. Contamination 2. Lubricant incompatible 3. Old marks copied	1. Protect clean faces 2. Match actual materials 3. Verify type-specific settings	1. Face shaft and sleeve checks 2. Seal and lubricant identity 3. Datum fastening and setting				
5. Startup preparation	1. Dry-running damage 2. Lost cooling 3. Rotating contact	1. Chamber not filled 2. Auxiliary route incorrect 3. Guard omitted	1. Verify fill and vent 2. Confirm auxiliary plan and flow 3. Restore guards and alignment	1. Chamber fluid and vent state 2. Support lines and cooling 3. Alignment guard and tool count				
6. Test and operations transfer	1. Repeat leak 2. Live adjustment injury 3. Unresolved fault operated	1. Cause not reviewed 2. Hands seek leak 3. Release scope unclear	1. Control test access 2. Re-isolate before correction 3. Transfer limits to operations	1. Test method and findings 2. Correction and retest evidence 3. Operating conditions and receiver				

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

4. Pre-work checklist

☐ Pump seal and fluid identity	☐ Main and auxiliary isolations	☐ Part support and access
☐ Face shaft and sleeve checks	☐ Chamber fluid and vent state	☐ Test method and findings
☐ Permit and authority scope	☐ Datum fastening and setting	☐ Operating conditions and receiver