

Centrifugal-pump mechanical seal replacement - 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 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. Identify pump and seal	1. Hazardous-fluid release 2. Hot-fluid burn 3. Wrong seal assembly	1. Fluid misidentified 2. Auxiliary supply missed 3. Drawing mismatched	1. Verify fluid/SDS 2. Trace all auxiliary systems 3. Match seal and drawing	1. Fluid/temp/pressure 2. Flush/buffer/barrier paths 3. Seal model/direction				
2. Isolate drain and cool	1. Trapped-fluid spray 2. Pressure returns 3. Chemical contact	1. Closed valve trusted 2. Gauge zero overextended 3. Drain/cleaning unverified	1. Isolate complete boundary 2. Verify safe pressure release 3. Drain/decontaminate/cool	1. Operations and energy boundary 2. Trapped sections/drains 3. Fluid removal/temperature				
3. Prepare opening support	1. Residual-fluid exposure 2. Component falls 3. Tool slips	1. PPE/collection absent 2. Part weight unknown 3. Wrong puller/tool	1. Match exposure protection 2. Support parts before release 3. Use specified tools	1. SDS and PPE 2. Part/support rating 3. Access/tool condition				
4. Inspect and assemble seal	1. Face damage 2. Elastomer degradation 3. Wrong operating length	1. Dirt or impact 2. Material/lube mismatch 3. Old marks trusted	1. Protect clean seal faces 2. Match fluid/materials 3. Use exact setting method	1. Face condition 2. Material/lubricant match 3. Datum/settings/direction				
5. Restore auxiliaries/guards	1. Lost cooling 2. Piping leak 3. Dry-running damage	1. Flush misconnected 2. Pipe support absent 3. Fill/vent omitted	1. Match piping to plan 2. Verify support/connections 3. Establish startup fluid	1. Auxiliary flow path 2. Pipe strain/connections 3. Filled/vented condition				
6. Control test and faults	1. Fluid spray injury 2. Rotating contact 3. Repressurised opening	1. Leak felt by hand 2. Live adjustment 3. Re-isolation omitted	1. Control test access 2. Keep hands from running parts 3. Re-isolate before rework	1. Test/leak method 2. Guarded boundary 3. Pressure/cooling recheck				

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

4. Pre-work checklist

☐ Fluid/temp/pressure	☐ Operations and energy boundary	☐ SDS and PPE
☐ Face condition	☐ Auxiliary flow path	☐ Test/leak method
☐ Seal model/direction	☐ Datum/settings/direction	☐ Pressure/cooling recheck