

MECHANICAL & NOISE DIAGNOSTIC LAB TECHNICIAN CHECKLIST

Field & Lab Verification Form: Rotary Vane & Mechanical Vacuum Pump Troubleshooting

Document ID: CHK-VAC-2021-13	Effective Date: Sept 15, 2021	Pump Model / SN: _____	Location/Rig: _____
Lead Tech: Kadeem Manning	Role: Tier II Vacuum Tech	Operating Hours: _____ hrs	Date of Inspection: _____

1. Pre-Diagnostic Safety & Initial Visual Inspection

Inspection Step / Task	Acceptance Standard / Criterion	Measured Value / Observation	Status
1.1 Safety LOTO & Belt Guard	OSHA LOTO verified; Belt guard shroud secure & intact	[] LOTO Active & Verified	[] PASS [] FAIL
1.2 Oil Level & Sight Glass	Level between 1/2 and 3/4 full; No dark or milky tint	Oil Level: _____ / Clarity: _____	[] PASS [] FAIL
1.3 External Fluid Leaks	Shaft seals, casing gaskets, and line fittings dry	Leak location: _____	[] PASS [] FAIL

2. Acoustic Fingerprint & Noise Diagnostics

Inspection Step / Task	Acceptance Standard / Criterion	Measured Value / Observation	Status
2.1 Cavitation / Rattling Check	Rattling disappears when gas ballast valve is opened slightly	Ballast Effect: [] Resolved [] Persists	[] PASS [] FAIL
2.2 Groaning / Hydraulic Strain	No heavy fluid groaning; Oil clear without water emulsion	Condensate found: [] Yes [] No	[] PASS [] FAIL
2.3 Metallic Knocking / Chattering	Smooth mechanical sound; No metallic vane/bearing impact	Impact location: _____	[] PASS [] FAIL
2.4 High-Pitched Squeal	Drive belt tension correct (1/4"-1/2" deflection under 5-8 lbs)	Belt Deflection: _____ inches	[] PASS [] FAIL

3. Motor & Mechanical Overload Inspections

Inspection Step / Task	Acceptance Standard / Criterion	Measured Value / Observation	Status
3.1 Motor Current Draw (FLA)	Measured FLA within ±10% of motor nameplate rating	Measured FLA: _____ A (Nameplate: ____A)	[] PASS [] FAIL
3.2 Exhaust Backpressure Check	Exhaust mist filter differential pressure <0.5 bar (7 psi)	Backpressure Gauge: _____ bar	[] PASS [] FAIL
3.3 Manual Shaft Hand-Rotation	Rotor rotates 360° smoothly by hand without binding or catches	Hand Rotation: [] Smooth [] Bound	[] PASS [] FAIL
3.4 Ultimate Vacuum Reach Test	Inlet isolated; Ultimate base pressure reaches <100 mTorr	Measured Base Vacuum: _____ mTorr	[] PASS [] FAIL

4. Corrective Action Log & Field Specialist Verification

Technician Observations & Diagnostic Notes:

Inspected By: Kadeem Manning Tier II Vacuum Tech Sig: _____ Date: _____	Approved By: Mark Tigges Field Operations Manager Sig: _____ Date: _____
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