UTILITIES EXPERT · ENGINEERING REPORT

Air Compressor Air End Inspection Report — 573570 — Fault Finder Summary

REPORT DETAILS

Report Name: Air Compressor Air End Inspection Report

UTILITIES EXPERT — FAULT FINDER SUMMARY REPORT

Equipment title: 573570

Date: 27/10/2026, 14:29:36

Media: 573570.jpg (photo)

Operator note: Air Compressor air end observation

EQUIPMENT IDENTIFIED

Rotary screw air compressor air end bearing housing

FINAL FINDING (confidence: HIGH)

Significant surface corrosion and oxidation are visible on the shaft end and bearing assembly, indicating severe moisture contamination or prolonged idleness in a humid environment. This level of rust on precision components can lead to bearing failure and rotor scoring if the unit is operated. Immediately stop the unit and plan for a professional internal inspection and bearing replacement by an OEM technician.

EVIDENCE OBSERVED

- Heavy rust and oxidation on the central shaft end face plate.

- Visible corrosion on the bearing outer race and surrounding housing.

- The lubricant appears dark and possibly contaminated with moisture or particulates.

- Clear star-shaped rust pattern suggests stagnant water was sitting on the metal surface.

SUPPORTING CAUSES

1. Prolonged equipment idleness [high]

Evidence: Localized rust patterns on the shaft end plate are consistent with atmospheric moisture condensing and sitting on static metal surfaces during a long shutdown.

Checks: Review the machine's logbook for the last run date and environmental humidity levels during that period.

2. Thermostatic valve failure [medium]

Evidence: If the valve is stuck open, the compressor runs too cold, allowing moisture from the intake air to condense into the oil rather than being exhausted as vapor.

Checks: Monitor the air discharge temperature during the next test run to ensure it reaches OEM operating specifications (typically above 80°C).

3. Contaminated or expired lubricant [medium]

Evidence: Discolored oil and the presence of corrosion suggest the oil's additive package and demulsibility have been compromised.

Checks: Take an oil sample for lab analysis, specifically checking for water content (ppm) and Total Acid Number (TAN).

READINGS TO CONFIRM

- What is the typical air discharge temperature (ADT) during operation?

- How long has this unit been idle prior to this inspection?

- What are the total running hours and the hours since the last oil change?

- Is there visible water or milky emulsion in the oil separator tank sight glass?

SAFETY

- Perform Lock-Out Tag-Out (LOTO) on the main power supply before any further disassembly or inspection.

- Ensure the compressor is fully depressurized and the sump tank pressure gauge reads zero PSI.

- Do not attempt to rotate the shaft if heavy resistance or grinding is felt, as this may further damage the rotors.

- Before executing any critical decision, discuss with your plant team. Invasive or live work only by qualified staff per the OEM manual.

Media quality: The image is clear and provides a direct, well-lit view of the internal bearing and shaft end components.

AI-assisted finding — verify on site before acting. https://utilitiesexpert.online

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Verify entered values and findings against site records and OEM requirements before making critical decisions.