

# TURBINE OIL ANALYSIS





# Turbine Oil Analysis

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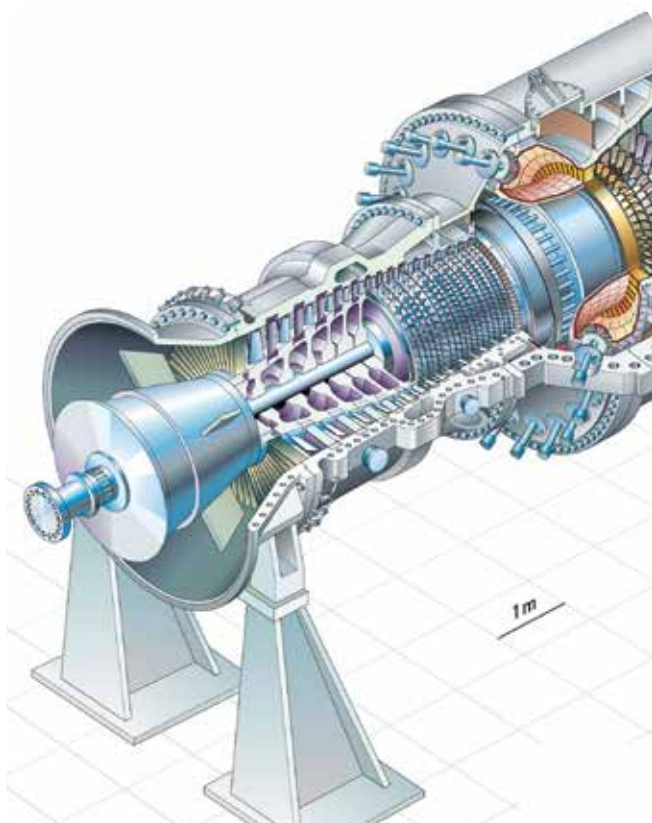
In today's world, companies rely on turbines and compressors to provide power and gas transportation for core processes. Turbines and compressors already have demanding lubrication requirements and those demands are increasing. More demands are being put on these fluids as reservoir size and working clearances decrease and system power outputs, pressures, temperatures and oil service life increase. Lubricants must be highly oxidative and thermally stable to be able to handle these higher operating temperatures. Additionally, the lubricant must remain contaminant-free to properly lubricate bearings and gears, and to act as a favourable hydraulic medium for governors and valving control systems.

Oil oxidation and sludge will lead to sticking servo valves, meaning control valves will not open on demand. Oil contamination will accelerate wear, cause governors and valves to operate erratically and plug system filters. Unmonitored, poor oil condition leads to unplanned outages which are disruptive and potentially very expensive.

In order to achieve peace of mind on the operating condition of your turbine and compressor you need the comprehensive testing that WearCheck provides. Specifically designed for industrial turbines and compressors, WearCheck's turbine oil analysis kit combines well-established industrial tests with more recent advances in industry-testing to provide an unparalleled view of the operating condition of your critical lubricants.

WearCheck's turbine oil analysis kit determines the levels of remaining antioxidants in the oil, detects unwanted oil contamination and will accurately determine the suitability of the lubricant for continued use. A comprehensive diagnosis warns you of any potential for damaging varnish build-up and includes recommendations for any necessary maintenance actions to remove contamination and restore the lubricant to optimum operating condition.

**Typical Applications:** gas turbines, steam turbines, hydro-electric turbines, rotary compressors.



TEST	METHOD	BENEFIT	STD. KITS	ADV. KITS
Viscosity at 40°C	ASTM D7279	Indication of the lubricant's resistance to flow at 40°C	✓	✓
Viscosity at 100°C	ASTM D7279	Indication of the lubricant's resistance to flow at 100°C	✓	✓
Elemental Analysis	ASTM D5185*	Concentration of wear and additive elements present in the lubricant	✓	✓
Water Content	ASTM D6304	Presence of moisture in parts per million (ppm)	✓	✓
Total Acid Number	ASTM D974	Acidity of the lubricant	✓	✓
Particle Quantification		Indication of magnetic particles in the lubricant	✓	✓
Particle Count	ISO4406:99	Size and distribution of particles present in the lubricant	✓	✓
Remaining Useful Life	ASTM D6971*	Concentration of antioxidants present as compared to new oil	✓	✓
Membrane Patch Colorimetry	ASTM D7843	Presence of insolubles that may lead to varnish build-up		✓
Foaming Characteristics	ASTM D892	Tendency of the lubricant to produce foam and the stability of the foam produced		✓
Air Release	ASTM 3427	Ability of the lubricant to release entrained air		✓
Water Separability	ASTM D1401	The lubricant's ability to separate from water		✓
Rotating Pressure Vessel Oxidation Test	ASTM D2272	Oxidation stability of the lubricant	Available On Request	

\* Variances to the method are applied

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