TANNAS CO.
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"Tomorrow's Instruments... Today" ™

Tannas *Quantum*™ Oxidation Tester

RPVOT - Rotating Pressure Vessel Oxidation Test *(a.k.a. RBOT)*

Principle:

- A copper catalyst coil is immersed in the test oil and exposed to oxygen at moderate pressure and at a test temperature until the oxygen destroys the oxidation resistance of the test oil. At this point the pressure drops rapidly and shows the oxidation induction time or break point.

Special Features & Benefits:

- Non-liquid 'Dry Cylinder' sample heating approach eliminates hot, hazardous, liquid bath mess and odor.
- Does not require placement of instrument in a hood to control objectionable oxidized oil odors.
- Simple venting technique permits discharge of objectionable odors through plastic tubing to scrubber, or distant hood.
- Auto-Shutoff feature at end of test.
- Has comparatively very small, bench-top, footprint.
- Front-loading, easily accessible pressure chamber.
- Convenient, front mounted oxygen charge and release valves.
- Each unit is a "stand-alone" but can be grouped if desired via software package.
- Automation Package for the *Quantum* tester monitors & records up to four independent units.
- Rapid turn-around in test capabilities due to independent nature of each unit – estimated to at least double productivity with multi-rig setup.

Significance:

- Used in evaluating the oxidation stability of new and in-service turbine oils having the same composition.
- Useful for assessing the remaining oxidation test life of in-service oils.

Dimensions:

- Bench-top footprint: 8"w x 15"d x 12"h (20 x 38 x 30.5 cm), ~20 lbs. (9 kg)

Voltage:

- 120 VAC, Single Phase, 15 Amp. 50/60 Hz. *(Also available in 220 VAC, 50 or 60 Hz)*

Heating Medium:

- Non-liquid 'Dry Cylinder' heating system – no hot oil bath.

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An ISO 9001 Certified Company

Testing Capacity:

- *Single* position stainless steel oxidation vessel (meets 18-8, Sa304 requirements) with pressure transducer.
- Designed for multiple unit (side-by-side) alignment on the bench-top, each functioning independently.

Test Parameter Capabilities:

- Temperature – Choice of operating temperatures (200 ±0.1°C recommended maximum). Measured with 100 Ohm RTD accurate to 0.1°C.
- Oxygen Charge – Ranges from 0-200 psi (1379 kPa). Choice of pressures (100 ±0.1 psi recommended maximum @ ambient). Overall system accuracy at 1.5% full scale including thermal error.
- Vessel Rotation – Variable speed control

Read-out:

- Temperature controller and pressure meter mounted on cabinet front for easy viewing of parameters throughout test – no separate console box.
- Continuous temperature and oxygen pressure output through Digital USB to Computer or Dsub9 connector to Analog chart recorder.
- Selectable graduations on recording device.

RPVOT Test Parameters (D 2272):

- Operating Temperature: 150°C
- Oxygen Charge: 90 psi (620 kPa)
- Oxidation Vessel Rotation: 100 RPM
- Oxidation Vessel Angle: 30°
- Test Sample: 50 ±0.5g
- Catalyst Components: Copper Wire Coil, Reagent Water

Safety:

- Oxidation vessel tested under pressures of 500 psig (3450 KPa) -- 300% of maximum test pressure
- Current limiting fuses
- Over-pressure sensor & relief
- Over-temperature cut-out fuse

Test Methods/Specifications:

- ASTM D 2272
- IP 229