



TLA-RNT

FOR ON-LINE ENGINE WEAR MEASUREMENT

Radiotracer techniques for accurate and real-time measurement of engine wear



TLA-RNT Chamber for Flow-through measurement

TLA-RNT equipment is a wear-monitoring probe especially designed for continuous wear measurement on engines. It offers **on-line wear results** with very high sensitivity in the range of one nanometer per hour (1 nanometer = 1/1000 of a micron).

TLA-RNT equipment can be adapted to any engines or mechanical devices. It is equipped with an internal pump that allows circulating a fluid (oil, fuel, coolant...) at very controlled conditions.

TLA-RNT equipment combines real-time results with very short response times in the range of several seconds. Its **extreme sensitivity and accuracy** allows shortening significantly test durations compared to conventional wear measurement procedures.

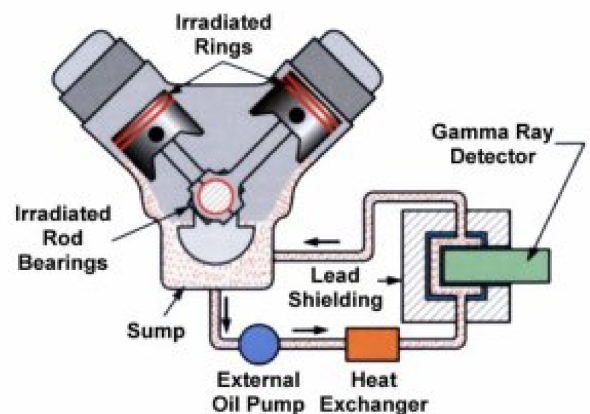
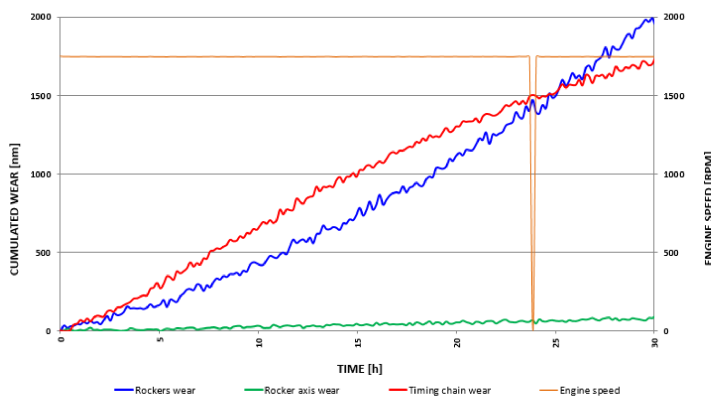
TLA-RNT equipment operating principle is based on the use of the Thin Layer Activation (TLA) technology (also called RNT for Radio Nuclide Technique). The methodology is based on the production of radiotracers on the surface of wear parts.

BENEFITS:

- ✓ On-line results
- ✓ Significant reduction of test duration
- ✓ Extremely **high sensitivity**: 1 nanometer
- ✓ Real-operating conditions without dismantling parts
- ✓ **Non-destructive measurement**
- ✓ Full package service measurement at DSi or at your test facility



Example of typical engine parts for TLA



Principle of a TLA-RNT measurement → On-line wear measurement (i.e. piston rings)

When wear occurs debris are released due to friction from labelled areas to a fluid (i.e. lubricant). As a consequence, there is an increase of radioactivity (gamma-rays) in the lubricant and a radiation probe is installed in a measuring chamber where the fluid is circulated. It allows detecting very little wear rates in the range of one nanometer per hour.



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