

# Test Report

for the utilization of

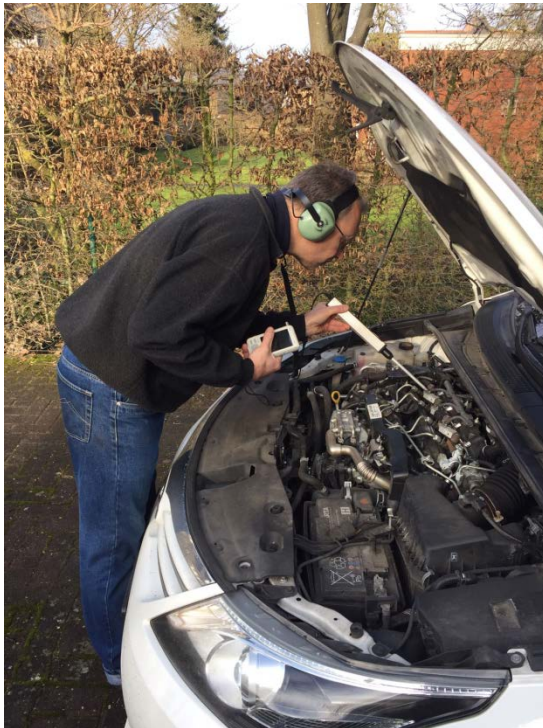
## "NPS Engine Improvement"

### Ultrasonic Wear Measurement

Toyota Avensis 2.2 D



## Ultrasonic Wear Measurement Toyota Avensis 2.2 D



The car is treated with NPS Engine Improvement at a mileage of 28,000km.



Ultrasonic wear measurement is carried out at a mileage of 127,000km

Test performed by Tacho-Spion



The Tacho-Spion ultrasonic wear measurement helps determine the true wear of a car.  
For more information visit-  
[Http://www.tacho-spion.de](http://www.tacho-spion.de)

# The Technology

## The technology

Every running motor produces ultrasonic noises.

Just as with the human voice and finger-prints. The source of the ultrasound can be identified, recorded and analyzed, motors from different manufactures have individual sound signatures.

Every engine has its own individual "voice", which changes through its lifetime, and it is dependent on the degree of wear and the present frictional status.

Therefore our testing method with Speedo-Spy gives a clear picture of the condition of the engine, which results from the quality and frequency of service, the way it has been driven and as well as the real distance being driven.

The principles of ultrasonic fault-finding are well known in the industry mainly developed to check on large high Tec systems.

Ultrasonic sounds are often indicators of defects, and with the extreme sensitivity of the UL 101, these can be detected in early stages.

Speedo-Spy has been used since 2001 to analyze over 11.000 motor/chassis combinations.

This results in a total of over 250,000 measurements, each tied to the indicated driven mileage and has produced a statistically valid data-base for our present and future tests and evaluations.

To achieve an accuracy of  $\pm 10\%$  miles compared with the odometer reading is dependent on the real distance being travelled, on the quality of maintenance and the type of driving (city or highway, passive or sportive).

The measuring takes only a few minutes and requires no disassembling of the engine.

The measured values are compared with the data-base online, and the results are available instantly.

Just like the engine, other components can be checked, such as:

Gears, Water pump, Power steering pump, Alternator and Turbo.

Test results:



# Prüfprotokoll

## Fahrzeugdaten:

Hersteller:	Toyota
Modell:	Avensis 2.2 D-4D
Fahrgestell-Nr.:	SB1EA76L30E038729
Amtliches Kennzeichen:	KLE AW 998
Kraftstoff:	Diesel
Wegstreckenzählerstand:	127000 KM
Erstzulassung:	30.10.2013
Zylinder:	4
Hubraum (ccm):	2231
KW:	110
Getriebetyp:	Schaltgetriebe
Anzahl Gänge:	6

## Messergebnis Motor:

Erfassungsdatum:	02.02.2017
Motorverschleiss:	gering (im Vergleich mit dem Durchschnittverschleiss dieses Motorentyps)
Verschleiss-Wert entspricht:	80.000 - 90.000 km

*Let us advise you !*

*We will inform you about the possibilities and benefits.*

## **Nano Protect** *Service* UG

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“Reducing fuel consumption, emissions and costs – always a step ahead”