



Millers Oils Ltd
Brighouse, West Yorkshire
HD6 3DP, England

millersoils.co.uk

enquiries@millersoils.co.uk

Tel: +44 (0)1484 713201



AUTOMOTIVE



Important information for race preparation teams, classic car and classic bike owners.

Changes to the anti wear additives in modern engine oil formulations can have a serious effect on older engine designs, such as accelerated camshaft / cam follower wear.

Engine builders are reporting frequent cases involving serious wear on camshafts and followers during the running in process, and / or within a relatively short period of time after an engine rebuild.

Inevitably, the problem will be attributed to the surface hardness or the quality of the lubricant.

However the situation is not as simple as it appears, and one explanation may relate to the changes that are occurring in current additive technology and how they affect older designs of engine component.

Historically, the anti wear additive used in the majority of formulations was a zinc / phosphorous based compound known as ZDDP. (Zinc dialkyldithiophosphate)

The bad guy in this story is the phosphorous content of ZDDP and its associated ash content, which has a detrimental effect on sensitive exhaust emission systems.

As the car manufacturers demand longer drain intervals (combined with low viscosities, such as 0w30, 5w30 etc.) there has been a need to replace the zinc / phosphorous additive in the oil with other additives.

This has led to many new formulations developed to meet the OE specifications from Ford, BMW, VAG, Mercedes etc., which have reduced levels of ZDDP.

However the anti wear characteristics of these new additives are different to ZDDP in certain circumstances and therefore require different specifications for the surface hardening on camshafts, followers, gears etc.

These oils will not present a problem in a new VW Golf, for instance, but may cause serious problems in an older race or classic engine, where the surface hardness has not been developed in conjunction with the additive pack in the oil.

Be assured that all Millers' Motorsport and Classic formulations will continue to contain the optimum amount of ZDDP to give maximum possible protection against wear for highly loaded engine components in high performance and older engine designs.

Millers' Premium automotive range of oils are obviously formulated to meet the latest OE car makers specifications and therefore will contain the latest additive technology with lower levels of ZDDP required to meet modern emissions regulations.

Motorsport

