Tufftrided cam followers – an explanation

We do not recommend the fitting of new tappets to run on a worn camshaft, or to run worn tappets on a new camshaft. Ideally a re-profiled or new camshaft should be fitted with new tappets.

The contact between the cam shaft lobe and the cam follower or tappet face is very inhospitable - a sliding contact, relatively high sliding speeds and high loads - altogether not conducive to a long life. Originally the tappets were made from chill cast cast iron, but unless we were to order several thousand at a time this is not a route we could use for re-manufacturing today. However, having sought advice from a number of authorities, including the Motor Industry Research Association it was decided that the tappets that we supply should be Tufftrided to give them the best possible life. This is a process used extensively within the motor industry.

Tufftriding is a relatively low temperature process so does not cause distortion but it leaves a very hard but thin layer on the surface which has excellent wear-resistant properties. Before Tufftriding, the cam followers are case-hardened conventionally, but because of the temperature employed in the Tufftriding process the hardness of the case is reduced although it still offers support to the Tufftrided layer. If a conventional hardness check is made on the foot of the cam follower the hardness of the underlying case will be measured, as the load on the diamond probe of about 2.5 Kgm will cause it to pass right through the Tufftriding into the underlying case hardening. This will appear to be relatively soft. In order to measure the properties of the Tufftrided surface a micro-hardness check is required, involving a much lighter-loaded probe of only 25 or 50 gms. The hardness reading should be 740 HV.