



## **Reticular Tin Aluminium Bearings - Hardened Crankshafts**

Occasionally we receive queries regarding operation of reticular tin aluminium bearings on hardened crankshafts.

Reticular tin aluminium bearings are compatible with all conventional crankshaft materials provided the crankshaft has been finished to the generally accepted standards required for any other bearing materials.

The process of nitride hardening of crankshafts is normally achieved by passing ammonia over the shaft at high temperature for a time, dependent on the depth of hardening required. The process results in a white friable layer of brittle iron nitride particles being formed on the journal surfaces.

It is essential that this white friable layer is removed before service, otherwise the particles will break away and cause characteristic "V" shaped scores on the bearings, which in turn may lead to bearing seizure.

Following the hardening or (re-hardening) process the shaft should be ground to remove 0.001"/0.0015" (0.025mm/0.038mm) and then lapped to finished size. The recommended lapping method is to rotate the crankshaft on its centres, wrapping a fairly smooth emery tape (360 grit or lower) around the journals, and pressure applied with a pair of wooden or aluminium tongs. The operation should be carried out with the tape soaked in engine oil.