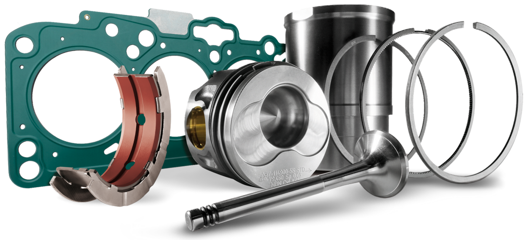

SERVICE
ENGINEERING
BULLETIN

SB2137.1

Valve Spring Replacement

When overhauling a cylinder head, it is essential to examine the valve springs carefully and to test them before considering their reuse.

First, thoroughly clean the springs and inspect the end faces. A polished appearance indicates “valve bounce” has occurred during service.

Such a condition means that:

- The engine has had over-speed
- The springs are weak
- The installed spring height was incorrect.

Now measure the open and closed spring pressures. Replace the valve springs if they do not produce at least 90% of the level specified by the engine manufacturer.

Valve spring distortion leads to excessive side thrust on the valve with consequential rapid valve guide wear, plus the possibility of valve breakage.

To check for this, stand the spring on a smooth level surface against a square. The spring must not be out of square by more than 1.016mm per 25.4mm (.040” per inch) length of spring (Fig. 1).

The valve spring surfaces must not exhibit any damage or corrosion pitting. Such surface defects will lead to localised stress raisers with possible resultant spring breakage during service.

If any doubts exists as to the serviceability of the old spring, then new ones should be fitted rather than run the risk of a possible dropped valve and consequential extensive engine damage

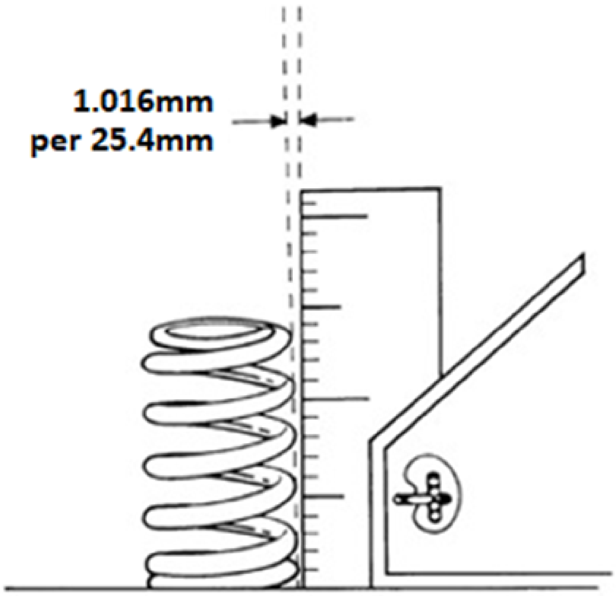

Fig.1.