

# Characteristics on Dynamic Strength of Engine Valve Spring

by

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## Abstract

The roles of an engine valve spring are as follows. It is to open and shut accurately along with a cam profile while air-intake and exhaust valves of an automobile engine are working. A surging of the valve spring becomes a problem in the speeding up of the engine due to the jumping of the valve and bouncing. However, there are only few reports on the analysis of the dynamic behavior of the valve spring, since it is complicated. In this study, a model which can measure the actual engine valve spring is used. It is recognized that the form of the seat end of the spring changes the stress state in the valve spring. Static and dynamic behaviors, and the stress state of the valve spring, are examined using a finite element method.

**Keywords:** Engine Valve Spring, Dynamic Stress State, Finite Element Method

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