Static and Dynamic Discharge Coefficient of Poppet Inlet Valve

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ABSTRACT

The Poppet Valve is the most important flow restriction in the intake system of four-stroke cycle engines, hence the air flow characteristics throughit is crucial in determining the breathing capacity of an engine.A lot of workconcerning the air flow through Poppet Valves has been done,but most of them are based on ""'static"'' tests or ""'speed"''tests.The objective of the present studyis to evaluate the instant air mass flow rate and the discharge coefficients through poppet inlet valve of a real operating engine. The results show that the dynamic discharge coefficient during the valve opening period is larger than that of closing period when engine speed is low,and the dynamic discharge coefficient during the valve opening period is less than that of closing period when engine speed is high.Under the same operatingcondition the dynamic coefficient is lower than the static discharge coefficent.

Keywords : 提動閥 ; 容積效率 ; 進氣系統 ; 進氣閥 ; 動態流逸係數 ; 靜態流逸係數

Table of Contents