



Service Instruction

ENGINE COMPONENTS, INC.

S.I. No.: 01-1

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Title: VENTURI INTAKE VALVE SEATS IN TCM 470, 520 AND 550 ENGINES

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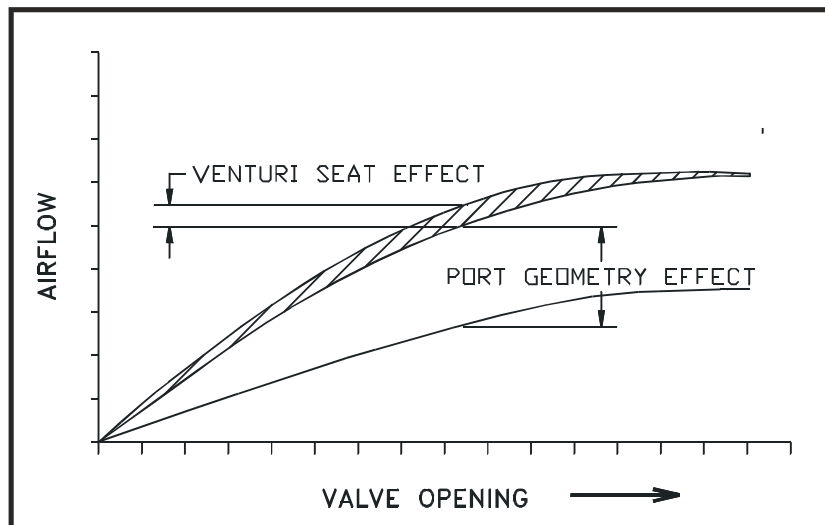
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Technical Portions are FAA DER Approved

SUBJECT: Venturi Seats in ECi TITAN™ 470/520/550 Cylinders and TCM Cylinders Repaired by ECi.

Engine Components, Inc. (ECi) has accomplished testing and computations that verify that the use of venturi intake seats in the angle head 470, 520 and 550 cylinders does not alter the operating characteristics of the cylinder enough to change the certification basis of the engine. Test data shows valve seats with a venturi interior shape (compared to straight bore seats) provide slightly higher flow at the intermediate valve opening positions, but the effect diminishes as the valve opens, and is of little or no significance at the full open position. The difference in airflow through the valve is influenced more by intake port geometric casting tolerances than the style of intake valve seat. This is especially true for turbocharged engines.

The illustration below summarizes the testing accomplished at ECi using a variety of OE and other Production Approval Holders cylinders (Including ECi's TITAN™ cylinders).



ECi has not been able to measure a significant change in engine power between the venturi and straight seat, but operators of test engines believe the transition from low to high engine speeds is faster and smoother. ECi's testing has shown that intake and exhaust port geometry has a significant effect on engine airflow, and poor port geometry can prevent the engine from developing rated power regardless of the type of intake valve seat used.

ECi is currently installing venturi style intake valve seats in TCM 470, 520 and 550 cylinder assemblies.