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C32A ECM Modification

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Abstract

These days, greater fuel efficiency in vehicles is something that is on everybody's minds. Newer cars and trucks are getting better and better gas mileage from the factory, they also have aftermarket products with programing capabilities to further increase their fuel efficiency. Owning a 1995 Acura Legend, that has no aftermarket programming abilities available on the market, we sought out to see if reprogramming the vehicles electronic "brains" could be done. Not only is an increase in fuel economy desired, but also an increase in engine horsepower and torque. In order to achieve these goals, the vehicle's engine computer would need to be removed, modified, reprogrammed, and tested. This involves retrieving the vehicle's stock calibration code, which needs to be uploaded from the stock computer, then deciphered it in order to make necessary changes without destroying the engine. Once the calibration is modified, it will then need to be downloaded to the engine's computer and tested. All steps, and findings, will be explained within this report.

Key Words:

ECM – Electronic Control Module (vehicle engine computer, the "brains" of the vehicle), PROM – Programmable Read Only Memory (stores the data tables for the ECM to use to control engine outputs), OBD-II – On Board Diagnostic system integrated into vehicles in 1996 and still used today, WOT – Wide Open Throttle, DAQ – Data Acquisition (The process of collecting, analyzing, and recording data from sensors used to monitor various electrical and physical quantities), RPM – Revolutions Per Minute, TPS – Throttle Position Sensor

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