

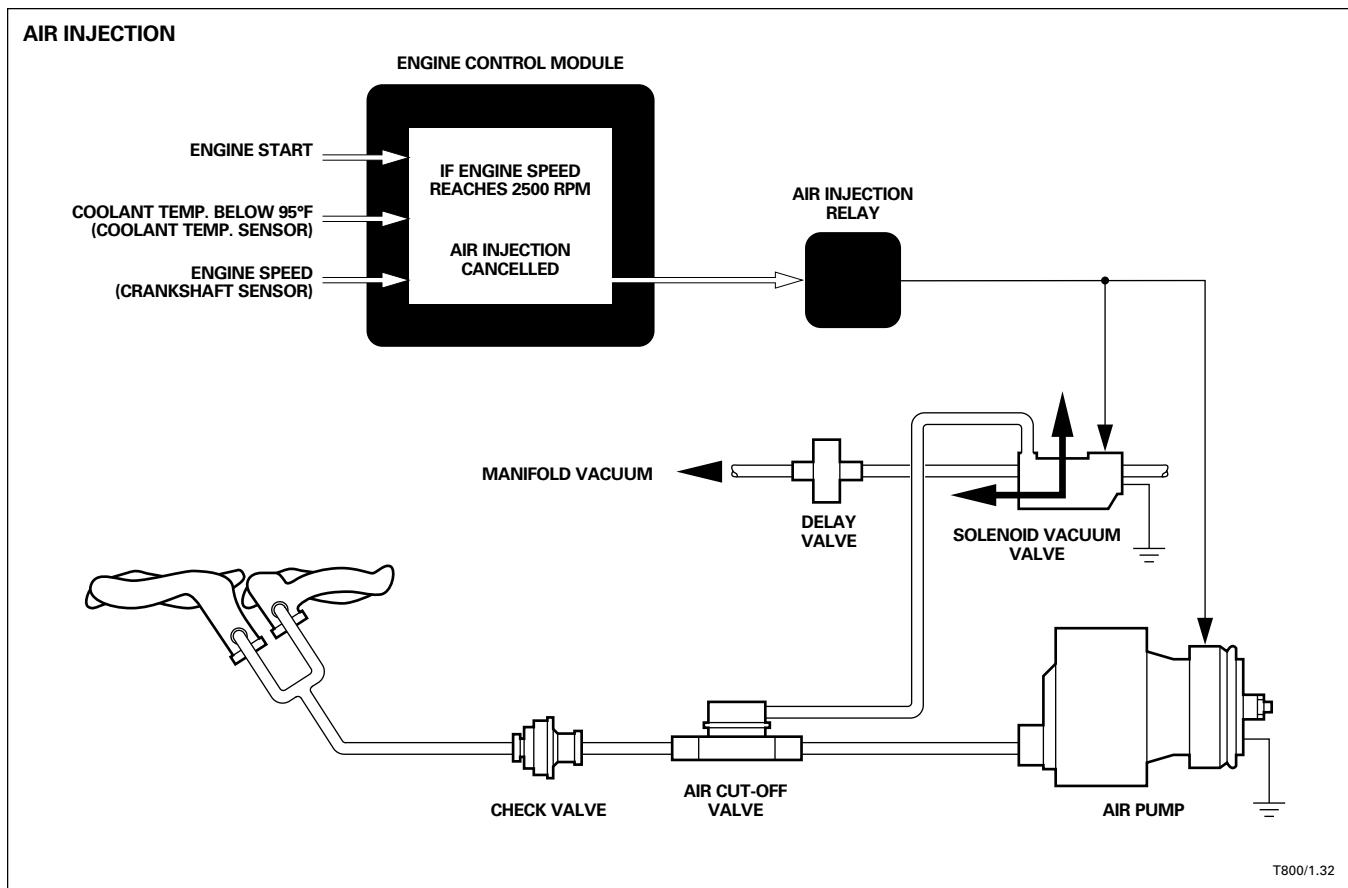
Air Injection

Air Injection Operation

Air injection is used to promote reaction in the exhaust down pipe catalyst, reducing the time required for the catalyst to reach working temperature. The air pumped into the exhaust manifold mixes with exhaust gas and oxidation takes place. The heat generated in this process reduces the time required for the catalyst to reach operating temperature.

Air injection is enabled by the ECM following each cold start and remains on until the engine coolant temperature reaches 95°F (34°C). At 95°F the air injection circuit is switched off and closed loop air / fuel ratio control is enabled. If the engine speed exceeds 2500 rpm while air injection is enabled, the ECM will switch off the circuit.

On 1993 – 94 MY vehicles, air injection is also enabled for approximately 30 seconds after each hot start.



The ECM switches the air injection relay, which in turn switches both the air pump clutch and the air injection solenoid vacuum valve. The solenoid vacuum valve controls the vacuum signal to the air switching valve. The air switching valve performs two functions. It backs-up the air injection check valve and it prevents air from being sucked through the pump and check valve into the exhaust. Such leakage would cause an air / fuel ratio error at the oxygen sensor. The vacuum supply to the air switching valve is sourced from the intake manifold through a delay valve. The delay valve is used to ensure that the air switching valve is held open during short periods of high engine load.

The ECM monitors its output to the air injection relay for on-board diagnostics.