

SYSTEM DESCRIPTION

The DeLorean Sports Car is equipped with a Bosch electronic idle speed control system. This system is used to maintain an extremely accurate engine idle speed under all operating conditions.

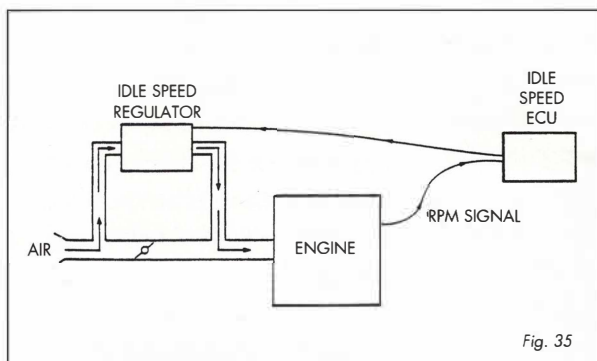
IDLE SPEED CONTROL PRINCIPLE

The control principle used is based on the fact that an electronic control unit (ECU) module is constantly monitoring the engine speed during an idle condition and correcting this speed when necessary.

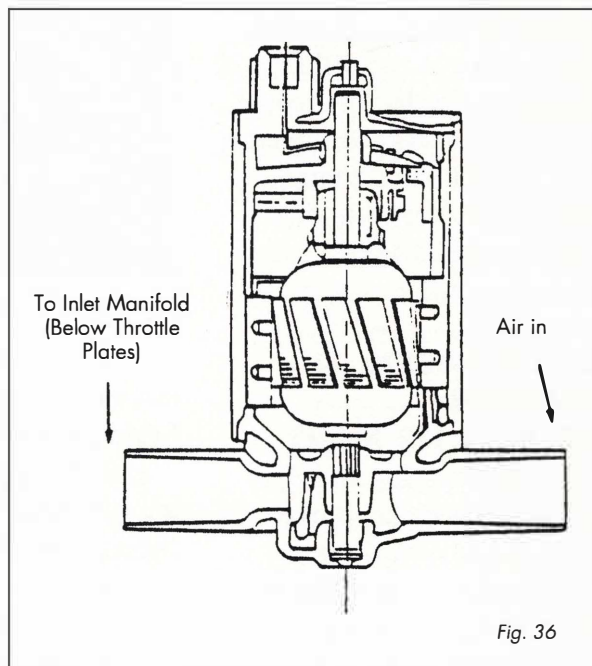
The idle speed regulator contains a rotary valve which controls the air flow through a duct that bypasses the throttle plates. During engine warm-up, for example, the engine speed is reduced due to friction. The idle speed regulator will open allowing additional air flow to the engine, increasing the RPM to specification. (Fig. 35)

SYSTEM OPERATION

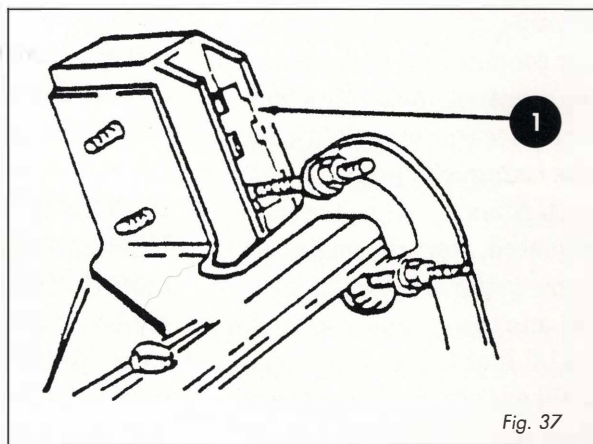
The idle speed regulator is constructed in a similar fashion to that of an electric motor, its purpose is to control the position of a rotary valve mounted on its shaft. This valve controls the air flow through a duct that bypasses the throttle plates.



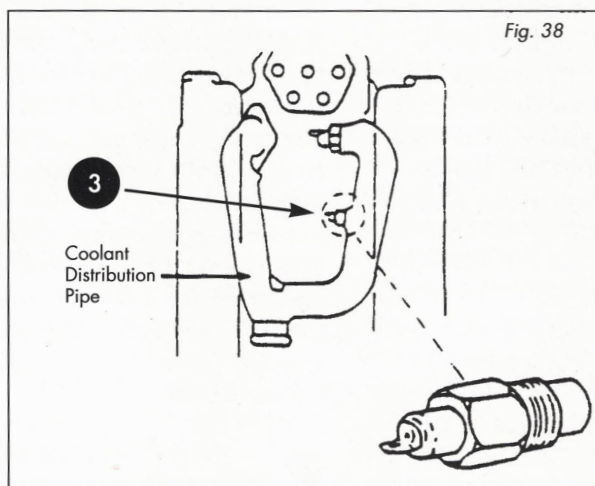
The regulator is mounted on the left side of the intake manifold. (Fig. 36)



The idle speed control system is only in operation when a microswitch (Fig. 37) (1) is closed by the throttle plates being in a fully closed position. This switch is located on the engine throttle linkage and allows the ECU module to operate. The ECU module senses engine speed from the tachometer and activates the idle speed regulator. The regulator changes the position on the rotary air valve in order to maintain a specified idle speed.



At engine coolant temperatures below 15° C (59° F), a thermistor, located on the coolant distribution pipe, signals the ECU module to switch the regulator to a "wider" open position. This will increase the idle speed (fast idle) during the engine warm-up period. (Fig. 38)



ELECTRICAL CIRCUIT FUNCTION

The ECU module (1) receives power through fuse No. 1 from the main relay when the ignition switch is in the "run" or "start" position.

When the throttle plates are fully closed, the micro-switch (5) provides ground for the ECU module to begin operation. An idle speed diode (4) is used to prevent "feed back" to the ECU module from another circuit which also uses the idle speed microswitch to provide its ground.

A thermistor (3), located in the coolant system distribution pipe, will activate another circuit within the ECU module when the coolant temperature is below 15° C (59° F). This circuit will provide a fast idle condition.

The ECU module receives an RPM signal from coil terminal No. 1. When the engine idle speed is above or below specifications, the ECU module activates the electric motor in the idle speed regulator (2). The signal from the module will run the motor in a forward or reverse direction which will open or close the rotary valve as necessary to achieve proper engine idle speed. (Fig. 39)

SYSTEM REPAIR NOTES

1. All of the idle speed control system parts are sealed units and cannot be adjusted or repaired.
2. The idle speed ECU module is located in the module compartment behind the driver's seat. The module is black in colour and is mounted in the upper portion of the compartment.
3. The idle speed diode is located in the module compartment behind the driver's seat. The diode is black in colour.
4. The idle speed microswitch is not adjustable and is preset to activate the control system when the throttle plates are in the closed position.
5. Engine idle speed is not adjustable. Speed is electronically controlled to 775 RPM $\pm$ 50 RPM.
6. Do not disconnect the idle speed regulator when adjusting the CO level.

