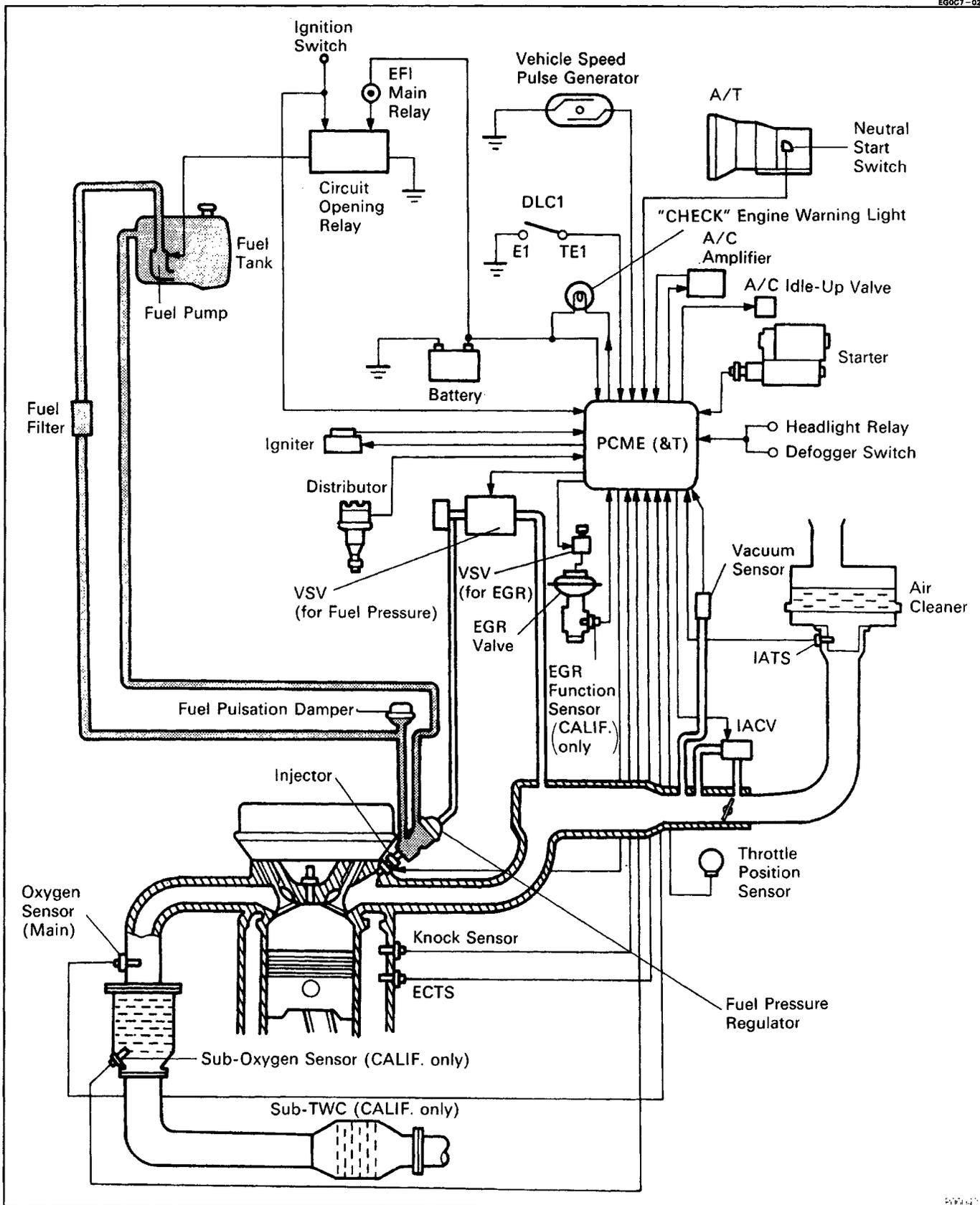


MPI SYSTEM

DESCRIPTION



EG0C7-02

90042

The MPI system is composed of three basic sub-systems: Fuel, Air Induction and Electronic Control Systems.

FUEL SYSTEM

Fuel is supplied under constant pressure to the MPI injectors by an electric fuel pump. The injectors inject a metered quantity of fuel into the intake port in accordance with signals from the PCME (& T) (Powertrain Control Module (Engine & Transmission)).

AIR INDUCTION SYSTEM

The air induction system provides sufficient air for engine operation.

ELECTRONIC CONTROL SYSTEM

The MR2 5S-FE engine is equipped with a TOYOTA Computer Controlled System (TCCS) which centrally controls the MPI, EI, IAC diagnosis systems etc. by means of a Powertrain Control Module (Engine & Transmission) (PCME (& T)–formerly MPI computer) employing a microcomputer.

The PCME (& T) controls the following functions:

1. Electronic Fuel Injection

The PCME (& T) receives signals from various sensors indicating changing engine operation conditions such as:

Intake manifold pressure

Intake air temperature

Coolant temperature

Engine rpm

Throttle valve opening angle

Exhaust oxygen content etc.

The signals are utilized by the PCME (& T) to determine the injection duration necessary for an optimum air-fuel ratio.

2. Electronic Ignition (EI)

The PCME (& T) is programmed with data for optimum ignition timing under any and all operating conditions. Using data provided by sensors which monitor various engine functions (rpm, coolant temperature, etc.), the microcomputer (PCME (& T)) triggers the spark at precisely the right instant.

3. Idle Speed Control (IAC)

The PCME (& T) is programmed with target idling speed values to respond to different engine conditions (coolant temperature, air conditioner ON/OFF, etc.) Sensors transmit signals to the PCME (& T) which controls the flow of air through the by-pass of the throttle valve and adjust idle speed to the target value.

4. Diagnosis

The PCME (& T) detects any malfunctions and abnormalities in the sensor network and lights a "CHECK" engine warning light on the combination meter. At the same time, trouble is identified and a diagnostic trouble code is recorded by the PCME (& T). The diagnostic trouble code can be read by the number of blinks of the "CHECK" engine warning light when terminals TE 1 and E1 are connected. The diagnostic trouble codes are referred to the later page.

(See page [EG2-209](#))

5. Fail-Safe Function

In the event of the sensor malfunction, a back-up circuit will take over to provide minimal drivability, and the "CHECK" engine warning light will illuminate.