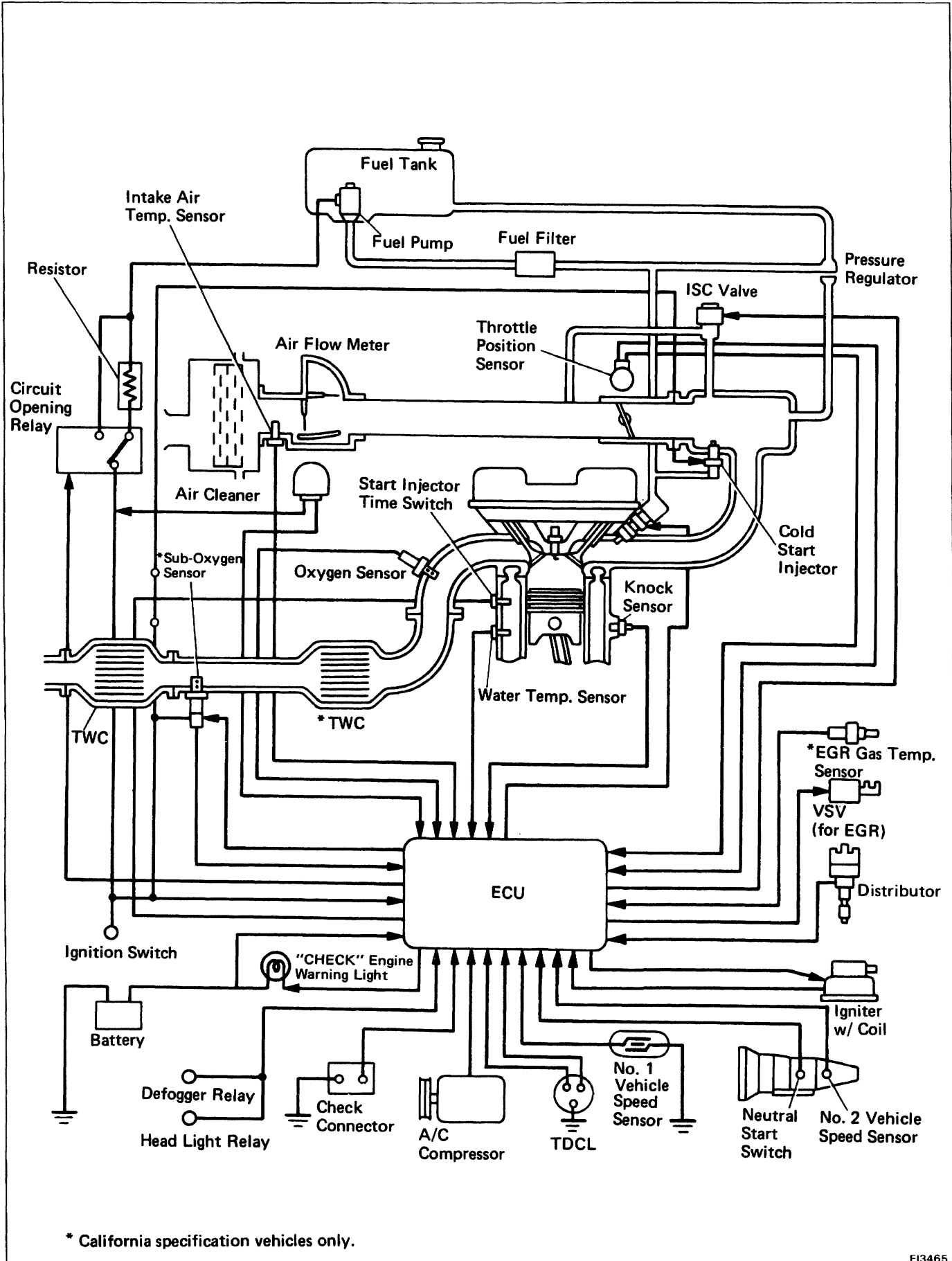

EFI SYSTEM

SYSTEM DESCRIPTION



* California specification vehicles only.

The EFI 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 EFI injectors by an electric fuel pump. The injectors inject a metered quantity of fuel into the intake manifold in accordance with signals from the ECU (Electronic Control Unit).

AIR INDUCTION SYSTEM

The air induction system provides just the right amount of air for the engine operating condition.

ELECTRONIC CONTROL SYSTEM

The CRESSIDA 7M-GE engine is equipped with a Toyota Computer Controlled System (TCCS) which centrally controls the EFI, ESA, ISC, ECT, Diagnosis systems etc. by means of an Electronic Control Unit (ECU, formerly the EFI computer) employing a microcomputer.

By means of the ECU, the TCCS controls the following functions:

1. Electronic Fuel Injection (EFI)
The ECU receives signals from various sensors indicating changing engine operating conditions such as:
 - Intake air volume
 - Intake temperature
 - Coolant temperature
 - Engine rpm
 - Acceleration/deceleration
 - Exhaust oxygen content etc.
 These signals are utilized by the ECU to determine the injection duration necessary for an optimum air-fuel ratio.

2. Electronic Spark Advance (ESA)
The ECU is programmed with data for optimum ignition timing under all operating conditions. Using data provided by sensors which monitor various engine functions (rpm, coolant temperature, etc.), the microcomputer (ECU) triggers the spark at precisely the right instant. (See IG section)
3. Idle Speed Control (ISC)
The ECU 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 ECU which control the flow of air through the by-pass of the throttle valve and adjust idle speed to the target value. (See pages [FI-43](#), 73)
4. Diagnosis Function
When the ECU detects malfunction or abnormalities in the sensor network, it lights the "CHECK" engine warning light in the combination meter. At the same time, the trouble is identified and a diagnostic code is recorded by the ECU. The diagnostic code can be read by the number of blinks of the "CHECK" engine warning light when terminals TE1 and E1 are connected. The diagnostic codes are explained on pages [FI-26](#), 27.
5. Fail-Safe Function
In the event of the sensor malfunctioning, a back-up circuit will take over to provide minimal driveability, and the "CHECK" engine warning light will light up.