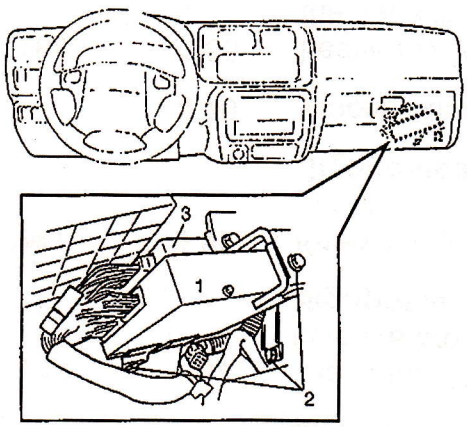



1. ECM
2. Bolt
3. A/T control module (A/T)

# ELECTRONIC CONTROL SYSTEM

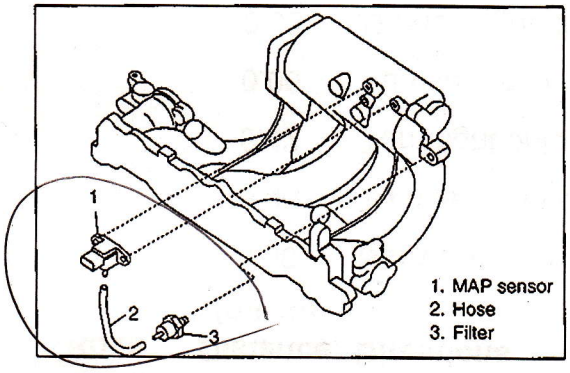
## ENGINE CONTROL MODULE (ECM)

**CAUTION:**
**As ECM consists of precision parts, be careful not to expose it to excessive shock.**

### Removal and Installation

1) Disconnect battery negative cable from battery.
2) Disable air bag system (if equipped) referring to "Disabling the Air Bag System" in Air Bag System section.
3) Remove glove box.
4) Disconnect connectors from ECM.
5) Remove ECM.

Reverse above procedure in case of installation.



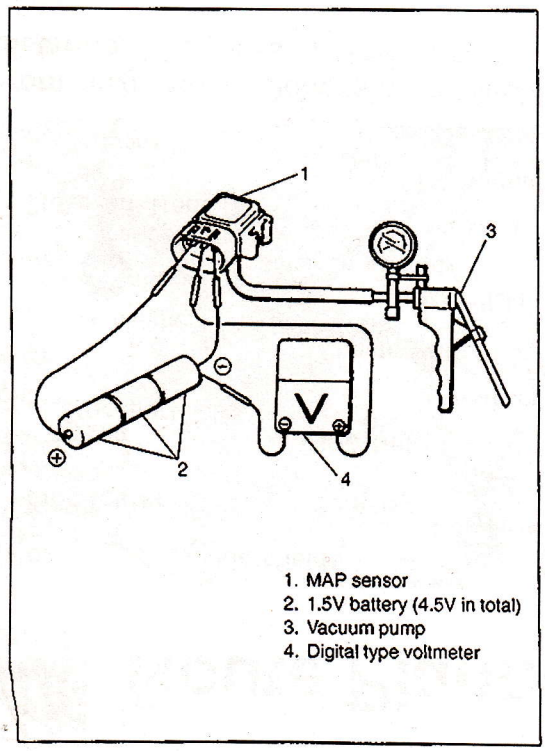

1. MAP sensor
2. Hose
3. Filter

## MANIFOLD ABSOLUTE PRESSURE SENSOR (MAP SENSOR)

### Removal and Installation

1) Disconnect negative cable at battery.
2) Disconnect MAP sensor coupler and hose from MAP sensor.
3) Remove MAP sensor from intake manifold.

Reverse above procedure in case of installation.




1. MAP sensor
2. 1.5V battery (4.5V in total)
3. Vacuum pump
4. Digital type voltmeter

### Installation

1) Arrange 3 new 1.5V batteries in series (check that total voltage is 4.5–5.0V) and connect its positive terminal to "Vin" terminal of sensor and negative terminal to "Ground" terminal. Then check voltage between "Vout" and "Ground".
Also, check if voltage reduces when vacuum is applied up to 400mmHg by using vacuum pump.

**Output voltage (Vin voltage 4.5 – 5.0V, ambient temp. 20 – 30°C, 68 – 86°F)**

| ALTITUDE (Reference) | | BAROMETRIC PRESSURE | OUTPUT VOLTAGE |
|---|---|---|---|
| (ft) | (m) | (mmHg) | (V) |
| 0 – 2000 | 0 – 610 | 760 – 707 | 3.1 – 3.6 |
| 2001 – 5000 | 611 – 1524 | 707 – 634 | 2.8 – 3.4 |
| 5001 – 8000 | 1525 – 2438 | 634 – 567 | 2.6 – 3.1 |
| 8001 – 10000 | 2439 – 3048 | 567 – 526 | 2.4 – 2.9 |