IAC Valve Circuit

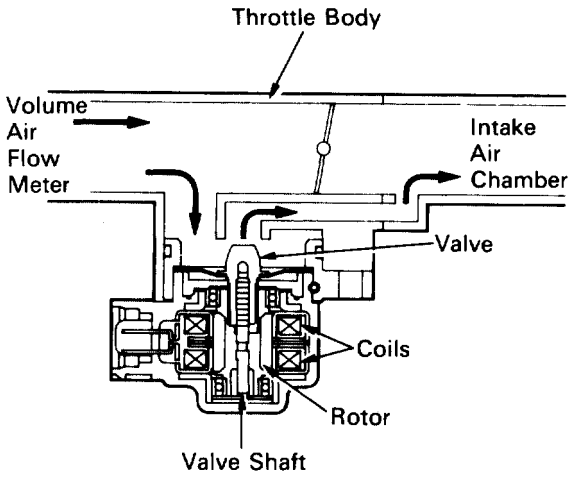
— CIRCUIT DESCRIPTION

The IAC valve is provided on the intake air chamber and intake air bypassing the throttle valve is directed to the IAC valve through a passage.

A step motor is built into the IAC valve. It consists of 4 coils, a magnetic rotor, valve shaft and valve.

When current flows to the coils due to signals from the ECM, the rotor turns and moves the valve shaft forward or backward, changing the clearance between the valve and the valve seat.

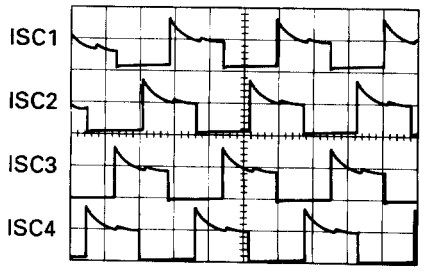
In this way the intake air volume bypassing the throttle valve is regulated, controlling the engine speed. There are 125 possible positions to which the valve can be opened.



FI6611

Reference **INSPECTION USING OSCILLOSCOPE**

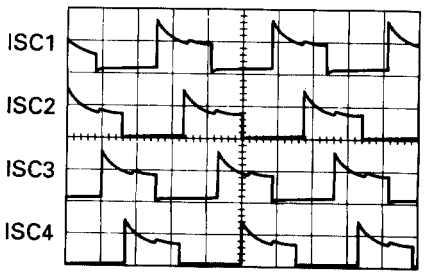
A/C Switch OFF → ON
(IAC Valve Open)



20 V/DIV.

10 m sec./Division

A/C Switch ON → OFF
(IAC Valve Close)



20 V/DIV.

10 m sec./Division

- With engine idling measure waveforms between terminals ISC1, ISC2, ISC3, ISC4 and E01 of engine control module when A/C switch ON or OFF.

HINT:
The correct waveform appears as shown in the illustration on the left.

FI6536
FI6537

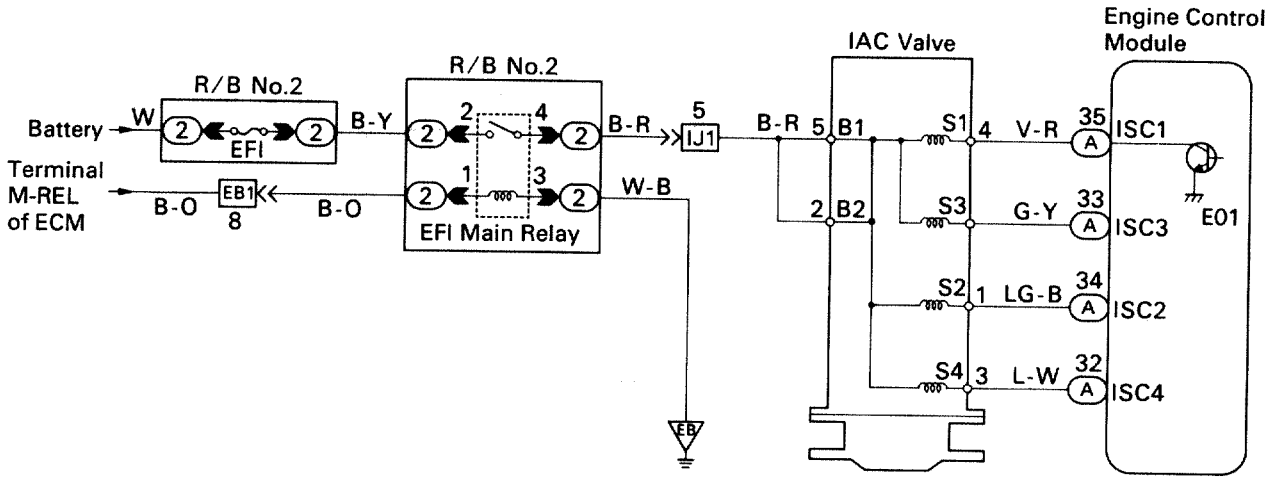
DIAGNOSTIC CHART

1 Check operation for IAC valve.
- NG → Replace IAC valve.
- OK ↓

2 Check harness and connector between EFI main relay, IAC valve and ECM.
- NG → Repair or replace harness or connector.
- OK ↓

Proceed to next circuit inspection shown on matrix chart (See page EG–348).

WIRING DIAGRAM

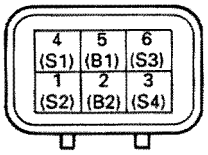


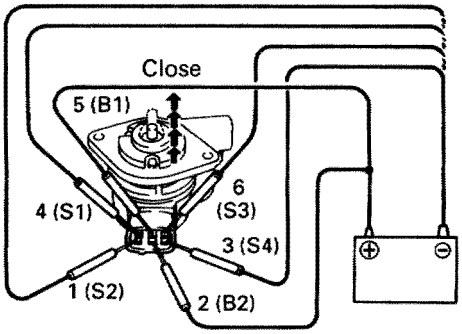
Connector Mark	A	B
ECM for A/T	E12	E11
ECM for M/T	E14	E13

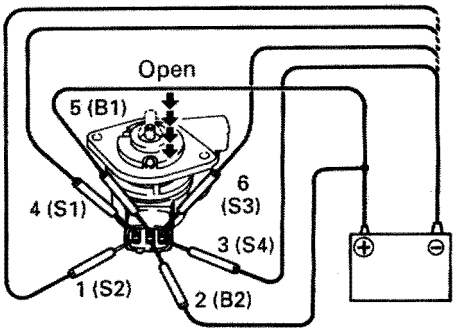
FI6634

INSPECTION PROCEDURE

1 **Check IAC valve.**







FI1694
P10701
P10700

P Disconnect IAC valve connector.

C Measure resistance between terminals shown below.

OK

Terminal	Resistance
5 (B1) – 4 (S1)	10 Ω – 30 Ω
5 (B1) – 6 (S3)	10 Ω – 30 Ω
2 (B2) – 1 (S2)	10 Ω – 30 Ω
2 (B2) – 3 (S4)	10 Ω – 30 Ω

P Remove IAC valve.

C
1. Connect battery positive lead to terminals 5 (B1) and 2 (B2), and negative lead to terminals 4 (S1) – 1 (S2) – 6 (S3) – 3 (S4) in that order.
2. Connect battery positive lead to terminals 5 (B1) and 2 (B2) and negative lead to terminals 3 (S4) – 6 (S3) – 1 (S2) – 4 (S1) in that order.

OK
1. **Valve moves in closing direction.**
2. **Valve moves in opening direction.**

OK → **NG** → **Replace IAC valve.**

2 **Check for open and short in harness and connector between EFI main relay and IAC valve, IAC valve and engine control module (See page IN–33).**

OK → **NG** → **Repair or replace harness or connector.**

Proceed to next circuit inspection shown on matrix chart (See page EG–348).