

Diagnosis System

DESCRIPTION

1. A self-diagnosis function is built into the electrical control system. Warning is indicated by the overdrive OFF indicator light.

HINT: Warning and diagnostic trouble codes can be read only when the overdrive switch is ON. If OFF, the overdrive OFF light is lit continuously and will not blink.

(a) If a malfunction occurs within the vehicle speed sensors (No. 1 or 2) or solenoids (No. 1, 2, or 4), the overdrive OFF light will blink to warn the driver.

However, there will be no warning of a malfunction with lock-up solenoid.

(b) The diagnostic trouble code can be read by the number of blinks of the overdrive OFF indicator light when terminals TE, and EI are connected.

(See page AT-111)

(c) The throttle position sensor or brake signal are not indicated, but inspection can be made by checking the voltage at terminal TT of the data link connector 1.

(d) The signals to each gear can be checked by measuring the voltage at terminal TT while driving.

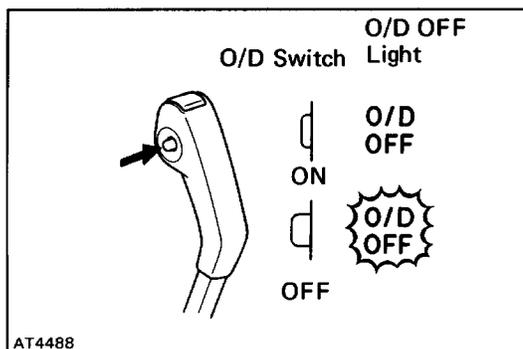
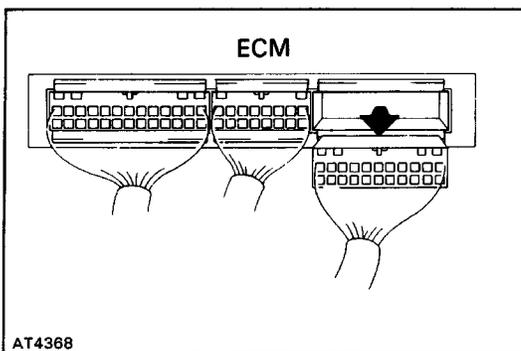
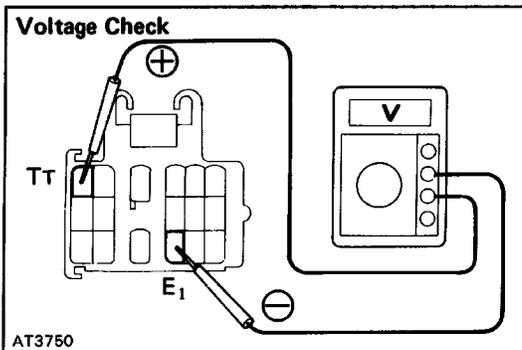
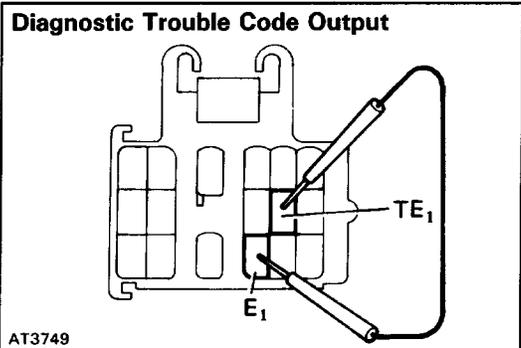
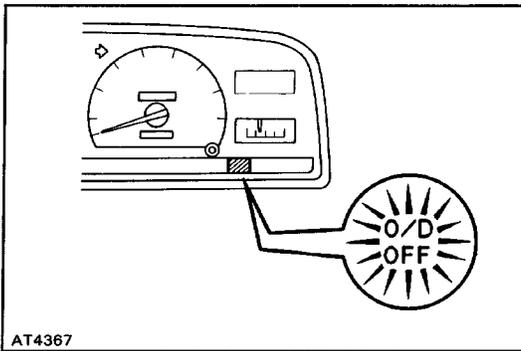
2. The diagnostic trouble code is retained memory by the ECM and due to back-up voltage, is not canceled out when the engine is turned off. Consequently, after repair, it is necessary to turn the ignition switch off and remove the MFI fuse (1 5A) or disconnect the ECM connector to cancel out the diagnostic trouble code.

(See page AT-119)

HINT:

Low battery positive voltage will cause faulty operation of the diagnosis system. Therefore, always check the battery first.

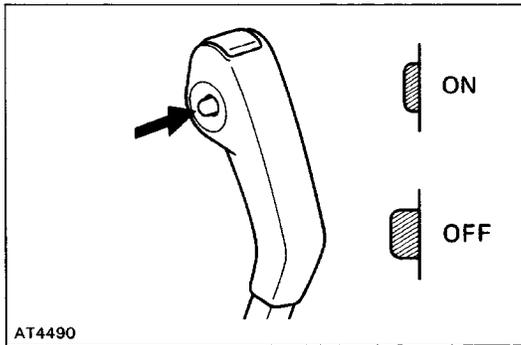
Use a voltmeter and ohmmeter that have an impedance of at least 10 kΩ/v.



CHECK "O/D OFF" INDICATOR LIGHT

1. Turn the ignition switch ON.
2. The "O/D OFF" light will come on when the O/D switch is placed at OFF.
3. When the O/D switch is set to ON, the "O/D OFF" light should go out.

If the "O/D OFF" light flashes when the O/D switch is set to ON, the electronic control system is faulty.

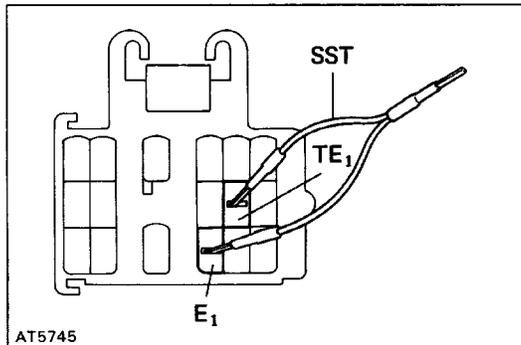


READ DIAGNOSTIC TROUBLE CODE

1. TURN IGNITION SWITCH AND O/D SWITCH TO ON

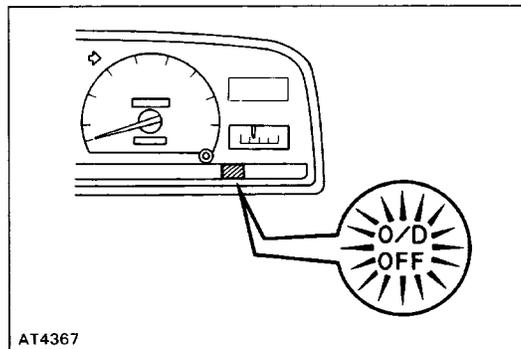
Do not start the engine.

HINT: Warning and diagnostic trouble codes can be read only when the overdrive switch is ON. If OFF, the overdrive OFF light will light continuously and will not blink.



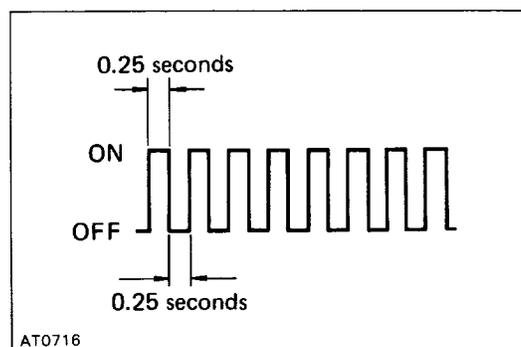
2. CONNECT TE, AND E, TERMINALS OF DATA LINK CONNECTOR 1

Using SST, connect terminals TE, and EI.
SST 09843-18020



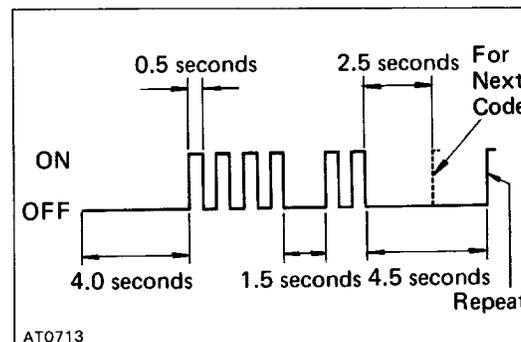
3. READ DIAGNOSTIC TROUBLE CODE

Read the diagnostic trouble code as indicated by the number of times the O/D OFF light flashes.



(Diagnostic Trouble Code Indication)

- If the system is operating normally, the light will flash 2 times per second.



- In the event of a malfunction, the light will flash 1 time per second. The number of blinks will equal the first number and, after 1.5 seconds pause, the second number of the two digit diagnostic trouble code. If there are two or more codes, there will be a 2.5 seconds pause between each.

HINT: In the event of several trouble codes occurring simultaneously, indication will begin from the smaller value and continue to the larger.

4. REMOVE SST

DIAGNOSTIC TROUBLE CODES

Code No.	Light Pattern	Diagnosis System
—		Normal
42		Defective No. 1 vehicle speed sensor (in ATM)—severed wire harness or short circuit
61		Defective No.2 vehicle speed sensor (in ATM)—severed wire harness or short circuit
62		Severed No. 1 solenoid or short circuit—severed wire harness or short circuit
63		Severed No.2 solenoid or short circuit—severed wire harness or short circuit
64		Severed lock-up solenoid or short circuit—severed wire harness or short circuit
65		Severed No.4 solenoid or short circuit—severed wire harness or short circuit

HINT: If codes 62, 63, 64 or 65 appear, there is an electrical malfunction in the solenoid.

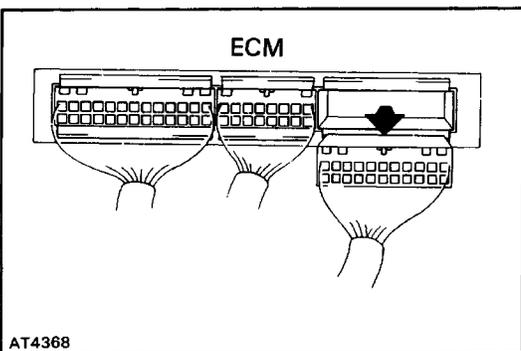
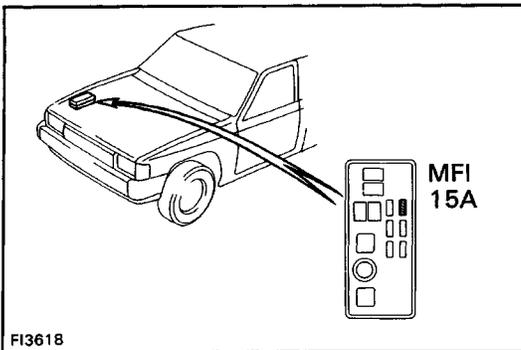
Causes due to mechanical failure, such as a stuck valve, will not appear.

CANCEL OUT DIAGNOSTIC TROUBLE CODE

1. After repair of the trouble area, the diagnostic trouble code retained in memory by the ECM must be canceled by removing the MFI fuse (1 5A) for 10 seconds or more, depending on ambient temperature (the lower the temperature, the longer the fuse must be left out) with the ignition switch OFF.

HINT:

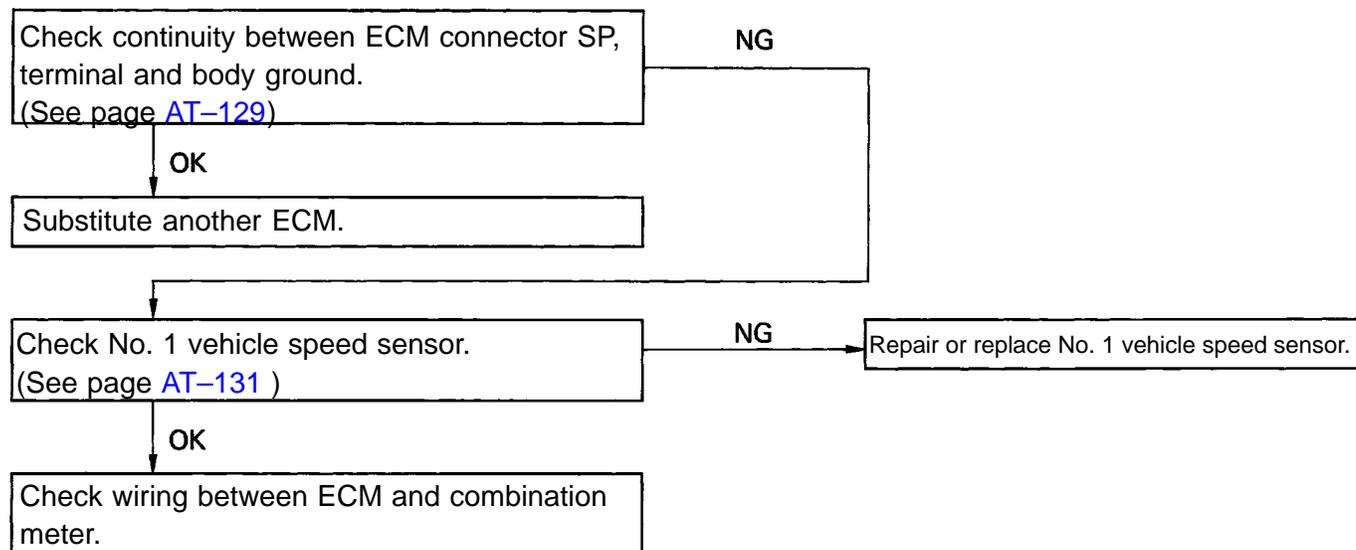
- Cancellation can be also done by removing the battery negative (-) terminal, but in this case other memory systems will be also canceled out.
 - The diagnostic trouble code can be also canceled out by disconnecting the ECM connector.
 - If the diagnostic trouble code is not canceled out, it will be retained by the ECM and appear along with a new code in event of future trouble.
2. After cancellation, perform a road test to confirm that a "normal code" is now read on the O/D OFF light.



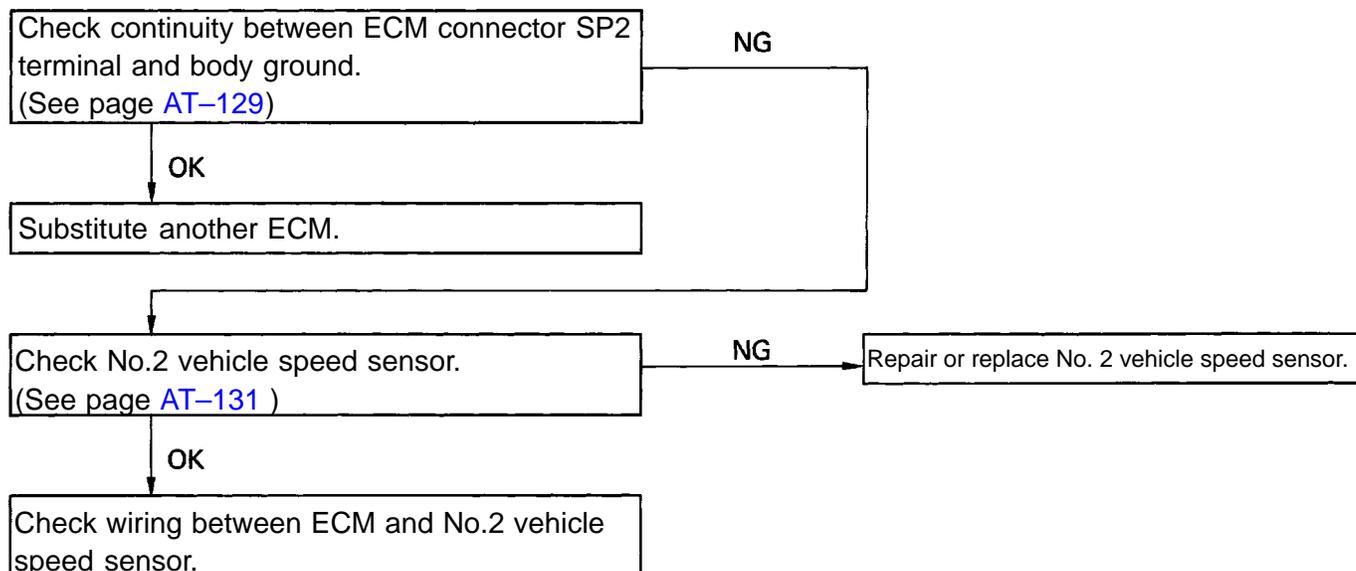
TROUBLESHOOTING FLOW-CHART

HINT:

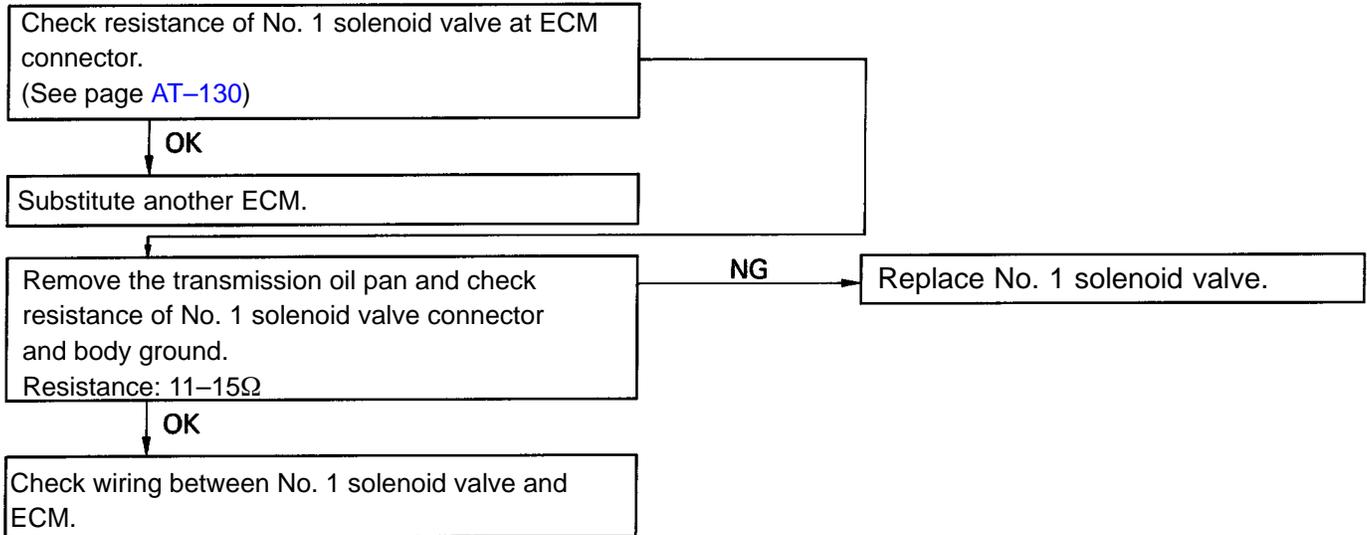
- If diagnostic trouble code Nos. 42, 61, 62, 63 or 65 are output, the overdrive OFF indicator light will begin to blink immediately to warn the driver. However, an impact or shock may cause the blinking to stop; but the code will still be retained in the ECM memory unit canceled out.
 - There is no warning for diagnostic trouble code No. 64.
 - In the event of a simultaneous malfunction of both No. 1 and No. 2 vehicle speed sensors, no diagnostic trouble code will appear and the fail-safe system will not function. However, when driving in the D position, the transmission will not up-shift from first gear, regardless of the vehicle speed.
- Diagnostic trouble code 42 (No. 1 vehicle speed sensor circuitry)



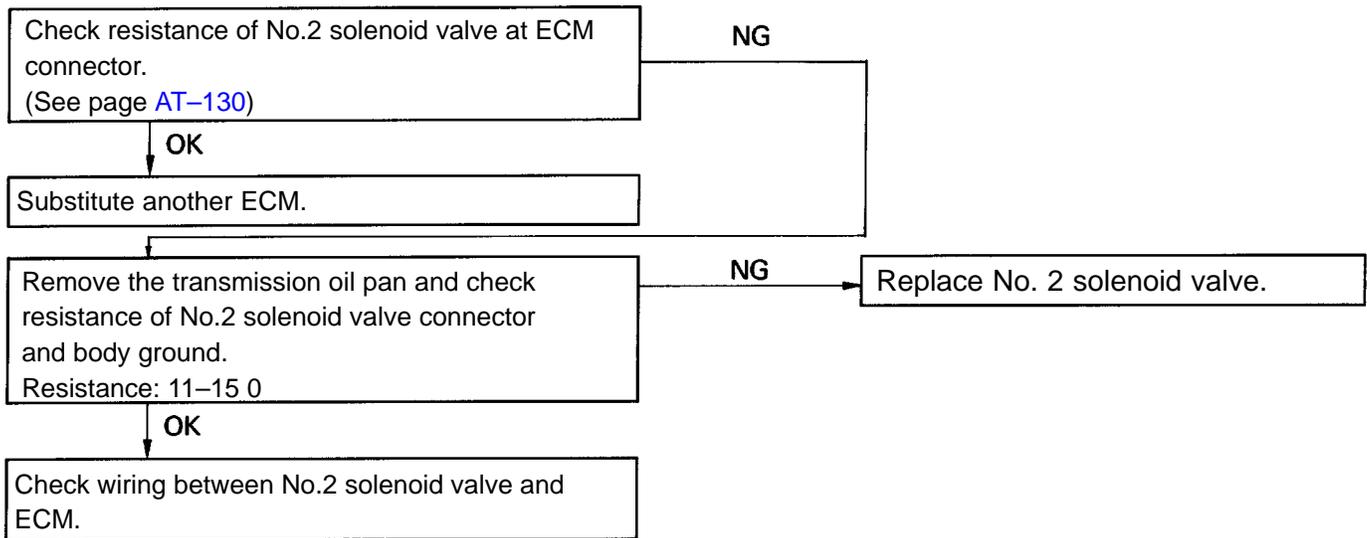
Diagnostic trouble code 61 (No.2 vehicle speed sensor circuitry)



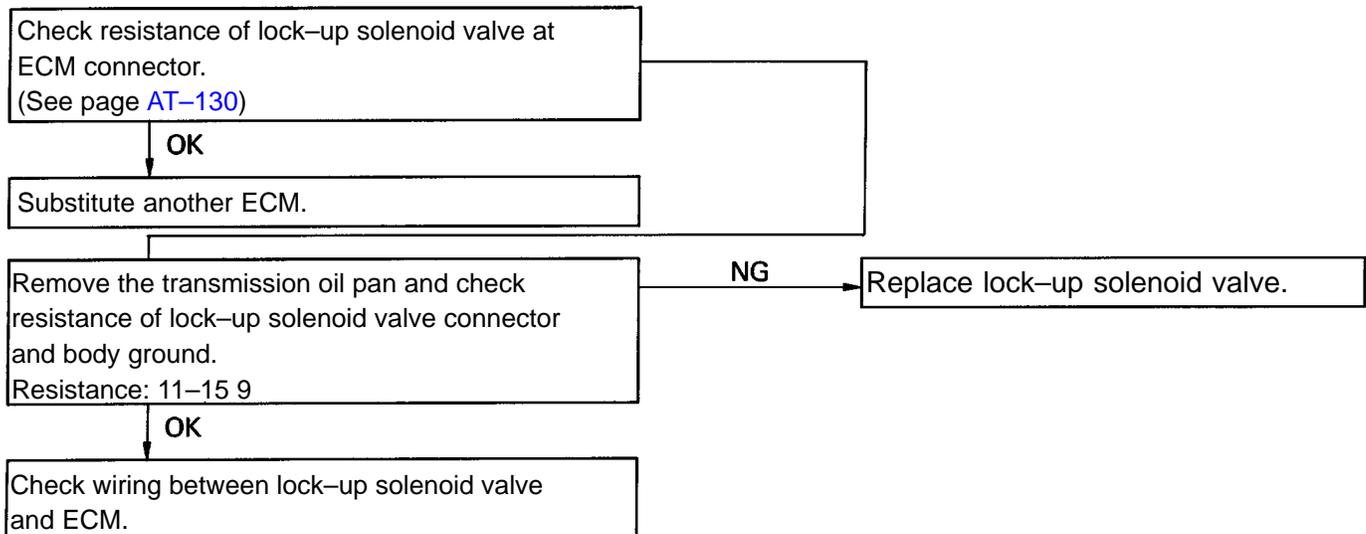
Diagnostic trouble code 62 (No. 1 solenoid valve circuitry)



Diagnostic trouble code 63 (No.2 solenoid valve circuitry)



Diagnostic trouble code 64 (Lock-up solenoid valve circuitry)



Diagnostic trouble code 65 (No.4 solenoid valve circuitry)