

Diag. Code	46	No. 4 Solenoid Valve Circuit (For Accumulator Back Pressure Modulation)
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CIRCUIT DESCRIPTION

The No. 4 solenoid valve controls the hydraulic pressure acting on the brakes and clutches of the planetary gear units when gears are shifted and performs smooth gear shifting. The ECU determines optimum operating pressure according to the signals from the throttle position sensor, speed sensor and O/D clutch speed sensor and controls the volume of current flow to the solenoid valve.

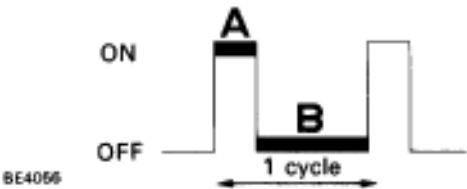
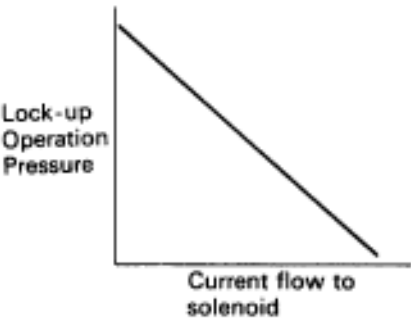
The amount of electric current to the solenoid is controlled by the (*) duty ratio of ECU output signals, causing momentary change to the hydraulic pressure acting on the clutches during gear shifting. When the duty ratio is high, the hydraulic pressure acting on the clutches is low.

(*) Duty Ratio

The duty ratio is the ratio of the period of continuity in one cycle.

For example, if A is the period of continuity in one cycle, and B is the period of non-continuity, then

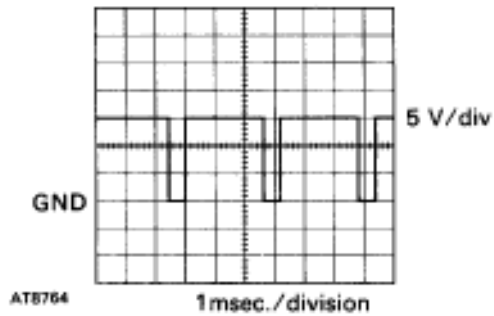
Duty Ratio= $\frac{A}{A + B} \times 100 (\%)$



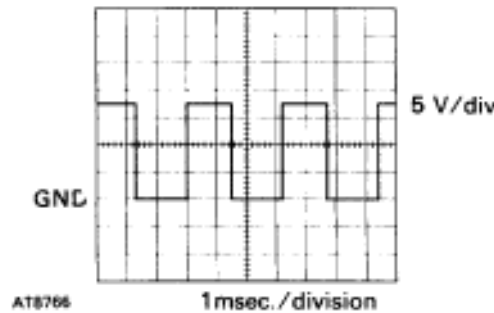
Code No.	Diagnostic Code Detecting Condition	Trouble Area
46	All conditions below are detected for 1 sec. or more. (2 trip detection logic)* (a) ECU outputs duty signal to No. 4 solenoid in 90 % or higher duty ratio. (b) Current to No. 4 solenoid: 330 ± 100 mA or less (O/D OFF indicator light doesn't blink)	•No. 4 solenoid valve. •Harness or connector between No. 4 solenoid valve and ECU. •ECU

*: See page [AT-62](#)

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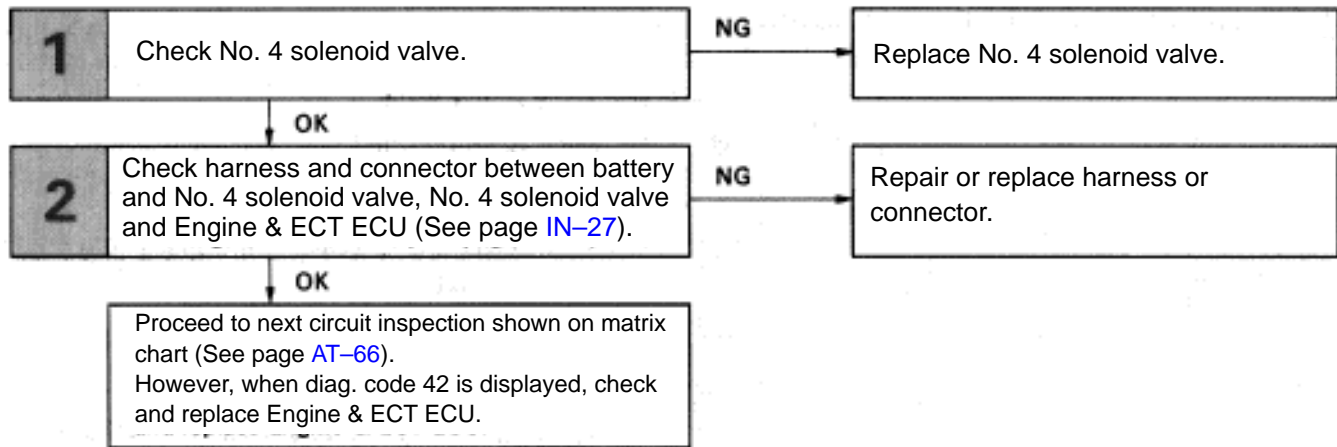


- Waveform between terminals SLN- and E1 when engine is idling.

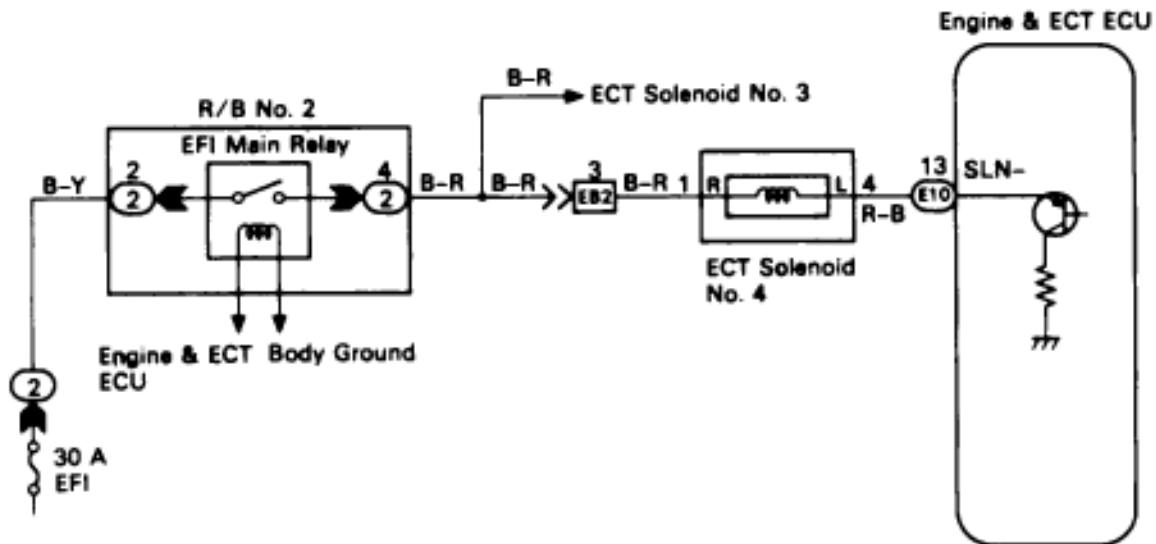


- Waveform between terminals SLN- and E1 during shift change.

DIAGNOSTIC CHART



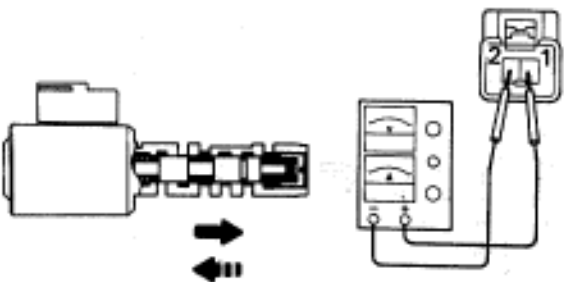
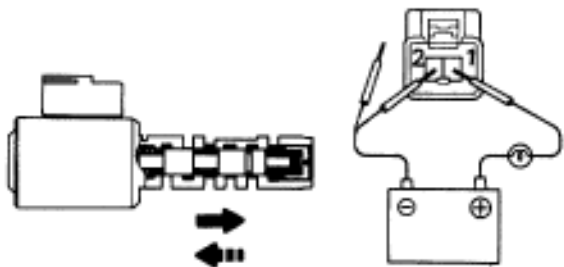
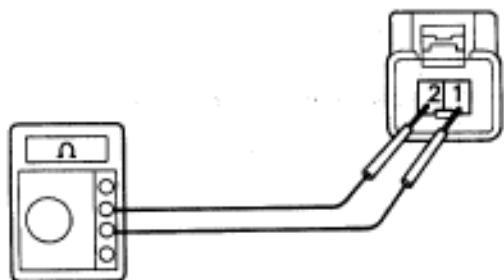
WIRING DIAGRAM



INSPECTION PROCEDURE

1

Check No. 4 solenoid valve.



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OK

Check solenoid resistance

- P** 1. Jack up the vehicle.
2. Remove oil pan.
3. Disconnect the connector
- C** Measure resistance between terminals 1 and 2 of solenoid connector.
- OK** **Resistance:** 5.1 – 5.5 Ω

Check solenoid operation

- C** Connect positive \oplus lead with an 8–10 W bulb to terminal 1 of solenoid connector and negative \ominus lead to terminal 2, then check the movement of the valve.

OK	When battery voltage is applied	Valve moves in direction in illustration at left.
	When battery voltage is cut off.	Valve moves in direction in illustration at left.

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Check the solenoid's operation

- C** 1. Prepare a variable power supply
2. Connect positive \oplus lead of the variable power supply to terminal 1 of solenoid connector and negative \ominus lead to terminal 2.
3. Check the movement of the valve when the voltage is gradually increased. (A current greater than 1 A should not be supplied.)
- OK** As the voltage is increase, the valve should move slowly in the direction.
- C** 4. Check the movement of the valve when the voltage is cut off.
- OK** The valve should return in the direction

NG

Replace No. 4 solenoid valve.

Go to step 2.

2

Check harness and connector between battery and No. 4 solenoid valve, No. 4 solenoid valve and Engine & ECT ECU (See page [IN-27](#)).

OK**NG**

Repair or replace harness or connector.

Proceed to next circuit inspection shown on matrix chart (See page [AT-66](#)). However, when diag. code 46 is displayed, check and replace Engine & ECT ECU.