

<b>DTC</b>	<b>21, 22, 23, 24</b>	<b>ABS Solenoid Circuit</b>
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## CIRCUIT DESCRIPTION

This solenoid goes on when signals are received from the ECU and controls the pressure acting on the brake cylinders, thus controlling the braking force.

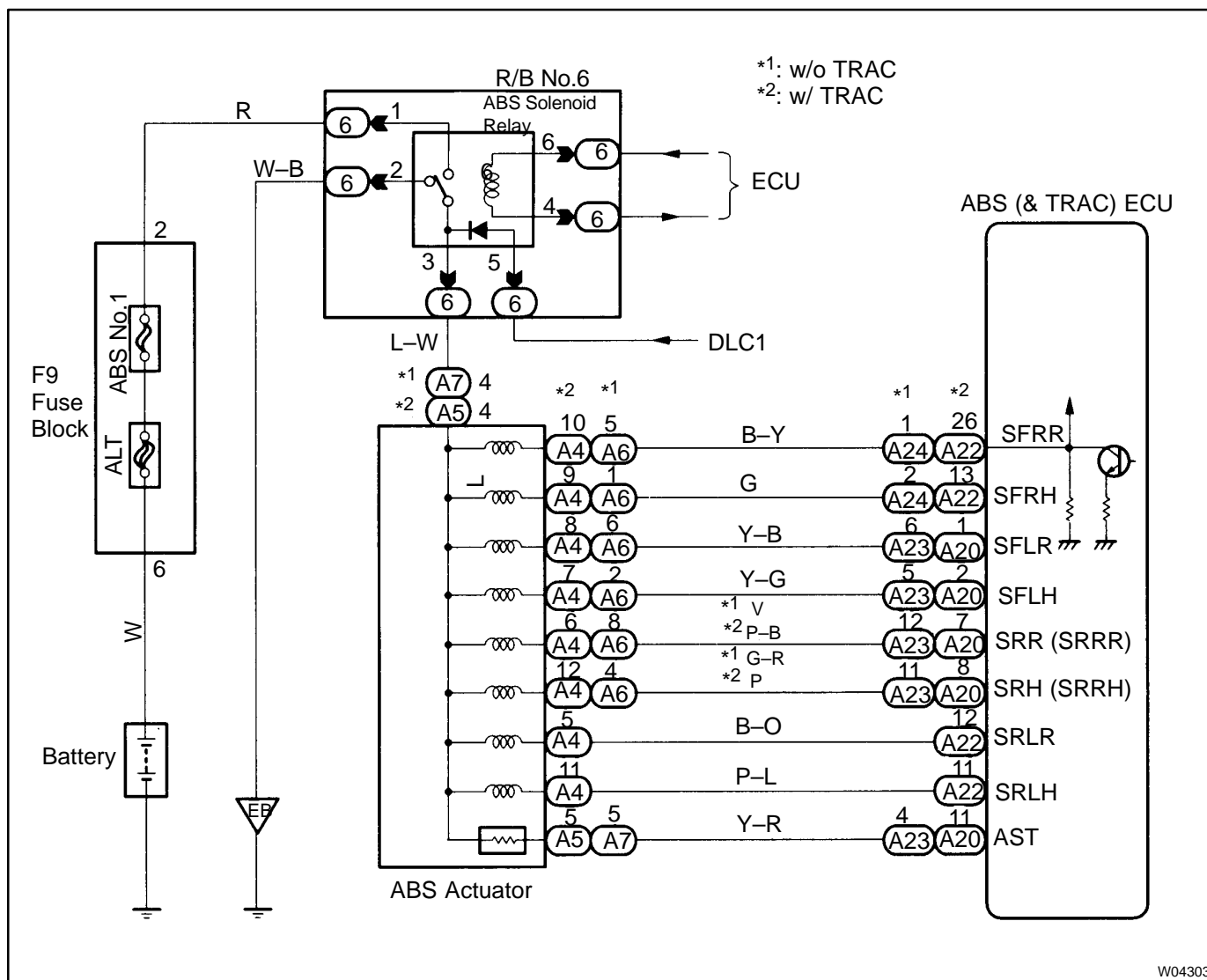
DTC No.	DTC Detecting Condition	Trouble Area
21	Conditions (1) through (3) continue for 0.05 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Below 1.5V (2) Voltage of ABS (& TRAC) ECU terminal AST: Battery positive voltage (3) When power transistor of ECU is ON, voltage of terminal SFRH or SFRR is 0 V or battery positive voltage.	<ul style="list-style-type: none"> <li>• ABS (&amp; TRAC) actuator</li> <li>• Open or short in SFRH or SFRR circuit</li> </ul>
22	Conditions (1) through (3) continue for 0.05 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Below 1.5V (2) Voltage of ABS (& TRAC) ECU terminal AST: Battery positive voltage (3) When power transistor of ECU is ON, voltage of terminal SFLH or SFLR is 0 V or battery positive voltage.	<ul style="list-style-type: none"> <li>• ABS (&amp; TRAC) actuator</li> <li>• Open or short in SFLH or SFLR circuit</li> </ul>
23	Conditions (1) through (3) continue for 0.05 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Below 1.5V (2) Voltage of ABS (& TRAC) ECU terminal AST: Battery positive voltage (3) When power transistor of ECU is ON, voltage of terminal SRH (SRRH) or SRR (SRRR) is 0 V or battery positive voltage.	<ul style="list-style-type: none"> <li>• ABS (&amp; TRAC) actuator</li> <li>• Open or short in SRH (SRRH) or SRR (SRRR) circuit</li> </ul>
24*	Conditions (1) through (3) continue for 0.05 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Below 1.5V (2) Voltage of ABS & TRAC ECU terminal AST: Battery positive voltage (3) When power transistor of ECU is ON, voltage of terminal SRLH or SRLR is 0 V or battery positive voltage.	<ul style="list-style-type: none"> <li>• ABS &amp; TRAC actuator</li> <li>• Open or short in SRLH or SRLR circuit</li> </ul>

Fail safe function:

If trouble occurs in the actuator solenoid circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS (& TRAC) control.

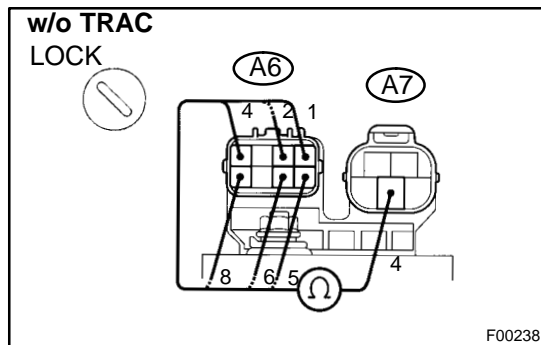
\*: Only vehicles with TRAC

## WIRING DIAGRAM



## INSPECTION PROCEDURE

## 1 Check ABS actuator solenoid.

**CHECK:**

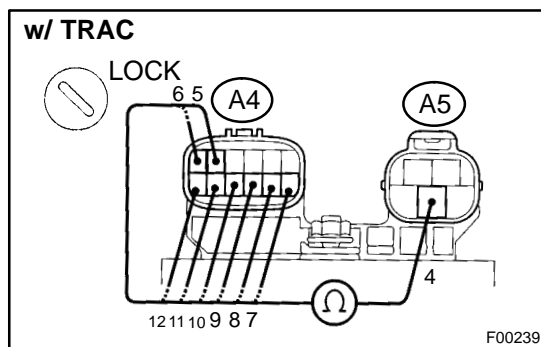
Check continuity between terminal A7 – 4 and A6 – 1, 2, 4, 5, 6, 8 of the ABS actuator connector.

**OK:****Continuity****HINT:**

Resistance of each solenoid

A7 – 4 and A6 – 1, 2, 4: 6.0 – 14.5  $\Omega$

A7 – 4 and A6 – 5, 6, 8: 3.0 – 7.2  $\Omega$

**CHECK:**

Check continuity between terminal A5 – 4 and A4 – 5, 6, 7, 8, 9, 10, 11, 12 of the ABS actuator connector.

**OK:****Continuity****HINT:**

Resistance of each solenoid

A5 – 4 and A4 – 7, 9, 11, 12: 6.0 – 14.5  $\Omega$

A5 – 4 and A4 – 5, 6, 8, 10: 3.0 – 7.2  $\Omega$

**NG****Replace ABS actuator.****OK**2 Check for open and short in harness and connector between ABS (& TRAC) ECU and ABS actuator (See page [IN-29](#)).**NG****Repair or replace harness or connector.****OK**

If the same code is still output after the DTC is deleted, check the contact condition of each connection.

If the connections are normal, the ECU may be defective.