DI5XT–01

DTC	21 – 24	Suspension Control Actuator Circuit

CIRCUIT DESCRIPTION

ECU sends a signal to suspension control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force. A suspension control actuator is fitted to each pneumatic cylinder.
The actuator is driven electromagnetically by step motor so that it can accurately follow the driving conditions that change frequently.

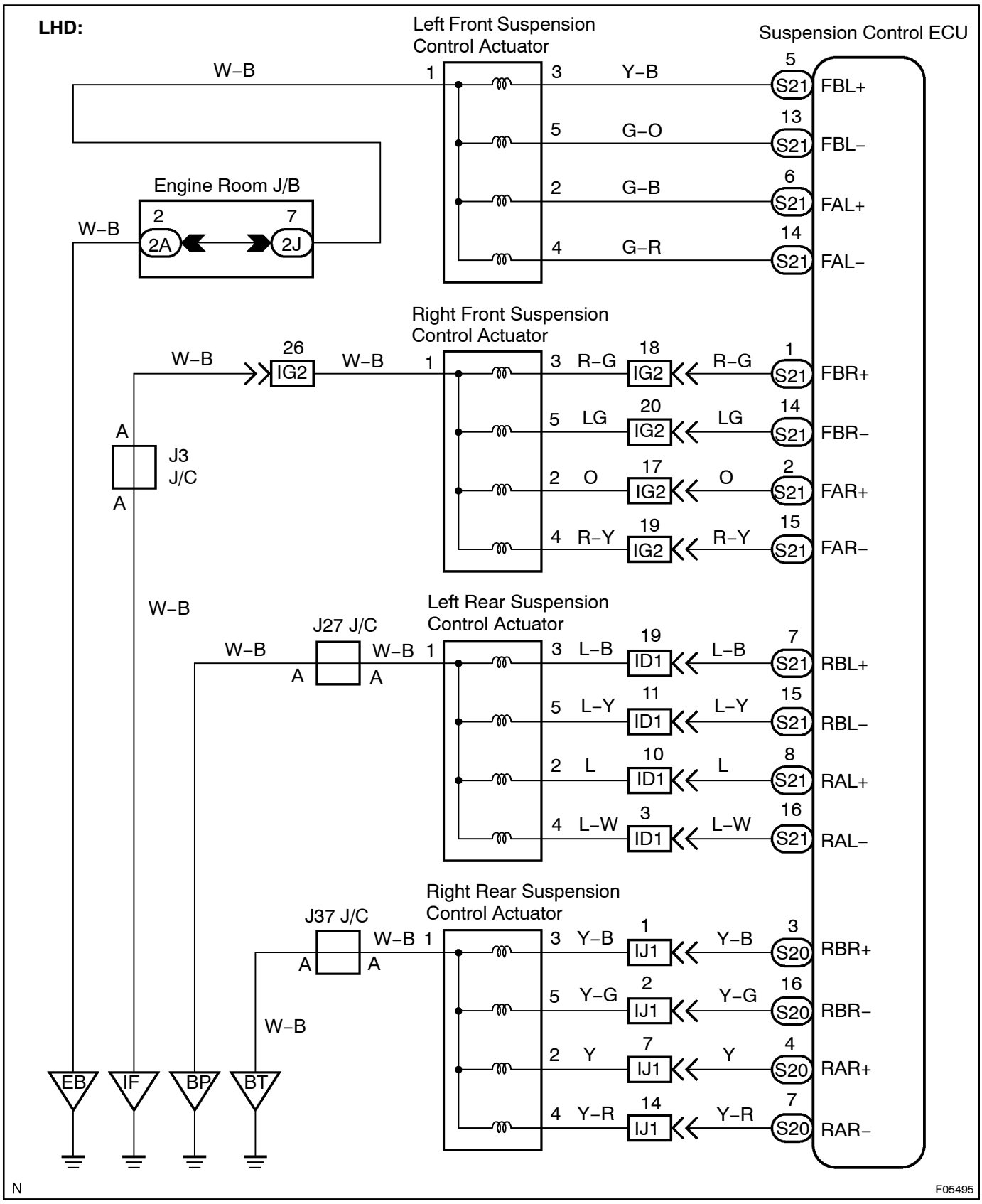
DTC No.	DTC Detecting Condition	Trouble Area
21 22 23 24	Either of following 1. or 2. is detected: 1. After the engine has started, an open signal of actuator is detected successively for 1.3 sec. 2. After the ignition switch has been turned ON, a short signal of actuator is detected successively for 2.6 sec.	• Right front, left front, right rear, left rear suspension control actuators • Each suspension control actuator circuit • Suspension control ECU

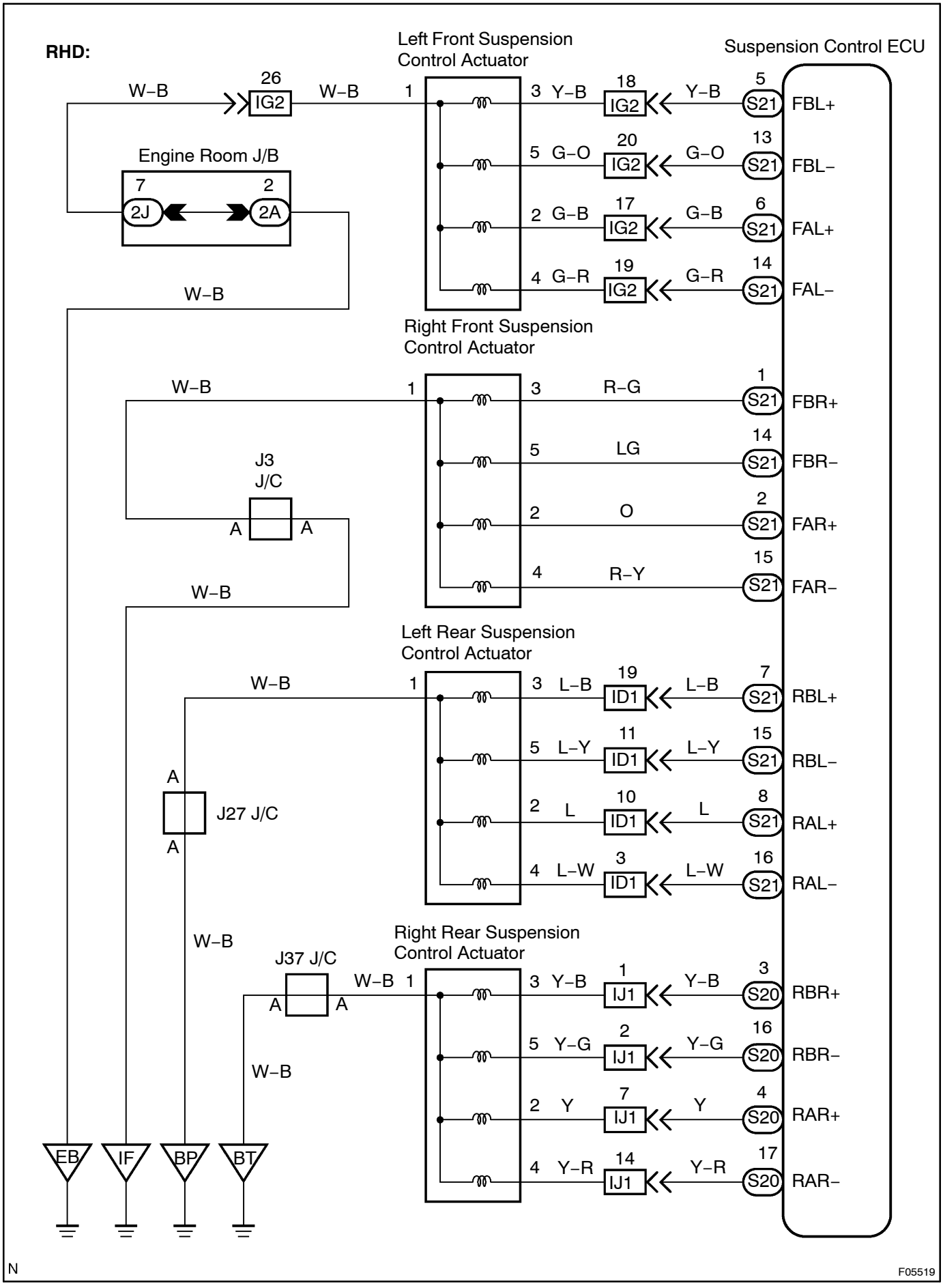
HINT:

- Code 21 corresponds to the right front suspension control actuator circuit.
- Code 22 corresponds to the left front suspension control actuator circuit.
- Code 23 corresponds to the right rear suspension control actuator circuit.
- Code 24 corresponds to the left rear suspension control actuator circuit.

Once the ECU stores DTC 21, 22, 23 or 24 in memory, damping force control is not carried out until a normal signal is input to the ECU from the suspension control actuator.
However, control is resumed if the ignition switch is turned OFF, then ON again.

WIRING DIAGRAM



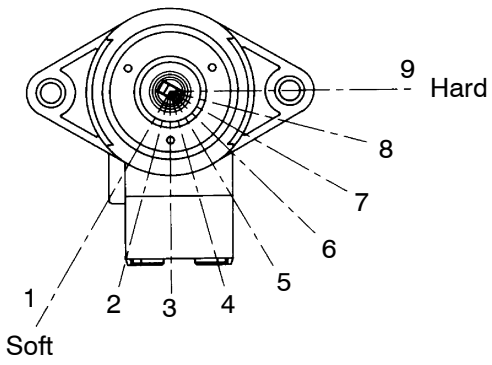

RHD:
Left Front Suspension Control Actuator
Suspension Control ECU
Engine Room J/B
Right Front Suspension Control Actuator
J3 J/C
Left Rear Suspension Control Actuator
J27 J/C
Right Rear Suspension Control Actuator
J37 J/C
W–B
Y–B
G–O
G–B
G–R
R–G
LG
O
R–Y
L–B
L–Y
L
L–W
Y–G
Y
Y–R
IG2
S21
ID1
IJ1
S20
FBL+
FBL–
FAL+
FAL–
FBR+
FBR–
FAR+
FAR–
RBL+
RBL–
RAL+
RAL–
RBR+
RBR–
RAR+
RAR–
EB
IF
BP
BT
N
F05519

INSPECTION PROCEDURE

HINT:

- When DTC "21" is displayed, check the right front suspension control actuator circuit.
- When DTC "22" is displayed, check the left front suspension control actuator circuit.
- When DTC "23" is displayed, check the right rear suspension control actuator circuit.
- When DTC "24" is displayed, check the left rear suspension control actuator circuit.
- When DTC 21, 22, 23, and 24 are displayed, perform inspection of step 2.

1	Check operation of suspension control actuator.



PREPARATION:

Front suspension control actuator:

Remove the actuator cover and actuator (See page SA–22).

Rear suspension control actuator:

(a) Remove the rear seat and partition trim (See page BO–139).

(b) Remove the actuator cover and actuator (See page SA–98).

CHECK:

(a) Turn the ignition switch ON.

(b) Connect the terminals OP7 and CG of the DLC3.

(c) Check that the suspension control actuator is driven 1 step further toward the hard side each time the height control switch is pushed on the HIGH side.

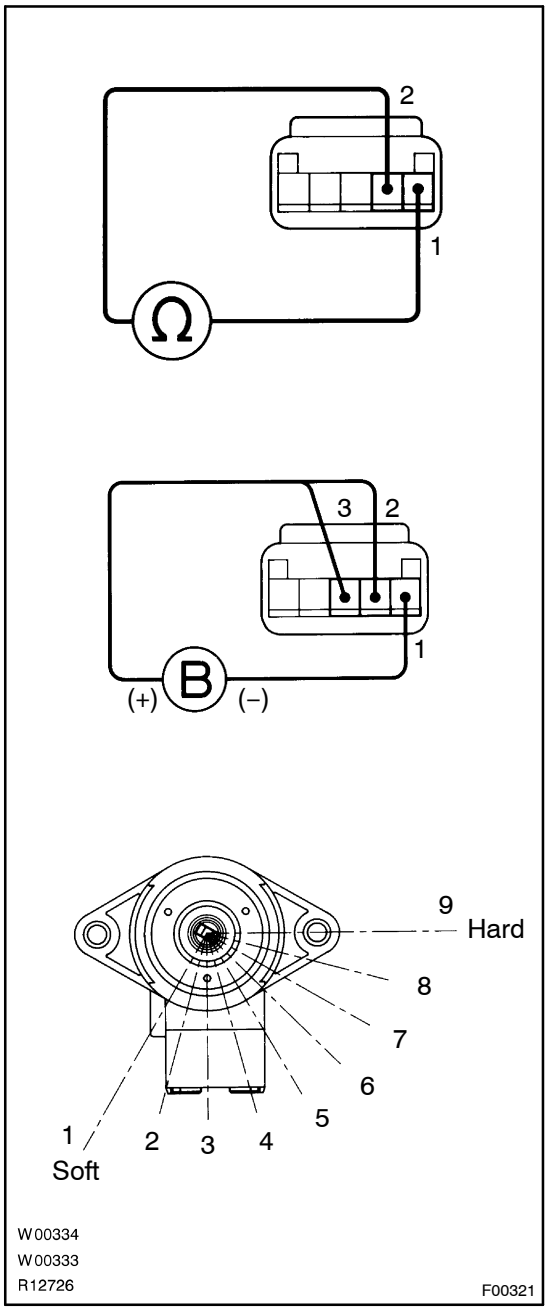
OK:

The actuator operates.

OK	Proceed to next circuit inspection shown on problem symptoms table (See page DI–79).

NG

2	Check suspension control actuator.



PREPARATION:

Front suspension control actuator:

(a) Remove the actuator cover and actuator (See page SA–22).

(b) Disconnect the actuator connector.

Rear suspension control actuator:

(a) Remove the rear seat and partition trim (See page BO–139).

(b) Remove the actuator cover and actuator (See page SA–98).

(c) Disconnect the actuator connector.

CHECK:

Measure resistance between terminals of suspension control actuator connector shown below.

OK:

Terminals	Resistance
1 – 2	14.7 – 15.7 Ω
1 – 3	14.7 – 15.7 Ω
1 – 4	14.7 – 15.7 Ω
1 – 5	14.7 – 15.7 Ω

CHECK:

(a) Using a screwdriver, locate output shaft of the actuator in soft position.

(b) Check that the suspension control actuator is driven 1 step further toward the hard side when battery voltage is applied to the terminals of suspension control actuator connector shown below.

OK:

Battery ⊕	Battery ⊖	Position
2 and 3	1	Soft 1 → 2
3 and 4	1	2 → 3
4 and 5	1	3 → 4
2 and 5	1	4 → 5
2 and 3	1	5 → 6
3 and 4	1	6 → 7
4 and 5	1	7 → 8
2 and 5	1	8 → 9 Hard

NG → **Replace suspension control actuator.**

OK

3	Check for open and short circuit in harness and connector between suspension control ECU and actuator, actuator and body ground (See page IN–30).

NG → Repair or replace harness or connectors.

OK →

Proceed to next circuit inspection shown on problem symptoms table (See page DI–79).*1

*1: However, when DTC 21, 22, 23 or 24 is displayed, check and replace suspension control ECU.