D11J8-01

CIRCUIT INSPECTION

DTC	11, 12	ABS Solenoid Relay Circuit

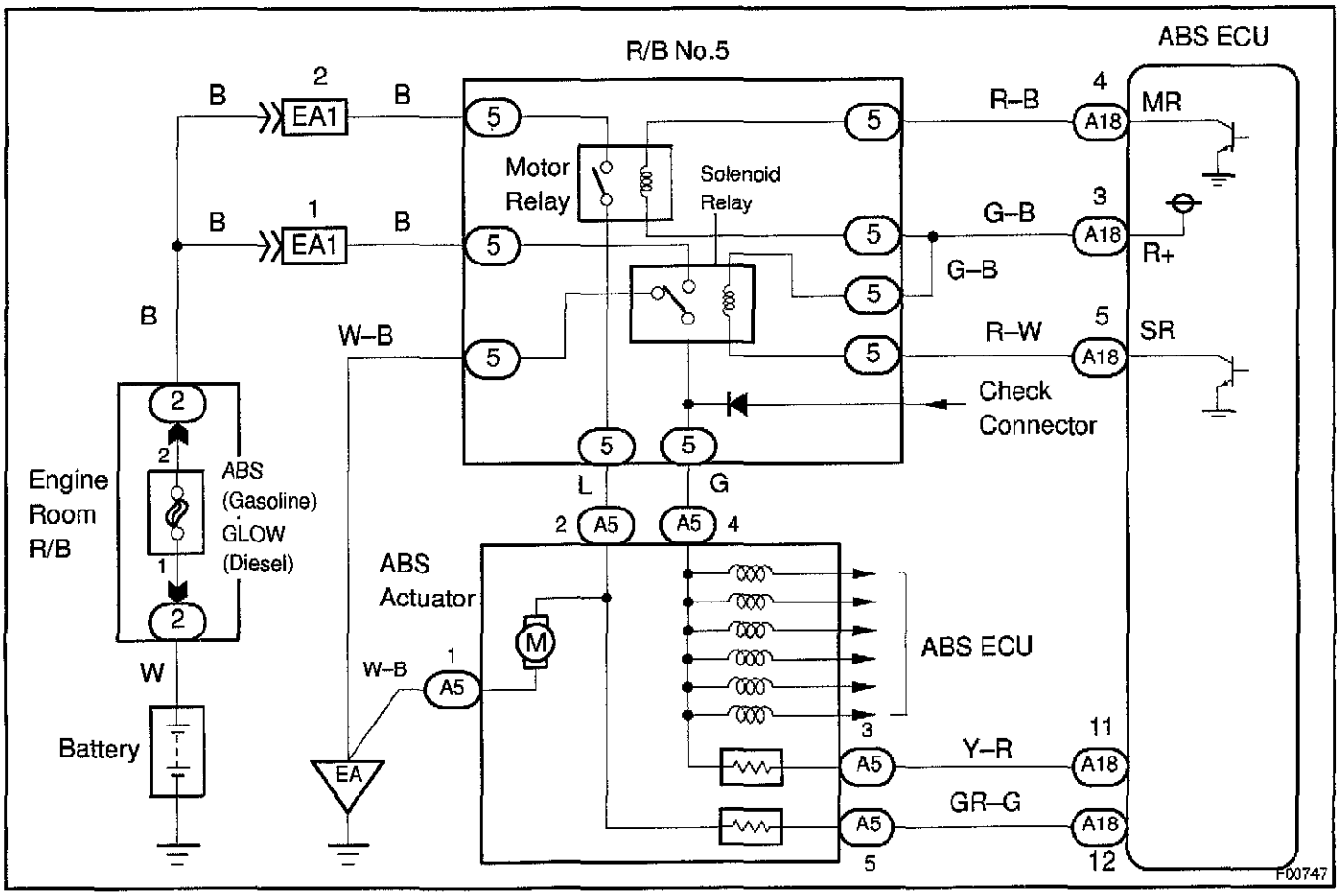
CIRCUIT DESCRIPTION

This relay supplies power to each ABS solenoid. After the ignition switch is turned ON, if the initial check is OK, the relay goes on.

DTC No.	DTC Detecting Condition	Trouble Area
11	Conditions (1) and (2) continue for 0.2 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: *Battery voltage* (2) ABS solenoid relay monitor terminal (AST) voltage: 0 V	• ABS solenoid relay • Open or short in ABS solenoid relay circuit • ECU
12	Conditions (1) and (2) continue for 0.2 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: 0 V (2) ABS solenoid relay monitor terminal (AST) voltage: *Battery voltage*	• ABS solenoid relay • B+ short in ABS solenoid relay circuit • ECU

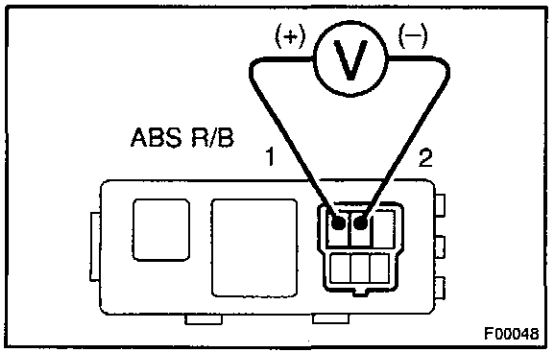
Fail safe function:
If trouble occurs in the ABS solenoid relay circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check voltage between terminals 1 and 2 of ABS R/B (for ABS solenoid relay).**

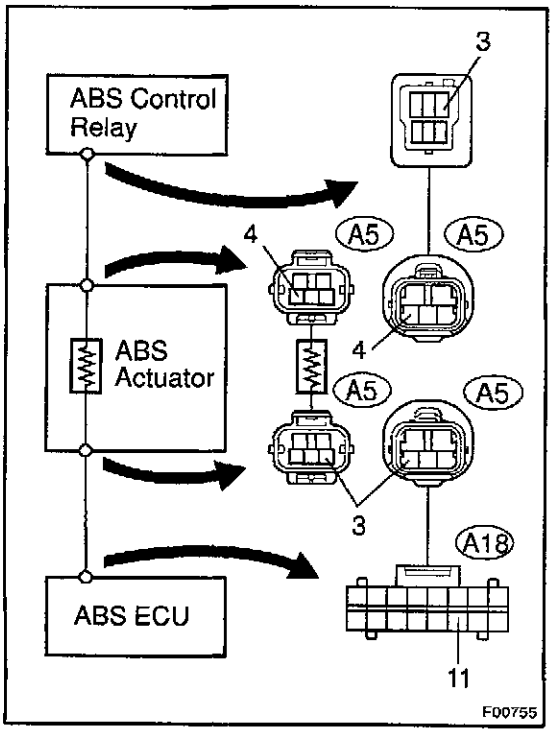


PREPARATION:
Remove ABS solenoid relay from ABS R/B.
CHECK:
Measure the voltage between terminals 1 and 2 of ABS R/B side.
OK:
Voltage: 10 – 14 V

NG → **Check and repair harness or connector.**

OK

2	**Check continuity between terminals 3 of ABS R/B (for ABS solenoid relay) and A5 – 4, A5 – 4 and A5 – 3, A5 – 3 and A18 – 11.**

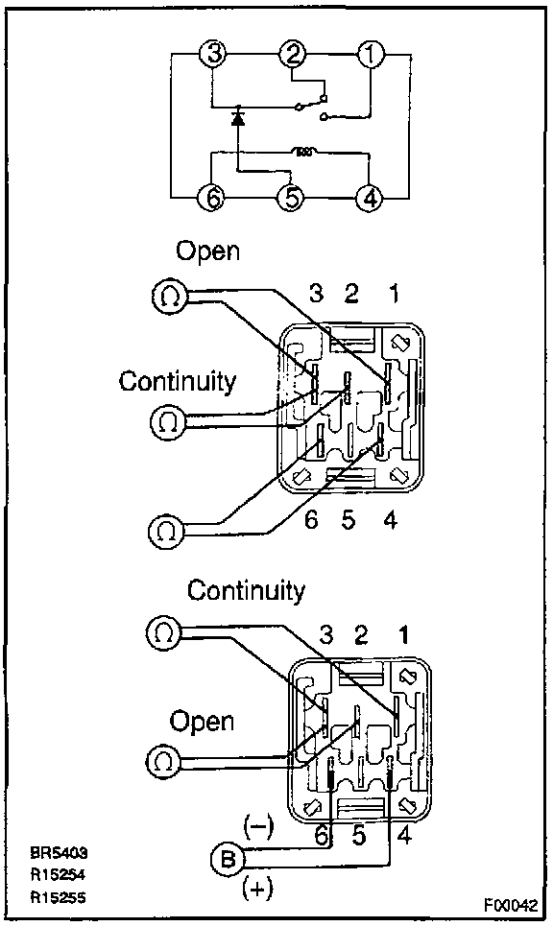


PREPARATION:
Disconnect the 2 connectors from ABS actuator.
CHECK:
Check continuity between terminals 3 of ABS R/B and A5 – 4, A5 – 4 and A5 – 3, A5 – 3 and A18 – 11.
OK:
Continuity
HINT:
There is a resistance of 26 – 40 Ω between terminals A5 – 4 and A5 – 3.

NG → **Repair or replace harness or ABS actuator.**

OK

3	Check ABS solenoid relay.



PREPARATION:

Remove ABS solenoid relay from ABS R/B.

CHECK:

Check continuity between each terminal of ABS solenoid relay.

OK:

Terminal 4 and 6	Continuity (Reference value 80 Ω)
Terminal 2 and 3	Continuity
Terminal 1 and 3	Open

CHECK:

(a) Apply battery voltage between terminals 4 and 6.

(b) Check continuity between each terminal of ABS solenoid relay.

OK:

Terminal 2 and 3	Open
Terminal 1 and 3	Continuity

NG → **Replace ABS solenoid relay.**

OK

4	Check for open and short in harness and connector between ABS solenoid relay and ABS ECU (See page IN-25).

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.
It the connection is normal, the ECU may be defective.

DI1J7-01

DTC	13, 14	ABS Motor Relay Circuit

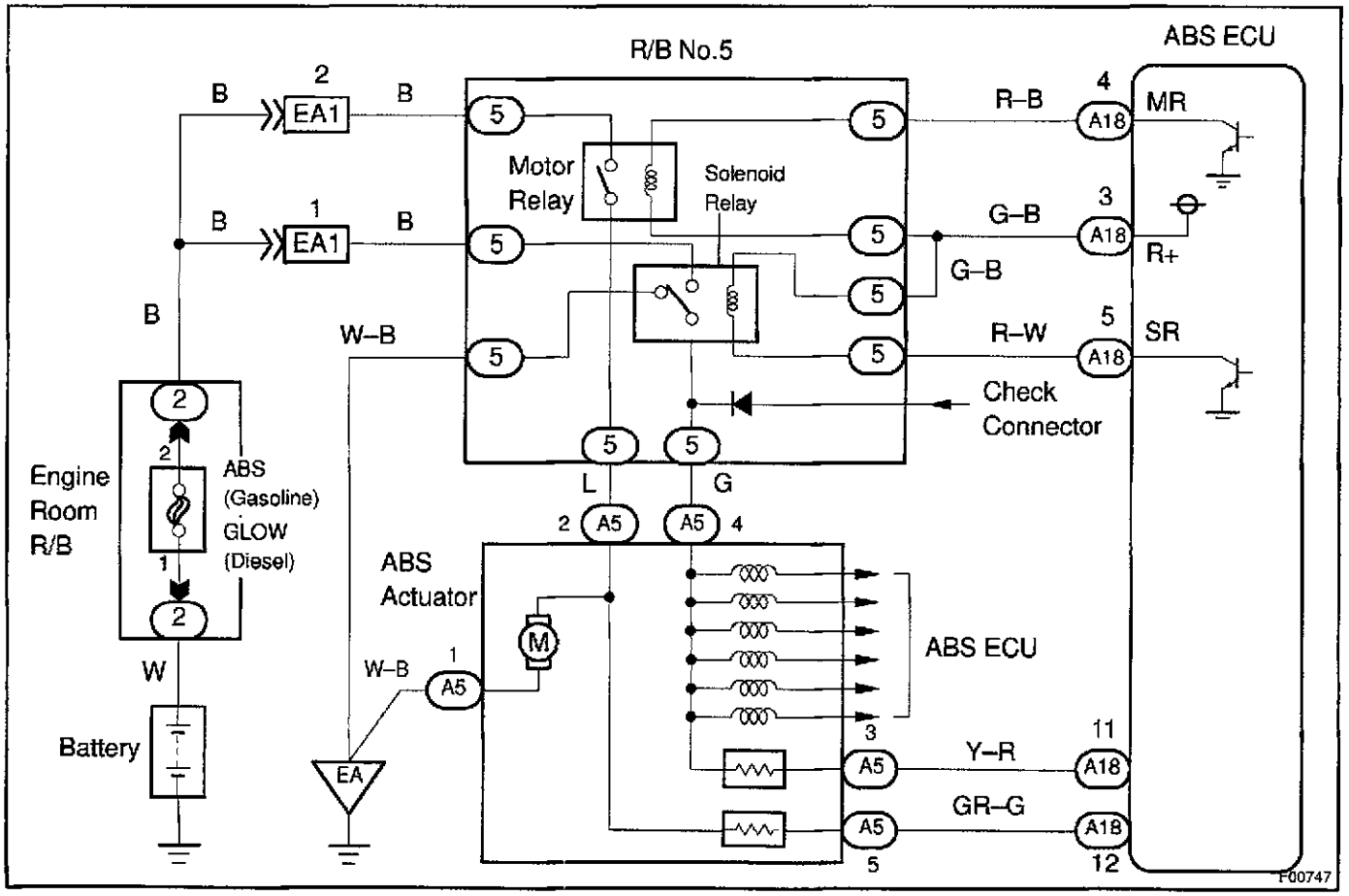
CIRCUIT DESCRIPTION

The ABS motor relay supplies power to the ABS pump motor. While the ABS is activated, the ECU switches the ABS motor relay ON and operates the ABS pump motor.

DTC No.	DTC Detecting Condition	Trouble Area
13	Conditions (1) and (2) continued for 0.2 sec. or more: (1) ABS motor relay terminal (MR) voltage: Battery voltage (2) ABS motor relay monitor terminal (MT) voltage: 0 V	• ABS motor relay • Open or short in ABS motor relay circuit • ECU
14	Conditions (1) and (2) continued for 2.5 sec. or more: (1) ABS motor relay terminal (MR) voltage: 0 V (2) ABS motor relay monitor terminal (MT) voltage: Battery voltage	• ABS motor relay • B+ short in ABS motor relay circuit • ECU

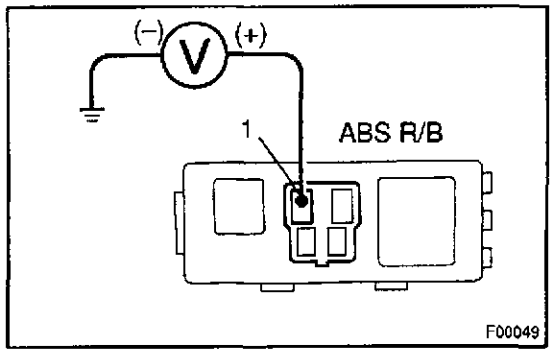
Fail safe function:
If trouble occurs in the ABS motor relay circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check voltage between terminal 1 of ABS R/B (for ABS motor relay) and body ground.**

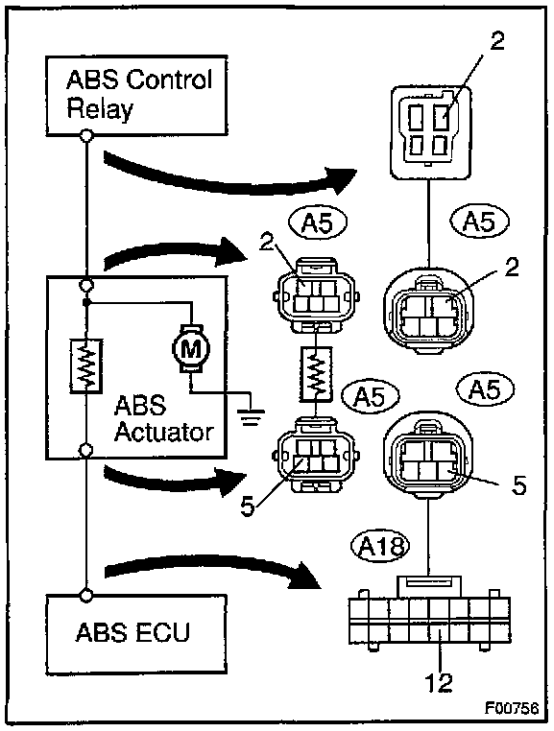


PREPARATION:
Remove ABS motor relay from ABS R/B.
CHECK:
Measure voltage between terminal 1 of ABS R/B (for ABS motor relay) and body ground.
OK:
Voltage: 10 – 14 V

NG → **Check and repair harness or connector.**

OK

2	**Check continuity between terminal 2 of ABS R/B (for ABS motor relay) and A5 – 2, A5 – 2 and A5 – 5, A5 – 5 and A18 – 12.**

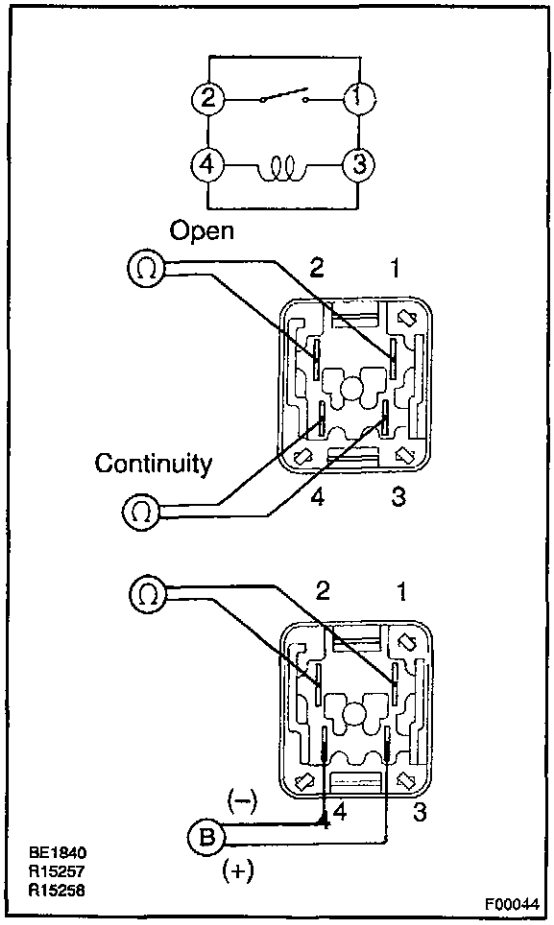


PREPARATION:
Disconnect the 2 connectors from ABS actuator.
CHECK:
Check continuity between terminals 2 of ABS R/B (for ABS motor relay and A5 – 2, A5 – 2 and A5 – 5, A5 – 5 and A18 – 12.
OK:
Continuity
HINT:
There is a resistance of 26 – 40 Ω between terminals A5 – 2 and A5 – 5.

NG → **Repair or replace harness or ABS actuator.**

OK

3	Check ABS motor relay.



PREPARATION:

Remove ABS motor relay from ABS R/B.

CHECK:

Check continuity between each terminal of ABS motor relay.

OK:

Terminals 3 and 4	Continuity (Reference value 62 Ω)
Terminals 1 and 2	Open

CHECK:

(a) Apply battery positive voltage between terminals 3 and 4.

(b) Check continuity between terminals of ABS motor relay.

Terminals 1 and 2	Continuity

NG → **Replace ABS motor relay.**

OK

4	Check for open and short in harness and connector between ABS motor relay and ABS ECU (See page IN–25).

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 connection is normal, the ECU may be defective.

DI4J8-01

DTC	21, 22, 23	ABS Actuator Solenoid Circuit

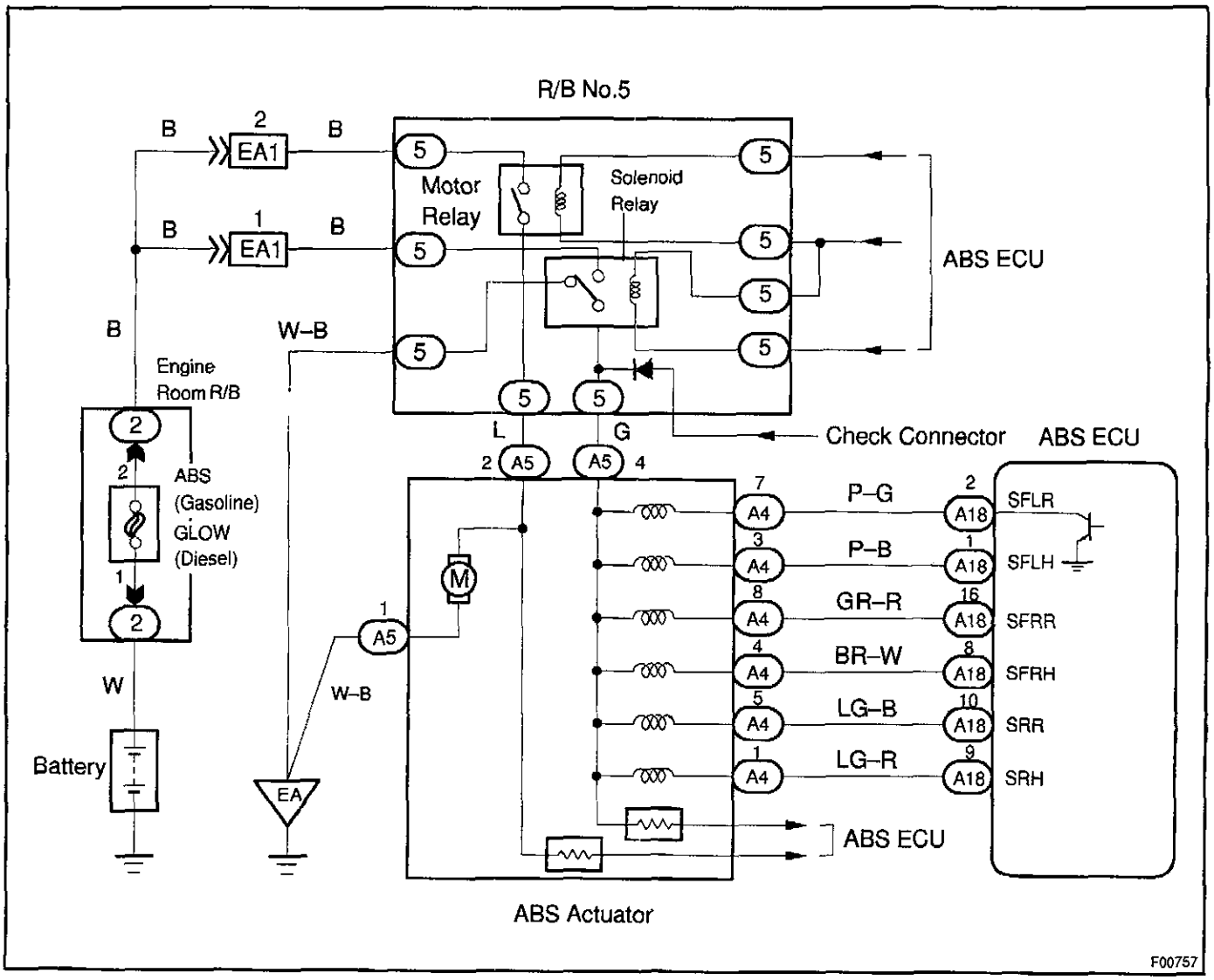
CIRCUIT DESCRIPTION

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

DTC No.	DTC Detecting Condition	Trouble Area
21	Conditions (1) through (3) continue for 0.02 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Battery voltage (2) Voltage of ABS ECU terminal AST: Battery voltage (3) When power transistor of ECU is ON, voltage of terminal SFRR or SFRH is 0 V or battery voltage.	• ABS actuator • Open or short in SFRR or SFRH circuit • ECU
22	Conditions (1) through (3) continue for 0.02 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Battery voltage (2) Voltage of ABS ECU terminal AST: Battery voltage (3) When power transistor of ECU is ON, voltage of terminal SFLR or SFLH is 0 V or battery voltage.	• ABS actuator • Open or short in SFLR or SFLH circuit • ECU
23	Conditions (1) through (3) continue for 0.02 sec. or more: (1) ABS solenoid relay terminal (SR) voltage: Battery voltage (2) Voltage of ABS ECU terminal AST: Battery voltage (3) When power transistor of ECU is ON, voltage of terminal SRR or SRH is 0 V or battery voltage.	• ABS actuator • Open or short in SRR or SRH circuit • ECU

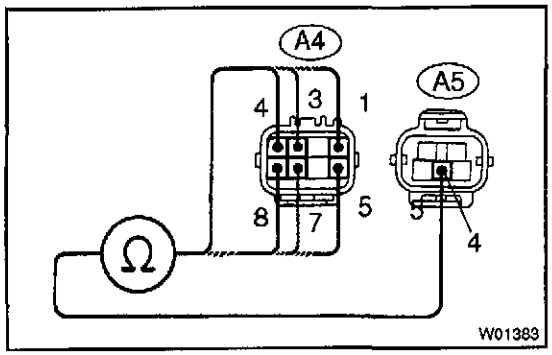
Fail safe function:
If trouble occurs in the actuator solenoid circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check ABS actuator solenoid.**



PREPARATION:
Disconnect the 2 connectors from ABS actuator.
CHECK:
Check continuity between terminals A5 – 4 and A4 – 1, 3, 4, 5, 7, 8 of ABS actuator connector.
OK:
Continuity
HINT:
Resistance of each solenoid coil
SFRH, SFLH, SRH: 5.0 Ω
SFRR, SFLR, SRR: 2.2 Ω

NG → **Replace ABS actuator.**

OK

2	**Check for open and short in harness and connector between ABS ECU and actuator (See page IN–25).**

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

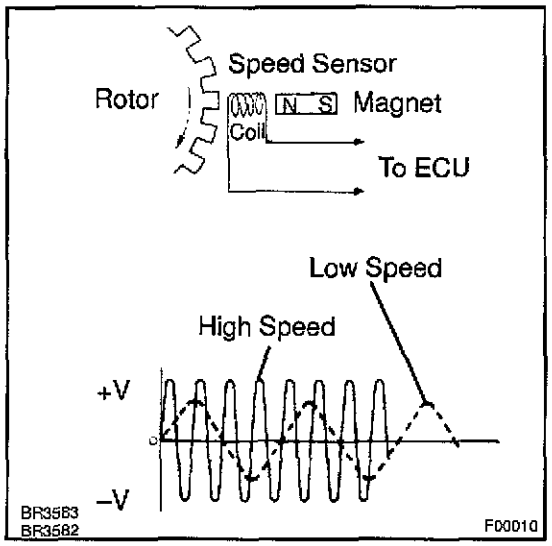
OK

If the same code is still output after the DTC is deleted, check the contact condition of each connection. If the connection is normal, the ECU may be defective.

DI1J9-01

DTC	31, 32, 33, 34	Speed Sensor Circuit

CIRCUIT DESCRIPTION



The speed sensor detects wheel speed and sends the appropriate signals to the ECU. These signals are used to control the ABS system. The front and rear rotors each have 48 serrations.

When the rotors rotate, the magnetic field emitted by the permanent magnet in the speed sensor generates an AC voltage. Since the frequency of this AC voltage changes in direct proportion to the speed of the rotor, the frequency is used by the ECU to detect the speed of each wheel.

DTC No.	DTC Detecting Condition	Trouble Area
31, 32, 33, 34	Detection of any of conditions (1) through (3): (1) At vehicle speed of 10 km/h (6 mph) or more, pulses are not input for 15 sec. (2) Momentary interruption of the speed sensor signal occurs at least 7 times in the time between turning the ignition switch ON and turning it OFF. (3) Abnormal fluctuation of speed sensor signals with the vehicle speed 20 km/h (12 mph) or more. (4) An open is detected in the speed sensor circuit for 0.6 sec.	• Right front, left front, right rear, left rear speed sensor • Open or short in each speed sensor circuit • ECU

HINT:

DTC No. 31 is for the right front speed sensor.

DTC No. 32 is for the left front speed sensor.

DTC No. 33 is for the right rear speed sensor.

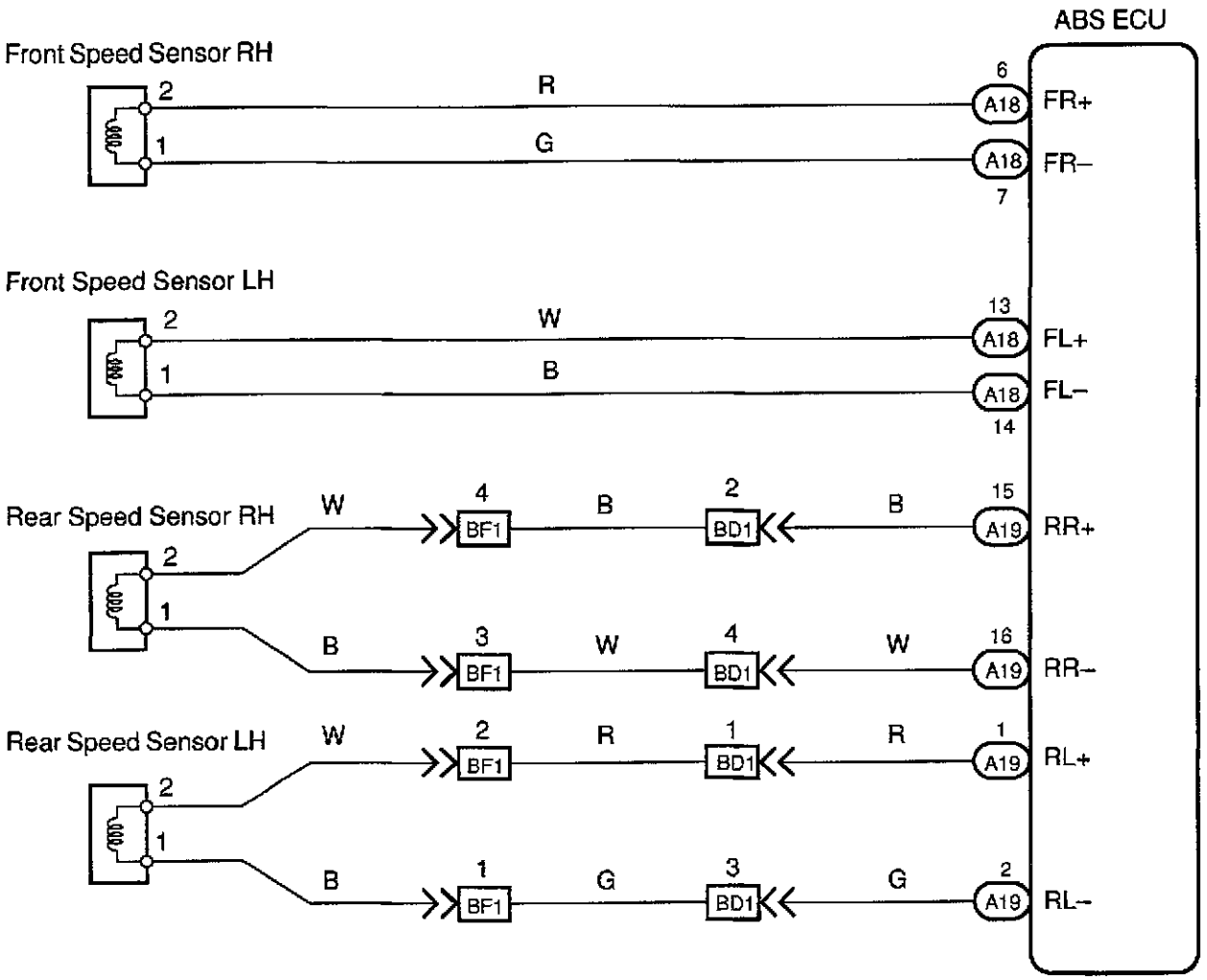
DTC No. 34 is for the left rear speed sensor.

Fail safe function:

If trouble occurs in the speed sensor circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

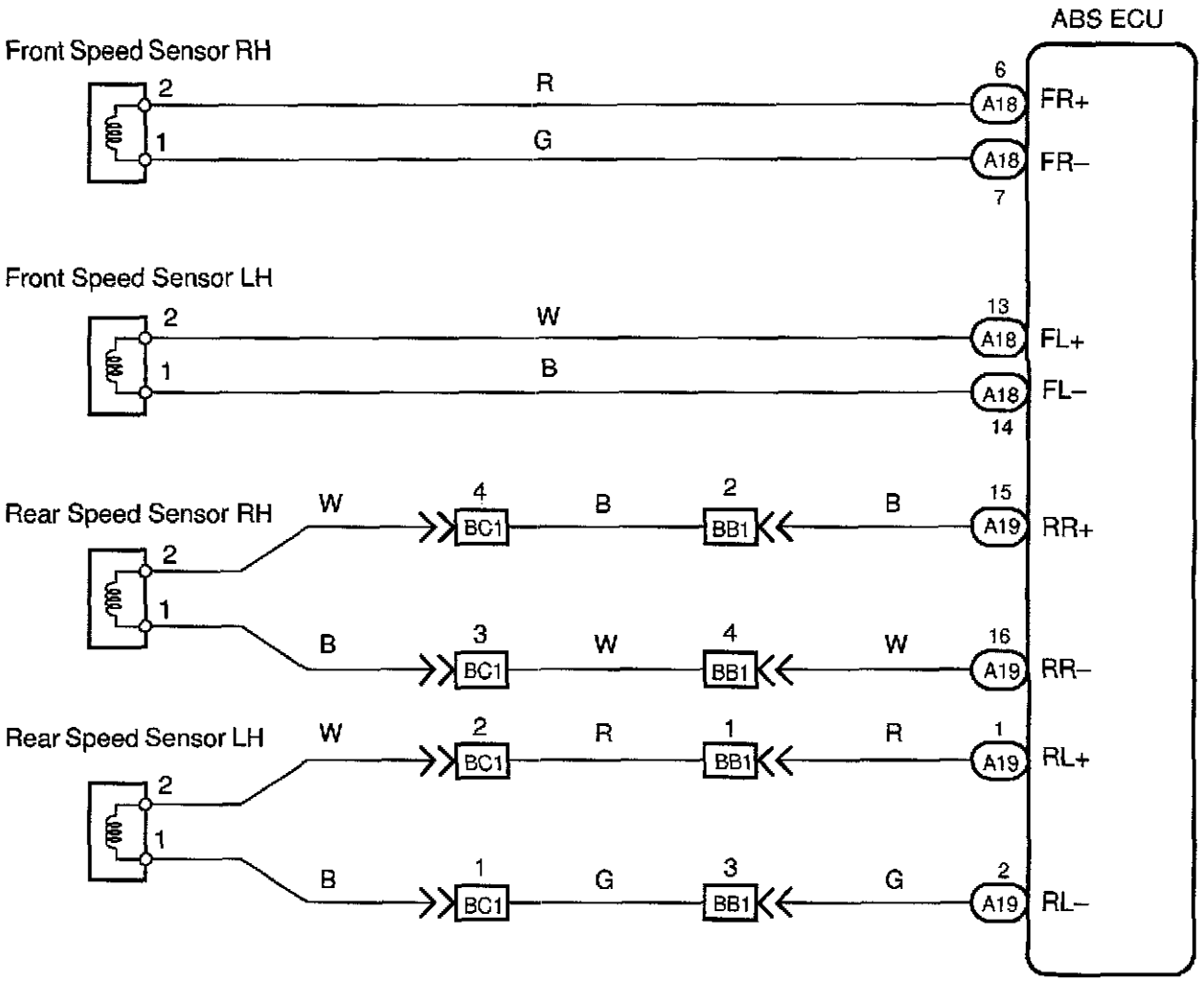
WIRING DIAGRAM

LHD



F00758

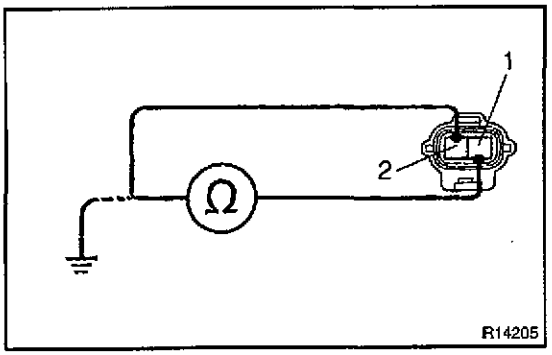
RHD


ABS ECU
Front Speed Sensor RH
2
1
R
G
6
A18
FR+
A18
FR–
7
Front Speed Sensor LH
2
1
W
B
13
A18
FL+
A18
FL–
14
Rear Speed Sensor RH
2
1
W
B
4
BC1
B
2
BB1
B
15
A19
RR+
3
BC1
W
4
BB1
W
16
A19
RR–
Rear Speed Sensor LH
2
1
W
B
2
BC1
R
1
BB1
R
1
A19
RL+
1
BC1
G
3
BB1
G
2
A19
RL–

F00758

INSPECTION PROCEDURE

1	Check speed sensor



FRONT

PREPARATION:

Disconnect speed sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of speed sensor connector.

OK:

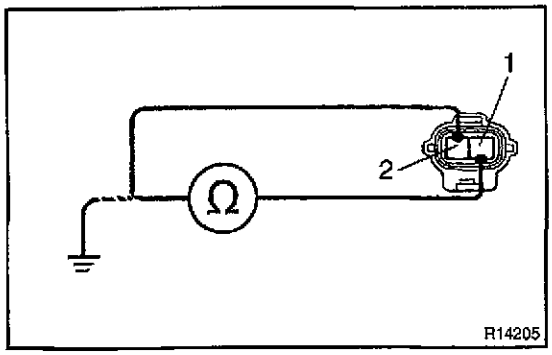
Resistance: 0.92 – 1.22 kΩ

CHECK:

Measure resistance between terminal 1 and 2 of speed sensor connector and body ground.

OK:

Resistance: 1 MΩ or higher



REAR

PREPARATION:

Disconnect speed sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of speed sensor connector.

OK:

Resistance: 0.89 – 1.29 kΩ

CHECK:

Measure resistance between terminals 1 and 2 of speed sensor connector and body ground.

OK:

Resistance: 1 MΩ or higher

NG	Replace the speed sensor.

NOTICE:

Check the speed sensor signal last (See page DI–52).

OK

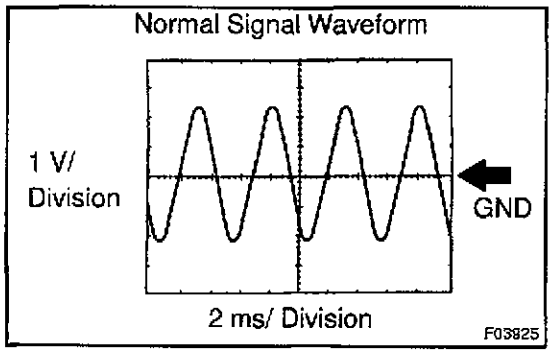
2	**Check for open and short in harness and connector between each speed sensor and ECU (See page IN–25).**

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

OK

3	**Check speed sensor and sensor rotor serrations.**

(REFERENCE)



INSPECTION USING OSCILLOSCOPE

PREPARATION:

(a) Remove the ABS ECU with connectors still connected.

(b) Connect the oscilloscope to the terminals FR+, FL+, RR+, or RL+ and GND of the ABS ECU.

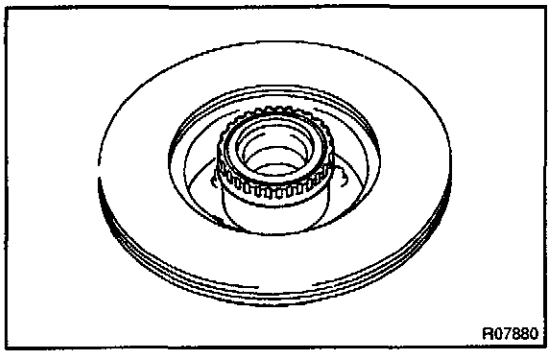
CHECK:

Drive the vehicle at 30 km/h (19 mph), and check the signal waveform.

OK → **Replace speed sensor.**

NG

4	Check sensor rotor and sensor installation



Front

PREPARATION:

Remove axle hub (See page SA–18 or SA–26).

CHECK:

Check sensor rotor serrations.

OK:

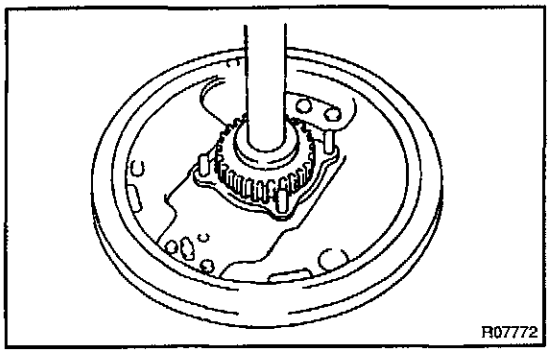
No scratches or missing teeth.

CHECK:

Check the sensor tip.

OK:

No scratches or foreign objects on the sensor tip.



Rear

PREPARATION:

Remove the axle shaft (See page SA–165).

CHECK:

Check the sensor rotor serrations.

OK:

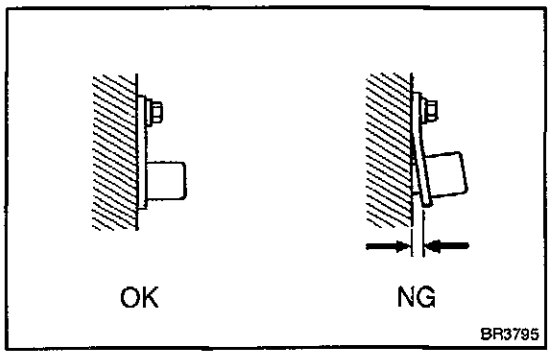
No scratches or missing teeth.

CHECK:

Check the sensor tip.

OK:

No scratches or foreign objects on the sensor tip.



CHECK:

Check the speed sensor installation.

OK:

The installation bolt is tightened properly and there is no clearance between the sensor and steering knuckle or rear axle housing.

NG → **Replace speed sensor or rotor.**

NOTICE:

Check the speed sensor signal last (See page DI–52).

OK

Check and replace ABS ECU.

DI1JA-01

DTC	37	Both Front Speed Sensor Rotor Missing

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
37	With the front wheels stationary and rear wheels rotating at 20+ km/h (12+ mph) for 10+ sec., turn ignition switch ON then OFF 8 times, in succession.	• Front axle hub • Right front, left front speed sensor • Wire harness for sensor system • ECU

INSPECTION PROCEDURE

1	Check front axle hub (See page SA–18 or SA–26).

NG → Replace front axle hub.

OK

2	Check front speed sensor (See page DI–73).

NG → Replace front speed sensor.

OK

3	Check for open or short in harness and connector between speed sensor and ECU (See page IN–25).

NG → Repair or replace harness and connector.

OK

Check and replace ABS ECU.

DI1JE–01

DTC	37	Tires of Different Size

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
37	Driving at more than 30 km/h (19 mph) for more than 60 seconds with 1 or 2 tires of different size.	• Tire size • ECU

INSPECTION PROCEDURE

1	**Check tire size.**

NG → **Replace tires so that all 4 tires are of the same size.**

OK

Check and replace ABS ECU.

DI1JC-01

DTC	41	IG Power Source Circuit

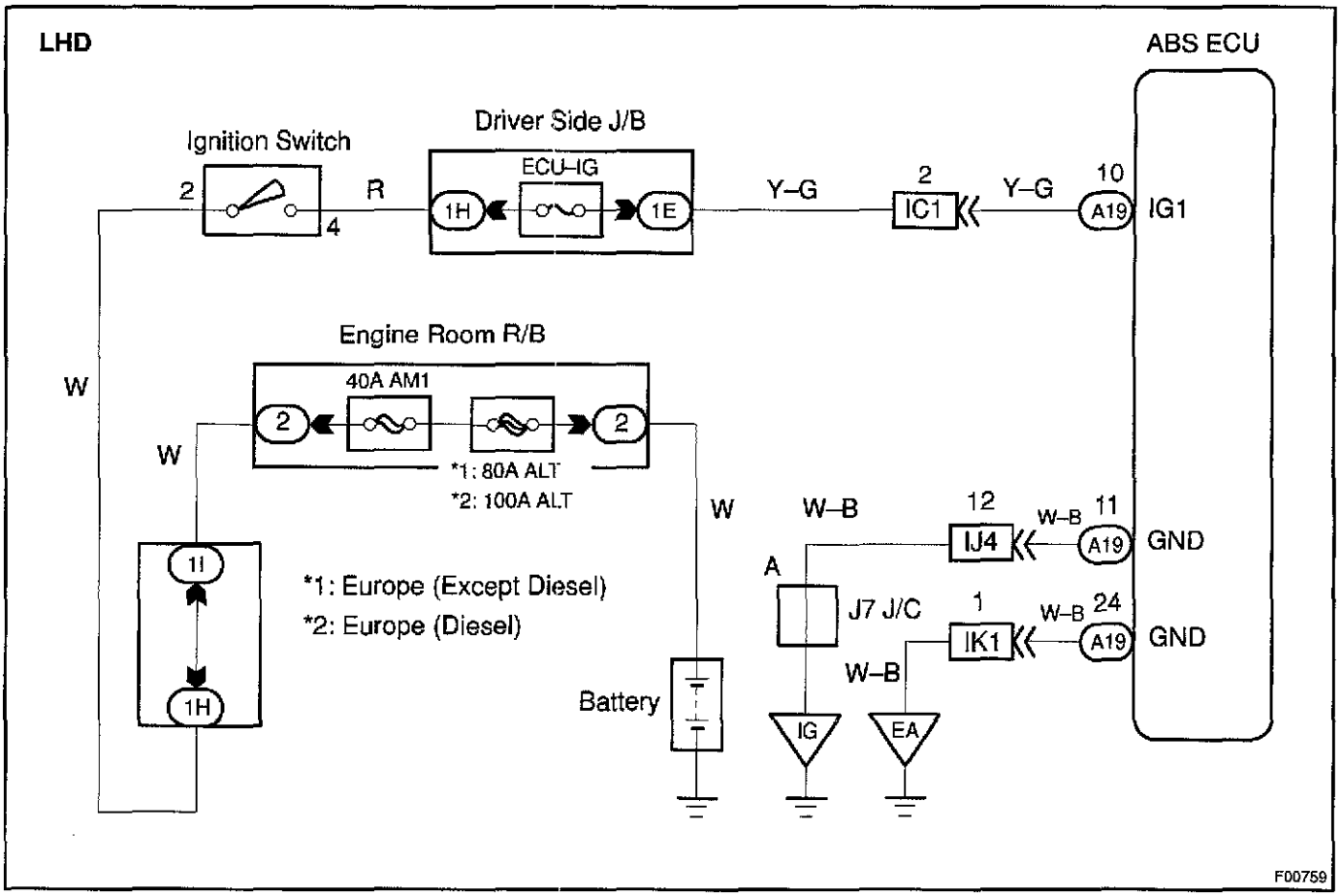
CIRCUIT DESCRIPTION

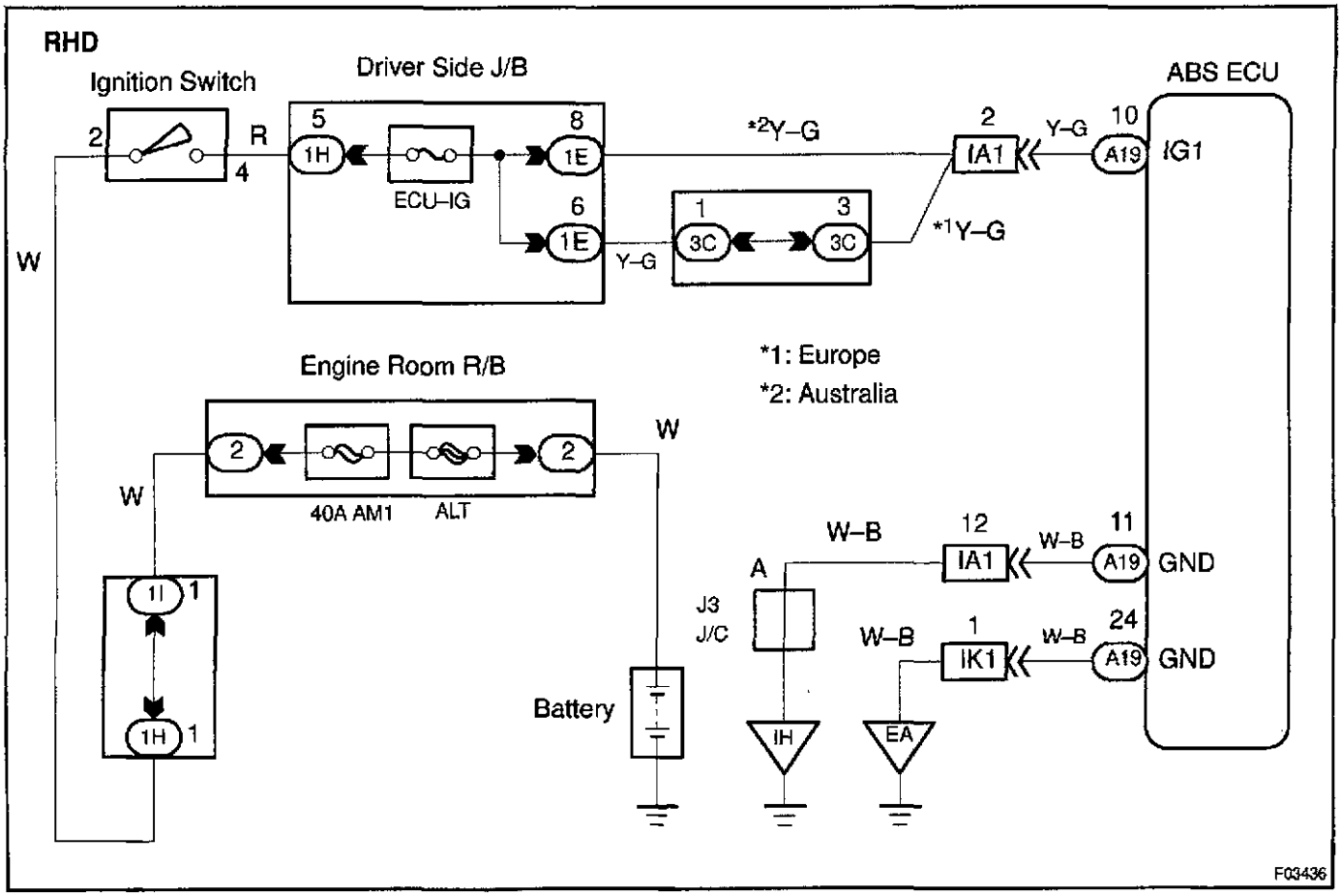
This is the power source for the ECU, hence the actuators.

DTC No.	DTC Detecting Condition	Trouble Area
41	Vehicle speed is 3 km/h (1.9 mph) or more and voltage of ECU terminal IG1 remains at more than 17 V or below 9.5 V for more than 10 sec.	• Battery • IC regulator • Open or short in power source circuit • ECU

Fail safe function:
If trouble occurs in the power source circuit, the ECU cuts off current to the ABS control (solenoid) relay and prohibits ABS control.

WIRING DIAGRAM





INSPECTION PROCEDURE

1	**Check battery voltage.**

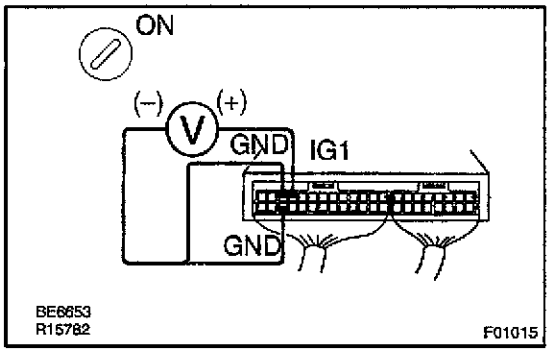
OK:

Voltage: 10 – 14 V

NG → **Check and repair the charging system.**

OK

2	Check voltage between terminals IG1 and GND of ABS ECU connector.

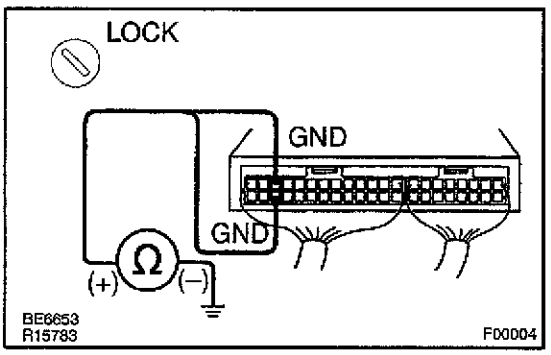


PREPARATION:
Remove ABS ECU with connectors still connected.
CHECK:
(a) Turn the ignition switch ON.
(b) Measure voltage between terminals IG1 and GND of ABS ECU connector.
OK:
Voltage: 10 – 14 V

OK → **Check and replace ABS ECU.**

NG

3	Check continuity between terminals GND of ABS ECU connector and body ground.

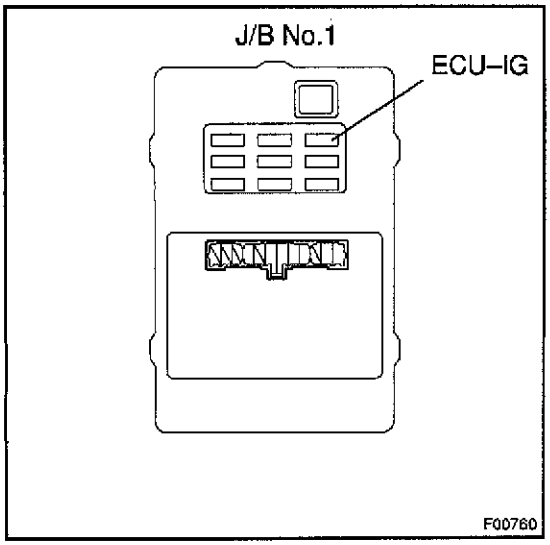


CHECK:
Measure resistance between terminals GND of ABS ECU connector and body ground.
OK:
Resistance: 1 Ω or less

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

OK

4	Check ECU–IG fuse.



PREPARATION:
Remove ECU–IG fuse from J/B No.1.
CHECK:
Check continuity of ECU–IG fuse.
OK:
Continuity

NG → **Check for short in all the harness and components connected to ECU–IG fuse (See attached wiring diagram).**

OK

Check for open in harness and connector between ABS ECU and battery (See page IN–25).

DHJD-01

DTC	43	Malfunction in Deceleration Sensor

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
43	Either of the following (1) or (2) is detected: (1) After the battery terminal is connected, input from the deceleration sensor does not change at one cycle (0 km/h → more than 30 km/h → 0 km/h) for 16 times continuously. (2) When the brake pedal is not depressed at vehicle speed of 5 km/h or more, forward and backward G (more than 0.4 G) is detected for 30 seconds or more.	• Deceleration sensor • Wire harness for deceleration sensor system • ECU

INSPECTION PROCEDURE

1	Check deceleration sensor (See page DI–52).

NG → Replace deceleration sensor.

OK

2	Check for open or short in harness and connector between sensor and ECU (See page IN–25).

NG → Repair or replace harness and connector.

OK

Check and replace ABS ECU.

DI0JE-01

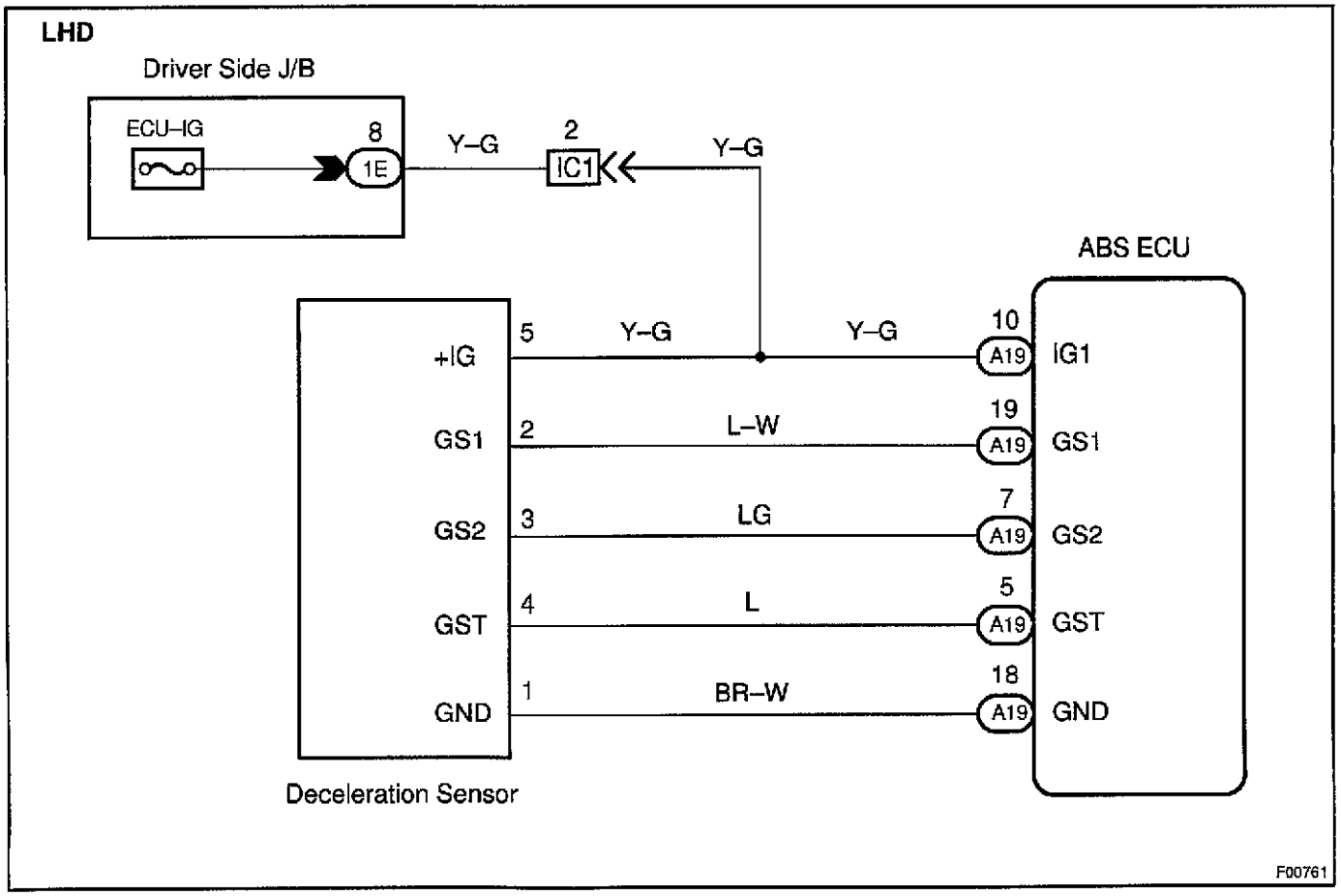
DTC	44	Deceleration Sensor Circuit

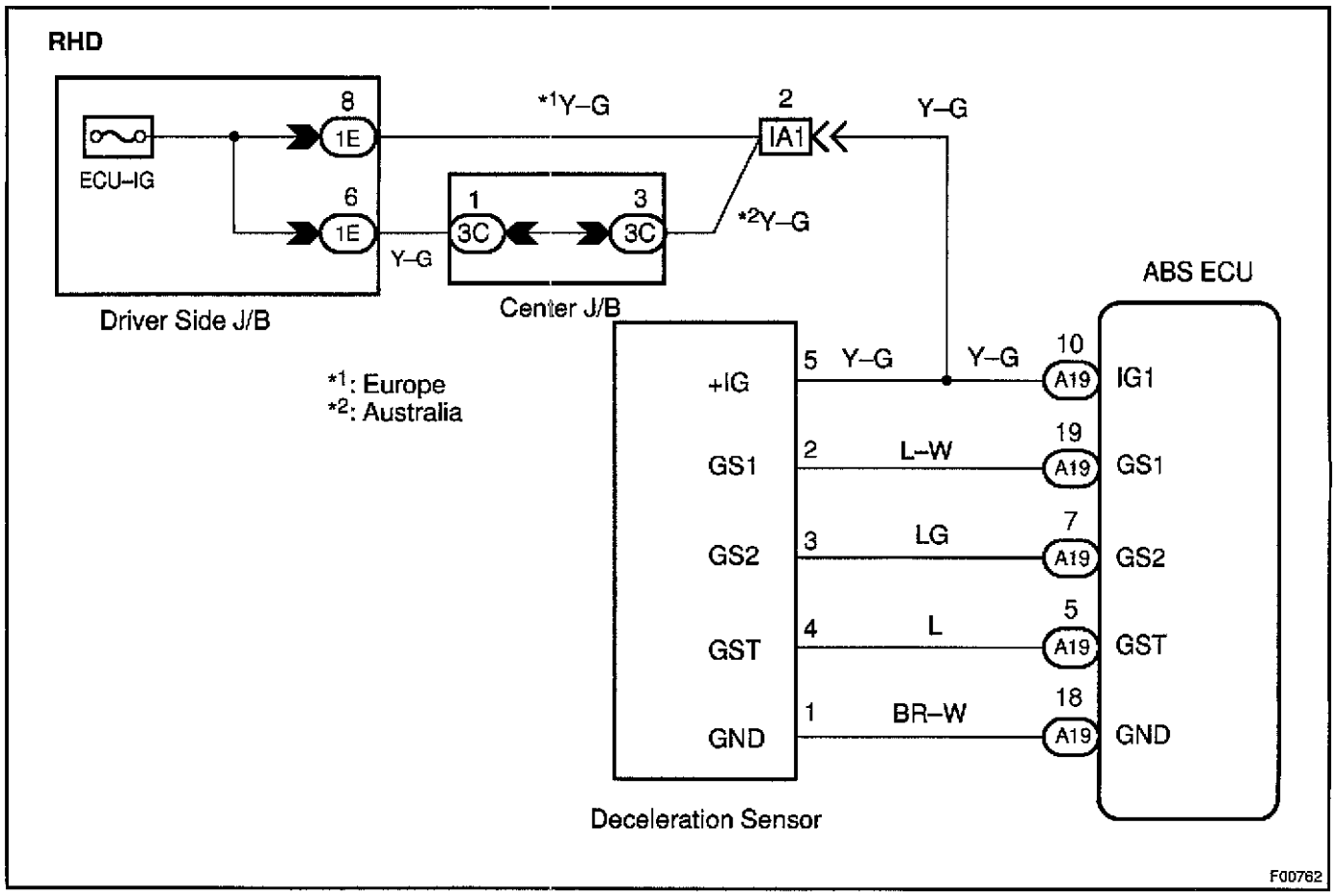
CIRCUIT DESCRIPTION

This sensor detects deceleration on the vehicle. The sensor signal is used in ABS control. If the sensor functions abnormally, the ABS warning light comes on but the ABS still operates.

DTC No.	DTC Detecting Condition	Trouble Area
44	Either of the following (1) or (2) is detected: (1) An open or short is detected in circuit GS1 or GS2 for 1sec. (2) After the ignition is turned ON, the test signal is output by GST. During this time, a trouble signal is detected for 0.5 sec.	• Deceleration sensor • Open or short in deceleration sensor circuit • ECU

WIRING DIAGRAM





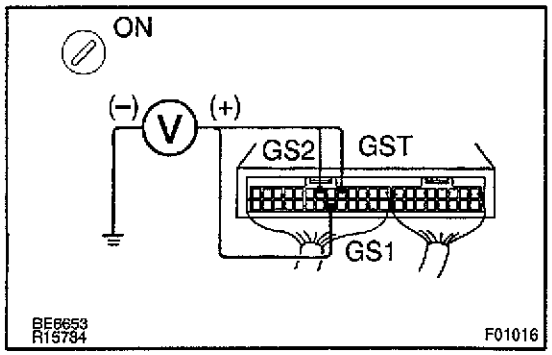
INSPECTION PROCEDURE

1	**Check for open and short in harness and connector between deceleration sensor and ECU (See page IN–25).**

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

OK

2	Check voltage between terminals GS1, GS2, GST of ABS ECU and body ground.



PREPARATION:

(a) Remove ABS ECU with connectors still connected.
(b) Disconnect deceleration sensor connector.
(c) Turn the ignition switch ON.

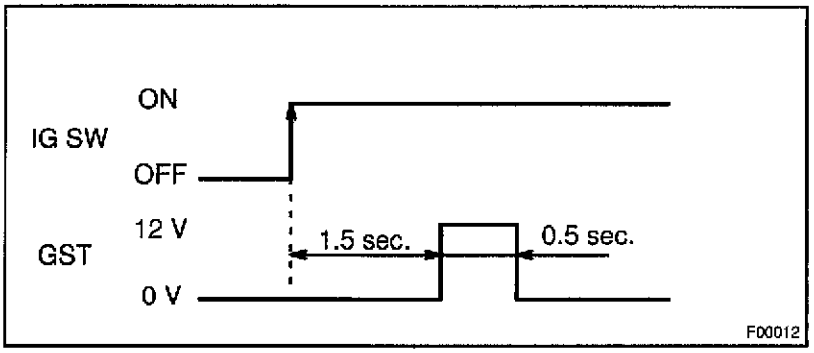
CHECK:

Measure voltage between terminals GS1, GS2, GST of ECU and Body ground.

OK:

Voltage:

GS1, GS2: About 5 V
GST: As shown below



NG → **Check and replace ABS ECU.**

OK

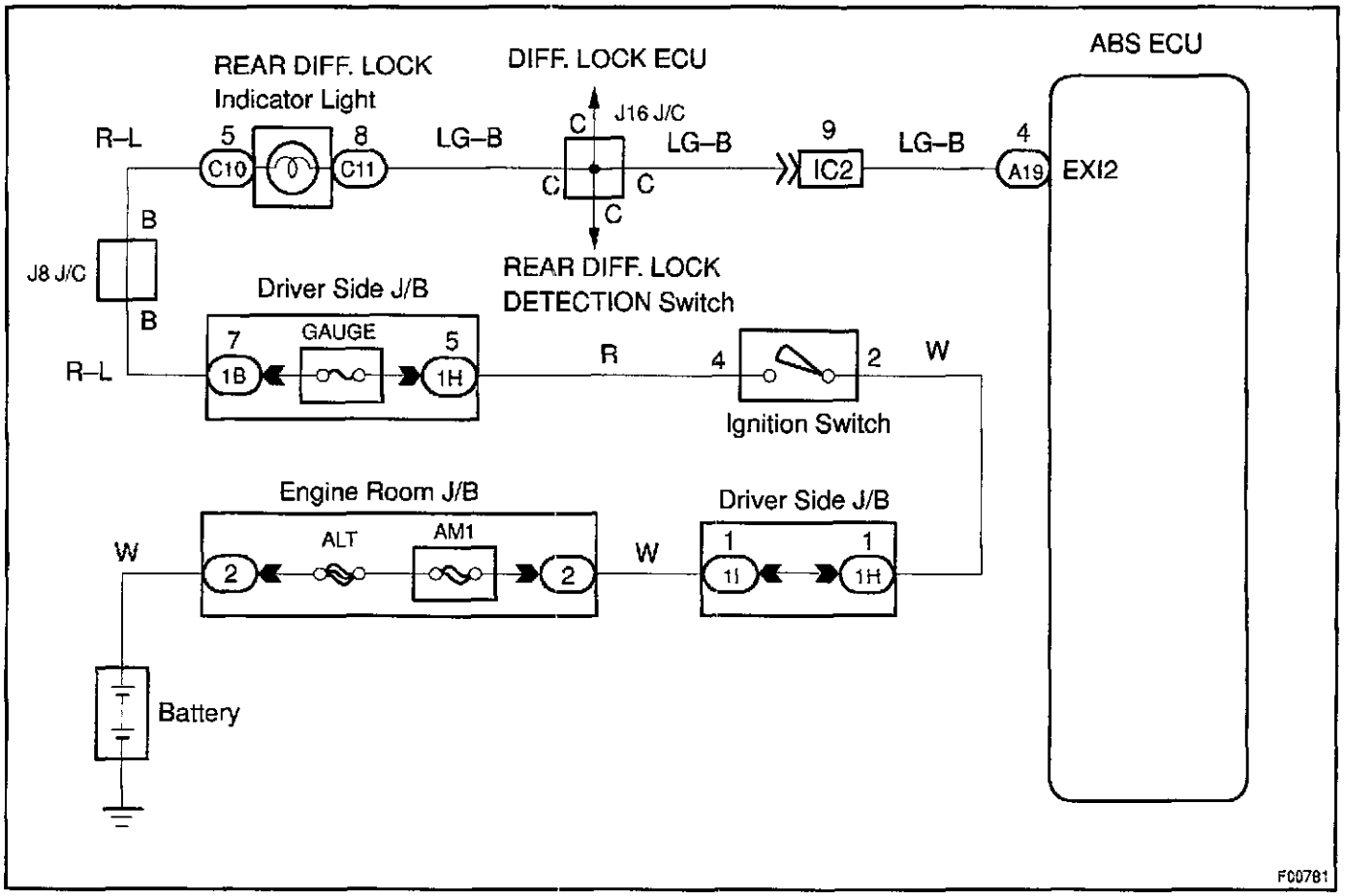
Check and replace deceleration sensor.

DTC	48	Rear Differential Lock Circuit (w/ Rear Differential Lock)

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
48	Open or short circuit in rear differential lock circuit. Rear differential is locking.	• Rear differential lock • ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
Rear differential lock switch is OFF.

1	**Check the rear differential lock is free (See page SA–254).**

NG → **Repair the rear differential lock system.**

OK

2	**Is DTC output?**

Check DTC on page DI–52.

NO → **Normal.**

YES

3	**Check that REAR DIFF. LOCK indicator light does not go off.**

NO → **Go to step 6.**

YES

4	**Check that bulb for REAR DIFF. LOCK indicator light is not burnt out.**

YES → **Replace indicator light.**

NO

5	Check for open in harness and connector between battery and REAR DIFF. LOCK indicator light, REAR DIFF. LOCK indicator light and ABS ECU (See page IN–25).

NG → Repair or replace harness or connector.

OK

6	Check for short in harness and connector between REAR DIFF. LOCK indicator light and ABS ECU (See page IN–25).

NG → Repair or replace harness or connector.

OK

Check and replace ABS ECU.

DI1JG-01

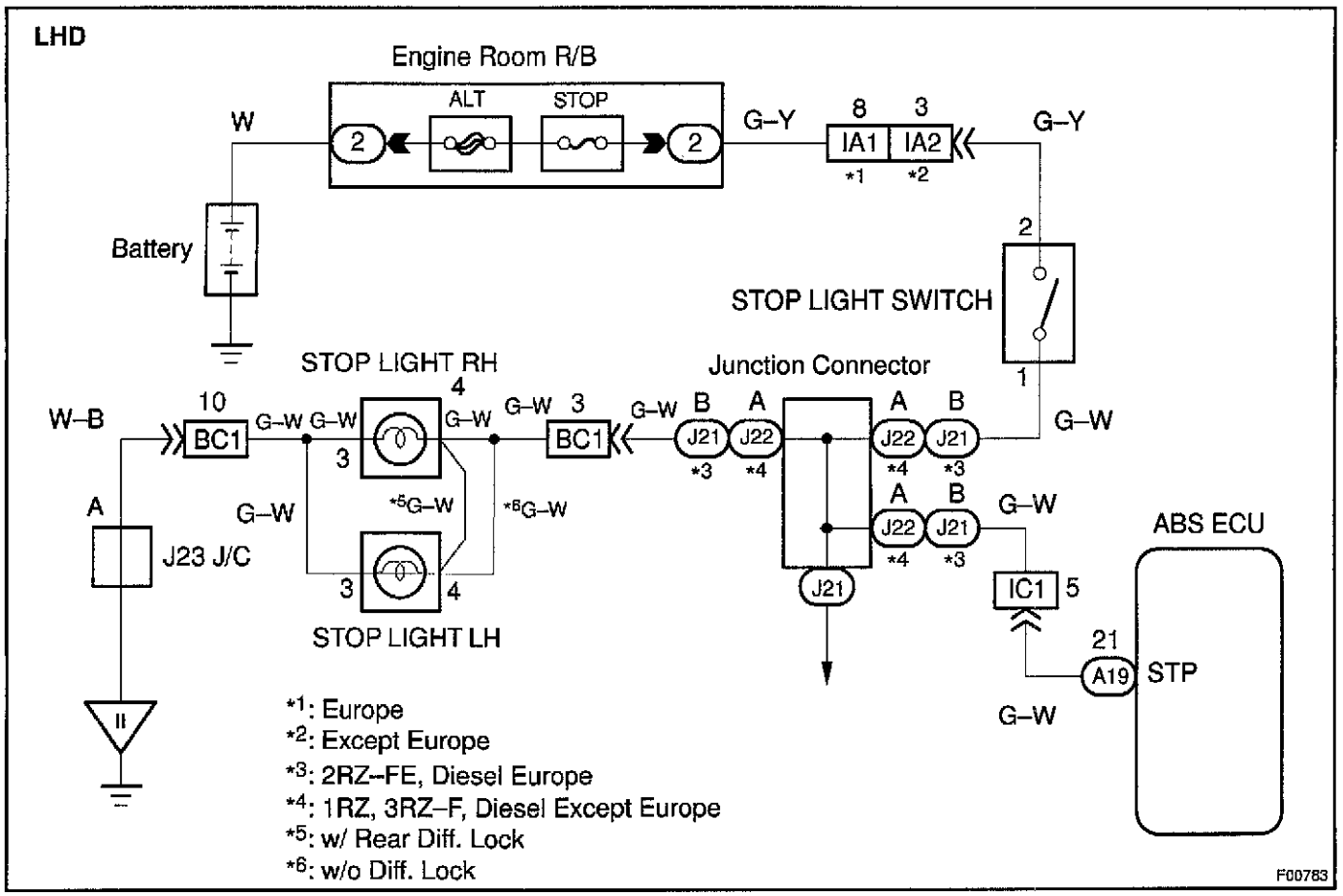
DTC	49	Stop Light Switch Circuit

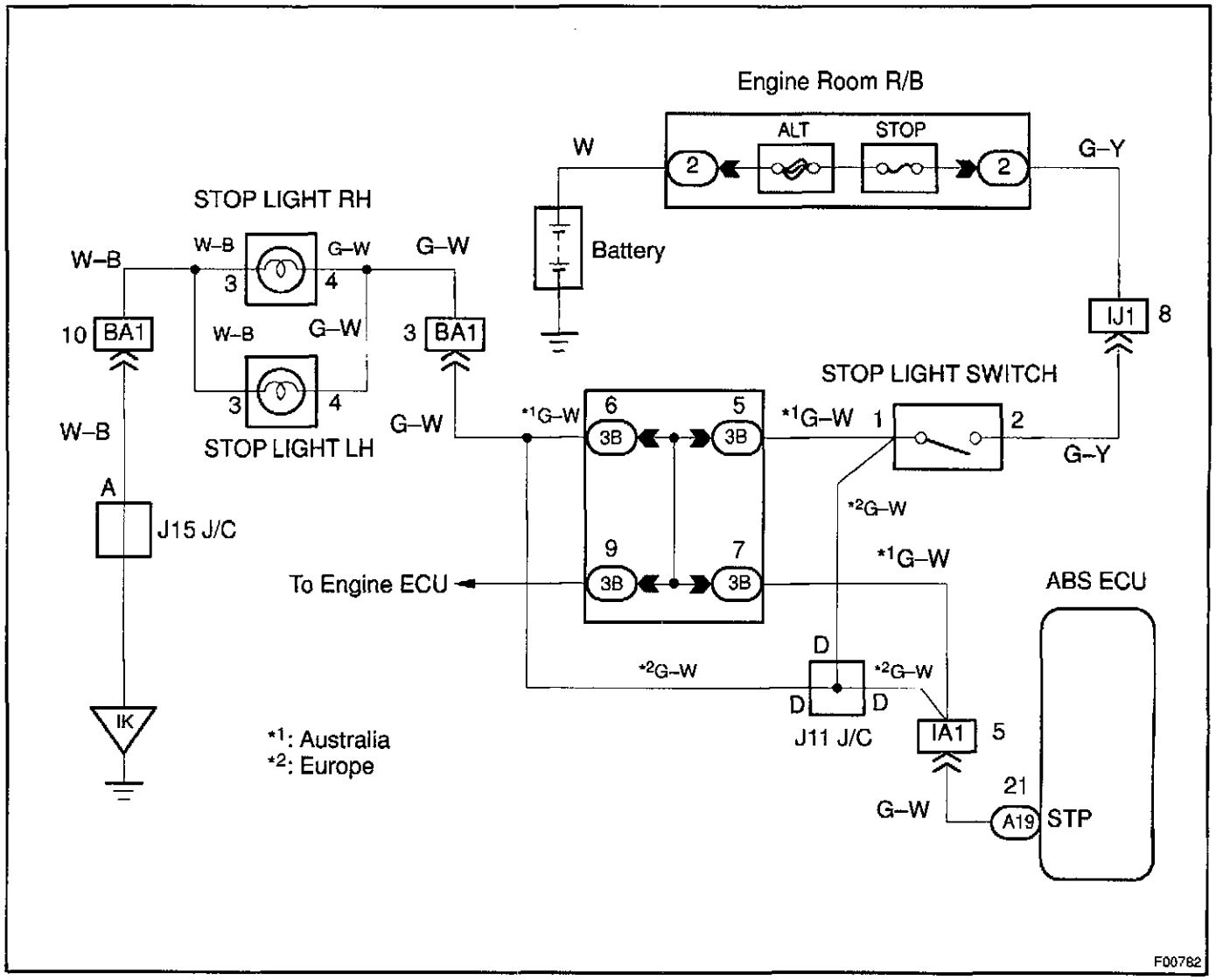
CIRCUIT DESCRIPTION

This stop light switch senses whether the brake pedal is depressed or released, and sends the signal to the ECU.

DTC No.	DTC Detection Condition	Trouble Area
49	1.2 – 1.7 V of STP voltage is continued for 0.3 seconds or more.	• Stop light switch • Open in stop light circuit

WIRING DIAGRAM





INSPECTION PROCEDURE

1	**Check operation of stop light.**

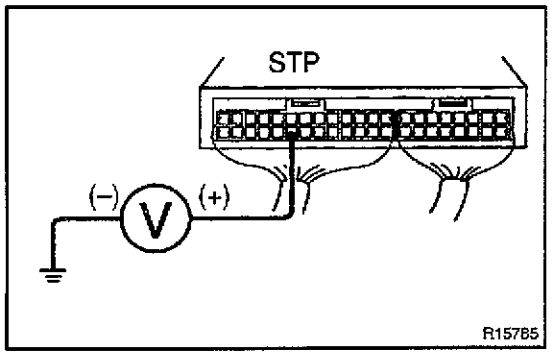
CHECK:

Check that stop light lights up when brake pedal is depressed and turns off when brake pedal is released.

NG → **Repair stop light circuit (See page BE–2).**

OK

2	**Check voltage between terminal STP of ABS ECU and body ground.**



PREPARATION:
Remove ABS ECU with connectors still connected.
CHECK:
Measure voltage between terminal STP of ABS ECU and body ground when brake pedal is depressed.
OK:
Voltage: 8 – 14 V

OK	**Proceed to next circuit inspection shown on problem symptoms table (See page DI–63).**

NG

3	**Check for open in harness and connector between ABS ECU and stop light switch (See page IN–25).**

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

OK

Check and replace ABS ECU.

D0QN-04

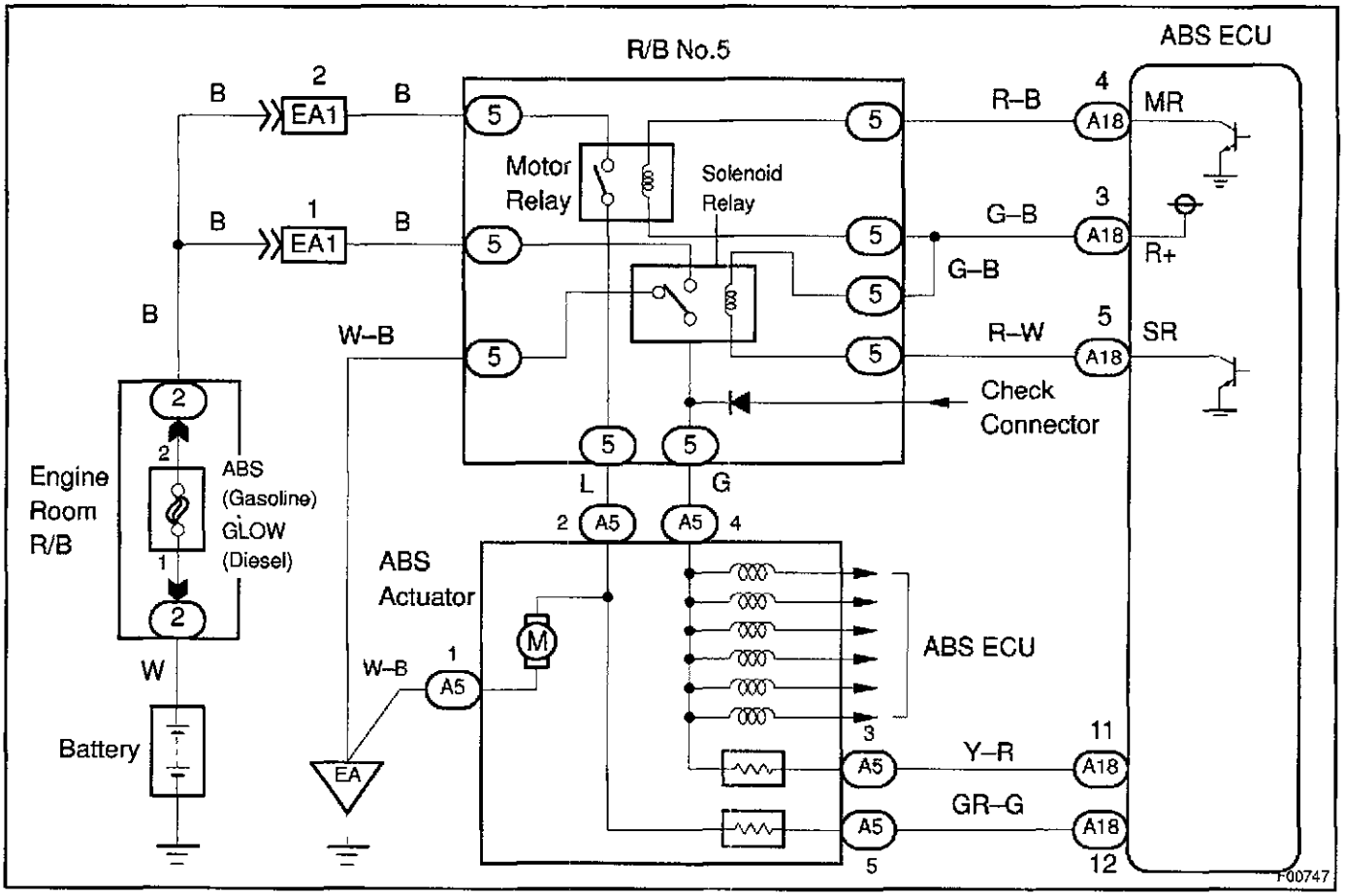
DTC	51	ABS Pump Motor Lock

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
51	Pump motor is not operating normally during initial check.	• ABS pump motor

Fail safe function:
If trouble occurs in the ABS pump motor, the ECU cuts off current to the ABS control (solenoid) relay and prohibits ABS control.

WIRING DIAGRAM



DI16E-02

DTC	Always ON	Malfunction in ECU

CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
Always ON	ABS ECU internal malfunction is detected.	• Battery • ECU

Fail safe function:
If trouble occurs in the power source circuit, the ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

INSPECTION PROCEDURE

1	**Is DTC output?**

Check DTC on page DI–52.

YES ▶ **Repair circuit indicated by the code output.**

NO ▼

2	**Is normal code displayed?**

YES ▶ **Check ABS solenoid relay. Check for short in harness and connector between ABS solenoid relay and check connector (See page IN–25).**

NO ▼

3	**Does ABS warning light go off?**

YES ▶ **Check for open or short in harness and connector between ECU–IG fuse and ABS ECU (See page IN–25).**

NO ▼

4	Check battery positive voltage.

PREPARATION:
Start the engine.
CHECK:
Check the battery positive voltage.
OK:
10 – 14 V

NG → Check and repair the charging system.

OK

5	Check ABS warning light.

PREPARATION:
(a) Turn the ignition switch OFF.
(b) Disconnect the connector from the ABS ECU.
(c) Turn the ignition switch ON.
CHECK:
Check the ABS warning light goes off.

OK → Check and replace ABS ECU.

NG

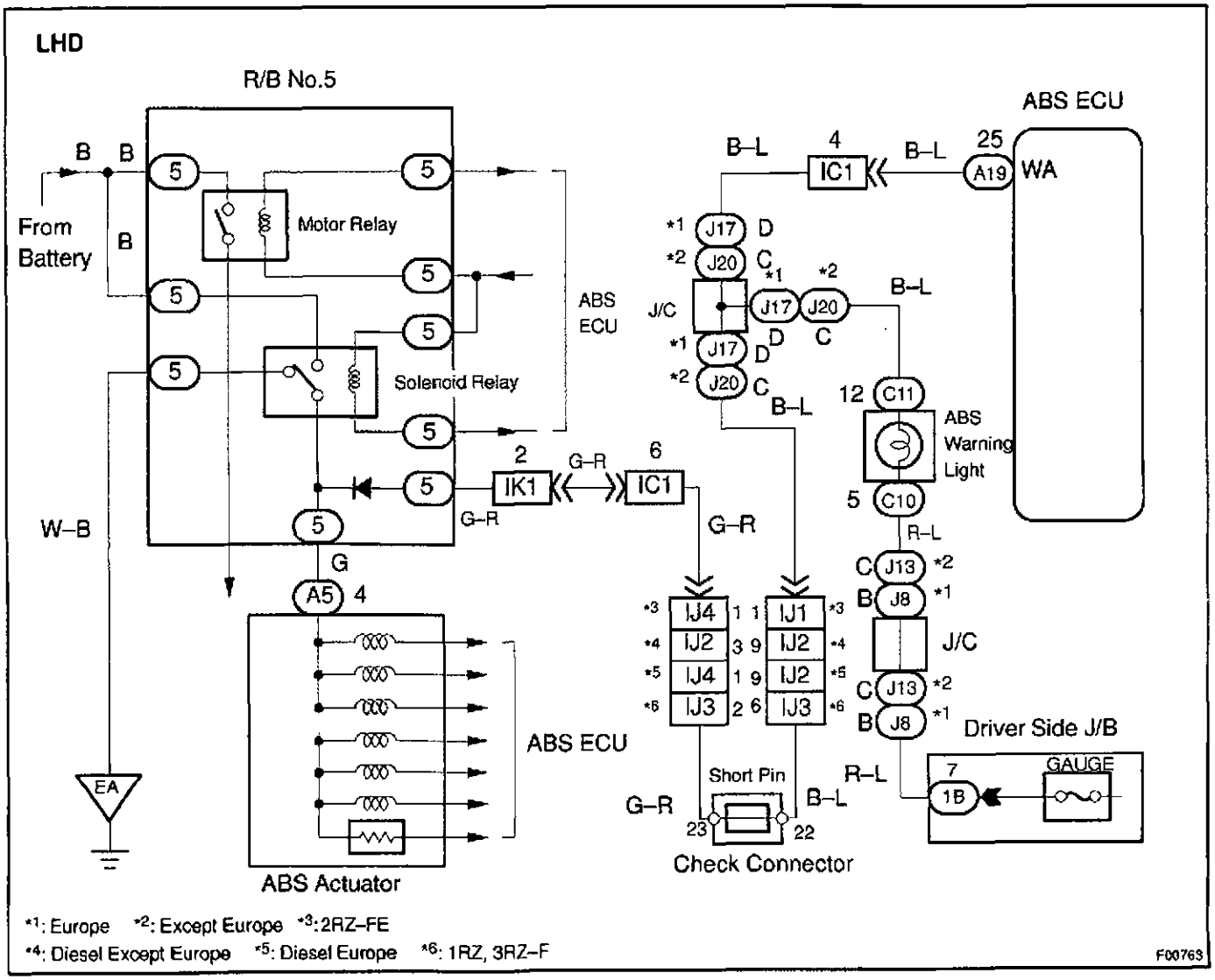
Check for short in harness and connector between ABS warning light, check connector and ABS ECU (See page IN–25).

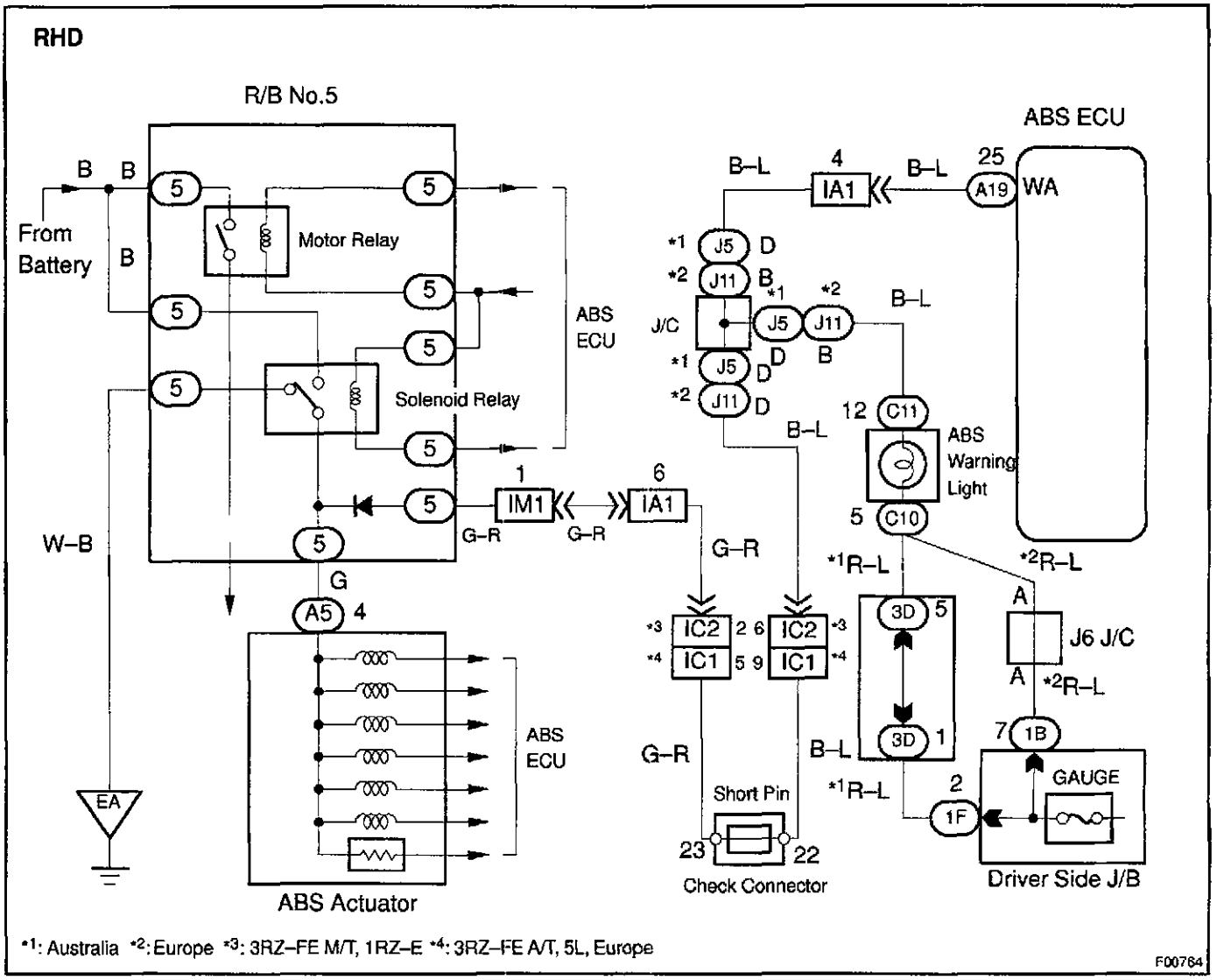
ABS Warning Light Circuit

CIRCUIT DESCRIPTION

If the ECU detects trouble, it lights the ABS warning light while at the same time prohibiting ABS control. At this time, the ECU records a DTC in memory.
After removing the short pin of the check connector, connect terminals Tc and E_1 of the check connector to make the ABS warning light blink and output the DTC.

WIRING DIAGRAM





INSPECTION PROCEDURE

Troubleshooting in accordance with the chart below for each trouble symptom.

ABS warning light does not light up	Go to step 1
ABS warning light remains on	Go to step 3

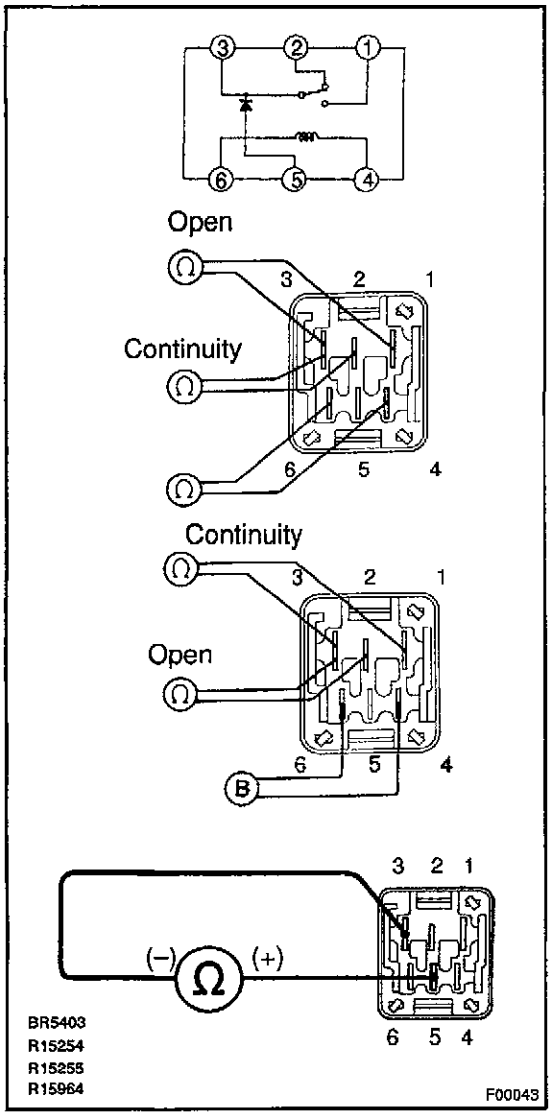
1	**Check ABS warning light.**

See Combination Meter Troubleshooting on page BE–2.

NG → **Repair bulb or combination meter assembly.**

OK

2	Check ABS solenoid relay.



PREPARATION:
Remove ABS solenoid relay from ABS R/B.

CHECK:
Check continuity between each terminal of ABS solenoid relay.

OK:

Terminals 4 and 6	Continuity (Reference value 80 Ω)
Terminals 2 and 3	Continuity
Terminals 1 and 3	Open

CHECK:
(a) Apply battery voltage between terminals 4 and 6.
(b) Check continuity between each terminal of ABS solenoid relay.

OK:

Terminals 2 and 3	Open
Terminals 1 and 3	Continuity

CHECK:
Connect the ⊕ test lead to terminal 5 and the ⊖ lead to terminal 3. Check continuity between the terminals.

OK:

Continuity

If there is no continuity, connect the ⊖ test lead to terminal 5 and the ⊕ lead to terminal 3. Recheck continuity between terminals.

NG → **Replace ABS solenoid relay.**

OK

Check for open in harness and connector between check connector, ABS solenoid relay and body ground (See page IN–25).

3	**Is DTC output?**

Check DTC on page DI–52.

YES → **Repair circuit indicated by the code output.**

NO

4	**Does ABS warning light go off if short pin is removed?**

NO → **Check for short in harness and connector between warning light and check connector and ECU (See page IN–25).**

YES

5	**Check ABS solenoid relay (See step 2.)**

NG → **Replace ABS solenoid relay.**

OK

Check for short in harness and connector between check connector and ABS solenoid relay (See page IN–25).

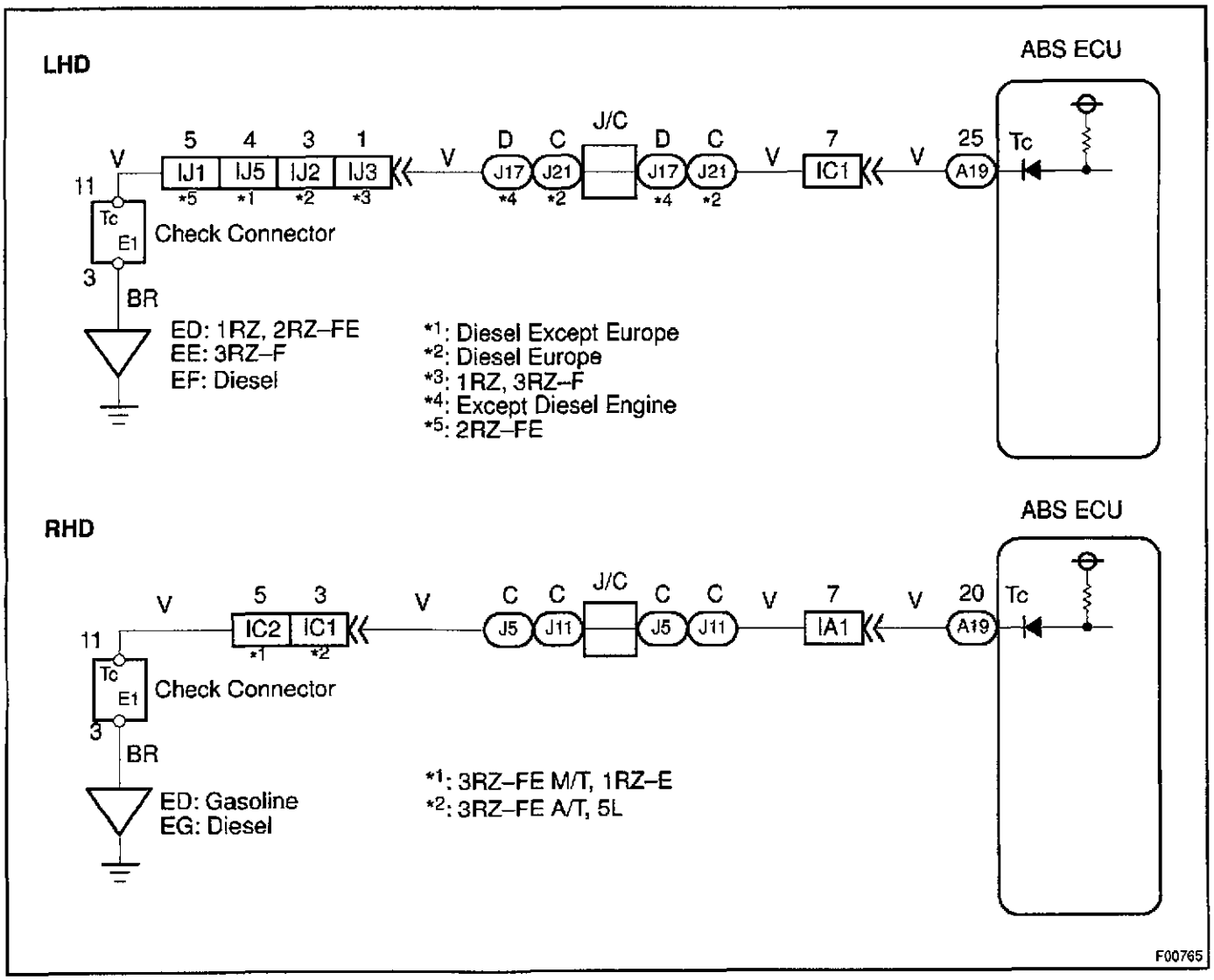
DI1JI-01

Tc Terminal Circuit

CIRCUIT DESCRIPTION

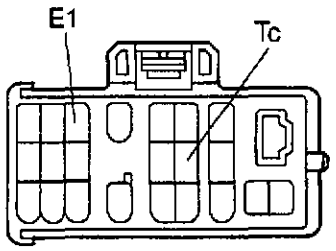
Connecting terminals Tc and E_1 of the check connector causes the ECU to display the DTC by flashing the ABS warning light.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check voltage between terminals Tc and E_1 of check connector.**



Check Connector

CHECK:

(a) Turn the ignition switch ON.

(b) Measure voltage between terminals Tc and E_1 of check connector.

OK:

Voltage: 10 – 14 V

OK → **If ABS warning light does not blink even after Tc and E_1 are connected, the ECU may be defective.**

NG

2	**Check for open and short in harness and connector between ABS ECU and check connector, check connector and body ground (See page IN–25).**

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

OK

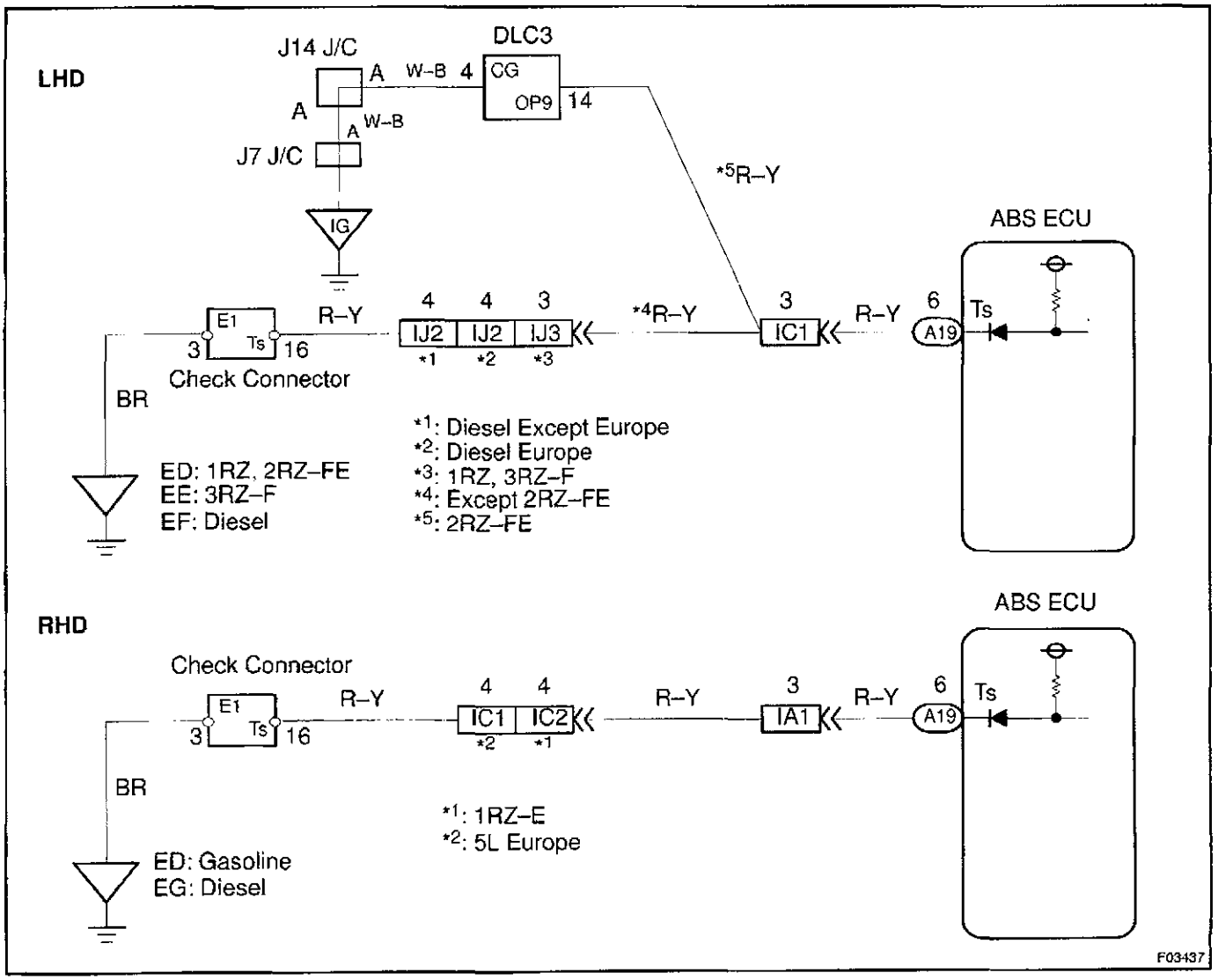
Check and replace ABS ECU.

Ts Terminal Circuit

CIRCUIT DESCRIPTION

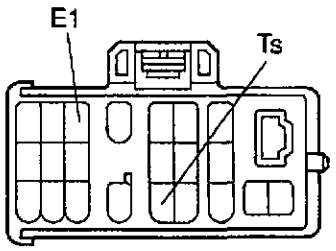
The sensor check circuit detects abnormalities in the speed sensor signal which cannot be detected with the DTC check.
Connecting terminals Ts and E_1 of the check connector in the engine compartment starts the check.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check voltage between terminals Ts and E_1 of check connector.**



Check Connector
F02201

CHECK:

(a) Turn the ignition switch ON.

(b) Measure voltage between terminals Ts and E_1 of check connector.

OK:

Voltage: 10 – 14 V

OK → **If ABS warning light does not blink even after Ts and E_1 are connected, the ECU may be defective.**

NG

2	**Check for open and short in harness and connector between ABS ECU and check connector, check connector and body ground (See page IN–25).**

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

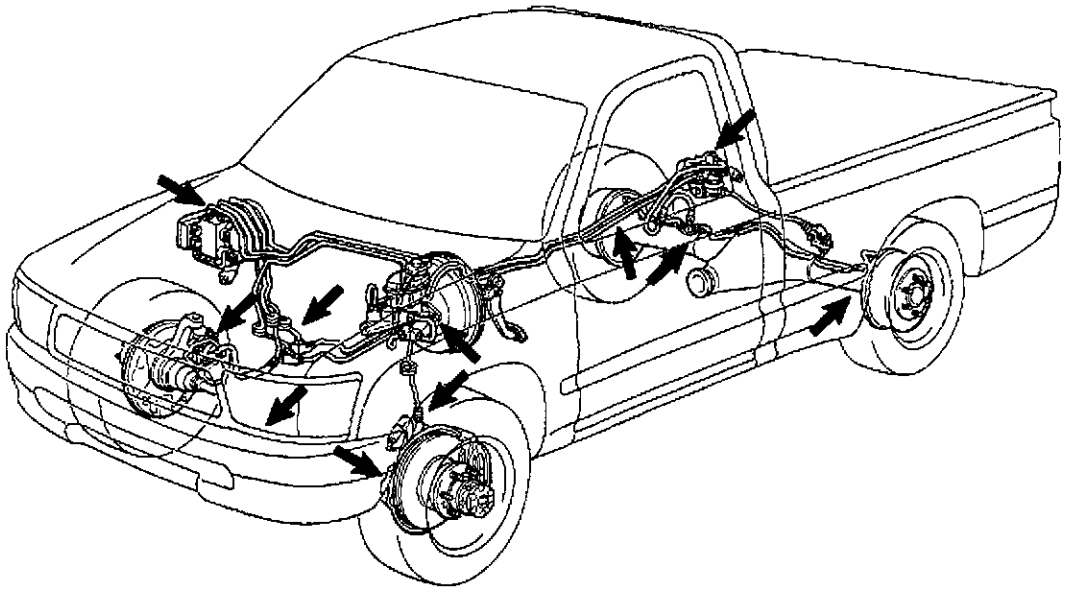
OK

Check and replace ABS ECU.

DI0JK–01

Check for fluid Leakage

Check for fluid leakage from actuator or hydraulic lines.



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