

Troubleshooting

DTC 7-1: Right-front Solenoid

During the initial diagnosis, after the fail-safe relays are turned on, and during the regular diagnosis, the ABS control unit monitors the voltage from the battery for the six solenoids (when the ABS is not functioning). If the detection circuit for the right-front solenoid detects 0 V, the ABS control unit keeps the ABS indicator light on after the engine is started. It turns the ABS indicator light on again if it detects 0 V after the light goes off.

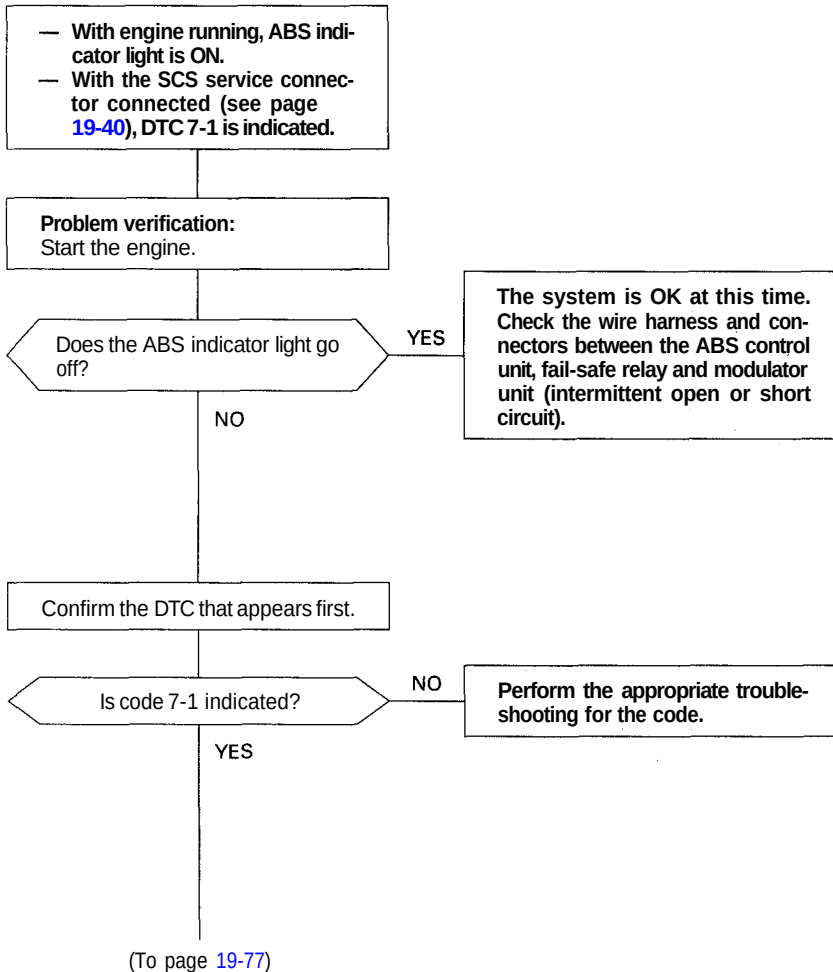
Possible causes:

- Open circuit in the right-front solenoid drive circuits between the front fail-safe relay and ABS control unit
- Short circuit to body ground in the right-front solenoid drive circuits between the solenoids and ABS control unit
- Faulty right-front solenoid drive transistor (ON) in the ABS control unit

The ABS control unit momentarily outputs the ON signal to each solenoid (too momentary to turn the solenoid on) during the initial diagnosis, and each time the vehicle is driven, to check the voltage from the battery with the detection circuit. If the detection circuit for the right-front solenoids detects battery voltage at this time, the ABS control unit keeps the ABS indicator light on. It turns the ABS indicator light on again if it detects battery voltage when the vehicle is driven.

Possible causes:

- Short circuit to power in the right-front solenoid drive circuits between the solenoids and ABS control unit
- Faulty right-front solenoid drive transistor (OFF) in the ABS control unit
- Short circuit to power in the right-front solenoid drive circuits in the modulator wire harness or solenoids
- Short circuit to the right-front solenoid outlet circuit in the inlet circuit between the solenoid and ABS control unit



(From page 19-76)

Check for an open in the SOLENOID circuit:

1. Remove the front fail-safe relay.
2. Connect the front fail-safe relay connector terminals No. 1 and No. 2 using a jumper wire.
3. Disconnect the modulator unit 14P connector.
4. Measure the voltage between body ground and terminals No. 5 and No. 8 individually.

Is there battery voltage?

YES

NO

Repair open in the wire(s) between the front fail-safe relay and modulator unit.

Check the solenoid:

1. Measure the resistance between the modulator unit 14P connector terminals to determine the solenoid standard resistance (A type or B type).
Inlet:
— No. 9 and No. 13
— No. 10 and No. 14
Outlet:
— No. 2 and No. 6
— No. 3 and No. 7
2. Measure the resistance between the modulator unit 14P connector terminals No. 1 and No. 5, and terminals No. 8 and No. 12.

NOTE:

	STANDARD RESISTANCE	
	A TYPE	B TYPE
Inlet Solenoid	2.5-2.9 Ω	6.5-7.5 Ω
Outlet Solenoid	2.5-2.9 Ω	3.3-3.9 Ω

is the resistance as specified?
Inlet: 2.5-2.9 Ω or 6.5-7.5 Ω
Outlet: 2.5-2.9 Ω or 3.3-3.9 Ω

NO

Visually inspect the modulator wire harness. If the harness is OK, replace the modulator unit. (Open or short in the right-front inlet or outlet solenoid)

YES

Check for a short to body ground in the solenoid:

Check for continuity between body ground and the modulator unit 14P connector terminals No. 1 and No. 12 individually.

Is there continuity?

NO

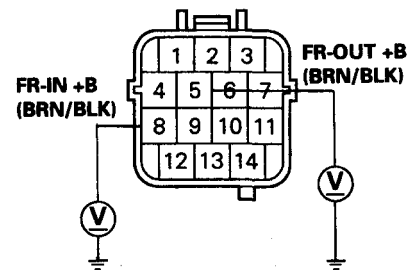
YES

Visually inspect the modulator wire harness. If the harness is OK, replace the modulator unit. (Short to body ground in the right-front inlet or outlet solenoid)

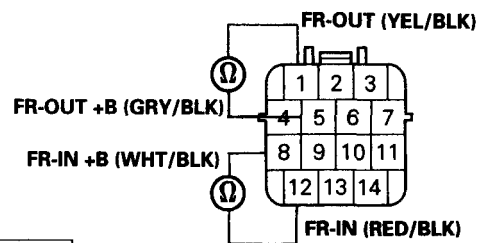
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FRONT FAIL-SAFE RELAY CONNECTOR**SOLENOID (BRN/BLK)**

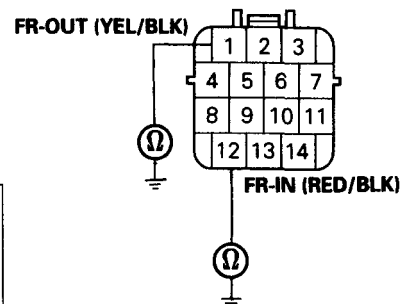
Terminal side of female terminals

MODULATOR UNIT 14P CONNECTOR

Terminal side of male terminals

MODULATOR UNIT 14P CONNECTOR

Wire side of female terminals



(cont'd)

Troubleshooting

DTC 7-1: Right-front Solenoid (cont'd)

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Check for a short in the modulator wire harness:
Check for continuity between the modulator unit 14P connector terminals No. 1 and No. 12.

Is there continuity?

YES

Replace the modulator wire harness. (Short to the FR-IN circuit in the FR-OUT circuit.)

NO

Check for a short to body ground in the FR-IN and FR-OUT circuits:
1. Disconnect the ABS control unit 26P connector.
2. Check for continuity between body ground and terminals No. 2 and No. 15 individually.

Is there continuity?

YES

Repair short to body ground in the FR-IN or FR-OUT circuit between the ABS control unit and modulator unit.

NO

Check for a short in the FR-IN and FR-OUT circuits:
Check for continuity between the ABS control unit 26P connector terminals No. 2 and No. 15.

Is there continuity?

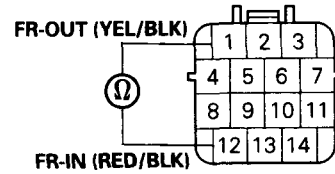
YES

Repair short to the FR-IN circuit in the FR-OUT circuit between the ABS control unit and modulator unit.

NO

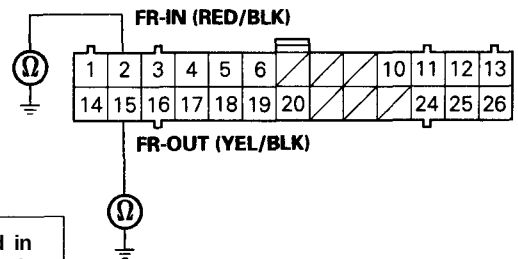
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MODULATOR UNIT 14P CONNECTOR

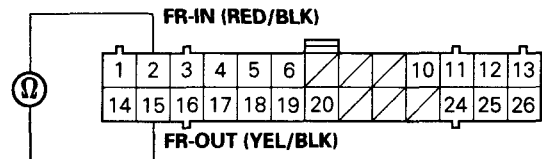


Wire side of female terminals

ABS CONTROL UNIT 26P CONNECTOR



Wire side of female terminals

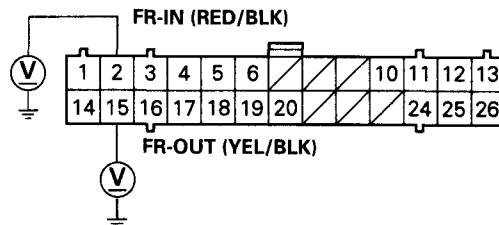


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Check for an open in the FR-IN and FR-OUT circuits:

1. Connect the modulator unit 14P connector.
2. Measure the voltage between body ground and the ABS control unit 26P connector terminals No. 2 and No. 15 individually.

NOTE: Leave jumper wire in fail-safe relay connector.

ABS CONTROL UNIT 26P CONNECTOR

Wire side of female terminals

Is there battery voltage?

NO

Repair open in the FR-IN or FR-OUT circuit between the ABS control unit and modulator unit.

YES

Check for an open in the GND circuit:

Check for continuity between the ABS control unit 26P connector terminal No. 12 and body ground.

Is there continuity?

NO

Repair open in the wire between the ABS control unit and body ground, or a poor ground (G402).

YES

Check for loose ABS control unit connectors. If necessary, substitute a known-good ABS control unit and recheck.

