

Flowcharts

Problem code 1: Pump Motor Over-run

CAUTION: Use only the digital multimeter to check the system.

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench.

Remove the pump motor relay.

Connect the No. 1 and 8 terminals using a jumper wire for about 8 seconds.

Does the pump motor run with an increasingly loud, raspy sound?

NO

Pump runs with a constant soft sound:
Bleed air from anti-lock brake system using the procedure on page 13-41 and check the pump sound again.

YES

Check the accumulator fluid quantity by bleeding the high pressure line with the Bleeder T-wrench.

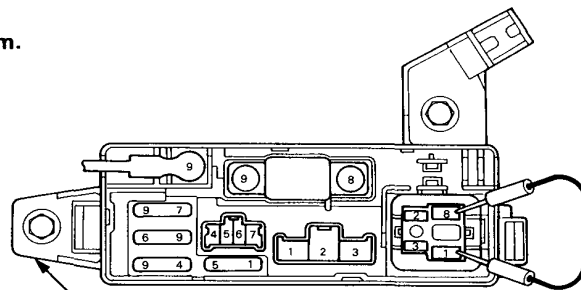
Is there 40–70 cc?

NO

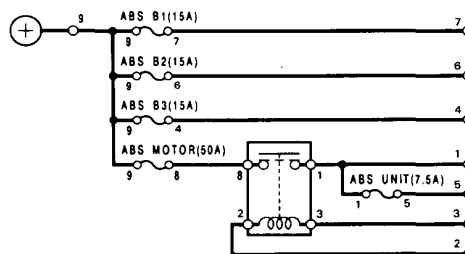
(To page 13-14)

YES

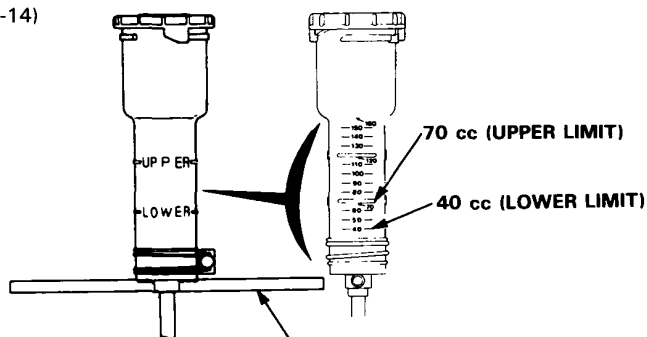
(To page 13-14)



UNDER-HOOD ABS FUSE/RELAY BOX



UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM



BLEEDER T-WRENCH
07HAA-SG00100
or
07HAA-SG00101

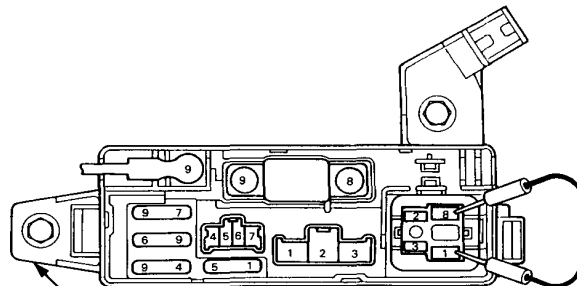
(cont'd)

Troubleshooting

Flowcharts (cont'd)

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(From page 13-13)



Connect the No. 1 and No. 8 terminals using a jumper wire for about 10 seconds.

Check if there is any change in the fluid level in the reservoir tank.

Is there any change?

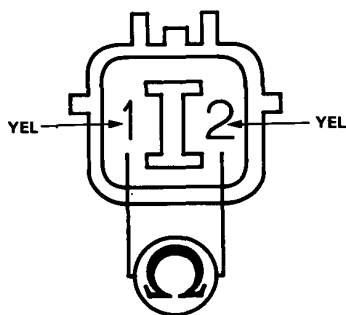
NO

Faulty pump motor (Relief valve is defective and open).

YES

Faulty solenoid (leakage).

SWITCH-SIDE CONNECTOR



View from terminal side.

Connect the No. 1 and No. 8 terminals using a jumper wire for about 10 seconds.

Disconnect the pressure switch 2-P connector and check the continuity between the No. 1 (YEL) and No. 2 (YEL) terminals.

Is there continuity?

NO

Faulty pressure switch.

YES

Vehicle is OK at this time.

Problem code 1-2: Pump Motor Circuit Problem

CAUTION: Use only the digital multimeter to check the system.

NOTE: If a malfunction is detected, this code appears and the fail-safe function is activated. The indicator light comes ON after restarting the engine until the malfunction code is erased (by disconnecting the ABS B2 fuse for 3 seconds).

Pre-test steps:

- Check ABS MOTOR (50 A) FUSE
- Check ABS UNIT (7.5 A) FUSE
- Check for loose under-hood ABS fuse/relay box connectors.

Remove and check the pump motor relay.

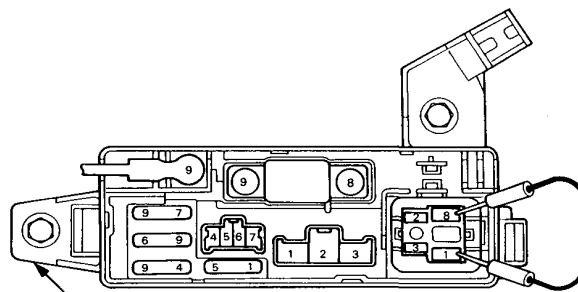
Does it work properly?

NO

Faulty pump motor relay.

YES

Connect the No. 1 and No. 8 terminals using a jumper wire.



UNDER-HOOD ABS FUSE/RELAY BOX

Does the pump motor run?

NO

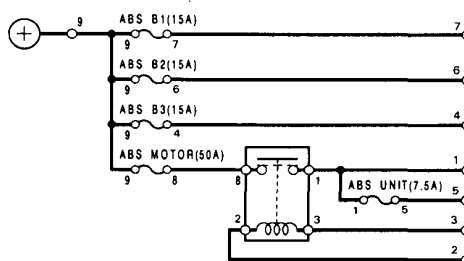
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YES

Disconnect the jumper wire.

Disconnect the 2-P connector from the pump motor.

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UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM

(cont'd)

Troubleshooting

Flowcharts (cont'd)

(From page 13-15)

Remove the ABS UNIT (7.5 A) fuse from under-hood ABS fuse/relay box.

Turn the ignition switch ON.

Check for voltage between the under-hood ABS fuse/relay box ABS unit fuse No. 5 terminal and body ground.

Is there battery voltage?

NO

Repair open in WHT/RED wire between the ABS unit fuse and control unit.

YES

Reinstall the fuse to the under-hood ABS fuse/relay box.

Check for voltage between the pump motor relay No. 1 terminal and body ground.

Is there battery voltage?

NO

Faulty under-hood ABS fuse/relay box.

YES

Check for voltage between the No. 2 terminal and body ground.

Is there battery voltage?

NO

Repair open in BLK/YEL wire between the fuse and pump motor relay.

YES

Reinstall the pump motor relay.

Disconnect the 18-P connector from the control unit.

Check for voltage between the control unit connector No.18 (YEL/RED) terminal and body ground.

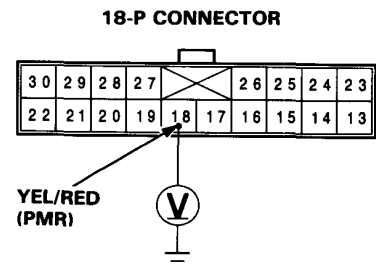
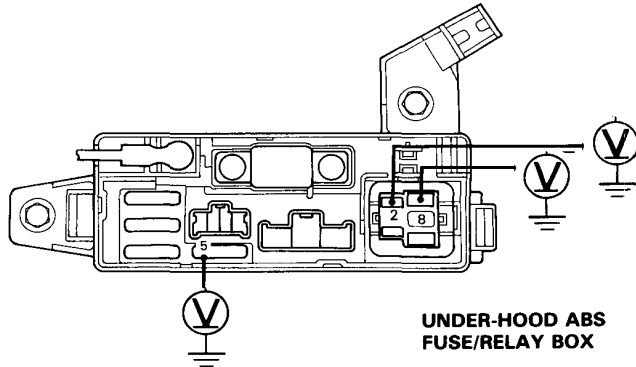
Is there battery voltage?

NO

Repair open in YEL/RED wire between the pump motor relay and control unit.

YES

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



(From page 13-13)

Check for voltage between the No. 1 terminal and body ground.

Is there battery voltage?

NO

Faulty under-hood ABS fuse/relay box.

YES

Disconnect the 2-P connectors from the pump motor.

Check for voltage between the No. 1 (WHT/BLU) terminal and body ground.

Is there battery voltage?

NO

Repair open in WHT/BLU wire between the motor relay and pump motor.

YES

Check for voltage between the No. 1 (WHT/BLU) terminal and No. 2 (BLK) terminal.

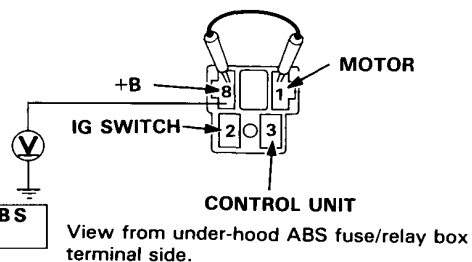
Is there battery voltage?

NO

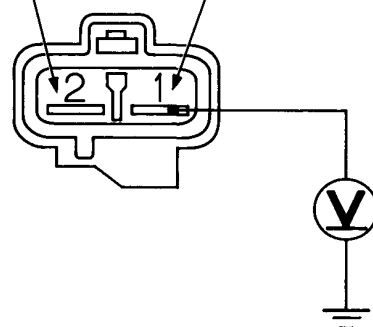
Repair open in BLK wire between the pump motor and ground or poor ground (G201).

YES

Faulty pump motor.

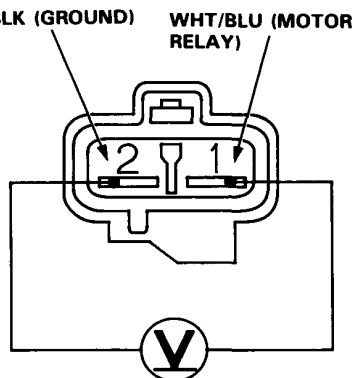


HARNESS-SIDE CONNECTOR
BLK (GROUND) WHT/BLU (MOTOR RELAY)



View from terminal side.

HARNESS-SIDE CONNECTOR
BLK (GROUND) WHT/BLU (MOTOR RELAY)



View from terminal side.

(cont'd)

Troubleshooting

Flowcharts (cont'd)

Problem code 1-3: High Pressure Leakage

CAUTION: Use only the digital multimeter to check the system.

Pre-test steps:

- Check reservoir fluid level, and if necessary, fill to the MAX level.
- Check for fluid leaks from the functional parts and replace the faulty parts if there is a leak.

Functional parts:

- Modulator
- Power unit
- High pressure hoses

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench.

Remove the pump motor relay.

Connect the No. 1 and No. 8 terminals using a jumper wire for about 10 seconds.

Disconnect the 2-P connector from the pressure switch.

After 30 minutes, check for continuity between the No.1 (YEL) and No.2 (YEL) terminals on the switch side of connector.

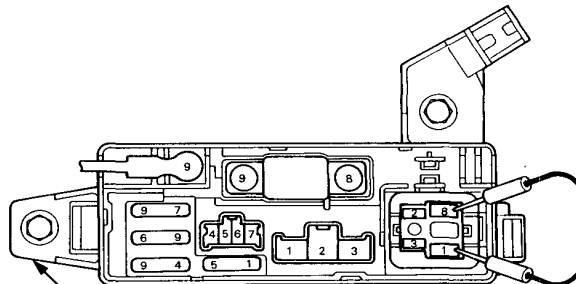
Is there continuity?

NO

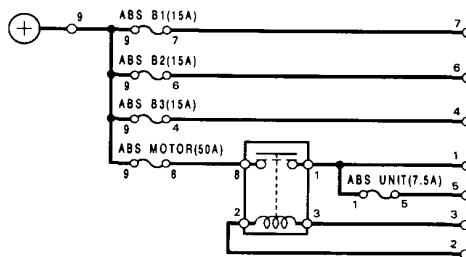
Faulty solenoid (leakage).

YES

Vehicle is OK at this time.

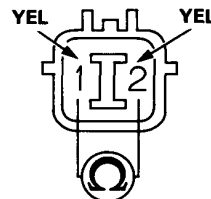


UNDER-HOOD ABS FUSE/RELAY BOX



UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM

SWITCH-SIDE CONNECTOR



View from terminal side.

Problem code 1-4: Pressure Switch Circuit

CAUTION: Use only the digital multimeter to check the system.

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench (see page 19-80).

Disconnect the 2-P connector from the pressure switch.

Check the continuity of pressure switch between the No.1 (YEL) and No.2 (YEL) terminals.

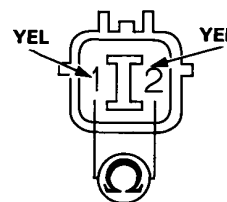
Is there continuity? **YES** → **Faulty pressure switch (closed).**

Check for continuity between the No.1 (YEL) terminal and body ground on the harness-side connector.

Is there continuity? **YES** → **Repair short in YEL wire between the control unit and pressure switch.**

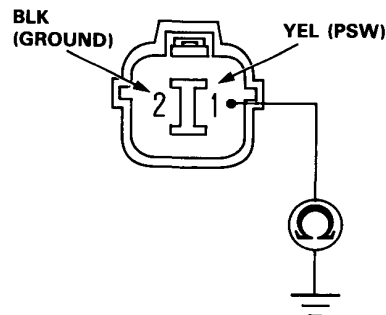
Check for loose control unit connectors. If necessary, substitute a known-good control unit and recheck.

SWITCH-SIDE CONNECTOR



View from terminal side.

HARNESS-SIDE CONNECTOR



View from terminal side.

(cont'd)

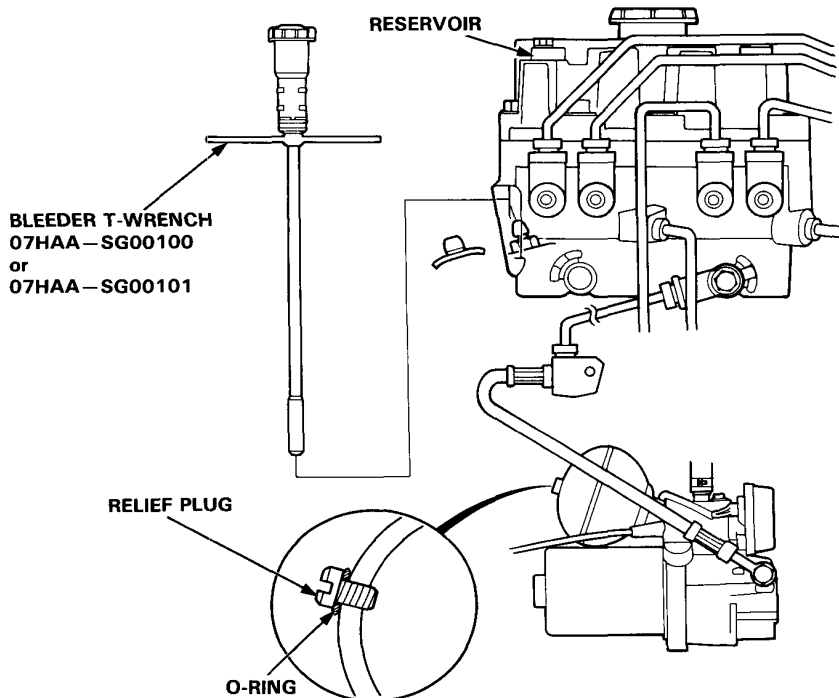
Troubleshooting

Flowcharts (cont'd)

Problem Code 1-8: Accumulator Gas Leakage

Check the following items:

- The relief plug is loose.
- The relief plug O-ring is out of place.
- Bleed the high pressure line with the Bleeder T-wrench. Operate the pump motor for 10 seconds and bleed the high pressure line again with the Bleeder T-wrench. If no fluid or more than 70 cc of fluid comes out, it is likely that the gas has leaked out.



Problem code 2-1: Parking Brake Switch Related Problem

If the parking brake has been released, the following items are possible causes. If they are OK, check the control unit connectors for good connection. If not loose or disconnected, substitute a known-good control unit and recheck.

NOTE: Before Troubleshooting Problem Code 2-1, remove the ABS B2 (15 A) fuse for 3 seconds to clear the control unit's memory, then test drive the car.

If the anti-lock brake system indicator light stays off, the probability is that the car was driven with the parking brake applied.

- The parking brake is applied for more than 30 seconds while driving.
- The brake fluid level in the master cylinder is too low.
- GRN/RED wire is shorted between the **BRAKE** indicator light and parking brake switch.
- GRN/RED wire is shorted between the **BRAKE** indicator light and brake fluid level switch.
- The **BRAKE** indicator light is blown.
- GRN/RED has an open between the **BRAKE** indicator light and the control unit.
- The stop light is blown.

Problem Code 4-1 to 4-8: Speed Sensor

CAUTION: Use only the digital multimeter to check the system.

NOTE: If a malfunction is detected, this code appears and the fail-safe function is activated. The indicator light comes ON after restarting the engine until the malfunction code is erased (by disconnecting the ABS B2 fuse for 3 seconds).

Disconnect the 18-P connector from the control unit.

Check each sensor for continuity between the positive and negative:

- GRN/BLK: Front Right Positive
- GRN: Front Right Negative
- GRN/BLU: Front Left Positive
- BRN: Front Left Negative
- GRN/YEL: Rear Right Positive
- BLU/YEL: Rear Right Negative
- LT BLU: Rear Left Positive
- GRY: Rear Left Negative

Is the resistance as specified?
*See table

NO

Disconnect the 2-P connector of the speed sensor.

Check for resistance between the sensor terminals.

Is the resistance as specified?
*See table

YES

Reconnect the 18-P connector from the control unit.

Check each wire for continuity between the speed sensor harness-side terminals and body ground.

Is there continuity? **

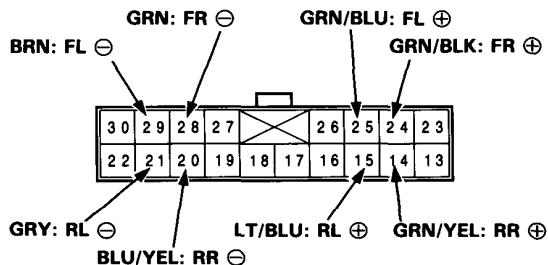
YES

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

* table

Front	700—1100 Ω
2 Door • 4 Door	
2WS	1000—1500 Ω
4WS	600—900 Ω
5 Door	
2WS	600—900 Ω

18-P CONNECTOR



Check for continuity to ground of wire and sensor.

View from control unit terminal side.

Is there continuity?

YES

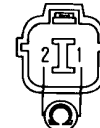
Repair short in sensor wire or faulty speed sensor.

NO

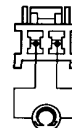
Check for loose control unit connectors. Check that the sensor is installed properly. If necessary, substitute a known-good control unit and recheck.

SENSOR-SIDE CONNECTOR

FRONT

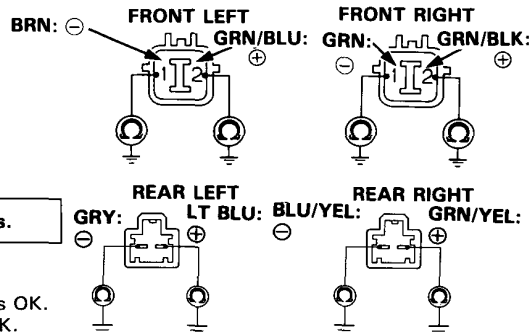


REAR



View from terminal side.

HARNESS-SIDE CONNECTOR



View from terminal side.

(cont'd)

** Positive: Less than 3.3 kΩ is OK.
Negative: Less than 1 Ω is OK.

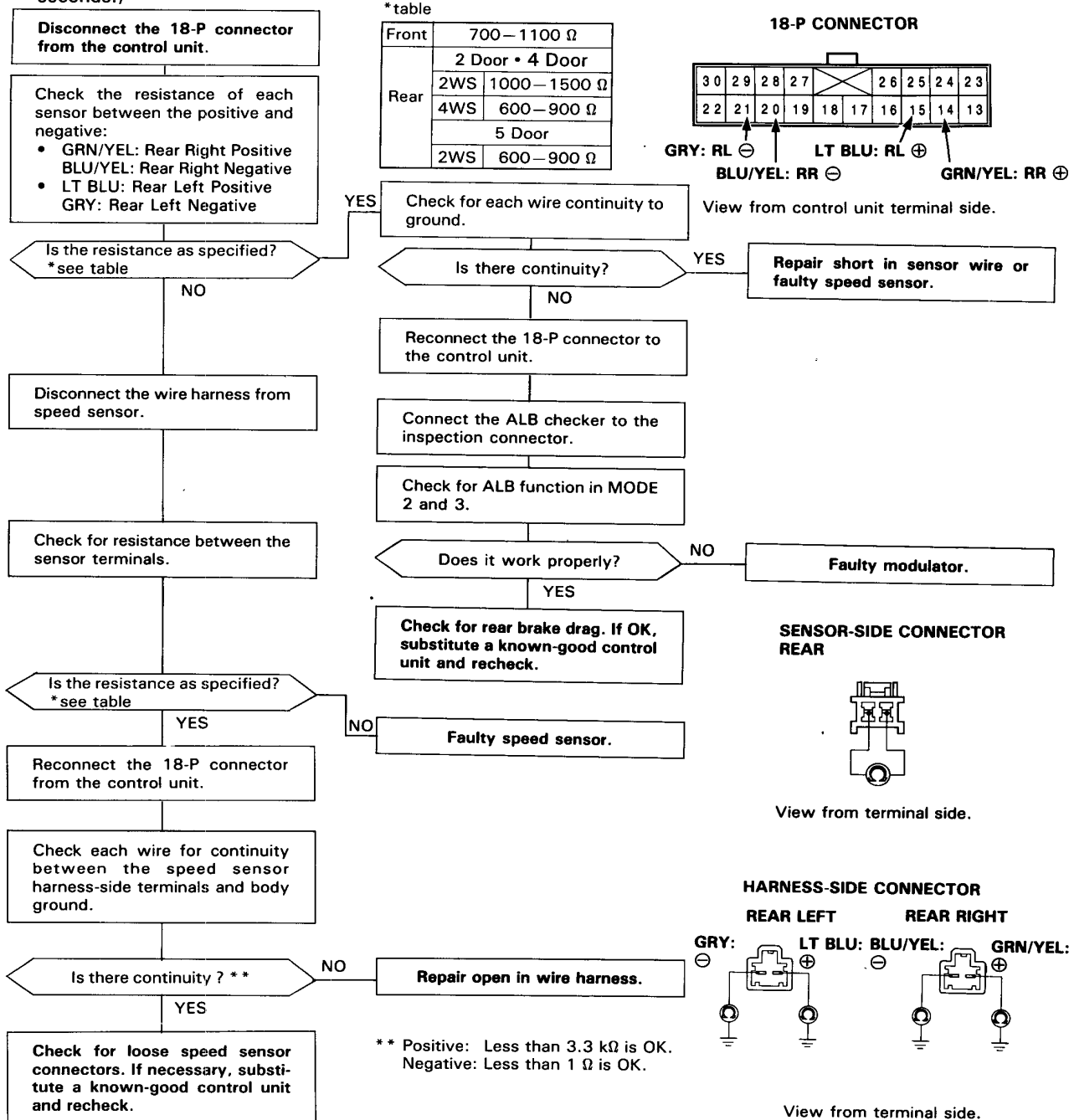
Troubleshooting

Flowcharts (cont'd)

Problem Code 5 to 5-8: Speed Sensor(s)

CAUTION: Use only the digital multimeter to check the system.

NOTE: If a malfunction is detected, this code appears and the fail-safe function is activated. The indicator light comes ON after restarting the engine until the malfunction code is erased (by disconnecting the ABS B2 fuse for 3 seconds.)



Problem Code 6-1: Front Fail-Safe Relay Circuit

CAUTION: Use only the digital multimeter to check the system.

Pre-test steps:

- Check ABS B1 (15 A) FUSE
- Check ABS B3 (15 A) FUSE
- Check for loose under-hood ABS fuse/relay box connectors.

Remove the front fail-safe relay.

Wire colors of the fail-safe relay connector
Front: BRN/BLK, YEL/BLK, YEL/GRN, BLK
Rear: BLU/BLK, YEL/BLK, YEL/GRN, BLK

Check relay function.

Does it work properly?

Faulty front fail-safe relay.

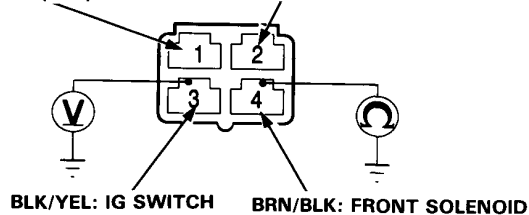
Disconnect the 10-P connector from the solenoid.

Turn the ignition switch ON.

Check for voltage between the fail-safe relay No. 3 (BLK/YEL) terminal and body ground.

YEL/GRN: CONTROL UNIT (FSR)

BLK: GROUND



View from terminal side.

Is there battery voltage?

NO

Repair open in BLK/YEL wire between the fuse and front fail-safe relay.

YES

Turn the ignition switch OFF.

Check for continuity between the fail-safe relay No. 4 (BRN/BLK) terminal and body ground.

Is there continuity?

YES

Repair short in BRN/BLK wire between the solenoid and front fail-safe relay.

NO

Check each wire for continuity between the solenoid terminals and body ground
No. 4 (BRN/BLK): Front Right
No. 6 (BRN/BLU): Front Left

Is there continuity?

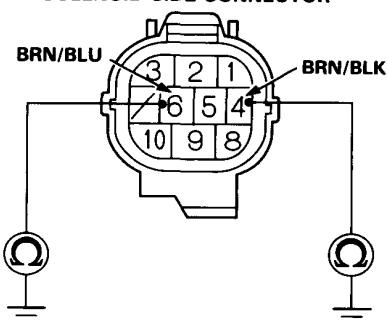
YES

Faulty solenoid (short).

NO

(To page 13-24)

SOLENOID-SIDE CONNECTOR



View from terminal side.

(cont'd)

Troubleshooting

Flowcharts (cont'd)

(From page 13-23)

Disconnect the 18-P and 12-P connector from the control unit.

Check each wire for continuity between the control unit and body ground.

No. 8 (RED/BLK): Front Right Inlet
No. 1 (YEL/BLK): Front Right Outlet
No. 10 (RED/BLU): Front Left Inlet
No. 3 (YEL/BLU): Front Left Outlet

Is there continuity?

YES

NO

Disconnect the rear fail-safe relay connector.

Check for continuity between the No. 17 (YEL/GRN) terminal and body ground.

Is there continuity?

YES

NO

Reinstall the front fail-safe relay.

Turn the ignition switch ON.

Check for voltage between the control unit connector No. 17 (YEL/GRN) terminal and body ground.

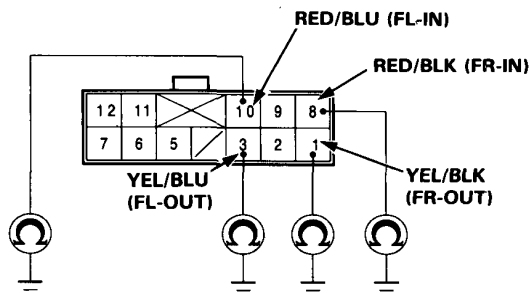
Is there battery voltage?

NO

YES

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

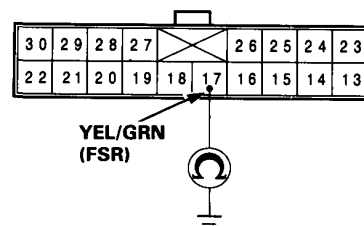
12-P CONNECTOR



View from control unit terminal side.

Repair short in wire between the solenoid and control unit:
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

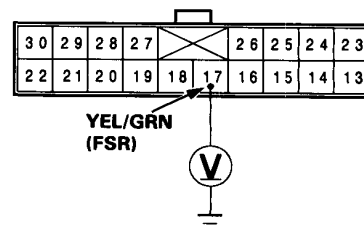
18-P CONNECTOR



View from control unit terminal side.

Repair short in YEL/GRN wire between the control unit and front fail-safe relay.

18-P CONNECTOR

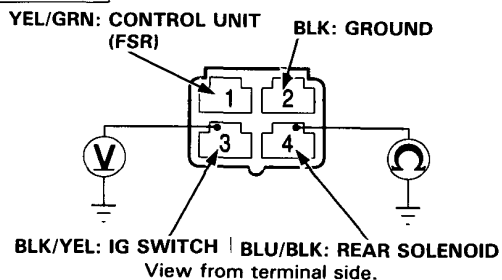
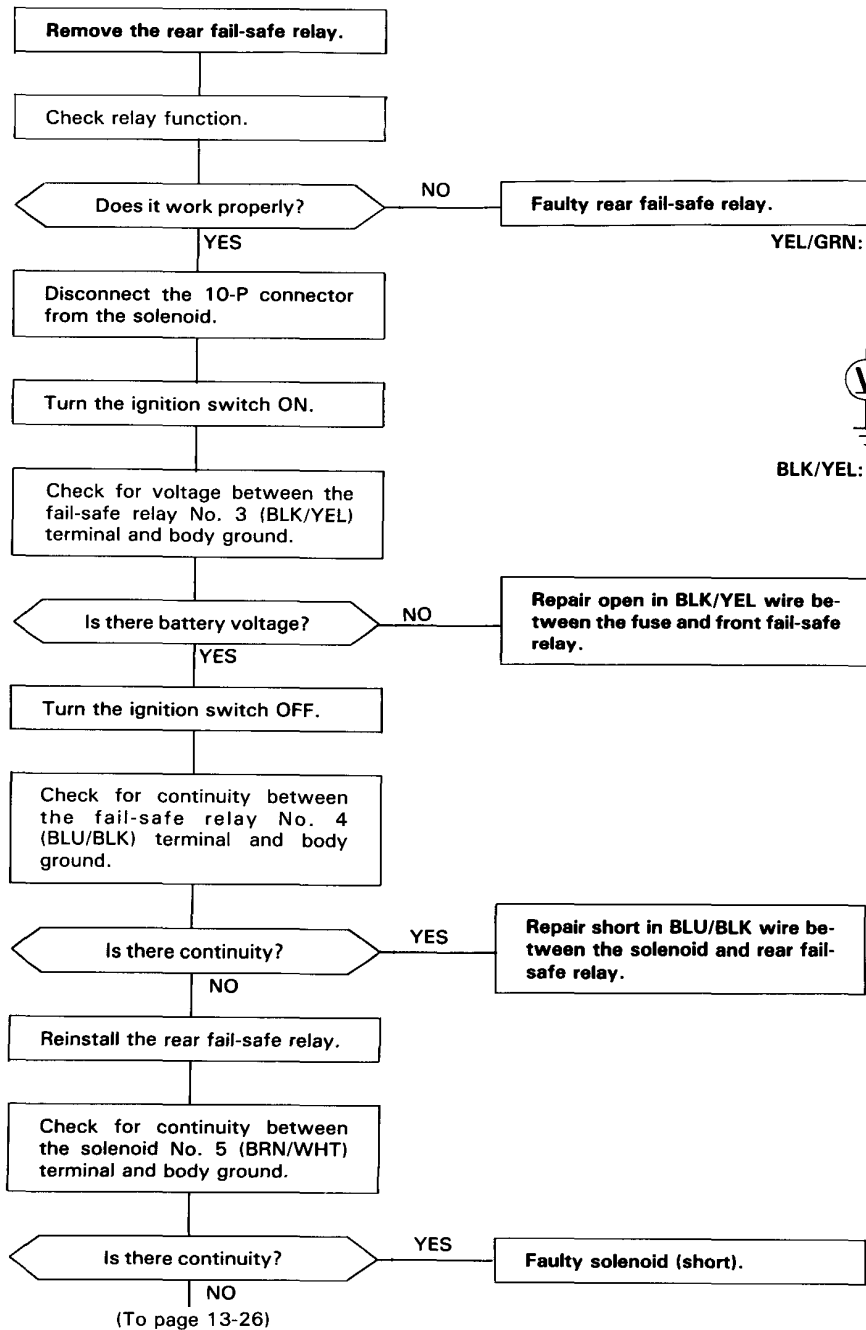


View from control unit terminal side.

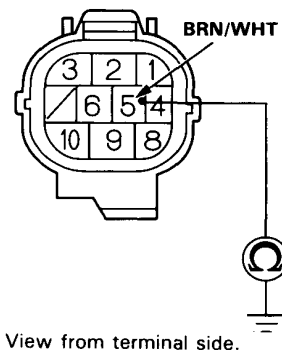
Repair open in YEL/GRN wire between the front fail-safe relay and control unit.

Problem Code 6-4: Rear Fail-Safe Relay Circuit

CAUTION: Use only digital multimeter to check the system.



SOLENOID-SIDE CONNECTOR

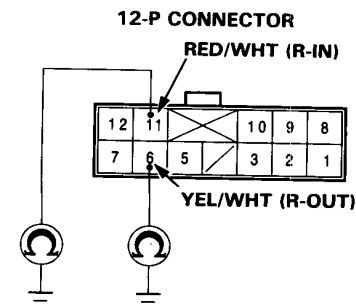
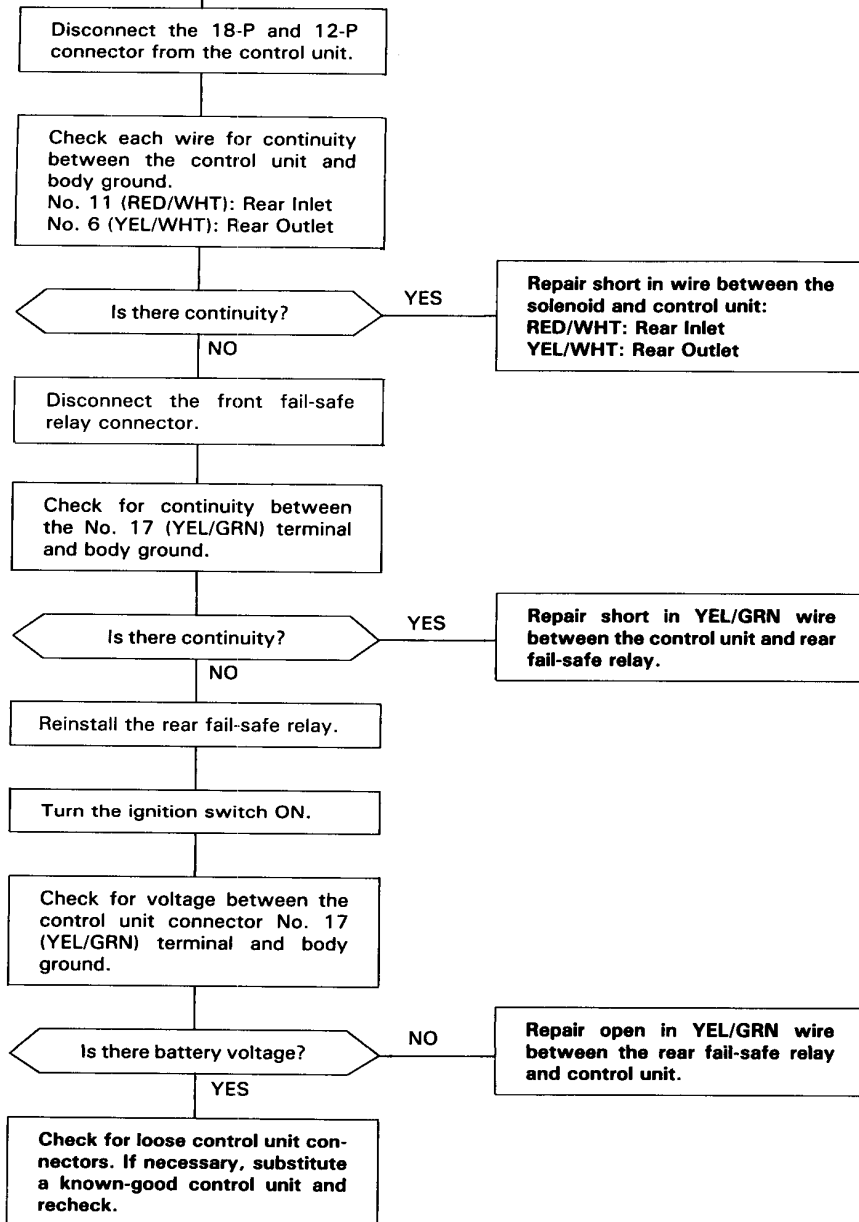


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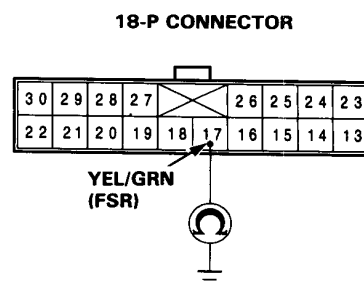
Troubleshooting

Flowcharts (cont'd)

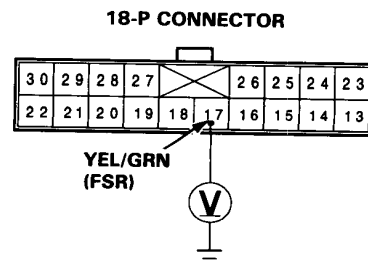
(From page 13-25)



View from control unit terminal side.



View from control unit terminal side.



View from control unit terminal side.

Problem code 7-1 and 7-2 Front Solenoid Related Problem

CAUTION: Use only the digital multimeter to check the system.

Pre-test steps:

- Check ABS B1 (15 A) FUSE
- Check ABS B3 (15 A) FUSE
- Check for loose under-hood ABS fuse/relay box connectors.

Disconnect the 10-P connector from the solenoids.

Check for resistance between the solenoid terminals:
No. 1 (RED/BLK) and No. 4 (BRN/BLK): Front Right Inlet
No. 3 (RED/BLU) and No. 6 (BRN/BLU): Front Left Inlet

Is there 1-3Ω?

NO

Faulty solenoid.

YES

Check for resistance between the solenoid terminals:
No. 8 (YEL/BLK) and No. 4 (BRN/BLK): Front Right Outlet
No. 10 (YEL/BLU) and No. 6 (BRN/BLU): Front Left Outlet

Is there 1-3Ω?

NO

Faulty solenoid.

YES

Disconnect the 12-P connector from control unit.

Check each wire for continuity between the control unit and front solenoid:
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

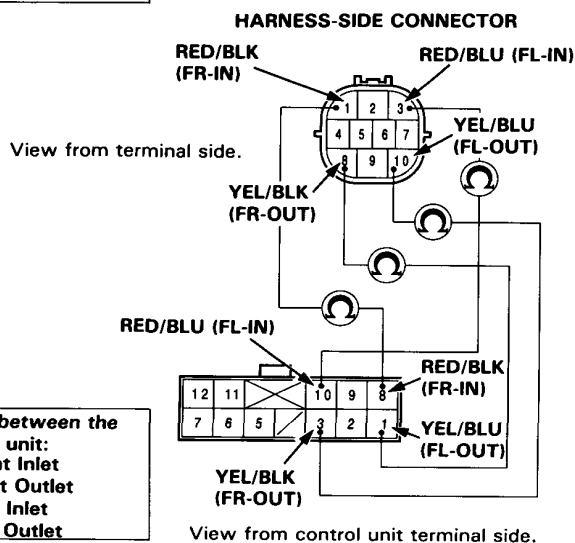
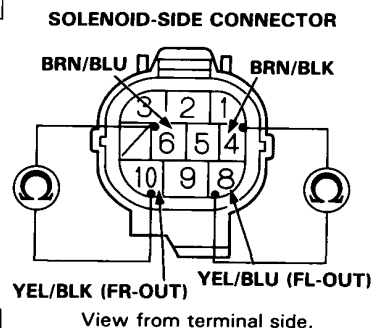
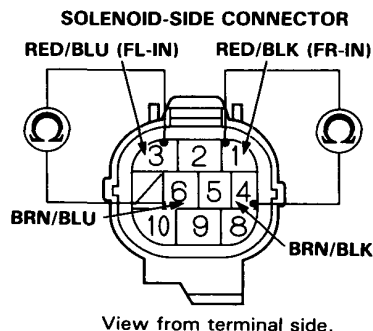
Is there continuity?

NO

Repair open in wire between the solenoid and control unit:
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

YES

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(cont'd)

Troubleshooting

Flowcharts (cont'd)

(From page 13-27)

Check each wire for continuity between the control unit and body ground:

No. 8 (RED/BLK): Front Right Inlet
No. 1 (YEL/BLK): Front Right Outlet
No. 10 (RED/BLU): Front Left Inlet
No. 3 (YEL/BLU): Front Left Outlet

Is there continuity?

YES

NO

Remove the front fail-safe relay.

Check for relay function.

Does it work properly?

NO

YES

Check for continuity between the fail-safe relay connector No. 2 (BLK) terminal and body ground.

Is there continuity?

NO

YES

Check BRN/BLK wire for continuity between the solenoids and front fail-safe relay.

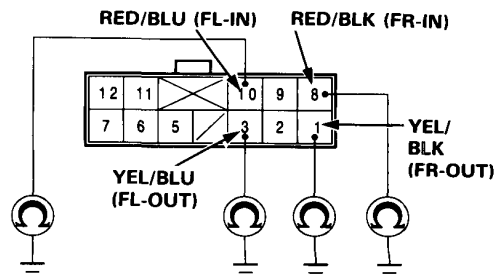
Is there continuity?

NO

YES

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

12-P CONNECTOR

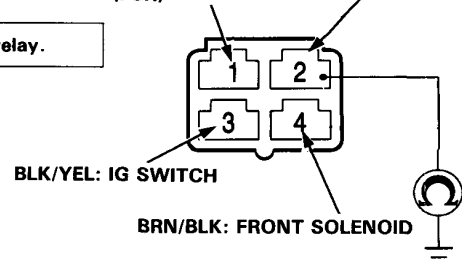


View from control unit terminal side.

Repair short in wire between the solenoid and control unit:
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Right Outlet

YEL/GRN: CONTROL UNIT (FSR)

BLK: GROUND



View from terminal side.

Repair open in BLK wire between the fail-safe relay and ground or poor ground (G503).

HARNESS-SIDE CONNECTOR

YEL/GRN: CONTROL UNIT (FSR)

BLK: GROUND

BLK/YEL: IG SWITCH

BRN/BLK: FRONT SOLENOID

View from terminal side.

Repair open in BRN/BLK wire between the solenoids and front fail-safe relay.

Problem Code 7-4: Rear Solenoid Problem

CAUTION: Use only the digital multimeter to check the system.

Disconnect the 10-P connector from the solenoids.

Check for resistance between the solenoid terminals:
No.2 (RED/WHT) and No.5 (BRN/WHT): Rear Inlet
No.9 (YEL/WHT) and No.5 (BRN/WHT): Rear Outlet

Is there 1-3Ω?

NO

Faulty solenoid.

YES

Disconnect the 12-P connector from control unit.

Check each wire for continuity between the control unit and rear solenoid:
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

Is there continuity?

NO

Repair open in wire between the solenoid and control unit:
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

YES

Check each wire for continuity between the control unit and body ground:
No.11 (RED/WHT): Rear Inlet
No.6 (YEL/WHT): Rear Outlet

Is there continuity?

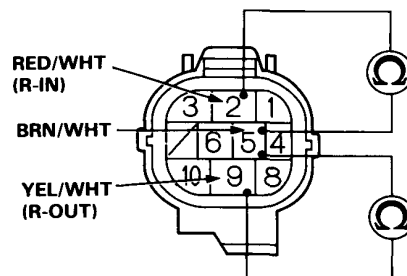
YES

Repair short in wire between the solenoid and control unit:
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

NO

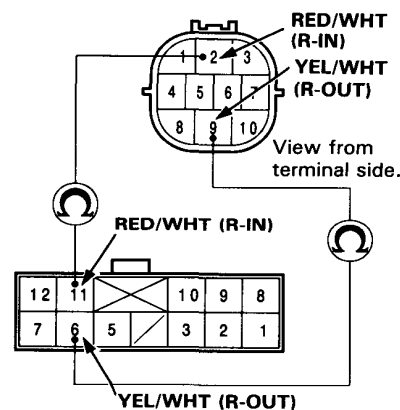
(To page 13-30)

SOLENOID-SIDE CONNECTOR



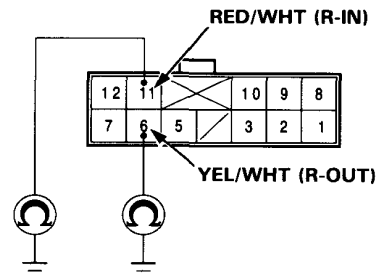
View from terminal side.

HARNESS-SIDE CONNECTOR



View from control unit terminal side.

12-P CONNECTOR



View from control unit terminal side.

(cont'd)

Troubleshooting

Flowcharts (cont'd)

(From page 13-29)

Remove the rear fail-safe relay.

Check for relay function.

Does it work properly?

NO

Faulty rear fail-safe relay.

YES

Check for continuity between the fail-safe relay connector No. 3 (BLK) terminal and body ground.

Is there continuity?

NO

Repair open in BLK wire between the fail-safe relay and ground or poor ground (G503).

YES

Check BLU/BLK wire for continuity between the solenoid and rear fail-safe relay.

Is there continuity?

NO

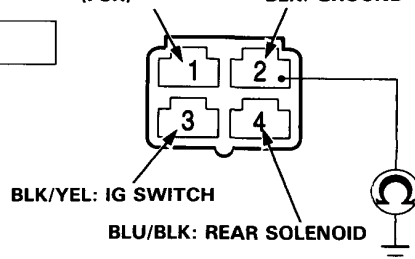
Repair open in BLU/BLK wire between the solenoid and rear fail-safe relay.

YES

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

YEL/GRN: CONTROL UNIT (FSR)

BLK: GROUND



View from terminal side.

HARNESS-SIDE CONNECTOR

BLU/BLK

YEL/GRN: CONTROL UNIT (FSR)

View from terminal side.

BLK: GROUND

BLK/YEL: IG SWITCH

BLU/BLK: REAR SOLENOID