

Troubleshooting

Flow Chart

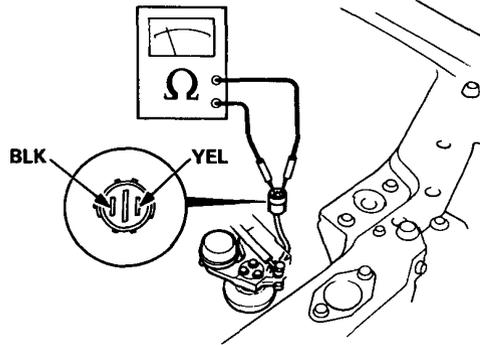
Problem Code 1: Hydraulic Controlled Components.

NOTE: The LED does not blink when the following failures occur.

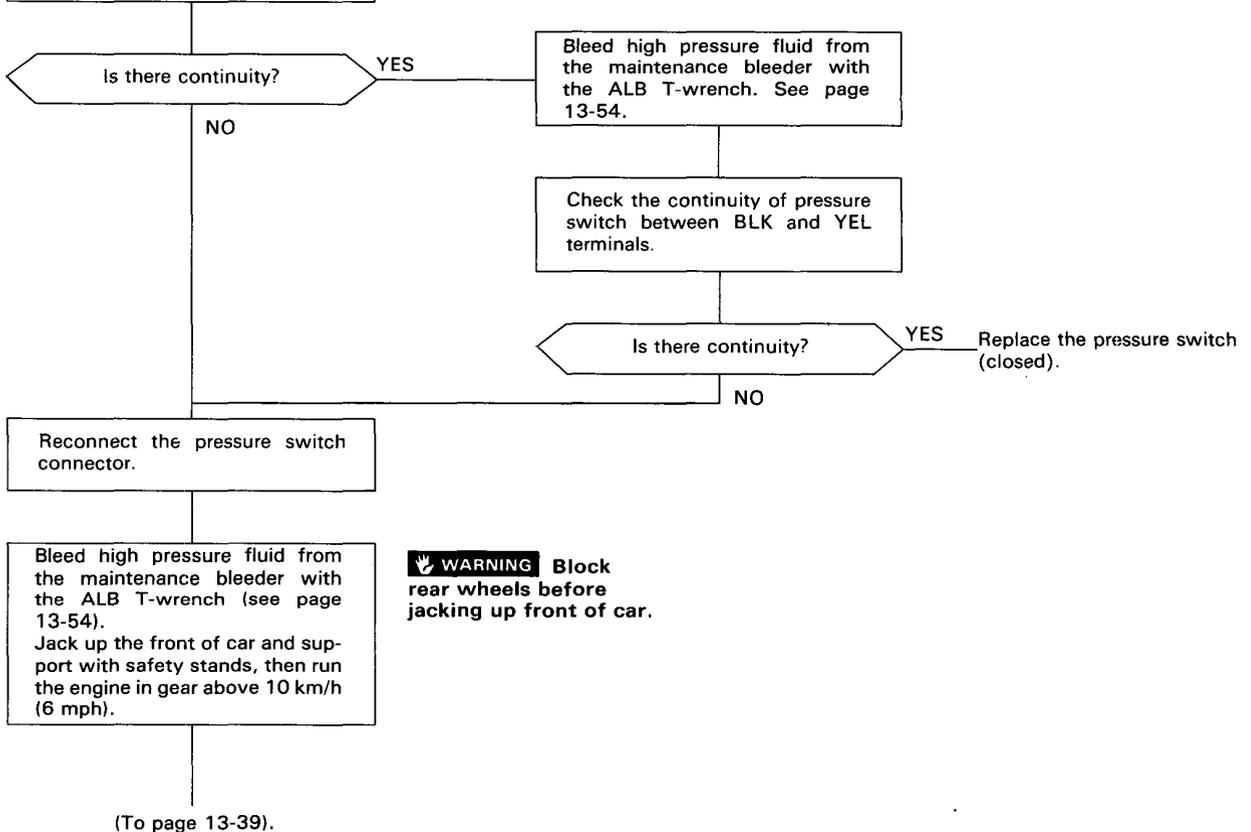
- The contact points of the motor relay remain closed (The motor runs continuously even after the ignition key is removed).
- YEL/RED lead is shorted or the control unit is internally shorted (The motor stops when the ignition switch is turned off).

Pre test steps:

- Check No. 40 Fuse.
- Check all brake system hoses and pipes (low and high pressure) for signs of leaking, bending or kinking.
- Check reservoir fluid level, and if necessary, fill to the MAX level.



Disconnect the pressure switch connector and check the continuity between BLK and YEL terminals.



WARNING Block rear wheels before jacking up front of car.



(From page 13-38)

Does the pump motor run? YES

(To page 13-40)

NO

Disconnect the 21P connector from the control unit.

Check for continuity between the YEL terminal and body around.

Is there continuity? YES

Repair short in YEL wire between the control unit and pressure switch.

NO

Connect the YEL/RED terminal to body ground using a jumper wire. Turn the ignition switch ON.

Does the pump motor run? YES

Faulty the control unit.

NO

Remove the pump motor relay and check the pump motor relay (page 13-66).

Does it work properly? NO

Faulty the pump motor relay.

YES

Connect the WHT/BLU and WHT terminals using a jumper wire.

Does the pump motor run? NO

(To page 13-41)

YES

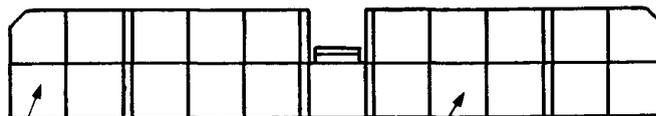
Check voltage between the YEL/BLK (+) and body ground (-).

Is there battery voltage? NO

Repair open in YEL/BLK wire between the No. 9 fuse and pump motor relay.

YES

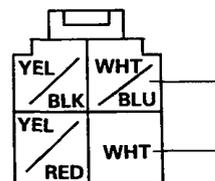
Repair open in YEL/RED wire between the control unit and pump motor relay.



YEL/RED

View from wire side.

YEL



View from terminal side.

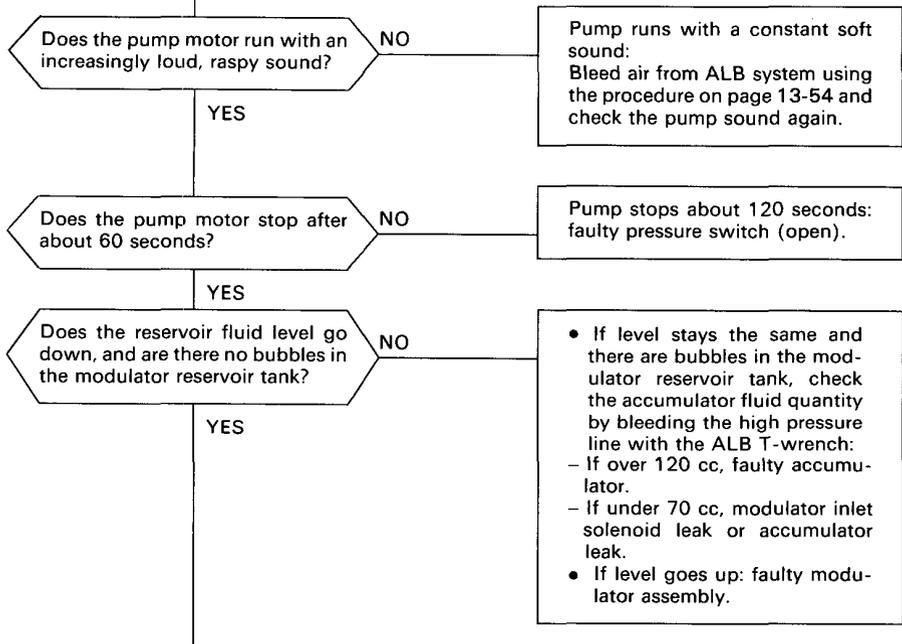
CAUTION: If the motor runs disconnect the jumper wire immediately.

(cont'd)

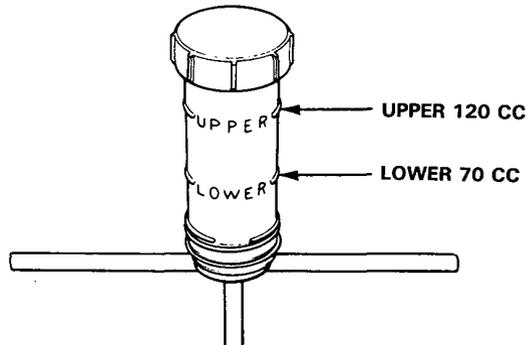
Troubleshooting

Flow Chart (cont'd)

(From page 13-39)



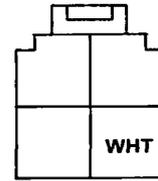
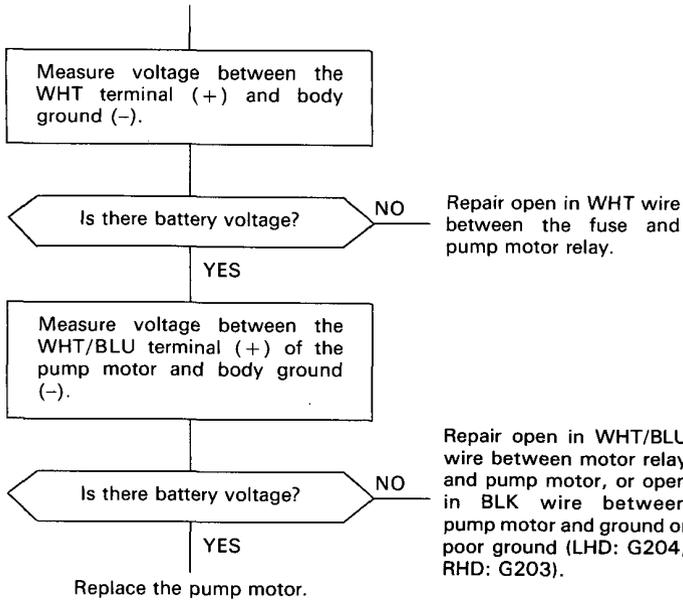
System is OK; recheck pump motor, to confirm no intermittent problem.



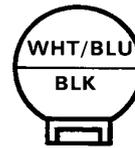
NOTE: The fluid enters the reservoir under pressure; wait 1 or 2 minutes for air bubbles to disappear and level to stabilize.



(From page 13-39)



View from terminal side.



View from terminal side.

Problem code2: 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, remove the No. 28 fuse for three seconds to clear the control unit's memory, then test drive the car.

If the **[ALB]** warning light and LED stay off, the probability is that the car was driving 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 lead is shorted between the **[BRAKE]** warning light and parking brake switch.
- GRN/RED lead is shorted between the **[BRAKE]** warning light and brake fluid level switch.
- The **[BRAKE]** warning light is blown.
- GRN/RED has an open between the **[BRAKE]** warning light and parking brake.
- GRN/RED has an open between the parking brake switch and control unit.

(cont'd)

Troubleshooting

Flow Chart (cont'd)

Problem code 4-4 to 4-12: Rear Speed Sensor

Disconnect wire harness from speed sensor.

Check for resistance between sensor terminals.

Is there 500 — 1,000 Ω ?

NO

Faulty the speed sensor.

YES

Disconnect the 21P connector from the control unit.

Check the sensor wire for continuity between the control unit and each speed sensor:
 BLU/YEL: Rear Right Negative
 GRY: Rear Left Negative
 GRN/YEL: Rear Right Positive
 LT BLU: Rear Left Positive

Is there continuity?

NO

Repair open in the sensor wire:
 BLU/YEL: Rear Right Negative
 GRY: Rear Left Negative
 GRN/YEL: Rear Right Positive
 LT BLU: Rear Left Positive

YES

Reconnect the 21P connector to the control unit and 2P connectors to the speed sensors.

Connect ALB checker to inspection connector.

Check ALB function in MODE 2 and 3.

Does it work properly?

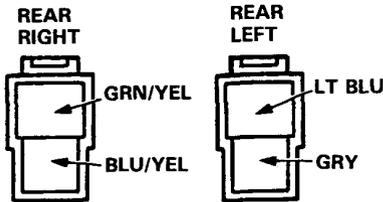
NO

Faulty the modulator.

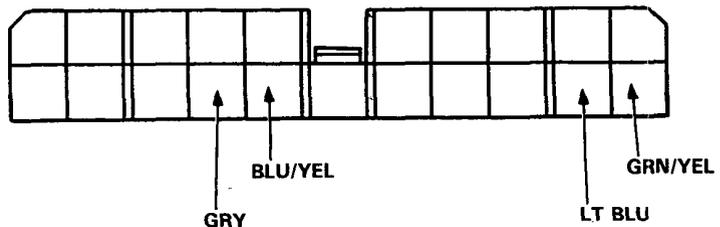
YES

Faulty the control unit.

SENSOR SIDE CONNECTOR



View from terminal side.



View from wire side.



Problem Code 5-1 to 7-8: Speed Sensor

Disconnect wire harness from speed sensor.

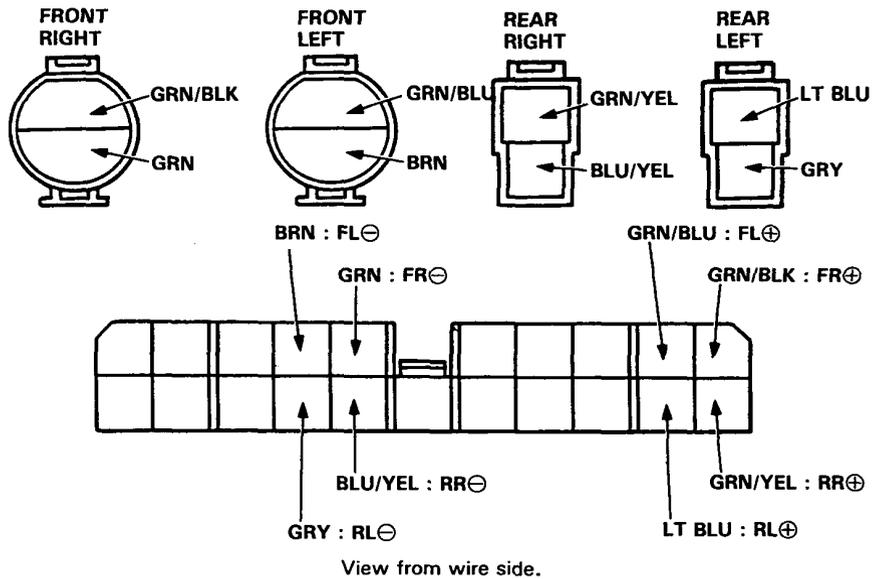
Check for resistance between sensor terminals.

Is there 500—1000 Ω? **NO** — Faulty the speed sensor.

YES

Disconnect the 21P connector from the control unit.

Check the each wires for continuity between the sensor and control unit:
GRN/BLK: Front Right Positive
GRN/BLU: Front Left Positive
GRN/YEL: Rear Right Positive
LT BLU: Rear Left Positive
GRN: Front Right Negative
BRN: Front Left Negative
BLU/YEL: Rear Right Negative
GRY: Rear Left Negative



Is there continuity? **NO** — Repair open in sensor wire:

YES

Check pulser air gap (page 13-68).

Is the air gap OK? **NO** — Repair air gap or replace the pulser rotor and/or speed sensor

YES

Faulty the control unit.

(cont'd)

Troubleshooting

Flow Chart (cont'd)

Problem Code 8-1 to 8-12: Front Solenoid Related Problem

NOTE: Problem Code 8-2 or 8-8, also perform troubleshooting of Problem Code 5-1 to 7-8 (page 13-43).

Disconnect wire harness from front solenoids.

Check for resistance between RED and BLK terminals of front solenoid.

Is there 1-3 Ω ?

NO Faulty solenoid.

YES

Check for resistance between YEL and BLK terminals of front solenoid.

Is there 1-3 Ω ?

NO Faulty solenoid.

YES

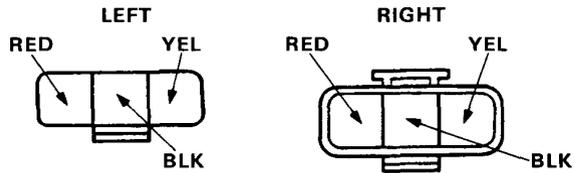
Disconnect the 21P and 5P connectors from the control unit.

Check for continuity between 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.

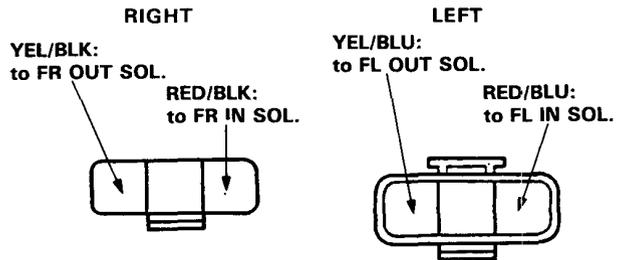
Is there continuity?

NO
 Repair open in wire:
 RED/BLK: Front Right Inlet
 YEL/BLK: Front Right Outlet
 RED/BLU: Front Left Inlet
 YEL/BLU: Front Left Outlet

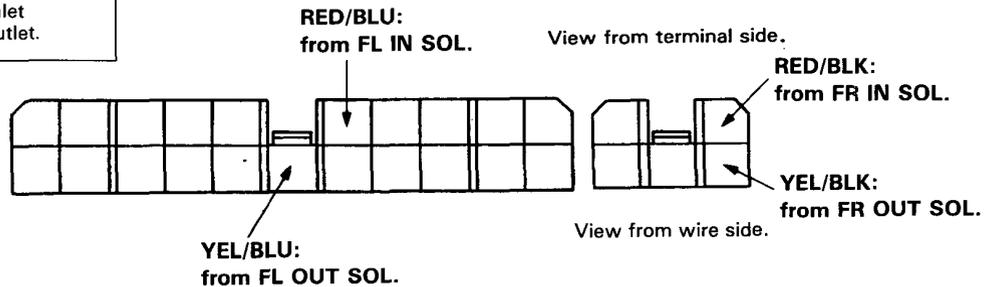
Faulty the control unit.



View from terminal side.



View from terminal side.



View from wire side.

View from wire side.



Problem 8-15: Front Fail Safe Relay Circuit

Remove front fail safe relay.

Check relay function (page 13-66).

Does it work properly? **NO** Faulty the front fail safe relay.

YES

Check for continuity between BLK lead and body ground.

Is there continuity? **NO** Repair open in BLK wire between the fail safe relay and ground or poor ground (LHD: G202, RHD: G203).

YES

Turn ignition switch ON.

Check for voltage between YEL/BLK lead (+) and body ground (-).

Is battery voltage available? **NO** Repair open in YEL/BLK wire between the fail safe relay and No. 9 fuse.

YES

Turn ignition switch OFF.

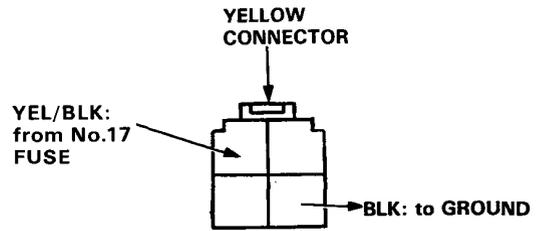
Disconnect the 3P connectors from the front solenoids.

Check for continuity in BRN/BLK lead between fail safe relay and solenoids.

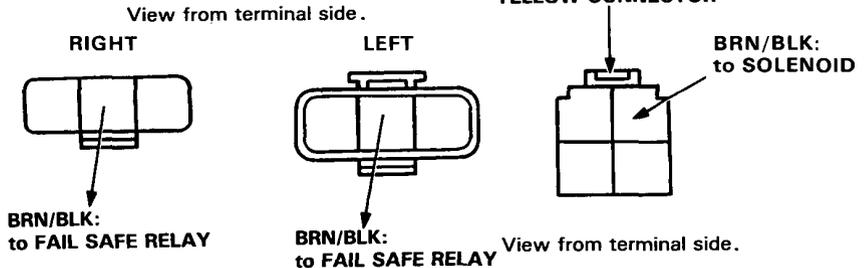
Is there continuity? **NO** Repair open in BRN/BLK wire between the solenoids and fail safe relay.

YES

(To page 13-46)



View from terminal side.



View from terminal side.

(cont'd)

Troubleshooting

Flow Chart (cont'd)

(From page 13-45)

Check for resistance between RED and BLK terminals of front solenoid.

Is there 1-3 Ω ? NO

Faulty solenoid.

YES

Check for resistance between YEL and BLK terminals of front solenoid.

Is there 1-3 Ω ? NO

Faulty solenoid.

YES

Disconnect the 21P and 5P connectors from the control unit.

Check for continuity between 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.

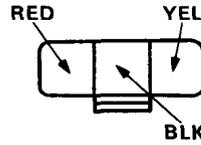
Is there continuity? NO

Repair open in wire:
 RED/BLK: Front Right Inlet
 YEL/BLK: Front Right Outlet
 RED/BLU: Front Left Inlet
 YEL/BLU: Front Left Outlet

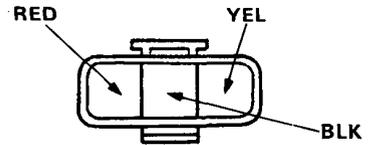
YES

Faulty the control unit.

LEFT

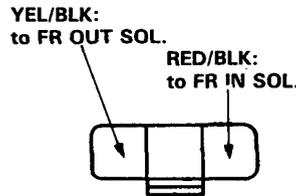


RIGHT

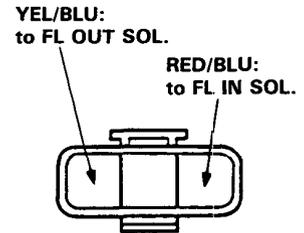


View from terminal side.

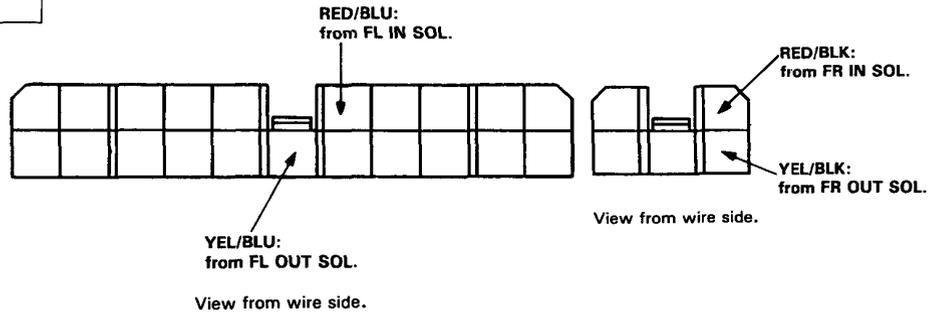
RIGHT



LEFT



View from terminal side.



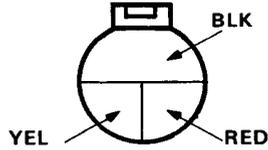


Problem Code 9 or 10: Rear Solenoid Related Problem

NOTE: Problem Code 10, also perform troubleshooting of Problem Code 5-1 to 7-8 (page 13-43).

Disconnect wire harness from rear solenoid.

Check for resistance between RED and BLK terminals of rear solenoid.



View from terminal side.

Is there 1-3 Ω ?

NO Faulty solenoid.

YES

Check for resistance between YEL and BLK terminals of rear solenoid.

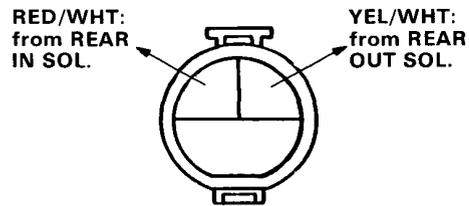
Is there 1-3 Ω ?

NO Faulty solenoid.

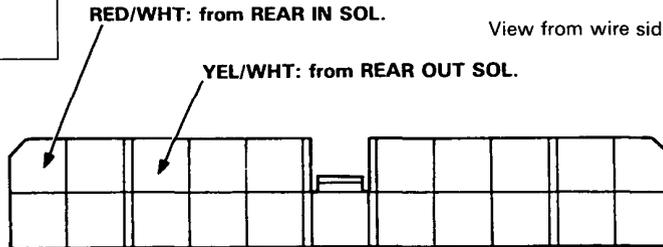
YES

Disconnect the 21P connector from the control unit.

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



View from wire side.



View from wire side.

Is there continuity?

NO Repair open in the wire between the rear solenoid and control unit
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

YES

Faulty the control unit.

(cont'd)

Troubleshooting

Flow Chart

Problem Code 11: Rear Fail Safe Relay Circuit

NOTE: Also perform Troubleshooting of Problem Code 9 or 10 (page 13-47).

Remove rear fail safe relay.

Check relay function (page 13-66).

Does it work properly? **NO** Faulty the relay.

YES

Check for continuity between BLK lead of wire harness and body ground.

Is there continuity? **NO** Repair open in BLK wire between the relay and ground or poor ground (LHD: G202, RHD: G203).

YES

Turn ignition switch ON.

Check for voltage between YEL/BLK lead (+) of wire harness and body ground (-).

Is battery voltage available? **NO** Repair open in YEL/BLK wire between the relay and No. 9 fuse.

YES

Turn ignition switch off.

Disconnect the 3P connector (PNK) from the rear solenoid.

Check for continuity in BLU/BLK lead between fail safe relay and solenoid.

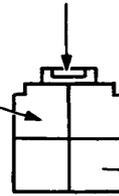
Is there continuity? **NO** Repair open in BLU/BLK wire between the relay and solenoid.

YES

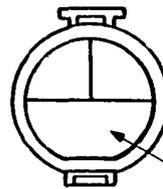
(To page 13-49)

PINK CONNECTOR

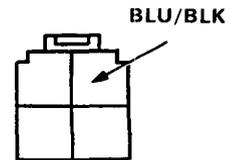
YEL/BLK:
from No. 11 FUSE



View from terminal side.



BLU/BLK



View from terminal side.



(From page 13-48)

Disconnect the 21P connector from the control unit.

Check for continuity in YEL/GRN lead between fail safe relay and control unit.

Is there continuity? NO

Repair open in YEL/GRN wire between the relay and control unit.

YES

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

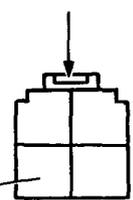
Is there continuity? NO

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

YES

Faulty the control unit.

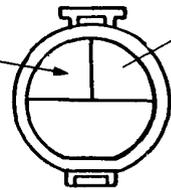
PINK CONNECTOR



YEL/GRN: to CONTROL UNIT

View from terminal side.

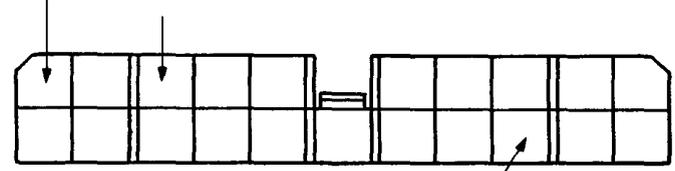
YEL/WHT: to REAR OUT SOL.
RED/WHT: to REAR IN SOL.



View from terminal side.

RED/WHT: from REAR IN SOL.

YEL/WHT: from REAR OUT SOL.



YEL/GRN: from FAIL SAFE RELAY

View from wire side.

(cont'd)

Troubleshooting

Flow Chart (cont'd)

Problem Code 12-1, 12-2, 12-4 or 12-8: Front Solenoid

Disconnect wire harness from front solenoids.

Check for resistance between RED and BLK terminals of front solenoid.

Is there 1-3 Ω ? **NO** Faulty solenoid.

YES

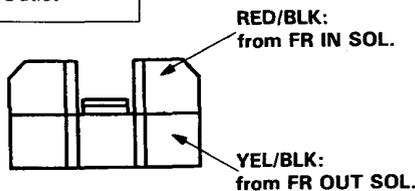
Check for resistance between YEL and BLK terminals of front solenoid.

Is there 1-3 Ω ? **NO** Faulty solenoid.

YES

Disconnect the 21P and 5P connectors from the control unit.

Check for continuity between wire harness and body ground.
 RED/BLK: front Right Inlet
 YEL/BLK: Front Right Outlet
 RED/BLU: Front Left Inlet
 YEL/BLU: Front Left Outlet



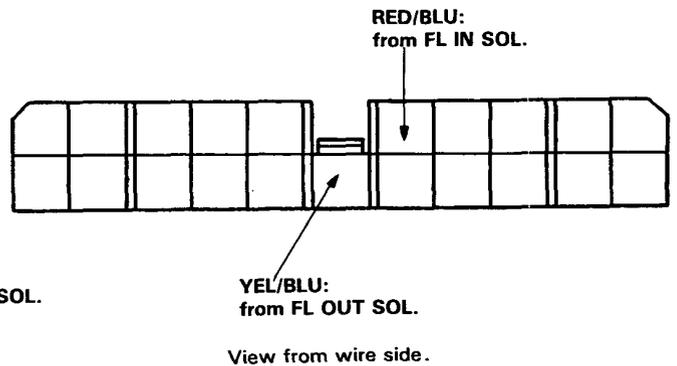
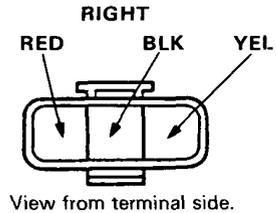
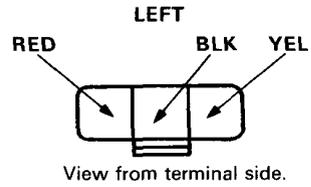
View from wire side.

Is there continuity? **YES**

Repair short in wire between control unit and front solenoids.
 RED/BLK: Front Right Inlet
 RED/BLU: Front Left Inlet
 YEL/BLK: Front Right Outlet
 YEL/BLU: Front Left Outlet

NO

Faulty the control unit.



RIGHT

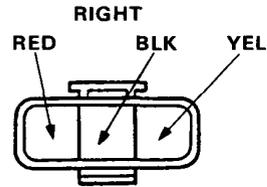
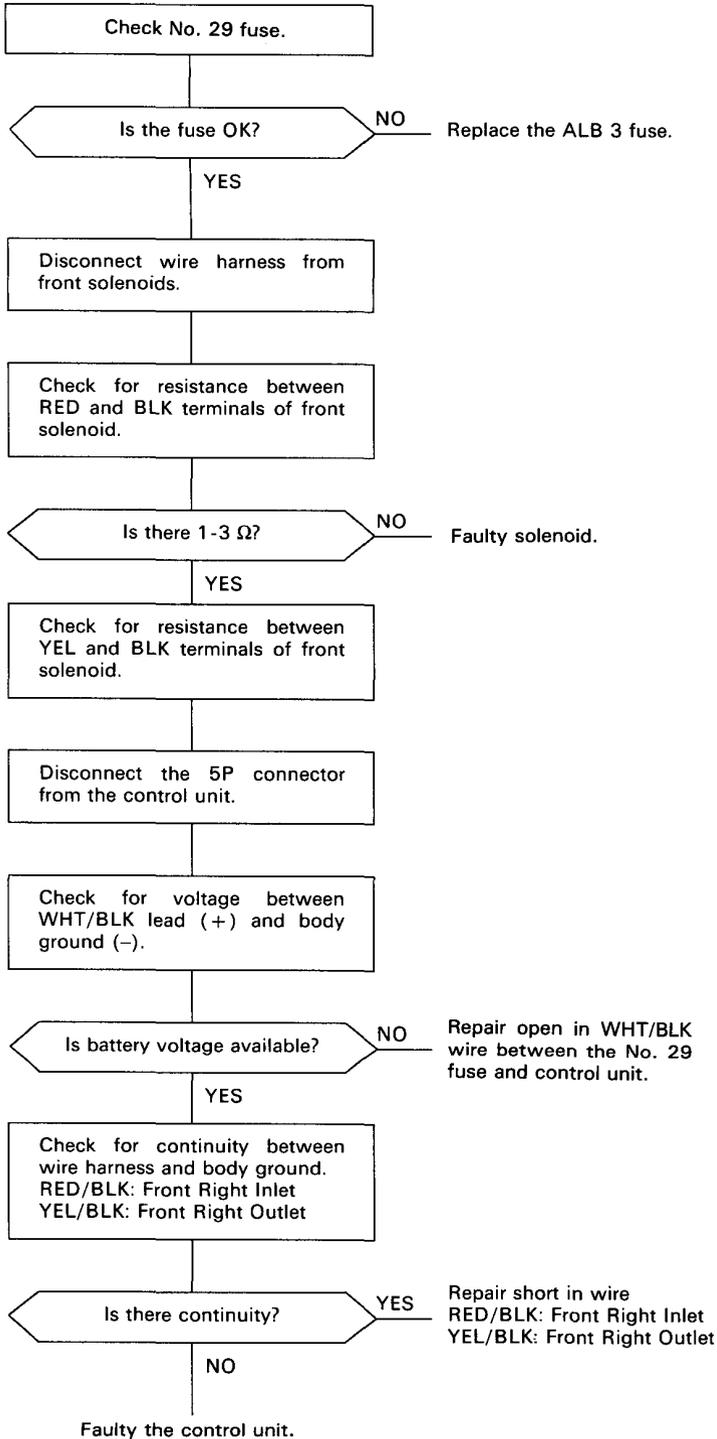
LEFT



View from terminal side.

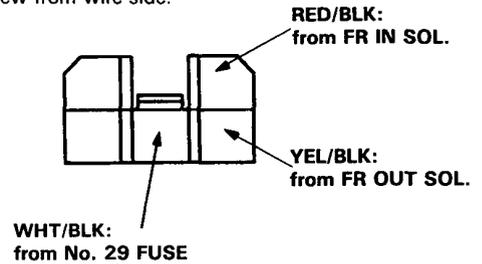


Problem Code 12-3: Front Right Solenoid and/or Power Supply



View from terminal side.

View from wire side.

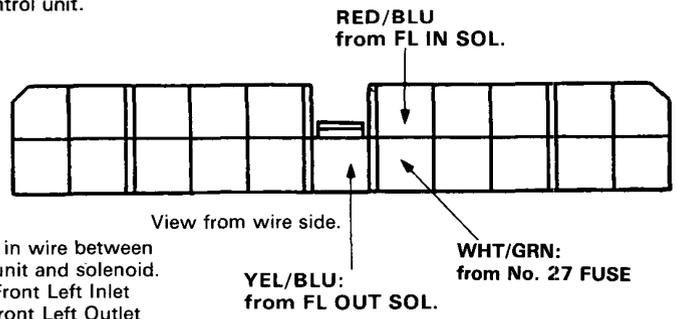
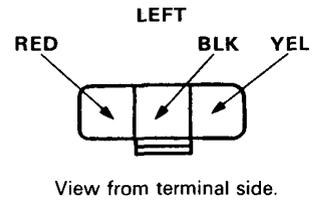
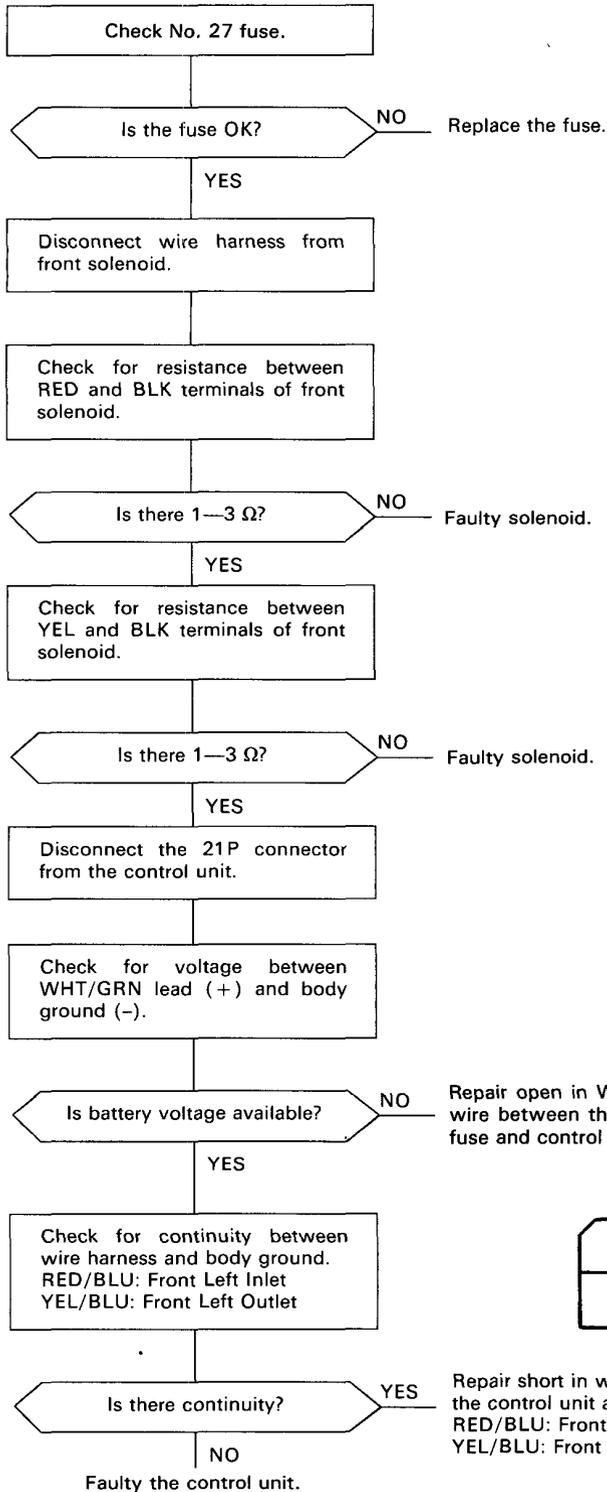


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Troubleshooting

Flow Chart

Problem Code 12-12: Front left Solenoid and/or Power Supply Problem





Problem Code 13 or 14: Rear Solenoid Related Problem

Disconnect wire harness from rear solenoid.

Check for resistance between RED and BLK terminals of rear solenoid.

Is there 1—3 Ω ? NO

Faulty solenoid.

YES

Check for resistance between YEL and BLK terminals of rear solenoid.

Is there 1—3 Ω ? NO

Faulty solenoid.

YES

Disconnect the 21P connector from the control unit.

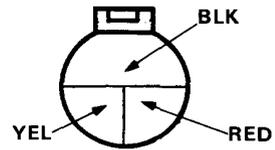
Check for continuity between wire harness and body ground.
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

Is there continuity? YES

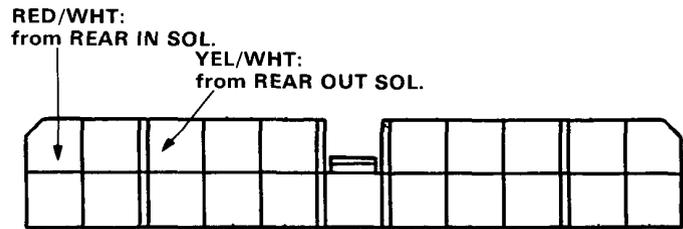
Repair short in wire between the solenoid and control unit.
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

Faulty the control unit.

NO



View from Terminal side.



View from wire side.