

# Troubleshooting

## Flowchart (cont'd)

(From page 13-51)

Does the pump motor run? YES (To page 13-53)

NO

Disconnect the 18P connector from the control unit.

Check for continuity between the YEL terminal and body ground.

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 control unit.

NO

Remove the pump motor relay and check the pump motor relay (page 13-80).

Connect the motor side ⊕ terminal of the pump motor relay and its output terminal with jumper wire.

Does the pump motor run?

NO

(To page 19-54)

YES

Check voltage between the pump motor relay motor side ⊕ terminal and body ground (-).

Is there battery voltage?

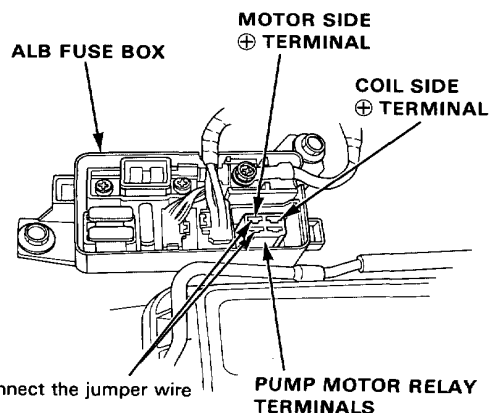
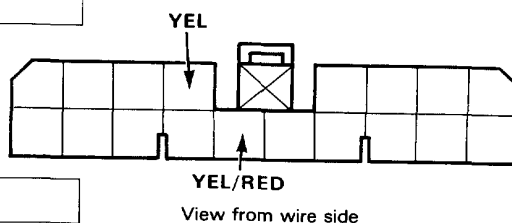
NO

Repair open in YEL/BLK wire between the No.8 (7.5 A) fuse and pump motor relay.

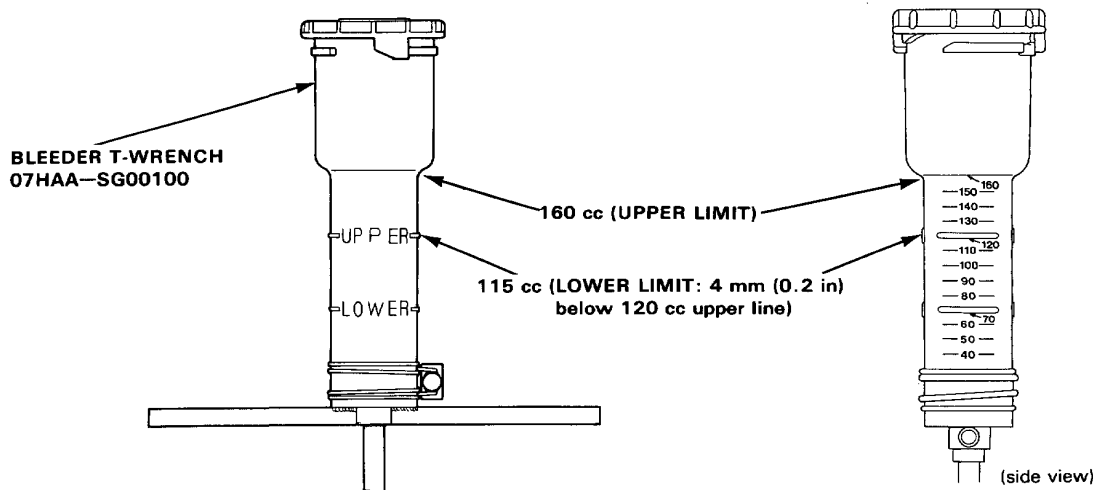
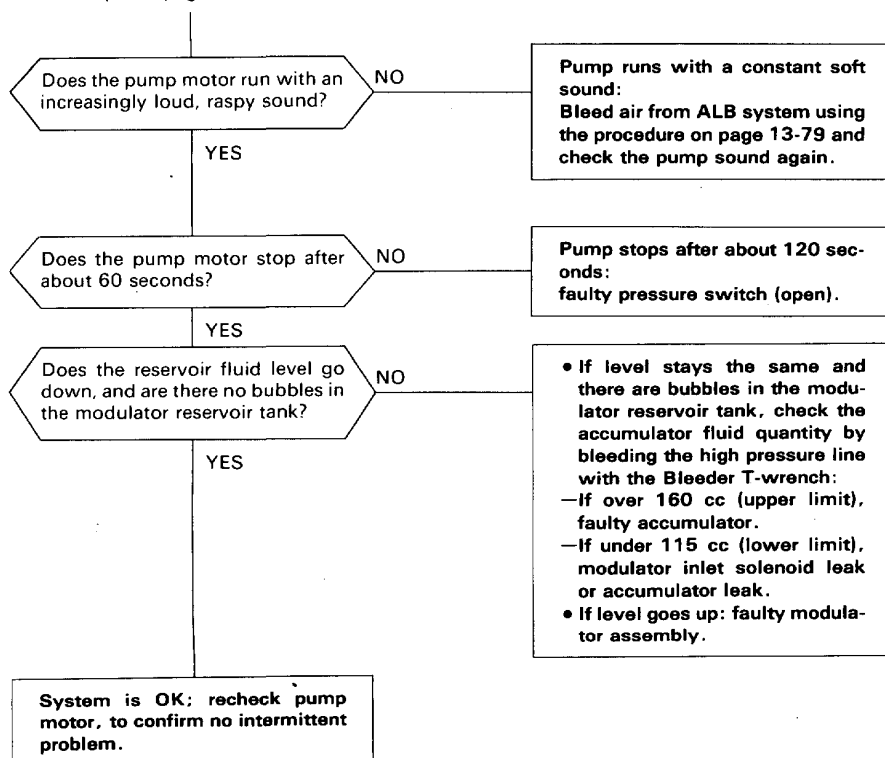
YES

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

CONTROL UNIT: 18P Connector



(From page 13-52)



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

(cont'd)

# Troubleshooting

## Flowchart (cont'd)

(From page 13-53)

Measure voltage between the WHT/BLU terminal (+) of the pump motor and body ground (-).

Is there battery voltage?

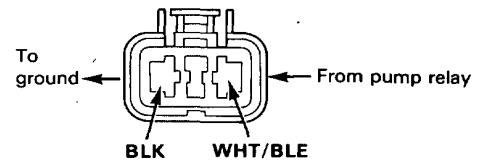
NO

Repair open in WHT/BLU wire between motor relay and pump motor, or open in BLK wire between pump motor and ground or poor ground.

YES

Faulty pump motor.

**PUMP MOTOR HARNESS  
SIDE CONNECTOR**



View from terminal side

### Problem code 2: 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 ALB 2 fuse for three seconds to clear the control unit's memory, then test drive the car.

If the dash warning light and LED stay 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 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.

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

NOTE: Control unit will only indicate the higher number sub-code.

Ignition switch: OFF

Disconnect wire harness from speed sensor.

Check for resistance between sensor terminals.

Is there 500 – 1,000  $\Omega$ ?

NO

Faulty speed sensor.

YES

Disconnect the 18P connector from the control unit.

Check each wire 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:

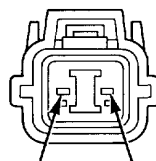
GRN/BLK: Front Right Positive    GRN: Front Right Negative  
GRN/BLU: Front Left Positive    BRN: Front Left Negative  
GRN/YEL: Rear Right Positive    BLU/YEL: Rear Right Negative  
LT BLU: Rear Left Positive    GRY: Rear Left Negative

Faulty control unit

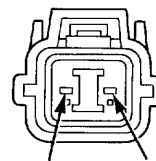
## **SENSOR SIDE CONNECTOR**

FRONT RIGHT

FRONT LEFT



GRN GRN/BLK



BRN GRN/BLU

View from terminal side

## **4WS: SENSOR SIDE CONNECTOR**

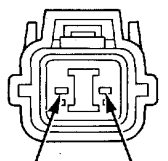
## **2WS: SENSOR SIDE CONNECTOR**

REAR RIGHT

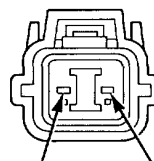
REAR LEFT

REAR RIGHT

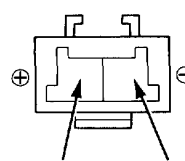
REAR LEFT



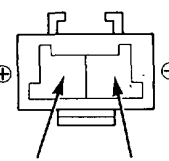
GRY $\ominus$  LT BLU $\oplus$



BLE/YEL $\ominus$  GRN/YEL $\oplus$



GRN/YEL $\oplus$  BLE/YEL $\ominus$

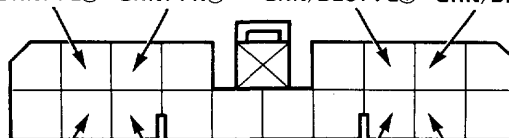


GRY $\oplus$  LT BLU $\ominus$

View from terminal side

## **CONTROL UNIT 18P CONNECTOR**

BRN: FL $\ominus$  GRN: FR $\ominus$  GRN/BLU: FL $\oplus$  GRN/BLK: FR $\oplus$



GRY: RL $\ominus$  BLU/YEL: RR $\ominus$  LT BLU: RL $\oplus$  GRN/YEL: RR $\oplus$

View from wire side

(cont'd)

# Troubleshooting

## Flowchart (cont'd)

**Problem Code 5 to 5-4, 5-8: Speed Sensor(s)**

Disconnect wire harness from speed sensor.

Check for resistance between sensor terminals.

Is there 500–1,000  $\Omega$ ?

NO

Faulty speed sensor.

YES

Disconnect the 18P connector from the control unit.

Check each wire 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

YES

Reconnect the 18P connector to the control unit and 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 modulator.

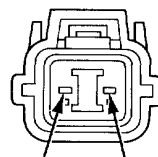
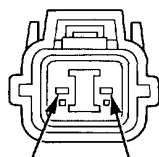
YES

• Incorrect the air gap (page 13-81)  
• Faulty control unit.

### SENSOR SIDE CONNECTOR

FRONT RIGHT

FRONT LEFT



GRN GRN/BLK

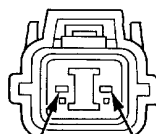
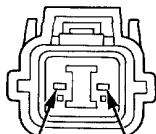
BRN GRN/BLU

View from terminal side

### 4WS: SENSOR SIDE CONNECTOR

REAR RIGHT

REAR LEFT



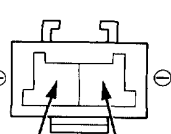
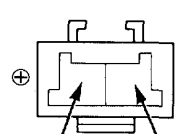
GRY LT BLU

BLE/YEL GRN/YEL

### 2WS: SENSOR SIDE CONNECTOR

REAR RIGHT

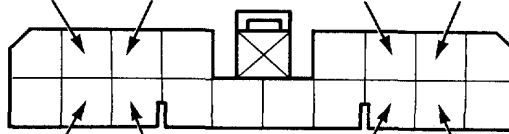
REAR LEFT



View from terminal side

### CONTROL UNIT 18P CONNECTOR

BRN: FL $\ominus$  GRN: FR $\ominus$  GRN/BLU: FL $\oplus$  GRN/BLK: FR $\oplus$



GRY: RL $\ominus$  BLU/YEL: RR $\ominus$  LT BLU: RL $\oplus$  GRN/YEL: RR $\oplus$

View from wire side.

Repair open in sensor wire:

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

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

Remove front fail safe relay.

Check relay function (page 13-80).

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.

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.8 fuse (7.5 A).

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?

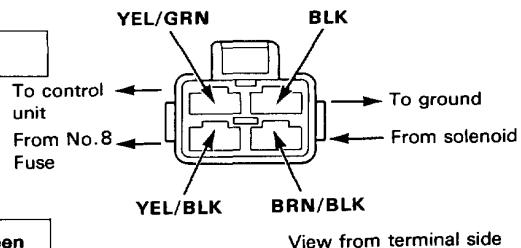
NO

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

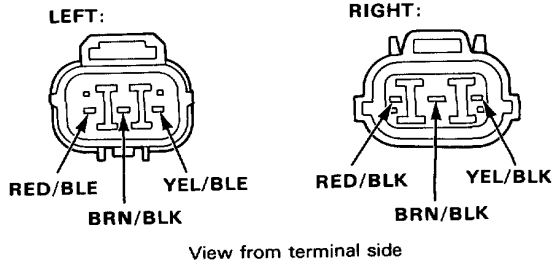
YES

(To page 13-58)

## **FRONT FAIL SAFE RELAY CONNECTOR HARNESS SIDE**



## **FRONT SOLENOIDS CONNECTOR HARNESS SIDE**



(cont'd)

# Troubleshooting

## Flowchart (cont'd)

(From page 13-57)

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

Is there 1-3  $\Omega$ ?

NO

Faulty solenoid.

YES

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

Is there 1-3  $\Omega$ ?

NO

Faulty solenoid.

YES

Disconnect the 12P connector 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

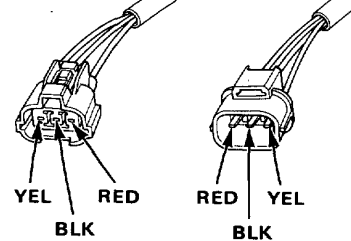
YES

• Faulty control unit.  
• Incorrect air gap (page 13-81).

### FRONT SOLENOID CONNECTOR

LEFT:

RIGHT:

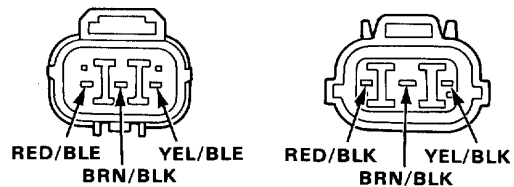


View from terminal side

### FRONT SOLENOIDS CONNECTOR HARNESS SIDE

LEFT:

RIGHT:

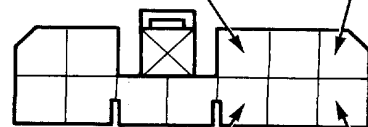


View from terminal side

### CONTROL UNIT 12P CONNECTOR

RED/BLU:  
from FL IN SOL.

RED/BLK:  
from FR IN SOL.



YEL/BLU:  
from FL OUT SOL.

YEL/BLK:  
from FR OUT SOL.

View from wire side.

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

Remove rear fail safe relay.

Check relay function (page 13-80).

Does it work properly?

NO

Faulty 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.

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.8 fuse.

YES

Turn ignition switch off.

Disconnect the 3P connector from the rear solenoid.

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

Is there continuity?

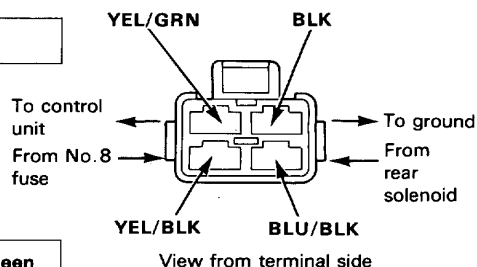
NO

Repair open in BLU/BLK wire between the relay and solenoid.

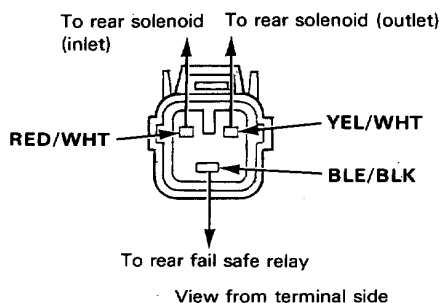
YES

(To page 13-60)

## **REAR FAIL SAFE RELAY CONNECTOR HARNESS SIDE**



## **REAR SOLENOID CONNECTOR HARNESS SIDE**



(cont'd)



# Troubleshooting

## Flowchart (cont'd)

(From page 13-59)

Disconnect the 18P and 12P connectors 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:

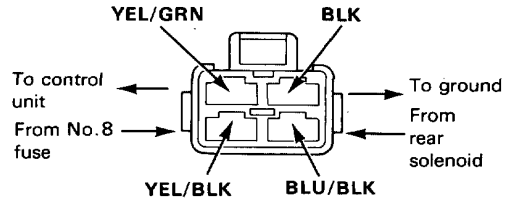
NO

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

YES

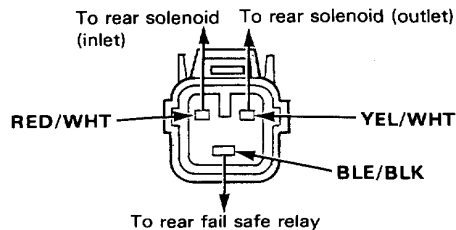
Faulty control unit.

REAR FAIL SAFE RELAY CONNECTOR  
HARNESS SIDE



View from terminal side

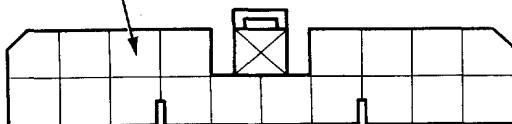
REAR SOLENOID CONNECTOR  
HARNESS SIDE



View from terminal side

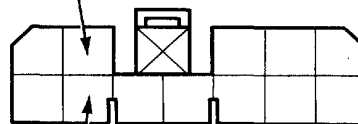
CONTROL UNIT 18P CONNECTOR

GRN: from FAIL SAFE RELAY



12P CONNECTOR

RED/WHT: from REAR IN SOL.



YEL/WHT: from REAR OUT SOL.

View from wire side

# **Problem Code 7-1 and 7-2 Front Solenoid Related Problem**

Disconnect wire harness from front solenoids.

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

Is there 1-3  $\Omega$ ?

NO

**Faulty solenoid.**

YES

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

Is there 1-3  $\Omega$ ?

NO

**Faulty solenoid.**

YES

Disconnect the 12P connector 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

Check for continuity between control unit and body ground.  
RED/BLK: Front Right Inlet  
YEL/BLK: Front Right Outlet  
RED/BLU: Front Left Inlet  
YEL/BLU: Front Left Outlet

Is there continuity?

YES

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

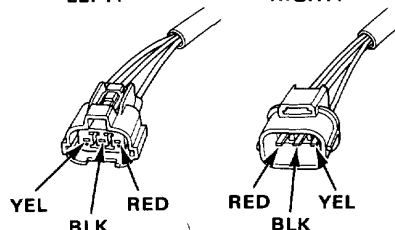
NO

• **Faulty control unit.**  
• **Incorrect air gap (page 13-81).**

## **FRONT SOLENOID CONNECTOR**

LEFT:

RIGHT:

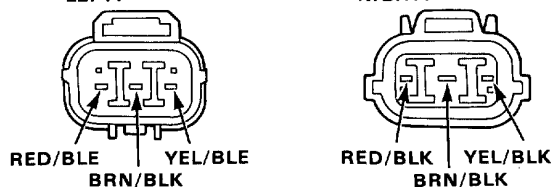


View from terminal side

## **FRONT SOLENOIDS CONNECTOR HARNESS SIDE**

LEFT:

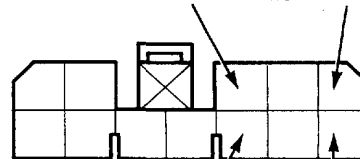
RIGHT:



View from terminal side

## **CONTROL UNIT 12P CONNECTOR**

RED/BLU: from FL IN SOL.  
RED/BLK: from FR IN SOL.



YEL/BLU: from FL OUT SOL.  
YEL/BLK: from FR OUT SOL.

View from wire side

(cont'd)

# Troubleshooting

## Flowchart (cont'd)

### Problem Code 7-4: 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  $\Omega$ ?

NO

Faulty solenoid.

YES

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

Is there 1-3  $\Omega$ ?

NO

Faulty solenoid.

YES

Disconnect the 12P connector from the control unit.

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 rear solenoid and control unit:  
RED/WHT: Rear Inlet  
YEL/WHT: Rear Outlet

YES

Check for continuity between control unit and body ground.  
RED/BLK: Front Right Inlet  
YEL/BLK: Front Right Outlet  
RED/BLU: Front Left Inlet  
YEL/BLU: Front Left Outlet

Is there continuity?

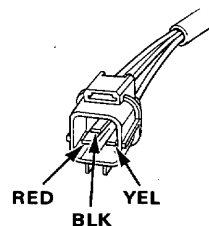
YES

Repair short in wire:  
RED/WHT: Rear Inlet  
YEL/WHT: Rear Outlet

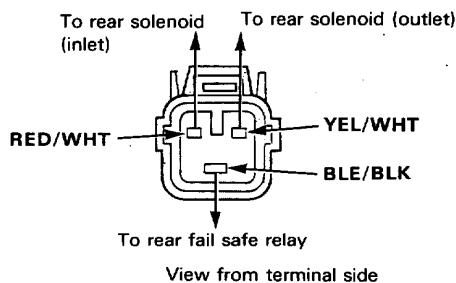
NO

Faulty control unit.

REAR SOLENOID CONNECTOR

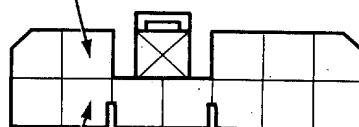


REAR SOLENOID CONNECTOR HARNESS SIDE



View from terminal side

RED/WHT: from REAR IN SOL.



YEL/WHT: from REAR OUT SOL.

View from wire side.

# Hydraulic System

## Hydraulic Connections



### CAUTION:

- Do not spill brake fluid on the car; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- The brake pipes and modulator pipe fittings are color coded.

