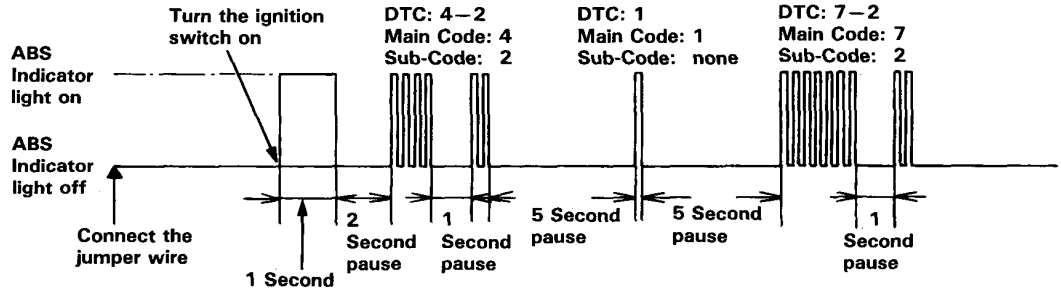
Diagnostic Trouble Code (DTC):

1. Disconnect the service check connector (2P) from the connector cover located under dash of the passenger's seat side.
   Connect the two terminals of the service check connector with a jumper wire.
2. Turn the ignition switch on, but do not start the engine.
3. Record the blinking frequency of the ABS indicator light.
   The blinking frequency indicates the diagnostic trouble code (DTC).

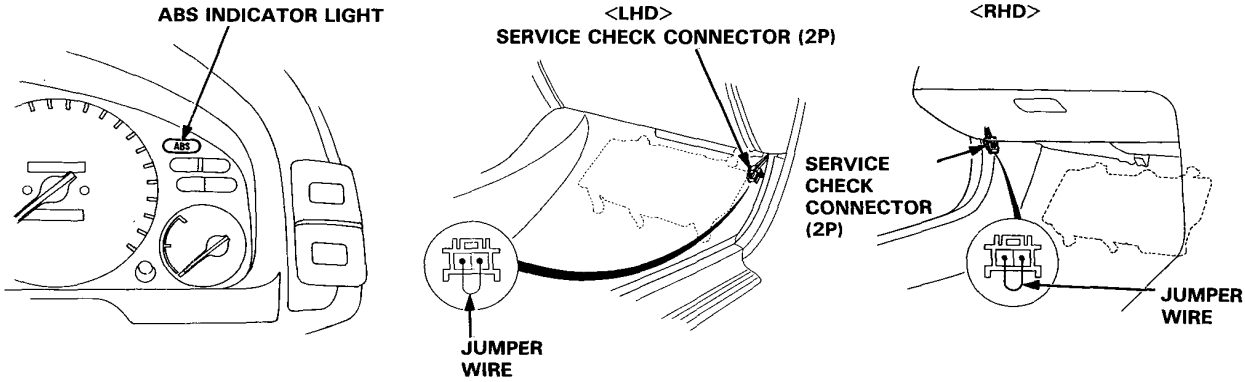
CAUTION: Before starting the engine, disconnect the jumper wire from the service check connector, or else the Malfunction Indicator Lamp (MIL) will stay on with the engine running.

DTC indication pattern



NOTE:

- The ABS control unit can indicate three DTCs (one, two or three problems).
- If the ABS indicator light does not light, see Troubleshooting of ABS Indicator Light Circuit page 19-60.
- If you miscount the blinking frequency, turn the ignition switch off then on to cycle the ABS indicator light again.
- After the repair is completed, disconnect the ABS B2 (15 A) fuse in the under-hood ABS fuse/relay box for at least three seconds to erase the ABS control unit's memory. Then turn the ignition key on again and recheck.
- The memory is erased if the connector is disconnected from the ABS control unit or the ABS control unit is removed from the body.
- After recording the DTC (if applicable), refer to the Symptom-to-System Chart.



Troubleshooting

Symptom-to-System Chart

DIAGNOSTIC TROUBLE CODE (DTC)		PROBLEMATIC COMPONENT/ SYSTEM	AFFECTED				PAGE	OTHER COMPONENT	PAGE
MAIN CODE	SUB-CODE		FRONT RIGHT	FRONT LEFT	REAR RIGHT	REAR LEFT			
①	—	ABS pump motor over-run	—	—	—	—	19-63	Solenoid ABS pump motor Pressure switch	
	②	ABS pump motor circuit problem	—	—	—	—	19-65	ABS motor relay ABS unit fuse ABS motor fuse	19-107
	③	High pressure leakage	—	—	—	—	19-68	Solenoid(s)	19-89
	④	Pressure switch	—	—	—	—	19-69		
	⑧	Accumulator gas leakage	—	—	—	—	19-70		
②	①	Parking brake switch-related problem	—	—	—	—	19-70	Brake fluid level switch, Brake system light	
③	①	Pulser(s)	○				19-108	Wheel sensor installation	
	②			○					
	④				○	○			
④	①	Wheel sensor	○				19-71		
	②			○					
	④				○				
	⑧					○			
⑤	—	Wheel sensor(s)			○	○	19-73	Modulator Rear brake drag	
	④				○				
	⑧					○			
⑥	—	Fail-safe relay		○		○	19-75		19-107 (Function Test)
	①			○					
	④					○			
⑦	①	Solenoid related problem	○				19-81	ABS B1 fuse Front fail-safe relay	
	②			○					
	④				○	○	19-84	Rear fail-safe relay	

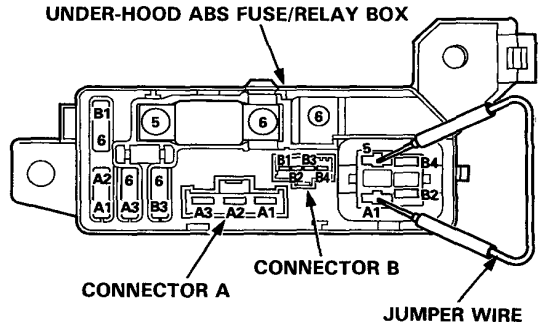
Flowcharts

Diagnostic Trouble Code (DTC) 1: ABS Pump Motor Over-run (20 seconds)

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

Pre-test step:
- Check for fluid leaks from the functional parts and replace the faulty parts if there is a leak.

Functional parts:
- Modulator unit
- ABS Pump assembly
- High pressure hose/pipe



– With engine running, ABS indicator light is ON.
– With service check connector jumped (see page 19-61), DTC 1 is indicated.

↓

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench (see page 19-88).

↓

Remove the ABS pump motor relay.

↓

Connect the No. 5 and A1 terminals using a jumper wire for about eight seconds.

↓

Does the ABS 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 19-101 and check the pump sound again.**

YES ↓

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

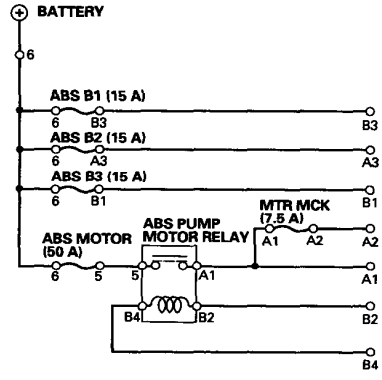
↓

Is there 40–70 ml?

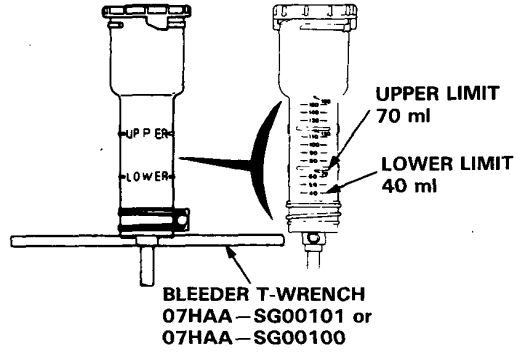
NO → (To page 19-64)

YES ↓

(To page 19-64)



UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM



(cont'd)

Flowcharts (cont'd)

(From page 19-63)

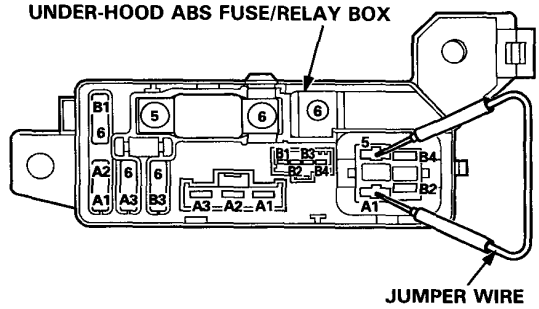
(From page 19-63)

Connect the No. 5 and A1 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 ABS pump motor (Relief valve is defective and open). Replace the ABS pump assembly.**

YES → **Faulty solenoid (leakage). Replace the modulator unit.**

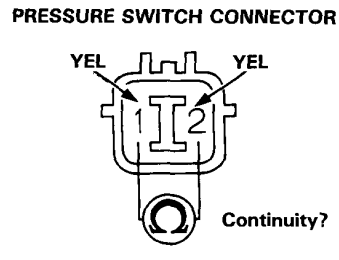


Connect the No. 5 and A1 terminals using a jumper wire for about 10 seconds.

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

Is there continuity? NO → **Replace the pressure switch.**

YES → **The vehicle is OK at this time.**



View from terminal side.

Diagnostic Trouble Code (DTC) 1-2: ABS 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 ABS indicator light comes ON after restarting the engine until the DTC is erased (by disconnecting the ABS B2 (15 A) fuse in the under-hood ABS fuse/relay box for three seconds).

Pre-test steps:
- Check ABS MOTOR (50 A) fuse in the under-hood ABS fuse/relay box.
- Check ABS UNIT (7.5 A) fuse in the under-hood ABS fuse/relay box.
- Check for loose under-hood ABS fuse/relay box connectors.

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTC 1-2 is indicated.

Check the ABS pump motor relay (see page 19-107).

Does it work properly? NO → **Replace the ABS pump motor relay.**

YES

Connect the No. 5 and A1 terminals using a jumper wire.

Does the ABS pump motor run? NO → (To page 19-67)

YES

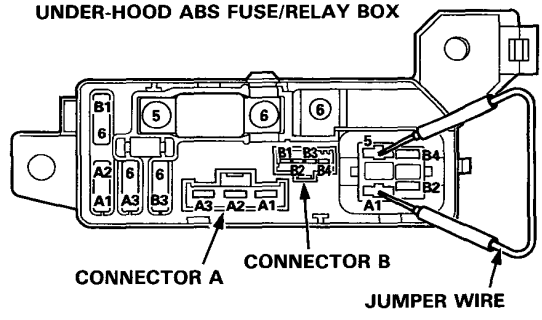
Disconnect the jumper wire.

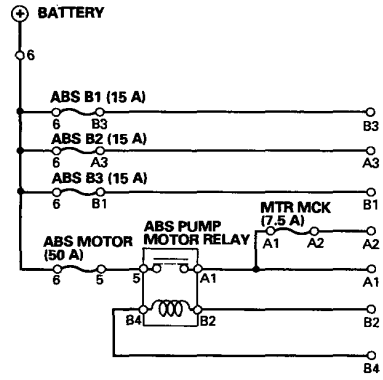
Remove the MTR MCK (7.5 A) fuse in the under-hood ABS fuse/relay box.

Turn the ignition switch ON.

(To page 19-66)

UNDER-HOOD ABS FUSE/RELAY BOX





UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM

(cont'd)

Flowcharts (cont'd)

(From page 19-65)

Check for voltage between the under-hood ABS fuse/relay box MTR MCK (7.5 A) fuse A2 terminal and body ground.

Is there battery voltage?

NO — **Repair open in WHT/BLK wire between the MTR MCK (7.5 A) fuse in the under-hood ABS fuse/relay box and ABS control unit.**

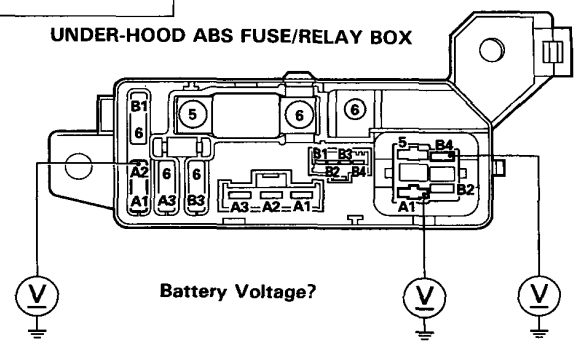
YES

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

Disconnect the ABS pump motor connector.

Check for voltage between the ABS fuse/relay box A1 terminal and body ground.

UNDER-HOOD ABS FUSE/RELAY BOX



Is there battery voltage?

NO — **Replace the under-hood ABS fuse/relay box.**

YES

Check for voltage between the B4 terminal and body ground.

Is there battery voltage?

NO — **Repair open in YEL/BLK wire between the No. 7 HEATER CONTROL RELAY, REAR DEFROSTER RELAY (7.5 A) fuse in the under-dash ABS fuse/relay box and ABS pump motor relay.**

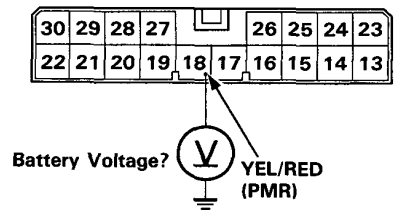
YES

Reinstall the ABS pump motor relay.

Disconnect the ABS control unit 18P connector.

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

ABS CONTROL UNIT 18P CONNECTOR



View from terminal side.

Is there battery voltage?

NO — **Repair open in YEL/RED wire between the ABS pump motor relay and ABS control unit.**

YES

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

(From page 19-65)

Disconnect the jumper wire.

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

Is there battery voltage?

NO — **Replace the under-hood ABS fuse/relay box.**

YES

Connect the No. 5 and A1 terminals using a jumper wire.

Disconnect the ABS pump motor connector.

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 ABS pump motor relay and ABS pump motor.**

YES

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

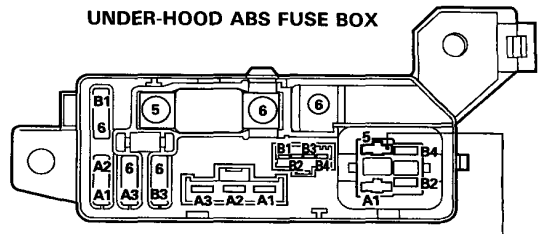
Is there battery voltage?

NO — **Repair open in BLK wire between the ABS pump motor and ground or poor ground (G202).**

YES

Faulty ABS pump motor. Replace the ABS pump assembly.

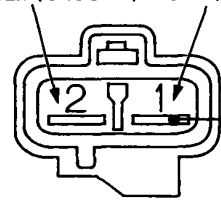
UNDER-HOOD ABS FUSE BOX



Battery Voltage?

ABS PUMP MOTOR CONNECTOR

BLK (GROUND) **WHT/BLU (MOTOR RELAY)**

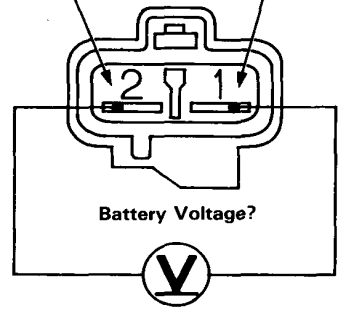


Battery Voltage?

View from terminal side.

ABS PUMP MOTOR CONNECTOR

BLK (GROUND) **WHT/BLU (MOTOR RELAY)**



View from terminal side.

(cont'd)

Flowcharts (cont'd)

Diagnostic Trouble Code (DTC) 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 line.
- Check for fluid leaks from the functional parts and replace the faulty parts if there is a leak.

Functional parts:
- Modulator unit
- ABS Pump assembly
- High pressure hose/pipe

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTC 1-3 is indicated.

↓

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench (see page 19-88).

↓

Remove the ABS pump motor relay.

↓

Connect the No. 5 and A1 terminals using a jumper wire for about 10 seconds.

↓

Disconnect the pressure switch connector.

↓

After 30 minutes, check for continuity between the No. 1 (YEL) and No. 2 (YEL) terminals.

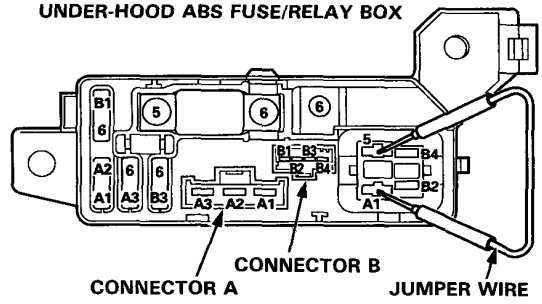
↓

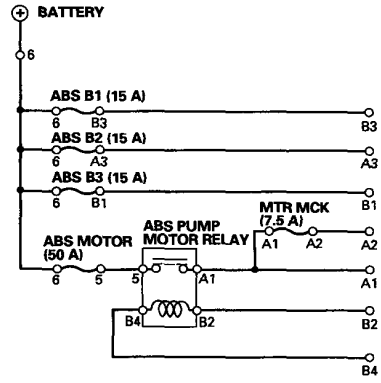
Is there continuity? — YES → **The vehicle is OK at this time.**

NO ↓

Faulty solenoid (leakage). Replace the modulator unit.

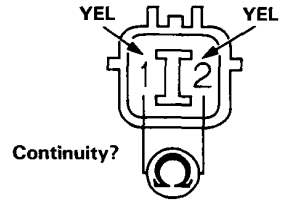
UNDER-HOOD ABS FUSE/RELAY BOX





UNDER-HOOD ABS FUSE/RELAY BOX CIRCUIT DIAGRAM

PRESSURE SWITCH CONNECTOR



View from terminal side.

Diagnostic Trouble Code (DTC) 1-4: Pressure Switch Circuit

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

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTC 1-4 is indicated.

↓

Bleed high pressure fluid from the maintenance bleeder with the Bleeder T-wrench (see page 19-88).

↓

Disconnect the pressure switch connector.

↓

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

↓

Is there continuity? — YES → **Replace the pressure switch (closed).**

NO

↓

Check for continuity between the No. 1 (YEL) terminal and body ground.

↓

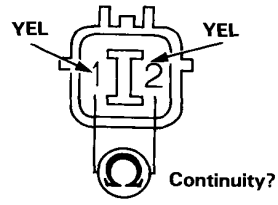
Is there continuity? — YES → **Repair short in YEL wire between the ABS control unit and pressure switch.**

NO

↓

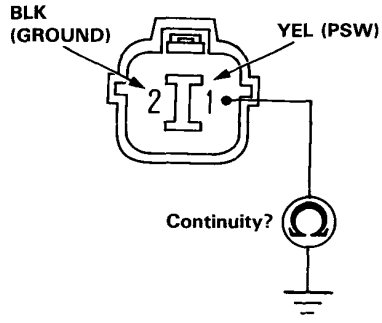
Check for loose ABS control unit connectors. If necessary, substitute a known-good ABS control unit and recheck.

PRESSURE SWITCH CONNECTOR



View from terminal side.

PRESSURE SWITCH CONNECTOR



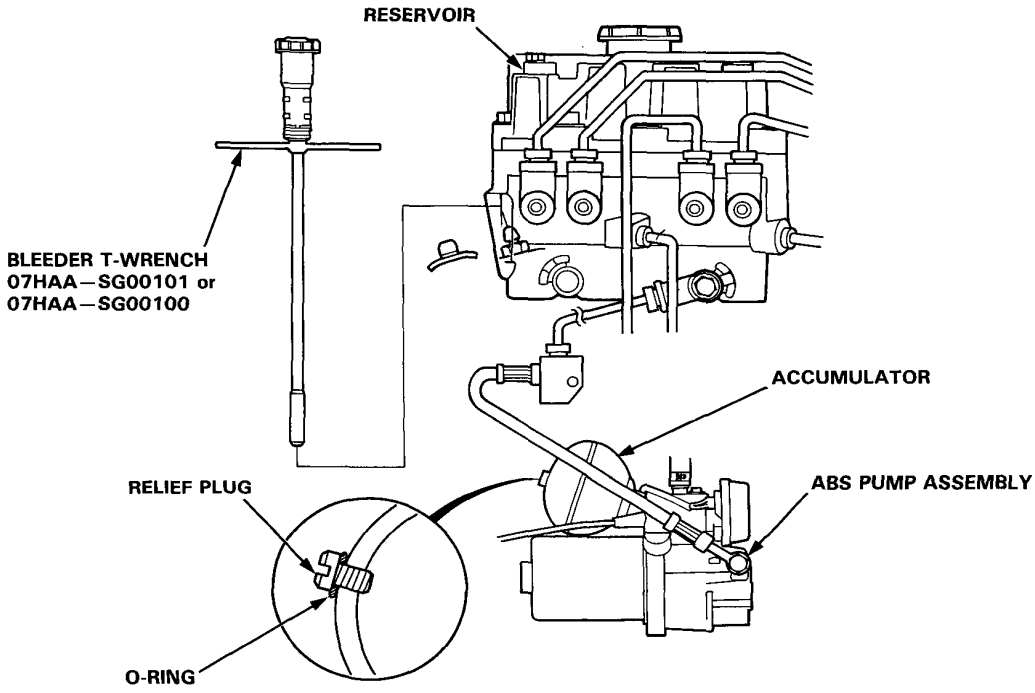
View from terminal side.

(cont'd)

Flowcharts (cont'd)

Diagnostic Trouble Code (DTC) 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 ABS pump motor for 10 seconds and bleed the high pressure line again with the Bleeder T-wrench. If no fluid or more than 70 ml of fluid come out, replace the ABS pump assembly.



Diagnostic Trouble Code (DTC) 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 ABS control unit connectors for good connection. If not loose or disconnected, substitute a known-good ABS control unit and recheck.

NOTE: Before troubleshooting DTC 2-1, remove the ABS B2 (15 A) fuse in the under-hood ABS fuse/relay box for three seconds to clear the ABS control unit's memory, then test drive the car.
If the ABS 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 system light and parking brake switch.
- GRN/RED wire is shorted between the brake system light and brake fluid level switch.
- The brake system light is blown.
- GRN/RED wire has an open between the brake system light and the ABS control unit.

Diagnostic Trouble Code (DTC) 4-1 to 4-8: Wheel 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 ABS indicator light may come ON after restarting the engine until the DTC is erased (by disconnecting the ABS B2 (15 A) fuse in the under-hood ABS fuse/relay box for three seconds).

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTCs 4-1, 4-2, 4-4 and/or 4-8 are indicated.

↓

Disconnect the ABS control unit 18P connector.

↓

Check the resistance of each sensor 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
- PUR: Rear Left Positive
  GRY: Rear Left Negative

↓

Is there Front: 700—1100 Ω, Rear : 1000—1600 Ω?

YES → Check each wire for continuity to body ground.

Check each wire for continuity to body ground.

↓

Is there continuity?

YES → **Repair short in sensor wire or Replace the wheel sensor.**

NO → **Check for loose ABS control unit connectors. Check that the sensor is installed properly. If necessary, substitute a known-good ABS control unit and recheck.**

NO

↓

Disconnect the wheel sensor connector.

↓

Check for resistance between the sensor terminals.

↓

Is there Front: 700—1100 Ω, Rear : 1000—1600 Ω?

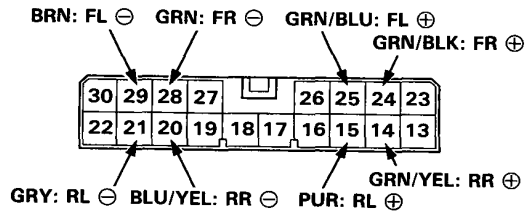
NO → **Replace the wheel sensor.**

YES

↓

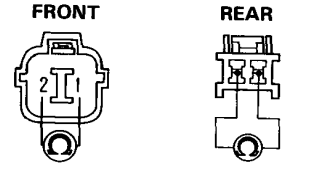
(To page 19-72)

ABS CONTROL UNIT 18P CONNECTOR



View from terminal side.

WHEEL SENSOR CONNECTOR



View from terminal side.

(cont'd)

Flowcharts (cont'd)

(From page 19-71)

Reconnect the ABS control unit 18P connector.

Check each wire for continuity between the wheel sensor connector ⊕, ⊖ terminals and body ground.

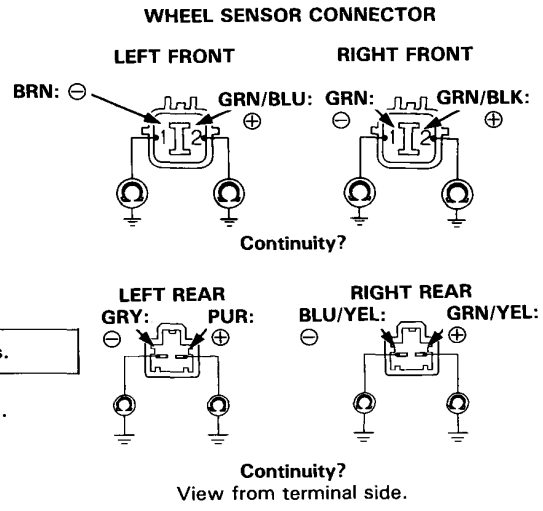
Is there continuity?

NO → **Repair open in wire harness.**

YES

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

Positive: 3.3 kΩ ± 15% is OK.
Negative: Less than 1 Ω is OK.



Diagnostic Trouble Code (DTC) 5 to 5-8: Wheel 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 ABS indicator light may come ON after restarting the engine until the DTC is erased (by disconnecting the ABS B2 (15 A) fuse in the under-hood ABS fuse/relay box for three seconds.)

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTCs 5, 5-4 or 5-8 is indicated.

Disconnect the ABS control unit 18P connector.

Check the resistance of each sensor between the positive and negative:
- GRN/YEL: Rear Right Positive
  BLU/YEL: Rear Right Negative
- PUR: Rear Left Positive
  GRY: Rear Left Negative

Is there 1000 – 1600 Ω?

YES → Check each wire for continuity to body ground.

NO

Is there continuity?

YES → **Repair short in sensor wire or replace the wheel sensor.**

NO

Reconnect the ABS control unit 18P connector.

Connect the ALB checker to the ABS inspection connector.

Check for ABS function in mode 2 and 3.

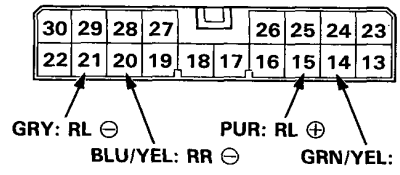
Does it work properly?

NO → **Replace the modulator unit.**

YES

Check for rear brake drag. If OK, substitute a known-good ABS control unit and recheck.

ABS CONTROL UNIT 18P CONNECTOR



View from terminal side.

(To page 19-74)

(cont'd)

Flowcharts (cont'd)

(From page 19-73)

Disconnect the wheel sensor connector.

Check for resistance between the sensor terminals.

Is there 1000—1600 Ω? NO → **Replace the wheel sensor.**

YES

Reconnect the ABS control unit 18P connector.

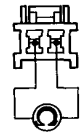
Check each wire for continuity between the wheel sensor connector ⊕, ⊖ terminals and body ground.

Is there continuity? NO → **Repair open in wire harness.**

YES

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

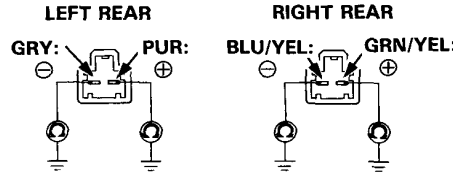
WHEEL SENSOR CONNECTOR
REAR



1000—1600 Ω?
View from terminal side.

Positive: 3.3 kΩ ± 15% is OK.
Negative: Less than 1 Ω is OK.

WHEEL SENSOR CONNECTOR



Continuity?

View from terminal side.

Diagnostic Trouble Code (DTC) 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 in the under-hood ABS fuse/relay box.
- Check for loose under-hood ABS fuse/relay box connectors.

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTC 6-1 is indicated.

↓

Remove the front fail-safe relay from the ABS control unit protector.

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 (see page 19-107).

↓

Does it work properly? — NO → **Replace the front fail-safe relay.**

YES ↓

Turn the ignition switch ON.

↓

Check for voltage between the front fail-safe relay connector No. 4 (YEL/BLK) terminal and body ground.

↓

Is there battery voltage? — NO → **Repair open in YEL/BLK wire between the No. 7 HEATER CONTROL RELAY, REAR DEFROSTER RELAY (7.5 A) fuse in the under-dash fuse/relay box and front fail-safe relay.**

YES ↓

Turn the ignition switch OFF.

↓

Disconnect the solenoid connector (10P).

↓

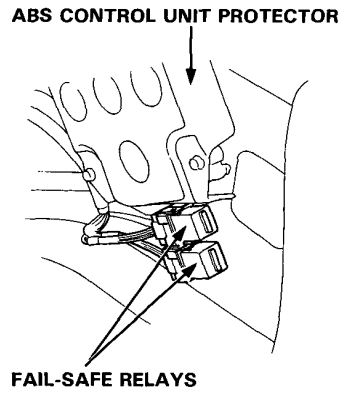
Check for continuity between the front fail-safe relay connector No. 8 (BRN/BLK) terminal and body ground.

↓

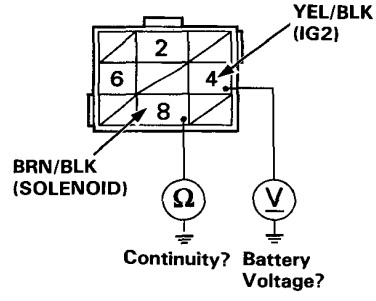
Is there continuity? — YES → **Repair short in BRN/BLK wire between the solenoid and front fail-safe reday.**

NO ↓

(To page 19-76)



FRONT FAIL-SAFE RELAY CONNECTOR



View from terminal side.

(cont'd)

Flowcharts (cont'd)

(From page 19-75)

Check each wire for continuity between the solenoid connector (10P) terminals and body ground
No. 4 (BRN/BLK): Front Right
No. 6 (BRN/BLU): Front Left

Is there continuity?

YES → **Faulty solenoid (short). Replace the modulator unit.**

NO

Disconnect the ABS control unit 12P connector.

Check each wire for continuity between the ABS control unit 12P connector and body ground.
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

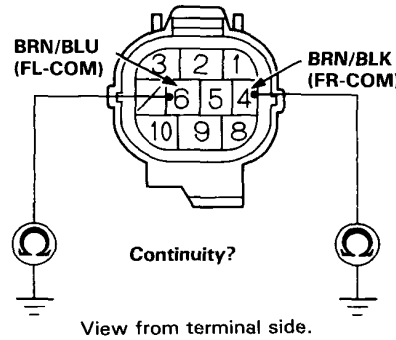
Is there continuity?

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

NO

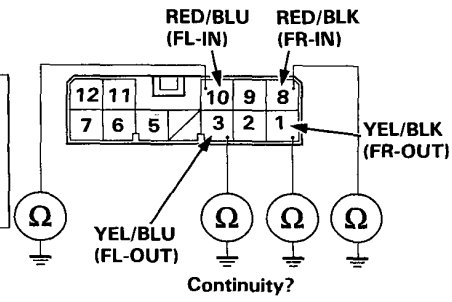
(To page 19-77)

SOLENOID CONNECTOR (10P)



View from terminal side.

ABS CONTROL UNIT 12P CONNECTOR



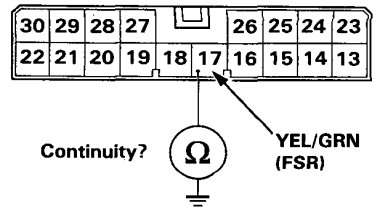
View from terminal side.

(From page 19-76)

Remove the rear fail-safe relay.

Check for continuity between the ABS control unit 18P connector No. 17 (YEL/GRN) terminal and body ground.

ABS CONTOL UNIT
18P CONNECTOR



View from terminal side.

Is there continuity?

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

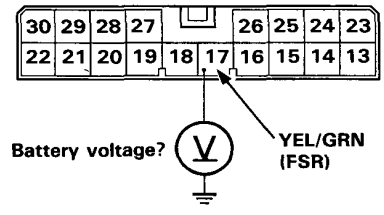
NO

Reinstall the front fail-safe relay.

Turn the ignition switch ON.

Check for voltage between the ABS control unit 18P connector No. 17 (YEL/GRN) terminal and body ground.

ABS CONTROL UNIT
18P CONNECTOR



View from terminal side.

Is there battery voltage?

NO → **Repair open in YEL/GRN wire between the front fail-safe relay and ABS control unit.**

YES

Check for loose ABS control unit 18P connector. If necessary, substitute a known-good ABS control unit and recheck.

(cont'd)

Flowcharts (cont'd)

Diagnostic Trouble Code (DTC) 6-4: Rear Fail-Safe Relay Circuit

CAUTION: Use only digital multimeter to check the system.

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTC 6-4 is indicated.

↓

Remove the rear fail-safe relay from the ABS control unit protector.

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 (see page 19-107).

↓

Does it work properly? — NO → **Replace the rear fail-safe relay.**

YES ↓

Turn the ignition switch ON.

↓

Check for voltage between the rear fail-safe relay connector No. 4 (YEL/BLK) terminal and body ground.

↓

Is there battery voltage? — NO → **Repair open in YEL/BLK wire between the No. 7 HEATER CONTROL RELAY, REAR DEFROSTER RELAY (7.5 A) fuse in the under-dash fuse/relay box and front fail-safe relay.**

YES ↓

Turn the ignition switch OFF.

↓

Disconnect the solenoid connector (10P).

↓

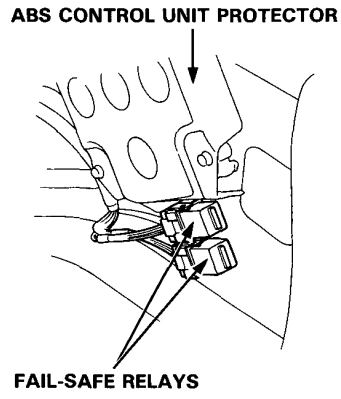
Check for continuity between the rear fail-safe relay connector No. 8 (BLU/BLK) terminal and body ground.

↓

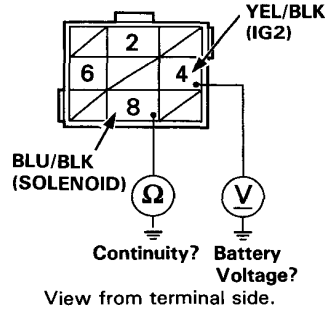
Is there continuity? — NO → **Repair short in BLU/BLK wire between the solenoid and rear fail-safe relay.**

YES ↓

(To page 19-79)



REAR FAIL-SAFE RELAY CONNECTOR



View from terminal side.

(From page 19-78)

Check for continuity between the solenoid connector (10P) No. 5 (BRN/WHT) terminal and body ground.

Is there continuity?

YES → **Faulty solenoid (short). Replace the modulator unit.**

NO

Disconnect the ABS control unit (10P) connector.

Check each wire for continuity between the ABS control unit 12P connector and body ground.
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

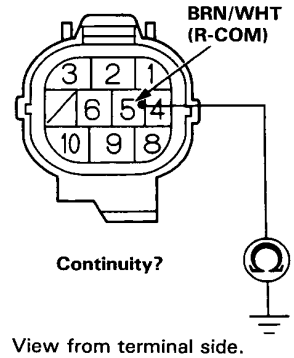
Is there continuity?

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

NO

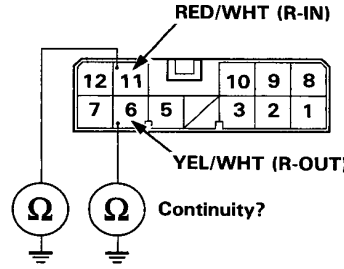
(To page 19-80)

SOLENOID CONNECTOR (10P)



View from terminal side.

ABS CONTROL UNIT 12P CONNECTOR



View from terminal side.

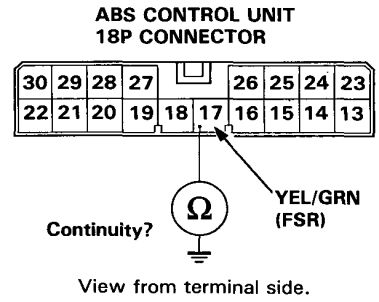
(cont'd)

Flowcharts (cont'd)

(From page 19-79)

Remove the front fail-safe relay.

Check for continuity between the ABS control unit 18P connector No. 17 (YEL/GRN) terminal and body ground.



View from terminal side.

Is there continuity?

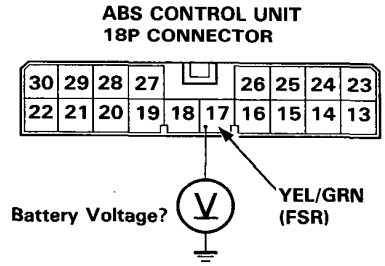
YES → **Repair short in YEL/GRN wire between the ABS control unit and *rear fail-safe relay*.**

NO

Reinstall the rear fail-safe relay.

Turn the ignition switch ON.

Check for voltage between the ABS control unit 18P connector No. 17 (YEL/GRN) terminal and body ground.



View from terminal side.

Is there battery voltage?

NO → **Repair open in YEL/GRN wire between the rear fail-safe relay and ABS control unit.**

YES

Check for loose ABS control unit 18P connector. If necessary, substitute a known-good ABS control unit and recheck.

Diagnostic Trouble Code (DTC) 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 in the under-hood ABS fuse/relay box.
- Check for loose under-hood ABS fuse/relay box connectors.

— With engine running, ABS indicator light is ON.
— With service check connector jumped (see page 19-61), DTCs 7-1 and/or 7-2 is indicated.

Disconnect the solenoid connector 10P.

Check for resistance between the solenoid connector (10P) 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 — 3 Ω? NO → **Faulty solenoid Replace the modulator unit.**

YES

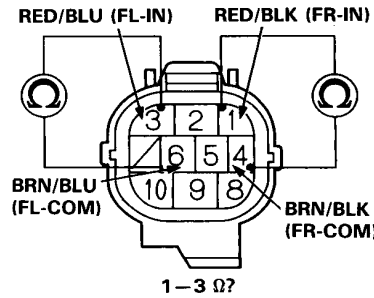
Check for resistance between the solenoid connector (10P) terminals:
No. 8 (YEL/BLK) and No. 4 (BRN/BLK): Front Right Outlet
No. 10 (YEL/BLU) and No. 6 (BRN/BLU): Front Left Outlet

Is there 1 — 3 Ω? NO → **Faulty solenoid Replace the modulator unit.**

YES

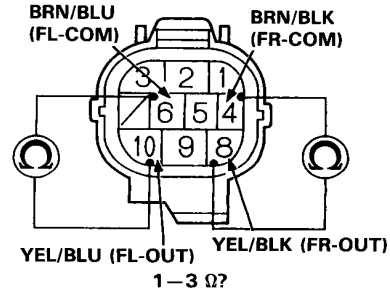
(To page 19-82)

SOLENOID CONNECTOR (10P)



View from terminal side.

SOLENOID CONNECTOR (10P)



View from terminal side.

Flowcharts (cont'd)

(From page 19-81)

Disconnect the ABS control unit 12P connector.

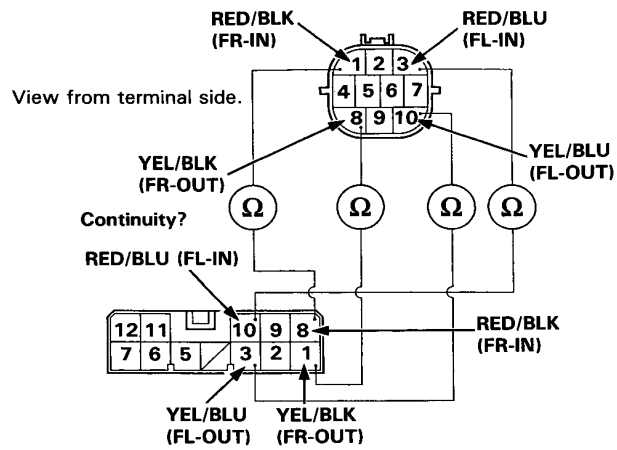
Check each wire for continuity between the ABS control unit 12P connector and solenoid connector (10P).
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

Is there continuity?

NO → **Repair open in wire between the solenoid and ABS control unit:**
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

YES

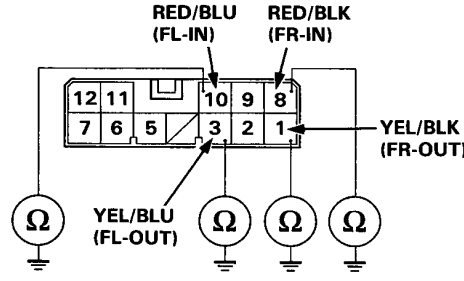
SOLENOID CONNECTOR (10P)



ABS CONTROL UNIT 12P CONNECTOR
View from terminal side.

Check each wire for continuity between the ABS control unit 12P connector and body ground.
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

ABS CONTROL UNIT 12P CONNECTOR



View from terminal side.

Is there continuity?

NO → **Repair short in wire between the solenoid and ABS control unit:**
RED/BLK: Front Right Inlet
YEL/BLK: Front Right Outlet
RED/BLU: Front Left Inlet
YEL/BLU: Front Left Outlet

YES

(To page 19-83)

(From page 19-82)

Remove the front fail-safe relay from the ABS control unit protector.

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 for relay function (see page 19-107).

Does it work properly?

NO → **Replace the front fail-safe relay.**

YES

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

Is there continuity?

NO → **Repair open in BLK wire between the fail-safe relay and body ground or poor ground (LHD: G452; RHD: G701).**

YES

Check for continuity between the solenoid connector (10P) No. 4 (BRN/BLK) terminal and front fail-safe relay connector No. 8 (BRN/BLK) terminal.

Is there continuity?

NO → **Repair open in BRN/BLK wire between the solenoid and front fail-safe relay.**

YES

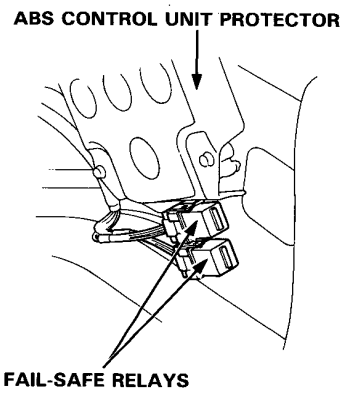
Check for continuity between the solenoid connector (10P) No. 6 (BRN/BLK) terminal and front fail-safe relay connector No. 8 (BRN/BLK) terminal.

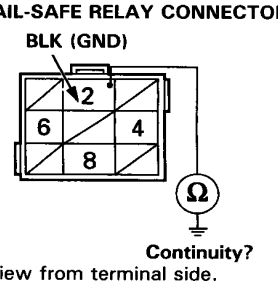
Is there continuity?

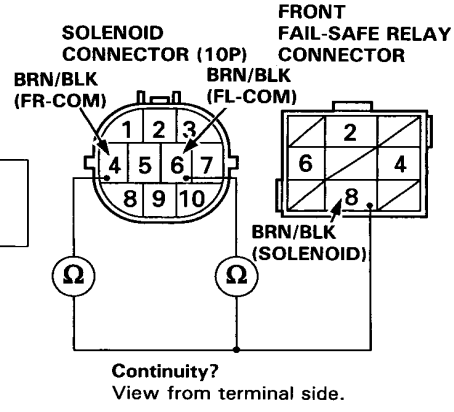
NO → **Repair open in BRN/BLK wire between the solenoid and front fail-safe relay.**

YES

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







(cont'd)

Flowcharts (cont'd)

Diagnostic Trouble Code (DTC) 7-4: Rear Solenoid Problem

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

— With engine running, ABS indicator light is ON.
— With service check connector *jumped (see page 19-61)*, DTC 7-4 is indicated.

Disconnect the solenoid connector (10P).

Check for resistance between the solenoid connector (10P) 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—3 Ω?

NO → **Faulty solenoid. Replace the modulator unit.**

YES

Disconnect the ABS control unit 12P connector.

Check each wire for continuity between the ABS control unit 12P connector and solenoid connector (10P).
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet

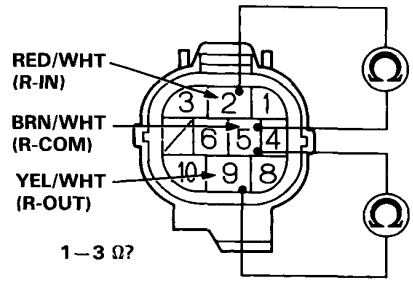
Is there continuity?

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

YES

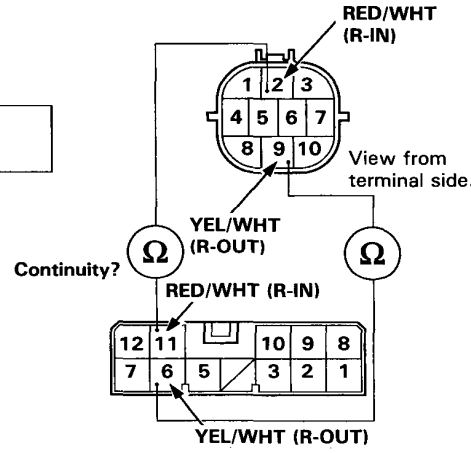
(To page 19-85)

SOLENOID CONNECTOR (10P)



View from terminal side.

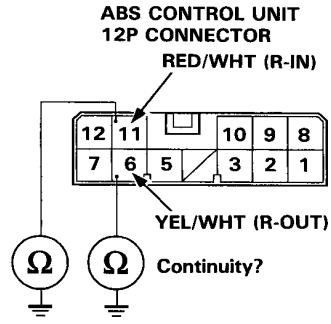
SOLENOID CONNECTOR (10P)



ABS CONTROL UNIT 12P CONNECTOR
View from terminal side.

(From page 19-84)

Check each wire for continuity between the ABS control unit 12P connector and body ground.
RED/WHT: Rear Inlet
YEL/WHT: Rear Outlet



View from terminal side.

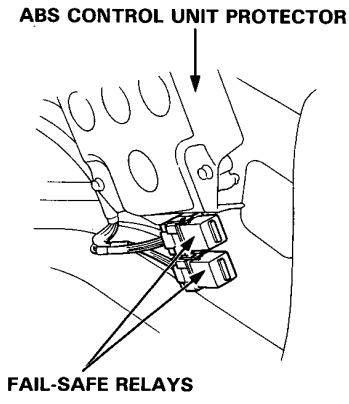
Is there continuity?

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

NO

Remove the rear fail-safe relay from the ABS control unit protector.

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



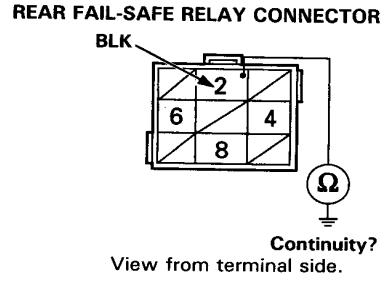
Check for relay function (see page 19-107).

Does it work properly?

NO → **Replace the rear fail-safe relay.**

YES

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



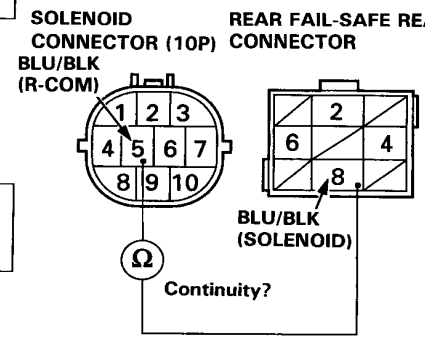
View from terminal side.

Is there continuity?

NO → **Repair open in BLK wire between the fail-safe relay and ground or poor ground (LHD: G452; RHD: G701).**

YES

Check for continuity between the solenoid connector (10P) No. 5 (BLU/BLK) terminal and rear fail-safe relay connector No. 8 (BLU/BLK) terminal.



Is there continuity?

NO → **Repair open in BLU/BLK wire between the solenoid and rear fail-safe relay.**

YES

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

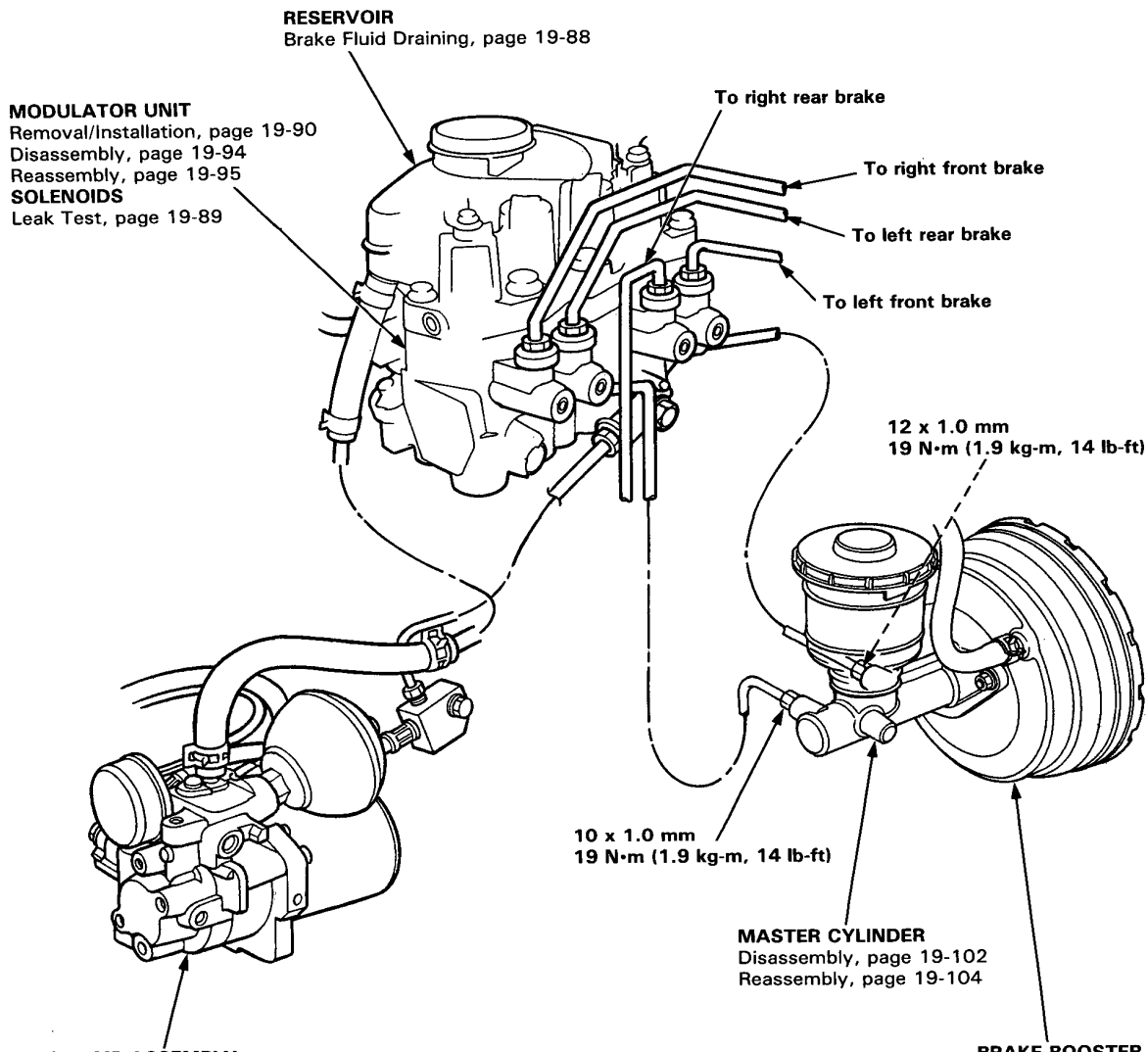
View from terminal side.

Hydraulic System

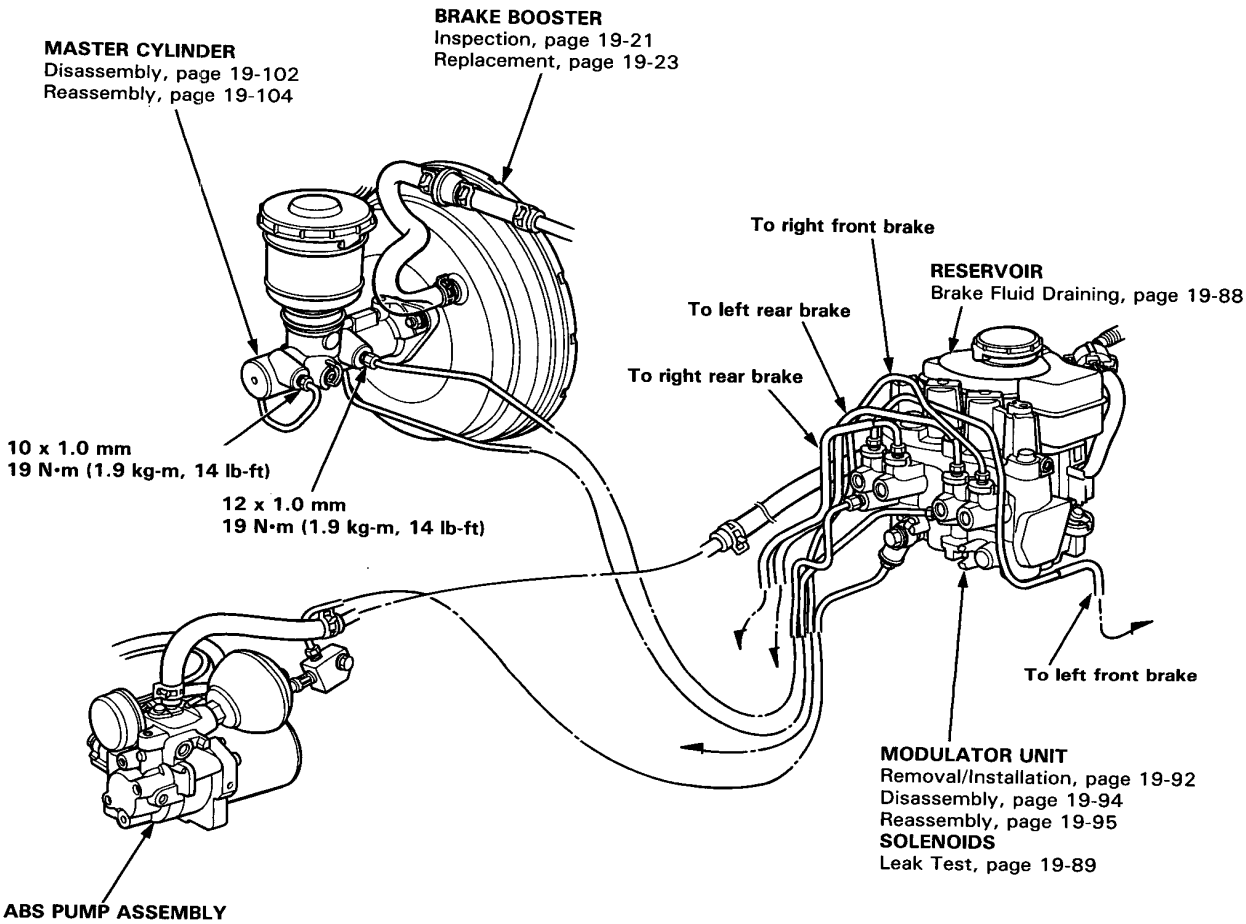
Index/Hydraulic Connections

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.

<LHD:>



<RHD:>


MASTER CYLINDER
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Reassembly, page 19-104
BRAKE BOOSTER
Inspection, page 19-21
Replacement, page 19-23
To right front brake
RESERVOIR
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To left rear brake
To right rear brake
10 x 1.0 mm
19 N·m (1.9 kg-m, 14 lb-ft)
12 x 1.0 mm
19 N·m (1.9 kg-m, 14 lb-ft)
To left front brake
MODULATOR UNIT
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Disassembly, page 19-94
Reassembly, page 19-95
SOLENOIDS
Leak Test, page 19-89
ABS PUMP ASSEMBLY
Relieving Accumulator/Line pressure, page 19-88
Removal/Installation, page 19-98
Pressure Switch Replacement, page 19-100
Accumulator Disposal, page 19-100

Relieving Accumulator/Line Pressure

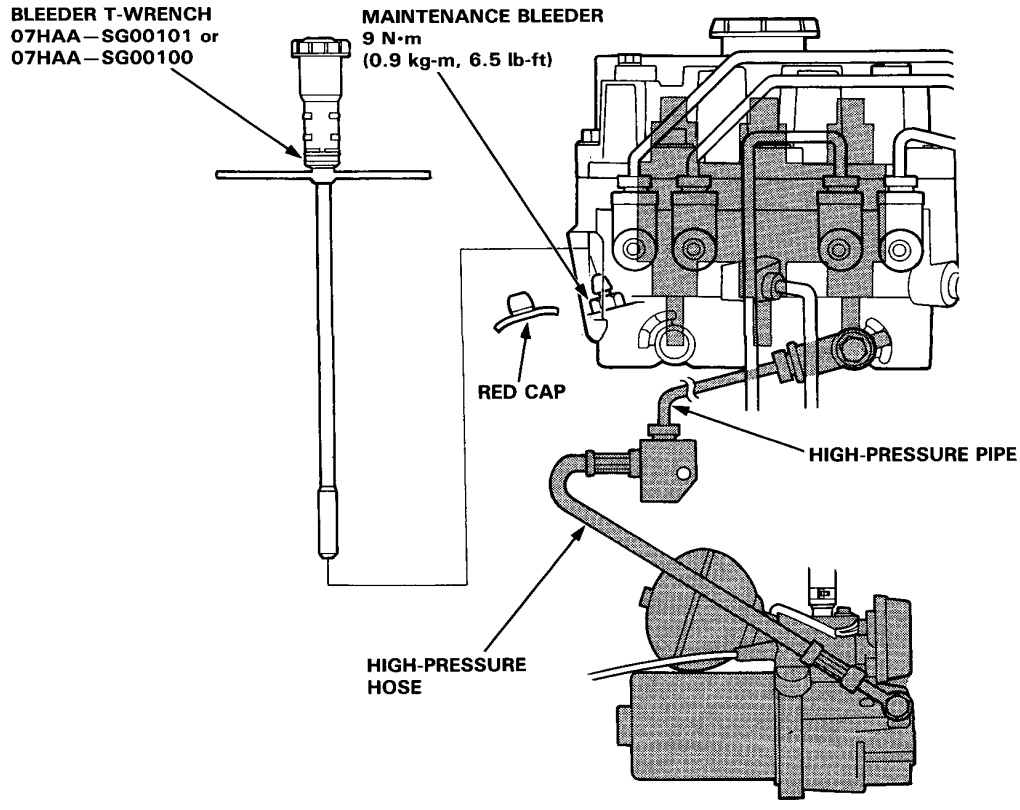
⚠WARNING Use the Bleeder T-wrench before disassembling the parts shaded in the illustration.

1. Open the hood.
2. Remove the red cap from the bleeder on the modulator.
3. Install the special tool on the maintenance bleeder and turn it out slowly 90° to collect high-pressure fluid into the reservoir. Turn the special tool out one complete turn to drain the brake fluid thoroughly.
4. Retighten the maintenance bleeder and discard the fluid.
5. Reinstall the red cap.

Reservoir Brake Fluid Draining

1. Draining brake fluid from modulator reservoir:
   The brake fluid may be sucked out through the top of the modulator reservoir with a syringe. It may also be drained through the pump joint after disconnecting the pump hose.
2. Draining brake fluid from master cylinder:
   Loosen the bleed screw and pump the brake pedal to drain the brake fluid from the master cylinder.

⚠WARNING
- **High-pressure fluid will squirt out if the shaded pipe/hose is removed.**
- **To drain high-pressure brake fluid, follow the procedure on this page.**

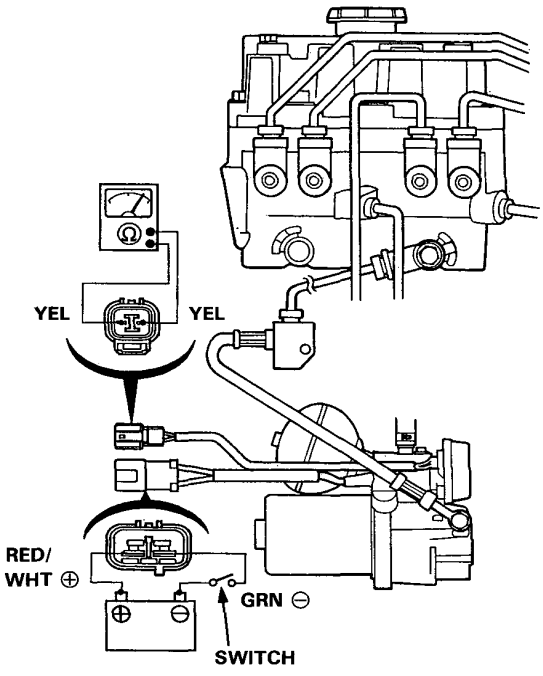


Solenoids

Leak Test

NOTE: If a solenoid leaks excessively, the brake fluid level in the modulator reservoir will rise when operating the ABS motor. The modulator reservoir may also overflow.

1. Disconnect the pump motor and pressure switch connectors.
2. Connect an ohmmeter between the YEL and YEL terminals of the pressure switch connector.
3. Attach the positive (+) lead of a fully charged 12 V battery to the RED/WHT terminal of the motor connector and negative (−) lead to the GRN terminal, and install a switch between negative lead and GRN terminal as shown.
4. Turn the switch on to allow sufficient pressure to build up within the accumulator and check for continuity. If the ohmmeter shows continuity (pressure switch turned on), run the motor for 10 seconds more, then turn the switch off.



- Check if the solenoid hisses or squeaks. Replace the modulator if the solenoid hisses or squeaks.
- Check the pressure switch for continuity within 30 minutes. It is normal if there is continuity. If there is no continuity, a solenoid is faulty or high-pressure line leaks.

Modulator Unit

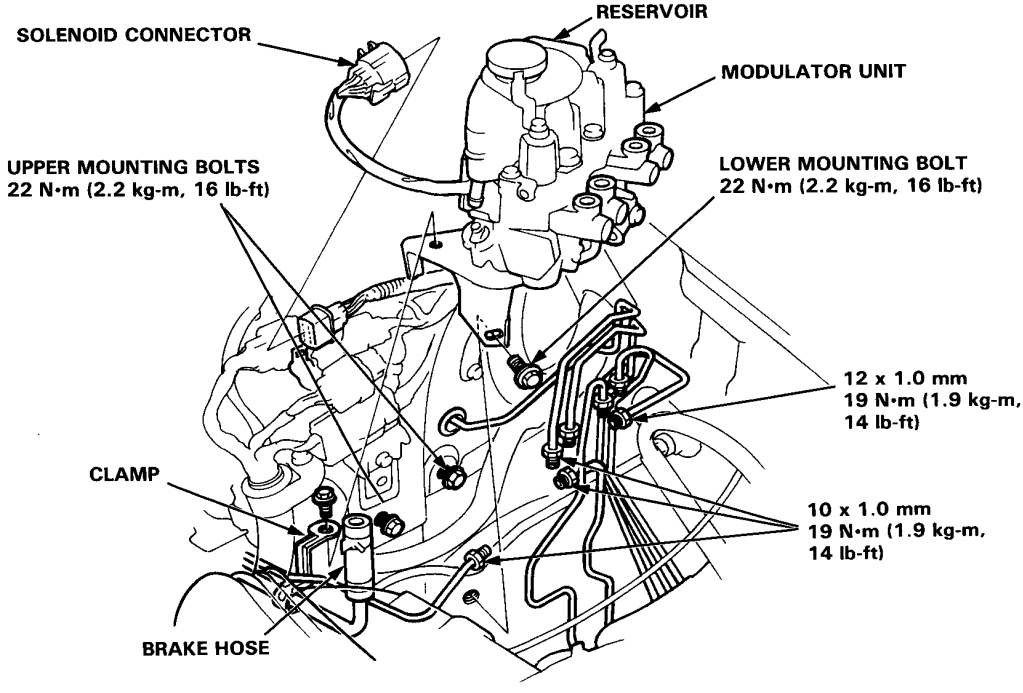
Removal/Installation (for LHD)

⚠ WARNING **Before removing the modulator-to-ABS pump assembly high-pressure line, be sure to relieve the high pressure fluid from the maintenance bleeder (see page 19-88).**

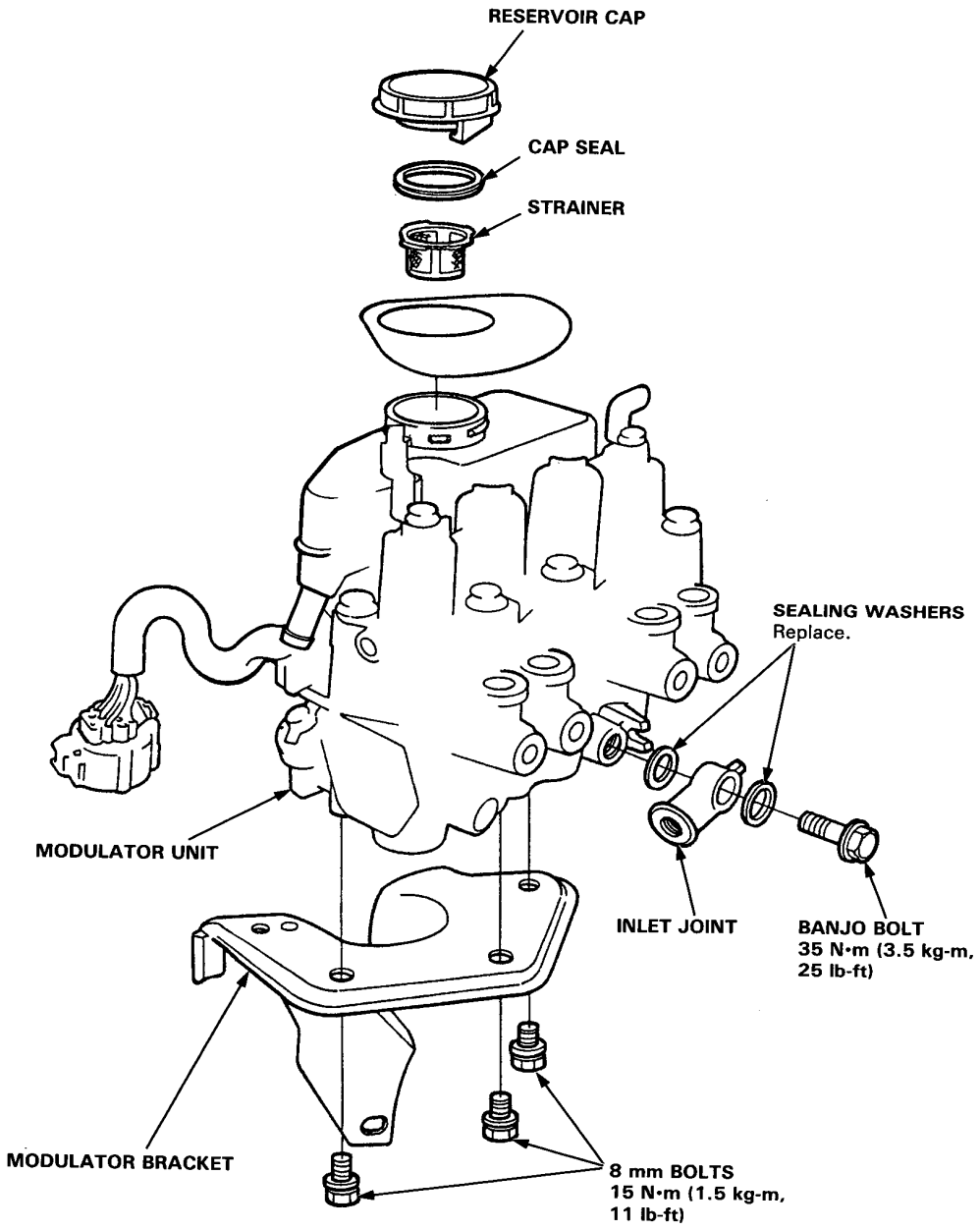
CAUTION:

- **Be careful not to bend or damage the brake pipes when removing the modulator unit.**
- **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.**
- **To prevent spills, cover the hose joints with rags or shop towels.**
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**
- **When connecting the brake pipes, make sure that there is no interference between the brake pipes and other parts.**

1. Drain the brake fluid from the master cylinder.
2. Drain the brake fluid from the modulator reservoir (see page 19-88).
3. Relieve the high pressure fluid (see page 19-88).
4. Remove the intake air duct.
5. Remove the emission control box.
6. Disconnect the solenoid connector.
7. Disconnect the seven brake pipes from the modulator unit.
8. Disconnect the brake hose from the modulator reservoir.
9. Remove the clamp from the modulator bracket.
10. Loosen the two upper mounting bolts, and remove the one lower mounting bolt and the modulator unit.



11. Remove the modulator bracket from the modulator unit.
12. Install the modulator unit in the reverse order of removal.
13. After installation, fill and bleed the conventional brake system (see page 19-6) and ABS (see page 19-101).



Modulator Unit

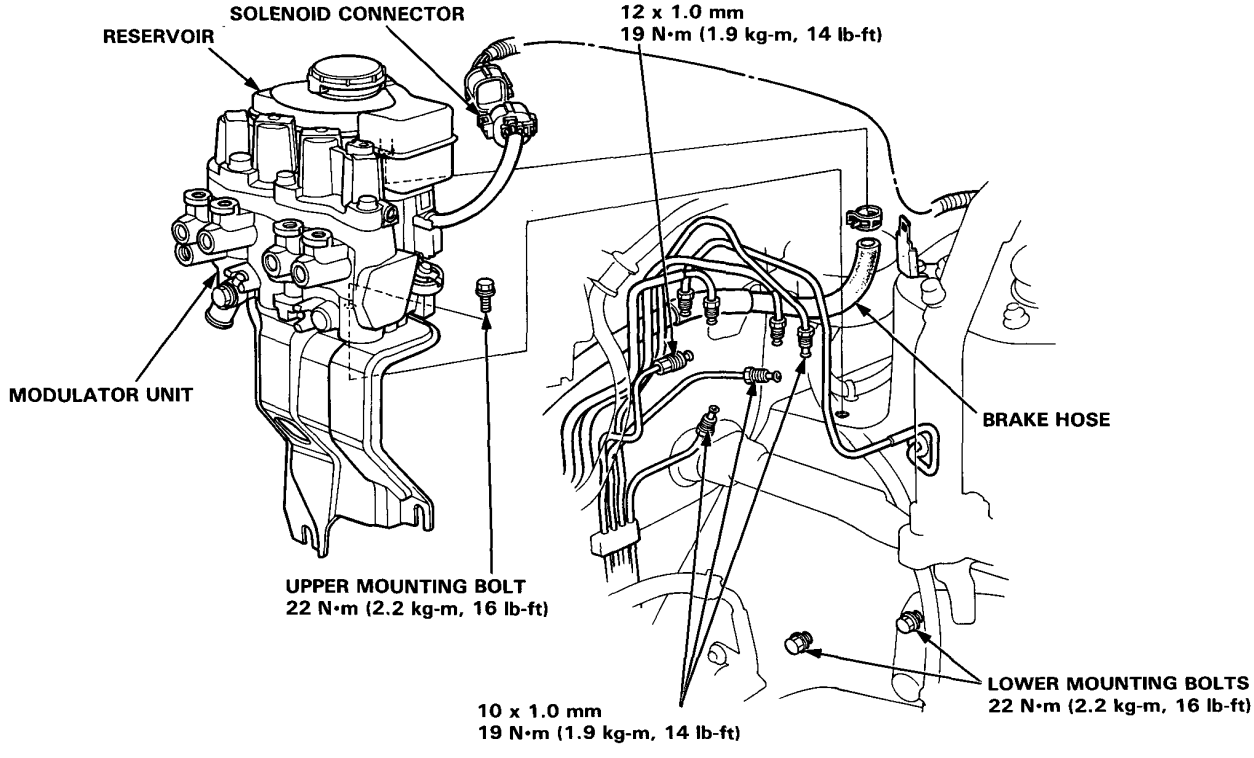
Removal/Installation (for RHD)

⚠WARNING **Before removing the modulator-to-ABS pump assembly high-pressure line, be sure to relieve the fluid pressure from the maintenance bleeder (see page 19-88).**

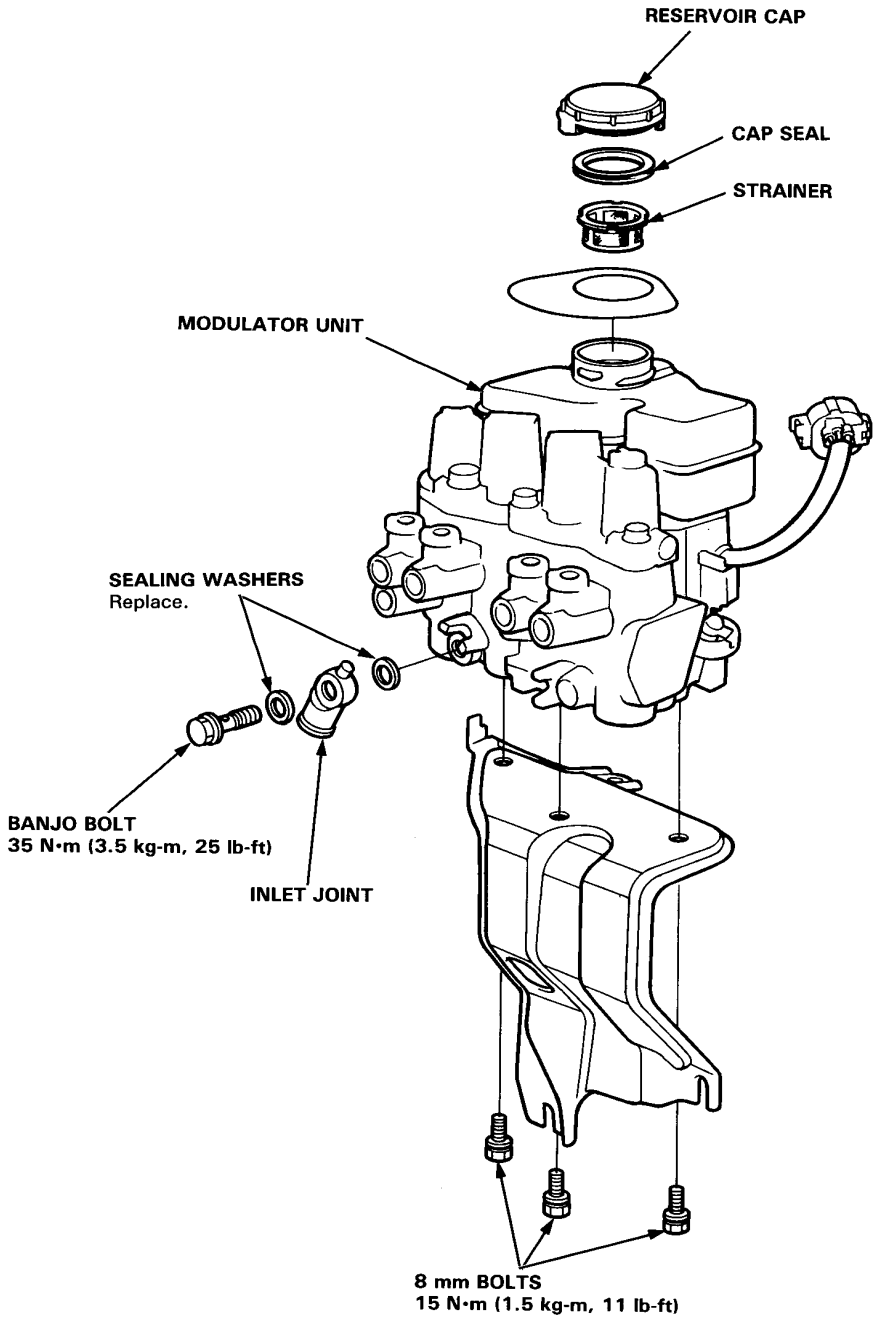
CAUTION:

- **Be careful not to bend or damage the brake pipes when removing the modulator unit.**
- **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.**
- **To prevent spills, cover the hose joints with rags or shop towels.**
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**
- **When connecting the brake pipes, make sure that there is no interference between the brake pipes and other parts.**

1. Drain the brake fluid from the master cylinder.
2. Drain the brake fluid from the modulator reservoir (see page 19-88).
3. Relieve the high pressure fluid (see page 19-88).
4. Disconnect the solenoid connector.
5. Disconnect the seven brake pipes from the modulator unit.
6. Disconnect the brake hose from the modulator reservoir.
7. Relieve fuel pressure, then disconnect the fuel pipe from the fuel filter (see section 11).
8. Loosen the two lower mounting bolts, and remove the one upper mounting bolt and the modulator unit.



9. Remove the modulator bracket from the modulator unit.
10. Install the modulator unit in the reverse order of removal.
11. After installation, fill and bleed the conventional brake system (see page 19-6) and ABS (see page 19-101).

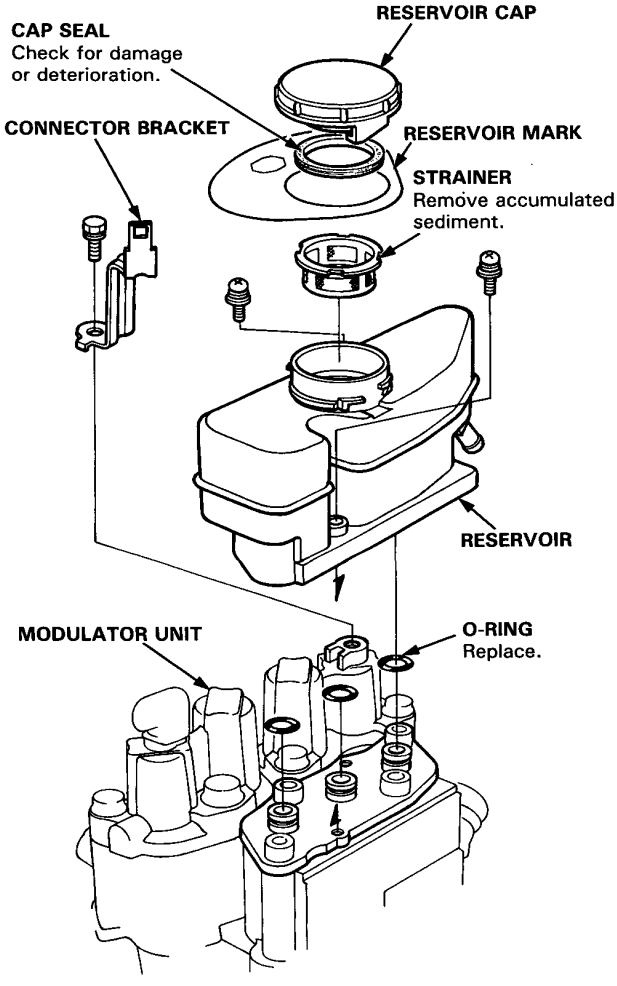


Modulator Unit

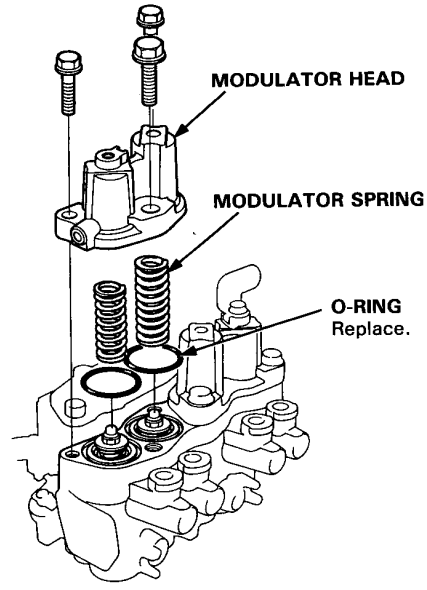
Disassembly

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.**
- **Replace parts with new ones whenever specified to do so.**

1. For LHD, remove the connector bracket from the modulator unit.
2. Remove the reservoir cap, reservoir mark and strainer from the reservoir.
3. Remove the cap seal from the reservoir cap.
4. Remove the reservoir from the modulator unit.
5. Remove the O-rings.

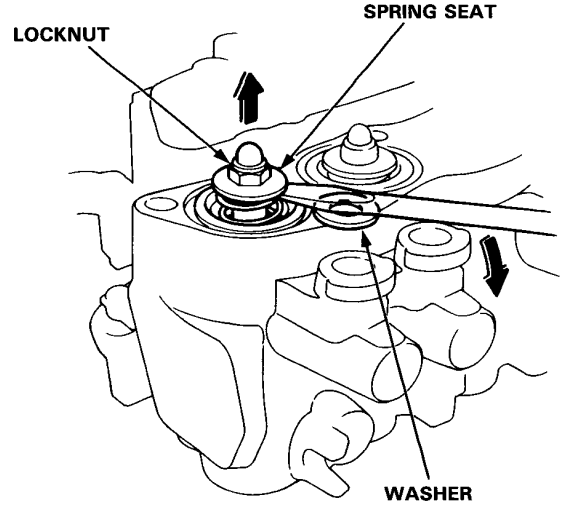


6. Remove the modulator head.
7. Remove the modulator springs and O-rings.



8. Insert the screwdriver under the spring seat, pry the piston assembly off slightly, then pull the piston assembly while grasping the locknut with pliers.

NOTE:
- Place a suitable washer between the screwdriver and modulator body to prevent damage to the modulator body.
- Be careful not to damage the piston sleeve.

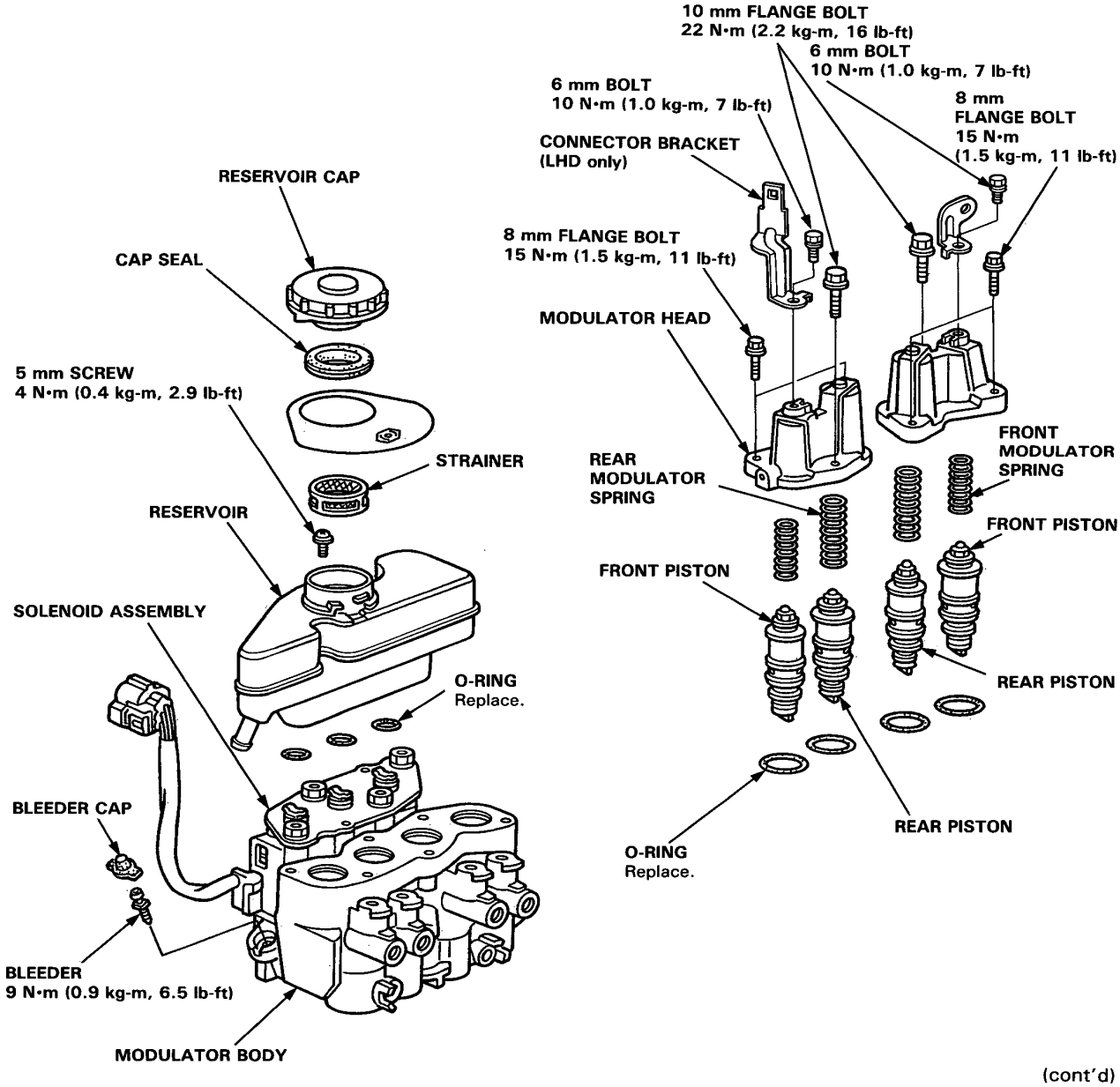


Reassembly

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.**
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Replace parts with new ones whenever specified to do so.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**

NOTE: Do not interchange the front and rear modulator springs. The longer spring is the rear modulator spring.

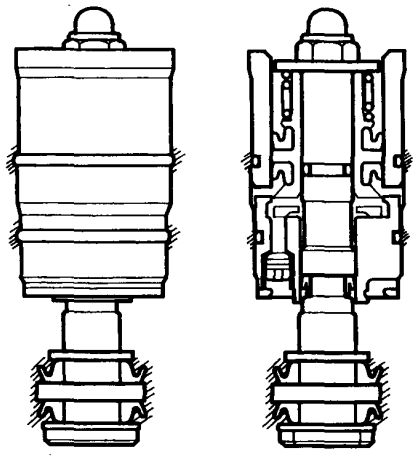


(cont'd)

Modulator Unit

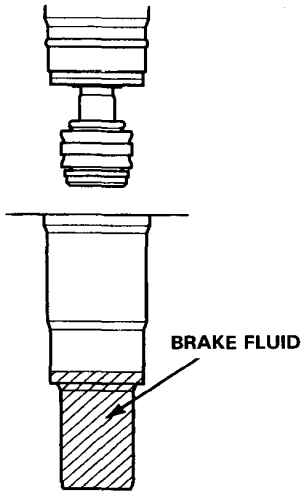
Reassembly (cont'd)

1. Apply rubber grease to the shaded areas of a new piston assembly as shown.

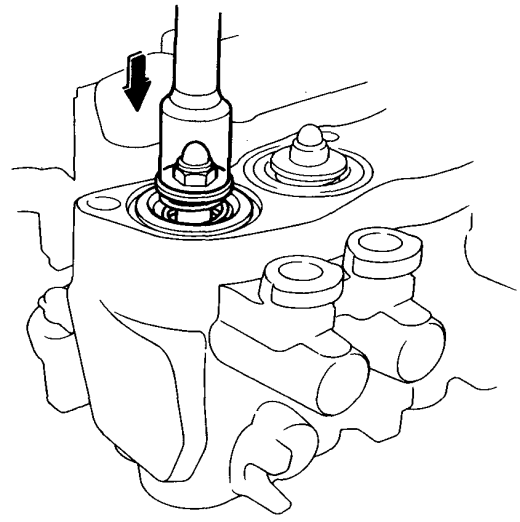


2. Pour brake fluid into the piston hole in the modulator body.

3. Coat the sliding surface of the piston with brake fluid and install the piston assembly into the modulator body.



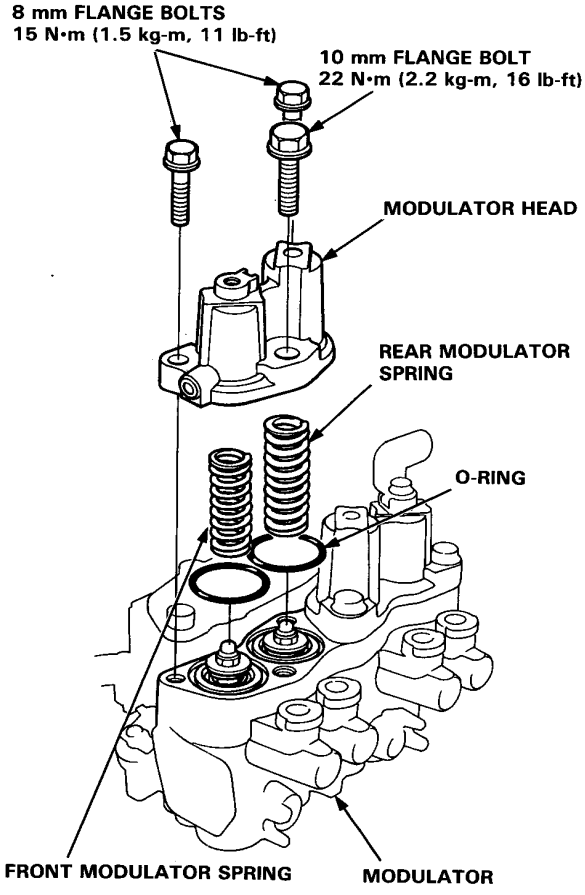
4. Push down the piston several times until no bubbles come out from the solenoid side.



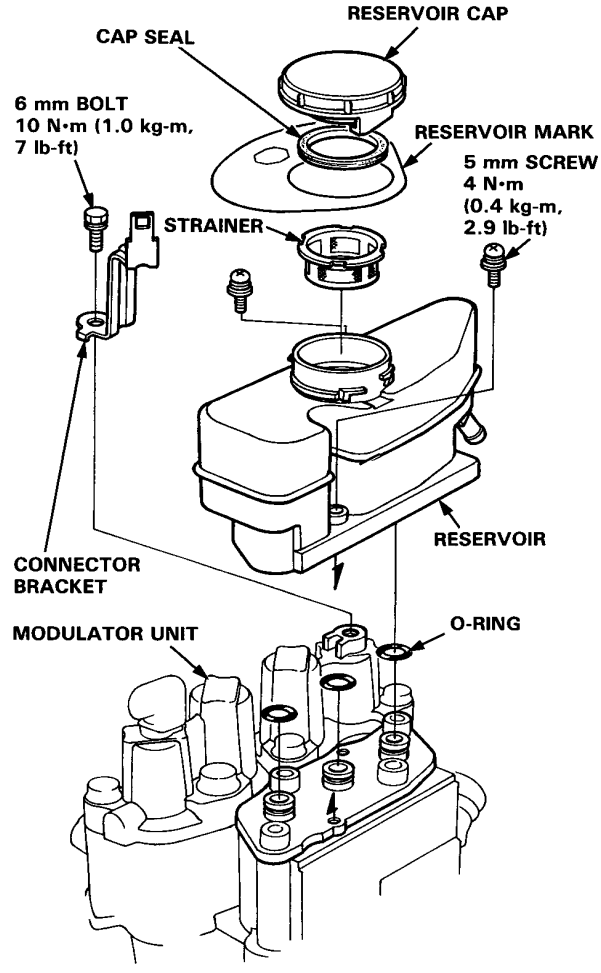
5. *Install new O-rings into the grooves in the* modulator body.
6. Install the modulator springs.

   NOTE: Do not interchange the front and rear modulator springs. The longer spring is the rear modulator spring.

7. Install the modulator head onto the body, being careful not to bind O-rings.



8. Install new O-rings into the grooves in the solenoids.
9. Install the reservoir onto the modulator unit.
10. Install the cap seal into the reservoir cap.
11. Install the strainer, reservoir mark and reservoir cap to the reservoir.
12. For LHD, install the connector bracket onto the modulator unit.



ABS Pump Assembly

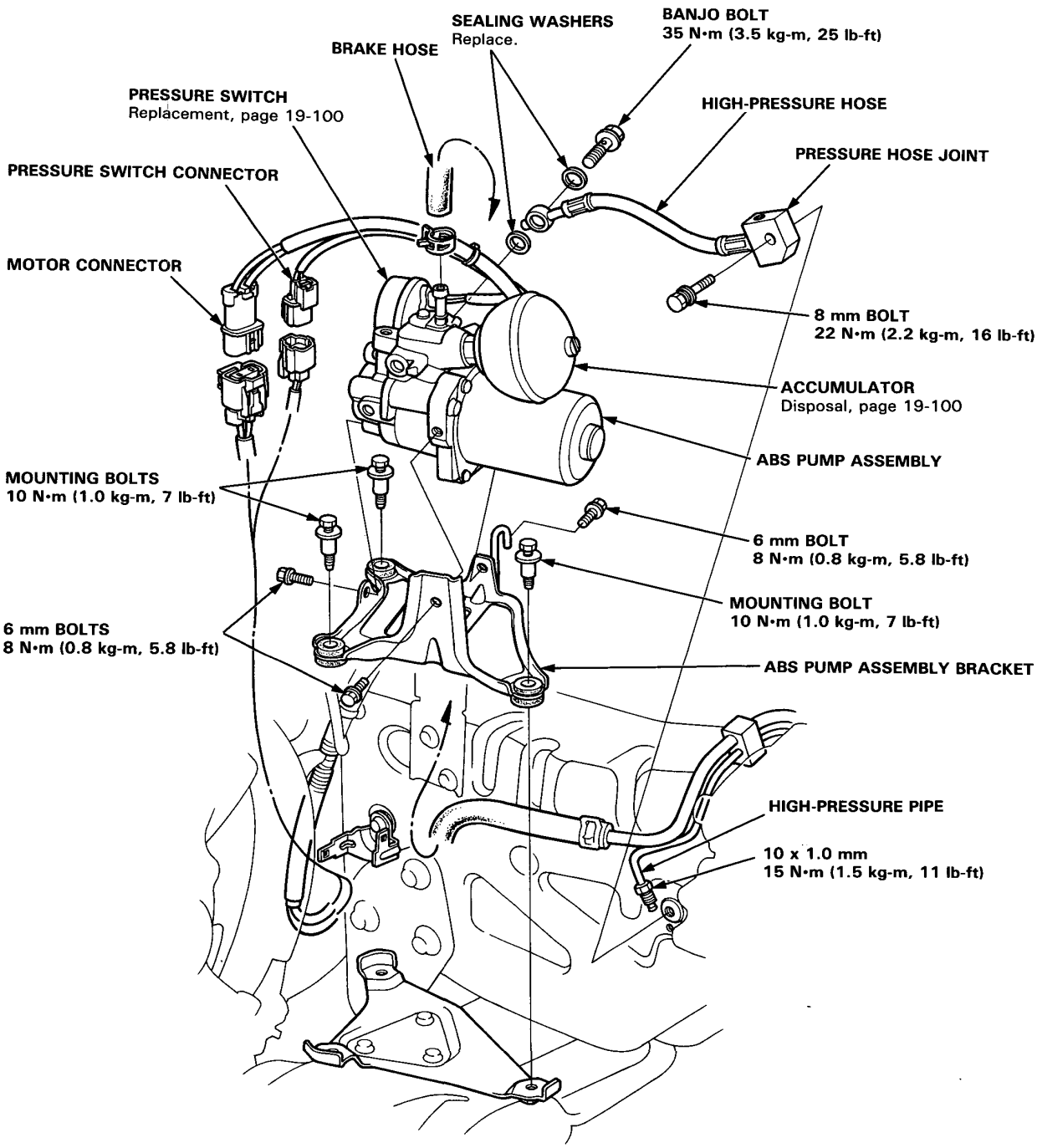
Removal/Installation

⚠ WARNING **Before removing the modulator-to-ABS pump assembly high-pressure line, be sure to relieve the high pressure fluid from the maintenance bleeder (see page 19-88).**

CAUTION:

- **Be careul not to bend or damage the brake pipes when removing the ABS pump assembly.**
- **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.**
- **To prevent spills, cover the hose joints with rags or shop towels.**
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**
- ***When connecting the brake pipes, make sure that there is no interference between the brake pipes and other parts.***
- **Do not disassemble the ABS pump assembly except the pressure switch.**

1. Drain the brake fluid from the modulator reservoir (see page 19-88).
2. Relieve the high pressure fluid (see page 19-88).
3. Remove the battery tray.
4. Disconnect the motor and pressure switch connectors.
5. Disconnect the high pressure pipe from the pressure hose joint.
6. Disconnect the brake hose from the ABS pump assembly.
7. Remove the three mounting bolts, and the ABS pump assembly.
8. Remove the ABS pump assembly bracket.
9. Remove the high-pressure hose from the ABS pump assembly.
10. Install the ABS pump assembly in the reverse order of removal.
11. After installation, fill and bleed the ABS (see page 19-101).

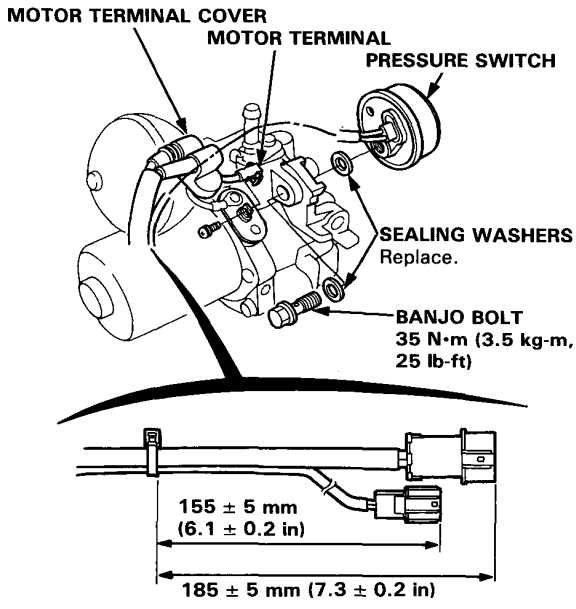

SEALING WASHERS
Replace.
BANJO BOLT
35 N·m (3.5 kg-m, 25 lb-ft)
BRAKE HOSE
PRESSURE SWITCH
Replacement, page 19-100
HIGH-PRESSURE HOSE
PRESSURE HOSE JOINT
PRESSURE SWITCH CONNECTOR
MOTOR CONNECTOR
8 mm BOLT
22 N·m (2.2 kg-m, 16 lb-ft)
ACCUMULATOR
Disposal, page 19-100
ABS PUMP ASSEMBLY
MOUNTING BOLTS
10 N·m (1.0 kg-m, 7 lb-ft)
6 mm BOLT
8 N·m (0.8 kg-m, 5.8 lb-ft)
MOUNTING BOLT
10 N·m (1.0 kg-m, 7 lb-ft)
6 mm BOLTS
8 N·m (0.8 kg-m, 5.8 lb-ft)
ABS PUMP ASSEMBLY BRACKET
HIGH-PRESSURE PIPE
10 x 1.0 mm
15 N·m (1.5 kg-m, 11 lb-ft)

ABS Pump Assembly

Pressure Switch Replacement

1. Secure the pump assembly in a vise.
2. Remove the harness band.
3. Slide the motor terminal cover off, then remove the motor terminal.
4. Remove the pressure switch.
5. Install the pressure switch in the reverse order of removal.

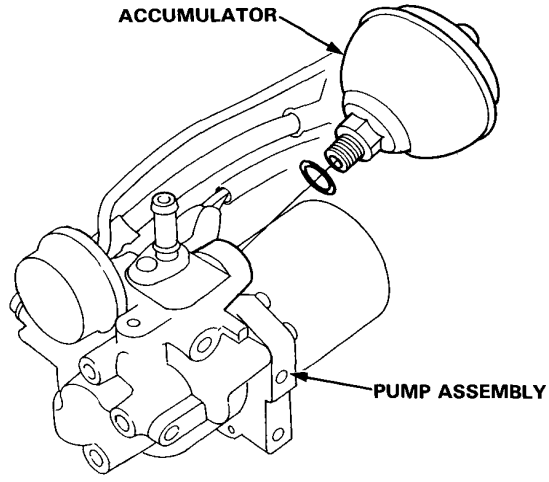
   NOTE: Install the harness band at the correct position as shown below.



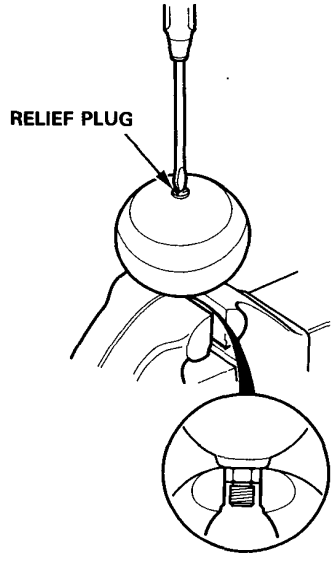
Accumulator Disposal

⚠WARNING The accumulator contains high pressure nitrogen gas. Do not puncture, expose to the flame, or attempt to disassemble the accumulator or it may explode and severe personal injury may result.

1. Secure the pump assembly in a vise and remove the accumulator by turning it counterclockwise with a 19 mm open-end wrench.



2. Secure the accumulator in a vise so that the relief plug points straight up.
3. Slowly turn the plug 3-1/2 turns and then wait 3 minutes for all pressure to escape.
4. Remove the plug completely and dispose of the accumulator.



Bleeding

Air Bleeding with ALB Checker

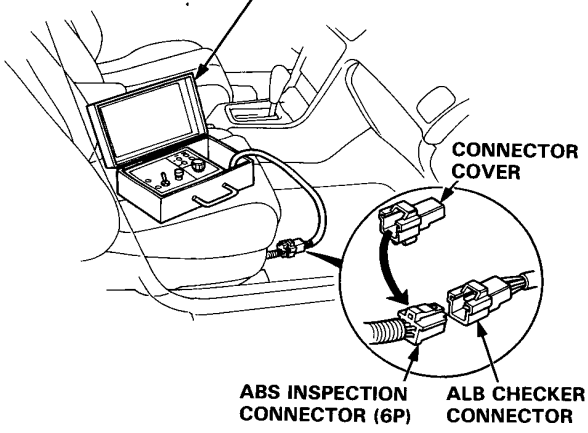
CAUTION:

- **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.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**

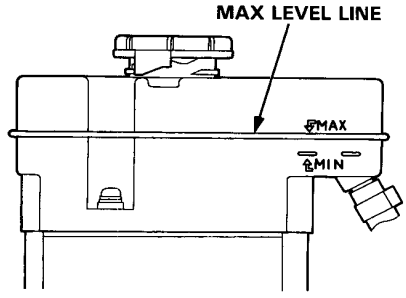
1. Place the vehicle on level ground with the wheels blocked. Put the transmission in neutral for manual transmission models, and in [P] position for automatic transmission models. Release the parking brake.

2. Disconnect the ABS inspection connector (6P) from the cross-member under the passenger's seat and connect the ABS inspection connector (6P) to the ALB checker.

ALB CHECKER
07HAJ—SG00602
See page 19-40 for other applicable checkers.

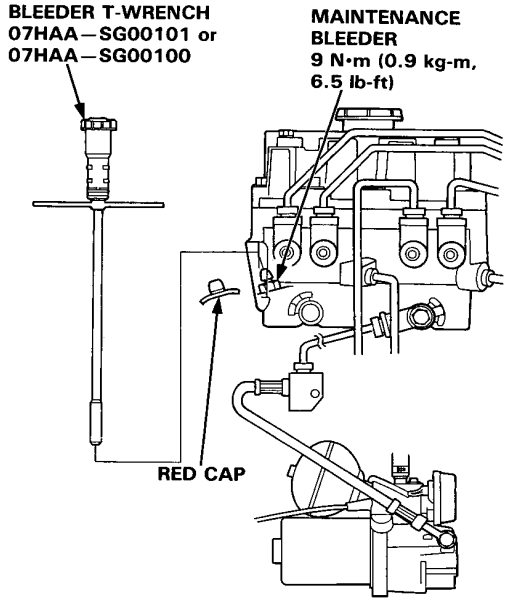


3. Fill the modulator reservoir to the MAX level line and install the reservoir cap.



4. Start the engine and allow it to idle for a few minutes, then stop it. Check the fluid level in the modulator reservoir and refill to the MAX level line if necessary.

5. Bleed high-pressure fluid from the maintenance bleeder with the special tool.



6. Start the engine and allow it to idle for a few minutes, then stop it. Check the fluid level in the modulator reservoir and refill to the MAX level line if necessary.

7. Turn the Mode Selector switch of the checker to 2.

8. While depressing the brake pedal firmly, push the Start Test switch to operate the modulator. There should be kickback on the brake pedal. If not, repeat steps 5 to 8.

   NOTE: Continue to depress the brake pedal firmly when operating the checker.

9 Turn the Mode Selector to 3, 4, and 5.
Perform step 8 for each of the test mode positions.

10. Refill the modulator reservoir to the MAX level line and install the reservoir cap.

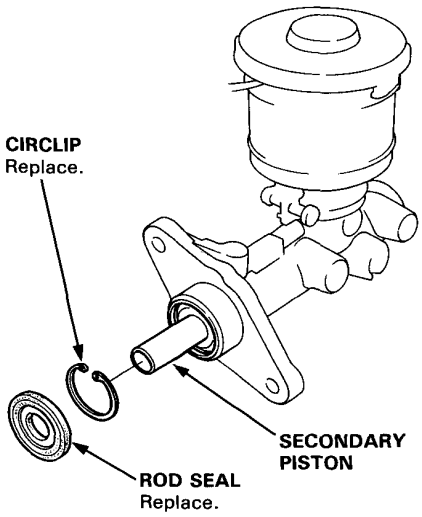
⚠ WARNING Disconnect the ALB Checker before driving the car. A collision can result from a reduction or complete loss of braking ability, causing severe personal injury or death.

Master Cylinder

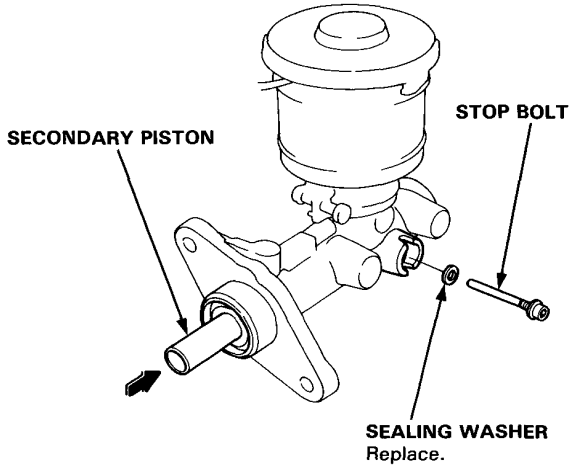
Disassembly

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.**
- ***Clean all parts in brake fluid and air dry; blow out all passages with compressed air***

1. Remove the master cylinder (see page 19-14).
2. Remove the rod seal.
3. Remove the circlip while pushing in the secondary piston.



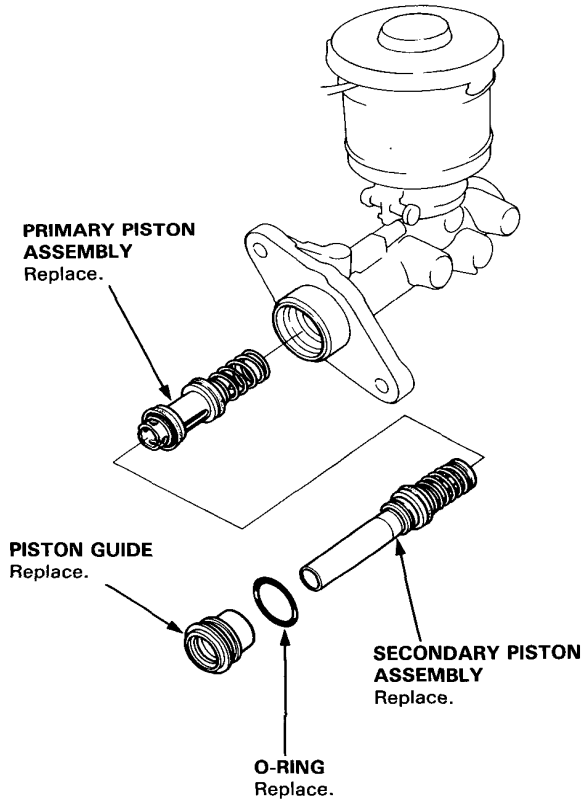
4. Remove the stop bolt while pushing in the secondary piston.



5. Remove the piston guide, secondary piston assembly and primary piston assembly.

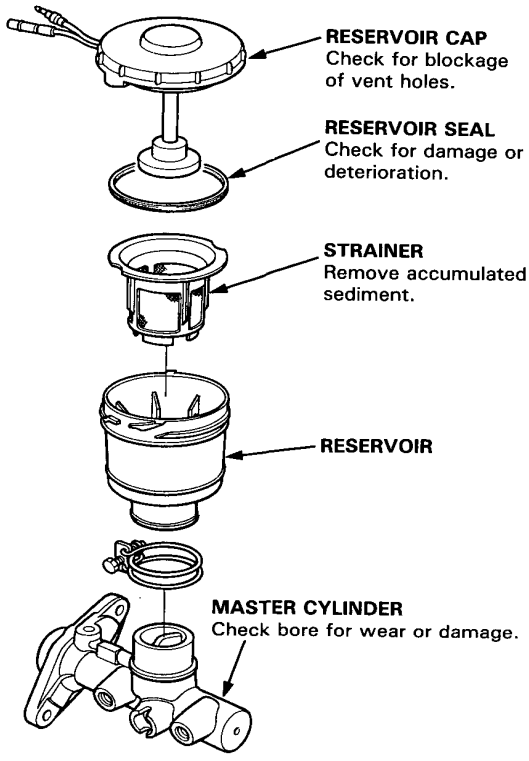
   NOTE: If the primary piston assembly is difficult to remove, apply compressed air from the primary piston side port.

CAUTION:
- **Do not use high pressure air or bring the nozzle too close to the port.**
- **Place a shop rag over the master cylinder to prevent the primary piston from becoming a projectile.**



6. Remove the reservoir cap, strainer and reservoir from the master cylinder.

7. Remove the reservoir seal from the reservoir cap.



Master Cylinder

Reassembly

CAUTION:

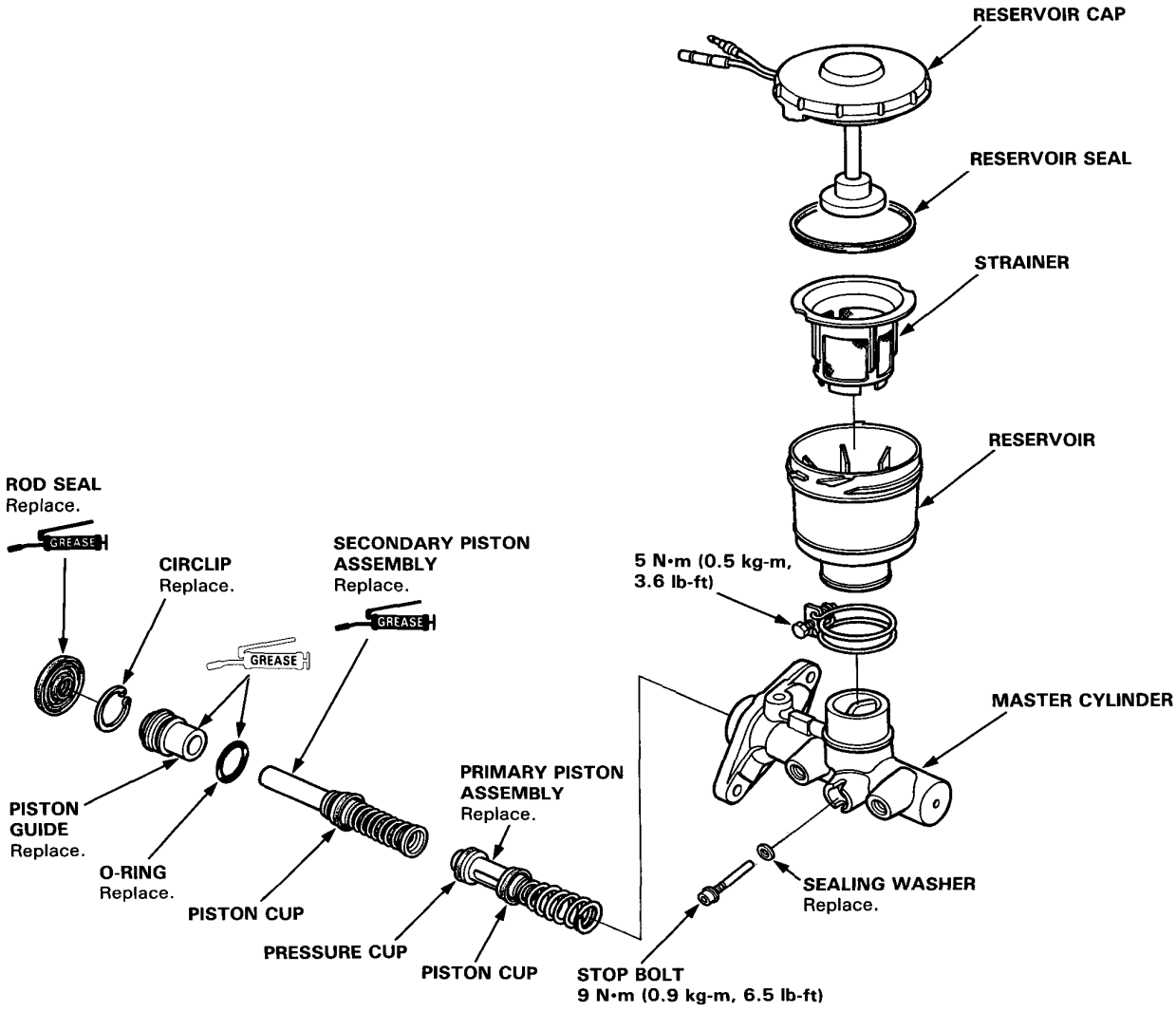
- **Do not spill brake fluid on the car; it may damage the paint; if brake does contact the paint, wash it off immediately with water.**
- **Clean all parts in brake fluid and air dry; blow out all passages with compressed air.**
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Replace parts with new ones whenever specified to do so.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not reuse the drained fluid. Use only clean DOT 3 or 4 brake fluid.**
- **Replace the master cylinder if the bore is damaged or worn. Do not hone or attempt to refinish the bore.**

NOTE:

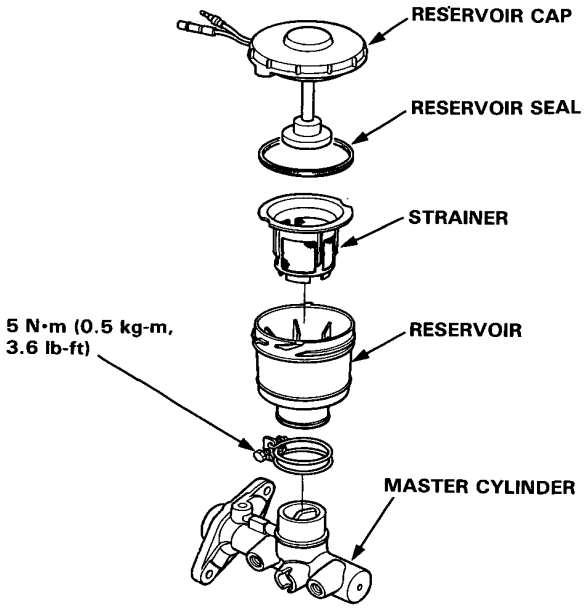
- Coat piston cups, pressure cup and master cylinder bore with clean brake fluid.
- Use recommended greases in the master cylinder seal set.

GREASE : KLUBER GLKO

GREASE : SHIN-ETSU CHEMICAL KS62M

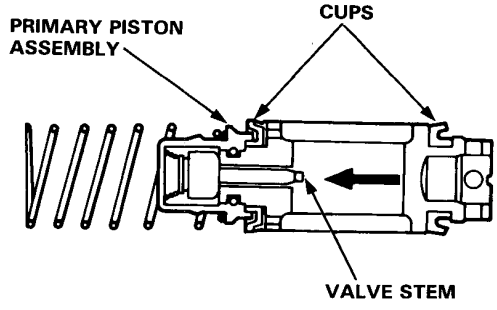


1. Install the reservoir on the master cylinder with a clamp as shown.
2. Install the reservoir seal in the groove of the reservoir cap.
3. Install the strainer and reservoir cap on the reservoir.



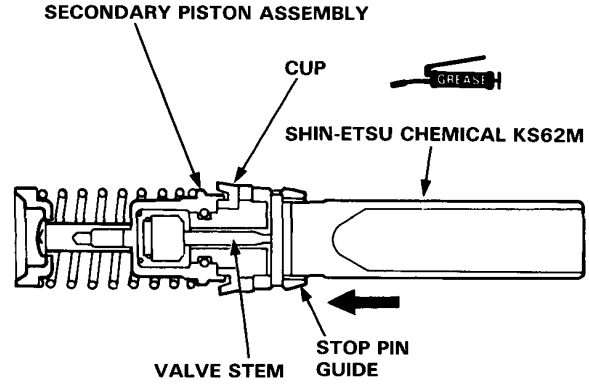
4. Coat the cups of a new primary piston assembly with clean brake fluid, then install the primary piston assembly into the master cylinder.

NOTE:
- Before installation, check that the valve stem moves smoothly by lightly pushing it through the slot in the piston.
- Install the piston so that the slot in the piston aligns with the stop bolt hole in the master cylinder.

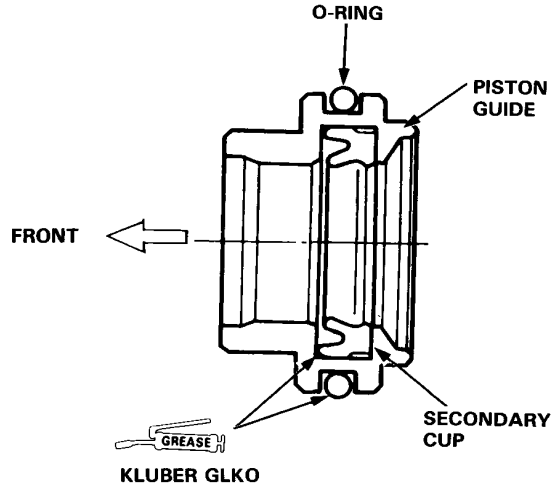


5. Coat the cup of a new secondary piston assembly with clean brake fluid.
6. Apply recommended grease in the master cylinder seal set to the piston and install the piston into the master cylinder.

NOTE: Check that the valve stem moves smoothly by pushing the stop pin guide.



7. Apply recommended grease in the master cylinder seal set to a new O-ring and the secondary cup in a new piston guide, and install the O-ring onto the piston guide.

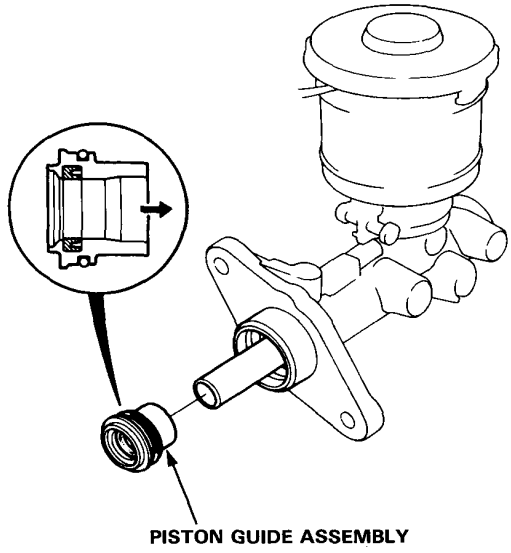


(cont'd)

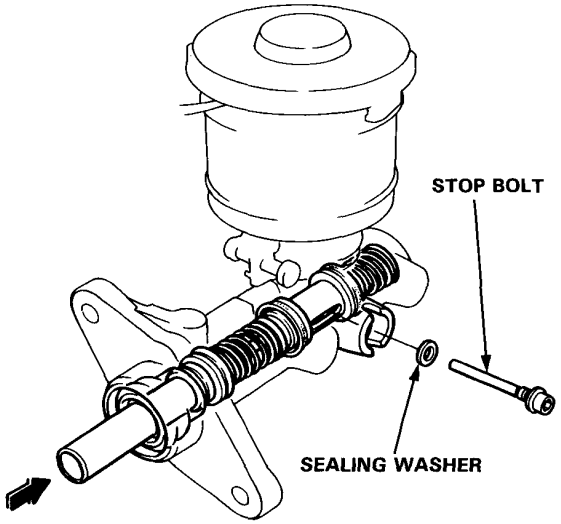
Master Cylinder

Reassembly (cont'd)

7. Install the piston guide assembly into the master cylinder.

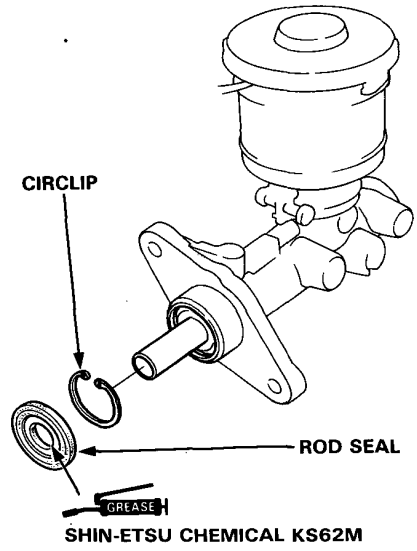


8. Align the slot in the primary piston with the stop bolt hole by pushing the secondary piston in, and install the stop bolt with a new sealing washer.



9. Install a new circlip while pushing in the secondary piston.

10. Apply recommended grease in the master cylinder set to a new rod seal, and install the seal onto the master cyliner.



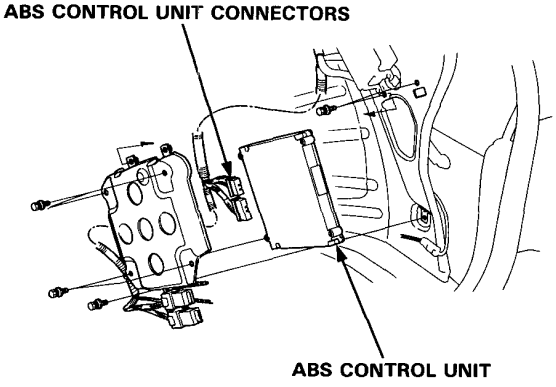
11. Adjust the pushrod clearance (see page 19-19).

12. Install the master cylinster (see page 19-20).

Electronic Components

ABS Control Unit Replacement

1. Remove the right quarter trim panel.
2. Disconnect the ABS control unit connectors.
3. Remove the ABS control unit mounting bolts, then remove the control unit.

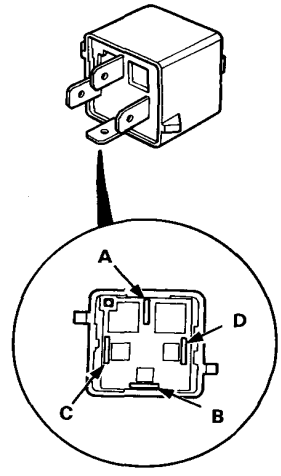


4. Install the ABS control unit in the reverse order of removal.

Relay Inspection

1. Remove the fail-safe relays and motor relay (location: page 19-41).
2. Check for continuity between the terminals C and D.
   There should be continuity.
3. Check for continuity between the terminals A and B.
   There should be continuity when the battery is connected between the terminals C and D.
   There should be no continuity when the battery is disconnected.

<Fail-safe Relay:>



<Motor Relay:>