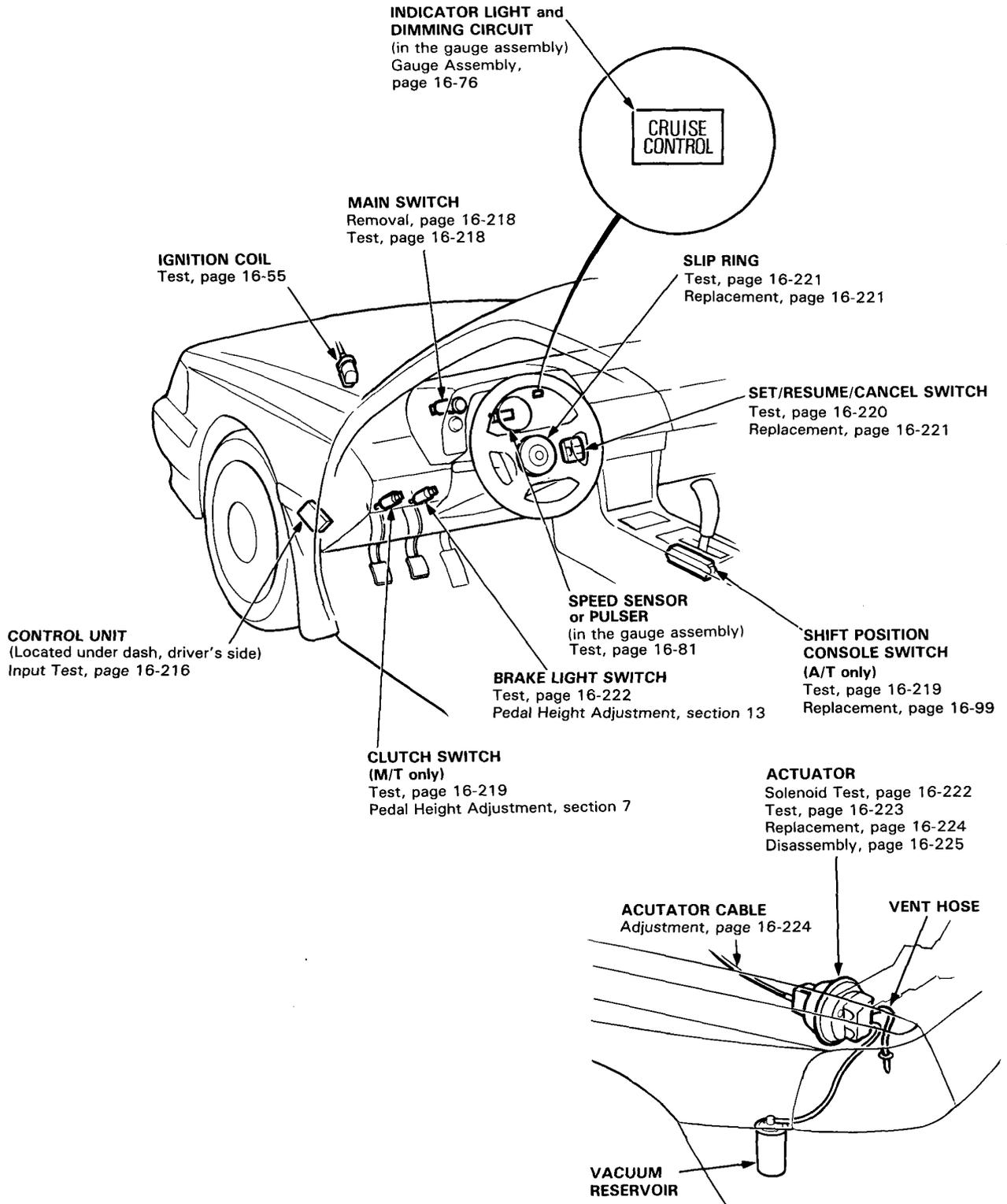


Cruise Control

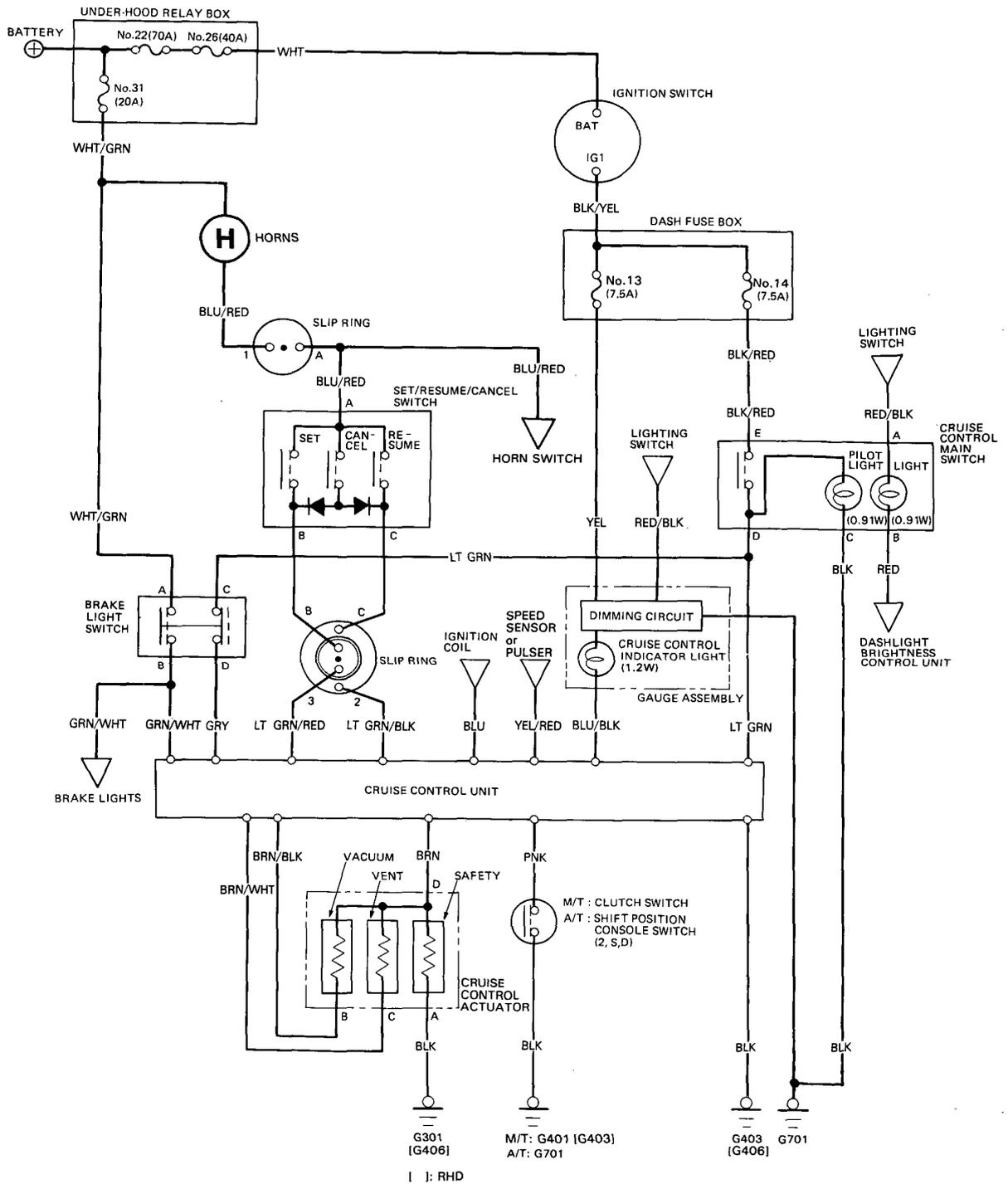


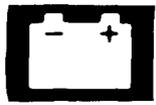
Component Location Index



Cruise Control

Circuit Diagram





Troubleshooting

NOTE: The numbers in the table show the troubleshooting sequence.

| Item to be inspected Symptom | Blown No. 14 (7.5 A) fuse (in the dash fuse box) | Main switch | Indicator light and its dimming circuit (in the gauge assembly) | SET/RESUME/CANCEL switch | Actuator cable free play | Actuator | Disconnected, clogged or restricted vacuum lines/stuck check valve/ leaky vacuum reservoir | Clutch switch and mounting (M/T) | Shift position console switch (A/T) | Blown No. 31 (20 A) fuse (in the under-hood relay box) | Brake light switch | Control unit input | Poor ground | Open circuit in wires or loose or disconnected terminals |
|---|---|-------------|--|--------------------------|--------------------------|----------|--|----------------------------------|-------------------------------------|---|--------------------|--------------------|----------------|---|
| Cruise control can't be set. | 1 | 2 | | | | | | | | | | 3 | G403 [G406] | LT GRN or BLK/RED |
| Cruise control can be set, but indicator light does not go on. | | | 1 | | | | | | | | | | | BLU/BLK |
| Cruise speed noticeably higher or lower than what was set. | | | | | | | | | | | 1 | | | |
| Excessive overshooting and/or undershooting when trying to set speed. | | | | | 1 | 2 | | | | | | 3 | | |
| Steady speed not held even on a flat road with cruise control set. | | | | | 1 | 3 | 2 | | | | | 4 | | |
| Car does not decelerate or ac- celerate accordingly when SET or RESUME button is pushed. | | | | 1 | | | | | | | | 2 | | |
| Set speed not cancelled when clutch pedal is pushed. (M/T) | | | | | | | | 1 | | | | 2 | | |
| Set speed not cancelled when shift lever is moved to N. (A/T) | | | | | | | | | 1 | | | 2 | | |
| Set speed not cancelled when brake pedal is pushed. | | | | | | | | | | 1 | 2 | 3 | | |
| Set speed not cancelled when CANCEL button is pushed. | | | | 1 | | | | | | | | 2 | | |
| Set speed not resumed when RESUME button is pushed (with main switch on, but set speed temporarily cancelled). | | | | 1 | | | | | | | | 2 | | |

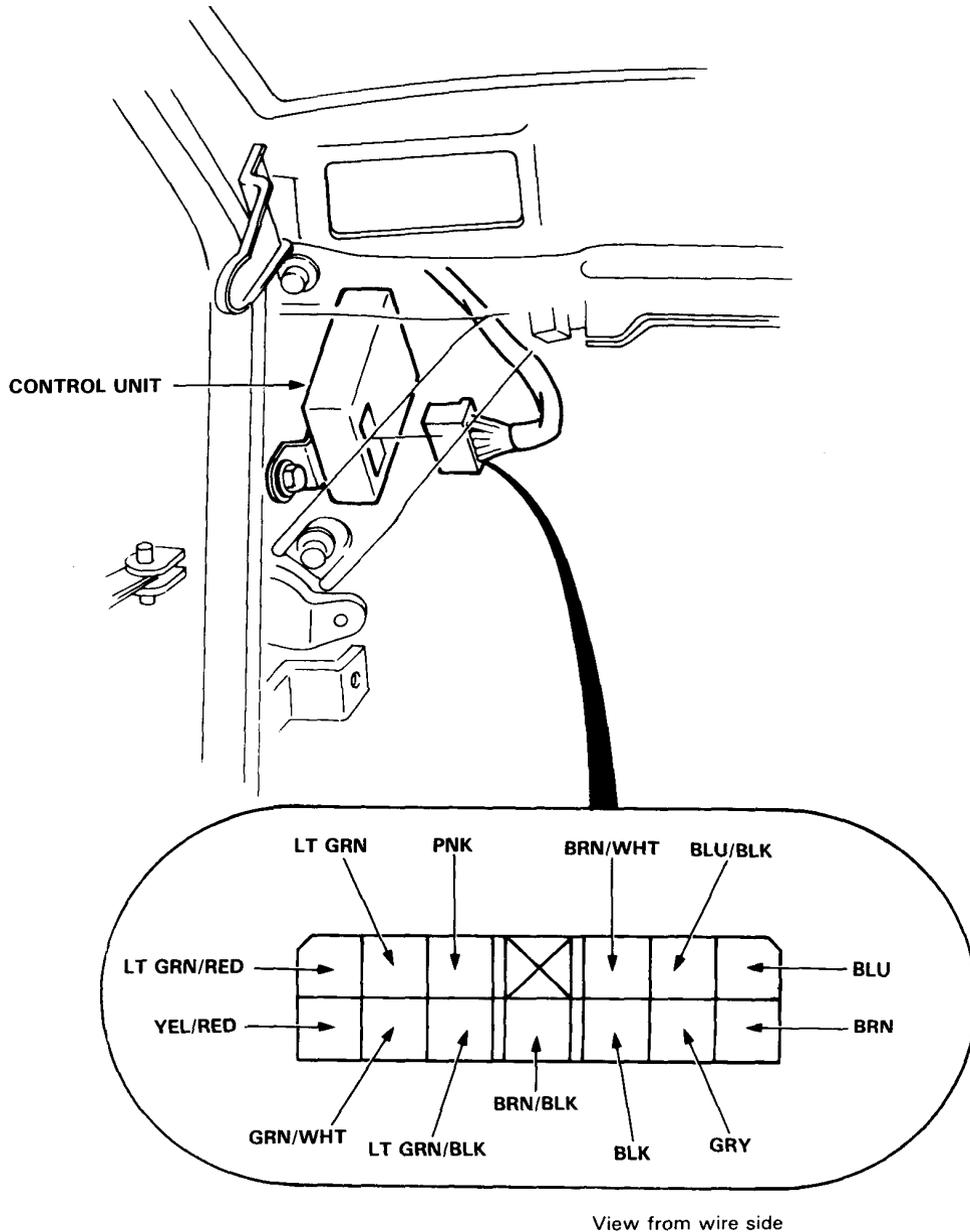
[]: RHD

Cruise Control

Control Unit Input Test

Remove the dashboard lower panel to disconnect the 13-P connector from the control unit.
Make the following input tests at the harness pins.

NOTE: Recheck the connections between the 13-P connector and the control unit, then replace the control unit if all input tests prove OK.



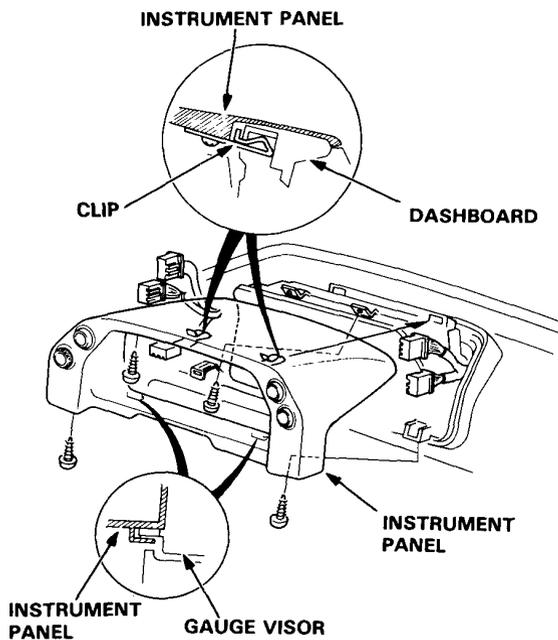


| No. | Wire | Test condition | Test: desired result | Possible cause (if result is not obtained) |
|-----|------------|--|---|--|
| 1 | BLK | Under all conditions. | Check for continuity to ground: should be continuity. | <ul style="list-style-type: none"> • Poor ground (LHD: G403, RHD: G406). • An open in the wire. |
| 2 | LT GRN | Ignition switch ON and main switch ON. | Check for voltage to ground: should be battery voltage. | <ul style="list-style-type: none"> • Blown No. 14 (7.5 A) fuse. • Faulty main switch. • An open in the LT GRN or BLK/RED wire. |
| 3 | LT GRN/BLK | Resume or cancel switch pushed. | Ground each terminal: Horns should sound as the switch is pushed. | <ul style="list-style-type: none"> • Blown No. 31 (20 A) fuse. • Faulty SET/RESUME/CANCEL switch. • Faulty slip ring. • Faulty horn. • An open in the WHT/GRN, BLU/RED, LT GRN/BLK or LT GRN/RED wire. |
| 4 | LT GRN/RED | Set or cancel switch pushed. | | |
| 5 | PNK | M/T: Clutch pedal pushed. A/T: Shift lever in 2, S or D | Check for continuity to ground: should be continuity. | <ul style="list-style-type: none"> • Faulty or misadjusted clutch switch (M/T). • Faulty shift position console switch (A/T). • Poor ground { M/T-LHD: G401, RHD: G403 } { A/T-G701 } • An open in the wire. |
| 6 | BLU | Start the engine. | Check for voltage to ground: should be battery voltage. | <ul style="list-style-type: none"> • Faulty ignition system. • An open in the wire. |
| 7 | YEL/RED | Ignition switch ON and main switch ON. Raise the front of the car and rotate one wheel slowly. | Check for voltage between the LT GRN ⊕ and YEL/RED ⊖ terminals: should be 0–12–0–12 V repeatedly. | <ul style="list-style-type: none"> • Faulty speed sensor or pulser. • An open in the wire. |
| 8 | GRY | Ignition switch ON, main switch ON and brake pedal pushed, then released. | Check for voltage to ground: should be 0 V with the pedal pushed and battery voltage with the pedal released. | <ul style="list-style-type: none"> • Faulty brake light switch. • An open in the GRY or LT GRN wire. |
| 9 | GRN/WHT | Brake pedal pushed, then released. | Check for voltage to ground: should be battery voltage with the pedal pushed, and 0V with the pedal released. | <ul style="list-style-type: none"> • Faulty brake light switch. • An open in the wire. |
| 10 | BLU/BLK | Ignition switch ON. | Attach to ground: Indicator light in the gauge assembly comes on. | <ul style="list-style-type: none"> • Blown bulb. • Blown No. 13 (7.5 A) fuse. • Faulty dimming circuit in the gauge assembly. • An open in the wire. |
| 11 | BRN/WHT | Under all conditions. | Check for resistance to ground: should be 80–120 Ω. | <ul style="list-style-type: none"> • Faulty actuator solenoid. • Open or short in the wire. |
| 12 | BRN | Under all conditions. | Check for resistance to ground: should be 40–60 Ω. | |
| 13 | BRN/BLK | Under all conditions. | Check for resistance to ground: should be 70–110 Ω. | |

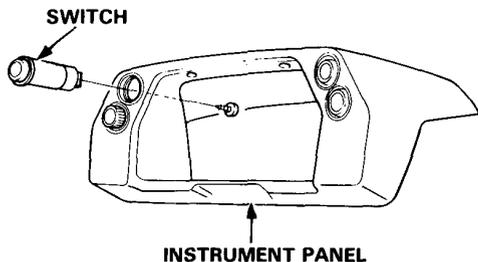
Cruise Control

Main Switch Removal

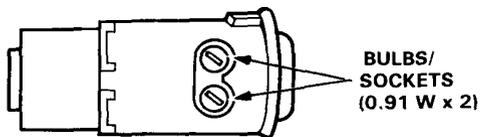
1. Remove the 4 screws, then remove the instrument panel from the dashboard.



2. Remove the screw from the rear of the instrument panel, then remove the switch.



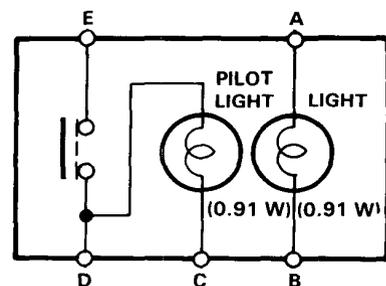
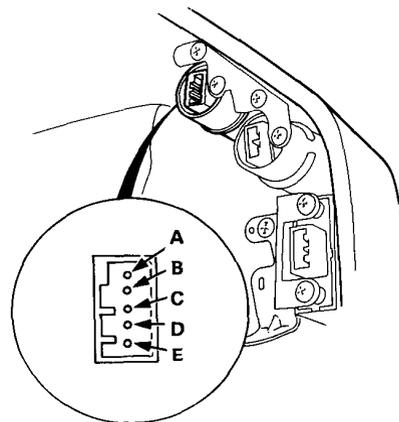
3. Turn the socket 45° counterclockwise to remove it.



Main Switch Test

1. Remove the instrument panel from the dashboard.
2. Check for continuity between the terminals in each switch position according to the table.

| Terminal Position | E | D | C | B | A |
|-------------------|---|---|---|---|---|
| OFF | | ○ | ○ | ○ | ○ |
| ON | ○ | ○ | ○ | ○ | ○ |

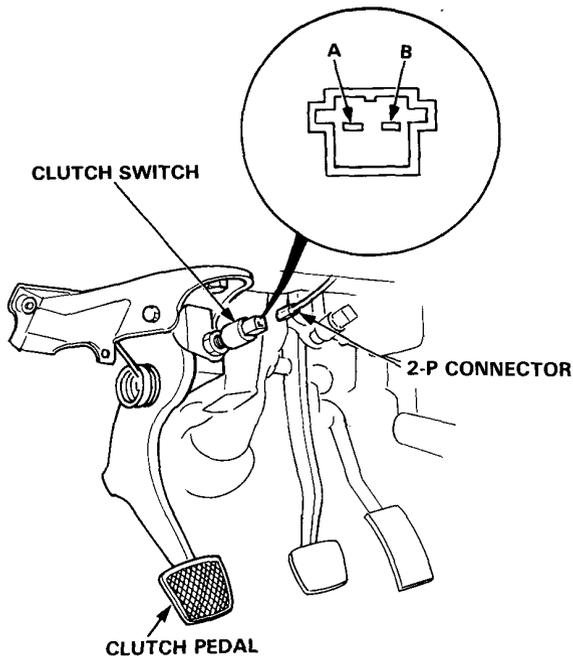




Clutch Switch Test

1. Disconnect the 2-P connector from the switch.
2. Check for continuity between the terminals according to the table.

| Terminal | A | B |
|--------------------------|---|---|
| Clutch Pedal RELEASED | ○ | ○ |
| PUSHED | | |



3. If necessary, replace the switch or adjust pedal height (see section 7).

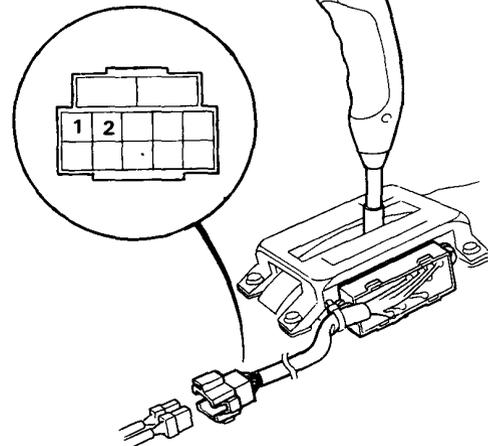
Shift Position Console Switch Test

1. Remove the front console and the center instrument panel, then disconnect the 10-P connector from the console switch.
2. Check for continuity between the terminals in each switch position according to the table.

Shift Position Switch (for cruise control)

| Terminal | 1 | 2 |
|----------|---|---|
| Position | | |
| 2 | ○ | ○ |
| S | ○ | ○ |
| D | ○ | ○ |
| N | | |
| R | | |
| P | | |

View from wire side

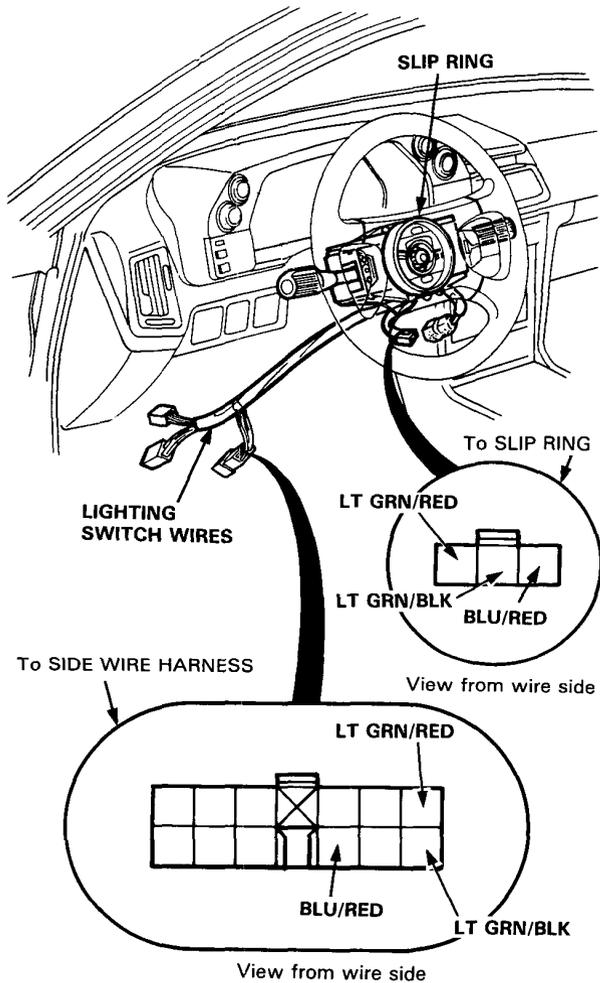


3. If necessary, replace the switch (see page 16-99).

Cruise Control

SET/RESUME/CANCEL Switch Test

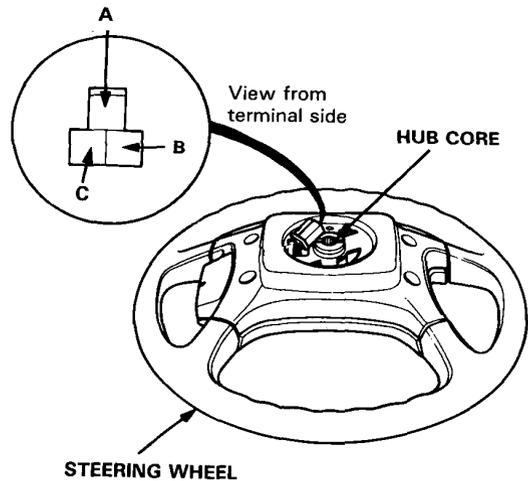
1. Remove the dashboard lower panel and disconnect the 13-P connector from the side wire harness.



2. Check for continuity between the terminals in each switch position according to the table.

| Terminal | A | B | C |
|-------------|---|---|---|
| Position | | | |
| SET (ON) | ○ | ○ | |
| RESUME (ON) | ○ | | ○ |
| CANCEL (ON) | ○ | ▶ | ○ |

- If all of the continuity check is OK, the SET/RESUME/CANCEL switch is OK.
 - If there is no continuity in one or some switch positions, remove the steering wheel, then turn it over and go to step 3.
3. Repeat step 2, but this time tests at the 3-P connector of the steering wheel.

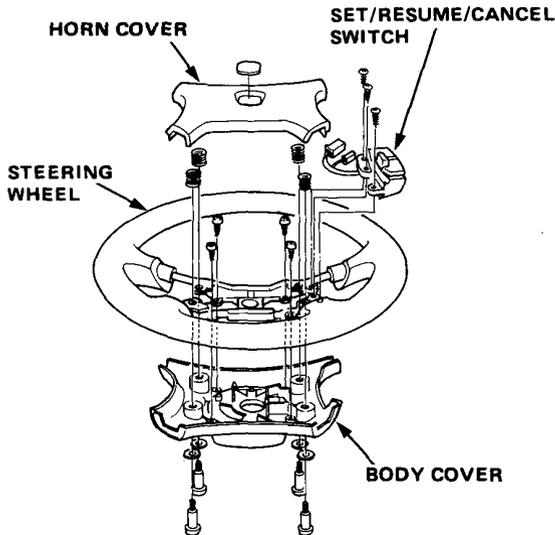


- If there is no continuity in one or some switch positions, repair the SET/RESUME/CANCEL switch.
- If all of the continuity check is OK, remove the steering column lower cover and disconnect the 3-P connector from the slip ring, then check for open in the lighting switch wires (BLU/RED, LT GRN/BLK and LT GRN/RED). If the wires are OK, check the slip ring.

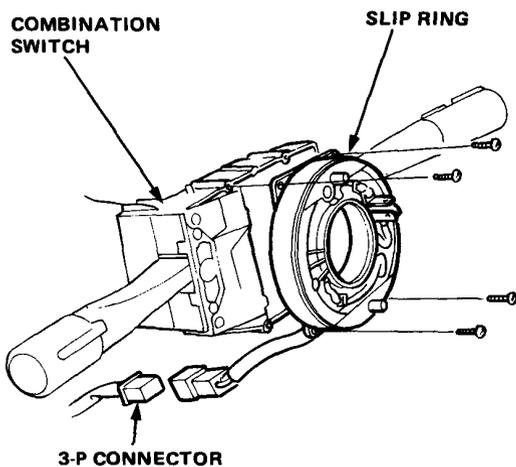


SET/RESUME/CANCEL Switch Replacement

1. Remove the steering wheel.
2. Separate the horn cover and the body cover by removing the 4 screws.
3. Remove the 3 screws and the SET/RESUME/CANCEL switch from the steering wheel.

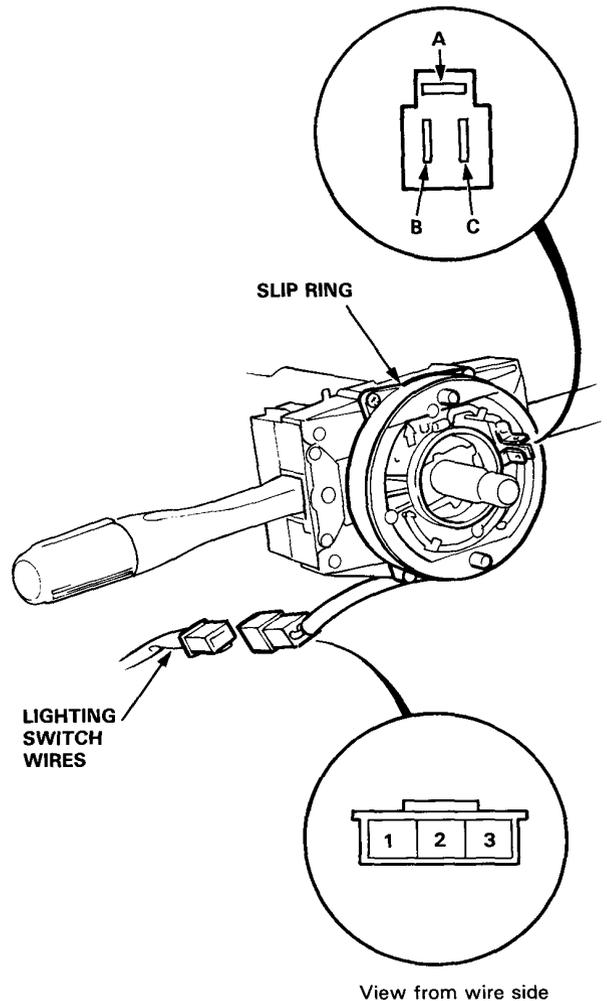


4. If necessary, remove the upper and lower steering column covers, then remove the 4 screws and disconnect the 3-P connector to remove the slip ring from the combination switch.



Slip Ring Test

1. Remove the steering wheel.
2. Remove the steering column lower cover, then disconnect the 3-P connector from the lighting switch wire.
3. There should be continuity between the No.1 and A terminals, the No.3 and B terminals, and the No.2 and C terminals, as you turn the slip ring.

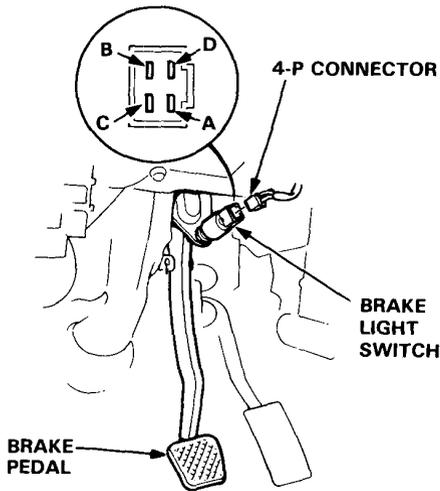


Cruise Control

Brake Light Switch Test

1. Disconnect the 4-P connector from the switch.
2. Check for continuity between the terminals according to the table.

| Terminal | A | B | C | D |
|-------------|---|---|---|---|
| Brake Pedal | | | | |
| PUSHED | ○ | ○ | | |
| RELEASED | | | ○ | ○ |



3. If necessary, replace the switch or adjust pedal height (see section 13).

Actuator Solenoid Test

1. Disconnect the 4-P connector from the actuator.
2. Measure resistance between the terminals.

Resistance

VACUUM SOLENOID (between B and D):

30–50Ω

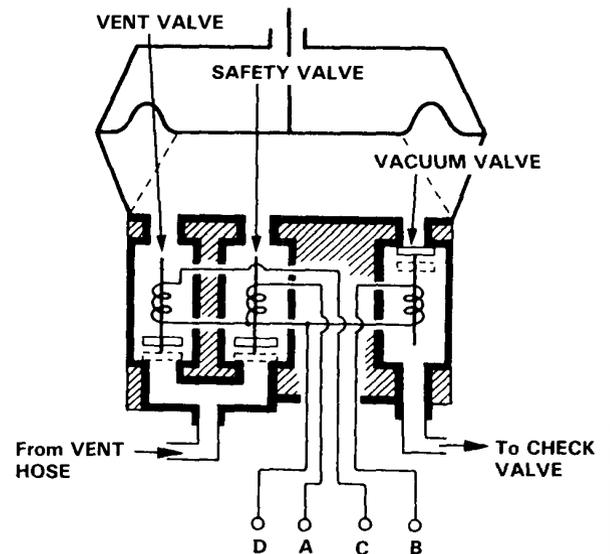
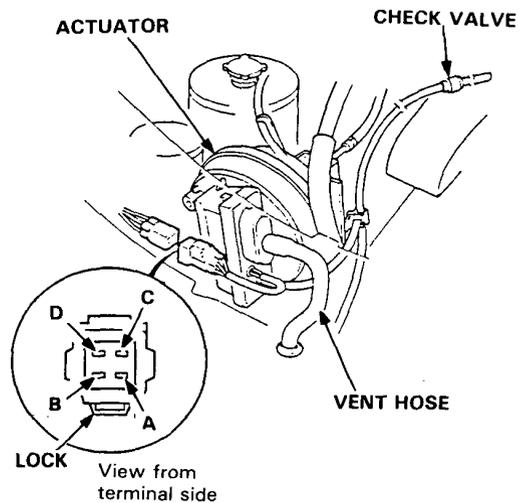
VENT SOLENOID (between C and D):

40–60Ω

SAFETY SOLENOID (between A and D):

40–60Ω

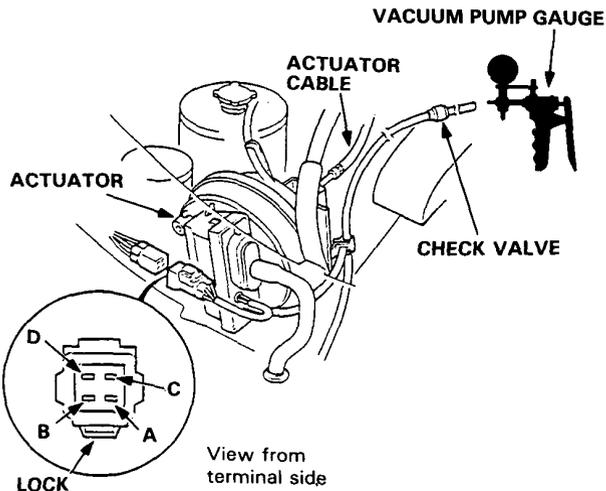
NOTE: Resistance will vary slightly with temperature; specified resistance is at 20°C (70°F).



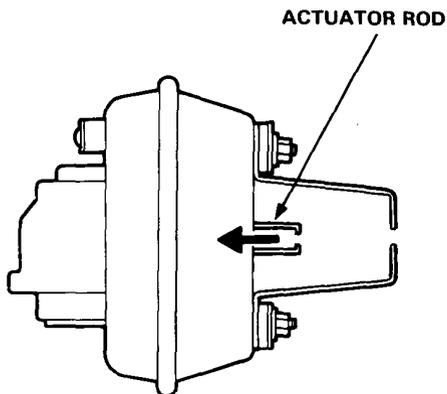


Actuator Test

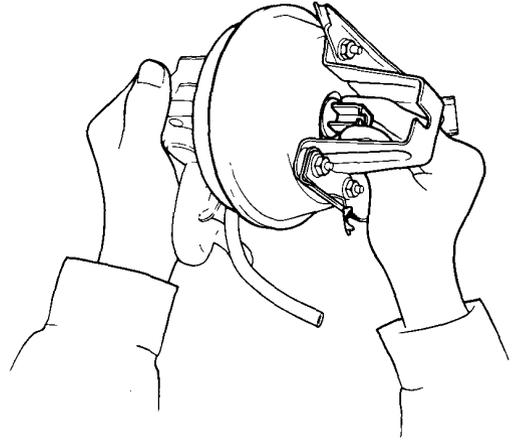
1. Disconnect the actuator cable from the actuator rod and the 4-P connector.
2. Connect battery positive to the D terminal and negative to the A, B and C terminals.
3. Connect a vacuum pump to the check valve. Then apply vacuum to the actuator.



4. The actuator rod should pull in completely. If the rod pulls in only part-way or not at all, check for a leaking vacuum line or defective solenoid.



5. With voltage and vacuum still applied, try to pull the actuator rod out by hand. You should not be able to pull it. If you can, it is defective.

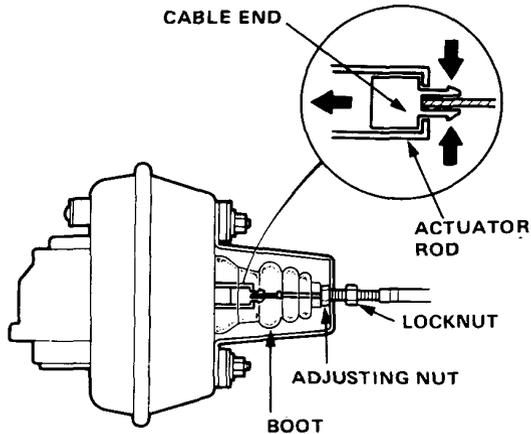


6. Disconnect battery negative from the C terminal. The actuator rod should return. If the actuator rod does not return, and the vent hose and filter are free, the solenoid valve assembly is defective.
7. Repeat steps 2-6, but this time disconnect battery negative from the A terminal. The actuator rod should return. If it does not return, and the vent hose and filter are free, the solenoid valve assembly is defective.
8. If the solenoid valve assembly is replaced, be sure to use new O-rings at each solenoid.

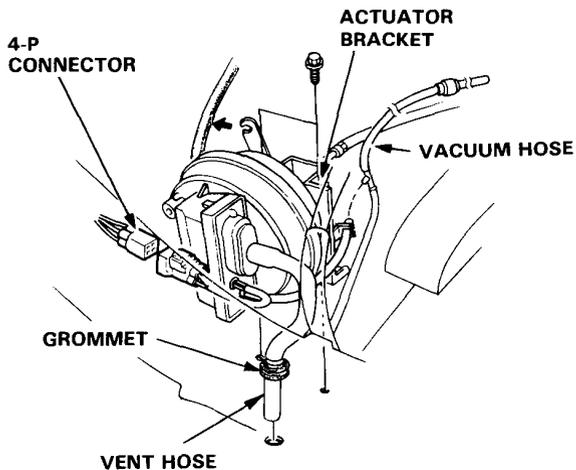
Cruise Control

Actuator/Cable Replacement

1. Pull back the boot and loosen the locknut, then disconnect the cable from the bracket.
2. Disconnect the cable end from the actuator rod.



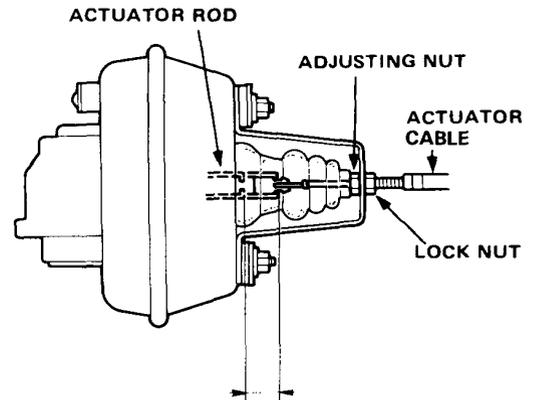
3. Disconnect the 4-P connector from the actuator.
4. Pull the vent hose from the grommet.
5. Disconnect the vacuum hose from the check valve.
6. Remove the 2 mount bolts and the actuator with the bracket and reservoir.



7. If necessary, disconnect the cable end from the linkage over the accelerator pedal, then turn the grommet 90° in the firewall and remove the cable.
8. Install in the reverse order of removal, and adjust free-play at actuator rod after connecting the cable (see next column).

Actuator Cable Adjustment

1. Check that the actuator cable operates smoothly with no binding or sticking.
2. Start the engine.
3. Measure the amount of movement of the actuator rod until the cable pulls on the accelerator lever (engine speed starts to increase). Free play should be 11 ± 1.5 mm (0.43 ± 0.06 in).



**LOCKNUT FREE PLAY: 11 ± 1.5 mm
(0.43 ± 0.06 in)**

4. If free play is not within specs, loosen the locknut and turn the adjusting nut as required.

NOTE: If necessary, check the throttle cable free play (see section 6), then recheck the actuator rod free play.

5. Retighten the locknut and recheck the free play.

