SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If electrical maintenance is required)

The CR-V SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, seat belt buckle tensioners in the front seat belt buckles, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items require special precautions and tools, and should be done only by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags and/or side airbags.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned OFF; otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

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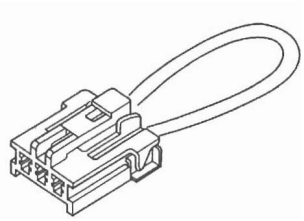
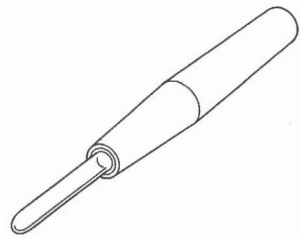
Special Tools

Ref. No.	Tool Number	Description	Qty
①	07WAZ-001010A	MPCS (MCIC) Service Connector	1
②	07TAZ-001020A	Back Probe Adaptor	1



①



②

General Troubleshooting Information

Tips and Precautions

Before Troubleshooting

1. Check applicable fuses in the appropriate fuse/relay box.

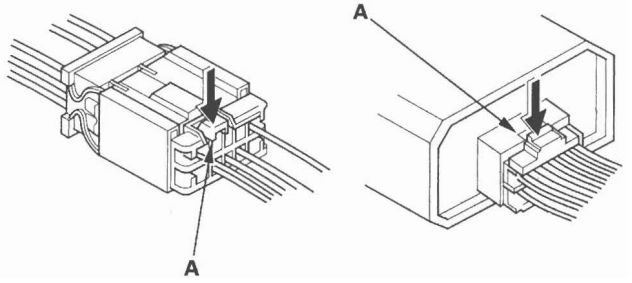
2. Check the battery for damage, state of charge, and clean and tight connections.

NOTICE

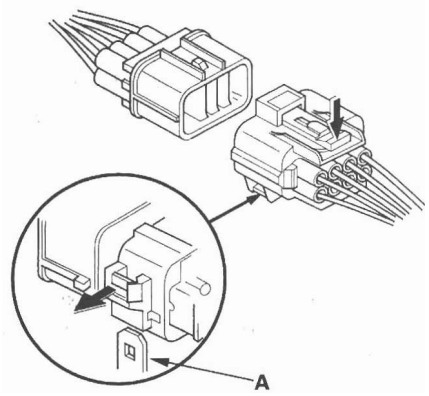
- Do not quick-charge a battery unless the battery ground cable has been disconnected, otherwise you will damage the alternator diodes.
- Do not attempt to crank the engine with the battery ground cable loosely connected or you will severely damage the wiring.

Handling Connectors

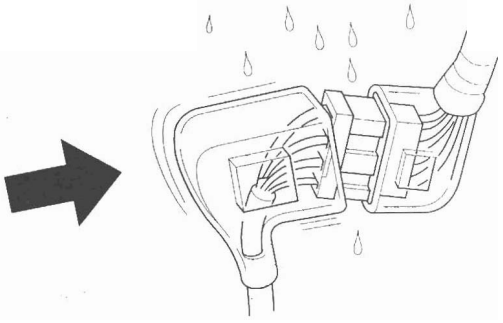
- Make sure the connectors are clean and have no loose wire terminals.
- Make sure multiple cavity connectors are packed with dielectric grease (except watertight connectors).
- All connectors have push-down release type locks (A).



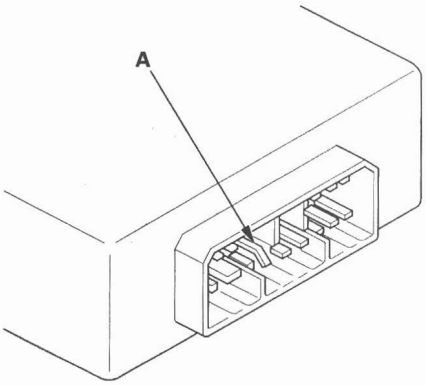
- Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
- Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket (A).



- Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
- Always reinstall plastic covers.



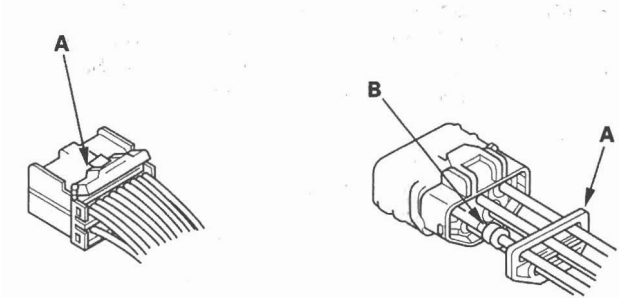
- Before connecting connectors, make sure the terminals (A) are in place and not bent.



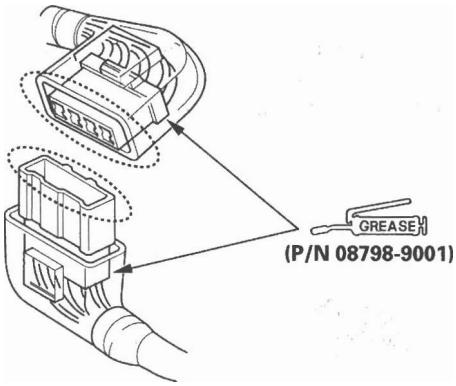
(cont'd)

General Troubleshooting Information (cont'd)

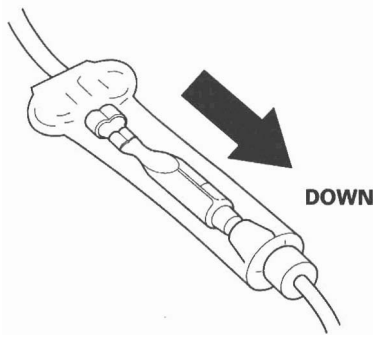
- Check for loose retainer (A) and rubber seals (B).



- The backs of some connectors are packed with dielectric grease. Add grease if necessary. If the grease is contaminated, replace it.

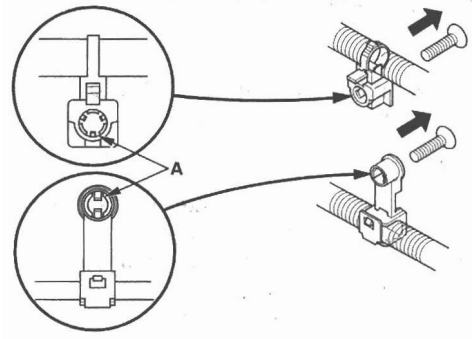


- Insert the connector all the way and make sure it is securely locked.
- Position wires so that the open end of the cover faces down.

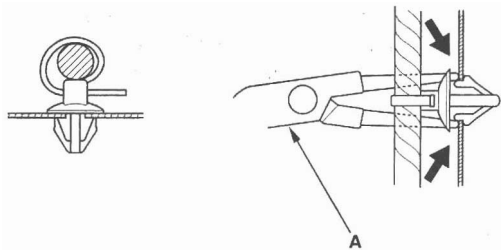


Handling Wires and Harnesses

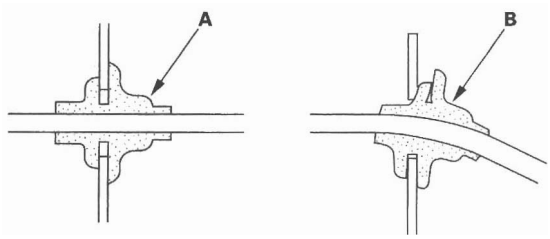
- Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.
- Remove clips carefully; don't damage their locks (A).



- Slip pliers (A) under the clip base and through the hole at an angle, then squeeze the expansion tabs to release the clip.

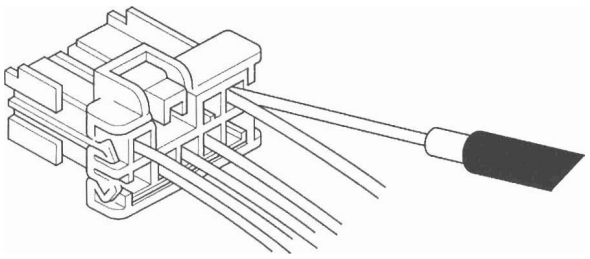


- After installing harness clips, make sure the harness doesn't interfere with any moving parts.
- Keep wire harnesses away from exhaust components and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.
- Seat grommets in their grooves properly (A). Do not leave grommets distorted (B).

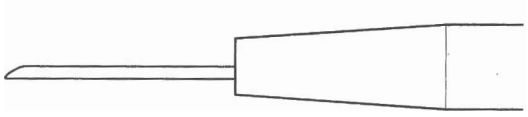


Testing and Repairs

- Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape.
- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage is SRS wiring or terminals, replace the harness.
- After installing parts, make sure that no wires are pinched under them.
- When using electrical test equipment, follow the manufacturer's instructions and those described in this manual.
- If possible, insert the probe of the tester from the wire side (except waterproof connector).



- Use back probe adaptor 07TAZ-001020A.



- Refer to the instructions in the Honda Terminal Kit for identification and replacement of connector terminals.

Five-step Troubleshooting

1. Verify The Complaint:
   Turn on all the components in the problem circuit to verify the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.

2. Analyze The Schematic:
   Look up the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power feed through the circuit components to ground. If several circuits fail at the same time, the fuse or a ground is a likely cause.

   Based on the symptoms and your understanding of the circuit operation, identify one or more possible causes of the problem.

3. Isolate The Problem By Testing The Circuit:
   Make circuit tests to check the diagnosis you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

4. Fix The Problem:
   Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.

5. Make Sure The Circuit Works:
   Turn on all components in the repaired circuit in all modes to make sure you've fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on the fuse. Make sure no new problems turn up and the original problem does not recur.

(cont'd)

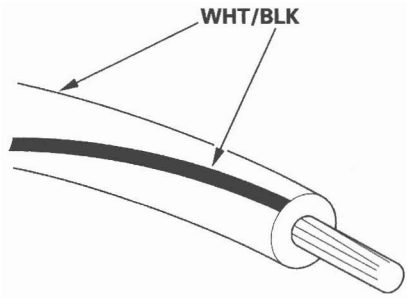
General Troubleshooting Information (cont'd)

Wire Color Codes

The following abbreviations are used to identify wire colors in the circuit schematics:

WHT	White
YEL	Yellow
BLK	Black
BLU	Blue
GRN	Green
RED	Red
ORN	Orange
PNK	Pink
BRN	Brown
GRY	Gray
PUR	Purple
LT BLU	Light Blue
LT GRN	Light Green

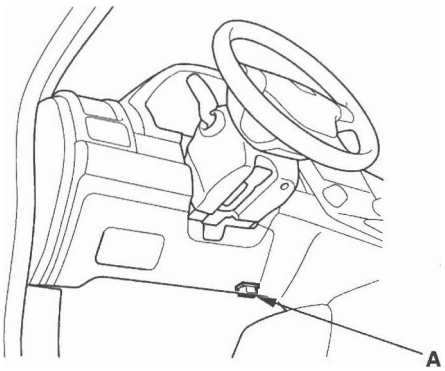
The wire insulation has one color or one color with another color stripe. The second color is the stripe.



How to Check for DTCs with the Honda Diagnostic System (HDS)

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS).

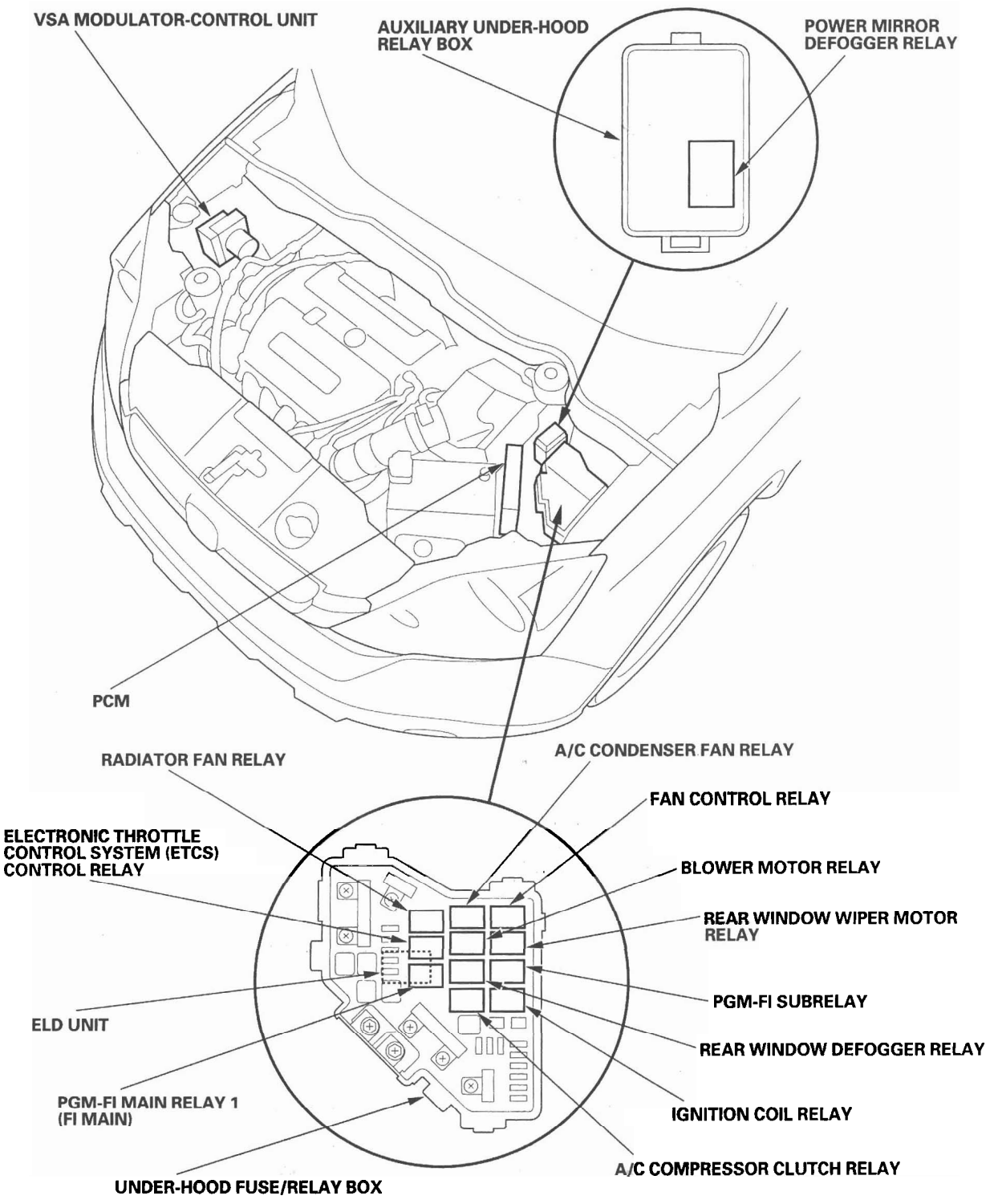
1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the vehicle, if it doesn't, troubleshoot the DLC circuit (see page 11-197).
4. Enter the BODY ELECTRICAL then select the TEST MODE menu.
5. Check for DTCs with the HDS.
6. If any DTCs are indicated, note them, and go to the indicated DTC troubleshooting.

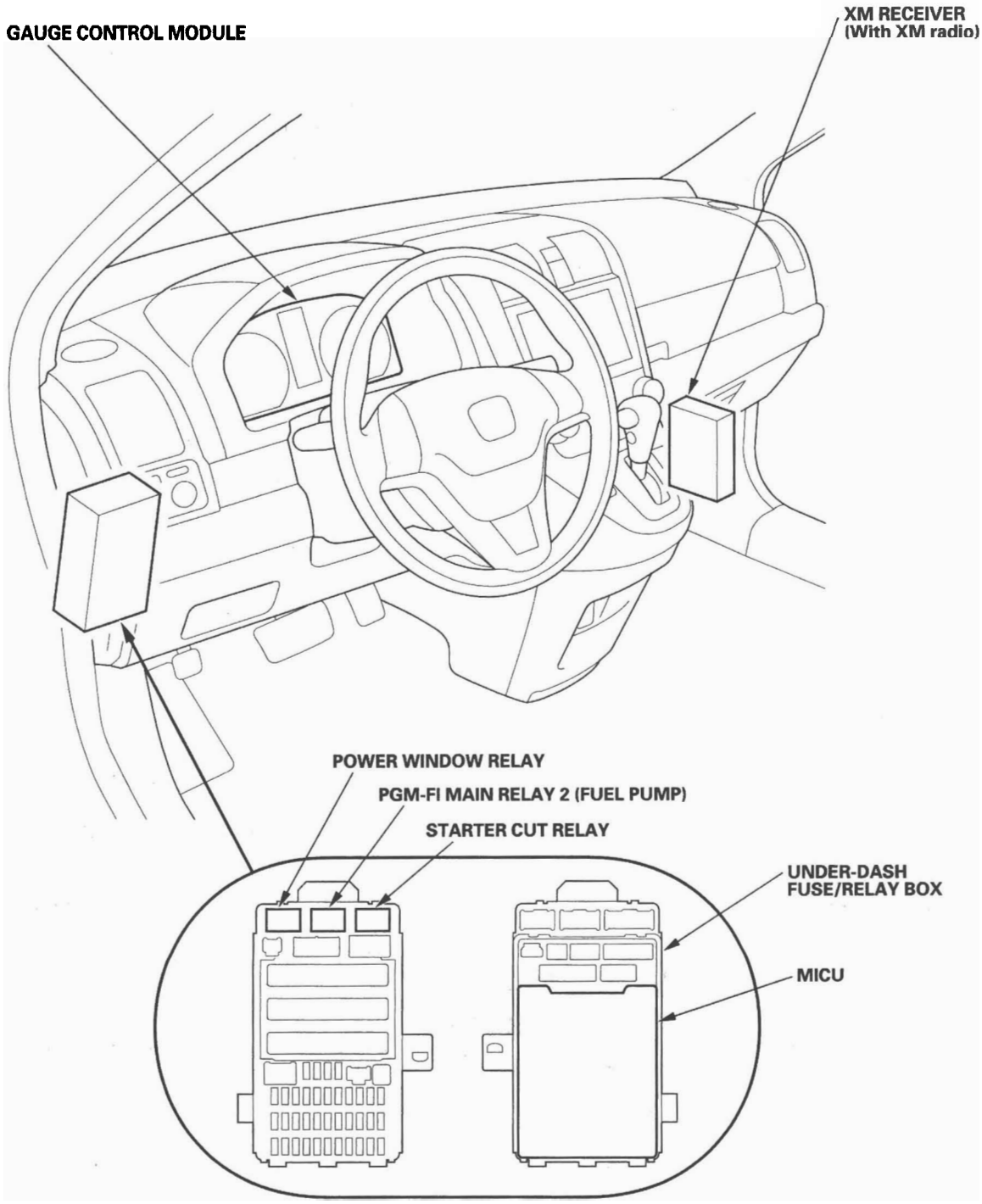
Relay and Control Unit Locations

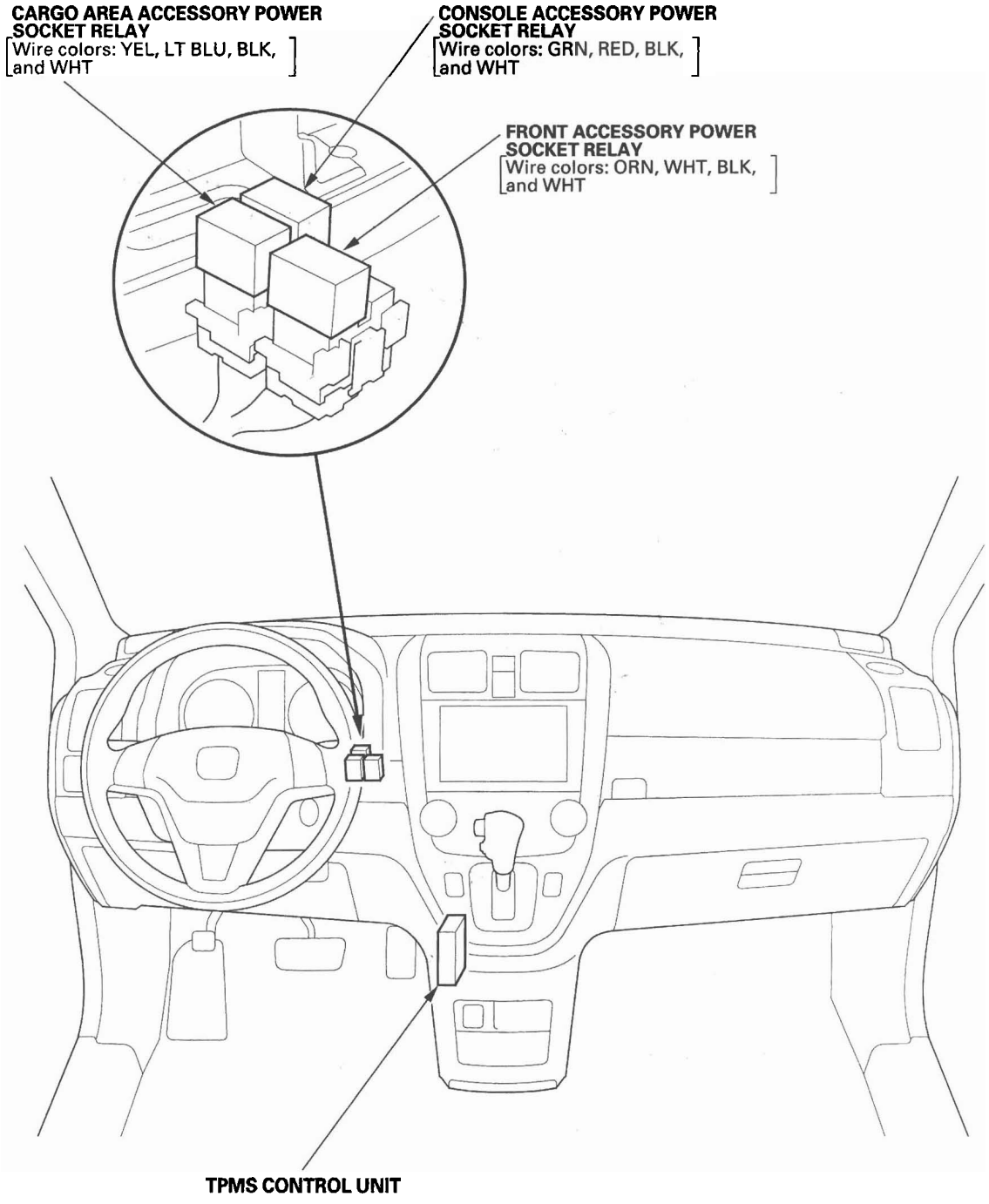
Engine Compartment



Relay and Control Unit Locations

Dashboard

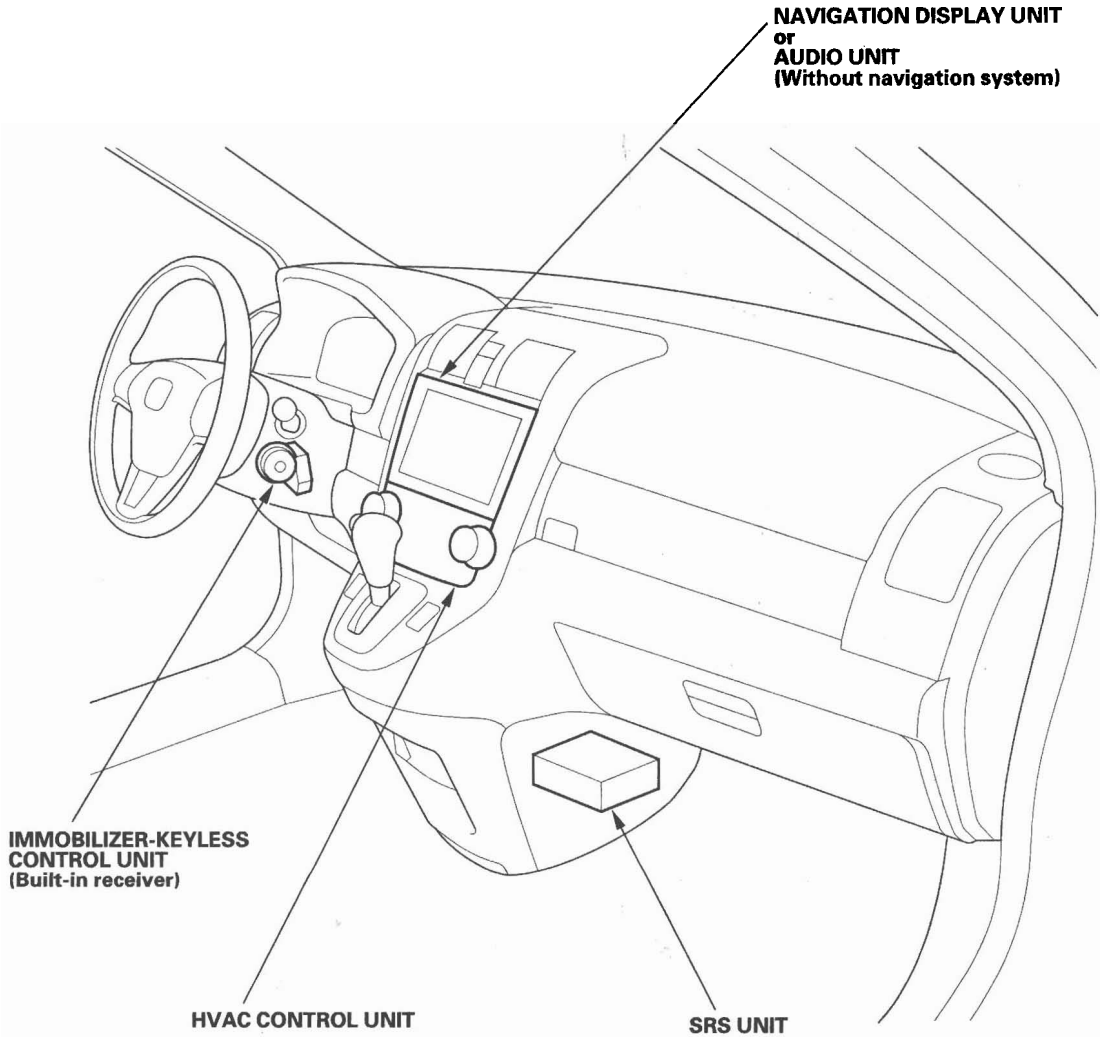



CARGO AREA ACCESSORY POWER SOCKET RELAY
[Wire colors: YEL, LT BLU, BLK, and WHT]
CONSOLE ACCESSORY POWER SOCKET RELAY
[Wire colors: GRN, RED, BLK, and WHT]
FRONT ACCESSORY POWER SOCKET RELAY
[Wire colors: ORN, WHT, BLK, and WHT]
TPMS CONTROL UNIT

(cont'd)

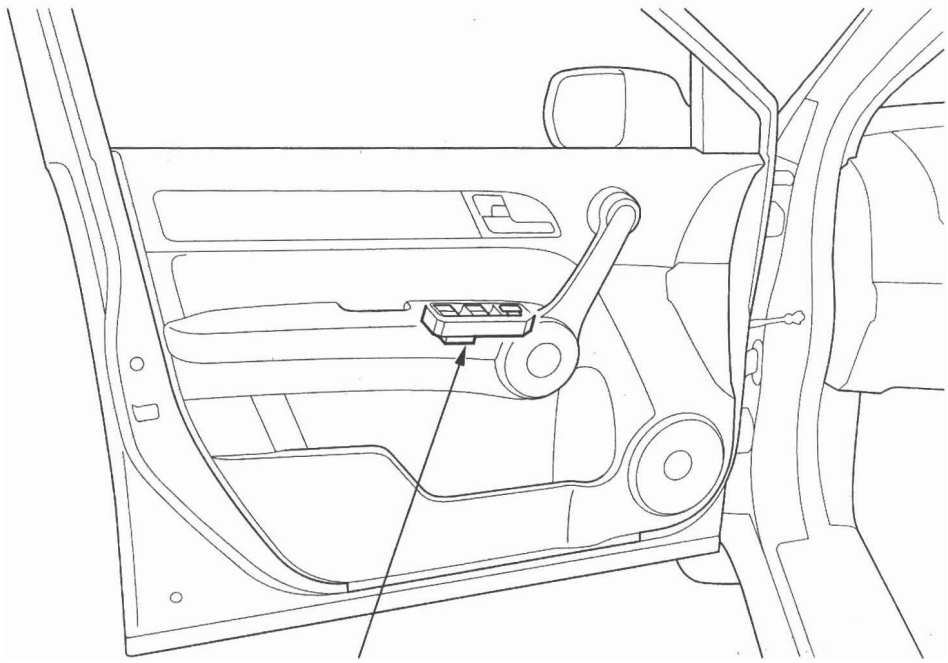
Relay and Control Unit Locations

Dashboard (cont'd)

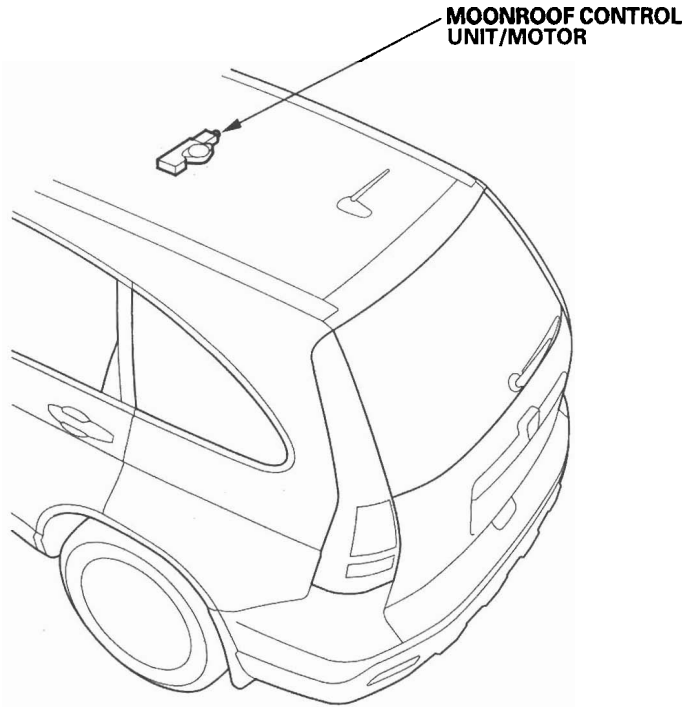


Door and Roof

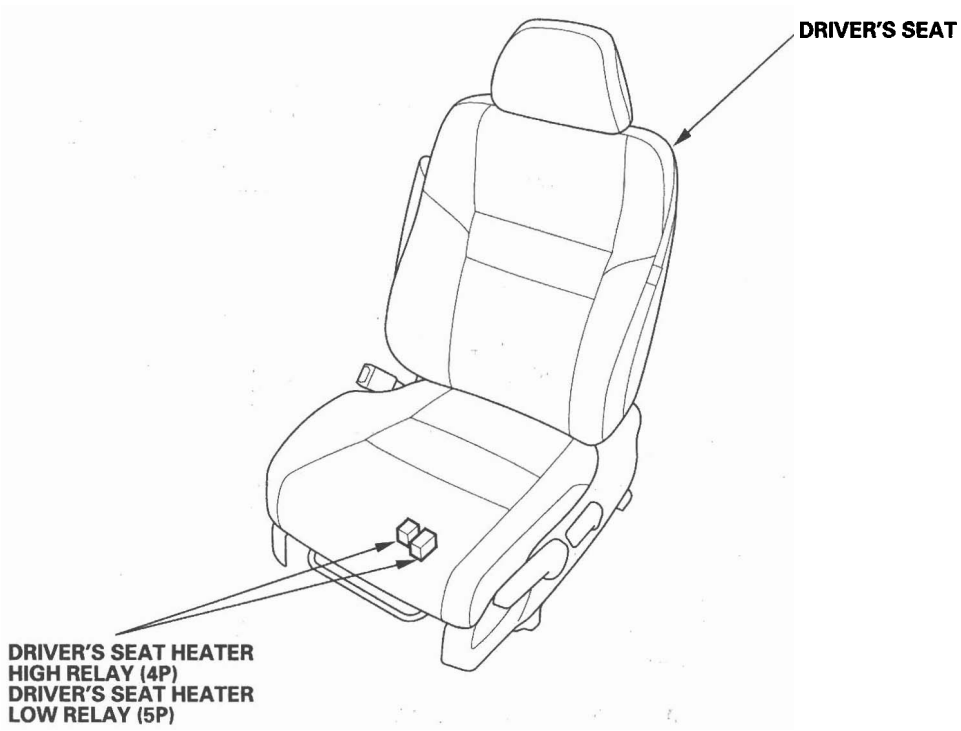
Driver's Door

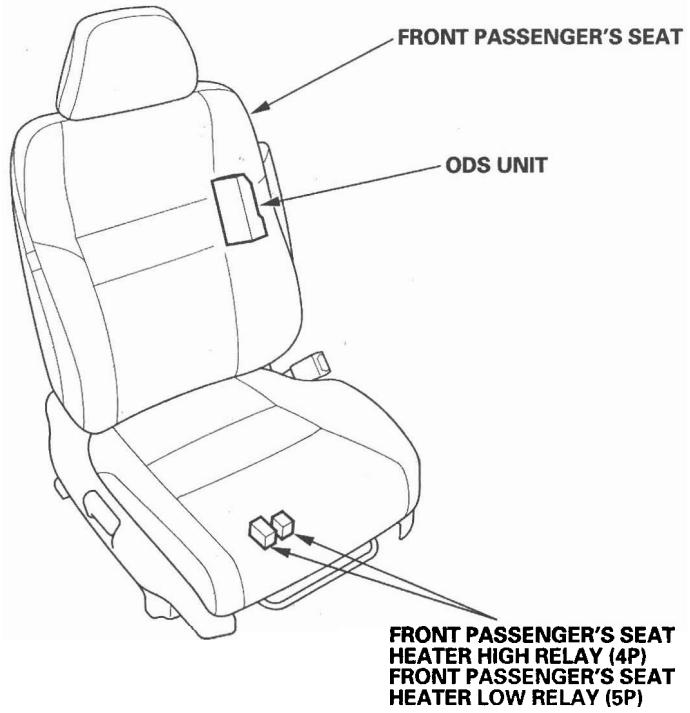


POWER WINDOW MASTER SWITCH
(Has built-in control unit)



Seat


DRIVER'S SEAT
DRIVER'S SEAT HEATER HIGH RELAY (4P)
DRIVER'S SEAT HEATER LOW RELAY (5P)


FRONT PASSENGER'S SEAT
ODS UNIT
FRONT PASSENGER'S SEAT HEATER HIGH RELAY (4P)
FRONT PASSENGER'S SEAT HEATER LOW RELAY (5P)

Connector Index

Identification numbers have been assigned to in-line connectors, junction connectors, and terminals. The number is preceded by the letter "C" for connectors "G" for ground terminals or "T" for non-ground terminals.

Harness	Location			Notes
	Engine Compartment	Dashboard	Others (Floor, Door, Tailgate, and Roof)	
A/C wire harness		C403, C505		(see page 22-55)
Battery ground cable	(−), T3, G1			(see page 22-14)
Cable reel subharness			C901	(see page 22-54)
Console subharness			C556	(see page 22-48)
Dashboard wire harness (View of driver's side)		C501, C502, C503, C601, C602, C751, C752, C801 G501		(see page 22-28)
Dashboard wire harness (View of middle)		C506, C507, C510 G502, G504, G505		(see page 22-30)
Dashboard wire harness (View of passenger's side)		C505, C508, C509, C761 G503		(see page 22-32)
Driver's door wire harness		C751, C752		(see page 22-44)
Driver's seat heater subharness			C551*1, C552	(see page 22-50)
Driver's seat position sensor harness			C551*2	(see page 22-50)
Engine compartment wire harness (Left branch)	C101, C301, C302 C303 G302	C401, C402, C403, C404, C405, C501, C502, C503 G401		(see page 22-22)
Engine compartment wire harness (Right branch)	G201, G202			(see page 22-26)
Engine ground cable	T4, G2			(see page 22-14)
Engine wire harness	C101 through C104 T103 through T106 G101			(see page 22-16)
Front engine compartment wire harness	C301 G301			(see page 22-20)
Front passenger's door wire harness		C761		(see page 22-45)
Front passenger's seat heater subharness			C557, C558	(see page 22-53)
Front passenger's seat subharness			C553, C554, C558	(see page 22-52)
Floor wire harness		C506, C507, C508	C551, C552, C553, C554, C555, C556, C605, C606, C781 G551, G552	(see page 22-34)
Fuel Tank subharness			C608	(see page 22-38)
Left rear door wire harness			C771	(see page 22-46)
ODS unit harness			C557	(see page 22-51)
Roof wire harness		C801		(see page 22-40)
Right rear door wire harness			C781	(see page 22-47)
Shift solenoid wire harness	C104			(see page 22-16)
Side wire harness (Left branch)		C401, C402, C601, C602	C603, through C607, C771 G602	(see page 22-36)
Side wire harness (Right branch)			C608 G601	(see page 22-38)
Starter subharness	(+), C102, C303, T1, T2, T101, T102			(see page 22-14)
Table subharness			C555	(see page 22-49)
Tailgate wire harness			C603, C604	(see page 22-42)

* 1: With seat heater
* 2: Without seat heater

Connector to Harness Index

Starter Subharness

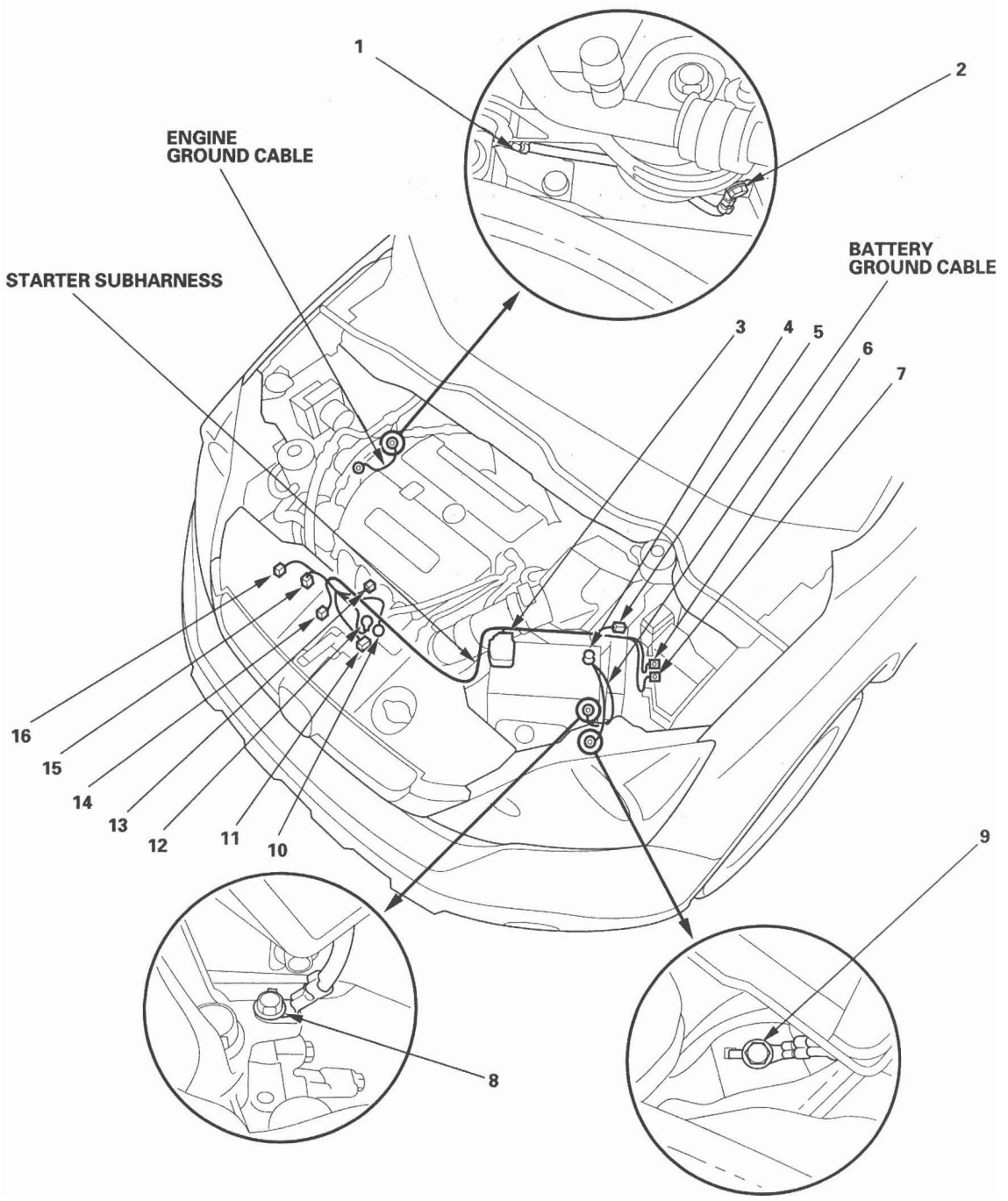
Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C compressor	14	3	Right side of engine compartment		
Alternator	15	4	Right side of engine compartment		
Knock sensor	13	1	Middle of engine compartment		
Starter magnetic switch	10	1	Middle of engine compartment		
C102	11	10	Left side of engine compartment	Engine wire harness (see page 22-16)	
C303	5	1	Left side of engine compartment	Engine compartment wire harness (see page 22-22)	
T1	7		Left side of engine compartment	Under-hood fuse/relay box (see page 22-56)	
T2	12		Middle of engine compartment	Starter motor	
T101	6		Left side of engine compartment	Under-hood fuse/relay box (see page 22-56)	
T102	16		Right side of engine compartment	Alternator B terminal	
(+)	3		Left side of engine compartment	Battery positive terminal	

Battery Ground Cable

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(−)	4		Left side of engine compartment	Battery negative terminal	
T3	8		Left side of engine compartment	Transmission housing	
G1	9		Left side of engine compartment	Body ground, via battery ground cable	

Engine Ground Cable

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T4	1		Right side of engine compartment	Engine	
G2	2		Right side of engine compartment	Body ground, via engine ground cable	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GROUND CABLE
STARTER SUBHARNESS
BATTERY
GROUND CABLE
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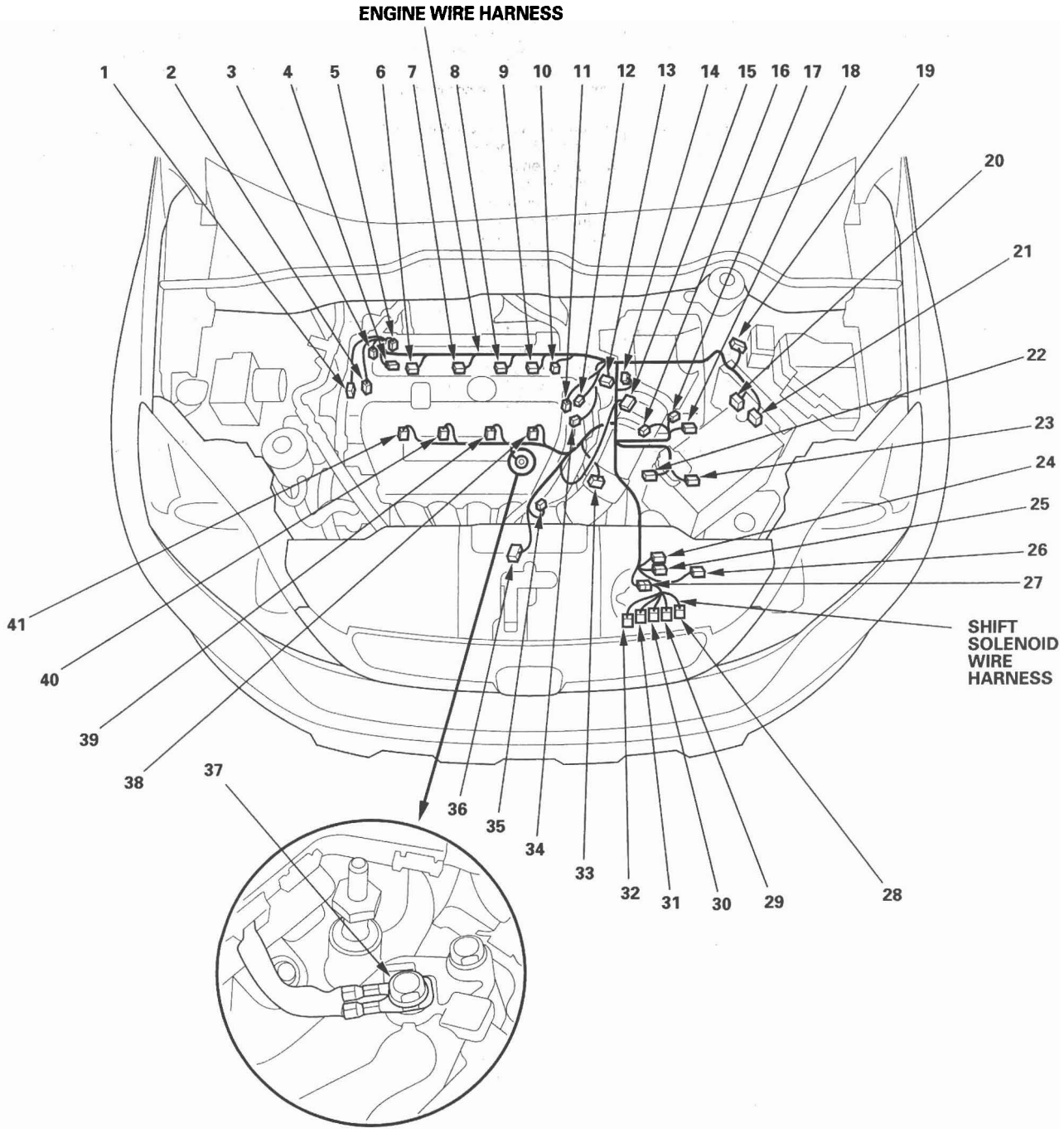
Connector to Harness Index (cont'd)

Engine Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/T clutch pressure control solenoid valve A	23	2	Transmission housing		
A/T clutch pressure control solenoid valve B	26	2	Transmission housing		
A/T clutch pressure control solenoid valve C	24	2	Transmission housing		
Camshaft position (CMP) sensor A	11	3	Middle of engine compartment		
Camshaft position (CMP) sensor B	12	3	Middle of engine compartment		
Crankshaft position (CKP) sensor	2	3	Middle of engine compartment		
Engine coolant temperature (ECT) sensor 1	34	2	Middle of engine compartment		
EVAP canister purge valve	10	2	Middle of engine compartment		
Exhaust gas recirculation (EGR) valve and position sensor	13	6	Middle of engine compartment		
Input shaft (mainshaft) speed sensor	18	3	Transmission housing		
Manifold absolute pressure (MAP) sensor	35	3	Middle of engine compartment		
Mass air flow (MAF) sensor/Intake air temperature (IAT) sensor	15	5	Middle of engine compartment		
Ignition coil No. 1	6	3	Middle of engine compartment		
Ignition coil No. 2	7	3	Middle of engine compartment		
Ignition coil No. 3	8	3	Middle of engine compartment		
Ignition coil No. 4	9	3	Middle of engine compartment		
Injector No. 1	41	2	Middle of engine compartment		
Injector No. 2	40	2	Middle of engine compartment		
Injector No. 3	39	2	Middle of engine compartment		
Injector No. 4	38	2	Middle of engine compartment		
Oil pressure switch	4	1	Middle of engine compartment		
Output shaft (countershaft) speed sensor	16	3	Transmission housing		
PCM connector B	21	44	Left side of engine compartment		
PCM connector C	20	44	Left side of engine compartment		
Rocker arm oil control solenoid	3	2	Middle of engine compartment		
Rocker arm oil pressure switch	5	2	Middle of engine compartment		
Transmission range switch	17	10	Transmission housing		
Throttle position sensor	33	6	Middle of engine compartment		
VTC oil control solenoid valve	1	2	Middle of engine compartment		
2nd clutch pressure switch	22	1	Transmission housing		
3nd clutch pressure switch	25	1	Transmission housing		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SHIFT SOLENOID WIRE HARNESS

(cont'd)

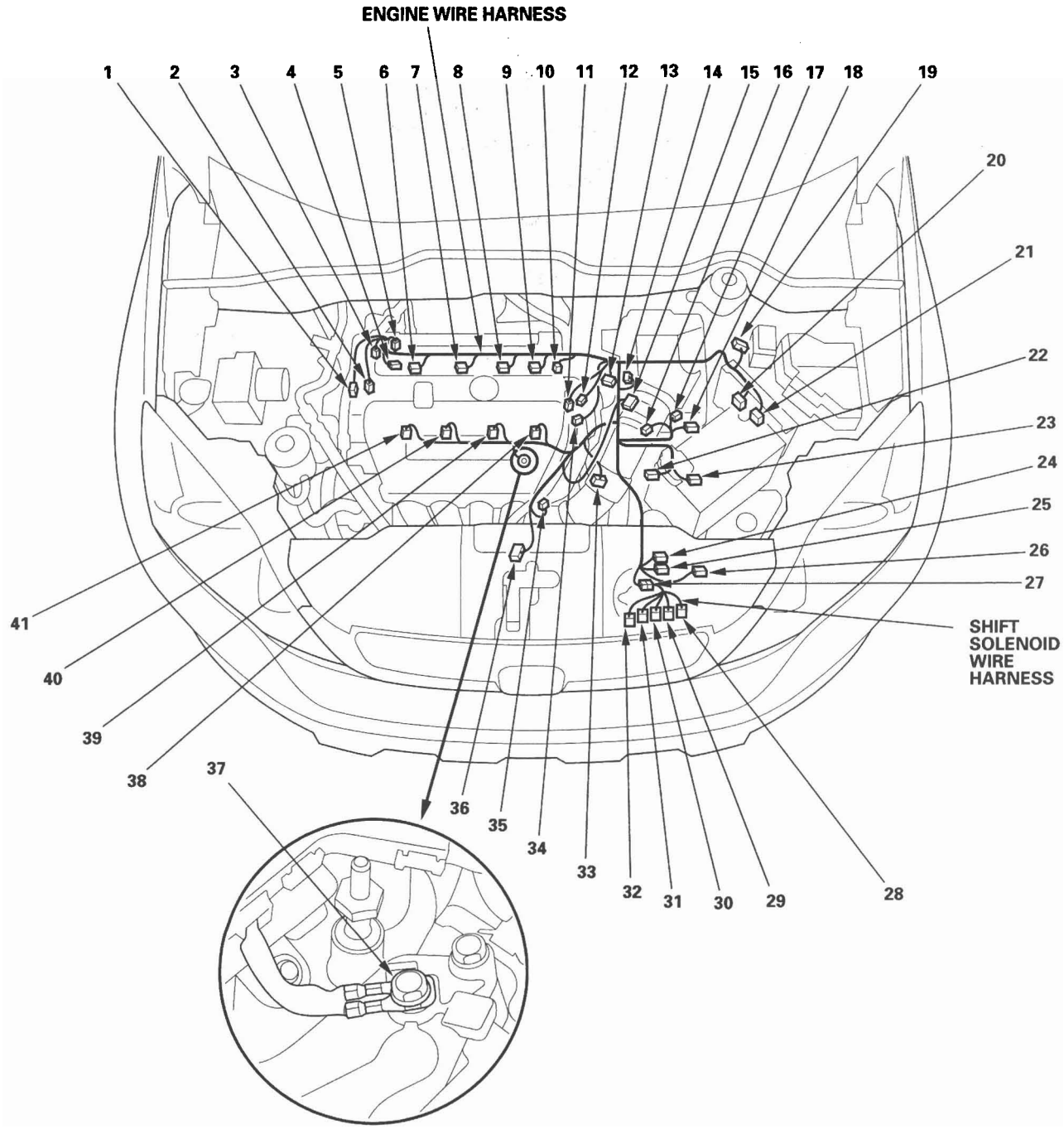
Connector to Harness Index (cont'd)

Engine Wire Harness (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C101	19	23	Left side of engine compartment	Engine compartment wire harness (see page 22-22)	
C102	36	10	Left side of engine compartment	Starter subharness (see page 22-14)	
C103 (Junction connector)	14	24	Middle of engine compartment		
C104	27	5	Transmission housing	Shift solenoid wire harness	
T103 (Terminal joint)		——	Middle of engine compartment		
T104 (Terminal joint)		——	Middle of engine compartment		
T105 (Terminal joint)		——	Middle of engine compartment		
T106 (Terminal joint)		——	Middle of engine compartment		
G101	37	——	Middle of engine compartment	Body ground, via engine wire harness	

Shift Solenoid Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
ATF temperature sensor	32	2	Transmission housing		
Shift solenoid valve A	28	2	Transmission housing		
Shift solenoid valve B	29	2	Transmission housing		
Shift solenoid valve C	30	2	Transmission housing		
Shift solenoid valve D	31	2	Transmission housing		
C104	27	8	On the transmission housing	Engine wire harness	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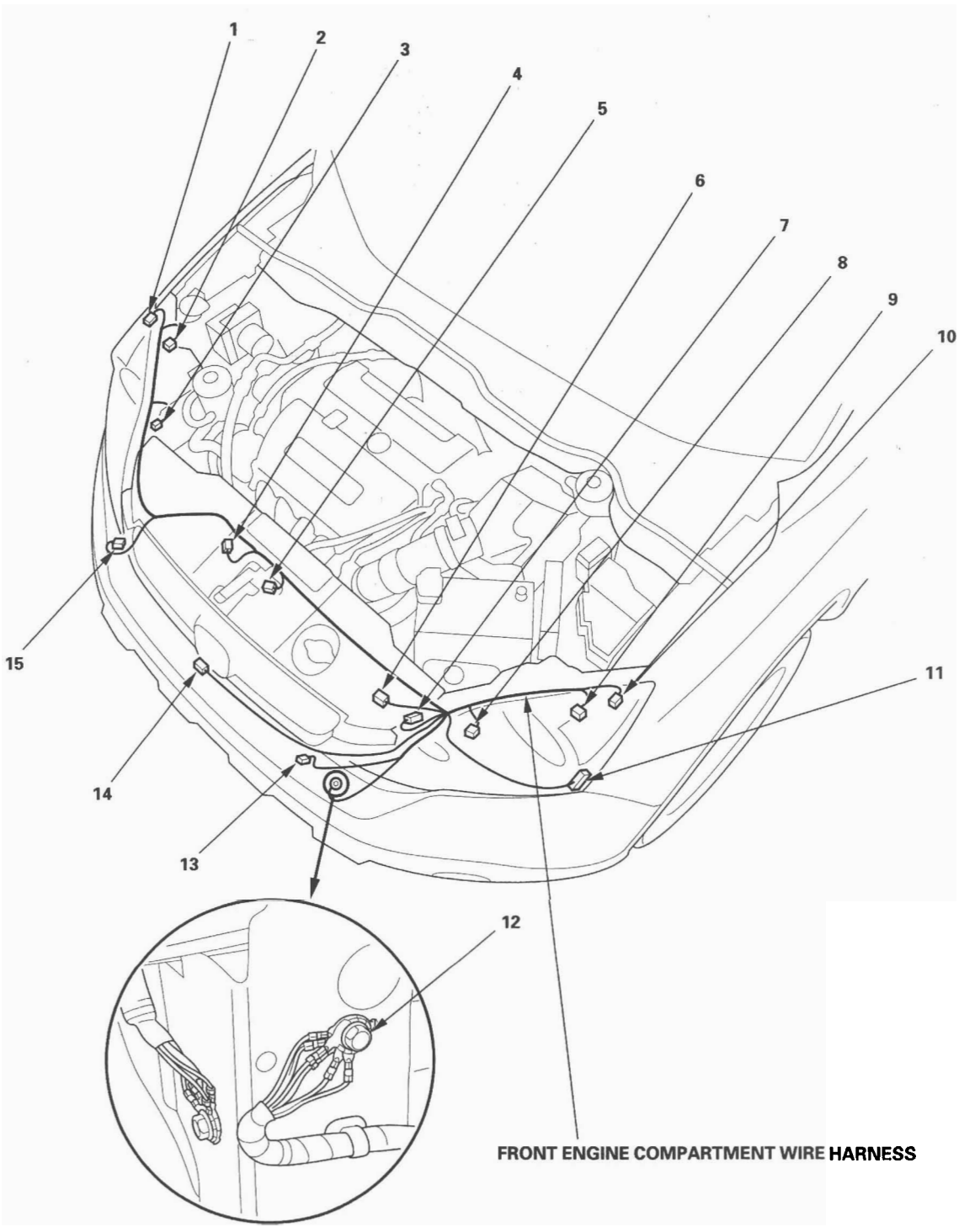
SHIFT SOLENOID WIRE HARNESS

Connector to Harness Index (cont'd)

Front Engine Compartment Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C condenser fan motor	6	2	Front of engine compartment		
ECT sensor 2	13	2	Front of engine compartment		
Hood switch	5	2	Front of engine compartment		
Horn (high)	7	1	Front of engine compartment		
Horn (low)	15	1	Behind left side of front bumper		
Left front parking light	10	2	Behind left headlight		
Left front turn signal light	8	2	Behind left headlight		
Left headlight	9	3	Behind left headlight		
Outside air temperature sensor	14	2	Behind middle of front bumper		
Radiator fan motor	4	2	Front of engine compartment		
Right front parking light	1	2	Behind right headlight		
Right front turn signal light	3	2	Behind right headlight		
Right headlight	2	3	Behind right headlight		
C301	11	31	Left side of engine compartment	Engine compartment wire harness (see page 22-22)	
G301	12		Left side of engine compartment	Body ground, via front engine compartment wire harness	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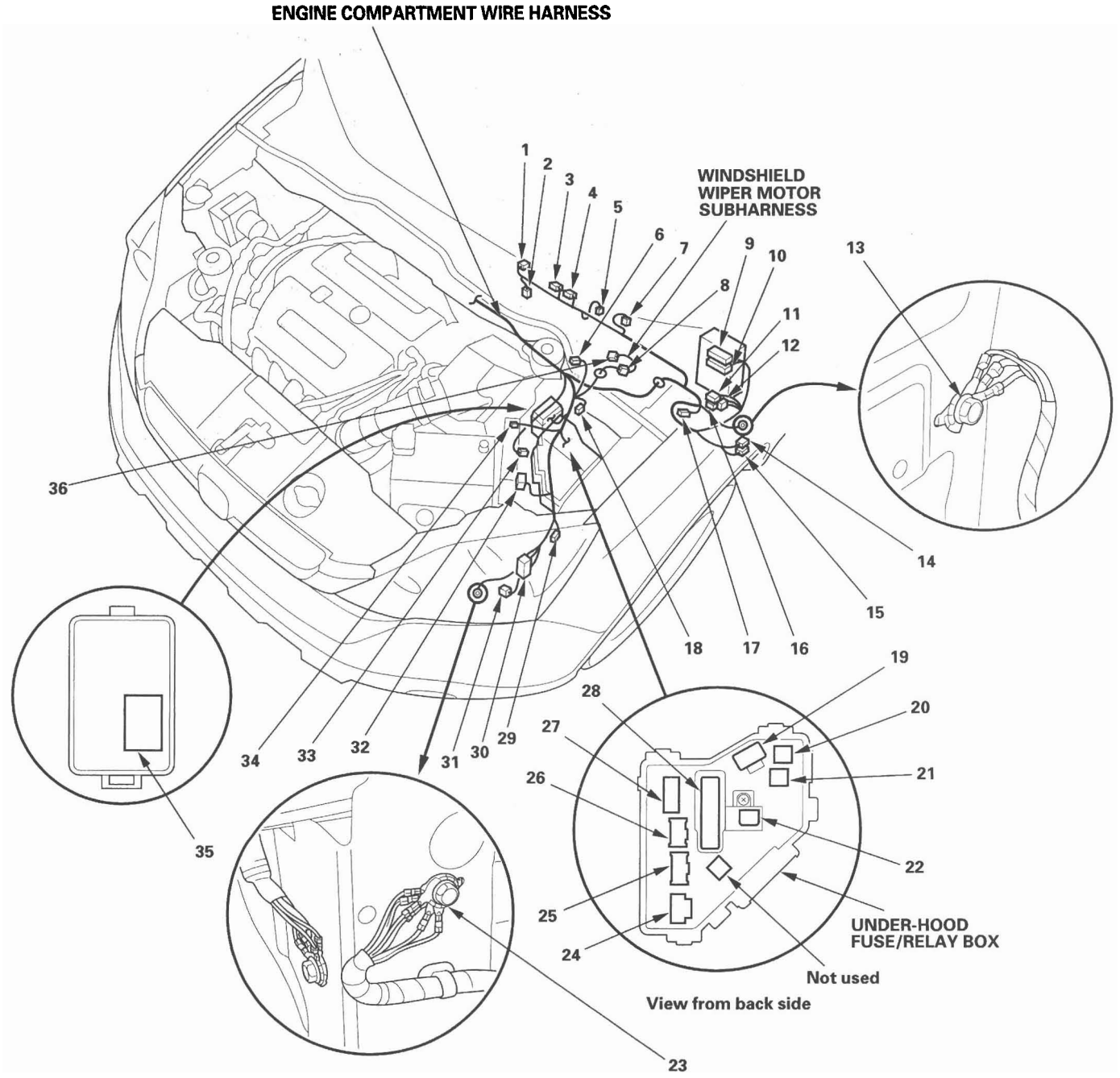
FRONT ENGINE COMPARTMENT WIRE HARNESS

Connector to Harness Index (cont'd)

Engine Compartment Wire Harness (Left branch)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
APP sensor	2	6	Under left side of dash		
Brake fluid level switch	6	2	Left side of engine compartment		
Brake pedal position switch	5	4	Under left side of dash		
Left front impact sensor	31	2	Under left side headlight		
Left front wheel sensor	33	2	Left side of engine compartment		
Optional connector	17	2	Under left side of dash		
Optional connector	29	1	Left side of engine compartment		
Parking brake switch	7	1	Under left side of dash		
PCM connector A	32	44	Left side of engine compartment		
Power mirror defogger relay	35	4	In auxiliary under-hood fuse/relay box		
Under-dash fuse/relay box connector F (see page 22-57)	9	34	Under-dash fuse/relay box		
Under-dash fuse/relay box connector G (see page 22-57)	10	42	Under-dash fuse/relay box		
Under-hood fuse/relay box connector A (ELD unit) (see page 22-56)	22	3	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector C (see page 22-56)	24	2	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector D (see page 22-56)	26	8	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector E (see page 22-56)	25	10	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector F (see page 22-56)	28	20	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector G (see page 22-56)	20	1	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector H (see page 22-56)	21	1	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector J (see page 22-56)	27	4	Behind under-hood fuse/relay box		
Under-hood fuse/relay box connector K (see page 22-56)	19	2	Behind under-hood fuse/relay box		


ENGINE COMPARTMENT WIRE HARNESS
WINDSHIELD WIPER MOTOR SUBHARNESS
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UNDER-HOOD FUSE/RELAY BOX
Not used
View from back side

(cont'd)

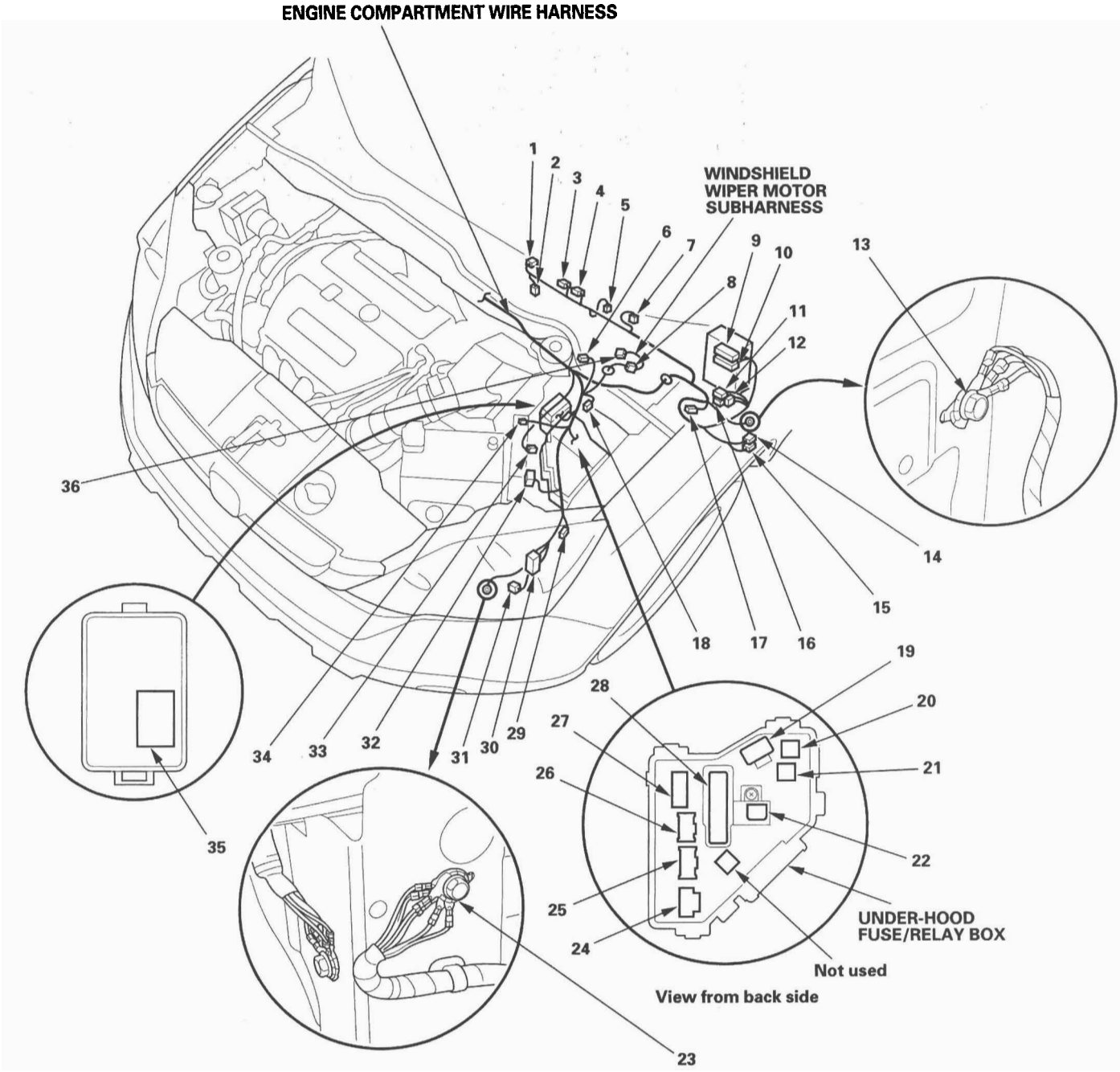
Connector to Harness Index (cont'd)

Engine Compartment Wire Harness (Left branch) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C101	18	23	Left side of engine compartment	Engine wire harness (see page 22-16)	
C301	30	31	Left side of engine compartment	Front engine compartment wire harness (see page 22-20)	
C302	8	5	Under left side of windshield	Windshield wiper motor subharness	
C303	34	1	Left side of engine compartment	Starter subharness (see page 22-14)	
C401	14	12	Under left side of dash	Side wire harness (see page 22-36)	
C402	15	8	Under left side of dash	Side wire harness (see page 22-36)	
C403	1	2	Under middle of dash	A/C wire harness (see page 22-55)	
C404 (Junction connector)	3	12	Under left side of dash		
C405 (Junction connector)	4	12	Under left side of dash		
C501	11	24	Under left side of dash	Dashboard wire harness (see page 22-28)	
C502	16	23	Under left side of dash	Dashboard wire harness (see page 22-28)	
C503	12	4	Under left side of dash	Dashboard wire harness (see page 22-28)	
G302	23		Left side of engine compartment	Body ground, via engine compartment wire harness	
G401	13		Left side of dash	Body ground, via engine compartment wire harness	

Windshield Wiper Motor Subharness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Windshield wiper motor	36	5	Under left side of windshield		
C302	8	5	Under left side of windshield	(Engine compartment wire harness	


ENGINE COMPARTMENT WIRE HARNESS
WINDSHIELD WIPER MOTOR SUBHARNESS
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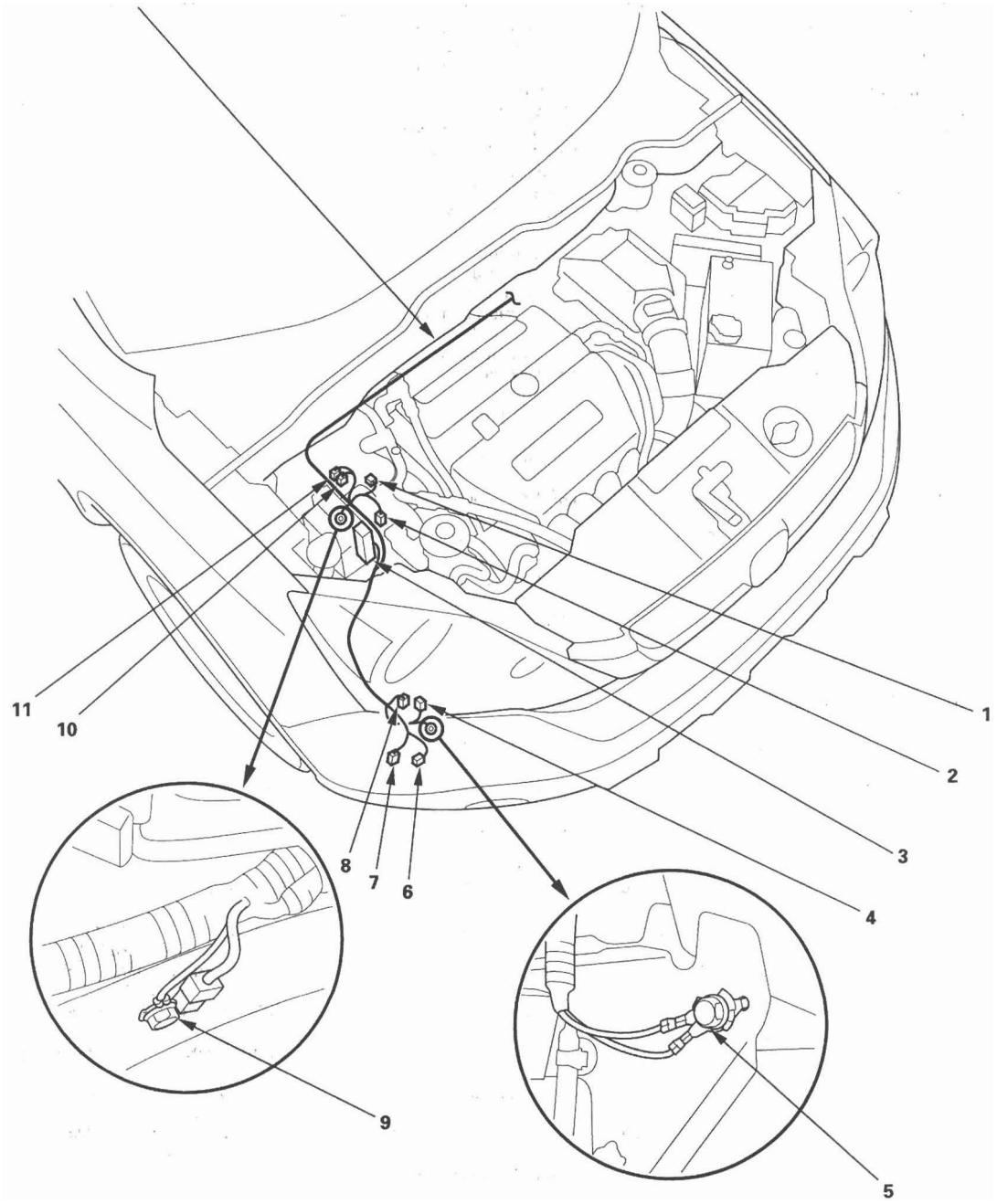
UNDER-HOOD FUSE/RELAY BOX
Not used
View from back side

Connector to Harness Index (cont'd)

Engine Compartment Wire Harness (Right branch)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C pressure sensor	8	3	Right side of engine compartment		
A/F sensor (Sensor 1)	10	4	Exhaust manifold		
Power steering pressure (PSP) switch	1	2	Right side of engine compartment		
Right front impact sensor	4	2	Under right headlight		
Right front wheel sensor	2	2	Behind right side of front bumper		
Secondary HO2S (Sensor 2)	11	6	Exhaust manifold		
VSA modulator-control unit	3	46	Right side of engine compartment		
Windshield washer motor	7	2	Behind right side of front bumper		
Windshield washer fluid level switch	6	2	Behind right side of front bumper		Canada
G201	5		Right side of engine compartment	Body ground, via engine compartment wire harness	Canada
G202	9		Right side of engine compartment	Body ground, via engine compartment wire harness	

ENGINE COMPARTMENT WIRE HARNESS

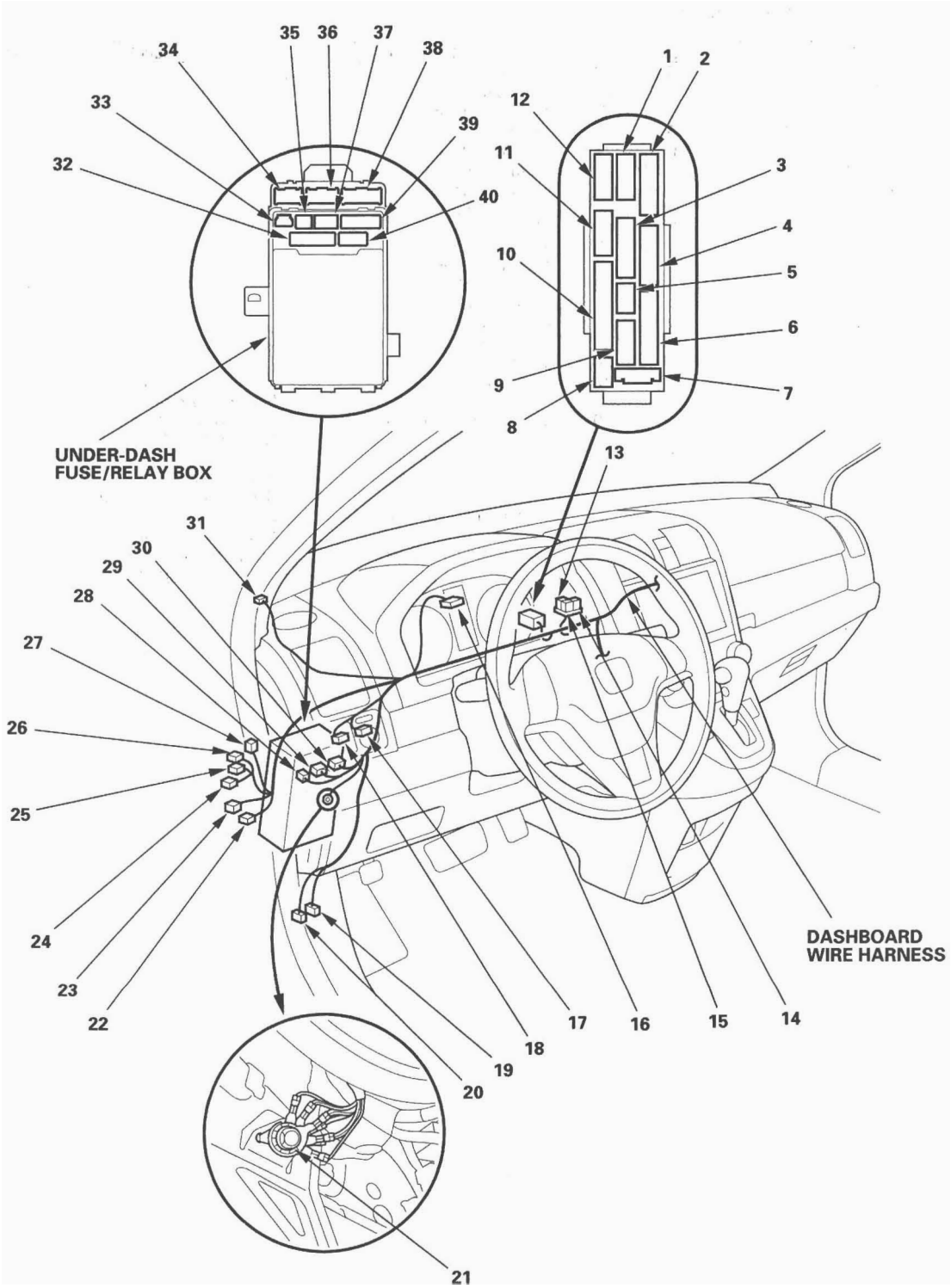


Connector to Harness Index (cont'd)

Dashboard Wire Harness (View of driver's side)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cargo area accessory power socket relay	15	4	Under middle of dash		
Console accessory power socket relay	14	4	Under middle of dash		
Front accessory power socket relay	13	4	Under middle of dash		
Gauge control module connector	16	36	Behind gauge		
Junction box connector A	7	6	Under middle of dash		
Junction box connector B	8	6	Under middle of dash		
Junction box connector C	2	14	Under middle of dash		
Junction box connector D	5	6	Under middle of dash		
Junction box connector E	6	18	Under middle of dash		
Junction box connector F	9	10	Under middle of dash		
Junction box connector G	4	14	Under middle of dash		
Junction box connector H	12	10	Under middle of dash		
Junction box connector J	10	22	Under middle of dash		
Junction box connector K	3	14	Under middle of dash		
Junction box connector L	11	10	Under middle of dash		
Junction box connector M	1	10	Under middle of dash		
Left tweeter	31	2	Left side of dash		* 1
Memory erase signal (MES) connector	28	2	Left kick panel		
Power mirror switch	17	13	Left side of dash		
Under-dash fuse/relay box connector C (see page 22-57)	29	4	Left kick panel		
Under-dash fuse/relay box connector D (see page 22-57)	30	2	Left kick panel		
Under-dash fuse/relay box connector J (see page 22-57)	33	4	Left kick panel		
Under-dash fuse/relay box connector K (see page 22-57)	34	8	Left kick panel		
Under-dash fuse/relay box connector M (see page 22-57)	36	10	Left kick panel		
Under-dash fuse/relay box connector N (see page 22-57)	38	14	Left kick panel		
Under-dash fuse/relay box connector P (see page 22-57)	35	10	Left kick panel		
Under-dash fuse/relay box connector Q (see page 22-57)	37	16	Left kick panel		
Under-dash fuse/relay box connector R (see page 22-57)	39	20	Left kick panel		
Under-dash fuse/relay box connector S (see page 22-57)	40	20	Left kick panel	MICU connector B	
Under-dash fuse/relay box connector T (see page 22-57)	32	34	Left kick panel	MICU connector A	
VSA OFF switch	18	5	Left side of dash		
C501	26	24	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C502	25	23	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C503	24	4	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C601	20	18	Under left side of dash	Side wire harness (see page 22-36)	
C602	19	16	Under left side of dash	Side wire harness (see page 22-36)	
C751	23	18	Under left side of dash	Driver's door wire harness (see page 22-44)	
C752	22	23	Under left side of dash	Driver's door wire harness (see page 22-44)	
C801	27	20	Under left side of dash	Roof wire harness (see page 22-40)	
G501	21		Under left side of dash	Body ground, via dashboard wire harness	

* 1: EX and EX-L models

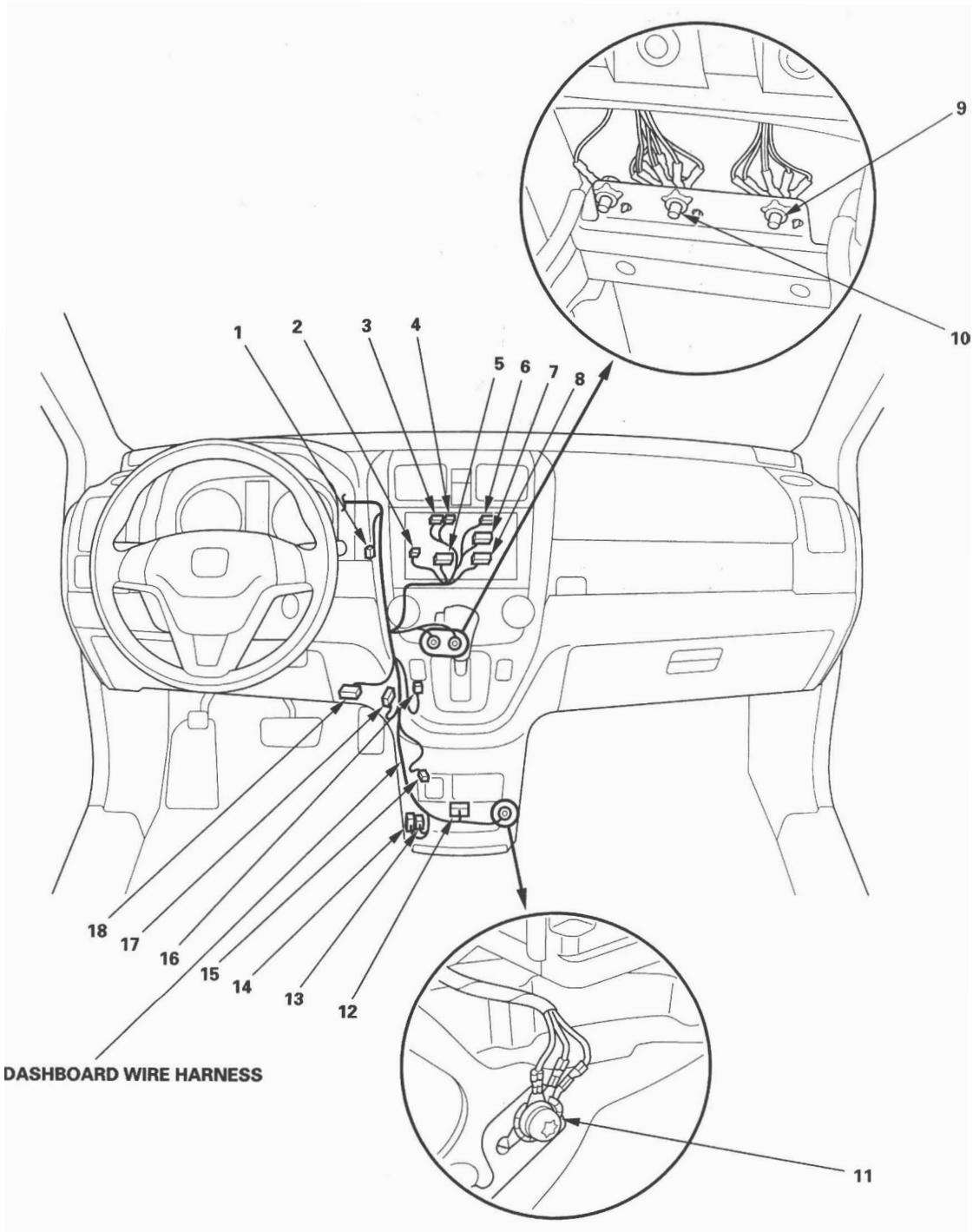

UNDER-DASH
FUSE/RELAY BOX
DASHBOARD
WIRE HARNESS

Connector to Harness Index (cont'd)

Dashboard Wire Harness (View of middle)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Audio unit connector A	5	17	Middle of dash		* 2
Audio unit connector B	7	20	Middle of dash		* 2
Audio unit connector C	3	5	Middle of dash		* 2
Audio unit connector D (GA-BUS)	8	14	Middle of dash		* 2
Data link connector	18	16	Middle of dash		
Driver's seat heater switch	16	6	Middle of dash		* 4
Front accessory power socket	15	2	Middle of dash		
Navigation unit connector A	5	17	Middle of dash		* 1
Navigation unit connector B	7	22	Middle of dash		* 1
Navigation unit connector C	3	5	Middle of dash		* 1
Navigation unit connector D	8	14	Middle of dash		* 1
Navigation unit connector E	6	12	Middle of dash		* 1
Navigation unit connector F	4	5	Middle of dash		* 1
Navigation unit connector G	2	7	Middle of dash		* 3
SRS unit connector A	12	28	Under middle of dash		
TPMS control unit	17	20	Under middle of dash		TPMS
C506	13	18	Under middle of dash	Floor wire harness (see page 22-34)	
C507	14	20	Under middle of dash	Floor wire harness (see page 22-34)	
C510 (Junction connector)	1	12	Under middle of dash		
G502	9		Under middle of dash	Body ground, via dashboard wire harness	
G504	10		Under middle of dash	Body ground, via dashboard wire harness	
G505	11		Under middle of dash	Body ground, via dashboard wire harness	

* 1: With navigation
* 2: Without navigation
* 3: With navigation and rearview camera
* 4: With seat heater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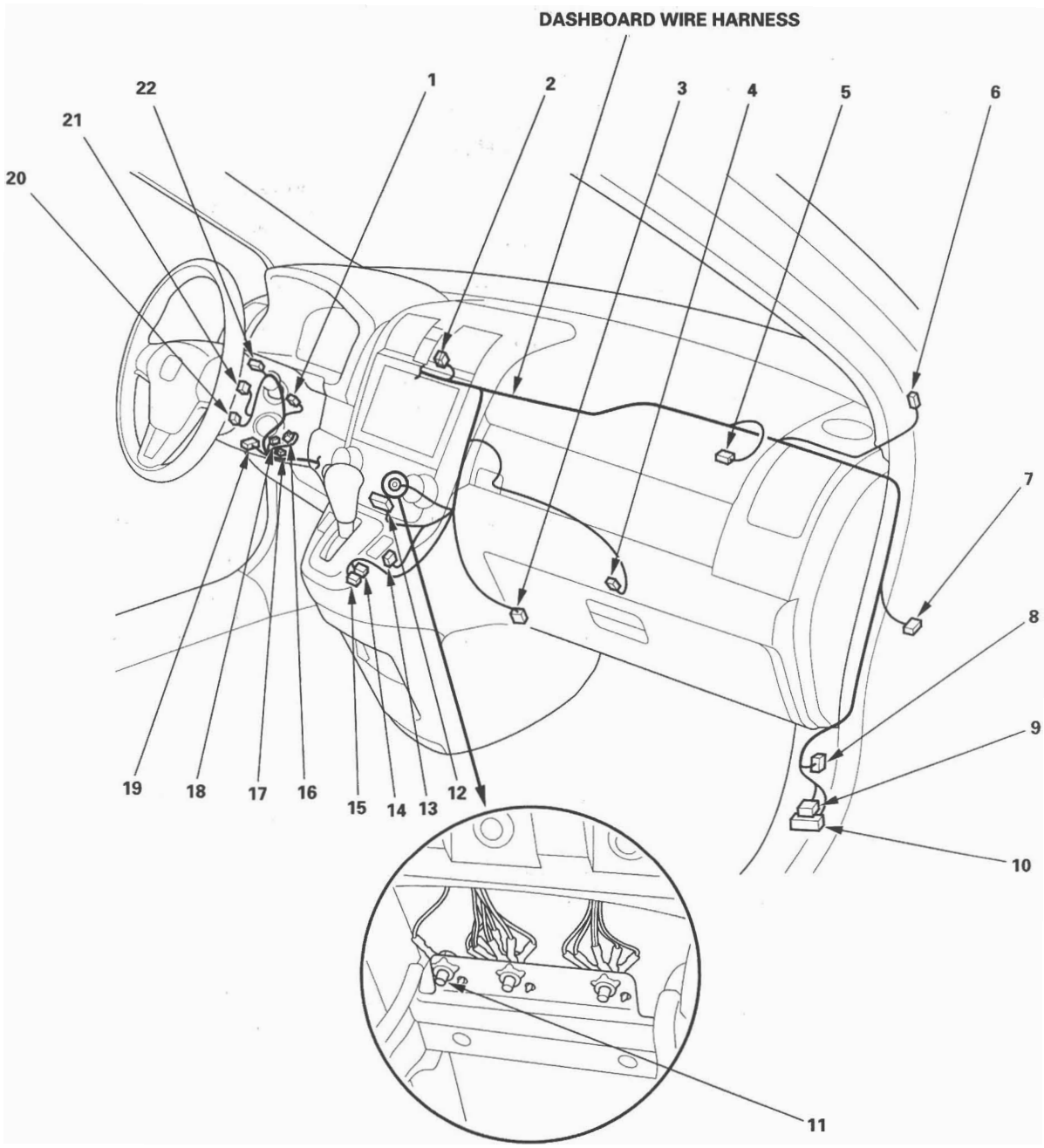
DASHBOARD WIRE HARNESS

Connector to Harness Index (cont'd)

Dashboard Wire Harness (View of passenger's side)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cable reel connector A	22	20	In steering column cover		
Cable reel connector B	16	4	In steering column cover		
Combination light switch	21	12	In steering column cover		
D3 switch/Park-pin switch	14	6	Middle of dash		
Front passenger's seat heater switch	13	7	Middle of dash		* 1
Glove box light	4	2	Under middle of dash		
Hazard warning switch/passenger's airbag cutoff indicator	2	6	Middle of dash		
HVAC control unit	12	28	Middle of dash		
Ignition switch	19	7	In steering column cover		
Ignition key switch	18	6	In steering column cover		
Immobilizer-keyless control unit	17	7	In steering column cover		
Passenger's airbag inflator	5	4	Under right side of dash		
Right tweeter	6	2	Right side of dash		* 2
Shift lock solenoid	15	2	Middle of dash		
Steering angle sensor	20	5	In steering column cover		
Wiper/washer switch	1	8	In steering column cover		
XM receiver	8	14	Under right side of dash		* 3
C505	3	24	Under middle of dash	A/C wire harness (see page 22-55)	
C508	9	12	Under right side of dash	Floor wire harness (see page 22-34)	* 3
C509 (Junction connector)	10	24	Under right side of dash		* 3
C761	7	18	Under right side of dash	Front passenger's door wire harness (see page 22-45)	
G503	11		Under middle of dash	Body ground, via dashboard wire harness	

* 1: With seat heater
* 2: EX and EX-L models
* 3: With XM radio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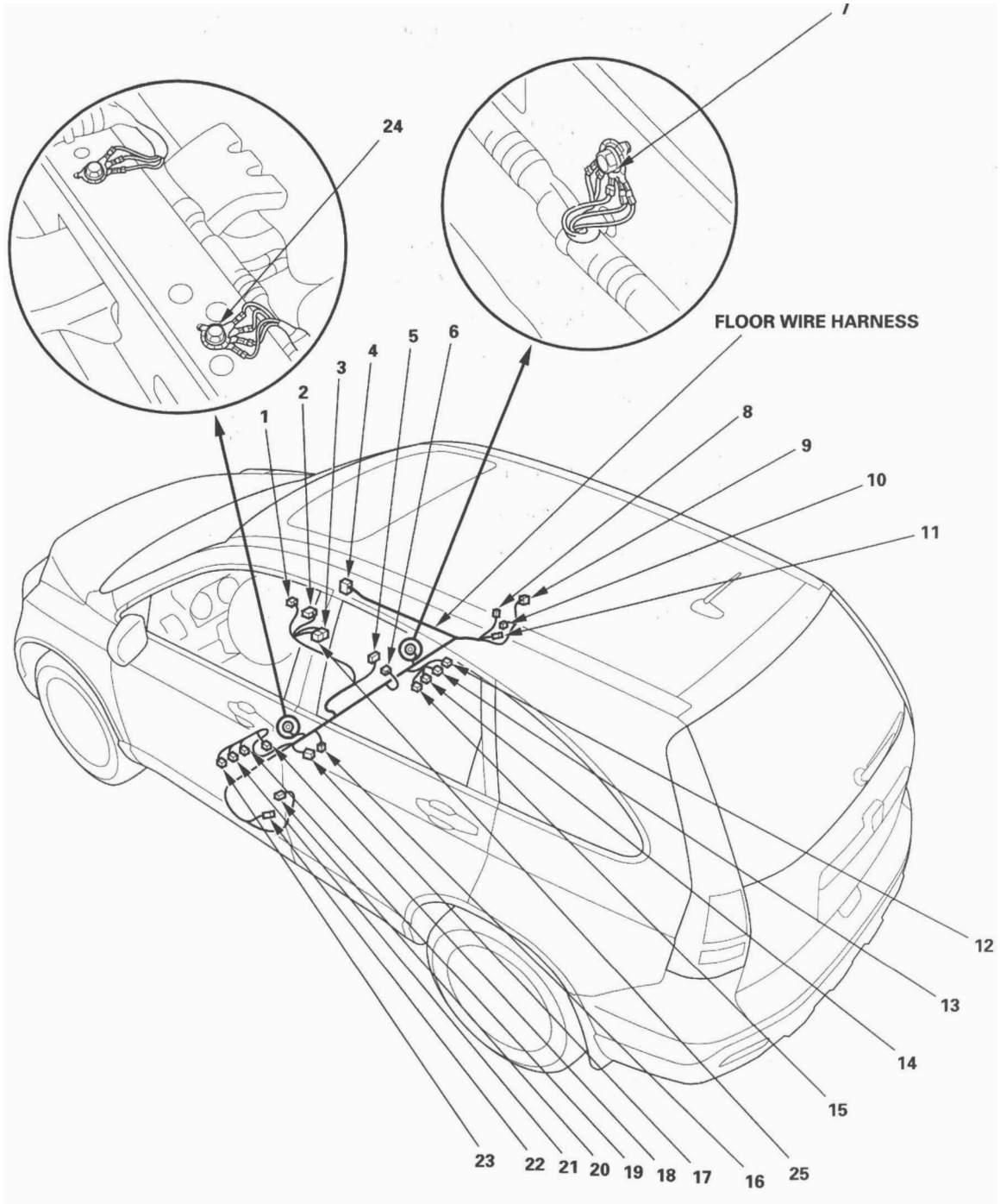
Connector to Harness Index (cont'd)

Floor Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Audio disc changer	6	13	Behind console box		EX-L
Driver's seat belt buckle switch	19	3	Under driver's seat		
Driver's seat belt buckle tensioner	18	4	Under driver's seat		
Driver's seat belt tensioner	20	4	Left B-pillar		
Driver's side airbag inflator	23	2	Under driver's seat		
Front passenger's door switch	8	1	Right B-pillar		
Front passenger's seat belt tensioner	10	4	Right B-pillar		
Left side impact sensor (B-pillar)	22	4	Left B-pillar		
Right side impact sensor (B-pillar)	11	4	Right B-pillar		
SRS unit connector A	2	28	Under middle of dash		
Subwoofer	12	6	Under front passenger's seat		* 3
Yaw rate-lateral acceleration sensor	1	4	Under middle of dash		
C506	3	18	Under middle of dash	Dashboard wire harness (see page 22-30)	
C507	25	20	Under middle of dash	Dashboard wire harness (see page 22-30)	
C508	4	12	Under right side of dash	Dashboard wire harness (see page 22-32)	* 4
C551	22	2	Under driver's seat	Driver's seat position sensor subharness (see page 22-50)	* 2
C552	21	8	Under driver's seat	Driver's seat heater subharness (see page 22-50)	* 1
C553	13	18	Under front passenger's seat	Front passenger's seat wire harness • With seat heater (see page 22-52) • Without seat heater (see page 22-53)	
C554	14	4	Under front passenger's seat	Front passenger's seat wire harness • With seat heater (see page 22-52) • Without seat heater (see page 22-53)	
C555	15	8	Under front passenger's seat	Table subharness (see page 22-49)	EX
C556	5	20	Behind console box	Console subharness (see page 22-48)	EX-L
C605	16	4	Under driver's seat	Side wire harness (see page 22-36)	
C606	17	4	Under driver's seat	Side wire harness (see page 22-36)	
C781	9	18	Right B-pillar	Right rear door wire harness (see page 22-47)	
G551	24		Under driver's seat	Body ground, via floor wire harness	
G552	7		Under front passenger's seat	Body ground, via floor wire harness	

* 1: With seat heater
* 2: Without seat heater
* 3: With navigation
* 4: With XM radio


FLOOR WIRE HARNESS
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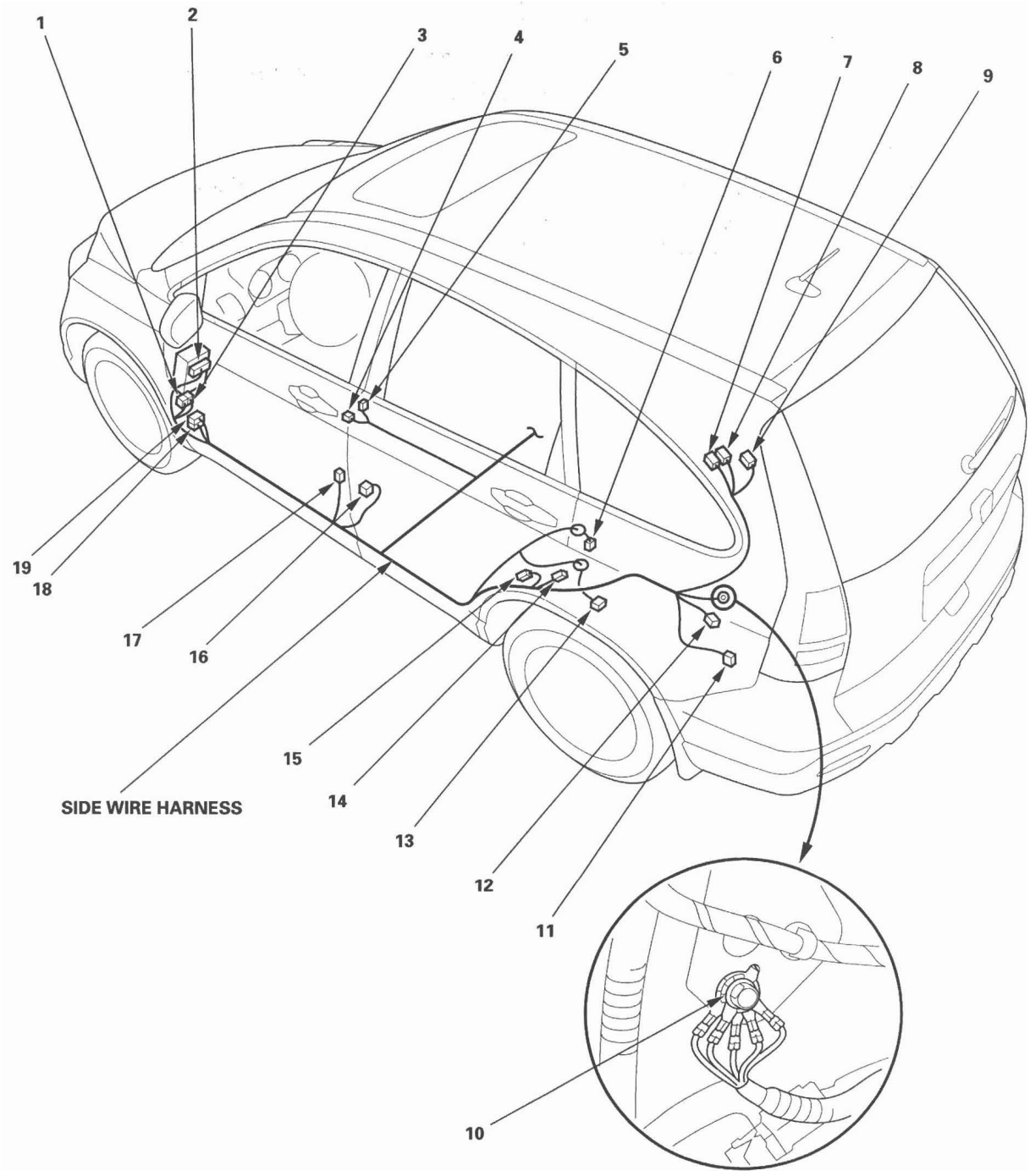
Connector to Harness Index (cont'd)

Side Wire Harness (Left branch)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cargo area accessory power socket	12	2	Left side of cargo area		
Driver's door switch	17	1	Left B-pillar		
Fuel tank unit	6	4	Fuel tank		
Left rear door switch	15	1	Left B-pillar		
Left rear wheel sensor	13	2	Left B-pillar		
Left side impact sensor	14	2	Left C-pillar		
Left side curtain airbag inflator	9	2	Left side of floor		
Left taillight	11	6	Left side of cargo area		
Under-dash fuse/relay box connector E (see page 22-57)	2	42	Left kick panel		
C401	19	12	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C402	18	8	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C601	1	18	Under left side of dash	Dashboard wire harness (see page 22-28)	
C602	3	16	Under left side of dash	Dashboard wire harness (see page 22-28)	
C603	7	18	Left D-pillar	Tailgate wire harness (see page 22-42)	
C604	8	2	Left D-pillar	Tailgate wire harness (see page 22-42)	
C605	5	4	Under driver's seat	Floor wire harness (see page 22-34)	
C606	4	4	Under driver's seat	Floor wire harness (see page 22-34)	
C771	16	18	Left C-pillar	Left rear door wire harness (see page 22-46)	
G602	9		Left side of cargo area	Body ground, via side wire harness	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10
SIDE WIRE HARNESS

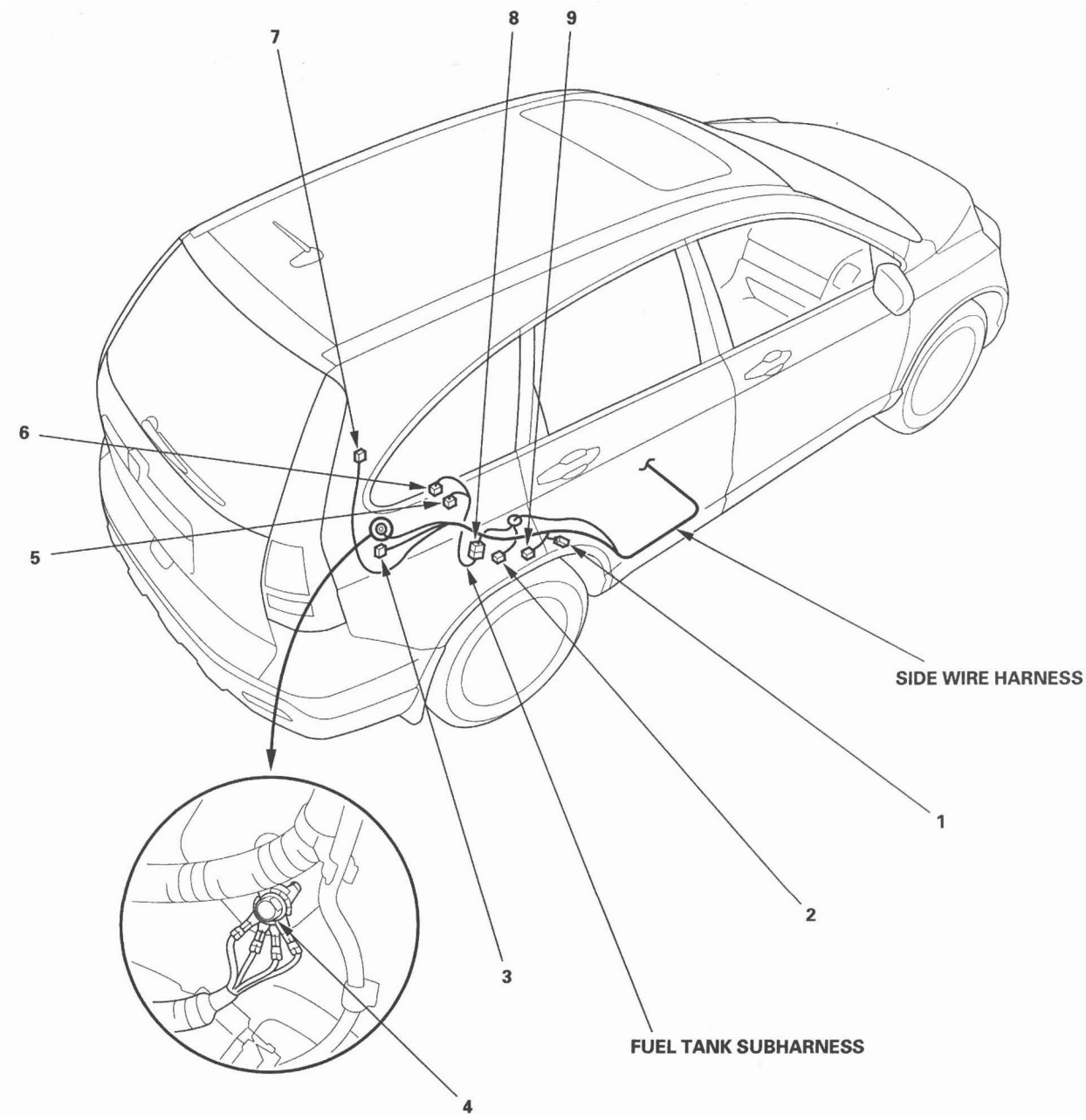
Connector to Harness Index (cont'd)

Side Wire Harness (Right branch)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Right rear door switch	1	1	Right C-pillar		
Right rear wheel sensor	2	2	Right side of floor		
Right side impact sensor	9	2	Right C-pillar		
Right side curtain airbag inflator	7	2	Right D-pillar		
Right taillight	3	6	Right side of cargo area		
C608	8	6	Under floor	Fuel tank subharness	
G601	4		Right side of cargo area	Body ground, via side wire harness	

Fuel Tank Subharness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
EVAP canister vent shut valve	5	2	Fuel tank		
Fuel tank pressure (FTP) sensor	6	3	Fuel tank		
C608	8	6	Under floor	Side wire harness	


7
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SIDE WIRE HARNESS
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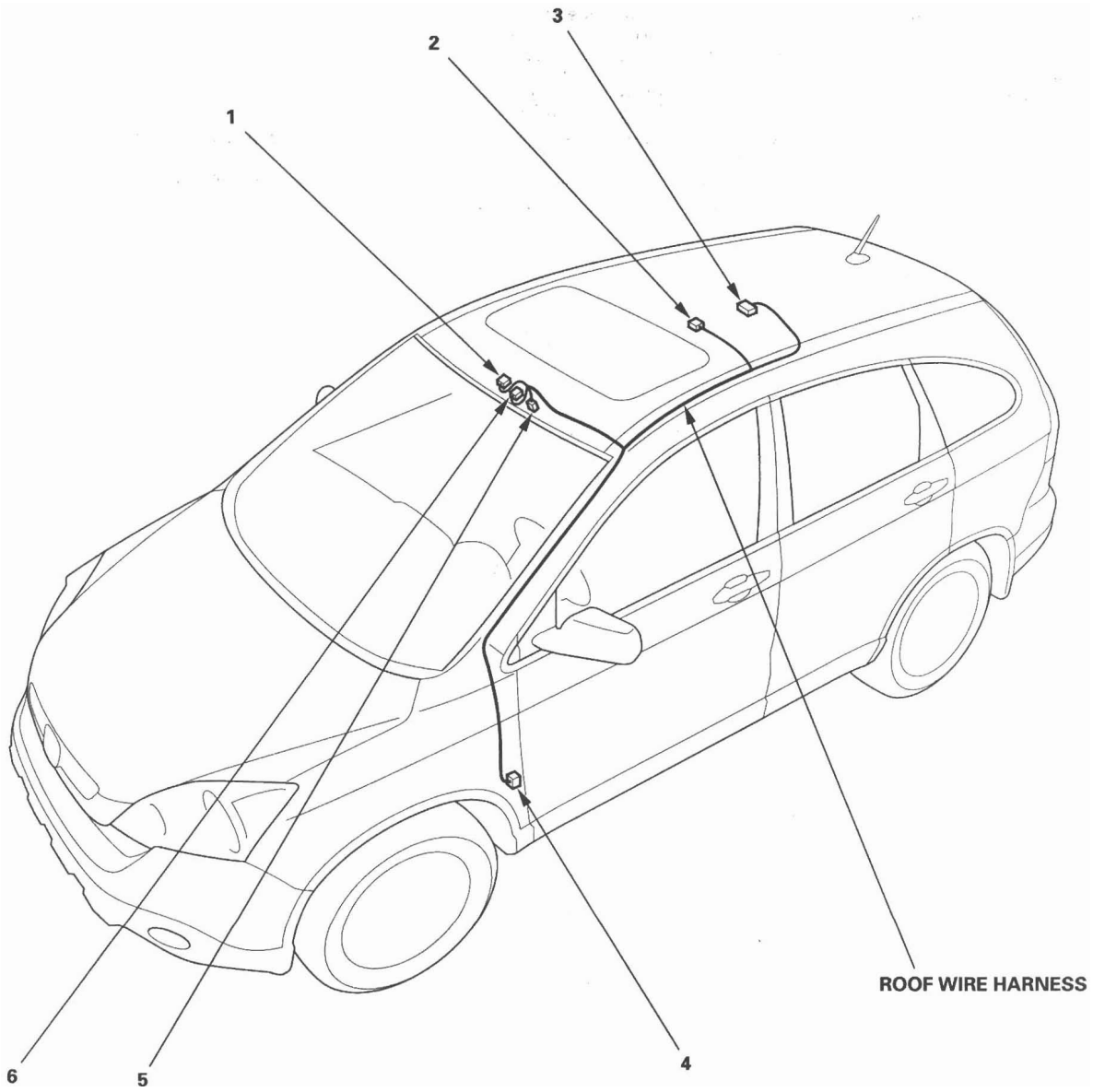
2
3
FUEL TANK SUBHARNESS
4

Connector to Harness Index (cont'd)

Roof Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Ceiling light	2	3	Front of roof		
Map light	6	3	Middle of roof		
Microphone	5	3	Front of roof		Navigation
Moonroof control unit/motor	3	3	Rear of roof		Moonroof
Moonroof switch	1	10	Front of roof		Moonroof
C801	4	20	Under left side of dash	Dashboard wire harness (see page 22-28)	


3
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1
ROOF WIRE HARNESS
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5
4

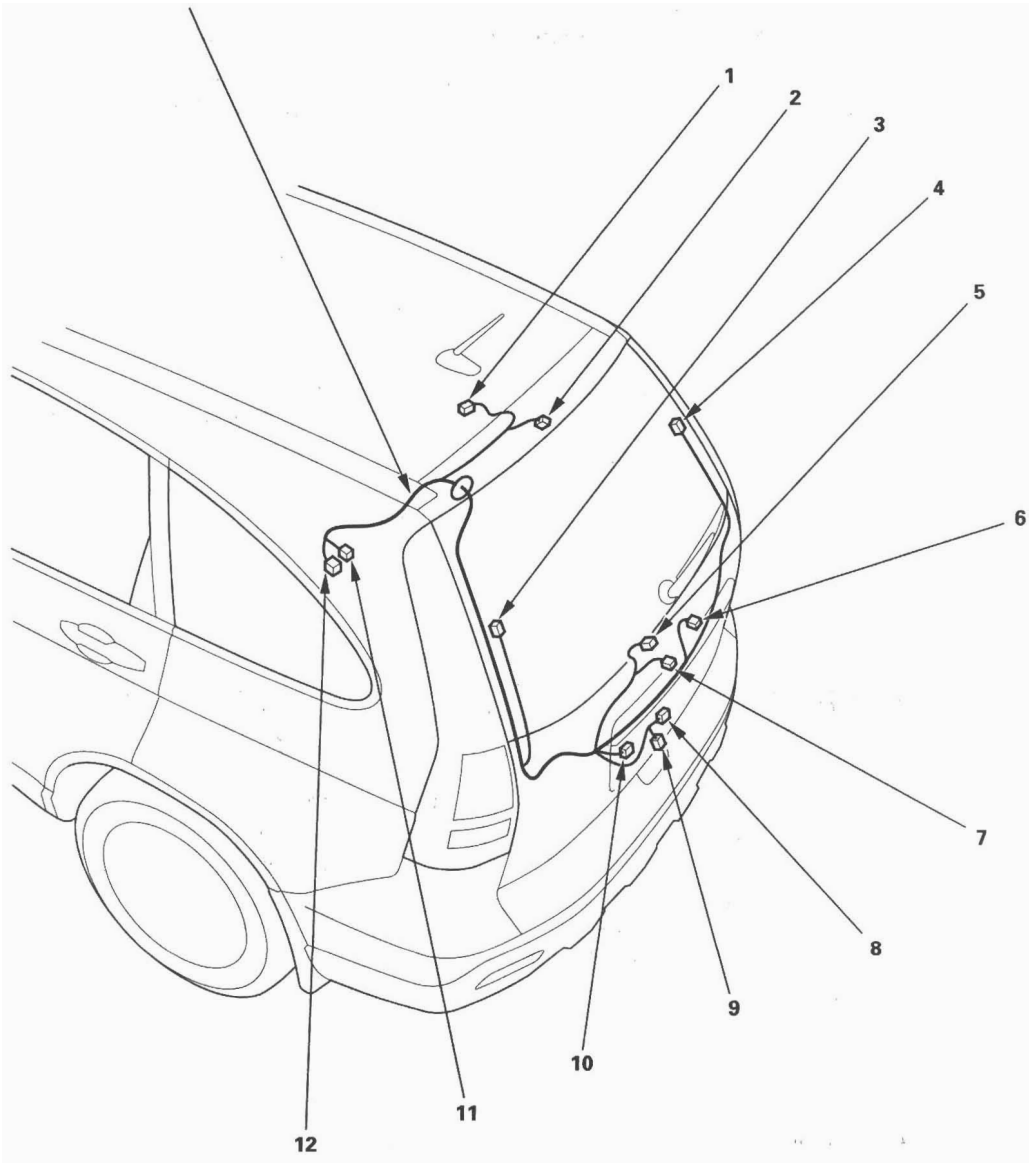
Connector to Harness Index (cont'd)

Tailgate Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cargo area light	1	3	Rear of roof		
High mount brake light	2	2	Behind high mount brake light		
License plate light	7	2	Middle of tailgate		
Rear window defogger terminal A (+)	3	1	Left side of rear window		
Rear window defogger terminal B (−)	4	1	Right side of rear window		
Rear window wiper motor	5	4	Middle of tailgate		
Rearview camera	6	6	Middle of tailgate		
Tailgate latch switch	9	2	Middle of tailgate		
Tailgate outer handle switch	10	2	Middle of tailgate		
Tailgate release actuator	8	2	Middle of tailgate		
C603	12	18	Left D-pillar	Side wire harness (see page 22-36)	
C604	11	2	Left D-pillar	Side wire harness (see page 22-36)	

*: With navigation

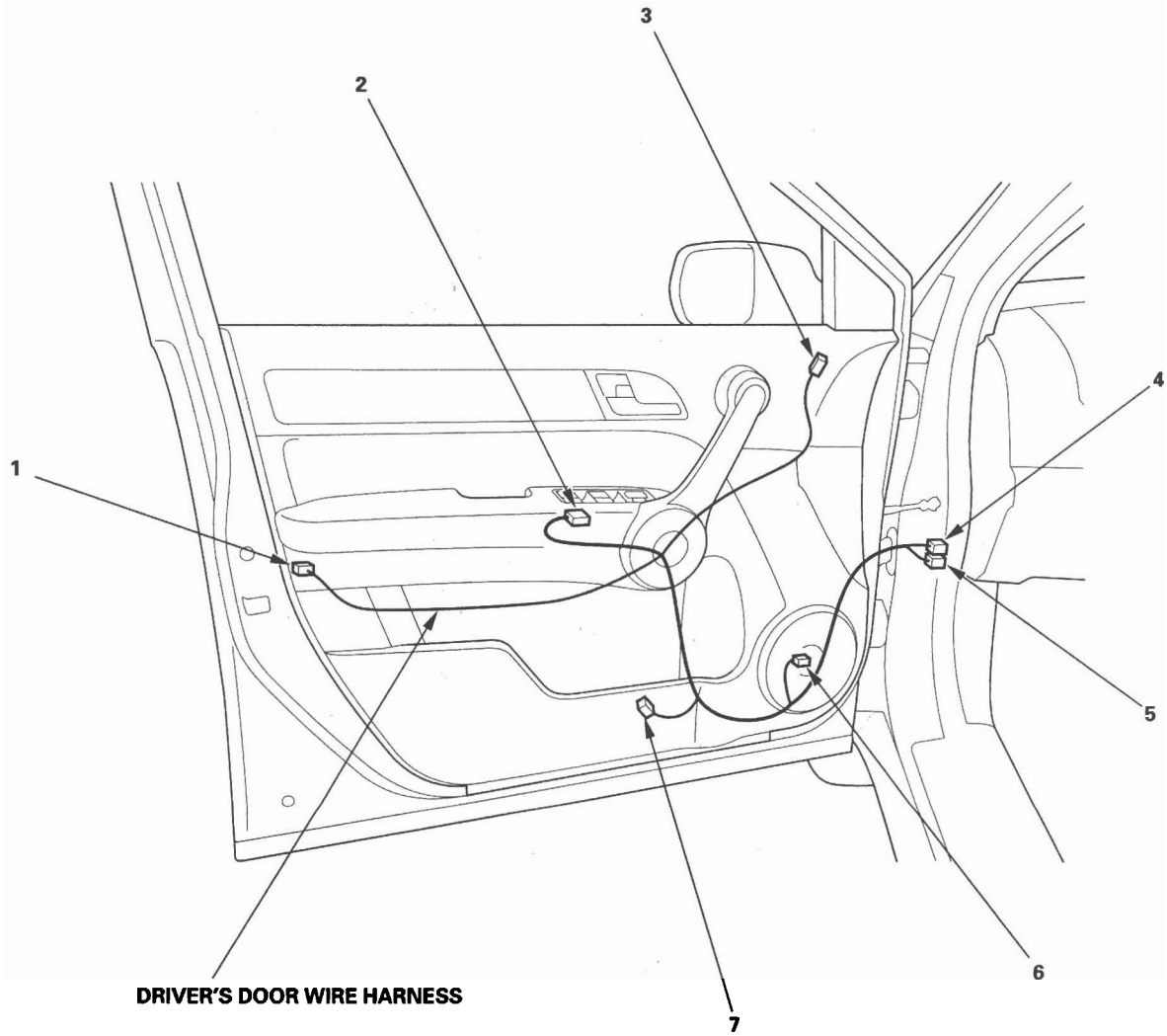
TAILGATE WIRE HARNESS



Connector to Harness Index (cont'd)

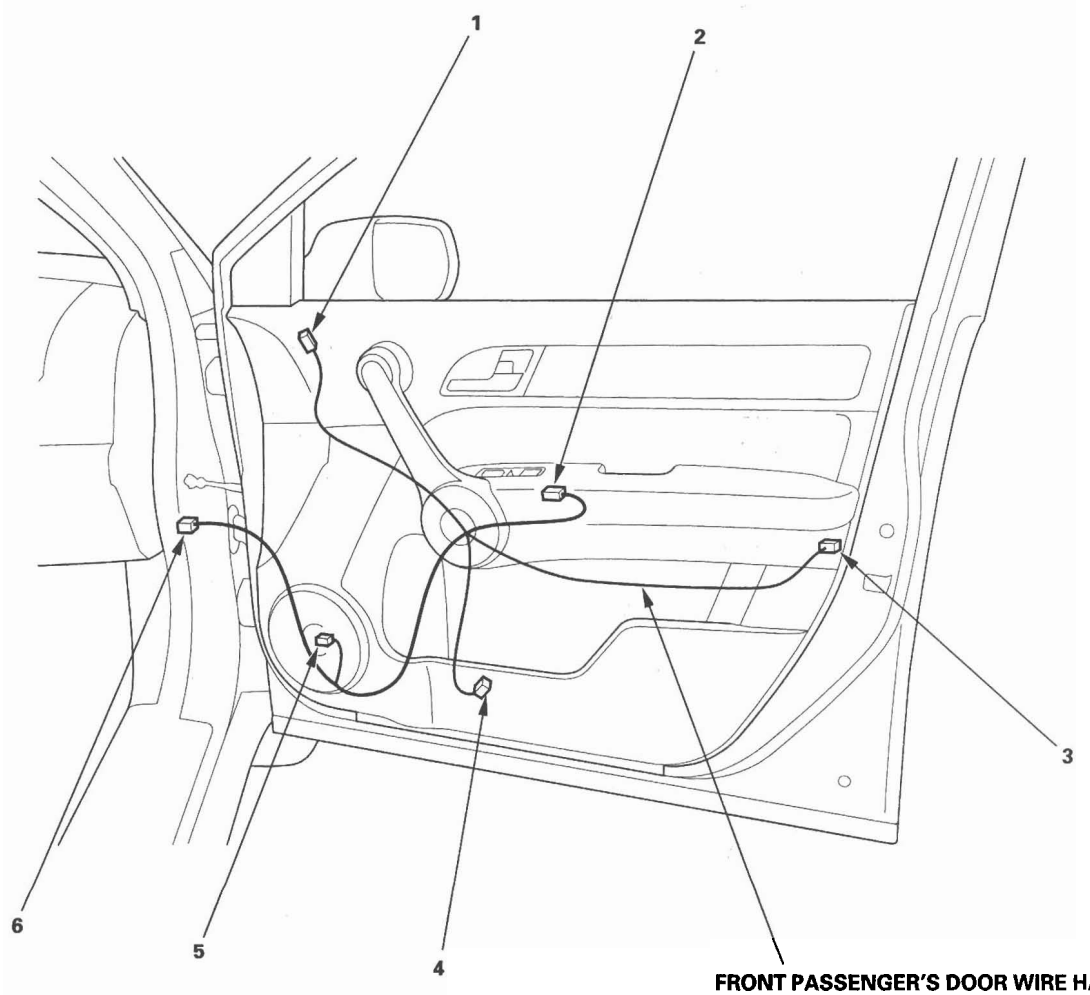
Driver's Door Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's door lock actuator/knob switch/key cylinder switch	1	10	Driver's door		
Driver's window motor	7	6	Driver's door		
Left front speaker	6	2	Driver's door		
Left power mirror	3	6	Driver's door		
Power window master switch/driver's door lock switch	2	22	Driver's door		
C751	5	18	Under left side of dash	Dashboard wire harness (see page 22-28)	
C752	4	23	Under left side of dash	Dashboard wire harness (see page 22-28)	



Front Passenger's Door Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front passenger's door lock actuator/ knob switch	3	10	Front passenger's door		
Front passenger's window motor	4	2	Front passenger's door		
Front passenger's window switch	2	8	Front passenger's door		
Right front speaker	5	2	Front passenger's door		
Right power mirror	1	6	Front passenger's door		
C761	6	18	Under right side of dash	Dashboard wire harness (see page 22-32)	

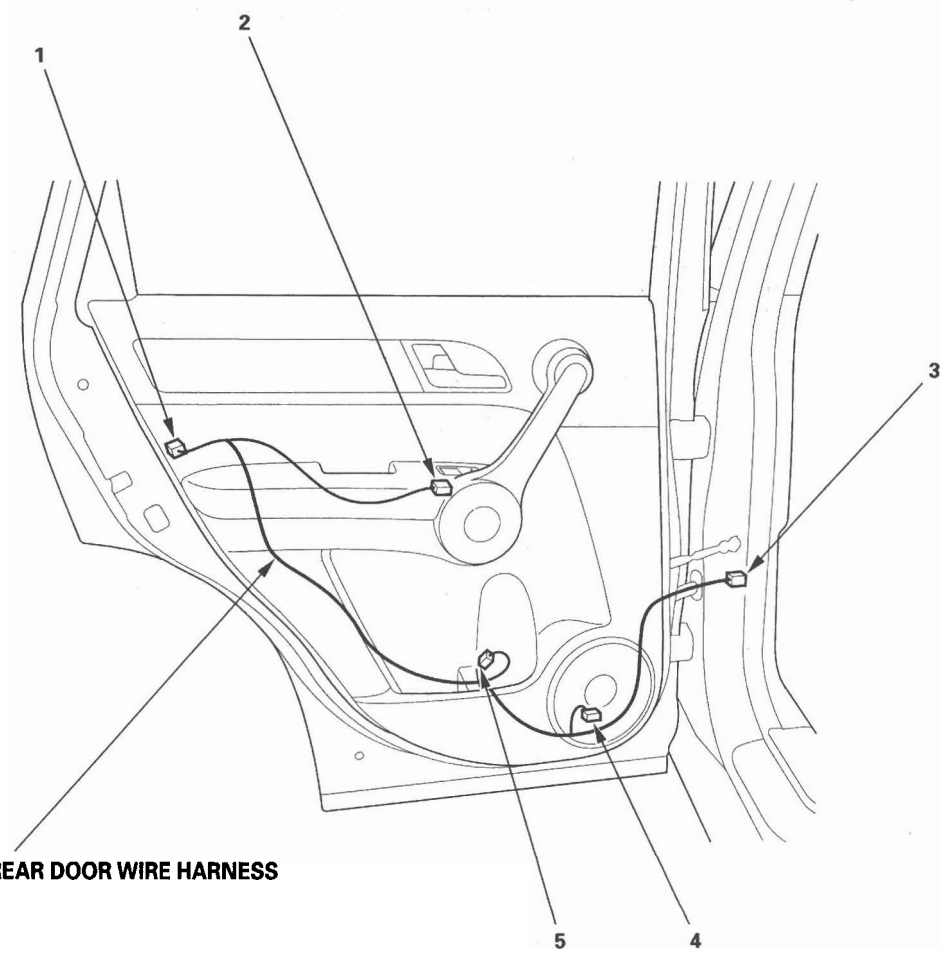


FRONT PASSENGER'S DOOR WIRE HARNESS

Connector to Harness Index (cont'd)

Left Rear Door Wire Harness

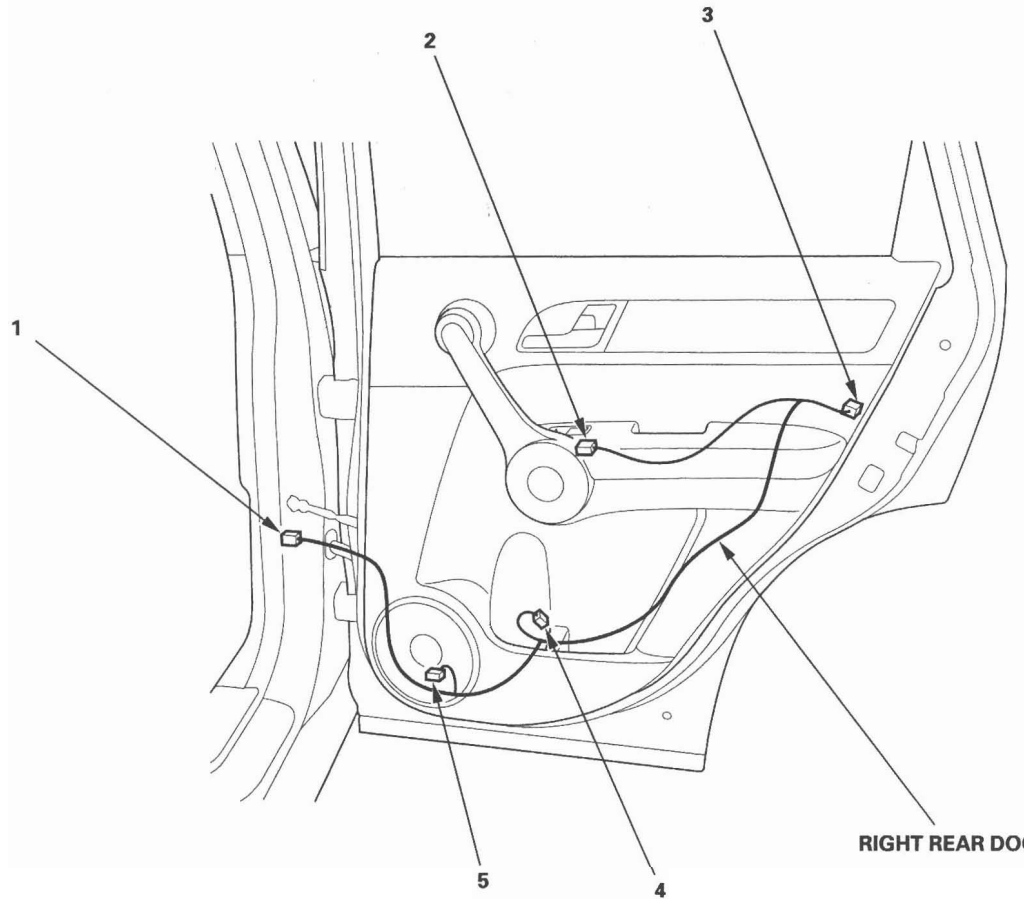
Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Left rear door lock actuator/knob switch	1	10	Left rear door		
Left rear speaker	4	2	Left rear door		
Left rear window motor	5	2	Left rear door		
Left rear window switch	2	8	Left rear door		
C771	3	18	Left B-pillar	Side wire harness (see page 22-36)	



LEFT REAR DOOR WIRE HARNESS

Right Rear Door Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Right rear door lock actuator/knob switch	3	10	Right rear door		
Right rear speaker	5	2	Right rear door		
Right rear window motor	4	2	Right rear door		
Right rear window switch	2	8	Right rear door		
C781	1	18	Right B-pillar	Floor wire harness (see page 22-34)	



RIGHT REAR DOOR WIRE HARNESS

Connector to Harness Index (cont'd)

Console Subharness (EX-L only)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Auxiliary jack assembly	3	5	Under console		
Console accessory power socket	2	2	Under console		
C556	1	20	Under middle of dash	Floor wire harness (see page 22-34)	

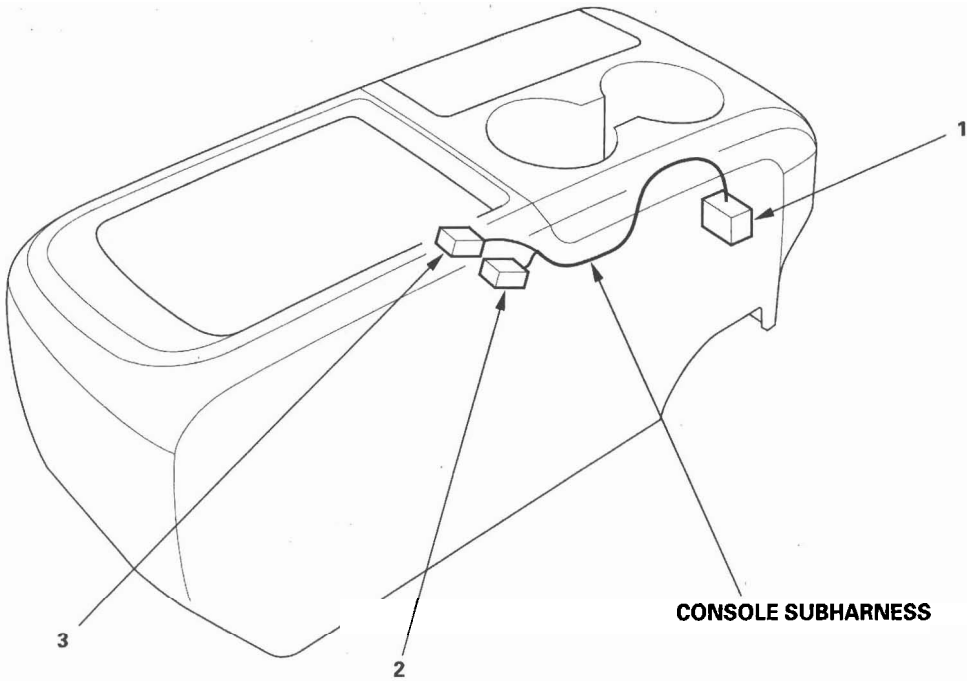
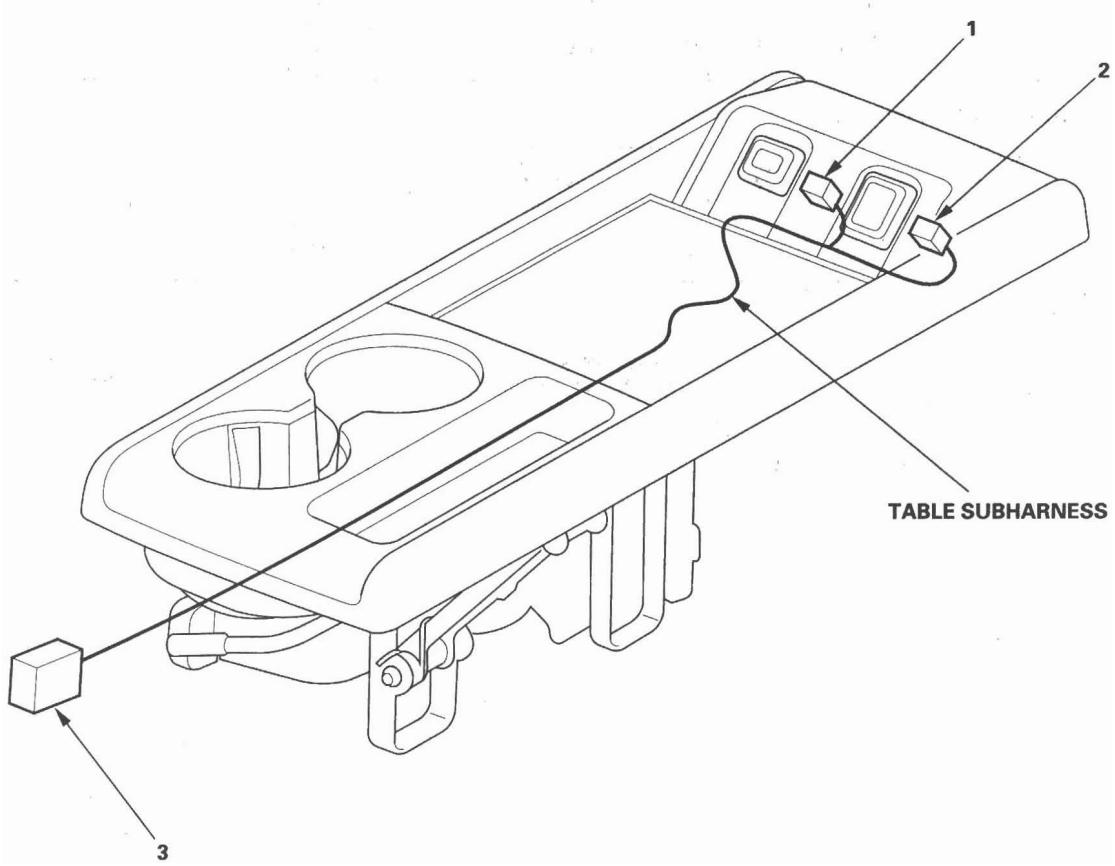


Table Subharness (EX only)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Auxiliary jack assembly	1	5	Under table		
Console accessory power socket	2	2	Under table		
C555	3	8	Under front passenger's seat	Floor wire harness (see page 22-34)	



Connector to Harness Index (cont'd)

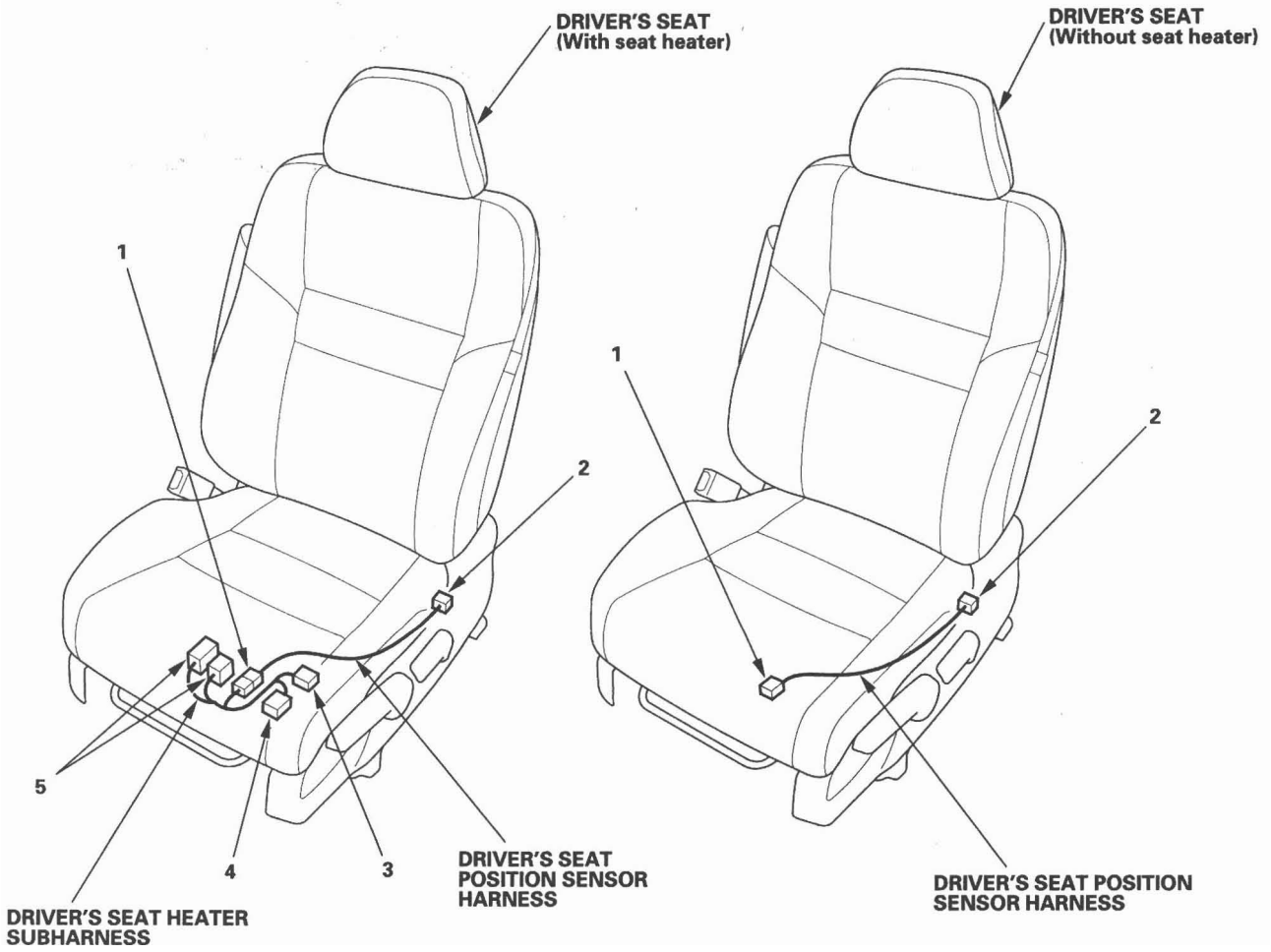
Driver's Seat Heater Subharness (With Seat Heater)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat heater	3	3	Under driver's seat		
Driver's seat heater relay holder	5	——	Under driver's seat	Seat heater HIGH relay and seat heater LOW relay	
C551	1	2	Under driver's seat	Driver's seat position sensor harness	
C552	4	8	Under driver's seat	Floor wire harness (see page 22-34)	

Driver's Seat Position Sensor Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat position sensor	2	2	Under driver's seat		
C551	1	2	Under driver's seat	Driver's seat heater subharness	* 1
C551	1	2	Under driver's seat	Floor wire harness (see page 22-34)	* 2

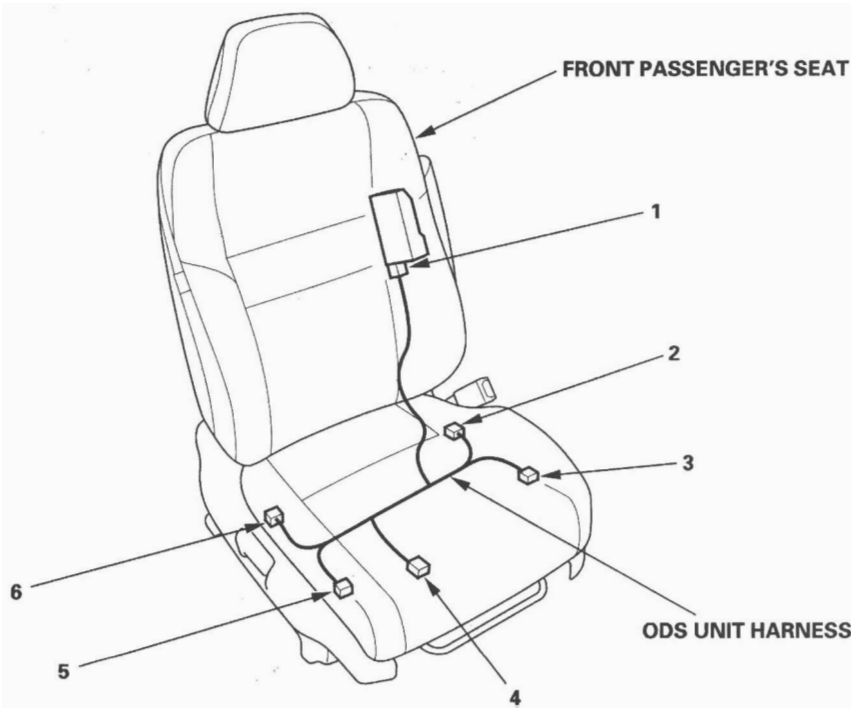
* 1: With seat heater
* 2: Without seat heater



ODS Unit Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front inner seat weight sensor	3	3	Left side of front passenger's seat		
Front outer seat weight sensor	5	3	Right side of front passenger's seat		
Rear inner seat weight sensor	2	3	Left side of front passenger's seat		
Rear outer seat weight sensor	6	3	Right side of front passenger's seat		
ODS unit	1	18	Left side of front passenger's seat		
C557	4	4	Under front passenger's seat	Front passenger's seat subharness (see page 22-52)	* 1
C557	4	4	Under front passenger's seat	Front passenger's seat subharness (see page 22-53)	* 2

* 1: With seat heater
* 2: Without seat heater



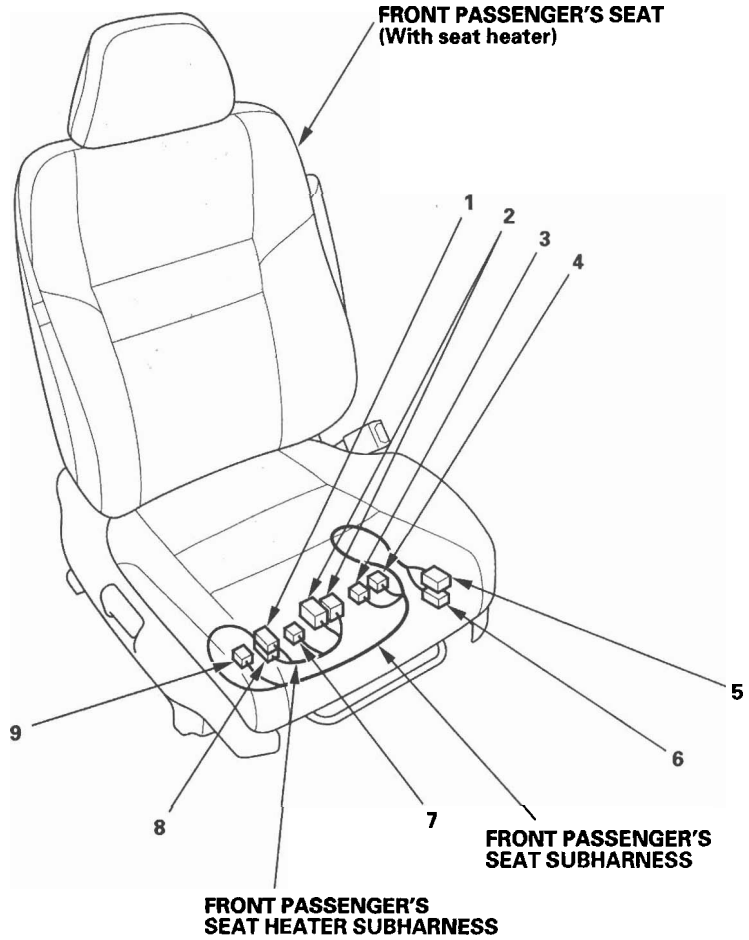
Connector to Harness Index (cont'd)

Front Passenger's Seat Subharness (With Seat Heater)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front passenger's seat belt buckle switch	3	3	Under front passenger's seat		
Front passenger's seat belt buckle tensioner	4	4	Under front passenger's seat		
Front passenger's side airbag inflator	9	2	Under front passenger's seat		
C553	5	18	Under front passenger's seat	Floor wire harness (see page 22-34)	
C554	6	4	Under front passenger's seat	Floor wire harness (see page 22-34)	
C558	1	8	Under front passenger's seat	Front passenger's seat heater subharness	

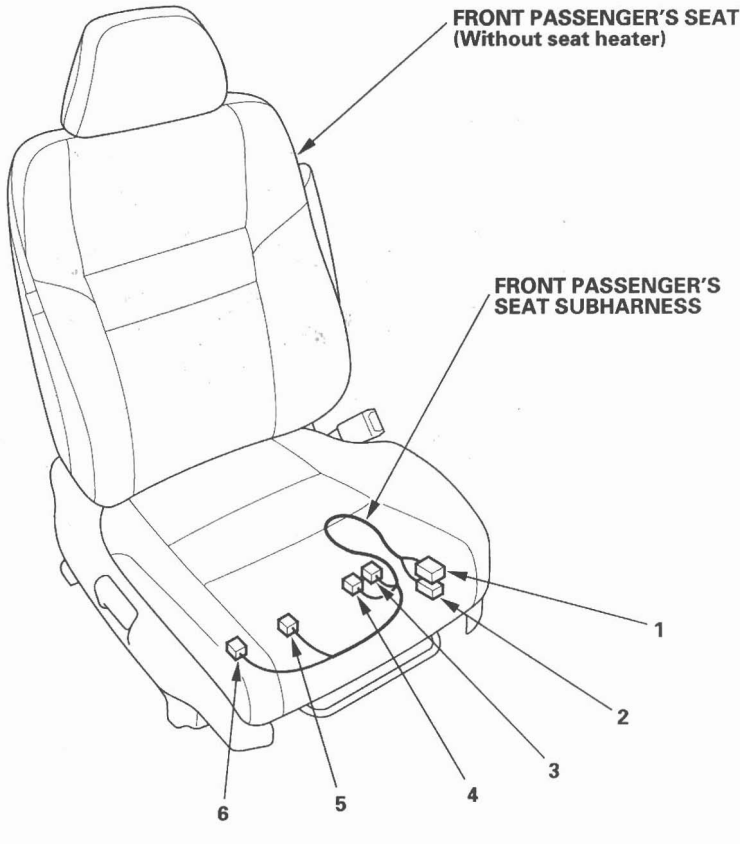
Front Passenger's Seat Heater Subharness (With Seat Heater)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front passenger's seat cushion heater	8	3	Under front passenger's seat		
Front passenger's seat heater relay holder	2	——	Under front passenger's seat	Seat heater HIGH relay and seat heater LOW relay	
C557	7	4	Under front passenger's seat	ODS unit harness (see page 22-51)	
C558	1	8	Under front passenger's seat	Front passenger's seat subharness	



Front Passenger's Seat Subharness (Without Seat Heater)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front passenger's seat belt buckle switch	4	3	Under front passenger's seat		
Front passenger's seat belt buckle tensioner	3	4	Under front passenger's seat		
Front passenger's side airbag inflator	6	2	Under front passenger's seat		
C553	1	18	Under front passenger's seat	Floor wire harness (see page 22-34)	
C554	2	4	Under front passenger's seat	Floor wire harness (see page 22-34)	
C557	5	4	Under front passenger's seat	ODS unit harness (see page 22-51)	

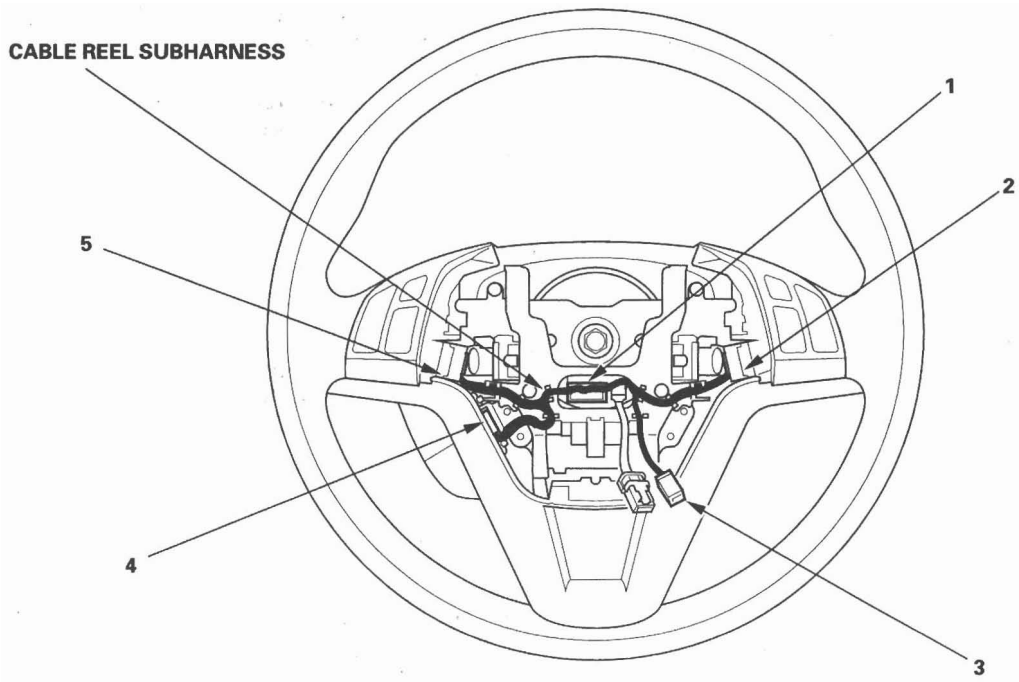


Connector to Harness Index (cont'd)

Cable Reel Subharness

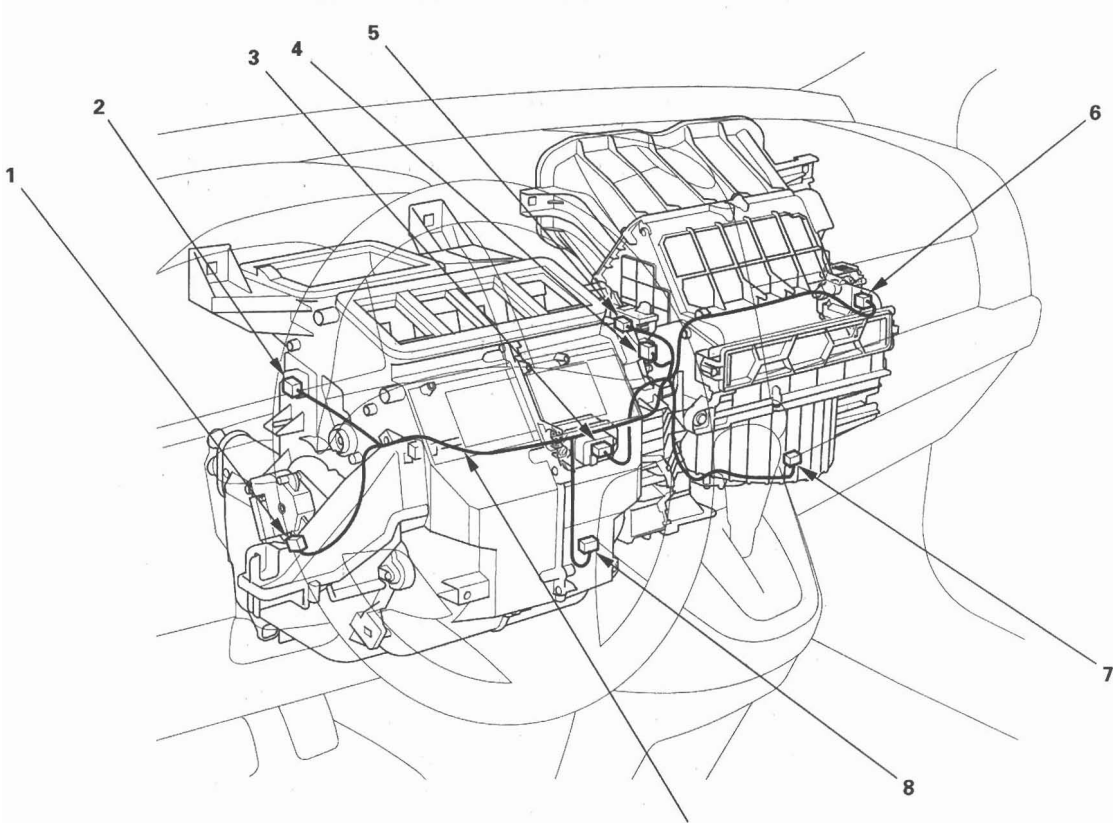
Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Audio remote switch	5	12	Steering wheel		
Cable reel connector C	1	20	Steering wheel		
Cruise control set/resume/cancel switch	2	12	Steering wheel		
Horn switch positive terminal	3	1	Steering wheel		
Voice control switch	4	5	Steering wheel		*

*: With navigation



A/C Wire Harness

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Air mix control motor	1	7	Under left side of dash		
Blower motor	7	2	Under right side of dash		
Evaporator temperature sensor	5	2	Under middle of dash		
Mode control motor	4	7	Behind glove box		
Power transistor	3	4	Under right side of dash		
Recirculation control motor	6	7	Behind glove box		
C403	2	2	Under left side of dash	Engine compartment wire harness (see page 22-22)	
C505	8	24	Behind left side of glove box	Dashboard wire harness (see page 22-32)	

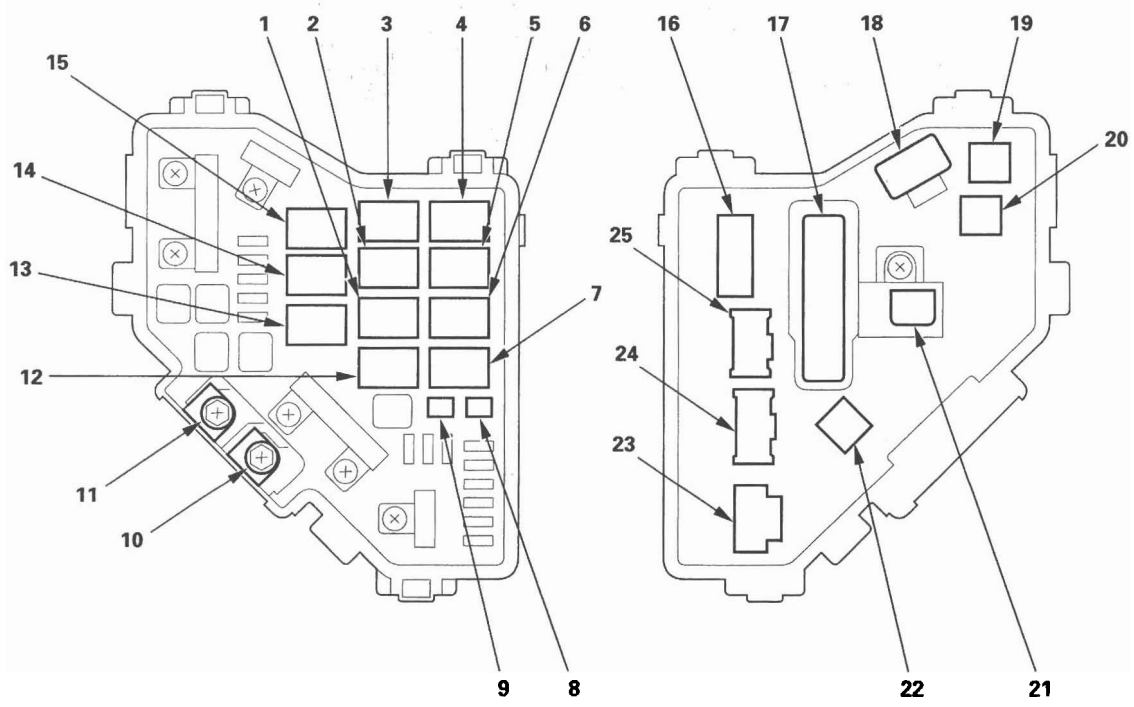


A/C WIRE HARNESS

Connector to Fuse/Relay Box Index

Under-hood Fuse/Relay Box

Socket	Ref	Terminal	Connects to	Notes
A (ELD unit)	21	3	Engine compartment wire harness (see page 22-22)	
A/C compressor clutch relay	12	4		
A/C condenser fan relay	3	4		
B	22	1	Not used	
Blower motor relay	2	4		
C	23	2	Engine compartment wire harness (see page 22-22)	
D	25	8	Engine compartment wire harness (see page 22-22)	
Diode (for A/C condenser fan)	9	———		
Diode (for radiator fan)	8	———		
E	24	10	Engine compartment wire harness (see page 22-22)	
Electronic throttle control system (ETCS) control relay	14	4		
F	17	20	Engine compartment wire harness (see page 22-22)	
Fan control relay	4	5		
G	19	1	Engine compartment wire harness (see page 22-22)	
H	20	1	Engine compartment wire harness (see page 22-22)	
Ignition coil relay	7	4		
J	16	4	Engine compartment wire harness (see page 22-22)	
K	18	2	Engine compartment wire harness (see page 22-22)	
PGM-FI main relay (FI MAIN)	13	4		
PGM-FI subrelay	6	4		
Radiator fan relay	15	4		
Rear window defogger relay	1	4		
Rear window wiper motor relay	5	5		
T1	10		Starter subharness (see page 22-14)	
T101	11		Alternator, via starter subharness (see page 22-14)	

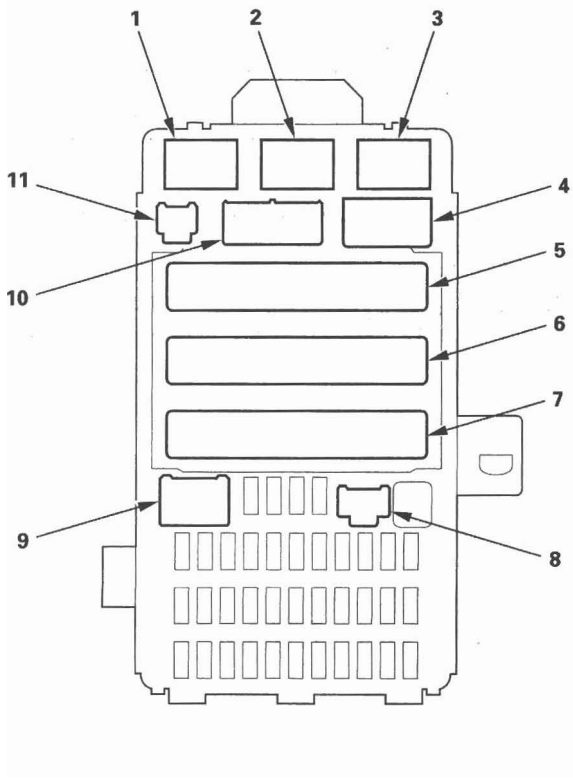


(View of front side)

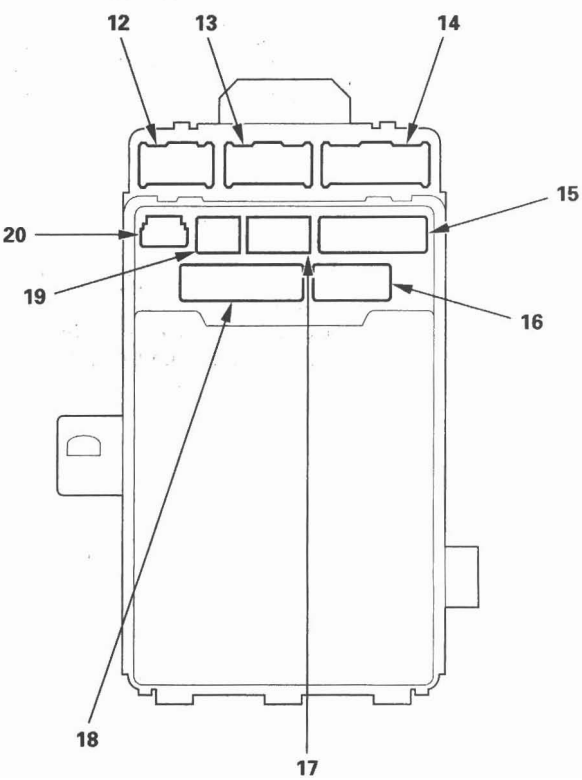
(View of back side)

Under-dash Fuse/Relay Box

Socket	Ref	Terminal	Connects to	Notes
A (Optional connector)	9	6	Not used	
C	10	4	Dashboard wire harness (see page 22-28)	
D	4	2	Dashboard wire harness (see page 22-28)	
E	5	42	Floor wire harness (see page 22-34)	
F	6	34	Engine compartment wire harness (see page 22-22)	
G	7	21	Engine compartment wire harness (see page 22-22)	
H (MICU service check connector)	8	3		
J	20	4	Dashboard wire harness (see page 22-28)	
K	12	8	Dashboard wire harness (see page 22-28)	
M	13	10	Dashboard wire harness (see page 22-28)	
Memory erase signal (MES) connector socket	11	———		
N	14	14	Dashboard wire harness (see page 22-28)	
P	19	10	Dashboard wire harness (see page 22-28)	
PGM-FI main relay 2 (FUEL PUMP)	2	4		
Power window relay	1	4		
Q	17	16	Dashboard wire harness (see page 22-28)	
R	15	20	Dashboard wire harness (see page 22-28)	
Starter cut relay	3	4		
S	16	20	Dashboard wire harness (see page 22-28)	
T	18	34	Dashboard wire harness (see page 22-28)	



(View of front side)

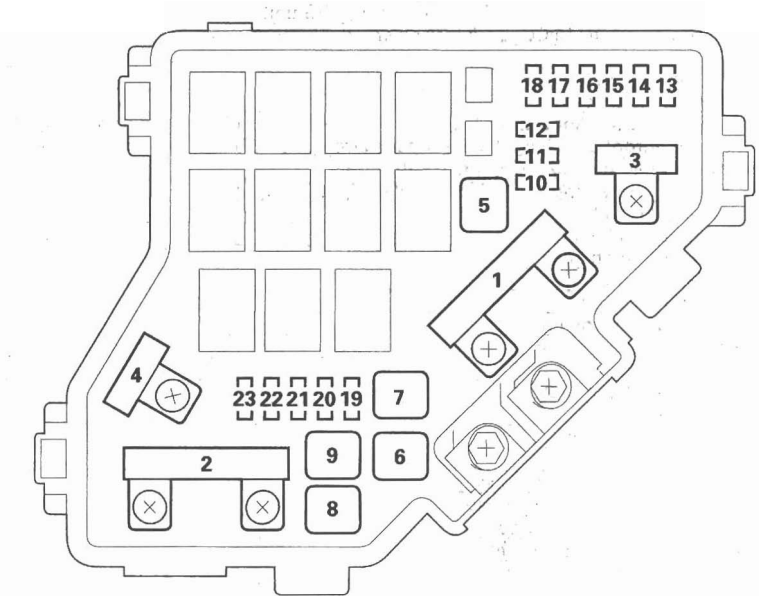


(View of back side)

Fuse to Components Index

Under-hood Fuse/Relay Box

Fuse Number	Amps	Component(s) or Circuit(s) Protected
1	100 A (BAT)	Battery, Power distribution
	70 A (EPS)	Not used
2	50 A (IG)	Ignition switch
	80 A (OPTION)	No. 5, No. 6, No. 7, No. 27, No. 28, No. 29, and No. 31 fuses (in the under-dash fuse/relay box)
3	40 A (VSA MTR)	VSA modulator-control unit
	20 A (VSA FSR)	VSA modulator-control unit
4	50 A (H/L)	No. 18, No. 19, No. 20, and No. 21 fuses (in the under-dash fuse/relay box)
	40 A (P/W)	No. 24, No. 25, No. 26, No. 30, No. 32, and No. 33 fuses (in the under-dash fuse/relay box)
5	———	Not used
6	20 A	A/C condenser fan motor (via A/C condenser fan relay)
7	20 A	Radiator fan motor (via radiator fan relay)
8	30 A	Rear window defogger (via rear window defogger relay)
9	40 A	Blower motor (via blower motor relay)
10	15 A	Hazard lights
11	15 A	A/F sensor (Sensor 1), PCM
12	15 A	Brake lights, PCM, Horn, MICU
13	———	Not used
14	———	Not used
15	7.5 A	A/C condenser fan relay
16	———	Not used
17	15 A	Subwoofer
18	15 A	Ignition coils, PCM
19	15 A	CKP sensor, CMP sensor B, PCM, ETCS control relay, Injectors, PGM-FI main relay 1 (FI MAIN), PGM-FI main relay 2 (FUEL PUMP)
20	7.5 A	A/C compressor clutch (via A/C compressor clutch relay)
21	15 A	PCM (via ETCS control relay)
22	7.5 A	Cargo area light, Ceiling light, Ignition key light, Map light, Vanity mirror light
23	10 A	Audio unit, Data link connector, Gauge control module, Hazard warning switch, Immobilizer-keyless control unit, MICU, Audio unit/Navigation unit

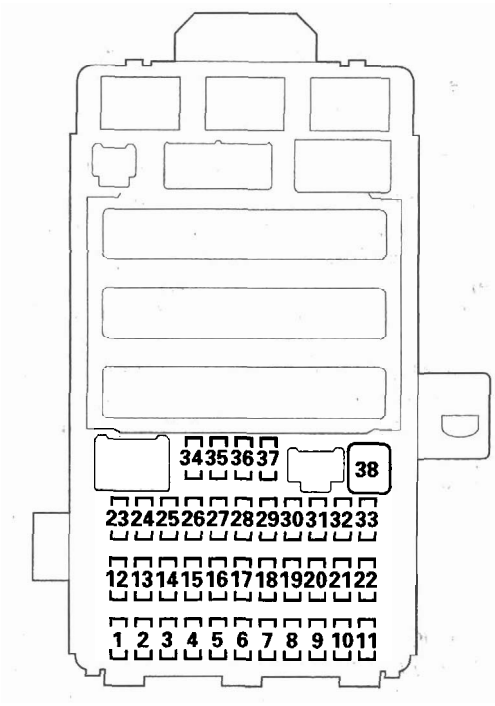


(cont'd)

Fuse to Components Index (cont'd)

Under-dash Fuse/Relay Box

Fuse Number	Amps	Amps Component(s) or Circuit(s) Protected
1	7.5 A	Moonroof control unit/motor
2	15 A	Immobilizer-keyless control unit, PCM, PGM-FI main relay 2
3	10 A	Alternator, ELD unit, EVAP canister purge valve, EVAP canister vent shut valve, MAF sensor, PCM
4	7.5 A	VSA modulator-control unit, Yaw rate-lateral acceleration sensor
5	15 A	Seat heaters
6	20 A	Not used (optional fog lights)
7	—	Not used
8	10 A	Rear window wiper motor (via relay)
9	7.5 A	ODS unit, Passenger's airbag CUTOFF indicator, SRS unit
10	7.5 A	Gauge control module, MICU, Shift lock solenoid, TPMS control unit
11	10 A	SRS unit
12	10 A	Right headlight (high beam)
13	10 A	Left headlight (high beam)
14	7.5 A	Audio unit light, Dash lights brightness controller, Glove box light, Hazard warning switch light, HVAC control unit light, Moonroof switch light, Passenger's airbag CUTOFF indicator light, Power mirror switch light, Steering wheel switches lights, VSA OFF switch light
15	7.5 A	Front side marker/parking lights, License plate light, Taillights
16	10 A	Right headlight (low beam)
17	10 A	Left headlight (low beam)
18	20 A	MICU (headlight-high beam)
19	15 A	MICU (parking lights)
20	7.5 A	TPMS control unit
21	20 A	MICU (headlight-low beam)
22	—	Not used
23	—	Not used
24	20 A	Moonroof control unit/motor
25	20 A	MICU (door locks)
26	20 A	Power window master switch
27	—	Not used
28	15 A	Cargo area accessory power socket relay
29	15 A	Front accessory power socket relay
30	20 A	Front passenger's power window motor
31	15 A	Console accessory power socket relay
32	20 A	Right rear power window motor
33	20 A	Left rear power window motor
34	7.5 A	Accessory power socket relays (Front, Console, and Cargo area), Audio unit, HandsFreeLink control unit
35	7.5 A	Key interlock solenoid, MICU
36	10 A	HVAC control unit, Power mirror defogger relay, Recirculation control motor, Under-hood fuse/relay box (A/C compressor clutch relay, Blower motor relay, Power mirror defogger relay, Rear window defogger relay), Fan control relay and radiator fan relay (via A/C diode), Seat heaters
37	7.5 A	MICU (DRL)
38	30 A	MICU (windshield wiper)


34 35 36 37
38
23 24 25 26 27 28 29 30 31 32 33
12 13 14 15 16 17 18 19 20 21 22
1 2 3 4 5 6 7 8 9 10 11

Ground Distribution

Ground to Components Index

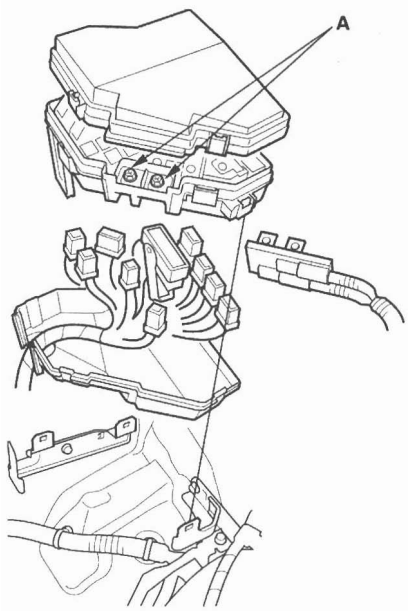
Ground	Component or circuit grounded
G1	Battery
G2	Engine
G101	BLK: A/T clutch pressure control solenoid valves A, B, C, PCM, EGR valve, PCM, Transmission range switch, VTC oil control solenoid valve BRN: Data link connector, Immobilizer-keyless control unit BRN/YEL: PCM
G201	Washer fluid level switch (Canada models)
G202	VSA modulator-control unit
G301	A/C condenser fan relay, Front side marker/parking lights, Front turn signal lights, Headlights, Hood switch
G302	Blower motor relay, ELD unit, Fan control relay, Power mirror defogger relay, Rear window wiper motor relay, Windshield wiper motor
G401	Brake fluid level switch, MICU, Power steering pressure (PSP) switch, Power transistor, (G401 connects to G601 via under-dash fuse/relay box)
G501	Cable reel (steering wheel switches ground), Driver's door lock knob switch/key cylinder switch, Gauge control module (2 wires), Ignition key switch, Left power mirror defogger, Moonroof switch, Moonroof control unit/motor, Power mirror switch, Power window master switch (including driver's door lock switch), Vanity mirror lights, VSA OFF switch
G502	Accessory power socket relays (Front, Console, and Cargo area), Audio unit, Data link connector, Driver's seat heater switch, Front accessory power socket, MICU, Navigation unit, Stereo amplifier, TPMS control unit
G503	A/T gear position indicator panel light/Park-pin switch, Front passenger's power window switch (including front passenger's door lock switch), Front passenger's power door lock knob switch, Front passenger's seat heater switch, Glove box light, HVAC control unit, Right power mirror defogger
G504	Audio unit, Navigation unit
G505	Memory erase signal (MES) connector, SRS unit (2 wires)
G551	Console accessory power socket, Driver's seat belt buckle switch, Driver's seat heater
G552	Front passenger's seat belt buckle switch, Front passenger's seat heater, ODS unit, Right rear door lock knob switch, Yaw rate-lateral acceleration sensor
G601	Left rear door lock knob switch, Right taillight
G602	Fuel pump, High mount brake light, Left taillight, License plate lights, MICU (2 wires), MICU service check connector, Rear accessory power socket, Rear window defogger, Rear window wiper motor, Tailgate latch switch, Tailgate outer handle switch, Tailgate release actuator, (G602 connects to G401 via under-dash fuse/relay box)

Under-hood Fuse/Relay Box

Removal and Installation

Removal

1. Make sure you have the anti-theft codes for the audio and navigation system. If equipped with XM radio, write down the XM radio presets.
2. Make sure the ignition switch is OFF.
3. Disconnect the negative battery cable, then disconnect the positive cable, and wait at least 3 minutes.
4. Remove the screws (A) for the alternator and battery cable terminals from the under-hood fuse/relay box.



5. Remove the bottom cover from the under-hood fuse/relay box.
6. Disconnect the connectors from the under-hood fuse/relay box.
7. Carefully remove the relays by prying under the base of the relay.

   NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start.

Installation

1. Install the relays and connect the connectors to the under-hood fuse/relay box, then install the under-hood fuse/relay box in the reverse order of removal.
2. Install the removed parts in the reverse order of removal.
3. Connect the positive cable to the battery, then connect the negative cable to the battery.
4. Enter the audio and navigation system anti-theft codes, and set the clock. If equipped with XM radio, enter the XM radio presets.
5. Confirm that all systems work properly.

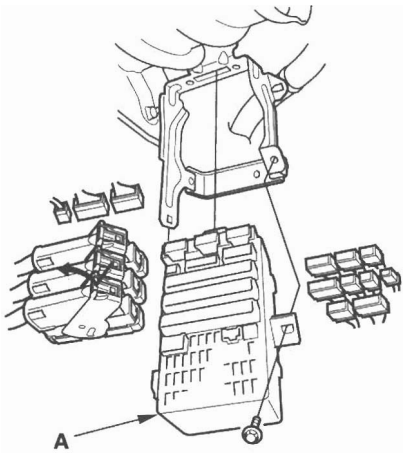
Under-dash Fuse/Relay Box

Removal and Installation

SRS components are located in this area. Review the SRS component locations (see page 24-13) and precautions and procedures (see page 24-15) before doing repairs or servicing.

Removal

1. Make sure you have anti-theft codes for the audio and navigation system. If equipped with XM radio, write down the XM radio presets.
2. Make sure the ignition switch is OFF.
3. Disconnect the negative battery cable, then disconnect the positive cable, and wait at least 3 minutes.
4. Remove the driver's dashboard lower cover (see page 20-101).
5. Disconnect the connectors from the fuse side of the under-dash fuse/relay box (A).



6. Remove the mounting bolt, and pull the fuse/relay box away from the body.
7. Disconnect the connectors from the back side of the under-dash fuse/relay box, then remove the under-dash fuse/relay box.
8. Carefully remove the relays by prying under the base of the relay.

   NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start.

Installation

1. Install the relays and connect the connectors to the under-dash fuse/relay box, then install the under-dash fuse/relay box in the reverse order of removal.
2. Install the removed parts in the reverse order of removal.
3. Connect the positive cable to the battery, then connect the negative cable to the battery.
4. Register the immobilizer system with the HDS (see page 22-302).

   NOTE: The imoes unit is built into the MICU which is part of the under-dash fuse/relay box. Because of this construction, the imoes must be registered, or the vehicle will not start.
5. Enter the audio and navigation system anti-theft codes, and set the clock. If equipped with XM radio, enter the XM radio presets.
6. Confirm that all systems work properly.

Battery Test

⚠ WARNING

A battery can explode if you do not follow the proper procedure, causing serious injury to anyone nearby. Follow all procedures carefully and keep sparks and open flames away from the battery.

Use an ED-18™ Battery Tester, and follow the manufacturer's procedures. If you don't have one of these computerized testers, follow this conventional test procedure:

1. Be sure the temperature of the electrolyte is between 70 °F (21 °C) and 100 °F (38 °C).
2. Inspect the battery case for cracks or leaks.
   - If the case is damaged, replace the battery. ■
   - If the case looks OK, go to step 3.
3. Check the test indicator window.
   - If the test indicator window indicates the battery is charged, go to step 4.
   - If the test indicator window indicates a low charge, go to step 7.
4. Apply a 300 amp load for 15 seconds to remove the surface charge.
5. Wait 15 seconds, then apply a test load of 280 amps for 15 seconds.
6. Record battery voltage.
   - If voltage is above 9.6 V, the battery is OK. ■
   - If voltage is below 9.6 V, go to step 7.
7. Charge the battery on High (40 amps) until the test indicator window shows the battery is charged, plus an additional 30 minutes. If the battery charge is very low, it may be necessary to bypass the charger's polarity protection circuitry.
   - If the test indicator window indicates the battery is charged within three hours, repeat steps 4 through 6. If the battery is still below 9.6 V, replace the battery. ■
   - If the test indicator window indicates the battery is not charged within three hours, replace the battery. ■

Power Relay Test

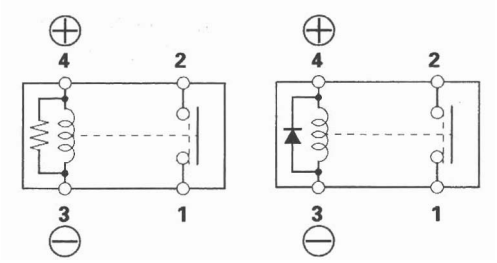
Use this chart to identify the type of relay, then do the test listed for it.

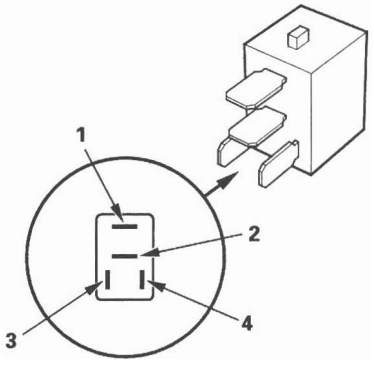
Relay	Test
A/C compressor clutch relay	Normally-open type
A/C condenser fan relay	
Blower motor relay	
Cargo area accessory power socket relay	
Console accessory power socket relay	
ETCS control relay	
Front accessory power socket relay	
Ignition coil relay	
PGM-FI main relay 1 (FI MAIN)	
PGM-FI main relay 2 (FUEL PUMP)	
PGM-FI subrelay	
Power mirror defogger relay	
Power window relay	
Radiator fan relay	
Rear window defogger relay	
Seat heater relays (high) (Driver's, Front passenger's)	
Starter cut relay	
Fan control relay	Five-terminal type
Rear window wiper motor relay	
Seat heater relays (low) (Driver's, Front passenger's)	

Normally-open type

Check for continuity between the terminals.

- There should be continuity between the No. 1 and No. 2 terminals when battery positive terminal is connected to the No. 4 terminal, and battery negative terminal is connected to the No. 3 terminal.
- There should be no continuity between the No. 1 and No. 2 terminals when power is disconnected.

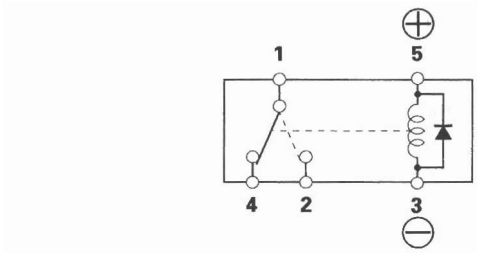


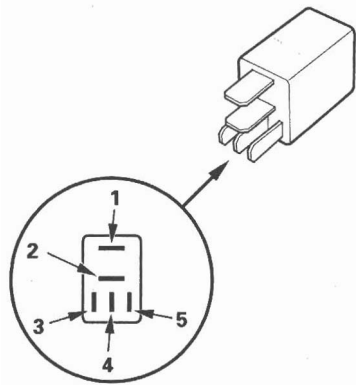


Five-terminal type B

Check for continuity between the terminals.

- There should be continuity between the No. 1 and No. 2 terminals when battery positive terminal is connected to the No. 5 terminal, and battery negative terminal is connected to the No. 3 terminal.
- There should be continuity between the No. 1 and No. 4 terminals when power is disconnected.



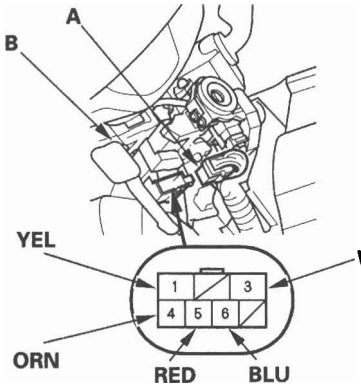


Ignition Switch

Test

SRS components are located in this area. Review the SRS component locations (see page 24-13) and precautions and procedures (see page 24-15) before performing repairs or servicing.

1. Make sure you have anti-theft codes for the audio and navigation system. If equipped with XM radio, write down the XM radio presets.
2. Turn the ignition switch OFF, and disconnect the negative battery cable.
3. Remove the driver's dashboard lower cover (see page 20-101) and the steering column covers (see page 17-25).
4. Disconnect the 7P connector (A) from the ignition switch (B).



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

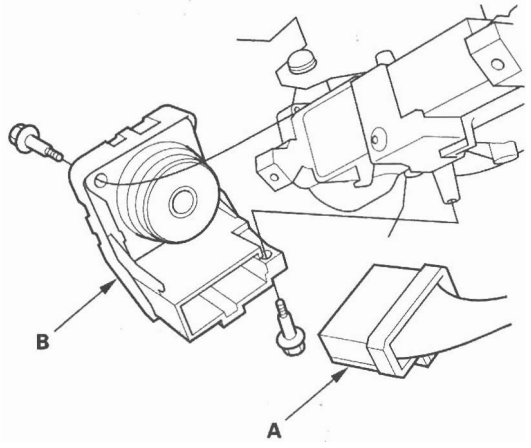
Position \ Terminal	RED (ACC)	WHT (BAT)	BLU (IG1)	ORN (IG2)	YEL (ST)
O (LOCK)					
I (ACC)	○	○			
II (ON)	○	○	○	○	
III (START)		○	○		○

6. If the continuity checks do not agree with the table, replace the ignition switch (see page 22-68).
7. After reconnecting the battery, enter the audio and navigation system anti-theft codes, and set the clock. If equipped with XM radio, enter the XM radio presets.

Replacement

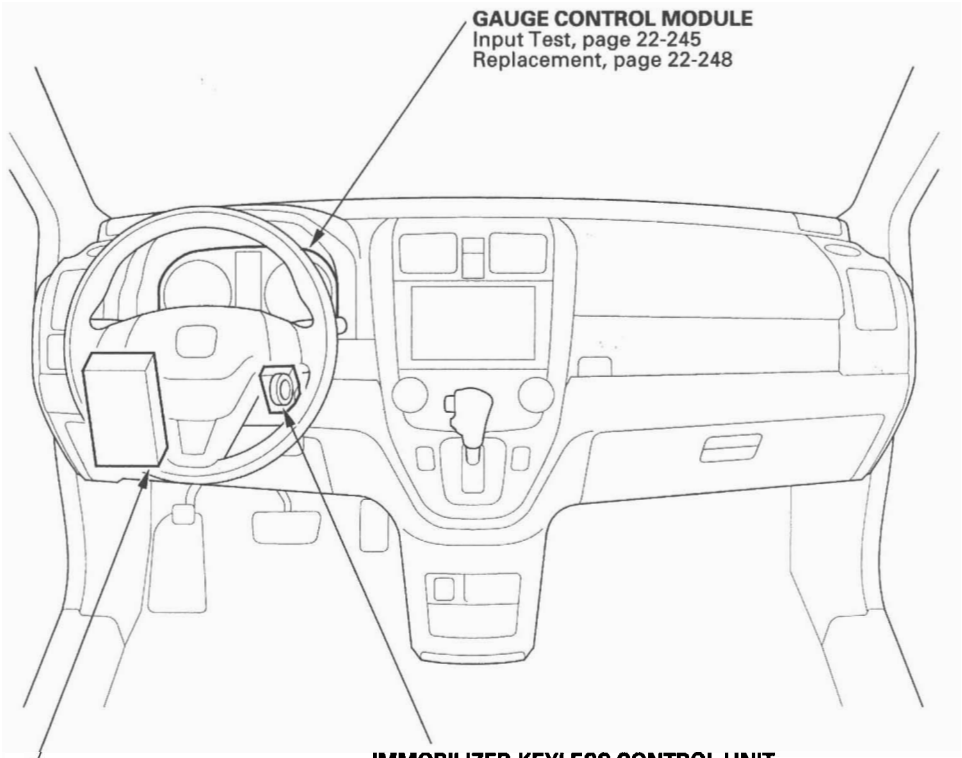
SRS components are located in this area. Review the SRS component locations (see page 24-13) and precautions and procedures (see page 24-15) before performing repairs or servicing.

1. Make sure you have anti-theft codes for the audio and navigation system. If equipped with XM radio, write down the XM radio presets.
2. Turn the ignition switch OFF, and disconnect the negative battery cable.
3. Remove the driver's dashboard lower cover (see page 20-101) and the steering column covers (see page 17-25).
4. Disconnect the 7P connector (A) from the ignition switch (B).



5. Remove the two screws and the ignition switch.
6. Install the ignition switch in the reverse order of removal.
7. After reconnecting the battery, enter the audio and navigation system anti-theft codes, and set the clock. If equipped with XM radio, enter the XM radio presets.

Component Location Index



General Troubleshooting Information

Troubleshooting CAN Circuit Related Problems

NOTE: Check the PCM for DTCs, and troubleshoot PCM (see page 11-3) or F-CAN loss of communication errors first.

Using the HDS (Preferred method)

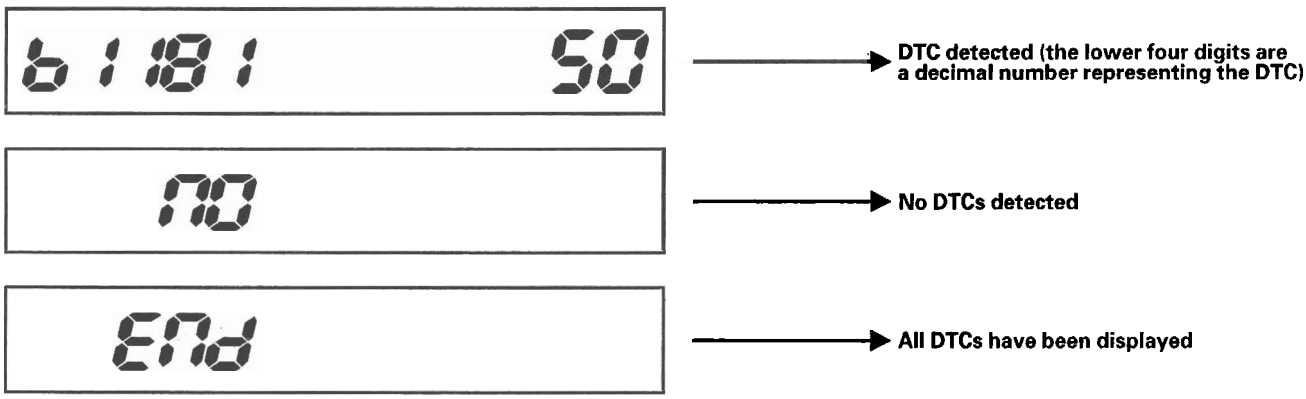
1. Go to B-CAN System Diagnosis Test Mode A to check for "Connected units" and DTCs (see page 22-92).
2. If no DTCs are retrieved, go to B-CAN System Diagnosis Test Mode C (see page 22-94) or D (see page 22-95).

Without HDS (Use only if the HDS is unavailable)

1. Check for communication circuit problems using B-CAN System Diagnostic Test Mode 1 and Mode 2 (see page 22-96).
2. Check for DTCs.
3. Sort, and then troubleshoot the DTCs in the order below.
   - -1 Battery voltage DTCs
   - -2 Internal error DTCs
   - -3 Loss of communication DTCs (beginning with the lowest number first; for example, if B1008 and B1011 are retrieved, troubleshoot B1008 first)
   - -4 Signal error DTCs
4. If no DTCs are retrieved, use B-CAN System Diagnostic Test Mode 2 to check all inputs related to failure (see step 10 on page 22-96).

How to display DTCs on the gauge control module

While in Test Mode 1, the DTCs which have been detected and stored individually by various B-CAN (Body-controller Area Network) units, will be shown one by one on the odometer display when the communication between the MICU and the gauge control module is normal. To scroll through the DTCs, press the select/reset button.



The unit that has stored the code can be identified by the number shown on the multi-information display.

MICU	10
Gauge control module	50
Immobilizer-keyless control unit	96

How to clear the DTC

While in Test Mode 1, press and hold down the SELECT/RESET button for about 13 seconds.

(cont'd)

General Troubleshooting Information (cont'd)

Loss of Communication DTC cross-reference chart

When an ECU is unable to communicate with the other ECUs on the CAN circuit, the other control units will set loss of communication DTCs. Use this chart to find the control unit that is not communicating.

1. Find the transmitting control unit that is in the same row as all of the loss of communication DTCs retrieved.
2. Do the input test for the transmitting control unit.

BUS OFF and Internal Error Codes

DTC type	Related Unit		
	MICU	Gauge Control Module	Immobilizer-Keyless Control Unit
BUS OFF	B1000	B1150	B1900
ECU (CPU) Error	B1001		
ECU (EEPROM) Error	B1002	B1152	

Transmitting Control Unit	Message	Receiving Unit/Loss of Communication DTC		
		MICU	Gauge Control Module	Immobilizer-Keyless Control Unit
MICU	RM		B1188	
	HLSW		B1155	
	WIPSW		B1156	
	MICU		B1157	
	DOORSW		B1159	
	DRLOCKSW		B1160	B1905
Gauge Control Module	VSP/NE	B1011		
	A/T	B1008		B1906
	ENG TEMP			
PCM	ENG		B1168	
	A/T		B1169	
VSA	VSA		B1170	
TPMS	TPMS		B1173	
SRS	SRS		B1187	

DTC Troubleshooting Index

NOTE: Check the PCM for DTCs, and troubleshoot PCM (see page 11-3) or F-CAN loss of communication errors first, then record all DTCs. Sort them by DTC type using the DTC troubleshooting index, then troubleshoot the DTC(s) in this order.

- Battery voltage DTCs
- Internal error DTCs
- Loss of communication DTCs (beginning with the lowest number first; for example, if B1008 and B1011 are retrieved, troubleshoot B1008 first).
- Signal error DTCs

MICU

DTC	Description	DTC type	Page
B1000	Communication bus line error (BUS-OFF)	Loss of communication	(see page 22-100)
B1001	MICU internal error (CPU error)	Internal error	(see page 22-101)
B1002	MICU internal error (EEPROM error)	Internal error	(see page 22-102)
B1008	MICU lost communication with the gauge control module (A/T message)	Loss of communication	(see page 22-102)
B1011	MICU lost communication with the gauge control module (VSP/ NE message)	Loss of communication	(see page 22-102)
B1026	Front passenger's door lock switch signal error (LOCK/UNLOCK)	Signal error	(see page 22-116)
B1028	Rear window wiper motor (As) signal error	Signal error	(see page 22-205)
B1032	MICU lost communication with the SRS unit (CDS message)	Signal error	(see page 22-104)
B1036	IG1 line input error	Signal error	(see page 22-105)
B1077	Windshield wiper (As) signal error	Signal error	(see page 22-209)
B1078	Daytime running lights signal error (Canada)	Signal error	(see page 22-150)
B1079	Daytime running lights signal error (USA)	Signal error	(see page 22-150)
B1127	Driver's door key cylinder switch signal error (LOCK/UNLOCK)	Signal error	(see page 22-118)
B1128	Driver's door lock switch signal error (LOCK/UNLOCK)	Signal error	(see page 22-119)
B1129	Driver's door lock knob switch signal error (LOCK/UNLOCK)	Signal error	(see page 22-121)
B1275	Combination light switch OFF position circuit malfunction	Signal error	(see page 22-152)
B1276	Combination light switch parking (SMALL) position circuit malfunction	Signal error	(see page 22-152)
B1278	Combination switch ON position circuit malfunction	Signal error	(see page 22-152)
B1279	Headlight switch DIMMER position circuit malfunction	Signal error	(see page 22-154)
B1280	Turn signal switch circuit malfunction	Signal error	(see page 22-156)
B1281	Windshield wiper switch MIST position circuit malfunction	Signal error	(see page 22-211)
B1282	Windshield wiper switch INT (AUTO) position circuit malfunction	Signal error	(see page 22-211)
B1283	Windshield wiper switch LOW position circuit malfunction	Signal error	(see page 22-211)
B1284	Windshield wiper switch HIGH position circuit malfunction	Signal error	(see page 22-211)

(cont'd)

DTC Troubleshooting Index (cont'd)

Gauge Control Module

DTC	Description	DTC type	Page
B1150	Communication bus line error (BUS-OFF)	Loss of communication	(see page 22-104)
B1152	Gauge control module internal error (EEPROM error)	Internal error	(see page 22-236)
B1155	Gauge control module lost communication with MICU (HLSW message)	Loss of communication	(see page 22-236)
B1156	Gauge control module lost communication with MICU (WIPSW message)	Loss of communication	(see page 22-236)
B1157	Gauge control module lost communication with MICU (MICU message)	Loss of communication	(see page 22-236)
B1159	Gauge control module lost communication with MICU (DOORSW message)	Loss of communication	(see page 22-236)
B1160	Gauge control module lost communication with MICU (DRLOCKSW message)	Loss of communication	(see page 22-236)
B1168	Gauge control module lost communication with PCM (Engine messages)	Loss of communication	(see page 22-237)
B1169	Gauge control module lost communication with PCM (A/T message)	Loss of communication	(see page 22-237)
B1170	Gauge control module lost communication with the VSA modulator-control unit (VSA message)	Loss of communication	(see page 22-238)
B1173	Gauge control module lost communication with TPMS control unit (TPMS message)	Loss of communication	(see page 22-239)
B1175	Fuel level sensor (Fuel gauge sending unit) circuit open	Signal error	(see page 22-240)
B1176	Fuel level sensor (Fuel gauge sending unit) circuit short	Signal error	(see page 22-241)
B1177	Battery voltage abnormal	Battery voltage	(see page 22-242)
B1178	F-CAN communication line error	Loss of communication	(see page 22-243)
B1187	Gauge control module lost communication with SRS unit (SRS message)	Loss of communication	(see page 22-244)
B1188	Gauge control module lost communication with MICU (RM message)	Loss of communication	(see page 22-236)

Immobilizer-Keyless Control Unit

DTC	Description	DTC type	Page
B1900	Communication bus line error (BUS-OFF)	Loss of communication	(see page 22-104)
B1905	Immobilizer-keyless control unit lost communication with MICU (DRLOCKSW message)	Loss of communication	(see page 22-289)
B1906	Immobilizer-keyless control unit lost communication with gauge control module (A/T message)	Loss of communication	(see page 22-290)

System Description

MICU Control Functions Index

The MICU (built into the under-dash fuse/relay box) is one of the B-CAN components. The MICU controls many systems related to the body controller area network, and also works as a gateway to diagnose the other B-CAN circuits with the HDS.
Refer to each system circuit diagram for details.

System	Function
Multiplex Control	Sends the switch input signal information to the MICU which commands distributes the information. The MICU controls the ECUs electric load and communication based upon the information received by the B-CAN.
On-Board Diagnosis	The MICU has a gateway function which sends the results of the MICU internal diagnosis and the B-CAN connected ECUs diagnosis to the HDS.
Self-Diagnosis	Test mode 1 diagnoses the communication line between the MICU and B-CAN connected unit. Test mode 2 checks the switch inputs connected to the MICU.
Interior Light(s)	The MICU controls the interior lights ON, OFF and dimming based upon the information of the related switches and/or the B-CAN related information.
Sleep Function	The MICU has a sleep function, which it enters during the power down mode.

The MICU also controls the function of these circuits:

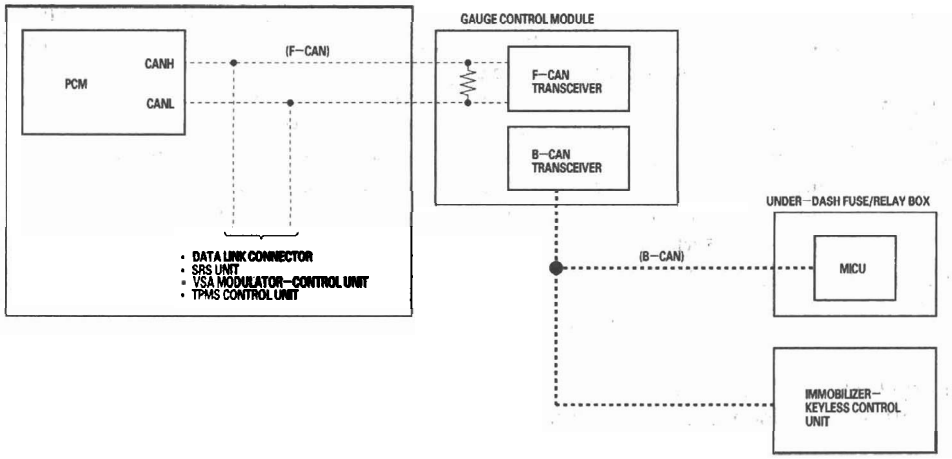
- Entry lights control (map lights and ceiling light)
- Exterior lights control (including the daytime running lights control)
- Horn
- Interlock system
- Key-in reminder
- Keyless entry
- Lights-on reminder
- Power door locks
- Power window key-off timer
- Seat belt reminder
- Security alarm
- Turn signal/hazard flasher
- Wiper/washer

(cont'd)

System Description (cont'd)

Body Controller Area Network (B-CAN) and Fast Controller Area Network (F-CAN)

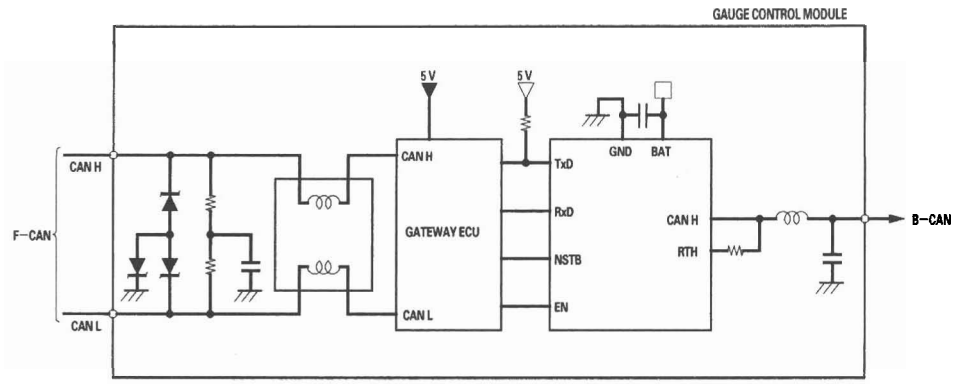
The body controller area network (B-CAN) and the fast controller area network (F-CAN) share information between multiple electronic control units (ECUs). B-CAN communication moves at a slower speed (33.33 kbps) for convenience related items and for other functions. F-CAN information moves at a faster speed (500 kbps) for "real time" functions such as fuel and emissions data. To allow both systems to share information, the gauge control module translates information from B-CAN to F-CAN and from F-CAN to B-CAN.



- The single wire method is used between the units not requiring the communication to move at a fast speed.
- Using a single wire method reduces the number of the wires used on the body controller area network.

Gateway Function

The gauge control module acts as a gateway to allow both systems to share information, the gauge control module translates information from B-CAN to F-CAN and from F-CAN to B-CAN.



Network "Loss of Communication" Error Checking Function

The ECUs on the CAN circuit send messages to each other. If there are any malfunctions on the network, the odo/trip display on the gauge control module can indicate the error messages by entering the gauge self-diagnostic function (see page 22-229).

Error Code List

Error code	Type of communication line(s) error
Error 1	F-CAN communication
Error 2	B-CAN communication
Error 12	F-CAN and B-CAN communication

NOTE: For further information about Error indication, refer to the gauge control module self-diagnostic function (see page 22-229).

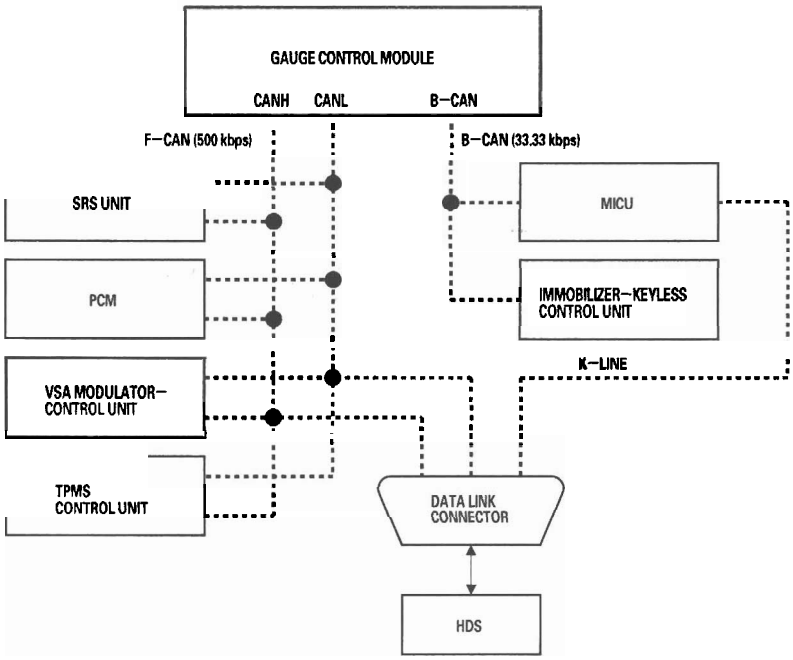
Example: Error 1

(cont'd)

System Description (cont'd)

Self-diagnostic Function

By connecting the HDS to the data link connector (DLC), the HDS can retrieve the diagnostic results from the MICU via a diagnostic line called K-LINE. The K-LINE is distinguished from the CAN line, and connected to the CAN related ECUs. The MICU is a gateway between the HDS and B-CAN related ECUs, and sends B-CAN diagnostic results to the HDS. When performing a function test with the HDS, the HDS sends an output signal through the K-LINE to the MICU. The MICU either relays the request to another ECU, or commands the function its self.



Wake-up and Sleep Function

The multiplex integrated control system has "wake-up" and "sleep" functions to decrease parasitic draw on the battery when the ignition switch is OFF.

- In the sleep mode, the MICU stops functioning (communication and CPU control) when it is not necessary for the system to operate.
- As soon as any operation is requested (for example, a door is unlocked), the related control unit in the sleep mode immediately wakes up and begins to function.
- When the ignition switch is turned OFF, and the driver's door is opened, then closed, there is a delay of about 40 seconds before the control unit goes from the wake-up mode to the sleep mode.
- The sleep mode will not function if any door is opened or if a key is in the ignition.
- The draw is reduced from 200 mA to less than 35 mA when in the sleep mode.

NOTE: Sleep and Wake-up Mode Test (see page 22-98).

Fail-safe Function

To prevent improper operation, the MICU has a fail-safe function. In the fail-safe mode, the output signal is fixed when any part of the system malfunctions (for example, a faulty control unit or communication line).
Each control unit has a hardware fail-safe function that fixes the output signal when there is a CPU malfunction, and a software fail-safe function that ignores the signal from a malfunctioning control unit, which allows the system to operate normally.

Hardware Fail-safe Control

Fail-safe function
When a CPU problem or a abnormal power supply voltage is detected, the MICU moves to the hardware fail-safe mode, and each system output load is set to the pre-programmed fail-safe value.

Software Fail-safe Control

When any of the data from the B-CAN circuit cannot be received within a specified time, or an unusual combination of the data is recognized, the MICU moves to the software fail-safe mode. The data that cannot be received is forced to a pre-programmed value.

(cont'd)

System Description (cont'd)

Power Supply Voltage Monitoring Function

The MICU monitors the power supply voltage (back-up voltage). If the voltage goes below 10 V, the MICU sends a MICU message and will not store DTCs.

	Input	Output
MICU	Battery voltage	
B-CAN		MICU message

Entry Lights Control System (Ceiling Lights, Map Lights, Ignition Key Light)

The MICU controls the ceiling light ON/OFF based upon the input signals from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Driver's door lock knob switch (LOCK)	Interior lights Ignition key light
B-CAN	Keyless LOCK/UNLOCK signal	

Cargo Area Lights Control

The MICU controls the cargo area light ON/OFF based upon the input signals from each switch.

	Input	Output
MICU	Tailgate latch switch	Cargo area light

Collision Detection Signal (CDS)

The MICU controls the door lock actuators based upon the IG1 and the SRS signals.

	Input	Output
MICU	IG1 power supply SRS signals	Door lock actuators (UNLOCK) Door lock actuator (LOCK)
B-CAN	CDS signal	

Key Interlock

The MICU controls the key interlock solenoid based upon the ignition switch (ACC), the transmission range switch, and the park-pin switch signals.

	Input	Output
MICU	Ignition switch (ACC) Transmission range switch (P) Park-pin switch	Key interlock solenoid

Key-in Reminder

The MICU controls the door lock actuators based upon the ignition key switch, the driver's door switch, and the driver's door lock knob switch signals.

	Input	Output
MICU	Ignition key switch Driver's door switch Driver's door lock knob switch (UNLOCK)	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK)

Power Window Timer Operation

The MICU controls the power window key-off timer based upon the ignition key switch, driver's and front passenger's door switch signals.

	Input	Output
MICU	Ignition key switch Driver's door switch Front passenger's door switch	Power window timer

Headlight

The MICU controls the headlight based upon the input signals from each switch.

	Input	Output
MICU	Battery voltage (DRL) IG1 power supply	Headlight (Low beam) Left headlight (High beam) Right headlight (High beam) Taillight relay
B-CAN	Combination light switch (OFF) Combination light switch (ON) Combination light switch (SMALL) Combination light switch (PASSING) Combination light switch (DIMMER)	MICU (RM) message MICU (HLSW) message

Daytime Running Lights

The MICU controls the exterior lights as daytime running lights based upon the input signals from each switch.

	Input	Output
MICU	IG1 power supply IG2 power supply Combination light switch (OFF) Combination light switch (ON) Combination light switch (PASSING) Combination light switch (DIMMER)	Headlight (Low beam) Left headlight (High beam) Right headlight (High beam) Taillight relay
B-CAN	Parking brake signal AT-P signal	MICU (RM) message

Turn Signal/Hazard Flasher

The MICU controls the turn signal/hazard flasher lights based upon the input signals from the turn signal switch and the hazard warning switch.

	Input	Output
MICU	IG1 power supply Turn signal switch (left) Turn signal switch (right) Hazard warning switch	Turn signal lights (left) Turn signal lights (right)
B-CAN	Turn signal switch (left) Turn signal switch (right)	MICU (HAZARDSW) message MICU (TURNLRLY) message MICU (TURNRRLY) message HLSW (TURNR) message HLSW (TURNL) message

Turn Signal One Touch Operation

The MICU controls the turn signal switch based upon the input signals from the turn signal switch.

	Input	Output
MICU	IG1 power supply Turn signal switch (left) Turn signal switch (right) Hazard warning switch	Turn signal lights (left) Turn signal lights (right)

(cont'd)

System Description (cont'd)

Windshield Wiper

The MICU controls the windshield wiper based upon the input signals from each switch.

	Input	Output
MICU	IG1 power supply Windshield wiper switch (INT & LO) Windshield wiper switch (HI & LO) Windshield wiper switch (MIST) Windshield wiper switch (As) Windshield wiper switch intermittent dwell time controller	Windshield wiper intermittent relay Windshield wiper motor high relay
B-CAN	A/T signal	MICU (RM) message MICU (WIPSW) message

Windshield Wiper (Vehicle Speed Sense)

The MICU controls the windshield wiper based upon the input signals from each switch.

	Input	Output
MICU	IG1 power supply Brake pedal position switch Transmission range switch (P position) Windshield wiper switch (INT & LO) Windshield wiper switch (HI & LO) Windshield wiper switch (MIST) Windshield wiper switch (As) Windshield wiper switch intermittent dwell time controller	Windshield wiper intermittent relay Windshield wiper motor high relay
B-CAN	A/T signal VSP/NE signal	MICU (WIPSW) message

Rear Window Wiper

The MICU controls the rear window wiper based upon the input signals from each switch.

	Input	Output
MICU	IG1 power supply Back-up light switch Rear window wiper switch Rear window wiper switch (As) Windshield wiper switch (INT) Windshield wiper switch (LO) Windshield wiper switch (HI)	Rear window wiper motor relay
B-CAN		MICU (WIPSW) message

Windshield/Rear Window Washer

The MICU controls the washer operation based upon the input signals from washer switches.

	Input	Output
MICU	IG1 power supply Windshield washer switch Rear window washer switch	Windshield washer motor Rear window washer motor

Answer Back Response Operation (Part 1)

The MICU controls the lighting system and horn based upon the B-CAN signals.

	Input	Output
MICU	IG1 power supply	Turn signal lights (left) Turn signal lights (right)
B-CAN	ANSBACK (HAZARD) signal VSP/NE signal	

Answer Back Response Operation (Part 2)

The MICU controls the lighting system and horn based upon the B-CAN signals.

	Input	Output
MICU		Headlight (Low beam) Taillight relay Horns
B-CAN	ANSBACK (SMALL) signal ANSBACK (H/L LO) signal ANSBACK (HORN) signal ANSBACK (BUZZER) signal	

Power Door Locks (1 motion all doors and tailgate unlock)

The MICU controls the door lock actuators based upon the input signals of each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Front passenger's door key cylinder switch (LOCK/UNLOCK)	Door lock actuators (LOCK) Door lock actuators (UNLOCK)

Power Door Locks (2 motions all doors and tailgate unlock)

The MICU controls the door lock actuators based upon the input signals of each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Front passenger's door key cylinder switch (LOCK/UNLOCK)	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK)

(cont'd)

System Description (cont'd)

Door Lock Response Operation

The MICU controls the door lock actuators based upon the B-CAN signals.

	Input	Output
MICU		Door lock actuator (LOCK) Door lock actuator (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator
B-CAN	Door lock signal	

Keyless Entry System (1 motion all doors and tailgate unlock)

The MICU controls the door lock actuators based upon the input signals of each switch and the B-CAN signals.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock knob switch (LOCK) Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Front passenger's door lock switch (LOCK/UNLOCK) Front passenger's door key cylinder switch (LOCK/UNLOCK)	Door lock actuator (LOCK) Door lock actuator (UNLOCK) Tailgate release actuator
B-CAN	Keyless LOCK/UNLOCK signal	Relock signal

Keyless Entry System (2 motions all doors and tailgate unlock)

The MICU controls the door lock actuators based upon the input signals of each switch and the B-CAN signals.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock knob switch (LOCK) Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Front passenger's door lock switch (LOCK/UNLOCK) Front passenger's door key cylinder switch (LOCK/UNLOCK)	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator
B-CAN	Keyless LOCK/UNLOCK signal	Relock signal

Keyless PANIC Operation

The MICU controls the keyless PANIC operation based upon the B-CAN signals.

	Input	Output
MICU		Headlights (Low beam) Taillight relay Horns
B-CAN	PANIC signals	

Power Door Locks (Lock operation)

The MICU controls the door lock actuators based upon the input signals of each switch.

	Input	Output
MICU	IG1 power supply Transmission range switch (P position) Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK)	Door lock actuators (LOCK)
B-CAN	Vehicle speed pulse signal Engine speed signal	

Power Door Locks (UNLOCK operation)

The MICU controls the door lock actuators based upon the input signals of each switch.

	Input	Output
MICU	IG1 power supply Transmission range switch (P position) Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK)	Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK)

(cont'd)

System Description (cont'd)

Security Alarm System

The MICU controls the lighting system and horns based upon the input signals of each switch and the B-CAN signals.

	Input	Output
MICU	IG1 power supply Ignition key switch Audio switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch Tailgate latch switch Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (UNLOCK) Front passenger's door key cylinder switch (LOCK/UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Hood switch	Headlight (Low beam) Taillight relay Horns
B-CAN	Keyless LOCK/UNLOCK signal Door lock signal	MICU (SET 1) message MICU (SET 2) message ALARM (ACTION) message

Tailgate Outer Handle Operation (1 motion all doors and tailgate unlock)

The MICU controls the tailgate release actuator based upon the tailgate outer handle switch and the driver's door lock knob switch signals.

	Input	Output
MICU	Tailgate outer handle switch Driver's door lock knob switch (LOCK/UNLOCK)	Tailgate release actuator

Tailgate Outer Handle Switch Operation (2 motions all doors and tailgate unlock)

The MICU controls the tailgate release actuator based upon the tailgate outer handle switch and the door lock knob switch signals.

	Input	Output
MICU	Tailgate outer handle switch Driver's door lock knob switch (LOCK/UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK)	Tailgate release actuator

HDS Inputs and Commands

Certain inputs happen so quickly that the HDS cannot update fast enough. Hold the switch that is being tested while monitoring the Data List. This should give the HDS time to update the signal on the Data List.
Because the HDS software is updated to support the release for newer vehicles it is not uncommon to see system function tests that are not supported.
Make sure that the most current software is loaded.

Input:

System Menu	Data List	Data List Indication
Gauges	Cruise Control Main Switch (ACC switch)	OFF/ON
	Cruise Control Set Switch	OFF/ON
	Cruise Control Resume Switch	OFF/ON
	Washer Fluid Level Switch	OFF/ON
	VSA/TCS Off Switch	OFF/ON
	Gauge Select/Reset Switch	OFF/ON
	Parking Brake Switch	OFF/ON
	Brake Fluid Level Switch	OFF/ON
	Select/Reset Switch	OFF/ON
	INFO Next Switch	OFF/ON
	ACC Distance Switch	OFF/ON
	CMBS Cancel Switch	OFF/ON
	Fuel Sending Unit Input 1	deg
	Fuel Sending Unit Input 2	V
	VSA/TCS Active Indicator	OFF/ON
	VSA/TCS Indicator (Warning)	OFF/ON
	ABS Indicator	OFF/ON
	EBD Indicator (Electric Brake Distribution)	OFF/ON
	Cruise Control Main Switch Indicator	OFF/ON
	MIL Indicator	OFF/ON
	Washer Fluid Level Indicator (Canada)	OFF/ON
	CMBS Indicator	OFF/ON
	HIDS Indicator	OFF/ON
	ACC Indicator	OFF/ON
	Low Oil Pressure Indicator	OFF/ON
	Changing System Indicator	OFF/ON
	Cruise Main Switch ON Indicator	OFF/ON
	Maintenance Required Indicator	OFF/ON
	Maintenance Minder Indicator	OFF/ON
	High Beam Indicator	OFF/ON
	Parking Light ON Indicator	OFF/ON
	Low Fuel Warning Indicator	OFF/ON
	Security Indicator	OFF/ON
	Fog light Indicator	OFF/ON
	Adaptive Front-lighting System Indicator	OFF/ON
	Master Warning Indicator	OFF/ON
	Auto-light Indicator	OFF/ON
	Seatbelt Indicator	OFF/ON
	Low Tire Pressure Indicator	OFF/ON
	TPMS Indicator	OFF/ON
	Rear Fog Indicator	
	Keyless Access "No Keyless Remote" Warn	
	Keyless Remote Battery-Charge Warn	
	Door Open Indicator	OFF/ON
	Power Trunk Lid Indicator	OFF/ON
	A/T Indicator	OFF/ON
	SRS Indicator	OFF/ON
	Side Airbag Cutoff Indicator	OFF/ON
	Keyless Access Indicator	OFF/ON
	EPS/ECPS Indicator	OFF/ON
	CMBS Radar Become Dirty	OFF/ON
	Outside Temperature Indicator	
	Speed Indicator (mph) Command	OFF/ON
	Driver's Seat Belt Buckle Switch	OFF/ON
	A/T Gear Position Switch (R)	OFF/ON
	A/T Gear Position Switch (P)	OFF/ON

(cont'd)

System Description (cont'd)

System Menu	Data List	Data List Indication
Keyless	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Front Passenger's Door Lock Sw. (LOCK)	OFF/ON
	Front Passenger's Door Lock Sw. (UNLOCK)	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Trunk Knob Sw. (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Trunk Lid Release Command	OFF/ON
Wiper	Brake Pedal Position Switch	OFF/ON
	Rear Wiper Auto Stop Switch	OFF/ON
	Windshield Wiper Switch (LOW)	OFF/ON
	Windshield Wiper Switch (HIGH)	OFF/ON
	Windshield Wiper Switch (MIST)	OFF/ON
	Rear Wiper Switch	OFF/ON
	Windshield Wiper Switch (INT)	OFF/ON
	Windshield Washer Switch	OFF/ON
	Rear Washer Switch	OFF/ON
	Windshield Wiper Motor PARK Switch	OFF/ON
	Rear Wiper Command	OFF/ON
	Rear Washer Command	OFF/ON
	Windshield Wiper Motor HI Command	OFF/ON
	Windshield Wiper Motor LO Command	OFF/ON
	Windshield Washer Motor Command	OFF/ON

System Menu	Data List	Data List Indication
Security	Ignition Key Cylinder Switch	OFF/ON
	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Front Passenger's Door Lock Sw. (LOCK)	OFF/ON
	Front Passenger's Door Lock Sw. (UNLOCK)	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Trunk Knob Sw. (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Radio Switch	OFF/ON
	Hazard Switch	OFF/ON
	Hood Switch	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Look Switch (LOCK)	OFF/ON
	Driver's Door Look Switch (UNLOCK)	OFF/ON
	Driver's Door Look Knob Switch (LOCK)	OFF/ON
	Driver's Door Look Knob Switch (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Trunk Lid Release Command	OFF/ON
	Security Hazard Signal Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Horn Command	OFF/ON

(cont'd)

System Description (cont'd)

System Menu	Data List	Data List Indication
Lighting	Driver's Door Switch	OFF/ON
	Hazard Switch	OFF/ON
	Headlight Switch (OFF)	OFF/ON
	Headlight Switch (PARKING)	OFF/ON
	Headlight Switch (HEADLIGHT)	OFF/ON
	Headlight Switch (High Beam)	OFF/ON
	Headlight Switch (PASSING)	OFF/ON
	Turn Signal Switch (LEFT)	OFF/ON
	Turn Signal Switch (RIGHT)	OFF/ON
	Fog Light Switch	OFF/ON
	Interior Light Command	OFF/ON
	Left Turn Signal Command	OFF/ON
	Right Turn Signal Command	OFF/ON
	Cargo Light Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Fog Light Command	OFF/ON
	DRL Command	OFF/ON
Door Locks	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Front Passenger's Door Lock Sw. (LOCK)	OFF/ON
	Front Passenger's Door Lock Sw. (UNLOCK)	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON

Function Test:

System Menu	Data List Indication	Data List and Operation Time
Door Locks	LOCK all doors	Outputs LOCK signal 1 time (0.6 sec) to all doors
	UNLOCK driver's side door	Outputs UNLOCK signal 1 time (0.6 sec) to driver's door
	UNLOCK all doors	Outputs UNLOCK signal 1 time (0.6 sec) to all doors
Lighting	Interior Light Command	Illuminates for 30 seconds.
	Fog Light Command	Operates fog lights for 15 seconds.
	LEFT Turn Signal Command	Blinks for 5 seconds.
	RIGHT Turn Signal Command	Blinks for 5 seconds
	Hazard flasher	Blinks turn signal (left and right) for 15 seconds.
	Headlight Command	Operates headlights (low) for 15 seconds.
	Headlight HIGH Beam Command	Operates headlights (high) for 15 seconds.
	Daytime Running Lights Signal (Canada)	Daytime running lights for 15 seconds.
	Parking Lights Command	Operates small lights for 15 seconds.
	Cargo Light	Operates cargo light for 15 seconds.
Keyless	Trunk Lid/Tailgate Release Command	Unlock tailgate
Security	Horn Command	Operates horn for 1 second.
Wipers	Windshield Wiper Motor LOW Command	Operates windshield wiper motor for 5 seconds (low speed).
	Windshield Wiper Motor HIGH Command	Operates windshield wiper motor for 5 seconds (high speed).
	Windshield Washer Command	Operates windshield washer motor for 5 seconds.
	Rear Wiper Motor	Operates rear wiper motor for 5 seconds
	Rear Wiper Washer	Operates rear wiper washer for 5 seconds
Gauges	Self Diagnostic Test	———

Troubleshooting - B-CAN System Diagnosis Test Mode A

Check the PCM for DTCs, and troubleshoot PCM (see page 11-3) or F-CAN loss of communication errors first, then do this diagnosis if the symptom is related to the B-CAN system.

NOTE: Always cycle the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures in this section.

1. Compare the symptom with this list of B-CAN related systems:

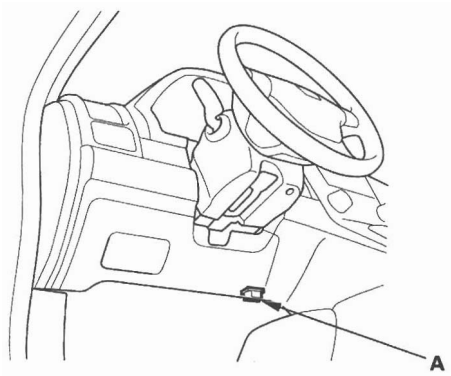
   - Gauge control module
   - Exterior lights
   - Turn signals
   - Entry light control
   - Interior lights
   - Door-open and tailgate-open indicators
   - Horns (security and panic)
   - Chimes (key-in, seat belt, lights-on, and parking brake)
   - Power window/moonroof timer
   - Wiper/washer
   - Security
   - Keyless entry
   - Power door locks
   - Key interlock
     Dash light brightness control
   - Tailgate release actuator

   Is the symptom related to the B-CAN system?

   YES—Go to step 2.

   NO—Go to the system troubleshooting for the system with the symptom. ■

2. Connect the HDS to the data link connector (A), then turn the ignition switch ON (II).



3. From the BODY ELECTRICAL system select menu, select UNIT INFORMATION, and then select CONNECTED UNIT to see if the following control units are communicating with the HDS.

   - MICU
   - Gauge control module
     Immobilizer-keyless control unit

   NOTE:
   - If a unit is communicating with the HDS, DETECT will be displayed.
   - If a unit is not communicating or the vehicle is not equipped, "Not Available" will be displayed.

   Are all control units communicating with the HDS?

   YES—Go to step 4.

   NO—If any of the control units are not communicating, go to B-CAN System Diagnosis Test Mode B (see page 22-93). If all units are not communicating or only the MICU is communicating, go to DTC B1000 troubleshooting (see page 22-100). ■

4. Select the system that has the problem from the BODY ELECTRICAL system select menu, then select DTCs.

   Are any DTCs indicated?

   YES—Go to step 5.

   NO—If the problem is related to one of the following items, go to B-CAN System Diagnosis Test Mode C (see page 22-94) if the system does not stop or turn off. Go to Test Mode D (see page 22-95) if the system does not run or turn on.

   - Exterior lights
   - Turn signals
   - Entry light control
   - Interior lights
   - Horn (security and panic)
   - Wiper/washer

   If the problem is related to one of the following items, go to the troubleshooting for that individual system.■

   - Gauge control module
   - Door-open and tailgate-open indicator
   - Chimes (key-in, seat belt, lights-on, and parking brake)
   - Security
   - Keyless entry
   - Key interlock
   - Dash light brightness control
   - Audio system
   - Navigation (if equipped)

5. Record all DTCs, and sort them by DTC type.

6. Troubleshoot the DTC(s) in this order:

   - Battery voltage DTCs.
   - Internal error DTCs.
   - Loss of communication DTCs. Begin troubleshooting with the lowest number first (Example: if DTC B1008 and B1011 are retrieved, begin by troubleshooting B1008).
   - Signal error DTCs.

Troubleshooting - B-CAN System Diagnosis Test Mode B

Do this diagnosis if any of the control units are not communicating (Not Available is displayed in the HDS) as found by the B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Using the HDS, select the system that has the symptom from the BODY ELECTRICAL system select menu.

2. Select DTCs, and then check for loss of communication DTCs.

   Are any loss of communication DTCs indicated?

   YES—Go to step 3.

   NO—Replace the MICU.■

3. Do the input test for the unit not communicating with the HDS.

Unit not communicating
MICU (see page 22-106)
Gauge control module (see page 22-245)
Immobilizer-keyless control unit (see page 22-300)

Troubleshooting - B-CAN System Diagnosis Test Mode C

Do this diagnosis if a component that is controlled by the B-CAN system does not stop or turn off.

NOTE:
- If the component does not turn on, go to B-CAN System Diagnosis Test Mode D (see page 22-95).
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and controls the output devices (see page 22-87).
- Always cycle the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures in this section.

1. Check for DTCs by selecting the TEST MODE menu from the HDS.

   Are any DTCs indicated?

   YES—Go to B-CAN System Diagnosis Test Mode A (see page 22-92).■

   NO—Go to step 2.

2. Turn off the switch that controls the malfunctioning component.

3. Select DATA LIST from the TEST MODE menu, and check the input of the switch that controls the component.

   Does the HDS indicate the switch is OFF?

   YES—Go to step 4.

   NO—Go to step 6.

4. In the DATA LIST, check the output signal of the malfunctioning component.

   Is the output signal OFF?

   YES—Go to step 5.

   NO—Replace the control unit that controls the device that will not turn OFF.■

5. Check the relay, if applicable, then check for a short in the wire between the relay and the component, the relay and control unit, or the component and control unit.

   Are the relay and the wire harness OK?

   YES—Replace the control unit that controls the component that will not turn OFF.■

   NO—Replace the relay or repair the wire harness.■

6. Check the switch, then check for a short in the wire between the switch and the control unit that monitors the switch.

   Is the switch and wire harness OK?

   YES—Replace the control unit that monitors the switch.■

   NO—Replace the switch or repair the wire harness.■

Troubleshooting - B-CAN System Diagnosis Test Mode D

Do this diagnosis if a component that is controlled by the B-CAN system does not run or come on.

NOTE:
- If the component does not turn off or stop, go to B-CAN System Diagnosis Test Mode C (see page 22-94).
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and controls the output devices (see page 22-87).
- Always cycle the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures in this section.

1. Check the fuse of the malfunctioning output device.

   Is the fuse OK?

   YES—Go to step 2.

   NO—Replace the fuse and recheck. ■

2. Check for DTCs by selecting the TEST MODE menu from the HDS.

   Are any DTCs indicated ?

   YES—Go to B-CAN System Diagnosis Test Mode A (see page 22-92). ■

   NO—Go to step 3.

3. Turn on the switch that controls the malfunctioning component.

4. Select DATA LIST from the TEST MODE menu, and check output signal for the malfunctioning component.

   Is there an output signal?

   YES—Go to step 5.

   NO—Go to step 9.

5. Check the relay and ground, then check for an open or a short in the circuit for the malfunctioning component.

   Are the relay and circuit OK?

   YES—Go to step 6.

   NO—Replace the relay or repair the wire circuit. ■

6. Do the FUNCTION TEST for the malfunctioning component.

   Does the output device pass the function test?

   YES—Go to step 7.

   NO—Replace the component. ■

7. With the malfunctioning output device connected, connect a voltmeter between the malfunctioning output device and body ground on the wire that the control unit uses to control the output device circuit.

8. Select MISC. TEST from the TEST MODE menu, and do the forced operation test of the malfunctioning component.

   Is there a change in voltage (12 V to 0 V or 0 V to 12 V)?

   YES—Replace the component. ■

   NO—Replace the control unit that controls the malfunctioning component. ■

9. Select DATA LIST from the TEST MODE menu, and make sure the switch signal input for the malfunctioning system indicates a change when operated.

   Does the switch input indicated ON when the switch is ON?

   YES—Replace the control unit that controls the malfunctioning component. ■

   NO—Go to step 10.

10. Check the switch and its ground (if applicable), then check for an open or a short in the wire between the switch and the control unit that monitors it.

    Is the switch and the wire harness OK?

    YES—Replace the control unit that monitors the switch. ■

    NO—Replace the switch or repair the wire harness. ■

Troubleshooting - B-CAN System Diagnosis Test Mode 1 and Test Mode 2 (without the HDS)

Special Tools Required
MPCS (MCIC) service connector 07WAZ-001010A

Test Mode 1

Check the PCM for DTCs, and troubleshoot PCM (see page 11-3) or F-CAN loss of communication errors first, then perform this diagnosis if the HDS is not available.

1. Check the No. 23 (10 A) fuse in the under-hood fuse/relay box and No. 10 (7.5 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

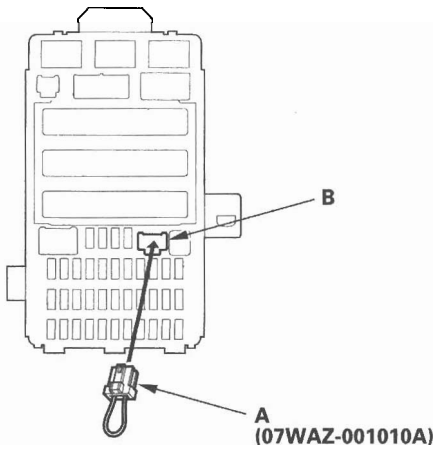
   YES—Go to step 2.

   NO—Find and repair the cause of the blown fuse.■

2. Remove the left kick panel (see page 20-67).

3. Turn the ignition switch ON (II), and move the ceiling light switch to the middle (door) position.

4. Connect the MPCS service connector (A) to the MCIC socket (B) in the under-dash fuse/relay box.



5. Wait 5 seconds, and watch the ceiling light. When the ceiling light flashes quickly once, and then goes off the system is in Test Mode 1.

6. Check for B-CAN DTCs indicated by the gauge control module odometer/trip meter display while still in Test Mode 1. Push the odometer select/reset button to display the next code. After you get to the last code, the display shows END. If no DTCs are stored, the display will read NO.

   Are any DTCs indicated?

   YES—Go to step 7.

   NO—Go to step 10.

7. Record all DTCs and sort them.

8. Troubleshoot the DTCs in this order:

   - Battery voltage DTCs
   - Internal error DTCs
   - Loss of communication DTCs (begin with the lowest number first; for example, if B1008 and B1011 are retrieved, troubleshoot B1008 first)
   - Signal error DTCs

9. Clear the DTCs by pressing and holding the select/reset button for about 13 seconds. You will hear a beep to confirm the code have been cleared. Operate the devices that failed, and recheck for codes.

Test Mode 2

10. Remove the MPCS service connector from the under-dash fuse/relay box socket for 5—10 seconds, then re-insert it to enter Mode 2. When the system enters Mode 2, the ceiling light will flash two times quickly and then go off.

    NOTE: If the MPCS connector is disconnected for too short or too long of a time, or the ignition switch is turned OFF, the system will return to Test Mode 1.

11. The following table lists the circuits that can be checked in Test Mode 2. Operate the switch that is most closely related to the problem. If the circuit is OK, the ceiling light will blink once. If the circuit is faulty, there will be no indication.

MICU

Item
Audio switch
Brake pedal position switch (ON)
Dimmer switch (ON)
Driver's door key cylinder switch (LOCK)*
Driver's door key cylinder switch (UNLOCK)*
Driver's door lock knob switch (LOCK)
Driver's door lock knob switch (UNLOCK)
Driver's door lock switch (LOCK)
Driver's door lock switch (UNLOCK)
Driver's door switch (OPEN)
Front passenger's door lock knob switch (UNLOCK)*
Front passenger's door lock switch (UNLOCK)
Front passenger's door switch (OPEN)
Hazard warning switch (ON)
Headlight switch (OFF)
Headlight switch (ON)
Hood switch (OPEN)**
Ignition key switch (ON)
Left rear door lock knob switch (UNLOCK)*
Left rear door switch (OPEN)
Lighting switch (ON)
Passing switch (ON)
Rear window wiper switch (OFF)
Rear window wiper switch (ON)
Rear window washer switch (ON)
Right rear door lock knob switch (UNLOCK)*
Right rear door switch (OPEN)
Tailgate latch switch (OPEN)
Tailgate outside handle switch
Transmission range switch (P)
Turn signal switch (LEFT)
Turn signal switch (RIGHT)
Windshield washer switch (ON)
Windshield wiper HI/LO switch
Windshield wiper INT/LO switch
Windshield wiper intermittent dwell time controller
Windshield wiper MIST switch

* A second key is necessary to check the key cylinder inputs.
Be sure to rotate the key cylinder switch two times to each position (lock and lock, unlock and unlock) to ensure the door lock knob switch is in the appropriate position.
* *: With security

Does the ceiling light work properly in all switch positions?

YES—Go to function and input test for the system related to the failure. ■

NO—Repair the open, short, or replace the faulty switch. ■

Sleep and Wake-up Mode Test

1. Shift to the sleep mode:
   Turn the ignition switch OFF, and remove the key. If the MICU receives no signals from the inputs listed below, it will go into sleep mode in less than 40 seconds.

Driver's door lock switch (LOCK or UNLOCK)
Driver's door key cylinder switch (LOCK or UNLOCK)
Front passenger's door lock switch (LOCK or UNLOCK)
Tailgate latch switch (tailgate closed)
Tailgate outer handle switch
Hazard warning switch (OFF)

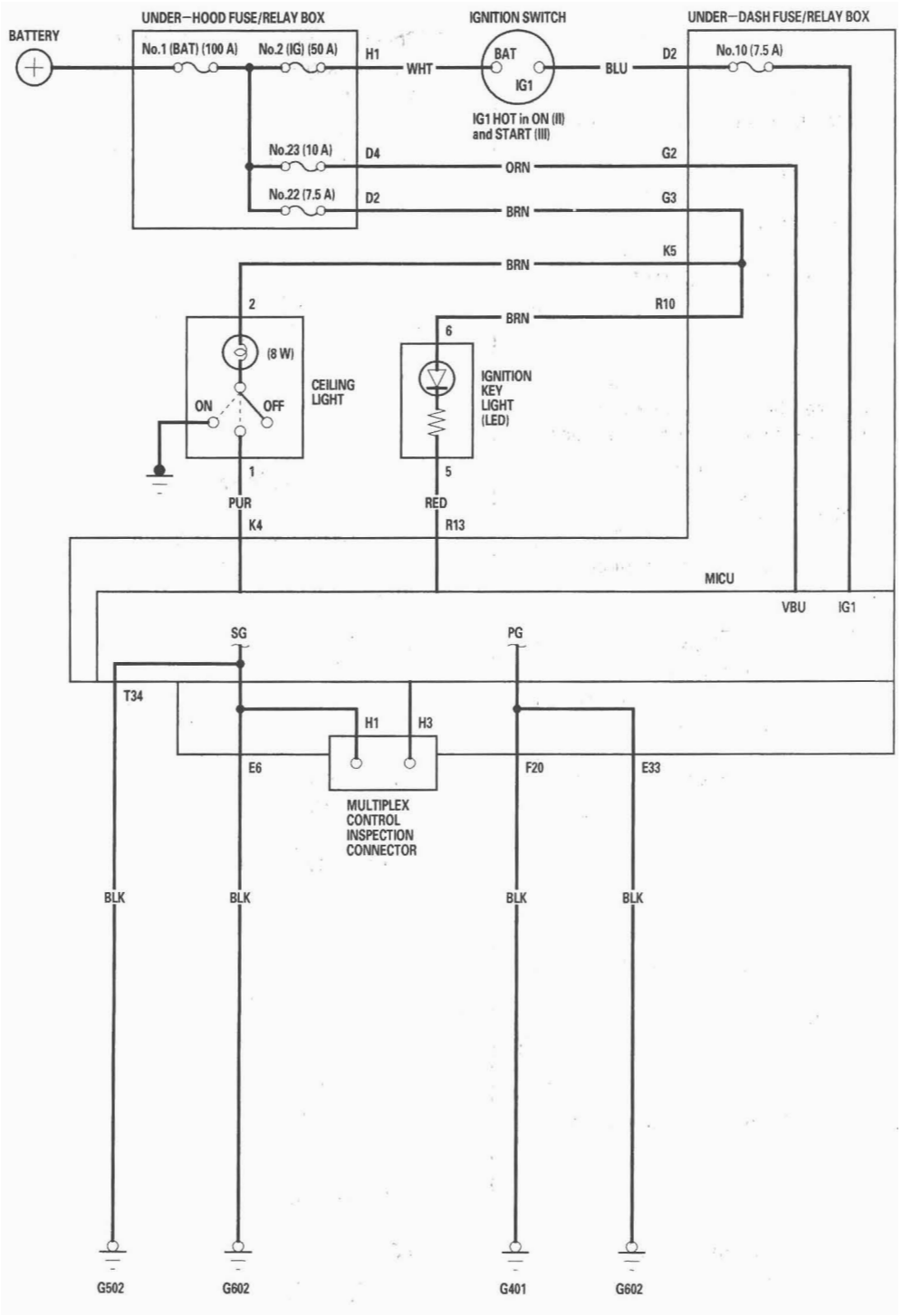
2. Confirm the sleep mode:
   Check for voltage on the B-CAN communication line; there should be battery voltage in the sleep mode. Check the parasitic draw at the battery while shifting into the sleep mode; amperage should change from about 200 mA to less than 35 mA.

3. Shift to the wake up mode:
   When the ignition switch is turned ON (II), the MICU, gauge control module, immobilizer-keyless control unit-receiver, and PCM wake up at the same time without "talking" to each other through the communication lines. When any switch in the multiplex integrated control system is turned on, it wakes up its related control unit which, in turn, wakes up the other units. After confirming the sleep mode, look in the following table for the switch most related to the problem. Operate that switch and see if its control unit wakes up.

   NOTE: If any control unit is faulty and will not wake up, several circuits in the system will malfunction at the same time. The MICU is followed by a list of the switches and input signals that can wake it up.

Door switches (door open)
Driver's door lock switch (LOCK or UNLOCK)
Driver's door lock knob switch (LOCK or UNLOCK)
Driver's door key cylinder switch (LOCK or UNLOCK)
Front passenger's door lock switch (LOCK or UNLOCK)
Front passenger's door lock knob switch (UNLOCK)
Left rear door lock knob switch
Right rear door lock knob switch
Tailgate latch switch (tailgate open)
Tailgate outer handle switch
Hood switch (with security) (hood open)
Hazard warning switch (ON)
Combination light switch (parking, headlight, dimmer, passing ON)
Ignition key switch (key inserted)

Circuit Diagram



DTC Troubleshooting

DTC B1000: Communication Bus Line Error (Bus-off)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTCs B1000 and/or B1008 and B1011 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the communication bus line is OK at this time. Check for poor connections or shorted wires. ■
5. Turn the ignition switch OFF.
6. Disconnect the appropriate connector at each control unit in the table.

Unit	Connector
MICU	Under-dash fuse/relay box connector Q (16P)
Gauge control module	36P connector
Immobilizer-keyless control unit	7P connector

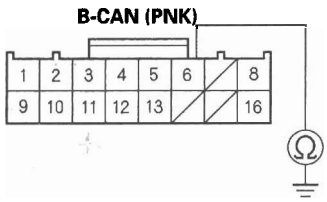
7. Turn the ignition switch ON (II).
8. Clear the DTCs with the HDS.
9. Turn the ignition switch OFF, and then back ON (II).
10. Wait for 6 seconds or more.
11. Check for DTCs with the HDS.

    Is DTCs B1000 and/or B1008, B1011, and B1032 indicated?

    YES—Go to step 12.

    NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■
12. Turn the ignition switch OFF.
13. Check for continuity between the under-dash fuse/relay box connector Q (16P) No. 6 terminal and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (16P)



Wire side of female terminals

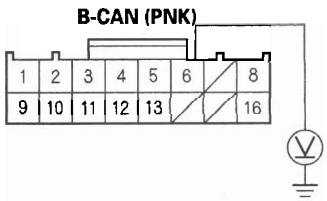
Is there continuity?

YES—Repair a short to ground in the wire between the under-dash fuse/relay box and the affected control unit. ■

NO—Go to step 14.

14. Turn the ignition switch ON (II).
15. Measure voltage between the under-dash fuse/relay box connector Q (16P) No. 6 terminal and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (16P)



Wire side of female terminals

Is there voltage?

YES—Repair the short to power in the wire between the under-dash fuse/relay box and the affected control unit. ■

NO—Go to step 16.

16. Turn the ignition switch OFF.
17. Reconnect the under-dash fuse/relay box connector Q (16P).
18. Reconnect the gauge control module 36P connector.
19. Turn the ignition switch ON (II).
20. Clear the DTCs with the HDS.
21. Turn the ignition switch OFF, and then back ON (II).
22. Wait for 6 seconds or more.
23. Check for DTCs with the HDS.

    Is DTC B1000 and/or B1008, B1011, and B1032 indicated?

    YES—Replace the gauge control module (see page 22-248). ■

    NO—Replace the immobilizer-keyless control unit. ■

DTC B1001: MICU Internal Error (CPU)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1001 indicated?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

   NO—Intermittent failure, the MICU is OK at this time. Check for loose or poor connections. If the connections are good, check the battery condition (see page 22-65) and the charging system. ■

DTC Troubleshooting (cont'd)

DTC B1002: MICU Internal Error (EEPROM)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1002 indicated?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

   NO—Intermittent failure, the MICU is OK at this time. Check for loose or poor connections. If the connections are good, check the battery condition (see page 22-65) and the charging system. ■

DTC B1008: MICU Lost Communication with the Gauge Control Module (A/T Message)

DTC B1011: MICU Lost Communication with the Gauge Control Module (VSP/NE Message)

NOTE:
- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).
- Before troubleshooting, check the No. 23 (10 A) fuse in the under-hood fuse/relay box and No. 10 (7.5 A) fuse in the under-dash fuse/relay box.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTCs B1008 and/or B1011 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the gauge control module is OK at this time. Check for loose or poor connections between the gauge control module and the under-dash fuse/relay box connector Q (16P). If the connections are good, check the battery condition (see page 22-65) and the charging system. ■

5. Select the UNIT INFORMATION from the BODY ELECTRICAL system select menu, then enter the CONNECTED UNIT.
6. Check the condition of the gauge control module in the CONNECTED UNIT list.

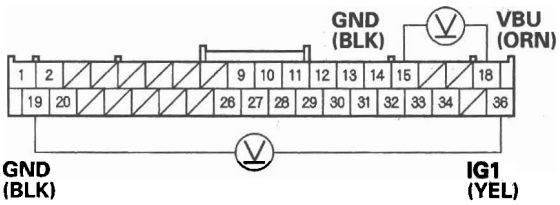
   Is NOT AVAILABLE indicated?

   YES—Go to step 7.

   NO—Replace the gauge control module. (see page 22-248). ■

7. Measure voltage between gauge control module 36P connector terminals No. 15 and No. 18, and between terminals No. 19 and No. 36.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES—Go to step 8.

NO—Repair an open in the wire. ■

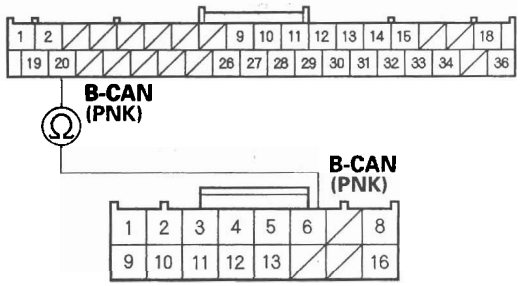
8. Turn the ignition switch OFF.

9. Disconnect the gauge control module 36P connector.

10. Disconnect the under-dash fuse/relay box connector Q (16P).

11. Check for continuity between the under-dash fuse/relay box connector Q (16P) No. 6 terminal and gauge control module 36P connector No. 20 terminal.

GAUGE CONTROL MODULE 36P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (16P)
Wire side of female terminals

Is there continuity?

YES—Replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire between the MICU and the gauge control module. ■

DTC Troubleshooting (cont'd)

DTC B1150 and B1900: Communication Bus Line Error (Bus-off)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Are DTC B1000, B1008, B1011, and B1032 also indicated with DTCs B1150 and B1900?

   YES—Go to DTC B1000 troubleshooting.■

   NO—Intermittent failure, the system is OK at this time.■

DTC B1032: MICU Lost Communication with the SRS Unit (CDS Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1032 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the gauge control module is OK at this time. Check for loose or poor connections at the gauge control module 36P connector and the under-dash fuse/relay box connector Q (16P). If the connections are good, check the battery condition (see page 22-65) and the charging system.■

5. Check for DTCs with the HDS.

   Are DTCs B1008 and B1011 also indicated with DTC B1032?

   YES—Check for an open in the communication circuit between the MICU and the gauge control module. If the circuit is bad, repair the open.■

   NO—Do the gauge control module input test (see page 22-245).■

DTC B1036: IG1 Line Input Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1036 indicated?

   YES—Go to step 5.

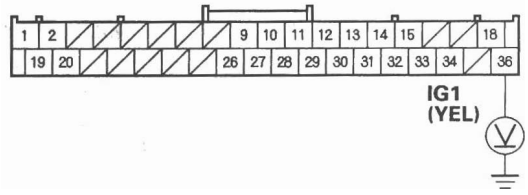
   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connection at the gauge control module 36P connector and the under-dash fuse/relay box connector Q (16P). If the connections are good, check the battery condition (see page 22-65) and the charging system. ■
5. Check for DTCs with the HDS.

   Is DTC B1008 indicated with DTC B1036?

   YES—Go to DTC B1008 troubleshooting. ■

   NO—Go to step 6.
6. Turn the ignition switch OFF.
7. Turn the ignition switch ON (II).
8. Measure voltage between the gauge control module 36P connector No. 36 terminal and body ground.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES—Faulty MICU or an open in the under-dash fuse/relay box internal circuit. Substitute a known-good under-dash fuse/relay box and recheck. ■

NO—Check No. 10 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is OK, check for an open in the wire between the under-dash fuse/relay box and the gauge control module, or repair a short in the wire between the under-dash fuse/relay box and the gauge control module. ■

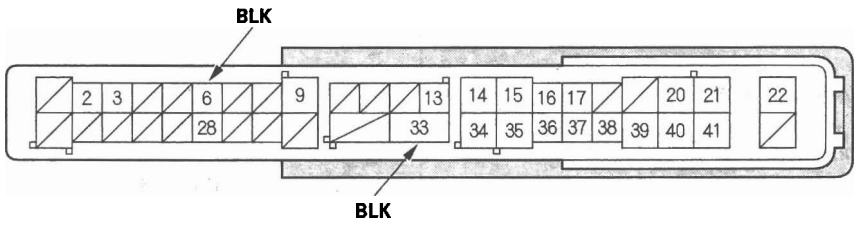
MICU Input Test

NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

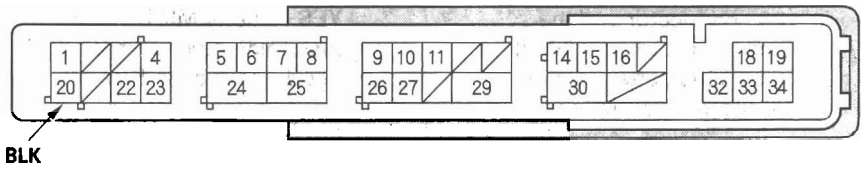
1. Turn the ignition switch OFF.
2. Disconnect the under-dash fuse/relay box connectors E, F, G, K, R, and T.

   NOTE: All connector views are wire side of female terminals.

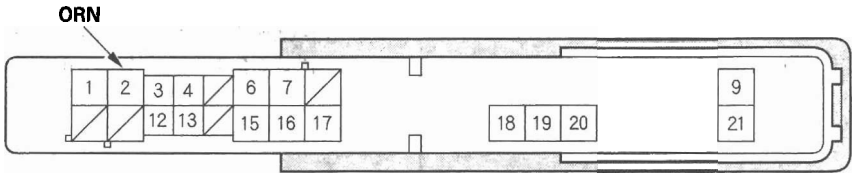
UNDER-DASH FUSE/RELAY BOX CONNECTOR E (42P)



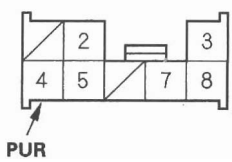
UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)



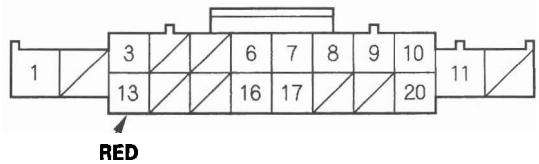
UNDER-DASH FUSE/RELAY BOX CONNECTOR G (21P)



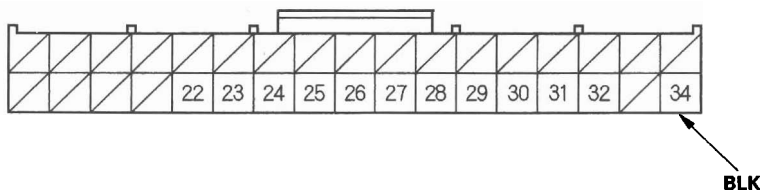
UNDER-DASH FUSE/RELAY BOX CONNECTOR K (8P)



UNDER-DASH FUSE/RELAY BOX CONNECTOR R (20P)



UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



3. Inspect the connector and socket terminals to be sure they are all making good contact.

   • If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   • If the terminals look OK, go to step 4.

4. With the connector still disconnected, make these input tests at the appropriate connector.

   • If any test indicates a problem, find and correct the cause, then recheck the system.
   • If all the input tests prove OK, go to step 5.

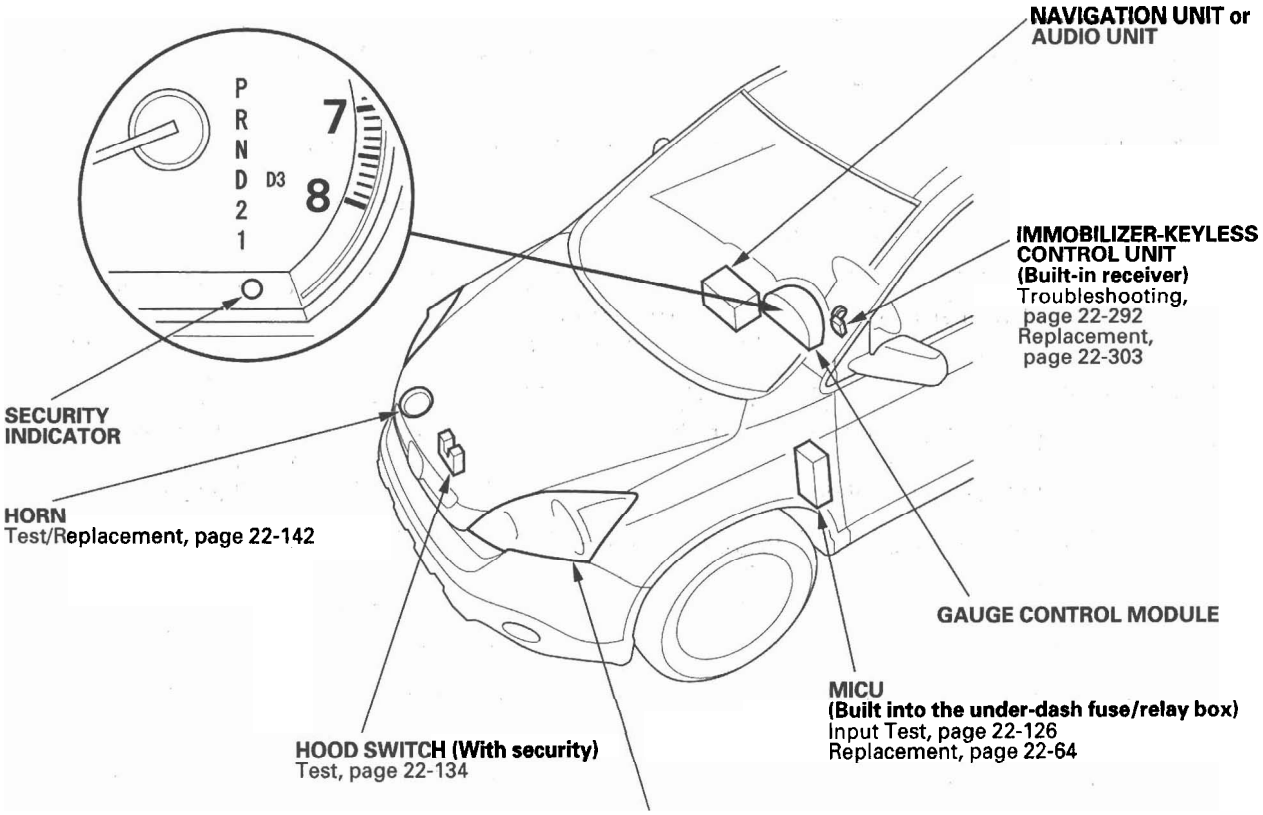
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
G2	ORN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
K4	PUR	Under all conditions (All doors are closed and the ceiling light in the door position.)	Attach to ground: The ceiling light should come on.	• Blown No. 22 (7.5 A) fuse in the under-hood fuse/relay box • Blown bulb(s) • Faulty ceiling light • An open in the wire
R13	RED	Under all conditions	Attach to ground: The ignition key light should come on.	• Blown No. 22 (7.5 A) fuse in the under-hood fuse/relay box • Faulty LED • An open in the wire

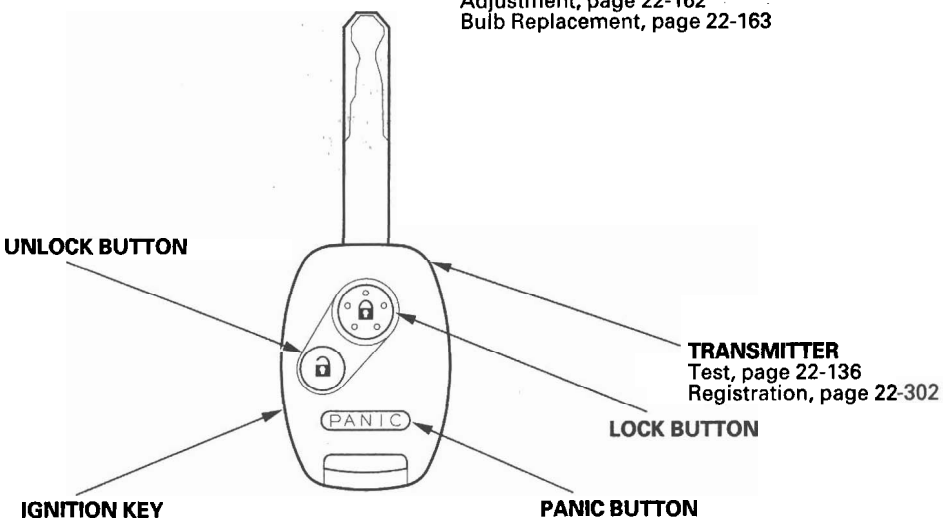
5. Reconnect the connectors to the under-dash fuse/relay box, and make these input tests at the connectors.

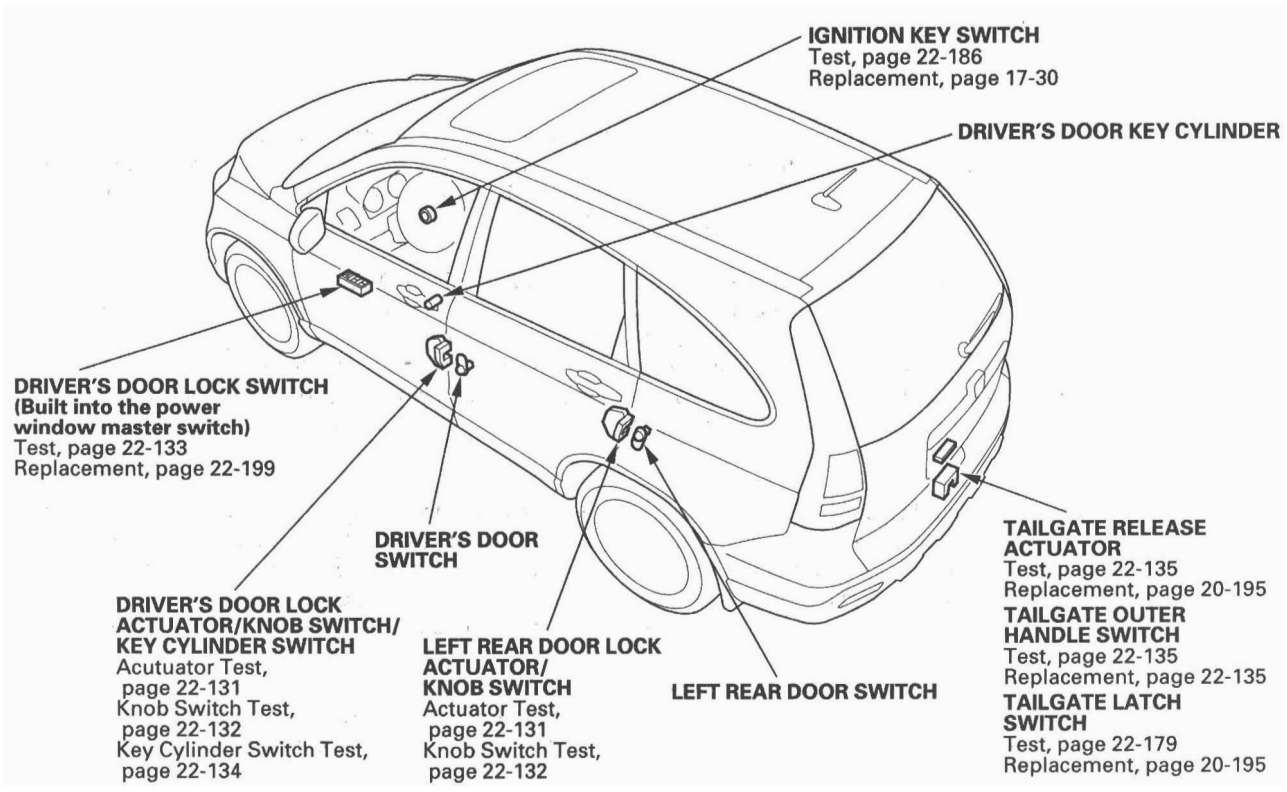
   • If any test indicates a problem, find and correct the cause, then recheck the system.
   • If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see page 22-64).

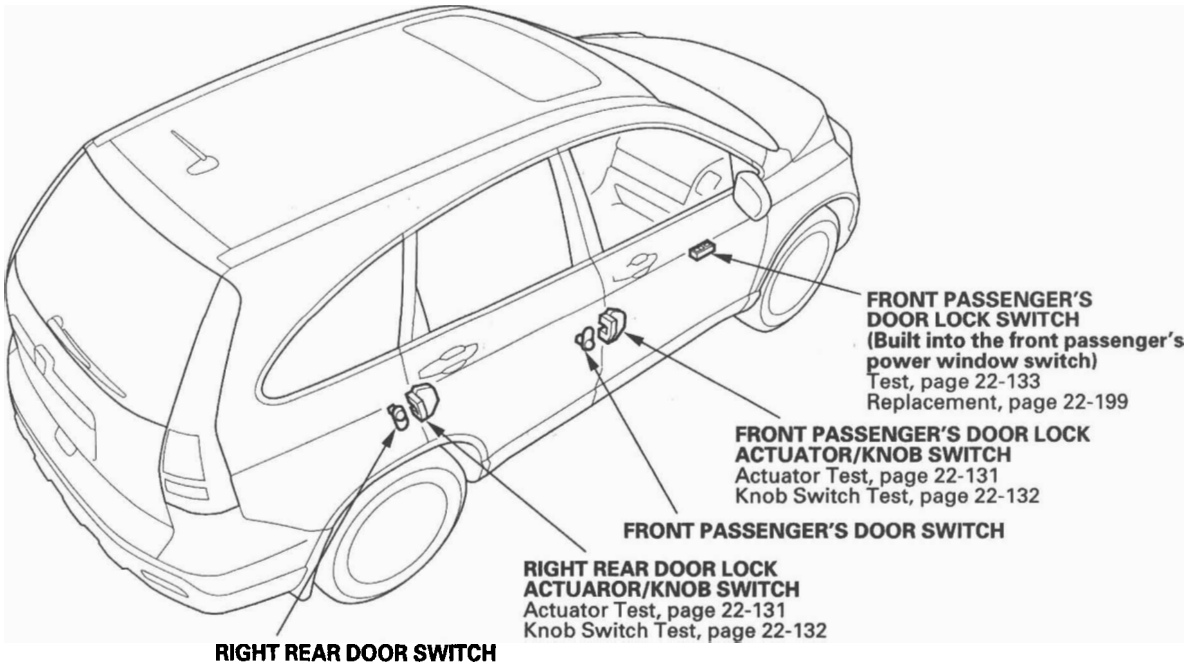
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
F20	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire

Component Location Index






IGNITION KEY SWITCH
Test, page 22-186
Replacement, page 17-30
DRIVER'S DOOR KEY CYLINDER
DRIVER'S DOOR LOCK SWITCH
(Built into the power window master switch)
Test, page 22-133
Replacement, page 22-199
DRIVER'S DOOR SWITCH
TAILGATE RELEASE ACTUATOR
Test, page 22-135
Replacement, page 20-195
TAILGATE OUTER HANDLE SWITCH
Test, page 22-135
Replacement, page 22-135
TAILGATE LATCH SWITCH
Test, page 22-179
Replacement, page 20-195
DRIVER'S DOOR LOCK ACTUATOR/KNOB SWITCH/ KEY CYLINDER SWITCH
Acutuator Test, page 22-131
Knob Switch Test, page 22-132
Key Cylinder Switch Test, page 22-134
LEFT REAR DOOR LOCK ACTUATOR/ KNOB SWITCH
Actuator Test, page 22-131
Knob Switch Test, page 22-132
LEFT REAR DOOR SWITCH


FRONT PASSENGER'S DOOR LOCK SWITCH
(Built into the front passenger's power window switch)
Test, page 22-133
Replacement, page 22-199
FRONT PASSENGER'S DOOR LOCK ACTUATOR/KNOB SWITCH
Actuator Test, page 22-131
Knob Switch Test, page 22-132
FRONT PASSENGER'S DOOR SWITCH
RIGHT REAR DOOR LOCK ACTUAROR/KNOB SWITCH
Actuator Test, page 22-131
Knob Switch Test, page 22-132
RIGHT REAR DOOR SWITCH

System Description

Security Alarm System

NOTE: This applies to EX and EX-L models.

The security alarm system is armed automatically after the doors, hood, and tailgate are closed and locked. For the system to arm, the ignition switch must be off, the key must be removed from the ignition switch, and the MICU must receive signals that the doors, hood, and tailgate are closed and locked. The alarm can be disarmed at any time by unlocking the driver's door with the key or pressing the UNLOCK button on the transmitter.

When everything is closed and locked, the only inputs that are grounded, and have 0 V, are the driver's door lock knob switch (LOCK position), and the audio unit or navigation unit (if equipped). In other words, all of the other switches are open, and have about 10 to 12 V, including the key cylinder switches. The security indicator in the gauge control module begins to flash immediately after the vehicle is completely closed and locked, and 15 seconds later, the security system arms. If the security indicator does not flash, the system is not arming. A beep sounds and the parking lights flash to confirm the security alarm system is armed if the LOCK button is pressed a second time within 5 seconds.

If one of the switches is misadjusted or shorted internally, or there is a short in the circuit, the security system will not arm. As long as the control unit continues to receive a ground signal (0 V), it senses that the vehicle is not closed and locked, and the system will not arm. A switch that is slightly misadjusted can cause the alarm to sound for no apparent reason. In this case, a significant change in outside air temperature, the vibration of a passing truck, or someone bumping into the vehicle could cause the alarm to sound. There is no glass breakage or motion detector feature.

If anything is opened or improperly unlocked after the system is armed, the control unit receives a ground signal from that switch, and the 10 to 12 V reference drops to 0 V. If the audio unit or navigation unit (if equipped) is disconnected, the input loses its ground, and the input voltage goes to 10 to 12 V. The system sounds the alarm when any of these occur:

- A door or the tailgate is forced open.
- A door is unlocked without using the key or the transmitter.
- The hood is opened.
- The audio unit or navigation unit (if equipped) is disconnected.
- The transmitter PANIC button is pressed.

When the system sounds the alarm, the horn sounds and the exterior lights flash for 2 minutes. The alarm can be stopped at any time by unlocking the driver's door with the key or by pressing any button on the transmitter.

Panic Mode

The panic mode sounds the alarm in order to attract attention. When the PANIC button on the transmitter is pressed and held for 2 seconds, the horn sounds and the exterior lights flash for about 20 seconds.

The panic mode can be cancelled at anytime by pressing any button on the transmitter or by turning the ignition switch ON (II). The panic mode will not function if the ignition switch is ON (II).

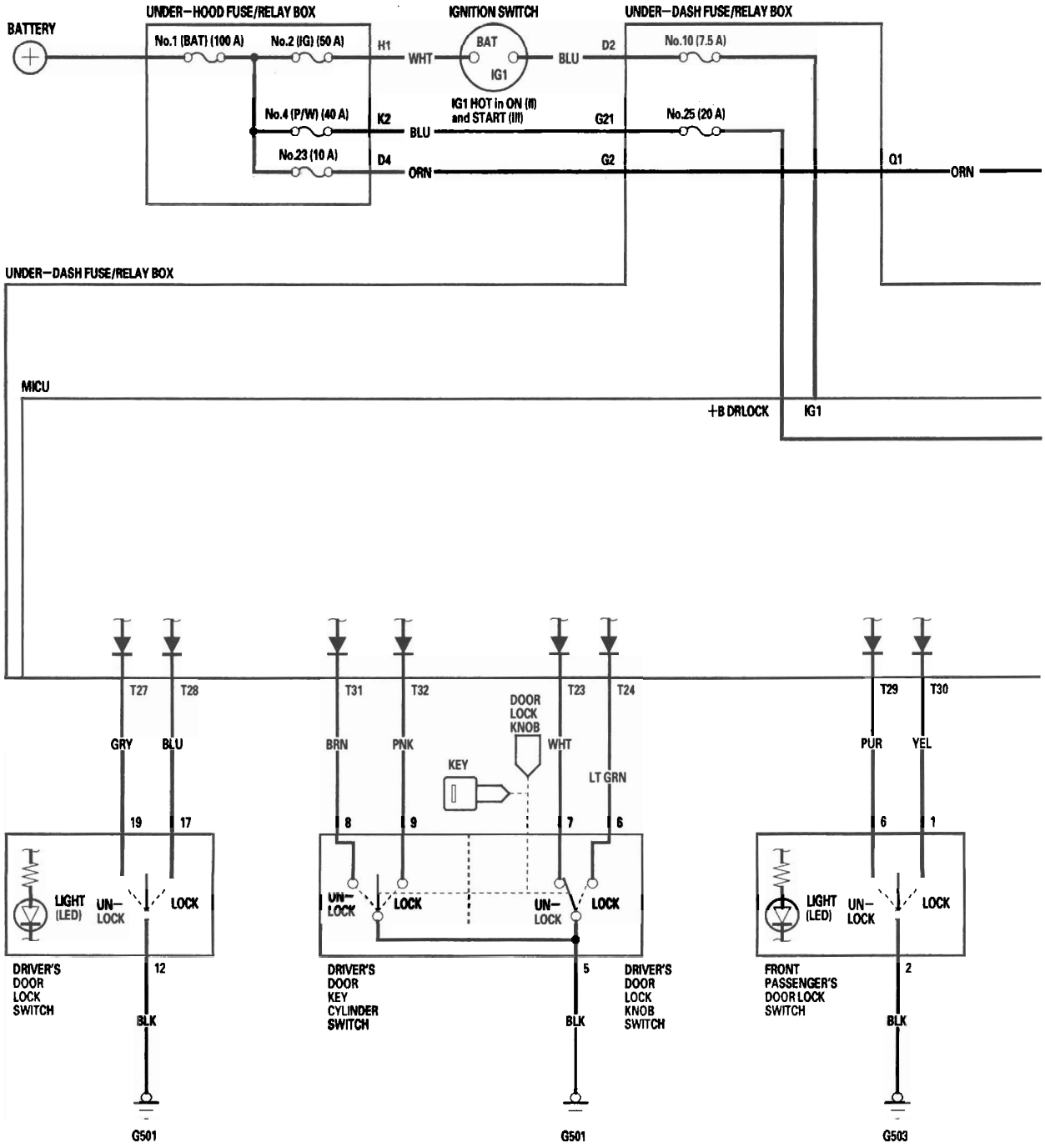
Keyless Entry System

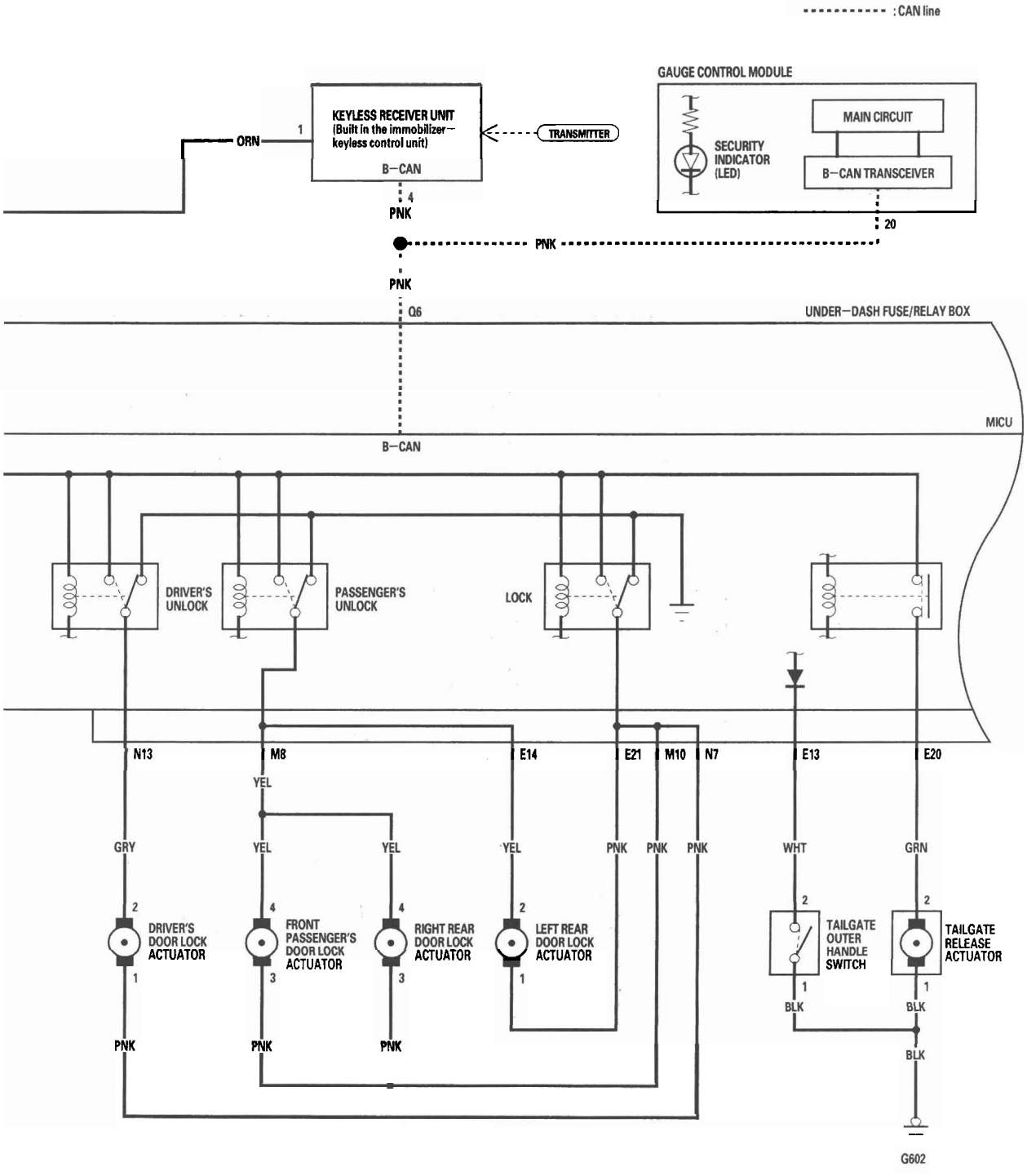
The keyless entry system is integrated with the multiplex integrated control system. The multiplex integrated control unit (MICU) receives LOCK, UNLOCK and PANIC signals from the immobilizer-keyless control unit (keyless receiver).

The keyless entry system allows you to lock and unlock the vehicle with the transmitter. When you press the LOCK button, all doors lock. When you press the UNLOCK button once, only the driver's door unlocks. The other doors will unlock when you press the button a second time. The doors will not lock with the transmitter if a door is not fully closed, or if the key is in the ignition switch.

When the switch for the ceiling light is in the center (DOOR) position, it will come on when the UNLOCK button is pressed. If a door is not opened, the light will go off and the doors will relock in about 30 seconds. If the doors are locked with the transmitter within 30 seconds, the light will go off immediately.

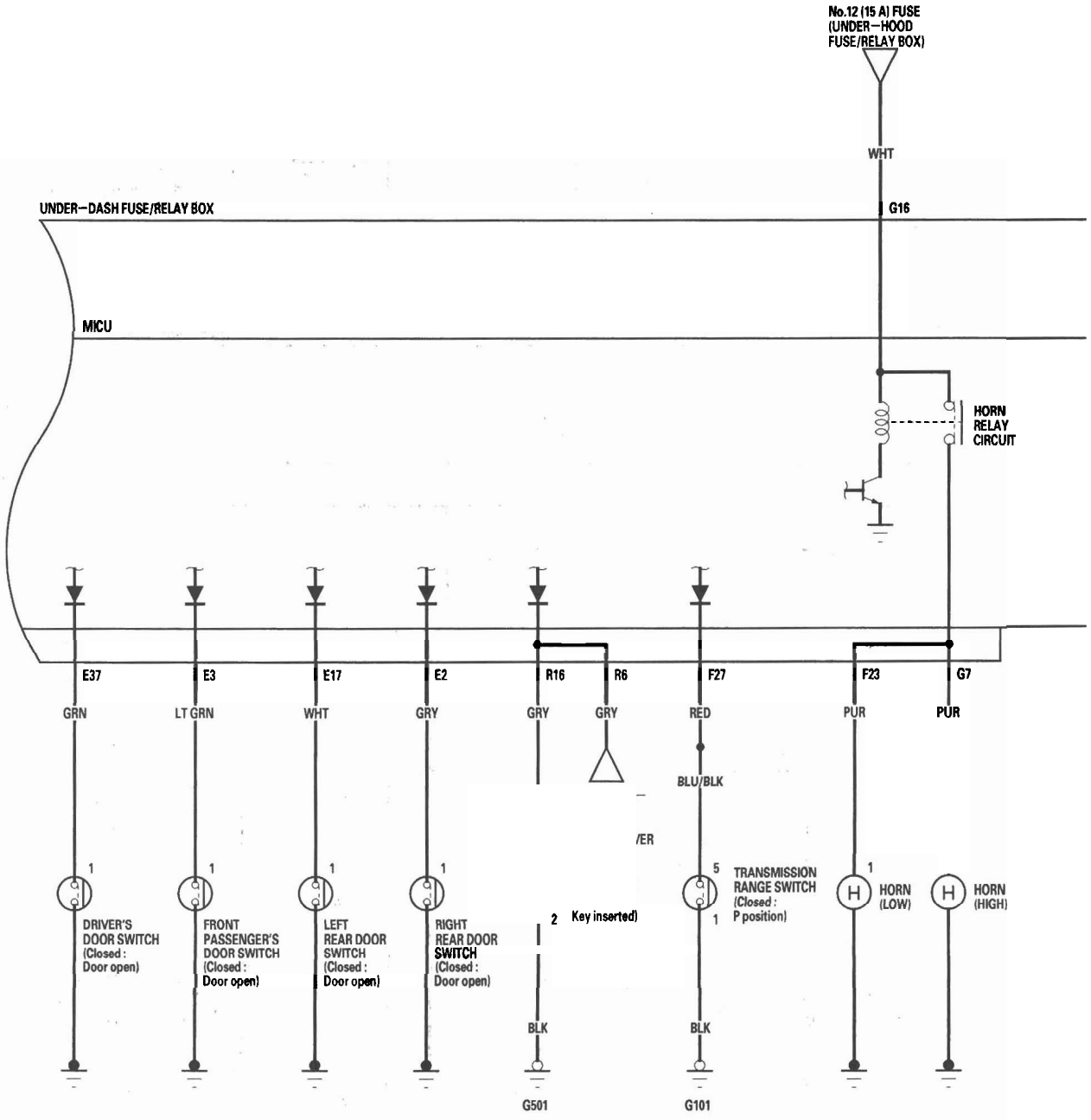
Circuit Diagram

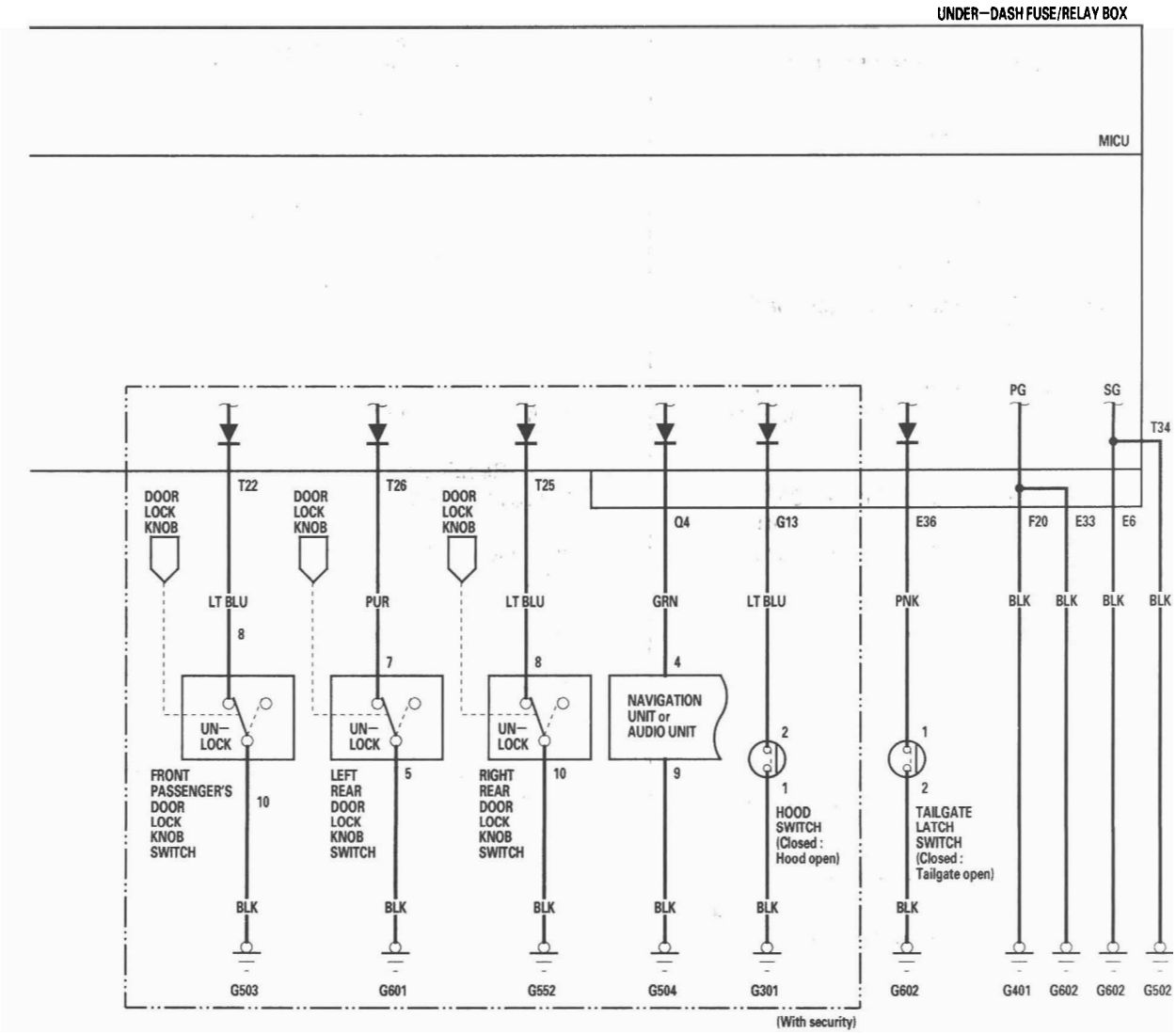



: CAN line
GAUGE CONTROL MODULE
KEYLESS RECEIVER UNIT
(Built in the immobilizer – keyless control unit)
B–CAN
TRANSMITTER
ORN
1
4
PNK
SECURITY INDICATOR (LED)
MAIN CIRCUIT
B–CAN TRANSCEIVER
20
PNK
PNK
Q6
UNDER–DASH FUSE/RELAY BOX
MICU
B–CAN
DRIVER'S UNLOCK
PASSENGER'S UNLOCK
LOCK
N13
M8
E14
E21
M10
N7
E13
E20
YEL
GRY
YEL
YEL
YEL
PNK
PNK
PNK
WHT
GRN
DRIVER'S DOOR LOCK ACTUATOR
FRONT PASSENGER'S DOOR LOCK ACTUATOR
RIGHT REAR DOOR LOCK ACTUATOR
LEFT REAR DOOR LOCK ACTUATOR
TAILGATE OUTER HANDLE SWITCH
TAILGATE RELEASE ACTUATOR
BLK
BLK
BLK
G602

(cont'd)

Circuit Diagram (cont'd)




UNDER–DASH FUSE/RELAY BOX
MICU
T34
PG
SG
DOOR LOCK KNOB
DOOR LOCK KNOB
DOOR LOCK KNOB
T22
T26
T25
Q4
G13
E36
F20
E33
E6
LT BLU
PUR
LT BLU
GRN
LT BLU
PNK
BLK
BLK
BLK
BLK
8
7
8
4
2
1
1
2
UN–LOCK
UN–LOCK
UN–LOCK
NAVIGATION UNIT or AUDIO UNIT
FRONT PASSENGER'S DOOR LOCK KNOB SWITCH
LEFT REAR DOOR LOCK KNOB SWITCH
RIGHT REAR DOOR LOCK KNOB SWITCH
HOOD SWITCH (Closed : Hood open)
TAILGATE LATCH SWITCH (Closed : Tailgate open)
10
5
10
9
BLK
BLK
BLK
BLK
BLK
BLK
G503
G601
G552
G504
G301
G602
G401
G602
G602
G502
(With security)

DTC Troubleshooting

DTC B1026: Front Passenger's Door Lock Switch Signal Error (LOCK/UNLOCK)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Operate the front passenger's door lock switch several times.
4. Check for DTCs with the HDS.

   Is DTC B1026 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the front passenger's door lock system is OK at this time. ■
5. With the front passenger's door lock switch in the neutral position, select SECURITY from the HDS and enter the DATA LIST.
6. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK SWITCH (LOCK) and FRONT PASSENGER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Go to step 12.

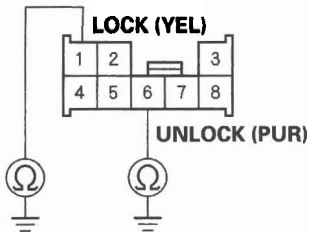
   NO—Go to step 7.
7. Disconnect the front passenger's power window switch 8P connector.
8. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK SWITCH (LOCK) and FRONT PASSENGER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Faulty door lock switch; replace the front passenger's power window switch. ■

   NO—Go to step 9.
9. Turn the ignition switch OFF.
10. Disconnect the under-dash fuse/relay box connector T (34P).
11. Check for continuity between the No. 1 (LOCK) and No. 6 (UNLOCK) terminals of the front passenger's power window switch 8P connector and body ground.

FRONT PASSENGER'S POWER WINDOW SWITCH 8P CONNECTOR



Wire side of female terminals

Is there continuity?

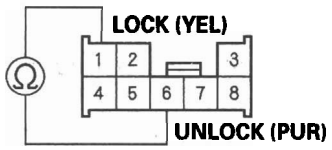
YES—Repair a short to ground in the LOCK or UNLOCK wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

12. Turn the ignition switch OFF.
13. Disconnect the front passenger's power window switch 8P connector.
14. Disconnect under-dash fuse/relay box connector T (34P).

15. Check for continuity between the No. 1 (LOCK) and No. 6 (UNLOCK) terminals of the front passenger's power window switch 8P connector.

FRONT PASSENGER'S POWER WINDOW SWITCH 8P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short between the LOCK and UNLOCK wires. ■

NO—Substitute a known-good passenger's power window switch, and recheck. If the symptom/indication goes away, replace the original passenger's power window switch. If not, the MICU is faulty, replace the under-dash fuse/relay box (see page 22-64). ■

DTC Troubleshooting (cont'd)

DTC B1127: Driver's Door Key Cylinder Switch Signal Error (LOCK/UNLOCK)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Insert the ignition key into the driver's door key cylinder switch, and turn the key in LOCK and UNLOCK positions ten times.
4. Check for DTCs with the HDS.

   Is DTC B1127 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the driver's door key cylinder switch system is OK at this time. ■
5. With the driver's door key cylinder in the neutral position, select KEYLESS with the HDS, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Go to step 12.

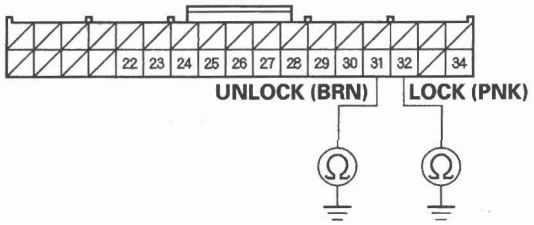
   NO—Go to step 7.
7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Faulty driver's door key cylinder switch; replace the driver's door lock actuator. ■

   NO—Go to step 9.
9. Turn the ignition switch OFF.
10. Disconnect the under-dash fuse/relay box connector T (34P).
11. Check for continuity between the No. 31 (UNLOCK) and No. 32 (LOCK) terminals of the under-dash fuse/relay box connector T (34P) and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Is there continuity?

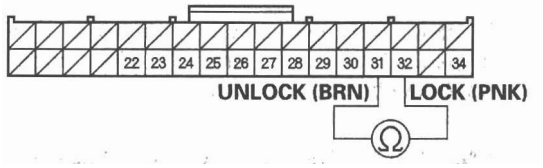
YES—Repair a short to ground in the LOCK and UNLOCK wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

12. Turn the ignition switch OFF.
13. Disconnect the driver's door lock actuator 10P connector.
14. Disconnect under-dash fuse/relay box connector T (34P).

15. Check for continuity between the No. 31 (UNLOCK) and No. 32 (LOCK) terminals of the under-dash fuse/relay box connector T (34P).

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Is there continuity?

YES—Repair a short between the LOCK and UNLOCK wires. ■

NO—Substitute a known-good MICU, and recheck. If the symptom/indication goes away, the original MICU is faulty; replace the under-dash fuse/relay box (see page 22-64), if not, replace the driver's door lock actuator. ■

DTC B1128: Driver's Door Lock Switch Signal Error (LOCK/UNLOCK)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Operate the driver's door lock switch LOCK/UNLOCK several times.
4. Check for DTCs with the HDS.

   Is DTC B1128 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the driver's door lock system is OK at this time. ■
5. With the driver's door lock switch in the neutral position, select SECURITY from the HDS and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Go to step 12.

   NO—Go to step 7.
7. Disconnect the driver's power window switch 22P connector.

(cont'd)

DTC Troubleshooting (cont'd)

8. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Faulty door lock switch; replace the power window master switch.■

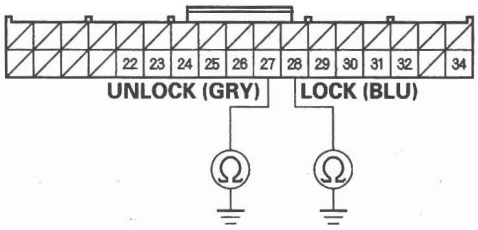
   NO—Go to step 9.

9. Turn the ignition switch OFF.

10. Disconnect the under-dash fuse/relay box connector T (34P).

11. Check for continuity between the No. 28 (LOCK) and No. 27 (UNLOCK) terminals of the under-dash fuse/relay box connector T (34P) and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Are there continuity?

YES—Repair a short to ground in the LOCK or UNLOCK wire.■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

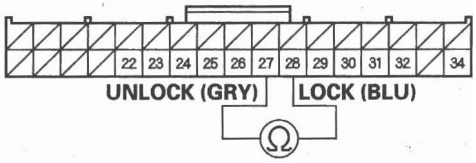
12. Turn the ignition switch OFF.

13. Disconnect the power window master switch 22P connector.

14. Disconnect under-dash fuse/relay box connector T (34P).

15. Check for continuity between the No. 28 (LOCK) and No. 27 (UNLOCK) terminals of the under-dash fuse/relay box connector T (34P).

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Is there continuity?

YES—Repair a short between the LOCK and UNLOCK wires.■

NO—Substitute a known-good power window master switch, and recheck. If the symptom/indication goes away, replace the original power window master switch. If not, the MICU is faulty, replace the under-dash fuse/relay box (see page 22-64).■

DTC B1129: Driver's Door Lock Knob Switch Signal Error (LOCK/UNLOCK)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Operate the driver's door lock knob switch several times.
4. Check for DTCs with the HDS.

   Is DTC B1129 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the driver's door lock knob switch system is OK at this time. Check for loose or poor connections. ■

5. Select KEYLESS from the BODY ELECTRICAL menu, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK).

   Does the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator ON and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator OFF with the driver's door lock knob switch in LOCK position, and does the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator OFF and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator ON with the driver's door lock knob switch in UNLOCK position?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

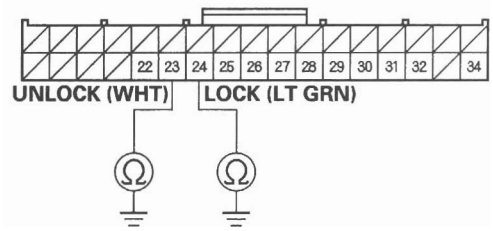
   NO—Go to step 7.
7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES—Check for an open in the driver's door lock switch (LOCK) wire or the driver's door lock knob switch (UNLOCK) wire between the MICU and the driver's door lock knob switch. If OK, replace the driver's door lock actuator. ■

   NO—Go to step 9.
9. Turn the ignition switch OFF.
10. Disconnect the under-dash fuse/relay box connector T (34P).
11. Check for continuity between the No. 23 (UNLOCK) and No. 24 (LOCK) terminals of the under-dash fuse/relay box connector T (34P) and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the LOCK or UNLOCK wire. ■

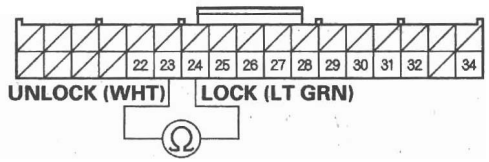
NO—Go to step 12.

(cont'd)

DTC Troubleshooting (cont'd)

12. Check for continuity between the No. 23 (UNLOCK) and No. 24 (LOCK) terminals of the under-dash fuse/relay box connector T (34P).

UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



Wire side of female terminals

Is there continuity?

YES—Repair a short between the LOCK wire and UNLOCK wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

Symptom Troubleshooting

Power Door Locks/Keyless

1. Check for B-CAN DTCs. If any B-CAN DTCs are indicated, troubleshoot and resolve them first.
2. If the door lock system and the keyless operation does not work, troubleshoot the door locks first.

NOTE: The system does not function when the ignition switch is ON (II).

No.	Symptom	Check Items
1	All the doors will not lock or unlock.*	• Poor ground (G401, G502, G601) • Blown No. 25 (20 A) fuse in the under-dash fuse/relay box • MICU input test (see page 22-126) • Driver's door key cylinder switch test (see page 22-134) • Door lock switch test (see page 22-133)
2	All the doors will not lock.*	MICU input test (see page 22-126)
3	All the doors will not unlock.*	MICU input test (see page 22-126)
4	Keyless operation does not work (LOCK, UNLOCK, PANIC).	Symptom troubleshooting (see page 22-124).
5	Doors will not unlock with the transmitter, but will unlock with the door switch.	Symptom troubleshooting (see page 22-124).
6	Doors will not lock with the transmitter, but will lock with the door switch.	• Symptom troubleshooting (see page 22-124). • Door switch test (check the door switch ON/OFF information with the HDS)
7	Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened.	Symptom troubleshooting (see page 22-125).
8	Only driver's door will unlock or door locks relock immediately after unlocking with the remote.	Driver's door lock knob switch test (see page 22-132).
9	The horn does not sound when PANIC button on the transmitter pressed (USA only).	Symptom troubleshooting (see page 22-125).
10	Keyless operation will work even though the ignition key is in the ignition switch.	Ignition key switch test (see page 22-186).

*: If only one door is not working properly, check that door's lock actuator first, then check the other items listed in this table.

Symptom Troubleshooting (cont'd)

Keyless operation does not work (LOCK, UNLOCK, PANIC)

NOTE:
- Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.
- Before troubleshooting, do the keyless transmitter test (see page 22-136).

1. Turn the ignition switch ON (II).
2. Try to start the engine.

   Does the engine start?

   YES—The immobilizer system is OK, go to step 3.

   NO—Go to the immobilizer symptom troubleshooting (see page 22-292).■
3. Turn the ignition switch OFF.
4. Test the transmitter (see page 22-136).

   Is the transmitter OK?

   YES—Replace the immobilizer-keyless control unit. ■

   NO—Replace the transmitter.■

Doors will not unlock (or lock) with the transmitter, but will unlock (lock) with the door switch

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.

1. Turn the ignition switch OFF.
2. Remove the ignition key from the ignition switch.
3. Close and lock the doors.
4. Try to lock/unlock the doors with the keyless transmitter.

   Do the door lock actuators work normally?

   YES—Intermittent failure, the system is OK at this time.■

   NO—Go to step 5.
5. Open the driver's door.

   Does the key-in reminder chime sound?

   YES—Faulty ignition key switch, or short to ground on the ignition switch wire. Repair as necessary.■

   NO—Go to step 6.
6. Do the transmitter test (see page 22-136).

   Is the transmitter OK?

   YES—Substitute a known-good MICU and recheck. If there is still a problem, substitute a known-good immobilizer-keyless control unit and recheck.■

   NO—Replace the transmitter.■

The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.

1. Press the PANIC button.

   Does the horn sound?

   YES—Go to step 3.

   NO—Go to step 2.

2. Press the horn button.

   Does the horn sound?

   YES—Go to step 3.

   NO—Check the horn circuit. ■

3. Turn the headlight switch ON.

   Do the headlights come on?

   YES—Go to step 4.

   NO—Check the lighting circuit. ■

4. Do the transmitter test (see page 22-136).

   Is the transmitter OK?

   YES—Substitute a known-good MICU and recheck. If there is still a problem, substitute a known-good immobilizer-keyless control unit and recheck. ■

   NO—Replace the transmitter. ■

Doors automatically relock after being unlocked with the transmitter even though a door has been opened

1. Place the ceiling light switch in the DOOR position.
2. Turn the ignition switch ON (II).
3. Close all doors.
4. Watch the ceiling light and the door indicator on the gauge control module.

   Does the ceiling light and door indicator go off?

   YES—Go to step 5.

   NO—Repair a short to ground in the wire between the MICU and door switch. ■

5. Open and close each door one at a time.
6. Watch the ceiling light and the door indicator on the gauge control module.

   Does the ceiling light and door indicator come on when the door is open, and go off when the door is closed?

   YES—Substitute a known-good MICU and recheck. If the symptom goes away, replace the original MICU. ■

   NO—Repair an open in the wire between the MICU and the door switch. If the wire is OK, faulty the door switch, replace it. ■

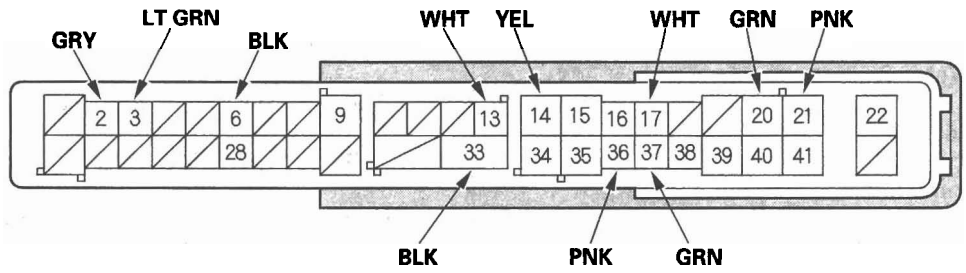
MICU Input Test

NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

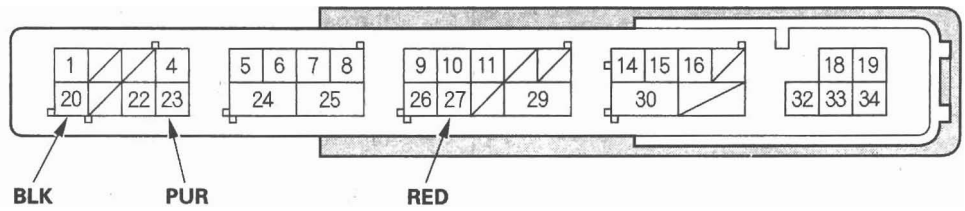
1. Turn the ignition switch OFF.
2. Disconnect the under-dash fuse/relay box connectors E, F, G, M, N, Q, R, and T.

   NOTE: All connector views are wire side of female terminals.

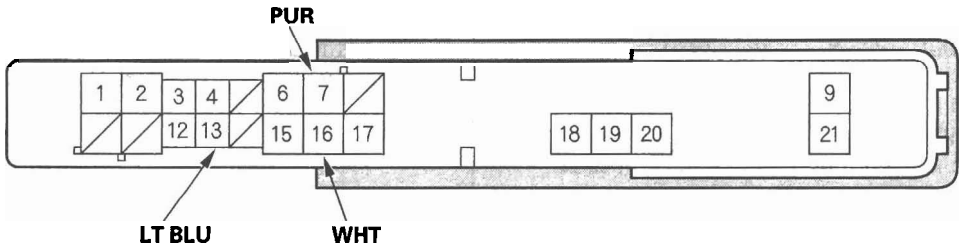
UNDER-DASH FUSE/RELAY BOX CONNECTOR E (42P)



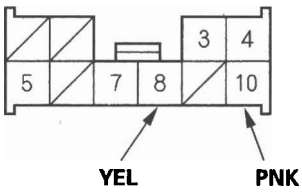
UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)



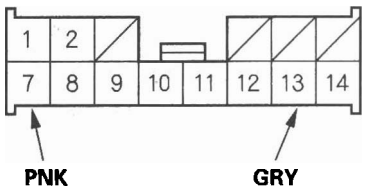
UNDER-DASH FUSE/RELAY BOX CONNECTOR G (21P)



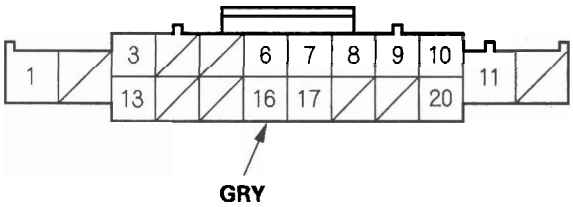
UNDER-DASH FUSE/RELAY BOX CONNECTOR M (10P)



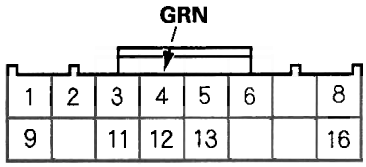
UNDER-DASH FUSE/RELAY BOX CONNECTOR N (14P)



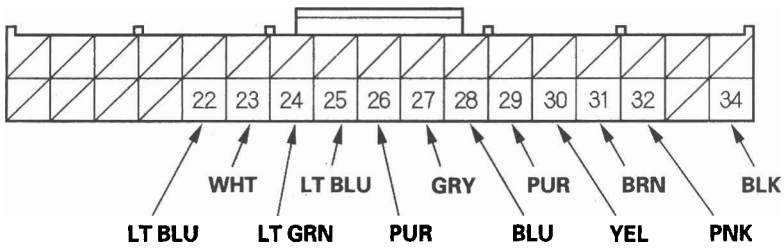
UNDER-DASH FUSE/RELAY BOX CONNECTOR R (20P)



UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (16P)



UNDER-DASH FUSE/RELAY BOX CONNECTOR T (34P)



3. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

(cont'd)

MICU Input Test (cont'd)

4. With the connectors still disconnected, make these input tests at the appropriate connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
G16	WHT	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 12 (15 A) fuse in the under-hood fuse/relay box • An open in the wire
G7	PUR	Under all conditions	Connect G16 and G7 terminals with a jumper wire momentarily: The horn should sound.	• Poor ground (body ground) • Blown No. 12 (15 A) fuse in the under-hood fuse/relay box Faulty horn • An open in the wire
E20	GRN	Under all conditions	Connect G2 and E20 terminals with a jumper wire: The tailgate release actuator should work (tailgate should open).	• Poor ground (G602) • Faulty tailgate release actuator • An open in the wire
N7 N13	PNK GRY	Under all conditions	Connect battery power to the N13 terminal and ground the N7 terminal momentarily: The driver's door lock actuator should unlock.	• Faulty driver's door lock actuator • An open in the wire
M8 M10	YEL PNK	Under all conditions	Connect battery power to the M8 terminal and ground the M10 terminal momentarily: The front passenger's and the right rear door lock actuators should unlock.	• Faulty front passenger's door lock actuator • Faulty right rear door lock actuator • An open in the wire
E14 E21	YEL PNK	Under all conditions	Connect battery power to the E14 terminal and ground the E21 terminal momentarily: The left rear door lock actuator should unlock.	• Faulty left rear door lock actuator An open in the wire

5. Reconnect the connectors to the under-dash fuse/relay box, and make these input tests at the connectors.

If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see page 22-64).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
F20	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
E2	GRY	Right rear door open	Check for voltage to ground: There should be less than 1 V.	• Faulty right rear door switch • An open in the wire
		Right rear door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty right rear door switch • Short to ground in the wire
E3	LT GRN	Front passenger's door open	Check for voltage to ground: There should be less than 1 V.	• Faulty front passenger's door switch • An open in the wire
		Front passenger's door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty front passenger's door switch • Short to ground in the wire
E17	WHT	Left rear door open	Check for voltage to ground: There should be less than 1 V.	• Faulty left rear door switch • An open in the wire
		Left rear door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty left rear door switch • Short to ground in the wire
E36	PNK	Tailgate open	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G602) • Faulty tailgate latch switch • An open in the wire
		Tailgate closed	Check for voltage to ground: There should be 5 V or more.	• Faulty tailgate latch switch • Short to ground in the wire
E37	GRN	Driver's door open	Check for voltage to ground: There should be less than 1 V.	• Faulty driver's door switch • An open in the wire
		Driver's door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door switch • Short to ground in the wire
F27	RED	Transmission range switch in P	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G101) • Faulty transmission range switch • An open in the wire
		Transmission range switch in any other position than P	Check for voltage to ground: There should be 5 V or more.	• Faulty transmission range switch • Short to ground in the wire
G13	LT BLU	Hood open	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G301) • Faulty hood switch • An open in the wire
		Hood closed	Check for voltage to ground: There should be 5 V or more.	• Faulty hood switch • Short to ground in the wire
Q4	GRN	Under all conditions	Check for voltage to ground: There should be less than 1 V.	An open in the wire
R16	GRY	Ignition key inserted into the ignition switch	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty ignition key switch • An open in the wire
		Ignition switch OFF and ignition key removed from the ignition switch	Check for voltage to ground: There should be 5 V or more.	• Faulty ignition key switch • Short to ground in the wire
T22	LT BLU	Front passenger's door lock knob switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G503) • Faulty front passenger's door lock knob switch • An open in the wire
		Front passenger's door lock knob switch locked	Check for voltage to ground: There should be 5 V or more.	• Faulty front passenger's door lock knob switch • Short to ground in the wire
E13	WHT	Tailgate outer handle pulled	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G602) • Faulty tailgate outer handle switch • An open in the wire
		Tailgate outer handle released	Check for voltage to ground: There should be 5 V or more.	• Faulty tailgate outer handle switch • A short to ground in the wire

(cont'd)

MICU Input Test (cont'd)

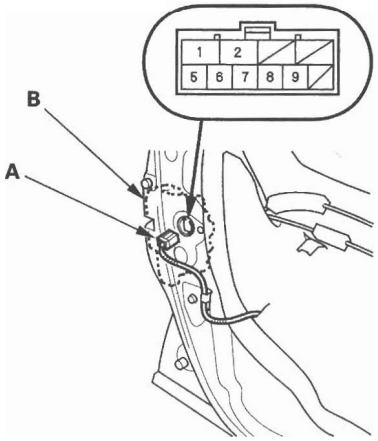
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
T23	WHT	Driver's door lock knob switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver's door lock knob switch • An open in the wire
		Driver's door lock knob switch locked	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door lock knob switch • Short to ground in the wire
T24	LT GRN	Driver's door lock knob switch unlocked	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door lock knob switch • Short to ground in the wire
		Driver's door lock knob switch locked	Check for voltage to ground: There should be less than 1 V.	Poor ground (G501) • Faulty driver's door lock knob switch • An open in the wire
T25	LT BLU	Right rear door lock knob switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G552) • Faulty right rear door lock knob switch • An open in the wire
		Right rear door lock knob switch locked	Check for voltage to ground: There should be 5 V or more.	• Faulty right rear door lock knob switch • Short to ground in the wire
T26	PUR	Left rear door lock knob switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G601) • Faulty left rear door lock knob switch • An open in the wire
		Left rear door lock knob switch locked	Check for voltage to ground: There should be 5 V or more.	• Faulty left rear door lock knob switch • Short to ground in the wire
T27	GRY	Driver door lock switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver door lock switch • An open in the wire
		Driver door lock switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty driver door lock switch • Short to ground in the wire
T28	BLU	Driver door lock switch locked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver door lock switch • An open in the wire
		Driver door lock switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty driver door lock switch • Short to ground in the wire
T29	PUR	Front passenger's door lock switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G503) • Faulty front passenger's door lock switch • An open in the wire
		Front passenger's door lock switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty front passenger's door lock switch Short to ground in the wire
T30	YEL	Front passenger's door lock switch locked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G503) • Faulty front passenger's door lock switch • An open in the wire
		Front passenger's door lock switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty front passenger's door lock switch Short to ground in the wire
T31	BRN	Driver door key cylinder switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver door key cylinder switch • An open in the wire
		Driver door key cylinder switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty driver door key cylinder switch • Short to ground in the wire
T32	PNK	Driver door key cylinder switch locked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver door key cylinder switch • An open in the wire
		Driver door key cylinder switch in neutral	Check for voltage to ground: There should be 5 V or more.	• Faulty driver door key cylinder switch • Short to ground in the wire

Door Lock Actuator Test

Driver's Door and Left Rear Door

1. Remove the door panel.
   - Front (see page 20-6)
   - Rear (see page 20-17)
2. Disconnect the 10P connector (A) from the actuator (B).

   NOTE: The illustration shows the driver's door.



3. Check the actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

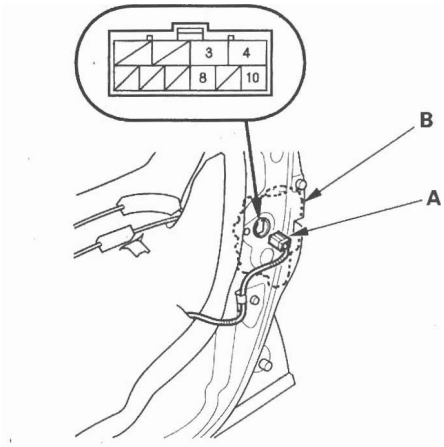
Position \ Terminal	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

Front Passenger's Door and Right Rear Door

1. Remove the door panel.
   - Front (see page 20-6)
   - Rear (see page 20-17)
2. Disconnect the 10P connector (A) from the actuator (B).

   NOTE: The illustration shows the front passenger's door.



3. Check the actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

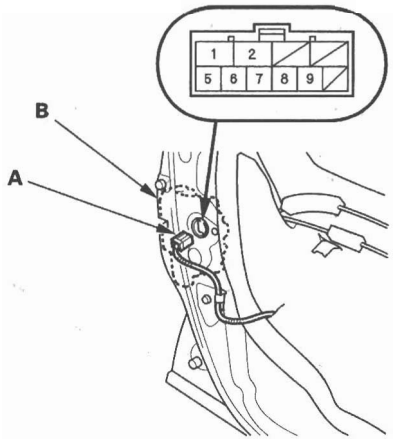
Position \ Terminal	3	4
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

Door Lock Knob Switch Test

Driver's Door

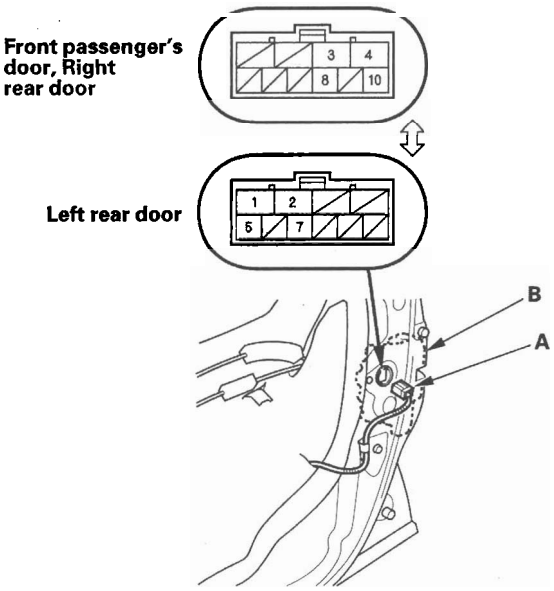
1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the actuator (B).



3. Check for continuity between the terminals.
   - There should be continuity between the No. 6 and No. 5 terminals when the door lock knob switch is in the LOCK position and no continuity when the switch is in the UNLOCK position.
   - There should be continuity between the No. 7 and No. 5 terminals when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.
4. If the continuity is not as specified, replace the door lock actuator.

Passenger Doors (With Security)

1. Remove the passenger's door panel.
   - Front (see page 20-6)
   - Rear (see page 20-17)
2. Disconnect the 10P connector (A) from the actuator (B).



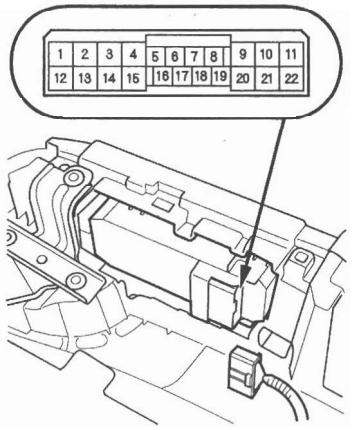
3. Check for continuity between the terminals. There should be continuity between the No. 8 [No. 7] and No. 10 [No. 5] terminals when the door lock knob switch in the UNLOCK position and no continuity when the switch is in the LOCK position.
   [ ] : Left rear door
4. If the continuity is not specified, replace the door lock actuator.

Door Lock Switch Test

Driver's Door

NOTE: The driver's door lock switch is built into the power window master switch.

1. Remove the power window master switch and disconnect its connector (see page 22-199).



2. Check for continuity between the power window master switch 22P connector terminals.

   - There should be continuity between the No. 17 and No. 12 terminals when the door lock switch is in the LOCK position.
   - There should be no continuity between the No. 17 and No. 12 terminals when the door lock switch is in the UNLOCK position.
   - There should be continuity between the No. 19 and No. 12 terminals when the door lock switch is in the UNLOCK position.
   - There should be no continuity between the No. 19 and No. 12 terminals when the door lock switch is in the LOCK position.

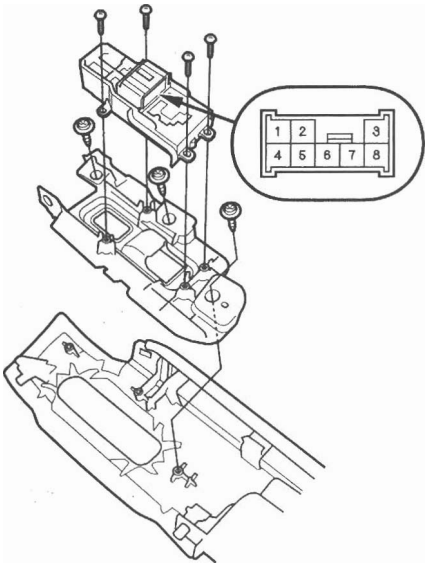
3. If the continuity is not as specified, replace the power window master switch (see page 22-199).

Front Passenger's Door

NOTE: The front passenger's door lock switch is built into the front passenger's power window switch.

1. Remove the front passenger's power window switch (see page 22-199).

   NOTE: The illustration shows the front passenger's door.



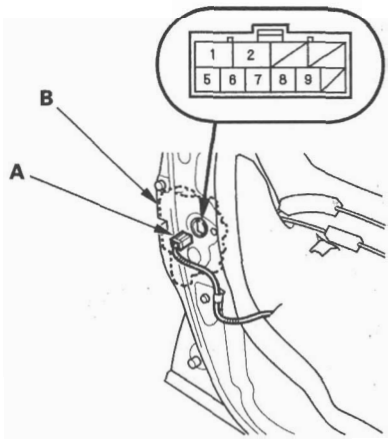
2. Check for continuity between the front passenger's power window switch 8P connector terminals.

   - There should be continuity between the No. 1 and No. 2 terminals when the door lock switch is in the LOCK position.
   - There should be no continuity between the No. 1 and No. 2 terminals when the door lock switch is in the UNLOCK position.
   - There should be continuity between the No. 2 and No. 6 terminals when the door lock switch is in the UNLOCK position.
   - There should be no continuity between the No. 2 and No. 6 terminals when the door lock switch is in the LOCK position.

3. If the continuity is not as specified, replace the front passenger's power window switch (see page 22-199).

Door Key Cylinder Switch Test

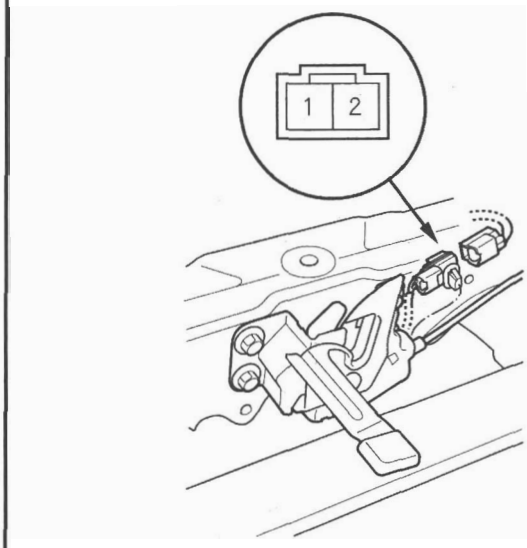
1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the key cylinder switch (B).



3. Check for continuity between the terminals.
   - There should be continuity between the No. 9 and No. 5 terminals when the door key cylinder switch is in LOCK position. (With security)
   - There should be no continuity between the No. 9 and No. 5 terminals when the door key cylinder switch is in the neutral or UNLOCK position. (With security)
   - There should be continuity between the No. 8 and No. 5 terminals when the door key cylinder switch is in UNLOCK position.
   - There should be no continuity between the No. 8 and No. 5 terminals when the door key cylinder switch is in the neutral or LOCK position.
4. If the continuity is not as specified, replace the door latch/actuator assembly (see page 20-11).

Hood Switch Test

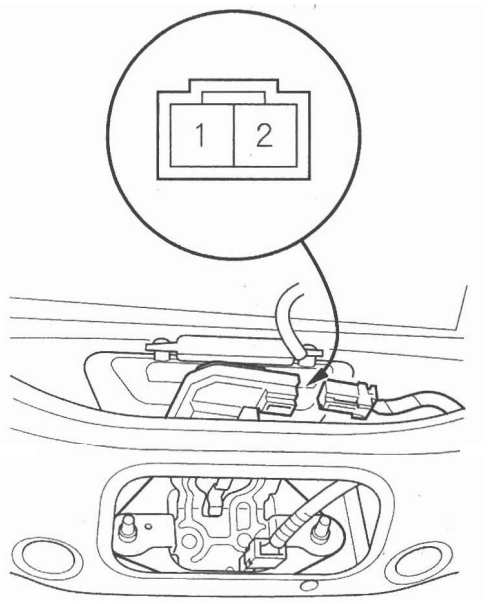
1. Open the hood.
2. Disconnect the 2P connector from the hood switch.



3. Check for continuity between the terminals.
   - There should be continuity between the No. 1 and No. 2 terminals when the hood is opened (latch released).
   - There should be no continuity between the No. 1 and No. 2 terminals when the hood is closed (latch pushed down).
4. If the continuity is not as specified, replace the hood latch assembly (see page 20-193).

Tailgate Release Actuator Test

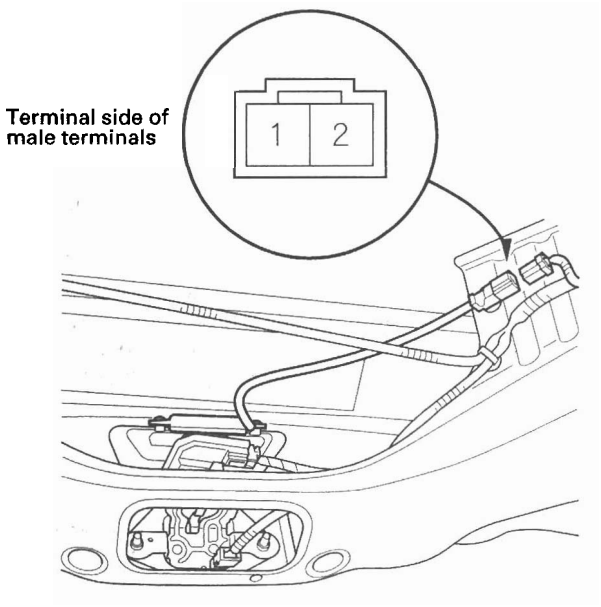
1. Open the tailgate, and remove the tailgate trim (see page 20-78).
2. Disconnect the 2P connector from the tailgate release actuator.



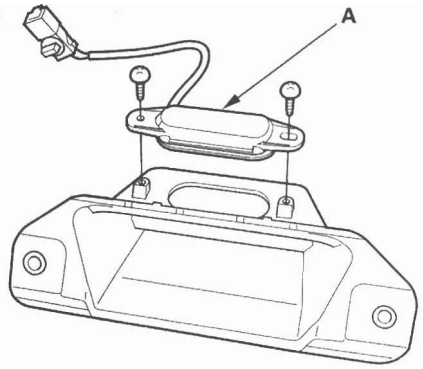
3. Check the actuator operation by connecting power to the No. 2 terminal and ground to the No. 1 terminal momentarily. The actuator should work.
4. If the actuator does not work, replace the tailgate latch switch/release actuator assembly.

Tailgate Outer Handle Switch Test/ Replacement

1. Open the tailgate, and remove the tailgate trim (see page 20-78).
2. Disconnect the 2P connector from the tailgate outer handle switch.



3. Check for continuity between the No. 1 terminal and No. 2 terminals.
   - There should be continuity with the outer handle lever pulled.
   - There should be no continuity with the outer handle lever released.
4. If the continuity is not as specified, remove the outer handle (see page 20-195), then replace the tailgate outer handle switch (A).



Transmitter Test

NOTE:
- If the doors unlock or lock with the transmitter, but the LED on the transmitter does not come on, the LED is faulty; replace the transmitter.
- If any door is open, you cannot lock the doors with the transmitter.
- If you unlocked the doors with the transmitter, but do not open any of the doors within 30 seconds, the doors relock automatically.
- The doors do not lock or unlock with the transmitter if the ignition key is inserted in the ignition switch.

With HDS

1. Press the lock or unlock button five or six times to reset the transmitter.

   - If the locks work, the transmitter is OK.
   - If any of the transmitter buttons does not work, replace the transmitter, then problem and register the transmitter (see page 22-302).
   - If the locks don't work, go to step 2.

2. Connect the HDS to the data link connector.

3. Select KEYLESS from the BODY ELECTRICAL menu, then select INSPECTION, then the KEYLESS CHECK.

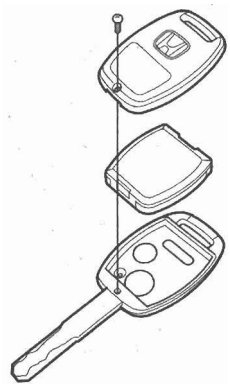
4. Press the lock, unlock, or panic button and check the response on the screen of the HDS.

   NOTE: The door lock actuators may or may not cycle when receiving input from the transmitter.

   - If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
   - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is not registered to the vehicle, if necessary, reprogram and register the transmitter (see page 22-302).
     If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 5.

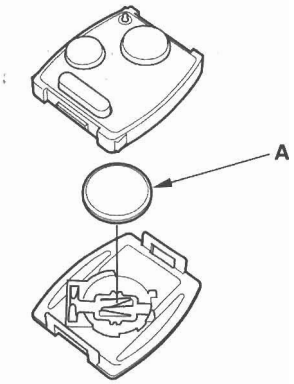
5. Open the transmitter, and check for water damage.

   - If you find any water damage, replace the transmitter, then reprogram and register the transmitter (see page 22-302).
   - If there is no water damage, go to step 6.



6. Replace the transmitter battery (A) with a new one, and press the lock or unlock button and check the response on the screen of the HDS.

   - If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
   - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 7.



7. Use a different known-good keyless transmitter assembly and repeat steps 3 and 4.

   NOTE: The keyless transmitter does not need to be programmed to the vehicle for this test.

   - If (DIFFERENT) KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, replace the keyless transmitter and do the immobilizer system registration (see page 22-302).
   - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, the immobilizer-keyless control unit is faulty, replace it and do the immobilizer system registration (see page 22-302).

   NOTE: As the keyless transmitter is combined with the immobilizer transponder, so when the transponder is registered by the HDS, the keyless transmitter programming is completed automatically.

Without HDS

1. Start the engine.

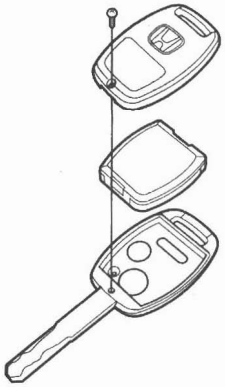
   - If the engine does not start, go to the immobilizer system troubleshooting (see page 22-292).
   - If the engine starts, go to step 2.

2. Press the lock or unlock button five or six times to reset the transmitter.

   - If the locks work, the transmitter is OK.
   - If the locks don't work, go to step 3.

3. Open the transmitter, and check for water damage.

   - If you find any water damage, replace the transmitter.
   - If there is no water damage, go to step 4.

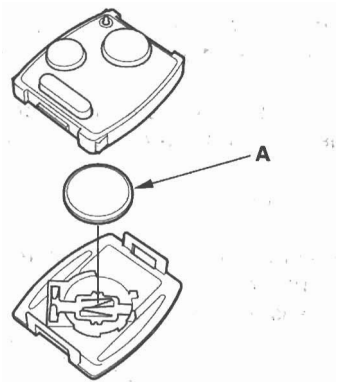


(cont'd)

Transmitter Test (cont'd)

4. Replace the transmitter battery (A) with a new one, and try to lock and unlock the doors with the transmitter by pressing the lock or unlock button five or six times.

   - If the doors lock and unlock, the transmitter is OK.
   - If the doors don't lock and unlock, go to step 5.

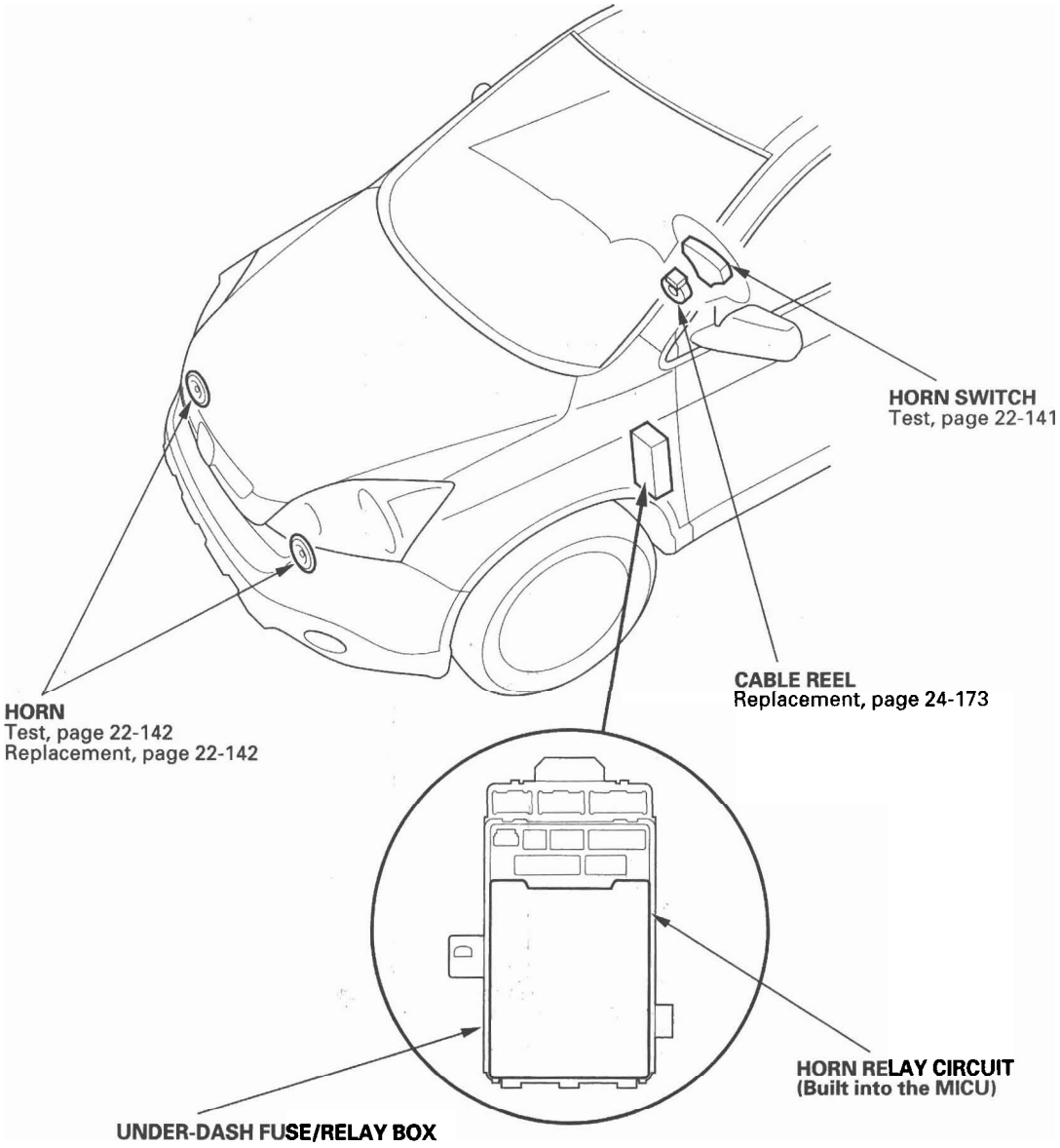


5. Reprogram and register the transmitter (see page 22-302), then try to lock and unlock the doors.

   - If the doors lock and unlock, the transmitter is OK.
   - If the doors don't lock and unlock, substitute a known-good transmitter and recheck (see page 22-302). If still not operating, replace the immobilizer-keyless control unit.

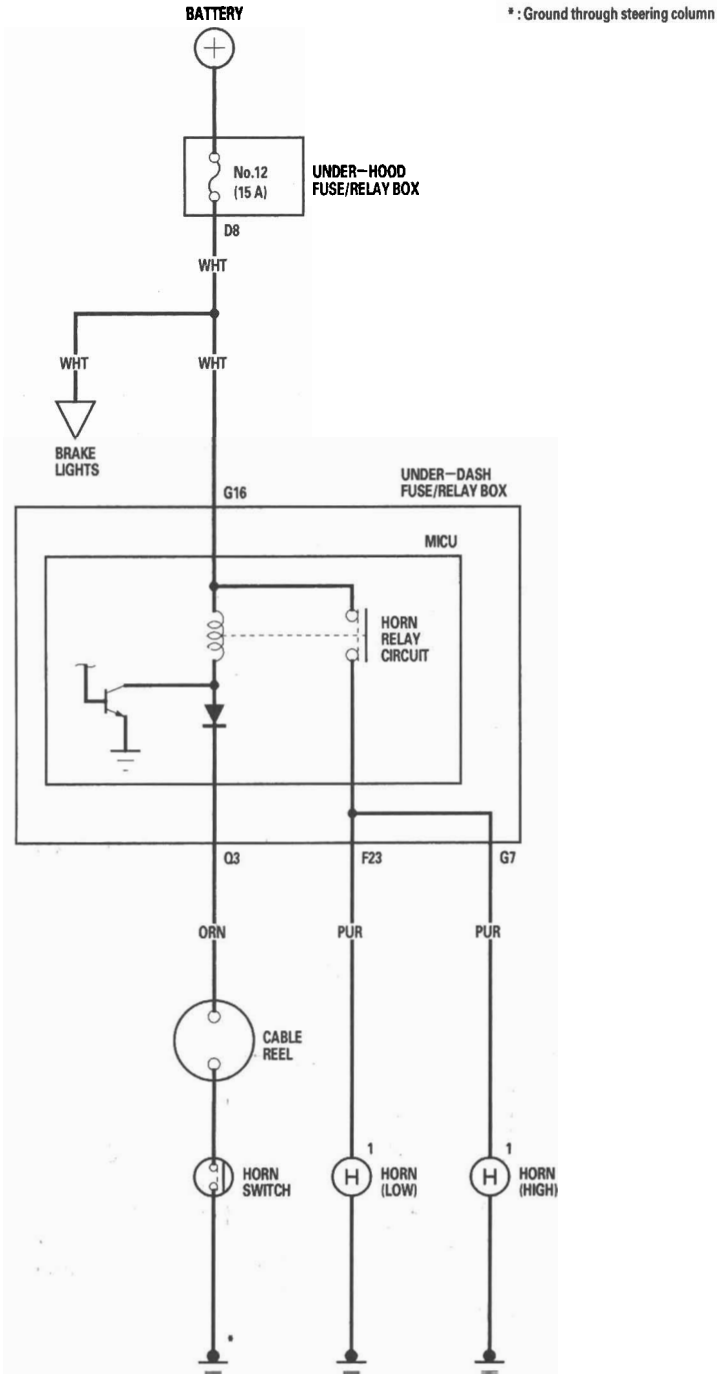
Horns

Component Location Index



Horns

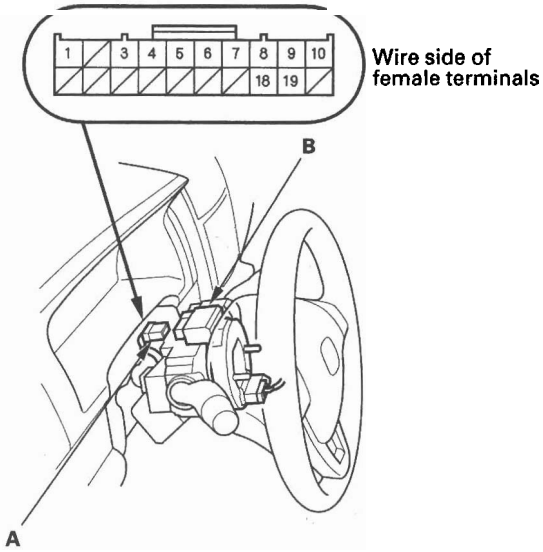
Circuit Diagram



Horn Switch Test

1. Remove the steering column covers (see page 17-25).

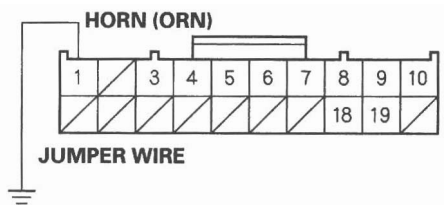
2. Disconnect the dashboard wire harness 20P connector (A) from the cable reel (B).



3. Using a jumper wire, connect the dashboard wire harness 20P connector No. 1 terminal to body ground. The horns should sound.

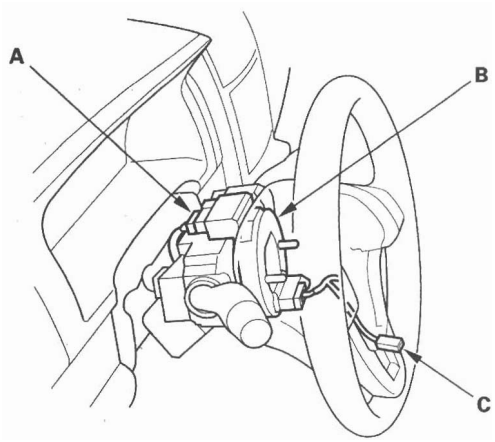
   - If the horns sound, go to step 4.
   - If the horns do not sound, check these items:
     - No. 12 (15 A) fuse in the under-hood fuse/relay box.
     - Horn (see page 22-142).
     - MICU.
     - An open in the wire.

DASHBOARD WIRE HARNESS 20P CONNECTOR



Wire side of female terminals

4. Reconnect the dashboard wire harness 20P connector (A) to the cable reel (B).

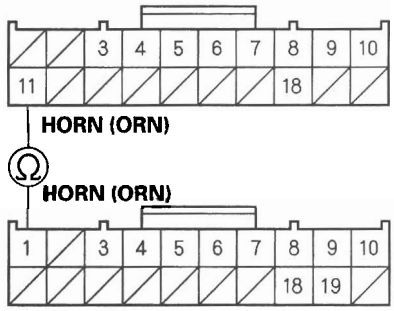


5. Remove the driver's airbag assembly (see page 24-161), and disconnect the horn switch 1P positive terminal (C) from the driver's airbag.

6. Check for continuity between the dashboard wire harness 20P connector No. 1 terminal and the cable reel subharness 20P connector No. 11 terminal.

   - If there is continuity, go to step 7.
   - If there is no continuity, replace the cable reel (see page 24-173).

CABLE REEL SUBHARNESS 20P CONNECTOR
Wire side of female terminals



DASHBOARD WIRE HARNESS 20P CONNECTOR
Wire side of female terminals

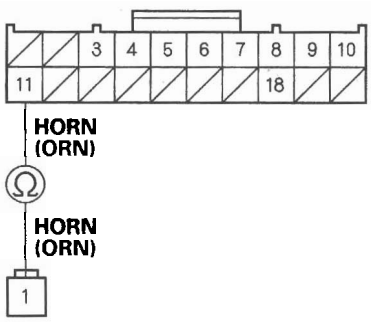
(cont'd)

Horn Switch Test (cont'd)

7. Check for continuity between the cable reel subharness 20P connector No. 11 terminal and the horn switch 1P positive terminal.

   - If there is continuity, check the installation of the driver's airbag assembly and the steering wheel. If OK, replace the driver's airbag assembly.
   - If there is no continuity, repair an open in the wire.

CABLE REEL SUBHARNESS 20P CONNECTOR
Wire side of female terminals

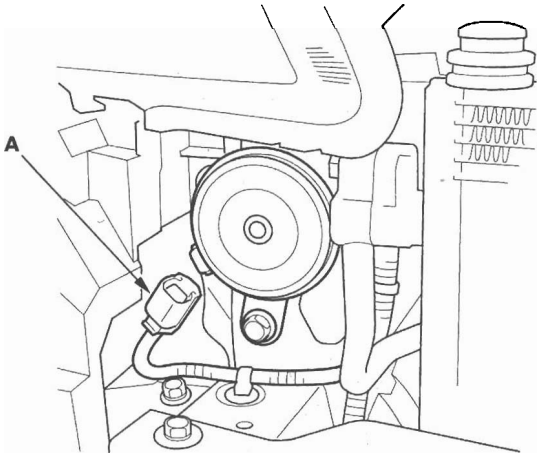


HORN SWITCH 1P POSITIVE TERMINAL
Wire side of female terminals

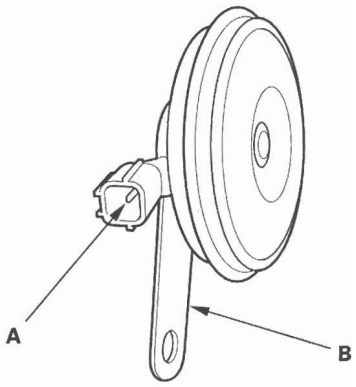
Horn Test/Replacement

1. Remove the front bumper (see page 20-149).

2. Disconnect the 1P connector (A) from the horn (B).



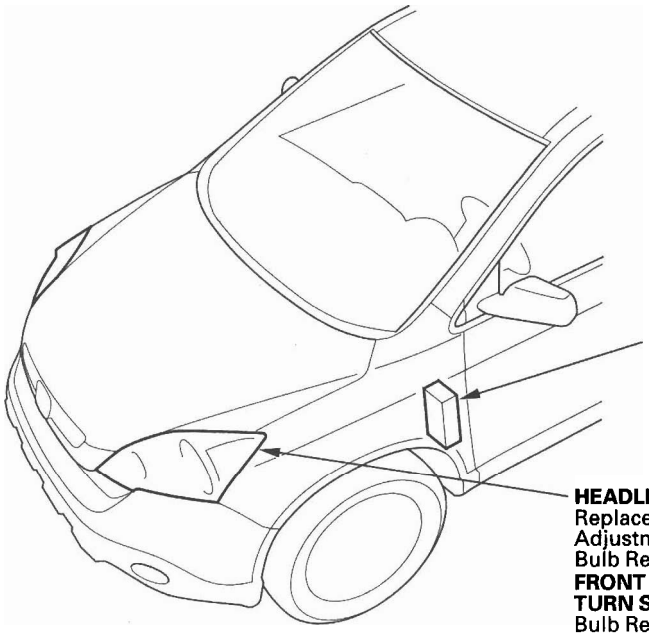
3. Test the horn by connecting battery power to the terminal (A) and grounding the bracket (B). The horn should sound.



4. If it fails to sound, replace it.

Exterior Lights

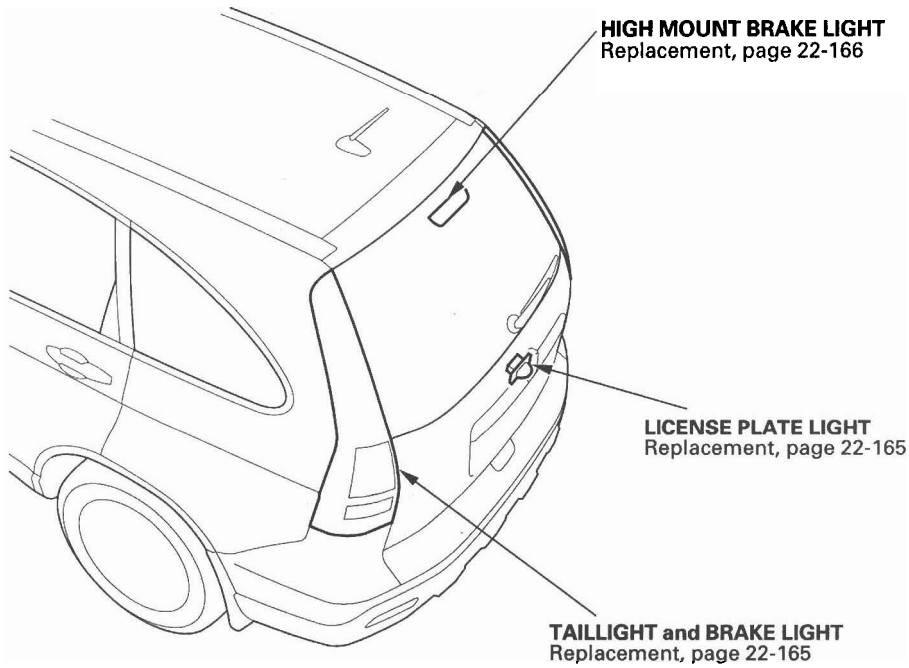
Component Location Index



DAYTIME RUNNING LIGHTS CIRCUIT (Built into the MICU)
Input Test, page 22-157
Replacement, page 22-64

HEADLIGHTS
Replacement, page 22-163
Adjustment, page 22-162
Bulb Replacement, page 22-163

FRONT SIDE MARKER/PARKING/ TURN SIGNAL LIGHTS
Bulb Replacement, page 22-163



HIGH MOUNT BRAKE LIGHT
Replacement, page 22-166

LICENSE PLATE LIGHT
Replacement, page 22-165

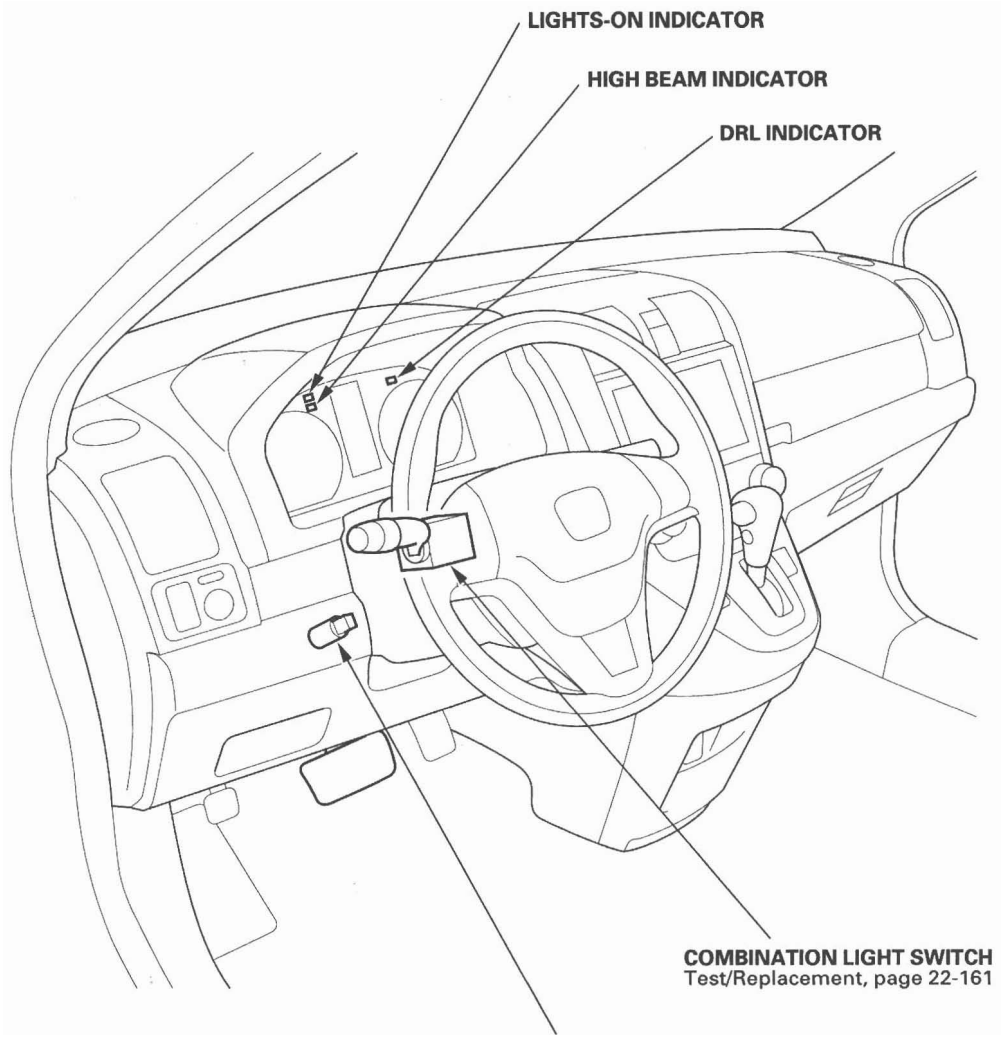
TAILLIGHT and BRAKE LIGHT
Replacement, page 22-165

REAR TURN SIGNAL LIGHT
Replacement, page 22-165

BACK-UP LIGHT
Replacement, page 22-165

(cont'd)

Component Location Index (cont'd)



System Description

Headlights System Description

The headlight system is composed of the MICU, the headlight and dimmer/flash-to-pass switches (inside the combination light switch), the left and right headlights, and the high beam indicator.
The MICU controls the headlights with a built-in low beam headlight relay and a built-in high beam control circuit based upon the position of the headlight and dimmer/flash-to-pass combination light switches.

Low Beams
When you move the headlight switch to the ON position and the dimmer/flash-to-pass switch to the low position, a ground signal is supplied to the No. 11 terminal of the under-dash fuse/relay box (MICU) connector S (20P). The MICU then energizes the low beam relay, supplying battery voltage to the low beam headlights, turning them on.

High Beams
When you move the headlight switch to the ON position and the dimmer/flash-to-pass switch to the high position, ground signals are supplied to the No. 11 and No. 16 terminals of the under-dash fuse/relay box (MICU) connector S (20P). The MICU then energizes the low beam headlight relay and activates the high beam control circuit, supplying battery voltage to the low and high beam headlights, turning them on.

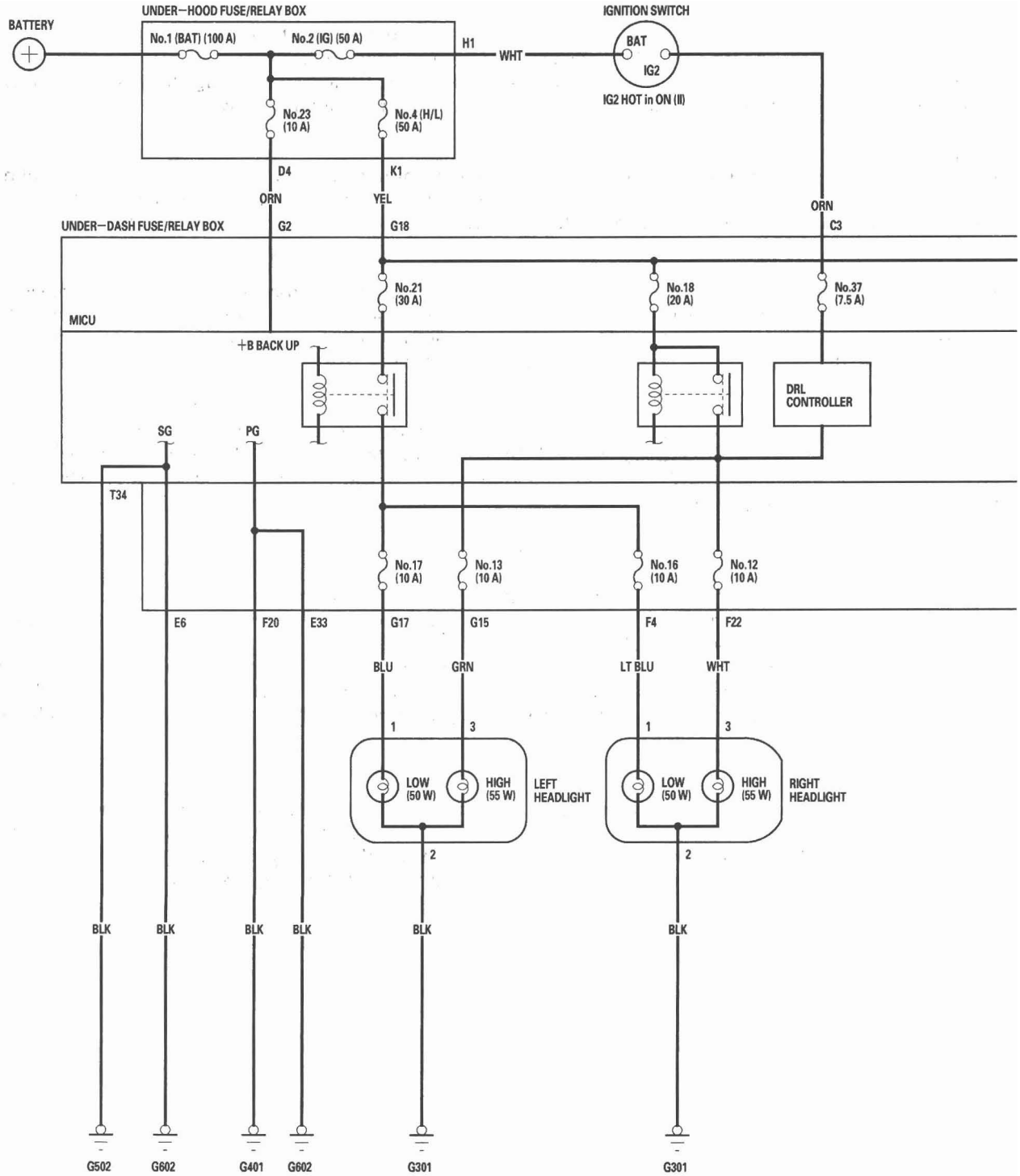
Flash-to-Pass
When you pull the dimmer/flash-to-pass switch to the passing position, a ground signal is supplied to No. 12 terminal of the under-dash fuse/relay box (MICU) connector S (20P). The MICU then energizes the low beam headlight relay and activates the high beam control circuit for as long as the switch is held, supplying battery voltage to the low and high beam headlights, turning them on.

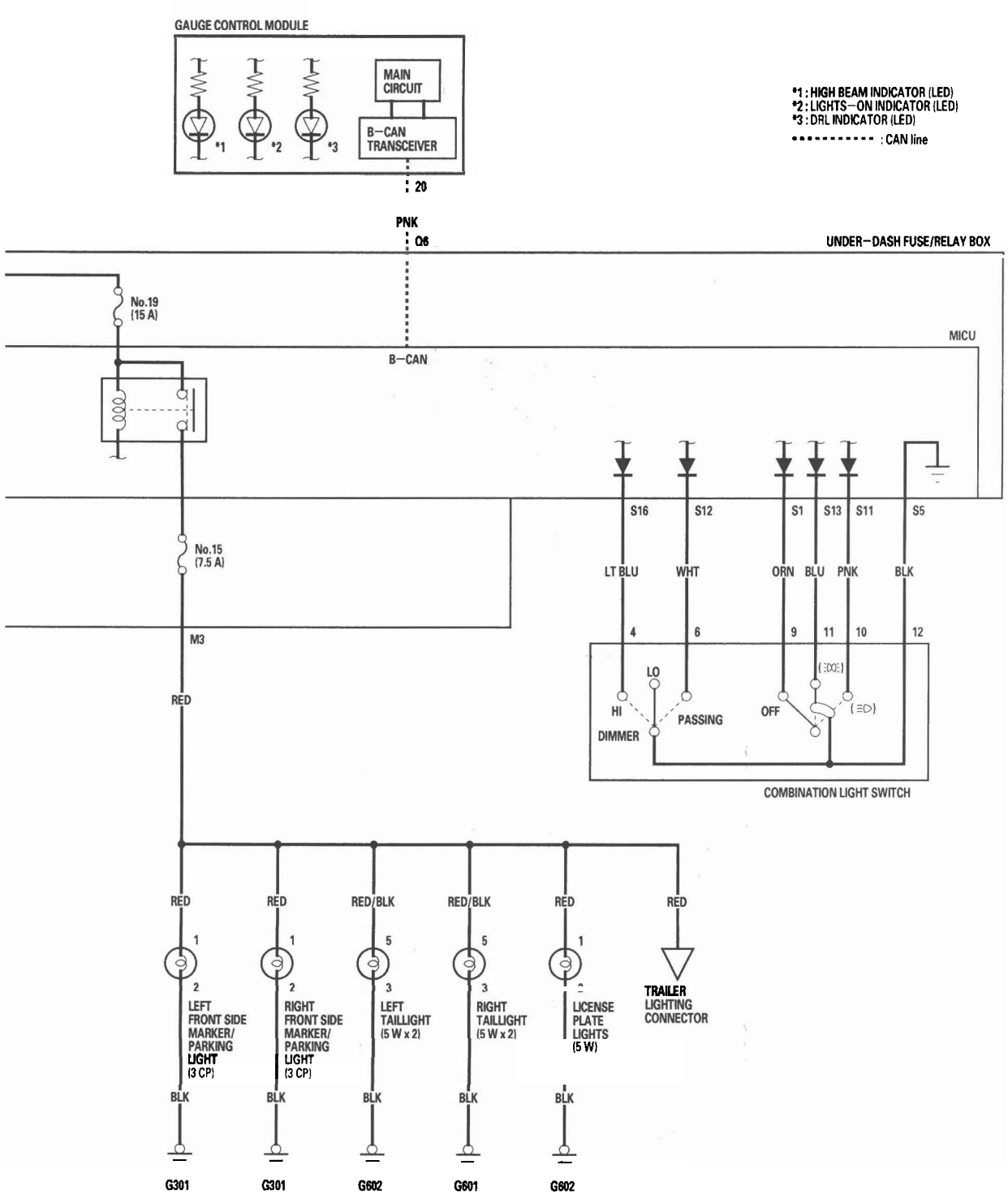
Daytime Running Lights System Description

The daytime running lights system includes the MICU, the left and right high beam headlights, and the DRL indicator. The daytime running lights operate with the ignition switch ON (II), the headlights off (headlight switch OFF or in the parking position), and the parking brake released.
When the daytime running lights are on, the MICU turns the high beam headlight control circuit on and off (duty cycle), which provides a reduced voltage (approximately 6—8 volts) to the high beam headlights (via the No. 12 and No. 13 fuses in the under-dash fuse/relay box); the high beam headlights come on with reduced brightness. The MICU also supplies battery voltage to the DRL indicator, turning it on.

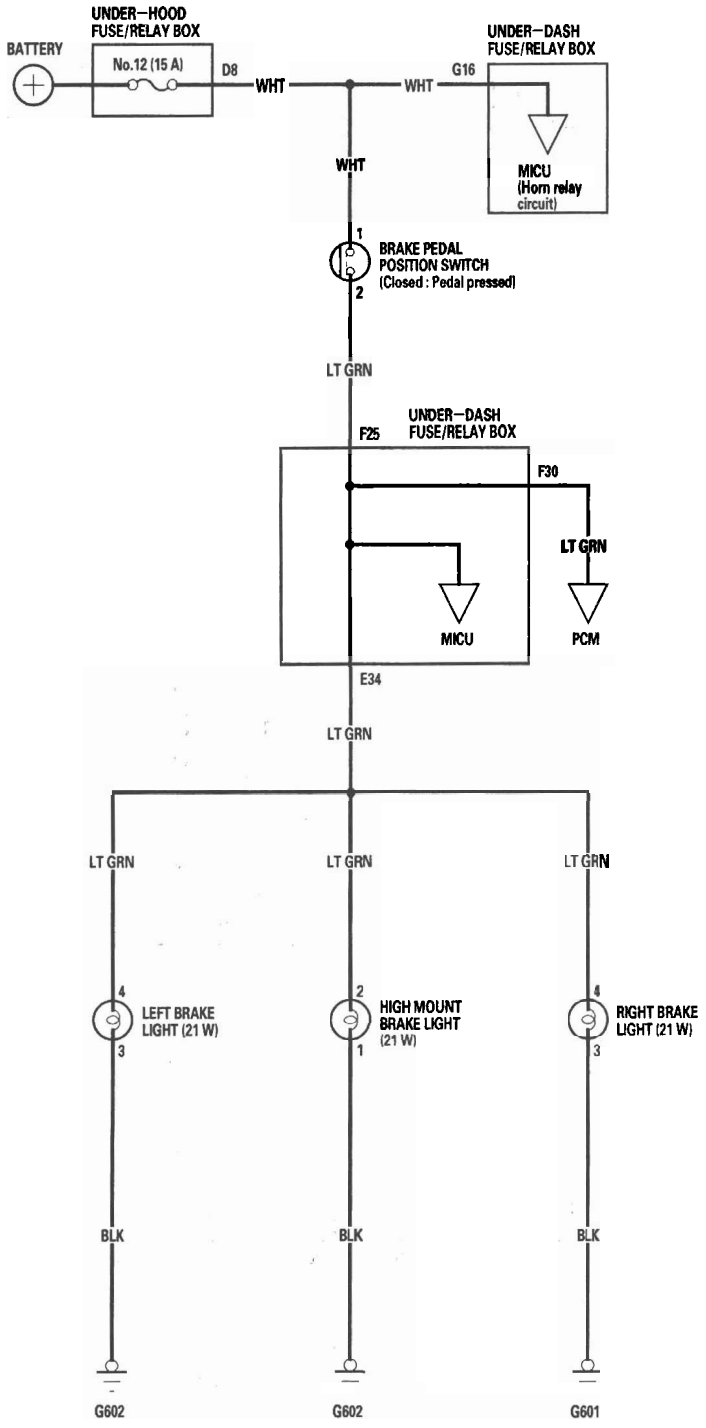
NOTE:
- The daytime running lights are disabled when the ignition switch is turned OFF. To keep the daytime running lights from coming on, apply the parking brake switch while the ignition switch is OFF. When you then turn the ignition switch back ON (II), the daytime running lights will not come on until the parking brake is released.
- The headlights revert to normal operation when you turn them on with the headlight switch.

Circuit Diagram

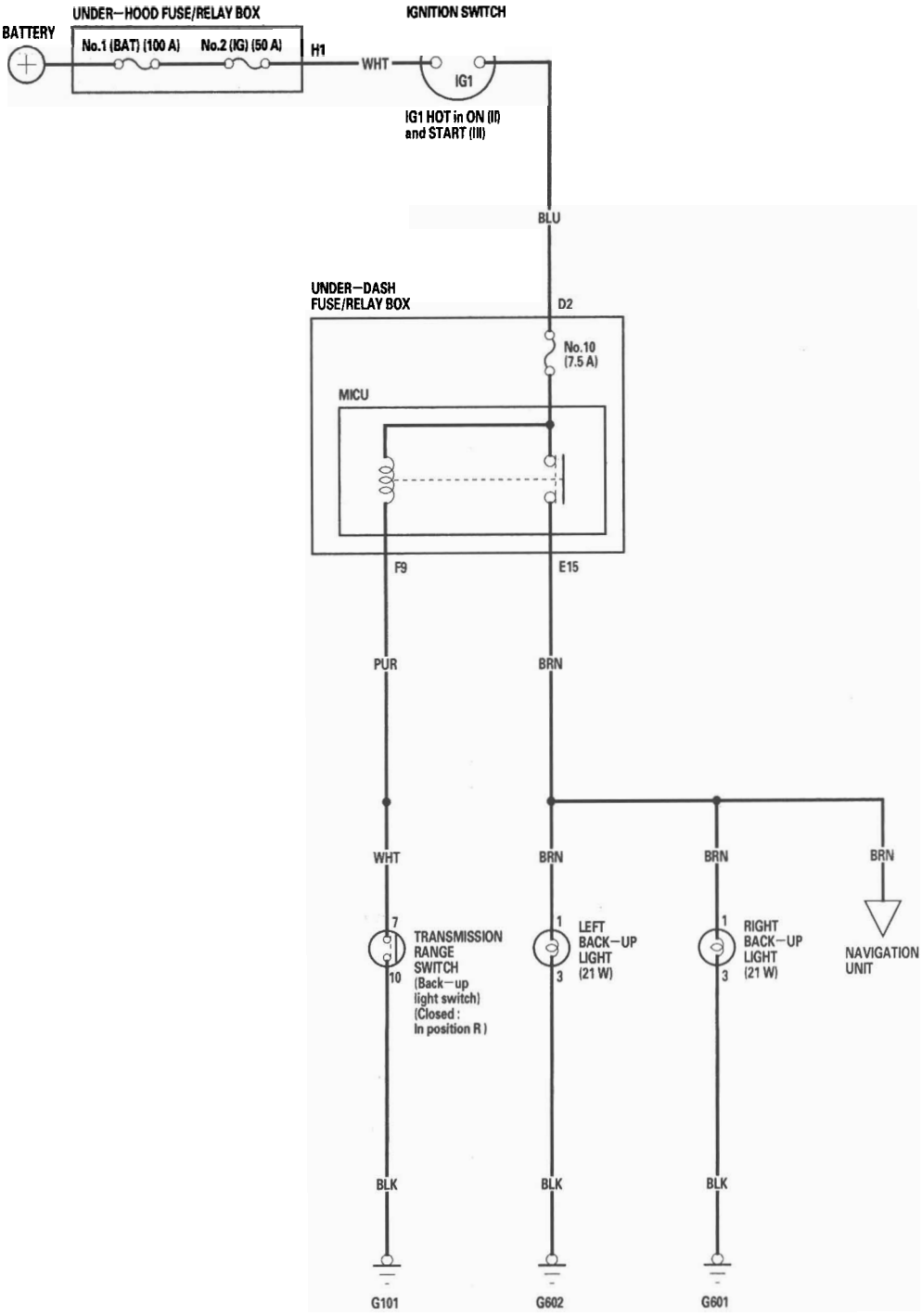



GAUGE CONTROL MODULE
MAIN CIRCUIT
B–CAN TRANSCEIVER
*1
*2
*3
20
*1 : HIGH BEAM INDICATOR (LED)
*2 : LIGHTS–ON INDICATOR (LED)
*3 : DRL INDICATOR (LED)
: CAN line
PNK
Q6
UNDER–DASH FUSE/RELAY BOX
No.19 (15 A)
MICU
B–CAN
No.15 (7.5 A)
M3
RED
S16
S12
S1
S13
S11
S5
LT BLU
WHT
ORN
BLU
PNK
BLK
4
6
9
11
10
12
LO
HI
PASSING
DIMMER
OFF
COMBINATION LIGHT SWITCH
RED
RED
RED/BLK
RED/BLK
RED
RED
1
2
LEFT FRONT SIDE MARKER/ PARKING LIGHT (3 CP)
RIGHT FRONT SIDE MARKER/ PARKING LIGHT (3 CP)
5
3
LEFT TAILLIGHT (5 W x 2)
RIGHT TAILLIGHT (5 W x 2)
LICENSE PLATE LIGHTS (5 W)
TRAILER LIGHTING CONNECTOR
BLK
G301
G301
G602
G601
G602

Circuit Diagram - Brake Lights



Circuit Diagram - Back-up Lights



DTC Troubleshooting

DTC B1078: Daytime Running Lights Signal Error (Canada)

DTC B1079: Daytime Running Lights Signal Error (USA)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Turn the ignition switch ON (II).
2. Pull the parking brake lever.
3. Clear the DTCs with the HDS.
4. Release the parking brake lever.
5. Turn the ignition switch OFF, and then back ON (II).
6. Check for DTCs with the HDS.

   Is DTC B1078 (Canada) or B1079 (USA) indicated?

   YES—Go to step 7.

   NO—Intermittent failure, the daytime running lights system is OK at this time. Check for loose or poor connections.■

7. Turn the headlight switch ON (high beam).

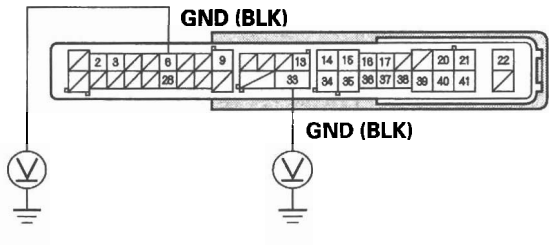
   Do both headlights (high beam) come on?

   YES—Go to step 8.

   NO—Go to step 10.

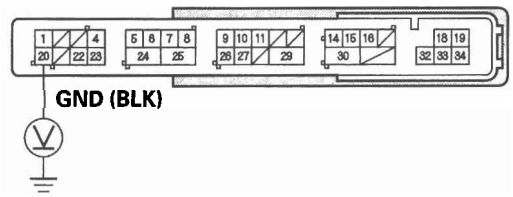
8. Turn the ignition switch OFF.
9. Measure voltage between the No. 6 and No. 33 terminals of the under-dash fuse/relay box connector E (42P) and body ground, and between the No. 20 terminal of the under-dash fuse/relay box connector F (34P) and body ground individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (42P)



Wire side of female terminals

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)



Wire side of female terminals

Is there less than 0.5 V?

YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

NO—Repair an open in the BLK wire or poor ground (G401 and G602).■

10. Turn the ignition and headlight switches OFF.

11. Check the No. 12, No. 13, and No. 18 fuses in the under-dash fuse/relay box.

    Are all of the fuses OK?

    YES—Go to step 12.

    NO—Replace the blown fuse and recheck. If the No. 18 (20 A) fuse is blown again, replace the under-dash fuse/relay box. If the No. 12 (10 A) or No. 13 (10 A) fuse is blown again, repair a short in the wire between the under-dash fuse/relay box and the appropriate headlight (high beam).■

12. Check the headlight bulbs.

    Are the headlight bulbs OK?

    YES—Go to step 13.

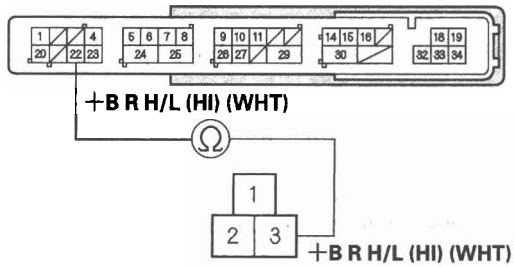
    NO—Replace the faulty bulb.■

13. Disconnect the under-dash fuse/relay box connectors F (34P) and G (21P).

14. Disconnect both of the headlight 3P connectors.

15. Check for continuity between the No. 3 terminal of the right headlight 3P connector and No. 22 terminal of the under-dash fuse/relay box connector F (34P).

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)
Wire side of female terminals



RIGHT HEADLIGHT 3P CONNECTOR
Wire side of female terminals

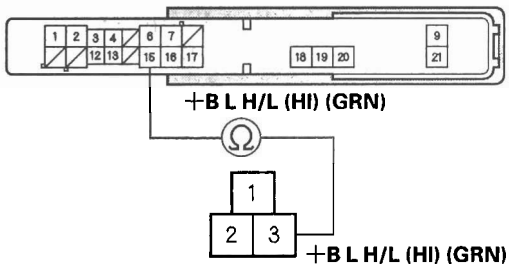
Is there continuity?

YES—Go to step 16.

NO—Repair an open in the wire between the right headlight (high beam) and the under-dash fuse/relay box.■

16. Check for continuity between the No. 3 terminal of the left headlight 3P connector and No. 15 terminal of the under-dash fuse/relay box connector G (21P).

UNDER-DASH FUSE/RELAY BOX CONNECTOR G (21P)
Wire side of female terminals



LEFT HEADLIGHT 3P CONNECTOR
Wire side of female terminals

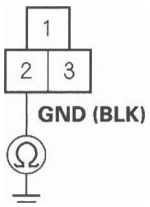
Is there continuity?

YES—Go to step 17.

NO—Repair an open in the wire between the left headlight (high beam) and the under-dash fuse/relay box.■

17. Check for continuity between the No. 2 terminal of each headlight 3P connector and body ground.

HEADLIGHT 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

NO—Repair an open in the BLK wire or poor ground (G301).■

DTC Troubleshooting (cont'd)

DTC B1275: Combination Light Switch OFF Position Circuit Malfunction

DTC B1276: Combination Light Switch Parking (SMALL) Position Circuit Malfunction

DTC B1278: Combination Light Switch ON Position Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Turn the combination light switch PARKING (SMALL) and ON (low beam) position, and then OFF position.
4. Clear the DTCs with the HDS.

   Is DTC B1275, B1276, or B1278 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■
5. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
6. Check each combination light switch position value with the DATA LIST menu.

   When the combination light switch is turned OFF

Data List	Value
Headlight Switch (OFF)	ON
Headlight Switch (PARKING)	OFF
Headlight Switch (HEADLIGHT)	OFF

   When the combination light switch is turned to PARKING (SMALL)

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (HEADLIGHT)	OFF

   When the combination light switch is turned ON (HEADLIGHT)

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (HEADLIGHT)	ON

   Are all data list values correct?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).

   NO—Go to step 7.
7. Turn the ignition switch OFF.
8. Disconnect the combination light switch 12P connector.
9. Turn the ignition switch ON (II).
10. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
11. Check each combination light switch position value with the DATA LIST menu.

    When the combination light switch is turned OFF

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	OFF
Headlight Switch (HEADLIGHT)	OFF

    Are all data list values indicated OFF?

    YES—Go to step 15.

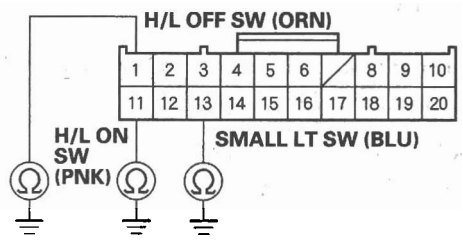
    NO—Go to step 12.

12. Turn the ignition switch OFF.

13. Disconnect the under-dash fuse/relay box connector S (20P).

14. Check for continuity between the body ground and the under-dash fuse/relay box connector S (20P) No. 1, No. 11, and No. 13 terminals individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

15. Turn the ignition switch OFF.

16. Do the combination light switch test (see page 22-161).

Is the combination light switch OK?

YES—Go to step 17.

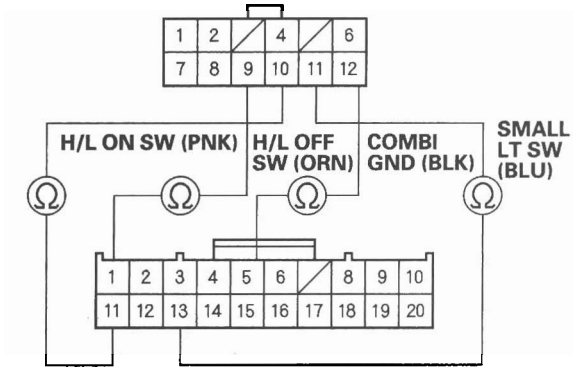
NO—Replace the combination light switch. ■

17. Disconnect the under-dash fuse/relay box connectors S (20P).

18. Check for continuity between the under-dash fuse/relay box connector S (20P) terminals and the combination light switch 12P connector terminals as shown:

Under-dash fuse/ relay box connector S (20P)	Combination light switch 12P connector
1	9
5	12
11	10
13	11

COMBINATION LIGHT SWITCH 12P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)
Wire side of female terminals

Is there continuity?

YES—Go to step 19.

NO—Repair an open in the wire. ■

19. Check for continuity between the under-dash fuse/relay box connector S (20P) terminals as shown:

From terminal	To terminal
1	11, 13
11	13

Is there continuity?

YES—Repair a short between the wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

DTC Troubleshooting (cont'd)

DTC B1279: Headlight Switch DIMMER Position Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Turn the combination light (headlight) switch ON.
4. Change the dimmer switch from low beam to high beam.
5. Turn the combination light switch OFF, and then PASSING position.
6. Check for DTCs with the HDS.

   Is DTC B1279 indicated?

   YES—Go to step 7.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections.■

7. Select LIGHTING from the BODY ELECTRICAL system select menu, then enter the DATA LIST.
8. Check each combination light switch position value with the DATA LIST menu.

   When the passing switch is operated

Data List	Value
Headlight Switch (PASSING)	ON
Headlight Switch (High beam)	OFF

   When the headlight switch is turned ON, and dimmer switch changed from low beam to high beam

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	ON
Headlight Switch (HEADLIGHT)	OFF

   Are all data list values correct?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

   NO—Go to step 9.

9. Turn the ignition switch OFF.
10. Disconnect the combination light switch 12P connector.
11. Turn the ignition switch ON (II).
12. Select the BODY ELECTRICAL system select menu, then enter the LIGHTING SYSTEM.
13. Check each combination light switch position value with the DATA LIST menu.

    When the combination light switch is turned OFF

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	OFF
Headlight Switch (HEADLIGHT)	OFF

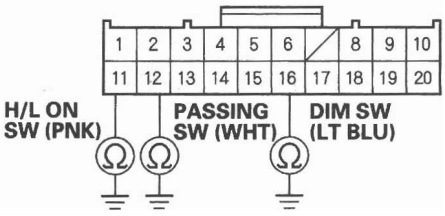
    Are all data list values indicated OFF?

    YES—Go to step 17.

    NO—Go to step 14.

14. Turn the ignition switch OFF.
15. Disconnect the under-dash fuse/relay box connector S (20P).
16. Check for continuity between the body ground and the under-dash fuse/relay box connector S (20P) No. 11, No. 12, and No. 16 terminals individually.

    UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire.■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

17. Turn the ignition switch OFF.

18. Do the combination light switch test (see page 22-161).

    Is the combination light switch OK?

    YES—Go to step 19.

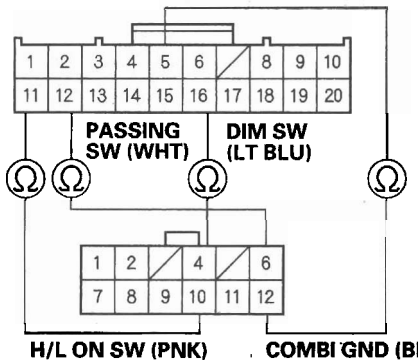
    NO—Replace the combination light switch. ■

19. Disconnect the under-dash fuse/relay box connectors S (20P).

20. Check for continuity between the under-dash fuse/relay box connector S (20P) terminals and the combination light switch 12P connector terminals as shown:

Under-dash fuse/ relay box connector S (20P)	Combination light switch 12P connector
5	12
11	10
12	6
16	4

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)
Wire side of female terminals



COMBINATION LIGHT SWITCH 12P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Go to step 21.

NO—Repair an open in the wire. ■

21. Check for continuity between the under-dash fuse/relay box connector S (20P) terminals as shown:

From terminal	To terminal
11	12, 14
12	14

Is there continuity?

YES—Repair a short between the wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

DTC Troubleshooting (cont'd)

DTC B1280: Turn Signal Switch Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Operate the turn signal switch in left and right positions.
4. Check for DTCs with the HDS.

   Is DTC B1280 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections.■

5. Select LIGHTING from the BODY ELECTRICAL system select menu, then enter the DATA LIST.
6. Check each turn signal switch position value with the DATA LIST menu.

   When the turn signal switch is in left position

Data List	Value
Turn Signal Switch (LEFT)	ON
Turn Signal Switch (RIGHT)	OFF

   When the turn signal switch is in right position

Data List	Value
Turn Signal Switch (LEFT)	OFF
Turn Signal Switch (RIGHT)	ON

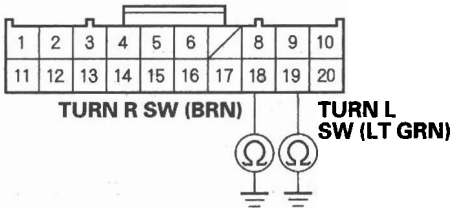
   Are all data list values correct?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

   NO—Go to step 7

7. Turn the ignition switch OFF.
8. Disconnect the combination light switch 12P connector.
9. Disconnect the under-dash fuse/relay box connector S (20P).
10. Check for continuity between the body ground and the under-dash fuse/relay box connector S (20P) No. 18, and No. 19 terminals.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

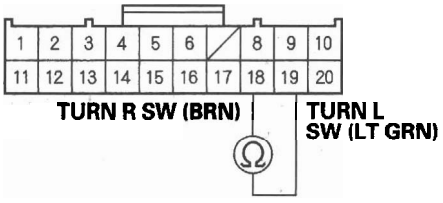
Is there continuity?

YES—Repair a short to ground in the wire.■

NO—Go to step 11.

11. Check for continuity between the under-dash fuse/relay box connector S (20P) No. 18 and No. 19 terminals.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short between the wires.■

NO—Replace the combination light switch.■

MICU Input Test

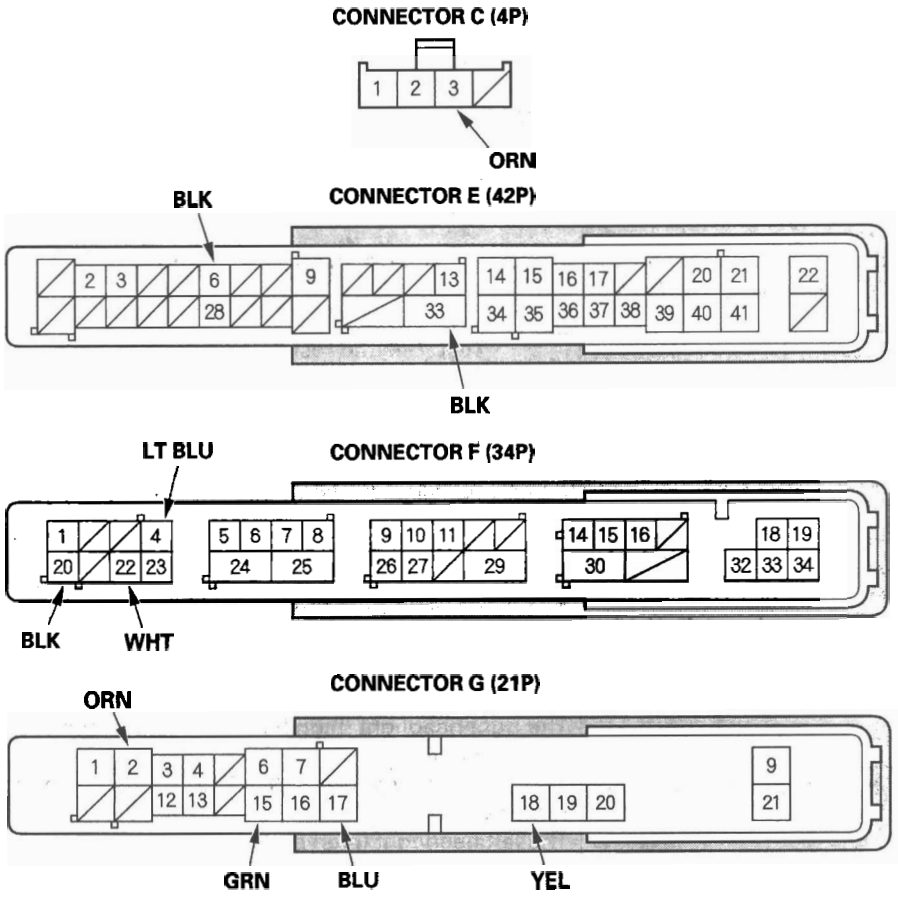
NOTE:
- The MICU turns on the headlights (high beams) in a dim mode for the daytime running lights under the following conditions:
  - The ignition switch is ON (II)
  - The headlight switch is OFF
  - The parking brake is released (parking brake switch OFF)
- If the vehicle is equipped with an optional remote control engine start system (Canada), the daytime running lights will not function when started with the remote start.

1. Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

2. Check the No. 12 (10 A), No. 13 (10 A), No. 15 (7.5 A), No. 16 (10 A), No. 17 (10 A), No. 18 (20 A), No. 19 (15 A), No. 21 (30 A), and No. 37 (7.5 A) fuses in the under-dash fuse/relay box. If any fuse is blown, replace it and go to step 3.

3. Disconnect the under-dash fuse/relay box connectors E, F, G, M, S, and T.

   NOTE: All connector views are wire side of female terminals.



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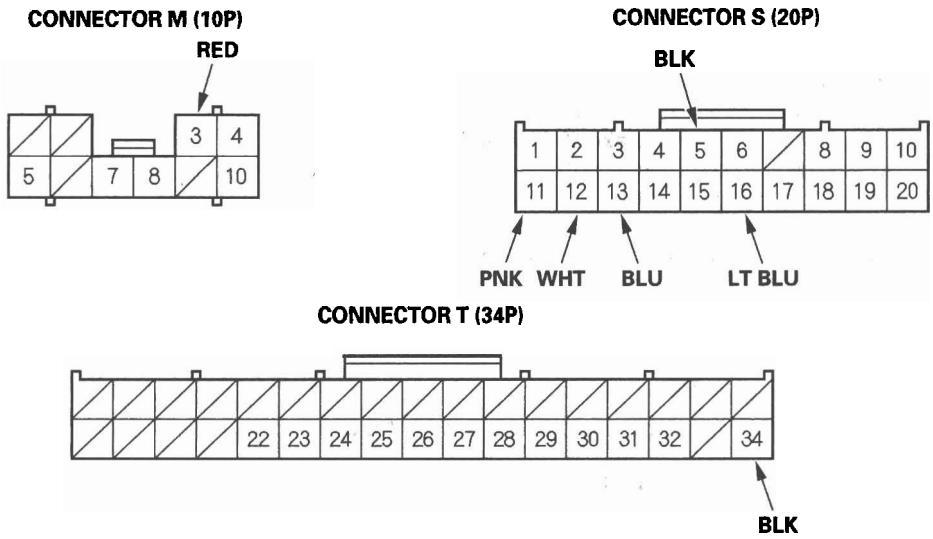
MICU Input Test (cont'd)



4. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.

5. With the connectors still disconnected, make these input tests at the appropriate connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
M3	RED	Under all conditions	Connect battery power to the M3 terminal: The front parking lights, taillights, and license plate lights should come on.	• Poor ground (G301, G601, G602) • Blown bulb • An open in the wire
F4	LT BLU	Under all conditions	Connect battery power to the F4 terminal: The right headlight (low beam) should come on.	• Poor ground (G301) • Blown bulb • An open in the wire
F22	WHT	Under all conditions	Connect battery power to the F22 terminal: The right headlight (high beam) should come on.	• Poor ground (G301) • Blown bulb • An open in the wire
G15	GRN	Under all conditions	Connect battery power to the G15 terminal: The left headlight (high beam) should come on.	• Poor ground (G301) Blown bulb • An open in the wire
G17	BLU	Under all conditions	Connect battery power to the G17 terminal: The left headlight (low beam) should come on.	• Poor ground (G301) • Blown bulb • An open in the wire

6. Reconnect the connectors, and do these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the MICU is faulty; replace the under-dash fuse/relay box (see page 22-64).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
F20	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
G2	ORN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
G18	YEL	Under all conditions	Check for voltage to ground: There should be battery voltage.	Blown No. 4 (H/L) (50 A) fuse in the under-hood fuse/relay box • An open in the wire
C3	ORN	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 2 (50 A) fuse in the under-hood fuse/relay box • Faulty ignition switch • An open in the wire

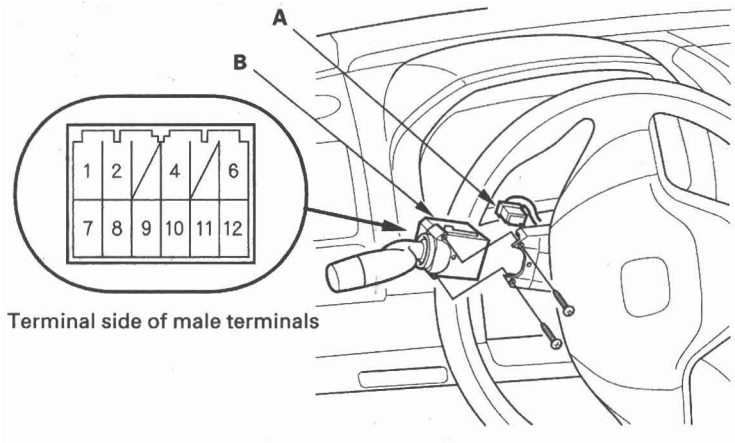
(cont'd)

MICU Input Test (cont'd)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
S1 · S5	ORN · BLK	Combination light switch OFF	Check for voltage between S1 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch in any other position than OFF	Check for voltage between S1 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S11 · S5	PNK · BLK	Combination light switch (Headlight position) ON	Check for voltage between S11 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch OFF	Check for voltage between S11 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S12 · S5	WHT · BLK	Combination light switch lever pulled (Passing)	Check for voltage between S12 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch lever released from passing position	Check for voltage between S12 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S13 · S5	BLU · BLK	Combination light switch (SMALL position) ON	Check for voltage between S13 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch OFF	Check for voltage between S13 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S16 · S5	LT BLU · BLK	Combination light switch (Dimmer) in high beam position	Check for voltage between S16 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch (Dimmer) in low beam position	Check for voltage between S16 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire

Combination Light Switch Test/Replacement

1. Remove the dashboard lower cover (see page 20-101).
2. Remove the steering column covers (see page 17-25).
3. Disconnect the 12P connector (A) from the combination light switch (B).



4. Remove the two screws, then slide out the combination light switch.
5. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, check for continuity between the terminals in each switch position according to the tables.

Light switch

Position \ Terminal		4	6	9	10	11	12
Headlight switch	OFF			○			○
	≡D					○	○
	≡D LOW				○	○	○
	≡D HIGH	○			○	○	○
Passing switch	OFF						
	ON		○				○

Turn signal switch

Position \ Terminal	1	2	12
LEFT		○	○
Neutral			
RIGHT	○		○

6. If the continuity is not as specified, replace the switch.

Headlight Adjustment

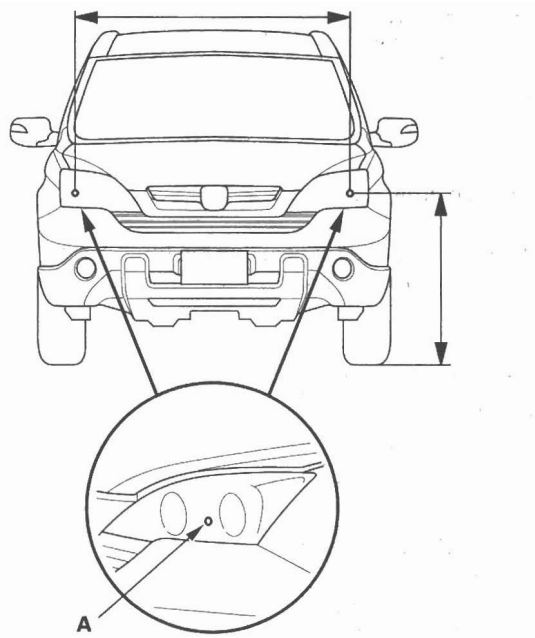
⚠CAUTION

Headlights become very hot during use; do not touch them or any attaching hardware immediately after they have been turned off.

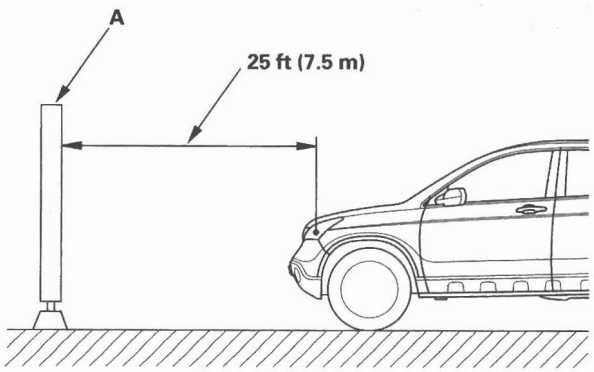
Before adjusting the headlights:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat.

1. Clean the outer lens so that you can see the center (A) of the headlights.



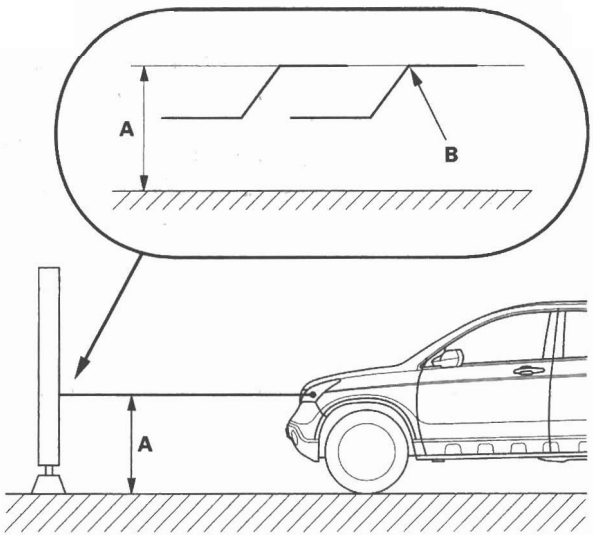
2. Park the vehicle in front of a wall or a screen (A).



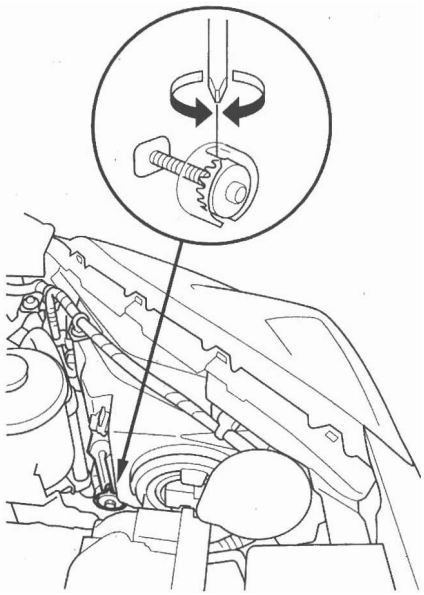
3. Turn the low beams on.

4. Determine if the headlights are aimed properly.

   Vertical adjustment:
   Measure the height of the headlights (A).
   Adjust the cut line (B) to the light's height.

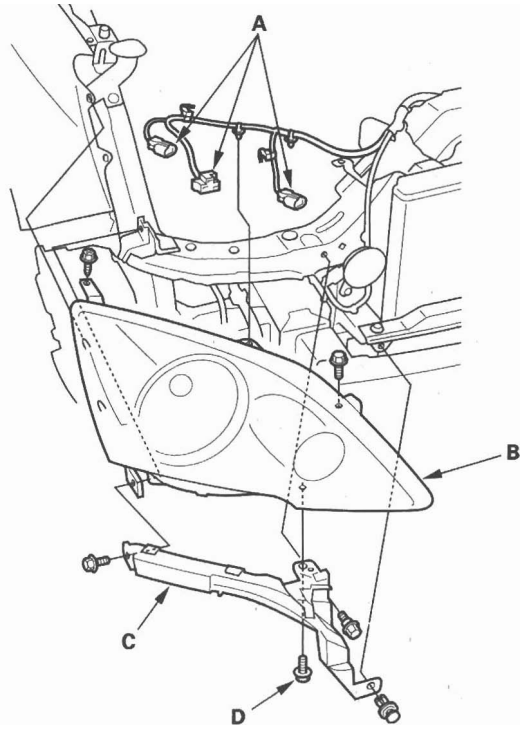


5. If necessary, open the hood and adjust the headlights by turning the vertical adjuster.



Headlight Replacement

1. Remove the front bumper (see page 20-149) and the front fender trim (see page 20-165).
2. Remove the connectors (A) from the headlight assembly (B).



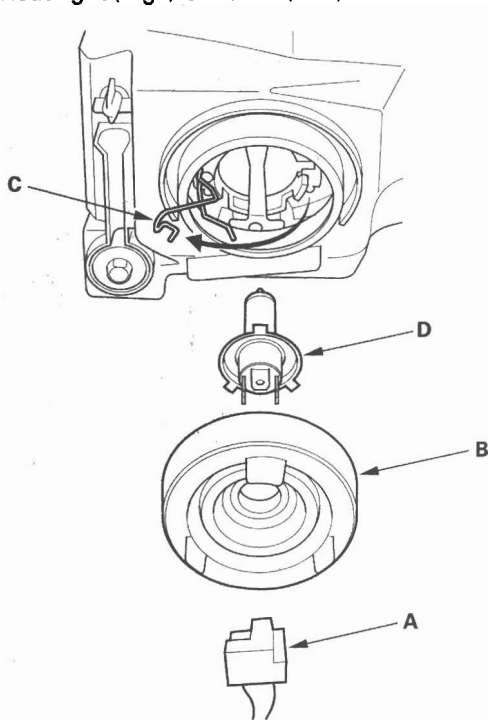
3. Remove the harness clips, screw, clip, and three bolts, then remove the headlight assembly with the corner upper beam (C).
4. Remove the bolt (D) and the corner upper beam from the headlight.
5. Install the headlight in the reverse order of removal.
6. After replacement, adjust the headlight.

Bulb Replacement

Headlight

1. Disconnect the 3P connector (A), then remove the rubber cap (B) from the headlight.

   Headlight (high/low beam): 55/50 W



2. Pull the retaining spring (C) away from the bulb, then remove the bulb (D).
3. Install a new bulb in the reverse order of removal.

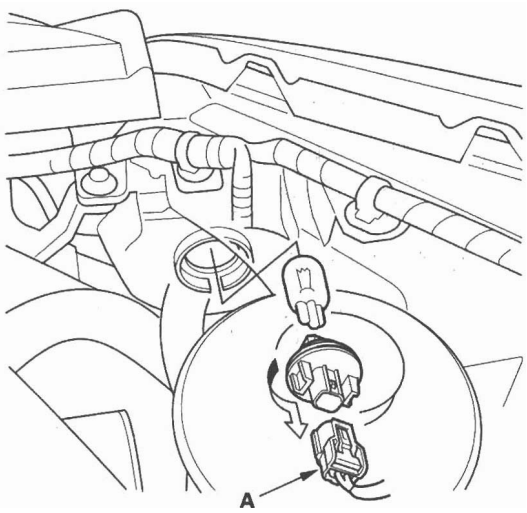
(cont'd)

Bulb Replacement (cont'd)

Front Side Marker/Parking Lights

1. Disconnect the 2P connector (A) from the front side marker/parking light.

Front Side Marker/Parking Lights:3 CP

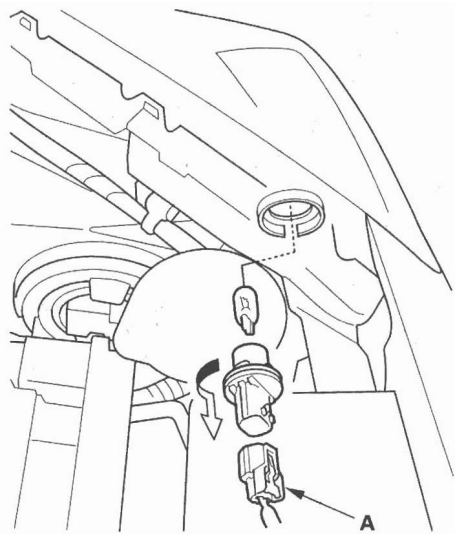


2. Turn the bulb socket 45° counterclockwise to remove the bulb.
3. Install a new bulb in the reverse order of removal.

Front Turn Signal Lights

1. Disconnect the 2P connector (A) from the front turn signal light.

Front Turn Signal Light: 21 W

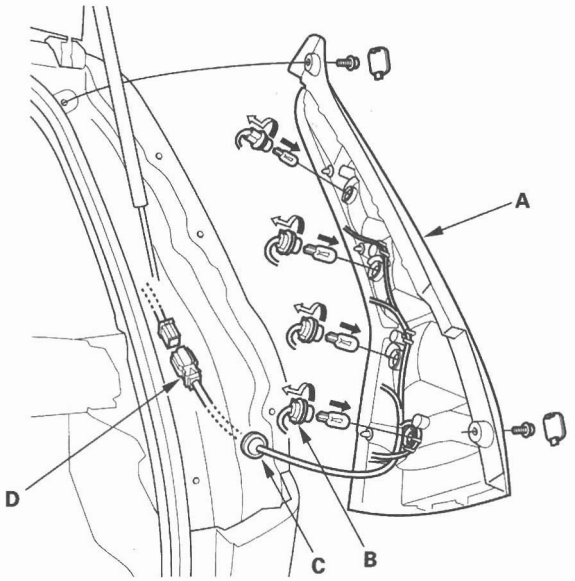


2. Turn the bulb socket 45° counterclockwise to remove the bulb.
3. Install a new bulb in the reverse order of removal.

Taillight Replacement

1. Open the tailgate.
2. Remove the caps and mounting bolts from the taillight (A), then carefully pull off the taillight.

Taillight:	**5 W**
Brake Light/Taillight:	**21/5 W**
Rear Turn Signal Light:	**21 W**
Back-up Light:	**21 W**

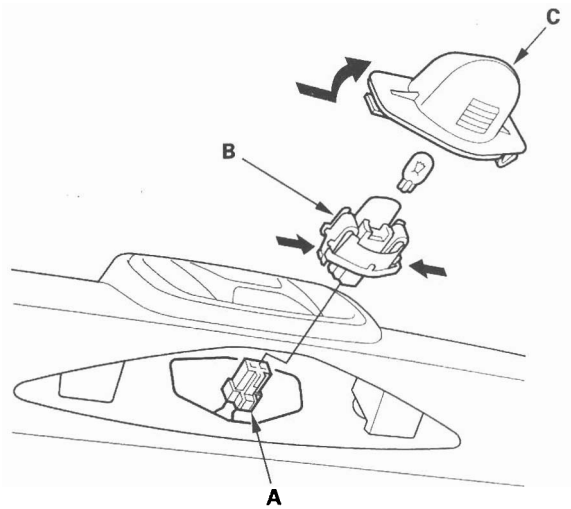


3. Turn the bulb sockets (B) 45° counterclockwise to remove them from the housing.
4. If replacement of the taillight harness is necessary, remove the grommet (C), and disconnect the 6P connector (D) from the side wire harness.
5. Install the taillight in the reverse order of removal.

License Plate Light Replacement

1. Open the tailgate and remove the tailgate lower trim (see page 20-179).
2. Disconnect the 2P connector (A) from the license plate light.

License Plate Light: 5 W

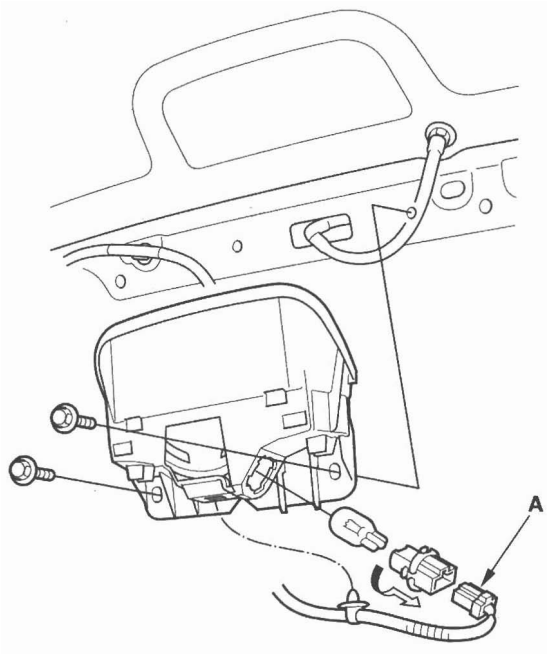


3. Release the bulb socket (B) from the lens (C) by pressing on the tabs.
4. Remove the lens from the tailgate by pressing on the tabs.
5. Install the light in the reverse order of removal.

High Mount Brake Light Replacement

1. Open the tailgate, and remove the tailgate upper trim panel (see page 20-78).
2. Disconnect the 2P connector (A) from the high mount brake light.

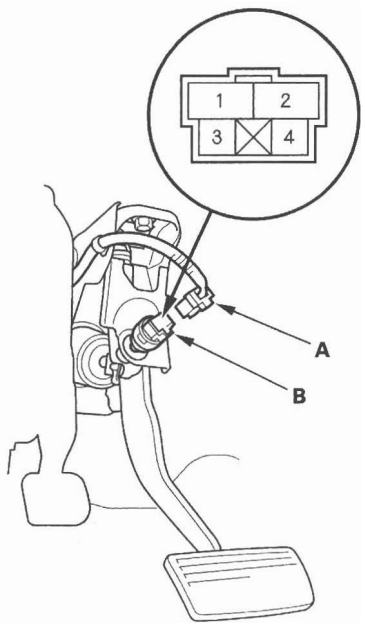
High Mount Brake Light: 21 W



3. Turn the bulb socket 45° counterclockwise to remove the bulb.
4. Remove the two bolts, then remove the housing.
5. Install the light in the reverse order of removal.

Brake Pedal Position Switch Test

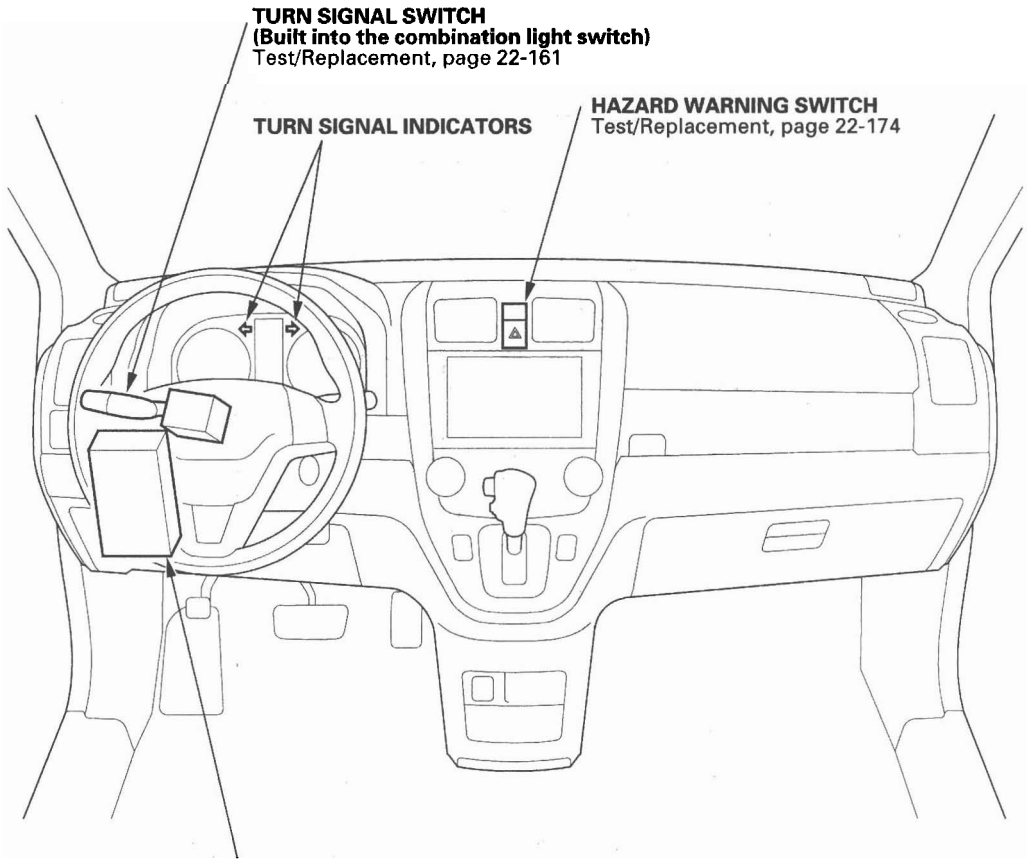
1. Disconnect the 4P connector (A) from the brake pedal position switch (B).



2. Check for continuity between the No. 1 and No. 2 terminals.
   - There should be continuity when the brake pedal is pressed.
   - There should be no continuity when the brake pedal is released.
3. Check for continuity between the No. 3 and No. 4 terminals.
   - There should be no continuity when the brake pedal is pressed.
   - There should be continuity when the brake pedal is released.
4. If necessary, adjust or replace the switch, or adjust the pedal height (see page 19-6).

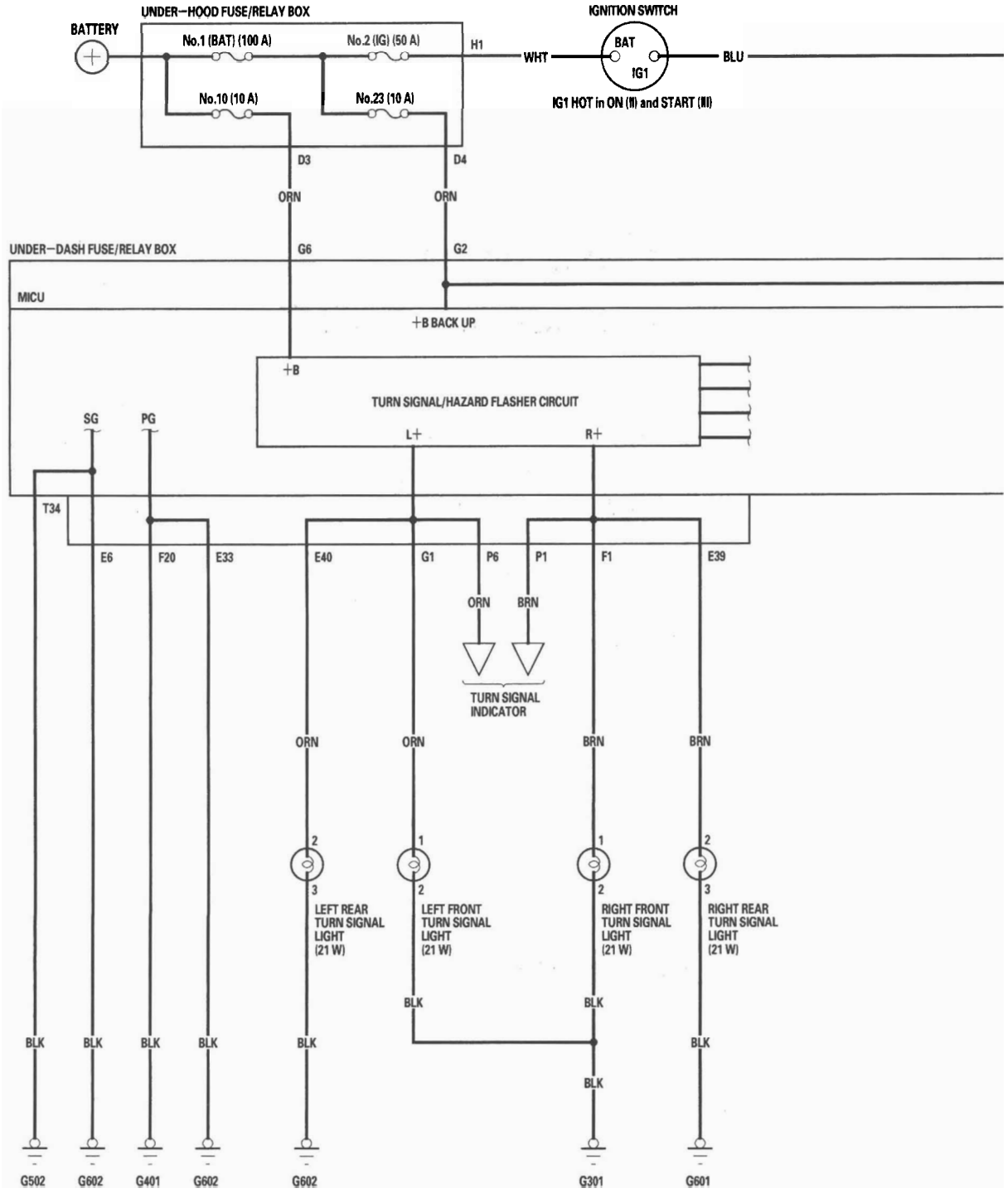
Turn Signal/Hazard Flasher

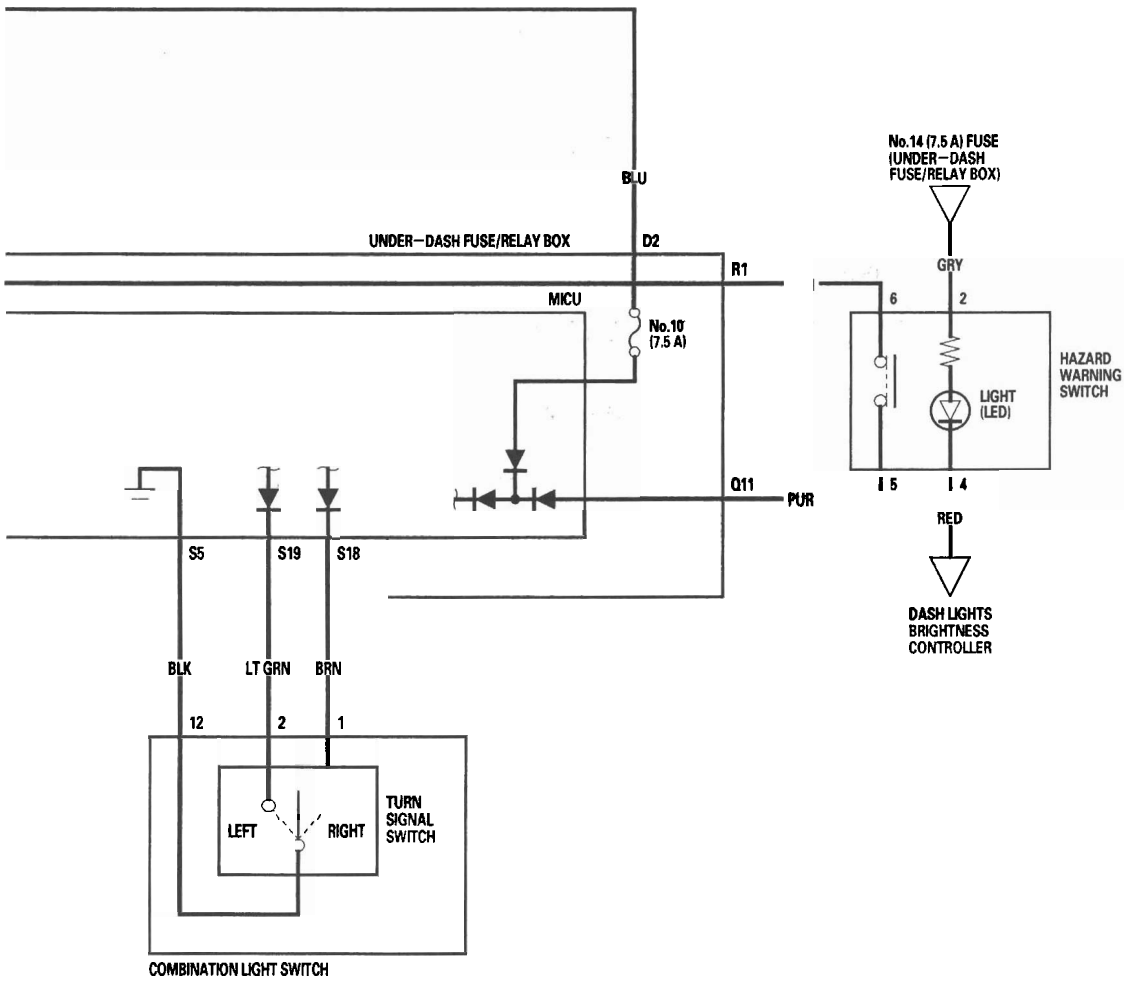
Component Location Index



Turn Signal/Hazard Flasher

Circuit Diagram



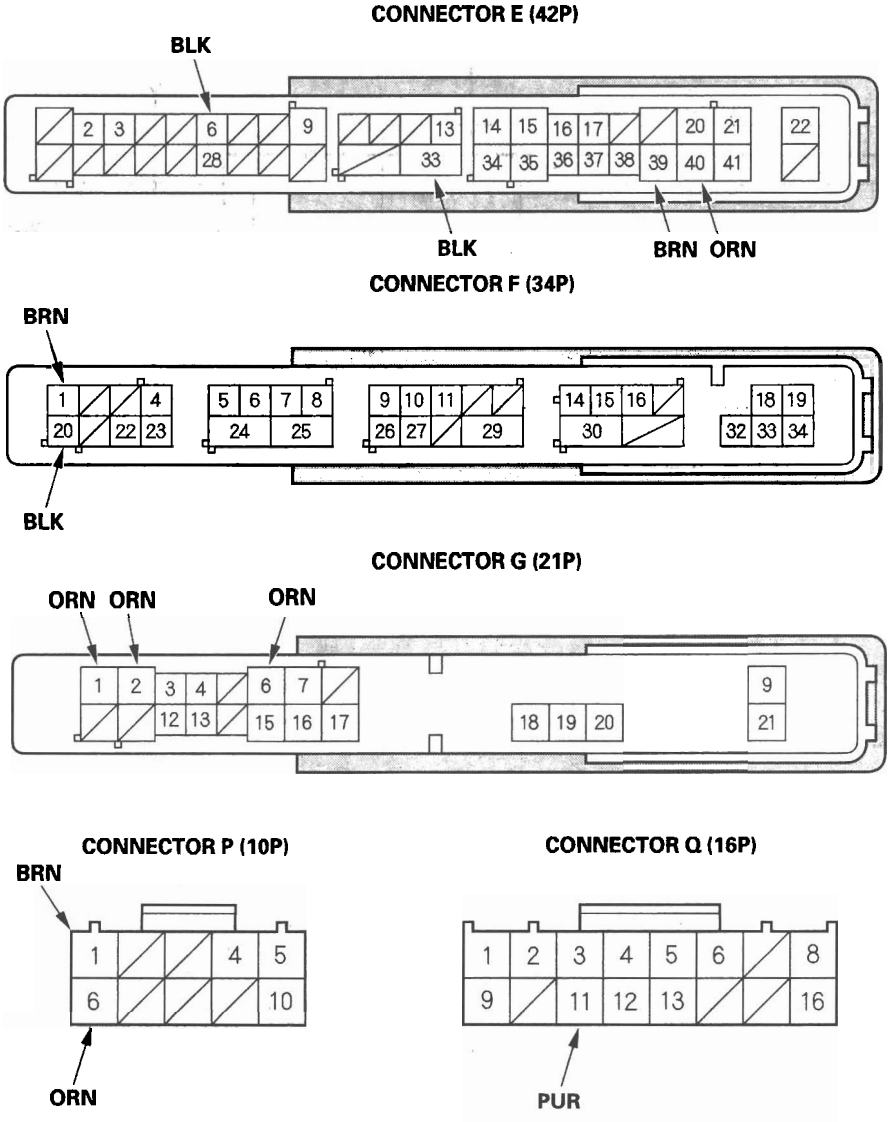

No.14 (7.5 A) FUSE
(UNDER–DASH
FUSE/RELAY BOX)
BLU
UNDER–DASH FUSE/RELAY BOX
D2
R1
MICU
No.10
(7.5 A)
GRY
6
2
HAZARD
WARNING
SWITCH
LIGHT
(LED)
Q11
PUR
5
4
RED
DASH LIGHTS
BRIGHTNESS
CONTROLLER
S5
S19
S18
BLK
LT GRN
BRN
12
2
1
TURN
SIGNAL
SWITCH
LEFT
RIGHT
COMBINATION LIGHT SWITCH

MICU Input Test

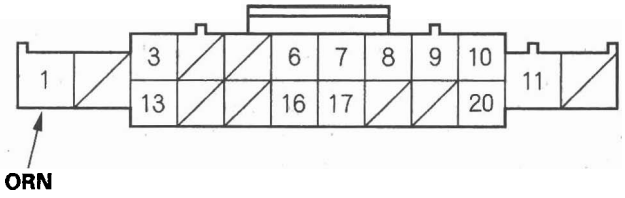
NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Check the No. 10 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is blown, replace it and go to step 2.
2. Disconnect the under-dash fuse/relay box connectors E, F, G, P, Q, R, S, and T.

   NOTE: All connector views are wire side of female terminals.



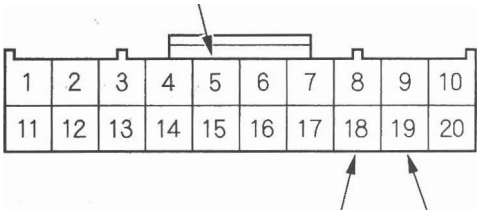
CONNECTOR R (20P)



ORN

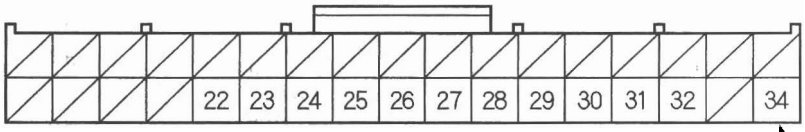
CONNECTOR S (20P)

BLK



BRN LT GRN

CONNECTOR T (34P)



BLK

3. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

(cont'd)

MICU Input Test (cont'd)

4. With the connectors still disconnected, make these input tests at the appropriate connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
G2	ORN	Under all conditions	Check for voltage between G2 terminal and body ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
G6	ORN	Under all conditions	Check for voltage between G6 terminal and body ground: There should be battery voltage.	• Blown No. 10 (10 A) fuse in the under-hood fuse/relay box An open in the wire
E39	BRN	Under all conditions	Connect G2 and E39 terminals with a jumper wire: The right rear turn signal light should come on.	Poor ground (G601) • Blown bulb • An open in the wire
E40	ORN	Under all conditions	Connect G2 and E40 terminals with a jumper wire: The left rear turn signal light should come on.	• Poor ground (G602) • Blown bulb • An open in the wire
F1	BRN	Under all conditions	Connect G2 and F1 terminals with a jumper wire: The right front turn signal light should come on.	• Poor ground (G301) • Blown bulb • An open in the wire
G1	ORN	Under all conditions	Connect G2 and G1 terminals with a jumper wire: The left front turn signal light should come on.	• Poor ground (G301) • Blown bulb • An open in the wire
P1	BRN	Under all conditions	Connect G2 and P1 terminals with a jumper wire: The right turn signal indicator should come on.	• Faulty gauge control module • Faulty indicator • An open in the wire
P6	ORN	Under all conditions	Connect G2 and P6 terminals with a jumper wire: The left turn signal indicator should come on.	• Faulty gauge control module • Faulty indicator • An open in the wire

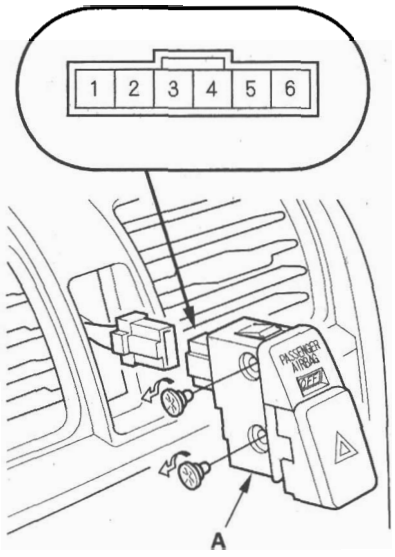
5. Reconnect the connectors to the under-dash fuse/relay box, and make these input tests at the connectors.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see page 22-64).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
F20	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
R1	ORN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Faulty under-dash fuse/relay box • A short to ground in the wire
Q11	PUR	Hazard warning switch pressed	Check for voltage to ground: There should be battery voltage.	• Faulty hazard warning switch • An open in the wire
S18 · S5	BRN · BLK	Turn signal switch in right position	Check for voltage between S18 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Turn signal switch in left or neutral position	Check for voltage between S18 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S19 · S5	LT GRN · BLK	Turn signal switch in left position	Check for voltage between S19 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Turn signal switch in right or neutral position	Check for voltage between S19 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire

Hazard Warning Switch Test/Replacement

1. Remove the center vent (see page 20-93).
2. Remove the hazard warning switch (A).



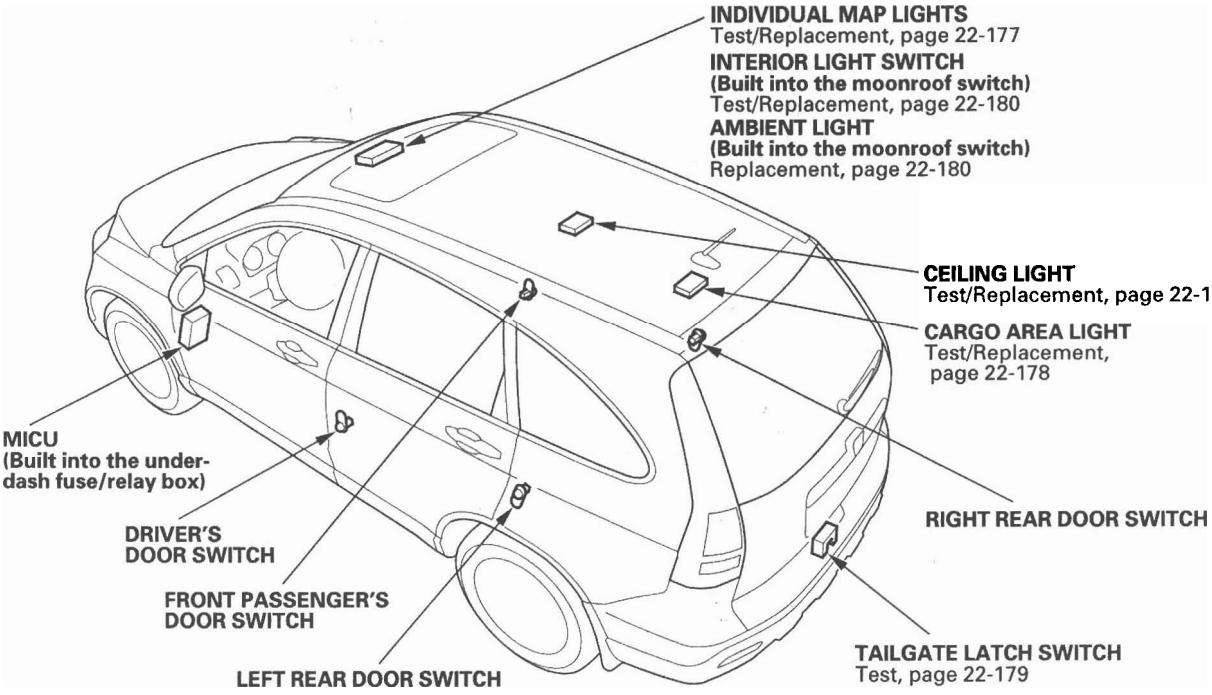
3. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	5	6	3		4
OFF			○	⌀	○
ON	○	○	○	⌀	○

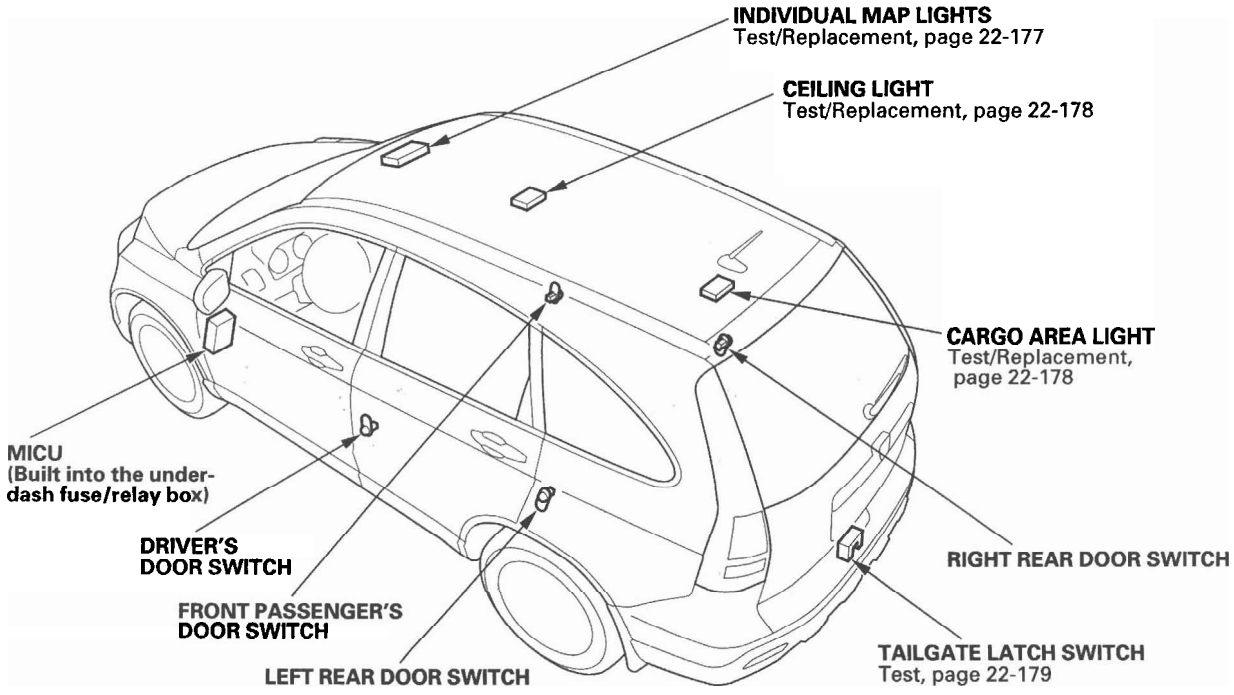
4. If the continuity is not as specified, replace the hazard warning switch.

Component Location Index

With moonroof

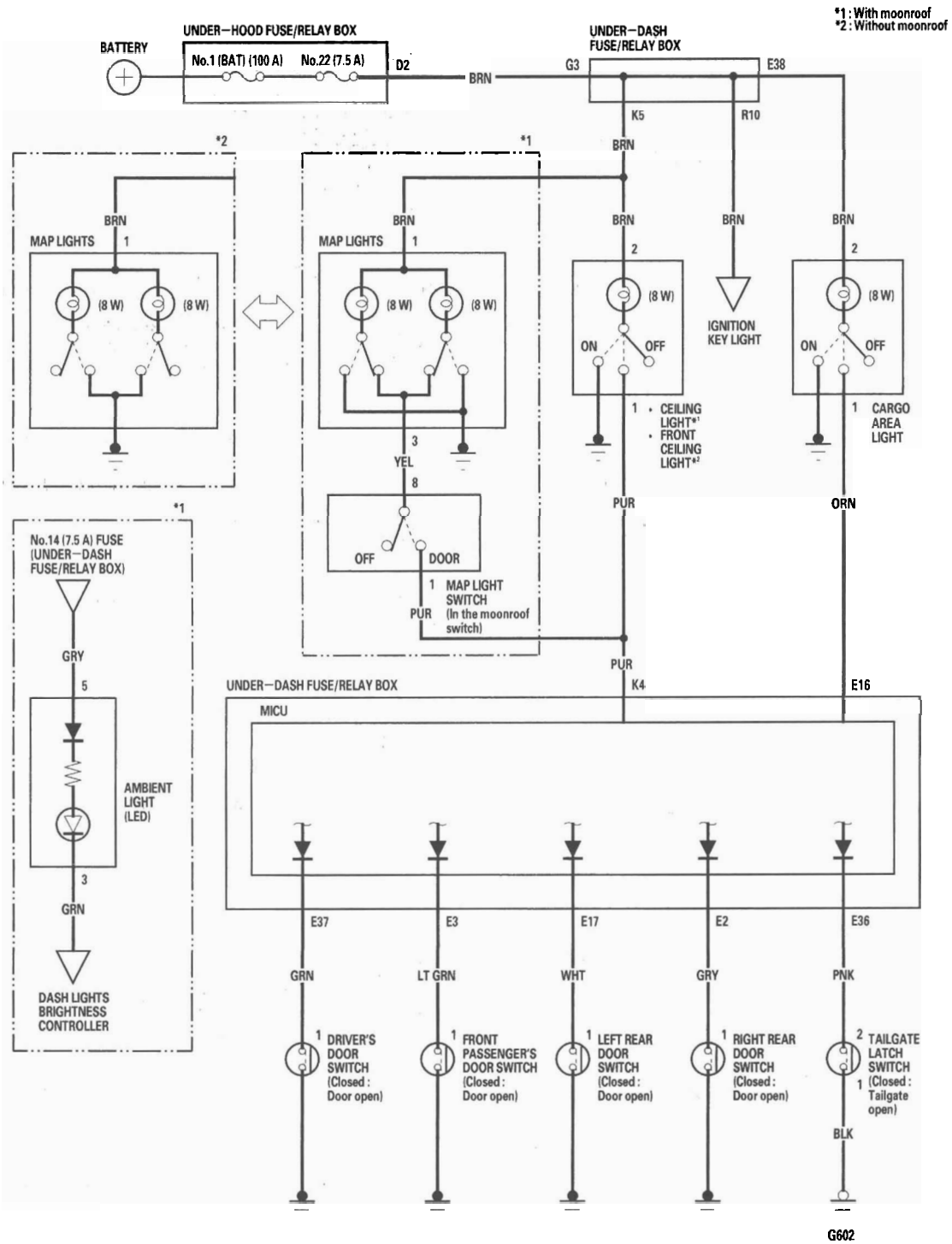


Without moonroof



Interior Lights

Circuit Diagram

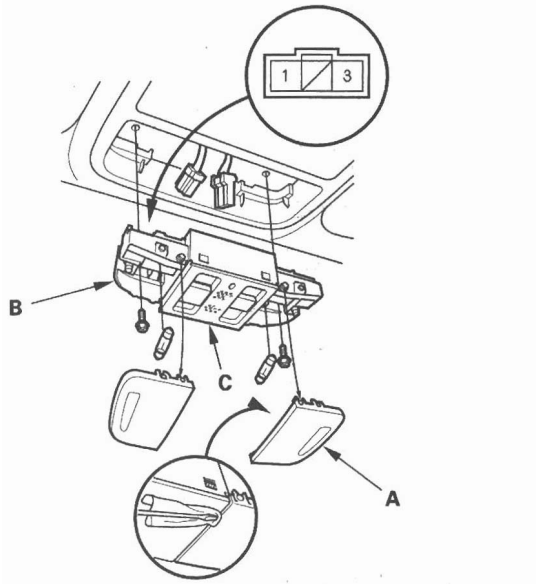


Front Individual Map Light Test/Replacement

With moonroof

1. Turn the map light switch OFF.
2. Carefully pry the lens (A) off with a small screwdriver.

Front Map Light: 8 W x 2



3. Remove the screws, then remove the map lights (B) and moonroof switch or navigation microphone (C).
4. Disconnect the 3P connector from the map lights and the 10P connector from the moonroof switch or navigation microphone.
5. Check for continuity between the terminals in each switch position according to the table.

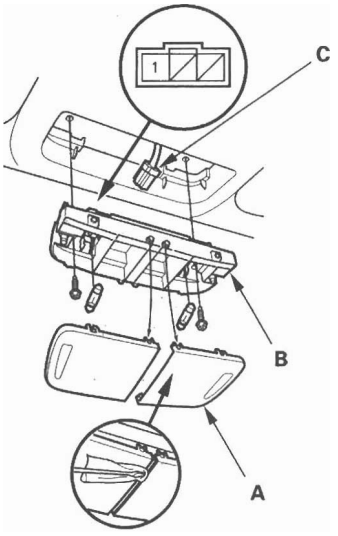
Position \ Terminal		1		3	Body ground
RIGHT	ON	○	○		○
	OFF	○	○	○	
LEFT	ON	○	○		○
	OFF	○	○	○	

6. If the continuity is not as specified, check the bulb(s). If the bulb(s) are OK, replace the light assembly.
7. Install in the reverse order of removal.

Without moonroof

1. Turn the map light switch OFF.
2. Carefully pry the lens (A) off with a small screwdriver.

Front Map Light: 8 W x 2



3. Remove the screws, then remove the map lights (B).
4. Disconnect the 3P connector (C) from the map lights.
5. Check for continuity between the terminals in each switch position according to the table.

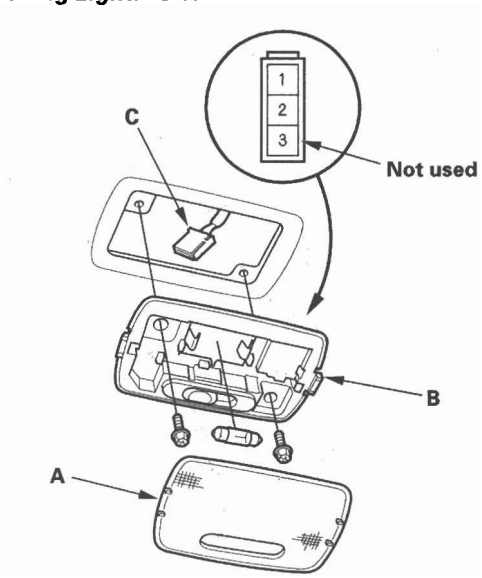
Position \ Terminal		1		Body ground
RIGHT	ON	○	○	○
	OFF			
LEFT	ON	○	○	○
	OFF			

6. If the continuity is not as specified, check the bulb(s). If the bulb(s) are OK, replace the light assembly.
7. Install in the reverse order of removal.

Ceiling Light Test/Replacement

1. Turn the ceiling light switch OFF.
2. Carefully pry the lens (A) off with a small screwdriver.

Ceiling Light: 5 W

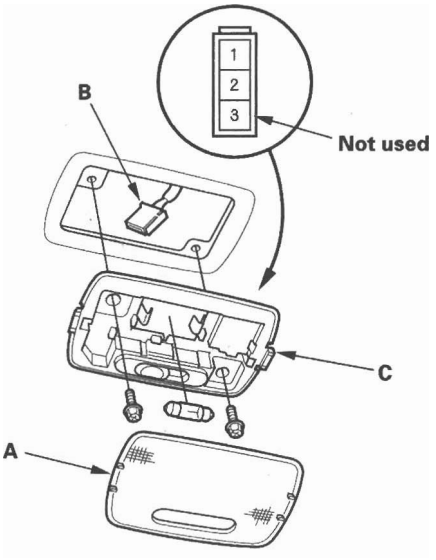


3. Remove the screws, then remove the ceiling light (B).
4. Disconnect the 3P connector (C) from the ceiling light.
5. Check for continuity between the terminals.
   - There should be continuity between the No. 1 and No. 2 terminals with the switch in the MIDDLE position.
   - There should be continuity between the No. 2 and No. 3 (Body ground) terminals with the switch in the ON position.
   - There should be no continuity between the No. 1 and No. 2 terminals, and between the No. 2 and body ground with the switch in the OFF position.
6. If the continuity is not as specified, check the bulb. If the bulb is OK, replace the light.
7. Install in the reverse order of removal.

Cargo Area Light Test/Replacement

1. Open the tailgate, and turn the cargo area light switch OFF.
2. Carefully pry the lens (A) off with a small screwdriver.

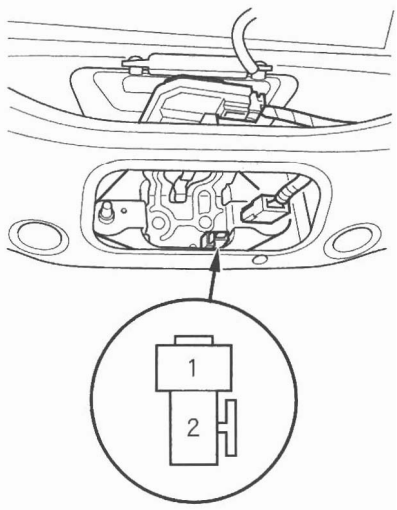
Cargo Area Light: 5 W



3. Remove the screws, then remove the cargo area light (B).
4. Disconnect the 3P connector (C) from the cargo area light.
5. Check for continuity between the terminals.
   - There should be continuity between the No. 1 and No. 2 terminals with the switch in the MIDDLE position.
   - There should be continuity between the No. 2 and No. 3 (Body ground) terminals with the switch in the ON position.
   - There should be no continuity between the No. 1 and No. 2 terminals, and between the No. 2 and body ground with the switch in the OFF position.
6. If the continuity is not as specified, check the bulb. If the bulb is OK, replace the light.
7. Install in the reverse order of removal.

Tailgate Latch Switch Test

1. Open the tailgate.
2. Remove the tailgate lower trim (see page 20-179).
3. Disconnect the 2P connector (A) from the tailgate latch switch (B).



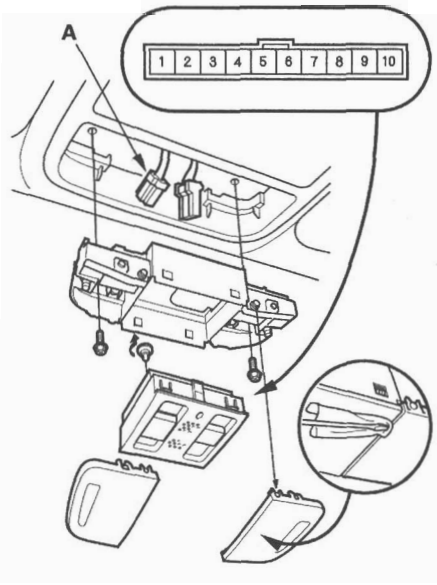
4. Check for continuity between the No. 1 and No. 2 terminals.
   - There should be continuity with the tailgate open.
   - There should be no continuity with the tailgate closed.
5. If the continuity is not as specified, replace the tailgate latch assembly.

Interior Light Switch Test/ Replacement

With moonroof

NOTE: The interior light switch is built into the moonroof switch, and it switches the front individual map lights between the OFF and DOOR positions.

1. Remove the front individual map lights (see page 22-177).
2. Disconnect the 10P connector (A) from the moonroof switch.



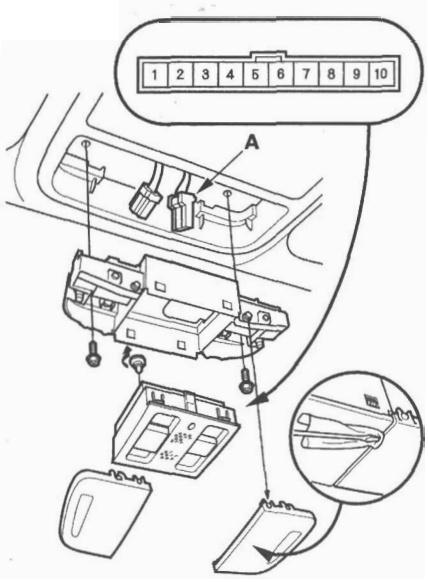
3. Check for continuity between the No. 1 and No. 8 terminals.
   - There should be continuity when the interior light switch is in the DOOR position.
   - There should be no continuity when the interior light switch is in the OFF position.
4. If the continuity is not as specified, replace the switch.
5. Install the switch and light in the reverse order of removal.

Ambient Light Test/Replacement

With moonroof

NOTE: The ambient light is built into the moonroof switch.

1. Remove the front individual map lights (see page 22-177).
2. Disconnect the 10P connector (A) from the moonroof switch.

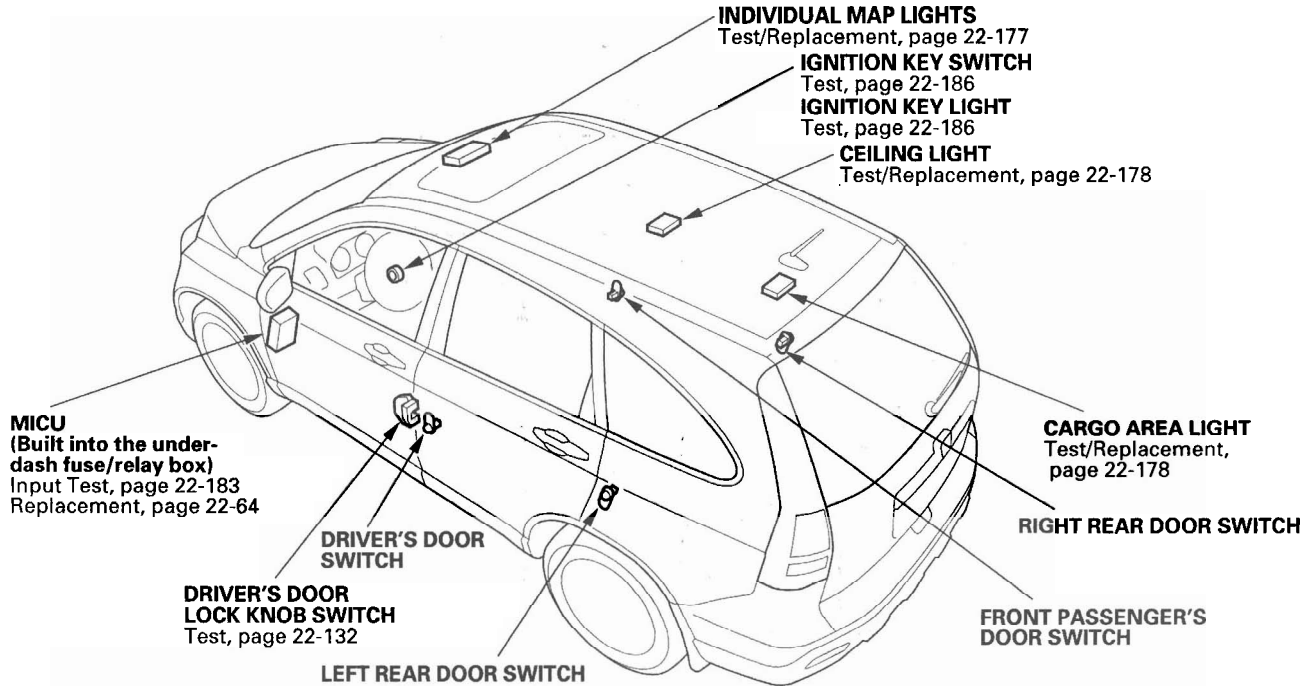


3. Connect the battery power to the No. 5 terminal and ground to the No. 3 terminal. The ambient light should turn on. If the light does not turn on, replace the moonroof switch as an assembly.
4. Install the switch and light in the reverse order of removal.

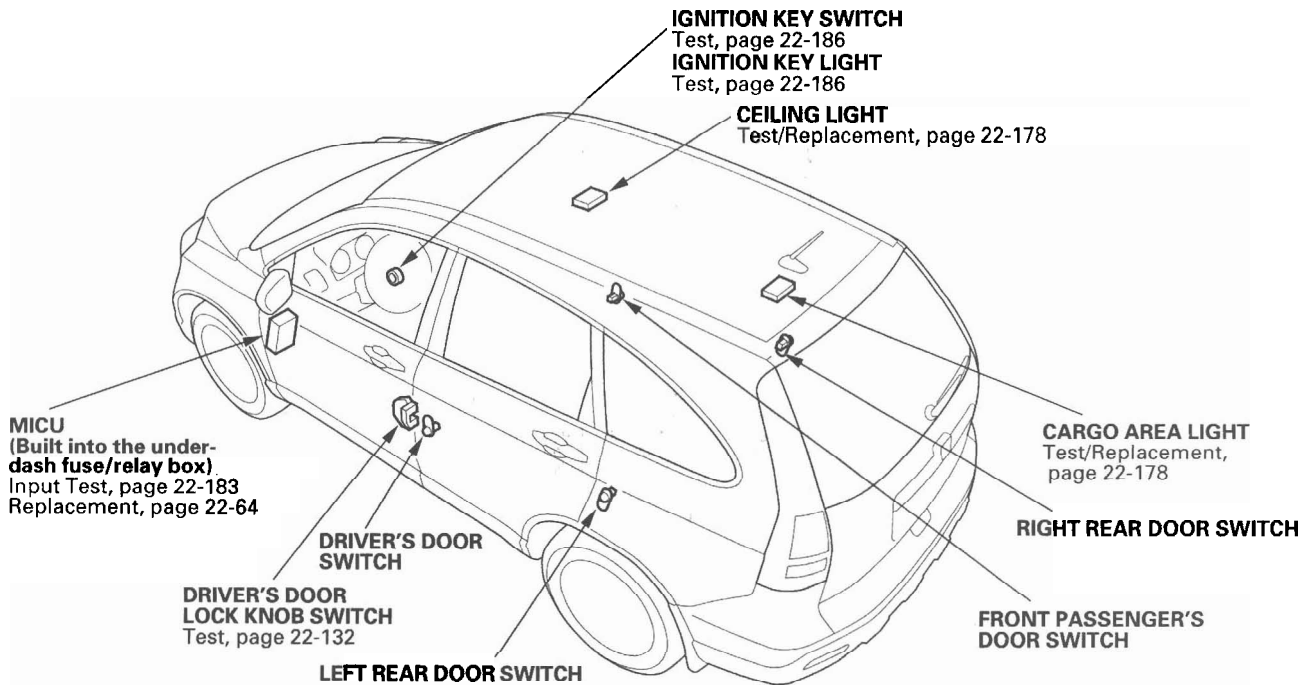
Entry Lights Control System

Component Location Index

With moonroof

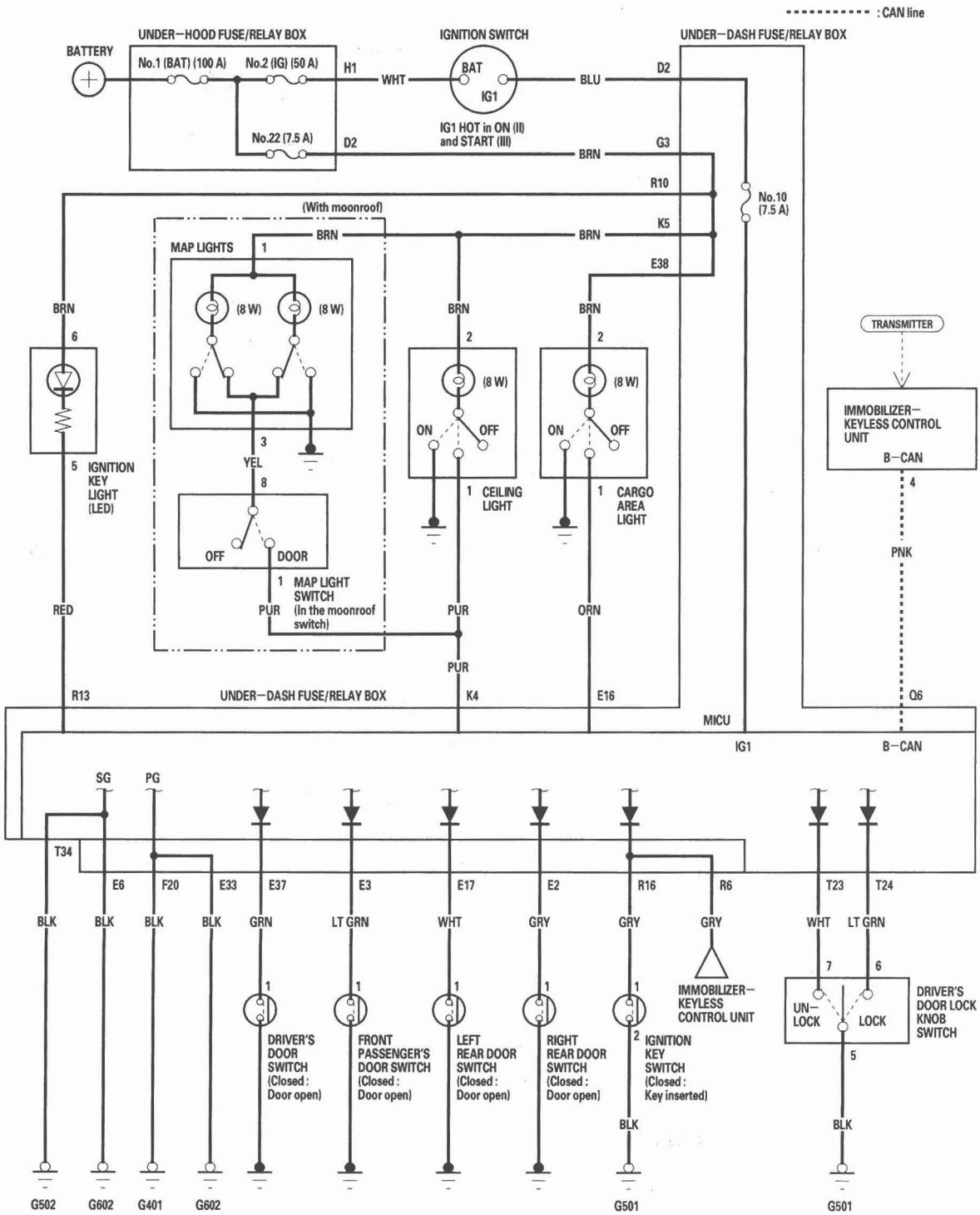


Without moonroof



Entry Lights Control System

Circuit Diagram

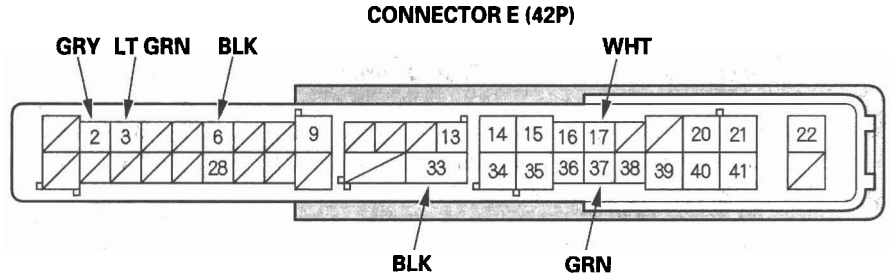


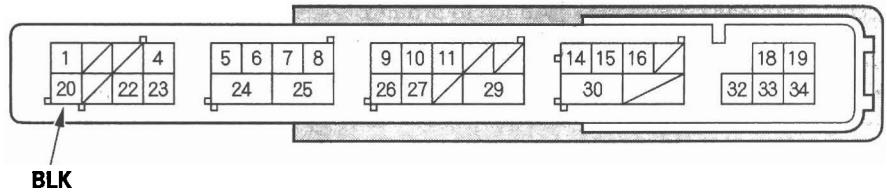
MICU Input Test

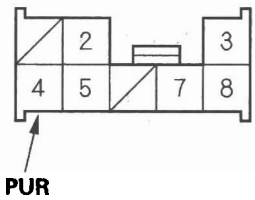
NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

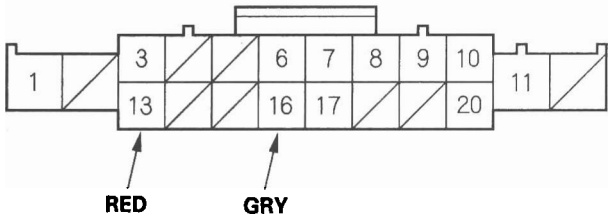
1. Check the No. 10 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is blown, replace it and go to step 2.
2. Disconnect the under-dash fuse/relay box connectors E, F, K, Q, R, and T.

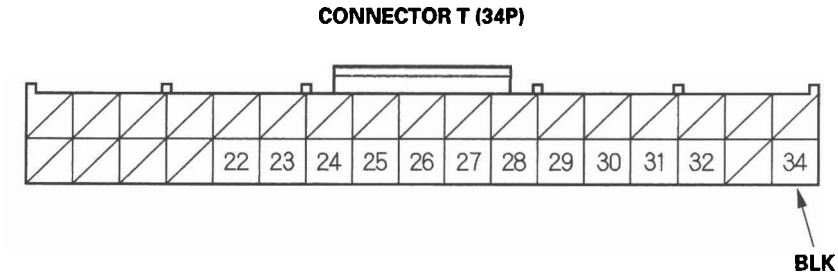
   NOTE: All connector views are wire side of female terminals.











(cont'd)

MICU Input Test (cont'd)

3. Inspect the connector and socket terminals to be sure they are all making good contact.

   • If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   • If the terminals look OK, go to step 4.

4. With the connectors still disconnected, do these input tests at the appropriate connector.

   • If any test indicates a problem, find and correct the cause, then recheck the system.
   • If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
K4	PUR	Under all conditions (With moonroof: select the interior light switch in DOOR position)	Attach to ground: The ceiling light and map lights* should come on.	• Blown No. 22 (7.5 A) fuse in the under-hood fuse/relay box • Blown bulb(s) Faulty ceiling light • Faulty map light* • Faulty interior light switch* • An open in the wire
R13	RED	Under all conditions	Attach to ground: The ignition key light should come on.	• Blown No. 22 (7.5 A) fuse in the under-hood fuse/relay box • Faulty ignition key light • An open in the wire

*: With moonroof

5. Reconnect the connectors to the under-dash fuse/relay box, and do these input tests at the connectors.

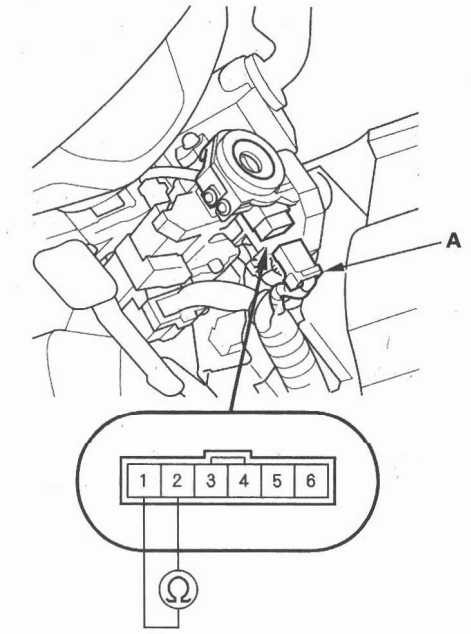
   • If any test indicates a problem, find and correct the cause, then recheck the system.
   • If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see page 22-64).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
F20	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E37	GRN	Driver's door open	Check for voltage to ground: There should be less than 1 V.	• Faulty driver's door switch • An open in the wire
		Driver's door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door switch • A short to ground in the wire
E3	LT GRN	Front passenger's door open	Check for voltage to ground: There should be less than 1 V.	• Faulty front passenger's door switch • An open in the wire
		Front passenger's door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty front passenger's door switch • A short to ground in the wire
E2	GRY	Right rear door open	Check for voltage to ground: There should be less than 1 V.	• Faulty right rear door switch • An open in the wire
		Right rear door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty right rear door switch • A short to ground in the wire
E17	WHT	Left rear door open	Check for voltage to ground: There should be less than 1 V.	• Faulty left rear door switch • An open in the wire
		Left rear door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty left rear door switch • A short to ground in the wire
R16	GRY	Ignition key inserted into the ignition switch	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty ignition key switch • An open in the wire
		Ignition switch OFF and ignition key removed from the ignition switch	Check for voltage to ground: There should be 5 V or more.	• Faulty ignition key switch • A short to ground in the wire
T23	WHT	Driver's door lock knob switch unlocked	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty driver's door lock knob switch • An open in the wire
		Driver's door lock knob switch locked	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door lock knob switch • A short to ground in the wire
T24	LT GRN	Driver's door lock knob switch unlocked	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door lock knob switch • A short to ground in the wire
		Driver's door lock knob switch locked	Check for voltage to ground: There should be less than 1 V.	Poor ground (G501) • Faulty driver's door lock knob switch • An open in the wire

Ignition Key Switch Test

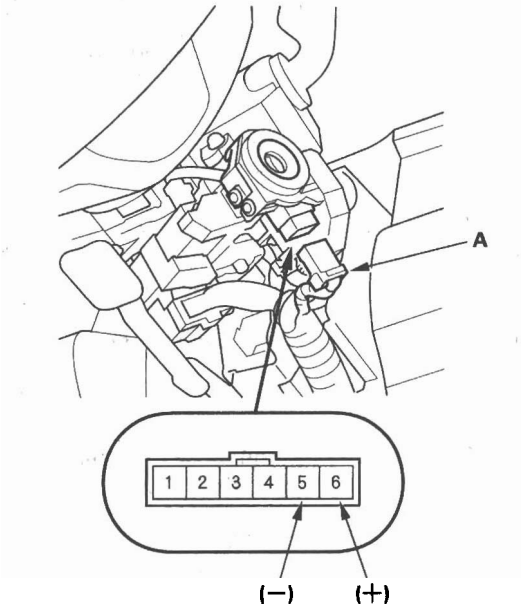
1. Remove the steering column upper and lower covers (see page 17-25).
2. Disconnect the 6P connector (A).



3. Check for continuity between the No. 1 and No. 2 terminals.
   - There should be continuity with the key in the ignition switch.
   - There should be no continuity with the key removed.
4. If the continuity is not as specified, replace the ignition switch.

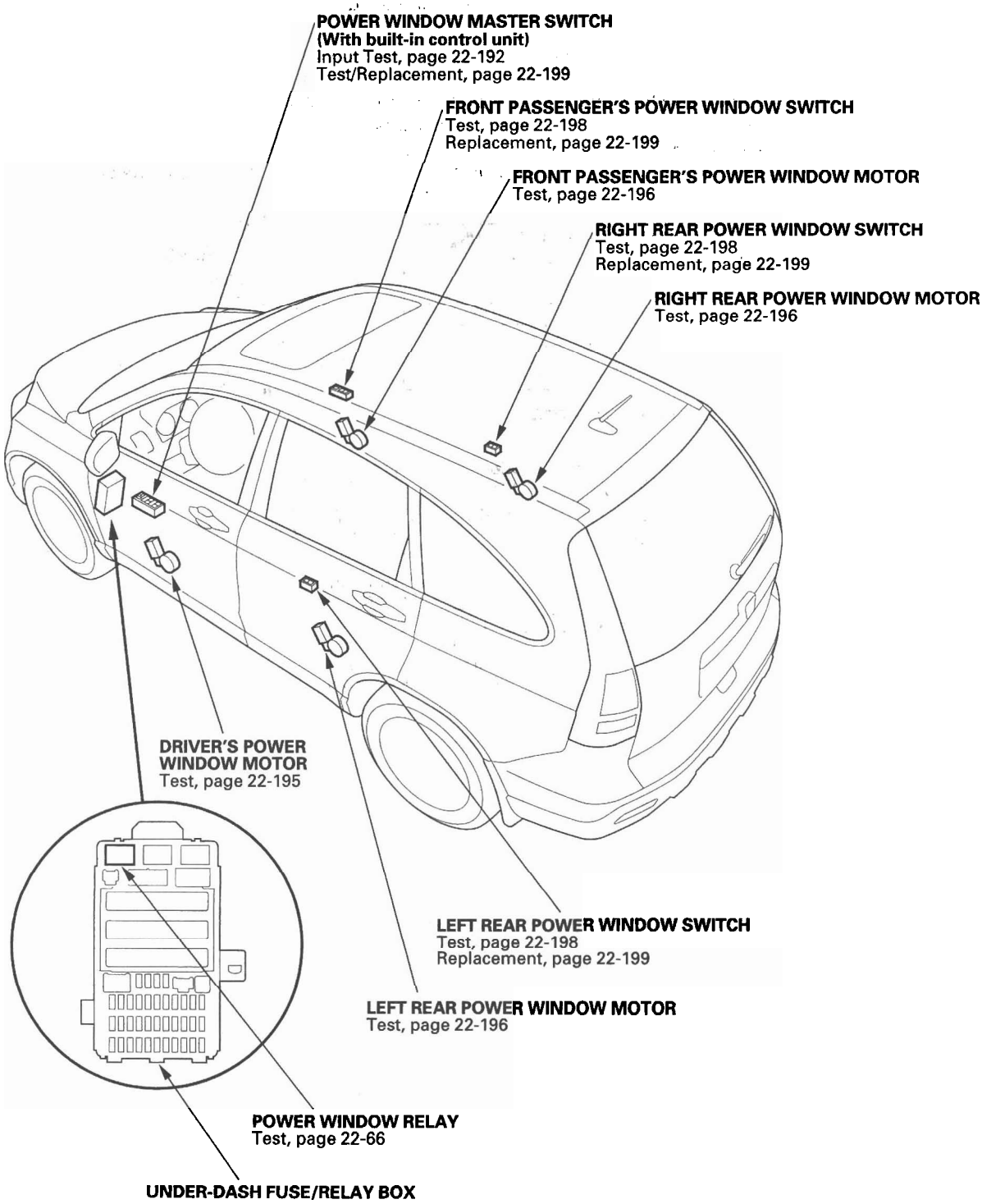
Ignition Key Light Test

1. Remove the steering column upper and lower covers (see page 17-25).
2. Disconnect the 6P connector (A).



3. The LED should come on when power is connected to the No. 6 terminal and ground is connected to No. 5 terminal.
4. If the LED does not come on, replace the ignition switch.

Component Location Index

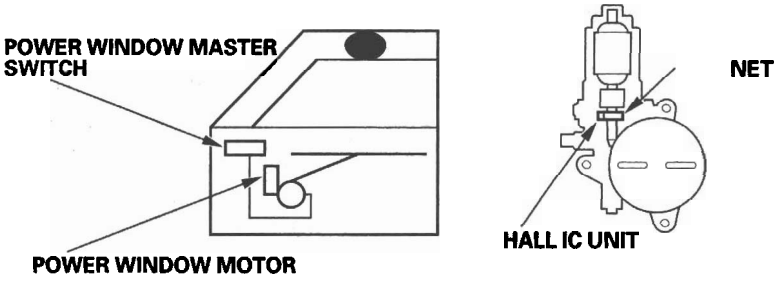


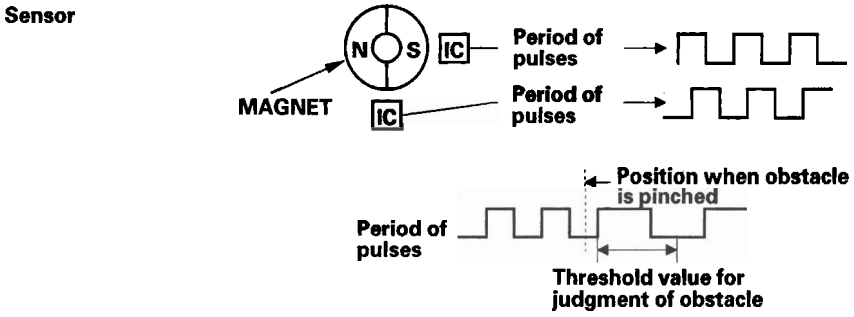
System Description

Auto Reverse Operation

The system is composed of the power window master switch and the driver's power window motor.

The driver's power window motor incorporates a pulser which generates pulses during the motor's operation and sends the pulses to the driver's power window control unit. As soon as the power window control unit detects no pulses from the pulser (the window stops short of full travel), the driver's power window control unit makes the power window motor stop and reverse. If the window is more than halfway closed, it will reverse to half open position. If the window is less than halfway closed, it will stop and reverse about 2 inches. This is to prevent pinching an obstacle during auto-up operation. The auto reverse operation is not active when the switch is held in the up position.





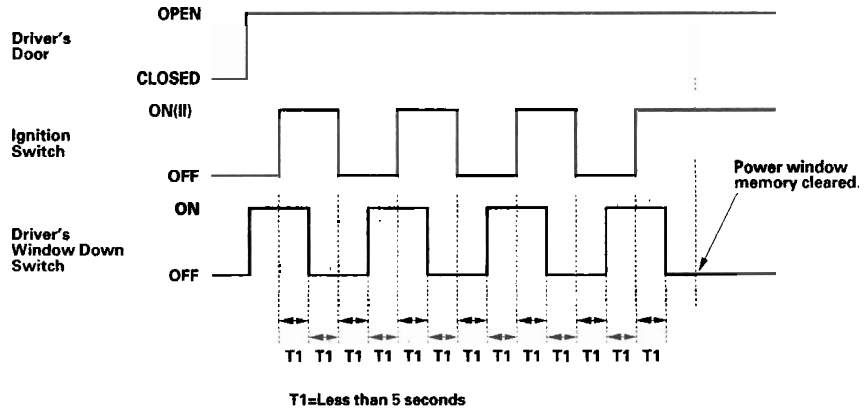
Resetting the Power Window Control Unit

Resetting the driver's power window is required when any of the following have occurred:

- Power window regulator replacement or repair
- Power window motor replacement or repair
- Window run channel replacement or repair
- Driver's door glass replacement or repair
- Power is removed from the power window control unit while the power window timer is ON.
- Power window master switch replacement

1. Turn the ignition switch ON (II).
2. Move the driver's window all the way down by using the driver's window DOWN switch.
3. Open the driver's door.

   NOTE: Steps 4—7 must be done within 5 seconds of each other.

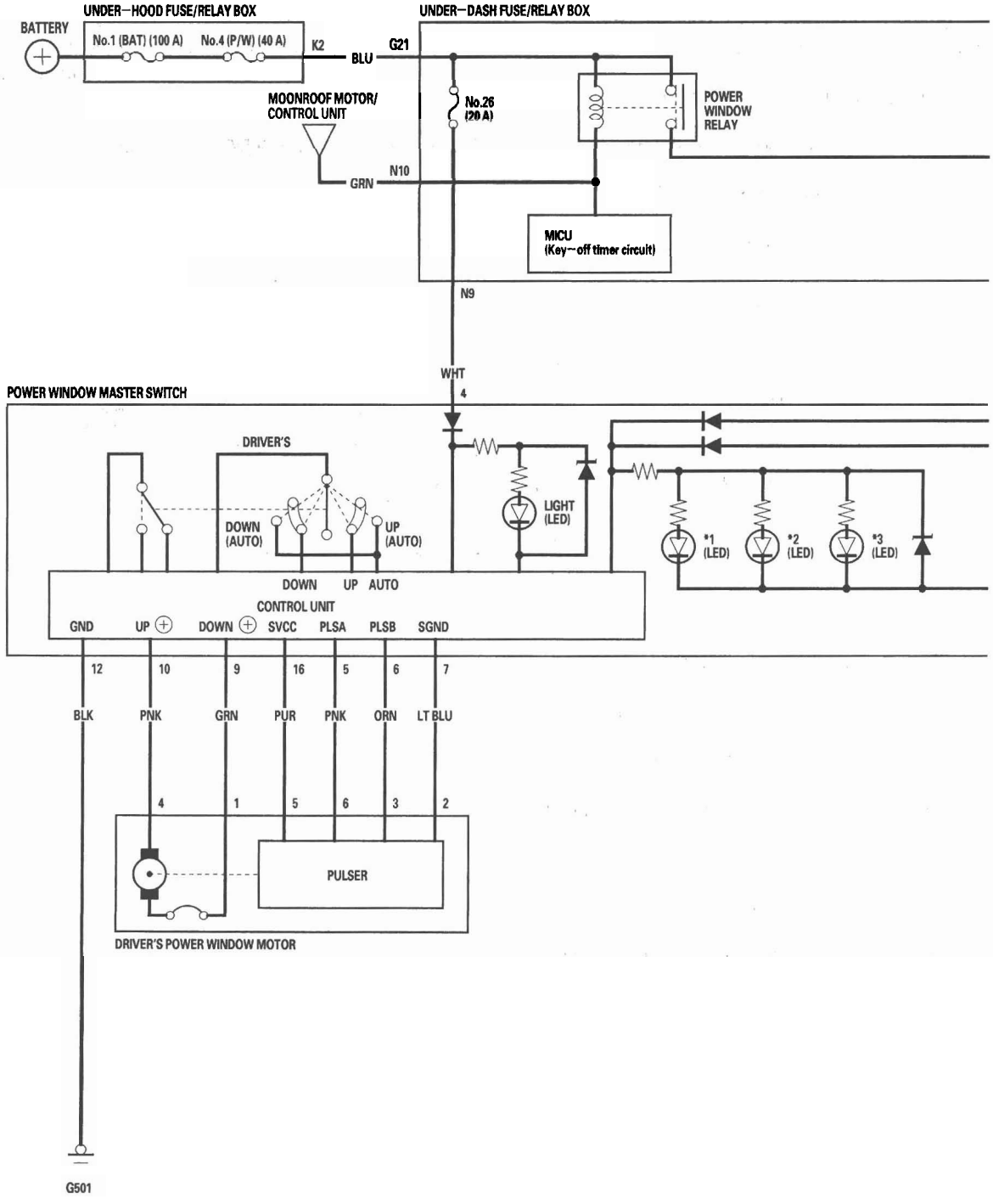


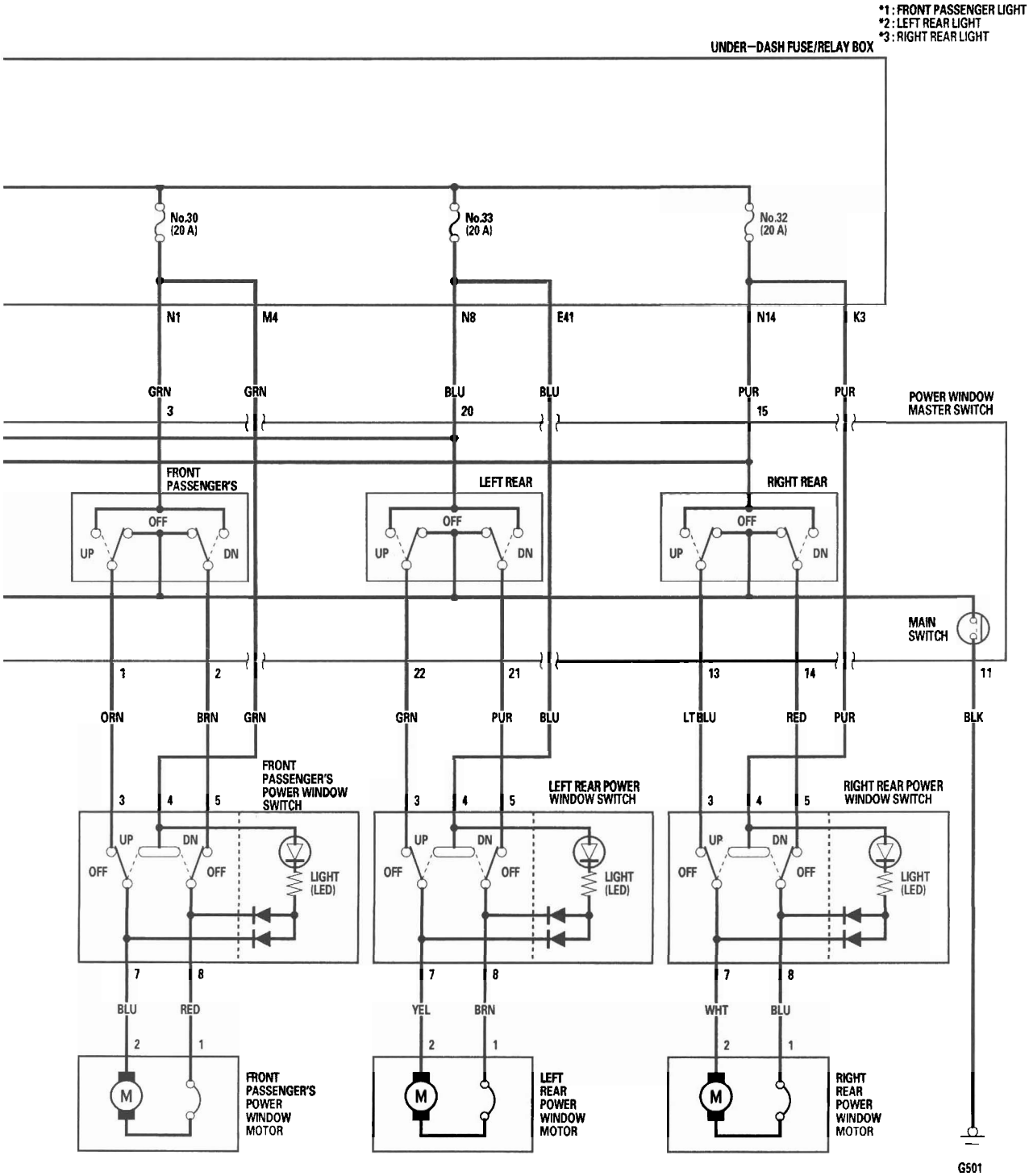
4. Turn the ignition switch OFF.
5. Push and hold the driver's window DOWN switch.
6. Turn the ignition switch ON (II).
7. Release the driver's window DOWN switch.
8. Repeat step 4—7 three more times.
9. Wait for at least 1 second.
10. Check if the AUTO UP and AUTO DOWN functions still work. If they do, go back to step 1 (the AUTO function has not been cleared; repeat the clear procedure again). If they do not, go to step 11.
11. Move the driver's window all the way down by using the driver's window DOWN switch.
12. Pull up and hold the driver's window UP switch until the window reaches the fully closed position, then continue to hold the switch for 1 second.
13. Confirm that the power window control unit is reset by using the driver's window AUTO UP and AUTO DOWN functions.

    If the window still does not work in AUTO, repeat the procedure several times, paying close attention to the 5 second time limit between steps. If it still does not work, refer to the master switch input test (see page 22-192).

Power Windows

Circuit Diagram

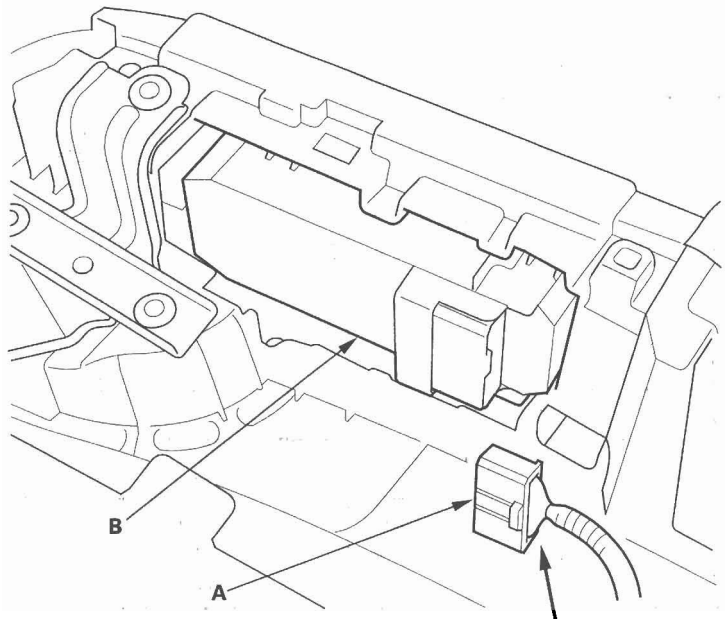


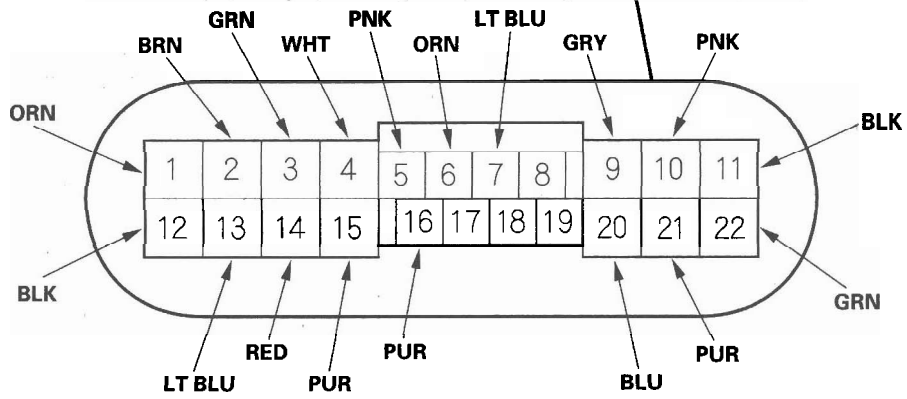

*1 : FRONT PASSENGER LIGHT
*2 : LEFT REAR LIGHT
*3 : RIGHT REAR LIGHT
UNDER–DASH FUSE/RELAY BOX
No.30 (20 A)
No.33 (20 A)
No.32 (20 A)
N1
M4
N8
E41
N14
K3
GRN
GRN
BLU
BLU
PUR
PUR
3
20
15
POWER WINDOW MASTER SWITCH
FRONT PASSENGER'S
LEFT REAR
RIGHT REAR
OFF
UP
DN
MAIN SWITCH
1
2
22
21
13
14
11
ORN
BRN
GRN
GRN
PUR
BLU
LT BLU
RED
PUR
BLK
FRONT PASSENGER'S POWER WINDOW SWITCH
LEFT REAR POWER WINDOW SWITCH
RIGHT REAR POWER WINDOW SWITCH
3
4
5
OFF
LIGHT (LED)
7
8
BLU
RED
YEL
BRN
WHT
BLU
2
1
M
FRONT PASSENGER'S POWER WINDOW MOTOR
LEFT REAR POWER WINDOW MOTOR
RIGHT REAR POWER WINDOW MOTOR
G501

Master Switch Input Test

NOTE: The power window control unit is built into the power window master switch.

1. Remove the power window switch panel (see page 20-6).
2. Disconnect the 22P connector (A) from the master switch (B).





Wire side of female terminals

3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.

4. With the connector still disconnected, do these input tests at the connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
9	GRN	Connect the No. 4 and the No. 9 terminals and No. 10 and No. 12 terminals momentarily with jumper wires	Check driver's power window motor operation: The window should go down.	• Faulty driver's power window motor • An open in the wire
10	PNK	Connect the No. 4 and the No. 10 terminals and No. 9 and No. 12 terminals momentarily with jumper wires	Check driver's window motor operation: The window should go up.	
1	ORN	Connect the No. 3 and the No. 2 terminals and No. 1 and No. 12 terminals momentarily with jumper wires	Check front passenger's power window motor operation: The window should go down.	• Faulty front passenger's power window motor • Faulty front passenger's power window switch • An open in the wire
2	BRN	Connect the No. 3 and the No. 1 terminals and No. 2 and No. 12 terminals momentarily with jumper wires	Check front passenger's power window motor operation: The window should go up.	
13	LT BLU	Connect the No. 15 and the No. 14 terminals and No. 13 and No. 12 terminals momentarily with jumper wires	Check right rear power window motor operation: The window should go down.	• Faulty right rear power window motor • Faulty right rear power window switch • An open in the wire
14	RED	Connect the No. 15 and the No. 13 terminals and No. 14 and No. 12 terminals momentarily with jumper wires	Check right rear power window motor operation: The window should go up.	
21	PUR	Connect the No. 20 and the No. 21 terminals and No. 22 and No. 12 terminals momentarily with jumper wires	Check left rear power window motor operation: The window should go down.	• Faulty left rear power window motor • Faulty left rear power window switch • An open in the wire
22	GRN	Connect the No. 20 and the No. 22 terminals and No. 21 and No. 12 terminals momentarily with jumper wires	Check left rear power window motor operation: The window should go up.	

(cont'd)

Master Switch Input Test (cont'd)

5. Reconnect the 22P connector to the power window master switch, and do these input tests at the connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the control unit must be faulty; replace the power window master switch, and go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
3	GRN	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	Blown No. 30 (20 A) fuse in the under-dash fuse/relay box • Faulty power window relay Faulty MICU • An open in the wire
4	WHT	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 26 (20 A) fuse in the under-dash fuse/relay box • An open in the wire
15	PUR	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 32 (20 A) fuse in the under-dash fuse/relay box • Faulty power window relay • Faulty MICU • An open in the wire
20	BLU	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 33 (20 A) fuse in the under-dash fuse/relay box • Faulty power window relay • Faulty MICU • An open in the wire
7	LT BLU	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
11	BLK	Ignition switch ON (II), and driver's window moving up and down	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
12	BLK	Ignition switch ON (II), main switch ON, and passenger's window moving up and down	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
16	PUR	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Faulty power window master switch • A short to ground in the wire
5	PNK	Ignition switch ON (II), and driver's window switch moving up or down	Check for voltage between the No. 5 and No. 7 terminals: There should be 0 V—about 5 V—0 V— about 5 V repeatedly (a digital voltmeter should reads about 2.5 V while the window moves).	• Faulty power window master switch • Faulty driver's power window motor • An open in the wire • A short to ground in the wire
6	ORN	Ignition switch ON (II), and driver's window switch moving up or down	Check for voltage between the No. 6 and No. 7 terminals: There should be 0 V—about 5 V—0 V— about 5 V repeatedly (a digital voltmeter should reads about 2.5 V while the window moves).	

6. Reset the power window control unit (see page 22-189).

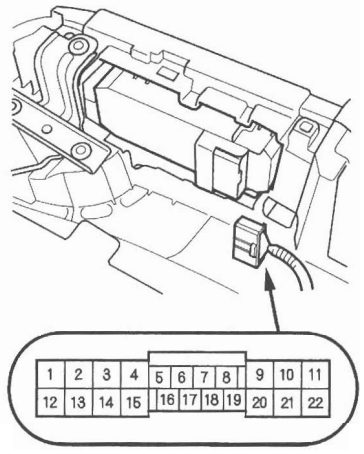
Driver's Power Window Motor Test

Motor Test

1. Remove the door panel (see page 20-6), and disconnect the connectors.

2. Test the motor in each direction by connecting battery power and ground to the power window master switch 22P connector according to the table.

Direction \ Terminal	9	10
UP	⊖	⊕
DOWN	⊕	⊖



Wire side of female terminals

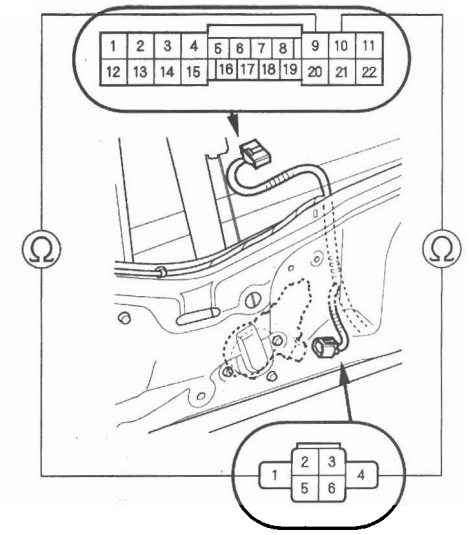
3. If the motor does not run or fails to run smoothly, go to step 4.

4. Disconnect the 6P connector from the driver's power window motor.

5. Check for continuity between the power window master switch 22P connector No. 9 and No. 10 terminals and the driver's power window motor 6P connector No. 1 and No. 4 terminals, respectively.

POWER WINDOW MASTER SWITCH 22P CONNECTOR	DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR
No. 9 terminal	No. 1 terminal
No. 10 terminal	No. 4 terminal

POWER WINDOW MASTER SWITCH 22P CONNECTOR
Wire side of female terminals



DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR
Wire side of female terminals

6. If the wire harness is OK, replace the driver's power window motor.

Pulser Test (With AUTO UP/AUTO DOWN)

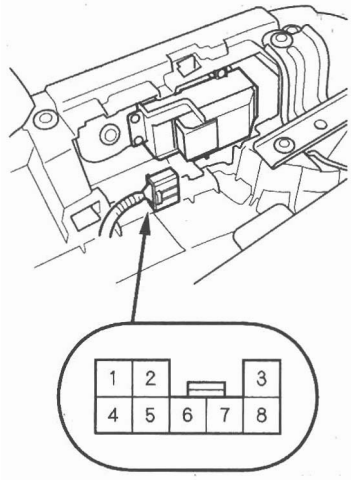
7. Do the power window master switch input test No. 5, No. 6, No. 7, and No. 16 terminals (see page 22-192).

Passenger's Power Window Motor Test

1. Remove the door panel (see page 20-6), and disconnect the connectors.

2. Test the motor in each direction by connecting battery power and ground to the passenger's power window switch 8P connector according to the table.

Direction \ Terminal	7	8
UP	⊕	⊖
DOWN	⊖	⊕



Wire side of female terminals

3. If the motor does not run or fails to run smoothly, go to step 4.

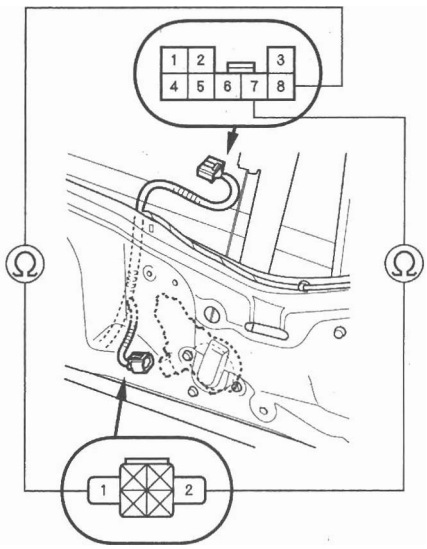
4. Disconnect the 6P connector (A) from the passenger's power window motor (B).

5. Check for continuity between the passenger's power window switch 8P connector No. 7 and No. 8 terminals and the passenger's power window motor 2P connector No. 1 and No. 2 terminals.

PASSENGER'S POWER WINDOW SWITCH 8P CONNECTOR	PASSENGER'S POWER WINDOW MOTOR 2P CONNECTOR
No. 7 terminal	No. 2 terminal
No. 8 terminal	No. 1 terminal

PASSENGER'S POWER WINDOW SWITCH 8P CONNECTOR

Wire side of female terminals



PASSENGER'S POWER WINDOW MOTOR 2P CONNECTOR

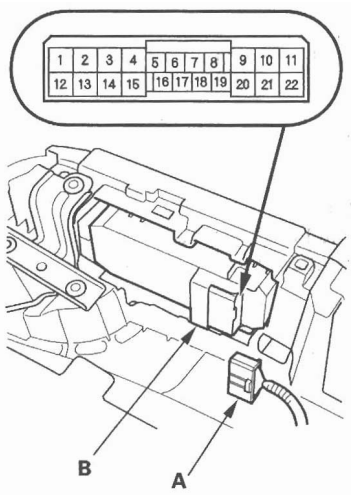
Wire side of female terminals

6. If the wire harness is OK, replace the appropriate power window motor.

Master Switch Test

1. Remove the driver's door panel (see page 20-6).

2. Disconnect the 22P connector (A) from the power window master switch (B).



3. Check for continuity between the terminals in each switch position according to the tables.

Driver's Switch

The driver's switch is combined with the control unit, so you cannot isolate the switch to test it. Instead, run the master switch input test procedures (see page 22-192). If the tests are normal, the driver's switch is faulty. Replace the switch.

Front Passenger's Switch (Right Rear Switch)

Position \ Terminal / Main Switch		1 [13]	2 [14]	3 [15]	11
OFF	ON	○	○		○
	OFF	○	○		
UP	ON	○		○	
			○		○
	OFF	○		○	
DOWN	ON	○		○	
			○		○
	OFF		○	○	

Left Rear Switch

Position \ Terminal / Main Switch		20	21	22	11
OFF	ON		○	○	○
	OFF		○	○	
UP	ON	○		○	
			○		○
	OFF	○		○	
DOWN	ON	○	○	○	○
	OFF	○	○		

4. If the continuity is not as specified, replace the switch (see page 22-199).

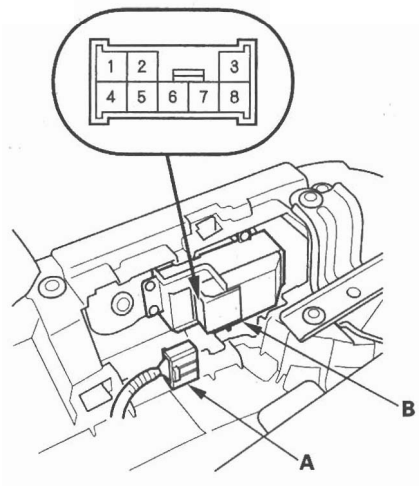
Passenger's Power Window Switch Test

1. Remove the passenger's door panel.

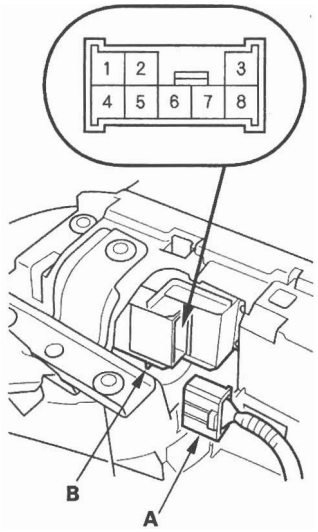
   Front (see page 20-6).
   Rear (see page 20-17).

2. Disconnect the 8P connector (A) from the passenger's power window switch (B).

Front passenger's



Rear



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

Position \ Terminal	3	4	5	7	8
OFF	○		○	○	○
UP		○	○	○	○
DOWN	○	○		○	○

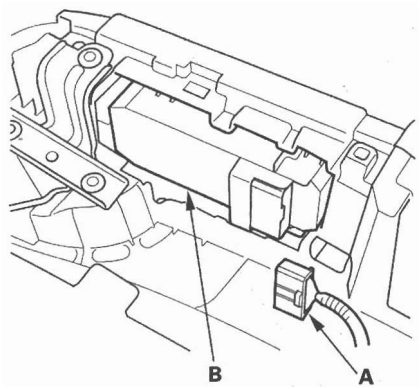
4. Connect battery power to the No. 4 terminal and ground the No. 7 (or No. 8) terminal. The switch light should come on.

5. If the continuity or switch light tests is not as specified, replace the switch (see page 22-199).

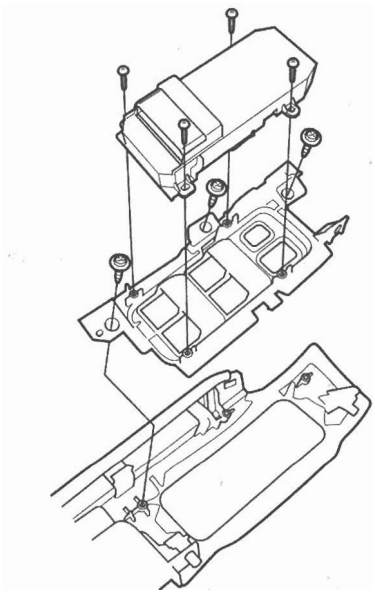
Power Window Switch Replacement

Driver's

1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 22P connector (A) from the power window master switch (B).



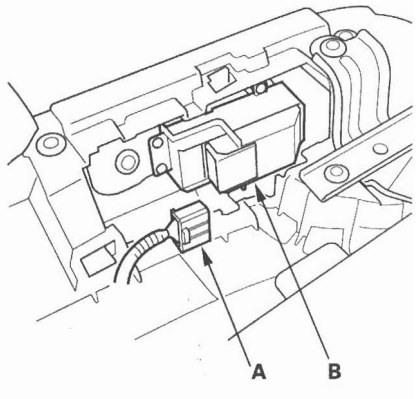
3. Remove the four screws and the power window master switch.



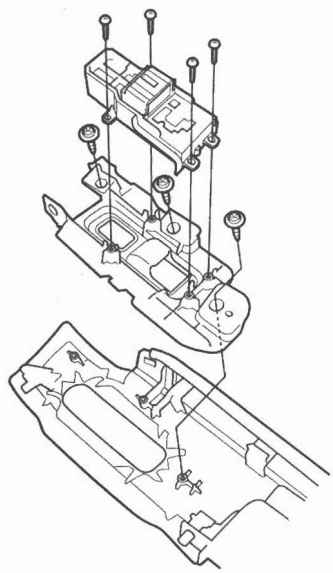
4. Install the switch in the reverse order of removal.
5. After replacement, reset the power window control unit (see page 22-189).

Passenger's

1. Remove the passenger's door panel.
   - Front (see page 20-6)
   - Rear (see page 20-17)
2. Disconnect the 8P connector (A) from the passenger's power window switch (B).

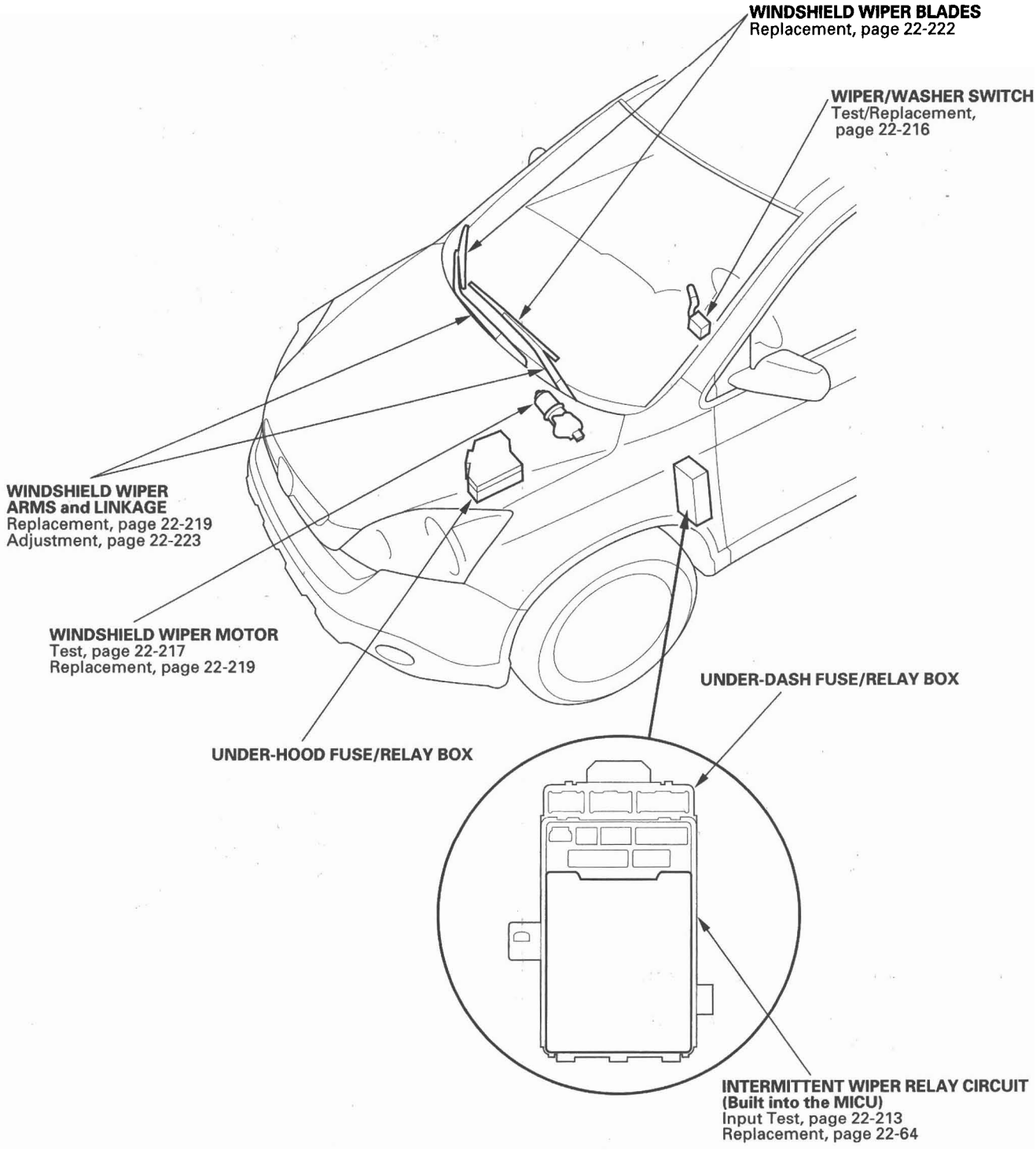


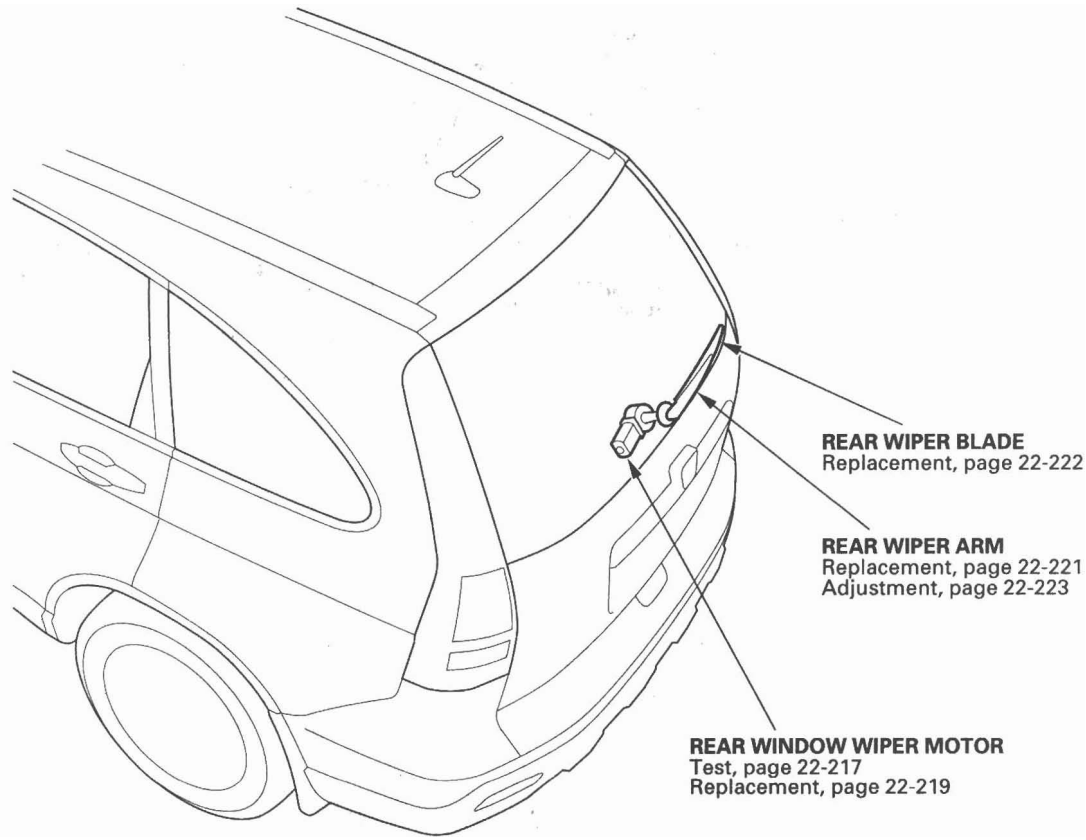
3. Remove the four screws and the passenger's power window switch.



4. Install the switch in the reverse order of removal.

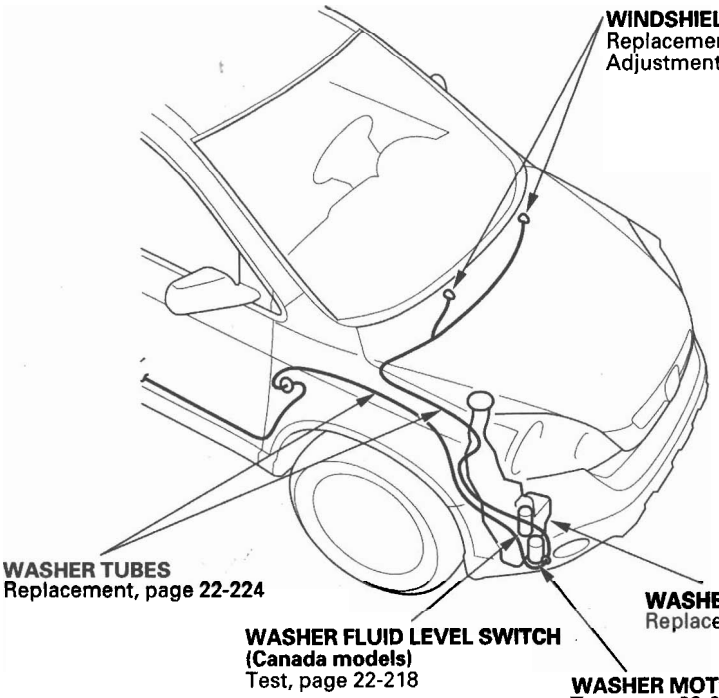
Component Location Index




REAR WIPER BLADE
Replacement, page 22-222
REAR WIPER ARM
Replacement, page 22-221
Adjustment, page 22-223
REAR WINDOW WIPER MOTOR
Test, page 22-217
Replacement, page 22-219

(cont'd)

Component Location Index (cont'd)



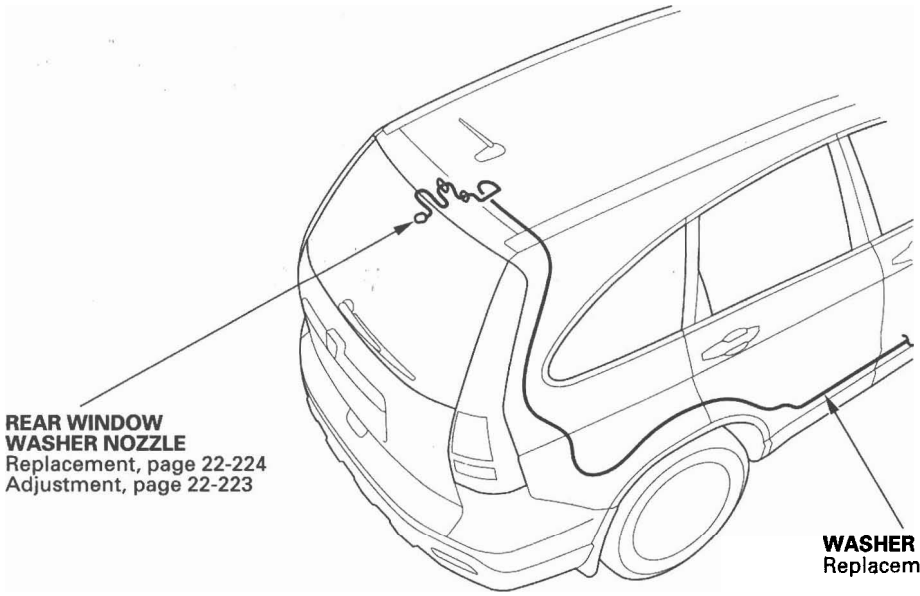
WINDSHIELD WASHER NOZZLES
Replacement, page 22-224
Adjustment, page 22-223

WASHER TUBES
Replacement, page 22-224

WASHER FLUID LEVEL SWITCH (Canada models)
Test, page 22-218

WASHER RESERVOIR
Replacement, page 22-221

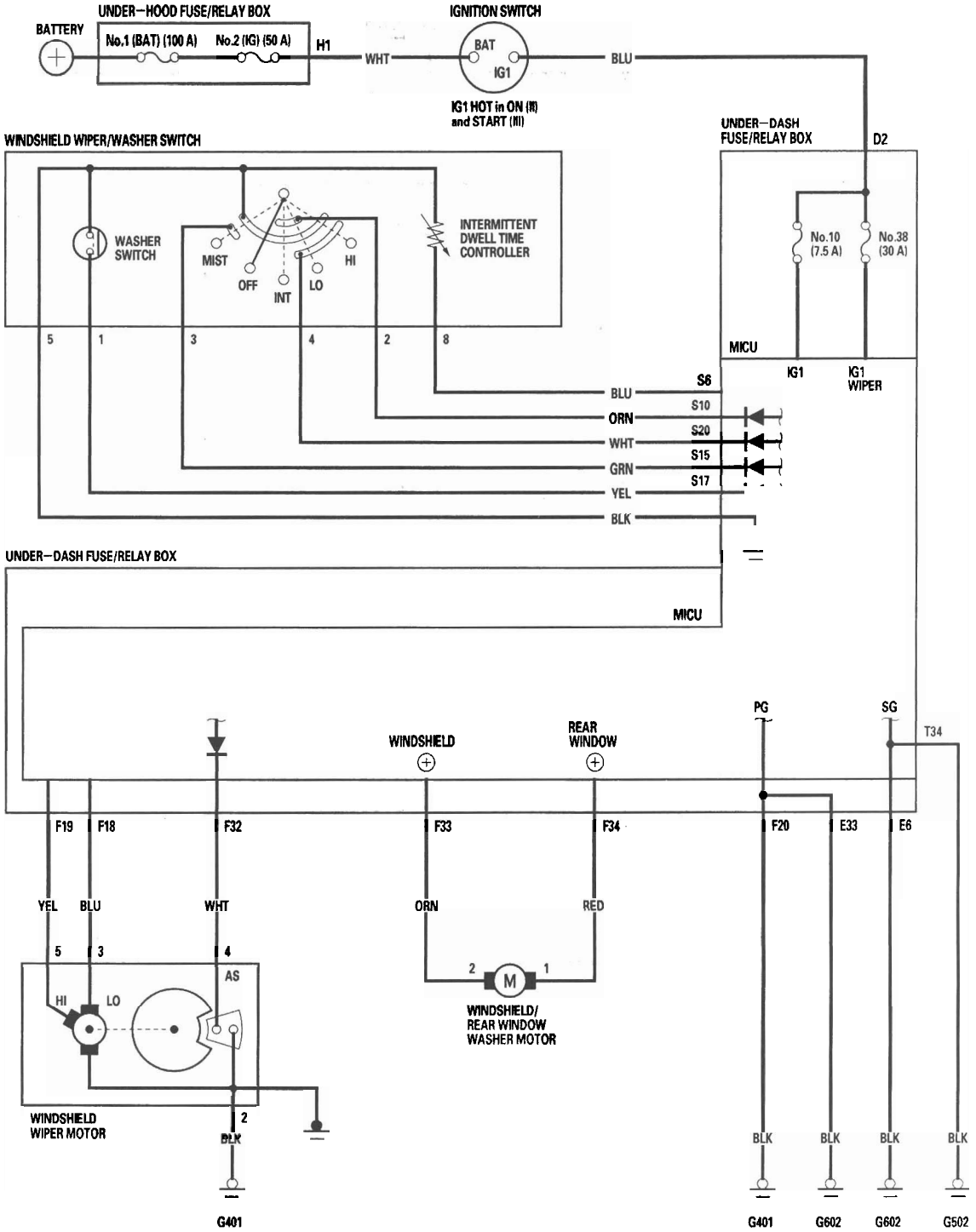
WASHER MOTOR
Test, page 22-218
Replacement, page 22-221



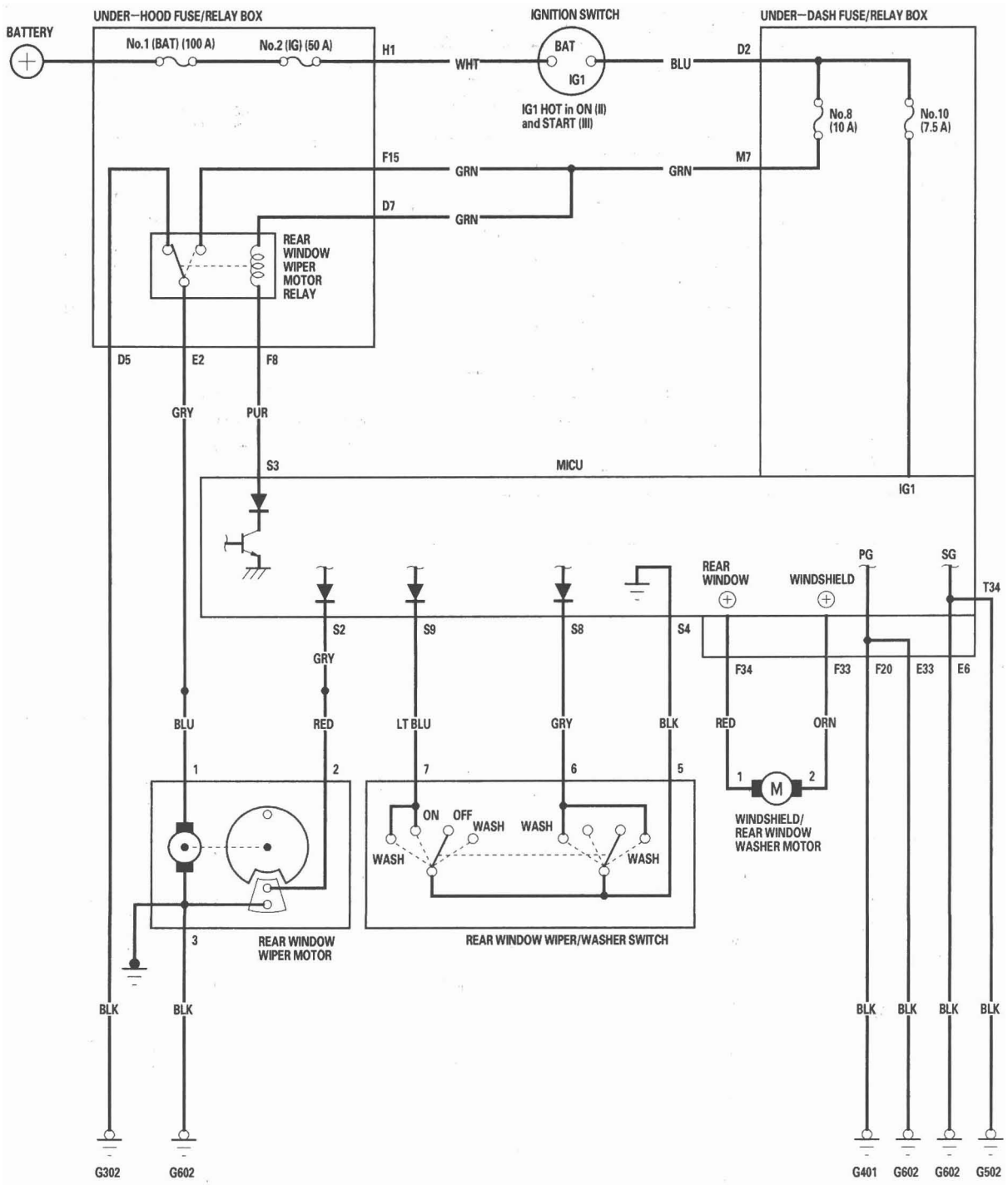
REAR WINDOW WASHER NOZZLE
Replacement, page 22-224
Adjustment, page 22-223

WASHER TUBE
Replacement, page 22-224

Circuit Diagram - Windshield



Circuit Diagram - Rear Window



DTC Troubleshooting

DTC B1028: Rear Window Wiper Motor (As) Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Operate the rear window wiper for 15 seconds or more, then turn the rear window wiper switch OFF.

   Does the rear window wiper stop in the normal park position?

   YES—Go to step 4.

   NO—Go to step 14.
4. Check for DTCs with the HDS.

   Is DTC B1028 indicated?

   YES—Go to step 5.

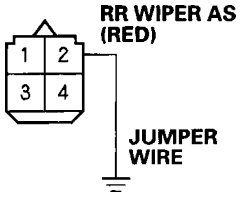
   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■
5. Do the rear window wiper motor test (see page 22-217).

   Is the rear window wiper motor OK?

   YES—Go to step 6.

   NO—Replace the rear window wiper motor (see page 22-219). ■
6. Make sure the ignition switch is OFF, and disconnect the under-dash fuse/relay box connector S (20P).
7. Disconnect the rear window wiper motor 4P connector.
8. Connect the rear window wiper motor 4P connector No. 2 terminal and body ground with a jumper wire.

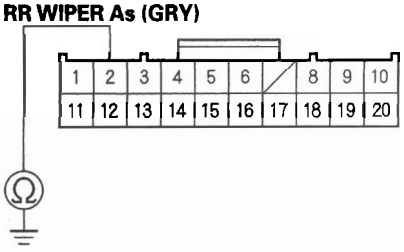
REAR WINDOW MOTOR 4P CONNECTOR



Wire side of female terminals

9. Check for continuity between the under-dash fuse/relay box connector S (20P) No. 2 terminal and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire. ■

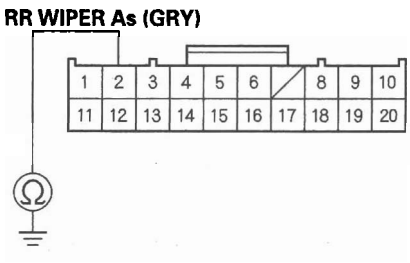
(cont'd)

DTC Troubleshooting (cont'd)

10. Remove the jumper wire from the rear window wiper motor 4P connector.

11. Check for continuity between the under-dash fuse/relay box connector S (20P) No. 2 terminal and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

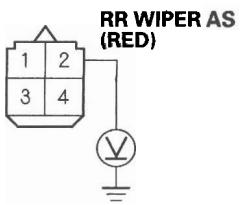
YES—Repair a short to ground in the wire.■

NO—Go to step 12.

12. Turn the ignition switch ON (II).

13. With the rear window wiper motor 4P connector still disconnected, measure voltage between the rear window wiper motor 4P connector No. 2 terminal and body ground.

REAR WINDOW MOTOR 4P CONNECTOR



Wire side of female terminals

Is there voltage?

YES—Repair a short to power in the wire.■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

14. Check the No. 8 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES—Go to step 15.

NO—Replace the blown fuse and recheck.■

15. Do the rear window wiper motor test (see page 22-217).

Is the rear window wiper motor OK?

YES—Go to step 16.

NO—Replace the rear window wiper motor (see page 22-219).■

16. Do the rear window wiper motor relay test (see page 22-66).

Is the rear window wiper motor relay OK?

YES—Go to step 17.

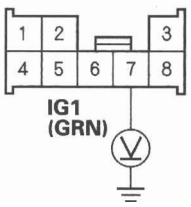
NO—Replace the rear window wiper motor relay.■

17. Disconnect the under-hood fuse/relay box connector D (8P).

18. Turn the ignition switch ON (II).

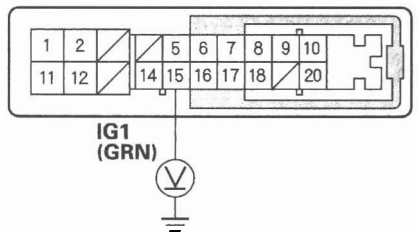
19. Measure voltage between the under-hood fuse/relay box connector D (8P) No. 7 terminal and body ground, and the under-hood fuse/relay box connector F (20P) No. 15 terminal and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR D (8P)



Wire side of female terminals

UNDER-HOOD FUSE/RELAY BOX CONNECTOR F (20P)



Wire side of female terminals

Is there battery voltage?

YES—Go to step 20.

NO—Repair an open in the wire.■

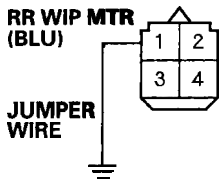
20. Turn the ignition switch OFF.

21. Disconnect the under-hood fuse/relay box connector E (10P).

22. Disconnect the rear window wiper motor 4P connector.

23. Connect the rear window wiper motor 4P connector No. 1 terminal and body ground with a jumper wire.

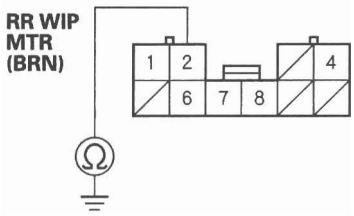
REAR WINDOW MOTOR 4P CONNECTOR



Wire side of female terminals

24. Check for continuity between the under-hood fuse/relay box connector E (10P) No. 2 terminal and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR E (10P)



Wire side of female terminals

Is there continuity?

YES—Go to step 25.

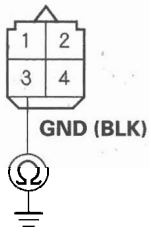
NO—Repair an open in the wire.■

(cont'd)

DTC Troubleshooting (cont'd)

25. Check for continuity between the rear window wiper motor 4P connector No. 3 terminal and body ground.

REAR WINDOW MOTOR 4P CONNECTOR



Wire side of female terminals

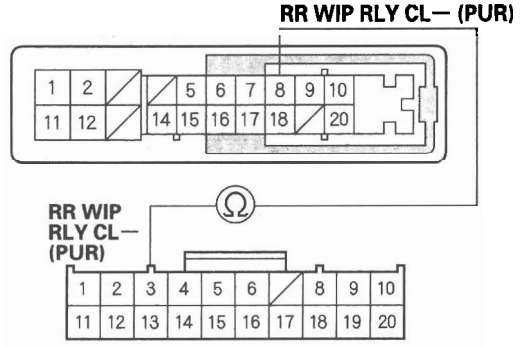
Is there continuity?

YES—Go to step 26.

NO—Repair an open in the wire or poor ground (G602).■

26. Check for continuity between the under-hood fuse/relay box connector F (20P) No. 8 terminal and the under-dash fuse/relay box connector S (20P) No. 3 terminal.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR F (20P)
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)
Wire side of female terminals

Is there continuity?

YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

NO—Repair an open in the wire.■

DTC B1077: Windshield Wiper (As) Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Turn the wiper switch to LOW or HIGH for at least 15 seconds, then turn the switch OFF.

   Do the wiper arms stop at the AUTO STOP (park) position?

   YES—Go to step 4.

   NO—Go to step 12.
4. Check for DTCs with the HDS.

   Is DTC B1077 indicated?

   YES—Go to step 5.

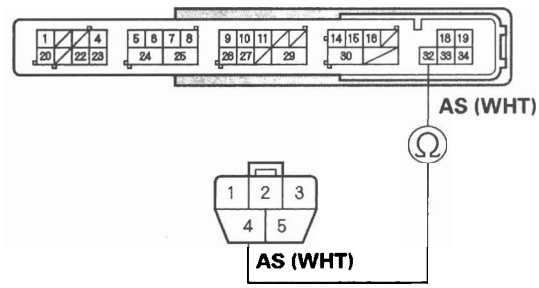
   NO—Intermittent failure, the windshield wiper system is OK at the time. Check for loose or poor connections.■
5. Turn the ignition switch OFF.
6. Do the windshield wiper motor test (see page 22-217).

   Does the wiper motor run normally?

   YES—Go to step 7.

   NO—Replace the windshield wiper motor (see page 22-219) and recheck.■
7. Disconnect the under-dash fuse/relay box connector F (34P) and windshield wiper motor 5P connector.
8. Check for continuity between the windshield wiper motor 5P connector No. 4 terminal and the under-dash fuse/relay box connector F (34P) No. 32 terminal.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)
Wire side of female terminals



WINDSHIELD WIPER MOTOR 5P CONNECTOR
Wire side of female terminals

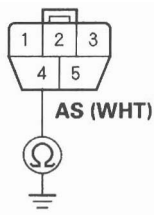
Is there continuity?

YES—Go to step 9.

NO—Repair an open in the WHT wire.■

9. Check for continuity between the windshield wiper motor 5P connector No. 4 terminal and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short in the WHT wire.■

NO—Go to step 10.

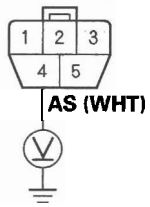
10. Turn the ignition switch ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure voltage between the windshield wiper motor 5P connector No. 4 terminal and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there voltage?

YES—Repair a short to power in the WHT wire. ■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

12. Turn the ignition switch OFF.

13. Check the No. 38 (30 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES—Go to step 14.

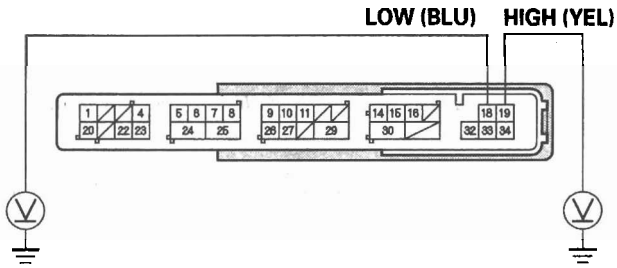
NO—Replace the fuse and recheck the system. ■

14. Do the windshield wiper motor test (see page 22-217).

15. Reconnect the windshield wiper motor 5P connector.

16. Run the windshield wiper motor at LOW or HIGH, and measure voltage between body ground and the under-dash fuse/relay box connector F (34P) No. 18 terminal (Low) and No. 19 terminal (High) respectively.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (34P)



Wire side of female terminals

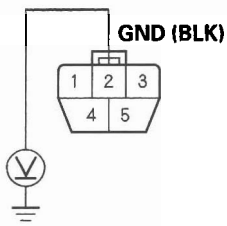
Is there battery voltage?

YES—Go to step 17.

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64). ■

17. Measure voltage between the windshield wiper motor 5P connector No. 2 terminal and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there less than 0.5 V?

YES—Repair an open or high resistance in the BLU (LO) or YEL (HI) wire. ■

NO—Repair an open in the BLK wire or poor ground (G302). ■

DTC B1281: Windshield Wiper Switch MIST Position Circuit Malfunction

DTC B1282: Windshield Wiper Switch INT (AUTO) Position Circuit Malfunction

DTC B1283: Windshield Wiper Switch LOW Position Circuit Malfunction

DTC B1284: Windshield Wiper Switch HIGH Position Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Turn the windshield wiper switch in MIST, INT, LOW, HIGH and OFF positions.
4. Check the DTCs with the HDS.

   Is DTC B1281, B1282, B1283, or B1284 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the wiper system is OK at this time. Check for loose or poor connections. ■
5. Select WIPERS from the BODY ELECTRICAL menu, and enter the DATA LIST.
6. Check the ON/OFF information of the WINDSHIELD WIPER SWITCH (MIST), WINDSHIELD WIPER SWITCH (INT), WINDSHIELD WIPER SWITCH (LOW), and WINDSHIELD WIPER SWITCH (HIGH) in the DATA LIST.

   Is the WINDSHIELD WIPER SWITCH (MIST) information indicator OFF, WINDSHIELD WIPER SWITCH (INT) information indicator OFF, WINDSHIELD WIPER SWITCH (LOW) information indicator OFF, and WINDSHIELD WIPER SWITCH (HIGH) information indicator OFF with the windshield wiper switch in the OFF position?

   YES—Go to step 14.

   NO—Go to step 7.
7. Turn the ignition switch OFF.
8. Disconnect the 8P connector from the windshield wiper switch.
9. Check the ON/OFF information of the WINDSHIELD WIPER SWITCH (MIST), WINDSHIELD WIPER SWITCH (INT), WINDSHIELD WIPER SWITCH (LOW), and WINDSHIELD WIPER SWITCH (HIGH) in the DATA LIST.

   Are the information indicators OFF?

   YES—Faulty windshield wiper switch; replace it. ■

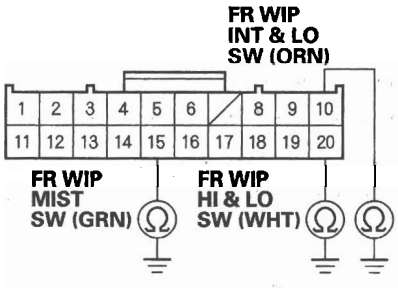
   NO—Go to step 10.
10. Turn the ignition switch OFF.
11. Disconnect under-dash fuse/relay box connector S (20P).

(cont'd)

DTC Troubleshooting (cont'd)

12. Check for continuity between body ground and under-dash fuse/relay box connector S (20P) terminals No. 10, No. 20, and No. 15 individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

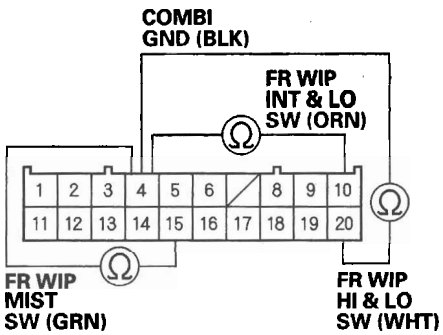
Is there continuity?

YES—Repair a short to ground in the wire.■

NO—Go to step 13.

13. Check for continuity between under-dash fuse/relay box connector S (20P) No. 4 and terminals No. 10, No. 15 and No. 20 terminals individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR S (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short between the wires.■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

14. Check for continuity between the under-dash fuse/relay box connector S (20P) terminals No. 10, No. 15 and, No. 20 as shown:

From terminal	To terminal
10	15, 20
15	20

Is there continuity?

YES—Repair a short between the wires.■

NO—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

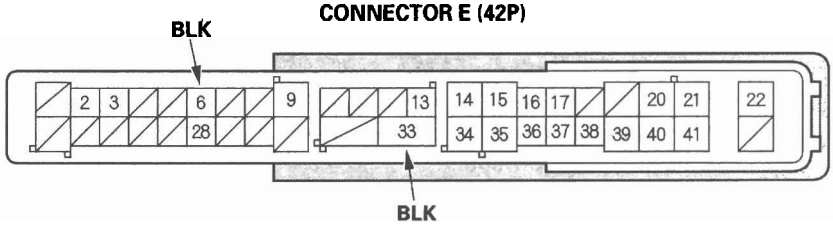
MICU Input Test

1. Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92), and check the No. 8 (10 A), No. 10 (7.5 A), and No. 38 (30 A) fuses in the under-dash fuse/relay box.

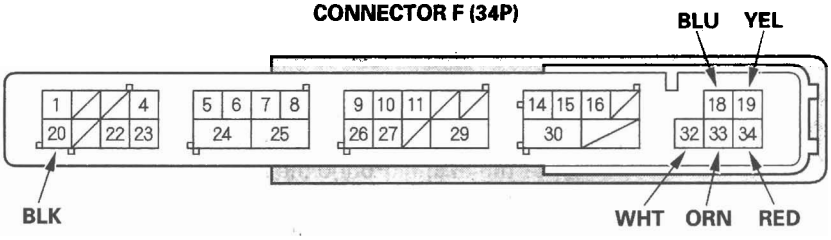
2. Disconnect under-dash fuse/relay box connectors E, F, S, and T.

   NOTE: All connector views are wire side of female terminals.

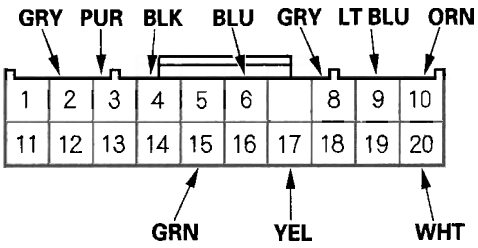
CONNECTOR E (42P)



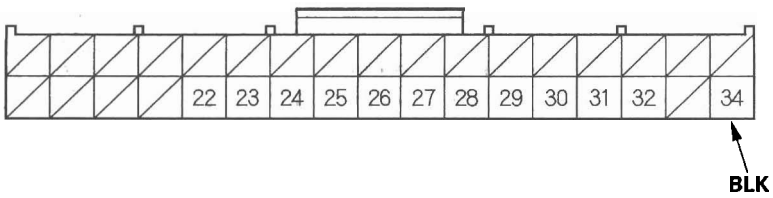
CONNECTOR F (34P)



CONNECTOR S (20P)



CONNECTOR T (34P)



3. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

(cont'd)

MICU Input Test (cont'd)

4. With the connectors still disconnected, make these input tests at the appropriate connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
F18	BLU	Under all conditions	Connect battery power to the F18 terminal: The windshield wiper motor should run at low speed.	• Poor ground (G401) • Faulty windshield wiper motor • An open in the wire
F19	YEL	Under all conditions	Connect battery power to the F19 terminal: The windshield wiper motor should run at high speed.	• Poor ground (G401) • Faulty windshield wiper motor • An open in the wire
F32	WHT	Under all conditions (disconnect the windshield wiper motor 5P connector)	Check for continuity between the F32 terminal and the windshield wiper motor 5P connector No. 4 terminal: There should be continuity.	An open in the wire
F33	ORN	Under all conditions	Connect battery power to the F33 terminal and ground the F34 terminal: The windshield washer motor should run.	• Faulty washer motor • An open in the wire
F34	RED	Under all conditions	Connect battery power to the F34 terminal and ground the F33 terminal: The windshield washer motor should run.	• Faulty washer motor • An open in the wire
S2	GRY	Under all conditions (disconnect the rear window wiper motor 4P connector)	Check for continuity between the S2 terminal and the rear window wiper motor 4P connector No. 2 terminal: There should be continuity.	An open in the wire
S3	PUR	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 8 (10 A) fuse in the under-dash fuse/relay box • Faulty rear window wiper motor relay • An open in the wire
			Attach to ground: The rear window wiper motor should work.	• Poor ground (G602) • Faulty rear window wiper motor relay • An open in the wire
S6 · S4	BLU · BLK	Intermittent dwell timer turned	Check resistance between S6 and S4 terminals: The resistance should vary between 0 to 1 kΩ.	• Faulty wiper/washer switch • An open in the wire

5. Reconnect the connectors to the under-dash fuse/relay box, and make these input tests at the connectors.

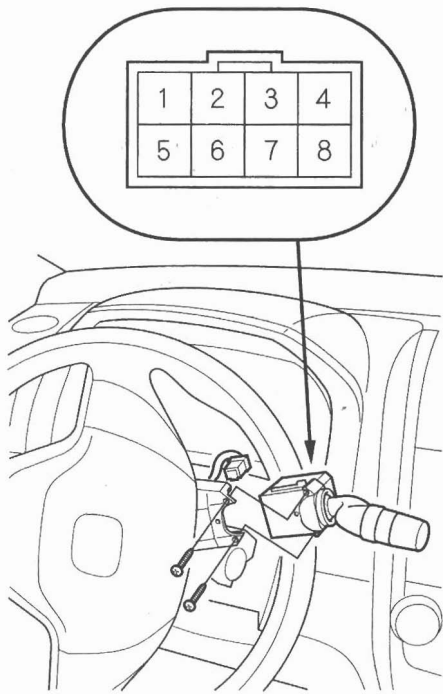
- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see page 22-64).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E6 E33	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G602) • An open in the wire
T34	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
S10 · S4	ORN · BLK	Windshield wiper switch (LOW) ON	Check for voltage between S10 and S4 terminals, and S20 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Windshield wiper switch OFF	Check for voltage between S10 and S4 terminals, and S20 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
S15 · S4	GRN · BLK	Windshield wiper switch (MIST) ON	Check for voltage between S15 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Windshield wiper switch (MIST) OFF	Check for voltage between S15 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
S17 · S4	YEL · BLK	Windshield washer switch ON	Check for voltage between S17 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Windshield washer switch OFF	Check for voltage between S17 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
S20 · S4	WHT · BLK	Windshield wiper switch (INT) ON	Check for voltage between S20 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Windshield wiper switch OFF	Check for voltage between S20 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
	WHT · BLK	Windshield wiper switch (HIGH) ON	Check for voltage between S20 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Windshield wiper switch OFF	Check for voltage between S20 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
S8 · S4	GRY · BLK	Rear window washer switch ON	Check for voltage between S8 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Rear window washer switch OFF	Check for voltage between S8 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire
S9 · S4	LT BLU · BLK	Rear window wiper switch ON	Check for voltage between S9 and S4 terminals: There should be less than 1 V.	• Faulty wiper/washer switch • An open in the wire
		Rear window wiper switch OFF	Check for voltage between S9 and S4 terminals: There should be 5 V or more.	• Faulty wiper/washer switch • A short to ground in the wire

Wiper/Washer Switch Test/Replacement

1. Remove the steering column covers (see page 20-107).

2. Disconnect the dashboard wire harness 8P connector (A) from the wiper/washer switch (B).



3. Remove the two screws, then slide out the wiper/washer switch.

4. Inspect the connector terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.

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

Windshield

Position \ Terminal	1	2	3	4	5		8
OFF							
INT		○			○		
LO		○		○	○		
HI				○	○		
Mist ON			○		○		
Washer ON	○				○		
Intermittent dwell timer turned					○	~	○

Rear Window

Position \ Terminal	5	6	7
Washer switch ON, wiper switch OFF	○	○	
OFF			
ON	○	○	○
Wiper and Washer switch ON	○		○

6. If the continuity is not as specified, replace the switch.

7. Install the switch in the reverse order of removal.

Wiper Motor Test

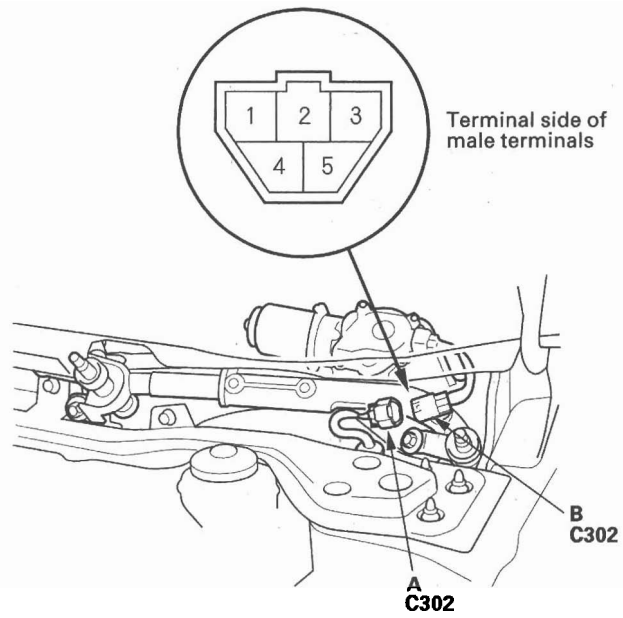
Windshield

1. Open the hood. Remove the caps, nuts, and the windshield wiper arms (see page 22-219).

   NOTE: Carefully remove the wiper arms so that they do not touch the hood.

2. Remove the hood seal and cowl covers (see page 22-219).

3. Disconnect engine compartment wire harness 5P connector C302 (A) from the windshield wiper subharness C302 (B).



4. Test the motor by connecting battery power to the No. 3 terminal and ground to the No. 2 terminal of the windshield wiper motor subharness 5P connector C302 (B). The motor should run at low speed.

5. Test the motor by connecting battery power to the No. 5 terminal and ground to the No. 2 terminal of the windshield wiper motor subharness 5P connector C302 (B). The motor should run at high speed.

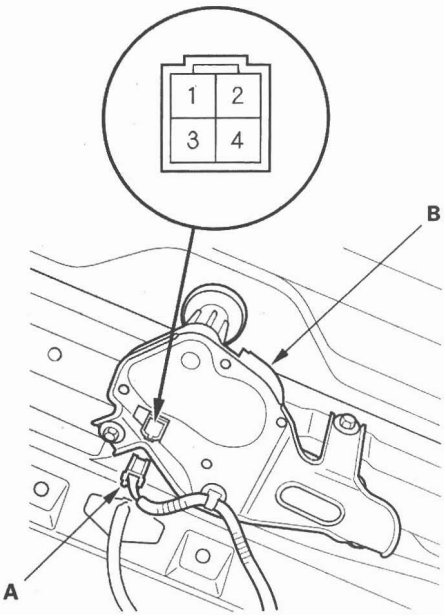
6. Connect an analog ohmmeter to the No. 4 and No. 2 terminals, and run the motor at low or high speed. The needle of the ohmmeter should pulse.

7. If there is no pulse, or the motor does not run, or fails to run smoothly, check for continuity of the windshield wiper motor subharness, if the wire harness is OK, replace the motor.

Rear Window

1. Open the tailgate, and remove the tailgate lower panel (see page 20-78).

2. Disconnect the 4P connector (A) from the wiper motor (B).

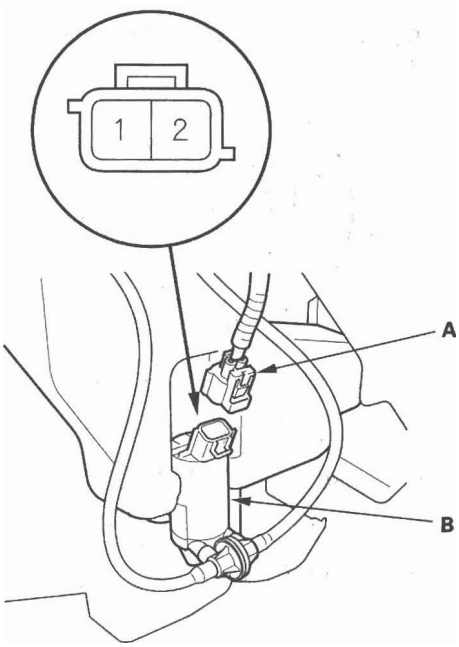


3. Test the motor by connecting battery power to the No. 1 terminal and ground the No. 3 terminal of the wiper motor. The motor should run. If the motor does not run or fails to run smoothly, replace the motor.

4. Connect an analog ohmmeter to the No. 2 and No. 3 terminals, and run the motor. The needle of the ohmmeter should pulse. If it does not, replace the motor.

Washer Motor Test

1. Remove the right inner fender (see page 20-181).
2. Disconnect the 2P connector (A) from the washer motor (B).



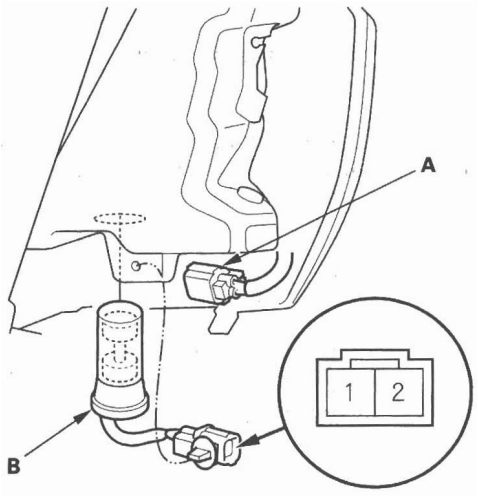
3. Test the motor by connecting battery power to the No. 2 [No. 1] terminal and ground the No. 1 [No. 2] terminal of the washer motor. The motor should run.
   [ ] : Rear window washer direction.

   - If the motor does not run or fails to run smoothly, replace it.
   - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.

Washer Fluid Level Switch Test

Canada models

1. Remove the right inner fender (see page 20-181).
2. Disconnect the 2P connector (A) from the washer fluid level switch (B).



Terminal side of male terminals

3. Remove the washer fluid level switch from the washer reservoir.

   NOTE: Fluid may flow out of the opening.

4. Check for continuity between the No. 1 and No. 2 terminals in each float position.

   - There should be continuity when the float is down.
   - There should be no continuity when the float is up.

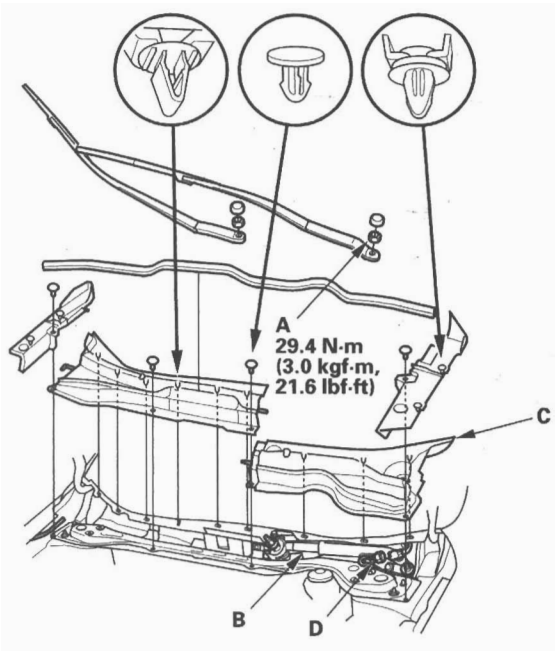
5. If the continuity is not as specified, replace the switch.

Wiper Motor Replacement

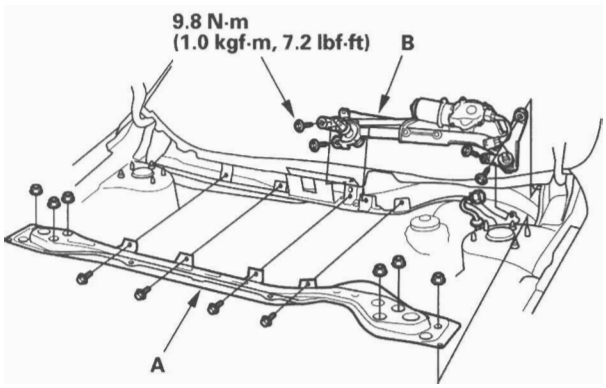
Windshield (Removal)

1. Open the hood. Remove the caps, nuts (A), and the windshield wiper arms (B).

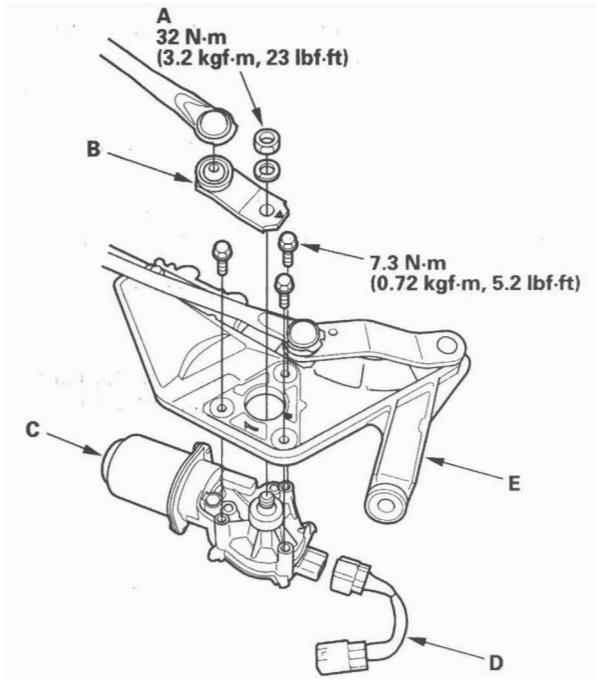
   NOTE: Carefully remove the wiper arms so that they do not touch the hood.



2. Remove the hood seal and cowl covers (C).
3. Disconnect the 5P connector (D) from the wiper motor.
4. Remove the bolts and the under-cowl panel (A).



5. Remove the four bolts and wiper linkage assembly (B).
6. Remove the nut (A), and separate the link (B) from windshield wiper motor (C).



7. Disconnect the windshield wiper motor subharness (D), then remove the three bolts, and separate the windshield wiper linkage (E) from the wiper motor.

(cont'd)

Wiper Motor Replacement (cont'd)

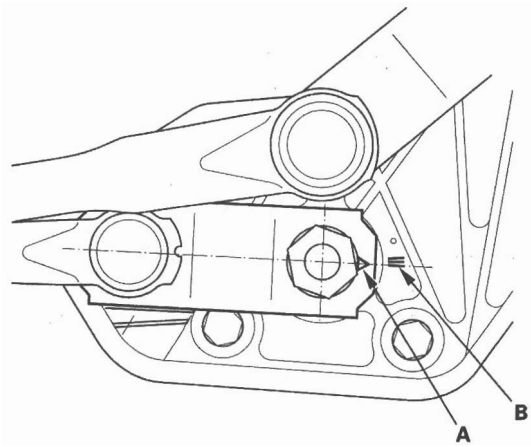
Windshield (Installation)

1. Plug in motor alone, turn the wiper/washer switch to (LO) or (HI) ON, then OFF to return the motor shaft to the park position.

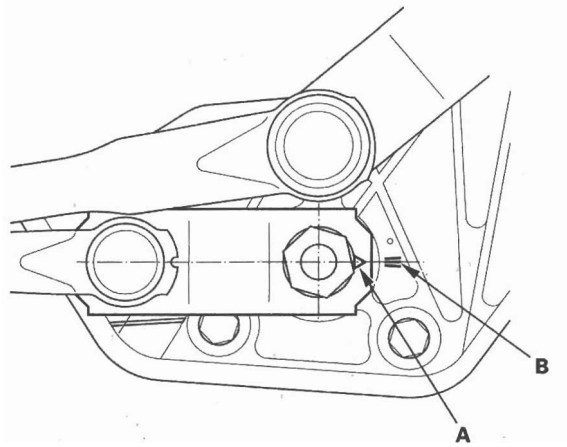
   NOTE:
   - Do not use the wiper/washer switch (INT) position in this step.
     If necessary, replace any damaged clips.
     Apply multipurpose grease to the moving parts.

2. Install the wiper motor to the wiper linkage assembly.

3. Install the link to the wiper motor shaft, then align the mark (A) of the link and the mark (B) of the wiper linkage assembly.



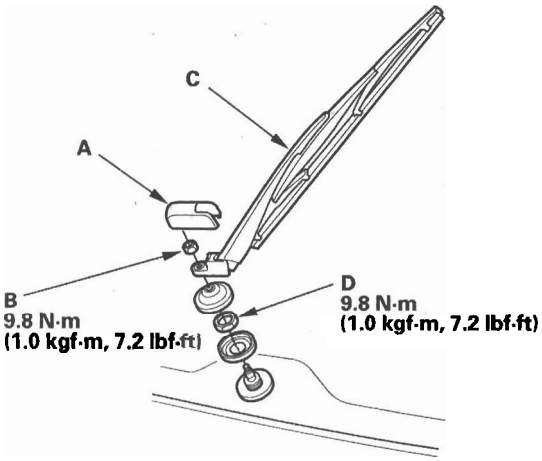
4. Before installing the wiper linkage assembly to the vehicle, mark sure the mark (A) of the link and the mark (B) of the linkage assembly are still aligned.



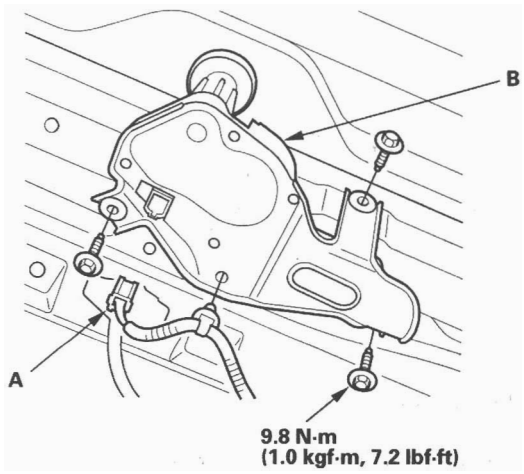
5. After installation, adjust the wiper arms (see page 22-223).

Rear Window

1. Open the tailgate, and remove the tailgate lower panel (see page 20-78).
2. Remove the cap (A), mounting nut (B), wiper arm (C), and special nut (D).



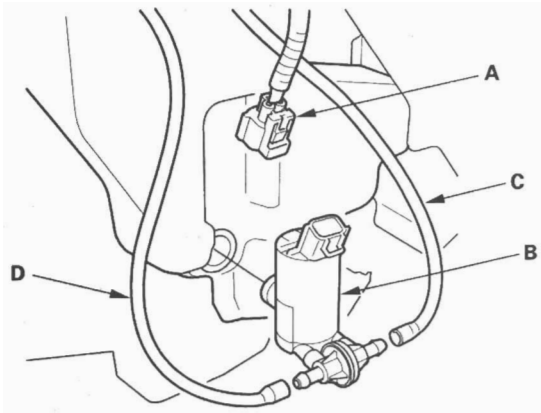
3. Disconnect the 4P connector (A), from the rear window wiper motor (B).



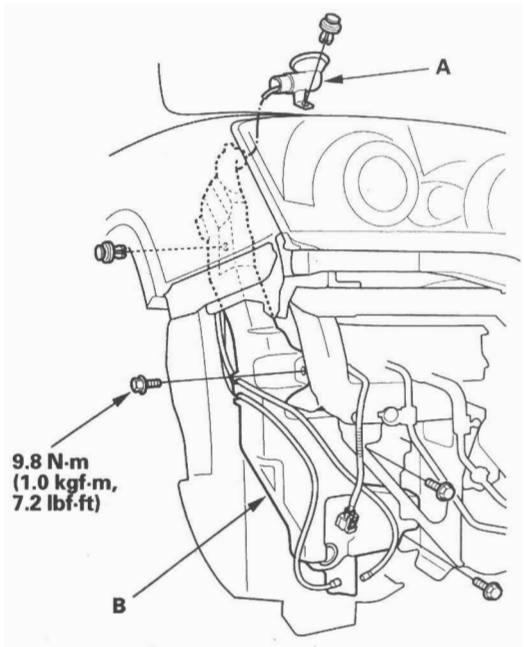
4. Remove the three bolts and wiper motor.
5. Install the wiper motor in the reverse order of removal.

Washer Reservoir Replacement

1. Remove the right inner fender (see page 20-181).
2. Disconnect the 2P connector(s) (A) from the washer motor (B) and the washer fluid level switch (Canada models).



3. Disconnect the windshield washer tube (C) and the rear window washer tubes (D).
4. Remove the clip from the filler neck (A), then disconnect the filler neck.

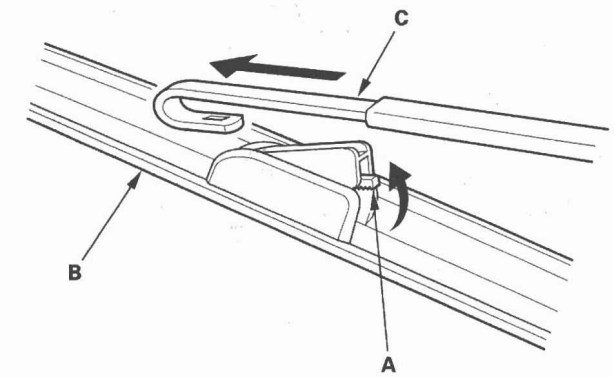


5. Remove the clip and bolts, then remove the washer reservoir (B).
6. Install the washer reservoir in the reverse order of removal.

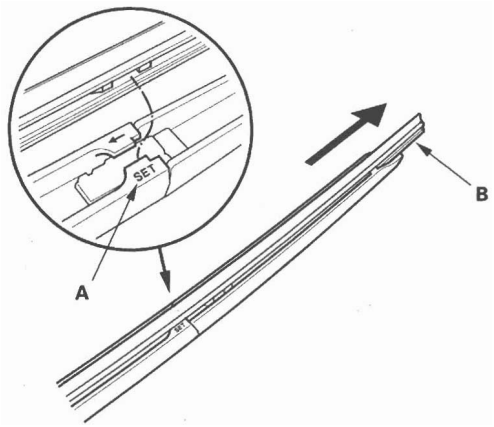
Wiper Blade Replacement

Windshield

1. Lift the wiper arms off the windshield.
2. Pull up and hold the tab (A), and slide the wiper blade (B) toward the tabs until it releases from the wiper arm (C).



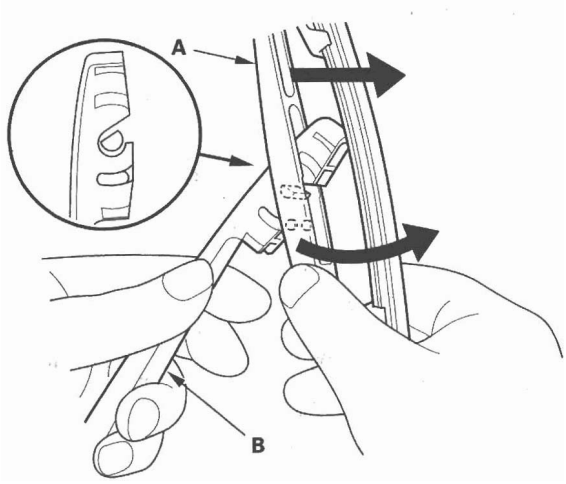
3. Find the blade labeled "SET" (A), then release the blade from it.



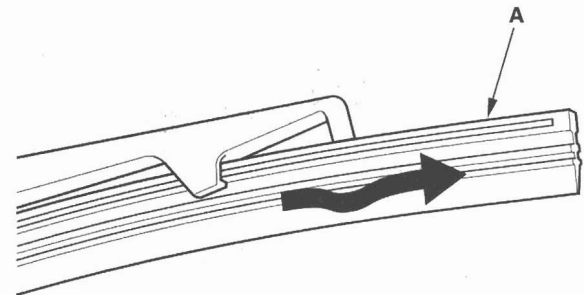
4. Pull back the end of the blade and slide out the old rubber (B).
5. Install a new rubber in the reverse order of removal.
6. Install the wiper blades onto the windshield wiper arms in the reverse order of removal.
7. Test by turning on the wipers. If the blades slip, turn off the wipers and seat the attachments more firmly.

Rear Window

1. Lift the wiper arm off the window.
2. Turn the blade (A) to release it from the wiper arm (B).



3. Pull back the end of the blade, and slide out the old rubber (A).



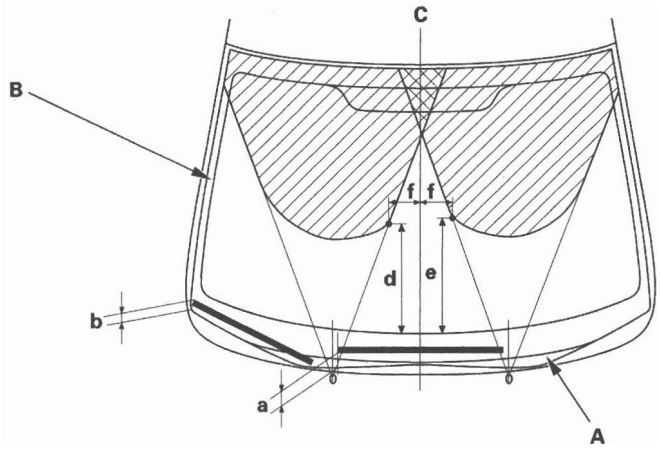
4. Install a new rubber in the reverse order of removal.
5. Install the wiper blade onto the rear window wiper arm in the reverse order of removal.
6. Test by turning on the wiper. If the blade slips, turn off the wiper and reinstall the wiper blade securely.

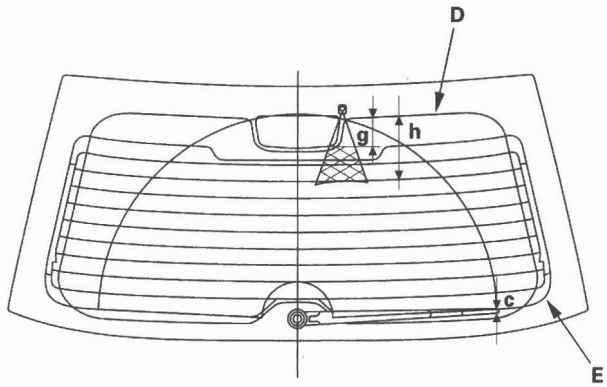
Wiper Arm/Nozzle Adjustment

1. Turn the windshield wipers ON then OFF, make sure when the wiper arms stop at the park position.

Windshield wiper arms stop position
a: Position at about 1.7 in. (43 mm) from the top of cowl cover (A).
b: Position at about 1.4 in. (35 mm) from the top of cowl cover (A).

Rear window wiper arms stop position
c: Align the wiper arms on the lowest wire of the rear window defogger (E).





2. When you turn on the washer(s), confirm 50 % or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzle(s).

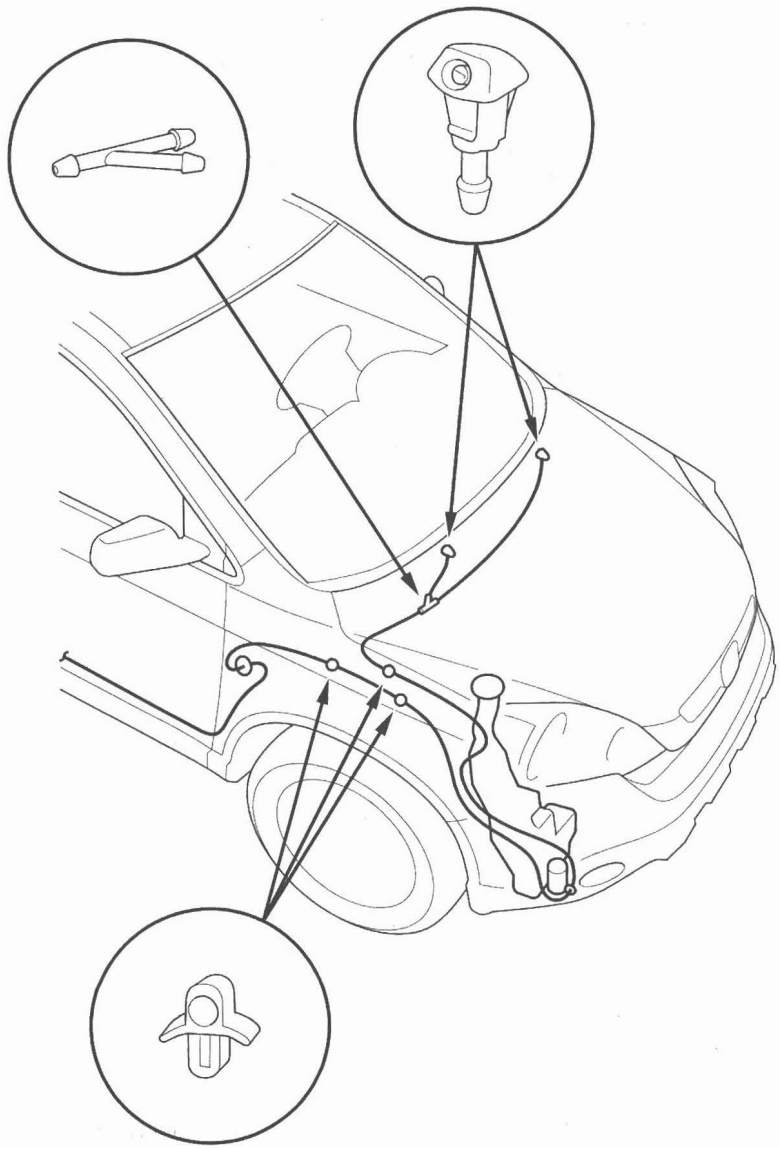
Windshield washer nozzle position
d: Position at about 12.9 in. (327 mm) from the top of the black ceramic area (B) at the lower windshield.
e: Position at about 13.7 in. (347 mm) from the top of the black ceramic area (B) at the lower windshield.
f: Position at about 4.8 in. (123 mm) from the windshield center line (C).

Rear window washer nozzle position
g: Position at about 1.5 in. (57 mm) from the rear window center line (D) at the upper rear window.
h: Position at about 4.2 in. (132 mm) from top of the black ceramic area (D) at the upper rear window.

Washer Tube Replacement

Windshield

1. Remove the right inner fender (see page 20-181).
2. Remove the washer nozzles and clips, then remove the tubes.

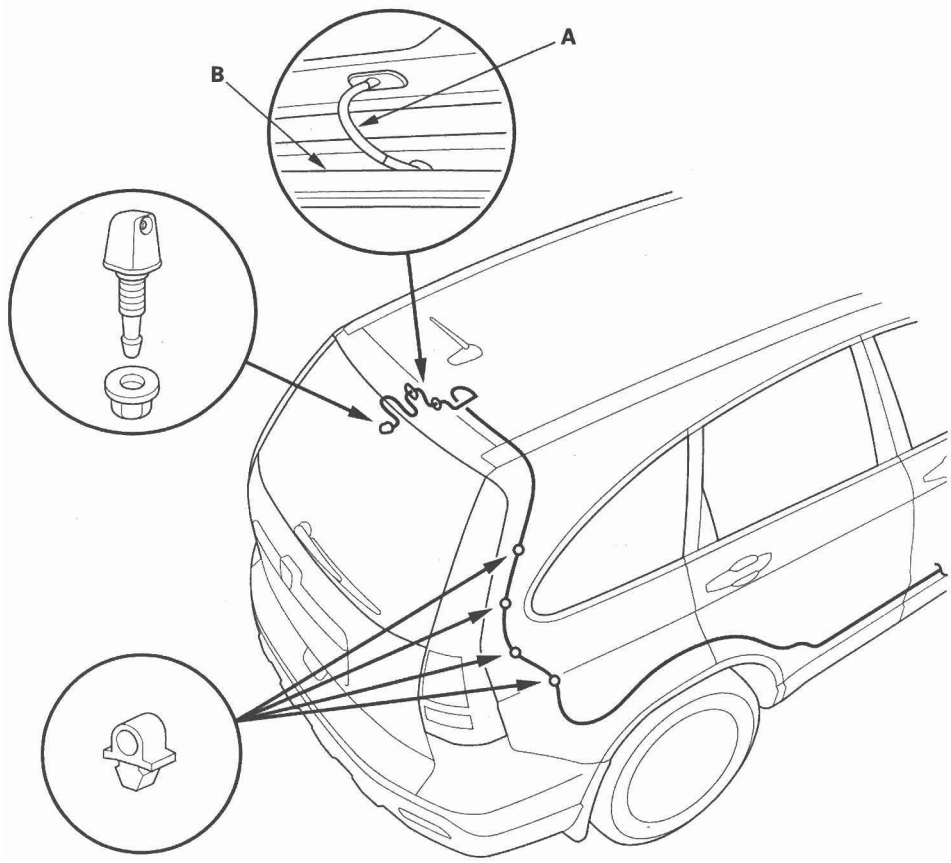


3. Install in the reverse order of removal. Take care not to pinch the washer tubes. Check the washer operation.

Rear Window

1. Open the tailgate, and lower the rear of the headliner (see page 20-83).

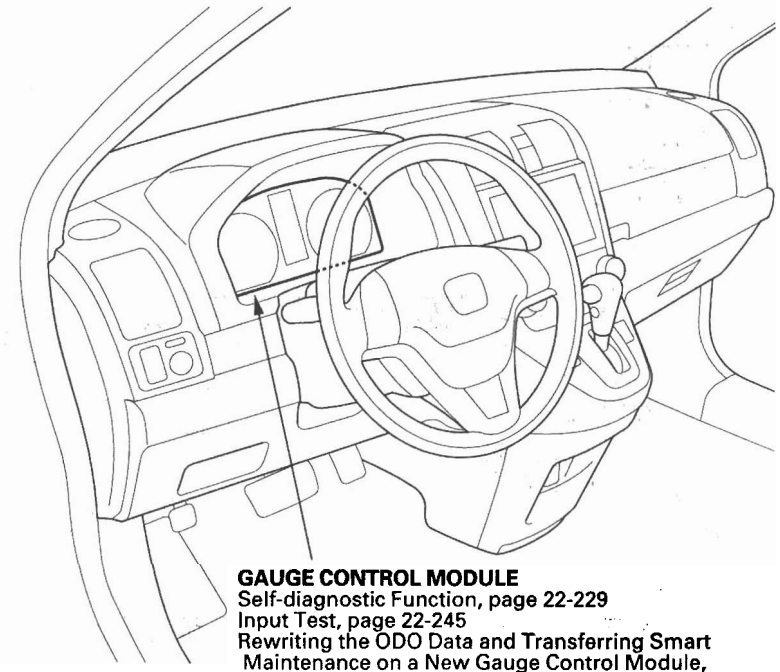
2. Remove the washer nozzle and clips, then remove the tube.



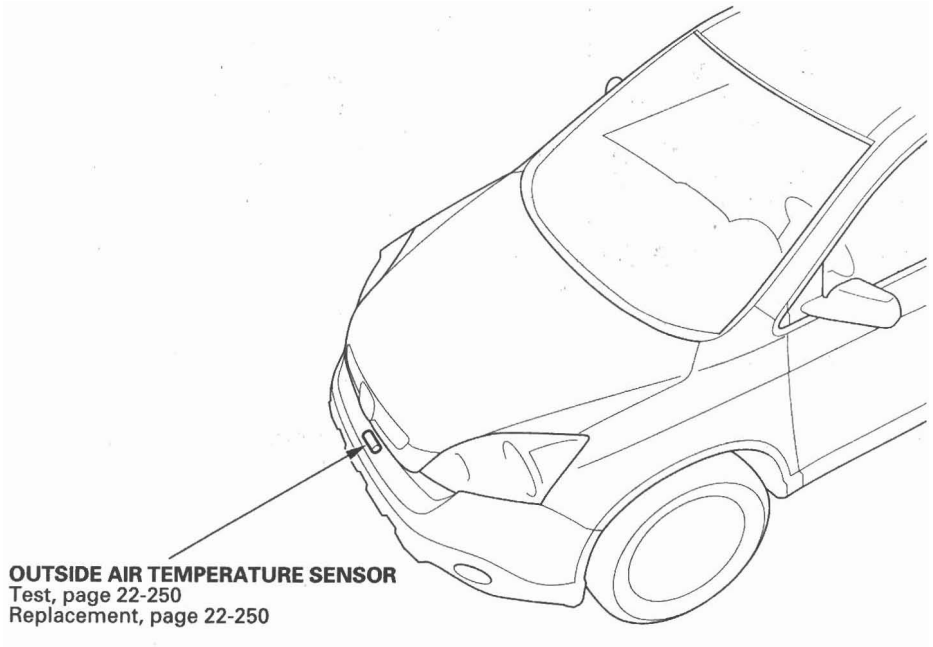
3. Install the parts in the reverse order of removal. Take care not to pinch the washer tube. Check the washer operation.

   NOTE: Even if the washer tube is pinched between the weatherstrip and the tailgate, the washer may operate, but it may allow water to leak at the weaterstrip. Make sure the tube is aligned, and adjust the tube by twisting if as needed.

Component Location Index



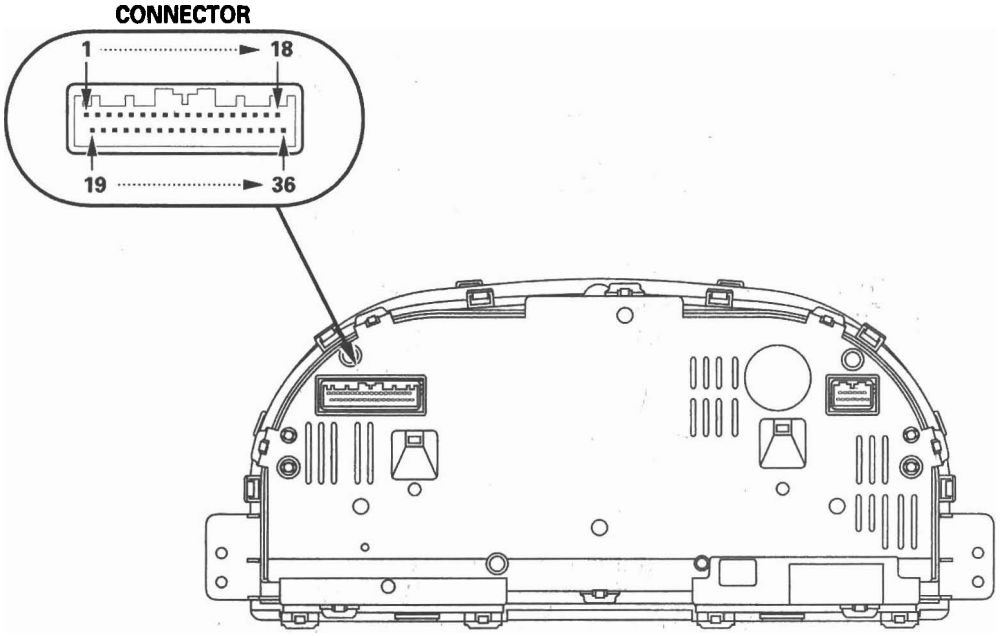
GAUGE CONTROL MODULE
Self-diagnostic Function, page 22-229
Input Test, page 22-245
Rewriting the ODO Data and Transferring Smart Maintenance on a New Gauge Control Module, page 22-247
Replacement, page 22-248
Outside Air Temperature Indicator Calibration, page 22-249

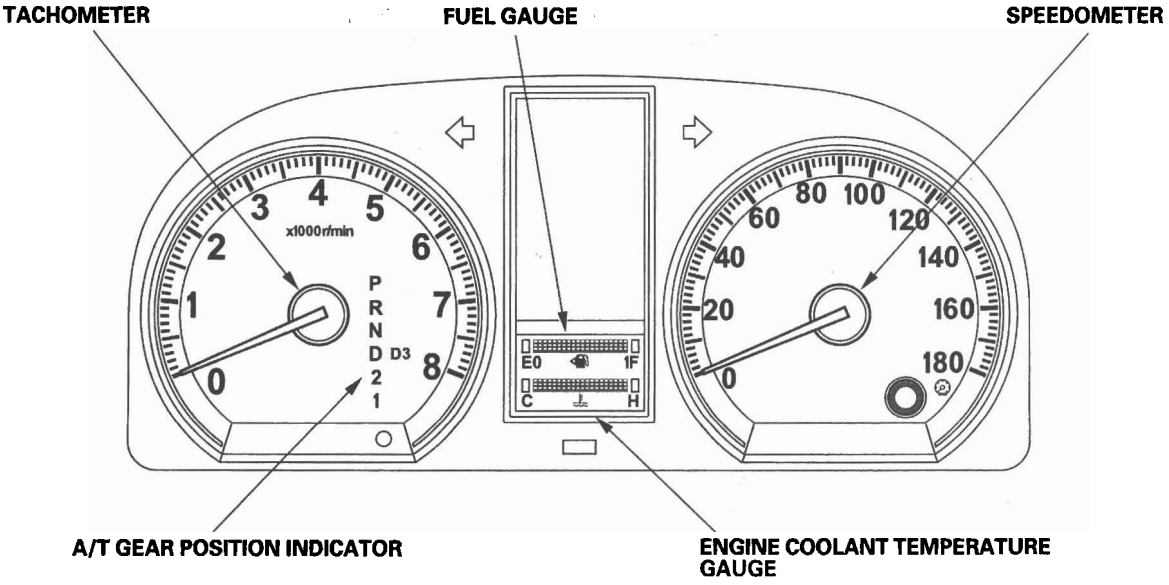


OUTSIDE AIR TEMPERATURE SENSOR
Test, page 22-250
Replacement, page 22-250

(cont'd)

Component Location Index (cont'd)





Self-diagnostic Function

Before checking the gauge system, refer to the B-CAN System Diagnosis Test Mode A (see page 22-92).

The gauge control module has the self-diagnostic functions shown, and also has the customizable reset function.

- The beeper drive circuit check.
- The indicator drive circuit check.
- The switch input test.
- The LCD segments check.
- The gauges drive circuit check (speedometer, tachometer, fuel gauge, coolant temperature gauge).
- The communication line check of the body-controller area network (B-CAN) communication line and the fast-controller area network (F-CAN) communication line.

NOTE:
Indicators are also controlled via the communication line.

Entering the self-diagnostic function with the HDS

Using the HDS, select Body Electrical, Gauges, then Function Test, and do the self-diagnostic function.

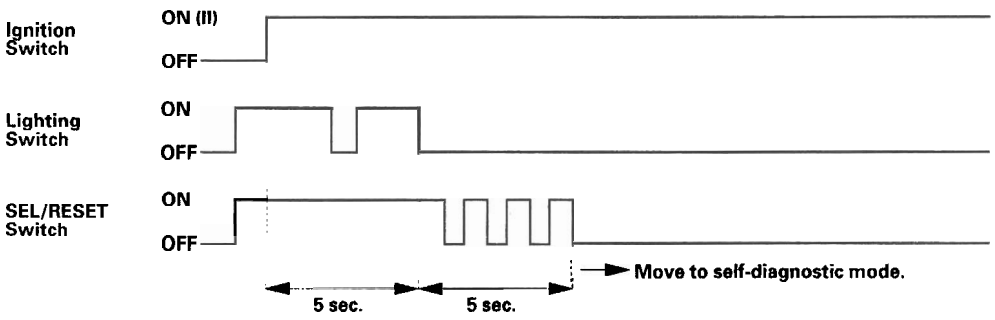
Entering the self-diagnostic function (manual method)

NOTE: This procedure takes precise timimg. It may take several tries to enter the self-diagnosis mode.

Before doing the self-diagnostic function, check the No. 10 (7.5 A) fuse in the under-dash fuse/relay box and the No. 23 (10 A) fuse in the under-hood fuse/relay box.

1. Push and hold the SEL/RESET switch button.
2. Turn the headlights ON.
3. Turn the ignition switch ON (II).
4. Within 5 sec., turn the headlights OFF, then ON and OFF again.
5. Within 5 sec., release the SEL/RESET switch button, and then push and release the button three times repeatedly.

NOTE:
- While in the self-diagnostic mode, the dash lights brightness controller operates normally.
- While in the self-diagnostic mode, the SEL/RESET button is used to start the Beeper Drive Circuit Test and the Gauge Drive Circuit Check.



(cont'd)

Self-diagnostic Function (cont'd)

The Indicator Drive Circuit Check

When entering the self-diagnostic mode, the following indicators blink:
ABS indicator, A/T gear position indicator, brake system indicator, charging system indicator, cruise control indicator, cruise indicator, door indicator, DRL indicator, high beam indicator, immobilizer indicator, lights-on indicator, low tire pressure indicator, low fuel indicator, malfunction indicator lamp (MIL), maintenance required indicator, oil pressure indicator, seat belt indicator, security indicator, side airbag cutoff indicator, SRS indicator, tailgate indicator, TPMS indicator, VSA indicator, VSA activation indicator, and washer fluid level indicator (Canada models).

Switch Input Check

At the initial stage of the self-diagnostic function, the beep sounds intermittently, the beeper sounds continuously when any of the following switch inputs are switched from OFF to ON:
Cruise control main, SET, RESUME, CANCEL switches, SEL/RESET switch, parking brake switch, and VSA OFF switch.
The illumination volume (+) and (−) switch (dash lights brightness controller) can be tested by turning on the headlights and verifying that the dash lights brightness changes as you turn the switch from full dim to full bright.

The Beeper Drive Circuit Check

When entering the self-diagnostic mode, the beeper sounds five times.

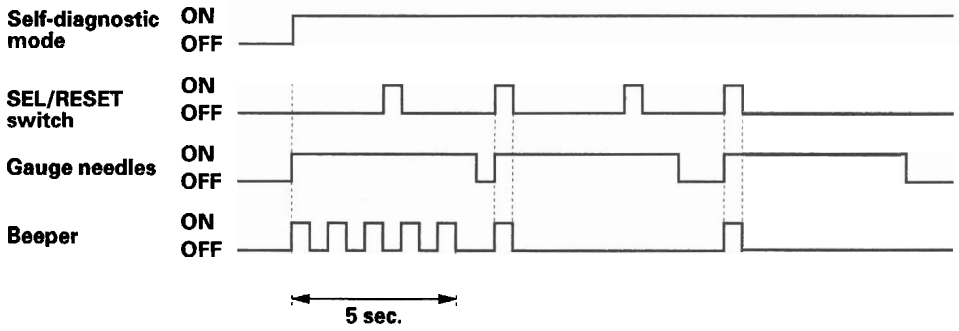
The LCD Segment Check

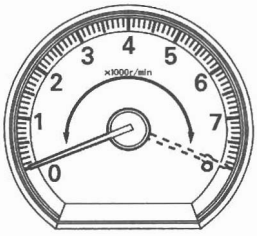
When entering the self-diagnostic mode, all the segments blink five times. After that, all segments come on.

The Gauge Drive Circuit Check

When entering the self-diagnostic mode, the speedometer and tachometer needles sweep from the minimum position to maximum position, then returns to the minimum position.

NOTE:
After the beeper stops sounding and the gauge needle returns to the minimum position, pushing the SEL/RESET switch starts the Beeper Drive Circuit Check (one beep) and the Gauge Drive Circuit Check again.
The check cannot be started again until the gauge needle returns to the minimum position.





The needle sweeps from the minimum position to the maximum position, then returns to the minimum position.

If the needle fails to sweep, or the beeper does not sound, replace the gauge control module.

The Communication Line Check

While in the self-diagnostic mode, the Communication Line Check starts after the LCD Segments Check.
If all segments come on, the communication line is OK. If faulty, the word "Error" will be indicated on the odometer display followed by number(s).

Error Code List

Error code	Type of communication line(s) error
Error 1	F-CAN communication
Error 2	B-CAN communication
Error 12	F-CAN and B-CAN communication

Example Indication

Normal (all segments come on.):

Faulty (Error 1):

- If the word "Error 1" is indicated, there is a malfunction in the communication line between the gauge control module and the fast-controller area network (F-CAN). Check for DTCs in the PCM and troubleshoot any DTCs found. If no DTCs are found, go to indicated troubleshooting.
- If the word "Error 2" is indicated, there is a malfunction in the communication line between the gauge control module and the body-controller area network (B-CAN). Go to indicated troubleshooting.

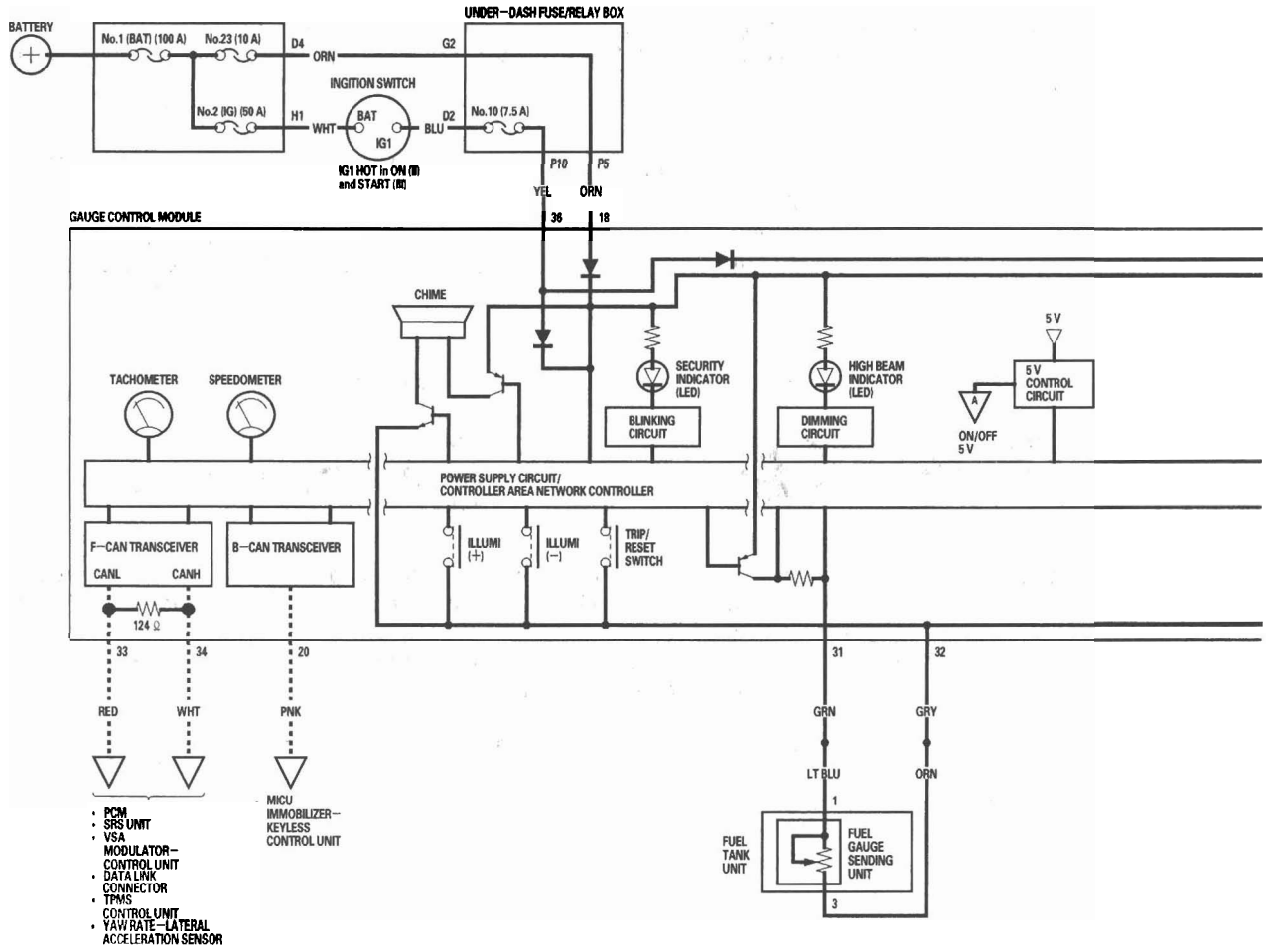
If any F-CAN or B-CAN communication line errors are found, go to DTC check using HDS.

Ending the self-diagnostic function

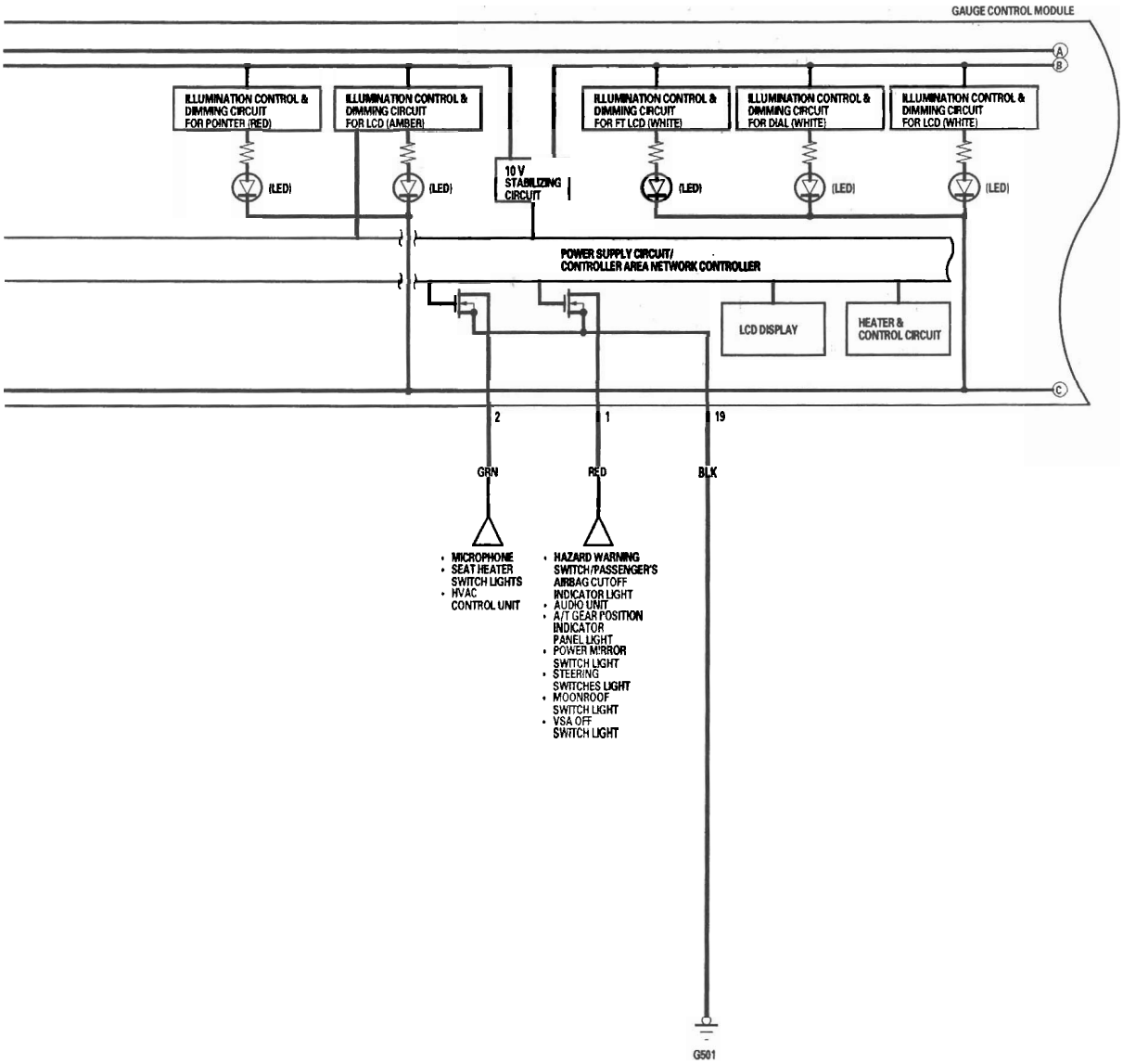
Turn the ignition switch OFF.

NOTE: If the vehicle speed exceeds 1.2 mph (2 km/h), the self-diagnostic function ends.

Circuit Diagram

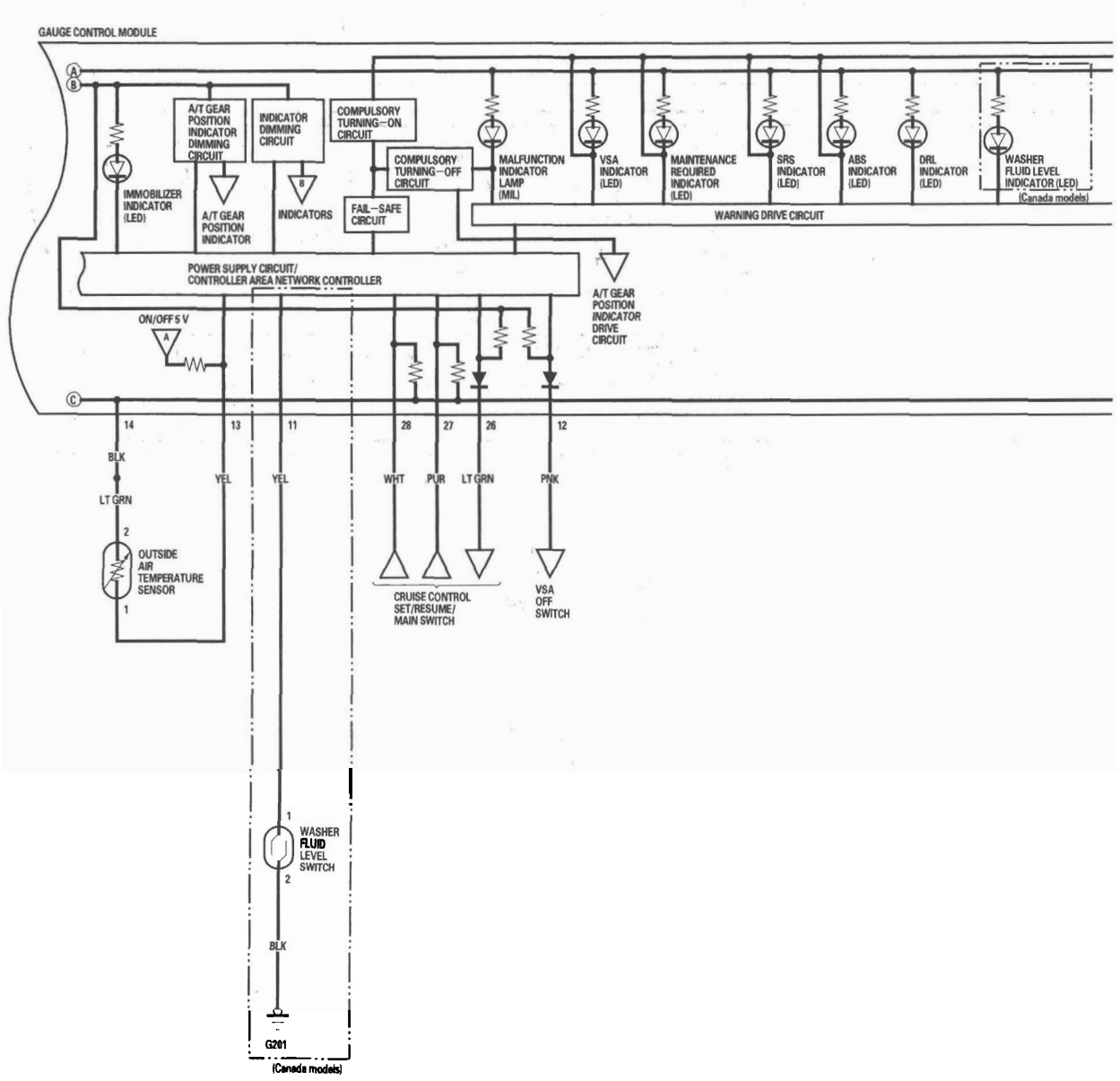


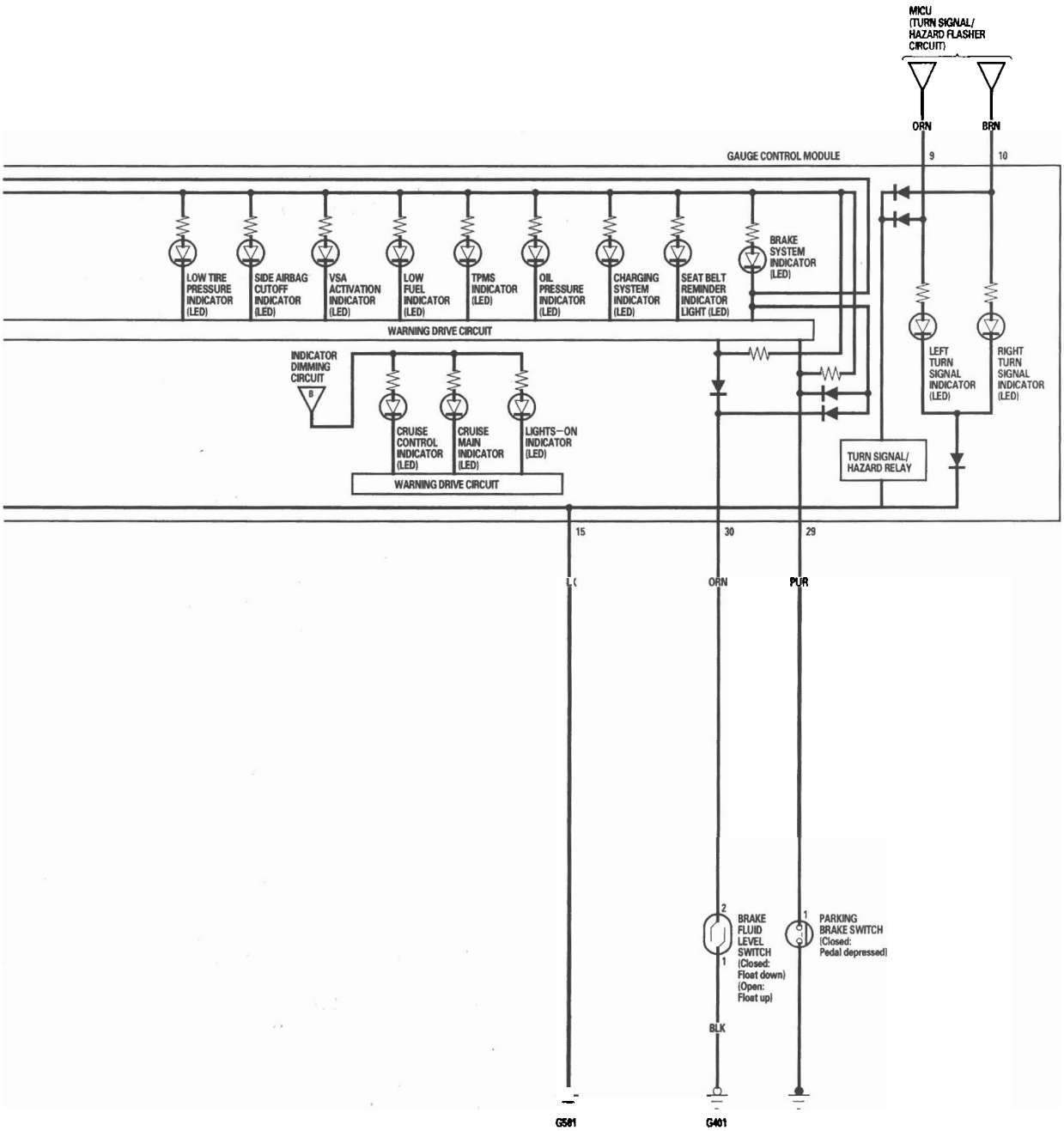
: CAN line



(cont'd)

Circuit Diagram (cont'd)




MICU
(TURN SIGNAL/
HAZARD FLASHER
CIRCUIT)
ORN
BRN
GAUGE CONTROL MODULE
9
10
LOW TIRE PRESSURE INDICATOR (LED)
SIDE AIRBAG CUTOFF INDICATOR (LED)
VSA ACTIVATION INDICATOR (LED)
LOW FUEL INDICATOR (LED)
TPMS INDICATOR (LED)
OIL PRESSURE INDICATOR (LED)
CHARGING SYSTEM INDICATOR (LED)
SEAT BELT REMINDER INDICATOR LIGHT (LED)
BRAKE SYSTEM INDICATOR (LED)
WARNING DRIVE CIRCUIT
INDICATOR DIMMING CIRCUIT
B
CRUISE CONTROL INDICATOR (LED)
CRUISE MAIN INDICATOR (LED)
LIGHTS—ON INDICATOR (LED)
WARNING DRIVE CIRCUIT
LEFT TURN SIGNAL INDICATOR (LED)
RIGHT TURN SIGNAL INDICATOR (LED)
TURN SIGNAL/ HAZARD RELAY
15
30
29
ORN
PUR
2
1
BRAKE FLUID LEVEL SWITCH (Closed: Float down) (Open: Float up)
1
PARKING BRAKE SWITCH (Closed: Pedal depressed)
BLK
G501
G401

DTC Troubleshooting

DTC B1152: Gauge Control Module Internal Error (EEPROM)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1152 indicated?

   YES—Replace the gauge control module.■

   NO—Intermittent failure, the system is OK at this time. Check the battery condition (see page 22-65), and the charging system.■

DTC B1155: Gauge Control Module Lost Communication with the MICU (HLSW Message)

DTC B1156: Gauge Control Module Lost Communication with the MICU (WIPSW Message)

DTC B1157: Gauge Control Module Lost Communication with the MICU (MICU Message)

DTC B1159: Gauge Control Module Lost Communication with the MICU (DOORSW Message)

DTC B1160: Gauge Control Module Lost Communication with the MICU (DRLOCKSW Message)

DTC B1188: Gauge Control Module Lost Communication with the MICU (RM Message)

NOTE: If you are troubleshooting multipule DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1155, B1156, B1157, B1159, B1160, or B1188 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the MICU.■

5. Check for DTCs with the HDS.

   Is DTC B1155, B1156, B1157, B1159, B1160, or B1188 indicated with DTCs B1905?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

   NO—Replace the gauge control module.■

DTC B1168: Gauge Control Module Lost Communication with the PCM (ENG Message)

DTC B1169: Gauge Control Module Lost Communication with the PCM (A/T Messages)

NOTE: If you are troubleshooting multipule DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1168 or B1169 indicated?

   YES—Go to step 5.

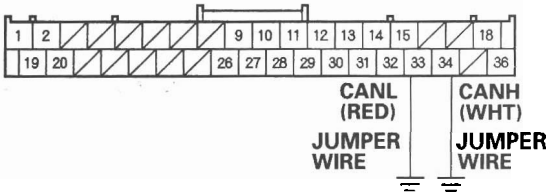
   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■
5. Check for Fuel and Emission system DTCs with the HDS (see page 11-3).

   Is any DTCs indicated?

   YES—Go to the indicated DTCs, then recheck.

   NO—Go to step 6.
6. Turn the ignition switch OFF.
7. Disconnect the gauge control module 36P connector.
8. Jump the SCS with the HDS (see page 11-3).
9. Disconnect the PCM connector A (44P).
10. Connect the gauge control module 36P connector No. 33 and No. 34 terminals and body ground with jumper wires.

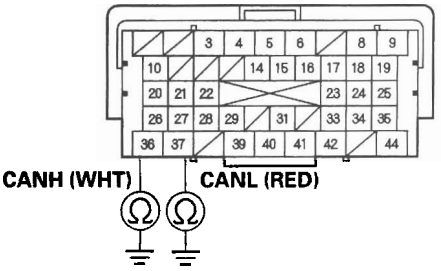
GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

11. Check for continuity between the PCM connector A (44P) No. 36 and No. 37 terminals and body ground individually.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there less than 3 Ω ?

YES—Update the PCM if it does not have the latest software (see page 11-7), or substitute a known-good PCM (see page 11-8), and recheck. If the indication goes away, replace the original PCM (see page 11-219). If the DTC is still present, replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire. ■

DTC Troubleshooting (cont'd)

DTC B1170: Gauge Control Module Lost Communication with the VSA Modulator-Control Unit (VSA message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1170 indicated?

   YES—Go to step 5.

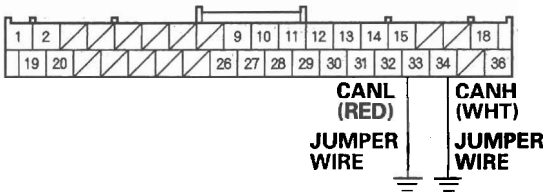
   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the VSA modulator-control unit. ■
5. Check for VSA system DTCs with the HDS.

   Is any DTCs indicated?

   YES—Go to the indicated DTCs, then recheck.

   NO—Go to step 6.
6. Turn the ignition switch OFF.
7. Disconnect the gauge control module 36P connector.
8. Disconnect the VSA modulator-control unit 46P connector.
9. Connect the gauge control module 36P connector No. 33 and No. 34 terminals and body ground with jumper wires.

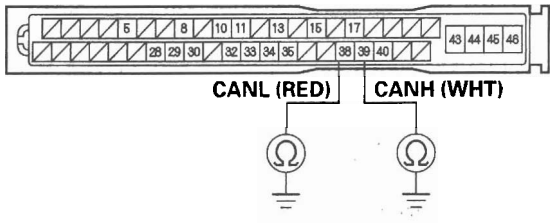
GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

10. Check for continuity between the VSA modulator-control unit 46P connector No. 38 and No. 39 terminals and body ground individually.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Is there less than 3 Ω ?

YES—Substitute a known-good VSA modulator-control unit, and recheck. If the indication goes away, replace the original VSA modulator-control unit. If the DTC is still present, replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire. ■

DTC B1173: Gauge Control Module Lost Communication with the TPMS Control Unit (TPMS message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1173 indicated?

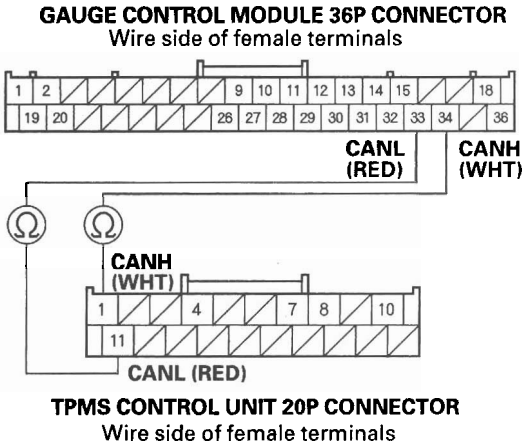
   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■
5. Check for TPMS DTCs with the HDS.

   Is any DTCs indicated?

   YES—Go to the indicated DTCs, then recheck.

   NO—Go to step 6.
6. Turn the ignition switch OFF.
7. Disconnect the gauge control module 36P connector.
8. Disconnect the TPMS control unit 20P connector.
9. Check for continuity between the gauge control module 36P connector No. 33 and No. 34 terminals and the TPMS control unit 20P connector No. 1 and No. 11 terminals respectively.



Is there continuity?

YES—Substitute a known-good TPMS control unit, and recheck. If the indication goes away, replace the original TPMS control unit. If the DTC is still present, replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire. ■

DTC Troubleshooting (cont'd)

DTC B1175: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Open

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

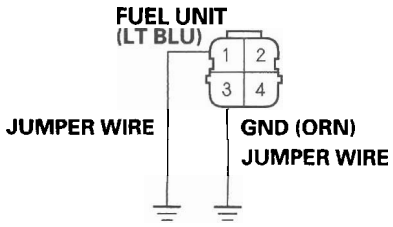
1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 30 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1175 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the fuel level sensor circuit is OK at this time. Check for loose or poor connections. ■
5. Turn the ignition switch OFF.
6. Disconnect the fuel tank unit 4P connector and the gauge control module 36P connector.
7. Connect the fuel tank unit 4P connector No. 1 and No. 3 terminals and body ground with jumper wires.

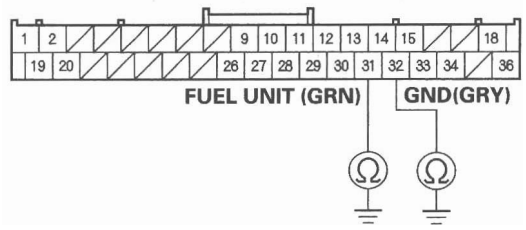
FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

8. Check for continuity between gauge control module 36P connector No. 31 and No. 32 terminals and body ground individually.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Go to step 9.

NO—Repair an open in the wire between the gauge control module and the fuel tank unit. ■

9. Do the fuel gauge sending unit test (see page 11-335).

   Is the fuel gauge sending unit OK?

   YES—Replace the gauge control module. ■

   NO—Replace the fuel tank unit. ■

DTC B1176: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Short

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 30 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1176 indicated?

   YES—Go to step 5.

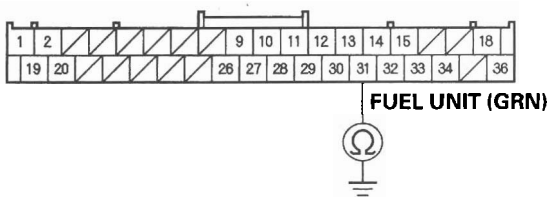
   NO—Intermittent failure, the fuel level sensor circuit is OK at this time. Check for worn/missing insulation or an internal short in the wire.■
5. Turn the ignition switch OFF.
6. Disconnect the fuel tank unit 4P connector.
7. Clear the DTCs with the HDS.
8. Turn the ignition switch OFF, and then back ON (II).
9. Wait for 30 seconds.
10. Check for DTCs with the HDS.

    Is DTC B1176 indicated?

    YES—Go to step 11.

    NO—Replace the fuel gauge sending unit (see page 11-332).■
11. Disconnect the gauge control module 36P connector.
12. Check for continuity between the gauge control module 36P connector No. 31 terminal and body ground.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short in the wire between the gauge control module and the fuel tank unit.■

NO—Replace the gauge control module.■

DTC Troubleshooting (cont'd)

DTC B1177: Battery Voltage Abnormal

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1177 indicated?

   YES—Go to step 8.

   NO—Go to step 4.
4. Clear the DTCs with the HDS.
5. Turn the ignition switch OFF, and then back ON (II).
6. Crank the engine.
7. Check for DTCs with the HDS.

   Is DTC B1177 indicated?

   YES—Go to step 8.

   NO—Intermittent failure, the gauge control module and power supply voltage (IG1) that is supplied to the gauge control module are OK at this time. The battery may have been discharged, and recovered.■
8. Check the battery (see page 22-65) and the charging system.

   Is the battery condition normal and the charging system OK?

   YES—Go to step 9.

   NO—The battery needs a recharge or replacement, or the charging system needs to be repaired.■
9. Turn the ignition switch ON (II).
10. With the gauge control module 36P connector still connected, measure voltage between the body ground and the gauge control module 36P connector No. 36 terminal.

    Is there battery voltage?

    YES—Replace the gauge control module.■

    NO—Repair an open or high resistance in the wire between the ignition switch and the gauge control module.■

DTC B1178: F-CAN Communication Line Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTCs B1168, B1169, B1170, and/or B1187 indicated?

   YES—Go to the indicated DTCs troubleshooting. ■

   NO—Intermittent failure, the system is OK at this time. Check for open or short in the wire. ■

DTC Troubleshooting (cont'd)

DTC B1187: Gauge Control Module Lost Communication with the SRS Unit (SRS Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1187 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the SRS unit. ■

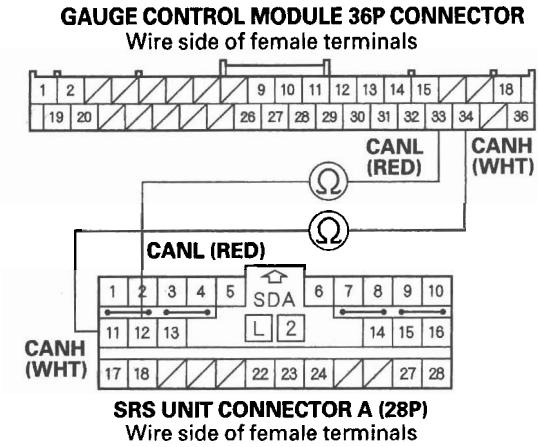
5. Check for SRS DTCs with the HDS.

   Is any DTCs indicated?

   YES—Go to the indicated DTCs troubleshooting, then recheck.

   NO—Go to step 6.

6. Turn the ignition switch OFF.
7. Disconnect the gauge control module 36P connector.
8. Disconnect the SRS unit connector A (28P).
9. Check for continuity between the gauge control module 36P connector No. 33 and No. 34 terminals and the SRS unit connector A (28P) No. 12 and No. 11 terminals respectively.



Is there continuity?

YES—Substitute a known-good SRS unit, and recheck. If the indication goes away, replace the original SRS unit. If the DTC is still present, replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire. ■

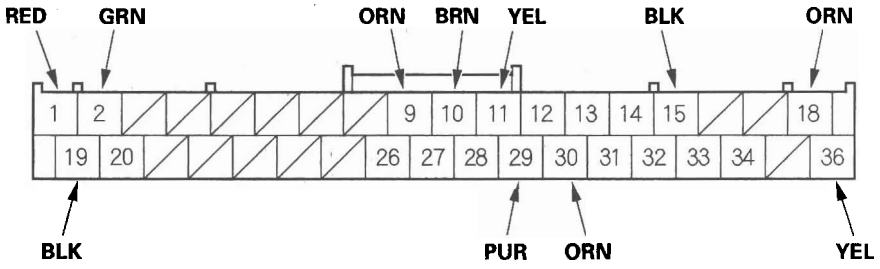
Gauge Control Module Input Test

NOTE: Before testing, do the gauge control module self-diagnosis procedure, and make sure the B-CAN communication line is OK.

1. Turn the ignition switch OFF.

2. Remove the gauge control module, and disconnect the 36P connector from it (see page 22-248).

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

3. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 4.

4. With the connector still disconnected, make these input tests at the connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	RED	Combination light switch ON	Attach to ground: The illumination of the dash lights, audio unit, and moonroof switch light should come on full.	• Faulty LEDs and bulbs • An open in the wire
2	GRN	Combination light switch ON	Attach to ground: The illumination of the seat heater switch lights and HVAC control unit should come on full bright.	• Faulty LEDs and bulbs • An open in the wire
9	ORN	Ignition switch ON (II), turn signal switch in LEFT	Check for voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty MICU • Faulty combination light switch • An open in the wire
10	BRN	Ignition switch ON (II), turn signal switch in RIGHT	Check for voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty MICU • Faulty combination light switch • An open in the wire

(cont'd)

Gauge Control Module Input Test (cont'd)

5. Reconnect the connector to the gauge control module, and make the input tests at the connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If the input test proves OK, the gauge control module must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
15	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
19	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
36	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 10 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire
18	ORN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
11	YEL	Ignition switch ON (II), washer fluid is half or more in the washer reservoir	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G201) • Faulty washer fluid level switch • An open in the wire
		Ignition switch ON (II), washer fluid is empty in the washer reservoir	Check for voltage to ground: There should be 5 V or more.	• Faulty washer fluid level switch • A short to ground in the wire
30	ORN	Ignition switch ON (II), brake fluid is full level in the reservoir	Check for voltage to ground: There should be 5 V or more.	• Faulty brake fluid level switch • A short to ground in the wire
		Ignition switch ON (II), brake fluid is lower level in the reservoir	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G401) • Faulty brake fluid level switch • An open in the wire
29	PUR	Ignition switch ON (II), parking brake pedal depressed	Check for voltage to ground: There should be less than 1 V.	• Faulty parking brake switch • An open in the wire
		Ignition switch ON (II), parking brake pedal released	Check for voltage to ground: There should be 5 V more.	• Faulty parking brake switch • A short to ground in the wire

Rewriting the ODO Data and Transferring Smart Maintenance on a New Gauge Control Module

NOTE:
- Obtain a new gauge control module before starting the rewriting process.
- Rewriting is not possible on a gauge control module that will not communicate with the HDS.
- Make sure that the HDS shows the correct VIN for the vehicle you are working on.
- Once you have started this procedure, you must complete it before removing the HDS from the DLC.
- Connect a battery jumper box (not a battery charger) to insure that correct battery voltage will be maintained.

1. Before replacing the gauge control module, connect the HDS.
2. Select GAUGES from the BODY ELECTRICAL system select menu with the HDS.
3. Select "Gauge Control Module Replacement (ODO Rewrite)" from the ADJUSTMENT menu, and follow the instructions on the display to retrieve the ODO value and the Smart Maintenance Information.
4. Replace the gauge control module.
5. Follow the instructions on the display to write the new ODO value and Smart Maintenance to the new gauge control module. If the data transfer fails, refer to the instructions below to release the locked ODO value.

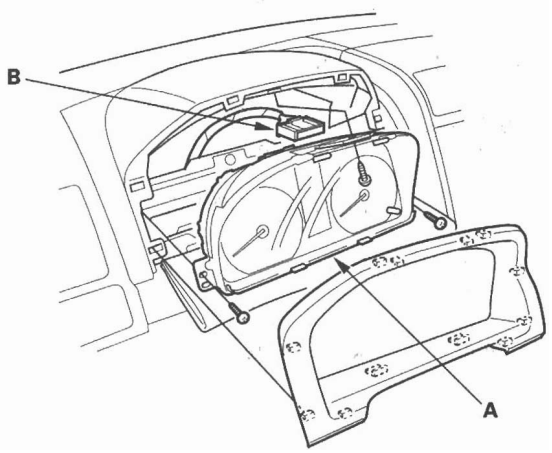
Release Locked odometer mileage to the original gauge control module.

If, after you attempt to transfer mileage, the odometer display has dashes (———), is garbled, or shows an incorrect value, the original gauge control module needs to be unlocked and restored to its original state:

1. Confirm that you have the latest HDS version of software.
2. Make sure that the HDS shows the correct VIN for the vehicle you are working on.
3. With the ignition switch OFF, reconnect the original gauge control module.
4. Completely re-boot the HDS.
5. Clear any stored DTCs.
6. Navigate to Body Electric/Gauges/Adjustment/ Instrument Panel Replacement.
7. Select "3. Releasing Locked ODO Value."
8. Follow the prompts and the Odometer mileage will be restored.
9. Start over and make sure the screen prompts are followed.

Gauge Control Module Replacement

1. Remove the instrument panel (see page 20-96).
2. Remove the three screws from the gauge control module (A).



3. Disconnect the 36P connector (B) from the gauge control module.
4. Install the gauge in the reverse order of removal.

Outside Air Temperature Indicator Calibration

Description

The outside temperature sensor is located behind the center of the front bumper. The gauge control module uses measurements from this sensor to display the outside air temperature.
Because of the location of the sensor, it may be affected by heat, reflection from the road, engine and radiator heat or hot exhaust from surrounding traffic.
These conditions can heat soak the outside air temperature sensor and cause inaccurate readings.
Logic has been written into the gauge control module to help prevent abnormal of fluctuating outside air temperature indicator readings.

Outside Air Temperature Indicator Logic

Initial outside air temperature indication after the ignition switch is turned ON (II).

- If the engine coolant temperature is 140 °F (60 °C) or higher when the ignition switch is turned ON (II), the outside air temperature will be indicated the last reading before the key was turned off regardless of the current temperature measured by the outside air temperature sensor.
- If the engine coolant temperature is 139 °F (59 °C) or lower when the ignition switch is turned ON (II), the current temperature measured by the outside air temperature sensor will be indicated.

Update to the outside air temperature indicator while driving

If the temperature measured by the outside air temperature sensor is greater than the temperature on the outside air temperature indicator, the outside temperature indicator will increase by 1 °F (1 °C) per minute after the vehicle speed is greater than 19 mph (30 km/h) for more than 1 minute and 30 seconds. It will continue to increase until the current outside air temperature is indicated. So, the first change to the outside air temperature indicator is 1 minute and 30 seconds after the vehicle speed is greater than 19 mph (30 km/h). If the vehicle speed drops below 19 mph (30 km/h), the indicator will not update again until the vehicle speed is increased to 19 mph (30 km/h) or more for more than 1 minute and 30 seconds again.

If the outside air temperature is less than 140 °F (60 °C), the temperature increases 1 °F (1 °C) every 2 seconds until the current outside air temperature.

If the outside air temperature is less than the indicated temperature, the temperature will decrease 1 °F (1 °C) every 2 seconds until the current outside air temperature is indicated regardless of vehicle speed.

Troubleshooting

If the indicator displays "———" for more than 2 seconds after selecting the outside air temperature display mode, check the climate control system or multiplex integrated control system for DTCs (see B-CAN System Diagnosis Test Mode A) (see page 22-92).

Calibration

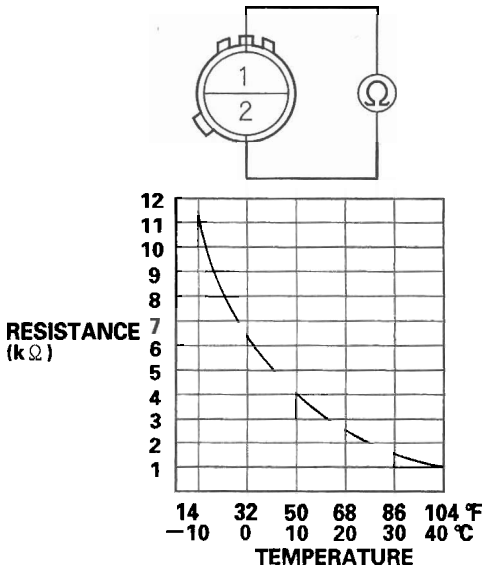
The outside air temperature indicator's displayed temperature can be recalibrated ±5 °F or ±3 °C to meet the customer's expectations.

Calibrate the outside air temperature with the HDS.

Outside Air Temperature Sensor Test

1. Remove the outside air temperature sensor (see page 22-250).
2. Dip the sensor in ice water, and measure the resistance. Then pour warm water on the sensor, and check for a change in resistance.
3. Compare the resistance reading between the No. 1 and No. 2 terminals of the outside air temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

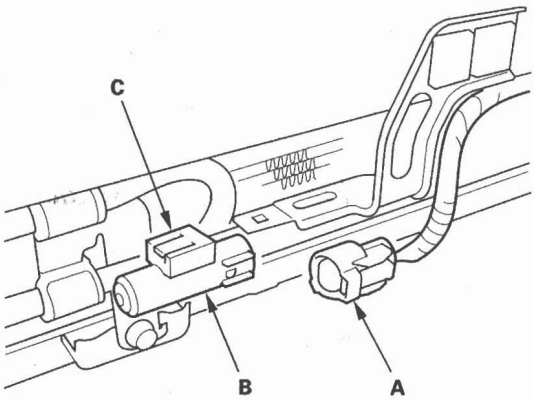
OUTSIDE AIR TEMPERATURE SENSOR



4. If the resistance is not as specified, replace the outside air temperature sensor (see page 22-250).

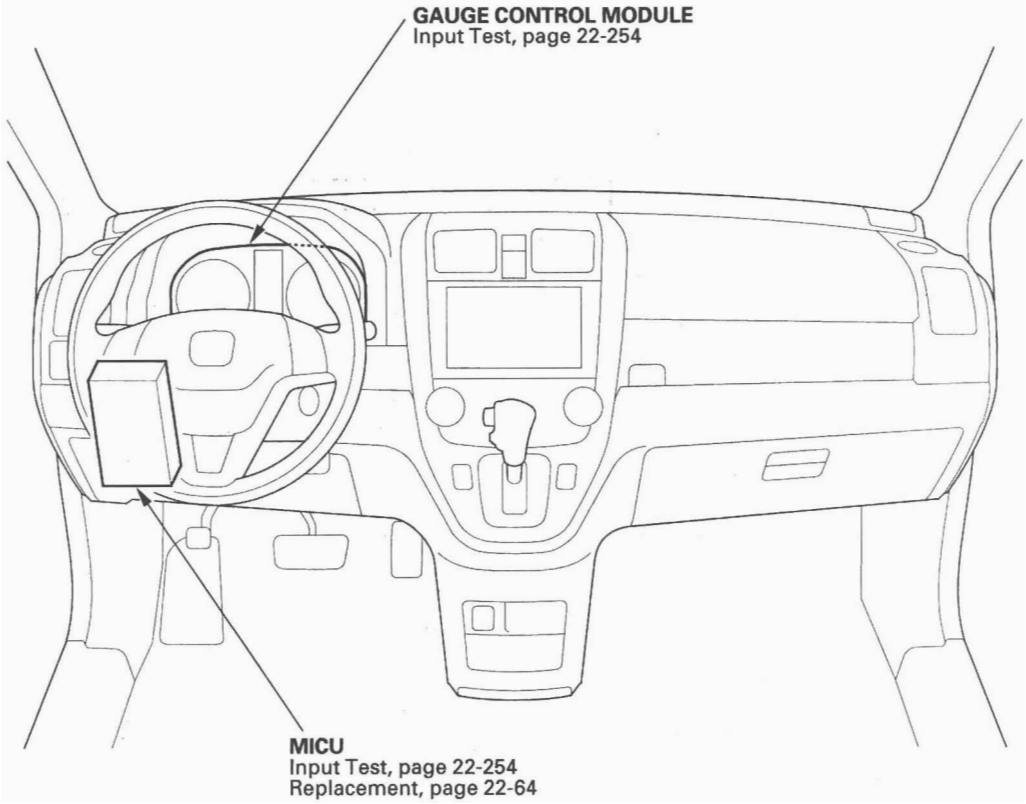
Outside Air Temperature Sensor Replacement

1. Disconnect the 2P connector (A) from the outside air temperature sensor (B).
2. Lift the tab (C) to release the lock, then remove the outside air temperature sensor from the front bumper.

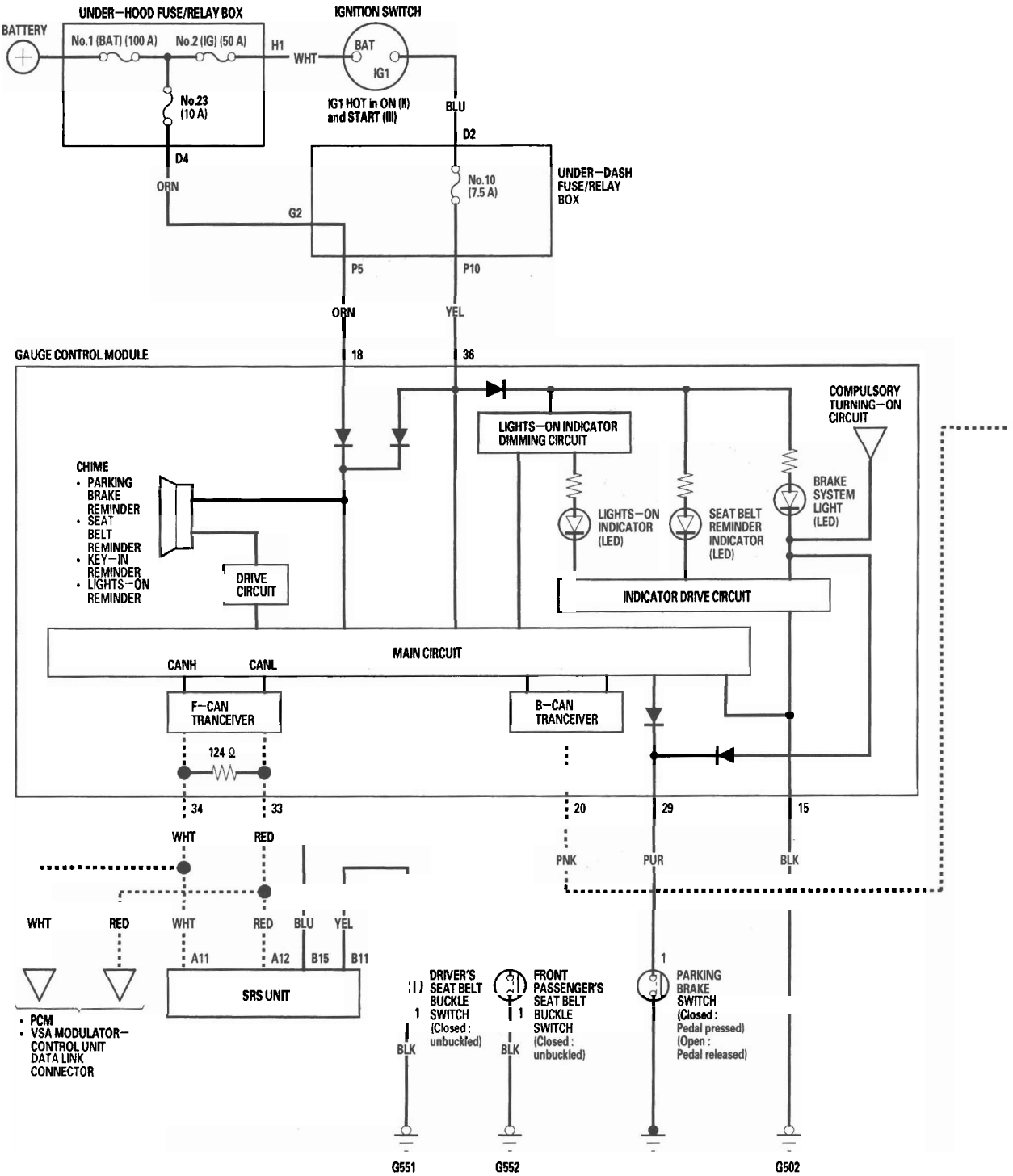


3. Install the sensor in the reverse order of removal.

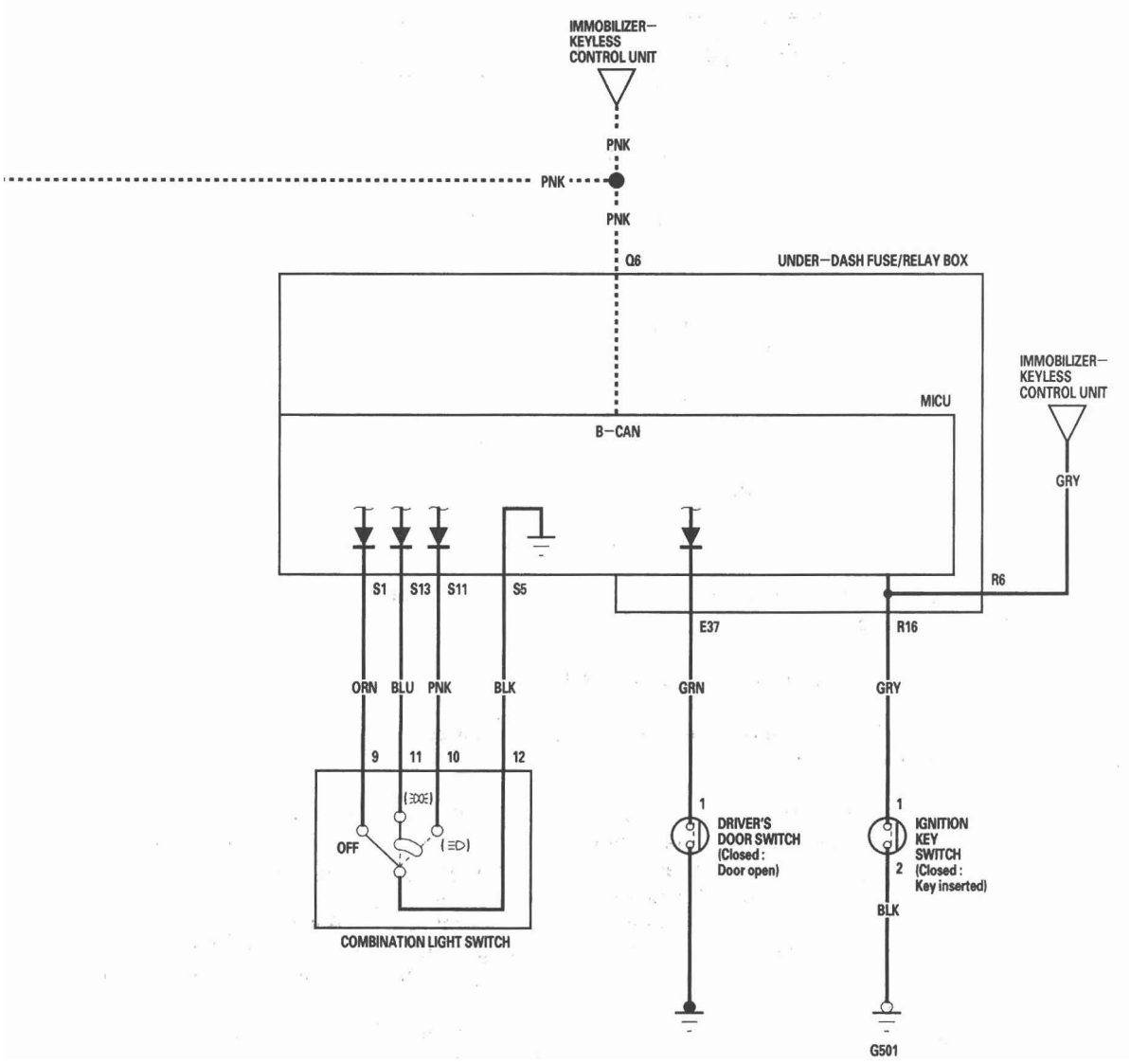
Component Location Index



Circuit Diagram



: CAN line


IMMOBILIZER–
KEYLESS
CONTROL UNIT
PNK
PNK
PNK
Q6
UNDER–DASH FUSE/RELAY BOX
MICU
B–CAN
IMMOBILIZER–
KEYLESS
CONTROL UNIT
GRY
R6
S1
S13
S11
S5
E37
R16
ORN
BLU
PNK
BLK
GRN
GRY
9
11
10
12
OFF
1
DRIVER'S
DOOR SWITCH
(Closed :
Door open)
1
IGNITION
KEY
SWITCH
2
(Closed :
Key inserted)
BLK
COMBINATION LIGHT SWITCH
G501

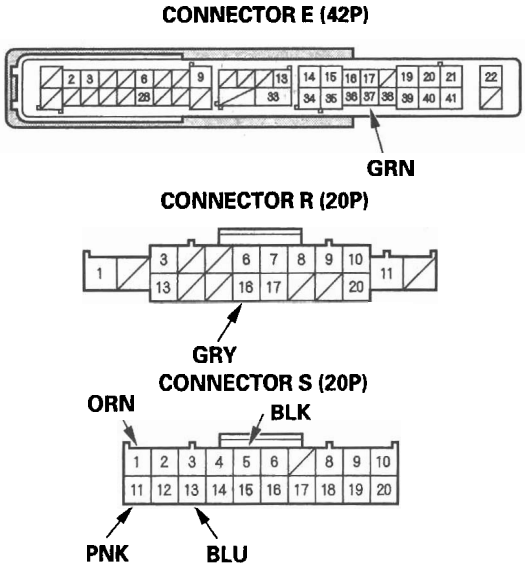
Control Unit Input Test

NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92).

MICU

1. Turn the ignition switch OFF.
2. Remove the left kick panel (see page 20-67).
3. Disconnect the under-dash fuse/relay box connectors.

   NOTE: All connector views are wire side of female terminals.



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 5.
5. Reconnect the connectors, then make these input tests at the connector.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

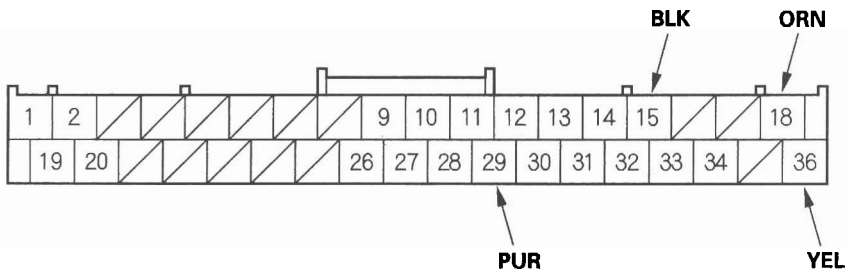
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
E37	GRN	Driver's door open	Check for voltage to ground: There should be less than 1 V.	• Faulty driver's door switch • An open in the wire
		Driver's door closed	Check for voltage to ground: There should be 5 V or more.	• Faulty driver's door switch • A short to ground in the wire
R16	GRY	Ignition key inserted into the ignition switch	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty ignition key switch • An open in the wire
		Ignition switch OFF and ignition key removed from the ignition switch	Check for voltage to ground: There should be 5 V or more.	• Faulty ignition key switch • A short to ground in the wire

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
S1 . S5	ORN . BLK	Combination light switch OFF	Check for voltage between S1 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch in any other position than OFF	Check for voltage between S1 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S11 . S5	PNK . BLK	Combination light switch (Headlight position) ON	Check for voltage between S11 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch OFF	Check for voltage between S11 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire
S13 . S5	BLU . BLK	Combination light switch (SMALL position) ON	Check for voltage between S13 and S5 terminals: There should be less than 1 V.	• Faulty combination light switch • An open in the wire
		Combination light switch OFF	Check for voltage between S13 and S5 terminals: There should be 5 V or more.	• Faulty combination light switch • A short to ground in the wire

Gauge Control Module

6. Turn the ignition switch OFF.
7. Remove the gauge control module (see page 22-248).
8. Disconnect the gauge control module 36P connector.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

(cont'd)

Control Unit Input Test (cont'd)

9. Inspect the connector and socket terminals to be sure they are all making good contact.

   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 10.

10. With the connectors still disconnected, make these input tests at all connectors.

    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If the input tests prove OK, go to step 11.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
18	ORN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
36	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 10 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire

11. Reconnect the gauge control module 36P connector, then make these input tests at the connector.

    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 12.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
15	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
29	PUR	Parking brake switch ON (pedal pressed)	Check for voltage to ground: There should be less than 1 V.	• Faulty parking brake switch • An open in the wire
		Parking brake switch OFF (pedal released)	Check for voltage to ground: There should be 5 V or more.	• Faulty parking brake switch • A short to ground in the wire

12. Do the Gauge Self-diagnostic Function Procedure (see page 22-229).

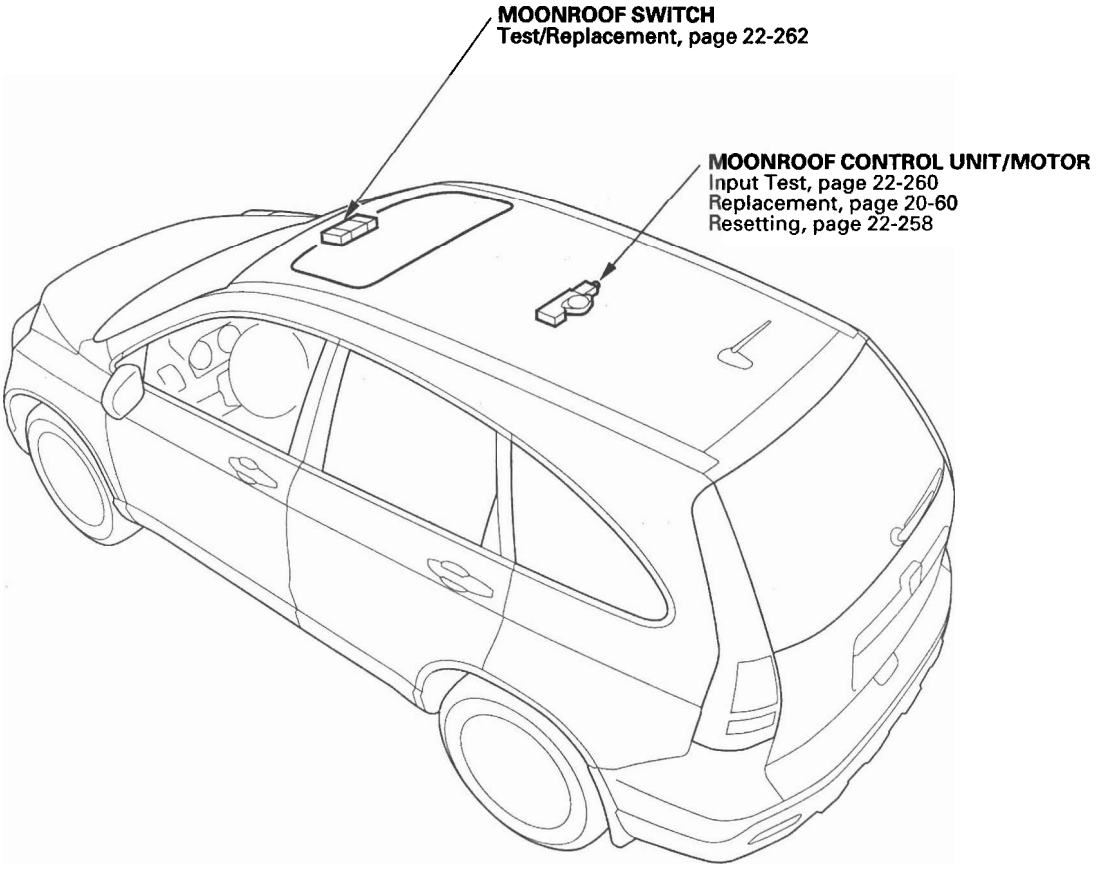
    - If the beeper sounds and the seat belt reminder light flashes, go to step 13.
    - If the beeper does not sound or the seat belt reminder light does not flash, replace the gauge control module.

13. Substitute a known-good gauge control module, and recheck the system.

    - If the symptom is gone, the gauge control module is faulty; replace it.
    - If the symptom is still present, the MICU is faulty; replace the under-dash fuse/relay box (see page 22-64).

Moonroof

Component Location Index



Resetting the Moonroof Control Unit

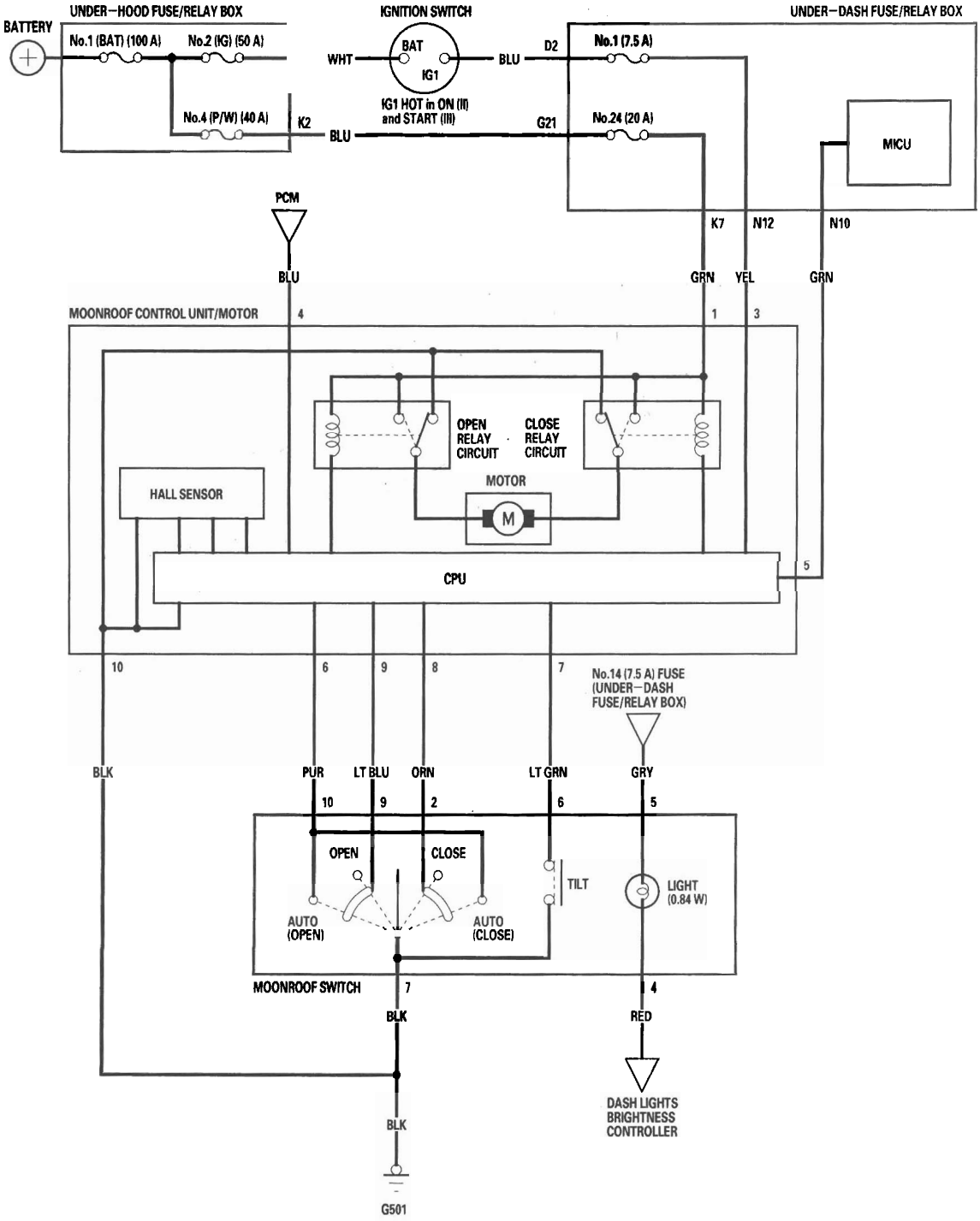
Resetting the moonroof is required when any of the following have occurred:

- The moonroof was moved manually while the battery was dead or disconnected.
- The moonroof motor was replaced with a new one.
- Any of components related to the moonroof were replaced.
  - Wind deflector
  - Moonroof glass
  - Moonroof seal
  - Moonroof glass bracket
  - Moonroof cables, etc.

To reset the moonroof control unit, do these steps:

1. Close the driver's door.
2. Turn the ignition switch OFF.
3. Press and hold the tilt switch, and turn the ignition switch ON (II).
4. Release the tilt switch, and turn the ignition switch OFF.
5. Repeat steps 2 and 3 four times.
6. Check if the AUTO OPEN and AUTO CLOSE functions still work. If they still work, the AUTO functions have not been cleared, go back to step 1. If the AUTO functions have been cleared, go to step 7.
7. Press and hold the moonroof open switch for 3 additional seconds after the moonroof is fully opened.
8. Press and hold the moonroof close switch for 3 additional seconds after the moonroof is fully closed (tilted).
9. Confirm that the moonroof control unit is reset by using the moonroof AUTO OPEN and AUTO CLOSE function.

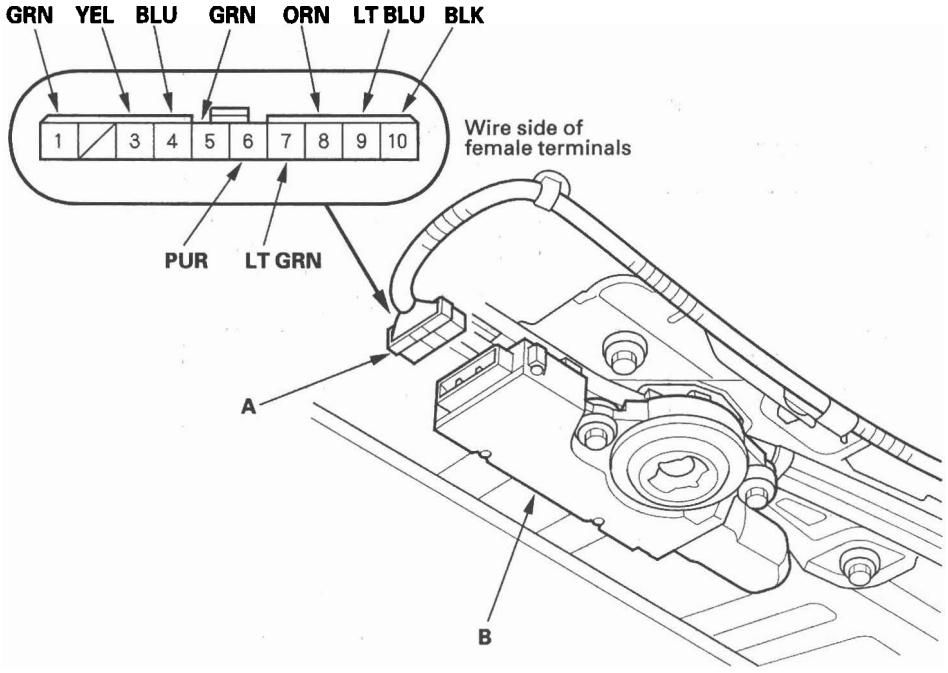
Circuit Diagram



Moonroof Control Unit Input Test

NOTE: If the moonroof works OK manually, but will not work in AUTO, or reverses frequently (obstacle detection), do the moonroof calibration (see page 22-258) before proceeding with the input test.

1. Turn the ignition switch OFF.
2. Remove the headliner (see page 20-83).
3. Disconnect the 10P connector (A) from the moonroof control unit (B).



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.

5. Reconnect the connector to the control unit, and make these input tests at the connector

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	GRN	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 24 (20 A) fuse in the under-dash fuse/relay box • An open in the wire
3	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 1 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire
10	BLK	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
6	PUR	Ignition switch ON (II), moonroof switch in AUTO OPEN or AUTO CLOSE position	Check for voltage to ground at the No. 3 and No. 6 terminals: There should be battery voltage.	• Faulty moonroof switch • An open in the wire
7	LT GRN	Ignition switch ON (II), moonroof switch in TILT position	Check for voltage to ground at the No. 3 and No. 7 terminals: There should be battery voltage.	• Faulty moonroof switch • An open in the wire
8	ORN	Ignition switch ON (II), moonroof switch in CLOSE position	Check for voltage to ground at the No. 3 and No. 8 terminals: There should be battery voltage.	• Faulty moonroof switch • An open in the wire
9	LT BLU	Ignition switch ON (II), moonroof switch in OPEN position	Check for voltage to ground at the No. 3 and No. 9 terminals: There should be battery voltage.	• Faulty moonroof switch • An open in the wire

6. Check the PCM DTCs. If there is no DTC, jump the SCS line with the HDS, then disconnect PCM connector A (44P) and the moonroof control unit/motor 10P connector.

7. Make these input tests at the connector.

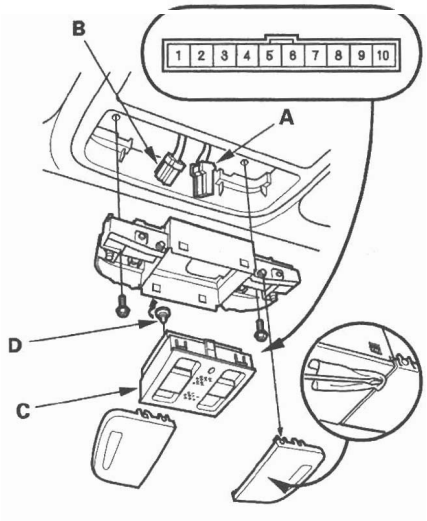
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the control unit must be faulty; replace the moonroof control unit/motor.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
4	BLU	Under all conditions	Check for continuity between the No. 4 terminal and PCM connector A (44P) No. 29 terminal: There should be continuity.	An open in the wire
			Check for continuity between the No. 4 terminal and body ground: There should be no continuity.	A short to ground in the wire

Moonroof Switch Test/Replacement

1. Remove the front individual map lights (see page 22-177).

2. Disconnect the moonroof switch 10P connector (A) and map light switch 3P connector (B).



3. Remove the moonroof switch (C).

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

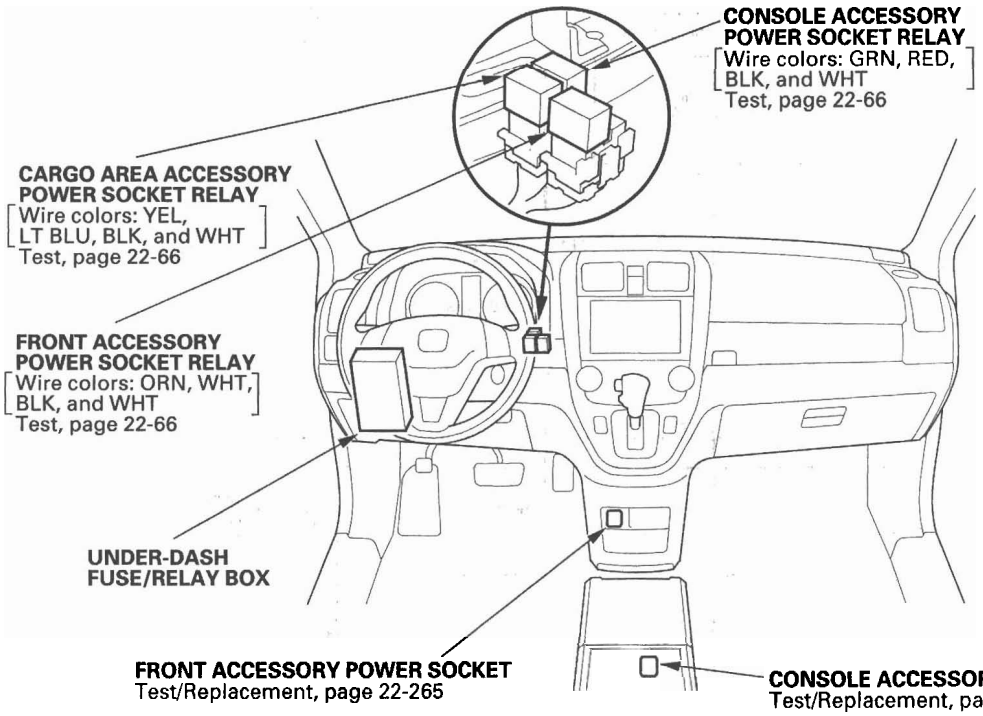
Position \ Terminal	7	2	6	9	10	4		5
OPEN	○			○				
CLOSE	○	○						
TILT	○		○			○	◎	○
CLOSE+AUTO	○	○			○			
OPEN+AUTO	○			○	○			

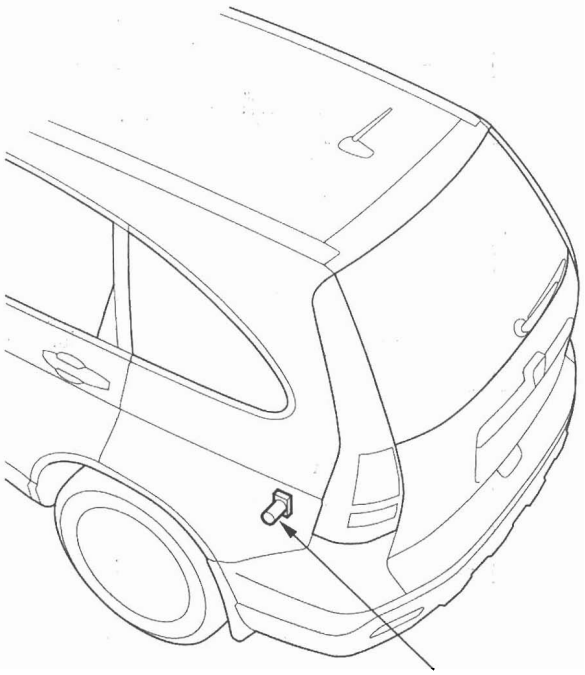
5. If the continuity is not as specified, replace the illumination bulb (D) or the switch.

6. Install the switch and light in the reverse order of removal.

Accessory Power Sockets

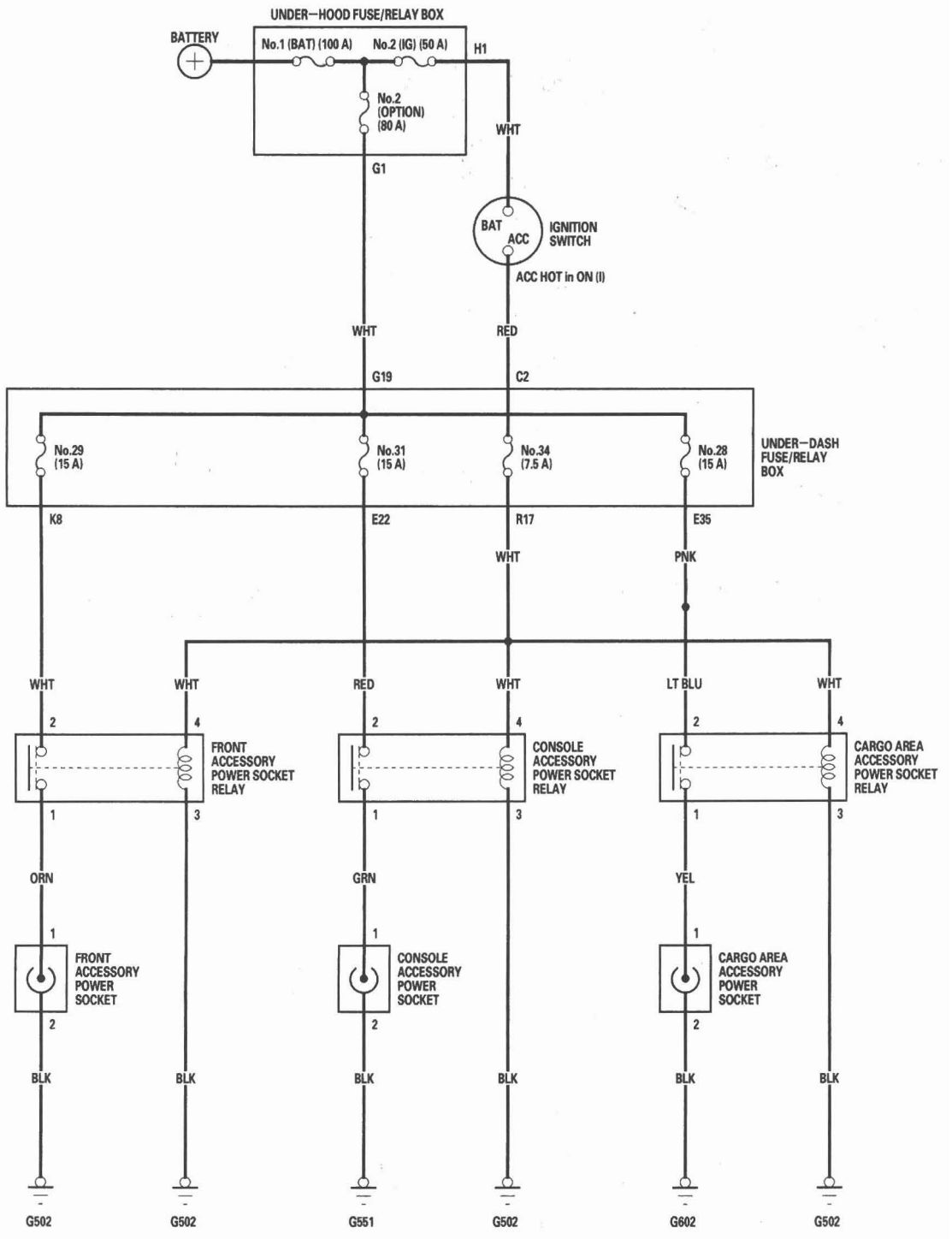
Component Location Index





Accessory Power Sockets

Circuit Diagram

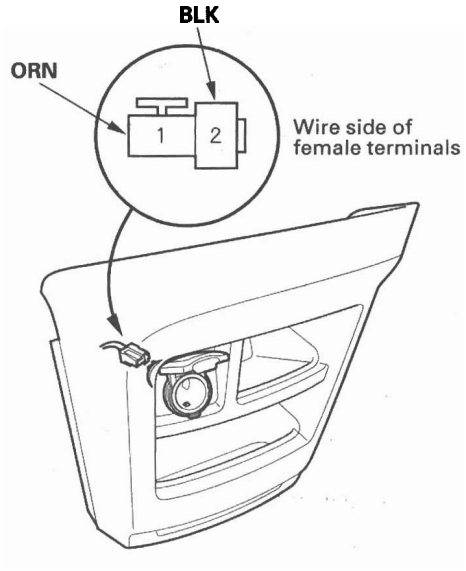


Front Accessory Power Socket Test/Replacement

NOTE: If all of the front, console, and cargo area accessory power sockets do not work, check the No. 34 (7.5 A) fuse in the under-dash fuse/relay box and ground (G502).

1. Remove the dashboard center lower cover (see page 20-95).

2. Disconnect the 2P connector (A) from the front accessory power socket (B).



3. Inspect the connector terminals to be sure they are all making good contact.

   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

4. Turn the ignition switch to ACC (I).

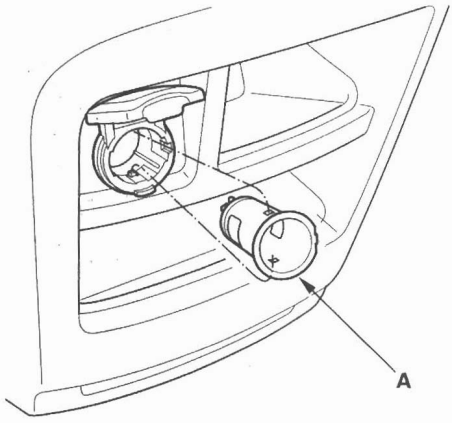
5. Measure voltage between the power accessory socket 2P connector No. 1 terminal and body ground. There should be battery voltage.

   - If there is battery voltage, go to step 6.
   - If there is no battery voltage, check for:
     – Blown No. 29 (15 A) fuse in the under-dash fuse/relay box.
     – Faulty front accessory power socket relay.
     – Poor ground (G502).
     – An open in the wire.

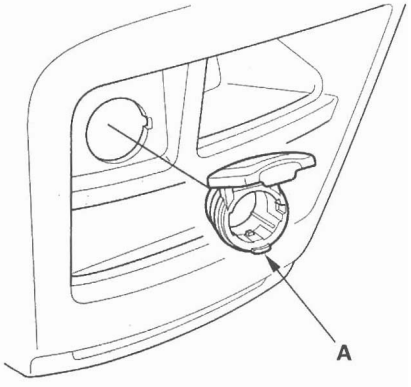
6. Check for continuity between the No. 2 terminal and body ground. There should be continuity.

   - If there is continuity, go to step 7.
   - If there is no continuity, check for:
     – Poor ground (G502).
     – An open in the wire.

7. Remove the socket (A).



8. Remove the housing (A) from the panel.

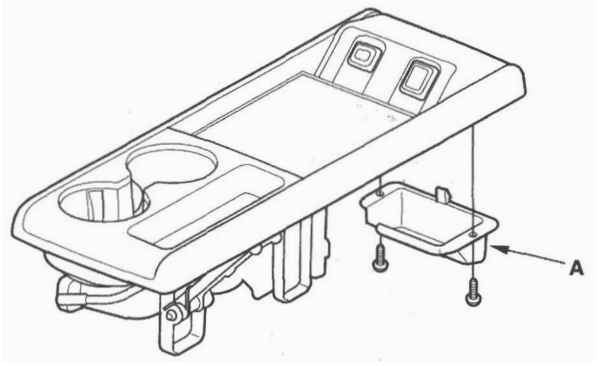


9. Install the power socket in the reverse order of removal.

Console Accessory Power Socket Test/Replacement

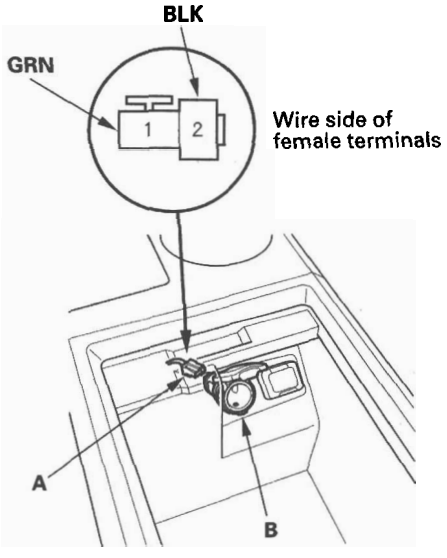
NOTE: If all of the front, console, and cargo area accessory power sockets do not work, check the No. 34 (7.5 A) fuse in the under-dash fuse/relay box and poor ground (G502).

1. For EX-L: Remove the center console (see page 20-89).
   For EX: Remove the center table AUX cover (A) from the table.

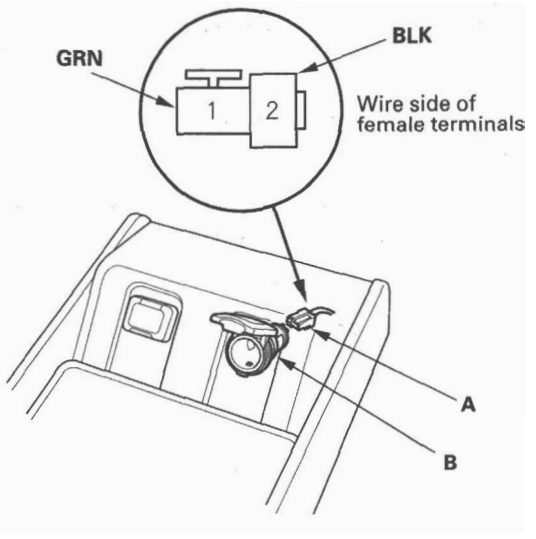


2. Disconnect the 2P connector (A) from the console accessory power socket (B).

EX-L



EX



3. Inspect the connector terminals to be sure they are all making good contact.

   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

4. Turn the ignition switch to ACC (I).

5. Measure voltage between the No. 1 terminal and body ground. There should be battery voltage.

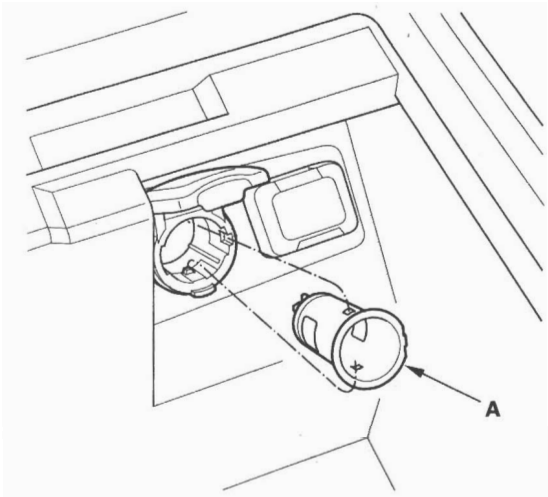
   - If there is battery voltage, go to step 6.
   - If there is no battery voltage, check for:
     – Blown No. 31 (15 A) fuse in the under-dash fuse/relay box.
     – Faulty console accessory power socket relay.
     – Poor ground (G502).
     – An open in the wire.

6. Check for continuity between the No. 2 terminal and body ground. There should be continuity.

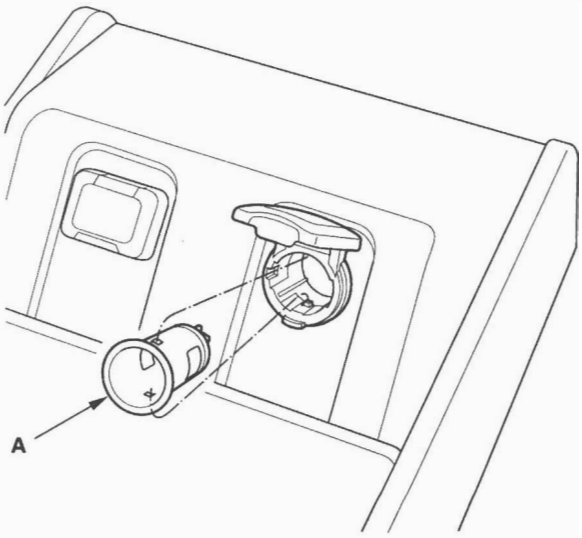
   - If there is continuity, go to step 7.
   - If there is no continuity, check for:
     – Poor ground (G551).
     – An open in the wire.

7. Remove the socket (A).

EX-L

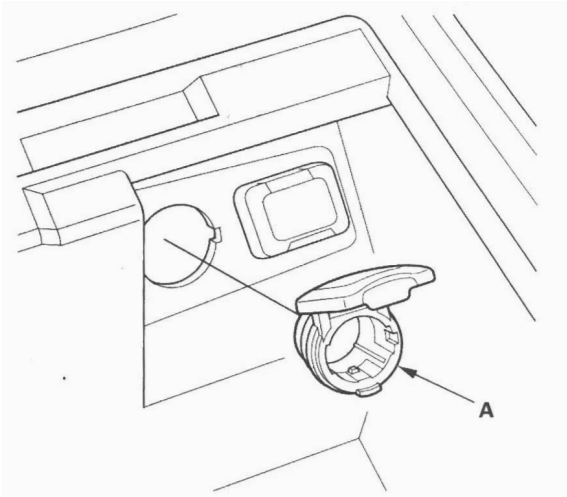


EX

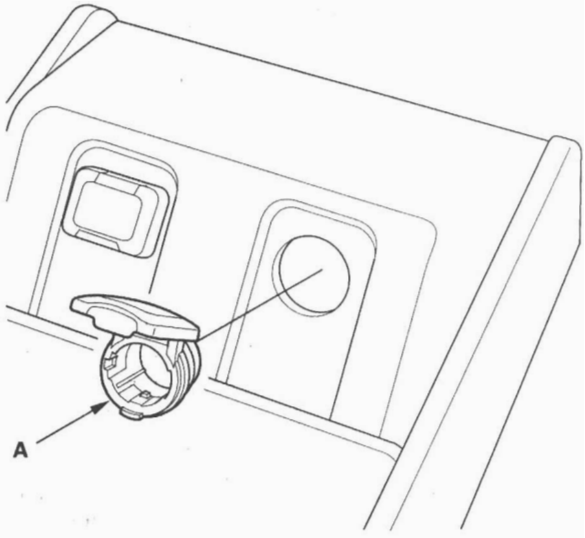


8. Remove the housing (A).

EX-L



EX

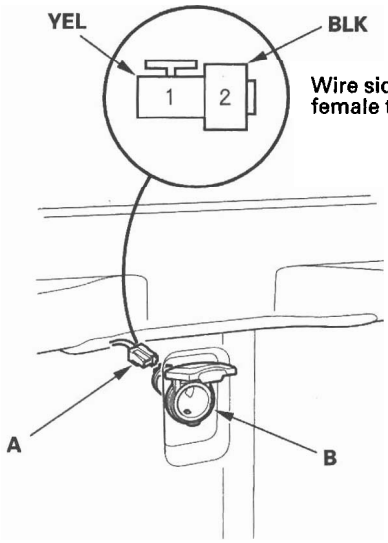


9. Install the power socket in the reverse order of removal.

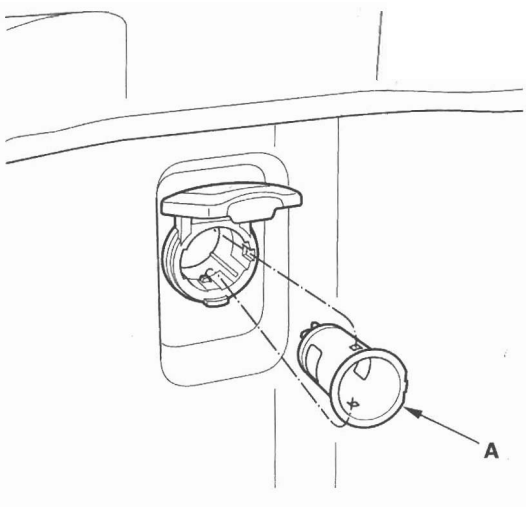
Cargo Area Accessory Power Socket Test/Replacement

NOTE: If all of the front, console, and cargo area accessory power sockets do not work, check the No. 34 (7.5 A) fuse in the under-dash fuse/relay box and ground (G502).

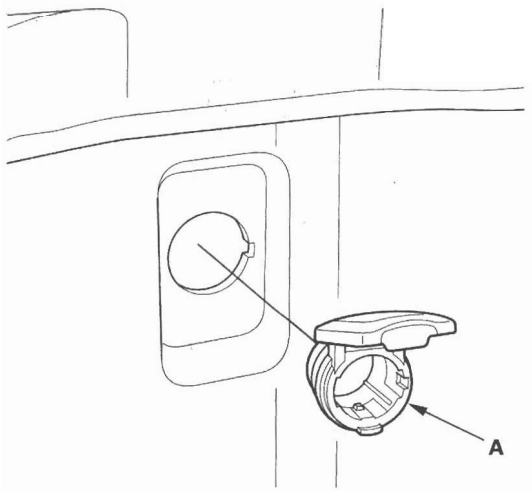
1. Remove the rear side trim panel (see page 20-75).
2. Disconnect the 2P connector (A) from the cargo area accessory power socket (B).



3. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.
4. Turn the ignition switch to ACC (I).
5. Measure voltage between the No. 1 terminal and body ground. There should be battery voltage.
   - If there is battery voltage, go to step 5.
   - If there is no battery voltage, check for:
     - Blown No. 28 (15 A) fuse in the under-dash fuse/relay box.
     - Faulty cargo area accessory power socket relay.
     - Poor ground (G502).
     - An open in the wire.
6. Check for continuity between the No. 2 terminal and body ground. There should be continuity.
   - If there is continuity, go to step 7.
   - If there is no continuity, check for:
     - Poor ground (G602).
     - An open in the wire.
7. Remove the socket (A).

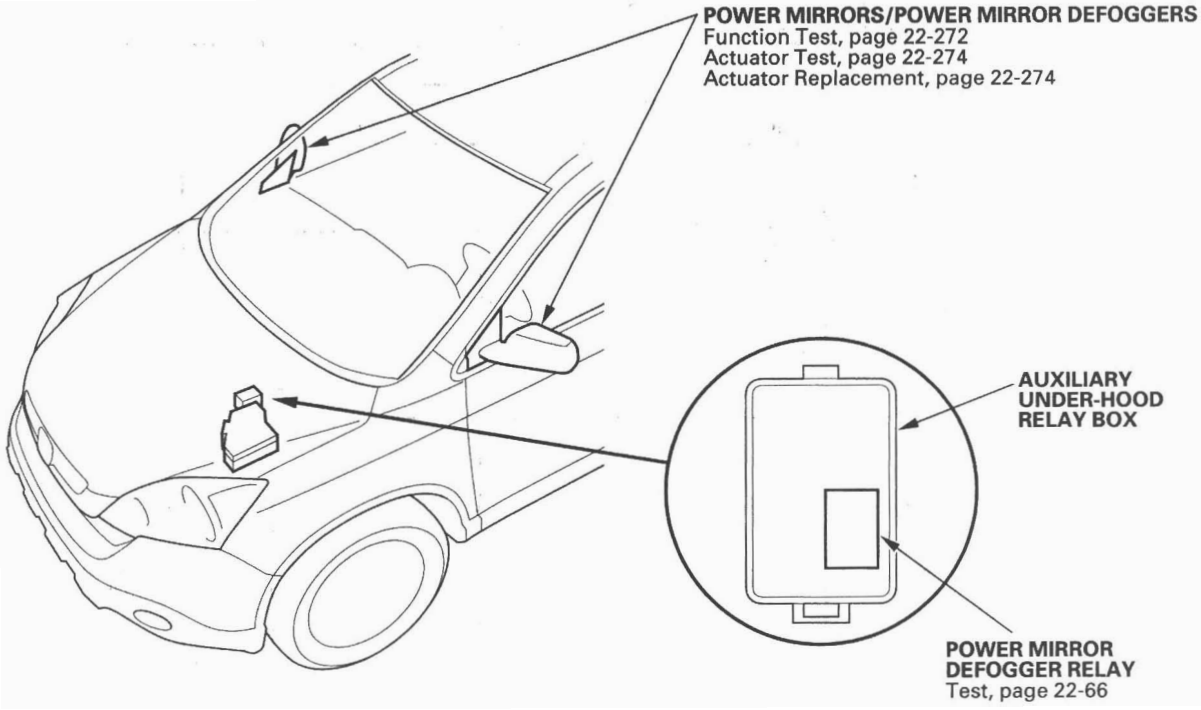


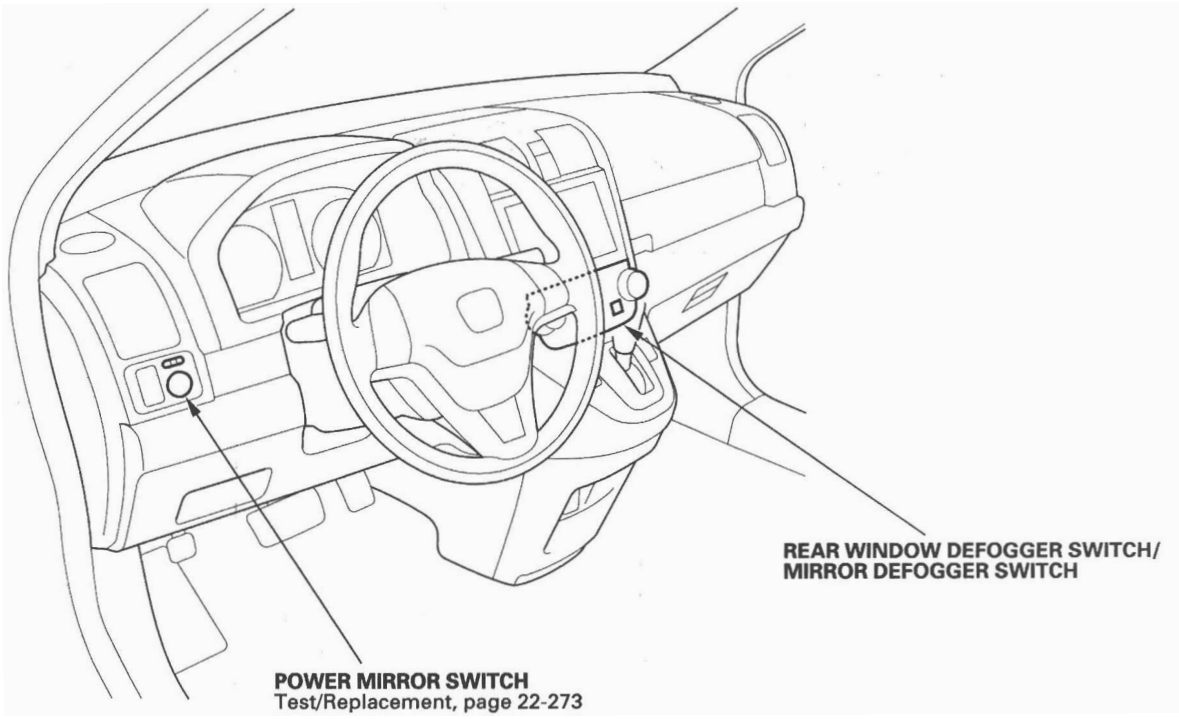
8. Remove the housing (A) from the panel.



9. Install the power socket in the reverse order of removal.

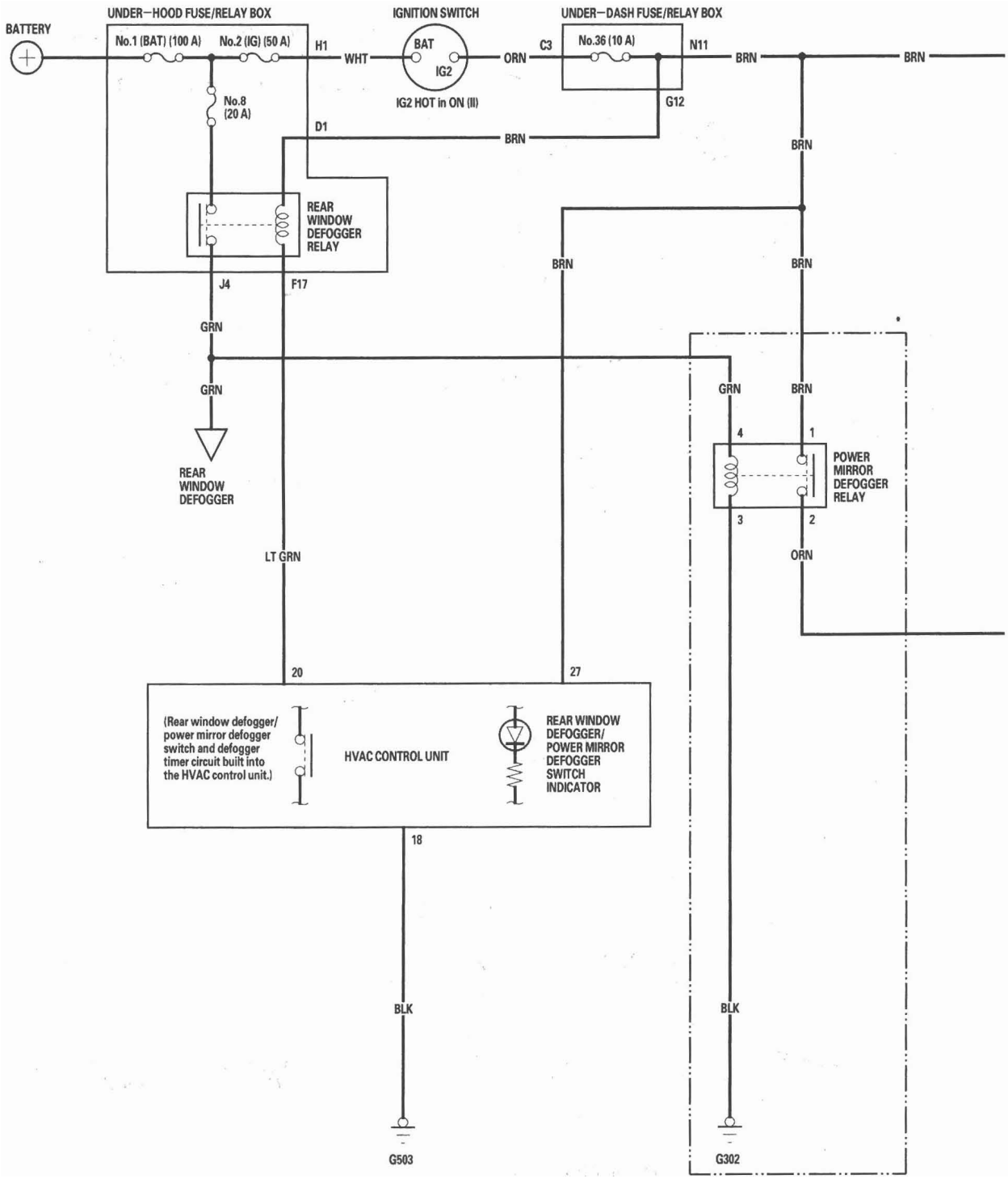
Component Location Index

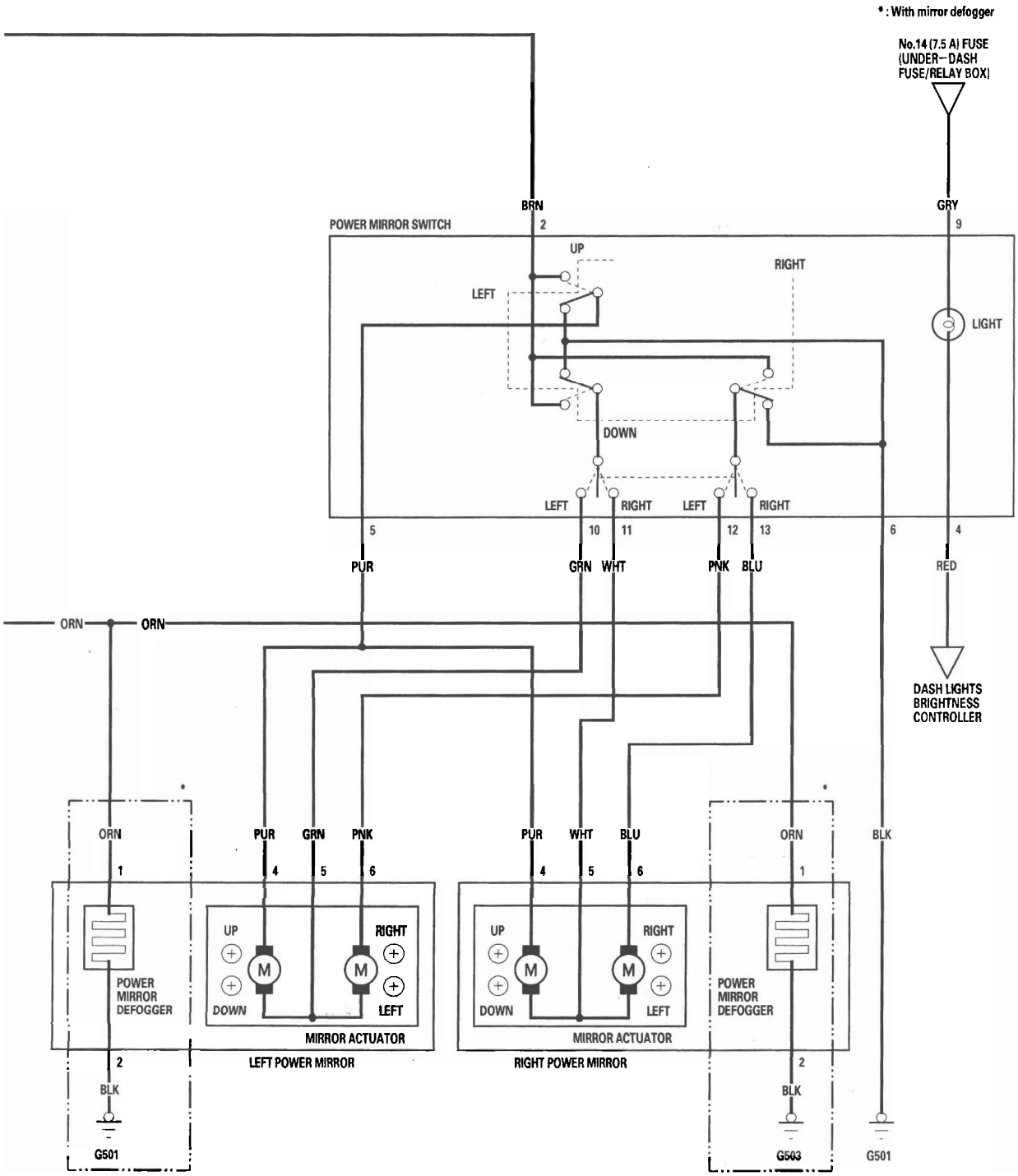




Power Mirrors

Circuit Diagram

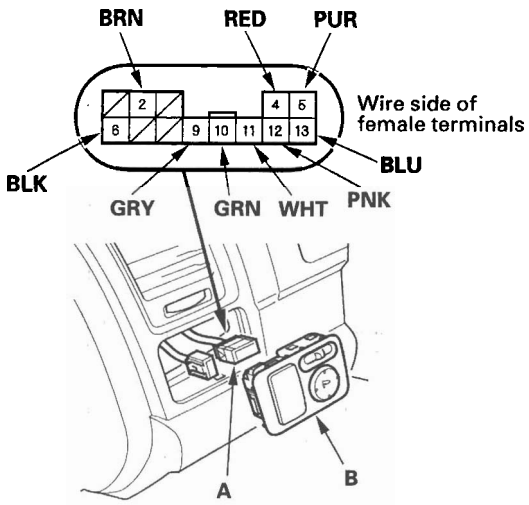



*: With mirror defogger
No.14 (7.5 A) FUSE (UNDER-DASH FUSE/RELAY BOX)
BRN
GRY
POWER MIRROR SWITCH
UP
RIGHT
LEFT
LIGHT
DOWN
LEFT
RIGHT
LEFT
RIGHT
5
10
11
12
13
6
4
PUR
GRN
WHT
PNK
BLU
RED
ORN
ORN
DASH LIGHTS BRIGHTNESS CONTROLLER
ORN
PUR
GRN
PNK
PUR
WHT
BLU
ORN
BLK
1
4
5
6
4
5
6
1
UP
RIGHT
DOWN
LEFT
M
M
M
M
POWER MIRROR DEFOGGER
MIRROR ACTUATOR
LEFT POWER MIRROR
RIGHT POWER MIRROR
POWER MIRROR DEFOGGER
2
2
BLK
BLK
G501
G503
G501

Function Test

1. Remove the power mirror switch (see page 22-273).

2. Disconnect the 13P connector (A) from the power mirror switch (B).



3. Choose the appropriate test based on the symptom:

   - Both mirrors don't work, go to step 4.
   - Left mirror doesn't work, go to step 6.
   - Right mirror doesn't work, go to step 7.
   - Mirror defoggers don't work, go to step 8.

Both mirrors

4. Check for voltage between the No. 2 terminal and body ground with the ignition switch ON (II). There should be battery voltage.

   - If there is no battery voltage, check for:
     – Blown No. 36 (10 A) fuse in the under-dash fuse/relay box.
     – An open in the BRN wire.
   - If there is battery voltage, go to step 5.

5. Check for continuity between the No. 6 terminal and body ground.
   There should be continuity.

   - If there is no continuity, check for:
     – An open in the BLK wire.
     – Poor ground (G501).
   - If there is continuity, check both mirrors individually.

Left mirror

6. Connect the No. 2 and No. 10 terminals, and the No. 5 (or No. 12) and No. 6 terminals with jumper wires.
   The left mirror should tilt down (or swing left) with the ignition switch ON (II).

   - If the left mirror does not tilt down (or does not swing left), check for an open in the PUR (or PNK) wire between the left mirror and the 13P connector.
     If the wire is OK, check the left mirror actuator.
   - If the mirror neither tilts down nor swings left, repair the GRN wire.
   - If the mirror works properly, check the mirror switch.

Right mirror

7. Connect the No. 2 and No. 11 terminals, and the No. 5 (or No. 13) and No. 6 terminals with jumper wires. The right mirror should tilt down (or swing left) with the ignition switch ON (II).

   - If the mirror does not tilt down (or does not swing left), check for an open in the PUR (or BLU) wire between the right mirror and the 13P connector.
     If the wire is OK, check the right mirror actuator.
   - If the mirror neither tilts down nor swings left, repair the WHT wire.
   - If the mirror works properly, check the mirror switch.

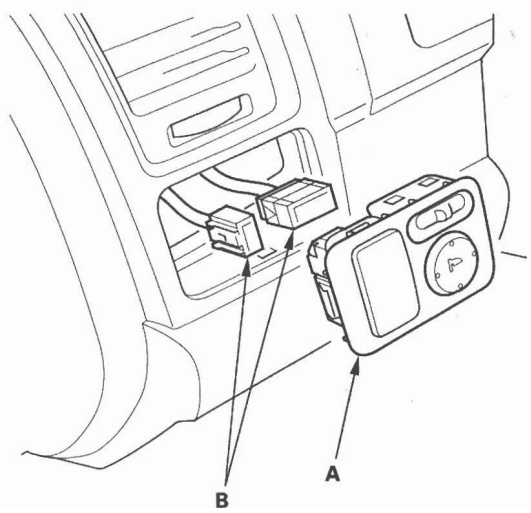
Defogger

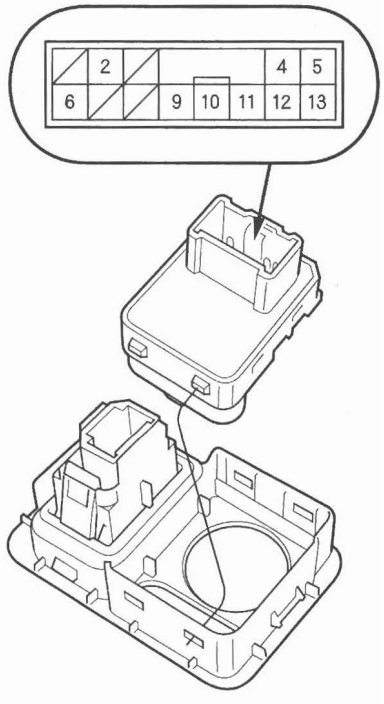
8. Connect the power mirror defogger relay No. 1 and No. 2 terminals with a jumper wire, and check for voltage between the No. 1 terminal of the mirror connectors and body ground. There should be battery voltage and both mirrors should warm up with the ignition switch ON (II).
   - If there is no voltage or neither warms up, check for:
     – An open in the ORN wire.
     – Blown No. 36 (10 A) fuse in the under-dash fuse/relay box.
   - If only one fails to warm up, check:
     – Its defogger.
     – Poor ground (G501, G503).
   - If both warm up, check the defogger switch or the power mirror defogger relay.

Power Mirror Switch Test/Replacement

1. Remove the driver's dashboard lower cover (see page 20-101).

2. Push the driver's switch panel (A) out from the dashboard, and disconnect the connectors (B).





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

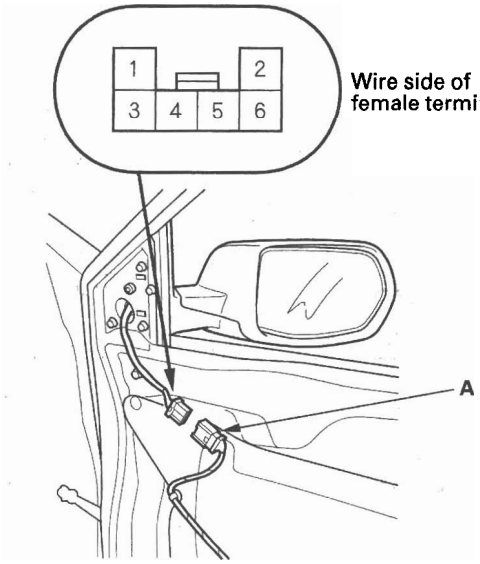
Position		Terminal 2	5	6	10	11	12	13
L	UP	○	○		○			
	DOWN	○		○	○			
	LEFT	○			○		○	
	RIGHT	○			○		○	
R	UP	○	○			○		
	DOWN	○		○		○		
	LEFT	○				○		○
	RIGHT	○				○		○

4. If the continuity is not as specified, replace the switch.

5. Install the switch in the reverse order of removal.

Power Mirror Actuator Test

1. Remove the door panel (see page 20-6).
2. Disconnect the 6P connector (A) from the power mirror actuator.



3. Check actuator operation by connecting power and ground according to the table.

Terminal / Position	4	5	6
TILT UP	⊕	⊖	
TILT DOWN	⊖	⊕	
SWING LEFT		⊕	⊖
SWING RIGHT		⊖	⊕

4. If the mirror fails to work properly, replace the power mirror actuator.

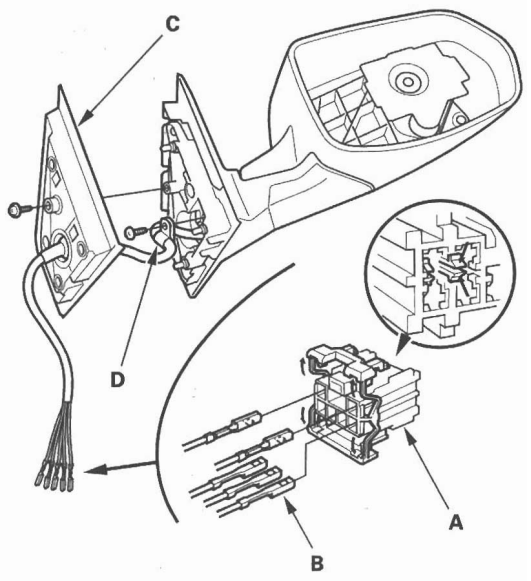
Defogger Test

5. Check for continuity between the power mirror actuator 6P connector No. 1 and No. 2 terminals. There should be continuity. If there is no continuity, check for an open in the wire between the mirror actuator 6P connector and the mirror holder terminals. If the wire harness is OK, replace the mirror holder.

Power Mirror Actuator Replacement

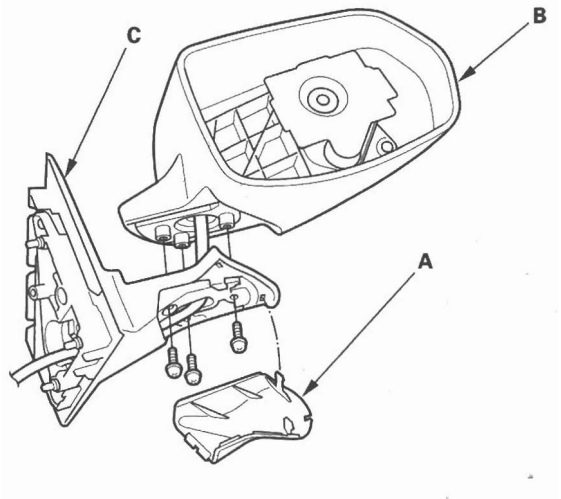
Removal

1. Remove the mirror holder (see page 20-34).
2. Remove the power mirror (see page 20-33), and disconnect the power mirror 6P connector from the door wire harness.
3. Record the power mirror 6P connector (A) terminal locations and wire colors.



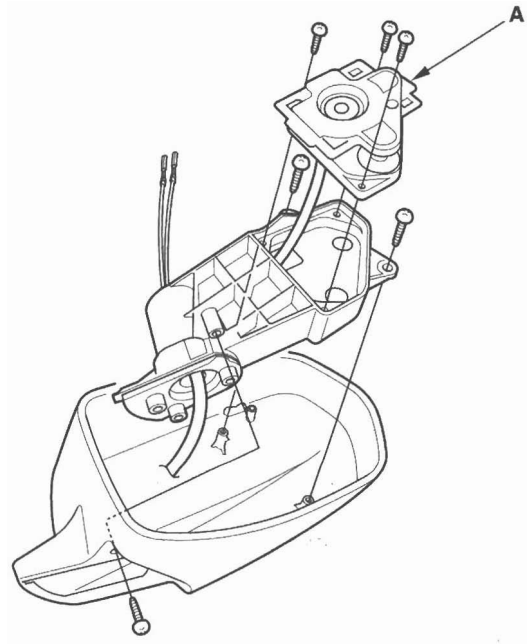
4. Disassemble the power mirror 6P connector, and remove all terminals (B) from the connector.
5. Remove the screw and the gasket (C).
6. Remove the screw and the harness clip (D).

7. Remove the cover (A).



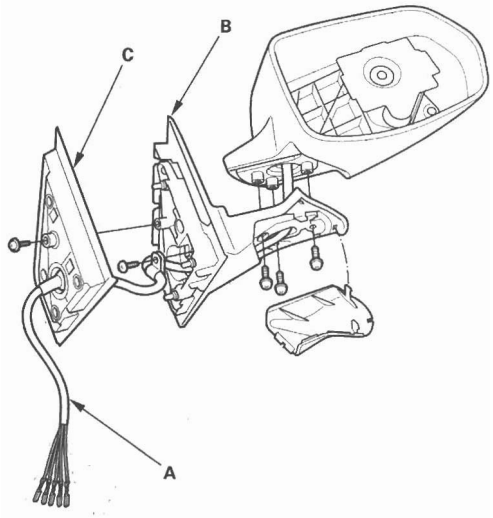
8. Remove the three screws, and separate the mirror housing (B) from the bracket (C).

9. Remove the screws and the actuator (A).



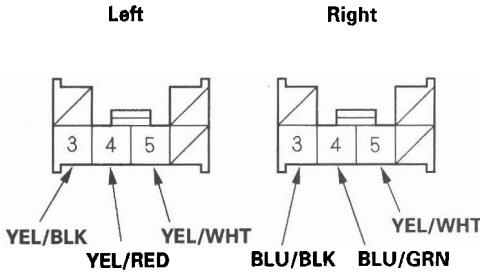
Installation

1. Route the wire harness (A) of a new actuator through the hole in the bracket (B) and gasket (C).



2. Install the parts in the reverse order of removal.

3. Insert the new actuator terminals into the connector in the original arrangement.



Wire side of female terminals

4. Apply tape to seal the intersection of the wire harness and the gasket.

5. Reassemble in the reverse order of disassembly.

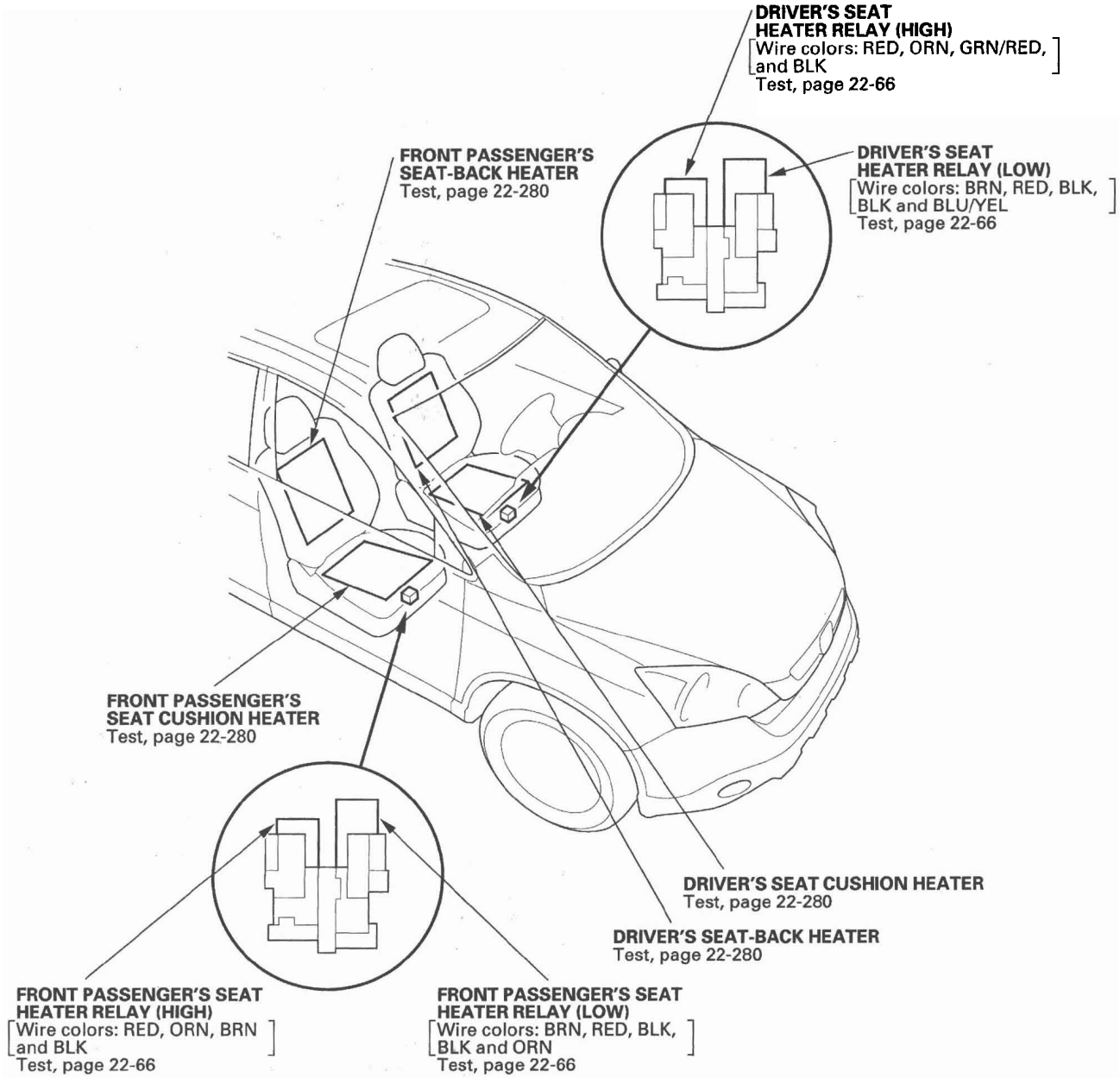
   NOTE: Be careful not to break the mirror when reinstalling it to the actuator.

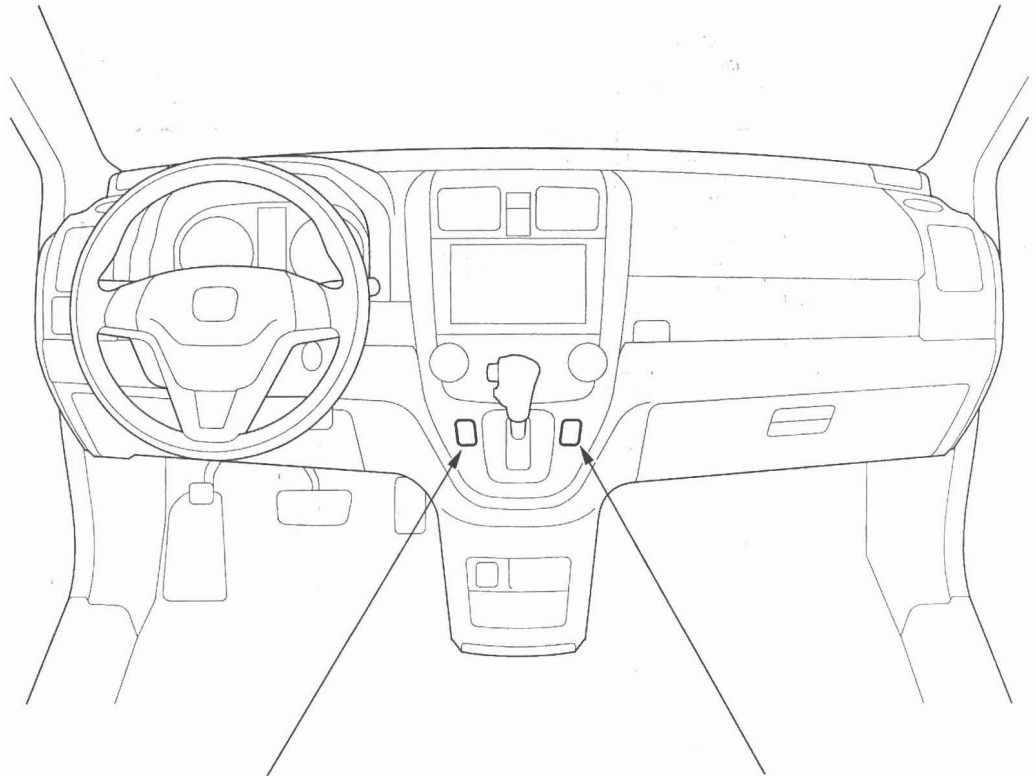
6. Reinstall the mirror assembly on the door.

7. Operate the power mirror to ensure smooth operation.

Seat Heaters

Component Location Index



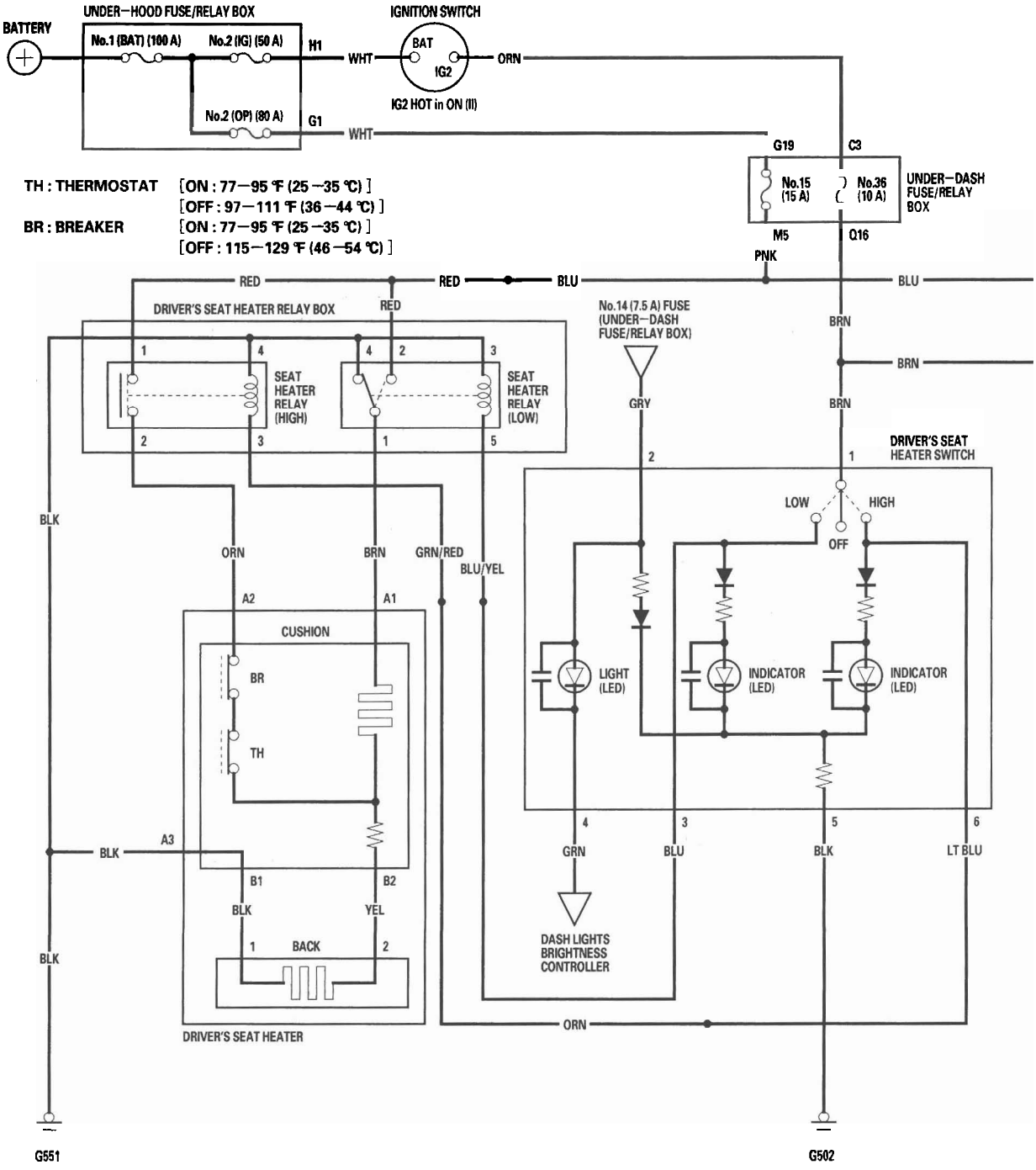


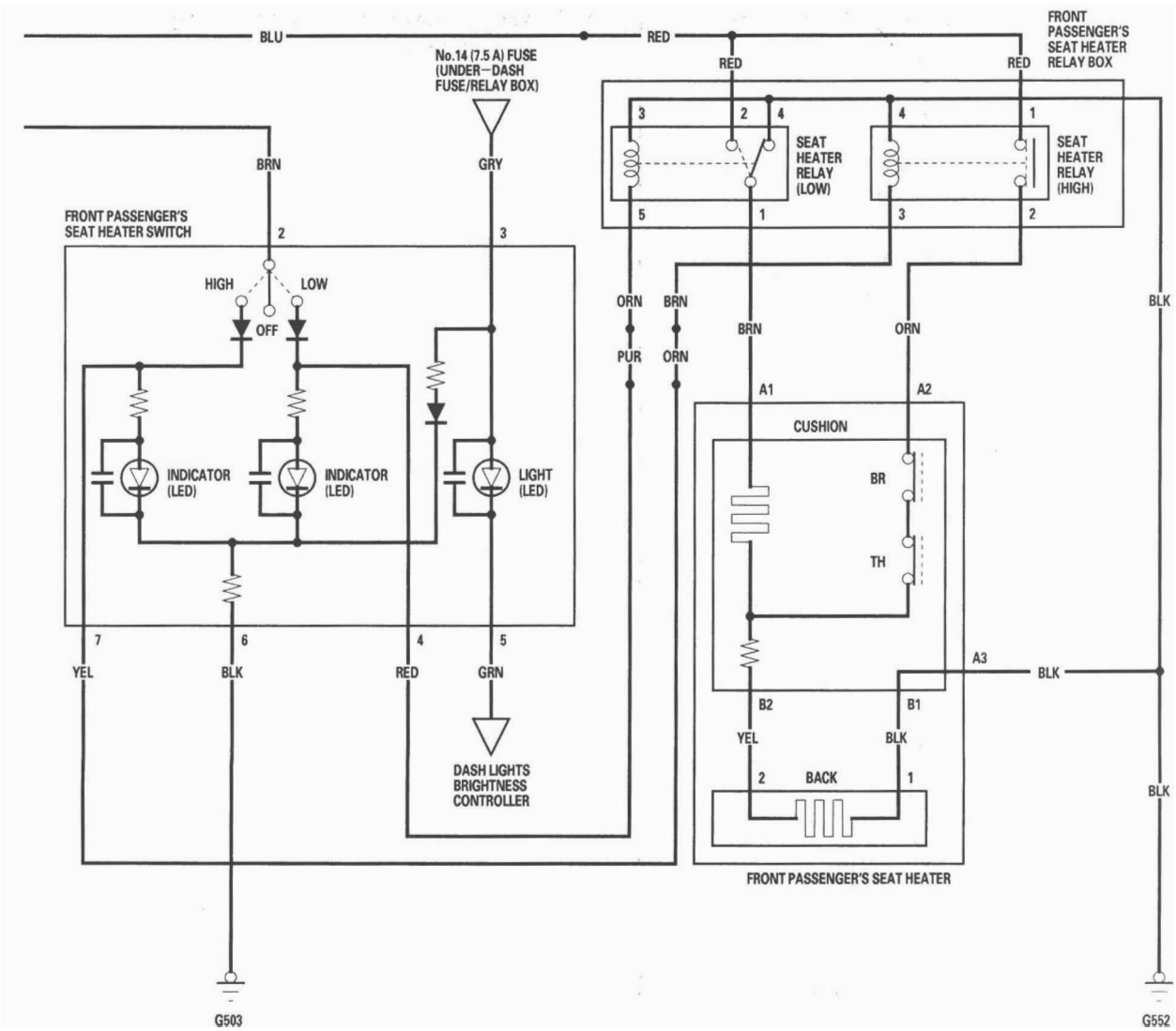
DRIVER'S SEAT HEATER SWITCH
Test/Replacement, page 22-281

FRONT PASSENGER'S SEAT HEATER SWITCH
Test/Replacement, page 22-281

Seat Heaters

Circuit Diagram




BLU
RED
No.14 (7.5 A) FUSE (UNDER–DASH FUSE/RELAY BOX)
FRONT PASSENGER'S SEAT HEATER RELAY BOX
RED
RED
BRN
GRY
FRONT PASSENGER'S SEAT HEATER SWITCH
2
3
HIGH
LOW
OFF
INDICATOR (LED)
INDICATOR (LED)
LIGHT (LED)
SEAT HEATER RELAY (LOW)
SEAT HEATER RELAY (HIGH)
3
2
4
4
1
5
1
3
2
ORN
BRN
PUR
ORN
BRN
ORN
BLK
A1
A2
CUSHION
BR
TH
A3
BLK
B2
B1
YEL
BLK
2
BACK
1
BLK
7
6
4
5
YEL
BLK
RED
GRN
DASH LIGHTS BRIGHTNESS CONTROLLER
FRONT PASSENGER'S SEAT HEATER
G503
G552

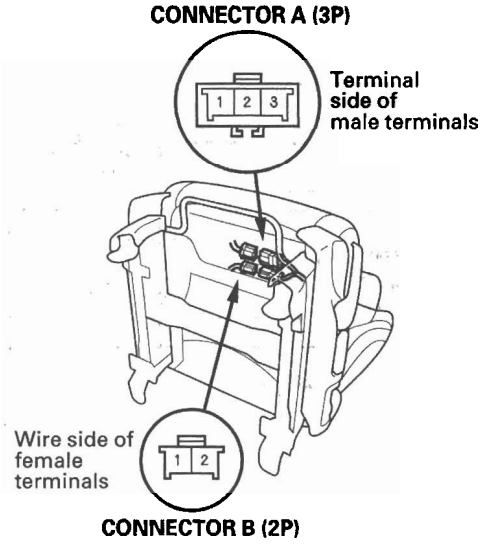
Seat Heaters

Seat Heater Test

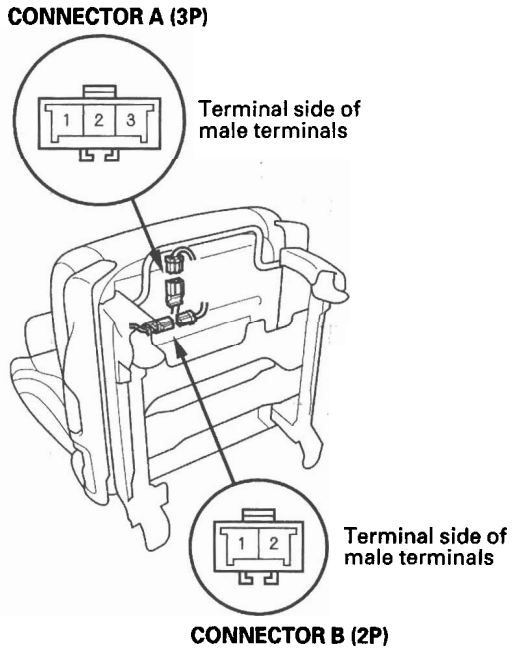
1. Remove the driver's or front passenger's seat (see page 20-118).

2. Disconnect the 3P (A) and 2P (B) connectors from the seat heater.

Driver's Seat



Front Passenger's Seat



3. Check for continuity between the seat heater connector B (2P) No. 1 and No. 2 terminals. There should be continuity.

4. Reconnect the seat heater connector B (2P) to the seat-back heater.

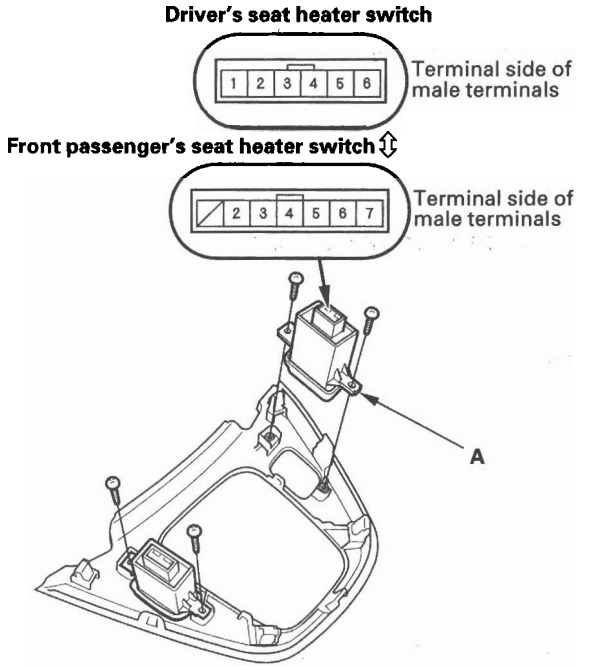
5. Check for continuity between the seat heater connector A (3P) No. 1 and No. 2 terminals, No. 2 and No. 3 terminals, and No. 1 and No. 3 terminals. There should be continuity.

6. If the continuity is not as specified, replace the appropriate seat heater.

Switch Test/Replacement

1. Remove the shift lever panel (see page 20-95).

2. Disconnect the 6P (or 7P*) connector from the seat heater switch (A), then remove the switch.
   * : Front passenger's



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

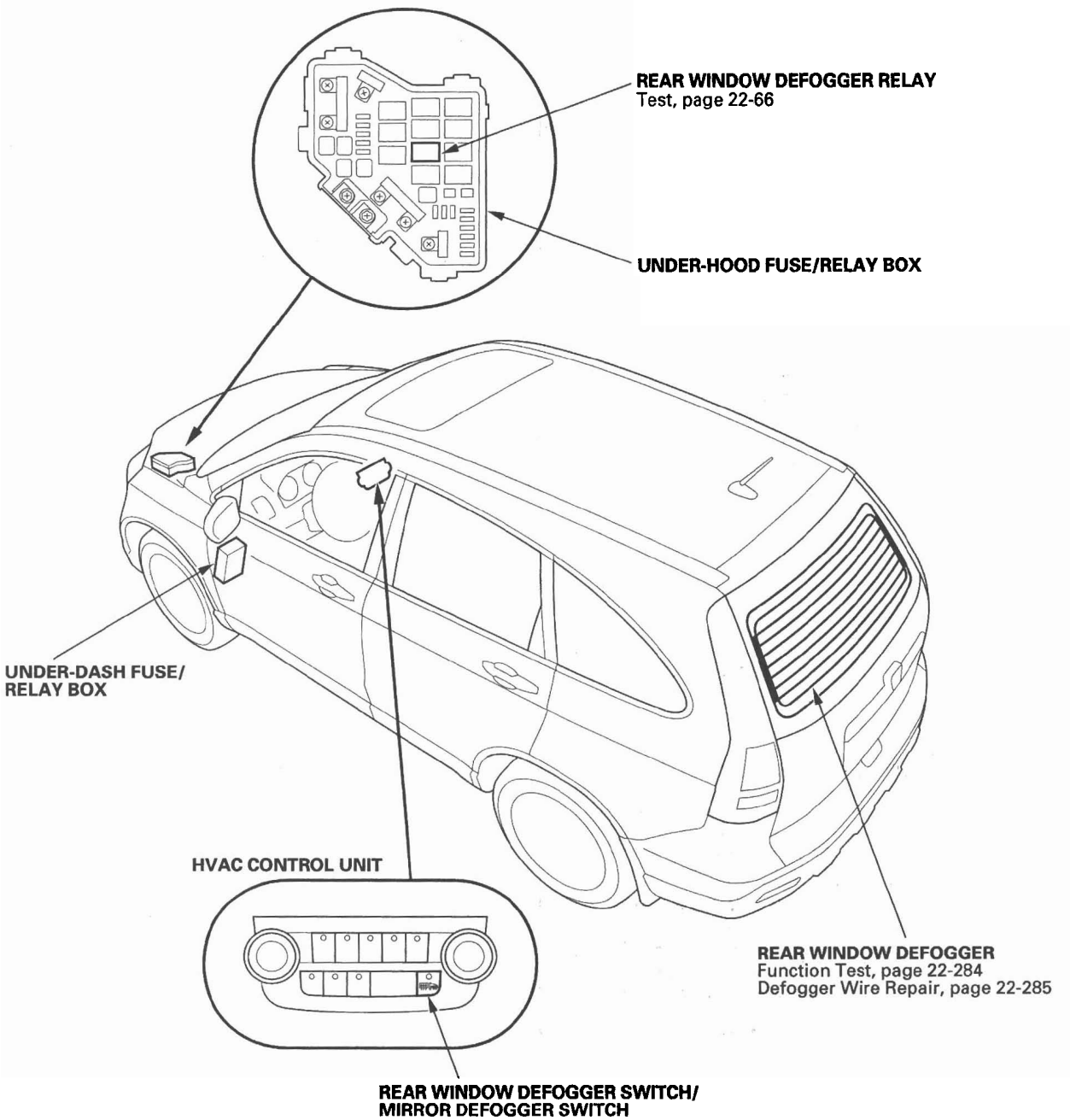
Terminal / Position		1 [2]	2 [3]	3 [4]		4 [5]	5 [6]	6 [7]
ON	HIGH	○	○		○—▶—W—⊗—W—		○	○
			○		○—⊗—▶—W—	○		
			○		○—W—▶—W—		○	
	LOW	○		○	○—▶—W—⊗—W—		○	
			○		○—⊗—▶—W—	○		
			○		○—W—▶—W—		○	
OFF			○		○—⊗—▶—W—	○		
			○		○—W—▶—W—		○	

[ ] : **Front passenger's seat heater switch**

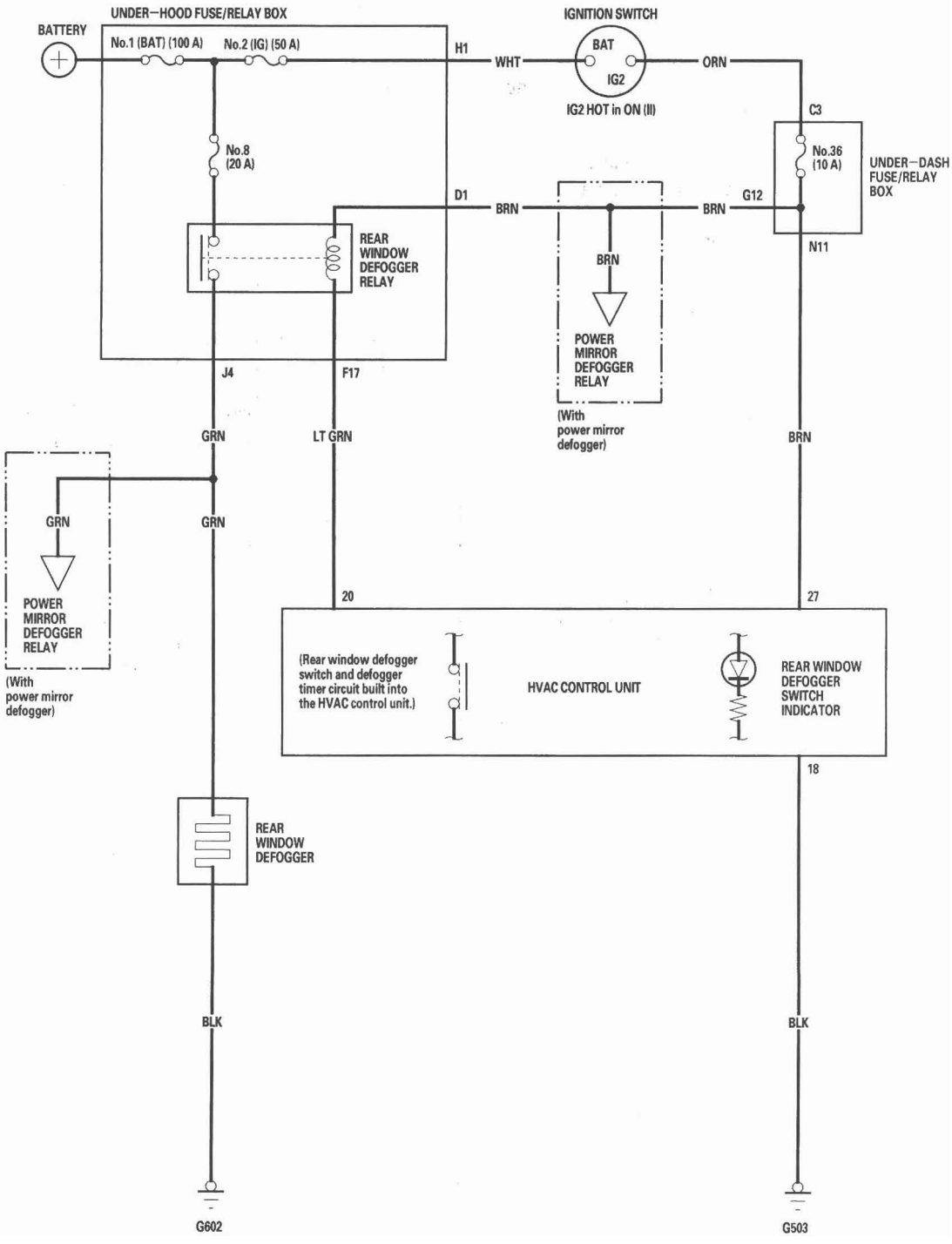
4. If the continuity is not as specified, replace the switch.

Rear Window Defogger

Component Location Index



Circuit Diagram



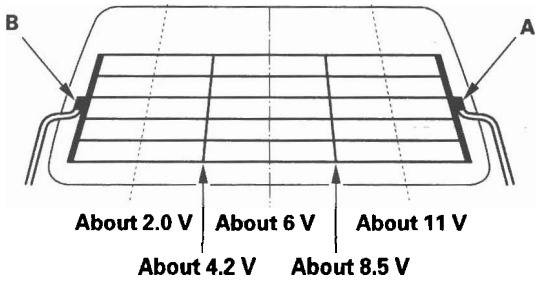
Rear Window Defogger

Function Test

NOTE:
- Be careful not to scratch or damage the defogger wires with the tester probe.
- Before testing, check the No. 8 (20 A) fuse in the under-hood fuse/relay box and the No. 36 (10 A) fuse in the under-dash fuse/relay box.

1. Measure voltage between the positive terminal (A) and body ground with the ignition switch and the defogger switch ON.
   There should be battery voltage.

   - If there is no voltage, check for:
     – Faulty rear window defogger relay.
     – Faulty HVAC control unit.
     – An open in the GRN wire to the positive terminal.
   - If there is voltage, go to step 2.



2. Turn the ignition switch OFF, and disconnect the negative terminal (B) from the rear window defogger.

3. Check for continuity between the negative terminal (B) and body ground.

   If there is no continuity, check for an open in the wire or poor ground (G602). If there is continuity, go to step 4.

4. Reconnect the negative terminal to the rear window defogger.

5. Turn the ignition switch ON (II) and the rear window defogger switch ON.

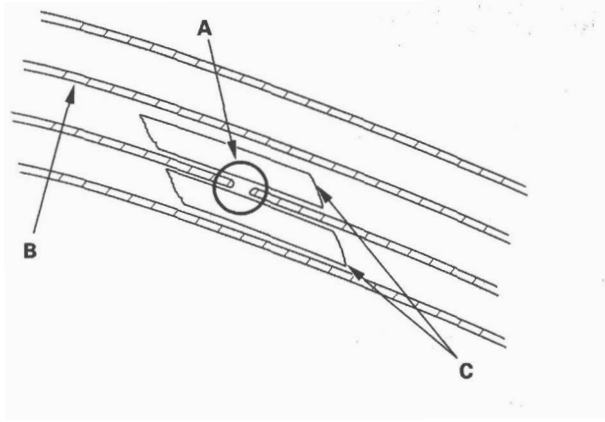
6. Touch the voltmeter positive probe to each point on each defogger wire, and the negative probe to the negative terminal.

   - If the voltage is as specified, the defogger wire up to that point is OK.
   - If the voltage is not as specified, repair the defogger wire.
     – If it is more than specified at one of the points, there is a break in the negative half of the wire.
     – If it is less than specified at one of the points, there is a break in the positive half of the wire.

Defogger Wire Repair

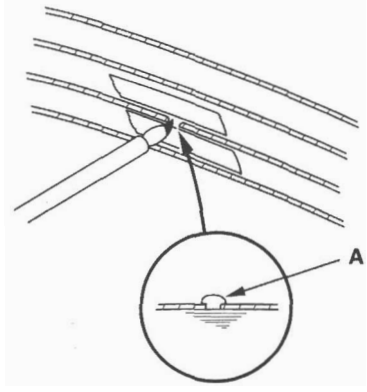
NOTE: To make an effective repair, the broken section must be no longer than 1 in. (25 mm).

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with alcohol.



2. Carefully mask above and below the broken portion of the defogger wire (B) with cellophane tape (C).

3. Using a small brush, apply a heavy coat of silver conductive paint (commercially available) (A) extending about 1/8" on both sides of the break. Allow 25 minutes to dry.

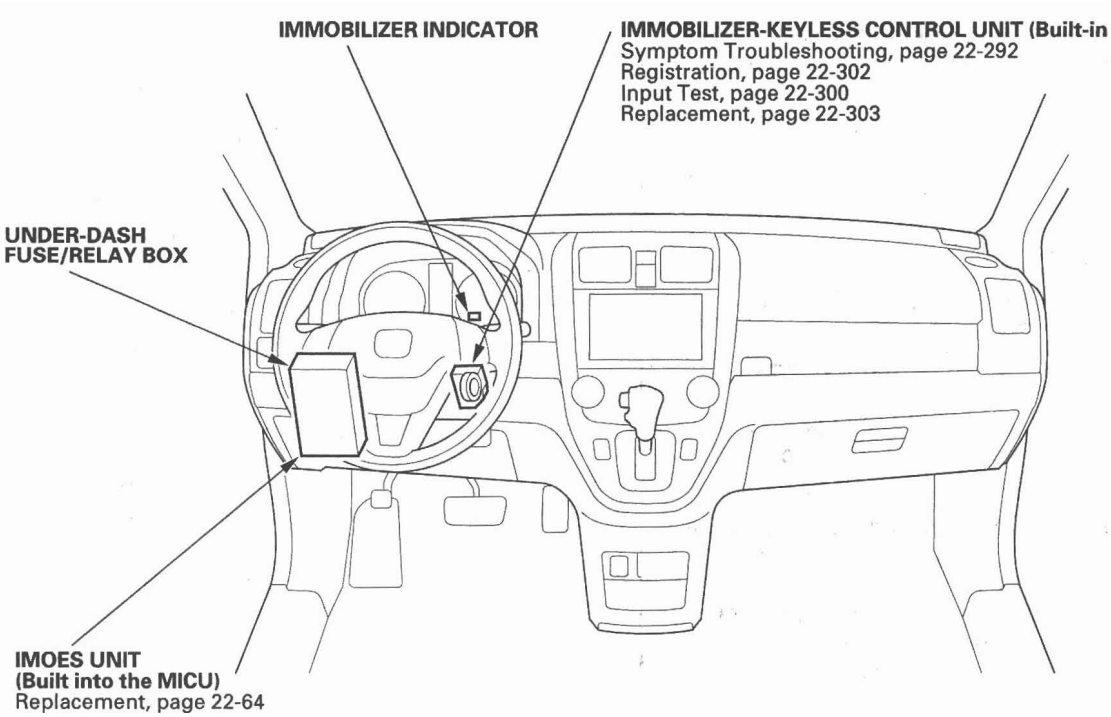


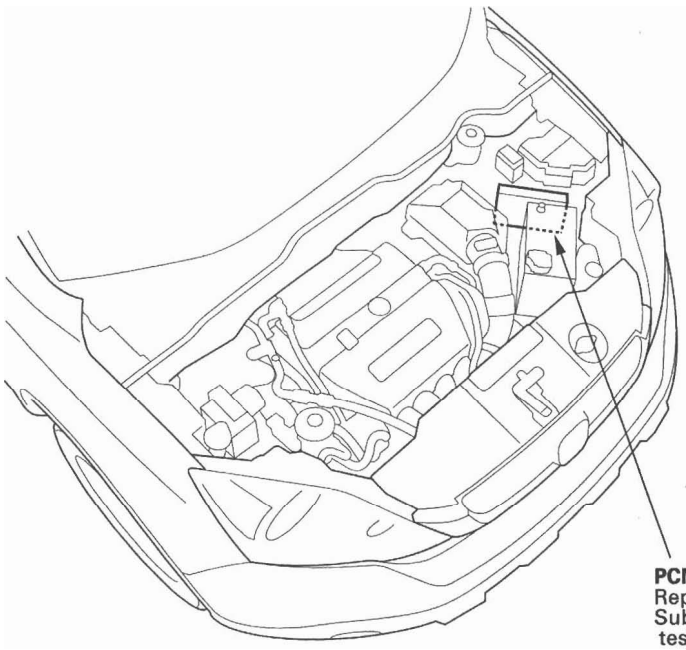
4. Do the function test to confirm that the wire is repaired (see page 22-284).

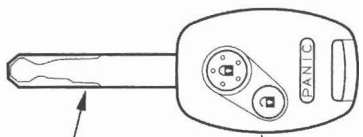
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

Immobilizer System

Component Location Index

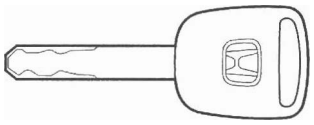




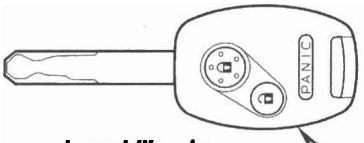


System Description

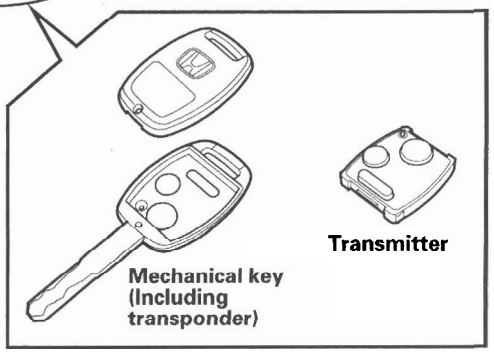
The vehicle is equipped with an immobilizer system that will disable the vehicle unless a programmed ignition key is used.
This system consists of a transponder combined with a keyless transmitter, an immobilizer-keyless control unit, the MICU (has built-in imoes unit), an immobilizer indicator, and the PCM.
When the immobilizer key (programmed by the HDS) is inserted into the ignition switch and turned to the ON (II) position, the immobilizer-keyless control unit sends power to the transponder in the ignition key. The transponder then sends a coded signal back to the immobilizer-keyless control unit which then sends a coded signal to the PCM and the MICU (imoes unit).
The PCM and MICU (imoes unit) identify this coded signal, then voltage is supplied to the fuel pump.

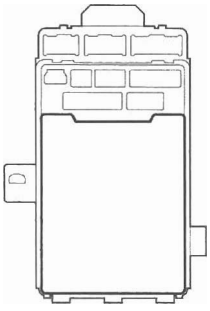


Mechanical key (Including transponder)

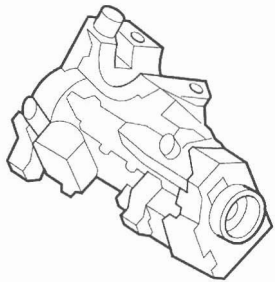


Immobilizer key

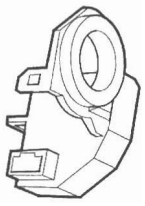




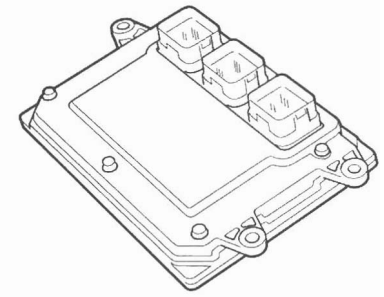
Under-dash fuse/relay box, with MICU (Imoes unit)



Steering lock assembly



Immobilizer-keyless control unit (Built-in receiver)

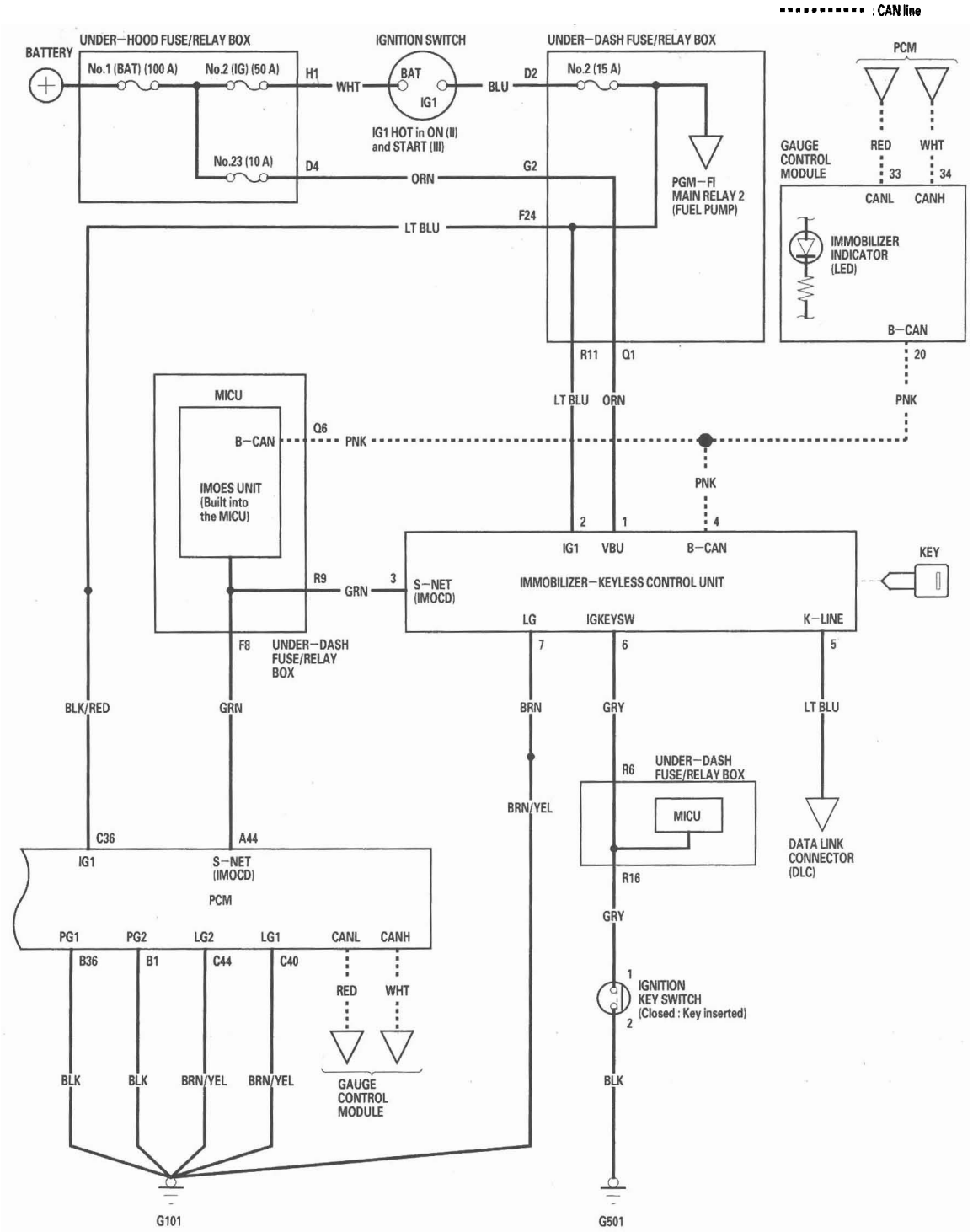


PCM

If the wrong key has been used or the code was not received or recognized by the unit, the indicator will quickly flash once, then it will blink until the ignition switch is turned OFF. When the ignition switch is turned to the LOCK (0) position, the immobilizer system indicator does not illuminate. This is unique to the type 6 system.

Immobilizer System

Circuit Diagram



DTC Troubleshooting

DTC B1905: Immobilizer-Keyless Control Unit Lost Communication with MICU (DRLOCKSW Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1905 indicated?

   YES—Go to step 5.

   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the MICU.■
5. Check for DTCs with the HDS.

   Are DTCs B1155, B1156, B1157, B1159, B1160, and B1188 all indicated with DTC B1905 at the same time?

   YES—Faulty MICU; replace the under-dash fuse/relay box (see page 22-64).■

   NO—Replace the immobilizer-keyless control unit (see page 22-303).■

DTC Troubleshooting (cont'd)

DTC B1906: Immobilizer-Keyless Control Unit Lost Communication with Gauge Control Module (A/T Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-92).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch OFF, and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

   Is DTC B1906 indicated?

   YES—Go to step 5.

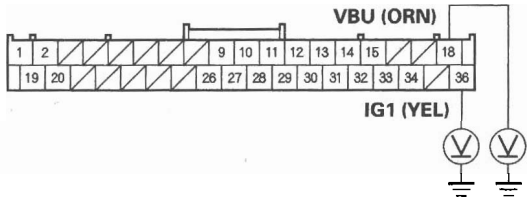
   NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the immobilizer-keyless control unit.■
5. Select the BODY ELECTRICAL system select menu, then enter the UNIT INFORMATION menu.
6. Check the condition of the gauge control module from the CONNECTED UNIT.

   Is NOT AVAILABLE indicated?

   YES—Go to step 7.

   NO—Replace the gauge control module (see page 22-248).
7. Turn the ignition switch OFF.
8. Disconnect the gauge control module 36P connector.
9. Turn the ignition switch ON (II).
10. Measure voltage between the gauge control module 36P connector No. 18 and No. 36 terminals and body ground individually.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

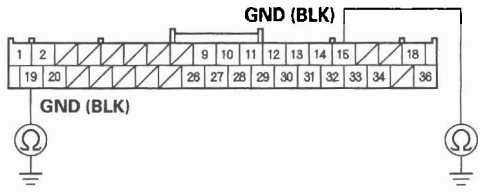
Is there battery voltage?

YES—Go to step 11.

NO—Check the No. 23 (10 A) fuse in the under-hood fuse/relay box and the No. 10 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is blown, replace the fuse and recheck the DTCs. If the fuses are OK, repair an open in the wire between the under-dash fuse/relay box and the gauge control module.■

11. Turn the ignition switch OFF.
12. Check for continuity between the gauge control module 36P connector No. 15 and No. 19 terminals and body ground individually.

GAUGE CONTROL MODULE 36P CONNECTOR



Wire side of female terminals

Is there continuity?

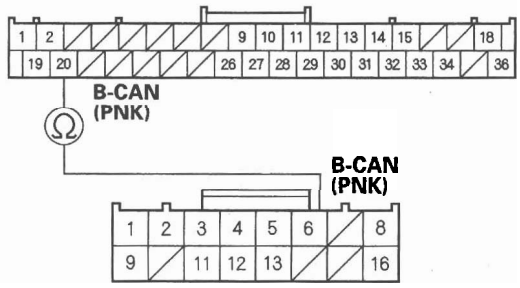
YES—Go to step 13.

NO— Repair an open in the wire or poor ground (G501).■

13. Disconnect the under-dash fuse/relay box connector Q (16P).

14. Check for continuity between the under-dash fuse/relay box connector Q (16P) No. 6 terminal and the gauge control module 36P connector No. 20 terminal.

GAUGE CONTROL MODULE 36P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (16P)
Wire side of female terminals

Is there continuity?

YES— Replace the gauge control module (see page 22-248). ■

NO—Repair an open in the wire between the MICU and the gauge control module. ■

Symptom Troubleshooting Information

General Check Before Troubleshooting

Before troubleshooting the immobilizer system, check the following general items and solve any if applicable:

- The battery is low; charge the battery fully, then troubleshoot the immobilizer system.
- The ignition key is not a genuine Honda part; use the Honda-approved key blank, register the key, then troubleshoot the immobilizer system.
- A key ring, keys, or a key case is used; remove the key from it, and troubleshoot the immobilizer system with a key only.
- An aftermarket electrical part is attached; remove it, then troubleshoot the immobilizer system.

Symptom Troubleshooting Using the Immobilizer Indicator Lighting Pattern

The pattern of the immobilizer indicator can help troubleshoot the condition of the immobilizer system. Following are descriptions of the four possible patterns.

Normal operation
If the immobilizer code is identified, the immobilizer indicator quickly flashes once when the ignition switch is turned ON (II).
The immobilizer indicator does not come on when the ignition switch is turned OFF.

Immobilizer code is not identified
If the immobilizer code is not identified, the immobilizer indicator will quickly flash once, then will blink until the ignition switch is turned OFF. When the ignition switch is turned OFF, the indicator will blink ten times, then go OFF. The state of the immobilizer key registration and the IMOCD line can be checked by doing a SYSTEM CHECK with the HDS (see page 22-6).

Immobilizer indicator does not come on
If the immobilizer indicator does not come on after turning the ignition switch ON (II), an open or short in the F-CAN lines between the PCM and the gauge control module. Watch the malfunction indicator lamp (MIL). If the MIL stays on, go to the PGM-FI system troubleshooting (see page 11-62).

Immobilizer indicator does not go off
If the immobilizer indicator does not go off after turning the ignition switch ON (II), do the gauge control module self-diagnostic function (see page 22-229). If the indicator drive circuit is OK, do the SYSTEM CHECK with the HDS.

Symptom Troubleshooting Using Malfunctioning Circuit Functions

If a malfunction occurs in the immobilizer circuit, use the table to cross-reference the malfunction criteria to the line(s) that should be checked table:

Function / Line Error: Terminal No. (Wire Color)	Cause of Malfunction	Immobilizer Indicator	Engine Start	Key Registration	Tester Communication	Keyless Operation
1 (ORN)	VBU line open or short	Comes on, then goes off.	Possible	Impossible	Possible	Impossible
2 (LT BLU)	IG1 line open or short	Blinking	Impossible	Impossible	Impossible	Possible
3 (GRN)	IMOCD (S-NET) line open or short	Blinking	Impossible	Impossible	Impossible	Possible
4 (PNK)	B-CAN line open or short	Comes on, then goes off.	Possible	Impossible	Immobilizer: Possible Keyless: Impossible	Impossible
5 (LT BLU)	K-LINE line open or short	Comes on, then goes off.	Possible	Impossible	Impossible	Possible
6 (GRY)	KEYSW line open	Comes on, then goes off.	Possible	Possible	Possible	Possible (in spite of the key is in the ignition switch)
	KEYSW line short to ground					Impossible
7 (BRN)	GND (LG) line open	Blinking	Impossible	Impossible	Impossible	Impossible

System Check and Status Log

NOTE: The HDS can be used to:
- Check the state of the immobilizer key registration and the IMOCD line by doing a SYSTEM CHECK.
- Check the number of times the immobilizer control unit-receiver doesn't permit the engine to run by checking the STATUS LOG.

1. Connect the HDS to the data link connector, then turn the ignition switch ON (II) and follow the prompts to the MAIN MENU.

   NOTE: If the HDS does not communicate with the vehicle, go to the DLC circuit troubleshooting (see page 11-197).

2. At the MAIN MENU, enter IMMOBILIZER, then select the IMMOBILIZER SETUP.

3. Do the SYSTEM CHECK. If there is a system check number, do the troubleshooting for the item indicated.

4. Check the status log using the HDS. Troubleshoot the line with the highest counts. If all the lines are "0" zero, the problem may not be caused by the immobilizer system, check for ignition or fuel problems.

   NOTE: Once repaired, clear the status log by removing the No. 23 (10 A) fuse in the under-hood fuse/relay box or disconnecting the battery.

Symptom Troubleshooting

1. Troubleshoot the immobilizer system by the order of the priority shown:

Order of Priority	Symptom	Possible cause
1	Immobilizer indicator blinks after the ignition switch is turned OFF.	Symptom troubleshooting (see page 22-295).
2	Engine does not start with the immobilizer key.	Symptom troubleshooting (see page 22-296).
3	Immobilizer indicator does not come on.	Check the MIL indication. • If the MIL comes on, go to the PGM-FI System MIL circuit troubleshooting (see page 11-196). • If the MIL does not come on, replace the gauge control module.
4	Immobilizer indicator does not go off.	Symptom troubleshooting (see page 22-297).

Immobilizer indicator blinks

NOTE: Before troubleshooting, check the items listed in "General Check before Troubleshooting".

1. Turn the ignition switch OFF.
2. Connect the HDS, then turn the ignition switch ON (II).
3. From the main menu, enter IMMOBILIZER, then select the IMMOBILIZER SETUP.
4. Select the SYSTEM CHECK.

   Is the SYSTEM CHECK indicated?

   YES—Troubleshoot the immobilizer system according to the result of the SYSTEM CHECK (see page 22-298). ■

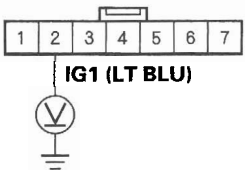
   NO—Go to step 5.
5. Turn the ignition switch OFF.
6. Enter the vehicle, and remove the ignition key from the ignition switch, then close the all doors.
7. Operate the keyless transmitter LOCK and UNLOCK several times in the vehicle.

   Do the door lock actuators work normally?

   YES—Go to step 8.

   NO—Check for a poor ground and/or an open in the wire between the immobilizer-keyless control unit 7P connector No. 7 terminal and body ground (G101). ■
8. Turn the ignition switch ON (II).
9. Back probe and measure voltage between the immobilizer-keyless control unit 7P connector No. 2 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

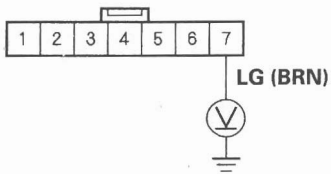
Is there battery voltage?

YES—Go to step 10.

NO—Check for a blown No. 2 (15 A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the LT BLU wire between the under-dash fuse-relay box and the immobilizer-keyless control unit. ■

10. Back probe and measure voltage between the immobilizer-keyless control unit 7P connector No. 7 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Is there 0.5 V or more?

YES—Repair poor connection or open between the immobilizer-keyless control unit 7P connector No. 7 terminal and G101. ■

NO—Replace the immobilizer-keyless control unit. ■

Symptom Troubleshooting (cont'd)

Engine does not start with the immobilizer key

NOTE: Before troubleshooting, check the items listed in "General Check before Troubleshooting" (see page 22-292).

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II), and check the immobilizer indicator.

   Does the indicator quickly flash once?

   YES—Go to step 3.

   NO—Go to step 6.
3. Turn the ignition switch to START (III).

   Does the starter motor run?

   YES—Go to step 4.

   NO—Go to Starting System, and check the starter motor.■
4. Try to start the engine with the immobilizer key.

   Does the engine start?

   YES—Go to step 5.

   NO—Go to the PGM-FI System Symptom Troubleshooting.■
5. Wait for a few minutes with the engine running.

   Does the engine stop?

   YES—Go to the PGM-FI System Symptom Troubleshooting.■

   NO—The system is OK at this time.■
6. Check to see if the immobilizer indicator comes on and blinks.

   Does the indicator blink?

   YES—Go to step 12.

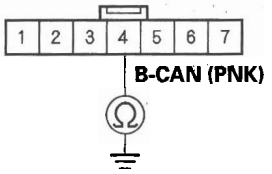
   NO—Go to step 7.
7. Disconnect the 7P connector from the immobilizer-keyless control unit. Wait for a few minutes with the engine running
8. Check to see if the immobilizer indicator goes off.

   Does the indicator go off?

   YES—Substitute a known-good immobilizer-keyless control unit and/or PCM, then register it and recheck.

   NO—Go to step 9.
9. Turn the ignition switch OFF.
10. Disconnect the gauge control module 36P connector (see page 22-248).
11. Check for continuity between the immobilizer-keyless control unit 7P connector No. 4 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

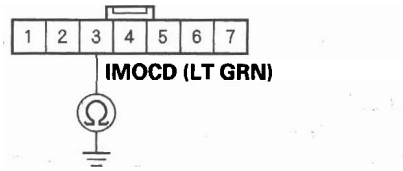
Is there continuity?

YES— Repair a short to ground in the PNK wire.■

NO—Faulty immobilizer indicator; replace the gauge control module (see page 22-248).

12. Turn the ignition switch OFF.
13. Jump the SCS with the HDS.
14. Disconnect the PCM connector A (44P).
15. Check for continuity between the immobilizer-keyless control unit 7P connector No. 3 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the LT GRN wire.■

NO—Substitute a known-good immobilizer-keyless control unit and/or PCM, then register it and recheck.

Immobilizer indicator does not go off

1. Turn the ignition switch OFF.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Enter the IMMOBILIZER, then select the IMMOBILIZER INFORMATION.
5. Do the SYSTEM CHECK with the HDS.

Is N-1 OK indicated?

YES—Replace the gauge control module.■

NO—Substitute a known-good immobilizer-keyless control unit, then register it and recheck. If the symptom goes away, replace the original immobilizer-keyless control unit.■

System Check

1. Connect the HDS to the data link connector.
2. Turn the ignition switch ON (II).
3. Monitor the System Check in the Immobilizer Info with the HDS.
4. If the HDS displays the "Normal", the immobilizer system is OK. If the HDS displays any other messages, check as follows:

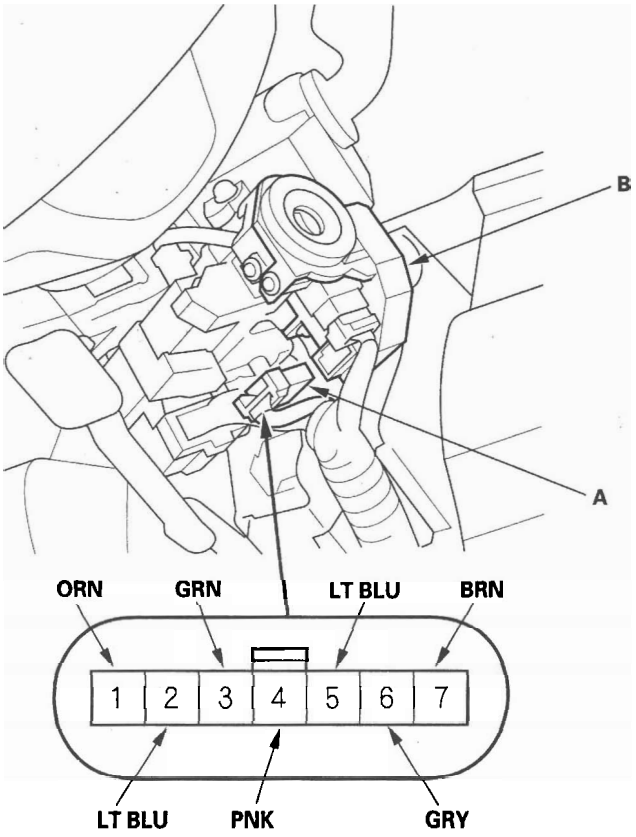
System Check No.	Status Log. Indication	System Check	Possible Cause
A-1	Possible	The key is not registered	• This key is not registered in the immobilizer-keyless control unit. Try to register keys using the HDS. No communication between the antenna and the immobilizer key metal such as key chains/key rings/ other keys. Low battery voltage.
A-2	Possible	Communication error between the key and immobilizer unit	• Intermittent interruption between transponder and immobilizer-keyless control unit. • The immobilizer key type is incorrect non-Honda key. • Key failure (transponder failure) • No communication between the antenna and the immobilizer key by influence of metal such as key chains/key rings/other keys. • Low battery voltage.
A-3	Possible	No communication between the key and immobilizer unit	• The ignition switch was turned on with a non-immobilizer key. • The immobilizer key type is incorrect non-Honda key. Key failure (transponder failure) • No communication between the antenna and the immobilizer key by influence of metal such as key chains/key rings/other keys. • Low battery voltage. • Immobilizer-keyless control unit failure
B-1	Possible	The ECM/PCM is not registered	• The PCM was not registered. Try to register the PCM using the HDS. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of interference. • Open in the IG1 line
B-2	Possible	Error of communication format in ECM/PCM	• The PCM was not registered. Try to register the PCM using the HDS. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of interference.

System Check No.	Status Log. Indication	System Check	Possible Cause
C-1	Possible	No registration of Imoes Unit	• Imoes unit was not registered. • No communication between the Imoes unit and the immobilizer control unit-receiver because of low battery voltage. • No communication between the Imoes unit and the immobilizer control unit-receiver because of interference.
C-2	Possible	Error of communication format in Imoes Unit	• Imoes unit was not registered. • No communication between the Imoes unit and the immobilizer control unit-receiver because of low battery voltage. • No communication between the Imoes unit and the immobilizer control unit-receiver because of interference.
D-1	Possible	S-net line short	• Harness short from the PCM to the immobilizer-keyless control unit. (IMOCD (S-net) line short) • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless unit and the PCM because of interference. • Immobilizer unit failure • PCM failure
D-2	Possible	No communication between Imoes unit and Immobilizer Unit	• Blown fuse • Harness open from the Imoes unit to the immobilizer-keyless control unit. (IMOCD (S-net) line open) • No communication between the Imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the Imoes unit and the immobilizer-keyless control unit because of interference. • Immobilizer-keyless control unit failure • Imoes unit failure
D-3	Possible	No communication between ECM/PCM and Immobilizer Unit	• Blown fuse • Harness open from the PCM to the immobilizer-keyless control unit. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of interference. • Immobilizer-keyless control unit failure • PCM failure
E-1 E-2 E-3 E-4 E-5	———	Initial registration of Immobilizer Unit is not completed	The immobilizer-keyless control unit is not registered. Try to register the immobilizer-keyless control unit using the HDS.
F-1 F-2 F-3 F-4 F-5	———	Special Mode	Turn the ignition switch ON (II) and OFF with the registered key.

Immobilizer-keyless Control Unit Input Test

NOTE: Before testing, troubleshoot the B-CAN System Diagnosis Test Mode A (see page 22-92), and check the No. 23 (10 A) fuse in the under-hood fuse/relay box and the No. 10 (7.5 A) fuse in the under-dash fuse/relay box.

1. Remove the driver's dashboard lower cover (see page 20-101).
2. Remove the steering column covers (see page 20-107).
3. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).



Wire side of female terminals

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.

5. With the connector still disconnected, make these input tests at the connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if result is not obtained
3	GRN	S-NET (IMOCD)	Under all conditions	Check for continuity between the No. 3 terminal and the PCM connector A (44P) No. 44 terminal: There should be continuity.	• An open in the wire • Faulty under-dash fuse/relay box • Bad connection at under-dash fuse/relay box connectors F or R
				Check for continuity between the No. 3 terminal and body ground: There should be no continuity.	• A short to ground in the wire • Faulty under-dash fuse/relay box • Faulty Imoes unit circuit built in the MICU
4	PNK	B-CAN	Under all conditions	Check for continuity between the No. 4 terminal and the gauge control module 36P connector No. 20 terminal, and under-dash fuse/relay box connector Q (16P) No. 6 terminal: There should be continuity.	An open in the wire
				Check for continuity between the No. 4 terminal and body ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the connector, and make these input tests at the connector.

   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the immobilizer-keyless control unit.

   NOTE: After replacing the immobilizer-keyless control unit, do the immobilizer registration (see page 22-302).

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if result is not obtained
1	ORN	VBU	Under all conditions	Check for voltage to ground: There should be battery voltage.	• Blown No. 23 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
2	LT BLU	IG1	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 2 (15 A) fuse in the under-dash fuse/relay box • An open in the wire
6	GRY	IG KEY SW	Ignition key inserted into the ignition switch	Check for voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty ignition key switch • An open in the wire
7	BRN	LG	Under all conditions	Check for voltage to ground: There should be less than 0.5 V.	• Poor ground (G101) • An open in the wire

Immobilizer Key Registration

NOTE:
- The HDS is required for registration of the immobilizer keys.
- Programming the immobilizer also programs the keyless transmitter.
- Check for aftermarket electrical equipment that can cause problems with transponder operation.
- The immobilizer control unit-receiver can store up to six immobilizer Keys.

Add one new key/Keyless transmitter

1. Have a registered key, a new immobilizer key, and the first password from the iN system.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete keys", then "Add 1 key".
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started by the newly registered key.

Add and Delete keys/Keyless transmitters, Then select Delete or Add keys

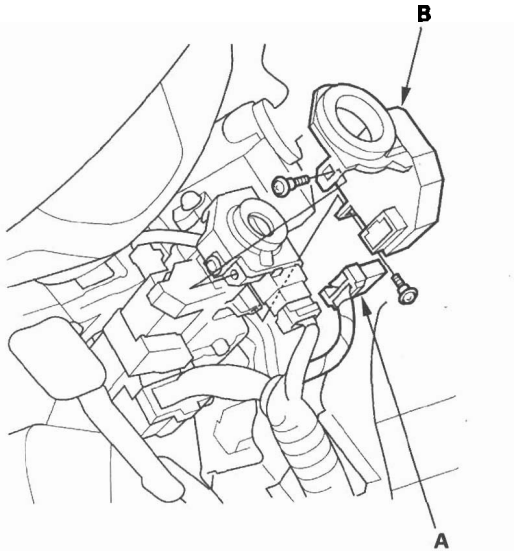
1. Have all registered keys, all new keys, and the first password.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete Keys", or "Delete or Add Multiple Keys".
6. Do the registration according to the instruction of HDS screen.
7. Check if the engine can be started by all the registered keys.

All keys are lost

1. Prepare all new keys and have the immobilizer PCM code.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete keys", then "ALL KEYS LOST".
6. Do the registration according to the instruction of HDS screen.
7. Check if the engine can be started by all the registered keys.

Immobilizer-keyless Control Unit Replacement

1. Remove the driver's dashboard lower cover (see page 20-101).
2. Remove the steering column covers (see page 20-107).
3. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).



4. Remove the two screws and the immobilizer-keyless control unit.
5. Install the immobilizer-keyless control unit in the reverse order of removal.
6. After replacement, register the immobilizer-keyless control unit (see page 22-302), and make sure the immobilizer system works properly.
7. Program all of the customer's keyless transmitters (see page 22-302).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If Audio, Navigation, and Telematics maintenance is required)

The CR-V SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, seat belt buckle tensioners in the front seat belt buckles, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items require special precautions and tools, and should be done only by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags and/or side airbags.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned OFF; otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.