

# HEATER SYSTEM

## Article Text

1993 Honda Prelude

For Cadi Centre Nsk CA 95051

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### ARTICLE BEGINNING

#### 1993 Heater Systems

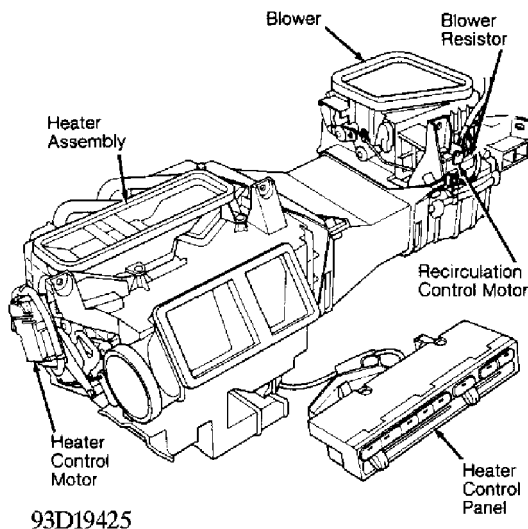
#### Prelude

### DESCRIPTION

The heating and ventilating system consists of heater control panel, heater assembly, blower assembly, heater ducts and hoses. See Fig. 1. On lever-type heater control panels, air source selection and air outlet distributions are controlled by sliding levers. Blower on-off speed and temperature are controlled by lever or rotating dial. On push button heater control panels, functions are controlled by various push buttons, levers or rotating dials.

**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES & ELECTRICAL section.

**CAUTION:** Radio is equipped with anti-theft circuitry. Obtain code number from owner before disconnecting battery, removing fuse No. 43 or removing radio. After service, turn on radio. When CODE appears, enter 5-digit code to restore operation.



**Fig. 1: Identifying Heater Assembly (Prelude)**  
Courtesy of American Honda Motor Co., Inc.

## OPERATION

### HEATER CONTROL PANEL

#### Air Source Select (Fresh Air & Recirculation) Lever/Buttons

To recirculate air inside vehicle, slide air select lever to recirculation position or press recirculation button, depending on control assembly type. Indicator light will come on, and outside air will be shut off.

Select the fresh air position with appropriate button or lever to circulate fresh air from outside vehicle; indicator light should come on. If equipped, ensure recirculation button is off.

#### Fan Switch

When fan switch is set to low, medium-low, medium-high or high position, fan will circulate warm, cool or outside air, depending on selected temperature and functions.

#### Temperature Control Lever/Dial

Depending on control assembly type, either slide appropriate lever from left to right or rotate dial clockwise for warmer air.

#### Function Control Lever/Buttons

Slide lever or push appropriate button to direct fresh or recirculated air to and from heater, defrosters and vents. Set function lever or button in vent (face) position. Outside air will now flow through side and center vents.

To ventilate, set temperature dial or lever to cold position. If equipped, ensure recirculation button is in OFF position. On all, select fresh air position with air select button or lever.

To defrost windshield or windows, set temperature lever or dial in hot position. Select defrost position with appropriate function button or lever, and switch on fan. Warmed (outside) air will flow from windshield and side defroster vents.

## ADJUSTMENTS

### AIR MIX CABLE/ROD

**NOTE:** Heater valve cable should always be adjusted whenever the air mix cable/rod has been disconnected. See **HEATER VALVE CABLE**.

Disconnect air mix cable. Slide temperature lever to COOL position. Connect cable to arm. Gently slide cable housing back to eliminate slack, and snap cable housing into clamp.

NOTE: Prelude uses function control motor.

#### HEATER VALVE CABLE

NOTE: Air mix control cable/rod should be adjusted whenever heater valve cable has been disconnected. See AIR MIX CABLE/ROD.

Slide temperature control lever to COOL position. Disconnect cable from heater valve. Close heater valve by turning control arm toward cable clamp. Connect end of cable to control arm of heater valve. Using clip, secure cable housing into clamp.

#### RECIRCULATION CONTROL MOTOR ROD

Connect wire harness to recirculation control motor. See Fig. 1. Press recirculation button and manually open air door. Connect control rod to arm of air door while holding air door open. Ensure air door and linkage move smoothly.

#### TROUBLE SHOOTING

##### BLOWER MOTOR DOES NOT RUN

1) Check fuse No. 9 (15-amp.), located in underdash fuse/relay box and fuse No. 35 (40-amp.), located in underhood fuse/relay box. Replace as necessary.

2) If fuses are okay, turn ignition on. Using a jumper wire, jumper Blue/Red at 2-pin blower motor connector to ground. If blower motor runs, go to next step. If blower motor does not run, go to step 6).

3) Turn ignition off. Remove radio/cassette player. Disconnect 7-pin blower fan switch connector. Turn ignition on. Check for battery voltage between Blue/Red wire terminal and body ground.

4) If battery voltage is present, go to next step. If battery voltage is not present, repair open in Blue/Red wire between blower motor and blower fan switch.

5) Turn ignition off. Check for continuity in Black wire between blower fan switch and body ground. If continuity is present, replace blower fan switch. If there is no continuity, repair open in Black wire between blower fan switch and body ground. If wire is okay, check for a bad ground at switch.

6) Disconnect 2-pin connector at blower motor. Turn ignition on. Check for battery voltage between Blue/White wire terminal and body ground. If battery voltage is not present, go to next step. If battery voltage is present, replace blower motor.

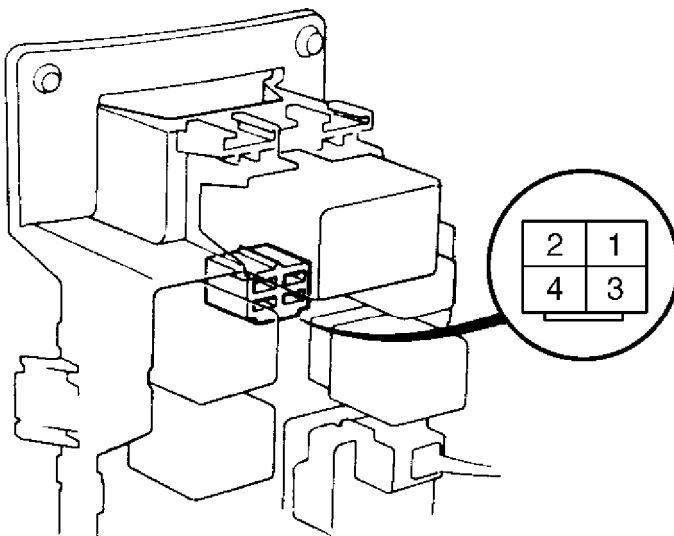
7) Turn ignition off. Remove blower relay and test. See HEATER SYSTEM Article Text (p. 3) 1993 Honda Prelude For Cadi Centre 1  
BLOWER MOTOR RELAY under TESTING. Replace blower motor relay if

faulty. If blower relay is okay, go to next step.

8) Check for battery voltage at blower relay socket terminal No. 4 (positive). If battery voltage is present, go to next step. If battery voltage is not present, repair open in White wire between heater blower 40-amp fuse in underhood relay/fuse box and blower relay socket terminal No. 4. See Fig. 2.

9) Turn ignition on. Check for battery voltage at blower relay socket terminal No. 1 (positive) and ground. If battery voltage is present, go to next step. If battery voltage is not present, replace underdash fuse/relay box.

10) Turn ignition off. Check for continuity between blower relay socket terminal No. 3 (positive) and ground. If continuity is present, repair open in Blue/White wire between blower motor relay and blower motor. If continuity does not exist, repair open in Blue/White wire between blower motor relay and blower motor.



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**Fig. 2: Blower Relay Socket Terminal ID  
Located Inside Underdash Fuse/Relay Box**

#### BLOWER MOTOR RUNS ONLY AT CERTAIN SPEEDS

1) Turn ignition on. Turn heater blower fan switch to OFF position. If blower fan motor does not run, go to step 4). If blower fan motor does run, turn ignition off. Remove radio/cassette player.

2) Disconnect 7-pin blower fan switch connector. Disconnect wire harness from heater resistor at blower case. Using an ohmmeter, check Blue/Black, Blue/Red, Blue/White and Blue/Yellow wires for continuity to ground.

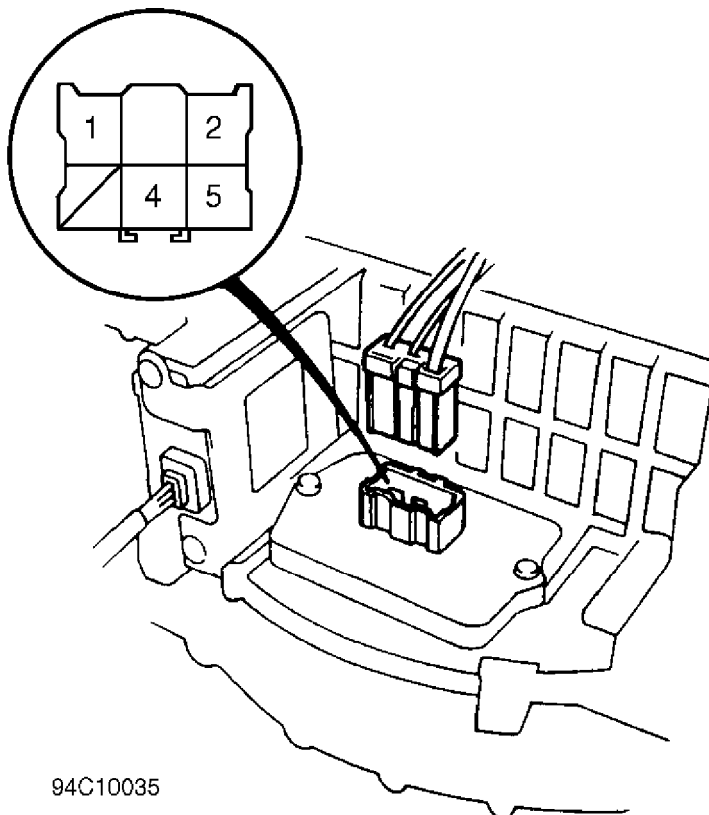
3) If any wire has continuity to ground, repair short in wire(s) between heater fan switch and blower motor resistor. If there is no continuity to ground, replace fan switch.

**HEATER SYSTEM**

4) Turn ignition off. Disconnect 5-pin connector from blower resistor at blower case. Measure resistance between blower motor resistor terminals No. 1 and 5. See Fig. 3. Resistance should be about 2.5 ohms. If resistance is not as specified, replace blower motor resistor. If resistance is as specified, go to next step.

5) Reconnect blower motor resistor connector. Remove radio/cassette player. Disconnect 7-pin connector from blower fan switch. Turn ignition on. At the heater fan switch 7-pin connector, ground each wire individually in the following order: Blue/White, Blue/Yellow, Blue/Black and Blue/Red wire terminals.

6) If blower motor operates at progressively higher speeds, replace heater fan switch. If blower motor does not operate at progressively higher speeds, repair open or cause of excessive resistance in appropriate wire(s) between heater fan switch and blower motor resistor.



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Fig. 3: Blower Motor Resistor Terminal ID  
Courtesy of American Honda Motor Co., Inc.

#### FUNCTION CONTROL MOTOR MALFUNCTION

**NOTE:** Before beginning trouble shooting procedures, check function motor links and doors for binding or sticking.

1) Check fuse No. 9 (15-amp) in underdash fuse/relay box.

Replace fuse if faulty. If fuse is okay, disconnect 8-pin connector from function control motor. Turn ignition on.

2) Switch control panel function control back and forth several times from fresh to recirculation modes. If recirculation control motor runs, go to step 5). If recirculation control motor does not run, turn ignition off. Disconnect function control motor 8-pin connector.

3) Turn ignition on. Check voltage between Black/Yellow wire terminal and ground. If battery voltage is present, go to next step. If battery voltage is not present, repair open in Black/Yellow wire between underdash fuse/relay box and function control motor.

4) Turn ignition off. Remove radio/cassette player. Disconnect 16-pin heater control panel. Check continuity in Black wire between heater control panel and ground. If continuity exists, replace heater control panel. If continuity does not exist, check for open in Black wire between heater control panel and ground. If wire is okay, check for poor ground connection.

5) Turn ignition off. Disconnect function control motor 8-pin connector. Turn ignition on. Check for battery voltage at Black/Yellow wire terminal of function control motor harness connector and ground. If battery voltage exists, go to next step. If battery voltage does not exist, repair open in Black/Yellow wire between function control motor and underdash fuse/relay box. See WIRING DIAGRAM.

6) Turn ignition off. Perform test on function control motor. See FUNCTION CONTROL MOTOR under TESTING. Replace motor if faulty. If motor is okay, remove radio/cassette player. Disconnect 16-pin heater control panel.

7) Using an ohmmeter, check for continuity between Brown/White, Blue, Blue/Red, Yellow/Green, Light Green/White and Light Green/Red wires between function control motor harness connector and body ground. If continuity does not exist, go to next step. If continuity exists, repair short in affected wire(s).

8) Check for continuity in Brown/White, Blue, Blue/Red, Yellow/Green and Light Green/White wires in harness from control panel connector to function control motor harness connector. If continuity does not exist, repair open in affected wire. If continuity does exist, replace heater control panel.

#### RECIRCULATION CONTROL MOTOR MALFUNCTION

1) Check fuse No. 9 (15-amp), in underdash fuse/relay box. If fuse is okay, turn ignition on. Switch controls between the different ventilation modes (VENT, HEAT, etc.). Observe if recirculation control motor operates. If motor operates, go to step 4). If motor does not operate, go to next step.

2) Turn ignition off. disconnect 4-pin recirculation motor connector. Turn ignition on. Check for battery voltage between Black/Yellow wire and body ground. If battery voltage is present, HEATER SYS

to next step. If battery voltage is not present, repair open in Black/Yellow wire between motor and fuse box.

3) Turn ignition off. Remove radio/cassette player. Disconnect 16-pin heater control panel harness connector. Check continuity in Black wire between heater control panel and ground. If continuity exists, replace heater control panel. If continuity does not exist, repair open in Black wire between heater control and ground.

4) Turn ignition off. Disconnect 4-pin recirculation control motor connector. Turn ignition on. Measure voltage between Black/Yellow wire terminal and ground. If voltage exists, go to next step. If voltage does not exist, check open in Black/Yellow wire between underdash fuse/relay box and recirculation control motor.

5) Turn ignition off. Test recirculation control motor. See RECIRCULATION CONTROL MOTOR under TESTING. Ensure recirculation control linkage and doors operate smoothly. Replace motor if faulty. If motor is okay, go to next step.

6) Remove radio/cassette player. Disconnect 16-pin heater control panel connector. Check continuity in Green/White and Green/Red wires between recirculation control motor and ground. If continuity does not exist, go to next step. If continuity exists, check for short in Green/White or Green/Red wires between recirculation control motor and heater control panel.

7) Check Green/White and Green/Red wires for battery voltage. If battery voltage is not present, go to next step. If battery voltage is present, check for short in Black/Yellow wire between recirculation control motor and heater control panel.

8) Check continuity in Green/White and Green/Red wires between recirculation control motor and heater control panel. If continuity exists, replace heater control panel. If continuity does not exist, check for open circuit in Green/White or Green/Red wires between recirculation control motor and heater control panel.

## TESTING

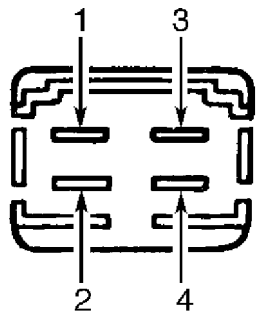
**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES & ELECTRICAL section.

## BLOWER MOTOR RELAY

Remove relay from underdash fuse/relay box. Connect 12-volt battery to terminals No. 3 and 4. See Fig. 4. Using ohmmeter, ensure continuity is present between terminals No. 1 and 2. Disconnect battery, and ensure continuity is no longer present between terminals

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No. 1 and 2.



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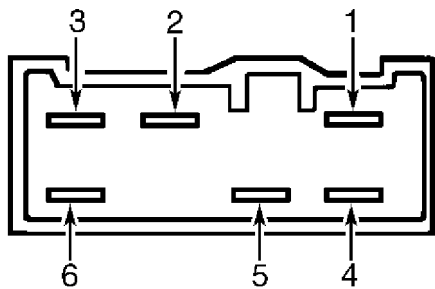
Fig. 4: Blower Motor Relay Terminal ID (Accord Shown; Others Similar)  
Courtesy of American Honda Motor Co., Inc.

FAN SWITCH

Check for continuity between specified terminals of fan switch. See FAN SWITCH CONTINUITY table. See Fig. 5. If continuity is not present, replace fan switch.

FAN SWITCH CONTINUITY TABLE

AA		
Switch Position	Continuity Between Terminals	
Low .....	1 & 3; 3 & 4	
Medium-Low .....	1 & 3; 3 & 5	
Medium-High .....	1 & 3; 3 & 6	
High .....	1 & 2; 2 & 3	
AA		



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Fig. 5: Fan Switch Connector Terminal ID  
Courtesy of American Honda Motor Co., Inc.

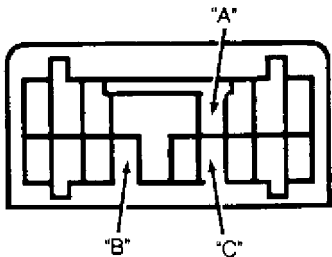
AIR SOURCE SELECT SWITCH (FRESH & RECIRCULATED AIR)

Check for continuity between specified terminals. See AIR SOURCE SELECT SWITCH CONTINUITY table. See Fig. 6. If continuity is not present, replace switch.

HEATER



AIR SOURCE SELECT SWITCH CONTINUITY TABLE	
AA	
Switch Position	Continuity Between Terminals
Fresh Air .....	"B" & "C"
Recirculation .....	"A" & "C"
AA	



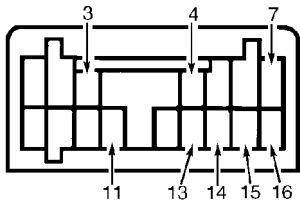
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Fig. 6: Fresh & Recirculated Air Switch Connector Terminal ID  
Courtesy of American Honda Motor Co., Inc.

FUNCTION CONTROL SWITCH

Check for continuity between specified terminals of function control switch. See FUNCTION CONTROL SWITCH CONTINUITYtable. See Fig. 7. If continuity is not present, replace switch.

FUNCTION CONTROL SWITCH CONTINUITY TABLE	
AA	
Switch Position	Continuity Between Terminals
Vent .....	13 & 7
Heat .....	13 & 15
Heat/Defrost .....	13 & 14
Defrost .....	13 & 3
Heat/Vent .....	13 & 16
AA	



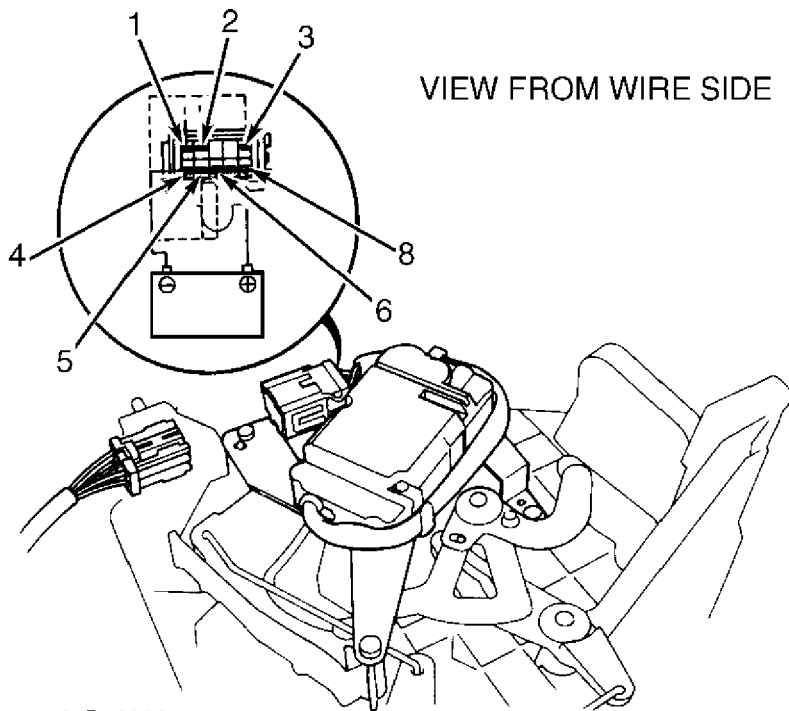
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Fig. 7: Function Control Switch Terminal ID  
Courtesy of American Honda Motor Co., Inc.

## FUNCTION CONTROL MOTOR

1) Disconnect function control motor 8-pin connector. Connect jumper wires from battery positive terminal to terminal No. 1 of connector. Connect terminal No. 2 of connector to battery negative terminal. See Fig. 8.

2) Using a jumper wire, connect terminal No. 2 to terminals No. 3, 4, 5, 6 and 7 in order. Motor should operate as each terminal is connected to terminal No. 2. If motor fails to operate at any terminal, retest particular terminal after testing others. If motor fails to operate again, replace motor.



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**Fig. 8: Function Control Motor Connector Terminal ID**  
Courtesy of American Honda Motor Co., Inc.

## RECIRCULATION CONTROL MOTOR

1) Turn ignition off. Disconnect 3-pin connector at recirculation motor. Connect battery positive terminal to terminal No. 1 (Black/Yellow wire) of recirculation control motor. See Fig. 9.

2) Alternately connect terminals No. 2 and 3 (Green/White and Green/Red wires) to battery negative terminal. Motor should move to fresh air position and then to recirculation position. If motor does not operate as indicated, replace recirculation control motor.

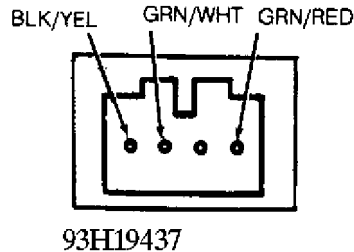


Fig. 9: Recirculation Control Motor Connector Terminal ID  
 Courtesy of American Honda Motor Co., Inc.

## REMOVAL & INSTALLATION

**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES & ELECTRICAL section.

### BLOWER MOTOR

#### Removal

Disconnect negative battery cable. Disconnect wire connectors from blower fan motor. Remove 3 bolts and lower blower fan motor.

#### Installation

To install, reverse removal procedure. Check for air leaks at blower.

### INSTRUMENT PANEL

**NOTE:** Radio may have a coded theft protection circuit. Ensure code is available before disconnecting battery, removing No. 43 (10-amp) fuse or removing radio.

#### Removal

1) Disable air bag system. Disconnect negative battery cable. Remove seat track covers and remove 4 track bolts from each seat. Disconnect electrical connectors and remove seats.

2) Wrap gearshift lever with clean shop towel. On manual transmission models, remove gearshift lever knob. On all models, remove screws and remove front console from vehicle.

3) Remove screws from center panel/radio assembly and pull outward. Disconnect electrical connectors from center panel/radio assembly.

4) Open glove box, and remove glove box screws and glove box.

Remove lower dash access cover and remove screws for lower instrument panel cover. Remove knee bolster under steering column.

5) Remove A/C duct under steering column. Remove upper and lower steering column covers. Remove nuts and bolts supporting steering column and lower column from dash area. Wrap steering column with shop towels to prevent damage during dash removal.

6) On 4-wheel steering models, ensure Supplemental Restraint short connector is installed on passenger-side air bag inflator connector before disconnecting air bag wire harness. Remove passenger-side air bag.

7) Remove bolt access panels on both side of dash. Disconnect electrical connectors and heater control cable. See Fig. 10. Use protective tape on front pillars to protect dash during removal and installation. Remove 6 dash bolts. Lift and remove dash. Use care not to scratch or damage dash during removal.

### Installation

To install, reverse removal procedure. Ensure electrical harness and heater control cable are not pinched when installing instrument panel.

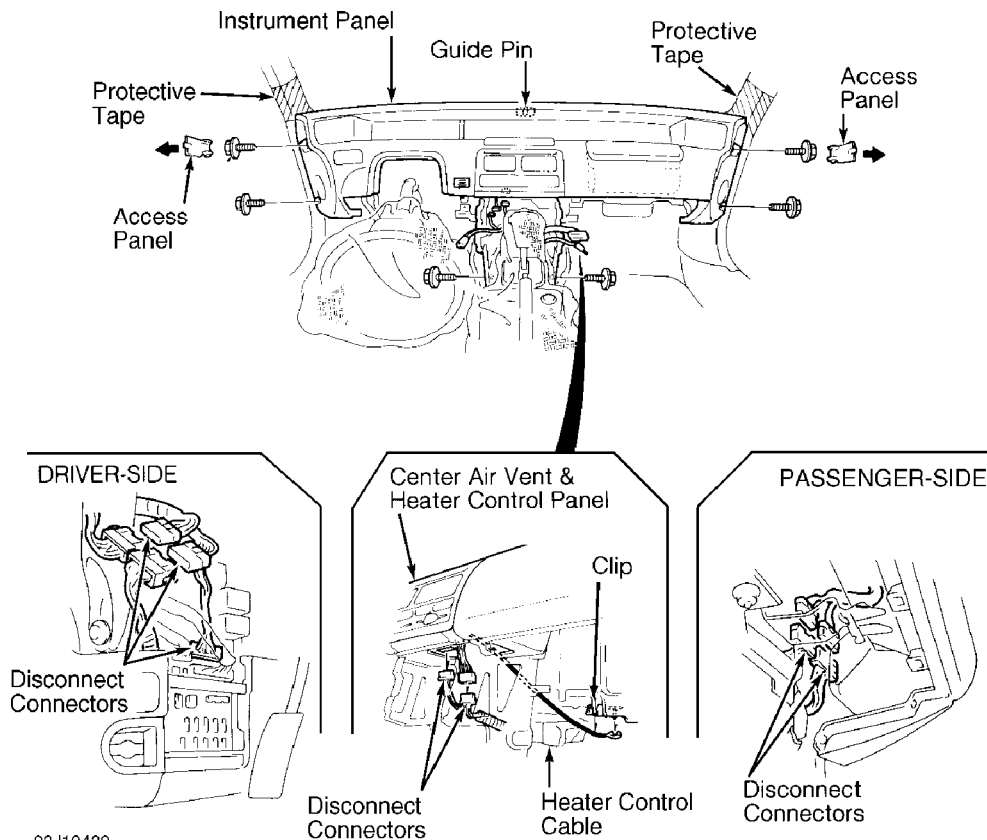


Fig. 10: Removal & Installation Of Instrument Panel  
Courtesy of American Honda Motor Co., Inc.

## HEATER CONTROL PANEL

**NOTE:** Radio may have a coded theft protection circuit. Ensure code is available before disconnecting battery, removing fuse No. 43, or removing radio.

### Removal

- 1) Wrap gearshift lever with clean shop towel. On manual transmission models, remove gearshift lever knob.
- 2) On all models, remove screws and remove front console from vehicle. Remove screws from center panel/radio assembly and pull outward. Disconnect electrical connectors from center panel/radio assembly.
- 3) Disconnect air mix cable at heater box. Remove 3 screws and heater control panel/air vent assembly. Disconnect electrical connections as necessary.

### Installation

To install, reverse removal procedure. Check cable adjustments. See ADJUSTMENTS.

## HEATER ASSEMBLY & HEATER CORE

### Removal

- 1) Drain radiator coolant. Place drip pan under heater hoses, and disconnect heater hoses at heater. Disconnect heater valve cable from heater valve.
- 2) Remove instrument panel. See INSTRUMENT PANEL under REMOVAL & INSTALLATION. Remove heater duct. Remove lower heater assembly nuts from inside engine compartment. Remove top heater assembly bolts.
- 3) Disconnect wiring harness from function control motor. Pull heater assembly away from body, and remove heater assembly. Remove heater core cover screws, and remove heater core.

### Installation

To install, reverse removal procedure. Apply sealant to grommets. DO NOT interchange inlet and outlet heater hoses. Secure hose clamps. Loosen radiator bolt. Refill radiator and reservoir tank with coolant. Tighten bleed bolt after trapped air has escaped. Check cable adjustments. See ADJUSTMENTS.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS TABLE

AA

Application

Ft. Lbs. (N.m)

Heater Assembly Nut .....	16 (22)
Steering Column	
8-mm Bolt .....	16 (22)
8-mm Nut (Use New) .....	12 (16)
10-mm Bolt .....	29 (39)

INCH Lbs. (N.m)

Blower Motor Bolt/Nut .....	89 (10)
Instrument Panel Bolt .....	89 (10)
Heater Assembly Bolt .....	89 (10)
Knee Bolster Bolt .....	89 (10)
Passenger-Side Air Bag Bracket Nut .....	89 (10)

AA

WIRING DIAGRAMS

## HEATER SYS

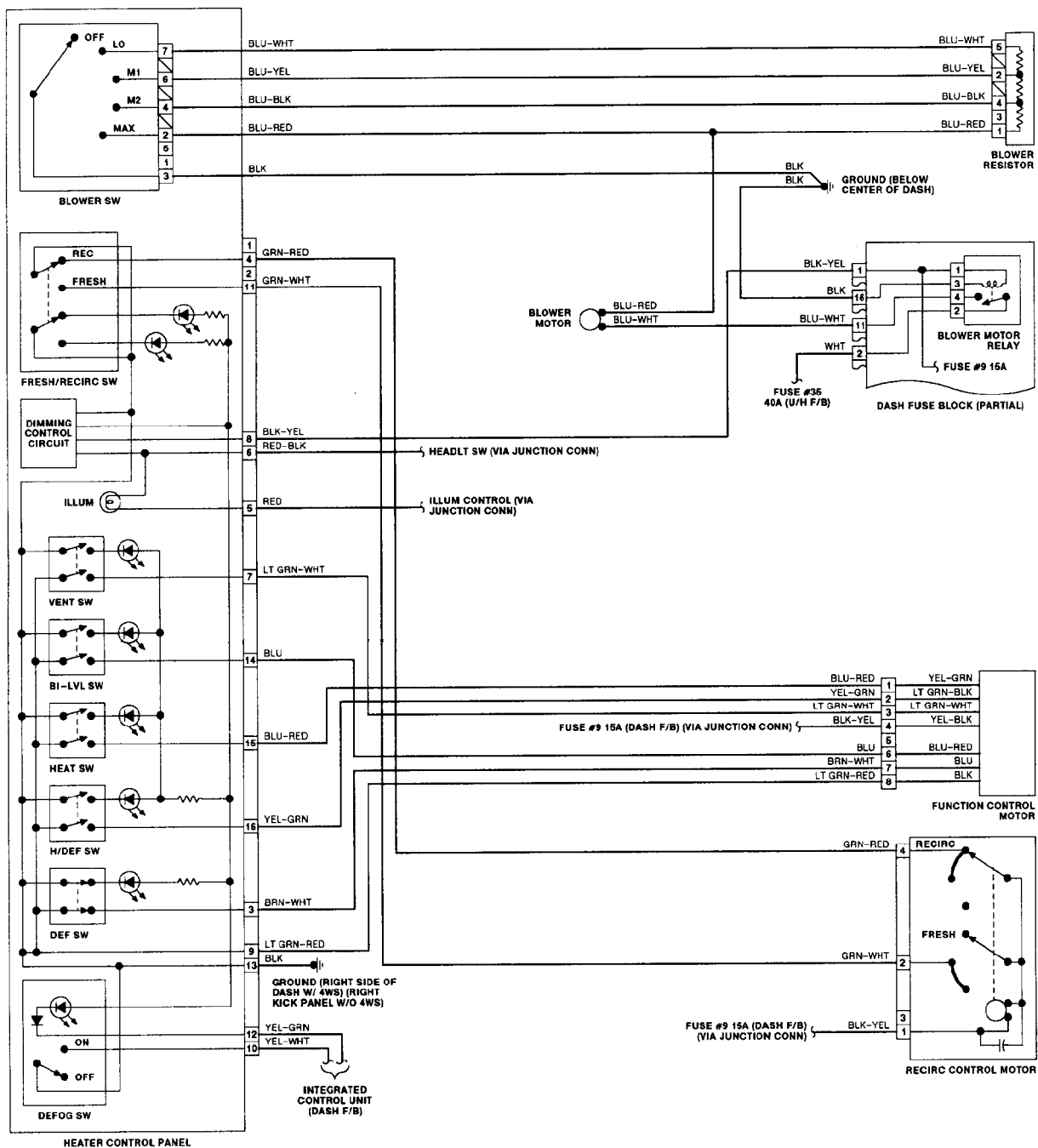


Fig. 11: Heater System Wiring Diagram

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