

HEATER SYSTEM

1993 Toyota Celica

1993 Heater Systems

Celica

DESCRIPTION

Heater assembly consists of heater core, control panel, blower motor, control cables (electric servomotors on push button-controlled models) and air ducts. All components are located under instrument panel.

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: When battery is disconnected, radio will go into anti-theft protection mode. Obtain radio anti-theft protection code from owner prior to servicing vehicle.

OPERATION

BLOWER SWITCH

Switch controls blower motor speed through blower resistor. Switch is operated by control lever, dial knob or push button.

CONTROL PANEL

Lever-Controlled Models

Temperature and mode levers are cable-connected to heater coolant valve and air doors. All models have a fresh/recirculation lever to provide choice of outside air entry or inside air recirculation.

Push Button-Controlled Models

Air inlet (fresh/recirculation), mode control and air mix are controlled by electric servomotors. Temperature selection is controlled by slide lever or rotating dial knob.

HEATER RELAY

A heater (or main) relay in heater circuit controls current flow through system. See WIRING DIAGRAM. For location of heater relay, see HEATER RELAY LOCATION table.

HEATER RELAY LOCATION TABLE

Models	Location
Celica	Relay/Fuse Block, Behind Right Kick Panel

ADJUSTMENTS

AIR INLET DAMPER CABLE

Lever-Controlled Models

Set air inlet damper and control lever to fresh air position. Remove cable retaining clip, and ensure damper and cable are in full fresh position. Attach control cable using retaining clip, and check operation of air intake damper.

AIR MIX DAMPER CABLE

Lever-Controlled Models

Set air door lever to warm position, and remove cable retaining clip. Ensure cable and damper are in full cool position. Install cable retaining clip. Check air mix damper operation.

AIRFLOW MODE DAMPER CABLE

Lever-Controlled Models

Set control lever to defrost position. Remove cable retaining clip. Ensure airflow mode damper and cable are in full defrost position. Install cable retaining clip.

WATER VALVE CONTROL CABLE

Lever-Controlled Models

Set control lever to warm position. Remove cable retaining clip. Ensure water valve control cable is in full warm position. Install cable retaining clip.

TROUBLE SHOOTING

BLOWER DOES NOT WORK

Check for open circuit breaker (some models), blown heater fuse and faulty heater relay. Also check for heater blower switch, heater blower resistor, heater blower motor, wiring or ground circuit fault.

INCORRECT TEMPERATURE OUTPUT

Check for control cables broken or out of adjustment, heater hoses leaking or clogged and faulty water pump. Also check for broken air dampers, faulty servomotor (some models), clogged air ducts, leaking or clogged heater core and faulty heater control unit.

TESTING

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AIR INLET CONTROL SERVOMOTOR

1) Disconnect air inlet control servomotor wiring harness connector. Ground terminal No. 3, and apply battery voltage to terminal No. 1. See Fig. 1. Ensure arm rotates smoothly to fresh (full counterclockwise) position.

2) Ground terminal No. 2, and apply battery voltage to terminal No. 1. Ensure arm rotates smoothly to recirculation (full

clockwise) position. If operation is not as specified, replace servomotor.

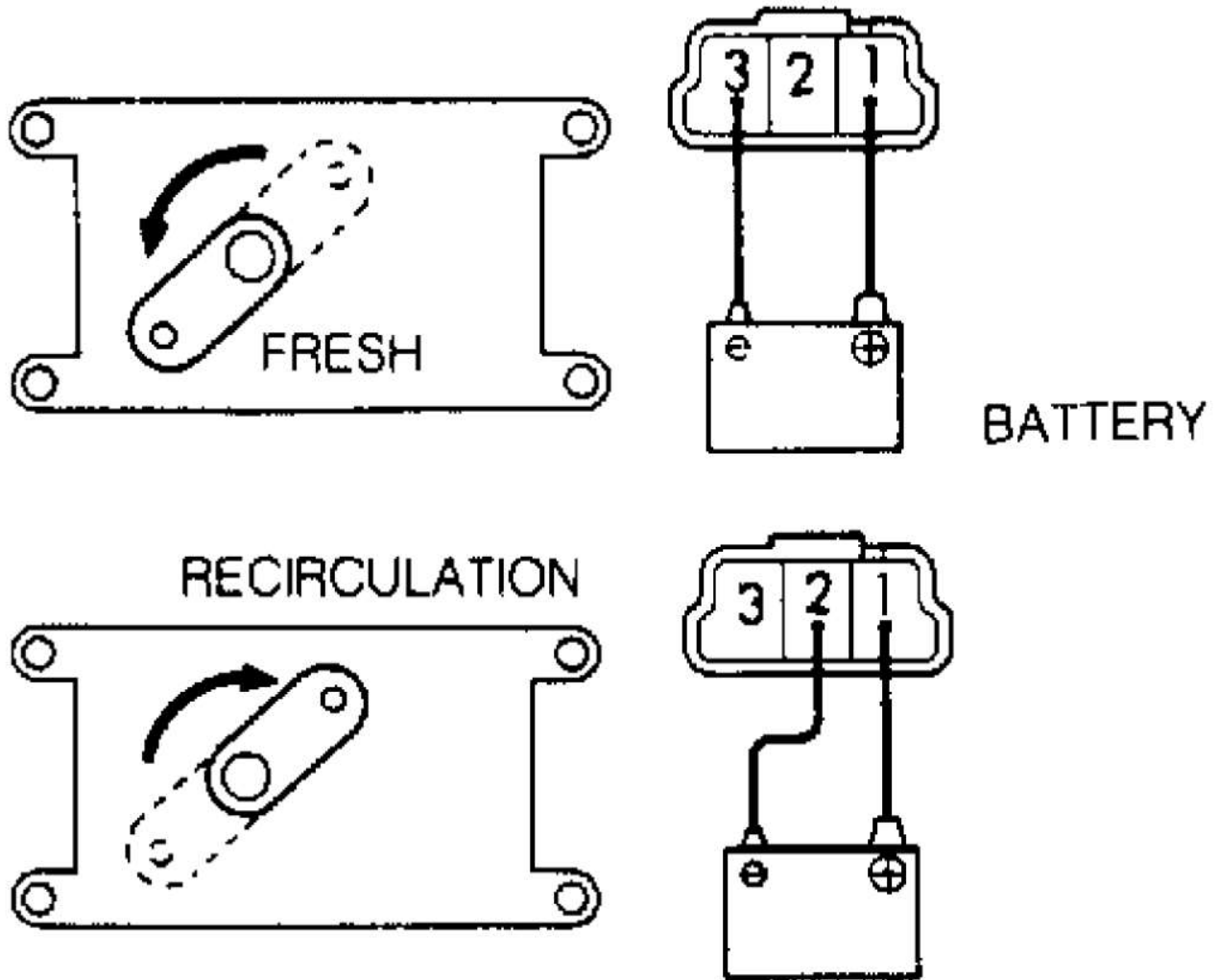


Fig. 1: Testing Air Inlet Control Servomotor
Courtesy of Toyota Motor Sales, U.S.A., Inc.

AIR INLET CONTROL SWITCH

1) Disconnect wiring harness connector "A" of heater control assembly. See Fig. 2. With recirculation button depressed, continuity should exist between terminals No. 2 and 7.

2) With fresh button depressed, continuity should exist between terminals No. 2 and 8. Switch contains diodes. Before deciding switch is faulty, check for continuity in both directions. If continuity is not as specified, replace heater control assembly.

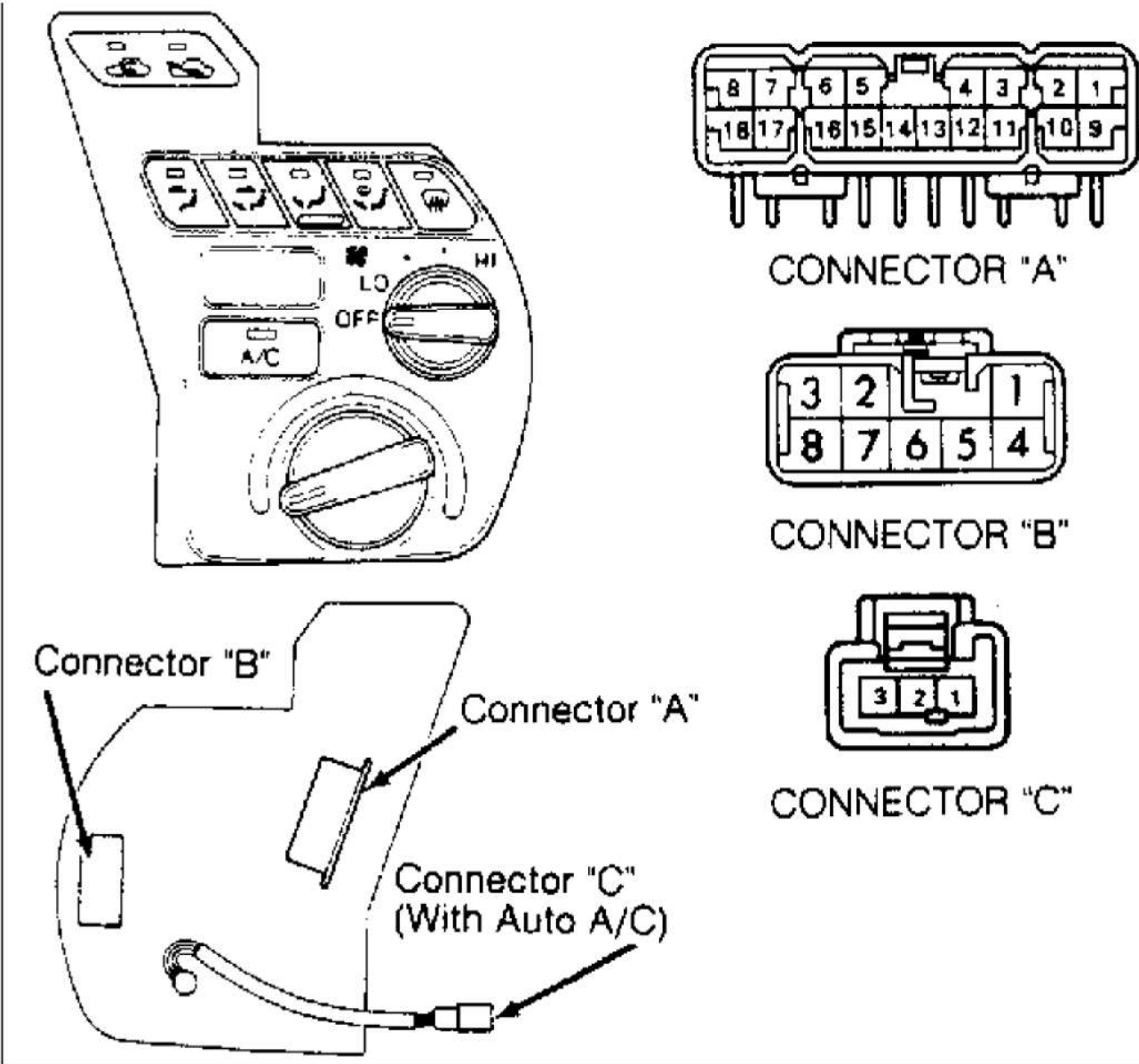


Fig. 2: Identifying Heater Control Assembly Connector Terminals
Courtesy of Toyota Motor Sales, U.S.A., Inc.

AIRFLOW MODE CONTROL SWITCH

Disconnect wiring harness connector "A" of heater control assembly. See Fig. 2. Check for continuity at specified terminals. See TESTING AIRFLOW MODE CONTROL SWITCH table. If continuity is not as specified, replace heater control assembly.

TESTING AIRFLOW MODE CONTROL SWITCH TABLE

Switch Position	Continuity Between Terminals
Face	2 & 9
Bi-Level	2 & 10
Foot	2 & 11

Foot/Defrost	2 & 12
Defrost	2 & 13

AIRFLOW MODE SERVOMOTOR

Disconnect servomotor connector. Ground terminal No. 6, and apply battery voltage to terminal No. 5. See Fig. 3. Ground each specified terminals, and ensure arm rotates smoothly to correct position. See TESTING AIRFLOW MODE SERVOMOTOR table. Replace servomotor if operation is not as specified.

TESTING AIRFLOW MODE SERVOMOTOR TABLE

Ground Terminal No.	Arm Position
1	Vent
2	Bi-Level
3	Foot 2
4	Foot/Defrost
7	Defrost
8	Foot 1

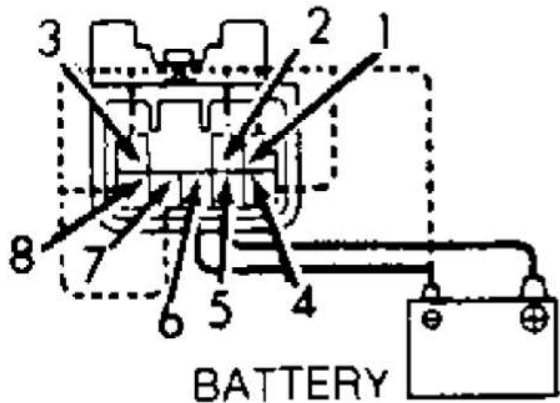
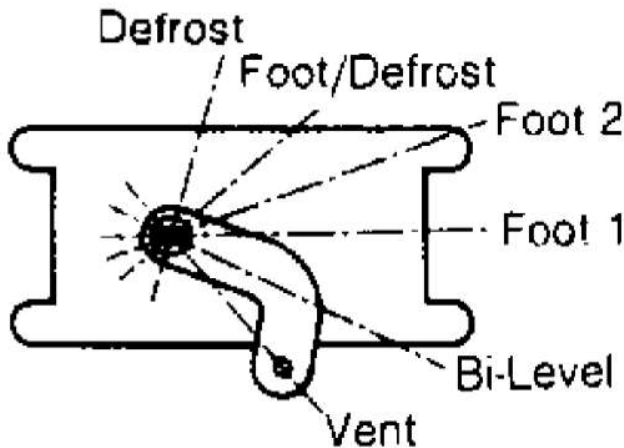


Fig. 3: Testing Airflow Mode Servomotor
Courtesy of Toyota Motor Sales, U.S.A., Inc.

BLOWER FAN RELAY

Disconnect wiring harness connector. Test blower fan relay as specified. See TESTING BLOWER FAN RELAY table. See Fig. 4. If continuity is not as specified, replace relay.

TESTING BLOWER FAN RELAY TABLE

Apply Battery Voltage Between Terminal No.	(1) Continuity Should Exist Between Terminal No.
5 & 6	1 & 3
5 & 7	3 & 4
5 & 8	2 & 3

(1) - When battery voltage is not applied, constant continuity is present between terminals No. 5 and 6,

5 and 7, and 5 and 8.

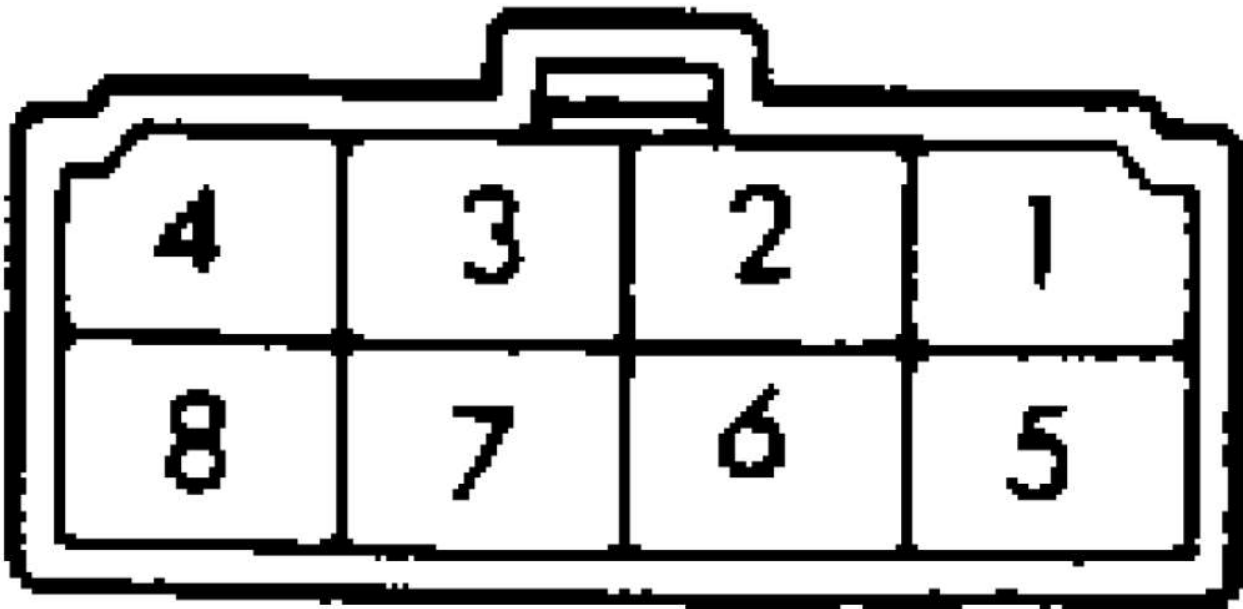
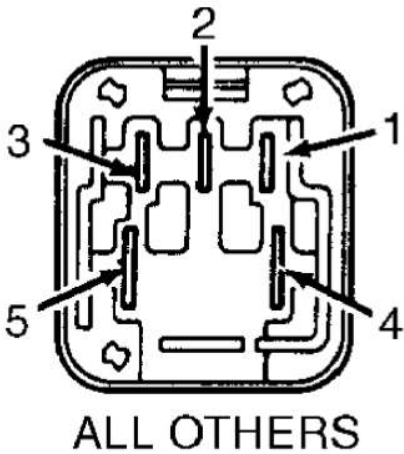


Fig. 4: Identifying Blower Fan Relay Connector Terminals
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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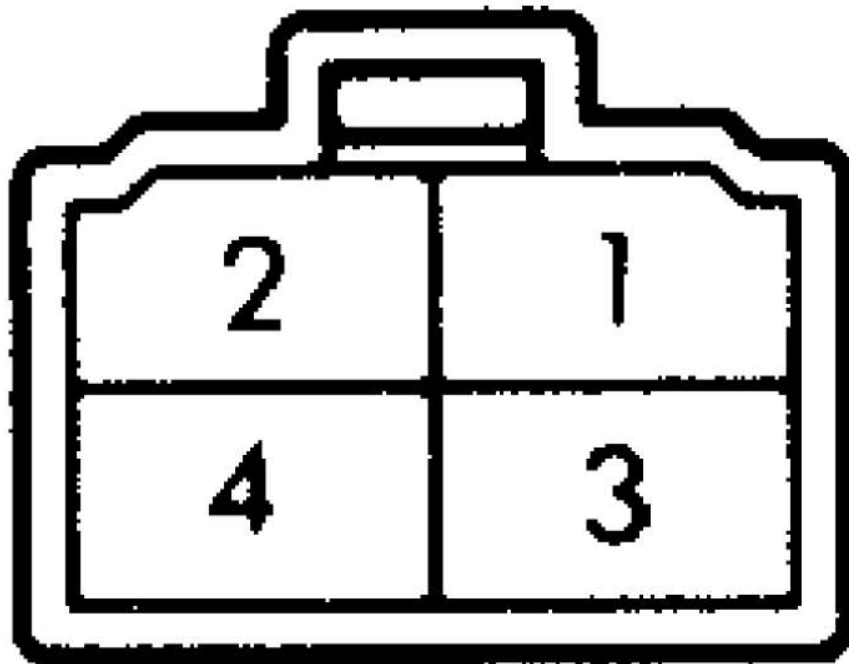
Fig. 5: Identifying Heater Relay Connector Terminals
Courtesy of Toyota Motor Sales, U.S.A., Inc.

BLOWER MOTOR

Disconnect blower motor wiring harness connector. Apply battery voltage to motor side of connector. Motor should operate smoothly. If motor operation is not smooth, replace motor.

BLOWER RESISTOR

Remove resistor from vehicle or disconnect resistor wiring. Using an ohmmeter, ensure continuity exists between blower resistor terminals No. 1 and 4. See Fig. 6. If continuity is not as specified, replace resistor.



ALL OTHER MODELS

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Fig. 6: Identifying Heater Blower Resistor Connector Terminals
Courtesy of Toyota Motor Sales, U.S.A., Inc.

BLOWER SPEED CONTROL SWITCH

Disconnect wiring harness connector "B" of heater control panel. Using an ohmmeter, check continuity between specified terminals and switch positions. See Fig. 2. See appropriate TESTING BLOWER SPEED CONTROL SWITCH table. If continuity is not as specified, replace blower switch.

TESTING BLOWER SPEED CONTROL SWITCH TABLE

Switch Position	Continuity Between Terminals
OFF	(1)
LO	1, 3 & 7
(i) (2)	2, 3 & 6
(i) (3)	2, 3 & 4
HI	2, 3 & 5

(1) - No continuity.
(2) - Square (i) closest to LO position.
(3) - Square (i) closest to HI position.

HEATER RELAY

4-Pin Type

1) Disconnect negative battery cable. Remove heater relay. Using an ohmmeter, ensure continuity exists between heater relay terminals No. 1 and 3, and between terminals No. 2 and 4. See Fig. 5. Ensure continuity does not exist between terminals No. 4 and 5. If continuity is not as specified, replace relay.

2) Ground terminal No. 3, and apply battery voltage to terminal No. 1. Ensure continuity exists between terminals No. 4 and 5. If continuity is not as specified, replace relay.

REMOVAL & INSTALLATION

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BLOWER MOTOR

Removal & Installation

Removal and installation procedures are not available.

Exploded views of heater systems are provided. See Fig. 7.

HEATER ASSEMBLY

Removal & Installation

Removal and installation procedures are not available.

Exploded views of heater systems are provided. See Fig. 7.

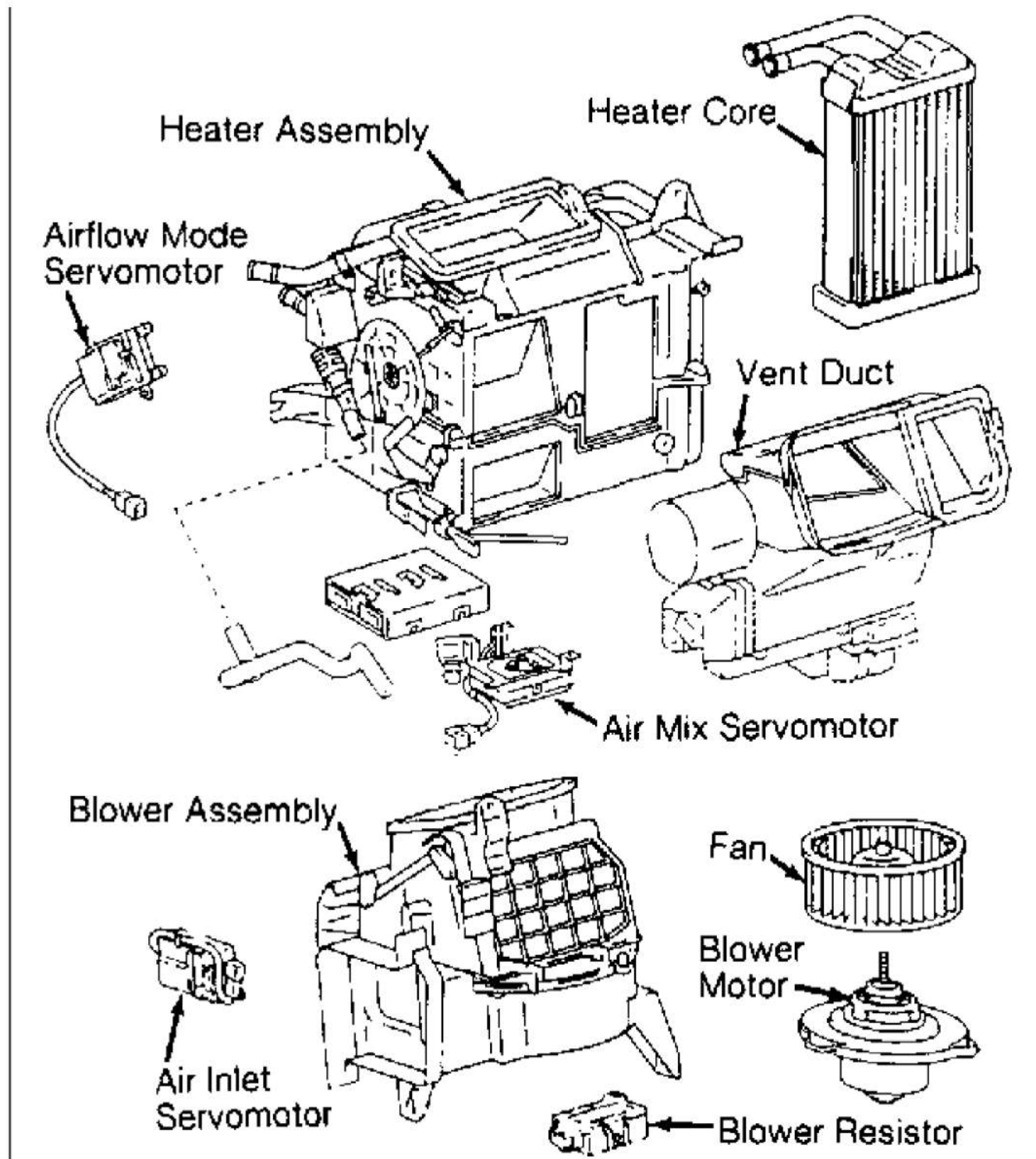


Fig. 7: Exploded View Of Heater Assembly
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

WIRING DIAGRAM

NOTE: For additional wiring diagrams, see appropriate A/C-HEATER SYSTEM - MANUAL article in the AIR CONDITIONING & HEAT section.

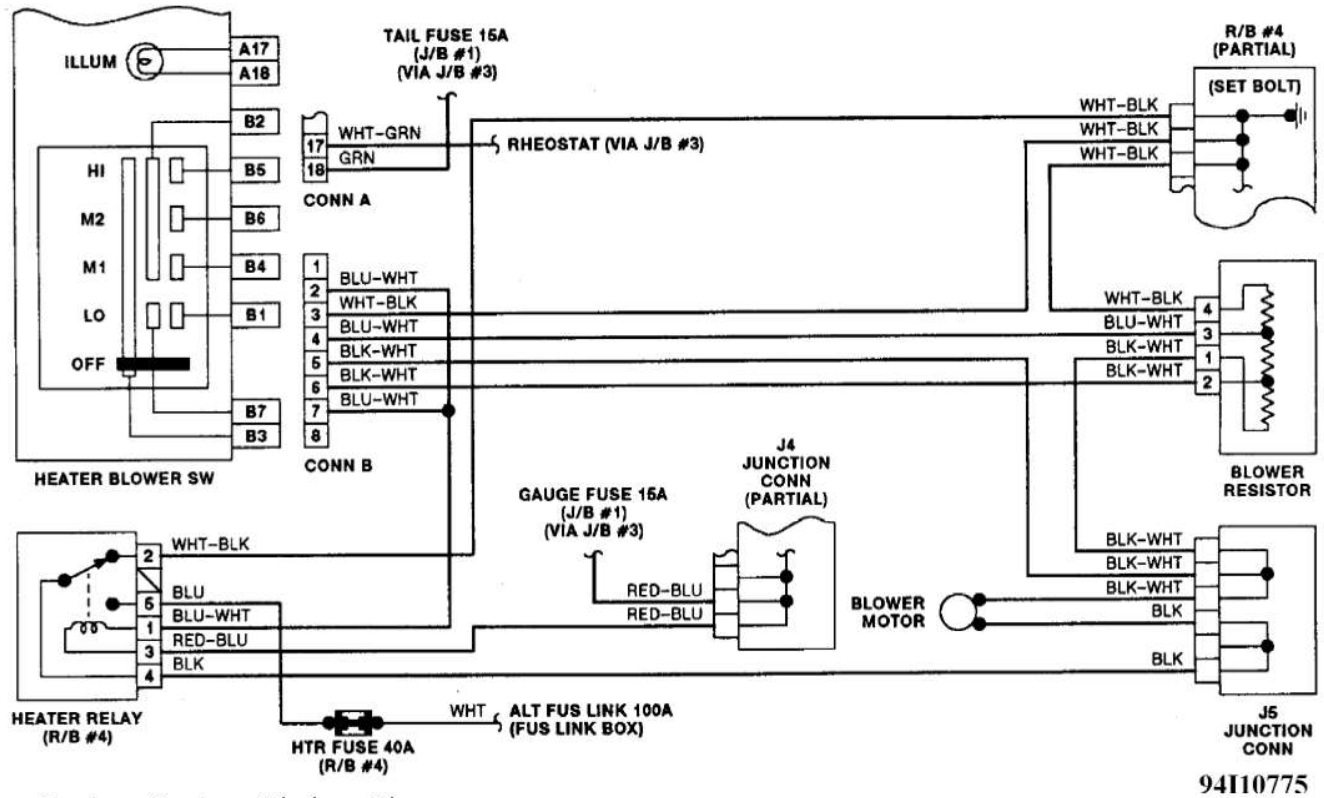


Fig. 8: Heater System Wiring Diagram

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