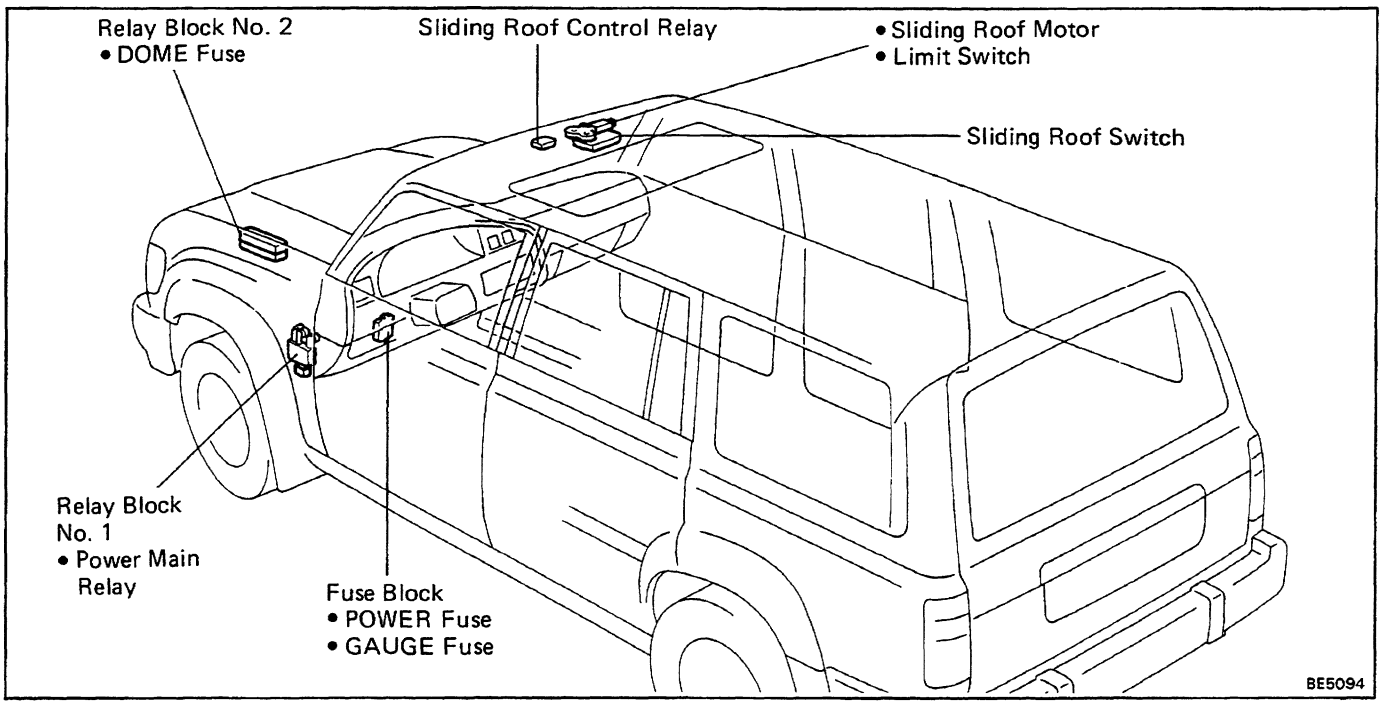
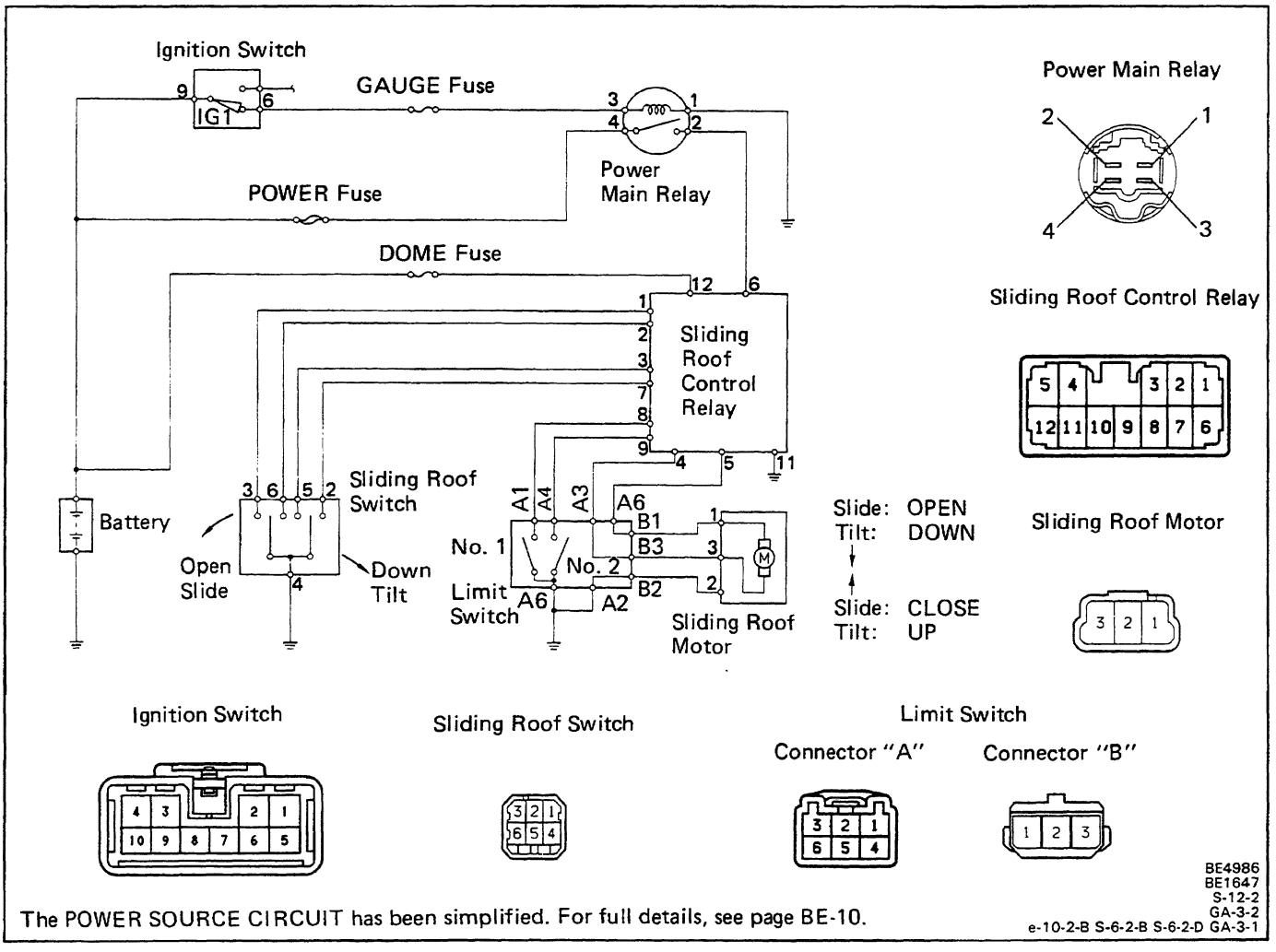
SLIDING ROOF SYSTEM

Parts Location

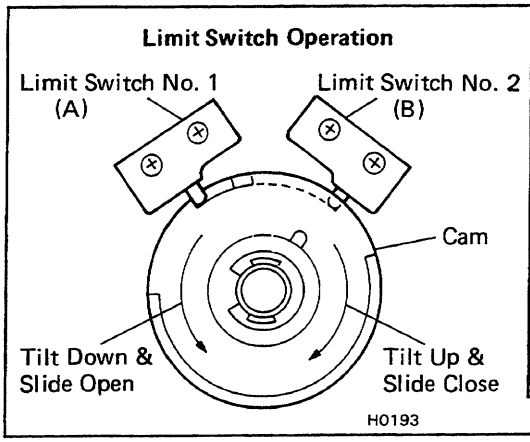


Wiring and Connector Diagrams



The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-10.

BE4986
BE1647
S-12-2
GA-3-2
e-10-2-B S-6-2-B S-6-2-D GA-3-1



Roof Position			Fully Opened		Momentary Stop		Fully Closed Down	Up
Function			Sliding Period			Idling Period	Tilting Period	
Limit Switch	(A)	ON						
		OFF						
	(B)	ON						
		OFF						
Sliding Roof Control Switch	OPEN		○	○	○	○	×	
	CLOSE		○	○	○	×	×	
	UP		×	×	×	○	○	
	DOWN		×	×	×	×	○	

○: Operational ×: Non-operational

System Description

Standby Operation

- Current flows from the DOME fuse to terminal 12 of the Sliding Roof Relay. (hereafter called relay)
- When the ignition switch is on, the current flows from the POWER fuse to terminal 6 of the relay.

Operation

1. OPEN operation

When the switch on the ”OPEN” side of the control switch is pushed, continuity is produced between terminal 1 of the relay and body ground. Then, the relay operates, the current flows through terminal 6 of the relay –i terminal 5 – terminal 1 of the sliding roof motor –) terminal 3 –i terminal 4 of the relay –) terminal 11 –i the body ground, and the motor starts to run in order to open the sliding roof.

2. CLOSE operation

When the switch on the ”CLOSE” side of the control switch is pushed, continuity is produced between terminal 2 of the relay and body ground. Then, the relay operates, the current flows through terminal 6 of the relay – terminal 4 –) terminal 3 of the sliding roof motor – terminal 1 –i terminal 5 of the relay –i terminal 11 – the body ground, and the motor starts to run in order to close the sliding roof.

Momentary Stop

When the sliding roof reaches about 100 mm (3.94 in.) short of the fully closed position, limit switch A is turned from ON to OFF, so there is no continuity between terminal 8 of the relay and the body ground. As a result, because the relay ceases to operate, the moon roof stops at that position. Release the control switch, then press the ”CLOSE” side of the control switch again.

Then the sliding will then roof move to fully closed position.

3. Tilt up operation (Fully close position)

When the switch on the “UP” side of the control switch is pushed, continuity is produced between terminal 3 of the relay and body ground. Then, the relay operates, the current flows through terminal 6 of the relay → terminal 4 → terminal 3 of the sliding roof motor→ terminal 1 → terminal 5 of the relay → terminal 11→ the body ground, and the motor starts to run in order to tilt up sliding roof.

4. Tilt Down operation (Fully close position)

When the switch on the ”DOWN” side of the control switch is pushed, continuity is produced between terminal 7 of the relay and body ground. Then the relay operates, the current flows through terminal 6 of the relay → terminal 5 → terminal 1 of the sliding roof motor → terminal 3 → terminal 4 of the relay → terminal 11 → the body ground, and the motor starts to run in order to tilt down the sliding roof.

5. Warning Buzzer Operation

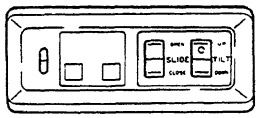
When the ignition switch is turned to LOCK position while the sliding roof is still in “Tilt up” position, a buzzer sounds to warn the driver that the sliding roof is in “Tilt up” position.

Troubleshooting

Problem	Possible cause	Remedy	Page
Sliding roof does not operate	GAUGE fuse blown	Replace fuse and check for short	BE–4, 6
	POWER fuse blown	Replace fuse and check for short	BE–4, 6
	Power main relay faulty	Check relay	BE–64
	Control switch faulty	Check switch	BE–62
	Limit switch faulty	Check switch	BE–62
	Sliding roof motor faulty	Check motor	BE–62
	Sliding roof control relay faulty	Check relay	BE–63
	Wiring faulty	Repair as necessary	

Parts Inspection

1. INSPECT SWITCHES
(Control Switch/Continuity)

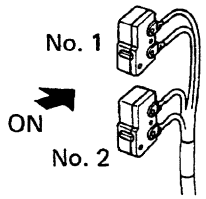


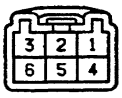

BE4999 S-6-2-B

Switch position		2	3	4	5	6
SLIDE	OPEN		○	○		
	OFF					
	CLOSE			○		○
TILT	DOWN	○		○		
	OFF					
	UP			○	○	

If continuity is not as specified, replace the switch.

(Limit Switch/Continuity)

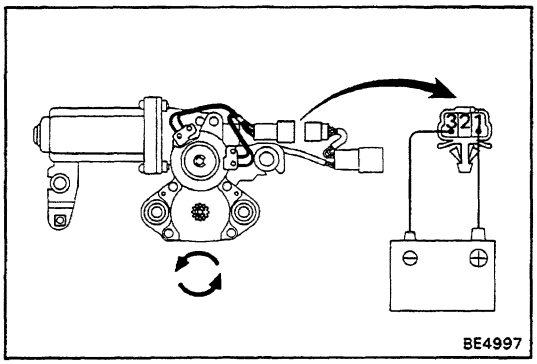




BE2859 S-6-2-D

Switch position		1	4	5
Limit switch No. 1	OFF (SW pin released)			
	ON (SW pin pushed in)	○		○
Limit switch No. 2	OFF (SW pin released)			
	ON (SW pin pushed in)		○	○

If continuity is not as specified, replace the switch.



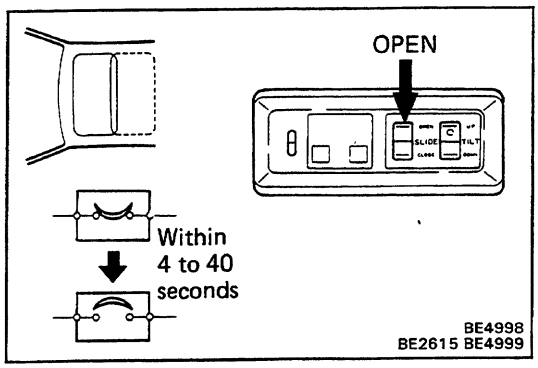
BE4997

2. INSPECT SLIDING ROOF MOTOR
(Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1, check that the motor turns to clockwise.

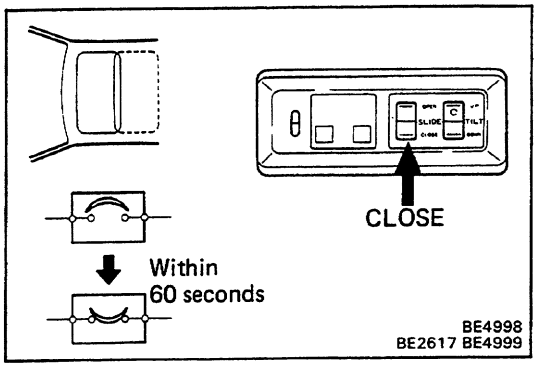
(b) Reverse the polarity, check that the motor turns to clockwise.

If operation is not as specified, replace the motor.



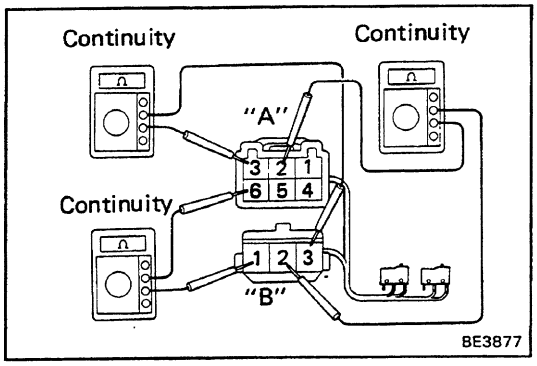
(Circuit Breaker Operation)

(a) With the sliding roof in the fully opened position, hold the sliding roof switch in "OPEN" position and check that there is a circuit breaker operation noise within 4 to 40 seconds.



(b) With the sliding roof in fully opened position, hold the sliding roof switch in "CLOSE" position and check that the sliding roof begins to close within 60 seconds.

If operation is not as specified, replace the motor.



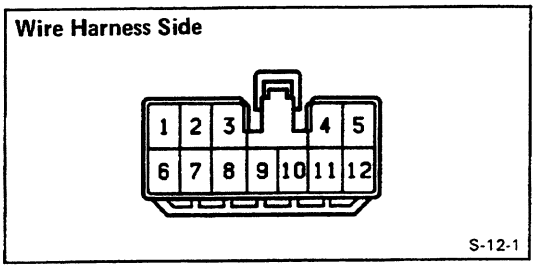
(Motor Wire Circuit)

(a) Check that there is continuity between terminals A2 and B2.

(b) Check that there is continuity between terminals A3 and B3.

(c) Check that there is continuity between terminals A6 and B1.

If continuity is not as specified, replace the switch.



3. INSPECT SLIDING ROOF CONTROL RELAY

(Relay Circuit)

Disconnect the connector from the relay and inspect the connector on the wire harness side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	1 – Ground	Sliding roof control switch position (SLIDE)	OFF or CLOSE	No continuity
			OPEN	Continuity
	2 – Ground	Sliding roof control switch position (SLIDE)	OFF or OPEN	No continuity
			CLOSE	Continuity
	3 – Ground	Sliding roof control switch position (TILT)	OFF or DOWN	No continuity
			UP	Continuity
	4 – Ground	Constant		No continuity
	4–5	Constant		*Continuity

*: There is resistance because this circuit is include motor.

Check for	Tester connection	Condition		Specified value
Continuity	9 – Ground	Limit switch No.2 (6) position	OFF [Roof tilt–up]	Continuity
			ON [Roof open]	No continuity
	7 – Ground	Control switch position (Tilt)	UP or OFF	No continuity
			DOWN	Continuity
	8 – Ground	Limit switch No. 1 (A) position	OFF [Roof tilt–up)	No continuity
			ON [Roof open]	Continuity
	11 – Ground	Constant		Continuity
Voltage	12 – Ground	Constant		Battery voltage
	6 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage

If circuit is as specified, replace the relay.
If circuit is not as specified, refer to BE–60 wiring diagram and inspect the circuits connected to other parts.

4. INSPECT POWER MAIN RELAY

See power main relay on page BE–52.