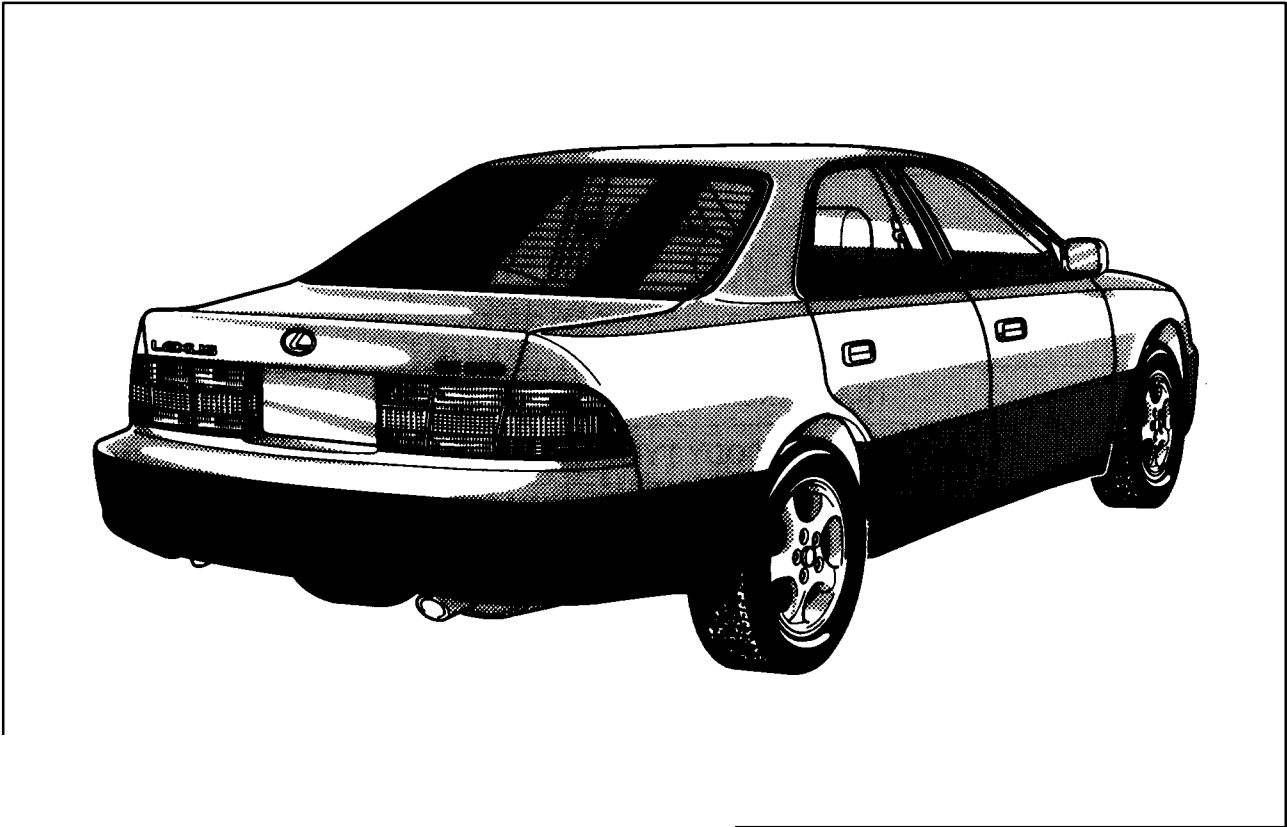


EXTERIOR APPEARANCE



ENGINE

1MZ-FE ENGINE

◦ DESCRIPTION

The performance of the 1MZ-FE engine has been improved through the adoption of the 2-way exhaust control system. In addition, its exhaust emissions have been reduced through the adoption of the fuel returnless system and the modification of the EGR control system.

◦ ENGINE SPECIFICATIONS AND PERFORMANCE CURVE

Engine		1MZ-FE Engine	New	Previous
Item				
No. of Cyls. & Arrangement			6-Cylinder, V Type	←
Valve Mechanism			24-Valve DOHC, Belt & Gear Drive	←
Combustion Chamber			Pentroof Type	←
Manifolds			Cross-Flow	←
Fuel System			SFI	←
Displacement	cm ³ (cu. in.)		2995 (182.7)	←
Bore x Stroke	mm (in.)		87.5 x 83.0 x (3.44 x 3.27)	←
Compression Ratio			10.5 : 1	←
Max. Output	[SAE-NET]		149 kW @ 5200 (200HP @ 5200)	140 kW @ 5200 (188HP @ 5200)
Max. Torque	[SAE-NET]		290 N·m @ 4400 rpm (214 ft·lbf @ 4400 rpm)	275 N·m @ 4400 rpm (203 ft·lbf @ 4400 rpm)
Valve Timing	Intake	Open	4°BTDC	←
		Closed	44°ABDC	←
	Exhaust	Open	46°BBDC	←
		Closed	2°ADTC	←
Fuel Octane Number	RON		91 or Higher	←
Oil Grade			API SH EC-II, ILSAC or Better	←

Premium unleaded gasoline (96 RON) is used for the above specifications.

DTC	33, 34	Rear Speed Sensor Rotor Faulty
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CIRCUIT DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
33, 34	The condition that both rear side wheels' speed is lower than front wheels' speed at 20 km/h (12 mph) or more for 20 sec. or more when IG switch turns ON and OFF is repeated in a sequence more than 8 times.	<ul style="list-style-type: none"> ●Rear axle hub ●Right rear, left rear speed sensor ●Rear speed sensor circuit

INSPECTION PROCEDURE

1	Check rear axle hub (See page SA-45).
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Replace rear axle hub.

OK

2	Check rear speed sensor (See page DI-248).
---	--

Replace rear speed sensor.

OK

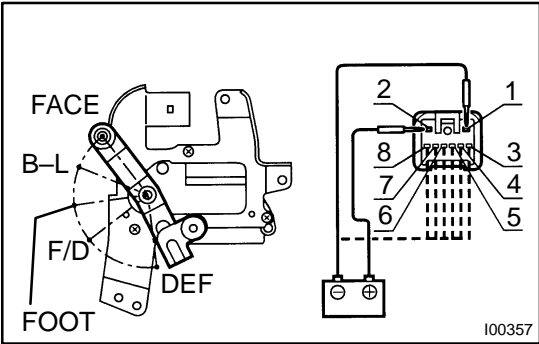
3	Check for open or short in harness and connector between rear speed sensor and ECU (See page IN-27).
---	--

Repair or replace harness and connector.

OK

Check and replace ABS ECU.

2 Check air outlet control servomotor.



PREPARATION:

Remove air outlet control servomotor (See page AC-76).

CHECK:

- (a) Connect positive (+) lead to terminal 2 and negative (-) lead to terminal 1.
- (b) Check the lever operation when the negative (-) lead is connected to the terminals shown below.

OK:

The lever moves smoothly to the position for each mode.

Ground Terminals	Mode
4	FACE
5	BI-LEVEL
6	FOOT
7	FOOT DEF
8	DEF

NG Replace air outlet control servomotor.

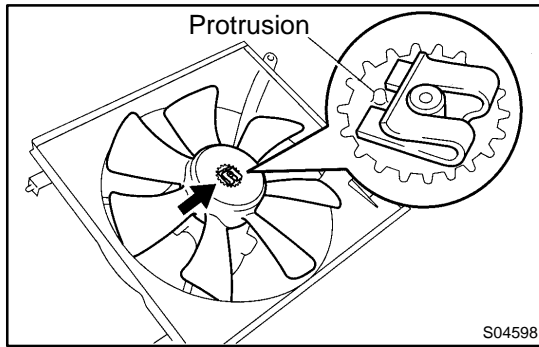
OK

3 Check harness and connector between A/C control assembly and air outlet control servomotor, air outlet control servomotor and battery, air outlet control servomotor and body ground (See page IN-27).

NG Repair or replace harness or connector.

OK

Repair or replace A/C control assembly.



DISASSEMBLY

1. No. 1 cooling fan: REMOVE FAN

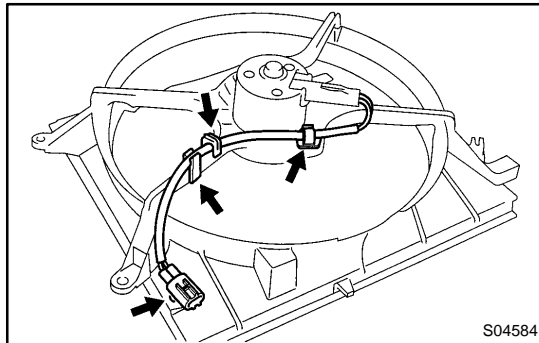
Remove the clip and fan.

NOTICE:

When removing the clip and fan, do not apply too much force to the motor shaft. And do not scratch the motor shaft.

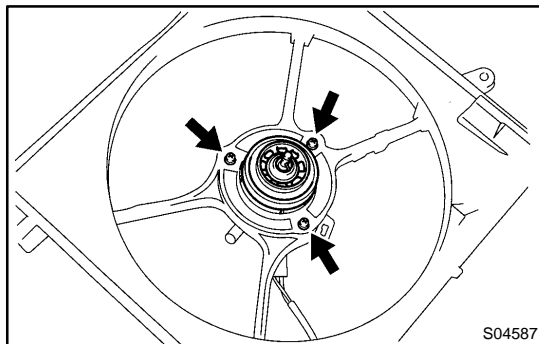
HINT:

Install a new clip from the side opposite the protrusion on the fan.

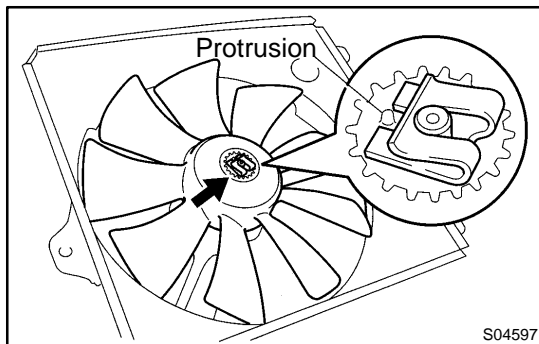


2. No. 1 cooling fan: REMOVE FAN MOTOR

(a) Disconnect the lead wire from the fan shroud.



(b) Remove the 3 screws and fan motor.



3. No. 2 cooling fan: REMOVE FAN

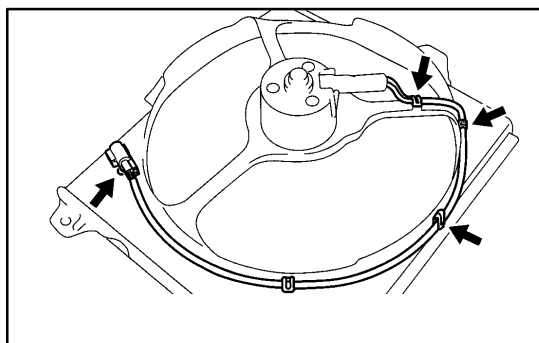
Remove the clip and fan.

NOTICE:

When removing the clip and fan, do not apply too much force to the motor shaft. And do not scratch the motor shaft.

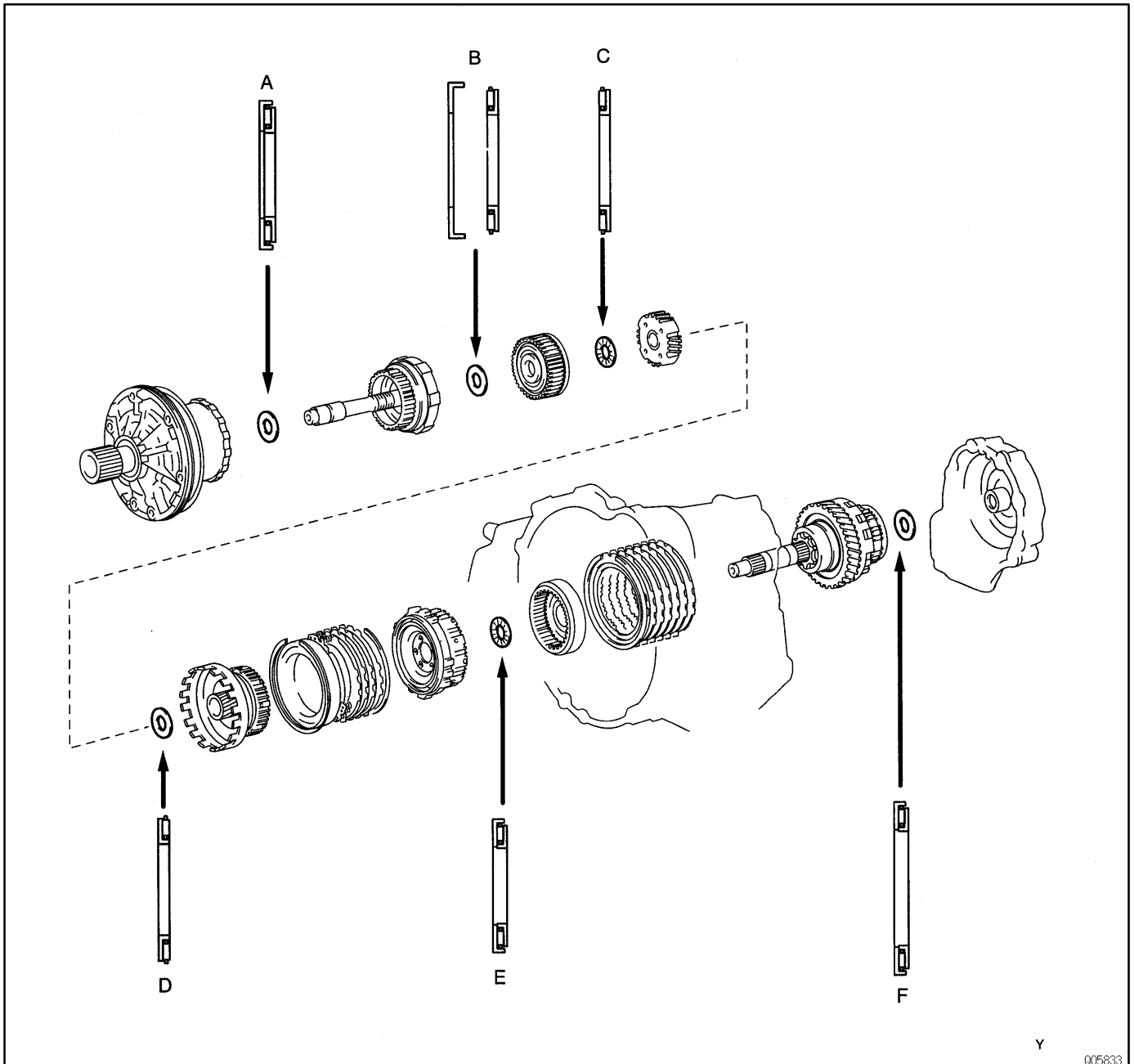
HINT:

Install a new clip from the side opposite the protrusion on the fan.



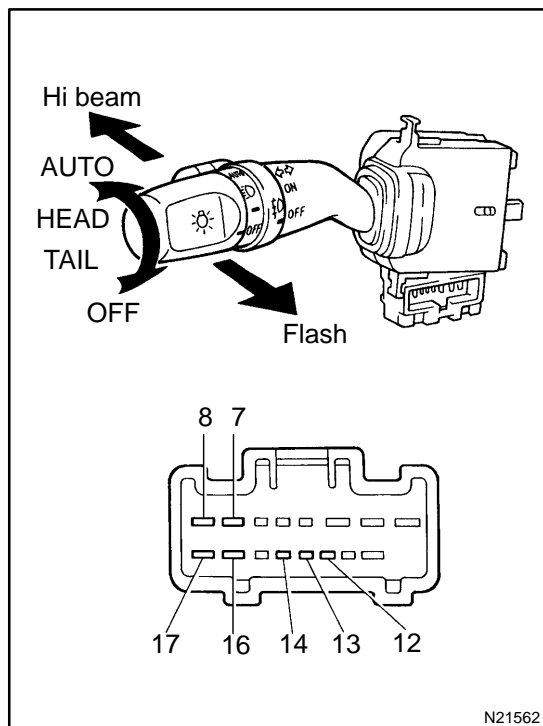
4. No. 2 cooling fan: REMOVE FAN MOTOR

(a) Disconnect the lead wire from the fan shroud.



Y 005833

Mark	Thrust Bearing Outside Diameter	
	mm (in.)	
A	See page AX-118	
B	47.6 (1.874)	31.4 (1.236)
C	45.5 (1.791)	30.1 (1.185)
D	45.5 (1.791)	30.1 (1.185)
E	38.7 (1.524)	22.6 (0.890)
F	46.3 (1.823)	28.6 (1.126)



INSPECTION

1. INSPECT LIGHT CONTROL SWITCH CONTINUITY

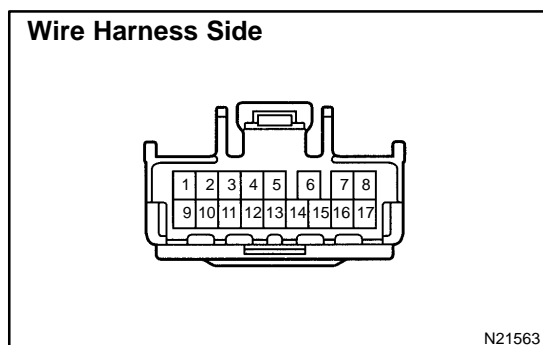
Switch position	Tester connection	Specified condition
OFF	-	No continuity
TAIL	14 - 16	Continuity
HEAD	13 - 14 - 16	Continuity
AUTO	12 - 16	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Low beam	16 - 17	Continuity
High beam	7 - 16	Continuity
Flash	7 - 8 - 16	Continuity

If continuity is not as specified, replace the switch.

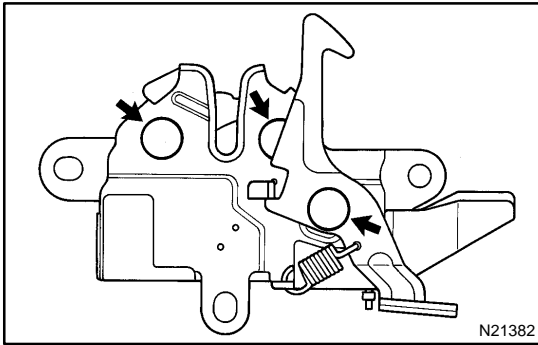


3. INSPECT COMBINATION SWITCH CIRCUIT

Connect the wire harness side connector to the combination switch and inspect wire harness side connector from the back side.

Light Control Switch:

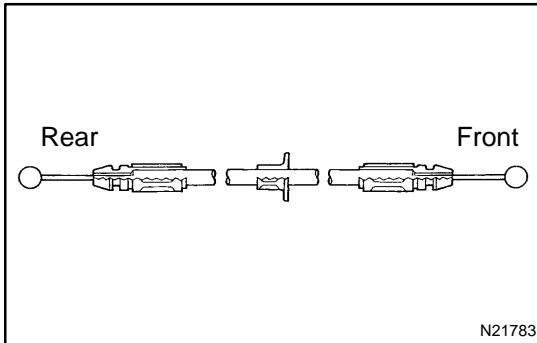
Tester connection	Condition	Specified condition
16 - Ground	Constant	Continuity
12 - Ground	Light control switch OFF, TAIL or HEAD	No voltage
12 - Ground	Light control switch AUTO	Battery positive voltage
13 - Ground	Light control switch OFF or TAIL	No voltage
13 - Ground	Light control switch HEAD	Battery positive voltage
14 - Ground	Light control switch OFF	No voltage
14 - Ground	Light control switch TAIL or HEAD	Battery positive voltage



INSTALLATION

1. BEFORE INSTALLING PARTS, COAT LOCK WITH MP GREASE

Apply MP grease to the sliding surface of the lock.



2. INSTALL HOOD LOCK CONTROL CABLE

- (a) Push the rear side cable through the grommet.
- (b) Using a screwdriver, push the cable stopper into the grommet.

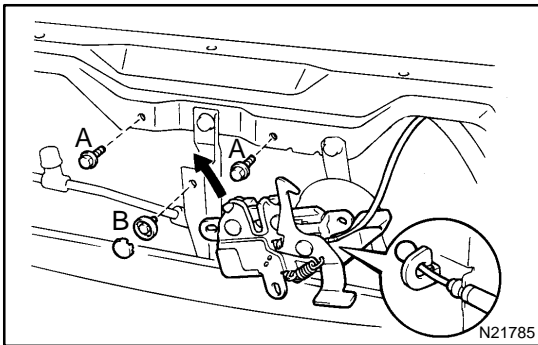
HINT:

- Tape the screwdriver tip before use.
- Do not damage the grommet with the screwdriver.

- (c) Pass the front side cable through the upper radiator support.

- (d) Install the cable with clamps.

3. INSTALL HOOD RELEASE LEVER



4. CHECK HOOD LOCK CONTROL FOR PROPER OPERATION

After checking for proper operation, tighten the 3 bolts to install the lock.

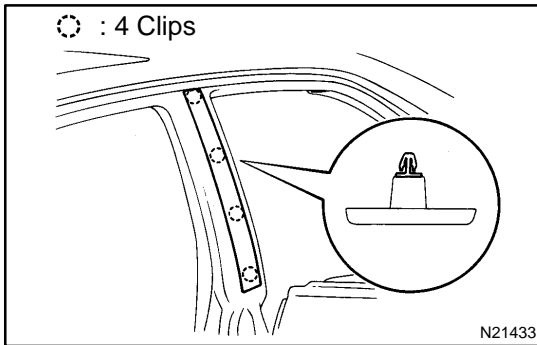
Torque:

A bolt: 8.0 N·m (82 kgf·cm, 71 in.-lbf)

B bolt: 11 N·m (112 kgf·cm, 8 ft·lbf)

5. INSTALL THESE PARTS:

- (a) Radiator support upper seal
- (b) LH fender liner
- (c) LH front fender side panel protector



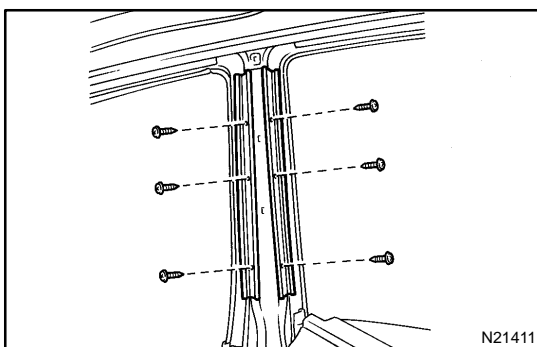
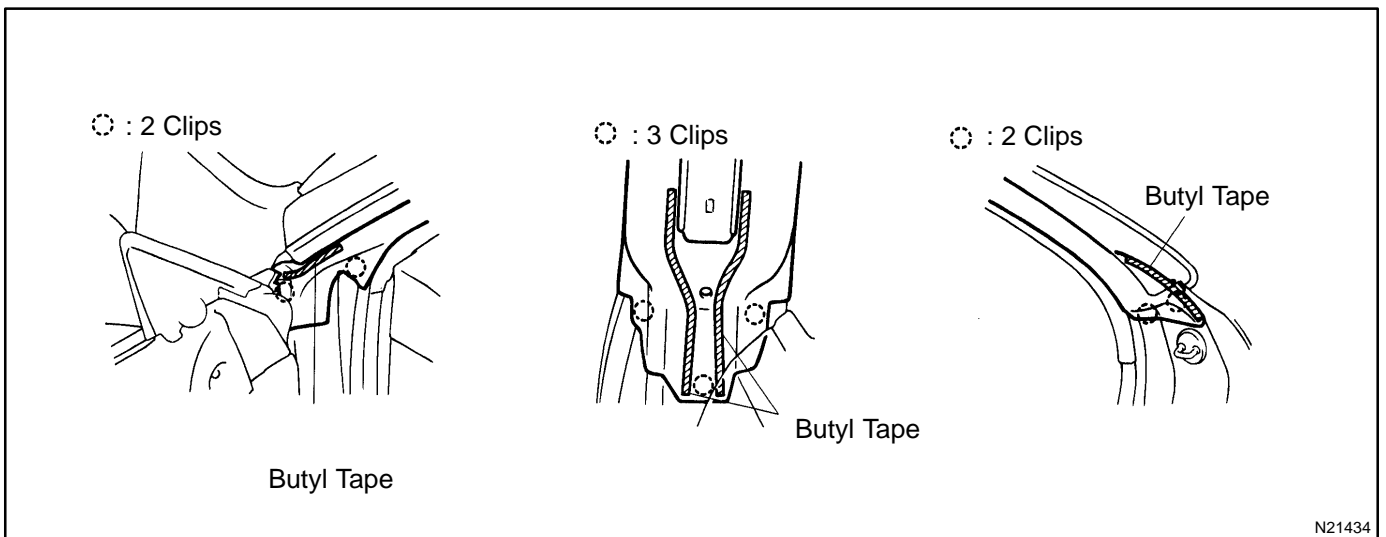
REMOVAL

1. REMOVE ROOF DRIP SIDE FINISH MOULDING

Remove the moulding.

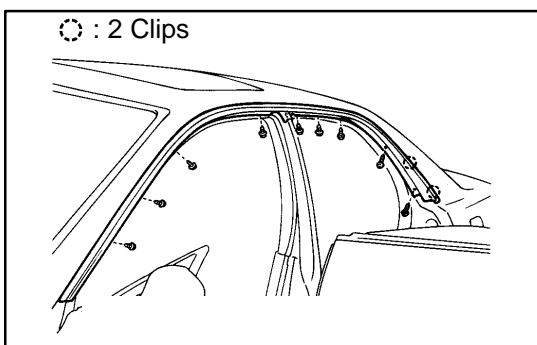
2. REMOVE ROOF SIDE RAIL WEATHERSTRIP

- (a) Using a clip remover, remove the 7 clips.
- (b) Pull off the weatherstrip.



3. REMOVE CENTER ROOF SIDE RAIL WEATHERSTRIP RETAINER

Remove the 6 screws and retainers.



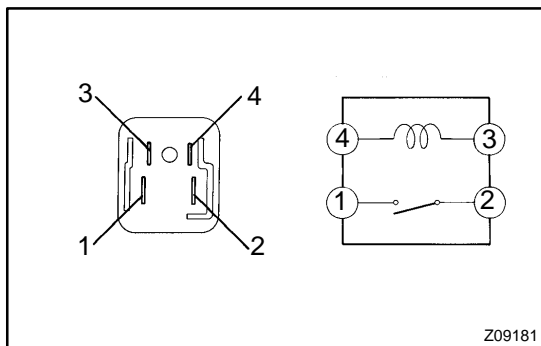
4. REMOVE FRONT ROOF SIDE WEATHERSTRIP RETAINER

Remove the 9 screws and retainers.

Headlight Dimmer Switch:

Tester connection	Condition	Specified condition
7 - Ground	Headlight dimmer switch Low Beam	No voltage
7 - Ground	Headlight dimmer switch High Beam or Flash	Battery positive voltage
8 - Ground	Headlight dimmer switch Low Beam or High Beam	No voltage
8 - Ground	Headlight dimmer switch Flash	Battery positive voltage
17- Ground	Headlight dimmer switch High Beam or Flash	No voltage
17- Ground	Headlight dimmer switch Low Beam	Battery positive voltage

If the circuit is not as specified, inspect the circuit connected to other parts.

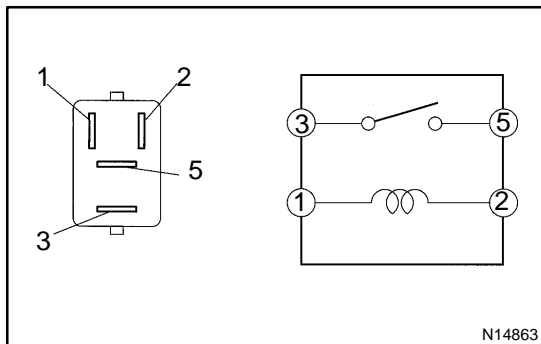


4. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	3 - 4	Continuity
Apply B+ between terminals 3 and 4.	1 - 2	Continuity

If continuity is not as specified, replace the relay.

5. INSPECT HEADLIGHT CONTROL RELAY CIRCUIT (See page BE-11)

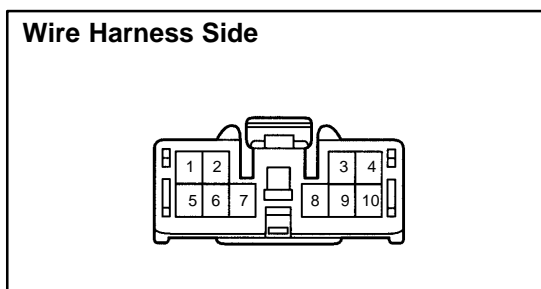


6. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

7. INSPECT TAILLIGHT CONTROL RELAY CIRCUIT (See page BE-27)



8. INSPECT DAYTIME RUNNING LIGHT RELAY CIRCUIT

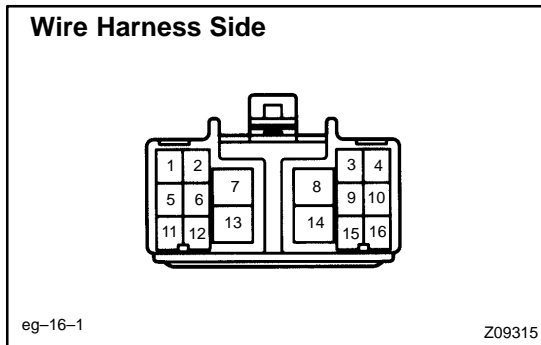
Disconnect the connector from the relay and inspect the connector on the wire harness side.

h-10-1-

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	1 – 11 5 – 7	Continuity
OFF	1 – 5 – 7	Continuity
REAR	1 – 7 5 – 11	Continuity

If continuity is not as specified, replace the switch.

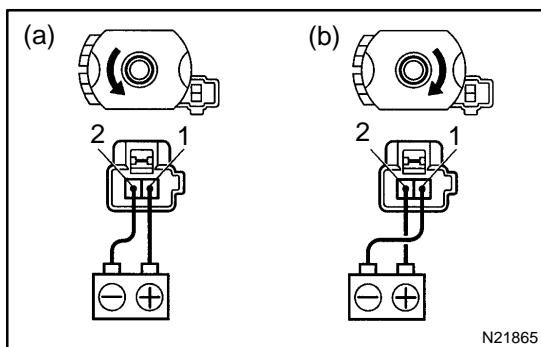


3. INSPECT POWER SEAT SWITCH CIRCUIT

- (a) Disconnect the switch connector and connect the seat wire harness to the floor wire harness.
- (b) Inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
7 – Ground	Constant	Continuity
11 – Ground	Constant	Battery positive voltage

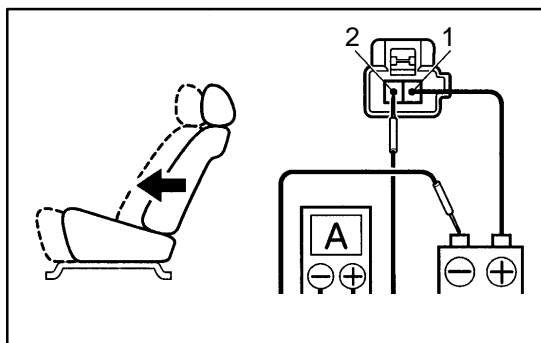
If circuit is not as specified, inspect the circuits connected to other parts.



4. INSPECT SLIDE MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
- (b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the seat adjuster.



5. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

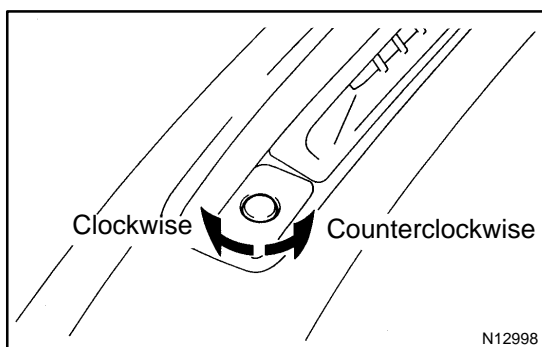
- (a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2 and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the front position.
- (b) Continue to apply voltage, check that current changes to less than 1 ampere within 4 to 90 seconds.

18. INSPECT LIGHT-OFF CONDITION

- (a) Turn the ignition switch ON.
- (b) Gradually cover the top of the sensor.
Lights auto ON:
- (c) Verify that the lights will go out when light control switch position is OFF or the area surrounding the sensor gets bright or open the driver's door while the ignition switch is OFF.

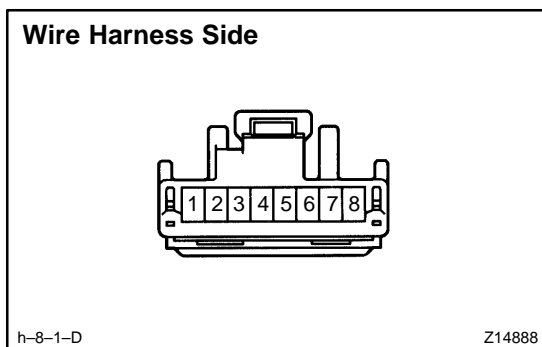
19. INSPECT LIGHTS-ON CONDITION

- (a) Open the driver's door while the ignition switch is OFF.
- (b) Turn the light control switch to AUTO leaving the door open and cover the top of the sensor, and verify that the lights go on when the ignition switch is turned ON.



20. ADJUST AUTOMATIC LIGHT CONTROL SENSOR

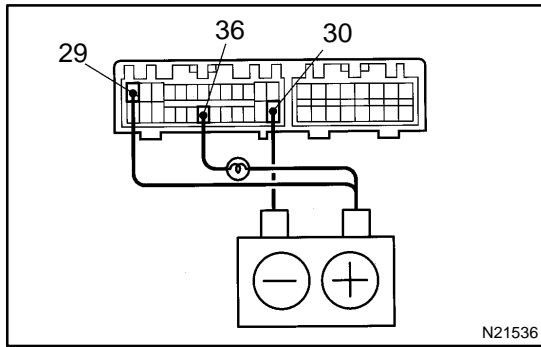
- (a) Adjustment of the light control is performed by turning the sensitivity knob on the sensor.
- (b) This will determine at what light condition the automatic control will take place.
 - If response is too quick, turn the knob counterclockwise.
 - If response is too slow, turn the knob clockwise.



21. Connector disconnected: INSPECT SENSOR CIRCUIT

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

Tester connection	Condition	Specified condition
3 - Ground	Door courtesy switch OFF	No continuity
3 - Ground	Door courtesy switch ON	Continuity
5 - Ground	Light control switch OFF, TAIL or AUTO	No continuity
5 - Ground	Light control switch HEAD	Continuity
6 - Ground	Light control switch OFF, TAIL or HEAD	No continuity
6 - Ground	Light control switch AUTO	Continuity
		No continuity
		Continuity

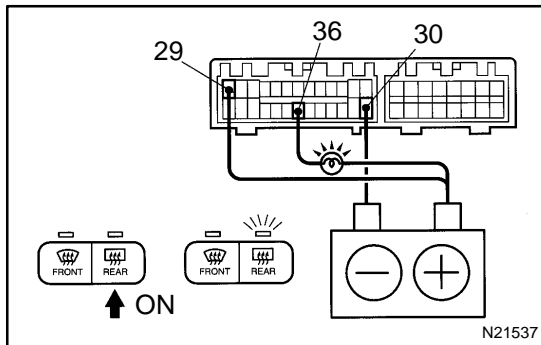


INSPECTION

1. A/C control panel assembly:

INSPECT DEFOGGER SWITCH OPERATION

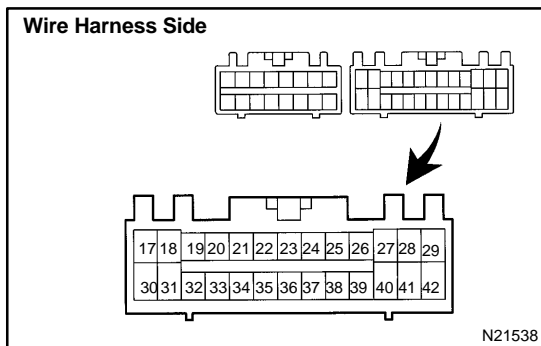
- (a) Connect the positive (+) lead from the battery to terminal 29 and negative (-) lead to terminal 30.
- (b) Connect the positive (+) lead from the battery to terminal 36 through a 1.4 W test bulb.



- (c) Turn the defogger switch ON and check that the test bulb and indicator light turn ON, then turn OFF after approx. 15 minutes.

If operation is not as specified, proceed to inspect the A/C control assembly.

(See page AC-105)

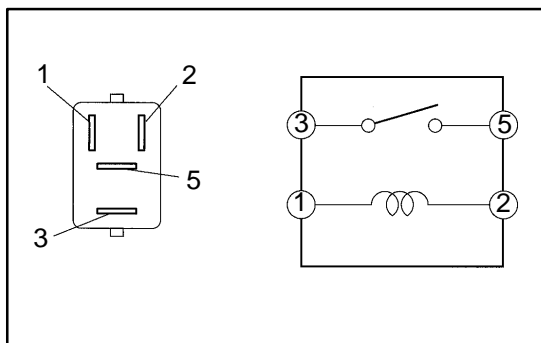


2. INSPECT DEFOGGER SWITCH CIRCUIT

Disconnect the connector from the switch and inspect the connector on wire harness side.

Tester connection	Condition	Specified condition
30 - Ground	Constant	Continuity
29 - Ground	Ignition switch position ACC or LOCK	No voltage
29 - Ground	Ignition switch position ON	Battery positive voltage

If the circuit is not as specified, inspect the circuits connected to other parts.



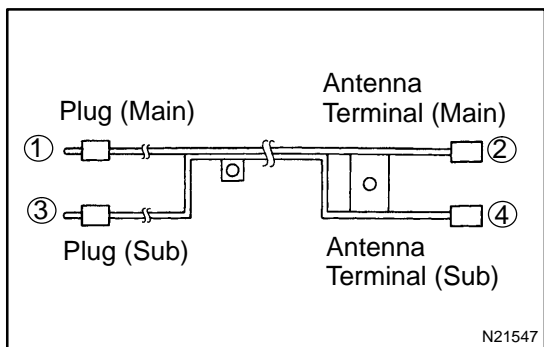
3. INSPECT DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

4. INSPECT DEFOGGER RELAY CIRCUIT

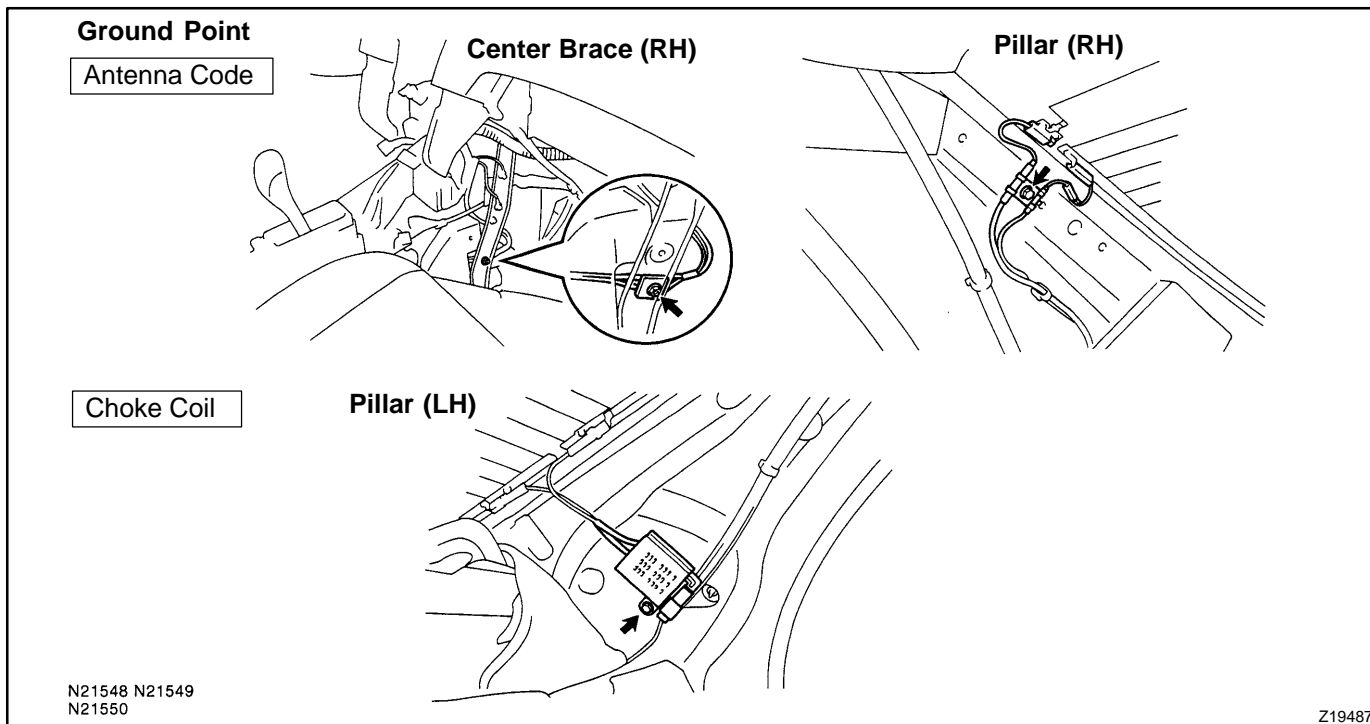
(See page AC-11)



(e) Antenna code continuity check and grounding point:
HINT:

During troubleshooting, in case that the antenna code continuity check, grounding check and grounding check of the choke coil are needed, please check referring to the following illustration.

Terminal connection	Normal condition
(1) ↔ (2)	Continuity
(3) ↔ (4)	No continuity



5. COMPACT DISC PLAYER

Compact Disc (hereafter called "CD") Players use a laser beam pick-up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc. There are 4.7 in. (12 cm) and 3.2 in. (8 cm) discs in the CD player.

HINT:

Never attempt to disassemble or oil any part of the player unit. Do not insert any object other than a disc into the magazine.

NOTICE:

CD players use an invisible laser beam which could cause hazardous radiation exposure. Be sure to operate the player correctly as instructed.

RADIO AND PLAYER

* 1 : SHIELDED

