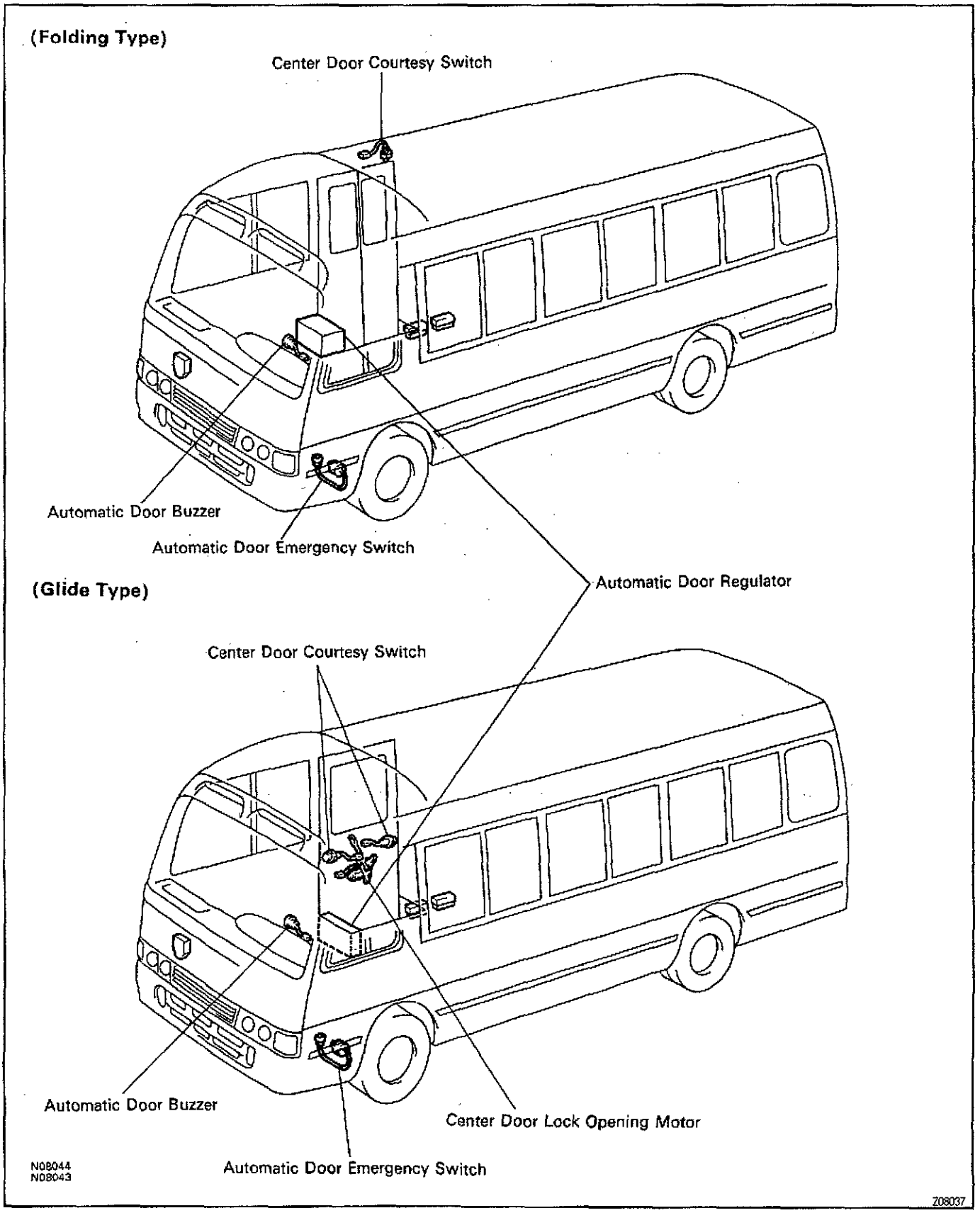
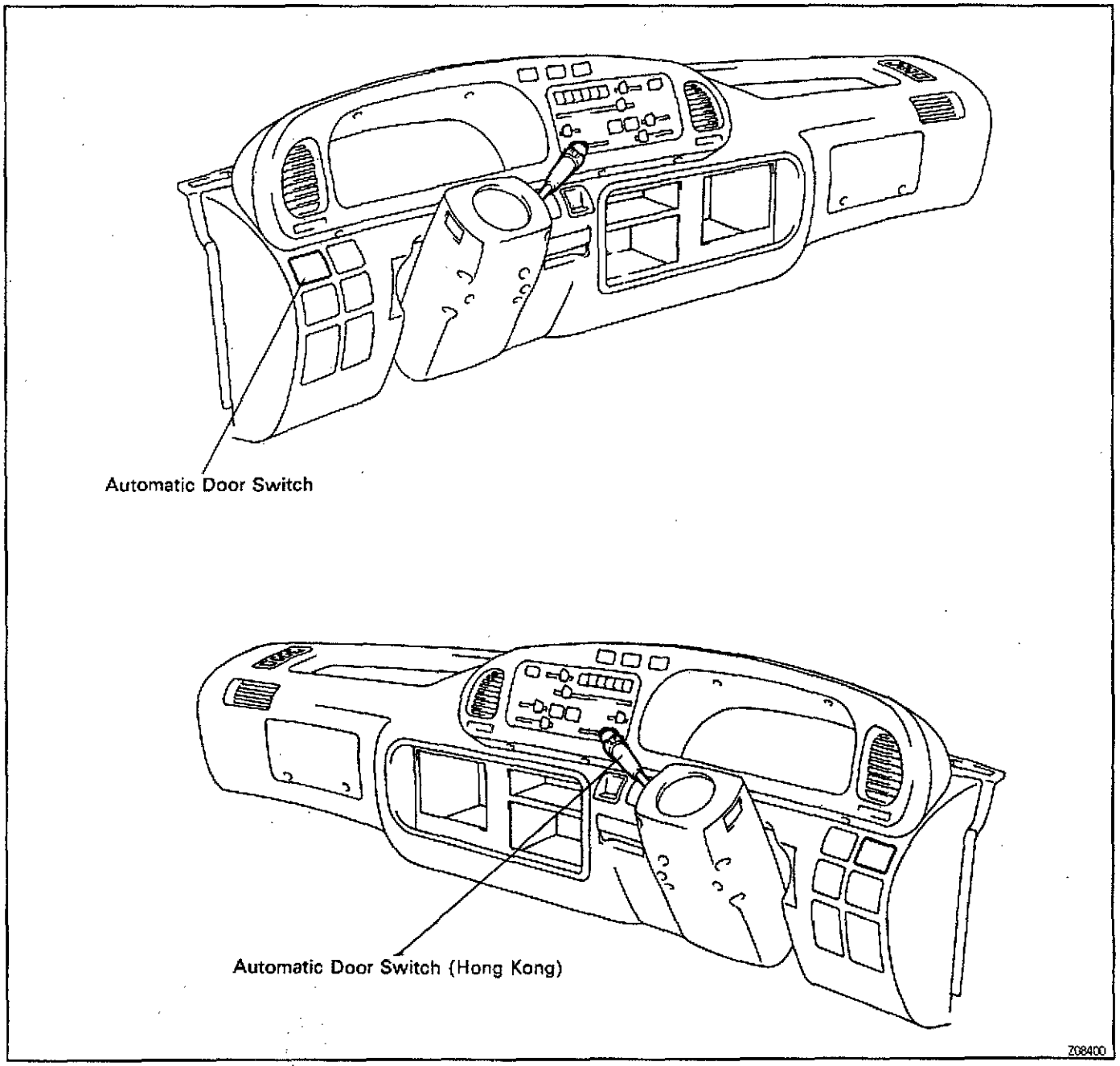
AUTOMATIC DOOR SYSTEM
PARTS LOCATION

BE106-01

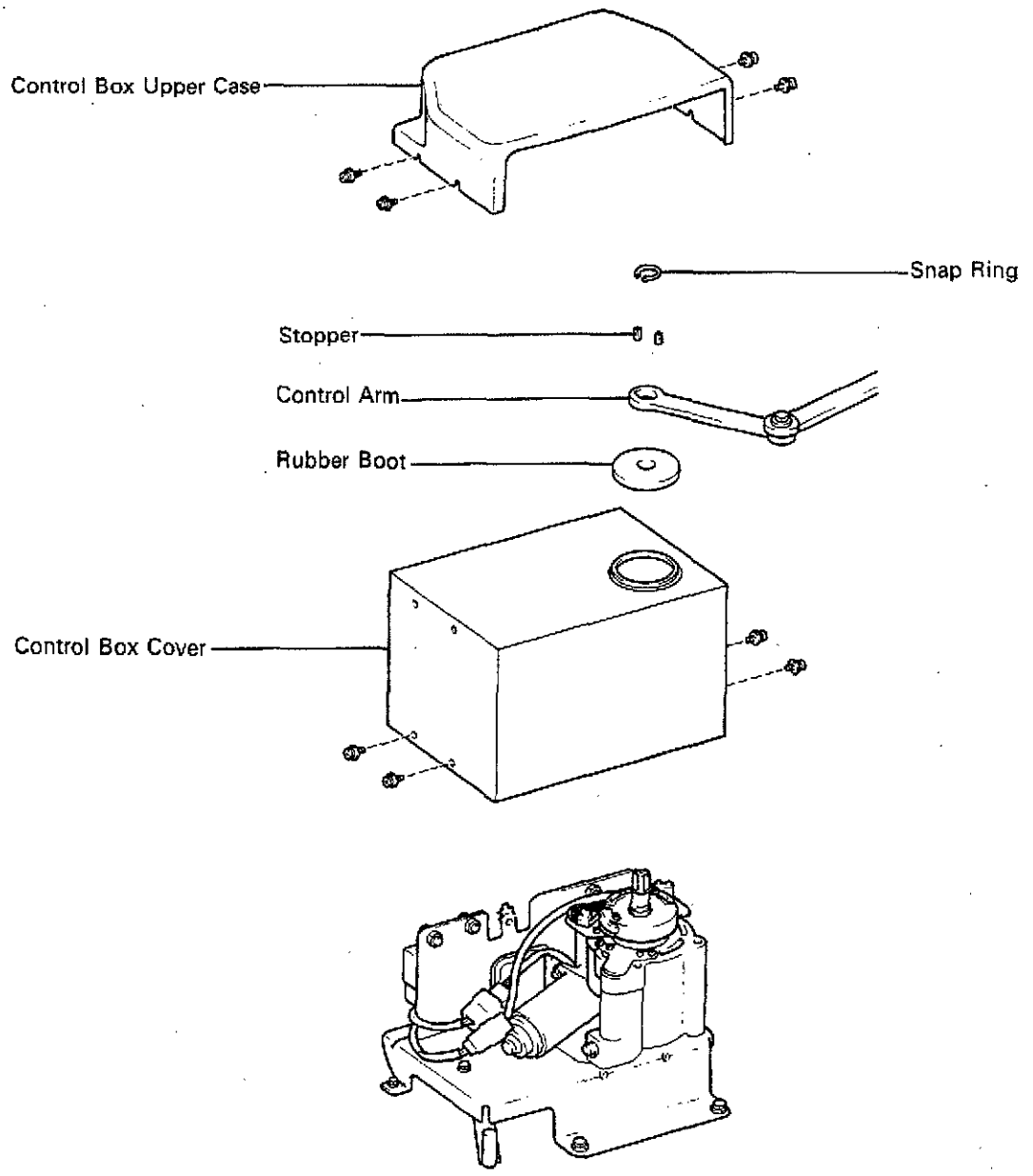


BE


Automatic Door Switch
Automatic Door Switch (Hong Kong)
Z08400

BE107-01

FOLDING TYPE AUTOMATIC DOOR ACTUATOR COMPONENTS



TROUBLESHOOTING

BE106-02

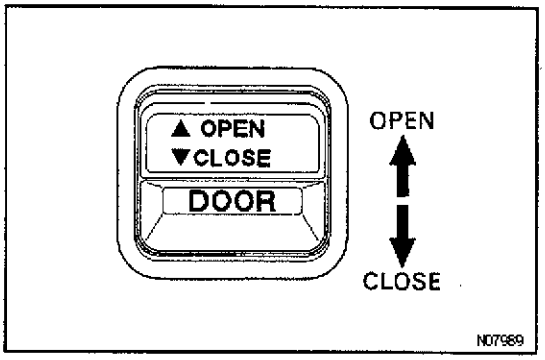
The table below will be useful for you in troubleshooting these electrical problems. The most likely causes of the malfunction are shown in the order of their probability. Inspect each part in the order shown, and replace the part when it is found to be faulty.

Trouble	Parts' name	See page
Accelerator interlock does not release.	1. FL (AM_1, ALT)	BE–9 and 12
	2. ECU–IG Fuse	BE–9 and 10
	3. Automatic Door Control ECU	BE–80
	4. Diode	
	5. Center Door Courtesy Switch	BE–67
	6. Accel Interlock Relay (No. 1, No. 2)	
	7. Accel Interlock Actuator	BE–78
	8. Wire Harness	
Door does not open or close at all.	1. FL (AM_1, ALT, AM–RR)	BE–9 and 12
	2. ECU–IG Fuse	BE–9 and 10
	3. DOOR Fuse	BE–9 and 11
	4. Automatic Door Control ECU	BE–80
	5. Circuit Breaker (CB)* (Glid Type)	
	6. Switch (SW)*	
	7. Automatic Door Control Relay*	BE–80
	8. Regulator Motor (M)*	
	9. Automatic Door Control Relay*	BE–80
	10. Wire Harness	
Door open only or close only operates.	1. Cam position*	BE–73
	2. Switch* (SW)	
	3. Automatic Door Control Relay*	BE–80
	4. Wire Harness	
Door stops part–way. (includes sticking)	1. Cam position*	BE–73
	2. Switch (SW)*	
	3. Resister (R1, R2, R3)*	BE–79
	4. Automatic Door Control Relay *	BE–80
	5. Wire Harness	
Door does not close at all.	1. Cam position*	BE–73
	2. Switch (SW)*	
	3. Automatic Door Control Relay*	BE–80
	4. Wire Harness	
Door does not open at all.	1. Cam position*	BE–73

Continue

Trouble	Parts' name	See page
Door opens/ closes too strongly	1. Cam position*	BE–73
	2. Switch (SW)*	
	3. Resister (R1, R2, R3)*	BE–79
	4. Automatic Door Control Relay*	BE–80
	5. Regulator Motor (M)*	
Door opens/ closes slowly. (Not operating at full power)	1. Cam position*	BE–73
	2. Circuit Bracker (CB)*	
	3. Automatic Door Control Relay*	BE–80
	4. Regulator Motor (M)*	
Door closes too strongly after passing door check. (seems to rebound)	1. Cam position*	BE–73
	2. Circuit Bracker (CB)*	
	3. Automatic Door Control Relay*	BE–80
	4. Regulator Motor (M)*	
Abnormal noise from control box during opening and closing.	1. AUTO–MANUAL Lever*	
	2. Regulator Motor (M)*	
	3. Wire Harness	
No door buzzer.	1. Door Warning Buzzer	BE–79
	2. Automatic Door Control Relay*	BE–80
	3. Wire Harness	
Door can be opened and closed by door switch during drining (above 3 km/h (1.9 mph)	1. Automatic Door Control ECU	BE–80
	2. Speed Sensor	BE–49
	3. Automatic Door Control Relay*	BE–80
	4. Wire Harness	

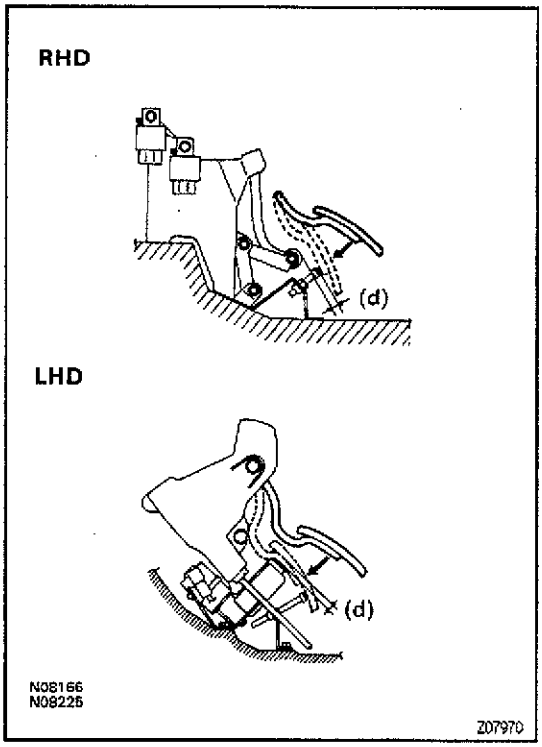
*: Auto Door Control Box



ADJUSTMENT OF ACCEL INTERLOCK

BE109-01

1. **CHECK OPERATION OF AUTOMATIC DOOR**
Check that the door opens automatically (operation via automatic door switch), the door open warning light comes on and the accelerator pedal cannot be depressed.



2. **ADJUST ACCEL INTERLOCK ACTUATOR (RHD)**

(a) Fully closed the center door to release the accel interlock.

(b) With the accelerator fully depressed, adjust the stopper bolt so the clearance between the accelerator and stopper bolts is specified.

Standard clearance (d)

RHD	**9mm (0.35in.)**
LHD	**7mm (0.28in.)**

(c) Tighten the lock nut.

Torque: 4.9 N·m (50 kgf·cm, 4.3 in.·lbf)

BE

BE138-01

ADJUSTMENT OF AUTOMATIC DOOR CAM

(Folding Type)

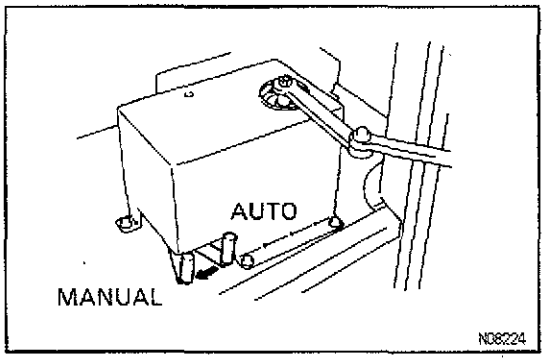
1. REMOVE CONTROL BOX COVER

(a) Remove the four screws and the control box upper case.

(b) Remove the snap ring and disconnect the control arm.

(c) Remove the two stoppers.

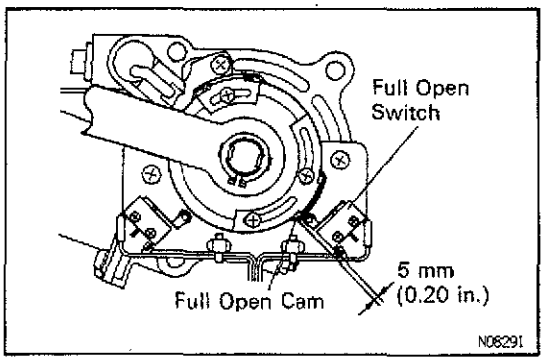
(d) Remove the four screws, rubber boot and control box cover.



2. INSTALL CONTROL ARM

Install the control arm and the 2 stoppers.

3. PLACE AUTO–MANUAL LEVER AT "MANUAL" POSITION



4. ADJUST FULL OPEN CAM POSITION

(a) Open the door by hand to the fully open position.

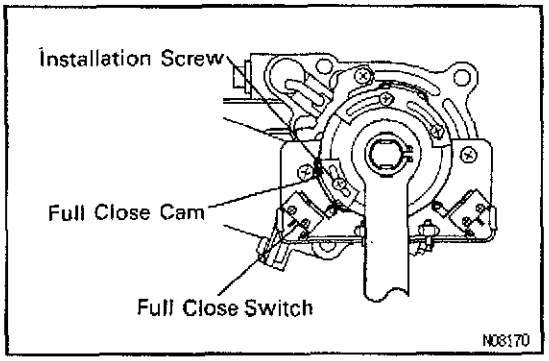
(b) Adjust the full open cam so that the roller of the full open switch is offset approximately 5 mm counterclockwise from the corner of the full open cam.

(Adjustment Method)

Loosen the cam installation screws. Then move the cam so that the roller of the full open switch on top of the cam is positioned approximately 5 mm counterclockwise from the corner of the cam. Tighten the cam installation screws.

HINT: If the center door rebounds a lot when fully closed during automatic opening/closing, adjust the roller offset so it is larger than specified.

If the door dose not fully open (stopping before the stopper rubber contacts the piller), reduce the roller offset so it is less than specified.



5. ADJUST FULL CLOSED CAM POSITION

(a) Lock the center door using the door inside handle lock.

(b) Ex. Hong Kong
Push the center door from inside. Then keep the position that the front and rear door are at a level.

(c) Loosen the cam installation screw and the cam so that the roller of the full close switch mounts the full close cam and the full close switch changes from ON to OFF (when the roller starts to mount the full close cam, the switch makes a cliking sound as it contacts teh corner of the cam).

BE

6. CHECK DOOR OPERATION

(a) Place the Auto–Manual Lever at "AUTO" position.

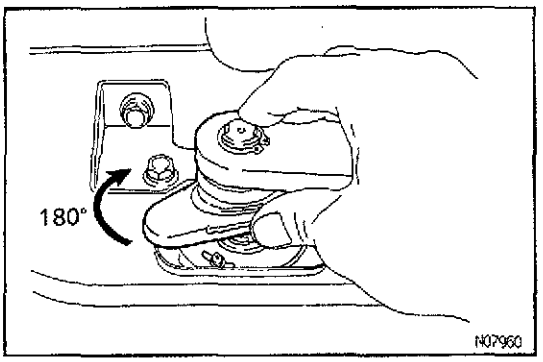
(b) Check the door operates properly.
If the door operate is abnormal, check the cam position.

7. REMOVE CONTROL ARM AND TWO STOPPERS

8. INSTALL CONTROL BOX COVER

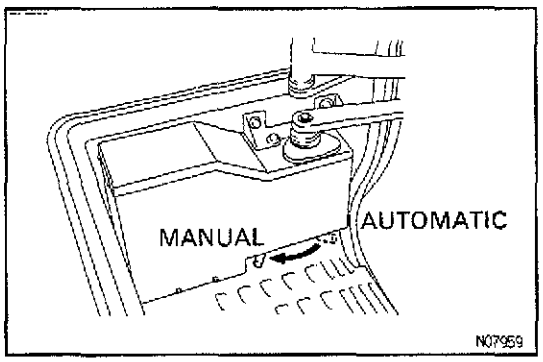
9. INSTALL CONTROL LEVER
Install the rubber boot, control arm, two stoppers and snap ring.

10. INSTALL CONTROL BOX UPPER COVER



(Glide Type)

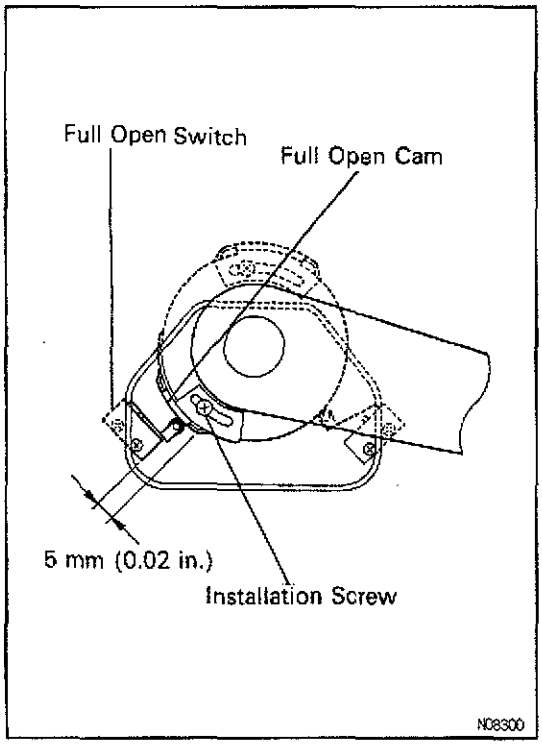
1. PULL UP PLASTIC COVER AND TURN IT 180°



2. PLACE AUTO–MANUAL LEVER AT "MANUAL" POSITION

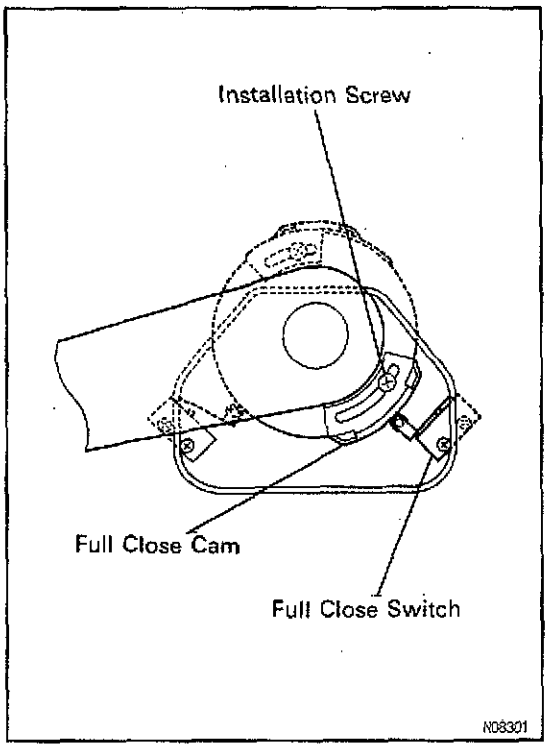
3. ADJUST FULL OPEN CAM POSITION

(a) Fully open the door by hand.



(b) Adjust the full open cam so that the roller of the full open switch is offset approximately 5 mm clockwise from the corner of the full open cam.
(Adjustment Method)
Loosen the cam installation screws. Then move the cam so that the roller of the full open switch on top of the cam is positioned approximately 5 mm counter-clockwise from the corner of the cam. Tighten the cam installation screws.
HINT: If the center door rebounds a lot when fully closed during automatic opening/closing, adjust the roller offset so it is larger than specified.
If the door dose not fully open (stopping before the stopper rubber contacts the piller), reduce the roller offset so it is less than specified.

BE



4. ADJUST FULL CLOSED CAM POSITION

(a) Close the door by hand to fully closed position.

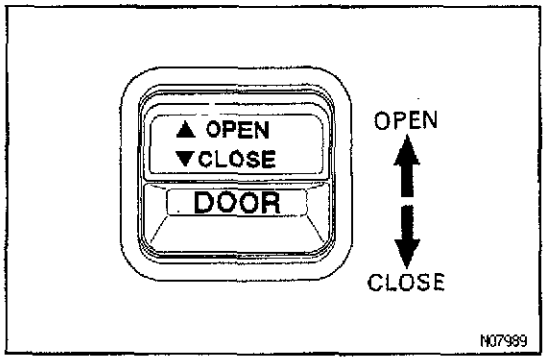
(b) Loosen the cam installation screw and the cam so that the roller of the full close switch mounts the full close cam and the full close switch changes from ON to OFF (when the roller starts to mount the full close cam, the switch makes a cliking sound as it contacts teh corner of the cam).

BE

5. CHECK DOOR OPERATION

Place the auto–manual lever at "AUTO" position and turn on the ignition switch. Check that the door operates properly.

NOTICE: The vehicle should be on level ground and the engine idling when carrying out the check.



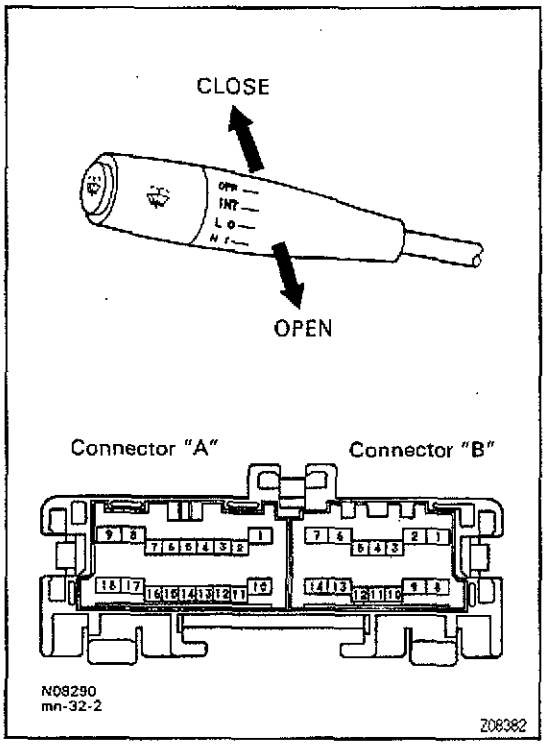
AUTOMATIC DOOR SWITCH

BE139-01

1. INSPECT AUTOMATIC DOOR SWITCH

Switch position	Tester connection	Specified value
OPEN	1 – 4	Continuity
NEUTRAL	–	No continuity
CLOSE	2 – 4	Continuity

If continuity is not as specified, replace the switch.

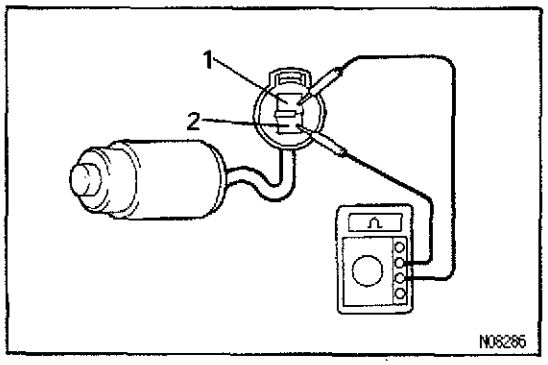


2. INSPECT AUTOMATIC DOOR SWITCH (Hong Kong)

Switch position	Tester connection	Specified value
Free	–	No continuity
Lock	1 – 2	Continuity

If continuity is not as specified, replace the switch.

BE



AUTOMATIC DOOR EMERGENCY SWITCH (Hong Kong, Australia, Singapore)

BE10C-02

INSPECT AUTOMATIC DOOR EMERGENCY SWITCH

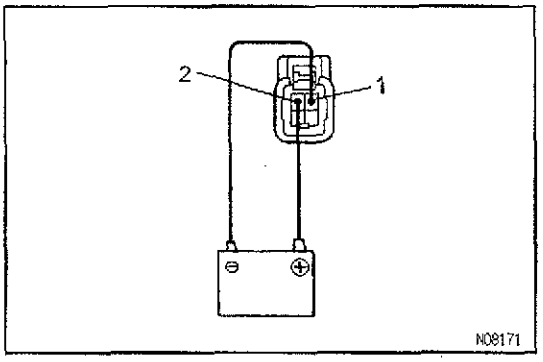
Inspect the continuity between terminals.

Condition	Tester connection	Specified value
Free	–	Continuity
Push	1 – 2	Continuity

If continuity is not as specified, replace the switch.

BE10D-02

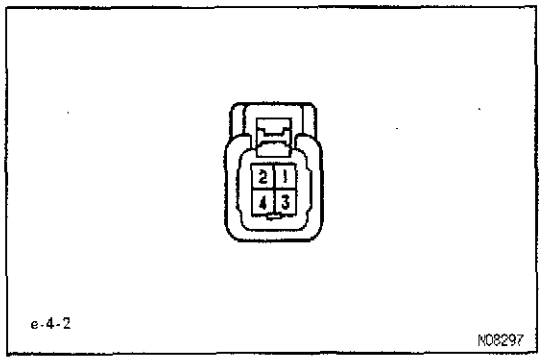
ACCEL INTERLOCK ACTUATOR



INSPECT MOTOR OPERATION OF ACCEL INTERLOCK ACTUATOR

RHD

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the actuator turns clockwise.

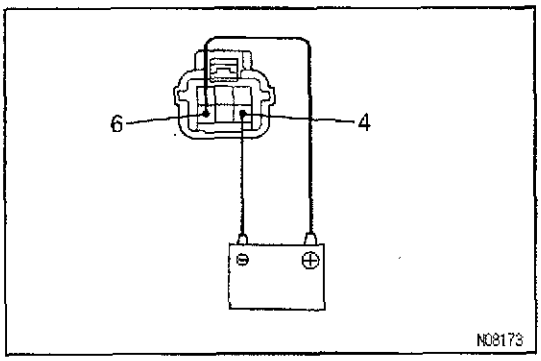


(b) Check that the continuity between terminals.

Condition	Tester conntection	Specified value
Accel Pedal free	2 – 4	Continuity
Accel Pedal free	2 – 3	No continuity
Accel Pedal depressed	2 – 4	No continuity
Accel Pedal depressed	2 – 3	Continuity

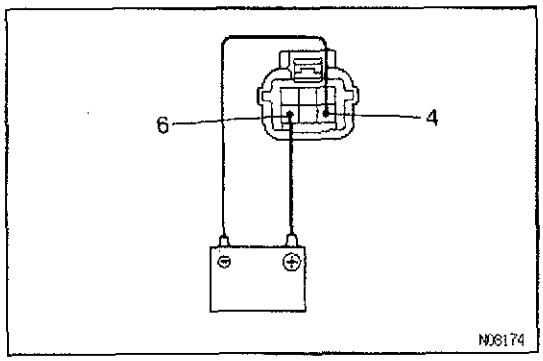
If continuity is not as specified, replace the actuator.

BE

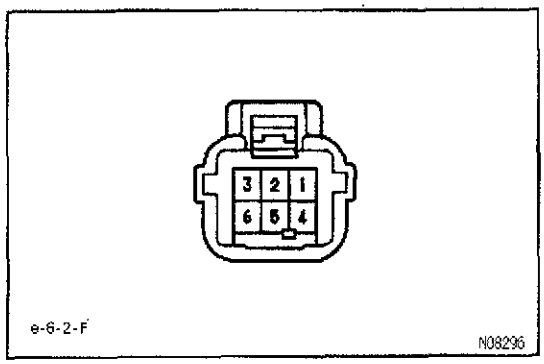


LHD

(a) Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 4, check that the Push Rod of Accel Interlock Actuator sticks out.



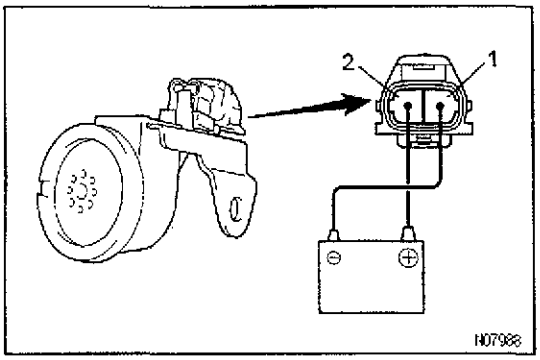
(b) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 6, check that the Push Rod of Accel interlock Actuator draws in.



(c) Check the continuity between terminals.

Condition	Tester connection	Specified value
Push Rod is sticking out	2 – 3 1 – 5	Continuity
Push Rod is drawing in	1 – 2 3 – 5	Continuity

If continuity is not as specified, replace the actuator.

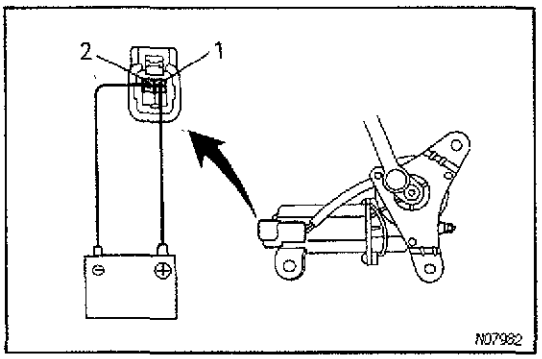


AUTO DOOR WARNING BUZZER

BE10E-01

INSPECT AUTO DOOR WARNING BUZZER

Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, check that the buzzer sounds.
If buzzer does not sound, replace the buzzer.



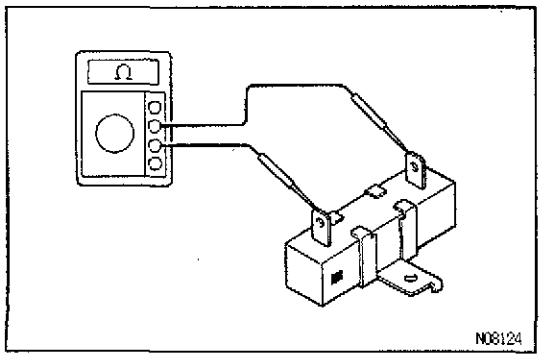
CENTER DOOR CONTROL MOTOR

BE10F-01

INSPECT CENTER DOOR CONTROL MOTOR

Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor operates.
If operation is not as specified, replace the motor.

BE



AUTOMATIC DOOR RESISTER

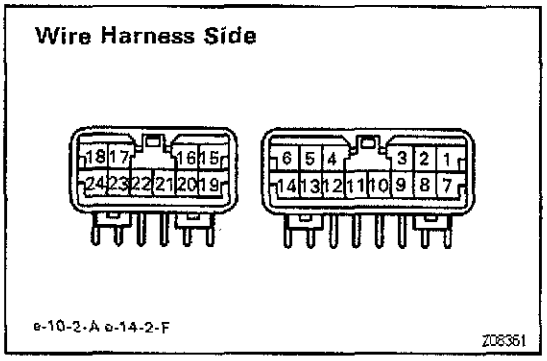
BE10G-01

INSPECT AUTOMATIC DOOR RESISTER

Using an ohmmeter, the specified resistances at 20°C (68°F) between the terminals are as follows.

Resister	12 V Vehicles	24 V Vehicles
R1	1.99 – 2.01 Ω	11.4 – 12.6 Ω
R2	–	21 – 25 Ω
R3	2.9 – 3.1 Ω	1.99 – 2.01 Ω

If resistance valve is not as specified, replace the resister.



AUTOMATIC DOOR CONTROL ECU

BE10H–02

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

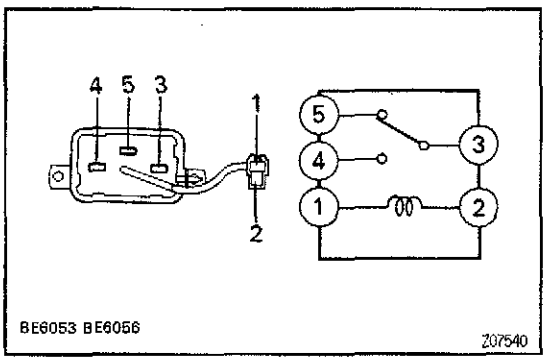
(VOLTAGE)

Tester connection	Condition	Specified value
3 – Ground	Ignition Switch "ON"	Battery voltage

(CONTINUITY)

Tester connection	Condition	Specified value (continuity)
1 – Ground	Constant	Continuity
5 – Ground	Center Door Full Open	No continuity
6 – Ground	Center Door Full Close	No continuity
15 – Ground	Constant	Continuity
16 – Ground	Constant	Continuity
17 – Ground	Constant	Continuity
18 – Ground	Constant	Continuity
19 – Ground	Constant	Continuity
21 – Ground	Constant	Continuity
22 – Ground	Constant	Continuity
23 – Ground	Constant	Continuity

BE



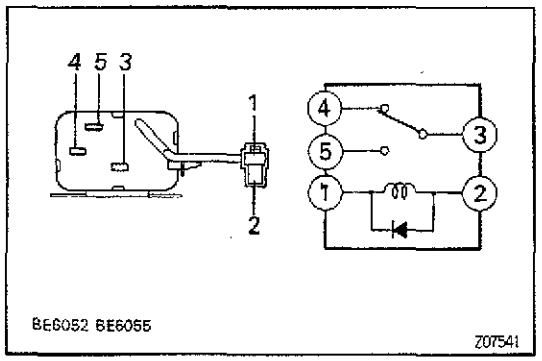
AUTOMAITC DOOR CONTROL RELAY

BE137–01

1. **INSPECT AUTOMATIC DOOR CONTROL RELAY (Glide Type)**
   (For open and closed)
   Inspect the relay continuity between terminals.

Condition	Tester connection	Specified value
Constant	1 – 2 3 – 5	Continuity
Apply battery voltage to terminal 1 and 2	3 – 4	Continuity

If continuity is not as specified, replace the relay.



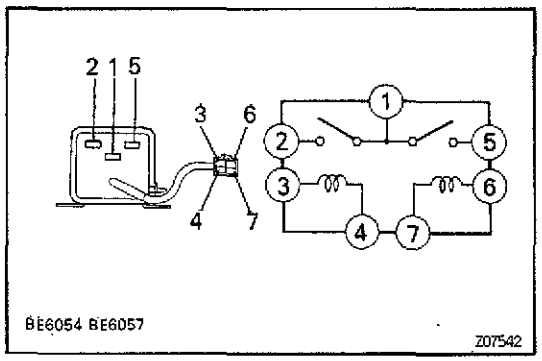
BE6052 BE6055

Z07541

(For accel)

Condition	Tester connection	Specified value
Constant	1 – 2 3 – 4	Continuity
Apply battery voltage to terminal 1 and 2.	3 – 5	Continuity

If continuity is not as specified, replace the relay.



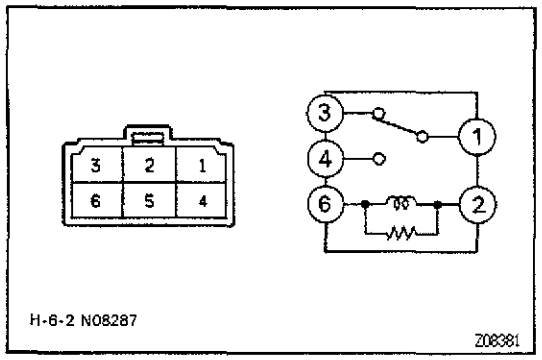
BE6054 BE6057

Z07542

(For brake)

Condition	Tester connection	Specified value
Constant	3 – 4 6 – 7	Specified value
Apply battery voltage to terminal 3 and 4	1 – 2	Continuity
Apply battery voltage to terminal 6 – 7	1 – 5	Continuity

If continuity is not as specified, replace the relay.



H-6-2 N08287

Z08381

2. INSPECT DOOR CONTROL RELAY (Folding Type)

(For open and closed)

Inspect the relay continuity between terminals.

Condition	Tester connection	Specified value
Constant	1 – 3 2 – 6	Continuity
Apply battery voltage to terminals 2 and 6	1 – 4	Continuity

BE