

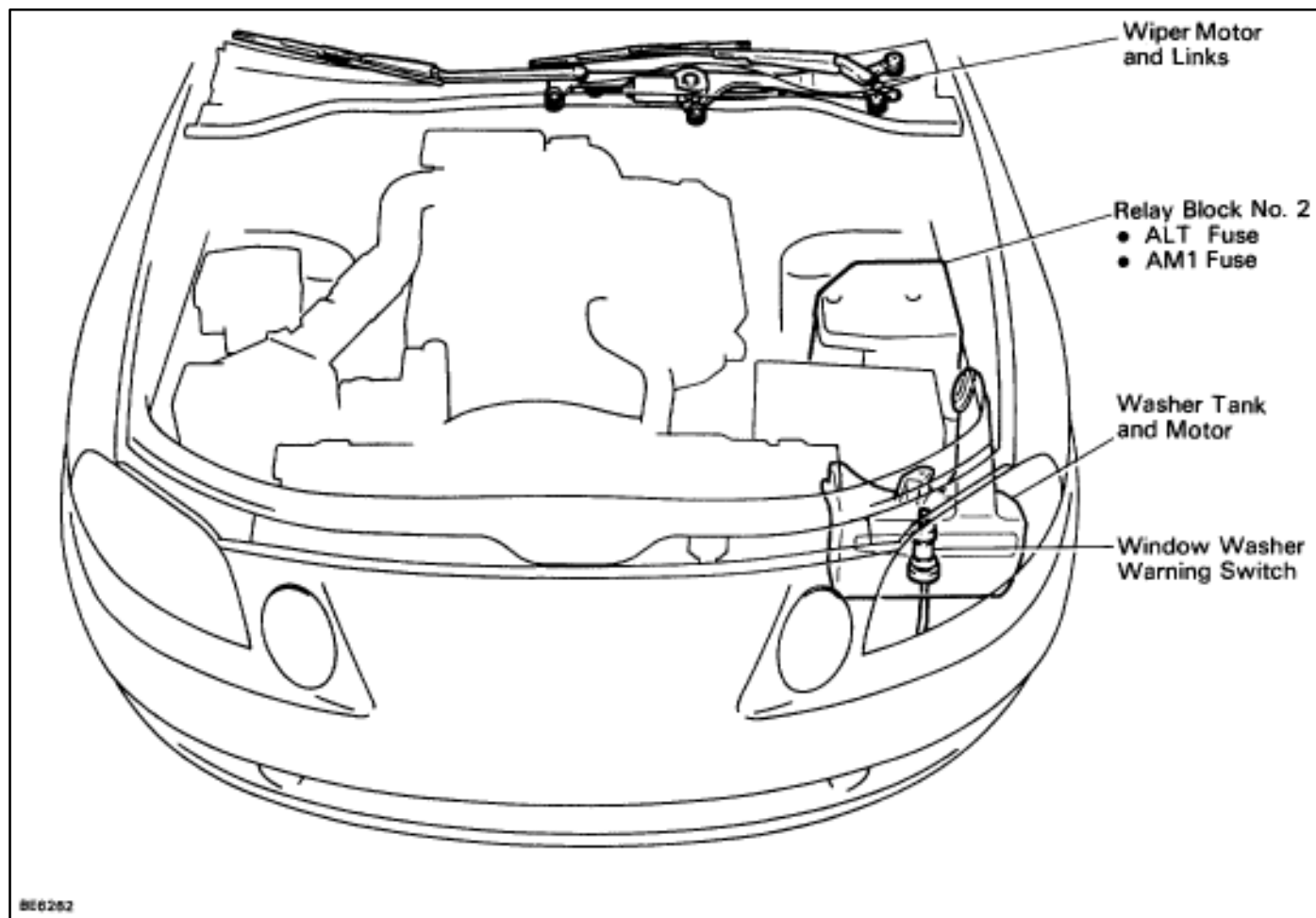
WIPER AND WASHER SYSTEM

Description

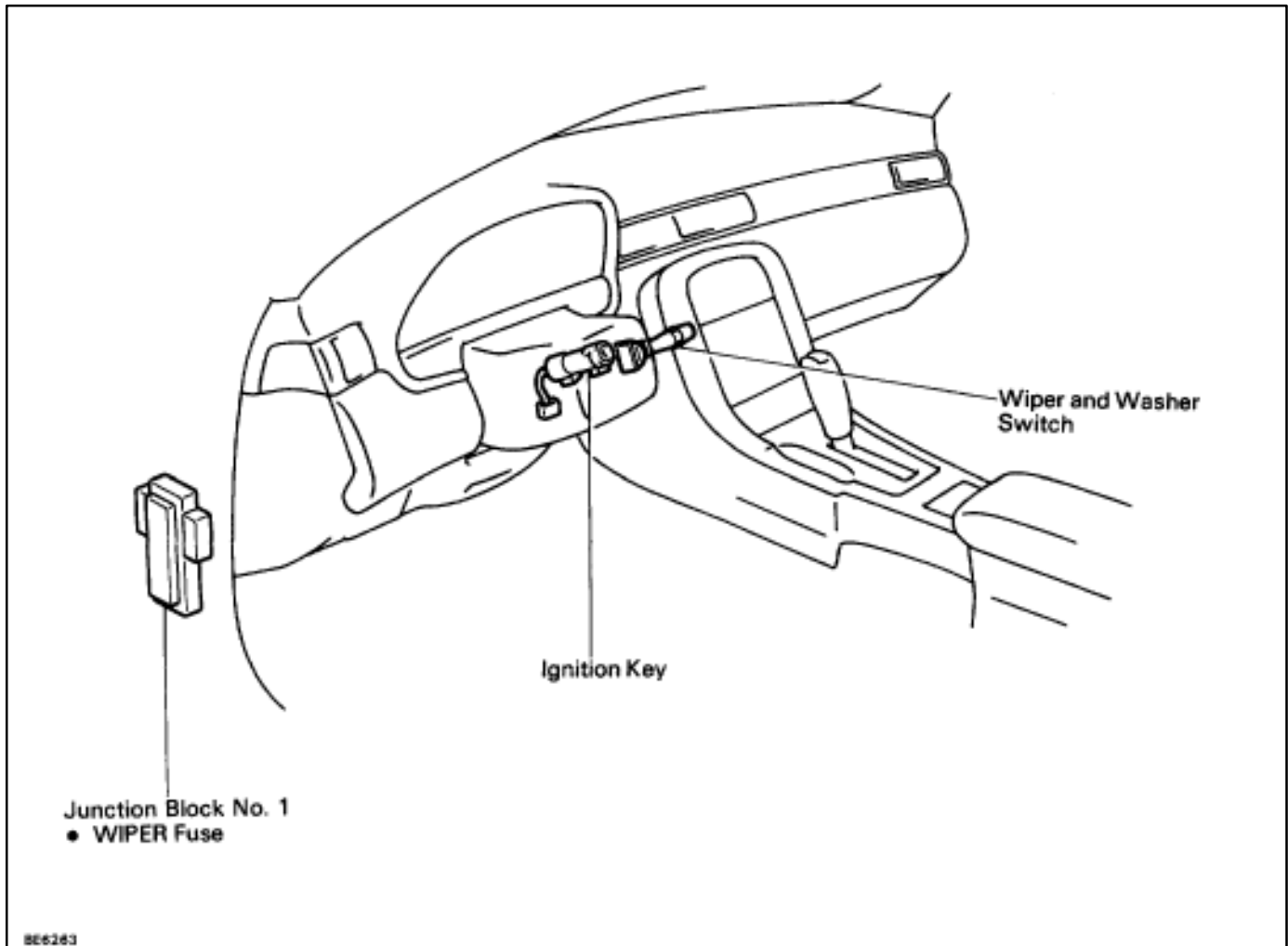
The component parts of this system and their functions are described in the following table.

Parts Name	Function
Wiper Switch	This switch changes the current from the wiper motor in order to operate the wiper motor at different speeds. It also has a built-in variable resistor which is used to adjust the interval for inter-mittent operation.
Wiper Relay	This relay turns the current to the wiper motor ON and OFF at intervals and operates the wipers continuously when the washer switch is ON.
Wiper Motor	Switching of the current at the wiper switch and wiper relay operates the motor at each speed (HI, LO) and at intervals (INT), thus moving the wiper arms and blades.
Washer Switch	By grounding current from the washer motor, this switch operates the washer motor.
Washer Motor	A pump in this motor pumps washer fluid and sprays it out from the washer nozzles.

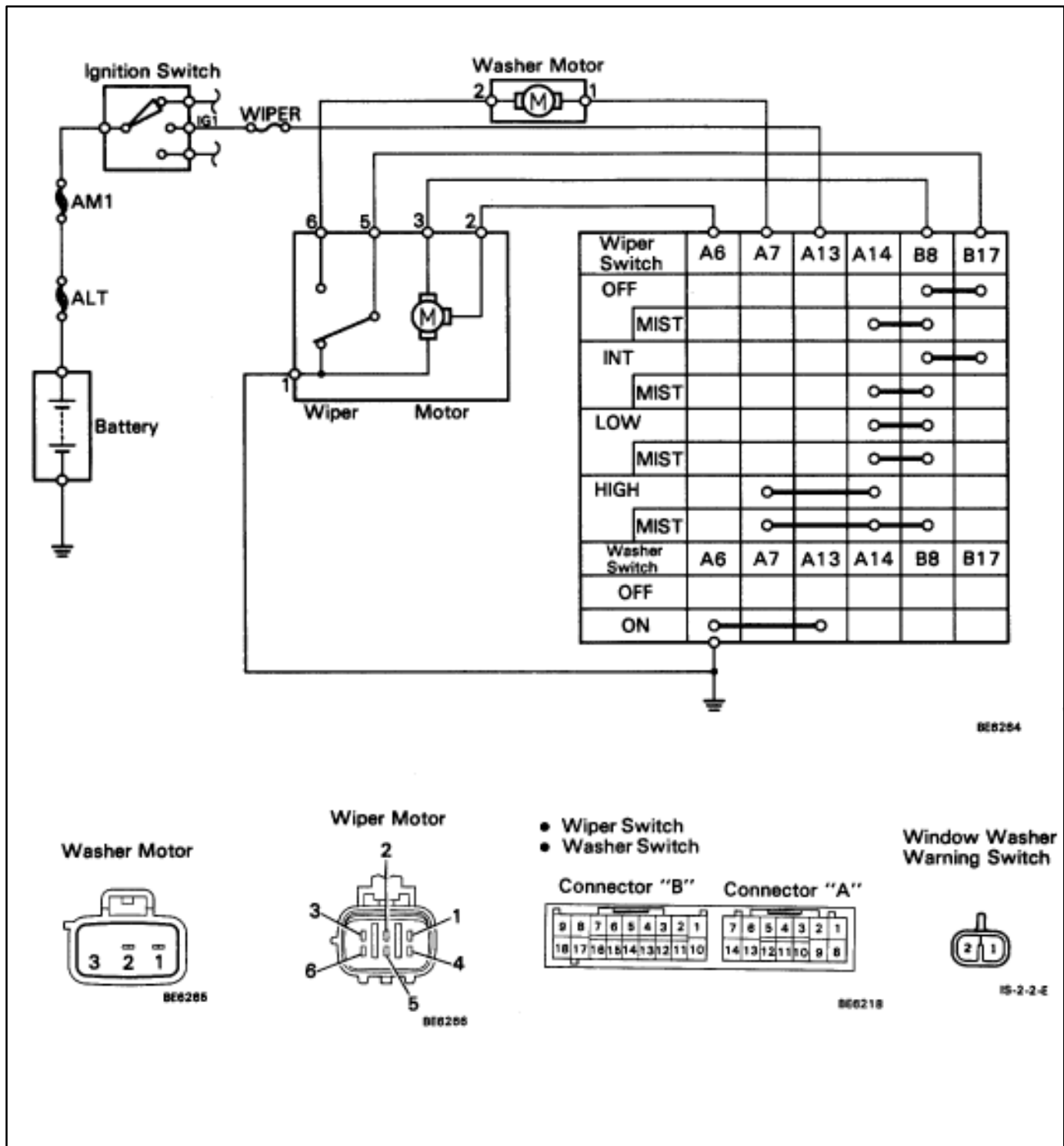
Parts Location



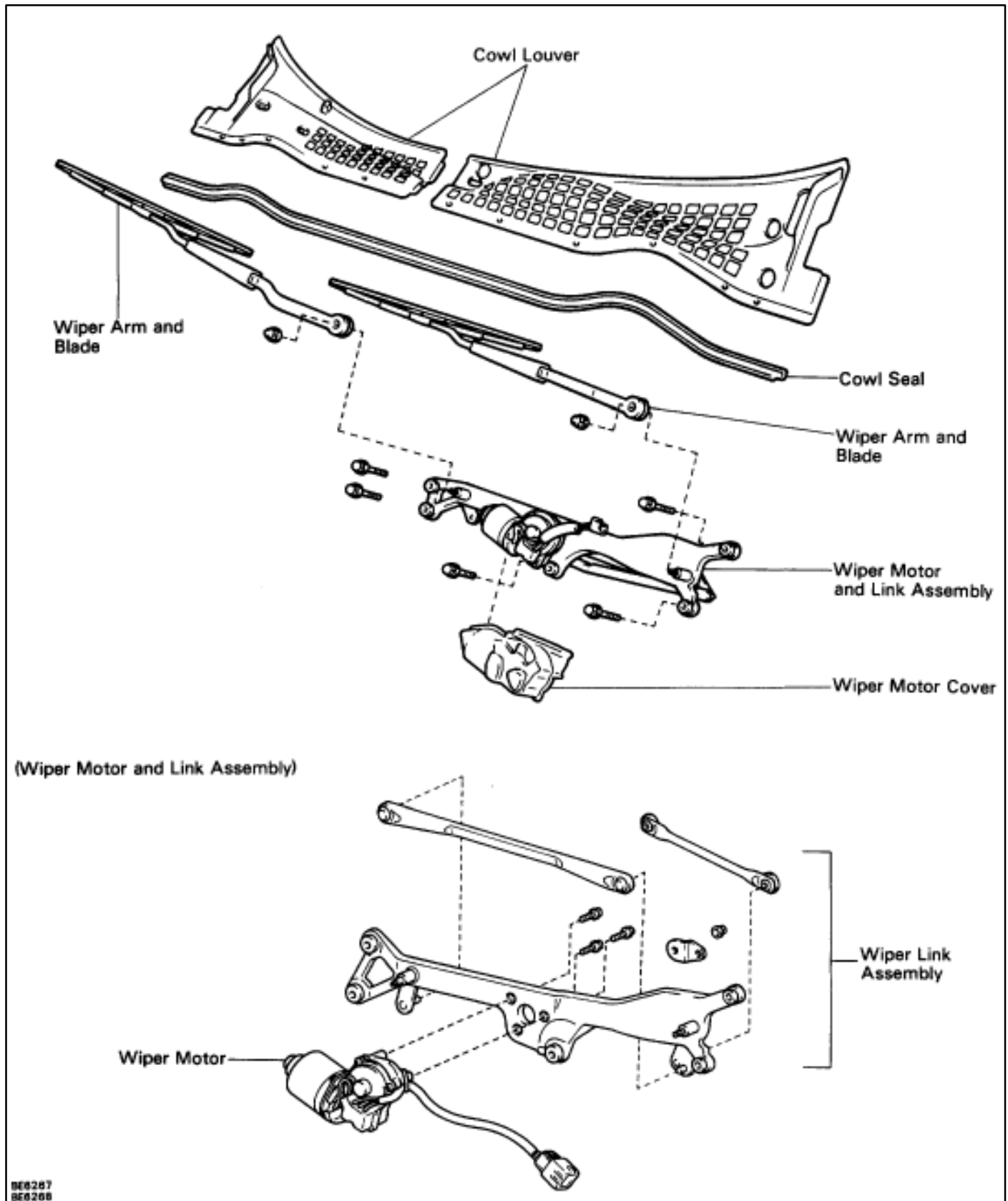
Parts Location (Cont'd)

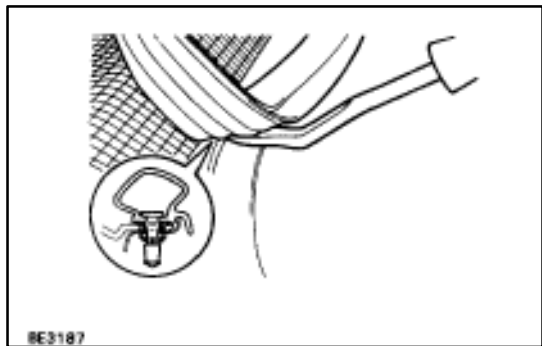


Wiring and Connector Diagram



Parts Inspection (Wiper Motor and Link Assembly) COMPONENTS



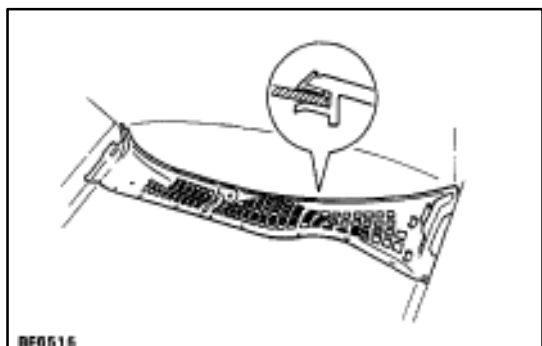


REMOVAL OF WIPER MOTOR AND LINK ASSEMBLY

1. REMOVE WIPER ARM AND BLADE ASSEMBLY
2. REMOVE COWL TOP LOUVER

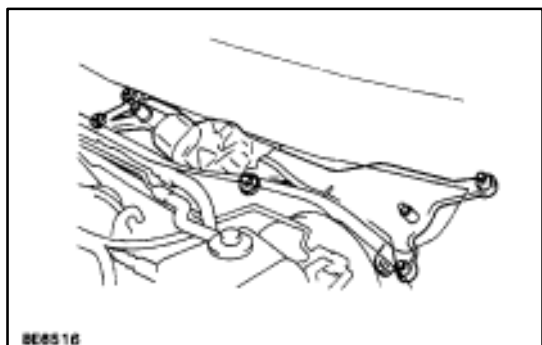
- (a) Remove hood to cowl seal.
- (b) Remove cowl louver.

HINT: Raise the front side of the cowl louver up and remove the cowl louver.



3. REMOVE WIPER MOTOR AND LINK ASSEMBLY

- (a) Remove five set bolts.
- (b) Disconnect connector.
- (c) Raise the front side of the wiper motor and link assembly up and remove the wiper motor and link assembly.
- (d) Remove wiper motor cover.



INSTALLATION OF WIPER MOTOR AND LINK ASSEMBLY

1. INSTALL WIPER MOTOR AND LINK ASSEMBLY

- (a) Install wiper motor cover.
- (b) Install wiper motor and link assembly.
- (c) Connect the connector.
- (d) Install and torque the four bolts.

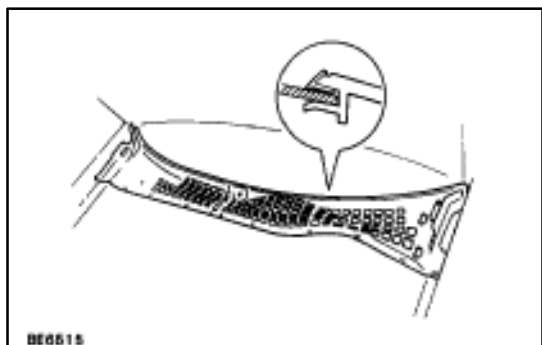
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)

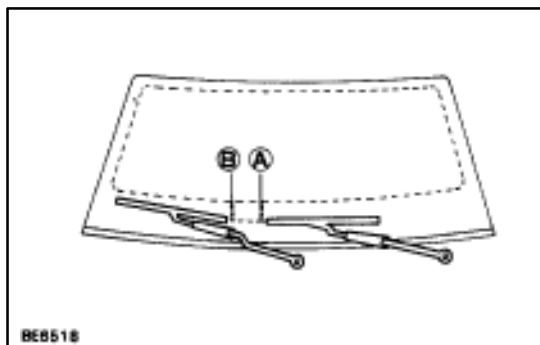
2. INSTALL COWL LOUVER

- (a) Install cowl louver.

HINT: With the front side of the louver raised, install the protector on the glass, then push the louver down.

- (b) Install hood to cowl seal.





3. INSTALL WIPER ARM AND BLADE ASSEMBLY

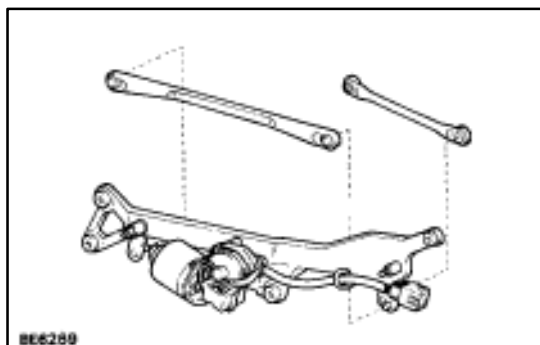
- (a) Install the wiper arms and blades, and operate the wipers once and turn the wiper switch OFF.
- (b) Adjust the installation positions of the wiper arms and blades to the positions shown in the figure.

(A) Approx. 44.0 mm (1.734 in.)

(B) Approx. 45.0 mm (1.773 in.)

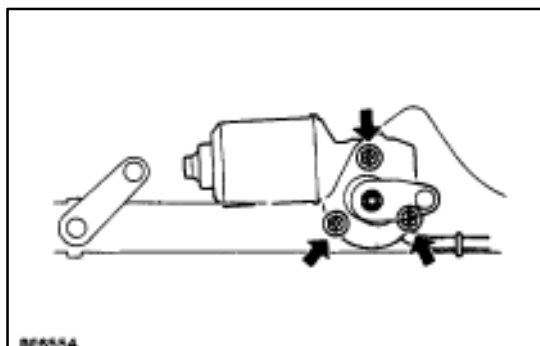
Torque the nut.

Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)



DISASSEMBLY OF WIPER MOTOR AND LINK ASSEMBLY

1. REMOVE CASE ROD AND WIPER LINK NO. 1 ROD



2. REMOVE WIPER MOTOR

- (a) Remove wire harness clamp and three bolts and a nut.
- (b) Remove wiper motor.

ASSEMBLY OF WIPER MOTOR AND LINK ASSEMBLY

1. INSTALL WIPER MOTOR

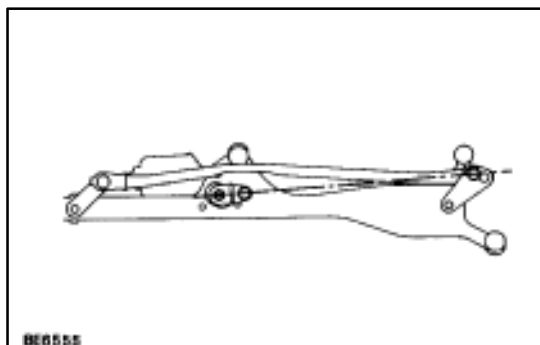
- (a) Connect the wiper motor connector.
- (b) Operate the wiper motor once and turn the wiper switch OFF.
- (c) Install wiper motor as shown in the figure.
- (d) Install wire harness clamp.
- (e) Install three bolts and a nut.

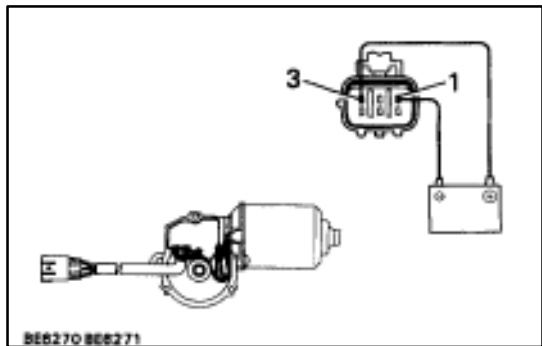
Torque:

BOLT: 5.4 N·m (55 kgf·cm, 48 in·lbf)

NUT: 17 N·m (175 kgf·cm, 13 ft·lbf)

2. INSTALL CASE ROD AND WIPER LINK NO. 1 ROD





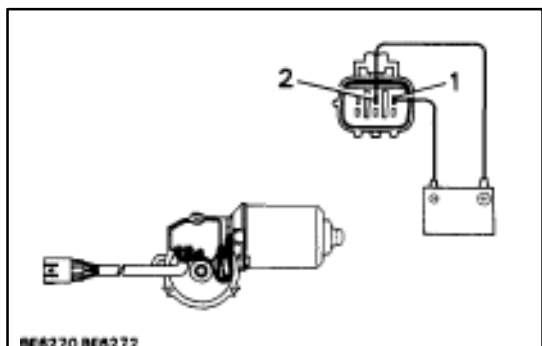
INSPECTION OF WIPER MOTOR

INSPECT MOTOR

(Operation at Low Speed)

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 1, check that the motor operates at low speed.

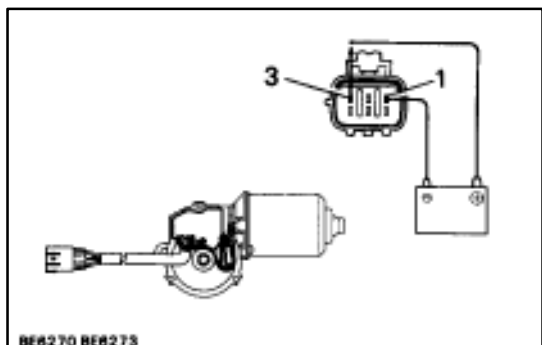
If operation is not as specified, replace the motor.



(Operation at High Speed)

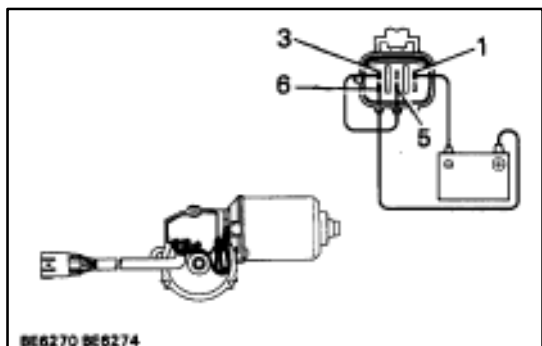
Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates at high speed.

If operation is not as specified, replace the motor.



(Operation, Stopping at Stop Position)

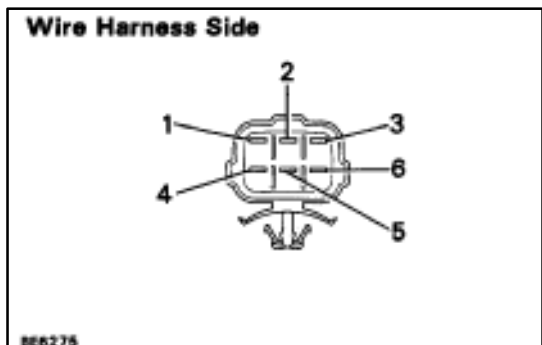
(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 3.



(b) Connect terminals 3 and 5.

(c) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 1, check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.



(Motor Circuit)

Disconnect the connector from the motor and inspect the connector on the wire harness side as shown.

Check for	Tester connection	Condition		Specified value
Continuity	1–Ground	Constant		Continuity
Voltage	2–Ground	Wiper switch position (Ignition switch ON)	HIGH or MIST	Battery voltage
			OFF or INT, LOW	No voltage
	3–Ground	Wiper switch position (Ignition switch ON)	LOW and MIST	Battery voltage
			OFF or INT, HIGH	No voltage
	6–Ground	Ignition switch	LOCK or ACC	No voltage
			ON	Battery voltage

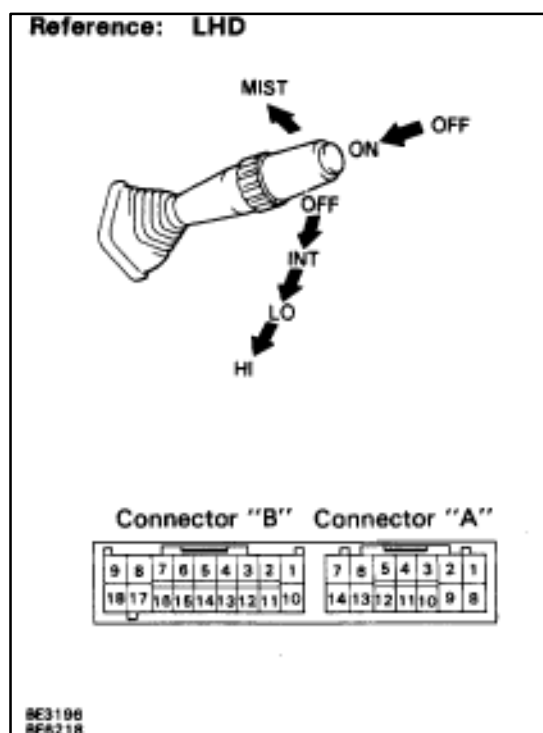
If circuit is not as specified, refer to [BE-86](#) wiring diagram and inspect the circuits connected to other parts.

(Combination Switch)

(See page [BE-46](#))

(Continuity)

Inspect the switch continuity between terminals.



Terminal			A6	A7	A13	A14	B8	B17
Switch position								
Wiper	OFF	OFF						
		MIST						
	INT	OFF						
		MIST						
	LO	OFF						
		MIST						
	HI	OFF						
		MIST						
Washer	OFF							
	ON							

If continuity is not as specified, replace the switch.

(Resistance)

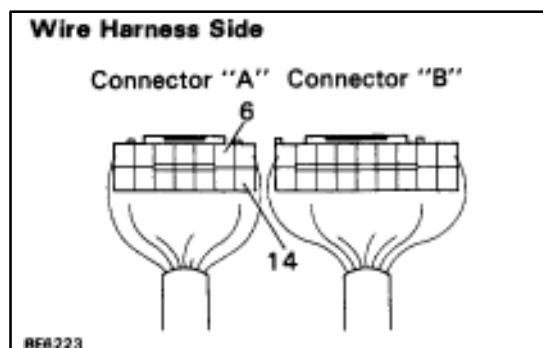
Inspect the switch resistance between terminals.

Terminal			A14	B17	Specified value
Switch position					
Wiper	INT	SLOW			Approx. 50k Ω
		FAST			Less than 10 Ω

If resistance value is not as specified, replace the switch.

(Switch Circuit)

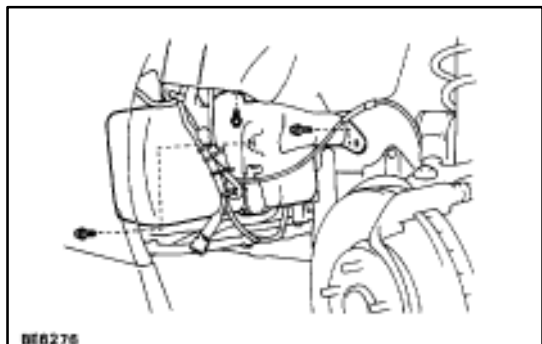
Disconnect the switch and wiper relay connector, inspect the each connector on the wire harness side as shown.



Check For	Tester connection	Condition		Specified value
Voltage	A14–Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery Voltage
Continuity	A6–Ground	Constant		Continuity

(Washer Motor and Tank)

REMOVAL AND INSTALLATION OF WASHER MOTOR AND TANK

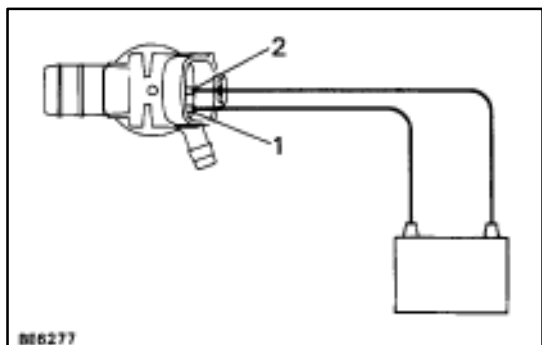


1. REMOVE WASHER TANK AND WASHER MOTOR

- Remove fender liner.
- Disconnect connector and hose.
- Remove three screws and tank.
- Separate tank and washer motor.

2. INSTALL WASHER TANK AND MOTOR

For installation follow the removal procedure in reverse.



INSPECTION OF WASHER MOTOR

INSPECT WASHER MOTOR

(Operation)

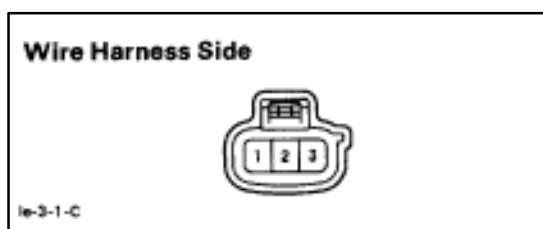
Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, check that the motor operates.

NOTICE: These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.

(Circuit)

Disconnect the connector from the washer motor and inspect the connector on harness side as shown.

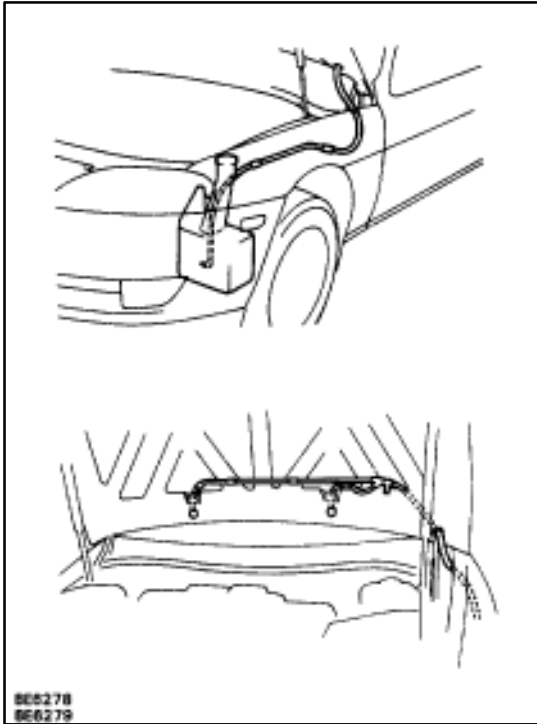


Check for	Tester connection	Condition	Specified value
Continuity	1–Ground	Push washer switch ON	Continuity
Voltage	2–Ground	Turn ignition switch ON	Battery voltage

If circuit is not as specified, inspect wire harness, power source or wiper switch.

(Window Washer Level Warning Switch)

(See page [BE-124](#))



(Washer Hose and Nozzle)

REMOVAL AND INSTALLATION OF WASHER HOSE AND NOZZLE

1. REMOVE WASHER HOSE

- Remove fender liner.
- Disconnect washer hose from washer motor.
- Remove the hose clamps as shown.

HINT: When installing or removing the hose clamp on the underside of the engine hood, remove the clip on the underside of the silencer.

- Remove service hole grommet and disconnect the hose from washer nozzle.

2. INSTALL WASHER HOSE

For installation follow the removal procedure in reverse.

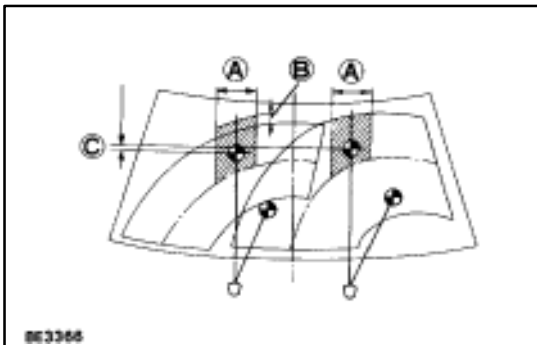
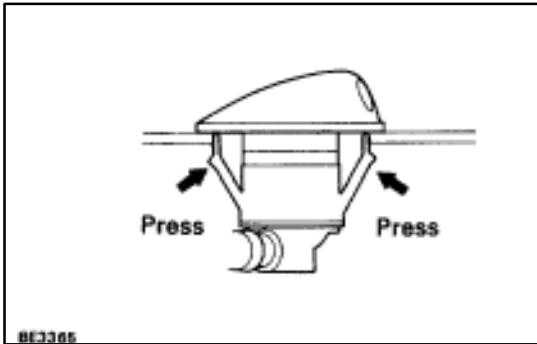
HINT: During assembly, the washer hose should be passed underneath the engine hood hinge on the body side.

3. REMOVE WASHER NOZZLE

- Remove service hole grommet.
- Disconnect washer hose from nozzle.
- Press on the claw on the underside of the nozzle and remove it from above.

4. INSTALL WASHER NOZZLE

For installation follow the removal procedure in reverse.



ADJUSTMENT OF WASHER NOZZLE

1. INSPECT WASHER NOZZLE

- While operating the washer, check whether the upper point where the washer fluid hits the windshield and the up surge area are within the range indicated by the hatched line.

(A) Approx. 150 mm (5.91 in.)

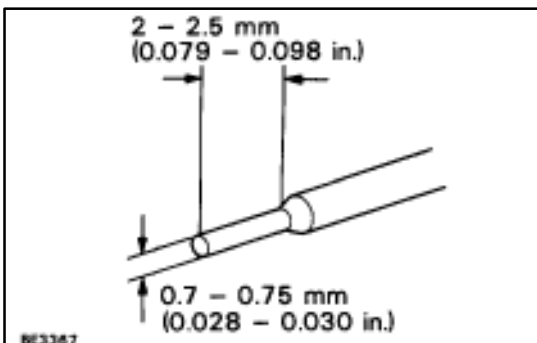
(B) Approx. 50 mm (1.99 in.)

(C) Approx. 0–1000 mm (0–3.94 in.)

- Check if the lower point where the washer fluid hits the windshield is within the range of the wiping pattern (the area of the glass which is wiped by the wiped blades).

2. ADJUST WASHER NOZZLE

Using a tool like that shown in the figure, change the direction of the nozzle hole to adjust the point where washer fluid strikes the windshield.



Troubleshooting

You will find the cause of trouble more easily by properly using the table shown below. In this table, the numbers indicate the order of priority of causes of trouble. Check each part in the order shown. If necessary, replace the parts.

See page	BE-4, 21	BE-26	BE-4, 20	BE-91	BE-90	BE-92	BE-91	BE-93	-
Part name									
Trouble	AM1 Fuse	Ignition Switch	WIPER Fuse	Wiper Switch	Wiper Motor	Washer Motor	Washer Switch	Washer Hose and Nozzle	Wire Harness
Wipers and washers do not operate.* ¹	1	3	2	4	5				6
Wipers and washers do not operate.* ²		2	1	3	4				5
Wipers and washers do not operate.* ³			1	2	3				4
Wipers do not operate in LO, HI or MIST.				1	2				3
Wipers do not operate in INT.				1	2				3
Washer motor does not operate.						2	1		3
Wipers do not operate when washer switch is ON.						1			2
Washer fluid does not spray.								1	

*1: Door Lock and Power Window do not operate.

*2: Door Lock and Power Window are normal. Combination Meter and Turn Signal do not operate.

*3: Combination Meter and Turn Signal are normal.