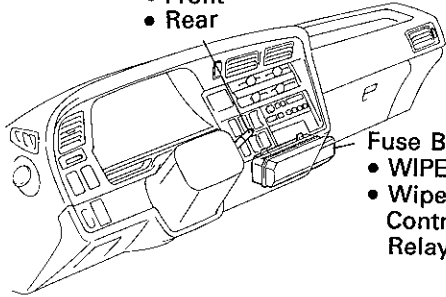


WIPER AND WASHER SYSTEM

Parts Location

LHD Vehicles

- Wiper and Washer Switch
- Front
 - Rear

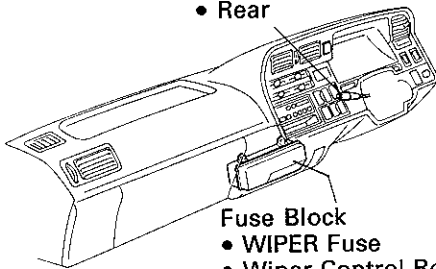


- Fuse Block
- WIPER Fuse
 - Wiper Control Relay*1

*1: with Intermitent and w/o Adjuster type

RHD Vehicles

- Wiper and Washer Switch
- Front
 - Rear



- Fuse Block
- WIPER Fuse
 - Wiper Control Relay*1

Front Wiper Motor

Rear Wiper Motor

Front Washer Motor

Washer Fluid Level Switch

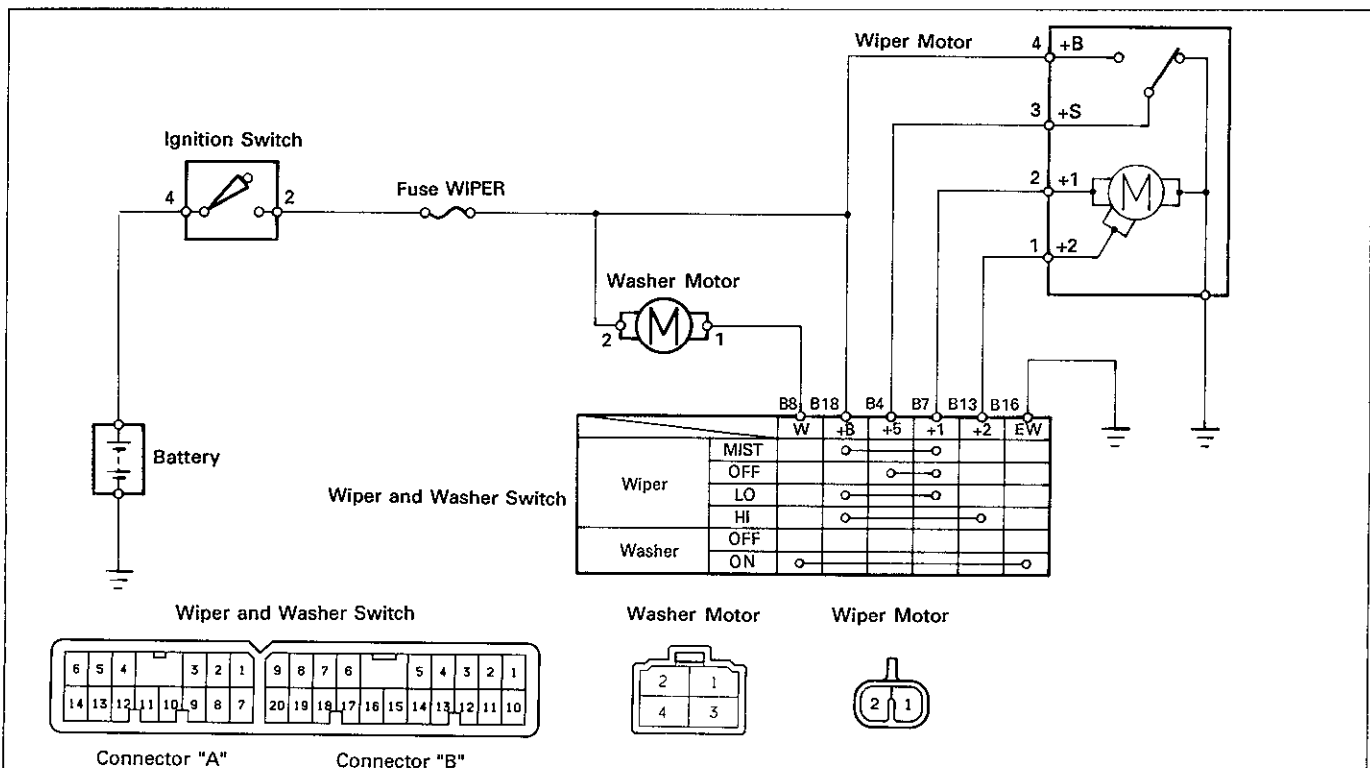
Rear Wiper Relay

Rear Washer Motor

BE4170 BE4172
BE4171

Wiring and Connector Diagrams

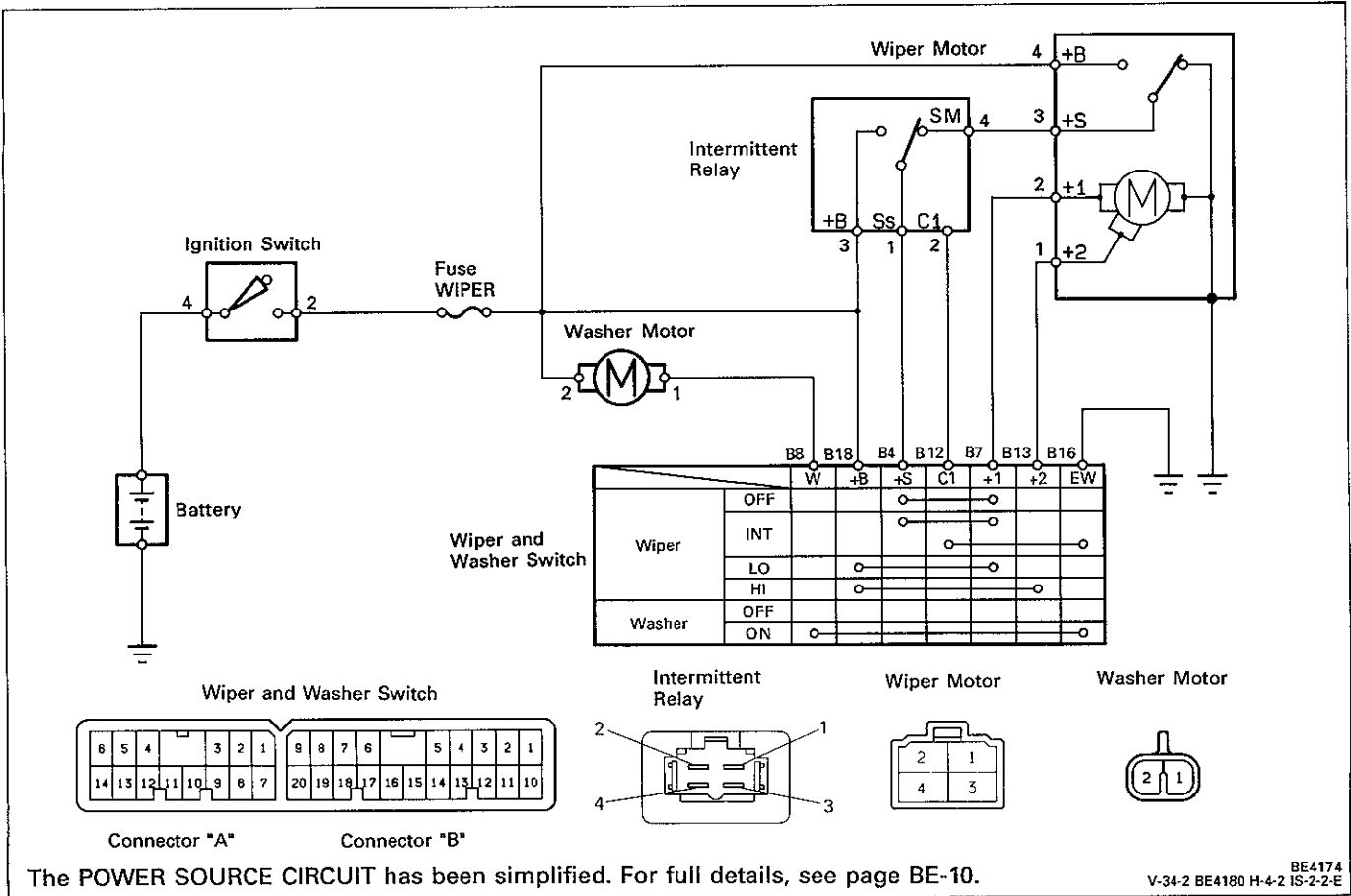
(Front: Mist Type)



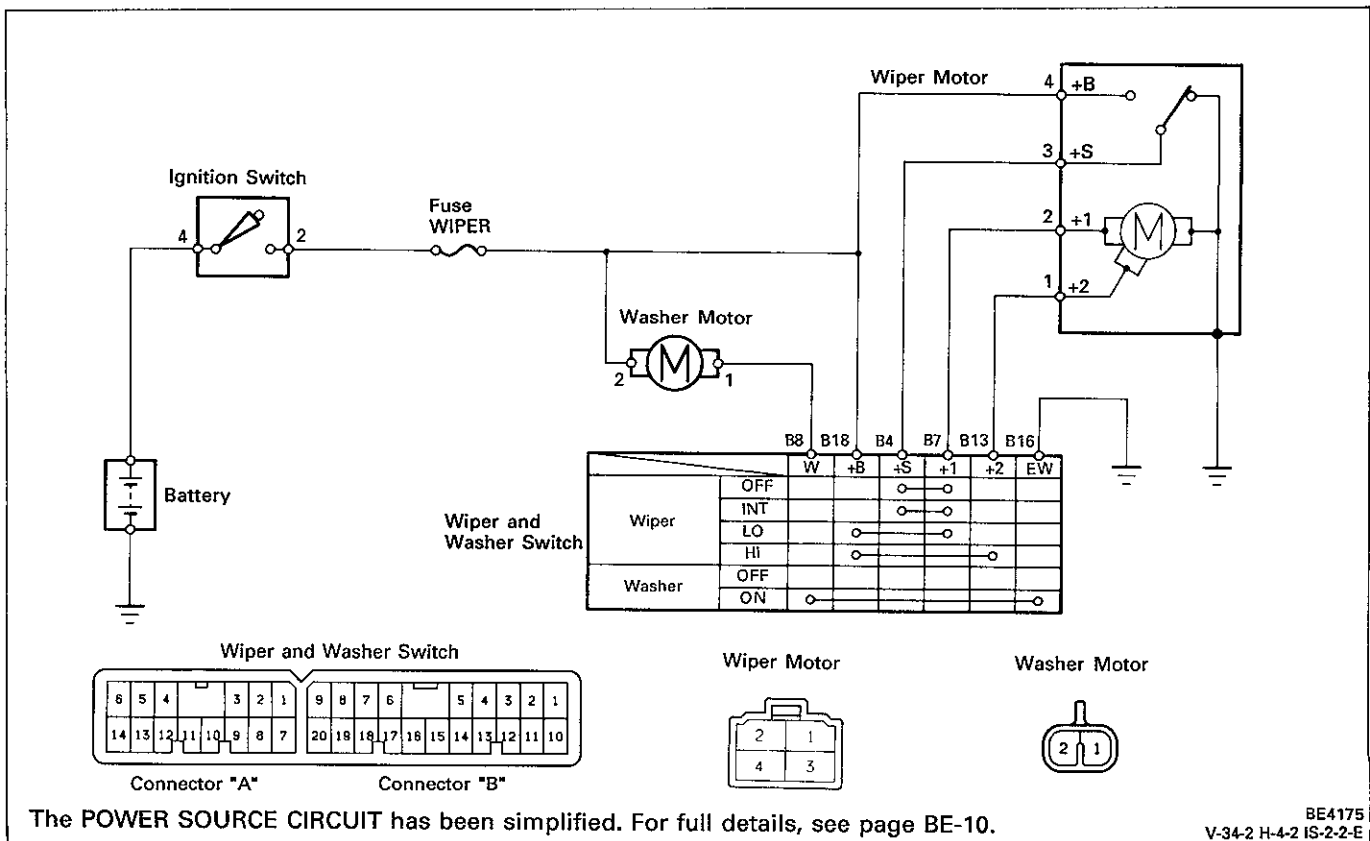
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-10.

BE4173
V-34-2 H-4-2 IS-2-2-E

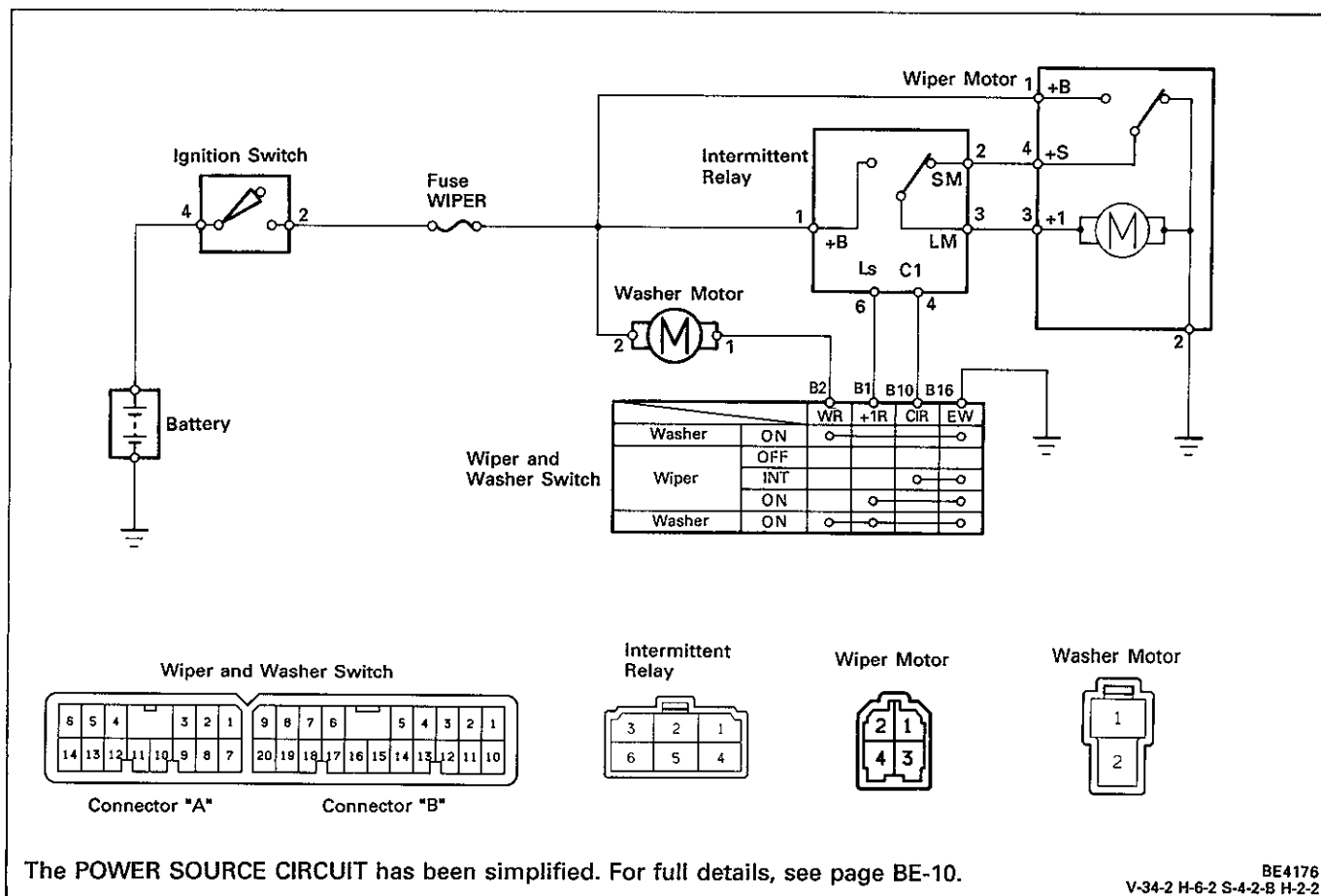
(Front: Intermittent Type w/o interval adjuster)



(Front: Intermittent Type w/ interval adjuster)



(Rear)

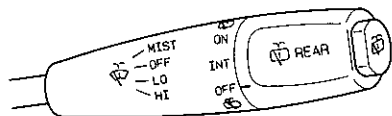
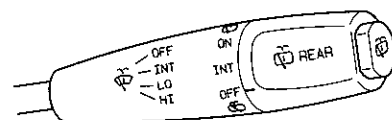
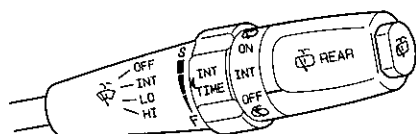
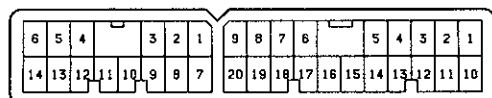


Troubleshooting

Problem	Possible cause	Remedy	Page	
			Front	Rear
Wiper do not operate or return to off position	WIPER fuse blown	Replace fuse and check for short	BE-7	BE-7
	Wiper motor faulty	Check motor	BE-39	BE-40
	Wiper switch faulty	Check switch	BE-37	BE-37
	Wiring or ground faulty	Repair as necessary		
Wiper do not operate in Mist position	Wiper switch faulty	Check switch	BE-37	—
	Wiper motor faulty	Check motor	BE-39	—
	Wiring or ground faulty	Repair as necessary		—
Wiper do not operate in Inter-mittent (INT) position	Wiper relay faulty	Check relay	BE-38	BE-39
	Wiper switch faulty	Check switch	BE-37	BE-37
	Wiper motor faulty	Check motor	BE-39	BE-40
	Wiring or ground faulty	Repair as necessary		
Washer do not operate	Washer hose or nozzle clogged	Repair as necessary		
	Washer motor faulty	Check motor	BE-39	BE-40
	Washer switch faulty	Check switch	BE-37	BE-37
	Wiring or ground faulty	Repair as necessary		

Parts Replacement

See Parts Replacement of Combination Switch on page BE-23.

Reference: LHD Vehicles**Mist Wiper Switch****Intermittent Wiper Switch (w/o Interval Adjuster)****Intermittent Wiper Switch (w/ Interval Adjuster)****Connector "A"****Connector "B"**

Reference: For RHD vehicles, the switches are always symmetrically opposite to those of LHD vehicles.

BE4177
BE4178
BE4179
V-34-2

Parts Inspection**Wiper System****1. INSPECT SWITCHES****(Front Wiper and Washer Switch/Continuity)****Mist Wiper**

Terminal (Color)		B4 (L-R)	B7 (L-B)	B8 (L)	B13 (L-O)	B16 (B)	B18 (L-W)
Switch position							
Wiper	OFF		○				○
	INT	○	○				
	LO		○				○
	HI				○		○
Washer	OFF						
	ON			○		○	

Intermittent Wiper (w/o interval adjuster)

Terminal (Color)		B4 (L-R)	B7 (L-B)	B8 (L)	B12 (Y-B)	B13 (L-O)	B16 (B)	B18 (L-W)
Switch position								
Wiper	OFF	○	○					
	INT	○	○		○		○	
	LO		○					○
	HI					○		○
Washer	OFF							
	ON			○			○	

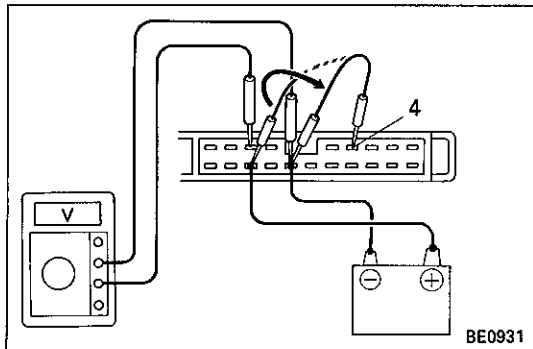
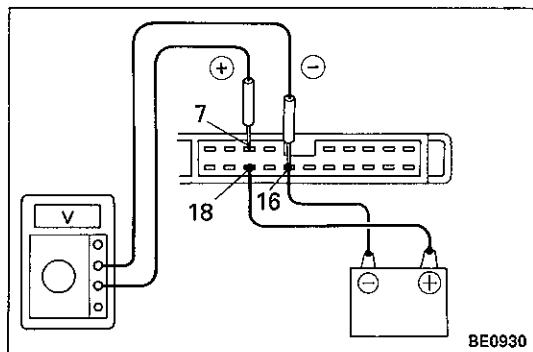
Intermittent Wiper (w/ interval adjuster)

Terminal (Color)		B4 (L-R)	B7 (L-B)	B8 (L)	B13 (L-O)	B16 (B)	B18 (L-W)
Switch position							
Wiper	OFF	○	○				
	INT	○	○				
	LO		○				○
	HI				○		○
Washer	OFF						
	ON			○		○	

(Rear Wiper and Washer Switch/Continuity)

Terminal (Color)		B1 (G)	B2 (V)	B10 (O)	B16 (B)
Switch position					
Washer	ON		○		○
Wiper	OFF			○	○
	INT				
	ON	○			○
Washer	ON	○	○		○

If continuity is not as specified, replace the switch.



2-1. (Intermittent Wiper: Variable type) INSPECT RELAY

(Operation at Intermittent)

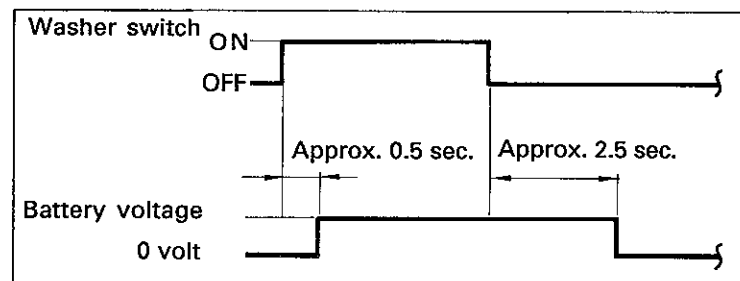
- Turn the wiper switch to INT position.
- Turn the intermittent time control switch to FAST position.
- Connect the positive (+) lead from the battery to terminal B18 and the negative (-) lead to terminal B16.
- Connect the positive (+) lead from the voltmeter to terminal B7 and the negative (-) lead to terminal B16, check that the meter needle indicates battery voltage.
- After connecting terminal B4 to terminal B18, connect to terminal B16. Then, check that the voltage rises from 0 volt to battery voltage within the times as shown in the table.

INT time control switch position	Voltage	
FAST	1.6±1 sec.	Battery voltage 0 volt
SLOW	10.7±5 sec.	Battery voltage 0 volt

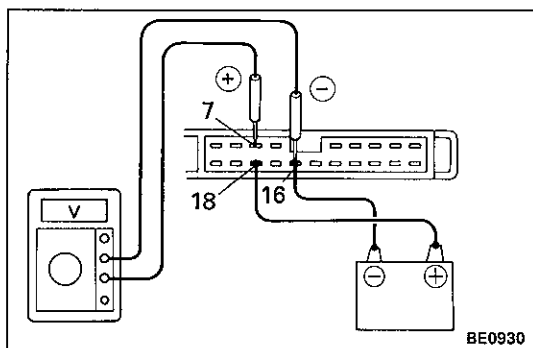
If operation is not as specified, replace the switch.

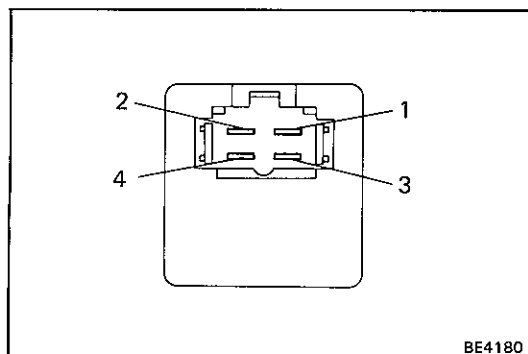
(Operation as Washer Linked)

- Connect the positive (+) lead from the battery to terminal B18 and the negative (-) lead to terminal B16.
- Connect the positive (+) lead from the voltmeter to terminal B7 and the negative (-) lead to terminal B16.
- Push in the washer switch. Check that the voltage changes as shown in the table.



If operation is not as specified, replace the switch.

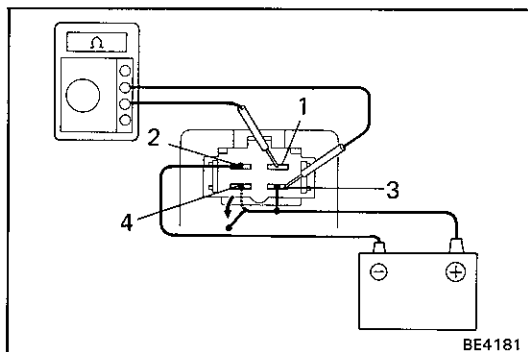




2-2. (Intermittent Wiper: Non variable type) INSPECT RELAY

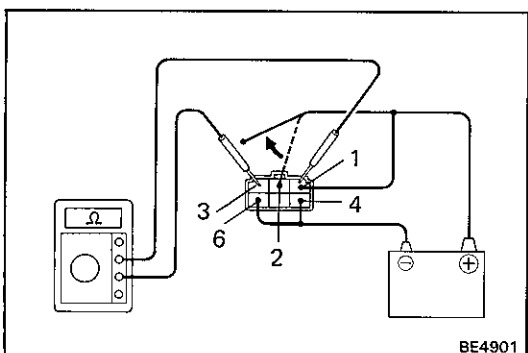
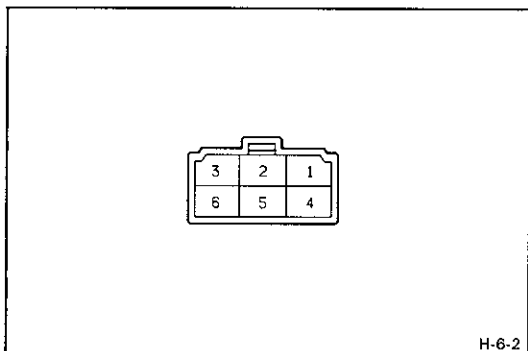
(Front)

- (a) Check that there is continuity between terminals 1 and 4.
- (b) Check that there is no continuity between terminals 1 and 3.
- (c) Connect the positive (+) lead from the battery to terminal 3 and the negative (—) leads to terminal 2.
- (d) Connect the positive (+) lead from the battery to terminal 4 for approx. 1 second.
- (e) Check that there is no continuity between terminals 1 and 3 for 3 to 5 seconds, then there is continuity.

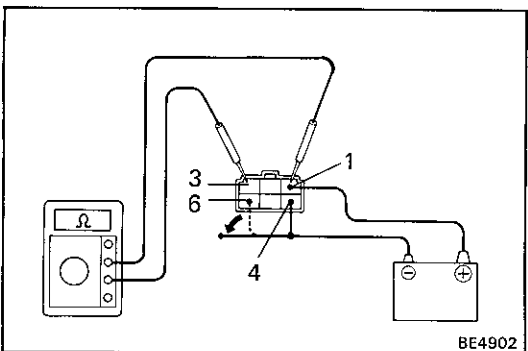


(Rear)

- (a) Check that there is continuity between terminals 2 and 3.
- (b) Check that there is no continuity between terminals 1 and 3.

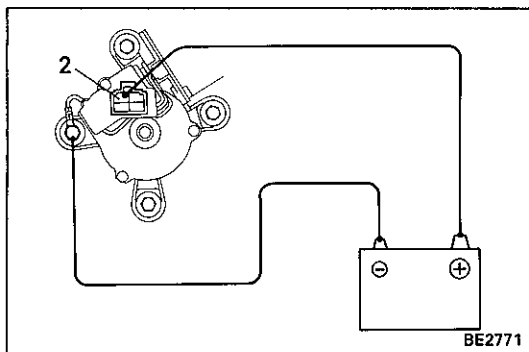


- (c) Connect the positive (+) lead from the battery to terminal 1 and the negative (—) leads to terminals 4.
- (d) Connect the positive (+) lead from the battery to terminal 2 for approx. 1 second.
- (e) Check that there is no continuity between terminals 1 and 3 for 9 to 15 seconds, then there is continuity.



- (f) Connect the positive (+) lead from the battery to terminal 1 and the negative (—) leads to terminals 4 and 6.
- (g) Check that there is continuity between terminals 1 and 3 after approx. 0.5 seconds.
- (h) Disconnect the negative (—) lead from terminal 6, check that there is no continuity between terminals 1 and 3 after approx. 2 seconds.

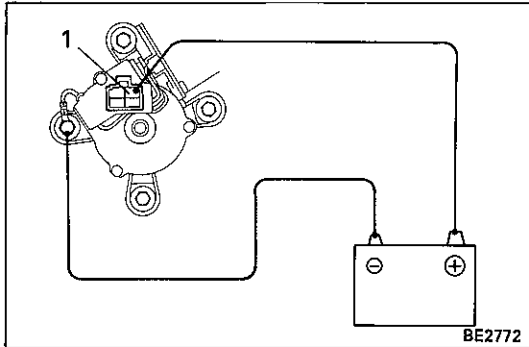
If operation is not as specified, replace the relay.



3. INSPECT MOTOR (Front Motor/Operation at Low Speed)

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to the motor body, check that the motor operates as low speed.

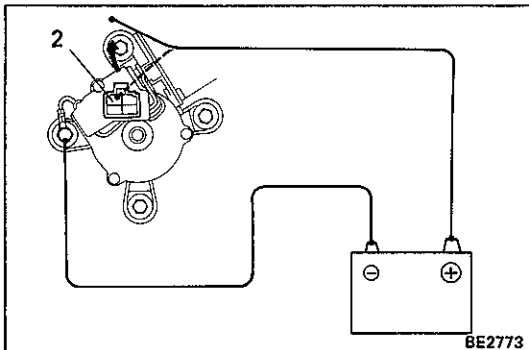
If operation is not as specified, replace the motor.



(Front Motor/Operation at High Speed)

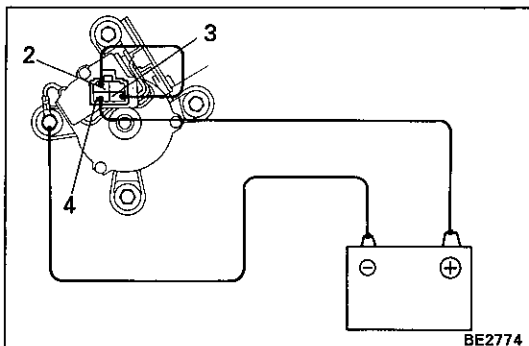
Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to the motor body, check that the motor operation at high speed.

If operation is not as specified, replace the motor.



(Front Motor/Operation, Stopping at Stop Position)

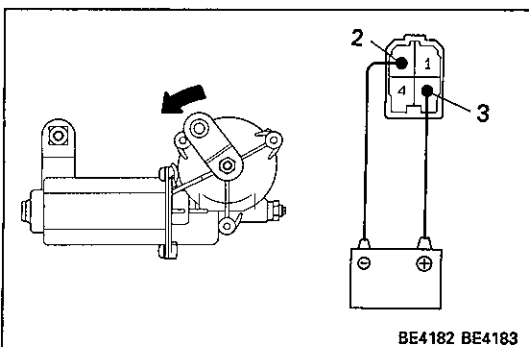
- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 2.



- (b) Connect terminals 2 and 3.

- (c) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to the motor body, check that the motor stops running at the stop position after the motor operates again.

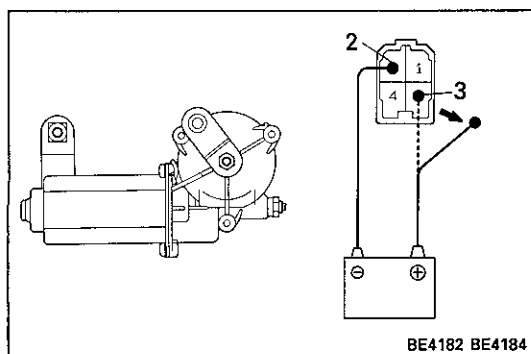
If operation is not as specified, replace the motor.



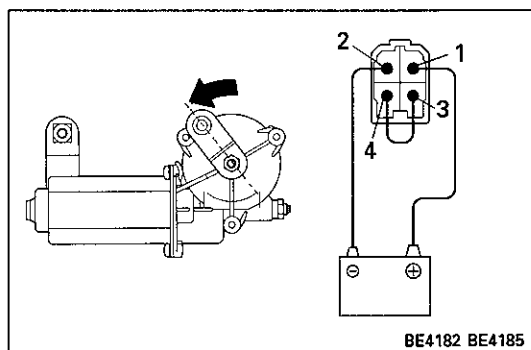
(Rear Motor/Operation at Low Speed)

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2, check that the motor operates as low speed.

If operation is not as specified, replace the motor.

**(Rear Motor/Operation, Stopping at Stop Position)**

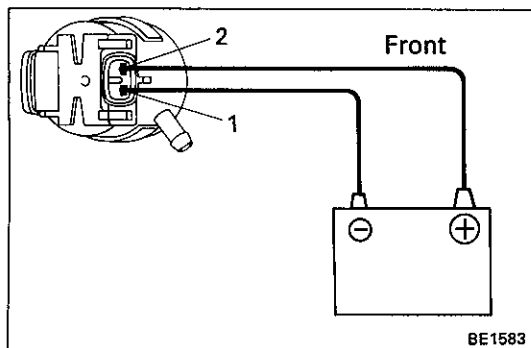
- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 3.



- (b) Connect terminals 3 and 4.

- (c) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.

**Washer System**

1. INSPECT WASHER SWITCH (Washer Switch)

See Wiper and Washer Switch on page BE-37.

2. INSPECT WASHER MOTOR

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.

