

**BODY SECTION**

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUJI HEAVY INDUSTRIES LTD.

**HVAC SYSTEM  
(HEATER, VENTILATOR AND A/C) AC**

**AIRBAG SYSTEM AB**

**SEAT BELT SYSTEM SB**

**LIGHTING SYSTEM LI**

**WIPER AND WASHER SYSTEMS WW**

**ENTERTAINMENT ET**

**COMMUNICATION SYSTEM COM**

**GLASS/WINDOWS/MIRRORS GW**

**BODY STRUCTURE BS**

**INSTRUMENTATION/DRIVER INFO IDI**

**SEATS SE**

**SECURITY AND LOCKS SL**

**SUNROOF/T-TOP/CONVERTIBLE TOP  
(SUNROOF) SR**

**EXTERIOR/INTERIOR TRIM EI**

**EXTERIOR BODY PANELS EB**

**CRUISE CONTROL SYSTEM CC**

# WIPER AND WASHER SYSTEMS

# WW

---

	<b>Page</b>
1. General Description.....	2
2. Wiper and Washer System .....	6
3. Combination Switch (Wiper).....	10
4. Wiper Blade.....	12
5. Washer Tank and Motor .....	13
6. Front Wiper Arm.....	14
7. Front Wiper Motor and Link .....	15
8. Front Washer.....	17
9. Rear Wiper Arm.....	19
10. Rear Wiper Motor.....	20
11. Rear Washer .....	21
12. Wiper Control Relay.....	23
13. Headlight Washer.....	24

# GENERAL DESCRIPTION

Wiper and Washer Systems

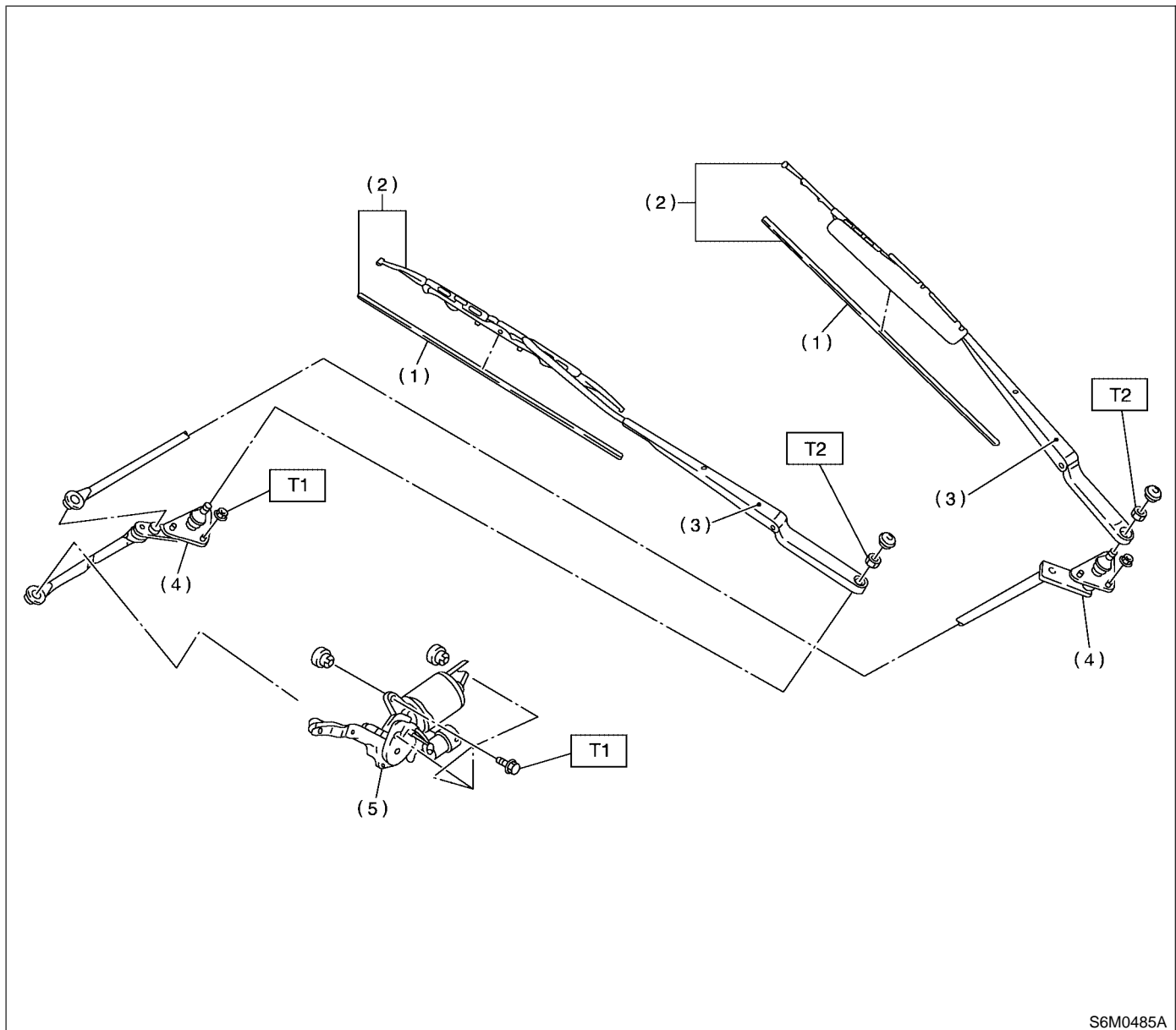
## 1. General Description S902001

### A: SPECIFICATIONS S902001E49

Front wiper motor	Input	12 V — 54 W or less
Rear wiper motor	Input	12 V — 42 W or less
Front washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less
Rear washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less

### B: COMPONENT S902001A05

#### 1. FRONT WIPER S902001A0501



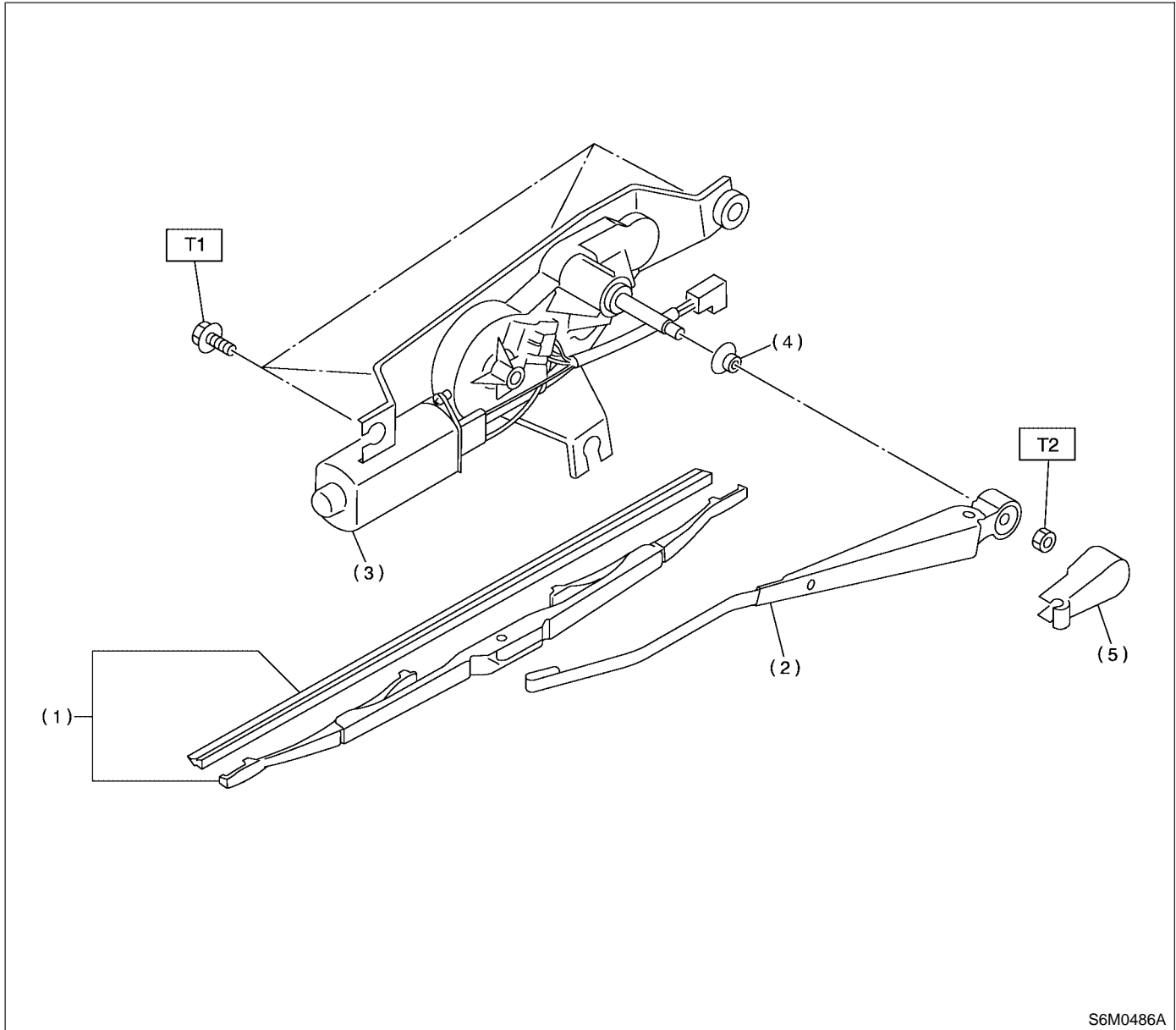
- (1) Wiper rubber
- (2) Wiper blade ASSY
- (3) Wiper arm
- (4) Wiper link
- (5) Wiper motor

**Tightening torque: N·m (kgf·m, ft·lb)**

**T1: 6.0 (0.61, 4.4)**

**T2: 20 (2.0, 14.5)**

## 2. REAR WIPER S902001A0502



- (1) Wiper blade ASSY
- (2) Wiper arm
- (3) Wiper motor
- (4) Pivot cap
- (5) Wiper arm cover

**Tightening torque: N·m (kgf·m, ft·lb)**

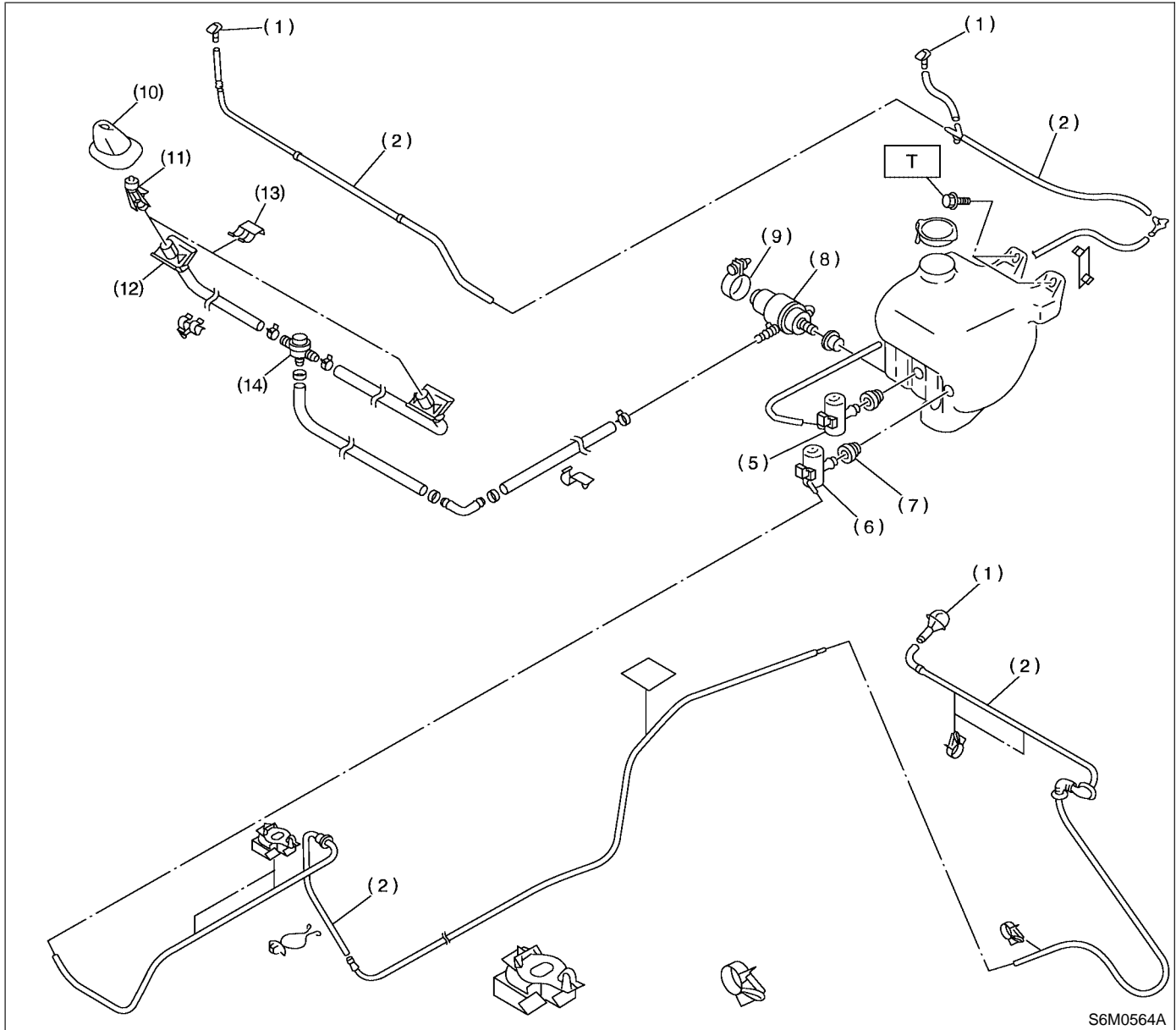
**T1: 5.9 (0.6, 4.3)**

**T2: 7.8 (0.8, 5.6)**

# GENERAL DESCRIPTION

Wiper and Washer Systems

## 3. WASHER TANK S902001A0503



- |                        |                                    |                  |
|------------------------|------------------------------------|------------------|
| (1) Washer nozzle      | (7) Grommet                        | (13) Clip        |
| (2) Washer hose        | (8) Headlight washer motor         | (14) Joint valve |
| (3) Washer tank        | (9) Motor bracket                  |                  |
| (4) Washer tank cap    | (10) Headlight washer case         |                  |
| (5) Front washer motor | (11) Headlight washer upper nozzle |                  |
| (6) Rear washer motor  | (12) Headlight washer lower nozzle |                  |

**Tightening torque: N·m (kgf·m, ft·lb)**  
**T: 6.0 (0.61, 4.4)**

## C: CAUTION S902001A03

- Reconnect connectors and hoses securely. After reconnecting, confirm that each function operates normally.
- Be careful that wire harnesses of airbag system pass near electrical parts and switches.
- Wire harnesses and connectors of all airbag system are yellow color. Do not use a tester on these circuits.
- Care must be taken when installing the piping hose so that no bending, jamming, etc. are caused.
- If even a little oil or grease such as silicon oil gets in the tank and washer passages, an oil film easily forms on the glass, causing the wiper to chatter and judder. Therefore, be careful not to let this happen.

# GENERAL DESCRIPTION

Wiper and Washer Systems

---

**MEMO:**

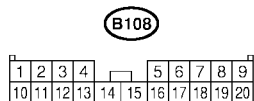
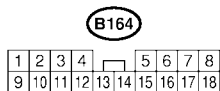
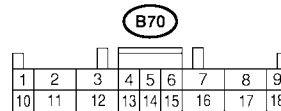
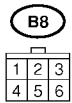
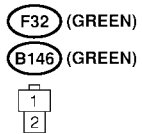
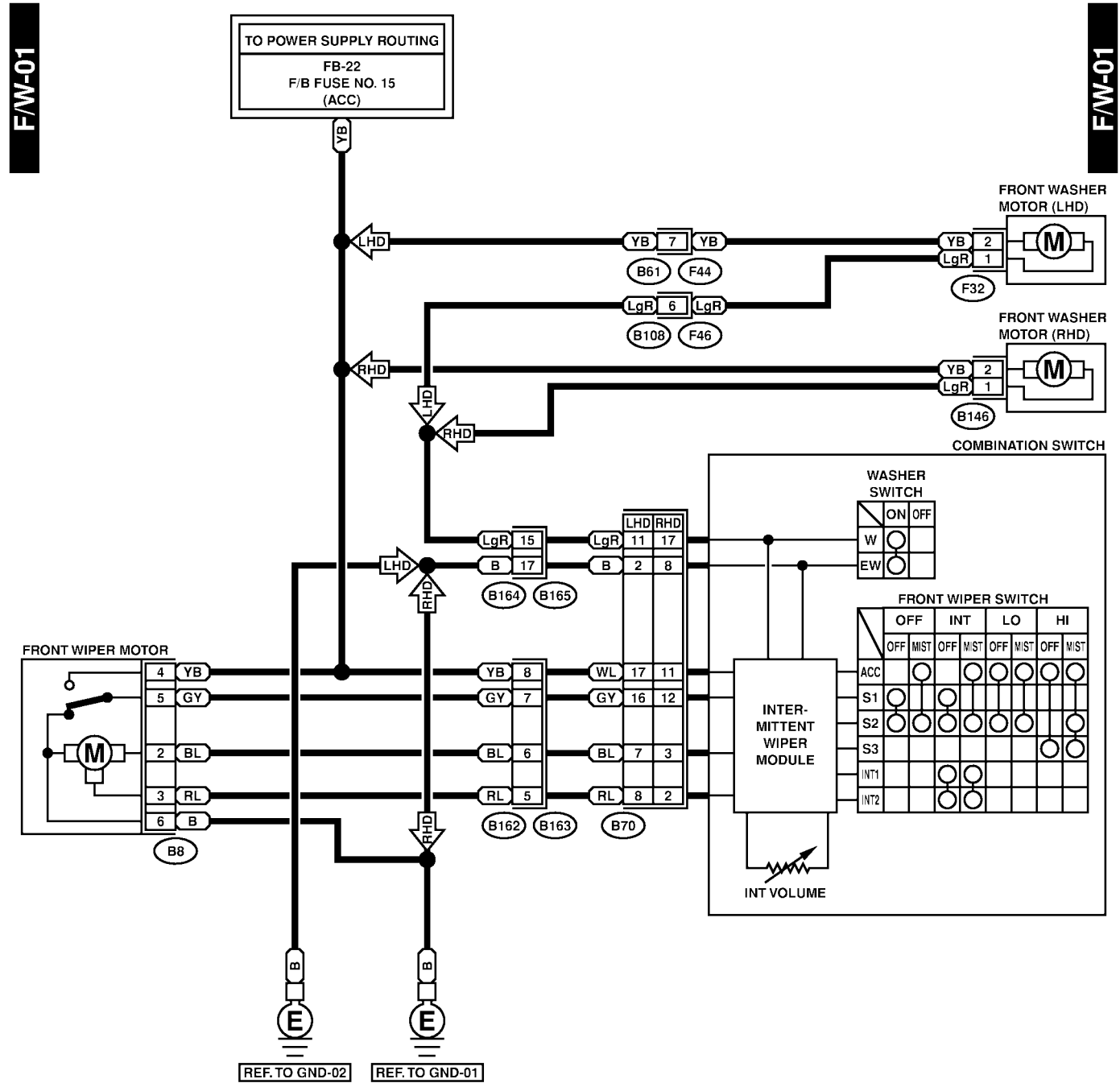
# WIPER AND WASHER SYSTEM

Wiper and Washer Systems

## 2. Wiper and Washer System S902394

### A: SCHEMATIC S902394A21

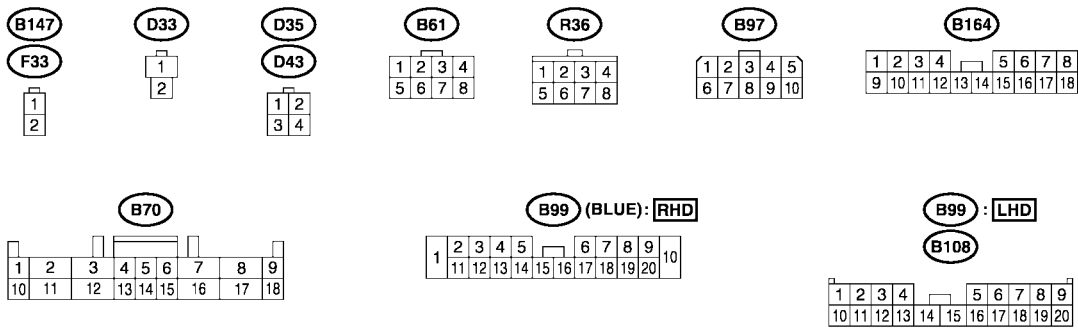
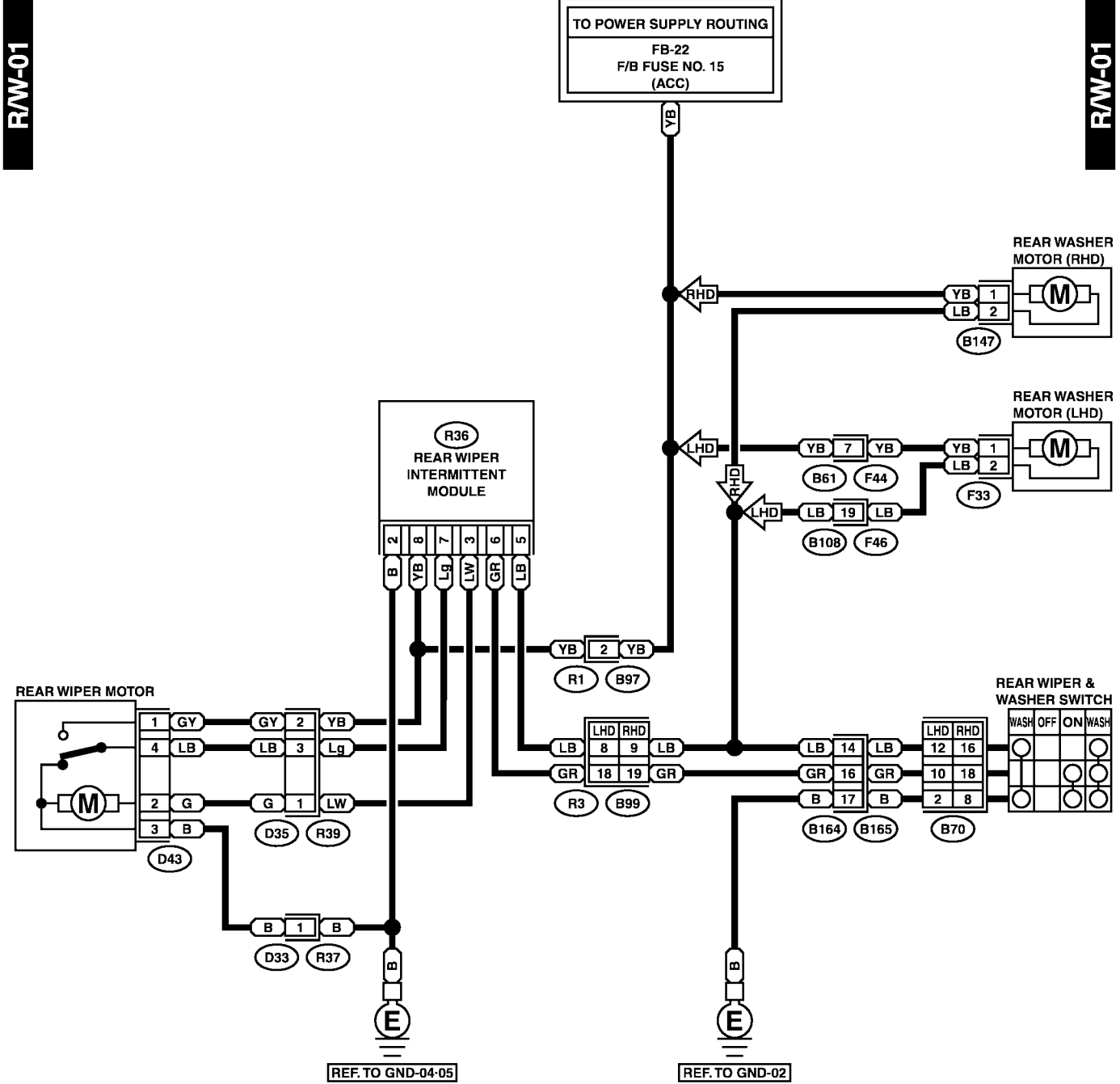
#### 1. WIPER AND WASHER (FRONT) S902394A2101



# WIPER AND WASHER SYSTEM

Wiper and Washer Systems

## 2. WIPER AND WASHER (REAR) SR02394A2102





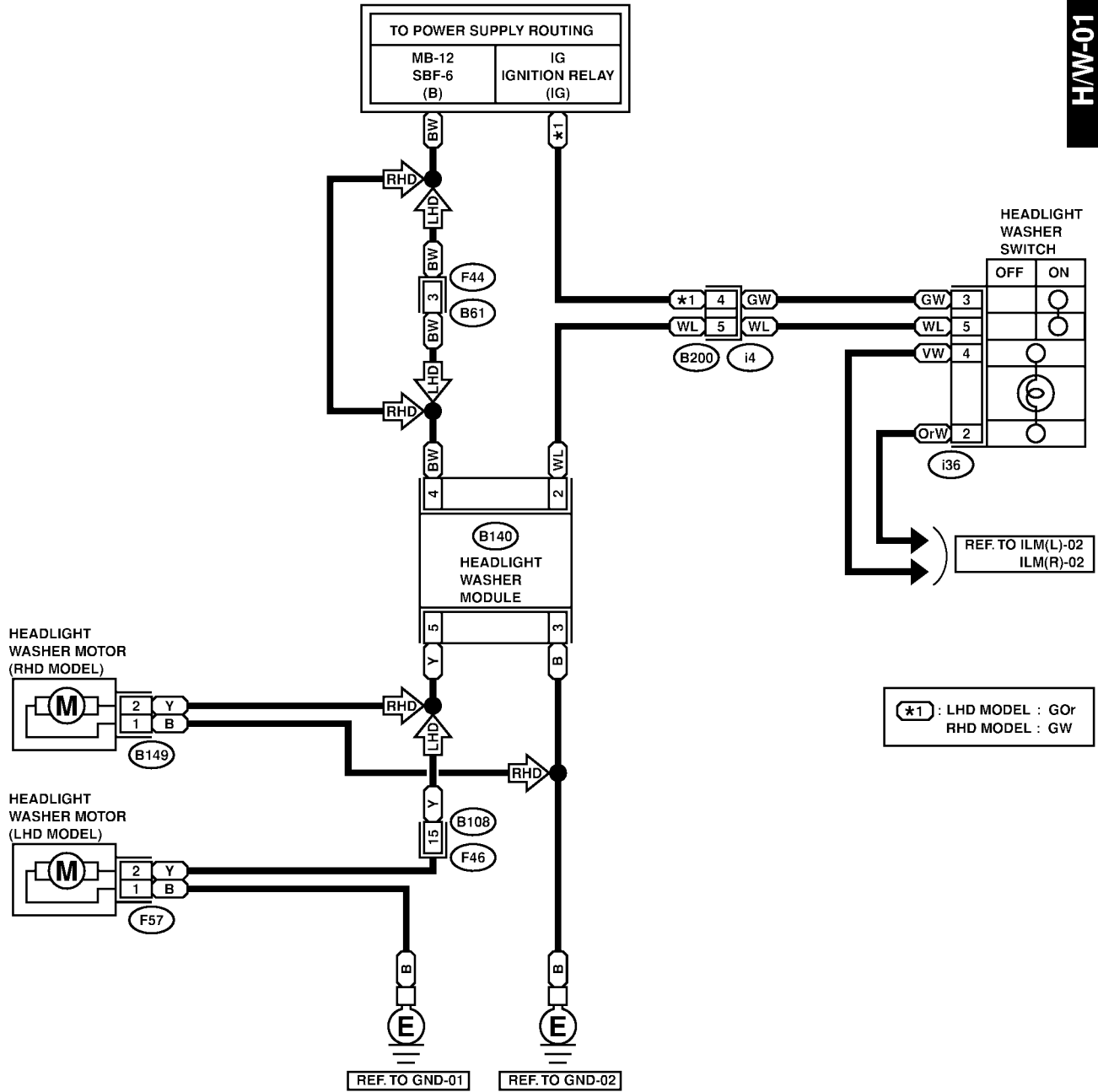
# WIPER AND WASHER SYSTEM

Wiper and Washer Systems

## 3. HEADLIGHT WASHER S902394A2107

**H/W-01**

**H/W-01**



F57 (BLUE)

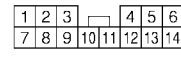
B140 (BLACK)

i36 (GRAY)

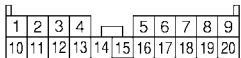
B61

B200

B149 (BLUE)



B108



# WIPER AND WASHER SYSTEM

Wiper and Washer Systems

## B: INSPECTION S902394A10

Symptom	Repair order
Wiper and washers do not operate.	(1) Wiper fuse (F/B No. 14, 15) (2) Combination switch (3) Wiper motor (4) Wire harness
Wipers do not operate in LO or HI.	(1) Combination switch (2) Wiper motor (3) Wire harness
Wipers do not operate in INT.	(1) Combination switch (2) Wiper motor (3) Wire harness
Washer motor does not operate.	(1) Washer switch (2) Washer motor (3) Wire harness
Wipers do not operate when washer switch is ON.	(1) Washer motor (2) Wire harness
Washer fluid spray does not operate.	(1) Washer hose and nozzle

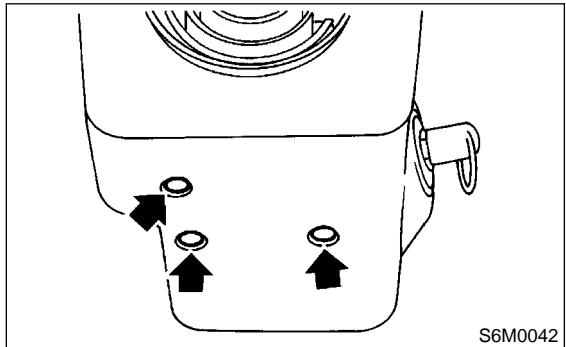
# COMBINATION SWITCH (WIPER)

## 3. Combination Switch (Wiper)

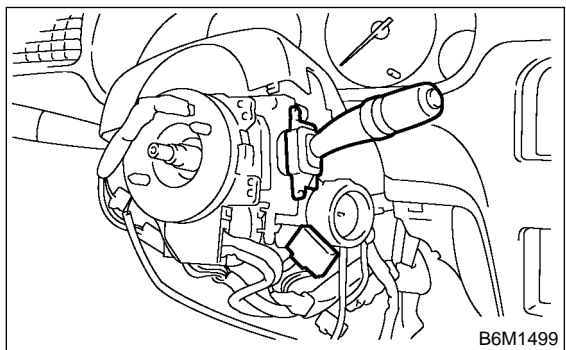
S902395

### A: REMOVAL S902395A18

1) Loosen screw to remove a steering column cover.



2) Disconnect connectors from combination switches.  
3) Loosen screw to remove combination switch.

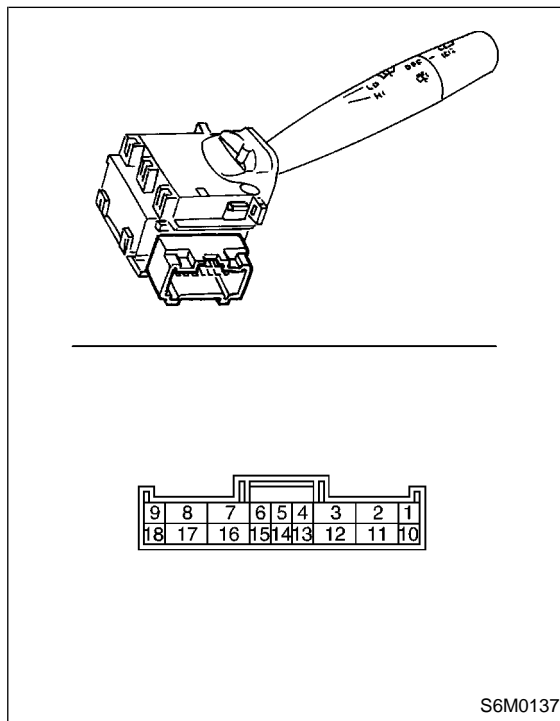


### B: INSTALLATION S902395A11

Install in the reverse order of removal.

### C: INSPECTION S902395A10

● Inspect the continuity between each connector terminal.



#### LHD model:

	Switch position	Test connection	Specified condition
FRONT	OFF	7 — 16	Continuity
	INT	7 — 16	Continuity
	LO	7 — 17	Continuity
	HI	8 — 17	Continuity
	Washer ON	2 — 11	Continuity
REAR	Washer ON	2 — 10 — 12	Continuity
	OFF	—	No continuity
	ON	2 — 10	Continuity
	Washer ON	2 — 10 — 12	Continuity

If continuity is not as specified, replace the switch.

#### RHD model:

	Switch position	Test connection	Specified condition
FRONT	OFF	3 — 12	Continuity
	INT	3 — 12	Continuity
	LO	3 — 11	Continuity
	HI	2 — 11	Continuity
	Washer ON	8 — 17	Continuity
REAR	Washer ON	8 — 16 — 18	Continuity
	OFF	—	No continuity
	ON	8 — 18	Continuity
	Washer ON	8 — 16 — 18	Continuity

If continuity is not as specified, replace the switch.

# COMBINATION SWITCH (WIPER)

● Intermittent operation inspection

- 1) Turn the wiper switch to INT.
- 2) Adjust the intermittent control switch to MAX.
- 3) Apply battery voltage to switch terminals 16 and 2, and inspect the voltage of terminals 7 and 2. (Measure the voltage from after the second time the wiper stops.)

Switch position	Voltage
MIN.	
MAX.	
Non variable type	

B6M1465A

If operation is not as specified, replace the switch.

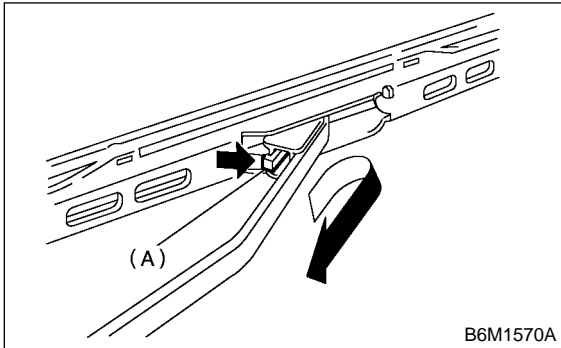
# WIPER BLADE

Wiper and Washer Systems

## 4. Wiper Blade S902392

### A: REMOVAL S902392A18

While pushing locking clip (A) up, pull out blade from arm to arrow direction.

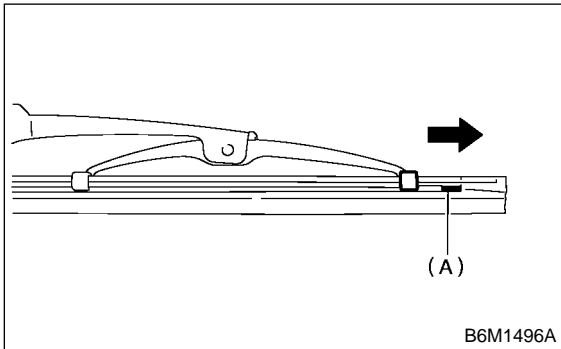


### B: INSTALLATION S902392A11

- 1) Install in the reverse order of removal.
- 2) Confirm that clip was locked securely.

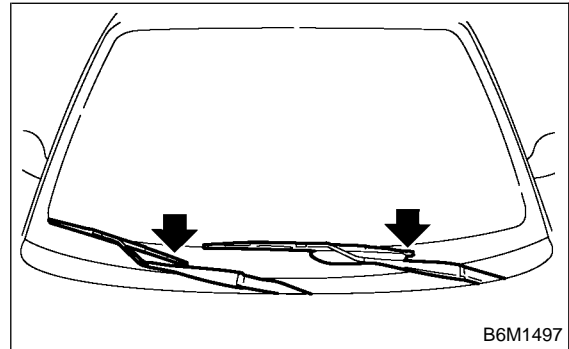
### C: DISASSEMBLY S902392A06

Pull on side (A) of the wiper rubber stopper and remove the rubber from the blade assembly.

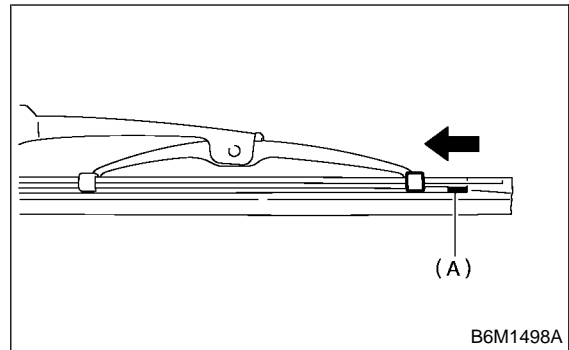


### D: ASSEMBLY S902392A02

- 1) Insert the wiper rubber onto the blade so that the stopper is in the position shown (at the bottom of the wiper arm).



- 2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



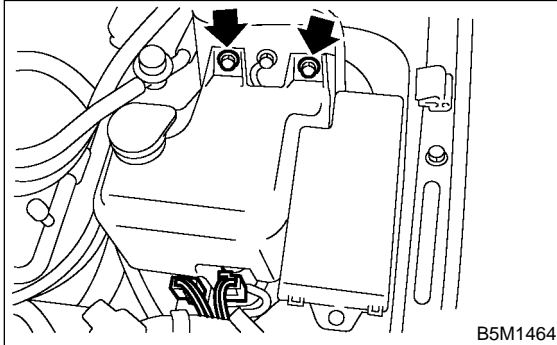
### E: INSPECTION S902392A10

- 1) When the wiper does not perform well, inspect the following:
  - Make sure the movable part of the blade assembly moves smoothly.
  - Make sure the wiper rubber is not deformed or damaged.
- 2) Replace with a new part if damage is found.

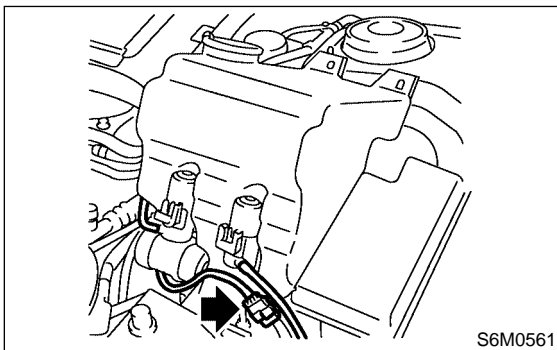
## 5. Washer Tank and Motor S902405

### A: REMOVAL S902405A18

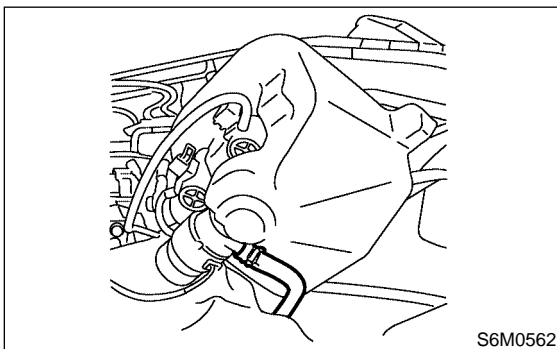
- 1) Disconnect the ground cable from the battery.
- 2) Remove the two bolts, and then disconnect the connectors from washer motors.



- 3) Lift the washer tank, and then disconnect the connector from headlight washer motor. Disconnect washer hoses.



- 4) Disconnect the washer hose from the motor, and then detach the washer tank.

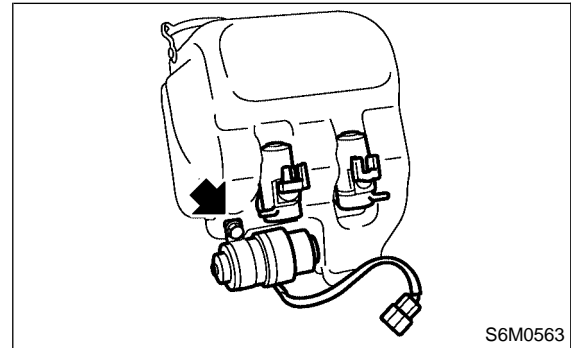


### B: INSTALLATION S902405A11

Install in the reverse order of removal.

### C: DISASSEMBLY S902405A06

Remove bolt, and then pull out washer motor from tank.

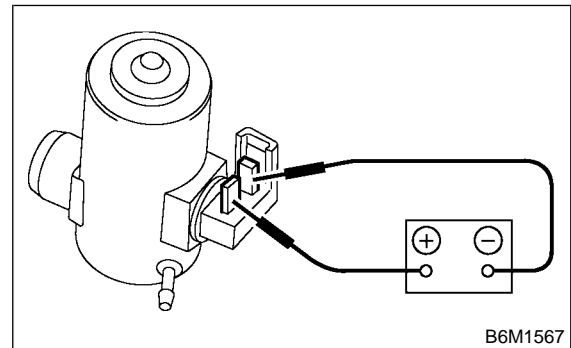


### D: ASSEMBLY S902405A02

- 1) Assemble in the reverse order of disassembly.
- 2) Confirm that water does not leak from installation area of motor.

### E: INSPECTION S902405A10

Apply battery voltage to the connector terminal of the washer motor and make sure the motor operates.



# FRONT WIPER ARM

Wiper and Washer Systems

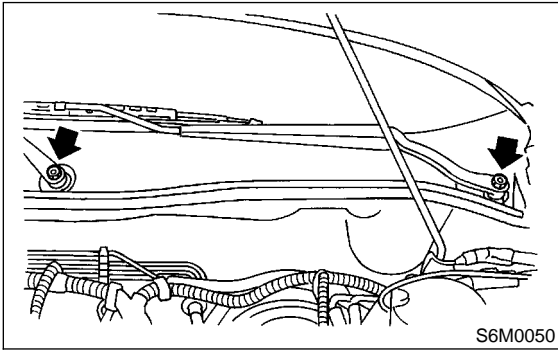
## 6. Front Wiper Arm S902404

### A: REMOVAL S902404A18

NOTE:

The positions for RHD model are symmetrically opposite.

- 1) Open hood.
- 2) Remove cap.
- 3) Loosen nut to remove wiper arm.

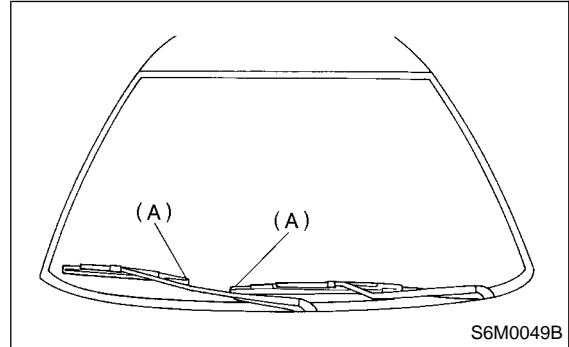


### C: ADJUSTMENT S902404A01

NOTE:

The positions for RHD model are symmetrically opposite.

Operate wiper once. Align wiper blade to ceramic print point mark (A) of front window pane.

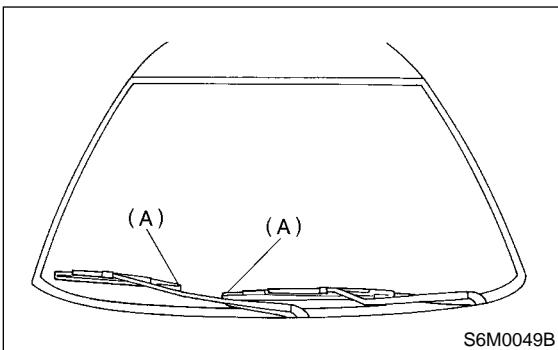


### B: INSTALLATION S902404A11

NOTE:

The positions for RHD model are symmetrically opposite.

- 1) Install in the reverse order of removal.
- 2) Operate wiper once.
- 3) Align wiper blade to ceramic print point mark (A) of front window pane.



## 7. Front Wiper Motor and Link

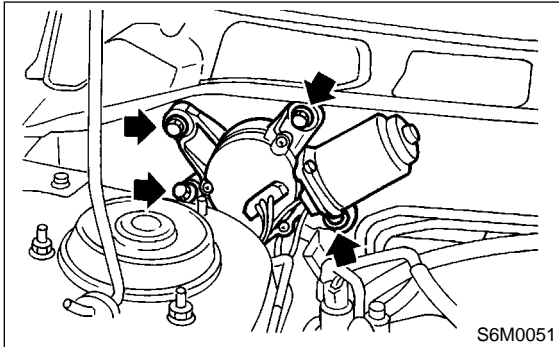
S902406

### A: REMOVAL S902406A18

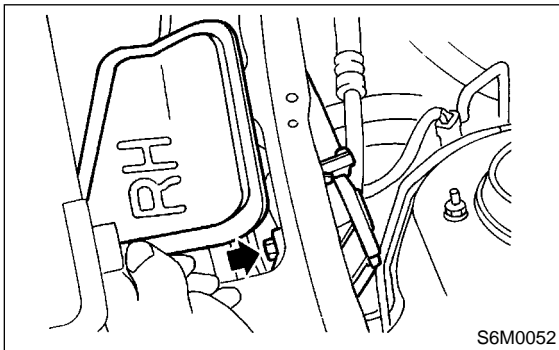
#### NOTE:

The positions for RHD model are symmetrically opposite.

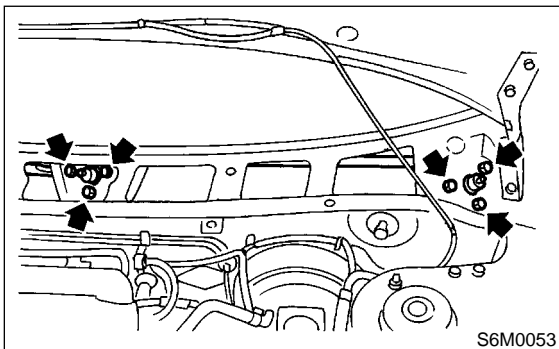
- 1) Remove cowl panel. <Ref. to EI-25 REMOVAL, Cowl Panel.>
- 2) Disconnect connector of motor, and remove motor attaching bolts.



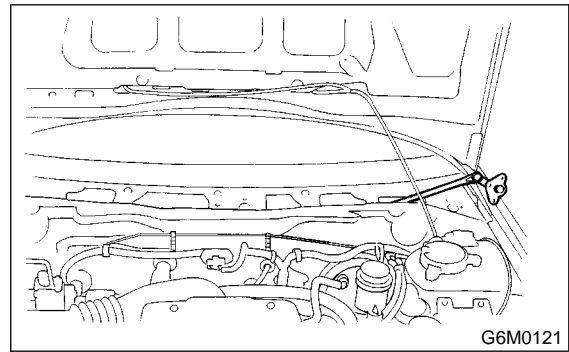
- 3) Remove cowl cover, and remove the motor link nut on the back side of the motor.



- 4) Remove bolts which secure sleeve unit.



- 5) Remove wiper link from service hole in front panel.

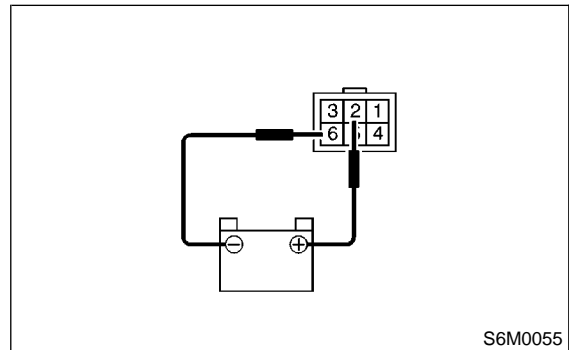


### B: INSTALLATION S902406A11

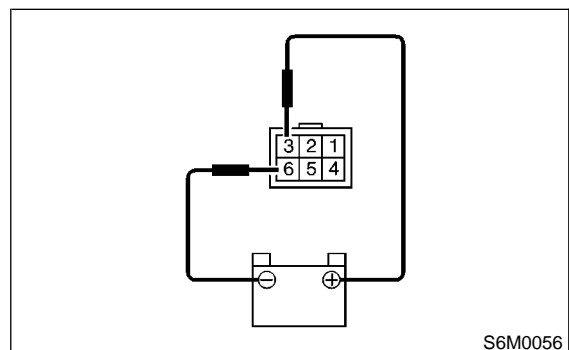
Install in the reverse order of removal.

### C: INSPECTION S902406A10

- 1) When battery is connected to terminal of connectors, confirm that motor operates at low speed.



- 2) When battery is connected to terminal of connectors, confirm that motor operates at high speed.



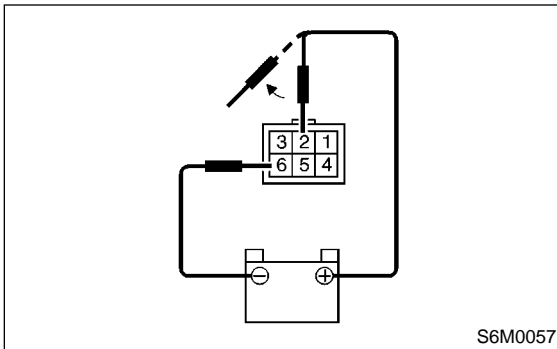


# FRONT WIPER MOTOR AND LINK

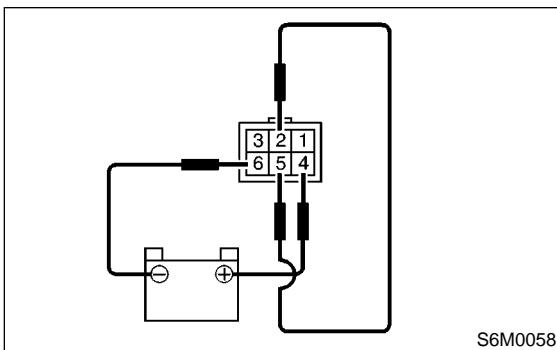
## Wiper and Washer Systems

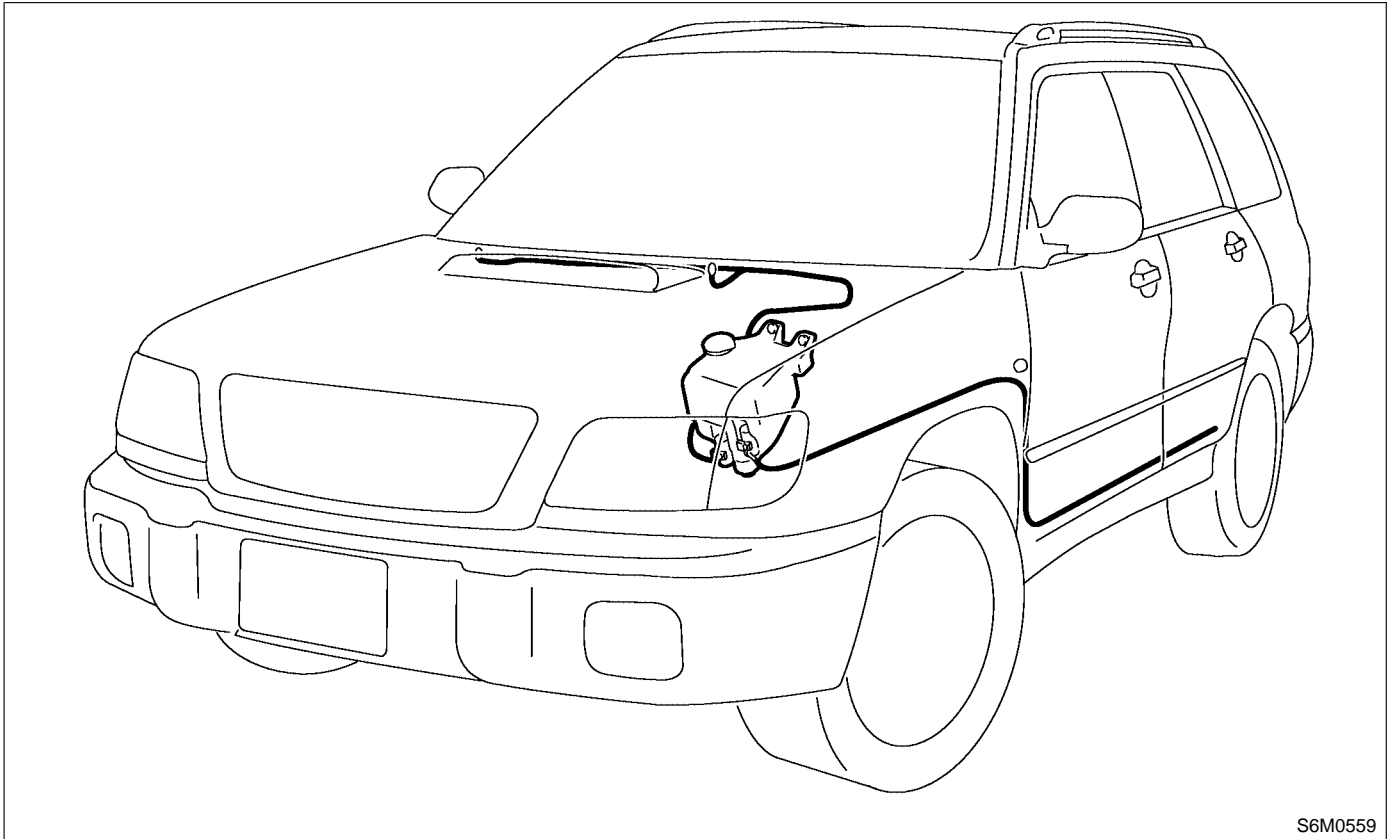
---

3) Connect battery to terminals of connector, and remove terminal connection with motor rotated at low speed, and stop wiper motor through operation.



4) Connect battery and confirm that motor stops at automatic stop position after motor operates at low speed again.

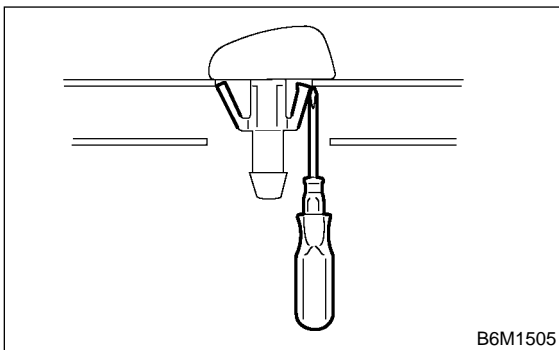


**8. Front Washer** S902401**A: LOCATION** S902401A13

S6M0559

**B: REMOVAL** S902401A18**1. NOZZLE** S902401A1801

- 1) Remove the washer hose from the washer nozzle.
- 2) Open the clips on the underside of the hood with a thin screwdriver or other tool, and remove the washer nozzle.



B6M1505

**C: INSTALLATION** S902401A11**1. NOZZLE** S902401A1101

- 1) Install in the reverse order of removal.
- 2) Adjust the position of the washer liquid sprayer. <Ref. to WW-18 ADJUSTMENT, Front Washer.>

**D: INSPECTION** S902401A10

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

# FRONT WASHER

Wiper and Washer Systems

## E: ADJUSTMENT S902401A01

### NOTE:

Adjustment positions for left-handed vehicle. Carry out left-right symmetry for adjustment positions for right-handed vehicle.

- 1) Turn wiper switch to OFF position.
- 2) When vehicle stops, adjust washer injection position as shown in the figure.

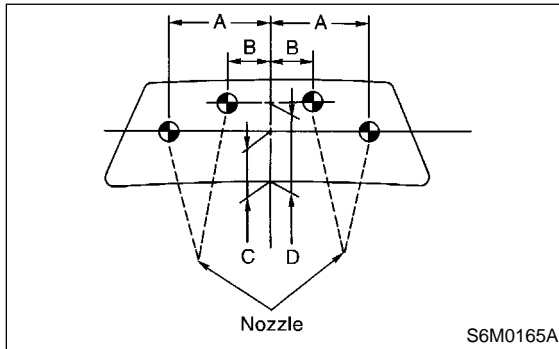
### **Injection position:**

**A: 410 mm (16.14 in)**

**B: 150 mm (5.91 in)**

**C: 370 mm (14.57 in)**

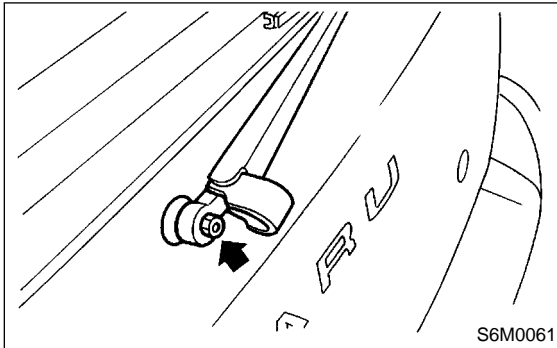
**D: 530 mm (20.87 in)**



## 9. Rear Wiper Arm S902402

### A: REMOVAL S902402A18

- 1) Raise wiper arm cover.
- 2) Loosen nut to remove wiper arm.



### B: INSTALLATION S902402A11

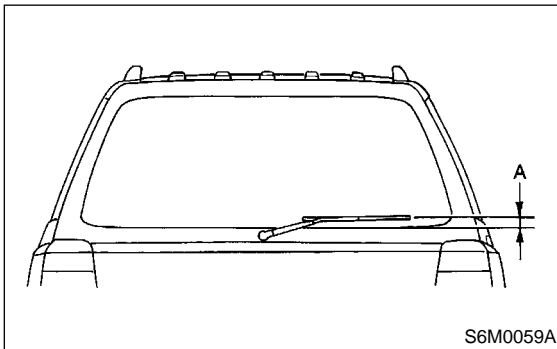
- 1) Install in the reverse order of removal.
- 2) Adjust the position of the wiper blade. <Ref. to WW-19, ADJUSTMENT, Rear Wiper Arm.>

### C: ADJUSTMENT S902402A01

- 1) Operate rear wiper once.
- 2) Adjust wiper blade to original position as shown in figure.

**Original position:**

**A:  $30 \pm 5$  mm (1.18  $\pm$  0.20 in)**



# REAR WIPER MOTOR

Wiper and Washer Systems

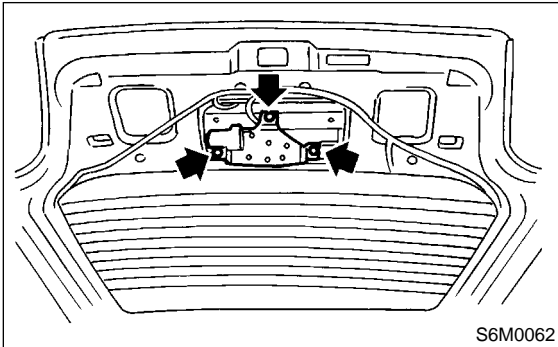
## 10. Rear Wiper Motor S902532

### A: REMOVAL S902532A18

- 1) Remove rear wiper arm.  
<Ref. to WW-19, REMOVAL, Rear Wiper Arm.>
- 2) Remove rear gate lower trim. <Ref. to EI-42 REMOVAL, Rear Gate Trim.>
- 3) Unclip clip of harness and disconnect connector of wiper motor.
- 4) Loosen bolts to remove wiper motor assembly.

#### CAUTION:

Be careful not to damage O-ring when removing wiper motor assembly.

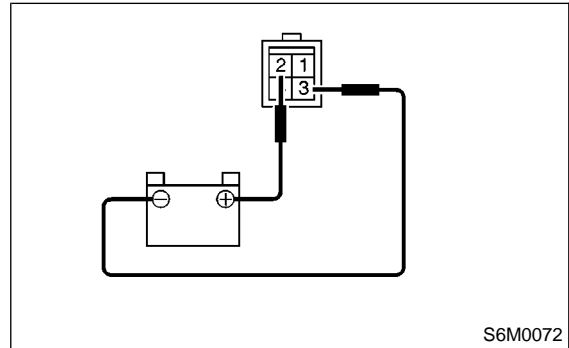


### B: INSTALLATION S902532A11

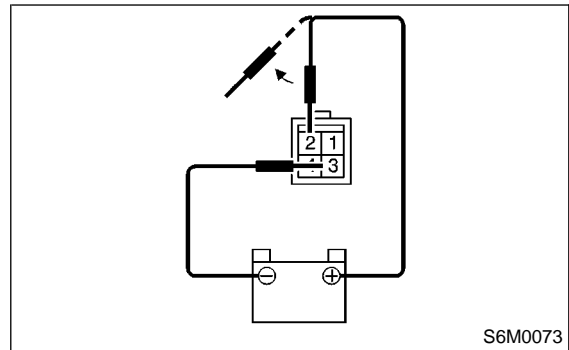
- 1) Install in the reverse order of removal.

### C: INSPECTION S902532A10

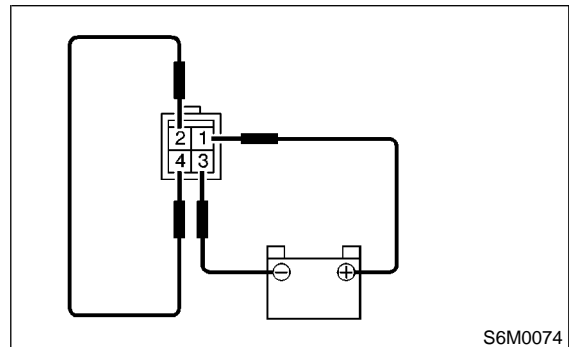
- 1) Connect battery to wiper motor connector and confirm that wiper motor operates.



- 2) Connect battery to terminal of connector and remove terminal connections with motor rotated, and stop wiper motor through operation.

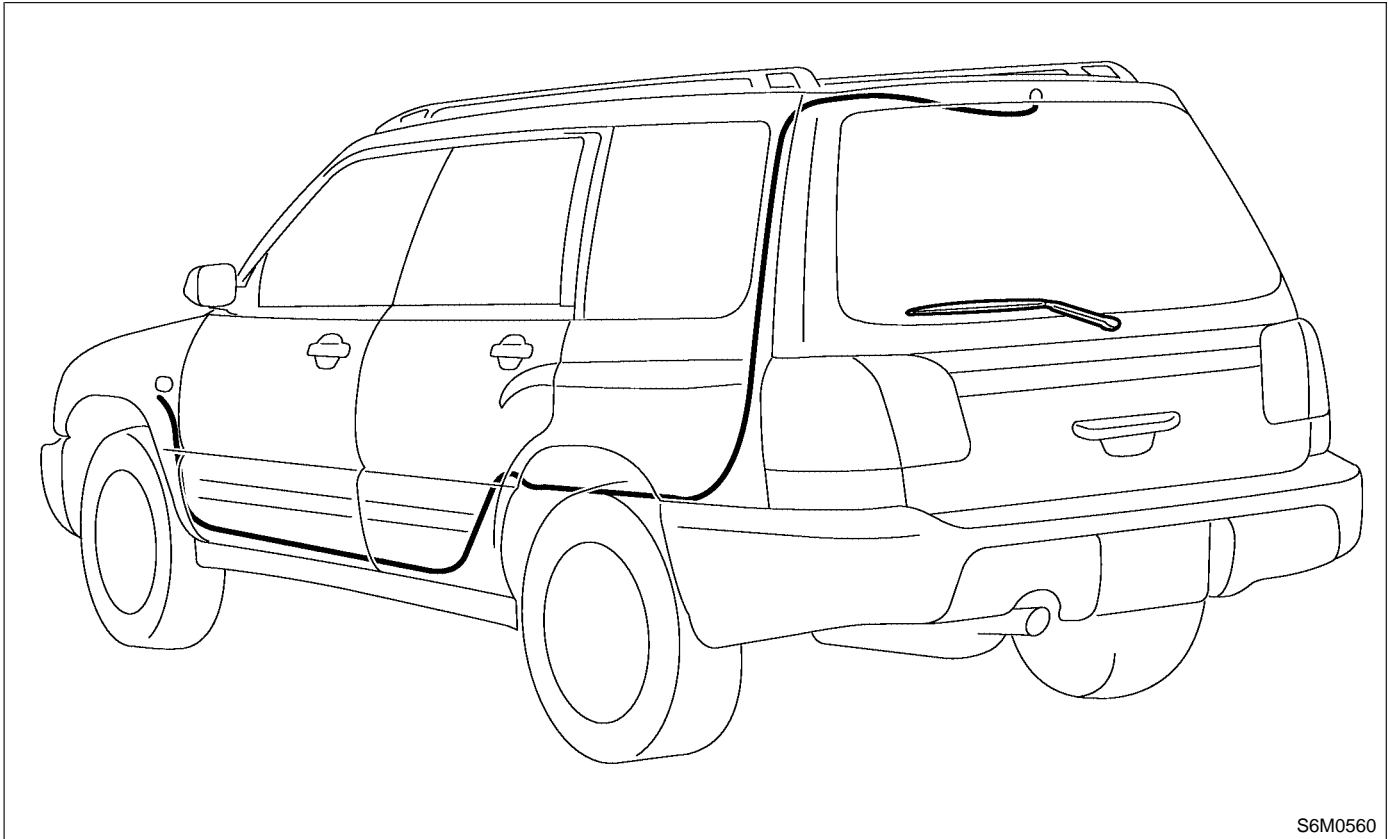


- 3) Connect battery and confirm that motor stops at automatic stop position after motor operates at low speed again.



## 11. Rear Washer S902400

### A: LOCATION S902400A13

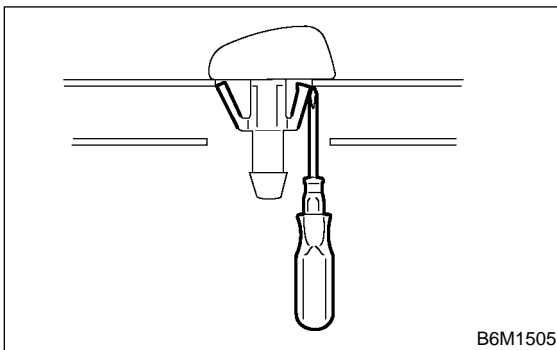


S6M0560

### B: REMOVAL S902400A18

#### 1. NOZZLE S902400A1801

- 1) Remove the high-mount stop light. <Ref. to LI-58 REMOVAL, High Mount Stop Light.>
- 2) Remove the washer hose from the washer nozzle.
- 3) Open the clips on the underside of the hood with a thin screwdriver or other tool, and remove the washer nozzle.



B6M1505

### C: INSTALLATION S902400A11

#### 1. NOZZLE S902400A1101

- 1) Install in the reverse order of removal.
- 2) Adjust the position of the washer liquid sprayer. <Ref. to WW-22 ADJUSTMENT, Rear Washer.>

### D: INSPECTION S902400A10

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

# REAR WASHER

Wiper and Washer Systems

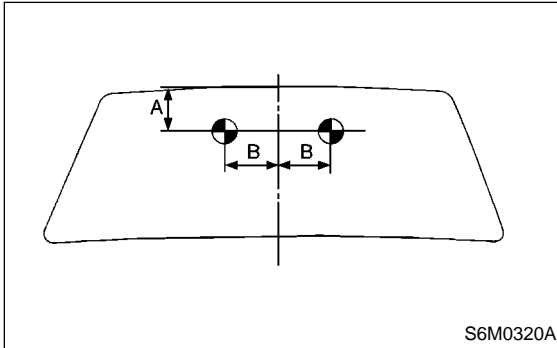
## E: ADJUSTMENT S902400A01

- 1) Turn wiper switch to OFF position.
- 2) When vehicle stops, adjust washer injection position as shown in the figure.

### ***Injection position:***

**A: 60 mm (2.36 in)**

**B: 60 mm (2.36 in)**

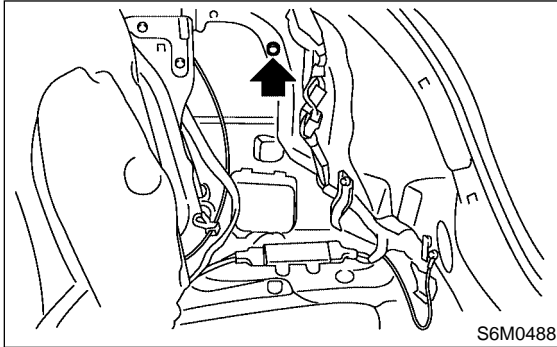


## 12. Wiper Control Relay S902403

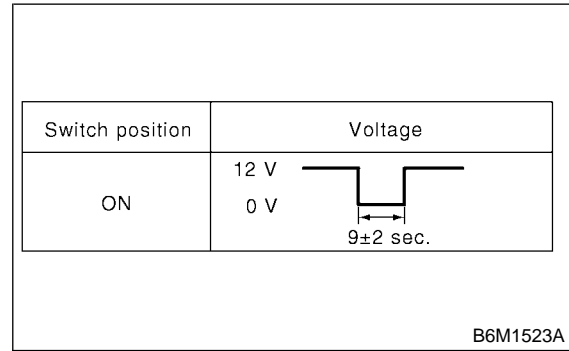
### A: REMOVAL S902403A18

#### 1. WAGON S902403A1801

- 1) Remove right quarter lower trim.<Ref. to EI-39 REMOVAL, Rear Quarter Trim.>
- 2) Remove quarter pocket.
- 3) Loosen nut to remove control unit.



- 3) Measure the voltage when the wiper relay is operated.



If operation is not as specified, replace the switch.

### B: INSTALLATION S902403A11

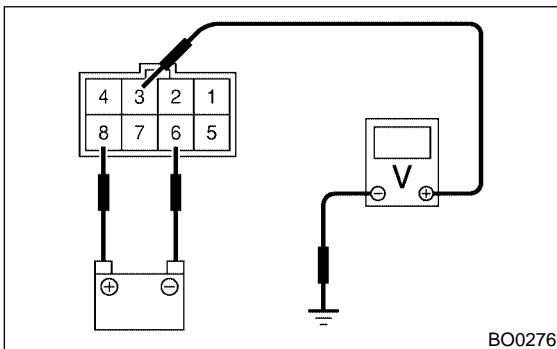
#### 1. WAGON S902403A1101

Install in the reverse order of removal.

### C: INSPECTION S902403A10

#### 1. WAGON S902403A1001

- 1) Disconnect the connector from the wiper control relay.
- 2) Connect the positive (+) lead from the battery to terminal 8 and the negative (-) lead to terminal 6. Connect the positive (+) lead from the voltmeter to terminal 3 and negative lead to ground.





# HEADLIGHT WASHER

Wiper and Washer Systems

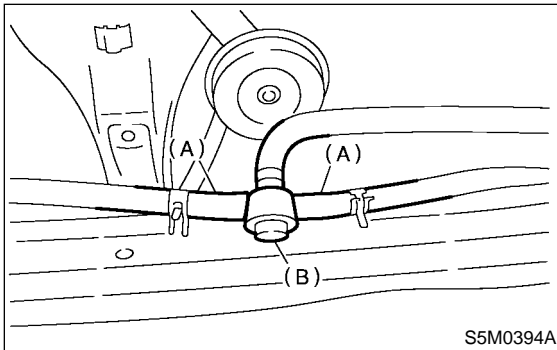
## 13. Headlight Washer S902736

### A: REMOVAL S902736A18

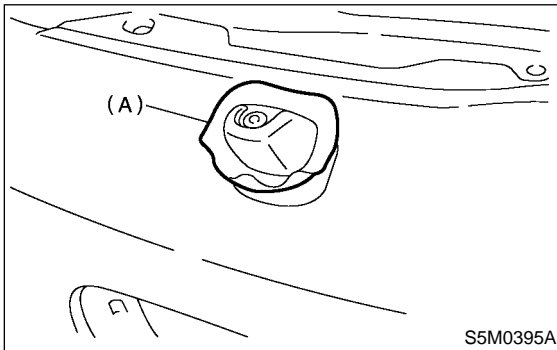
- 1) Disconnect the ground cable from the battery.
- 2) Remove the front grille. <Ref. to EI-10, REMOVAL, Front Grille.>
- 3) Draw out headlight washer hose.
- 4) Disconnect hose (A) from valve (B).

#### NOTE:

Washer fluid may drain from valve. Put a pan under the valve, then disconnect valve from hose while pinching the hose edge.



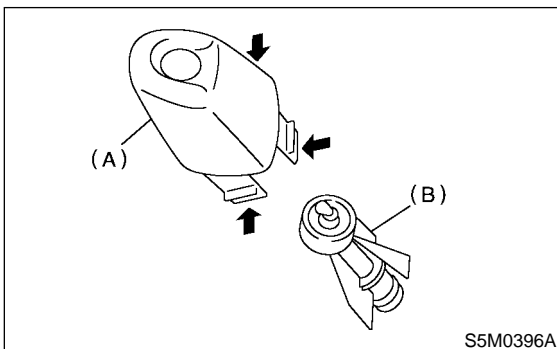
- 5) Remove nozzle cover (A).



- 6) Push the three pawls to remove outer nozzle (A). Then, pull out inner nozzle (B).

#### NOTE:

Before pushing the outer nozzle pawls, cover the bumper to avoid scratches.



### B: INSTALLATION S902736A11

Install in the reverse order of removal.