

WIPER AND WASHER SYSTEMS



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General Description

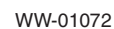
WIPER AND WASHER SYSTEMS

1. General Description

A: SPECIFICATION

Front wiper motor	Input	12 V — 72 W or less
Rear wiper motor	Input	12 V — 42 W or less
Front washer motor	Pump type	Centrifugal
	Input	12 V — 60 W or less
Rear washer motor	Pump type	Centrifugal
	Input	12 V — 60 W or less

1. FRONT WIPER



- (6) Rubber ASSY - windshield wiper driver
- (7) Arm ASSY - windshield wiper assistor
- (8) Blade ASSY - windshield wiper assistor
- (9) Rubber ASSY - windshield wiper assistor

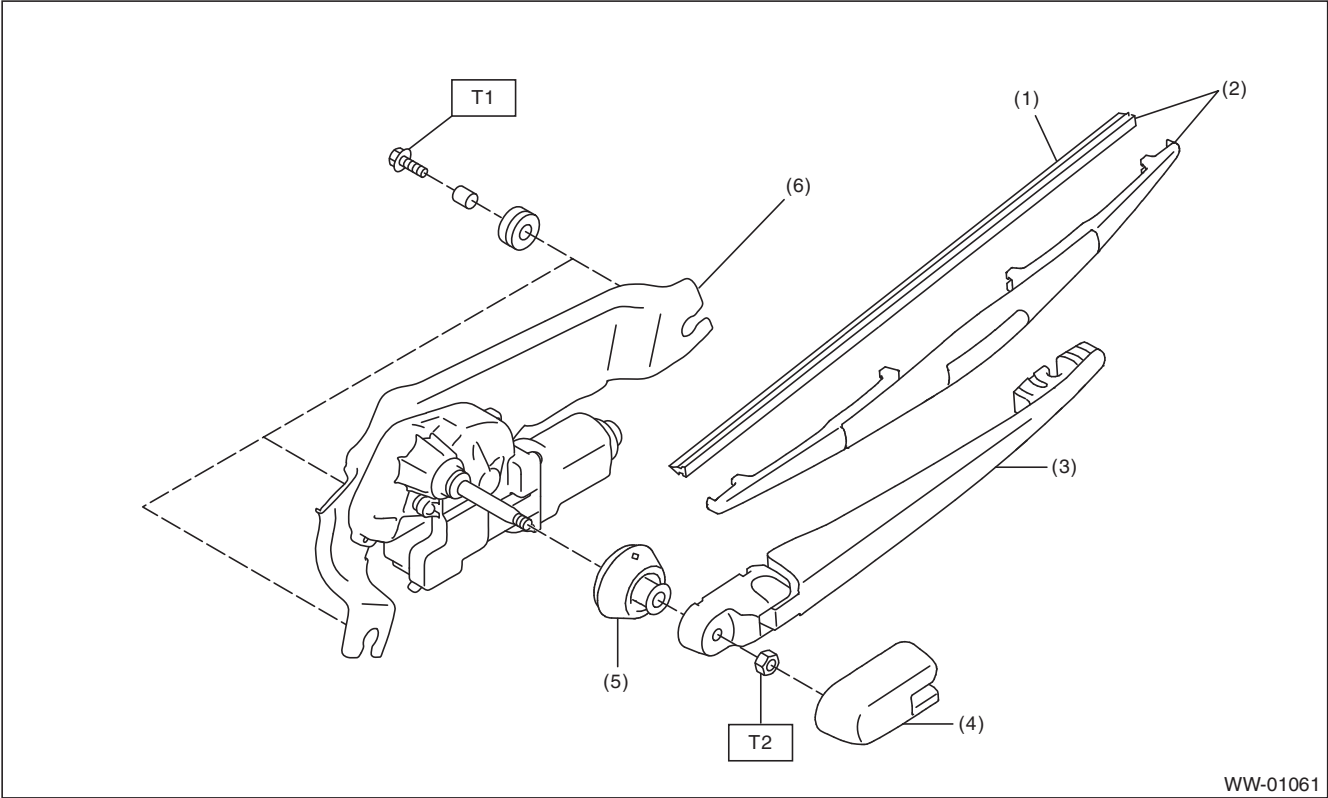
- (6) Rubber ASSY - windshield wiper driver
- (7) Arm ASSY - windshield wiper assistor
- (8) Blade ASSY - windshield wiper assistor
- (9) Rubber ASSY - windshield wiper assistor

T4: <Ref. to WW-32, INSTALLATION, Front Wiper Motor and Link.>

General Description

WIPER AND WASHER SYSTEMS

2. REAR WIPER



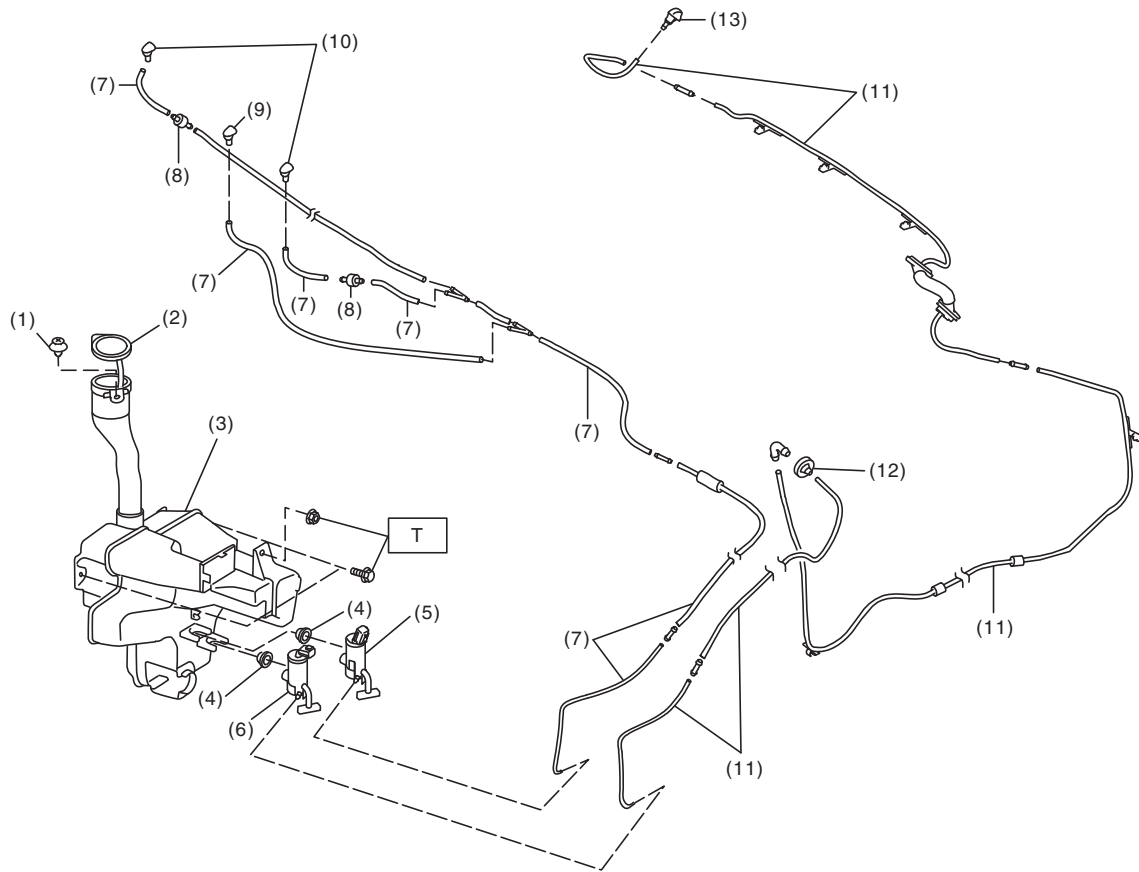
- | | |
|------------------------------|-----------------------------|
| (1) Rubber ASSY - rear wiper | (4) Cover - rear wiper arm |
| (2) Blade ASSY - rear wiper | (5) Cap - pivot wiper |
| (3) Arm ASSY - rear wiper | (6) Motor ASSY - rear wiper |

Tightening torque: N-m (kgf-m, ft-lb)
T1: 6 (0.61, 4.4)
T2: 8 (0.82, 5.9)

General Description

WIPER AND WASHER SYSTEMS

3. WASHER TANK (MODELS WITH EyeSight)



WW-01081

- | | |
|------------------------------------|---|
| (1) Clip | (7) Hose - windshield washer |
| (2) Cap ASSY - washer tank | (8) Valve - windshield washer |
| (3) Tank - washer front | (9) Nozzle - windshield washer EyeSight |
| (4) Packing - washer motor | (10) Nozzle - windshield washer |
| (5) Motor pump ASSY - washer front | (11) Hose ASSY - rear washer |
| (6) Motor pump ASSY - washer rear | (12) Grommet - washer hose |

- (13) Nozzle - rear washer

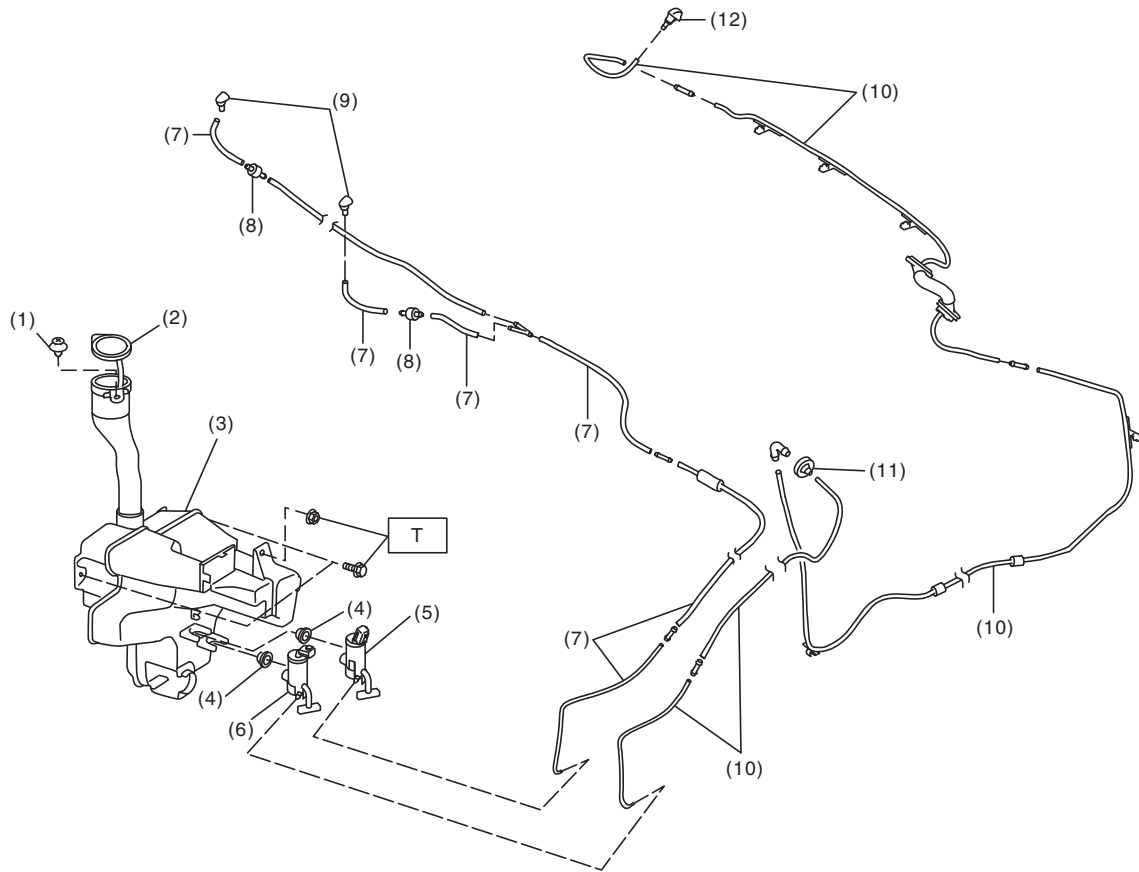
Tightening torque: N-m (kgf-m, ft-lb)

T: 6 (0.61, 4.4)

General Description

WIPER AND WASHER SYSTEMS

4. WASHER TANK (MODELS WITHOUT EyeSight)



WW-01080

- | | | |
|------------------------------------|-----------------------------------|----------------------------|
| (1) Clip | (6) Motor pump ASSY - washer rear | (11) Grommet - washer hose |
| (2) Cap ASSY - washer tank | (7) Hose - windshield washer | (12) Nozzle - rear washer |
| (3) Tank - washer front | (8) Valve - windshield washer | |
| (4) Packing - washer motor | (9) Nozzle - windshield washer | |
| (5) Motor pump ASSY - washer front | (10) Hose ASSY - rear washer | |

Tightening torque: N·m (kgf-m, ft-lb)
T: 6 (0.61, 4.4)

General Description

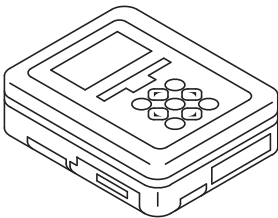
WIPER AND WASHER SYSTEMS

C: CAUTION

- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure that the each component or each function operates normally.
- Be careful with the airbag system wiring harness which passes near electrical parts and switches.
- Yellow connectors and harnesses with yellow tapes around them are the connectors and harnesses for the airbag system. Using a tester above such circuits may cause malfunction of airbag system. Follow the cautions of "AIRBAG SYSTEM" in this case. <Ref. to AB-9, CAUTION, General Description.>
- When connecting the pipe hoses, be careful not to cause bend or blockage.
- If even a small amount of silicon oil or grease enters the tank - washer and the washer fluid passages, an oil film will be formed on the glass and will cause the wiper to chatter and judder. Make sure that no oil comes into contact with the system.

D: PREPARATION TOOL

1. SPECIAL TOOL

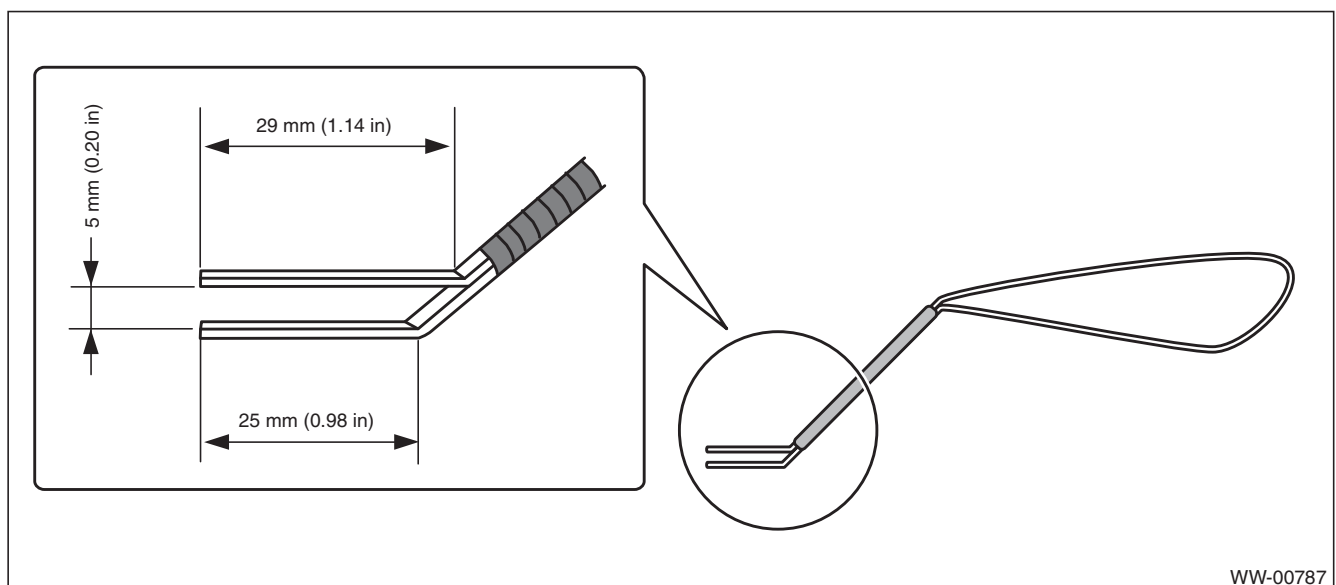
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for setting of each function and trouble-shooting for electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for checking voltage and continuity.

NOTE:

Referring to the data described below, prepare the materials to make a nozzle - windshield washer adjustment tool.



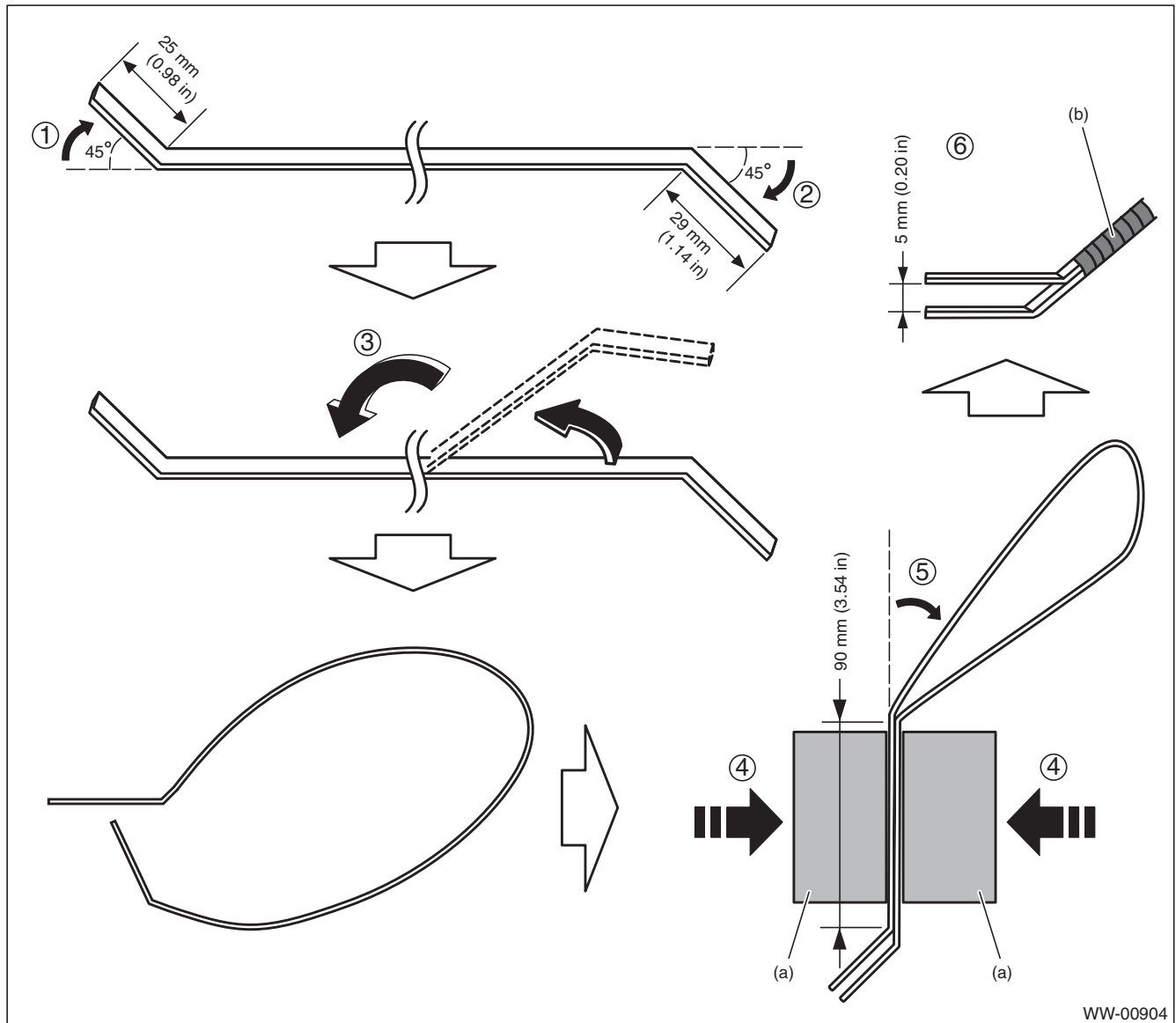
General Description

WIPER AND WASHER SYSTEMS

Materials

- Vertebra of wiper blade which is to be discarded
- Vinyl tape

Steps of making a front washer nozzle adjustment tool



WW-00904

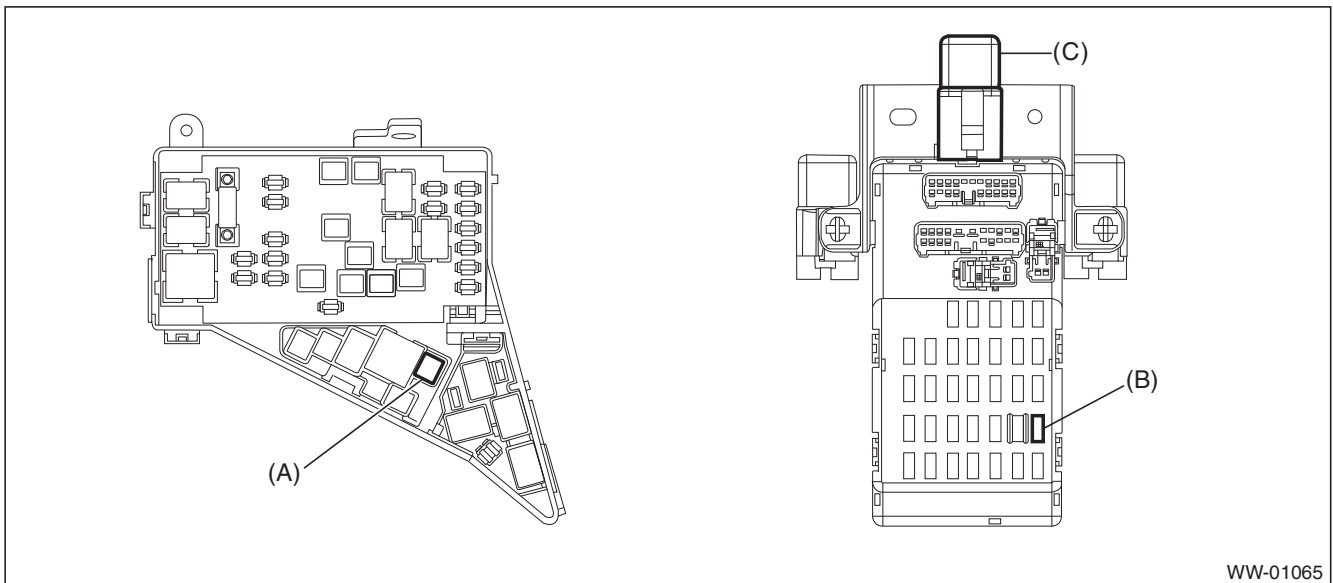
1. Bend the vertebra at the position 25 mm (0.98 in) away from its end by 45°.
2. Bend the vertebra at the position 29 mm (1.14 in) away from the other end by 45°.
3. Double up the vertebra so that the longer end (29 mm (1.14 in)) comes upward.
4. Secure the vertebra with a vise (a) so that the tip clearance becomes 5 mm (0.20 in).
5. Bend the vertebra at the position approximately 90 mm (3.54 in) away from the bending point for the longer end.
6. Check that the tip clearance is 5 mm (0.20 in), and secure the vertebra with vinyl tape (b).

Relay and Fuse

WIPER AND WASHER SYSTEMS

2. Relay and Fuse

A: LOCATION



Main fuse box	Fuse 30 A (wiper)	(A)
Relay & fuse box	Fuse 7.5 A (wiper)	(B)
Relay holder	Wiper relay	(C)

NOTE:

For other related fuses, refer to the wiring diagram. <Ref. to WI-24, Power Supply Circuit.>

Relay and Fuse

WIPER AND WASHER SYSTEMS

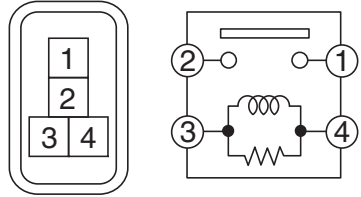
B: INSPECTION

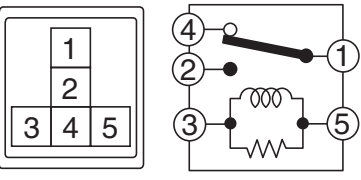
1. CHECK FUSE

- 1) Remove the fuse and inspect visually.
- 2) If the fuse is blown out, replace the fuse.

2. CHECK RELAY

- 1) Check the resistance between relay terminals.

Terminal No.	Inspection conditions	Standard	Circuit
1 — 2	Always	1 M Ω or more	 SR-00180
1 — 2	Apply battery voltage between terminals 4 and 3.	Less than 1 Ω	

Terminal No.	Inspection conditions	Standard	Circuit
1 — 2	Always	1 M Ω or more	 SL-01085
1 — 4	Always	Less than 1 Ω	
1 — 2	Apply battery voltage between terminals 3 and 5.	Less than 1 Ω	

- 2) Replace the relay if the inspection result is not within the standard.

Wiper and Washer System

WIPER AND WASHER SYSTEMS

3. Wiper and Washer System

A: WIRING DIAGRAM

1. WIPER AND WASHER (FRONT)

Refer to "Front Wiper and Washer System" in the wiring diagram. <Ref. to WI-255, WIRING DIAGRAM, Front Wiper and Washer System.>

2. WIPER AND WASHER (REAR)

Refer to "Rear Wiper and Washer System" in the wiring diagram. <Ref. to WI-358, WIRING DIAGRAM, Rear Wiper and Washer System.>

B: INSPECTION

Symptoms	Repair order
Wiper and washers do not operate.	1. Wiper fuse (F/B No. 14, 15) 2. Combination switch 3. Motor assembly - wiper 4. Wiring harness
Wipers do not operate in LO or HI.	1. Combination switch 2. Motor assembly - wiper 3. Wiring harness
Wipers do not operate in INT.	1. Combination switch 2. Motor assembly - wiper 3. Wiring harness
Washer motor does not operate.	1. Combination switch 2. Motor pump assembly - washer 3. Wiring harness
Wipers do not operate when washer switch is ON.	1. Motor assembly - wiper 2. Wiring harness
Washer fluid spray does not operate properly.	1. Motor pump assembly - washer 2. Hose assembly - washer 3. Nozzle - washer

C: NOTE

For operation procedures of each component of the wiper and washer system, refer to the respective sections.

- Combination switch (Wiper): <Ref. to WW-12, Combination Switch (Wiper).>
- Wiper blade: <Ref. to WW-18, Wiper Blade.>
- Front wiper arm: <Ref. to WW-28, Front Wiper Arm.>
- Front wiper motor and link: <Ref. to WW-30, Front Wiper Motor and Link.>
- Rear wiper arm: <Ref. to WW-40, Rear Wiper Arm.>
- Rear wiper motor: <Ref. to WW-42, Rear Wiper Motor.>
- Washer tank and motor: <Ref. to WW-22, Washer Tank and Motor.>
- Front washer nozzle: <Ref. to WW-34, Front Washer Nozzle.>
- Rear washer nozzle: <Ref. to WW-46, Rear Washer.>

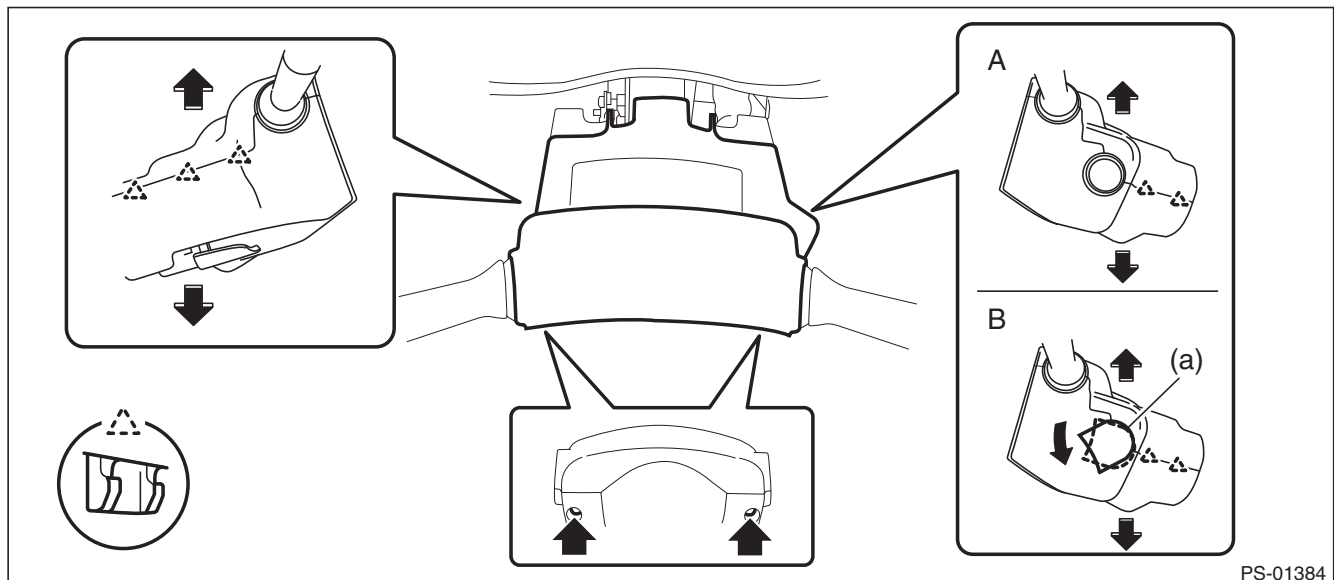
Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

4. Combination Switch (Wiper)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the cover assembly - column.
 - (1) Release the screws and claws.
 - (2) Remove the cap - key cylinder (a). (Model with keyless access)
 - (3) Remove the cover assembly - column UPR and the cover assembly - column LWR.



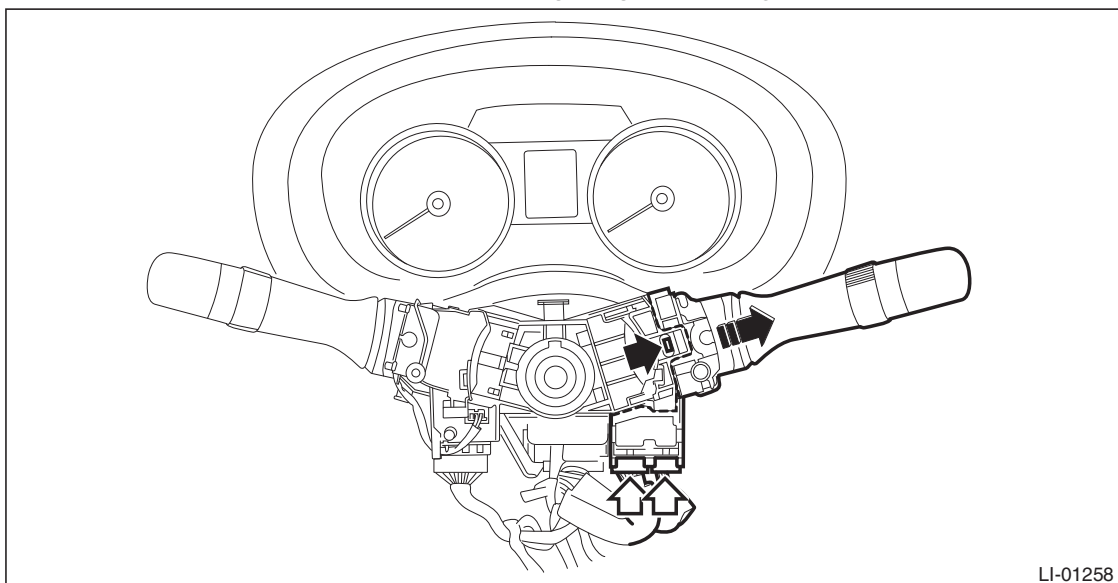
A Models without keyless access

B Models with keyless access

- 3) Remove the switch assembly - combination wiper select.
 - (1) Disconnect the connector.
 - (2) Release the claws, and pull out the switch assembly - combination wiper select.

CAUTION:

Do not press the claws with excessive force. They may be damaged.



Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

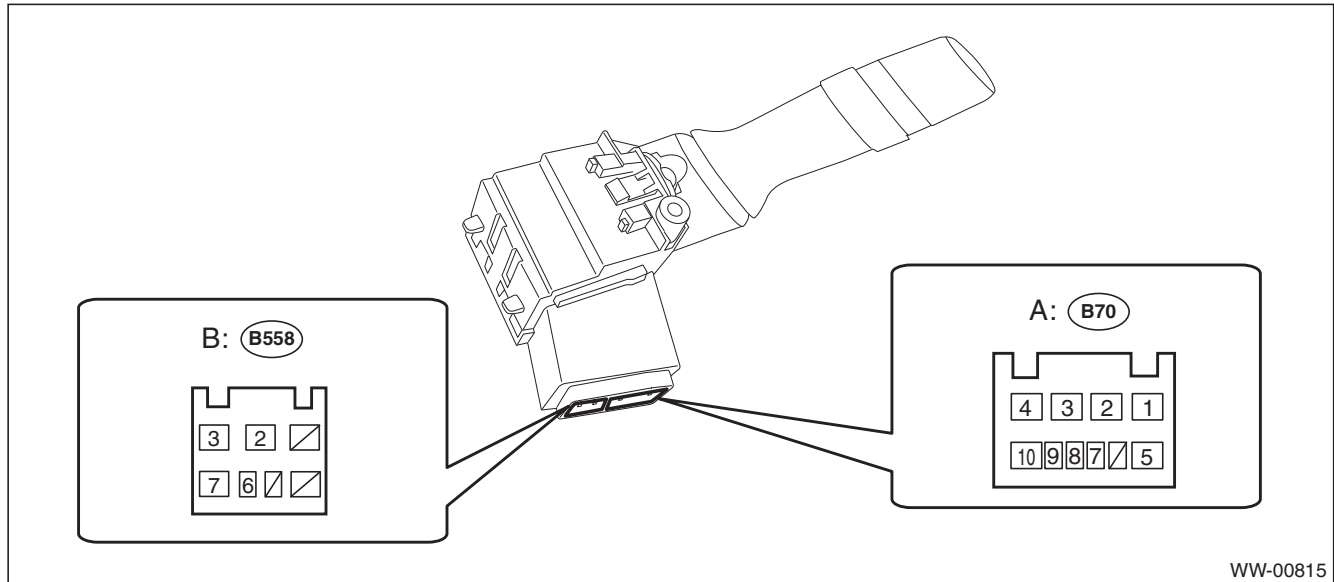
B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

1. INSPECTION OF SWITCH UNIT

1) Operate the switches to check the continuity between terminals.



	Switch position	Terminal No.	Standard
Front	OFF	A1 and A3	Less than 1 Ω
	INT	A1 and A3	Less than 1 Ω
	LO	A2 and A3	Less than 1 Ω
	HI	A2 and A4	Less than 1 Ω
	Washer ON	B2 and B3	Less than 1 Ω
Rear	OFF	A5 and B2 B6 and B2 B7 and B2	1 M Ω or more
	LO	B6 and B2	Less than 1 Ω
	HI	B7 and B2	Less than 1 Ω
	Washer ON	A5 and B2	Less than 1 Ω

2) Replace the switch if the inspection result is not within the standard.

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

2. FRONT WIPER

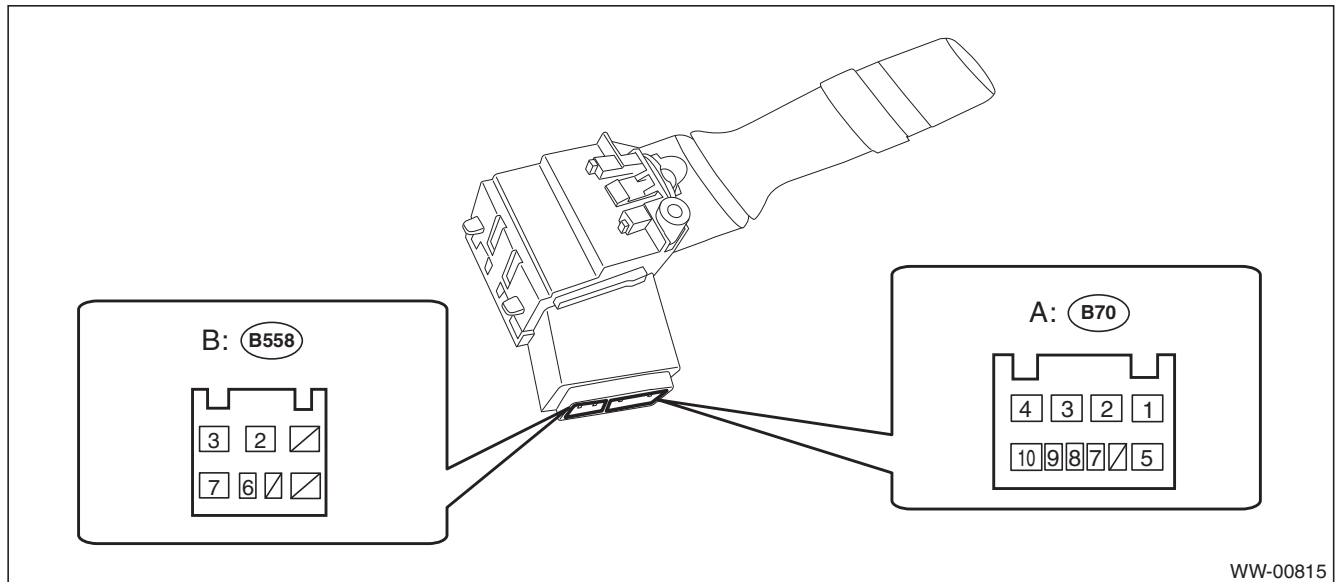
1) Check with Subaru Select Monitor

(1) Check the input signal when the switch assembly - combination wiper select is turned to LO or HI, using the current data display.

(2) Does the input signal change corresponding to the switch operation?

- **Yes** → Finish the diagnosis.
- **No** → Check the harness.

2) CHECK THE INTERMITTENT OPERATION (INSPECTION OF THE WIPER SWITCH ALONE).



(1) Set the voltmeter between terminals No. A2 (+) and No. B2 (-).

(2) Connect the battery to connector. (Terminal No. A2 (+), terminal No. B2 & A3 (-))

(3) Turn the switch assembly - combination wiper select to INT.

(4) Connect the battery (+) to the terminal No. A2 for 5 seconds.

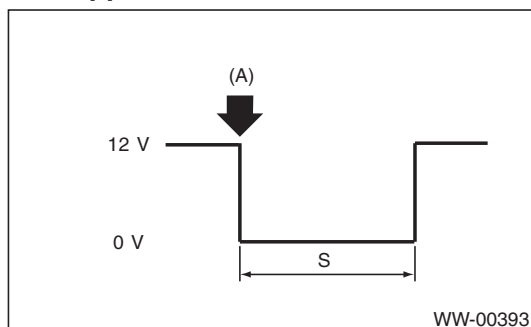
(5) Connect the battery (-) to the terminal No. B2, and check the voltage between terminals No. A2 and No. A3 during intermittent operation.

(6) Perform step (1) to (5) above when intermittent control switch is in MIN or MAX, and replace the switch if the operation is not as specified.

Intermittent stationary time

MIN: Approx. 2 seconds

MAX: Approx. 16 seconds



(A): Connect the battery (-) to the terminal No. B2.

S: Intermittent downtime (sec.)

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

3. REAR WIPER

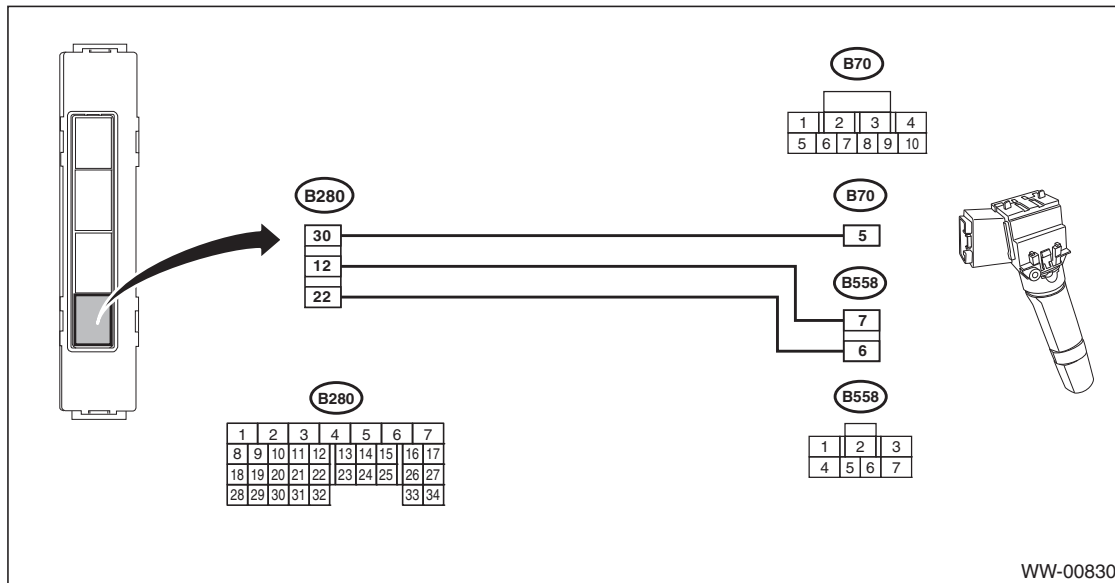
1) Check input of body integrated unit

Check the input signal when the rear wiper switch is operated using Subaru Select Monitor.

- (1) Turn the ignition switch to ON.
- (2) Operate the rear wiper switch to each position of ON, INT and Washer ON.
- (3) Does the input signal change corresponding to the switch operation?
 - **Yes** → Go to step 4.
 - **No** → Go to step 2.

2) Check harness

- (1) Turn the ignition switch to OFF, disconnect the ground cable from battery.
- (2) Disconnect the connector of body integrated unit and wiper switch.
- (3) Measure the resistance between body integrated unit and wiper switch.



Connector & terminal

(B280) No. 30 — (B70) No. 5:

(B280) No. 22 — (B558) No. 6:

(B280) No. 12 — (B558) No. 7:

(4) Is the resistance less than 10 Ω?

- **Yes** → Go to step 3.
- **No** → Repair the harness between the body integrated unit and wiper switch.

3) Check input voltage of body integrated unit

- (1) Connect the ground cable to battery.
- (2) Turn the ignition switch to ON and check the input voltage of body integrated unit.

Connector & terminal

(i84) No. 6 (+) — Chassis ground (—):

(B281) No. 3 (+) — Chassis ground (—):

(3) Is the voltage 10 V or more?

- **Yes** → Go to step 4.
- **No** → Check the harness and fuse.

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

4) Check output of body integrated unit

Check the output signal when the rear wiper switch is operated using Subaru Select Monitor.

- (1) Turn the ignition switch to ON.
- (2) Operate the rear wiper switch to ON and Washer ON.
- (3) When the operation in step (2) is performed, check the output signal of body integrated unit to rear wiper motor.
- (4) When the rear wiper switch is set to ON, is ON output continuous? Also, when the washer is set to ON, is ON output?
- **Yes** → Go to step 5.
- **No** → Replace the body integrated unit. <Ref. to SL-74, Body Integrated Unit.>

5) Check output of body integrated unit

Check the output signal when the rear wiper switch is operated using Subaru Select Monitor.

- (1) Turn the ignition switch to ON.
- (2) Set the rear wiper switch to INT.
- (3) When the operation in step (2) is performed, check the output signal of body integrated unit.
- (4) When the rear wiper switch is set to INT, is ON/OFF output repeated? (INT OFF time (when vehicle parked): 12 seconds)
- **Yes** → Go to step 8.
- **No** → Go to step 6.

6) Check harness between body integrated unit and rear wiper motor

- (1) Turn the ignition switch to OFF, disconnect the ground cable from battery.
- (2) Disconnect the connector of body integrated unit and wiper switch.
- (3) Measure the resistance between the harness connector terminals of the body integrated unit and rear wiper motor.

Connector & terminal

(B280) No. 6 — (B97) No. 11:

- (4) Is the resistance less than 10 Ω ?
- **Yes** → Go to step 7.
- **No** → Repair the open circuit of the harness between body integrated unit and rear wiper motor.

7) Check stop position circuit of the rear wiper motor

- (1) Disconnect the harness connector of the motor assembly - rear wiper.
- (2) Check the continuity of the circuit of rear wiper motor stop position.

Connector & terminal

(D43) No. 1 (+) — (D43) No. 4 (-):

- (3) Is there continuity between terminals?
- **Yes** → Go to step 8.
- **No** → Replace the motor assembly - rear wiper.

8) Check power supply circuit of the rear wiper motor

- (1) Disconnect the harness connector of the motor assembly - rear wiper.
- (2) Turn the ignition switch to ON.
- (3) Measure the voltage between the rear wiper motor harness connector terminal and chassis ground.

Connector & terminal

(D43) No. 3 (+) — Chassis ground (-):

- (4) Is the voltage 10 V or more?
- **Yes** → Go to step 9.
- **No** → Check the fuse (No. 27 in main fuse box).

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

9) Check ground circuit of rear wiper motor

(1) Turn the ignition switch to OFF.

(2) Measure the resistance between the rear wiper motor harness connector terminal and chassis ground.

Connector & terminal

(D43) No. 4 — Chassis ground:

(3) Is the resistance less than 10 Ω ?

- **Yes** → Go to step 10.
- **No** → Repair the open circuit of the rear wiper motor ground circuit.

10) Check harness between body integrated unit and rear wiper motor

(1) Turn the ignition switch to OFF.

(2) Disconnect the harness connector of body integrated unit.

(3) Disconnect the harness connector of the motor assembly - rear wiper.

(4) Measure the resistance between the harness connector terminals of the body integrated unit and rear wiper motor.

Connector & terminal

(B280) No. 7 — (D43) No. 2:

(5) Is the resistance less than 10 Ω ?

- **Yes** → Go to step 11.
- **No** → Repair the open circuit of the harness between body integrated unit and rear wiper motor.

11) Check output of body integrated unit

(1) Connect the harness connector of body integrated unit.

(2) Disconnect the connector of the motor assembly - rear wiper.

(3) Turn the ignition switch to ON.

(4) Measure the voltage between rear wiper motor connector and chassis ground.

Connector & terminal

(D43) No. 2 (+) — Chassis ground (-):

(5) Is the voltage less than 1.5 V when the rear wiper switch is OFF, and is the voltage 10 V or more when the rear wiper switch is ON?

- **Yes** → Go to step 12.
- **No** → Replace the body integrated unit. <Ref. to SL-74, Body Integrated Unit.>

12) Check operation of rear wiper motor

(1) Remove the motor assembly - rear wiper.

(2) Check the rear wiper motor. <Ref. to WW-45, INSPECTION, Rear Wiper Motor.>

(3) Does the rear wiper motor rotate normally?

- **Yes** → Finished.
- **No** → Replace the motor assembly - rear wiper.

NOTE:

Rear wiper intermittent time

Select lever position	Vehicle speed (km/h (MPH))	Intermittent stopping time (sec.)
Rev.	—	Continuous operation
Except for reverse mode	80 — (50 —)	3
	50 — 80 (31 — 50)	6
	20 — 50 (12 — 31)	9
	0 — 20 (0 — 12)	12

Wiper Blade

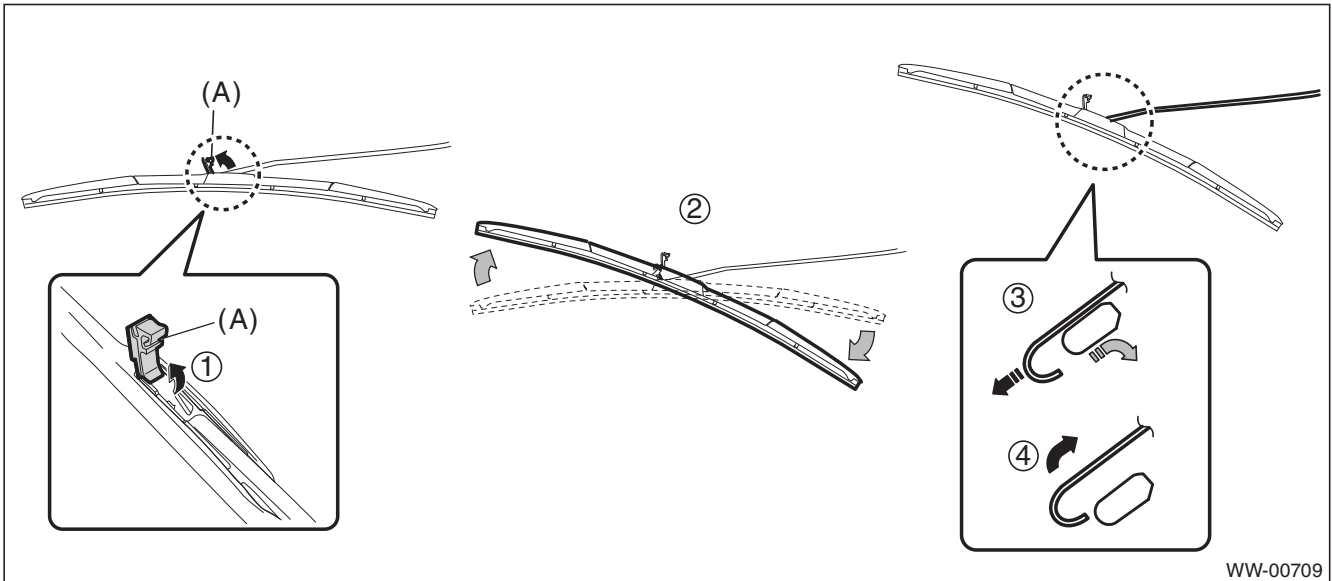
WIPER AND WASHER SYSTEMS

5. Wiper Blade

A: REMOVAL

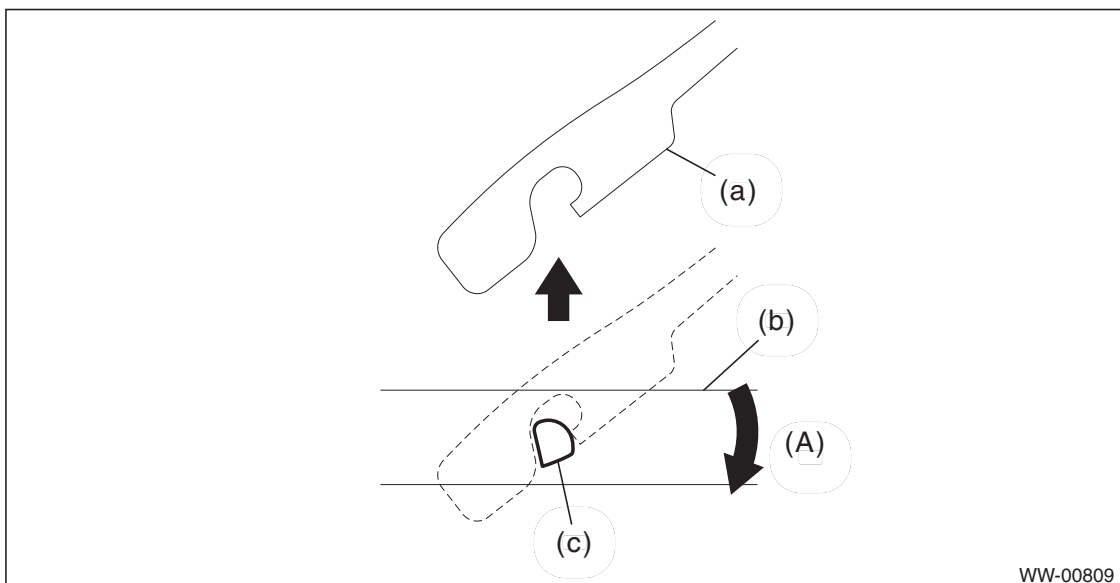
1. FRONT

- 1) Lift up the locking clip (A).
- 2) Turn the blade assembly - windshield wiper in the arrow direction.
- 3) Push in the arm assembly - windshield wiper.
- 4) Pull out the arm assembly - windshield wiper while pulling it up, and remove the blade assembly - windshield wiper from the arm assembly - windshield wiper.



2. REAR

Turn the blade assembly - rear wiper in the direction of arrow (A) and remove it from the arm assembly - rear wiper.



(A) Turn the wiper blade.

(a) Arm ASSY - rear wiper

(b) Blade ASSY - rear wiper

(c) Wiper blade attachment section

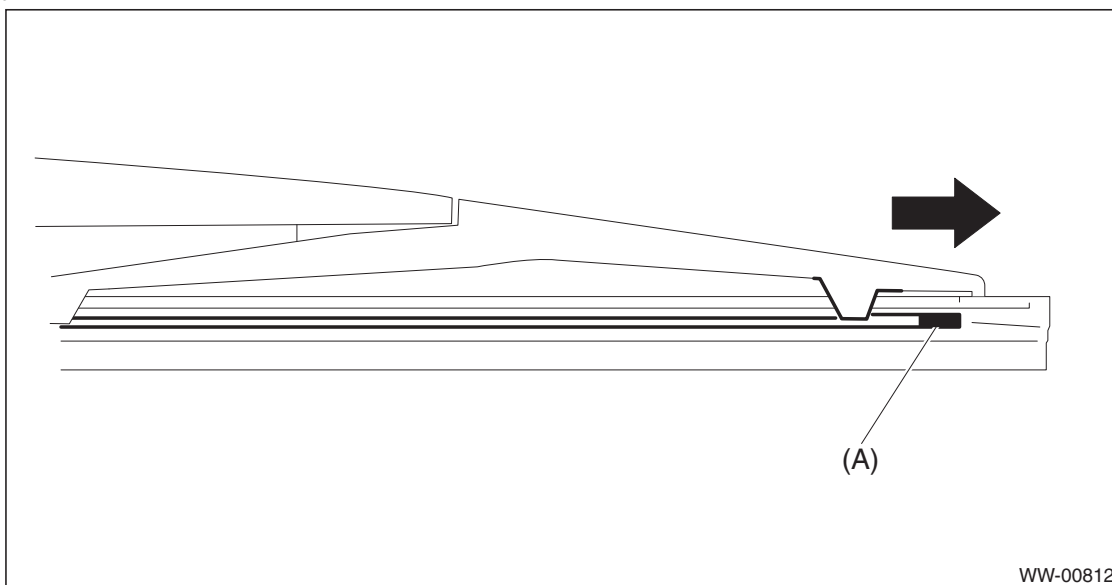
B: INSTALLATION

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

C: DISASSEMBLY

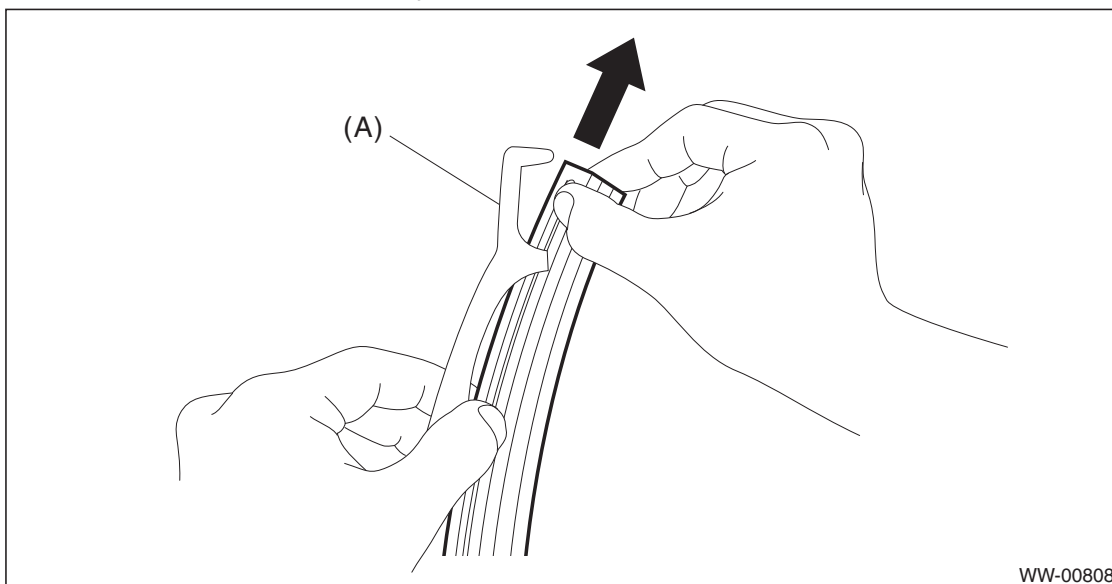
1. FRONT

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



2. REAR

Slightly pull the top of the rubber assembly - rear wiper from the stopper (A), and pull out completely.



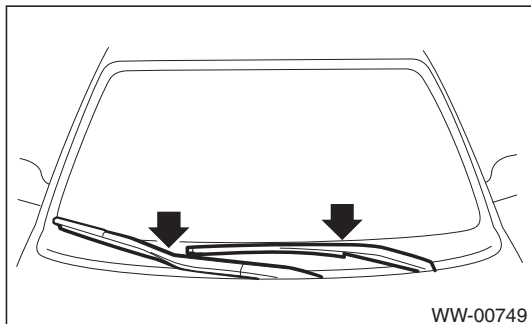
Wiper Blade

WIPER AND WASHER SYSTEMS

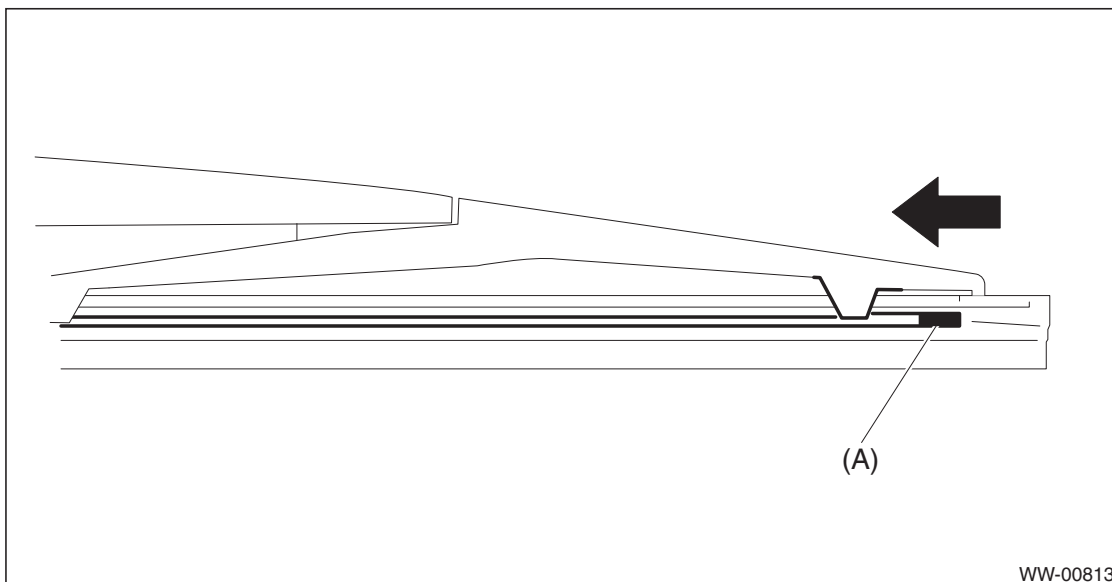
D: ASSEMBLY

1. FRONT

1) Insert the rubber assembly - windshield wiper onto the blade - windshield wiper so that the stopper is in the position shown in the figure.



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

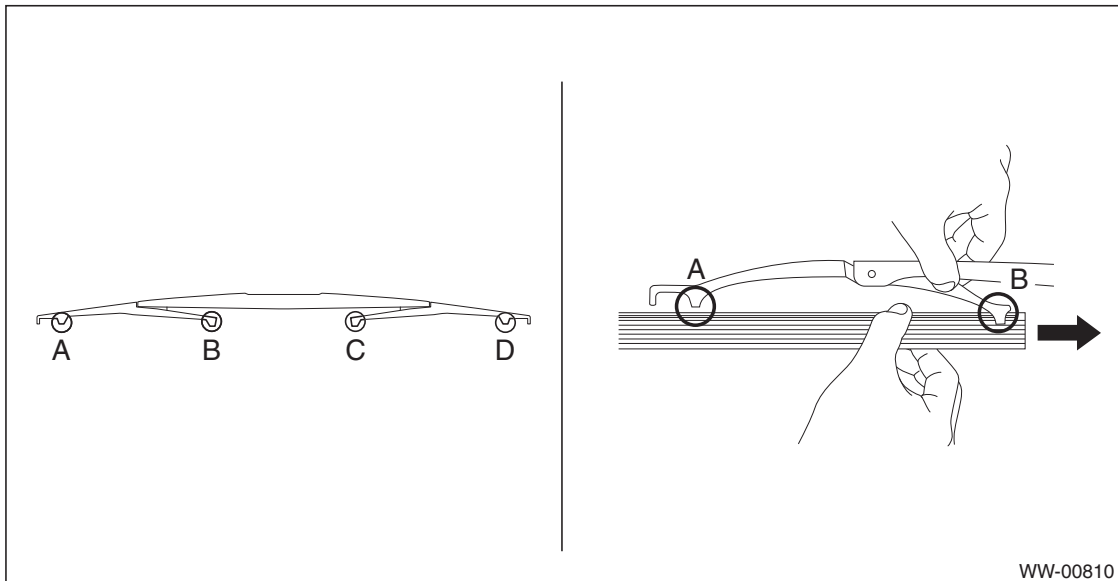


Wiper Blade

WIPER AND WASHER SYSTEMS

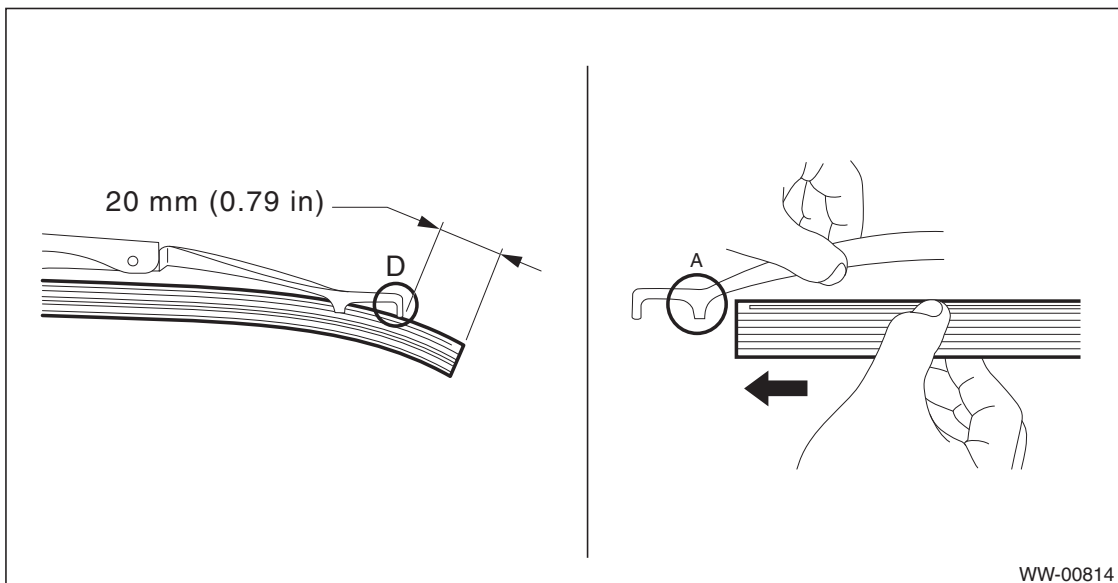
2. REAR

1) Insert the rubber assembly - rear wiper into claw (B).



2) Insert the rubber assembly - rear wiper until its top end protrudes approx. 20 mm (0.79 in) from stopper (D).

3) Insert the rubber assembly - rear wiper into claw (A).



E: INSPECTION

1) When the wiper does not operate properly, inspect the following item.

- Make sure the movable part of the blade assembly - rear wiper moves smoothly.
- Check that the rubber assembly - rear wiper rubber is not deformed or damaged.

2) Replace with a new part if damage is found.

Washer Tank and Motor

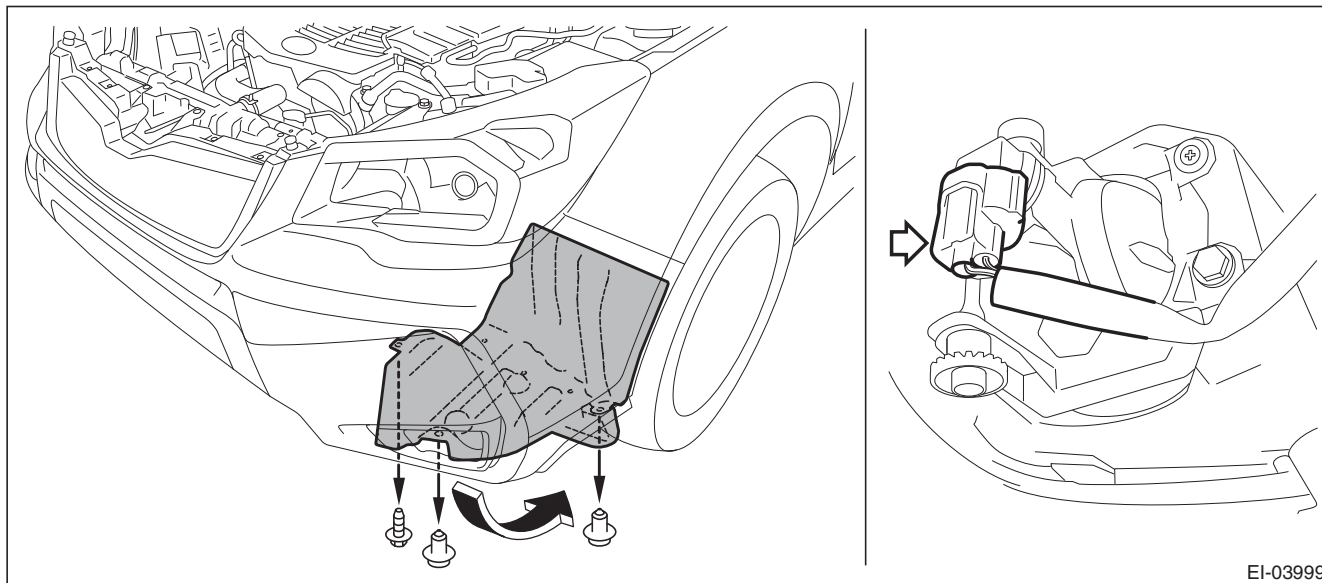
WIPER AND WASHER SYSTEMS

6. Washer Tank and Motor

A: REMOVAL

1. WASHER TANK

- 1) Open the hood COMPL - front.
- 2) Disconnect the ground cable from battery.
- 3) Remove the bumper face - front.
 - (1) Remove the screws and clips, and turn over the mud guard - front, and then disconnect the connectors of the fog light assembly - front on the LH and RH sides. (Model with fog light)

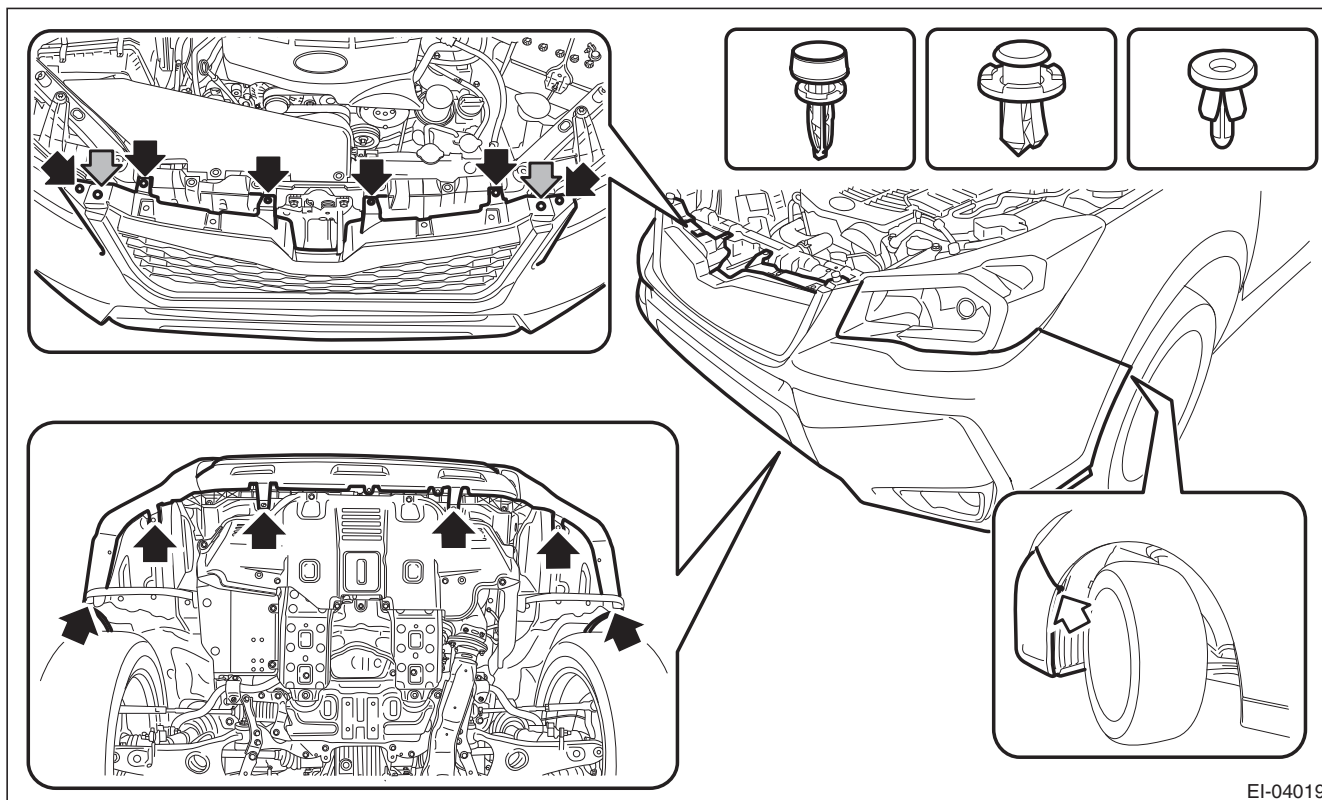


- (2) Remove the clips at the upper side of the bumper face - front.
- (3) Remove the clips from the fender.

Washer Tank and Motor

WIPER AND WASHER SYSTEMS

(4) Remove the clips at the lower side of the bumper face - front.

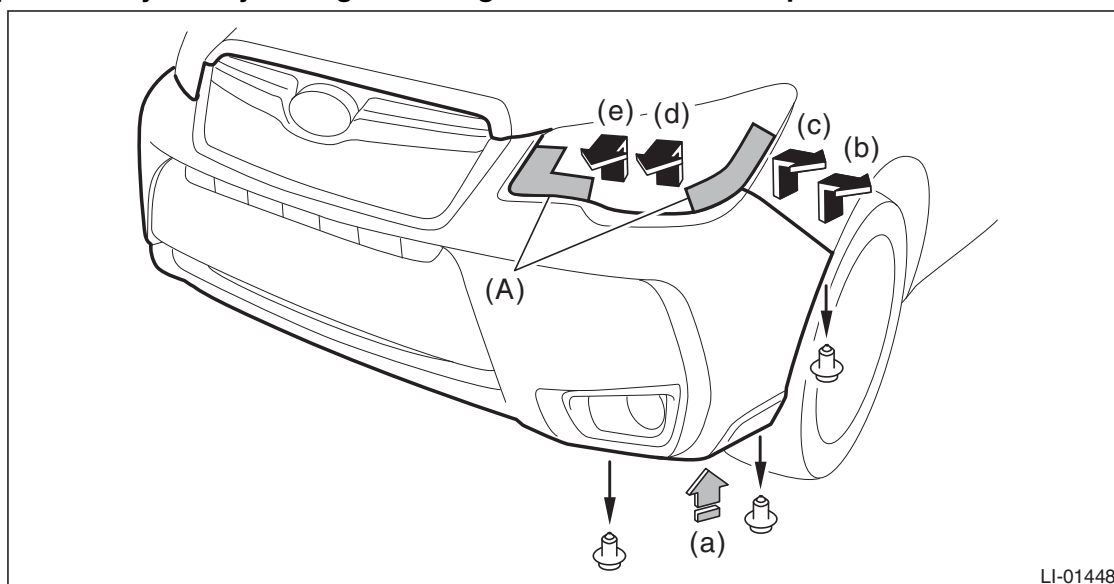


(5) Apply protective tape (A) to the light assembly - head.

(6) Release the clips, and while pushing up the lower side (a) of the bumper face - front, remove in the order from (b) to (e).

CAUTION:

Do not pull forcibly. It may damage the flange sections of the bumper face - front.



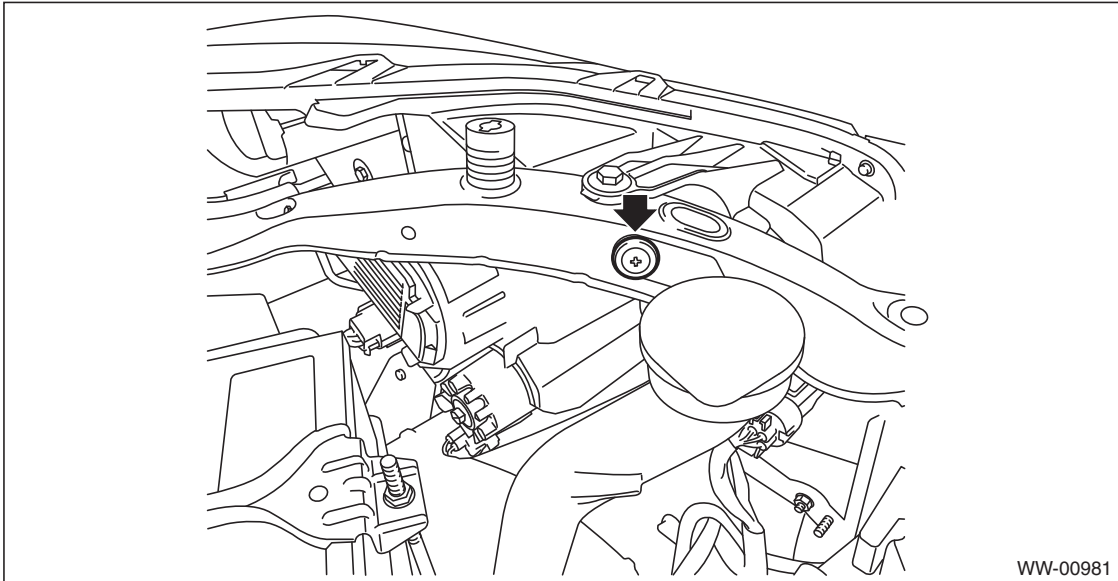
NOTE:

Detach the opposite side in the same manner.

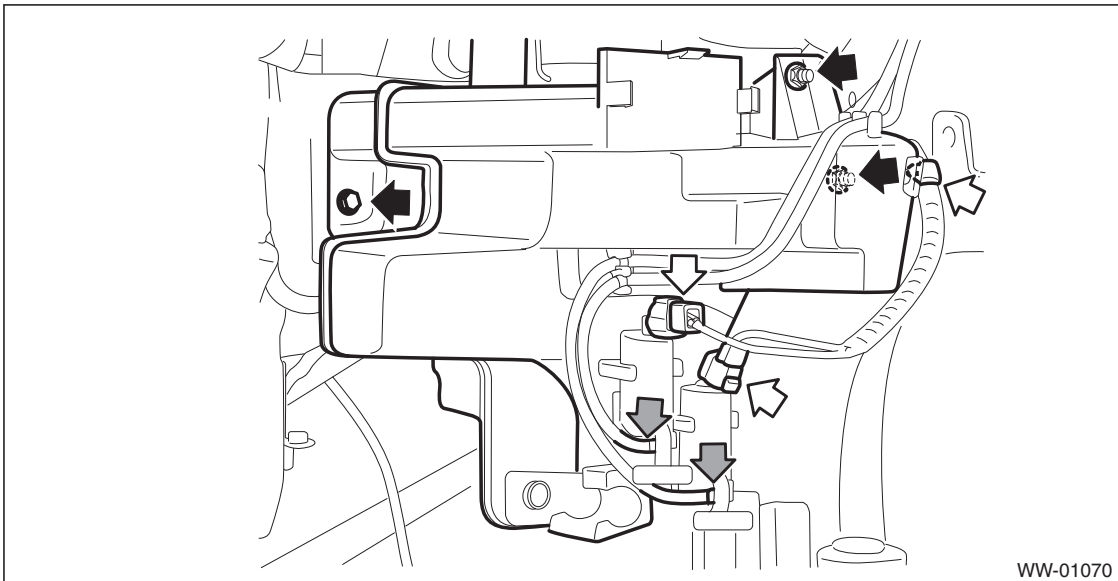
Washer Tank and Motor

WIPER AND WASHER SYSTEMS

- 4) Remove the tank - washer assembly.
(1) Remove the clip of the holder - windshield washer tank.



- (2) Disconnect the connector from the motor pump assembly - washer and the sensor - washer tank, and then remove the harness clip.
(3) Prepare a container before disconnecting the hose - washer, and drain all washer fluid in the tank - washer.
(4) Remove the bolt and nuts and remove the tank - washer assembly.

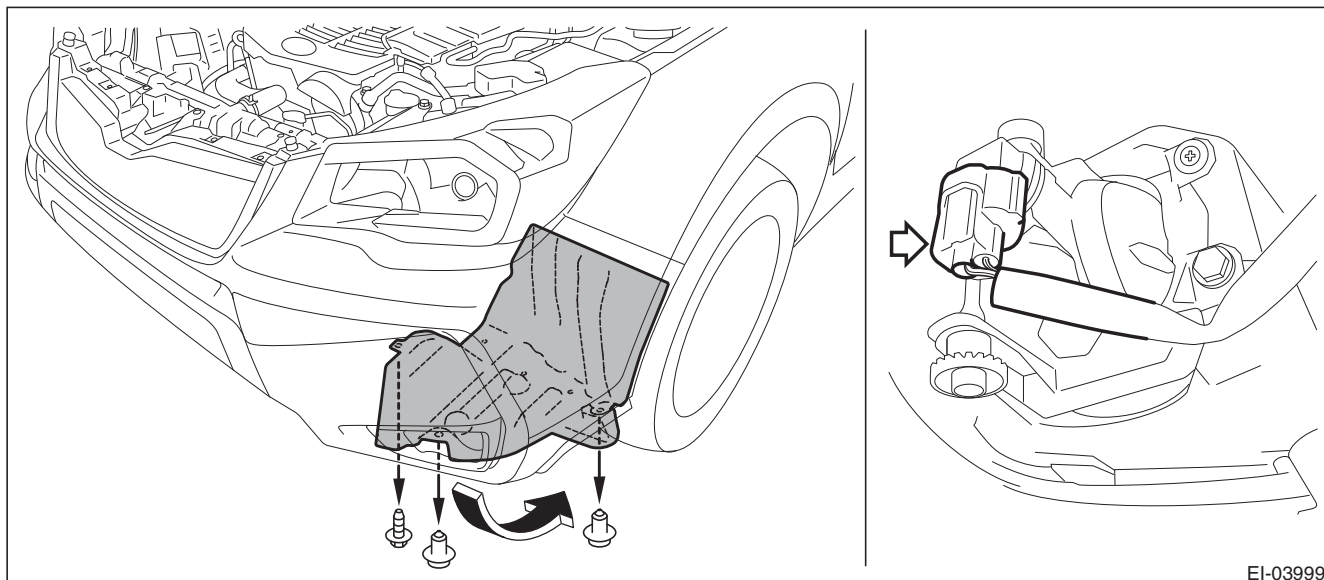


Washer Tank and Motor

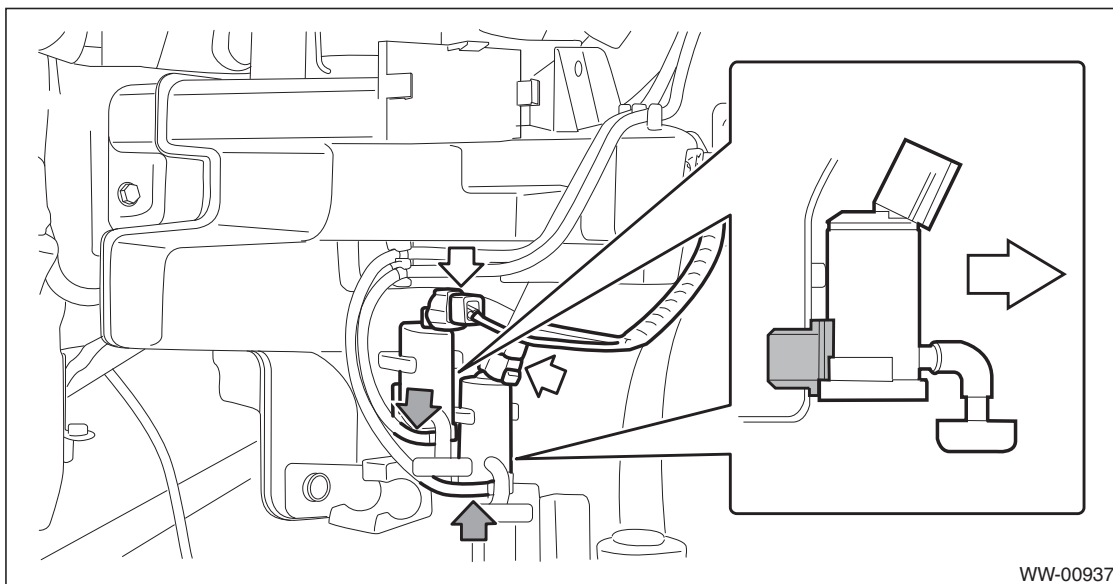
WIPER AND WASHER SYSTEMS

2. WASHER MOTOR

- 1) Open the hood COMPL - front.
- 2) Disconnect the ground cable from battery.
- 3) Remove the clips and screws, and turn over the mud guard - front LH.
- 4) Disconnect the connector of the fog light assembly - front LH. (Model with fog light)



- 5) Disconnect the connector from the motor pump assembly - washer and remove the harness clip.
- 6) Prepare a container before disconnecting the hose - washer, and drain all washer fluid in the tank - washer.
- 7) Remove the motor pump assembly - washer from the tank - washer.



Washer Tank and Motor

WIPER AND WASHER SYSTEMS

B: INSTALLATION

1) Install each part in the reverse order of removal.

Tightening torque:

6 N·m (0.61 kgf-m, 4.4 ft-lb)

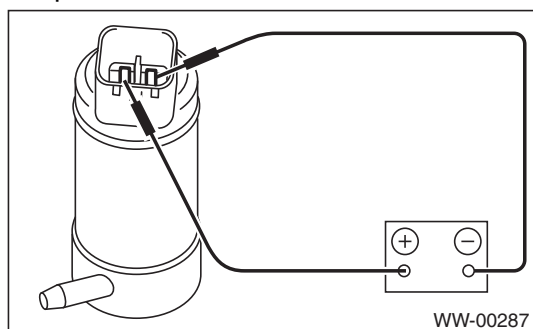
2) Add new washer fluid.

3) Adjust the fog light beam. (Model with fog light) <Ref. to LI-47, FOG LIGHT AIMING, ADJUSTMENT, Front Fog Light Assembly.>

C: INSPECTION

1. WASHER PUMP

Apply battery voltage to the connector terminal of the motor pump assembly - washer, and make sure that the motor operates.



2. WASHER FLUID LEVEL SENSOR

1) Check the connection status of washer fluid level sensor connector.

2) Does the low washer fluid warning light illuminate after draining the washer fluid? And does the low washer fluid warning light go off after refilling the washer fluid?

- **Yes** → **Normal operation.**

- **No** → **Perform step 3.**

3) Using a tester, measure the voltage of the washer fluid level sensor connector.

(1) Is the voltage approx. 8.5 V or more?

- **Yes** → **Perform step 4.**

- **No** → **Check harness, meter and integrated unit, and replace if necessary.**

4) Does the meter indicator illuminate if you short the washer fluid level sensor connector?

- **Yes** → **Perform step 5.**

- **No** → **Check meter and integrated unit, and replace if necessary.**

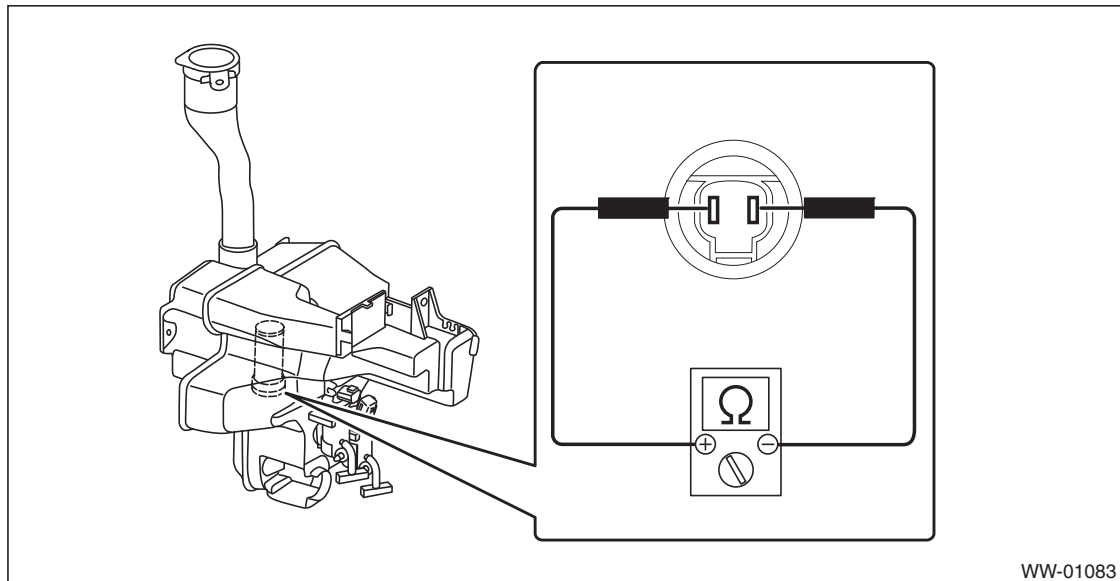
Washer Tank and Motor

WIPER AND WASHER SYSTEMS

5) Using a tester, measure the resistance of the washer fluid level sensor.

(1) Turn over the mud guard.

(2) Measure the resistance of the washer fluid level sensor.



Amount of washer fluid in the tank	Standard
No remaining quantity (ON)	Less than 10 Ω
There is remaining quantity (OFF)	1 M Ω or more

(3) Is the resistance within the standard?

- **Yes** → Normal operation.
- **No** → Replace the washer fluid level sensor along with the washer tank.

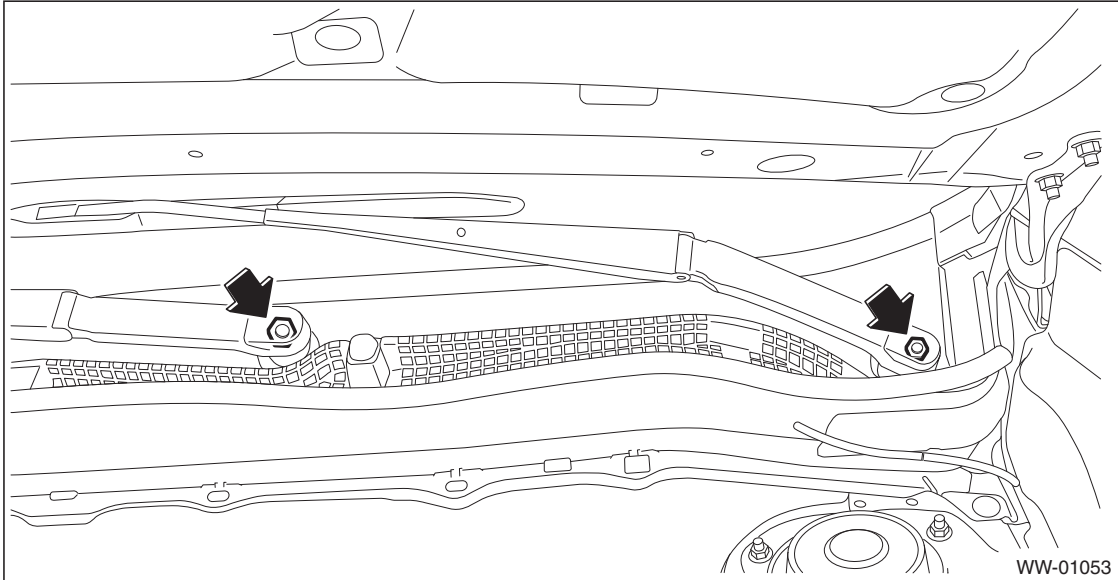
Front Wiper Arm

WIPER AND WASHER SYSTEMS

7. Front Wiper Arm

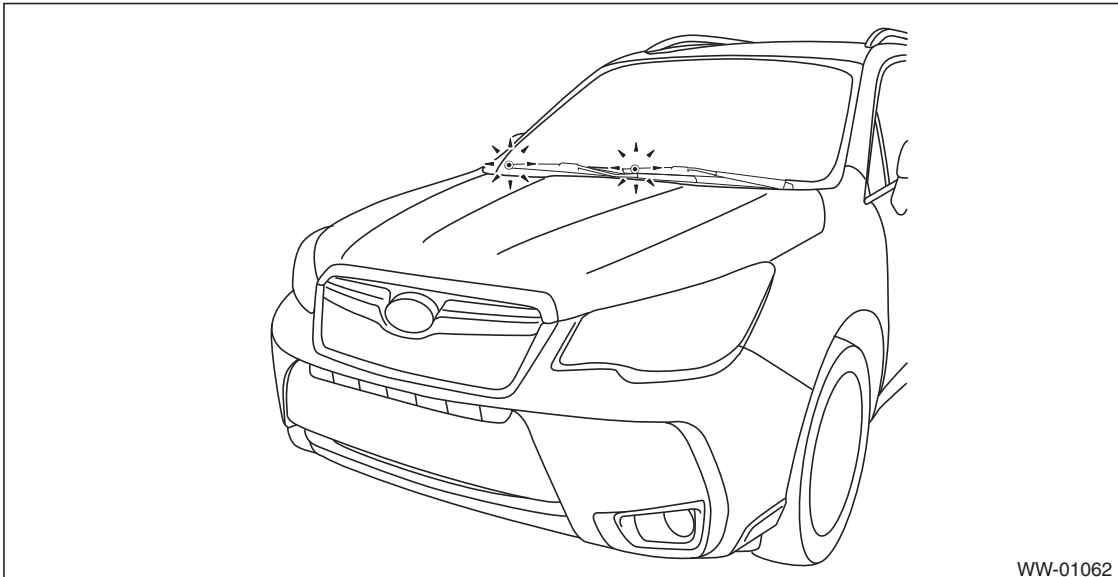
A: REMOVAL

- 1) Open the hood COMPL - front.
- 2) Remove the arm assembly - windshield wiper.
 - (1) Remove the cover - windshield wiper arm.
 - (2) Remove the nuts, and remove the arm assembly - windshield wiper.



B: INSTALLATION

- 1) Install the arm assembly - windshield wiper.
 - (1) Assemble the arm assembly - windshield wiper so that the blade assembly - windshield wiper is aligned to the ceramic print point mark of the windshield glass.



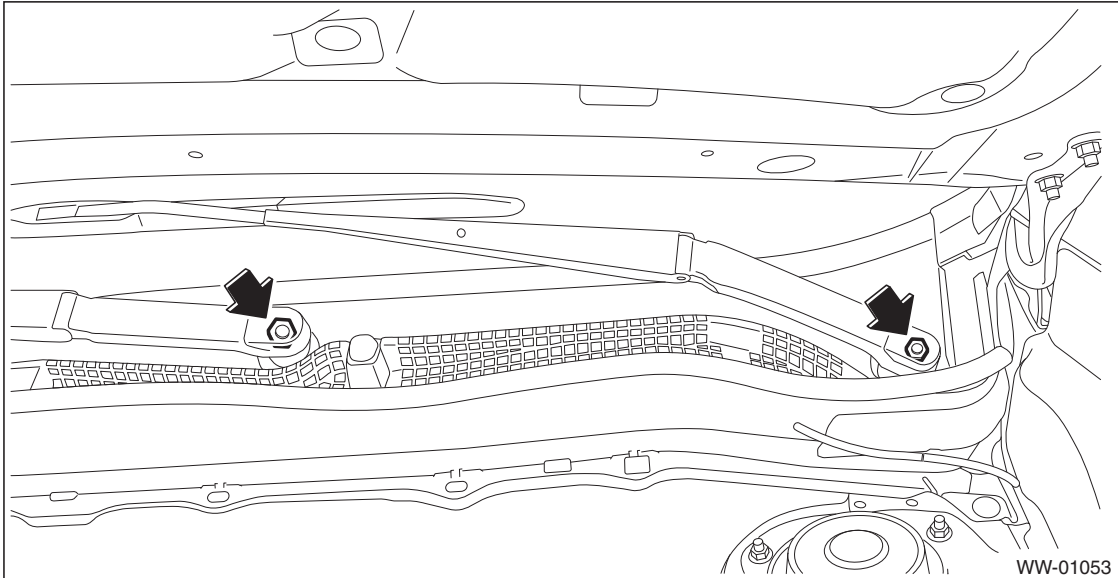
Front Wiper Arm

WIPER AND WASHER SYSTEMS

- (2) Tighten the arm assembly - windshield wiper to specified torque and install the cap.

Tightening torque:

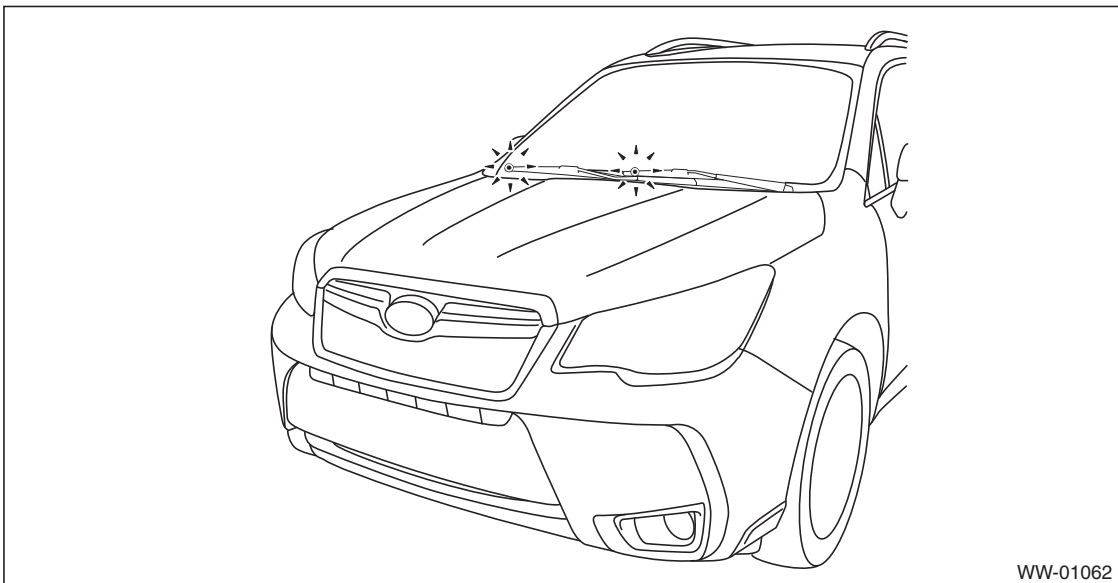
22 N·m (2.24 kgf-m, 16.2 ft-lb)



- 2) Check the position of windshield wiper. <Ref. to WW-29, ADJUSTMENT, Front Wiper Arm.>

C: ADJUSTMENT

- 1) Operate the windshield wiper once.
- 2) Check that the wiper blade is aligned with the point mark.



- 3) If the wiper blade is not aligned with the point mark, perform the removal and installation of the windshield wiper. <Ref. to WW-28, REMOVAL, Front Wiper Arm.>

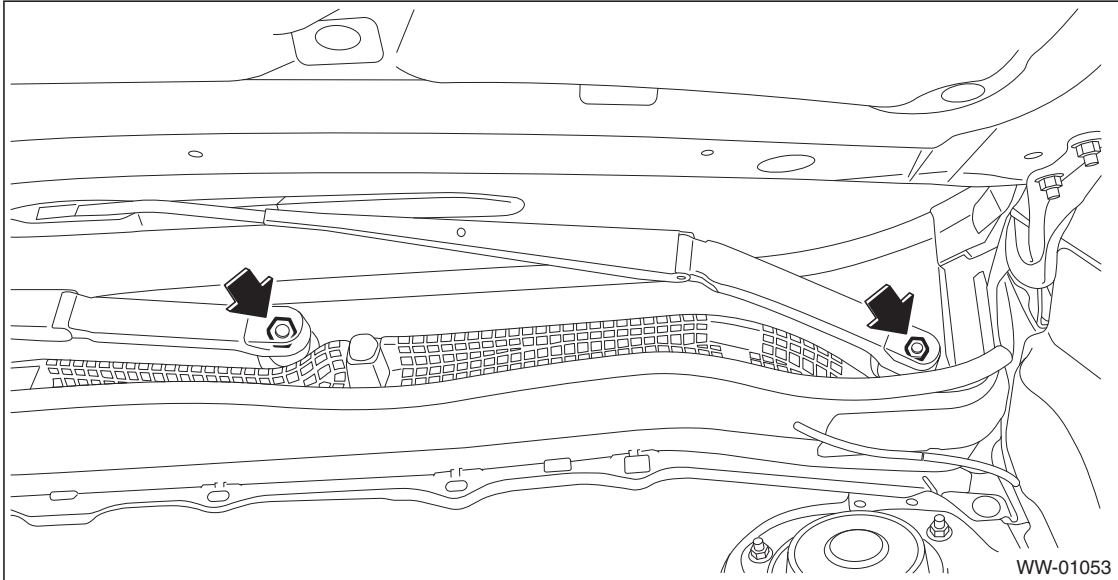
Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

8. Front Wiper Motor and Link

A: REMOVAL

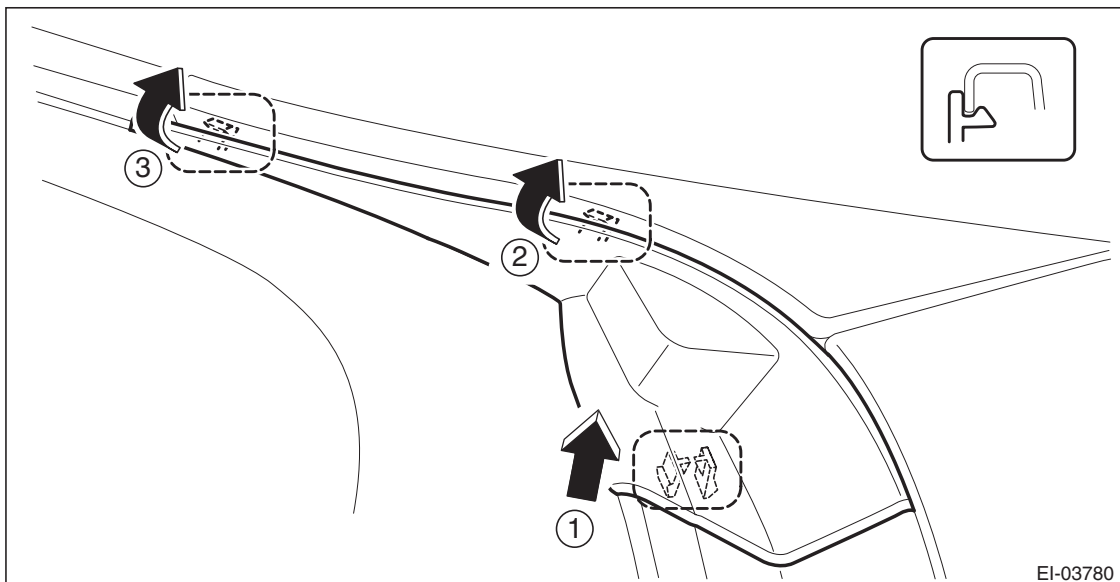
- 1) Disconnect the ground cable from battery.
- 2) Remove the arm assembly - windshield wiper.
 - (1) Remove the cover - windshield wiper arm.
 - (2) Remove the nuts, and remove the arm assembly - windshield wiper.



- 3) Remove the cowl panel - side.
 - (1) Remove the clips.
 - (2) Release the claws from (1) to (3) in sequence, and then remove the cowl panel - side.

CAUTION:

Pulling with excessive force may damage the cowl panel - side. If it is difficult to remove, use a plastic remover or equivalent tool.



Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

4) Remove the cowl panel assembly.

CAUTION:

Before removing the cowl panel, use an air blower and nylon brush to sweep gravel from the lower area of the front side of the glass.

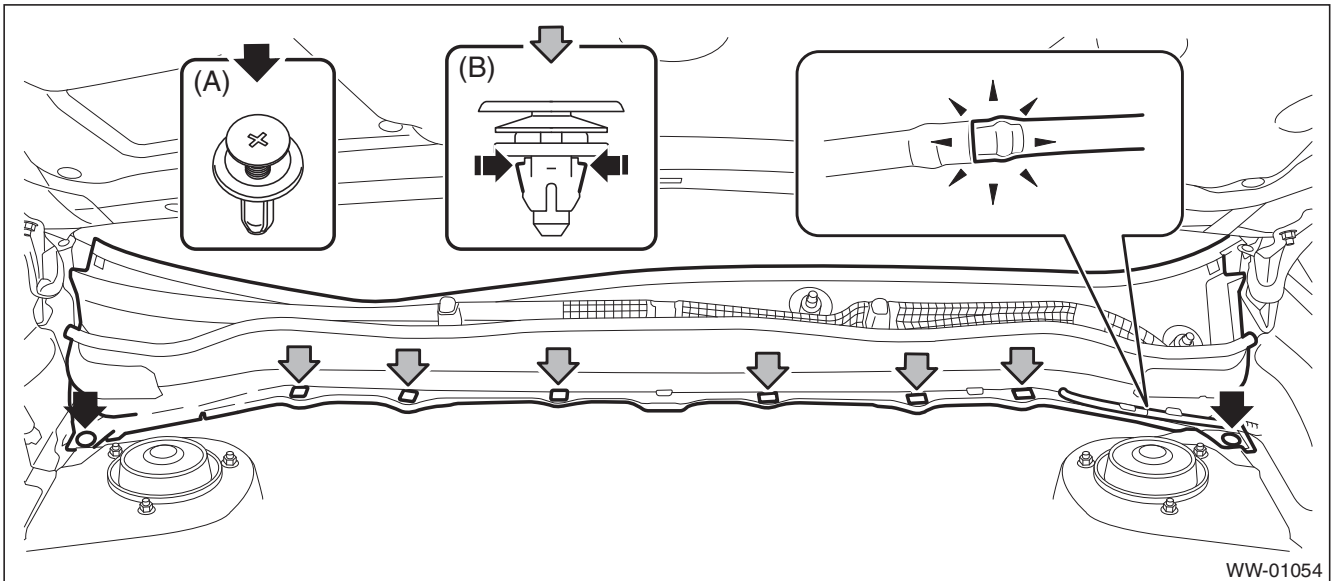
- (1) Disconnect the hose - windshield washer.
- (2) Remove clips (A).
- (3) Check the direction of the clip (B), and push the claws from both sides to remove it.

CAUTION:

When removing the clip (B), push the claw of the clip from both sides.

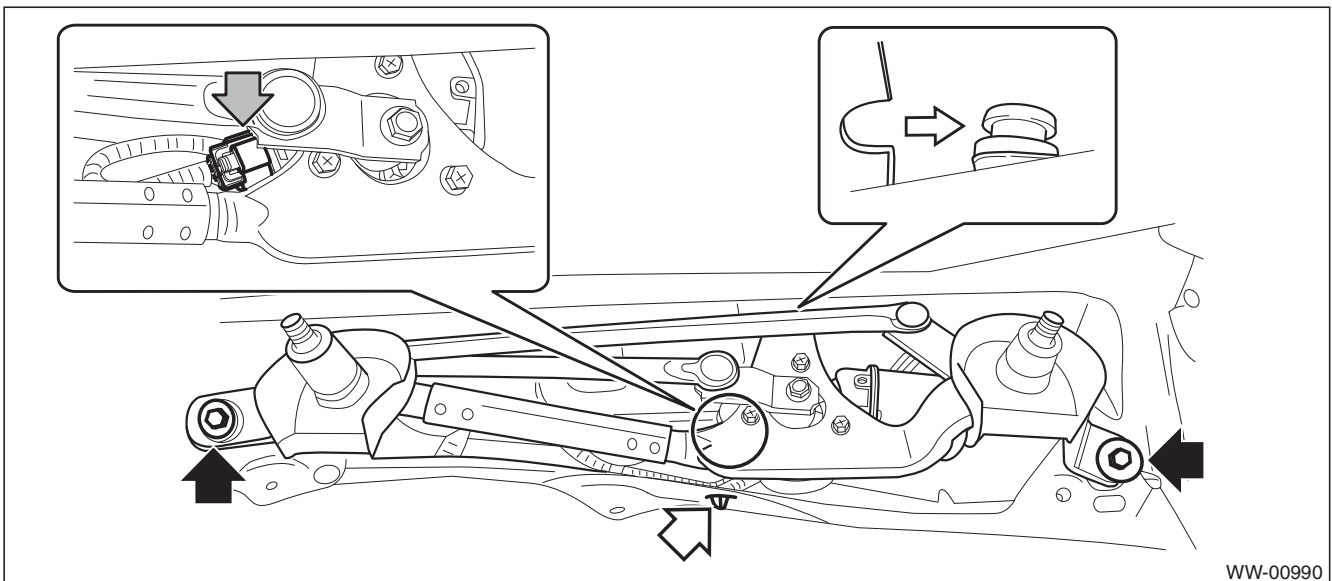
Be careful because the clips (B) can be damaged if you pull unnecessarily hard on them.

- (4) Remove the cowl panel assembly by pulling it out towards the front of the vehicle.



5) Remove the link assembly - windshield wiper.

- (1) Disconnect the connector of the motor assembly - windshield wiper.
- (2) Remove the bolts and harness clips, and remove the link assembly - windshield wiper.



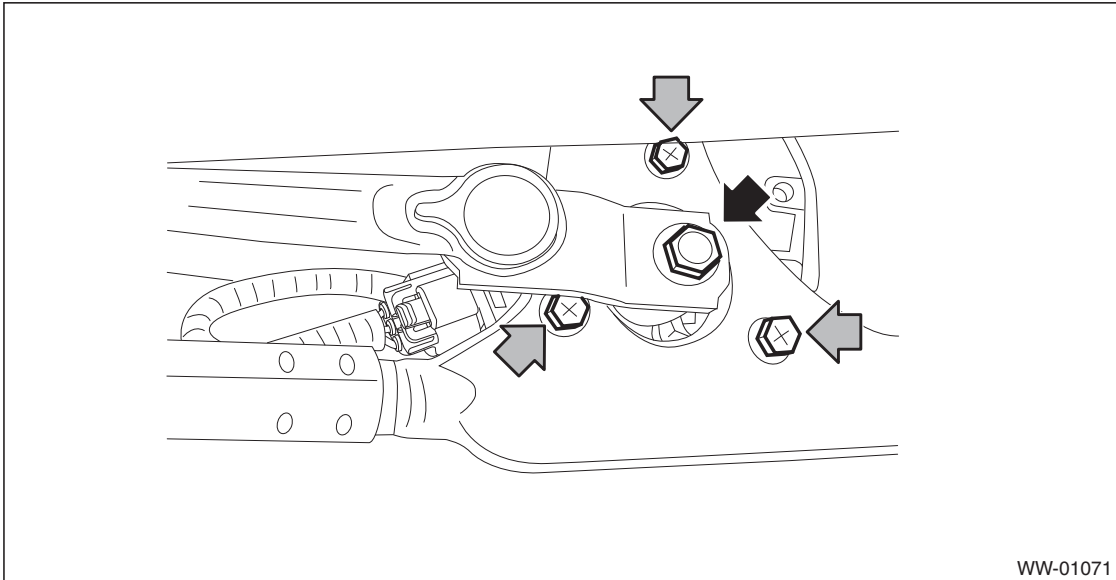
Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

6) Remove the motor assembly - windshield wiper.

(1) Remove the nuts on the link plate and the motor assembly - windshield wiper, and disconnect from the link assembly - windshield wiper.

(2) Remove the bolts, and remove the motor assembly - windshield wiper.



WW-01071

B: INSTALLATION

1) Connect the battery ground terminal.

2) To confirm that the motor assembly - windshield wiper is at the auto stop position, connect the harness to the motor and turn the wiper switch to ON/OFF once.

CAUTION:

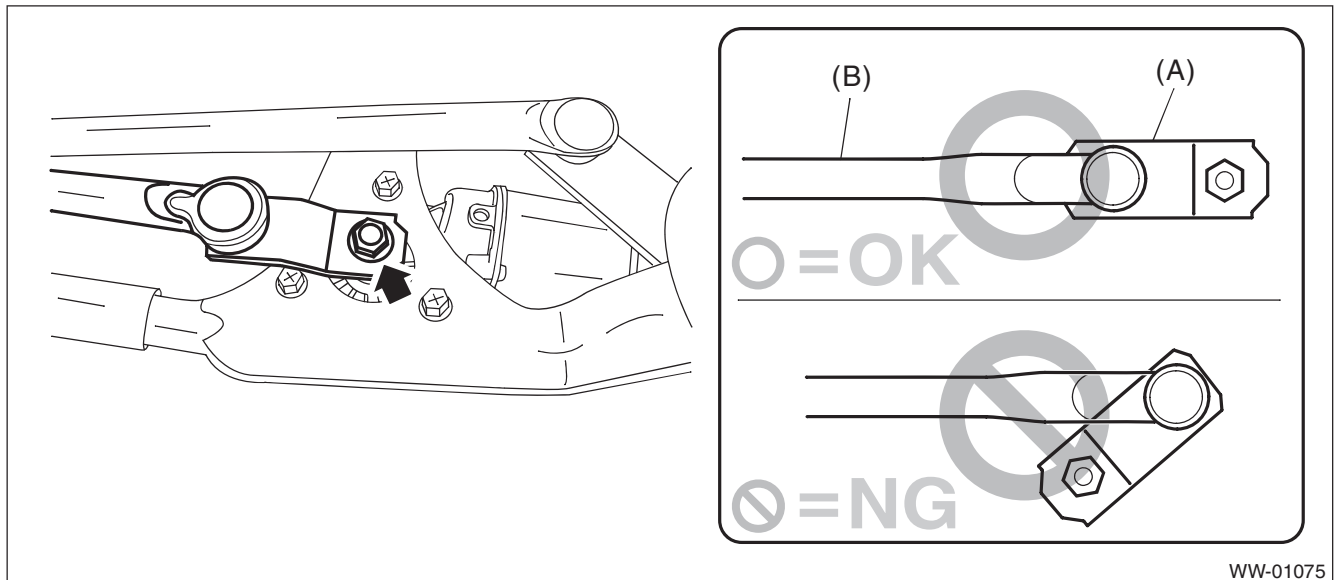
During motor operation, do not touch the movable part.

3) Disconnect the ground cable from battery.

4) Install the motor assembly - windshield wiper.

CAUTION:

Tighten the nut where rod (B) and link plate (A) is aligned in a straight line.



WW-01075

Tightening torque:

Tighten to 8.5 N·m (0.87 kgf-m, 6.3 ft-lb) by 115°.

Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

5) Install the link assembly - windshield wiper and cowl panel in the reverse order of removal.

CAUTION:

- If the cowl panel assembly cannot be installed properly, do not hit or set it forcibly. The claws of the cowl panel or the windshield glass may be damaged.
- Before installing the windshield glass and cowl panel, make sure there are no gravel in the installing area.

Tightening torque:

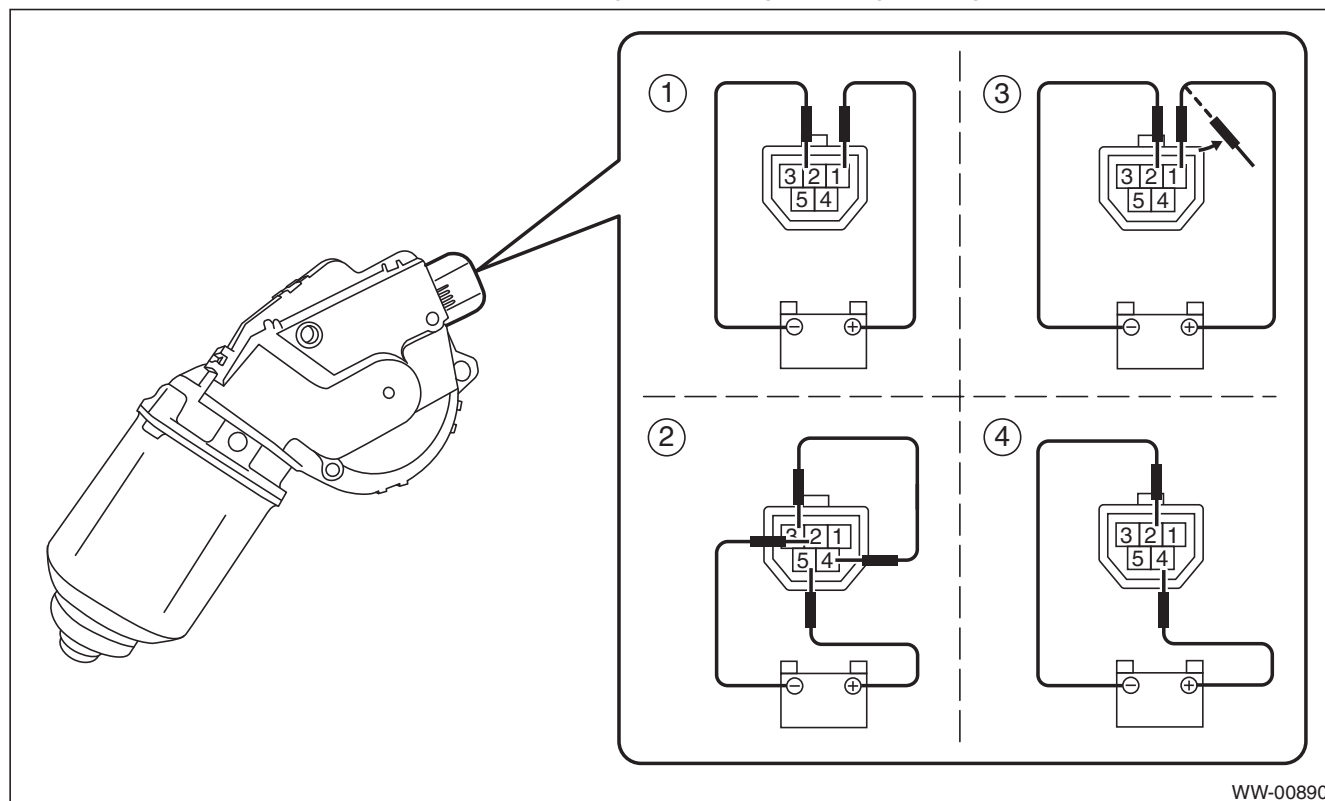
Refer to "COMPONENT" of "General Description". <Ref. to WW-3, FRONT WIPER, COMPONENT, General Description.>

C: INSPECTION

- 1) When the battery is connected to the terminal of connectors, confirm that the motor operates at low speed.
- 2) When the battery is connected to the terminal of connectors, confirm that the motor operates at high speed.
- 3) Connect the battery to terminals of the connector, and remove the terminal connection with motor rotating at low speed, and stop the motor assembly - windshield wiper in mid-operation.
- 4) Connect the battery and check that the motor stops at the automatic stop position after the motor operates at low speed again.

CAUTION:

Fix the motor to prevent the motor from being shorted by moving during operation.



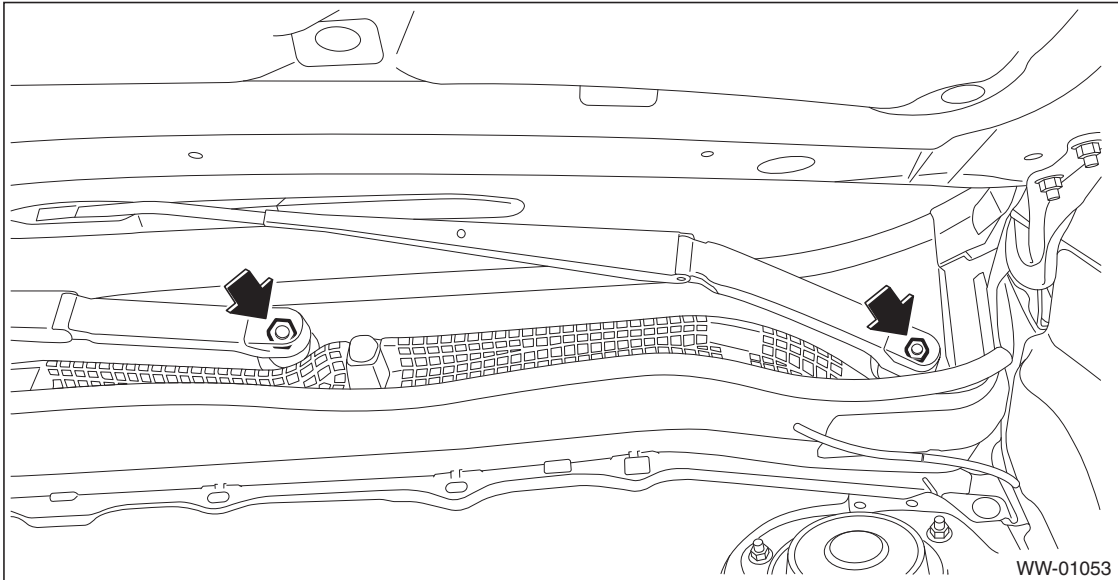
Front Washer Nozzle

WIPER AND WASHER SYSTEMS

9. Front Washer Nozzle

A: REMOVAL

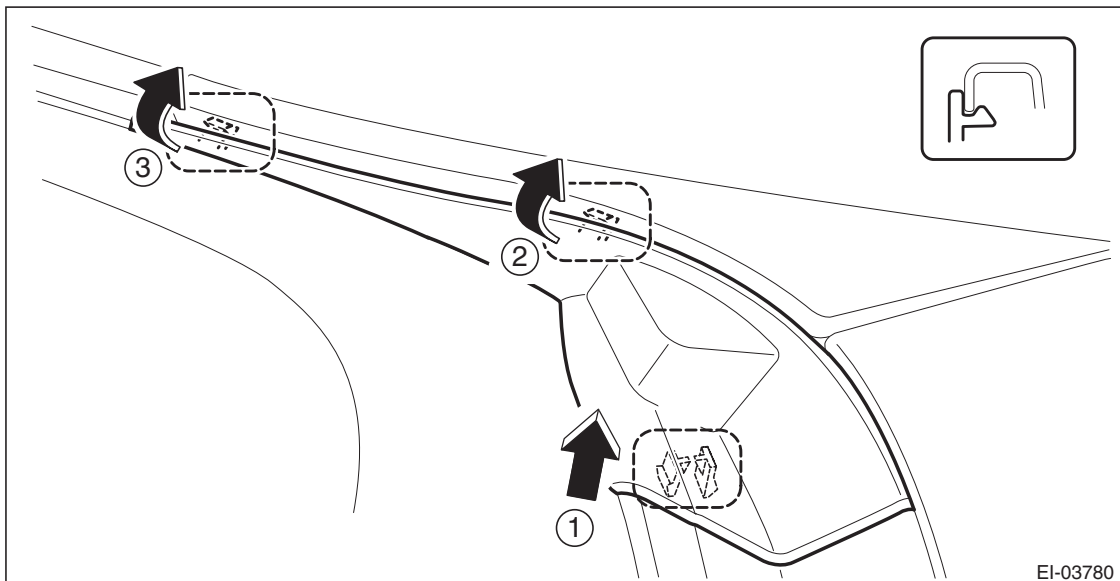
- 1) Open the hood COMPL - front.
- 2) Disconnect the ground cable from battery.
- 3) Remove the arm assembly - windshield wiper.
 - (1) Remove the cover - windshield wiper arm.
 - (2) Remove the nuts, and remove the arm assembly - windshield wiper.



- 4) Remove the cowl panel - side.
 - (1) Remove the clips.
 - (2) Release the claws from (1) to (3) in sequence, and then remove the cowl panel - side.

CAUTION:

Pulling with excessive force may damage the cowl panel - side. If it is difficult to remove, use a plastic remover or equivalent tool.



Front Washer Nozzle

WIPER AND WASHER SYSTEMS

5) Remove the cowl panel assembly.

CAUTION:

Before removing the cowl panel, use an air blower and nylon brush to sweep gravel from the lower area of the front side of the glass.

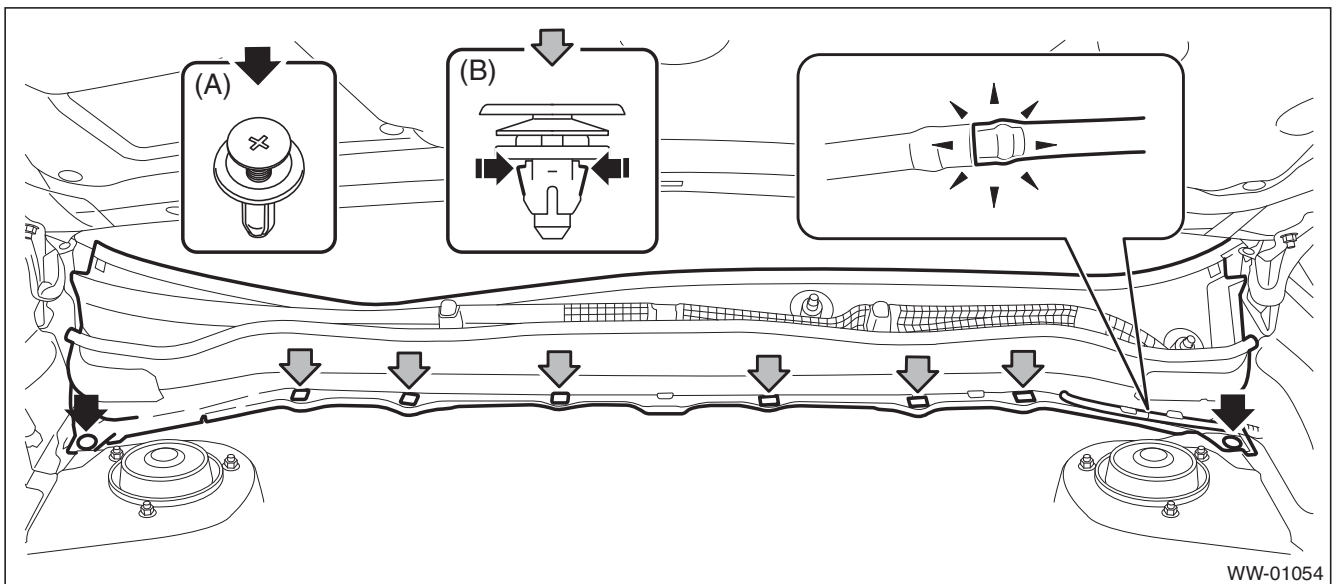
- (1) Disconnect the hose - windshield washer.
- (2) Remove clips (A).
- (3) Check the direction of the clip (B), and push the claws from both sides to remove it.

CAUTION:

When removing the clip (B), push the claw of the clip from both sides.

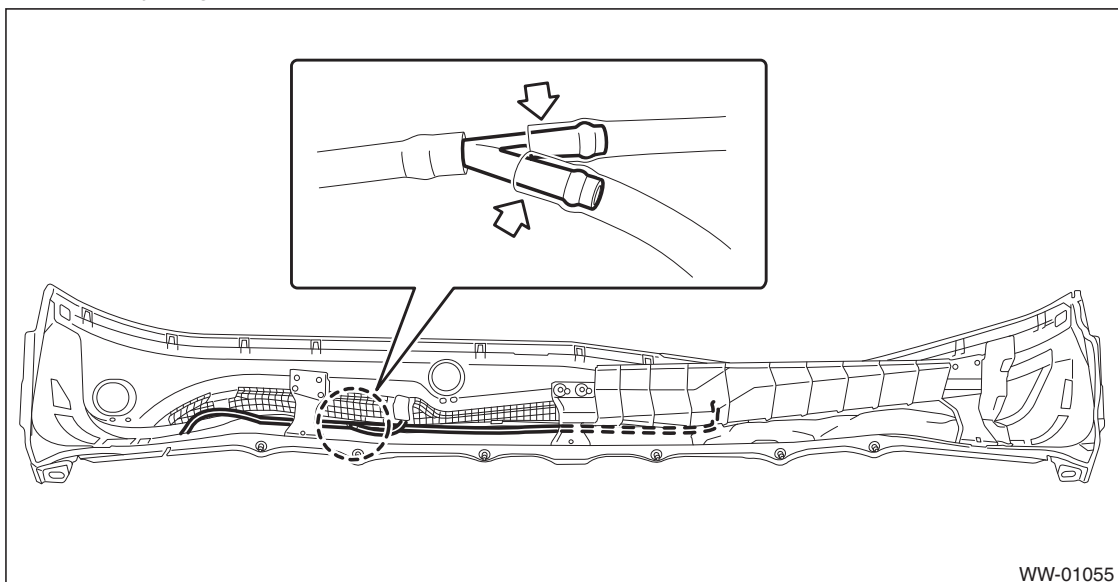
Be careful because the clips (B) can be damaged if you pull unnecessarily hard on them.

- (4) Remove the cowl panel assembly by pulling it out towards the front of the vehicle.



6) Disconnect the hose - windshield washer.

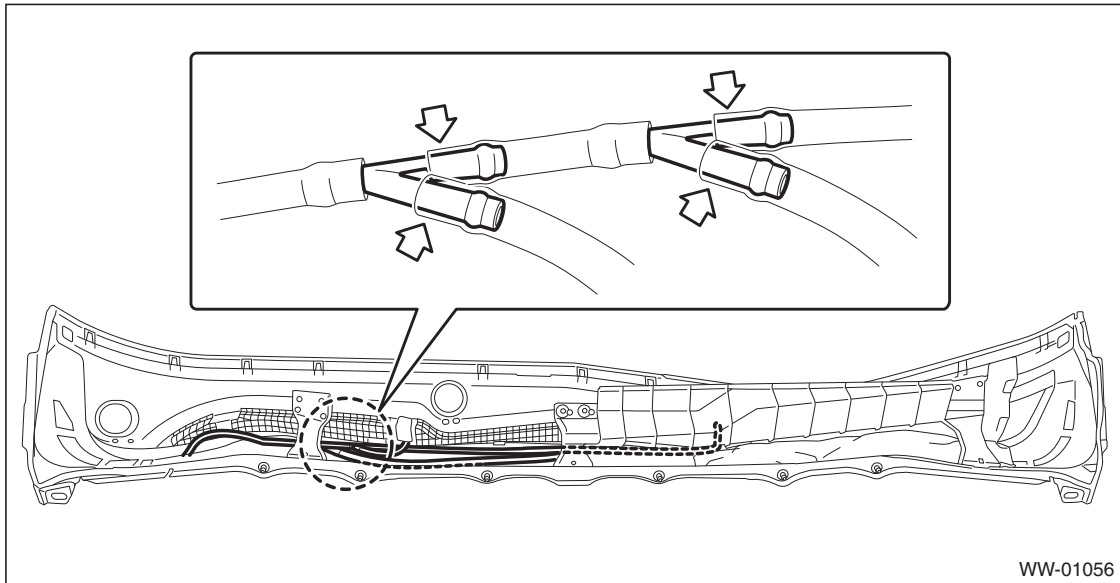
- Models without EyeSight



Front Washer Nozzle

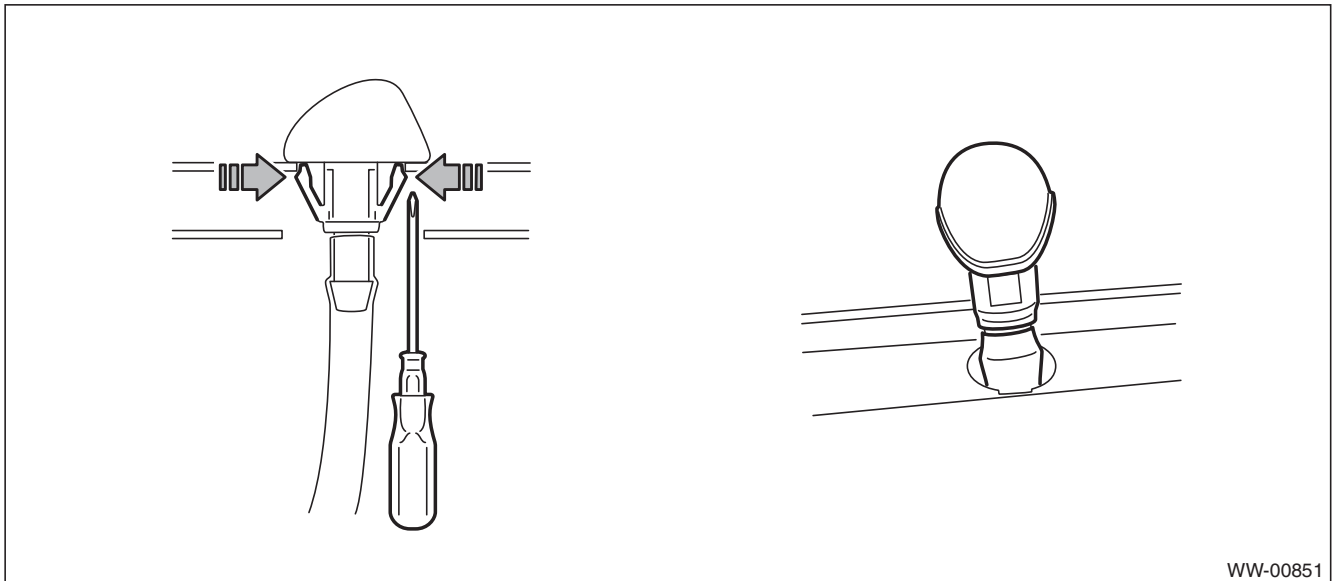
WIPER AND WASHER SYSTEMS

- Models with EyeSight



7) Remove the nozzle - windshield washer.

- (1) Push the claw using a flat tip screwdriver, etc.
- (2) When the nozzle - windshield washer lifts up, pull out the nozzle - windshield washer using a clip remover, etc.
- (3) Disconnect the hose - windshield washer, and remove the nozzle - windshield washer.



B: INSTALLATION

- 1) Install each part in the reverse order of removal.

CAUTION:

- If the cowl panel assembly cannot be installed properly, do not hit or set it forcibly. The claws of the cowl panel or the windshield glass may be damaged.
- Before installing the windshield glass and cowl panel, make sure there are no gravel in the installing area.

Tightening torque:

Refer to "COMPONENT" of "General Description". <Ref. to WW-3, FRONT WIPER, COMPONENT, General Description.>

Front Washer Nozzle

WIPER AND WASHER SYSTEMS

2) Adjust the position of the nozzle - windshield washer. <Ref. to WW-37, ADJUSTMENT, Front Washer Nozzle.>

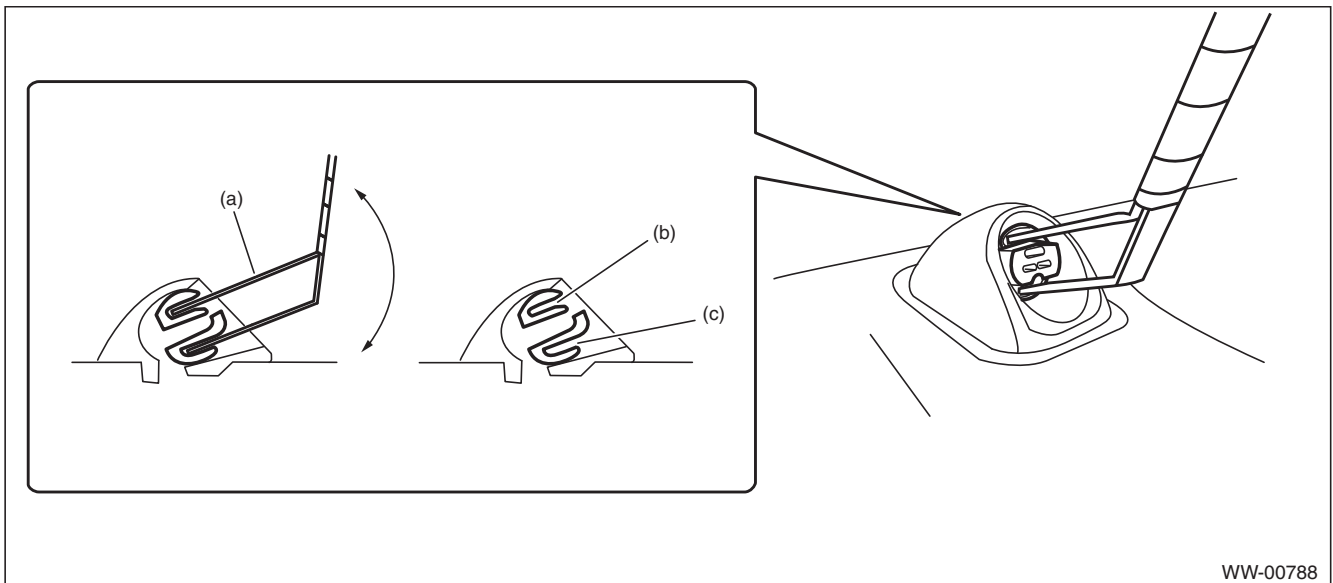
C: INSPECTION

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

D: ADJUSTMENT

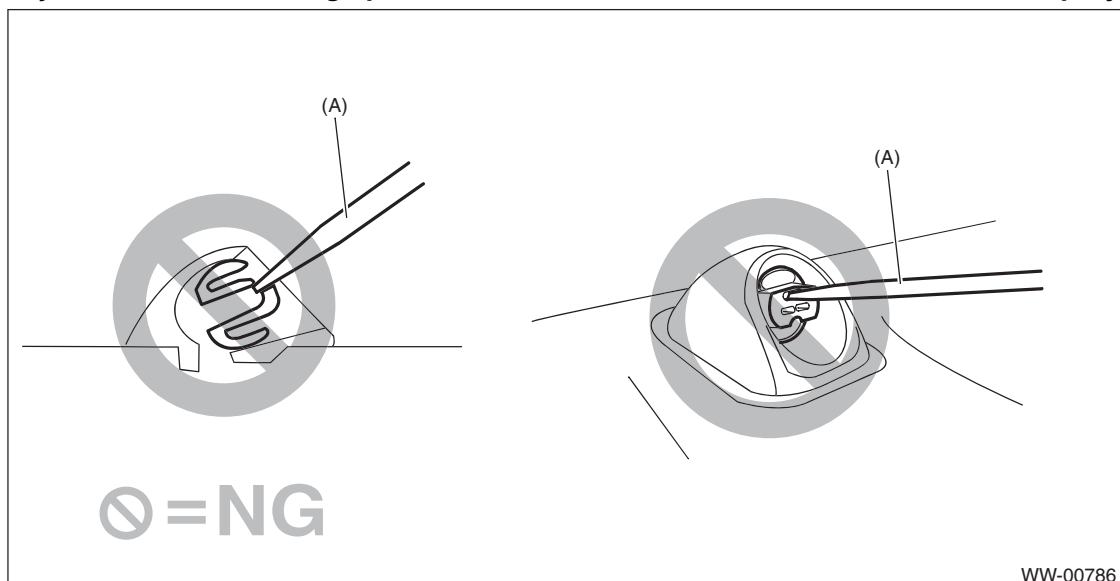
1. NOZZLE - WINDSHIELD WASHER

- 1) Turn the wiper switch to OFF position.
- 2) While the vehicle is at a standstill, insert the washer nozzle adjustment tool (a) into upper side (b) and lower side (c) of the nozzle - windshield washer to perform necessary adjustment.



CAUTION:

Washer nozzle is made of resin. If precision screwdriver (A) or equivalent is inserted into discharge port for adjustment, the discharge port can be deformed, and washer fluid cannot be sprayed.

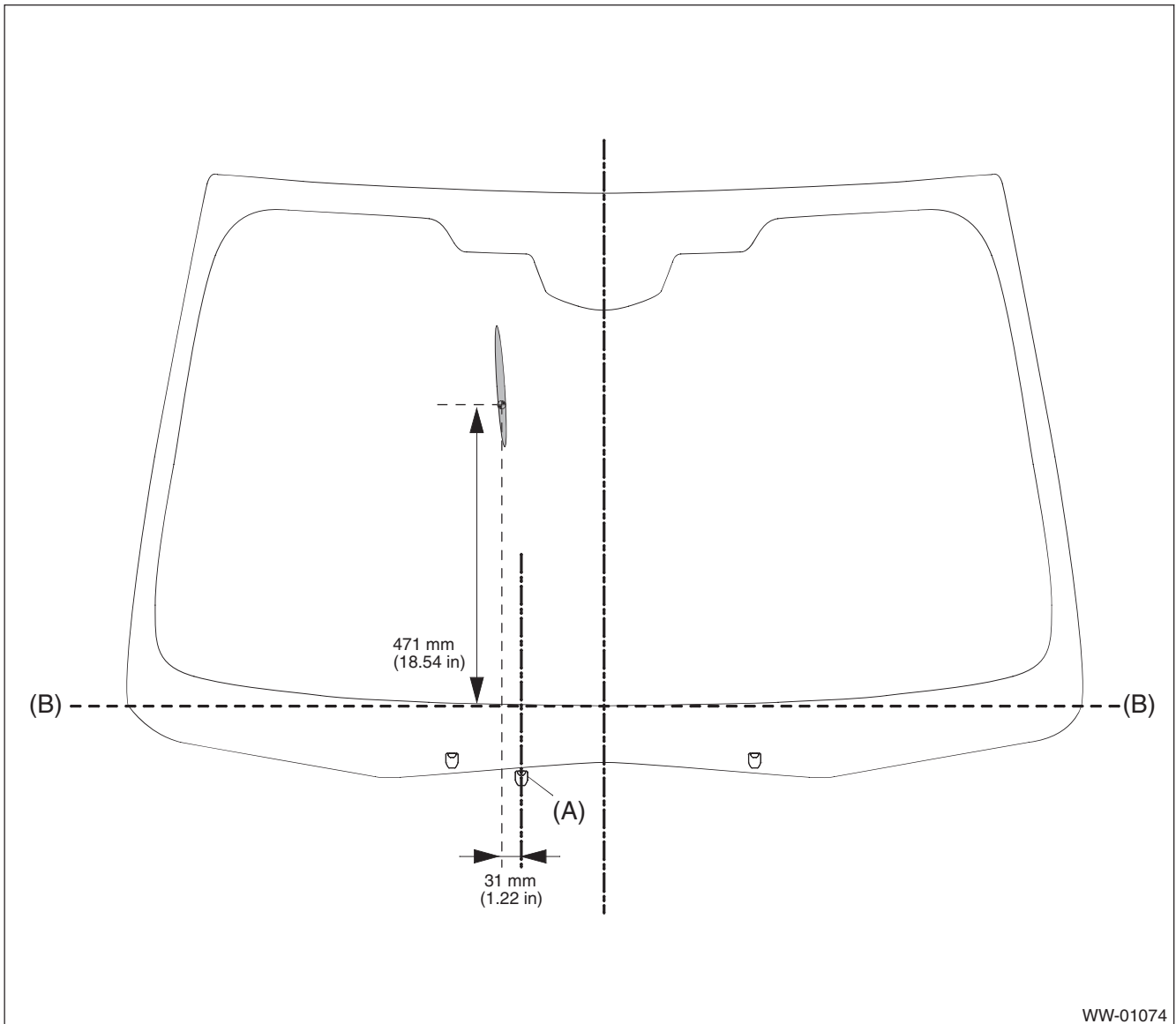


Front Washer Nozzle

WIPER AND WASHER SYSTEMS

2. NOZZLE - WINDSHIELD WASHER EyeSight (MODEL WITH EyeSight ONLY)

- 1) Turn the wiper switch to OFF position.
- 2) Adjust the washer injection position as shown in the figure.



- (A) Nozzle - windshield washer Eye-Sight (B) Ceramic line

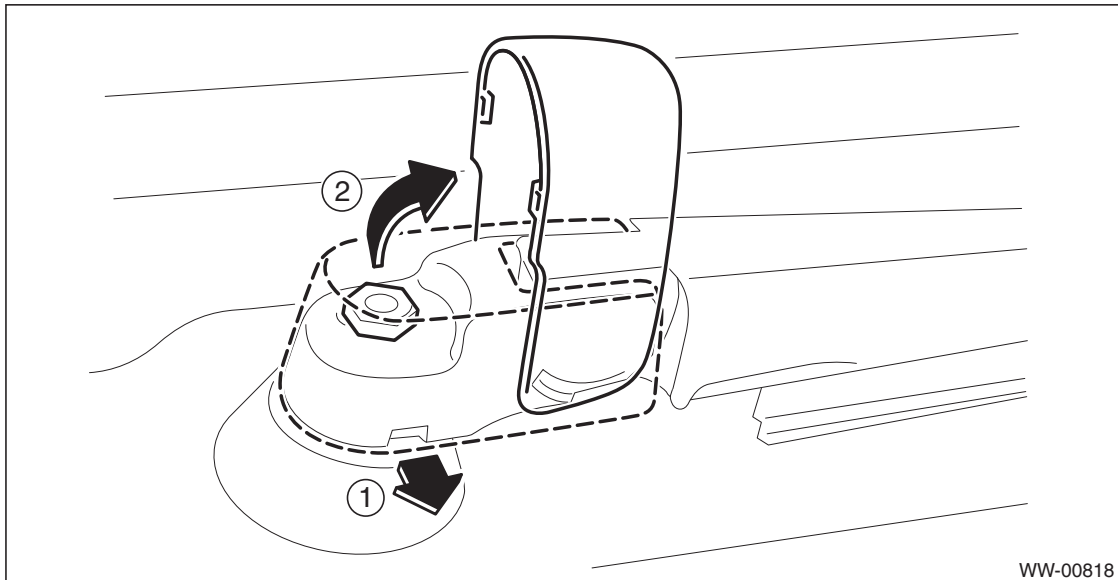
Rear Wiper Arm

WIPER AND WASHER SYSTEMS

10.Rear Wiper Arm

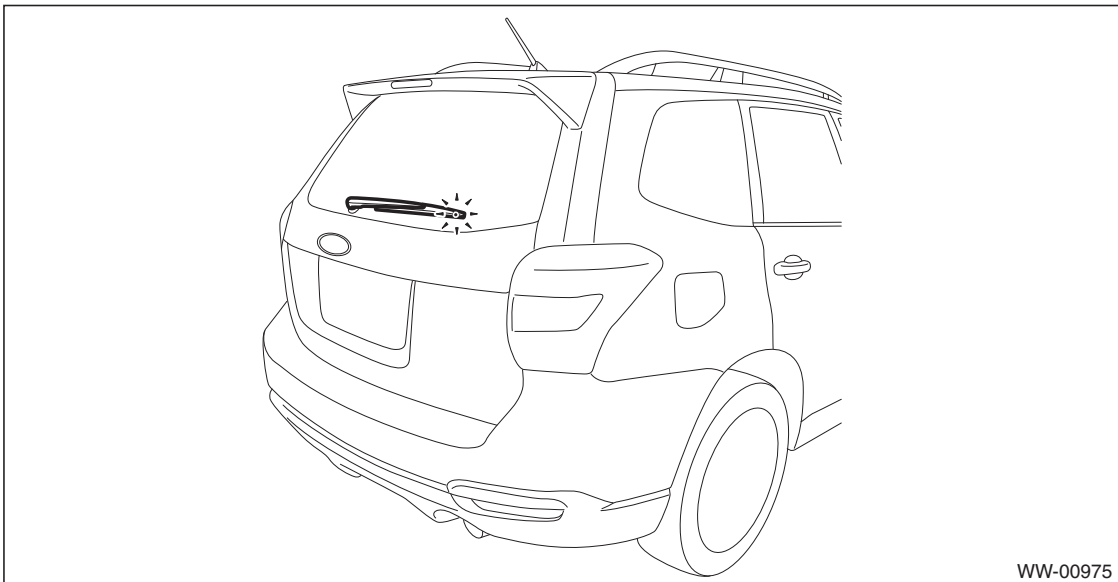
A: REMOVAL

- 1) Pull up the cover - rear wiper arm.
- 2) Remove the nut, and remove the arm assembly - rear wiper.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Operate the rear wiper once.
- 3) Align the blade assembly - rear wiper with the marking on the glass, and then tighten the nut to the specified torque.



Tightening torque:

8 N·m (0.82 kgf-m, 5.9 ft-lb)

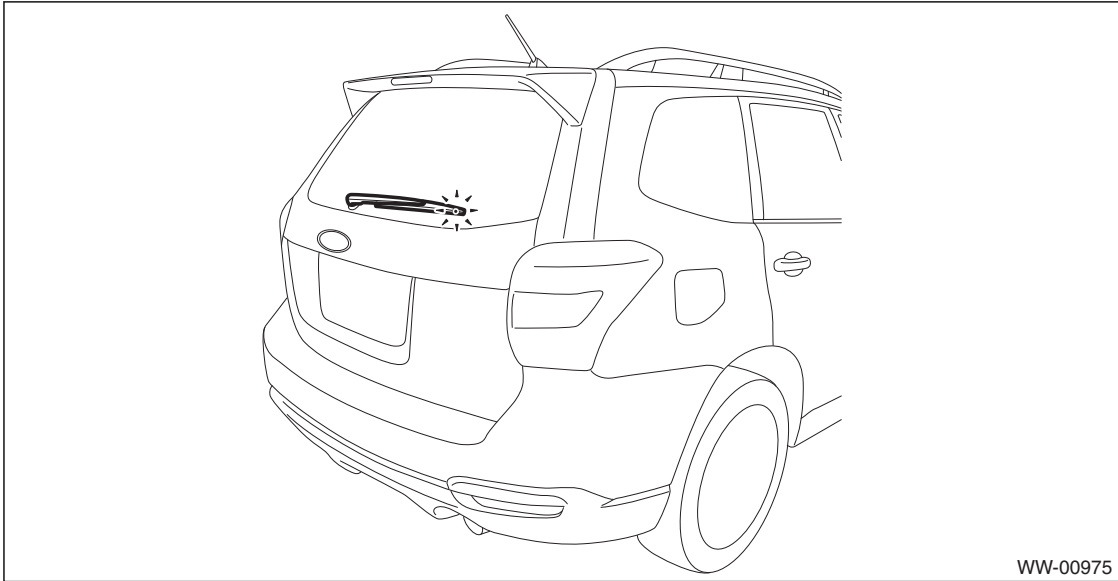
- 4) Operate the wiper to check whether the wiper blade aligns with the point mark. If not, perform installation over again.

Rear Wiper Arm

WIPER AND WASHER SYSTEMS

C: ADJUSTMENT

- 1) Operate the rear wiper once.
- 2) Align the blade assembly - rear wipe with the marking on the glass.



WW-00975

- 3) If the wiper blade is not aligned with the point mark, perform the removal of the rear wiper to align with the marking. <Ref. to WW-40, REMOVAL, Rear Wiper Arm.>



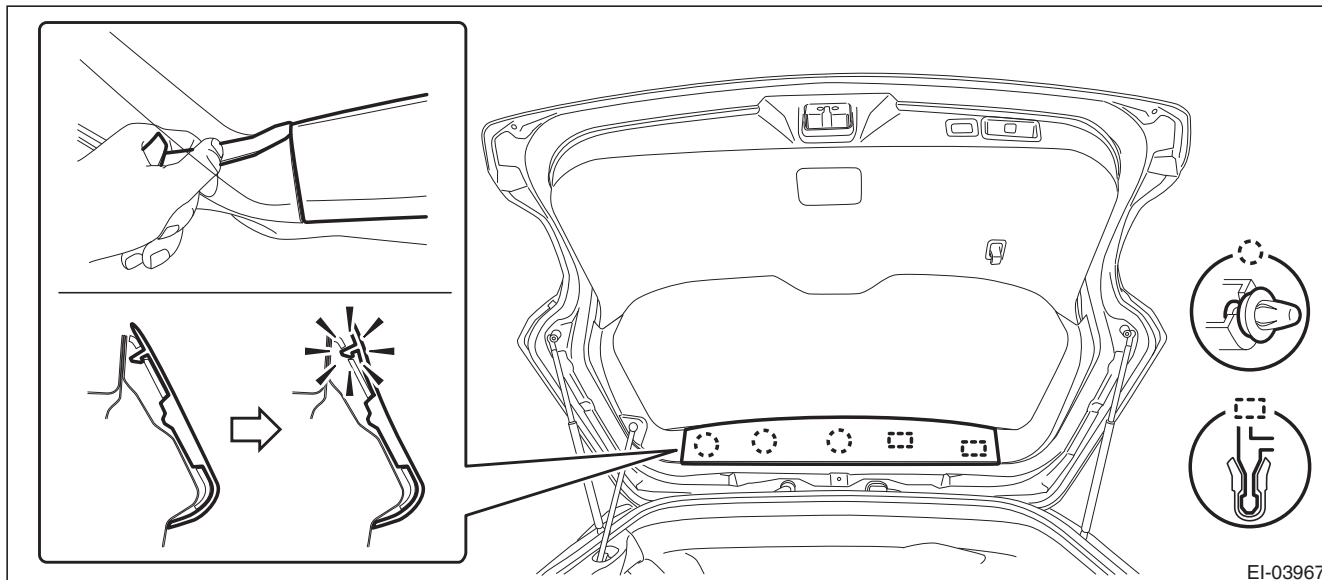
Rear Wiper Motor

WIPER AND WASHER SYSTEMS

11.Rear Wiper Motor

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate UPR.
 - (1) Remove the claws on the trim edge.
 - (2) Release the claws in the center of trim, and remove the trim panel - rear gate UPR.

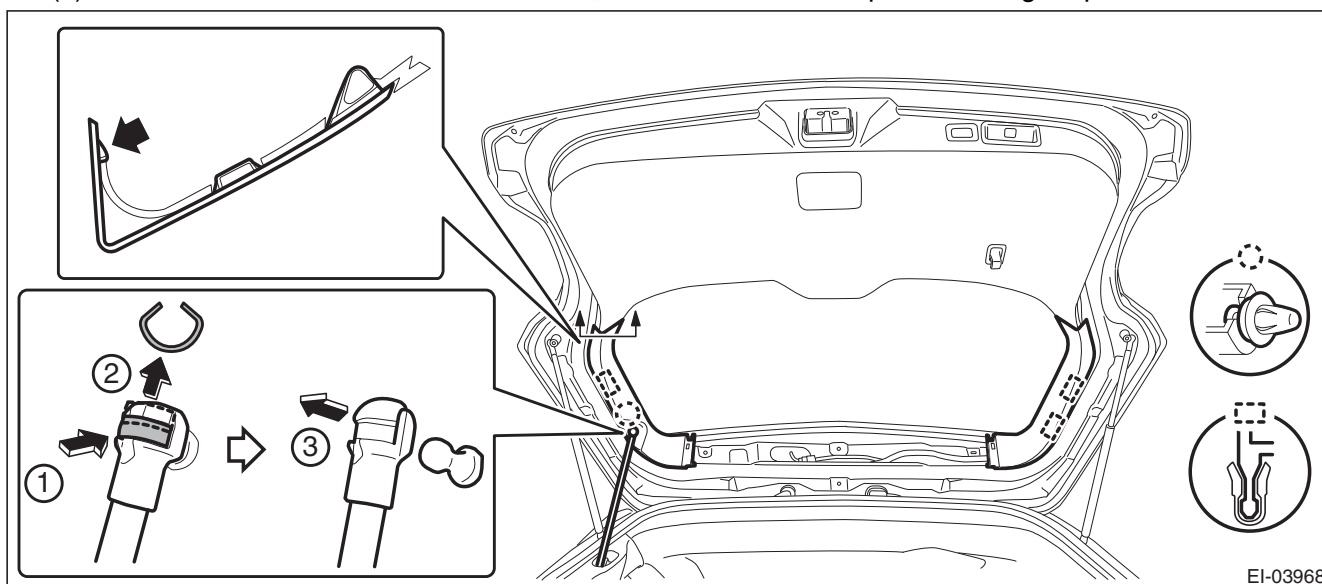


- 3) Remove the trim panel - rear gate pillar side.
 - (1) Disconnect the rod - power rear gate before removing the trim panel - rear gate pillar side LH. (Only for models with power rear gate)

CAUTION:

For the disconnection procedure of the rod - power rear gate, refer to "REMOVAL", "Power Rear Gate Rod" in the "POWER REAR GATE" section and observe the precautions for removal. <Ref. to PRG-13, REMOVAL, Power Rear Gate Rod.>

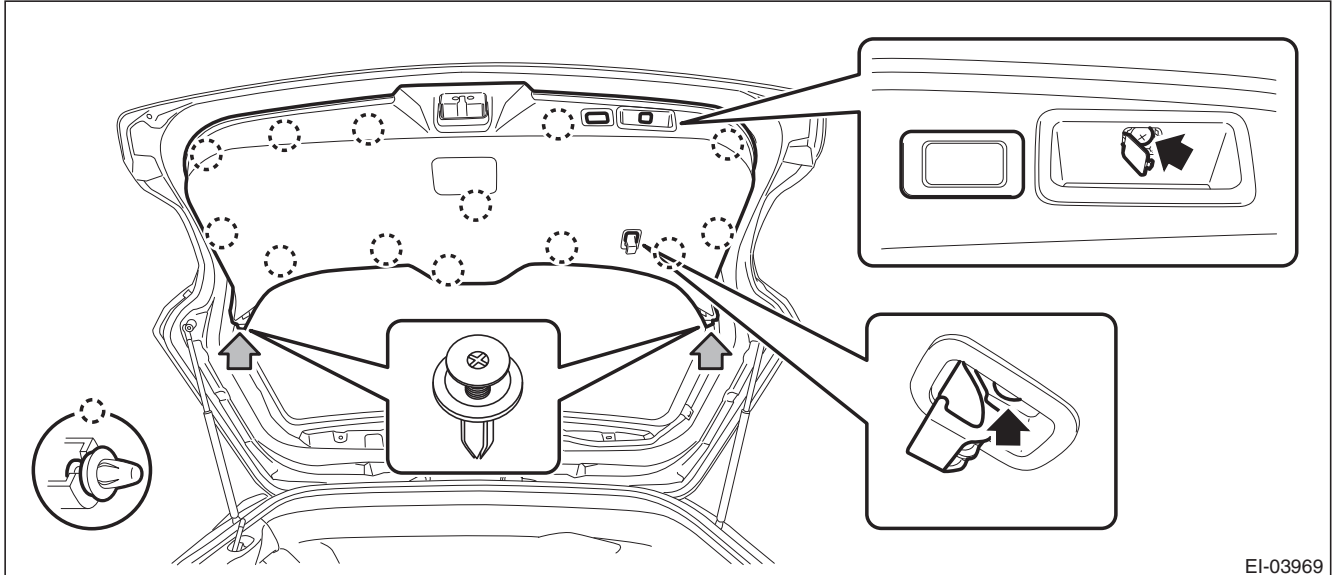
- (2) Release the claws.
- (3) Remove the claws on the bottom of trim, and remove the trim panel - rear gate pillar side.



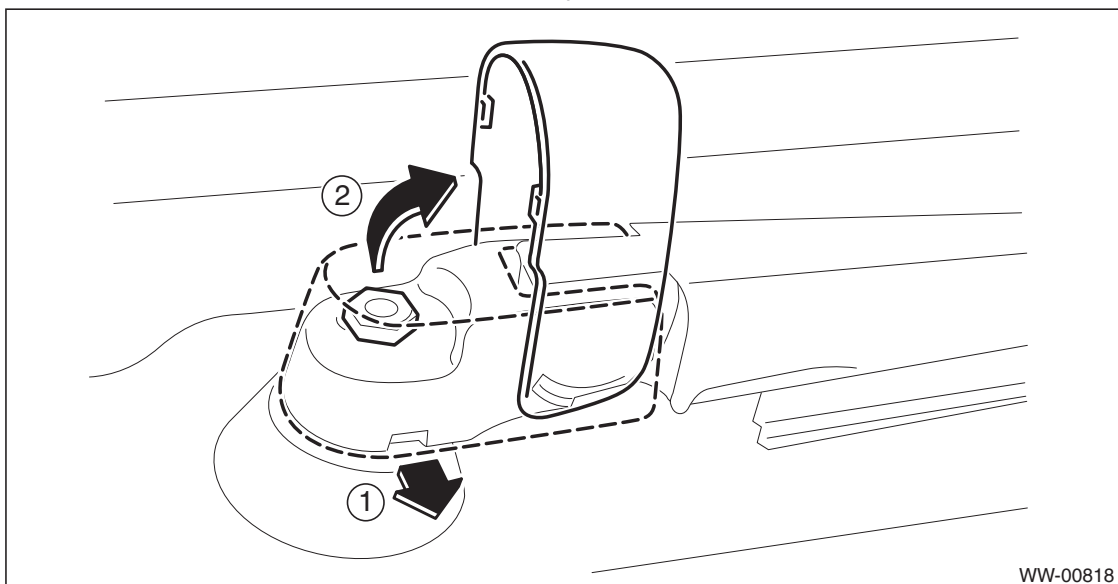
Rear Wiper Motor

WIPER AND WASHER SYSTEMS

- 4) Remove the trim panel - rear gate LWR.
- (1) Remove the power rear gate inner switch and disconnect the connector. (Only for models with power rear gate)
 - (2) Remove the screw and clips on both ends.
 - (3) Release the clips, and remove the trim panel - rear gate LWR.



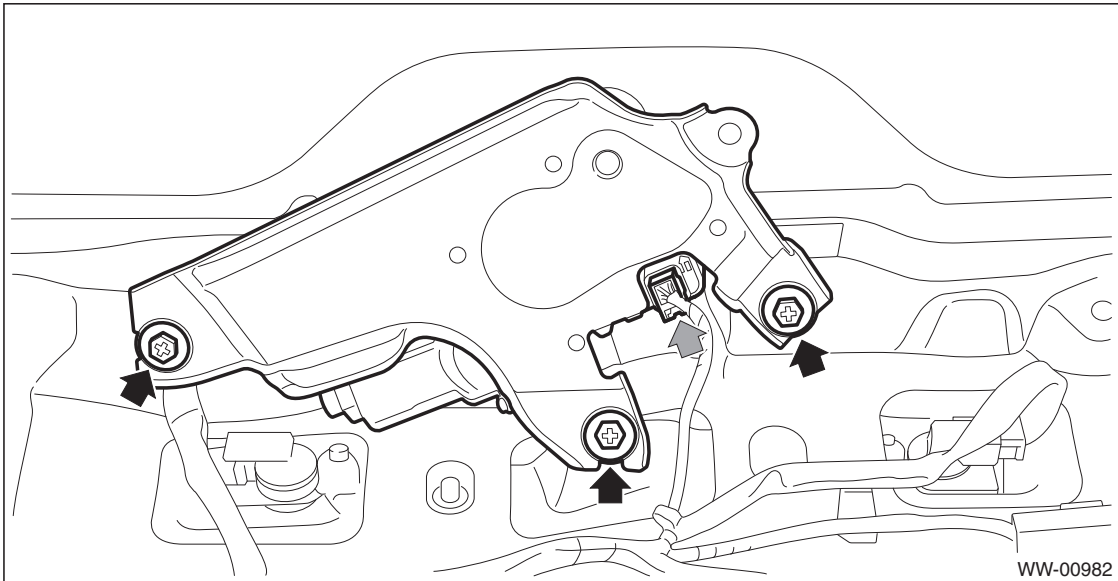
- 5) Remove the arm assembly - rear wiper.
- (1) Remove the cover - rear wiper arm.
 - (2) Remove the nut, and remove the arm assembly - rear wiper.



Rear Wiper Motor

WIPER AND WASHER SYSTEMS

- 6) Remove the motor assembly - rear wiper.
- (1) Disconnect the harness connector of the motor assembly - rear wiper.
 - (2) Remove the bolts, and remove the motor assembly - rear wiper.



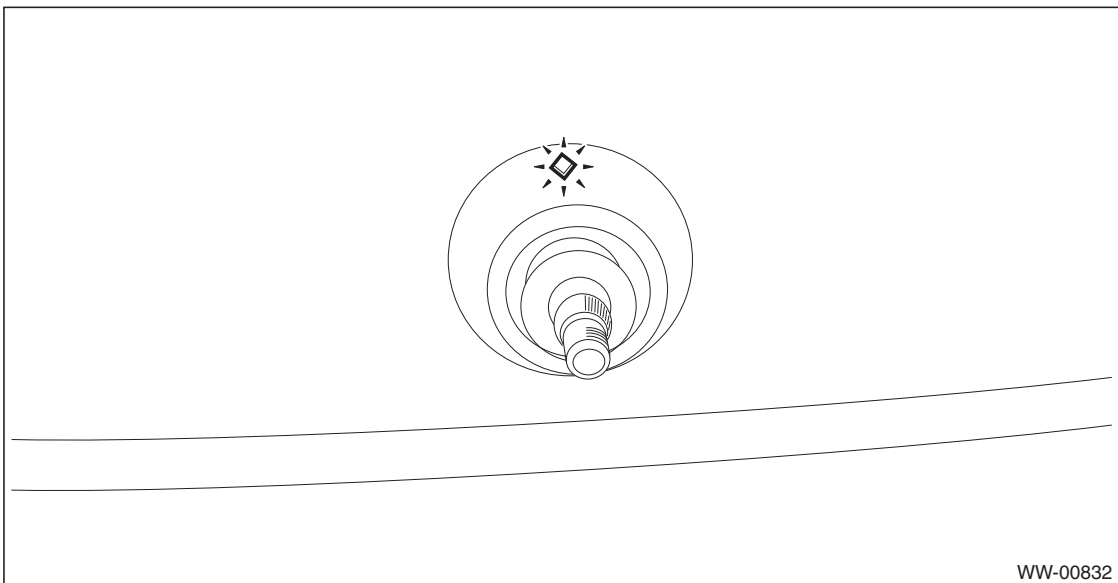
B: INSTALLATION

- 1) Install each part in the reverse order of removal.

CAUTION:

For installation of the rod - power rear gate, refer to "INSTALLATION", "Power Rear Gate Rod" in the "POWER REAR GATE" section and observe the precautions for installation. <Ref. to PRG-14, INSTALLATION, Power Rear Gate Rod.>

- 2) Check that the mark on the cap - pivot wiper faces up, as shown in the figure.



Tightening torque:

Refer to "COMPONENT" of "General Description". <Ref. to WW-4, REAR WIPER, COMPONENT, General Description.>

Rear Wiper Motor

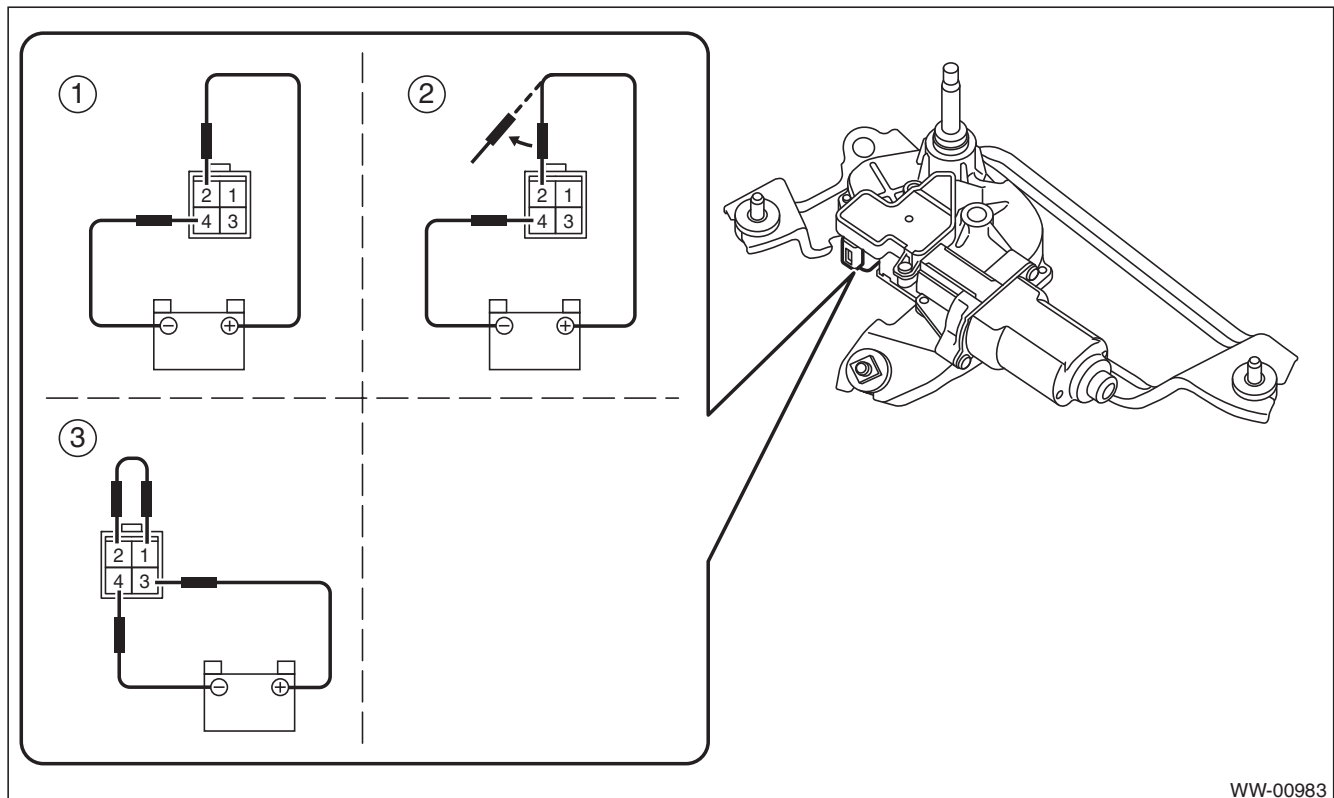
WIPER AND WASHER SYSTEMS

C: INSPECTION

- 1) Connect the battery to the rear wiper motor connector, and check that the motor assembly - rear wiper operates.
- 2) Connect the battery to terminals of the connector, and remove the terminal connection with motor rotating, and stop the motor assembly - rear wiper in mid-operation.
- 3) Connect the battery and check that the motor stops at the automatic stop position after the motor operates at low speed again.

CAUTION:

Fix the motor to prevent the motor from being shorted by moving during operation.



WW-00983

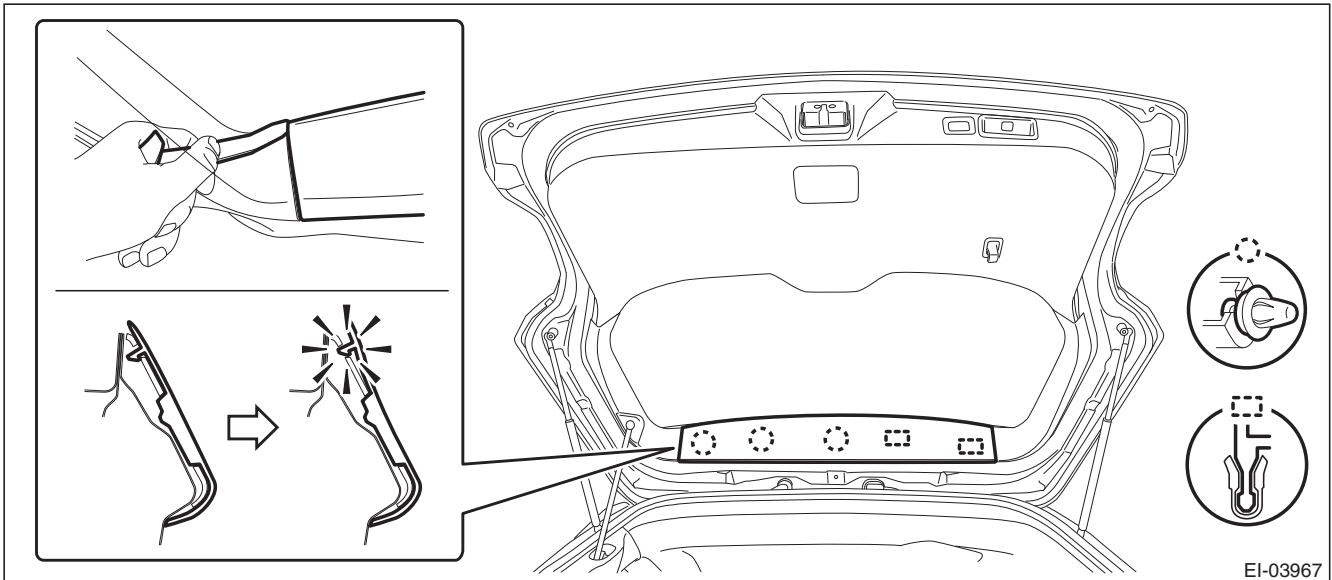
Rear Washer

WIPER AND WASHER SYSTEMS

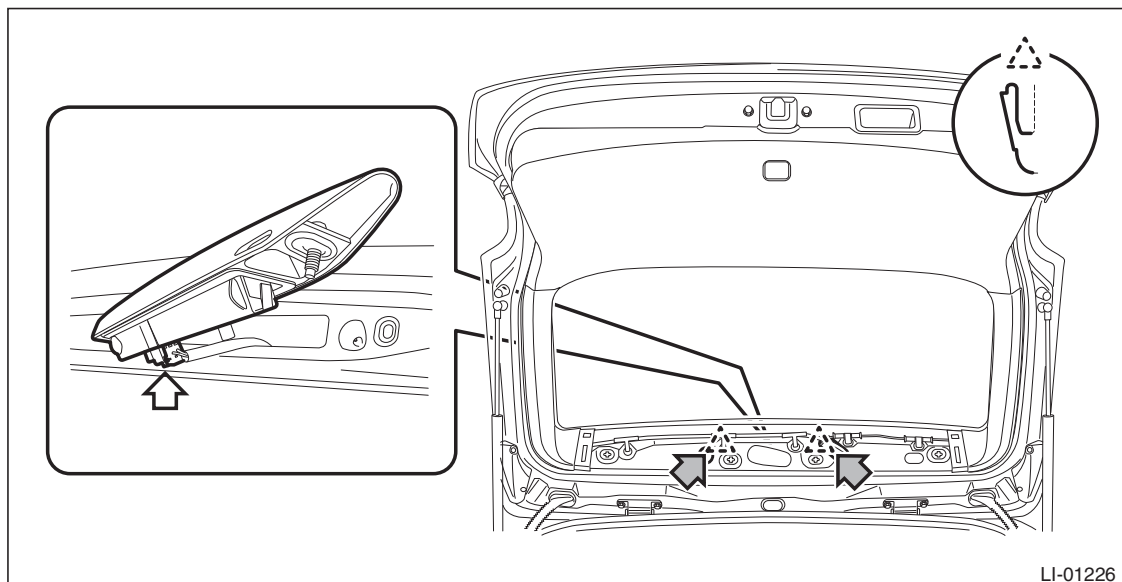
12.Rear Washer

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate UPR.
 - (1) Remove the claws on the trim edge.
 - (2) Release the claws in the center of trim, and remove the trim panel - rear gate UPR.



- 3) Remove the light assembly - high-mounted. (Model without roof spoiler)
 - (1) Remove the nut.
 - (2) Disconnect the connector and remove the light assembly - high-mounted.



- 4) Remove the roof spoiler. (Model with roof spoiler) <Ref. to EI-50, REMOVAL, Roof Spoiler.>

Rear Washer

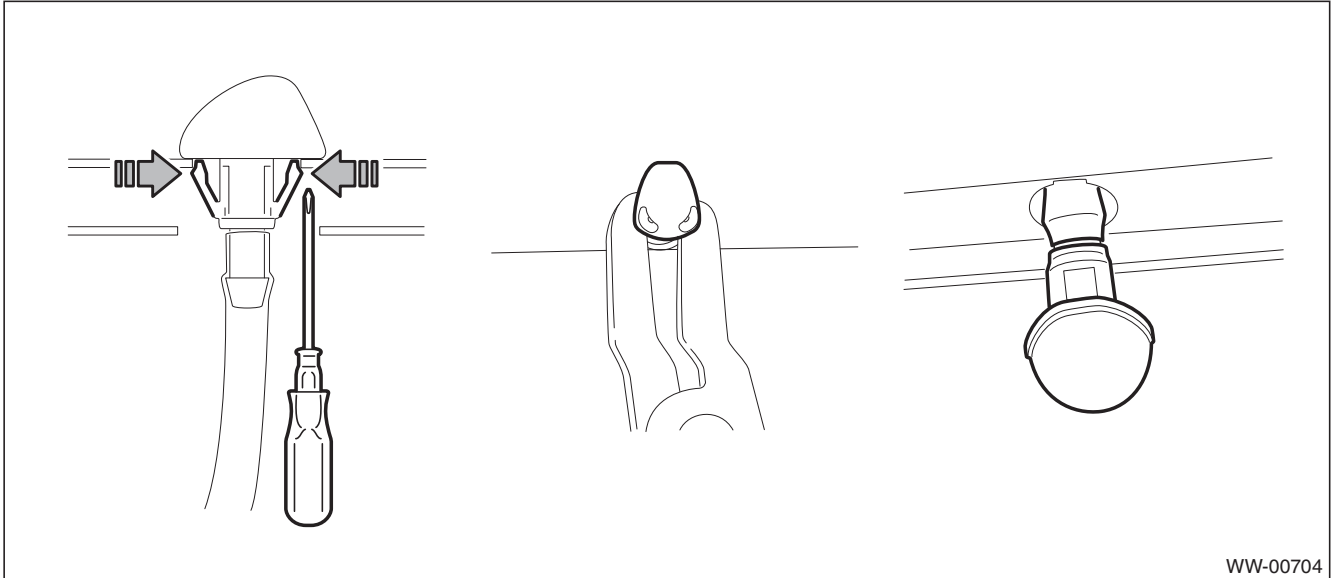
WIPER AND WASHER SYSTEMS

5) Remove the nozzle - rear washer.

CAUTION:

Before removing, apply protective tape to the body panel and used tools not to damage the panel - rear gate.

- (1) Push the claw using a flat tip screwdriver, etc.
- (2) When the nozzle - rear washer lifts up, pull out the nozzle - rear washer using a clip remover, etc.
- (3) Disconnect the hose assembly - rear washer, and remove the nozzle - rear washer.



B: INSTALLATION

1) Install each part in the reverse order of removal.

Tightening torque:

Light assembly - high-mounted (model without roof spoiler): 4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

Spoiler assembly - roof (model with roof spoiler): 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

2) Check the nozzle - rear washer position. <Ref. to WW-48, VISUAL INSPECTION, INSPECTION, Rear Washer.>

Rear Washer

WIPER AND WASHER SYSTEMS

C: INSPECTION

1. VISUAL INSPECTION

Check for the following items, and if any malfunction is found, replace the corresponding part.

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

2. INSPECTING THE SPRAY POSITION

- 1) Turn the wiper switch to OFF position.
- 2) While the vehicle is stopped, check that the washer spray position is as shown in the figure.
- 3) After inspection, if the spray position is significantly out of the specified range, replace the nozzle - rear washer with a new part.

