

WIPER AND WASHER SYSTEM

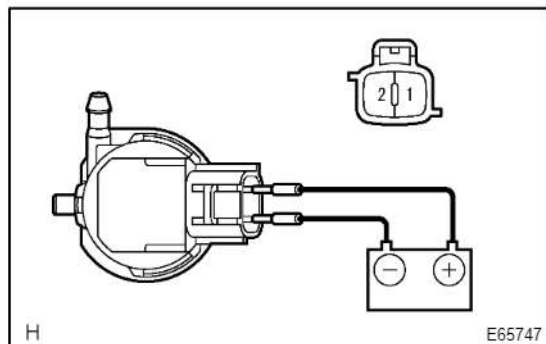
6805A-06

PRECAUTION

1. PRECAUTION OF WASHER NOZZLE ADJUSTMENT

- (a) Do not clean or adjust the washer nozzle with a safety pin etc. because;
 - (1) the washer nozzle tip is made of resin and could be damaged.
 - (2) adjustment is not necessary because the washer nozzle is spray type.
- (b) In case the washer nozzle is clogged with wax etc., remove the objects and clean the nozzle hole with a soft resin brush etc.

ON-VEHICLE INSPECTION

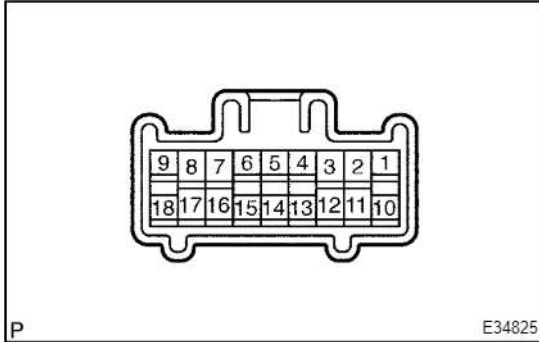


1. WASHER MOTOR

(a) Operation Check

- (1) Pour the washer fluid into the washer jar with the washer motor and the pump installed to the washer jar assy.
- (2) Connect the battery (+) to terminal 1 of the washer motor and the pump, the battery (-) to terminal 2 of the washer motor and the pump. Check that the water comes out from the washer jar.

INSPECTION



1. WINDSHIELD WIPER SWITCH ASSY

(a) Continuity Check

- (1) Check the continuity of each terminal of the connector.

Front Wiper Switch

Switch position	Tester connection	Specified condition
OFF	16 (+S) – 7 (+1)	Continuity
INTO	16 (+S) – 7 (+1)	Continuity
LO	17 (+B) – 7 (+1)	Continuity
HI	17 (+B) – 8 (+2)	Continuity

Rear Wiper Switch

Switch position	Tester connection	Specified condition
OFF	–	No Continuity
INTO	2 (EW) – 13 (C1R)	Continuity
ON	2 (EW) – 10 (+1R)	Continuity

Front Washer Switch

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON	11 (WF) – 2 (EW)	Continuity

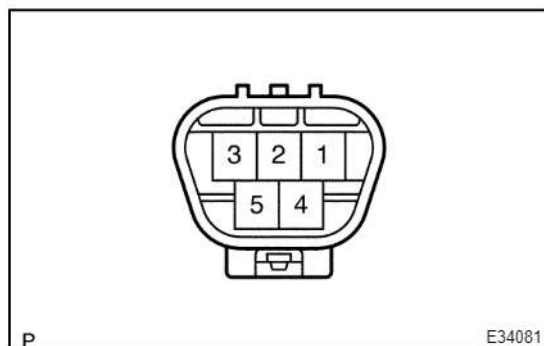
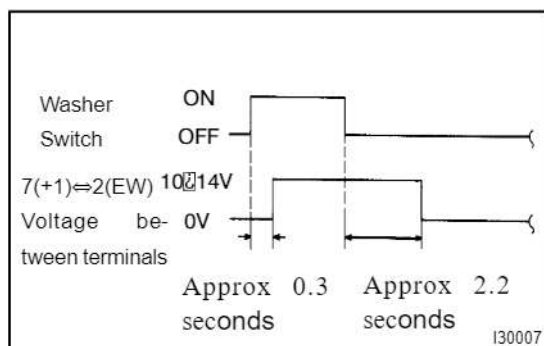
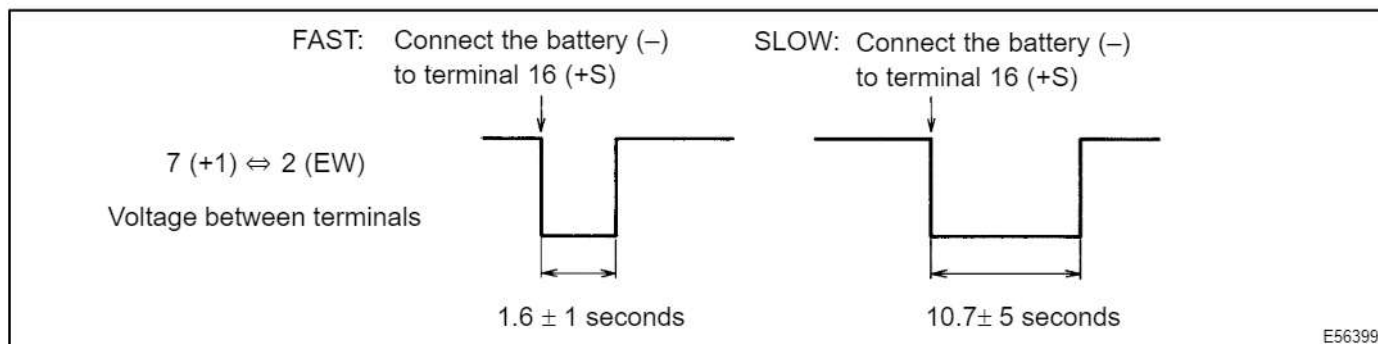
Rear Washer Switch

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON (OFF position side)	2 (EW) – 12 (WR)	Continuity
ON (ON position side)	2 (EW) – 10 (+1R) – 12 (WR)	Continuity

(b) Intermittent Operation Check

- (1) Connect the voltmeter (+) terminal to terminal 7 (+1) of the connector, the voltmeter (–) terminal to terminal 2 (EW) of the connector.
- (2) Connect the battery (+) to terminal 17 (+B) of the connector, the battery (–) to terminal 2 (EW) and 16 (+S) of the connector.
- (3) Turn the wiper switch to INT.
- (4) Connect the battery (+) to terminal 16 (+S) of the connector for 5 seconds.

- (5) Connect the battery (–) to terminal 16 (+S) of the connector. Operate the intermittent wiper relay and check voltage between terminal 7 (+1) and terminal 2 (EW).



(c) Operation Check (Front Wiper)

- (1) Turn the wiper switch to OFF.
- (2) Connect the battery (+) to terminal 17 (+B) of the connector, the battery (–) to terminal 16 (+S) and 2 (EW) of the connector.
- (3) Connect the voltmeter (+) terminal to terminal 7 (+1) of the connector and the voltmeter (–) terminal to terminal 2 (EW) of the connector. Turn the washer switch to ON and OFF, and check voltage between terminal 7 (+1) and terminal 2 (EW).

2. WINDSHIELD WIPER MOTOR ASSY

(a) LO Operation Check

- (1) Connect the battery (+) to terminal 1 (+1) of the connector, the battery (–) to terminal 5 (E) of the connector, and check that the motor operates with low speed (LO).

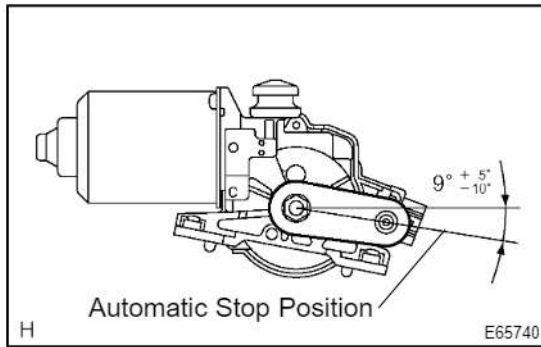
(b) HI Operation Check

- (1) Connect the battery (+) to terminal 4 (+2) of the connector, the battery (–) to terminal 5 (E) of the connector, and check that the motor operates with high speed (HI).

(c) Automatic Stop Operation Check

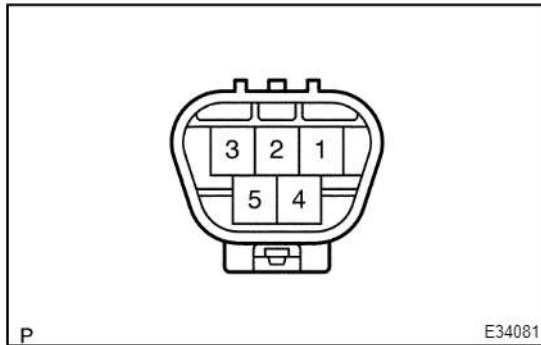
- (1) Connect the battery (+) to terminal 1 (+1) of the connector, the battery (–) to terminal 5 (E) of the connector. With the motor being rotated at low speed (LO), disconnect terminal 1 (+1) to stop the wiper motor operation at any position except the automatic stop position.
- (2) Using a SST, connect terminal 1 (+1) and 3 (S), and the battery (+) to terminal 2 (B) to restart the motor operation at low speed.

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(3) Check the automatic stop position.

Standard: See the illustration.



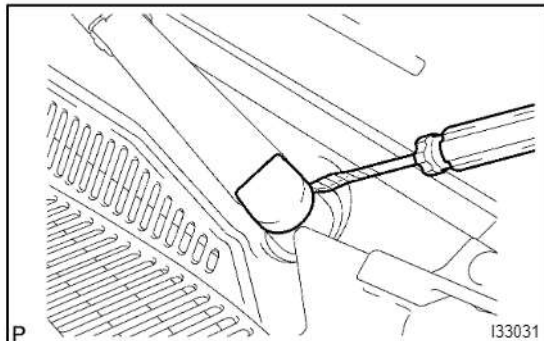
3. REAR WIPER MOTOR ASSY

(a) Operation Check

- (1) Connect the battery (+) to terminal 4 of the rear wiper motor assy, the battery (-) to terminal 5 of the rear wiper motor assy. Check that the motor turns clockwise.
- (2) Reverse the polarity, and check that the motor turns counterclockwise.

WINDSHIELD WIPER MOTOR ASSY REPLACEMENT

6809A-02



1. REMOVE FRONT WIPER ARM HEAD CAP

- (a) Using a small screwdriver, remove the 2 front wiper arm head cap.

HINT:

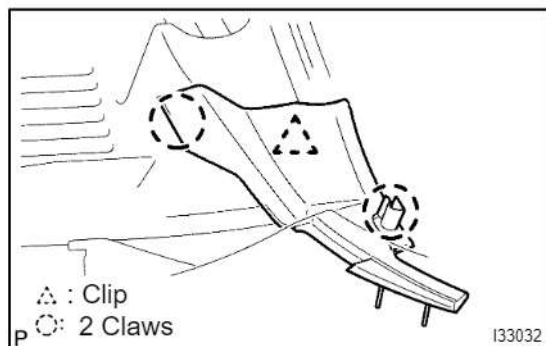
Tape the screwdriver tip before use.

2. REMOVE FR WIPER ARM RH

- (a) Operate the wiper and stop the windshield wiper motor assy at the automatic stop position.
(b) Remove a nut and FR wiper arm RH.

3. REMOVE FR WIPER ARM LH

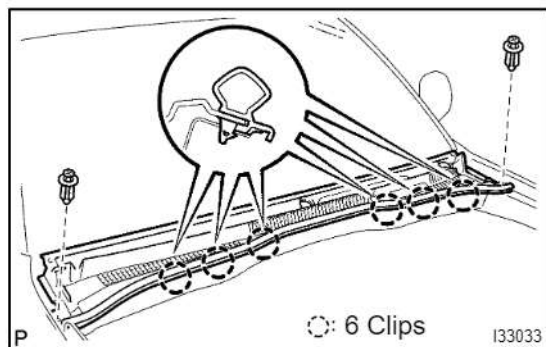
- (a) Remove a nut and FR wiper arm LH.



4. REMOVE FRONT FENDER TO COWL SIDE SEAL LH

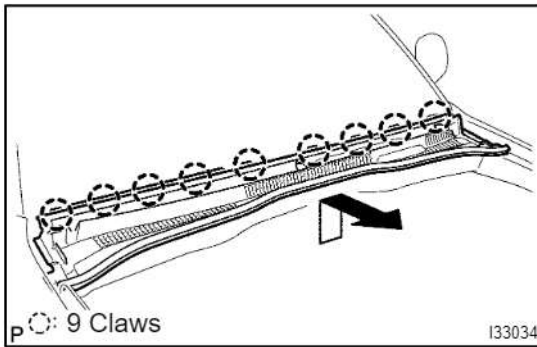
- (a) Remove the clip.
(b) Release the 2 claws, and remove the front fender to cowl side seal LH.

5. REMOVE FRONT FENDER TO COWL SIDE SEAL RH

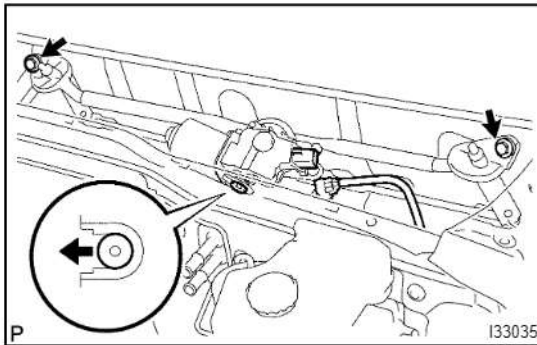


6. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY

- (a) Remove the 2 clips.
(b) Using a clipremover, disengage the meshing of 6 clips.

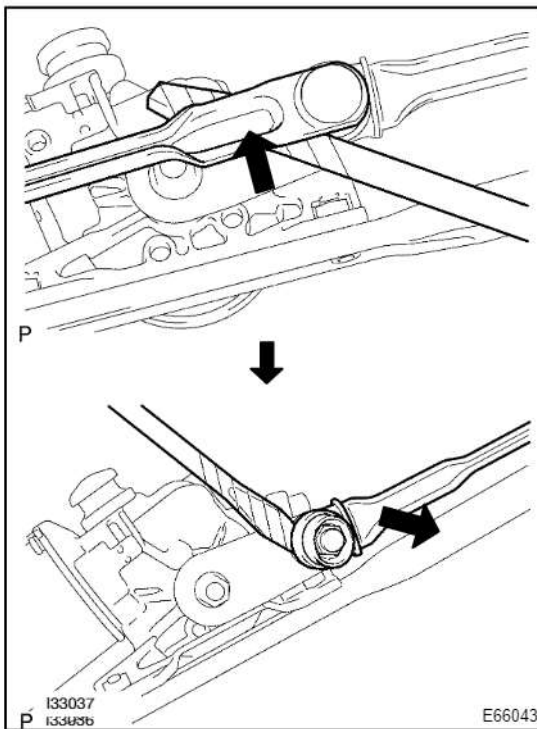


- (c) Remove the 9 claws and cowl top ventilator louver sub-assy.



7. REMOVE WINDSHIELD WIPER MOTOR & LINK ASSY

- (a) Disconnect the connector and remove the 2 bolts.
 (b) Slide the wiper link assy to vehicle's passengers side. Disengage the meshing of the rubber pin and remove the wiper link assy.

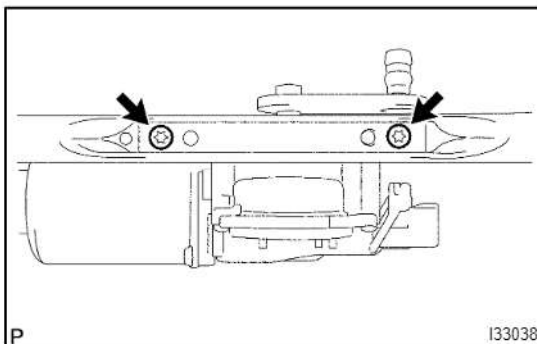


8. REMOVE WINDSHIELD WIPER MOTOR ASSY

- (a) Using a screwdriver and disengage the meshing of 2 rods at the clank arm pivot of the windshield wiper motor assy.

HINT:

Tape the screwdriver tip before use.



- (b) Remove the 2 bolts and windshield wiper motor assy.

9. INSTALL WINDSHIELD WIPER MOTOR ASSY

- (a) Apply MP grease to the clank arm pivot of the windshield wiper motor assy.
- (b) Install the windshield wiper motor assy with 2 bolts.

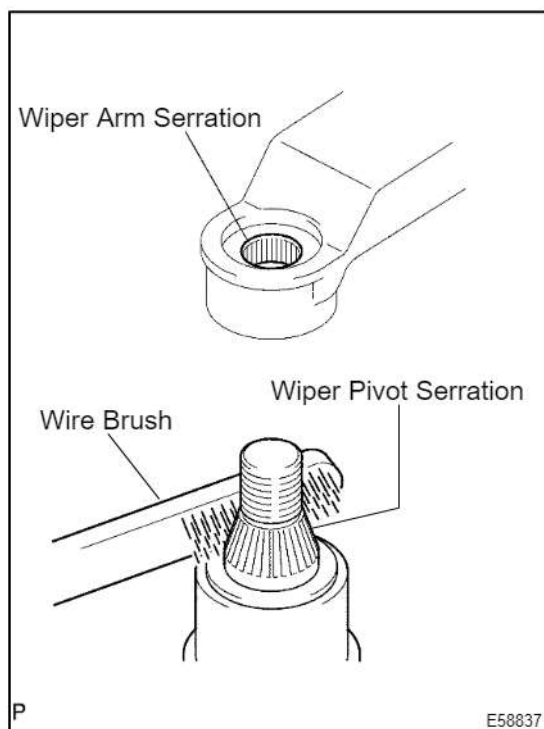
Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)

10. INSTALL WINDSHIELD WIPER MOTOR & LINK ASSY

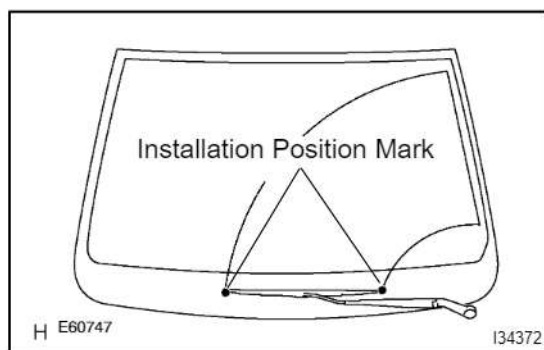
- (a) Install the meshing of the rubber pin.
- (b) Install the windshield wiper link assy with the 2 bolts.

Torque: 7 N·m (71 kgf·cm, 62 in.·lbf)

- (c) Connect the connector.

**11. INSTALL FR WIPER ARM LH**

- (a) Operate the wiper, and stop the windshield wiper motor assy at the automatic stop position.
- (b) Scrape off the serration part of the wiper arm with a round file or equivalent.
- (c) Clean the wiper pivot serration with the wire brush.

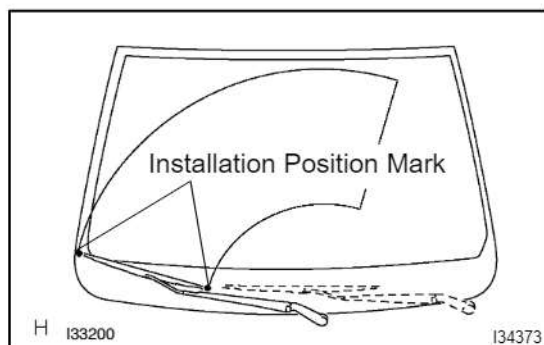


- (d) Install the front wiper arm LH with a nut to the position shown in the illustration.

Torque: 25 N·m (255 kgf·cm, 18.4 ft·lbf)

HINT:

Hold down the arm hinge with hand to fasten a nut.

**12. INSTALL FR WIPER ARM RH**

- (a) Scrape off the serration part of the wiper arm with a round file or equivalent.
- (b) Clean the wiper pivot serration with the wire brush.
- (c) Install the front wiper arm RH with a nut at the position shown in the illustration.

Torque: 25 N·m (255 kgf·cm, 18.4 ft·lbf)

HINT:

Hold down the arm hinge with hand to fasten a nut.

- (d) Operate the wiper while running the water or the washer fluid over the window, and check the wiping condition and that the rear wiper does not hit against the vehicle body.

WIPER RUBBER LH

REPLACEMENT

6809B-02

1. REMOVE FR WIPER BLADE LH

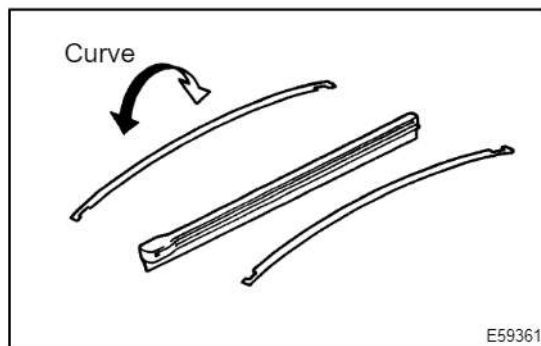
- (a) Remove the front wiper blade LH from the front wiper arm LH.

NOTICE:

Do not fold down the front wiper arm with the front wiper blade being removed from it.

2. REMOVE WIPER RUBBER LH

- (a) Remove the front wiper rubber LH from the front wiper blade.
(b) Remove the 2 wiper rubber backing plates from the wiper rubber LH.

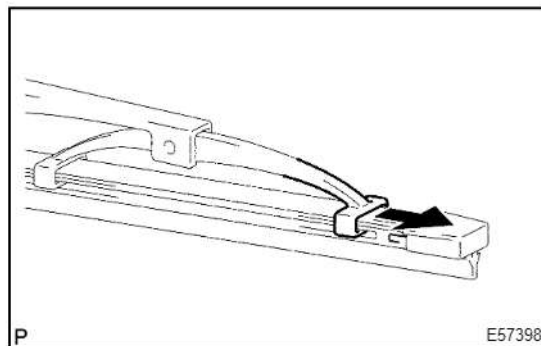


3. INSTALL WIPER RUBBER LH

- (a) Install the 2 wiper rubber backing plates to the wiper rubber LH.

NOTICE:

Be careful to observe and keep direction of curvature for correct replacement.



- (b) Install the wiper rubber LH so that the head part (Larger side) of the wiper rubber faces the arm axis side.

NOTICE:

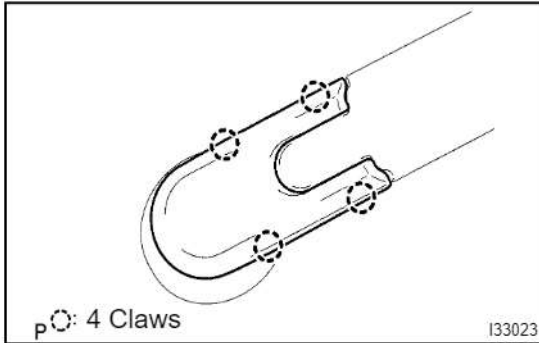
Push the front wiper blade into the grooves of the wiper rubber to engage them completely.

REAR WIPER MOTOR ASSY

REPLACEMENT

6809C-02

1. REMOVE BACK DOOR TRIM BOARD(See page 75-38)
2. REMOVE BACK DOOR SERVICE HOLE COVER LH(See page 75-38)



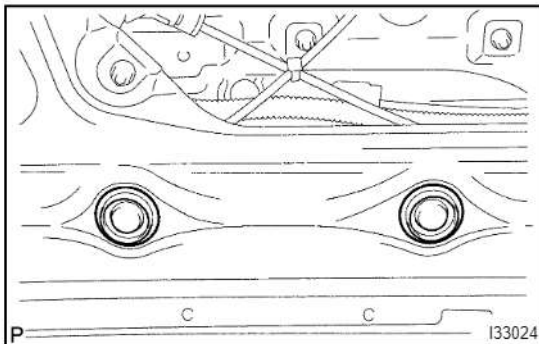
3. REMOVE REAR WIPER ARM HEAD CAP

- (a) Release the 4 claws and remove the rear wiper arm head cap.

4. REMOVE REAR WIPER ARM

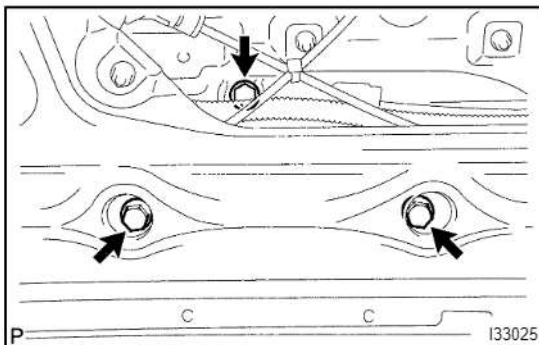
- (a) Remove a nut and rear wiper arm.

5. REMOVE REAR WIPER MOTOR GROMMET

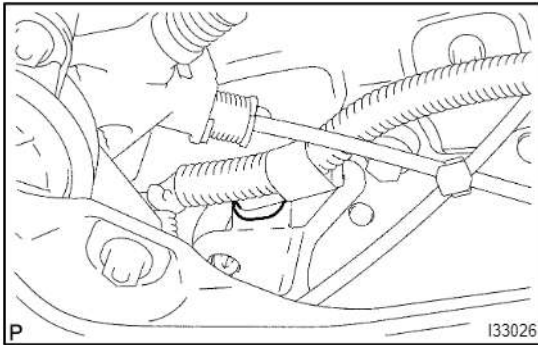


6. REMOVE REAR WIPER MOTOR ASSY

- (a) Remove the 2 grommets.



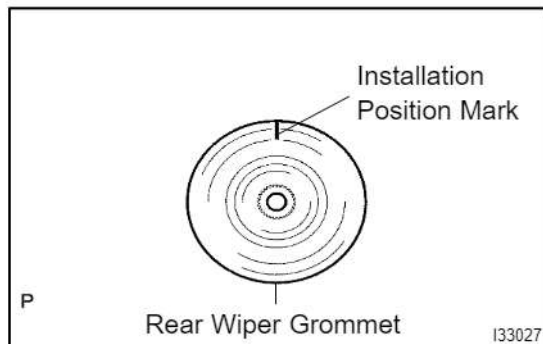
- (b) Remove the 3 bolts.



- (c) Using a clipremover, remove the clamp.
- (d) Disconnect the connector and remove the rear wiper motor assy.

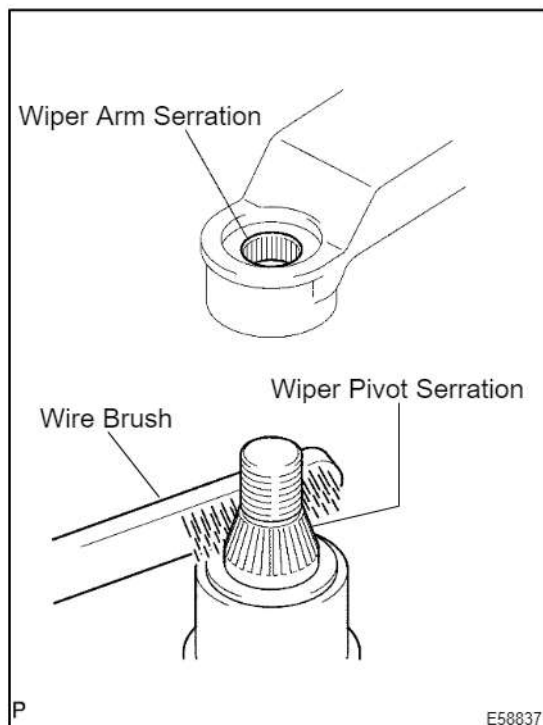
7. INSTALL REAR WIPER MOTOR ASSY

- (a) Install the rear wiper motor assy with 3 bolts.
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)
- (b) Install the clamp and connect the connector.



8. INSTALL REAR WIPER MOTOR GROMMET

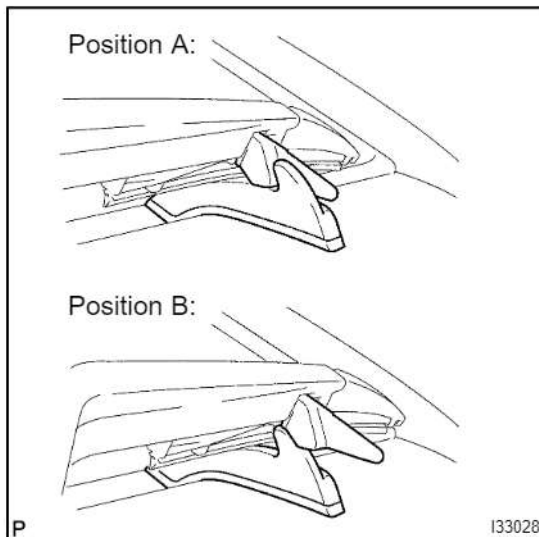
- (a) As shown in the illustration, install the rear wiper motor grommet with its position mark upside.



9. INSTALL REAR WIPER ARM

- (a) Scrape off the serration part of the wiper arm with a round file or equivalent.
- (b) Clean the rear wiper pivot serration with the wire brush.
- (c) Stop the rear wiper motor assy at the automatic stop position.

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- (d) Hold the slider to the position "A" and install the arm & blade assy with the nut temporarily.
- (e) Move the slider to the position "B" and tighten the nut to install the arm & blade assy.

Torque: 5.5 N·m (56 kgf·cm, 49 in.·lbf)

HINT:

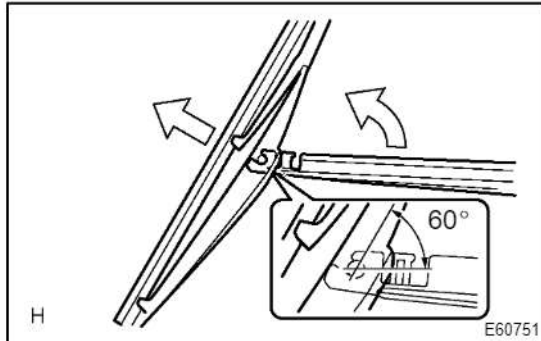
Hold down the arm hinge with hand to fasten a nut.

- (f) Set the arm & blade assy by moving it back to the rise-up position.
- (g) Operate the rear wiper while running the water or the washer fluid over the window, and check the wiping condition and that the rear wiper does not hit against the vehicle body.

10. INSTALL BACK DOOR SERVICE HOLE COVER LH(See page 75-38)

REAR WIPER RUBBER REPLACEMENT

6809D-02



1. REMOVE RR WIPER BLADE

- (a) Raise the rear wiper blade to the position as shown in the illustration, to the extent that the meshing of the claw is disengaged with the click sound.

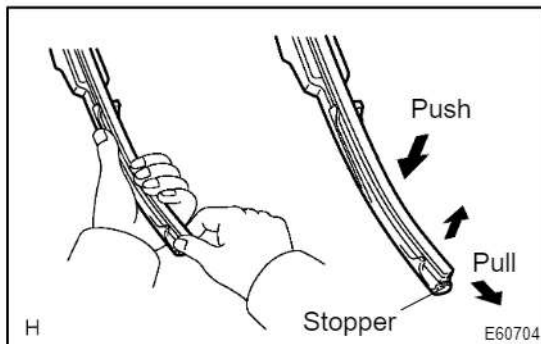
NOTICE:

Be careful not to break the claw.

- (b) Pull straight the rear wiper blade to vehicle's left from the wiper arm.

NOTICE:

Do not fold the rear wiper arm with the rear wiper blade being removed from it.



2. REMOVE REAR WIPER RUBBER

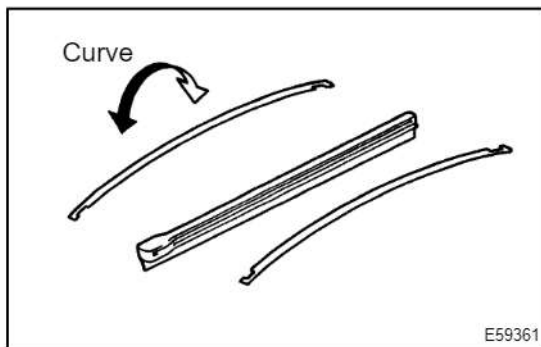
- (a) Place the rear wiper with the rear end of the rubber protruded from the blade stopper as shown in the illustration.

NOTICE:

Do not pull out the wiper rubber forcibly. Otherwise the backing plates are deformed or blade claw is damaged.

HINT:

Pushing the position close to the middle of the blade will raise the rubber, which could be easier to pull it out.

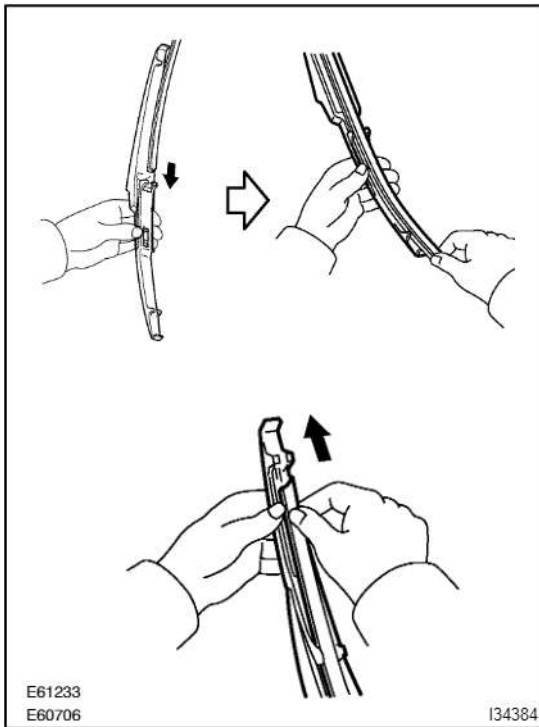


3. INSTALL REAR WIPER RUBBER

- (a) Install the 2 wiper rubber backing plates to the rear wiper rubber.

NOTICE:

Be careful to observe and keep direction of curvature for correct replacement.

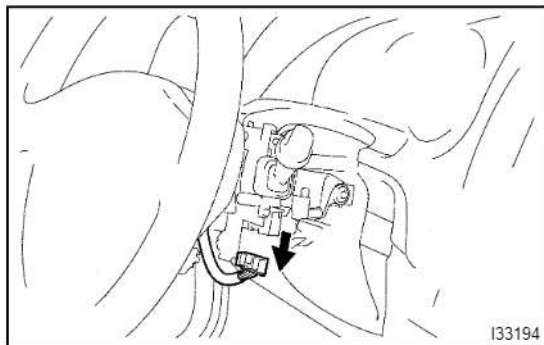


- (b) Insert the rear wiper rubber from the claw of the middle of the rear wiper blade into the rear end position.
- (c) After passing the rear wiper rubber through the rear end side claw, protrude it from the rear end stopper and pass it through the front tip side claw.

WINDSHIELD WIPER SWITCH ASSY REPLACEMENT

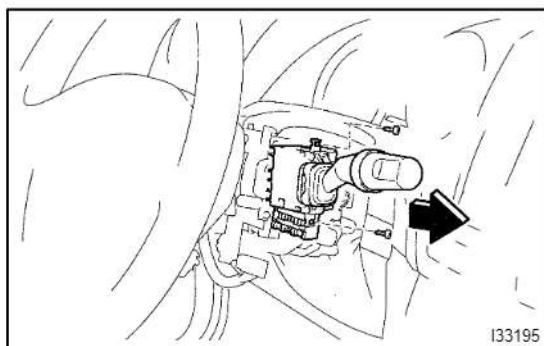
6809E-02

1. REMOVE STEERING COLUMN COVER LWR(See page50-8)
2. REMOVE STEERING COLUMN COVER(See page50-8)



3. REMOVE WINDSHIELD WIPER SWITCH ASSY

- (a) Disconnect the connector.



- (b) Remove the 2 screws and windshield wiper switch assy.

WASHER NOZZLE

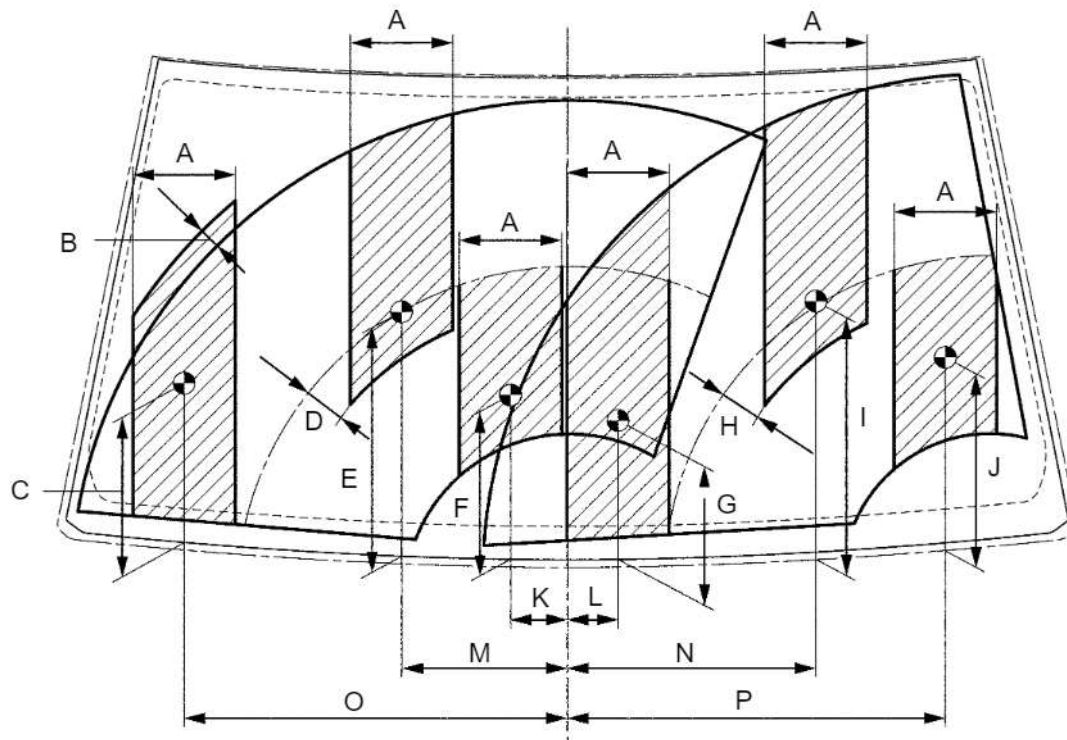
ADJUSTMENT

68099-02

1. INSPECT WASHER NOZZLE

- (a) With the engine running, check that the point where the washer fluid hits the windshield and the rear window is within the range indicated by the hatched line.

Front:



A: 150mm(5.91in.)
 B: 30mm(1.18in.)
 C: 236.5mm(9.311in.)
 D: 60mm(2.36in.)
 E: 364.4mm(14.346in.)
 F: 240.1mm(9.453in.)
 G: 207.8mm(8.181in.)
 H: 60mm(2.36in.)

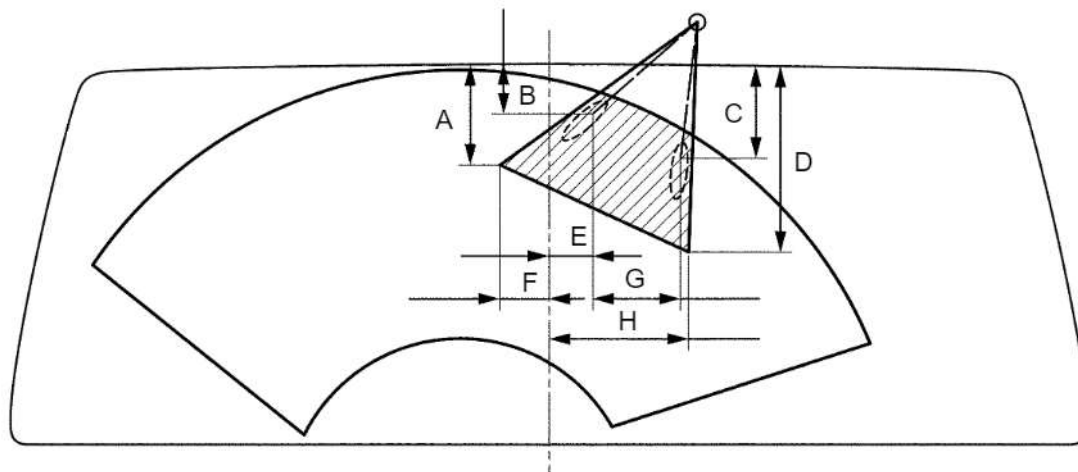
I: 384.6mm(15.142in.)
 J: 288.2mm(11.346in.)
 K: 85.2mm(3.354in.)
 L: 77.1mm(3.035in.)
 M: 247mm(9.72in.)
 N: 366.7mm(14.437in.)
 O: 568.3mm(22.374in.)
 P: 557.2mm(21.937in.)

P

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Rear:



A: 114.2mm(4.496in.)

B: 60.3mm(2.374in.)

C: 107mm(4.21in.)

D: 210.4mm(8.283in.)

E: 41.6mm(1.638in.)

F: 56.4mm(2.22in.)

G: 102.7mm(4.043in.)

H: 153.8mm(6.055in.)

P

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