2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

2007-08 ACCESSORIES AND EQUIPMENT

Wipers/Washers - Element

COMPONENT LOCATION INDEX

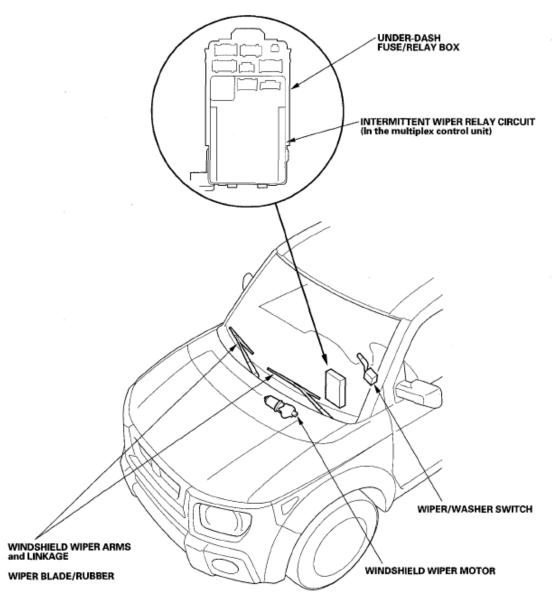


Fig. 1: Identifying Wipers/Washers Component Location (1 Of 2) Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

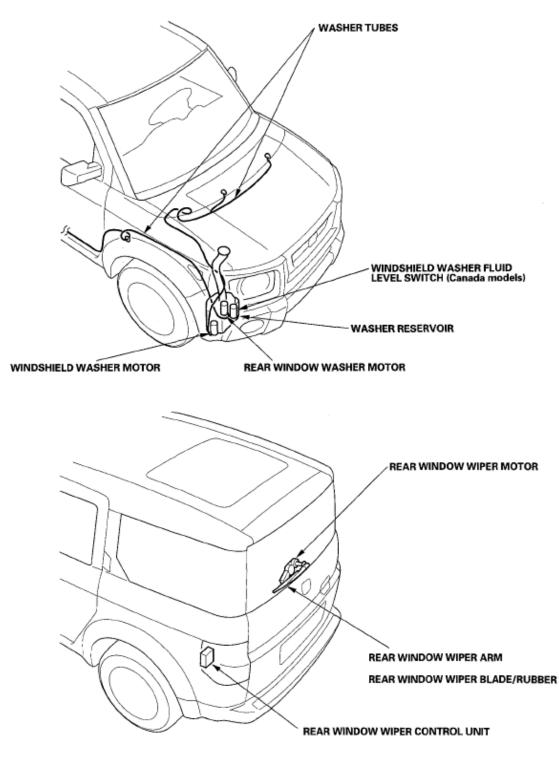
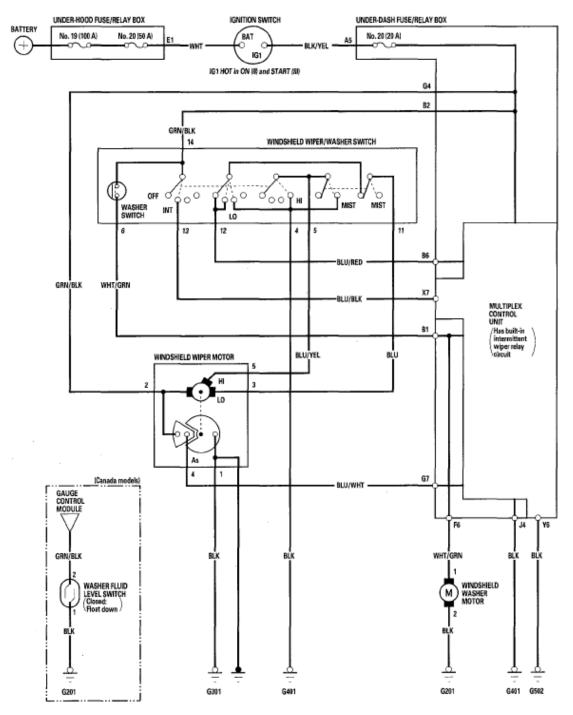


Fig. 2: Identifying Wipers/Washers Component Location (2 Of 2) Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - WINDSHIELD

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element



<u>Fig. 3: Windshield - Circuit Diagram</u> Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - REAR WINDOW

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

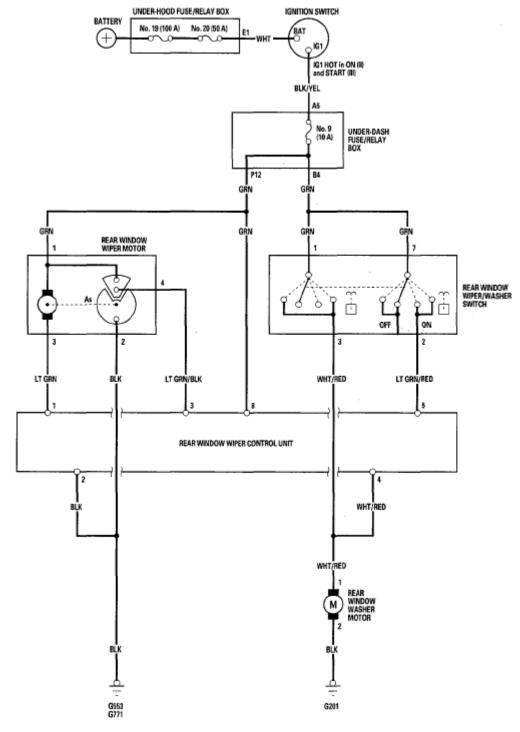


Fig. 4: Rear Window - Circuit Diagram Courtesy of AMERICAN HONDA MOTOR CO., INC.

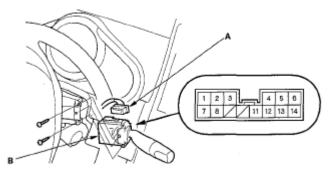
WIPER/WASHER SWITCH TEST/REPLACEMENT

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER**

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

<u>REMOVAL/INSTALLATION</u>).

- 2. Remove the steering column covers (see <u>STEERING COLUMN REMOVAL AND</u> <u>INSTALLATION</u>).
- 3. Disconnect the 14P connector (A) from the wiper/washer switch (B).



<u>Fig. 5: Identifying 14P Connector And Wiper/Washer Switch Connector</u> Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 4. Remove the two screws, then pull out the wiper/washer switch.
- 5. Inspect the connector terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, check for continuity between the terminals in each switch position according to the tables. If the continuity is not as specified, replace the switch.

Windshield

| Terminal Position | 4 | 5 | 6 | 11 | 12 | 13 | 14 |
|----------------------|----|----|----|----|----|----|----|
| OFF | | | | 0 | 9 | | |
| INT | | | | 0- | -0 | 0- | -0 |
| LO | 0- | | | -0 | | | |
| н | 0- | 0 | | | | | |
| Mist switch ON | 0- | -0 | | | | | |
| Washer switch ON | | | 0- | | | | -0 |

Fig. 6: Terminals Continuity Chart - Windshield Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Window

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

| Terminal Position | 1 | 2 | 3 | 7 |
|--|----|---|----|----|
| Washer switch ON and wiper switch OFF | 0- | | -0 | |
| OFF | | | | |
| ON | | 0 | | -0 |
| Wiper and Washer switch ON | 0 | 0 | -0 | -0 |

Fig. 7: Terminals Continuity Chart - Rear Window Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL UNIT INPUT TEST

- 1. Before testing, troubleshoot the multiplex control system (see **TROUBLESHOOTING**).
- 2. Remove the dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
- 3. Disconnect the under-dash fuse/relay box connectors B, F, G, J, X and Y.

NOTE: All connectors are shown from wire side of female terminals.

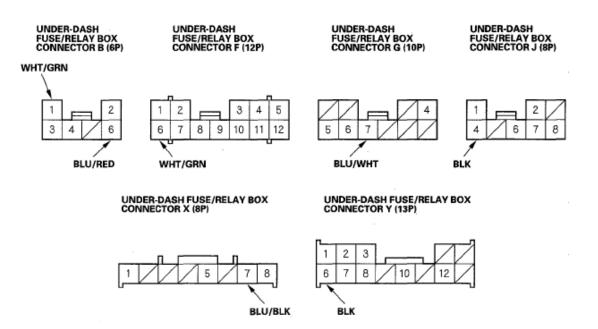


Fig. 8: Identifying Under-Dash Fuse/Relay Box Connectors Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals are OK, go to step 5.
- 5. Reconnect the connectors, and make these input tests at the connector.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the multiplex control unit must be faulty; replace the under-dash fuse/relay box assembly.

| Cavity | Wire | Test condition | Test: Desired result | Possible cause if desired result is not obtained |
|----------|---------|---|--|---|
| J4 | BLK | Under all conditions | Measure voltage to ground: There should be less than 0.5 V. | Poor ground(G401) An open in the wire |
| Y6 | BLK | Under all conditions | Measure voltage to ground: There should be less than 0.5 V. | Poor ground(G502) An open in the wire |
| B1 | WHT/GRN | Ignition switch ON (II) and washer switch ON | Measure voltage to ground: There should be battery voltage. | Blown No. 20 (20 A) fuse in the under-dash fuse/relay box |
| X7 | BLU/BLK | Ignition switch ON (II) and wiper switch in INT | Measure voltage to ground: There should be battery voltage. | Faulty wiper/washer switchAn open in the wire |
| B6 | BLU/RED | Ignition switch ON (II), wiper switch in OFF or INT, and when the motor is not in operation. | Measure voltage to ground: There should be battery voltage. | Blown No. 20 (20 A) fuse in the under-dash fuse/relay box Faulty wiper/washer switch Faulty windshield wiper motor An open in the wire |
| G7 | BLU/WHT | Ignition switch ON (II) and wipers in park position | Measure voltage to ground: There should be battery voltage. | An open in the wire Blown No. 20 (20 A) fuse in the under-dash fuse/relay box Faulty windshield wiper motor An open in the wire |
| B1 F6 | WHT/GRN | Jump B1 to F6 terminals, then ignition switch ON (II) and washer switch ON | Check windshield washer motor operation: The washer motor should run. | Poor ground(G201) Blown No. 20 (20 A) fuse in the under-dash fuse/relay box Faulty wiper/washer switch Faulty windshield washer motor Faulty under-dash |

TEST CONDITION

2007 Honda Element EX 2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element fuse/relay box • An open in the wire

REAR WINDOW WIPER CONTROL UNIT INPUT TEST

- 1. Remove the left rear side trim panel (see TRIM REMOVAL/INSTALLATION REAR SIDE AREA).
- 2. Disconnect the 8P connector (A) from the rear window wiper control unit (B).

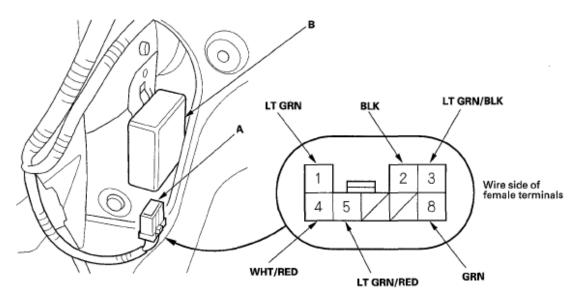


Fig. 9: Identifying Rear Window Wiper Control Unit 8P Connector Terminals Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 4.
- 4. With the connector still disconnected, and make this input test at the connector.
 - If the test indicates a problem, find and correct the cause, then recheck the system.
 - If the input test proves OK, go to step 5.

| Cavity | Wire | Test condition | Test: Desired result | Possible cause if desired result is not obtained |
|--------|------|----------------|---|---|
| 1 | | ON (II). | Attach to ground: The rear window wiper motor should run. | Blown No. 9 (10 A) fuse in the under-dash fuse/relay box Faulty rear window wiper motor An open in the wire |

TEGT CONDITION

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

- 5. Reconnect the connector to the control unit, and make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the control unit must be faulty; replace it.

| Cavity | Wire | Test condition | Test: Desired result | Possible cause if desired result is not obtained | |
|--------|---------------|---|--|---|--|
| 8 | GRN | Ignition switch ON (ID | Measure voltage to ground: There should be battery | • Blown No. 9 (10 A) fuse in the under-dash fuse/relay box | |
| | | | voltage. | • An open in the wire | |
| 2 | BLK | Under all conditions | Measure voltage to ground: There | • Poor ground(G553, G771) | |
| | | | should be 0.5 V. | • An open in the wire | |
| 4 | WHT/RED | Ignition switch ON (II) and rear window washer switch ON | Measure voltage to ground: There should be battery voltage. | • Blown No. 9 (10 A) fuse in the under-dash fuse/relay box | |
| 5 | LT GRN/RED | Ignition switch ON (II) and rear window wiper switch ON | Measure voltage to ground: There should be battery voltage. | Faulty rear window wiper/washer switchAn open in the wire | |
| 3 | LT GRN/BLK | Ignition switch ON (II), rear wiper switch OFF, and wiper in park position | Measure voltage to ground: There should be battery voltage. | Blown No. 9 (10 A) fuse in the under-dash fuse/relay box Faulty rear window wiper motor An open in the wire | |

TEST CONDITION

WINDSHIELD WIPER MOTOR TEST

- 1. Remove the wiper arms, hood seals, and cowl covers (see <u>WINDSHIELD WIPER MOTOR</u> <u>REPLACEMENT</u>).
- 2. Disconnect the 5P connector (A) from the wiper motor (B).

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

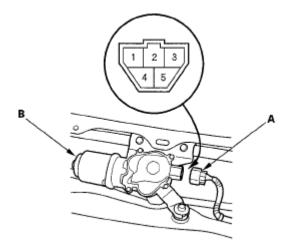
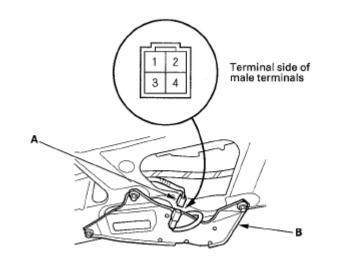


Fig. 10: Identifying Wiper Motor 5P Connector Terminals Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Test the motor by connecting battery power to the No. 2 terminal and ground the No. 3 terminal of the wiper motor 5P connector. The motor should run at low speed. If the motor does not run, or fails to run smoothly, replace the motor.
- 4. Test the motor by connecting battery power to the No. 2 terminal and ground the No. 5 terminal of the wiper motor 5P connector. The motor should run at high speed. If the motor does not run, or fails to run smoothly, replace the motor.
- 5. Connect an analog ohmmeter to the No. 4 and No. 1 terminals, and run the motor at low or high speed. The needle of the ohmmeter should pulse. If it does not, replace the motor.

REAR WINDOW WIPER MOTOR TEST

- 1. Open the hatch, and remove the hatch trim panel (see <u>TRIM REMOVAL/INSTALLATION HATCH</u> <u>AREA</u>).
- 2. Disconnect the 4P connector (A) from the wiper motor (B).



2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

Fig. 11: Identifying Wiper Motor 4P Connector Terminals Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Test the motor by connecting battery power to the No. 1 terminal and ground the No. 3 terminal of the wiper motor. The motor should run. If the motor does not run or fails to run smoothly, replace the motor.
- 4. Connect the battery power to the No. 1 terminal, and ground to the No. 2 and No. 3 terminals of the 4P connector. Then connect an analog voltmeter between the No. 4 (+) terminal and the No. 2 (ground) terminal. When the park switch contacts, the pointer should swing. If not, replace the motor.

WASHER MOTOR TEST

- 1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
- 2. Disconnect the 2P connectors (A) from the washer motors.

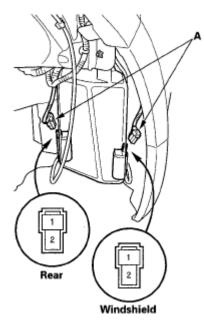


Fig. 12: Identifying Washer Motors 2P Connectors Terminals Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Test the motor by connecting battery power to the No. 1 terminal and ground the No. 2 terminal of the washer motor. The motor should run.
 - If the motor does not run or fails to run smoothly, replace it.
 - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged pump outlet in the motor.

WASHER FLUID LEVEL SWITCH TEST/REPLACEMENT

CANADA MODELS

1 Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**)

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

2. Disconnect the 2P connector (A) from the washer fluid level switch (B).

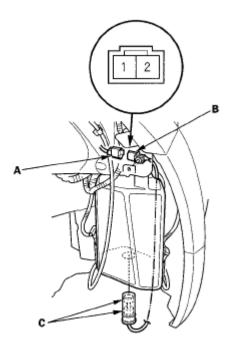


Fig. 13: Identifying Washer Fluid Level Switch 2P Connector Terminals Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the washer fluid level switch from the washer reservoir.

NOTE: Fluid may flow out of the opening.

- 4. Check for continuity between the No. 1 and No. 2 terminals in each float position (C).
 - There should be continuity when the float is down.
 - There should be no continuity when the float is up.
- 5. If the continuity is not as specified, replace the switch.

WINDSHIELD WIPER MOTOR REPLACEMENT

1. Remove the nuts (A) and the windshield wiper arms (B).

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

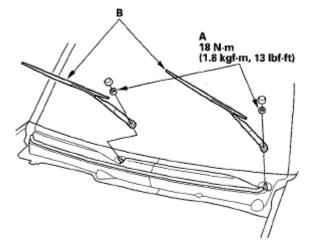


Fig. 14: Identifying Nuts And Windshield Wiper Arms With Torque Specification Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the hood seal (A) and cowl covers (B). Remove and replace the clips

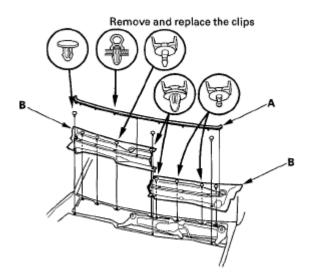


Fig. 15: Identifying Hood Seal And Cowl Covers Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 5P connector (A) from the windshield wiper motor (B).

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

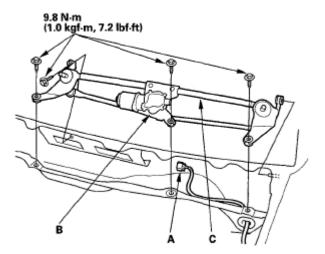


Fig. 16: Identifying Windshield Wiper Motor Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 4. Remove the mounting bolts and the wiper linkage assembly (C).
- 5. Remove the two mounting bolts and nut from the wiper linkage (A) to remove the wiper motor (B).

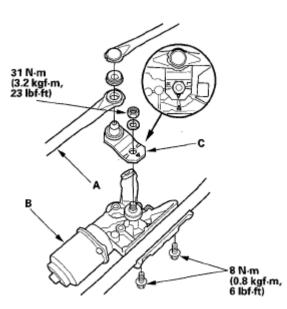


Fig. 17: Identifying Wiper Linkage And Wiper Motor Bolts And Nut With Torque Specifications Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 6. Align the "up triangle" mark on the wiper link (C) and the "down triangle" mark on the wiper motor to show the original arrangement.
- 7. Install in the reverse order of removal, and note these items:
 - Apply multipurpose grease to the moving parts.
 - Before reinstalling the wiper arms, turn the wiper switch ON, then OFF to return the wiper shafts to the park position.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

- If necessary, replace any damaged clips.
- Make sure the wiper motor operates properly.

REAR WINDOW WIPER MOTOR REPLACEMENT

1. Remove the cover (A), mounting nut (B), rear window wiper arm (C), wiper shaft cap (D), nut (E), and washer (F).

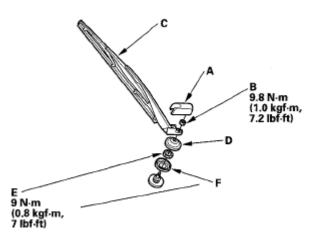


Fig. 18: Identifying Rear Window Wiper Arm, Wiper Shaft Cap, Nut And Washer Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 2. Open the tailgate and remove the tailgate lower trim panel (see <u>TRIM REMOVAL/INSTALLATION -</u> <u>TAILGATE AREA</u>).
- 3. Disconnect the 4P connector (A) from the rear window wiper motor (B).

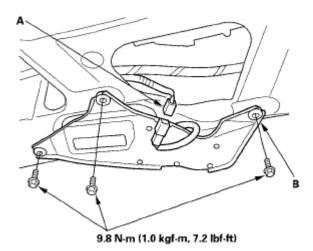


Fig. 19: Identifying Rear Window Wiper Motor With Torque Specification Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the mounting bolts and the wiper motor.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

5. Install in the reverse order of removal.

WIPER BLADE REPLACEMENT

- 1. Lift the windshield wiper arm off the windshield, rising the driver's side first, then the passenger's side.
- 2. Press and hold the tab (A) and slide the wiper blade (B) toward the tab until it releases from the wiper arm (C).

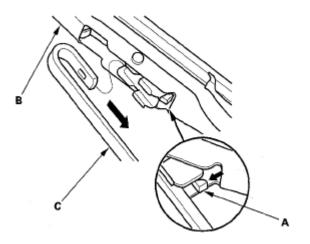


Fig. 20: Pressing And Hold Tab And Slide Wiper Blade Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Slide out the old rubber (A).

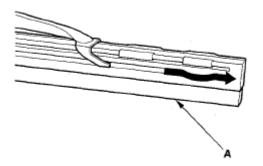


Fig. 21: Sliding Out Old Rubber Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 4. Install a new rubber in the reverse order of removal.
- 5. Install the wiper blades onto the windshield wiper arms in the reverse order of removal.
- 6. Test by turning on the wipers. If the blades slip, turn off the wipers and seat the attachments more firmly.

REAR WINDOW WIPER BLADE REPLACEMENT

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

NOTE: Take care not to damage or deform the rear window wiper blade.

- 1. Raise the rear window wiper arm from the rear window.
- 2. Hold the rear window wiper arm (A) and blade assembly (B) as shown in Fig. 22.

Clean with installation

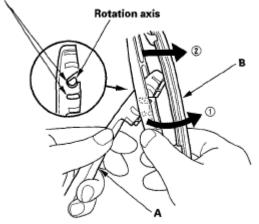


Fig. 22: Holding Rear Window Wiper Arm And Blade Assembly Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Rotate the rear window wiper blade assembly, and then remove it from the rear window wiper arm.
- 4. Remove the rear window wiper blade from the wiper blade holder.

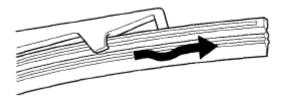


Fig. 23: Identifying Rear Window Wiper Blade Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 5. Install in the reverse order of removal, and note these items:
 - Clean the rear window wiper arm and blade holder, then install the wiper blade.
 - Make sure wiper blade is set securely.
 - Do not pinch the wiper blade.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

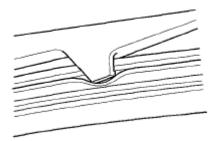


Fig. 24: Identifying Rear Window Wiper Blade Courtesy of AMERICAN HONDA MOTOR CO., INC.

WIPER ARM/NOZZLE ADJUSTMENT

FRONT

Wiper arms stop position

- 1. When the wiper arms stop at the automatic stop position, confirm that they are at the standard position.
 - a. Position at about 0.6 in. (16 mm) from the top of cowl cover (A)
 - b. Position at about 0.6 in. (16 mm) from the top of cowl cover (A)

Washer nozzle position

1. When you turn on the washers, confirm 50% or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzles.

NOTE:

- Spray area on the passenger side is symmetrical.
- X shows the distance from the centerline of the windshield.
- Y shows the distance from the cowl cover.

| | c | d | e | f | g | h | i | J | | |
|---|------------|----------|--------------|--------------|--------------|--------------|--------------|--------------|--|--|
| X | . 18.3 in. | 14.7 in. | 16.7 in. | 14.0 in. | 9.8 in. (249 | 6.7 in. (170 | 10.2 in. | 7.8 in. (198 | | |
| | (465 mm) | (374 mm) | (424 mm) | (355 mm) | mm) | mm) | (259 mm) | mm) | | |
| Y | . 10.8 in. | 10.3 in. | 4.8 in. (121 | 4.6 in. (117 | 10.0 in. | 9.9 in. (252 | 4.5 in. (115 | 4.5 in. (114 | | |
| | (275 mm) | (262 mm) | mm) | mm) | (253 mm) | mm) | mm) | mm) | | |

WASHER NOZZLE POSITION

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

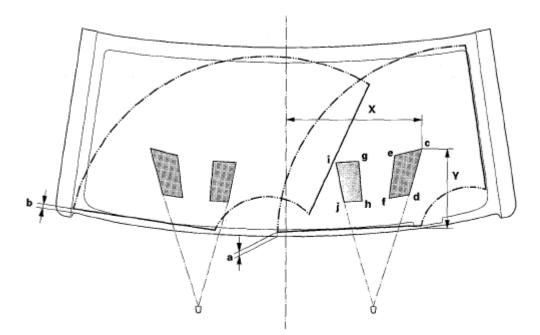


Fig. 25: Identifying Wiper Arm/Nozzle Position - Front Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

Wiper arm stop position

- 1. When the wiper arm stops at the automatic stop position, confirm that it is are at the standard position.
 - a. Position at about 1.7 in. (44 mm) from the bottom of the windshield (A).

Washer nozzle position

- 1. When you turn on the washers, confirm the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzles.
 - a. Position at about 0.6 in. (15 mm) from the top of the windshield (B).

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

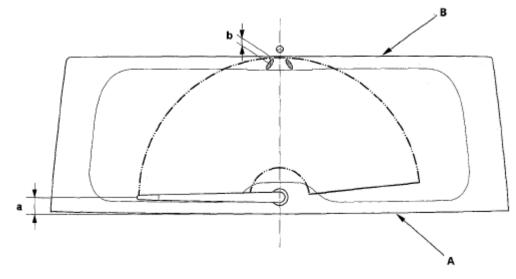


Fig. 26: Identifying Wiper Arm/Nozzle Position - Rear Courtesy of AMERICAN HONDA MOTOR CO., INC.

WASHER TUBE REPLACEMENT

- 1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
- 2. Remove the washer nozzles and clips, then remove the tubes.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

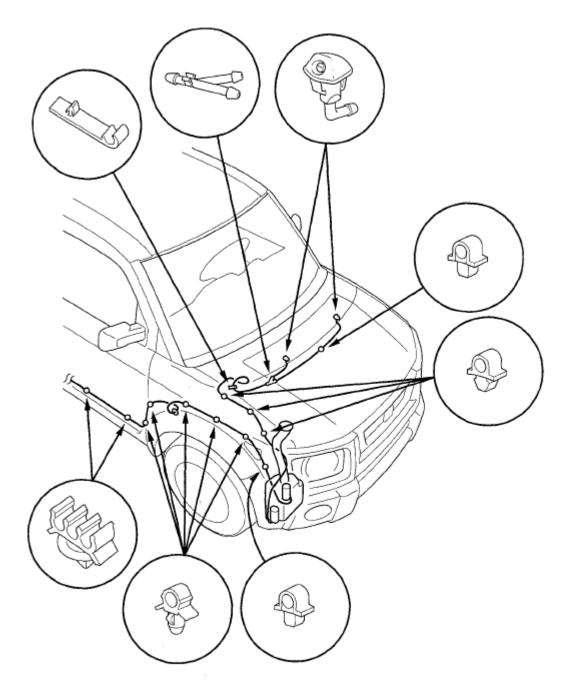


Fig. 27: Identifying Washer Tube Replacement (1 Of 2) Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

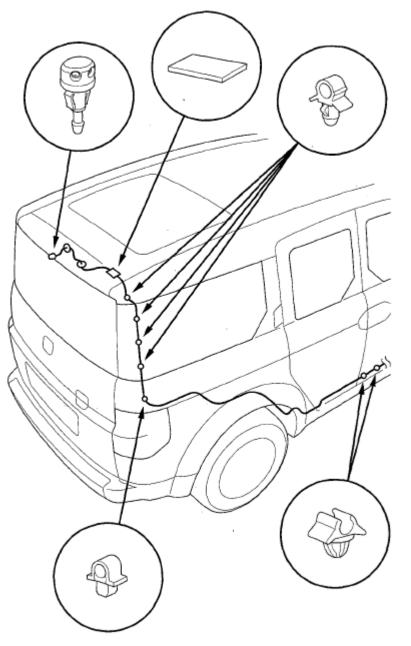


Fig. 28: Identifying Washer Tube Replacement (2 Of 2) Courtesy of AMERICAN HONDA MOTOR CO., INC.

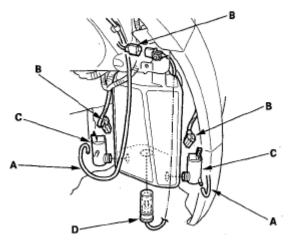
- 3. Install in the reverse order of removal. Take care not to pinch the washer tubes. Check the washer operation.
 - NOTE: Make sure the washer tube is routed behind the side curtain airbag tether strap (see <u>SIDE CURTAIN AIRBAG REPLACEMENT</u>).

WASHER RESERVOIR REPLACEMENT

2007-08 ACCESSORIES AND EQUIPMENT Wipers/Washers - Element

- 1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
- 2. Disconnect the washer tubes (A).

Washer reservoir capacity: 4.5 L (4.8 US qt)



<u>Fig. 29: Identifying Washer Tubes</u> Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 3. Disconnect the 2P connectors (B) from the washer motors (C) and the washer fluid level switch (D) (Canada models).
- 4. Remove the three mounting bolts and washer reservoir (A).

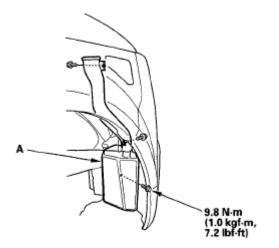


Fig. 30: Identifying Mounting Bolts And Washer Reservoir With Torque Specification Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install in the reverse order of removal. Make sure the washer motors operate properly.