

# 2008 Toyota RAV4

By Bob Beranek

## Vehicle information



**Vehicle type:** Four-door utility

**NAGS numbers\*:** Windshield part numbers FW2625, solar, third frit, and FW2669, solar, third frit, heated; quarter glass FQ22920-21, solar, encapsulated; and back glass FB22922, solar, antenna, heated

**Watch for:** The windshield can come bonded with or without the top molding.

\*With permission from National Auto Glass Specifications. Call NAGS at 800/551-4012 or visit [www.nags.com](http://www.nags.com).

## A. Windshield

### Preparation

1. Cover the front seats, floorboards, dash and steering wheel with a clean drop cloth or disposable plastic covers.

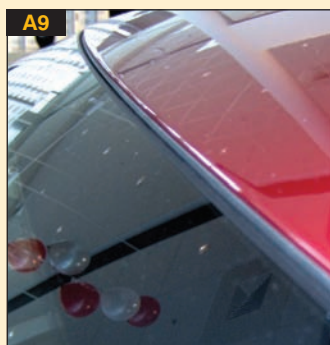
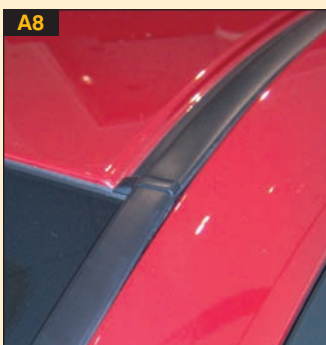
**Note:** Always wear eye and hand protection when working with glass. Make sure you have the right glass and moldings, and the urethane systems are current. Windshield part numbers are FW2625 and FW2669.

2. Drape the fender with a fender cover and tape up any vulnerable areas on the vehicle to protect against possible damage. Tape up the defroster vents to prevent debris from falling into the openings.

3. Remove the rearview mirror by loosening the T20 Torx set screw in the base of the mirror and sliding the mirror off the pad.

4. Remove the windshield-wiper nut covers.

5. Remove the windshield-wiper nuts using a 13-millimeter



wrench or socket. Move the wiper arm in an up-and-down motion to break it loose from the post, or use a wiper puller.

**Note:** Wipers can sometimes be hard to remove. Use a wiper puller to avoid stressing the post.

6. Remove the two faux Phillips-screw retainers in the two corners of the cowl panel.

7. There are a number of retaining devices along the front leading edge of the cowl panel that snap into holes. To release them, use your fingers to separate the top of the cowl from the cowl drain. Slide the cowl from under the glass edge and remove.

8. The side moldings appear to be separate from the molding that continues to the luggage rack on the top of the vehicle, but they are one piece. Grasp the lower corner of the molding and pull it off the A-pillar flange. Lay it on the top of the vehicle, up and out of your way.

9. The top molding will more than likely be damaged upon removal. Grasp the edge of the top molding and pull it from the glass edge. If the molding is firmly attached, cut it off. **Note:** The new glass part can come with or without the top molding. Before beginning windshield removal, verify the new windshield is the correct one and the urethanes and primers are current. Never use outdated products as this could jeopardize the structural integrity of the vehicle and the safety of its passengers.

### Removal

10. The top and side moldings should cover the wall of the pinchweld when installed, so cutout should not pose a problem.

11. Make sure cutting blades are sufficiently sharp.

12. Before cutting out the windshield, remove contaminants from the glass and pinchweld to prevent contact with the urethane.

13. Use the cutting tools of your choice to remove the glass from the adhesive bead. **Note:** When using any power tool, use plain water to lubricate the cutting area. Spray the top, sides and bottom; then make your cuts. **Caution:** Be careful not to hit or cut the gravity stops; mark their location with a marking pencil or molding-retention tape.

14. Take the windshield out of the opening using vacuum cups. **Note:** Make sure the vacuum cups do not overlap cracks in the glass.



15. Lift the glass and place it on a windshield stand or suitable workstation.

### Installation

16. After cutting the windshield out, remove contaminants such as dirt, moisture and debris from the pinchweld. Clean the dashboard.

17. Dry fit the new glass to the opening. Mark your glass using a grease pencil or molding-retention tape. If the glass did not come with a top molding, attach the molding to the glass edge.

18. Place your vacuum cups on the windshield in the appropriate location.

19. Set the windshield onto the old urethane.

20. With the windshield resting in the opening, make sure it is in the right spot.

21. Adjust both sides to the correct setting, marking the passenger's side, then the driver's side. Lift the glass and place it on a windshield stand or suitable workstation.

22. Follow the urethane manufacturer's recommendations for installation.

23. Clean the inside of the windshield using a urethane manufacturer-recommended product.

**Note:** Do not touch the windshield bonding area after cleaning, prepping or priming it.

24. Wear powder-free Nitrile gloves to keep off chemicals.

25. Apply the glass prep and primer, following the urethane manufacturer's recommendations.

26. Using the tool of your choice, remove the original urethane bead, leaving 1-2 millimeters of existing urethane on the pinchweld. **Note:** Before removing the old urethane, make sure there are no contaminants, and do not touch the pinchweld after you have prepped the area.

27. Apply the pinchweld primer only to the areas where needed, and follow the urethane manufacturer's recommendations. Allow preps and primers to dry as recommended by the urethane manufacturer.

28. Apply a triangular bead of urethane to the same path as the freshly cut urethane on the pinchweld. Before cutting your V-notch, cut the tip off of your nozzle using a nozzle cutter. With the cut nozzle, measure to the top of the roofline, and at  $\frac{1}{16}$ -inch higher than the roofline, make a mark on the nozzle with a pen or marker. Notch the nozzle up to the marked line; this will give you the appropriate triangular bead.

29. Lift the windshield from the windshield stand or workstation using vacuum cups. Set the windshield on the urethane at the mark you made during dry fit. Lower the driver's side of the windshield onto the urethane and line it up with the dry-fit mark; it is now in place.

30. The windshield is now ready to be decked. Press firmly to ensure a good seal.

31. Before re-installing the parts, check for leaks. Use a leak detector to go over the perimeter of the windshield. If you find a leak, apply pressure to the spot to ensure the glass makes contact with the wet urethane.

32. Re-install the removed parts in reverse order.

33. Allow the urethane to cure according to the urethane manufacturer's recommended cure time before returning the vehicle to the customer.

**Warning:** Disregarding the safe drive-away time your urethane manufacturer recommends could jeopardize the structural integrity of the vehicle and the safety of its passengers.

34. You have completed the removal and replacement of the windshield.

## B. Quarter glass

### Removal

1. Make sure you have the right glass. It is encapsulated. Quarter glass part numbers are FQ22920-21.

2. Remove the entire quarter panel. Cut the front bead first to facilitate removal of the rest of the part. Take care not to cut or damage the front leading edge of the encapsulation. It will be visible when the door is open. **Note:** When using any power tool, use plain water to lubricate the cutting area. Spray the top, sides and bottom; then make your cuts.

**Installation**

3. After cutting the quarter glass out, remove contaminants such as dirt, moisture and other debris from the pinchweld.
  4. Dry fit the new glass to the opening. Mark your glass using a grease pencil or molding-retention tape.
  5. Place your vacuum cups on the quarter glass in the appropriate location.
  6. Lift the quarter glass from the workstation using vacuum cups.
  7. With the quarter glass resting in the opening, make sure it is in the right spot.
  8. Adjust both sides to the correct setting and make your mark. Lift the glass and place it on a windshield stand or suitable workstation.
  9. Follow the urethane manufacturer's recommendations for installation.
  10. Clean the inside of the quarter glass using a urethane manufacturer-recommended product. **Note:** Do not touch the bonding area of the quarter glass after cleaning, prepping or priming.
  11. Wear powder-free Nitrile gloves to keep off chemicals.
  12. Apply the glass prep and primer, following the urethane manufacturer's recommendations.
  13. Using a pinchweld scraper, remove as much of the original urethane as the urethane manufacturer recommends.
- Note:** Before removing the old urethane, make sure there are no contaminants, and do not touch the pinchweld after you have prepped the area.
14. Apply the pinchweld primer only to the areas where needed, and follow the urethane manufacturer's recommendations. Allow preps and primers to dry as recommended by the urethane manufacturer.
  15. Apply a triangular bead of urethane to the same path as the freshly cut urethane on the pinchweld.
  16. Place your vacuum cups on the quarter glass in the appropriate location.
  17. Lift the quarter glass from the windshield stand or workstation using your vacuum cups.



18. Set the quarter glass in the opening.
19. The quarter glass is now ready to be decked. Press firmly to ensure a good seal.
20. Before re-installing the parts, check for leaks. Use a leak detector to go over the perimeter of the quarter glass. If you find a leak, apply pressure to the spot to ensure the glass makes contact with the wet urethane.
21. Re-install the removed parts in reverse manner.
22. Allow the urethane to cure according to the urethane manufacturer's recommended cure time before returning the vehicle to the customer.
23. You have completed the removal and replacement of the quarter glass.

**C. Back glass****Removal**

1. Make sure that you have the right glass. Back glass part number is FB22922. The glass comes with the "molding added" option. The molding is easily salvageable if the glass is broken; if you want to salvage the glass, get the molding attached or have it available.
2. Remove the rear wiper arm by removing the nut cover and the 10-millimeter nut. Salvage the wiper-hole grommet; it does not come on the new glass part.
3. Open the back deck and remove the two 10-millimeter nuts from the spoiler bolts. Slide the spoiler from the rear door and disconnect the high-mounted brake light connectors. Set aside.
4. Remove the three-piece interior garnish molding and disconnect the defroster wiring harnesses and antenna connector.
5. Use the tools of your choice to cut out the glass. **Note:** When using any power tool, lubricate the cutting area with water. Spray the top, sides and bottom; then make your cuts.

**Installation**

6. After cutting the back glass out, remove contaminants such as dirt, moisture and other debris from the pinchweld.
7. Dry fit the new glass to the opening. Mark your glass using a grease pencil or molding-retention tape.
8. Place your vacuum cups on the back glass in the appropriate location.
9. Set the back glass onto the old urethane.
10. With the back glass resting in the opening, make sure it is in the right spot.
11. Adjust both sides to the correct setting, marking the passenger's side, then the driver's side. Lift the glass and place it on a windshield stand or suitable workstation.
12. Follow the urethane manufacturer's recommendations for installation.
13. Clean the inside of the back glass using a urethane manufacturer-recommended product. **Note:** Do not touch the bonding area of the back glass after cleaning, prepping or priming.
14. Wear powder-free Nitrile gloves to keep off chemicals.
15. Apply the glass prep and primer, following the urethane manufacturer's recommendations.
16. Using a pinchweld scraper, remove as much of the original urethane as the urethane manufacturer recommends.

**Note:** Before removing the old urethane, make sure there are no contaminants, and do not touch the pinchweld after you have prepped the area.

17. Apply the pinchweld primer only to the areas where needed, and follow the urethane manufacturer's recommendations. Allow preps and primers to dry as recommended by the urethane manufacturer.

18. Apply a triangular bead of urethane to the same path as the freshly cut urethane on the pinchweld. Before cutting your V-notch, cut the tip off of your nozzle using a nozzle-cutter. With the cut nozzle, measure to the top of the roofline, and at 1/8-inch higher than the roofline and bodyline, make a mark on the nozzle with a pen or marker. Notch the nozzle up to the marked line; this will give you the appropriate triangular bead.

19. Place your vacuum cups on the back glass in the appropriate location.

20. Lift the back glass from the windshield stand or workstation using vacuum cups.

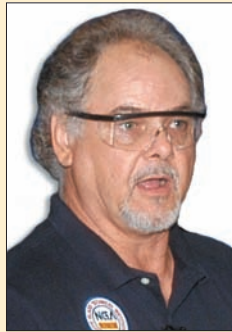
21. Set the back glass in the opening.

22. The back glass is now ready to be decked. Press firmly to ensure a good seal.

23. Before re-installing the parts, check for leaks. Use a leak detector to go over the perimeter of the back glass. If you find a leak, apply pressure to the spot to ensure the glass makes contact with the wet urethane.

24. Re-install the removed parts in reverse manner.

25. Check operation of the defroster and antenna options.



26. Allow the urethane to cure according to the urethane manufacturer's recommended cure time before returning the vehicle to the customer.

27. You have completed the removal and replacement of the back glass. **AG**

*The author is president of Automotive Glass Experts in Sun Prairie, Wis. Write him at [bberanek@aol.com](mailto:bberanek@aol.com).*

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