



# Failed Thermopane RV Window Repair

Explain how to remove a RV window from the coach and to demonstrate the proper procedure to disassemble, repair thermopane unit, and re-assemble the window.

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# INTRODUCTION

A thermopane window, by definition, is two pieces of glass insulated together, with an airspace between the two panes. If that seal becomes degraded or damaged, it allows moisture to get between those two panes of glass, eventually causing the window to become “fogged” and it is impossible to see out of them. We will walk through the repair process to remove the window, take it apart, attempt to clean it, and put it all back together. It is important to note that while all of the steps are true and can be used in part, the actual insulation of the glass does require specialized machinery, and this is not recommended as a DIY project.

This project is of moderate difficulty, requiring the use of specialized machinery and the ability to lift and maneuver 50 lbs. The required time of the repair process does vary depending on the individual coach and window, however, can be estimated between 2-3 hours for an unexperienced person.

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## TOOLS:

- [Cordless Drill](#) (1)
- [Ladder](#) (1)
- [2 " Square #2 Drill Bit](#) (1)
- [1 " Square # 1 Drill Bit](#) (1)
- [2" Torx T-20 Drill Bit](#) (1)
- [4 " Flexible Putty Knife](#) (1)
- [container](#) (1)
- [Reversible Clamp](#) (1)
- [Rubber Mallet](#) (1)
- [Utility Knife](#) (1)
- [Painter's Tape](#) (1)
- [Socket Wrench](#) (1)
- [Silicone Caulking](#) (1)
- [Caulking Gun](#) (1)
- [Razor Blade](#) (10)
- [Razer Scraper](#) (1)
- [Marker](#) (1)
- [Insulating Material](#) (1)
- [Ammonia Free Glass Cleaner](#) (1)
- [Large Needle Nose Pliers](#) (1)
- [Shop Towels or Rags](#) (1)

## Step 1 — Failed Thermopane RV Window Repair



- On the inside of the coach, using a cordless drill, remove the interior screws wrapping around the window. Some may be hidden behind the valences, in that case simply use a hand ratchet to unscrew them manually.
- On the outside of the coach, use a stiff putty knife to cut the seal behind the frame of the coach. Carefully place the blade end of the putty knife behind the frame and apply pressure towards the frame. If there is any resistance, use a rubber mallet to lightly tap the putty knife down. Repeat until the seal has been broken around the entire frame
- Pull the top of the frame towards you, lift the window up and out of the coach. Ensure the window is completely out of the opening before moving away with the window to ensure the seal is completely broken (This will ensure you do not accidentally drag the window across the body of the coach).



## Step 2



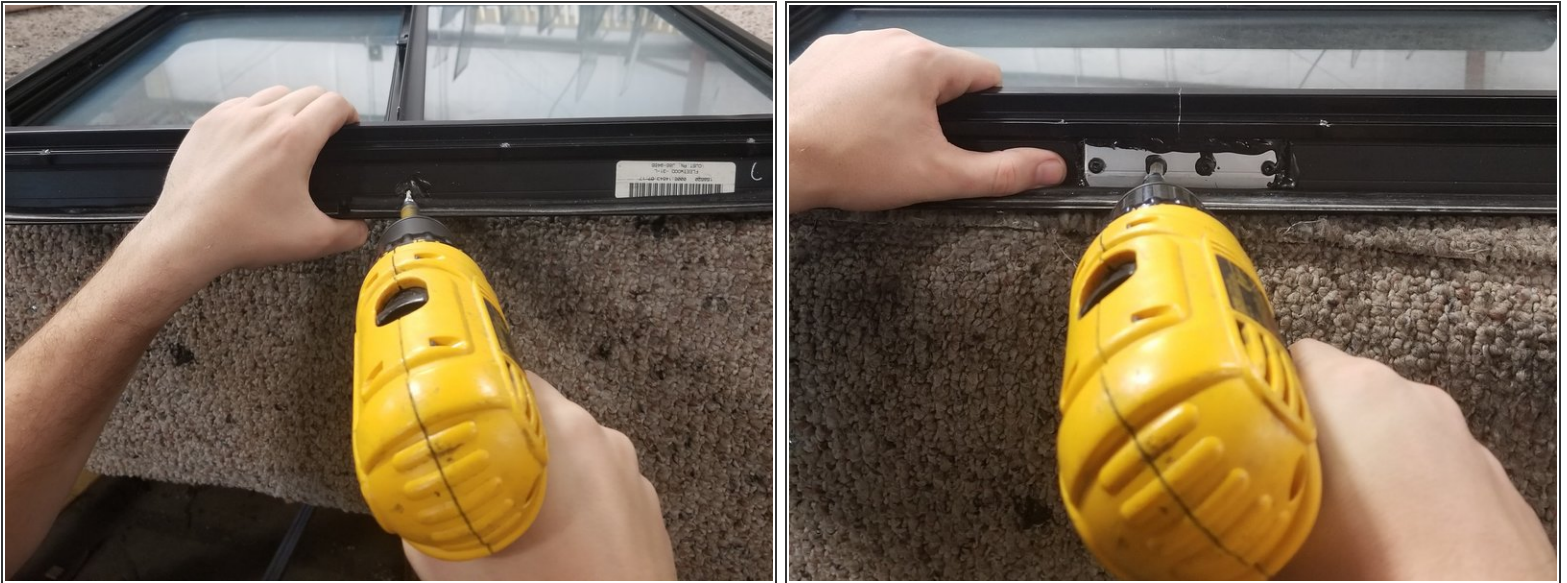
- ⚠ Lay the window face up on a carpeted surface. This is important to ensure we do not scratch the framing or glass of the window.
- ★ Using a marker, mark a small line across the bar on the framing. Doing this will be helpful during the re-assembling the window to ensure that the center bar is back where it needs to be.

## Step 3



- Flip the window over.
- ⓘ Around the outside of the frame there will be at least three areas of screws—one on each side of the center bar and one at the split of the framing.
- These screws are usually caulked over from the manufacturer, so using needle nose pliers, remove the caulking to expose the screws. Ensure they are completely clean, to have the least chance of stripping the screw head upon removal.

## Step 4



- Using the appropriate drill bit (depending on the window) remove the screws.
- There will be one screw on each side of the center bar, behind the frame.
- There will be four screws on a plate behind the frame, where the window splits. Remove either both left or both right screws. (You can remove all four, but it is not necessary).



## Step 5



- Insert the reverse clamp into window opening.
  - Slowly begin expanding the clamp until the window is open enough to remove the sliding portion of the window.
  - Once the slider is removed, remove the reverse clamp.
- i** If the frame is difficult to open, use a heat gun or blow dryer to melt the caulking and loosen the plate.

## Step 6



- From the inside of the window, apply pressure on either side of the framing away from the center until that side of the stationary unit is removed
- Pull the other side towards you and the stationary unit and the center bar should pull away from the rest of the frame. Set aside the frame.

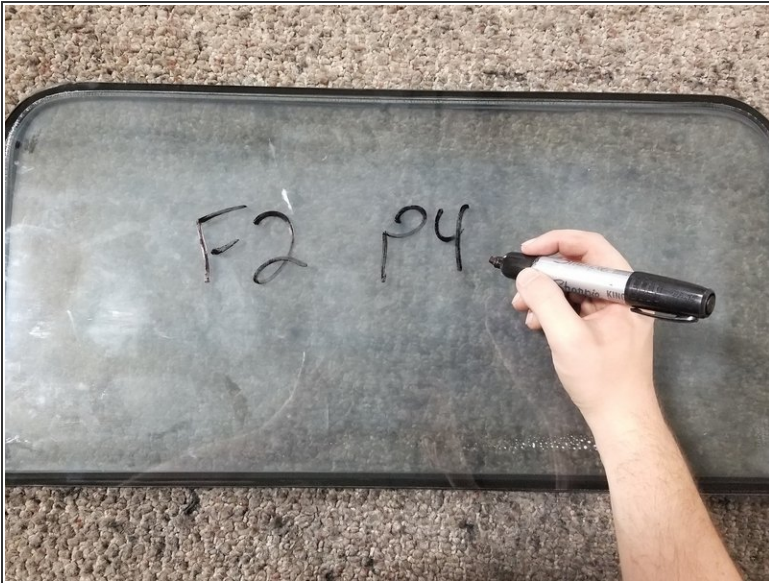
## Step 7



- ⓘ Begin removing the rubber from the bottom of the unit. (This avoids stretching the rubber)
- Grasp the bar with one hand and with the other apply pressure in the direction away from the bar.



## Step 8



- i** Using the marker write on the glass on both sides (this will remind you which side is to face outside of the insulated unit later).
- Using the deglazing tool, insert the blade into the seal between the two panes of glass.
  - While oscillating, push the blade through the seal around the perimeter of the unit, splitting the insulated unit into two separate panes of glass. Place aside.
- i** In the above photo, the F2 marks the location of the coach and the P4 represents the window taken from the coach. The fourth window back on the passenger side.



## Step 9



- Place the sliding portion on the carpeted surface, with the handle on the side of your less dominant hand.
- i Using your glass cleaner, spray where handle meets the glass (this avoids scratching the glass)
- Place a flexible putty knife against the handle and tap underneath the handle, along the entire length until you can remove the handle from the glass.
- Repeat oscillation, to separate the sliding insulated unit, marking this unit with an S to know which one was the slider.

## Step 10



- Place one half of the insulated unit on the carpeted table. Spray along the perimeter of the glass and using a scraping toll with a razor blade.
- Press the blade along the excess seal until all the seal is removed.
- ⓘ Repeat with other 3 panes of glass.

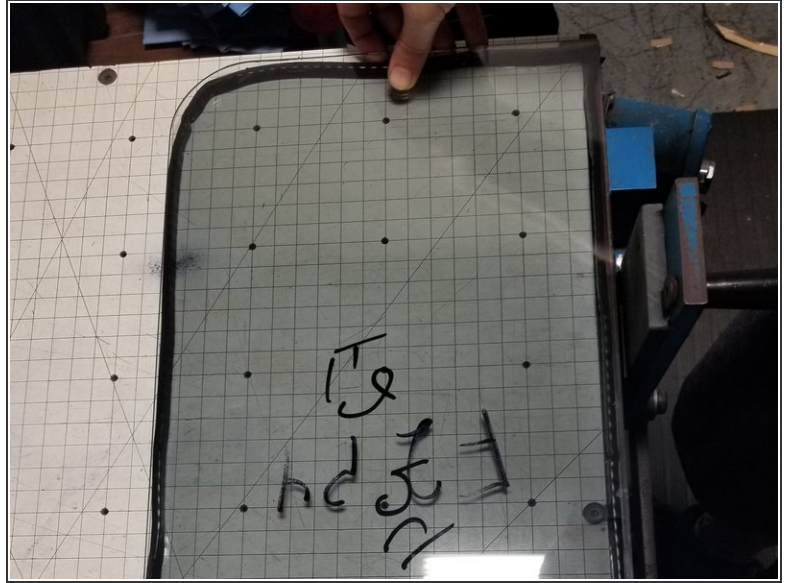
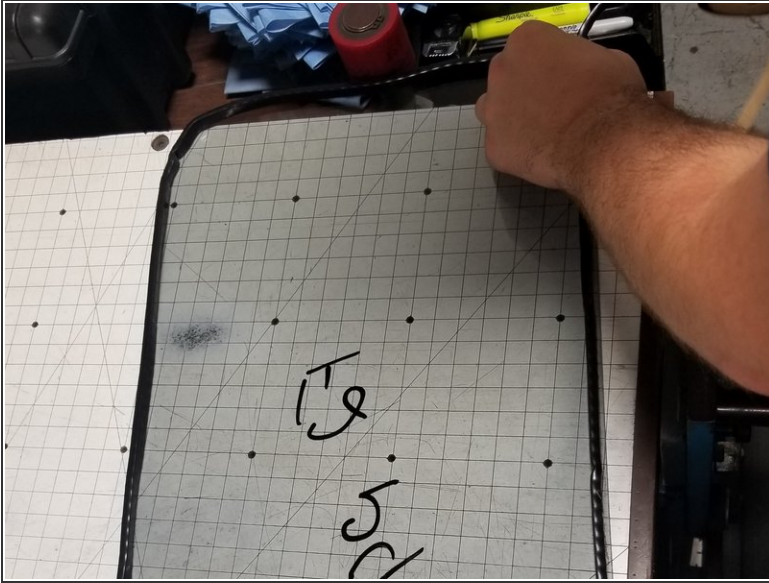
## Step 11



- Using a water stain removal, polish the inside of the glass unit (the same way you would wax a car).
- Once complete spray with the glass cleaner and wipe down the glass.
- Run through the glass washing machine. Repeat with each pane of glass.



## Step 12



- Place the replacement seal around the perimeter of the glass, ensuring the side with the marker is face down, leaving one corner open.
- Place the other pane of glass on top of the seal, ensuring the marker side is face up.

## Step 13



- Run glass unit through the insulating oven. This will simultaneously press the unit to the correct thickness and bond the new sealant to the glass.
- Once complete, insert pressurized air into the opening, close the opening and press together.



## Step 14



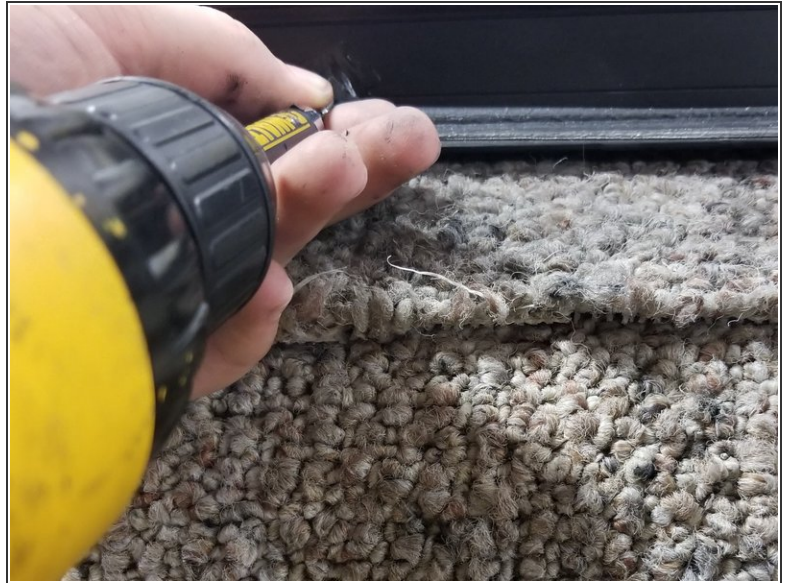
- i** Take the insulated units back to the carpeted surface. The glass units are typically two different colors, a tinted piece and a clear piece.
- Ensure the tinted piece is the outside pane of the window.
  - Begin with the stationary unit. Place the rubber back around the unit. Place the bar back along the top.

## Step 15



- Place the unit back into the frame by apply pressure to the sides of the frame to separate it.
- Carefully insert the unit, being careful that the rubber does not fall off.
- Lay the slider back into the frame on top of the stationary unit. Ensure the glass is lying in the tracking in the frame.

## Step 16



- Reversing your reversible clamp, clamp the window frame shut.
- Insert the screws back into the holes they were removed from. Begin with the plate screws and then each bar screw.
- ⓘ Clean the marker off of the glass.

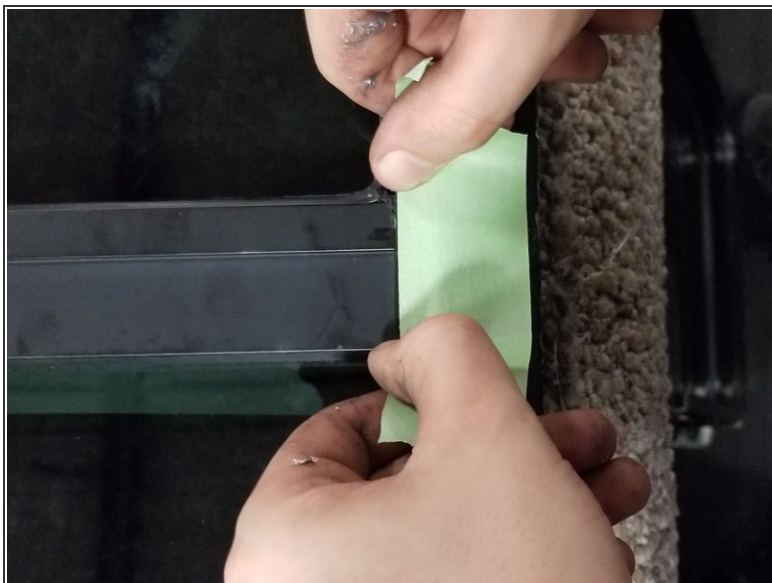


## Step 17



- Apply your high-performance silicone to the inside of the handle for the slider.
- With the slider, closest to you, put the handle back on to the glass gently applying pressure towards you.
- Flip the window back over.

## Step 18



- On the breaks of the windows (where the bar meets the frame and where the frame separates), place strips of painter's tape on both sides.
- Apply a thin line of the high-performance silicone to seal those breaks.

## Step 19



- Place the window back into the opening of the coach. Ensure someone is standing on the outside to hold the window in place.
- On the inside of the coach, screw in all of the screws.
- On the outside of the coach, apply high-performance silicone where the frame meets the body of the coach. (If the weep holes are behind the frame, do not seal the bottom. This allows the water to drain out.)
- Having one person on the inside of the coach and one person on the outside using a hose, begin from the bottom of the window working your way up spray the frame with water. This tests both the window and the seal to ensure they are leak proof.