



AERO PLASTICS INC.

Single Piece Windshield

Report No.336/CON

Installation Drawing List

Applicable Aircraft Models

Cessna 310	s/n 35000 through 35546
310A	s/n 38001 through 38161
310B through 310D	s/n 35547 through 39299
310E	s/n 35912A, 310M0001 through 310M0036
310F through 310K	s/n 310-0001 through 310K0245
320 through 320D	s/n 320-0001 through 320D0130

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GENERAL INFORMATION

The original Cessna 310 through 310D aircraft came equipped with a windshield manufactured in a thickness of .125" acrylic. This windshield also had a doubler bonded to the top inside surface which was also .125" thick acrylic and made the top thickness .250". The 310F and 320 through all subsequent models were equipped with a full .250" thick acrylic windshield. Starting with the 310L and 320E the center retainer strap was eliminated by the factory. The design and attachment of the windshield was the same as the earlier .250" thick windshields except elimination of the center strap. The center retainer held the mount for the compass.

Our STC will permit the installation of a .250" thick windshield in place of the original .125" thick windshield as well as removing the center retainer from these installations. The compass may be mounted on the windshield or the glareshield.

INSTALLATION & REMOVAL INSTRUCTIONS FOR REMOVAL OF CENTER STRAP CESSNA 310 AND 320 WINDSHIELD REMOVAL

Reference Figures 1 (1-), 2 (2-) and 3 (3-)

1. Remove magnetic compass by removing the upper and lower center strip trim (fig 2-16) from windshield center strip (fig. 1-1).
2. Uncouple the wrist lock (1-5) attaching the compass light wire.
3. Remove the nuts (1-7) and screws (1-2) securing mounting bracket (1-8) to the windshield center strip.
4. Remove the windshield upper trim (2-15), left front window trim (2-8), right front window trim (2-21) and sun visors (2-14).
5. Start at the left side and carefully remove the headliner from the prong edges of the windshield upper retainer. Pin the headliner back out of the way.

Ref. Fig. 3

6. Remove the left (19) and right (20) lower outside retainers by removing the screws and drilling out any rivets. Exercise care when drilling any rivets to avoid elongating any holes.
7. Remove screws (3 & 4) and nuts (8 & 9) from center retainers (5 & 7) and remove the center retainers.
8. Remove the left (18) and right (21) skin sections by removing the retaining screws (16,17 & 22) and nuts (13, 14, & 24).
9. Remove all screws (2) and nuts (11) from the top of the windshield.
10. The windshield may now be removed from the aircraft. First pull out the bottom of the windshield, then pull down and out on the top edge.
11. Use solvent to remove all old sealant from all retainers and channels. Check for corrosion and make any necessary repairs.

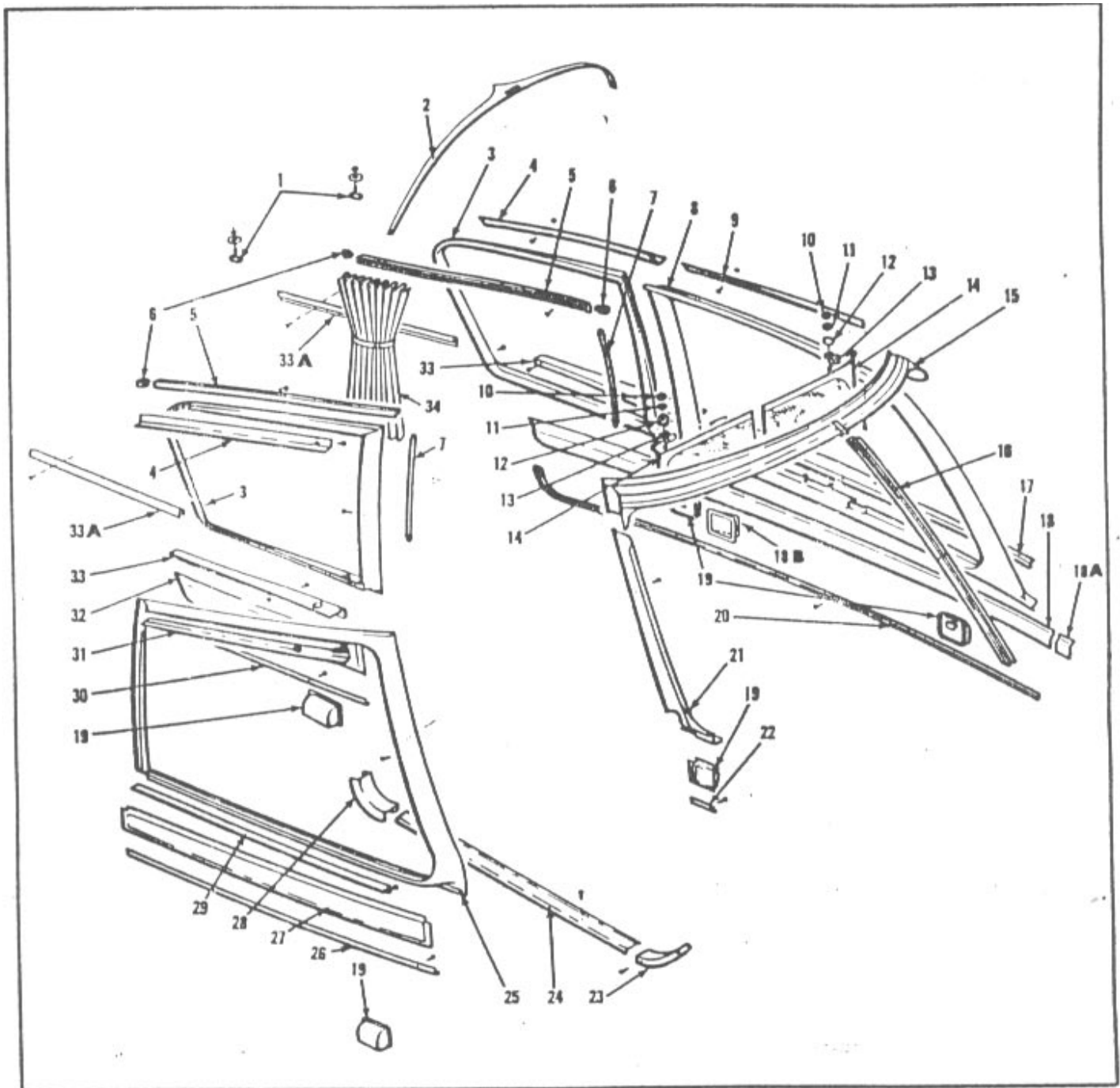
INSTALLATION

1. The new windshield (p/n 336/CON or 336/CMB) is trimmed slightly oversize. Most of the excess material will be at the base. The notches are cut at the factory along both the left and right sides.
 2. An exact duplicate of the original windshield can be made by making a paper overlay of the original windshield. Place a large piece of kraft paper over the outside of the windshield. Tape the bottom center and the top center while pulling the paper taut. Pull taut and tape both the left and right centers. The paper will now be anchored in four spots. The areas of paper between these four spots can now be cut with a razor knife, overlap the edges and tape these seams flat. By repeating this over the entire windshield, the paper will follow all the compound curvatures. The excess paper around the edges may be removed by following the edge of the windshield with the razor knife and cutting the paper. This new pattern may be placed over the outside of the new windshield, aligned with the side notches and taped in position. Use a marker or grease pencil to follow the edge of the paper template and transfer a trim line to the new windshield.
 3. Use a bandsaw, router, rotary cutter, grinder or sander to trim the windshield to the correct size. Sand smooth all edges and radius all corners and holes. trial fit the windshield into the opening, and make any adjustments necessary.
 4. The protective coating may be removed, set aside, and the windshield inspected for any damage or defects. Reapply the protective coating or cover with a cling type food wrap except a 2" area around the edges.
 5. Place sealing tape (12)(3/4" or 1" electrical tape) around the entire edge of the windshield. Center the windshield on the tape to give an equal overlap on both the inside and outside surfaces.
 6. Align the windshield in position. **USE ONLY ACRYLIC DRILL BITS** to drill all holes in the windshield. Pilot holes may be drilled in the acrylic the same size as the holes in the aluminum skin. **DO NOT DRILL THE HOLES FOR THE CENTER STRAP.** The windshield may now be removed and all holes drilled at least 1/3 the fastener diameter larger. Partially countersink all holes across the top outside of the windshield for proper seating to the skin. Chamfer the edges of all holes on both the inside and outside surface.
 7. Position the windshield in the opening and temporarily fasten all retainers in position. use masking tape to mask the surface of all aluminum edges and the windshield to within 1/16' of the retainers. this will allow for a fillet in the sealer. Now place a second layer of masking tape over the first layer. This masking will protect both the skin and windshield from excess sealants. **REMEMBER "AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE"**
 8. Remove the windshield and clean all sealing surfaces with isopropyl alcohol on a soft cloth.
 9. Apply sealant (Chemseal CS-3204-B2 or equivalent) evenly to all sealing surfaces.
- Ref. Fig 3
10. Position windshield into upper retainer (1).
 11. Loosely fasten both left hand (18) and right hand skins (21) in position.
 12. Position Left hand (15) and right hand (23) retainers in place and hold with cleco fasteners.
 13. Replace fasteners in all retainers. Do not over tighten! Allow excess sealant to squeeze onto the masking tape. Use your finger to remove the excess sealant and create a fillet along the windshield/retainer edge. Remove any excess sealant from the inside of the windshield. Remove the top layer of masking tape and allow the sealant to cure. Any addition sealant which may squeeze out will be caught by the bottom layer of tape.
 14. The original compass may be mounted by fabricating a mounting bracket as per the attached drawings and mounting by aligning the attachment holes with the fasteners (2 & 3) located at the top center of the windshield, 336/CON, or a new vertical compass may be mounted on the glareshield. When the windshield, 336/CMB, is installed, the compass used on Cessna 310L/320E or later aircraft may be installed on the mounting block which is bonded to the windshield.

15. Reattach the headliner and replace all interior trim panels.

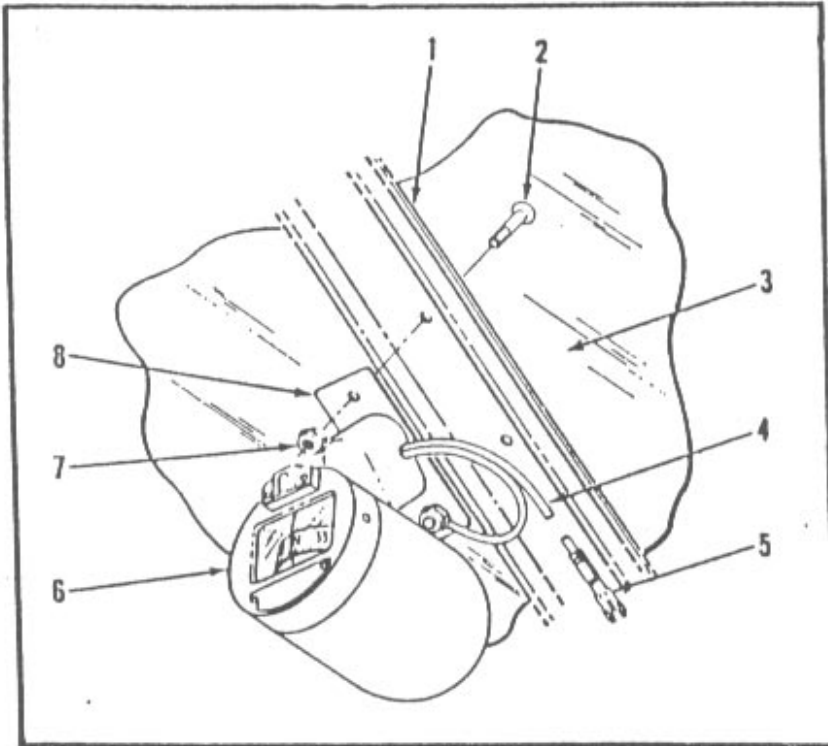
16. Follow the guidelines on acceptable maintenance procedures in the FAA Advisory Circular AC 43.13-1A, or latest revision, in completing all phases of the installation.

17. Complete 337 form. The weight of the original .125" thick windshield and center strap is approximately 8 lb. 10 oz. and the weight of the replacement windshield is approximately 15lb. 5 oz. Perform weight and balance. The weight of the center strap and fasteners removed from the .250" windshield is less than 1 lb.



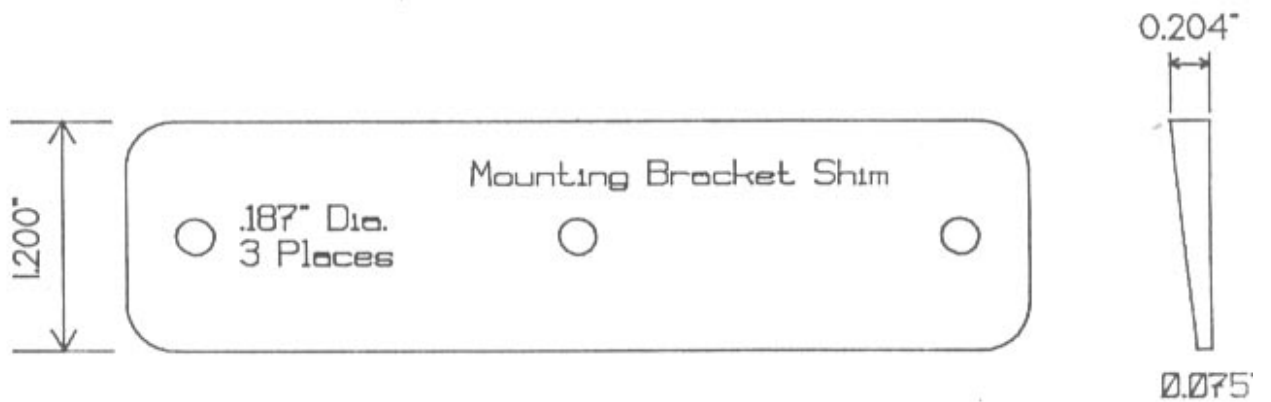
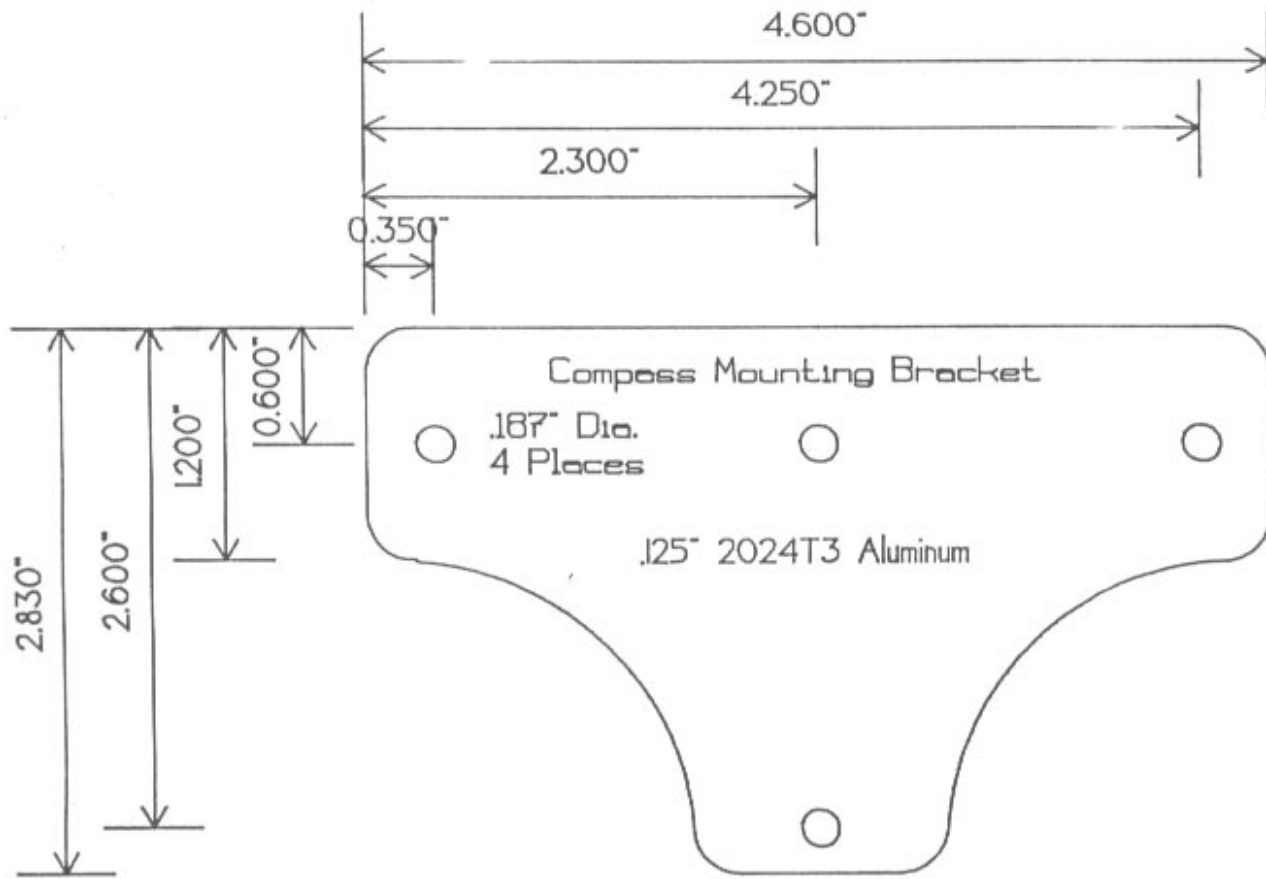
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|---------------------------|------------------------------|--------------------------|
| 1. Coat Hook | 13. Bolt | 24. Door Jamb Step |
| 2. Tiara | 14. Sun Visor | 25. Door Window Trim |
| 3. Rear Window Trim | 15. Upper Windshield Trim | 26. Retainer |
| 4. Upper Trim Support | 16. Center Windshield Trim | 27. Door Trim Pad |
| 5. Curtain Track | 17. Lower Trim Support | 28. Aft Door Jamb Fillet |
| 6. Curtain Stop | 18. Left Trim Pad | 29. Lower Trim Support |
| 7. Assist Cord | 18A. Insert Panel | 30. Retainer |
| 8. Left Front Window Trim | 18B. Cigar Lighter Trim Cup | 31. Upper Trim Support |
| 9. Upper Trim Support | 19. Ash Receiver | 32. Rear Trim Pad |
| 10. Washer | 20. Retainer | 33. Lower Trim Support |
| 11. Washer | 21. Window Post Trim | 33A. Retainer |
| 12. Visor Mount | 22. Retainer | 34. Curtain |
| | 23. Forward Door Jamb Fillet | |

Figure 2 Upholstery Trim



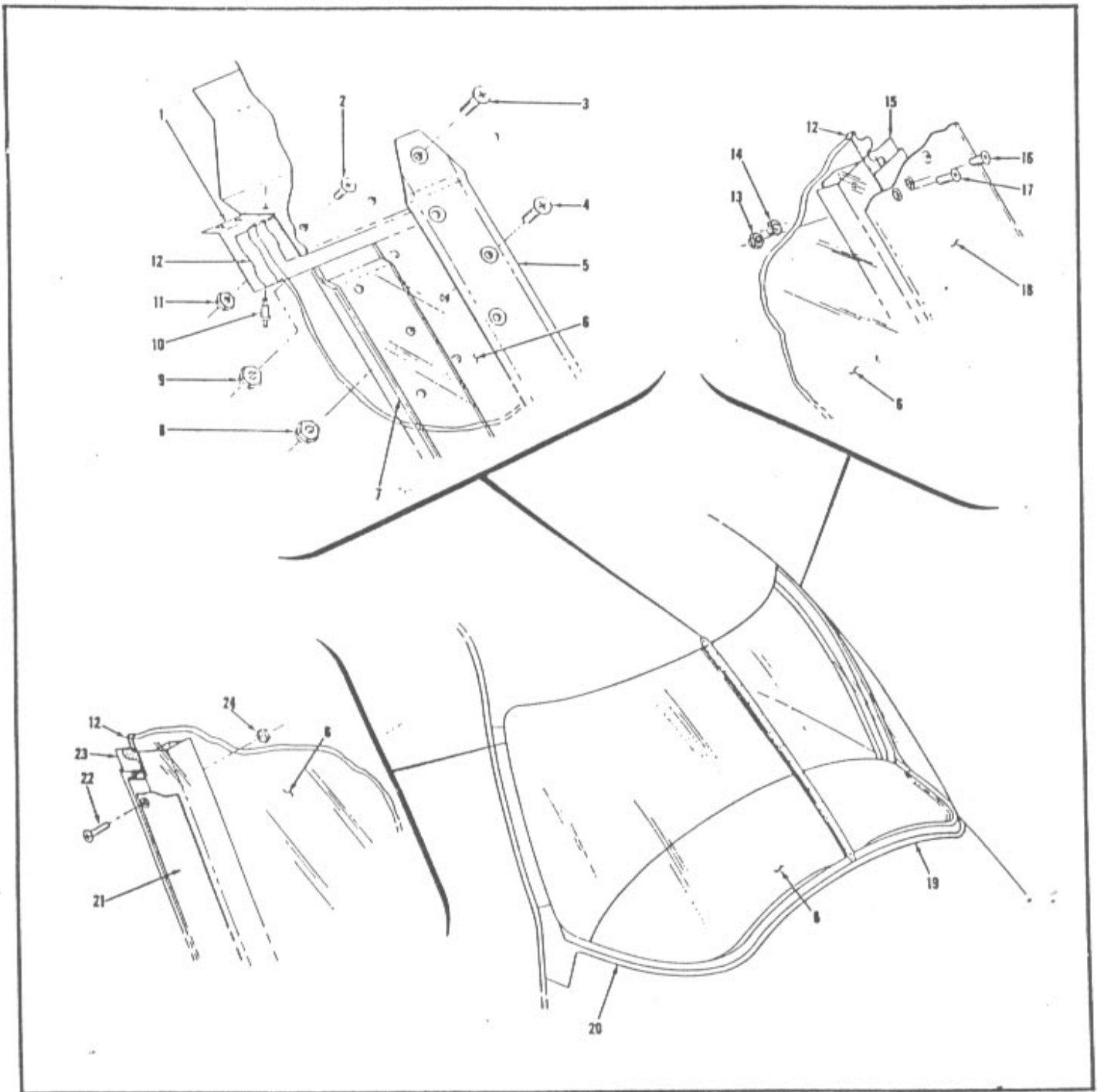
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|---------------------------|---------------------|
| 1. Windshield Centerstrip | 5. Wrist Lock |
| 2. Bolt | 6. Magnetic Compass |
| 3. Windshield | 7. Nut |
| 4. Compass Light Wire | 8. Mounting Bracket |

Figure 1 Magnetic Compass



Compass Mounting Bracket & Shim

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- 1. Inside Upper Retainer
- 2. Screw
- 3. Screw
- 4. Screw
- 5. Outside Center Stiffener
- 6. Windshield Panel
- 7. Inside Center Stiffener
- 8. Nut
- 9. Nut
- 10. Cherry Rivet
- 11. Nut
- 12. Tape

- 13. Nut
- 14. Nut
- 15. Left Inside Retainer
- 16. Screw
- 17. Screw
- 18. Left Skin
- 19. Left Outside Retainer
- 20. Right Outside Retainer
- 21. Right Skin
- 22. Screw
- 23. Right Inside Retainer
- 24. Nut

Figure -3 Windshield Assembly