

SUBJECT: Strut Tower Corrosion. [With edits and comments by HoraceJohn for allpar forum]

OVERVIEW: This bulletin involves correcting a corrosion staining, surface corrosion, or corrosion perforation condition at the top of the strut tower(s).

MODELS: 1996 -2000 (NS) Town & Country/ Voyager/ Caravan

SYMPTOM/CONDITION: Cosmetic corrosion or perforation at upper strut tower(s) usually between the strut and upper load path beam inner panel (inner fender). [If the corrosion is merely cosmetic, it would be wise to prevent further damage by using repair A. But if the corrosion more than cosmetic, particularly if it is perforated, use repair B to reinforce as well as to stop further corrosion. But if it has gone too far, see note B14.]

DIAGNOSIS and REPAIR DESCRIPTION: Inspect left and right strut towers for condition. [Poke the metal with a screwdriver. Also look up from the wheel well.] If corrosion is present, perform one of the following repair procedures:

Repair A -Cosmetic corrosion removal and the application of corrosion resistant materials and/or primers and topcoats.

Repair B -Corrosion perforation removal and installation of 1 or 2 new cap(s) kit.

PARTS/MATERIALS REQUIRED: [Only needed for repair B]

Qty	mopar Part No.	Description
1	05080009AA	Strut Tower Cap (left side)
1 Kit	05086513AB	Strut Tower Cap Installation Kit (left side)
1	05080008AA	Strut Tower Cap (right side)
1 Kit	05086512AB	Strut Tower Cap Installation Kit (right side)
1 ½ to 2 Cartridges Per Side	05083855AA	Mopar Structural Adhesive

[The installation kit has these instructions, 3 screws, and 10 rivets. The left and right kits are now the same and have the same mopar number.]

[Dorman sells the cap with fasteners together. I have only seen pictures of it so I can't judge the quality. Beware however of the Dorman instructions which fail to mention the adhesive. Dorman admits that is a mistake]

[The adhesive is Lord Fusor 112B. It is two-part acrylic, very strong, waterproof, protects metal, but vulnerable to heat so beware of welding near it. Cheaper from an auto body supply store than from a dealer.]

EQUIPMENT REQUIRED: [Only needed for repair B]

W-7804R	90-degree drill motor (PSE)	[Ingersoll Rand 7807R]
W-861	High-speed air cutter (die grinder) (PSE)	[Ingersoll Rand 307A, I think]
05016570AA	Adhesive dispenser (MOPAR)	[Lord Fusor 301]
W-AK175	Power set rivet gun (PSE)	[Huck AK175A]

REPAIR PROCEDURES:

Note: any under hood labels requiring replacement during these repairs should be obtained prior to beginning repairs. [Peel off labels if you can, otherwise take a close-up photo and print that for your car manual.]

Warning: during this procedure proper safety equipment must be used to protect eyes, respiratory system, and hands.

Caution: prior to starting any grinding or metal cutting type procedures, apply protective covers to surrounding panels including glass.

The instructions say to "Use the MDS2 and the appropriate Service Manual" for steps A1-A4, B1-B7, and B36.

[I would add that you should let the area dry out. Remember that your hood may drip rain onto the spot. Maybe that was part of the problem to begin with.]

Repair A: [When the corrosion is merely "cosmetic"]

- A1. Remove and store the battery.
- A2. Remove and store hood.
- A3. Remove wiper arms and cowl cover.
- A4. Remove the wiper unit/tub.
- A5. Remove the surface corrosion from the strut tower(s).
- A6. If corrosion was removed without breaking paint, clean the surface and apply corrosion resistant material between the strut tower and the strut tower reinforcement. [What does this mean?]
- A7. If paint was removed during corrosion removal, apply corrosion resistant primer, sealer, and paint.

Repair B: [When the corrosion has caused perforation.]

- B1. Remove and store the battery.
- B2. Remove and store hood.
- B3. Remove wiper arms and cowl cover.
- B4. Remove the wiper unit/tub.
- B5. Remove hood hinge arms.
- B6. Remove fasteners securing the power distribution center (PDC). Position the PDC to access the area around the strut tower.
- B7. Remove hood release cable from clamps on upper rail and left strut tower then route around the engine side of strut tower.
- B8. Remove hood alarm switch if equipped (**Fig. 1**).
- B9. Remove power steering fluid reservoir mounting screws and position reservoir away from right strut tower (**Fig. 2**).
- B10. Remove clamp holding air conditioning hose on inside of right strut tower and position hose away from strut tower (**Fig. 3**).
- B11. Use the template provided to mark area of sheet metal to be removed from top of strut tower (**Figs. 4 and 5**). [The template for left and for right sides is at the end of these instructions]
- B12. Use a spot weld cutter to remove the spot welds located within the area marked for removal (**Fig. 6**).
- B13. Using a tool such as a die grinder, cut along the lines marked using the template and remove the strut tower(s) sheet metal (**Fig. 7**).
- B14. Remove all corrosion-damaged sheet metal material making sure to remove all traces of corrosion (**Fig. 8**).  
Note: If removal of rust perforation extends down past spot welds securing the inner reinforcement to the tower, a new strut tower is recommended.
- B15. Place repair cap on the strut tower for a dry fit. Minor adjustments maybe required to get the cap over the strut. Adjustments may include removal of a small amount of material from the rear bottom edge of the cap (no more than 1/8" should be required). The new cap should fit securely in place with no more than 1/8" gap at any location.

- B16. Using drill motor and. 7/32" drill bit, drill the 3 holes into upper strut tower and the inner load path beam through the three guide holes in the new cap (**Fig. 9**).
- B17. Secure cap(s) by loosely installing the three per side, self-tapping screws into the holes made in the previous step.
- B18. Using a 9/32" drill bit and the holes in the new cap as a guide, drill the remaining [seven] holes in the strut tower and upper load path beam. [Confirm that the rivets will go in.]
- B19. Using a marker and the bottom of the cap as a guide, mark a line around the bottom of the cap onto the strut tower and around the cap at load path beam.
- B20. Remove the self-tapping fasteners and the new cap.
- B21. Remove paint and E-coat [electrocoat] materials within the marked area where the cap will be placed.
- B22. Remove the E-coat from underside of repair cap (**Fig. 10**). [Yes, the surfaces should be bare metal. The Fusor 112B is a metal-metal adhesive. Resist the temptation to prime it.]
- B23. Remove sanding residue from strut tower(s), upper load path beam and underside of the repair cap(s). [If you are going to mask the strut bolts, do it before the next step]
- B24. Insert adhesive cartridge into the applicator gun.
- B25. Remove the retaining nut and plastic end caps from the cartridge, slowly squeeze out material until both parts of the adhesive flow equally (**Fig. 11**).
- B26. Attach the mixer tube to the end of the adhesive cartridge. Dispense adhesive through the mixer tube until you have a thorough mix (**Fig. 12**).
- B27. Load adhesive into the corner where upper load path beam and upper strut tower reinforcement meet (**Fig. 13**).
- B28. Apply a thick coat of adhesive to the underside of the repair cap, smooth/spread the adhesive using a 1" paint brush, making sure to cover all bare metal.
- B29. Apply a thick coat of adhesive to the top of the strut tower, smooth/spread the adhesive using a 1" paint brush, making sure to cover all bare metal. (**Fig. 14**)
- Note: Make sure to apply enough adhesive to cause squeeze out at all locations.
- Note: Once the cap is set down on the strut tower, it should not be lifted. If the cap is lifted it may cause air bubbles in the adhesive. Air bubbles will weaken the bond.
- B30. When the new cap is in position install the 3 self-tapping screws through the cap, into the tower (**Fig. 15**).
- B31. Insert the structural rivets around the perimeter, through the cap, into the tower side apron (**Fig. 16**). [seven of the ten rivets]
- B32. Remove the 3 self-tapping screws, drill the holes using the 9/32" drill bit, and install the structural rivets. [the remaining three rivets]
- B33. Smooth excess adhesive squeeze out around the edges of the repair cap using it as a seam sealer.
- B34. Use an appropriate solvent and paper towels to clean all adhesive residue from area around strut towers.
- B35. Once adhesive has cured, clean, sand, mask, prime, and paint the repaired areas necessary (**Fig. 17**).
- B36. Reassemble the vehicle.
- B37. Clean and detail the vehicle for delivery.

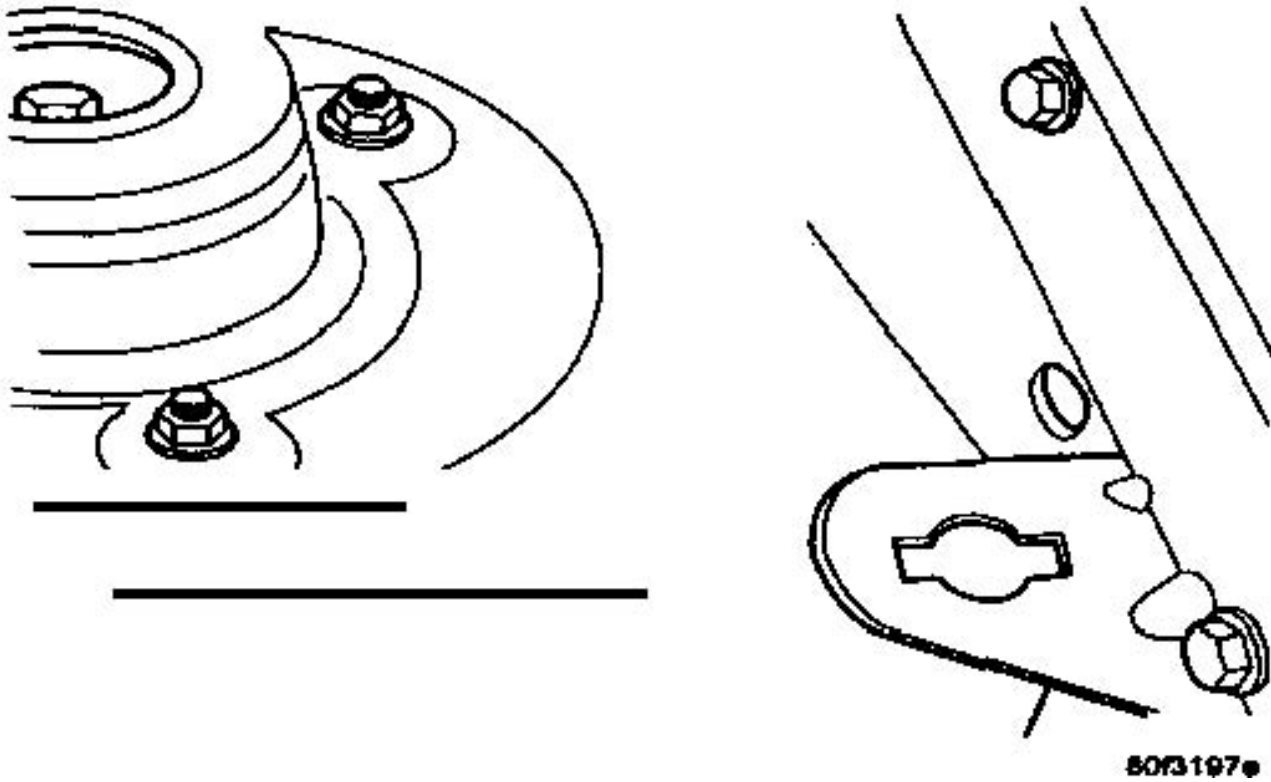


Figure 1. Switch mount with switch removed

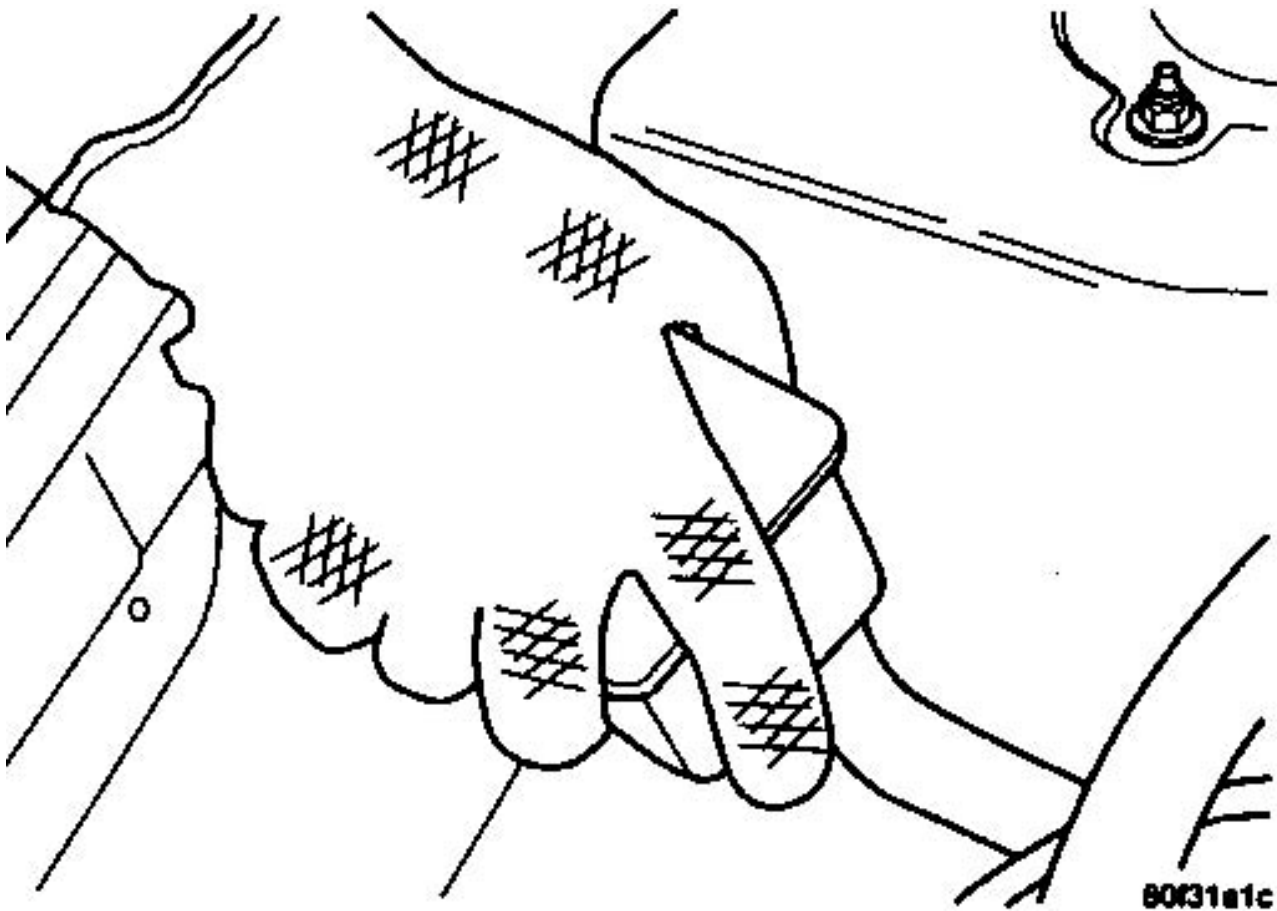
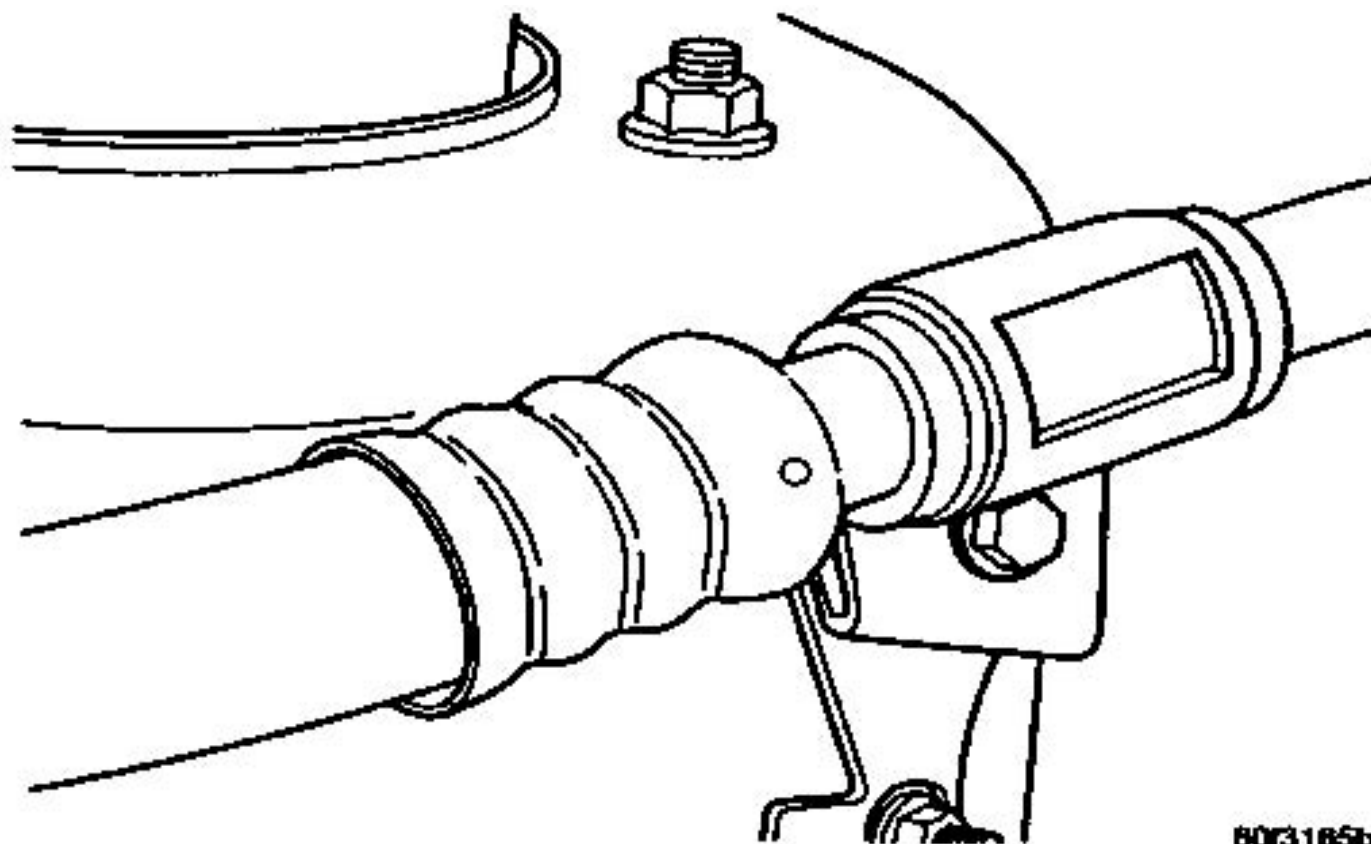


Figure 2. Place power steering reservoir away from work area



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Figure 3. Move air conditioning hose away from work area

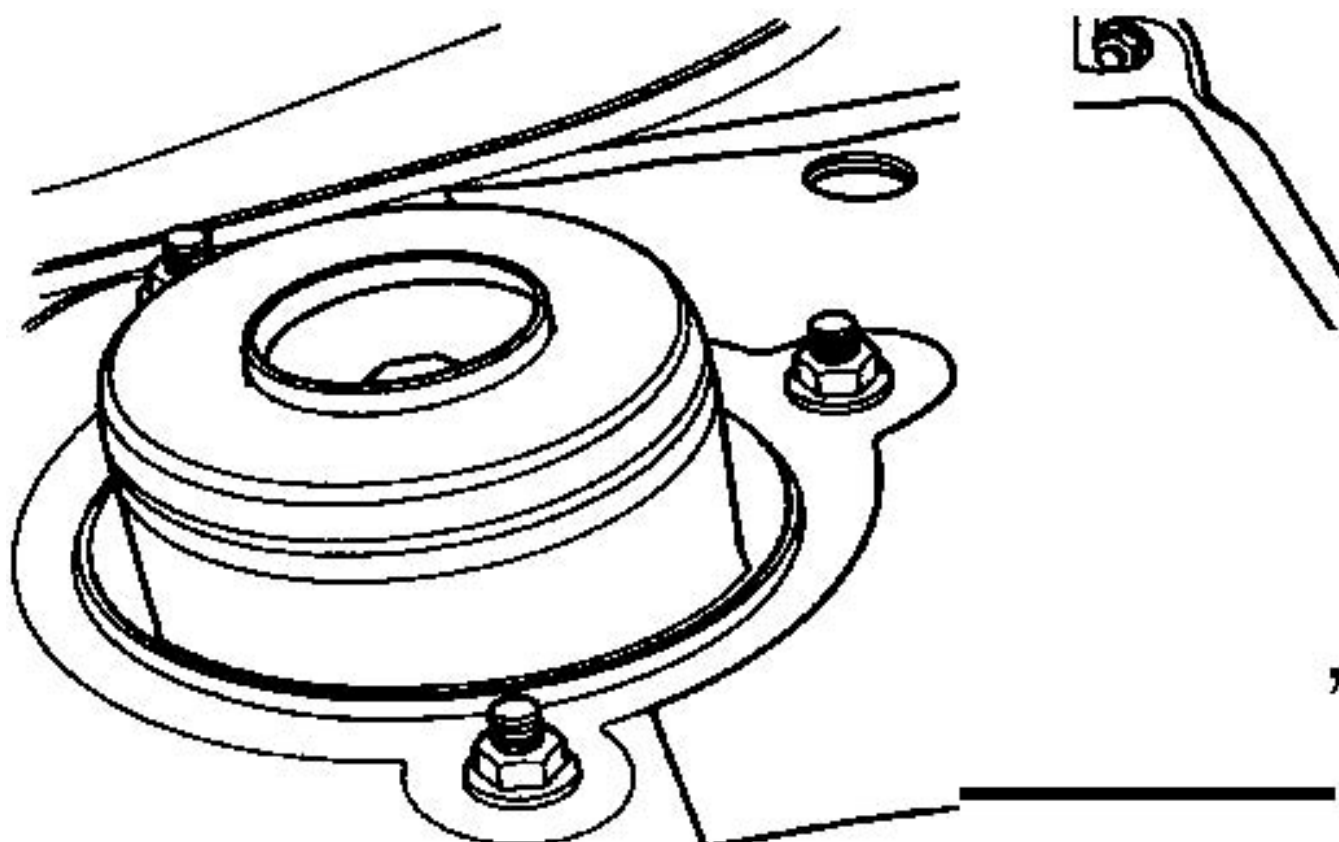


Figure 4. Position template on strut tower

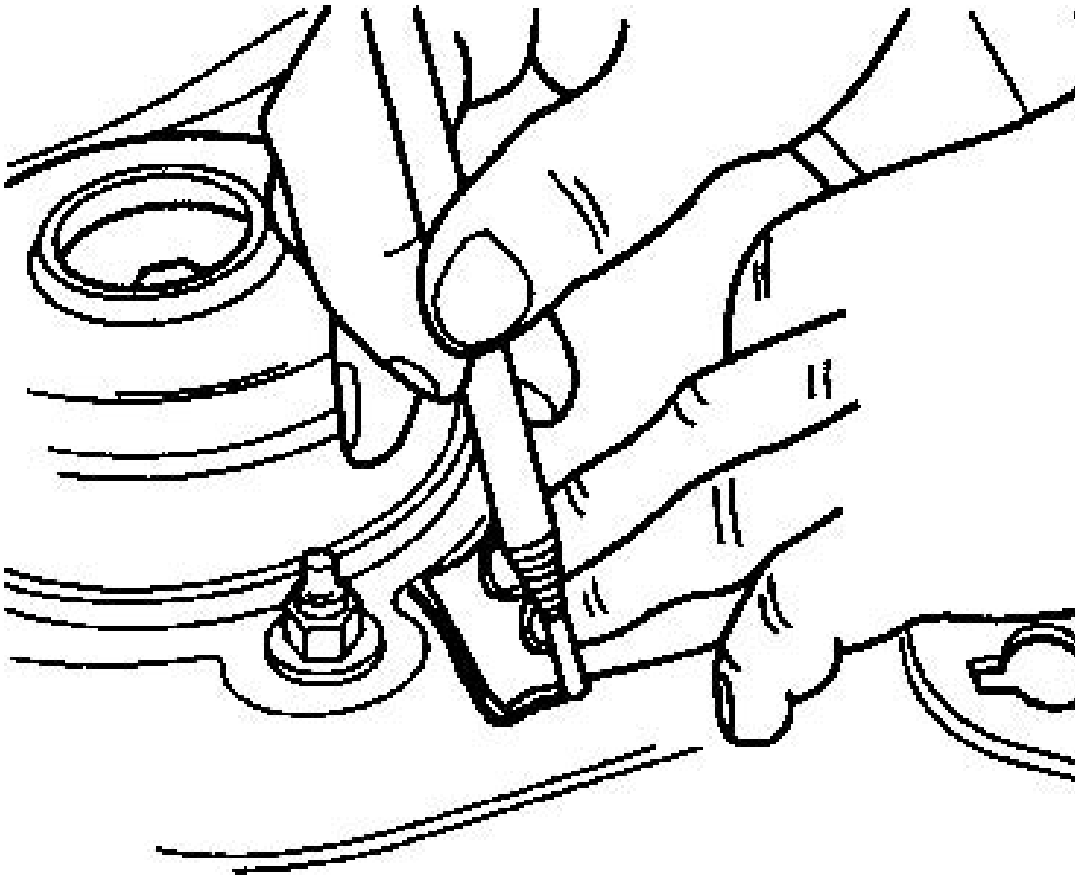


Figure 5. Use template to mark and remove sheet metal

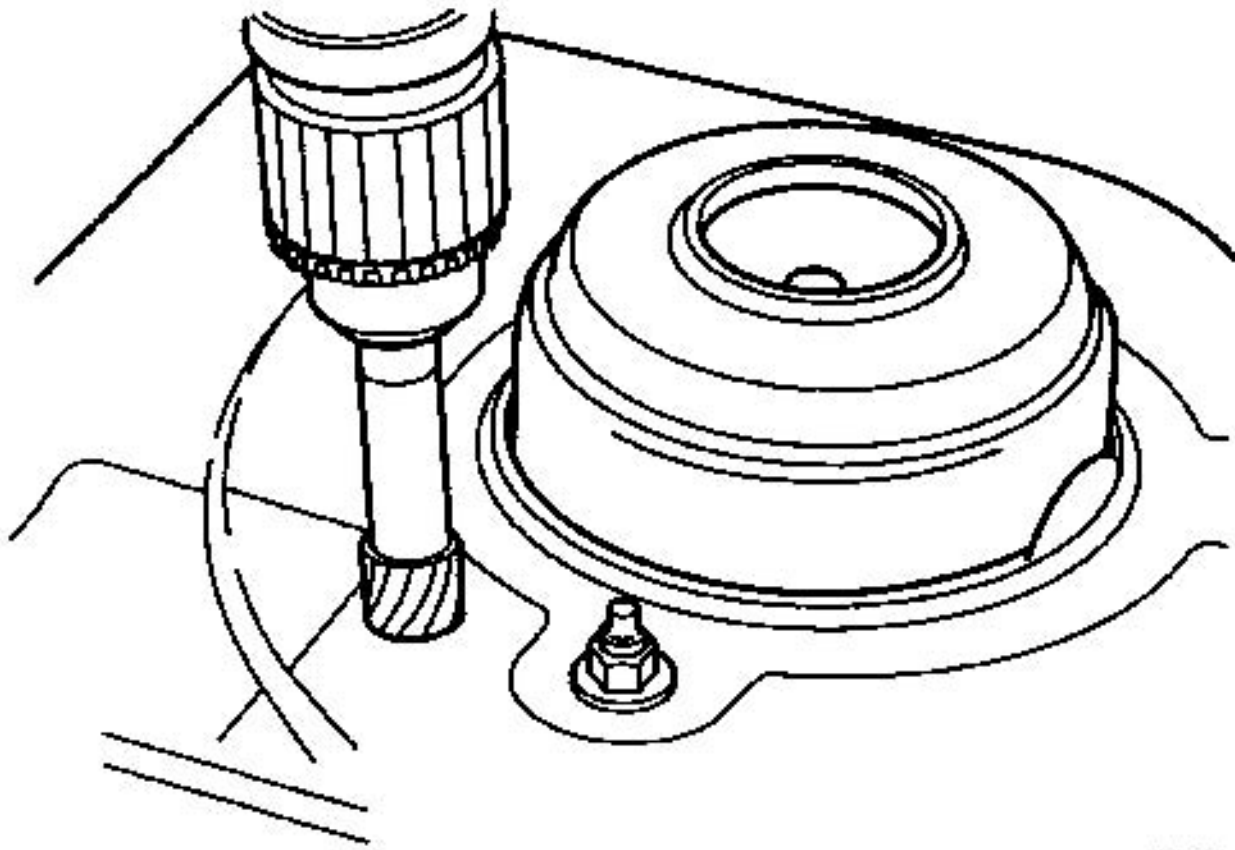


Figure 6. Remove spot welds from area to be removed

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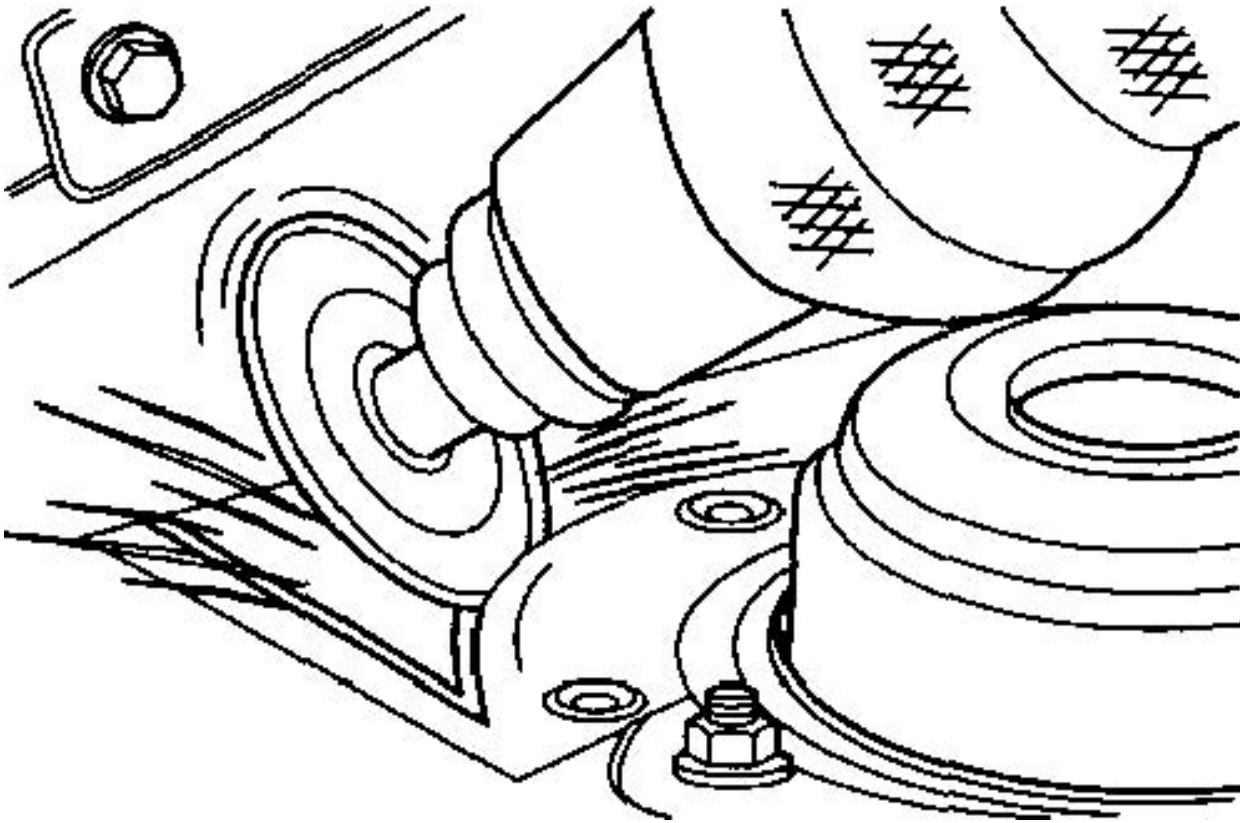


Figure 7. Use a die grinder to remove the outlined area

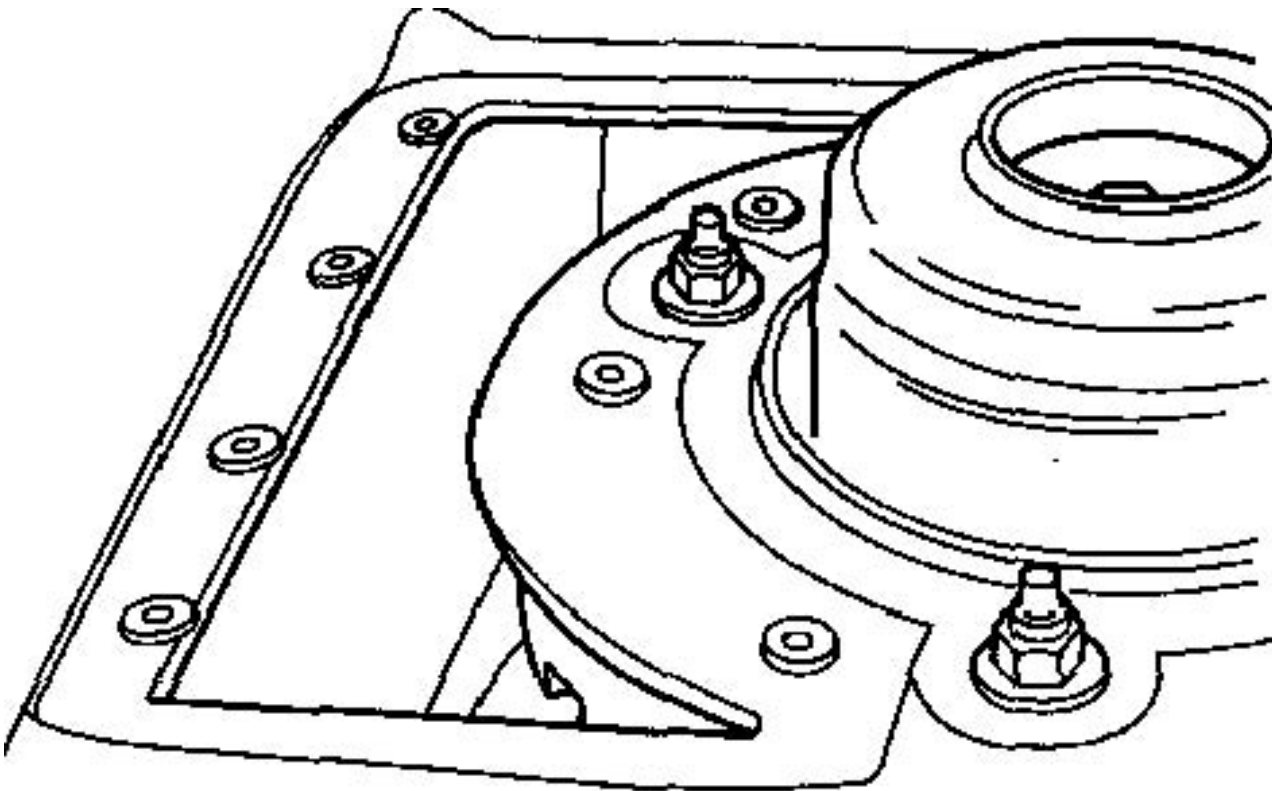


Figure 8. Strut tower with corrosion removed

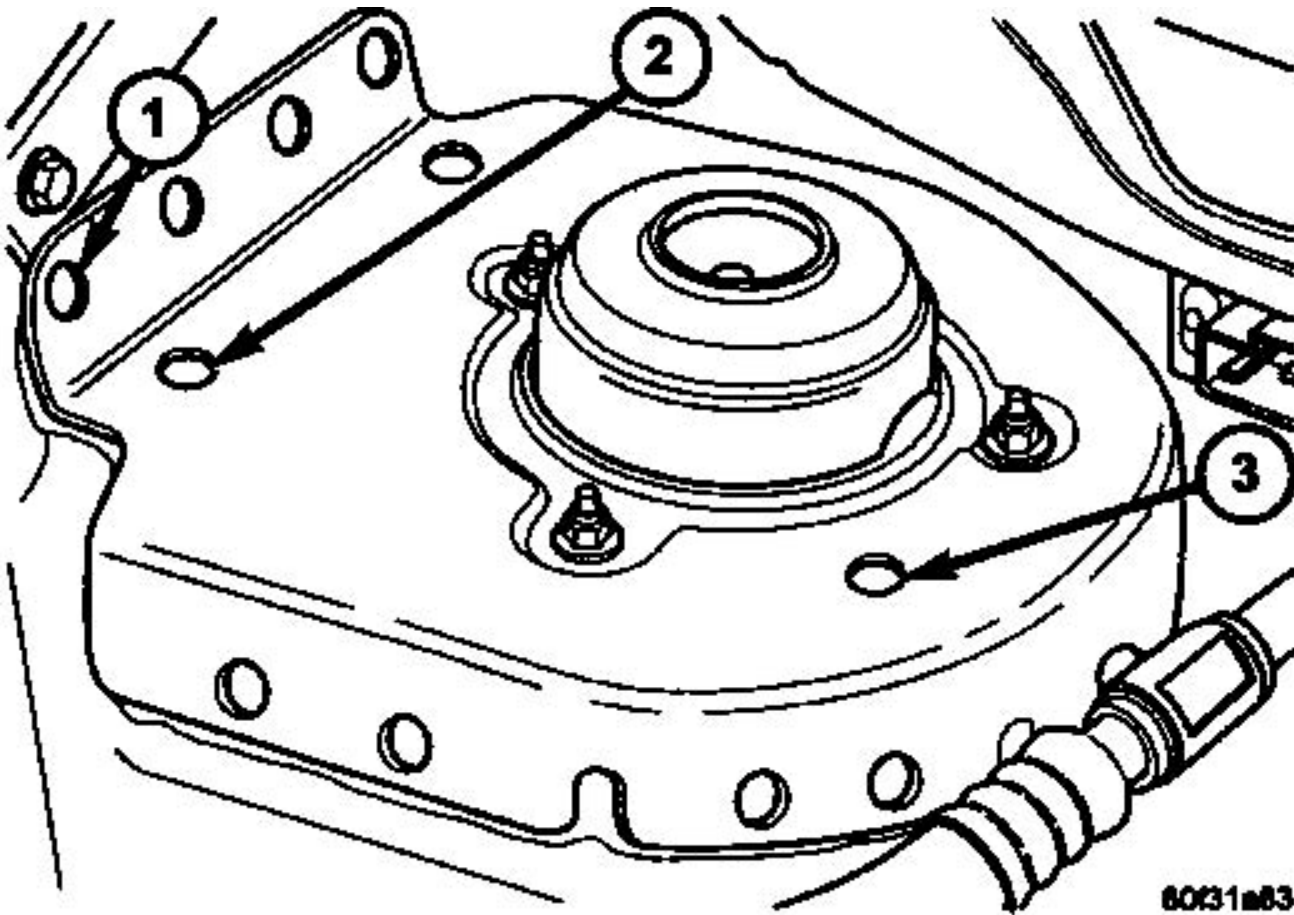


Figure 9. Cap with the 3 holes to be drilled for self-tapping screws and the 7 holes for rivets

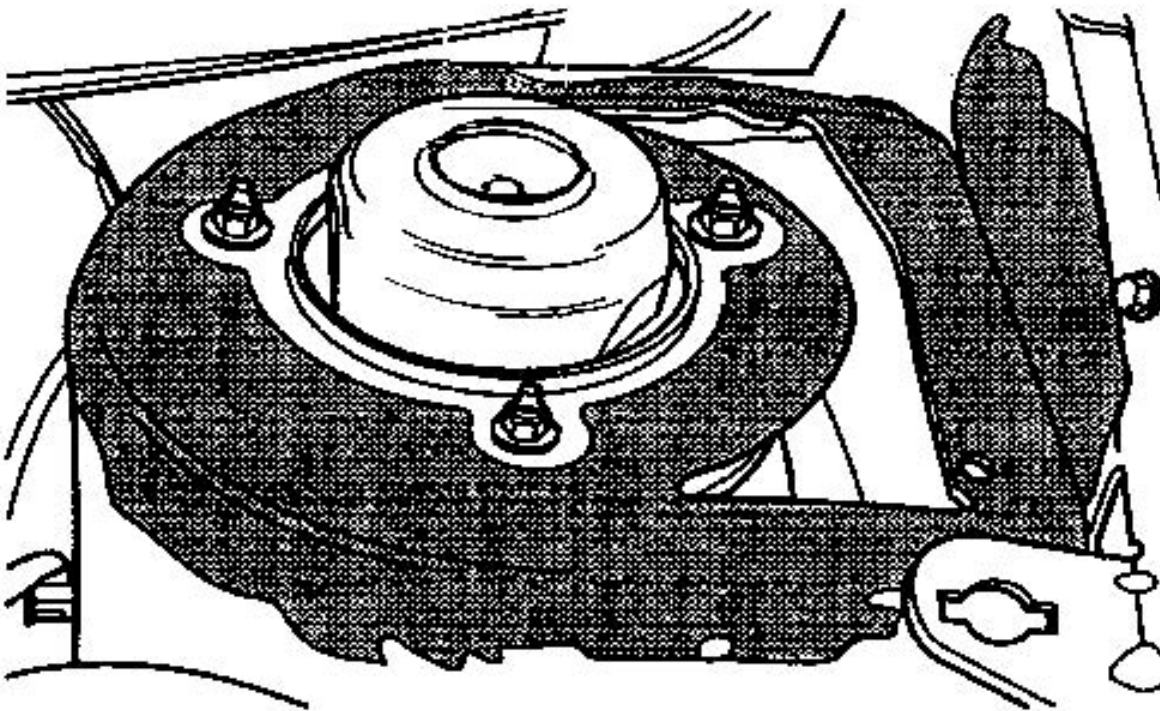


Figure 10. All paint and undercoat must be removed from the marked area. Bare metal.



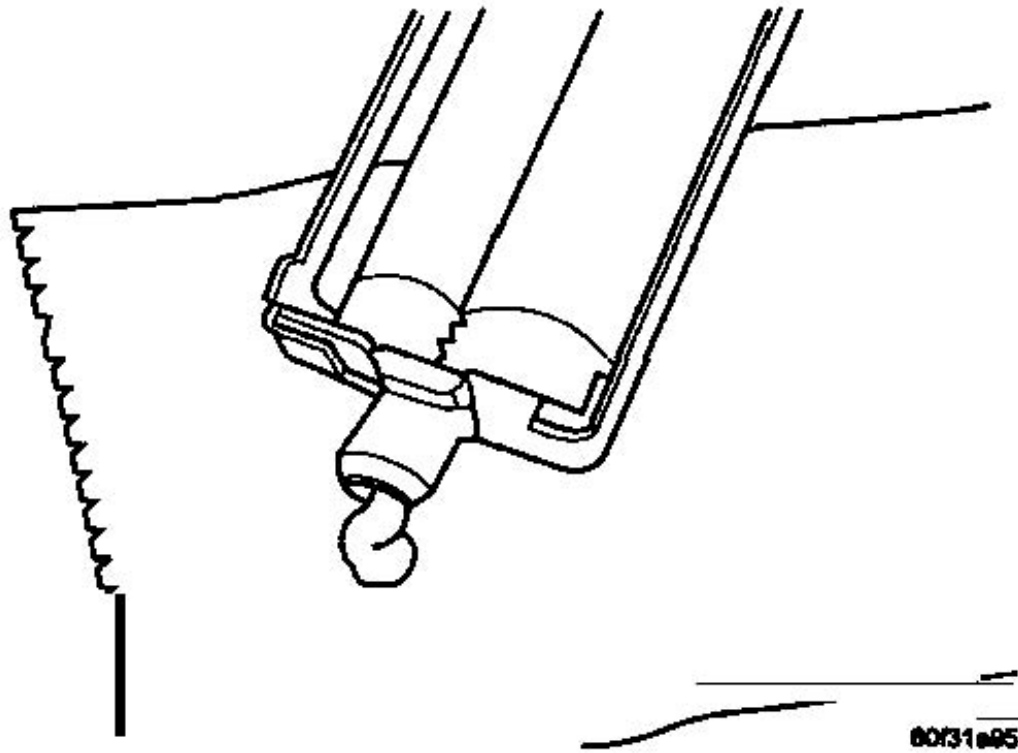


Figure 11. Both sides of cartridge should be flowing equally

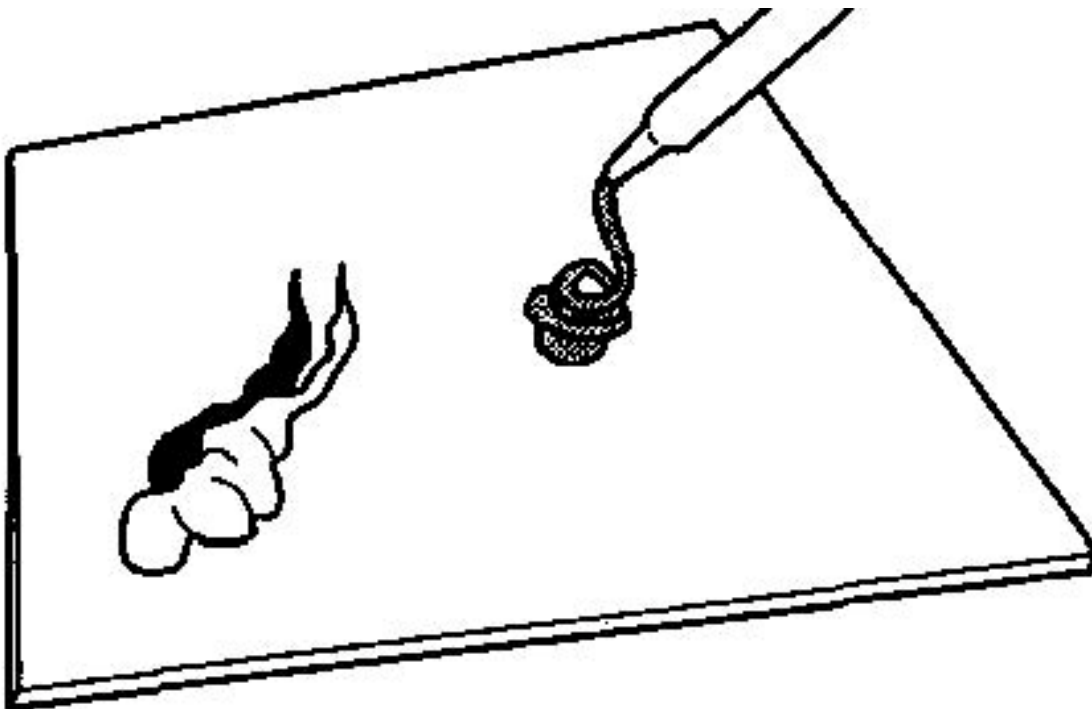
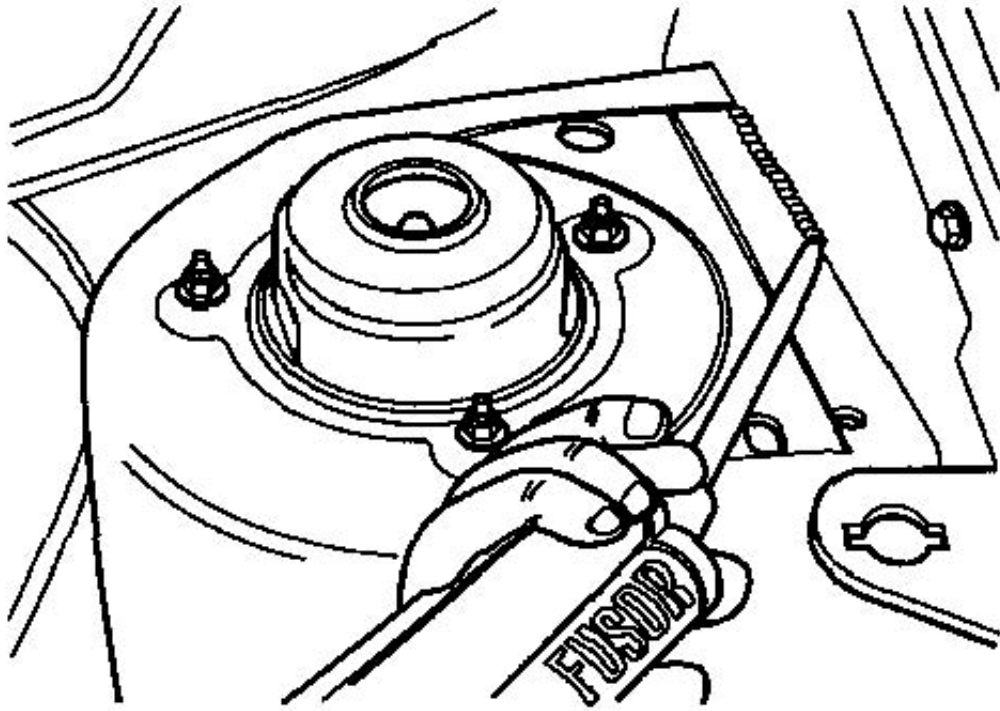
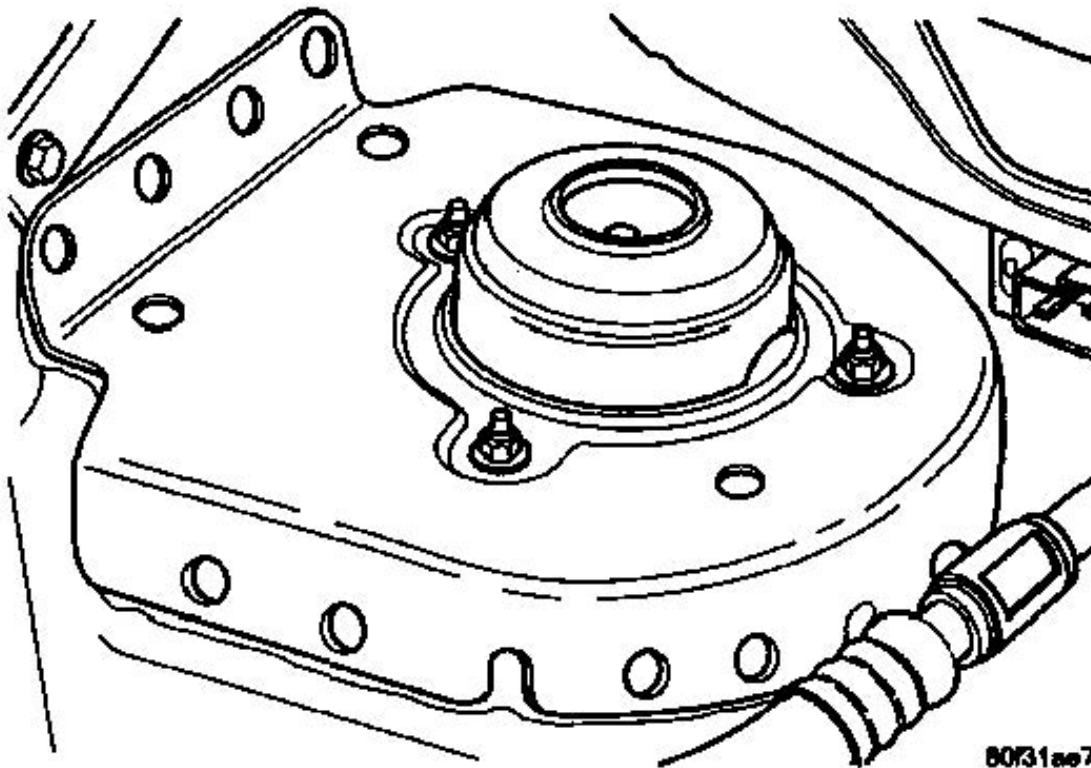


Figure 12. Mix should be one solid color



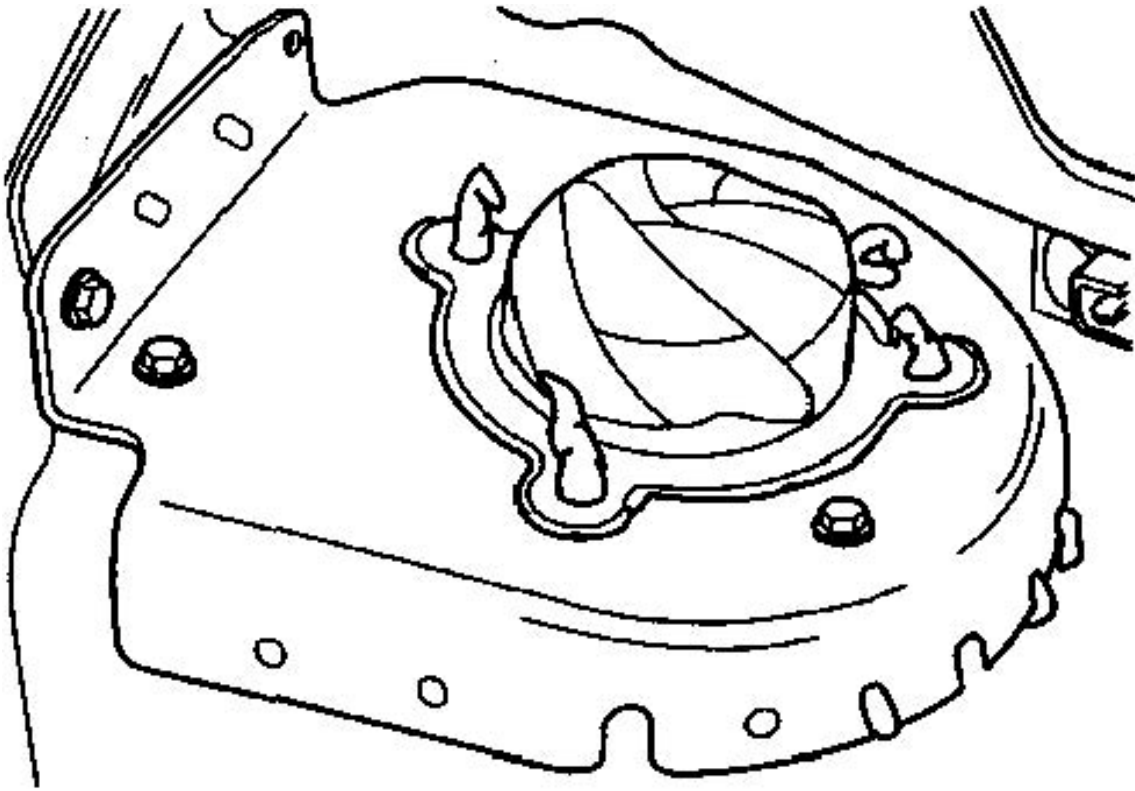
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Figure 13. Make sure to apply enough adhesive to create squeeze-out



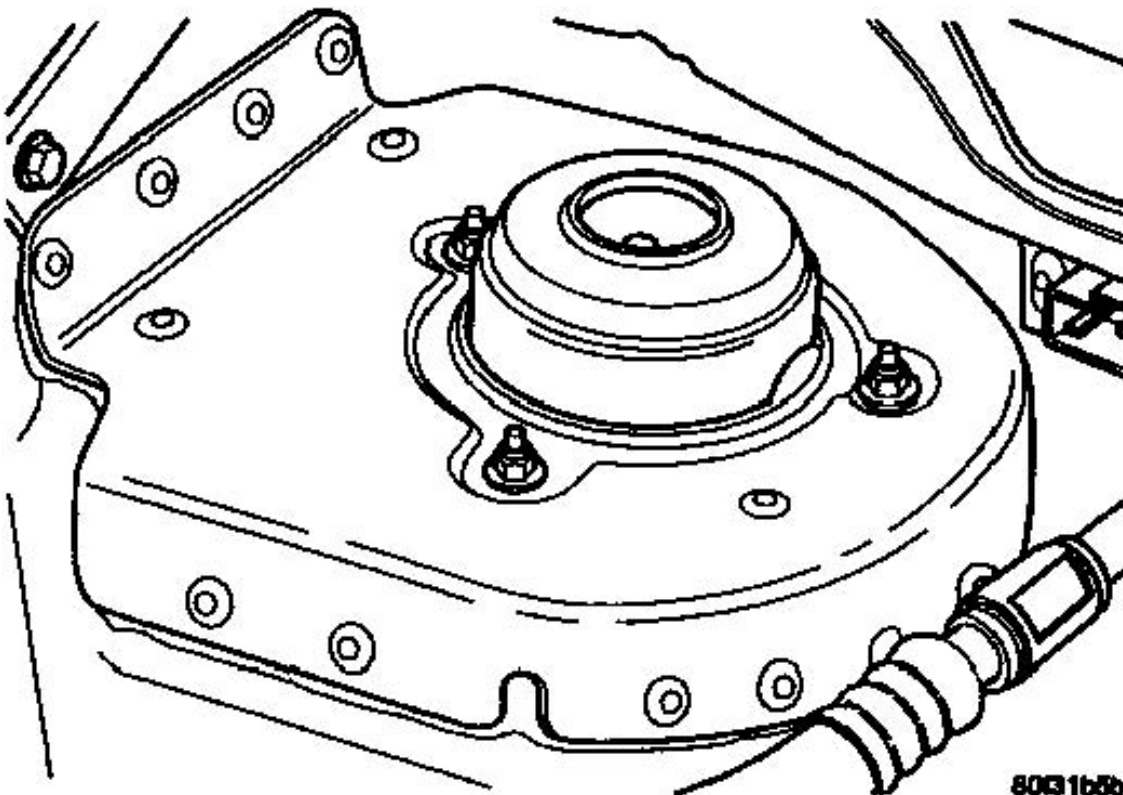
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Figure 14. Make sure you have enough squeeze-out to seal edges



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Figure 15. Insert the 3 self-tapping screws. Note: Masking off the top of the strut assembly and strut mounting bolts may help with clean-up later. [\[Do that before step B23\]](#)



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Figure 16. Insert 7 of the 10 structural rivets around the cap

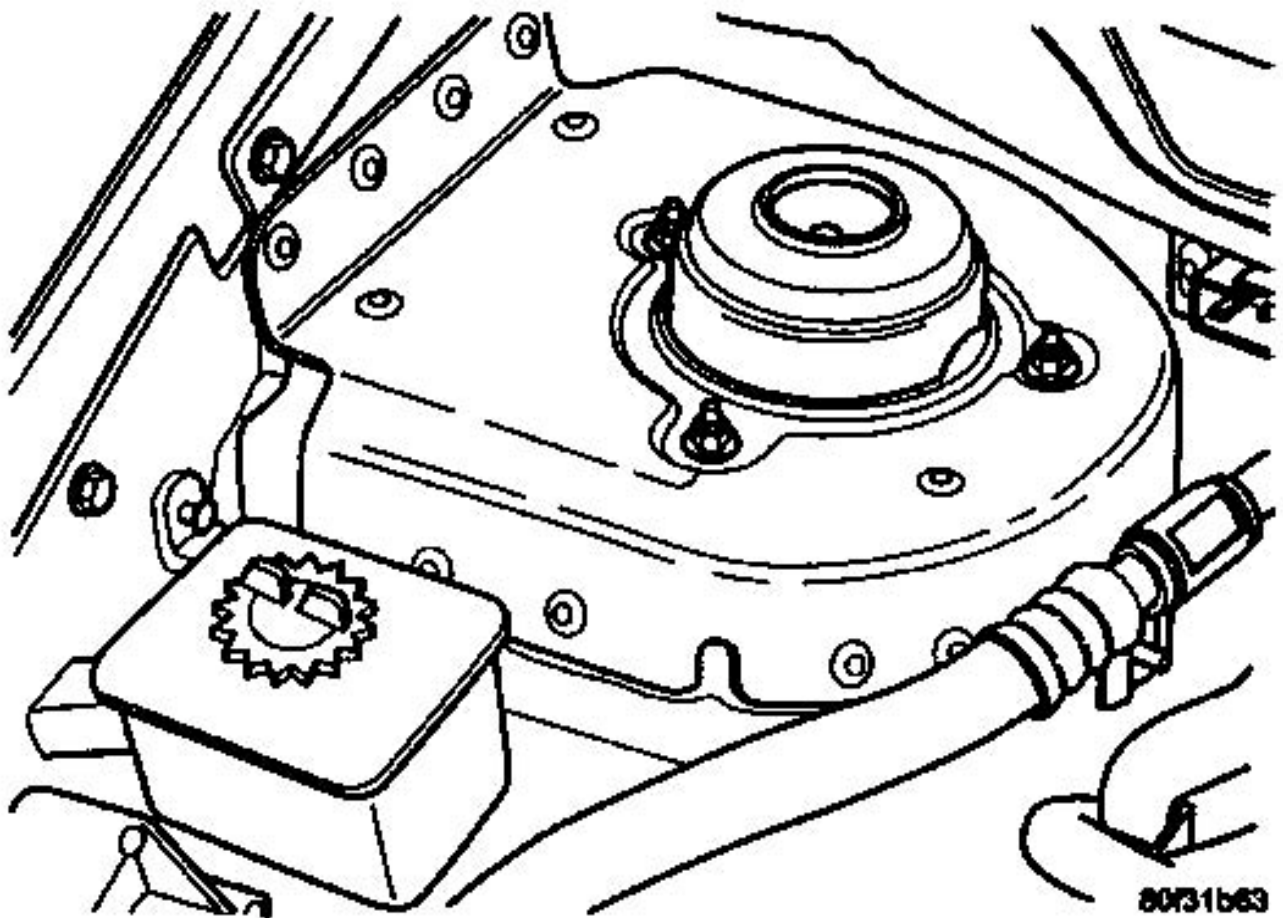
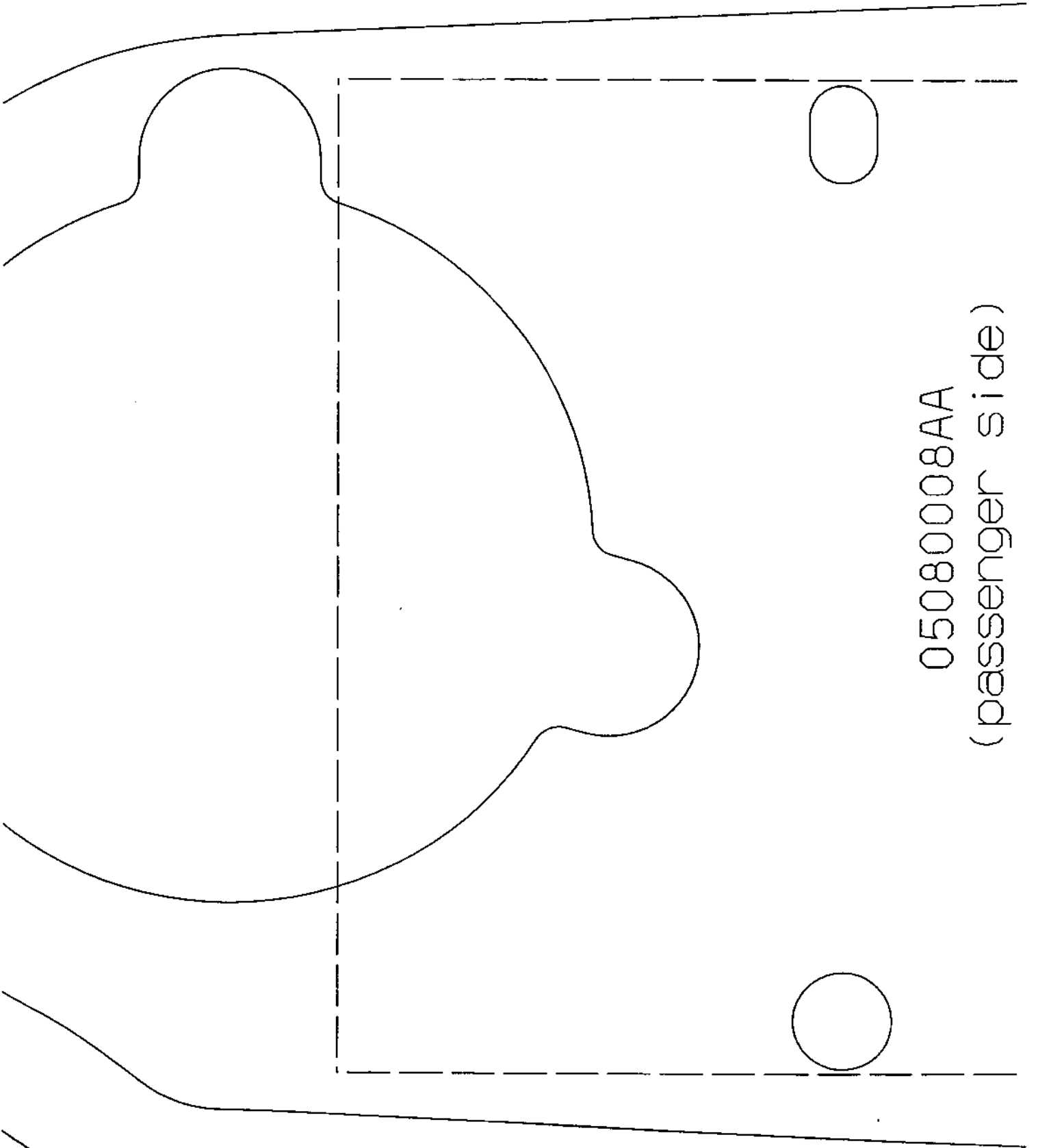
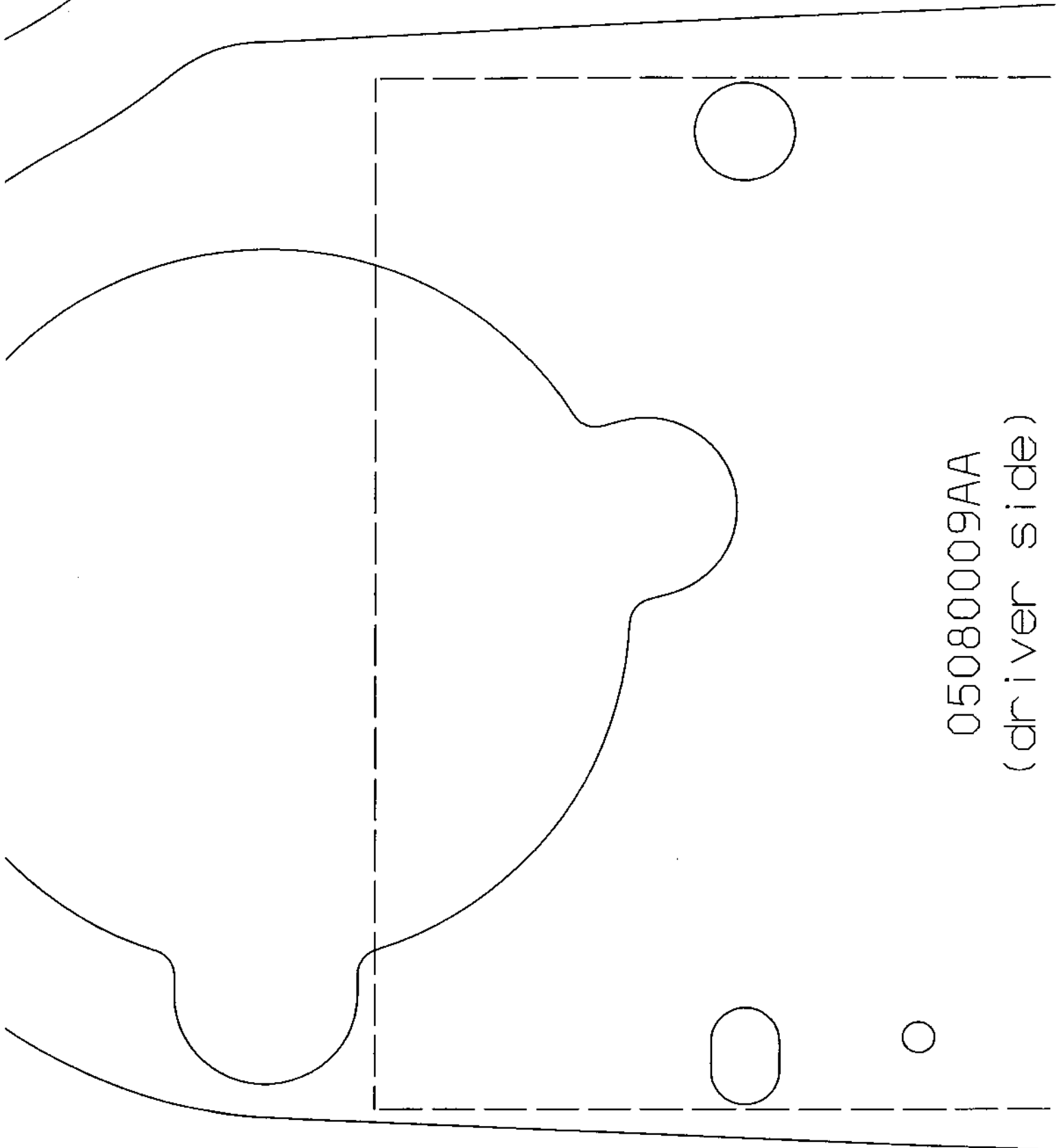


Figure 17. Once painted, reassemble the vehicle





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(passenger side)



05080009AA  
(driver side)