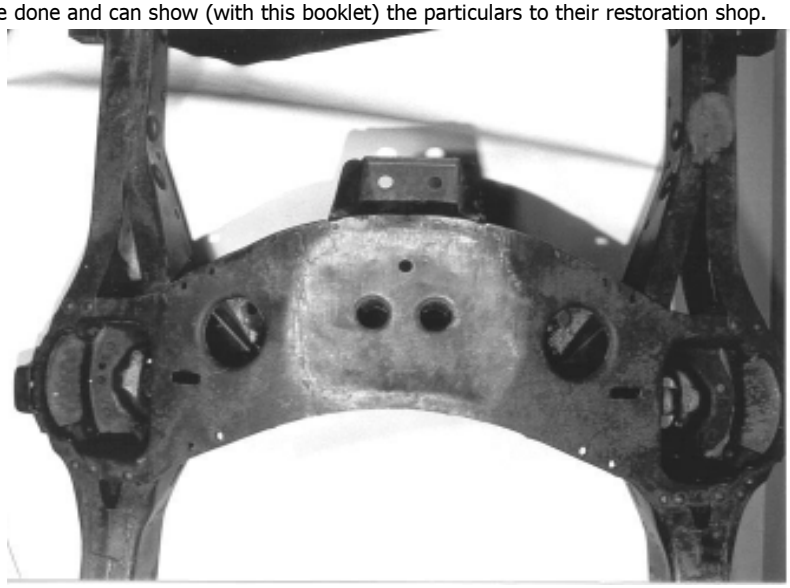
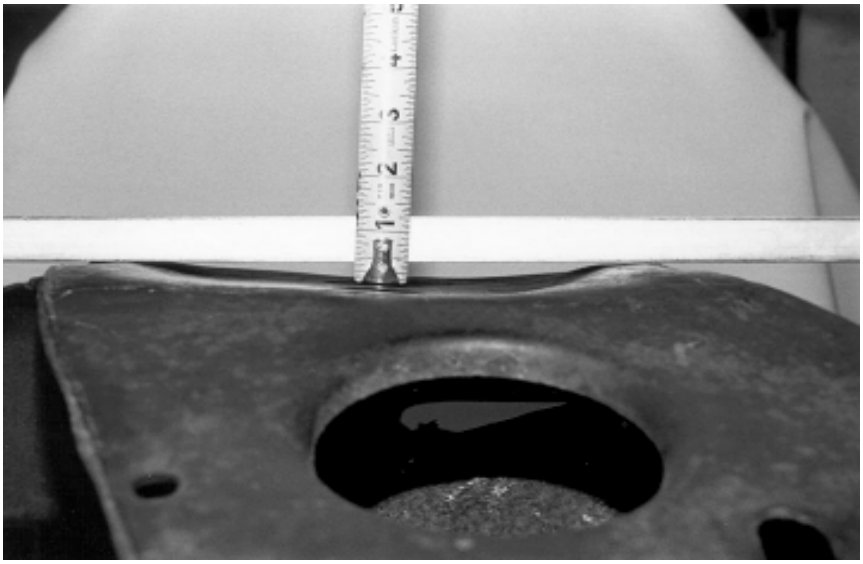
FRAME SADDLE REPAIR

Full-framed GM musclecars have an engine cradle, or "saddle", that is almost always damaged from floor jack abuse. Located squarely in the middle of the frame beneath the engine, the saddle is a logical location for jacking. The car stays balanced, and even though the saddle gets bent with each pump of the floor jack, "no harm seen is no harm done" is the service station's mechanic way of thinking. Of course, there is great harm done, which is highly visible in a body-off-frame restoration. A mangled frame saddle also gives a poor boy look to a detailed chassis, so it must be fixed in a show winning restoration. Jeff Lilly of "Jeff Lilly Restorations Ltd."' in San Antonio was restoring a concours Chevy frame for a client who wanted it as new. This meant cutting out the saddle, straightening it, and welding it back in place because to date, there are no reproduction saddles for sale. As you'll see in the steps ahead this booklet provides detailed restoration information that will be vital for future projects. Spot welds must be removed with a spot weld cutter, such as a "Spot Ease" from Wivco. New spot welds require a wire-feed MIG welder. Amateurs may or may not tackle this job, but at least they will know the concours way it should be done and can show (with this booklet) the particulars to their restoration shop. 23 PHOTOS

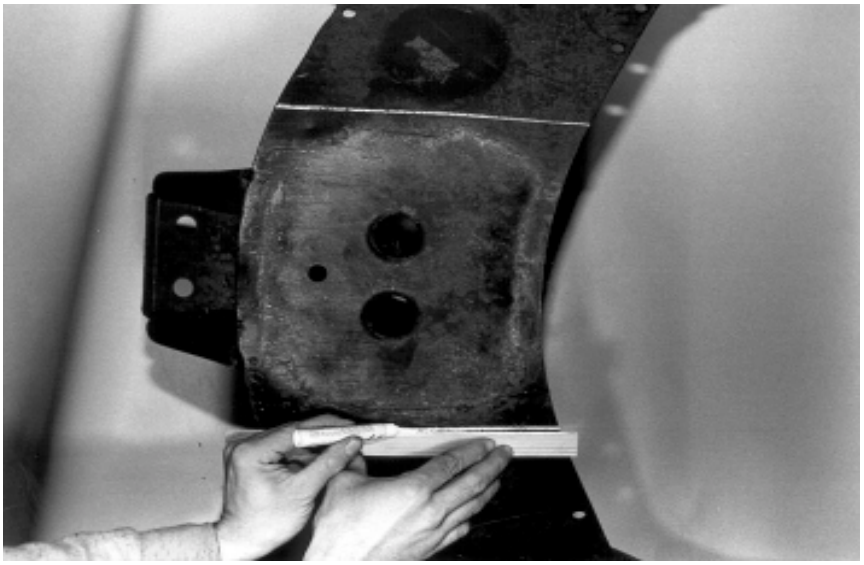


1. The saddle is located on the underside of the crossmember in the front of the frame, just under the engine oil pan.



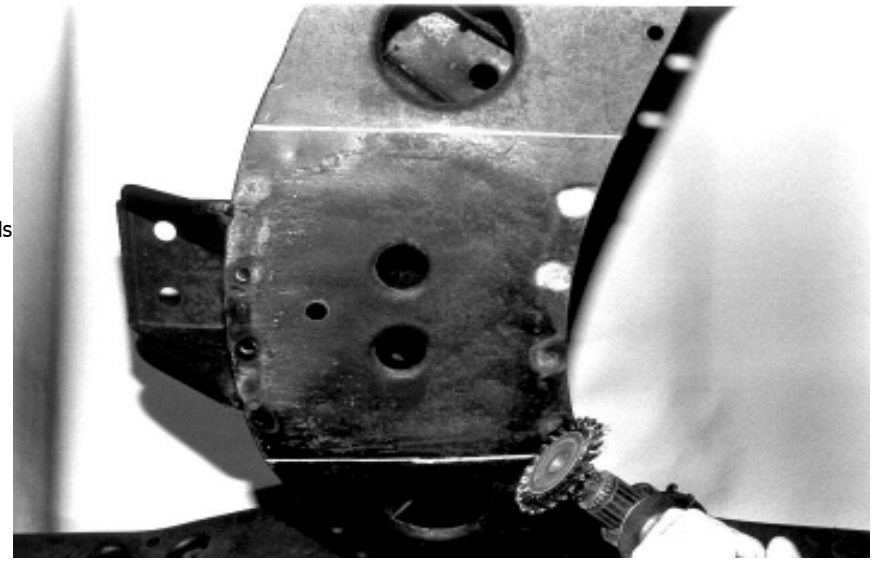
2. With a straight edge and a tape measure, we can see the damage a floor jack has done to this GM frame saddle. A cross section view shows a saddle that has been bent nearly a half an inch and is no longer a smooth contour.

3. The tools that are required for this project include the following: Grinder with cut off wheel, spot weld cutter, hammer, dollys, face shield, welder and torch.

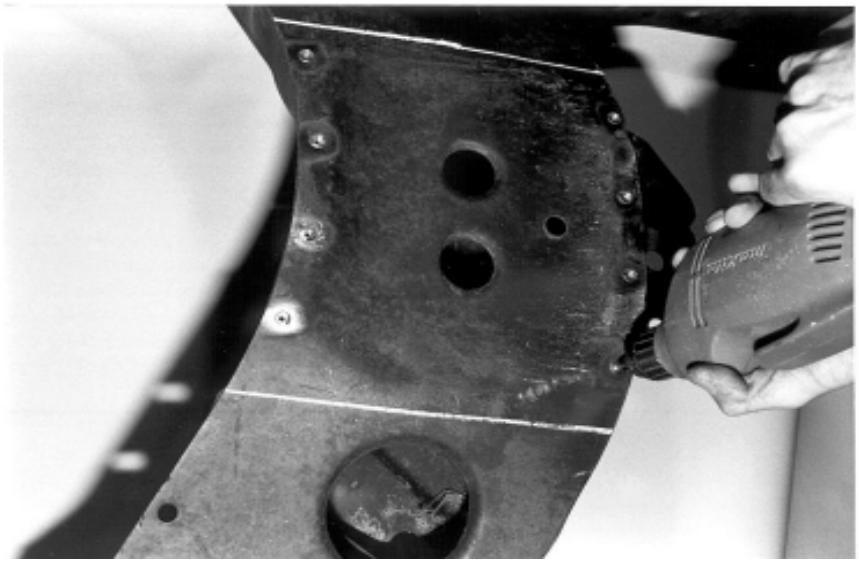


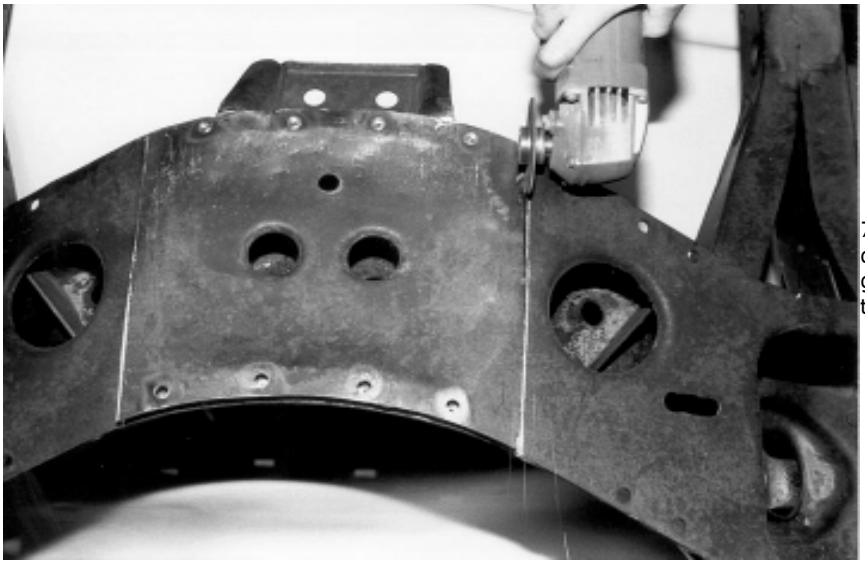
4. Begin the job by first inscribing two straight lines just past the damaged area.

5. With a wire wheel, buff the factory spot welds to a shine metal so they will be easy to see.



6. With a Weld Cutter in your electric drill, cut out each spot weld one by one, taking care to cut only the first layer of metal. Drill a pilot hole to keep your spot cutter from moving if using the blair style cutters.

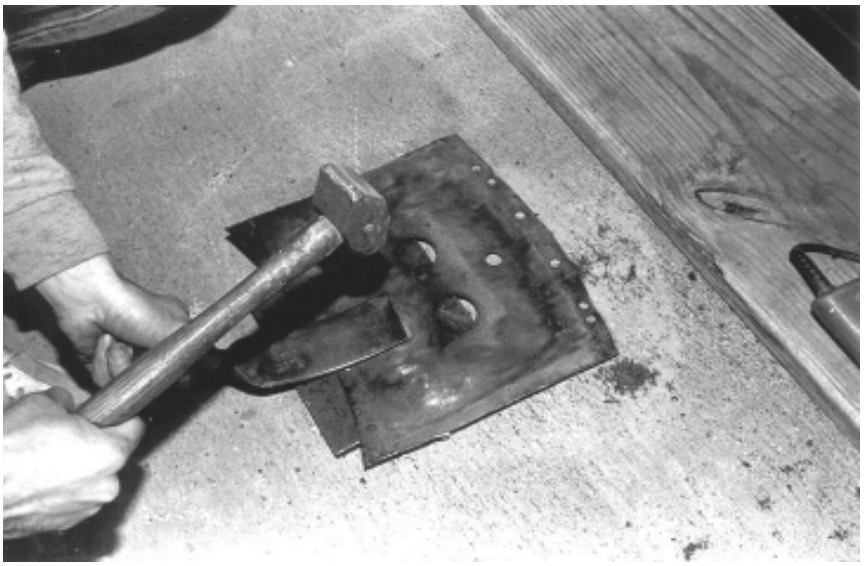




7. Cut out the damaged area along the lines drawn With a cut-off tool. When the die-cutter gets close to the edges, take care not to cut the second layer of metal underneath.

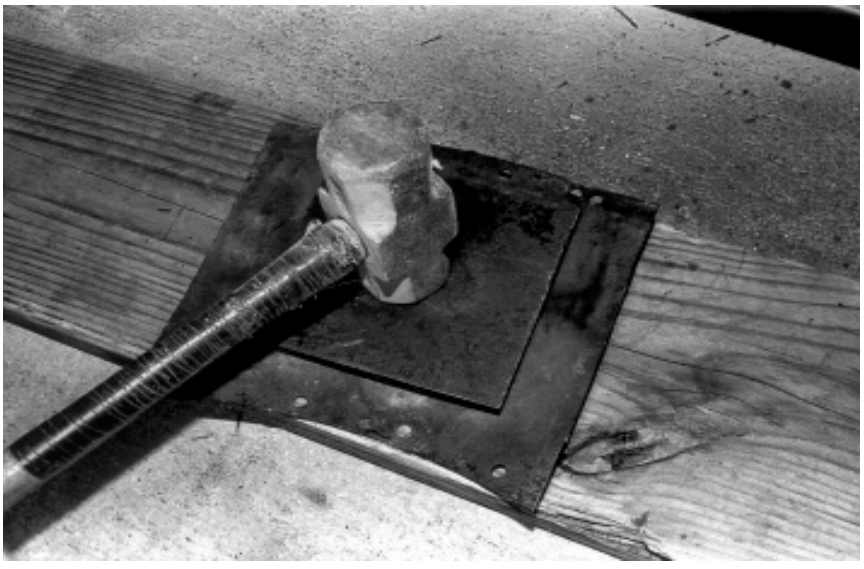
8. Pull out the damaged saddle.

9. The saddle must be straightened, since no replacement saddle repair panels are yet available. Begin the job by turning the saddle upside down and first heating the metal to a red glow. Start at the outside and work toward the middle, but do not heat the metal near the holes in the center.

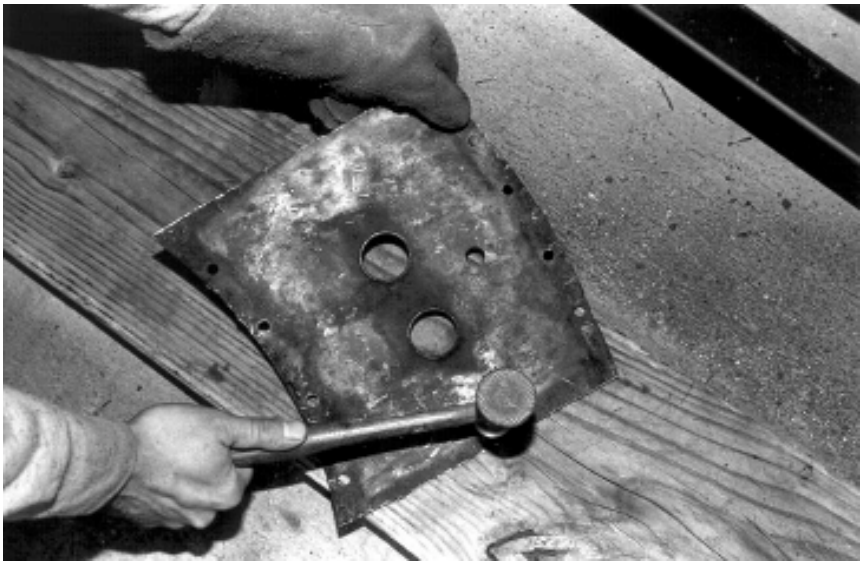


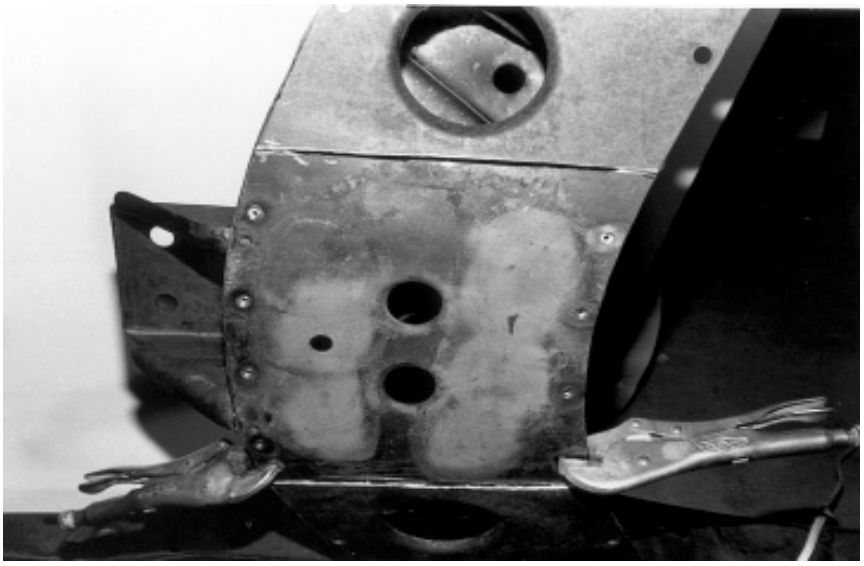
10. With the saddle still upside down and red hot, place it on a flat metal slab, and begin bending it back out with a metal spoon and a large hammer. Tap 360° around its perimeter.

11. Then, with the saddle still inverted and backed with a thick piece of wood, place a metal plate on top, and drive out the center portion with a single blow. The idea is to give the saddle its approximate gentle convex shape. We used a 7lb. sledge for the job.



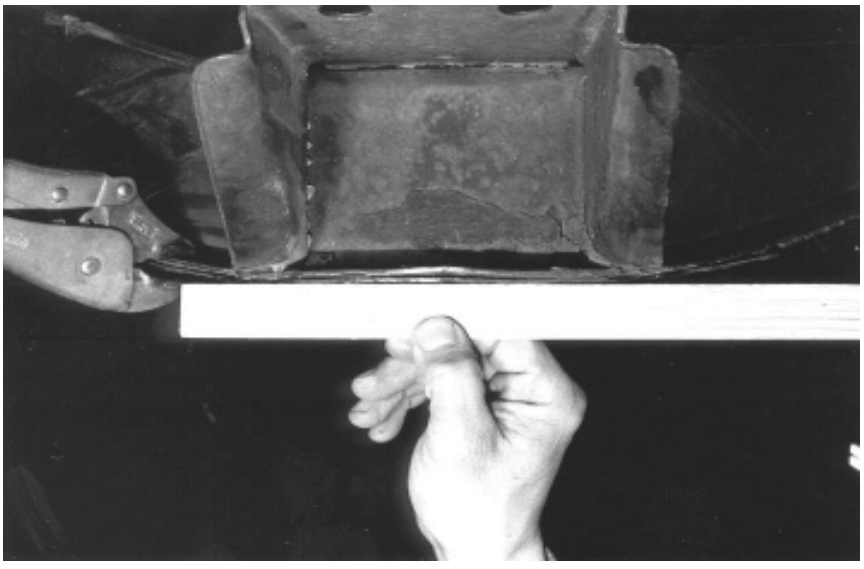
12. With a body hammer, tap the edges of the metal to meet the contour made by the single large blow in the center.



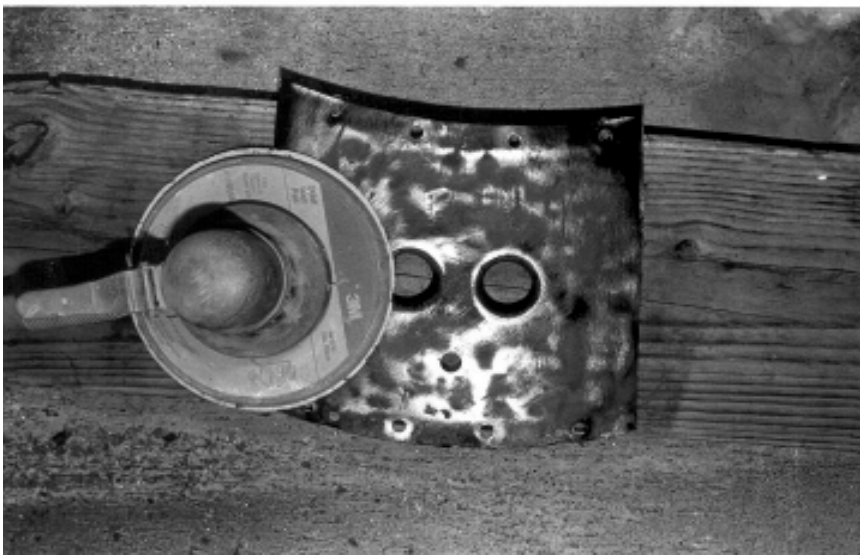


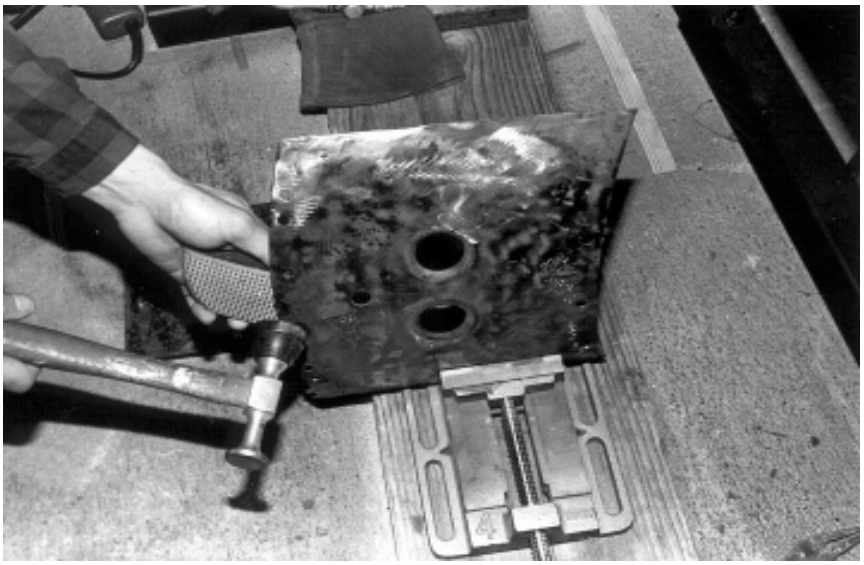
13. Notice the saddle needs more working for a good fit.

14. Clamp the saddle in place using vice grips, and check for fit.



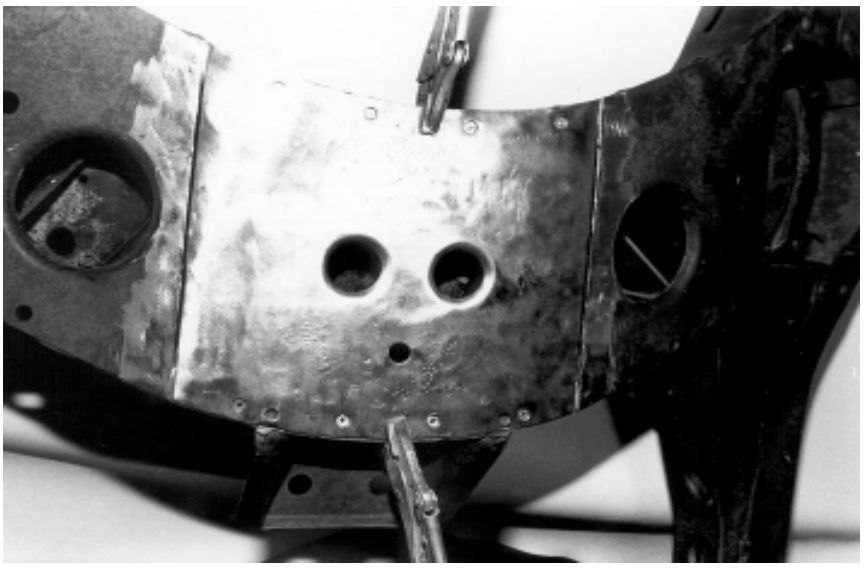
15. Using a large (8") sander, plane the bottom of the saddle to checks for highs and lows. Highs will be shiny (contacting the saddle), and lows will be dark (not contacting the saddle).



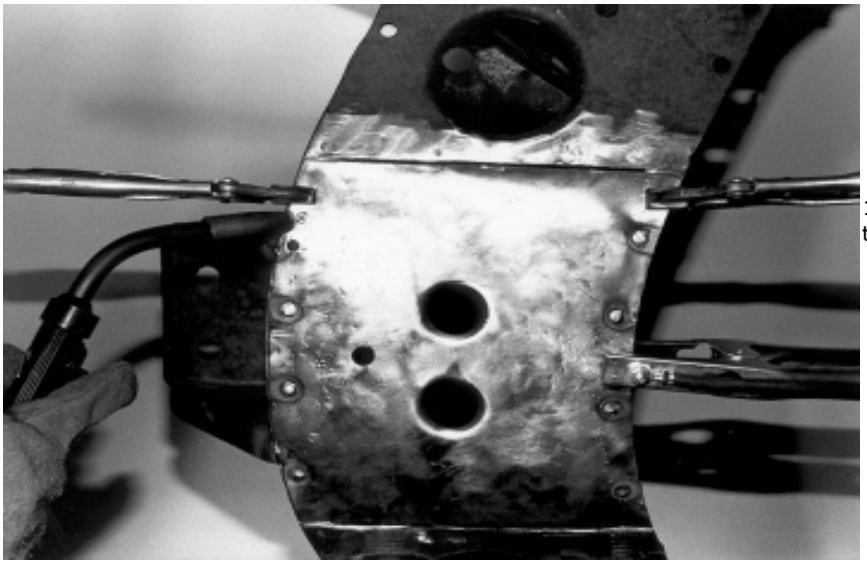


16. Secure the saddle in a vice, and use a dolly and a body hammer to straighten the metal. Drive down the highs (shiny areas) with the body hammer, backed by a dolly.

17. This time, we liked the fit and left the saddle clamped in place for spot welding.

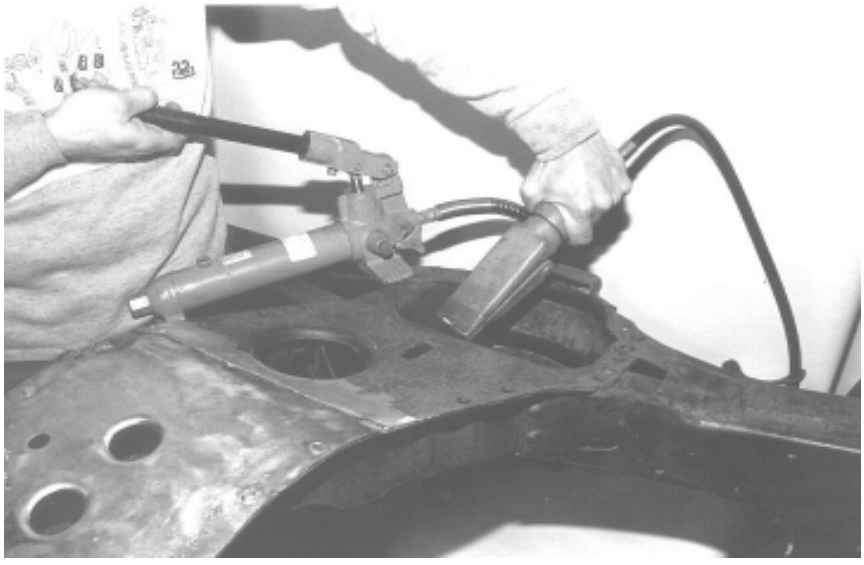


18. A dual purpose wire feed MIG welder is mandatory to do this job. It has a dual purpose: it has an infinite heat selector range knob for dialing in the right amount of heat for any application. With a 3/32" gap (large) to fill, the heat setting is critical to filling and laying down a good bead. This welder is available from Century.

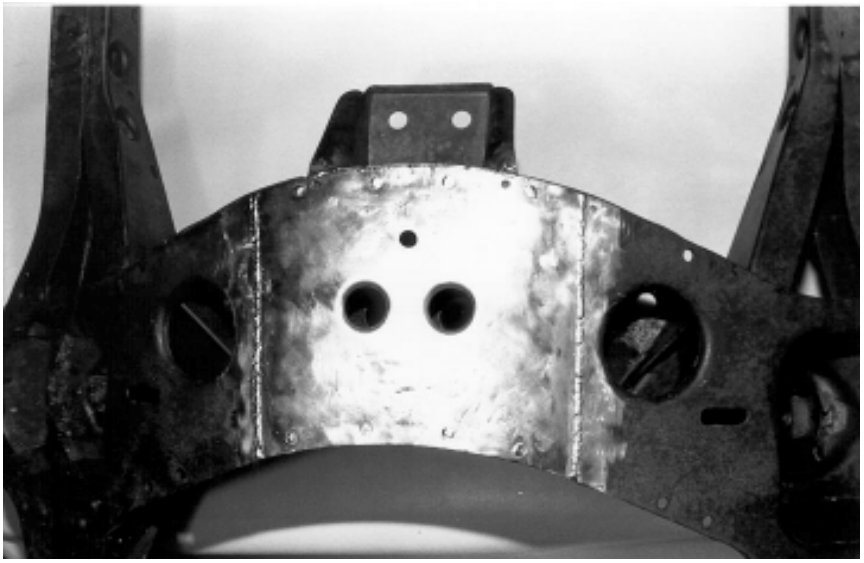


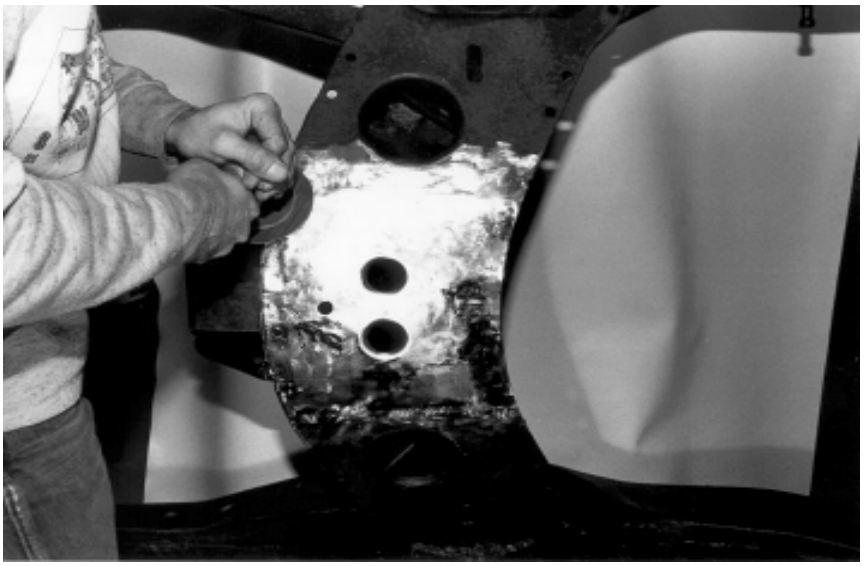
19. Start at the center and work your way to the outside for the spot welds.

21. You may need a Porta-Power hydraulic press to keep the metal from warping at the edges as you weld. The trick is to put pressure against the gap where the metal is being welded together, and then move the press every two inches of weld.



22. The result is a nice bead, MIG welded with 0.030" wire.





23. Grind down the weld with #24 grit wheels from 3M.

Then body work with a thin skim coat of filler, sand smooth, prime and paint.

Short optional Customer Survey

About the Sites Convenience

1. Did you have any difficulty downloading or viewing our booklets?
   ○ Yes ○ No if So, Why: _____
2. Was Restoreityourself.com easy to navigate?
   ○ Yes ○ No if Not, Why: _____
3. Was our sample enough information for you to purchase it?
   ○ Yes ○ No if Not, Why: _____

About This booklet

4. Is our product priced fairly?
   ○ Yes ○ No if Not, Why: _____
5. Do you feel our booklet will help you with your project?
   ○ Yes ○ No if Not, Why: _____

About Tools

6. Would you buy your tools on-line and have them delivered to your Home or Business?
   ○ Yes ○ No If Not, why? _____

About You & your Vehicle

7. Will you be doing the work yourself or will you have a shop do the work for you?
   ○ Myself ○ Shop
8. What is your age group? ○ 15-24 ○ 25-34 ○ 35-44 ○ 45-54 ○ 55-64 ○ 65+
9. What Vehicle/s do you own? _____
10. What Vehicle/s are you working on or having worked on? _____

In General

11. How do you feel about On-line shopping?
    ○ Comfortable ○ Uncomfortable but still do it ○ Not comfortable at all
12. Are you interested in becoming a member at restoreityourself.com for substantial savings?
    ○ Yes ○ No
13. Have you seen other sites providing Auto-Restoration booklets?
    ○ Yes ○ No if yes, Where: _____
14. Will you be a frequent visitor at restoreityourself.com?
    ○ Yes ○ No ○ Don't know

Please enter your email address if you would like us to contact you about the results of your survey: _____

For any additional comments please type them in below:

Submit

(You must be online in order to submit this Form)