Brain Dump on restoring my 1958 hardtop

Dennis D

Link to Corvette Forum Thread

I rebuilt my 1958 hardtop and would like to share the information I learned on the way.

I have gotten a lot out of this forum and it's time I gave back…so here you go.

This was an EXTENSIVE restoration…including removing ALL rivets, screws, a section of the frame on the passenger side where the "Y" bracket is located, and welding in a new section. The skin was sent out for paint. I also make my own hold-down bracket on the passenger side that connects to the deck lid.

Disclaimer: I am not a professional at restoring these cars. I just have my own 1958 and the information provided here are things I learned. I don't know if they are right, NCRS correct, if there is a better way of doing it, missing steps, and even maybe completely wrong. This is basically a brain dump of what I can remember and perhaps others can add their two cents. In other words, do your own home work and don't rely on this POST as the correct way of doing things! I am not responsible if you screw things up

NOTE: As I re-read this or think about things I have forgotten, I'll just update this original post - so it may change from time to time.

What I found out when restoring my hardtop is that I was all over this forum, the internet, and calling places to get info. I hope this POST saves some of you time if you plan to restore your hardtop.

First of all….I started out not knowing a thing on how to restore my stainless and all it takes is restoring a hardtop to learn how, and you will become an expert by the time you are done….trust me! I found myself going back over pieces I had initially done as I got better. The pieces I restored came out show quality…and if I can do it…you can to…all you need is A LOT of time…patience and the right tools.

Please note my hardtop was a 1958…and is slightly unique and different than the 60-62 and even the 56-57. This includes the frame section where the inside molding goes on the left and right side.

These are the tools I used – you probably will not need all this stuff.
* Harbor Freight body hammer tool set Item # 31277 – Costs $28
* Steel punch and nails…both with flat ends (not pointed)
* Various socket sets (for pounding out dents – I'll explain this later)
* At least a ¼hp bench grinder/polisher (A MUST!!)
* Dremel Tool (A MUST!) fast change out cutting wheel, various grinders, cutting and sanding disks
* Fine file (round and flat) A MUST!
* Sandpaper – 220/400/600/800/1000/1200/1500/2000 (All these grits are needed!!)
* Green Polishing compound (I used Orchard Supply #1 and number 6)
* Master Formula Metal Gloss and Sealer (On Ebay)
* Lincoln HD180 Mig Welder (available at home depot) $700 dollars
* Regular and very thin putty knife (for my thin putty knife I used a sheet rock mud trowel)
* Screw drivers/drill/ and common house-hold tools
* Glassworks hardtop rebuild kit which includes screws, rivets and quarter window channel material. I also purchased their rubber drill which was handy but didn't do as good a job as I expected.
* New glass (side windows and back windows dated) Same price dated or not so go with dated
* Dish Soap
* Shoe Goo (Orchard Supply) – more on this
* 3M Black Strip Calk (looks like licorice) and is a must!
* 24" x 12" x ¼" flat aluminum plate and Seaboard plastic sheet for pounding (Tap Plastics)
* 3M – 90 Super Adhesive spray glue

* Rivet Gun and some home-made spacers (more on this later)
* A 5 gallon bucket and some pillows to rest on the inside of your hardtop (and no, not for puking and sleeping)
* Guide Coat Black spray paint (a must!)
*** Zip lock bags and sharpie pen to MARK EVERTHING YOU TAKE OFF!!!**
*** Camera to take pictures of everything before you remove it!**
*** DO NOT REMOVE THE PLASTIC COVERING THE WINDOW!** Just peel back about 1" and then tape it to expose the edge of the window that will fit in the rubber channel. I would not recommend that you trim this plastic with scissors or a razor blade...you may slip and hit your plexiglass.

* When installing screws use a ratchet type of screw driver - you will be less likely to slip on the head.

For those that are not mechanically inclined, or don't have the time, or money isn't an object, or want it NCRS perfect...then you can send it off to either of these two places...but plan to pay around $3,000-$5,500 dollars and $500 dollars in shipping ($250 each way).

Glassworks - www.thehardtopshop.com
Auto Entech - www.autoentec.com

References: I found these links very helpful and you should read and look at everyone 10 times before doing this job!

You-Tube Video's from Glassworks http://www.youtube.com/user/Glassworks1/videos
http://www.vetteweb.com/tech/vemp_02.../photo_23.html
http://www.vetteweb.com/tech/vemp_02.../photo_01.html
http://www.vetteweb.com/tech/vemp_02...p_restoration/

First thing to do is to disassemble the top. This means remove the frame from the "skin" which is the fiberglass shell.

Some notes on stainless:

* Having a couple of putty knives including one that is very thin was handy.
* NEVER force the stainless off. If you do it correctly it will "pop" off.
* Never start in the middle of a stainless piece and try to pry it off - you will bend it!
* Always start at the end of a piece that is lipped over the retainer and slowly work to the other side using a putty knife. It is important that when separating the stainless from the retainer that you lift it off evenly... meaning just don't try to pry off one side all the way...work it off evenly and slowly.

First thing - Remove all the stainless staring from the inside -
Put a blanket on a table and lay the hardtop upside down on it. The stainless running along the back window is made up of 3 pieces. You must first remove the center piece which is a decorative piece to hide the gap between the left and right pieces. Again, use a putty knife (starting at the retainer) and slip it off. Once you remove it, you can use this gap to get a putty knife under the corner edges for the L/R sides.

You can use a hammer to tap on the putty knife guiding the knife down along the edge…always make sure you angle your putty knife **SLIGHTLY away from the stainless** and more towards the steel channel as you don't want to "cut" into your stainless. You may need two putty knives to help you pry it off. It should come off easily…do not force or bend it off. Work it off evenly.

Remove the 3 screws that secure the side stainless and starting at the back, again use the same technique to remove these pieces.
In the center of the back window is the hold down bracket and it is riveted to the Plexiglas…you must grind those off using your Dremel tool. I didn't use a drill cause I didn't want to take a chance on it slipping into my Plexiglas. You must remove these rivets before you remove your outside stainless to relieve the stress on the glass otherwise it may crack!

Next remove outside stainless. These are held on by “Barrel nuts” that must be removed from inside.
On my 58 there were different sizes of T-bolts and Barrel nuts which apparently are unique to the 58. My understanding is that the 56-57 hardtop used short T-Bolts and Barrel nuts and on the 59-60 they used longer ones. The 58 apparently is a combination...especially the early models. Both types are available from Glassworks.

The important thing is to pay attention to what size barrel nuts (and T-Bolts) you take off. They may not be all the same!

There is also a barrel nut on the hold down brackets – don’t forget these.
Once all the barrel nuts are off….the outside stainless should come off easily.
Here is a picture of some of the barrel nuts I took off...notice the different sizes.

Back Window Removal -
Once the all the stainless is removed (AND the rivets on the center bracket) ...you can start in on the removal of your back window.
Place a few pieces of thick tape along the outside edge to protect your glass. Tape is cheap…use plenty of it! Again using a putty knife, get it between your Plexiglas and rubber and pry it out. I started at the center top and worked my way to the corners. This required a couple of putty knives to keep the gap open.

Once the back window is out….remove the back window rubber. There are 2 screws next to the hardtop guide pins that must be removed and you must lift the rubber over the hardtop guide pins. There may be others screws on different years. **Be careful not to bend the rain gutter ends/tabs as you remove it.**
Side Window Removal –
Remove the weather stripping that runs from the front header to the back quarter windows. These are held in by screws.
To remove the side windows there are two rivet along the vertical window channel (runs top to bottom). Both these rivets must be removed. There are also two screws towards the top that need to be removed. Once you remove these, the channel can be removed.

Slide out the quarter window (hopefully nobody has silicone-sealed this in).

NOTE: With the Glassworks hardtop rebuild kit they include 4 strips of paper about 1" thick. You need to fold this paper in half and insert it into the bottom and top channel before you put in your new quarter windows. I would not silicone or otherwise seal the glass...just use the paper.

Once all the glass is removed and the weather stripping, you must remove the fiberglass “skin” from the frame. The skin is riveted all along the back window channel… all these need to be drilled out.

All the screws that run down the left and right side along the rain gutter must be removed.

There is a screw on each side of the aluminum header that secures the frame to the header... These need to be removed.
Once you have all the rivets and the screws removed the skin can be removed from the frame.

Removing the hardtop front header stainless. – (watch the You-tube video)

Header Stainless Removal - YouTube

Take some thick 2” tape and lay it alongside your stainless and hardtop to protect your paint/fiberglass. Again, there is a decorative clip in the center…you must remove this by next using a very THIN putty knife. You need to get under the front corner edge of the stainless and pry it out just enough so that it breaks its grip and rests on the outside edge of the aluminum header. **DO NOT PRY IT UP** past the aluminum header!!
Again using the THIN putty knife and a hammer…slide it down along the edge to break the seal…you don’t want to lift the whole thing out at this time…you want to pry it out evenly going from side to side raising it slowly with each pass. Once it clears the aluminum header…you must push (tap) the stainless towards the back window to “unlock” it from the tabs. **DO NOT BEND IT UP!!!**

Remove the Header from the skin -
There are 9 screws that run alongside the front molding retainer….these need to be removed.
Remove the weather stripping in the header. This is held on with rivets and metal plates. Using a screw driver these can be pried out.

Restoring/repairing the frame and stainless -
Once your hardtop is dissembled….here are some things I did that you may find helpful starting at the front of the hardtop.

First of all I didn’t use any silicone sealer or anything else that hardens. I used 3M strip calk that never hardens which I highly recommend. I used it everywhere along the edges of the skin where any metal meets up with it and between the quarter window channels and the rain gutter. Also along the front edge where the header mounts (more on this later). I did not use any calking or sealer on any of the weather stripping around the glass.

Header restore -
1. Filed down the edges on the aluminum header – Removing all the nicks along the edge/scratches
2. Cleaned up the weather strip channel
3. Sanded it down using 220/400/800 and polished it using a bench grinder/polisher.
4. The rebuilt kits came with sheet metal screws to secure the hardtop stainless molding retainer. I didn't use these. I used my original 9 tapped screws.
5. Re-tapped all the screws including the 9 holes on the retainer, 4 holes for the hardtop brackets and the two holes on each end that connect up the frame.

Frame Restore –First of all you should know **the frame is all stainless**! Do not try to weld on it using mild steel!

I used my HD180 Mig Welder with 309S wire (S for Stainless). The 309S wire can be used to weld stainless to stainless and stainless to steel. I also welded other stainless pieces including my vertical quarter window channels and after grinding down/filing/sanding/polishing, it comes out just as shiny and you cannot see the weld.

My frame was in pretty good shape except on the passenger side where the "Y" hold-down bracket to the hardtop is located. Both the frame and the bracket were cracked.

I removed the rivets for the bracket and cut out the rotted section as shown below…

I then got some stainless and bent up a section and welded it back in place using the bracket as a guide.

Repaired and ready to be filed down

After repairing the frame and any of the stainless you work on, you need to remove all the glue, cement, sealer and crap from it... this ESPECIALLY includes all the lips on the stainless moldings. I flattened out a nail and bent it over at 90 degrees and used this to go inside all the trim grooves.

This is how you want your frame to look when you are done…with all the rust removed. Bead blasting works great on the side pieces. After blasting them, I used a steel etching primer/regular primer and then painted aluminum to prevent future rust.

Since my hardtop bracket was cracked…forget repairing it! Any repair you do will probably not hold up as the bracket is made from brass. Some think it's pot metal but mine was solid brass.

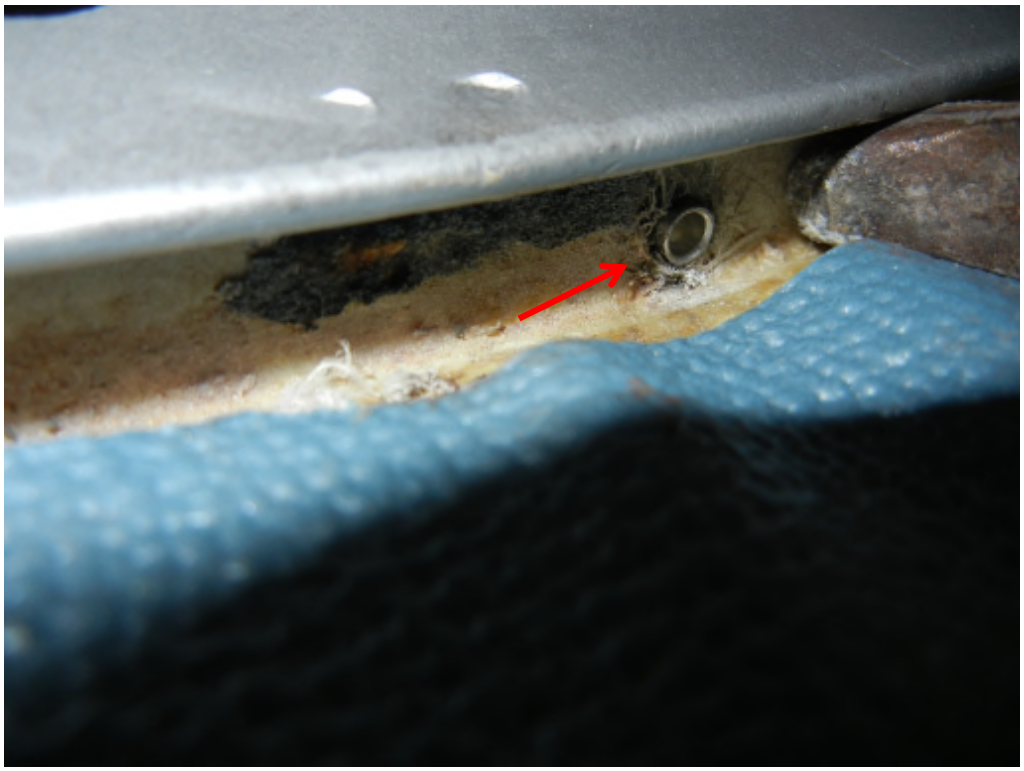
I made one out of steel…and it's never going to break. I traced out my original bracket on the same thickness steel and cut it using a hand-held jig saw with a steel blade and ground it down; taking measurements along the way and also comparing it to the driver's side bracket.

Once I had the two pieces it was time to weld them together. The critical thing is the angle and to ensure this was correct, I put the frame on the car, aligned it to the deck lid and "tacked" it with my Mig welder.
Once it was welded up, I sent it off to be chromed.

Can you tell the difference of which one is the "home-made" bracket?? (It's the bottom one)

Riveting up the Skin to the frame -
IMPORTANT!! Before you rivet the top skin to the frame, you need to inspect the screw holes that run down along the left and right sides of the hardtop. Most likely these screw holes are enlarged and even if they aren't, I strongly suggest you install U-Shaped Timmerman nuts. These slip onto the edge of the fiberglass.

I purchased a hardtop rebuild kit from Glassworks but I did not use all the supplied parts. As you can see from the picture below, the rivets I received were not long enough, in my opinion, to secure the top...so I used pop-rivets (read on)



I thought about using screws, but trying to get nut drivers on the inside of the frame was almost impossible. I decided to use pop rivets. Some may joke about pop rivets, but I can assure you that your fiberglass will tear before a pop rivet does!

Sounds easy right…wrong! There were two problems. My rivet gun would not fit down inside the window channel and the stems on the rivets weren't long enough. So I had to improvise…

I removed the rivet stem from a correct length rivet I got at the hardware store (1/4")…and replaced it with the same diameter of a 3" finishing nail. I then used an aluminum standoff and cut it down to the same height of the channel so that the head of my rivet gun could rest on it.
I then put the pop rivet in the hole of the window channel and through the skin of the fiberglass…and then I put a STAINLESS washer on the end of the rivet to add support and not pull through.
When I compressed the rivet….I ended up breaking the nail! So…I had to grind down the stem of the nail near the end to create a "fracture" point that would break at the right place under pressure. Here you can see the original rivet…and my adaptation.

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I put some strip calk on the end of the finishing nail to hold the rivet in place while I stuck it in the hole and this also helped hold on the washer and also filled up the hole to prevent leaking.

Here is a picture showing the aluminum stand-off and the rivet gun.

Here is the rivet in place

Stainless repair –
Doing stainless repair was not as difficult as one might think. As I mentioned, I didn't know anything about how to repair stainless until this project. All it takes is some patience (and lots of it) and **I highly recommend that you watch the Glasswork videos on stainless 10 times**. This gives you the general idea on repairing stainless. However I found a few things that worked for me.

Most of the work you want to do (hammer out), you want to do on the "inside" of the stainless (not the visible shiny side). I used one of the body-work tools from Harbor Freight that has a chisel end.

If a dent was protruding outward on the visual side, I would again pound the dent out from the inside. Most of the time this will get you close, but sometimes you need to pound on the visual side of the stainless…if you do, you need a very hard surface for backing. In areas where there were curves, I used various sizes of socket sets and used them as a "backing bar".

I also found that with some dents, especially small ones (picture a dent made by a nail), ... no matter how much I hammered the dent against the hard surface it wouldn't go away. Apparently, this was because the hard surface would not allow me to bend the metal past the flat point where I could sand/file it from the other side. To solve this...I used a piece of "seaboard" (which is kind of a nylon slippery white surface) as my surface. When I pounded the dent with the plastic plate below it, the metal of course dented out...that allowed me to then file and sand it. Nobody told me this is acceptable practice...it was just something I discovered and it worked great for me.

I used anything I could get my hands in the garage....including a center punch and even used dull nails to get out small dents. Another VERY helpful trick was this....I could see the dent on the shiny side, but when I flipped the metal over I couldn't tell where the heck the dent was! In those cases I relied on two things...marking the edge of the stainless with a sharpie or the bottom to get me in the general location. Sometimes I'd take a nail... make a very small dent... and look on the other side to see if I was close before I gave it a good pounding.

Then I used a FINE file to make it straight. Even then I could not get it right, so that was where I used "Guide" coat. This is a black paint that will "guide" you and shows the high low spots in the piece. After I got out most of the dent, I would spray the entire stainless piece black and then go over it with a fine file...or use something like the flat side of a paint-stirring stick with 220 sand-paper on it. The important thing is to have a straight and flat sanding tool. Any areas that are not straight will either show up black or be scraped off by the file/sand paper. This makes it easier to see any remaining dents and high/low spots.
When it comes to sanding….plan on sanding a lot! I found that using a Dremel tool with the sanding disk worked wonders on getting out deep scratches…**BUT BE CAREFUL**, you can sand right through your stainless if you go too far!

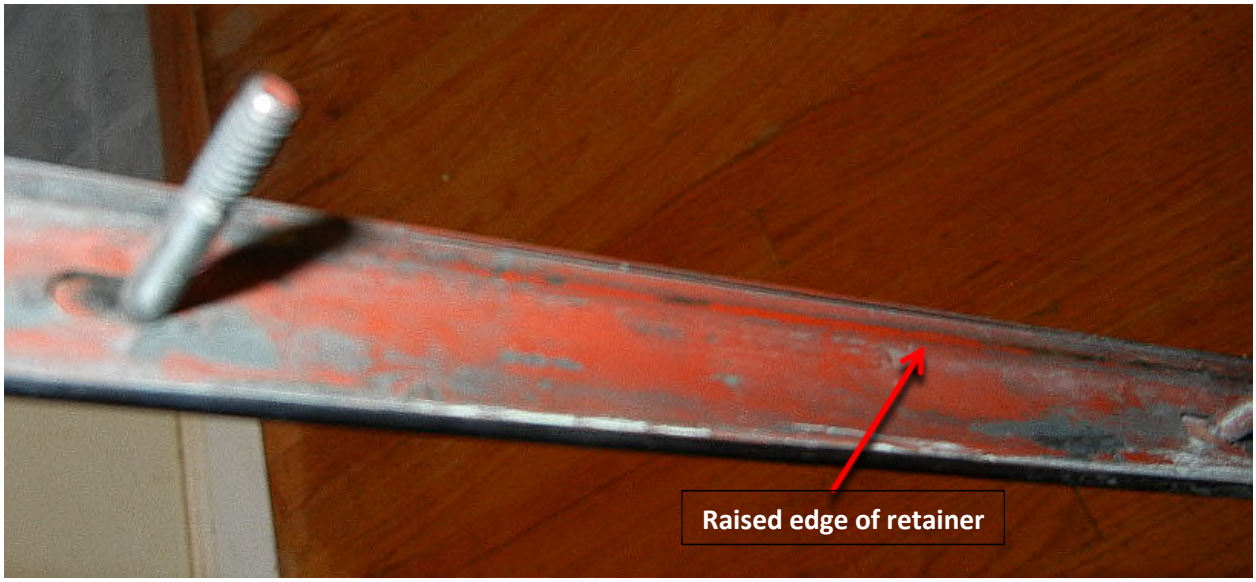
Once you have all your stainless “straight” and the dents out… start off using 220 grit… and sand the WHOLE thing…then switch to 400, then 600, then 800, 1200 and up to 2000. Then use a buffer with number 1 polishing compound (from Orchard supply)…this gets out the main scratches. Then switch to number 6 fine polishing and plan to spend a lot of time at the buffer. When you see scratches, just go back over them with sand paper in the same order.

Here are a couple of pictures (before and after) just to give you an idea how bad some of the stainless was. Like I said, if I can do this...so can you!

Stainless retainers -
As I mentioned earlier, .the “T-Bolts” and “Barrel Nuts” are not all the same! Some are longer and some are shorter. So make sure if you remove the retainers and the T-Bolts and barrel nuts, you know where they go back and put them in a labeled baggie.

IMPORTANT: If you plan to replace the T-bolts you should make note of which edge of the retainer goes with which edge of the stainless AND which way the stainless goes back on the car!

If you look at the retainers, you can see there is a raised edge that runs along on one side. This edge should go towards the glass. Don't get it reversed!



Installing the back window –
Again, refer to the Glassworks video and this forum for information. I don't want to cover this whole thing, but there are a few things I learned.

1. It's a PITA!

2. Make sure you use a lot of liquid soap on the glass and weather stripping when installing it. I had a bowl full of it with a throw away brush. Can't wait to drive this car in the rain…I will be blowing bubbles all winter! Some people use WD40. I don't believe in this because it's oily, hard to get off the glass and it's a SOLVENT capable of ruining your paint. I once used it on a shot gun and it immediately removed all the bluing. Liquid soap works great if not better and is harmless.

3. Cut the weather stripping at the "Y" as shown

4. Look over this article from Vette magazine when installing the rubber:

http://www.vetteweb.com/tech/vemp_02.../photo_01.html

5. You can get your back window from Glassworks, AutoEntech, Corvette Central (and other places) and you can have it dated for very little if not the same cost.

The window I got from Corvette Central has a very slight blue tint (that you really can't see) but I noticed it…and it is a BITCH (put mildly) to install! I do not believe it has the correct curvature. I have heard that AutoEntech (see link above) makes a CLEAR glass (plastic) that fits perfectly and is of higher quality. It's made from the same plastic they use in aircraft windows. I don't personally know….all I know is that I had a hell of a time putting in my back window and it didn't go in like the video Glassworks shows here.

Also a **BIG tip is to "block" the front of your hardtop** to keep it from moving forward as you press the back window in. When I discovered this trick, it was a big help. When you look at this video you can see him using his body to press against the top and it's not sliding away. (They don't show you the front of the top).
Under 4 minutes…my ***....maybe if you had a perfect fitting windows. Took me 2 days!

GLASSWORKS Corvette Hardtop 56-62 Window Installation - YouTube

6. I had a hell of a time getting the windshield into the channel. One of the tricks Glassworks provided to me was this: get two 2x4's and sandwich the glass between the two. One of the 2x4's has to go from the top frame (be careful not to hit your new liner!) to the bottom of the frame. The second 2x4 (which is shorter) is put on the top of the glass with rags under it to prevent scratching and then you can "vise" the glass down into the channel. This actually worked. I had to do this to BOTH sides to keep it in place while I put on the stainless. You can move the top block around to push in the areas you need to.

Another IMPORTANT trick before you install your back window...is to put the top stainless molding on with the nuts and LIGHTLY tightened. This helps to guide the glass into the channel and keeps it from popping out.

7. Before cutting the holes in the rubber, make sure you have the window in the right place! What I did was to sharpen a nail (as I didn't have an ice pick) and using some WD40 spray the nail or ice pick and stuck it through the hole. Glassworks makes a "barrel" drill that can go over the nail and drills a hole…pretty handy, but as far as cutting a nice clean hole….that didn't happen. Once I had the hole drilled, I went back over them with a drill bit to clean them out.

Headliner –

Note: Al Knoch makes a "preformed" headliner that you can just slip in…which is nice but it will cost you and it's very expensive to ship!

Something that I didn't do, but I think I would if I did this again, is that I'd take some Bondo and smooth out all the edges/seams on the inside of the hardtop because once you put on the liner, they will show. At the very least make sure inner surface is smooth, clean and there nothing is protruding.

The first thing you want to do is find the center line of the top and the center of the head liner and mark both. Line up the headliner and trim it. **Do not trim it to the exact length yet!** Trim it at least an inch or two past your end point.

Once you have it trimmed… then you can start to glue it in.

What I did was to tuck the headliner under the aluminum header (very gently otherwise you can rip it). I did not have to loosen it.

I folded the headliner over the front and started gluing the very front (along the headliner) using 3M-90 adhesive on the skin then on the liner. I glued about 8" on one side and then moved over to the other side working my way back and periodically checking my center marks on the liner and frame.

IMPORTANT: Once the glue on the headliner and the glue on the skin meet you cannot pull it off! If you do, you will rip the backing of the vinyl and you'll play hell gluing it back! Go slow! And glue small areas at a time.
Once it is glued in, you can trim the headliner. Test fit your trim pieces to see how much vinyl you can trim so the skin doesn't show. I would trim the headliner so that it hides the rivets along the back window so they don't show when looking down the top. **This trimming is a task you want to take very slowly.**

Helpful Hint: One of the final touches is that you can use a hair dryer on "high" and heat up the vinyl to smooth out any creases in the liner, but you have to be careful that you don't over-heat it as it will turn shiny. If in doubt, have a professional get the creases out.

Weather stripping and strip calk notes -

I used a lot of 3M black strip calk. On the outside edge of the skin I put a strip of the calk. Also on the side rails that run from the front header to the quarter windows....I put a single strip along the bottom edge of the frame where the rubber meets it…and a single strip on the bottom (between the screws and the inside frame). When installing the stiff rubber, this strip calk helps the rubber to stay in place, plus you can squash it up against the rain gutter and it stays and makes a nice uniform seal.

When installing the rain gutters…I used strip calk between the skin and the frame and I also used it where the quarter widow channels rivet to the rain gutters. Basically I used strip calk where any two pieces came together. However I didn't use any on the back window and rubber...or the quarter windows.

I also used strip calk between the aluminum header and the skin right on the outer edge. Before I put on the front stainless header molding retainer (with the 9 screws)…I put strip calk around the holes and on to the head of the screws. The reason for this is…the fiberglass has 9 holes in it, should water leak down into these screw holes it can leak inside.

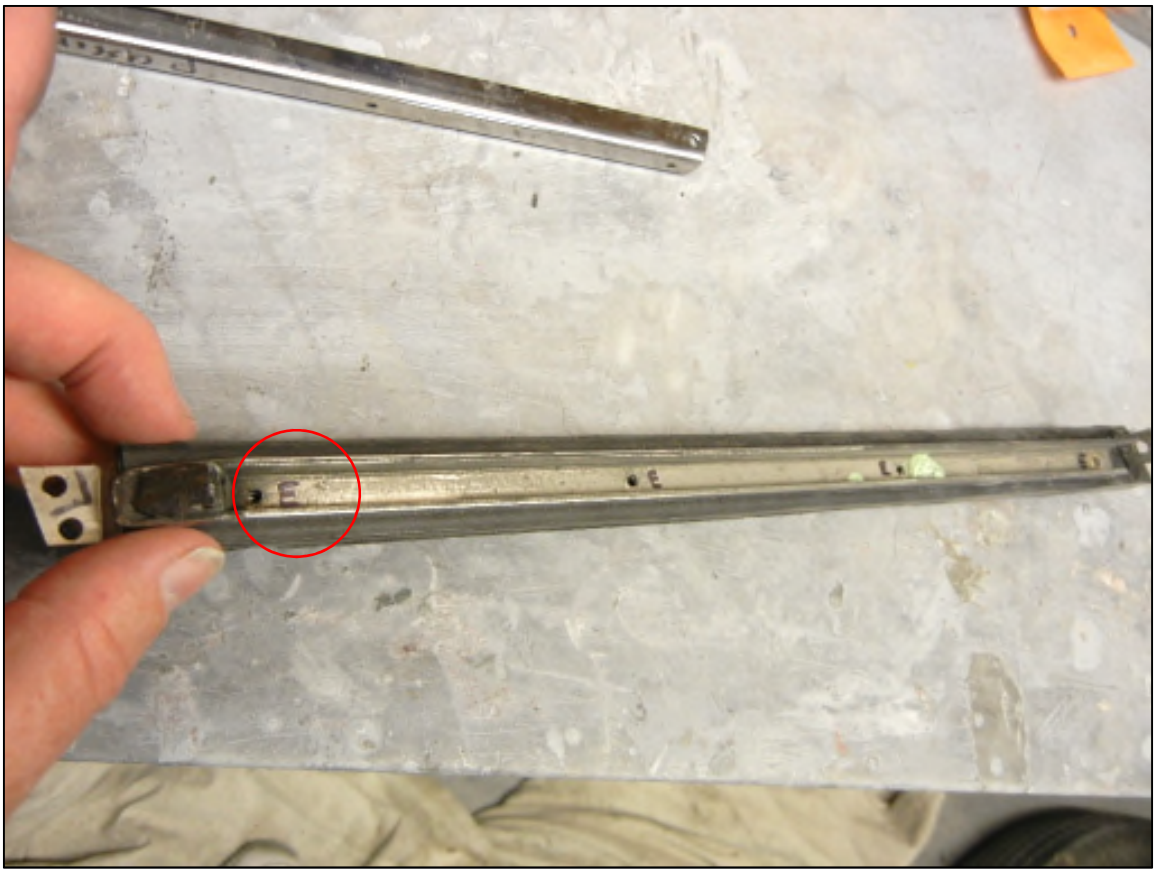
To clean up any strip calk that squashed out…I used a piece of wood and made a “big” pencil-looking tool and used it to “mold” the strip calk along all the edges…this includes the quarter window frames. If you lightly spray some carb cleaner on a rag this also cleans up the 3M strip calk but do not let it touch your paint!
There were some places that I nicked the rubber. I used black “Shoe Goo” to repair these places. It works wonders.

Some miscellaneous pictures -
Use of Glide Coat on the top. As you can see, I did this on the car. The reason is, I want to ensure the same curvature of the top while preparing it for paint.

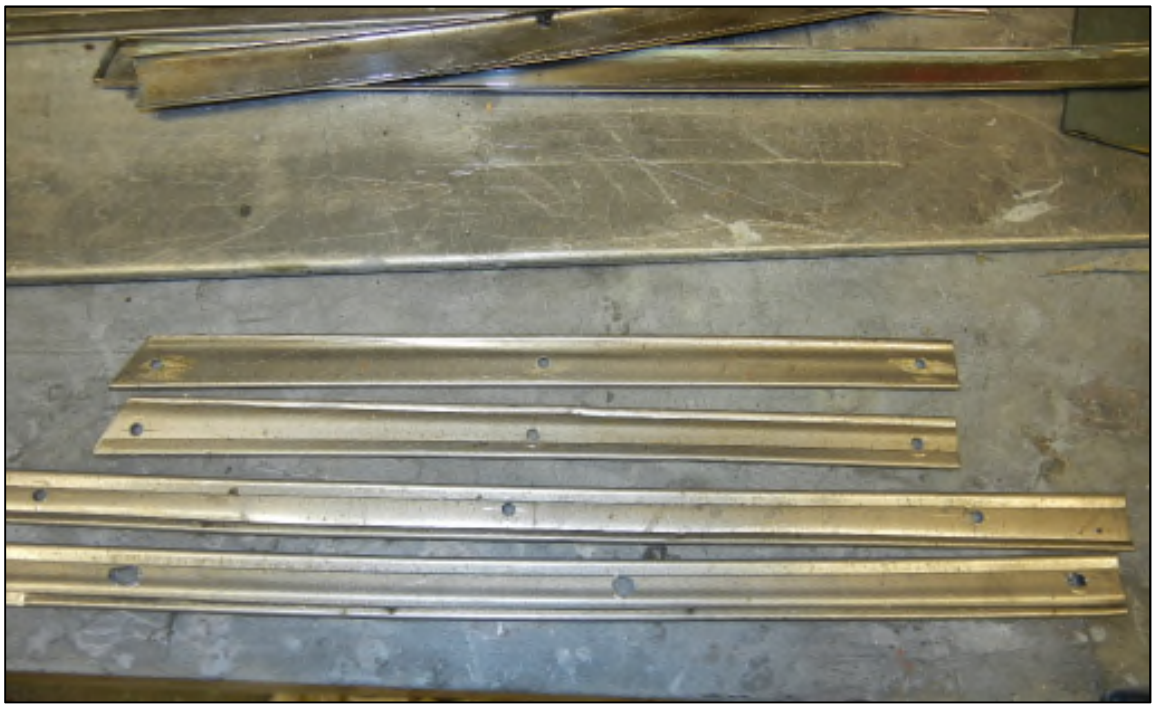
Hardtop header/side rail molding
Note: I did not use the spiral rivets that came with the hardtop rebuilt kit. I just LIGHTLY glued in the rubber header seal at about 5 spots just to keep it from slipping. I did this to make it easy to replace.

This rear bow stainless was bent, dinged, scratched.

When I got the screw kit, I separated all the screws and rivets and put them in a baggy and labeled it. I then identified all the holes and what went to each hole. This was “baggy E”.



Stainless molding retainers that a friend of mine at a machine shop made out of galvanized steel. You cannot buy these. The reproductions are made out of plastic. Plastic?? No thanks! They say they work and they don't rust, but personally I question the durability and strength.
Should you wish to make your own, note that they have a slight curve to them and also check the spacing so the T-Bolts will fit.



Before installing the T-Bolts and putting stainless on the retainers, I put some strip calk on the bolt to hold it in place

The finished product….

I hope this information helps anyone thinking of doing this project. As I said, I am not a professional and if you have something to add to this POST…go for it. I was so intimidated by this job and in looking back, yes it was hard, but if you have the right tools, patience, time and want to save a lot of money…you can do it also! However if you are going for NCRS judging quality….then send I'd probably send it off.

Hope you enjoyed my post and if you have any questions, please let me know. I have probably been there done that!

Nov. 7, 2015 3:40PM

Here are some updated pictures.

One of things I added was glue a strip of weather stripping along the back. The reason I did this is when you put the vinyl in and tuck it back under the stainless, I could still see the rivets...it looked unfinished.

The weather stripping "puffs up" the vinyl so when you put back on the stainless; the vinyl is right up against it.