You Can Do It

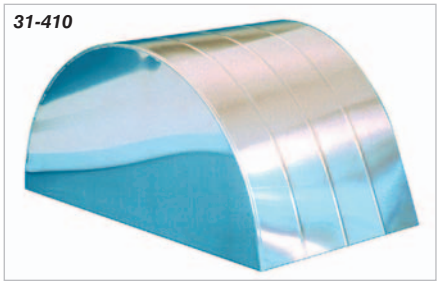
Text and photos by George Franklin #20000416

1955-57 WHEEL TUBS

My 1956 two-door sedan project car had some very rusty rear wheelhouses, wheel tubs, and trunk walls. The car is being customized with a street/strip flavor, so originality is not a big concern. It has already been treated to a spring pocket kit ***P/N 21-131*** *and is due for some very wide rear tires. This car needed so much sheet metal that the decision was made to use race car-style wheel tubs and to repair the trunk walls. The final result is a whopping 16" of tire width clearance between the inside of the quarter panel lip and the original frame.*

Tools Needed:

1/4" pilot point drill bit
Drill
Seam splitter
Ball peen hammer
Markers
Cut-off tool
Reciprocating saw
Die grinder
Soap stone
Masking tape
Sharp knife
Measuring tape
C-clamps
Pneumatic high speed saw
Body hammer and dollies
Tin snips
Pneumatic hole punch
MIG welder
Alignment punch tools
Vise-grips



Materials Needed:

Weld-thru primer
Miscellaneous flat sheetmetal
88-0187-1 Joint & Seam Sealer

Parts Needed:

31-410 Wheel Tub Kit
31-89 1956-57 Left Rear Wheelhouse Extension
31-90 1956-57 Right Rear Wheelhouse Extension

Optional Parts:

31-317 1955-57 Left Trunk Wall Repair Panel (Htp/Cvt Only)
31-318 1955-57 Right Trunk Wall Repair Panel (Htp/Cvt Only)
31-223 1955-57 Complete Trunk Floor
31-276 1955-57 Complete Trunk Floor W/Braces
31-81 1955 Left Rear Wheelhouse Extension
31-82 1955 Right Rear Wheelhouse Extension

To order parts call 1-800-456-1957 or visit ClassicChevy.com

Time Frame:

40-60 hours

Photo #1: The trunk area of this car was in sad shape. The rear section of the original inner wheel tub had rusted away from the inner trunk wall. The rusty gap was over an inch wide and had been filled in by gobs of body filler. The outer rear wheelhouse section between the rear quarter panel and trunk wall didn't look any better. The front section of the original inner wheel tub had similar rust problems. The outer front wheelhouse section was rusty as well. Rather than purchase a few thousand dollars of sheet metal to preserve the original look, the decision was made to go for a street/strip look for a lot less money. As one can see, this car had recently received a new floor. The rear seat back support will need to be removed to gain access to the tubs. Begin by drilling out the support spot welds with a 1/4 inch pilot point drill bit. Use a seam splitter to pop the welds loose, and remove the support.

Photo #2: The tub kit **P/N 31-410** has four nearly flat pieces of 24 gauge steel. These include two semi-circular cheeks and two rectangular bands. Also in the carton will be two sheets of corrugated paper that will serve as band templates. Do not destroy the carton. It will be used to make the cheek templates.

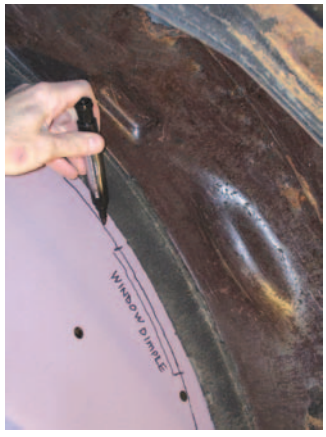


Photo #3: With the rear of the car up on jack stands, remove both rear wheels and the gas tank. Before cutting any sheet metal away, mark the inside of the outer quarter panel along the lower edge of the wheelhouse seal. The new wheel tub must meet the quarter panel near this line. Also mark the location and depth of the window dimple in the front wheelhouse section. This dimple allows necessary clearance for the rear corner of the rear quarter window.

Photo #4a & 4b: A cut-off tool was used to sever the support between the original inner wheel tub and the trunk hinge box. Always use proper safety equipment.


#4a


#4b

We used a reciprocating saw to cut the tub from the trunk floor. For the cuts along the inboard and rear sides of the tub, cut the floor and leave the floor to tub flange attached to the tub. At the front of tub we preserved the outboard 8" of the floor flange to become an attachment point for the new tub. Drill out the spot welds holding the front of the tub to the floor. Use a seam splitter to separate the front side of the tub from the floor.

Photo #5: This is the preserved floor flange section. This flange has no holes drilled though it because this is a brand new floor and had never been spot welded to the original tub. If your rear wheelhouse extensions (mud flaps) are in good shape you may want to preserve them as well. Leave them attached to the quarter panel at the rear. Cut the extensions away from the rear wheelhouse section with a horizontal cut at trunk floor height. If your rear wheelhouse baffle is in good shape you might wish to preserve it too. This baffle seals the upper inner quarter panel keeping dust, heat, cold, and tire smoke from making their way into the passenger compartment. The baffle is welded to the inner trunk wall and to the top of the rear outer wheelhouse. Cut the baffle away from the wheelhouse, leaving it attached to the trunk wall.

Photo #6: These are the removed components of the original sheet metal from the left side of the car. The small piece in the middle is the baffle. This baffle was badly rusted and new ones are not available for this body style. The baffle on the right side of this car was missing entirely. New baffles will be fabricated. The piece on the far left is the original rear wheelhouse extension. It was in pretty good shape, but the right side one on this car was missing. New extensions, **P/N 31-89** and **31-90**, will be used.

Photo #7: This was a good time to remove the paint from the lower portion of the hinge box using a 3M Green Roloc bristle disc on a pneumatic die grinder. These discs are great for removing paint without grinding away too much metal. The metal on this car was already thin enough! The lower portion of the hinge box was then coated with weld-thru primer, SEM 39783. Rather than repeating this many times, suffice it to say that all metal pieces need to be clean and bare prior to welding. The metal should also be coated with weld-thru primer if the backside metal surface will not be accessible after welding.

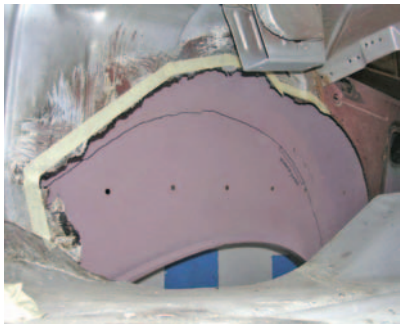
Photo #8: Working from under the car, mark the underside of the trunk floor along the outboard edge of the frame. We are using a flat soap stone which left a good visible line. We used a cut-off tool to make cuts through the trunk floor every few inches along the line.

Photo #9: On the top surface of the trunk floor the cuts were connected with a length of tape to mark a continuous cut line. This cut will be parallel to and directly above the frame's outboard edge.

Photo #10: There are four vertical beads rolled into the original inner trunk wall for strength. The rear cut line on the trunk floor, marked here with tape, was just to the rear of the forward most (fourth) bead. This was a conservative initial position for the cut. The cut will be moved rearward later to allow fine tuning of the height of the new tub. This rear trunk floor cut is perpendicular to the frame.

Photo #11: The front cut will also be perpendicular to the frame and preserves the outboard eight inches of the original floor to the forward inner wheel tub flange.

Photo #12: The rusted part of the trunk wall must also be removed. We used tape to mark a one inch border around the rusted edge. We cut along the outside of this tape line in order to reach solid metal. Cut away as much or as little metal as needed.



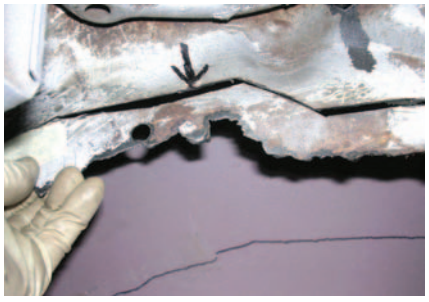


Photo #13: As the rusted metal was removed we found the original location of the baffle. The arrow marks that location, just forward of the hinge box on the outboard side of this panel. You will want to mount the new baffle in this same location.

Photo #14: Make a template of the tub cheek using the carton that the tub kit came in. Trace the shape of the metal cheek onto the carton and cut the template out with a sharp knife. Make a mark every inch along the circumference of the template.

Photo #15: Raise the cheek template up into the opening in the trunk floor with the inch markings on the inboard side. Use C-clamps to hold the template to the frame. The center line of the template has been marked as a reference. Conventional wisdom is that the center line of racing tubs should be vertical and centered on the rear axle. This gives maximum vertical clearance for suspension travel and symmetrical front and rear tire clearance. We instead placed the center line behind the rear axle and at an angle to vertical. This minimizes intrusion of the tub into the passenger compartment and retains proper rear quarter window clearance, while still leaving plenty of tire clearance. The upper surface of the new tub should end up just below the trunk hinge box, although it sits lower than in this view. You can just see the hinge box at the top center of this photo. The conservative rear trunk floor cut made earlier can now be reassessed. By gradually moving this cut line to the rear, the cheek template can rise higher in the trunk. The goal is for the cheek template to end up just below the trunk hinge box.

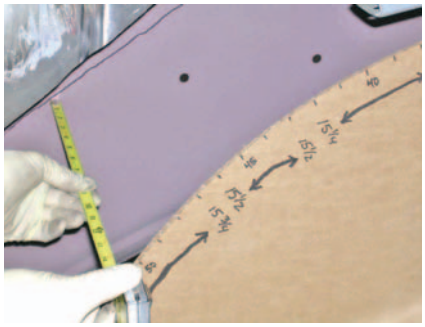


Photo #16: Measure from the cheek template to the inside of the quarter panel at every inch mark around the circumference. Keep the tape measure perpendicular to the cheek template and parallel to the ground. Record these measurements on the cheek template. These measurements determine the width of the band.

Photo #17: Curl the band template provided in the kit by rolling it around a cylindrical object. A propane bottle was used here.

Photo #18: Remove the cheek template from the car. Use masking tape to attach the band template to the cheek template. Transfer the recorded measurements to the band and connect them to mark a cut line along the band. In order to make trial fitting of the tub template easier, we cut the band about one quarter inch short of this line.

Photo #19: Working from above, place the tub template in the trunk and attach it to the frame with C-clamps. The top of the band template should end up about 1/2 inch below the hinge box. The tub template can be raised by gradually increasing the length of the trunk opening. Making new rear trunk floor cuts will allow this. Notice the final cut in this photo is about 3" to the rear of the conservative initial cut. This final cut is just ahead of the third trunk wall bead.

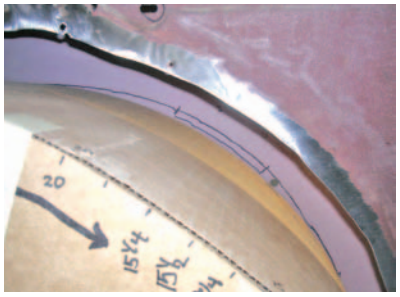


Photo #20: When the tub template is properly located it will be below and to the rear of the window dimple marking. This will allow proper operation of the rear quarter window. Also make sure the template position will not interfere with holes used to attach the exterior stainless trim.

Photo #21: A contour marking tool allowed us to make a more accurate band fit. The tool was made from a wooden paint paddle with holes drilled at one and two inches from its end. These holes allow the tip of a marker to pass through the tool. The contour tool was slid along the inner quarter marking a line on the underside of the band template. This marked line followed the exact contour of quarter panel and was exactly one inch from that surface. If the band template was cut too narrow, the two inch hole on the tool could be used instead. With the tub template in its final position this is a good time to mark the inboard side of the cheek template along the top of the trunk floor.

Photo ##22: Next we assembled the actual steel tub by mating a band to a cheek. We rolled the band around a spare tire to give it a bit of a curve. Make sure the open part of the Pittsburgh seam is to the inside of the curve. We also ran a small screwdriver down the seam to make sure it wasn't pinched flat by the curving process. We used a hammer and dolly to check the lip on the curved edge of the cheek to make sure it had a nice 90 degree angle. The lip of the cheek fits into the seam on the band, so checking these areas first is recommended. We also recommend at least two people for handling this awkward job.

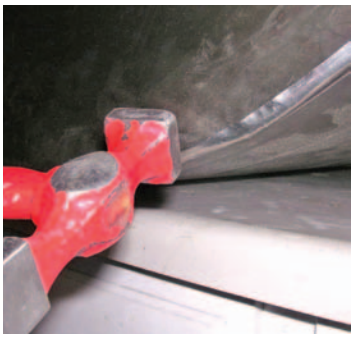


Photo #23: We slid the end of cheek lip into the band seam and bent the band up slightly with a body hammer, locking the cheek into the seam. Tap the seam up just enough to hold the cheek and band together. Gradually work your way down the seam locking in a few inches at a time.

Photo #24: After the entire circumference of the cheek is locked to the band, the seam can be gradually flattened. By working a bit at a time the seam will be flat and free of kinks. Finish the seam with a hammer and dolly.

Photo #25: The cheek template was then cut along the line marking the top of the trunk floor. The piece of the cheek template cut away was saved to later serve as a guide for flange construction. The tub template was placed inside the newly assembled metal tub and the trunk floor line of the template was traced.

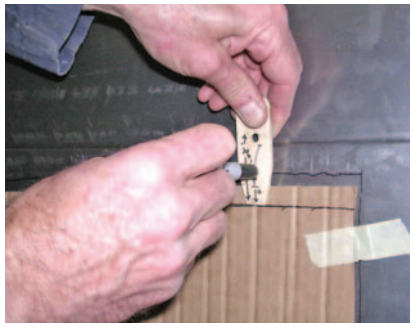


Photo #26: The contour tool was used to trace the exact contour of the inner quarter panel surface onto the band. The front and rear edges of the band template were traced as well. At this point a decision must to be made on how the band will be attached to the inner surface of the rear quarter panel. If these tubs are going into a car with a nice paint job,

then this marked line will be a cut line, and the band will be glued and sealed to the quarter with autobody sealant alone. This car wasn't painted, so the decision was made to make tabs that would allow spot welding of the band to the inner surface of the quarter panel. This method will be significantly stronger than just using sealant alone. A second line was drawn using the contour tool, one inch further from the cheek than the first line. This second line became the cut line using a pneumatic high speed saw. The cheek was then cut along the line marking the trunk floor surface. The front and rear edges of the band were cut one inch long. These long edges will extend below the trunk floor when the tub is in place. They will become attachment points for the wheelhouse extension at the rear and for a patch panel that will seal the passenger compartment floor and quarter panel at the front.

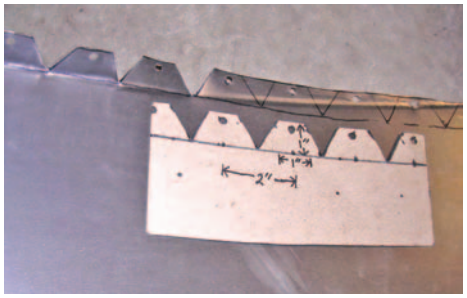
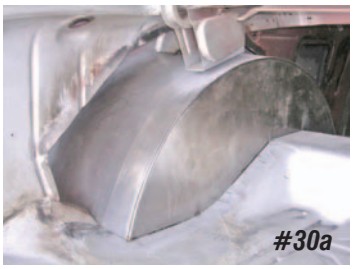


Photo #27: Tabs were made by cutting out triangle shaped pieces using tin snips. The triangles were one inch deep, one inch across their bases, and one inch apart. A pneumatic hole punch was used to make 3/16" holes for spot welds, two inches apart. Pliers were used to bend the tabs down along the first contour line and then the tabs were flattened with a hammer and dolly. The cardboard template shown was used to keep the tab spacing consistent.

Photo #28: Working from above, the tub was trial fitted to the car. The top surface was checked with a level. Make sure the band is behind and below the window dimple and doesn't interfere with any trim mounting holes. Slight adjustment of the tabs might be necessary to create a snug fit between the tub and the inner surface of the quarter panel. Be careful when moving the tub in and out of the trunk floor. The thin sheet metal tub can easily bend or kink.

Photo #29: Using the shape of the original baffle as a guide, a template for a new baffle was cut from cardboard. The placement for the baffle will be just rear of the peak of the band, insuring that water cannot become trapped against the baffle as it is thrown up into the rear tail light area by the tires. This template is purposefully cut long with its lower edge below the line marking the wheelhouse seal. The lower edge will be trimmed for a tight fit to the top of the band.

The new baffle was cut from a flat piece of 18 gauge sheet metal. It was tack welded to the quarter panel and to trunk wall with a MIG welder. The tub was then fitted and the lower edge of the baffle was trimmed for a tight fit to the band. Once we were satisfied with the fit, the baffle was sealed along its upper edge with sealer **P/N 88-0187-1**. After the tub is welded into place and the trunk wall is repaired, the rest of the perimeter of the baffle can be sealed.



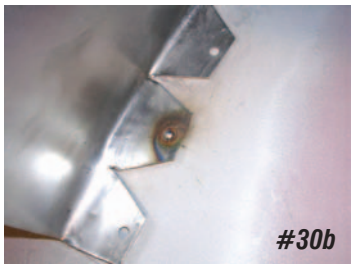


Photo #30a & 30b: The underside of the trunk floor along the cut lines was cleaned to bare metal and the tub was lowered into place one final time. When the fit was satisfactory the tub was tack welded to the trunk floor from underneath. The band was tack welded to the baffle from above.

A few of the tabs were spot welded to the inside of the quarter panel. The line marking the edge of the wheelhouse seal is no longer visible in this photo. That surface was prepped and is now covered in a layer of weld-thru primer.

Photo #31: More tack welds were added along the floor to cheek edge.

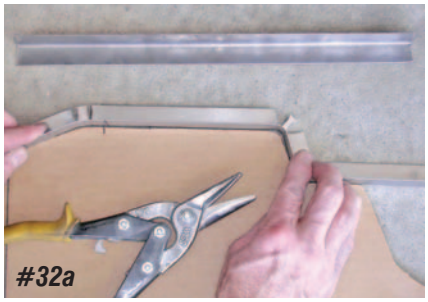


Photo #32a & 32b: The portion of the cheek template that was cut away and saved became a trunk floor contour guide for making a flange. The flange will help strengthen the joint between the floor and the tub. Twenty gauge sheet metal was chosen as a compromise between the 18 gauge floor and the 24 gauge tub. Pieces 1-1/2" wide were bent into 90 degree angles, 3/4" x 3/4", using a sheet metal bending brake

If you don't have a brake, a bench vise can be used as well. Cuts and notches made by tin snips allowed bending the flange along the floor's contour.
The flange was punched with holes every two to three inches and spot welded to both the floor and the cheek.

Photo #33a & 33b: At the front of the band there will be a gap between the band, the passenger compartment floor, and the rear quarter panel. A cardboard template was cut to fit the gap. The template was used to cut a patch panel out of a piece of 18 gauge sheet metal. The metal was tack welded into place, then welded solid with a continuous bead. The edge of the patch along the quarter panel will be sealed with autobody sealant, as will the band.

Photo #34: A pedestal was constructed to support the trunk hinge box and to strengthen the tub. The sides of the pedestal extend the walls of the hinge box down to the band. Paper templates were used to create the four sides. The templates were transferred to 18 gauge sheet metal and the pedestal sides were tack welded to both the hinge box and the band.

Photo #35: The inner quarter panel was then rebuilt. This panel consists mostly of flat sheet metal. Paper templates were made and metal patches were cut out of 18 gauge sheet metal. One of the templates is shown taped to the quarter panel just above its patch. These patches were tack welded into place on the quarter panel. Once tack welded into place they could be adjusted, tack welded to each other, and tack welded to the band. The patch at the peak of the band was welded to the new baffle. The level of finish for these welds is a matter of personal preference. These will be covered by upholstered side panels so perfect finish work is not needed.

Photo #36: The repair of the inner trunk wall was more complicated since patch panels are not available for sedan body styles. The end of the fourth bead was compromised by rust and had to be cut away. We began by fabricating this patch panel first. Starting with a piece of 18 gauge sheet metal approximately 6 x 12 inches, we marked a straight line ending in a "T" to serve as a guide. Using the small 1/4 inch die on a bead roller, we rolled a bead that ended at the "T". With a straight bead established, we moved on to larger dies, making the bead wider and deeper. Since most of you may not have a bead roller, this shape can also be formed with a ball peen hammer and some elbow grease.
The patch panel was then tack welded into place. The new bead ties in nicely to the original bead above it. The remainder of the trunk wall pieces were made by similar processes and then welded into place. If you are working on a 2-door hardtop or convertible, you can avoid making your own patches and use repair panels **P/N 31-317** and **31-318** here.

Photo #37: With the trunk wall and inner quarter repaired, flanges should be made to attach the front and rear edges of the band to the floor. Shown here is a paper template that was used as guide to make the cuts and notches on the flange material. Holes were punched

in the flanges and they were spot welded to the band and the floor. With the tub tack welded in place, and all the flanges in place, the tub was then welded with a continuous bead all the way around the trunk floor. We made sure to weld only in short bursts to keep the heat down and to avoid warping the band or the cheek.

Photo #38: With the tub finished we then tackled the rear wheelhouse extension. The extensions, **P/N 31-89** and **31-90**, are sturdy pieces of metal and they do take considerable abuse. The extension is also the lower stabilizing point for the rear quarter panel, keeping the quarter panel from flexing and fatiguing. Simply welding the extension to the thin 24 gauge tub band without bracing of some kind wouldn't have been stable enough. This would be especially true if the band was not spot welded to the inner rear quarter and was held on only by sealant. We first reinforced the extension by welding two pieces of 12 gauge sheet metal to the back side of the extension. These will not be visible from most angles. The triangular reinforcement piece is evident from the spot welds visible on the inboard underside of this extension. A second piece of 12 gauge was welded to the upper surface of the trailing edge where the extension would be welded to the inner surface of the rear quarter panel.

Photo #39: A piece of 12 gauge approximately 3 x 4 inches in size was welded to the outboard surface of the inner trunk wall. This piece reinforced the wall and spread the load over a larger area. Braces of 1/8 x 3/4 x 3/4 angle were welded in place between the trunk wall reinforcement and the reinforced portions of the extension. This bracing will keep the extension in place, will prevent the rear quarter panel from flexing, and will take the strain off the band. Be sure to mock up the gas tank filler tube to check clearances before welding these braces in place. The right side wheel tub was then constructed using techniques similar to those shown in the steps above. When the right side hinge box support was removed, the car lost the forward mounting bracket for the original equipment jack. I have chosen to forgo the original jack for a more compact modern jack that will be hidden behind custom trunk panels. For that reason the rear jack bracket on the trunk floor was also removed.

Photo #40: The seat back support was then modified to fit around the new larger wheel tubs. I began by tracing the left side of the support onto a piece of corrugated paper. I cut out the template which included the holes that marked the original spot welds. The right side was tackled in a similar manner at the same time.
With the support template positioned by alignment tools through the original spot weld holes, the template was trimmed to fit nicely around the new wheel tub.

Photo #41: The template outline was then transferred to the support and the excess metal was removed with a cut-off tool. Additional trimming was necessary to give the best fit of the support to the tub. The support was then welded into place using the original spot weld holes in the package tray and along the rear of the floor.

Photo #42a & 42b: Flanges were made to fit along the vertical inboard side to the cheek as well as across the top of the band. A piece of sheet metal was added to the support to fill in the quarter circle shaped gap left by the missing original inner wheel tub. This increase the flange length and strength across the top of the band. As one can see by the amount of metal cut from this support, modifications will need to be made to the rear seat bottom and backrest frames, the seat upholstery, and to the side panel. With the metal work complete, a generous bead of autobody sealant along the underside of the Pittsburgh seam and along the edges of the band will keep out the elements. The underside of the tubs can then be painted or undercoated for a finished appearance. The only question now is how wide do we want the new rear tires to be? Good Luck.