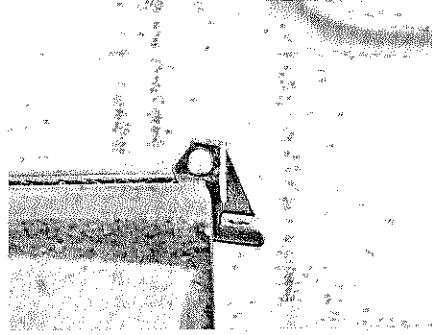
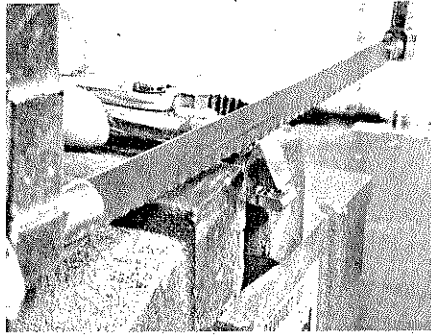


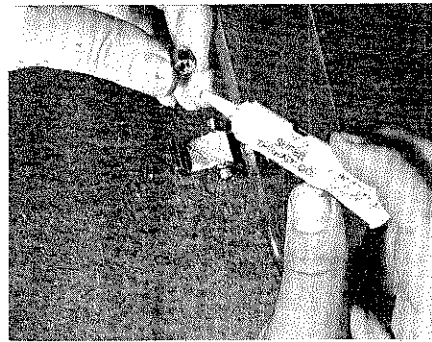
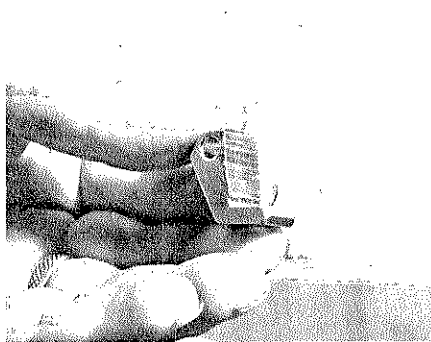
Assembly



38. PREPARE WIND WINGS. 20 min.

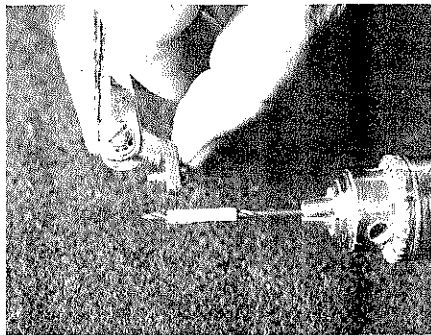
Remove the wind wings from their box. Remove the section of the hinge not attached to the plexiglass.

Clamp the hinge piece in a vise and with a hack saw remove the unneeded section. A plier is useful to help guide the saw when you start the cut.



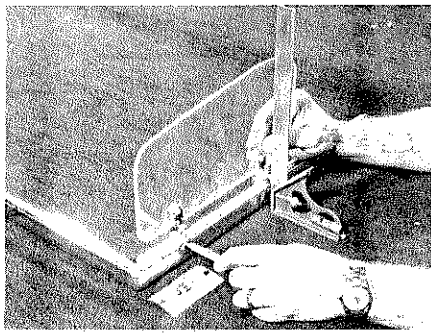
Noting that the narrow end of the wing is up, install the hinges dropping the bolt in from the top and placing the lock washers and acorn nut on from below. Use locktite as the wind wings will encounter much buffeting from the wind.

Remove the four hinge set screws and discard. (Note: The wing bottom is bent out to flare away from the dash cowl. This will tell you which wing is for which side.)



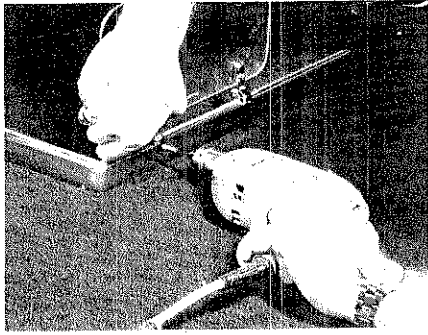
39. PREPARE WINDSHIELD. 1 hr. 25 min.

Locate No. 8 x 1/2" round headed Phillips screws. Insert into the wing hinge. Put a 1/8" bit in your drill and hold it up to the wing hinge. Wrap masking tape around the bit to give you a gauge as to how deep to drill. Go 1/16" deeper than the screw will go.

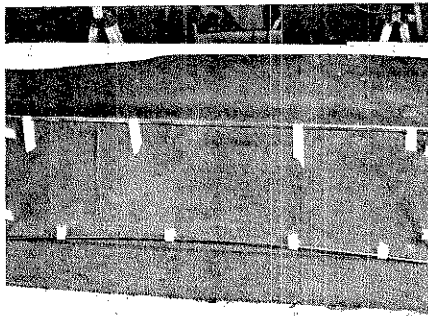


Lay the windshield frame on your bench slotted, or front edge, down. Set the wind wing on the frame and set the hinges parallel to the side. Slide the top hinge down 3 1/2" from the top and mark the frame through the hinge holes with a felt tip marker.

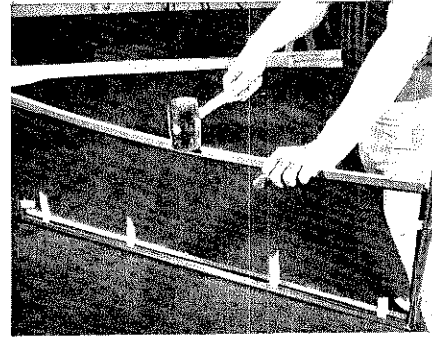
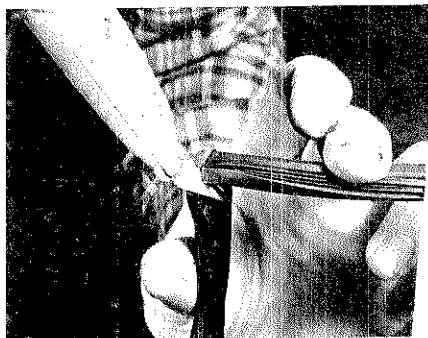
Assembly



Remove the wing and center punch the marks. Carefully drill up to your tape guide. (Note: You must drill perpendicular to the frame for proper wing fit. You may elect to hold the wing firmly and drill through the hinge, using it as a guide.)



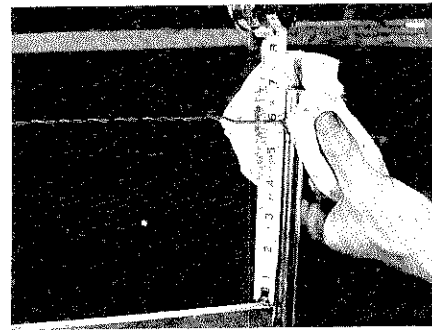
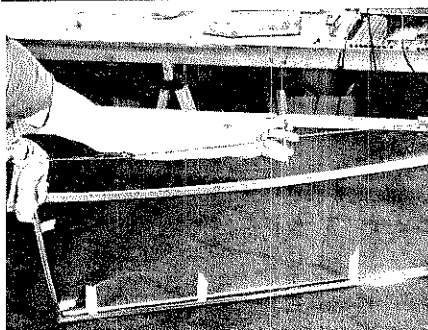
When all four holes are drilled, set the wind wings aside for installation later. Locate the windshield and the rubber perimeter extrusion. Place the extrusion on the glass edge and tape using masking tape to keep the extrusion in place. Pull the extrusion around each corner firmly but do not stretch it. Leave $\frac{1}{4}$ " extra on both ends of the extrusion at the open end.



With your razor blade knife, carefully cut and remove the rubber to form neat 45° corners.

Apply a silicone-like lubricant to the frame groove to make glass installation easier.

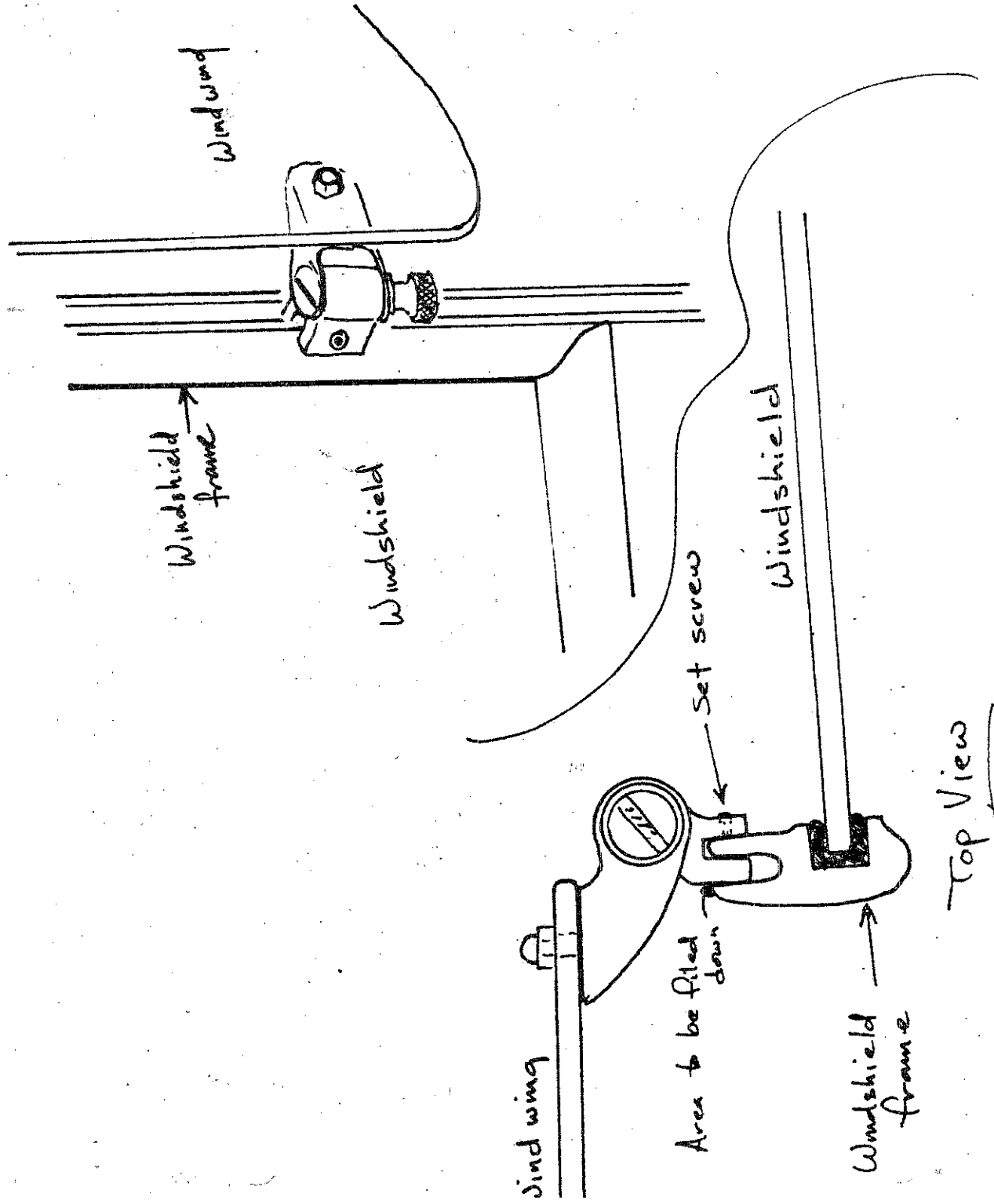
Slide the glass into the frame and place the bottom frame member on the glass. Push the member down firmly and finally tap into position with a rubber hammer.



Hold the frame together by twisting wire between the vertical members. Make sure the glass is down as far as is reasonable and measure for quick reference. Check before drilling to insure proper positioning.

Instructions on Wind Wings

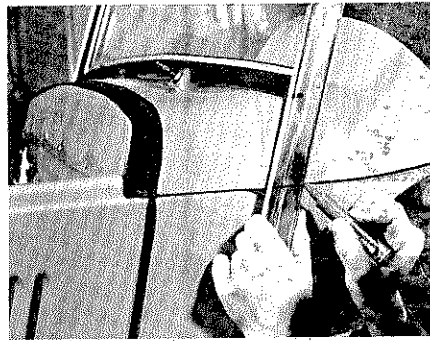
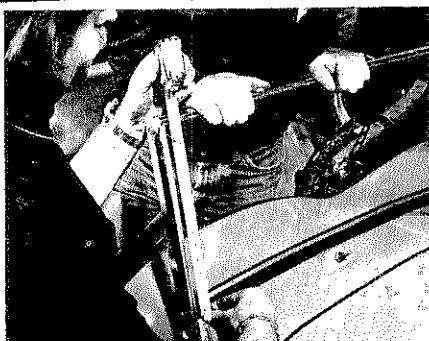
Remove wind wings from box. Fit into vertical groove on windshield frame. It may be necessary to file hinge flange to insure a proper fit. When hinges fit, mount to windshield frame. The wind wings should be mounted in such a way that the set screw which secures them is on the inside of the frame. Mounting location is optional but we recommend the bottom of the wing be approximately two inches above the cowl surface. When wings are properly positioned, tighten set screws and knurled knobs.



Assembly



Measure in $15/32''$ and visually mark the correct vertical distance to install the frame connection screw. Drill a $13/64''$ hole perpendicular to the frame. Use your countersink bit to give a professional finish. Install the two screws and remove your binding wire. Install the rubber extrusion to the bottom frame member.

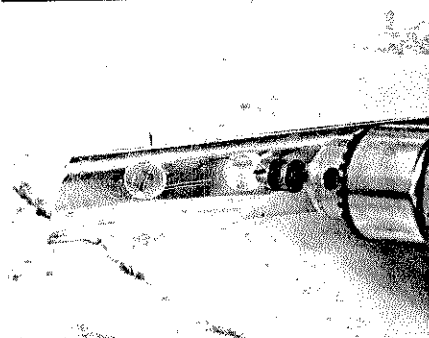


Place the frame into position on the body, make sure the bottom rubber extrusion is flipped forward, and push the windshield down until you measure $13\frac{1}{4}''$ or less from the underside of the top frame member to the dash cowl, at the edge.

With the frame pushed down to its final location, mark the frame legs parallel with the bottom of the dash cowl.

Measure down $\frac{3}{4}''$ from the top of the cowl and $\frac{3}{4}''$ up from your bottom mark to locate the mounting bolt area.

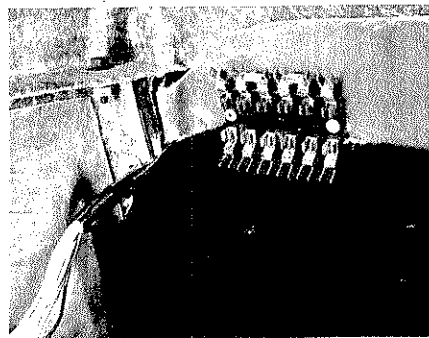
Drill from the backside of the frame, through the glass slot, as far forward as possible, two $5/16''$ holes on each side. The holes must center on your $\frac{3}{4}''$ marks.



Use your bevel bit to carefully countersink the windshield mounting bolt holes. The holes should end up flush with the surface.

Cut off the bottom of the frame relative to your marked line with a hacksaw.

Place the windshield into temporary position. Drill through the top holes into the glass and insert the top bolts. Back off and inspect your work. (Note: Make sure the windshield is pushed down far enough before drilling. The rubber extrusion should fold forward on the outside edges of the dash cowl.)



40. INSTALL FUSE BLOCK AND DASH. 30 min.

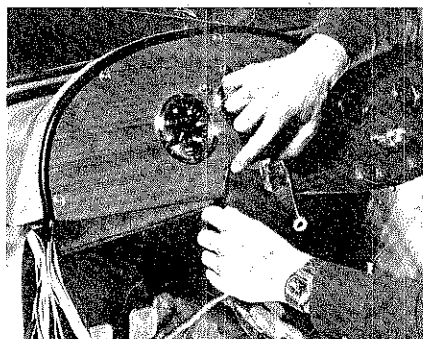
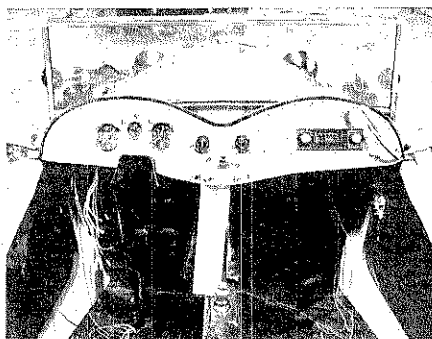
Place the fuse block into position, drill two $13/64''$ holes and secure with two $3/16'' \times 1''$ rivets. Use your side cutters to remove excess rivet.

Wedge a $22\frac{3}{4}''$ piece of $2'' \times 4''$ under the dash cowl to force it up against the center of the windshield.

Locate the vinyl welting and glue to the top perimeter of the dash face leaving approximately $2''$ extra on both ends to fold back. (Note: Push the welting into the valley of the dash.)

You may wish to cut the welting flange in the valley area to make it more flexible. However, do not put tension on the welting here as it will then tend to ride out in the future.

Assembly

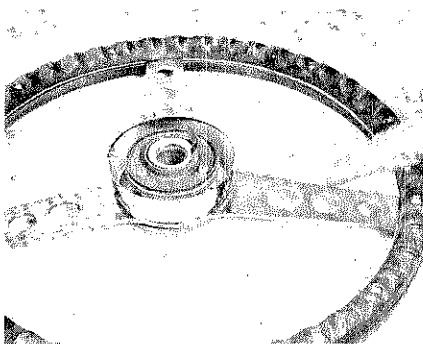
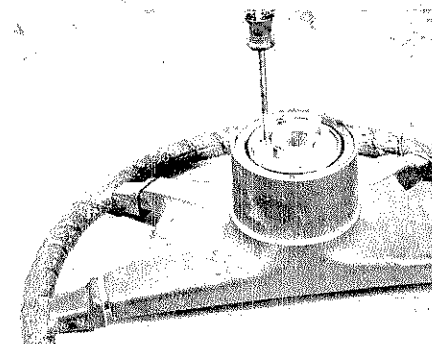


Center the dash in position so that the dash welting does not ride over the top of the dash cowl.

Drill two 9/64" outermost mounting points of the dash first and install the finishing screws. Complete the center next, and the remaining holes last.

The dash wedge can now be removed, and the dash will hold the dash cowl tight against the windshield.

Install special welting around the steering column mounting edge.



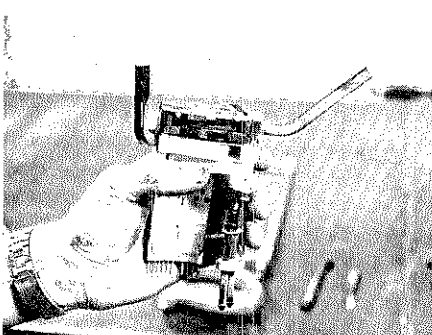
41. PREPARE THE STEERING COLUMN. 1 hr.

IMPORTANT NOTE: Check the impact absorbing section of the column, many are cracked or broken. If in doubt, take to a competent VW dealer for inspection, repair, or replacement.

Remove the VW steering wheel from the column. Remove the turn signal cancel cam from the wheel.

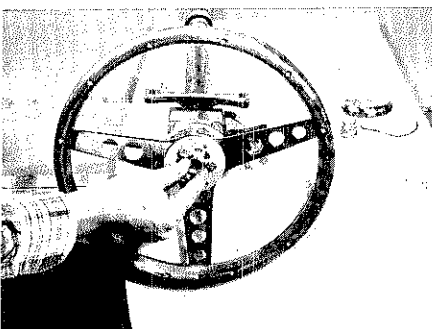
Assemble your new steering wheel with the VW cancel cam installed toward the right steering wheel spoke.

(Note: See steering wheel assembly instruction in the steering wheel box)



Remove the turn signal section from the column and cut the signal arm off at the first bend from the outside end of the lever. (Late models also have the windshield wiper on the column. On early models with turn signals only on the column, do not remove the center section from the column. Perform the straightening operation with the column intact.)

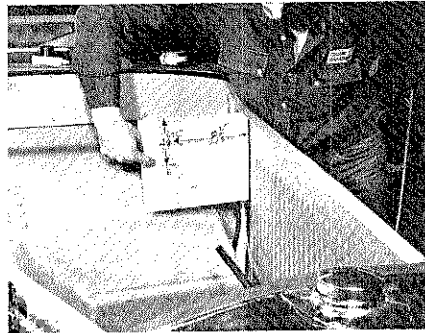
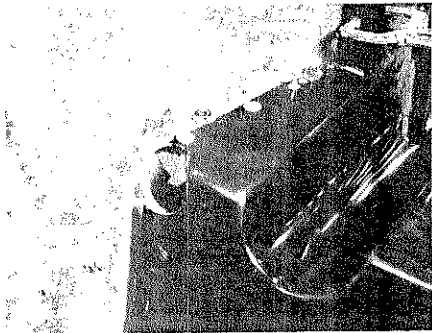
Very carefully heat the metal arm next to the column to straighten it. (Note: This metal has a low melting point so heat slowly or you may lose the arm and destroy this section. Protect the column with a piece of sheet metal when heating.) Grind the cut end smooth.



Reinstall the signal section into the column. The turn signal arm should be within your new wheel perimeter, and conveniently behind it.

Temporarily install the steering wheel.

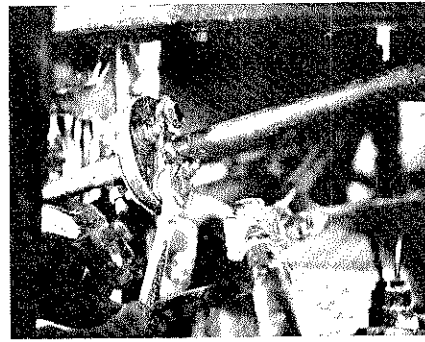
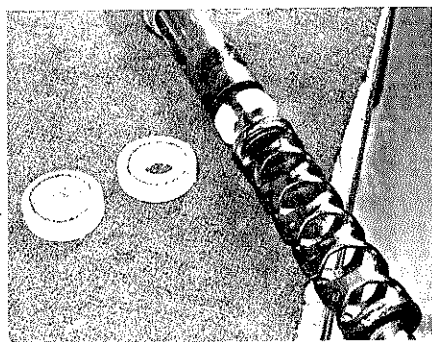
Assembly



42. INSTALL THE STEERING COLUMN. 1 hr. 10 min.

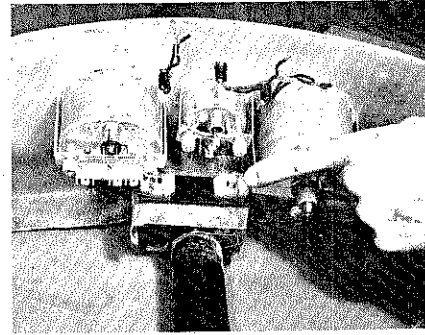
Cut a $2\frac{1}{8}$ " hole in the front tie-in near the side panel, angled downward toward the steering gear box, and centered slightly below the rear edge of the front tie-in.

Locate the approximate center for the steering column on the fire wall, and drill a 1" hole ($8\frac{3}{4}$ " in from the side panel and $4\frac{1}{4}$ " down from the dash cowl). Pull a string down to approximately the center line of the steering column and note the actual center of the $2\frac{1}{8}$ " hole to be cut. Cut the $2\frac{1}{8}$ " hole using the new center.



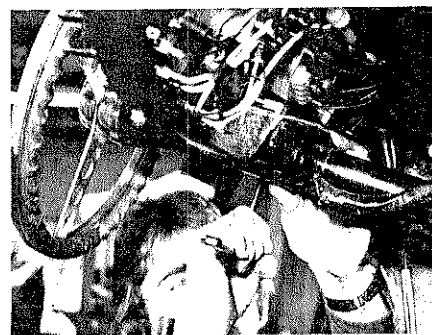
Cut a nylon or teflon bushing and install securely into position around the steering shaft and slide up into the column tube just above the collapsible section of the column. This will help to eliminate column wobble.

Insert the steering column extension rod through the front tie-in and fasten to the gear box connection using locktite. (The bushing has a $1\frac{1}{2}$ " outer diameter, wedged edge, and a $\frac{7}{8}$ " center hole.)



Install the steering column into position over the column extension rod, with the column and housing as far forward as is possible.

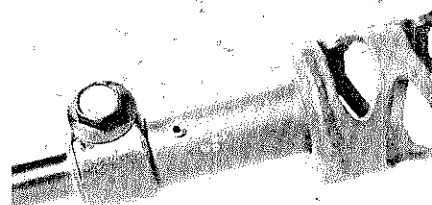
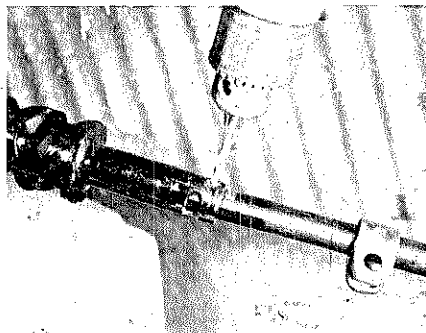
Cut the ends of the original VW mounting bracket so that it does not interfere with the gauges. Drill two $\frac{5}{16}$ " holes through the column and into the dash mount near the back of the dash to utilize maximum dash strength.



Secure to the VW bracket with the original VW mounting bolts. (Note: On real wood dash mounting, predrill the dash block and secure with two wood screws.)

Pull on the steering wheel and move rear column shaft back relative to the extension shaft so that there exists a $\frac{1}{8}$ " gap between the chrome ring behind the steering wheel, and the column housing. If this gap is not maintained, the column will short out and blow fuses.

Assembly

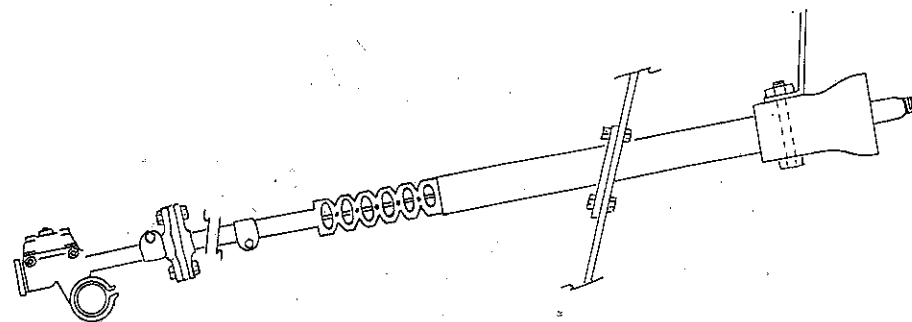
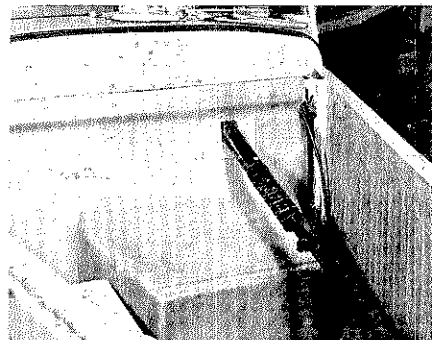


Drill a 5/32" hole completely through the column at the connection point of the rear shaft to the extension shaft. Install a compression pin and secure finally, with the original VW clamp.

(Note: Before the compression pin hole is drilled, make sure the flat spot on the extension rod lines up with the bolt way of the clamp.)

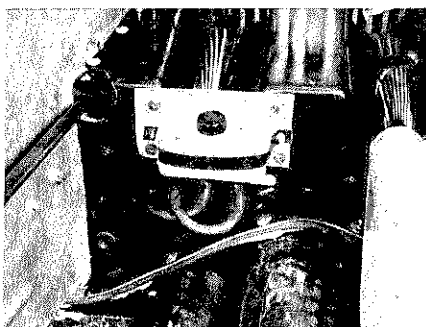
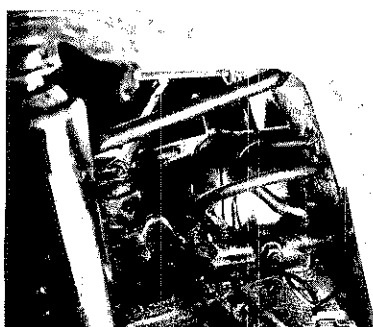
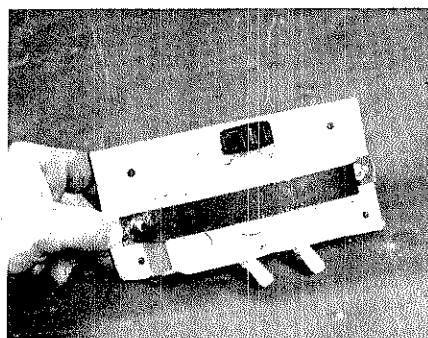
Drill and install a short screw into the column bushing to secure it in position.

Cut a "U" shaped piece of plastic and slide it up around the column at the fire wall, and secure with screws. This not only helps to weather seal the hole, but more firmly secures the column. Caulk the remaining opening.



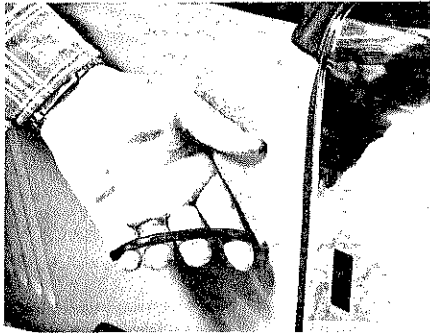
43. INSTALL BRAKE RESERVOIR 20 min.

Secure the brake reservoir to a flat plastic piece with a piece of metal banding or in a reservoir container similar to the type used on the VW.



Drill two 1" holes in the front tie-in to allow flexible lines to be run to the master cylinder. Install rubber grommets around each hole, connect your reservoir lines to the master cylinder and run them through the front tie-in. Secure the reservoir to the front tie-in with rivets.

Assembly



44. INSTALL THE HEADLIGHT CRADLE TIE-IN. 20 min.

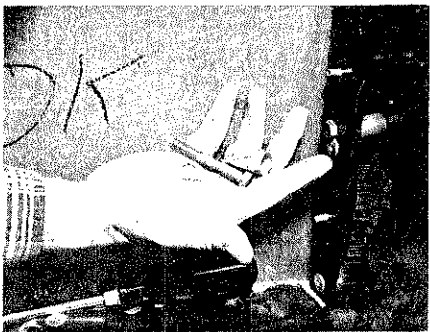
Cut two $4\frac{1}{8}$ " sections of the bumper override extrusion and grill grommet rubber extrusion. Install in the grill hole and make a grommet for the headlight tie-in bar.

Install the headlight tie-in bar and center.



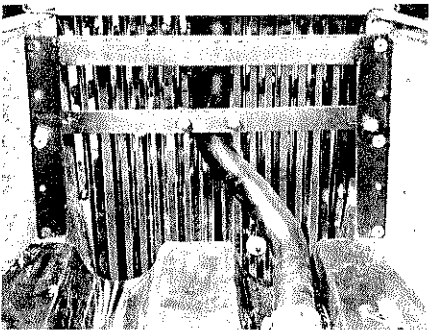
Install the muffer clamp around the fill neck, add the half round spacer, and insert into the center holes of the headlight tie-in bar.

With the headlight tie-in bar centered through the grill holes, locate the point on the slotted hole of the core support, that lines up with the tie-in bar. Drill a $\frac{3}{8}$ " hole through the front side panel flange.



Insert a $\frac{3}{8}$ " x $2\frac{1}{2}$ " hex head bolt through the core support, through the tube space, through the headlight tie-in bar and secure with a lock washer and nut. If the tie-in bar is not centered in the grill holes, remove the bolt and space with washers.

Check the filler neck height relative to the gas cap/grill, and tighten all nuts and clamps securely.



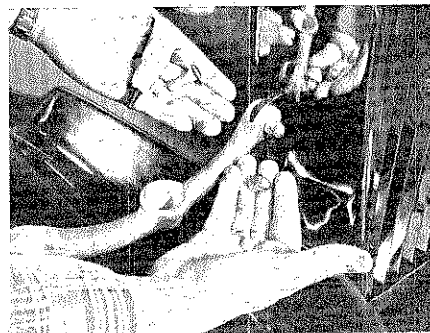
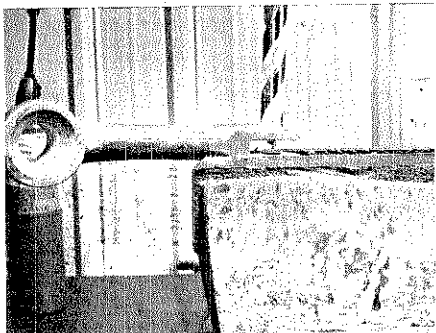
45. INSTALL THE GAS FILLER TUBE. 20 min.

Lay out one 2" flexible connector from the VW gas tank, two 2" clamps, the headlight tie-in bar, muffer clamp, two 1" aluminum tube spacers, two $\frac{3}{8}$ " x $2\frac{1}{2}$ " hex head bolts, washers and nuts, the gas cap and the filler neck. Make sure all pieces except gas cap, are painted black. Do a quality paint job so you will not see rust through the grill.

Attach one flex connector, with clamp on each end, to the bottom end of the filler tube.

Install the vertical member of the filler through the grill hole. (Note: Just below the grill nose, you may need to file, cut, or bend a small area of the grill away to make room for the fill neck.) Prior to tightening the clamps, put the gas cap on the fill neck and adjust the pipe so that there exists a $\frac{1}{8}$ " gap between the bottom of the gas cap and the grill nose. You may place a pad under the fill tube on the front tie-in as protection and as a shim.

Assembly

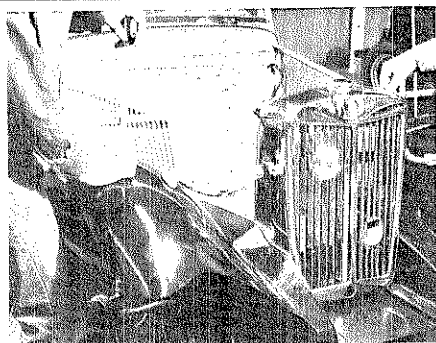


46. INSTALL THE HEADLIGHT CRADLE. 30 min. per

(Cradles can be buffed, painted black, or purchased chromed from us.)

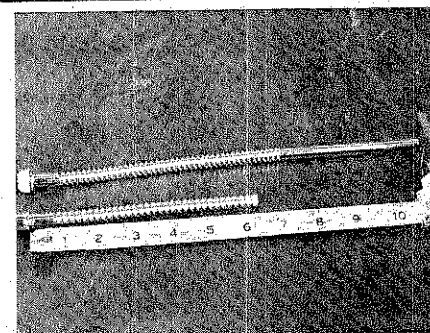
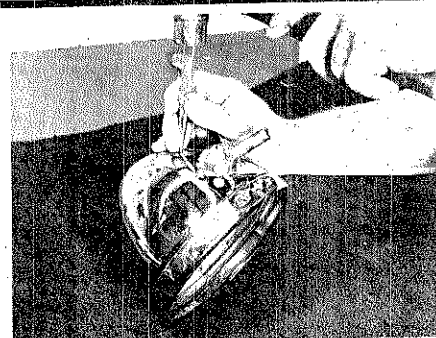
You will notice a reverse twist when comparing cradles. Determine left and right by the way they fit the fender curvature. Enlarge the back hole where the cradle attaches to the tie-in bar to accommodate the carriage bolt.

Install the cradle to the tie-in by inserting the $\frac{3}{8}$ " x 1" carriage bolt from behind, locktite, and secure with a chrome $\frac{3}{8}$ " acorn nut from the front. (Note: You may need to file the cradle slot to accommodate the tie-in bar.)



With both cradles attached to the tie-in, lay a flat bar next to the back of the grill, and running across the fender tops. Measure down from the bottom of this bar $4\frac{1}{2}$ " to the crown of the fender top. Push the fender up or down and hold to this measurement. With the rubber pad installed between the cradle and the fender, push the cradle firmly against the fender. Drill a $\frac{1}{4}$ " hole through the forward cradle hole and into the fender. Insert a $\frac{1}{4}$ " x $1\frac{1}{4}$ " spin lock bolt up from below, apply locktite, and secure with an acorn nut.

Drill the back hole, install the bolt with a cable fastener. When the wiring is run for the turn signals, thread the wiring through this fastener.

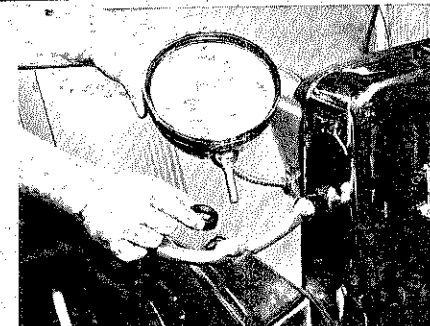
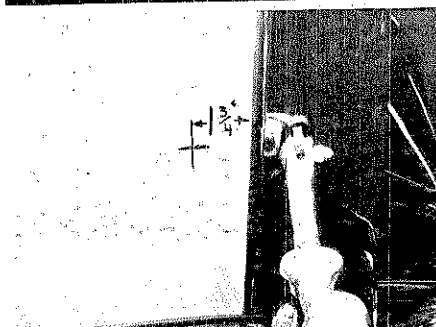


47. INSTALL HEADLIGHT SHELL. 1 hr. per

Center punch the headlight shell, 1" behind the cradle connector bolt and carefully drill a $\frac{7}{16}$ " hole.

Locate the chromed $\frac{3}{8}$ " flex tube and measure from the tube flange $6\frac{1}{2}$ " to 7" (bigger loop). Cut the tube and discard the extra.

Cross cut the end down $\frac{1}{4}$ " to form four bendable tabs.

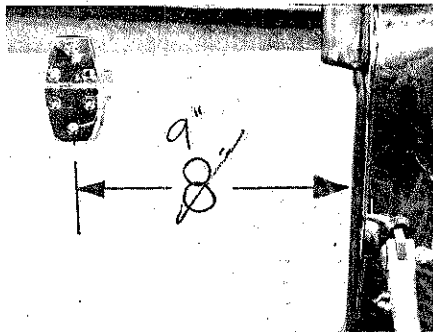
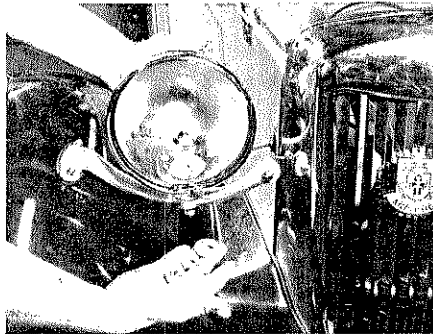


Drill a $\frac{1}{4}$ " hole $1\frac{3}{4}$ " directly back of the headlight tie-in bar. Install a rubber grommet (Note: Enlarge the hole with your rotary rasp, and cut your grommet to leave a tight fit) Install the flex tube through the headlight shell hole, and insert the flex tube through the grommet. Paint the shell base black and install on top of the cradle. Install the shell mounting bolt through the base, the cradle, and secure with the provided nut.

Assembly

Carefully bend the four tabs back on the flex tube on the inside of the side panel.

owner's photo



48. INSTALL HOOD. 1 hr.

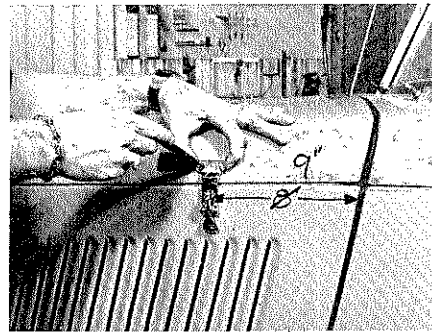
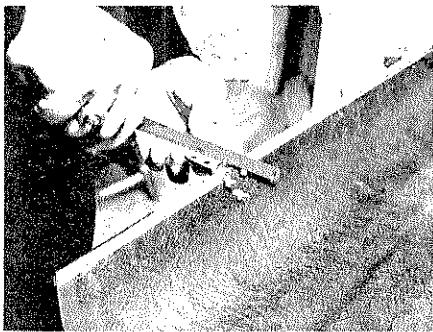
Set the hood in position and hold firmly down. Mark the center line of the passenger side hinges $9\frac{1}{2}$ " from each end of the front side panel.

Center the hinge pin on the edge of the hood. Drill the bottom hole of each hinge and secure with a No. 8-32 x $\frac{1}{2}$ " oval headed Phillips bolt and nut.

Set the hood securely in position and drill the top hinge hold into the hood. Secure with bolts and nuts.

Check the hood fit. If acceptable, mark the remaining hood hinge holes.

Remove the bottom hinge bolt, remove the hood, drill the remaining two holes in each top hinge, secure all bolts with locktite and a nut.

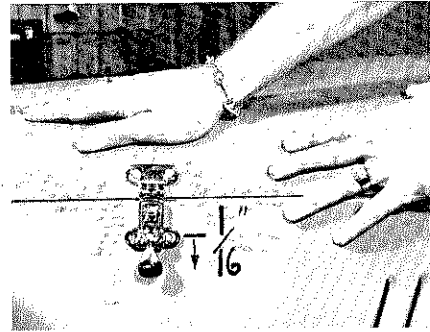
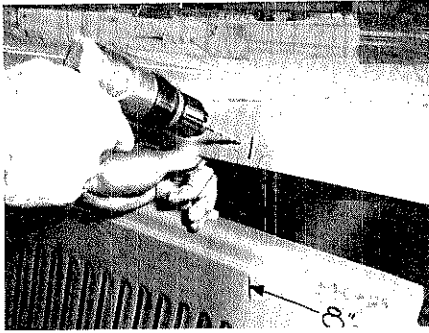


With a hacksaw blade or a grinder, remove any excess bolt protruding above the nut and paint the nuts black (excess bolt will scratch the side panels.)

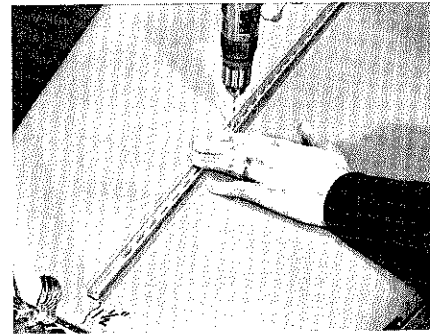
Place the hood back on the body and secure the bottom hinge. Drill the remaining holes and secure as above. $9\frac{1}{2}$ "

Locate the hood latch center line $9\frac{1}{2}$ " from either end of the driver's side front panel. Set the latch on the hood with the hinge pin just above the hood edge. Mark the top holes.

Assembly

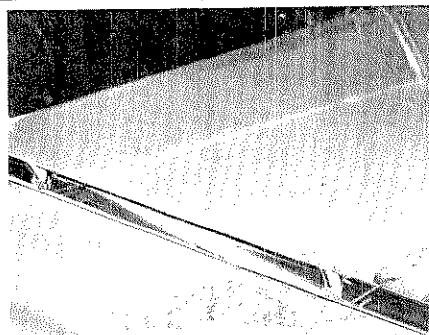


Open the hood, drill the $3/16''$ holes.
Install the latch tops with 10-32 x $1/2''$ oval headed Phillips bolts, and cut any excess bolt stock off after securement.
Push the hood down and clasp the bottom of the latch to the top. While applying reasonable downward pressure to the hood, mark the bottom latch holes. Drill the holes $1/16''$ below the center of your mark to insure that over center tension is maintained on the latch. Install the bottom latch sections and secure with No. 10-32 x $1/2''$ oval headed Phillips bolts, nuts, and locktite.

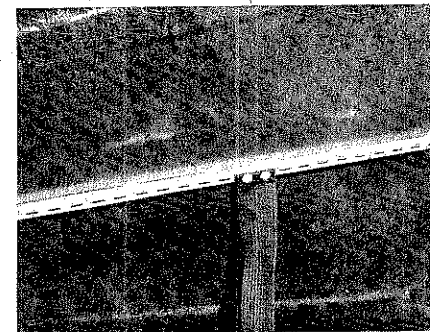


49. INSTALL THE CENTER HOOD CHROME STRIP. 45 min.

Remove the windshield and latch the hood. Run a chalk line from the center of the gas cap to the center of the dash. Snap a line.
Cut the reinforcement steel 3" shorter than the hood length. Center the reinforcement bar over the chalk line $1\frac{1}{2}''$ from either hood end. Drill $3/16''$ holes through the reinforcement steel mounting holes. The cut end will require drilling through the steel and into the glass.



Snap five bolt clips to the center hood chrome strip. The bolts must center and you must spring the clip into the chrome strip. Slide the clips to their appropriate position and install the chrome strip on the hood. Open the hood and install the reinforcement bar on the exposed bolts. Apply locktite and secure. (Note: Do not pull the nuts down too tight or you will kink the chrome strip.) The two legs of the reinforcement steel should be against the hood leaving the clip nuts on the flat side of the reinforcement bar.



Cut your shoulder harness belt to a length of 33" from the center hole on the metal end.

Hold the metal end against the fire wall so that the angle of the end is correct with the angle of the fire wall. Run the belt up to the hood reinforcement. When you have the correct belt position, overlap the fabric and install two finishing screws into the belt and secure to the slots of the reinforcement bar.

The hood belt can be wrapped around the windshield wiper for the time being until the trunk is carpeted.

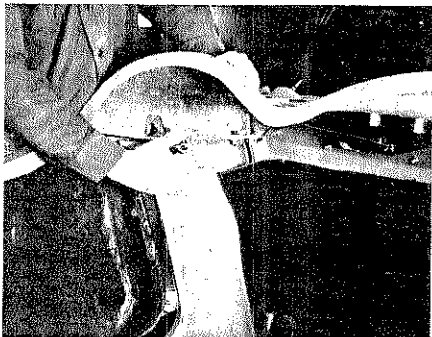
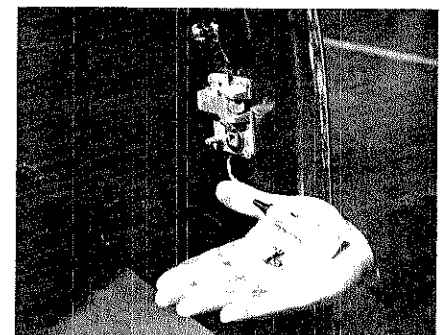
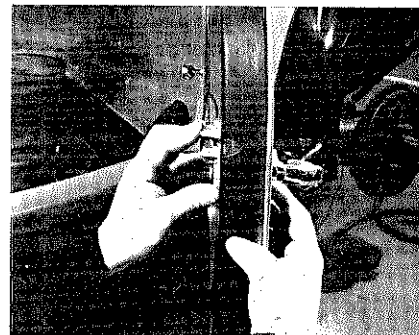
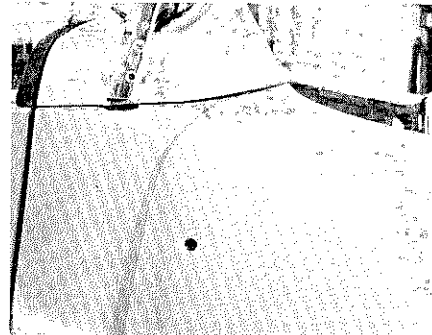
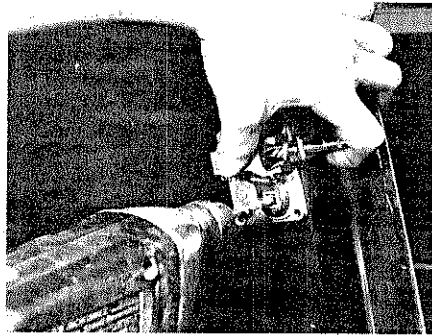
Assembly

50. INSTALL THE DOOR LATCH AND STRIKER. 4 hrs.

Remove the chrome cover from the door latch. Insert the striker into the latch and set in place on the door so that the striker fits into the notch on the door inner liner. Parallel the latch edge with the inner door edge and drill a $\frac{3}{4}$ " hole through the latch and door. (Note: Be careful to drill precisely perpendicular to the latch.)

Using your cone shaped rotary rasp, enlarge the outer hole until the door handle fits precisely into the glass. With the latch on the door, slide the handle into the latch. (You may need to grind the shaft slightly to fit)

When alignment is assured, drill four $\frac{13}{64}$ " holes at the corner of the latch. Above and below the latch, and forward of the center line of the latch, drill a 1" hole for access to the securement bolts. (Note: Before finally securing the latch, set the striker in place and check the fit. You may wish to shim the latch out with a $\frac{3}{16}$ " washer for a proper fit. Read all of this section for proper striker fit)

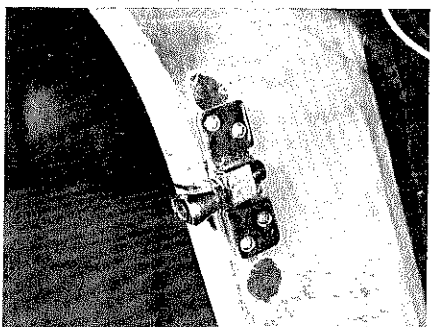
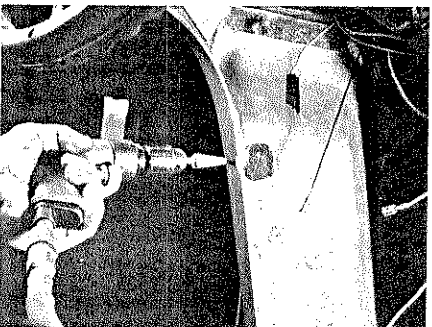


Using 10-32 x 1" oval headed Phillips bolts, locktite and nuts, secure the latch to the door.

Set the door handle perpendicular with the front of the door and align the handle cover plate with the handle. Drill two $\frac{13}{64}$ " holes and secure the handle to the door with 10-32 x 1" oval headed Phillips bolts, flat washer, nut and locktite.

With the door closed, check the mate line of the door with the side panel. Adjust the back end of the dash cowl ledge in or out to give the best fit and clamp. Drill a $\frac{5}{16}$ " hole, (elbow drill is very helpful) through the cowl flange and secure with a large flat washer on each side of the flanges, $\frac{5}{16}$ " x 1" spin lock bolt, lock washer, and nut.

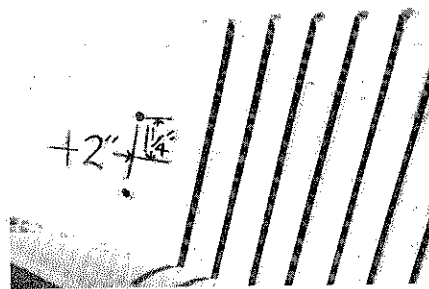
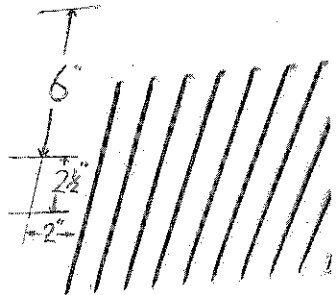
Set the striker on the side panel so that the striker lines up with the latch. Mark the perimeter of the striker on the side panel.



With your cone shaped rotary rasp, neatly remove enough of the door jamb to allow the striker to lie flat. Engage the striker to the latch.

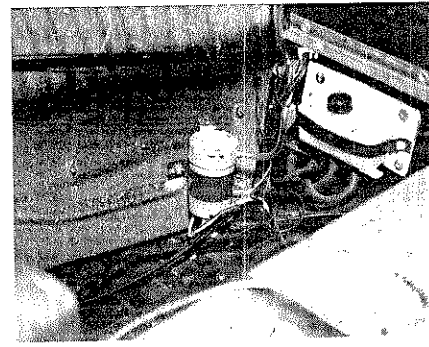
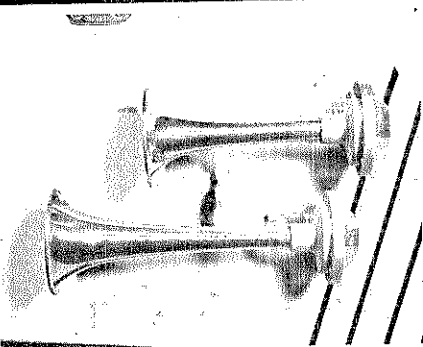
Check the door/side panel gap, adjust or shim if necessary to give the desired relationship. When you are satisfied, drill a 1" hole on the top and bottom of the striker, and secure with 10-32 x 1" oval headed Phillips bolts, locktite, flat washer, and a nut.

Assembly



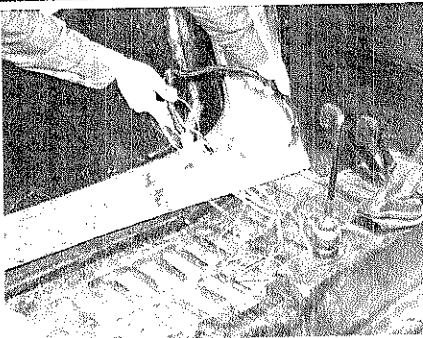
51. INSTALL AIR HORNS. 20 min.

Drill two 5/16" holes 2 1/2" apart, 2" from the front louvre on the driver's side, with the first hole being 6" down from the hood ledge. Centered and 2" forward of the above holes, drill a 5/16" hole.



Mount the small horn in the top hole and the larger horn below. Cut a 3 1/2" and 4 1/2" piece of clear plastic hose. Connect the long piece to the top horn and the short piece to the bottom. Install the "Y" connection. Insert the remaining hose through the side panel and to the remaining end of the "Y" connection.

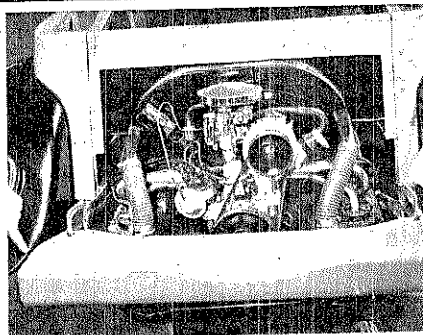
Mount the compressor below the fender line and as far forward as possible. Cut the clear hose to length and connect to the compressor.



52. INSTALL WIRING HARNESS. 15 min.

Drill a 2 1/8" access hole in the lower forward section of the inner liner of the driver's side rear panel.

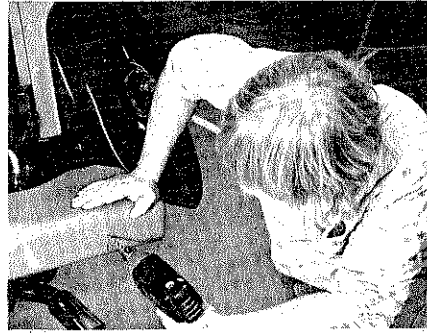
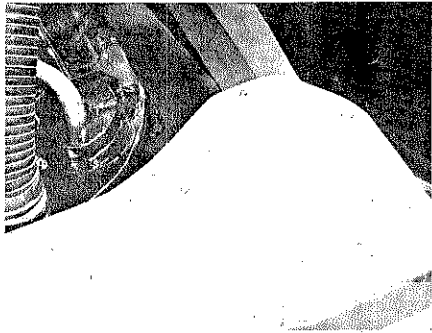
Insert the rear harness into the access hole and pull it through to the access hole used to tighten the rear chassis to body bolt. Drill a 1" hole in the boot bottom face, grommet and feed the harness to the back. The forward harness will connect to the fuse block and through the 1" hole you have drilled above it on the fire wall. (Use a grommet and caulk.) The schematic diagram outlines each connection. In general, avoid electrical tape, use wire ties, and use wire clips to make a neat tight abrasion free electrical system. Both weather and vibration will wear the wiring if not carefully installed.



53. INSTALL THE SUBFRAME COVER. 20 min.

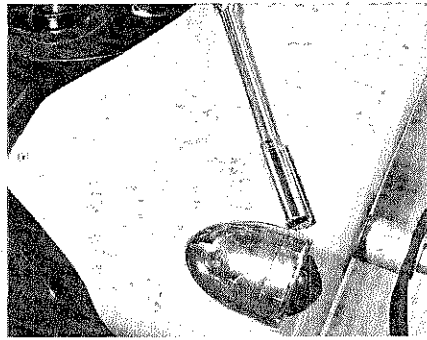
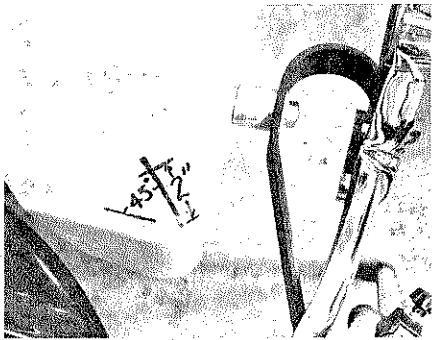
Center the subframe cover between the fenders. Push the driver's side forward to the stops, then measure the distance from the rear side panel leg to the back of the cover. Duplicate this measurement on the passenger side.

Assembly



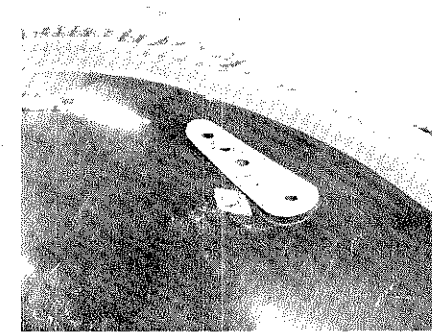
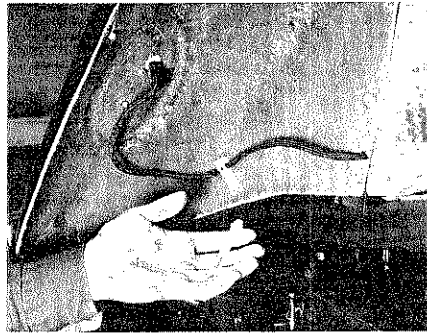
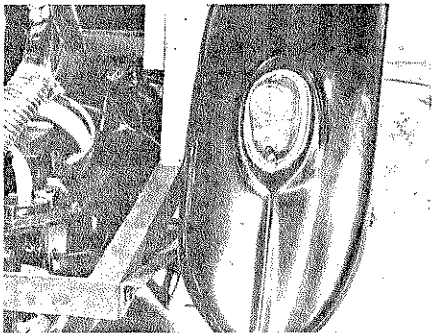
On the top forward end of the cover, drill a 13/64" hole through the subframe, into the subframe cover, and secure with a rivet

Hold the cover down and drill a pilot hole into the bumper mounts. Use your rasp to enlarge the holes. Mount your rear bumper assembly and secure.



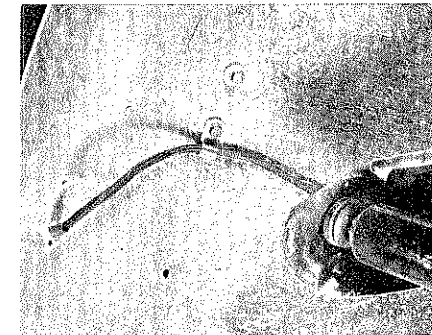
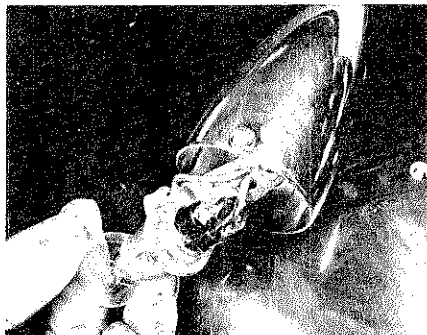
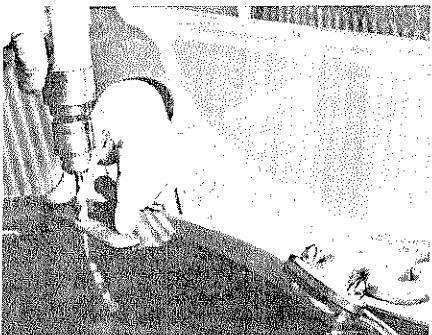
54. INSTALL BRAKE, TAILLIGHT, AND TURN SIGNAL LAMPS. 2 hrs.

On a 45° line back from the frame cover, drill a 5/16" hole, mount the brake lights and wire. (Note: These lights may be replaced by others of your choice to comply with any applicable laws.)



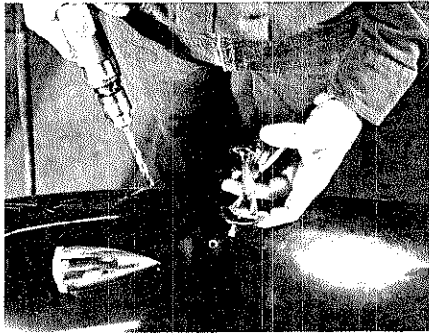
Remove the taillight lens, center the lamp and drill 1/4" mounting holes and secure with provided bolts, locktite, and nut

After you have connected the lamp to the harness, secure the loose cable to the fender wall with a wire fastener.



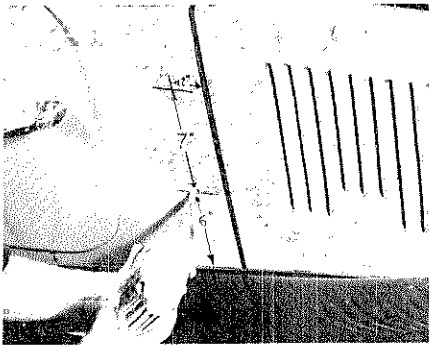
Find the mold mark on the crown of the front fender, set the rubber pad as far back as is possible and still cover the mark. Drill three 1/4" holes. Feed the harness wiring up through the fender and into the lamp. Be careful not to scuff the harness in this lamp as the quarters are tight. If the mounting bolts are slightly too short, grind a little of the glass away under the fender.

Assembly



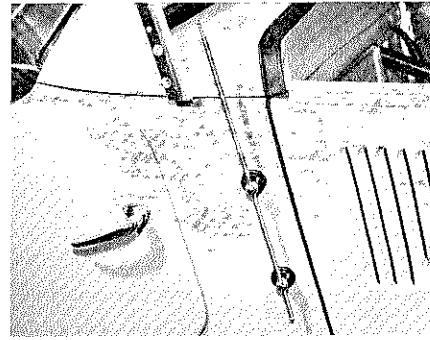
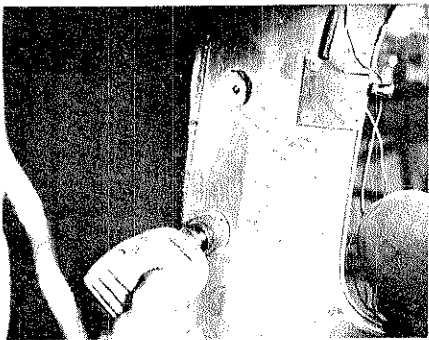
55. INSTALL THE FENDER MIRRORS. 20 min.

Drill a $5/16$ " hole 2" behind the rear tip of the turn signal and 1" to the outside. Secure the mirrors to their respective fenders.

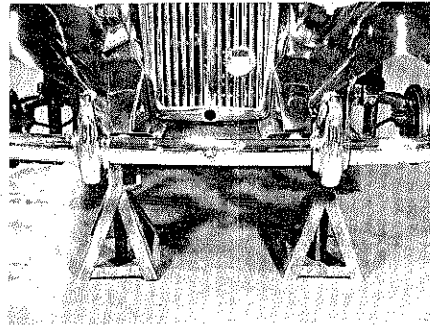
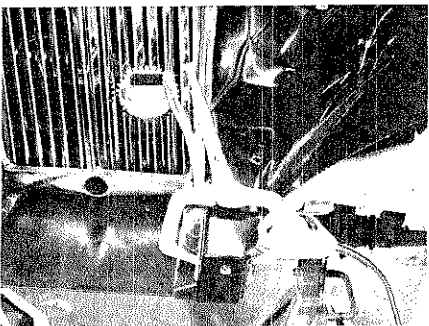


56. INSTALL THE ANTENNA. 30 min.

Measure in 2" behind the front/rear side panel mate line, up 6" from the fender, mark, and up 7" more and mark



Drill two $9/16$ " holes through the inner liner. From the inside use the drilled holes as a guide and drill two $2\frac{1}{8}$ " access holes in the inner liner. Mount the antenna. To the bottom mount of the antenna, connect a copper lead and rivet to the chassis for better reception.



57. INSTALL FRONT BUMPERS. 35 min.

Clamp the leading end of the front fenders to the bumper mount. Set the front crank plate into position and adjust the fenders in or out until the bumper mount holes are symmetrical and until the crank plate fits. Drill a pilot hole into the mount and enlarge with your rasp.

Mount the front bumper assembly and secure. Your Duchess is beginning to take shape, isn't it?

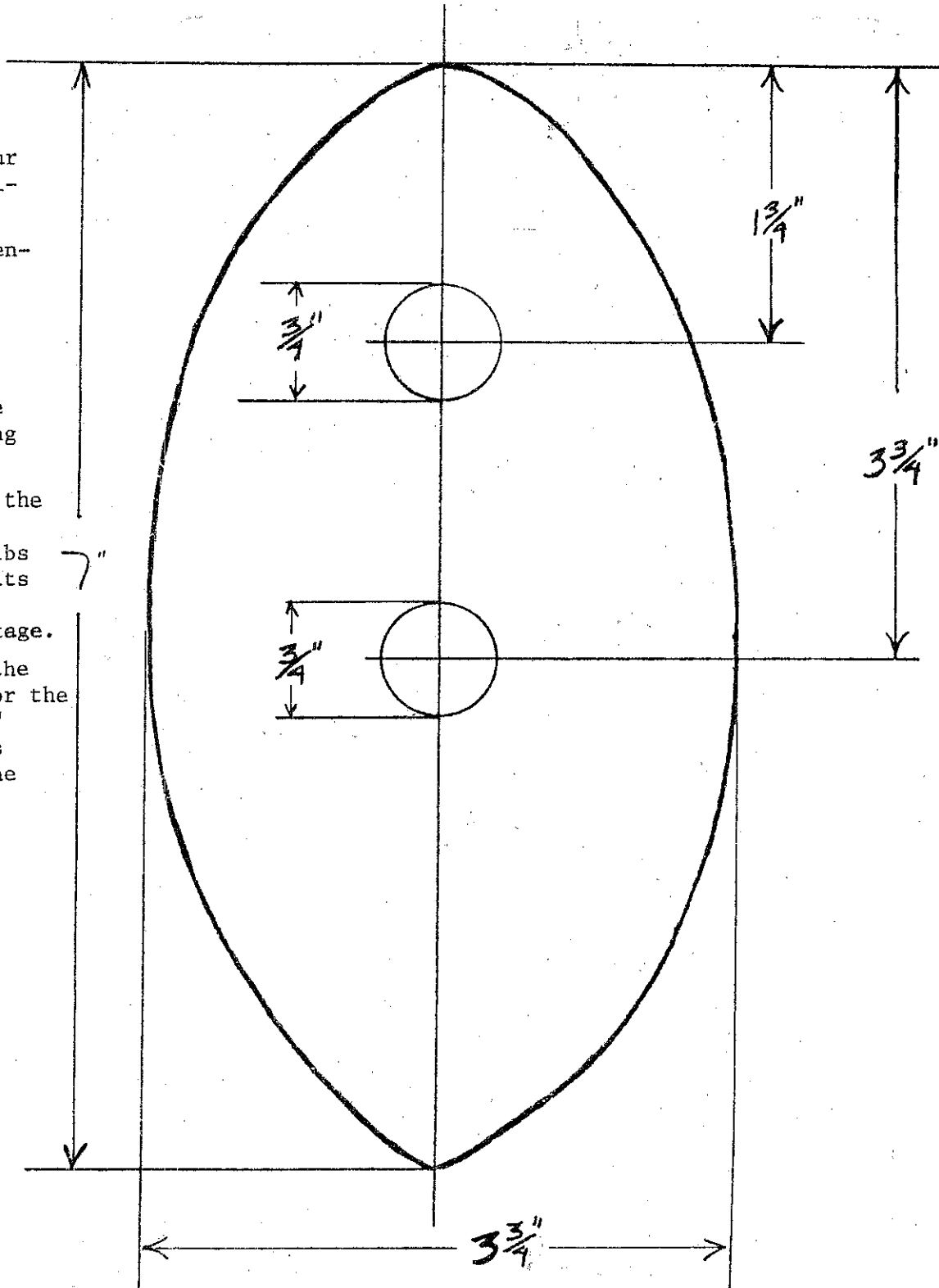
REVISED TAILLIGHT INSTALLATION INSTRUCTIONS

The taillight assembly enclosed in your kit is a two function light and will eliminate the need for bullet brake lights.

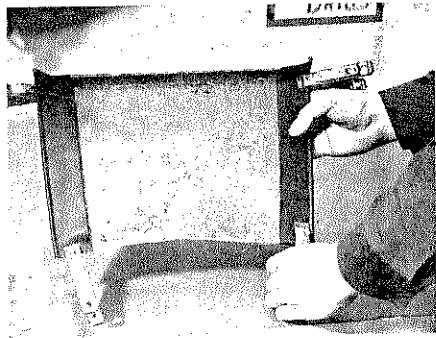
Start with the passenger side rear fender and drill your $3/4$ " holes with a hole saw according to this diagram. Mount the single element pigtail in the top hole. This will be your turn signal light. In the bottom holes mount the double element pigtail. The high beam will be your brake light and the low beam will be your running light.

Mount so that the mounting flange on the pigtail is on the backside of the fender. If mounted with the flange on top, the bulbs will hit the lense. Use the $8-32 \times 3/4$ " bolts to secure the pigtails. Use silicon caulk around the pigtails to insure against leakage.

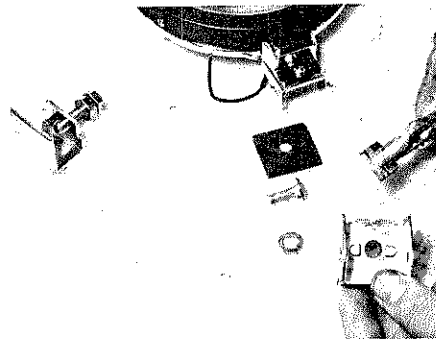
After mounting the fixtures, center the lense on the radius and mark your holes for the lense mounting bolts. Use the $8-32 \times 2-1/2$ " bolts to mount. Shorten the pigtail wires and solder to the rear wiring harness. The solder connections must be covered.



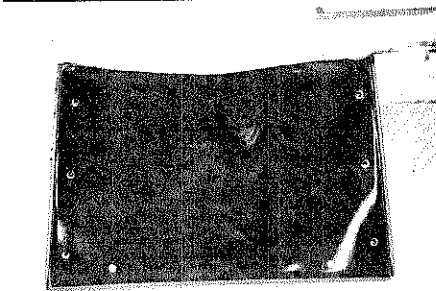
Assembly



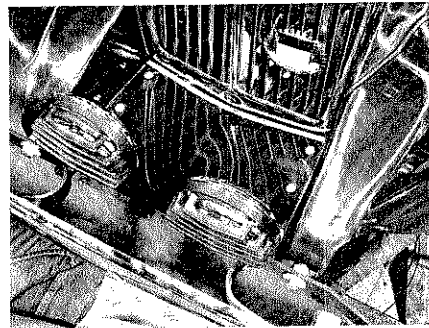
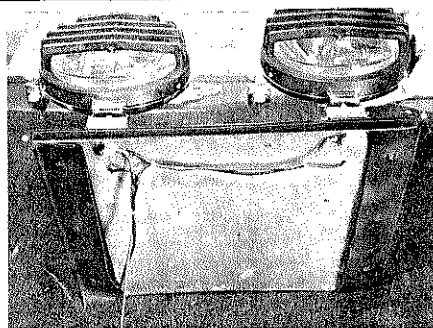
58. INSTALL THE CRANK PLATE. 1 hr. 10 min.
Glue welting to the sides of the plate and set aside to dry.



There are several places to mount fog or driving lights. We have found that the crank plate makes a good spot. Set aside the portions of the light mount base you do not need, and make necessary modifications.



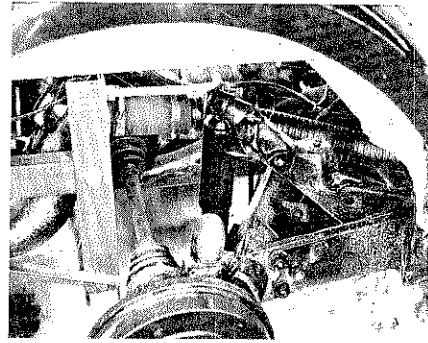
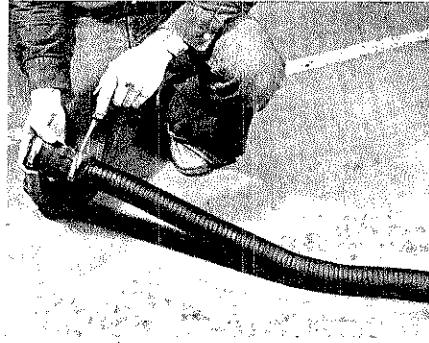
Assemble the bases. Set the crank plate in position and set the lamps where you like them best and mark the mounting holes. Mark the six additional crank plate mounting holes. Remove the crank plate and drill all six $\frac{1}{4}$ " plate mounting holes, and two $\frac{5}{16}$ " lamp mounts.



Mount the lamp base securely to the crank plate.
Mount the lights and wire the underside of the crank plate including the ground wire between lamps.

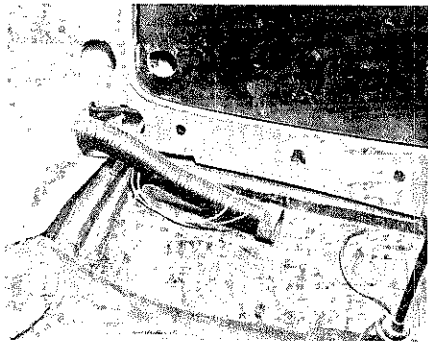
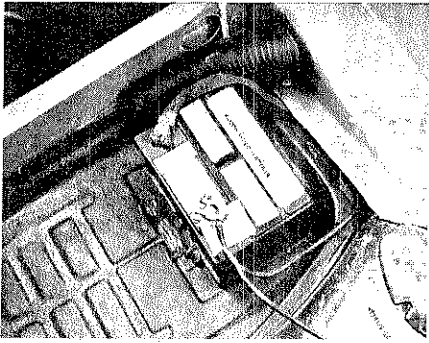
Drill six $\frac{1}{4}$ " holes in the crank plate ledge on the front fender using the plate as a guide. Redrill the crank plate with $\frac{5}{16}$ " holes to allow room for the carriage bolt shoulder.

Use $\frac{1}{4}$ " x 1" carriage bolts to secure.



59. INSTALL HEATER DUCTS. 25 min.

Paint the 2" flex tube black and connect a flexible connector to the tube with a clamp.



Drill a 2 1/8" hole in the boot bottom face on each side, slide the flex tube through the holes and connect securely to the heater box on the engine. Usually you are better off installing the tubes as far to the outside as is possible.

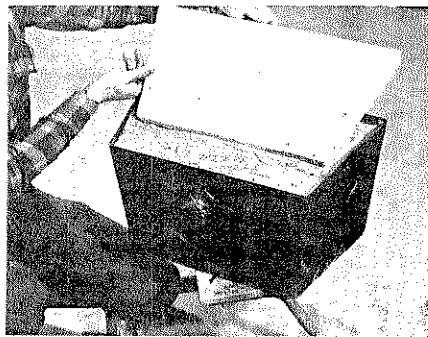
60. RUN TEST.

At this point in construction, all equipment should be functional except the license plate light and brakes. Before you go on and complete your Duchess, we recommend you have the brakes bled, adjusted, and run test all equipment and components.

When you are satisfied that all is well, proceed.

owner's photo

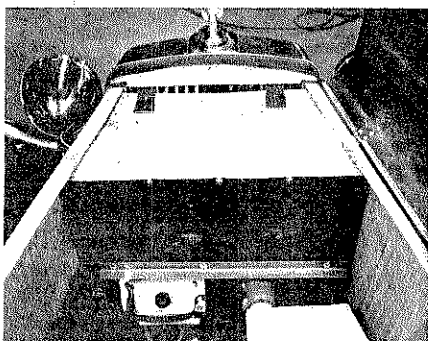
Assembly



61. INSTALL BALLAST. 1 hr.

If you have not purchased our wood group, use Pattern A and cut the weight box top out of a piece of $\frac{3}{4}$ " plywood.

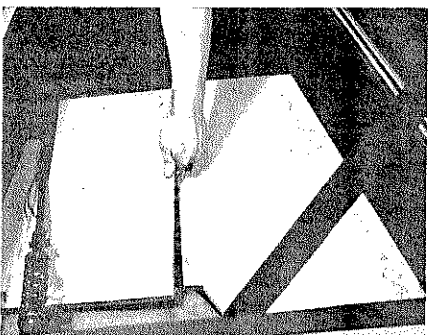
Fill the weight box full of sand and tamp down. The top should fit tightly into the box.



Drill $\frac{1}{8}$ " holes around the perimeter of the box and into the top. Secure with wood screws.

With the help of a friend, slide the box back into position. Locate two 1" pieces of angle iron. Put the 2" leg in front of the core support and secure the 3" leg to the top of the box.

Below the steering column and behind the compressor, there is room for approximately 80 additional pounds of sand. Use garbage bags inside of burlap bags and pack as much as you can in this area.

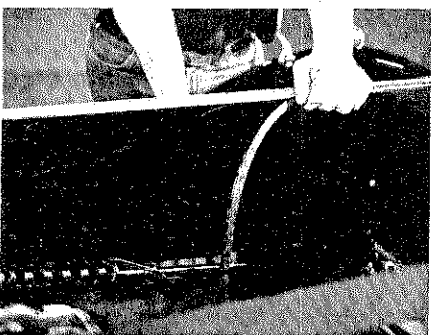
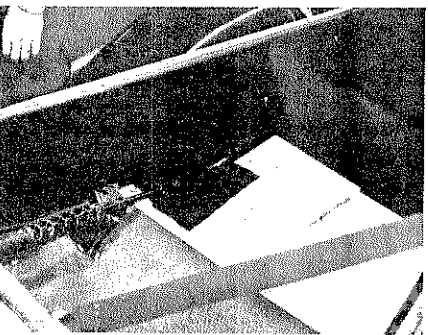


62. FINISH THE LUGGAGE AREA. 3 hrs.

If you have not purchased our wood group, locate Pattern B and cut both sections of the trunk deck out of $\frac{3}{4}$ " plywood. Add a $\frac{1}{2}$ " strip across the back bottom of the right section to keep the deck off the gas tank sending unit.

Rivet a 20" section of 1" x 1" angle iron $1\frac{1}{2}$ " up from the bottom of the weight box to act as a ledge to support the trunk deck.

Locate the carpet for the side walls and using Fast Tac generously cover the side panels. Locate the triangular cut piece for the weight box and glue it in place under the top flange of the side panels.



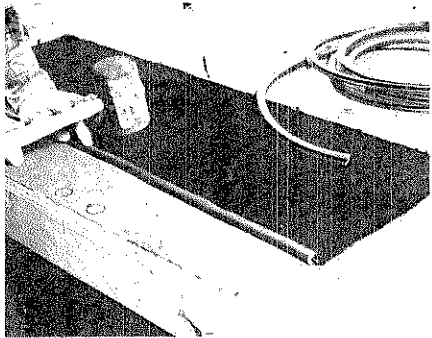
Carpet the back of the grill bridge.

Lay the compartment deck in position.

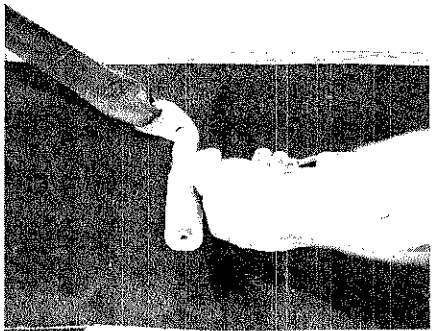
Carpet the area around the steering column penetration.

Snap the vinyl covered metal edge extrusion over both top side flanges.

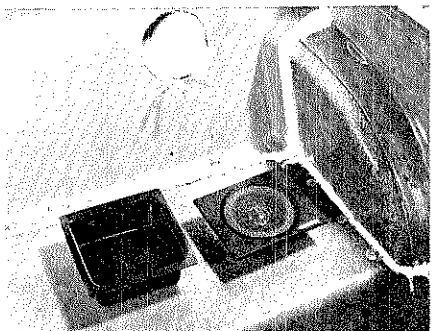
Assembly



Locate the fire wall carpet and using a rubber hammer, pinch the extrusion around the carpet top. Set a straight edge across the top of the front side panels next to the fire wall. Mark a line on the fire wall at the same height as the side panel tops. Using this line as a guide, apply Fast Tac to the fire wall and line the fire wall carpet extrusion up with this line.

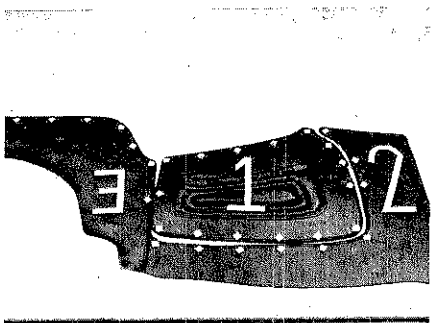


Just below the extrusion install a line of five finishing screws. Center the hood strap on the fire wall and secure with a rivet and washer.



63. INSTALL STEREO SPEAKERS. (Factory option) 40 min.

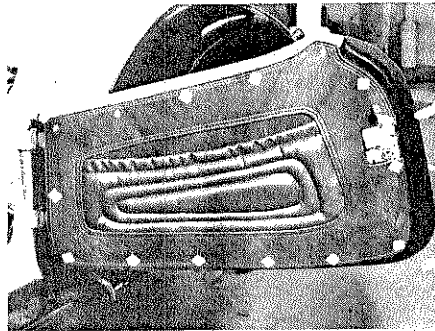
Cut a hole on each side of the rear tie-in to fit your speaker. Into the special rear speaker cover place a piece of carpet or foam for sound deadening. Caulk the cover edge. Place the cover in position and secure with screws or rivets. Run the speaker wires over the top of the boot bottom tie-in. After the rear tie-in/boot bottom has been carpeted, cut the carpet away from the hole. Connect the speaker wires to the speaker and mount the speaker with the provided finishing screws.



64. INSTALL THE INTERIORS. 8 hrs.

Locate the long triangular sections of floor carpet. Apply Fast Tac to the pan and lay the carpet in both sides. Remove the VW shift knob. Apply Fast Tac over the center tunnel. Make sure the rubber boot is covering the emergency brake heat levers, then install the tunnel carpet. The interior sequence will be the door panel, second the front panel, third the rear panel, fourth the rear tire well carpet, and finally the rear tie-in/boot bottom carpet. The method used to install the upholstery screws can vary from drilling and hand installation to a screwdriver bit in a variable drive drill, and drive the screws in. If you select the faster, drill method, practice before you start on that beautiful door panel.

Assembly



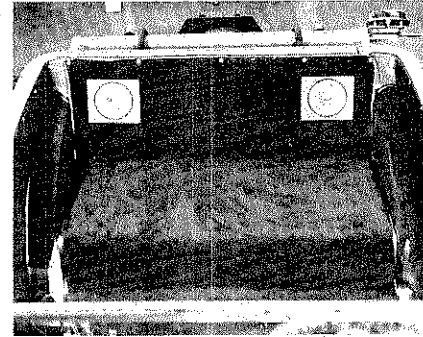
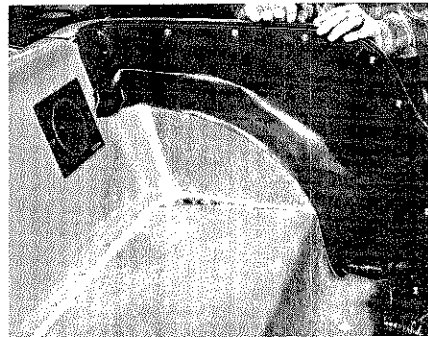
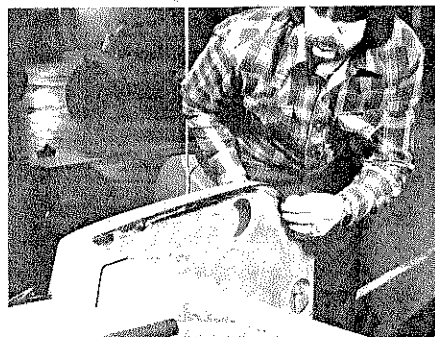
The doors have 14 finishing screws. When installed the washer or the screw should be at least 1/16" inside the nylon edge welting.

The spacing is not precisely equal, but it does give the appearance of symmetry. The screws on the adjacent side panels should match up with the door panel screws.

Each screw location is pre-marked.

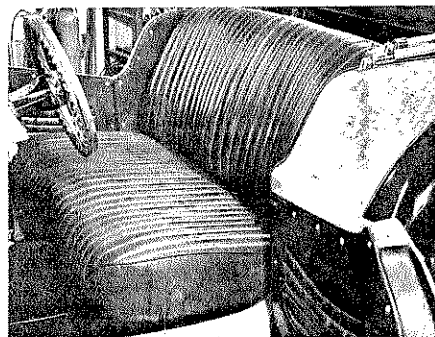
Apply Fast Tac to the door liner. Remove the latch cover, and set the door panel in place. Start at the top left corner, then the top right corner, then the remaining locations.

The front side panels must be very well glued in place. The top welt should cover the sharp panel edge, but keep it as low as possible so that scuffing will not cause the panel to pull away from the panel. Match up the nine screw locations relative to the door panel.



Prior to installing the rear side panels, inspect to insure that the fiberglass edge is smooth and properly shaped. Using a smooth cloth, paint the glass panel edge black.

Install the rear side panel in the same fashion as the front with nine screws. Glue the wheel well carpet generously, let set up, and install.



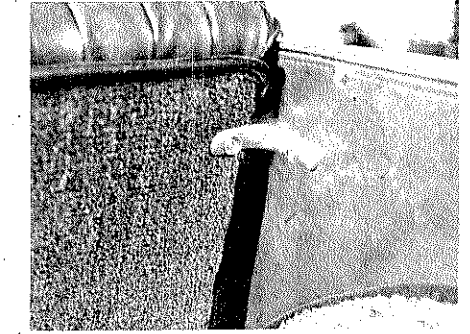
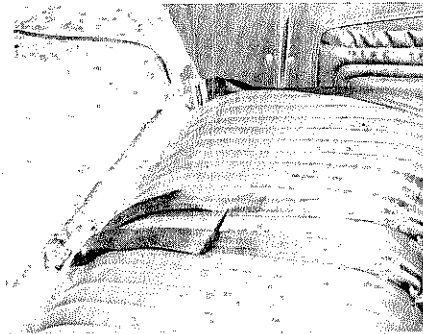
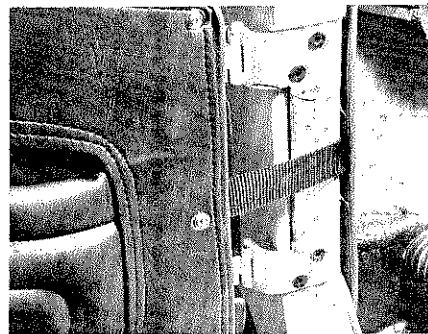
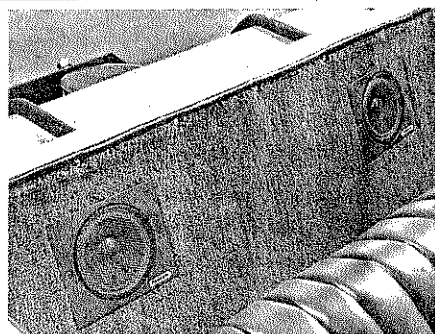
Install the rear tie-in carpet by applying Fast Tac then five finishing screws across the back top.

Locate Pattern C and cut two seat supports out of 3/4" plywood. Carpet the seat supports using Fast Tac and attach them to the seat bottom. Set the seat bottom in place and as far back as is possible. Drill several 13/64" holes into the glass behind the seat and into the boot bottom. Secure with rivets.

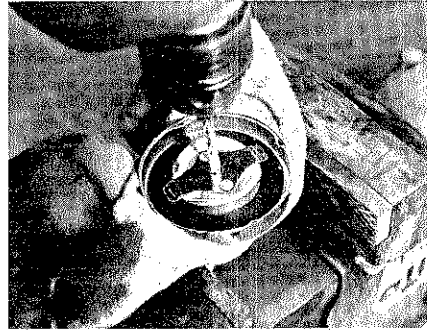
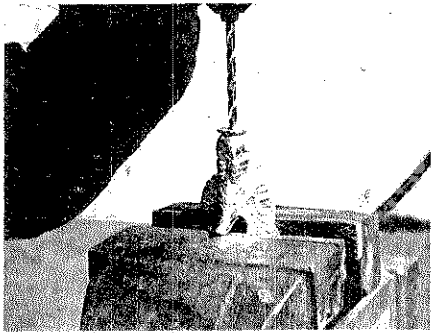
(Note: If seat belts are to be installed, now is the time.) The outside belts are easy, drill as low as is convenient near the side panel through the boot bottom and into the wheel well. Secure the belt with a large washer on the wheel side of the well. The center belts may be secured behind the seat through the exposed surface of the glass seat bottom. Secure, pushing the bolt in from the top with a large washer below.

Set the back in place and with some help, determine the most comfortable seat back position. Once the position has been selected, fasten an "L" bracket 2" down from the top of the seat, into the seat and the side panels.

(Note: If less room is desired, the seat can be moved three inches forward and resecured.)

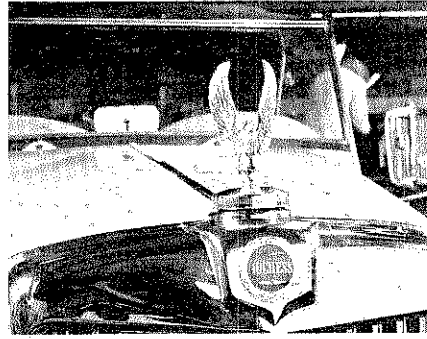
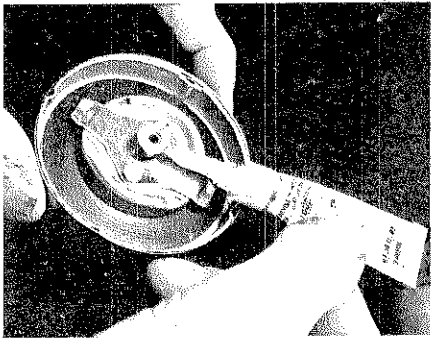


Assembly



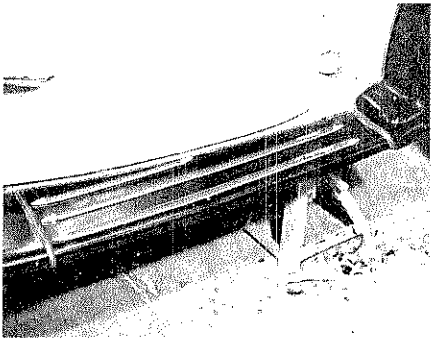
65. PREPARE GAS CAP. 25 min.

If you desire an eagle gas cap, cut the threaded end off the eagle. Carefully drill a $13/64$ " hole, precisely into the center of the base, approximately $3/4$ " deep.



Drill a $13/64$ " hole through the gas cap being careful to center the exit of the bit through the cap top.

Super Glue the base of the eagle and secure with either a $3/16$ " x 1" rivet or a #8 x $3/4$ " screw. Do not secure the eagle so tight that the top dents in. (You may spray black paint on the eagle and quickly wipe it off. The paint cannot be removed from creases in the eagle, leaving an antiqued look.)



66. INSTALL RUNNING BOARD TRIM AND DOOR WEATHER STRIP. 40 min.

Cut four strips of vinyl trim 23" long and two strips 11" long.

Measure in 1" from the outer edge of the running board, center between the rubber running board gaskets, and install one 23" trim strip. Two inches in from the first strip, install another strip. Two inches from the second strip and equally spaced forward, install the final 11" strip.

Install six tips, one on each end of the strips.

Repeat the process for the opposite side.



Install $1/8$ " x $3/8$ " weather strip around the perimeter of the front door edge.

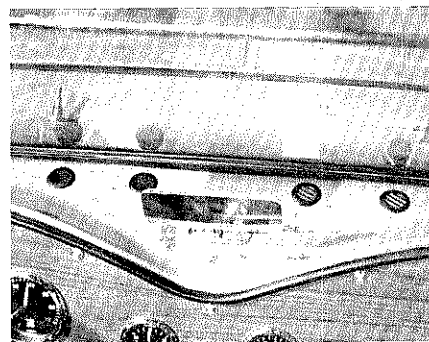
Assembly



67. INSTALL FINAL WINDSHIELD BOLT AND DASH MIRROR. 15 min.

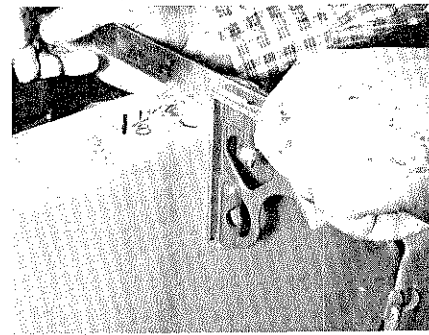
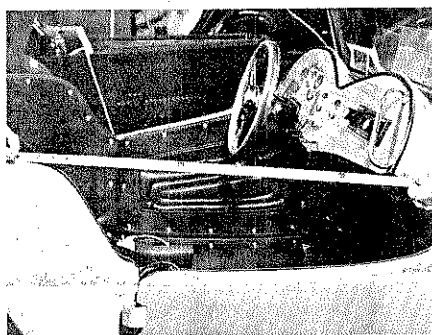
Set the windshield in place, push down, and secure through the top hole with a $5/16'' \times 1\frac{3}{4}''$ flat head slot drive bolt, flat washer, lock washer, and nut

Locate the center of the rear tie-in. Measure diagonally an equal distance of $59'' \pm \frac{1}{4}''$ from the forward corners of the windshield frame to the center back of the rear tie-in.



Drill through the bottom hole of the windshield frame and secure the windshield frame bottom to the dash cowl with the mounting bolts. Torque each mounting bolt

Install the mirror with the furnished mounting hardware through your already drilled dash holes.

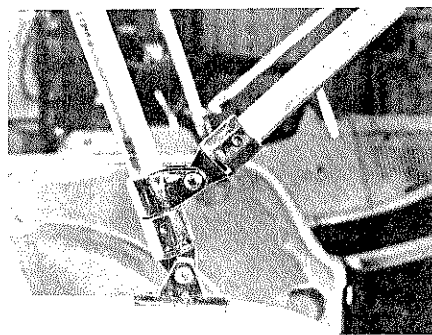


68. INSTALL THE TOP. 4 hrs.

Locate the center point of the front mounting bolt of the bow hinge, $28\frac{5}{8}''$ back from the rear edge of the dash cowl, and $1\frac{1}{8}''$ in from the side panel surface.

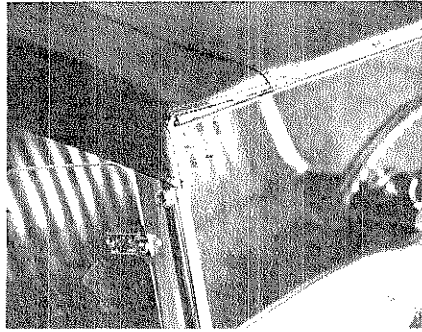
Drill a $13/64''$ hole, set the hinge in place parallel with the side panel, and drill the rear hinge hole.

Use $10-32 \times 1''$ oval headed Phillips bolts, flat washer, lockite, and secure with a nut. Install a bow cup in each hinge.

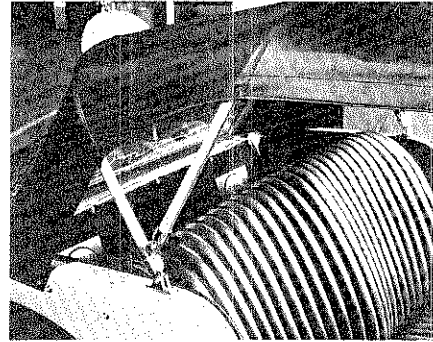
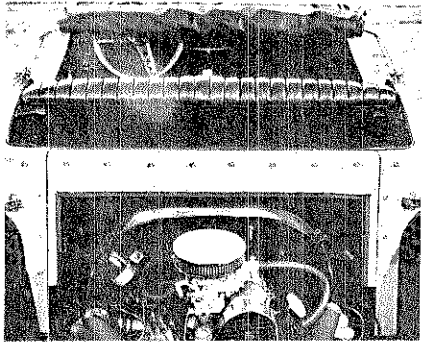


Install the short bow into the forward location on the top. Install the long bow into the rear location. Install bow adjustment straps between bows as you are inserting bows into the top. Install a jaw slide into each side of the rear bow. Insert the forward bow ends into the hinge cup on the jaw slide.

Assembly



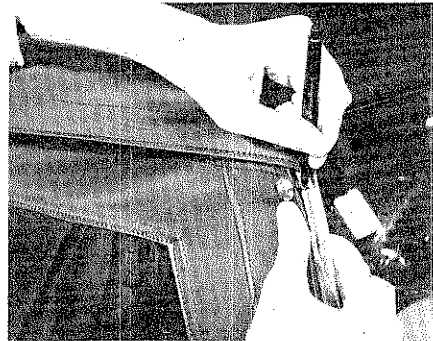
Install the rear bow ends into the hinge cup on the side panel tops. Tighten hinge cup set screws. Insert a 1/16" x 3/4" x 1 1/2" metal tab into the left and right sides of the front of the top. Install a 1/16" x 3/4" x 39 1/4" metal bar into the front edge of the top. Insert and center the leading edge of the top into the slot in the front edge of the windshield frame. Open the bows until the bows follow the top seam lines. Adjust bow adjustment straps to hold bows in position.



Use a felt marker and mark a line across the back of the rear tie-in, 5/8" down from the tie-in top edge.

Mark the center point of this line. Measure 2" either side of the center mark.

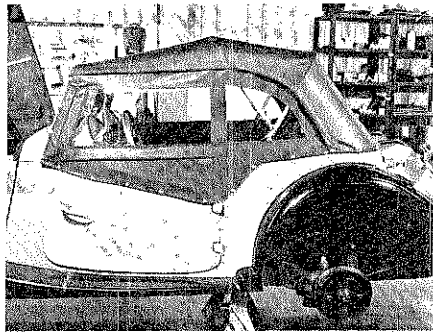
Stretch the top down to the line. (Note: You will want the top relatively tight. By slightly releasing tension on the bow adjustment strap, you can install the center snaps with less stress.)



With the top pulled into position, locate the centers for the middle snaps. Drill a 7/64" hole as close to your line as is appropriate and screw in a male snap on both sides. Snap the top to the body. Work from the center towards each side, keeping tension toward the outside. Keep the snaps in line and as close to the marked line as possible. Install ten snaps on the rear. Tighten the bow adjustment strap pulling the bows into correct position.

Pull the zipper edge of the top snug and into position. Drill, install male snap end, and snap top in position.

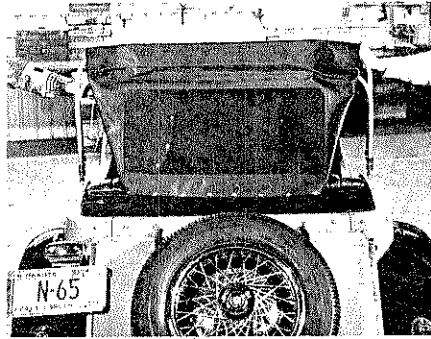
Pull the corner fabric tight until the top is smooth. Install the corner snaps slightly tighter than the tie-in snaps, and secure the top.



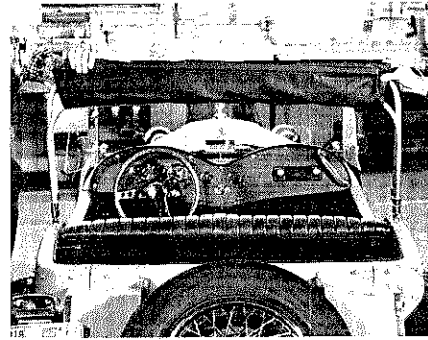
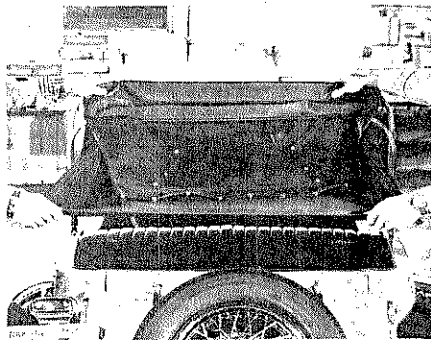
Unsnap the zipper snap, zip the side curtain to the top, snap the top. Pull the side curtain forward to the windshield. Locate the position of the windshield frame snap so that excess tension is not caused to the zipper, especially at the windshield frame. Work down the frame drilling 1/8" holes, tap each hole with a full-sized screw, then use shortened snaps and secure to the windshield. The location of the frame snaps should be positioned far enough forward to keep the curtain smooth. In colder climates, do not make the side curtains too tight or you will have difficulty snapping the curtains when fabric shrinks from the cold.

Pull the side curtain down slightly, locate the body/curtain snap locations, install and snap the side curtain into position.

Assembly



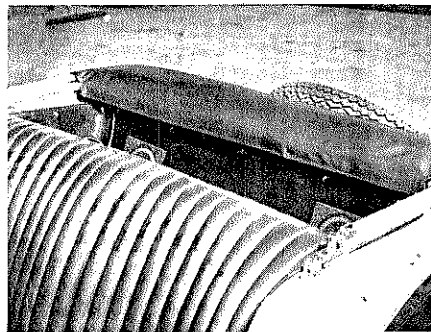
To properly lay the top down, unsnap the rear top snaps. Slide the bows together, then roll the outside edge of the top under the remaining fabric, so that the top is no wider than the inside dimension of the bows.



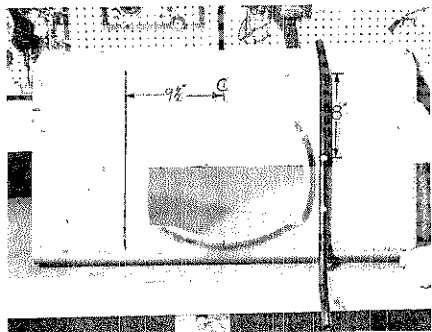
Pull the fabric from the front, through the bows, and wrap tightly around the bows.

If you ordered the top cover, slip the cover over the top and close the forward velcro seam.

owner's photo



Assembly

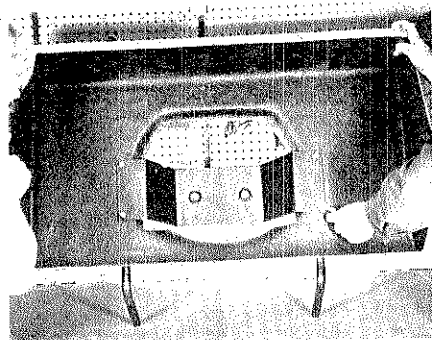


69. PREPARE THE ENGINE COVER. 1 hr. 20 min.

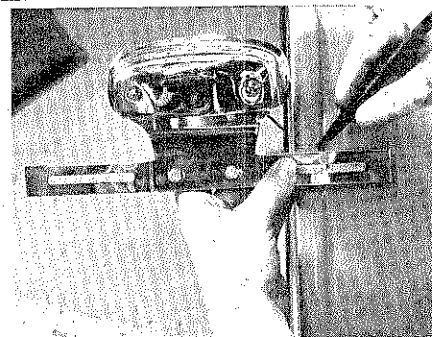
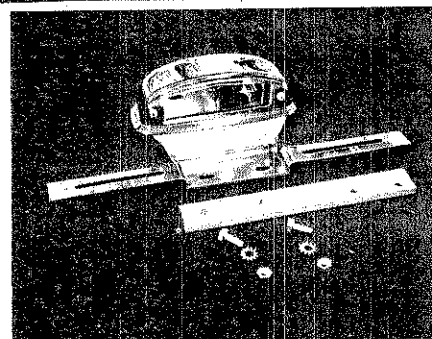
Locate the center of the engine cover, both top and bottom. Measure $9\frac{1}{2}$ " from the center, both left and right, and mark to vertical lines down the rear face of the engine cover.

Place the "Z" bar on the engine cover so that the top hole lines up approximately 8" below the top back edge. (Note: The "Z" bar will not work if placed upside down.)

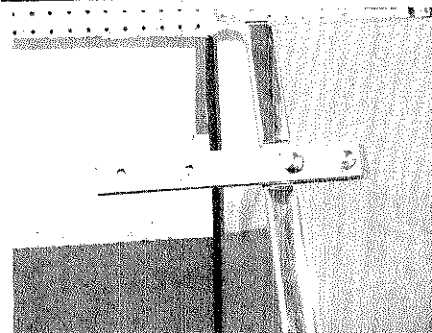
While holding the "Z" bar precisely vertical over your marked line, mark the location of two holes, each side. Drill four $\frac{1}{4}$ " holes.



From the backside of the engine cover, place the tire mounting frame through the access hole. Insert $\frac{1}{4}$ " x $1\frac{1}{2}$ " carriage bolts through the "Z" bars and through the tire mounting frame. Secure each bolt with lock washer and nut.

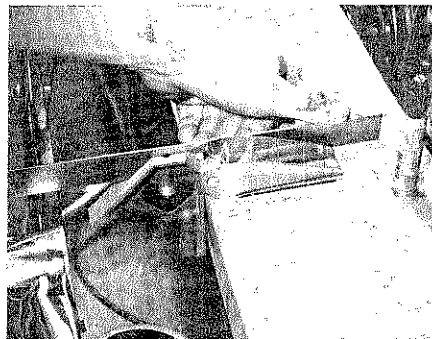
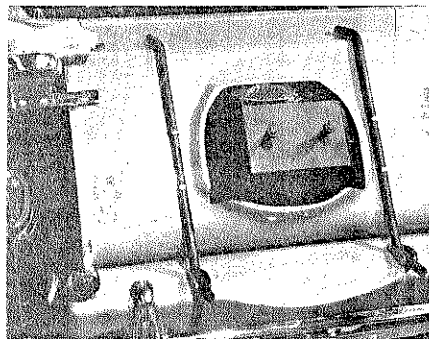


Locate the license light and mounting hardware. Drill two $\frac{1}{4}$ " holes through the bar, spaced properly to mount the light to the bar. Connect the light to the bar and set the bar into position. The right side of the light should line up with the left side of the engine cover. Mark around the bar on the engine cover. Install the chrome trim tape to each side of the engine cover.



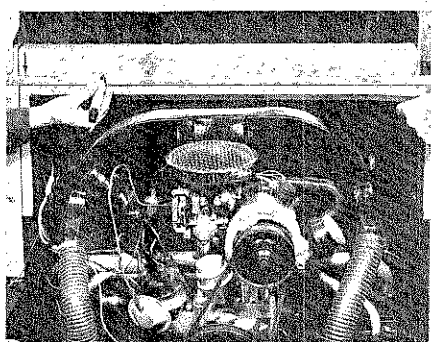
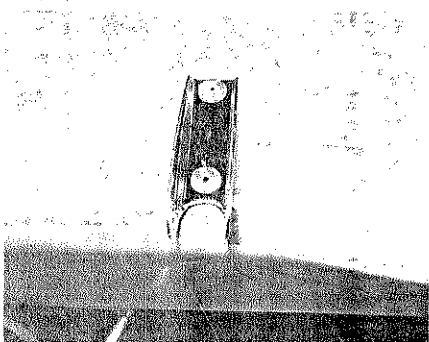
Remove the light from the bar and set the bar back into position. Locate two appropriate mounting holes on the bar, drill through the bar and into the engine cover, securely mount the bar to the engine cover with $\frac{1}{4}$ " x $\frac{3}{4}$ " carriage bolts, flat washer, locktite, and nut.

Assembly



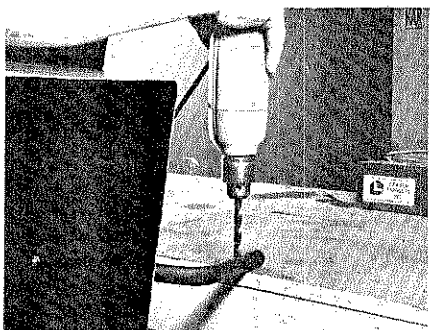
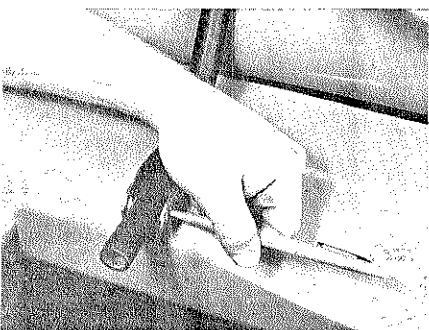
70. INSTALL THE ENGINE COVER ON THE CHASSIS. 1 hr. 50 min.

Set the assembled engine cover on the rear frame cover and center between the fenders. Set the engine cover hinges in place. Slide the hinges forward until the hinge hole centers over the vertical surface of the fiberglass. Outline the properly positioned hinge with a felt tip marker. Remove the engine cover and set the hinges in position, checking the hinge pin location.



Drill two $13/64$ " holes per the hinge requirements and rivet with a $3/16$ " steel rivet

Set the engine cover in position. Carefully check to level the top surface with the rear tie-in. Mark the rear tie-ins, left side, at the top of the engine cover. Mark the line across the tie-in at this dimension to act as a reference line to insure the engine cover is level. (Note: Place a "Z" bar in a vise and straighten slightly to raise a side.)

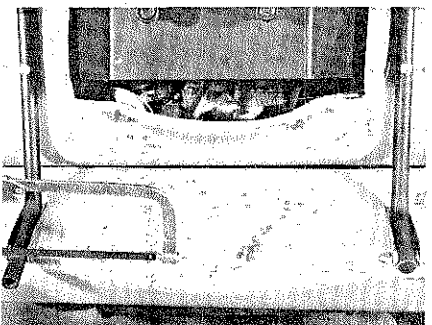
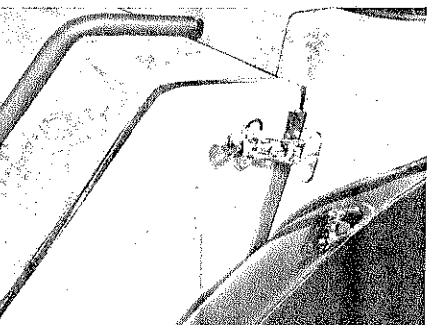


Install rubber extrusion to the three raw edges of the engine cover front. Cut the extrusion at 45° for each corner.

Apply adhesive to the extrusion to secure. Set the engine cover firmly in position and mark the pin position in the "Z" bar.

Remove the engine cover and drill a $3/8$ " hole precisely 90° to the "Z" bar each side.

Set the engine cover in position and insert a $3/8$ " x 2" stud through each hinge pin location with a large flat washer on each side of the "Z" bar inside the hinge sides. On each end of the hinge pin install a large flat washer and secure with an acorn nut and locktite.



Locate the over center latch sets for the engine cover. Set them in place 2" below the engine cover top.

Properly located, the base part of the latch should be $1/16$ " away from the rubber extrusion. Mark the center of the mounting holes. Drill two $13/64$ " holes into the rear side panel. Secure the latch base with two 10-32 x 1" oval headed Phillips bolts, flat washers, locktite, and nuts.

Clasp the latch, press the engine cover securely against the rear tie-in, align the latch set, and mark the bolt location. Drill the $13/64$ " holes $1/16$ " behind your center to insure a tight, over center clasp.

Cut the excess "Z" bar behind frame hinge.