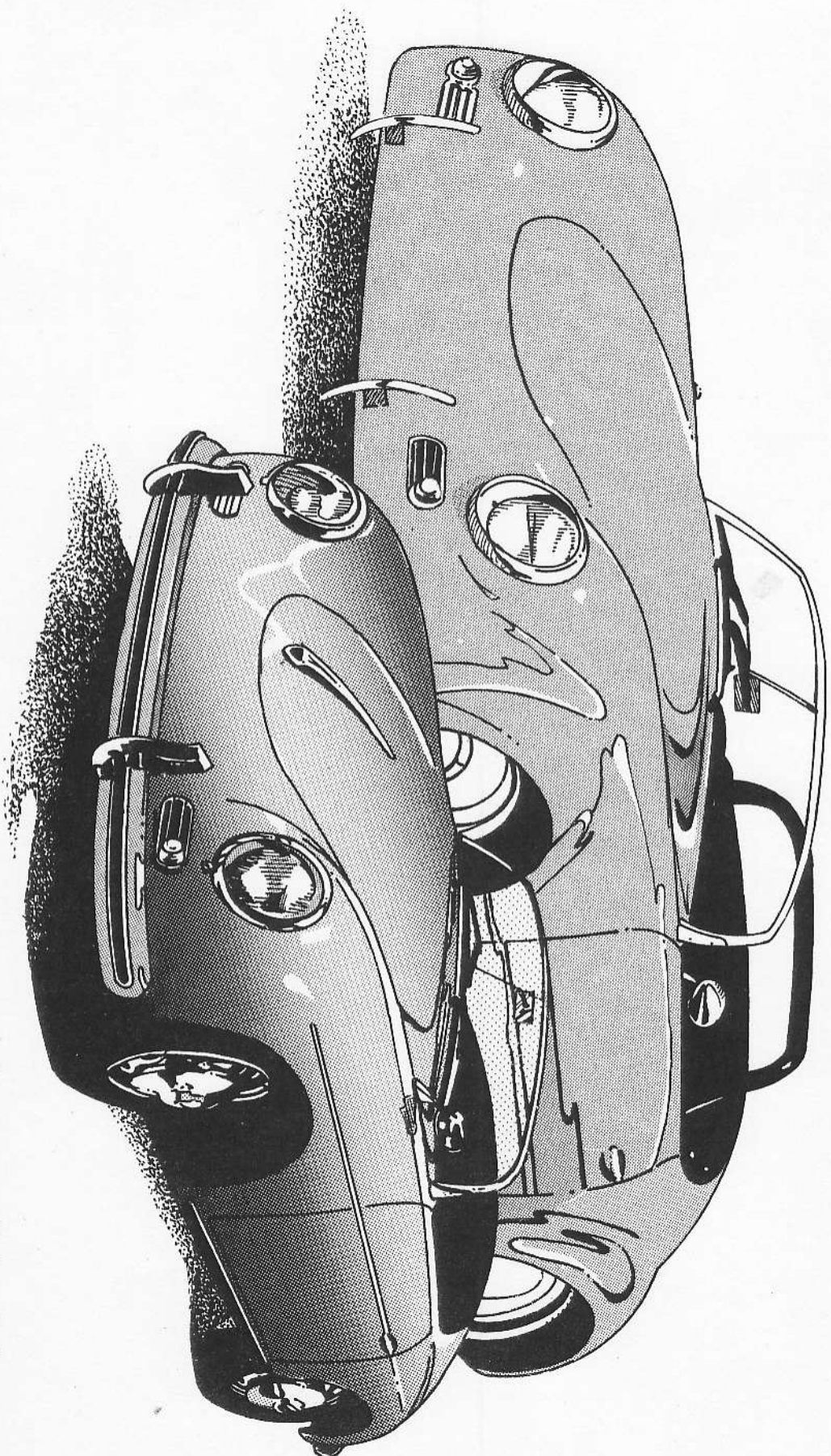


Speedster™ AND Speedster™ CALIFORNIAN



Assembly Manual

09-0016-00



FIBERFAB INTERNATIONAL, INC.
6807 Wayzata Blvd. • Minneapolis, MN 55426

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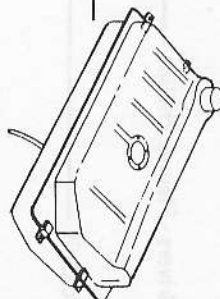
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SECTION I INTRODUCTION - PARTS, TOOLS AND SPECIFICATIONS

PARTS TO BE PURCHASED (THESE PARTS ARE ALSO AVAILABLE FROM OUR PARTS DEPT.)
IMPORTANT: Order these items early due to possible delays with your local dealer.

FROM LOCAL VW DEALER

Gas Tank 1961-67 VW Beetle
Part No. 113201075AB (only needed if using
Super Beetle. Super Beetle tank cannot be used)
* Not available from our Parts Dept.



MISCELLANEOUS ITEMS

Heater Hose (2 Req'd.)
Part No. 813-1313

Napa Balkamp or equivalent universal
emission control duct 2" x 36"



Horn Relay

Part No. HB-53

Motorcraft or equivalent



12 Volt Flasher
2 Prong



Dimmer Switch (Floor Mounted, 12V)



FOR SUPER BEETLE CONVERSION PARTS SEE APPENDIX A

Hammer _____

Hack Saw & Fine Tooth Blades _____

Pliers _____

Wire Brush _____

Cold Chisel — 

Tape Measure —  Pop Rivet Gun 

Metric and Standard Socket Set, 

Metric Wrench Set _____ 

Rotary Wire brush (for a drill) _____ 



Caulking Gun _____

Tube of Caulking - Silicone Sealer _____

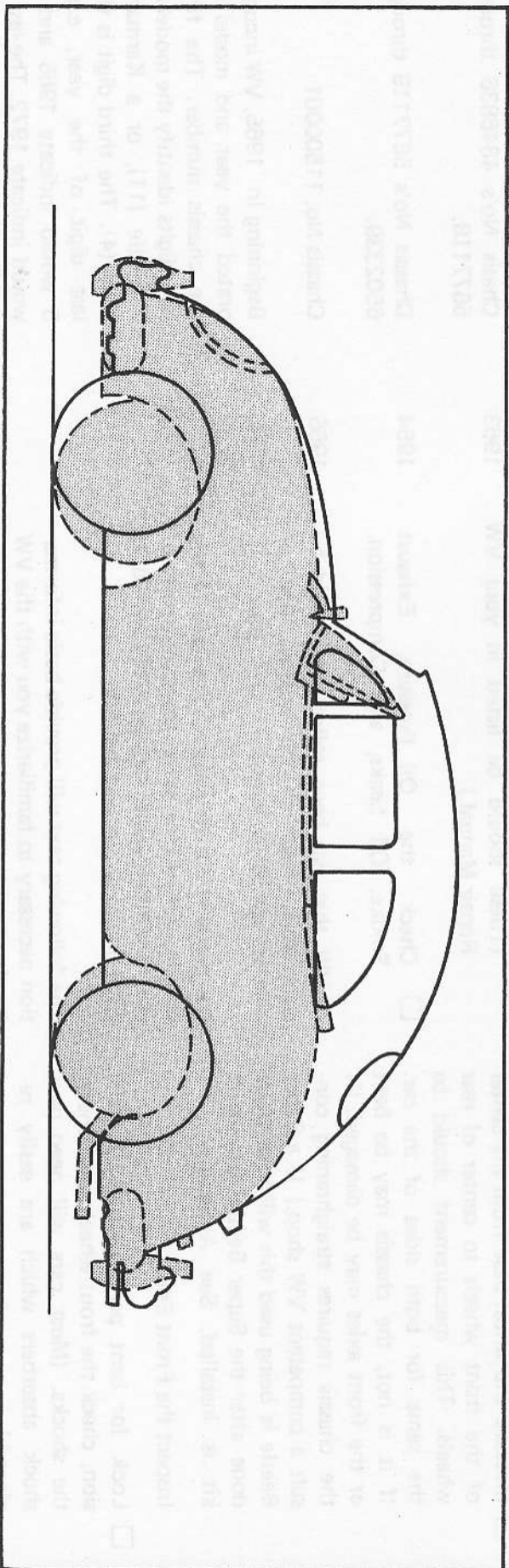
Gallon of Polyester fiberglass resin and

1 quart of Acetone or any safe re

solvent for brush cleaning

2 Saw Horses 50" wide, 30" high

10-24 Tar



CONSIDERATIONS WHEN BUYING A VOLKSWAGEN

YEAR AND TYPE

This Replica assembly can be built utilizing any VW Beetle. (It can be built using a VW Super Beetle. This requires the use of our Super Beetle Conversion Kit and the purchase of additional parts. See Appendix.)

We recommend using 1969 or newer Beetles because of improved horse power and improved rear suspension.

WHERE TO FIND A VW

Local Newspaper Classified Advertisements
Neighborhood Flyers/Newspapers

SPEEDSTER SUPERIMPOSED OVER BEETLE

Bulletin Boards in Gas Stations, Supermarkets, Apartment complexes, Schools and Colleges.

Places of Work

Tell your friends and fellow workers about your project - they may help.

VW repair garages. (Some may sell completely reconditioned chassis and engines.)

VW Dealerships

Automobile adjusters or insurance agents

Automobile salvage yards

Used Car Dealerships

WHAT TO LOOK FOR BEFORE BUYING YOUR VW

Before you begin, purchase a VW repair manual such as - "VW Official Service Manual" published by Robert Bentley Inc. This will help you identify the parts which you will want to check. Remember that Beetles with damaged bodies and interiors can be used to assemble your kit. As a matter of fact a damaged car is ideal if the floor pan is not bent.

☐ Inspect the Pan

☐ Check for severe rust or damages caused by collision or battery acid. (Small holes in the floor pan can be patched using fiberglass.)

☐ Check the Wheel Base

- ☐ Measure the wheel base from the center of the front wheels to center of rear wheels. This measurement should be the same for both sides of the car. If it is not, the chassis may be bent or the front axles may be damaged. (If the chassis requires straightening consult a competent VW shop.) If a Super Beetle is being used this will have to be done after the Super Beetle conversion kit is installed. See Appendix.
- Inspect the Front End.
- ☐ Look for bent parts caused by collision, check the front wheels, also check the shocks. (Most cars will need new shock absorbers which are easily replaced.)
- ☐ Check the steering and the brakes.
- ☐ Check for excessive play in steering. (Excessive play can be corrected by adjustment.)
- ☐ Leaky wheel cylinders and master cylinders. (Wheel cylinders and the Master cylinder are easily replaced after the VW body is removed from the chassis.)
- ☐ Check the Transaxle:
- ☐ The gear box differential should not be noisy - check for smooth, quiet, and positive shifting.
- ☐ Check the Engine:
- ☐ Use the usual troubleshooting methods.

(These should be listed in your VW Repair Manual.)

- ☐ Check the Oil Pressure, Exhaust Smoke, Oil Leaks, and Compression.

A VW that has been rolled-over would be acceptable, assuming no engine, pan or axle damage has occurred.

We prefer 1969 or newer VW's due to the double jointed rear axles. However, many of our customers build cars on VW's as old as 1961 and they turn out just fine.

The following text will provide basic information necessary to familiarize you with the VW Beetle chassis.

When shopping for a Beetle, the year the car was manufactured may be established by obtaining the chassis and engine number.

To acquaint you with the manufacturing changes made through the years to the VW Beetle, the following brief history is provided:

1960 Sedans are 36 HP and employ (and earlier) 4 speed non-synchro gear box.

1961 Chassis No's 3192507 through 4040995. Transmission was improved (stronger synchromesh) anti-sway bars, a king pin on the front suspension were added in addition to an increase from 36 HP to 40 HP.

1962 Chassis No's 4010995 through 4846835.

1963 Chasis No's 4846836 through 5677118.

1964 Chassis No's 5677119 through 6502339.

1965 Chassis No. 11500001

NOTE:

Beginning in 1965, VW incorporated the year and model in the chassis number. The first two digits identify the model as a Beetle (11), or a Karmann Ghia (4). The third digit is the last digit of the year, e.g.: 5 would indicate 1965 and 2 would indicate 1972. The last 6 to 7 digits are the chassis serial number.

1966 Chassis No. 11600001 through 1161021298, HP increased from 40 to 50 and changed to a ball joint on the front suspension.

1967 Chassis No. 117000001 through 1177844892 12 volt system. Increased HP from 50 to 53. Dual brake system.

1968 Chassis No. 118000001 through 1811016098. Automatic stick shift, introduced raised bumper height, modified front and rear shock arrangement.

1969 Chassis No. 119000001 through 1191093704. Double jointed rear axles introduced.

1970	Chassis No. 11000001 through 1103096945. HP increased from 53 to 57.	1971	Chassis No. 1312000001
1971	Chassis No. 1112000001. HP increased from 57 to 60. Super Beetle introduced.	1973	Chassis No. 1332000001
1972	Chassis No. 1122000001	1974	Chassis No. 1342000001
1973	Chassis No. 1132000001	1975	Chassis No. 1352000001
1974	Chassis No. 1142000001	1976	None
1975	Chassis No. 1152000001		
1976	Chassis No. 1162000001		
1977	Chassis No. 1172000001		
1978	None		

The following Super Beetle chassis numbers are provided for the five years they were in production:

In summary, the 1967, 1968, 1969 sedans are 1500 cc, 53 HP, have ball-joint front ends and a 12 volt system (earlier ones are 6 volt). 1967 was the last year to have a wide 5 bolt pattern on the wheels. In 1968 they were changed to the 4 bolt pattern.

Starting with the 1968 automatic-stick and continuing through the 1969 and newer sedans, a redesigned trans-axle with a double U-joint type independent rear suspension was introduced along with a raised bumper height. The 1970 engines are 1600cc (rated

57 HP), with single-port heads. The 1971 through 1975 engines are 1600cc (rated 60 HP), with dual-port heads. Engines 1973 and later have decreased HP ratings due to emission equipment.

When looking for a chassis, remember, what you need consists of the following 4 major units; floorpan, front suspension with steering components, trans-axle complete with rear suspension and engine. (Refer to Fig. 1) **REMEMBER, AS LONG AS THE FOUR MAJOR ITEMS ARE INTACT, THE WRECK IS USABLE. DO NOT LET A RUSTED OR MANGLED BODY FOOL YOU.**

BEFORE STARTING

NOTE: This assembly manual deals with all phases of construction of your Replica. Some of the operations covered deal with optional items. Consult your brochure for details on standard components.

Be sure to read this manual all the way through before starting work.

WHEELS AND TIRES

The standard assembly is designed to use standard VW wheels with 165 SR15 tires. Special chrome plated wheels and hub caps are available from our factory. The custom assembly is designed to use a 7" wide 15" wheel with 205/50 VR 15 tires in front and 225/50 VR 15 in the rear. Special wheels are available from our factory. With the decreased weight of the fiberglass body we have found that radial tires give the car a distinct handling advantage as well as decreased rolling resistance. Other tires can be used but problems may develop regarding clearance with the fenders. In addition a standard VW tire will not fit in the luggage compartment. The best alternative here is to obtain a late model space saver spare tire T125/70 D 15 and mount it on a 4 1/2" VW wheel. Original VW tires should be left on the car until the body is installed on the pan and all fiberglassing has been done. New tires and wheels can then be installed.

WORKING SPACE

You need a working space approximately the size of a two-car garage. The assembled chassis measures 150 x 60 inches wide. The fiberglass body occupies approximately the same space. During initial construction you will need room for both the chassis and the body until both are finished. Once the fiberglass body is mated to the chassis, only half the original space is required.

Be sure to allow sufficient space for walking, storage of parts, and access to the car.

UNPACKING

Your Replica assembly is shipped in one or more crates and number of cardboard cartons. The total number of items in the shipment is indicated on the shipping documents. Since you may have ordered options, the number of items in your shipment may differ from other customers. Be sure to sign the bill of lading noting any observable damage.

Carefully check each container for evidence of damage to container or contents. If you find damage, immediately call the shipper's local office and follow shipper's instructions for submitting a claim.

HARDWARE AND FASTENERS

When disassembling your VW be sure to save all hardware. Some of this hardware will be reused when assembling the kit. Take special care to keep nuts, bolts and washers in the proper order.

WARNING

NOTE: Check factory service manual for torque specifications when reassembling removed hardware.

Structural bolts and nuts should only be replaced with equivalent parts. Replacement parts must be of equal or better strength as indicated by standard bolt and nut markings (radial lines on bolt head, raised dots on nuts.)

WIRING

There are a number of choices available to you for wiring your assembly. First you can purchase our optional wiring harness which is specifically designed to accommodate our custom gauges as well as all other accessories. This is a real timesaver. Another method is to fabricate or modify your own harness based on VW wiring diagrams.

WELDING

There is some welding required in building your assembly. We suggest that you do all the welding at one time. The work can usually be accomplished in 1/2 day and most towns have mobile welders that will come to your garage and do the welding. Unless you are an experienced welder we suggest you have a professional do the work. In the long run the cost will be less. The following can be welded:

- The pan cut and shortened
- Front end lowered
- Cables shortened
- Shift tube shortened

BEFORE STARTING

NOTE: This assembly manual deals with all phases of construction of your Replica. Some of the operations covered deal with optional items. Consult your brochure for details on standard components.

Be sure to read this manual all the way through before starting work.

- ☐ Have all the tools you need before you start.
- ☐ Be sure your work space is large enough.
- ☐ Save all parts and hardware, that you remove. If you try to buy all the pieces separately, they will cost a lot more.
- ☐ Have masking tape ready to label parts, attaching hardware, wires, fuel lines, clips, etc. It would also be a good idea to have a variety of small containers to hold small loose items such as nuts, bolts, and washers.
- ☐ Make sketches or take Polaroid photos of any assemblies that seem complicated. This can help you later when you are assembling the kit.
- ☐ Keep records and receipts. You will need these when you register your completed car. Contact your State Department of Motor Vehicles and find out what their requirements are. Obtain a Bill of Sale and title when you purchase your component car. We supply a manufacturer's Statement of Origin (MSO) with each assembly kit.

SAFETY

USE COMMON SENSE. Develop safe work habits. Take every possible precaution. Follow these basic Do's and Don'ts.

- | | |
|---|--|
| <p>DO'S</p> <ul style="list-style-type: none"> ☐ Do use safety stands to support vehicles. Jacks are for lifting only. ☐ Do keep a fire extinguisher in your work area. ☐ Do keep a first aid kit in your work area. ☐ Do disconnect the battery (negative) cable whenever working on electrical system. ☐ Do disconnect and remove the battery from the component car before starting disassembly. ☐ Do use the proper tools. ☐ Do clean and maintain your tools. Clean your work area often. ☐ Do use approved containers for gasoline and flammable liquids. Put away and out of reach of children when not in use. ☐ Do wear safety glasses or goggles when grinding, drilling, sawing, painting, glassing, or when handling the battery. ☐ Do read all instructions. ☐ Do pay attention to warning labels. ☐ Do use adequate ventilation when using chemicals, spraying paint, fiberglassing. Wear a mask over mouth and nose when necessary. | <p>DON'TS</p> <ul style="list-style-type: none"> ☐ Do use electrical extension cords of the proper gauge and with proper plugs in a good condition. ☐ Do wear proper clothing and shoes. Remove ties, jewelry and other items that can get caught in moving components. ☐ Don't smoke when working around gasoline or other flammable chemicals. ☐ Don't use open flame heaters around gasoline or when using flammable chemicals. ☐ Don't smoke when working around the battery. ☐ Don't run an engine in a garage without proper ventilation. ☐ Don't attempt to service air conditioning unit without proper tools or training. ☐ Don't use air conditioning refrigerant (R-12) in the presence of an open flame. ☐ Don't leave tools where some one can trip over them. |
|---|--|

SECTION II DISASSEMBLY

REMOVING THE VW BODY

Removing the body from your VW is very easy. For this operation you will need a metric socket and wrench set.

NOTE: Save all nuts, bolts and washers removed during the body disassembly process.

Because of slight differences between VW model years, the exact location of parts to be removed may vary slightly. (Refer to Figure 1 for general orientation.)

- ☐ Open the trunk and remove the cardboard gas tank covering.
- ☐ Disconnect the wire to the fuel sender unit.

- ☐ Remove the pipe and 2 hoses that connect the fuel tank to the fitting that comes out of the frame. Save these pieces. Remove filler neck assembly from right side of body and save. (Cut the entire fuel filler pocket from the body, if necessary.)

NOTE: With a 1961 to 1967 tank, you will need to remove the breather pipe. On 1968 and newer tanks, you must remove the large clamp from the breather pipe boot, then remove the boot and pipe. This arrangement will vary from year to year.

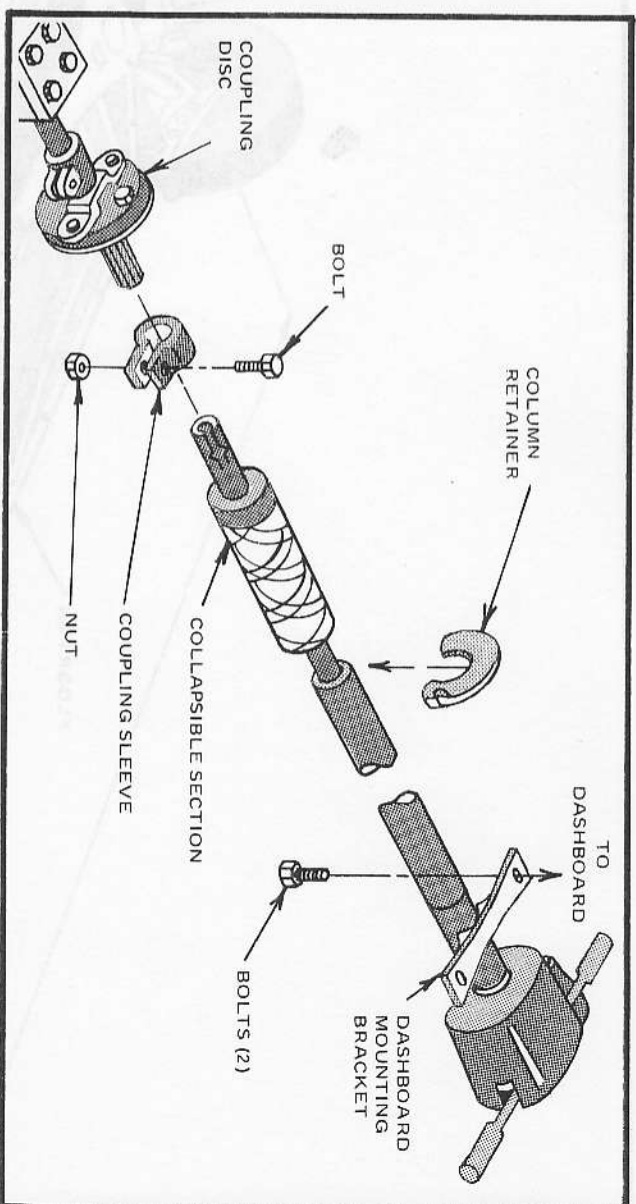


Figure 1

- ☐ Remove the 4 bolts holding down the tank and lift it out.

- ☐ Under where the fuel tank was previously, you will find 2 bolts that are located 6" from the center line. Remove them. (In a Super Beetle these 2 bolts are about 2 1/4" apart on the tunnel. Save these for use with the Super Beetle conversion unit.)

- ☐ Remove the bolt from the coupling sleeve that attaches the steering column to the coupling disc.

- ☐ Remove the two bolts holding the steering column to the underside of the dashboard. Pry off the retainer at the top of the collapsible section of the steering

column and pull the column out of the car. Save the entire steering assembly.

- ☐ Disconnect the speedometer cable and save it.

- ☐ Remove and save the brake fluid reservoir.

- ☐ Disconnect the wires going to the voltage regulator.

NOTE: The voltage regulator on later models is mounted inside the car body, behind the driver's door and under the rear seat. Be sure to save it and the wires that connect it to the generator or alternator. Earlier ones are mounted on

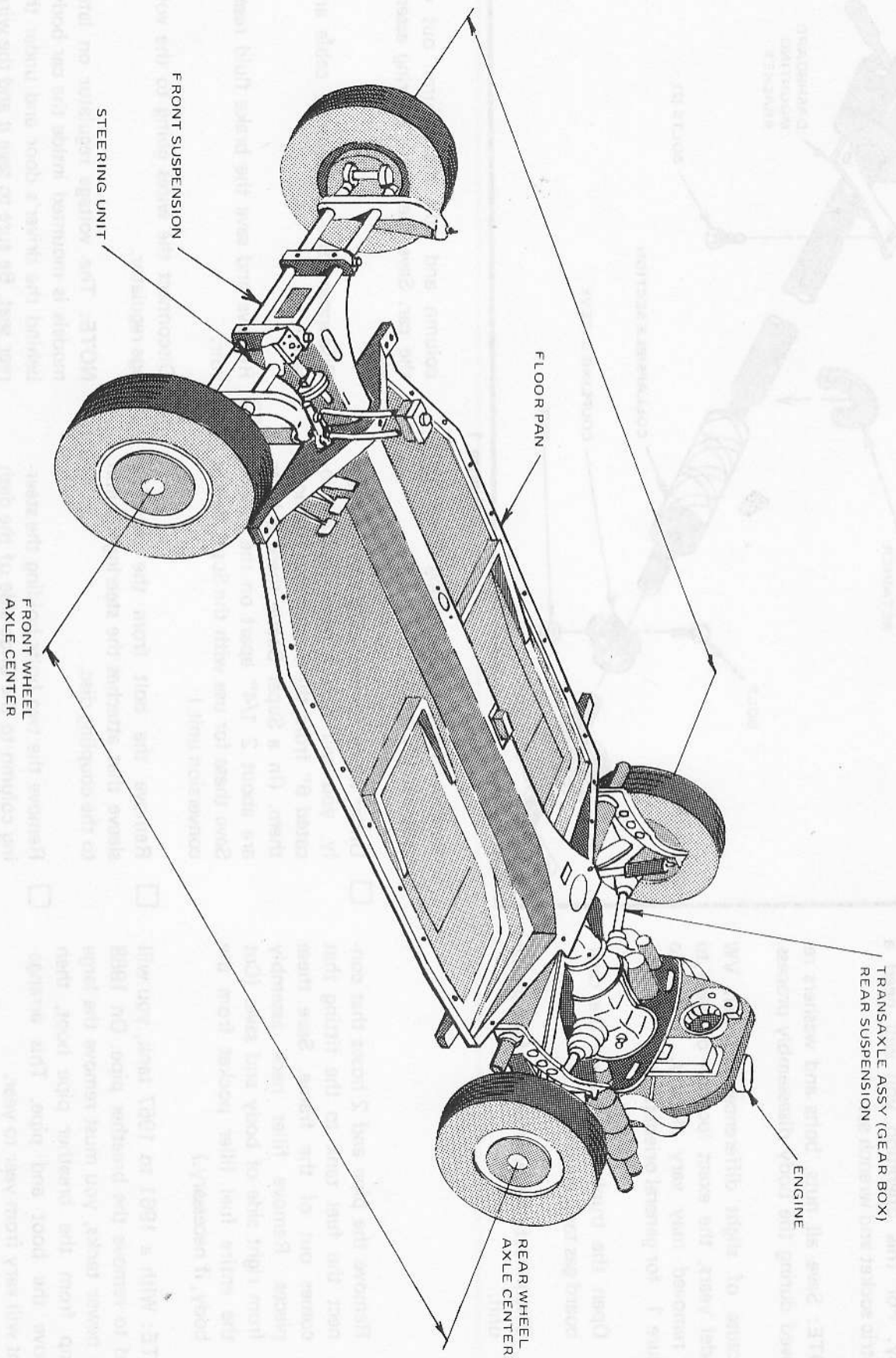


Figure 2

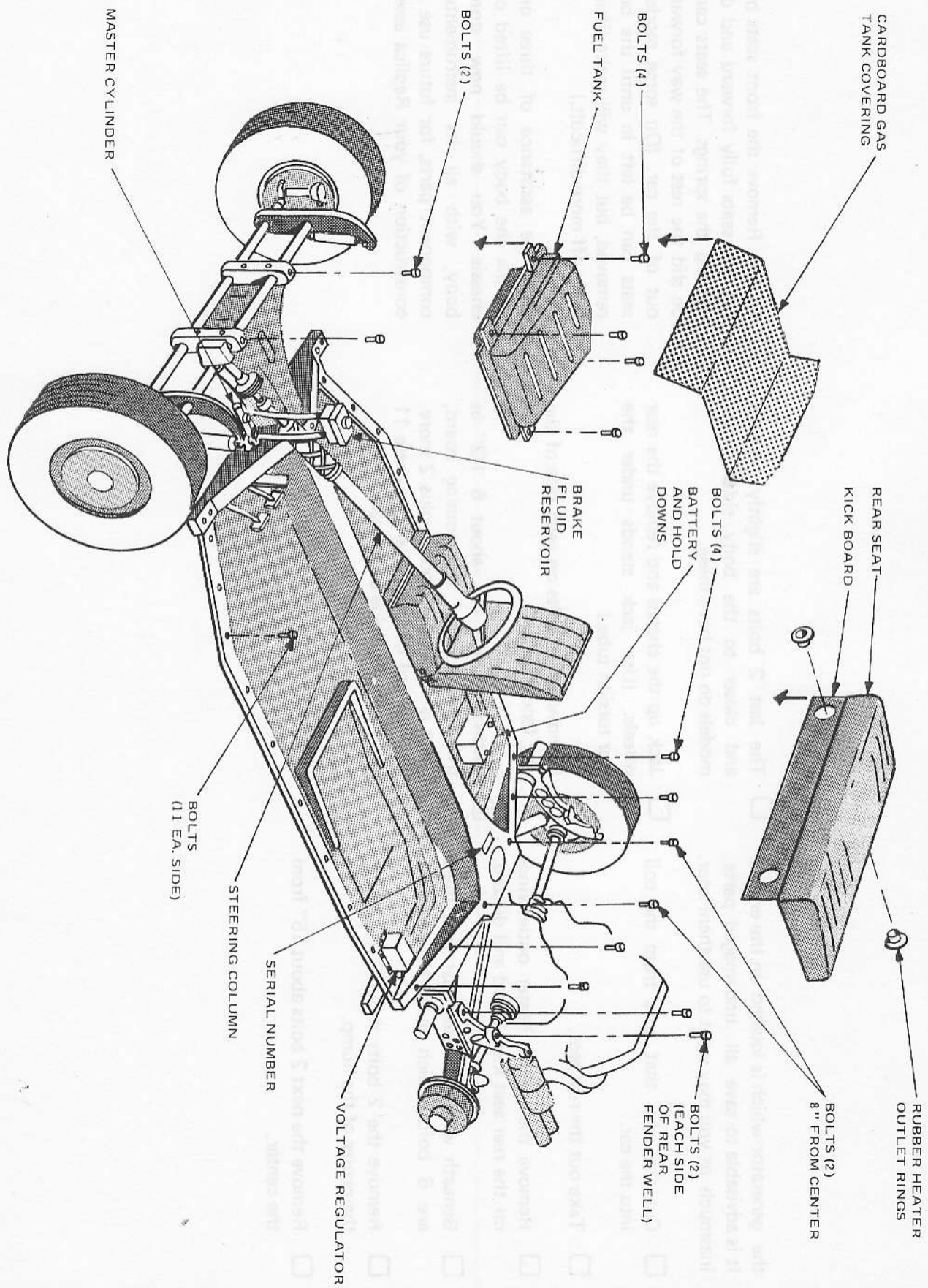


Figure 3

- the generator which is located on the engine. It is advisable to save all undamaged parts, inasmuch as you may want to use them later.
- ☐ Cut the wire that goes from the coil into the car.
 - ☐ Take out the rear seat.
 - ☐ Remove the rubber heater outlet rings on the rear seat kick board and discard.
 - ☐ Beneath where the rear seat was, there are 6 bolts which must be removed.
 - ☐ Remove the 2 bolts about 8" out from the center of the hump.
 - ☐ Remove the next 2 bolts about 15" from the center.
 - ☐ The last 2 bolts are slightly forward and closer to the body sides. Later models do not have these.
 - ☐ Jack up the chassis and remove the rear wheels. (Use jack stands under the rear torsion tube.)
 - ☐ Remove the 2 bolts on each side of the rear fender well.
 - ☐ Underneath the car, about 6 1/2" in from the edge of the running board, there is a row of 9 bolts, plus 2 more, just forward of them. Remove these 11 bolts from each side of the car.
 - ☐ **NOTE:** Remove the front seats by sliding the seats fully forward and disconnecting the springs. The seats can then be slid the rest of the way forward and out of the car. (On some models the seats can be left in until the body is removed, but they will make lifting the body off more difficult.)
 - ☐ With the assistance of three or four people the body can be lifted off the chassis. You should now store the body, with all its instruments and component parts, for future use in the construction of your Replica assembly.

PREPARATION OF CHASSIS

- ☐ Remove all unwanted material from the floor, such as tar and insulation.
- ☐ If the seats have not already been removed, do it now.
- ☐ Using a hand chisel, remove the seat tracks, battery hold down points, jacking points and guide tubes (if any) from the heater cable on the pan. These cable guide tubes control only the original VW heater/defroster valve flap which was removed with the body. The main heater on/off control cable (the lever on right side of the emergency brake) is attached to the heater boxes on the engine, and is left intact. The pan may suffer a few holes which can be patched with fiberglass or equivalent, at a later time.

REMOVAL OF THE CLUTCH, BRAKE, AND GAS PEDAL ASSEMBLY

(Refer to Figure 4)

This assembly is secured to the left side of the tunnel wall.

- ☐ Disconnect the fuel and clutch cables at the motor end.
- ☐ Take out the 2 mounting bolts and the clutch, brake and gas pedal assembly will come out as one complete unit. (See Figure 4A)
- ☐ Remove the pedal stop and save it for future use.

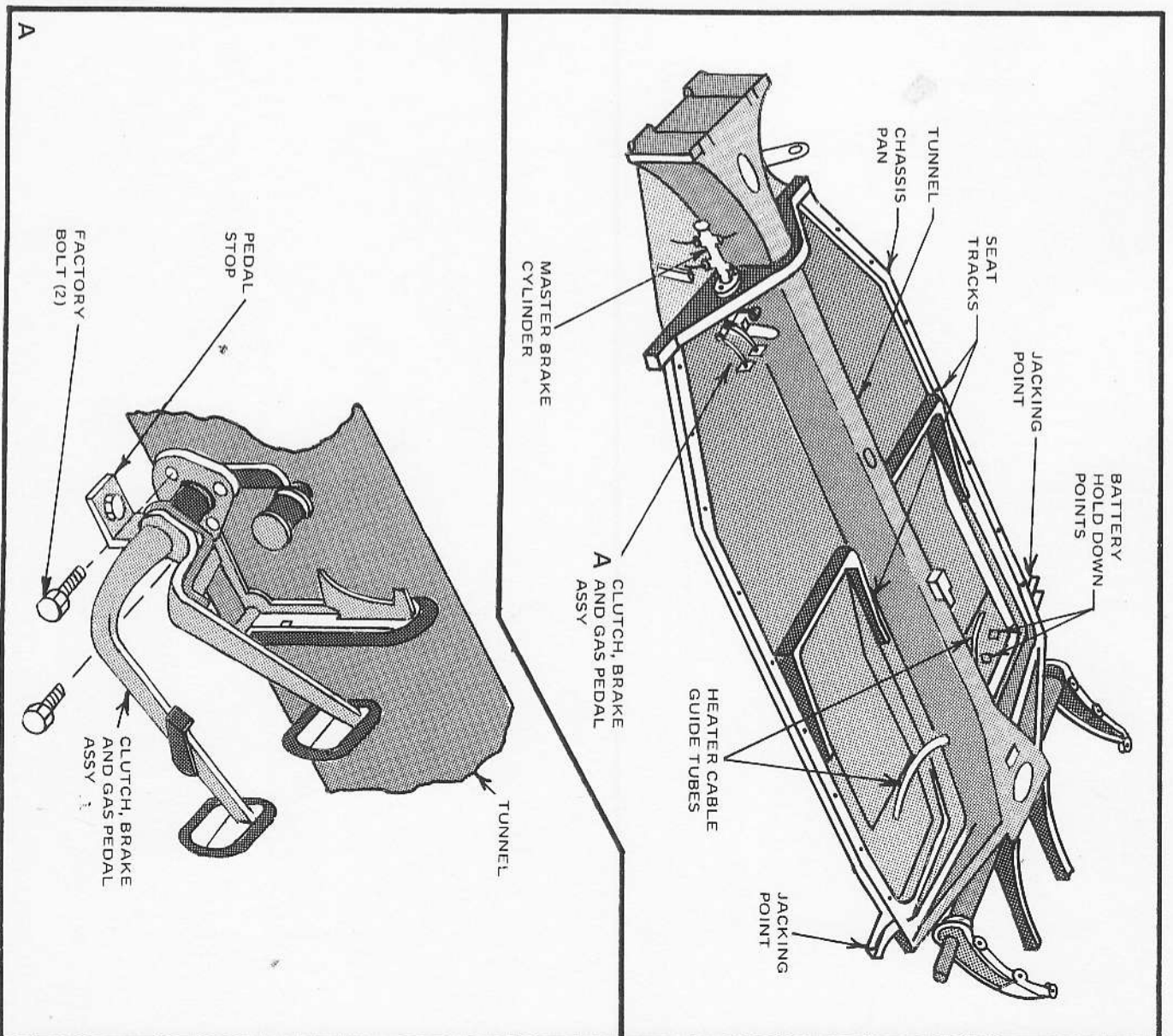


Figure 4

SECTION III PAN SHORTENING

VW PAN SHORTENING

In order to accurately shorten the VW chassis two fixtures should be constructed as follows:

- ☐ Using a VW service manual for your year car, remove engine and transmission from chassis.
- ☐ NOTE: It is necessary to shorten the VW pan 11.81 inches. To do this a 10" section is removed from the pan following the instructions in this section. The pan is then pulled together with an overlap of 1.81 inches.
- ☐ Obtain 2 lengths of 2 x 4, 60" long. Along the center of the 2 x 4, drill a 1/2" hole in one end and a 5/16" hole in the other end. The hole should be 3/4" from each end. This will give you 58 1/2" between holes. This dimension is critical.
- ☐ At engine side cut ends off heater cables. Disconnect at heater control (right side) and pull out from housings. Blow out gas line with compressed air to prevent fires.
- ☐ Insert a 1/2 x 2 1/4" bolt in one end and a 5/16 x 2 1/4" bolt in the other. Secure with a nut. Set aside until needed.
- ☐ At rear corners just in front of the rear body, mount hole, measure forward 2 1/2" and mark. Measure forward an additional 10", and mark. Connect all marked points with a grease pencil. Lines should coincide with diagram.
- ☐ Remove pedal assembly from tunnel. At engine, cut ends off clutch and accelerator cables and pull out from pedal side. Remove main brake line.
- ☐ Using a cutting torch, cut through bottom of pan and tunnel. Do not cut all the way to the outside edges of the pan. Be careful when cutting into tunnel, so as not to cut into any cable housings.
- ☐ At emergency brake handle, cut ends off emergency brake cable and pull out from back of chassis.
- ☐ Gently turn chassis right side up.
- ☐ Turn chassis on its side.
- ☐ Finish cutting through edges of pan. Cut along tunnel, in between the two previous cuts. Section should drop out.
- ☐ Along bottom of tunnel, measure back 56 1/2" from front lip of pan (58 3/16" for Super Beetle) and mark of car.

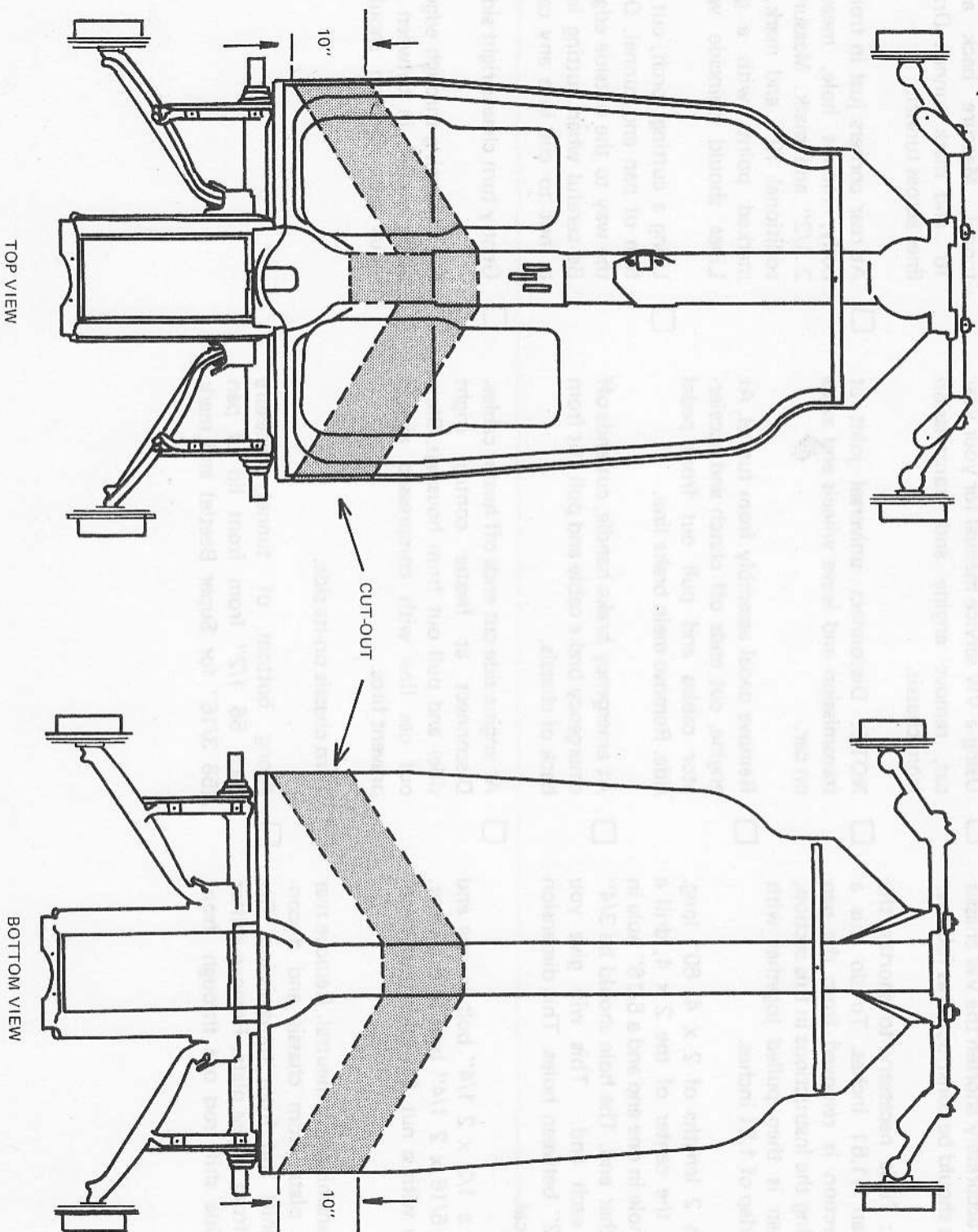


Figure 1

- ☐ On the top of the tunnel, measure off a 15 x 3 1/2" rectangle, starting above the front edge of the cut out. Extend a line down the side of the tunnel to meet cut out. **NOTE:** On some VW Beetle chassis the emergency brake is located further rearward than with others. If the rear of the emergency brake is behind the front cut, start rectangle on top 1" behind emergency brake mount.
- ☐ On the sides of the tunnel, measure 4" forward from back edge of cut out, then 4" up and 4" back. From that point extend line up to meet top rectangle. Finished lines should coincide with diagram. **NOTE:** Sections to be removed. (Refer to Figure 3A)
- ☐ Place supports under chassis on each side of cutting area. Using the cutting torch, cut out rectangle on top of tunnel, being careful not to cut into any cable housings. Save cut out section.
- ☐ Make additional cuts, cutting out side sections of tunnel. Be careful not to cut any cable housings. Cut a 1/2 x 3" notch along tunnel of front section.
- ☐ All cable housing should now be exposed to view.
- ☐ At rear access cover, cut clutch and accelerator cable housings loose at weld.
- ☐ Cut emergency brake housings 1" behind opening. Bend rear part of housings up and out of the way. (Do the same thing

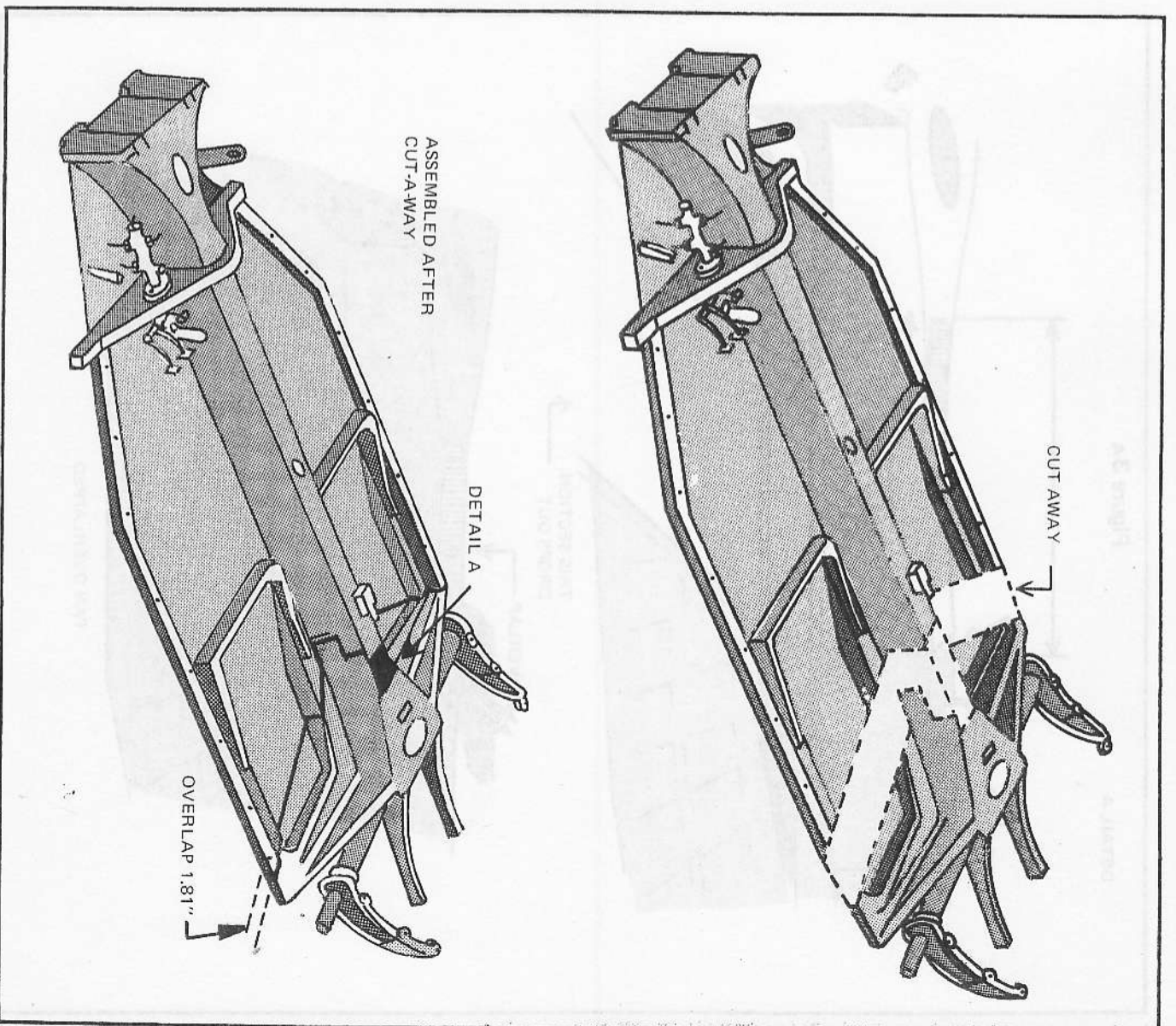
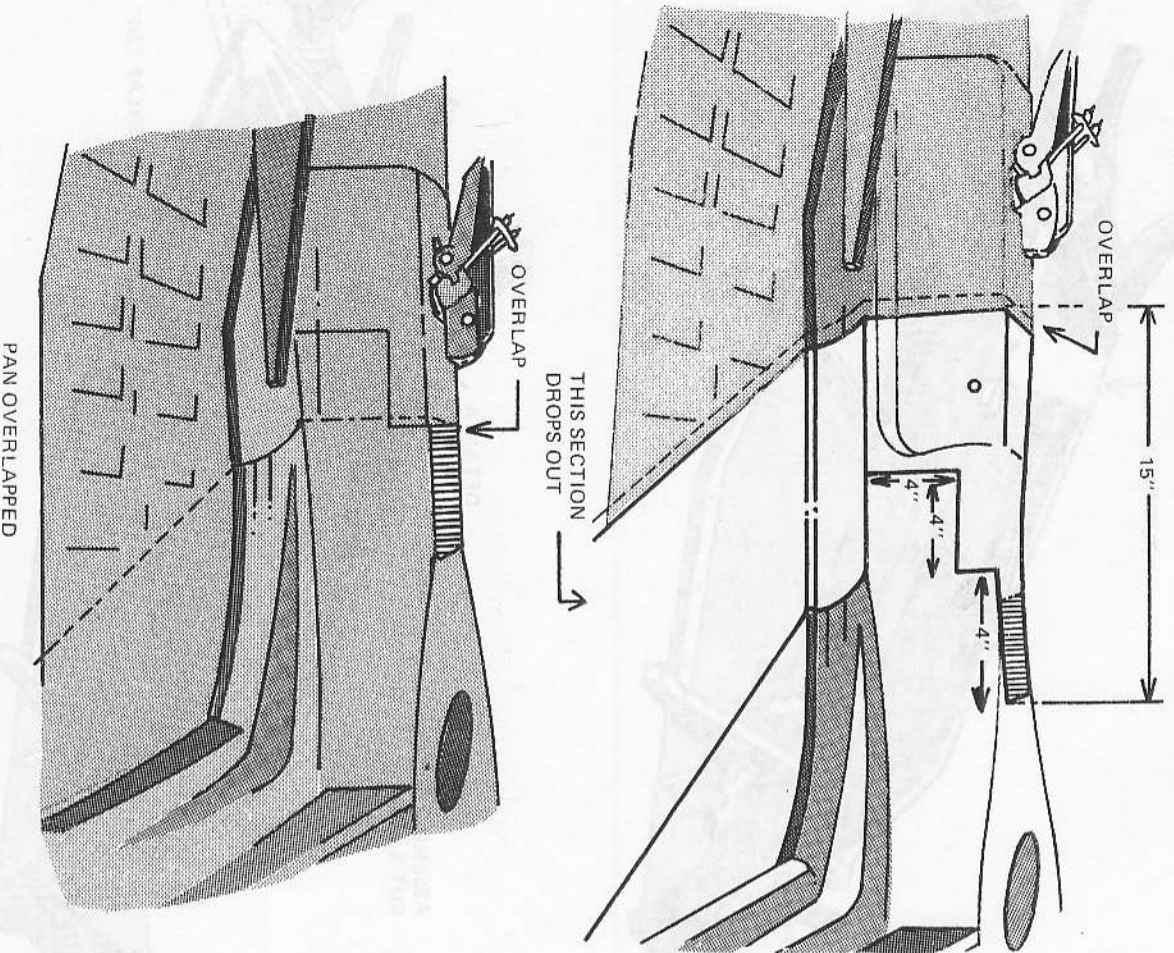


Figure 2

DETAIL A

Figure 3A



for the heater controls for the right side.)

- ☐ The heater controls on the left side are not used and should be cut off flush at both ends.
- ☐ Gas line, clutch housing and accelerator housing will be fed out the back as the two sections are pushed together.
- ☐ Bend the two 4 x 4" sections outward to aid in fitting together. Also bend the bottom of the tunnel of the front section downward to give you more room.
- ☐ Push the two sections together, watching for areas where it might get caught. Use a pair of pliers to bend the pan as necessary. Make certain that the gas line is pulled out as you go or it will kink.
- ☐ Continue to fit the chassis together until a measurement of 58 1/2" is obtained from the outermost of the two holes on the front of the chassis to the forward mounting hole on the rear shock tower. Use the two fixtures constructed previously to check this measurement. With the two fixtures in place, clamp the chassis together at the outer corners.
- ☐ Adjust the two sections until they are on the same plane. If the rear end is up too high it will hit the engine cover. If too low, the body and sub frame will not sit properly.

Figure 3

- ☐ Spot weld the sides of the tunnel. Make sure all measurements are correct and weld tunnel all around. Use a hammer as necessary to band the metal together. Weld along the top of the pan. In the rear corners, bring the rear section down where it protrudes upwards and weld to pan. Turn chassis over and weld bottom of chassis. Return chassis to upright position.
- ☐ Bend heater cable and emergency brake cable housings down to meet forward section. Cut even with front pieces. Use hack saw. Remove all burrs from inside of tubes with a file. Spot weld together. It will be necessary to bend and shift the tubes around in order to get them to line up.
- ☐ Cut clutch and accelerator tubes 1" behind end of chassis and spot weld in place.
- ☐ Grease and reinstall all cables back into housings. Reattach pedal assembly to tunnel using original bolts.
- ☐ Reinstall engine and transmission.
- ☐ Obtain a VW cable shortening kit, available from our factory or any VW parts outlet. This includes new ends for the clutch, accelerator and emergency brake cables. The heater cables all function fine without new ends. Install as per instructions and attach the engine and emergency brake handle. Check for free movement of all cables.

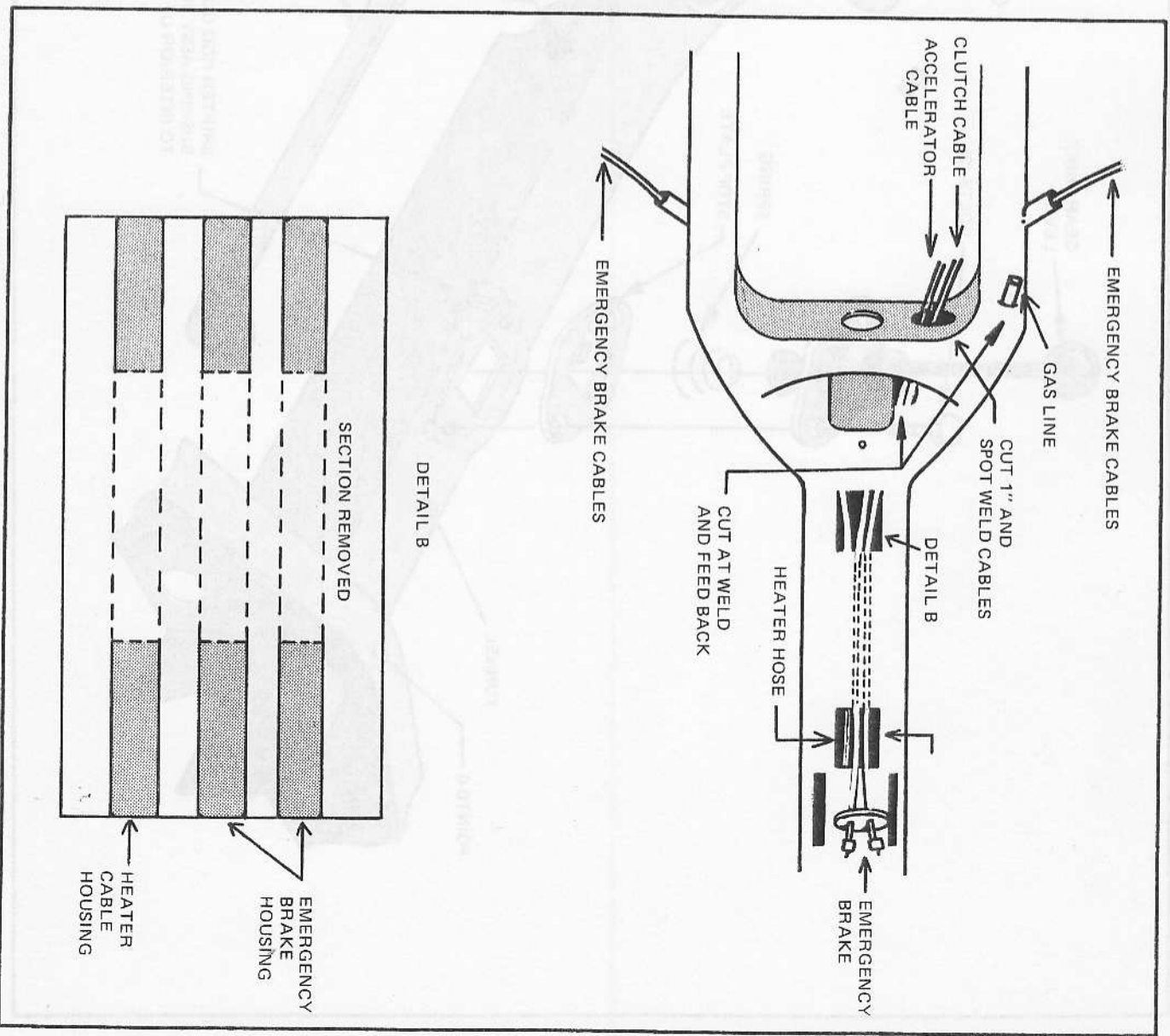


Figure 4

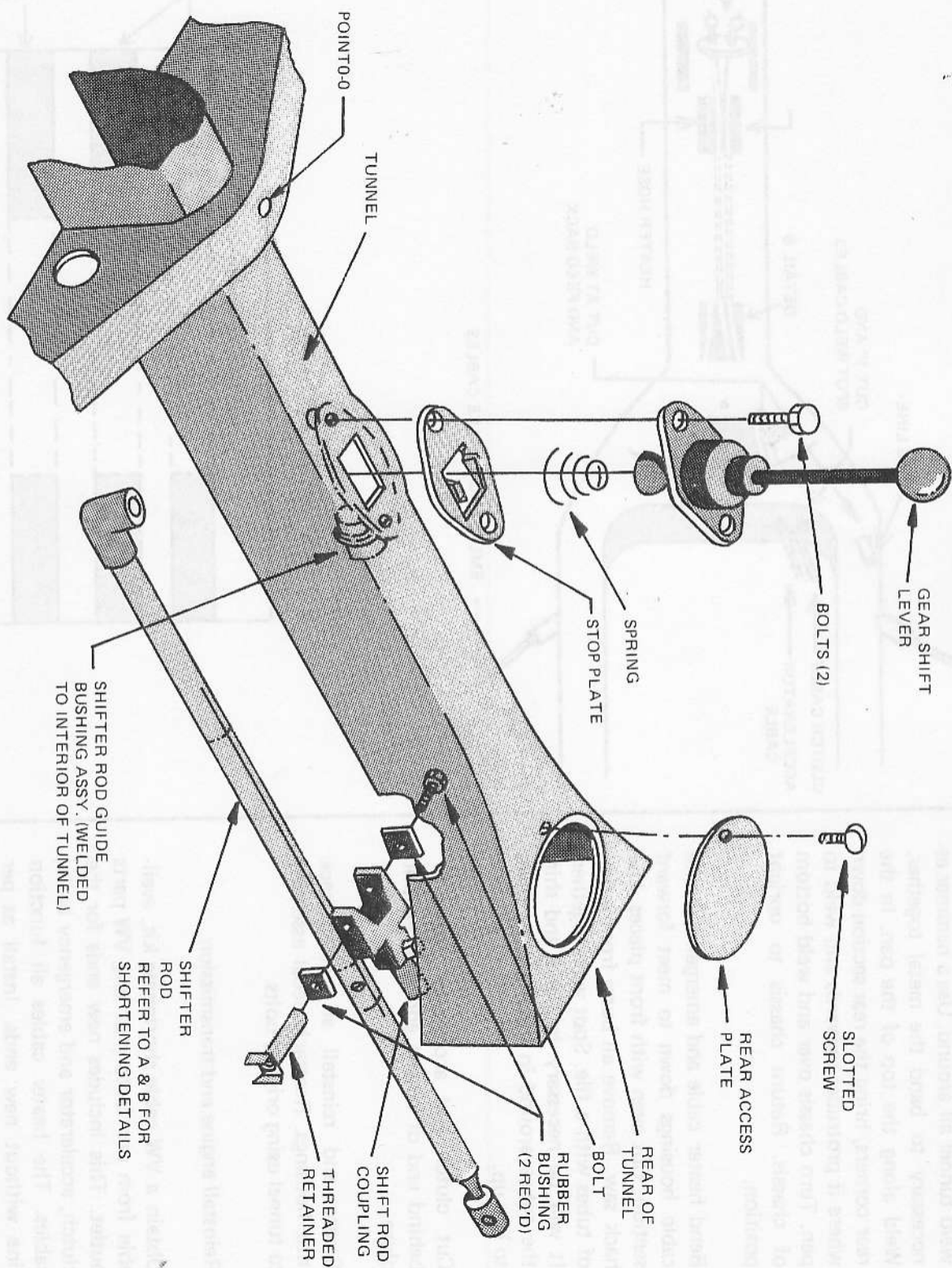


Figure 5

MODIFYING THE SHIFT ROD

- ☐ Lay shift rod on top or on the side of the tunnel, centering socket of the shift rod over hole in tunnel. At the back mark the shift rod directly over holes in shift rod coupling yoke. There are two methods available in shortening this rod, one is to measure from the mark made on the rod to the center of the rear hole that connects the rod to the yoke. Scribe a line down the length of the shift rod. Cut a section out of the middle of the rod conforming to measurement just obtained. Insert a piece of tight fitting pipe into the shift rod to act as a support and weld back together, keeping the scribed lines aligned.
- ☐ Another method requiring no welding is also available. Once the rod is marked, drill a $3/8$ " hole at the marked location, keeping it in line with the existing hole. Measure $1/4$ " behind hole and cut rod. You may have to slightly flatten rod at the drilled point to allow it to mate with the transmission.
- ☐ Reinstall shift rod and shifter. Check for free shifting. Adjust as necessary as per instructions in your VW service manual.
- ☐ Once you are sure everything is functioning properly, fashion a cover for the top of the tunnel from the $15 \times 3 \times 1/2$ " piece of tunnel saved earlier and weld in place.

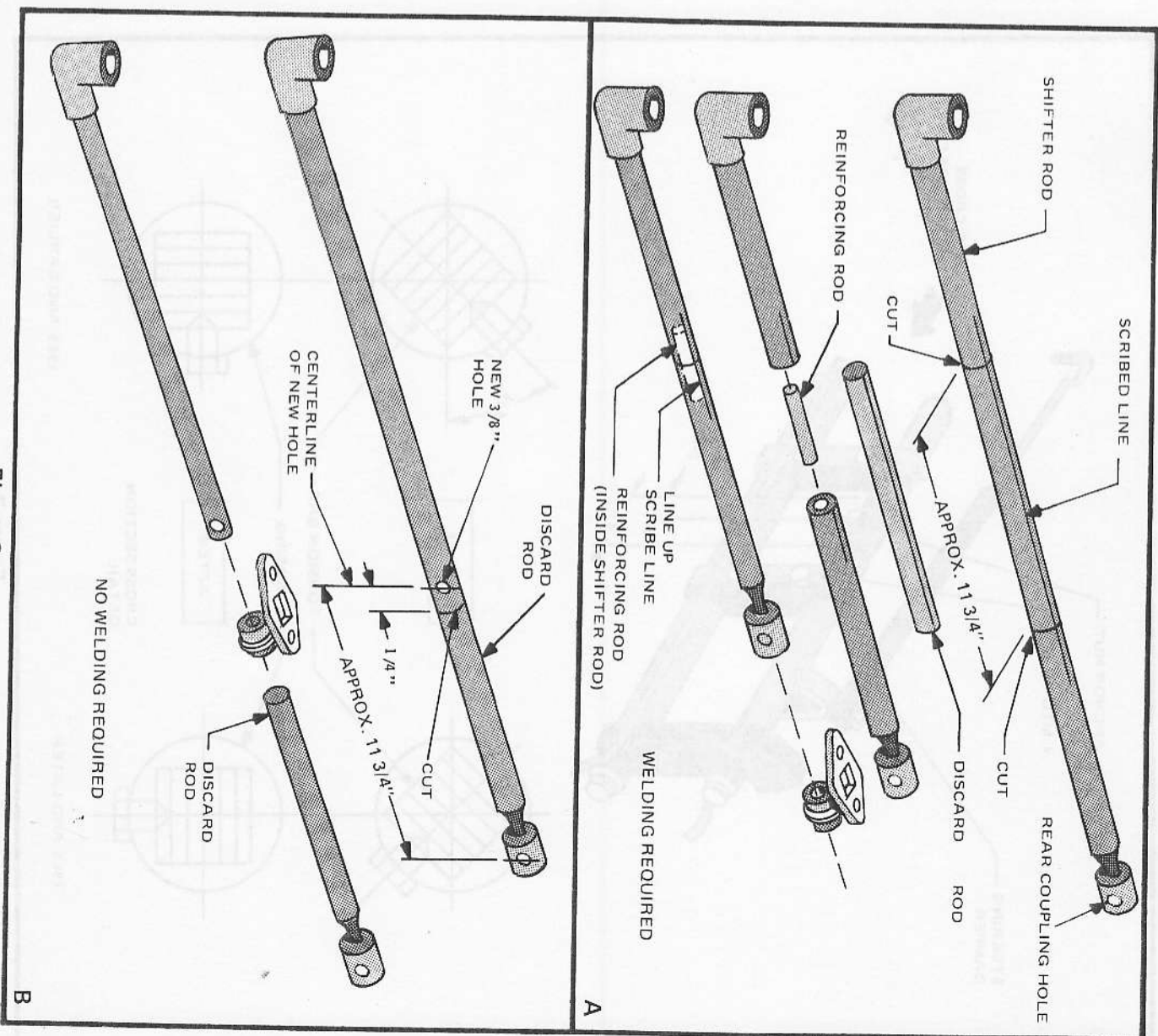
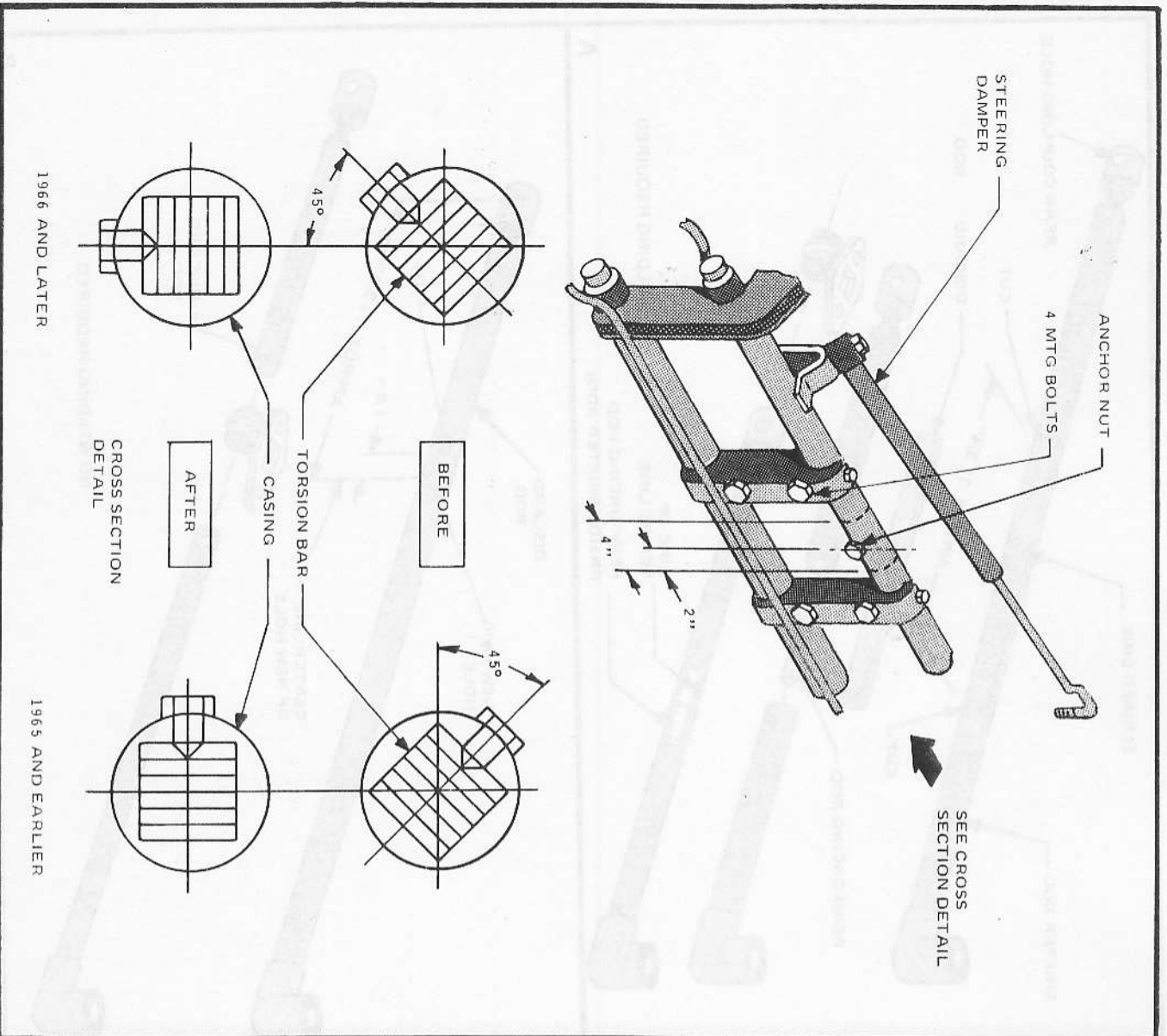


Figure 6



LOWERING FRONT END

Because of the decreased weight of the fiberglass body and the general weight shift toward the rear, the front suspension must be eased to allow the car to sit lower.

- ☐ Jack up chassis and support pan on jack stands. Remove torsion tube assembly by removing 4 mounting bolts located on the front of the assembly.
- ☐ Disconnect the steering damper at the tie rod and swing it up and out of the way.
- ☐ Measure 2" out on each side of the anchor nut on the top torsion tube. Draw a line completely around the casing at this point. Using a tubing cutter or hack saw, cut through the upper torsion tube casing only. Do not cut through the torsion bar, just the casing. Reinstall assembly on car. If your car is a '66 or later the center anchor nut must be rotated down 45 degrees from the original position. This will put the anchor nut directly on the bottom of the tube casing.
- ☐ This is easily accomplished if you have 1 or 2 people stand on the front of the chassis. A pipe wrench fitted around the cut section is useful at this point for precise adjustment. Spot weld the cut section back in place in a number of places. Remove torsion bar assembly and completely weld casing back together. Reinstall assembly. For '65 or older

Figure 7

cars the anchor nut must be rotated 45 degrees downward from the original position. This will put the anchor nut directly on the front of the tube casing. Proceed as above.

- ☐ **NOTE:** For the custom version you can lower the front an additional 5-10" for a lower stance.

REAR SUSPENSION ADJUSTMENT

- ☐ You may want to lower the rear of the car if you are building the custom model. If you wish to lower or raise the VW rear suspension consult your VW service manual for detailed instructions.

BRAKE LINES

- ☐ Remount the pedal assembly. You can use the old brake lines, however, we

suggest you renew all lines. These are available from any VW dealer. **NOTE:** the brake line from the master cylinder to the rear will be a little too long now that the chassis has been shortened. Simply coil the excess line forward of the master cylinder, being careful not to pinch the line.

MECHANICAL AND CHASSIS PREPARATION

Attention should be given to any mechanical work indicated as the chassis is easy to work on with the body removed. Regular VW mechanical service should be done, for instance: engine reconditioning, tuning and performance modifications, paint and detailing with chrome extras, lubrication and grease job. You are now just about ready to

mount your body, but before you do, we suggest that you paint the chassis.

First you must clean the chassis using either mineral spirits or lacquer thinner. The really bad areas should be cleaned with a rotary wire brush in your drill.

We suggest that the entire chassis be painted with a good quality paint such as Rustoleum. When you are completely finished painting the chassis, we recommend you buy a spray can of undercoater and cover the entire bottom pan on the surface that would be exposed to the highway salt and water.

FIBERGLASS PREPARATION

The following information will help you in working with fiberglass.

- ☐ When drilling fiberglass always use the slowest speed possible. Use light pressure to avoid unnecessary heat buildup, and ensure that the bit has started in order to prevent it from "walking".
- ☐ When cutting fiberglass, always mark the outline of the cut with a grease pencil (do not use marker pencils since they can stain and discolor the lighter body colors), cut inside the drawn area, and finish off with a file. An ordinary hacksaw (or sabresaw) is sufficient, but be sure that only a metal type (fine tooth) blade is used to avoid rough cutting.
- ☐ When using a sabresaw to cut fiberglass use duct tape or masking tape along cut edges and under shoe on saw (flat portion) that may come into contact with body. This will give you smoother edges and prevent chips and scratches to gel coat.
- ☐ When there is no edge (inside cuts) drill hole through fiberglass large enough to accommodate saw blade.
- ☐ When bolting fiberglass to metal or fiberglass to fiberglass always use a flat washer next to the fiberglass to spread the stress over a larger area.

- ☐ Set up all the parts to be glassed in the correct positions, and then cut the matting (fiberglass) material to size and shape.

- ☐ When cutting fiberglass along the prescribed lines, apply masking tape along the edge of the side to be kept. Cut outside the tape and finish off with a file. Remove the tape.

- ☐ Have fiberglass mat or tape on hand and a gallon of resin and hardener (methyl ethyl ketone).

- ☐ Mix the resin and the hardener according to the manufacturer's instructions.

- ☐ **WARNING:** Be sure to observe manufacturer's safety precautions for handling the resin and the hardener.

- ☐ Resin can best be applied with a brush. First apply resin in the work area, then lay in glass cloth. Thoroughly saturate the cloth with resin using the brush.

- ☐ **NOTE:** It is essential that, when applying new fiberglass to fiberglass or metal, the matting surfaces be prepared by sanding with a medium grit sandpaper to roughen the surfaces for a better bond. Carefully sand all smooth gel coat (colored) areas to ensure a good bond. Just sand enough to give a rough surface. It is not necessary to go down to the fiberglass.

- ☐ Clean the brushes or any other tools which you may have used with acetone that you can buy where you purchased the rest of your fiberglassing materials.

- ☐ All finished edges of fiberglass parts, such as fender edges, should be given a light sanding. Sand only along the edge. Never sand across the edge from the inside out as this will chip the gel coat.

- ☐ For minor repairs to fiberglass or gel coat see Appendix.

SCRIBE LINES

In order to insure a precision fit of the fiberglass parts in the assembly, scribe lines and drill points have been integrated into the molds. Careful attention to cutting these parts will result in a more precise fit and ease of assembly. **NOTE:** Scribe lines should be used as guides. Always cut inside of the line and fit part(s) by trimming where necessary.

TO CUT A SCRIBE LINE

- ☐ Run tape along the line on the good side of the scribe. Cut along the line keeping 1/8 - 1/6" from the tape. File to the tape, being careful not to over file. Finish off with a sanding block and fine sand paper.
- ☐ Sand all exposed edges with a fine grit sand paper. Avoid sanding directly on gel coat surface.

SECTION IV BODY PREASSEMBLY

HORN GRILLES AND FRONT TURN SIGNALS

- ☐ Line up horn grilles against the scribed locations below the headlights. Drill holes for studs attached to the grilles. Check scribe mark against grille.
- ☐ Drill a hole inside the scribed area as a starting point and carefully cut out area with a sabre saw with a fine blade. Mask outside of scribe mark to prevent flat of saw from scratching body.
- ☐ Remove rubber gaskets from turn signals and place against recess in horn grille. Mark where lip contacts horn grille. Cut away this area. Place gaskets back on turn signal.
- ☐ Mount horn grilles into position on body with hardware provided.
- ☐ Using the center mounting holes as a reference, cut a $3/4"$ hole through the body for the socket on the turn signal light.
- ☐ Remove lens and chrome bezel from turn signals and line up against the horn grilles with set screws for the chrome ring on the sides. Drill two $5/32"$ holes for each light through rubber gasket and body. Attach the body with hardware provided and reattach lens and chrome bezel.

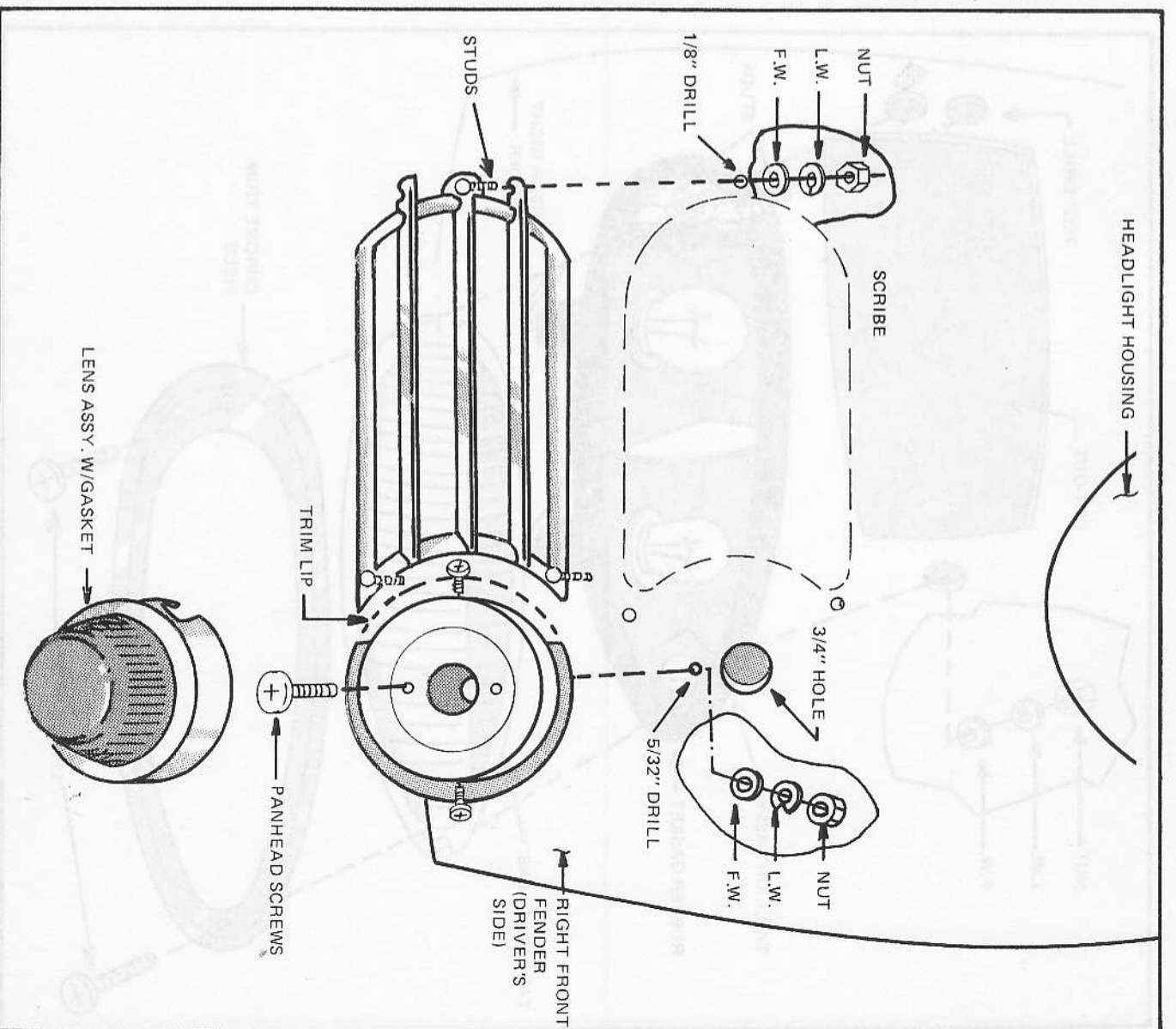


Figure 1

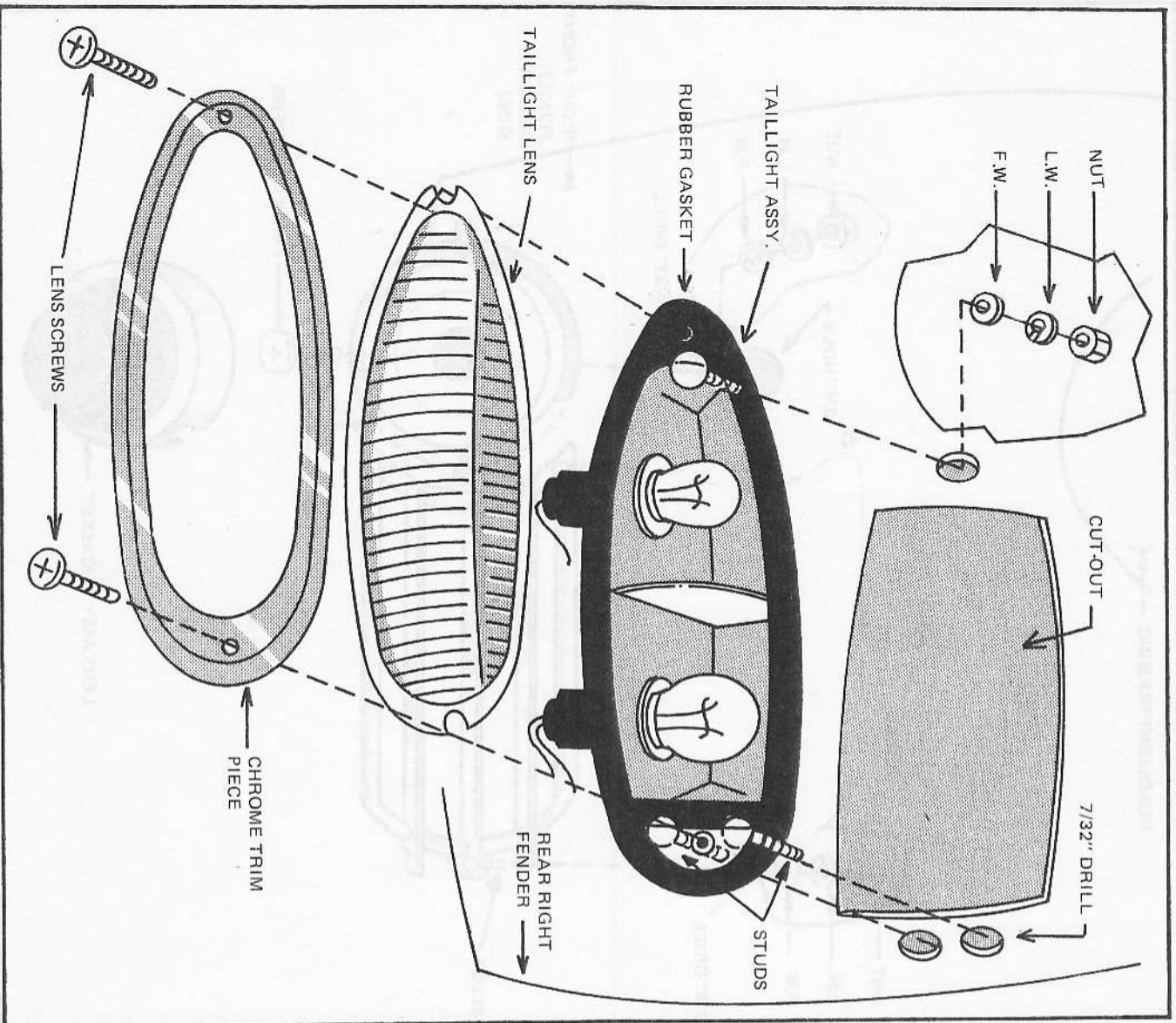


Figure 2

TAILLIGHTS

- ☐ Carefully remove one of the rubber gaskets from a taillight.

- ☐ Using the scribe lines on the body as a reference place rubber taillight gasket against the body and mark exact hole location on the inside of the rubber gasket.

- ☐ **NOTE:** Because of the angle on the back of the light, it is necessary to remove slightly more ($1/4$ ") of material above the top scribe line and slightly less at the bottom. About $1/4$ " is correct. The ears scribed on the body should not be cut.

- ☐ Drill a starting hole inside the scribed area and cut out area with a sabre saw using a fine toothed blade. Mark the mounting hole locations through the rubber gasket and drill three $7/32$ " hole for each light.

- ☐ Insert studs on light through holes in rubber gasket and body. Secure with nuts provided. Use No. 10 flat washers and lock washers behind the nuts.

LICENSE PLATE HOLDER LIGHT AND BACK UP LIGHTS

- ☐ Draw a straight line from the center of the engine compartment opening to the bottom lip of the body at the rear of the car. Use a grease pencil.
- ☐ Measure down line from lower outer lip of body at engine compartment 10 1/2" for standard assembly, 12 1/4" for custom and mark. Measure down 2 1/4" from this mark and place another mark.
- ☐ Center license plate bracket on upper mark, drill two 5/16 inch holes on 2 inch centers and secure license plate bracket to the body with 5/16" x 1" hex head cap screws with flat washer, lock washer and nuts.
- ☐ Center rubber gasket from license back-up light, along lower mark under license plate bracket. Drill a 1 1/2" hole in the center with an appropriate hole saw. Drill two 7/8" holes on 8" centers for side lights. Drill two 7/32" holes on 5 1/2" centers for mounting studs. See Figure 3.
- ☐ Slide studs through gasket and body and secure with nuts provided. Use No. 10 flat washers and lock washers behind nuts.

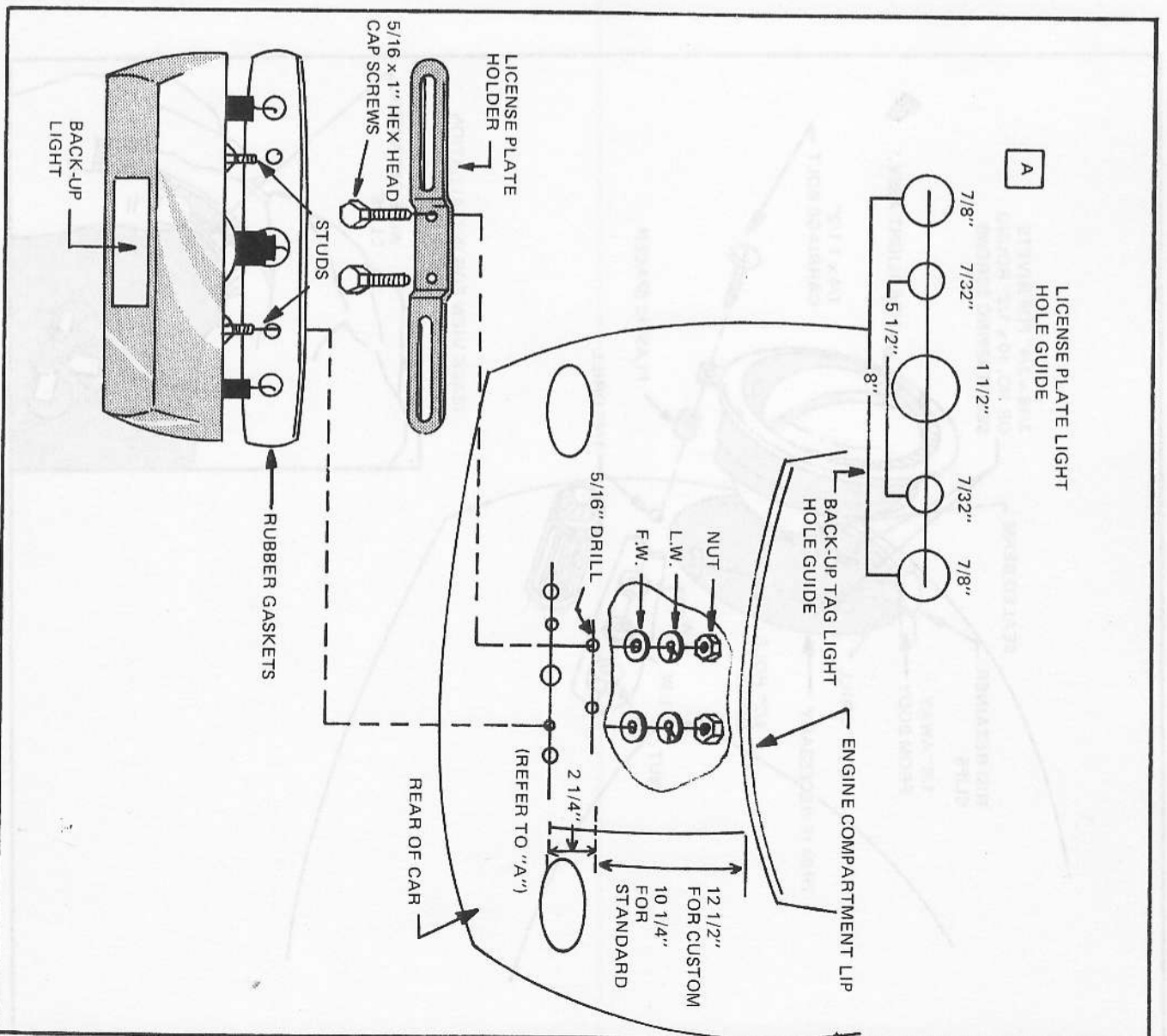


Figure 3

HEADLIGHTS

- ☐ Unpack headlight assemblies and install T67 single filament 12 V parking bulbs and sealed beam. Secure with wire retainer clips packed with assemblies.
- ☐ Drill 1/2" hole through fiberglass at the bottom rear of each headlight housing on the body to accommodate the headlight wires.
- ☐ Test fit headlight assemblies into housings. Grind or file edges slightly if necessary, for proper fit.
- ☐ The rim retaining clip mounts to the inner top of each headlight housing with the lip protruding upward 1/8" away from body above the housing. Enlarge existing holes to 3/16" and drill an extra hole in each clip. Secure to headlight housing with 3/16 x 3/4" pop rivets or with No. 10 x 1/2" round or pan head self-tapping screws.
- ☐ Hook headlight rim over clip and mark hole location for mounting flange on the body below the headlight. Drill 1/4" hole and secure to body with 1/4 x 1 1/2" carriage bolt, flat washer, lock washer and nut. Install plastic spacer between headlight rim and body.

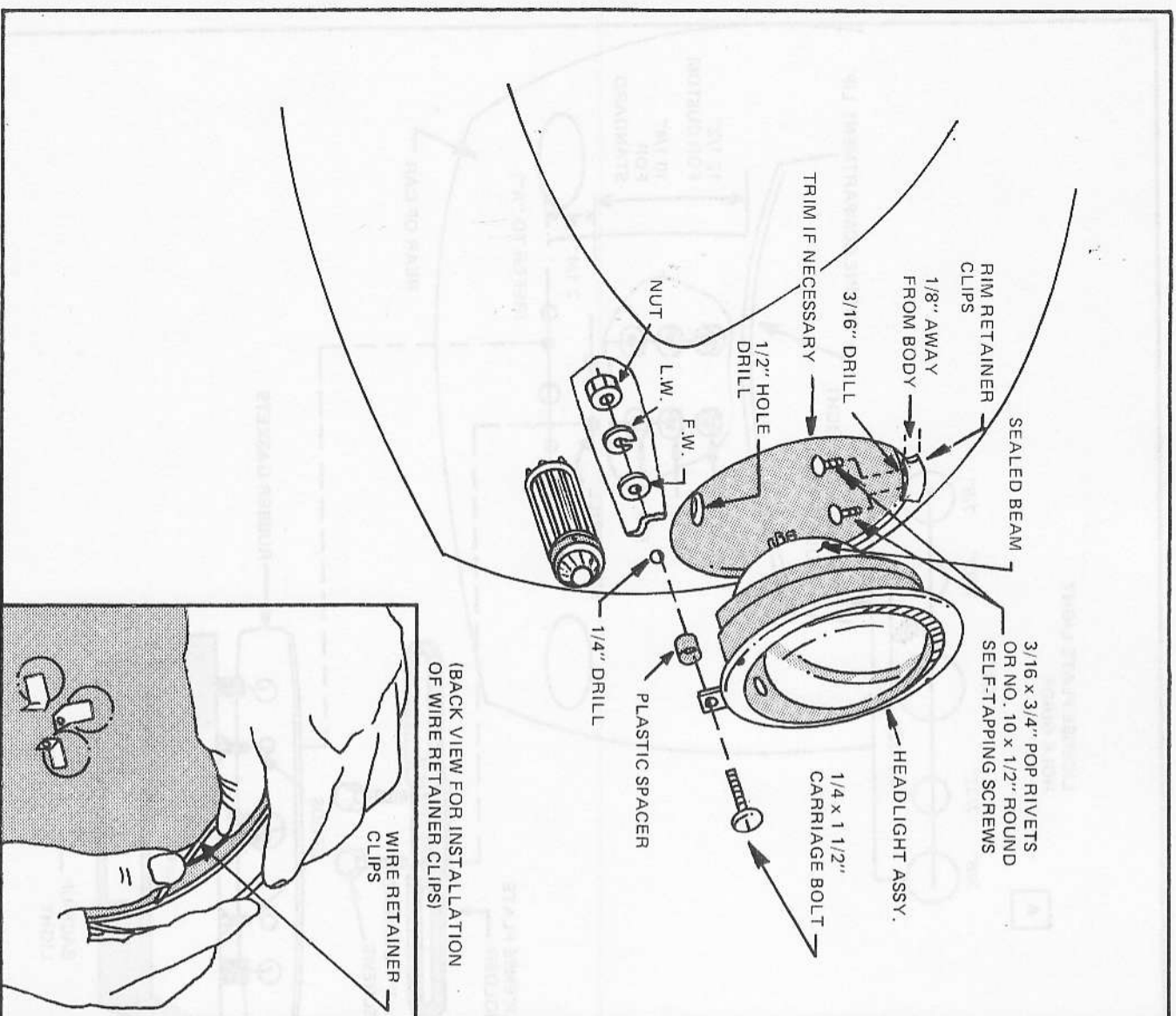


Figure 4

ENGINE COVER (REAR DECK)

- ☐ With a sabre saw cut out recessed area of rear deck lid where the grille fits. Be careful to cut only the outside surface. Do not cut inside surface. Paint all visible unfinished inner surfaces, with black paint for a finished appearance.
- ☐ Grind or file inner lip of body at trunk recess to approximately 3/4". Apply 1/4 to 3/4" foam weather strip material to lip to seal against deck lid and prevent water from entering the engine compartment.
- ☐ Take the two metal deck hinges and drill a 3/8" hole through the hook portion of each hinge. Center of hole is 1/2" from top edge of hinge. Drill two 1/4" holes in the angle portion of each hinge. The front hole is 2" back on angle closest to hole previously drilled. Rear hole is 5" back.
- ☐ Place hinges on mounting surface on inside of rear deck lid. The open portion of the angles face the outside of the car at the very edge of inside center of the deck lid. Allow edge of angle to extend 1/2" beyond edge of mounting surface. Mark hole locations on deck and drill 1/4" holes. Secure hinge to deck lid with 1/4 x 1" hex head bolts, flat washer, lock washer and nuts.

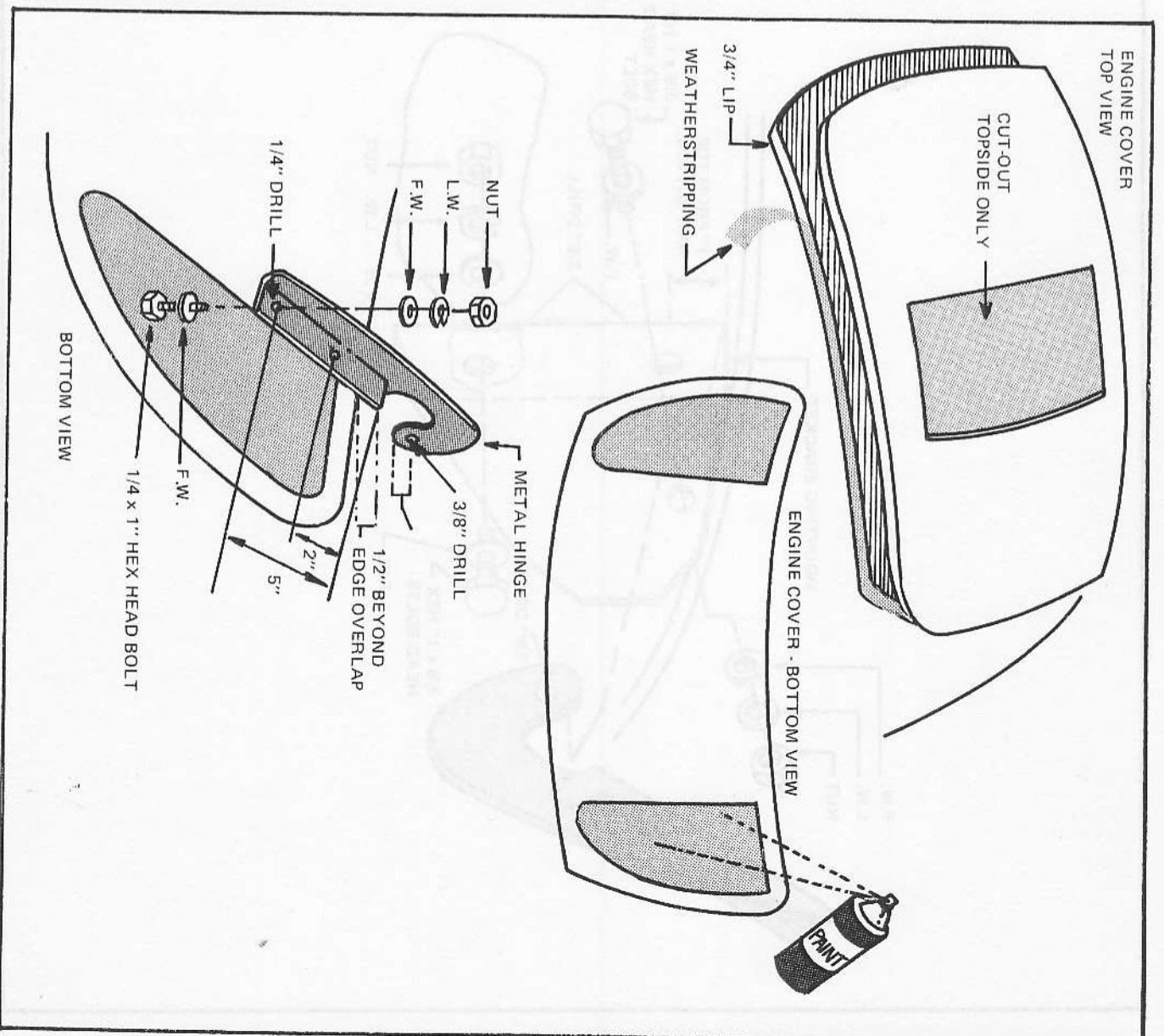


Figure 5

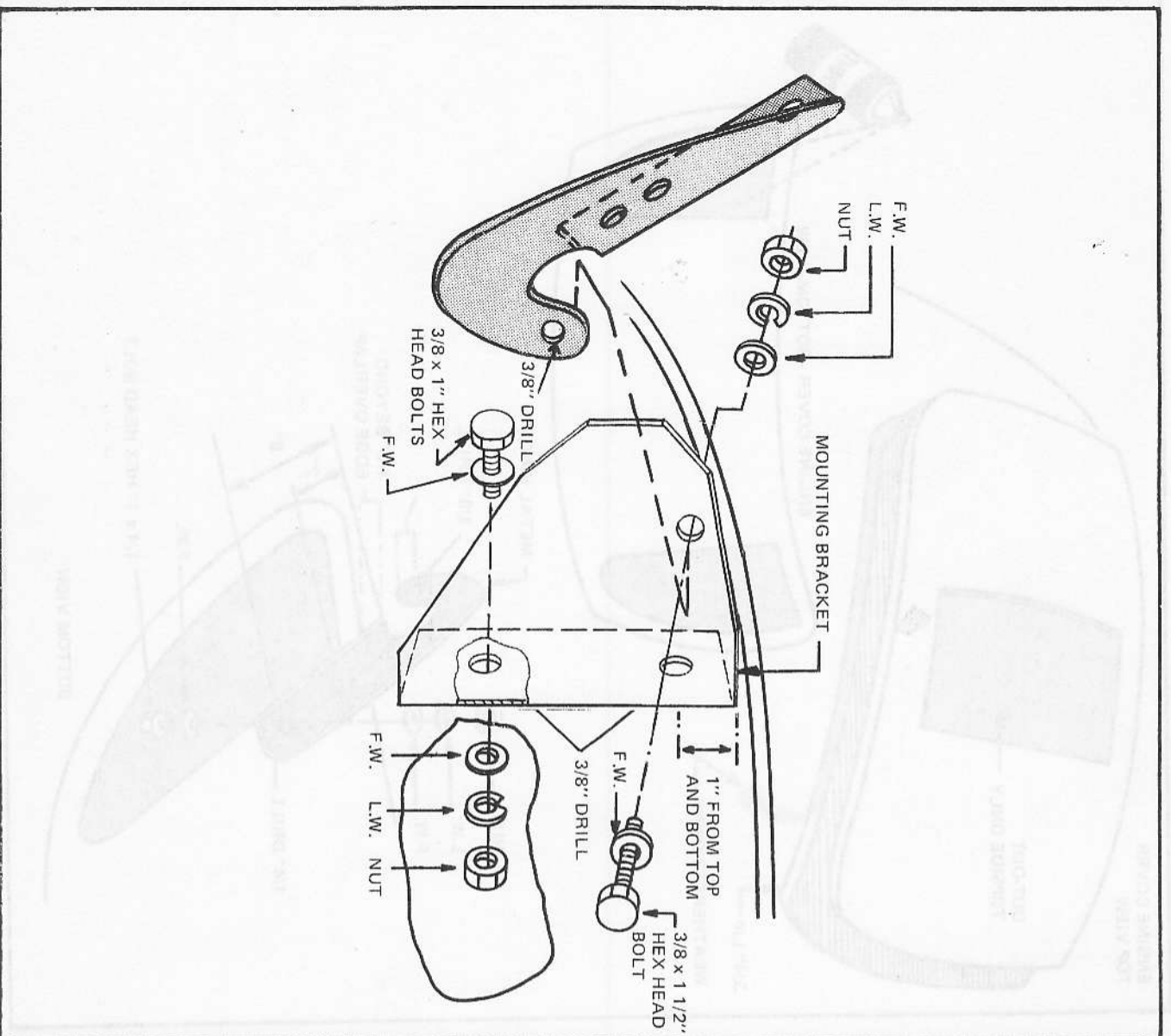


Figure 6

- ☐ Take the two metal hinge mounting brackets and drill two 3/8" holes through the flat mounting portion of each bracket. The holes are 1" in from the top and bottom edge. The hinge brackets are attached to the firewall with the higher portion on top.

- ☐ Place deck lid on body and center all around. Have a helper press down firmly on lid so it is flush with the body. From underneath the body position the hinge mounting brackets against the firewall. The metal ear of hinge with 3/8" hole should be on the inside of each bracket. Mark correct location on firewall. Remove deck lid and drill 3/8" holes through firewall. Mount brackets with 3/8" x 1" hex head bolts, flat washer, lock washer and nuts.

- ☐ **NOTE:** Place flat washer under bolt heads going through metal brackets.

- ☐ Place trunk cover back in recess, centered, and have helper press down so it is flush with the body. From inside of the trunk drill 3/8" holes through plastic brackets in line with holes in metal hinges. Fasten hinges to brackets with 3/8 x 1 1/2" hex head bolt with flat washers on each side and lock nuts. Make sure lid opens and closes correctly. Adjust, if necessary.

- ☐ Center lock pin at bottom inner most edge of deck lid 1/4" from innermost edge. Drill 5/16" hole through lip extending into area behind grille. Secure threaded portion of stud to lid with lock nuts and flat washers on each side.
- ☐ With a 2" hole saw cut hole through inside flange of lock mount support 3/4" below mounting surface. Place lock on pin with lever facing front of car and spring on lock on passenger side. Close deck lid and have helper press down so lid is flush with body. From underneath mark hole locations on mounting flange. If necessary you can use washers between lock and flange to gain room. Open lid and drill two 3/8" holes through flange. Secure lock to flange with 3/8 x 1 1/2" hex head bolts, flat washers on each side, lock washer and nuts.
- ☐ Open hood to full open position and drill a 3/16" hole through left hinge and bracket for support pin. Mount pin retainer to the firewall on the left side of the hinge bracket on the driver's side. Drill a 3/16" hole through the firewall and secure with No. 10 x 1 1/2"
- ☐ Attach trunk release cable to the lever on lock. Either twist to secure or use a throttle cable stop available at most auto supply stores.
- ☐ Place grille into place and drill two 1/8" holes in each end between slats in grille. Secure to fiberglass with No. 6 x 3/4" round head stainless steel self-tapping screws.

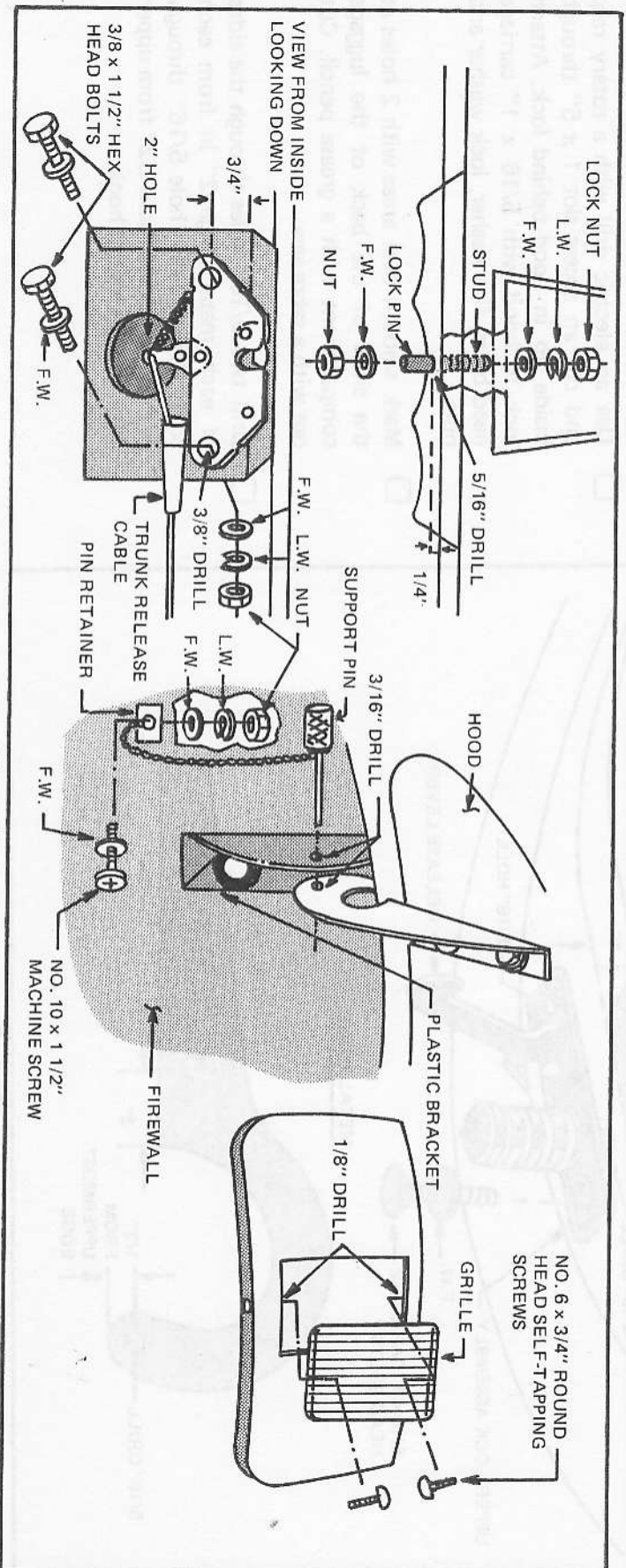


Figure 7

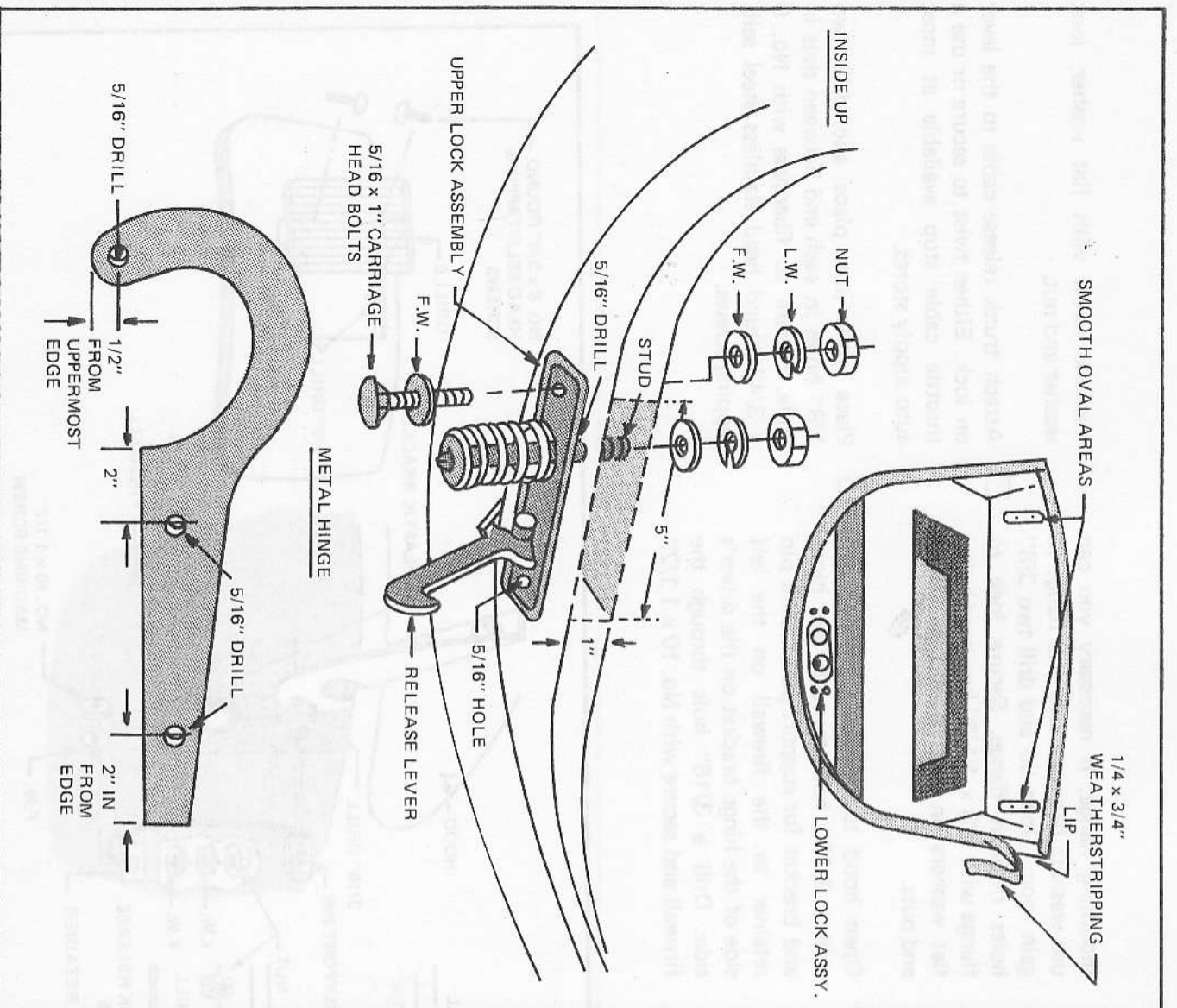


Figure 8

HOOD COVER (LUGGAGE COMPARTMENT COVER)

- ☐ Apply 1/4 x 3/4" foam weather stripping to lip of body in recess where hood fits.
- ☐ Place upper lock assembly into lower lock mechanism with release lever at the front passenger side of car. Place hood in position with front slightly elevated and mark stud with some paint or a grease pencil. Allow hood to rest on top of stud so it is marked. Drill 5/16" hole in underside of hood for stud. Place lock into position and drill two 5/16" holes in fiberglass through mounting holes.
- ☐ Use an electric drill with a rotary rasp and cut an access slot 1 x 5" through inside lip in hood behind lock. Attach lock to hood with 5/16 x 1" carriage head bolts, flat washer, lock washer and nuts.
- ☐ Mark smooth oval areas with 2 holes at the sides of the back of the luggage compartment with a grease pencil. Cut out with a sabre saw.
- ☐ Drill two 5/16" holes through the sides of each metal hinge 2" in from each edge. Drill another hole 5/16" through each hinge. Center hole 1/2" from upper most edge of mount hook.

- Place hinges against outside edge of metal flanges on hood. Line edge at rear of hinge where it starts to curve with inside bottom edge of fiberglass elevation behind the metal flange. The front of hinge rests on the fiberglass at the front of flange. The rear bottom edge of hinge should be $1/2''$ from fiberglass at rear of flange. Drill two $5/16''$ holes through each hinge and flange. Secure hinges to flange with $5/16 \times 1''$ hex head bolts, flat washers, lock washers and nuts. (Figure 9)

- Place hood on car with hinges extending through cut out areas. Center hood in recess leaving slightly more room between the rear lip and body than at the front. Temporarily clamp metal hood support braces in position on top of the front cross member to the outside of each hinge. Have a helper press down on hood so it is flush all around. Mark hole locations on supports through holes drilled in hinge and hole locations on frame member. Remove supports and drill $5/16''$ hole through supports where hinge mounts. Drill $5/16''$ holes through frame member. Replace hood and secure hinges to bracket with $5/16 \times 1''$ hex

head bolts with flat washer on both sides and lock nut. Secure hood hinge brackets to frame with $5/16 \times 2 \frac{1}{2}''$ hex head bolts with flat washer, lock washer and nuts. Check for free movement and clearance in the open and closed position. Adjust, if necessary.

- Cut slots in plastic support cover boxes. Trim or grind front as necessary. Set aside, as these will be fiberglassed into position later.

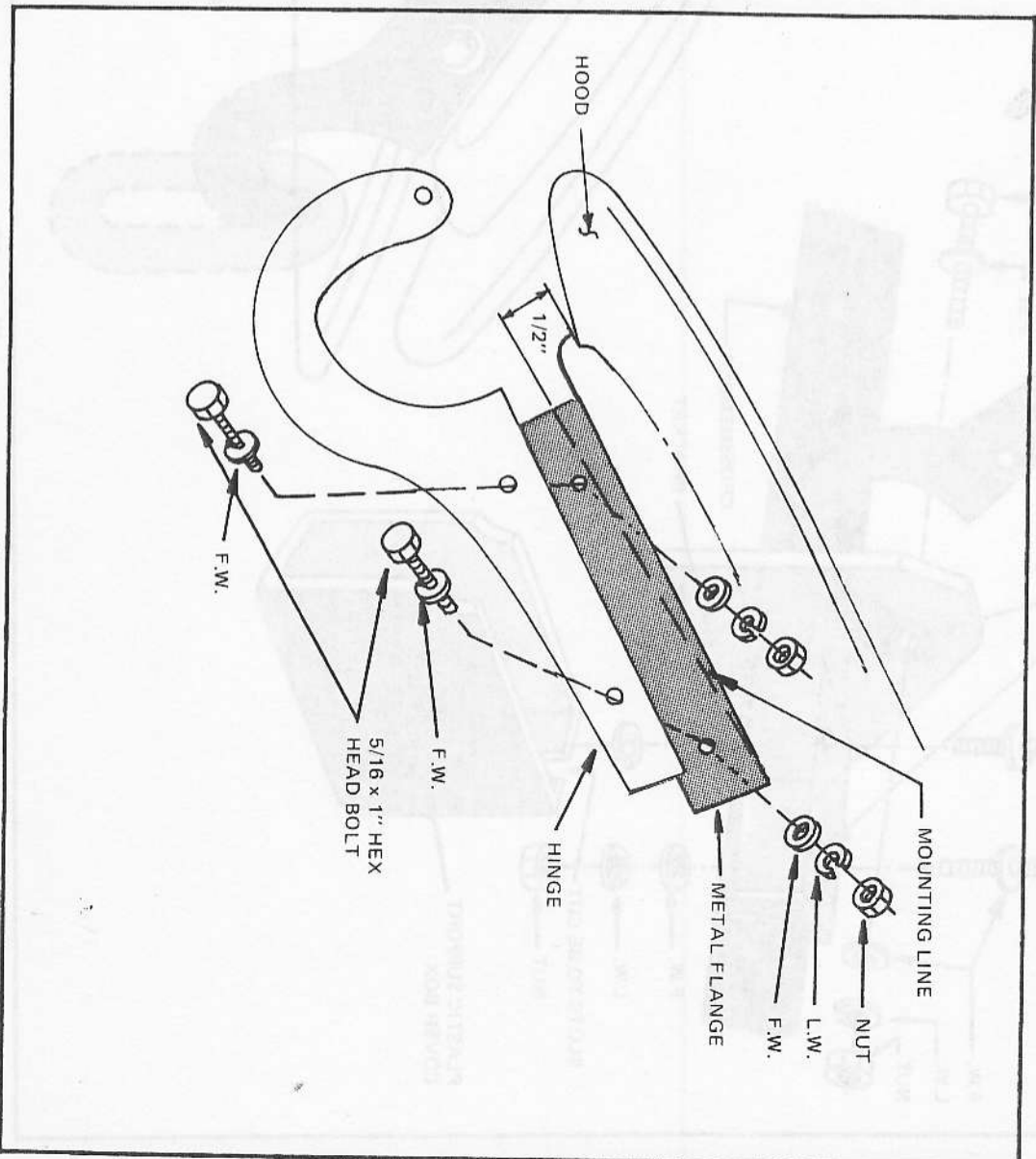


Figure 9

BRACKET ATTACHMENT DETAIL

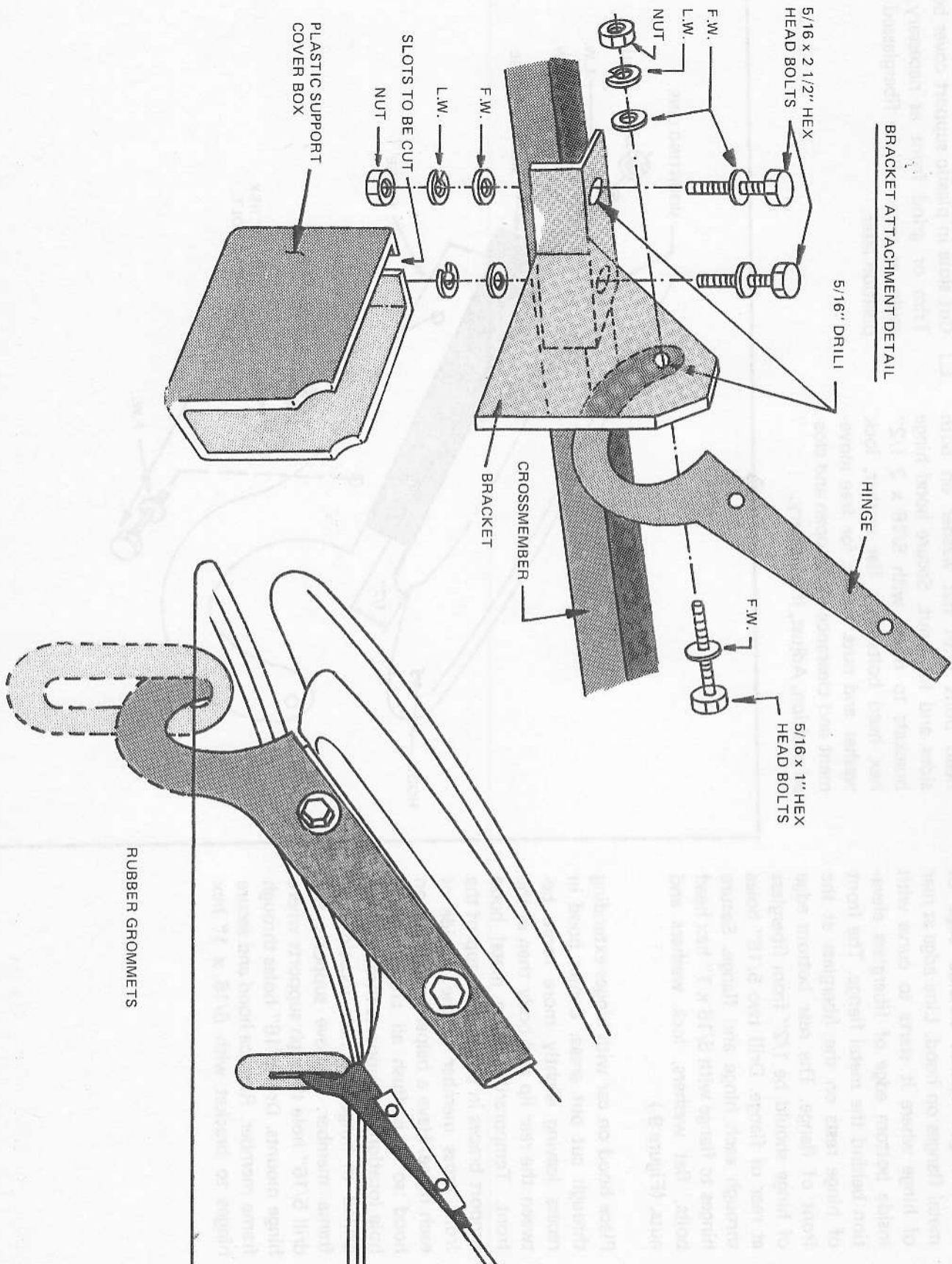


Figure 10

BATTERY COMPARTMENT

- ☐ Mark rear wall of battery compartment 4" from each side and 2" from the top. Also mark floor at forward front corners. Drill 3/4" holes where marked. The front holes are for drainage; the rear holes accommodate the battery cables. Finish holes with rubber grommets or small diameter hose slit lengthwise.
- ☐ Place battery in compartment. (NOTE: it is a good idea to use as low a profile battery as possible to conserve trunk space.) Battery can be secured to floor with a rubber hold down strap available at most hardware or auto supply stores. Drill 1/4" holes through floor at ends of battery and install 1/4" eye bolts through floor with a flat washer and nut on each side. Fasten rubber strap to these to secure battery. Remove battery.

BRAKE FLUID RESERVOIR

- ☐ The VW brake fluid reservoir is mounted to the floor of the trunk on the driver's side of the gas tank flange. Rear mounting hole is 7" from rear corner.
- ☐ Drill two 1/2" holes for line fitting 1 1/2" apart; secure reservoir to floor. Drill a 3/16" hole in flange on reservoir without hole. Drill two 1/8" holes through fiberglass and secure to floor with No. 8 x 3/4" hex washer head self-tapping screws.

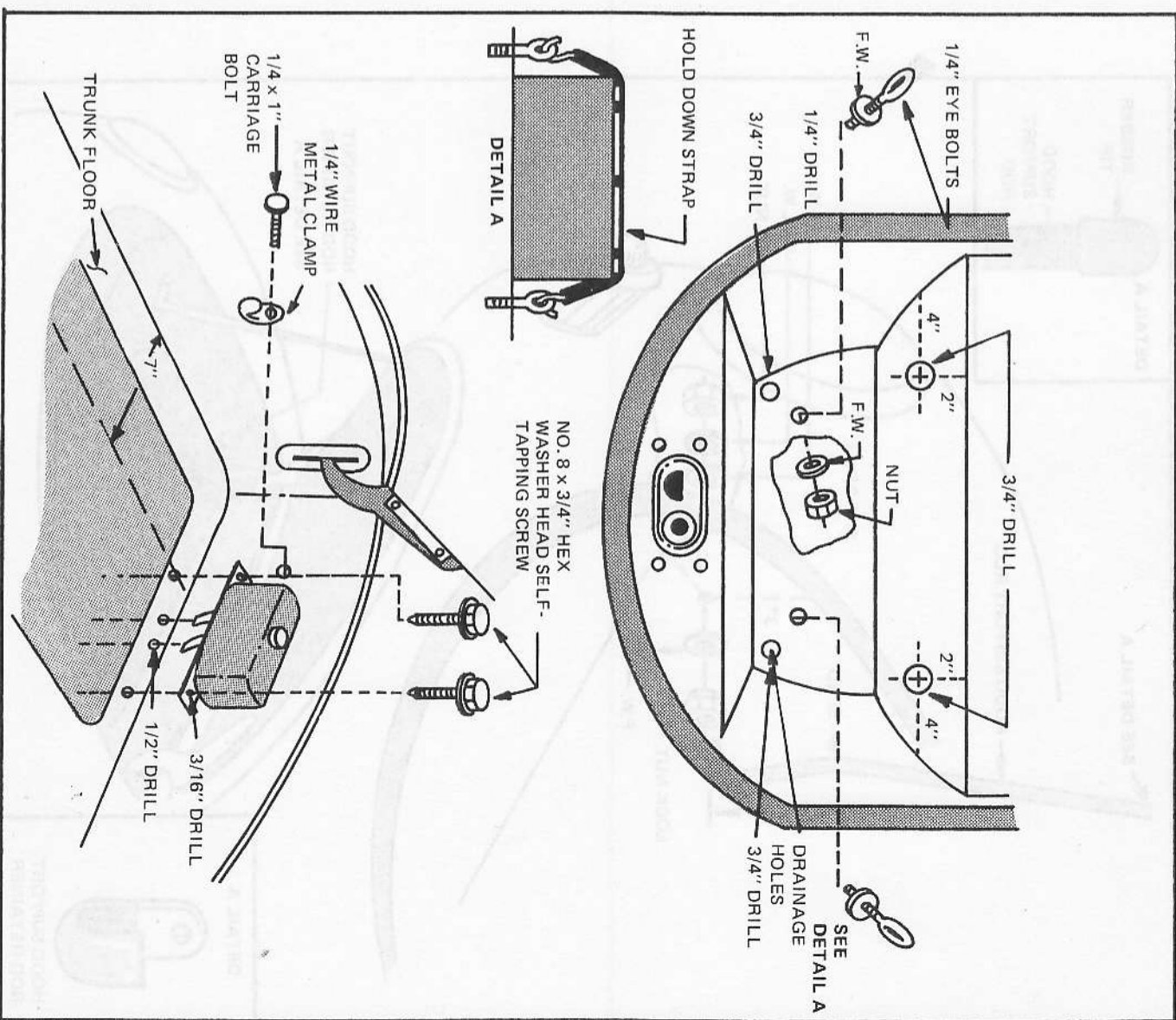


Figure 11

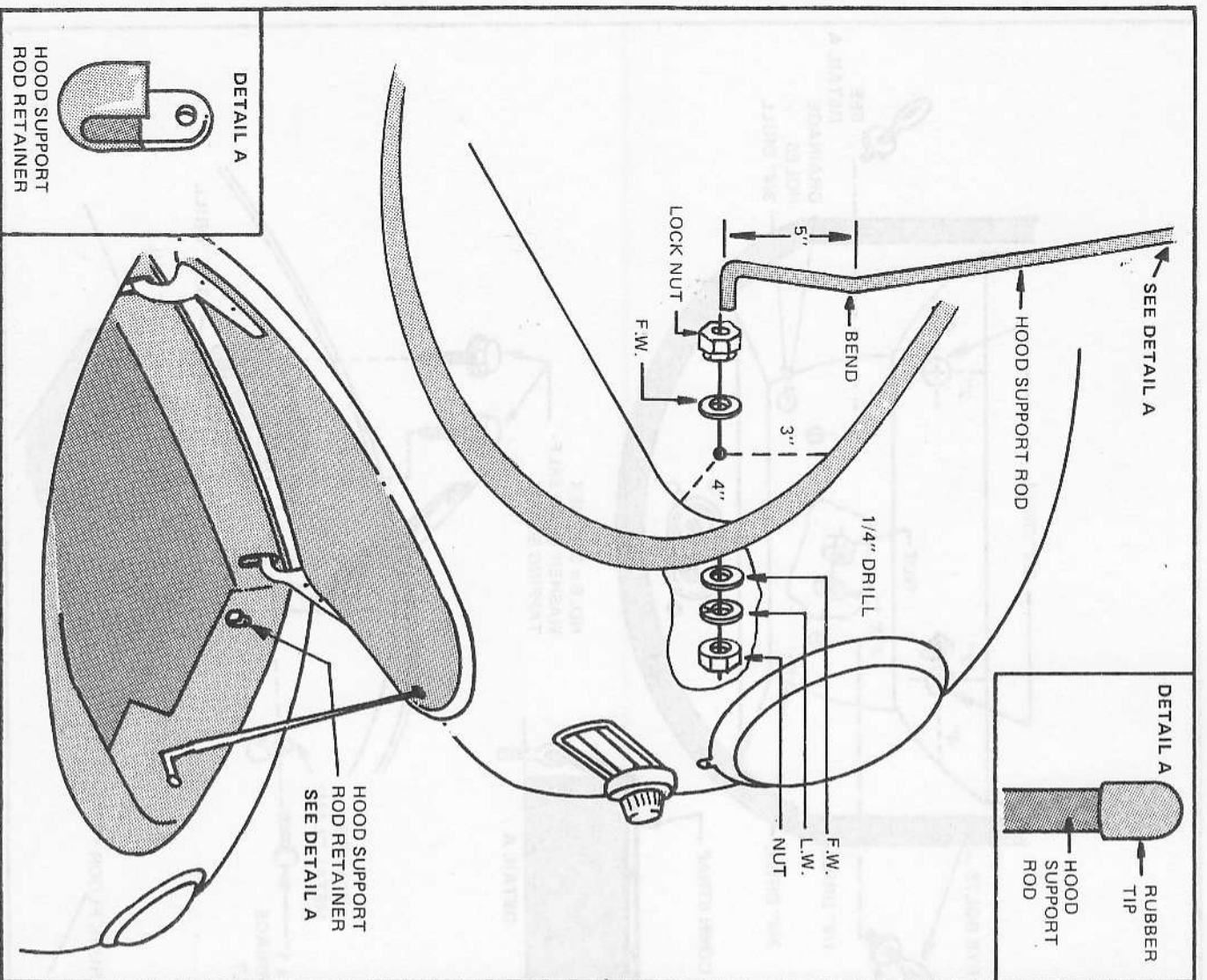


Figure 12

IV-12

HOOD SUPPORT ROD

- ☐ Measure back 4" from the front wall of the battery box on the driver's side of the luggage compartment and down 3" from the hood mounting surface. Drill 1/4" hole through side of compartment for hood mounting rod.
- ☐ Bend rod toward the center of the car 5" up from mounting threads so it engages recess in bottom of hood. Secure rod to trunk wall with supplied hardware. Lock nut is on the outside of the trunk.
- ☐ Obtain a 1/4" metal wire clamp at an auto supply store. Cut off outer top mounting hole and install on side of trunk with a 1/4 x 1" carriage bolt, flat washer, lock washer and nut. Install as a retainer near end of rod. Install rubber tip on end of rod.

HOOD HANDLE - STANDARD ASSEMBLY ONLY

- ☐ Attach Speedster emblem to hood handle. Remove studs from handle and position on the center of the hood with the front edge of the handle 2 1/2" from front edge of hood. Draw a line around mounting surfaces with a grease pencil.
- ☐ Mark hole locations on hood. Drill 1/4" hole for front mounting stud. Drill two 5/32" holes for rear studs. Secure handle to hood with nuts provided. Use flat washers under nuts. DO NOT OVERTIGHTEN.

LOWER DECORATIVE MOLDING - STANDARD ASSEMBLY ONLY

- ☐ Draw a straight line from front fender well to rear fender well 1 1/2" below and parallel with door opening on both sides of the car. This is the center of the lower decorative molding. Remove rubber center strip from decorative molding and mounting screws. Mark hole locations and drill five 3/16" holes in each side.
- ☐ Slide rubber gasket into extrusion on rear of molding. Insert studs through holes. Secure with nuts provided using No. 10 washers in front of them. DO NOT OVERTIGHTEN.
- ☐ Push rubber center strip back into position.

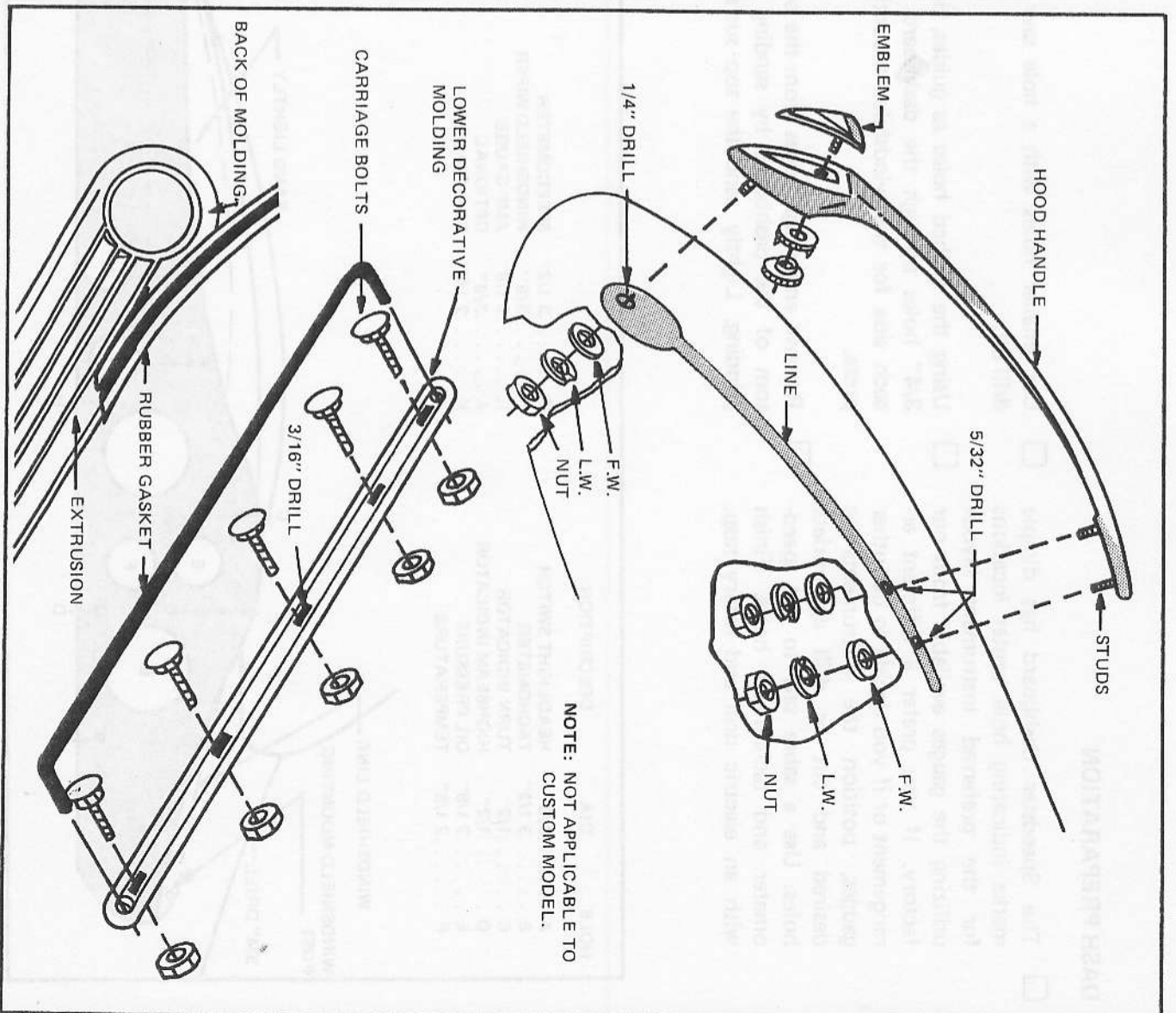


Figure 13

DASH PREPARATION

☐ The Speedster dashboard has dimple marks indicating hole center locations for the preferred instrument layout utilizing the gauges available from our factory. If you prefer a different arrangement or if you decide to use other gauges, position the instruments as desired and cut or drill appropriate holes. Use a sabre saw to cut speedometer and tachometer holes. Finish with an electric drill and rotary rasp.

☐ Cut smaller holes with a hole saw or drill bit.

☐ Using the scribed holes as guides, drill 3/4" holes through the dashboard on each side for the windshield mounting posts.

☐ Remove any rough edges from the bottom of the dashboard by sanding or grinding. Lightly sand the top surface

of the dash behind the windshield mounting line and the front upper area above the line on the front passenger side of the dash. This is where the dash upholstery will be cemented.

☐ If you should decide to install the optional VDO gauges that are available from our factory, refer to VDO layout.

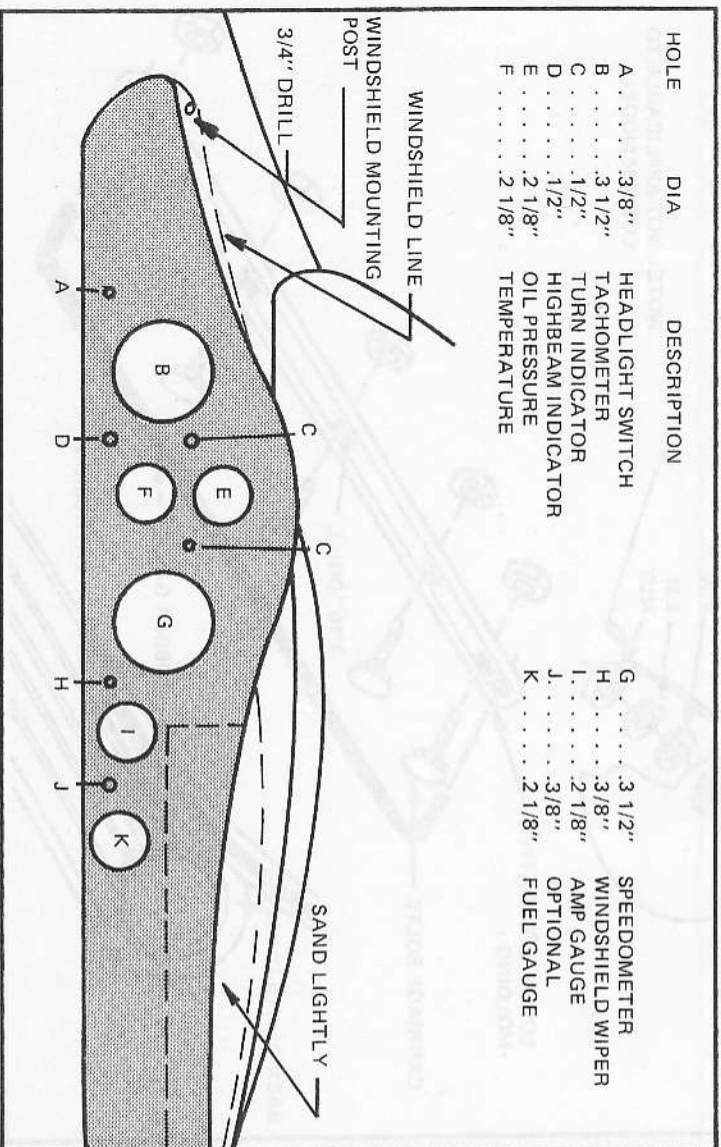


Figure 14

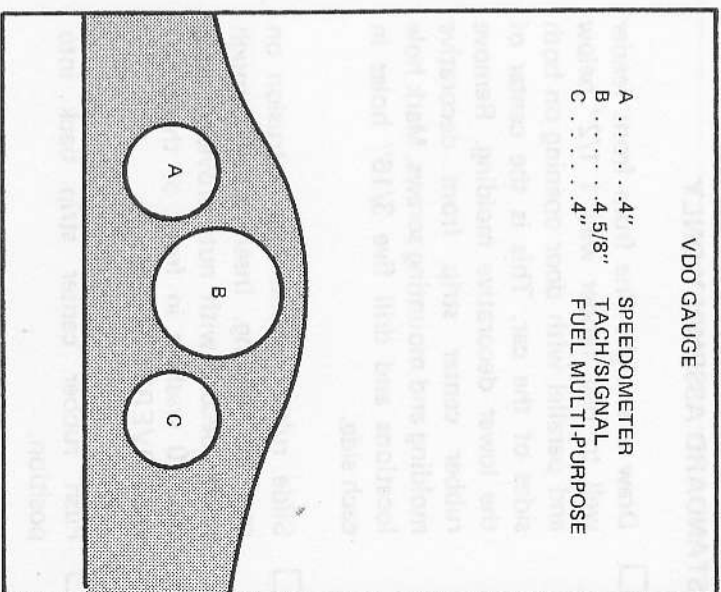


Figure 15

DASH UPHOLSTERY

- ☐ Cut upholstery material to fit the dash. Allow material to extend 1/2" forward of the windshield line.
- ☐ Apply 3M spray 90 adhesive to both surfaces. Do not apply cement to area in front of windshield line. Stretch and smooth into position until a wrinkle-free surface is obtained.
- ☐ Cut upholstery material to fit the three rubber trim pieces. Fasten the material to the trim pieces with contact cement. **NOTE:** You can staple the material into the back of the rubber trim.
- ☐ Drill four 3/16" holes through the dash for the studs on the curved trim piece. Attach trim piece loosely with 3/16" nuts, flat washer and lock washers. Insert the lip of trim bead between the dash and trim piece and tighten nuts to hold in place.
- ☐ Apply adhesive to the two small trim pieces. Glue into place sliding the trim piece behind the top edges.
- ☐ Cut out holes for defroster vents and cement into place.

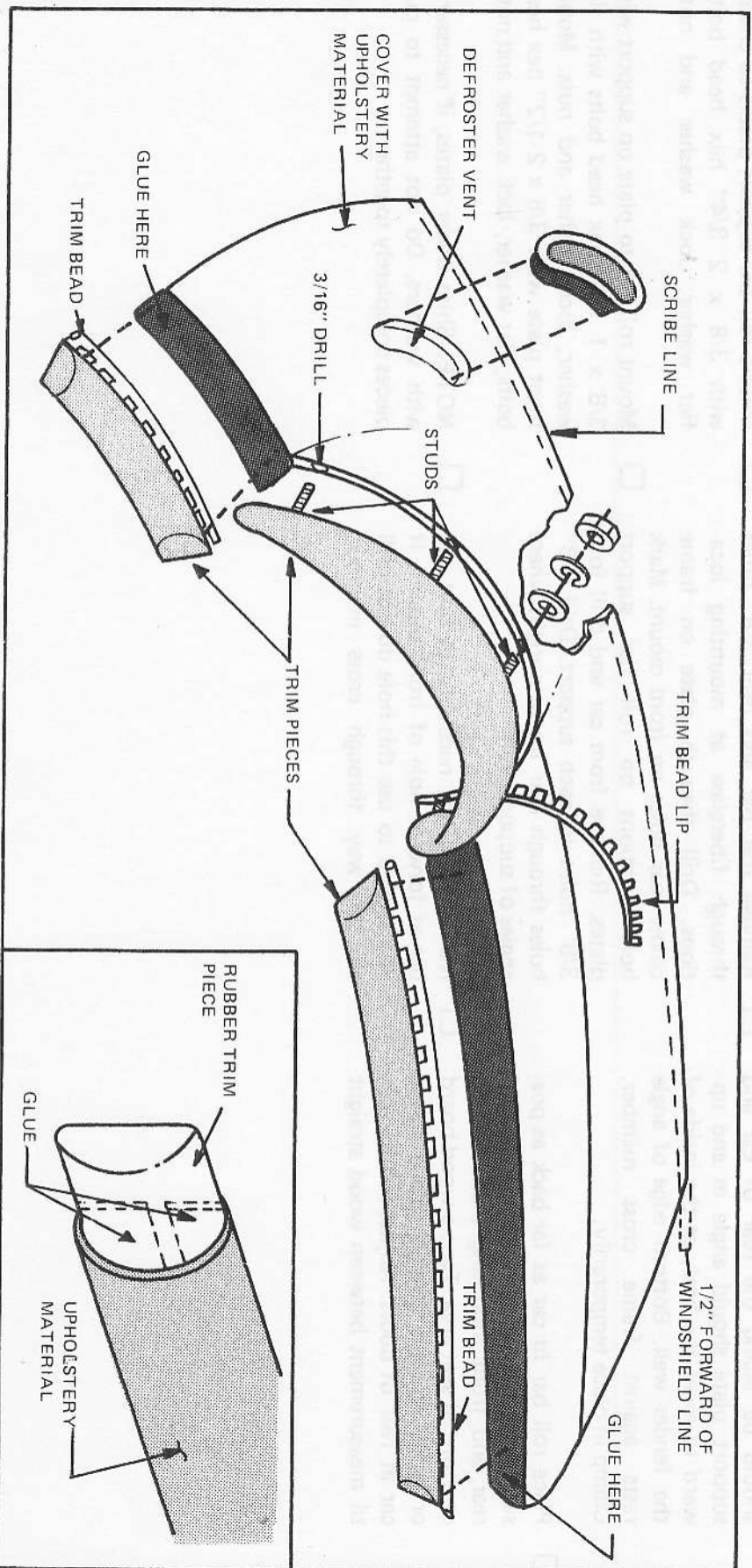


Figure 16

DECORATIVE ROLL BAR (OPTIONAL)

- ☐ Place left and right roll bar support plates against back inner sides of frame uprights. Holes in angles on supports should be facing the rear of car and support plate should angle in and upward to meet the body at the inside of the fender well. Bottom edge of angle rests against frame cross member. Clamp in place temporarily.
- ☐ Remove roll bar and drill $3/8"$ holes through fiberglass at mounting locations. Drill through plate on frame below rear holes on front mount. Mark hole locations on roll bar support plates. Remove from car and drill four $3/8"$ holes in each support. Drill $3/8"$ holes through rear frame upright where angles of supports bolt.
- ☐ Mount roll bar to plate on support with $3/8 \times 1\frac{1}{2}"$ hex head bolts with flat washer, lock washer and nuts. front plate with $3/8 \times 2\frac{1}{2}"$ hex head bolts, flat washer, lock washer and nuts.
- ☐ Place roll bar in car as far back as possible with support legs extending toward rear and front mounting plates resting on front of seat area. Tape a wood board or other suitable straight piece across car at rear of doors. Adjust roll bar until measurement between wood straight edge and bar is equal on both sides. Mark hole locations on fiberglass.
- ☐ Drill only through top surface and secure with a lag bolt.
- ☐ Mount roll bar support plates to chassis with $3/8 \times 2\frac{3}{4}"$ hex head bolts, flat washer, lock washer and nuts.
- ☐ **NOTE:** it is not necessary to bolt roll bar at forward hole of front mount. If you decide to use this hole do not drill all the way through cross member.
- ☐ **NOTE:** Shim under plates, if necessary, with washers. Do not attempt to pull pieces completely together.

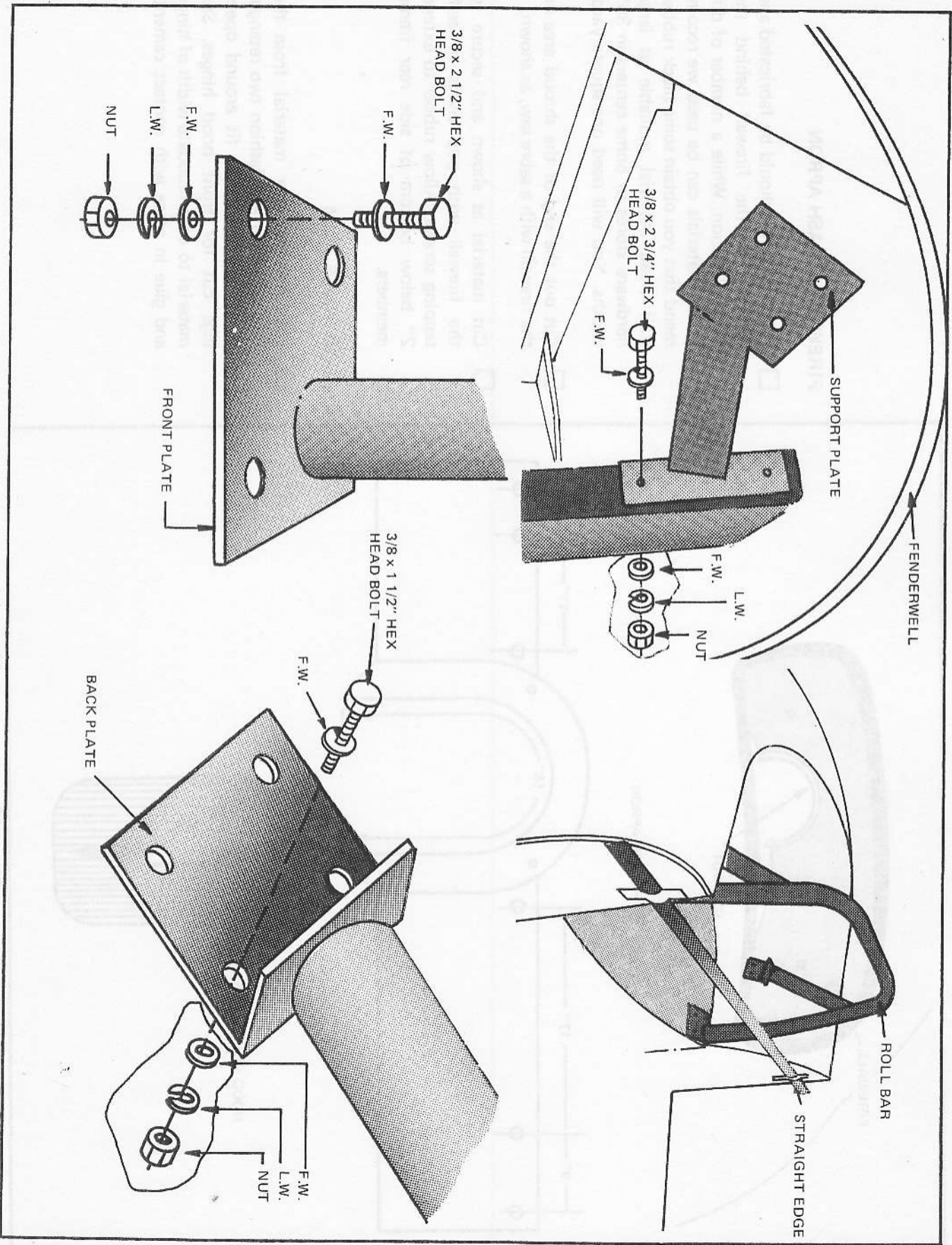


Figure 17

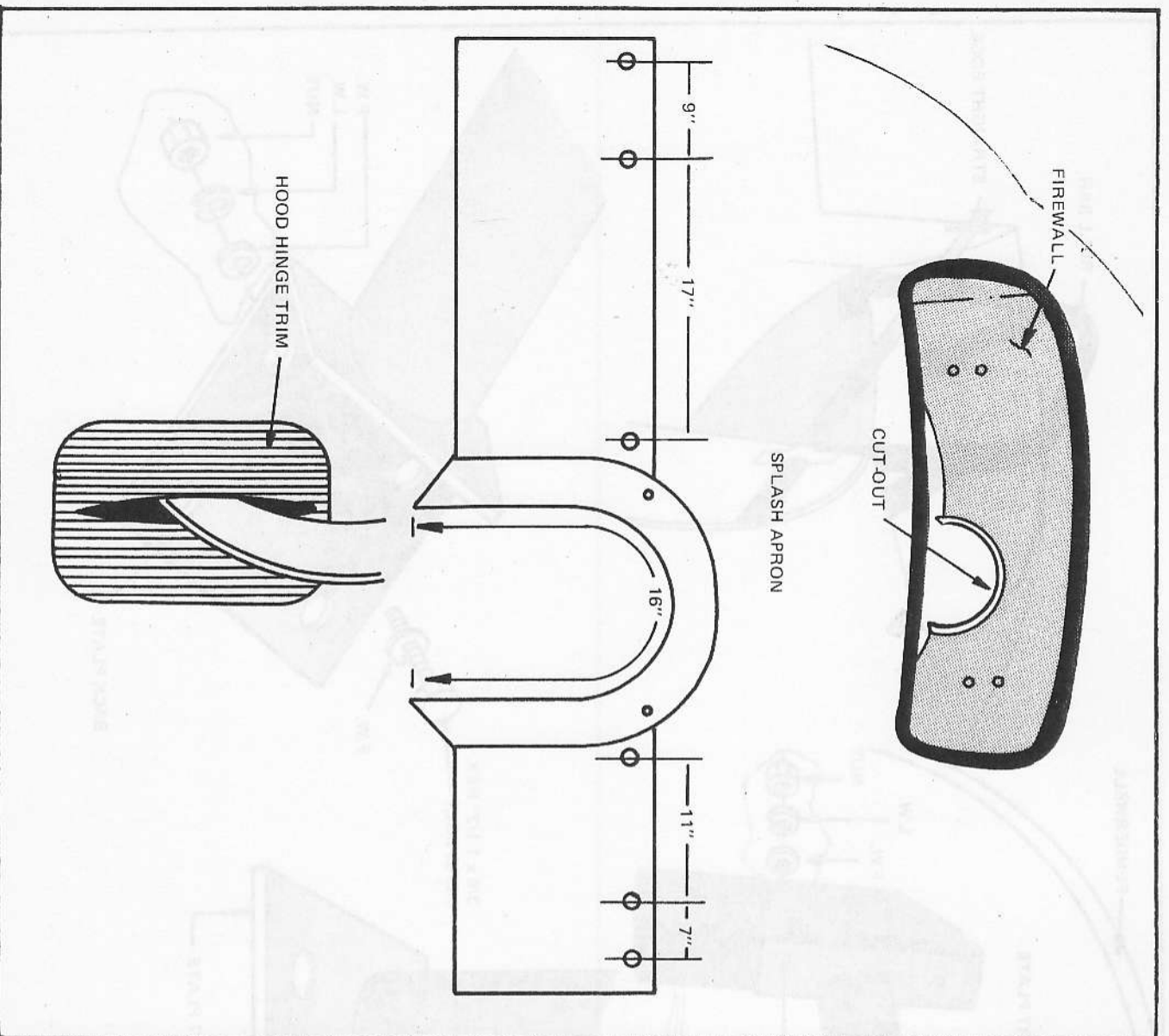


Figure 18

FIREWALL SPLASH APRON

- ☐ A splash apron should be fabricated and fastened to the firewall behind the engine location. While a number of different materials can be used we recommend that you obtain some black rubber stair tread material available at large hardware stores or home centers in 36" widths. You will need one square yard.
- ☐ Cut out the end of the shroud area on the firewall with a sabre saw, as shown.
- ☐ Cut material as shown and secure to the firewall with pop rivets or self-tapping screws. Allow rubber to extend 2" below bottom of side rear frame members.

HOOD HINGE TRIM

- ☐ Take the left-over material from the firewall apron and fashion two retangular pieces 4 x 6" to fit around openings cut for front hood hinges. Slit material to accommodate width of hinge and glue in place with contact cement.

OPTIONAL DEFROSTER DUCTS

- ☐ Cut out slots for the defroster ducts in the scribed areas on the upper dash surface behind the windshield mounting line. Use a sabre saw or an electric drill with a rotary rasp.

FUSE BLOCK PLATE

- ☐ Fabricate fuse block plate from 1/2" plywood (4 x 12"). Mount fuse block and horn relay to plate. Attach to fiberglass under dash in front of frame member. Secure from trunk area with two 1/4 x 1 1/2" carriage bolts, flat washer, lock washer and nuts.

GAUGE INSTALLATION

- ☐ Route wires for gauges through their appropriate holes (see wiring instructions). Connect gauges and install brackets to hold them in place.
- ☐ Attach wires to tag lights and taillights.
- ☐ Connect wires to windshield wiper motor and windshield washer, if used.

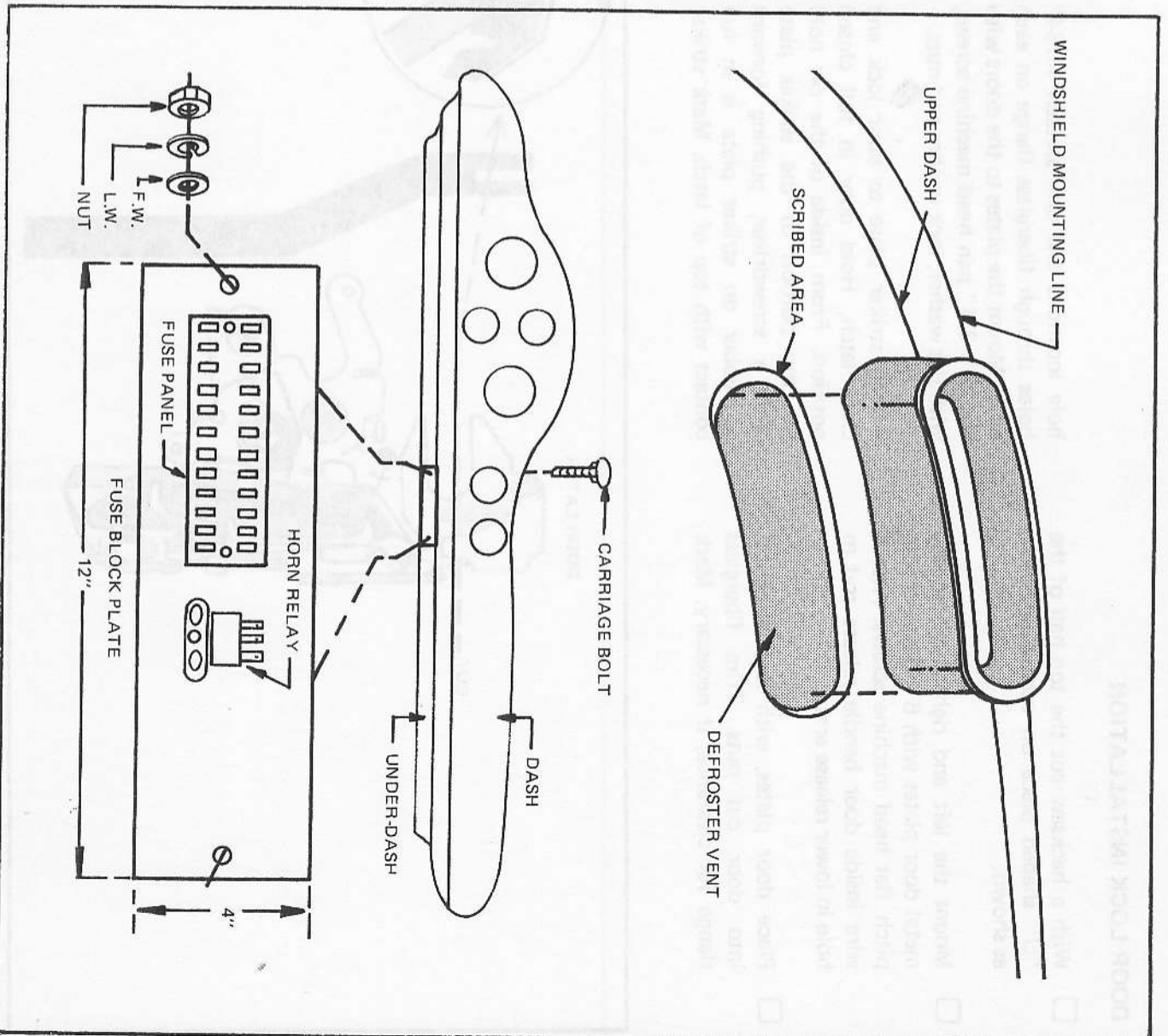


Figure 19

DOOR LOCK INSTALLATION

- ☐ With a hacksaw cut the top half of the "U" shaped piece on each door latch, as shown.
- ☐ Mount the left and right locks to the metal door plates with 6 x 12mm 1 mm pitch flat head machine screws. Attach wire inside door handle release rod to hole in lower release arm.
- ☐ Place door plates, with lock attached, into door cut outs. Trim fiberglass flange for clearance, if necessary. Mark
- hole locations and drill sixteen 11/64" holes through fiberglass flange on each door. Mount the plates to the doors with No. 8 x 3/4" pan head machine screws, with flat washer, lock washer and nuts.
- ☐ Attach striker plate to door lock and close latch. Hold door in full closed position. From inside of the car hold the top portion of the striker plate with a screwdriver, pushing forward so rubber on striker plate is in full contact with top of latch. Mark striker plate position from inside with a grease pencil or other suitable marker. Open door and remove striker. Place against door opening, where marked. Drill four 1/4" holes through fiberglass. Mount striker plate to the body and backing plate with 1/4 x 3/4" flat head machine screws, lock washers and nuts. If necessary, adjust door by widening the holes in the fiberglass. Striker plate can be shimmed outward with metal washers.

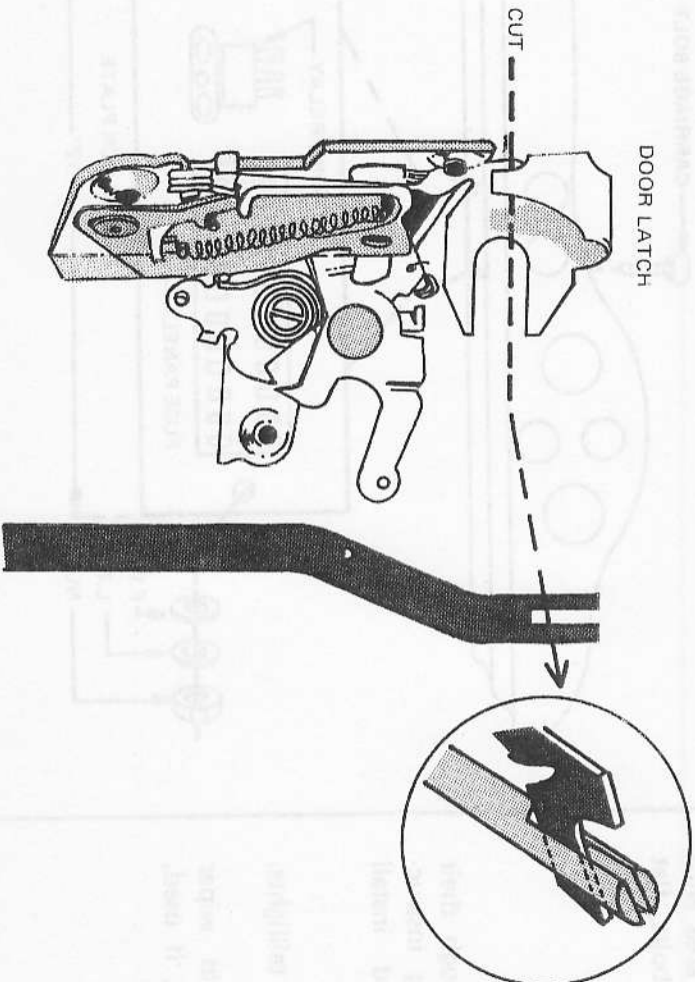


Figure 20

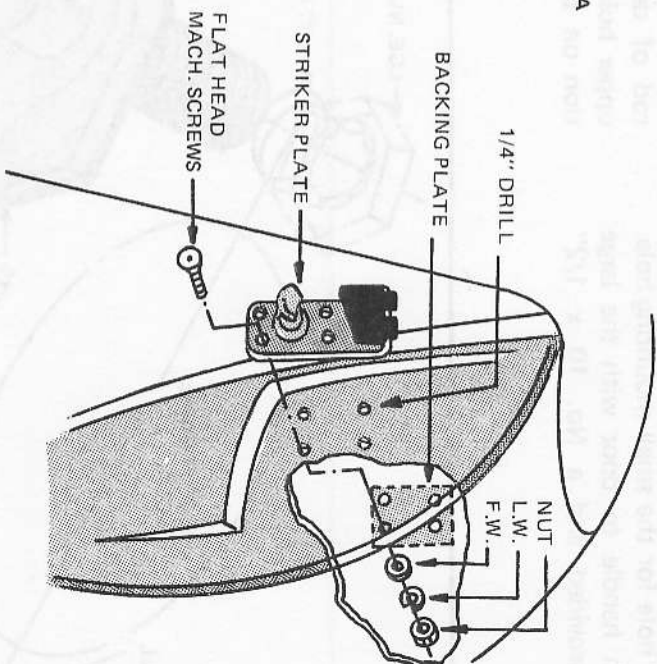
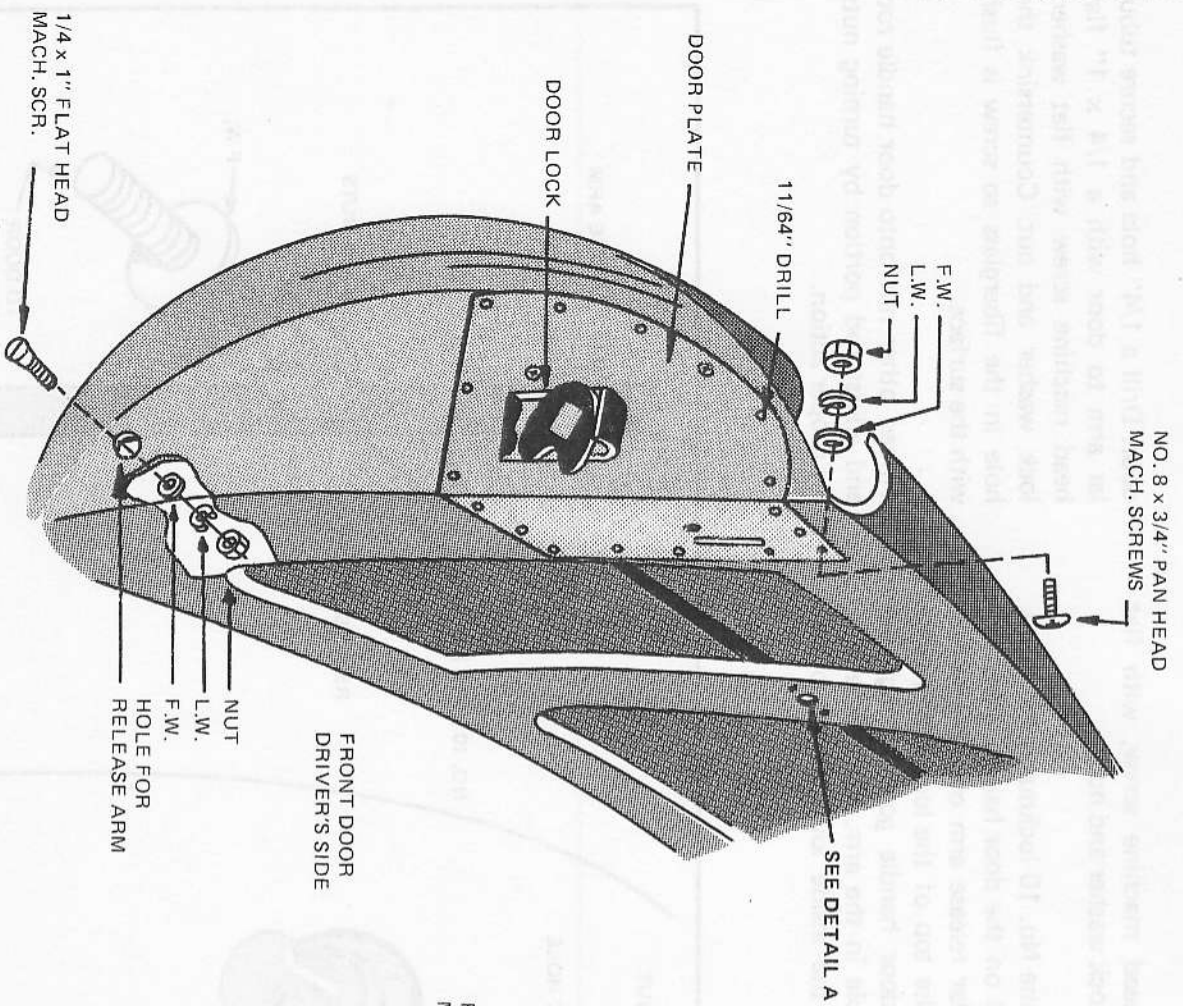


Figure 21

- ☐ Draw a straight line across the center of the door handle recess on the outside of the door. Place rubber gaskets against the body. The large gasket is located closest to edge of door that opens. Mark hole centers 5" apart. With a 1" hole saw, cut the large hole. Drill a 3/16" hole for the small mounting hole. Attach handle to door with the large nut provided and a No. 10 x 1/2"
- ☐ Thread one No. 10 locknut onto the release rod on the door handle. Slide slot on tubular release arm over the release arm at the top of the lock. The release rod of door handle goes through the upper hole in the arm. Mark hole location on the inside lower center of the door. Drill a 1/4" hole and secure tubular arm to door with a 1/4 x 1" flat head machine screw with flat washer, lock washer and nut. Countersink the hole in the fiberglass so screw is flush with the surface.
- ☐ Thread other nut onto door handle rod and adjust rod portion by turning nuts for proper action.

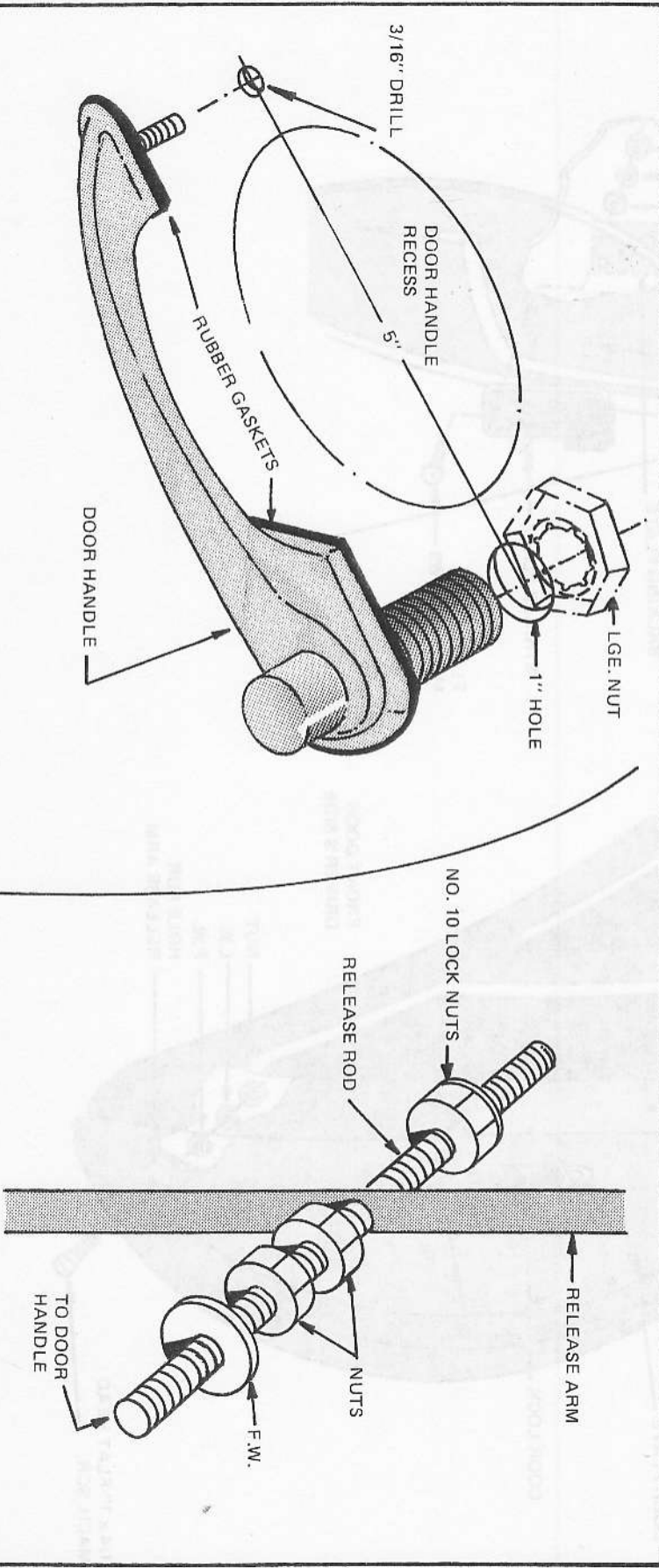


Figure 22

- ☐ Mark position of inside handle release bracket 6 1/2" from top of door on center fiberglass door support. Position bracket on line so release lever faces down. Open portion of inner door handle is in line with top corner of lock plate. Mark hole locations. Drill 1/4" holes for mounting bolts and 3/4" hole for handle shaft.
- ☐ Attach inside handle wire release rod from the lock to the arm of bracket and bolt through the inside of door with 1/4 x 1" flat head machine screws with flat washer, lock washer and nuts. Counter-sink holes in the fiberglass so screws are flush with the surface.
- ☐ **NOTE:** As an alternative, you may use a piece of cable in place of the release rod. Obtain throttle cable and a throttle cable stop from an automotive supply store to secure cable ends together.
- ☐ After installation of the door upholstery, place handle and trim pad into position and secure with a cotter pin.

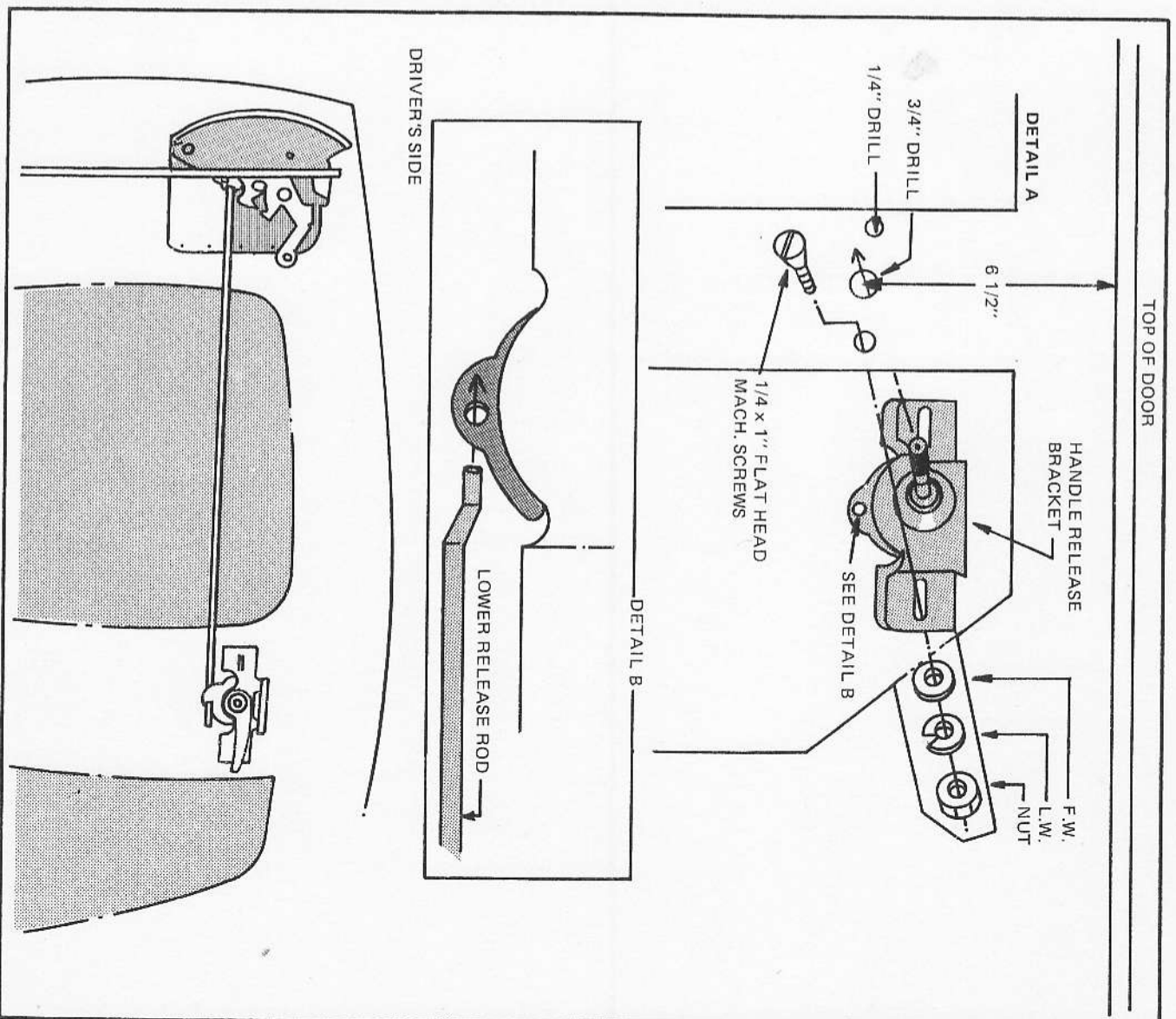


Figure 23

DASH STUDS FOR OPTIONAL TONNEAU COVER

- ☐ The studs behind the windshield for the tonneau cover must be installed prior to windshield installation. Even if you are not using a tonneau cover, we suggest that you install these studs.
- ☐ Twelve male studs with self-tapping screws are used. Drill 9/64" holes and

- ☐ screw into fiberglass. Do not overtighten, as you may strip the fiberglass material.
- ☐ Locate a stud 1" out on each side of the center dimple mark for the windshield hold down rod and 2" back from the windshield line on the body. Locate a snap in each corner of the dash, behind

the windshield post holes. Locate 4 more snaps on each side of the dash, between the snaps previously installed. Space snaps approximately 5" apart and 2" behind the line for the windshield frame.

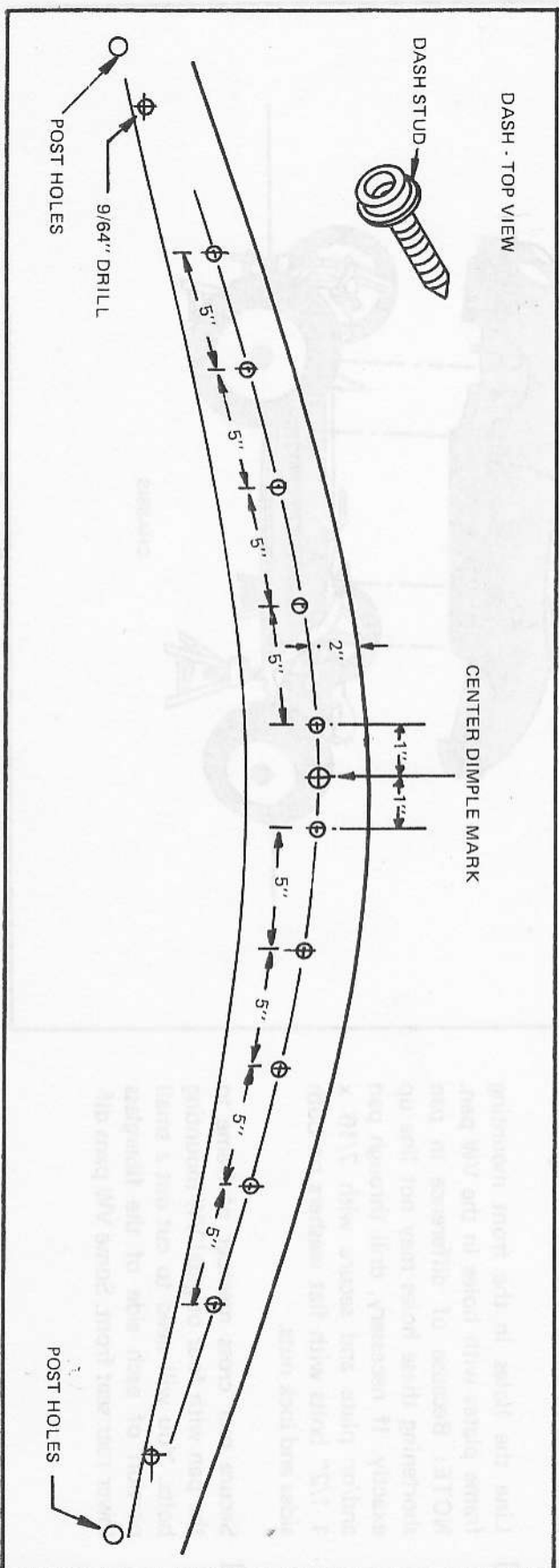


Figure 1

ASSEMBLING THE BODY TO PAN

You will need a minimum of six people or a suitable lifting device to lift the body onto the frame.

NOTE: Prior to installation of the body, support the frame on jack stands, off the ground.

☐ Apply a 2" wide heavy bead of silicone sealer to all edges of the pan that contact the frame in the body. Three tubes, that fit into a caulking gun, are required.

☐ Lift body onto frame and adjust, so the holes in the mounting plates, at the rear, line up with the front holes in the shock towers on the chassis. Secure loosely with stock VW mounting bolts.

☐ Line the holes in the front mounting frame plates with holes in the VW pan. **NOTE:** Because of difference in pan shortening these holes may not line up exactly. If necessary, drill through pan and/or plate and secure with 7/16 x 1 1/2" bolts with flat washers on both sides and lock nuts.

☐ Secure rear cross member of frame to the pan with four original VW mounting bolts. You will need to cut out a small portion of each side of the fiberglass lower rear seat front. Some VW pans dif-

fer slightly and the holes may not line up. In this case, it will be necessary to drill 5/16" holes through the bottom of the pan and mounting plate flange on frame and secure with 5/16 x 2" hex head bolts with flat washers on both sides and lock nuts.

☐ On the sides of the pan, drill 1/4" holes in the frame member through the

two front and rear pan holes, on each side of the car. Secure with 5/16 x 1" hex washer head self-tapping screws. ☐ Drill 5/16" holes through the middle three holes on the sides of the pan through the side plates on the frame. Secure with 5/16 x 1 1/4" hex head bolts with flat washers on both sides and lock nuts.

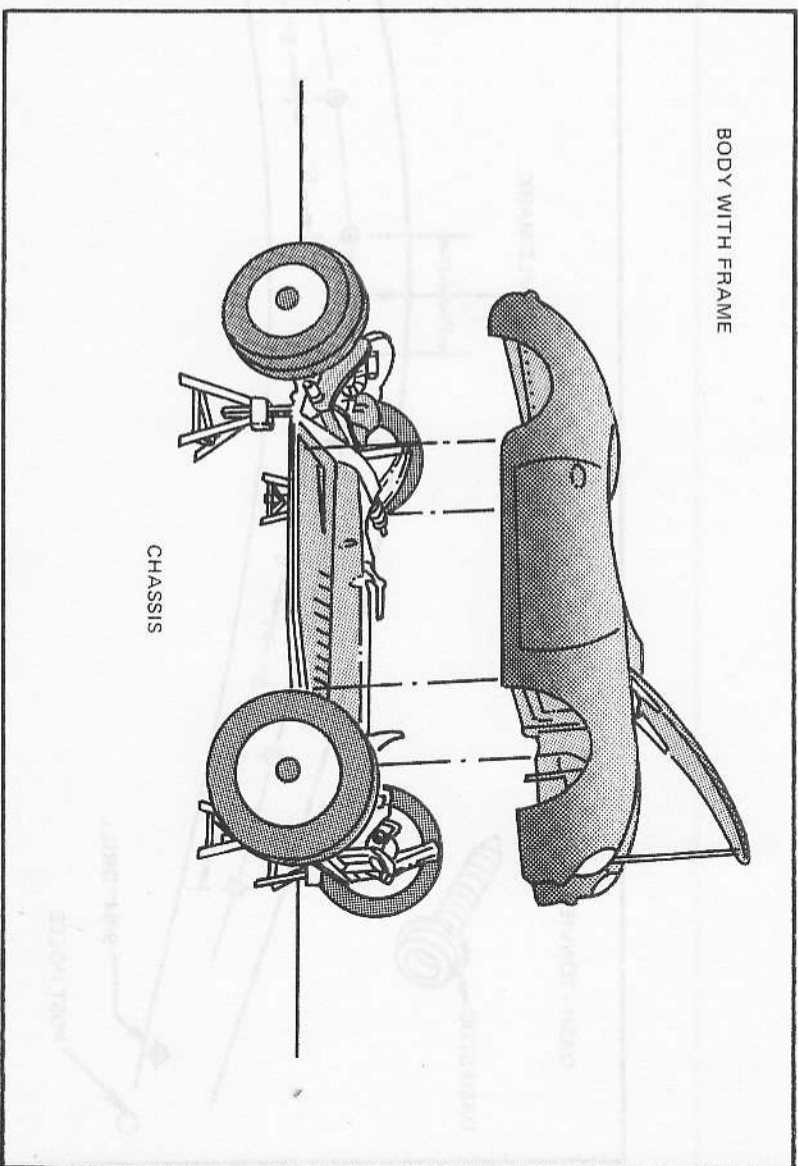


Figure 2

* BODY NOT SHOWN FOR CLARITY

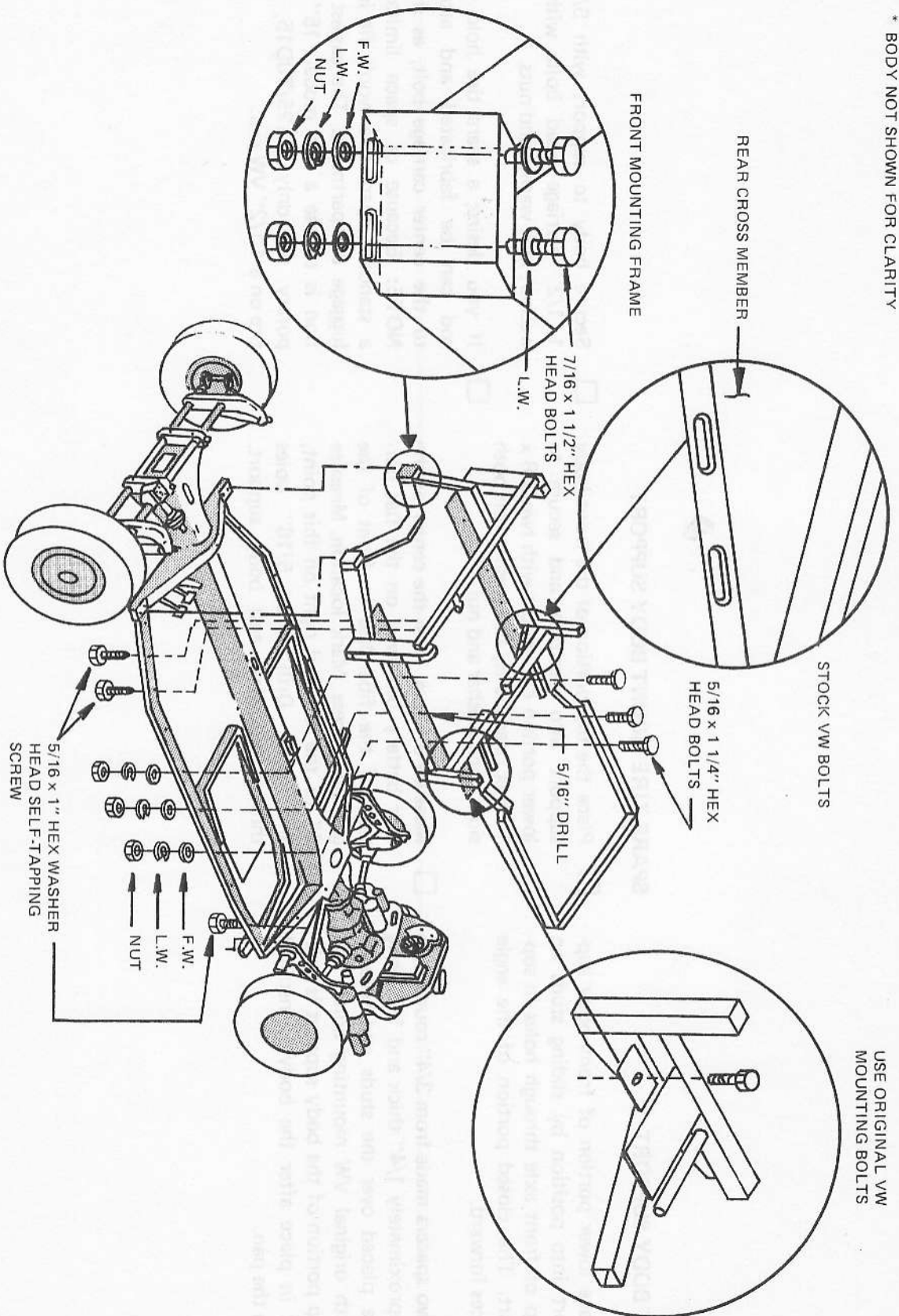


Figure 3

FRONT BODY SUPPORT

- ☐ Place lower portion of front body support into position by sliding studs on top of front axle through holes in support. The closed portion of the angle faces forward.
- ☐ Two spacers made from 3/4" round pipe approximately 1/4" thick and 1/2" long are placed over the studs and secured with original VW mounting bolts. The top portion of the body support is bolted in place after the body is installed on the pan.

SPARE TIRE MOUNT BODY SUPPORT

- ☐ Place the top portion of the front body support into position and secure to lower portion of support with two 3/8 x 1" hex head bolts, flat washers on both sides, lock washer and nut.
- ☐ Measure 3" back from the center of the rear battery box wall on the flat portion of the fiberglass in front of the gas tank recess. Mark location. Measure 6" to the left and right on this point, and mark. Drill three 5/16" holes through fiberglass and body support.
- ☐ Secure body to support with 5/16 x 1 1/2" carriage head bolts with flat washer, lock washer and nuts.
- ☐ If you desire, a spare tire hold down rod can be fabricated and attached to the center carriage bolt, as shown. **NOTE:** Because of space limitations, a standard spare tire won't fit in the luggage compartment. The easiest solution is to use a late model, 15" temporary use only, T125/TOD15, spare tire on a 4 1/2" VW rim.

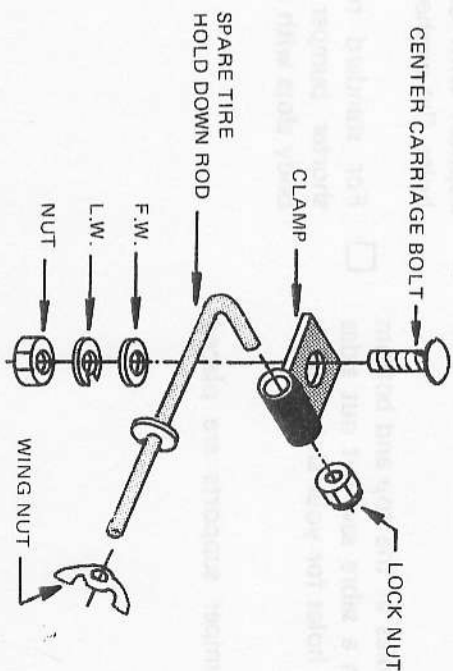
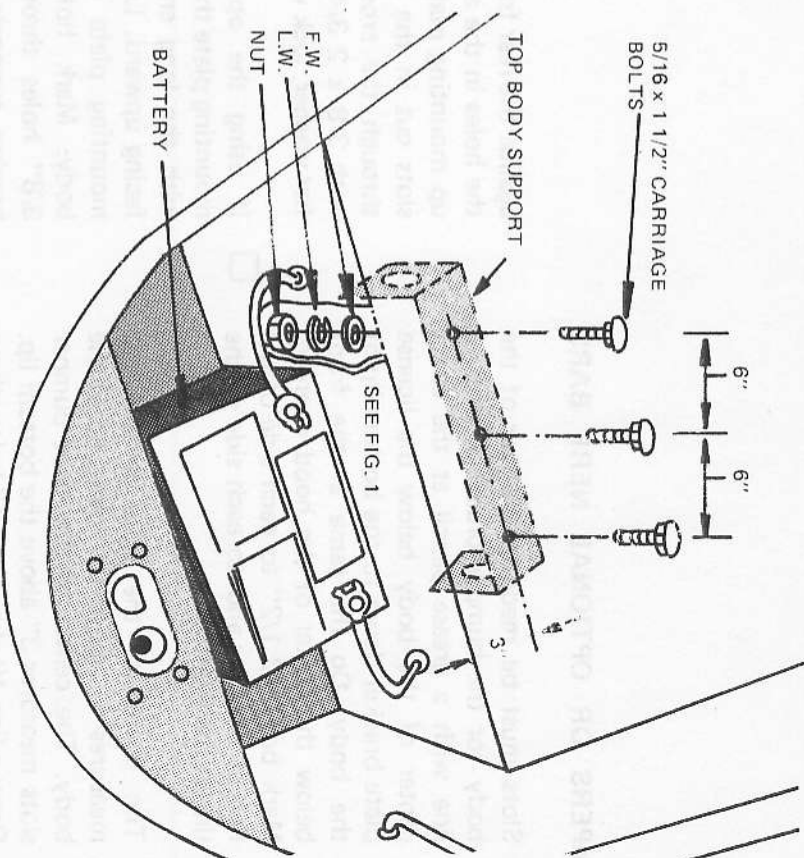
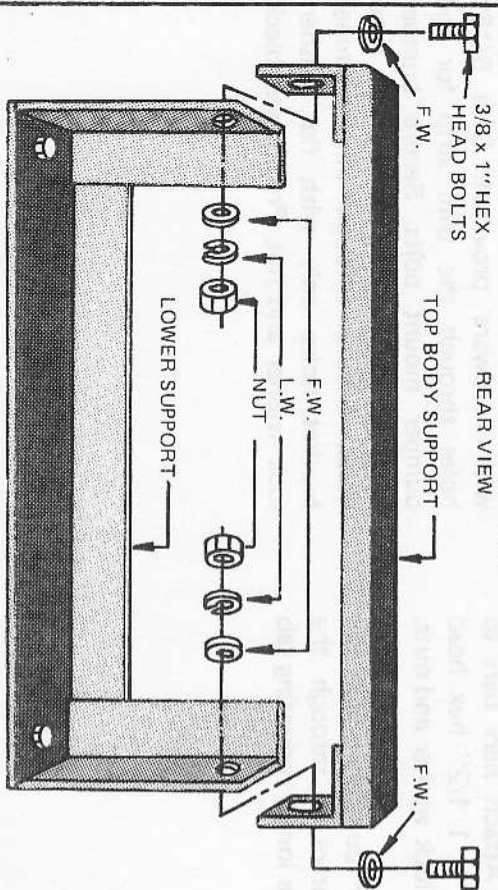
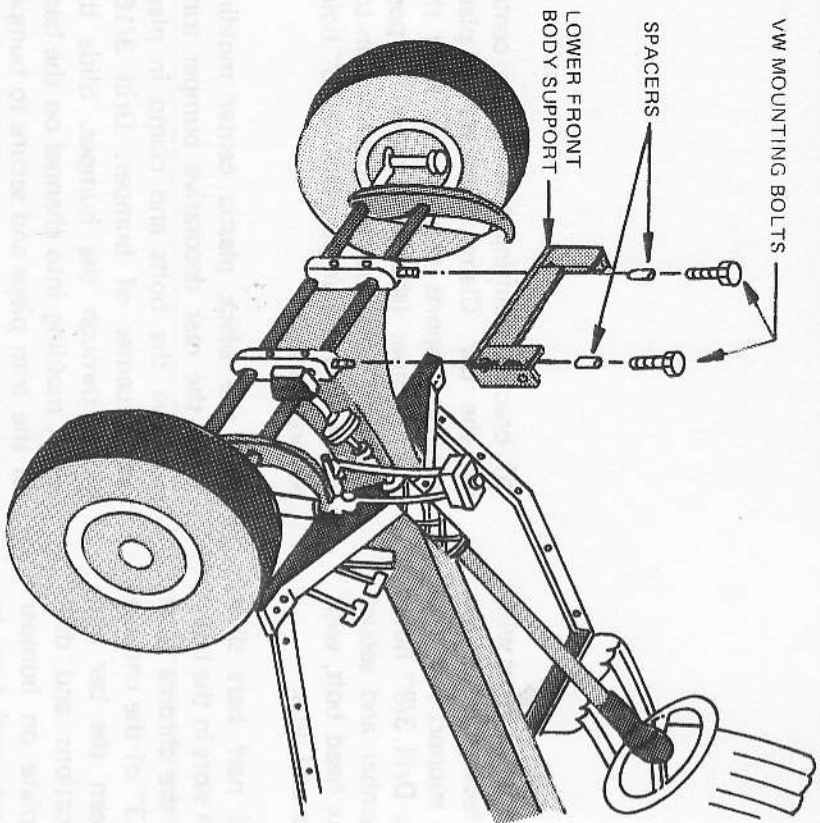
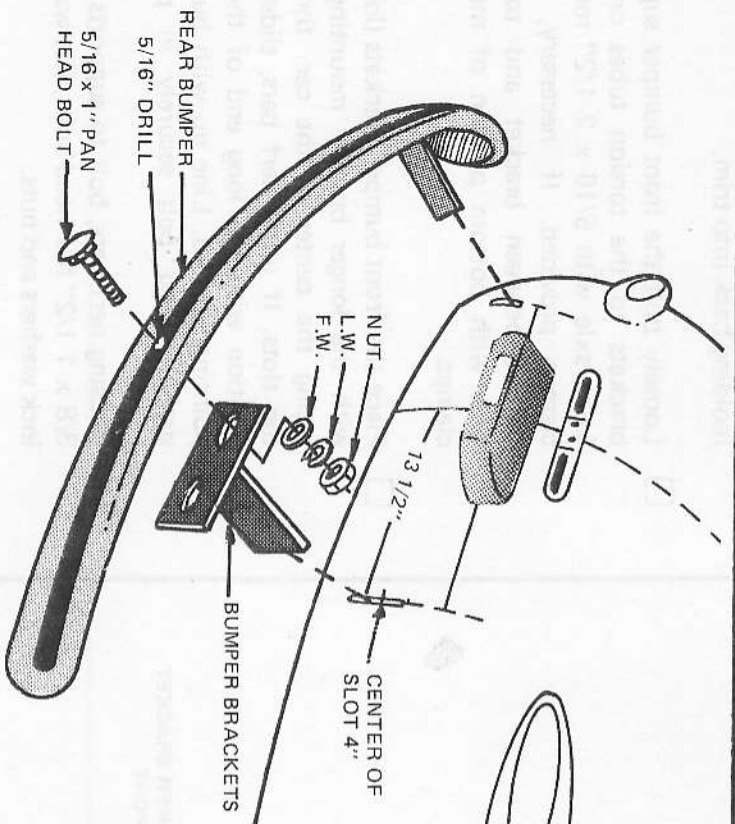


FIG. 1

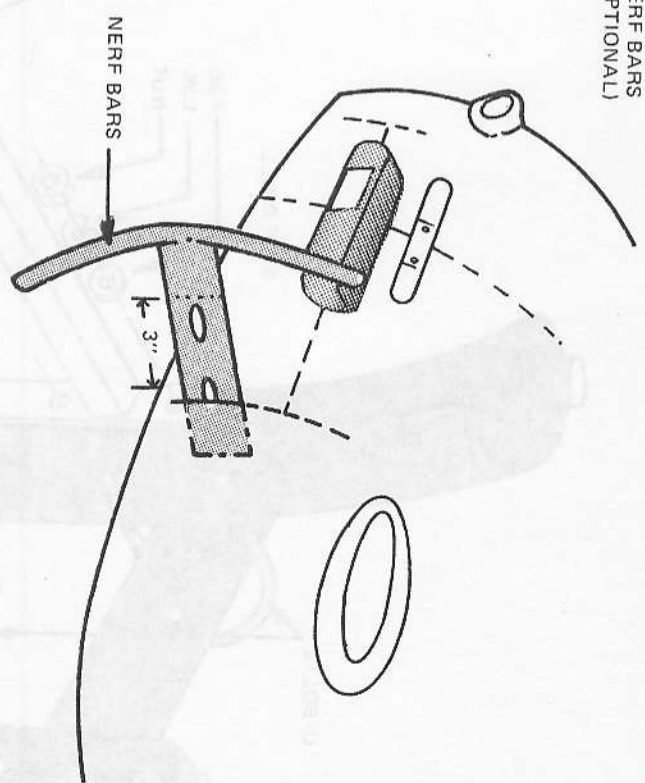
Figure 4

BUMPERS OR OPTIONAL NERF BARS

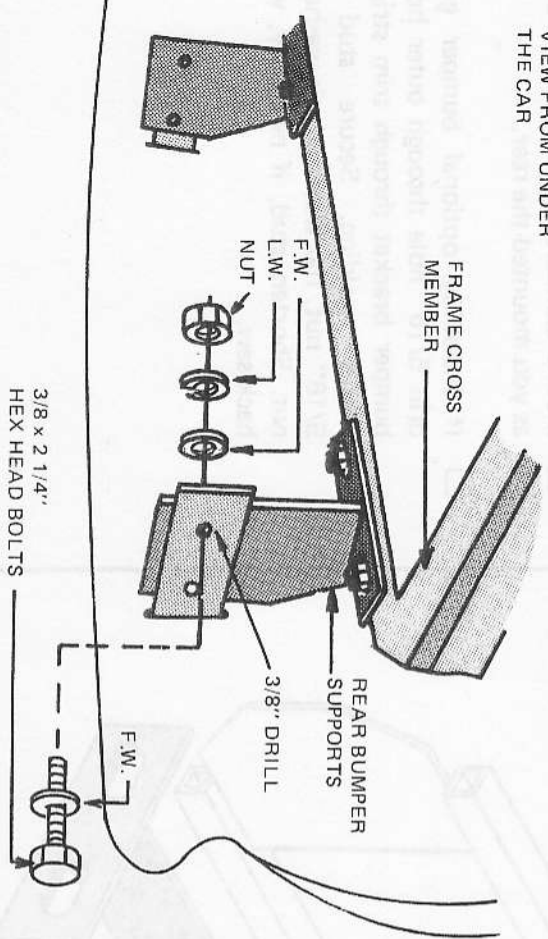
- ☐ Slots must be made in the rear of the body for the bumper brackets. Draw a line with a grease pencil at the exact center of the body below the license plate bracket down to the bottom lip of the body. Do the same at the front below the center of the hood opening. Mark body 13 1/2" to each side of the line at the rear and to each side of the line at the front.
- ☐ The center of the slots at the rear measures 4" above the lower lip of the body. The center of the front bumper slots measures 3" above the bottom lip. Draw a line 1" above and 1" below these points.
- ☐ Drill 1/4" holes at the top and bottom of line. With a sabre saw cut out sides between the holes for your slots. Finish with a file.
- ☐ The rear bumper supports are placed against the rear frame cross member with the holes in the angle facing down. Line up mounting plate on support with the slots cut in the body. Drill 3/8" holes through the cross member and secure with 3/8 x 2 3/4" hex head bolt, with flat washer, lock washer and nuts.
- ☐ If using the optional nerf bars slide mounting plate through slots in the body with the long end of the chrome tube facing upward. Leave 3" of the chrome mounting plate between the bar and body. Mark hole locations and drill 3/8" holes through plate on bumper bracket supports. Attach nerf bars to support with 3/8 x 1 1/2" hex head bolts, flat washer, lock washer and nuts.
- ☐ For standard rear bumper, place the shorter bumper brackets through the body slots with the longer mounting tab of bracket pointing toward the center of the car. Clamp brackets in place against supports temporarily. Hold the rear bumper (shorter bumper) in position and mark the hole locations on the inside of the bumper. Drill 5/16" holes where marked.
- ☐ Pull the black plastic center molding from the rear decorative bumper trim. Remove the bolts and clamp in place along center of bumper. Drill 3/16" holes through the bumper. Slide the small molding into channel on the back of the trim piece and secure to bumper with hardware provided. Drill 5/16" holes through the trim strip for the bumper mount bolts. Secure bumper to brackets with 5/16 x 1" pan head bolts. Secure through inner bumper bracket holes only with flat washer, lock washer and nut. Press outer black



NERF BARS
(OPTIONAL)



VIEW FROM UNDER
THE CAR



OPTIONAL BUMPER GUARDS

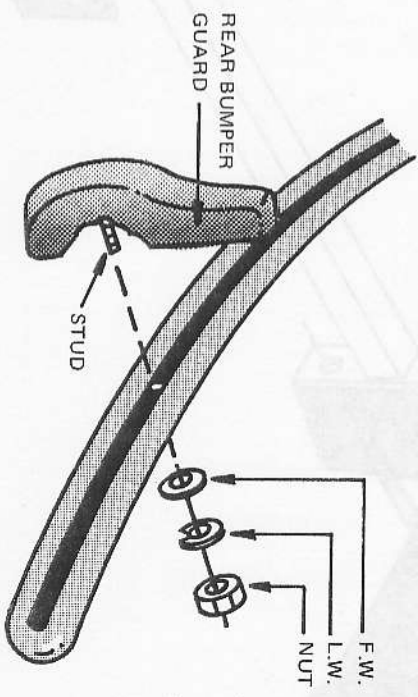


Figure 5

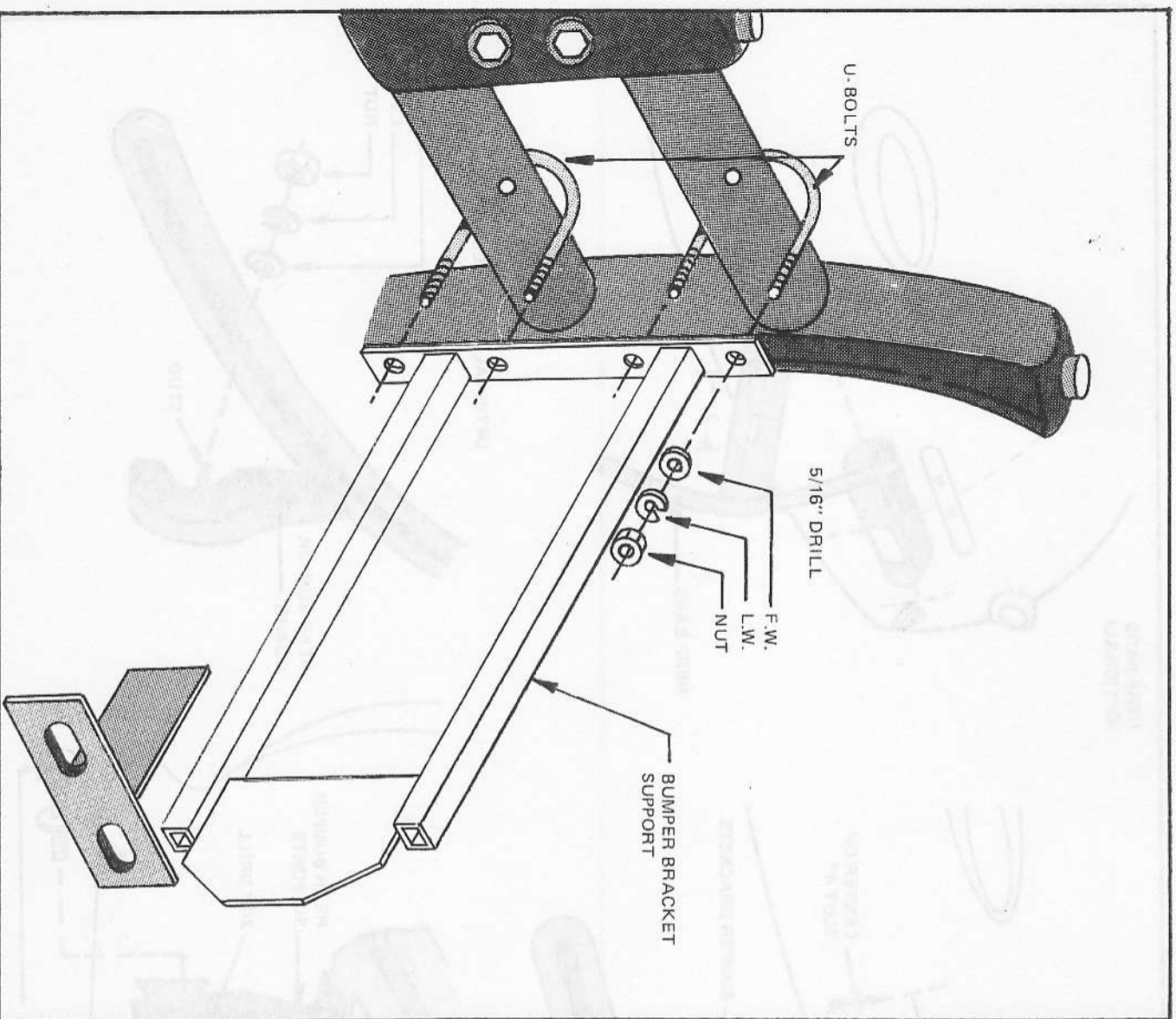


Figure 6

- ☐ Loosely bolt the front bumper support brackets to the torsion tubes on the front axle with 5/16 x 2 1/2" muffler clamps provided. If necessary, shim clamps between bracket and torsion tube with bottom portion of muffler clamps.
- ☐ Place the front bumper brackets (longer) with the longer bumper mounting tab facing the center of the car through the slots. If using nerf bars, slide into position with the long end of the bar pointing upward. Line up with bumper supports and bolt securely in place.
- ☐ If using nerf bars, bolt to supports with 3/8 x 1 1/2" hex head bolts, flat washer, lock washers and nuts.
- ☐ Mount standard front bumpers exactly as you mounted the rear.
- ☐ If installing optional bumper guards, drill 5/16" hole through outer hole on bumper bracket through trim strip and rubber molding. Secure stud with 5/16" nut, flat washer, lock washer and nut. Shorten stud, if necessary, with a hack saw.

STEERING COLUMN

- ☐ Attach the adjustable column bracket to the mounting tab on the frame cross member behind the dash with a 5/16 x 3" hex head bolt, flat washers on both sides, lock washer and nut.
- ☐ With a sabre saw cut a 2 1/2" slot in the fiberglass bulkhead below the rear portion of the gas tank. The center of
- ☐ this slot is 2 1/2" from the lip of the gas tank cut out.
- ☐ Mount steering shaft to steering box with original hardware. Mount steering column to adjustable bracket with 5/16 x 1 1/2" hex head bolts, flat washers, on both sides, lock washer and nuts.
- ☐ **NOTE:** If your car is equipped with a switch for wipers and washer, cut the lever on the switch flush with the column.
- ☐ On pre 1968 VW's a provision for the ignition switch must be made in the dashboard.

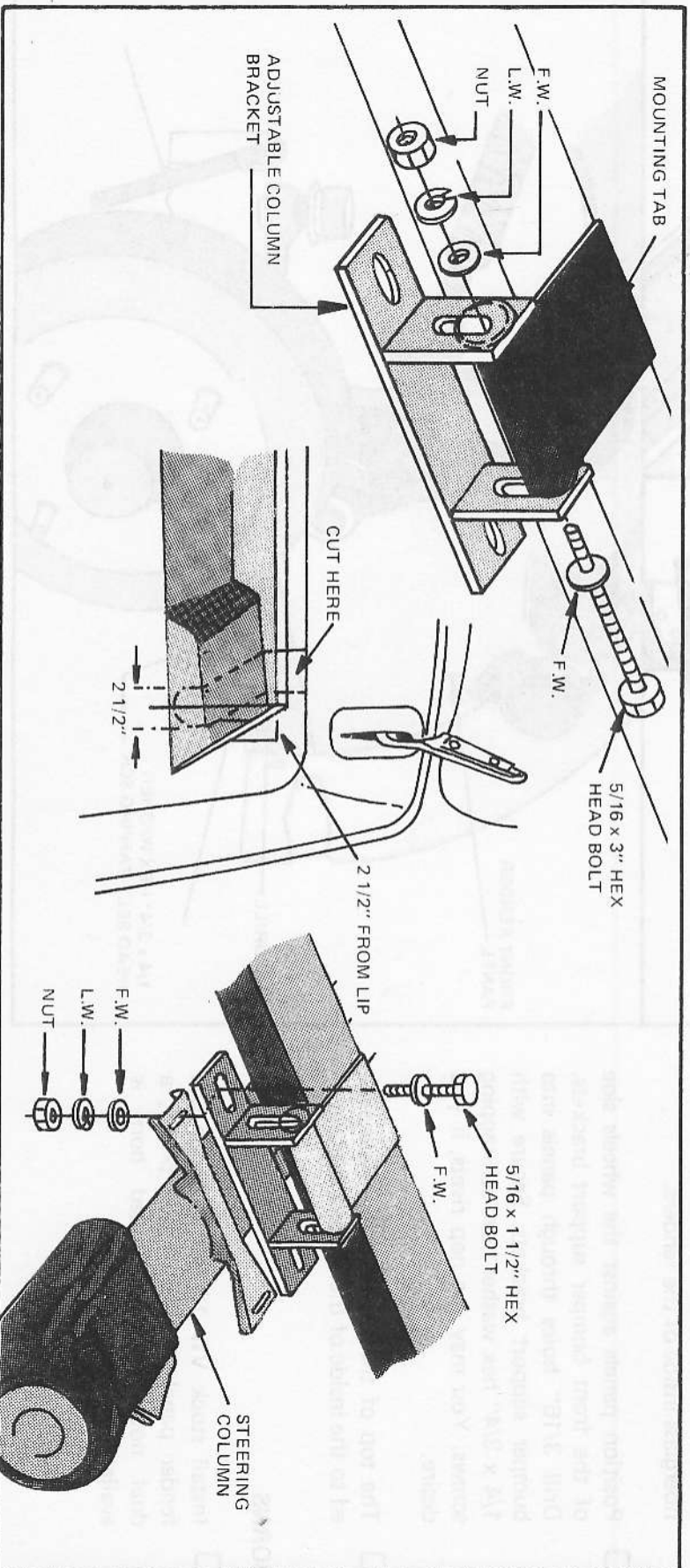


Figure 7

DOOR WEATHER STRIPPING

- ☐ Install 1/4 x 3/4" foam weather stripping to the bottom of door opening and latch portion of door opening where it contacts door.
- ☐ Attach a piece of weather stripping to hinge side of door.

FRONT FENDER PANELS

- ☐ Trim the front fender panels, as necessary, to obtain a proper fit. Grind gel coat from edges that contact the fiberglass inside of the fenders.
- ☐ Position panels against the wheels side of the front bumper support brackets. Drill 3/16" holes through panels into bumper support brackets. Secure with 1/4 x 3/4" hex washer head self-tapping screws. You may use pop rivets, if you desire.

- ☐ The top of the panel will be fiberglassed to the inside of the fenders later on.

HORNS

- ☐ Install stock VW 12 volt horn on left fender panel. **NOTE:** If you prefer, a dual note European styled horn is available from our factory.

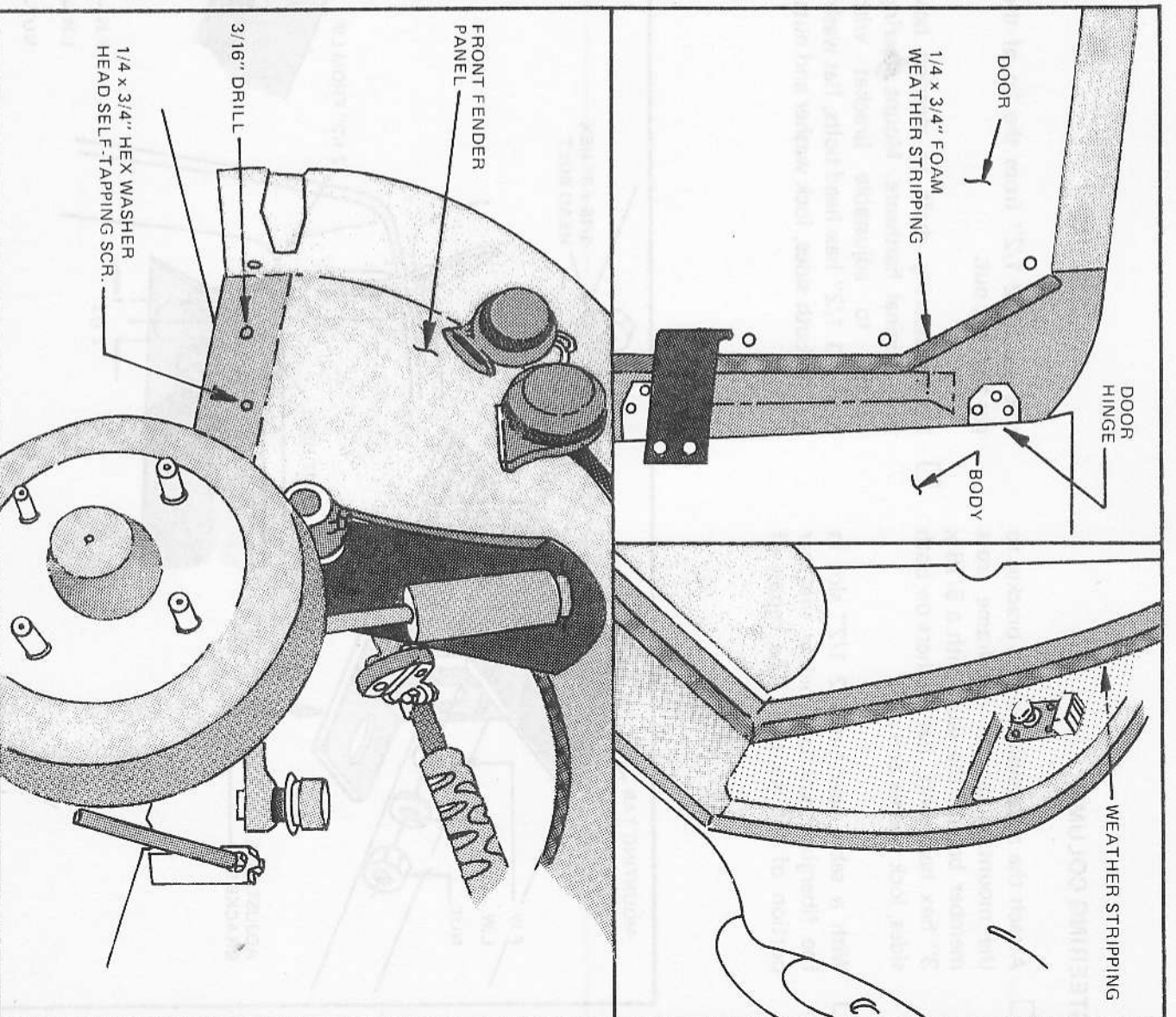


Figure 8

ENGINE COMPARTMENT INSERTS

- ☐ Trim the engine compartment fiber-glass inserts to fit.
- ☐ The smaller insert seals the rear inside of the body to the top of the rear cross member and should be flush with the front edge of the crossmember. Sand gel coat surface, as this will be fiber-glassed in place later.
- ☐ The lower insert fits against the bottom of the rear crossmember and frame rails. The front lip of the insert fits against the engine cover plates. Trim, as necessary, for the best fit.
- ☐ Drill four $3/16"$ holes through the upper insert and the top of the rear crossmember. Secure with four $1/4 \times 3/4"$ hex washer self-tapping screws. You can pop rivet the upper piece into place, if desired.
- ☐ Secure the lower insert to the bottom of the frame by drilling five $3/16"$ holes through insert and the bottom of the frame. Attach with five $1/4 \times 3/4"$ hex washer head self-tapping screws.
- ☐ Use a piece of weather stripping or rubber to seal spaces between engine closure plates and insert.

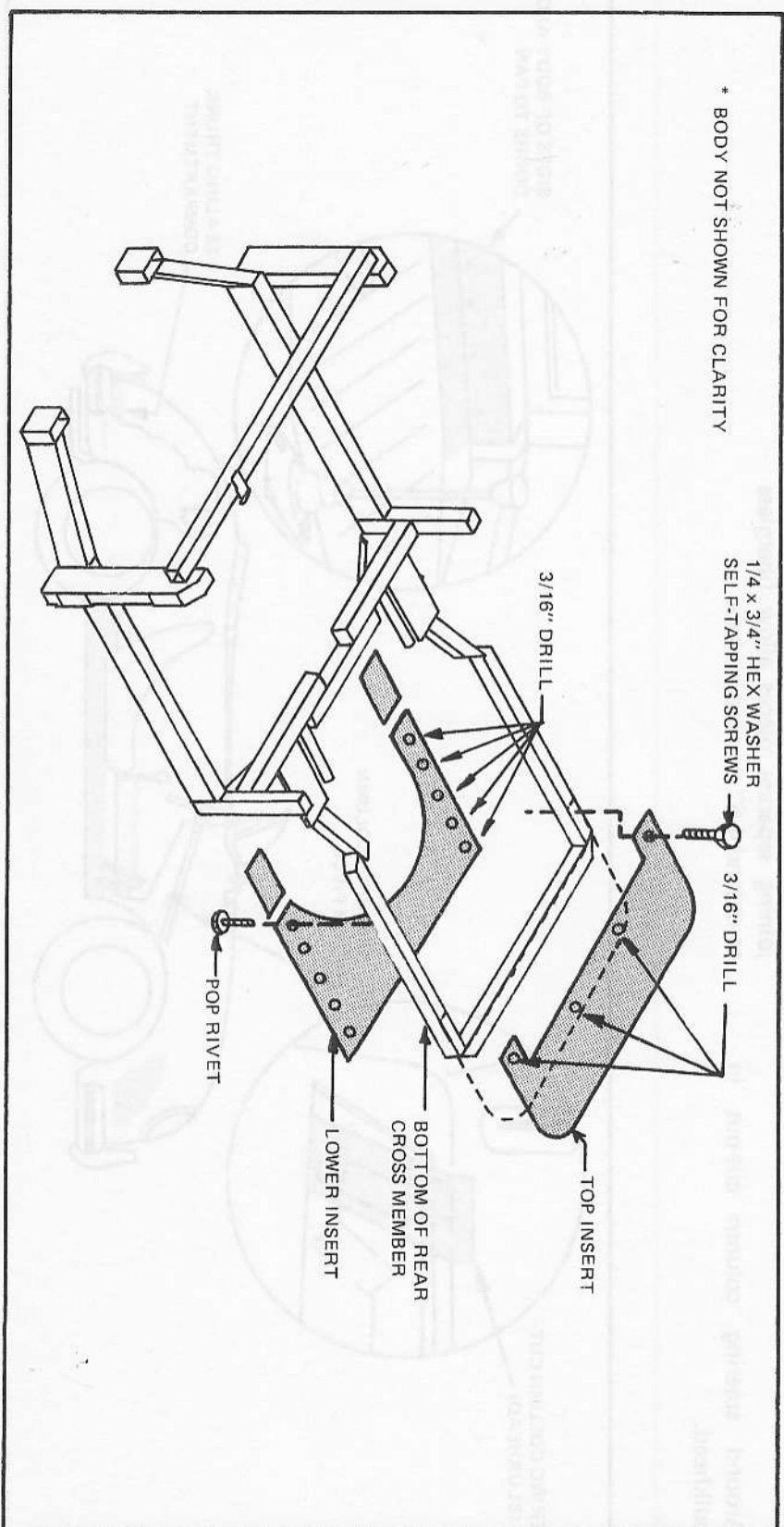


Figure 9

GLASSING THE BODY

Areas to be fiberglassed are:

- ☐ Hood support bracket cover boxes to body, sealing trunk compartment from passenger compartment.
- ☐ Top of front fender panels to body.
- ☐ Sides of body along doors to VW pan.
- ☐ Rear of body at seat base to pan.
- ☐ Around steering column cut-out in bulkhead.
- ☐ Steering column trim piece.
- ☐ Check to make sure all gel coat has been removed from any areas to be fiberglassed. All parts should be clean and dust free. Sand surface of any plastic pieces that are fiberglassed.
- ☐ Cut strips of fiberglass matting to fit areas to be glassed. Allow at least a 3" overlap between adjacent strips. When joining separate pieces allow fiberglass to extend 4-6" on each surface.
- ☐ Mix resin according to the manufacturer's instructions. Do not add too much hardener.
- ☐ To protect steering column from adhering to fiberglass, cover with polyethylene film. This will not stick to the fiberglass and can be removed after the fiberglass cures. Any heavy plastic food storage bag will work.

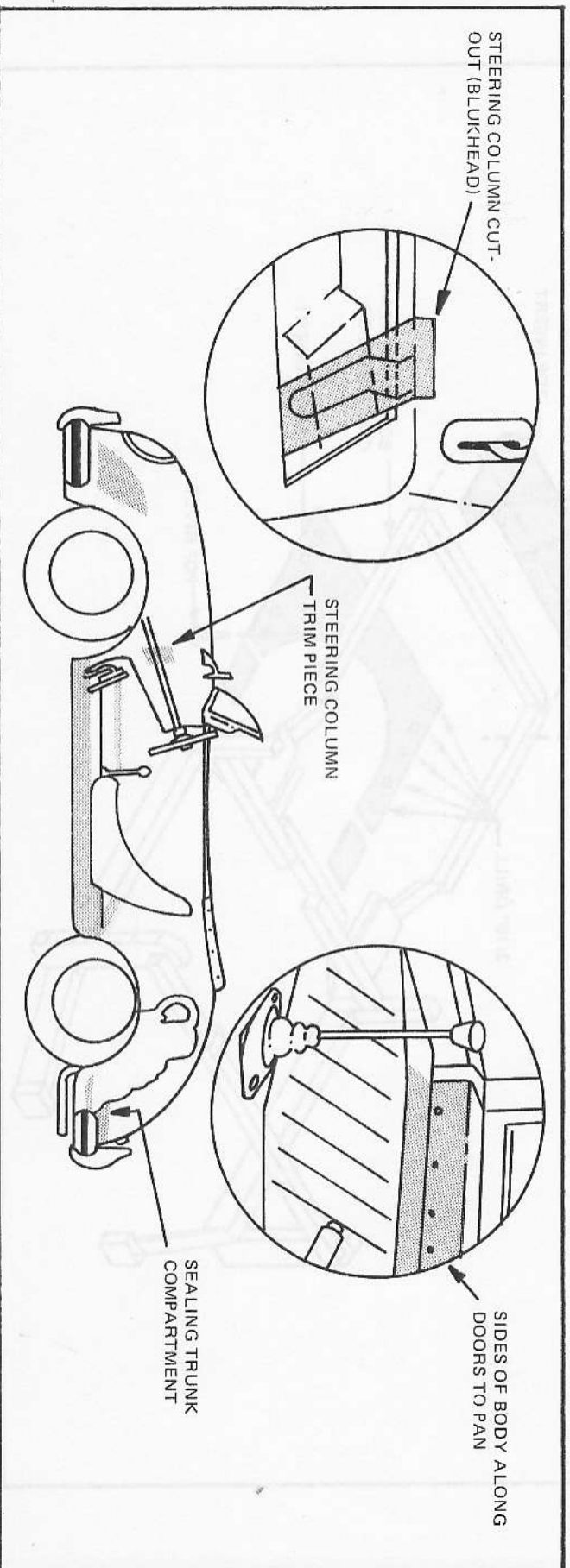


Figure 10

GAS TANK MODIFICATION

The VW gas tank will have to be modified for use on the Replica. For 1967, or earlier, fuel tanks, the filler must be moved to the opposite corner. Super Beetle tanks cannot be used.

Before performing any modifications do the following:

☐ Drain all gasoline from tank. Fill tank with detergent and water solution. Agitate tank and drain. Refill with soap and water solution, right to the bottom of the filler neck.

☐ For '67 or older tanks, cut filler neck off flush with tank. With cap still on filler, cut filler neck down just below vent fitting. Weld shortened filler neck back onto tank.

☐ **NOTE: WE RECOMMEND THAT THIS PROCEDURE BE DONE BY A SHOP THAT IS EXPERIENCED IN WELD.**

ING GAS TANKS. ANY GAS TANK THAT HAS HAD GASOLINE IN IT IS POTENTIALLY DANGEROUS. THIS IS TRUE FOR ALL GAS TANKS.

☐ For '68 or newer tanks the filler opening must be moved to the opposite corner of the tank. On the raised flat spot, opposite the filler neck, cut a 2" hole, using a hole saw. Save the plug. Cut the filler neck down just below the vent fitting and save. Cut remaining tube on tank off just above tank. Weld shortened neck piece back onto tank.

☐ Plug original filler hole with 2" plug, saved from opposite corner of tank. Weld in place.

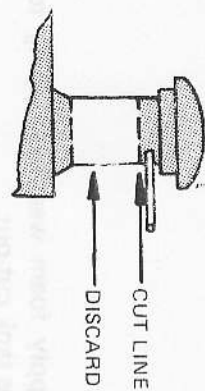
GAS TANK INSTALLATION

☐ Attach a length of neoprene gas hose to bottom of tank and secure with a hose clamp. Attach length of fuel tube to vent fitting.

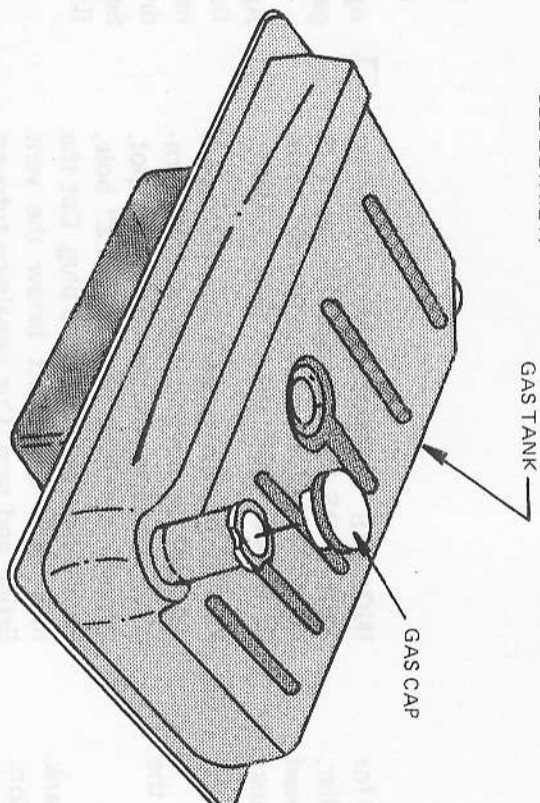
☐ Apply foam weatherstripping to lip of gas tank cut-out.

☐ Apply silicone to bottom of gas tank flange and set in place. Position original tank retainers on sides of tank and drill into fiberglass (5/16" drill bit). Secure with 5/16 x 1" carriage bolts, flat washer and lock nut.

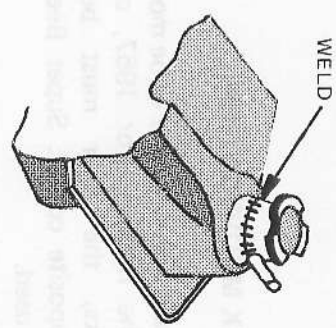
☐ Drill a 1/2" hole in the fiberglass floor next to filler neck. Attach an 18" long piece of vacuum or fuel hose to the vent and pass through hole in floor and down front fender well. Secure to the inside of the fender well with a cable clamp.



1967 OR OLDER

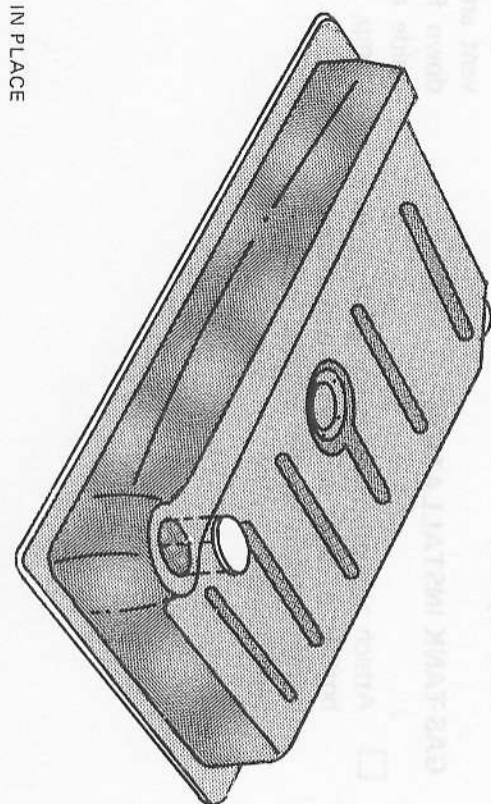
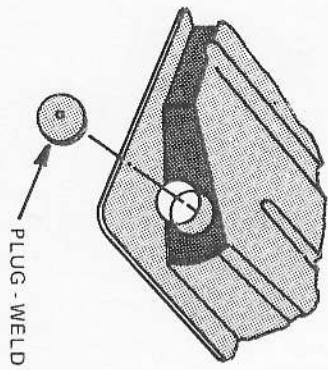


SEE DETAIL A



DETAIL A

1968 OR LATER



FIRST CUT LINE

Figure 11

SPEEDOMETER CABLE

- ☐ Obtain a VW speedometer cable No. 211,9578094 from a VW dealer or use original.
- ☐ Modify speedometer cable as follows: Grind off protrusions holding knurled mounting nut to cable. Slide mounting nut off cable. Replace with nut supplied with our gauges. (Other gauge sets may use different arrangements.)
- ☐ Route speedometer cable along the front harness and attach to the front wheel on the driver's side of the car.

STEERING WHEEL (OPTIONAL)

- ☐ Attach steering wheel to adapter with screws provided. Fit wheel to column and retain with original VW nut. Attach horn button wires and press in place.

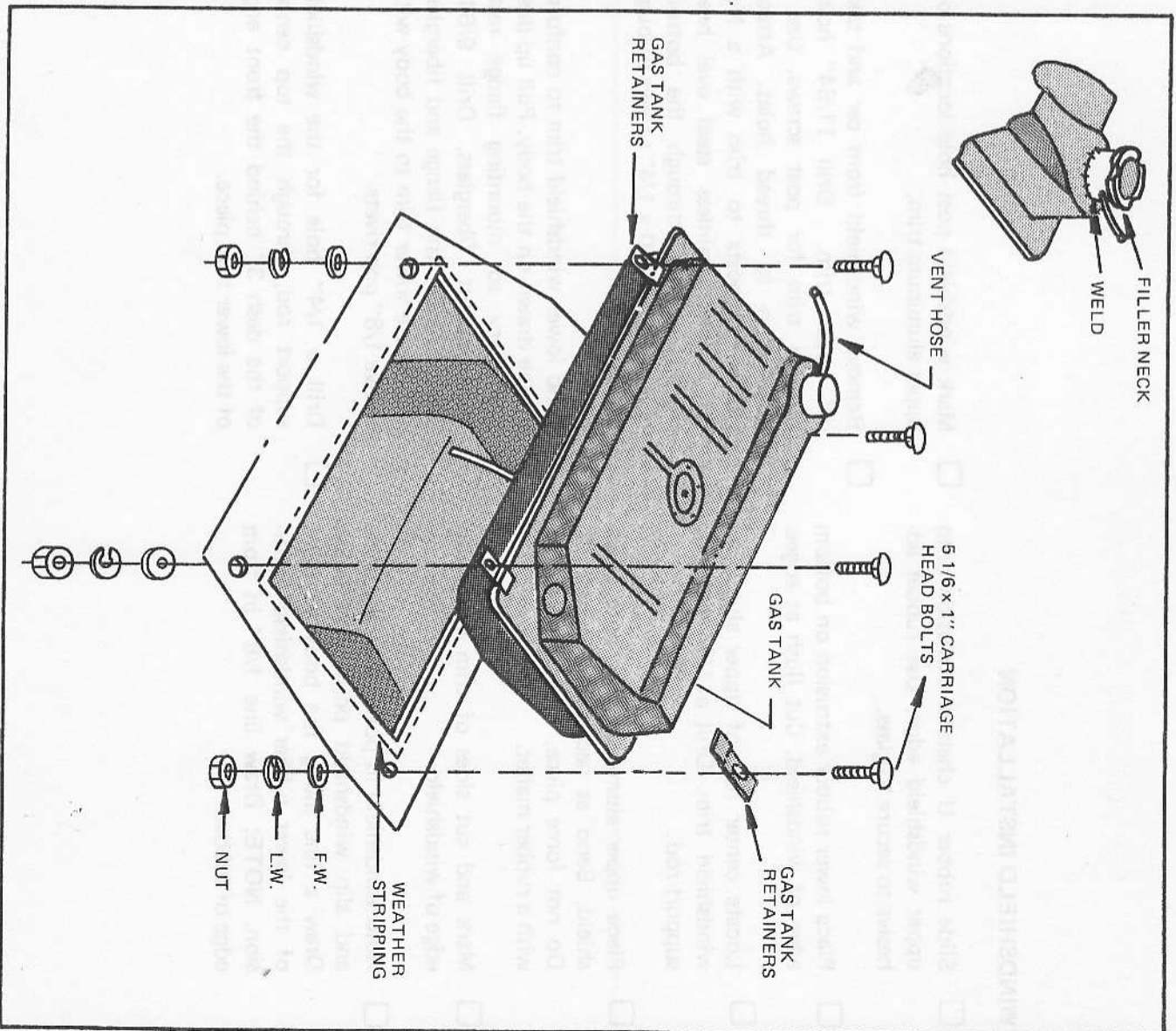


Figure 12

WINDSHIELD INSTALLATION

- ☐ Slide rubber U channel extrusion onto upper windshield edge. Use rubber adhesive to secure to glass.
- ☐ Place lower rubber extrusion on bottom edge of windshield. Cut flush at edges.
- ☐ Locate center rear of upper aluminum windshield trim. Drill a 1/4" hole for support rod.
- ☐ Place upper aluminum trim onto windshield. Bend as necessary for best fit. Do not force piece. Tap, if necessary, with a rubber mallet.
- ☐ Mark and cut sides of trim even with edge of windshield.
- ☐ Hold windshield in position on the body and slip windshield posts into holes. Draw a line along the body in front of the lower rubber windshield extrusion. **NOTE:** Draw line 1/8" in from edge of rubber.
- ☐ Mark windshield post hole locations on upper aluminum trim.
- ☐ Remove windshield from car and take off upper trim. Drill 11/64" holes through trim for post screws. Use a 10-24 tap to thread holes. Attach windshield posts to trim with a No. 10 x 3/4" stainless steel oval head machine screw, through the bottom holes. Use No. 10 x 1/4" screws through the top holes.
- ☐ Bend lower windshield trim to conform to line drawn on the body. Pull up dash upholstery so mounting flange rests flush against fiberglass. Drill 9/64" holes through the flange and fiberglass and secure lower trim to the body with twelve 1/8" pop rivets.
- ☐ Drill a 1/4" hole for the windshield support rod, through the top center of the dash 3" behind the front edge of the lower trim piece.
- ☐ Cut two 3/4 diameter pieces of aluminum tubing with a 30° taper on one end for windshield post spacers.
- ☐ Place windshield with posts attached into position on car; slip spacers over post ends from below the dash and loosely secure with 3/8 x 1 1/4" hex head bolts with a flat washer under the head.
- ☐ Place support rod into hole in dash and hole in upper windshield trim. Attach nut, flat washer and lock washer to threaded portion of rod under the dash.
- ☐ **USE CAUTION.** Tighten in rotation. First tighten the support nut partially. Next tighten the post bolts. Then tighten the support rod nut.
- ☐ Apply clear auto sealer 3M - 08551, or equivalent, to outer lip of lower windshield extrusion and windshield trim.

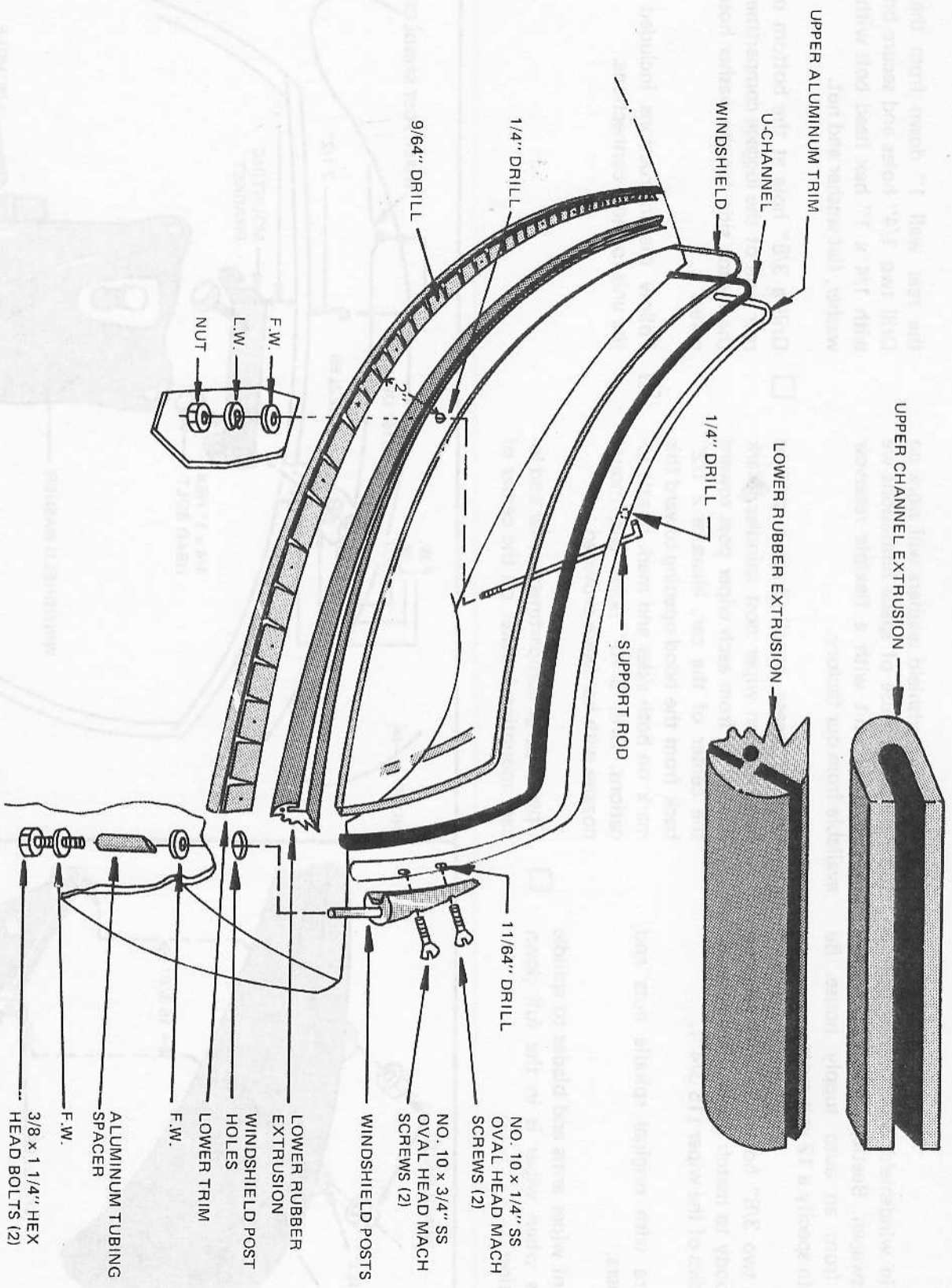


Figure 13

INSTALLING WINDSHIELD WIPER MOTOR

- ☐ Obtain windshield wiper motor from a Volkswagen Beetle, or order a new one from an auto supply house. Be sure to specify a 12 volt motor.
- ☐ Drill two 3/8" holes in the recesses on the body to match the distance between spindles of the wiper (15 3/4").
- ☐ Secure with original spindle nuts and washers.
- ☐ Mount wiper arms and blades to spindle posts when wiper is in the full down position.

WINDSHIELD WASHER - OPTIONAL

A variety of windshield washers will work on the Replica. Because of space limitations we have a small unit with a flexible reservoir available from our factory.

- ☐ With a grease pencil draw a straight line between wiper post spindles. Mark line 4" in from each wiper post toward the center of the car. Measure 2 1/2" back from the hood opening toward this mark on both sides and mark nozzle locations. Drill 5/16" holes and mount nozzles with hardware provided.
- ☐ Open luggage compartment cover and locate mounting bracket on the center of the rear wall 1" down from the top. Drill two 1/4" holes and secure bracket with 1/4 x 1" hex head bolt with lock washer, flat washer and nut.
- ☐ Drill a 3/8" hole at the bottom of the rear wall of the luggage compartment on the motor side for the washer hose and wires.
- ☐ Follow the instructions included with the unit for hose connections.

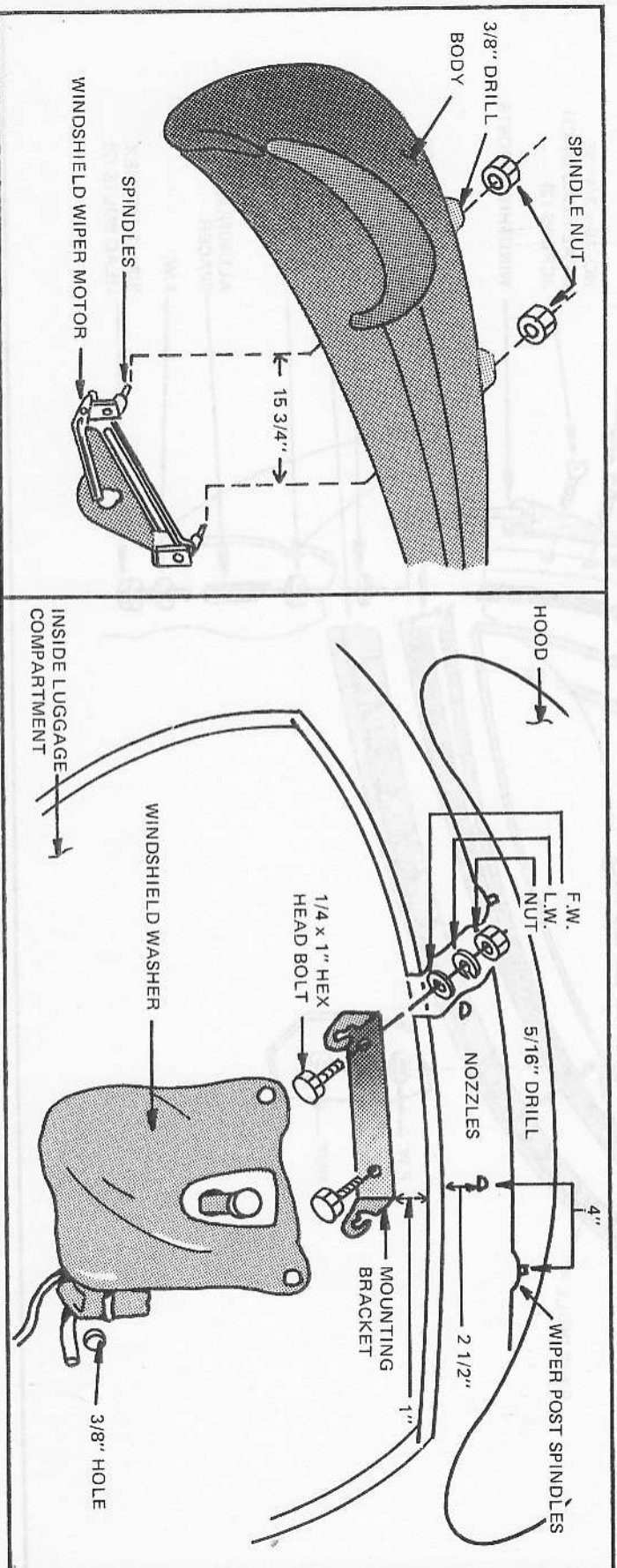


Figure 14

Connect the red/black 10 gauge (No. 27) lead in the instrument harness to the power input terminal on the fuse panel (fuses 5-12). Connect the violet (No. 7) wire from the main harness to a power input terminal on the fuse panel (fuse 5-12 side).

☐ Steering Column Connections - Connections are made from various wires located on the VW steering column to wires from the instrument harness. Some wires on the VW are not used and should be taped securely out of the way. If your steering column has a provision for a dimmer switch the wires may be used for a windshield washer.

☐ Connect 10 gauge yellow (No. 17) lead from the battery harness to red/black 10 gauge wire from the VW

ignition switch.

☐ Connect the 10 gauge red/black (No. 27) lead from the instrument harness to the 10 gauge black VW ignition switch wire.

☐ Connect the 10 gauge red (No. 28) wire from the instrument harness to the 10 gauge red VW ignition switch wire.

☐ Connect the green/white (No. 30) lead from the instrument harness to one side of a 12 volt flasher to the steering column.

☐ Connect the green/black/white wire from the VW signal switch to the other side of the flasher.

☐ Connect the green (No. 5) lead from

the instrument harness to the green/black wire from the VW turn signal switch.

☐ Connect the orange (No. 6) lead from the instrument harness to the black/white wire from the VW turn signal switch.

☐ Connect the yellow/white (No. 29) lead from the instrument harness to the brown or horn wire on the VW column.

☐ Secure the black harness wire to the frame next to the steering column for ground.

Additional accessories can be added easily. Extra terminals are provided on the fuse panel.

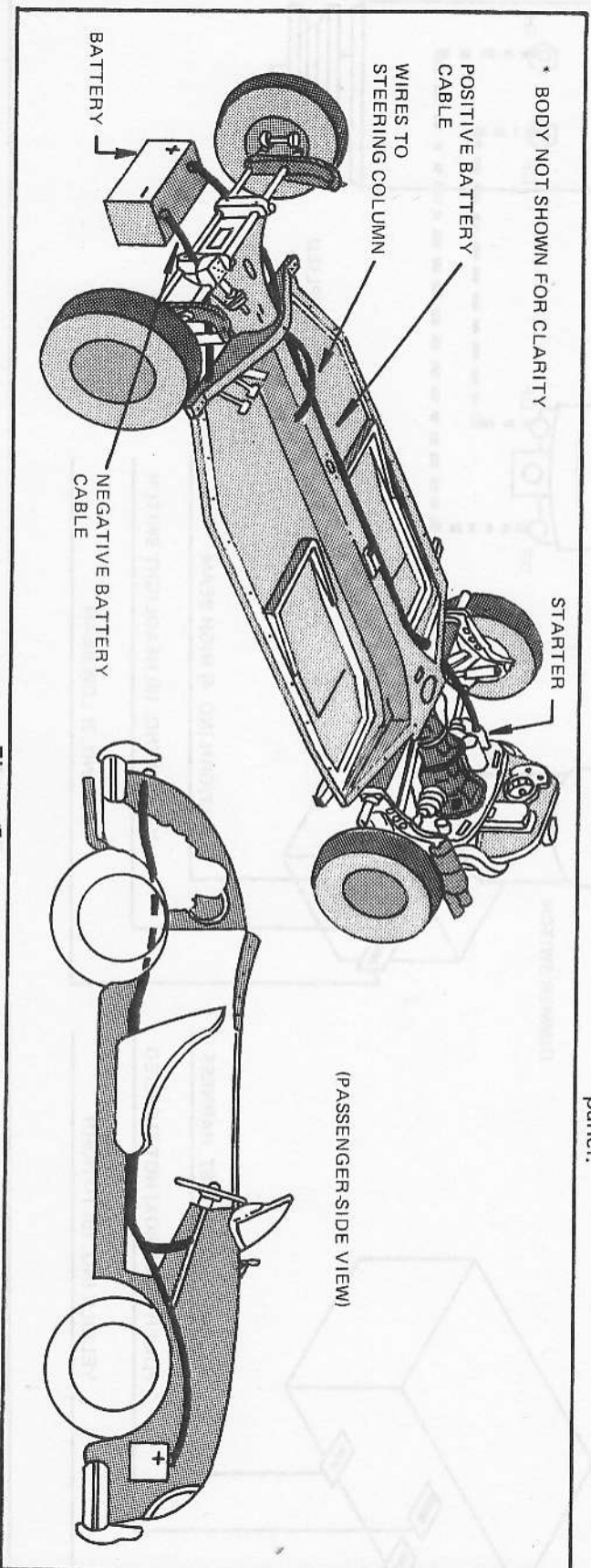


Figure 7

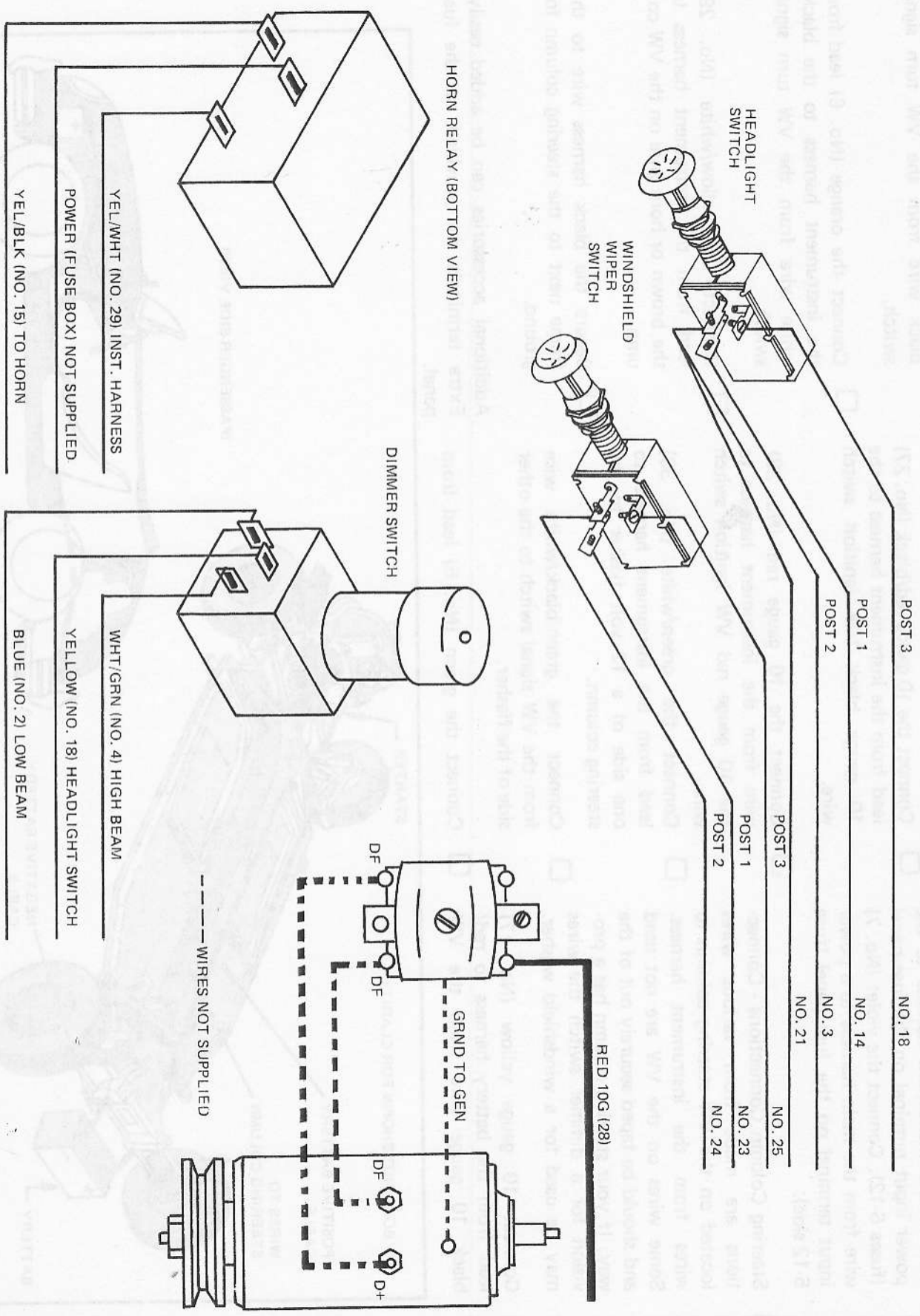


Figure 8

SECTION VI WIRING

WIRING HARNESS INSTALLATION

There are a number of choices available in wiring your assembly.

- ☐ A VW harness can be modified and used. However, extensive modifications are necessary. In addition, a separate harness will have to be fabricated if you are using custom gauges.
- ☐ A complete wiring harness can be fabricated by a professional or by yourself, if your knowledge of automotive wiring is sufficient.
- ☐ Many people chose our wiring harness, specifically designed for the assembly. It accommodates all accessories and custom gauges. Step-by-step instructions make it easy to install.
- ☐ The harness should be placed on the car at this point. Connections can be made to components as they are installed, following the instructions furnished with the harness.
- ☐ The instrument portion of the harness is fastened to the top of the front cross-member behind the dash area. The front harness extends straight forward on the driver's side of the car. A 3/4" hole is cut through the bulkhead into the upper inside of the fenderwell. The harness is secured to the inside of the fender well just below the luggage compartment cable release housing that is fiberglassed to the body. It is secured to the body with wire clamps, available at auto supply stores. Split the harness at
- ☐ The rear portion of the harness runs down the front edge of the forward frame upright, just in front of the driver's door, to the floor. It then extends back along the pan and exits through a 3/4" hole, drilled through the corner of the seat base. The wires run along the frame and then branch to the left and right taillights and engine connections. Secure with wire ties or cable clamps. Keep the wires away from sharp objects and edges.

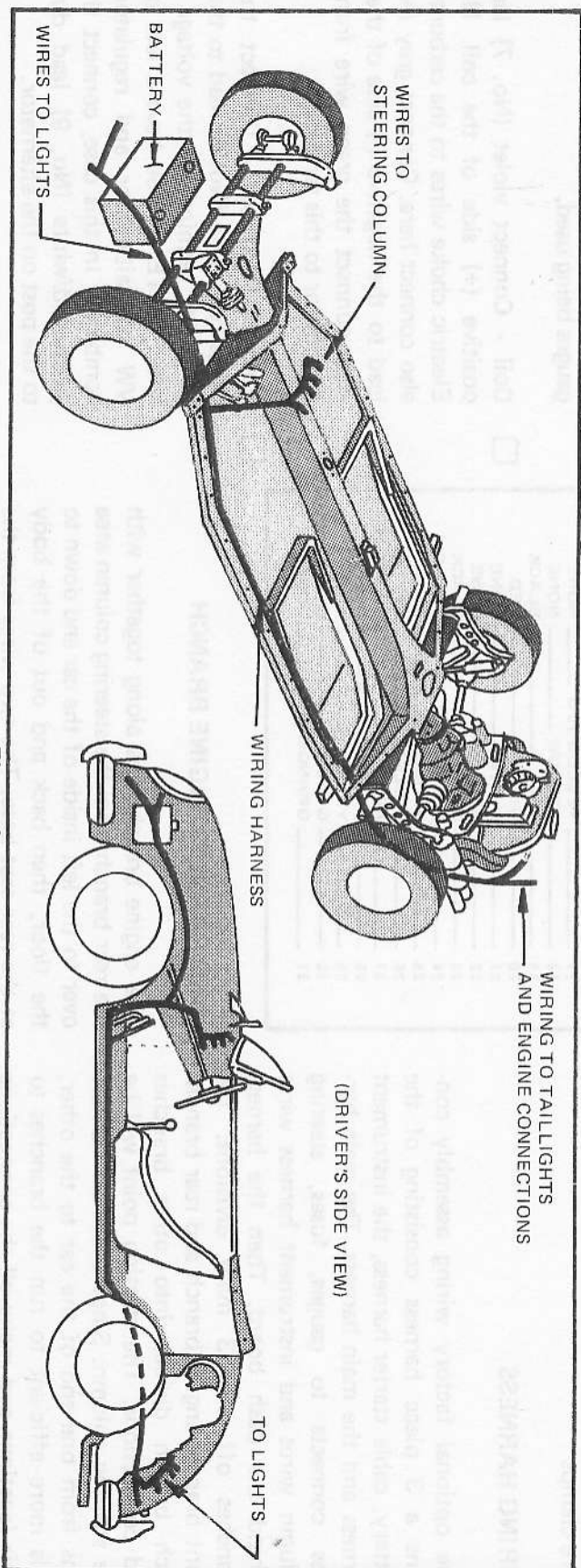


Figure 1

WIRING

Before you start the wiring on your assembly, we suggest that you have the following tools and supplies on hand.

TOOLS:

Good quality wire strippers
Good quality terminal crimping tool
Straight edge razor knife and extra blades
Self powered test light
12 Volt test light

SUPPLIES:

Proper terminals - butt connectors, ring terminals, female disconnects, splice connectors
Electrical tape
Wire ties
Wire clamps

WIRING HARNESS

The optional factory wiring assembly contains a 3 piece harness consisting of the battery, cable starter harness, the instrument harness and the main harness. The main harness connects to gauges, fuses, steering column wires and instrument harness wires behind the dash board. Then the harness branches off into 3 main divisions: the front branch, engine branch and rear branch. Each branch divides into other branches and connections. The starting point will be the steering column. Since the main harness runs from one end of the car to the other, it is more efficient to run the branches to their locations and make all the connections

that apply to the branch. Then come back to the steering column and make the appropriate connections.

NOTE: If using VDO gauges you will need a different wiring schematic. Call our Technical Department for new VDO Schematic.

WIRE NO.	COLOR	MARKING
1	BLACK	NONE
2	BLUE	NONE
3	BROWN	NONE
4	WHITE	GREEN
5	GREEN	NONE
6	ORANGE	NONE
7	VIOLET	NONE
8	GREY	NONE
9	RED	WHITE
10	RED	YELLOW
11	RED	BLUE
12	BLUE	BLACK
13	ORANGE	BLACK
14	RED	GREY
15	YELLOW	BLACK
16	RED+	NONE
17	YELLOW 10G	NONE
18	YELLOW	NONE
19	RED	BLACK
20	WHITE	RED
21	WHITE	NONE
22	RED	NONE
23	GREY	BLACK
24	BLUE	YELLOW
25	BROWN	WHITE
26	RED	WHITE
27	VIOLET	BLACK 10G
28	RED 10G	NONE
29	YELLOW	WHITE
30	GREEN	WHITE
31	ORANGE 10G	NONE

MAIN HARNESS ENGINE BRANCH

The engine branch runs along together with the rear branch from the steering column area over to the left inside of the car and down to the floor, then back and out of the body at the rear seat base. The two wires from the

back up light switch run over to the switch located on the transmission. The harness runs along the frame rail then the engine branch runs up and into the engine compartment. Secure the harness to the frame and fender well area, where necessary, with wire ties or wire clamps, available at auto supply stores.

☐ Transmission Back-Up Switch - Connect blue/black (No. 12) lead to back-up switch on transmission. Connect red/black (No. 19) lead to other terminal on transmission switch. **NOTE:** These two leads are interchangeable.

☐ Senders - Connect red/blue (No. 11) lead to the oil pressure on top of the engine. Connect red/yellow (No. 10) lead to the oil temperature sender at the bottom of the engine. **NOTE:** Make sure you use the appropriate senders for the gauges being used.

☐ Coil - Connect violet (No. 7) lead to positive (+) side of the coil. **NOTE:** Electric choke wires to the carburetor(s) also connect here. Connect grey (No. 8) lead to the negative (-) side of the coil. Also connect the green wire from the distributor to this terminal.

☐ Voltage Regulator - Connect the 10 gauge red/white (No. 9) lead to the battery (B+) terminal on the voltage regulator. **NOTE:** If you have a late model VW the alternator and regulator are combined. In this case, connect the 10 gauge red/white (No. 9) lead directly to the post on the alternator.

- ☐ Generator - If your car has a separate regulator, fashion wire and make connections between the two. Connect the D+ terminal (armature) on the regulator to the D+ terminal on the generator. Connect the DF terminal (Field) on the voltage regulator to the DF terminal on the generator. Run a wire from the ground screw on regulator to ground screw on generator.

- ☐ Alternator - If your car is equipped with a separate voltage regulator and alternator use the stock plug and wires to connect the two.

- ☐ Ground - The black (No. 1) lead at the intersection of the engine and rear harness is secured to the frame. **NOTE:** Make sure all dust, paint, rust, ect. is cleaned away where the ground connection is made. This completes your engine connections from the main harness.

MAIN HARNESS - REAR BRANCH

- ☐ The rear branch runs back along the frame side rail to the left taillight, then along the rear frame member to the license plate back-up light, then over to the right taillight. Secure harness to frame with wire ties or wire clamps.

- ☐ Left Taillight - Connect the orange (No. 6) lead to the signal light. Connect the brown (No. 3) lead to the taillight. Connect the white/red (No. 20)

lead to the brake light. The black (No. 1) lead is the ground and is connected to a taillight mounting stud.

- ☐ Back-up Tag Light - Join the two tag light wires (same color) on the license plate light and connect the brown (No. 3) lead to them. Connect the red/black (No. 19) to the back-up light wire. The black (No. 1) lead is the ground and is connected to a mounting stud.

- ☐ Right Taillight - Connect the green (No. 5) lead to the right signal light. Connect the remaining wires the same way you connected them to the left taillight.

This completes the connections at the rear of the harness.

MAIN HARNESS - FRONT BRANCH

- ☐ Run the front portion of the main harness out of the driver's compartment just forward of the far left upper frame member into the wheel well. Run the wires along the cable release housing for the luggage compartment cover. The small three wire branch runs down to the brake switch on the master cylinder. The rest of the harness runs along the front left fender well down to the left signal headlight, and horn. Drill a hole through the left inside fender panel at the bottom and run the harness across to the right of the car. Secure the harness, wherever necessary, with wire

ties or wire clamps.

- ☐ Brake Light Switch - Connect the orange/black (No. 13) lead to an outside terminal of the brake light switch on the master cylinder. Connect the white/red (No. 20) lead to the outside terminal. **NOTE:** Only one switch is used. We suggest the front switch. The center terminal on the switch is not utilized. The two leads are interchangeable.

- ☐ Ground - Secure the black (No. 1) lead to the chassis.

- ☐ Horn - Connect the yellow/black (No. 15) lead to the horn. The black (No. 1) lead is the horn ground.

- ☐ Left Turn Signal - Connect the orange (No. 6) lead to the left turn signal wire. Connect a black (No. 1) lead to a stud on the light for ground.

- ☐ Left Headlight - Connect the brown (No. 3) lead to the left parking light. This is the bulb at the bottom of the headlight housing. Connect the blue (No. 2) lead to the low beam light. Connect the white/green (No. 4) lead to the high beam light. The black (No. 1) lead is the ground. **NOTE:** It is easier to splice the original VW headlight plug to the wires.

- ☐ Right Signal Light - Connect the green (No. 5) lead to the right signal light wire. Connect a black (No. 1) lead to a

Main Harness Schematic

MAIN HARNESS FRONT BRANCH

RED + BATTERY CABLE (16)

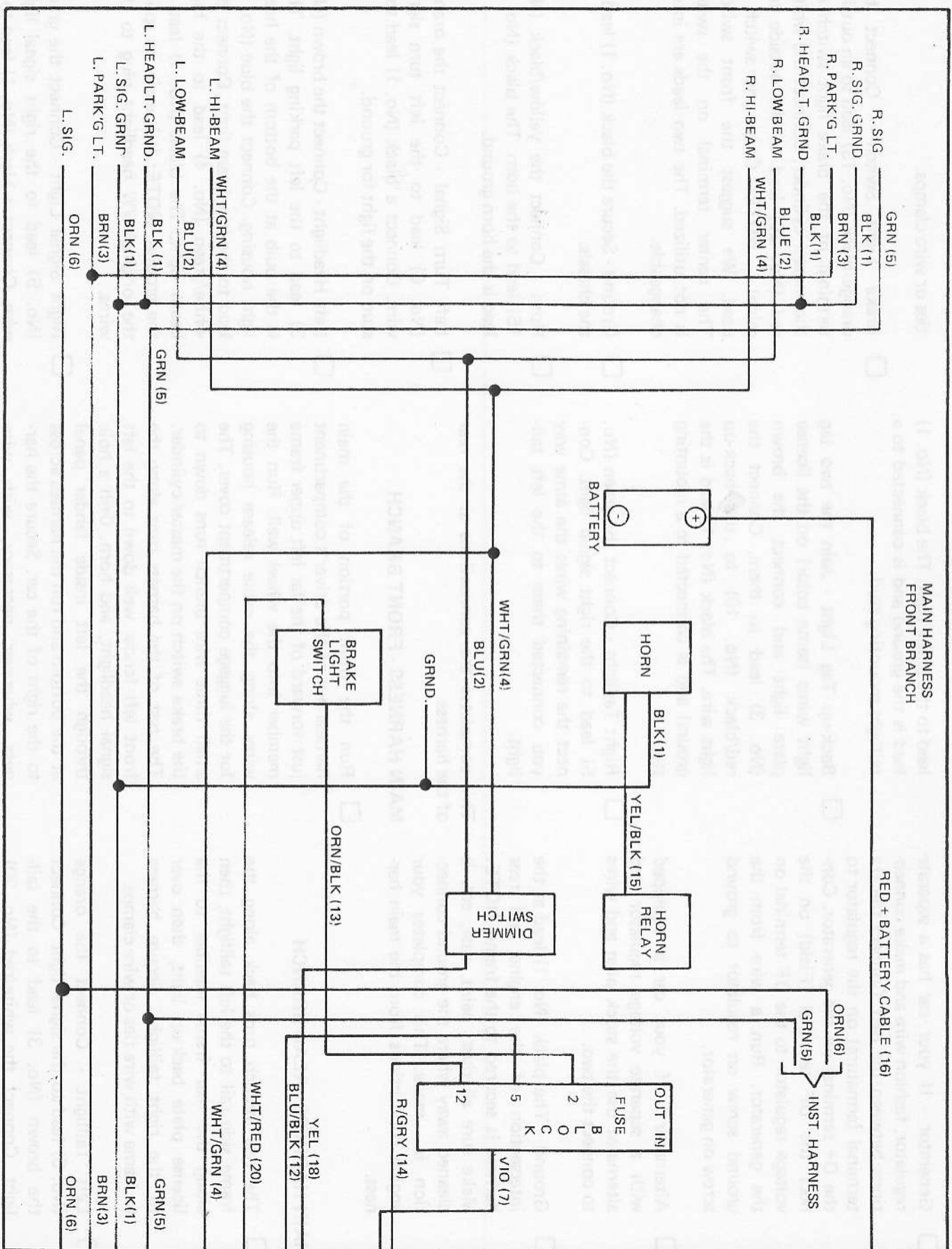


Figure 2

Main Harness Schematic

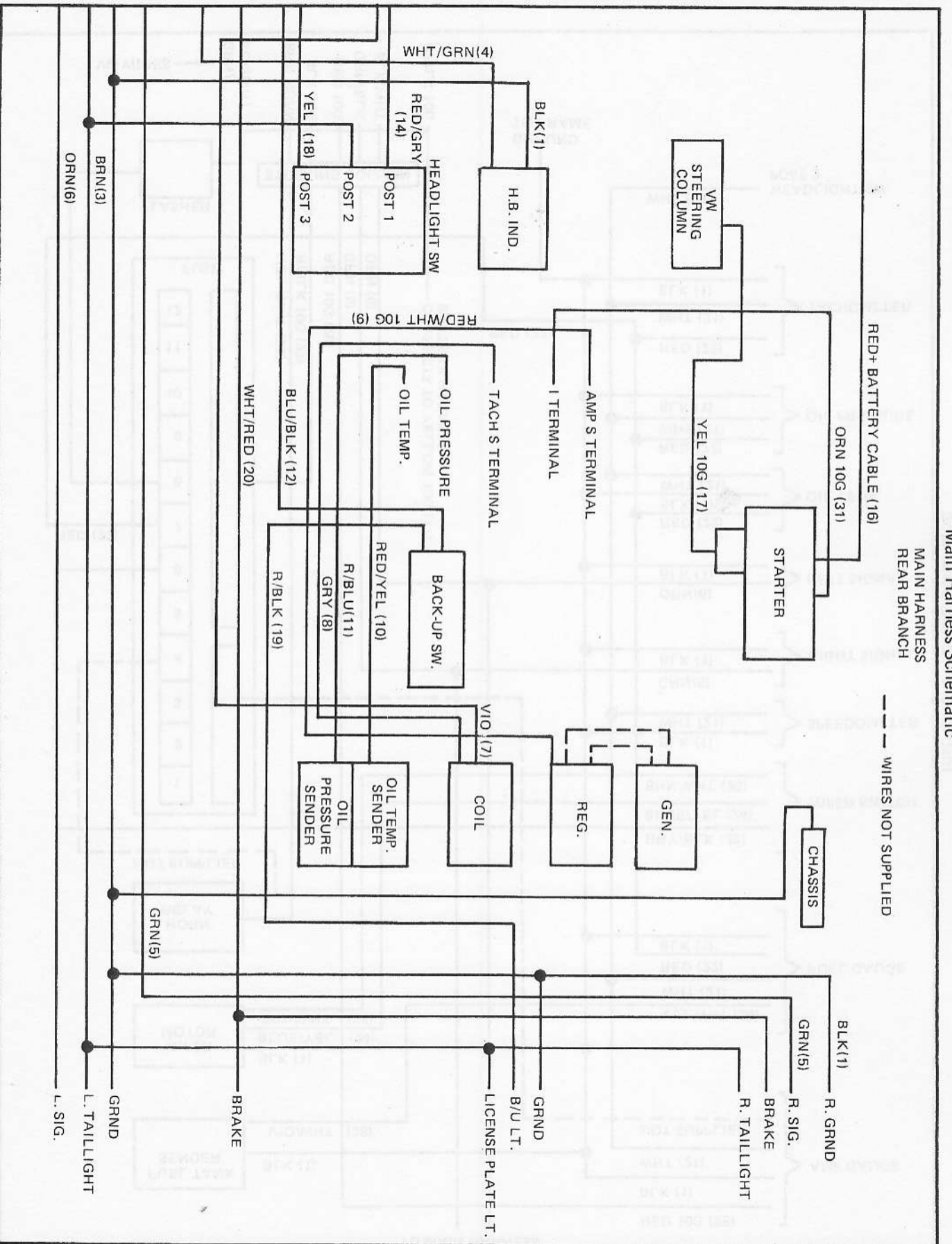


Figure 3

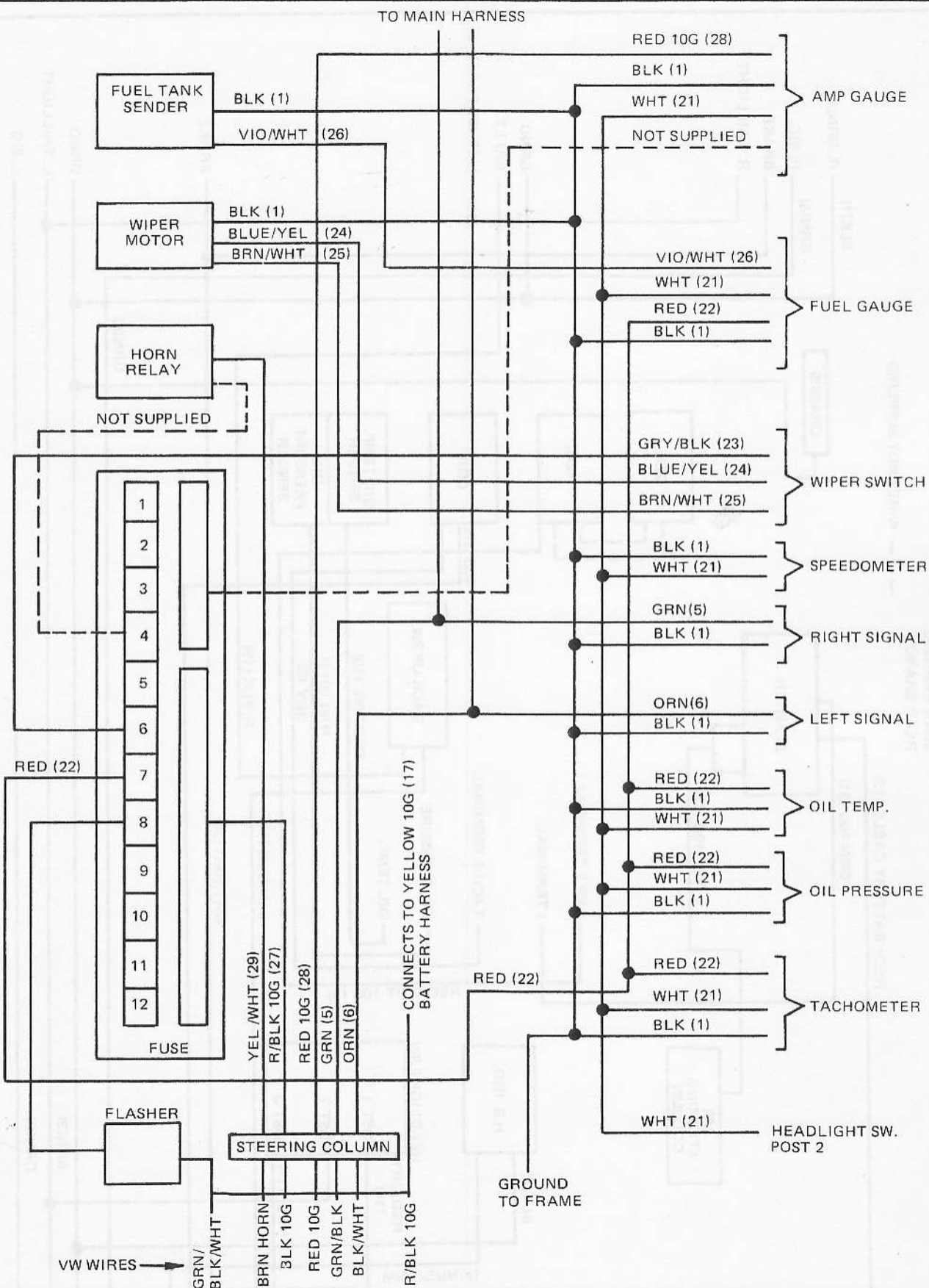


Figure 4

- ☐ mounting stud for ground.
- ☐ Right Headlight - Wire the same as the left light.

MAIN HARNESS - PASSENGER COMPARTMENT, INSTRUMENT, FUSE CONNECTIONS

- ☐ Dimmer Switch - Connect the yellow (No. 18) lead to the power in post on dimmer switch. Connect the blue (No. 2) lead to the dimmer switch. Connect the white/green (No. 4) lead to the dimmer switch.
- ☐ Headlight Switch - Connect the red/grey (No. 14) lead to post No. 1 on the headlight switch. Connect the brown (No. 3) lead to post 2 on the headlight switch. Connect the yellow (No. 18) lead to post 3 on the headlight.

- ☐ High Beam Indicator Light - Connect the white/green (No. 4) lead to the high beam indicator light. Connect the black (No. 1) lead to the other terminal on the light. The leads are interchangeable.

- ☐ Tachometer - Connect the grey (No. 8) lead to the S terminal on the tach.
- ☐ Oil Pressure Gauge - Connect the red/blue (No. 11) lead to the S terminal.
- ☐ Oil Temperature Gauge - Connect the red/yellow (No. 10) lead to the S terminal.

- ☐ Connect the 10 gauge red/white (No. 9) wire to the S terminal on the amp gauge.

- ☐ Connect the blue/black (No. 12) lead to fuse 5 (power output) on the fuse panel.

- ☐ Connect the orange/black (No. 13) lead to fuse No. 2 (power output) on the fuse panel.

- ☐ Connect the red/grey (No. 14) lead to fuse 12 (power output) on the fuse panel.

- ☐ Connect the yellow/Black (No. 15) lead to the power out terminal on the horn relay.

- ☐ The violet (No. 7) lead is connected to the fuse panel later and the orange (No. 6) lead and green (No. 5) lead will be connected to the instrument harness.

INSTRUMENT HARNESS

The instrument harness is positioned behind the dashboard. It will be easier to work with if you extend the wires for the instruments through their respective holes. Start working at the left and move to the right.

- ☐ Instrument Lights - Connect the white (No. 21) lead to post 2 on the headlight switch. This is the same post the brown is connected to.

- ☐ Tachometer - Connect the red (No. 22) lead to the I terminal. Connect the black (No. 1) lead to the ground terminal. Connect the white (No. 21) lead to the light terminal.

- ☐ Oil Pressure Gauge - Connect a red (No. 22) lead to the I terminal. Connect the black (No. 1) lead to the ground terminal. Connect the white (No. 21) lead to the light terminal.

- ☐ Oil Temperature - Connect the red (No. 22) lead to the I terminal. Connect the black (No. 1) lead to the ground terminal. Connect the white (No. 21) lead to the white terminal.

- ☐ Left Signal Indicator Light - Connect the orange (No. 6) lead to a terminal on the left signal indicator light. Connect a black (No. 1) lead to the other terminal.

- ☐ Right Signal Indicator Light - Connect the green (No. 5) lead to a terminal on the right signal indicator light. Connect a black (No. 1) lead to the other terminal. **NOTE:** The terminals on the signal lights are interchangeable.

- ☐ Speedometer - Connect the black (No. 1) lead to the ground terminal. Connect the white (No. 21) lead to the light terminal.

- ☐ Wiper Switch - Connect the grey/black (No. 23) lead to post 1 on the wiper switch. Connect blue/yellow (No. 24)

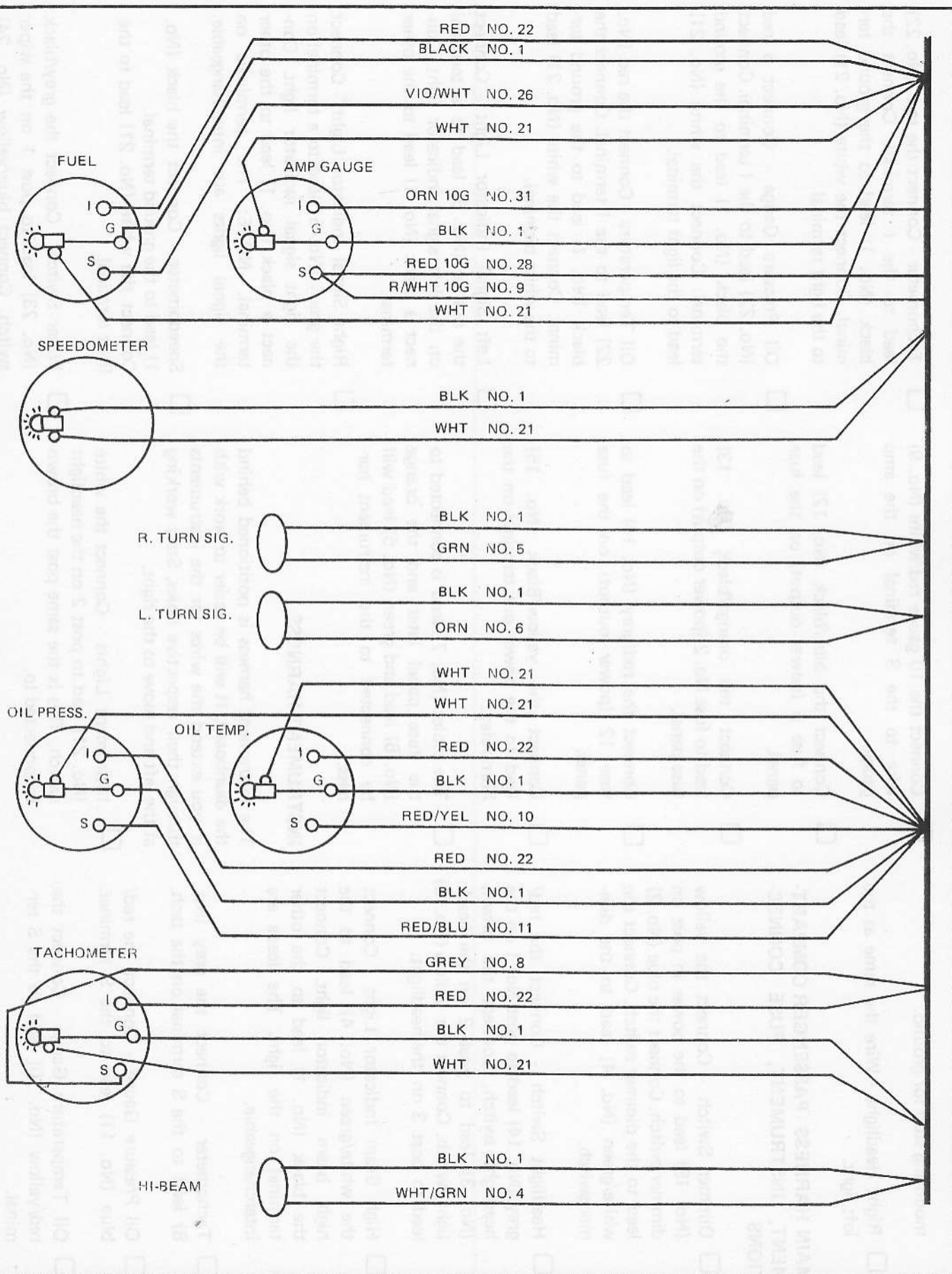


Figure 5

Fuse Block Layout

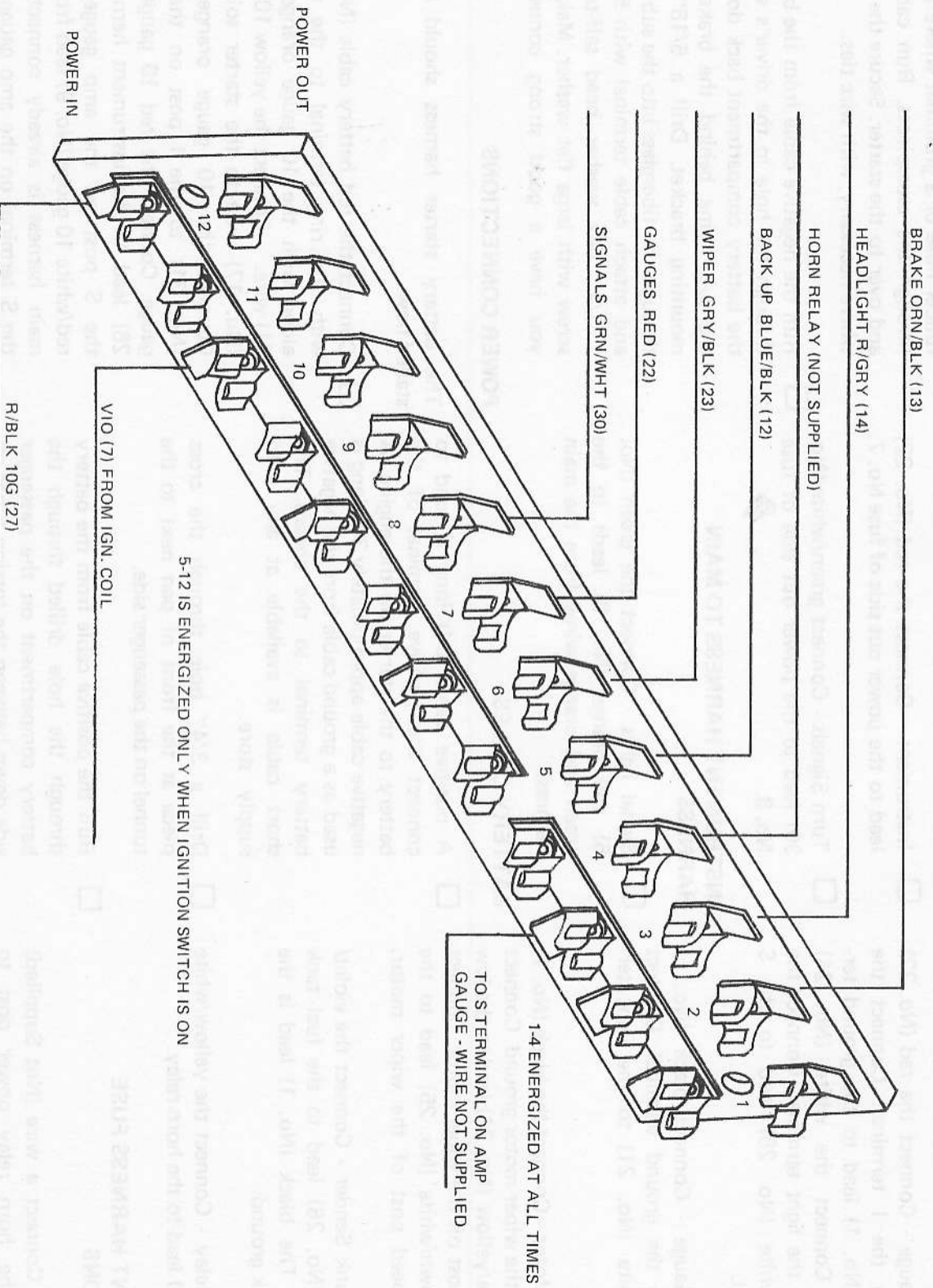


Figure 6

lead to post 2. Connect brown/white (No. 25) lead to post 3.

- ☐ Fuel Gauge - Connect the red (No. 22) lead to the 1 terminal. Connect the black (No. 1) lead to the ground terminal. Connect the white (No. 21) lead to the light terminal. Connect the violet/white (No. 26) lead to the S terminal.

- ☐ Amp Gauge - Connect black (No. 1) lead to the ground terminal. Connect the white (No. 21) to the light terminal.

- ☐ Wiper Motor - Connect the black (No. 1) lead to the wiper motor ground. Connect the blue/yellow (No. 24) lead to the low speed post on the wiper motor. Connect the brown/white (No. 25) lead to the high speed post of the wiper motor.

- ☐ Fuel Tank Sender - Connect the violet/white (No. 26) lead to the fuel tank sender. The black (No. 1) lead is the fuel tank ground.

- ☐ Horn Relay - Connect the yellow/white (No. 29) lead to the horn relay.

INSTRUMENT HARNESS FUSE

CONNECTIONS

- ☐ Horn - Connect a wire (Not Supplied) from the horn relay power post to power out side of fuse No. 4.

- ☐ Windshield Wiper - Connect the grey/

black (No. 23) lead to the power out side of fuse No. 6.

- ☐ Instrument - Connect the red (No. 22) lead to the power out side of fuse No. 7.
- ☐ Turn Signals - Connect green/white (No. 30) lead to the power out side of fuse No. 8.

INSTRUMENT HARNESS TO MAIN HARNESS

- ☐ Signal lights - Connect the green (No. 5) and orange (No. 6) leads to the green and orange wires from the main harness.

BATTERY CABLES

- ☐ A positive cable 10 ft. long is used to connect the positive terminal of the battery to the starter on the engine. A negative cable approximately 30" long is used as a ground cable from the negative battery terminal to the chassis. The short cable is available at any auto supply store.

- ☐ Drill a 3/4" hole through the cross piece at the front of pan next to the tunnel on the passenger side.

- ☐ Run the positive cable from the battery through the hole drilled through the battery compartment on the passenger side down between the torsion tubes on the front axle and back through the hole in the front cross piece. Run the cable next to the tunnel to the back of the

car and out through the hole in the rear cross piece. Protect cable with piece of rubber hose or a grommet where it goes through the crosspieces. Run cable up and over to the starter. Secure the cable, where necessary, with wire ties.

- ☐ Run the negative cable from the battery through the hole in the driver's side of the battery compartment back down to the sub frame behind the brake hose mounting bracket. Drill a 5/16" hole through the fiberglass into the sub frame and attach cable terminal with 5/16 x 1 1/4" hex washer head self-tapping screw with large flat washer. Make sure you have a good strong connection.

POWER CONNECTIONS

The battery starter harness should be installed now.

- ☐ Connect the red battery cable (No. 16) with the ring terminal to the starter along with the 10 gauge orange (No. 31) wire. Connect the yellow 10 gauge (No. 17) wire to the starter solenoid. Connect the 10 gauge orange wire (No. 31) to the 1 post on the amp gauge. Connect the red 10 gauge (No. 28) lead in the instrument harness to the S post on the amp gauge. The red/white 10 gauge (No. 9) lead from the main harness is already connected to the S terminal on the amp gauge. Also run a length of 10 gauge wire from the S terminal on the amp gauge to the power input side of the fuse panel (fuses 1-4).

Connect the red/black 10 gauge (No. 27) lead in the instrument harness to the power input terminal on the fuse panel (fuses 5-12). Connect the violet (No. 7) wire from the main harness to a power input terminal on the fuse panel (fuse 5-12 side).

☐ Steering Column Connections - Connections are made from various wires located on the VW steering column to wires from the instrument harness. Some wires on the VW are not used and should be taped securely out of the way. If your steering column has a provision for a dimmer switch the wires may be used for a windshield washer.

☐ Connect 10 gauge yellow (No. 17) lead from the battery harness to red/black 10 gauge wire from the VW

ignition switch.

☐ Connect the 10 gauge red/black (No. 27) lead from the instrument harness to the 10 gauge black VW ignition switch wire.

☐ Connect the 10 gauge red (No. 28) wire from the instrument harness to the 10 gauge red VW ignition switch wire.

☐ Connect the green/white (No. 30) lead from the instrument harness to one side of a 12 volt flasher to the steering column.

☐ Connect the green/black/white wire from the VW signal switch to the other side of the flasher.

☐ Connect the green (No. 5) lead from

the instrument harness to the green/black wire from the VW turn signal switch.

☐ Connect the orange (No. 6) lead from the instrument harness to the black/white wire from the VW turn signal switch.

☐ Connect the yellow/white (No. 29) lead from the instrument harness to the brown or horn wire on the VW column.

☐ Secure the black harness wire to the frame next to the steering column for ground.

Additional accessories can be added easily. Extra terminals are provided on the fuse panel.

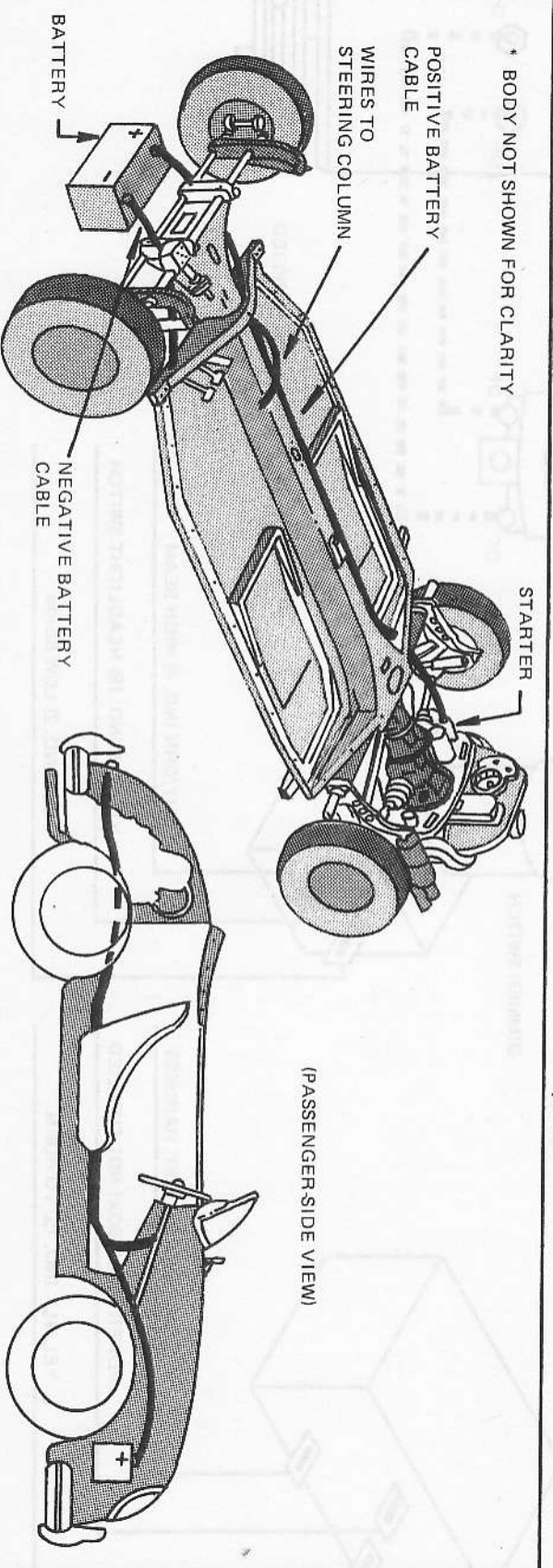


Figure 7

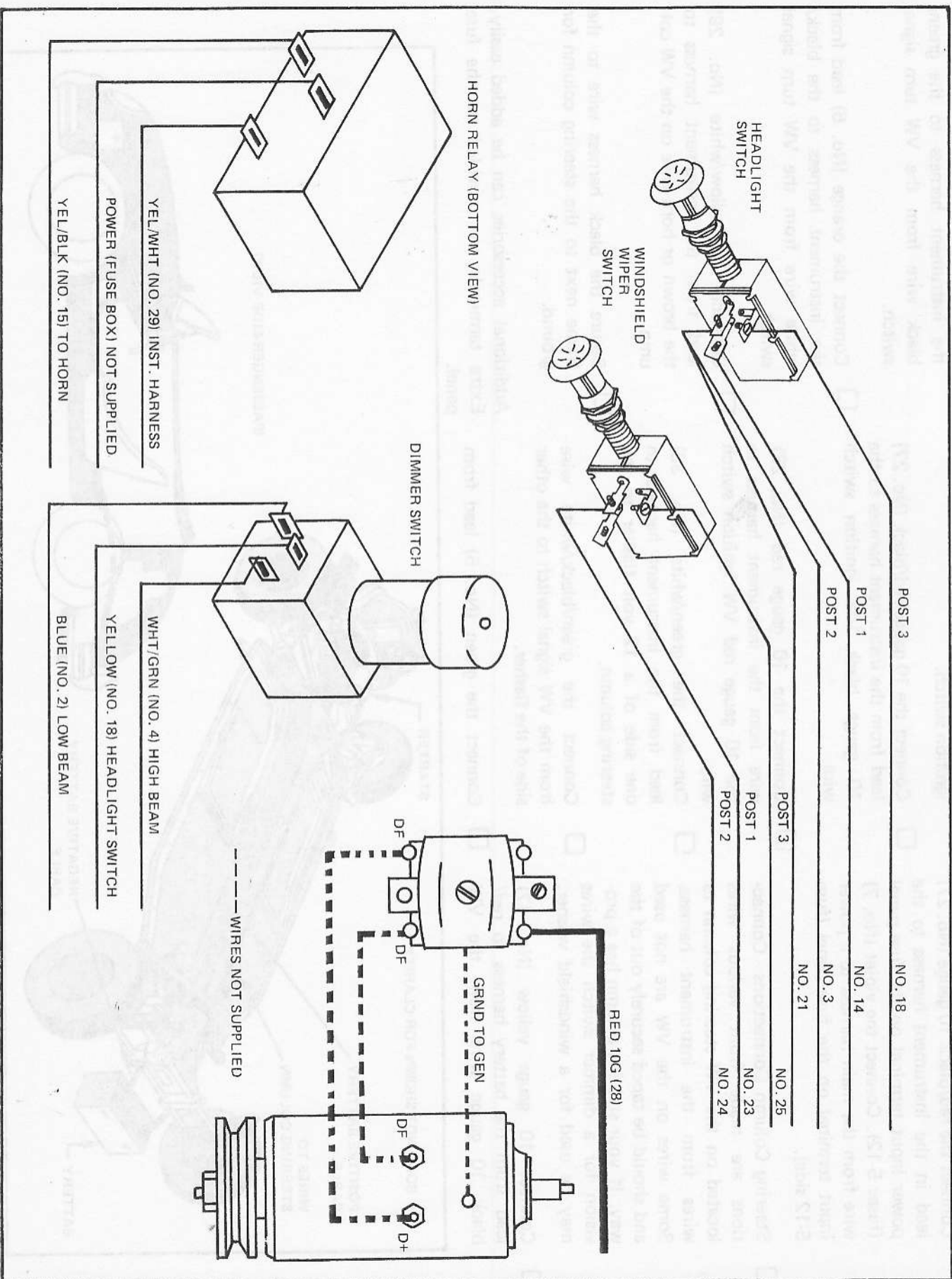


Figure 8

SECTION VII UPHOLSTERY TRIM AND TOP

UPHOLSTERY

In this section, you will install seats and carpet and will need 3M "90" spray adhesive and a good pair of scissors and some straight edge razor blades.

- ☐ Seat are best assembled on a large work bench or table of convenient height. You should cover the workbench with carpet remnants or similar material to protect the upholstery while you are working on the seats.
- ☐ Illustrations and instructions in this section contain some plywood and foam not supplied with your assembly. If you wish to use extra foam, it's available at your local auto upholstery supply house. However, the foam supplied with your assembly is adequate.

CARPETING

The carpeting kit consists of fourteen pieces of pre-cut and trimmed carpet, as shown. Lay out the pieces on the floor and check to be sure you have unpacked all the pieces. The seat back pieces are not used yet and should be placed aside for use later.

NOTE: Finished edges on the carpet are designed to be visible in the car. Unfinished edges are concealed by other parts and may have to be trimmed to fit.

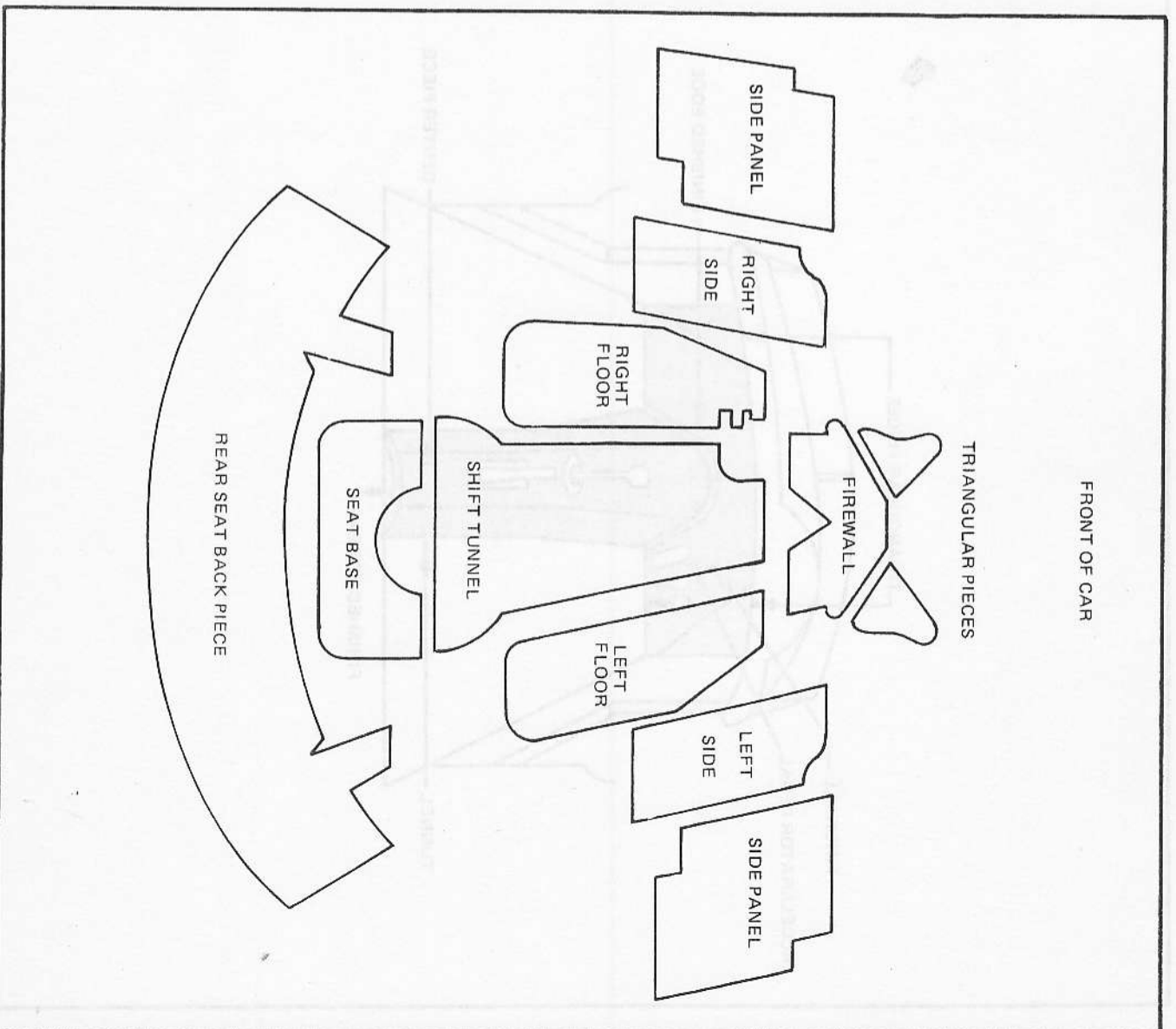
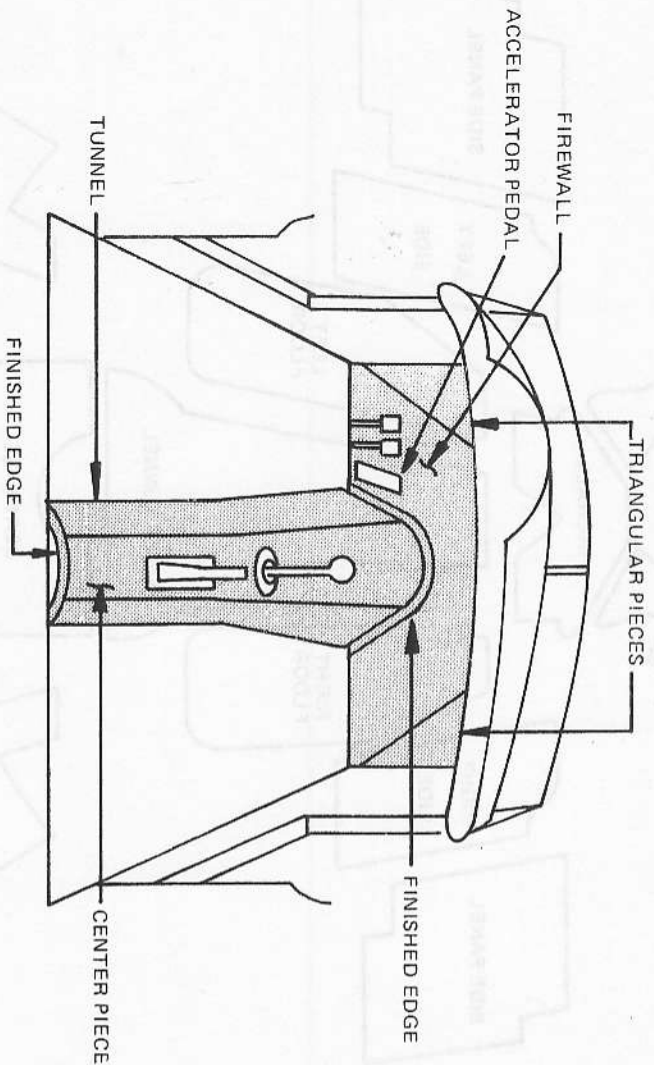


Figure 1



- ☐ Position the first piece against the trunk wall behind the accelerator pedal. Allow piece to extend several inches onto the floor. Apply adhesive and secure in place. Install the two small triangular pieces next.

☐ **NOTE:** Carpet is secured in place with a spray carpet adhesive such as 3M "90" brand spray adhesive. This adhesive is sprayed on the back of the carpet and the surface to which it will be cemented. Allow the adhesive to air-dry for about 30 seconds, then press in place.

- ☐ If necessary, the carpet can be picked up and moved to get a better alignment. You can also use contact cement. However, you have less capability to move the carpet in case of misalignment.

- ☐ Position the center piece over the shift tunnel. Glue in place starting at the front of the tunnel. Working toward the rear, cut an opening for the shift lever and another for the parking brake lever.

Finish cementing the remainder of the section to the tunnel.

Figure 2

- ☐ Install the large rear seat back piece next, then the seat base carpet.
 - ☐ Position the carpet pieces at the side kick panels. Apply cement and glue in place.
 - ☐ Position the door carpet pieces in position next and allow to extend down and on to the pan.
- The left and right floor sections are glued in to complete the carpeting.

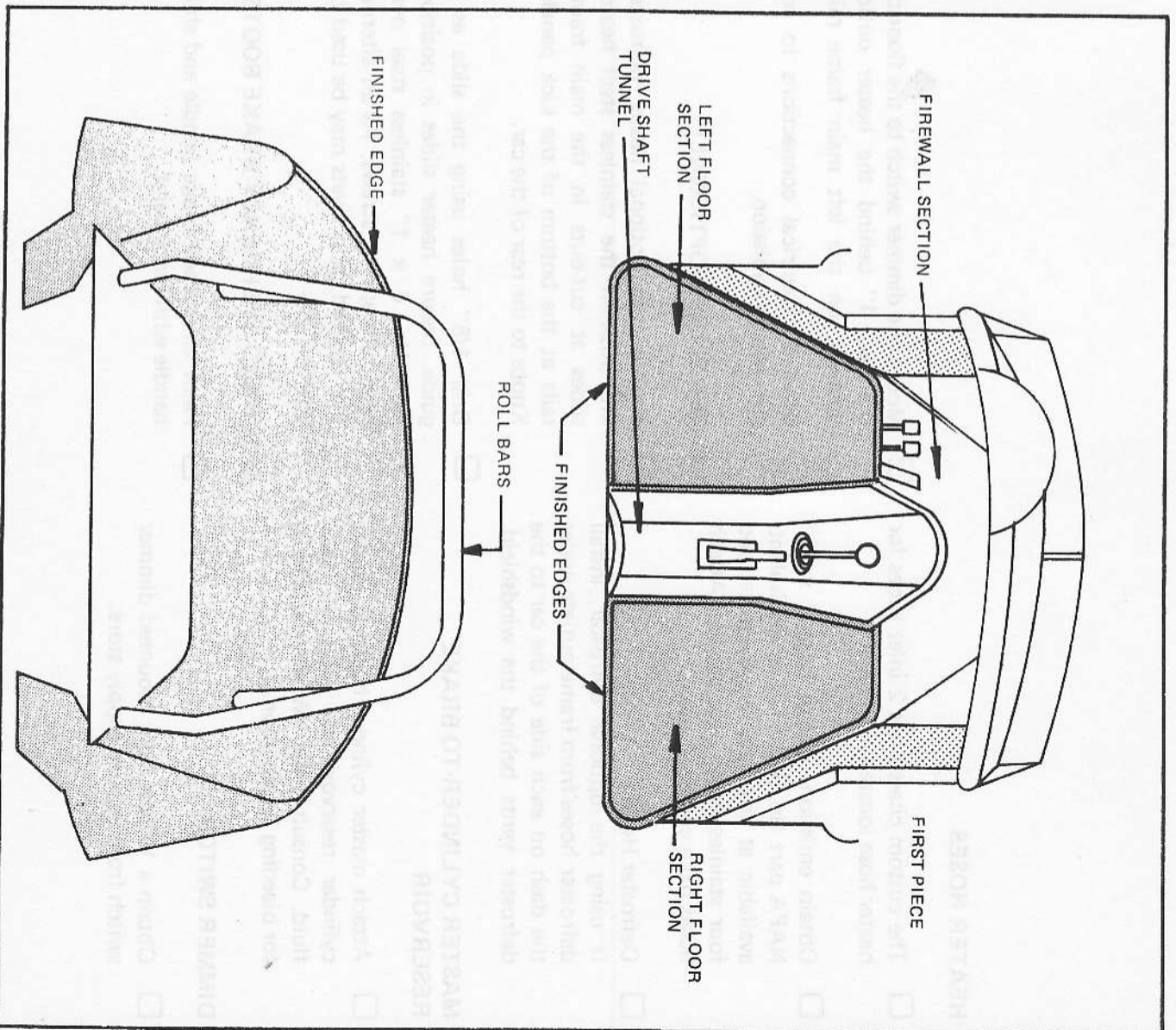


Figure 3

HEATER HOSES

- ☐ The custom chassis has 2 inlet tubes for heater hose located at the rear.
- ☐ Obtain emission control hose 2 x 36" NAPA part No. 813-1313, or equivalent, available at any auto supply store, and four stainless steel hose clamps. Attach hoses from engine to frame.

DEFROSTER HOSES:

If using the optional defroster, install defroster hoses from frame outlets under the dash on each side of the car to the defroster vents behind the windshield.

MASTER CYLINDER TO BRAKE RESERVOIR

- ☐ Attach master cylinder hoses to master cylinder reservoir and fill with brake fluid. Consult your VW service manual for bleeding information.

DIMMER SWITCH

- ☐ Obtain a 12 volt floor mounted dimmer switch from an auto supply store.

- ☐ Mount the dimmer switch to the floor of the car, 4" behind the heater outlet opening, on the left main frame rail.
- ☐ Make all electrical connections to engine and transmission.

HEATER SLIDES (OPTIONAL)

- ☐ If using the optional heater defroster kit, position the stainless steel heater slides at cut-outs in the main frame rails at the bottom of the kick panels. Knobs to the rear of the car.

- ☐ Drill 1/8" holes using the slide as a guide. Secure heater slides in position with No. 6 x 1" stainless steel oval head self-tapping screws. As an alternative method, pop rivets may be used to secure slides.

SHIFT AND EMERGENCY BRAKE BOOTS

- ☐ Paint emergency brake handle and shift handle with black paint.

- ☐ Obtain a standard shift boot from any auto supply store or our factory and install according to manufacturer's instructions.

- ☐ The original VW emergency brake boot is installed in the same manner as it was on the VW. New emergency brake boots are available from your local VW dealer.

WIPER ARMS AND BLADES

- ☐ Attach Trico AL 60 heavy duty stainless steel wiper arms and appropriate blades, following instructions packed with the arms. These units are available from our factory. Attach arms when posts are in their full park position.

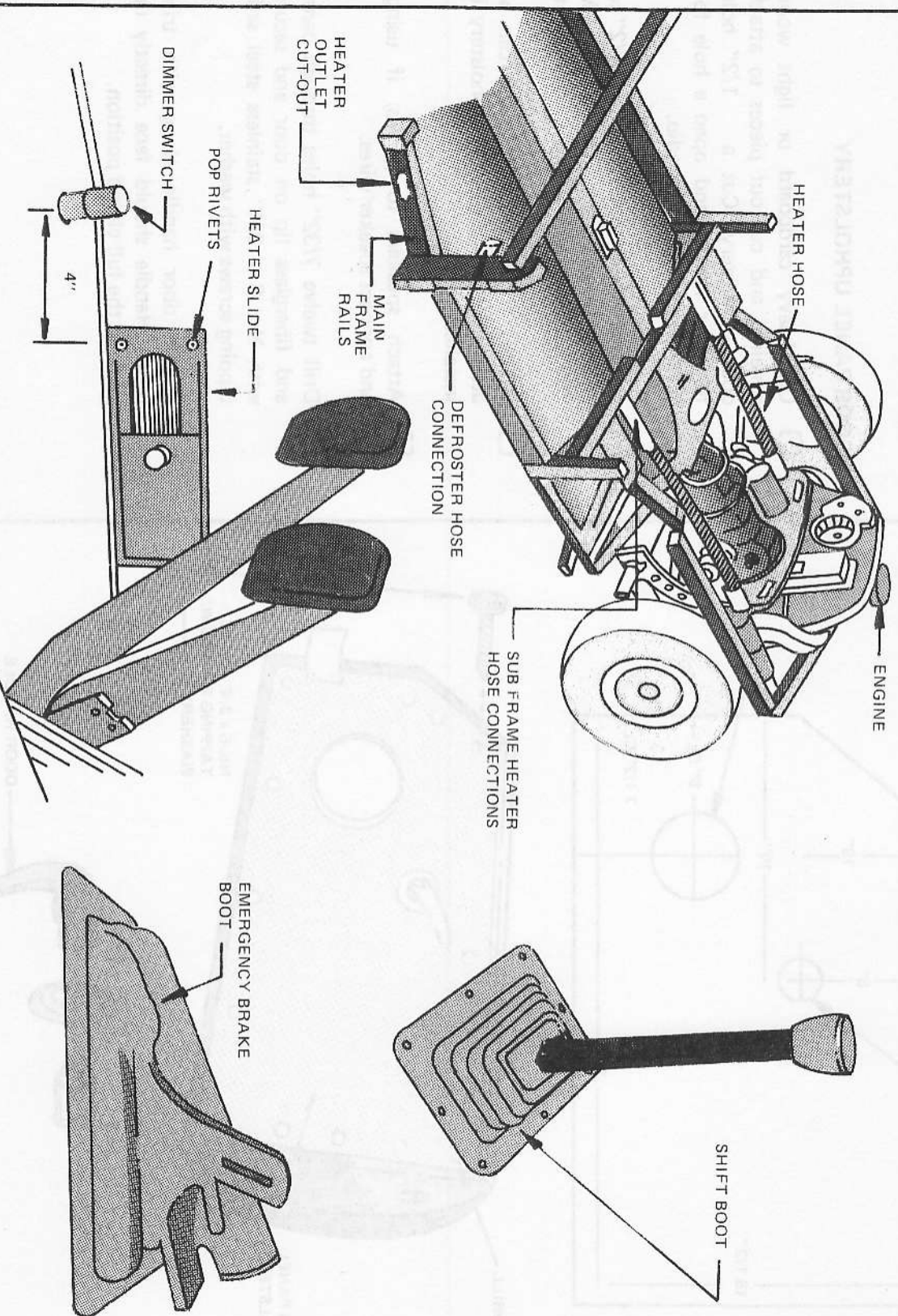


Figure 4

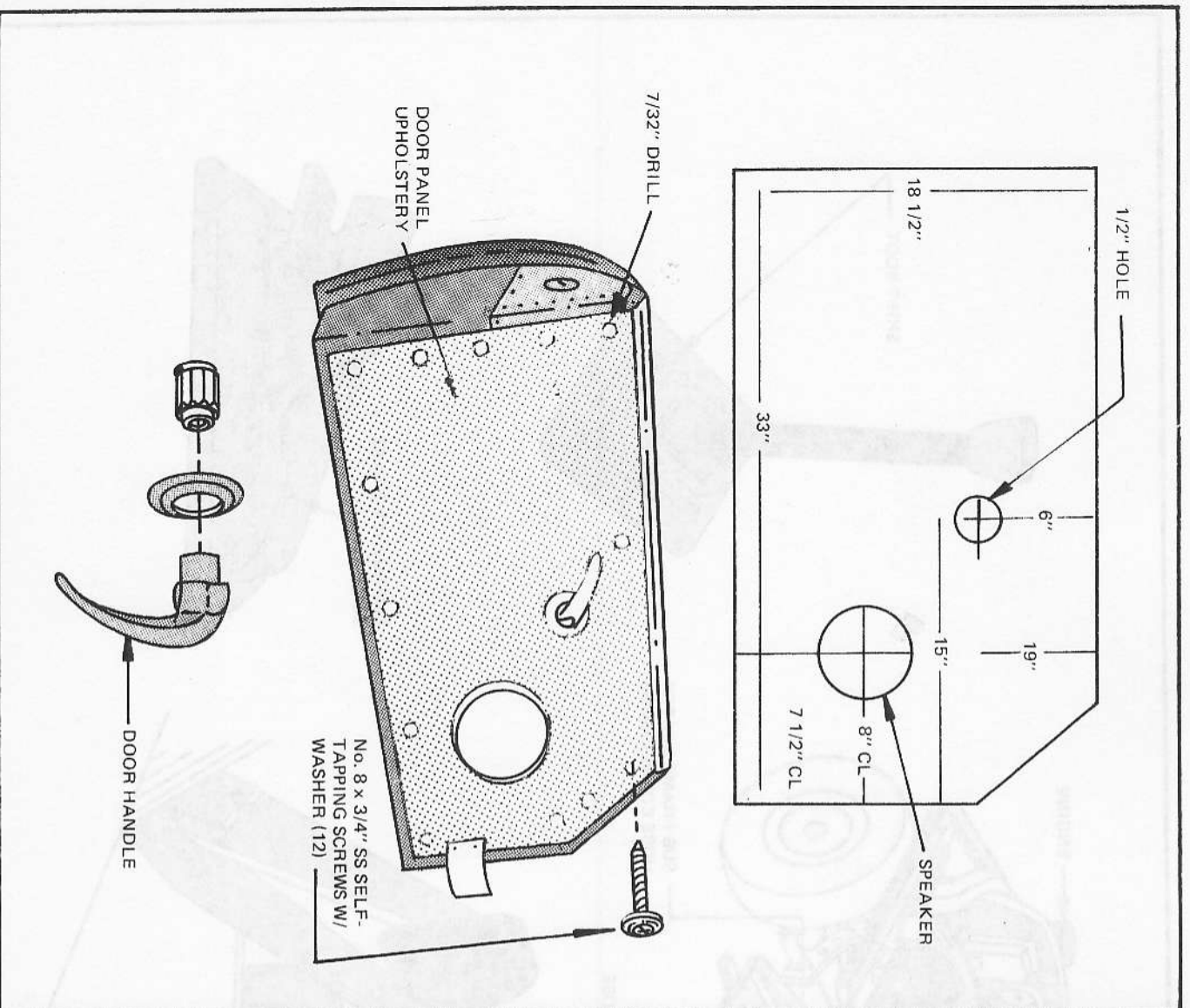


Figure 5

DOOR PANEL UPHOLSTERY

- ☐ Use heavy cardboard or light wood paneling and cut out pieces to attach door upholstery. Cut a 1/2" hole for door handle and open a hole for speakers, if installing a radio.
- ☐ Cut material to shape allowing 1 1/2" to extend around back. Attach with 3M "90" spray adhesive, or equivalent.
- ☐ **NOTE:** If desired, 1/4" foam can be attached to panels before upholstery is installed.
- ☐ Attach speakers to panels, if using, and connect speaker wires.
- ☐ Drill twelve 7/32" holes through panel and fiberglass lip on door and secure with No. 8 x 3/4" stainless steel self-tapping screws with washer.
- ☐ Attach door handle along with trim piece. Handle should face directly up when in the full closed position.

FRONT SEAT FABRICATION

- ☐ Cut out the scribed oval areas on backs of fiberglass seat shells with a sabre saw.
- ☐ Attach black vinyl seat edge trim to the edge of each seat.
- ☐ Fabricate 1" wide strips from 1/4" plywood and attach to the inside of seat back and seat bottom. The back strips are centered 11" apart and the bottom strips are centered 9 1/2" apart. Secure to fiberglass shell with No. 10 1/2" round head wood screws or use pop rivets as an alternative.
- ☐ Attach seat adjustment levers to outside upper seat slides with No. 10 x 3/4" pan head machine screws with flat washers and lock nuts.
- ☐ Center slides on bottom of seat 9 1/2" apart.
- ☐ **NOTE:** Tracks must be parallel for free movement.
- ☐ Mark hole location on fiberglass through holes in tracks. Drill 5/16" holes. Secure tracks to seats with 5/16 x 2" carriage bolts with flat washer, lock washer and lock nuts.
- ☐ **NOTE:** Two cup spacers are placed between the seat and track with a flat washer between them.

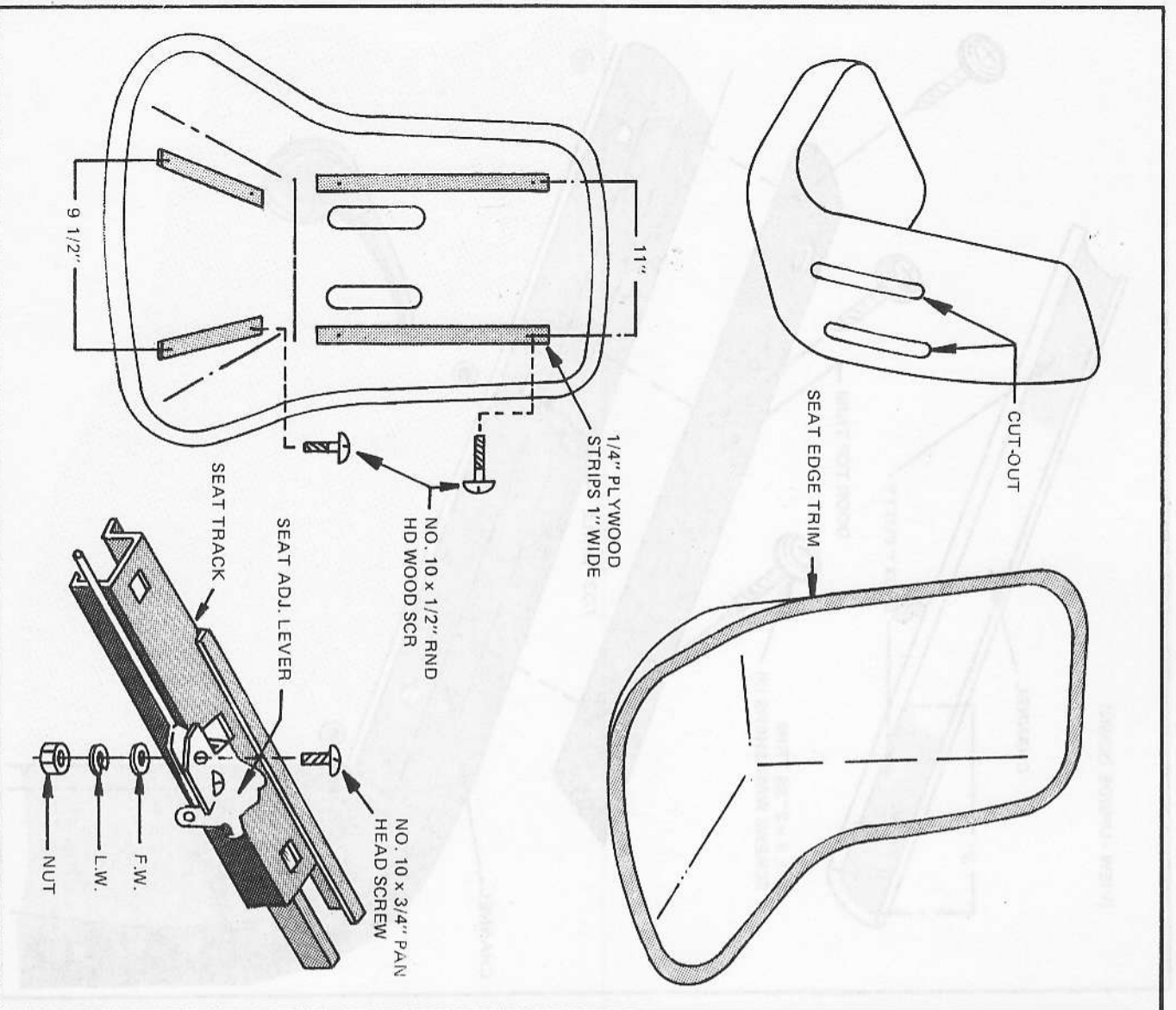


Figure 7

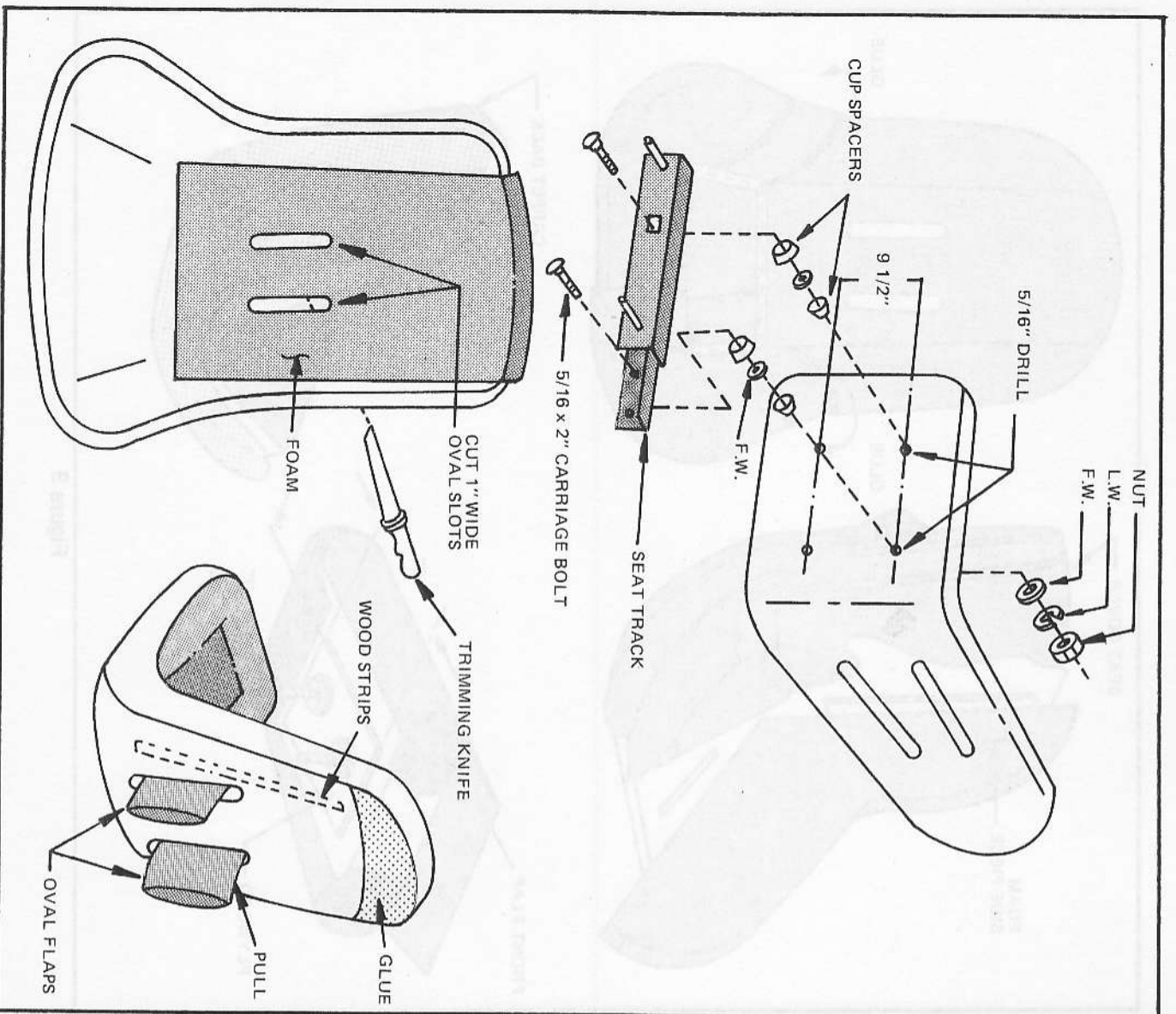


Figure 8

- ☐ Apply 3M "90" spray adhesive to rear seat foam and fiberglass. Place foam in position with 1" of foam above the top of the fiberglass seat back.
 - ☐ With a sharp knife cut 1" wide oval slots in the foam, through the oval cut-outs in fiberglass.
 - ☐ Slip oval flaps on the back of the upholstery fabric through the cut-outs in the fiberglass shell. Fasten inner side flaps to the wood strips with a staple gun. Pull the top center of the upholstery over the top of the fiberglass seat shell and glue to seat back with 3M "90" adhesive. Trim inner flaps where stapled.
 - ☐ Apply adhesive to foam side pieces and glue in place.
 - ☐ Staple inside edges of seat side upholstery to wood strips on seat base. Pull sides of seat upholstery around outer seat edge and glue in place.
 - ☐ Pull upholstery tightly through oval cut outs in seat back and notch and trim fabric for best fit. Glue in place with 3M "90" spray adhesive.
- NOTE:** As an alternative, 1/8" wood strips 1" wide can be fastened to the back of the fiberglass shell near the seat edge and the upholstery can be stapled to these strips.

- ☐ Fabricate a seat base for the seat cushions out of 1/2" plywood. Base is 7 1/2" wide and 10" long. Center cushion base on seat bottom and attach to fiberglass shell with two 5/16 x 1 1/2" carriage bolts spaced 6" apart. Secure with flat washer, lock washers and nuts.
- ☐ Center foam cushion on plywood base, pushing back of foam against seat back as far as possible. Secure foam with 3M "90" adhesive.
- ☐ Remove plywood cushion base and foam from the seat. Slip seat upholstery over foam. Staple the side flaps to the bottom of the plywood. Staple the rear flap to the plywood. Leave the front flap loose.
- ☐ Attach seat cushion permanently into position. Pull front flap forward and over fiberglass shell and glue in place.
- ☐ Attach carpet backs to seat with spray adhesive and trim for best fit.

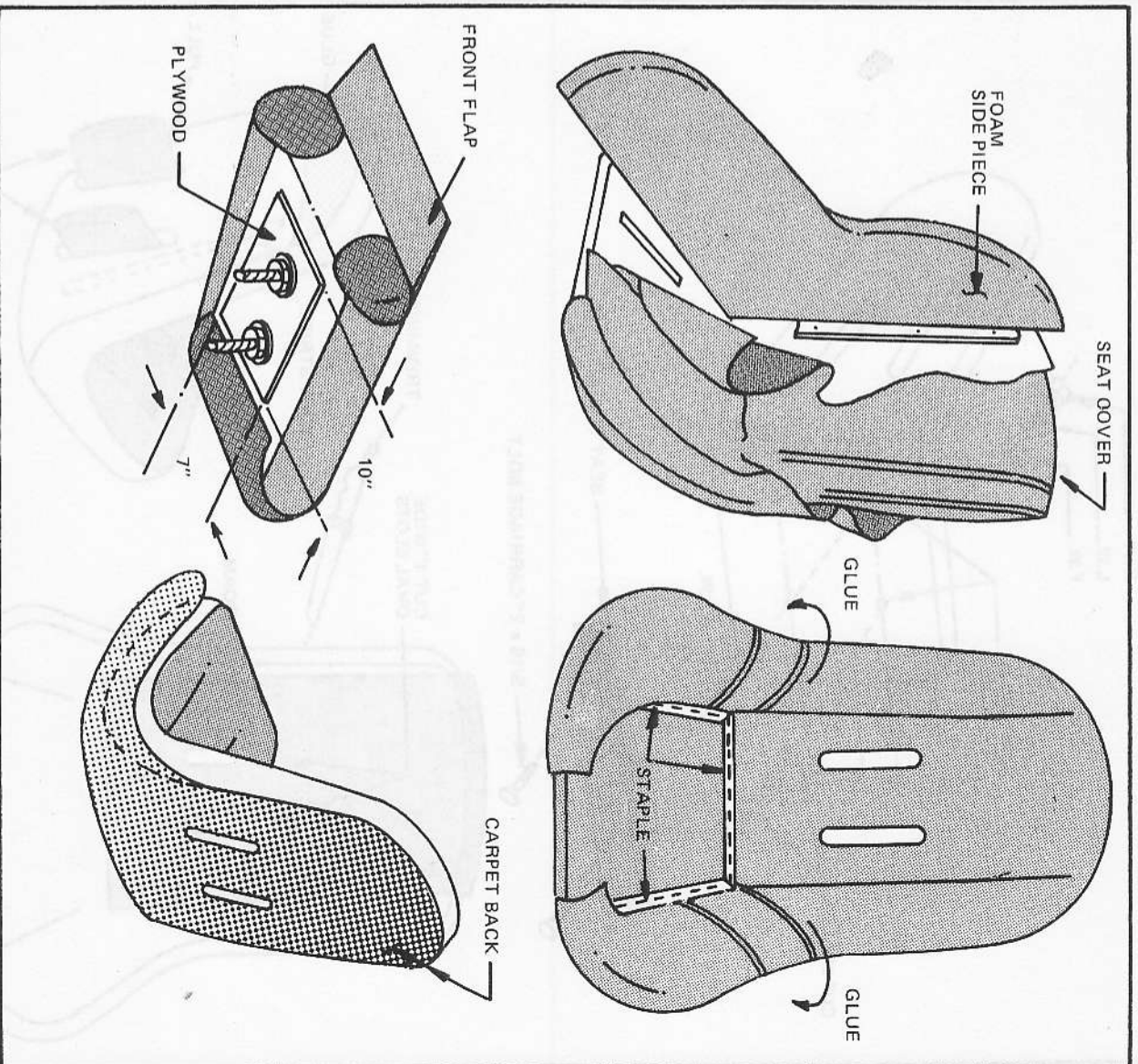


Figure 9

REAR SEAT CUSHION

- ☐ Make a cardboard template for the rear seat cushion. Cut holes at sides if the optional roll bar has been installed.
- ☐ Transfer dimensions to a piece of 1/2" plywood and cut out with a sabre saw.
- ☐ Glue a 2" piece of foam to plywood with 3M "90" spray adhesive. Trim foam for proper fit.
- ☐ Attach rear seat upholstery to bottom of plywood with staples.
- ☐ Install rear seat in car.

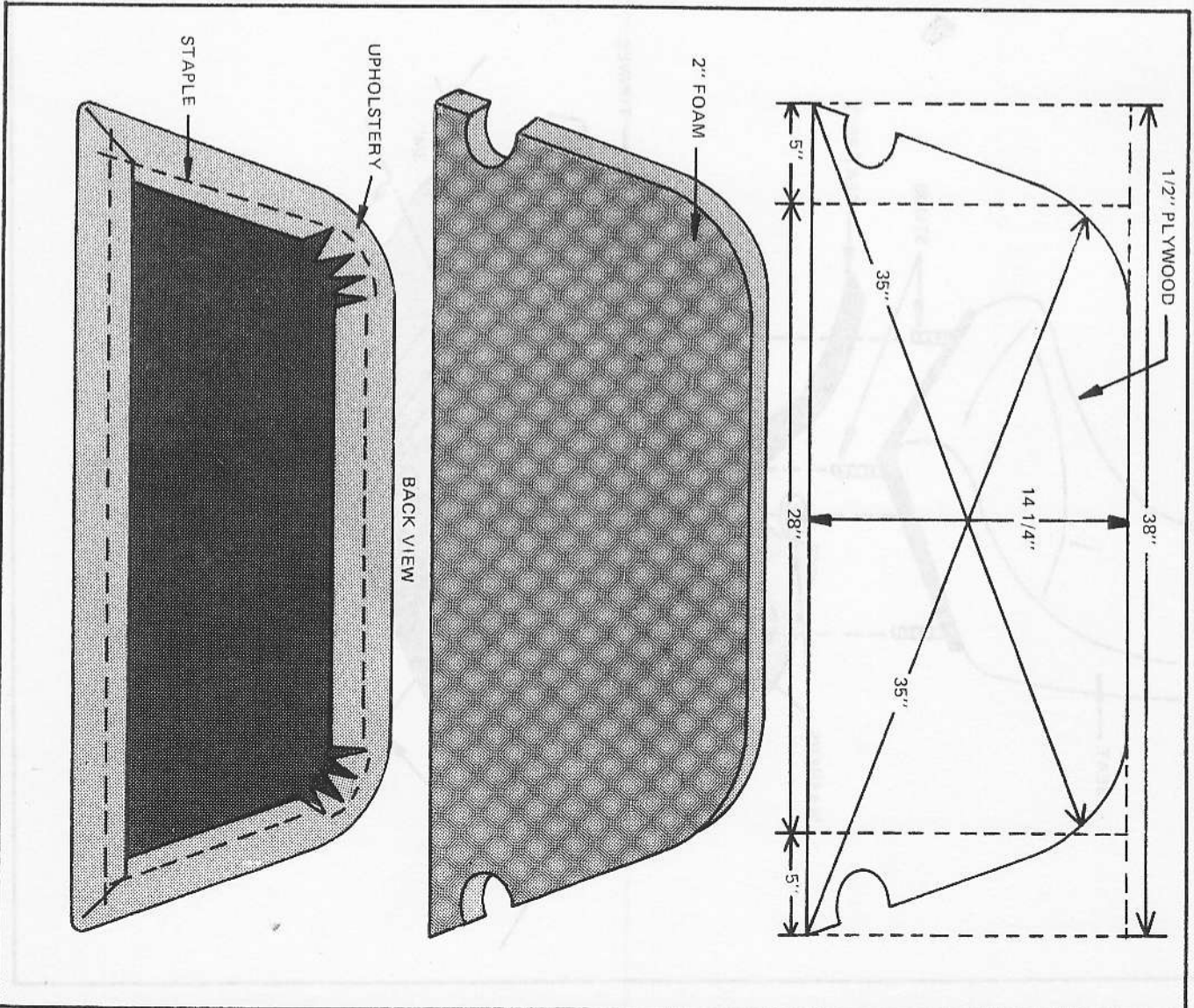


Figure 10

SEAT INSTALLATION

NOTE: The following positioning of seats give the proper location for the average person. The location can be moved forward or backward, as desired, to meet your individual requirements.

- ☐ Locate the rear seat studs 11" forward from the rear seat base. Inside studs are 3 1/4" from tunnel. Hole locations can be marked on carpet by applying chalk to bottom of studs or by applying masking tape to carpet, then pressing down on seat.
- ☐ Drill 3/8" holes. Place the seats in place with large washers between the seat track and carpet.
- ☐ Check the position and bolt the seats securely in place with 5/16" nuts with lock washers and large flat washers.

SEAT BELTS

- ☐ While the stock seat belts can be used, if the brackets are straightened, we use smaller belts on the assembly. Available from our factory, these belts are installed with the seats. The rear studs pass through the holes in the brackets at the ends of the belts.

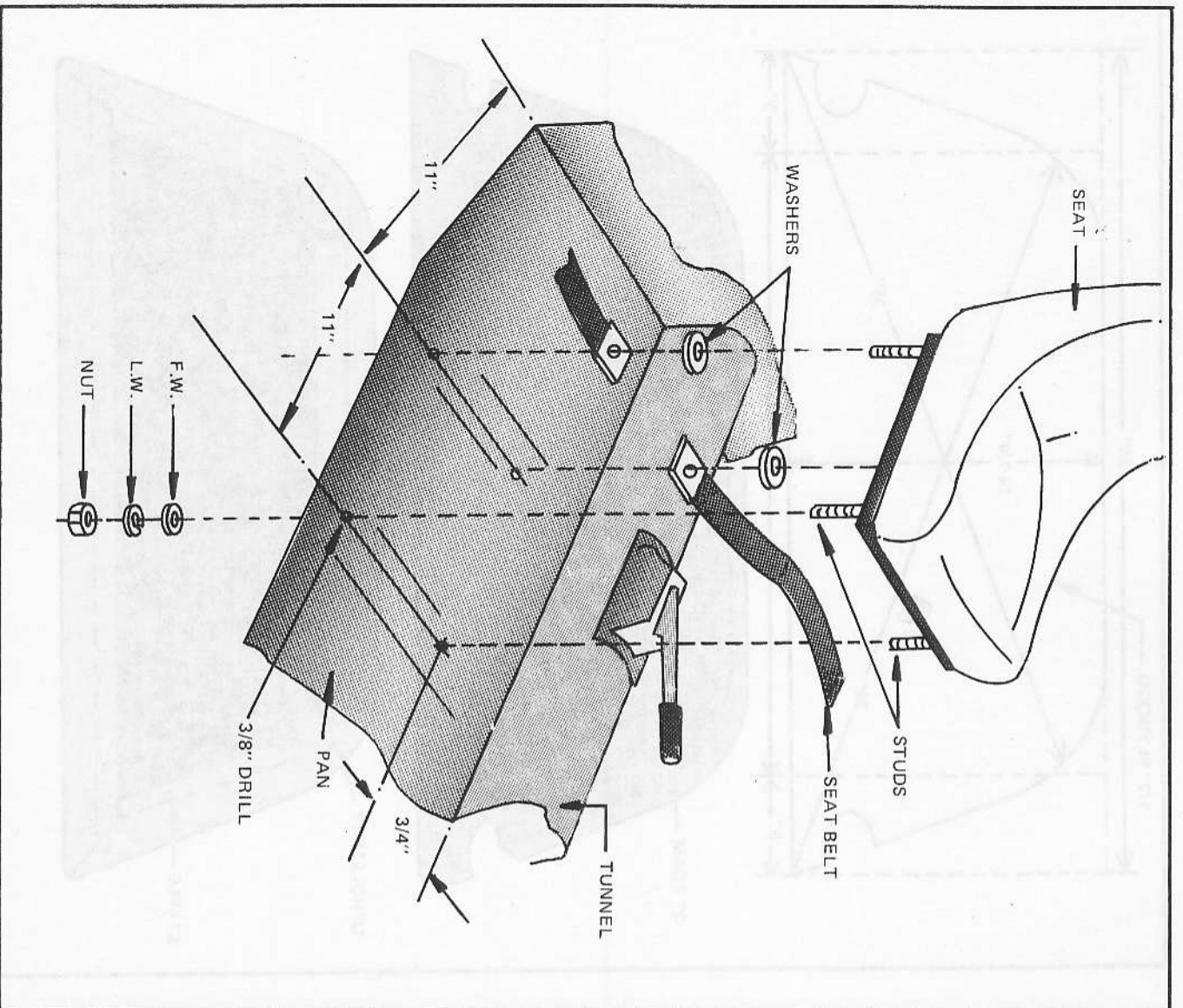


Figure 11

CARPET TRIM

- Position the long piece of aluminum carpet trim at the rear of the door opening on the body. Closed end of trim piece faces up. Trim bottom for proper fit.

- Shorter piece of trim fits on front inside edge of door opening on the body. Bend trim piece to follow contour of door opening. Trim bottom for proper fit.

- Drill six $7/64$ " holes for the front trim piece and seven for the rear. Attach with 6×1 " stainless steel oval head self-tapping screws or with pop rivets.

DOOR SILL TRIM

- Place door sill trim pieces along inside edge of the bottom of each door opening on the body, covering edge of carpet. Shorten, if necessary.

- Drill nine $7/64$ " holes for each trim piece and attach with No. 6 $\times$ 1" stainless steel oval head self-tapping screws or pop rivets.

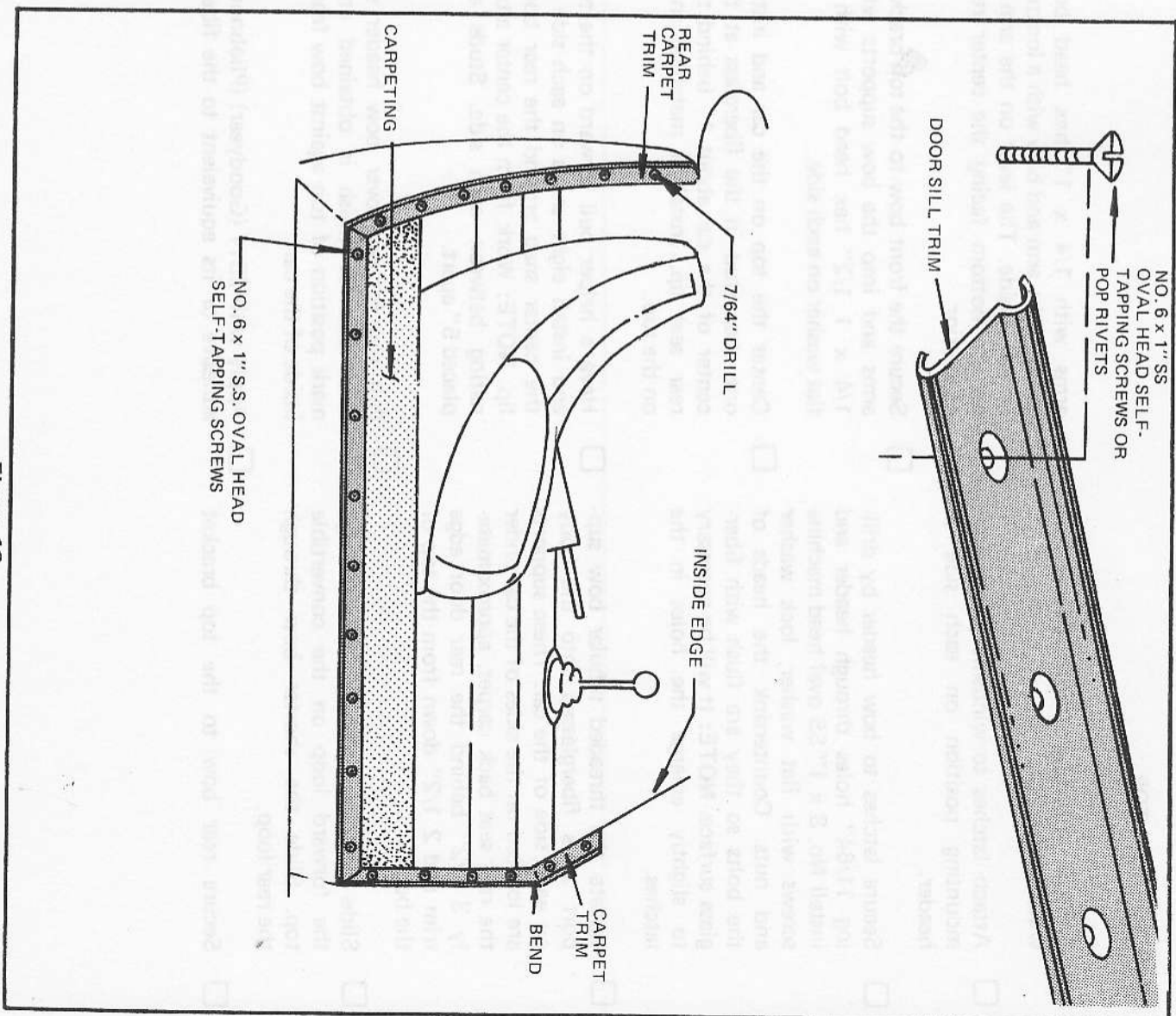


Figure 12

CONVERTIBLE TOP

- ☐ Position fiberglass bow header on windshield frame.
- ☐ Attach latches to windshield and mark mounting position on each side of header.
- ☐ Secure latches to bow header by drilling 11/64" holes through header and install No. 8 x 1" SS oval head machine screws with flat washer, lock washer and nuts. Countersink the heads of the bolts so they are flush with fiberglass surface. **NOTE:** It will be necessary to slightly enlarge the holes in the latches.
- ☐ Locate the threaded tubular bow support arms fiberglassed into the body on each side of the car. These supports are located on the sides of the car under the rear seat back carpet, approximately 3 1/2" behind the rear door edge trim and 2 1/2" down from the top of the body.
- ☐ Slide the longer metal top bow through the forward loop on the convertible top. Slide the shorter bow through the rear loop.
- ☐ Secure rear bow to the top bracket
- ☐ arms with 1/4 x 1" hex head bolt through the arm and bow with a locknut on the inside. The lever on the arm is on the bottom facing the center rear of interior.
- ☐ Secure the front bow to the top bracket arms and into the bow supports with 1/4 x 1 1/2" hex head bolt with a flat washer on each side.
- ☐ Center the top on the car and install one snap stud in the fiberglass at the center of the car about 1" behind the rear seat lip. Install a matching snap on the top.
- ☐ Have a helper pull forward on the top and install eight snaps on each side of the center snap around the rear body lip. **NOTE:** Work from the center alternating between each side. Studs are placed 5" apart.
- ☐ Pull top forward over bow header so a wrinkle-free finish is obtained and mark position of top against bow from inside of the car.
- ☐ Apply with 2011 (Goodyear) (Pliobond) adhesive or its equivalent to the fiber-

glass header and top. Sand header bow before applying glue. Trim material 2" in front of fiberglass header and glue material around and inside channel of header. Attach a piece of foam rubber weather stripping to inside of channel.

- ☐ Install a stud on each side of upper windshield trim. **NOTE:** Drill a 1/8" hole and secure with a pop rivet. **NOTE:** Be very careful to avoid windshield glass. Install a matching snap in each forward flap.
- ☐ Install an additional snap stud on each side of the car for the rear side curtain flaps. Install a matching snap in the flaps.

TONNEAU COVER (OPTIONAL)

- ☐ Install snaps in tonneau cover to match studs on padded rolls and trunk lid. Start at the rear center and work toward the front of the car.

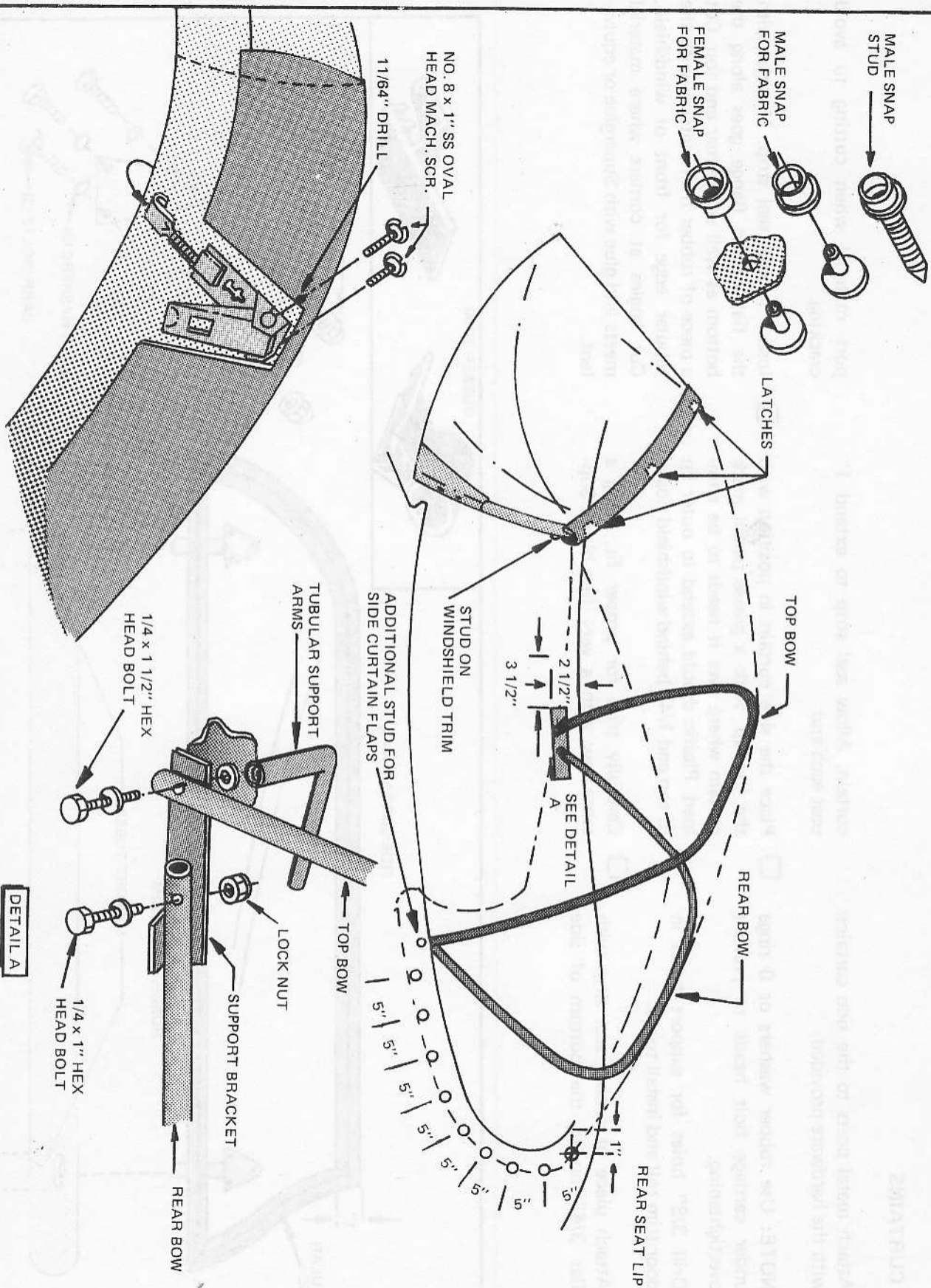


Figure 13

VII-15

SIDE CURTAINS

- ☐ Attach metal posts to the side curtains with the hardware provided.
- ☐ **NOTE:** Use rubber washers or O rings under carriage bolt heads to prevent overtightening.
- ☐ Drill 3/8" holes for support tubes in door trim roll and install tubes.
- ☐ Attach piece of rubber seal strip with flat 3/4" lip to the bottom of side curtain. Allow seal strip to extend 1" past each end.
- ☐ Place the side curtain in position with the top up. With a grease pencil mark curtain where ever it needs to be trimmed. Plastic should extend to outer lip of top and 1/4" behind windshield posts.
- ☐ Carefully trim for proper fit, using a sabre saw with a very fine blade. Support material when cutting to avoid cracking.
- ☐ Install rubber seal strip. Material with the flat rubber flange goes along the bottom as well as the rear and top. Cut a piece of rubber trim material with the tubular edge for front of windshield. Cut angles at corners where material meets and glue with Superglue or equivalent.

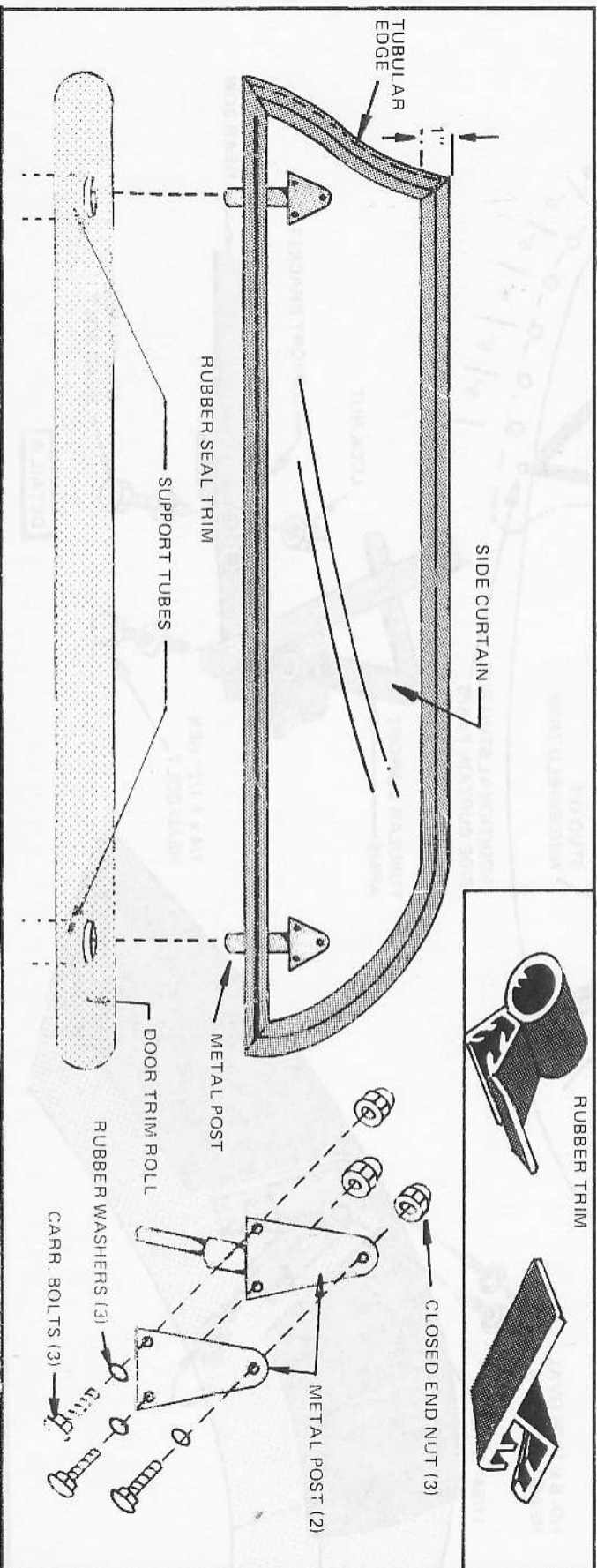


Figure 14

SECTION VIII FINAL DETAILS

MIRRORS

Many types of mirrors can be utilized on the Replica. Mounting is a matter of personal preference. Illustrations are for mirrors available from our factory.

- ☐ Attach rear view mirror to the windshield support rod with the hardware provided.
- ☐ Attach outside fender mirrors to the fenders. Locate center of mirror(s) approximately 5" from the side of the luggage compartment opening, 3" forward of the rear corner. Fasten with hardware provided.

UPPER SIDE TRIM - STANDARD VERSION ONLY

- ☐ Clean surface of mounting location with acetone.
- ☐ Draw a light line with a grease pencil from the center of the door handle to the front and rear of the car. Extend line 33" on side of front fender and 35" on side of rear fender. Points of molding are at the front and rear of car.
- ☐ Cut pieces to fit front fender and remove backing and apply to surface. Cut pieces to fit the door. Remaining pointed piece runs along the rear fender.

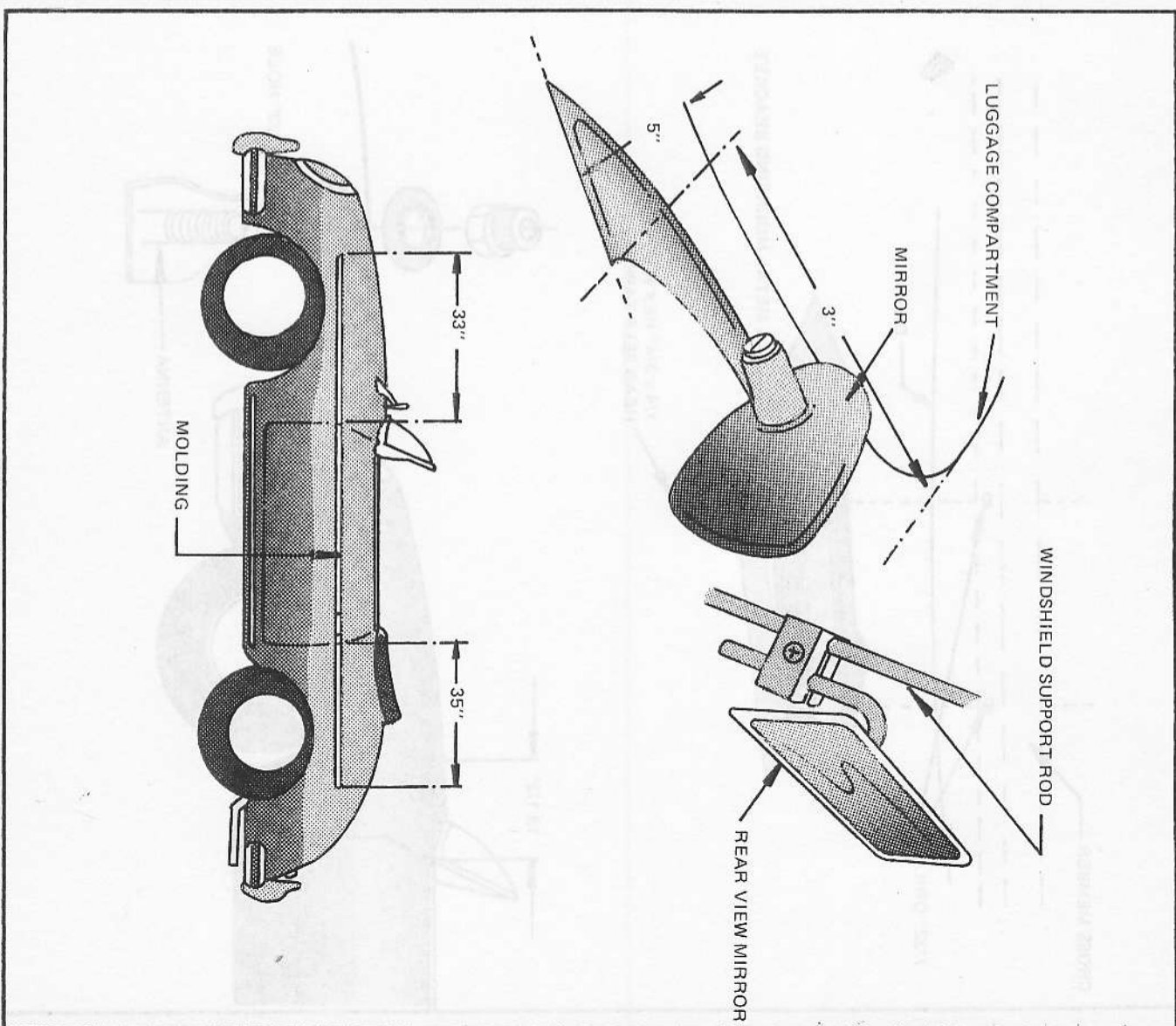
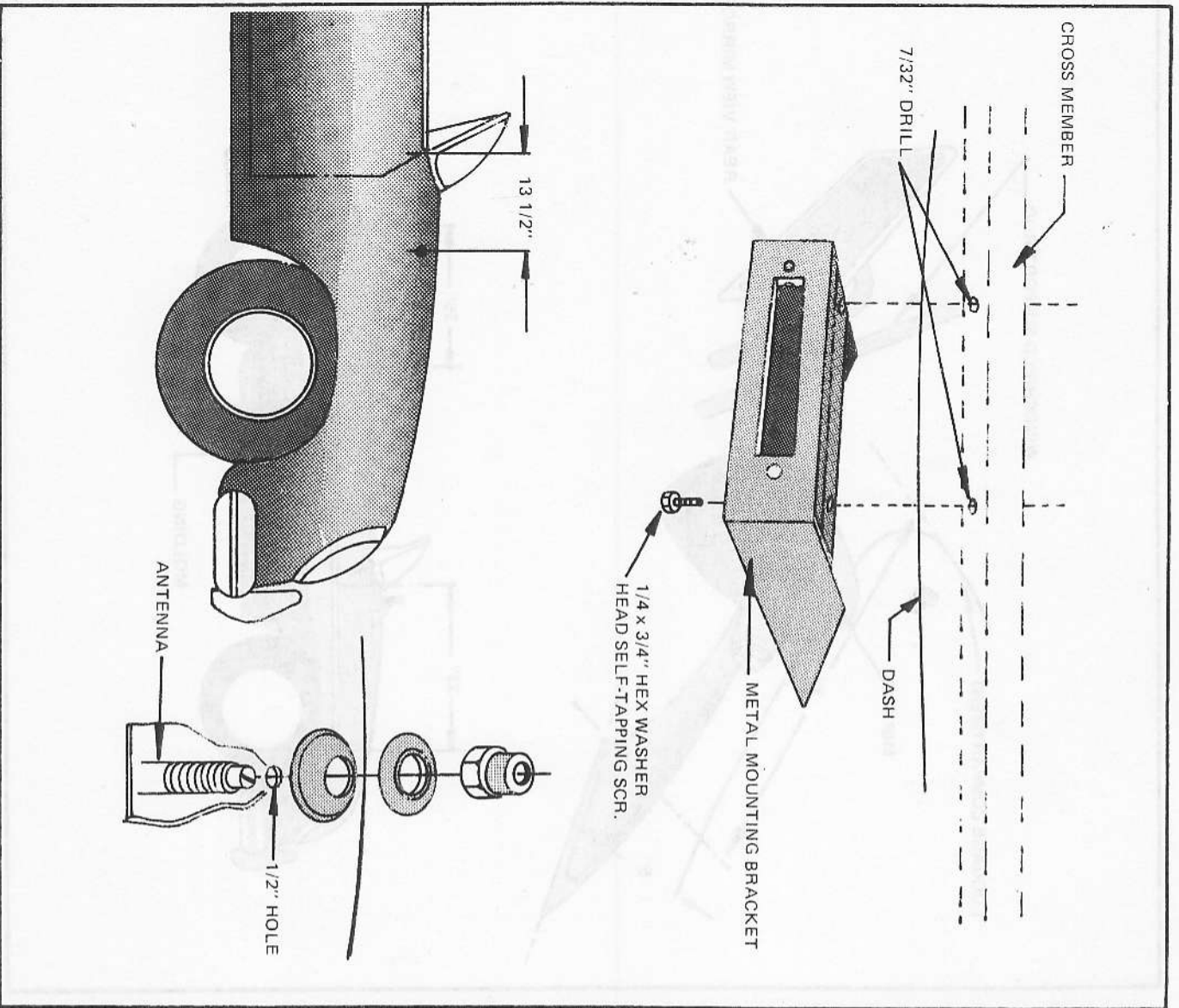


Figure 1



RADIO

A number of radios will fit the Replica assembly. The optional factory unit comes with a special mounting bracket and case. The radio is located on the passenger side of the car below the dash.

- ☐ Position the metal mounting bracket in the appropriate location against the bottom of the crossmember behind the dash. Drill two 7/32" holes and attach with 1/4 x 3/4" hex washer head self-tapping screws.

- ☐ Install radio and cover.

- ☐ Drill holes through the top of the door and door jamb for speaker wires.

ANTENNA

- ☐ The optional antenna mounts to the top of the fender on the passenger side of the car.

- ☐ Mark hole location approximately 13 1/2" forward of the top of the door opening. Drill a 1/2" hole and mount antenna.

- ☐ If using the optional power antenna, secure the mount on the power unit to the inside of the fender well.

Figure 2

PASSENGER GRAB HANDLE (OPTIONAL)

A grab handle for the car is available from the factory as an option. It is for the convenience of passengers.

- ☐ Locate handle 6" from the end of the dash trim roll on the passenger side. The bottom of the handle contacts the bottom lip of the dash. The upper mounting hole lines up with the trim piece.
- ☐ Mark hole locations and drill two 1/4" holes. Secure with the hardware provided.

EMBLEMS

One emblem is furnished with the assembly. It can be mounted on the dash or front fender. If desired, an additional emblem can be obtained from the factory.

Preferred locations are on the passenger side of the dash or on the passenger side front fender, just forward of the door, above upper side molding on the standard model.

- ☐ Position emblem in desired location and mark stud location. Drill five 1/8" holes and push into position. If the assembly should become loose, adhesive can be applied to the studs.

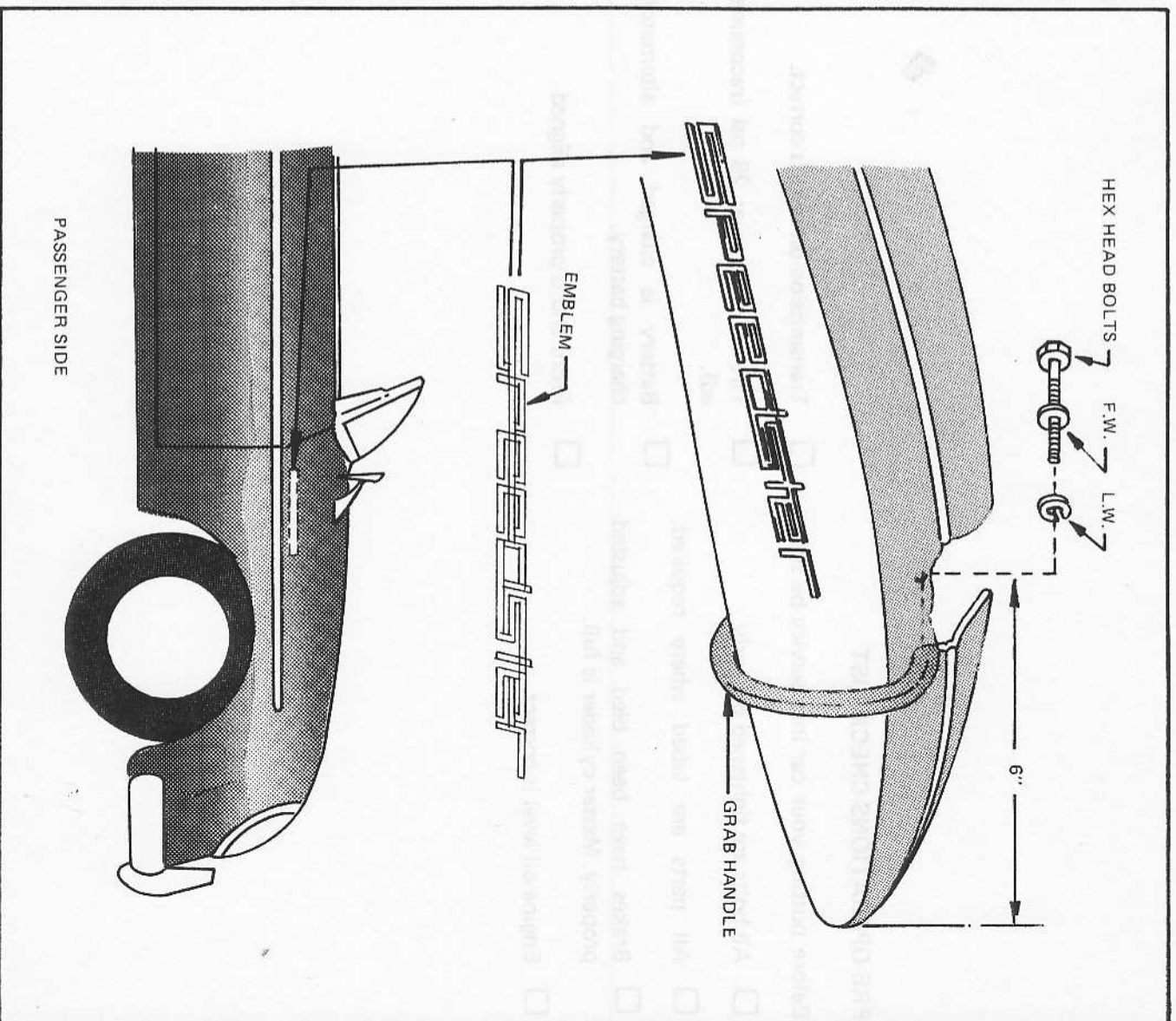


Figure 3

PRE-OPERATIONS CHECK LIST

Before putting your car into service be sure:

- | | |
|--|---|
| ☐ All bolts are tightened properly. | ☐ Transmission oil level is correct. |
| ☐ All parts are lubed where required. | ☐ Tire inflation is at 28 psi (recommended). |
| ☐ Brakes have been bled and adjusted properly. Master cylinder is full. | ☐ Battery is charged and alternator is charging battery. |
| ☐ Engine oil level is correct. | ☐ Front end is properly aligned. |
| | ☐ All belts are tightened properly. |
| | ☐ Headlights are adjusted. |
| | ☐ Horns and all safety items function properly. |
| | ☐ Car meets your state safety and emission requirements. |



SECTION IX APPENDIX

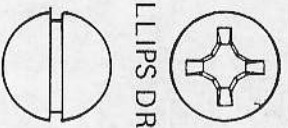
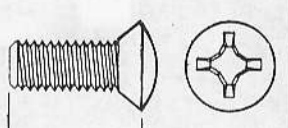
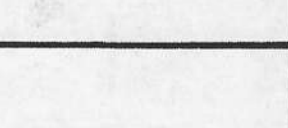
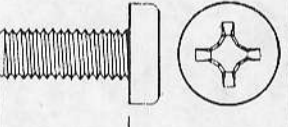
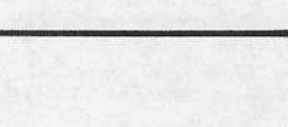
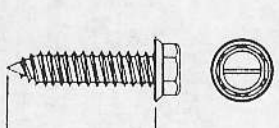
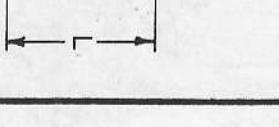
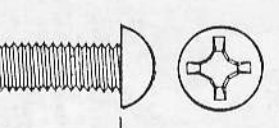
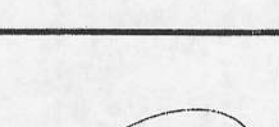
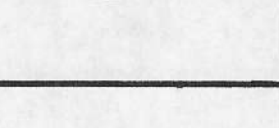
NUT AND BOLT LIST

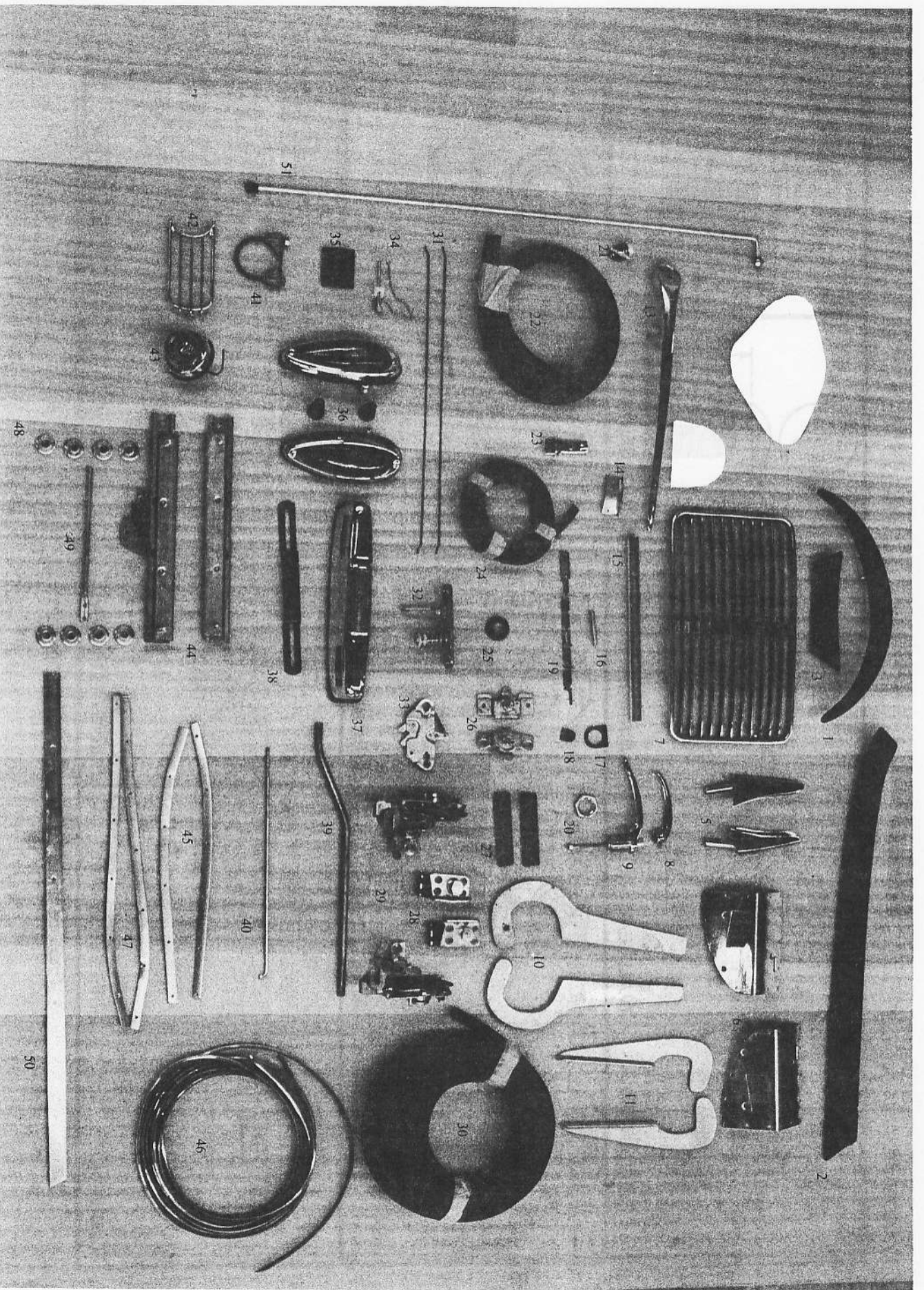
1. License plate holder to body - (2 each) 5/16 x 1" hex head cap screws with flat washers, lock washer and nuts.
2. Taillights to body - 6 No. 10 flat washers and lock washers.
3. License and back up light to body - 2 No. 10 flat washer and lock washer.
4. Horn grilles to body - 6 No. 6 flat washer and lock washer.
5. Turn signals to body - 4 No. 10 flat washer and lock washer.
6. Deck hinges to deck lid - (4 each) 1/4 x 1 1/2" hex head screws with flat washer, lock washer and nuts.
7. Rear deck hinge brackets to body - (4 each) 3/8 x 1 1/2" hex head cap screws, lock washers and nuts. 8 flat washers.
8. Deck hinge to bracket - Two 3/8 x 1 1/2" hex head cap screw. 4 flat washers, 2 lock nuts.
9. Deck lock to mounting plate - (2 each) 3/8 x 1 1/2" hex head cap screws; 4 lock washers and nuts, 4 flat washers.
10. Lock pin to deck lid - (2 each) 5/16 lock nuts and flat washers.
11. Support pin to firewall - 1 No. 10 x 1 1/2" round head machine screw, flat washer, lock washer and nut.
12. Grille to deck lid - 4 No. 6 round head stainless steel self-tapping screws.
13. Headlight clip to body - (3 each) No. 10 x 1/2" round head machine screws with flat washers, lock washers and nuts.
14. Headlight housing to body - (2 each) 1 1/2" chrome or S.S. carriage bolts, flat washer, lock washer and nuts.
15. Hood latch to hood - (2 each) 5/16 x 1" carriage bolts with flat washer, lock washer and nuts.
16. Hood hinges to hood flange - (4 each) 5/16 x 1" hex head bolts with flat washer, lock washer and nuts.
17. Hood hinges to hood hinge support bracket - Two 5/16 x 1" hex head bolts with 4 flat washers and 2 lock nuts.
18. Hood hinge support brackets to frame - (4 each) 5/16 x 2 1/2" hex head bolts with flat washers, lock washers and nuts.
19. Brake reservoir to trunk floor - 2 No. 8 x 3/4" hex washer head self-tapping screws.
20. Hood support rod retainer bracket - 1/4 x 1" carriage bolt with flat washer, lock washer and nut.
21. Hood handle to hood - 2 No. 8 flat washers.
22. Lower door molding - 10 No. 10 flat washers.
23. Dash trim center piece to dash - (4 each) 3/16" nuts, flat washer and lock washers.
24. Firewall splash apron to firewall - No. 8 x 3/4" self-tapping round head screws.
25. Rear bumper support brackets to frame - (4 each) 3/8 x 2 3/4" hex head bolts, flat washers, lock washer and nuts.
26. Nerf bars or bumper brackets to bumper support brackets - (8 each) 3/8 x 1 1/2" hex head bolt, flat washer, lock washer and nuts.
27. Bumper molding to bumpers - (4 each) 5/16 x 1" pan head machine screw with flat washer, lock washer and nuts.
28. Bumper guards to bumper - Four 5/16 flat washer, lock washer and nuts.
29. Fuse block plate to body under dash - (2 each) 1/4 x 1 1/2" carriage bolts, flat washers, lock washer and nuts.
30. Roll bar supports to chassis - (4 each) 3/8 x 2 3/4 hex head bolts, flat washer, lock washer and nuts.
31. Roll bar to support - (8 each) 3/8 x 1 1/2" hex head bolts, flat washer, lock washer and nuts.
32. Forward roll bar mount to chassis - (4 each) 3/8 x 2 1/2" hex head bolts, flat washer, lock washer and nuts.
33. Engine compartment inserts to frame - Fourteen 1/4 x 3/14" hex washer head self-tapping screws.
34. Door locks to door plates - 6 x 12mm 1mm pitch flat head machine screws.
35. Door lock plates to body - (32 each) No. 8 x 3/4" pan head machine screws with flat washer, lock washer and nuts.
36. Striker plate to reinforcing plate - (8 each) 1/4 x 3/4" flat head machine screws with lock washers and nuts.
37. Door handle to door - (2 each) No. 10 x 1/2" round head machine screw with flat washer, lock washer and nut.
38. Door release rod to door - (2 each) 1/4 x 1" flat head machine screw with flat washer, lock washer and nut.
39. Door handle release rod to lock release rod - 4 No. 10 lock nuts.

40. Inside door release mechanism to door - (4 each) 1/4 x 1" flat head machine screws with flat washer, lock washer and nuts.
41. Front subframe mounts to VW pan - (4 each) 7/16 x 1 1/2" hex head bolts with 8 flat washers and 2 lock nuts.
42. Front and rear pan sides to subframe - Eight 5/16 x 1" hex washer head self-tapping screws.
43. Sides of pan to frame side plates - (6 each) 5/16 x 1 1/4" hex head bolts with lock nuts, 12 flat washers.
44. Top body support to lower body support - (2 each) 3/8 x 1" hex head bolt lock washer and nuts, 4 flat washers.
45. Body to body support - (3 each) 5/16 x 1 1/2" carriage bolt with flat washer, lock washer and nuts.
46. Fuse block plate to body - (2 each) 1/4 x 1 1/2" carriage bolts with flat washer, lock washer and nuts.
47. Steering column bracket to frame - One 5/16 x 3" hex head bolt with lock washer and nut, 2 flat washers.
48. Steering column to steering column bracket - (2 each) 5/16 x 1 1/2" hex head bolt with lock washers and nuts, 4 flat washers.
49. Carpet trim to body - 26 No. 6 x 1" stainless steel oval head self-tapping machine screws.
50. Door sill trim to body - 18 No. 6 x 1" stainless steel oval head self-tapping screws.
51. Heater slides to frame - 8 No. 6 x 1" stainless steel phillips oval head self-tapping screws.
52. Dimmer switch to floor - Two 1/4 x 3/4" hex washer head self-tapping screws.
53. Fender panels to front bumper support brackets - Ten 1/4 x 3/4 hex washer head self-tapping screw.
54. Plywood strips to front seats - 48 No. 10 x 1/2" wood screws.
55. Seat adjustment levers to seat tracks - (4 each) No. 10 x 3/4" pan head machine screws with lock nuts.
56. Seat tracks to seats - (8 each) 5/16 x 2" carriage head bolts with flat washer, lock washer and nuts.
57. Front Seat cushion to seat - (4 each) 5/16 x 1 1/2" carriage head bolts with flat washer, lock washer and nuts.
58. Door panels to door - 24 SS No. 8 x 3/4" self-tapping trim screws and washers.
59. Windshield post to upper windshield trim - two No. 10 x 1/4" SS oval head machine screws; two No. 10 x 3/4" SS oval head machine screws.
60. Windshield center support post to body - one 1/4" nut, flat washer and lock washer.
61. Windshield posts to body - (2 each) 3/8" and 1/4" hex head bolts with four flat washers.
62. Gas tank to body (4 each) 5/16 x 1" carriage bolts with flat washer, lock washer and nuts.
63. Rear bow to support arm - (2 each) 1/4 x 1" hex head bolts with lock nuts.
64. Front bow to support arm and support bracket - (2 each) 1/4 x 1 1/2" hex head bolts with 4 flat washers.
65. Top latches to fiberglass bow header - (4 each) No. 8 x 1" stainless steel oval head machine screws with flat washers, lock washers and nuts.

NOTE: The nuts and bolts listed here may vary from our optional hardware kit. In addition, many options are supplied with their own hardware and because of variations, the hardware is not listed here.

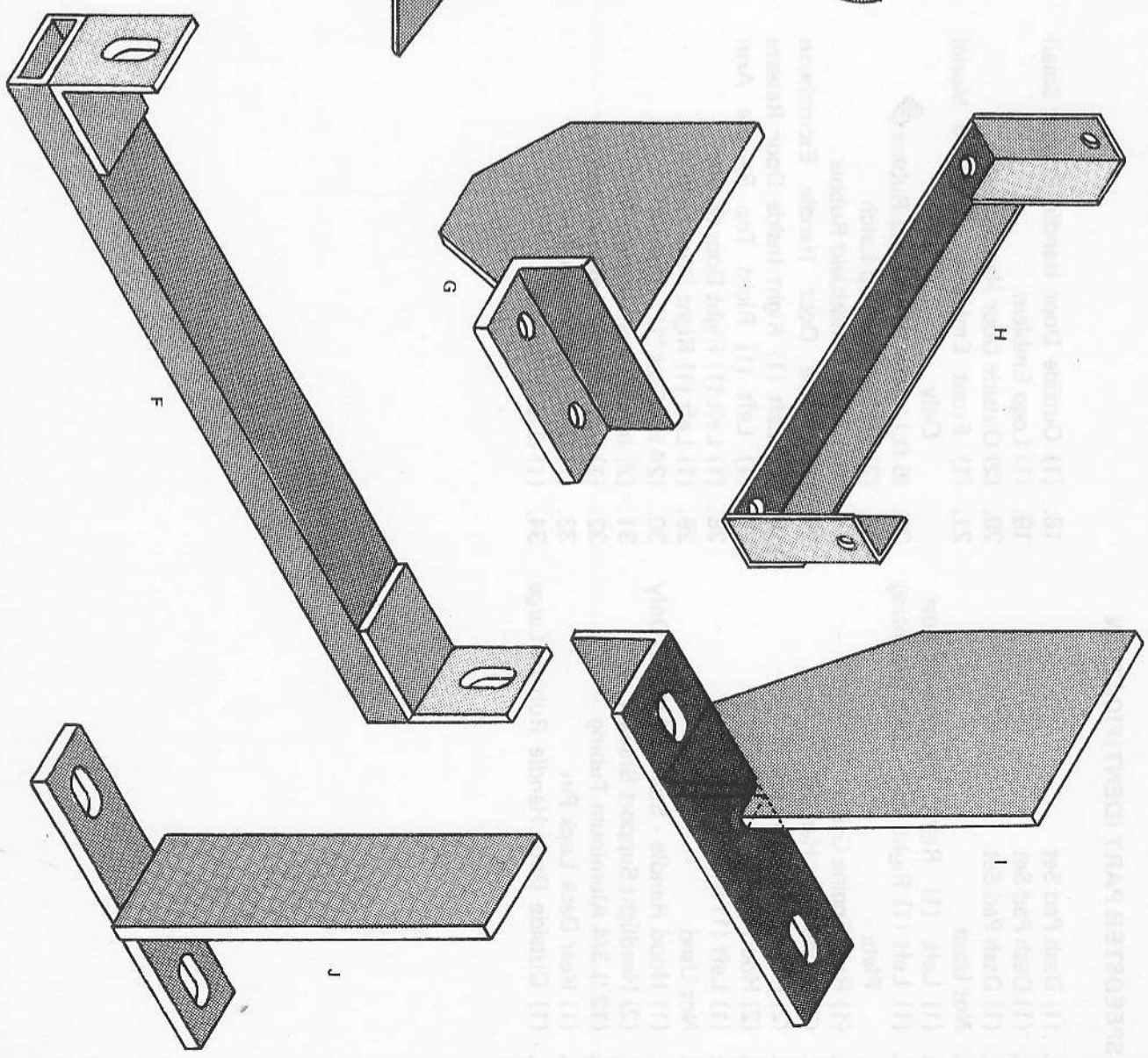
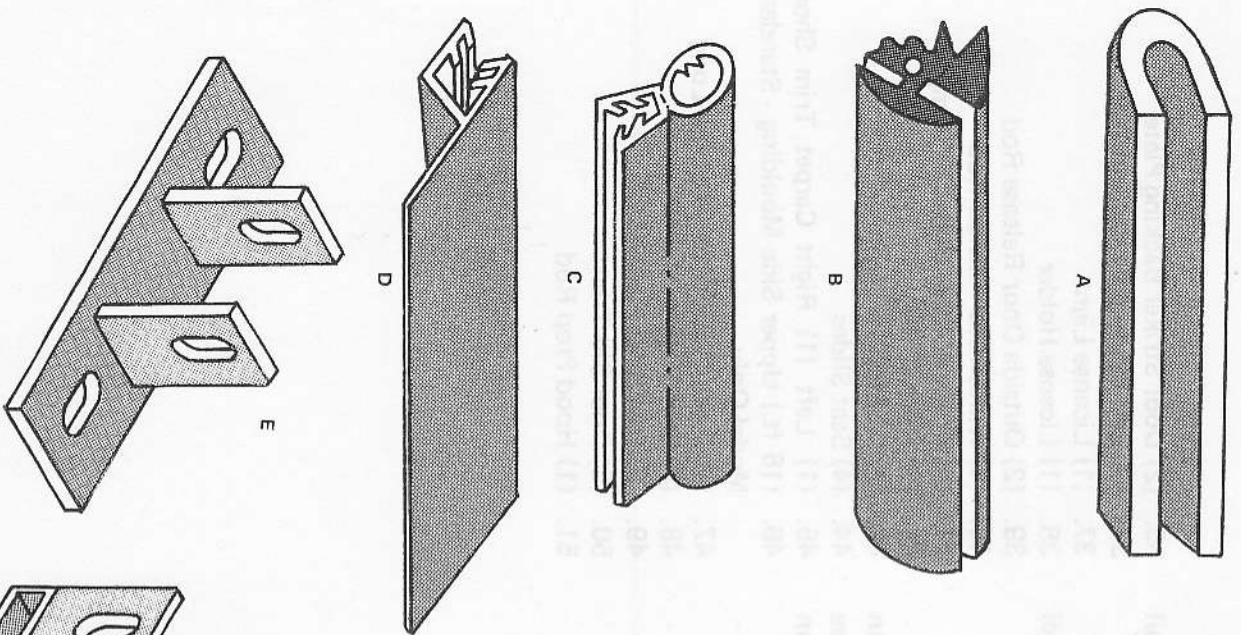
HARDWARE

PHILLIPS DRIVE  SLOT DRIVE 	HEX HEAD  CARRIAGE HEAD 	PAN HEAD  FLAT 	HEX HEAD WASHER SHEET METAL SCREW  ROUND HEAD 	SPRING LOCK  HEX NUT 	RING TERMINAL  BUTT CONNECTOR 	PUSH ON TERMINAL  WIRE TIE 	SCOTCH SPLICE 
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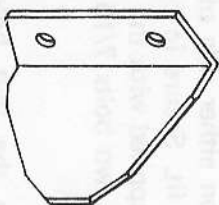
SPEEDSTER PART IDENTIFICATION

1. (1) Dash Pad Set
2. (1) Dash Pad Set
3. (1) Dash Pad Set
4. Not Used
5. (1) Left (1) Right Windshield Post
6. (1) Left (1) Right Door Lock Mounting Plate
7. (1) Rear Engine Grille
8. (2) Inside Door Handle
9. (2) Outside Door Handle
10. (2) Hood Hinges
11. (1) Left (1) Right Deck Hinge
12. Not Used
13. (1) Hood Handle - Standard Model Only
14. (2) Headlight Support Bracket
15. (12") 3/4 Aluminum Tubing
16. (1) Rear Deck Lock Pin
17. (1) Outside Door Handle Rubber Large
18. (1) Outside Door Handle Rubber Small
19. (1) Logo Emblem
20. (2) Outside Door Handle Nut
21. (1) Front Emblem - Standard Model Only
22. (5 ft.) Lower Windshield Rubber
23. (2) Convertible Top Latch
24. (6 ft.) Top Windshield Rubber
25. (2) Inside Door Handle Escutcheon
26. (1) Left (1) Right Inside Door Release
27. (1) Left (1) Right Top Release Arm
28. (1) Left (1) Right Door Striker
29. (1) Left (1) Right Door Latch
30. (24 ft.) Seat "U" Channel
31. (2) Inside Door Release Rod
32. (1) Upper Hood Latch Assembly
33. (1) Deck Latch Assembly
34. (1) Deck Prop Pin
35. (2) Door Striker Backing Plate
36. (1) Left (1) Right Rear Tail Light
37. (1) License Light
38. (1) License Holder
39. (2) Outside Door Release Rod
40. (1) Windshield Tension Rod
41. (4) Front Bumper Support Clamps
42. (2) Horn Grille
43. (2) Directional Lights
44. (4) Seat Slides
45. (1) Left (1) Right Carpet Trim Short
46. (18 ft.) Upper Side Moulding - Standard Model Only
47. (1) Left (1) Right Carpet Trim Long
48. (8) Seat Slide Washers
49. (2) Seat Slide Handles
50. (2) Door Sill Trim
51. (1) Hood Prop Rod

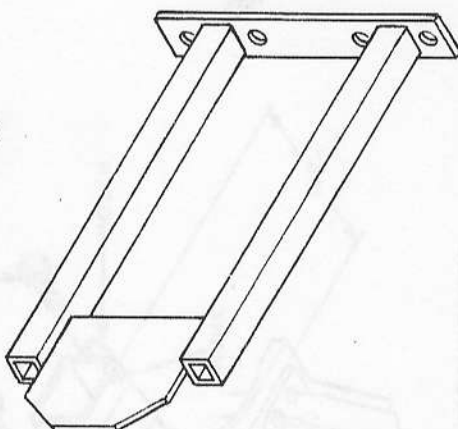


RUBBER TRIM AND BRACKETS

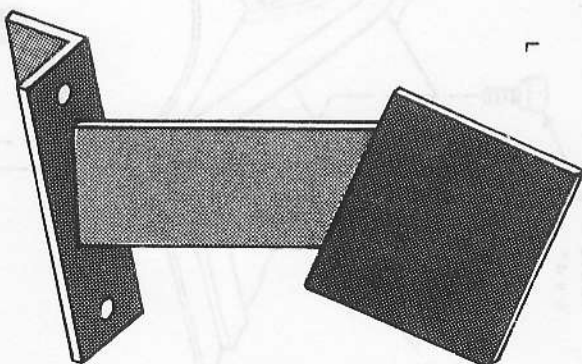
- (A) UPPER CHANNEL EXTRUSION
- (B) LOWER RUBBER EXTRUSION
- (C) WINDSHIELD
- (D) TUBULAR SEAL (SIDE CURTAIN)
- (E) RUBBER SEAL TRIM (SIDE CURTAIN)
- (F) STEERING COLUMN BRACKET
- (G) FRONT UPPER BODY SUPPORT
- (H) HOOD SUPPORT BRACKET (2)
- (I) FRONT LOWER BODY SUPPORT
- (J) REAR INNER BUMPER BRACKET (2)
- (K) REAR OUTER BUMPER BRACKET (2)
- (L) FRONT INNER BUMPER SUPPORT (2)
- (M) ROLL BAR SUPPORT BRACKET (2)
- (N) FRONT OUTER BUMPER BRACKET (2)
- (O) NERF BARS (4) OPTIONAL
- (P) ROLL BAR
- (Q) DECK SUPPORT BRACKET L, R



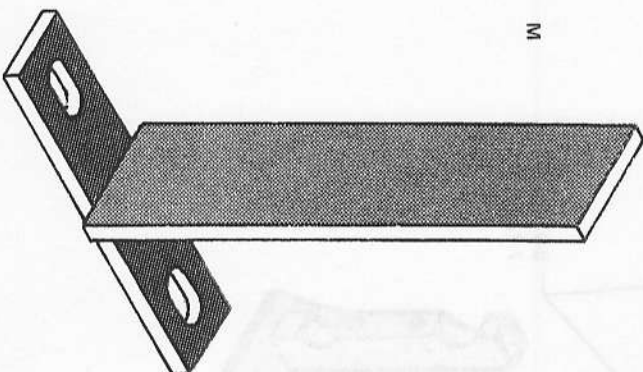
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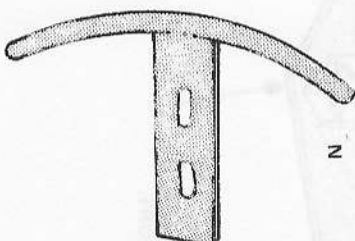
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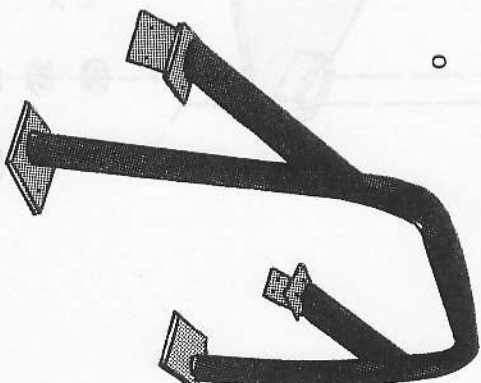
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M



N



O

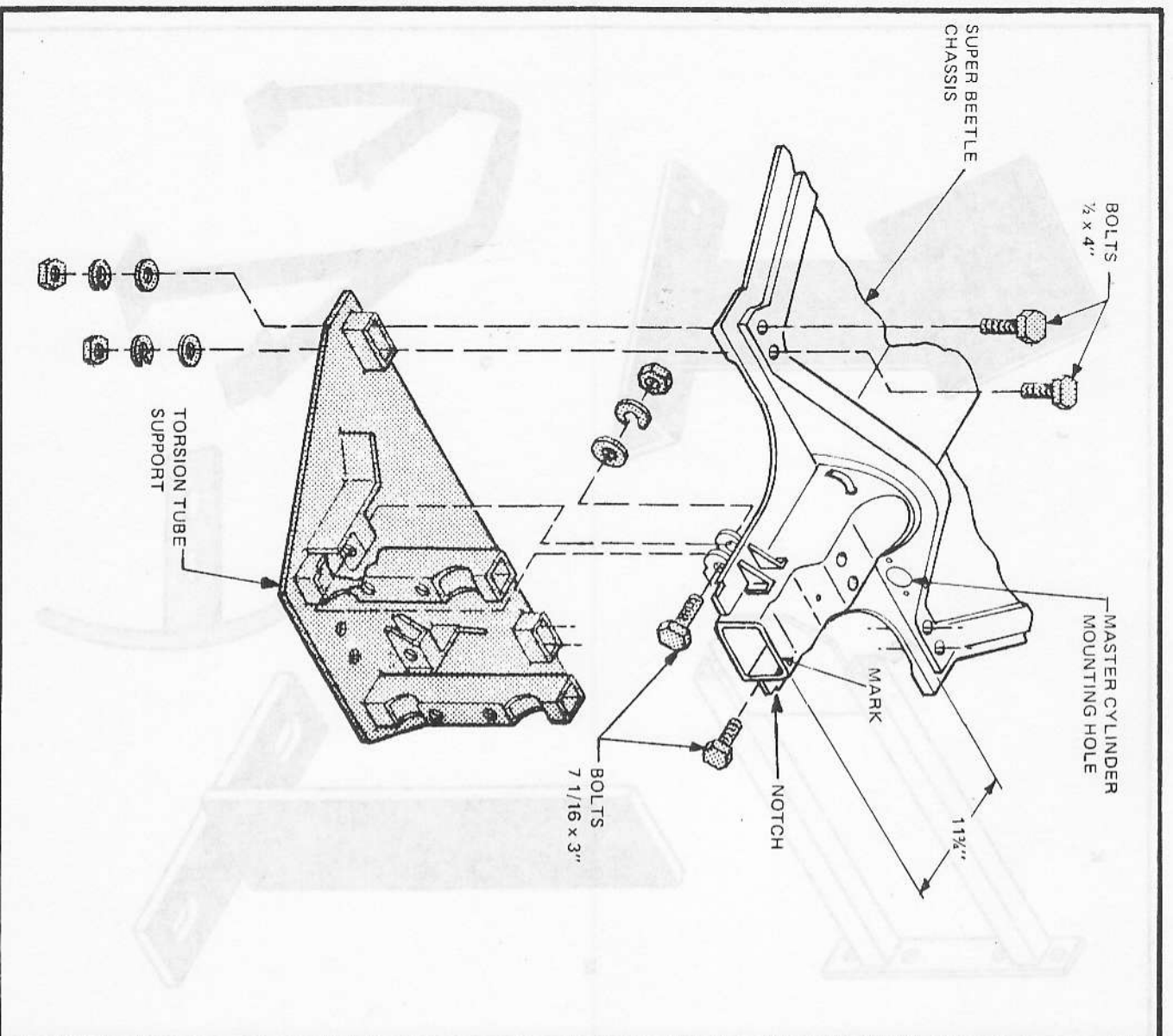


Figure A1

SUPER BEETLE CONVERSION UNIT (OPTIONAL)

- ☐ The unit should be installed after the shifter assembly has been removed. With the Super Beetle conversion kit in place, it will be difficult to remove the shifter rod from the front of the car. See "Remounting The Gear Shift Lever".

Obtain a standard Beetle torsion tube assembly - complete with brake drums, shocks, steering box, steering control arm and steering damper. With the Super Beetle body removed from its chassis, measure $11\frac{3}{4}$ " from the edge of the master cylinder mounting hole and scribe a mark around the chassis tunnel as shown in the illustration. With a hacksaw, cut along the scribe mark around the chassis tunnel. Remove and discard the nose section.

- ☐ Fit the torsion tube support plate to the underside of the Super Beetle chassis. It may be necessary to cut or file a notch on either side of the chassis for a proper fit. Secure in place using the six bolts supplied with the kit (4 bolts $1\frac{1}{2}$ x 4" and two bolts $7\frac{1}{16}$ x 3") then finger tighten.

- ☐ Remove the bolt holding the steering damper to the torsion tube assembly. It is not necessary to save this bolt.

- Locate the Standard Beetle torsion tube assembly into the four slots of the torsion tube support brackets and secure with the two bottom bolts supplied with the kit. Fit the top plate to the Super Beetle chassis as shown. Using the two original bolts, secure finger tight. Next, insert two bolts supplied with the kit ($1/2 \times 5 \ 1/2''$) through the upper holes of the Standard Beetle torsion tube assembly, securing the top plate to the rear of the torsion tube support brackets.

- Check measurement of wheel base on each side of car. The measurement from the center line of the front wheel axis to the center line of the rear wheel axis should be equal on each side. Refer to Figure 1. Shift the Torsion Tube Support to the left or the right until you achieve equal wheel base measurements. When this is accomplished, tighten all bolts. Using the remaining two holes on the Torsion Tube Support plate as a guide, drill two $9/16''$ holes into the Super Beetle chassis. Insert two sets of $1/2 \times 2''$ bolts, spacers, flat washers, lock washers and nuts supplied with the kit, as shown in the illustration, and tighten. At this time, recheck the wheel axis measurements on both sides of the frame to confirm that no shifting has occurred.

- Refit the Steering Damper using the $10\text{mm} \times 64\text{mm}$ bolt and the spacer provided with the kit. Recheck all measurements and again tighten nuts and bolts.

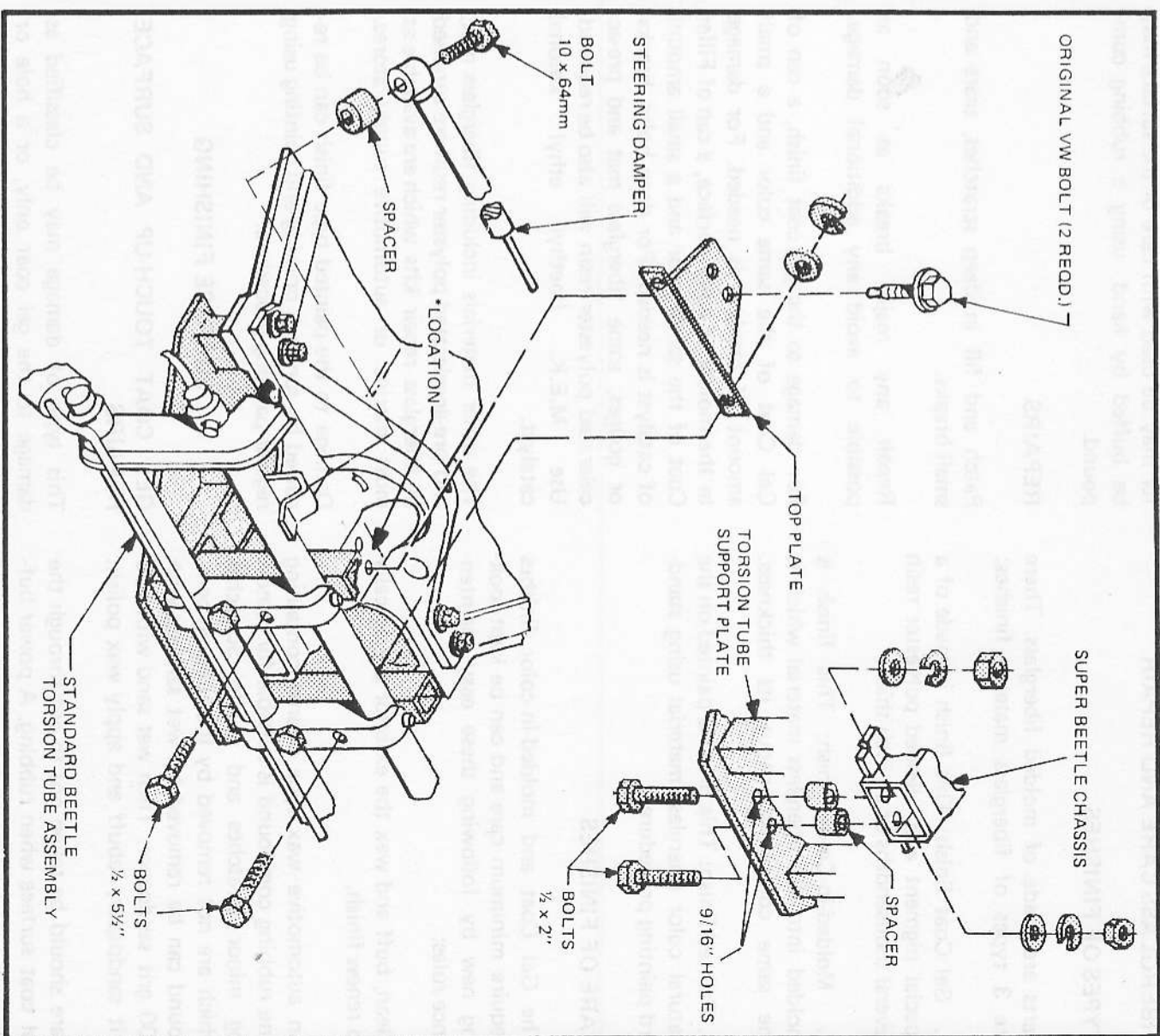


Figure A2

FIBERGLASS CARE AND REPAIR

TYPES OF FINISHES

Parts are made of molded fiberglass. There are 3 types of fiberglass material finishes:

1. Gel Coat finish: This finish is made of a special pigment and blended polyester resin several thousandths of an inch thick.
2. Molded-in-Color finish: This finish is molded into the fiberglass material which is the same color throughout its thickness.
3. Painted finish: This finish is painted on the natural color fiberglass material using standard painting procedure.

CARE OF FINISHES

The Gel Coat and molded-in-color finishes require minimum care and can be kept looking new by following these easy maintenance rules:

Clean, buff and wax the exterior periodically to renew finish.

An automotive wax type cleaner containing fine rubbing compound is suitable for removing minor scratches and scuffs. Scratches which are not removed by the rubbing compound can be removed by wet sanding with 400 grit sandpaper. Then wet sand with 600 grit sandpaper, rebuff and apply wax polish.

Care should be taken not to cut through the gel coat surface when rubbing. A power buff

er may be used with care or the surface may be buffed by hand, using a rubbing compound.

REPAIRS

Patch and fill in deep scratches, scars and small breaks.

Repair any major breaks as soon as possible to avoid any additional damage.

For damage to the gel coat finish, a can of Gel Coat of the same color and a small amount of catalyst is needed. For damage to the molded-in-color surface, a can of Filler Coat of the same color and a small amount of catalyst is needed. For deep holes, breaks, or gouges, some fiberglass mat and pre-accelerated polyester resin will also be required. Use M.E.K. (methyl ethyl ketone) catalyst.

The other materials including fiberglass mat, and pre-accelerated polyester resin are supplied in fiberglass repair kits which are available at most marine or automotive supply stores.

Damage to the painted type finish can be repaired by sanding, priming and painting using regular painting procedure.

SURFACE FINISHING

GEL COAT TOUCH-UP AND SURFACE REPAIRS

This type of damage may be classified as damage to the gel coat only, or a hole or

gouge that is deep enough to slightly penetrate fiberglass material. Repair as follows:

1. To be sure that the area to be patched is dry, clean and free of any wax or oil, wash with lacquer thinner.
2. Roughen the bottom and sides of the damaged area, using a power drill with a burr attachment. Feather the edge surrounding the scratch or gouge, being careful not to undercut this edge. (See Figure A)
3. A small amount of gel coat, the same color as the finish should be placed in a small can lid or on a piece of cardboard. Use just enough to fill the damaged area. If damage has penetrated through to fiberglass material, an equal amount of fibers, which can be taken from glass mat and shredded into small fibers, should be mixed with the gel coat - using a putty knife or flat stick. Add three drops of catalyst per teaspoon of gel coat using an eye dropper. Be sure to mix the catalyst thoroughly for maximum working time. Maximum working time (pot life) will be about 15 to 20 minutes at which time it begins to "gel". (See Figure B)

4. Fill the scratch or hole above the damaged area about 1/16", working the material into the damaged area with the sharp point of a knife. Be careful to puncture and eliminate any air bubbles which may occur. (See Figure C)

NOTE: If fiberglass fibers have not been used in mixture, skip steps 5 through 7 and proceed with step 8.

5. When the patch feels rubbery to touch (10-15 minutes), trim the patch flush with the surface, and then allow to cure completely (30-60 minutes). Patch will shrink slightly as it cures, making a depression. (See Figure D)

6. Carefully roughen up the bottom and edges of the depression, using the electric drill with burr attachment, as in Step 2. Feather into surrounding gel coat; do not undercut.

7. Again mix a small amount of gel coat with catalyst - do not use glass fibers. Using your

finger or putty knife, fill the depression with gel coat 1/16" above the surrounding surface.

8. Spread the gel coat level with the surrounding area and allow to cure (30 - 60 minutes). (See Figure E) Gel coat can be covered with cellophane, if desired, to aid in spreading evenly. Remove cellophane after gel coat has cured.

9. Sand the patched area, using a sanding block with 600-grit wet sandpaper. Finish by buffing with fine rubbing compound such as DuPont No. 606 and waxing. Weather-

ing will aid to blend touch-up if a slight color difference can be observed. (See Figure F)

NOTE: Where surface color of part has changed due to weathering, color match of patch may not be satisfactory. In this case, entire panel must be sprayed.

Thin Gel coat with acetone (1 to 1 ratio) and spray panel, blending sprayed area into a radius or corner on the part. Use a touch-up spray gun such as the Binks Model 15. After Gel coat is hard, buff and polish sprayed area.

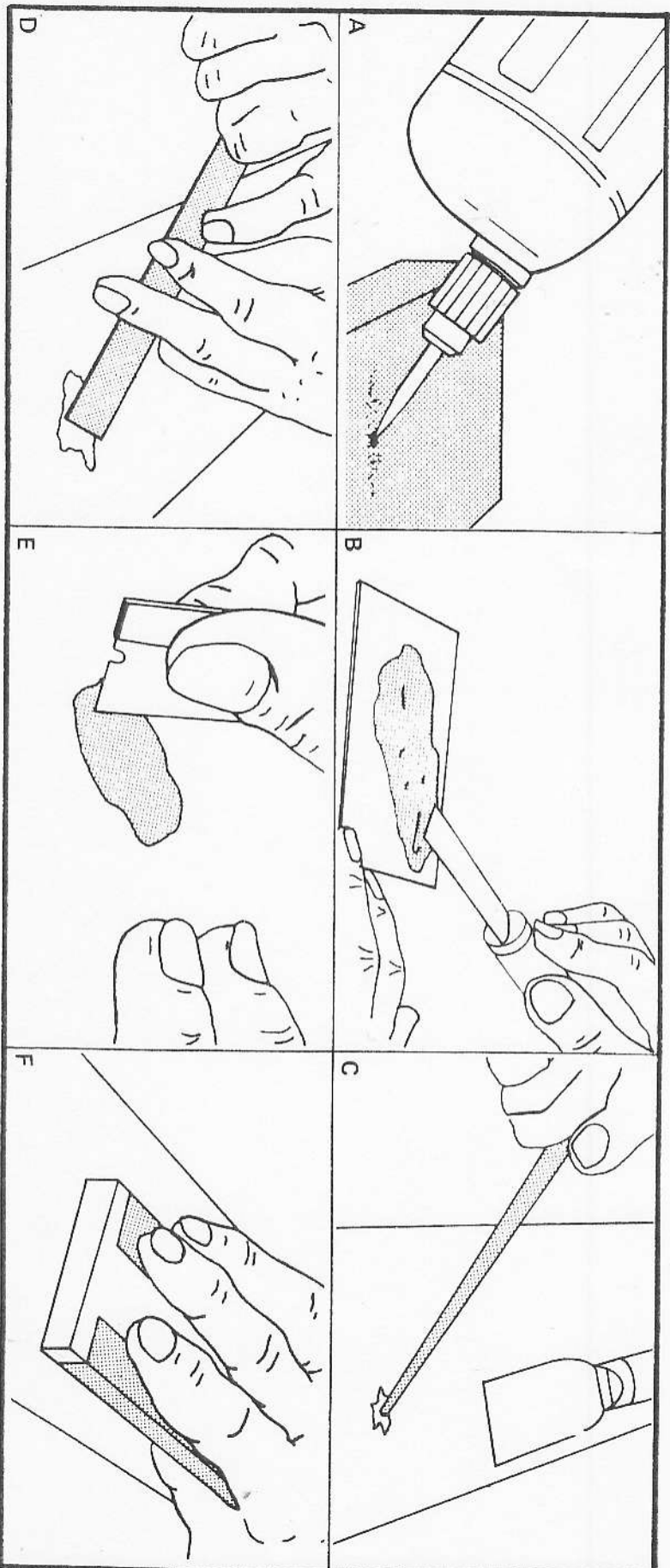


Figure 1

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