FIBERFAB INTERNATIONAL

8800 West Highway 7
Suite 416
Minneapolis, Minnesota 55426

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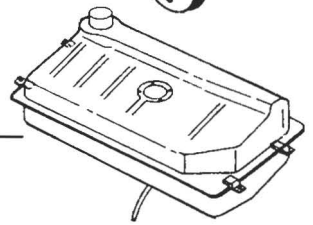
PARTS TO BE PURCHASED (THESE PARTS ARE ALSO AVAILABLE FROM OUR PARTS DEPT.)
IMPORTANT: Order these items early due to possible delays with your local dealer.

FROM LOCAL VW DEALER

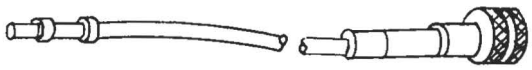
Coupling Disk Part No. 111,415,417 (for coupling to Steering Shaft Extension)

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.



Gear Shift Plate
Part No. 111,701-255B and Part No. 111,701-259A Bushing

Speedometer Cable
Part No. 211,957-801E (81 1/2" long)



MISCELLANEOUS ITEMS

Heater Hose (2 Req'd.)
Part No. 813-1313
Napa Balkamp or equivalent universal emission control duct 2" x 36"

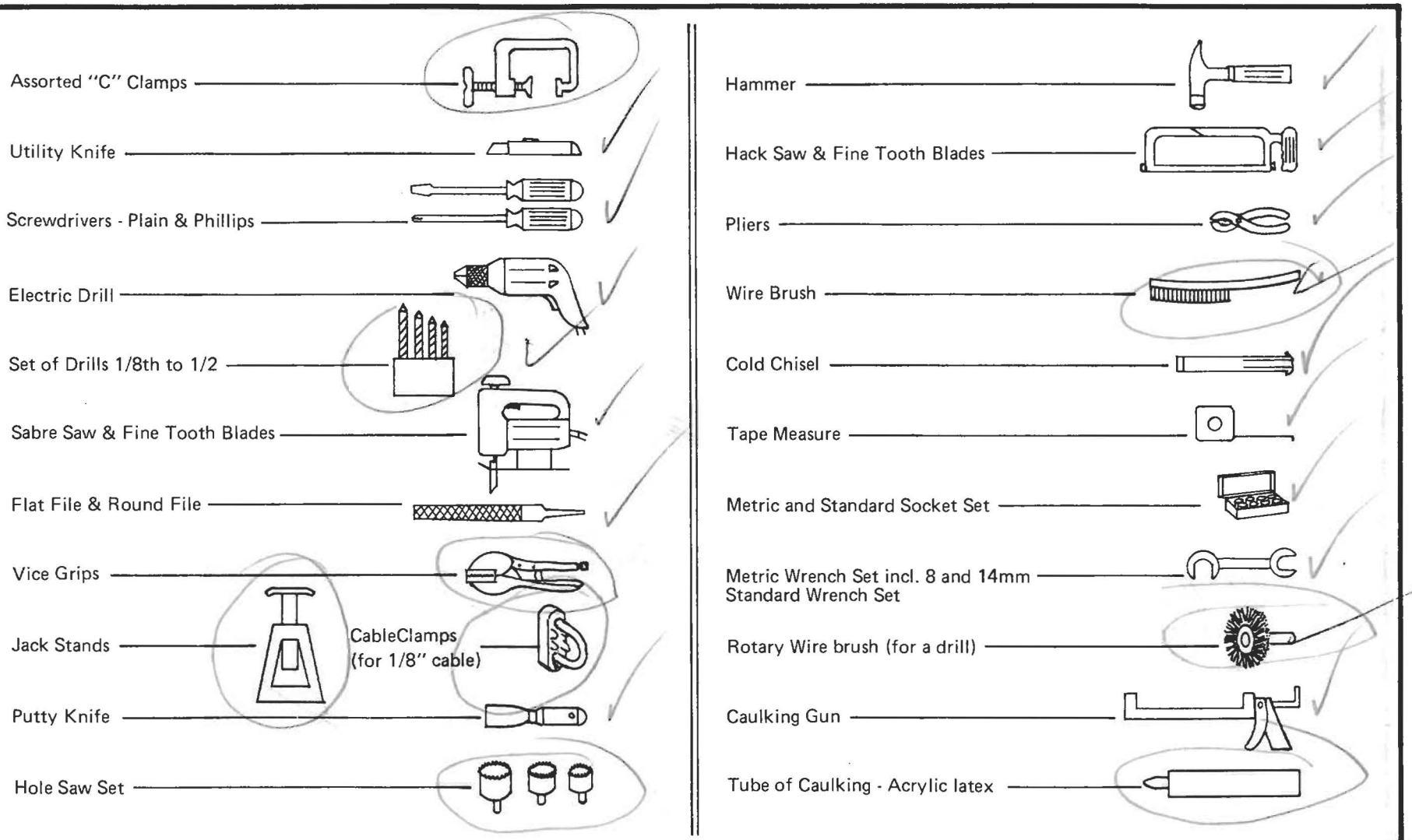
Horn Relay
Part No. HB-53
Motorcraft or equivalent

12 Volt Flasher
2 Prong

Dimmer Switch (Floor Mounted, 12V)

FOR SUPER BEETLE CONVERSION PARTS SEE APPENDIX A

TOOLS AND PARTS



MISCELLANEOUS ITEMS

2 Spray cans of flat black paint

Sandpaper - 60, 80, 220, 400, 600 grit

Rags

Large tube of contact cement

1 qt. of Rust Retardant Paint

4 sq. yards of 1½ oz. fiberglass mat or 30 ft. of 6" wide fiberglass tape

2 2" brushes (throw away type)

China Marker (Grease Pencil)

Can of Penetrating Oil

Minerals Spirits

Gallon of Polyester fiberglass resin and hardener (Methyl Ethyl Ketone)

1 quart of Acetone or any safe resin solvent for brush cleaning

30" of 3/8" inside diameter neoprene gas line

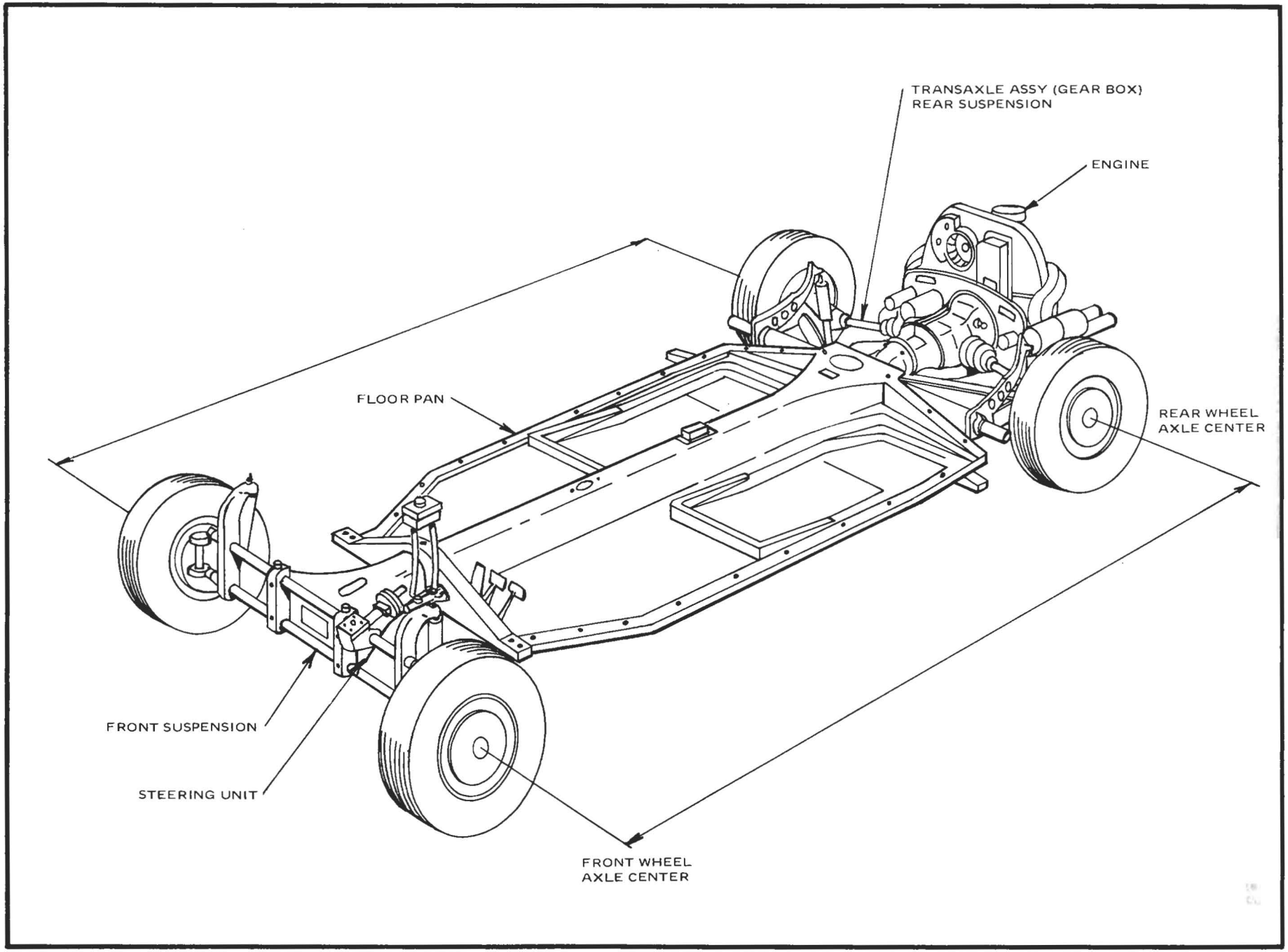

TRANSAXLE ASSY (GEAR BOX)
REAR SUSPENSION
ENGINE
FLOOR PAN
REAR WHEEL
AXLE CENTER
FRONT SUSPENSION
STEERING UNIT
FRONT WHEEL
AXLE CENTER

Figure 1

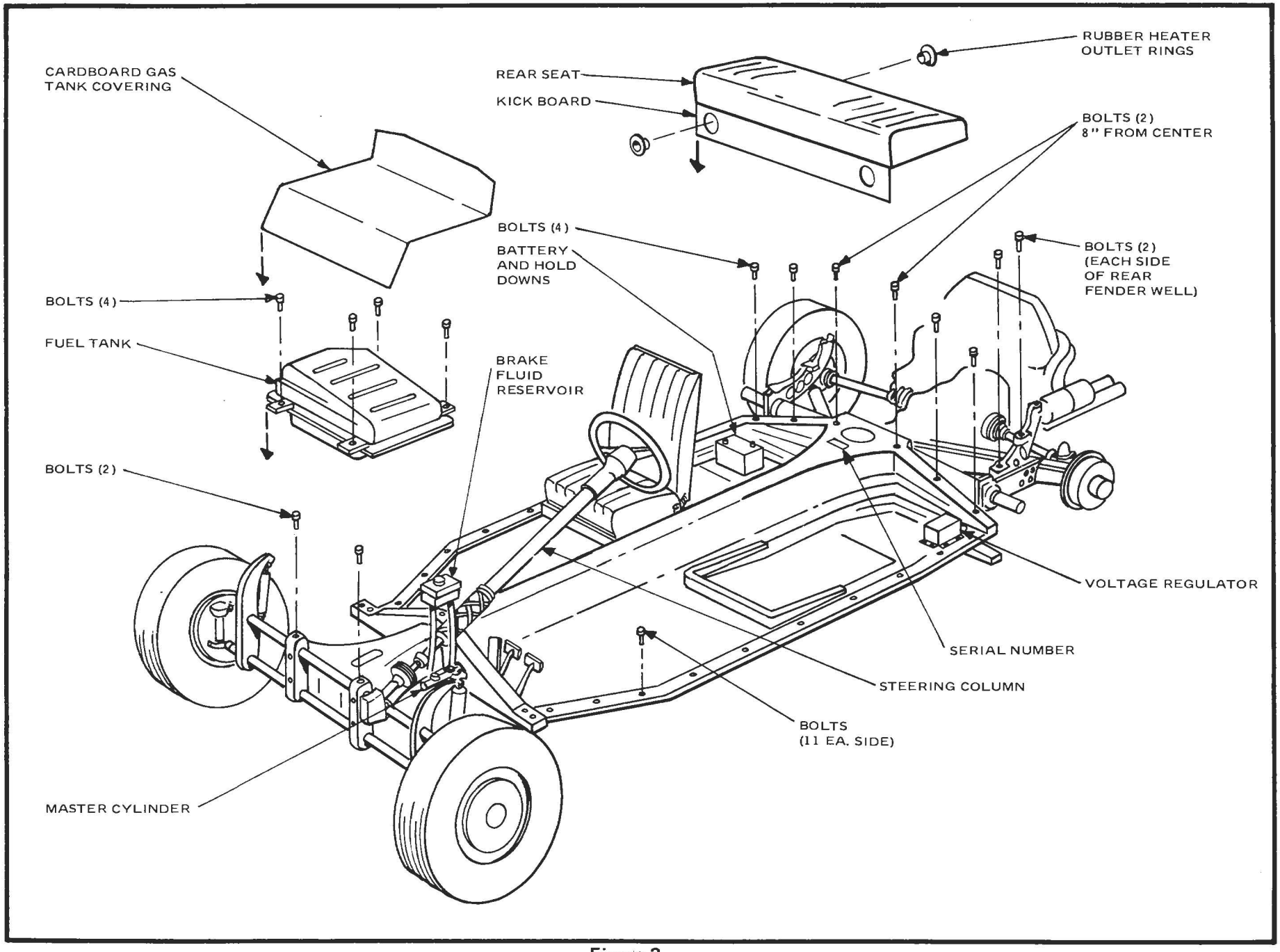
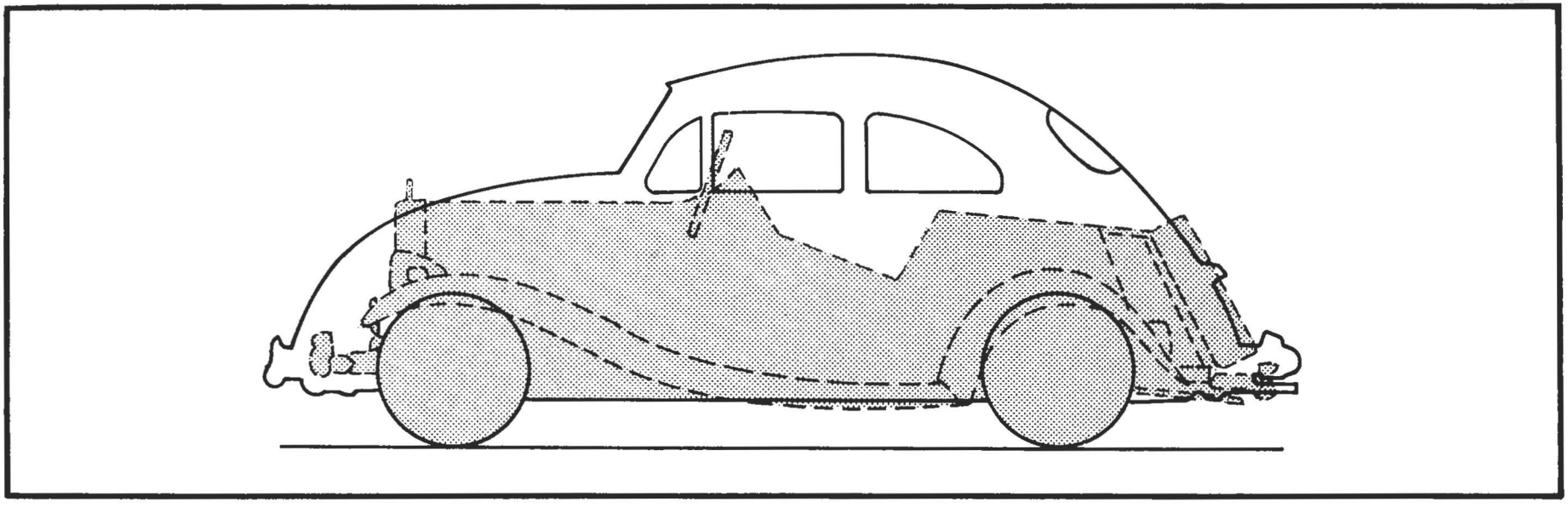

CARDBOARD GAS TANK COVERING
REAR SEAT
KICK BOARD
RUBBER HEATER OUTLET RINGS
BOLTS (2) 8" FROM CENTER
BOLTS (4)
BATTERY AND HOLD DOWNS
BOLTS (2) (EACH SIDE OF REAR FENDER WELL)
BOLTS (4)
FUEL TANK
BRAKE FLUID RESERVOIR
BOLTS (2)
VOLTAGE REGULATOR
SERIAL NUMBER
STEERING COLUMN
BOLTS (11 EA. SIDE)
MASTER CYLINDER

Figure 2



TD SUPERIMPOSED OVER BEETLE

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 "A".)

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

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 "A".

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 cyliner 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 (and earlier)	Sedans are 36 HP and employ 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 font 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. 116000001 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. 110000011 through 1103096945. HP increased from 53 to 57.

1971 Chassis No. 1112000001. HP increased from 57 to 60. Super Beetle introduced.

1972 Chassis No. 1122000001

1973 Chassis No. 1132000001

1974 Chassis No. 1142000001

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:

1971 Chassis No. 1312000001

1972 Chassis No. 1320000001

1973 Chassis No. 1332000001

1974 Chassis No. 1342000001

1975 Chassis No. 1352000001

1976 None

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.

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 2 for general orientation.)

- ☐ Open the trunk and remove the cardboard gas tank covering.
- ☐ Disconnect the wire to the fuel sender unit.
- ☐ Remove and save the sender unit for later use.
- ☐ 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.

- ☐ 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 2¼" 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. (Figure 3)

☐ Remove the two bolts holding the steering column to the underside of the dash board. 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 discard it. You will replace it later with VW Bus Cable, Part number 211-957-801E.

☐ 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 drivers door and under the rear seat. Be sure to save it. Earlier ones are mounted on 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 for use on the kit; (two each, Part No's 111255499 and 111255500).

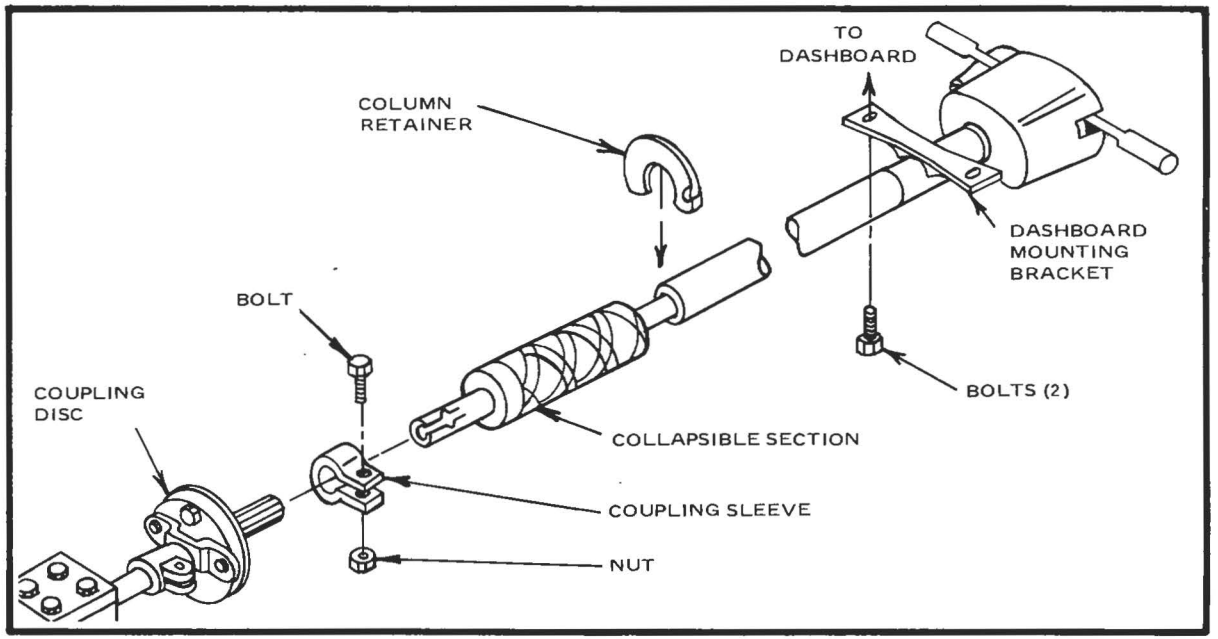


Figure 3

☐ 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 6½" 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.

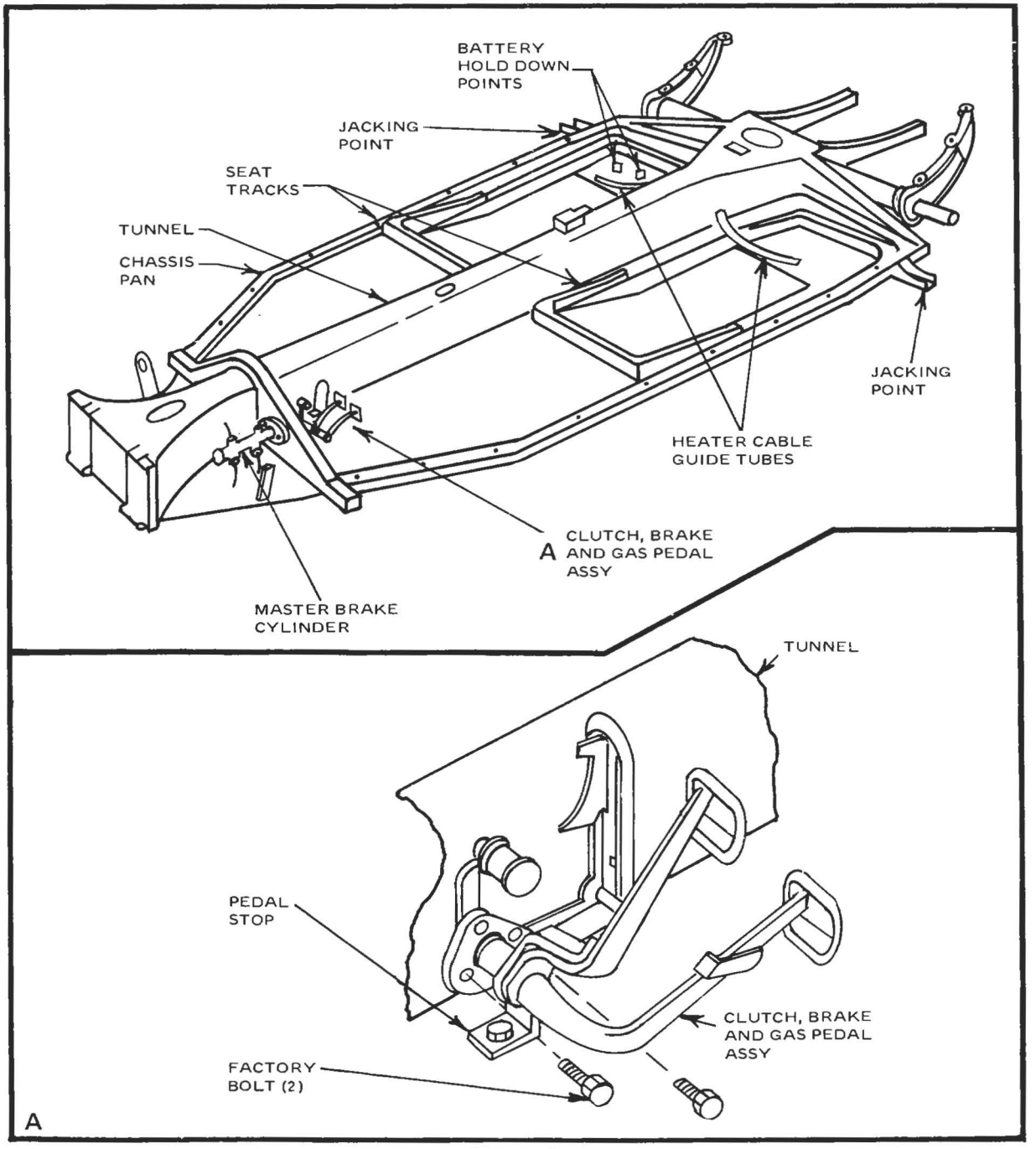


Figure 4

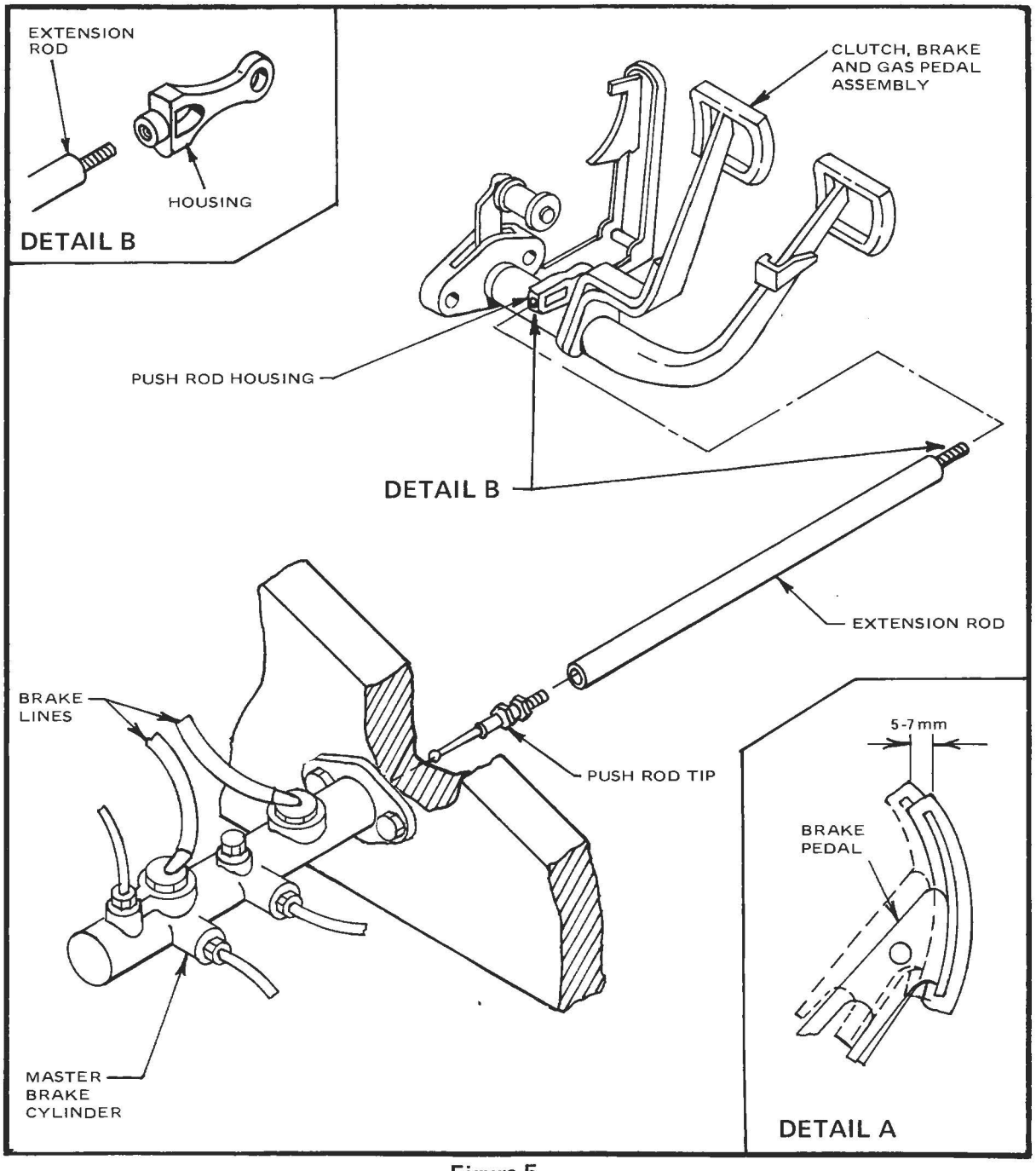


Figure 5

MODIFYING BRAKE PUSHROD

☐ Remove brake pushrod tip from the pedal assembly by unscrewing the pushrod tip from the housing. Assemble the brake extension by screwing the pushrod into one end and the housing on the other (Refer to Figure 5).

MOUNTING CLUTCH, BRAKE AND GAS ASSEMBLY

NOTE:

The dimension given for relocation of the pedal assembly and gear shift lever are those which this company has found to be most suitable for average purposes. Obviously, it is possible to relocate these items in any other position to meet your own requirements. This can be done by placing one of our seats on the floor pan in the final assembly position and adjusting pedals for location. Remember that while the seat base is stationary, the seat back is adjustable after it is permanently installed. This adjustment and the specified pedal relocation has proven to be adequate for a wide range of people of different height. Locating the pedals in another place will require modification of the brake extension.

☐ From the rear of the forward cross member measure back 23 1/4" and draw a verticle line. This reference line is the center location of the 2" pedal clearance hole and will be used in a later step. (Figure 6)

☐ Cut out the new 2" pedal assembly hole into the side of the tunnel using a saber saw or 2" hole saw, even with the bottom of the pan.

- ☐ Place the pedal assembly into the new hole in the tunnel. Mark the location of the two mounting holes and drill 3/8" holes into the tunnel.

- ☐ On the right side of the tunnel, opposite the 2" pedal hole, cut an 4 1/2 x 4 1/2" access hole.

- ☐ Bolt pedal assy. to tunnel using 5/16 x 1 1/4" bolts with flat washer, lock washer and nut.

- ☐ Position the clutch and brake pedals so that the pads are straight up and down. Locate the pedal stop in front of the pedals and mark hole location on pan. Drill 5/16" holes and secure with 5/16 x 1 1/4" bolt with flat washer, lock washer and nut.

- ☐ Install brake extension into master cylinder and attach to brake pedal. Adjust pushrod to give 5-7mm of free play at the pedal.(Fig. 5A)

NOTE:

When the body is installed, you will have to refer back to this drawing to make final brake adjustments regarding the brake pedal's relationship to the fire wall.

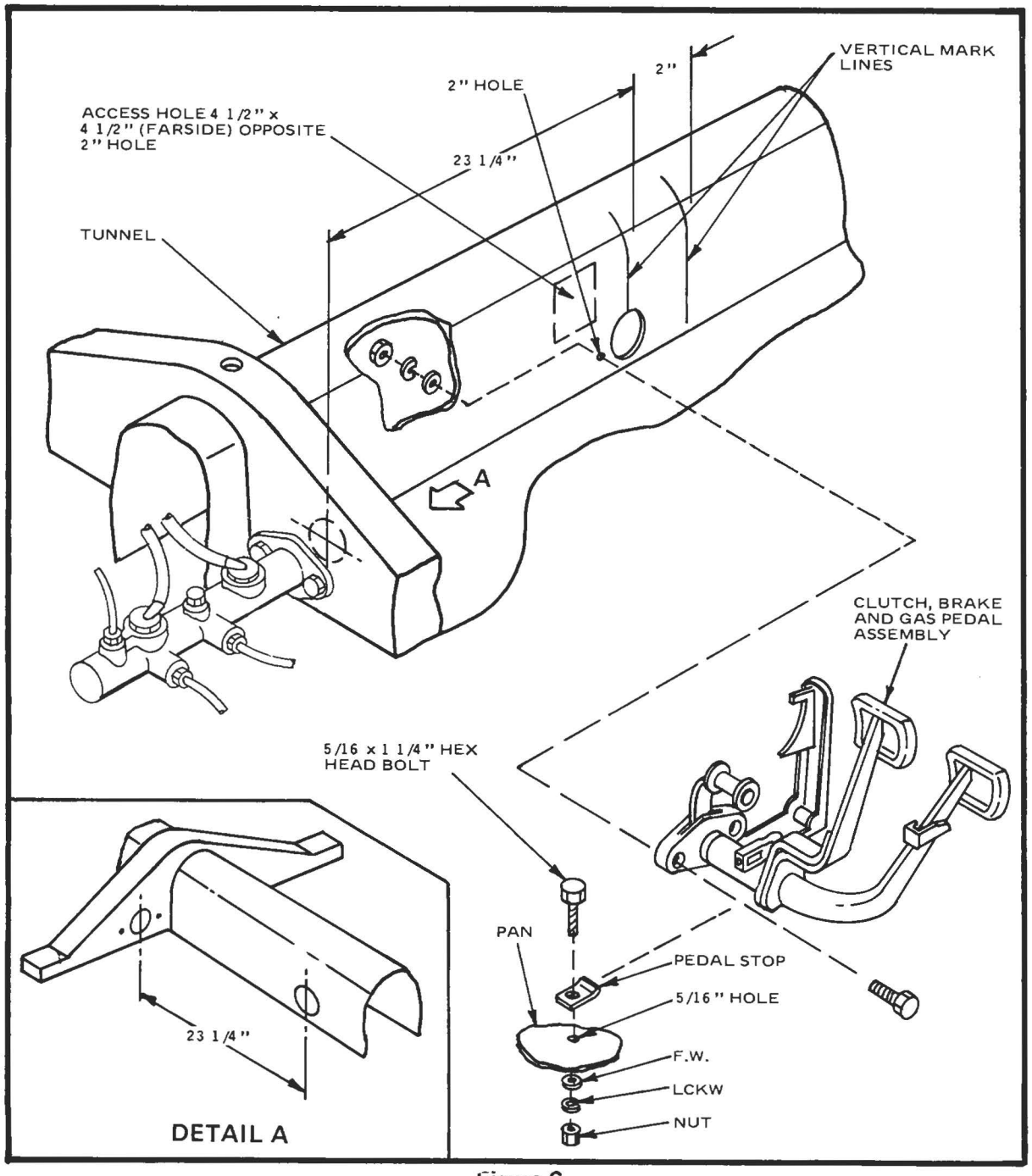


Figure 6

☐ On the left side of the tunnel, measure back 2" from the center of the 2" hole and 3 5/8" up from the floor pan and make a mark. Starting at this point, cut a slot 3" long by 5/8" wide towards the rear of the car. (Refer to Figure 7)

☐ Working through the 4 1/2 x 4 1/2" access hole, cut the throttle tube so that it extends approximately 3/8" in front of the slot cut in the previous step. Bend the tube through the slot so that it projects forward as it was originally.

☐ Using access hole, cut the clutch cable tube (that is located inside the chassis tunnel) 3 inches from the lever on the clutch pedal. (Refer to Figure 8)

☐ Feed the throttle and clutch cables through their respective tubes to the engine end.

☐ Cut the clutch cable approximately 3" from the end of the threaded adjustment rod so that you will have enough cable to allow for clamping. (Refer to Figure 9)

☐ Reattach the cut ends using two cable clamps (available in any hardware store). Cut off excess cable. Tighten the cable end to the clutch operating lever with the wing nut. (Figure 9A)

NOTE: Adjust the clutch cable for ½ to ¾" play at the pedal shown in detail. (Figure 9B)

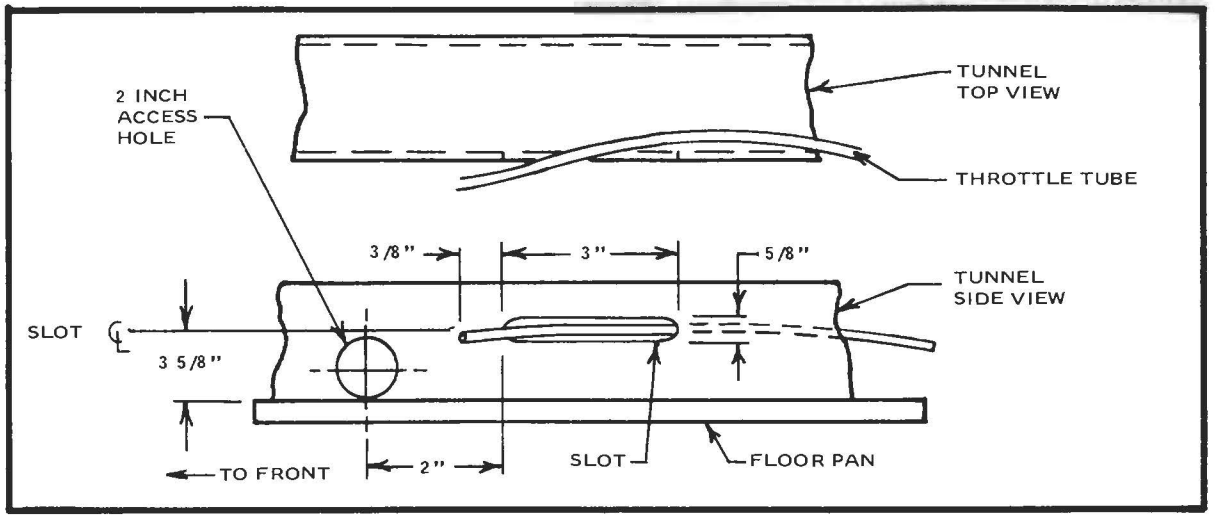


Figure 7

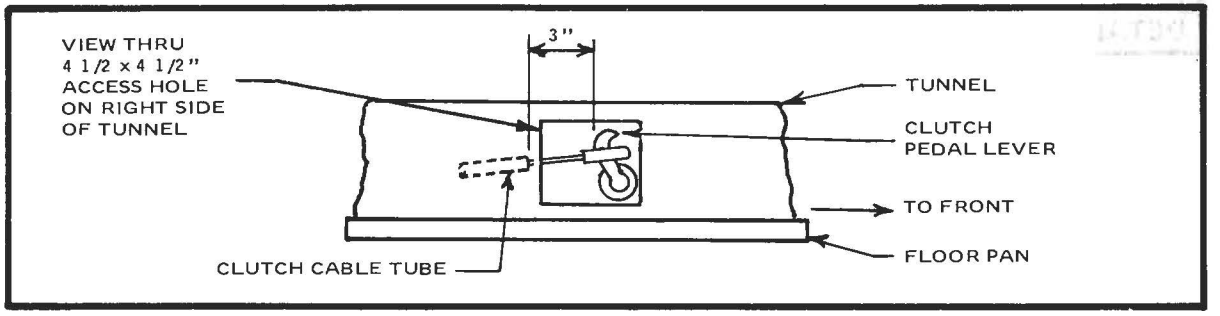


Figure 8

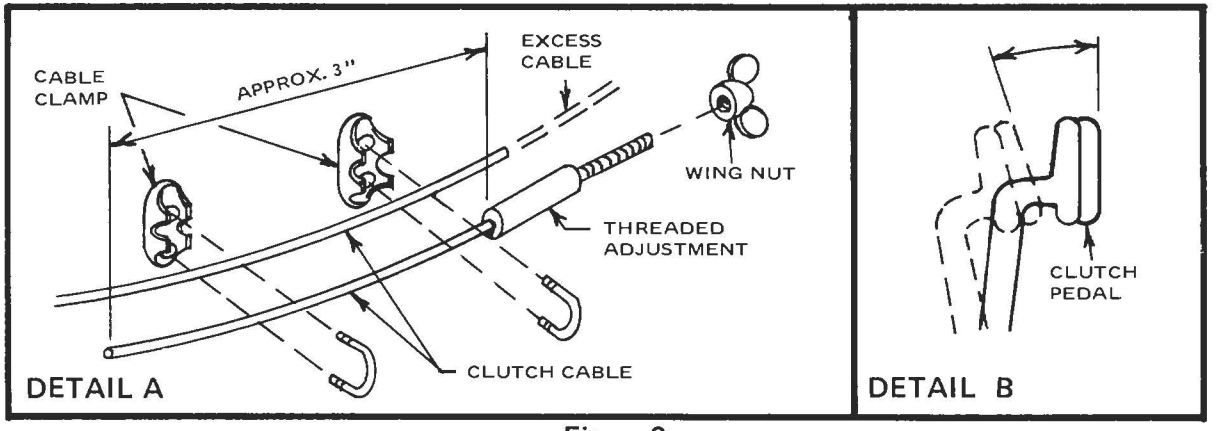


Figure 9

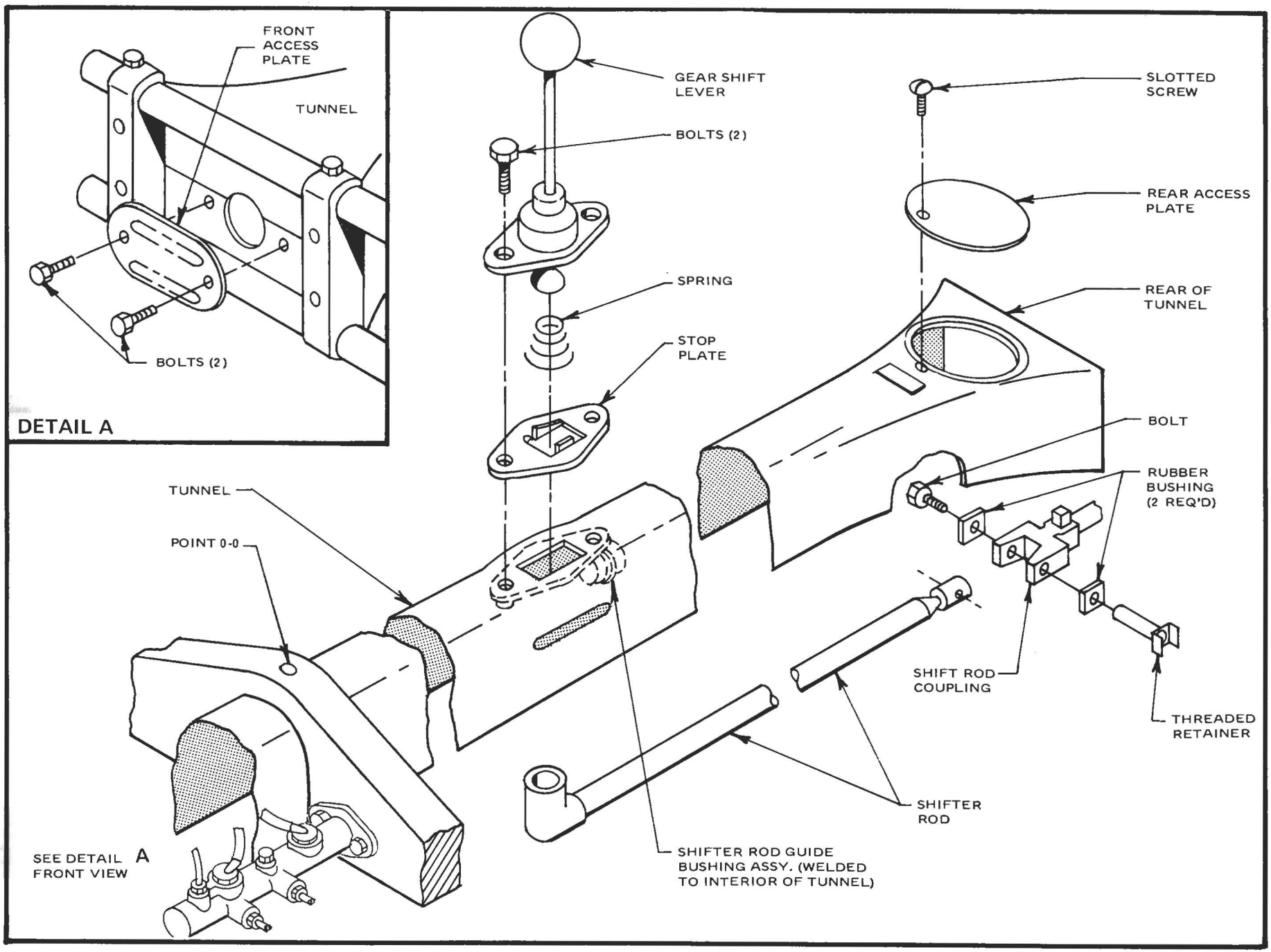

FRONT ACCESS PLATE
TUNNEL
BOLTS (2)
DETAIL A
GEAR SHIFT LEVER
BOLTS (2)
SPRING
STOP PLATE
SLOTTED SCREW
REAR ACCESS PLATE
REAR OF TUNNEL
BOLT
RUBBER BUSHING (2 REQ'D)
TUNNEL
POINT 0-0
SHIFT ROD COUPLING
THREADED RETAINER
SHIFTER ROD
SHIFTER ROD GUIDE BUSHING ASSY. (WELDED TO INTERIOR OF TUNNEL)
SEE DETAIL A FRONT VIEW

Figure 10

REMOUNTING THE GEAR SHIFT LEVER

☐ Remove the two bolts that hold the gear shift lever onto the "tunnel". (Refer to Figure 10) Make sure that you note the way the stop plate came out and do not turn it over or reverse it. Save all bolts. The shifter rod is removed from the front of the tunnel. Next, remove the front access plate mounted by two bolts to the tunnel just in back of the front axle. Disconnect the transmission end of the shifter rod under the rear access plate from the transmission at the rear end of the tunnel. Then you can pull the shifter rod out through the front access hole working it along through the old shifter hole with a pair of pliers. Remove the shift rod guide bushing assembly. (This piece is spot welded to the tunnel.) To facilitate construction we recommend purchasing a new unit from VW (Part No. 117-01255B and No. 111701259A). Measure 24" towards the back of the car from the rear mounting hole of the old shifter point. Mark this location with a grease pencil. Using the bushing assembly as a template, lay it over the location with the grease mark visible through the rear hole. Mark the other mounting hole and the outline of the center hole. Drill a 2" hole in the center of the rectangular outline. Use caution in drilling as there are cables underneath (Figure 11)

☐ Cut an access hole 4 1/2 x 4 1/2" on the right side of the tunnel to allow hookup of the shifter in its new location. You are now ready to shorten this rod.

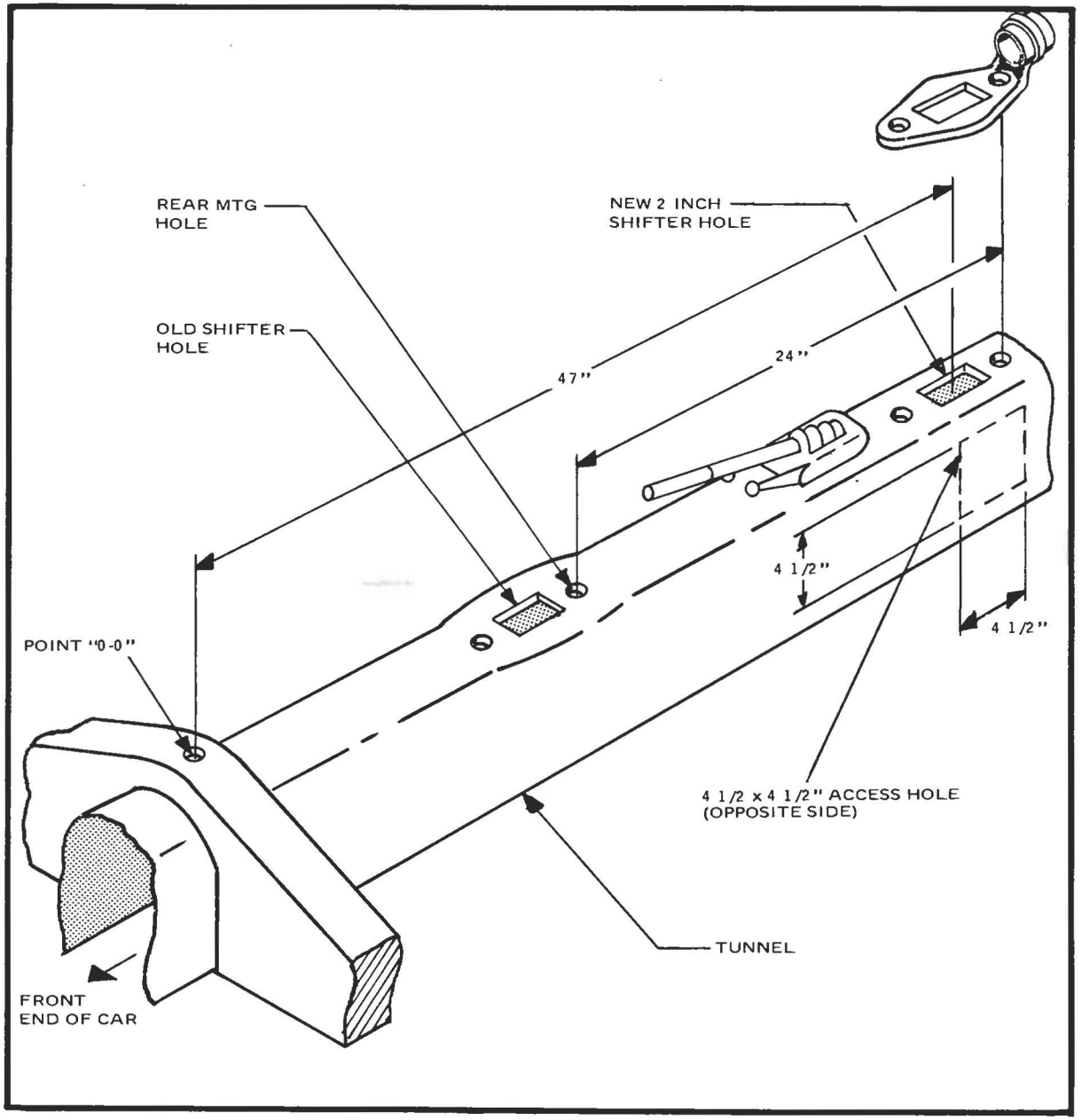


Figure 11

MODIFYING THE SHIFTER ROD

If you have no welding facilities, you can take it to a competent welder and have him scribe a line down the length

of the tube. Now cut 24" right out of the center. Insert a short length of reinforcing rod into the tube and reweld together with the scribe marks in line again. (Figure 12A)

NOTE: Be careful to insure that the two tube pieces fit together exactly the same way they originally were. Do not change the angles on them, the realigned scribe marks should ensure this. As an alternative, you can try this method of shortening requiring no welding. Measure 24" from the center of the rear coupling hole and center punch the location of the new hole. (Make sure this hole lines up with the old one.) Drill 3/8" hole in the new location. Measure ¼" behind the new hole and cut rod. (You may have to slightly flatten the end of the shifter rod by the new hole to allow it to mate with the transmission, Figure 12B.)

☐ Slide the new shifter bushing and reinstall through side access hole. Reinstall all parts as they were removed. Be sure stop plate is reinstalled the same way it was removed. In order to reinstall the shifter it may be necessary to move some of the cable housing out of the way by gently prying them over to the sides with a piece of wood.

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.

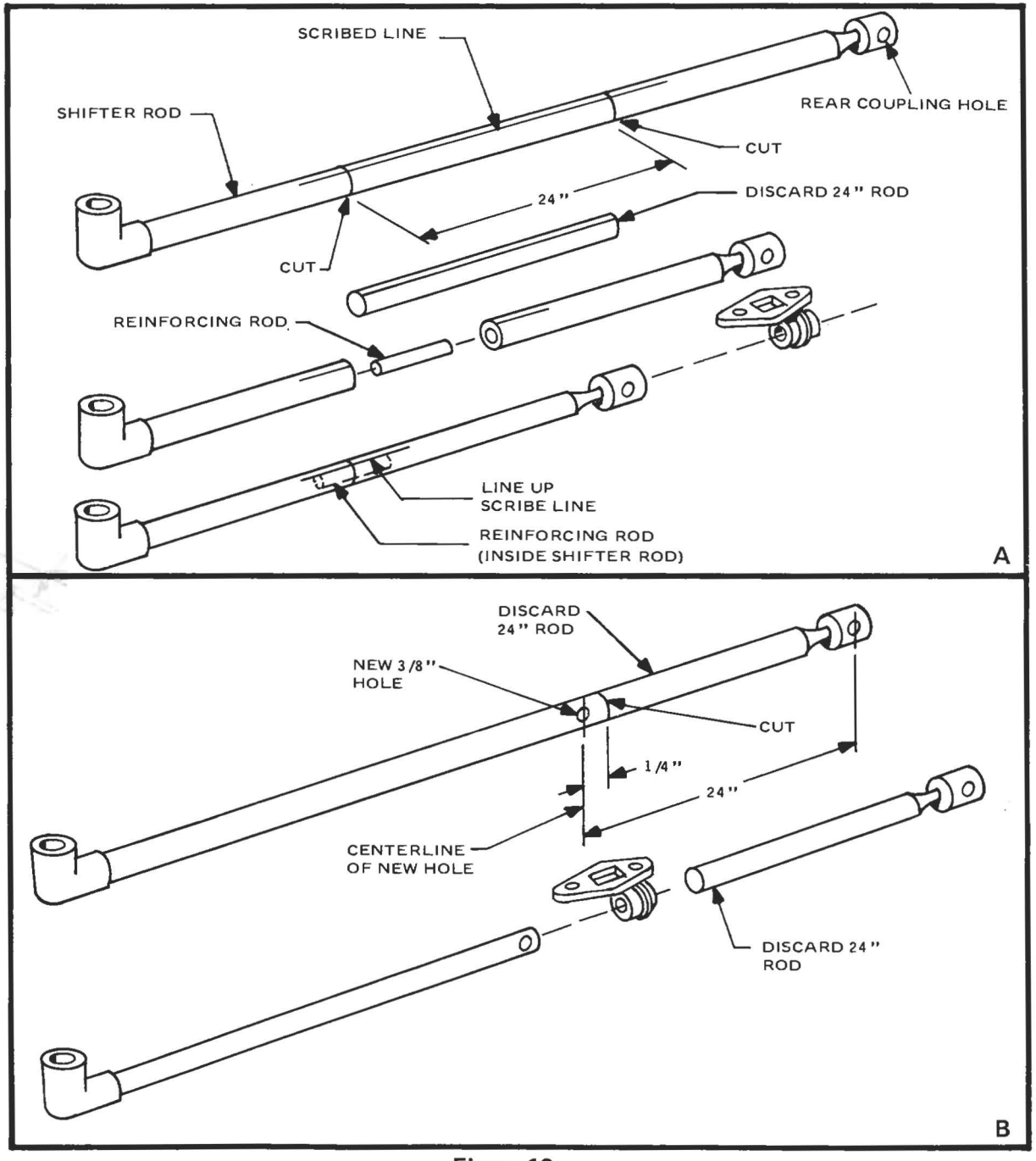


Figure 12

- ☐ 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. (Refer to Figure 13)

- ☐ 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 of 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. Make no alterations to the lower 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 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.

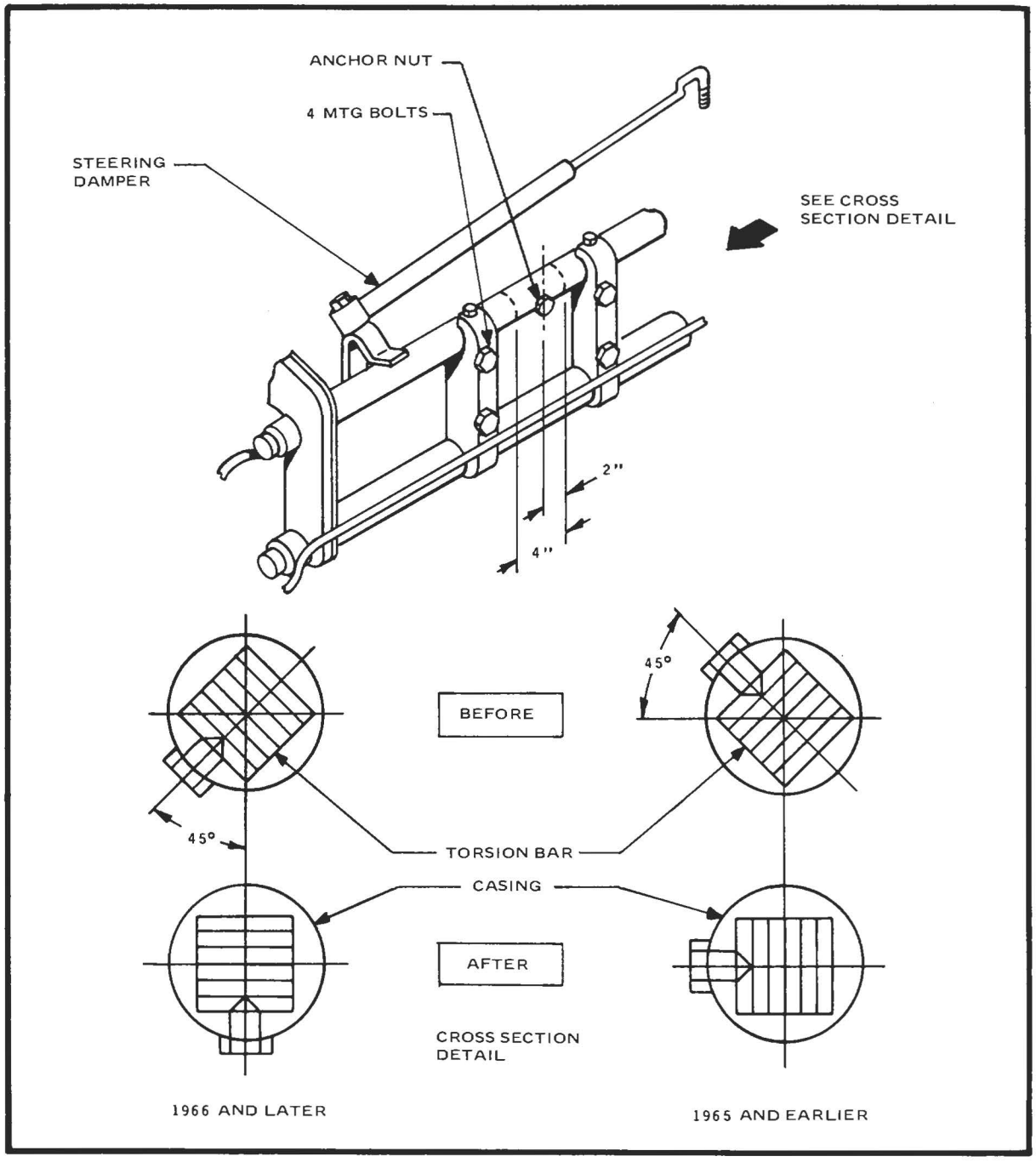


Figure 13

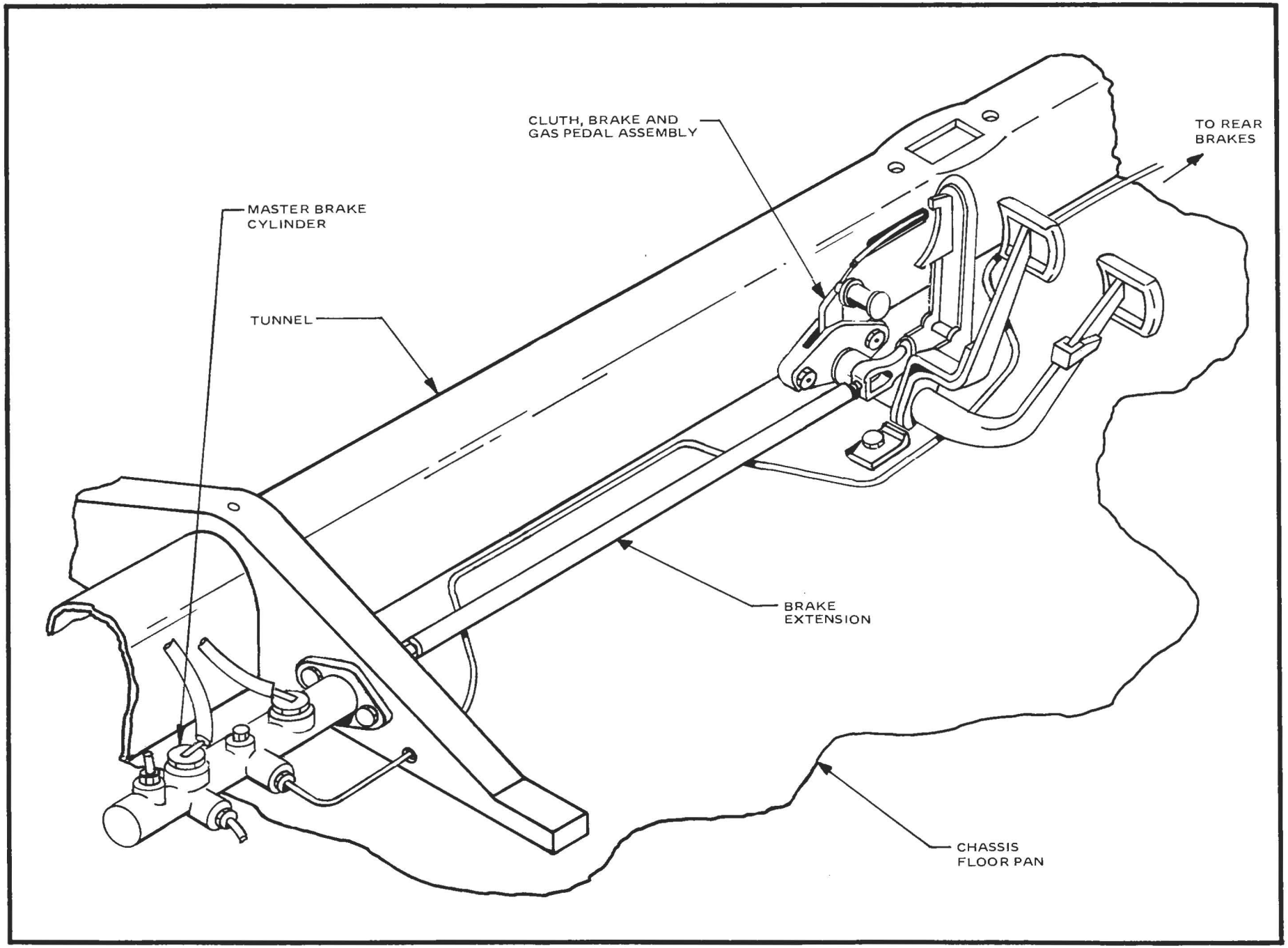
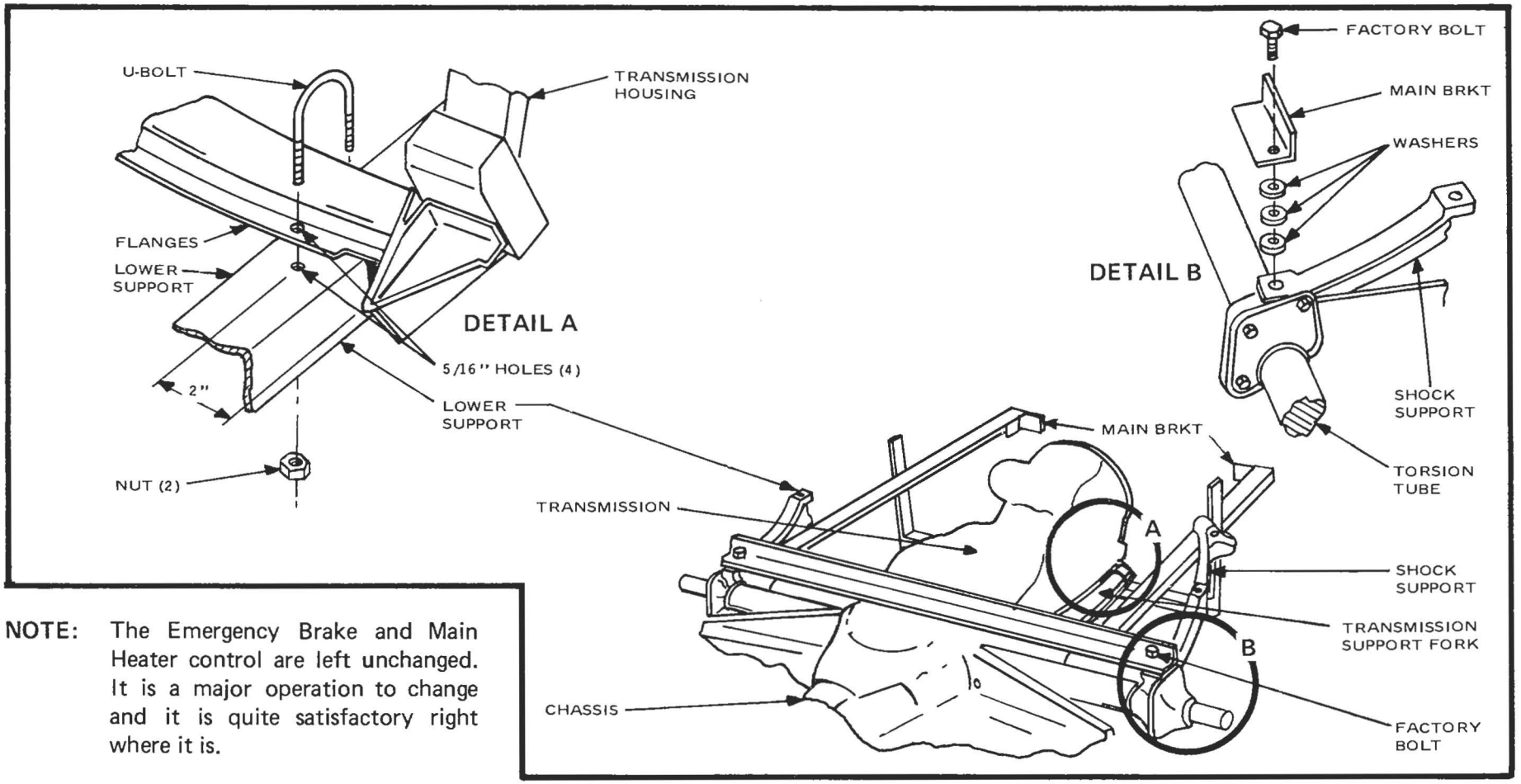

CLUTH, BRAKE AND
GAS PEDAL ASSEMBLY
TO REAR
BRAKES
MASTER BRAKE
CYLINDER
TUNNEL
BRAKE
EXTENSION
CHASSIS
FLOOR PAN

Figure 14



NOTE: The Emergency Brake and Main Heater control are left unchanged. It is a major operation to change and it is quite satisfactory right where it is.

Figure 15

REAR BUMPER BRACKET INSTALLATION

☐ The rear bumper brackets support the rear bumpers as well as holding up the rear splash pan. It consists of a lower support and a main support.

☐ Position the lower support under the transmission support forks at the beginning of the transaxle.

☐ Measure 2" forward from the transmission housing on the support forks. Drill 5/16" holes 2" apart on the forks. This should put one hole on each side of the fork, through the flanges. Insert the 2 "U" bolts provided from the top down through the flanges. Position the bracket under the fork and bolt loosely to the "U" bolts (Figure 15) Position the main support bracket on the two lower mounting holes of the rear shock support. Use 3 washers at each location as shims and bolt in place using the original bolts.

☐ Align the two brackets, shifting the lower support left or right. Tighten the "U" bolts under the car. The two brackets will be drilled and bolted together in a later step.

WHEELS AND TIRES

This Replica assembly was designed to use standard VW wheels with 165 SR15 tires. With the decreased weight of the fiberglass body, we 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. Original VW tires should be left on the car until all fiberglassing has been done to minimize chance of getting resin on the wheels. New tires can then be installed.

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.

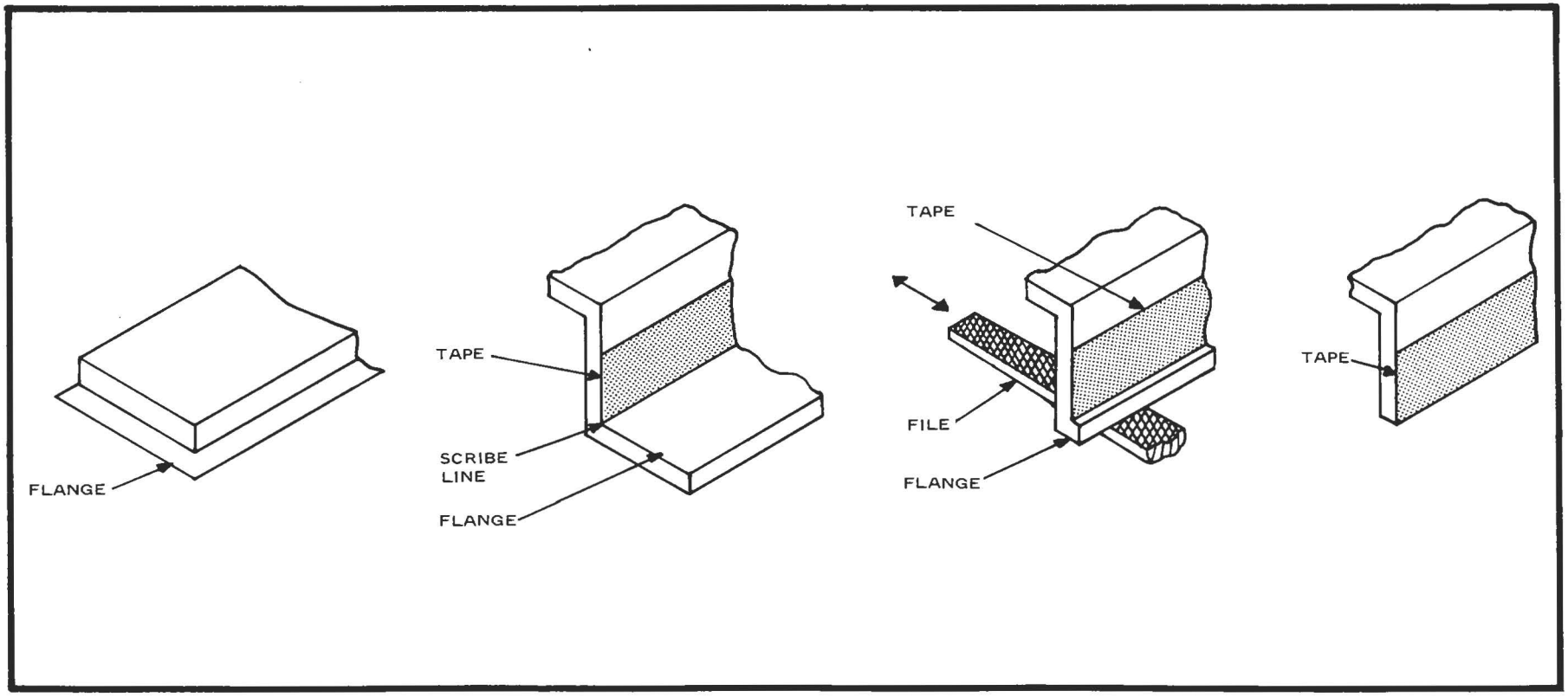


Figure 16

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 build-up, 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 sabersaw) is sufficient, but be sure that only a metal type (fine tooth) blade is used to avoid rough cutting.

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 keytone).

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 to 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 mating 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 "B".

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.

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.

In a situation where the scribe line falls in a right angle corner, such as the running board flange, tape the vertical surface at a right angle to the flange. Cut the flange off next to the tape. File off the remaining fiberglass level with the tape. (Refer to Figure 16)

Sand all exposed edges with a fine grit sand paper. Avoid sanding directly on gel coat surface.

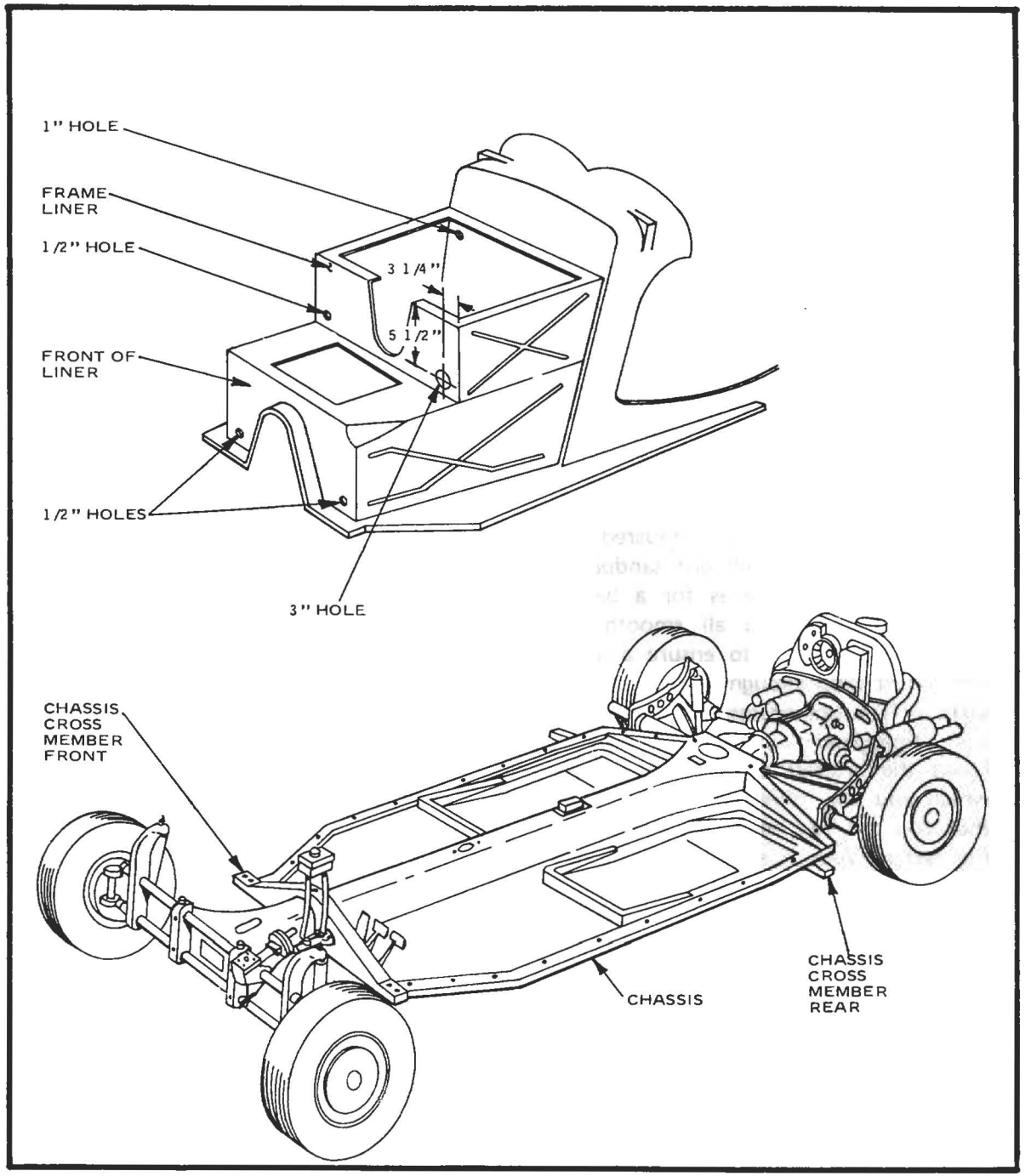


Figure 17

BODY ASSEMBLY

NOTE: The body can be assembled on two saw horses or a low table and mounted on the chassis when completed. This has proven to be an effective method of assembly, although part by part assembly on a chassis generally allows for easier adjustment as you proceed.

- ☐ Trim and drill body as shown. Lift body onto chassis hooking front lip of body over front cross member of chassis. Center chassis from left to right. Drilling up through the holes in the edge of the chassis, drill through the forward two holes and the first 6 side holes on each side, using a 3/8" drill.
- ☐ Lift body and apply a bead of silicone caulking to the area gatween the chassis and body. If using floor pan gasket, lay in place and hold down with contact cement. Redrill through gasket.
- ☐ Bolt body to chassis using 3/8 x 1 1/4" bolts with lock washer, nut and original pan washers removed from VW chassis.
- ☐ Drill up through the 4 holes in the rear cross member using a 1/4" drill bit. From the top, open the holes to 3/8". Secure with original hardware removed from the V.W.
- ☐ From inside the body, drill 4 holes, 5/16", through the lip of the firewall and into the chassis. Secure with 5/16 x 1 1/4" bolts with flat washer, lock washer and nut.

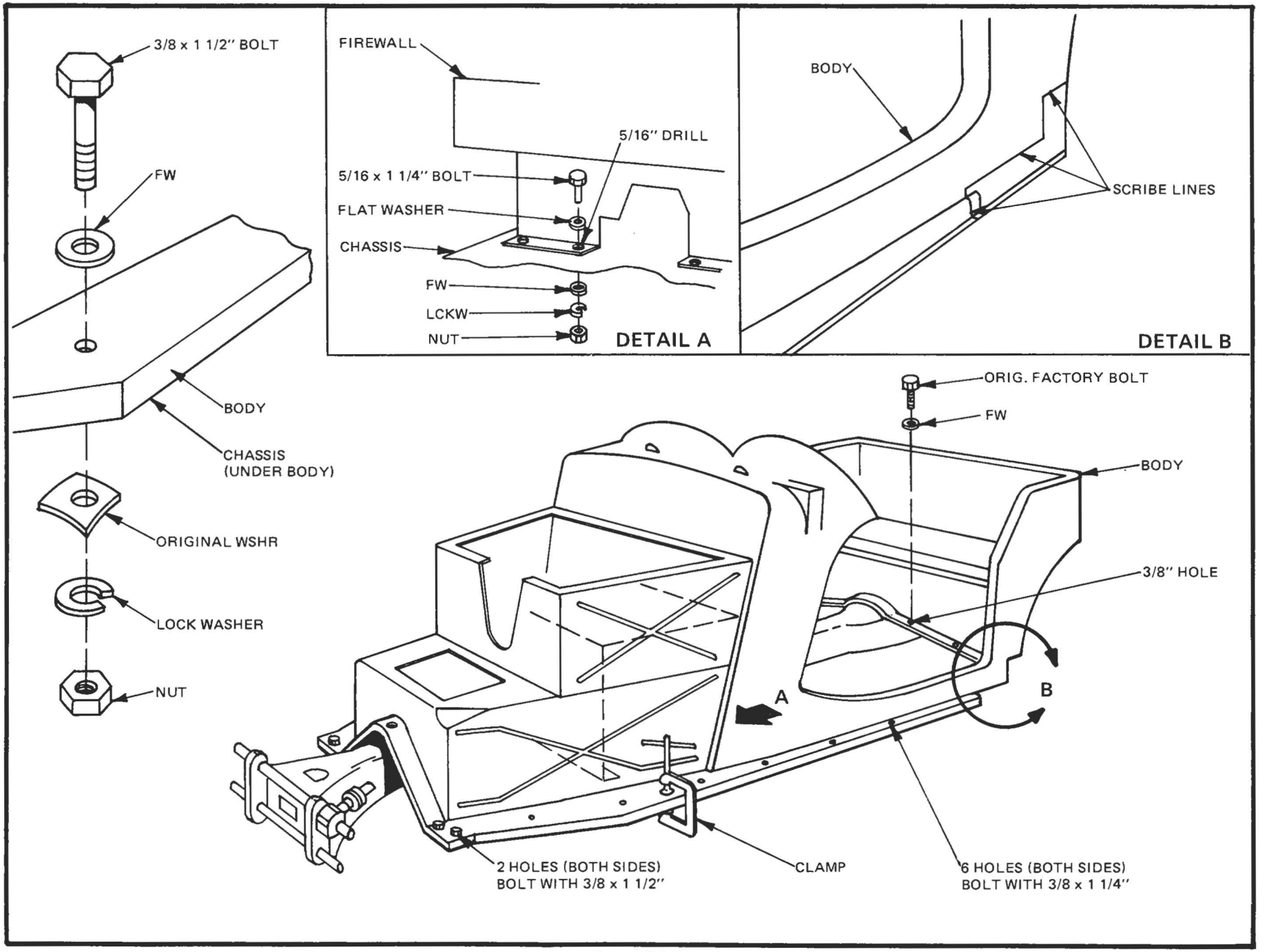

3/8 x 1 1/2" BOLT
FW
BODY
CHASSIS
(UNDER BODY)
ORIGINAL WSHR
LOCK WASHER
NUT
FIREWALL
5/16" DRILL
5/16 x 1 1/4" BOLT
FLAT WASHER
CHASSIS
FW
LCKW
NUT
DETAIL A
BODY
SCRIBE LINES
DETAIL B
ORIG. FACTORY BOLT
FW
BODY
3/8" HOLE
A
B
2 HOLES (BOTH SIDES)
BOLT WITH 3/8 x 1 1/2"
CLAMP
6 HOLES (BOTH SIDES)
BOLT WITH 3/8 x 1 1/4"

Figure 18

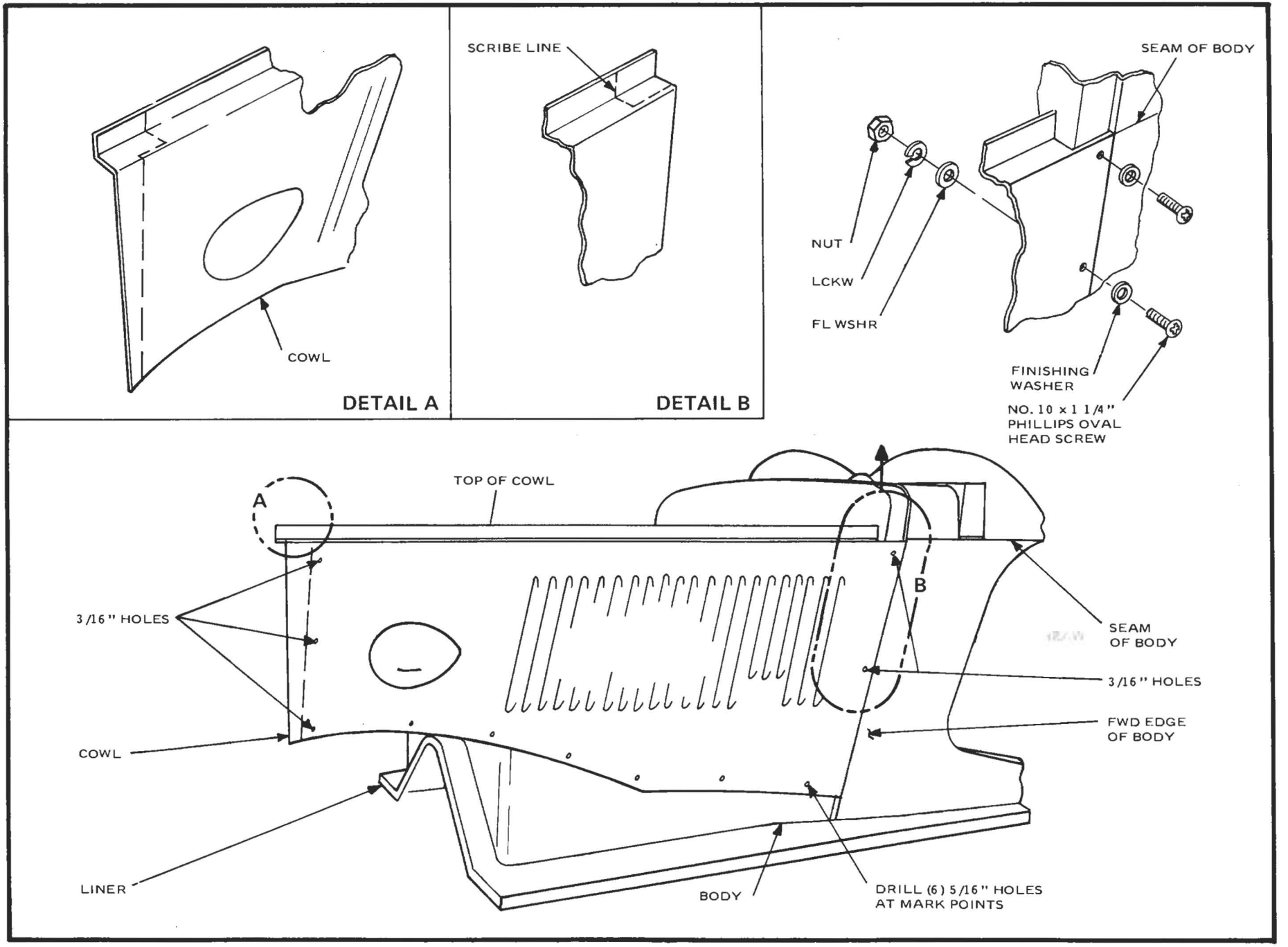

COWL
DETAIL A
SCRIBE LINE
DETAIL B
SEAM OF BODY
NUT
LCKW
FL WSHR
FINISHING WASHER
NO. 10 x 1 1/4" PHILLIPS OVAL HEAD SCREW
TOP OF COWL
A
B
3/16" HOLES
COWL
LINER
BODY
SEAM OF BODY
3/16" HOLES
FWD EDGE OF BODY
DRILL (6) 5/16" HOLES AT MARK POINTS

Figure 19

COWLS

☐ Trim cowls as per diagram. (Figure 19) Drill at the marked points. Carefully align cowls with the body, matching rear of cowls with forward edge of body. Move cowls up and down until top of cowl is aligned with seam of body.

☐ Drill through 2 rear 3/16" holes into body. Secure with No. 10 x 1 1/4" phillips oval machine screws and finishing washers. Leave all other bolts out at this time.

FRONT FENDERS

Trim on scribe lines as per diagram. On forward section of fender, measure in 2" from the front and 2" from the rear. Remove middle section of the lip. This is for a support brace installed later. (Figure 20) Drill all marked points 3/16" and 5/16". Align forward notch of fender with edge of cowl and allow rear to rest on body ledge.

☐ Bolt second hole from front (5/16" x 1 1/4") and third hole from rear (5/16" x 1 1/2"). Attach remaining bolts (5/16" x 1 1/4") except forward 3/16". (It will sometimes be necessary to re-drill some of the holes through the fender to assure perfect alignment.) Hand tighten all bolts at this time as fender welting will be installed later. Front of fenders, where they meet, will be drilled and bolted in a later step.

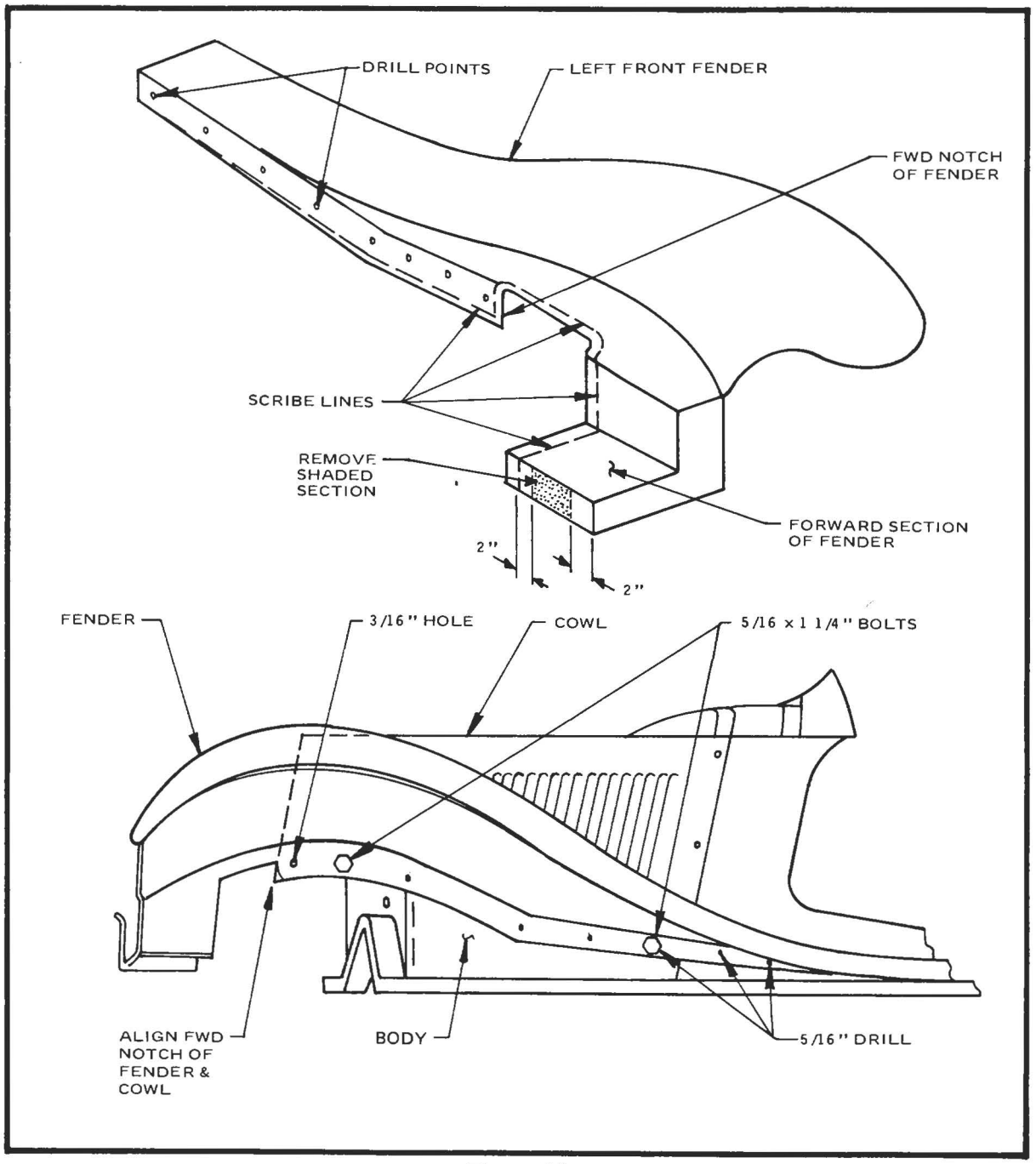


Figure 20

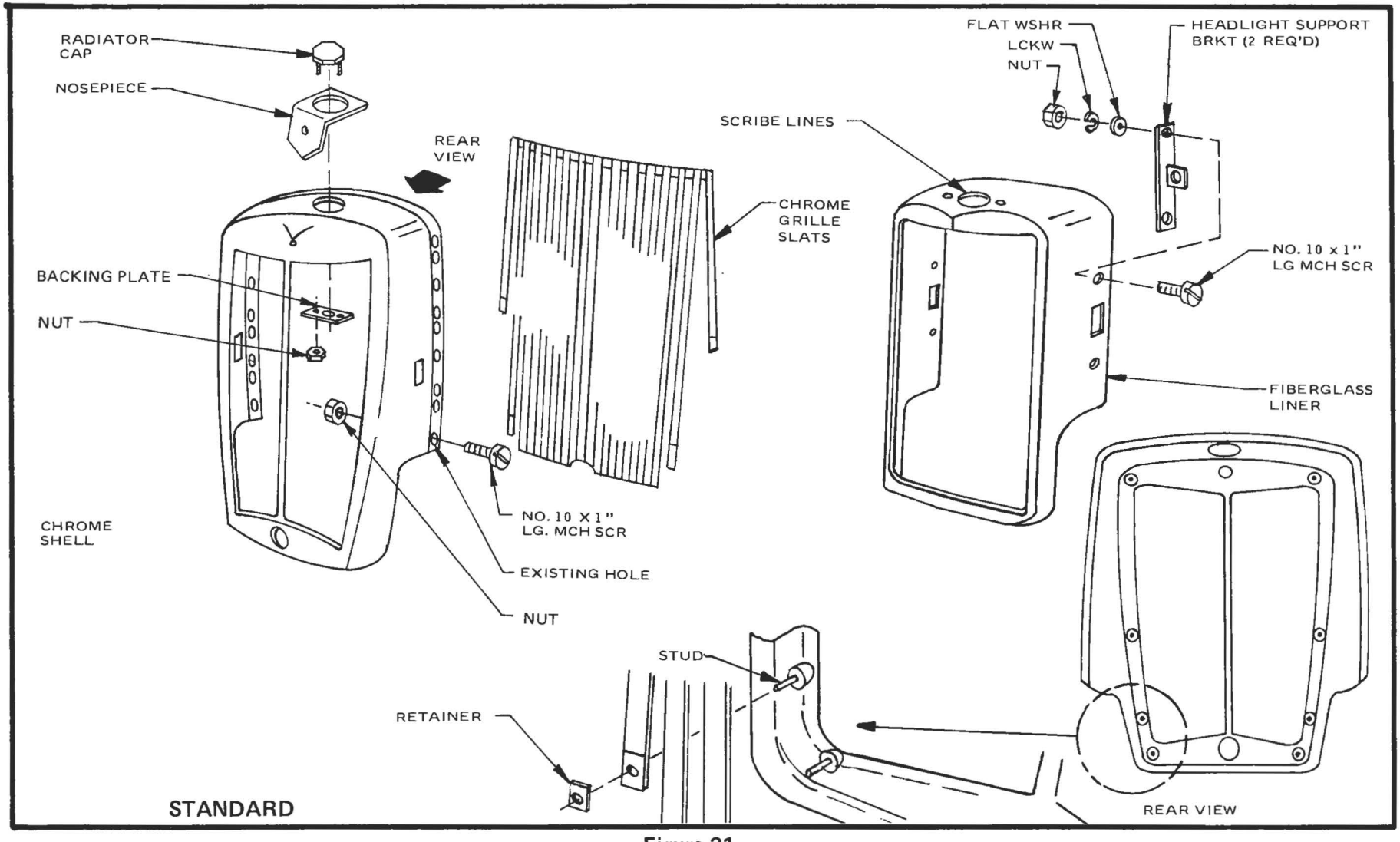


Figure 21

GRILLE PREPARATION

(Refer to Figure 21)

The grille consists of 7 pieces. The fiberglass liner, the chrome shell, the chrome grille slats, the simulated radiator cap and optional moto-meter, the nose piece and the two large grille mounted headlight supports.

☐ Bend the metal frame of the chrome grille slats to match the contour of the chrome shell.

☐ Remove the 4 corner nuts of the grille slats. Knock out the studs. Insert slats over projections in chrome grille shell. Secure with retainers provided.

☐ Cut the fiberglass liner on the pre-scribed lines, including hole for radiator cap.

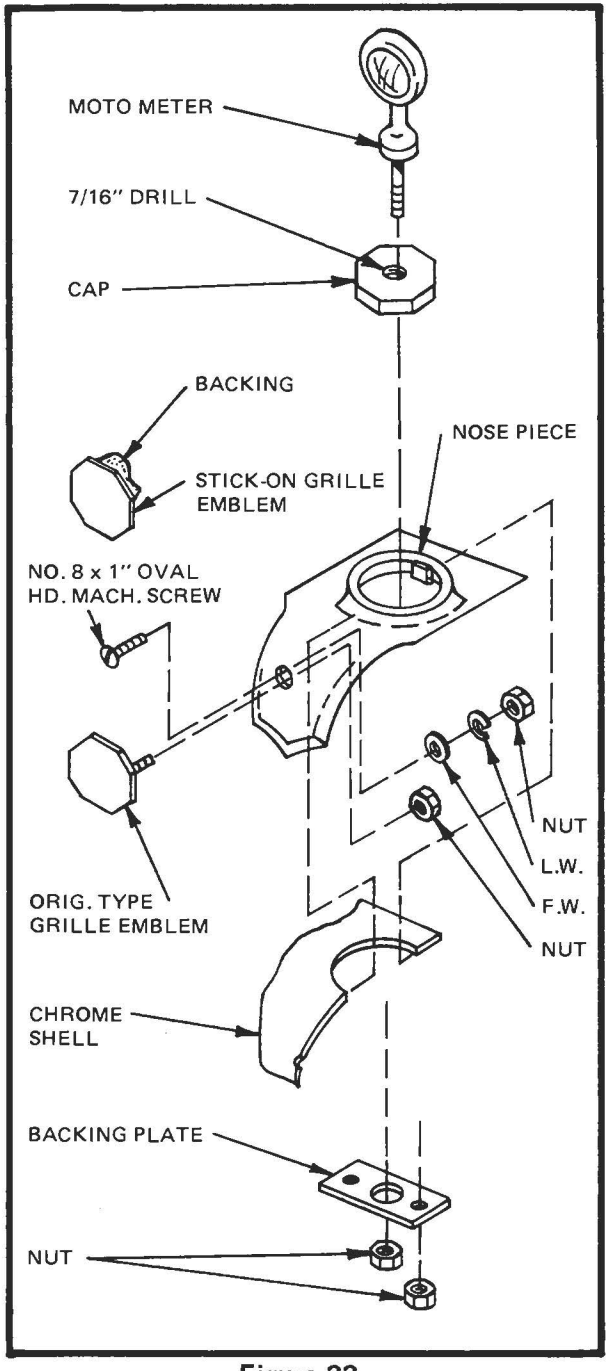


Figure 22

GRILLE PREPARATION (Con't)

- ☐ If using the optional moto meter, drill through the center of the radiator cap using a 7/16" drill bit.
- ☐ Install nose piece onto grille shell bending back tab up to hold it in place. Pull front tab down and bend forward.
- ☐ If using our stick-on grille emblem, insert a No. 8 x 1" stainless steel oval head machine screw through the front of the nose piece, the grille shell and the tab. Secure with a flat washer and nut. Tighten the screw so that the nose piece indents around the screw head.
- ☐ Peel backing from emblem and stick in place.
- ☐ If using an original reproduction type grille emblem with a mounting stud attached, eliminate the No. 8 screw and attach directly to grille assembly.
- ☐ Attach cap to grille assembly using nuts and back plate provided. Make sure cap does not rotate as the screws are being tightened.
- ☐ If using optional moto meter, install through center of cap and backing plate. Secure with nut provided.

GRILLE ASSEMBLY

- ☐ Insert liner into assembled chrome shell. (Refer to Figure 24) Working through the rectangular holes on each side of the chrome shell, scribe the outline into the fiberglass liner. Remove liner and cut out the rectangular holes in the fiberglass liner. Position one of the headlight support brackets into the rectangular slot of the fiberglass liner. When installed the tab should be angled straight out from the center line of the car, not from the shell. Mark the location of the screw holes. Drill 3/16" hole at the marked location. Insert 2 No. 10 x 1" screws into the liner from the outside. Slide the headlight support over the screws and bolt, using nuts, flat washers and lock washers. Repeat for opposite side.
- ☐ Insert fiberglass liner back into chrome shell, gently prying the chrome shell over the headlight supports. Using one of the existing holes in the side of the shell drill through the fiberglass shell and secure with a small bolt and nut (No. 10 x 1"). (Do not use the countersunk holes for this step.) This is just to hold the two sections together.

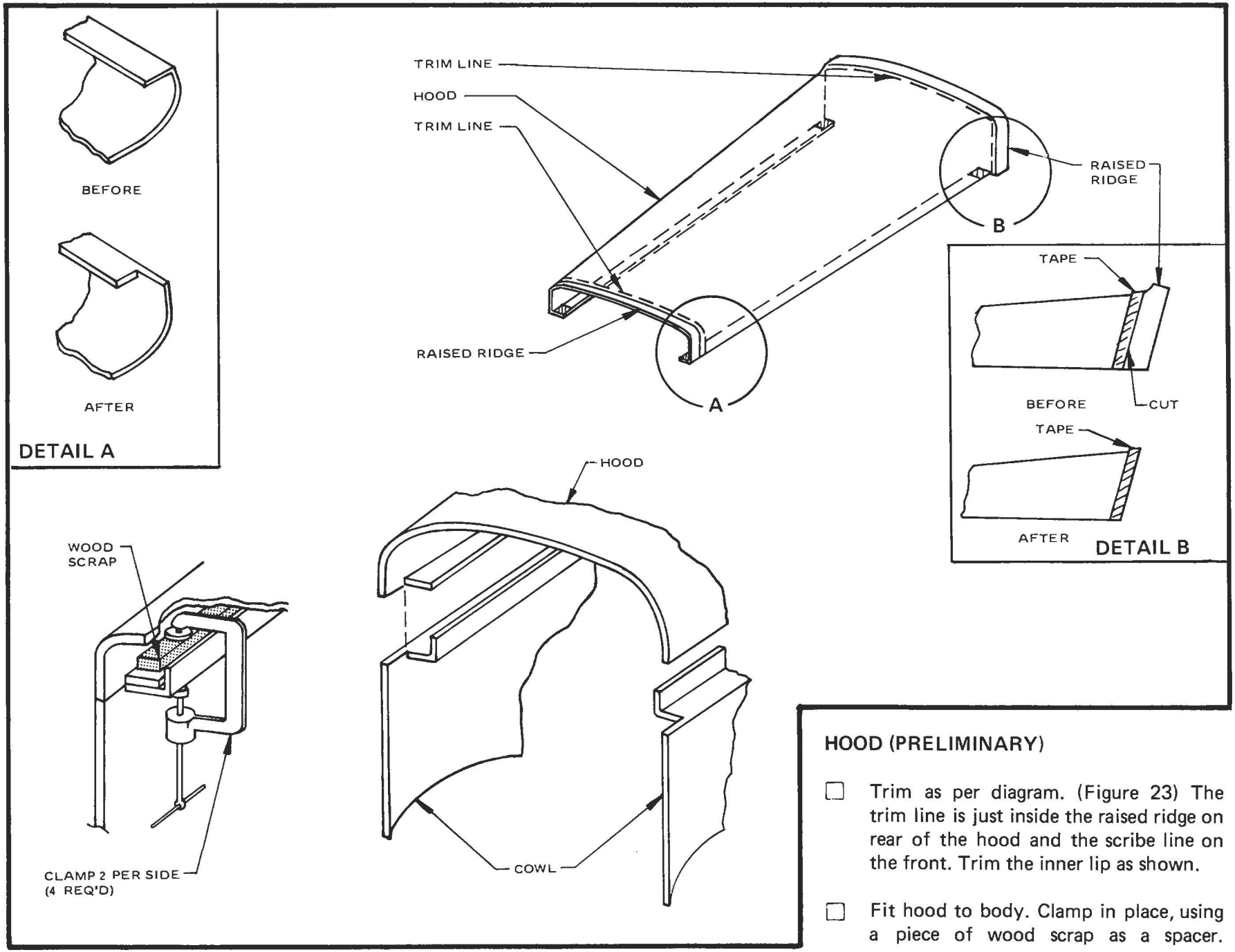


Figure 23

HOOD (PRELIMINARY)

- ☐ Trim as per diagram. (Figure 23) The trim line is just inside the raised ridge on rear of the hood and the scribe line on the front. Trim the inner lip as shown.
- ☐ Fit hood to body. Clamp in place, using a piece of wood scrap as a spacer.

GRILLE FITTING

☐ Slide the grille into place. Pull the grille assembly up as far as possible until shell contacts hood. (Figure 24). It may be necessary to further sand hood or cowls for a good fit where it contacts the grille shell. Hold shell in place and drill through the upper holes in cowl and grille shell (3/16"). Remove grille shell and hood clamps. Realign grille shell with cowls. Insert No. 10 x 1 1/2" oval head phillips screws with finishing washers. Using washers, lock washers and nuts, secure grille to body. Drill and bolt through lower hole in front part of fender.

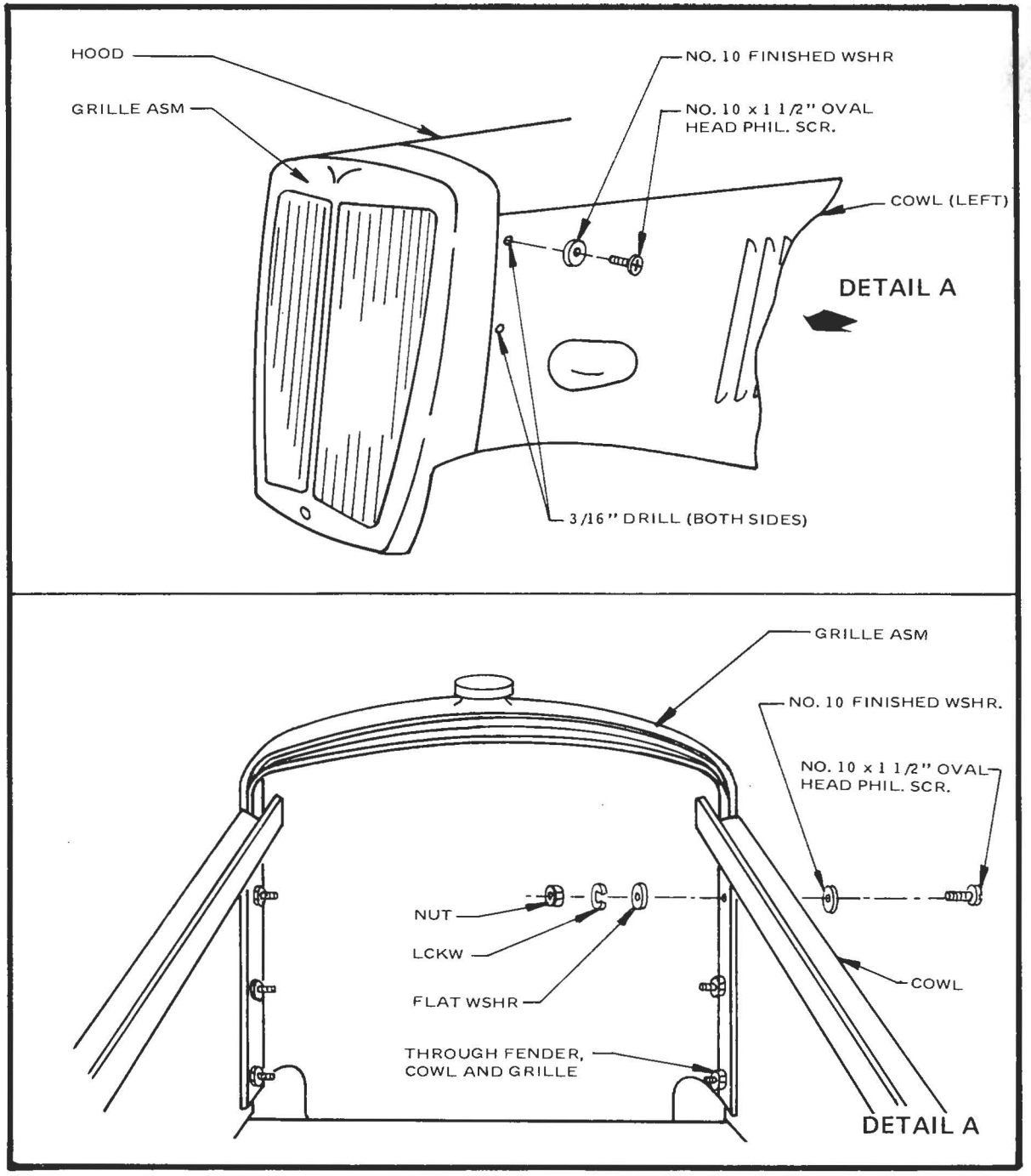


Figure 24

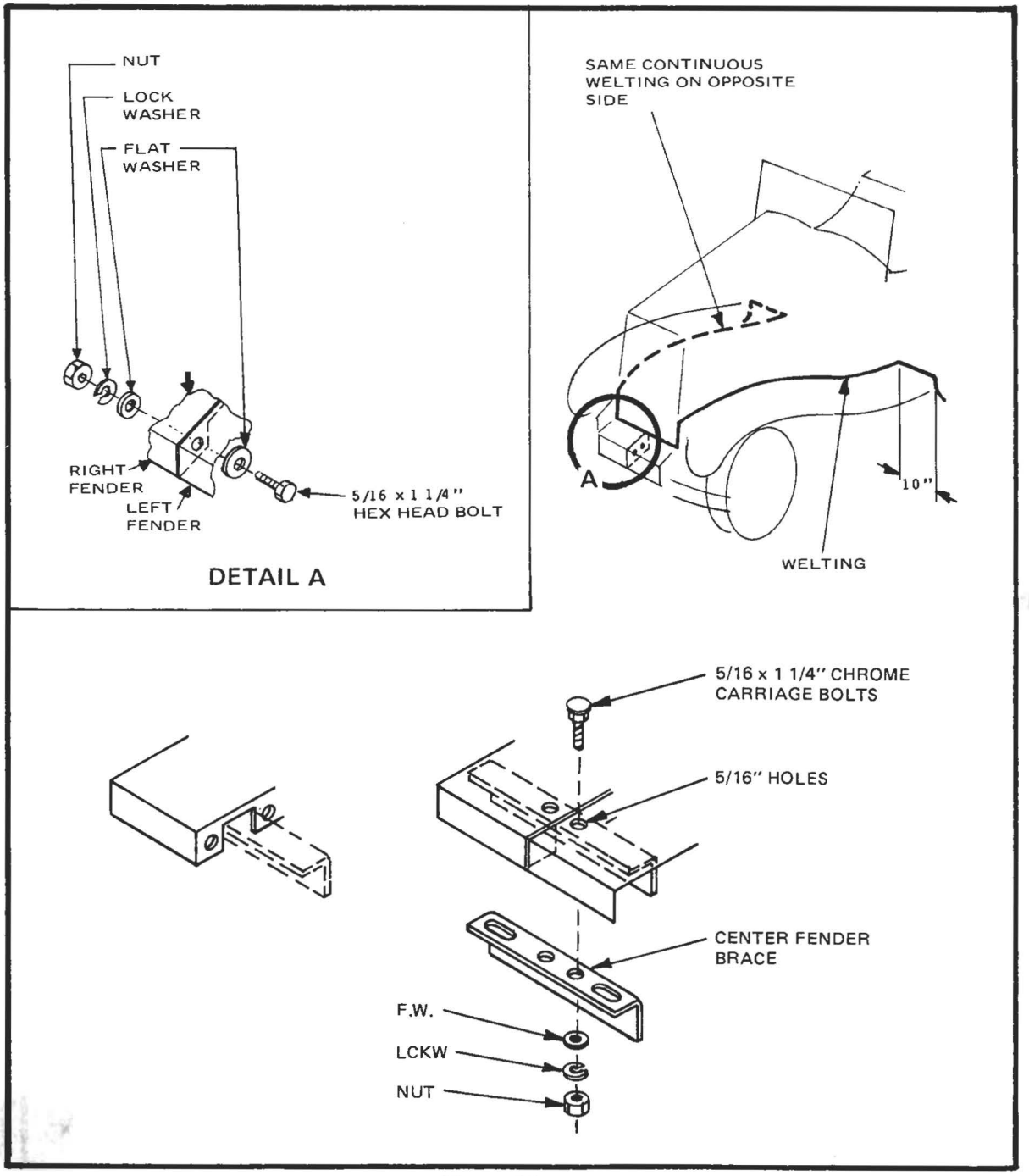


Figure 25

FINAL ATTACHMENT - FRONT FENDERS AND WELTING (Figure 25)

☐ Clamp front of fenders together where they meet in front of radiator shell. Keep the two halves at the same level. Drill 2 holes (5/16") through flange and bolt using 5/16 x 1 1/4" bolts, flat washer, lock washer and nut. From underneath, align front center fender brace in notch of fenders. Clamp in place. Drill 5/16" holes up through round holes in brace. Secure with 5/16 x 1 1/4" chrome carriage bolts with flat washer, lock washer and nut. If not using fog lights, drill 5/16" holes through the slots in the brace and secure with 5/16 x 1 1/4" chrome carriage bolts with flat washer, lock washer and nut.

WELTING (Refer to Figure 25)

☐ Welting is installed between the fenders and the body. It must be notched to fit around bolts and to negotiate curves. Starting at the rear of the front fender, leave 10" of welting exposed. (This will go between the fender and running board.) Run the welting up along the front fender. Continue around the grille shell and back along the other fender. Leave 10" of welting exposed and cut. Tighten down all fender bolts. (Contact cement can be used in problem areas to keep welting in place.)

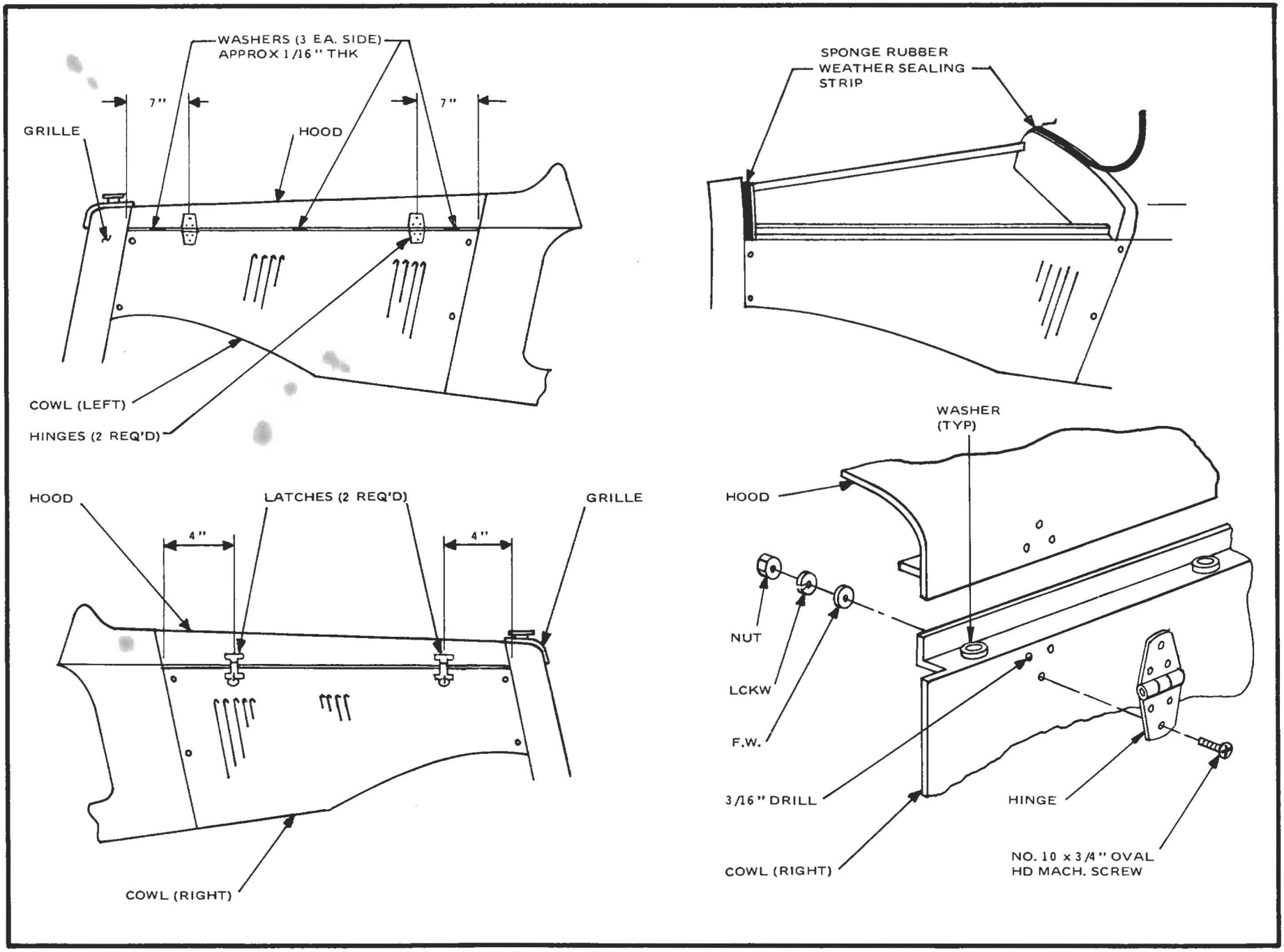

WASHERS (3 EA. SIDE)
APPROX 1/16" THK
7"
7"
GRILLE
HOOD
COWL (LEFT)
HINGES (2 REQ'D)
SPONGE RUBBER
WEATHER SEALING
STRIP
HOOD
LATCHES (2 REQ'D)
GRILLE
4"
4"
COWL (RIGHT)
WASHER
(TYP)
HOOD
NUT
LCKW
F.W.
3/16" DRILL
COWL (RIGHT)
HINGE
NO. 10 x 3/4" OVAL
HD MACH. SCREW

Figure 26

HOOD FITTING

☐ Reinstall hood. Space hood up on the left side only approximately 1/16 of an inch. Use three washers as temporary spacers, mark the location of the hinges. The center of each hinge should be 7" from the end of the hood, on the left side. Drill and bolt to body and hood, using No. 10 x 3/4" oval head screws. Install latches approximately 4 inches from ends of the hood on the right side, drill and bolt as hinges. Install a sponge rubber weather sealing strip on rear of hood opening and along top of grille, where they contact hood (Figure 26).

MASTER CYLINDER RESERVOIR

☐ Mount brake fluid reservoir on the forward part of the body directly above the master cylinder. Fabricate a holder from 1/2" aluminum or steel strapping and drill 3/16" holes in each end. Secure to body using No. 10 x 1" self-tapping screws. Run 2 lengths of brake hose from the reservoir to the master cylinder and fill with approved brake fluid. Bleed brakes according to instructions in your VW manual.

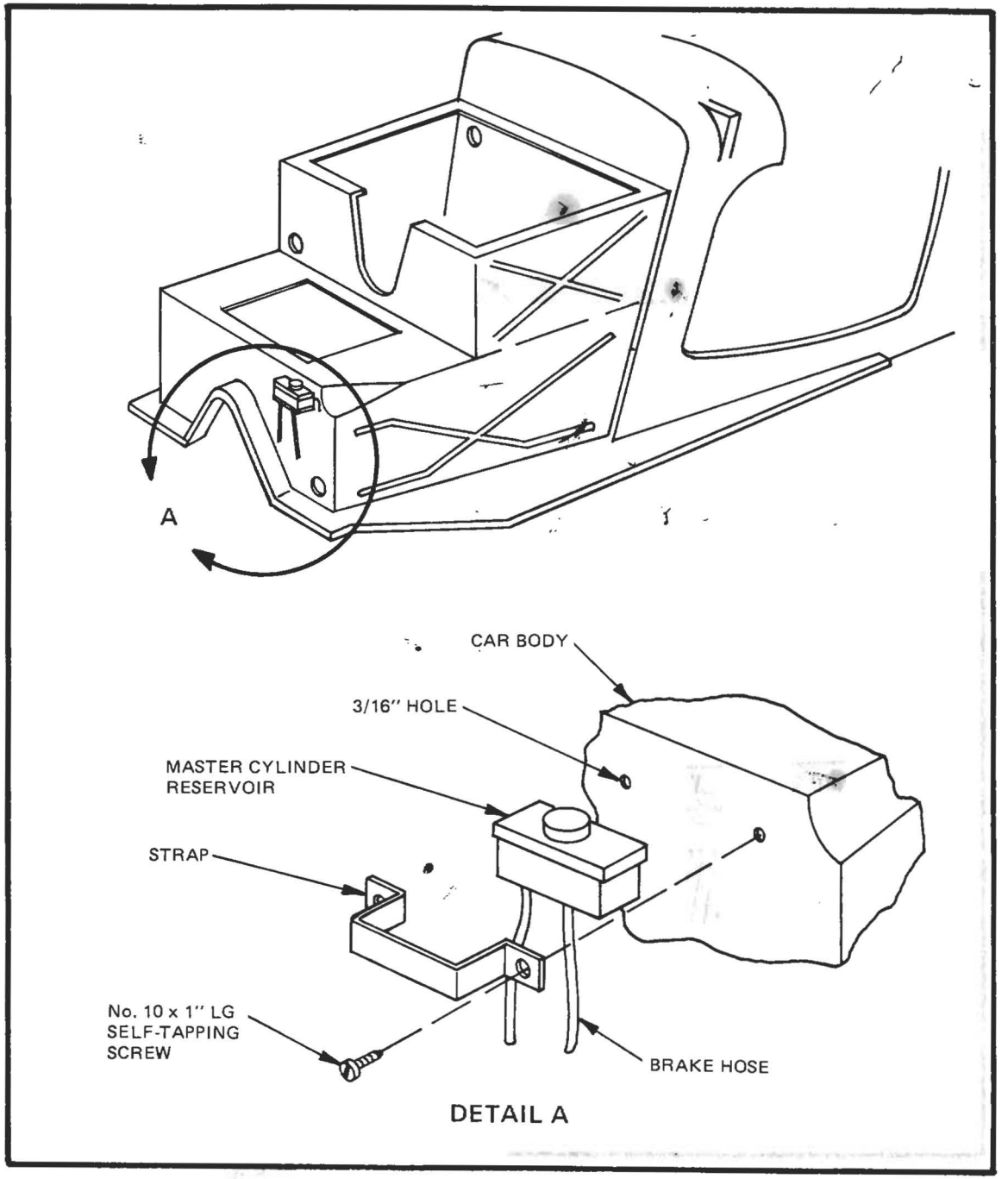


Figure 27

RUNNING BOARDS

- ☐ Trim running boards (Figure 28)
- ☐ Drill all marked points (5/16"). Clamp running board to fender and body, resting running board on body ledge. Using black spray paint, carefully spray a short burst at each pre-drilled hole. (Don't spray enough to allow dripping.) Remove running board and drill at all paint spots (1/4" drill). Drill all the way through the body. From inside the car, using a 1 1/2" hole saw, drill out the inner body panel only using the 1/4" holes as pilots. Do not drill completely through the body. Drill the original 1/4" holes out to 5/16". Bolt on running boards using 1/4" x 1 1/4" bolts, nuts and washers. (This allows slight adjustment of the running boards.) Slip 10" length of welting left from previous installation between fender and running boards. Finger tighten.

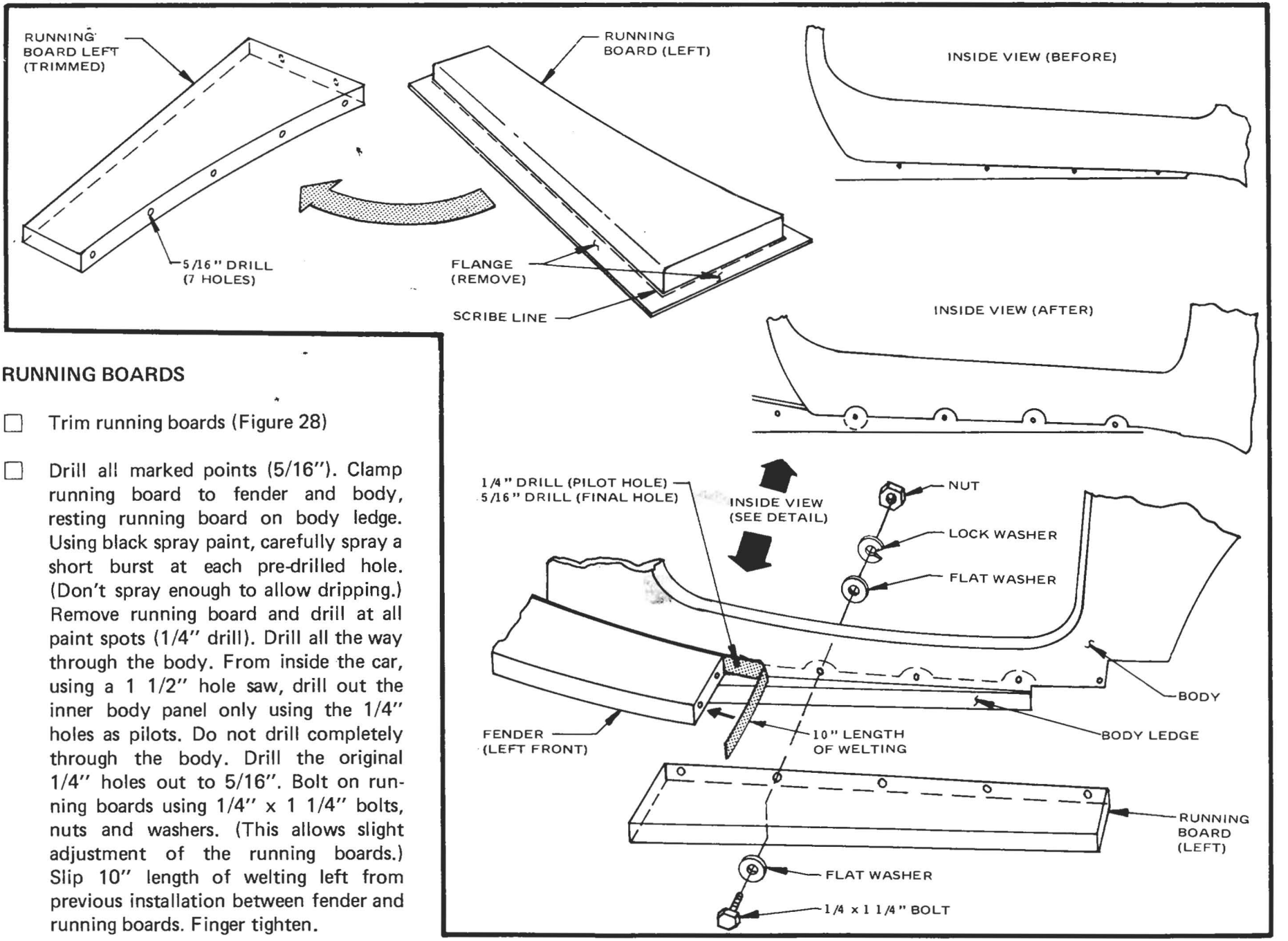


Figure 28

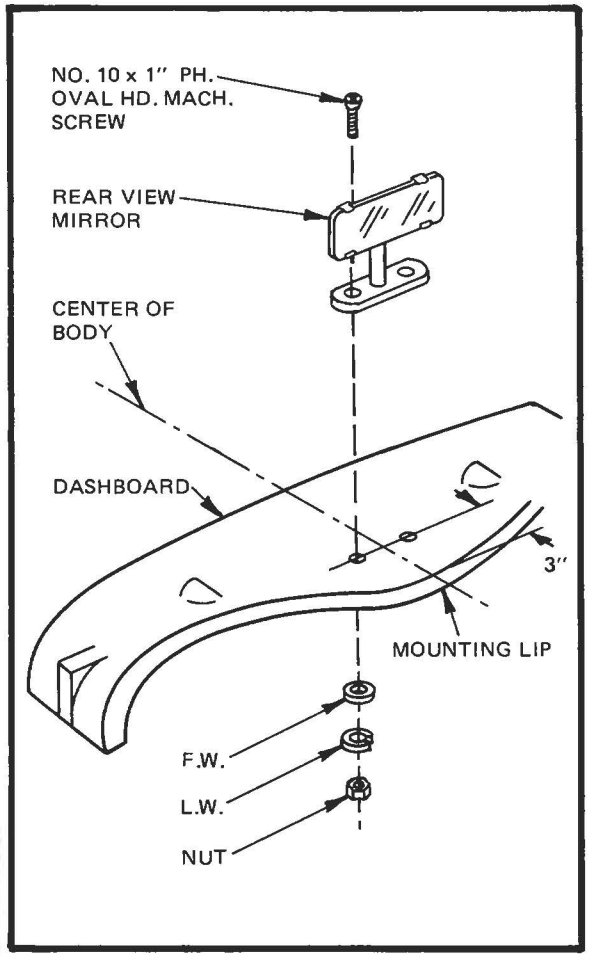


Figure 29

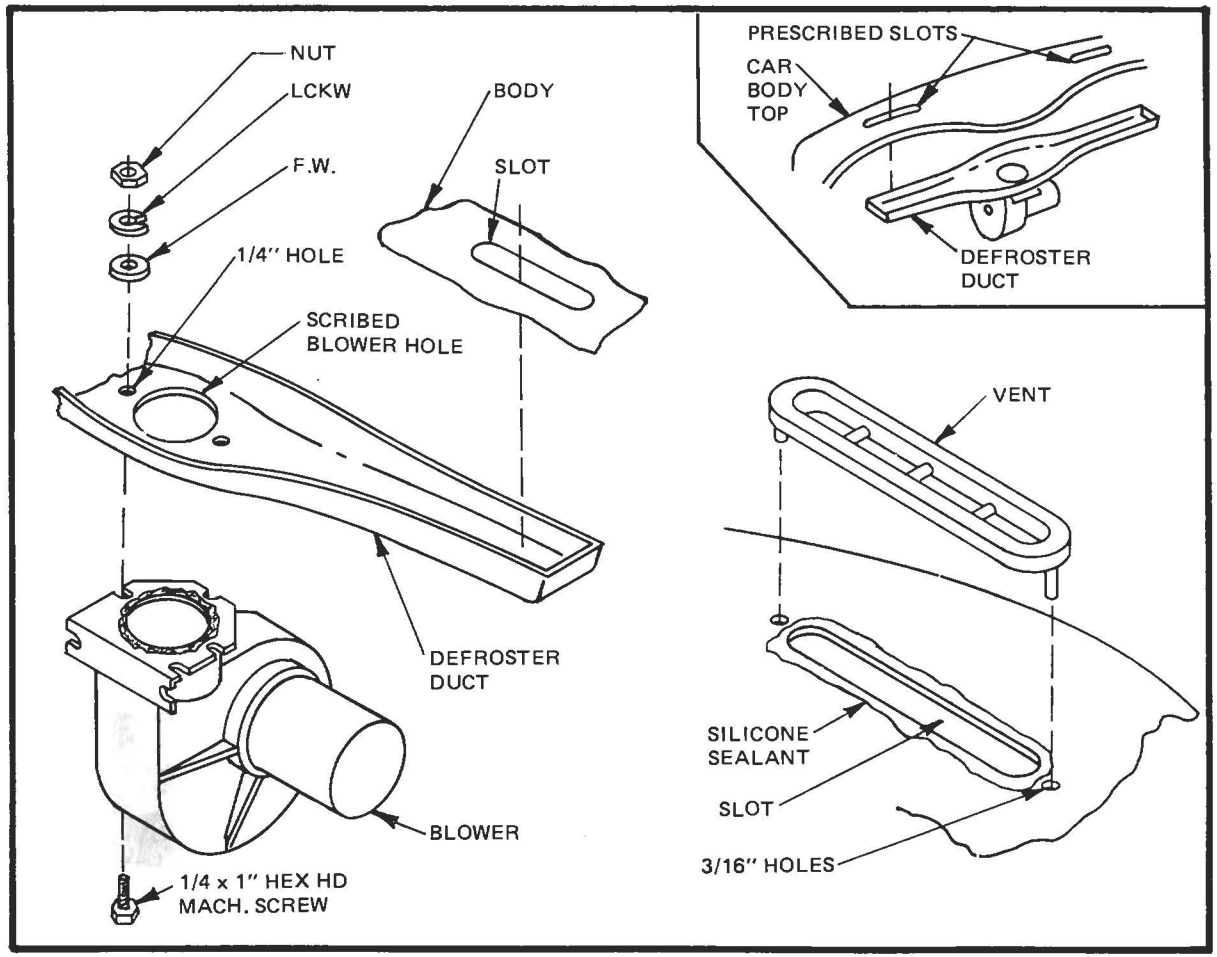


Figure 30

REAR VIEW MIRROR (OPTIONAL)

☐ Position rear view mirror on center of body approximately 3" forward from dashboard mounting lip and mark hole locations. Drill 3/16" holes and secure with No. 10 x 1" stainless steel philips oval head machine screws with flat washer, lock washer and nut.

DEFROSTERS (OPTIONAL)

☐ Cut out prescribed slots on top of body and drill out holes (3/16"). Insert vents, angled towards the windshield. Fasten in place using silicone sealant.

☐ Trim defroster duct on prescribed lines. Cut out hole for blower and drill 1/4" holes for mounting. Attach blower to duct using 1/4 x 1" hex head machine screws with flat washer, lock washer and nut. The main part of the blower should be in the direction of the arrow. Sand the gel coated area along the edge of the duct for glassing. Fit duct work in place under dash area of body. Prop in place using lengths of 2 x 4. Apply glass mat to perimeter or duct and saturate with resin. Be sure that mat is covering both the duct edges and part of the body.

BRAKE ADJUSTMENT

Refer back to Figure 5.

☐ Measure the distance from the back of brake pedal to the firewall. This distance must be at least 7 7/8" for safe brake travel. If it is less, adjust the brake push rod by unscrewing the shaft and lengthening the rod (Figure 5A). Reposition the pedal stop to give 5-7mm free play in the pedal (Figure 5B)

BATTERY BOX

☐ Trim battery box as shown. Drill 5/16" holes into the flange of the box and 3/16" holes into the body. Secure with 1/4 x 1" hex washer head self-tapping screws.

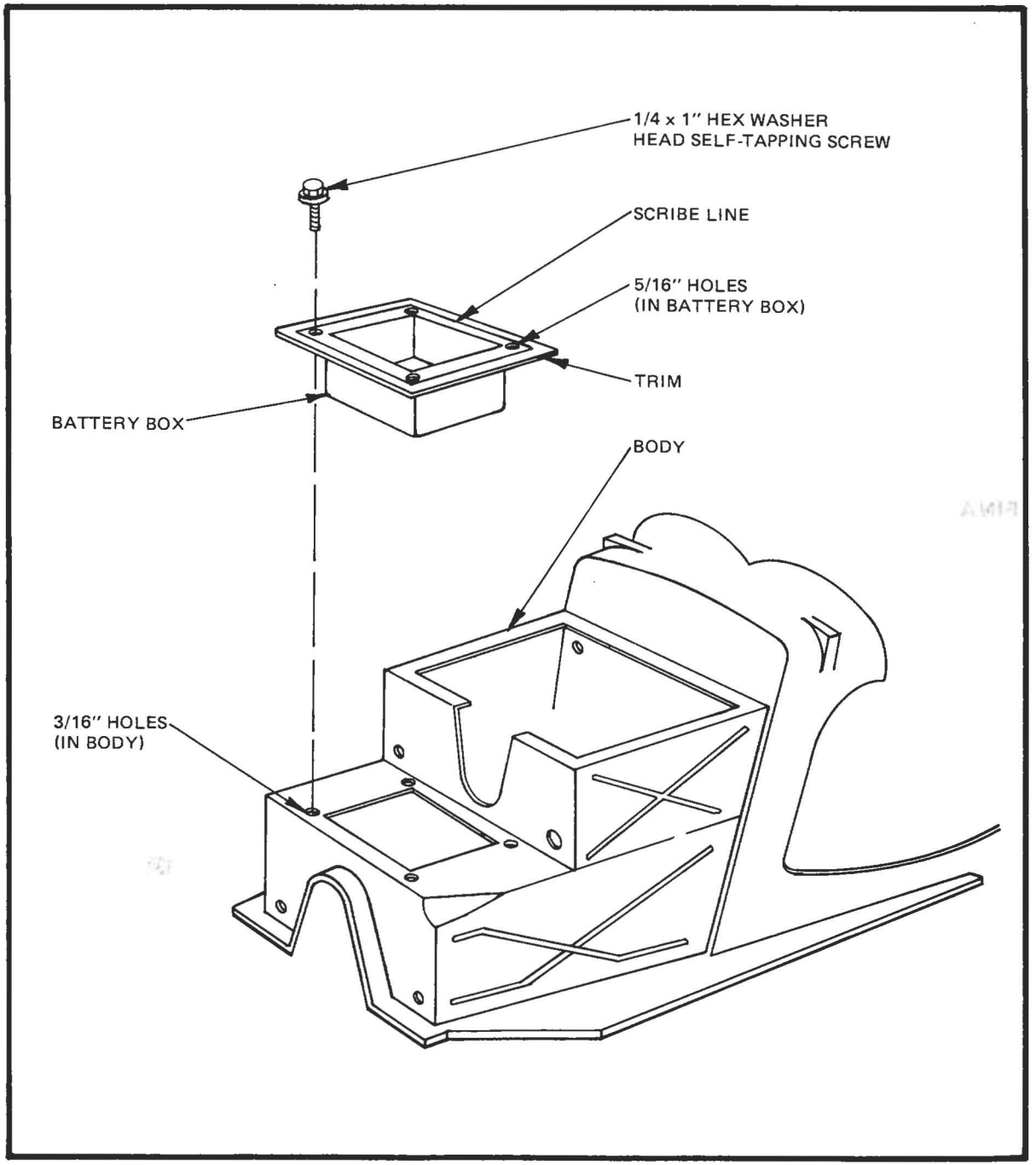


Figure 31

☐ Drill as per diagram (5/16"). (Figure 32) Align front of fender with rear of running board. The rest of the fender will fit into place, indexing with the rear body. Clamp to body and running board. Do not bolt.

SPLASH APRON (PRELIMINARY)

☐ Clamp rear cover onto body centering it from left to right approximately 1 1/8" down from the top. Trim splash apron as per diagram. (Apron should just clear engine sheet metal flange. Splash apron will mate with fenders. (Figure 32) Clamp to body and fenders, making sure splash apron is tight up against rear cover. Adjust fenders as necessary to obtain a good fit.

FINAL ASSEMBLY

☐ Using flat black spray paint spot each hole in the fender onto the body and splash apron. Also spray the under side of the running boards onto the forward edge of the fender. Remove clamps from fenders and drill through all spot marks (5/16" drill). (Do not remove splash apron from body.) Reinstall fenders and bolt through all holes except those indicated (5/16 x 1 1/4"). (Figure 32) Finger tighten.

☐ Install fender welting between rear fender and body and between running board and body. Cut a piece of welting approximately 8" long and insert between rear fender and running boards. Tighten all bolts. Drill through flange of splash apron into body. Bolt using 5/16 x 1 1/4" bolts, with flat washer, lock washer and nuts.

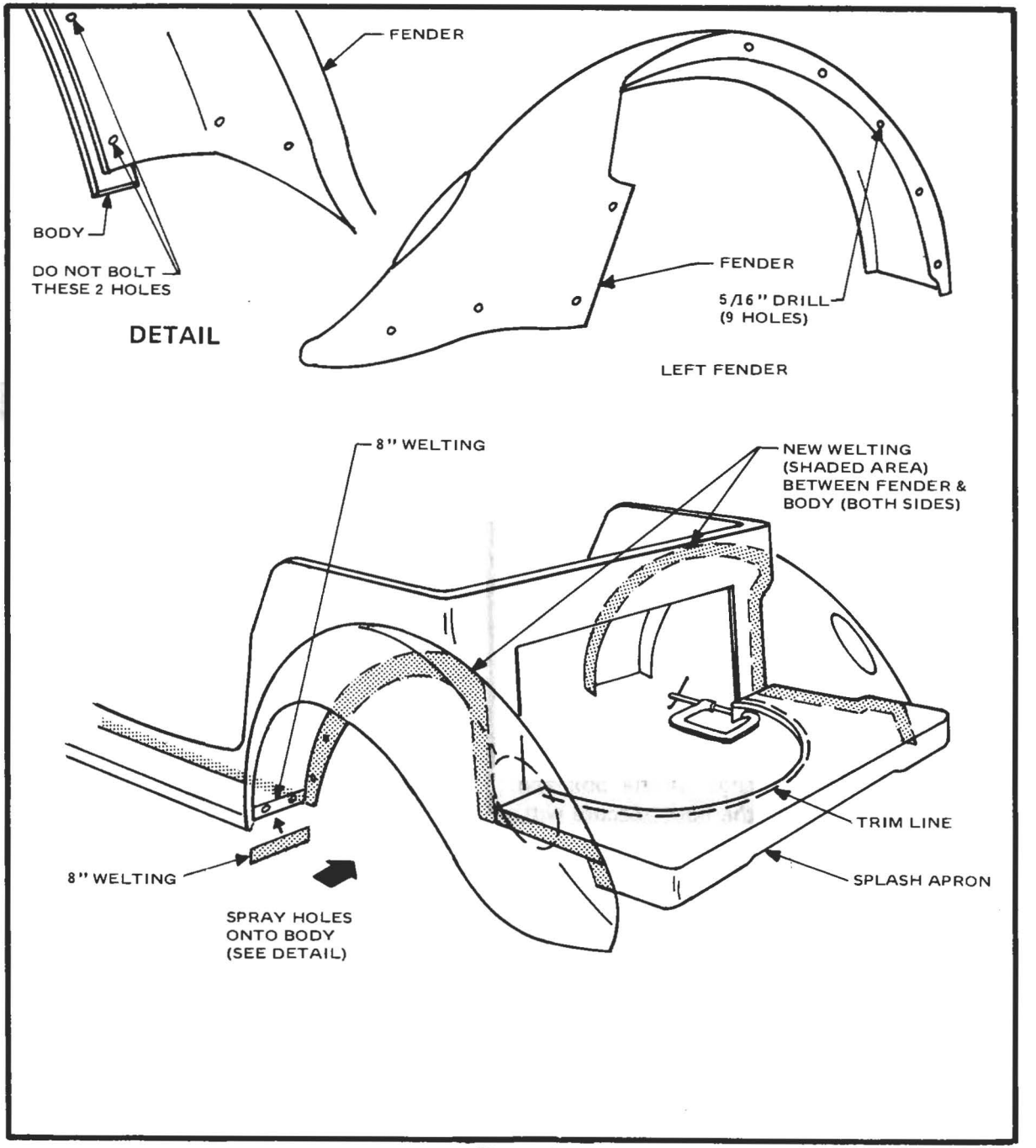


Figure 32

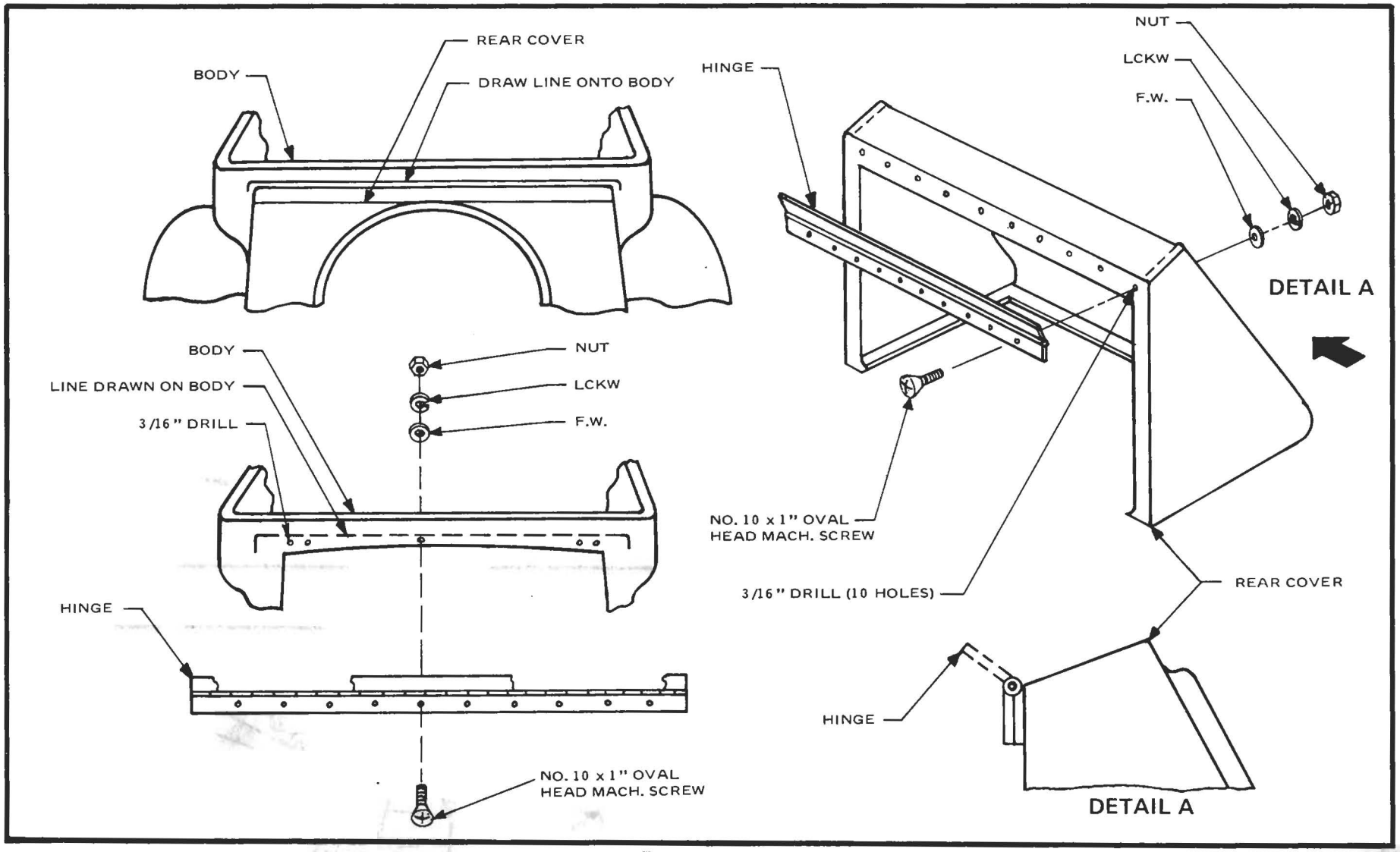


Figure 33

REAR COVER INSTALLATION

☐ Remove rear cover and align closed hinge as shown. (Figure 33) Mark and drill all holes. Secure with 3 screws (temporarily). Reposition cover on car. Draw a line onto the body where the top of the hinge rests. Also mark where the sides of the hinge fall. Remove hinge from cover. Realign the hinge with the marks made on the body. Drill all holes into body. Attach hinge to cover, using No. 10 x 1" oval head, machine screws with nuts, washers and lock washers. Hold cover up to car and bolt to body, using No. 10 x 1" screws and hardware.

FINAL REAR SUPPORT ATTACHMENT

☐ At this time raise the rear bumper bracket up until it contacts the splash apron. Working through the rear fender well, drill through the main bracket and the lower support (Figure 34). Bolt with 5/16 x 1" bolts, nuts and lockwashers.

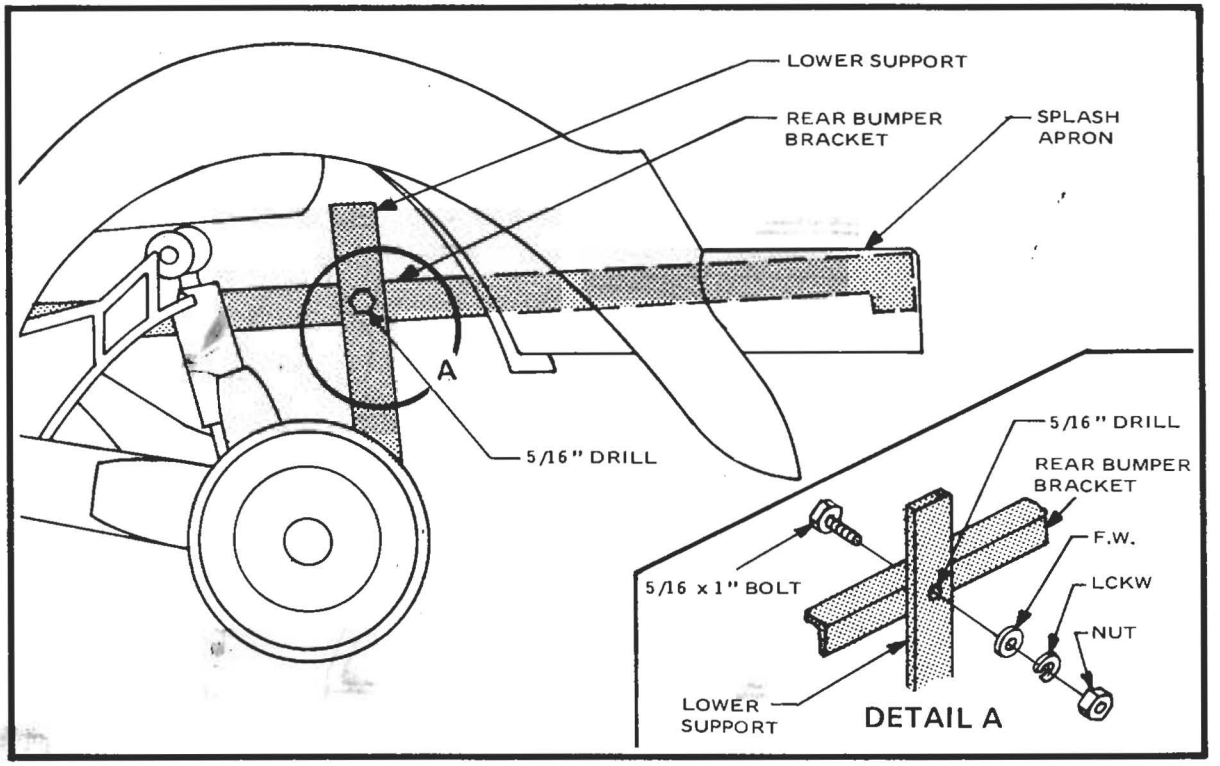


Figure 34

WHEEL WELL LINERS (Refer to Figure 35)

☐ Fit wheel well liners into place as shown. Trim as necessary to obtain a good fit. Drill through liner and bumper support bracket (3/16") at two locations shown in illustration. Secure with 1/4" x 1" self-tapping screws. Drill through holes in rear of fender into liner. Secure with two 5/16 x 1 1/2" bolts, lock washer, flat washer and nut. Fiberglass area around liner where it contacts body.

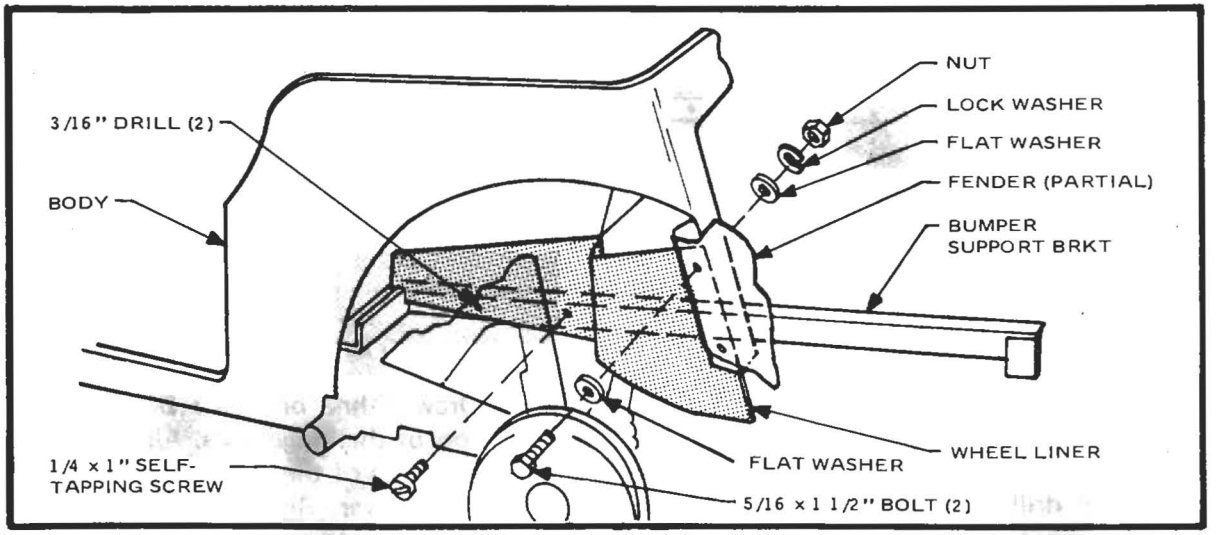


Figure 35

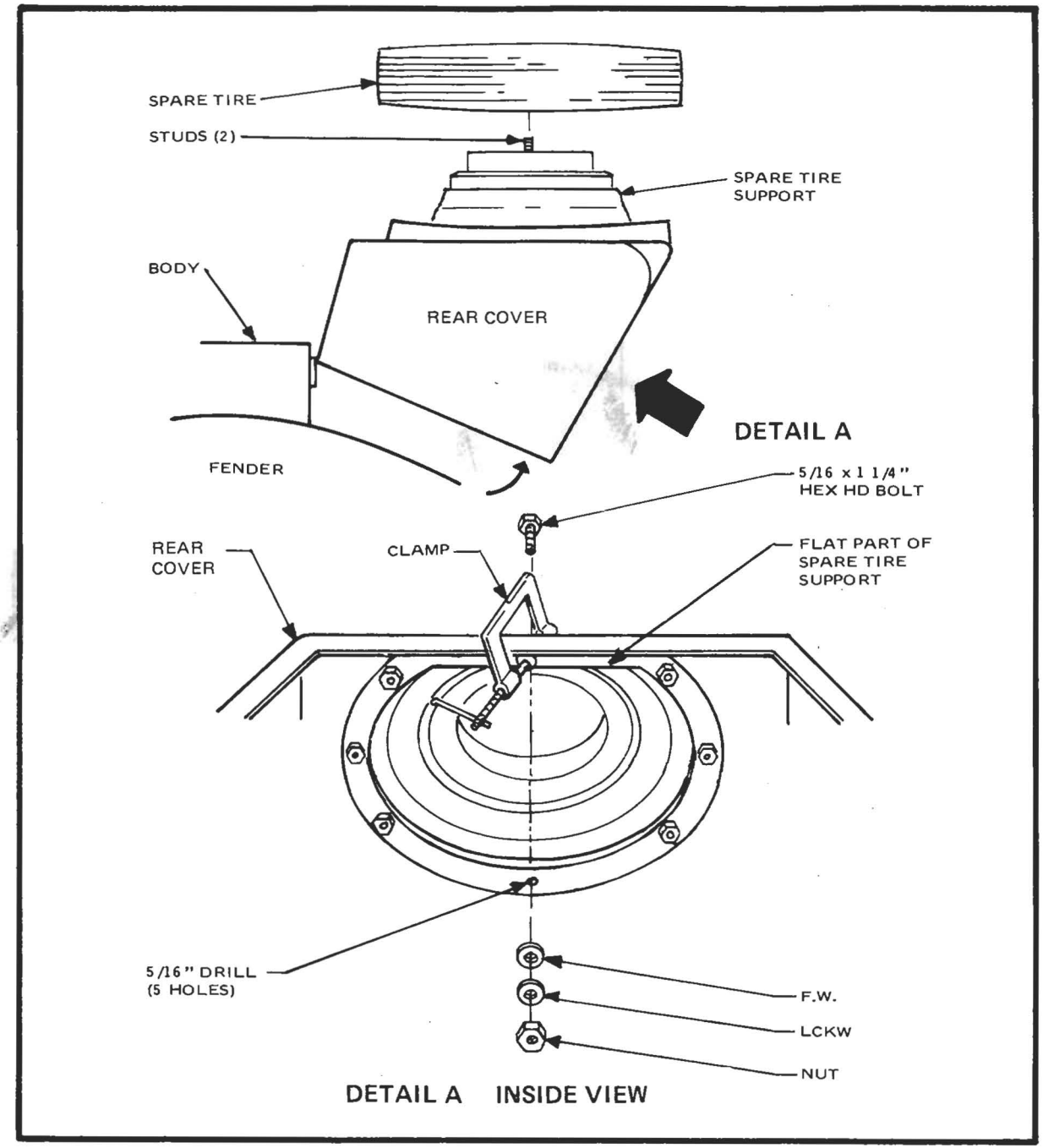


Figure 36

SPARE TIRE SUPPORT (See Figure 36)

☐ Open rear cover horizontally. Insert support from inside the cover. Clamp in place along bottom edge. Drill 7 holes, 5/16", evenly spaced around edge of support and into cover. Secure with 5/16" x 1 1/4" hex head bolts with flat washers on each side, lock washer and nuts. Install tire. (The support is designed to mount standard VW wheels with 165 x 15 tires. Use of other tires will require spacers or modification of the support.) Using a grease pencil mark the outline of each wheel slot onto the support. Remove wheel and cut out holes for ventilation.

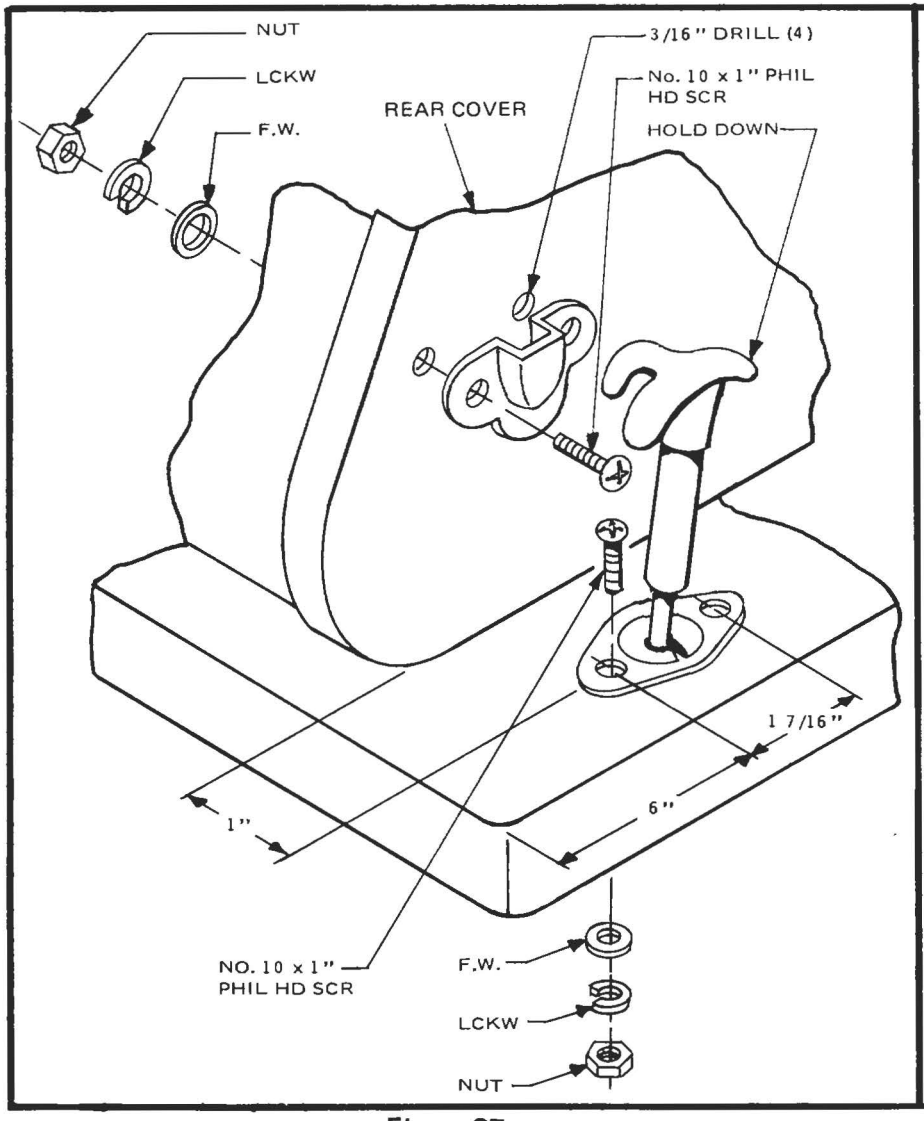


Figure 37

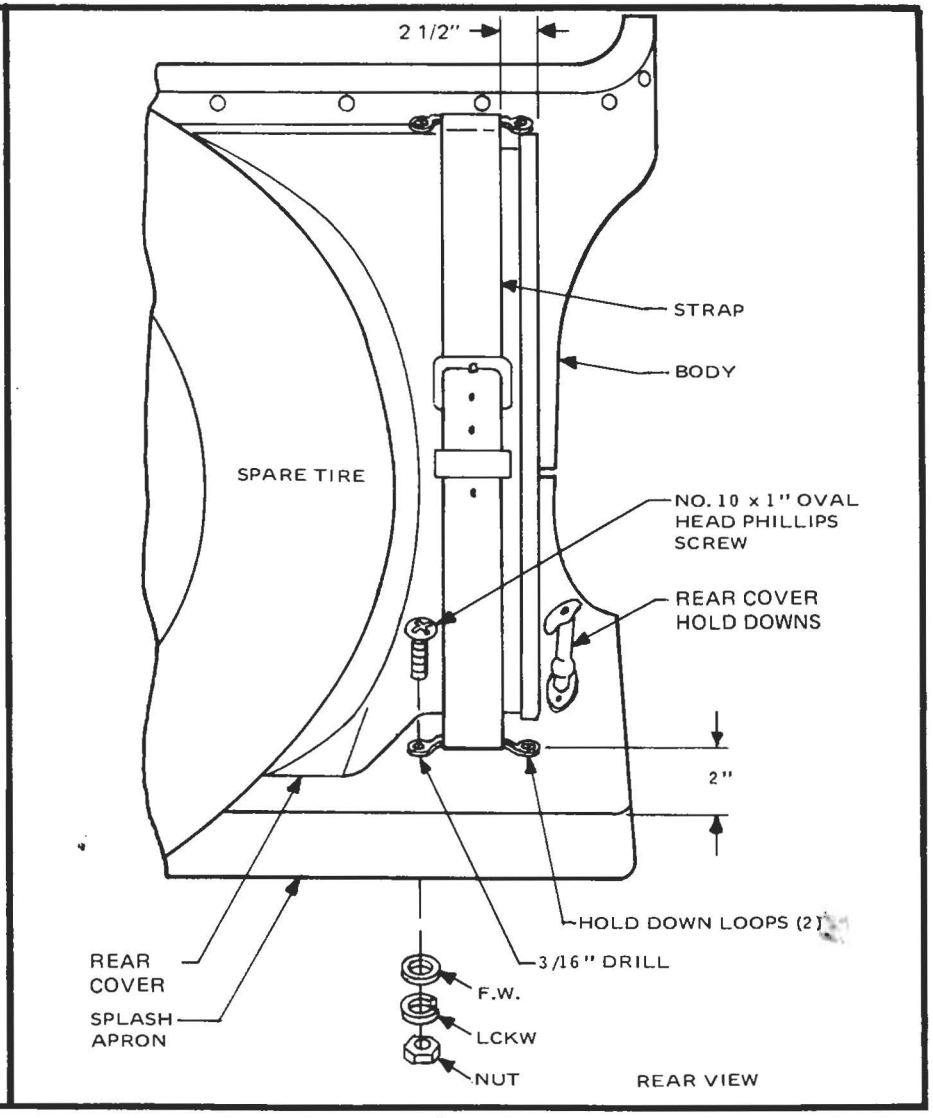


Figure 38

REAR COVER HOLD DOWNS (Refer to Figure 37)

☐ Install rear cover hold downs as shown. Drill 3/16" holes. Install so that 1" of extension is visible when locked and the elongated part of the extension hole is to the outside. Use No. 10 x 1" oval head phillip screws, lock washers, washers and nuts.

REAR COVER STRAPS (OPTIONAL)

☐ The straps are installed 2 1/2" from the edge of the rear cover. (Figure 38) With strap attached, install two of the hold down loops provided into the splash apron, approximately 2" from the back edge. Drill 3/16" hole. Secure with No. 10 x 1" oval head phillips screw with flat washer, lock washer and nut. Pull strap taut and attach to top of cover, using same hardware as above. Adjust strap as necessary.

TAILLIGHTS

☐ Using the rubber gasket as a guide locate the holes for the taillights on the raised area of the rear fender. Drill 3/16" holes for mounting taillight base and 3/4" holes for sockets.

☐ Place sockets in fender (double contact socket on bottom), and mark mounting hole locations. Drill 3/16" holes. Secure sockets to fender using No. 10 x 1" round head machine screw with flat washer, lock washer and nut. Attach a length of wire to one of the mounting screws of each socket and run to the frame as a ground.

☐ Fit gasket to base.

☐ Attach base to fender using No. 10 x 1 1/4" round head machine screws with flat washer, lock washer and nut. Install bulbs and lens.

PARKING LIGHTS

☐ Using the rubber gasket as a guide, locate the holes for the parking light on the top of the front fender. Move the gasket back and forth until the extreme top of the fender is found. (Figure 40) Drill as indicated for two mounting screws and wires, (1/4"). Attach leads to lights at this time to facilitate hook up later. Secure with 1/4 x 3/4" and 1/4 x 1" bolts, SAE fine thread (short bolt in front of light, long in rear).

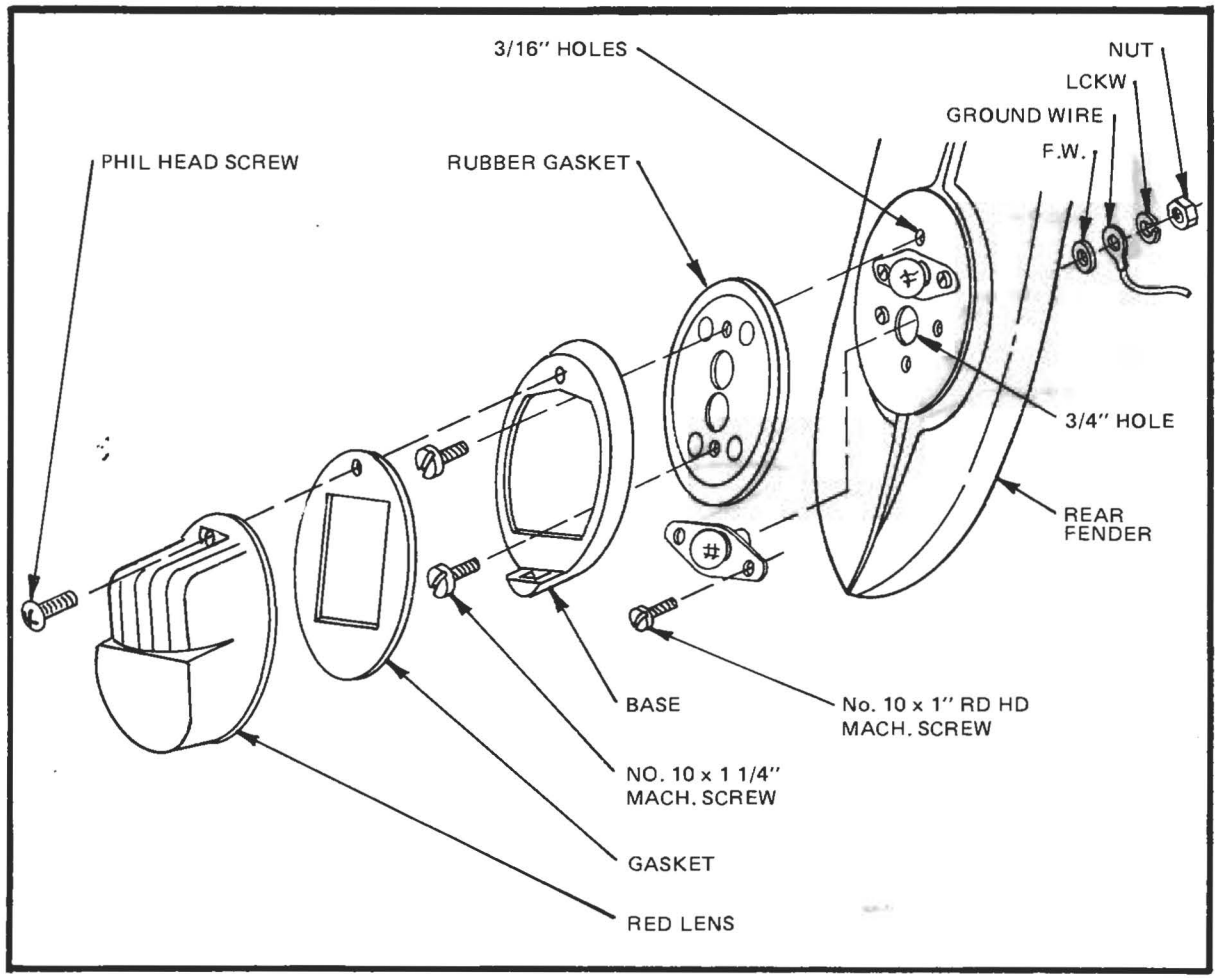


Figure 39

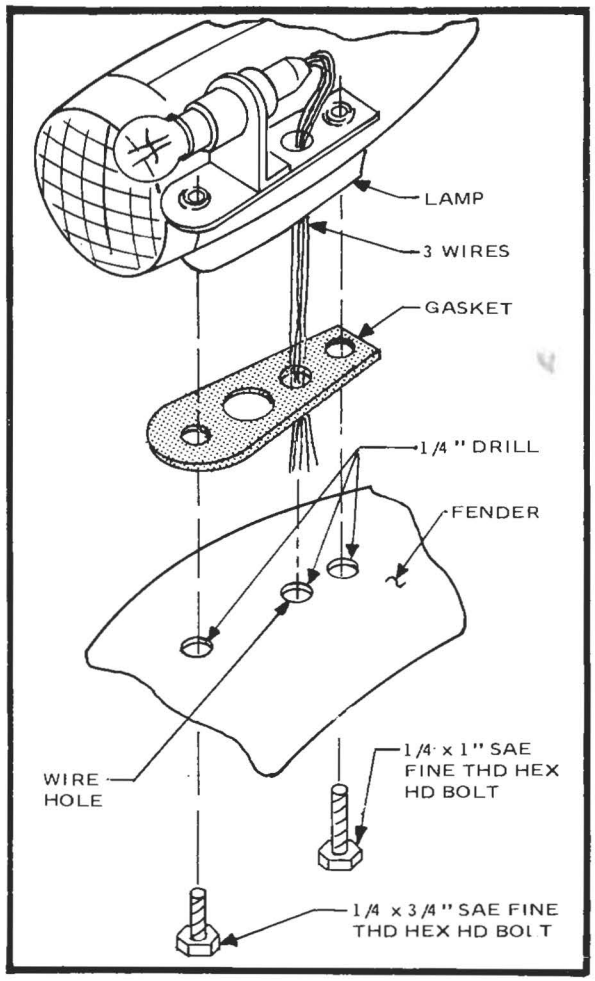


Figure 40

WINDSHIELD WIPER MOTOR

Because of mounting considerations a standard VW windshield wiper motor assembly is required. (15 3/4" between spindles)

☐ Measure the distance from one wiper mounting post to the other. Transfer this dimension to the dimples on the top of the body. Drill 2 holes (3/8 or 1/2" depending on the year of your motor) at the marked location. Install wiper motor, retaining it by the spindle nuts.

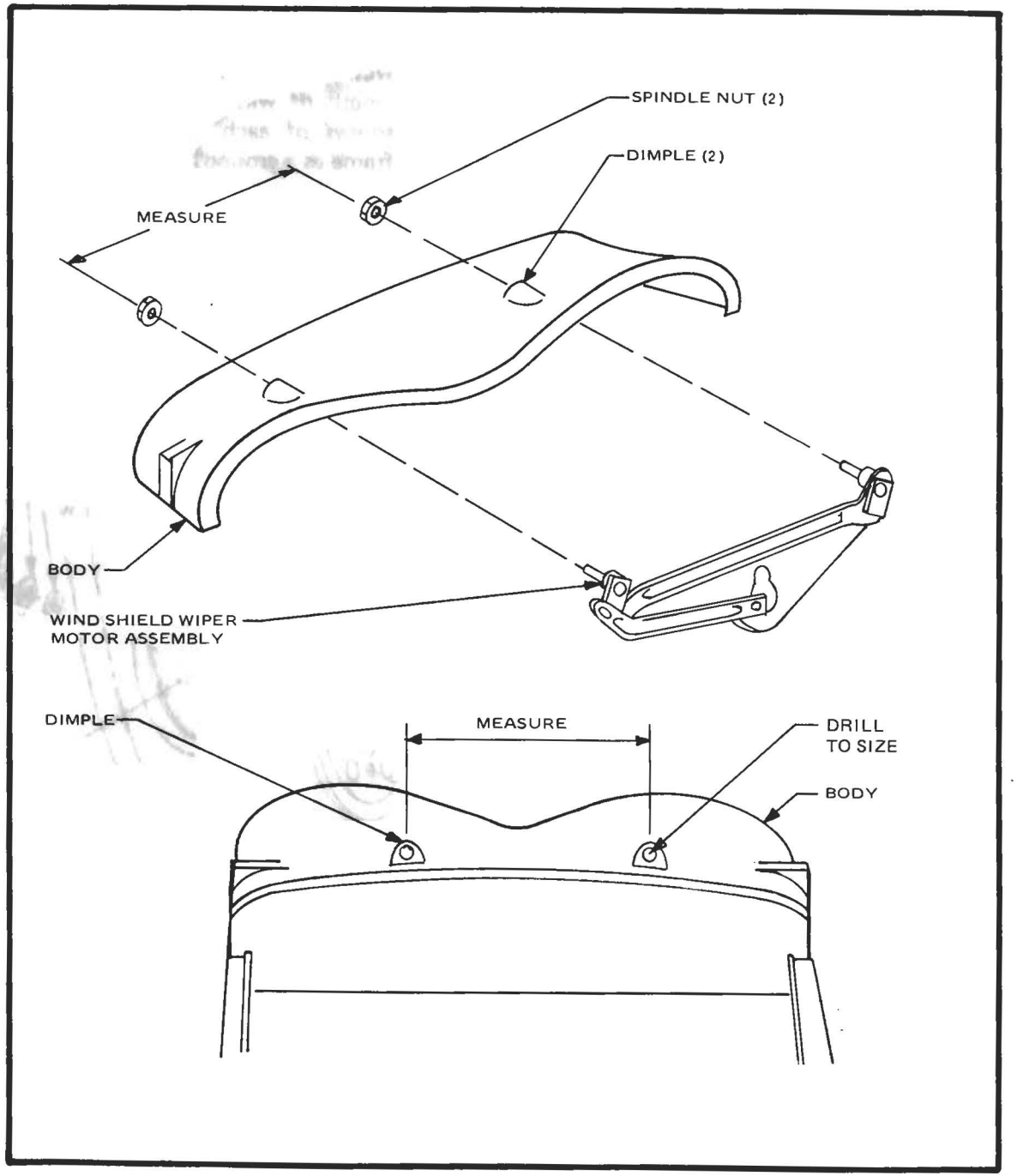


Figure 41

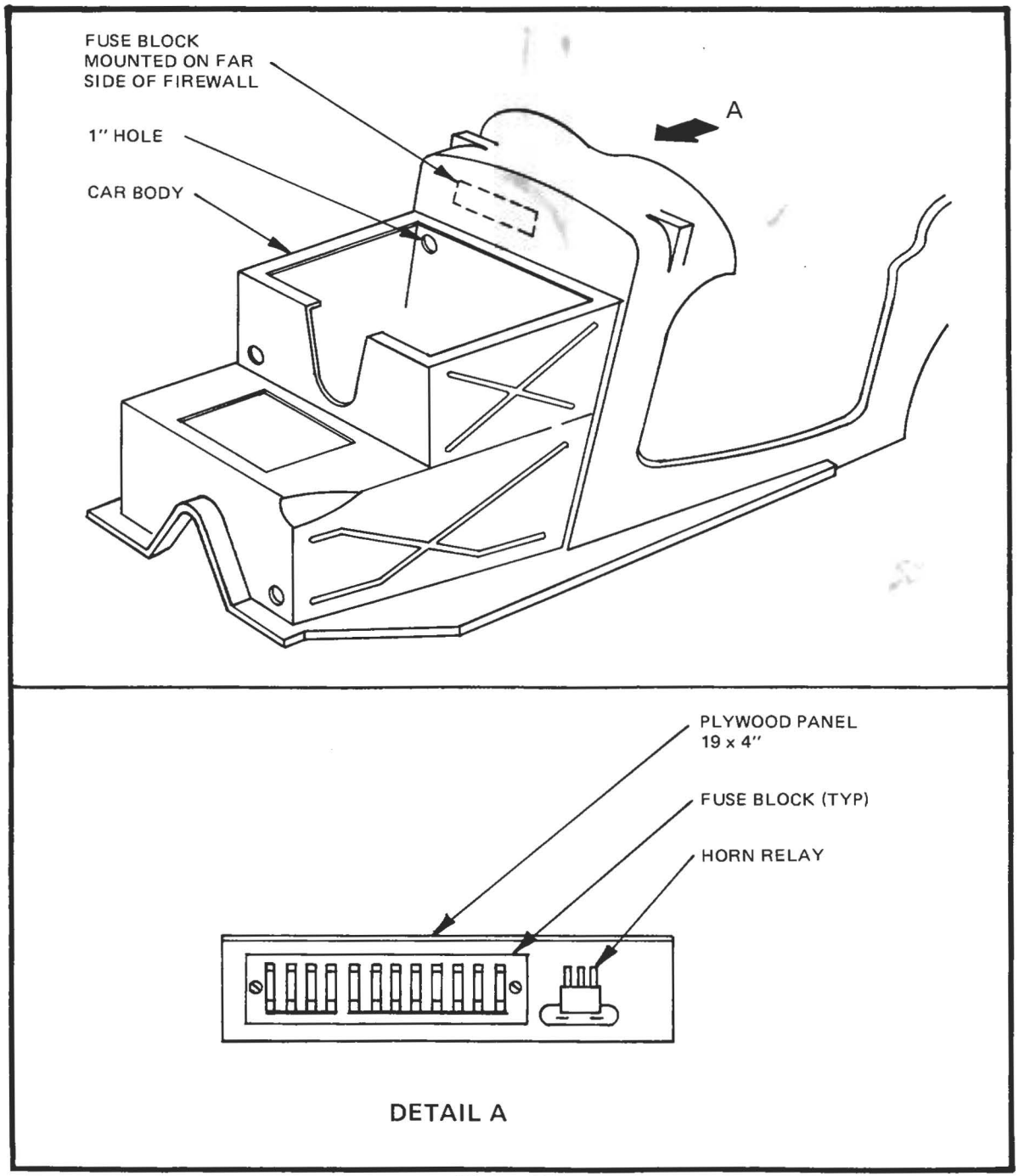


Figure 42

DASH BOARD AND WIRING HARNESS

- ☐ Wire dash board with all gauges as indicated in "Appendix C" of this manual. Connections to the main harness and fuse block should terminate on the passenger side. (Refer to Figure 42)

- ☐ Mount fuse block and horn relay on a piece of plywood (19 x 4"). (Figure 42A) Bolt to upper firewall on passenger side of car.

- ☐ Battery cables, front running lights, horns, and gas tank leads should enter the gas tank area via the 1" hole on the right side of the car. Connections in the trunk area are as follows:

- ☐ Battery cables to battery. Remove negative cable from harness and secure to frame with a self-tapping screw. Gas tank lead to tank. Front running lights and horns down and out of holes in front of body.

- ☐ On the inside of the firewall, next to the steering column, you will have the connections to the steering column, the fuse block and the instrument harness.

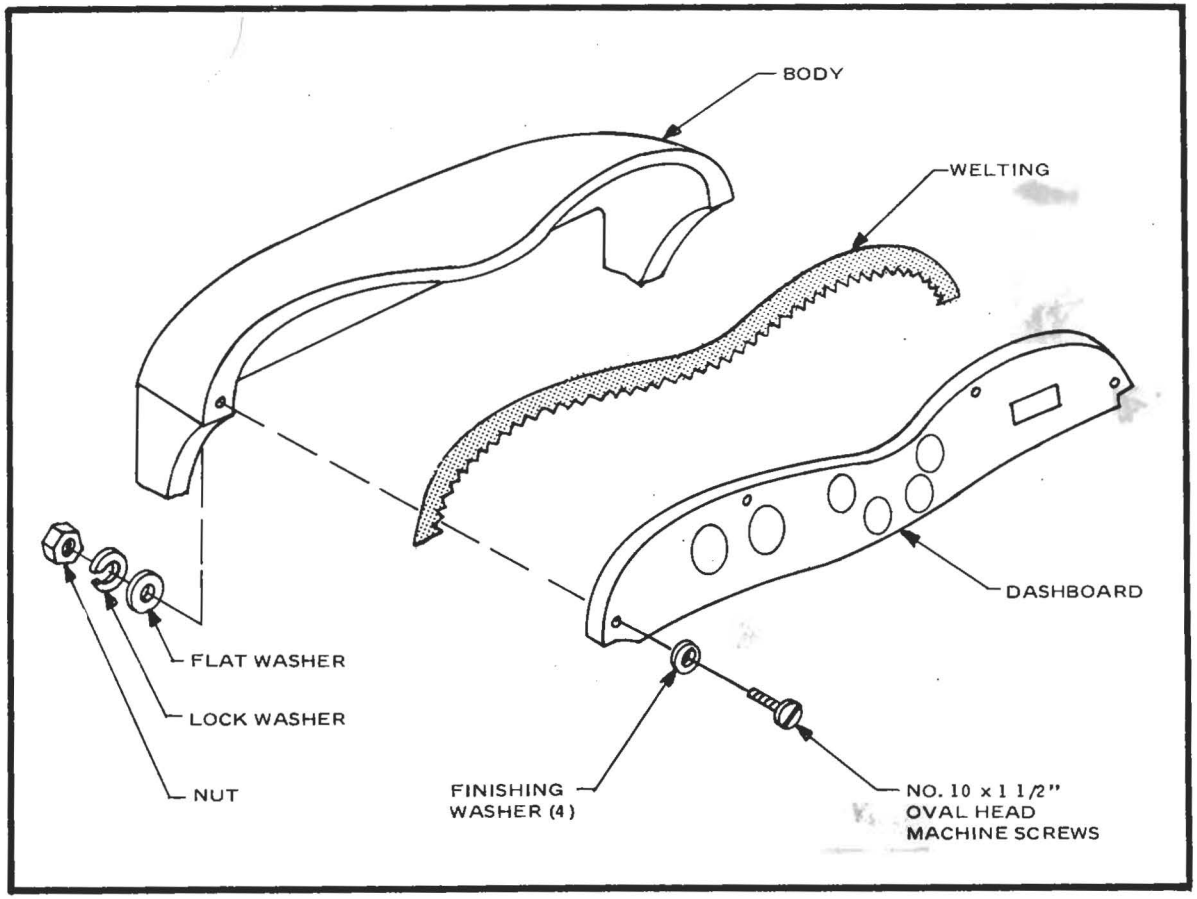


Figure 43

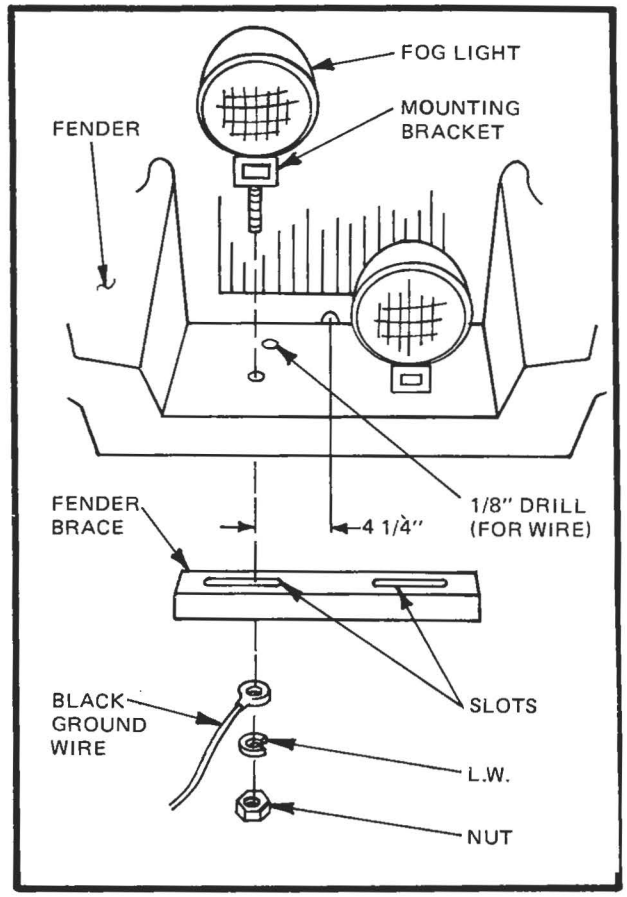


Figure 44

☐ The remainder of the harness is routed under the passenger door to the back of the car, through the 1 1/2" hole in the rear of the body. This supplies rear lights, starter and all engine connections.

☐ Align the dashboard with the body. Drill 4 holes, 3/16", appproximately at the locations shown. (Figure 43) Bolt in place using No. 10 x 1 1/2" machine screws with finishing washer, flat washer, lock washer and nut. Do not tighten all the way. Cut a piece of welting to length and insert between dash and body, notching where necessary to prevent kinks. Tighten bolts.

FOG LIGHTS (OPTIONAL)

☐ Locate each fog light approximately as shown. (Figure 44) Drill a 3/8" hole up through the slots in the fender brace at the marked location. Position fog lights in the holes. Drill a 1/8" hole directly behind the mounting bracket and push the attached wire through. Where the mounting bolt projects through the fender brace, attach the black ground wire from the harness and secure with fog light hardware.

STEERING COLUMN

- ☐ Measure 7" over from left body side and 3" down from the top of the gas tank opening on the firewall. Drill a 3" hole for steering column.
- ☐ (Refer to Figure 45). Fabricate a bushing to keep the steering column centered in its casing. Use dimensions shown. (A nylon pulley wheel, available in a marine supply house works well as basic shape.) Cut completed bushing in half and slip into casing. Secure with self-tapping screws through casing.
- ☐ Remove fitting from coupling disk at steering box.

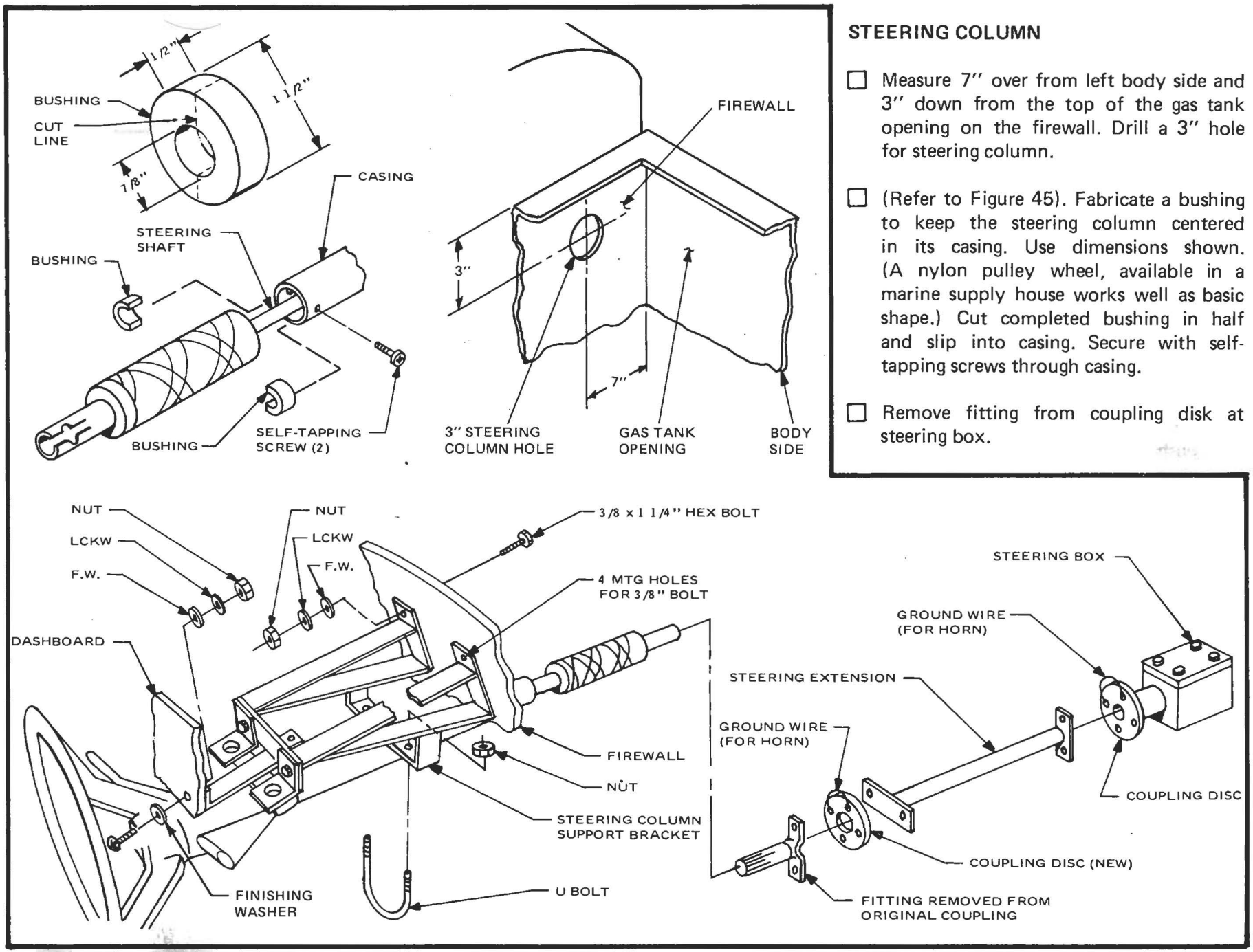


Figure 45

STEERING COLUMN (Con't)

☐ Attach steering extension to coupling disk at steering box. Bolt the fitting removed above onto new coupling disk purchased from a VW dealer (Part No. 111 415 417). Secure with 5/16 x 1 1/2" bolts, lock washers and nut.

☐ Attach new coupling disk to end of steering extension. Secure with 5/16 x 1 1/2" bolts, lockwashers and nut.

☐ Assemble the steering column into the support bracket. (Figure 45) Finger tighten all bolts.

☐ Slide steering column through hole in the firewall and secure to extension. Push support bracket against upper part of firewall on the body. Also push it upwards until flat part of steering column contacts dashboard. (Figure 45) Mark the location of the four mounting holes on the body. Remove column and drill through (3/8"). Reinsert column and bolt to firewall using 3/8 x 1 1/4" bolts, flat washers, lock washers and nuts. Slide dashboard brace against dash and drill 3/16" hole 1" above column, through dash and bracket. Bolt with No. 10 x 1 1/4" oval head machine screw with finishing washer, flat washer, lock washer and nut. Tighten all bolts.

SPEEDOMETER CABLE (Refer to Fig. 46)

☐ Obtain VW speedometer cable No. 211 957 801E from a VW dealer.

☐ 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 from left front wheel up through steering column mounting hole. Attach to speedometer.

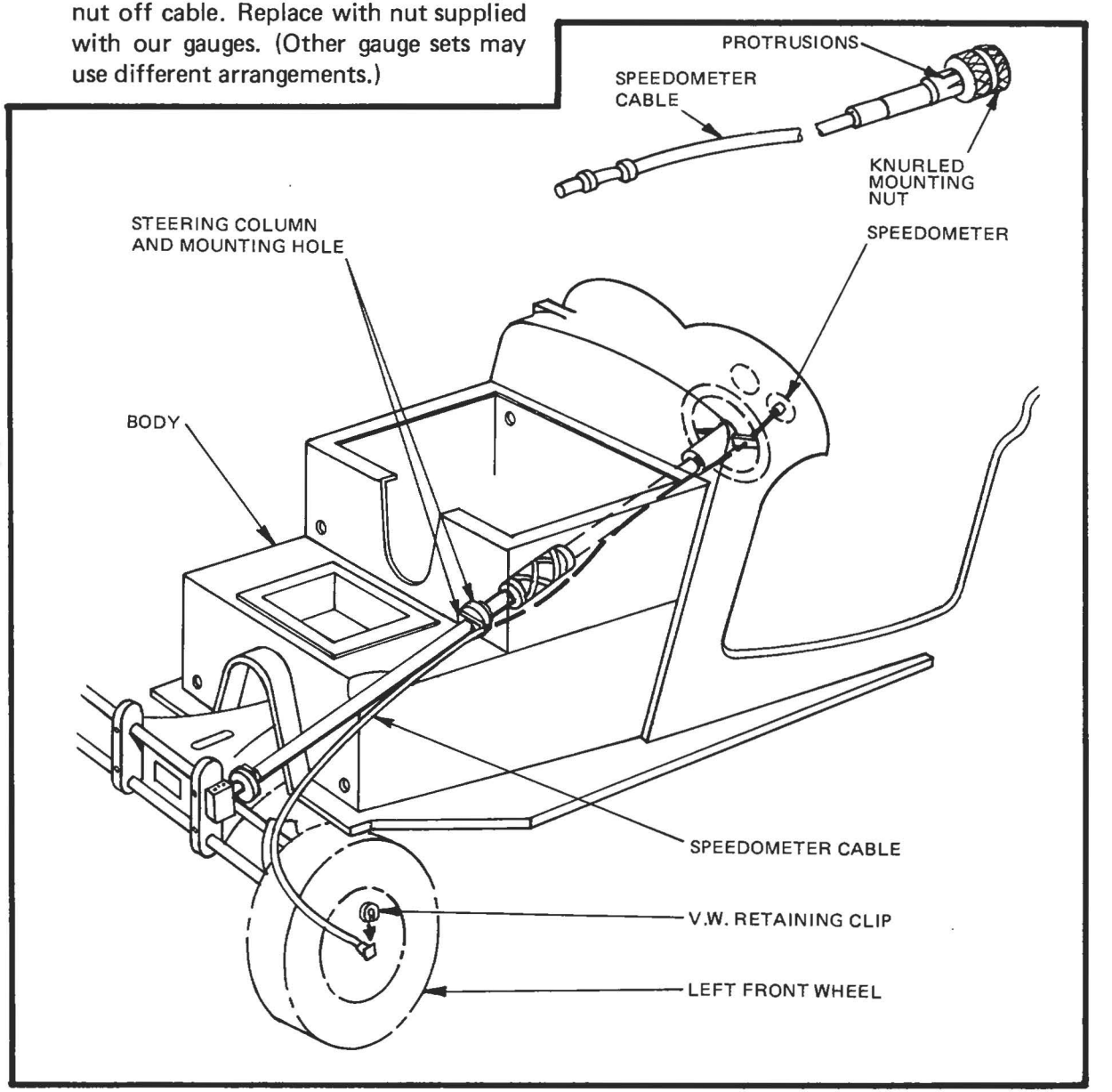


Figure 46

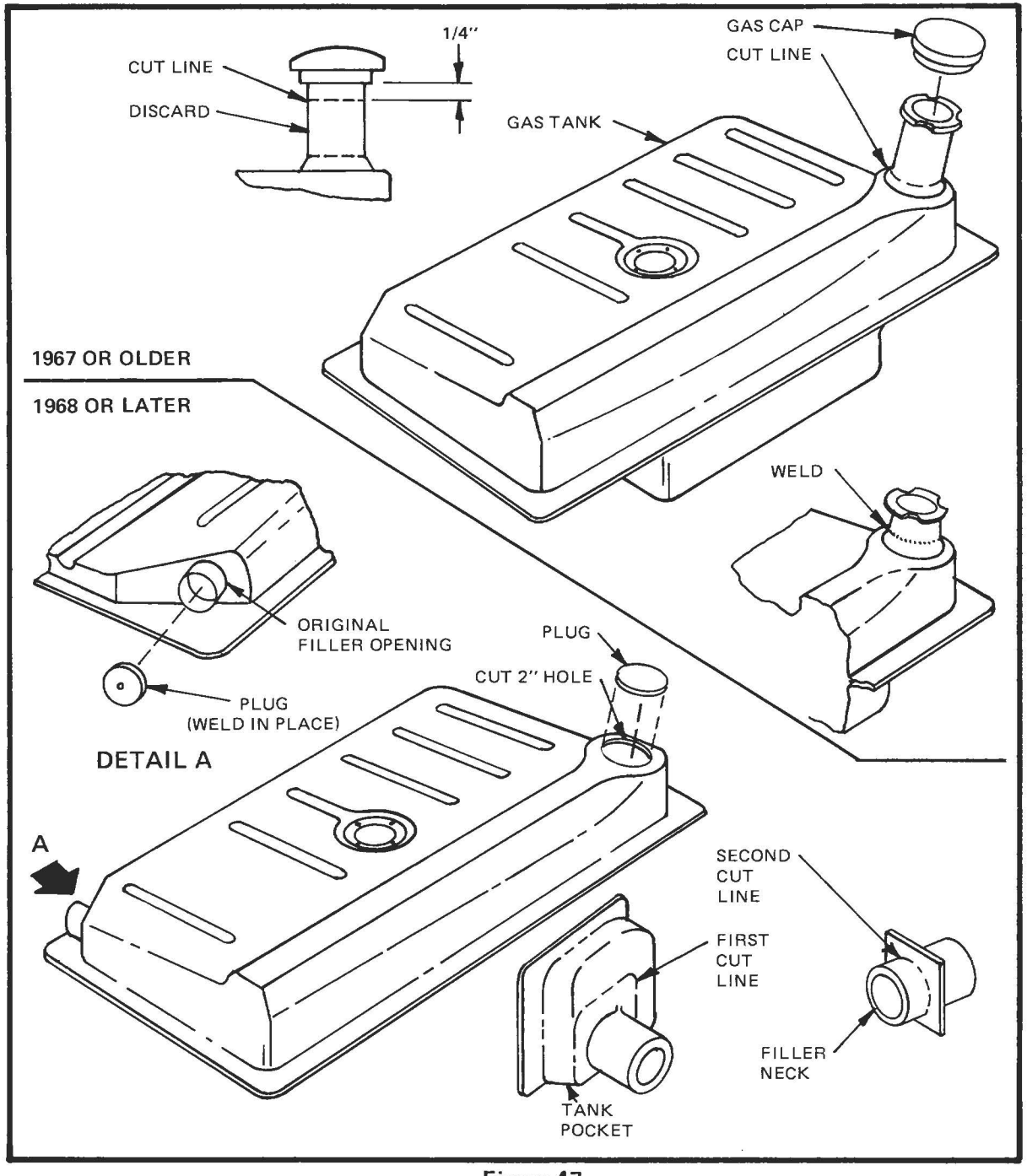


Figure 47

GAS TANK MODIFICATION

The VW gas tank will have to be modified for use on the Replica. For 1961-67 fuel tanks the filler spout must be shortened. For 1968 or newer tanks, the filler must be moved to the opposite corner. Super Beetle tanks cannot be used.

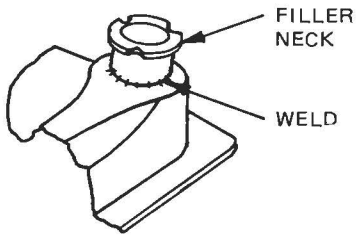
Before performing any modifications do the following:

- ☐ 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 as short as possible. Weld shortened filler neck back onto tank.

  NOTE: We recommend that this procedure be done by a shop that is experienced in welding 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 so that only 1/4" remains below the weld that holds the cap end to the filler neck. Weld onto the tank over the hole just cut.



GAS TANK INSTALLATION

- ☐ Plug original filler hole with 2" plug saved from opposite corner of tank. Weld in place. Weld shut all other breather openings. Install a vented cap.
- ☐ Attach a length of neoprene gas hose to bottom of tank and secure with a hose clamp.
- ☐ Set gas tank liner into body and drill 3 holes, 3/16", on each side of liner into body and 3 holes, 3/16", above front flange. Apply silicone sealant between liner and body and secure with 1/4 x 3/4" hex washer head self-tapping screws.
- ☐ Apply silicone to bottom of gas tank flange and set in place. Position original tank retainers on sides of tank and drill into fiberglass (3/16" drill bit). Secure with 1/4 x 3/4" hex washer head self-tapping screws.
- ☐ Install fuel sender into tank and bolt down. (Sender is packed with optional gauges.)

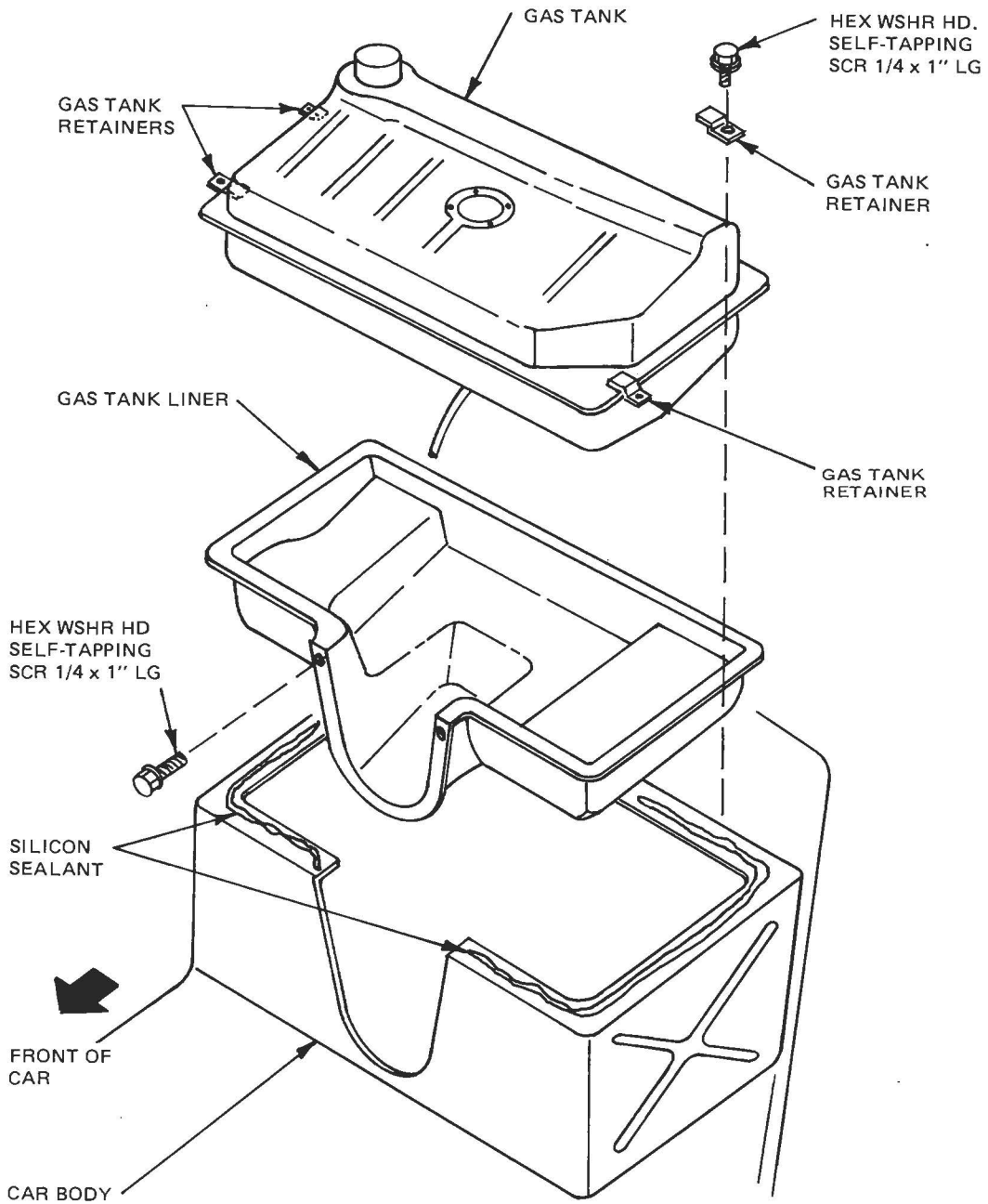


Figure 48

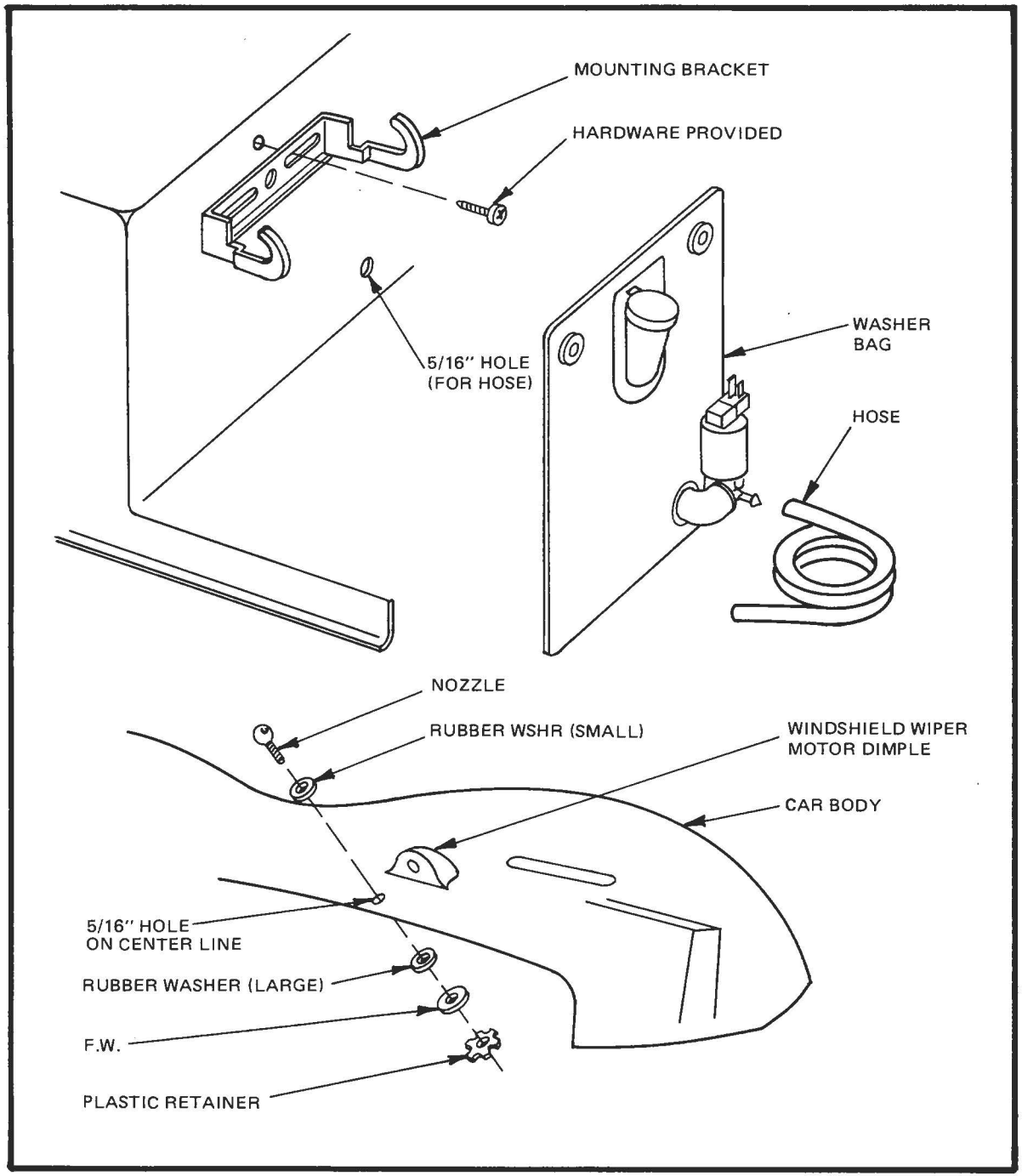


Figure 49

WINDSHIELD WASHER (OPTIONAL)

- ☐ Attach windshield washer bracket to body in front of gas tank on passenger side of car. Use hardware provided with washer.
- ☐ Locate washer nozzles in front of the wiper arms, just to the outside of the dimples. Drill 5/16" holes and mount nozzles, keeping the small gasket on the bottom. Drill a 5/16" hole into the body at the bottom of the washer bag and attach hose. Drill another 5/16" hole into firewall and bring hose thru. Under dash, cut hose and attach "T" connector. Run hoses to each nozzle.
- ☐ Install switch in dash and run a wire from the switch to the positive side of the washer motor. Run a lead from the negative side of the motor to ground.
- ☐ Attach the hot lead from the fuse block to the other post on the switch.

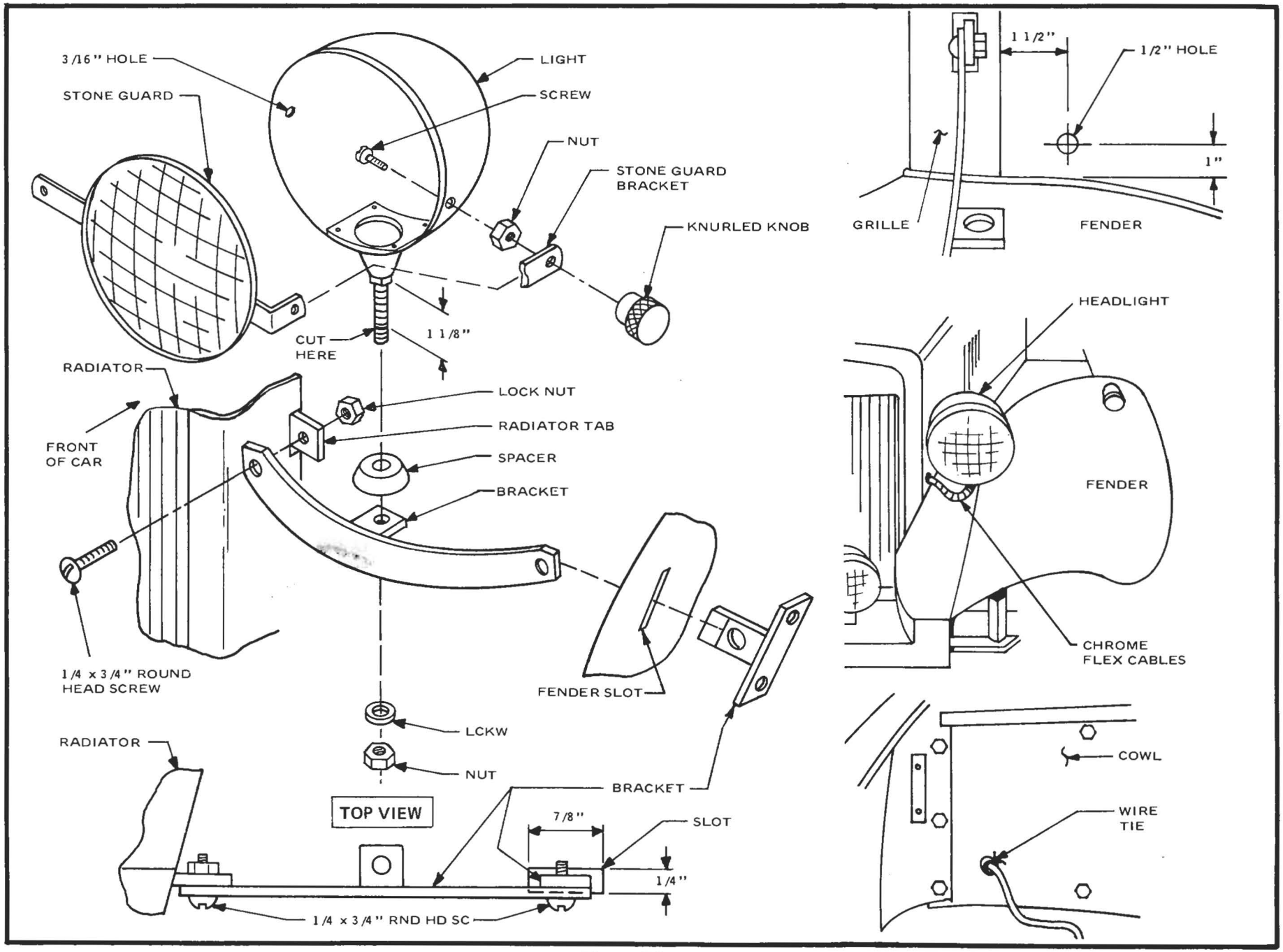

3/16" HOLE
STONE GUARD
LIGHT
SCREW
NUT
STONE GUARD BRACKET
KNURLED KNOB
CUT HERE
1 1/8"
RADIATOR
LOCK NUT
RADIATOR TAB
SPACER
BRACKET
FRONT OF CAR
1/4 x 3/4" ROUND HEAD SCREW
FENDER SLOT
LCKW
NUT
RADIATOR
BRACKET
TOP VIEW
7/8"
SLOT
1/4"
1/4 x 3/4" RND HD SC
1 1/2"
1/2" HOLE
1"
GRILLE
FENDER
HEADLIGHT
FENDER
CHROME FLEX CABLES
COWL
WIRE TIE

Figure 50

HEADLIGHTS

- ☐ Refer to Figure 50 and exploded view for general construction. Position the main headlight brackets against the radiator shell and bolt to the brackets previously installed in the shell. (Headlight mounting tab must face rearward.) Bolt with 1/4 x 3/4" round head; Secure with lock nuts; hand tighten. At this time make sure the fenders sit at the same height. Adjust them by propping with a length of 2 x 4. Mark the location where the bracket contacts the fender. Cut a slot 7/8" x 1/4" so the slot is adjacent to the rear surface of the bracket. Insert the small fender mounted headlight support from beneath the fender, and bolt to bracket, using 1/4 x 3/4" pan head bolt with lock nut. Tighten all bolts. From underneath the fenders, lay fiberglass matting over the bracket and saturate with resin.
- ☐ After resin has set install headlights as shown. If optional chrome flex cables or stone guards are used, modify headlight as follows:
- ☐ Remove knurled knob, nut and small screw from each side of the headlight stone guard. Lay the screening over the headlight, pulling back as tightly as possible. Mark the sides of the headlight through the holes in the two mounting tabs.
- ☐ Remove headlight chrome ring and sealed beam. Pull wires from mounting bolt. For chrome flex cables, cut mounting bolt so that 1 1/8" remains above square shoulder of bolt. File off any burrs inside and outside the mounting bolt.
- ☐ For headlight stone guards, drill each previously marked point with a 3/16" drill. Insert screw from inside and secure with nut on outside. Reassemble headlight.
- ☐ Fix headlight stone guards to headlight sliding holes in mounting tabs over projecting screws from headlight. Secure with knurled knobs.
- ☐ Drill a 1/2" hole, 1 1/2" behind the radiator shell and 1" off the fender. Install headlight. Slide flex cables over wire and push onto mounting bolt. (Epoxy or silicone may be used to retain cable.) Push flex cable through hole in body and secure inside with a plastic wire tie.

WINDSHIELD (Refer to Figure 51)

- ☐ Tape the thin rubber gasket included in the windshield frame kit around the four sides of the windshield. Bend the bottom frame piece of the windshield frame assembly, to match the curve of the windshield glass along the bottom edge.

- ☐ Slide the gasket-lined glass into the frame. Application of a lubricant (e.g., rust penetrant) to the windshield and gasket will facilitate this operation.

- ☐ Place the bottom piece of the frame against the main body, at the point where the frame will be mounted. (Use the raised "mounting pads" on each side of the body as a guide.) Check to see that the bottom frame piece is the same width as the main body at this point. Trim the bottom frame piece by filing if necessary.

- ☐ Slide the bottom edge of the frame onto the main frame, and tap the frame piece lightly into place, with a rubber mallet.

- ☐ Adjust the thin rubber gasket (around the windshield glass) into the frame, so that only one lip folds over the outside of the frame.

- ☐ Press the large rubber gasket onto the bottom of the frame, so that the larger flange is toward the outside of the frame, and the smooth side will mount flush on the main section. The groove or channel along the top and side edges of the frame is where the convertible top and side curtains tuck and secure. This channel MUST FACE FORWARD.

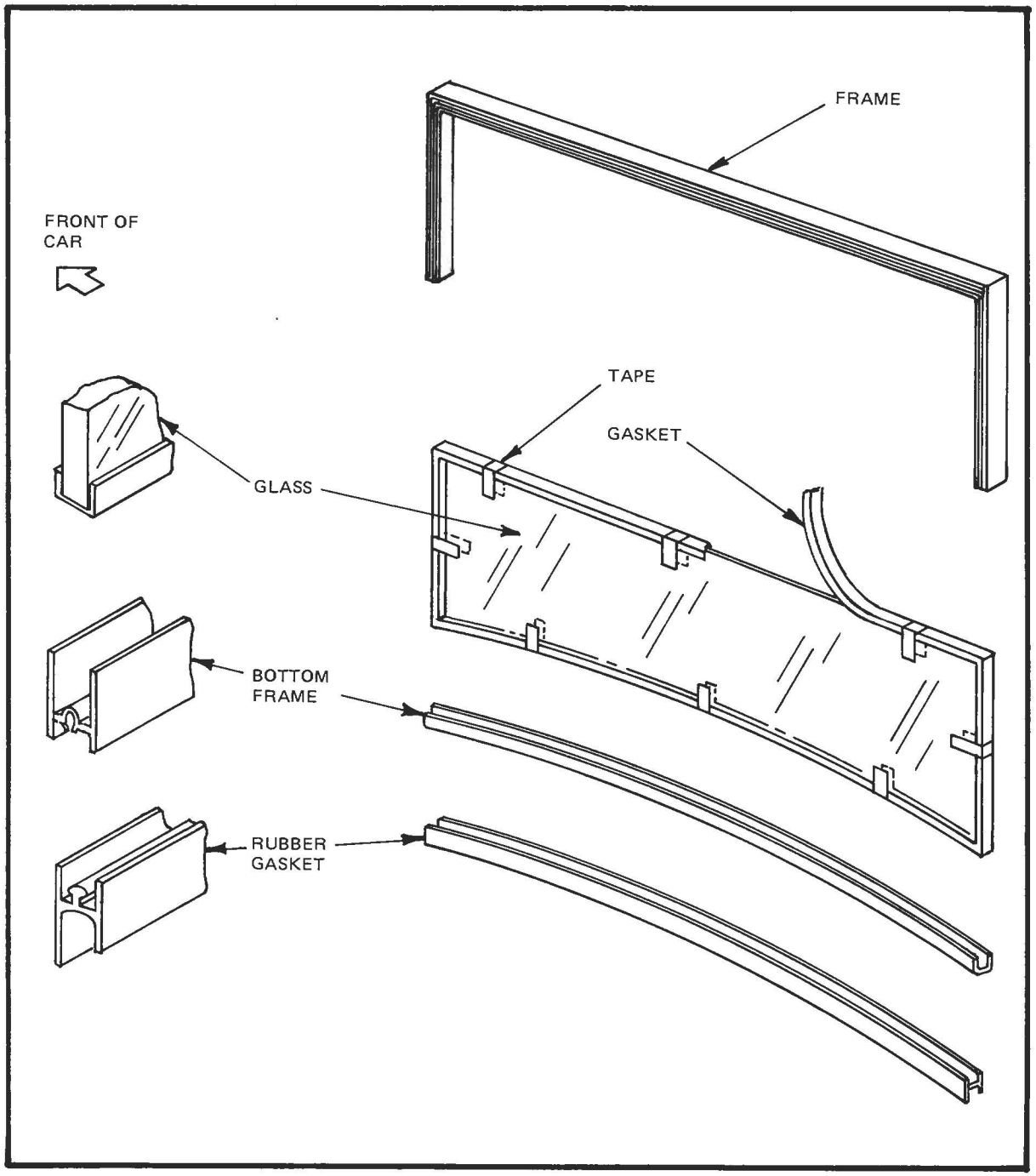


Figure 51

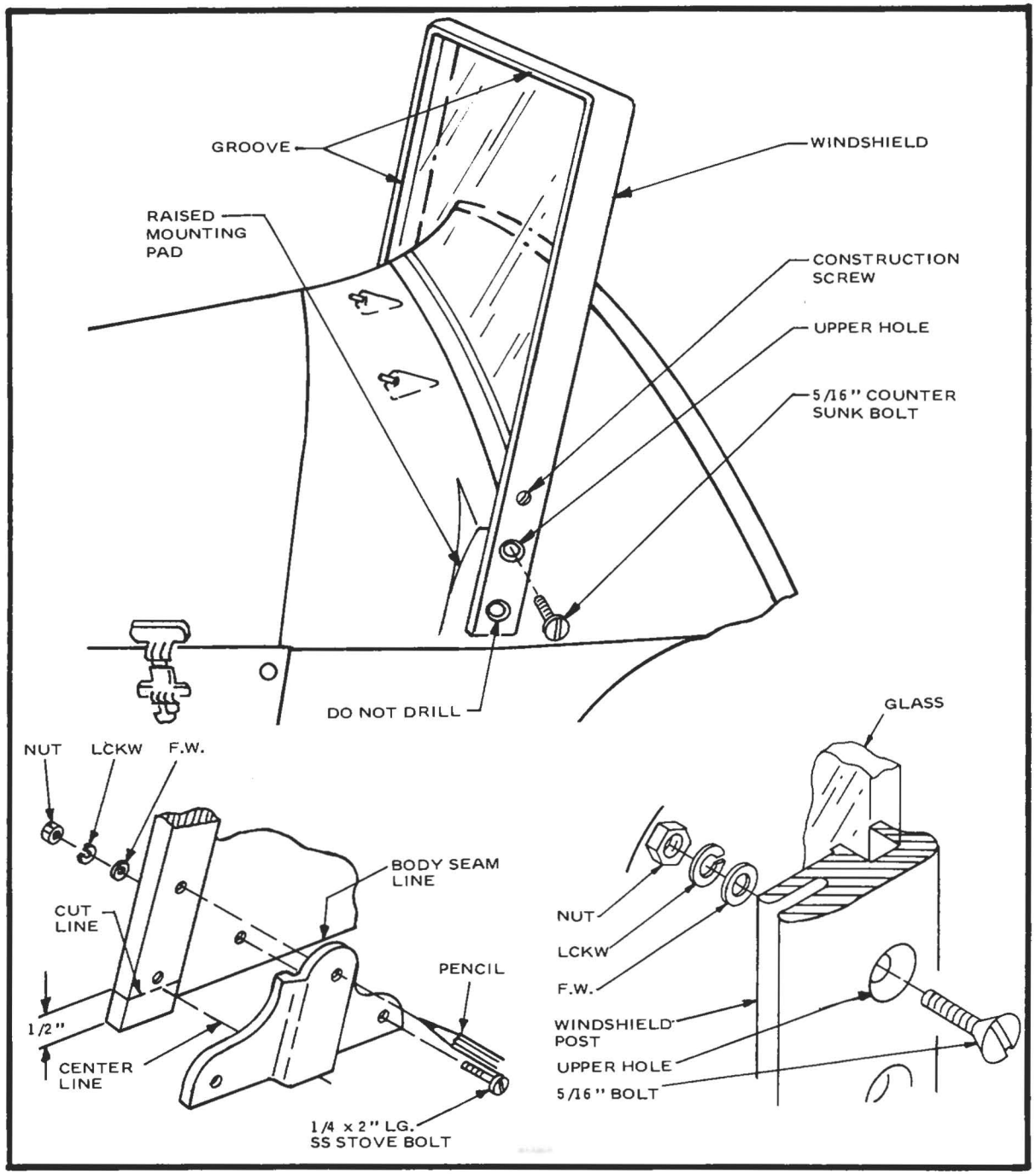


Figure 52

WINDSHIELD (Refer to Figure 52)

☐ Slide windshield over body, centering each side post on the raised mounting pads on the body sides. (Loosen the construction screw on each side of the frame if necessary.) Angle the windshield back so that the angle of the frame matches that of the forward edge of the mounting pad. (Figure 51) The groove in the edge of the windshield must face forward to allow installation of the convertible top.

☐ Mark frame leg at body seam line and cut. If using windshield post end caps, cut off an additional 1/2". If not using end caps drill through frame leg approximately 2 3/4" from bottom of leg. If using end caps, drill 5/16" holes through all dimpled points. Counter sink all holes. Position end cap on frame leg and mark windshield through hole in end cap. Drill 5/16" hole.

☐ Mark fiberglass through upper hole only in frame. (Press down on windshield to insure a water-tight seal.) Drill with 5/16" drill bit. Insert 2 of the bolts supplied and secure with washers and lock nuts. Tighten only enough to draw windshield posts into body. Do not overtighten as glass can crack. Do not install end caps at this time. They will be permanently installed after lower bolts are installed.

BUMPERS - FRONT (Refer to Figure 53)

The front bumper consists of 5 pieces. Two inner supports, two outer brackets (the larger set) and the bumper.

- ☐ Position inner supports on lower torsion tube. (The slotted mounting tabs must face outward.) Align ends of mounting tabs with edges of fiberglass. Hand tighten.

- ☐ Bolt outer brackets to bumper using 3/8 x 1 1/4" chrome carriage bolts with flat lock and nut. (If using optional bumper guards, bolt onto bumper, inserting rubber molding between guard and bumper. Replace innermost bolt with 3/8 x 1 1/2" hex head bolt inserted from the rear.)

- ☐ Measure distance between mounting holes of brackets. Transfer this dimension to lower valance of fenders. Determine correct height of mounting hole by measuring center of inner support mounting tabs. Drill 7/16" hole at marked locations. Bolt to body and bracket using 3/8 x 1 1/2" chrome carriage bolts with flat washer, lock washer and nut. Tighten all bolts.

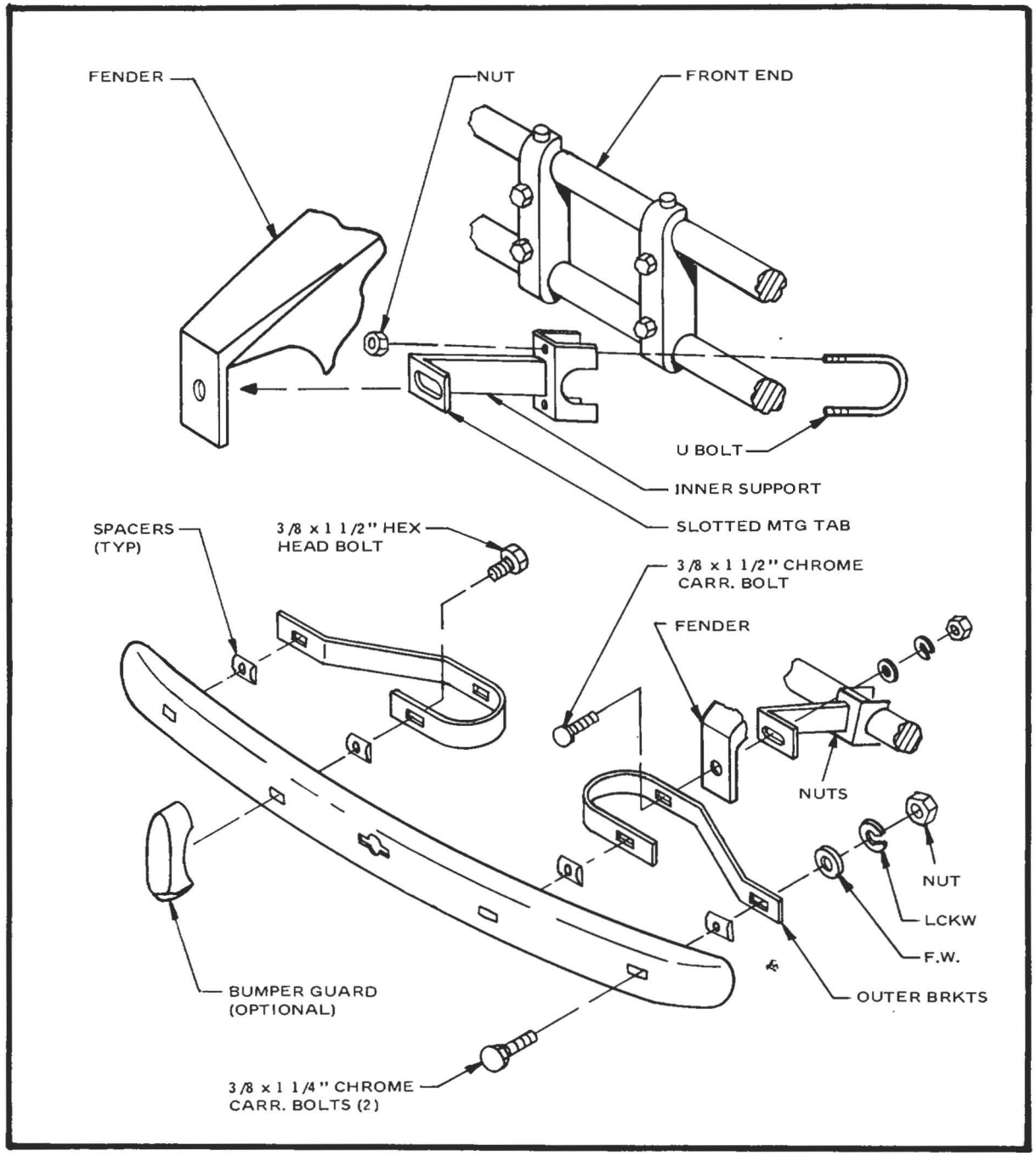


Figure 53

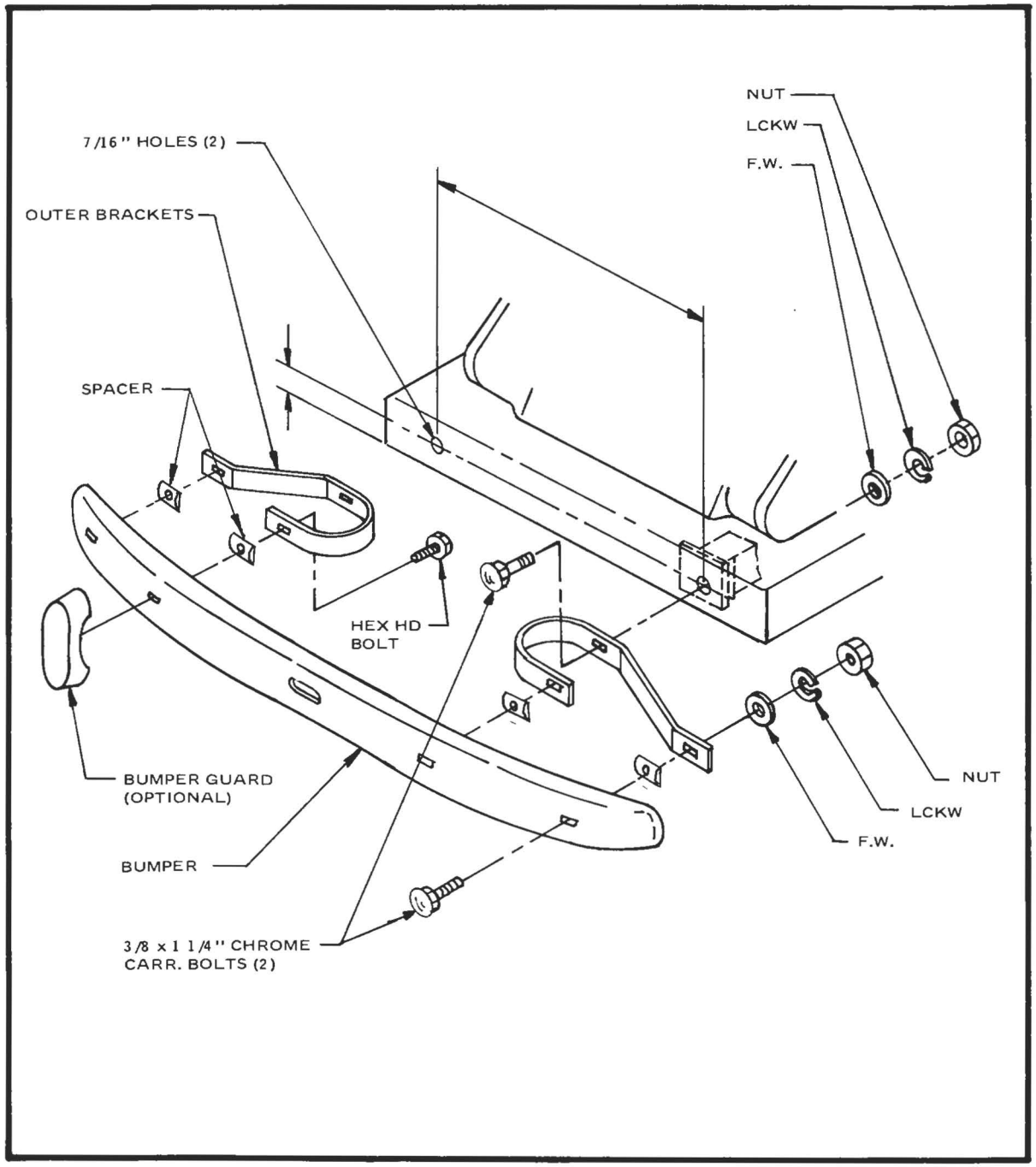


Figure 54

BUMPERS - REAR (Refer to Figure 54)

The rear bumper consists of the two supports installed with the chassis, two outer brackets (the shorter set) and the bumper.

- ☐ Bolt brackets to bumpers using 3/8 x 1 1/4" chrome carriage bolts with flat washer, lock washer and nut. (If using bumper guards bolt onto bumper, inserting rubber molding between guard and bumper. Replace innermost bolt with 3/8 x 1 1/2" hex head bolt inserted from the rear.)

- ☐ Measure distance between mounting holes of brackets. Transfer this dimension to the back of the splash apron. Determine correct height of mounting hole by finding center of mounting tabs under splash apron. Drill 7/16" holes at marked location, through splash apron and inner support. Bolt using 3/8 x 1 1/2" carriage bolt with flat washer, lock washer and nut.

LICENSE LIGHT

- ☐ The license light can be mounted in one of two places; on the engine cover with the bracket supplied or on the bumper. For engine cover mounting, bolt license light to bracket using No. 10 x 1" machine screws with flat washers, lock washer and nut. Line bracket up on left side of engine cover. Measure 4 3/4" back from the body and 8" up from the splash apron. Keep license light perpendicular to ground. Mark and drill 2 holes, 3/16", through holes in bracket. Secure to cover using No. 10 x 1" machine screws with flat washer, lock washer and nut. Run wires (hot and ground) up body and down into cover. (Figure 55A)

- ☐ For bumper mounting, drill two 3/16" holes in license light as indicated. (Figure 55B)

- ☐ Hold light up to bumper over hole in center. Mark through drilled holes onto bumper. Remove and drill in marked location. Secure with 2 No. 10 x 1" machine screws with flat washer, lock washer and nut.

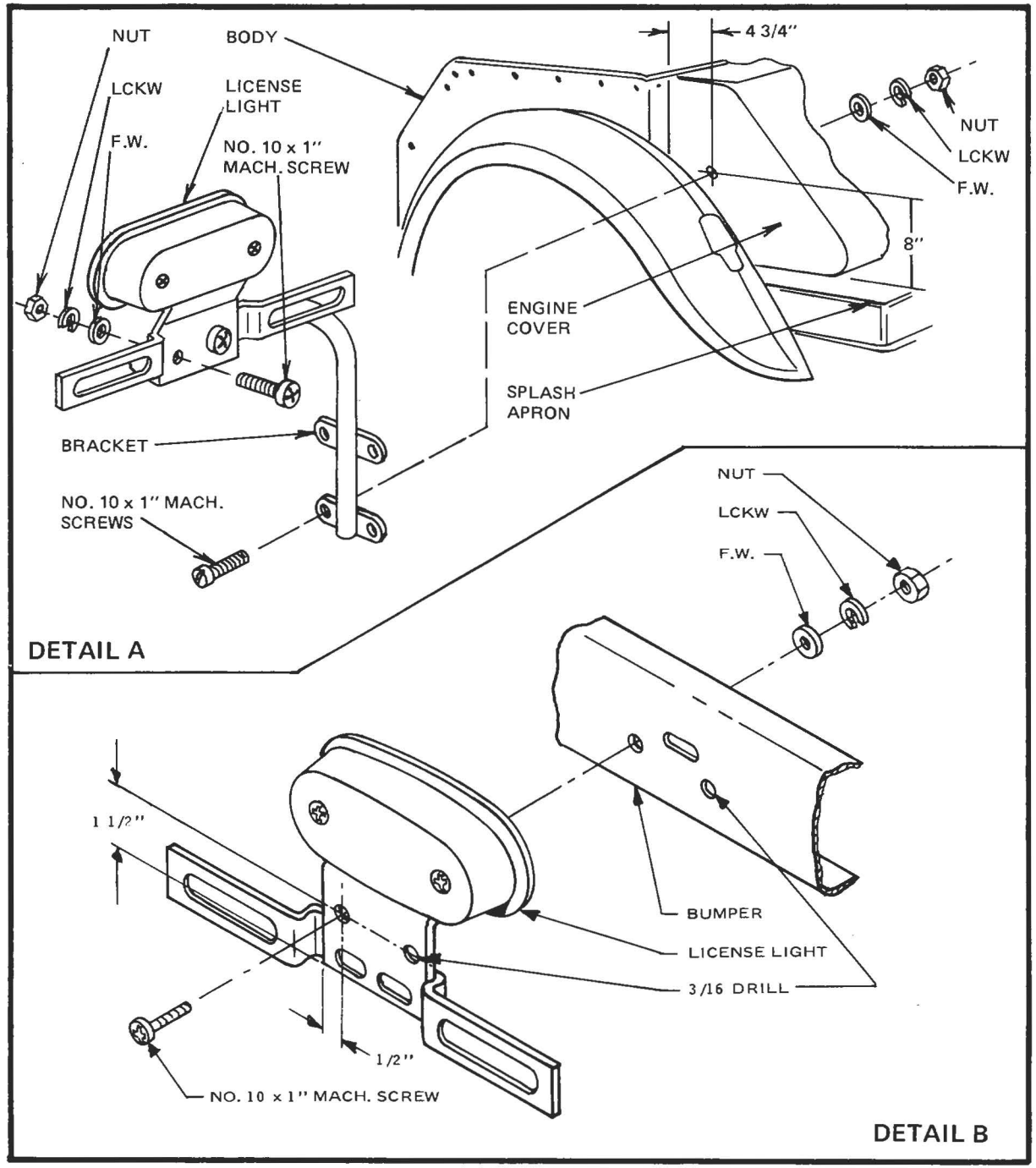


Figure 55

DOORS (Refer to Figure 56)

- ☐ Fit doors to body opening, sanding where necessary for a good fit. Align hinges in slots in door edge. Hinges must face rear of car and have hinge pins pointing upward. (It may be necessary to file slots flat for a precise fit.) Keep back edge of hinges 1/4" from inner edge of door. Mark hole locations and drill 1/4" holes. Bolt to door, using 1/4 x 1" flat head socket screws with flat washer, lock washer and nut.

- ☐ Position door in main body. Space door off door jamb approximately 1/4". Use washers taped to door jamb as spacers. From the inside of the car, scribe a line around the hinge onto the main body. Open door. Align hinges in scribe line just made and mark hole locations. Drill 1/4" holes. Bolt using 1/4 x 1" flat head screws with flat washer, lock washer and nut. (Access to nut is through fender well with a long rachet extension.) An alternate method is to cut two access holes on the body just behind the hinge location. Cut holes as indicated. These holes will be covered later by carpeting. Check for free movement of door. Adjust hinges if necessary.

- ☐ Refer to Figure 57. Temporarily hold upholstery in place and mark location of lock cut out. With door closed, hold lock in position with spring latch con-

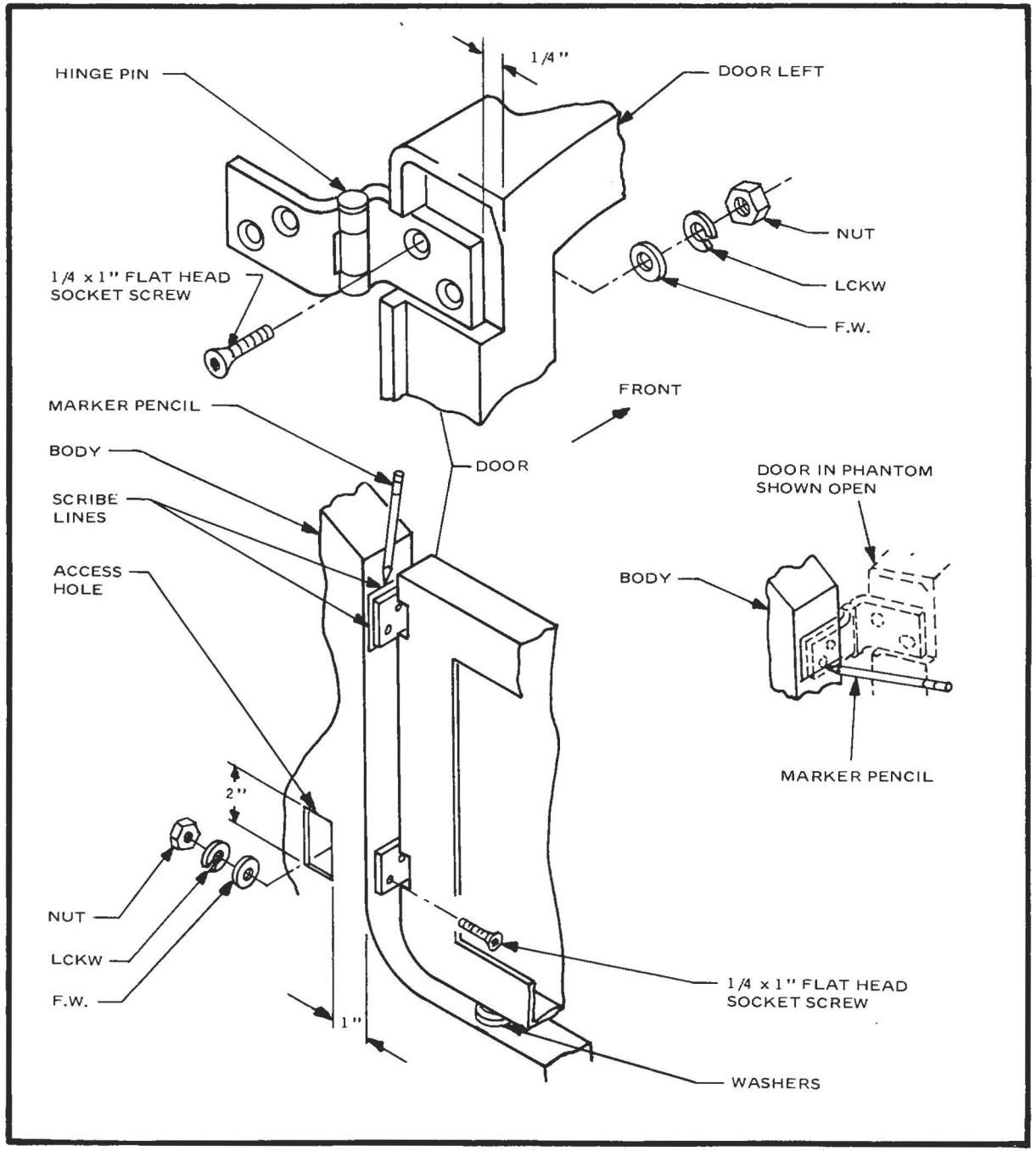


Figure 56

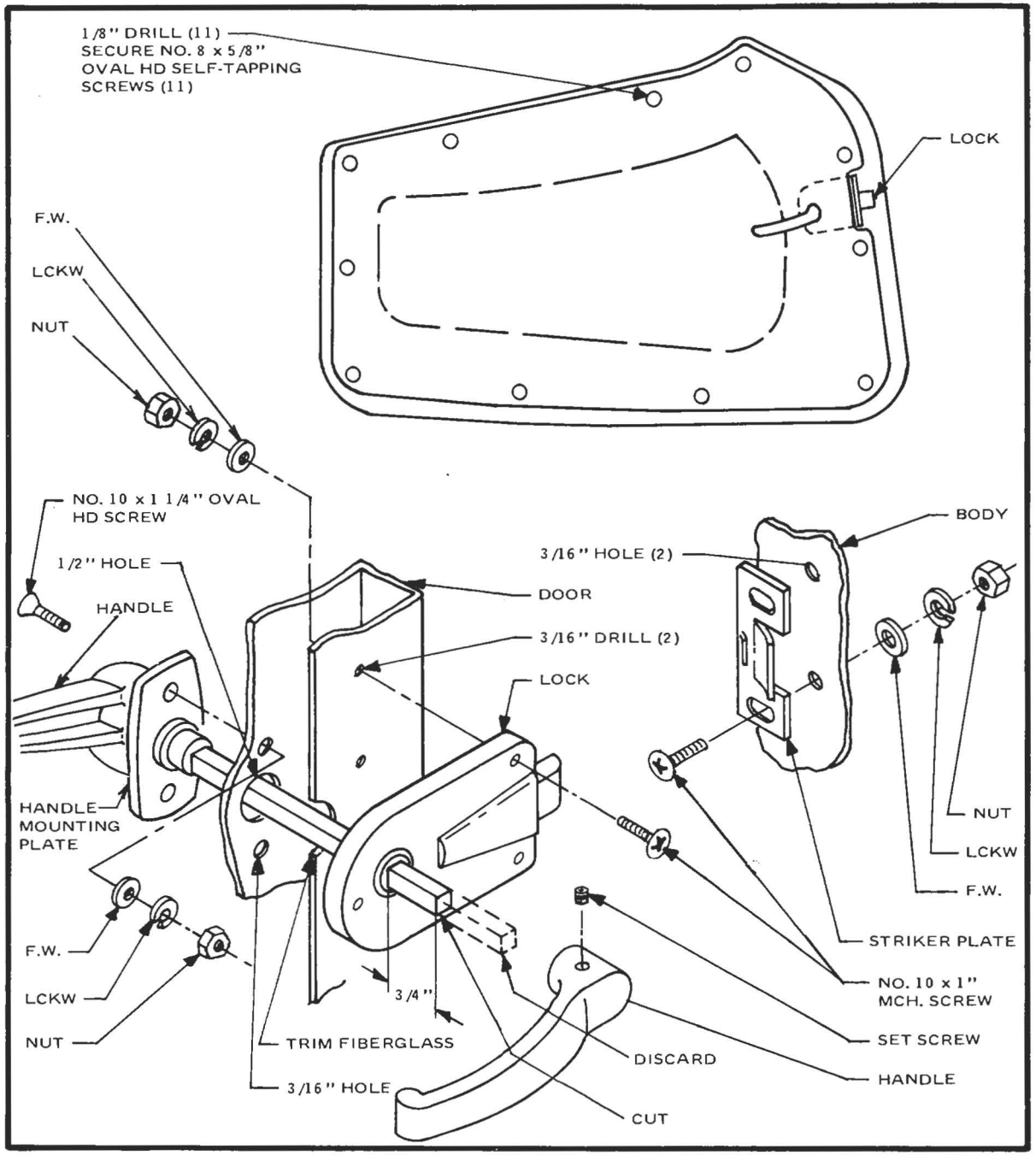


Figure 57

tacting body. Mark holes and drill (3/16" drill bit). It may be necessary to cut away some of the inner door to allow the lock to seat flush. Bolt with No. 10 x 1" oval head machine screws with flat washer, lockwasher and nut.

☐ Using a 5/16" drill bit, drill through operating hole of latch mechanism into door. Enlarge hole to 1/2". Slide handle through door and lock. Measure 3/4" from the lock on the handle shaft. Mark and cut. Position handle mounting plate straight up and down and mark holes. Drill 3/16" holes. Secure with No. 10 x 1 1/4" oval head machine screw with flat washer, lock washer and nut.

☐ Install pre-upholstered door panels on door. Where handle shaft protrudes cut a small hole in upholstery (cut hole smaller than shaft). Align panel on door and drill 1/8" pilot holes at approximate places indicated. (Pull panel tight on each side of lock.) Secure with 11 No. 8 x 5/8" oval head self-tapping screws with finishing washers. Position striker plates in door opening. Drill 2 holes, 3/16". Secure with No. 10 x 1" machine screws with flat washer, lock washer and nut. Adjust plate for tight fit when door is closed. It may be necessary to grind down striker plate to allow it to fit. Do not attempt to bend striker to achieve a fit.

CARPETING

Carpeting consists of 10 pieces: (Figure 58)

- ☐ 2 rear wheel hump covers
  1 rear section
  1 tunnel section
  1 right side section
  1 left side section
  1 firewall section
  2 floor sections

- ☐ The first pieces to be installed are the wheel hump sections. (Figure 59A) Using spray glue or contact cement, glue the section in place, notching where necessary to allow it to lay flat.

  NOTE: Carpet edges that are not finished are designed to be covered by other sections.

- ☐ Fit the rear section in place. Align side edges with wheel humps and rear with top of body. (Figure 59B) Glue in place, spreading glue on back and bottom of body. Do not glue corners or part of carpet that covers rear body support. They will be glued in a later step.

- ☐ Fit tunnel section in place, cutting out holes for shifter and emergency brake.

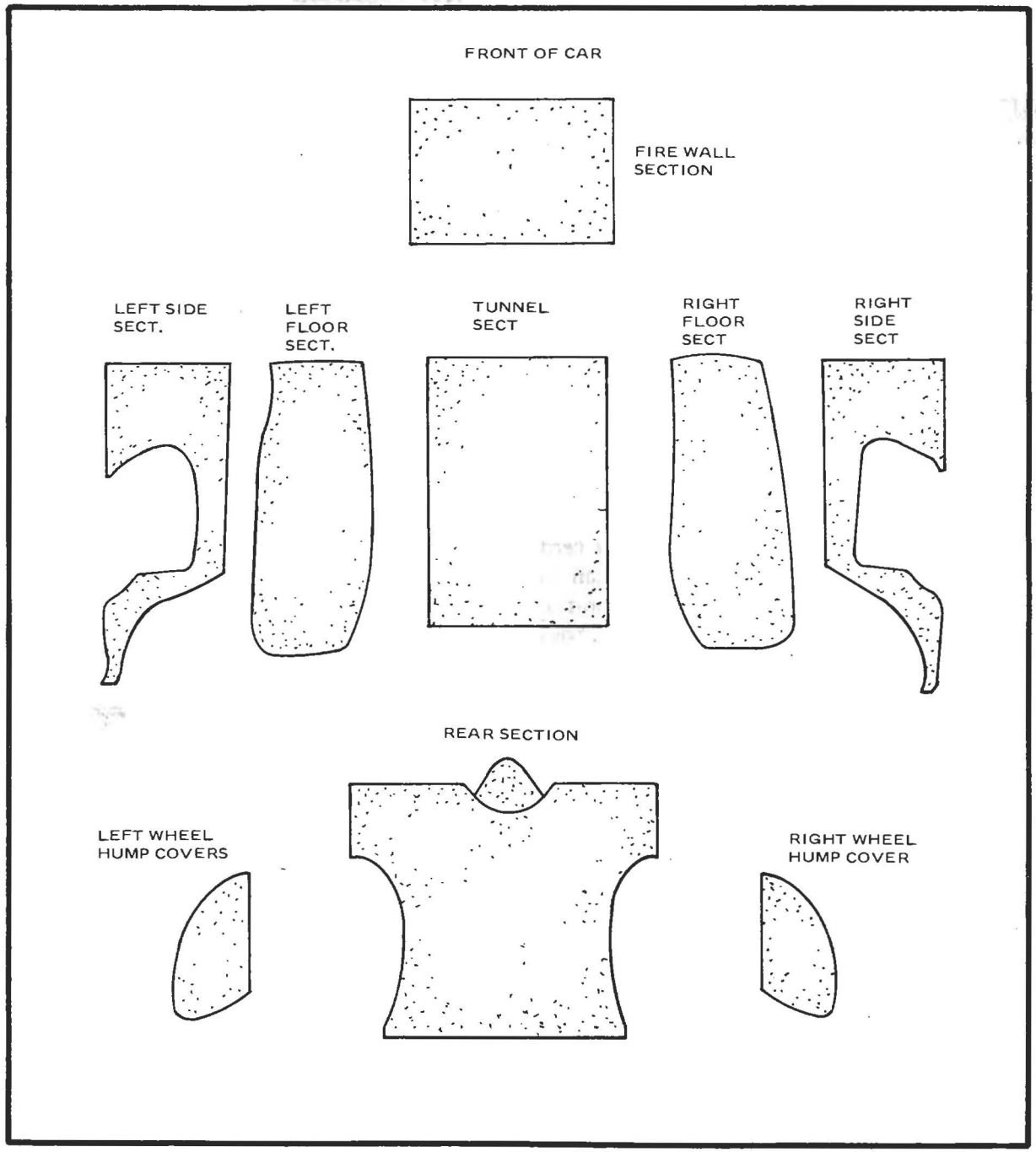


Figure 58

CARPETING (Con't)

- ☐ Run rear of carpet onto lower body. Cut out an opening for the rear access hole. (This opening will be covered by a flap on the rear section.)
- ☐ Glue down remaining part of rear section to rear body support.
- ☐ Fit firewall section in place. Notch out as necessary to clear tunnel and pedals. Glue in place.
- ☐ Side sections fit around the door openings, extend forward to the fire wall and back over the wheel hump. They must be mounted on a piece of heavy cardboard or paneling before they can be installed. This is due to the configuration of the body around the doors. As a basic pattern cut a piece of cardboard to the sizes indicated. (Figure 59)
- ☐ Fit into car, trimming as necessary, to obtain a tight fit against fire wall and as flush a fit as possible against floor pan. A precision fit is not necessary as the carpet will run off the cardboard and be covered by the floor section.
- ☐ When a good fit is obtained, trace the outline of the door opening onto the cardboard.

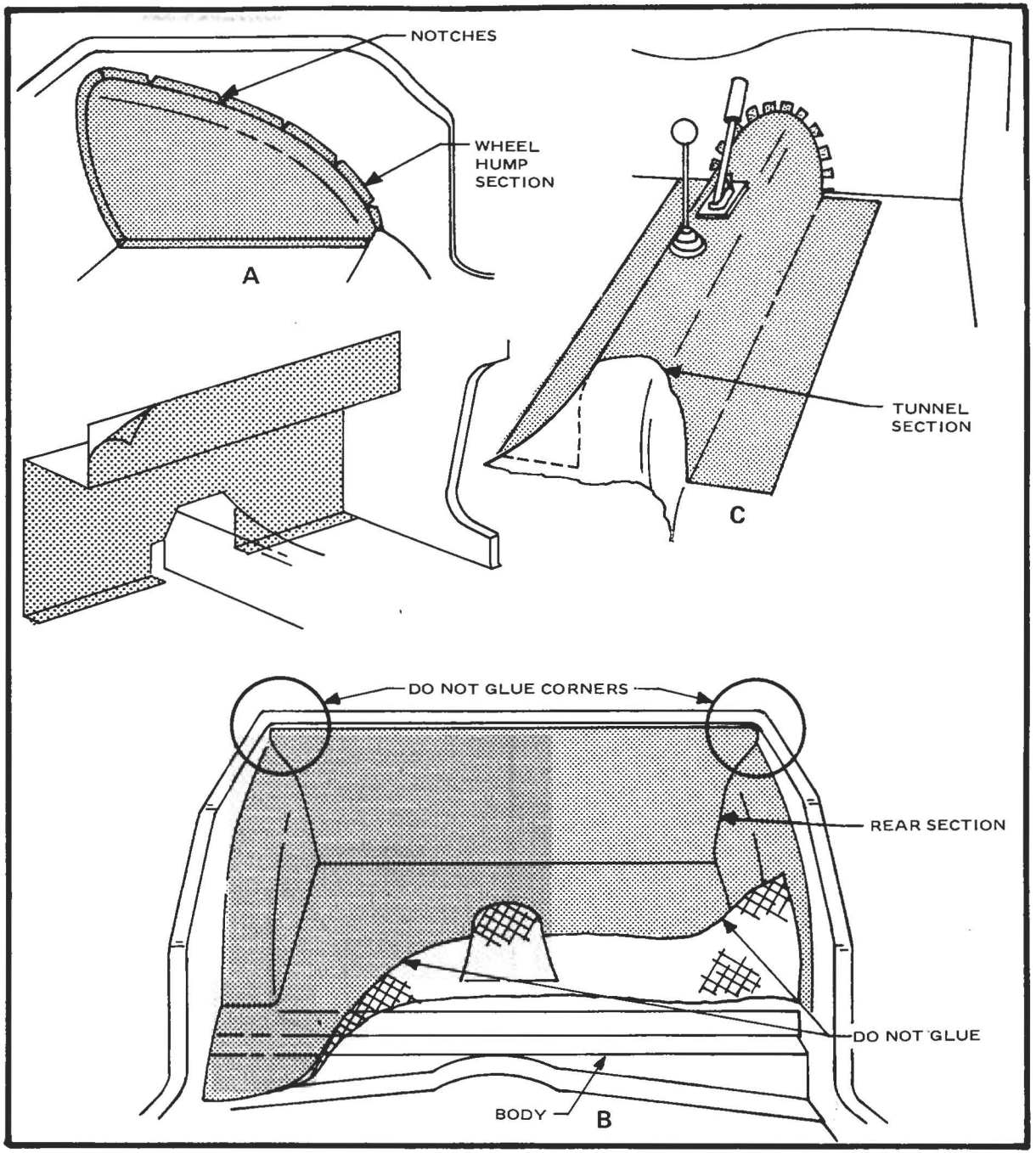


Figure 59

CARPETING (Con't)

- ☐ Install completed panels in car, carefully aligning the padded piping with the door opening. Keep all wiring under the panels (speaker wire, harness cable) and against the body, trying to keep it in the hollow spaces under the doors. Using No. 8 x 5/8" chrome phillips self-tapping screws with attached finishing washer, secure panel to car around door opening (approximately 5" apart). Allow excess carpet on bottom to extend onto floor pan.

- ☐ Using spray glue or contact cement, attach rear part of side panel to car. In the rear corners glue ends of side section under corners from rear section. Secure with No. 8 x 5/8" chrome phillips self-tapping screw and finishing washer. See Detail.

- ☐ Fit floor sections into car aligning the finished edges with the contours of the pan. Make sure all unfinished edges of the other sections are lying flat on the pan to ensure a finished appearance. Using spray glue or contact cement, attach to floor pan.

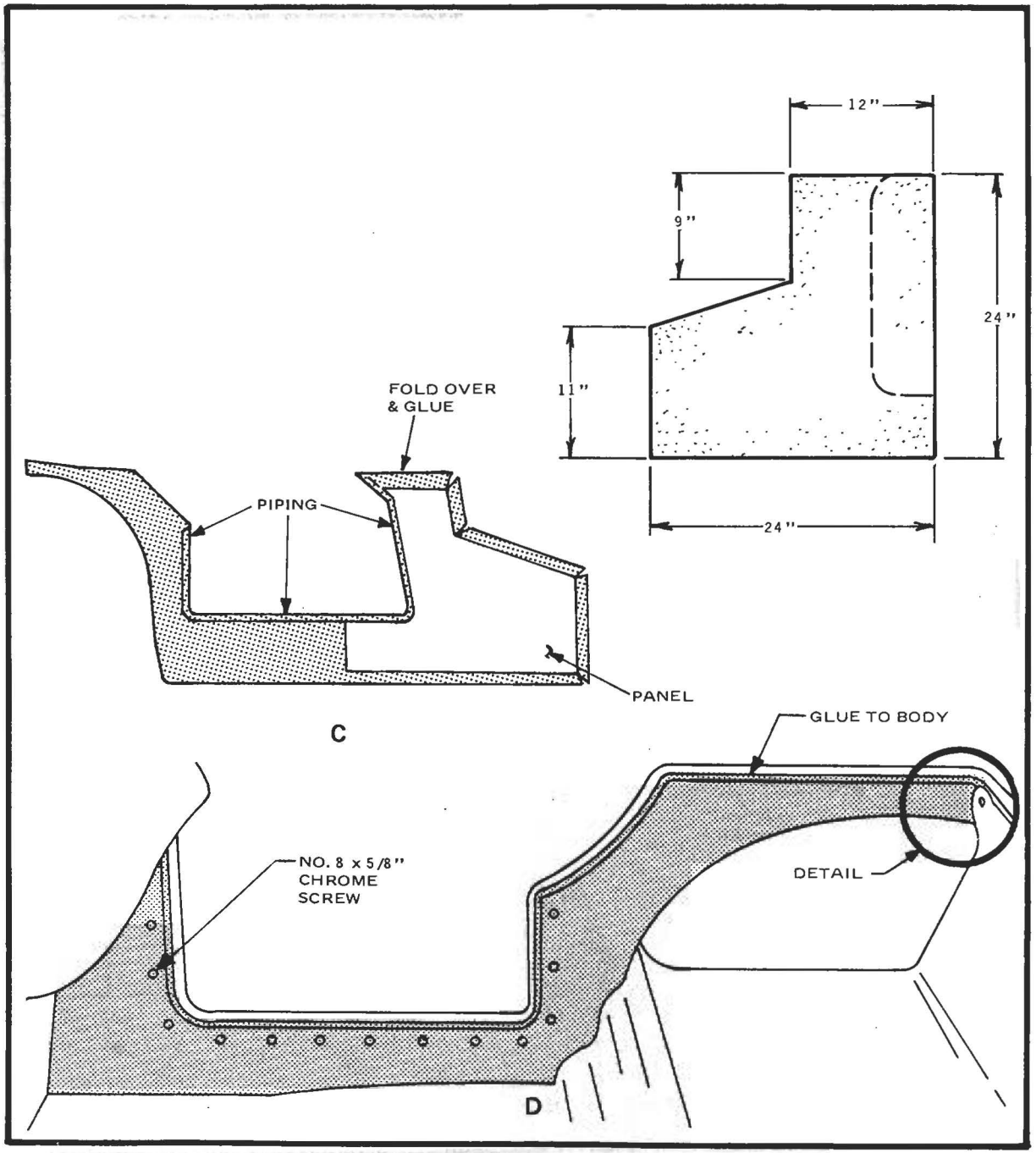


Figure 60

SEAT BASE CONSTRUCTION

☐ Lay upholstered cushion, plywood side up on a table with the angle cut corner at the top as shown. Trim the seat bases as shown. (Figure 61) If installing speakers and heater, cut opening on front of seat base as shown. Paint seat bases black, inside and out. Align seat base on cushion, keeping cut end of base flush with plywood of cushion. Center from left to right.

☐ Align closed hinges on edge of flange, even with edge of fiberglass. Mark hole locations on fiberglass. Remove hinges and drill through fiberglass and into plywood (1/8" drill). Remove fiberglass base and enlarge holes in fiberglass to 3/16". Secure hinges to base using No. 10 x 5/8" flat head m/s. Secure to cushion using No. 10 x 5/8" flat head self-tapping screws.

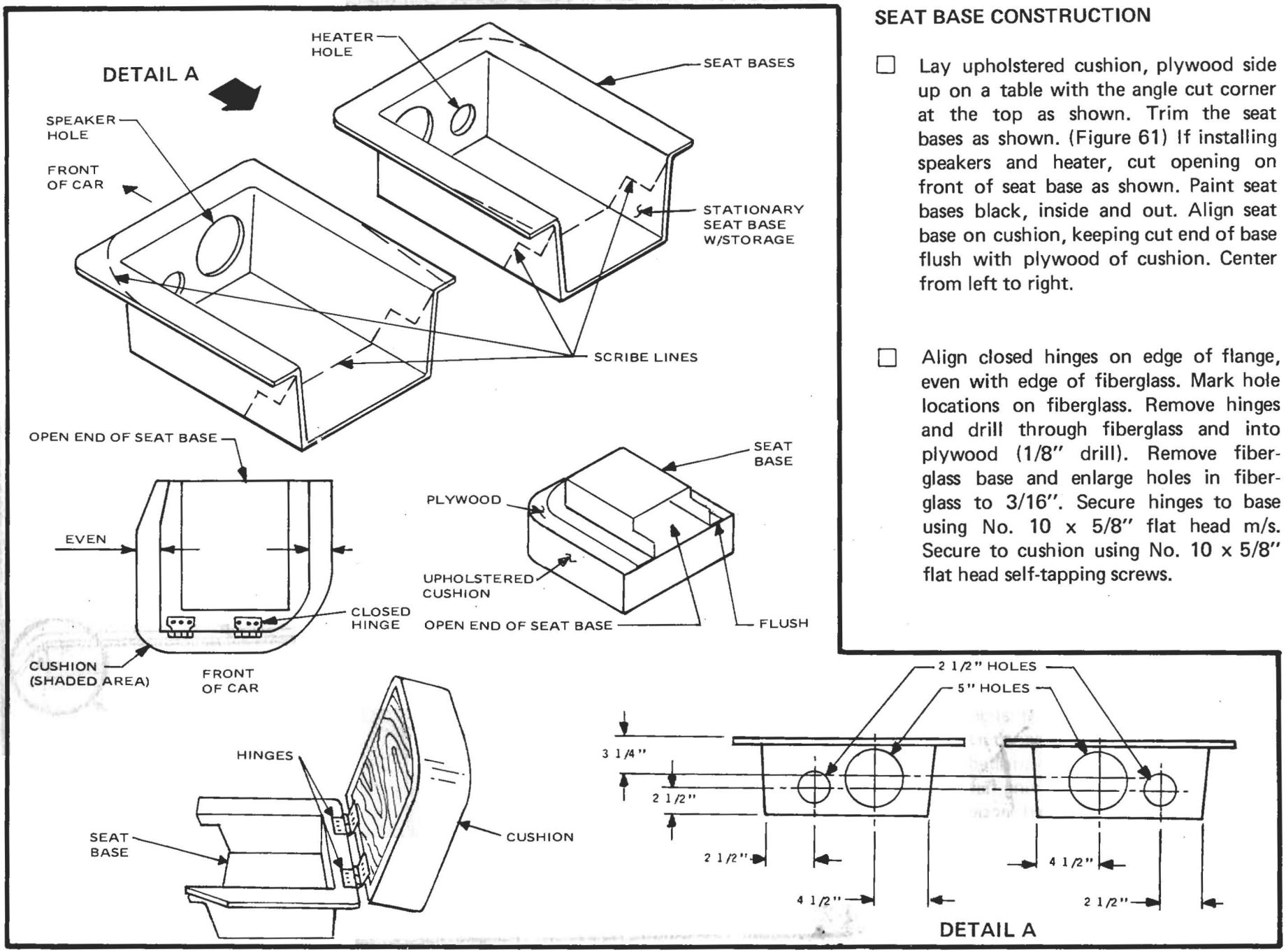


Figure 61

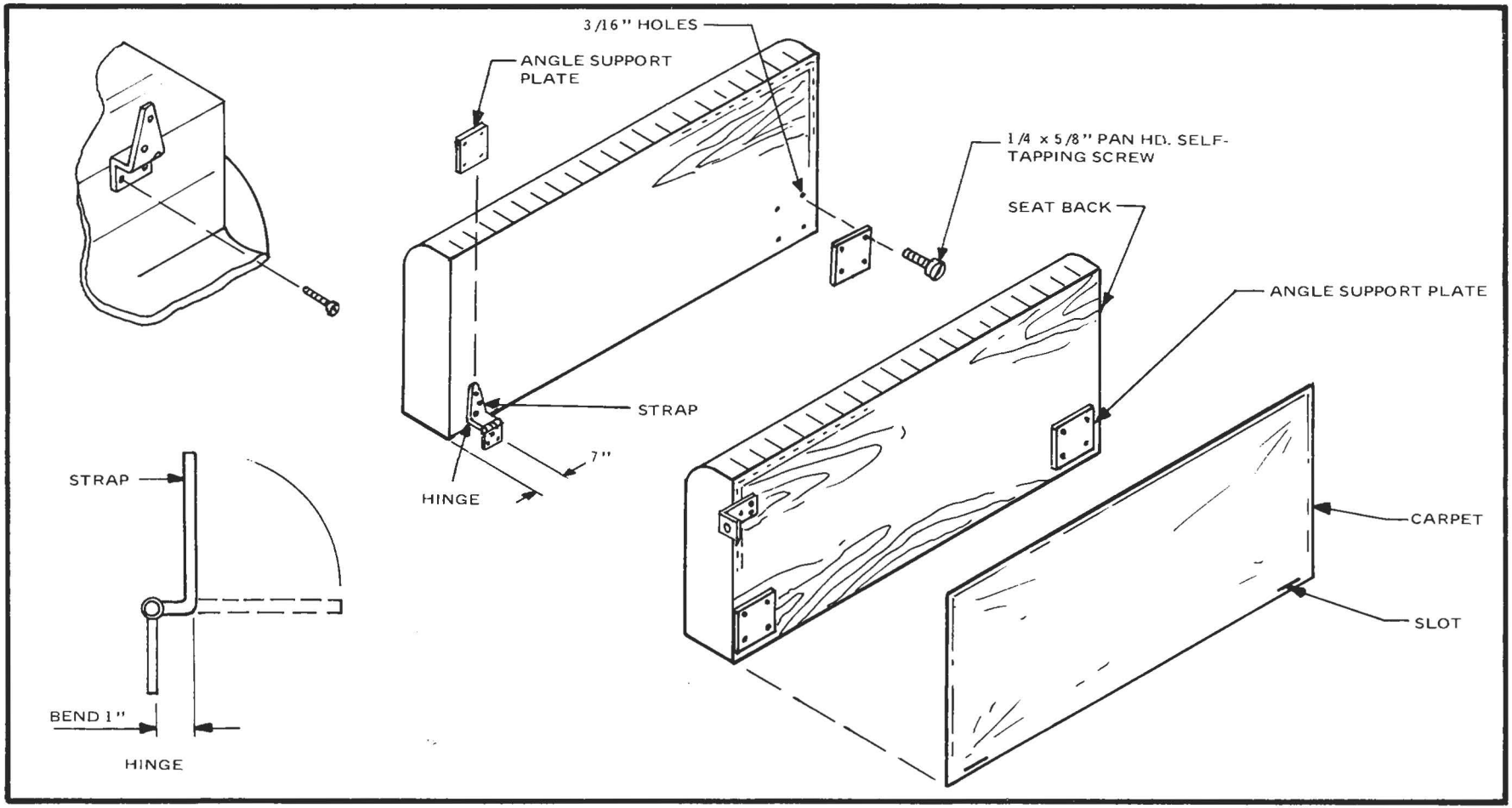


Figure 62

SEAT BACK MOUNTING

For maximum flexibility modify hinges as follows:

☐ With hinge fully closed, mark a line 1" down on the strap from the edge of the pivot pin. Clamp in a vise and bend out at a 90 dgree angle. (Fig. 62)

☐ Attach hinges to body using No. 10 x 1" flat head self-tapping screws. The pivot pin should be upwards, with the strap projecting straight forward. Hinges should be installed approximately 7" from body sides, and 1/4" down from the rear ledge.

☐ Temporarily, put seat bases into car, pushing them as far back as possible. Fit seat back into position, resting on the seat cushion. Push seat back, trying to keep it straight up and down. With strap of hinge flat against back of seat, fit one of the hinge support plates over the strap. Push plate down tightly on hinge. Mark hole locations. Repeat for opposite side. Drill with 1/4" drill. Secure plates to seat using 1/4 x 5/8" pan head self-tapping screws. Slide seat over hinges and check for fit. (Figure 76)

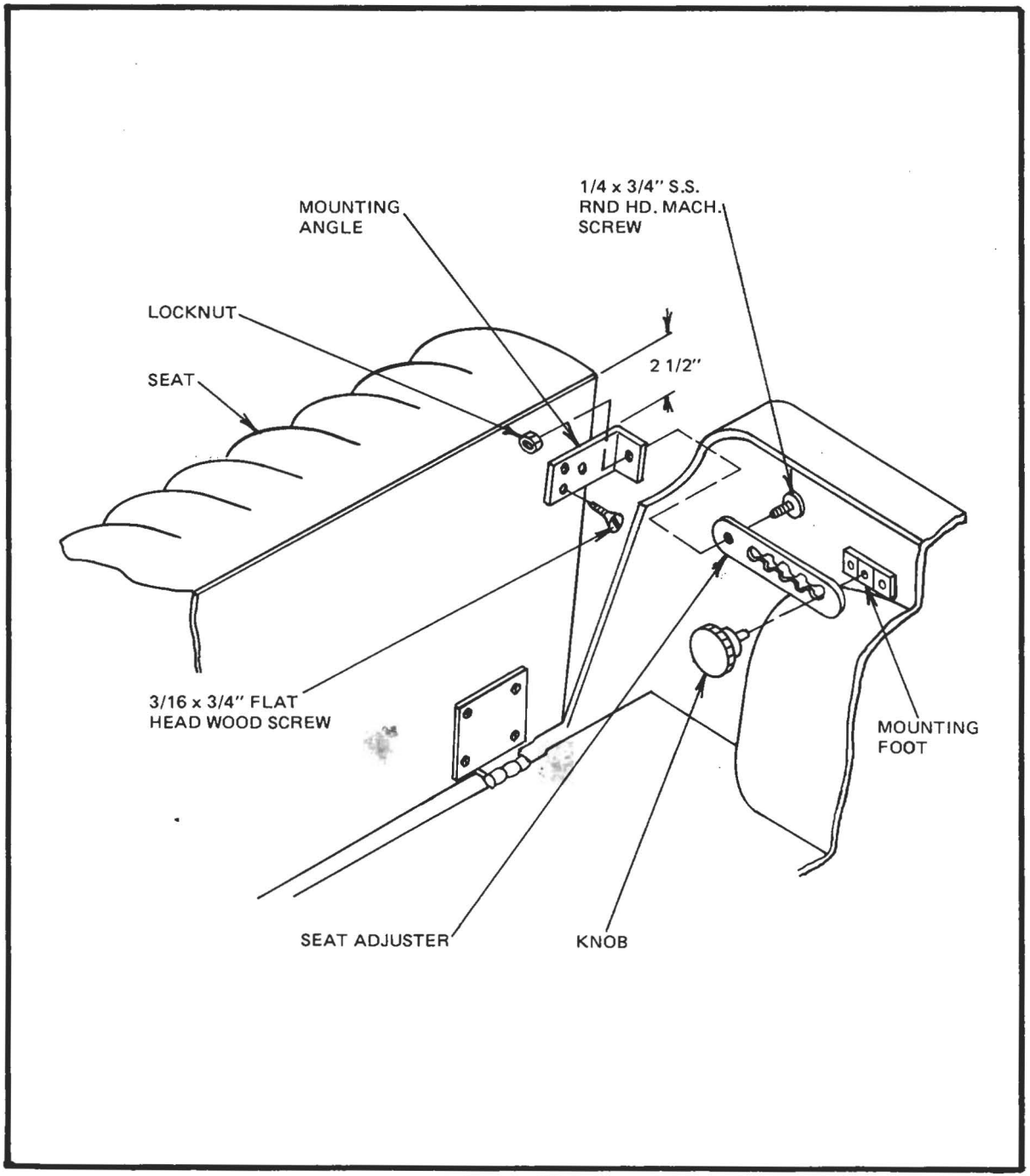


Figure 63

SEAT ADJUSTERS

- ☐ Attach seat adjuster to mounting angle using 1/4 x 3/4" stainless steel round head machine screw and lock nut.
- ☐ Position seat in the most forward position you will be using. Secure knob in last hole of adjuster.
- ☐ Align mounting angle on seat back approximately 2 1/2" down from top edge. Adjust it left and right until adjuster is parallel to side of body. Mark hole locations and secure with 3/16 x 3/4" flat head wood screws.
- ☐ Position mounting foot on body keeping adjuster parallel to top of body. Mark hole locations and secure with No. 10 x 1" stainless steel phillips oval head self-tapping screws. (Figure 63).
- ☐ Remove adjuster from angle.
- ☐ Remove seat back. Lay carpet rectangle over back of seat centering it on all sides. Staple along top edge. Apply contact cement or spray glue to metal plates and area of seat back below plate. Lay carpet down over seat and staple remaining edges. With a razor blade or sharp knife cut a slit in carpet along bottom of metal support plates. Trim as necessary to allow easy access. (Figure 62) .

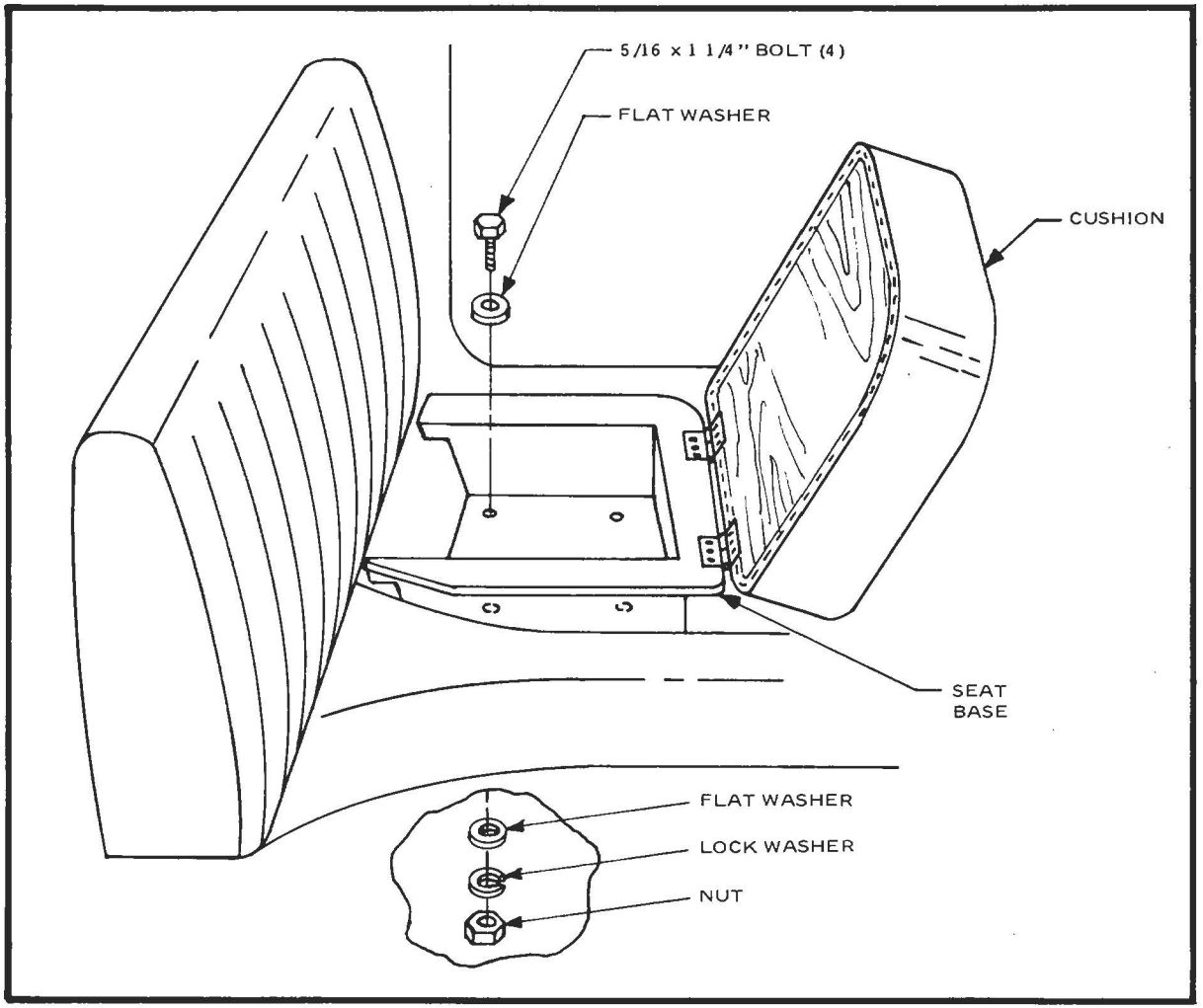


Figure 64

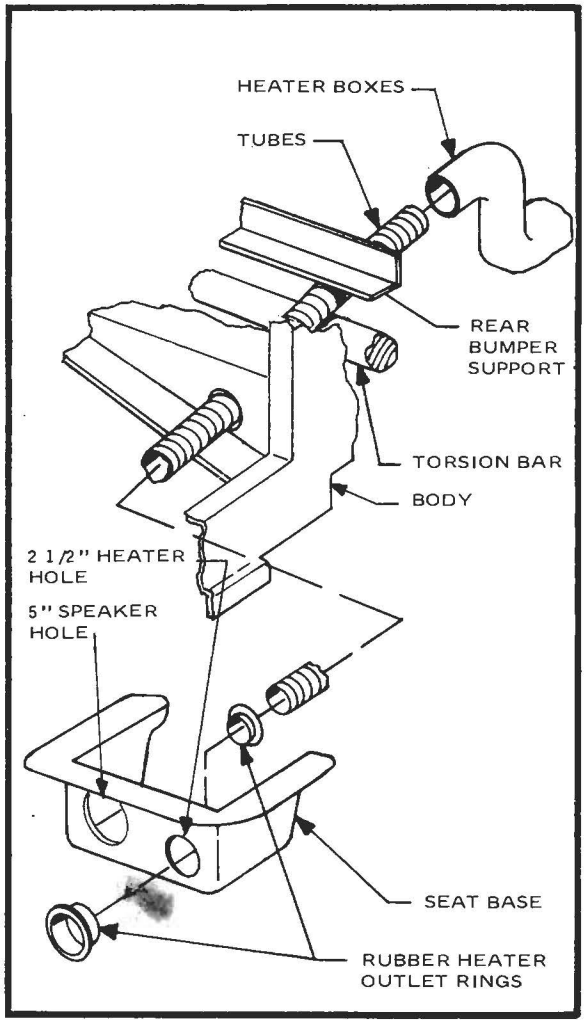


Figure 65

SEAT BASE MOUNTING (Refer to Fig. 64)

☐ With the seat back straight up and down, position seat bases in car. Find most rearward position that will allow seat cushion to open and close easily.

☐ Using a 3/8" drill bit, drill 4 holes through the bottom of the seat base and through the chassis. Bolt using 5/16" x 1 1/4" bolts, flat washers and lock washers. Use a flat washer on each side to spread the load.

HEATER (Refer to Figure 65)

☐ Run heater tubes from heater boxes of engine through holes in body support. Snap rubber heater ring onto seat base. Insert heater tube into rubber ring and secure with duct tape or silicone sealant.

CONVERTIBLE TOP INSTALLATION

(Refer to Figure 66)

- ☐ Insert main bow through pocket in top with secondary bow projecting forward. Be sure to slide bow through straps. These are inserted through the slits on the forward edge of the pocket. Figure 69) Measure for location of bow mounts as indicated. Center the mounting foot over this point and mark hole locations. Drill 1/8" holes with No. 10 x 1" oval head self-tapping screws. (Figure 69A, 69B)

- ☐ Locate center of rear body above engine cover. Install a snap stud into this point. Measure 4" out from the center stud, 4 on each side until 9 snap studs have been installed. (Figure 66C)

- ☐ Attach top to windshield by pushing front seam into slot on front edge of windshield. Pull rear of top down over snap studs. With a grease pencil, mark the top whenever you can feel a stud underneath. After marking, install snaps using a small anvil and die tool that can be purchased for a few dollars or use a more professional type tool that can be rented. (Figure 66D)

- ☐ Position secondary bow along seam and adjust straps.

- ☐ Pull sides of top taut along body over rear fenders. Mark for 5 snap studs equally spaced along body. Install an additional stud in rear corners and pull top down tight. (Figure 66E)

- ☐ Pull windshield forward until top is tight and mark lower mounting hole location. Drill 5/16" hole and secure with bolt supplied with windshield. (See Detail A)

- ☐ Mark windshield post 1 1/2" down from top. Drill 1/8" hole and insert snap stud. Pull forward flaps of top taut against frame and bring around to cover stud. Mark material and install snap.

- ☐ Hang side curtains from convertible top. Attach 3 studs to outside of windshield frame where outer flap contacts frame. Mark and install snaps.

- ☐ Locate snap studs on door and body where side curtain falls. Mark side curtain and install snaps. (Figure 69F)

BOOT COVER

- ☐ To install boot cover, fold top back on itself, folding material around bows. Insert into boot cover and zip.

TONNEAU COVER (OPTIONAL)

- ☐ Install snaps on the tonneau cover to match the studs installed previously for the top and side curtains. Pull tonneau cover forward over dash and mark location of 5 snap studs. Locate 1 in the center and evenly space the others out from there. Drill 1/8" holes and install studs. (It may be necessary to tilt the windshield forward to allow the holes to be drilled. Remove the top mounting bolt from the windshield and tilt it forward.)

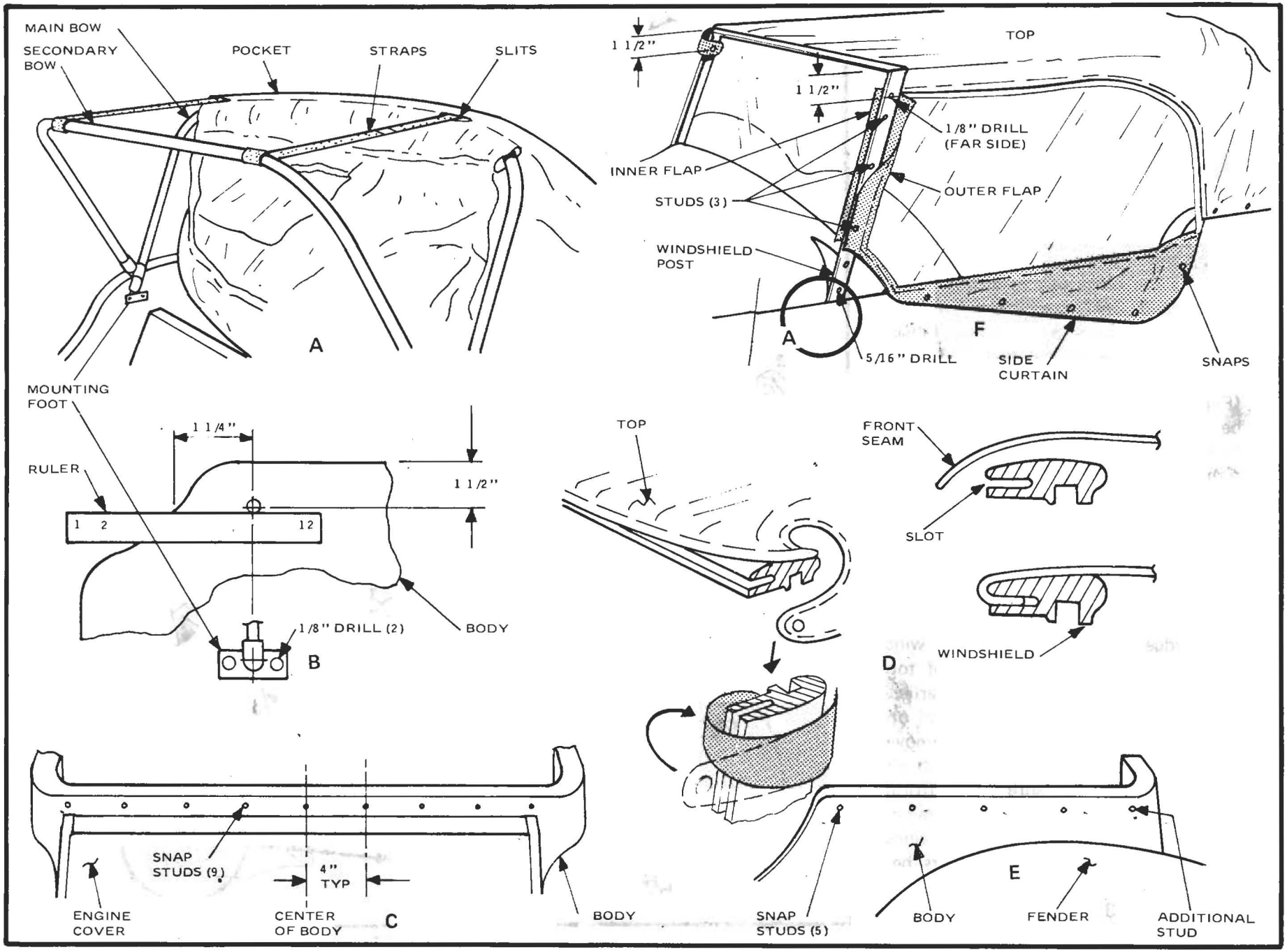

MAIN BOW
SECONDARY BOW
POCKET
STRAPS
SLITS
A
1 1/2"
1 1/2"
TOP
1/8" DRILL (FAR SIDE)
INNER FLAP
OUTER FLAP
STUDS (3)
WINDSHIELD POST
A
F
5/16" DRILL
SIDE CURTAIN
SNAPS
MOUNTING FOOT
1 1/4"
RULER
1 2
12
1 1/2"
1/8" DRILL (2)
BODY
B
TOP
FRONT SEAM
SLOT
WINDSHIELD
D
SNAP STUDS (9)
4" TYP
ENGINE COVER
CENTER OF BODY
C
BODY
SNAP STUDS (5)
BODY
FENDER
ADDITIONAL STUD
E

Figure 66

WIND WINGS (OPTIONAL)

Wind wings attach in the groove on the front of the windshield. Before mounting, the hinges must be modified as follows:

- ☐ Using a punch, drive out the pin holding the hinge together. (One end of the pin will have 3 indentations in it. Drive the pin out by punching from the opposite, smooth side.)
- ☐ When the pin is removed, drill the holes in the hinge out to 5/32". Install No. 8 x 1 3/4" machine screws and lock nuts (No. 8 - 32). Attach hinges to wind wing as shown using No. 8-32 x 1/2" oval head screws and cap nuts. (Figure 67) Large end of wind wing must be at bottom. Measure down 4 1/2" from top of windshield, and mark frame. Measure in 1/4" from front edge of frame (Figure 67). This is done by placing a ruler across the groove in front of the windshield and then measuring back 1/4" from the ruler. Repeat further down the frame and connect the points. This will give you a line 1/4" from the front edge of the frame. Position wind wing on frame with top hole of top hinge over the two lines scribed earlier. Make sure all other hinge holes fall on 1/4" line. Mark at each hole. Remove wind wing and drill 3/16" holes at all marked locations. Be sure to keep drill parallel to windshield glass, not frame. Counter sink all holes. Install wind wings as shown using washers as spacers between frame and hinge. (Figure 67) Secure with 8-32 x 5/8" machine screws and cap nuts. Repeat for opposite side.

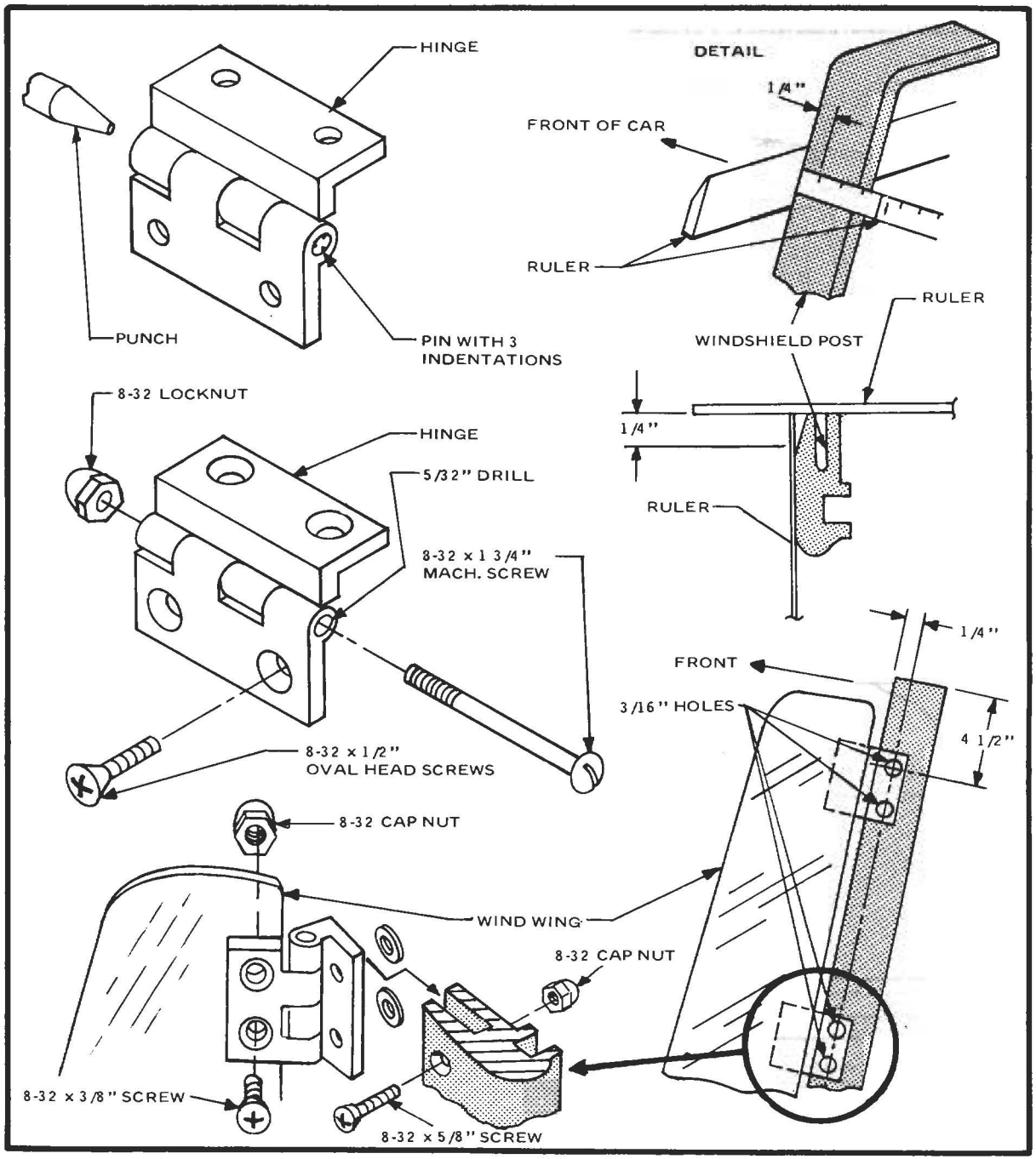


Figure 67

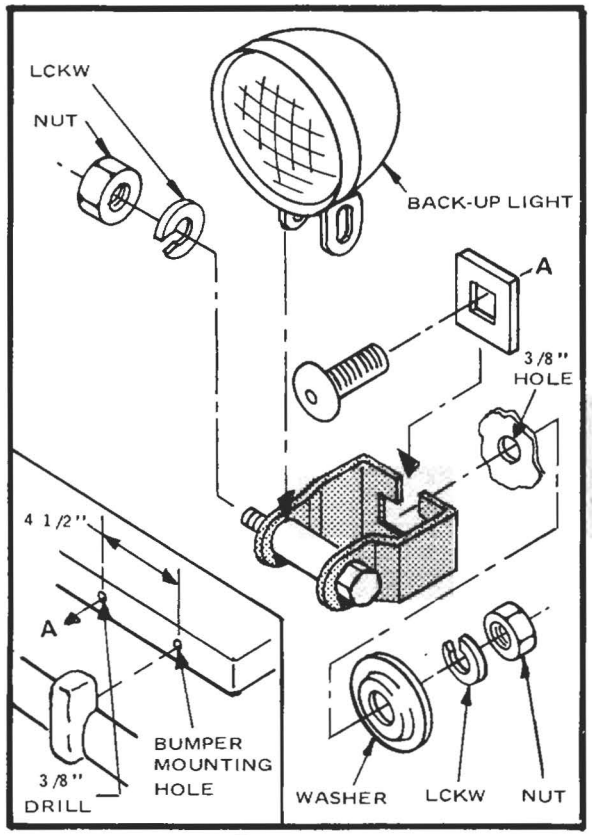


Figure 68

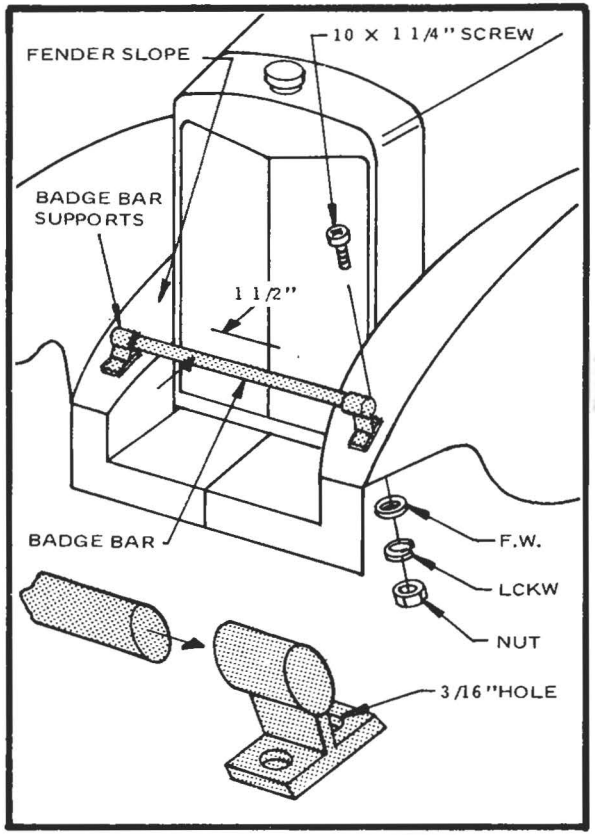


Figure 69

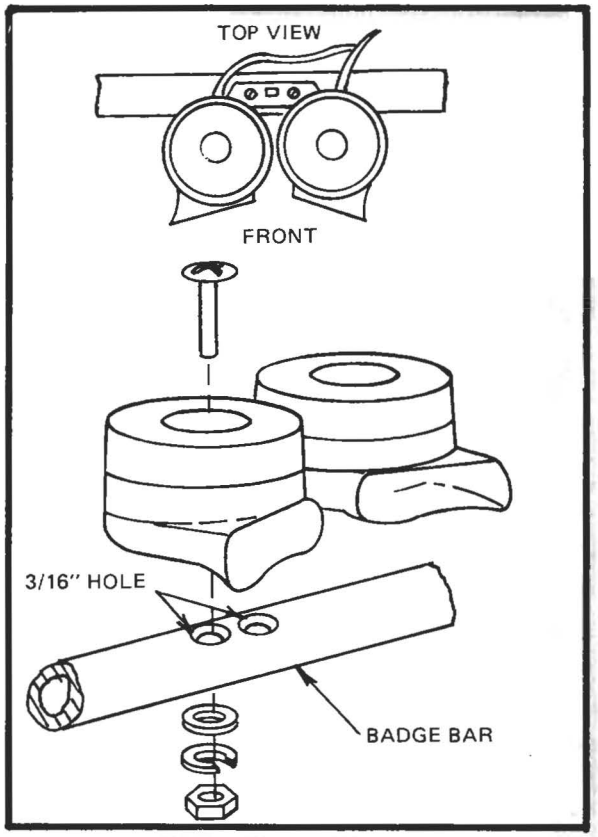


Figure 70

BACKUP LIGHTS (OPTIONAL)

☐ Locate backup light (or lights if using 2) on splash apron behind bumper. If using 2 lights, measure in approximately 4 1/2" from inner bumper bracket mounting hole. Position lights so they protrude just above bumper. Mark location and drill 3/8" holes. Assemble lights as shown and bolt to fiberglass. (If washer supplied is too large, substitute a smaller washer.) Attach a 2 foot piece of wire to the mounting bolt and run to frame as a ground.

BADGE BAR

☐ Fit badge bar into supports as shown. Position on fender slopes, keeping badge bar approximately 1 1/2" from center ridge of radiator shell. Mark hole locations. Drill 3/16" holes and secure with No. 10 x 1 1/4" oval head machine screws with flat washer, lock washer and nuts.

HORNS (OPTIONAL)

☐ Align horns with top of badge bar. (Usually on the left side). Drill 3/16" hole completely through the badge bar and secure with No. 10 x 1 1/2" stainless steel machine screws with flat washer, lock washer and nut.

☐ Route wires along badge bar to support. Drill a 1/4" hole at the base of the support and run wires through fender.

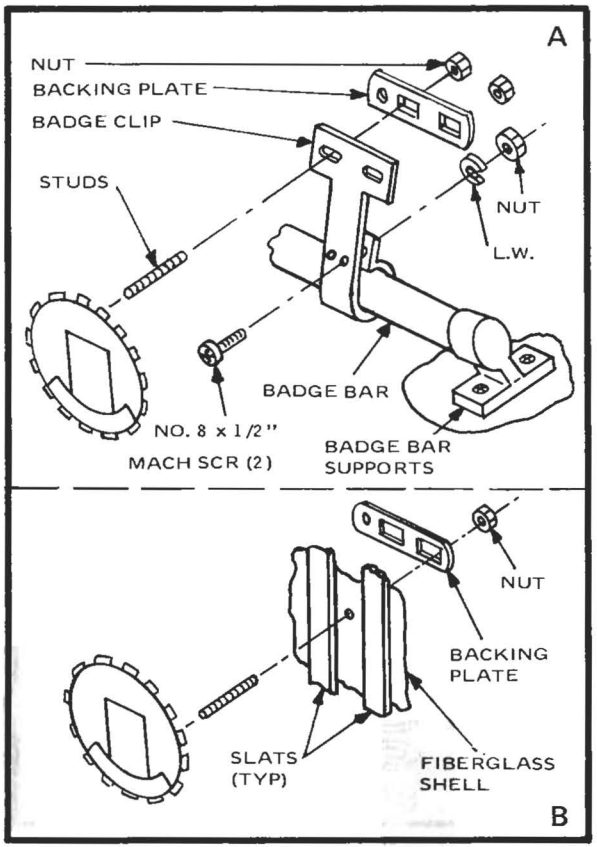


Figure 71

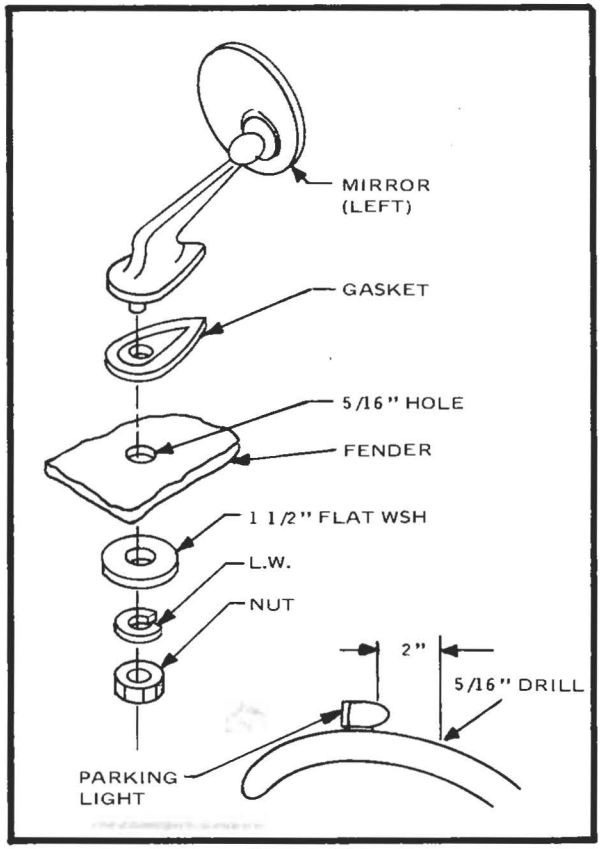


Figure 72

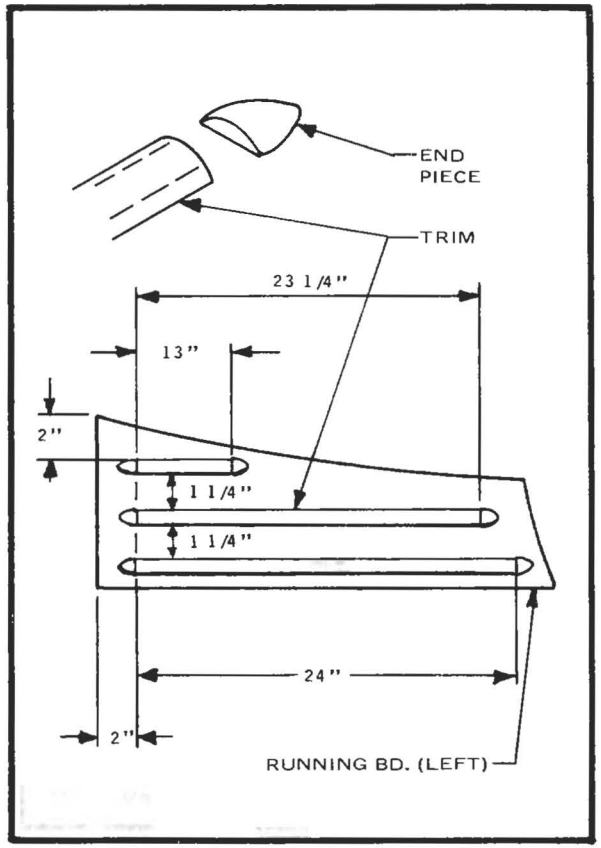


Figure 73

BADGES (OPTIONAL)

☐ Secure badges to clips supplied using hardware that comes with badges. Secure clips to badge bar using No. 8 x 1/2" machine screws with lock washer and nut. (Figure 71A) Badges can be fastened to grille by drilling 3/16" holes through grille and fiberglass shell and securing with hardware supplied. (Figure 71B)

FENDER MIRRORS (OPTIONAL)

☐ Position mirror 2" behind parking light on top of fender. Drill a 5/16" hole at marked location, and secure mirror to fender using hardware provided.

RUNNING BOARD TRIM

☐ Cut trim to lengths indicated; 2 pieces each of 23 1/4", 24", and 13 1/2". Position 1st piece on running boards, 2" behind front seam and 2" from body. Clean running board thoroughly with acetone. Remove backing from trim and attach as indicated. Peel backing off end pieces and secure to running boards.

AIR HORNS (OPTIONAL)

- ☐ The air horns are mounted on the cowls, approximately 12" back from the edge of the grille shell. Drill 5/16" holes for mounting. Measure 3" forward from the mounting holes and drill 7/16" holes for hose.

- ☐ Secure horns to cowl using 5/16 x 1" bolts with flat washer, lock washer and nut.

- ☐ Cut two 7" lengths of hose and push onto horns and through holes in cowl. Attach to "Y" connector inside car.

- ☐ On the vertical body surface, next to the steering column, drill 5/16" holes approximately 3" apart for mounting the compressor. Run the remaining hose from the compressor to the "Y" connector. Bolt to body using 5/16 x 1" bolts with flat washer, lock washer and nut. Attach hot and ground wires to the posts on the compressor. The relay supplied with the air horns is not used.

GRAB HANDLE (OPTIONAL)

- ☐ Position grab handle on upper right hand corner of dash board and mark hole locations. Drill 3/16" holes and secure handle to dash using No. 8 x 1 1/2" stainless steel oval head machine screws with flat washer, lock washer and nut.

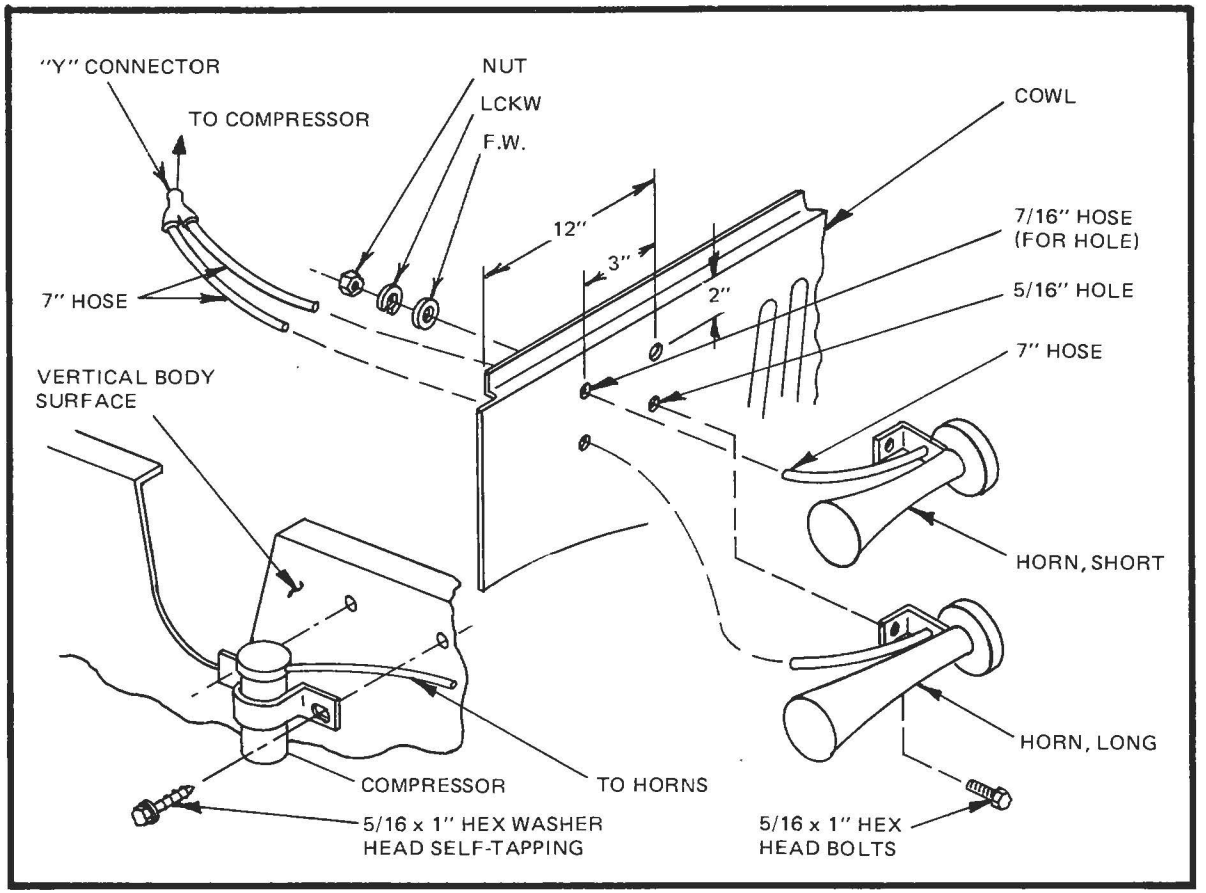


Figure 74

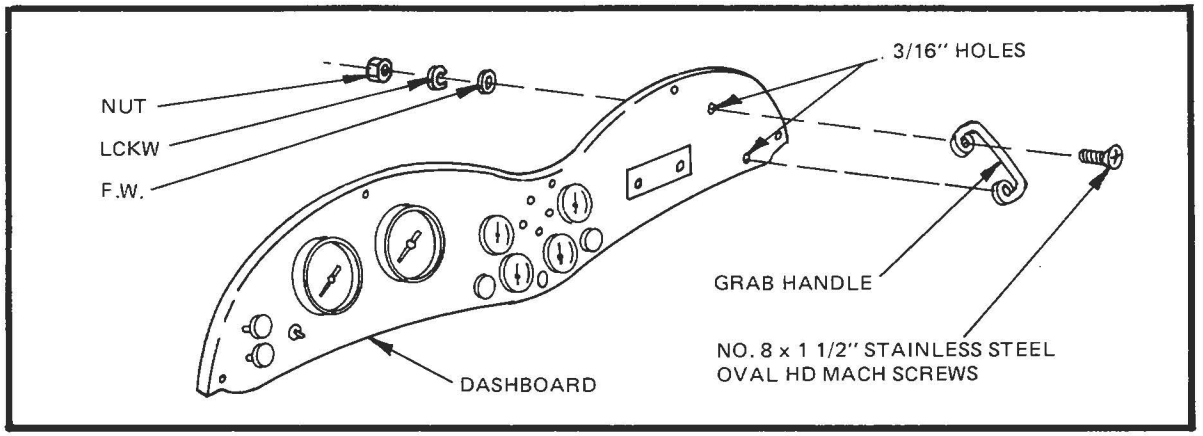


Figure 75

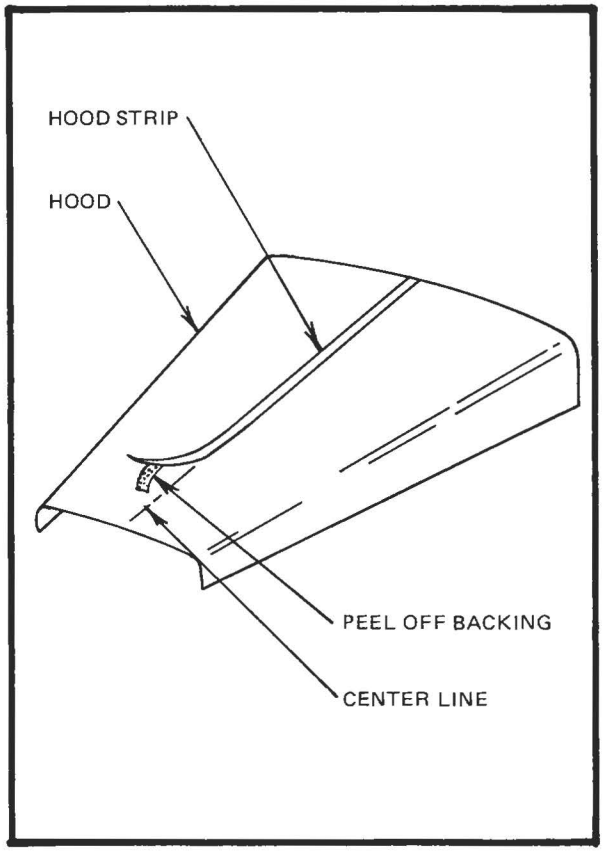


Figure 76

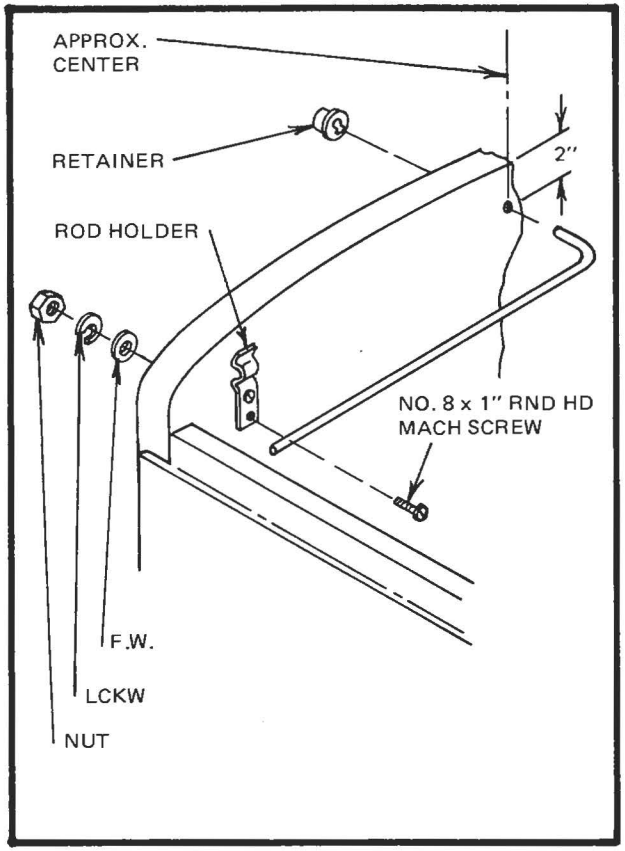


Figure 77

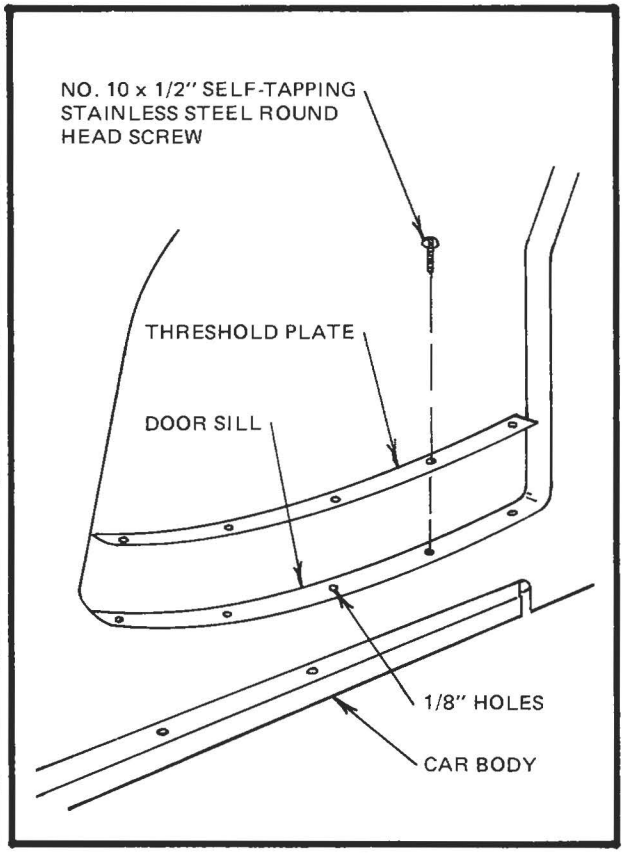


Figure 78

HOOD STRIP (OPTIONAL)

- ☐ Align hood strip along center line of hood. (It would help if a line were drawn down the center of the hood with a straight edge. Use a grease pencil.
- ☐ Peel off backing and stick hood strip to hood. Cut ends square with ends of hood.

HOOD SUPPORT ROD (OPTIONAL)

- ☐ Drill a 1/4" hole approximately 2" down from top of body at rear of engine compartment. Hole should be located at the middle of the body. Secure on reverse side with retainer provided.
- ☐ At end of rod, drill two holes, 3/16", into body for rod holder. Use holder as a template. Secure with No. 8 x 1" round head machine screws with flat washer, lock washer and nut.

THRESHOLD PLATES (OPTIONAL)

- ☐ Align plates on door sills and mark hole locations. Drill 1/8" holes and secure plates to door sill using No. 10 x 1/2" stainless steel round head self-tapping screws.

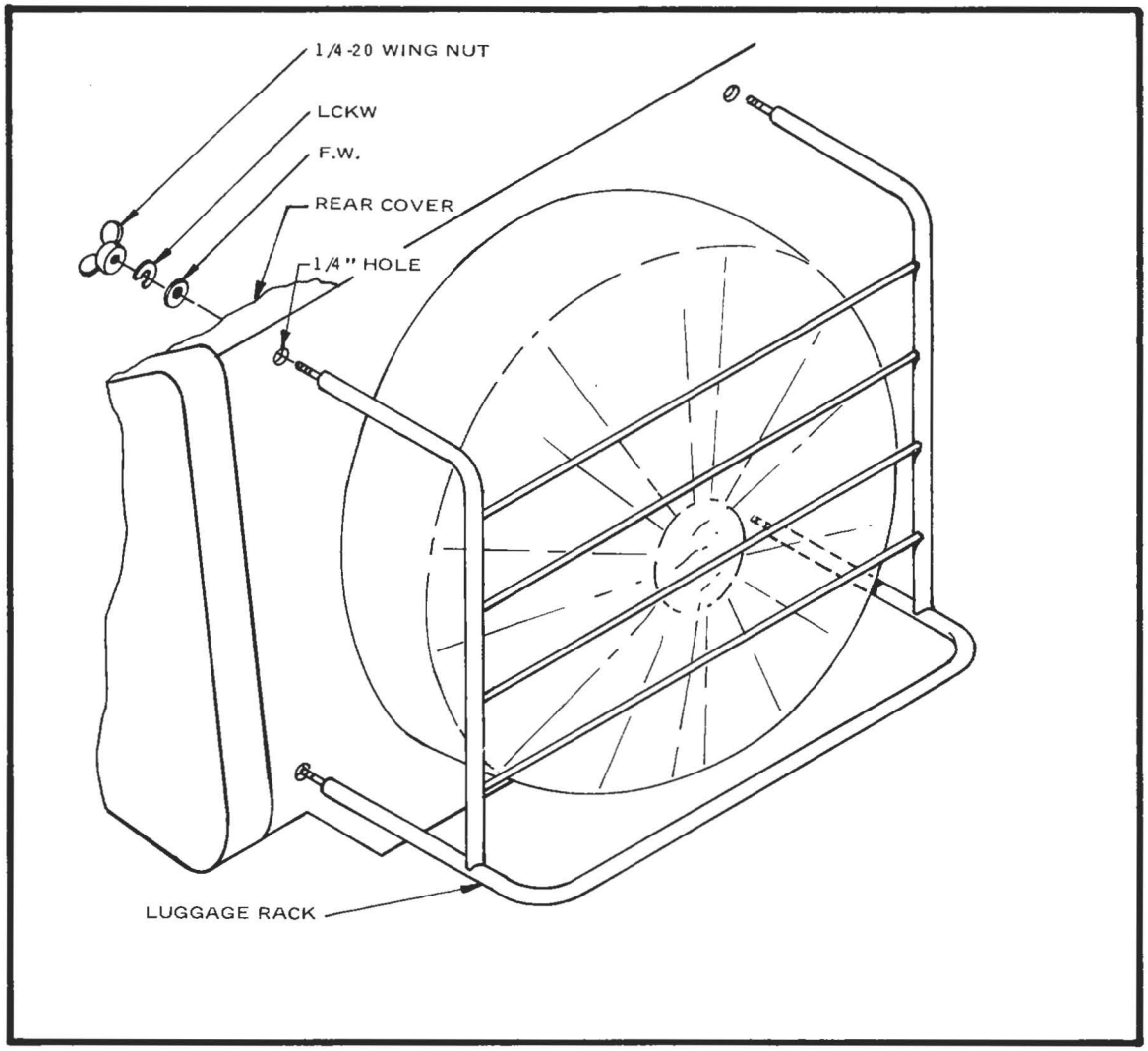


Figure 79

LUGGAGE RACK (OPTIONAL)

☐ Fit luggage rack over spare tire and mark hole locations. Drill 1/4" holes at the marked location. Secure rack to rear cover using 1/4-20 wing nuts with flat washer and lock washer.

APPENDIX

A. Super Beetle Conversion

B. Fiberglass Repair

C. Wiring Harness

SUPER BEETLE CONVERSION UNIT

☐ 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 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 1/2 x 4" and two bolts 7/16 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.

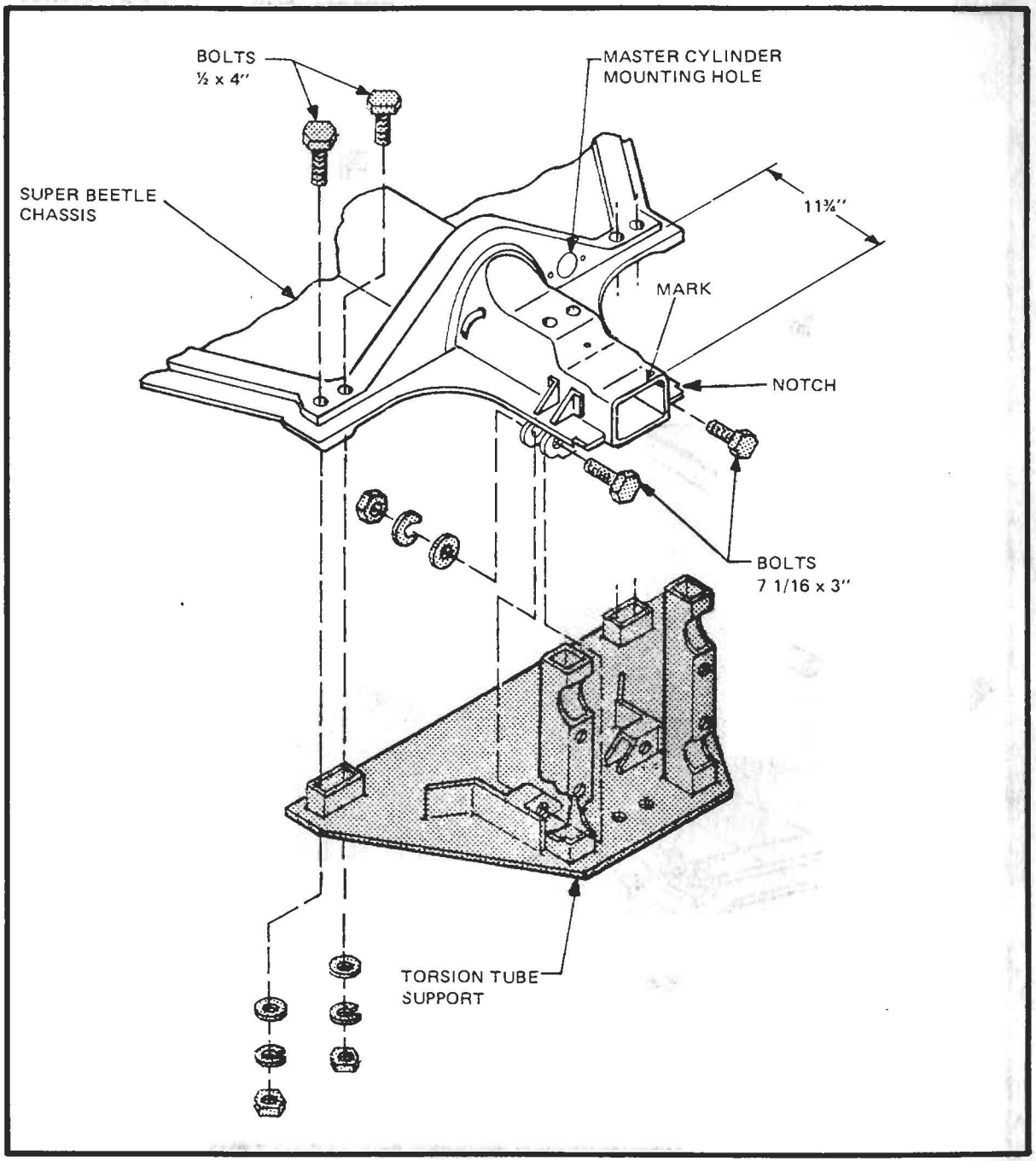


Figure A1

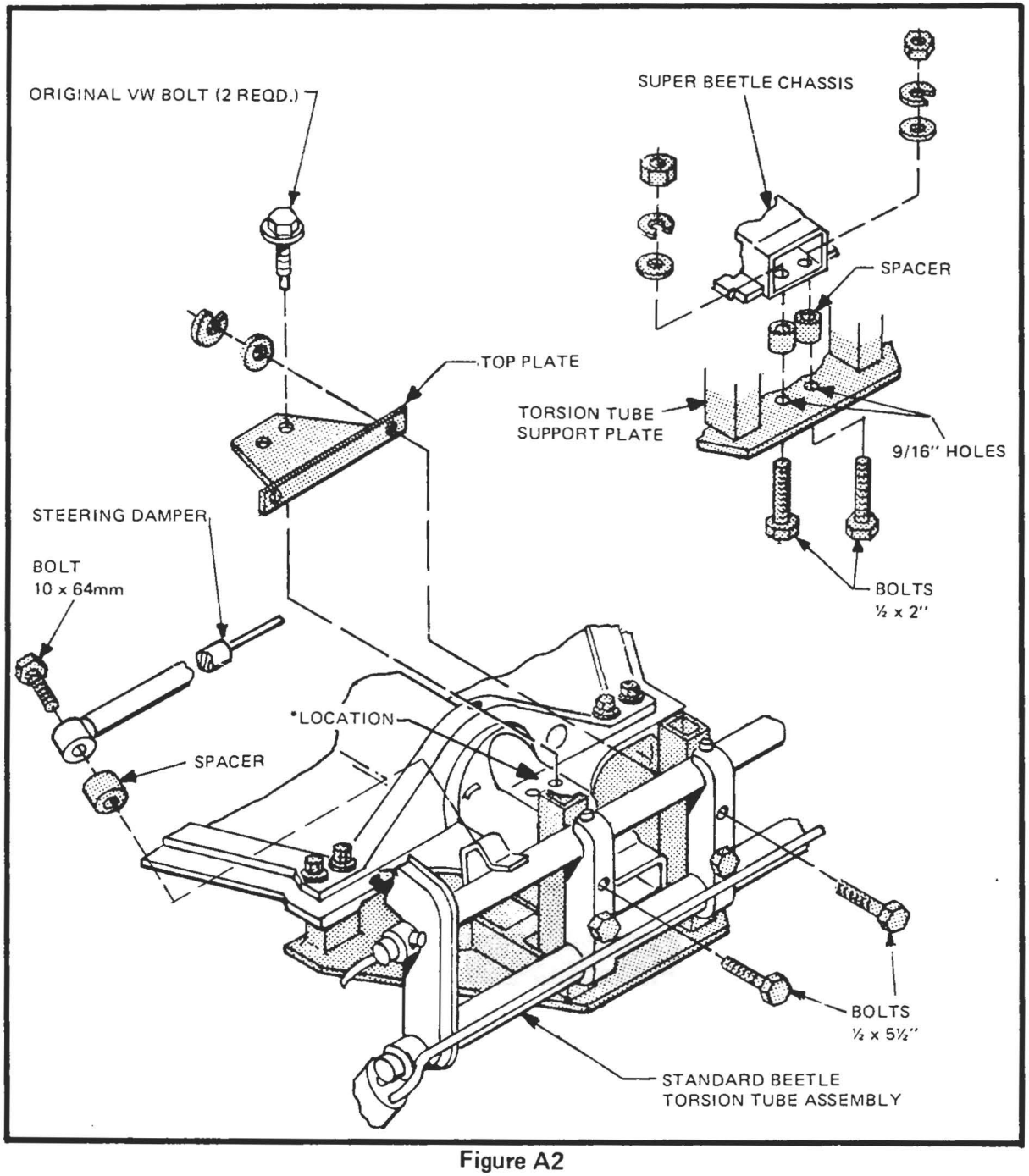


Figure A2

☐ 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 x 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 x 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 10mm x 64mm bolt and the spacer provided with the kit. Recheck all measurements and again tighten nuts and bolts.

GENERAL

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 buffer 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 polyster 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 of 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. Weathering 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.

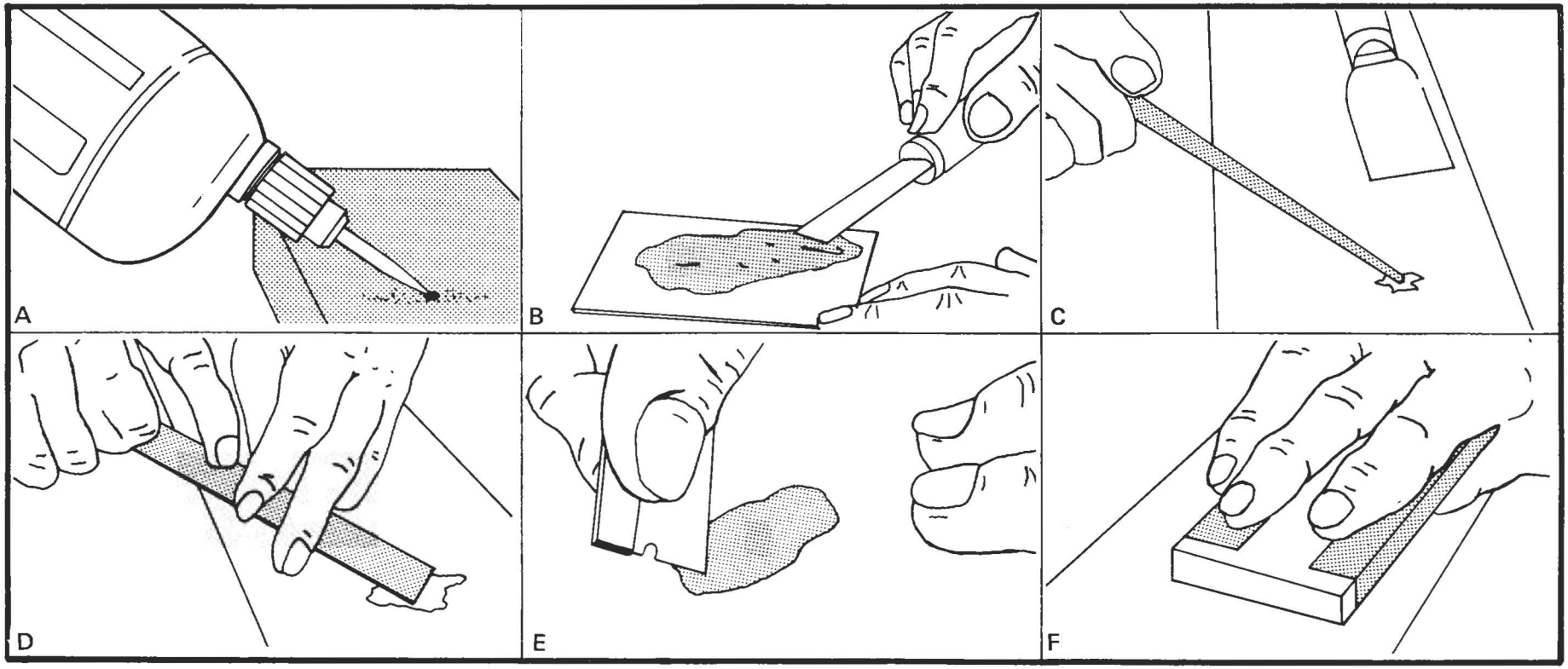


Figure B1

WIRING HARNESS

In addition to the harness, the following items will have to be purchased.

1. Flasher unit - any 12 volt
2. Horn relay - HB-53 or equivalent
3. Floor mounted dimmer switch - any 12 volt

WIRING

The custom wiring harness consists of three (3) pieces. The dash harness, which contains all the wiring for instruments and switches and rear harness, which contains engine functions, rear lights, etc. and the front harness which contains front running lights, gas tank etc. The three harnesses are joined under the dash on the right side. Each section contains a bundle of wires that are matched and joined. They are fully color coded and must be matched and spliced together. These can be connected by splicing and taping butt connectors or by using a terminal strip, available in any electronic supply store.

To ease installation, go over the harness and isolate each group of wires that you will need by function. Most are already separated, but, in some cases more than one function will terminate at the same place.

STEERING COLUMN WIRING

The harness is connected to the VW steering column as follows:

10 guage yellow to red/black on column
Brown/red to brown on column or to horn button
Yellow/blue to black/white on column
Brown/yellow to green/black on column
10 guage red/white to 10 gauge black on column
10 guage yellow/red to 10 gauge red on column
Black/orange to green/black/white on column

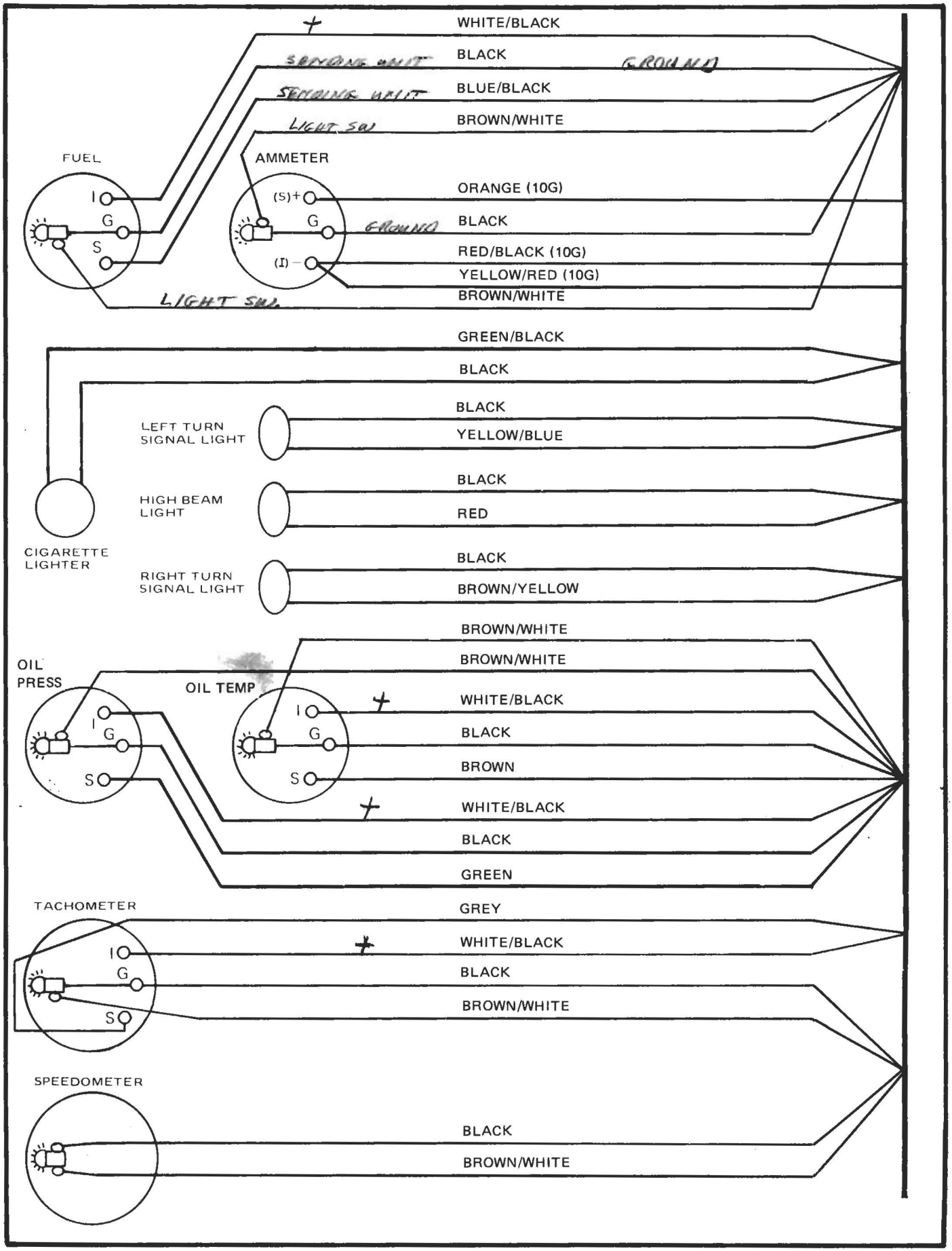


Figure C1 Instrument Wiring

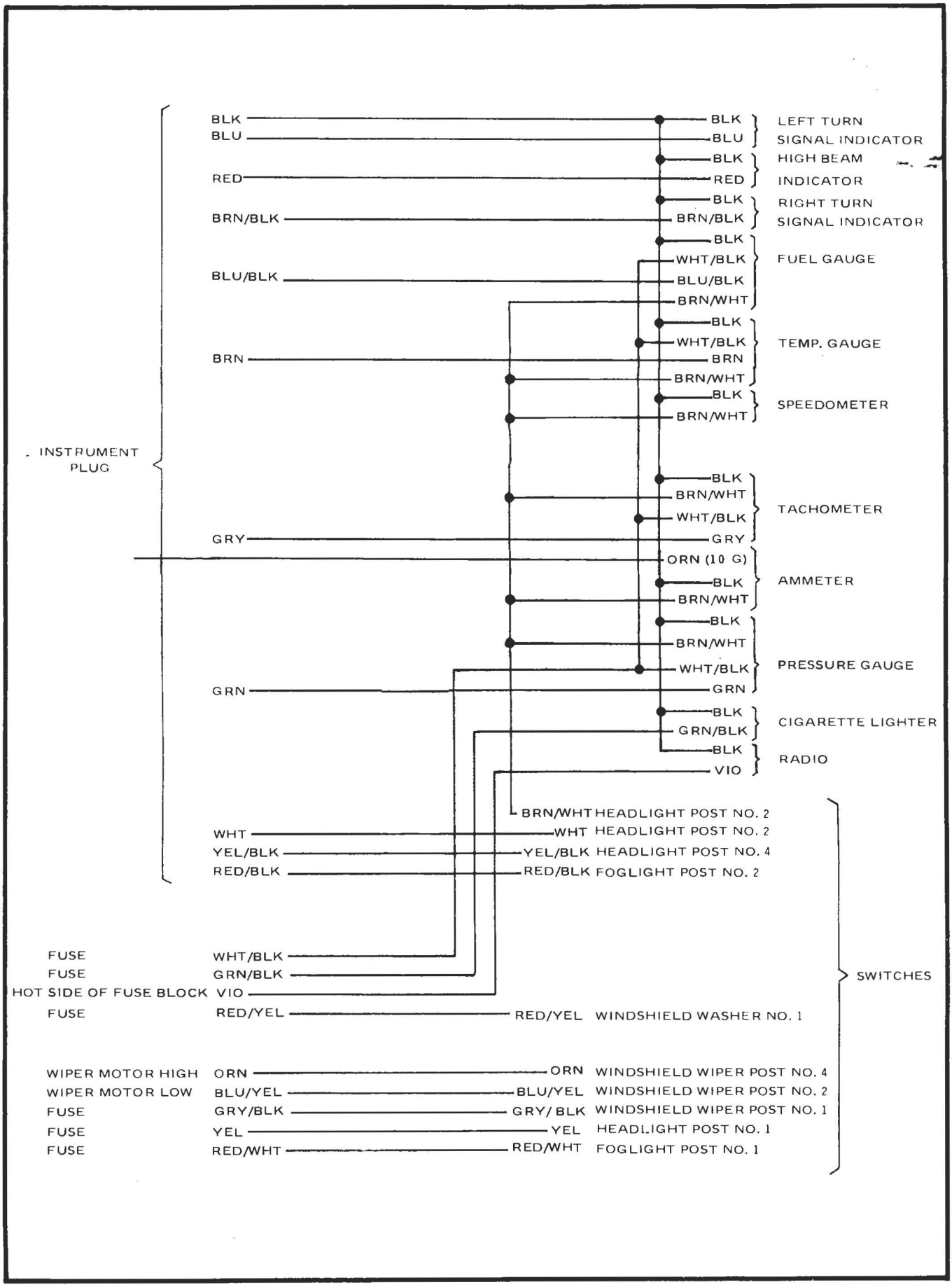
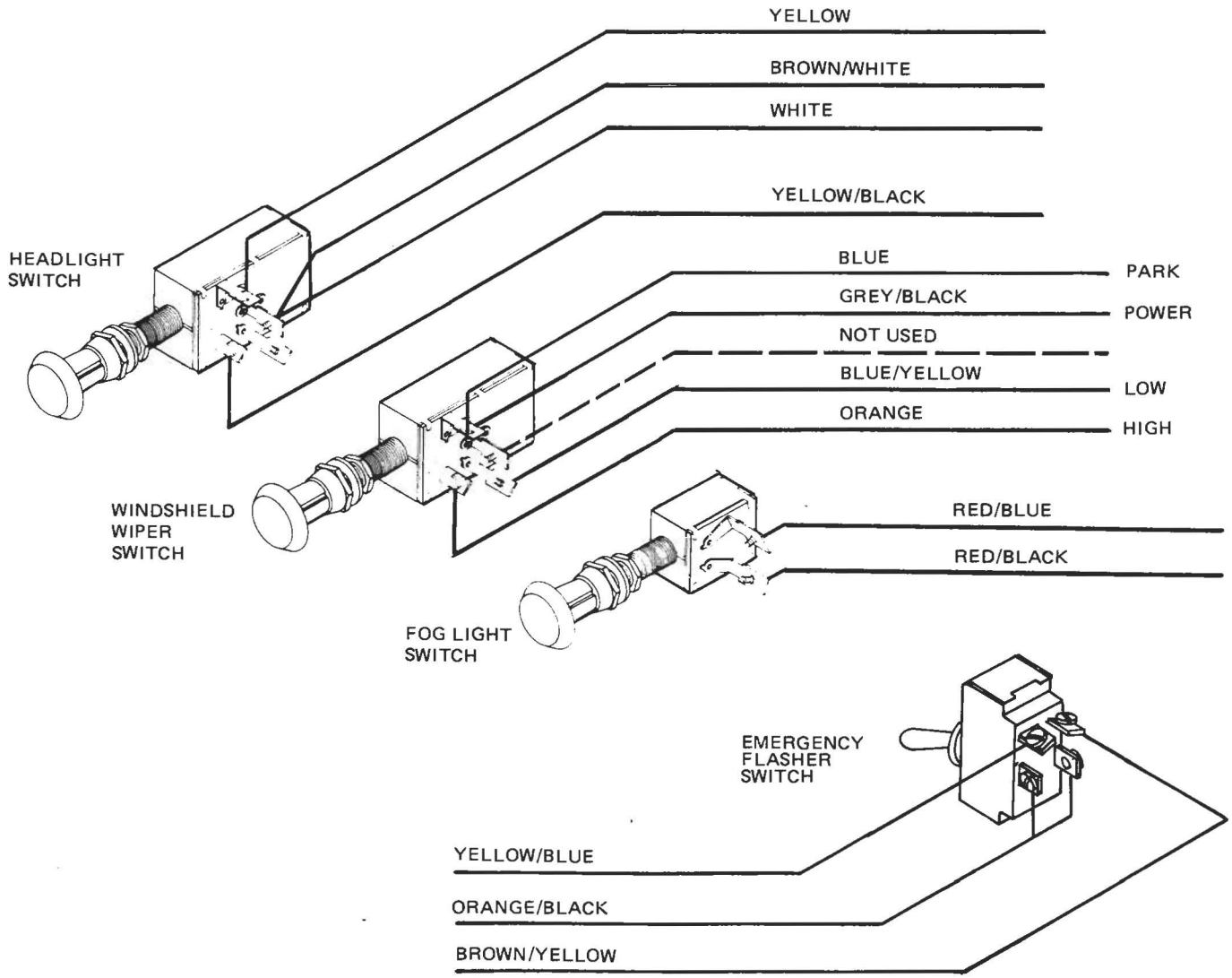
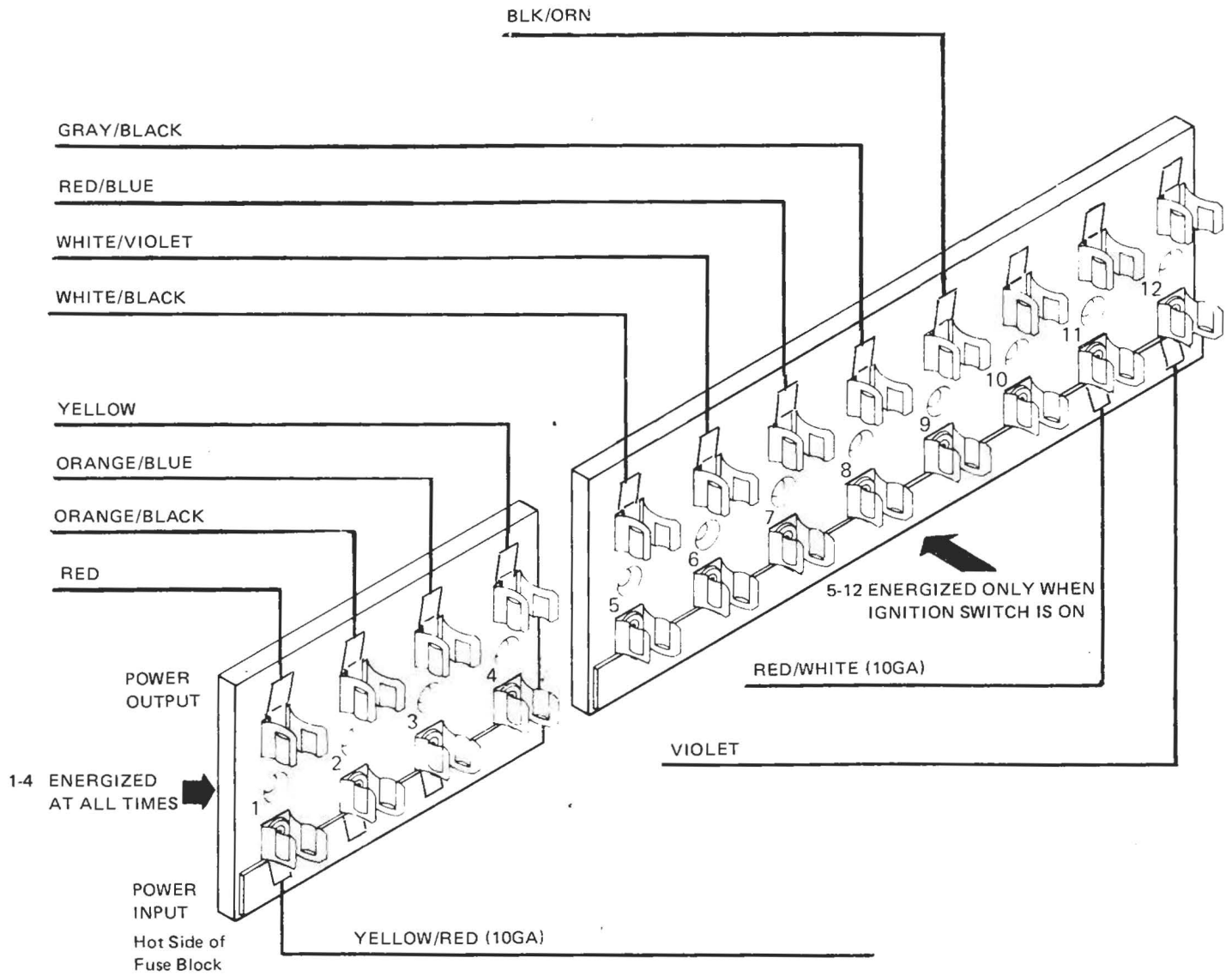


Figure C2 Dashboard Harness Schematic



*WIRES NOT SUPPLIED

Figure C3 Switch Wiring



Figue C4 Fuse Block Wiring

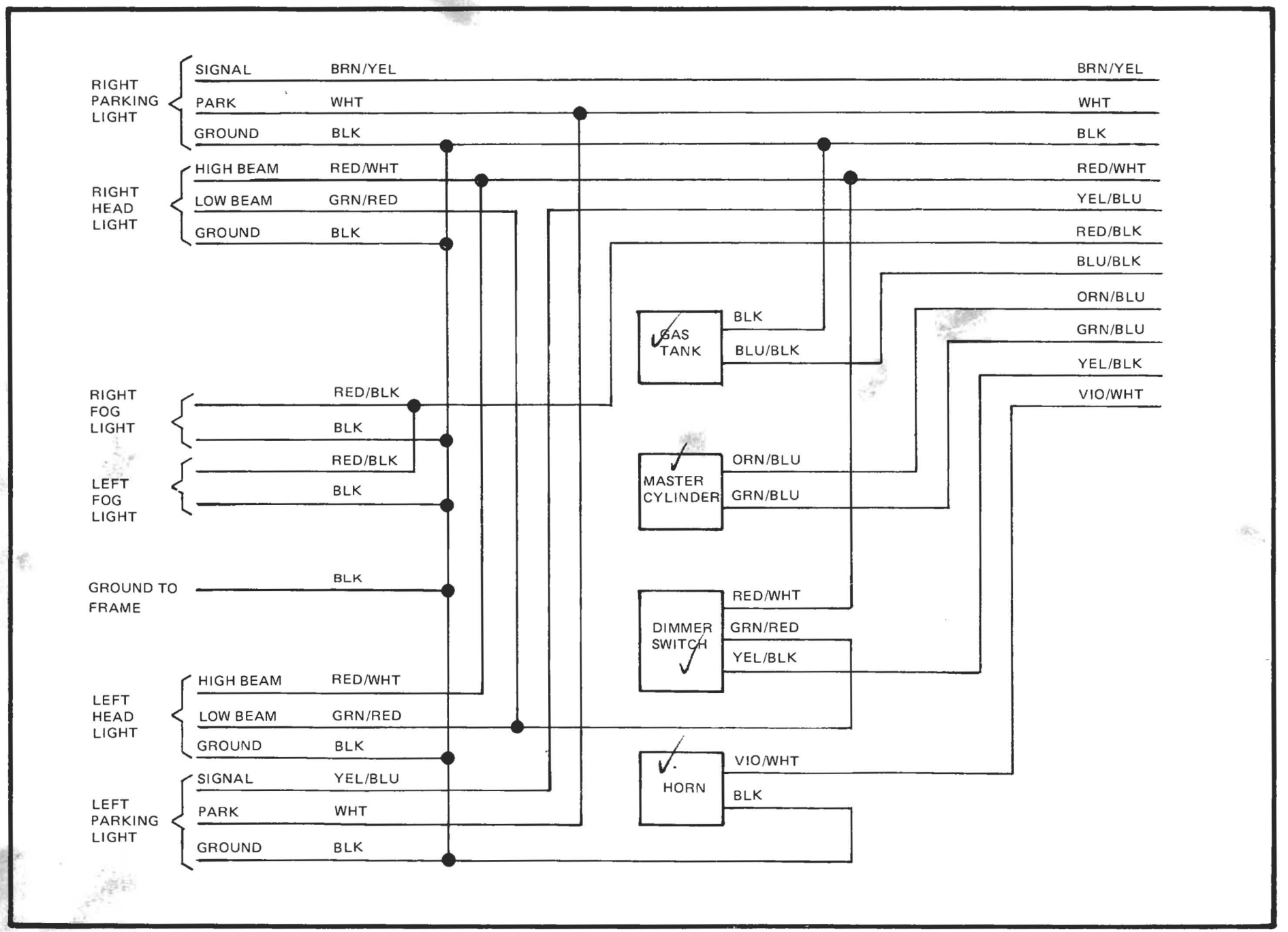


Figure C5 Front Harness

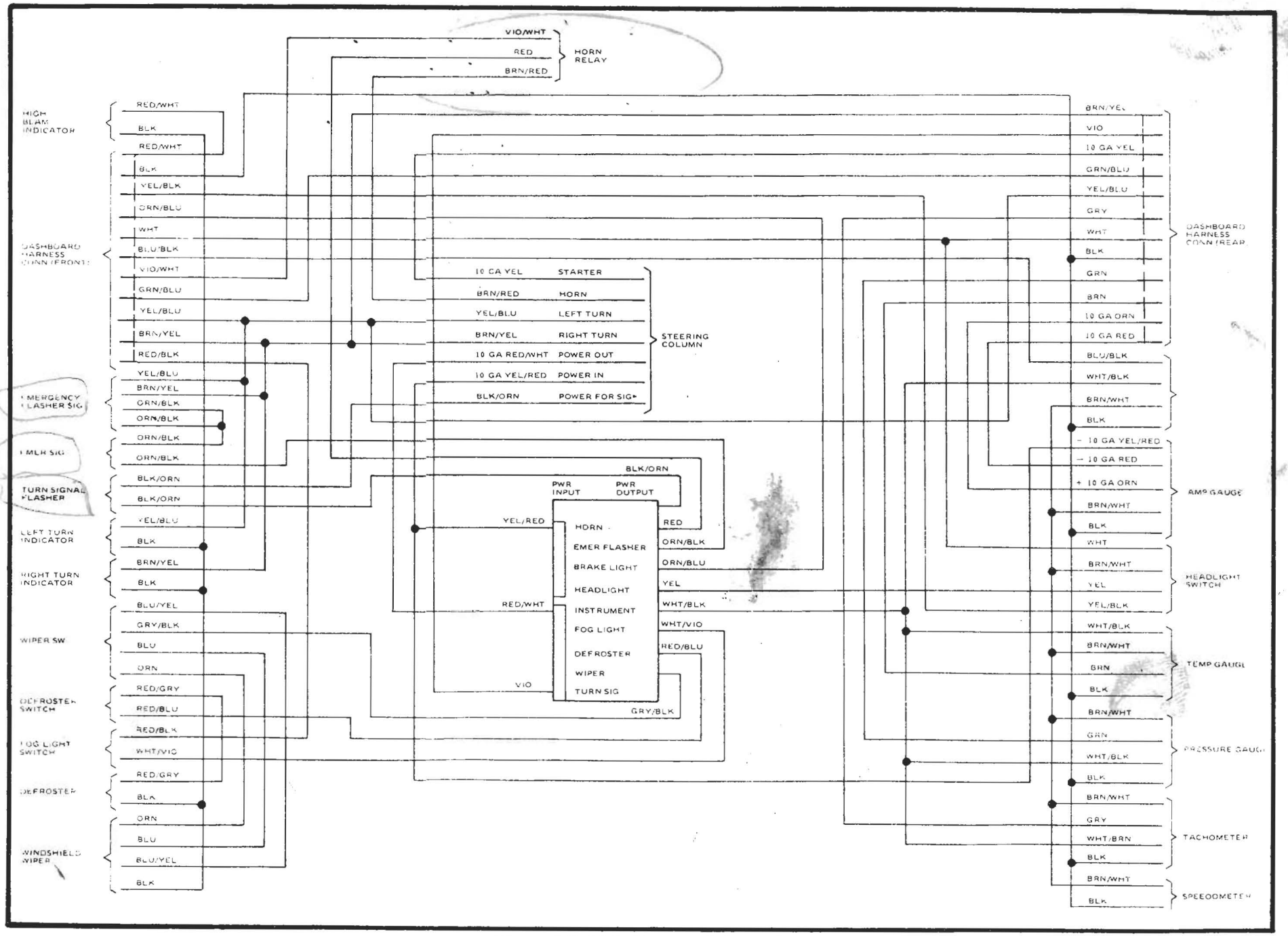


Figure C6 Main Harness Schematic

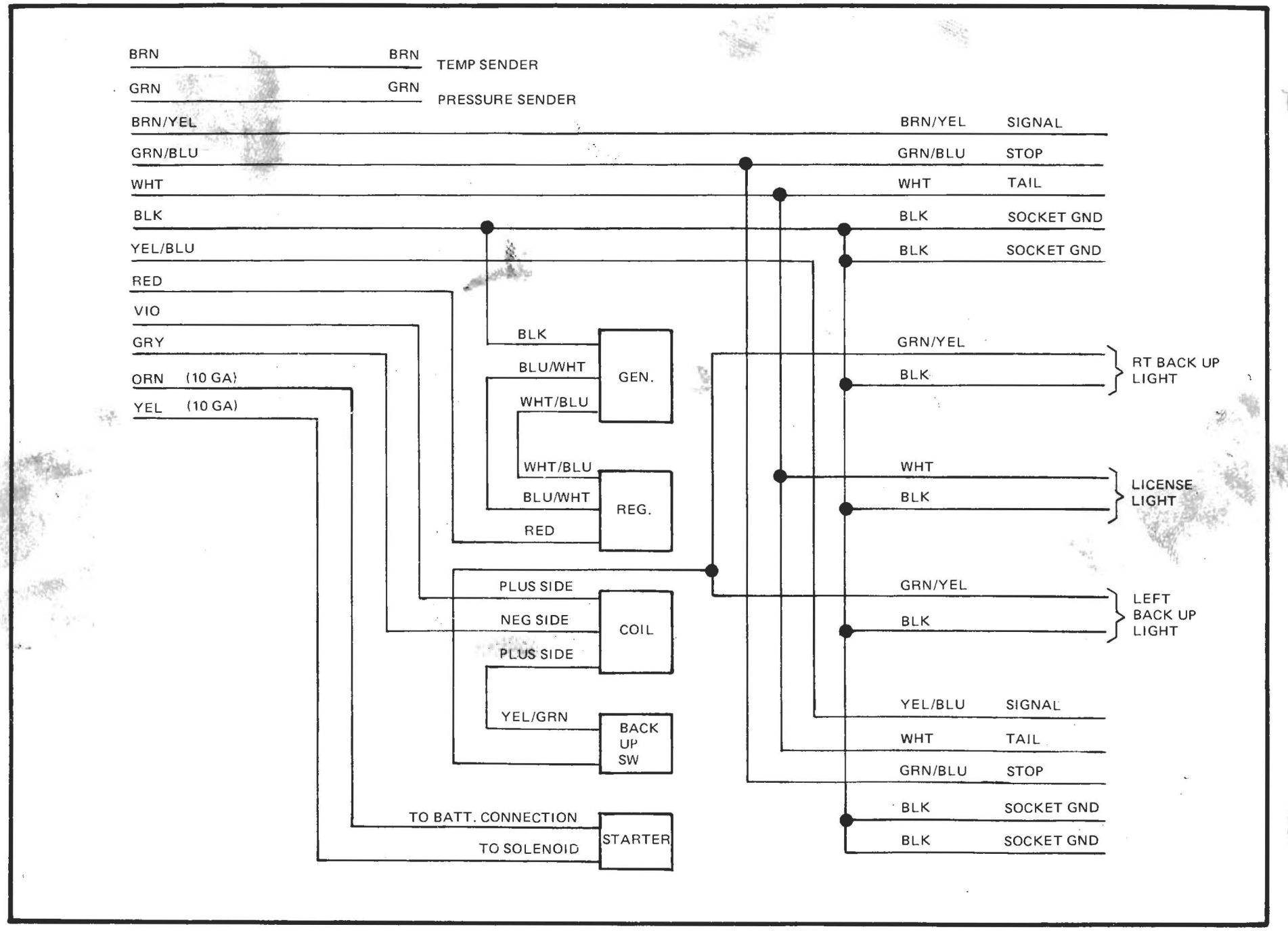


Figure C7 Rear Harness

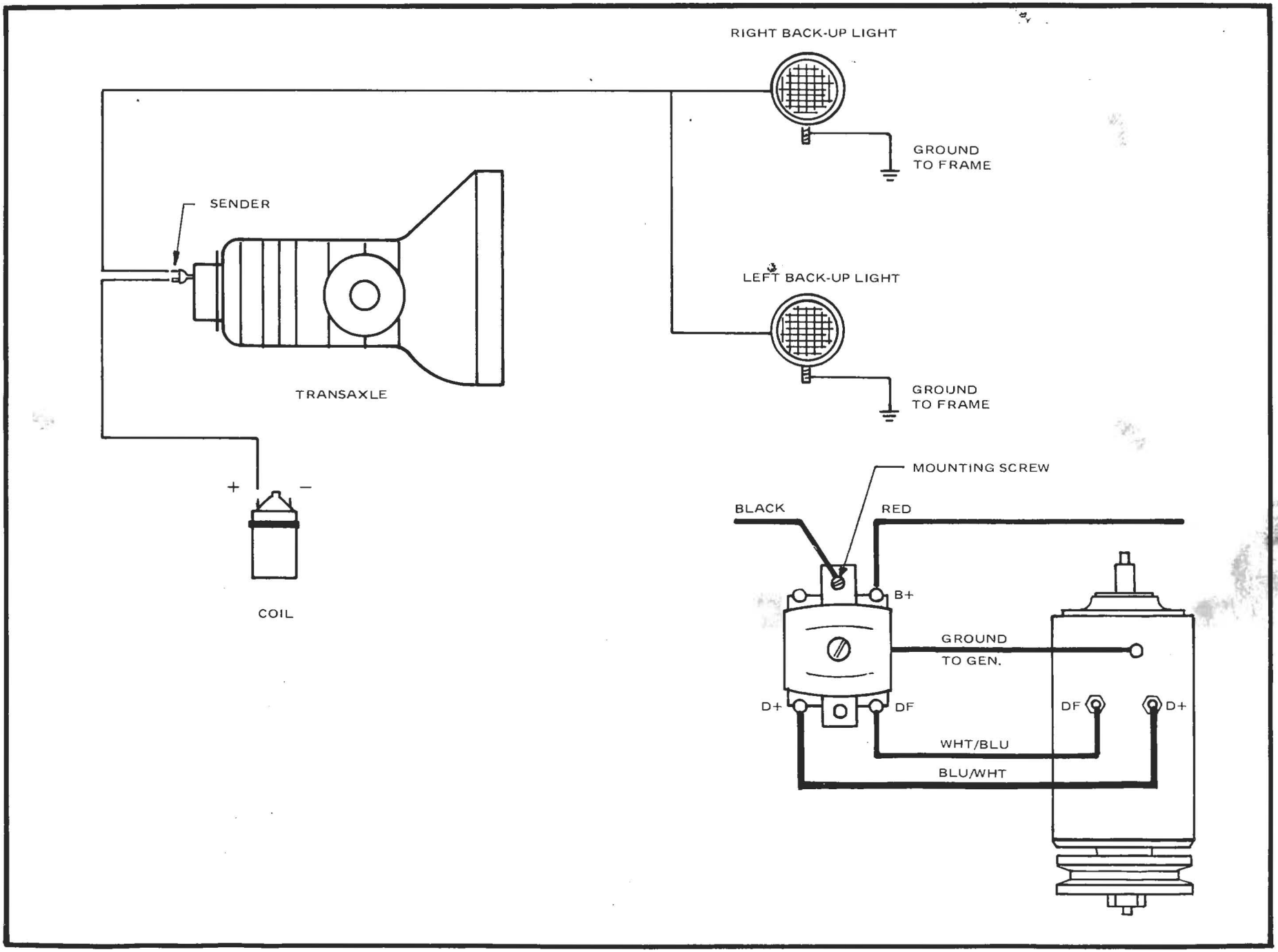


Figure C8 Back-up Light and Generator Wiring

MG-VW NUT & BOLT KIT

1. Deleted
2. Deleted
3. Pedal Assembly to tunnel (3 each) 5/16 x 3/4" bolts plus flat washers, lock washers, and nuts.
4. Gear shift lever to tunnel - (4each) FACTORY
5. Fiberglass frame to VW pan - 5/16 x 1 1/2" bolts with flat washer, 1 lock washer and nut (18 sets) and original VW washers (16 each)
6. Front bumper bracket to bumper - (4 each) 3/8 x 1 1/4" chrome carriage bolt with flat washer, lock washer and nut (2 each) 3/8" x 1 1/2" chrome carriage bolt with flat washer, lock washer and nut.
7. Radiator shell to body fiberglass - (6 each) No. 10 x 1 1/4" stainless oval phillips with flat washer, lock washer and finishing washer.
8. Radiator shell to body metal - Fastened with same bolts.
9. Front fenders and cowls to liner - (6 sets) 5/16 x 1 1/2" with 2 flat washers, 1 lock washer and 1 nut; (6 sets) 5/16 x 1" with 2 flat washers, 1 lock washer and 1 nut.
10. Rear fender to body - (20 sets) 5/16 x 1 1/4" with 2 flat washers, 1 lock washer and 1 nut.
11. Running boards to body - (18 sets) 1/4 x 1 1/4" with 2 flat washers, 1 lock washer and 1 nut.
12. Brake reservoirs - (2 each) No. 10 x 1" self-threading to fiberglass.
13. Gas Tank (13 each) 1/4 x 1" hex washer head self-tapping screws.
14. Rear cover to body - (top) (20 each) No. 10 x 1" stainless oval phillips with flat washer, lock washer and nut.
15. Rear cover latches - (18 each) No. 10 x 1" stainless oval phillips with flat washer, lock washer and nut.
16. Spare tire support to rear deck lid - (7 each) 5/16 x 1" bolt with 2 flat washers, 1 lock washer and 1 nut.
17. Hood hinge - (12 each) No. 10 x 1" stainless oval phillips with flat washer, lock washer and nut.
18. Deleted
19. Hood latches - (8 each) No. 10 x 1" stainless oval phillips with flat washer, lock washer and nut.
20. Deleted
21. Rear splash pan to body - (4 each) 5/16 x 1 1/2" bolt with 2 flat washers, 1 lock washer and 1 nut.
22. Rear wheel liners to metal brkt. - (4 each) 1/4 x 1" self-tapping screw.
23. Steering column to fire wall - (4 each) 3/8 x 1 1/4" bolt with 2 flat washers, 1 lock washer and 1 nut.
24. Steering column to steering bracket - (2 each) 5/16 x 1 1/4" bolt with 2 flat washers, 1 lock washer and 1 nut.
25. Seat base to floor - (8 sets) 5/16 x 1 1/4" bolts with 2 flat washers, 1 lock washer and 1 nut.
26. Seat cushions to seat base - (12 each) No. 10 x 5/8 flat head machine screw, flat washer, lock washer and nut. (12 each) No. 10 x 5/8" flat head wood screws.
27. Seat back assembly - (6 each) No. 10 x 1" flat head self-tapping screw (for hinges (8 each) 1/2 x 5/8" pan head self-tapping screw (for plates).
28. Dash to body - (4 each) No. 10 x 1 1/2" stainless oval head with finishing washer, flat washer, lock washer and nut.
29. Fire wall to chassis (4 each) 5/16 x 1 1/4" hex head carriage screw, flat washer, lock washer and nut.
30. Rear bumper bolts (bumper to bracket) - (4 each) 3/8 x 1 1/4" chrome carriage bolt with flat washer, lock washer, and nut.
    (2 each) 3/8 x 1 1/2" chrome carriage bolt with flat washer, lock washer and nut.
31. Rear bumper support frame to chassis - (2 each) "U" bolts with nuts. (2 each) 5/16 x 1" bolts, flat washers, lock washers and nut. (2 each) VW factory bolts.
32. Steering extension bolts - (4 each) 5/16 x 1 1/2" lock washer and nut.
33. Main headlight bracket to fender and grille (4 each) 1/4 x 3/4" pan head bolt with lock nuts.
34. Headlight bracket to radiator shell - (4 each) No. 10 x 1" machine screws, flat washer, lock washer and nut.
35. Tail lights (4 each) No. 10 x 1/4" round head machine screw, flat washer, lock washer and nut.
    (8 each) - No. 10 x 1" round head

machine screw, flat washer, lock washer and nut.

36. License bracket bolt - (4 each) No. 10 x 1 1/4" phillips stainless machine screws, with flat washer, lock washer and nut.
37. Door hinge bolts - (16 each) 1/4 x 1" flat head socket screws.
38. Door lock to door - (4 each) No. 10 x 1 1/4" stainless steel phillips oval with flat washer, lock washer and nut.
39. Door lock striker to body - (4 each) No. 10 x 1" phillips oval with flat washer, lock washer and nut.
40. Top bows to body - (4 each) No. 10 x 1" oval head chrome self-tapping screw, full thread.
41. Parking lights - (2 each) 1/4 x 3/4" bolts, SAE fine thread.
    (2 each) 1/4 x 1" bolts, SAE fine thread.
42. Simulated radiator cap to grille - (2 each) No. 10 x 1" stainless chrome screw, flat washer, lock washer and nut.
43. Cowls to body - (4 each) No. 10 x 1 1/4" phillips oval machine screw, stainless steel, with finish washer, flat washer, lock washer and nut.
44. Badge bar - (4 each) No. 10-24 x 1 1/4" phillips oval machine screws, 18/8 stainless with flat washer, lock washer and nut.
45. Door panels - (22 each) No. 8 x 5/8" chrome phillips oval self-tapping screws No. 2772 Auveco.
46. Side carpet panels - (24 each) No. 8 x 5/8" chrome phillips oval self-tapping screws No. 2771 Auveco.
47. Seat back adjusters - (4 each) No. 10 x 1" flat head self-tapping screws.
    (6 each) No. 10 x 3/4" flat head wood screws.
48. Horns - (2 each) 1/4 x 1" hex head bolts with flat washer, lock washer, and nuts.
    (2 each) No. 10 x 1 1/2" stainless machine screwws, flat washers, lock washers and nuts.
49. Badges - (2 each) No. 8 x 1/2" stainless machine screw, flat washer, lock washer and nuts.
50. Deleted.
51. Grab Handle (2 each) No. 8 x 1 1/2" stainless steel oval head machine screw, flat washer, lock washer and nut.
52. Air Horns (4 each) 5/16 x 1" hex head carriage screw, flat washer, lock washer and nut.
53. Threshold plates (14 each) No. 10 x 1/2" stainless steel round head self-tapping screws.
54. Hood support (2 each) No. 8 x 1" round head machine screw.
55. Windshield post caps (4 each) 1/4 x 2" stainless steel flat head stove bolts.
56. Battery box (4 each) 1/4 x 1" hex washer head self-tapping screws.
57. Defroster to duct (2 each) 1/4 x 1" hex head machine screws, flat washer, lock washer and nut.
58. Front fender brace (2 each) 5/16 x 1 1/4" chrome carriage bolts with flat washer, lock washer and nut.

ALL OPTIONAL ITEMS SHOULD HAVE NUTS AND BOLTS.

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