Dear Cimbria SS Builder:

The introduction of the Cimbria SS marks over nine years of dramatic and successful growth for Amore Cars Ltd. Our early commitment to provide our customers with the best car kit, combined with the leadership design of the Cimbria SS, is why Amore Cars Ltd. has achieved one of the top positions among the world's car kit manufacturers.

The Cimbria SS assembly plans represent a new approach to provide out kit car builders with comprehensive blueprints of construction that try to cover all phases of preparation and assembly.

You will find that building your own personal sports car of this caliber an experience that can be emotionally, as well as financially rewarding. While it is almost impossible to establish an exact time of completion for every builder, most of our customers average between 200 and 300 hours. We suggest you establish your own enjoyable pace and thoroughly complete each operation to avoid any errors. This will only reflect a superb final outcome.

Your craftsmanship and ingenuity, combined with the Cimbria SS styling and engineering designs, will produce a sports car that is truly one of a kind, with sexy European lines to assure its "in" style appearance well into the future. Admirers will honestly believe that the Cimbria SS finished product is an expensive European sports car. Only you will know how little it really cost.

Happy Motoring!

Sincerely,

[Signature]

[Name]

[Name]
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All drawings and layouts were done by Leonard Scherer.
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VOLKSWAGON BODY DISASSEMBLE

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VOLKSWAGEN BODY DISASSEMBLY

Inspect the Chassis

When buying a used Beetle for the Cimbria SS, be prepared to spend some time and money replacing or repairing worn parts. It is usually better to pay a little more for a low mileage VW which has body damage, than to get one which is simply worn out with many miles of driving.

1. Inspect the front end for collision damage, worn ball joints, bearings, steering box, and rusted thru shock towers.
   a) Shocks and steering damper should always be replaced with our recommended replacements.
2. Inspect the floor pan for collision damage, rust, and cracks.
3. Inspect the rear suspension. Look for noisy U joints and wheel bearings.
4. Inspect the transaxle for smooth and positive shifting.
5. Inspect the brake system for worn linings and leaky wheel cylinders.
6. Inspect the engine for oil leaks, contamination of the oil, oil smoke in the exhaust, unequal compression in the cylinders, and low generator output.

Tools Used to Disassemble the VW

1. VW service manual
2. Vise grips
3. Hammer
4. Metric wrenches (6mm to 19mm)
5. 1 1/8" socket
6. Wheel puller
7. Cold chisel
8. Blade and Philips screwdrivers
9. Penetrating oil

Volkswagen Disassembly Procedure

Removal of the body and the necessary components can be done in about 3 hours. You will need the help of 4 or 5 friends to lift the VW body off the chassis. Make sure you have adequate room to lift the body off to one side when removing it from the VW chassis.

Before starting the tear down job, read the tool and parts to be saved list.

1. Remove the front seats. Slide the seats part way forward and remove the spring from underneath. Continue to slide the seats forward and out. Remove the rear seat cushion by pressing in. Lift it up and out.
2. Locate chassis serial number for future reference. You may need the number to register the vehicle later.
3. Disconnect and remove the battery. Save it, the rear bracket, and the negative lead for re-use.
4. Remove the voltage regulator which is located in the left rear corner opposite the battery. Save the regulator for later use.
5. Remove four 8mm x 1.25 x 30mm bolts from the rear body mounting flange. Save them for later use.
6. Remove the bolt from each corner under the back seat cushion. Remove the rear seat belts and save them for future use.

7. Disconnect the speedometer cable from the driver's side wheel by removing the cotter pin or retaining clip from the hub center. Save the parts for re-use. Pull the speedometer cable from the hub by pulling it from the rear of the wheel.

8. Open the hood and remove the cardboard covers over the dash and gas tank.

9. Locate the headlight dimmer relay and flasher. Remove it and save for re-use. Remove the radio and speaker if you wish.

10. Pull the speedometer cable out of the body. Disconnect the cable at the speedometer and save it.

11. Disconnect the gasoline gauge wire to the gas tank. Remove the two rear gas tank brackets and bolts. Disconnect the filler hose from the tank. Lift the tank up and to the side. Use vise-grip pliers to clamp the hose to avoid spilling gas. DISCONNECT the hose from the chassis connection and set the tank aside.

12. Remove the brake fluid reservoir. Disconnect the flexible hoses from the metal hoses. Save them for later use. Disconnect all wires from the brake master cylinder switches. Remove and save all metal hoses from the flexible hoses at the brake master cylinder. Use two 5/16" bolts to plug the hoses on the master cylinder to avoid contamination of the fluid and cylinder.

13. Locate the steering column wire group and disconnect all wires from behind the dash (remember, if you're using the VW harness, to tag each wire). Pull the wires out of the dash beneath the steering column.

14. Remove the bolts holding the column to the dash and steering box. Pull the steering column free of the steering box and save it.

15. Remove the two 10mm x 1.5 x 35mm body bolts located on top of the front torsion tubes beneath the area where the gas tank was located. Save them.

16. Remove the horn and mounting bracket located under the driver's front fender in front of the wheel.

17. Remove the rear wheels and the body mounting bolts in front of the shock absorber. You may need to use penetrating oil or even the heat of a torch to loosen the bolts.

18. Locate the oil warning light sender below the distributor. Disconnect the wire from it. The sender should be replaced later with an oil pressure sender unit.

19. Disconnect all wires in the engine compartment and tag for re-use.

20. Turn the car on its side and remove all body bolts and washers. Save the washers. Remove the four bolts under the front corners of the pan.

**BODY REMOVAL**

Recheck:

- a) All body bolts removed
- b) Steering disconnected and removed
- c) All engine and brake wires removed
- d) Rear suspension stabilizer bar disconnected on newer models
- e) Heater hoses disconnected from the body near the rear wheel wells

21. Remove the body by having 4 or 5 friends lift the body to one side.

22. Remove the battery bracket from the body pan with a cold chisel. Be careful not to damage the pan or bracket. Save the bracket for re-use.

23. Chisel off the back seat heater cable tube on each side and throw out.

24. Chisel off the jack handles at both sides and throw out.

25. Collect all the parts to be saved. See list.
Items To Be Saved From Your VW

*1. Steering column and ignition switch
2. Brake fluid reservoir and hoses
3. Gas tank and electric sending unit
   a) Preferably the type with the nozzle up (1961-1967)
4. Fusebox
5. Square body mounting washers
6. The rubber gasket around the mounting flange of the chassis
   a) garage door weatherstripping also will work
7. Any other parts you may want to incorporate in your Cimbría
   (Ash trays, interior light, glove box lock, radio, antenna, etc.)
8. Wiring harness (tape and tag each wire as you disconnect it)
9. Speedometer cable and clip
10. Headlight switch
11. Dimmer relay
12. Flasher
13. Voltage regulator
14. Horn

* A GM tilt steering column is highly recommended in place of
   the VW type. Telescopic units may not be used.
BODY (WITH DRIVER & PASSENGER DOOR, INTERIOR TUB AND TRUNK TUB)

MAIN BODY PART NUMBER  181-1010
DRIVER DOOR PART NUMBER  181-1015
PASSENGER DOOR PART NUMBER  181-1016
INTERIOR TUB PART NUMBER  181-1020
TRUNK TUB PART NUMBER      181-1030

FLOOR PAN (WITH BUILT IN CONSOLE)
PART NUMBER 181-1040
OPTIONAL REAR HOOD
(STANDARD ON V8 MODELS)
PART NUMBER 181-1070

OPTIONAL SPLIT WINDOW REAR HOOD
(CAN BE USED FOR V8 OR VW ONLY)
PART NUMBER 181-1080
ROCKER PANEL
PART NUMBER 181-2000P

OUTER WINDOW TUNNEL
PART NUMBER 181-2010

INNER WINDOW TUNNEL
PART NUMBER 181-2020

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Parts Manufactured By Others

Bearings for Door Piston - CM55
Bulb for taillights:
  1157
  7073 or 1156
Blower Kit - 90-12
Butyl Tape - C1303 (Square)
Door Piston - 171-827-550A
Door Locks:
  Gold Lock - 152823509B
  Gold Pin - 111-823-507F
  Bearing
  Pulley
  Inside Handles - 249
  Outside Handles - 250 (with keys)
Exterior Mirrors
  Left Side - P267L
  Right Side - P321R
Front Turn Signals:
  Sockets - 8759
  Plate - 8767
  Bulb - 1157

Gauges:
  Speed - D-550E2
  Tachometer - D-997-A
  Fuel - 283-M
  Fuel Sender - 0385-B
  Volts - 283-H
  Oil Press - 283-L
  Oil Sender - 279-B
  Glue - 77-205
Heater Hose - NPN 2516
Hinge for Front Hood - Ford Fairmont E052 16796-A
Headlight w/ housings - S964573
Hinge for Side glass
Headlight System:
  Linear Actuator - DCA 2 PC-04-9102103009
  Bearing - N6912J
Indicator Lights:
  Ignition - SL71
  High Beam - SL71
  Turn Signal - SL71
Interior Mirror Blue Kit -11067
Interior Mirror 10" Wink 9145
Lock & interior releases for front hood.
(see pin & locks for doors) also get Choke cables
License Plate Light -M-436
Prop-outs for Side Glass:
   Bolt w/lug ASS. -ARH-1
   Pin release -PP-1
   Latch with Fingerpulls -ARL-3
   mb-Frame (Rivet on bracket) -ARL-3
Primer for Windshield -CRL 1110
Seat Track
Shifter handle -NPN 6057
Steering Wheel:
   Tirismo-vinyl 13" 1223
   GM Hub -402
   VW Hub -171
Switches:
   Headlight & Beam TILA51-1L-BLFW-BL
   Headlight & Pop-up TILCS5-1LBLFN-BLK
   Electric Door -TIGM5-1L-BL-FN-BL
   Blower -T16G51-8L-BL-FN-BL

Side Marker Lights:
   Red -m115R
   Amber -m115A

Socket for taillights:
   11475
   1200 3A77

Taillights:
   913601
   913602

Speed Cable Nut
Weatherstripping for Doors & Windows Chrysler
Windlace Style 500
Windshield Molding -AV 4581

Wiper System:
   Motor -WC 7210Y0
   Arm-LE 721153A24
   Blade -BD721011-22
   (Bag piece) LE -721125A-1
   SH -721205A
   KT -721040
   Fuse Box -EVS 111-937-5057
   Seat Foam 1" Thick
   Upholstery (Rol1) Black
   Foam (Rol1 ½" Thick
   Upholstery Glue (Can)
   Jute (Rol1) 4002
# CHAPTER THREE
## SUGGESTIONS FOR ASSEMBLY

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Suggestions

1. Read the entire instruction manual before proceeding.
2. Prior to each operation, review the instructions and illustrations carefully, and familiarize yourself to what has to be accomplished and how it is done.
3. Always use adequate eye protection when drilling, sanding or cutting.
4. Use a china marker (grease pencil) or a pencil when marking on the outside surface of the fiberglass. Never use ballpoint pens or marking pens.
5. When drilling or cutting through fiberglass, always drill/cut from the finished side to avoid chipping or cracking.
6. Flat washers are always used against and between fiberglass and the head of the screw or nut when a bracket is not used. The exception to this is oval head and countersink screw heads.
7. When making measurements, use a solid rule (not flexible) for greater accuracy.
8. For round holes, try to use a hole saw, however, marking the diameter and carefully cutting with a saber saw or drilling a series of holes, will also accomplish the task. Complete the operation with a rotary rasp or file to obtain a smooth, even appearance.
9. Glue must be used sparingly and applied evenly on the upholstery to avoid excessive wrinkling.
10. Flat black or semi-gloss paint should be used on the following areas:

   a) bumper facings (fiberglass) including edges and inside
   b) wheel wells
   c) engine bay area
   d) inside doors
   e) inside fresh air scoops
   f) inside side louvers (fresh air to engine)
   g) inside front trunk area
   *h) backside of front and rear hoods
   i) headlight pod bottom cover
   j) rear window pod

* These should be painted immediately before installation.

How to Make Wooden Saw Horses

1. Placing the Cimbria SS body on 2 wooden horses, make the assembly of certain items much easier. FIGURE 3-1 shows a typical wooden horse that can be made easily. Nail carpeting or foam on the top area to protect the body when it is placed upside down.

FIGURE 3-1
SAW HORSES
Adapters - Water-cooled engines are used more frequently late due to their availability, reliability and inexpensive initial cost for additional horsepower. There are several companies that make fine adapters. Two of the best we've used are:

1) Esslinger Engineering
   712 Montecito Drive
   San Gabriel, CA 91776
   (213) 289-3073
   Pinto and Capri to VW transaxles

2) Kennedy Engineered Products
   10202 Glenoaks Blvd.
   Pacoima, CA 91331
   (213) 899-2612
   All other engines to VW transaxle

Buick V6 engines require some chassis changes:

1. Rear torsion bars must be changed to 28 or 29mm.
2. Rear engine mounts are necessary.
3. A larger capacity radiator must be used.
4. Possible beefing up of the transaxle may be necessary, depending on the state of tune of the engine.
5. A 200mm pressure plate and disc should be used or a VW bus type plate and disc may also be used.
6. A perimeter frame (FIGURE 5-3 ) is a must.
7. FIGURE 5-2 also shows the proper routing of water lines and heater lines.

WATER-COOLED ENGINES

Most 4-cylinder water-cooled engines will fit with no or very little cutting. However, there are some recommendations that will help you with certain engines.

1. A perimeter frame should be made and bolted to your VW chassis. See FIGURE 5-2.
2. Water lines (water pipe 1 1/4" OD x 10') should be welded to the perimeter frame. FIGURE 5-2.
3. Heater lines (3/4" OD x 10' tubing) should be routed along side the water cooling pipes.
4. A rear rubber mounting is highly recommended for most engines due to the inherent vibrations of 4-cylinder engines.
5. Adequate cooling is achieved by opening the frontal area of the body to the dimensions listed in FIGURE 10-1. Also, FIGURE 10-3 shows the dimensions and particulars of the proper radiator. A cross-flow type is superior. The amount of cores are determined by your particular engine - for example: Pinto 2000cc = 2 core radiator; Pinto 2000cc with air conditioning = 3 or 4 core radiator.
6. An electric fan must be used with your radiator - these can be purchased from Amore Cars Ltd. or various local stores. Position the fan so that it pulls through the radiator.

Shrouding for Engine

Your VW engine needs to keep cool. Make a shrouding out of tin or sheet steel and close off the bottom half of the engine. This will prevent the engine fan from reusing the hot air in the engine compartment. Make sure that the hose connected to the two side vents reaches the engine fan opening.

Sealing the Wheel Wells

Use plastic roofing tar, which can be purchased at your local hardware store, in the wheel well areas. Tar the front firewall chassis floor, and all wheel wells (right over the excess covers).
There are various minor details that should be done. Some are necessary and some are suggestions.

Lights front and rear trunks. Installation of courtesy lights inside your front and rear trunk areas. Find the most strategic area you can and install the lights. These lights can be obtained from your old VW, junk yard, or many of the auto accessory stores in your area.

Rubber shims should be placed at each corner of the front and rear trunks. These will prevent rattles; you can align your hoods properly; and they will also put more tension on the locks to assure a positive locked position. These again can be purchased at any of your local accessory stores.

Drain Holes: The front trunk area is not designed to be water tight. Drain holes should be drilled at the bottom of the trunk. Use a 3/8” drill bit and drill at least four holes in the depression and two more holes in the trunk’s corners.

Door Gaps: With the doors locked in place, visually measure the gaps around the door. If there is an uneven area, use a pencil and mark a line so that the gap would be even in most areas. Lift the door up and sand the edges down to the line. Do the same to the other door.

Air Conditioning Evaporator: If you are installing an air conditioning system, install the evaporator under the dash. Please refer to the instructions supplied with the air conditioning system.

If you are installing windshield washers. There are a variety of systems available and closely follow the instructions supplied with the unit. Generally speaking, the reservoir and pump should be mounted inside the front trunk. The eyelets or squirters should be places approximately 2 inches behind the front hood between it and the windshield at each corner of the hood.

When your Cimbria SS is complete. Take time to carefully inspect your work. Be fussy with it and take a careful look. Clean the car carefully, vacuum the carpeting, clean the windows, and wax the paint job. The first time you drive it around will show you exactly why the Cimbria SS is the Super Star of kit cars.

Alignment Specs

VW chassis, using the recommended wheels and tires.

Front:
- Tire air pressure - 26 lbs.
- Toe in - 1/16” to 1/8” ± 1/16”
- Camber - ± 0 to ½ degree negative
- Caster - 2-4 degrees

Rear:
- Tire air pressure - 30 lbs.
- Toe in - 1/16” to 1/8” ± 1/16”
- Camber - ± 0 to ½ degree negative.

Remember to aim your headlights according to the diagram in FIGURE 14-14

Painting

The Cimbria body should be prepared for painting. It has been sanded down to a 220 finish at the factory and one more coat of all purpose primer has been sprayed over that. You should sand down the body again to at least a 220 finish, however, most painters have their own feelings on painting and various finishes work well. The factory has tried to catch all of the air bubbles under the fiberglass top layers, but sometimes we may miss a few pinholes. Look the body over carefully for pinholes and use a heat gun over the surface to bring any hidden air pockets out. Remember 3/4’s of painting is preparation. Be meticulous with your preparation. Take your time.

Before proceeding to the body, paint the inside of the door jams. Use the same color as the exterior finish (make sure that the inside door panel is semi gloss black).

Mask off all areas to the interior of the car. Cover all wheels and tires. Cover the engine bay, and cover the inner glass.
List of Tools Needed

1. A VW Service manual
2. ½" Electric drill and drill bits
3. Circular saw
4. Sabre saw and blades
5. Rivet gun and 3/16" rivets
6. Wire terminal crimpers and stripper
7. Various open and box end wrenches
8. Various screw drivers: Blade and phillips
9. Hacksaw
10. Ratchet/socket set
11. Knife
12. Assorted files, rasps, etc.
13. Pliers
14. Allen wrenches
15. Caulking gun
16. Scissors
17. Razor blades
18. Paint brush
19. Jack and jack stands
20. Flexible and straight edge rules
21. Hand sanding block or power sander
22. Vise grips

Normally, the inventory of the average garage is quite adequate!
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CHAPTER FIVE
REHABILITATE CHASSIS

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Chassis Preparation

To enhance your enjoyment of the Cimbria SS fully, do as good a job as you can in making the chassis mechanically sound. Total enjoyment of the Cimbria SS is created by a reliable, safe, and trouble free chassis. Our frame recommendations were developed over many years of testing and we heartily recommend them for good riding and spirited driving.

Now is the time to work on the chassis. The information provided here is intended only as a guide as you work with your particular chassis. Use your best judgment as you prepare to mount the body on the chassis. If you see something which needs repair or replacement, take care of it even if it isn’t mentioned in the instructions. There is no better time to work on the chassis than now. Be sure to use a VW service manual for mechanical components such as the Official Service Manual found at VW dealers only.

1. Remove all insulation from the chassis.
2. Clean the chassis.
3. Double check all the items listed earlier under “Inspect the Chassis”. Adjust, repair, or replace any worn parts.
4. Paint the chassis with a rust preventative paint.
5. Repack the front wheel bearings, grease the front end, and check the lubricant level in the steering box and transaxle.
6. Adjust the clutch if necessary and inspect the operation of the pedal assembly for clutch, brake and accelerator pedals for free movement.
7. Inspect all bolts and nuts for tightness. Loosen up the heater box operation on the engine if necessary.
8. Tune up the engine including adjusting the valves. Adjust the generator belt and change the oil.
9. Change the angle of the steering box. Loosen the two bolts that hold the steering box in place. Rotate the steering box down, so by eyesight, the steering shaft will be approximately 2 inches above the clutch and brake pedal assembly. Do NOT RETIGHTEN THE STEERING BOX YET. This will be done after the body is bolted down and your steering column is on and centered.
10. Cut 2/3’s off the rubber snubber and reinstall. This will allow 2 inches more suspension travel without bottoming out.
11. Undercoat the floorpan with plastic roofing tar. Allow overnight drying.
12. Bumper brackets on chassis front and rear to be mounted. See FIGURE 18-1 & 18-4.
13. Perimeter frame (FIGURE 5-3).
14. Front bumper brackets (FIGURE 18-1).
15. Rear bumper brackets (FIGURE 18-4).
16. Cut floor (FIGURE 5-3).
17. Move shifter back (FIGURE 5-11).
18. Shorten hand brake handle (FIGURE 5-8).
19. Spread clutch and brake pedals (FIGURE 5-1).
20. Location of brake fluid reservoir (FIGURE 5-2)

FIGURE 5-1
SPREADING PEDALS

CLUTCH PEDAL

BRAKE PEDAL

1½”
Brake Reservoir

The brake fluid reservoir should be mounted inside the front trunk as direct above the master cylinder as possible. Use sheet metal screws and push nuts to hold it in place.

Do not connect the hose until the body is mounted to the chassis at a later time.

The master cylinder should be checked for leaks. Usually a rebuild or a replacement is in order for high mileage vehicles.

If the brake fluid hose was broken or is no longer usable, buy 3 feet of 8mm I.D. brake hose from your VW dealer. Part # N 20-350-1. This hose will eliminate cutting and bending of the tubing.

VW Chassis Final Inspection and Recommendations

1. Pedal Assembly - bend the clutch pedal to the left 1" to 1½"; bend the brake pedal ¾" to the left.
2. Brake lines - replace if necessary.
3. Clutch and accelerator cables - should be replaced. It’s much easier to do it now.
4. Heat exchanger cables - replace if necessary.
5. Master cylinder - check it closely. Rebuild or replace if necessary.
7. Exhaust system - VW engines should use the Monza 4 tip units. Water-cooled engines should have their systems made at a local Car X or Midas dealer. They usually don’t cost any more than a stocked unit.
A perimeter frame is necessary when using a water-cooled engine. Routing of cooling lines and heater lines is simplified and, at the same time, the VW frame is greatly strengthened.

Figure 5-2 shows a typical perimeter frame. Detail A shows the 2 plates recommended for attaching water lines and heater lines to the perimeter frame.

- Water lines - 1 1/8" OD x 1" ID x 10' two required
- Heater lines - 3/4" OD x 5/8" ID x 10' two required

Note: The perimeter frame can also be used for VW engines - exclude the 2 plates for water lines.
1. Cut out VW floor pan as shown in FIGURE 5-3.
2. Turn frame upside down and mount perimeter frame (FIGURE 5-3) if you're using a water-cooled engine.
SHORTENING HAND BRAKE

1. Remove the hand brake handle.
2. Remove the thumb button.
3. Remove the spring FIGURE 5-4.
4. Remove the Pawl rod FIGURE 5-4.
5. Cut the parking brake lever as shown in FIGURE 5-5.
6. Cut the spring as shown in FIGURE 5-6.
7. Cut the Pawl rod and re-tap as shown in FIGURE 5-7.
8. Re-install the Pawl rod, spring and thumb button.
9. Bolt hand brake back in place.
10. Hand brake should look like FIGURE 5-8.
SHORTENING SHIFT ROD

1. Position shift rod in a vise with the socket end up.
2. Cut off the socket end as shown in FIGURE 5-9.
3. Cut off 5" from the shift rod. **DO NOT REMOVE ROD FROM VISE.**
4. Weld the socket end back, making sure it is positioned as before.
5. Insert the rod through the front inspection plate area.
6. Be sure to slide the tube through the GUIDE SLEEVE. See FIGURE 5-11.

FIGURE 5-9
SHORTENING SHIFT ROD

RELOCATION OF SHIFTER

1. Place shifter in neutral.
2. Remove VW shifter.
3. Disconnect the shift rod under the inspection plate in the rear (see FIGURE 5-3.)
4. Remove the shift rod through the front inspection plate between the front torsion bar tubes. (see FIGURE 5-3.)
5. Using a marker pen, outline the dimensions as illustrated in FIGURE 5-10.
6. Drill a 3/8" hole as a starter hole.
7. Insert your saber saw blade into the 3/8" hole and cut the outside lines out.
8. Remove the cut out area.
9. Cut the removed area according to the dimensions shown in FIGURE 5-10.
10. Swap ends and weld as shown in FIGURE 5-11.
Prior to installation, cut out shifter and handbrake holes as shown in the fiberglass floor pan FIGURE 5-12.

**FIGURE 5-12**

**HOLES IN FLOOR PAN**

Installation of Floorpan

1. After cutting out the VW floorpan as shown in FIGURE 5-3, glue garage door weatherstripping, which can be purchased in any hardware store, along the perimeter of the cut out hole.

2. Place the floor pan over the weatherstripping and push down.

3. Use a 25/64 drill bit and drill approximately where shown in FIGURE 5-13 for (8) 3/8" bolts.

4. Use a wide washer on top and bottom to distribute the load and bolt the floor pan down with 3/8" x 1 1/2" bolts.

5. Make sure that the floor pan is sealed all around.

6. Use silicone rubber caulk to seal any holes.
FIGURE 5-13
BOLTING FLOOR PAN DOWN

3/8" BOLT 1" LONG

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Mounting Body to VW Chassis

Prior to mounting the body to the VW chassis, these things should be checked: 1) Has everything been done to the chassis (such as brakes, shocks, suspension resetting steering damper, engine rebuilt, etc.); 2) Is the original rubber sealer around the chassis's mounting flange in place, if not, 1" closed cell neoprene should be substituted; 3) Are the proper wheels and tires on (7 x 15 with GR50 x 15 tires in front, and 8 x 15 with LR50 x 15 tires in the rear). Do not mount your Cimbria body until all of these points are done.

With the help of four or five friends, lift the body, by grabbing each wheel well, and place it on the chassis mounting flange. Check to make sure that nothing (wires, hose, etc.) is pinched under the flange or anywhere else. If the body mounting flange does not touch completely around, see what is causing it. You may have to cut some of the rear engine firewall down. Don't be afraid to cut. After the body is settled in position, you and a friend will measure to make sure your body is on exactly straight. Place a long straight edge or rule against the bottom of the left rear tire and the top of the wheel well perpendicular to the wheel hub (centered to the wheel hub). Use a ruler and measure from the wheel hub to the outside of the straight edge. Read your measurement. Go to the other rear wheel and do the same. They must be exactly the same (+- 1/8"). Move the body around until they both show an equal measurement from side to side.

Go to the front and use the same procedure. The front will not read the same measurements as the rear (the two rear measurements should be the same and the two front measurements should be the same).

Torque the body bolts to 11 to 14 ft. lb.
CENTERING BODY ON CHASSIS
FRONT TO REAR

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<td>H (driver side)</td>
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FIGURE 6-1
CENTERING REAR OF BODY FRONT TO REAR

E-DISTANCE (PASSENGER SIDE)
G-DISTANCE (DRIVER SIDE)
F-DISTANCE (PASSENGER SIDE)
H-DISTANCE (DRIVER SIDE)

FIGURE 6-2
CENTERING FRONT OF BODY FRONT TO REAR

P-DISTANCE (PASSENGER SIDE)
R-DISTANCE (DRIVER SIDE)
Q-DISTANCE (PASSENGER SIDE)
S-DISTANCE (DRIVER SIDE)
CHAPTER SEVEN
STEERING COLUMN

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Hole for Steering Column

1. Drill all holes while body is upside down.

FIGURE 7-1
STEERING COLUMN HOLE

BODY UPSIDE DOWN

Saw Horses

RECOMMENDED WORKING POSITION

PASSenger Side

Driver Side

Steering Column 4” Hole

4 1/2”
STEERING COLUMN BAR

1. Use 45" x 3" x 1" x 1/8" rectangular steel tubing used for steering column mounting.

2. Used also for grounding the dash wiring harness by routing a metal strap from each end to the frame using a mounting bolt. (See FIGURE 7-5)

3. Mount heater and air conditioning evaporator towards the passenger side.

4. Dash wiring loom and fuse box are also routed with the fuse box on the passenger side. Note: Refer to FIGURE 7-5.

Angle cut a 45" x 3" x 1" x 1/8" rectangular tubing as shown in FIGURE 7-2 both sides. Weld a side plate on each side using FIGURE 7-3 as your guide. Mount the steel tubing to the body (see FIGURE 7-4), by wedging it as far forward and down as it will go. Use (4) 5/16" x 1½" bolts, flat washers and lock washers on each side for mounting. See FIGURE 7-4 for accurate measurements. Make sure that it is level.
Steel Bar—Main Ground

1. Using one of the steel bar's mounting bolts, attach a steel strap or ground to it and run the ground to the frame. Do this to both sides. In this way, your steel bar can be used also as your main ground for everything located behind the dash.

Figure 7-5
Location of Items on Steering Column Bar

- Heater Location and Air Conditioning Evaporator (for water cooled engine)
- Evaporator Location (for air cooled engine, for air conditioning)
- Main Ground Location
- Steering Column Location
- Steel Bar
- Ground Strap to Main Frame or Sub Frame on One on Each Side of Car
- Fuse Box Location
Adapting GM Steering Column

1. A GM late model (1970-1980) tilt steering column should be used in your Cimbria. They are readily available in salvage yards for very little money. It adds a dimension of adjustability which most people can use.

2. FIGURE 7-6 shows how to cut your steering column and how to adapt it to your VW steering box.

3. Weld the VW end piece to your tilt steering column.

Figure 7-6: Adapting GM steering column to VW steering box

- Cut off must be in park, weld in place which must be in park
- Discard
- Weld

GM Tilt Steering Column

NOTE: A tilt and telescopic column should not be used due to the unavailability of an after market steering wheel hub.
Mounting Steering Column to Bar

1. Position Steering Column in place.
2. Attach to the steering box first.
   NOTE: Be sure your dash is in position. It will be used as a guide to center your steering column.
3. Pull the steering column up so that it touches the dash opening. See FIGURE 7-8.
4. From the bottom, mark where the column holes align with the steel bar using a thin pencil. See FIGURE 7-7.
5. Drill (2) 7/16" holes and use 3/8" X 3" bolts, flat washers, lock washers, and nuts to bolt the column to the steel bar.
   NOTE: Use a 1" square tubing spacer as seen in FIGURE 7-7 and Detail "A" and "B" between the column and steel plate.

STEERING COLUMN MOUNTS
SEE DETAILS "A", "B" & "C"
1" x 1/8" WALL SQUARE TUBING SPACER. LENGTH IS DETERMINED BY MOUNTING FIRST WITHOUT SPACER.

DETAIL "A"

DRIVERS SIDE

MUST BE FITTED BY HAVING DASH FACING AND STEERING COLUMN IN PLACE TEMPORARILY

DETAIL "C"

Note: Steering column tabs should be used only if the steel bar has been mislocated.
FIGURE 7-8
STEERING COLUMN BY DASH

- Oil Pressure
- Speedometer
- Tachometer
- Water Temp.
- Fuel Gauge
- Amps.

Try to keep this space equal side to side. Column should touch top area.

FIGURE 7-9
ADAPTING STEERING WHEEL TO STEERING COLUMN

- 13" Diameter Steering Wheel
- Nut (comes with steering column)
- Steering Wheel Hub
- Steering Column
- Emblem
CHAPTER EIGHT
VW GAS TANK

Figure 8-1 Gas Tank Bracket
Figure 8-1A Gas Tank Bracket Angle
Figure 8-2 Location of Gas Tank Bracket

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Gas tank filler: requires a 3" hole.

Air hole for gas tank; used also as an overflow tube. Requires a 2 ft. long rubber hose attached to it (rubber hose should be gas line). Route the hose to the outside, away from the engine and heat exchangers.
CHAPTER NINE
HEATING AND VENTILATING

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Figure 9-6 Routing of Hose for Water-Cooled Engines 9-6
Heating System Air-Cooled Engines

One of the biggest problems with air-cooled VW's in winter, is the lack of heat. It's not because the heat exchangers don't make enough heat, but rather because not enough of it can get to you with the engine fan alone. Auxiliary blowers are needed especially in our colder climates. The Cimbria was developed in Wisconsin, where cold is cold. Amore Cars Ltd. has heating blower systems available at an extra cost. If you live in a similar climate, blowers are a necessity. You may purchase them from us, or there are various local places that carry blower kits also.

The actual mounting of the blowers really depends on the type of blower you use. Refer to the instructions supplied with the blower kits.

Insulate the heating hose by wrapping it with fiberglass insulation or any other good insulators.
Holes for Air Cooled Engines

1. Drill all holes while body is upside down.
1. Drill all holes while body is upside down.
FIGURE 9-4
BODY HOLES FOR WATER COOLED ENGINES

BODY UPSIDE DOWN

1. Drill all holes while body is upside down.

Holes for Water Cooled Engines
FIGURE 9-5

BODY HOLE FOR WATER COOLED ENGINES

1. Drill all holes while body is upside down.

BODY UPSIDE DOWN

19½"

11"

3" hole

5"

3"

3"

3" hole

4"

3"

3" hole

REAR

9-5
Figure 9-6
Routing of hose for water cooled engines

Driver Side

From front scoop

2 1/8" hose

To dash

Body is upside down

From rear scoop

3" hose

Passenger Side

From front scoop

2 1/8" hose

From rear scoop
CHAPTER TEN
RADIATOR

Openings in Trunk Tub
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Water Cooled Frontal Openings
   Figure 10-2 Radiator Opening in Body
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   Figure 10-3 Radiator for Water Cooled Engines
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OPENINGS IN TRUNK TUB

1. Openings A & B are recommended as access holes to the frontal area including the steering box. They apply to all versions of the car.

2. Opening D is the cut out for the radiator.

3. Opening C is used as an air escape for the radiator.

NOTE: These are typical openings. They can vary from these and still be effective.
Water Cooled Frontal Openings

1. Water-cooled engines require an opening in the front nose. It is very important that an adequate hole be opened.

2. FIGURE 10-2 shows the proper opening for all radiator sizes for the Cimbria SS.

3. The radiator under cover is a must and should be installed after all other procedures are finished. It guarantees that the air is routed through the radiator for cooling.

4. FIGURE 10-1 shows the proper radiator opening.
Size Radiator to Use

1. The ideal radiator for the Cimbria SS should look like FIGURE 10-3.

2. A cross flow radiator with 18" X 23" outside dimensions as shown in FIGURE 10-3 should be used for all water-cooled engines.

3. The amount of cores are due primarily by the size of the engine and whether air conditioning is being used. See FIGURE 10-3.
Installation of Radiator and Electric Fan

1. FIGURE 10-4 and 10-5 show the installation of a typical electric fan with a thermostatically controlled switch.

FIGURE 10-4
PLACEMENT OF ELECTRIC FAN

PETCOCK

MOUNTING BRACKET

ELECTRA-TEMP CONTROLLER

TEMPERATURE SENSING BULB

INLET

PRINTED CIRCUIT MOTOR

12" FAN

OUTLET

To install Radiator use 5/16" x 1" long bolt (2 on each side)

Note: A rubber strip should be installed between the radiator and body.
FIGURE 10-5
ASSEMBLY OF ELECTRIC FAN

12" FAN

INLET

MOUNTING BRACKET

LOCKING NUT

FLAT WASHER

ELECTRA-TEMP CONTROLLER

PRINTED CIRCUIT MOTOR

MOUNTING BRACKET

LOCKING NUT

FLAT WASHER

OUTLET

HEX HEAD SCREW

MOUNTING BRACKET PADS
# Chapter Eleven

## Wipers

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Holes for Wiper Motor

1. Drill a 7/8" hole as shown in FIGURE 11-1. Also see FIGURE 11-2.

FIGURE 11-1
LOCATION OF WIPER MOTOR HOLE

FIGURE 11-2
WIPER MOTOR BOLT HOLES

WINDSHIELD OPENING
Wiper Motor Assembly

1. Wiper systems are supplied with their own assembly instructions. Please refer to them.

2. FIGURE 11-3 shows a typical finished wiper motor and bracket.

FIGURE 11-4
WIPER ARM LOCATION

LOCATION OF WIPER ARM WHEN IN OFF POSITION

WIPER ARM SHAFT ASSEMBLY
USE HOLE "B"

MOUNTING BRACKET

DRIVE ARM

WIPER ARM SHAFT ASSEMBLY

CONNECTING LINK

WWC WIPER MOTOR

ASSEMBLY OF WIPER MOTOR AND BRACKET
### CHAPTER TWELVE

#### WIRING

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Holes for Wiring Harness

Place the Cimbria body upside down on the 2 horses. Refer to FIGURE 12-1. Drill the holes as shown:

- ½" hole - speedometer cable
- 1" holes - electrical wire

FIGURE 12-1
ROUTING FOR WIRING HARNESS

BODY UPSIDE DOWN

PASSENGER SIDE

BATTERY CABLE

DRIVER SIDE
FIGURE 12-2

HOLES FOR WIRING HARNESS

BODY UPSIDE DOWN

DRIVER SIDE

PASSenger SIDE

SPEEDOMETER CABLE 1/2 hole

1 1/2

2 1/2

3/4 hole

15" 17"

17"

5

7"

RECOMMENDED WORKING POSITION
Figure 12-4

Identification of Switches
Looking at Them from the Back

Switch 1 = Headlight High Beam
          Washer On & Off
Switch 2 = Interior Lights (extra)
Switch 3 = Headlights Up & Down
Switch 4 = Headlights On & Parking Lights
Switch 5 = Wiper On & Off
Switch 6 = Radiator Fan
Figure 12-5
Identification of Wires Going to Switches

SWITCH-1
- Ground #16 Black
- Headlight Relay #16 Violet
- Windshield Washer Pump

SWITCH-2
- Linear Actuator #12 Purple

SWITCH-3
- Linear Actuator #12 Green
- Ground #16 Black
- Headlight Relay #14 White

SWITCH-4
- Battery Fuse #12 Green
- Ign On Fuse #12 Brown
- Ground #14 Black
- Fuse Box #12 Orange
- Fuse Box (Running Lights) #16 Red

SWITCH-5
- Ground Wiper Motor to Chassis
- To Wiper Motor Return #16 Black
- Ign On #12 Brown

SWITCH-6
- Ign On #12 Brown
- Ground #16 Black
- Fan #16 Dark Green
Figure 12-6
Identification of Gauges
Looking at Them from the Back

Gauge 1 = Fuel Gauge
Gauge 2 = Water Temp.
Gauge 3 = Tachometer
Gauge 4 = Speedometer
Gauge 5 = Volts
Gauge 6 = Oil Pressure
Light 1 = Ignition
Light 2 = Right Turn Signal
Light 3 = Left Turn Signal
Light 4 = High Beam
Figure 12-7
Identification of Wires Going to Gauges

Gauge-1: Ign. On Fuse #16 Red
- Fuse Box #16 Red
- Mounting Bolt
- Gas Tank Sending Unit
- Mounting Bolt #16 Grey
- Ign. On #16 Grey

Gauge-2: Ign. On
- Fuse Box #16 Red
- Mounting Bolt
- Ign. On (off Fuse Box) #16 Grey
- Ground #16 Block
- Mounting Bolt
- To Engine Water Sending Unit

Gauge-3: Ground #16 Block
-Fuse Box #16 Red
- Mounting Bolt
- Ground #16 Black
- To Neg. Side of Coil

Gauge-4: Speedometer Hook Up
- Mounting Bolt Ground #16 Block
- Mounting Bolt
- Ground #16 Black
- To Engine Oil Pressure Sending Unit #16 White

Gauge-5: Mounting Bolt
- Mounting Bolt
- Mounting Bolt Ground #16 Black

Gauge-6: Mounting Bolt
- Mounting Bolt
- Mounting Bolt

Light-1: Vol. Reg #16 Grey
- Fuse Box #16 Grey
- 4 Wire Junction (LT) #16 Yellow/Black

Light-2: 1-2
- 4 Wire Junction (RT) #16 Green/Black
- Ground #16 Block

Light-3: 1-2
- Ground #16 Black

Light-4: 1-2
- Ground #16 Black
- Ground #16 Black
Wiring for Fuse Block

Figure 12-8
Identification of Wires
Going to Fuse Block
Looking at it from the Back

- Headlights Highbeam #12 Green
- Headlights Lowbeam #14 White
- Gauges #10 Grey
- Wipers #16 Red
- Horn #16 Orange
- Brake Master Cylinder #16 Light Blue
- Steering Column Acc. #12 Brown
- Linear Act. Switch #12 Orange
- Headlight Dimmer #14 White
- Flasher #16 Red/Green
- High Beam Lites #16 Blue/White
- Headlight Dimmer #16 Red
- Running Lites & Dash Lites #16 Red
- Washer #16 Red
- Clock #20 Yellow
- Interior Lites #12 Purple
- Acc., Lighter, Heater Fan #12 Purple
- Acc. Switch on Steering Column #12 Purple
- Battery, Steering Column #10 Red
- Headlight Switch #12 Green
- Headlight Switch #16 Red
- Clock #20 Red
Figure 12-9
Dash Wiring Diagram
Looking at from the Back

Wiring for Dash

4 Wire Junction
Right

4 Wire Junction
Left

Lite Relay
V.W. Type 1

Flasheer G.M.
2 Prong

12-9
Figure 12-10
Identification of Wires
Going to Steering Column

Wiring for Steering Column

1. STARTER
2. BATTERY
3. IGN. ON
4. BATTERY
5. NOT USED
6. BATTERY
7. ACCESSORIES
8. NOT USED
9. NOT USED

10. RED
11. BROWN
12. PURPLE
13. DARK GREEN
14. BLACK/WHITE
15. GREEN/RED
16. YELLOW/BLACK
17. GREEN/BLACK
Coding and Description for Items on Wiring Diagram

A = Battery
B = Starter
C = Generator
C1 = Regulator
D = Ignition/Starter Switch
E = Windshield Wiper Switch
E1 = Light Switch
E2 = Turn Signal
E4 = Headlight Dimmer Switch
E5 = Windshield Washer Switch
E6 = Headlight Up & Down Switch
E8 = Radiator Fan Switch
F = Brake Light Switch
F1 = Oil Pressure Switch
F4 = Back-up Light Switch
G = Fuel Gauge Sending Unit
G1 = Fuel Gauge
G5 = Water Temperature Gauge
H = Horn Button
H1 = Horn
J2 = Flasher Relay

K = Ignition Light
K1 = High Beam Warning Light
K2 = Volt Gauge
K3 = Oil Pressure Gauge
K5 = Turn Signal Warning Light
L1 = Sealed-Beam Unit Left Headlight
L2 = Sealed-Beam Unit Right Headlight
L11 = Speedometer Light
M2 = Tail/Brake Light Right
M4 = Tail/Brake Light Left
M5 = Turn Signal and Parking Light Front Left
M6 = Turn Signal Rear Left
M7 = Turn Signal and Parking Light Front Right
M8 = Turn Signal Rear Right
M11 = Side Marker Light Front
M12 = Side Marker Light Rear
N = Ignition Coil
N1 = Automatic Choke
N4 = Tachometer
O = Distributor
S = Fuse Box
V = Windshield Wiper Motor
V1 = Headlight Motor
V2 = Fan Motor
X = License Plate Light
X1 = Back-up Light Left
X2 = Back-up Light Right
CHAPTER THIRTEEN
DOORS

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Bearing for Door Striker

1. Press fit the copper bushing into the bearing using a vise.
2. Use the appropriate Allen wrench to tighten the two screws which hold the bushing in place.
3. Run an 8mm x 1.25mm tap through the bushing.
4. Thread the door striker into the bushing.

Door Lock System

1. Door lock system is shown in FIGURE 13-4.

FIGURE 13-4

HOW DOOR LOCK SYSTEM IS INSTALLED

3/16" X 1" Long Carriage Bolt

3" X 9" Steel Plate

3/16" X 1" Long

5/16" X 1 1/8" Long
Door Piston Installation:

1. Door pistons used are from a VW Rabbit rear hatch.

2. Locate the pre-drilled hole on the body.

3. Mount the right angle bearing mount to the piston. (5/16" washer and nut required.)

4. Place a wide flat washer between the right angle bearing and the body and place the end through the hole. Use a 5/16" flat washer and lock nut to bolt in place.

5. Bolt the other end to the door piston mounting flange. Use a 5/16" by 1¾" bolt. Be sure to use enough washers as spacers so that the piston does not bind on the flange.

NOTE: The piston will be installed and removed several times during the course of assembly.
1. Cut the female part of the hinge as shown.
2. Drill (2) 5/32" holes.

**FIGURE 13-6**
CUT HINGE

3. Glue the male part of the hinge to the side window glass using the dimensions provided in **FIGURE 13-7**.
4. Use a glue made specifically for metal to glass bonding. (No Crazy Glue, please.)
5. Amore Cars Ltd. uses windshield mirror glue for bonding the hinge to the glass.
6. Caution should be exercised that all surfaces be extremely clean.
7. Push the female hinge on the male part and place the entire assembly in the window opening.
8. With a pencil, mark where the female hinge touches the door. Use **FIGURE 13-10a** as a guide to offset one of the hinges. This is important for installing and removing the glass.

**FIGURE 13-7**
LOCATION OF HINGES ON GLASS
7. Remove the glass from the door cavity.
8. Remove the female end from the hinge.
9. Align the female hinge on the door where they were marked and place it so that it bottoms out on the weatherstripping flange. (See FIGURE 13-9.)
10. Mark the holes and drill for #8 sheet metal screws 1” long.
11. Use a small flat washer, as a shim, behind each hole and screw tightly.
12. Place the window in place and make sure that it installs and removes easily.

FIGURE 13-9
FASTENING HINGES TO DOOR

FIGURE 13-10
OFFSET OF HINGES
Installation of Side Window Prop-Out

1. Use FIGURE 13-11 as a guide to layout for prop-out window plate. Use 1/8" thick metal (2 required).
2. Cut out and drill according to the template.
3. Paint with a black rustoleum paint.
4. Attach to the side window prop-out (see FIGURE 13-11) using (2) #10 screws, nuts and lock washers.

---

FIGURE 13-11
PROP-OUT WINDOW PLATE

---

1. Attach the side window prop-out to the window as shown in FIGURE 13-12.
2. With you inside the car, have someone push on the side window so that it seals on the weatherstripping all around. (A light touch is usually sufficient.)
3. With the prop-out in a closed position, mark the mounting holes on the door.
4. Use a 5/32" drill bit for #8 x 1 1/4" sheet metal screws.
5. Start by screwing the middle hole first. Do not tighten all the way.
6. Screw the other 2 holes part of the way.
7. Periodically try the prop-out. When it snaps shut and the window is sealed all around, stop tightening.
Weatherstripping for Side Doors

1. If you bought a Cimbria SS kit that did not include weatherstripping, we heartily recommend that you purchase the weatherstrip kit from Amore Cars Ltd. The weatherstripping flange has been spaced from the door with this type in mind.

2. See FIGURE 13-13. Use the suggested stop and start areas.

3. Weatherstripping should be temporarily installed to properly align the doors and then removed to be reinstalled only after the car is completely painted and buffed.

4. Use black silicone rubber where the two ends join for sealing.

FIGURE 13-14
HOW WEATHERSTRIPPING LOOK ON FLANGE
Weatherstripping for Side Windows

1. Place weatherstripping starting where shown in FIGURE 13-15
2. Use a mallet or other tool to push weatherstripping down in tight corners.
3. Cut to fit.
4. Use silicone rubber to seal where the two ends join.
Upholstery for Door Panels

1. Cut each door panel along the arm rest as shown in FIGURE 13-16.
2. Place the inner door lock in position and mark for a cut out. Cut out the opening. Fit the lock in place to be sure that the lock fits correctly.
3. Place the lower door panel on the door and trim to fit.
4. Use (2) #8 sheet metal screws to hold the panel to the door.
5. Place the upper door panel on the door and trim to fit.
6. Remove the upper door panel and glue 1/2" foam to the surface.
7. Cut enough material from the roll so that a 2" overlap is reached.
8. Glue the material to the back side only.
10. Do the same to the other side.
11. Remove the lower door panel.
12. Glue 1/2" foam all around.
13. Glue another 1/2" foam directly over the arm rest area. See FIGURE 13-17.
14. Place the sewn door panel material over the door panel.
15. Position the seam so that it follows the upper part of the arm rest.
16. Pull tight and glue to the back side at both ends of the arm rest, #1 & 2.
17. Pull the material and glue to the back side area #3.
18. Pull the material tight and use a heat gun and glue to the back side of area #4.
19. Work the material and glue all around the back side.
20. Slit the cut out area and glue to the back side.
21. Install the inner lock see FIGURE 13-4.
22. Install the door pull.
23. Put door panel aside for later permanent installation.
24. Repeat all procedures to the opposite panel.

FIGURE 13-16
HOW TO CUT DOOR PANELS
Upholstery for Roof Panels on Door

1. While the lower door panels are in position, place the door roof panels on the doors and trim to fit.
2. Glue 1/2" foam.
3. Cut enough material so that a 2" overlap is reached.
4. Glue the material to the foam and back side.
5. Put each panel aside for later permanent installation.

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Installation of Tail Lights

1. Actual Template for the rear tail lights. (Pontiac Sunbird tail lights.)
2. Place the outline of the template over the outer edge and top of the car rear.
3. Mark all the openings and holes.
4. Cut the body out and drill the appropriate holes.
5. Mount the Pontiac Sunbird tail lights.
6. Turn over the template and do the same to the driver side.
TEMPLATE FOR TAIL LIGHTS
CUT ON LINE

3/8"

ACTUAL SIZE

PLACE ON THE EDGE
OF BODY REAR

USE THIS SIDE ON PASSENGER SIDE
(TURN OVER AND USE ON DRIVER SIDE)

STERLINGKITCARS.COM
Installation of License Plate Lights

1. Use FIGURE 14-2 as a guide for the license plate lights.
2. Use template to mark your holes.
3. Push the wire, attached to the light, through the middle hole.
4. Use #8 x 1" long sheet metal screws to attach to body.
Side Marker Lights

Federal law requires the use of side marker lights, however, they also must be located properly by law.

1. Various side marker lights can be used, however, there are certain regulations that must be followed.
2. Positioning your side marker lights as in FIGURES 14-3 and 14-4.

---

**FIGURE 14-3**

**FRONT SIDE MARKER LIGHTS**

**FIGURE 14-4**

**REAR SIDE MARKER LIGHTS**

- **RED LIGHT**
- **FINISHED SHEET METAL SCREW 1” Long**
- **3 1/2”**
- **1/2” ABOVE BODY LINE**
- **FINISHED SHEET METAL SCREW 1” Long**
- **3/4” ABOVE BODY LINE**

---

14-6
Openings in Headlight Pods

1. Cut out the openings in both headlight pods as shown in FIGURE 14-5.

Figure 14-5
Holes in Headlight Pod

---

Holes for Headlight Bearings

1. Mount the 2 headlight bearings and mounts in the (2)-2" holes shown in FIGURE 14-6.

Figure 14-6
Holes for Headlight Bearings and Headlight Actuator Mount

---

SAND OR FILE UNDER SIDE OF EDGE TO CLEAR BODY MORE EASILY. 45° ANGLE IS USUALLY SUFFICIENT.
Installation of Headlight Pop Up System

1. Mount the 2 headlight bearings and mounts on the outside area of the trunk.

2. Push the passengers headlight flag through the bearing from the inside wheel well area.

3. Place the headlight motor tube over the passenger flag tube.

4. Push the driver headlight flag through the bearing and through the motor tube.

5. Align the flags so that they are centered in the headlight opening on the body.

6. Tighten the set screws in each of the headlight bearings so that the flag tubes can't move from side to side.

7. Drill a \( \frac{1}{4} \)" hole through the motor tube and passenger flag tube and bolt together with a \( \frac{3}{4} \times \frac{1}{4} \)" bolt, flat washer, lock washer and nut. (See FIGURE 14-8.)

8. Do the same on the other side. NOTE: Be sure the flags are centered in the opening.

9. Drill and bolt so that there are 2 bolts on each side. (See FIGURE 14-8.)
Installation of Linear Actuator

1. Bolt the linear actuator (headlight motor) to the mount and the headlight motor tube.

2. Use a nylon nut both sides and tighten just enough so that the motor can swing freely as it travels in and out.
   NOTE: The headlight motor is to be installed after the headlight pods are bolted in place.

FIGURE 14-9
MOUNTING LINEAR ACTUATOR
Installation of Pods to Flags

1. Drill (3) 9/32" holes approximately where shown in FIGURE 14-10.
2. Place the headlight pods in the opening, and from underneath, mark the holes on the fiberglass pods.
3. Drill the holes in the bottom of the headlight pods and using 1¼" x ¼" bolts, mount the pod to the flag.
4. Use shims (flat washers) between the flag and the pod so that the pod will clear the body as it swings up. This will take a little trial and error, but once it is shimmed properly, it should never have to be removed.

NOTE: Sand or file the back edge of the pod so that it clears the body more easily. (See FIGURE 14-5.)

Assembly of Headlights

1. Most headlights come as a three piece unit as shown in FIGURE 14-11.
2. Screw all three pieces together.
3. Mount each unit to the headlight facings, shown in FIGURE 14-12 from the back side.

4. Use the brackets shown in FIGURE 14-12 to hold the headlights to the headlight facings.

5. Place the headlight facing in the headlight pod for fit and remove after you’re satisfied it fits well. Put them to the side for later installation.
Installation of Facing to Pod

1. Headlight facing is attached to the headlight pod with #8 sheet metal screws.
2. Drill (4) 9/32" holes in the headlight facing side flanges.
3. Turn lights on and align the facing with your hand.
4. Mark the holes on the headlight pod when proper alignment is reached.
5. Drill (4) holes on pod and attach with (4) #8 sheet metal screws.

Aiming Headlights

1. Position the car on a level surface 25 ft. from a vertical wall. Have the fuel tank about half-filled and make certain that tire pressures are correct.
2. Roll the car back and forth a few yards to settle the suspension. Then load the driver's seat with one person or a weight of 154 lb. Aiming target figure 14-14 on vertical wall. Shaded areas are zones of high light intensity. Vertical lines (V) and horizontal line (H) intersect at the headlight centers.

FIGURE 14-13
HEADLIGHT FACING TO HEADLIGHT POD

FIGURE 14-14
AIMING TARGET
CHAPTER FIFTEEN
DASH

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Temporary Installation of Dash and Upholstery of Dash Top

1. Put 1\(\frac{1}{4}\)" X 20 X 2" carriage bolts into each hole and use a flat washer, lock washer and nut to draw the carriage bolt down tightly. Be sure each bolt is straight. Tighten each nut permanently.

2. Drill (2) 3" holes (see FIGURE 15-1). These will be used for defrost registers supplied with the fresh air blower kit.

3. Foam the dash top over the carriage bolts and all with 1/2" foam. Be sure the front flange is covered evenly.

4. Place the sewn dash top material over the top.

5. Align the seam so that it follows all the way across.

6. The dash top is one of the very few pieces that you will glue the material right to the foam and round the back areas.

7. Always start from the middle area and carefully work your way to the outside. Glue should be used very sparingly on the foam and material surfaces. Note: Glue both surfaces, wait until slightly tacky and press together.

8. Attach the seam area first. Hold the material away from the dash top and apply heat from a heat gun. Pull the material tight so to remove all wrinkles and push down to the surface.

9. Work to each side using the same method.

10. Slit the two holes and glue the material to the back side.

11. Screw the two registers in place using #8 black sheet metal screws.

12. Put the dash top aside for later permanent installation.
Temporary Installation of Dash and Upholstery of Lower Dash

1. Drill (2) 3/8" holes on each side of the mounting flange. See FIGURE 15-2.
2. Place the lower dash on the body approximately where it fits.
3. Have someone hold each end of the dash tight against the Cimbrida body while you place the dash top (FIGURE 15-3) on top of the lower dash.
4. Trim the dash top, if necessary, so that the dash top area closest to the windshield base fits about one inch below the windshield cavity.
5. Mark the four holes from the lower dash mounting flange to the body. Drill the 3/8" holes on the body and temporarily mount the lower dash to the body using 3/8" X 1 1/4" bolts with flat washers and lock nuts.
6. Hold down the dash top according to FIGURE 15-2 and using a 9/32" drill bit, drill holes through the dash top and lower dash using FIGURE 15-2 as suggested locations for the holes.
7. Remove the dash top and put to the side temporarily.
8. Use a 1/2" drill bit and drill out all the 9/32" holes on the lower dash.
9. Remove the lower dash from the body.
10. Glue a sheet of 1/2" foam on the lower dash. Cover all areas tightly.
11. Place the sewn dash upholstery starting from the middle area out.

Bolting Dash Top to Lower Dash and Upholstery

1. Bolt lower dash in place.
2. Place dash top in place leave space like in FIGURE 15-3.
3. Drill 9/32" hole through dash top and lower dash.
4. Remove dash top and ream the 9/32" hole to a 1/2" hole.
5. Install the bolts in dash top like in Detail "A".

DETAIL "A"

FIBERGLASS

FLAT WASHER

LOCK WASHER

NUT

CARRIAGE BOLT

DASH TOP

LOWER DASH
FIGURE 15-2
BOLT DASH TOP TO LOWER DASH

#8 Finished Sheet Metal Screw 1 1/4" Long

DASH TOP

See Detail "A"
1/4" X 2" Long Carriage Bolt
8 Needed

(TYPICAL) 9/32" HOLE

(TYPICAL) REAM TO 1/2" HOLE

START HERE FOR UPHOLSTERY

LOWER DASH

5/16" X 1 1/4" Long
12. Pull the upholstery tight following the contours. Do this several times so that you can see how the upholstery follows the various cavities of the lower dash.

13. The key is to place the seam straight across.

Note: The key to all the sewn materials is to align the seams with the appropriate area. Always maintain a straight line.

14. Start with the middle area. (See Figure 15-2) glue the top then the lower areas of back side only. Do NOT glue the actual front surfaces. In this way, you will be able to pull the material tightly and wrinkle free.

Note: Use a heat gun or hair dryer to make the vinyl material slightly pliable.

15. Always work your way from the middle to the outside edges.

16. Here's where patience really pays off. Proper upholstering spells quality throughout the entire car.

17. After covering the entire lower dash with material, check to see that all seams are straight. Be particular now!

18. Put the lower dash on its face.

19. Use a razor blade to slit the material in the open cavities. Slit all the cavities at one time.

20. Brush glue on the slitted areas and the surrounding areas.

21. Wait until slightly tacky.

22. Turn the lower dash so that it is facing you.

23. Use your heat gun on each cut area.

24. From the backside, pull each slit tightly and press against the body so it holds. Note: Be very careful that you do not pull the seams out of line.

25. After all cavities are opened, place the various facings and appropriate instruments in place permanently.
Dash Panels

1. All facings should be 1/8" to 1/4" thick.
2. Each facing requires that all backside edges be sanded or cut to a 45° angle.

**FIGURE 15-4**

TYPICAL CORNER FOR DASH PANEL

**FIGURE 15-5**

TYPICAL BACK EDGE FOR DASH PANEL

**Set up for Switch Panel**

1. Cut out **FIGURE 15-6**.
2. Use **FIGURE 15-6** as a template for the switch panel.
3. If you're using Amore Cars' switches which are supplied with the deluxe kit, cut out the areas noted and place the template on the facing material to be used.
4. Cut out the facing and each hole - try each switch to be sure the hole is adequate for the switch.
5. Sand the backside of each edge to a 45° angle.

**FIGURE 15-6**

SWITCH PANEL LAY OUT

SAND BACKSIDE EDGE TO A 45° ANGLE ALL AROUND
FIGURE 15-7
LAYOUT FOR SWITCHES

Set up for Instrument Panel

1. Our instrument facing uses Stewart Warner gauges.
2. This is an actual template of the facing.
3. Various materials can be used. The most popular being wood, plastic, wood veneer, and metal.
4. Sand the back of each edge to a 45° angle.
**Instrument Panel Facing**

1. A typical layout for the instrument facing.
2. Various materials can be used for the actual facings. Examples:
   a) wood
   b) plastic
   c) wood veneer with a backing
   d) aluminum

---

**FIGURE 15-9**

**LAYOUT FOR INSTRUMENT GAUGE**

- VOLTS
- SPEEDOMETER
- TACHOMETER
- FUEL GAUGE
- OIL PRESSURE
- WATER TEMP.
- TURN SIGNAL
- HIGH BEAM
- IGNITION

---

**FIGURE 15-10**

**FUSE BLOCK PANEL**

4 13/16" x 14 5/8"

---

**FIGURE 15-11**

**FRESH AIR PANEL PASSENGER SIDE**

3 3/16" x 14 13/16"
Holes Cut in Lower Dash

1. Using your facings as templates, mark the lower dash as shown in FIGURE 15-14.
2. Using a 3/8" drill bit, drill a hole in each marked area.
3. With a jig saw, cut out the marked area.
4. Place your dash facings over the area again and make sure that you can see through the holes in the facings without interference from the lower dash.
5. Remove the facings.
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Upholstery and Assembly of Rear Shelf

1. The rear shelf is composed of ½” plywood.

2. It is generally used for:
   a) speaker placement
   b) storage
   c) a way to hide the uneveness of the VW floor area
   d) a place for luggage

3. Shelf should be carpeted, not upholstered.

4. FIGURE 16-1 shows a typical size that works with most VW setups.

5. The two holes, shown in FIGURE 16-2, may be used as storage bins or glove boxes.

6. FIGURE 16-3 shows how to construct 2 boxes that may be inserted in the openings.

NOTE: Finished glove boxes can be purchased inexpensively through certain local marine shops. They may work better and usually allow room for speakers also.

DETAIL "C"

#8 SHEET METAL SCREW

DETAIL "B"

#8 SHEET METAL SCREW

1/4" x 1 1/2"
7. Use (4) 2" L brackets to connect the top section to the bottom section.
8. Detail A can be used to determine the exact angle that the 4 L brackets should be bent to.
9. Use wood screws, from the underside, to attach the L bracket to the wood.
10. Try the rear shelf for fit.
11. Make any final cutting or sanding now. Remember to allow room for carpeting. Usually a 1/8" gap all around where the shelf touches the body is adequate.
12. Using a piece of chalk, mark a line along the back area where the shelf meets the body.
13. Remove the shelf and carpet it using glue and staples.
14. Mount 2 L brackets, just below the chalk line.
15. Mark another chalk line going straight up from each L bracket on the wall (about 4" long).
16. Place the shelf back in place ready to be permanently mounted.
17. If you've mounted speakers in the rear shelf, attach the appropriate wires.
18. Use 1" x 1/8" x 4" flat steel to attach the lower area of the shelf. Use 3/4" #8 sheet metal screws. See Detail C.
19. Using (3) 1½" #8 sheet metal screws, attach the upper overhang area of the shelf to the console.
Carpet Installation

If you received the carpeting from Amore Cars Ltd., now is the time to install certain sections. If you are using your own carpeting, use FIGURE 16-4 as a guide.

Each section of carpeting has a number in the back. Refer to these numbers as you look at FIGURE 16-4. Only numbers 1, 9, and 10 will be installed at this time.

Carefully align #1 in place. Fold over the passenger side. Apply glue to the front firewall and the back of the folded carpeting. Allow to dry until slightly tacky. Carefully position the folded carpeting on the firewall. Press them together. Do the same to the other side. Align 9 and glue. The same with 10.

You will refer to FIGURE 16-4 at a later time when you install the rest of the carpeting.

CARPETING IDENTIFICATION & SEQUENCE

1. Front wall cover
2. V.W. Tunnel cover
3. Passenger side consol cover
4. Driver side consol cover
5. Back wall cover
6. Driver side side wall & door opening cover
7. Passenger side side wall & door opening cover
8. Front flange cover
9. Passenger side floor cover
10. Driver side floor cover
Installation of Seats

1. After installing the seat tracks, push them all the way forward so that the seat would be farthest to the rear.

2. Position the seat in the body cavity (rear shelf must be in place) so that the seat back will just touch the rear shelf. Be sure the bolts are touching the floor.

3. Use a marker pen and mark the floor around each bolt as it touches the floor.

4. Remove the seat and turn it upside down. With your marker, mark Passenger side or Driver’s side on the seat bottom.

5. Refer back to the marks you made on the floor. Carefully measure 1" forward of each mark and drill a 3/8" hole at that point. Do the same to all marks on both sides.

   NOTE: The reason you drill 1" ahead of the mark is to allow the seat to clear the rear shelf as the bolts go through the floor. Remember you marked the bolts as they stood on the floor not through it. The curvature of the seat back would hit the rear shelf if this is not done.

6. Position seats in the holes and check so that it slides effortlessly. Make adjustments if necessary.

Seat Foam

1. Glue B & C in place first.

2. Trim D to fit & glue.

3. Glue E in place.

4. Glue A & F together first, then glue the combination to the seat.

   NOTE: 1" Foam is used. You may add additional foam to suit.

   NOTE: Seat tracks must be installed before foam can be glued to the seat.
Upholstery of Interior Panels

There are four major areas to cover in building a Cimbria body: chassis preparation, body assembly, wiring and upholstery.

The upholstery section deals with more than just covering a panel or a dash. It requires planning and anticipation. For instance, before actually gluing the material to the panel, several things must be determined first: (1) How thick of foam should be used (1/2" thick is the recommended thickness to all panels except where specifically noted); Have the panels been trimmed so that with the additional material they fit snug and correctly in place.

Things to do before actual upholstering begins: (Keep in mind that all of the upholstery (except the roof posts, roof and windshield base area) will be upholstered outside the car and put in place when called for.)

Note: There is no sewing required when you buy the upholstery kit (included with all kits but the basic). Only gluing is required. (Glue is supplied with our deluxe kits, but if you run out, any vinyl top glue will do.)

Refer to each upholstery FIGURE for specific instructions on each.

Upholstery of Kick Panels

1. While the dash is being fitted, place the passenger and driver kick upholstery panels in position and trim to fit.
2. While in position drill (2) 9/32" holes through the panels directly through the body. See FIGURE 16-8.
3. Remove the panels.
4. Bolt (2) 1/4" X 20 X 2" carriage bolts through the 9/32" holes on each panel. Use flat washers, lock washers and nuts.
5. Glue 1/2" foam.
6. Glue material to the back side only.
7. Use a heat gun to remove all wrinkles.
8. Set aside for later permanent installation.

FIGURE 16-8
UPHOLSTERY FOR KICK PANELS

1/4" or 5/16" X 2" Long Carriage Bolt

9/32" HOLE
Upholstery of Rear Panels

1. Fit panels and trim.
2. Use 1/2” foam and glue to surface.
3. Cut enough material so that you have a 2” overlap all around.
4. Start with the middle area and glue to surface and then to back side.
5. Again place in position.
6. Mark the piston mounting hole to the backside of the panel.
7. Drill out a 3/8” hole carefully.
8. Put aside for later permanent installation.
9. Do the same for other side.
UPHOLSTERY OF CONSOLE TOP

1. Place the console top next to the console and mark the approximate locations of the shifter and handbrake openings.
2. Cut out the holes.
3. Foam the middle area with 1/2" foam.
4. Foam over the whole console top with another 1/2" foam stip.
5. Cut enough material from the roll so that a 2" overhang is reached.
6. Glue the material only to the back side.
7. Slit the material over the cutouts and glue to the back side.
Upholstery of Dash Top Flange

1. The flange that the dash top rests on near the base of the windshield must be upholstered. See FIGURE 16-11.

2. From the upholstery roll supplied (except basic kit), cut a strip 4” x 72”.

3. Glue the material directly to the body cavity as shown in FIGURE 16-11.
Upholstery of Windshield Posts and Ceiling

1. Before the posts and ceiling get upholstered, certain items must be checked:
   a.) Check the weatherstripping flange so that it is no thicker than 1/8” all around. Sand down if necessary.
   b.) Doors should be mounted and aligned at this time.
   c.) Bolts holding the door hinges should be cut so that they do not go beyond the nut.

2. Glue 1” foam on the posts. Cut a separate strip of material so that it follows the pattern of each post with a 2” overlap on each side.

3. Start with the inside flange of the passenger windshield post. See FIGURE 16-12. Glue a 10” strip. Pull the material tight and glue to the outside flange. See FIGURE 16-12.

4. Work your way down so that the post material overlaps the area in FIGURE 16-12. Before you glue the post material over FIGURE 16-12, turn the end over so that a finish is achieved at the end of the material.

   Note: The material is glued right on the windshield cavity (the windshield will rest right on it.) Also the material pulled and glued to the outside is glued right to the weatherstripping flange. (The weatherstrip will clip right over the material.)

5. Work your way up to where the ceiling meets the posts. See FIGURE 16-12.

6. Use your heat gun to get all wrinkles out.

7. You may rivet each end using a 3/16” or 1/8” rivets. Also the corners can be riveted see FIGURE 16-12.

8. Use black silicone rubber sealant all around the edge of the material in the windshield cavity. This will prevent moisture from getting under the material.

9. Cut a 17” X 35” foam strip and glue to the ceiling.

10. Cut a 21” X 39” piece of material and begin by gluing the very front part at the top of the windshield cavity. See FIGURE 16-12

11. Pull the material back tightly and glue to the back flange.

12. Glue the passenger side flange.

13. Use your heat gun and then glue the drivers side.

Note: Glue only to the flanges.
### CHAPTER SEVENTEEN
### FRONT AND REAR HOODS

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Opening Front Hood Louvers

1. FIGURE 17-1 shows a typical way to open the front hood louvers.
2. A radiator is required when using a water cooled engine.
3. The radiator is placed below the hood.
4. Use the same directions found in FIGURE 17-17 to open the louvers.

Front Hood Hinge Holes

1. See FIGURE 17-2 for detail dimensions for cutting the front hood hinge holes.
2. 1981 (Front or Rear) hood hinges are used.
3. Shim the hinges (with flat washers) so that they open parallel to each other. They both must face straight forward and be perfectly parallel to each other or they will bind when opening the hood.

FIGURE 17-1
OPENING LOUVERS WATER COOLED ENGINE ONLY

FIGURE 17-2
HOLES FOR FRONT HOOD HINGE
FIGURE 17-3
SHIMING FOR FRONT HOOD HINGE

SHIM 1/2"

SHIM 1/4"

NO SHIMS

NO SHIMS

20"

20"
Front Hood Striker Holder

1. Use 1" x 1/8" stock and bend as shown.
2. Use for the front hood striker bracket
3. Mount to wood block which is fiberglassed in the inside of the front hood using sheet metal screws.

Front Hood Lock Holder

1. Use ¼" x 1/8" stock and bend as shown.
2. 2(2) required to hold the front hood lock.
3. Mount to the wood block in the very back of the front hood. Use sheet metal screws.
Installation of Front Hood Lock

1. See FIGURE 17-5 for the correct shape of the steel bar that holds the striker for the front hood.
2. Detail "B" shows how to mount the striker to the bar.
3. FIGURE 17-8 gives you locating dimensions.
4. Use sheet metal screws to bolt the steel bar to the fiberglassed wood in the front hood.
FIGURE 17-8
LOCATION OF FRONT HOOD STRIKER

#8 Sheet Metal Screw
1" Long

SEE DETAL "B"

DETAL "B"

DETAL "A"
FIGURE 17-9
LOCATION FOR RUBBER STOPS

LOCATION FOR RUBBER STOPS
HEIGHT OF RUBBER STOPS IS DETERMINED BY FITTING HOOD SO IT IS FLUSH WITH BODY ALL AROUND.

FIGURE 17-10
BRACKET FOR RUBBER STOP

#8 Sheet Metal Screw 1/4" Long
Installation of Front Hood Prop-Up

1. See FIGURE 17-12 for the location of the front hood prop-up.
2. A 36" X 1/4" rod should be used.
3. Bend according to Detail "A" & "B".

Front Hood Prop-Up

1. Recommended prop-ups for the front hood are shown in FIGURE 17-11.
2. Detail "A" shows the base plate that the rod pivots in. One is required for the front hood.

FIGURE 17-11
FRONT HOOD PROP-UP

DETAIL "A"
5/16" HOLE
3/4" 3/4"
1/2"

DETAIL "B"
5/16" ROD

#8 Sheet Metal Screw
1/2" Long

FIBERGLASS BODY
FIGURE 17-12
LOCATION FOR PROP-UP

SEE DETAIL “A” & “B”

CLIP
Installation of Rear Hood Prop-Up

1. All rear hoods use the same prop-up as shown in FIGURE 17-13.

2. (3) 36" X 1/4" rods are welded to a form such as in FIGURE 17-14.

3. See Detail "B" for bending the 2 ends.
Rear Hood Prop-Up

1. The rear hood rod utilizes 3 separate rods welded together.

2. Detail "A" shows the base plate that the rod pivots in. One required for the front hood; (2) required for the rear hood.

FIGURE 17-14
REAR HOOD PROP-UP

DETAIL "A"

5/16" HOLE

3/4" x 3/4" x 3/4"

V/2"

DETAIL "B"

5/16" ROD

#8 Sheet Metal Screw 3/8" Long

FIBERGLASS BODY
Hinges for Standard Rear Hood

1. (2) Hasp locks are used for the rear hood hinges.
2. See FIGURE 17-16 and bend accordingly.

FIGURE 17-16
STANDARD REAR HOOD HINGE

DON'T USE THIS HOLE

(ACTUAL SIZE)

3"
Installation of Standard Rear Hood Hinges

1. Cut out slots as shown in FIGURE 17-17.
2. Mark areas with a pencil.
3. Use a 5/16" drill bit for a starter hole in each louver.
4. Use a saber saw and carefully cut out.
5. Use a file and sandpaper to smooth all sides.

Note: Before opening any slot, check to see that your distributor and other vital areas of the engine are not exposed directly under an opening.

FIGURE 17-17
LOCATION FOR HINGES ON STANDARD REAR HOOD

FIGURE 17-18
HOW TO BOLT STANDARD REAR HOOD
2 on each side
3/4" X 1" Long Carriage Bolt

HINGE

1 3/4"

1" TYPICAL

2"

1 3/4"

HINGE

1" TYPICAL

HINGE

1 3/4"

1" TYPICAL

HINGE

1 3/4"

1" TYPICAL

HINGE

1 3/4"

1" TYPICAL

FIGURE 17-13
Installation of Optional Rear Hood

1. The optional louvered rear deck uses a clip on type weather seal all around. (See Detail "B".)

2. FIGURE 17-21 shows where to notch the under braces for the deck prop-up. (See Detail "A".)
Installation of Optional Split Window Rear Hood

1. The split window rear deck is optional for V8 cars and VW powered cars.
2. All rear engined water-cooled cars (V6 & 4 cylinder) require our standard rear deck. See FIGURE 17-17.
3. Window procedure:
   a.) Paint rear deck body color.
   b.) The window well (window sits in) should be painted black.
   c.) Prime window well and glass windows with windshield primer glue.
   d.) Wait until primer is slightly tacky, and place butyl tape all around each window.
   e.) Place window in well and push down until sealed all around.
   f.) The gap between the window and rear deck should be filled with black silicone rubber and made smooth with your finger.
FIGURE 17-23

HOW TO INSTALL GLASS IN SPLITWINDOW REAR HOOD

SPLITWINDOW (GLASS)

BUTYL TAPE

DETAIL "A"

PIANO HINGE

FIBERGLASS BODY

FIBERGLASS SPLITWINDOW REAR HOOD

#8 Sheet Metal Screw
1½" Long to body

3/16" pop Rivits
3/4" Long to split window

CUT OUT
CHAPTER EIGHTEEN
BUMPERS

Installation of Rear Chassis Bumper Mount
  Figure 18-1 Install Rear Chassis Bumper Mount
  Figure 18-2 Assembly of Rear Bumper System
  Figure 18-3 Install Rear Bumper Facing
Installation of Front Chassis Bumper Mount
  Figure 18-4 Install Front Chassis Bumper Mount
  Figure 18-5 Assembly of Front Bumper System
Figure 18-6 Opening Front Bumper Facing for Water Cooled Engines
Installation of Front Turn Signals
  Figure 18-7 Front Turn Signal Bulb
Front Bumper Turn Signal Lenses
  Figure 18-8 Install Amber Turn Signal Lenses
Figure 18-9 Install Front Bumper Facing
Installation of Rear Chassis Bumper Mount

1. Install both rear chassis bumper mount as shown in FIGURE 18-1.
Installation of Front Chassis Bumper Mount

1. Bolt front bumper chassis. Mount in place as shown in FIGURE 18-4. Use (size) bolts, flat washers and lock washers.
ASSEMBLY OF FRONT BUMPER SYSTEM

- 1/4" X 1 1/4" Long
  3 on Each Side

- 3/8" X 1 1/2" Long

- 4" X 4" X 1/8" PLATE

- FIBERGLASS BODY

- 4" X 4" X 1/8" PLATE

- 1 1/2" X 1 1/2" X 4"

- 9" X 4" X 1/8" PLATE
FIGURE 18-6
OPENING FRONT BUMPER FACING FOR WATER COOLED ENGINES

SEE DETAL "A"
Installation of Front Turn Signals

1. Drill a 3/4" hole as shown in FIGURE 18-7 for the front turn signal bulb and socket.
2. Snap the socket in place from underneath.
3. Place the bulb in and press and turn.
4. See FIGURE 18-8 for lenses.

FIGURE 18-7
FRONT TURN SIGNAL BULB

#8 Sheet Metal Screw 1/2" Long

FRONT BUMPER TURN SIGNAL POD
INSTALL AMBER TURN SIGNAL LENSES

After the bumper is painted flat black and the turn signal sockets and bulbs have been put in place, screw the clear and amber lenses to the front bumper with sheet metal screws. Be very cautious when drilling through the lenses.
CHAPTER NINETEEN
WINDOWS

Installation of Rear Window
Figure 19-1 Install Rear Window
Installation of Windshield
Figure 19-2 Install Windshield

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19-2
Installation of Rear Window

1. Use butyl tape to install the rear window glass into the inner window pod cavity. (See Detail "A").

2. Detail "B" illustrates the type of brace used to hold the glass in place after it is butyl taped to the inner window pod. Use 2 braces.

**Figure 19-1**

Install Rear Window

- **Detail "A"**
  - Glass
  - Butyl Tape
  - Fiberglass Inner Window Tunnel
  - Outside

- **Detail "B"**
  - #8 Finished Sheet Metal Screw 1 1/4" Long
  - Inside

- **4 Needed #8 Finished Sheet Metal Screws 1 1/4" Long**

SEE DETAIL "A"

SEE DETAIL "B"
Installation of Windshield

Use a small table and put some foam on it to prevent any damage to the windshield. Carefully place the windshield down, with the curved (outside) end down. Brush windshield primer (available at any glass store) on the outer surface area of the windshield and the windshield cavity on the body. Wait until it's slightly tacky. Begin to clip the rubber molding to the windshield, starting at the middle of the bottom part of the windshield. Clip it on so that the tail is facing closest to the floor. See Detail "A".

Place the windshield in the body cavity. Make sure it fits all around. Lift the rubber molding's tail to see if all around. (1) See Detail "B". When aligned properly, stick strips of masking tape on the windshield, continue down to the body in various places. See FIGURE 19-2. These will be used to align the windshield properly when you will permanently install it. Remove the windshield and place it upside down on the table again.

Brush more windshield primer on the rubber molding, and again on the windshield area. Wait until the primed surface is slightly tacky and begin to apply the 3/8" butyl tape on the glass. Butyl tape should be partly on the rubber and partly on the glass. NOTE: Silicone rubber can be applied to the outside area of the glass just below the rubber's tail. See Detail "D". Lift the rubber tail and apply the silicone rubber with a caulk gun. Start at the bottom and go all around. Do not touch it with your fingers. Press it down with the paper it comes with. Clean the excess primer with a razor blade, by scraping it toward the butyl tape. See Detail "C".

Have two friends in the car. You and another friend place the windshield in the windshield area, aligning it with the masking tape on the body and windshield, while your friends inside hold the windshield up to prevent it from touching the primed surface. When everything lines up, let the windshield lay in its cavity. Do not press down yet. Pull the rubber molding tail up slightly all around and see if it fits. Push the windshield around until it is completely in the groove. When in the proper place, begin to press down on it gently all around. If it sticks up above the body slightly, don't worry; it will settle after a while by itself. See Detail "D".

The remainder of the butyl tape should be applied to the inner area. Start from half way up one windshield post and work your way around the top to the other side of the post. If you see any area that might leak, apply another layer of butyl tape to it.
Installation of Mirrors

1. The position of the side view mirrors is critical.
2. Start with the passenger side first.
3. Use the dimensions shown as a guide.
4. Repeat on the driver’s side.
5. Interior mirror is glued to the windshield.
6. American Motor's small mirror is used.
7. Use the glue which comes with the mirror.
8. Use the dimensions as shown in FIGURE 20-1.
CHAPTER TWENTY-ONE
ROCKER PANELS
LOWER ENGINE COVER

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Installation of Lower Engine Cover
Figure 21-1 Mounting Lower Engine Cover
Figure 21-2 Template for Lower Engine Cover
Installation of Rocker Panels
Figure 21-3 Install Rocker Panels
Installation of Lower Engine Cover

1. If you are using an engine other than the VW air cooled, then the lower engine cover will allow you to cut the back area of the body so that your engine will fit.

2. Determine how far your engine sticks out of the body cavity after you've cut the body.

3. Cut the sides of the engine cover accordingly so that the cover clears the engine. (See FIGURE 21-1).

4. Cut out the area as shown in FIGURE 21-1.

5. Use expanded metal in the cut out area. This will allow heat to escape from the engine and also give the area a finish.

6. Clip the excess window and door weatherstripping on the cover's edges as shown.

7. The lower engine cover should be mounted with 4 angle plates as shown in FIGURE 21-1.

NOTE: Use the template provided in FIGURE 21-2 to outline the contour of the body onto the lower engine cover's side flanges.
FIGURE 21-1
MOUNTING LOWER ENGINE COVER

#8 FINISHED SHEET METAL SCREWS
2" Long

TYPICAL
1/4" X 1" Long

CUT OUT

3"
3"
11/2"

THIS DISTANCE SHOULD BE AS SMALL AS YOU CAN MAKE IT.

CLIP EXCESS WEATHERSTRIPING ON THIS EDGE BOTH SIDES
FIGURE 21-2
TEMPLATE FOR LOWER ENGINE COVER

THIS SIDE FITS TO THE BODY IN THE REAR
Installation of Rocker Panels

1. Drill (4) 5/16" holes in each rocker panel inner flange as shown in FIGURE 21-3.

2. With someone holding the rocker panel to the body, aligned properly from side to side and up and down, mark the holes on the body using a small pencil.

   NOTE: If the rocker panel does not touch the body in the middle area of the body, push it in, so that it will touch. Use force if necessary.

3. Drill the (4) holes with a 5/16" drill bit.

4. Use (4) 3/4" x 1" bolts, flat washer, lock washers and nut to fasten.
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AIR CONDITIONING

Figure 22-1 Routing of Hose for Air Conditioning
Figure 22-2 Air Conditioning Wiring
CHAPTER TWENTY-THREE
SPECIFICATION ON HOW TO MAKE
METAL COMPONENTS FOR HEADLIGHTS,
FRONT AND REAR BUMPER SYSTEM

Figure 23-1 Headlight Motor Tube
Figure 23-2 Headlight Flag
Figure 23-3 Front Chassis Bumper Bracket
Figure 23-4 Front Bumper Plate
Figure 23-5 Front Body Outer Bumper Mount
Figure 23-6 Front Body Inner Bumper Mount
Figure 23-7 Rear Chassis Bumper Bracket
Figure 23-8 Rear Bumper Plate
Figure 23-9 Rear Body Outer Bumper Mount
Figure 23-10 Rear Body Inner Bumper Mount
FIGURE 23-1
Headlight Motor Tube

FIGURE 23-2
Headlight Flag
FIGURE 23-3
Front Chassis Bumper Bracket
FIGURE 23-9
Rear Body Outer Bumper Mount

SEE PLATE "Z"

1 1/4"

DRIVER SIDE

SEE DETAIL "A"

SEE PLATE "Z"

1 1/4"

PASSENGER SIDE

SEE DETAIL "A"

4" x 4" x 1/8"
STEEL PLATE

1 1/2"

PLATE "Z"

1/2"

3/8"

3/8"

1/2"

3 1/2"

1/4"

3/8"

5/8"

1 1/2"

1/2"
FIGURE 23-10
Rear Body Inner Bumper Mount

SEE PLATE "P"

4" x 4" x 1/8" STEEL PLATE

PLATE "P"