

SUPPLEMENTARY INSTRUCTIONS
FOR INSTALLING
ROLL-UP, CURVED-GLASS SIDE-WINDOWS
IN THE FIBERFAB
VALKYRIE KIT
or
AVENGER

Page 43 of the Valkyrie Kit mounting instructions refers to the installation of Ford LTD curved-glass, roll-up windows. The following supplementary instructions complete the details of this installation and follow the techniques we have found most practical and least expensive in the construction of our factory-built Valkyries.

The Valkyrie side-window openings are designed to accept Ford Mustang (e.g., 1965 hardtop) vent windows and Ford LTD (e.g., 1966 4-door hardtop) curved-glass side windows. The door inner-panels are designed to accommodate the above mentioned windows and to support a roll-up mechanism--slightly-modified VW-Karman-Ghia (see PARTS LIST and text below for identification and parts numbers)--for raising and lowering the side windows with a standard crank.

Figure 1 shows the Valkyrie door inner panel (in this photo a right door panel is shown) with the hardware mounting holes labelled--the positions of these holes are cast into the panels as "dimples" in the fiberglass surface. Referring to the figure--the two "A" holes are used to mount the roll-up guide-track. The six "B" holes are used to mount the regulator (crank-up mechanism). The "C" holes (there are four) are drilled using the vent window frame as a guide (see subsequent figures). All holes are drilled with a 5/16" drill bit.

Figure 2 shows a stock (right) and modified roll-up guide-track and track-rider (the VW parts numbers are: 141-837-552B for a right door and 141-837-551B for a left door). The first step in modifying the guide track is to cut the top (the track riders are nearest the "tops" of the guide-tracks in Fig. 2) of the track at a 25-degree angle as shown in the figure. Then make a parallel cut 18" along the track. The extra slot in the track-rider is added subsequently.

Figure 3 shows the reverse side of the guide-tracks. Note that the bottom attachment-point must be moved up 4 3/8". To perform this repositioning drill out the attaching spot welds (obviously, this operation must be performed before the track is shortened to 18"), remove the attachment point and secure it in its new position--welding (as in the figure) or epoxy cement are appropriate for the fastening--screws or rivets should not be used because nothing should project on the other side of the track.

FIGURE 1

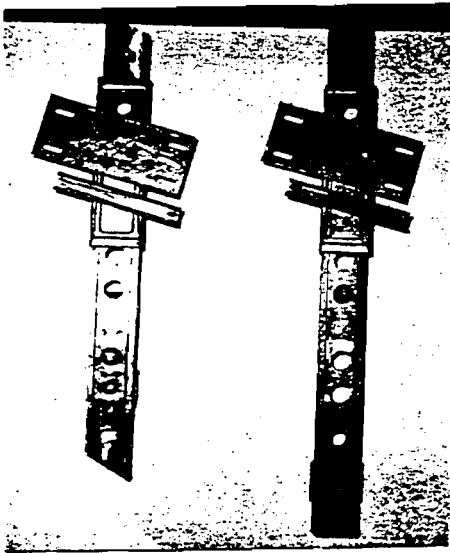
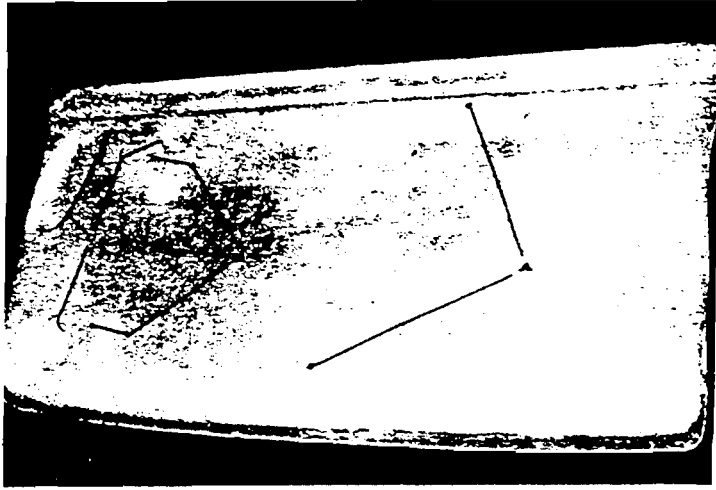


FIGURE 2

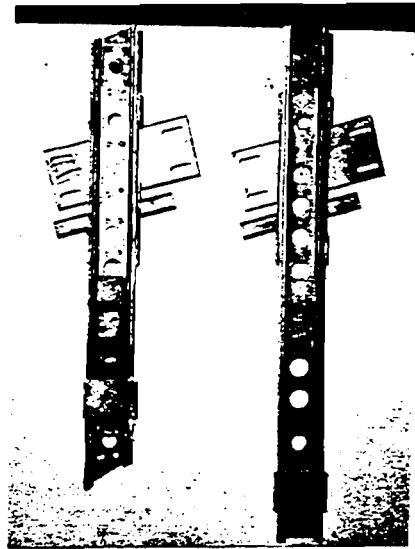


FIGURE 3

Figure 4 shows a stock (right) and modified regulator (the VW parts numbers are: 141-837-502A for a right door and 141-837-501A for a left door). To modify the regulator the L-shaped arm must be rotated 32-degrees clockwise as viewed in Figure 4. To move the arm, drill out the lower (in the figure) securing rivet and move the arm so that the rivet hole is positioned 2" away from its original position-- secure by welding or epoxy. Note also that the "up-travel stop" must be lengthened to 2 5/8".

FIGURE 4

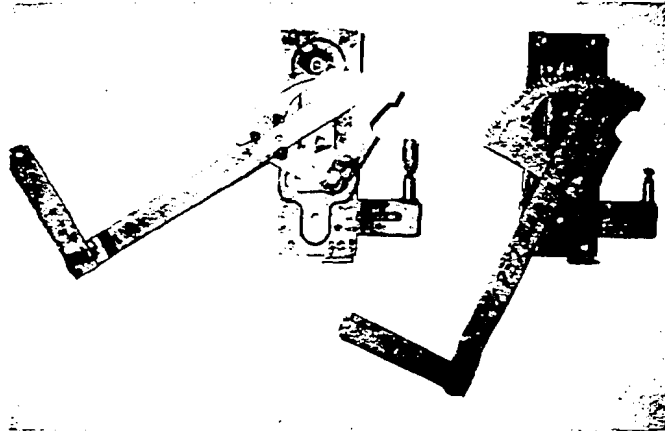


Figure 5 shows the LTD window glass installed in a VW glass-holder (part number 141-837-571A) using butyl tape (silicon rubber seal may also be utilized--see your local parts store for other window-affixing materials). The track-rider is attached to the glass-holder so that the rider is parallel with the front edge of the glass as shown in the figure. Use one original slotted hole and cut a second as in Figures 3, 4 and 5.

FIGURE 5

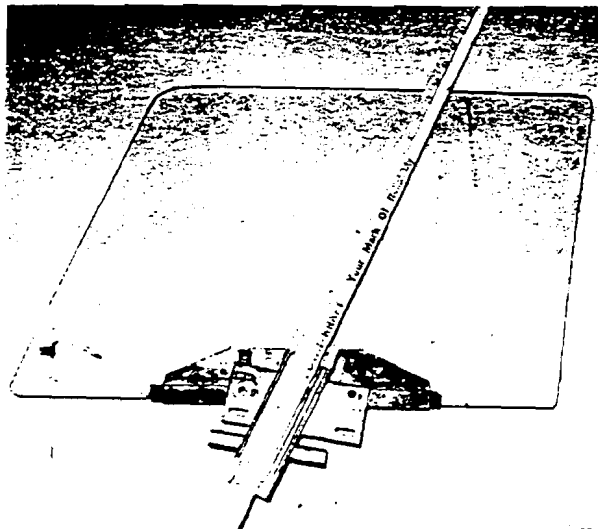


Figure 6 shows the roll-up guide-track and vent window assembly mounted on the inner-panel. Before mounting the vent window cut-off the window guide channel just below the lower attaching plate as in the figure. Also use Figure 7 as a full-size template to re-contour the top of the vent window frame to match contours of the Valkyrie window opening. Use a file or grinder to carefully remove metal from the frame. Referring again to Figure 6-- after the guide track and vent window are loosely bolted in place use a square to set the track and the channel parallel.

Finally, install the glass by bolting the glass holder to the track-rider--position the front edge of the glass firmly in the guide channel using the slotted adjustment holes in the track-rider. Now install the regulator by engaging the L-shaped arm in the track-rider and securing the crank assembly to the inner panel using six bolts (get the metric hardware you need at your VW dealer's parts department). The completed roll-up window assembly is shown in Figure 8 in the maximum "UP" position. Be sure to grease the track, crank-gear, etc. before installing the inner-panel, with mechanism attached, in the door--fasten the panel to the door with flat-head bolts at the top of the door, when nuts can be applied, and with #8 x 3/4" interior trim screws (with countersunk washers) along the sides and bottom of the door. Note also, in Figure 8, the application of weather stripping along the inside, top edge of the inner-panel--use small wood screws or epoxy cement.

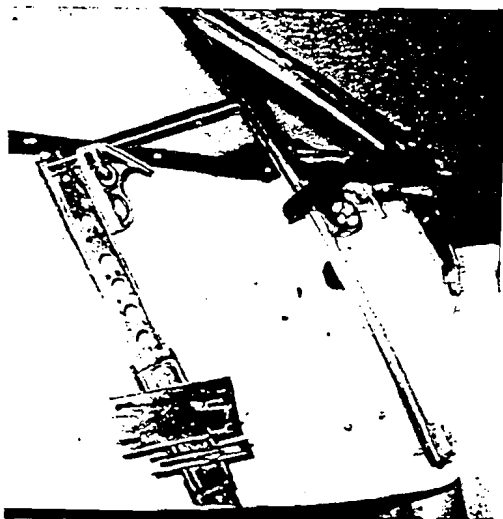


FIGURE 6

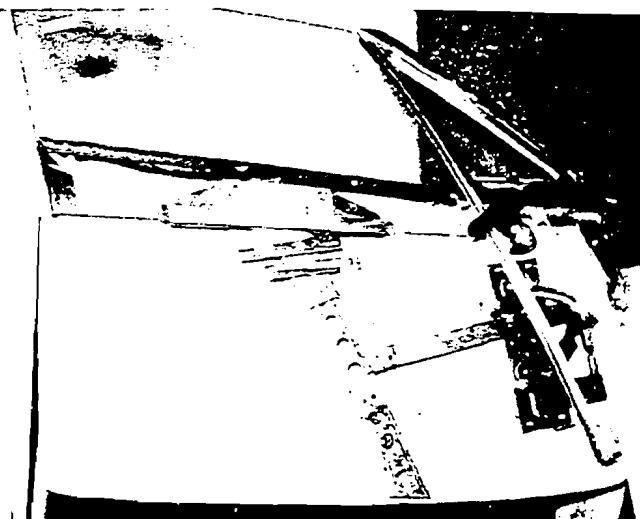
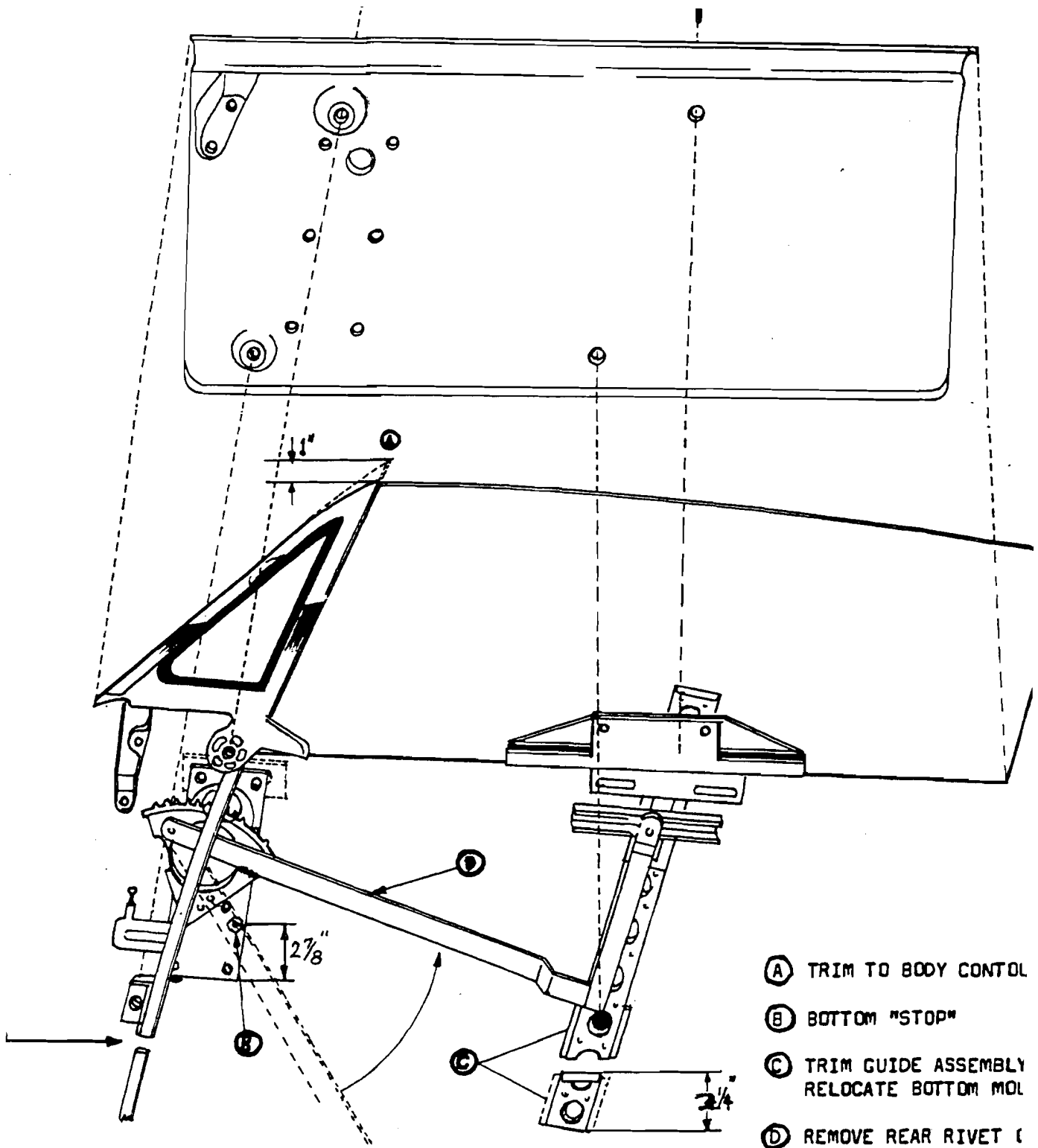


FIGURE 8



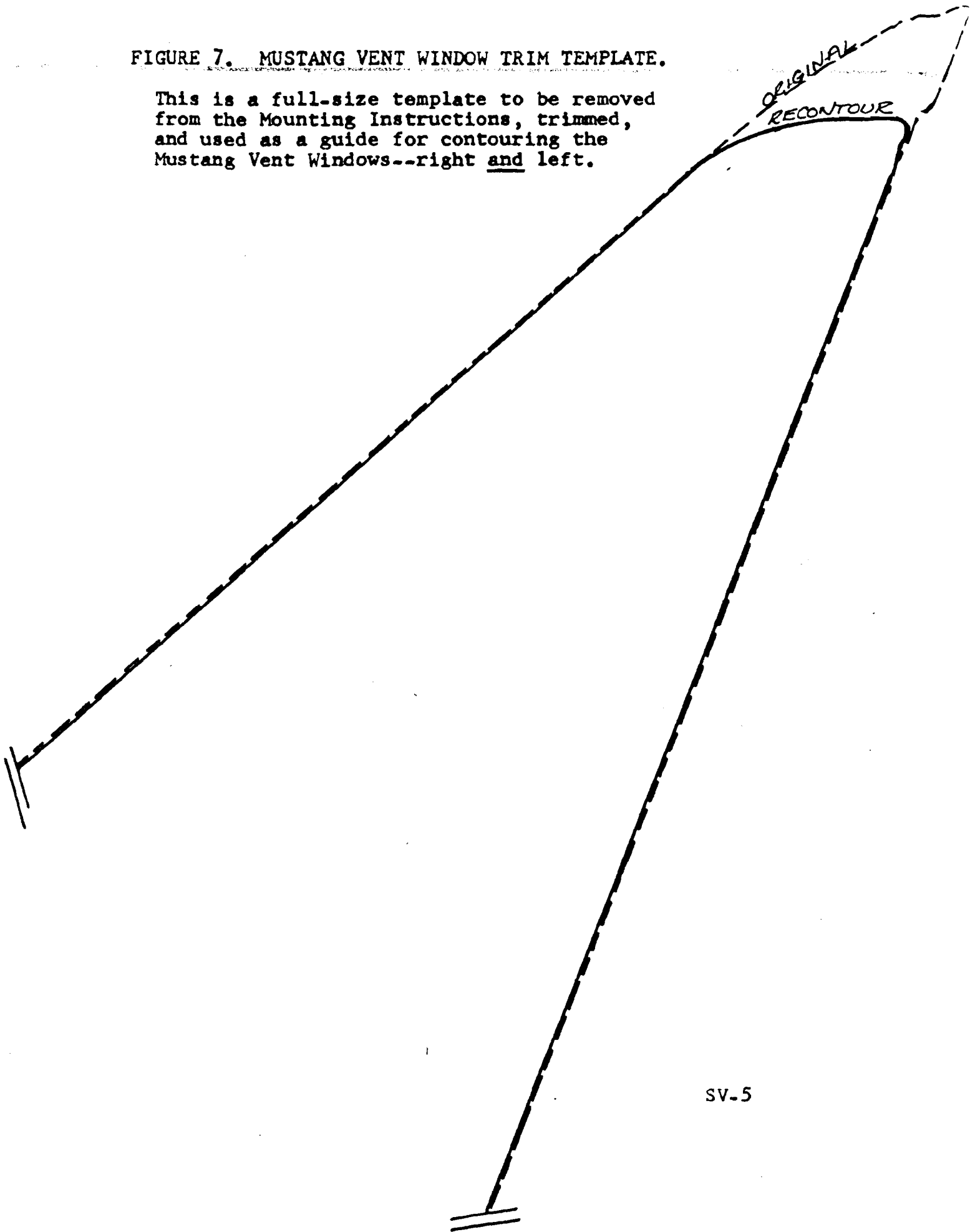
- (A) TRIM TO BODY CONTROL
- (B) BOTTOM "STOP"
- (C) TRIM GUIDE ASSEMBLY
RELOCATE BOTTOM MOL
- (D) REMOVE REAR RIVET (AND SWING ARM UP 2 (MEASURE FROM CENTE RIVET HOLE)
- (E) TRIM TO BRACKET

PARTS USED:

FIBERFAB DOORPANELS
 1965 MUSTANG WINDOWING - COMPLETE
 1965 FORD LTD FRONT DOOR WINDOW GLASS
 1960 OR LATER KARMANN GHIA WINDOW

FIGURE 7. MUSTANG VENT WINDOW TRIM TEMPLATE.

This is a full-size template to be removed from the Mounting Instructions, trimmed, and used as a guide for contouring the Mustang Vent Windows--right and left.

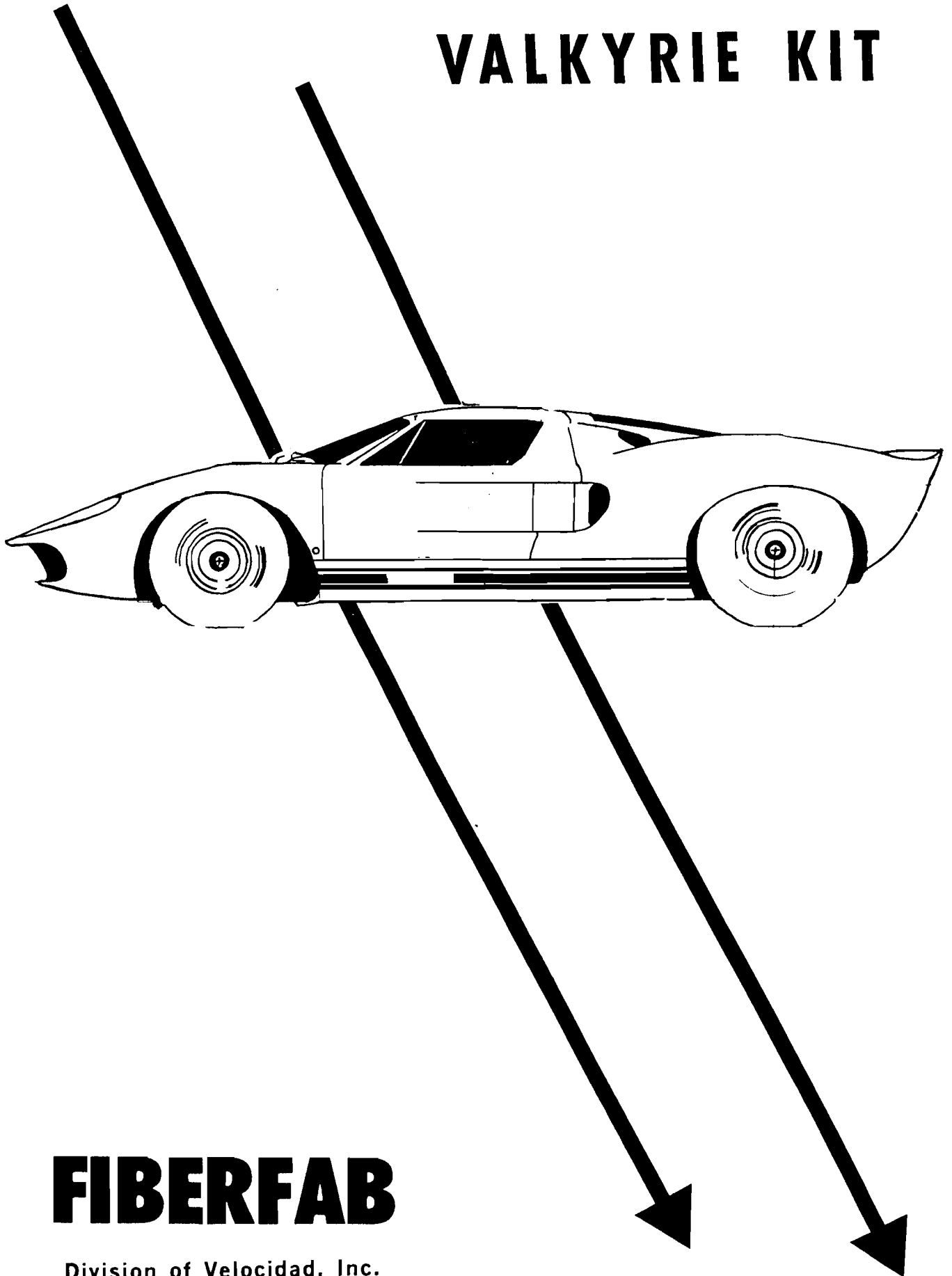


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RECOMMENDED PARTS LIST

DOOR/WINDOW HARDWARE		
Vent Window Assembly	Ford	1965 Hardtop Mustang Vent Window
Side Window Glass	Ford	1965 4-Door Hardtop LTD
Window Guide-Track	VW/Ghia	141-837-552B
		141-837-551B
Regulator	VW/Ghia	141-837-502A
		141-837-501A
Glass-Holder	VW/Ghia	141-837-571A
Arm Rest Base	Ford	C5ZZ-6524144-A
Arm Rest Pad	Ford	C5ZZ-6524100-AFA
Weatherstripping	Ford	C5ZZ-6551222-B
		C5ZZ-6551222-C
		C5ZZ-65513467-A
		C5ZZ-65513466-B
Door Lock Cylinder	Ford	C5OZ-6221984-A1
Door Latches	Ford	C4SZ-6321813-C
		C4SZ-6321812-C
Striker Studs	Ford	C2OB-6220008
		C2OB-6220009
Hinges	Ford	
RH Top		C5AZ-6222810-C
RH Bottom		C5AZ-6222811-B
LH Top		C5AZ-6222811-C
LH Bottom		C5AZ-6222801-B

VALKYRIE KIT



FIBERFAB

Division of Velocidad, Inc.

- 1/ GENERAL -- INTRODUCTION
- 2/ CONSTRUCTION MATERIALS
- 3/ ACQUIRING COMPONENTS
 - a. Corvair front suspension and steering assembly
 - b. Corvair transaxle
 - c. V-8 engine and bellhousing
 - d. Other major mechanical components
- 4/ ASSEMBLING THE ENGINE/TRANSAXLE UNIT
- 5/ INSTALLING THE FRONT SUSPENSION
- 6/ INSTALLING THE ENGINE/TRANSAXLE/REAR SUSPENSION
- 7/ COMPLETING THE CHASSIS PREPARATION
 - a. Hydraulic system
 - b. Fuel system
 - c. Shift linkage
 - d. Cooling system
- 8/ MOUNTING THE BODY
- 9/ MOUNTING ELECTRICAL COMPONENTS -- WIRING
- 10/ INSTALLING WINDOWS AND DOORS
- 11/ FINISHING THE INTERIOR -- UPHOLSTERY
- 12/ FINISHING THE EXTERIOR -- PAINTING

PARTS LIST
OPTIONS LIST

1/ INTRODUCTION TO THE VALKYRIE KIT

Fiberfab first introduced the Valkyrie concept to the public in the fall of 1966 in the form of the VALKYRIE 500 GT automobile. The 500 GT is a completely finished vehicle incorporating a centrally-located, 500 horsepower engine, a five speed Z-transaxle, four-wheel independent suspension and disc brakes, "topped off" with a posh, all-leather interior and a sleek, ultra-contemporary GT body. The 500 GT is undoubtedly the fastest production automobile ever made available to the general public -- it is also one of the most beautiful. The price of the GT 500 is \$12,500.

\$12,500 for a car such as the 500 GT cannot be considered unreasonable, especially when a comparison is made between this price and the prices of similar vehicles (eg., the FORD GT-40 at \$17,700, etc.). Regardless of the rationale for this price, it remains, however, beyond the budgets of all but the most avid car buffs.

It is realized, by Fiberfab's technical staff, that much of the cost of the Valkyrie 500 resides in labor expenditures and the costs of the specially-prepared engine and gearbox -- eliminate these high-cost items and the price of the Valkyrie is significantly reduced. The low price of the VALKYRIE KIT -- \$1495 is accomplished in this manner, i.e., by trading Fiberfab's personnel and overhead charges for your time and by making provisions in the kit design for the use of standard automotive components supplied by you.

Whereas the 500 GT is a completed; and as a result expensive machine, the VALKYRIE KIT is completed by you at the expense of your time and for the cost of the kit and standard, readily available engine, running-gear and suspension components. In particular, the VALKYRIE KIT includes the following:

1. Special rectangular-tube frame (5" x 2" x .083", 3" x 1-1/2" x .083" and 2" x 2" x .083" steel tubing with 1/8" steel-plate gusset reinforcements).
2. The VALKYRIE body complete with console dash, integral floorpan with molded-in seats, and wheel-well inner-panels.
3. Windshield and rear-window glass.
4. Special adapter components which allow you to utilize the Chevrolet 283/327 cubic-inch engine* and Chevrolet Corvair transaxles and rear suspension (post 1964) and Corvair front suspensions.

* Ford 289 CID engines may be used in special-order kits.

1/ INTRODUCTION TO THE VALKYRIE KIT - CONTINUED

Hence, you provide only your time and creativity and about \$450 (average) of major automotive suspension and power compone in excess of the purchase price of the Valkyrie Kit.

Figure 1 shows an overall view of all the components in th Valkyrie kit and Figure 2 shows, in detail, just the components of the Corvair-to-V8 adapter kit which comes with the Valkyrie. (It is interesting to note in Figure 2, the differences in leng and diameter between the Corvair standard transmission input sh 25" long and the special Fiberfab shaft shown. By eliminating need for the long, flexible standard shaft, Fiberfab's adaptati of the Corvair transaxle is capable of handling significantly m torque than the original Corvair configuration.-- from 265 lb-ft maximum for standard Corvair up to 375 lb-ft for the Fiberfab Valkyrie set-up).



FIGURE 1

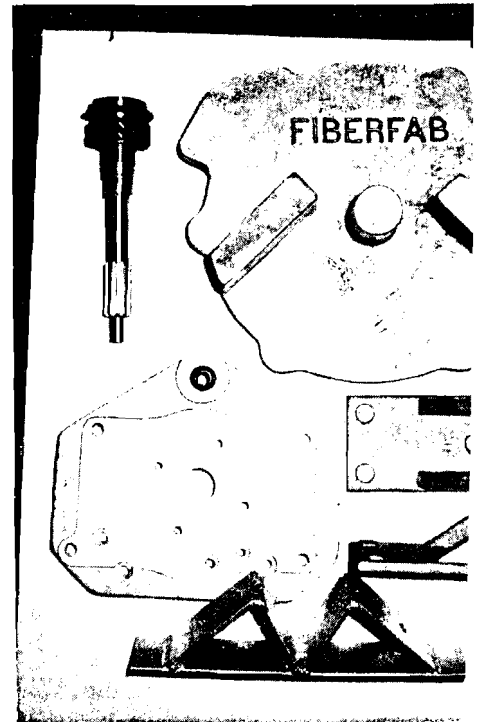


FIGURE 2

2/... CONSTRUCTION MATERIALS

The typical inventory of tools found in most home workshops will probably suffice to complete your Valkyrie Kit. A foremost criterion in all Fiberfab designs is that assembly procedures should not be based on the use of any "exotic" cutting, fastening, etc. methods not readily available to the home, "hobby-type" builder. There are those instances, of course, when for example, arc-welding might be preferred to bolting -- in no instance, however, is an exotic technique required nor will the use of a home workshop alternative compromise the integrity of your finished Valkyrie.

The following tabulation of tools and materials is based on Fiberfab's factory assembly procedures and experience. Items considered essential are listed apart from those items that are simply helpful or time-saving (but whose function can be duplicated by the essential items).

HAND TOOLS

Essential

3/8" - drive sockets: 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4"

3/8" - drive ratchet-handle

Combination wrenches (open-end and box-end combined): 3/8", 7/16", 1/2", 9/16", 5/8"

Standard screwdriver: medium blade

Phillips screwdriver: medium blade

Straight-edge

Drills (high-speed steel): 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2"

Files: 1/4" diameter round-file, flat wood rasp

Taps: 1/4"-20, 5/16" -18

Misc: hacksaw, center-punch, knife, hammer, putty-knife

Helpful

3/8" - drive extensions: 3" and 6"

"Pop-riquet" gun -- home workshop variety (\$4.95)

72" steel rule

Electrical terminal crimping tool and wire-stripper -- home workshop variety (\$2.98)

Set of wood-working (high-speed steel not required) hole saws, eg., 1/2", 1", 2", 3"

Diagonal-cutting-pliers

"Channel-lock" pliers

Jack stands

POWER TOOLS

Essential

Electric drill: 1/4" capacity

Helpful

Electric drill: 1/2" capacity

Sabre saw

Rotary sander/grinder

Hydraulic floor-jack

2/ CONSTRUCTION MATERIALS - CONTINUED

CONSTRUCTION MATERIALS

Essential

Assorted machine bolts and nuts: 1/4", 5/16",
3/8", 7/16"

Assorted washers and locking-washers

Sandpaper: assorted coarse and fine grits

#16 AWG wire: 300 feet

#10 AWG wire: 50 feet

Silicone seal: common types are Rubber Sealant
by the Macklenburg-Duncan Company of Okla-
homa City, Dow-Corning DC 750 sealant,
General Electric sealant, etc.

Paint, primer, thinner

Helpful

Epoxy adhesive kit

Epoxy putty/filler

Crimp-on wire terminals: ring-terminals and
press-on female terminals

Assorted-length "pop" rivets and backing washers

Acetone

3. ACQUIRING COMPONENTS

This section is primarily an annotated parts list of major mechanical components required to complete your Valkyrie kit. Generally there are two sources for each item, viz., a Chevrolet (or in some cases, Ford) parts depot or auto wrecking yards -- the latter represents the most economical source, by far. Arrangements can usually be made with reputable auto wreckers to supply a "package-deal" including all the parts you require along with some form of guarantee of their usable condition.

In the locale of Fiberfab -- the San Francisco Bay Area -- reputable automobile dismantlers are listed in a publication called the PARTS LOCATOR. The PARTS LOCATOR is issued monthly and contains extensive lists of all the wrecked automobiles in yards throughout Northern California. Most likely, similar publications exist in your area and would assist you significantly if you choose to utilize used parts. For your reference the PARTS LOCATOR address is:

PARTS LOCATOR
1696 Washington Avenue
San Leandro, California 94577

The major components of interest are:

1. Corvaire transaxle/rear suspension
2. V-8 engine
3. Corvaire front suspension

An exact description of these component groups is given below.

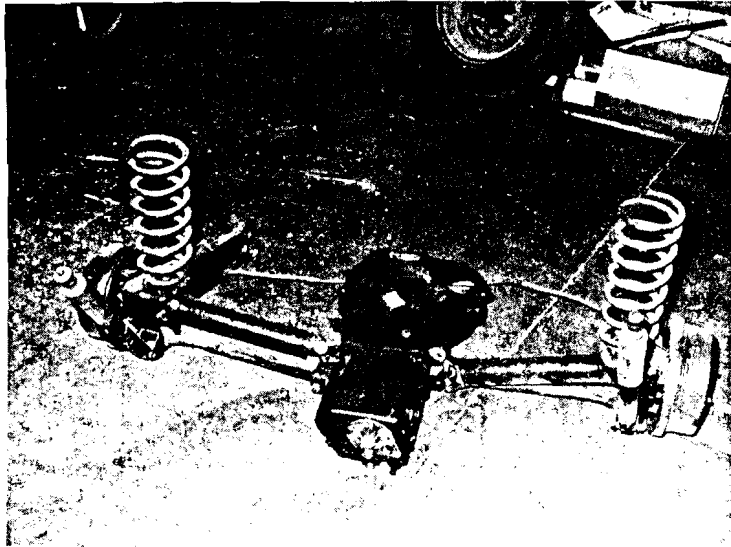
CORVAIRE TRANSAXLE/REAR SUSPENSION

This component group, as used in the Valkyrie, is composed of:

1. The differential/ring and pinion housing
2. The gearbox
3. Two axles (four universal-joints)
4. Two forged-steel suspension links
5. Two stamped-steel suspension link hangers
6. Two shock absorbers
7. Two stamped-steel radius-arm/bearing carrier hub assemblies
8. Two wheel/brake assemblies
9. Two coil springs

These components (as pictured in Figure 3) comprise the total 1965 Corvaire transaxle/rear suspension unit -- less bell housing and engine cradles. The 1966-67 units are identical with the exception that the gearbox is bigger (1-5/8' longer) and contains "beefier" gears. (WHEN A VALKYRIE KIT ORDER IS PLACED THE YEAR OF THE CORVAIRE GEARBOX TO BE USED MUST BE SPECIFIED).

3. ACQUIRING COMPONENTS - CONTINUED



If you purchase a used trans-axle/rear suspension be sure to check the rubber bushings for signs of deterioration, the axles and stamped-steel components for dents, the differential and gearbox housings for gouges and/or cracks and the shock absorbers for stiffness.

FIGURE 3

1965 Corvair Rear Suspension/Transaxle Unit

CORVAIR FRONT SUSPENSION/STEERING ASSEMBLY

The Corvair -- 1960 to present -- front suspension/steering assembly can be removed from the Corvair chassis as a complete unit simply by loosening and removing about a dozen bolts. The basic front suspension cross-member is shown in Figure 4 -- note that just four bolts retain this entire unit. To this basic structure are attached,

1. Right and left upper "A-arms"
2. Right and left lower suspension links (items 1 and 2 are stamped steel parts)
3. Two springs
4. Two shock-absorbers
5. Two forged trailing arms
6. Right and left spindles
7. Right and left hubs and bearings
8. Right and left backing-plates and brakes
9. Right and left brake drums

Up to and including 1964 the hubs and wheels have a four-bolt bolt-pattern. In 1965 the pattern was changed to five-bolt (front and rear). The 1960, '61 and '62 Corvairs have no anti-roll bars. In 1963 a 5/8" bar (#3783523) was made available as an option. All 1964's were equipped with 3/4" bars and since 1965 the anti-roll bars have been 13/16" in diameter.

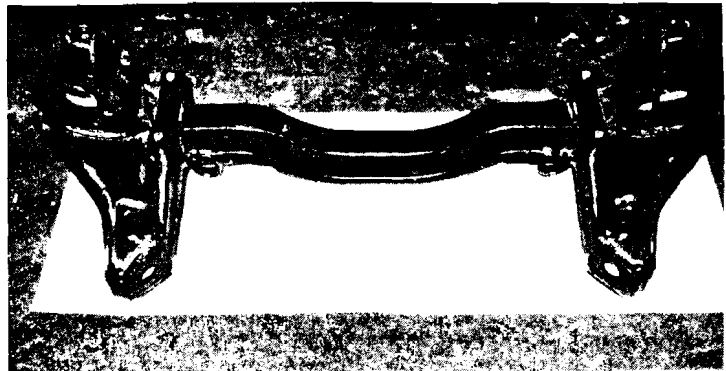


FIGURE 4 - Corvair Front Suspension

