

SECTION 1

GENERAL INFORMATION

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MANUAL DESCRIPTION

INTRODUCTION

This publication contains the essential removal, installation, adjustment and maintenance procedures for servicing all 1966 Fisher Body Styles. This information is current as of time of publication approval.

INDEX

The preceding page contains a "Table of Contents" which lists the section number and subject title of each main body area section. The first page in each main body area section has an index to the subjects included in that section. An alphabetic index covering the entire manual is located in section 13.

PAGE AND FIGURE NUMBERS

All page numbers and figure numbers consist of two sets of digits separated by a dash. The digits

preceding the dash identify the main body area section. The digits following the dash represent the consecutive page number or figure number within the particular body area section.

REFERENCE TABS

The first page of each section is marked with a ready-reference black tab corresponding with the table of contents page.

TEXT

Unless otherwise specified, each service procedure covers all body styles. Procedures covering specific styles are identified by the style number, body series number, body type letter or similar designation. A description of these designations is covered in this section under "Model Identification".

ILLUSTRATIONS

Where possible, illustrations are placed in close

proximity to the accompanying text and should be used as part of the text.

BODY NUMBER PLATE

The body number plate identifies the body style, body assembly plant, body number, trim combination number, paint code and time built code (Fig. 1-1). On Corvair styles, the body number plate is attached to the left side of the motor compartment

cross rail. On Cadillac styles, the plate is located on the left upper portion of the horizontal surface of the cowl. On all other cars, the plate is located on the left upper portion of the vertical surface of the dash firewall.

MODEL IDENTIFICATION

INTRODUCTION

Due to the wide variety of body styles available, certain body styles have been grouped in this publication as an aid to identification. These group designations may be used individually or in various combinations. An explanation of the principal categories follows:

BODY STYLE NUMBER

The body style number consists of five digits as they appear on the body number plate. (Refer to previous section for body number plate location.) The body style number is used to include or exclude a specific style (ex. on 16637, use; on all styles, except the 68069 style, use).

BODY STYLE NUMBER SERIES

The body style number series may be used to indicate three possibilities:

Division - first digit and four zeros (ex. 10000 Chevrolet; 20000 Pontiac).

Division and Car Line - first two digits and three zeros (ex. 33000 Oldsmobile F 85; 45000 Buick LeSabre).

Division, Car Line and Style Group - First three digits and two zeros (ex. 25200 Catalina; 25600 Star Chief).

BODY STYLE NUMBER SUFFIX

The last two digits of the body style number indicate body type as follows:

- 07 - 2 door sport coupe with pillar post
- 11 - 2 door sedan with pillar post
- 17 - 2 door sport coupe hardtop
- 23 - 4 door sedan with auxiliary center seat
- 33 - 4 door sedan with auxiliary center seat and center partition window
- 35 - 4 door station wagon two seat
- 37 - 2 door coupe hardtop
- 39 - 4 door sedan hardtop
- 45 - 4 door station wagon three seat
- 47 - 2 door sport coupe hardtop
- 55 - 4 door station wagon two seat with skylight
- 57 - 2 door sport coupe hardtop
- 65 - 4 door station wagon three seat with skylight
- 67 - 2 door convertible coupe
- 69 - 4 door sedan with pillar post (some models equipped with door window frames)
- 80 - 2 door pick-up delivery
- 87 - 2 door sport coupe hardtop

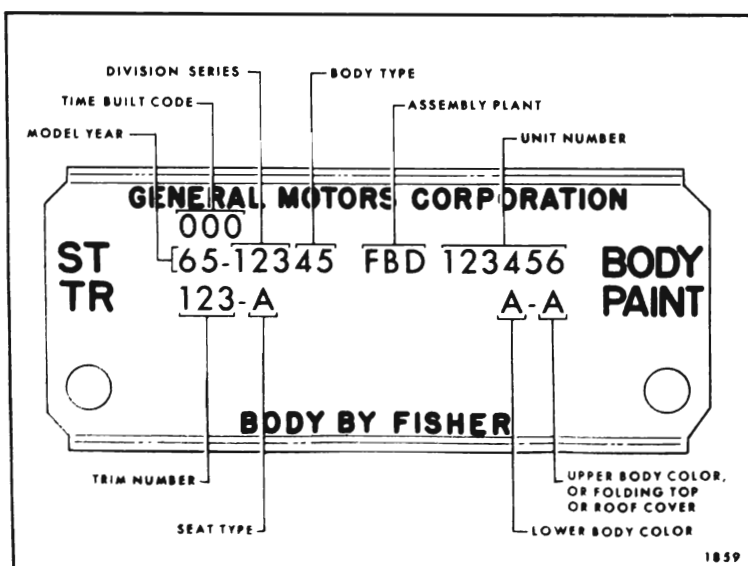


Fig. 1-1—Body Number Plate

BODY TYPE NAME

Body type names are used for group classification as follows (style number suffix shown in brackets):

- Closed Style
 - Two door sedan (11)
 - Two door sport coupe (07)
 - Four Door sedan (69)
 - Limousine (23, 33)

Hard Top

- Sport coupe hardtop (17, 47, 57, 87)
- Coupe hardtop (37)
- Sedan hardtop (39)

Station Wagon

- Station wagon two seat (35 less skylight; 55 with skylight)
- Station wagon three seat (45 less skylight; 65 with skylight)

Convertible Coupe (67)

Sedan Delivery (80)

“A” - Chevrolet 13000 Series
Pontiac 23-24000 Series
Oldsmobile 33000 Series
Buick 43-44000 Series

“B” - Chevrolet 15-16000 Series
Pontiac 25-26000 Series
Oldsmobile 35000 Series
Buick 45-46000 Series

“C” - Oldsmobile 384-386-39800 Series
Buick 482-48400 Series
Cadillac 68000 Series

“D” - Cadillac 69000 Series

“E” - Oldsmobile 394-39600 Series
Buick 49000 Series

“X” - Chevrolet 11000 Series

“Z” - Chevrolet 10000 Series

BODY TYPE LETTER

Basic body types can be identified by generic group classifications as follows:

**ADHESIVE CAULKING
All A-B-C-E-Z Styles**

DESCRIPTION

This concept of glass installation incorporates a synthetic self-curing rubber adhesive caulking compound that adheres to both glass and window opening pinchweld flange in place of the rubber channel that was formerly used. Applied to the glass while in a soft state the material begins to cure soon after exposure to air. Due to this fast curing characteristic, installation of the glass into the body opening must quickly follow application of material to glass. This method of glass installation is used on stationary glass, such as windshield glass, back glass, station wagon quarter glass and skylights. Reference to specific procedures applicable to the individual glass assemblies may be found in the appropriate section of the manual.

Adhesive caulking GM Kit Part #4226000, which is designed for a short method windshield installation, has some of the materials needed to remove and replace a stationary glass and can be obtained through regular service parts channels.

GM Kit Part #4226000 consists of:

- A. One tube of Adhesive Caulking Material
- B. One nozzle (cut for the short method)
- C. Steel music wire (.020 thickness)
- D. Adhesive Caulking Primer (for priming old caulking material on pinchweld flanges).

The other materials that are needed to complete an installation are available as service parts or at local supply shops.

Additional materials required:

- A. Caulking gun (standard household type reworked as follows).
 - 1. Widen end-slot of caulking gun with a file to accept dispensing end of tube.
 - 2. Grind down plunger disc on rod so that disc will fit into large end of tube.
- B. Two pieces of wood for wire handles.
- C. Black weatherstrip adhesive.
- D. Paint Finish Primer - service part, used only on the extended method.
- E. Rubber glass spacers.

SERVICE PROCEDURES

This type of glass installation requires an entirely different removal and installation service procedure. There are two methods of removal and installation. They are called the short method and the extended method. The extended method requires the removal of all adhesive caulking material from the glass and the opening. The short method requires the removal of all adhesive caulking material from the glass only and the removal

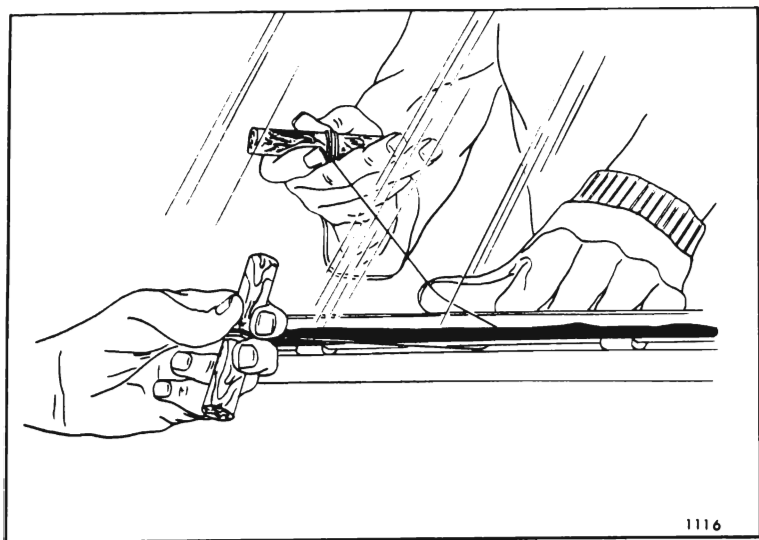


Fig. 1-2—Cutting Adhesive Material

of a minimum of adhesive caulk material when cutting the glass from the body opening. No loose pieces of adhesive material or sealing strip material should be left around the opening. The short method installation is used on a windshield installation only.

IMPORTANT: When the glass is originally installed a sponge or rubber type filler sealing strip is applied to the inside surface of the glass prior to application of adhesive caulk material. For service replacements the sealing strips are not required and are not available as a service part. When replacing a glass, using the short method, the sealing strip must be trimmed from the adhesive material in the body opening for a good appearance.

Removal

The glass removal procedure will be the same for the extended or short method.

1. Place protective coverings around area of glass being removed.
2. Remove garnish moldings, escutcheons, reveal moldings, wiper arm assemblies, cowl air intake grille, rear view mirror support and instrument panel items (instrument panel cover) as required.

NOTE: Reveal molding removal is covered in Exterior Molding Section.

3. Secure one end of steel music wire to a piece of wood (for handle) (Fig. 1-2). With the aid of a pair of long nose pliers insert the other end of wire through caulk material at lower inside corner of windshield along side of glass surface; then, secure that end of wire to another piece of wood (for handle).

4. With the aid of a helper, carefully cut (pull steel wire) through caulk material, up one side of glass across top, down opposite side and across bottom of glass (Fig. 1-2). Make sure inside wire is held close to plane of glass to prevent cutting an excessive amount of adhesive caulk material from the glass opening. This can be accomplished by holding the inside wire close to the plane of the glass with one hand while pulling the wire with the other hand. Keep tension on wire throughout cutting operation to prevent "kinks" in wire.
5. After cutting the adhesive material entire perimeter of glass, carefully remove glass.

Installation

NOTE: If the original glass is to be re-used, place it on a protected bench or holding fixture and remove old caulk material from glass with sharp scraper or razor blade. Remove all remaining traces with toluene or thinner dampened cloth.

IMPORTANT: Do not use oil base solvent. Any oil will prevent adhesion of new caulk material to glass.

1. Align glass to opening; mark glass to body with tape for proper alignment of glass to opening at time of installation.

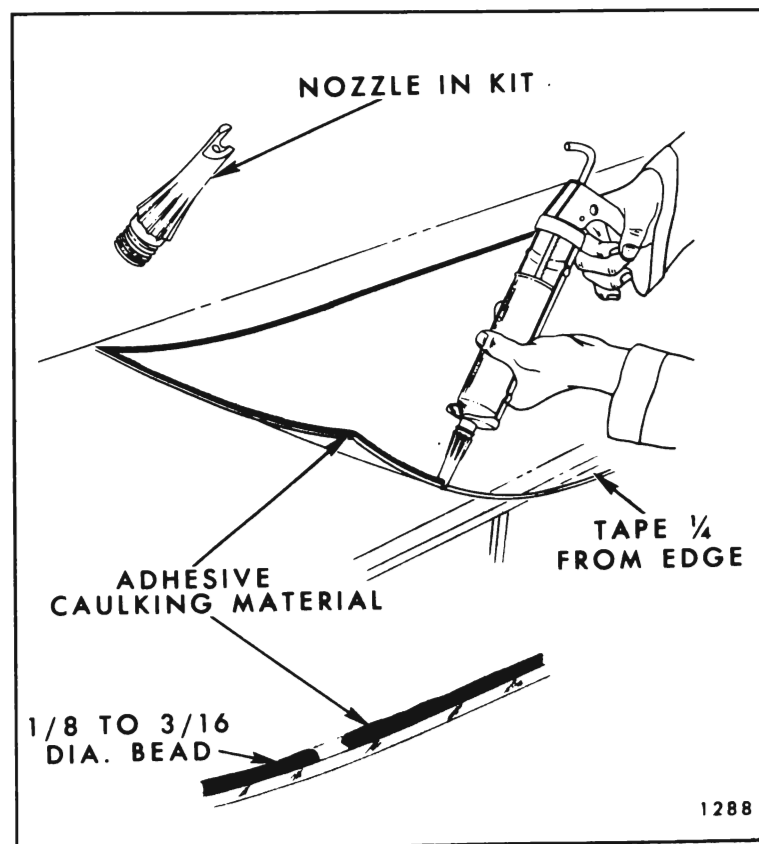


Fig. 1-3—Adhesive Glass Installation Short Method

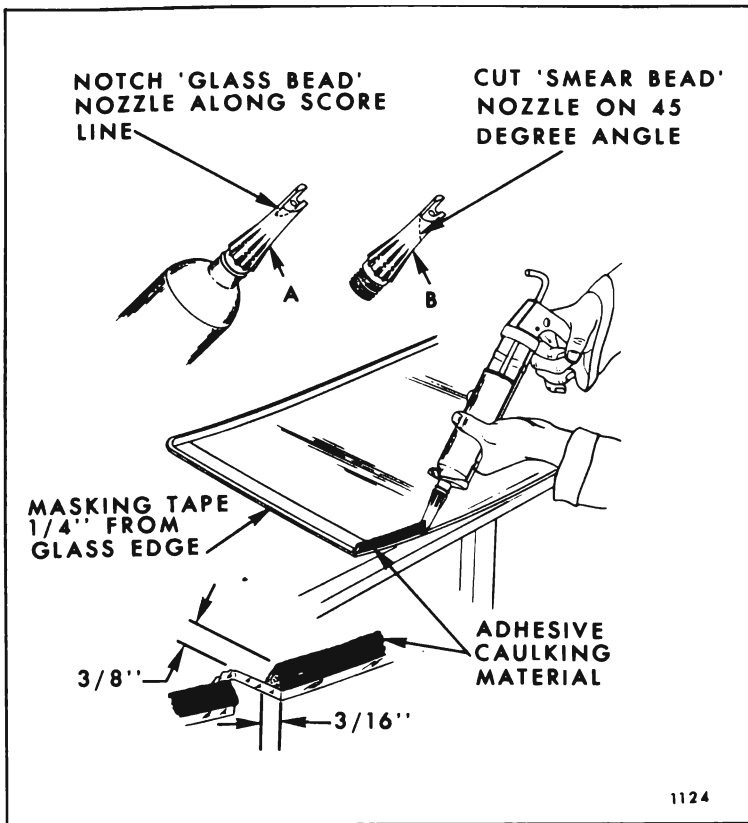


Fig. 1-4—Adhesive Glass Installation Extended Method

- Using a clean, lint-free cloth, briskly rub a generous amount of adhesive caulking primer over original adhesive caulking material that remains on pinchweld flange. Additional brisk application of primer on flat rubber spacers is necessary to insure a good bond of material to spacers.

CAUTION: Do not allow primer to drop on painted surfaces or trim parts.

NOTE: If the glass opening is freshly painted due to collision work, etc., apply paint finish primer to painted pinchweld flange. Paint finish primer is available as a service part.

- If short method installation is required, the nozzle furnished with the kit, is pre-cut to dispense the proper size bead of caulking material (Fig. 1-3).
- If extended method is required, cut off tip of one nozzle along score line (Fig. 1-4). This glass bead nozzle will be used to apply bead of adhesive caulking material to glass. Cut tip off other nozzle at 45° angle 1" below end of nozzle (Fig. 1-4). This nozzle will be used to apply "smear bead" of adhesive caulking material to pinchweld flange.
- Wipe surface of glass to which bead of adhesive caulking material will be applied (between masking tape and edge of glass) with a

clean, water-dampened cloth. Dry glass with a clean dry cloth.

- Remove cap and protective end cover from one tube of adhesive caulking material and insert "glass bead" nozzle.
- Positioning the gun and nozzle as shown in Figure 1-4, carefully apply a smooth continuous bead of caulking material 3/8" high by 3/16" wide at base completely around inside edge of glass. When material in first tube is dispensed, quickly insert second tube and continue application of bead. After application, check bead and fill all voids and air bubbles.

NOTE: Material begins to cure after 15 minutes exposure to air, therefore, perform following steps immediately and install glass in opening as soon as possible.

- Remove "glass bead" nozzle and insert "smear bead" nozzle. Holding caulking gun at an angle so that angle-cut of nozzle rests flat on pinchweld flange, apply a thin (1/4" wide x 1/16" high) "smear bead" of adhesive caulking material completely around pinchweld flange.
- Install glass in opening using tape marks as a guide.
- Watertest windshield immediately using cold water spray. If any waterleaks are encountered, use flat-bladed tool or stick and work caulking material into leak point to correct leak. This operation is usually performed most effectively from outside the body.

CAUTION: Do not run a heavy stream of water directly on caulking material while the material is still soft.

- Install previously removed hardware and trim parts.

WATERLEAK CORRECTION OF ADHESIVE CAULKED GLASS

Adhesive caulked glass installation waterleaks can be corrected in the following manner without removing and reinstalling the glass.

NOTE: The following procedure is applicable only with the use of adhesive caulking material and primer furnished in Kit Part #4226000 or equivalent.

- Remove reveal moldings in area of leak.
- Mark location of leak(s).

IMPORTANT: If leak is between adhesive caulking material and body or between material and glass carefully push outward on glass in area of leak to determine extent of leak. This operation should be performed while water is being applied to leak area. Mark extent of leak area.

3. From outside body clean any dirt or foreign material from leak area with water; then dry area with air hose.
4. Using a sharp knife, trim off uneven edge of adhesive caulking material (see Operation "A" Fig. 1-5) at leak point and 3 to 4 inches on both sides of leak point or beyond limits of leak area.
5. Using a small brush, apply adhesive caulking material primer over trimmed edge of adhesive caulking material and over adjacent painted surface (see Operation "B" Fig. 1-5).
6. Apply adhesive caulking material, as shown in Operation "C" (Fig. 1-5), at leak point and 3 to 4 inches on both sides of leak point or beyond limits of leak area.
7. Immediately after performing step 6, use flat stick or other suitable flat-bladed tool to work adhesive caulking material well into leak point and into joint of original material and body to effect a watertight seal along entire length of material application (See Operation "D" Fig. 1-5).

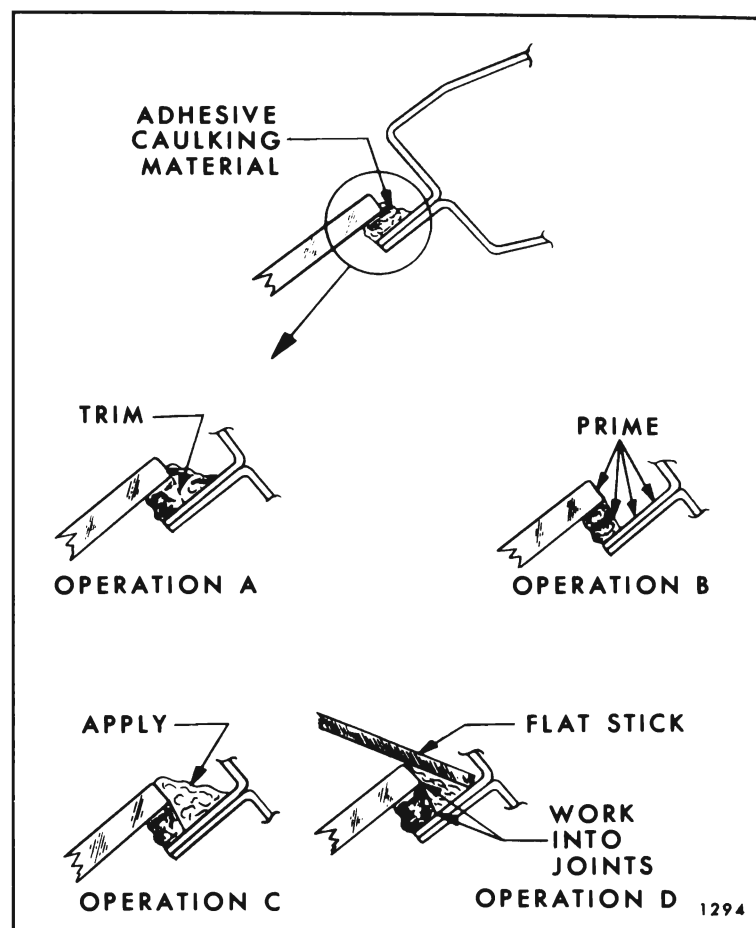


Fig. 1-5—Adhesive Glass Waterleak Correction

8. Spray watertest to assure that leak has been corrected. DO NOT run a heavy stream of water directly on freshly applied adhesive caulking material.

TRIM CLEANING PROCEDURE

INTRODUCTION

This procedure has been prepared to assist service personnel in cleaning automotive upholstery, floor carpets, headlining and folding tops using the latest approved methods for removing soil and stain.

GENERAL INSTRUCTIONS

There are four general types of trim materials used in automotive bodies:

1. Fabrics that may be either plain fabrics (broadcloth), or pattern fabrics which are manufactured with natural or synthetic (nylon, rayon,) fibers.
2. Genuine leather.
3. Coated fabrics (vinyl or mylar).
4. Polyurethane foam.

Dust and dirt particles that accumulate on the upholstery of a car should be removed every few weeks, or oftener if the car is given constant hard use. This is done with a whisk broom or vacuum cleaner.

CAUTION: Do not use a whisk broom on fabrics having raised tapestry patterns since damage to the fine threads may result. On polyurethane foam material, use soft bristle brush - do not use a whisk broom or vacuum cleaner.

Before attempting to remove spots or stains from upholstery fabrics, determine as accurately as possible:

1. Nature and age of the spot or stain.
2. The effect of stain removing agents on the color structure and general appearance of the fabric.

For best results, stains should be removed from upholstery as soon as possible after they have been made. If they are allowed to stand for some time, they often become set and removal becomes more difficult - frequently, impossible.

There are three basic types of acceptable cleaners available to car owners:

1. Volatile cleaners (colorless liquids).
2. Detergents.
3. Neutral soap (nonalkaline).

Many types of these cleaners can be obtained through GM Dealer or other reputable supply houses.

The volatile cleaners have great solvent powers for grease, oils and general road grime. Detergents generally loosen up stains satisfactorily; however, the use of improper type detergents involves risk of damage to the color or finish of fabrics.

CLEANING FABRICS WITH VOLATILE CLEANERS

Care should be taken not to use too much solvent and to apply it only with clean cloths. It is the solvent that does the work - so only a minimum of pressure should be applied.

1. Brush away all loose particles of dirt and soil.
2. Dampen a clean cloth (cheese cloth may be used) with the volatile cleaner. Open the cloth and allow a portion of the cleaner to evaporate so that the cloth is just slightly damp.
3. Using very light pressure and a circular lifting motion, rub the stained area, starting at the outer edge and working toward the center until the entire area has been covered. Change to a clean portion of the cloth every few strokes.
4. Using a clean white blotter, blot stained area to remove any excess cleaner. Change to a new portion of the blotter each time stained area is blotted. The blotting action should be repeated until no stain is transferred to the blotter surface.
5. Before proceeding, wait several minutes to allow most of the volatile cleaner to evaporate. **DO NOT** saturate stained area. This will avoid the danger of the cleaner penetrating to the padding under the upholstery. Certain cleaners will deteriorate sponge rubber which is often used in padding.

6. It may be necessary to repeat steps 2, 3, 4 and 5 several times before the stain has been satisfactorily removed. Each time a clean cloth should be used.
7. If a ring should form on the fabric when removing a stain, the entire area of the trim assembly should be cleaned as described in the preceding steps.
8. The cleaned upholstery should be allowed to dry completely before using.

Some volatile cleaners are toxic and harmful; therefore, the following safety precautions should be used.

1. Always use in a well ventilated area. Car windows and garage doors must be open when such cleaners are used.
2. Avoid prolonged or repeated breathing of vapors from cleaner.
3. Avoid prolonged or repeated contact with the skin.
4. Keep away from eyes and mouth.
5. Some cleaners are flammable, and every precaution and care must be exercised in handling these cleaners.
6. Always follow directions specified by the manufacturer of the product used (label directions).

CLEANING FABRICS WITH DETERGENTS

1. Make a solution of the detergent in lukewarm water, working up thick, frothy suds.
2. With a clean cloth or sponge, dampened with lukewarm water, apply suds only to the surface of the upholstery using light to medium pressure. Repeat several times, applying more suds with a clean portion of the cloth or sponge.
3. With a second clean cloth, dampened with lukewarm water, rub over the area with medium pressure to remove excess detergent and loose material.
4. With a clean dry cloth, wipe off all excess moisture. A vacuum cleaner may also be used.
5. Allow the upholstery to dry partially; then, repeat the above treatment, if necessary, to remove stain.

- When the upholstery is satisfactorily cleaned, allow to dry completely before using.

PRECAUTIONS FOR CLEANING FABRICS

- Solutions containing water are not recommended for general cleaning of broad cloth. Water has great destructive powers on the high face or high gloss finish of broad cloth, causing the nap to curl and roughen to such an extent that the finish is destroyed or made very unsightly. However, in some cases where it is necessary to use a solution containing water to remove a stain, the resultant disturbance to the finish of the material may be preferable to the stain.
- Do not use as a cleaning solvent, any gasoline which is colored or which contains tetraethyl lead.
- Do not use solvents such as acetone, lacquer thinners, enamel reducers or nail polish remover, as a cleaning solvent.
- Do not use laundry soaps, bleaches or reducing agents, such as the following: chloride of lime, javelle water, hydrogen peroxide, sodium hydrosulphite, potassium permanganate, chlorine or chlorine water, sulphurous acid (sulphur dioxide), sodium thiosulphate (photographers' hypo). The use of these agents tends to weaken fabric and to change its color.
- Do not use too much cleaning fluid; some interior trim assemblies are padded with rubber, and volatile cleaners are generally solvents for rubber. The application of too much cleaner may destroy these rubber pads or leave a solvent ring.

CLEANING GENUINE LEATHER AND COATED FABRICS

Care of genuine leather and coated fabrics is a relatively simple but important matter. The surface should be wiped occasionally with a dry cloth, and whenever dirt accumulates, the following cleaning instructions should be used:

- Lukewarm water and a neutral soap should be used. Apply a thick suds to the surface, worked up on a piece of gauze or cheesecloth.

NOTE: When cleaning coated fabrics, a non-flammable detergent may be substituted for neutral soap.

- The operation should be repeated, using only a damp cloth and no soap.

- The surface should then be wiped dry with a soft cloth.

Polishes and cleaners used for auto body finishes, volatile cleaners, furniture polishes, oils, varnishes or household cleaning and bleaching agents should never be used.

CLEANING POLYURETHANE FOAM HEADLINING MATERIAL

Normal soilage such as dirt and finger prints can be removed with a cleaning solution of approximately two ounces of white detergent powder mixed in a gallon of water. Immerse a clean cellulose sponge in cleaning solution. Wring the sponge out thoroughly leaving suds only; then, clean soiled area carefully. Rinse off the cleaned area with sponge and clean water - DO NOT soak the cleaned area.

Soilage such as cements, sealers, and grease can be removed by first cleaning the soiled area with a detergent solution as described above - DO NOT RINSE. Leaving suds on the soiled area, clean area with a clean cloth that has been dipped in a good volatile upholstery cleaner and thoroughly wrung out (naphtha cleaner is recommended). Then clean soiled area again with detergent suds and rinse as described above.

CLEANING FOLDING TOP AND FABRIC ROOF COVER MATERIAL

The top should be washed frequently with neutral soap suds, lukewarm water and a brush with soft bristles. Rinse top with sufficient quantities of clear water to remove all traces of soap.

IMPORTANT: Care must be exercised to keep the soaps and cleaners from running onto body finish, as it may cause streaks if allowed to run down and dry.

If the top requires additional cleaning after using soap and water, a mild foaming cleanser can be used. Rinse the whole top with water, then apply a mild foaming type cleanser to the entire top. Scrub with a small, soft bristle hand brush, adding water as necessary until the cleanser foams to a soapy consistency. Remove the first accumulated soilage with a cloth or sponge before it can be ground into the top material. Apply additional cleanser to the area and scrub until the top is clean. After the entire top has been cleaned, rinse the top generously with clear water to remove all traces of cleanser. If desired, the top can be supported from the underside during the scrubbing operations.

After cleaning a convertible top, always be sure the top is thoroughly dry before it is lowered. Lowering the top while it is still wet or damp may cause mildew and unsightly wrinkles.

Do not use volatile cleansers, household bleaching agents, or cleansers containing bleaching agents on the top material.

CLEANING FLOOR CARPETS

Thoroughly brush or vacuum the floor carpet. In many instances, the floor carpet may require no further cleaning. If carpet is extremely soiled, remove carpet from car and thoroughly vacuum to remove loose dirt; then, with a foaming type upholstery cleaner, clean approximately one square foot of carpet at a time. After each area is cleaned, remove as much of the cleaner as possible with a vacuum cleaner. After cleaning the carpet, use an air hose to "fluff" the carpet pile, then dry the carpet. After the carpet is completely dried, use an air hose to again fluff the carpet pile.

NOTE: If the carpet is not extremely soiled, the carpet may be cleaned in the car by applying a sparing amount of foaming type upholstery cleaner with a brush.

If oil or grease spots are still present on the carpet, they may be removed by using a volatile cleaner; however, the cleaner must be used very sparingly since it may have a tendency to remove some of the dye coloring.

REMOVAL OF SPECIFIC STAINS FROM AUTOMOTIVE UPHOLSTERY

Some types of stains and soilage including blood, ink, chewing gum, etc., require special consideration for most satisfactory results. For these and other stains, specific instructions are outlined in succeeding paragraphs. It must be expected, particularly where water treatment is specified, that discoloration and finish disturbance may occur. In some cases, fabric disturbance may be considered preferable to the stain itself. By following the procedures outlined with normal care and caution, reasonably satisfactory results can be expected.

Battery Acid

Apply ordinary household ammonia water with a brush or cloth to the affected area, saturating it thoroughly. Permit the ammonia water to remain on the spot about a minute, so that it will have ample time to neutralize the acid. Then rinse the spot by rubbing with a clean cloth saturated with cold water.

This treatment will suffice for both old and new stains. However, no type of treatment will repair damage to fibers resulting from the action of the acids on the fibers - particularly after the spot has dried.

Blood

DO NOT use hot water or soap and water on blood stains since they will set the stain, thereby making its removal practically impossible.

Rub the stain with a clean cloth saturated with cold water until no more of the stain will come out. Care must be taken so that clean portions of cloth are used for rubbing the stain.

This treatment should remove all of the stain. If it does not, apply a small amount of household ammonia water to the stain with a cloth or brush. After a lapse of about one minute, continue to rub the stain with a clean cloth dipped in clear water.

If the stain remains after the use of water and ammonia, a thick paste of corn starch and cold water may be applied to the stained area. Allow the paste to remain until it has dried and absorbed the stain. Then pick off the dry starch. Brush the surface to remove starch particles that remain. For bad stains, several applications of starch paste may be necessary.

Candy

Candy stains, other than candy containing chocolate, can be removed by rubbing the affected area with a cloth soaked with very hot water. If the stain is not completely removed, rub area lightly (after drying) with a cloth wet with volatile cleaner. This will usually remove the stain.

Candy stains resulting from cream and fruit-filled chocolates can be removed more easily by rubbing with a cloth soaked in lukewarm soapsuds (mild neutral soap) and scraping, while wet with a dull knife. This treatment is followed with a rinsing by rubbing the spot with a cloth dipped in cold water.

Stains resulting from chocolate or milk chocolate can be removed by rubbing the stain with a cloth wet with lukewarm water. After the spot is dry, rub it lightly with a cloth dipped in a volatile cleaner. Using a clean white blotter, blot area to remove excess cleaner and chocolate stain. Repeat blotting action until stain is no longer transferred to surface of blotter.

Chewing Gum

Harden the gum with an ice cube, and scrape off particles with a dull knife. If gum cannot be removed completely by this method, moisten it with

a volatile cleaner and work it from the fabric with a dull knife, while gum is still moist.

Fruit, Fruit Stains, Liquor and Wine

Practically all fruit stains can be removed by treatment with very hot water. Wet the stain well by applying hot water to the spot with a clean cloth. Scrape all excess pulp, if present, off the fabric with a dull knife; then, rub vigorously with a cloth wet with very hot water. If the stain is very old or deep, it may be necessary to pour very hot water directly on the spot, following this treatment with the scrapping and rubbing. Direct application of hot water to fabrics is not recommended for general use since discoloration may result.

If the above treatments do not remove stain, allow fabric to dry thoroughly; then, rub lightly with a clean cloth dipped in a volatile cleaner. This is the only further treatment recommended.

Soap and water are not recommended since they will probably set the stain and cause a permanent discoloration. Drying the fabric by means of heat (such as the use of an iron) is not recommended.

Grease and Oil

If grease has been spilled on the material, as much as possible should be removed by scraping with a dull knife or spatula before further treatment is attempted.

Grease and oil stains may be removed by rubbing lightly with a clean cloth saturated with a volatile cleaner. Be sure all motions are toward the center of the stained area, to decrease the possibility of spreading the stain. Use a clean white blotter, blot area to remove excess cleaner and loosened grease or oil. Repeat blotting action until grease or oil stain is no longer transferred to blotter.

Ice Cream

The same procedure is recommended for the removal of ice cream stains as that used in removing fruit stains.

If the stain is persistent, rubbing the spot with a cloth wet with warm soapsuds (mild neutral soap) may be used to some advantage after the initial treatment with hot water. This soap treatment should be followed with a rinsing, by rubbing with a clean cloth wet with cold water. After this dries, rubbing lightly with a cloth wet with volatile cleaner will clear up the last of the stain by removing fatty or oil matter.

Nausea

Sponge with a clean cloth, dipped in clear cold water. After most of the stain has been removed in this way, wash lightly with soap (mild neutral), using a clean cloth and lukewarm water. Then rub with another clean cloth dipped in cold water. If any of the stain remains after this treatment, gently rub clean with a cloth moistened with a volatile cleaner.

Shoe Polish and Dressings

On types of shoe dressings which contain starch, dextrine or some water soluble vehicle, allow the polish to dry; then, brush the spot vigorously with a brush. This will probably be all the treatment that is necessary. If further treatment is required, moisten the spot with cold water and after it has dried, repeat the brushing operation.

Paste or wax type shoe polishes may require using a volatile cleaner. Rub the stain gently with a cloth wet with a volatile cleaner until the polish is removed. Use a clean portion of the cloth for each rubbing operation and rub the stained area from outside to center. Blot stained area to remove as much of the cleaner as possible.

Tar

Remove as much of the tar as possible with a dull knife. Moisten the spot lightly with a volatile cleaner, and again remove as much of the tar as possible with a dull knife. Follow this operation by rubbing the spot lightly with a cloth wet with the cleaner until the stain is removed.

Urine

Sponge the stain with a clean cloth saturated with lukewarm soapsuds (mild neutral soap) and then rinse well by rubbing the stain with a clean cloth dipped in cold water. Then saturate a clean cloth with a solution of one part household ammonia water and five parts water. Apply the cloth to the stain and allow solution to remain on affected area for one minute; then, rinse by rubbing with a clean wet cloth.

Lipstick

The compositions of different brands of lipsticks vary, making the stains very difficult to remove. In some instances, a volatile cleaner may remove the stain. If some stain remains after repeated applications of the volatile cleaner, it is best to leave it rather than try other measures.

UNDERBODY ALIGNMENT All Corvair Styles

GENERAL BODY CONSTRUCTION

The body design used on the 10000 series is of an integral, all steel, welded construction, commonly known as "unitized" body construction. The overall rigidity of the body is drawn from each of the individual metal components which, when welded together, comprise the body shell assembly. Panels forming the underbody area incorporate attachment provisions for the power train and the suspension systems. These panels, therefore, contribute the greatest amount of strength to the body assembly.

UNDERBODY GENERAL SERVICE INFORMATION

The underbody assembly is comprised of frame side rails, frame cross rails, floor pan cross bars, inner and outer rocker panels and other floor panel components. The underbody is of all-welded construction. The slightest misalignment in the underbody can affect door, front compartment lid, and engine compartment lid fits. Most important, however, underbody misalignment can influence the suspension system, thereby causing many of the

problems that arise from a suspension misalignment. It is essential, therefore, that underbody alignment be exact to within 1/16" of the specified dimensions.

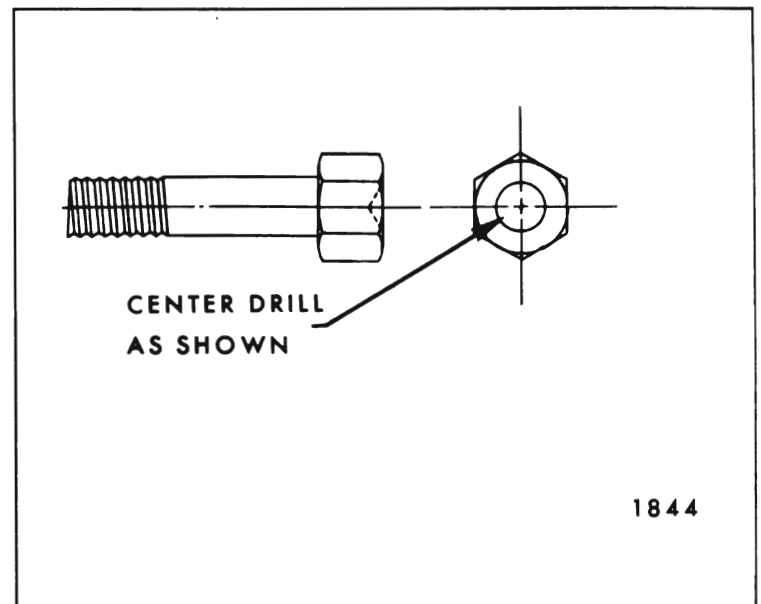


Fig. 1-6—Tram Gage Centering Bolt

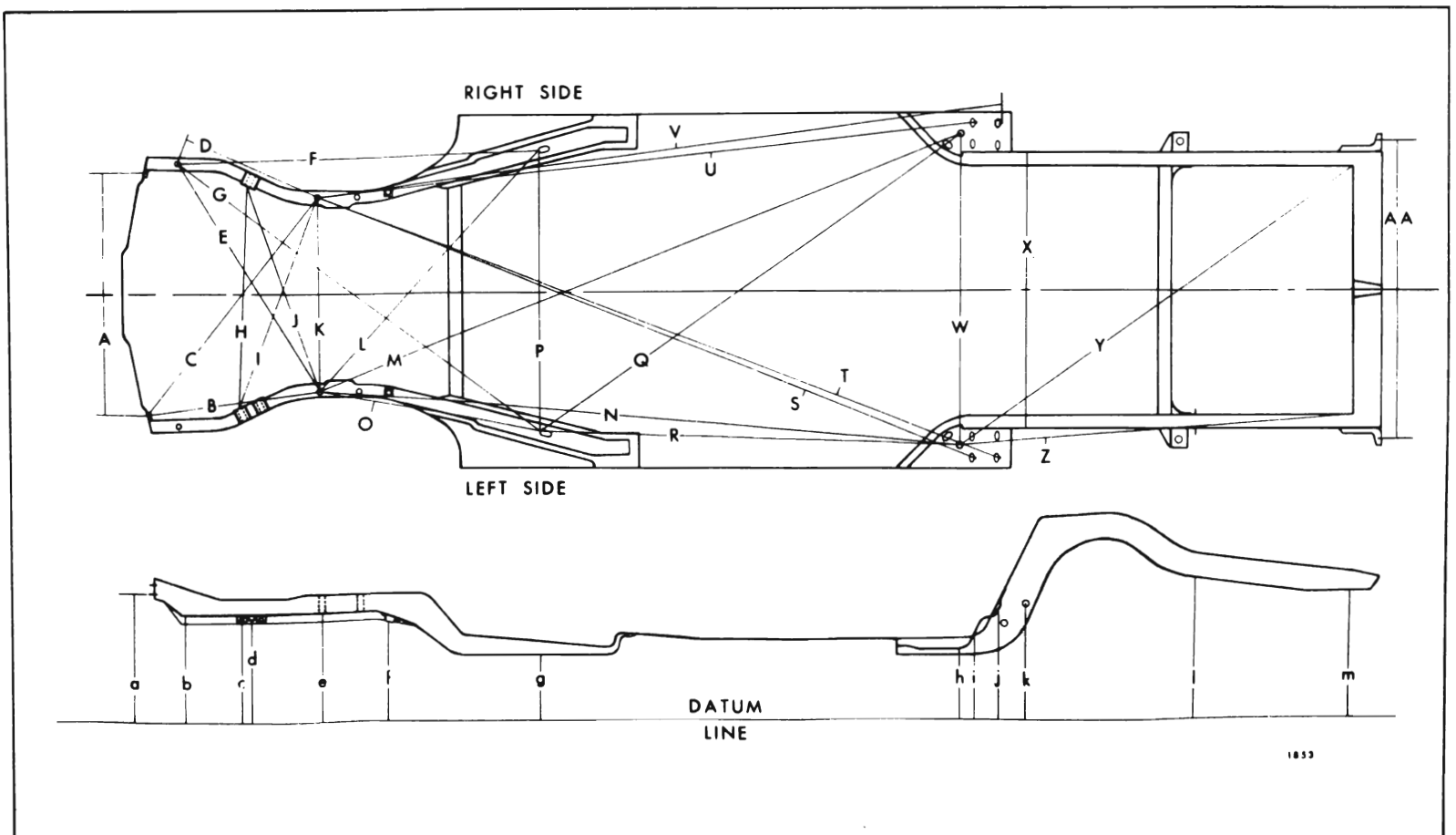


Fig. 1-7—Underbody Vertical Alignment Ref. Points

In the event of collision damage it is important that underbody alignment be thoroughly checked and, if necessary, realigned in order to accurately establish suspension, steering and engine mounting locations. There are many classifications of tools that may be employed to correct the average collision damage situation including frame straightening machines, lighter external pulling equipment and standard body jacks.

Frame tools are not considered as essential equipment for average collision repair operations; however, there will be many situations with this unitized type of construction as with other types of frame construction, where frame equipment will be required. There are also areas of repair where, even though not essential, frame equipment may prove beneficial.

IMPORTANT: Since each individual underbody component contributes directly to the over-all strength of the body, it is essential that proper welding, sealing and rust proofing techniques be observed during service operations. Underbody components should be rust-proofed whenever body repair operations, which destroy or damage the original rust-proofing, are completed. Particularly critical are the enclosed box areas. When rust-proofing critical under body components, it is essential that a good quality type of air dry primer be used (such as corrosion resistant zinc chromate). It is not advisable to use combination type of primer surfacers.

To assist in checking alignment of the underbody components, repairing minor underbody damage or locating replacement parts, the following underbody dimensions and alignment checking information is presented.

ALIGNMENT CHECKING INFORMATION

Body Tram Gauge

An accurate method of determining the alignment of the underbody utilizes a measuring tram gauge. The tram gauge required to perform all recommended measuring checks properly must be capable of extending to a length of 102". At least one of the vertical pointers must be capable of a maximum reach of 18".

Dimensions shown in the upper portion of Figure 1-7 are calculated on a horizontal plane parallel to the plane of the underbody. Precision measurements can be made only if the tram gauge is also parallel to the plane of the underbody. This can be controlled by setting the vertical pointers on the tram gauge according to the dimensions shown in the lower portion of Figure 1-7.

A proper tramming tool is essential for analyzing and determining the extent of collision misalignment present in underbody construction.

To facilitate centering the tram gauge pointers at the suspension locations, special centering bolts (same size and thread as original attaching bolts) may be prepared as shown in Figure 1-6. Use center of bolt thread diameter for centering drill point. Depth of drilled-out cone should be the same for all centering bolts being used as a "set".

Underbody Alignment Reference Point Dimensions—(Fig. 1-7)

Dimensions to gauge holes and other unthreaded holes are measured to dead center of the holes and flush to the adjacent surface metal. Dimensions to body front tie down slots are measured to the front centerline edge of the slot (see Fig. 1-8). Dimensions to bolt or bolt hole locations are measured to the dead center of the thread diameter of the bolt or bolt hole, unless specified otherwise.

The following reference points are key locations and should be used wherever possible as a basis for checking other reference points:

1. Front suspension front attaching bolt holes or bolt heads.
2. 3/4 inch master gauge hole in motor compartment side rail-to-rocker panel brace.
3. Rear suspension control arm lower and upper outer attaching bolt holes (upper edge of holes).

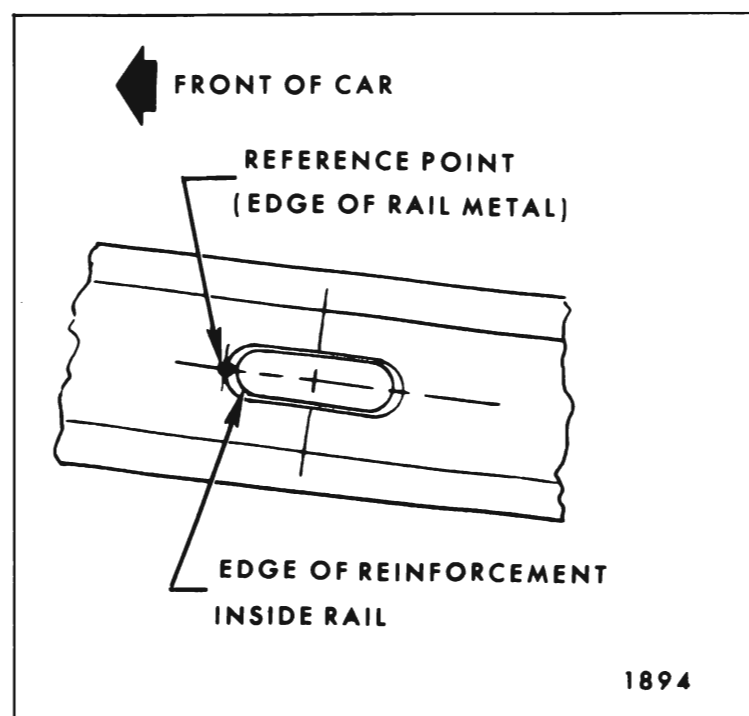


Fig. 1-8—Front Body-Tie Down Slot

Horizontal Dimensions (Fig. 1-7)

Fig. Ref.	Dimension	Location
A	33-7/8	Center of front bumper lower attaching bolt holes.
B	24-3/8	Directly below center of front bumper lower attaching bolt hole and front suspension front attaching bolt head or bolt hole on same side of body.
C	39-1/16	Directly below center of front bumper lower attaching bolt hole and front suspension front attaching bolt hole or bolt head on opposite side of body.
D	15-7/8	3/4" hole in front compartment side rail and front suspension front attaching bolt hole or bolt head on same side of body.
E	35-9/16	3/4" hole in front compartment side rail and front suspension front attaching bolt hole or bolt head on opposite side of body.
F	46	3/4" hole in front compartment side rail and body tie down slot on same side of body (use front center of slot of side rail metal - See Fig. 1-8).

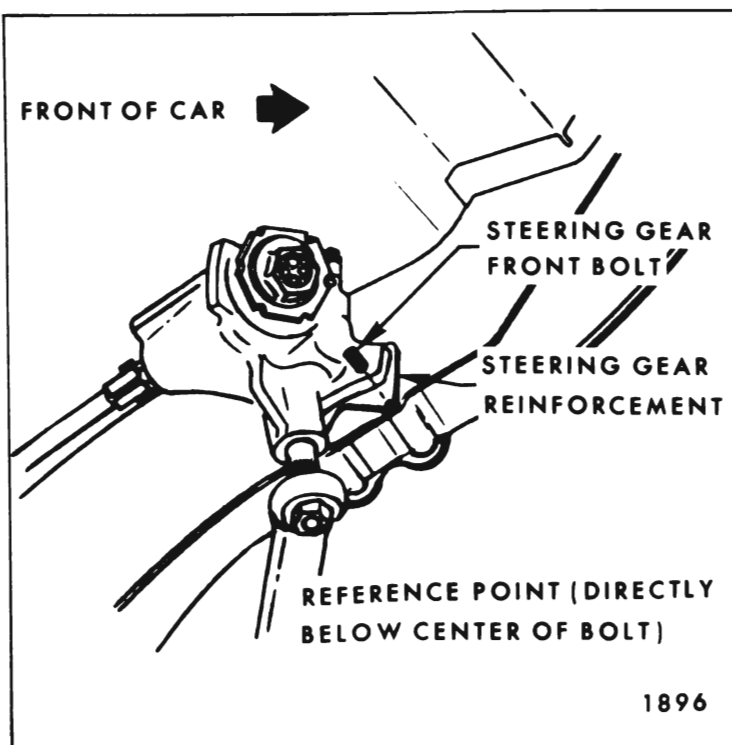


Fig. 1-9—Ref. Point at Steering Gear Reinforcement

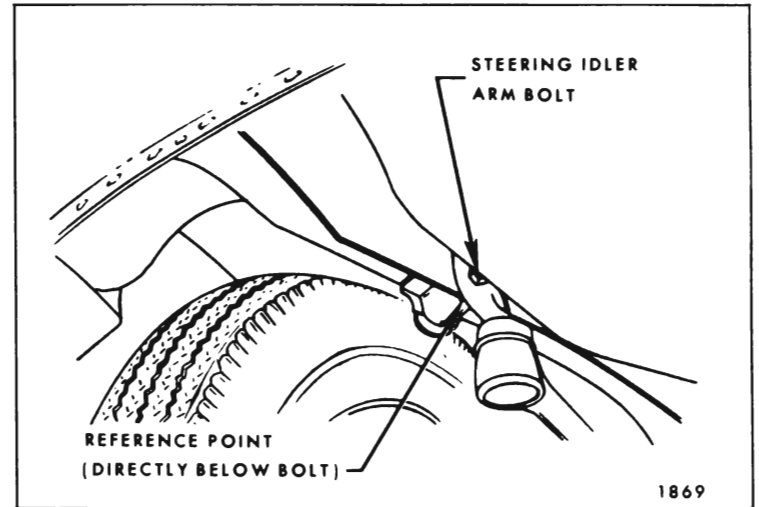


Fig. 1-10—Ref. Point at Steering Idler Arm

Fig. Ref.	Dimension	Location
G	59-29/32	3/4" hole in front compartment side rail and body tie down slot on opposite side of body (use front center of slot of side rail metal - See Fig. 1-8).
H	31-7/8	Lower inner edge of steering gear reinforcement directly below center of steering gear front attaching bolt hole (Fig. 1-9) and lower inner edge of front compartment right side rail directly below center of steering gear idler arm support lower attaching bolt hole (Fig. 1-10).
I	31-15/16	Lower inner edge of steering gear reinforcement directly below center of steering gear front attaching bolt hole (Fig. 1-9) and front suspension front attaching bolt hole or bolt head on opposite side of body.
J	31-1/32	Lower inner edge of front compartment right side rail directly below center of steering gear idler arm support lower attaching bolt hole (Fig. 1-10) and front suspension front attaching bolt hole or bolt head on opposite side of body.
K	27-9/16	Front suspension front attaching bolt hole or bolt head.
L	45-23/32	Front suspension front attaching bolt hole or bolt head and body

Fig. Ref.	Dimension	Location	Fig. Ref.	Dimension	Location
		front tie down slot on opposite side of body (use front center of slot of side rail metal - See Fig. 1-8).	U	91-3/8	Front suspension front attaching bolt hole or bolt head and rear suspension control arm lower outer attaching bolt hole (upper edge of hole) on same side of body.
M	96-1/8	Front suspension front attaching bolt hole or bolt head on opposite side of body and 3/4" master gauge hole in motor compartment side rail-to-rocker panel brace.	V	94-7/8	Front suspension front attaching bolt hole or bolt head and rear suspension control arm upper outer attaching bolt hole (upper edge of hole) on same side of body.
N	89-9/16	Front suspension front attaching bolt hole or bolt head and 3/4" master gauge hole in motor compartment side rail-to-rocker panel brace on same side of body.	W	44	3/4" master gauge hole in motor compartment side rail-to-rocker panel brace.
O	31-3/8	Front suspension front attaching bolt hole or bolt head and body front tie down slot on same side of body (use front center of slot of side rail metal - See Fig. 1-8).	X	38-15/16	Outside edge of motor compartment side rail directly below transmission support upper attaching bolt.
P	40-3/16	Body front tie down slot (use front center of slot of side rail metal - See Fig. 1-8).	Y	67-1/2	3/4" master gauge hole in motor compartment side rail-to-rocker panel brace and lower edge of joint of motor compartment side rail and motor compartment rear cross rail on opposite side of body.
Q	72	Body front tie down slot (use front center of slot of side rail metal - See Fig. 1-8) and 3/4" master gauge hole in motor compartment side rail-to-rocker panel brace on opposite side of body.	Z	55-1/32	3/4" master gauge hole in motor compartment side rail-to-rocker panel brace and lower edge of joint of motor compartment side rail and motor compartment rear cross rail on same side of body.
R	58-13/32	Body front tie down slot (use front center of slot of side rail metal - See Fig. 1-8) and 3/4" master gauge hole in motor compartment side rail-to-rocker panel brace on same side of body.	AA	41-5/32	Rear bumper lower attaching holes.
S	98-1/8	Front suspension front attaching bolt hole or bolt head and rear suspension control arm lower outer attaching bolt hole (upper edge of hole) on opposite side of body.	Vertical Dimensions (Fig. 1-7)		
T	101-3/8	Front suspension front attaching bolt hole or bolt head and rear suspension control arm upper outer attaching bolt hole (upper edge of hole) on opposite side of body.	Fig. Ref.	Dimension	Location
			a	15-3/16	Center of front bumper lower attaching bolt holes.
			b	12-9/32	Front edge of 3/4" diameter paint hole.

NOTE: This dimension is constant rearward to motor compartment rear cross rail.

Fig. Ref.	Dimension	Location	Fig. Ref.	Dimension	Location
c	11-19/32	Lower inner edge of steering gear reinforcement directly below center of front attaching bolt hole (Fig. 1-9).	h	6-13/16	3/4" master gauge hole in motor compartment side rail-to-rocker panel brace.
d	11-17/32	Lower inner edge of front compartment right side rail directly below center of steering idler arm support lower attaching bolt hole (Fig. 1-10).	i	8-3/8	Rear suspension control arm lower outer attaching bolt hole (upper edge of hole).
e	12-13/32 11-13/16	Front suspension front attaching hole (front suspension removed). Front suspension front attaching bolt (suspension installed).	j	12-3/8	Rear suspension control arm upper outer attaching bolt hole (upper edge of hole).
f	10-1/4 9-3/4	Front suspension rear attaching hole (front suspension removed). Front suspension rear attaching bolt (suspension installed).	k	13-13/32	Transmission support upper attaching bolt hole or bolt head.
g	6	Lower surface of front compartment side rail at body front tie down slot (front center of slot). Fig. 1-8.	l	8	Lower surface of motor compartment side rail at a point 1 inch rearward of rear edge of motor compartment corner reinforcement.
			m	15-3/32	Lower surface of motor compartment side rail adjacent to front edge of motor compartment rear cross rail.

UNDERBODY ALIGNMENT

Chevy II Styles

GENERAL BODY CONSTRUCTION

Description

Chevy II series bodies are of unitized construction with provisions for the attachment of an independent front end skirt assembly. The front end skirt assembly incorporates attachment provisions for the front end sheet metal, front suspension system, engine and other mechanical components. The removable front end skirt assembly is covered in detail in the "FRONT END SKIRT ASSEMBLY" section of the chassis manual.

The body is of integral all steel, welded construction. The over-all rigidity of the body is drawn from each of the individual metal components which, when welded together, comprise the body shell assembly. Panels forming the cowl and dash and underbody incorporate attachment provisions for the front end skirt assembly and rear suspension system. These panels, therefore, contribute the greatest amount of strength to the body assembly.

UNDERBODY GENERAL SERVICE INFORMATION

Since each individual underbody component contributes directly to the over-all strength of the body, it is essential that proper welding, sealing and rust-proofing techniques be observed during service operations. Underbody components should be rust-proofed whenever body repair operations, which destroy or damage the original rust-proofing, are completed. When rust-proofing critical underbody components, it is essential that a good quality type of air dry primer be used (such as corrosion resistant zinc chromate). It is not advisable to use combination type primer surfacers.

ALIGNMENT CHECKING PROCEDURE

The underbody is comprised of body dash front braces, body floor pan cross braces, body compartment pan side rails, inner and outer rocker panels and other floor panel components. The underbody is of all welded construction. Misalignment in the underbody can affect front fender, door,

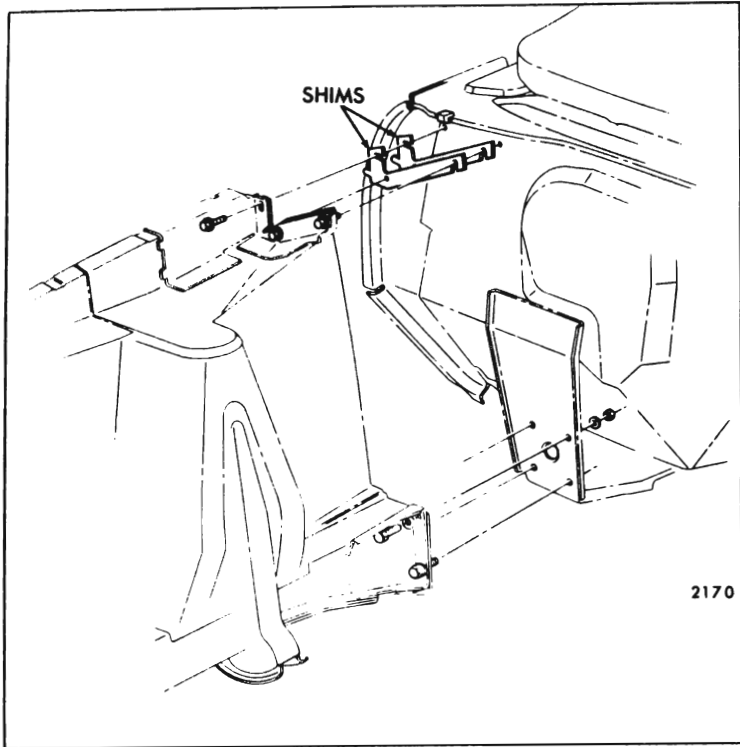


Fig. 1-11—Skirt-to-Dash Mounting

rear compartment lid and glass opening alignment, station wagon tail gate and back body opening alignments. Most important, however, underbody misalignment can influence the suspension system, thereby causing many of the problems that arise from a suspension misalignment. It is essential, therefore, that underbody alignment be exact to within 1/16" of the specified dimensions.

In the event of collision damage, it is important that underbody alignment be thoroughly checked and, if necessary, realigned in order to accurately establish proper dimensions. There are many classifications of tools that may be employed to correct the average collision damage situation including frame straightening machines, lighter external pulling equipment and standard body jacks.

NOTE: Minor misalignment of the front end assembly to the body may be corrected by adding or removing shims at the upper skirt-to-dash attaching surface. Figure 1-11 shows both upper and lower attachment and the installed position of the shims. Shims are available in 1/32" and 1/8" thickness.

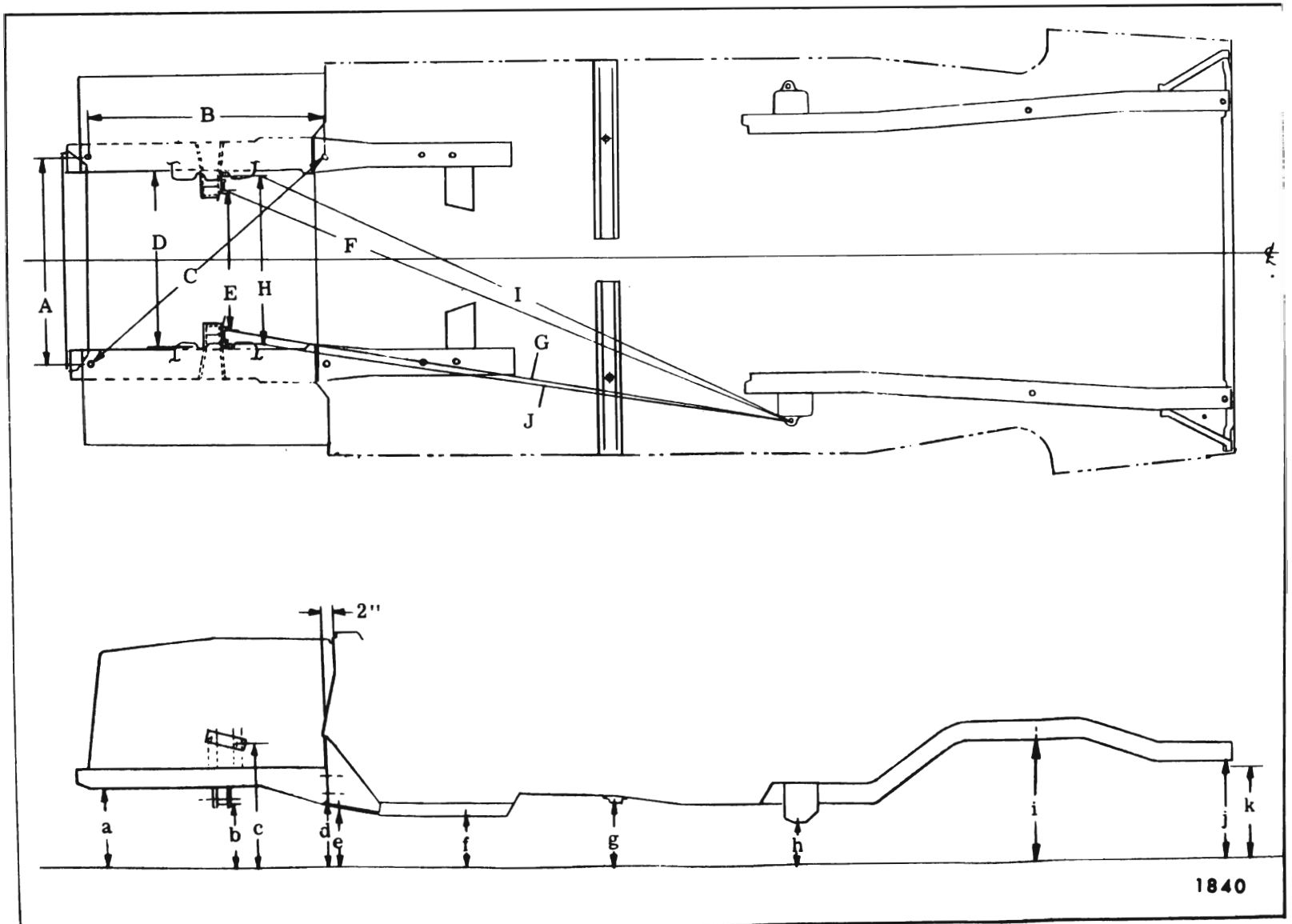


Fig. 1-12—Horizontal and Vertical Dimensions (Front Skirt Assembly)

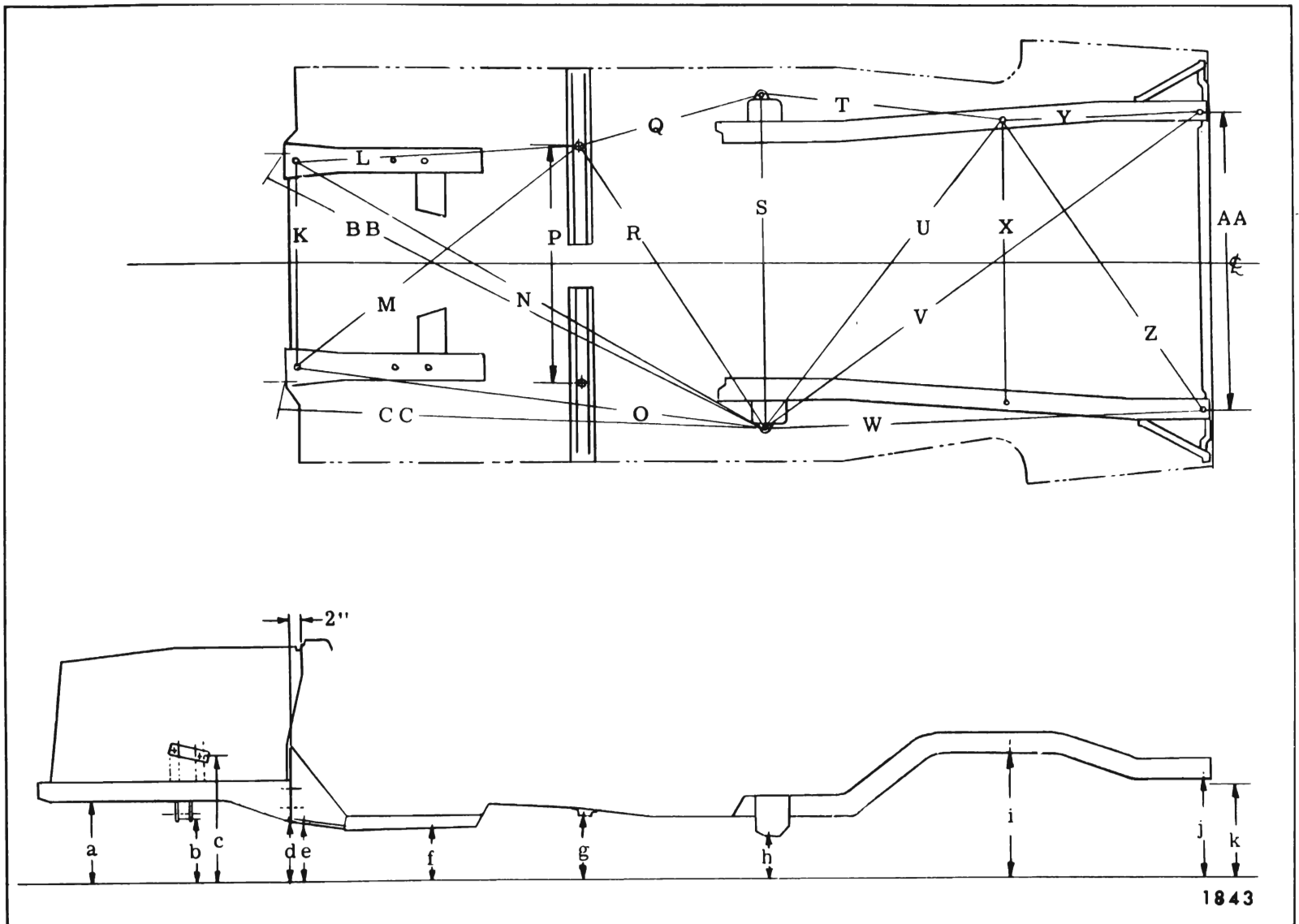


Fig. 1-13—Horizontal and Vertical Dimensions (Body Assembly)

CAUTION: Do not change skirt assembly-to-dash shimming in an effort to adjust the door-to-fender gap or any other sheet metal appearance item. These shims regulate the front end assembly relationship to the body and should only be used to correct dimensions as shown in Figures 1-12 and 1-13.

To assist in checking alignment of the underbody components, repairing minor underbody damage or locating replacement parts, the following underbody dimensions and alignment checking information is presented.

Body Tram Gage

An accurate method of determining the alignment of the underbody utilizes a measuring tram gage. The tram gage required to perform all recommended measuring checks properly must be capable of extending to a length of 91". At least one of the vertical pointers must be capable of a maximum reach of 17".

Horizontal dimensions shown in the upper portion of Figures 1-12 and 1-13 are calculated on a plane parallel to the plane of the underbody. Precision measurements can be made only if the tram gage is properly adjusted so as to remain parallel to the plane of the underbody during measuring operations.

A proper tramping tool is essential for analyzing and determining the extent of collision misalignment present in underbody construction.

Principles of Tramping

In the upper portion of 1-12 and 1-13 all reference locations shown are symmetrical about the centerline of the vehicle. For example, when performing a cross-check of the body floor pan area, dimension "N" should measure the same distance in both diagonal directions of the cross-check operation. Cross checking operations are used to determine the relationship between two locations on the underbody.

To measure the distance accurately between any two reference points on the underbody, two specifications are required:

- a. The horizontal dimension between the two points to be trammed.
- b. The vertical dimension from the datum line to the points to be trammed. As an example, the diagonal measurement (calculated on a horizontal plane) between reference points of dimension line "N", shown in Figure 1-13, is $78 \frac{25}{32}$ inches. The specifications from the datum line have a vertical height difference of $3 \frac{5}{16}$ inches between the forward location of dimension "N" (at vertical dimension "e") and the rearward location of dimension "N" (at vertical dimension "h"). The vertical pointer used at the forward location should be positioned so as to extend $3 \frac{5}{16}$ inches further from the tram bar than the pointer used at the rearward location. With the proper settings the tram bar will be on a plane parallel to that of the body plane. The exception to this would be when one of the reference locations is included in the misaligned area; then the parallel plane between the body and the tram bar may not prevail. After completion of the repairs, the tram gage should be set at the specified dimension to check the accuracy of the repair operation.

Car Preparation

Preparing the car for the underbody alignment check involves the following:

1. Place the car on level surface.
2. The weight of the car should be supported at the wheel locations.
3. A visual damage inspection should be made to eliminate needless measuring. Obviously damaged or misaligned areas can often be located by sight.

Tramming Sequence

The tramming sequence will vary depending upon the nature and location of the misaligned area.

Prior to performing any tramming operation, the accuracy of reference points to be used must be determined. A measurement that originates from a reference point which is included in a damaged area will produce untrue results and confuse the evaluation of the underbody condition. Unlike the conventional type of frame design, the unitized type

of body construction seldom develops the condition of "diamond" in the floor pan area as a result of front or rear end collisions. Therefore, underbody alignment checking can usually originate from the body floor pan area. If inspection indicates that these locations have been disturbed and are not suitable for measuring, one of the undamaged suspension locations should be used as a beginning reference point. If a rare situation should exist where all of these locations are not suitable as reference points, repair operations should begin with the body floor pan area. All other underbody components should be aligned progressively from this area.

Underbody Alignment Reference Point Dimensions (Figures 1-12, 1-13, and 1-14)

Dimensions to gage holes and other unthreaded holes are measured to dead center of the holes and flush to the adjacent surface metal. Dimensions to bolt or bolt hole locations are measured to the dead center of the thread diameter of the bolt or bolt hole.

Figure 1-12 specifies dimension reference locations required for alignment of front end skirt assembly and for alignment of front end skirt assembly to body assembly. Figure 1-13 specifies dimension reference locations required for alignment of underbody assembly. Figure 1-14 specifies cowl and dash reference locations required to check the skirt assembly attaching hole locations.

Horizontal Dimensions (Front End Skirt Assembly)

Fig.

Ref. Dimension

Location

A $30 \frac{5}{32}$ $15/32$ " gage hole at front of skirt side rails.

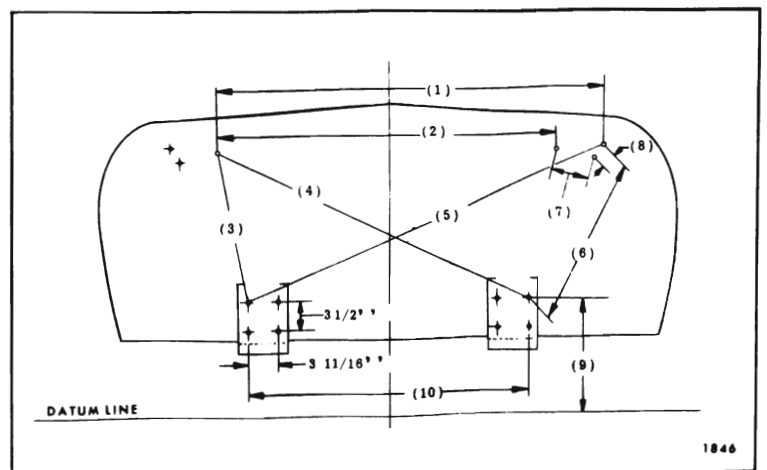


Fig. 1-14—Front View of Cowl and Dash

Fig. Ref.	Dimension	Location
B	35	15/32" gage hole at front of skirt side rail to forward gage hole in dash front brace on same side of body.
C	46 3/16	15/32" gage hole at front of skirt side rail to forward gage hole in dash front brace on opposite side of body.
D	25 29/32	Skirt panel inner surface adjacent to front suspension upper control arm attaching points. (See Fig. 1-16).
E	20 7/8	Front suspension lower control arm adjusting cam guide (outer edge of inner flange - See Fig. 1-15).
F	90 19/32	Front suspension lower control arm adjusting cam guide (outer edge of inner flange - See Fig. 1-15) to gage hole in lower flange of rear spring front support on opposite side of body.

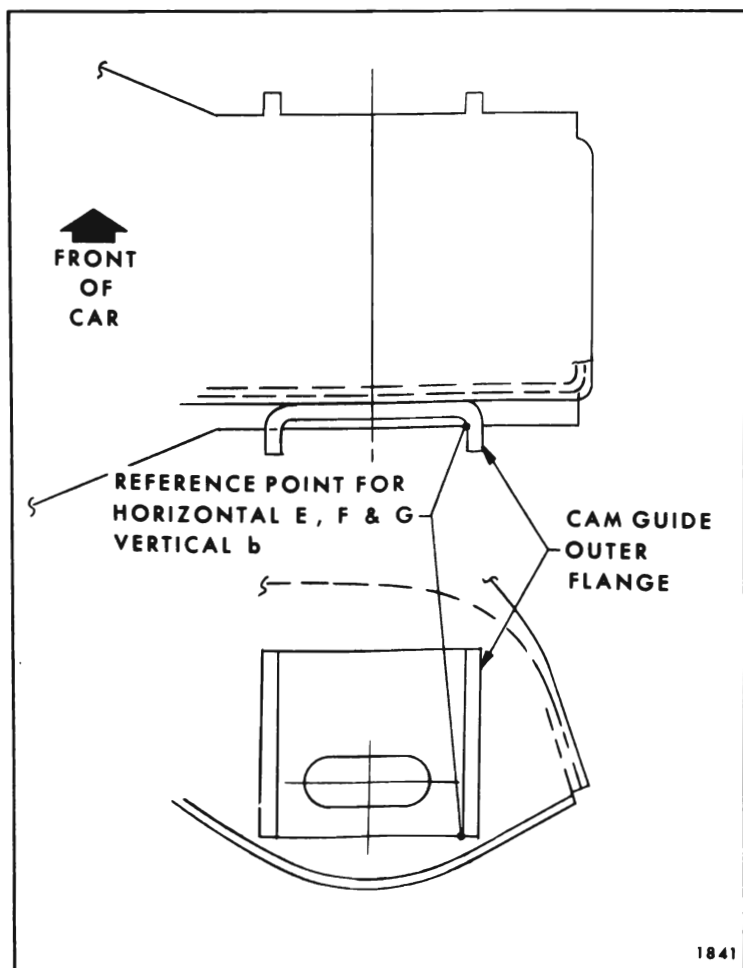


Fig. 1-15—Lower Control Arm Adjusting Cam Guide

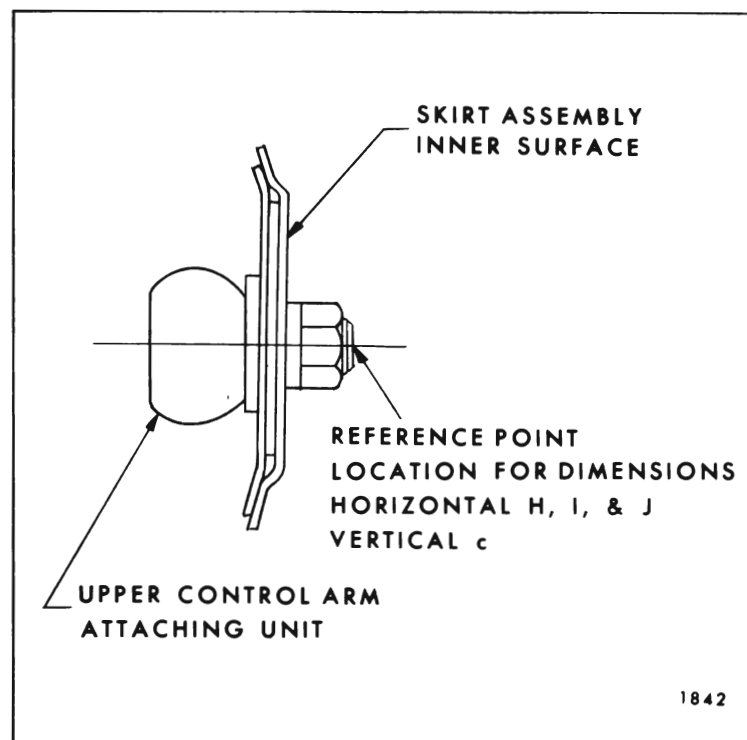


Fig. 1-16—Upper Control Arm Rear Attaching Stud

Fig. Ref.	Dimension	Location
G	84 7/8	Front suspension lower control arm adjusting cam guide (outer edge of inner flange - See Fig. 1-15) to gage hole in lower flange of rear spring front support on same side of body.
H	24 1/2	Front suspension upper control arm rear attaching stud - center of thread end (See Fig. 1-16).
I	90 13/32	Front suspension upper control arm rear attaching stud - center of thread end (See Fig. 1-16) to gage hole in lower flange of rear spring front support on opposite side of body.
J	83 5/8	Front suspension upper control arm rear attaching stud - center of thread end (See Fig. 1-16) to gage hole in lower flange of rear spring front support on same side of body.

Horizontal Dimensions (Body Assembly)

K	30 5/32	Forward gage hole in dash front brace.
L	41 3/4	Forward gage hole in dash front brace to 11/32" gage hole in

Fig. Ref.	Dimension	Location	Fig. Ref.	Dimension	Location
		floor pan cross brace on same side of body.		69 9/32 (Sta. Wag.)	
M	53 1/16	Forward gage hole in dash front brace to 11/32" gage hole in floor pan cross brace on opposite side of body.	X	40 13/16	1/4" unthreaded gage hole in compartment pan side rail at center of kick-up area.
N	78 25/32	Forward gage hole in dash front brace to gage hole in lower flange of rear spring front support on opposite side of body.	Y	29 3/32 (Sedan & Coupe)	1/4" unthreaded gage hole in compartment pan side rail at center of kick-up area to rear bumper attaching bolt or bolt hole on same side of body.
O	69	Forward gage hole in dash front brace to gage hole in lower flange of rear spring front support on same side of body.		38 15/16 (Sta. Wag.)	
P	35 17/32	11/32" gage hole in floor pan cross brace.	Z	51 1/4 (Sedan & Coupe)	1/4" unthreaded gage hole in compartment pan side rail at center of kick-up area to rear bumper attaching bolt or bolt hole on opposite side of body.
Q	27 15/32	11/32" gage hole in floor pan cross brace to gage hole in lower flange of rear spring front support on same side of body.		54 3/32 (Sta. Wag.)	
R	49 19/32	11/32" gage hole in front pan cross brace to gage hole in lower flange of rear spring front support on opposite side of body.	AA	43 7/16	Rear bumper attaching bolt or bolt hole.
S	48	Gage hole in lower flange of rear spring front support.	BB	80 7/8	Front face of dash lower attaching pad directly under centerline of outer holes in attaching pad (See Fig. 1-17) to gage hole in lower flange of rear spring front support on opposite side of body.
T	35 1/2	Gage hole in lower flange of rear spring front support to 1/4" gage hole in compartment pan side rail at center of kickup area on same side of body.	CC	70 5/32	Front face of dash lower attaching pad directly under centerline of outer holes in attaching pad (See Fig. 1-17) to gage hole in lower flange of rear spring front support on same side of body.
U	56 3/4	Gage hole in lower flange of rear spring front support to 1/4" gage hole in compartment pan side rail at center of kick-up area on opposite side of body.			
V	79 1/16 (Sedan & Coupe)	Gage hole in lower flange of rear spring front support to rear bumper attaching bolt or bolt hole on opposite side of body.			
	82 31/32 (Sta. Wag.)				
W	64 17/32 (Sedan & Coupe)	Gage hole in lower flange of rear spring front support to rear bumper attaching bolt or bolt hole on same side of body.			

**Vertical Dimensions (Complete Underbody)
(See Figure 1-13 and 1-12)**

a	11 9/16	15/32" gage hole at front of skirt side rail.
b	9 3/16	Lowest point of front suspension lower control arm adjusting cam guide (See Fig. 1-15).
c	18 5/16	Center of front suspension upper control arm rear attaching stud center of thread end (See Fig. 1-16).

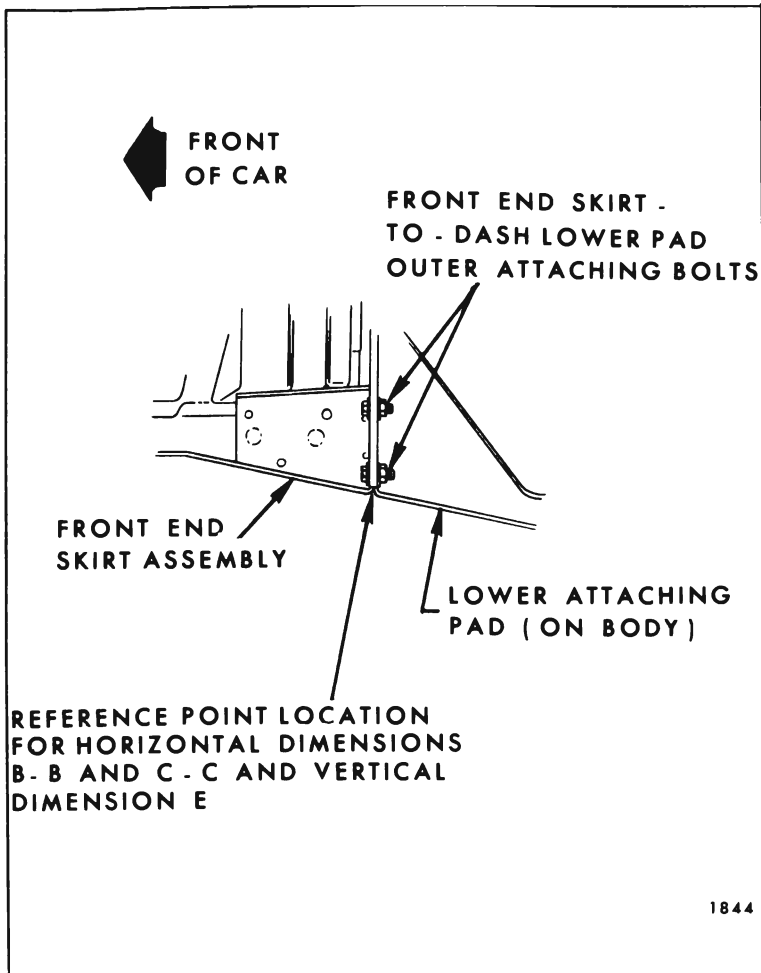


Fig. 1-17—Front End Skirt-to-Dash Lower Attaching Pad

Fig. Ref.	Dimension	Location
d	9 11/32	Joint of front end skirt assembly and dash lower attaching pad on line even with bottom surface of both members (See Fig. 1-17).
e	9 1/16	Lower surface of dash front brace at center of forward gage hole.
f	7 23/32	Lower surface of dash front brace at rear gage hole.
g	9 13/32	Lower surface of floor pan cross brace at 11/32" gage hole.
h	5 3/4	Lower surface of rear spring front support at gage hole in lower flange.
i	17 13/32	Lower surface of compartment pan side rail at 1/4" unthreaded gage hole at center of kick-up area.

Fig. Ref.	Dimension	Location
j	13 7/8 (Sedan & Coupe)	Lower surface of compartment pan side rail spring support reinforcement at rear bumper attaching bolt hole (See Fig. 1-18).
	12 1/32 (Sta. Wag.)	
k	13 11/32 (Sedan & Coupe)	Center of lower surface of rear bumper attaching bolt head (See Fig. 1-18).
	11 15/32 (Sta. Wag.)	

Cowl and Dash Dimensions

All dimensions are between attaching holes for front end skirt assembly.

Fig. Ref.	Dimension	Location
(1)	46 11/16	Inner threaded hole in upper attaching surface to outer threaded hole on opposite side of dash.
(2)	41 3/32	Inner threaded hole in upper attaching surface to inner threaded hole on opposite side of dash.

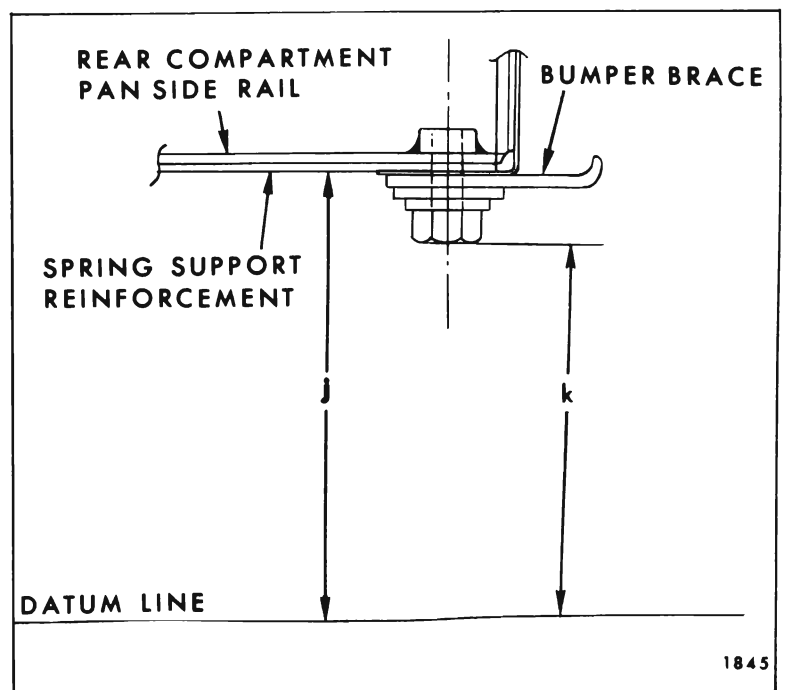


Fig. 1-18—Rear Bumper Attaching Bolt

Fig. Ref.	Dimension	Location	Fig. Ref.	Dimension	Location
*(3)	18 3/4	Inner threaded hole in upper attaching surface to upper outer hole in lower attaching pad on same side of dash.			hole in upper attaching surface on same side of dash.
*(4)	41 3/4	Inner threaded hole on upper attaching surface to upper outer hole in lower attaching pad on opposite side of dash.	(7)	4 11/16	Between the two innermost threaded holes in upper attaching surface on same side of dash.
*(5)	47	Upper outer hole in lower attaching pad to outer threaded hole in upper attaching surface on opposite side of dash.	(8)	1 7/8	Between the two outermost threaded holes in upper attaching surface on same side of dash.
*(6)	21 1/32	Upper outer hole in lower attaching pad to outer threaded	<p>*NOTE: When checking dimensions 3, 4, 5 or 6 the upper pointer should be extended 2" longer than the lower pointer.</p>		