

# SECTION XI

## FRAME

### Description

Steel side members running the entire length of the frame are joined together by four crossmembers and an "X" member. All frame joints are either welded or cold riveted for greatest strength. The "X" member in the area under the body compartment is made up of "I" beam type members. A "U" type member reinforces the forward end of the frame.

A welded box type structure provides rigidity at the point of engine and front suspension support. Double side channels extend rearward from the suspension crossmember to the forward legs of the "X" member. A "U" type crossmember reinforces the frame

side members at the top of the rear kickup. A "Z" type crossmember provides extra reinforcement for attaching the bumper and fuel tank at the rear of the frame.

### Frame Alignment

Correct frame alignment is most important for safe and smooth operation of the vehicle. Improper frame alignment, usually caused by an accident, places excessive strain on certain parts of the entire vehicle. Frame misalignment will also cause improper front suspension alignment. Body misalignment, annoying squeaks, and rattles can sometimes be traced to improper frame alignment.

The frame may be checked for alignment by taking

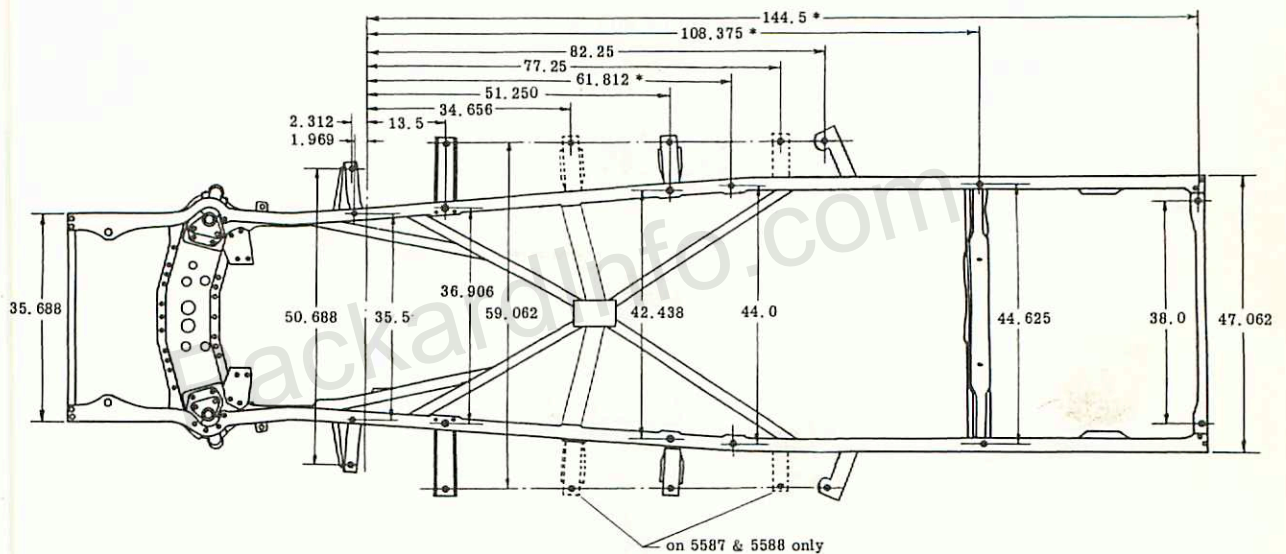


Figure 1—Frame Dimensions for Models 5582-87-88

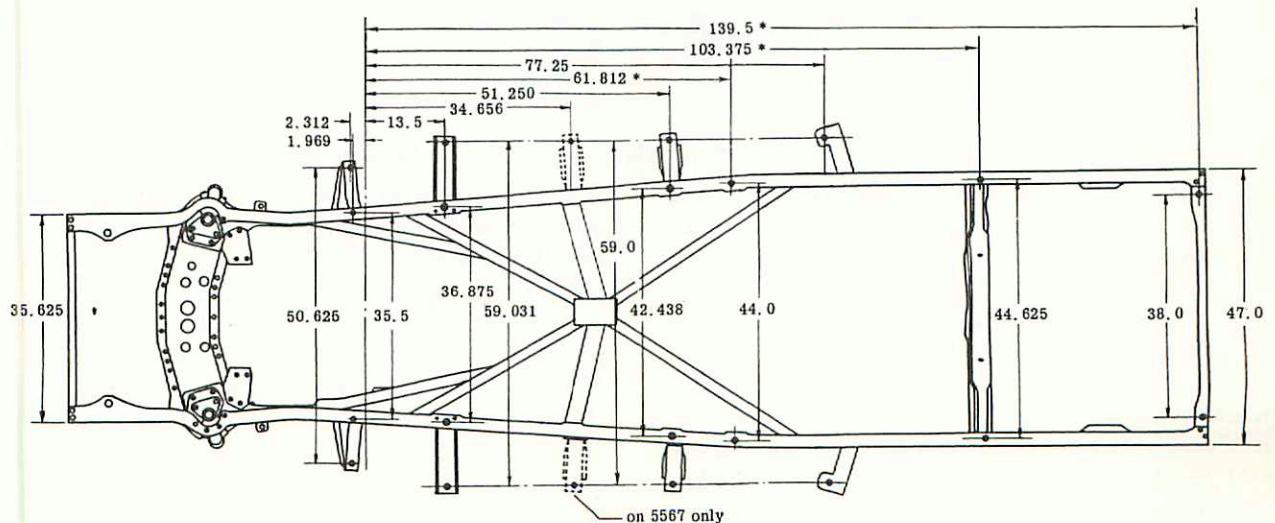
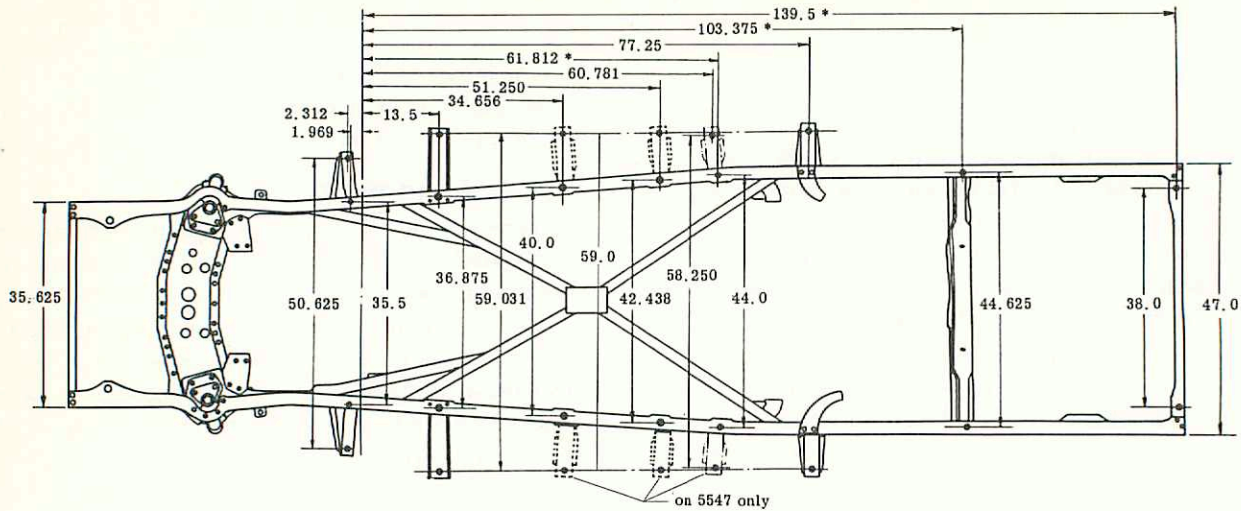
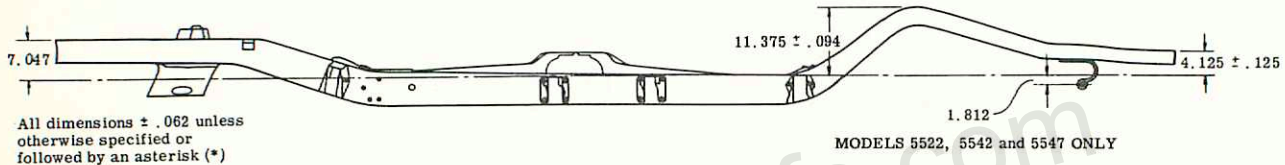


Figure 2—Frame Dimensions for Models 5562-67

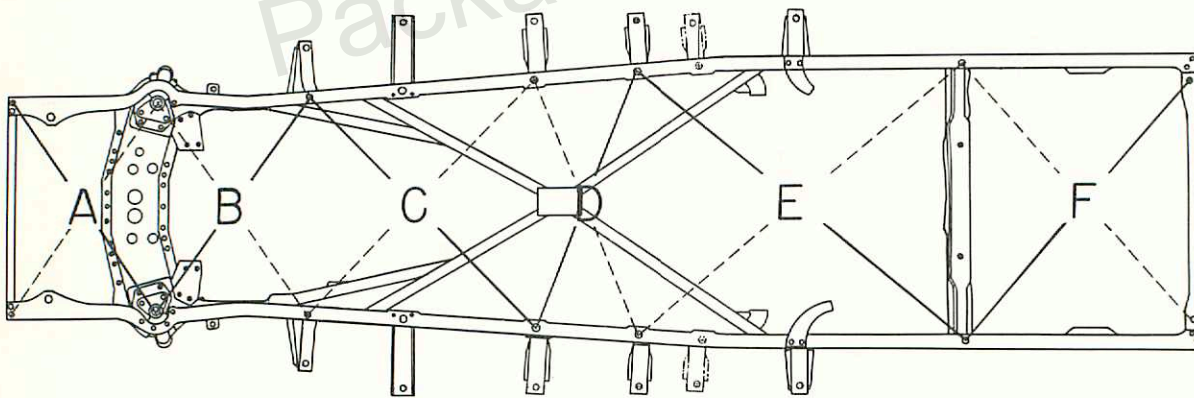
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**Figure 3—Frame Dimensions for Models 5522-42-47**



**Figure 4—Frame Dimensions for All Models**



**Figure 5—Diagonal Measurements that may be taken to Align the Frame**

diagonal measurements at exactly corresponding points on each side of the frame. When checking frame alignment, diagonal measuring should be performed with greatest care and accuracy. Figures 1, 2, 3 and 4 show the dimensions that may be used as a guide in checking frame side member alignment. These dimensions are the exact distance between the two points as measured with a steel tape. Figure 5 shows some of the diagonal measurements which may be taken to check the squareness of the frame. These measurements will quickly indicate which part of the frame was bent and where pressure should be applied to restore the correct alignment.

Frame alignment measurements may also be taken without removing the body from the chassis by using the plumb-bob and chalk method, which may be performed as follows.

Locate the car on a level floor. Hold the line of the plumb-bob to the center of one of the rear body bolts. Mark the floor with the chalk at the exact spot where the plumb-bob comes to rest slightly above the floor.

Using the plumb-bob, mark the floor underneath the center of all the other body bolts. The marks on the floor will represent the various points of the frame which are to be checked transversely and diagonally.

Move the car and measure the distance between the



## FRAME

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marks on the floor. This measurement should come within  $\frac{1}{4}$  inch of the exact corresponding diagonal on the opposite side of the frame. Care should be taken to be sure that any two diagonals compared represent exactly corresponding points on each side of the frame.

Correct frame alignment can easily be obtained by straightening the frame sections which have been bent. However, some badly bent or twisted frame parts in most cases can be replaced easily and more economically than attempting to straighten these parts. When installing the body, it should be properly aligned to the frame so that the body bolts may be installed without forcing them into place. Shims should be used to level the body to the frame so that when the body bolts are

tightened they will not put undue stresses on any portion of the body which would tend to distort the body and cause misalignment of the doors.

### Replacing Body Brackets

The outrigger body brackets are riveted to the frame, while the engine rear support is bolted to the "X" member channels of the frame. The best method to install new body brackets is to cut out the old rivets, line up the new parts with the riveted holes, and cold rivet them in place. The brackets may be installed with cap screws, lock washers, and nuts. On box sections of the frame, the brackets may be arc welded to the frame member.

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## NOTES

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# FRAME

## 56TH SERIES SUPPLEMENT

### Description

Steel side members running the entire length of the frame are joined together by four cross members and an "X" member. All frame joints are either welded or cold riveted for greatest strength. The "X" member in the area under the body compartment is made up of "I" beam type members. A "U" type member reinforces the forward end of the frame and a channel type at the rear.

A welded box type structure provides rigidity at the point of engine and front suspension support. Double side channels extend rearward from the suspension cross member to the forward legs of the "X" member. A "U" type cross member reinforces the frame side members at the top of the rear kickup. A "Z" type cross member provides extra reinforcement for attaching the bumper and fuel tank at the rear of the frame. A welded box type structure runs from the rear axle kickup forward past the rear X-leg.

### Frame Alignment

Correct frame alignment is most important for safe and smooth operation of the vehicle. Improper frame alignment, usually caused by an accident, places excessive strain on certain parts of the entire vehicle. Frame misalignment will also cause improper front suspension alignment. Body misalignment, annoying squeaks, and rattles can sometimes be traced to improper frame alignment.

The frame may be checked for alignment by taking diagonal measurements at exact corresponding points

on each side of the frame. When checking frame alignment, diagonal measuring should be performed with greatest care and accuracy. Figures 6, 7, 8 and 9 show the dimensions that may be used as a guide in checking frame side member alignment. These dimensions are the exact distance between the two points as measured with a steel tape. Figure 10 shows some of the diagonal measurements which may be taken to check the squareness of the frame. These measurements will quickly indicate which part of the frame is bent and where pressure should be applied to restore the correct alignment.

Frame alignment measurements may also be taken without removing the body from the chassis by using the plumb-bob and chalk method, which may be performed as follows:

Locate the car on a level floor. Hold the line of the plumb-bob to the center of one of the rear body bolts. Mark the floor with the chalk at the exact spot where the plumb-bob comes to rest slightly above the floor.

Using the plumb-bob, mark the floor underneath the center of all the other body bolts. The marks on the floor will represent the various points of the frame which are to be checked transversely and diagonally.

Move the car and measure the distance between the marks on the floor. This measurement should come within  $\frac{1}{4}$  inch of the exact corresponding diagonal on the opposite side of the frame. Care should be taken to be sure that any two diagonals compared represent exactly corresponding points on each side of the frame.

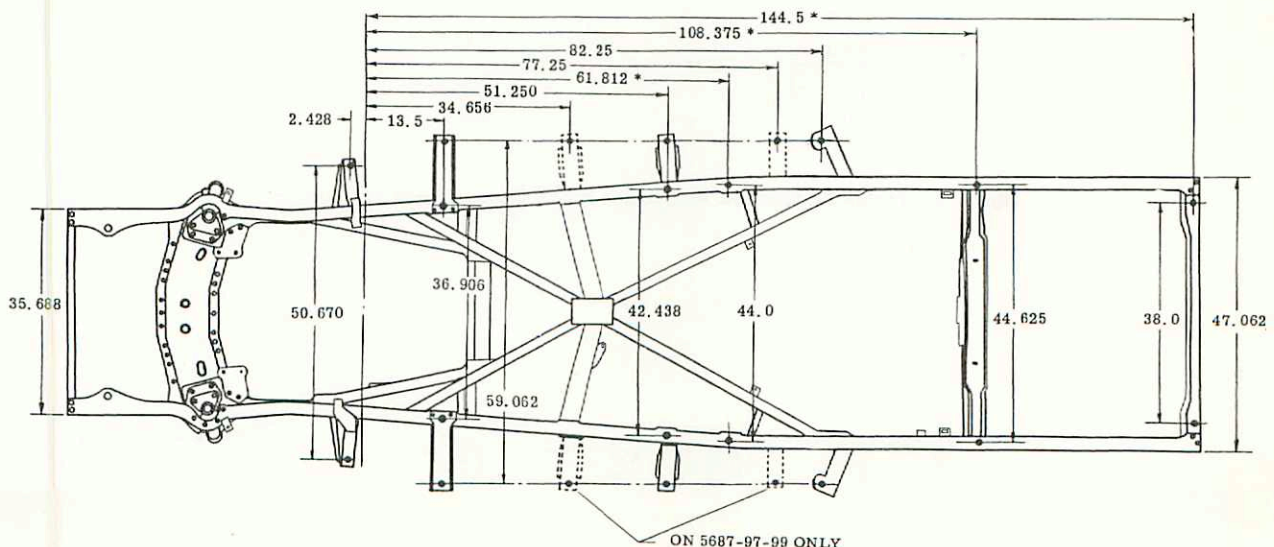


Figure 6—Frame Dimensions for Models 5682-87-97-99



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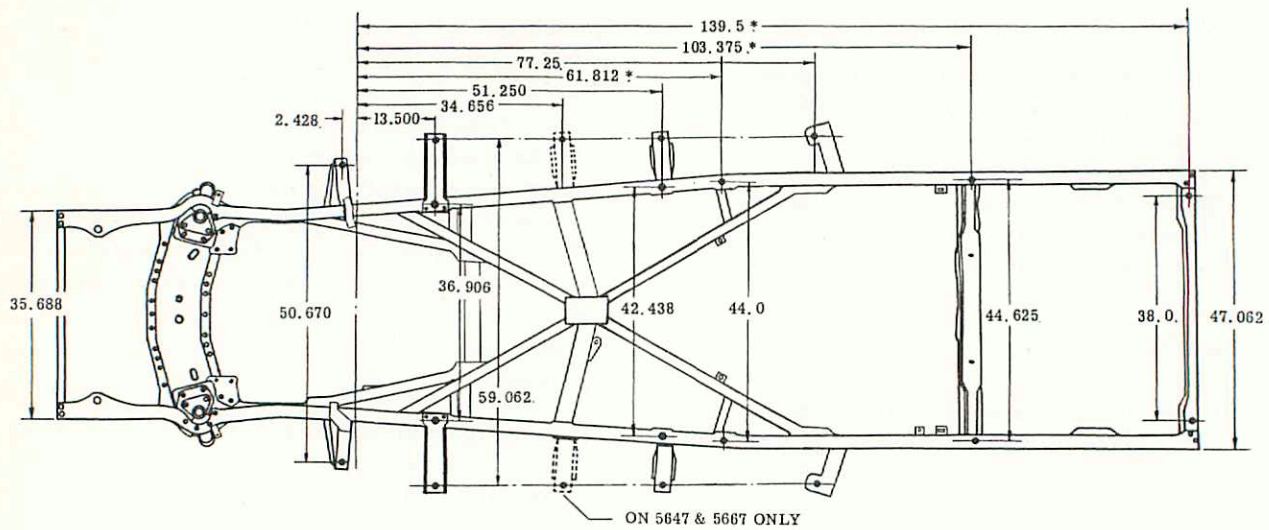


Figure 7—Frame Dimensions for Models 5622-42-47-62-67

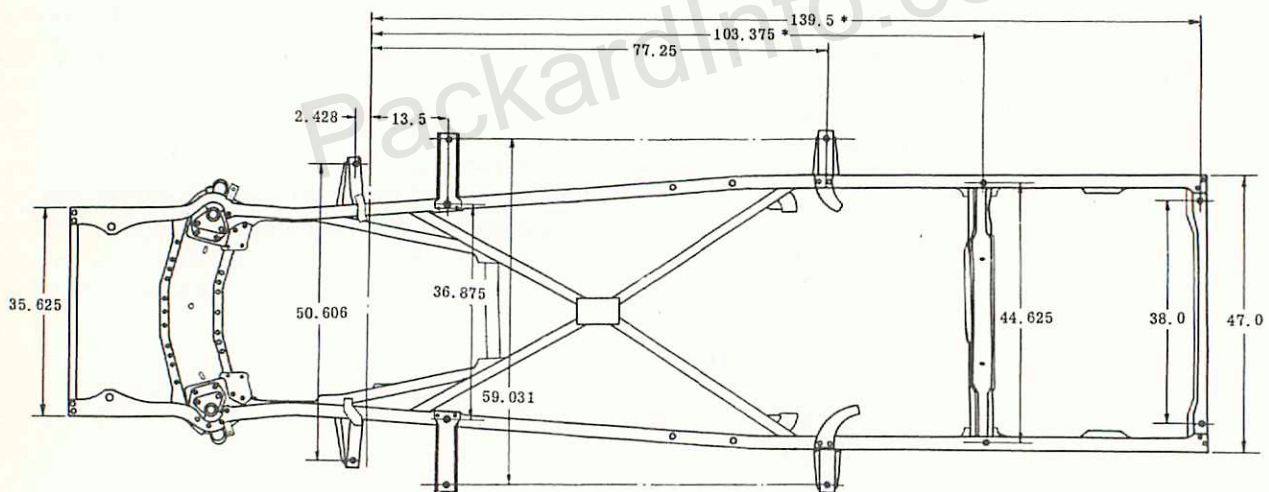
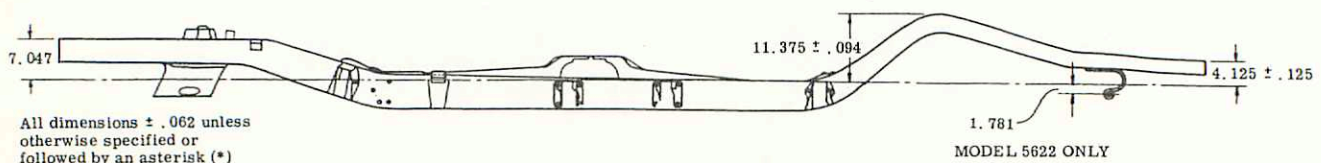


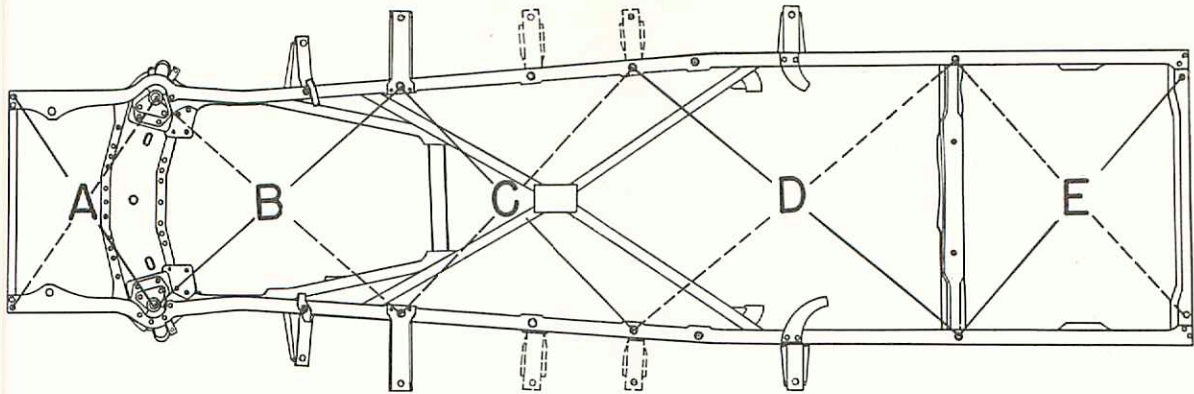
Figure 8—Frame Dimensions for Model 5622 Conventional Suspension



All dimensions  $\pm .062$  unless otherwise specified or followed by an asterisk (\*)

Figure 9—Frame Dimensions for All Models

## FRAME



*Figure 10—Diagonal Measurements that may be taken to Align the Frame*

Correct frame alignment can easily be obtained by straightening the frame sections which have been bent. However, some badly bent or twisted frame parts in most cases can be replaced easily and more economically than attempting to straighten these parts. When installing the body, it should be properly aligned to the frame so that the body bolts may be installed without forcing them into place. Shims should be used to level the body to the frame so that when the body bolts are tightened they will not put undue stresses on any portion of the body which would tend to distort the body and cause misalignment of the doors.

### Replacing Body Brackets

The outrigger body brackets are riveted to the frame, while the engine rear support is bolted to the "X" member channels of the frame. The best method to install new body brackets is to cut out the old rivets, line up the new parts with the riveted holes, and cold rivet them in place. The brackets may be installed with cap screws, lock washers, and nuts. On box sections of the frame, the brackets may be arc-welded to the frame member.

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## NOTES

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