

BODIES—PANELS—FENDERS—HOODS—BUMPERS

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BODIES

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BODY CONSTRUCTION

General

Jeep vehicles are of all-steel construction, with insulated body mounting points that provide a secure attachment to the chassis frame.

All major body panels are of heavy gauge steel, reinforced, flanged, and welded. The bodies are completely detachable from the chassis unit and are insulated from the frame by body spacers placed between the body and frame and held in position with body bolts.

Spacers are located between the body and chassis mounting points to insulate against vibrations and road noises.

Periodic inspection is necessary to determine the condition of body spacers and holddown bolts. Worn, loose, or fatigued spacers permit the body to settle causing body lean or possible interference between the floorpan and various chassis components.

Water Test Procedure

Water testing can be performed without the need of a helper, by utilizing a suitable stand to which a water hose can be attached. The hose attachment should be adjustable to permit changing the spray direction as needed. This method will make it possible for one man to observe and detect the point of water entry while the water is being applied.

Always begin the water spray at the lowest point and allow sufficient saturation before moving the water spray upward.

To best simulate conditions that cause water leaks, i.e., rain or car wash, it is advisable to water-test with a

spray pattern rather than a heavy, solid stream of water which can create misleading symptoms.

This procedure can be used on any area suspected of having a water leak.

Correction of Leaks

The following is a list of sealing compounds best suited to correct water or dust leaks in the respective areas as described. Comply with specific instructions recommended by the manufacturer and noted on the container.

Body Joint Sealer—A heavy-bodied asphalt base compound with properties very similar to undercoating material. Used to seal body joints. Do not use where scuffing of sealer may occur. Ideal for use in wheel splash area after adequate cleaning of surface.

Undercoat Spray—Undercoating material in a pressurized spray container is ideal for quick sealing of body seams and joints. A four-inch plastic tube used as a nozzle extension allows access to hard-to-seal areas.

Body Caulk-String Caulk—A heavy-bodied material which can be molded easily and pressed into place and remain pliable. Adjoining surfaces must be clean for good adhesion. Caulk is best suited as a gasketing material and must not be substituted for a sealant which requires an adhering bond.

Plastisol or Hard-Setting Sealers—Fast curing sealers which can be used on an exposed painted surface. Surface of sealer will harden smoothly and quickly for repaint or touch-up. Use for sealing coach joints of exposed surface requiring a hard, smooth finish.

Flowable Black Sealers—Black, thin-bodied sealers with a butyl or rubber base, remain soft and tacky to fill voids which may occur due to flexing.

FRAME CONSTRUCTION

The frame is the foundation and structural center of the vehicle. In addition to carrying the load, it mounts and supports the power unit while maintaining correct relationship and alignment of the power train. This relationship assures normal functioning of the units and freedom from excessive wear, stress, and strain. The frame is constructed of heavy channel steel side rails and crossmembers. The crossmembers maintain the proper positions of the side rails in direct relationship to each other, providing maximum resistance to torsional twist and strains.

In the event of collision damage, it is important that the frame alignment be checked and realigned to frame dimensions shown on the individual dimension charts (fig. 14-1 through 14-5).

Wheel geometry and axle alignment should be checked.

FRAME ALIGNMENT

The most efficient method of checking frame alignment is with a frame alignment machine.

NOTE: *The following procedure is adequate for checking most frame dimensions. However, if torsional twist or frame rail height is in question, the vehicle must be checked on an alignment machine using datum gauges. Follow alignment machine manufacturer's instructions.*

If a frame straightening machine is not available, frame alignment may be determined by using the "X" or diagonal method. Figures 14-1 through 14-5 provide all frame dimensions.

The most convenient method of checking frame dimensions is to locate with a plumb-bob and chalk mark on a level floor all dimensional points from which measurements are taken. This is known as "plumb-bobbing" the frame. If working on a cement floor, clean it so that the chalk marks will be visible underneath the frame. If working on a wooden floor, lay sheets of paper underneath the vehicle. Drop a plumb-bob from each point indicated in figures 14-1 through 14-5, marking the floor directly underneath the point. Satisfactory checking depends on the accuracy of the marks in relation to the frame.

To check points that have been marked, carefully move the vehicle away from the layout on the floor, and proceed as follows:

Check the frame at front and rear end using corresponding marks on the floor. If widths correspond to frame specifications, draw a centerline the full length of

the vehicle, halfway between the marks indicating front and rear widths. If frame width is not correct and the centerline cannot be laid out from checking points at the end of the frame, it can be drawn through intersections of any two pairs of equal dimensions.

With the centerline correctly laid out, measure the distance to several opposite points over the entire length of the frame. If the frame is in proper alignment, opposite measurement should be the same.

To locate the points at which the frame is sprung, measure the diagonals between selected points on the frame (fig. 14-1 through 14-5).

If the diagonals in each pair are within 1/8-inch, that part of the frame included between points of measurement may be considered as satisfactorily aligned. These diagonals should also intersect at the centerline. If the measurements do not agree within the above limits, it means that a frame alignment correction is necessary and will have to be made between those points that are not equal.

NOTE: *During the process of straightening the frame, be extremely careful not to overstretch the frame. This could cause the already aligned sections of the frame to become misaligned or weakened.*

FRAME STRAIGHTENING

A bent or twisted frame may be straightened, provided the extent of misalignment is not excessive. To avoid weakening the frame, straightening should be performed without the application of heat. Severely damaged frame parts should be replaced.

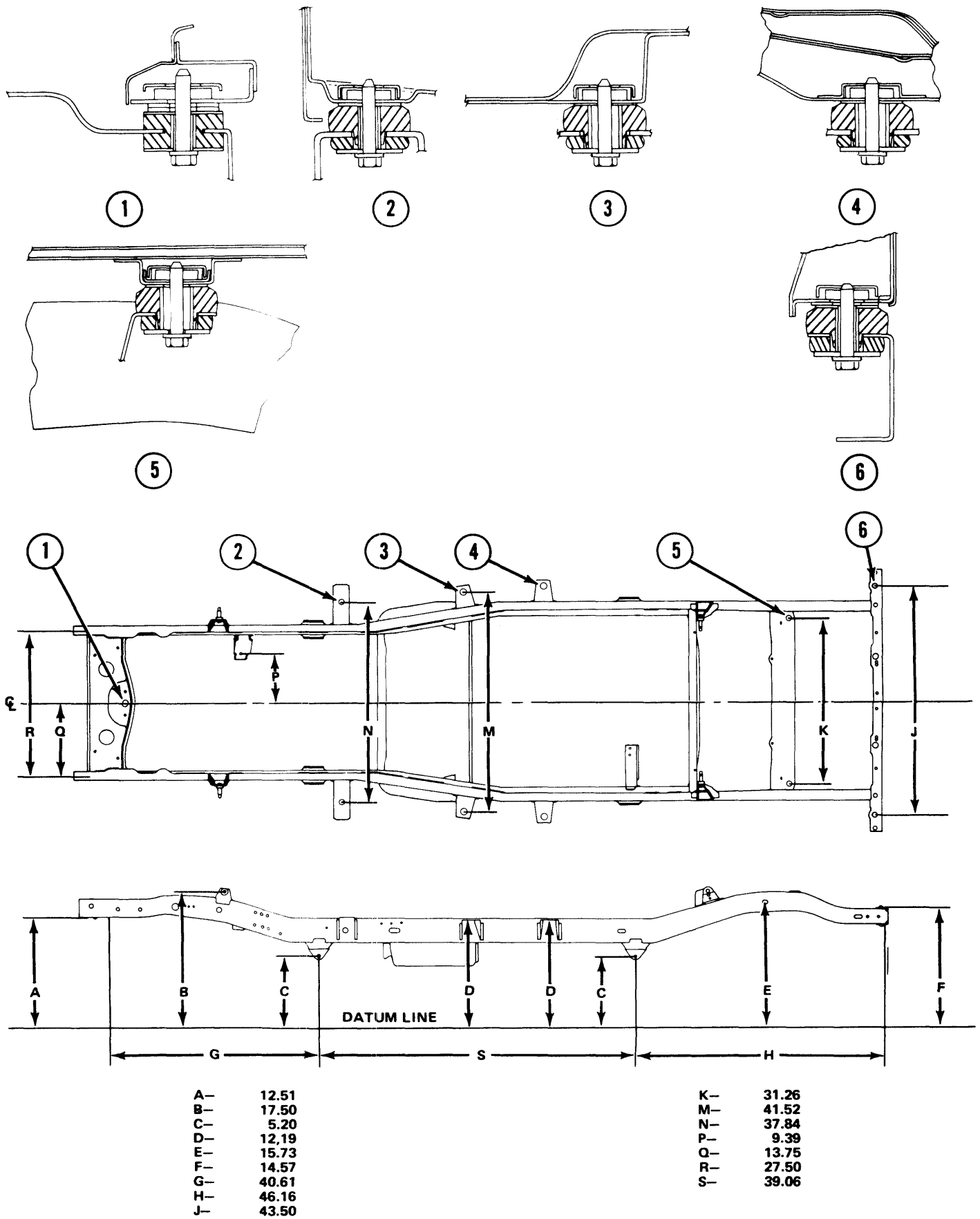
NOTE: *The controlled-heat technique can be utilized where a frame section is squashed and must be brought out without tearing or excessive stretch to the metal.*

AXLE ALIGNMENT

When the frame is properly aligned, the front axle alignment to the frame should be checked also. The front axle is square with the frame if the distance between the front and rear axles is the same on both sides and the "X" dimensions are the same.

The distance from the spring upper bushings to the axle on both sides should be equal. Check both axles.

NOTE: *Always inspect the springs for broken spring center-bolts when checking the frame and axle alignment.*



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Fig. 14-1 CJ-5 Model Frame Dimensions (Inches)

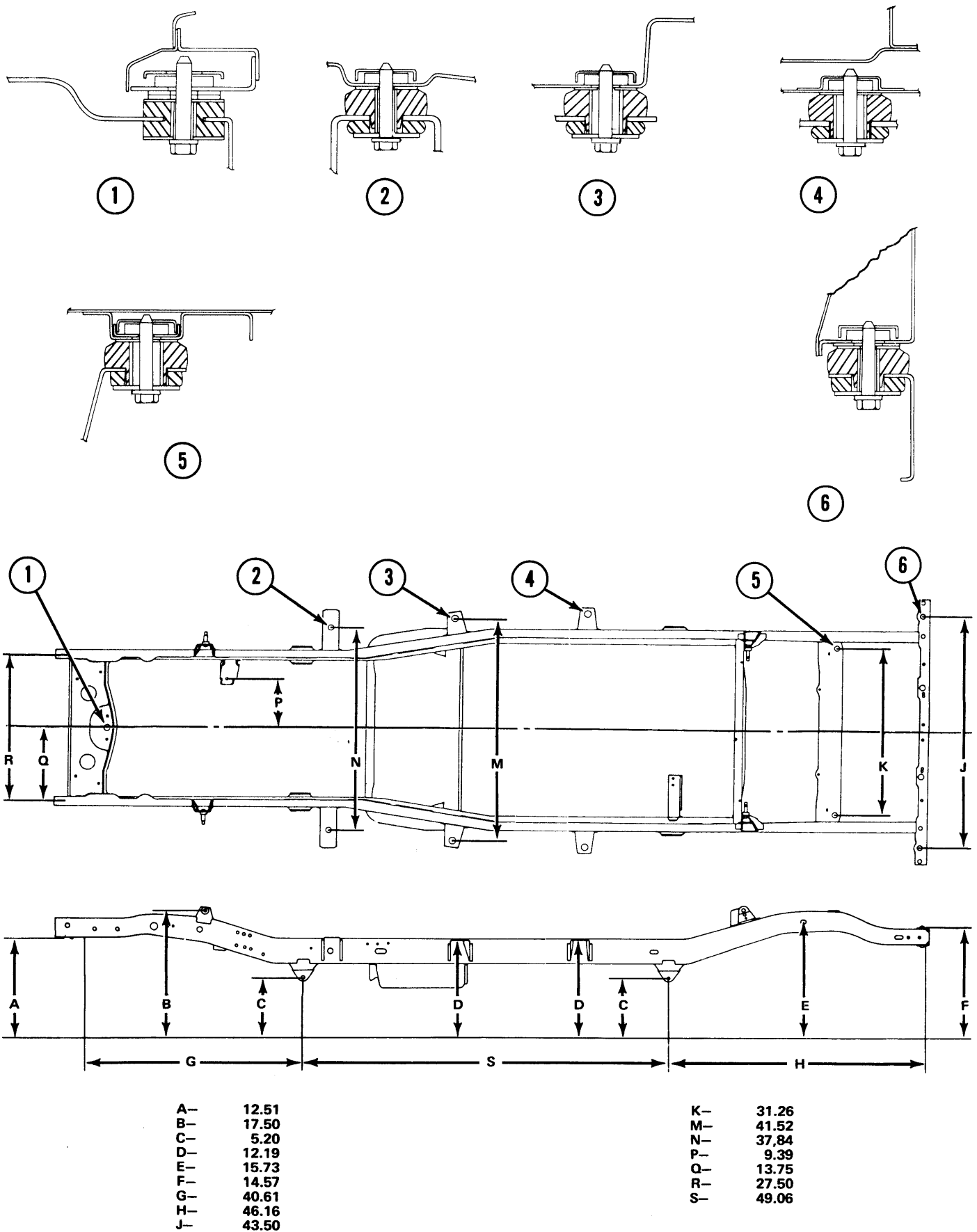


Fig. 14-2 CJ-7 Model Frame Dimensions (Inches)

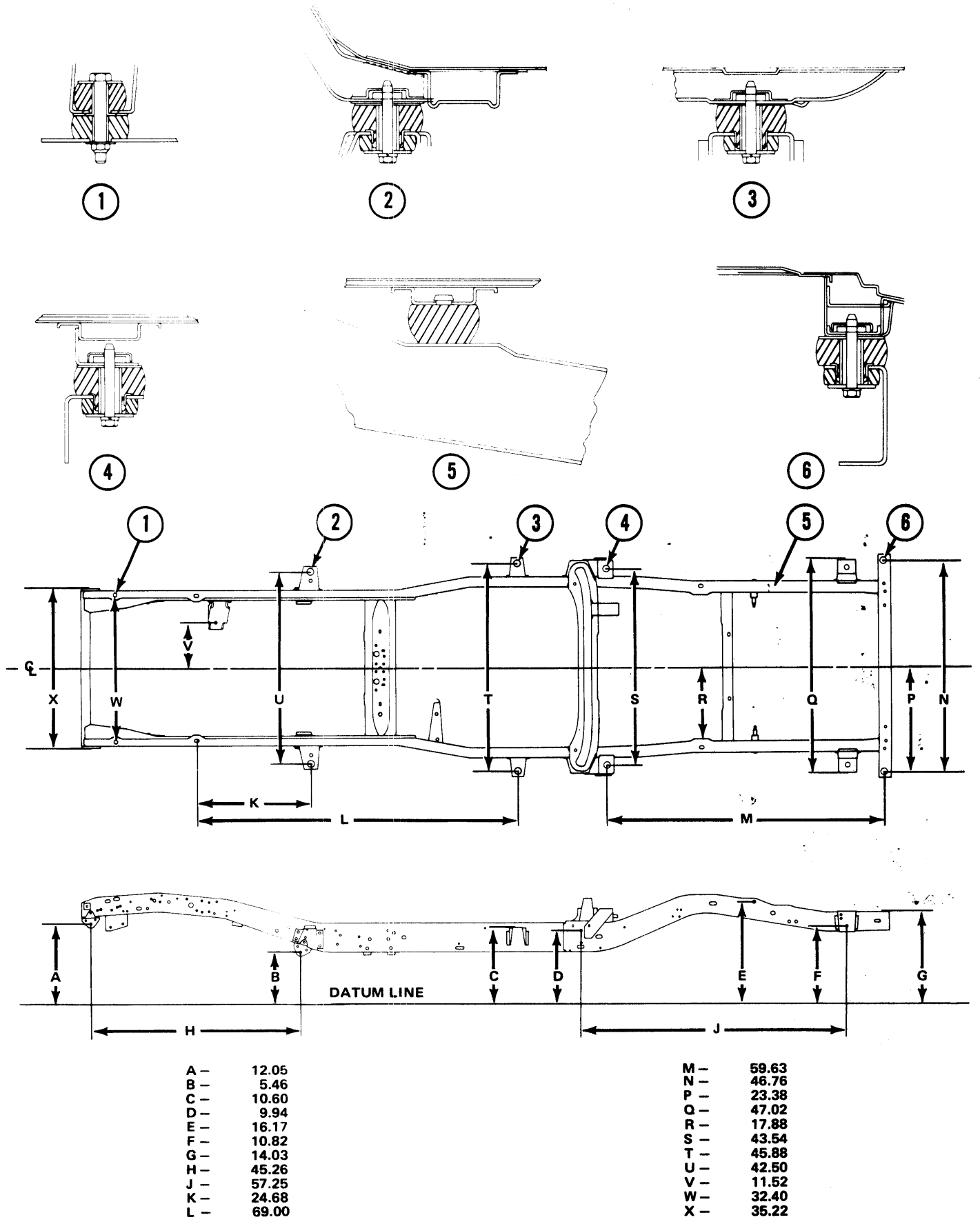
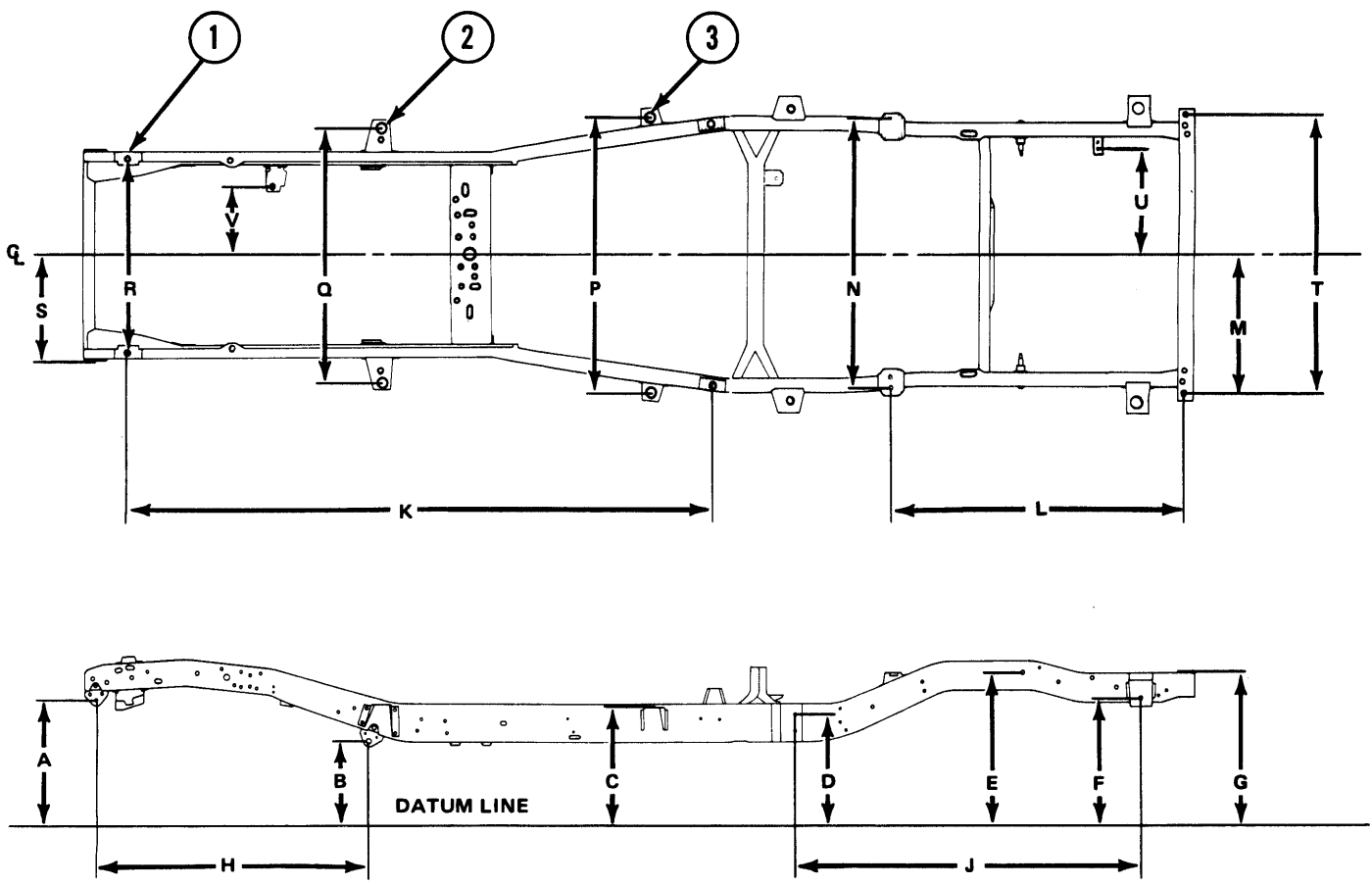
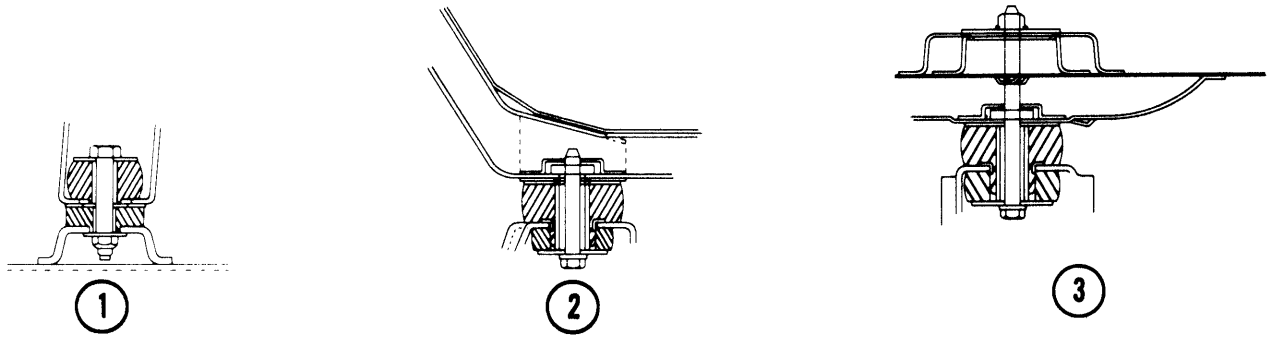


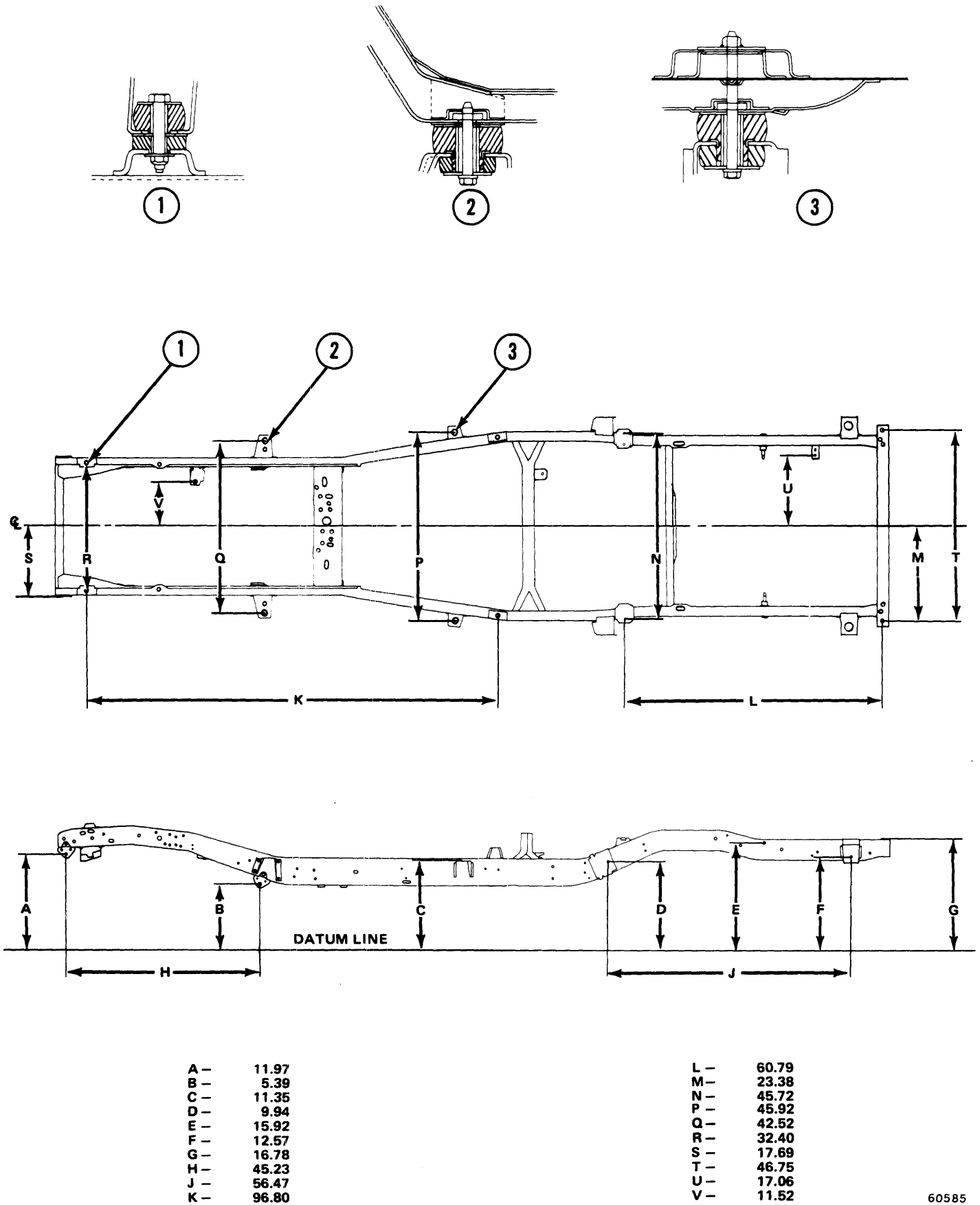
Fig. 14-3 Cherokee and Wagoneer Frame Dimensions (Inches)



A -	11.97
B -	5.39
C -	11.35
D -	9.94
E -	16.80
F -	12.55
G -	16.78
H -	45.23
J -	57.22
K -	96.80

L -	48.79
M -	23.38
N -	45.72
P -	45.92
Q -	42.52
R -	32.40
S -	17.69
T -	46.75
U -	17.06
V -	11.52

Fig. 14-4 Truck Frame Dimensions 119 Inch Wheelbase (Inch)



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Fig. 14-5 Truck Frame Dimensions 131 Inch Wheelbase (Inch)

PANELS

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GENERAL

Assembled sections or any of the individual panels available for replacement are complete and may be installed as a unit. When only a portion of the unit is damaged, the damaged unit may be cut from the body at the location best suited for welding, and the new unit cut to the desired size and welded in place.

Galvanized Panels

For protection against rust, panels vulnerable to corrosion on Cherokee, Wagoneer, and Truck vehicles are galvanized. A neutralizer must be applied to these panels prior to painting to ensure good adhesion of the paint.

Replacement

Where replacement is required, careful examination should be made as to the extent of damage to determine which panels require replacement.

In most cases, the weld joints of one panel to another are visible and can be separated for installation of a new panel.

DOORS

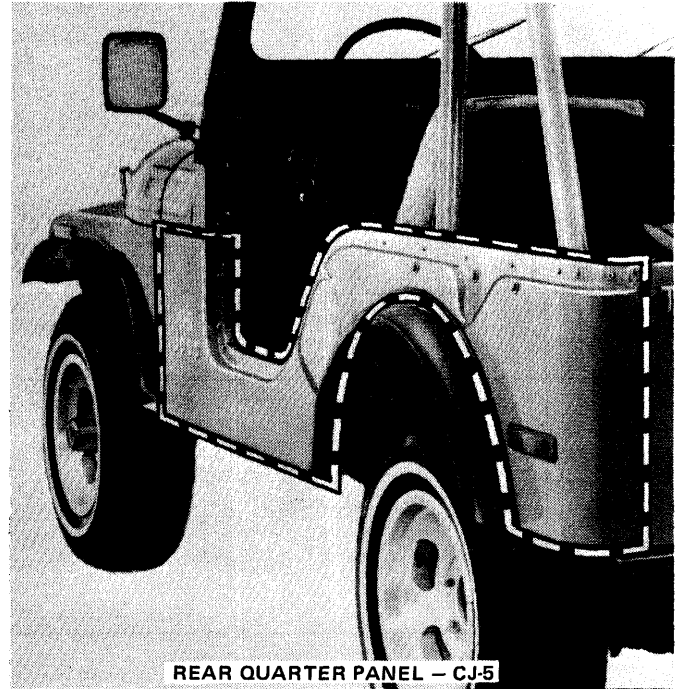
The complete door, with outer and inner door panels flanged and welded together and primed, is available as well as the outer panel only.

These outer panels may be used in cases in which the inner panel and pillar assemblies are not damaged to avoid the extra expense of using a complete door.

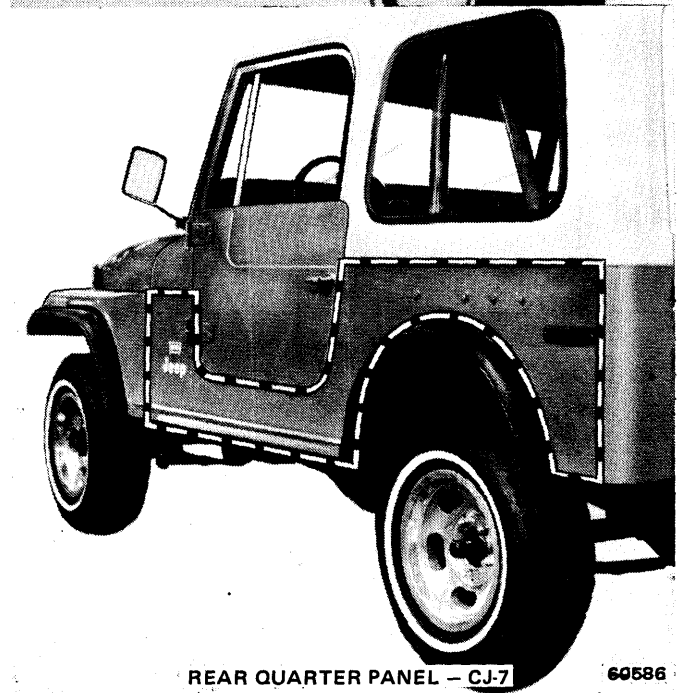
REAR QUARTER PANELS

The rear quarter panels are welded to the body as indicated by dotted lines in figures 14-6 through 14-8.

Whenever a rear quarter panel is replaced, it is very important to apply a suitable rust preventive such as a weld primer to all mating surfaces prior to welding. It is also very necessary to seal all welded joints with Jeep Metal Joint Sealer or equivalent.



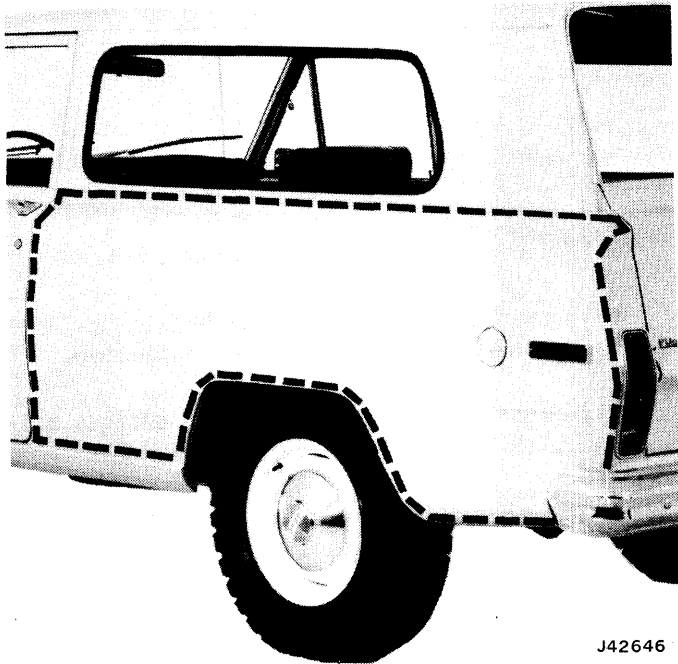
REAR QUARTER PANEL — CJ-5



REAR QUARTER PANEL — CJ-7

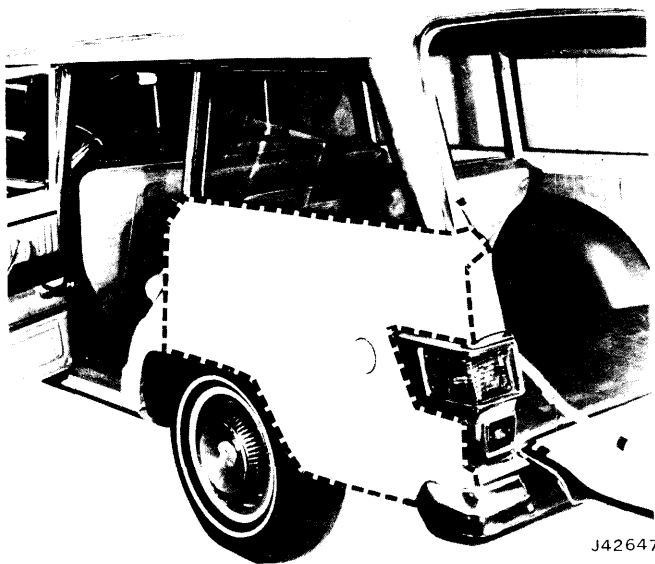
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Fig. 14-6 Rear Quarter Panel—CJ



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Fig. 14-7 Rear Quarter Panel—Cherokee



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Fig. 14-8 Rear Quarter Panel—Wagoneer (Cherokee 4-Door Similar)

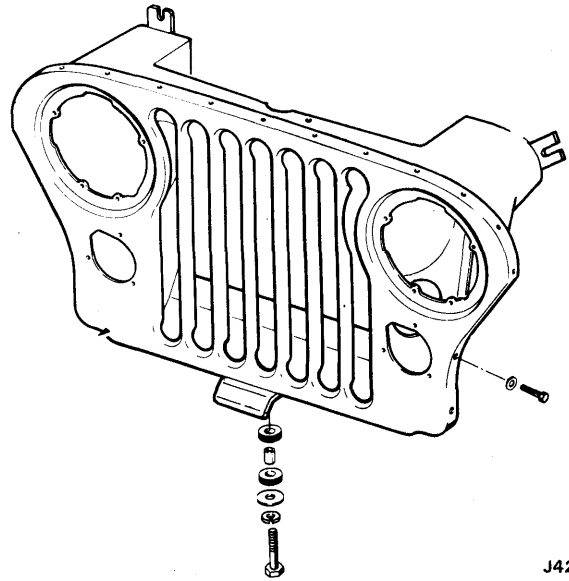
RADIATOR GRILLES

CJ Models

The CJ grille and the support and baffle are welded together to form a maximum-strength radiator guard (fig. 14-9).

Removal

(1) Remove screws and washers securing radiator and shroud to radiator guard panel.



J42648

Fig. 14-9 Grille Panel—CJ Models

(2) Remove bolts and washers securing guard panel to fenders.

(3) Remove radiator grille to frame crossmember holddown assembly. Note sequence of parts.

(4) Loosen nuts securing the two radiator support rods to the radiator grille guard support brackets.

(5) Remove rods from brackets.

(6) Tilt guard panel forward and disconnect electrical wiring at head lamp sealed beam unit and parking lamp assembly wiring harness at connectors.

(7) If equipped with air conditioning, proceed as follows:

(a) Discharge air conditioning system as outlined in Section 13A—Air Conditioning.

(b) Disconnect air conditioning high pressure line at condenser fitting. Cap line and condenser fittings to prevent the entry of dirt and moisture.

(8) Lift radiator guard panel from vehicle.

Installation

(1) Position guard panel and connect electrical wiring at headlamp sealed beam unit and parking lamps.

(2) If equipped with air conditioning, remove caps from fittings and connect line to condenser.

(3) Position radiator support rods in radiator grille guard support brackets and install attaching rods.

(4) Install radiator grille to frame crossmember holddown assembly.

(5) Position guard panel to fenders and install attaching bolts and washers.

(6) Install radiator and radiator shroud to radiator guard panel attaching screws and washers.

(7) If equipped with air conditioning, evacuate, leak test, and charge the system as outlined in Section 13A—Air Conditioning.

Cherokee-Wagoneer-Truck

Removal

- (1) Remove headlamp doors and disconnect headlamp wiring at sealed beam unit.
- (2) Remove parking lamp assemblies on Wagoneer Models.
- (3) Remove screws, bolts, and washers securing grille.
- (4) Remove grille.

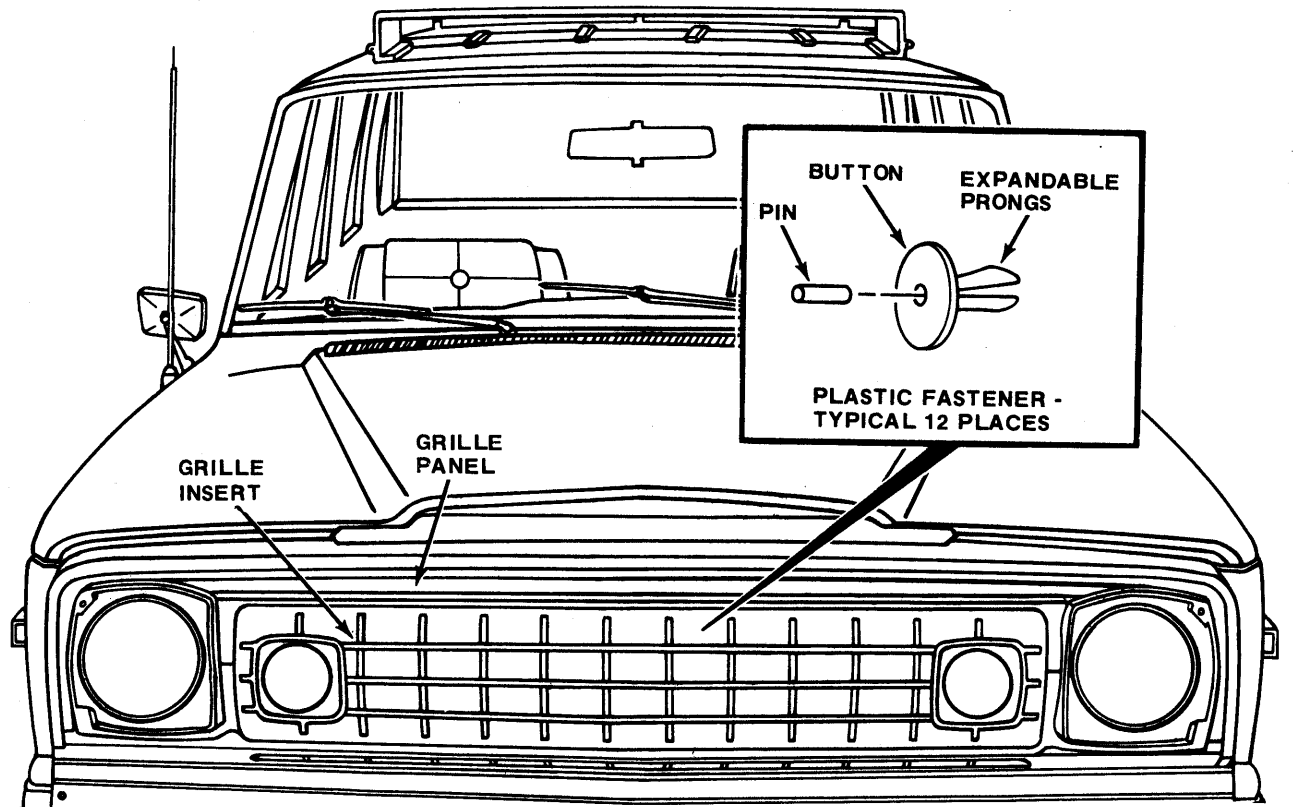
Installation

- (1) Position grille and install attaching screws, bolts, and washers.
- (2) Install parking lamp assemblies on Wagoneer Models.
- (3) Connect headlamp wiring at sealed beam unit and install headlamp doors.

WAGONEER GRILLE INSERT

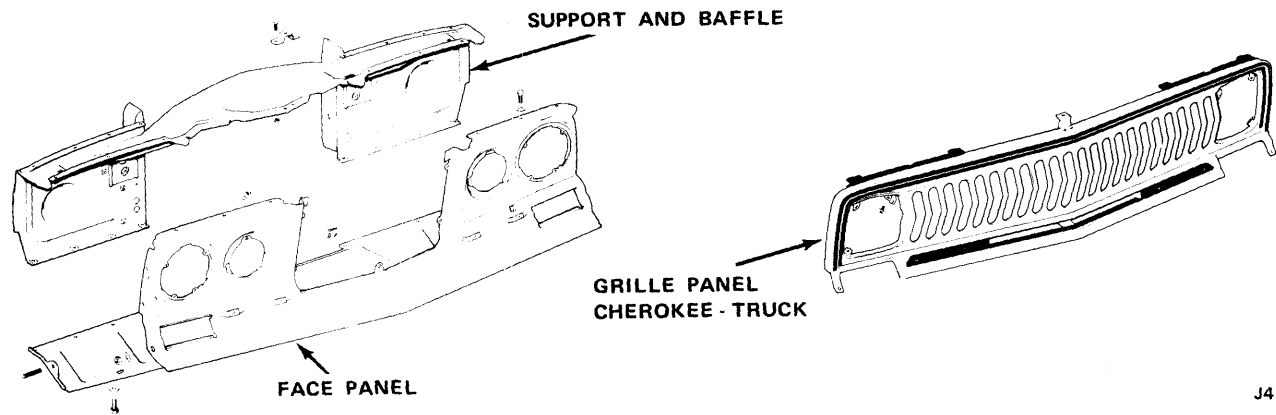
Replacement

- (1) Push the pin through and out the back of the button-shaped plastic fasteners using a 1/8-inch diameter tool (fig. 14-10).
- (2) Remove and discard plastic fastener buttons.
- (3) Remove grille insert from grille panel and disconnect parking lamp wiring at harness connectors.
- (4) Connect parking lamp wiring to harness connectors and position grille insert in grille panel.
- (5) Align holes in grille insert with grille panel holes and install plastic fasteners. Push pin in flush with fastener button, expanding fastener prongs.



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Fig. 14-10 Grille Insert and Fasteners—Wagoneer



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Fig. 14-11 Grille Panel—Cherokee-Truck

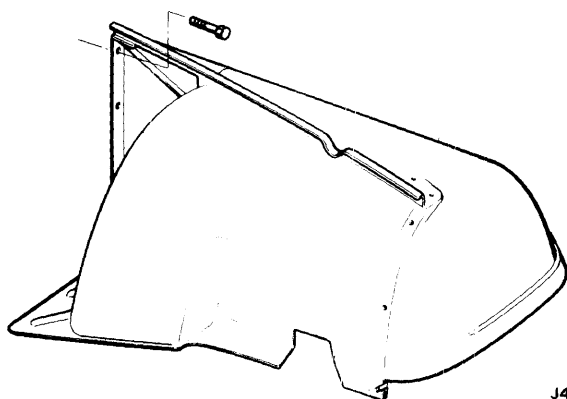
FENDERS

FRONT FENDER AND APRON

CJ Models

Replacement

- (1) Remove or disconnect all items attached to apron of fender.
- (2) Disconnect electrical connector at side marker lamp.
- (3) Remove rocker panel moulding, if equipped.
- (4) Remove bolts and washers securing fender and brace to dash panel (fig. 14-12).
- (5) Remove bolts, washers, and nuts attaching fender to radiator grille guard panel.
- (6) Pull fender outboard and lift from vehicle.
- (7) Position fender or vehicle and install fender-to-



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Fig. 14-12 Front Fender—CJ Models

radiator grille guard panel attaching bolts, washers, and nuts.

(8) Install fender and brace-to-dash panel attaching bolts and washers.

(9) Connect side marker lamp electrical connector.

(10) Install and connect items previously removed from apron of fender.

(11) Install rocker panel moulding, if equipped.

Cherokee-Wagoneer-Truck

Removal

- (1) Remove front bumper.
- (2) Remove headlamp to gain access through opening.
- (3) Reach through headlamp opening and remove bolts and washers attaching fender to grille face panel.
- (4) Remove side marker lamp reflector lens and disconnect lamp socket assembly from lens.
- (5) Remove bolts and washers holding fender to grille face panel.
- (6) Disconnect brace at fender.
- (7) Remove bolts and washers attaching fender to rocker panel just below the hinge pillars.
- (8) Remove bolts and washers that attach the top of the fender to the fender apron, the hood hinge support bracket, and the fender-to-dash panel bracket.

NOTE: Note the number and position of shims between fender and rocker panels so they can be assembled in the same position.

(9) Open doors and remove the fender from the vehicle.

(10) Remove or disconnect all items attached to the apron.

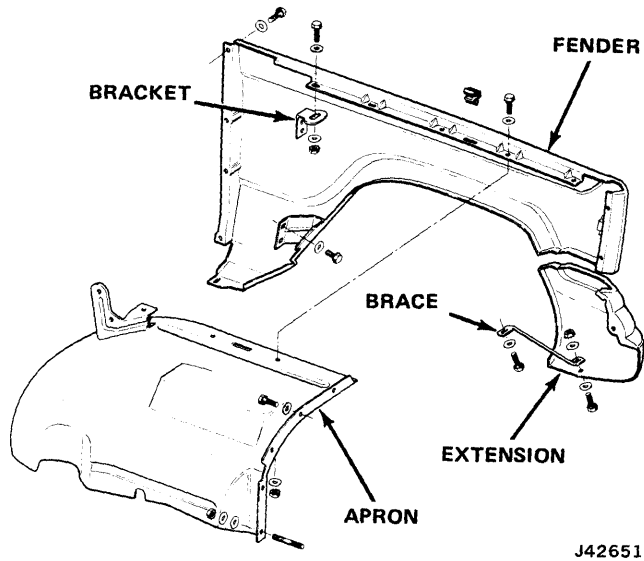


Fig. 14-13 Front Fender—Cherokee-Wagoneer-Truck

(11) Remove bolts and washers that attach the fender apron to the radiator support and to two brackets on the firewall.

Installation

(1) Spread sealer evenly over and along surfaces where fender and apron make metal-to-metal contact with other sheet metal parts.

(2) Install apron and fender in place with finger-tightened bolts until all bolts and washers have been installed. Tighten all nuts and bolts.

(3) Install and reconnect all items removed from the fender and apron, such as wiring harness, electrical components.

(4) Secure items, such as headlight, grille and front bumper, which were released or removed to facilitate removal of fender and apron.

HOODS

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GENERAL

The CJ hood consists of an outer flanged panel with inner U-channels welded at the front and rear of the hood panel.

The Cherokee, Wagoneer, and Truck hood consists of an inner and outer panel flanged and welded together at the outer edges.

Removal and Disassembly

(1) Mark position of hinges on their respective mounting panels before removing hood.

(2) Detach hood panel from hinges by removing attaching bolts, lockwashers, and flat washers.

(3) Disassembly of CJ hood is accomplished by removing hood prop rod, hood prop rod retainer clip, hood side catch brackets, footman loop, and windshield bumpers (fig. 14-14).

(4) Disassembly of Cherokee, Wagoneer, and Truck hood is accomplished by removing hood lever lock assembly, front filler bezel, left and right hood panel brace

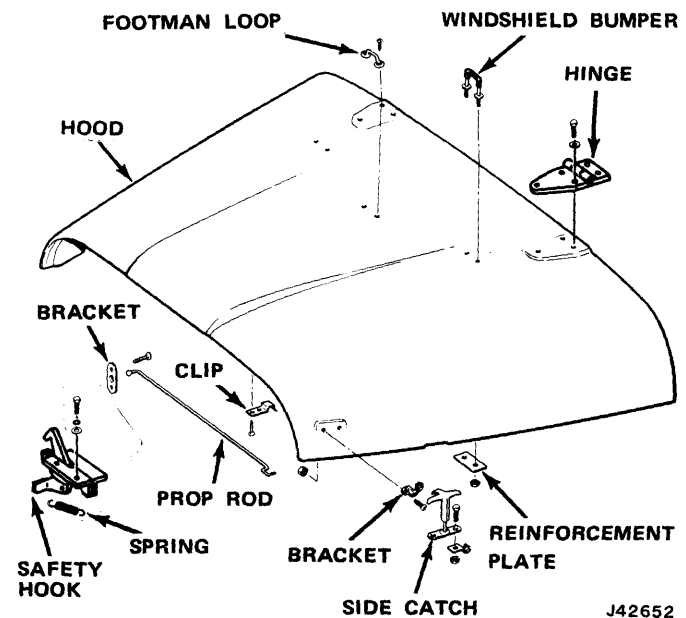


Fig. 14-14 Hood and Related Parts—CJ Models

rods, and insulation pad (Cherokee and Wagoneer) cemented to the hood panel (fig. 14-15).

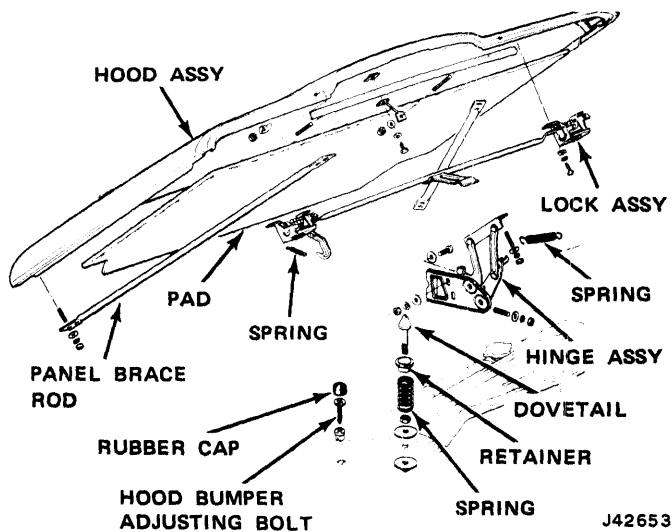


Fig. 14-15 Hood and Related Parts—Cherokee-Wagoneer-Truck

Assembly and Installation

(1) Finger-tighten related component parts and assemblies to hood panel.

(2) If Cherokee or Wagoneer hood panel insulation pad has been removed, clean off all loose cement and pad particles from panel to ensure good adhesion when recemented.

(3) Position hood panel assembly and align hinges with scribe marks on the respective mounting panels. Torque all attaching bolts.

(4) Check hood alignment. If not correct, apply following procedure.

Alignment

The hood hinge mounting holes are oversized to permit adjustment when aligning the hood.

NOTE: If the hood must be moved to either side, the hood lock striker, hood lever lock, and safety hook assembly, according to vehicle model, must first be loosened.

GENERAL

Front bumpers on CJ models are of one-piece construction. When vehicle is equipped with rear mounted spare, two separate bumperettes are used.

Front bumpers on the Cherokee, Wagoneer, and Truck models are of three-piece construction. Rear bumpers of three-piece construction are used on the Cherokee and

(1) Loosen hinge mounting bolts slightly on one side and tap hinge in opposite direction hood is to be moved.

(2) Tighten bolts.

(3) Repeat procedure on opposite hinge.

(4) Hook lock striker, hook lever lock, and safety hook assembly must be adjusted to ensure positive locking.

(5) Shim between hinge and hood with caster and camber shims or flat washers at the rear bolt if hood is low in relation to the cowl top.

(6) Shim at the front bolt if the hood is too high at the cowl.

HOOD LOCK

Cherokee-Wagoneer-Truck

The hood lock and safety catch incorporates a release system, whereby the release lever operates the hood lock and the safety catch.

The hood lock release latch is located under the front center of the hood, above the grille. To release the latch, reach under the hood, lift up and raise the hood.

CJ Models

The CJ hood is secured to the front fenders by two hood retaining latches. To release, pull the latches straight up and turn slightly at the end of travel. The hood now may be raised with the release of the safety catch by inserting fingers between the grille bars to the right of center and by pulling to the left on the catch. To secure the hood in the raised position, remove the support bar from its retaining clip and insert the free end into the support bar bracket.

HOOD BUMPER

The hood bumpers on CJ Models are located across the top of the radiator grille guard and are not adjustable.

The hood bumpers on the Cherokee, Wagoneer, and Truck are adjustable. Rubber caps must be removed to adjust the bumper bolts.

BUMPERS

Wagoneer. Trucks, when equipped with a rear bumper, have a one-piece bumper.

Bumper bar ends on the Cherokee, Wagoneer, and Truck may be removed individually.

Front bumper guards and nerf strips are available as an option on standard bumpers on all except CJ models.

