

# BODY AND FRAME COMPONENTS

# 3F

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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 hold-down bolts. Worn, loose, or fatigued spacers permit the body to settle causing

body lean or possible interference between the floorpan and various chassis components.

### BODY MOULDINGS

#### Trim Mouldings

Trim mouldings on the front fenders, front and rear doors and rear quarter are attached with adhesive backing and/or screws and snap-in clips. To replace mouldings, remove attaching screws and use a wedge-shaped fiber stick to pry mouldings from body.

#### Rocker Panel Mouldings

The CJ and Scrambler rocker panel mouldings are attached with studs and nuts. To replace rocker panel mouldings, remove attaching nuts and remove moulding.

## FRAMES

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### 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

### 3F-2 BODY AND FRAME COMPONENTS

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 (figs. 3F-1 through 3F-5). Wheel geometry and axle alignment should be checked.

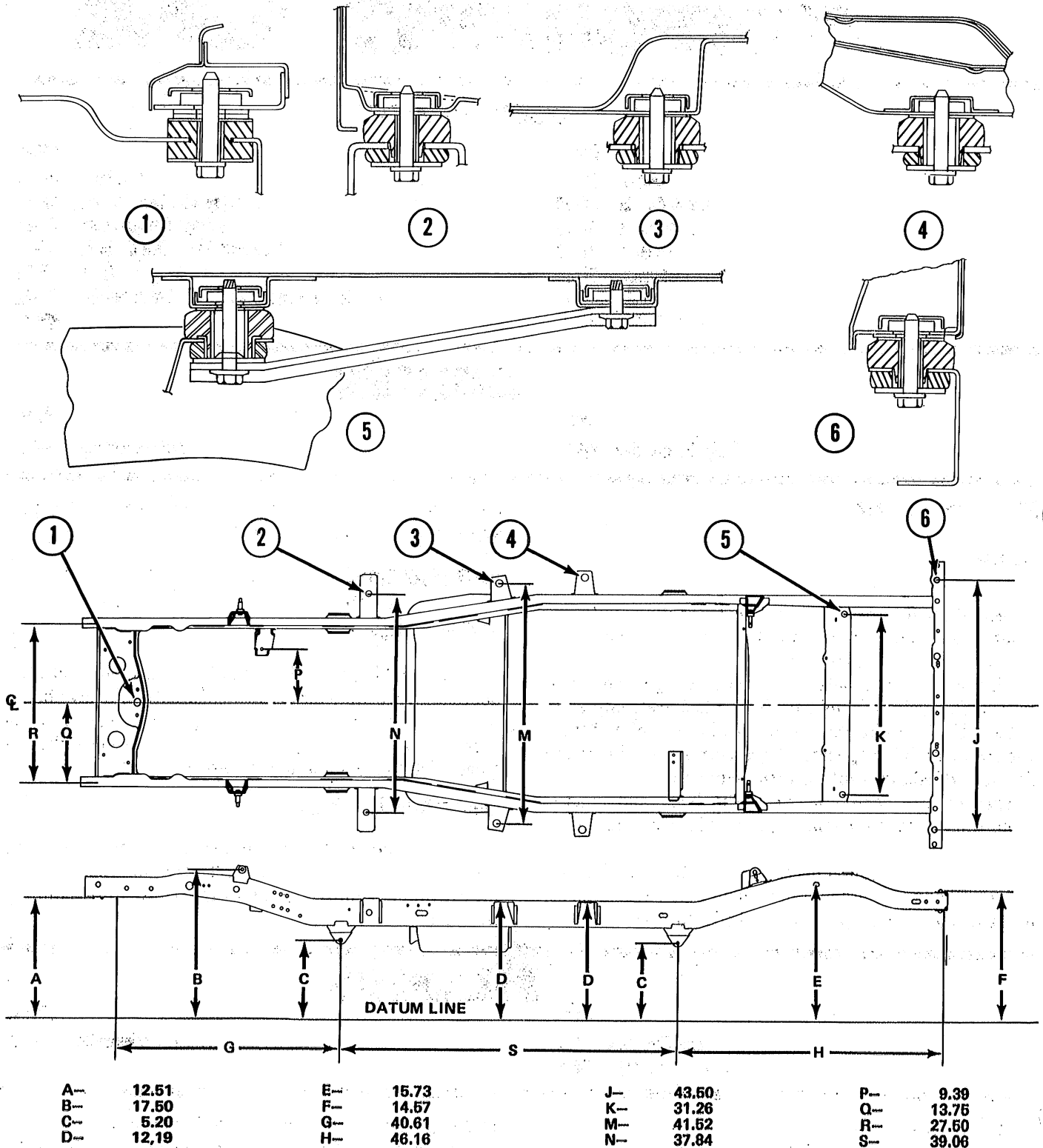
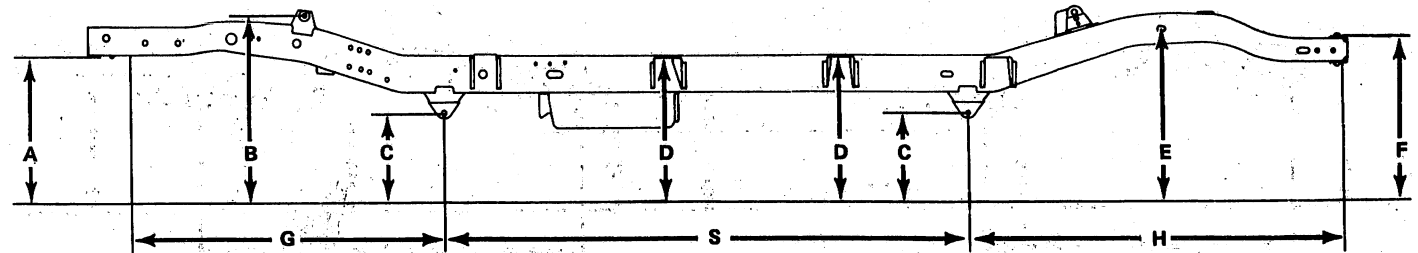
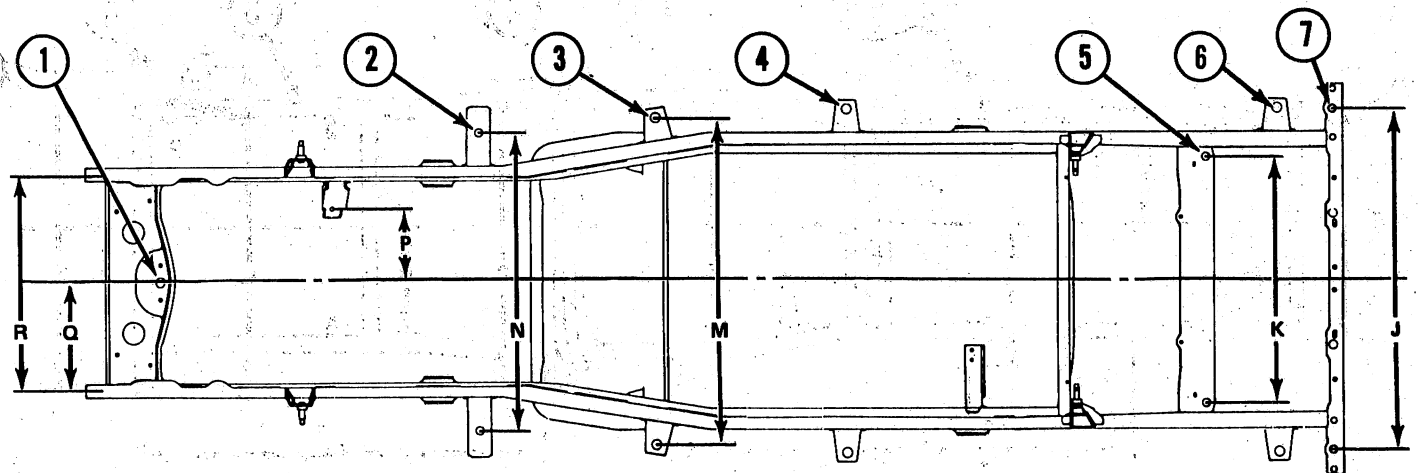
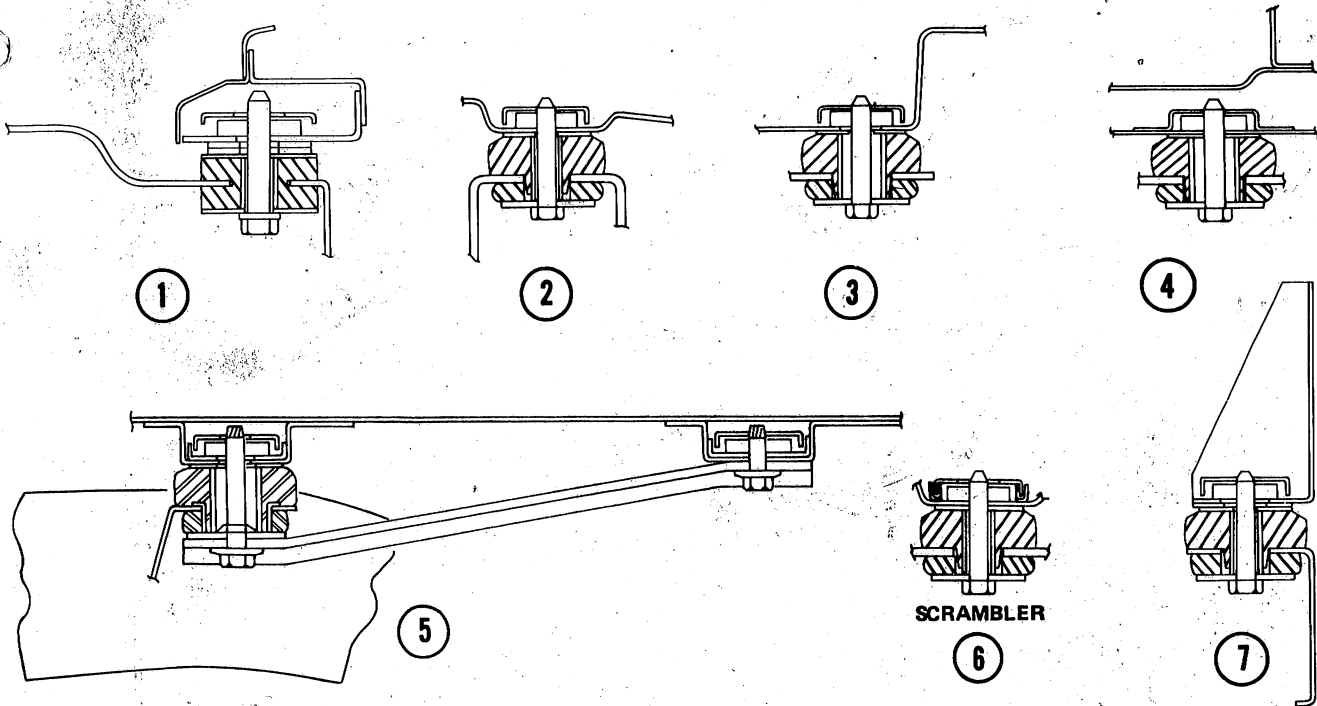


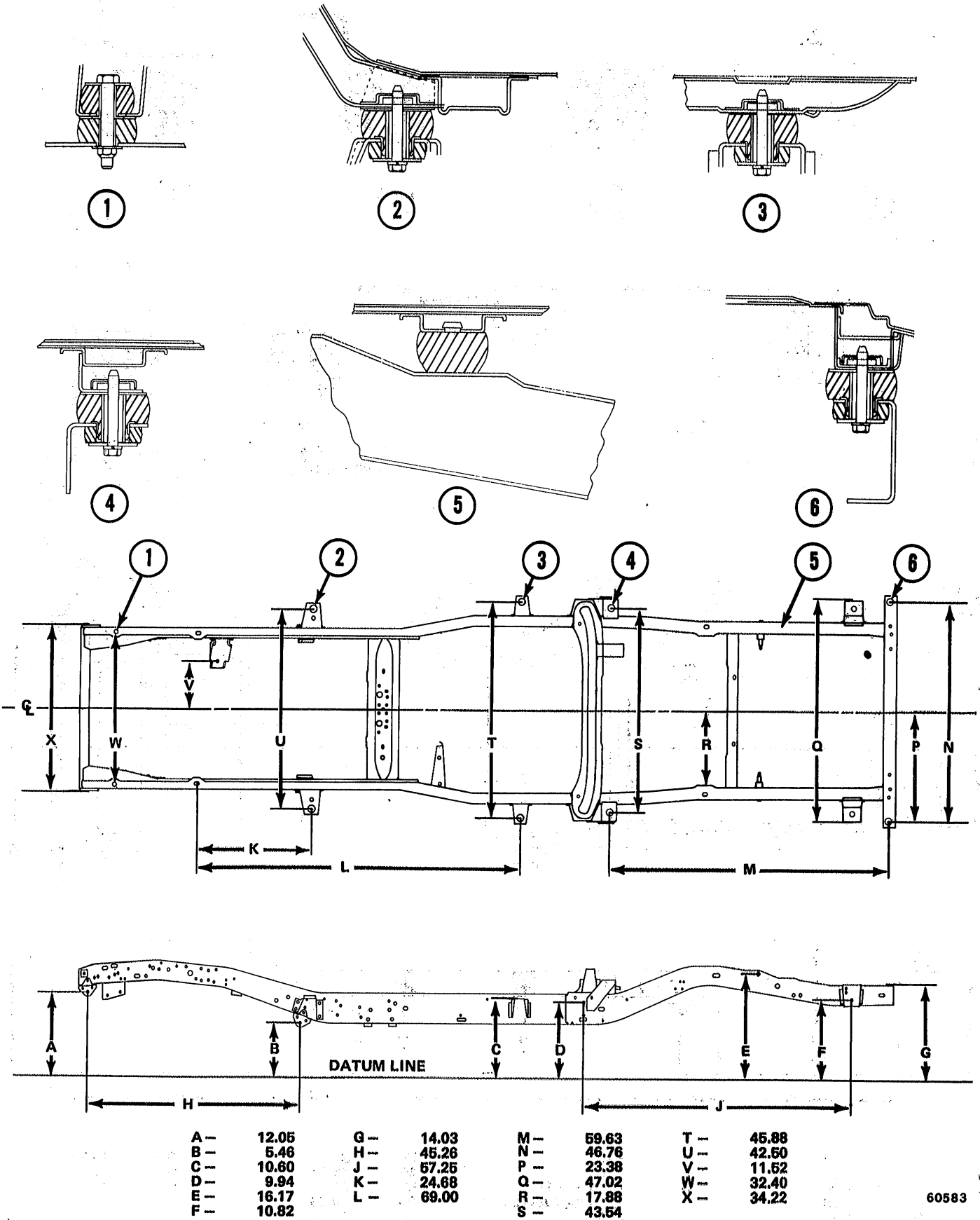
Fig. 3F-1 CJ-5 Model Frame Dimensions (Inches)



A-	12.51	F-	14.57	K-	31.26	Q-	13.75
B-	17.50	G-	40.61	M-	41.52	R-	27.50
C-	5.20	H-	46.16 (C-J-7)	N-	37.84	S-	49.06
D-	12.19	J-	70.02 (SCRAMBLER)	P-	9.39		
E-	15.73		43.50				

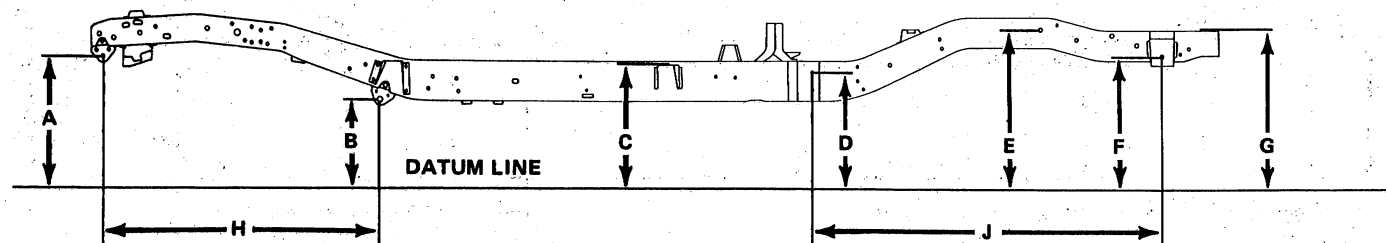
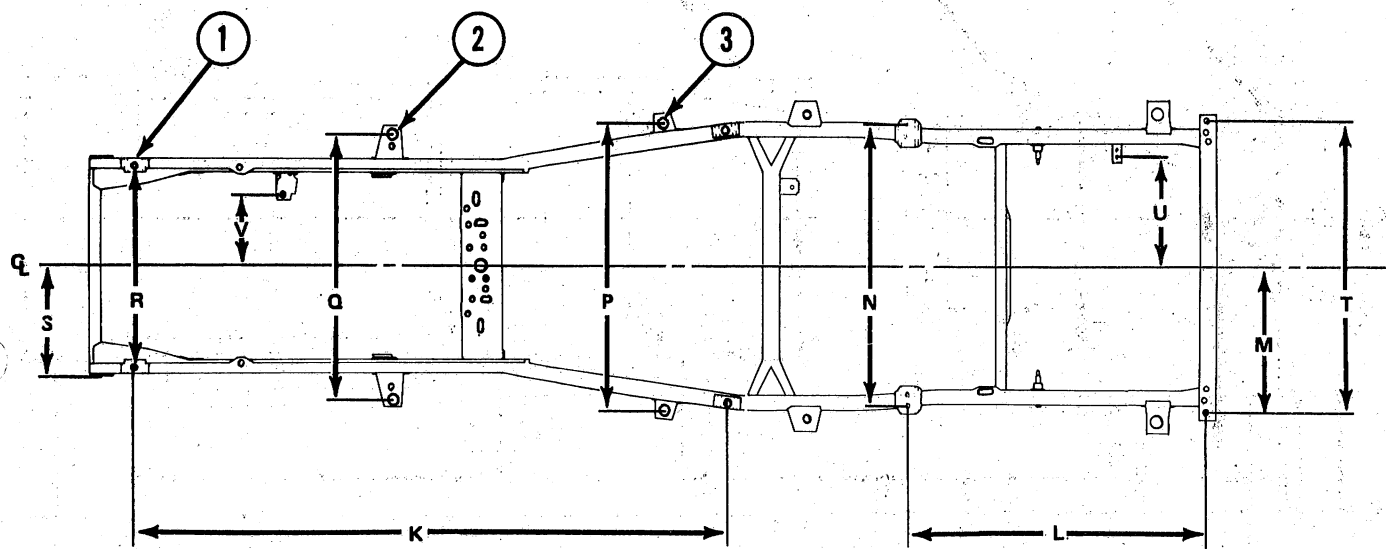
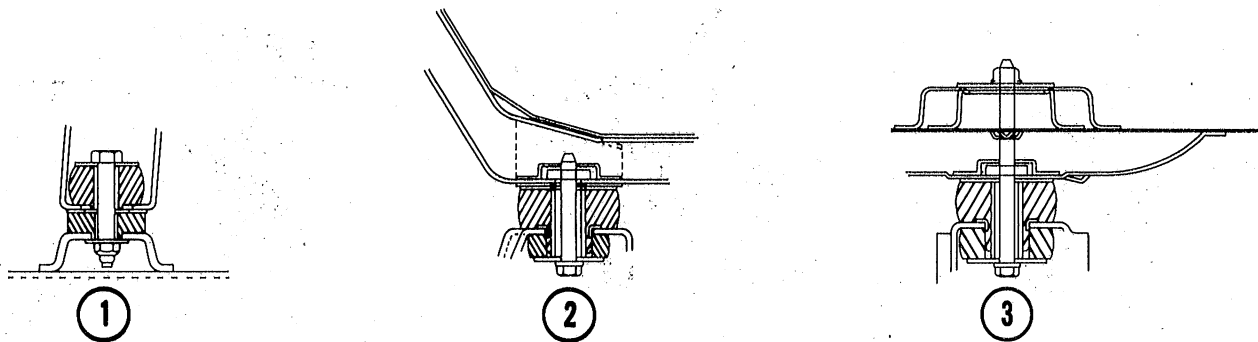
Fig. 3F-2 CJ-7 and Scrambler Model Frame Dimensions (Inches)

# 3F-4 BODY AND FRAME COMPONENTS



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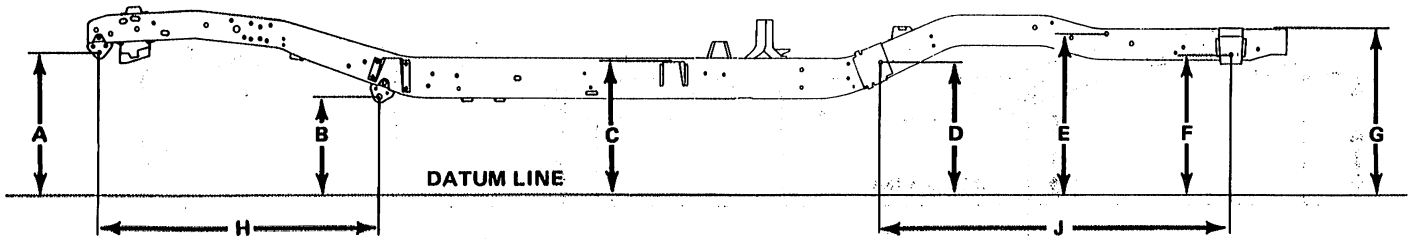
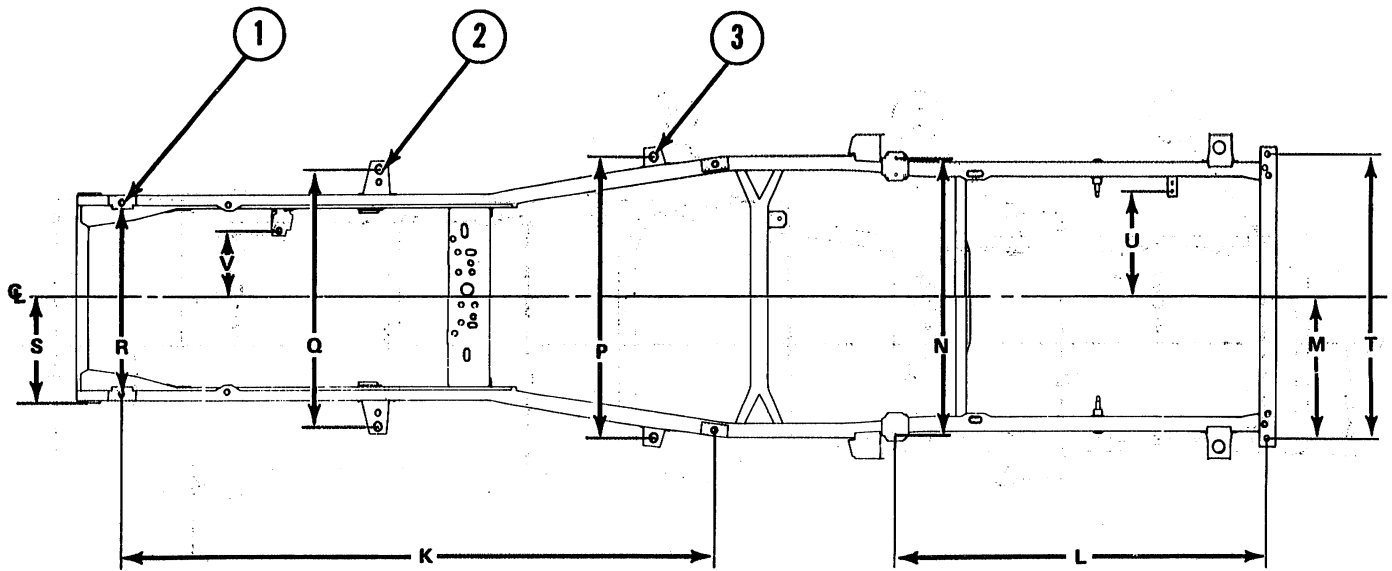
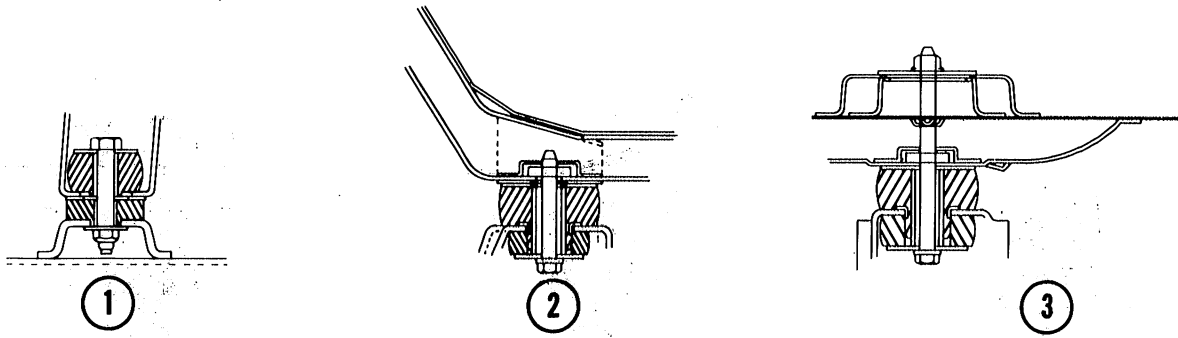
Fig. 3F-3 Cherokee and Wagoneer Frame Dimensions (Inches)



A -	11.97	L -	48.79
B -	5.39	M -	23.38
C -	11.35	N -	45.72
D -	9.94	P -	45.92
E -	16.80	Q -	42.52
F -	12.55	R -	32.40
G -	16.78	S -	17.69
H -	45.23	T -	46.75
J -	57.22	U -	17.06
K -	96.80	V -	11.52

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Fig. 3F-4. Truck Frame Dimensions—119-Inch Wheelbase (Inches)



A -	11.97
B -	5.39
C -	11.35
D -	9.94
E -	15.92
F -	12.57
G -	16.78
H -	45.23
J -	56.47
K -	96.80

L -	60.79
M -	23.38
N -	45.72
P -	45.92
O -	42.52
R -	32.40
S -	17.69
T -	46.75
U -	17.06
V -	11.52

Fig. 3F-5 Truck Frame Dimensions—131-Inch Wheelbase (Inches)

**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 3F-1 through 3F-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 3F-1 through 3F-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 (figs. 3F-1 through 3F-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 properly 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. Severely damaged frame parts should be replaced.

**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 corrosion, vulnerable panels on all models are galvanized. A conversion coating 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.

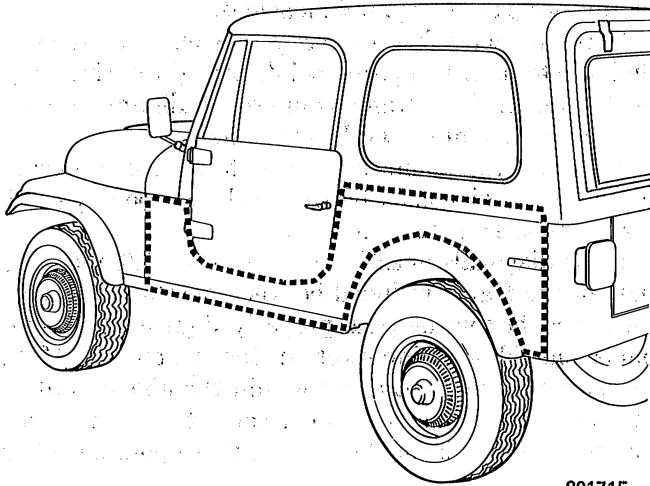
**DOORS**

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.

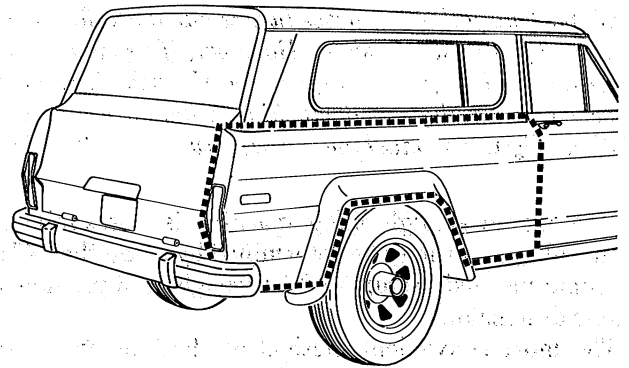
**REAR QUARTER PANELS**

The rear quarter panels are welded to the body as indicated in figures 3F-6 through 3F-9.



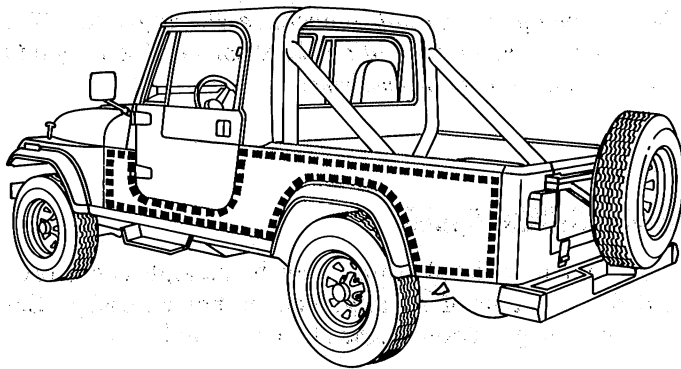
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Fig. 3F-6 Rear Quarter Panel—CJ Models



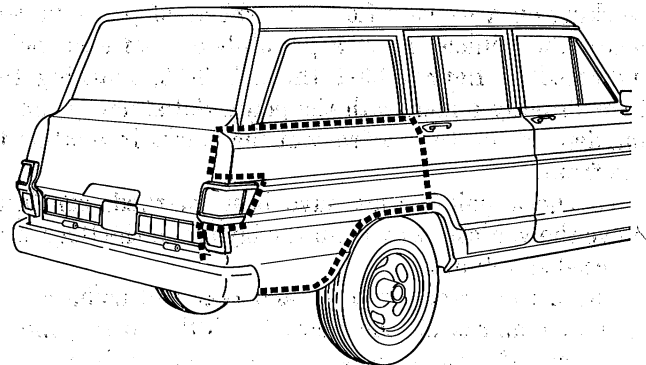
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Fig. 3F-8 Rear Quarter Panel—2-Door Cherokee



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Fig. 3F-7 Rear Quarter Panel—Scrambler Models



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Fig. 3F-9 Rear Quarter Panel—Wagoneer (4-Door Cherokee Similar)

**RADIATOR GRILLES**

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**CJ AND SCRAMBLER MODELS**

The CJ and Scrambler grille, support and the baffle are welded together to form a maximum-strength radiator grille guard (fig. 3F-10).

**Removal**

- (1) Remove front crossmember cover, if equipped.
- (2) Remove screws and washers attaching radiator and shroud to radiator grille guard panel.
- (3) Remove bolts and washers attaching guard panel to fenders.

(4) Remove radiator grille to frame crossmember hold-down assembly. Note sequence of parts removal.

(5) Loosen nuts attaching two radiator support rods to radiator grille guard support brackets.

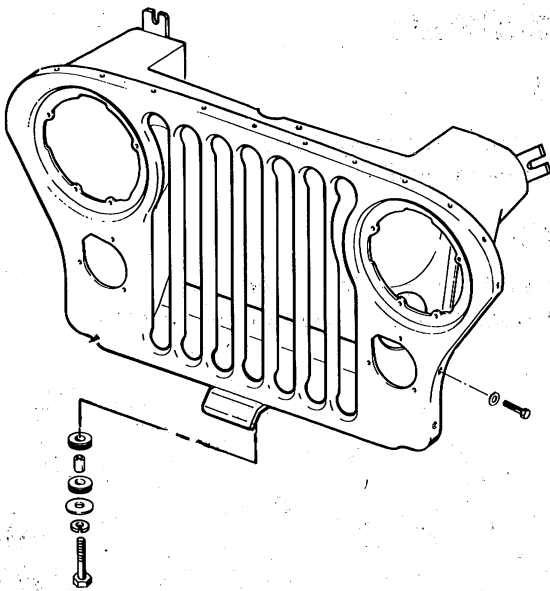
(6) Remove rods from brackets.

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

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

(a) Discharge air conditioning system as outlined in Chapter 3E—Air Conditioning.





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Fig. 3F-10 Grille Panel—CJ and Scrambler Models

(b) Disconnect air conditioning high pressure hose at sight glass connection and cap hose and sight glass fitting to prevent entry of dirt and moisture.

(c) Disconnect air conditioning high pressure hose at fitting on compressor and cap hose and compressor fitting to prevent entry of dirt and moisture.

(9) Lift radiator grille panel from vehicle.

### Installation

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

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

(a) Remove caps from high pressure hose and compressor and connect hose to compressor.

(b) Remove caps from sight glass and high pressure hose and connect hose to sight glass.

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

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

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

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

(7) Install front crossmember cover, if equipped.

(8) If equipped with air conditioning, evacuate, leak test, and charge the system as outlined in Chapter 3E—Air Conditioning.

### GRILLE APPLIQUE—CJ AND SCRAMBLER MODELS

#### General

The chrome grille applique is installed over the grille assembly requiring the use of well nuts and screws as

well as using the headlight and parking light attaching screws to retain the applique.

### Removal

(1) Raise hood.

(2) Remove headlamp doors.

(3) Remove headlamp body retaining screws.

(4) Disconnect and remove headlamp and body assemblies.

(5) Remove parking lamp retaining screws.

(6) Disconnect and remove parking lamp assemblies.

(7) Remove front crossmember cover, if equipped.

(8) Remove torx bit screws and bumpers across top of radiator grille using Torx Bit Tool J-25359-C.

(9) Remove grille applique.

(10) Remove double back tape along bottom of applique.

### Installation

(1) Install double-back tape along bottom on back-side of applique.

(2) Position grille applique over grille assembly and press along bottom.

**CAUTION:** Torx screws are installed into well nuts, do not overtighten.

(3) Install torx screws and bumpers using Torx Bit Tool J-25359-C.

(4) Connect and position headlamp and body assemblies.

(5) Install retaining screws.

(6) Install headlamp doors.

(7) Position and connect parking lamp assemblies.

(8) Install parking lamp retaining screws.

(9) Close hood.

(10) Install front crossmember cover, if equipped.

### CHEROKEE-TRUCK MODELS

#### Removal

(1) Remove headlamp doors.

(2) Remove plastic drive rivets attaching grille insert to grille housing (fig. 3F-11).

(3) Remove grille insert.

(4) Remove screws attaching grille housing to face panel.

(5) Remove grille housing.

**Installation**

- (1) Position grille housing in body opening.
- (2) Install attaching screws.
- (3) Position grille insert in grille housing.
- (4) Install attaching rivets.
- (5) Install headlamp doors.

**WAGONEER MODELS**

**Removal**

- (1) Remove screws attaching grille panel.
- (2) Remove grille panel.

**Installation**

- (1) Position grille in body opening.
- (2) Install attaching screws and washers.

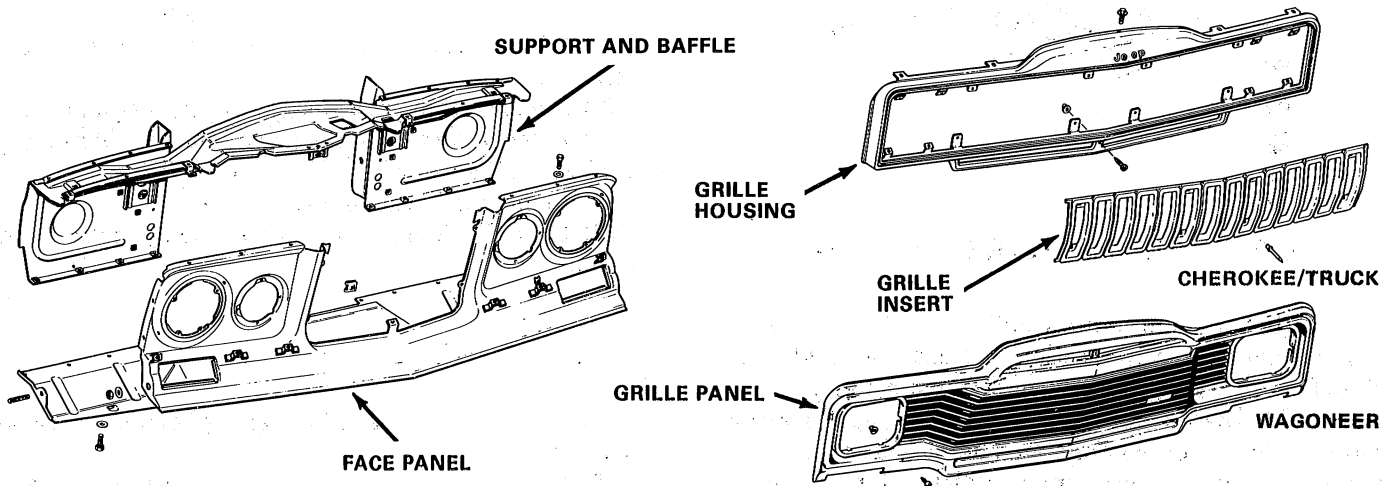


Fig. 3F-11 Grille Panels—Wagoneer-Cherokee-Truck Models

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# FENDERS

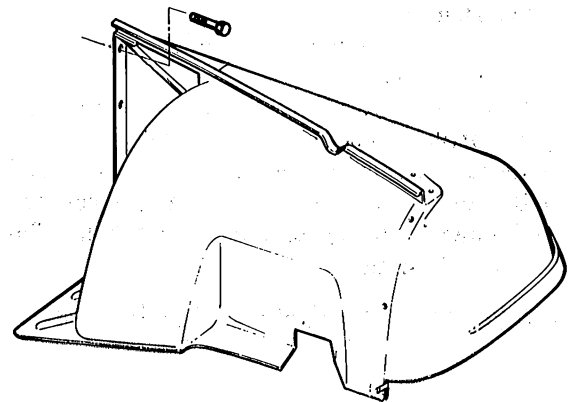
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**CJ AND SCRAMBLER MODELS**

**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 attaching fender and brace to dash panel (fig. 3F-12).
- (5) Remove bolts, washers and nuts attaching fender to radiator grille panel.
- (6) Pull fender outboard and lift from vehicle.
- (7) Position fender on vehicle and install fender-to-radiator grille panel attaching bolts, washers, and nuts.



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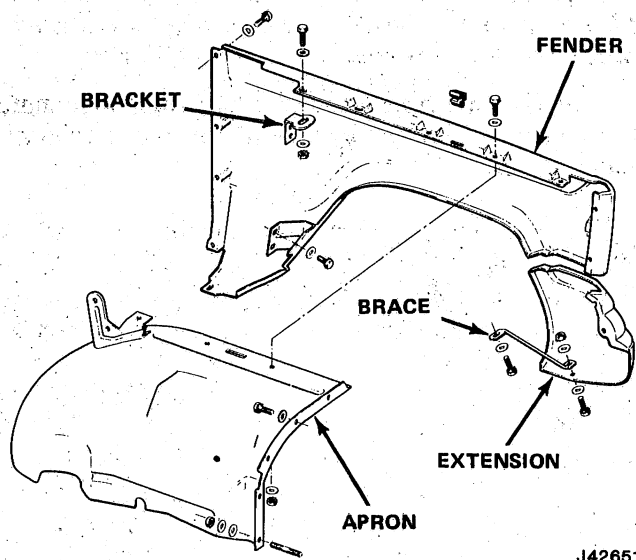
Fig. 3F-12 Front Fender—CJ and Scrambler Models

- (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 MODELS**

**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 attaching fender to grille face panel.
- (6) Disconnect brace at fender (fig. 3F-13).



**Fig. 3F-13 Front Fender—Cherokee-Wagoneer-Truck Models**

- (7) Remove bolts and washers attaching fender to rocker panel just below the hinge pillars.
- (8) Remove bolts and washers attaching top of fender to fender apron, hood hinge support bracket, and 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 fender from vehicle.
- (10) Remove or disconnect all items attached to fender apron.
- (11) Remove bolts and washers attaching fender apron to radiator support and two brackets on dash panel.

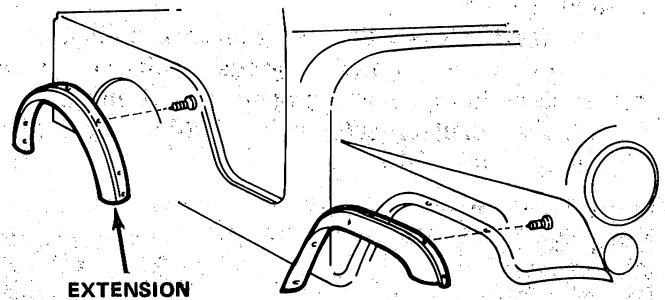
**Installation**

- (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 and finger tighten bolts until all bolts and washers have been installed. Tighten all nuts and bolts.
- (3) Install and reconnect all items removed from fender and apron, such as wiring harness, electrical components.
- (4) Secure items, such as headlamp, grille and front bumper, which were released or removed to facilitate removal of fender and apron.

**FENDER EXTENSIONS—CJ AND SCRAMBLER MODELS**

**Removal**

- (1) Remove screws and nuts attaching inner and outer reinforcements and fender extension to fender (fig. 3F-14).



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**Fig. 3F-14 Fender Extension—CJ and Scrambler Models**

- (2) Remove inner and outer reinforcements and extension from fender.

**Installation**

- (1) Position fender extension and inner and outer reinforcements on fender and align screw holes.
- (2) Install screws and nuts attaching fender extension and reinforcements to fender.

**REAR FENDERS—SPORT TRUCK**

**General**

The Sport Truck model rear fenders are constructed of lightweight, dent resistant fiberglass. No special paint system is required for refinishing the fenders.

## Removal

- (1) Support fender.
- (2) Remove all attaching hardware.
- (3) Remove fender from vehicle.

## Installation

- (1) Position fender on vehicle and support.
- (2) Install all attaching hardware.

## Repair

In the event of damage, the following materials are necessary for a quality repair.

- Fiberglass mat or cloth
- Fiberglass resin and hardener
- Structural Adhesive (3M brand, or equivalent)
- Auto Body Repair Tape (3M brand, or equivalent)
- Glazing Putty
- Aluminum Foil
- Plastic Spreader

## Crack Repair

(1) Use grinder to remove paint and to outline damaged area.

(a) Use grade 24 disc for initial grinding.

(b) Follow up with grade 50 disc to prevent coarse scratches from showing up in final finish.

(2) Stop-drill crack(s) using 1/8-inch drill bit as shown in figure 3F-15.

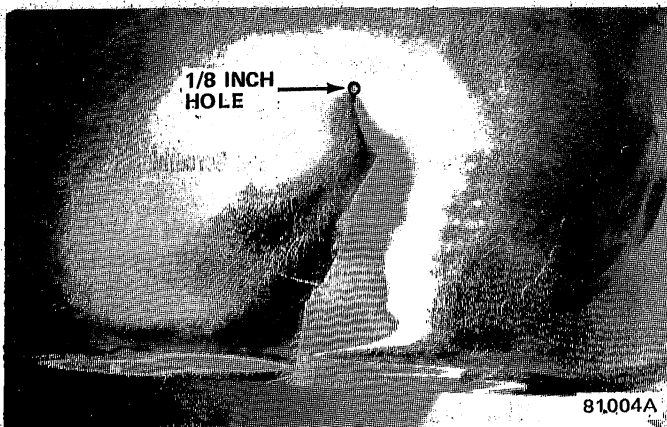


Fig. 3F-15 Stop-Drilling Cracks

(3) Bevel edges of crack(s) using rotary file.

**NOTE:** Edges should be beveled to ensure sufficient surface area for good bonding.

(4) Clean inside of fender repair area and apply Auto Body Repair Tape (fig. 3F-16), fiberglass or equivalent.

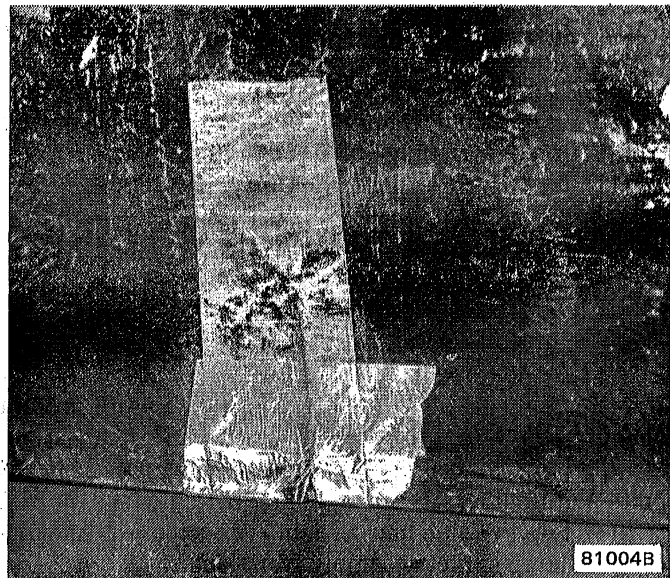


Fig. 3F-16 Installation of Auto Body Repair Tape

**NOTE:** The application of Auto Body Repair Tape or fiberglass to the inside of the fender is essential to prevent moisture from entering the repair area.

(5) Mix Structural Adhesive, according to manufacturer's instructions; apply liberally to break as shown in figure 3F-17.

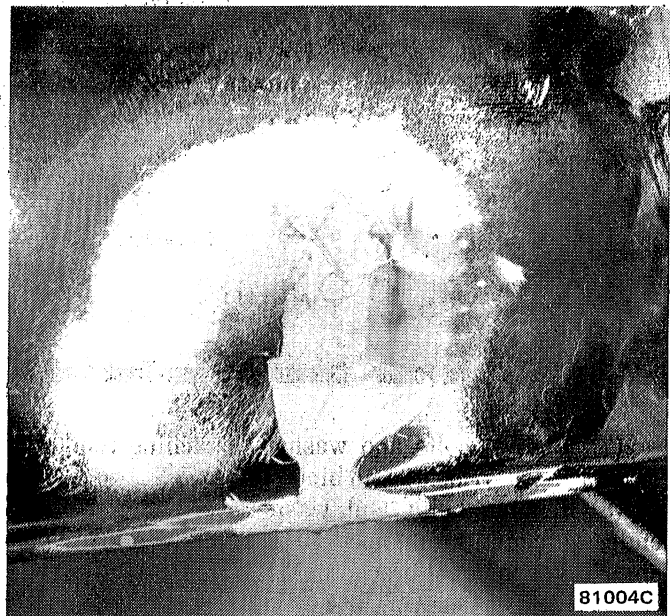


Fig. 3F-17 Structural Adhesive Applied to Fractured Area

(6) Use air file or hand file board for shaping of hardened Structural Adhesive.

(a) For initial shaping, use grade 24 paper.

(b) For shaping and sanding contour in Structural Adhesive, use grade 220 paper.

(c) For finish sanding, use grade 360 paper.

- (7) Apply glazing putty over repair area for smooth finish.
- (8) Finish repair area using grade 400 paper.
- (9) Apply sealer and color coat fender (refer to Chapter 3B).

**Hole Repair**

- (1) Use grinder to remove paint and to outline damaged area.
  - (a) Use grade 24 disc for initial grinding.
  - (b) Follow up with grade 50 disc to prevent coarse scratches from showing up in final finish.

**NOTE:** *If there are any cracks extending out from the hole, it will be necessary to stop-drill the crack(s) using a 1/8-inch drill bit.*

- (2) Clean inside of fender around hole.

**NOTE:** *It may be necessary to grind inside of fender to ensure proper adhesion of fiberglass resin.*

- (3) Position fiberglass mat or cloth on repair area, cut out piece, allow one inch extension beyond damaged area.

- (4) Clean damaged area.
- (5) Place fiberglass on piece of aluminum foil.
- (6) Pour fiberglass resin into clean container.
- (7) Mix appropriate amount of hardener with resin, according to manufacturer's instructions.
- (8) Apply resin mixture to both sides of fiberglass.
- (9) Apply fiberglass and aluminum foil over repair area, on inside of fender, with plastic spreader. Use firm pressure with spreader to remove air bubbles. Allow resin to cure. Remove aluminum foil.
- (10) Sand top surface of fender with grade 180 paper.
- (11) Mix Structural Adhesive, according to manufacturer's instructions, apply liberally to repair area.
- (12) Use an air file or hand file board for shaping hardened Structural Adhesive.
  - (a) For initial shaping, use grade 24 paper.
  - (b) For shaping and sanding contour in Structural Adhesive, use grade 220 paper.
  - (c) For finish sanding, use grade 360 paper.
- (13) If necessary, apply glazing putty over repair area according to manufacturer's instructions.
- (14) Finish sanding repair area with grade 400 paper.
- (15) Apply sealer and color coat fender (refer to Chapter 3B).

# BUMPERS

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**GENERAL**

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

Front bumpers on the Cherokee, Wagoneer, and Truck models are one-piece chromed aluminum. Rear bumpers are the same construction and are used on the Cherokee and Wagoneer. Scrambler and Truck models, when equipped with a rear bumper, have a one-piece step bumper.

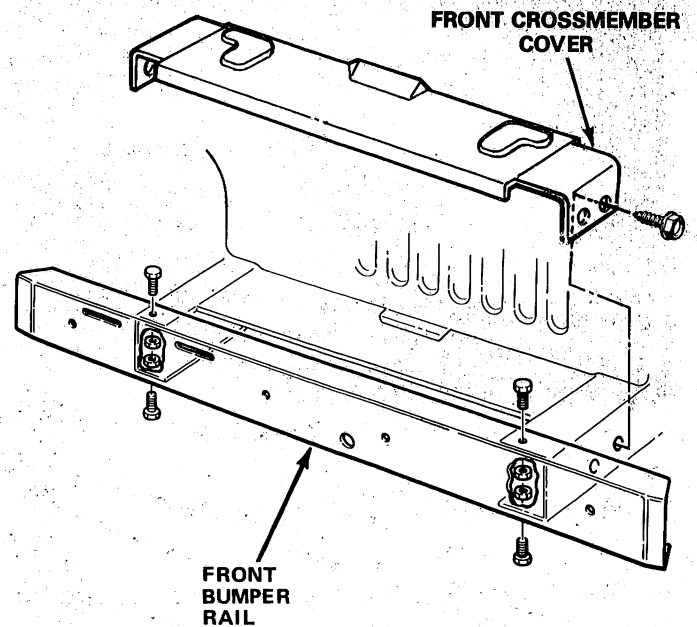
Front bumper guards are available as an option on standard bumpers on all except CJ and Scrambler models. All CJ and Scrambler models have a front crossmember cover which covers the area between the grille panel and front bumper rail (fig. 3F-18).

**FRONT BUMPERS**

**CJ and Scrambler Models**

**Removal**

- (1) Disconnect and remove fog lamps, if equipped.
- (2) Remove nuts and bolts attaching front bumper rail (fig. 3F-18) to frame extensions.



**Fig. 3F-18 Front Bumper—CJ and Scrambler Models**

- (3) Remove front bumper rail from frame extensions.

## Installation

- (1) Position front bumper rail on frame extension.
- (2) Install bolts and nuts attaching front bumper rail to frame extension.
- (3) Install and connect fog lamps, if equipped.

## Front Crossmember Cover—CJ and Scrambler Models

### Removal

- (1) Remove nuts and bolts attaching front crossmember cover (fig. 3F-18) to frame extensions.
- (2) Remove front crossmember cover from frame extensions.

### Installation

- (1) Position front crossmember cover on frame extensions.
- (2) Install bolt and nuts attaching front crossmember cover to frame extensions.

## Cherokee-Wagoneer-Truck Models

### Removal

- (1) Disconnect and remove fog lamps, if equipped.
- (2) Remove vertical bumper guards (fig. 3F-19) from bumper rail, if equipped.

(3) Remove horizontal bumper guards from bumper rail, if equipped.

(4) Remove front air deflector (fig. 3F-19), if equipped.

(5) Remove nuts and bolts attaching bumper rail to frame mounted bumper brackets. Remove bumper rail from vehicle.

(6) Remove nuts and bolts attaching bumper brackets to vehicle frame. Remove brackets from vehicle frame.

### Installation

(1) Position brackets on vehicle frame and install attaching bolts and nuts.

**NOTE:** Do not tighten attaching hardware until complete bumper is assembled on vehicle frame and properly aligned.

(2) Position bumper rail on brackets and install attaching bolts and nuts.

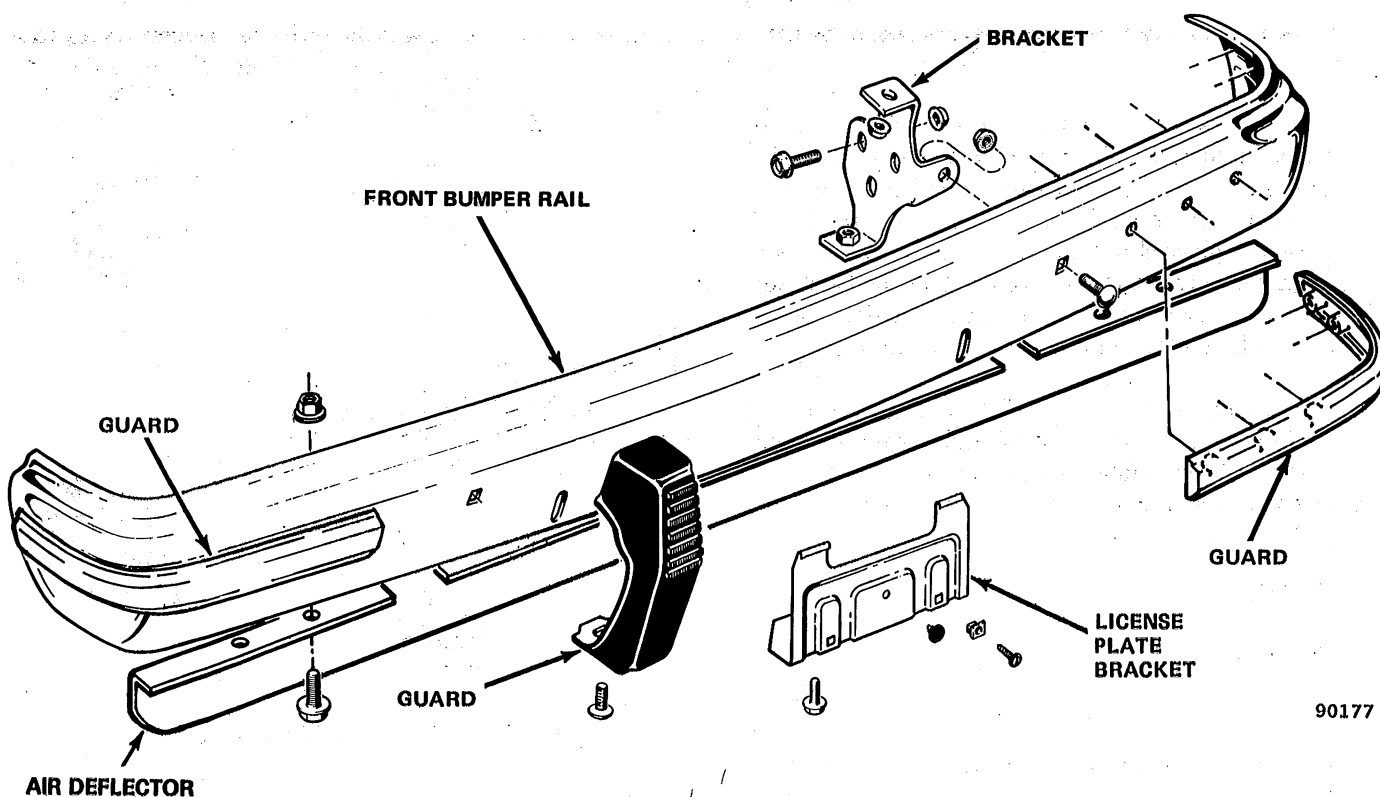
(3) Align bumper assembly and tighten all attaching hardware.

(4) Install horizontal bumper guards, if equipped.

(5) Install and connect fog lamps, if equipped.

(6) Install vertical bumper guards, if equipped.

(7) Install front air deflector, if equipped.



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Fig. 3F-19 Front Bumper—Cherokee-Wagoneer-Truck Models

**Replacement**

- (1) Remove bumper rail as described above.
- (2) Position replacement bumper rail on work bench and secure.
- (3) Position horizontal bumper guards on bumper rail and mark hole locations on bumper rail.
- (4) Center punch and drill 1/2-inch holes at marked locations.
- (5) Position horizontal bumper guards on bumper rail and install screws attaching bumper guards to bumper rail.

**NOTE:** *Some filing of holes may be required for proper fit.*

- (6) Position vertical bumper guards on bumper rail at desired locations and mark hole location on bumper rail.
- (7) Center punch and drill 3/8-inch holes at marked locations.
- (8) Position vertical bumper guards on bumper rail and install screws attaching bumper guards to bumper rail.

**NOTE:** *Some filing of holes may be required for proper fit.*

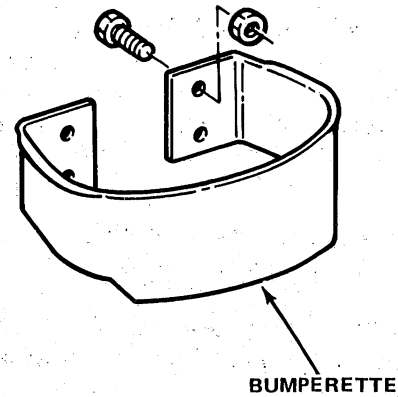
- (9) Install bumper rail as described above.

**REAR BUMPERS**

**CJ Models**

**Removal**

- (1) Remove nuts and bolts attaching rear bumperettes (fig. 3F-20) to vehicle frame.



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**Fig. 3F-20 Rear Bumperette—CJ Models**

- (2) Remove rear bumperettes from vehicle frame.

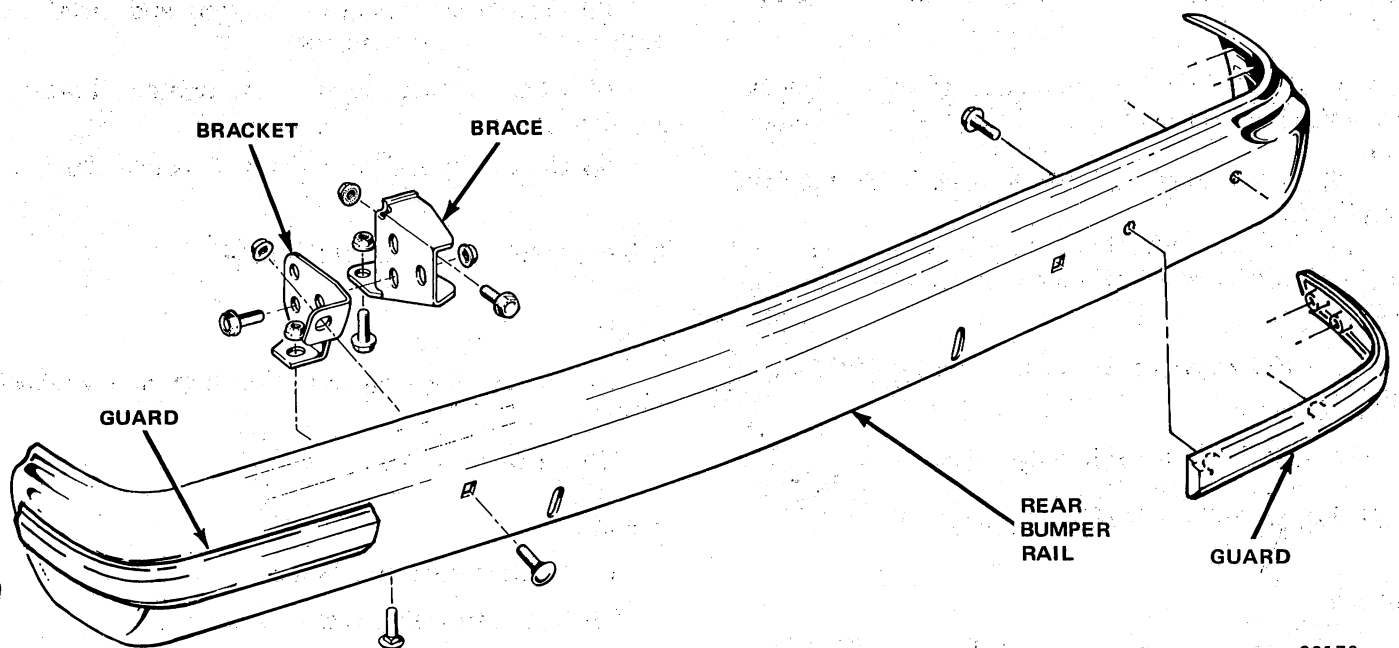
**Installation**

- (1) Position rear bumperettes on vehicle frame.
- (2) Install bolts and nuts attaching rear bumperettes to vehicle frame.

**Cherokee-Wagoneer Models**

**Removal**

- (1) Remove bumper guards (fig. 3F-21) from bumper rail, if equipped.



**Fig. 3F-21 Rear Bumper—Cherokee-Wagoneer Models**

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90178

- (2) Remove nuts and bolts attaching bumper rails to bumper brackets.
- (3) Remove bumper rail from vehicle.
- (4) Remove nuts and bolts attaching brackets to vehicle frame.
- (5) Remove brackets from vehicle frame.

### Installation

- (1) Position brackets on vehicle frame and install attaching bolts, washers and nuts.

**NOTE:** Do not tighten attaching hardware until complete bumper is assembled on vehicle frame and properly aligned.

- (2) Position bumper rail on brackets and install attaching bolts and nuts.
- (3) Align bumper assembly and tighten all attaching hardware.
- (4) Install horizontal bumper guards on bumper end rails, if equipped.

### Replacement

- (1) Remove bumper rail as described above.
- (2) Position replacement bumper rail on work bench and secure.
- (3) Position horizontal bumper guards on bumper rail and mark hole locations on bumper rail.
- (4) Center punch and drill 1/2-inch holes at marked locations.
- (5) Position horizontal bumper guards on bumper rail and install screws attaching bumper guards to bumper rail.

**NOTE:** Some filing of holes may be required for proper fit.

- (6) Position vertical bumper guards on bumper rail at desired locations and mark hole location on bumper rail.
- (7) Center punch and drill 3/8-inch holes at marked locations.
- (8) Position vertical bumper guards on bumper rail and install screws attaching bumper guards to bumper rail.

**NOTE:** Some filing of holes may be required for proper fit.

- (9) Install bumper rail as described above.

## Rear Step Bumper—Scrambler and Truck Models

### Removal

- (1) Disconnect license lamp wiring (fig. 3F-22) from vehicle wiring.

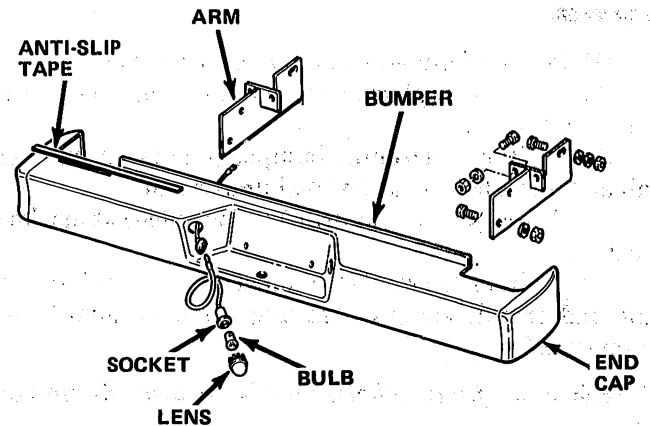


Fig. 3F-22 Rear Step Bumper—Scrambler and Truck Models

- (2) Remove nuts, washers and bolts attaching step bumper to arms.
- (3) Remove step bumper from arms.
- (4) Remove nuts, washers and bolts attaching arms to vehicle frame. Remove arms from vehicle.

### Installation

- (1) Position arms on vehicle frame and install attaching bolts, washers and nuts.

**NOTE:** Do not tighten attaching hardware until complete bumper is installed on vehicle frame and properly aligned.

- (2) Position step bumper on arms and install attaching bolts, washers and nuts.
- (3) Align bumper assembly and tighten all attaching hardware.
- (4) Connect license lamp wiring to vehicle wiring.

## End Cap—Scrambler and Truck Models

### Removal

- (1) Remove end cap attaching nuts and washers from studs.
- (2) Remove end cap.

### Installation

- (1) Position end cap on bumper.
- (2) Install attaching washers and nuts.
- (3) Tighten attaching nuts.



# SPARE TIRE CARRIERS

CJ-7 Models Page 3F-17

Scrambler Models Page 3F-17

## CJ-7 MODELS (OPTIONAL ON SCRAMBLER)

### Removal

- (1) Remove spare tire from carrier (fig. 3F-23).
- (2) Remove hinge pin nuts and bolts from upper and lower hinges.
- (3) Unlatch handle from latch bracket and remove carrier and hinge spacer washers.
- (4) Remove pin attaching latch handle to carrier and remove handle, spring and washer.

### Installation

- (1) Position spring, washer and handle in carrier and install attaching pin.
- (2) Position hinge spacer washers and carrier in upper and lower hinges and latch handle in latch bracket.
- (3) Install hinge pin bolts and nuts in upper and lower hinges.
- (4) Install spare tire on carrier.

## SCRAMBLER MODELS

The Scrambler model utilizes a tire carrier that is attached to the roll bar (fig. 3F-24). When a service operation necessitates, remove nuts, washers and bolts and remove tire mount.

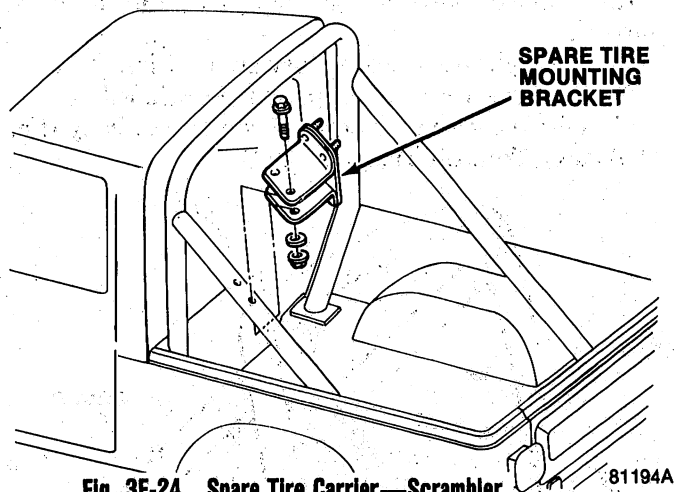


Fig. 3F-24 Spare Tire Carrier—Scrambler

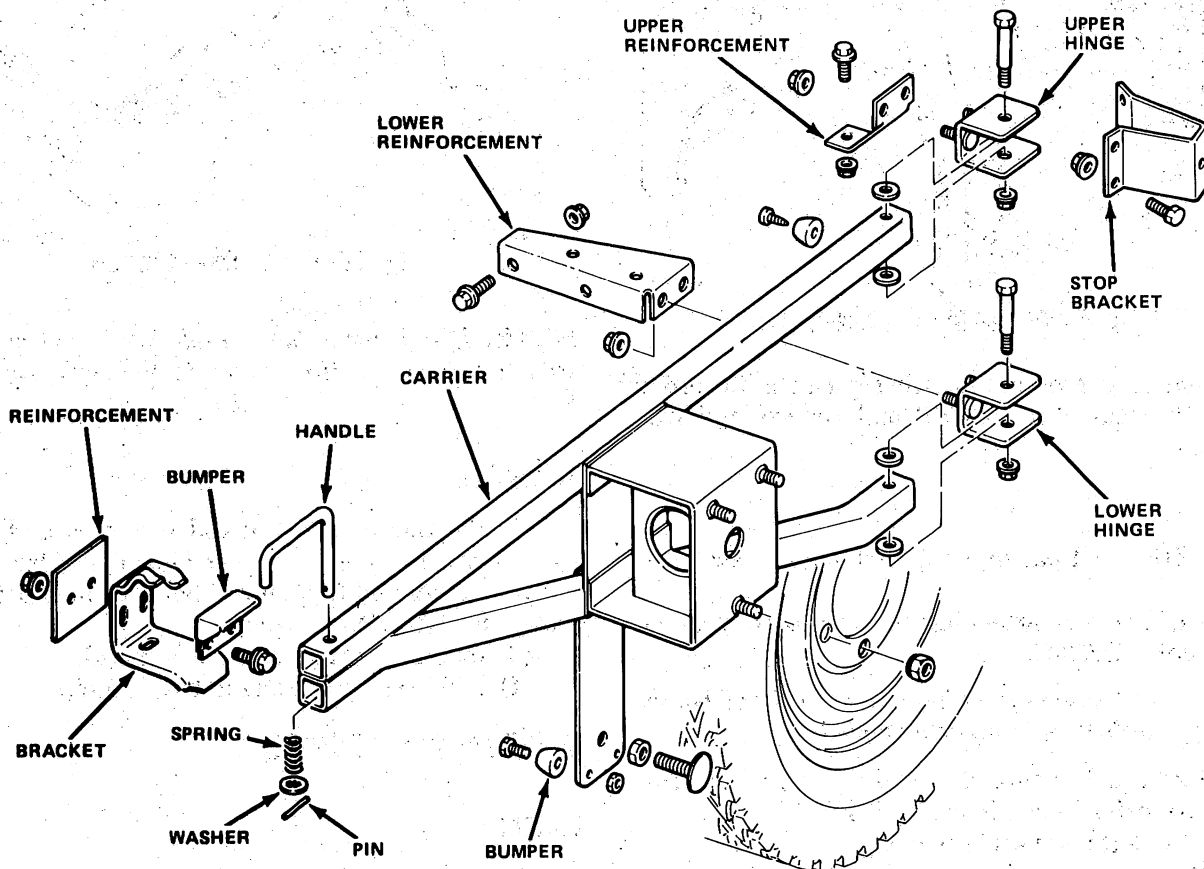


Fig. 3F-23 Swingout Spare Tire Carrier—CJ-7 Models (Optional on Scrambler)

# ROLL BARS

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CJ Models	3F-18
Scrambler Models	3F-18

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Sport Truck	3F-19
Townside Truck	3F-18

## CJ MODELS

### Removal

- (1) Remove left front seat assembly.
- (2) Remove hardtop or fold soft top back, if equipped.
- (3) Tilt right front seat to forward position.
- (4) Remove necessary carpeting, if equipped.
- (5) Remove screws attaching roll bar to body (fig. 3F-25) using Torx Bit Tool J-25359-C.

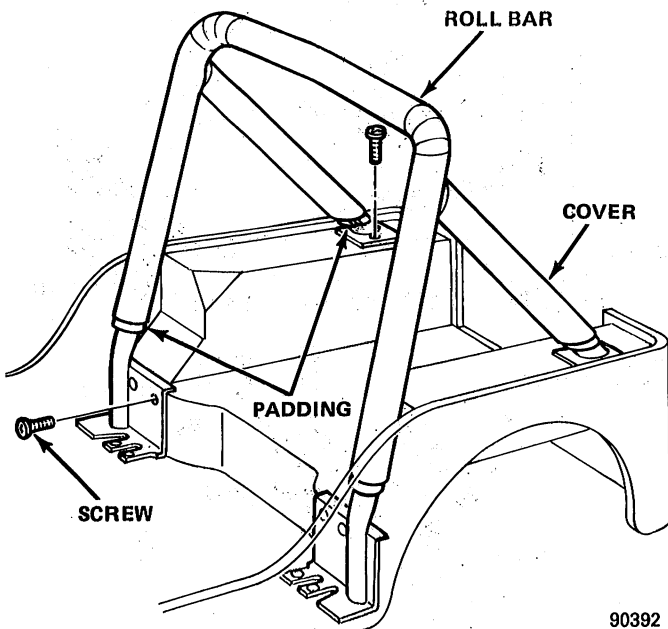


Fig. 3F-25 Roll Bar—CJ Models

- (6) Heat area around mounting brackets (to soften sealer) with Heat Gun J-25070 and remove roll bar assembly.

### Installation

- (1) Position roll bar on body and align screw holes with body.
- (2) Install screws attaching roll bar to body using Torx Bit Tool J-25359-C.

**NOTE:** Do not tighten attaching screws until roll bar is completely installed and properly aligned.

- (3) Align roll bar assembly and tighten all attaching hardware using Torx Bit Tool J-25359-C.
- (4) Install left front seat assembly.
- (5) Install carpeting, if removed.
- (6) Install hardtop or soft top, if equipped.

## SCRAMBLER MODELS

### Removal

- (1) Remove spare tire from roll bar, if equipped.
- (2) Remove wood side rails from both sides of cargo box, if equipped.
- (3) Remove roll bar attaching bolts (fig. 3F-26).
- (4) Remove roll bar from vehicle using chain hoist or with aid of helper.

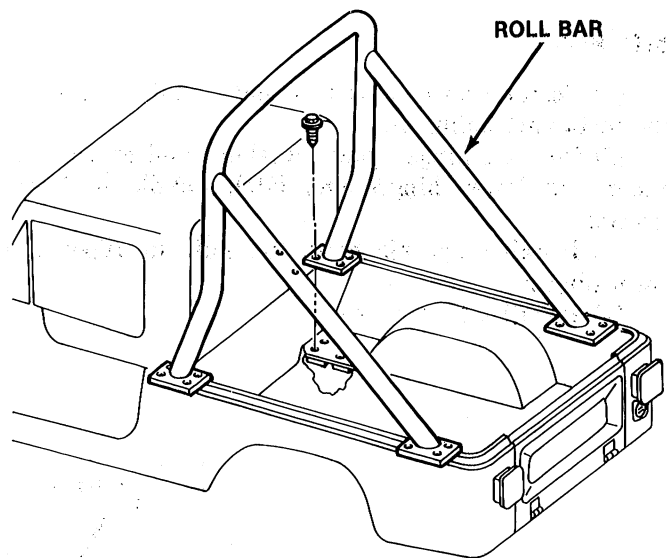


Fig. 3F-26 Roll Bar—Scrambler

**NOTE:** If roll bar is being replaced it is necessary to transfer the spare tire mount to the replacement roll bar.

### Installation

- (1) Position and install roll bar in cargo box. Use chain hoist or helper to raise and install roll bar.
- (2) Install and tighten roll bar attaching bolts to 25 foot-pounds (34 N•m) torque.
- (3) Install wood side rails, if equipped.
- (4) Install spare tire on roll bar, if equipped.

## TOWNSIDE TRUCK MODELS

### Removal

- (1) Remove CB radio antenna from roll bar, if equipped.

- (2) Remove nuts, washers, bolts and nut plates (fig. 3F-27) attaching roll bar to side of pickup box, using Torx Bit Tool J-25359-C.

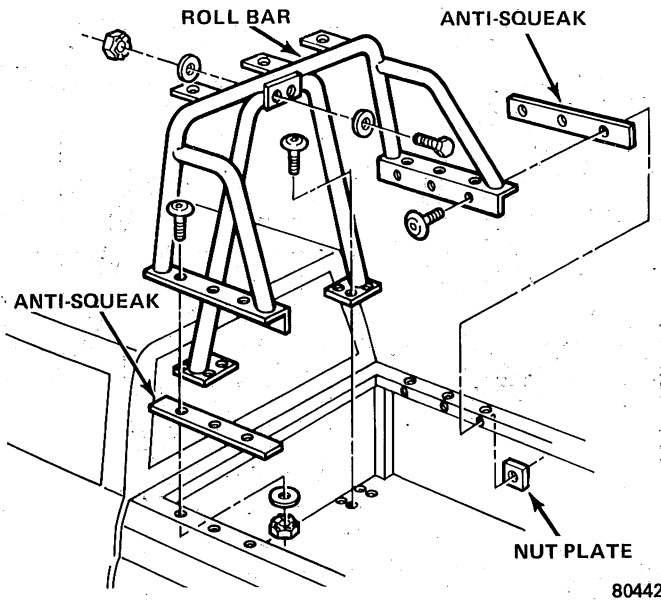


Fig. 3F-27 Roll Bar—Townside Truck

- (3) Remove nuts, washers and bolts attaching roll bar to bed of pickup box, using Torx Bit Tool J-25359-C.
- (4) Remove roll bar assembly and anti-squeak material from pickup box.

**Installation**

- (1) Position anti-squeak material and roll bar assembly on pickup box.
  - (2) Install bolts, washers and nuts attaching roll bar to bed of pickup box, using Torx Bit Tool J-25359-C.
- NOTE:** Do not tighten attaching hardware until roll bar is completely installed and properly aligned.
- (3) Install bolts, washers, nuts and nut plates attaching roll bar to side of pickup box.
  - (4) Align roll bar assembly and tighten all attaching hardware using Torx Bit Tool J-25359-C.
  - (5) Install CB radio antenna on roll bar, if equipped.

**SPORT TRUCK**

**Removal**

- (1) Remove CB radio antenna from roll bar, if equipped.
- (2) Remove wooden side rails, if equipped.
- (3) Remove nuts, washers and bolts attaching roll bar to bed of pickup box, using Torx Bit Tool J-25359-C (fig. 3F-28).

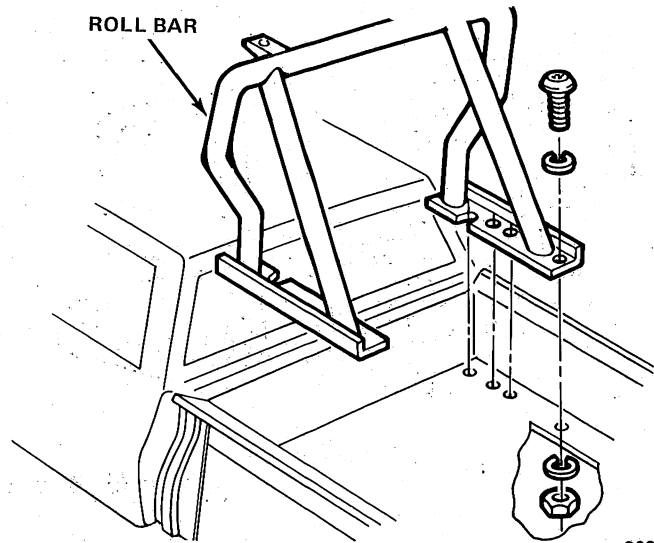


Fig. 3F-28 Roll Bar—Sport Truck

- (4) Remove roll bar assembly from pickup box.

**Installation**

- (1) Position roll bar on bed of pickup box.
  - (2) Install bolts, washers and nuts attaching roll bar to bed of pickup box using Torx Bit Tool J-25359-C.
- NOTE:** Do not tighten attaching hardware until roll bar is completely installed and properly aligned.
- (3) Align roll bar assembly and tighten all attaching hardware using Torx Bit Tool J-25359-C.
  - (4) Install wooden side rails, if equipped.
  - (5) Install CB radio antenna on roll bar, if equipped.

**BRUSH GUARDS**

**CHEROKEE-TRUCK MODELS**

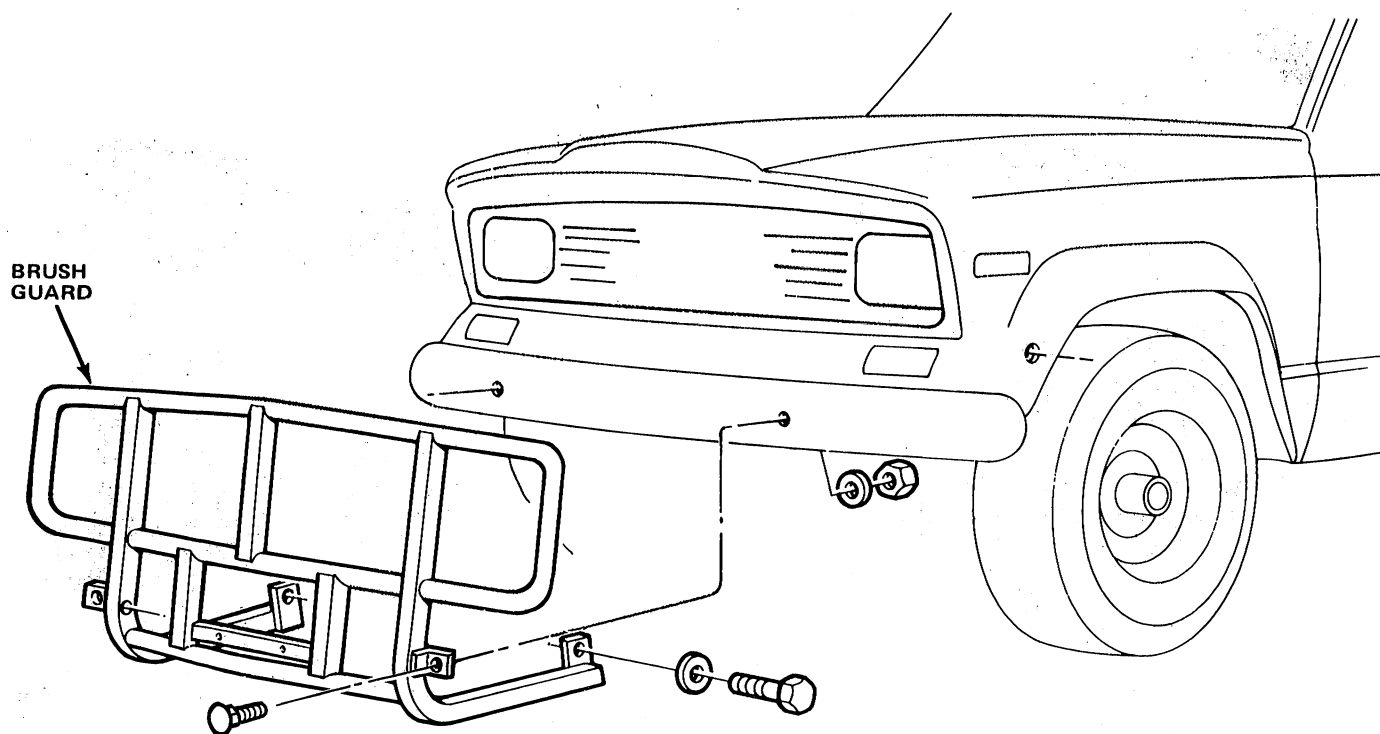
**Removal**

- (1) Disconnect and remove fog lamps, if equipped.
- (2) Remove bolts and washers attaching brush guard (fig. 3F-29) to frame rails.

- (3) Remove nuts and bolts attaching brush guard to bumper bolts and remove brush guard.

**Installation**

- (1) Position brush guard on bumper and install attaching bolts and nuts.



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Fig. 3F-29 Brush Guard—Cherokee-Truck Models

**NOTE:** Do not tighten attaching hardware until complete brush guard is assembled on vehicle and properly aligned.

(2) Install bolts and washers attaching brush guard to frame rails.

(3) Align brush guard assembly and tighten all attaching hardware.

(4) Install and connect fog lamps, if equipped.

## SOFT TOP WITH METAL DOORS—CJ AND SCRAMBLER MODELS

### GENERAL

A soft top with metal doors is available on the CJ-7 and Scrambler models. This option offers the convenience of a soft top with the security of metal doors. The adjustment of the doors remains the same as if equipped with a hard top.

See Chapter 3J for door and window service procedures.

It is possible to adjust the soft top at the rear of the door to achieve an air-tight seal between door and soft top.

### ADJUSTMENT

(1) Unsnap soft top from vertical support blade (fig. 3F-30).

(2) Loosen adjusting screws.

(3) Reposition vertical support blade.

(4) Tighten adjusting screws.

(5) Reposition and snap soft top into place.

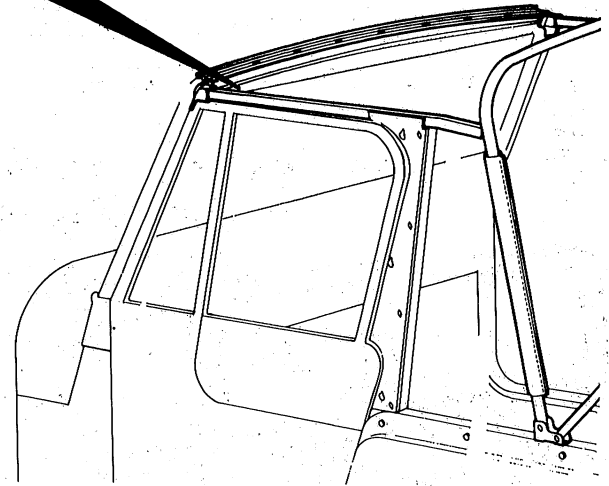
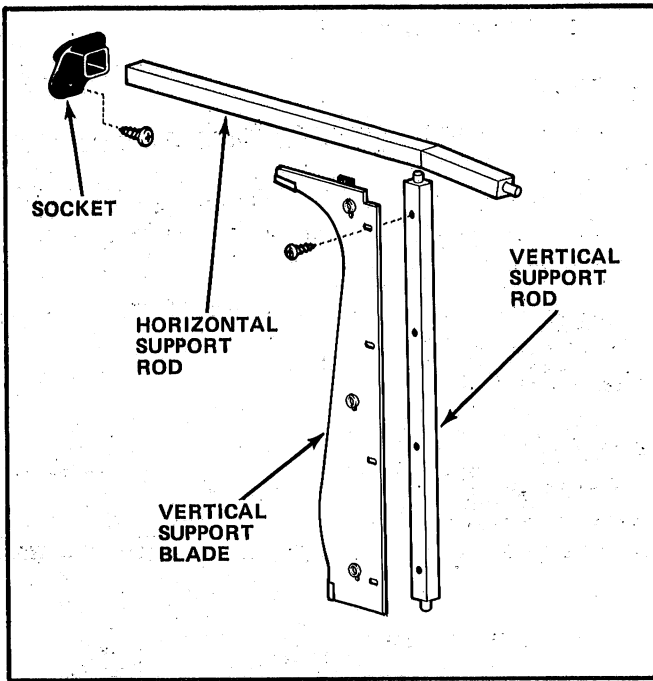


Fig. 3F-30 Soft Top Supports for Metal Door

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## STORAGE COMPARTMENT

### GENERAL

A storage compartment is available on all CJ models, however, the rear seat must be deleted on the CJ-5 models when a storage compartment is installed.

The storage compartment can be locked with a key and is also bolted to the body side panels for added security.

### Removal

- (1) Open storage compartment and remove attaching screws and washers shown in figure 3F-31.
- (2) Remove storage compartment assembly.
- (3) Remove rubber washers from wheelhouse.

### Installation

- (1) Position rubber washers on storage compartment mounting holes.
- (2) Position storage compartment assembly in vehicle and align holes with rubber washers and holes in wheelhouse.
- (3) Install storage compartment attaching screws and washers, tighten to 10 to 15 foot-pounds torque.

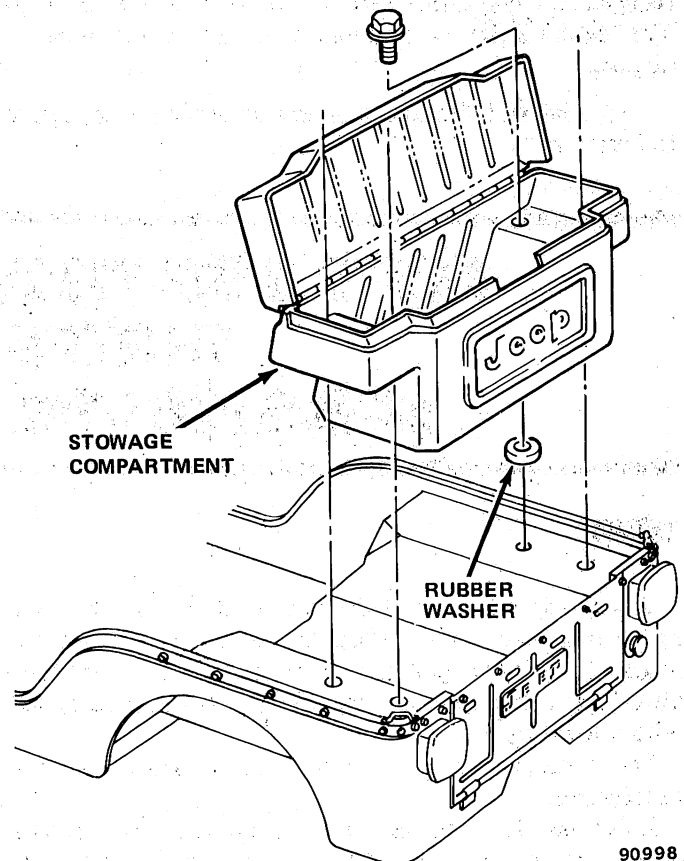


Fig. 3F-31 Storage Compartment—CJ Models

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**LOCK CYLINDER**

**Removal**

- (1) Open storage compartment and remove screw retaining lock rods.
- (2) Remove lock rods from lock cylinder.
- (3) Remove nut from lock cylinder.

- (4) Remove lock cylinder.

**Installation**

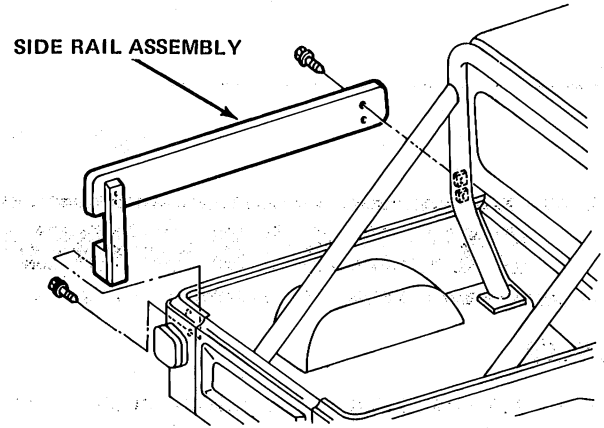
- (1) Position lock cylinder into storage compartment.
- (2) Install nut on lock cylinder and tighten.
- (3) Install lock rods onto lock cylinder and tighten retaining screw.

# WOODEN RAILS— SCRAMBLER AND SPORT TRUCK MODEL

**GENERAL**

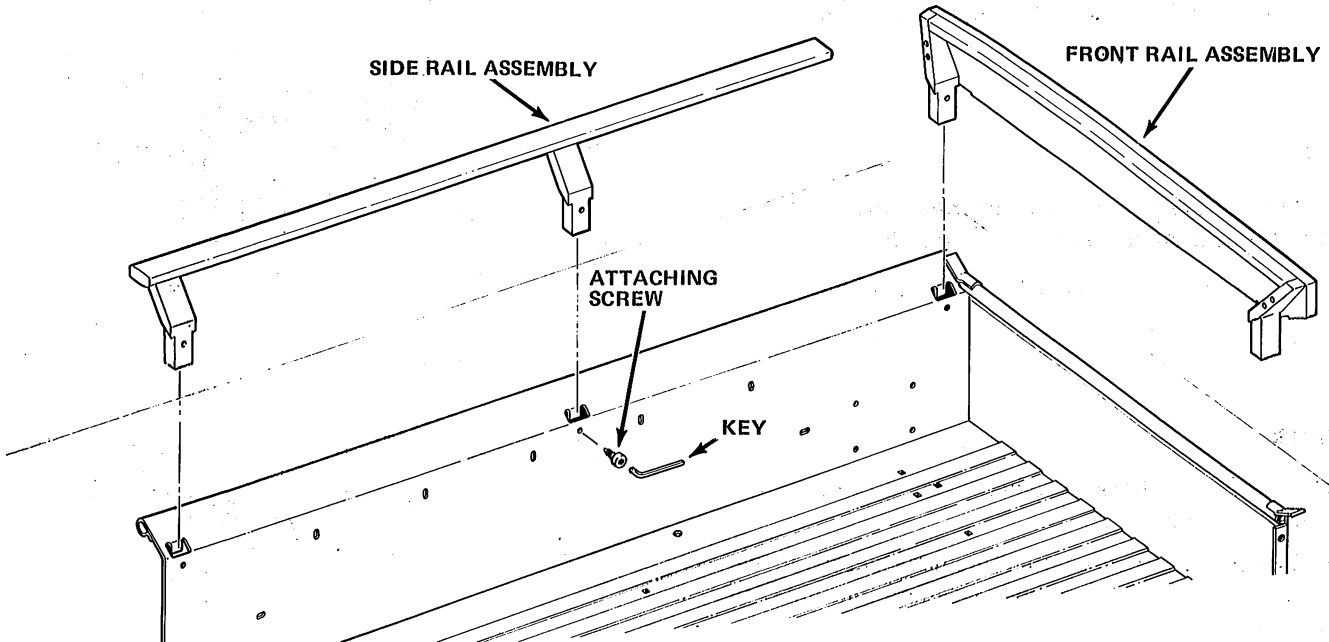
Wooden side rails are available for the Scrambler models equipped with a roll bar. The rails are attached to the roll bar in front and the body side panel in back (fig. 3F-32).

Wooden front and side rails are available for the Sport Truck models equipped with a roll bar. They are installed in the stake pockets and retained with special screws. The key-type wrench located in the glove box or Torx Bit Tool J-25359-C may be used to remove the screws (fig. 3F-33).



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**Fig. 3F-32 Wooden Side Rails**



**Fig. 3F-33 Wooden Side Rails—Sport Truck**

**Scrambler Models**

**Removal**

- (1) Remove bolts at roll bar and body side panel.
- (2) Remove wood rail.

**Installation**

- (1) Position rail.
- (2) Install bolts at roll bar and body side panel.

**Sport Truck**

**Removal**

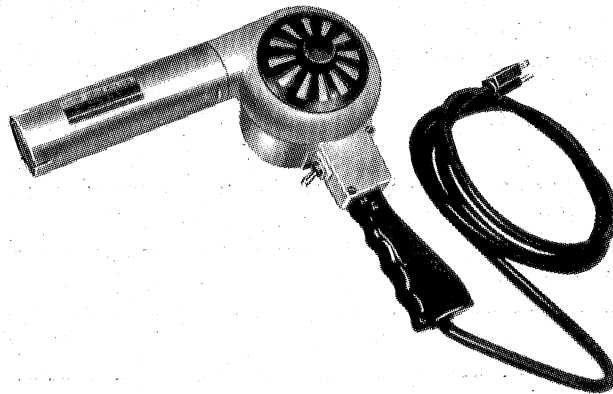
- (1) Remove attaching screws from pickup box (fig. 3F-33) using Torx Bit Tool J-25359-C or key wrench located in glove box.

- (2) Disengage side rails from roll bar bracket.
- (3) Remove side rail assemblies.
- (4) Remove front rail assembly.

**Installation**

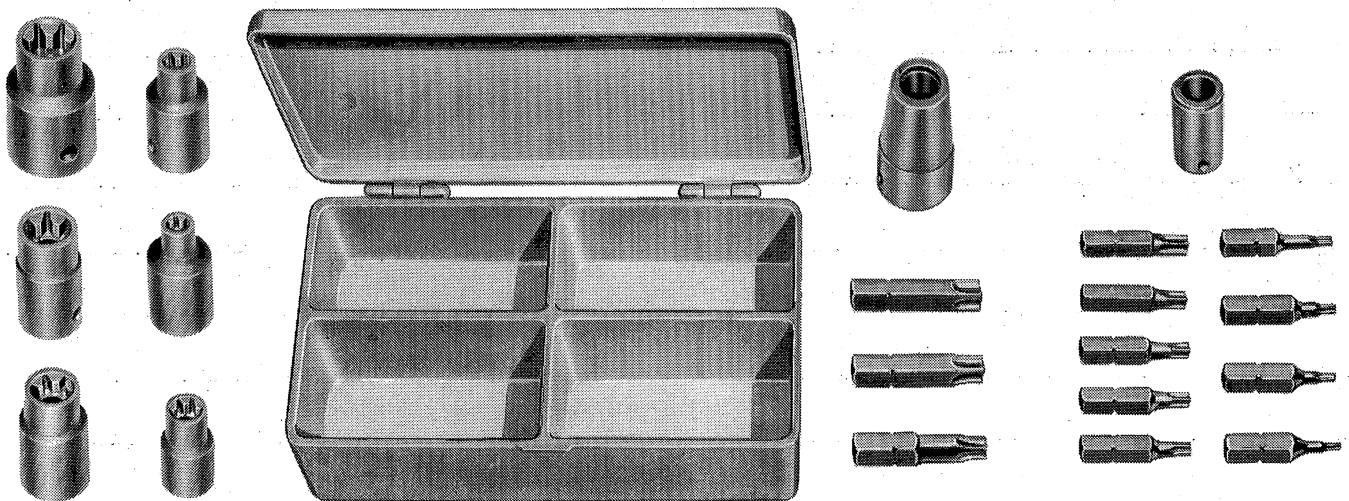
- (1) Position front rail assembly in pickup box stake pockets.
- (2) Position side rail assemblies in pickup box stake pockets making sure end brackets are located in roll bar brackets.
- (3) Install and tighten attaching screws using Torx Bit Tool J-25359-C or key wrench located in glove box.

**Tools**



**J-25070 HEAT GUN**

70301



**J-25359-C  
TORX BIT AND SOCKET SET**

70119

