FRAME AND BUMPERS

CONTENTS

XJ UNIBODY CONSTRUCTION

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GENERAL INFORMATION

Jeep® XJ Vehicles (Fig. 1) and the cab section of Jeep® are constructed as a unitized body and frame.

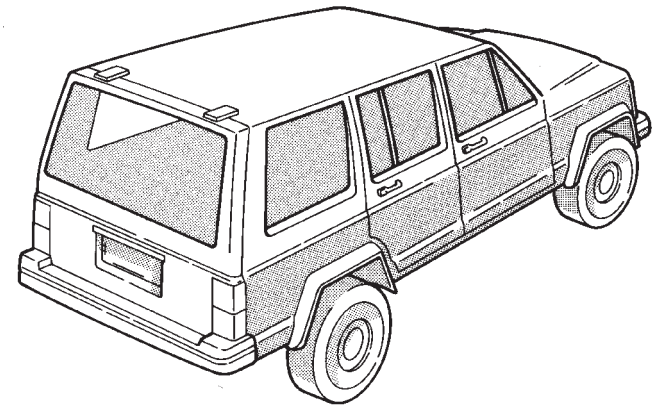

Fig. 1 Jeep® XJ

Jeep® XJ unibodies are constructed from special high-strength steel and coated metals. These types of metals reduce weight and provide strength.

COLLISION DAMAGE TORQUE

DAMAGE DIAGNOSIS

A vehicle constructed as a unibody reacts differently to the impact of a collision. While the damage at the immediate point of impact is easily recognizable, the damage must be diagnosed to expose it.

With unibody construction, there are five logical areas to examine to expose damage.

(1) Damage at the immediate point of impact—primary damage.

(2) The other (lessor) body damage—secondary damage.

(3) Damage to the exterior trim and other surface-attached components.

(4) Damage to the mechanical components.

(5) The interior trim and accessory damage.

DAMAGE REPAIR

A logical approach to the sequence of damage repair must also be used. Usually, during vehicle repair, the tasks are accomplished in the reverse order of consequence.

When there is damage to a vehicle, the alignment points must be returned too specifications. This entails:

- accurate measurement;
- repetitive measurement; and
- re-check of measurements.

Collision damage repair can be completed "right" the first time:

- if the fundamental steps for collision damage repair are correctly followed, and
- if the basic structural details of unibody construction are correctly considered.

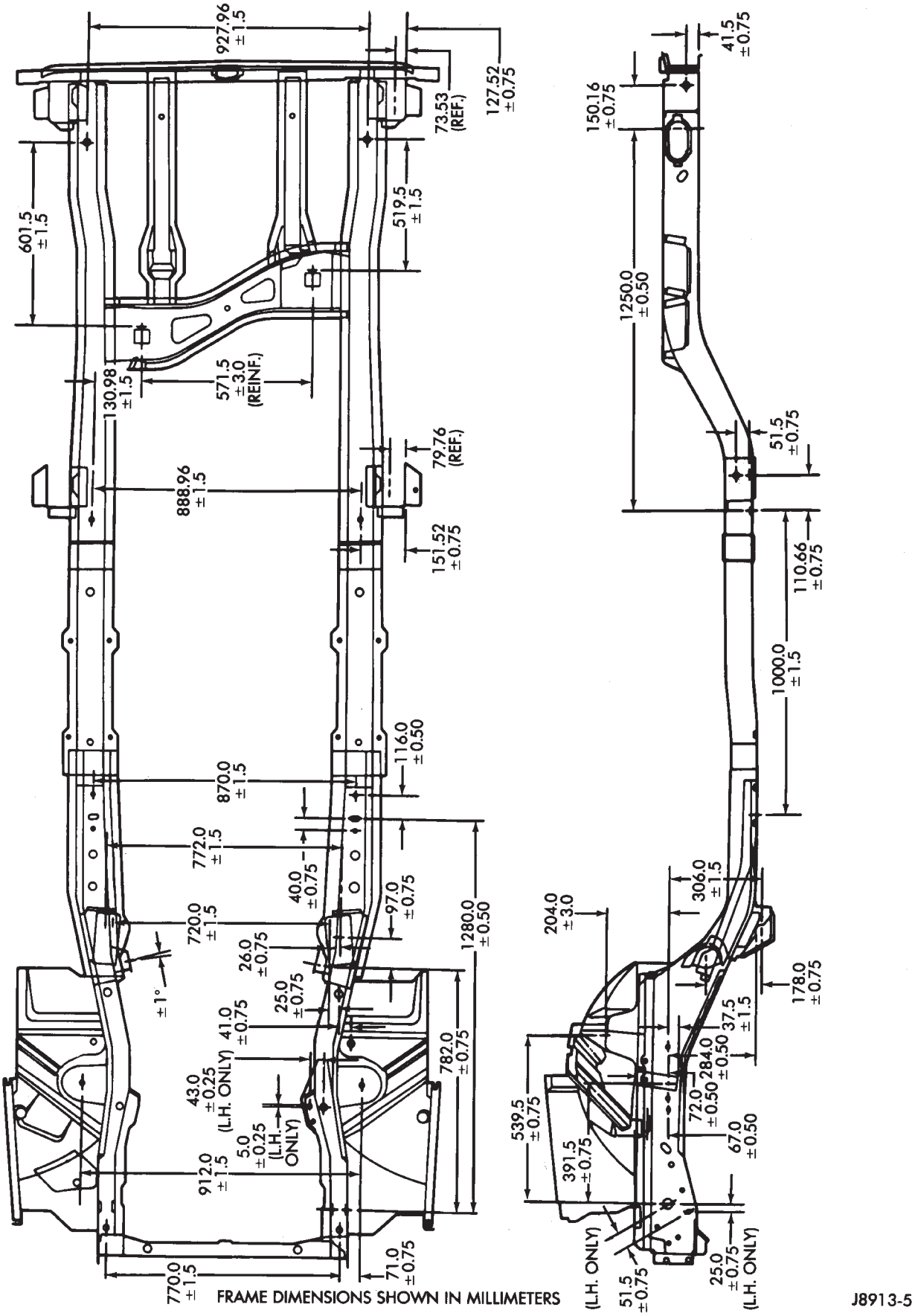

Fig. 2 Frame Alignment Reference Dimensions—XJ Vehicles

XJ BUMPERS

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FRONT BUMPER

REMOVAL/DISASSEMBLY

(1) The bumper guards, end caps and tow hooks can be removed from XJ front bumpers with the bumper attached to the vehicle. Do not remove the bumper from the vehicle if only these components require service.

If equipped with a brush guard, refer to the Brush Guard Removal within Group 23—Body Components.

(2) If equipped, disconnect the fog lamp wire harness connectors (Fig. 1).

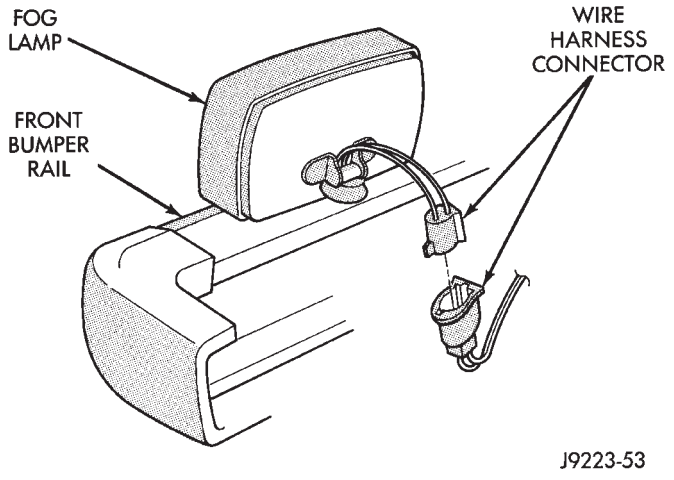

Fig. 1 Fog Lamp Wire Harness Connector

(3) Disconnect the vacuum reservoir tube harness connectors (Figs. 2 and 3).

(4) If equipped, remove the locknuts and Torx-head bolts that attach the tow hook straps (Fig. 4) to the underbody sillmember.

The retaining screws and the steering gear skid plate must be removed before the left strap can be removed from the sillmember.

(5) Detach the tow hook straps from the sillmember.

(6) Support the bumper.

(7) Remove the bolts that attach the bumper support brackets to the right and left sillmembers (Fig. 5).

(8) Remove the support and the bumper from the vehicle. 5).

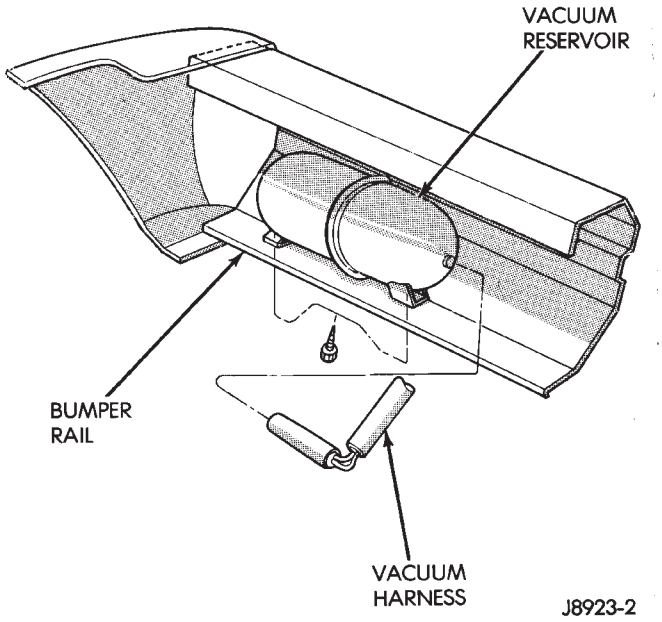

Fig. 2 Vacuum Reservoir—Left Side

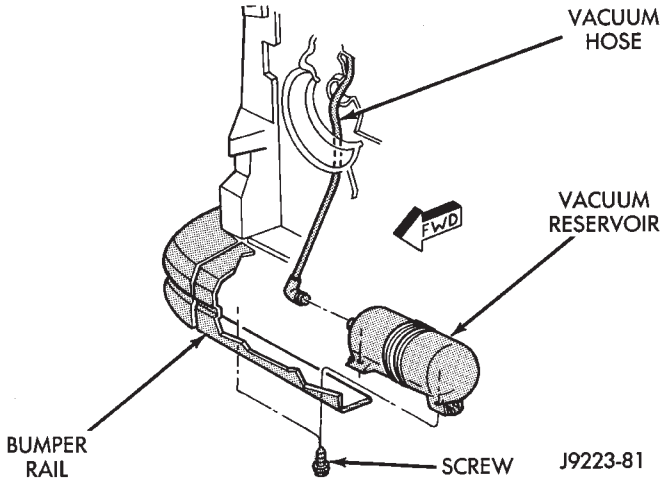

Fig. 3 Vacuum Reservoir—Right Side With Speed Control Only

(9) If equipped, remove the nuts and bolts that attach the tow hooks to the bumper support brackets.

(10) Remove the support brackets (Fig. 6), bumper guards (Fig. 7) and caps (Fig. 8) from the bumper rail.

(11) Remove the license plate bracket (Fig. 9), if equipped, from the bumper rail.

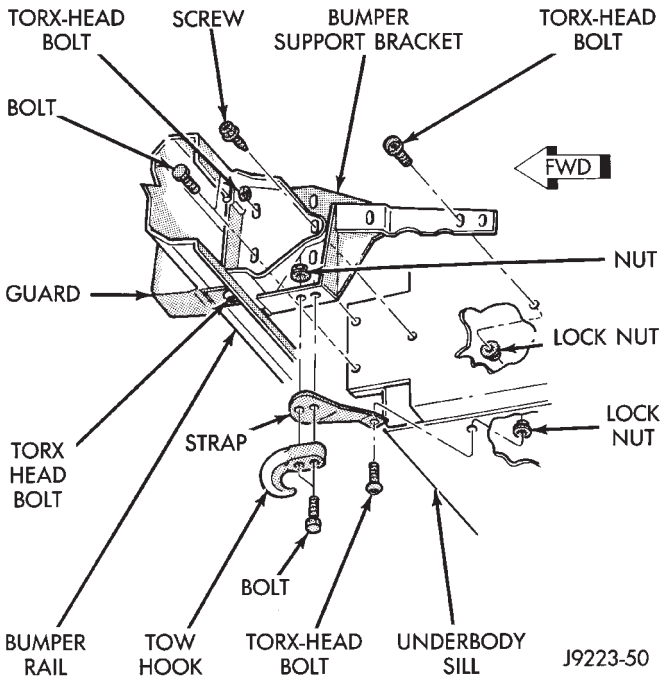

Fig. 4 Tow Hook & Strap—XJ Vehicles

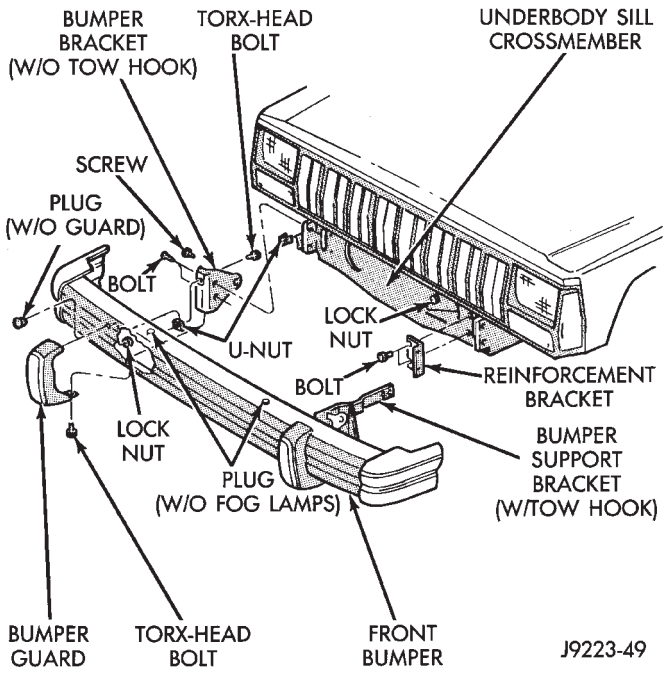

Fig. 5 Front Bumper Removal/Installation

(12) If equipped, remove the fog lamps (Fig. 10) from the bumper rail.

(13) If necessary, remove the vacuum reservoir(s) from the bumper rail.

(14) If necessary, remove the sill crossmember reinforcement brackets from the sillmembers.

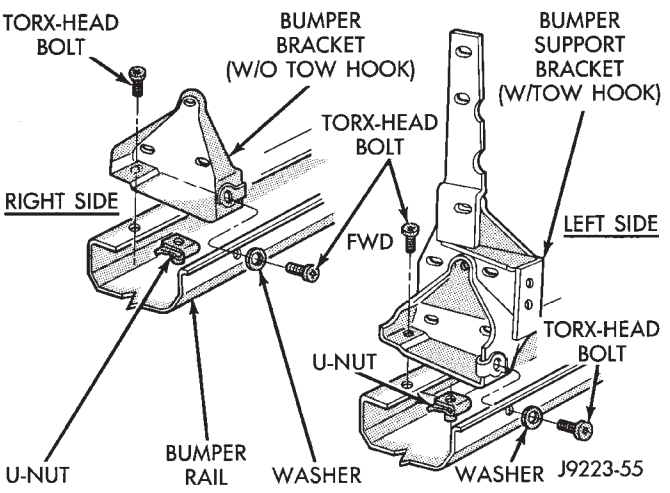

Fig. 6 Bumper Support Bracket Removal/Installation

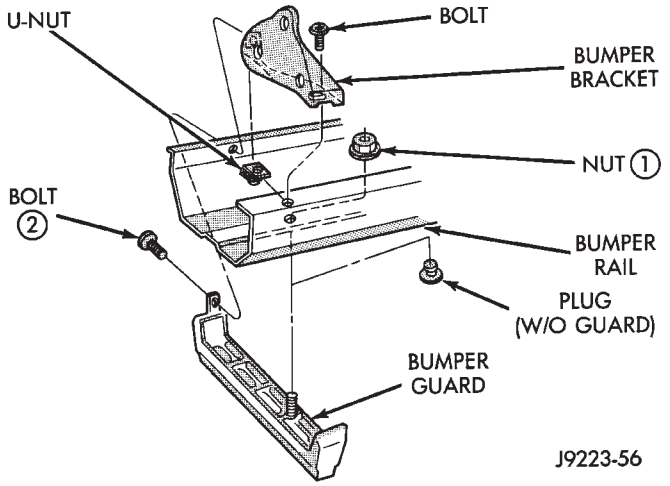

Fig. 7 Bumper Guard Removal/Installation

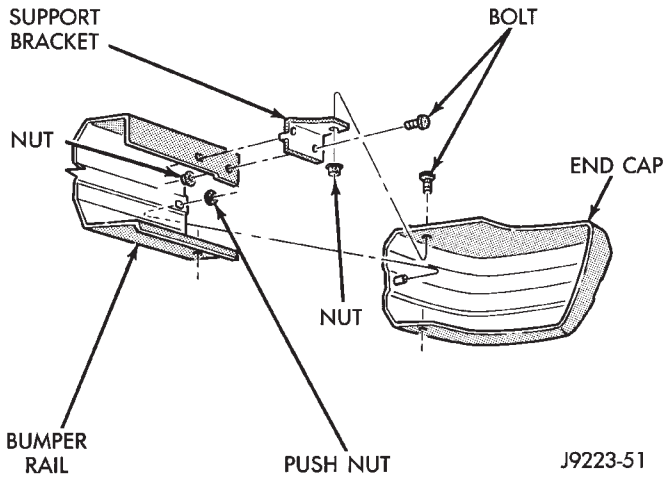

Fig. 8 Bumper End Cap Removal/Installation

ASSEMBLY/INSTALLATION

(1) If removed, install the sill crossmember reinforcement brackets on the sillmembers (Fig. 11). Tighten bolts to 56 N·m (41 ft-lbs) torque.

(2) If equipped, install the bumper support brack-

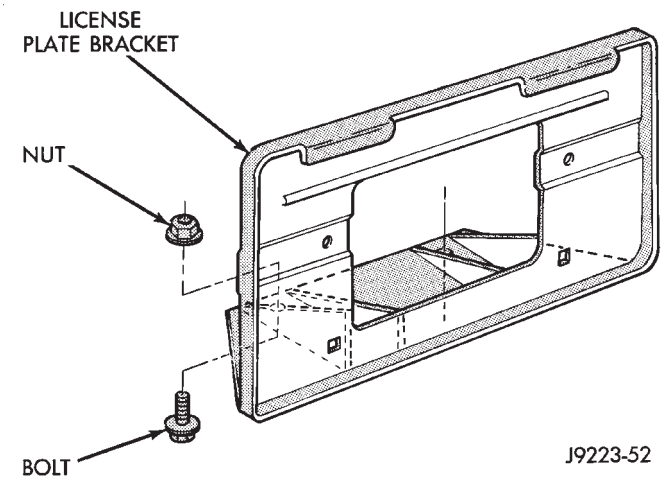

Fig. 9 Bumper License Plate Bracket Removal/ Installation

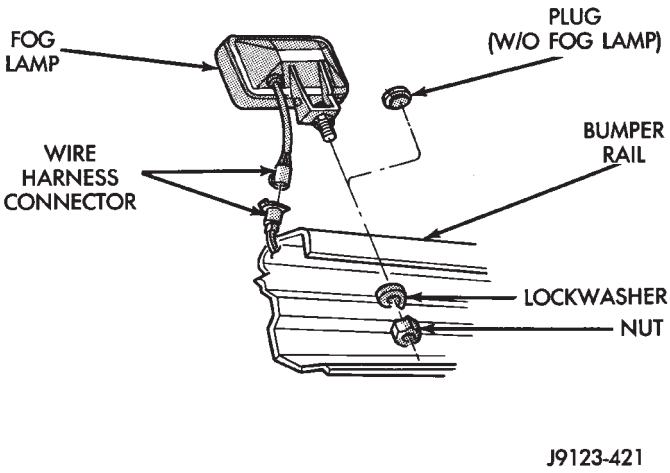

Fig. 10 Fog Lamp

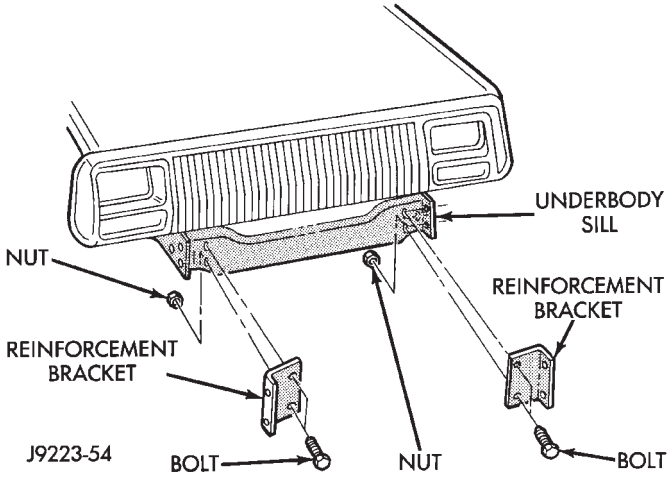

Fig. 11 Reinforcement Brackets

ets and bumper guards on the bumper rail. Tighten hardware in the sequence indicated in Figure 7. Tighten the locknuts with 20 N·m (15 ft-lbs) torque. Tighten bolts to 56 N·m (41 ft-lbs) torque.

(3) If not equipped with bumper guards, install the bumper support brackets on the bumper rail. Tighten bolts to 56 N·m (41 ft-lbs) torque.

(4) If equipped with tow hooks, install the bolts and nuts that attach them to the bumper support brackets. Tighten nuts with 100 N·m (74 ft-lbs) torque.

(5) Install the bumper end caps on the bumper rail (Fig. 8). Tighten nuts with 8 N·m (72 in-lbs) torque.

(6) Install the license plate bracket on the bumper rail. Tighten the nuts securely.

(7) If equipped, install the fog lamps on the bumper rail. Tighten the nuts securely.

(8) If removed, install the vacuum reservoir(s) on the bumper rail. Tighten the retaining screws and bolts to 8 N·m (72 in-lbs) torque.

(9) Position and support the bumper at the front of the vehicle.

(10) Attach the bumper support brackets to the right and left sillmembers and reinforcement brackets. Tighten screws and bolts to 56 N·m (41 ft-lbs) torque.

(11) If equipped, install the Torx-head bolts and locknuts that attach the tow hook straps to the underbody sillmember. Tighten locknuts with 30 N·m (22 ft-lbs) torque.

Install the steering gear skid plate and screws after the left tow hook strap has been installed.

(12) If equipped, connect the fog lamp wire harness connectors.

(13) Connect the vacuum reservoir tube harness connectors.

(14) Remove the bumper support.

FRONT TOW HOOKS

If a tow hook must be replaced or removed only for service access, remove the nuts and bolts that attach it to the bumper support bracket. When installing a tow hook, tighten nuts with 100 N·m (74 ft-lbs) torque.

If a tow hook/bumper support bracket must be replaced, refer to the following removal and installation procedures.

REMOVAL

If equipped with a brush guard, refer to the Brush Guard Removal within Group 23—Body Components.

(1) If equipped, disconnect the fog lamp wire harness connectors.

(2) Disconnect the vacuum reservoir tube harness connectors.

(3) Support the bumper.

(4) Remove the bolts that attach the bumper support brackets to the right and left sillmembers.

(5) Remove the locknuts and Torx-head bolts that attach the tow hook straps to the underbody sillmember.

The retaining screws and the steering gear skid plate must be removed before the left strap can be removed from the sillmember.

(6) Detach the tow hook straps from the sillmember.

(7) Remove the support and the bumper from the vehicle.

(8) Remove the nuts and bolts that attach the tow hooks to the bumper support brackets.

(9) Remove the tow hook from the bumper support bracket (Fig. 4).

(10) Remove the support bracket from the bumper rail.

INSTALLATION

(1) If equipped, install the bumper guard and bumper support bracket on the bumper rail. Tighten the retaining hardware in the sequence indicated in Figure 7. Tighten locknuts to 20 N·m (15 ft-lbs) torque. Tighten bolts to 56 N·m (41 ft-lbs) torque.

(2) If not equipped with bumper guards, install the bumper support bracket on the bumper rail. Tighten bolts to 56 N·m (41 ft-lbs) torque.

(3) Position the tow hook at the support bracket. Install the bolts and nuts that attach tow hook to the bumper support bracket. (Fig. 4). Tighten nuts to 100 N·m (74 ft-lbs) torque.

(4) Position and support the bumper at the front of the vehicle.

(5) Attach the bumper support brackets to the right and left sillmembers and reinforcement brackets. Tighten screws and bolts to 56 N·m (41 ft-lbs) torque.

(6) If equipped, install the Torx-head bolts and locknuts that attach the tow hook straps to the underbody sillmember. Tighten locknuts to 30 N·m (22 ft-lbs) torque.

Install the steering gear skid plate and screws after the left tow hook strap has been installed.

(7) If equipped, connect the fog lamp wire harness connectors. Connect the vacuum reservoir tube harness connectors.

(8) Remove the bumper support.

REAR BUMPER

REMOVAL

(1) For vehicles equipped with a trailer hitch, remove the hitch before removing the bumper. If necessary, refer to the removal procedure within Group 23—Body Components.

(2) Raise and support the rear of the vehicle.

(3) Support the bumper.

(4) Remove the bolts that attach the bumper support brackets to the sill crossmember (Fig. 12).

(5) Remove the support and the rear bumper from the vehicle.

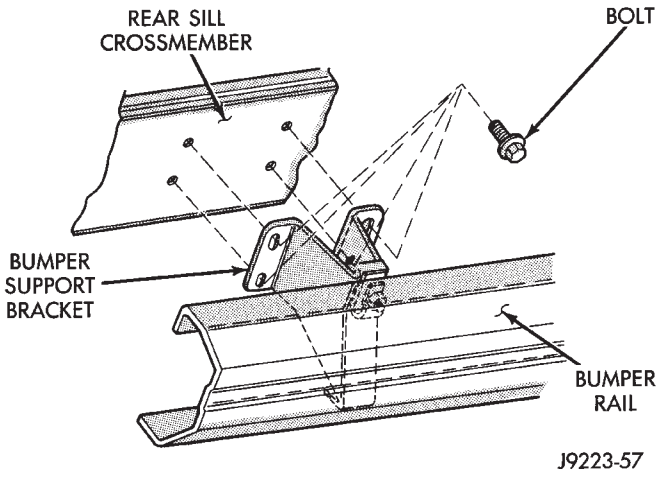

Fig. 12 Rear Bumper Removal/Installation—XJ Vehicles

(6) Remove the bumper support brackets and splash shield the bumper, if necessary (Fig. 13).

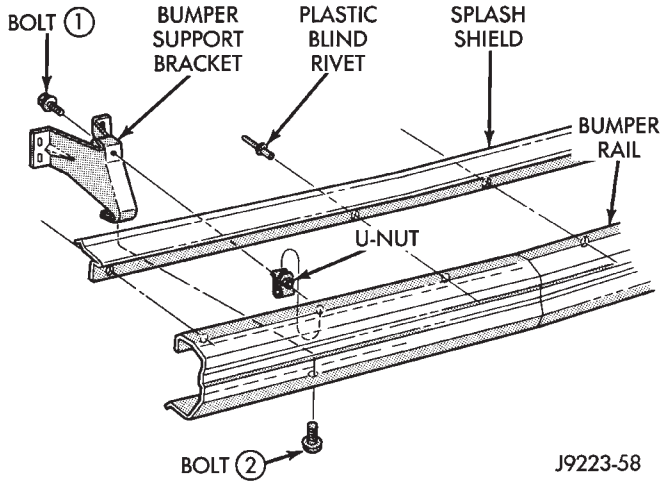

Fig. 13 Bumper Bracket & Splash Shield Removal/ Installation—XJ Vehicles

(7) Remove the bumper end caps (Fig. 14) and bumper guards from the bumper (Fig. 15), if necessary.

INSTALLATION

(1) As applicable, install the splash shield and bumper support brackets, the bumper end caps and the bumper guards.

(2) Tighten the bumper support bolts to 56 N·m (41 ft-lbs).

(3) Tighten the nuts in the sequence depicted in Figure 14. Tighten the bumper end cap plate bolt nuts to 22 N·m (16 ft-lbs) torque. Tighten the lower bolt nuts to 8 N·m (6 ft-lbs) torque.

(4) If applicable, tighten the bumper guard bolts/ nuts to 56 N·m (41 ft-lbs).

(5) Position and support the bumper with the bracket holes aligned with the sill crossmember

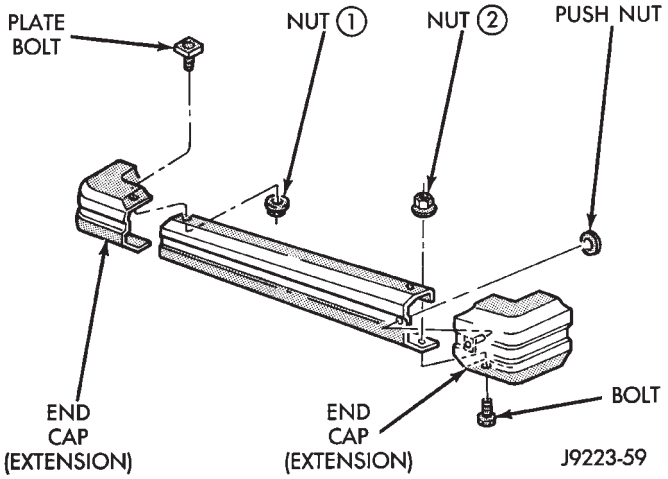

Fig. 14 Bumper End Cap Removal/Installation—XJ Vehicles

holes. Install the bracket-to-crossmember bolts. Tighten the bolts to 42 N·m (31 ft-lbs) torque.

(6) If removed, install the trailer hitch. If necessary, refer to the installation procedure within Group 23—Body Components.

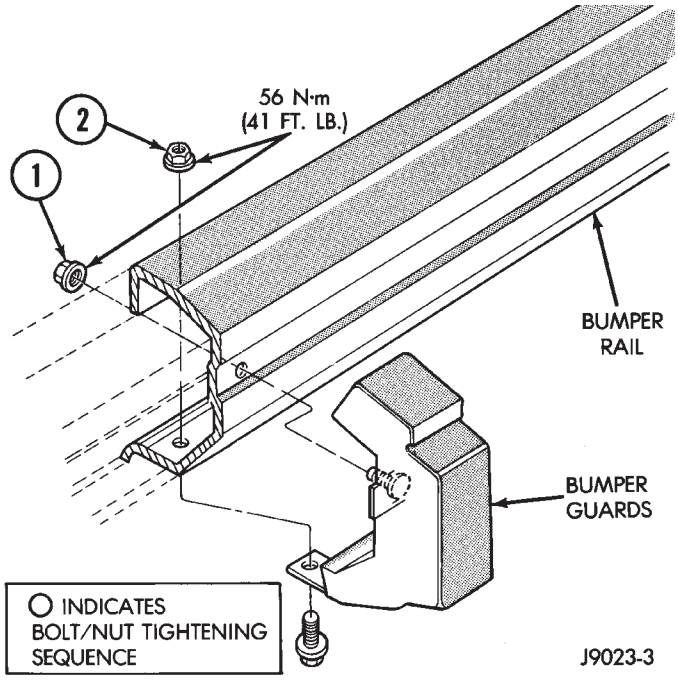

Fig. 15 Bumper Guard Removal/Installation—XJ Vehicles

YJ FRAME

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GENERAL INFORMATION

FUNCTIONS

The Jeep® YJ (Fig. 1) frame is the structural center of the vehicle. In addition to supporting the body and payload, the frame provides a station for the engine. The vehicle body is attached to the frame with holddowns (Figs. 2 and 3).

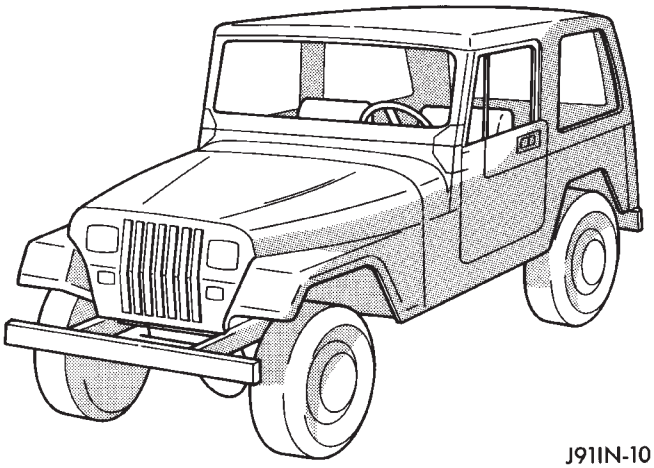

Fig. 1 Jeep® YJ

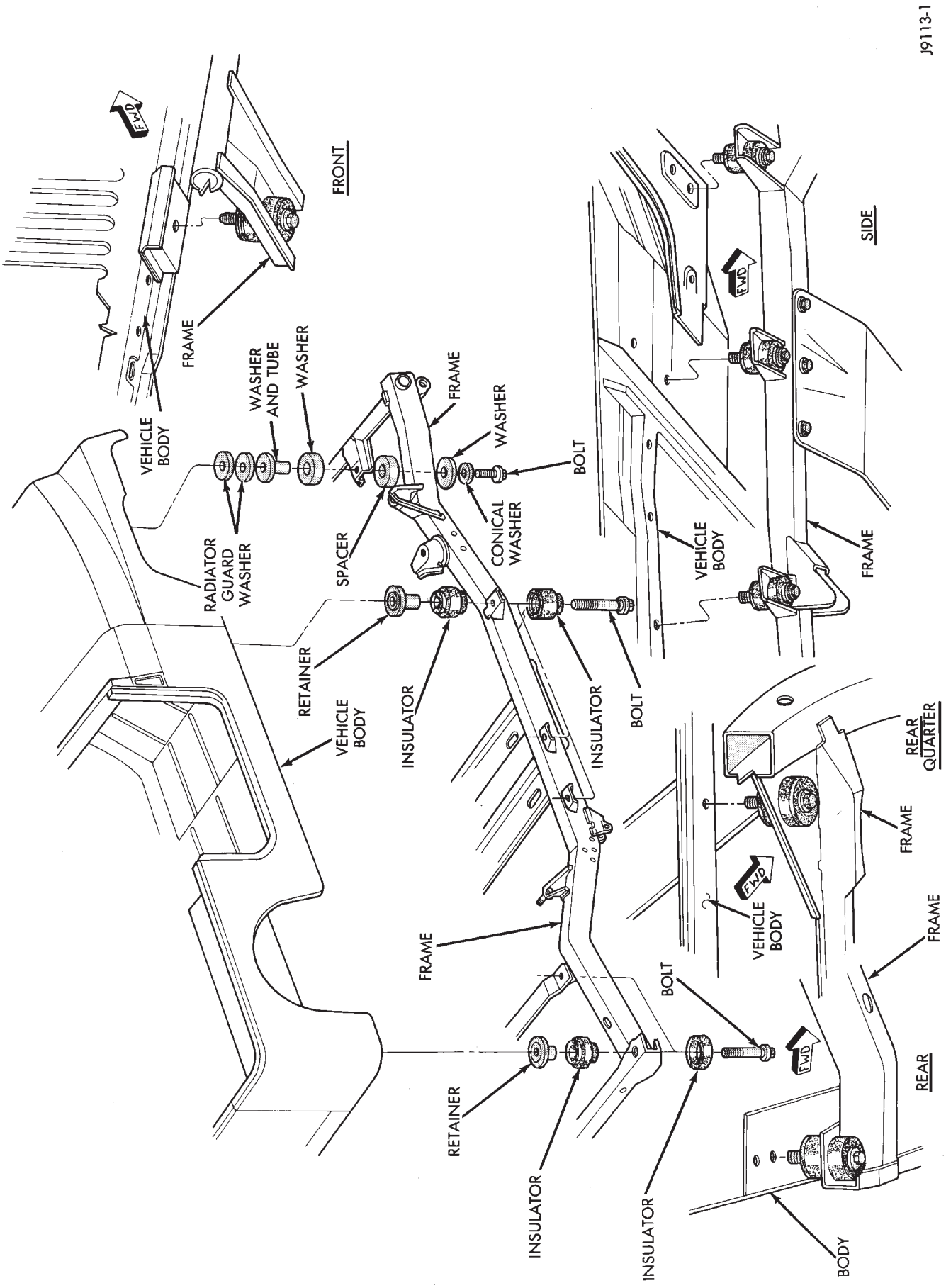

Fig. 2 Jeep® YJ Body & Frame

CONSTRUCTION

The frame is constructed of high-strength channel steel siderails and crossmembers. The crossmembers join the siderails and retain them in alignment in relation to each other. This provides resistance to frame twists and strains.

FRAME ALIGNMENT

INCORRECT ALIGNMENT

Incorrect frame alignment is usually a result of:

- collision impact, or
- the vehicle being operated with excessive loads, or
- loads not positioned in a properly distributed manner on the vehicle.

A mis-aligned frame will affect front axle and/or rear axle alignment. It can cause excessive wear and mechanical failures in the powertrain. Window glass cracks and door opening/closing problems. Vehicle performance can also be impaired.

RE-ALIGNMENT

With collision damage, it is important that the existence of any frame alignment damage be determined. If necessary, the frame should be correctly realigned. Refer to the reference dimensions listed on frame alignment dimension chart (Fig. 4).

FRAME INSPECTION/MEASUREMENTS

INSPECTION

Before proceeding with measurements, inspect all components for visible damage and other metal damage. Also, inspect all connections for loose and missing hardware.

All damaged areas must be repaired and/or the components replaced, as necessary.

MEASUREMENTS

Measure the frame for mis-alignment with the body attached to the frame. Figure 4 provides the alignment reference dimensions. The following information applies to all measurements.

(1) Place the vehicle on a level surface.

(2) If the vehicle is loaded, ensure that the vehicle weight plus the payload does not exceed the gross vehicle weight rating. Also, ensure that the load is distributed in the vehicle as evenly as possible.

(3) Measure the tire inflation pressures and adjust the pressure, if necessary.

HORIZONTAL OR DIAGONAL FRAME MEASUREMENTS

Determine the frame horizontal non-square deviation(s) according to the following procedure.

(1) Select several reference points along one frame siderail, preferably at the crossmember junctions.

(2) Transfer these reference points to the surface/floor with a plumb bob. Paper sheets can be attached to the surface below the reference points for better measurement accuracy.

(3) Locate the reference points on the other frame siderail and transfer them to the surface/floor with the same procedure as above.

(4) Move the vehicle away and measure between all the reference points diagonally from and parallel to the siderails (Fig. 5). The measurements should not differ by more than 6 mm (1/4 in).

(5) Measure the distance between the two front reference points and the distance between the two rear reference points. Divide each distance in half and indicate the two half-way points on the surface/floor. Designate the front point as “1” and the rear point as “2” (Fig. 5).

(6) Place a chalk-line between points 1 and 2 and “snap” the string.

(7) Determine how close the center line is to the diagonal intersection points A, B, C, D, E, and F in Figure 5.

(8) The reference marks on the surface/floor will provide an illustrated indication of the degree of frame misalignment.

(9) A reference point transferred from one frame siderail may be 3 mm (1/8 in) ahead or behind the reference point from the opposite siderail.

(10) Frame bow to the side should not exceed 3 mm per 2,540 mm (1/8 inch per 100 inches) in length.

(11) The overall width of the frame should not vary more than 3 mm (1/8 in) from reference point-to-reference point.

(12) Repeat steps (1) through (11) after straightening the frame to evaluate the effectiveness.

TWIST AND PARALLEL FRAME MEASUREMENTS

Determine the amount of frame twist and siderail deviation according to the following procedure.

(1) Mark the vertical measurement reference points under the frame siderails at 305-mm (12-in) intervals starting at the rear frame crossmember.

(2) Measure the vertical distance up from a level surface to each reference point located under the left and right frame siderails.

(3) The distance to a reference point under one frame siderail should be 3 mm (1/8 in) greater or less than the point under the opposite siderail.

(4) Plot the measured vertical distances to scale on a sheet of graph paper. Plot the distances so that the frame siderails are located adjacent to each other. Join the vertical distance points.

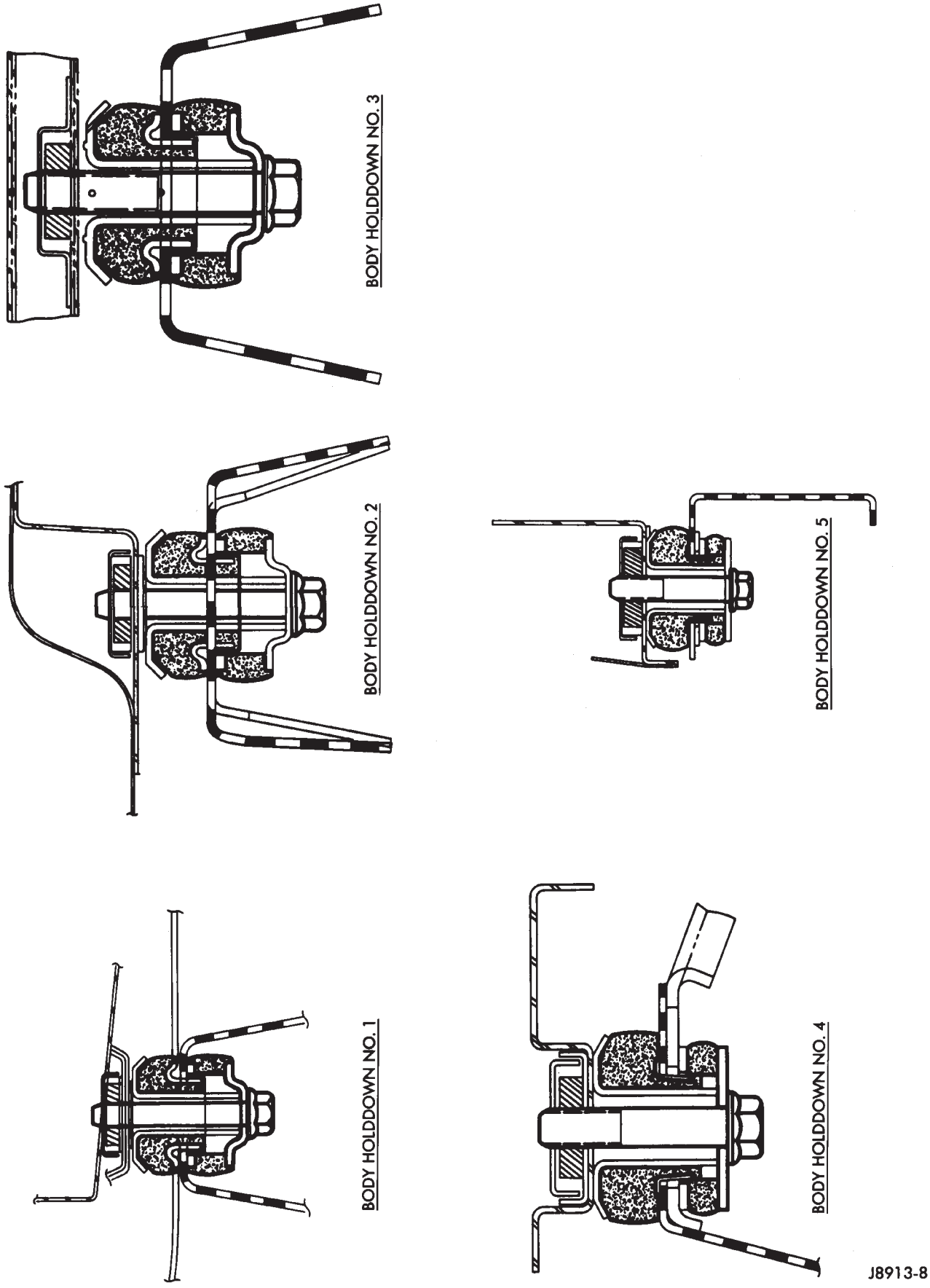

Fig. 3 Body HoldDowns—YJ Vehicles

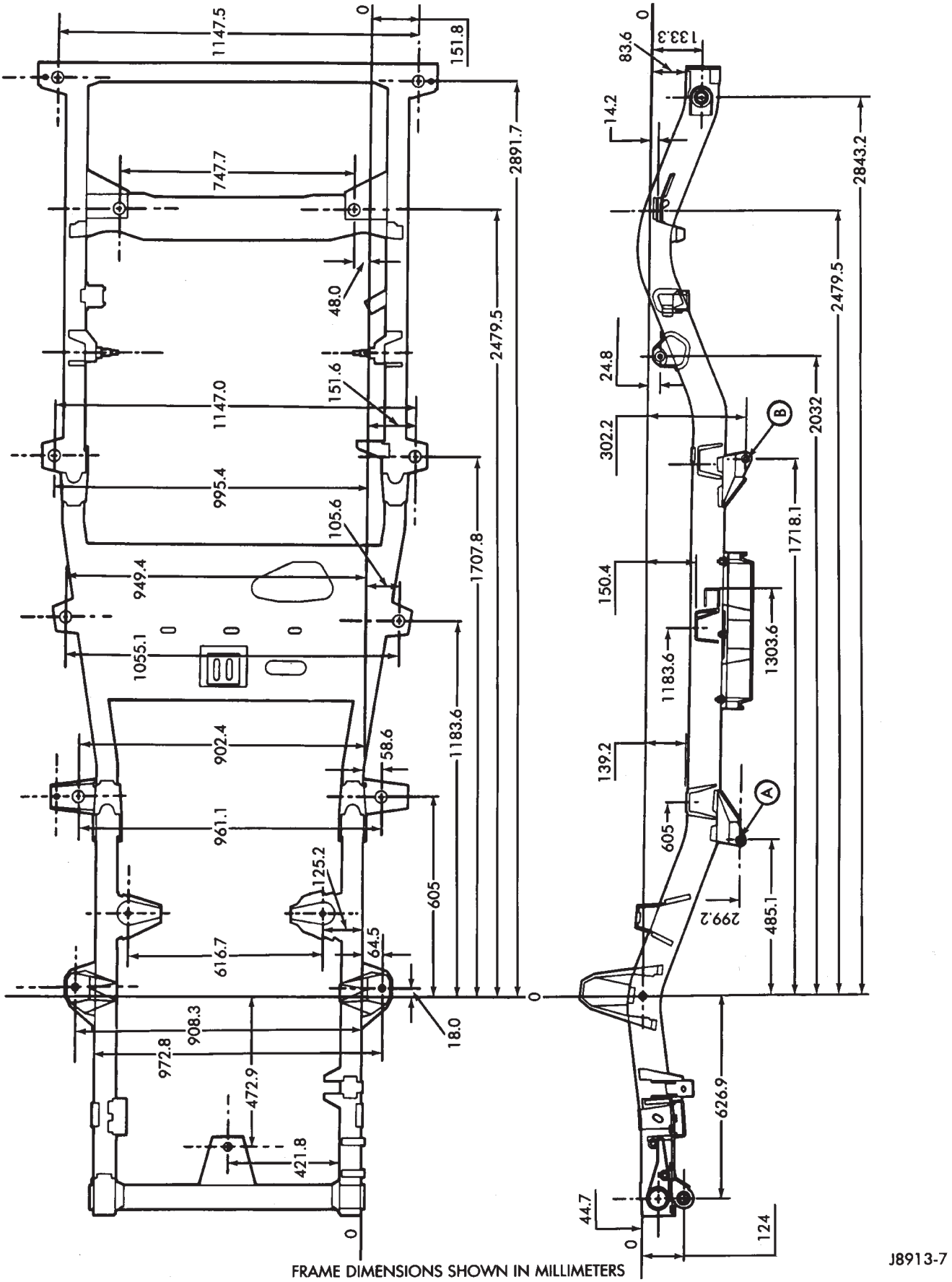

Fig. 4 Frame Alignment Dimensions—YJ Vehicles

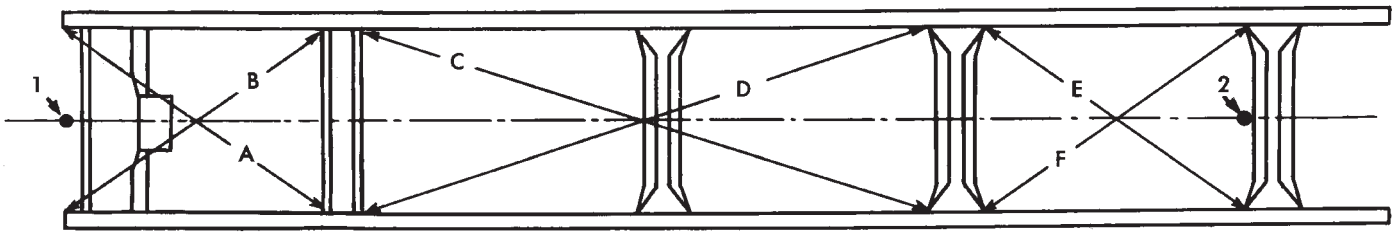

Fig. 5 Frame Alignment Reference Points—Typical

FRAME REPAIR SERVICE

When necessary, conventional vehicle frames that are bent or twisted can be straightened by application of heat. The temperature must not exceed 566°C/1050°F.

Damaged frame siderails, crossmembers, and brackets are repaired either by straightening or by replacement.

Welded joints between the frame siderails and crossmembers are not recommended.

FRAME STRAIGHTENING

A straightening repair process should be limited to frame components that are not severely damaged. The bolts, nuts and rivets should conform to the specifications as the original.

FRAME COMPONENT REPLACEMENT

An improperly straightened frame component will have harmful effects on the overall frame alignment.

FRAME COMPONENT REPAIRS

DRILLING HOLES

Holes **should not** be drilled in frame siderail flanges because this will severely reduce the frame strength. Holes drilled in the frame siderail vertical webs must be 38 mm (1 and 1/2 in) minimum from the top and bottom flanges.

Newly drilled holes should be located an acceptable distance away from any existing holes.

WELDING

It is recommended that electric welding equipment be used to weld frame siderails and crossmembers.

A damaged frame component should be closely examined for hairline cracks. Repair frame component cracks according to the following procedure.

(1) Drill a hole at each end of the crack with a 3-mm (1/8-in) diameter drill bit.

(2) "V-groove" the crack to allow good weld penetration.

(3) Weld the crack.

(4) Grind the weld surface area smooth and install a reinforcement section at the welded area.

The flanges on reinforcement channel should be less in width than the siderail flanges. Otherwise, longitudinal welds are very acceptable. Complete transverse welds should be avoided.

FRAME REPAIR HARDWARE

Bolts, nuts and rivets can be used to repair frames or to install a reinforcement section on the frame. When it is more practical to substitute a bolt for a rivet, install the next-larger-size diameter bolt to prevent the bolt from loosening.

Conical-type lockwashers are preferred over the split-ring type lockwashers. Normally, grade-5 bolts are adequate for frame repair. **Grade-3 bolts (or less) should not be used.** Tightening bolts/nuts with the correct torque is mandatory to adequately "lock" the bolt, lockwasher and nut together, and to prevent them from loosening.

YJ BUMPERS AND FRAME ATTACHED COMPONENTS

INDEX

SERVICE INFORMATION

In some cases, components in the following procedures either support, or are hidden by other components.

FRONT BUMPER

The YJ front bumper is a one-piece rail (Fig. 1). A front crossmember cover (Fig. 1) is also installed on all YJ vehicles.

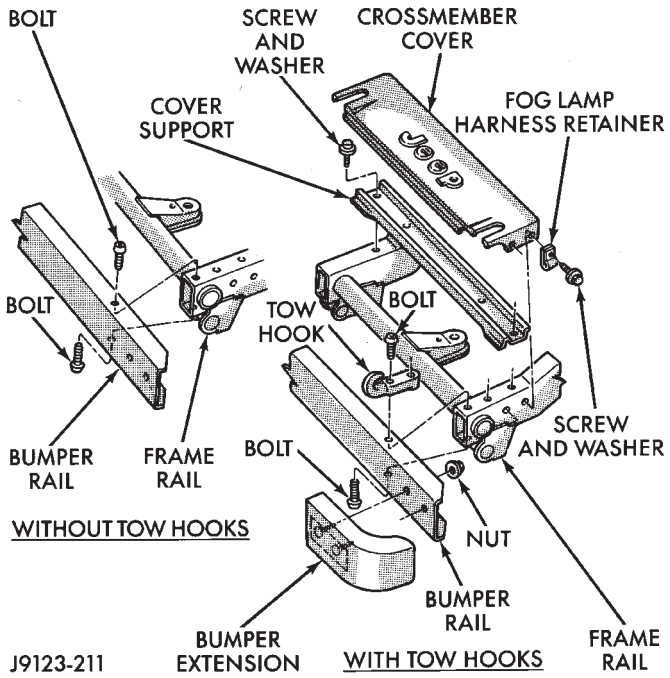

Fig. 1 Front Bumper Rail, Crossmember Cover & Tow Hooks

BUMPER REMOVAL

(1) Disconnect and remove the fog lamps, if equipped.

(2) Remove the nuts and bolts that retain the bumper extensions to the bumper rail and remove the extensions.

(3) Remove the nuts and bolts that attach the bumper rail/tow hooks to the frame rails.

(4) Remove the bumper rail from the frame rails.

BUMPER INSTALLATION

(1) Position the front bumper on the frame rails.

(2) Install the bolts and attach the front bumper rail (and tow hooks, if equipped) to the frame rails.

(3) Tighten the bolts to 102 N·m (75 ft-lbs) torque.

(4) Position the bumper extensions on the bumper rail and install the retaining bolts.

(5) Tighten the bolts to 104 N·m (77 ft-lbs) torque.

(6) Install the fog lamps, if equipped.

FRAME CROSSMEMBER COVER

REMOVAL

(1) Remove the screws that attach the crossmember cover and support to the frame rails.

(2) Remove the crossmember cover and support from the frame rails.

INSTALLATION

(1) Position the support and crossmember cover on the frame rails.

(2) Install the attaching screws.

(3) Tighten the screws to 8 N·m (72 in-lbs) torque.

TOW HOOKS

REMOVAL

(1) Remove the two bolts that attach the tow hook to the bumper rail and to the frame rail.

(2) Remove the tow hook.

INSTALLATION

(1) Position the tow hook on the bumper rail and frame rail.

(2) Install the attaching bolts.

(3) Tighten the bolts to 102 N·m (75 ft-lbs) torque.

GENERATOR SPLASH SHIELD

REMOVAL

(1) Remove the shield retaining nut and washer (Fig. 2) from the engine oil pan stud (2.5L engines only).

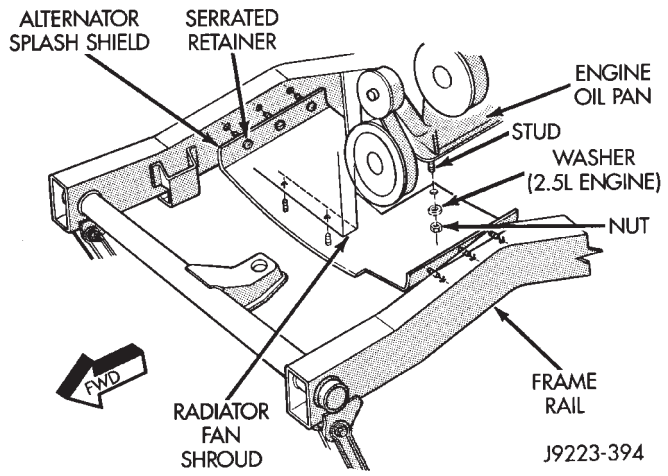

Fig. 2 Generator Splash Shield

(2) Pry the serrated retainers from the frame rail holes at each side of the vehicle.

(3) Pry the serrated retainers from the fan shroud holes (Fig. 2).

(4) Remove the shield from the vehicle.

INSTALLATION

(1) Position the generator splash shield at the fan shroud and frame rails.

(2) Force the serrated retainers into the fan shroud holes.

(3) Force the serrated retainers into the frame rail holes at each side of the vehicle.

ENGINE FRONT SUPPORT CUSHION

REMOVAL

(1) Raise and support the engine.

(2) Remove the nut and bolt that attach the engine support cushion to the engine support bracket (Figs. 3 and 4).

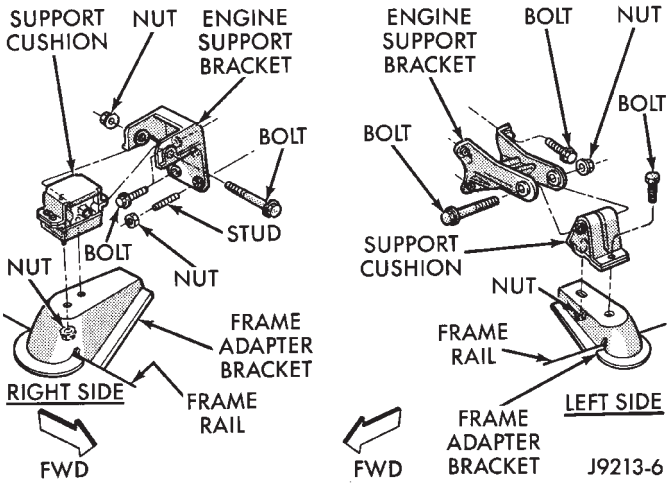

Fig. 3 Engine Support Cushion—2.5L Engine

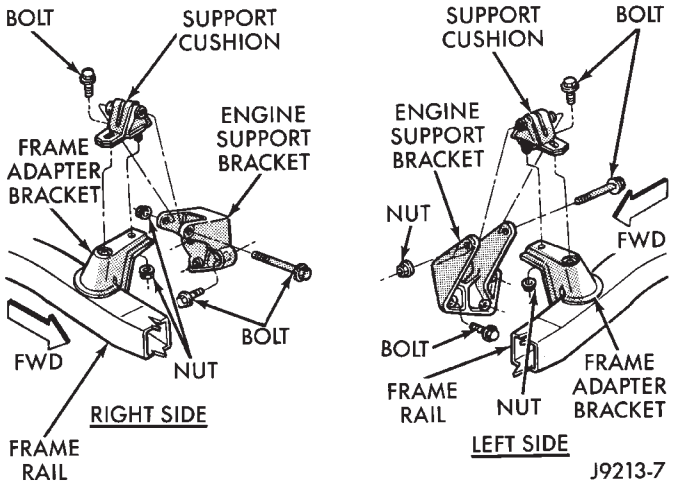

Fig. 4 Engine Support Cushion—4.0L Engine

(3) Remove the nut and bolt that attach the support cushion to the frame adapter bracket.

(4) Remove the support cushion from the frame adapter bracket.

INSTALLATION

(1) Position the support cushion on the frame adapter bracket.

(2) Install the bolt and nut that attach the engine support cushion to the frame adapter bracket. Tighten the bolt and nut to 49 N·m (36 ft-lbs) torque.

(3) Install the bolt and nut that attach the engine support cushion to the engine support bracket. Tighten the nut to 65 N·m (48 ft-lbs) torque.

(4) Remove the support and lower the engine.

TRANSFER CASE SKID PLATE

REMOVAL

(1) Raise and support the transmission.

(2) Remove the nuts that attach the transmission support cushion and torque bracket to the skid plate (Fig. 5).

(3) Separate the transmission support cushion from the skid plate.

(4) Remove the nuts and bolts that attach the skid plate to the frame.

(5) Remove the skid plate from the vehicle.

INSTALLATION

(1) Position the skid plate at the frame and transmission support cushion.

(2) Attach the skid plate to the frame.

(3) Install the nuts that attach the transmission support cushion and torque bracket to the skid plate. Tighten the nuts to 56 N·m (41 ft-lbs) torque.

(4) Remove the support and lower the transmission.

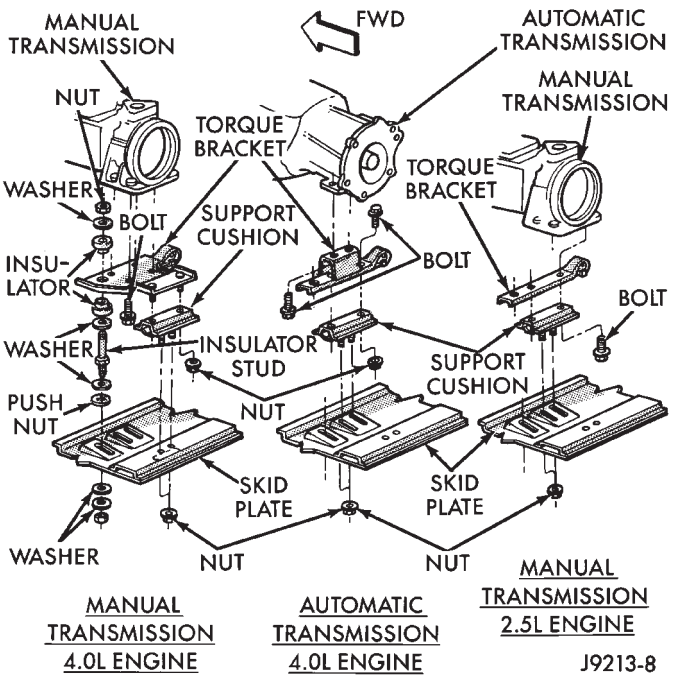

Fig. 5 Transfer Case Skid Plate

FUEL TANK SKID PLATE

REMOVAL

(1) Position a support under the fuel tank skid plate.

(2) Remove the nuts that attach the skid plate to the straps and to the crossmembers (Fig. 6).

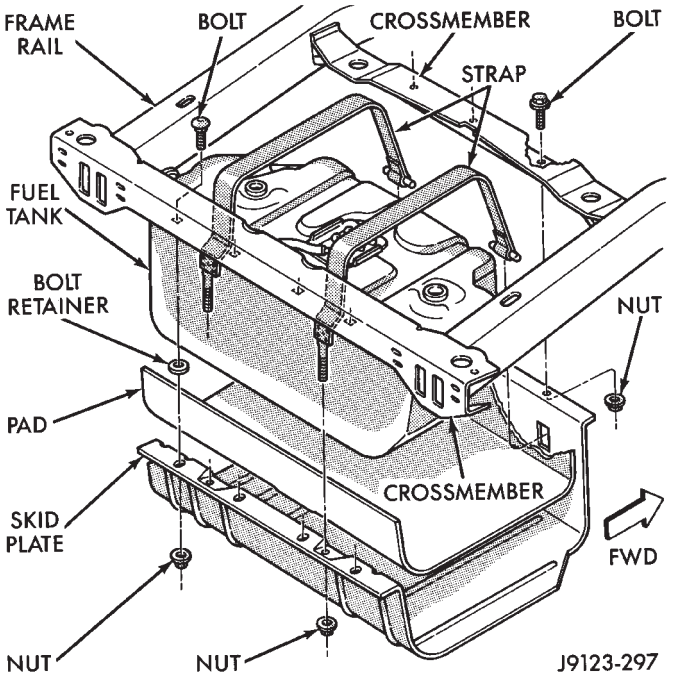

Fig. 6 Fuel Tank Skid Plate

(3) Separate the fuel tank strap from the skid plate.

(4) Support the fuel tank and remove the skid plate and the pad from the vehicle.

INSTALLATION

(1) Attach the skid plate to the fuel tank strap.

(2) Position and support the pad and skid plate under the fuel tank.

(3) Install the nuts to attach the skid plate to the straps and to the frame crossmembers. Tighten the fuel tank strap nuts to 5 N·m (40 in-lbs) torque. Tighten the skid plate-to-crossmember nuts with 16 N·m (138 in-lbs) torque.

(4) Remove the support from under the skid plate.

FUEL AND BRAKE FLUID TUBE RETAINER CLIP

REMOVAL

(1) Remove the fuel/brake fluid tubes from the retainer clip grooves (Fig. 7).

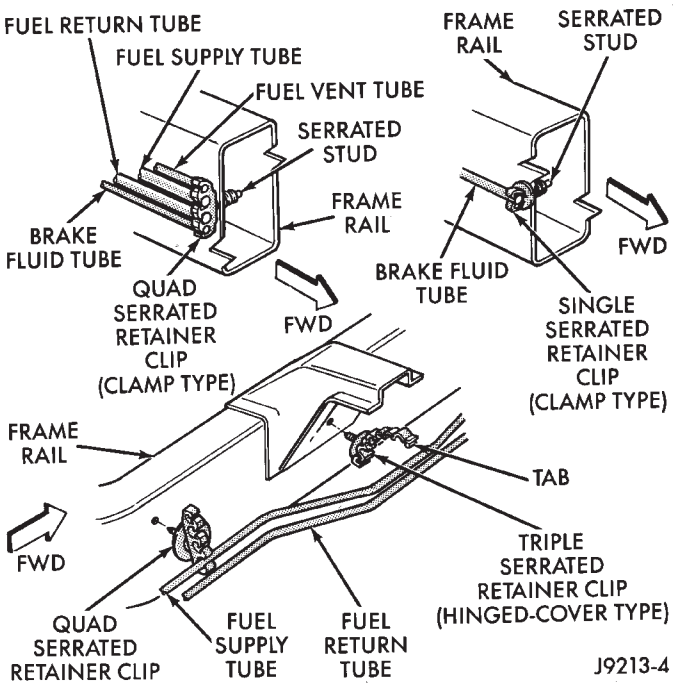

Fig. 7 Fuel & Brake Tube Serrated Retainer Clips—Typical

(2) Pry the serrated retainer clip outward and remove it from the frame rail hole.

INSTALLATION

(1) Position the serrated retainer clip at the frame rail hole.

(2) Force the serrated retainer clip inward against the frame rail.

(3) Insert the fuel/brake fluid tubes in the retainer clip grooves and press inward to seat them.

MUFFLER/TAILPIPE HANGER BRACKET

REMOVAL

(1) As applicable, detach the muffler or tailpipe hanger from the insulator (Fig. 8). Remove the insulator from the hanger bracket.

(2) As applicable, remove the nuts and bolts, or screws that attach the hanger bracket to the frame rail.

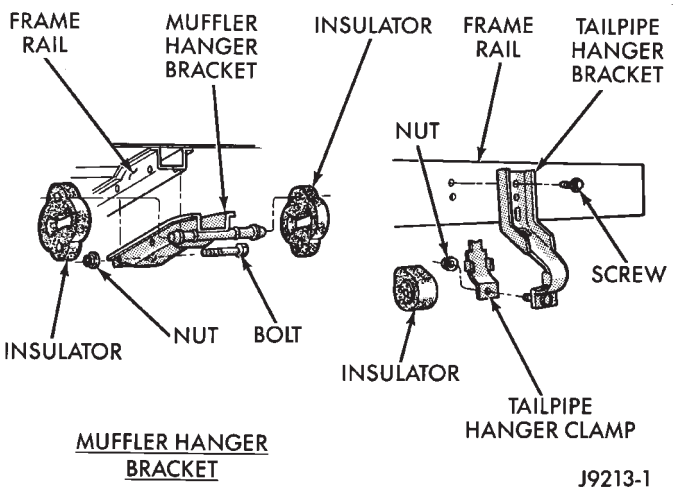

Fig. 8 Muffler/Tailpipe Hanger Bracket

(3) Remove the hanger bracket from the frame rail.

INSTALLATION

(1) Position the hanger bracket on the frame rail.

(2) As applicable, install the nuts and bolts, or screws that attach the hanger bracket to the frame rail. Tighten the nuts/screws securely.

(3) Remove the insulator from the hanger bracket.

(4) As applicable, attach the muffler or tailpipe hanger to the insulator.

MUFFLER AND TAILPIPE HEAT SHIELDS

REMOVAL

(1) If necessary, remove the muffler and tailpipe for access.

(2) Remove the retaining screws and the heat shields from the support bracket (Fig. 9).

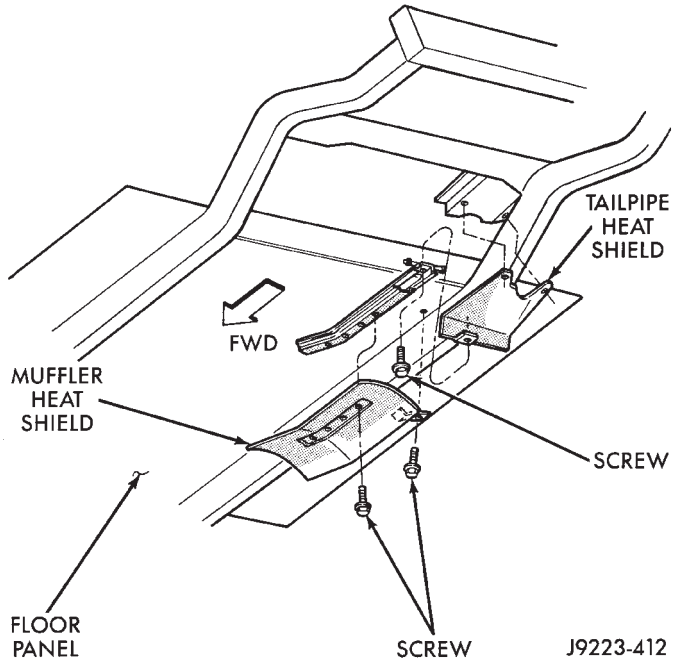

Fig. 9 Muffler & Tailpipe Heat Shield

INSTALLATION

(1) Position the heat shields on the support bracket and install screws. Tighten the screws to 5 N·m (in 44 in-lbs) torque.

(2) If removed, install the muffler and tailpipe.

FUEL FILTER SHIELD AND BRACKET

REMOVAL

(1) Remove the screws that attach the fuel filter shield to the frame rail (Figs. 10 and 11).

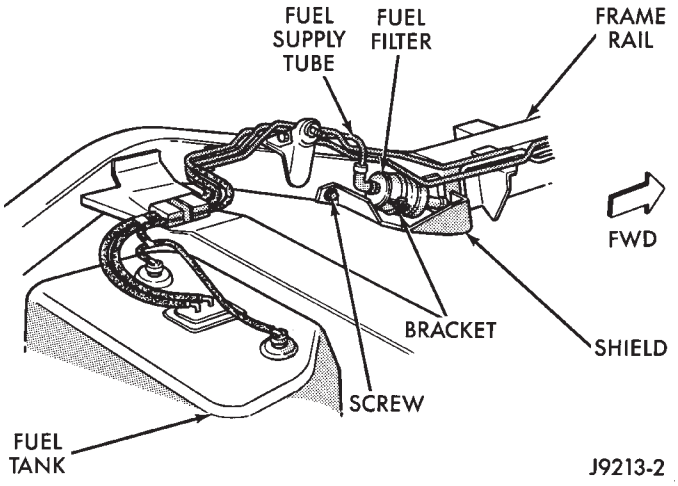

Fig. 10 Fuel Filter Shield & Bracket—Installed

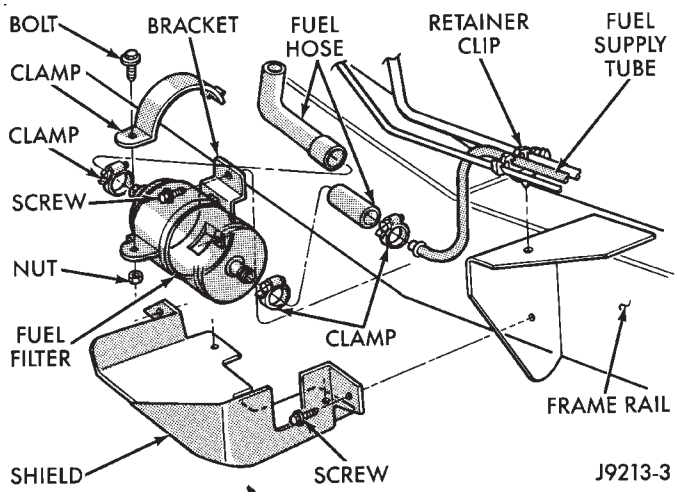

Fig. 11 Fuel Filter Shield & Bracket—Removed

(2) Remove the shield from the frame rail (Fig. 11).

(3) Remove the nut and bolt from the fuel filter bracket clamp.

(4) Remove the clamp and the fuel filter from the bracket.

(5) Remove the screws that attach the bracket to the frame rail.

(6) Remove the bracket from the frame rail.

INSTALLATION

(1) Position the fuel filter bracket on the frame rail.

(2) Install the screws that attach the bracket to the frame rail. Tighten the screws to 42 N·m (31 ft-lbs) torque.

(3) Install the fuel filter in the bracket.

(4) Position the clamp on the bracket and install bolt and nut. Tighten the nut to 8 N·m (72 in-lbs) torque.

(5) Position the fuel filter shield from the frame rail.

(6) Install the screws that attach the fuel filter shield to the frame rail. Tighten the screws to 42 N·m (31 ft-lbs) torque.

REAR JOUNCE BUMPER

REMOVAL

(1) Remove the screws that attach the jounce bumper to the frame rail (Fig. 12).

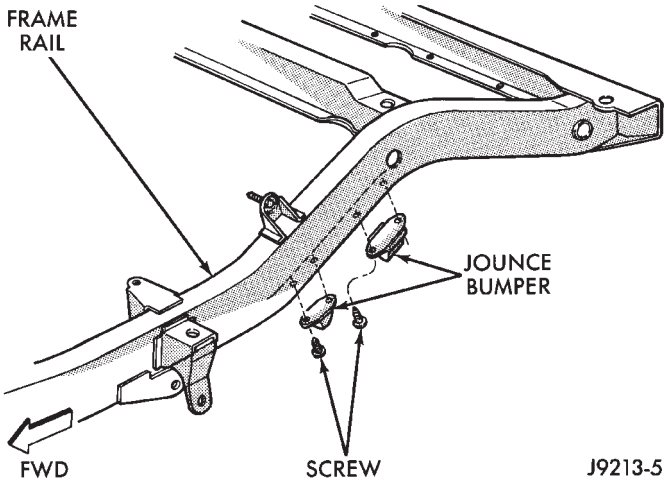

Fig. 12 Rear Jounce Bumpers

(2) Remove the jounce bumper from the frame rail.

INSTALLATION

(1) Position the jounce bumper on the frame rail.

(2) Install the screws that attach the jounce bumper to the frame rail. Tighten the screws to 20 N·m (15 ft-lbs) torque.

REAR BUMPER

When equipped with a spare tire carrier attached to the tailgate, a rear bumperette is attached to the frame (Figs. 13 and 14).

BUMPERETTE AND DRAW BAR REMOVAL

(1) Remove the bumperette and draw bar retaining nuts, bolts and washers from the frame rear crossmember (Figs. 14 and 15).

(2) Remove the bumperettes, spacers, brackets and draw bar from the rear crossmember.

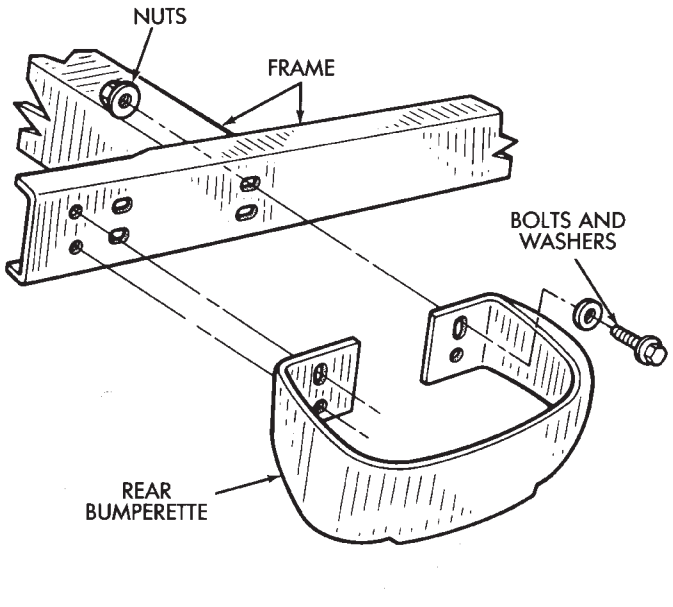

Fig. 13 Rear Bumperette

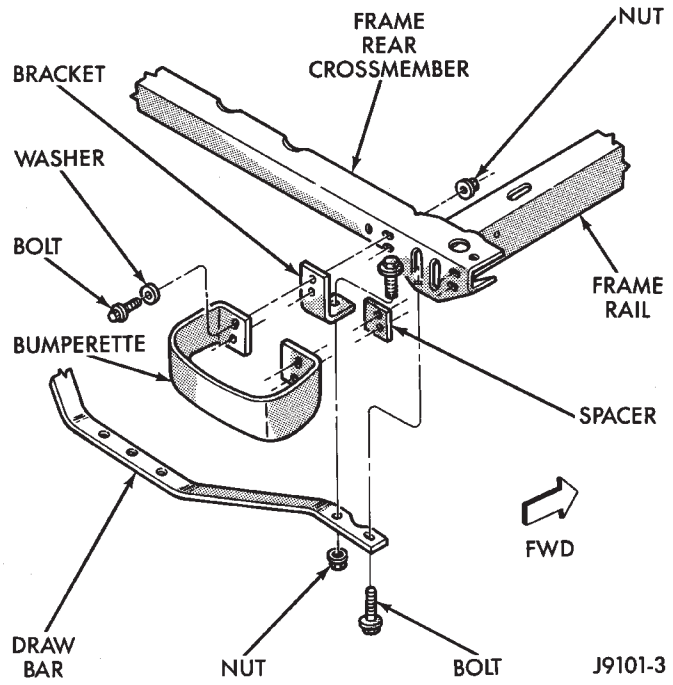

Fig. 14 Rear Bumperette & Draw Bar

INSTALLATION

(1) Position the spacers, brackets, draw bar and bumperettes on the rear crossmember.

(2) Install the retaining nuts, bolts and washers in the frame rear crossmember. Tighten the retaining nuts and bolts securely.

BODY

REMOVAL

The body is attached to the vehicle frame with bolts (Fig. 15). The body can be removed for repair, service access, or replacement, if necessary.

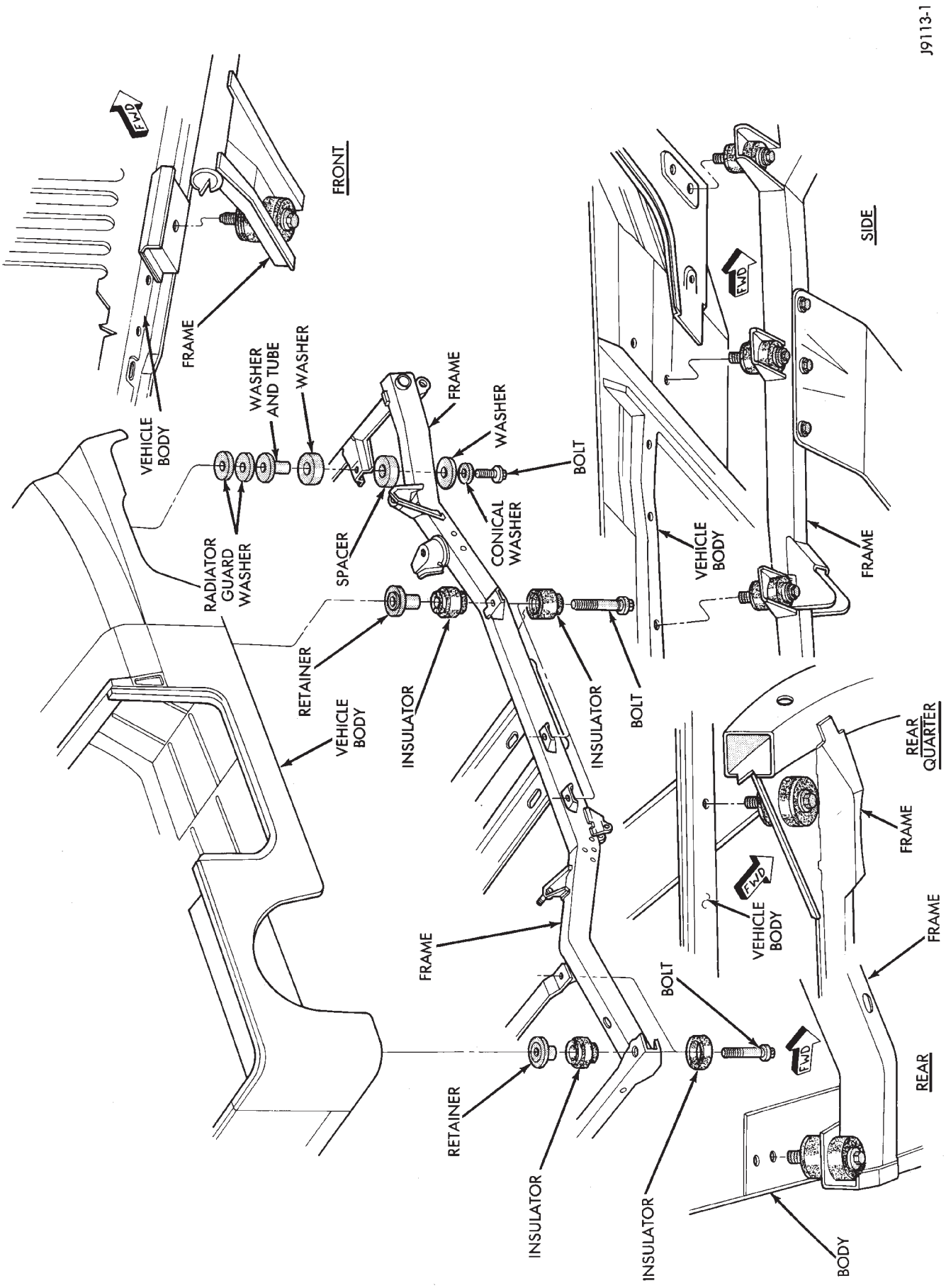

Fig. 15 Body Removal/Installation

(1) Disconnect the battery negative cable.

(2) Disconnect all wire harness connectors that connect body wire harnesses to the frame wire harnesses.

(3) Loosen the clamps and disconnect the fuel hoses from the filler nozzle (Fig. 16).

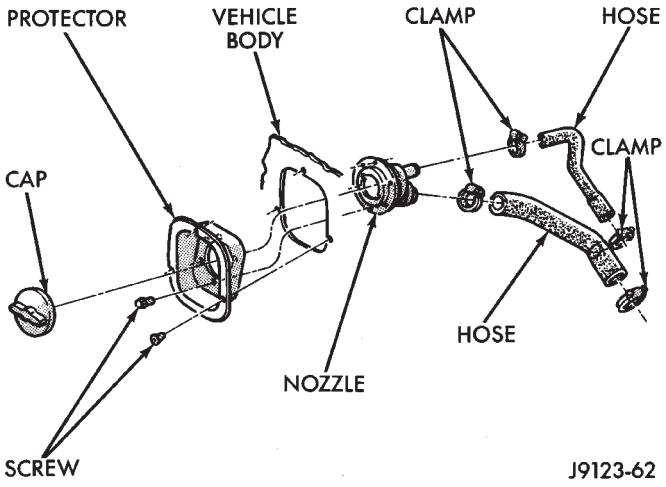

Fig. 16 Fuel Hoses & Clamps

(4) Disconnect the parking brake cable.

(5) Support the exhaust system and disconnect the support hangers.

(6) Disconnect all suspension components from the body.

(7) Disconnect all drive train components from the body.

(8) Disconnect all steering components from the body.

(9) Disconnect all engine control components from the body.

(10) Disconnect all cooling system components from the body.

(11) Disconnect all brake system components from the body.

(12) Disconnect all remaining component connections between the body and the frame.

(13) Remove bolts from the frame and body. The bolts are accessible from the underside of the frame at the following locations:

- at the rear of each frame rail;
- at each rear quarter crossmember wedge;
- at the side of each frame rail and
- at the center of the front crossmember.

(14) Identify, mark and retain the attaching hardware for installation reference.

(15) Remove the body from the frame.

INSTALLATION

(1) Position body on the frame.

(2) Install the body-to-frame attaching hardware.

(3) Connect the exhaust hangers, fuel tank hoses and parking brake cable.

(4) Connect all the wire harness connectors.

(5) Connect all disconnected vehicle components to the body. Refer to the applicable procedures within this manual.

(6) Connect the battery negative cable.