FRAME AND BUMPERS

CONTENTS

FRAME

GENERAL INFORMATION

Jeep® Grand Cherokee vehicles do not have a conventional frame (Fig. 1). They are constructed as a unitized body and frame. Jeep® unibodies are constructed from special high-strength steel and coated metals. This process reduces weight and provides strength to withstand the forces applied against structural members. The structural members provide a unibody that has great structural strength.

A vehicle is designed within a three dimensional grid partitioned into 100 mm (3.92 in.) cubes. The lines that make the grid run in three planes defined as X, Y and Z (Fig 1.). The X-plane extends from the front to the rear of the vehicle. The Y-plane extends from 50 mm (2.00 in.) below the frame rails upward (Datum). The Z-plane extends from the center line (C/L) of the vehicle outward. The Zero point of the grid is located 50 mm (2.00 in.) below the front Principle Location Points (PLPs) at the center line of the vehicle. Most Z-plane dimensions are symmetrical to the center line.

COLLISION DAMAGE

DAMAGE DIAGNOSIS

A unibody reacts differently to impact than a vehicle with a conventional frame. While damage at the point of impact is noticed, the extent of hidden damage must be diagnosed to expose it.

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

- (1) Damage at immediate point of impact—primary damage.
- (2) Other body damage—secondary damage.
- (3) Damage to exterior trim and other attached components.
- (4) Damage to mechanical components.

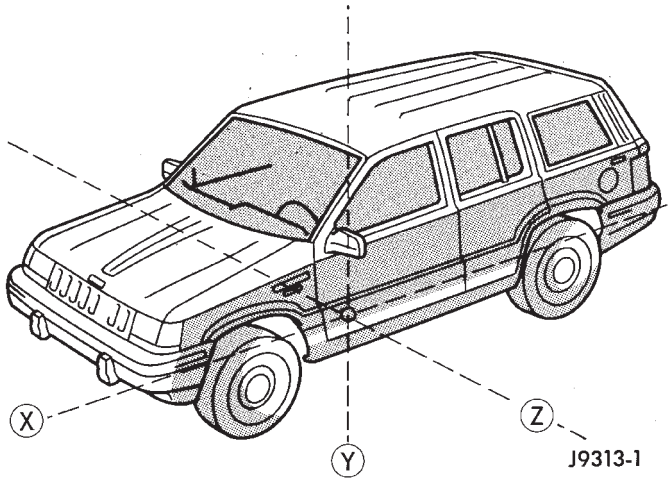

Fig. 1 Grand Cherokee

- (5) Interior trim and accessory damage.

DAMAGE REPAIR

A logical approach to damage repair must be used. Usually, the repairs are done in the reverse order of consequence.

Also, when there is damage to a unibody, the critical alignment points must be returned to the manufacturer's specifications (Figs. 2 and 3). This entails:

- Accurate measurement
- Repetitive measurement
- Re-check of measurements.

Collision damage repair can be done right the first time:

- If the fundamental steps for damage repair are correctly followed
- If the basic structural details of unibody construction are correctly considered.

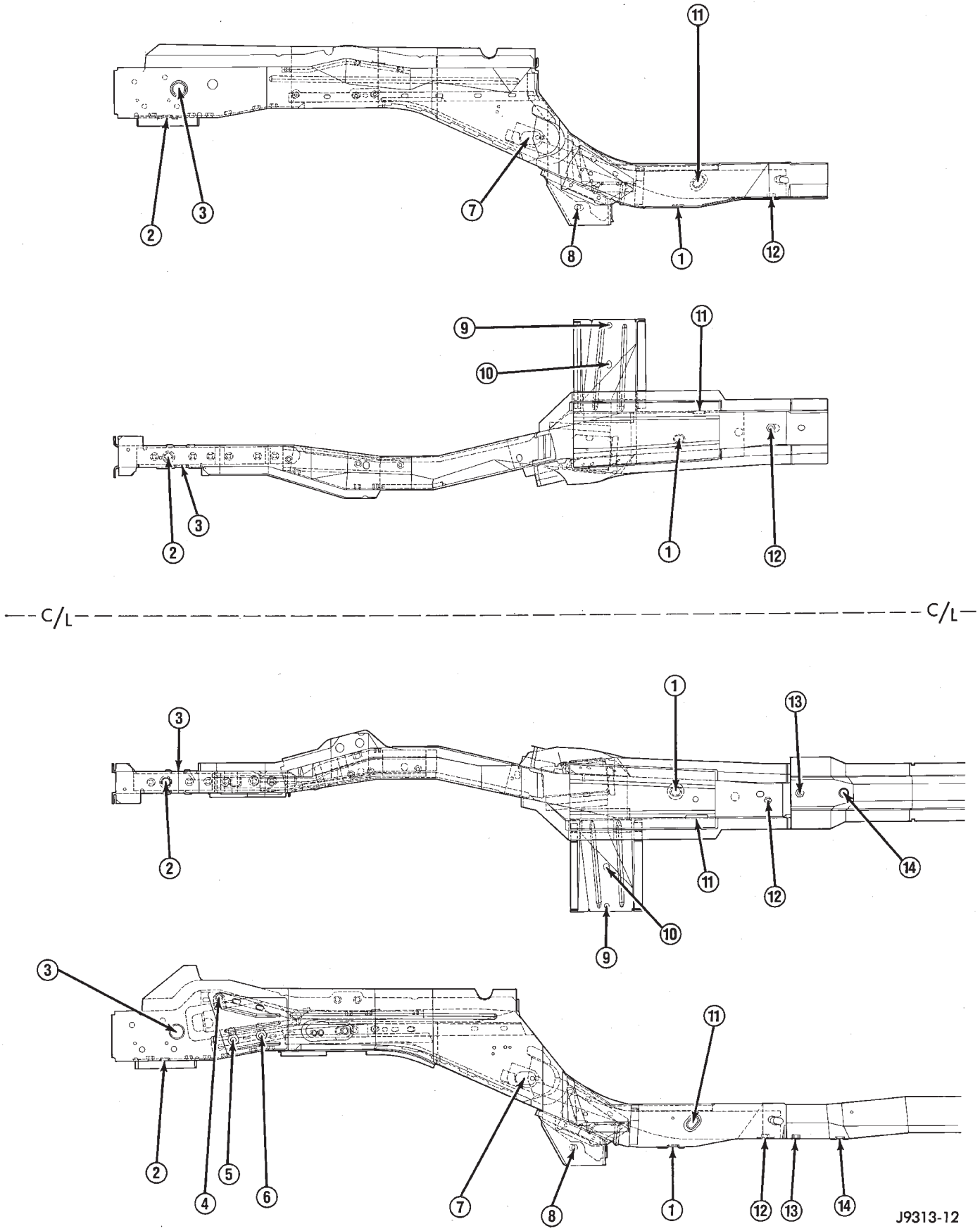

Fig. 2 Frame Dimension Locations—Front

Location	X from ZERO	Y from DATUM	Z from C/L ♦
1	0	50 mm (2.00 in.)	420 mm (16.8 in.)
2	-1280 mm (-51.2 in.)	280 mm (11.2 in.)	385 mm (15.4 in.)
3	-1250 mm (-50.0 in.)	350 mm (14.0 in.)	413 mm (16.5 in.)
4	-1144 mm (-45.8 in.)	434 mm (17.4 in.)	N/A
5	-1107 mm (-44.3 in.)	326 mm (13.0 in.)	N/A
6	-1037 mm (-41.5 in.)	337 mm (13.5 in.)	N/A
7	- 370 mm (-14.8 in.)	222 mm (8.9 in.)	N/A
8	- 249 mm (- 9.9 in.)	49 mm (1.9 in.)	N/A
9	- 190 mm (- 7.6 in.)	110 mm (4.4 in.)	706 mm (28.2 in.)
10	- 190 mm (- 7.6 in.)	110 mm (4.4 in.)	606 mm (24.2 in.)
11	50 mm (2.0 in.)	108 mm (4.3 in.)	489 mm (19.6 in.)
12	232 mm (9.3 in.)	70 mm (2.8 in.)	444 mm (17.8 in.)
13	308 mm (12.3 in.)	70 mm (2.8 in.)	444 mm (17.8 in.)
14	420 mm (16.8 in.)	70 mm (2.8 in.)	444 mm (17.8 in.)
15	900 mm (36.0 in.)	84 mm (3.4 in.)	444 mm (17.8 in.)
16	1128 mm (45.1 in.)	129 mm (5.1 in.)	N/A
17	1350 mm (54.0 in.)	82 mm (3.3 in.)	444 mm (17.8 in.)
18	1505 mm (60.2 in.)	50 mm (2.0 in.)	444 mm (17.8 in.)
19	1635 mm (65.4 in.)	189 mm (7.6 in.)	N/A
20	1933 mm (77.3 in.)	280 mm (11.2 in.)	518 mm (20.7 in.)
21	2064 mm (82.6 in.)	230 mm (9.2 in.)	444 mm (17.8 in.)
22	2272 mm (90.9 in.)	340 mm (13.6 in.)	570 mm (22.8 in.)
23	2314 mm (92.6 in.)	267 mm (10.7 in.)	464 mm (18.6 in.)
24	2463 mm (98.5 in.)	295 mm (11.8 in.)	495 mm (19.8 in.)
25	2515 mm (100.6 in.)	267 mm (10.7 in.)	464 mm (18.6 in.)
26	2250 mm (90.0 in.)	N/A	200 mm (8.0 in.)
27	2597 mm (103.9 in.)	N/A	200 mm (8.0 in.)
28	2710 mm (108.4 in.)	N/A	170 mm (6.8 in.)

N/A = Not Applicable
C/L = Center Line
* = Measure to C/L of rail.
Locations 1, 2, 3, 14, 15, and 25 are Principal Location Points (PLP).

Zero = Point of X, Y and Z origin.
Datum = 50 mm below frame rails.
♦ = Measures symmetrical to C/L

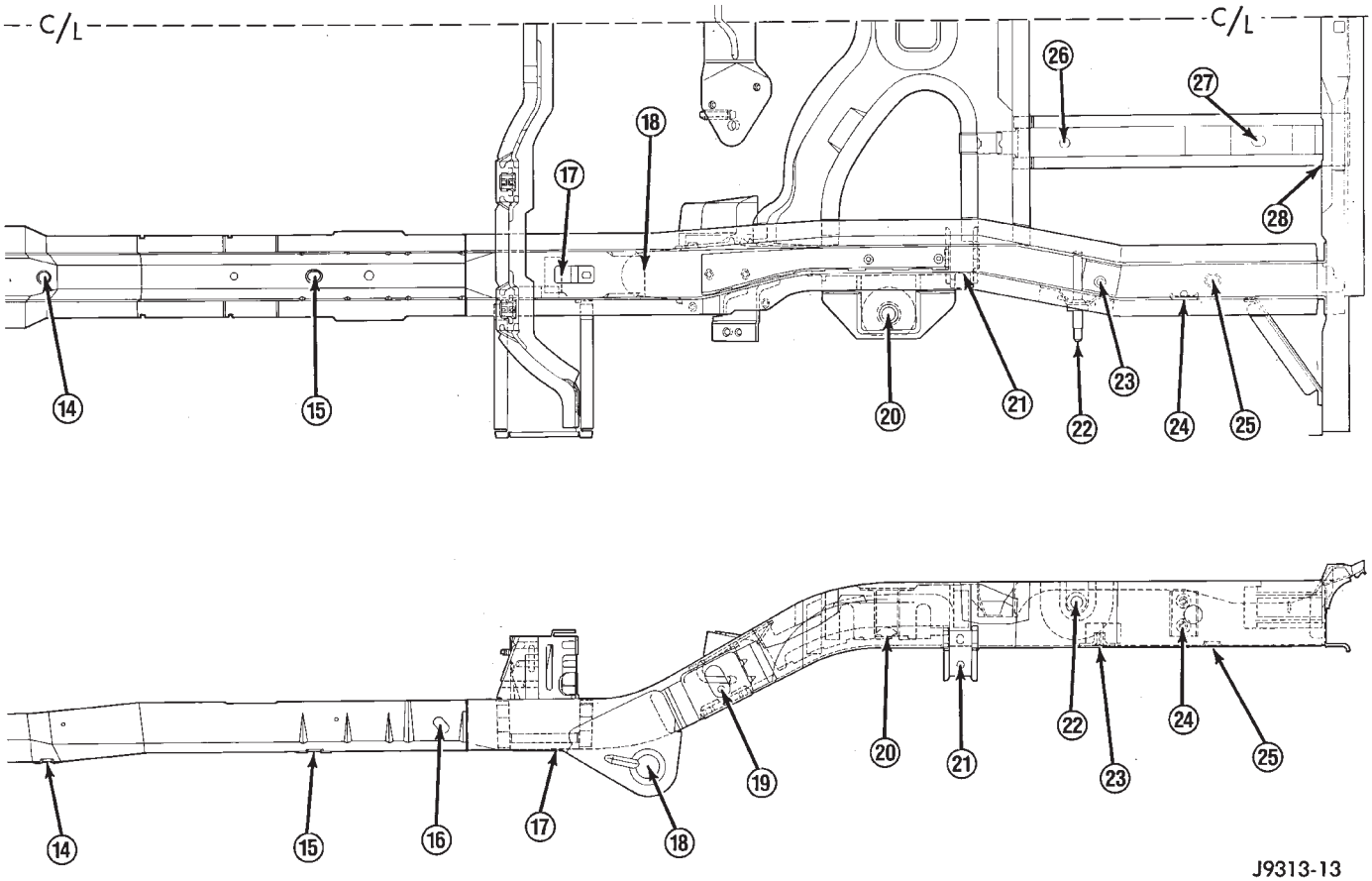

Fig. 3 Frame Dimension Locations—Rear

BUMPERS

INDEX

FRONT BUMPER/FASCIA

GENERAL INFORMATION

The Grand Cherokee front bumper is actually a bumper fascia incorporated with a lower welded crossmember. The lower crossmember is a fixed welded structure. To replace the crossmember a frame machine should be used to correctly align

the crossmember to the unibody.

REMOVAL

(1) Remove 3 grille screws at grille opening reinforcement (GOR) (Fig. 1).

(2) Unsnap lower clips at grille. Remove grille from (GOR).

(3) Remove turn signals, side markers and headlamps. Refer to Group 8L, Lamps for service information.

(4) Remove the 6 retainers at the front fascia (Fig. 2).

(5) Remove the 3 plastic rivets at each front wheel well (Fig. 3).

(6) Slide the fascia off of the retainer pegs at the side of the fender attach brackets. Using a small screwdriver, pull up on locating tangs under turn signal mounting location.

(7) Remove the fascia from the vehicle (Fig. 2).

Reverse removal procedure for installation.

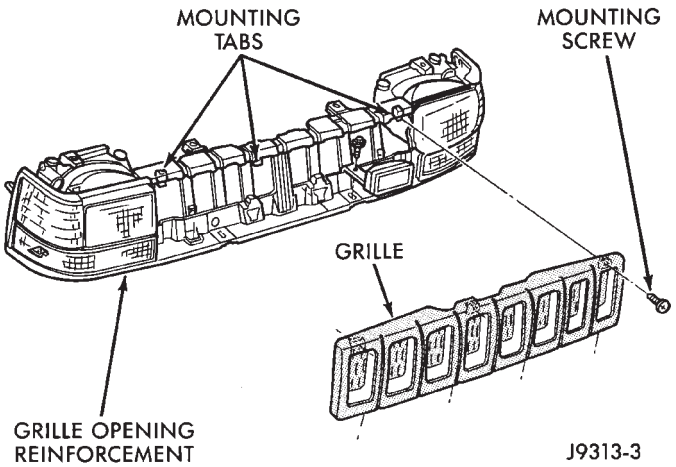

Fig. 1 Grille Removal

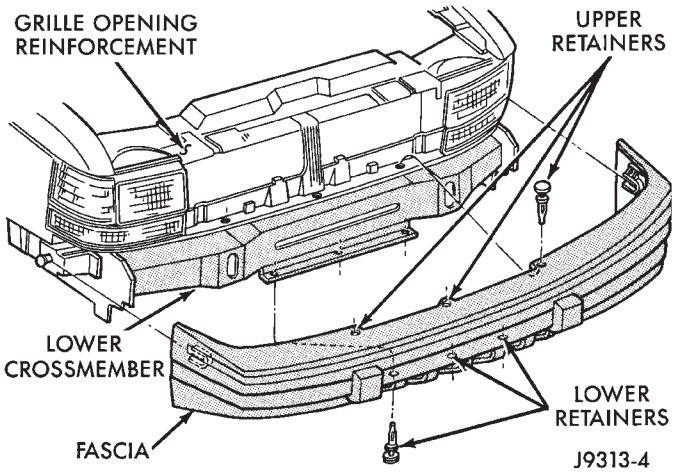

Fig. 2 Lower Fascia Removal

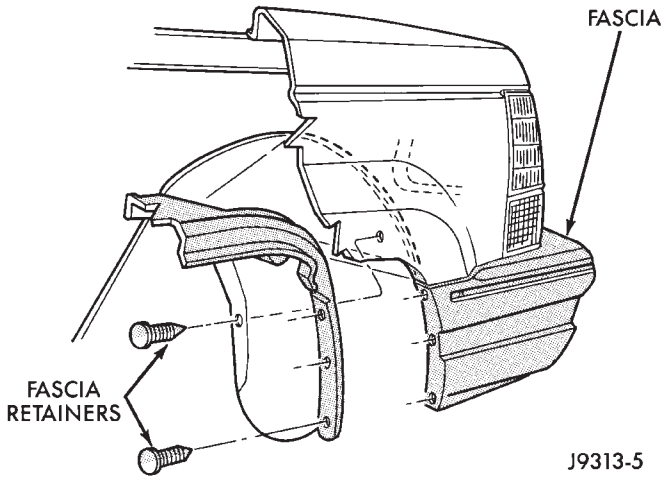

Fig. 3 Wheel Well Retainers

FRONT TOW HOOKS

REMOVAL

(1) Remove the nuts and bolts that attach the tow hooks to the lower crossmember (Fig. 4).

(2) Remove the tow hooks from the lower crossmember (Fig. 4).

INSTALLATION

(1) Position the tow hooks at the lower crossmember. Install the bolts and nuts that attach tow hooks (Fig. 4). Tighten the retaining nuts to 100 N●m (74 ft-lbs) torque.

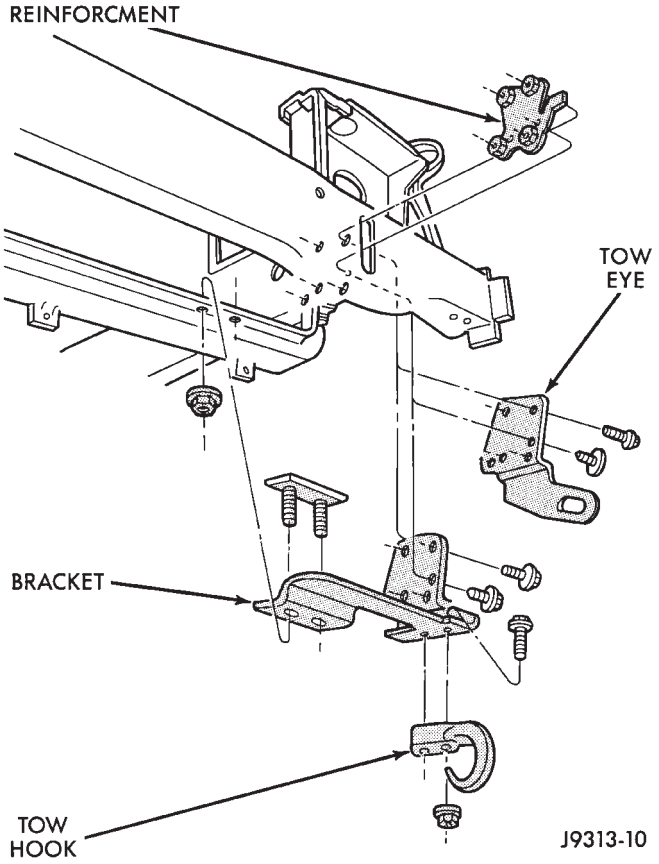

Fig. 4 Tow Hook Removal

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 2 push-in retainers at each side rear wheel well.

(5) Remove the bolts that attach the bumper support brackets to the rear rails (Fig. 5).

(6) Slide the bumper beam/fascia off of the retainer pegs on the side of the lower quarter panel.

(7) Remove the beam/fascia from the vehicle.

(8) Remove the bumper support brackets from the bumper (Fig. 6).

(9) Remove the upper scuff pad from the bumper fascia by squeezing fasteners and pushing through slots.(Fig. 6).

(10) Remove the 4 lower retainers from the bumper fascia (Fig. 6).

(11) Remove the bumper fascia from the bumper.

INSTALLATION

(1) Install brackets onto bumper beam.

(2) Install beam/brackets onto vehicle rails finger-tight (Fig. 6).

(3) Install fascia onto bumper assembly (Fig. 6).

(4) Check gaps and fit. Adjust as necessary. Tighten bolts to 56 N●m (41 ft-lbs).

(5) Install scuff pad (Fig. 6).

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

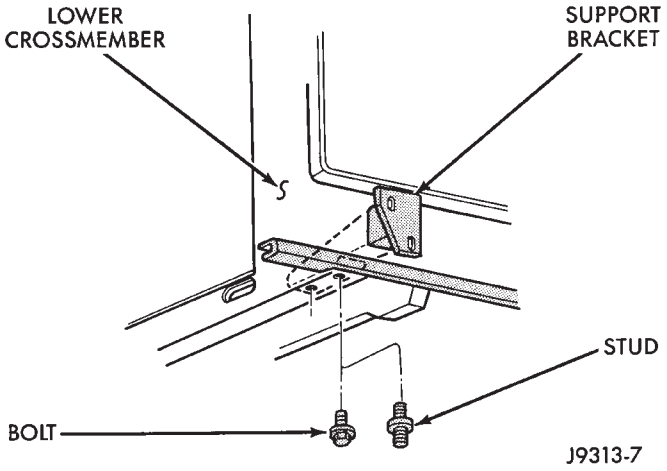

Fig. 5 Bumper Support Bracket

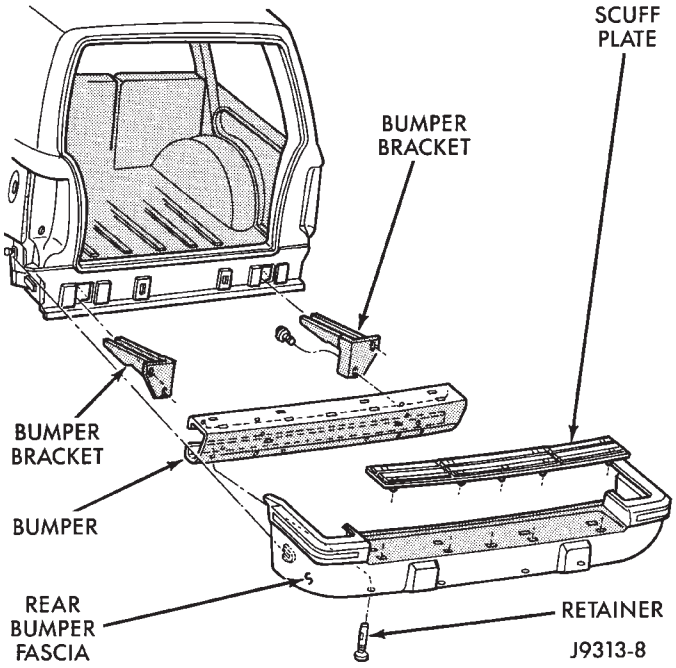

Fig. 6 Bumper Removal

REAR BUMPER FASCIA

REMOVAL

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

(2) Raise and support the rear of the vehicle.
(3) Remove the upper scuff pad from fascia (Fig. 6).
(4) Remove the 4 lower retainers from fascia (Fig. 6).
(5) Remove the 2 push-in retainers located at the rear wheel well on each side.
(6) Remove the fascia from the bumper.
For installation, reverse removal procedure.

REAR TOW HOOK

REMOVAL

(1) Remove the nuts and bolts that attach the tow hook to the lower crossmember (Fig. 7).
(2) Remove the tow hook from the lower crossmember (Fig. 7).

INSTALLATION

(1) Position the tow hook at the lower crossmember. Install the bolts and nuts that attach tow hook (Fig. 7). Tighten the retaining nuts to 100 N●m (74 ft-lbs) torque.

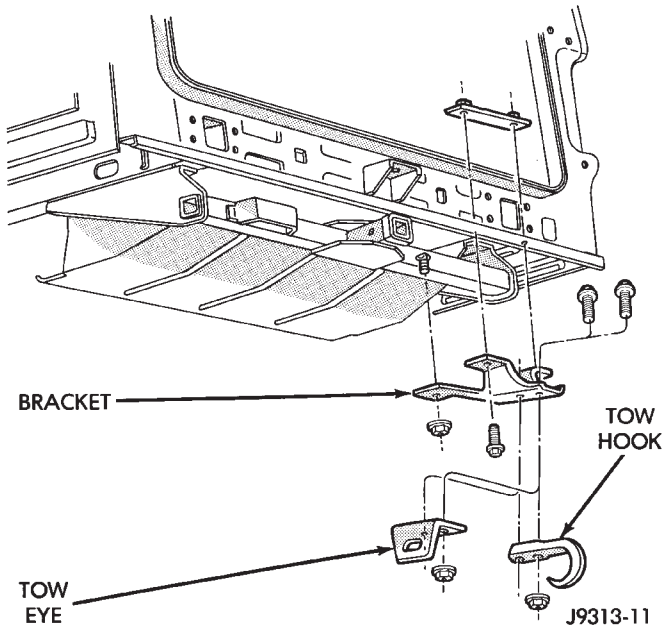

Fig. 7 Tow Hook Removal