

FRAME AND BUMPERS

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BUMPERS

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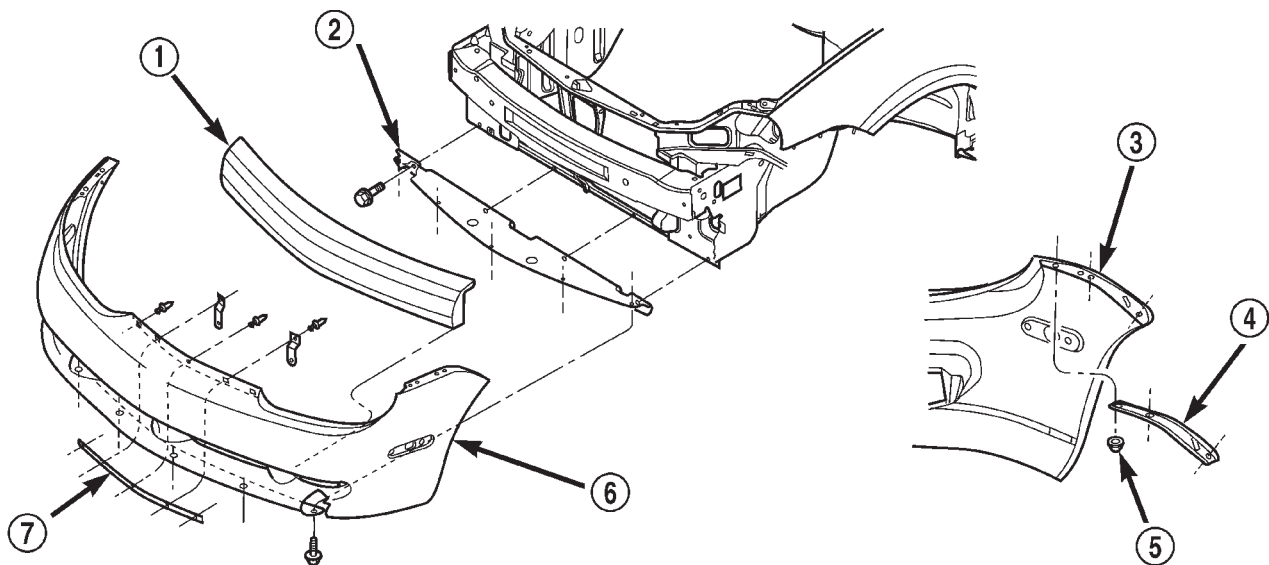
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DESCRIPTION AND OPERATION

BUMPER FASCIA

The bumper fascia is a decorative covering that is placed over the bumper reinforcement.

FRONT BUMPER FASCIA



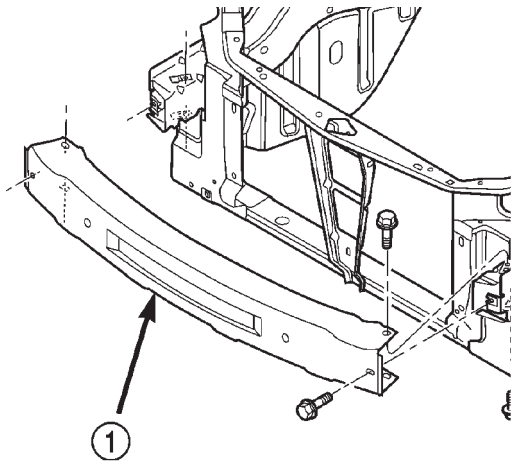
- 1 - FRONT BUMPER FOAM
- 2 - AIR DAM
- 3 - FRONT BUMPER FASCIA
- 4 - FASCIA TO BODY RETAINER

- 5 - ATTACHING NUT
- 6 - FRONT BUMPER FASCIA
- 7 - FRONT BUMPER STRIP

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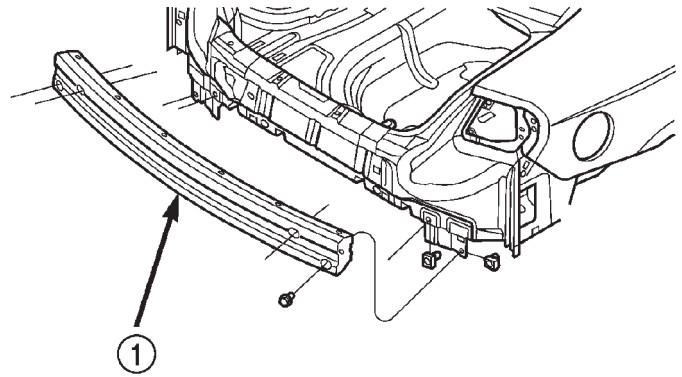
DESCRIPTION AND OPERATION (Continued)

FRONT BUMPER REINFORCEMENT



1 - FRONT BUMPER REINFORCEMENT

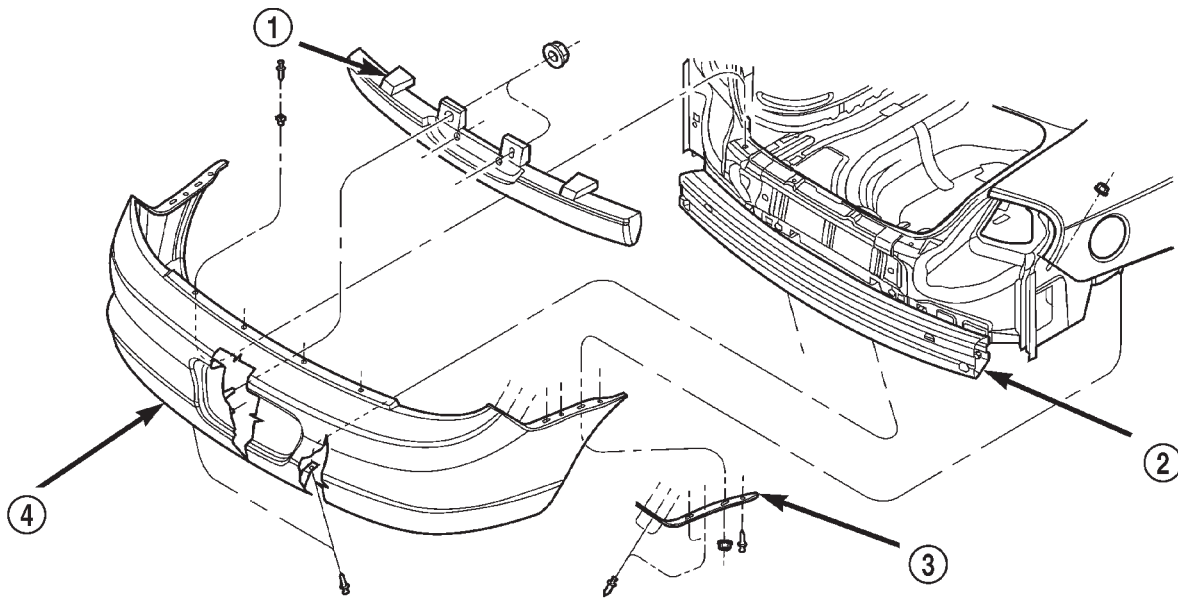
REAR BUMPER REINFORCEMENT



1 - REAR BUMPER REINFORCEMENT

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REAR BUMPER FASCIA



1 - REAR BUMPER FOAM
2 - REAR BUMPER REINFORCEMENT

3 - REAR FASCIA TO BODY RETAINER
4 - REAR FASCIA

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REMOVAL AND INSTALLATION

FRONT BUMPER FASCIA

REMOVAL

- (1) Remove nuts attaching front bumper fascia to bottom of fender flange (Fig. 1).
- (2) Remove fasteners attaching fascia to bumper reinforcement forward of radiator.
- (3) Remove fasteners attaching fascia to bottom of bumper reinforcement.
- (4) Remove air dam fasteners from crossmember.
- (5) Remove splash shield attaching screws.
- (6) Remove fascia from vehicle.

INSTALLATION

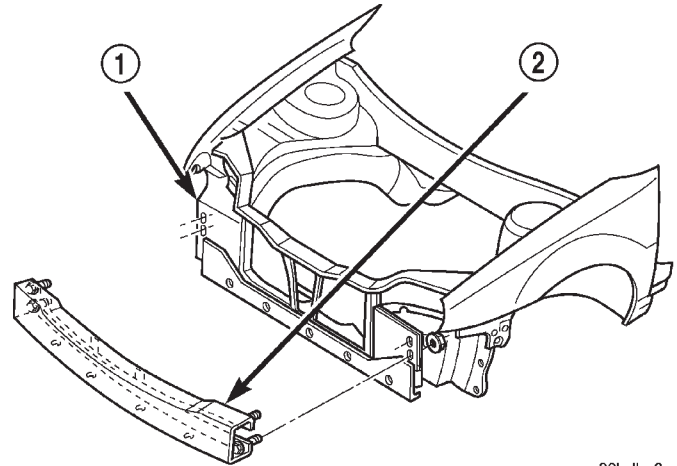
- (1) Position fascia on vehicle.
- (2) Install splash shield attaching screws.
- (3) Install air dam fasteners to crossmember.
- (4) Install fasteners attaching fascia to bottom of bumper reinforcement.
- (5) Install fasteners attaching fascia to bumper reinforcement forward of radiator.
- (6) Install nuts attaching front bumper fascia to bottom of fender flange.

FRONT BUMPER REINFORCEMENT

REMOVAL

- (1) Remove front fascia.
- (2) Support bumper reinforcement on a suitable lifting device.

- (3) Remove nuts attaching reinforcement to the rail assembly (Fig. 2).
- (4) Remove bumper reinforcement from vehicle.



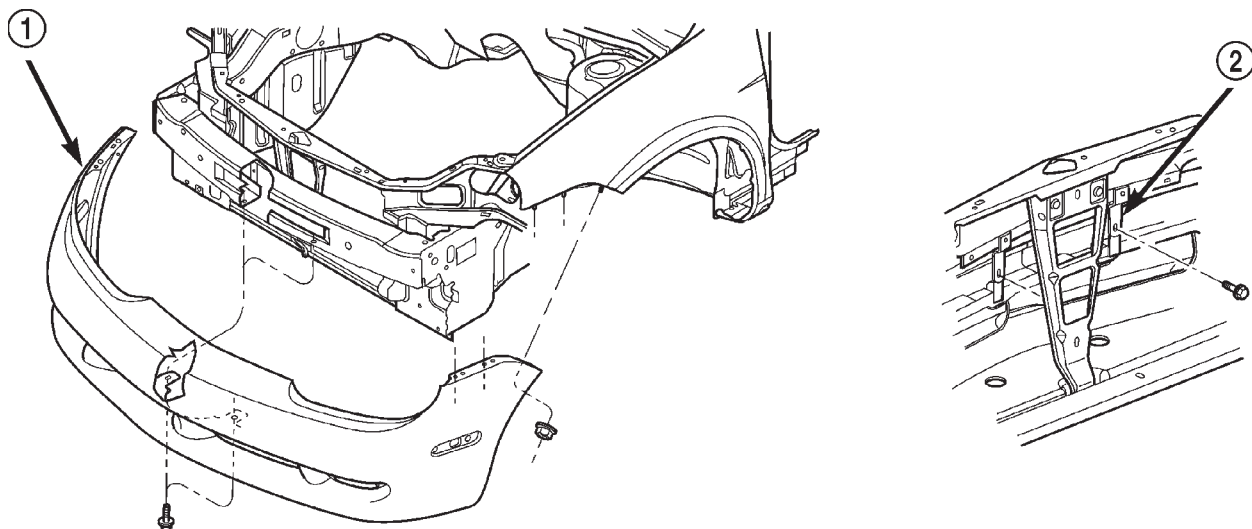
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Fig. 2 Front Bumper Reinforcement

- 1 - RAIL ASSEMBLY
2 - FRONT BUMPER REINFORCEMENT

INSTALLATION

- (1) Place bumper reinforcement in position.
- (2) Support bumper reinforcement on a suitable lifting device.
- (3) Install nuts attaching reinforcement to rail assembly.
- (4) Install front fascia.

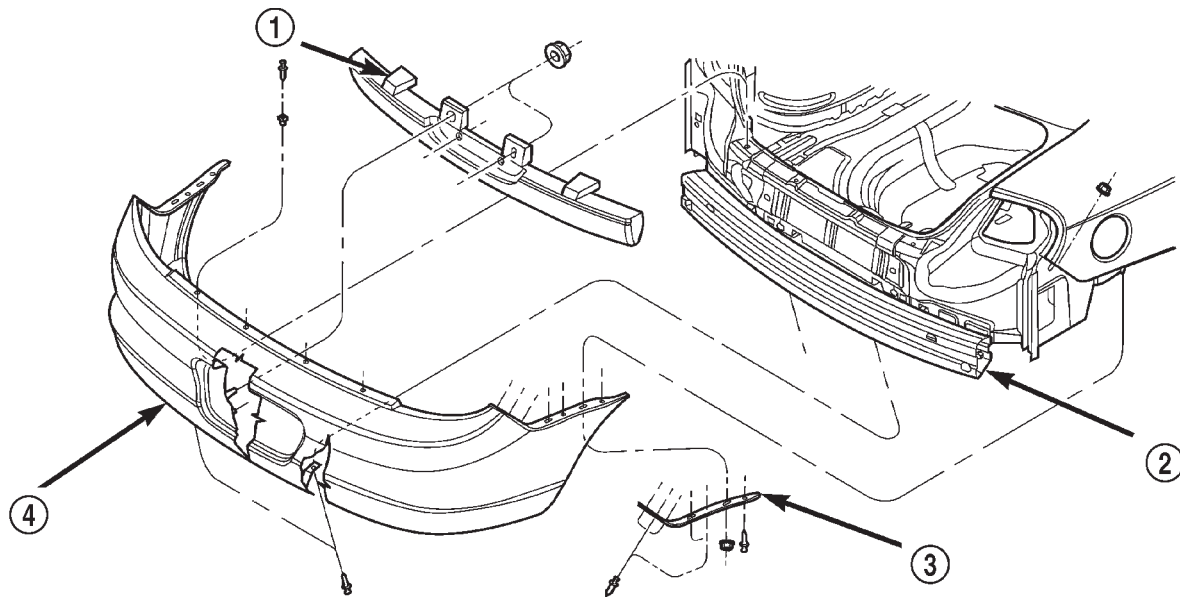


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Fig. 1 Front Bumper Fascia

- 1 - FRONT FASCIA
2 - FASCIA TO REINFORCEMENT BRACKET

REMOVAL AND INSTALLATION (Continued)

**Fig. 3 Rear Bumper Fascia**

1 - REAR BUMPER FOAM
2 - REAR BUMPER REINFORCEMENT

3 - REAR FASCIA TO BODY RETAINER
4 - REAR FASCIA

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REAR BUMPER FASCIA**REMOVAL**

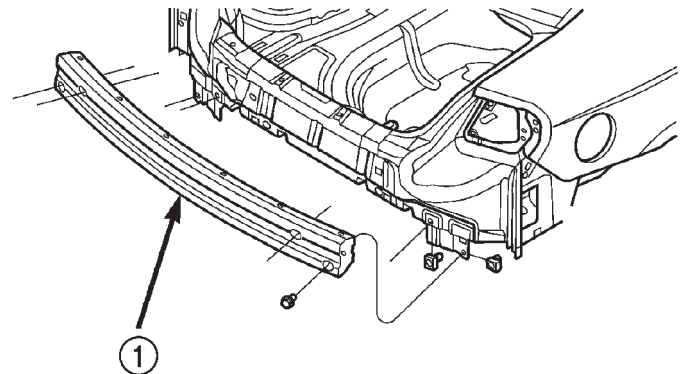
- (1) Release decklid lock and open decklid.
- (2) Remove nuts attaching fascia in the trunk (Fig. 3).
- (3) Raise vehicle on hoist.
- (4) Disconnect license lamp.
- (5) Remove splash shield from fascia in the wheel opening area.
- (6) Remove nuts attaching fascia to lower quarter panels.
- (7) From under license plate area, remove fasteners attaching lower fascia.
- (8) Remove fascia from vehicle.

INSTALLATION

- (1) Position fascia on vehicle.
- (2) From under license plate area, install fasteners attaching lower fascia.
- (3) Install nuts attaching fascia to lower quarter panels.
- (4) Install splash shield in the wheel opening area.
- (5) Connect license lamp.
- (6) Lower vehicle.
- (7) Install nuts attaching fascia in the trunk.
- (8) Close decklid.

REAR BUMPER REINFORCEMENT**REMOVAL**

- (1) Remove rear fascia (Fig. 4).
- (2) Support bumper reinforcement on a suitable lifting device.
- (3) Remove screws attaching reinforcement to rear closure panel.
- (4) Remove bumper reinforcement from vehicle.



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Fig. 4 Rear Bumper Reinforcement

1 - REAR BUMPER REINFORCEMENT

INSTALLATION

- (1) Position bumper reinforcement to vehicle.
- (2) Install screws attaching reinforcement to rear closure panel.
- (3) Install rear fascia.

FRAMES

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DESCRIPTION AND OPERATION

FRONT SUSPENSION

The front suspension crossmember must be properly installed to achieve design camber, caster settings and wheel stagger. The crossmember can be installed out of position on the frame rails due to its design. Bolts and cage nuts hold the rear of the crossmember to the frame torque boxes. Bolts and J-nuts hold the front of the crossmember to the frame rails. No designed in locating device is used to position the crossmember in the vehicle. Before removing the crossmember mark the frame torque box around the rear mounting location to aid installation. A crossmember that is removed during service must be installed in the same position from which it was removed. To verify that crossmember is in the proper position, refer to the dimensions provided. Front end dimensions are gauged from the principal locating point (PLP) holes located under the frame torque boxes rearward of the front wheels. After removal and installation of the crossmember is performed, verify that front suspension alignment is within specifications. If camber, caster settings and wheel stagger is not within specifications, loosen and reposition crossmember to bring suspension within specifications. Refer to Group 2, Front Suspension for additional information.

REMOVAL AND INSTALLATION

FRONT SUSPENSION CROSSMEMBER

CAUTION: If the front suspension crossmember is being replaced due to collision damage, inspect the steering column lower coupling for damage. Refer to **STEERING COLUMN** in the **STEERING** service manual group for the procedure.

REMOVAL

- (1) Raise the vehicle. Refer to **HOISTING** in the **LUBRICATION AND MAINTENANCE** group in this service manual for the correct lifting procedure.
- (2) Remove both front tire and wheel assemblies from the vehicle.
- (3) Remove both stabilizer bar links from the vehicle (Fig. 1). Remove each link by holding the upper retainer/nut with a wrench and turning the link bolt.

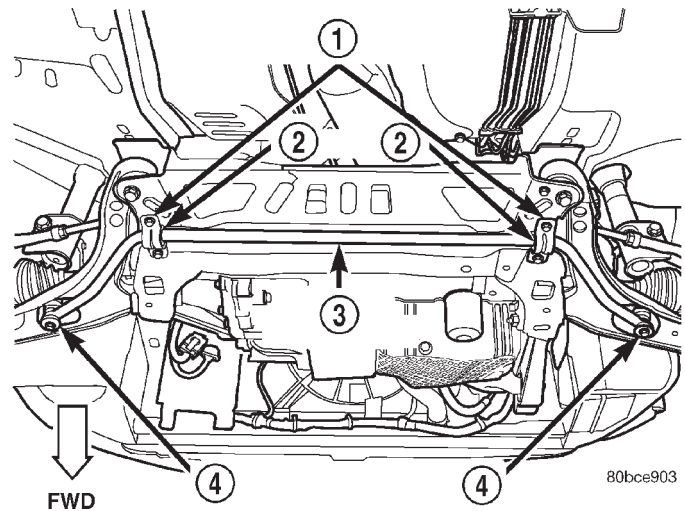


Fig. 1 Stabilizer Bar

- 1 - STABILIZER BAR CUSHION RETAINERS
- 2 - CUSHIONS
- 3 - FRONT STABILIZER BAR
- 4 - STABILIZER BAR LINKS

- (4) Remove the stabilizer bar cushion retainer bolts and retainers (Fig. 1), and remove the stabilizer bar with cushions attached from the vehicle.
- (5) Remove the nut and pinch bolt clamping each ball joint stud to the steering knuckle (Fig. 2).

REMOVAL AND INSTALLATION (Continued)

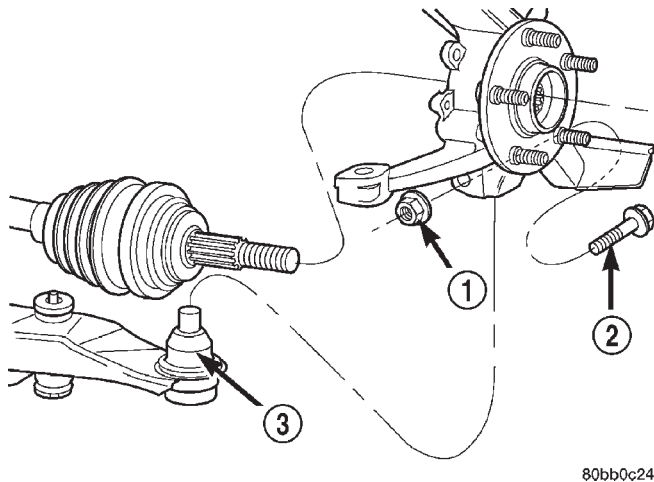


Fig. 2 Ball Joint Bolt And Nut

- 1 - NUT
- 2 - BOLT
- 3 - BALL JOINT

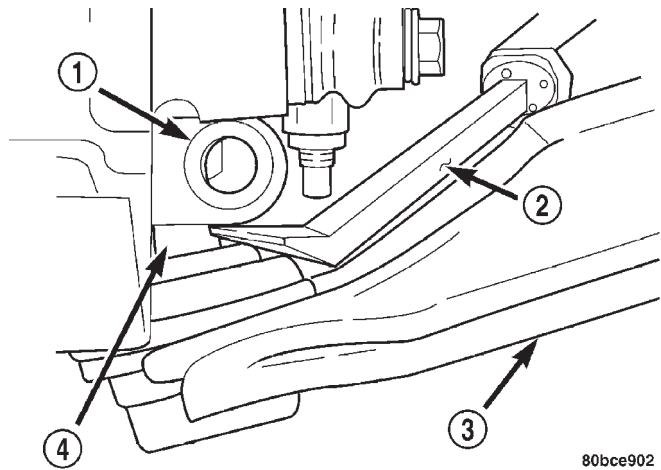


Fig. 3 Pry Bar Usage

- 1 - STEERING KNUCKLE
- 2 - PRY BAR
- 3 - LOWER CONTROL ARM
- 4 - BALL JOINT STUD

CAUTION: After removing the steering knuckle from the ball joint stud, do not pull outward on the knuckle. Pulling the steering knuckle outward at this point can separate the inner C/V joint on the driveshaft. Refer to **FRONT DRIVESHAFTS** in the **DIFFERENTIAL AND DRIVELINE** group for further information.

NOTE: Use caution when separating the ball joint stud from the steering knuckle, so the ball joint seal does not get cut.

(6) Separate each ball joint stud from the steering knuckle by prying down on lower control arm and up against the ball joint boss on the steering knuckle (Fig. 3).

(7) If the vehicle is equipped with a power steering fluid cooler, remove the two screws securing the cooler to the front suspension crossmember. They are located behind the cooler and can be accessed from above. Allow the cooler to hang out of the way.

(8) Using wire or cord, support and tie off the power steering gear to the underbody of the vehicle, so when the crossmember is lowered, the gear does not fall away being held to the vehicle by only the steering column coupler and the fluid hoses.

(9) Loosen and remove the four bolts attaching the power steering gear to the front suspension crossmember (Fig. 4). Remove the power steering gear from the front suspension crossmember.

(10) Remove the bolt mounting the engine torque strut to the right forward corner of the front suspension crossmember (Fig. 5).

NOTE: Before removing the front suspension crossmember from the vehicle, the location of the

crossmember must be scribed on the body of the vehicle (Fig. 9). Do this so that the crossmember can be relocated upon reinstallation against the body of vehicle in the same location as before removal. If the front suspension crossmember is not reinstalled in exactly the same location as before removal, the preset front wheel alignment settings (caster and camber) will be lost.

(11) Using an awl, scribe a line (Fig. 6) marking the location of where the front suspension crossmember is mounted against the body of the vehicle.

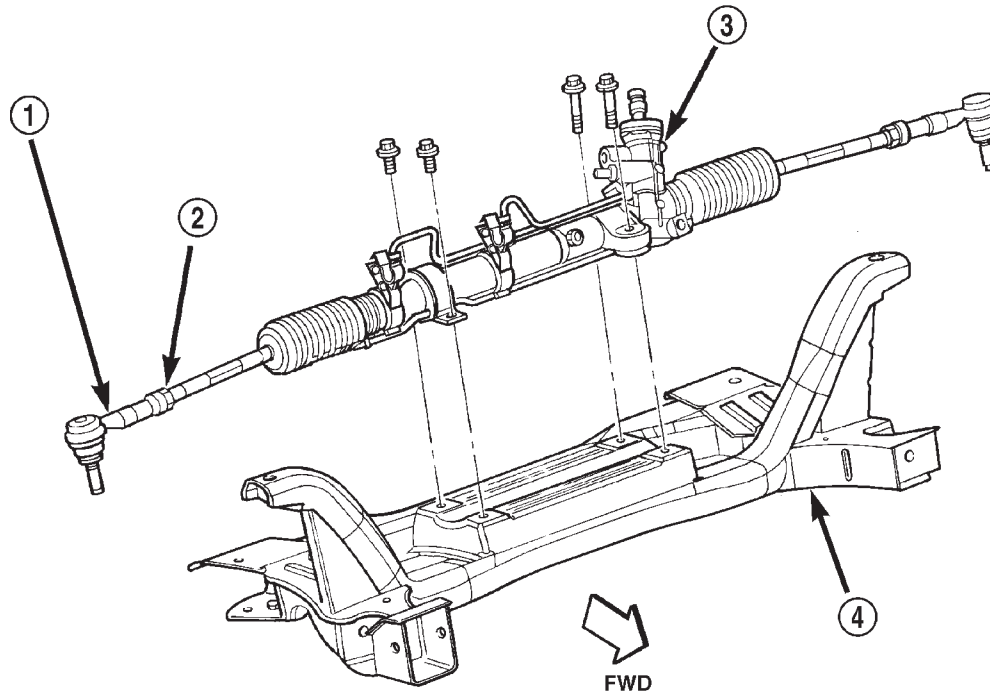
(12) Position a transmission jack under the center of the front suspension crossmember and raise it to support the bottom of the crossmember.

(13) Loosen and completely remove the two front bolts (one right and one left) attaching the front suspension crossmember to the frame rails of vehicle. The right side bolt can be viewed in the mounting bolt figure (Fig. 5). The left side bolt is located in the same location on the other side of the vehicle.

(14) Loosen the two rear bolts (one right and one left) attaching the front suspension crossmember and lower control arms to the body of the vehicle until they release from the threaded tapping plates in the body of the vehicle. Remove the rear bolts from the body of the vehicle, but do not completely remove the rear bolts because they are designed to disengage from the body threads yet stay within the lower control arm rear isolator bushing. This allows the lower control arm to stay in place on the crossmember. The right side bolt can be viewed in the mounting bolt figure (Fig. 5). The left side bolt is located in the same location on the other side of the vehicle.

(15) Lower the front suspension crossmember.

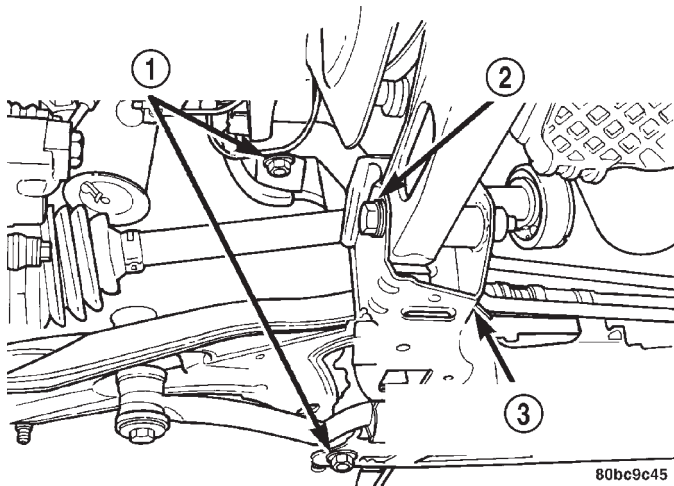
REMOVAL AND INSTALLATION (Continued)



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Fig. 4 Steering Gear Mounting

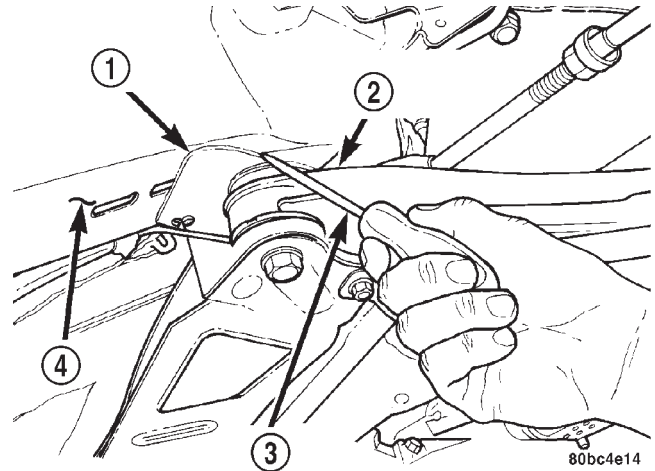
- | | |
|-------------------|----------------------------------|
| 1 - OUTER TIE ROD | 3 - STEERING GEAR |
| 2 - JAM NUT | 4 - FRONT SUSPENSION CROSSMEMBER |



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Fig. 5 Mounting Bolts

- | |
|-------------------------------------------------|
| 1 - FRONT SUSPENSION CROSSMEMBER MOUNTING BOLTS |
| 2 - ENGINE TORQUE ISOLATOR STRUT MOUNTING BOLT |
| 3 - FRONT SUSPENSION CROSSMEMBER |



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Fig. 6 Marking Crossmember Location

- | |
|----------------------------------|
| 1 - SCRIBED LINE |
| 2 - FRONT SUSPENSION CROSSMEMBER |
| 3 - AWL |
| 4 - BODY |

(16) Remove each lower control arm from the crossmember by removing the front pivot bolt.

INSTALLATION

(1) Install the lower control arms on the front suspension crossmember. Install the pivot bolts, but do not completely tighten them at this time.

(2) Using the transmission jack, raise the front suspension crossmember and lower control arms until the crossmember contacts its mounting spot against the body and frame rails of the vehicle. As the crossmember is raised, carefully guide the power steering gear into mounting position.

REMOVAL AND INSTALLATION (Continued)

(3) Start the two rear crossmember mounting bolts into the tapping plates mounted in the body. The right side bolt can be viewed in the mounting bolt figure (Fig. 5). The left side bolt is located in the same location on the other side of the vehicle. Next, install the two front mounting bolts attaching front suspension crossmember to frame rails of vehicle. Lightly tighten all four mounting bolts to a approximately 2 N·m (20 in. lbs.) to hold the front suspension crossmember in position.

NOTE: When reinstalling the front suspension crossmember back in the vehicle, it is very important that the crossmember be attached to the body in exactly the same spot as when it was removed. Otherwise, the vehicle's wheel alignment settings (caster and camber) will be lost.

(4) Using a soft face hammer, tap the front suspension crossmember back-and-forth or side-to-side until it is aligned with the previously scribed positioning marks on the body of the vehicle (Fig. 6). Once the front suspension crossmember is correctly positioned, tighten the rear two crossmember mounting bolts to a torque of 203 N·m (150 ft. lbs.), then tighten the front two crossmember mounting bolts to a torque of 142 N·m (105 ft. lbs.).

(5) Tighten the lower control arm front pivot bolts to a torque of 163 N·m (120 ft. lbs.).

(6) Attach the steering gear to the front suspension crossmember (Fig. 4). Install the four power steering gear mounting bolts. Tighten the mounting bolts to a torque of 61 N·m (45 ft. lbs.).

(7) Remove the wire or cord suspending the power steering gear to the underbody.

(8) If the vehicle is equipped with a power steering fluid cooler, install the two screws securing the cooler to the front suspension crossmember. They are located behind the cooler.

(9) Install each ball joint stud into the steering knuckle aligning the bolt hole in the knuckle boss with the notch formed in the side of the ball joint stud.

(10) Install a new ball joint stud pinch bolt and nut (Fig. 2). Tighten the nut to a torque of 95 N·m (70 ft. lbs.).

(11) Fasten the engine torque strut to the right forward corner of the front suspension crossmember using its mounting bolt (Fig. 5). Follow the procedure described in the ENGINE service manual group to properly align and tighten the torque strut and its mounting bolts.

NOTE: Before installing the stabilizer bar, make sure the bar is not upside-down. The stabilizer bar must be installed with the curve on the outboard ends of the bar facing downward to clear the control arms once fully installed (Fig. 7).

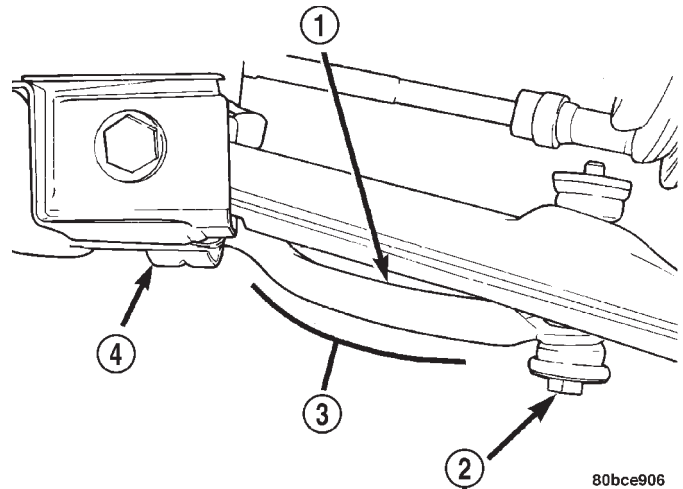


Fig. 7 Downward Curve

- 1 - STABILIZER BAR
- 2 - LINK
- 3 - DOWNWARD CURVE
- 4 - CUSHION RETAINER

(12) First, place the stabilizer bar in position on the front suspension crossmember. The slits in each cushion must point toward the front of the vehicle and sit directly on top of the raised beads formed into the stamping on the crossmember. Next, install the cushion retainers, matching the raised beads formed into the cushion retainers to the grooves formed into the cushions. Install the cushion retainer bolts, but do not completely tighten them at this time.

(13) Install both stabilizer bar links back on vehicle (Fig. 1). Start each stabilizer bar link bolt with bushing from the bottom, through the stabilizer bar, inner link bushings, lower control arm, and into the upper retainer/nut and bushing. Do not fully tighten the link assemblies at this time.

(14) Install the tire and wheel assemblies back on vehicle. Tighten the wheel mounting nuts to 135 N·m (100 ft. lbs.) torque.

(15) Lower the vehicle.

NOTE: It may be necessary to put the vehicle on a platform hoist or alignment rack to gain access to the stabilizer bar mounting bolts with the vehicle at curb height.

(16) Tighten each stabilizer bar link by holding the upper retainer/nut with a wrench and turning the link bolt. Tighten each link bolt to a torque of 23 N·m (200 in. lbs.).

(17) Tighten the stabilizer bar cushion retainer bolts to a torque of 34 N·m (300 in. lbs.).

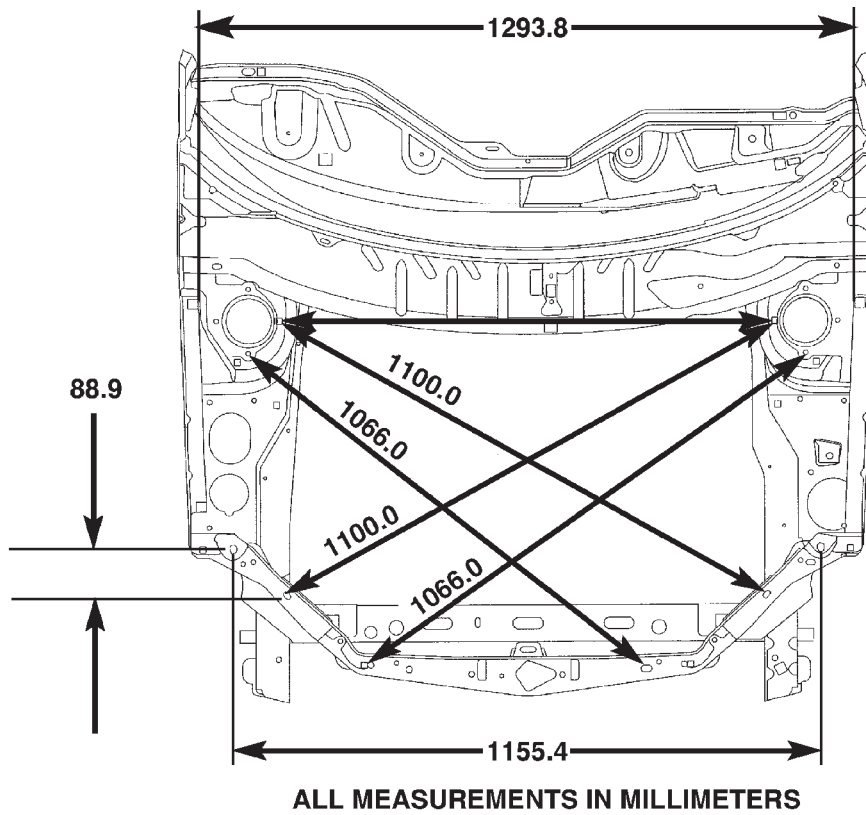
(18) Check the front wheel alignment on the vehicle. Refer to WHEEL ALIGNMENT in the SUSPENSION service manual group.

SPECIFICATIONS

FRAME DIMENSIONS

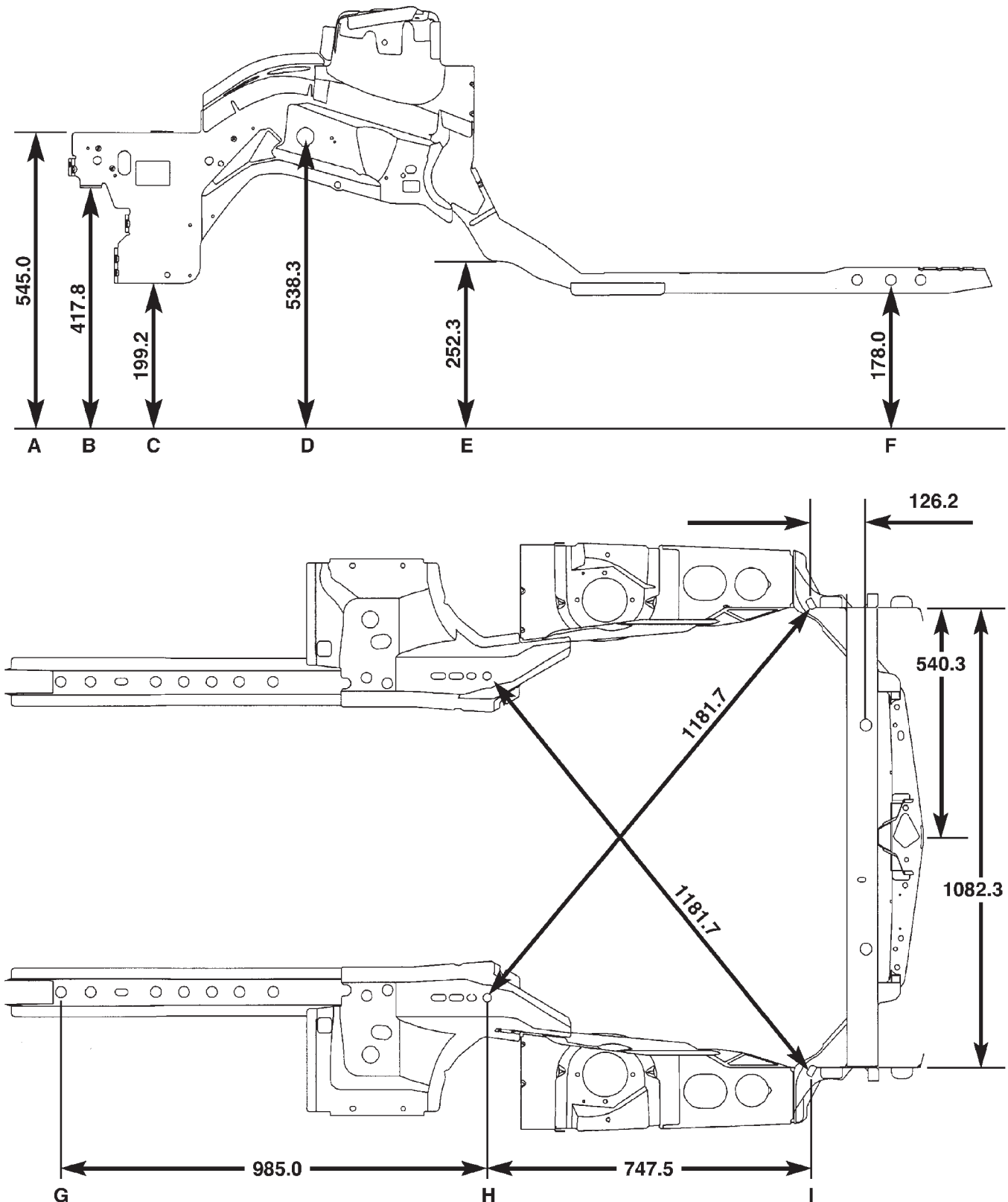
Structural dimensions are listed in metric measurements. All dimensions are from center to center of Principal Locating Point (PLP), or from center to center of PLP and fastener location.

ENGINE COMPARTMENT TOP VIEW



SPECIFICATIONS (Continued)

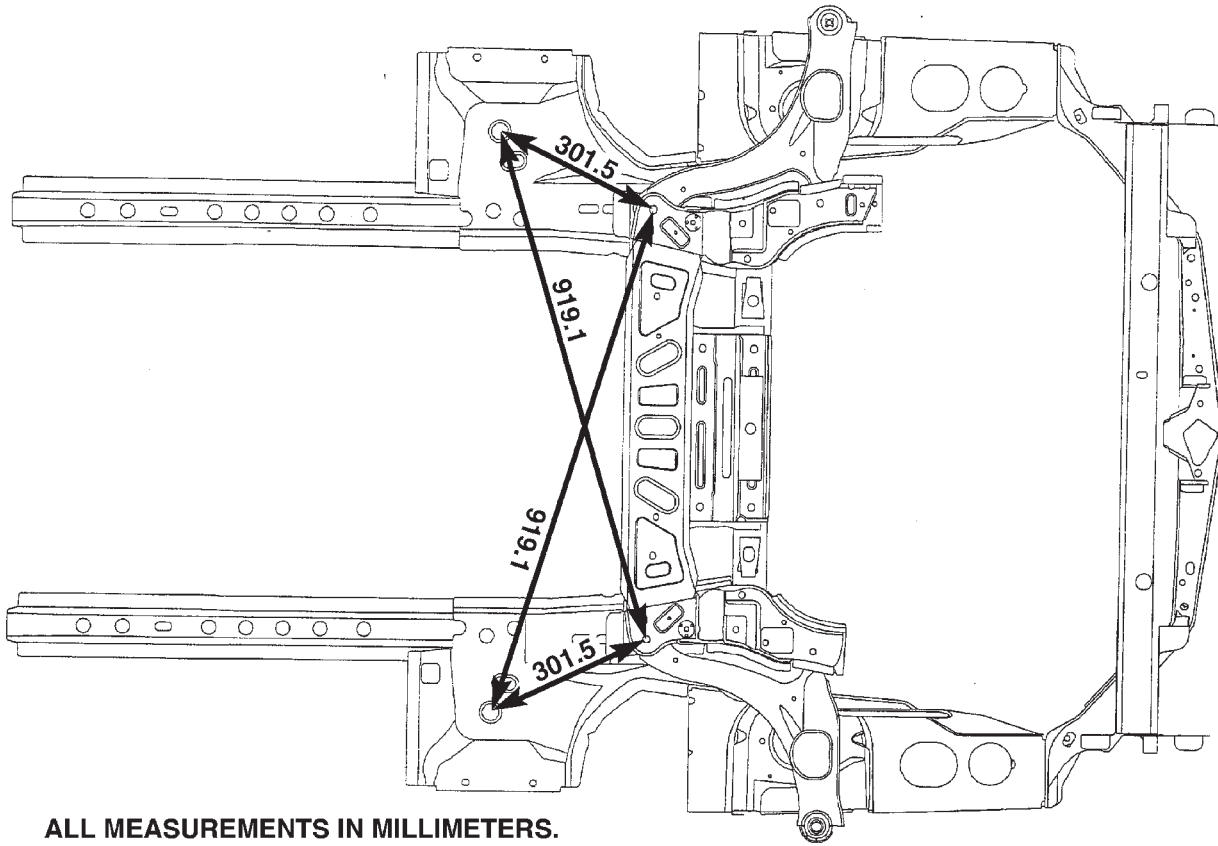
ENGINE COMPARTMENT SIDE AND BOTTOM VIEW



ALL MEASUREMENTS IN MILLIMETERS

SPECIFICATIONS (Continued)

FORWARD FRAME AND CROSSMEMBER

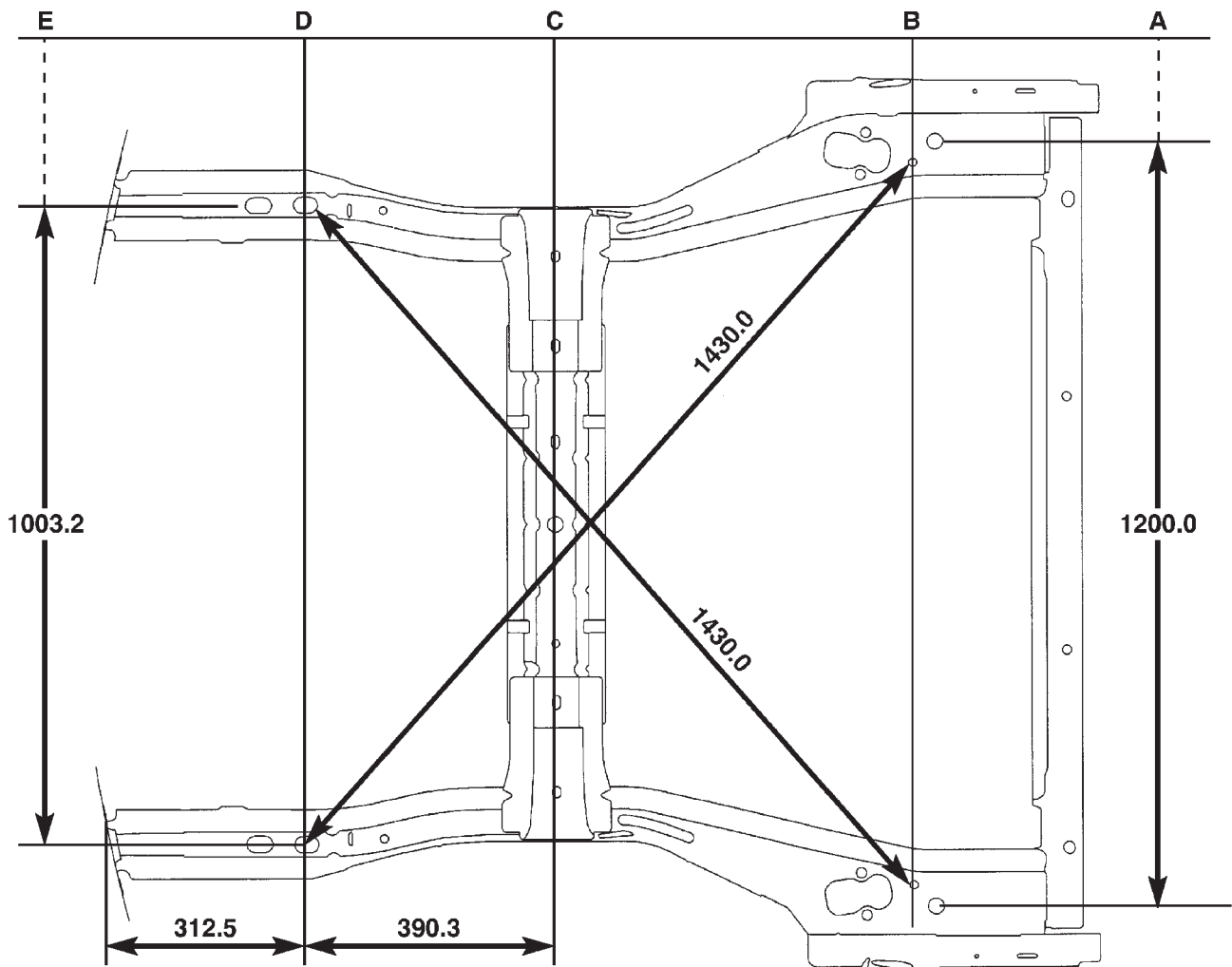


ALL MEASUREMENTS IN MILLIMETERS.

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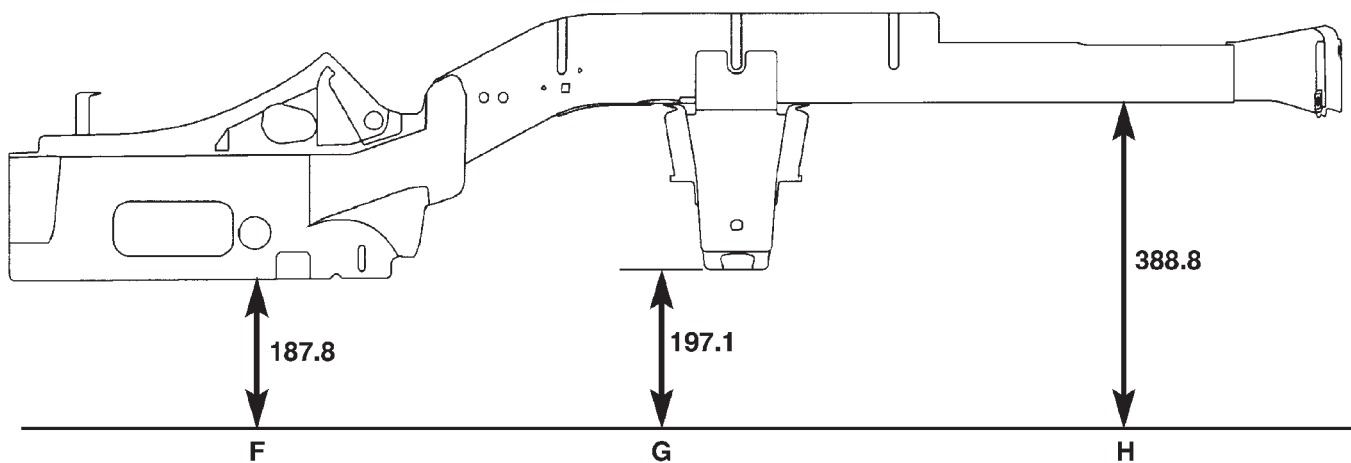
SPECIFICATIONS (Continued)

REAR FRAME SECTION SIDE AND BOTTOM VIEW



- A. WIDTH OF REAR PLP
- B. REAR RAIL REAR PRINCIPLE LOCATING POINTS
- C. CENTER OF REAR SUSPENSION CROSSMEMBER
- D. REAR RAIL SECOND FORWARD PLP

- E. WIDTH OF REAR RAIL FORWARD PRINCIPLE LOCATION POINTS (PLP)
- F. FRONT LOWER SURFACE OF REAR RAIL
- G. LOWER SURFACE OF SUSPENSION CROSSMEMBER
- H. REAR LOWER SURFACE OF REAR RAIL



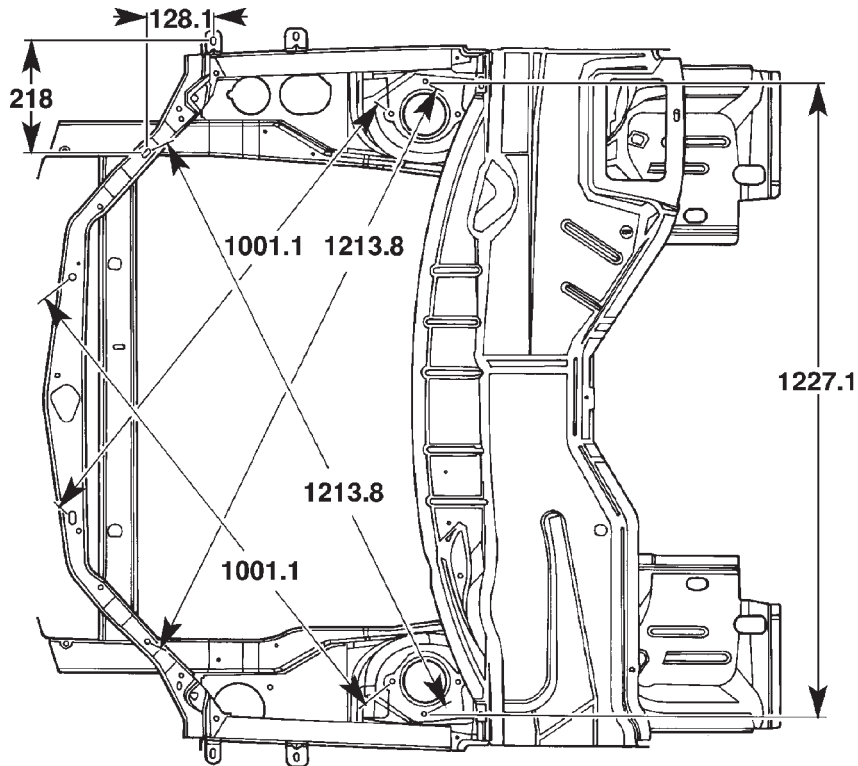
ALL MEASUREMENTS IN MILLIMETERS

SPECIFICATIONS (Continued)

STRUCTURAL DIMENSIONS

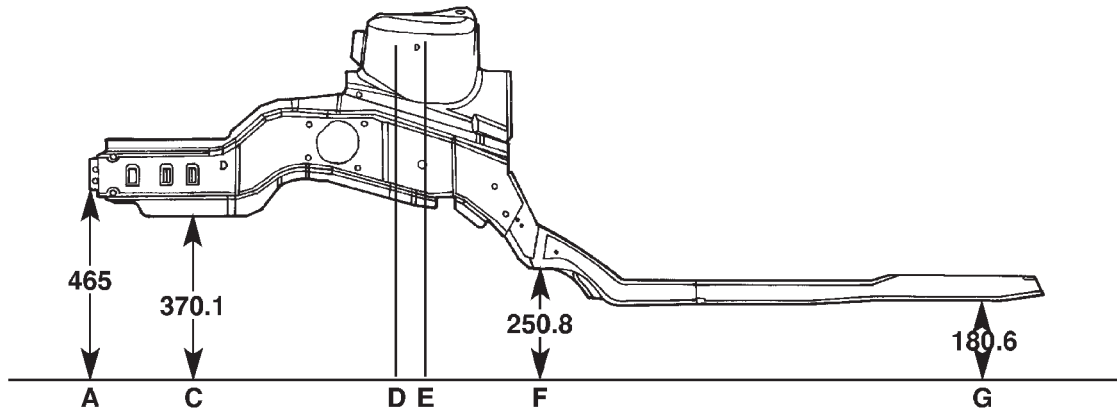
Structural dimensions are listed in metric measurements. All dimensions are from center to center of Principal Locating Point (PLP), or from center to center of PLP and fastener location.

ENGINE COMPARTMENT TOP VIEW



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ENGINE COMPARTMENT SIDE VIEW

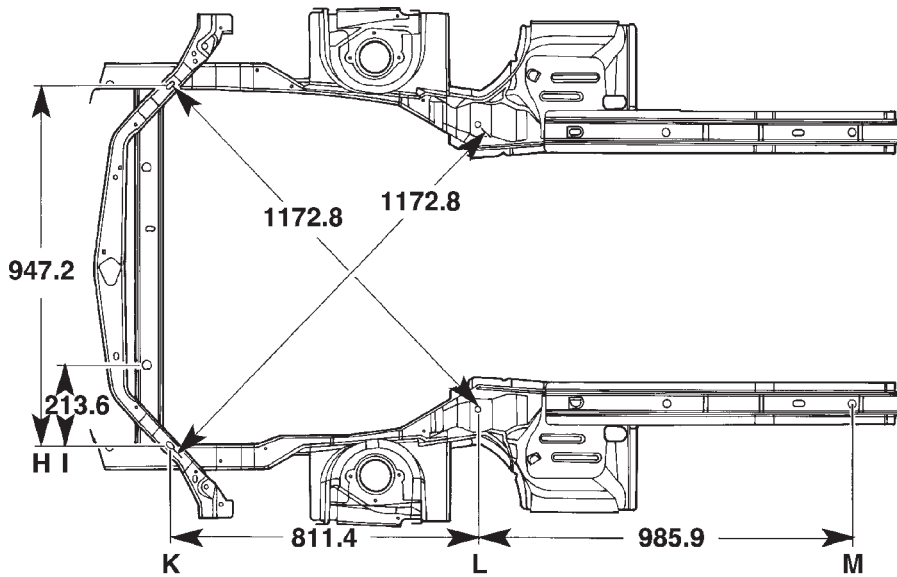


- A. CENTER OF FRONT REINFORCEMENT
- B. TRAILING EDGE OF HEADLAMP SUPPORT
- C. LOWER EDGE OF FRONT RAIL
- E. INBOARD STRUT MOUNTING HOLE
- F. LOWER EDGE OF FRONT SIDE RAIL REAR RAIL
- G. LOWER EDGE OF FRONT SIDE RAIL REAR EXTENSION

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SPECIFICATIONS (Continued)

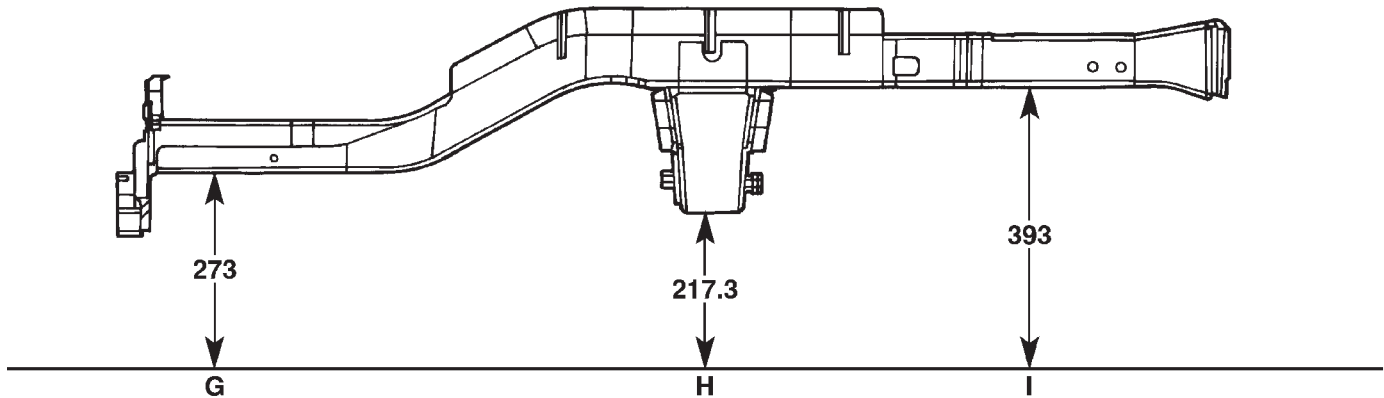
ENGINE COMPARTMENT BOTTOM VIEW



- H. WIDTH OF ENGINE COMPARTMENT FRONT PRINCIPLE LOCATION POINTS
- I. CENTER OF LOWER CROSSMEMBER TO ENGINE COMPARTMENT FRONT
- J. CENTER OF LOWER CROSSMEMBER - T.B.D. (IF REQUIRED)
- K. ENGINE COMPARTMENT FRONT PLP
- L. ENGINE COMPARTMENT REAR PRINCIPLE LOCATION POINTS
- M. FRONT RAIL REAR EXTENSION REAR PLP

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REAR FRAME SECTION SIDE VIEW

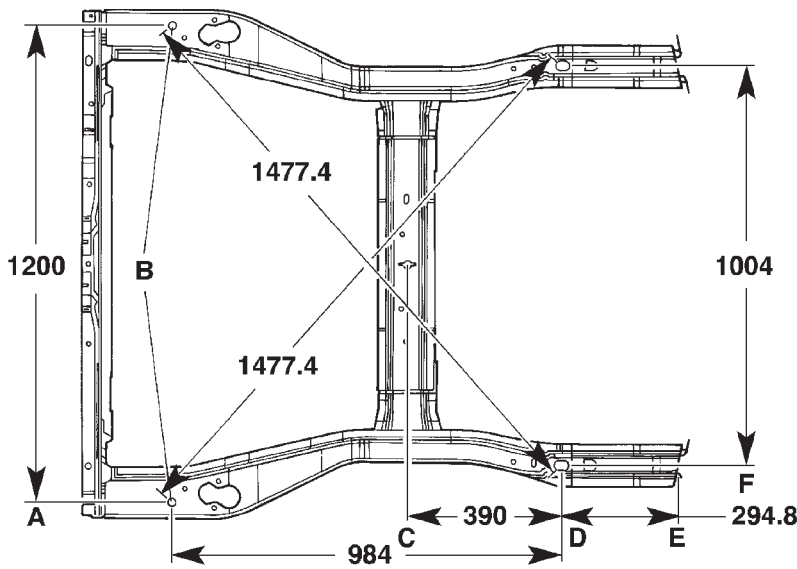


- G. FRONT LOWER SURFACE OF REAR RAIL
- H. LOWER SURFACE OF SUSPENSION CROSSMEMBER
- I. REAR LOWER SURFACE OF REAR RAIL

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SPECIFICATIONS (Continued)

REAR FRAME SECTION BOTTOM VIEW



- A. WIDTH OF FORWARD PLP
- B. REAR RAIL REAR PRINCIPLE LOCATION POINTS
- C. CENTER OF REAR SUSPENSION CROSSMEMBER
- D. REAR RAIL SECOND FORWARD PLP
- E. FRONT OF REAR RAIL
- F. WIDTH OF REAR RAIL FORWARD PRINCIPLE LOCATION POINTS

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TORQUE SPECIFICATIONS

DESCRIPTION	TORQUE
Front Bumper Reinforcement	
Nut	156 N·m (115 ft. lbs)
Rear Bumper Reinforcement	
Nut	156 N·m (115 ft. lbs)
Front Crossmember To Body Mounting	
Bolts	163 N·m (120 ft. lbs)

