

# FRAME AND BUMPERS

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### GENERAL INFORMATION

In this section, references are made to Vehicle Family (Body) codes. To determine the vehicle family identification code, refer to the Introduction Group at the front of this manual.

### LOW LINE FRONT BUMPER

#### LOW LINE FRONT BUMPER REMOVAL (FIG. 1)

- (1) Remove nut holding front bumper end caps to front fenders.
- (2) Remove nut holding front bumper end caps to bumper support.
- (3) Remove push-in fastener holding front bumper end caps to bumper.
- (4) Support front bumper on a suitable lifting device.
- (5) Remove nuts holding front bumper to support bracket.

#### LOW LINE FRONT BUMPER INSTALLATION

Reverse the preceding operation. Align front bumper to 15 mm (0.6 in.) from bottom of grille. To move bumper up or down, loosen nuts holding support bracket to radiator closure panel.

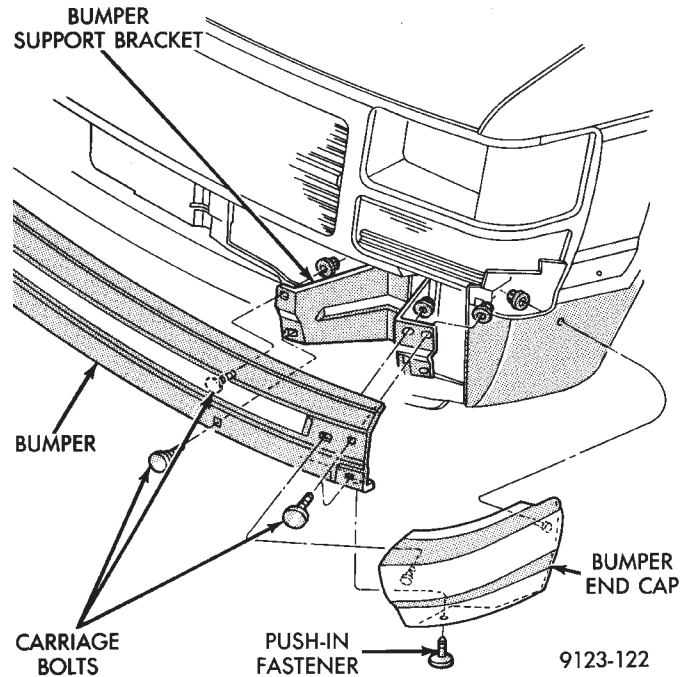


Fig. 1 Low Line Front Bumper

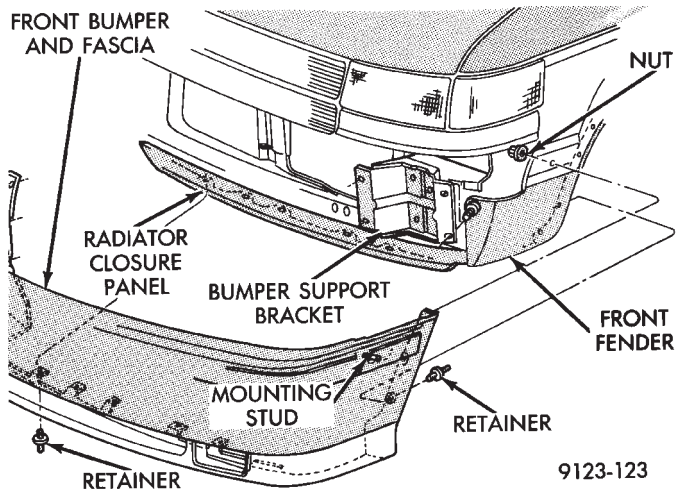
## HIGH LINE FRONT BUMPER AND FASCIA

### HIGH LINE FRONT BUMPER AND FASCIA REMOVAL (FIG. 2)

- (1) Remove retainers holding front bumper fascia to bottom of radiator closure panel.
- (2) Remove retainers holding fascia to forward edge of front wheel openings.
- (3) Remove nuts holding fascia to front fenders.
- (4) Disconnect fog lamp wire connector, if equipped.
- (5) Support front bumper on a suitable lifting device.
- (6) Remove bolts holding front bumper reinforcement to bumper support bracket.
- (7) Separate bumper assembly from vehicle.

### HIGH LINE FRONT BUMPER AND FASCIA INSTALLATION

Reverse the preceding operation. Align front bumper to 15 mm (0.6 in.) from bottom of grille. To move bumper up or down, loosen nuts holding support bracket to radiator closure panel.



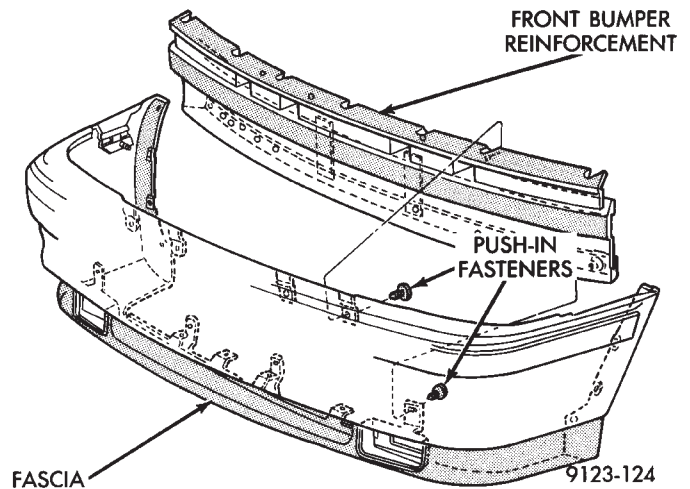
**Fig. 2 High Line Front Bumper**

### HIGH LINE FRONT BUMPER OVERHAUL (FIG. 3)

- (1) Remove high line front bumper and fascia assembly.
- (2) Position front bumper and fascia on a suitable padded work surface to protect painted finish.
- (3) Remove fog lamp assemblies.
- (4) Remove push-in fasteners holding fascia to bumper reinforcement.
- (5) Separate reinforcement from fascia.

### HIGH LINE FRONT BUMPER ASSEMBLY

Reverse the preceding operation.



**Fig. 3 High line Front Bumper Overhaul**

## FRONT BUMPER SUPPORT BRACKET

### FRONT BUMPER SUPPORT BRACKET REMOVAL

- (1) Remove front bumper as necessary to clear removal path of support bracket.
- (2) Remove nuts holding bumper support bracket to radiator closure panel.
- (3) Separate bumper support bracket from vehicle.

### FRONT BUMPER SUPPORT BRACKET INSTALLATION

Reverse the preceding operation.

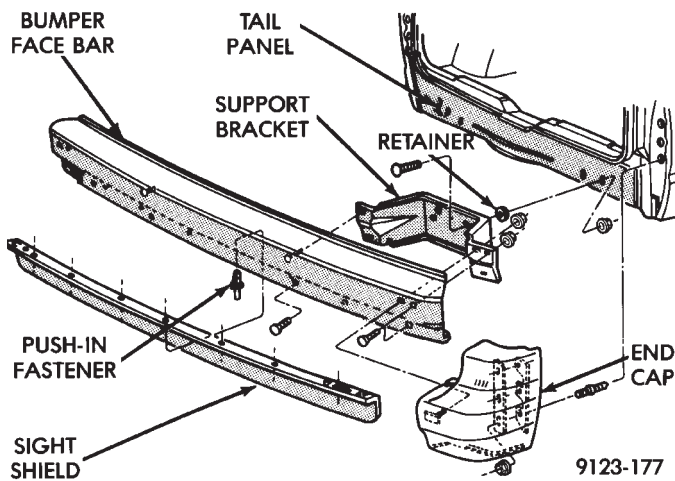
## REAR BUMPER

### REAR BUMPER REMOVAL (FIG. 4)

- (1) Remove nuts holding front bumper end caps to quarter panels.
- (2) Remove nut holding front bumper end caps to bumper support.
- (3) Remove push-in fastener holding front bumper end caps to bumper.
- (4) Support front bumper on a suitable lifting device.
- (5) Remove nuts holding front bumper to support bracket.

### REAR BUMPER INSTALLATION

Reverse the preceding operation.



**Fig. 4 Rear Bumper**

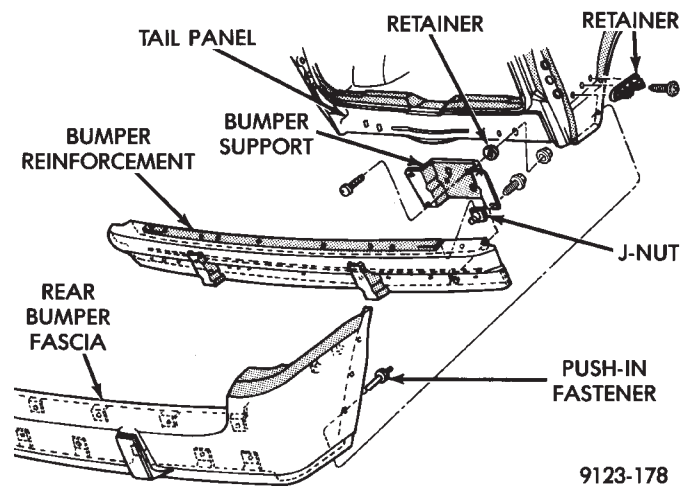
## HIGH LINE REAR BUMPER AND FASCIA

### HIGH LINE REAR BUMPER AND FASCIA REMOVAL (FIG. 5)

- (1) Remove push-in fasteners holding fascia to wheel openings.
- (2) Remove nuts holding fascia to quarter panels.
- (3) Support front bumper on a suitable lifting device.
- (4) Remove bolts holding bumper reinforcement to bumper support brackets.
- (5) Separate bumper assembly from vehicle.

### HIGH LINE REAR BUMPER AND WRAP-AROUND FASCIA INSTALLATION

Reverse the preceding operation.



**Fig. 5 High Line Rear Bumper and Fascia**

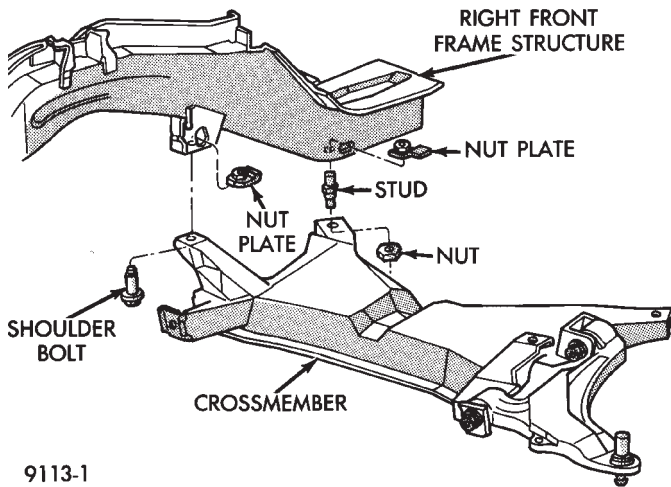
## FRONT WHEEL DRIVE VAN/WAGON CROSSMEMBER

### CROSSMEMBER REMOVAL (FIG. 6)

- (1) Hoist vehicle and support on safety stands. Refer to Group 0, Lubrication and Maintenance for proper procedures.
- (2) Remove front wheels.
- (3) Disconnect lower ball joints from the knuckle assembly. Refer to Group 2, Suspension for proper procedures.
- (4) Disconnect power steering hose tie-down from rear upper edge of crossmember, if equipped.
- (5) Remove bolts holding steering gear to crossmember. Refer to Group 19, Steering for proper procedures.
- (6) Support crossmember on a suitable lifting device.
- (7) Remove nuts holding rear of crossmember to the frame.
- (8) Remove bolts holding crossmember to frame from above lower control arms.
- (9) Separate the crossmember from the vehicle.
- (10) Transfer lower control arms and sway eliminator shaft to new crossmember, if crossmember is being replaced. Refer to Group 2, Suspension for proper procedure.

### CROSSMEMBER INSTALLATION

Reverse the preceding operation.



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**Fig. 6 Front Wheel Drive Van/Wagon Crossmember**  
**ALL WHEEL DRIVE VAN/WAGON CROSSMEMBER**

#### CROSSMEMBER REMOVAL (FIG. 7)

(1) Hoist vehicle and support on safety stands. Refer to Group 0, Lubrication and Maintenance for proper procedures.

(2) Remove front wheels.

(3) Disconnect lower ball joints from the knuckle assembly. Refer to Group 2, Suspension for proper procedures.

(4) Disconnect power steering hose tie-down from rear upper edge of crossmember, if equipped.

(5) Remove bolts holding steering gear support bridge to crossmember.

(6) Remove bolt holding engine bobble strut to crossmember.

(7) Support crossmember on a suitable lifting device.

(8) Remove nuts holding rear of crossmember to the frame.

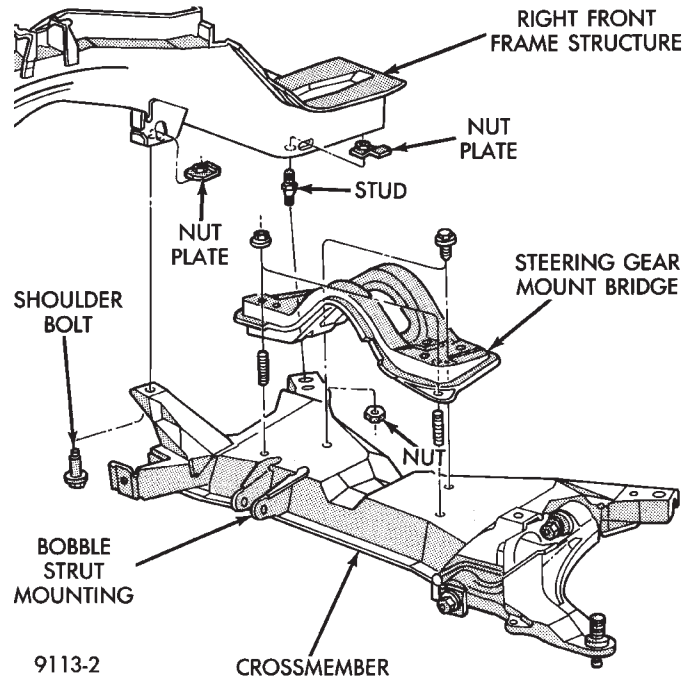
(9) Remove bolts holding crossmember to frame from above lower control arms.

(10) Separate the crossmember from the vehicle.

(11) Transfer lower control arms and sway eliminator shaft to new crossmember, if crossmember is being replaced. Refer to Group 2, Suspension for proper procedure.

#### CROSSMEMBER INSTALLATION

Reverse the preceding operation.



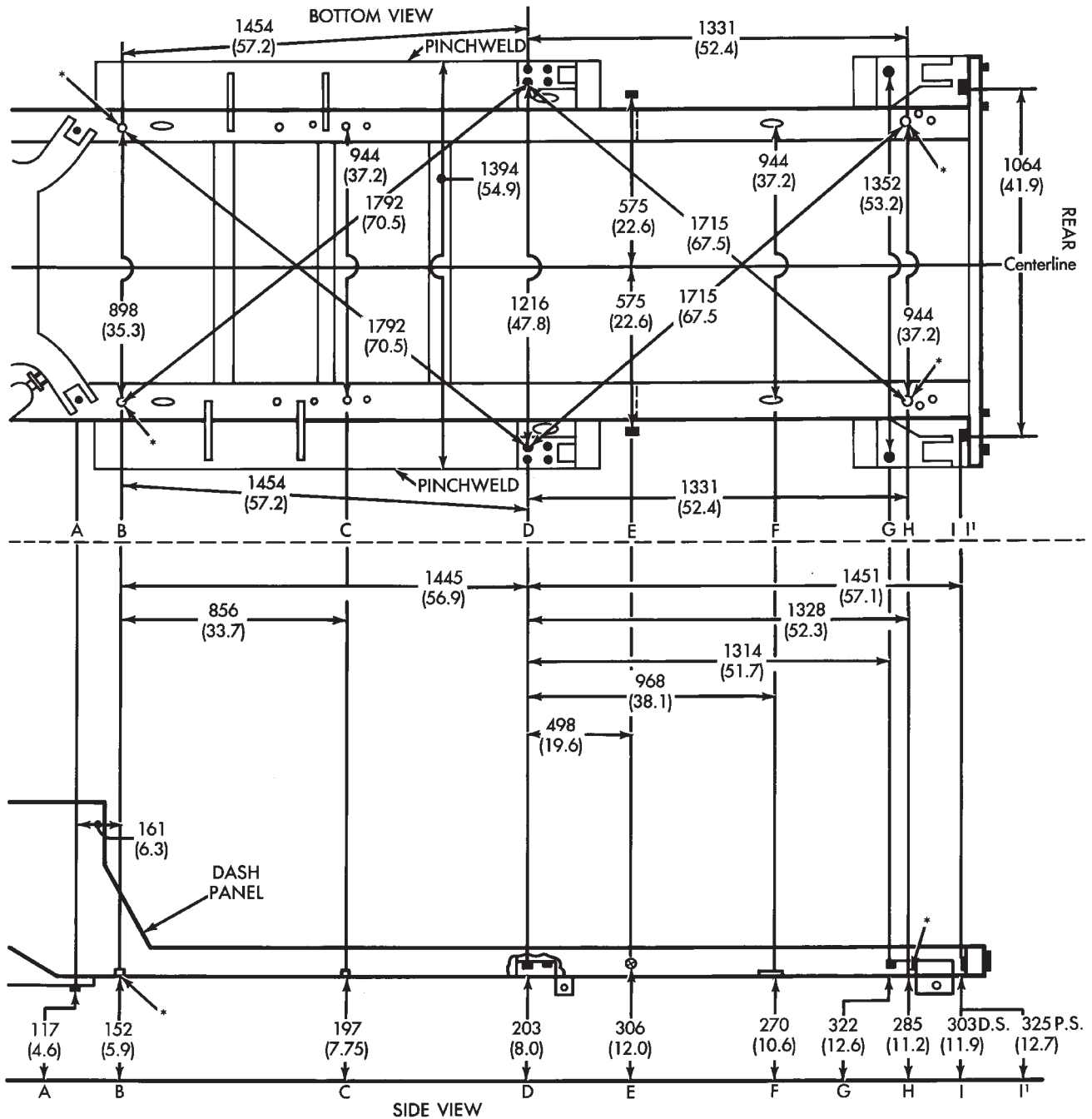
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**Fig. 7 All Wheel Drive Van/Wagon Crossmember**  
**FRAME DIMENSIONS**

Frame dimensions are listed in metric scale then converted to inch scale listed in parenthesis. All dimensions are from center to center of Principal Locating Point (PLP), or from center to center of PLP and fastener location.

#### VEHICLE PREPARATION

Position the vehicle on a level work surface. Using screw or bottle jacks, adjust the vehicle PLP heights to the specified dimension above a level work surface. Vertical dimensions can be taken from the work surface to the locations indicated (Fig. 8, 9, 10 or 11).



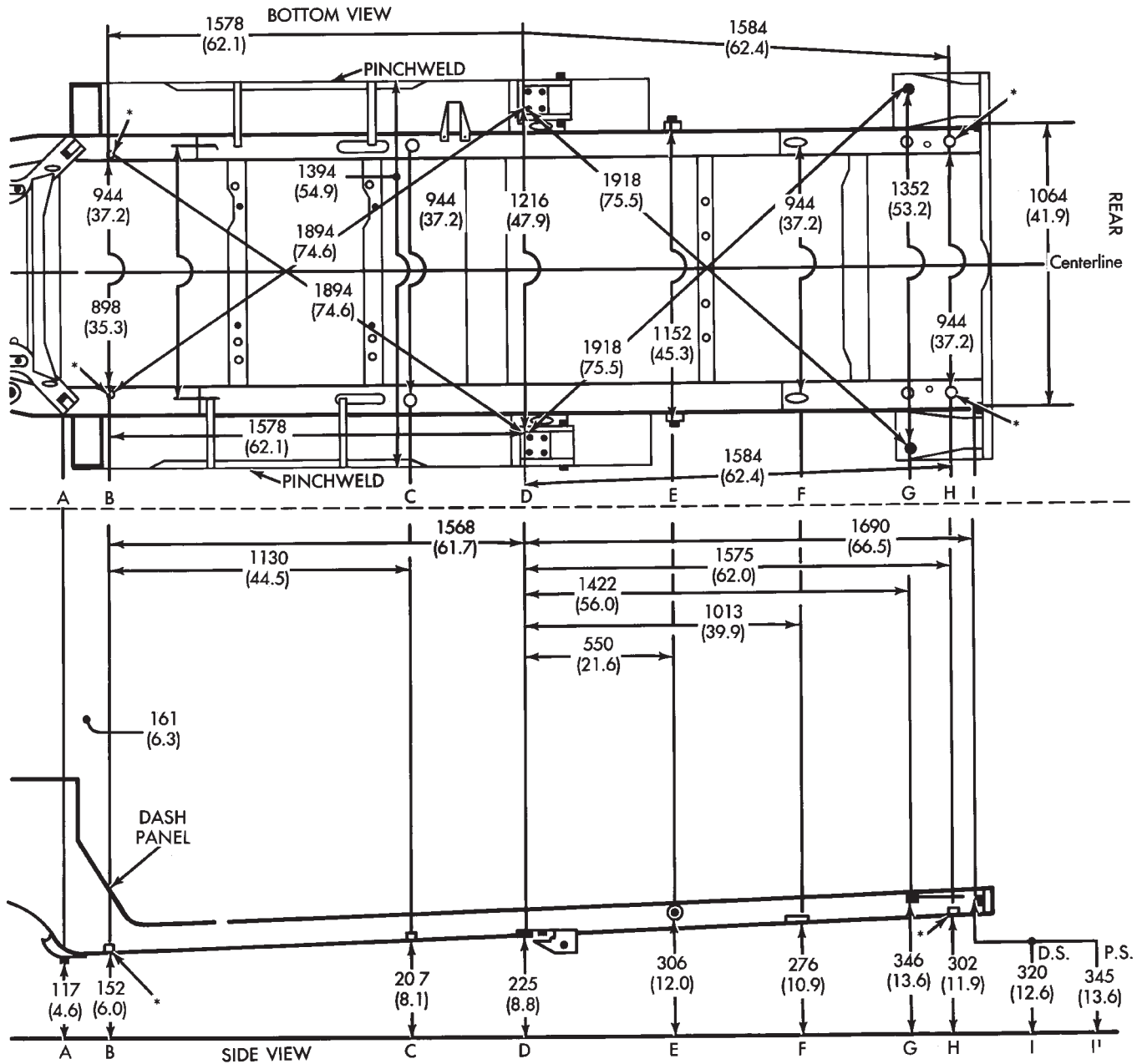
**MEASURING POINT DESIGNATIONS**

- A - Head of Rear Mounting Bolt for Front Crossmember
- B - Center of 25 mm (1") Round Hole - Front  
Center of Frame Rail
- C - Center of 15 mm (5/8") Round Hole - Rear  
Center of Frame Rail
- D - Front Inner Bolt of Forward Spring Shackle
- E - Outer Tip of Bolt - Rear Shock Mounting Bolt
- F - Rear Center of 32 x 17 mm (1 1/4 x 1 1/8") Oval Hole
- G - Head of Bolt on Rearward Spring Shackle
- H - Center of 18 mm (3/4") Round Hole
- I - Inside Bolt for Rear Bumper Bracket

- D.S.** - DRIVER SIDE
- P.S.** - PASSENGER SIDE
- - BOLTS
- - HOLES
- \* - PLP LOCATIONS

2846mm (111.0 in.) wheel base  
van/wagon

**Fig. 8 Dimensions Rear of Crossmember—Short Wheel Base Van/Wagon**

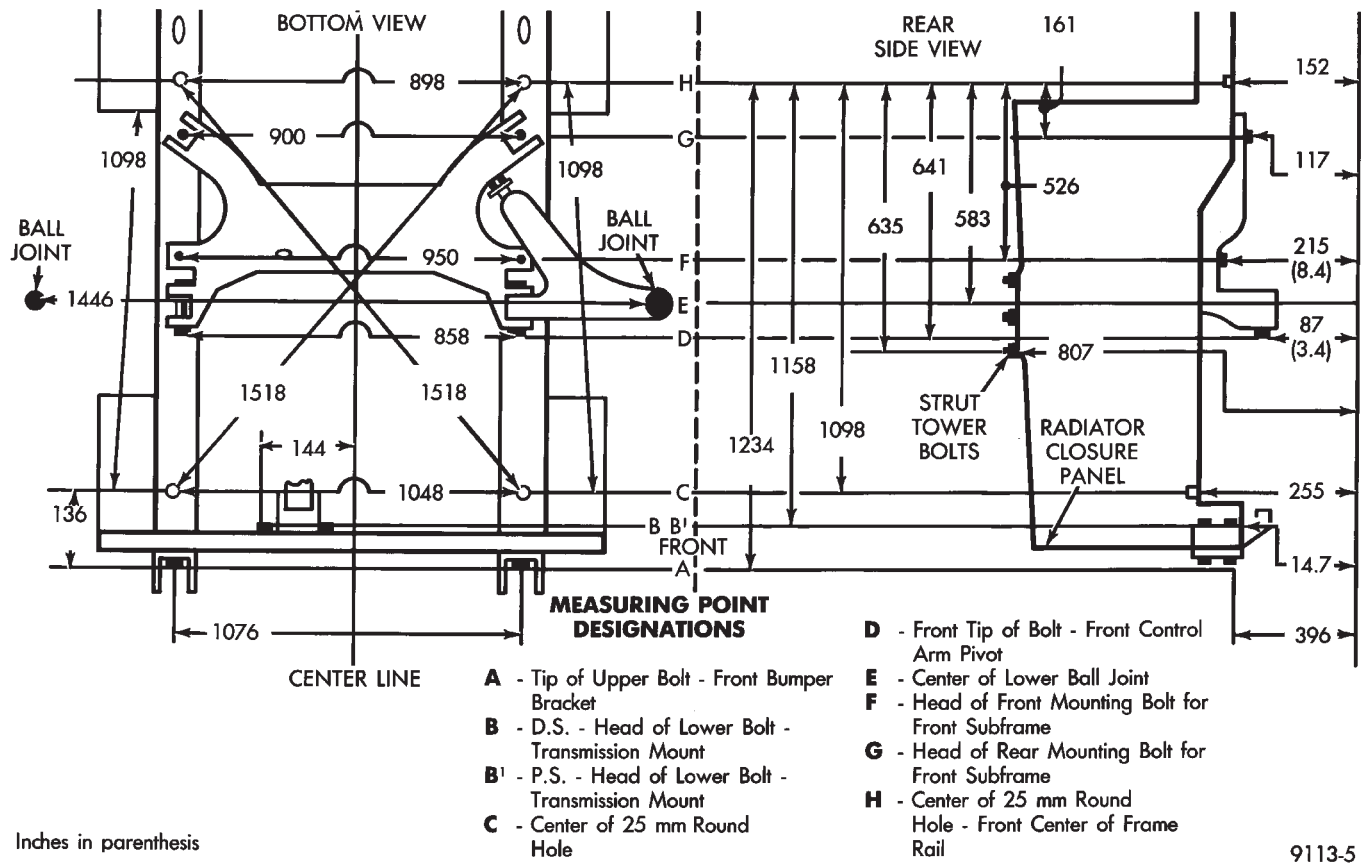


- A - Tip of Rear Mounting Bolt for Front Crossmember
- B - Center of 25 mm (1") Round Hole
- C - Center of 25 mm (1") Round Hole
- D - Front Inner Bolt of Forward Spring Shackle
- E - Outer Tip of Bolt - Rear Shock Mounting Bolt
- F - Rear Center of 32 x 17 mm (1 1/4 x 1/16") Oval Hole
- G - Head of Bolt on Rearward Spring Shackle
- H - Center of 18 mm (1/16") Round Hole
- I - D.S. - Outer Bolt for Rear Bumper Bracket
- I' - P.S. - Outer Bolt for Rear Bumper Bracket

- D.S. - DRIVER SIDE
- P.S. - PASSENGER SIDE
- - BOLTS
- - HOLES
- \* - PLP LOCATIONS

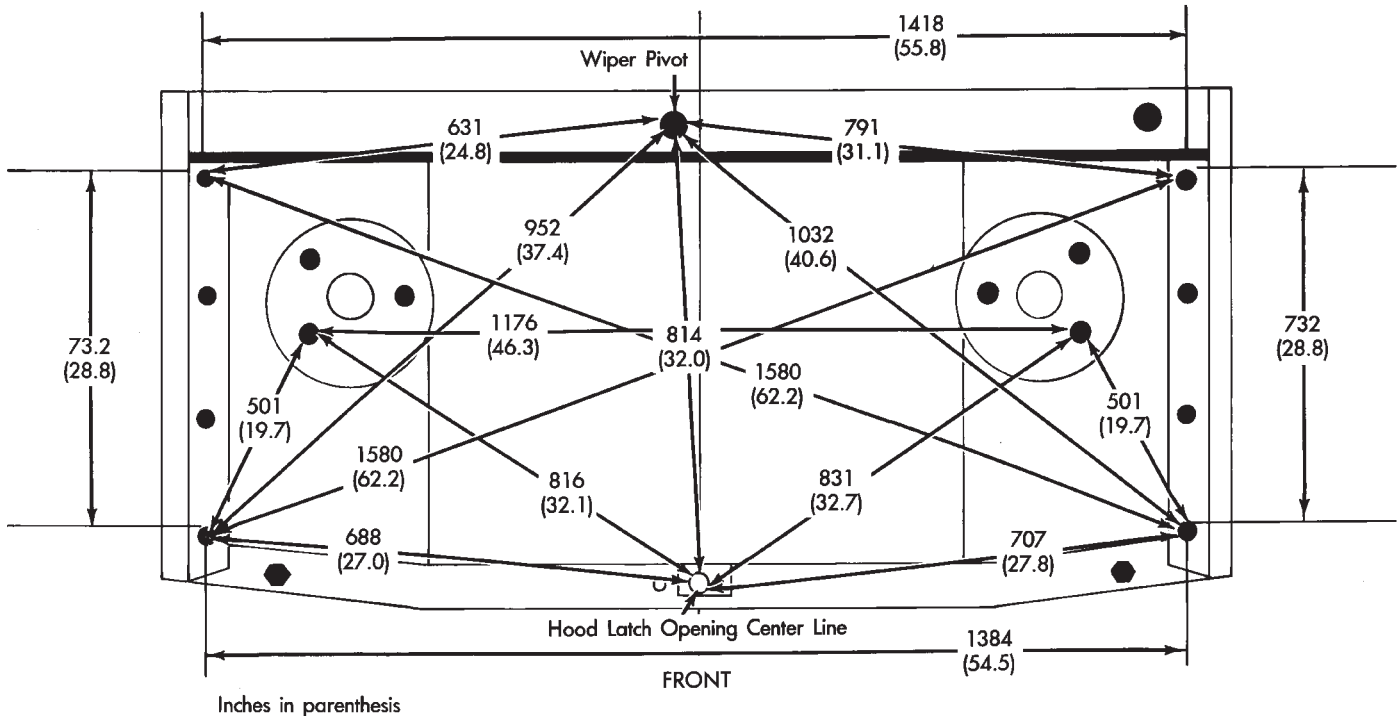
3024mm (119.1 in) wheel base  
van/wagon

Fig. 9 Dimensions Rear of Crossmember—Long Wheel Base Van/Wagon



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Fig. 10 Dimensions Forward of Gage Hole Rear of Crossmember— All Van/Wagons



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Fig. 11 Engine Compartment Dimensions—All Van/Wagons

