HOLDEN COMMODORE VB SERIES

STATION WAGON

SERVICE MANUAL SUPPLEMENT

FOREWORD

This Supplement, when used in conjunction with Holden Commodore VB Series Service Manual, Part Number M38145 and the various other publications quoted in M38145, will provide descriptions, specifications and service procedures for *Holden Commodore VB Series Station Wagon Models.*

Engine, transmission, front brake and rear axle assemblies are similar to those used in other GMH vehicles, no major service repair and overhaul procedures are given for these assemblies, and reference should be made to existing Service Manuals as detailed in the appropriate sections of Manual Part Number M38145.

The Section Index on this page enables the user to quickly locate any desired Section. At the beginning of each section containing more than one major subject is a Table of Contents, which gives the section page number on which each major subject begins. An Index is placed at the beginning of each major subject within the section.

All information, illustrations and specifications contained in this Supplement are based on the latest product information available at the time of publication approval. The right is reserved to make changes at any time without notice.

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SECTION 00

GENERAL INFORMATION AND LUBRICATION

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GENERAL INFORMATION

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GENERAL DESCRIPTION

The VB Station Wagon range comprises two five door models. The end gate is of one piece, wrap round construction, with a lift handle and is supported in the open position by gas filled struts located each side of the end gate.

The mechanical specifications for Station Wagon models are essentially the same as for the Sedan versions except for revisions to the front stabilizer bar, revised rear springs and revised rear shock absorber mounting. Rear tread has been increased by the use of longer rear axles and tubes.

A revised shape fuel tank with 68 litre capacity is fitted to Station Sedans. A back window wiper and washer assembly is standard on 'SL' models.

For details of Station Wagon models, refer 'Model availability and base equipment chart' in this section.

MODEL AVAILABILITY & BASE EQUIPMENT

BODY STYLE	MODEL		KERB MASS (Estimated)	ENGINE	TRANSMISSION		AXLE RATIO :1	TYRES	WHEELS
	NUMBER	NAME			TYPE	SHIFT LOCATION			
STATION WAGON 5 DOOR	8VK35	COMMODORE	1276 kg	2.85	4 SPEED MANUAL	FLOOR	3.36	CR78S14	SLOTTED STEEL
	8VL35	COMMODORE 'SL'	1280 kg	3.3	AUTOMATIC 'TRIMATIC'		3.08		

EXTERIOR DIMENSIONS

MODELS	LENGTH	WIDTH	HEIGHT	WHEEL BASE	TREAD (FRONT)	TREAD (REAR)	TURNING CIRCLE
8VK35	4732	1722	1424	2668	1451	1440 DRUM	10.2 m (Manual) 10.8 m (Power) (KERB TO KERB)
8VL35						1447 (DISC)	11.0 m (Manual) 11.4 m (Power) (WALL TO WALL)

POWER TRAIN COMBINATIONS

ENGINE	TRANSMISSION TYPE	REAR AXLE RECOMMENDED USAGE		
		COUNTRY/HIGHWAY ECONOMY HIGH RATIO	CITY SUBURBAN GENERAL PURPOSE BASE	TOWING PERFORMANCE LOW RATIO
2.85 L6 (HIGH COMP.)	4 SPEED MANUAL	–	3.36	–
3.3 L6 (HIGH COMP.)	4 SPEED MANUAL	3.08	3.36	–
	TRIMATIC	–	3.08	3.36
3.3 L6 (LOW COMP.)	4 SPEED MANUAL	–	3.36	–
4.2 V8 (HIGH COMP.)	4 SPEED MANUAL	–	3.08	–
	TRIMATIC	–	2.78	3.08
5.0 V8 (HIGH COMP.)	4 SPEED MANUAL	–	3.08	3.36
	TURBO HYDRA-MATIC	–	2.60	3.08

LUBRICATION

LUBRICATION & MAINTENANCE INTERVALS

Lubrication recommendations for 'VB' Series Station Wagons are as shown in 'VB' Service Manual except for the revised specifications described in the following instructions.

FRONT SUSPENSION LOWER CONTROL ARM BALL JOINT ASSEMBLIES

Lubricate with Lithium base grease containing 5 percent molybdenum disulphide (Molybond GA 5 or equivalent) every 10,000 kilometres or 6 months, whichever occurs first.

NOTE: Lithium base grease containing 5 percent molybdenum disulphide has extreme pressure properties for effective long life lubrication. If conventional chassis grease not intended for extended lubrication periods is used, the lubrication intervals should be shortened and should not exceed 3,300 kilometres.

NOTES

SECTION 01

BODY AND REAR BUMPER BAR

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BODY

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SERVICE OPERATIONS

END GATE

The one piece construction end gate fitted to the Station Wagon incorporates a rubber glazed heated rear window glass.

The end gate operation is assisted by gas filled support struts located at each side of end gate.

WARNING: ONLY LOOSEN OR REMOVE SUPPORT STRUTS WHEN END GATE IS SUPPORTED IN THE FULLY OPENED POSITION.

Refer Section 12, Electrical, for details of end gate heated rear window and washer/wiper installation.

REMOVAL

1. Scribe position of hinges on end gate to facilitate installation.
2. With the end gate supported in the open position, disconnect electrical wiring from support struts and using a screwdriver prise out retaining wedges 'A' Fig. 1-1 and disengage strut from ball.
3. Support end gate and remove bolts attaching end gate to hinges.
4. To remove end gate hinges from body it is necessary to remove the upper section of body opening weatherstrip and fold back headlining sufficiently to gain access to hinge to body attaching bolts.

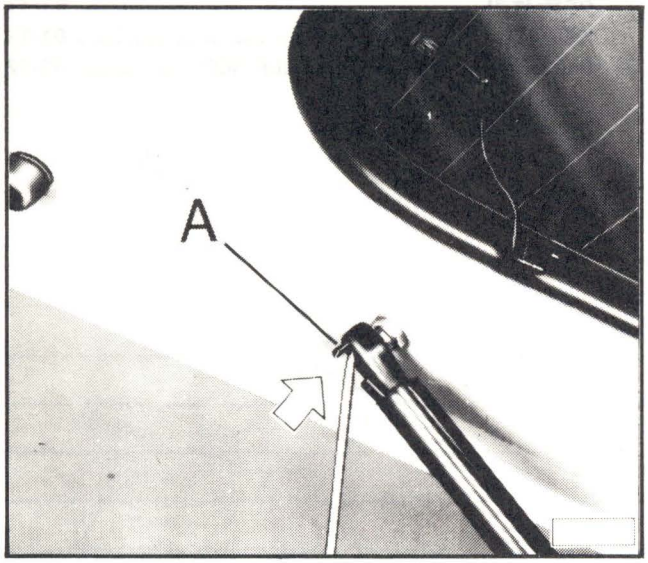

Figure 1-1

INSTALLATION

Reverse removal operations.

NOTE: Following removal or adjustment of the end gate it is important that the end gate lock striker pin engages correctly with lock. Adjust striker to ensure correct engagement between lock and striker and to achieve correct alignment between end gate and adjacent body panels.

END GATE LOCK

REMOVAL

1. With the end gate in the raised position use a screwdriver or suitable flat tool to prise the trim panel fasteners from end gate. Remove trim panel 'A' Fig. 1-2.
2. From inside end gate, disengage push button to lock connecting rod. 'B' Fig. 1-3.
3. Remove screws attaching lock to end gate.

INSTALLATION

Reverse removal operations.

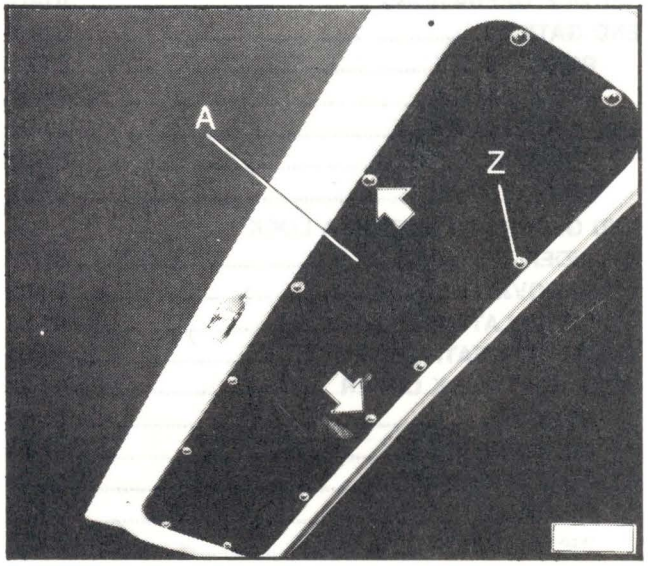

Figure 1-2

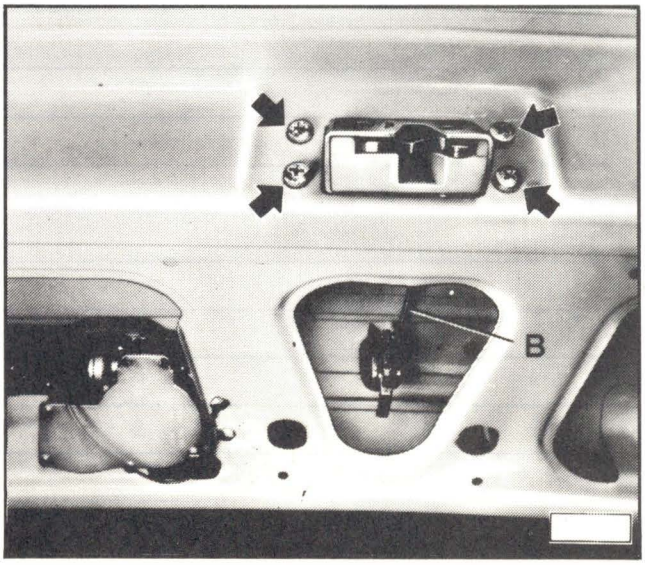

Figure 1-3

END GATE PUSH BUTTON & LOCK CYLINDER

REMOVAL

1. With the end gate in the raised position use a screwdriver or suitable flat bladed tool to prise the trim panel fasteners from end gate. Remove trim panel 'A' Fig. 1-2.
2. From inside end gate, disengage push button to lock connecting rod 'B' Fig. 1-4.
3. Using a suitable tool remove the slotted nut retaining the push button assembly to end gate. Remove push button assembly.
4. To remove the lock cylinder, use point nose pliers to remove circlip '1' retaining lock cylinder '2' to push button housing '3' Fig. 1-5. Remove lock cylinder.
5. The exterior lift handle is attached to the end gate by screws 'C' Fig. 1-4.

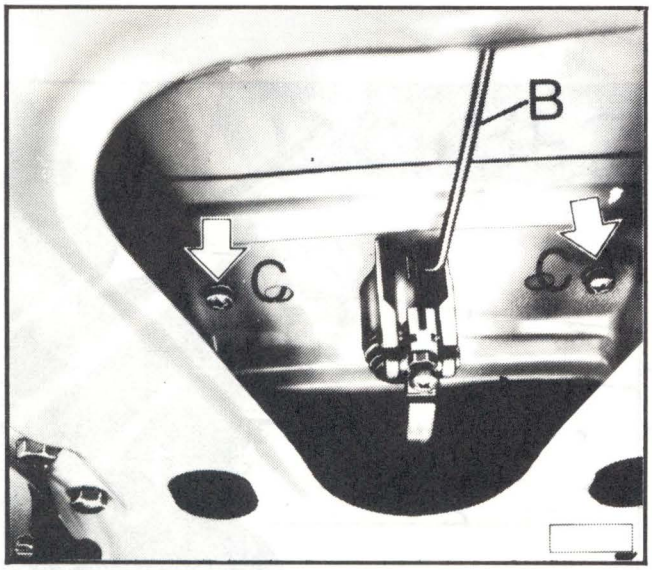

Figure 1-4

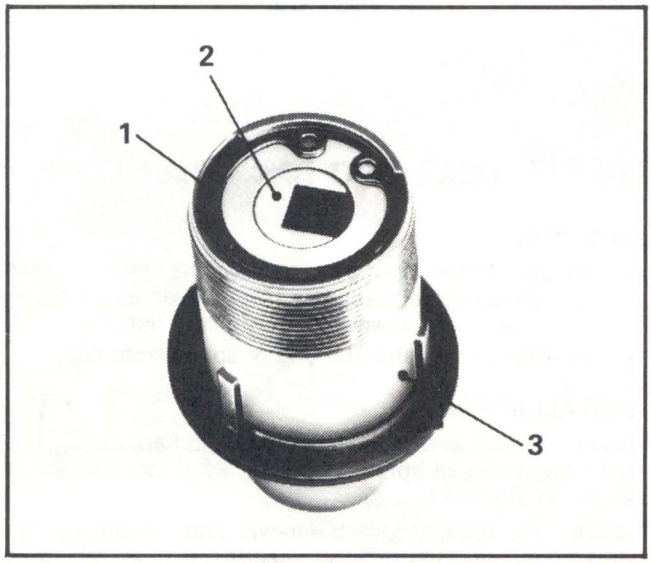

Figure 1-5

INSTALLATION

Reverse removal operations.

Assemble push button assembly in the following sequence. Fig. 1-6.

1. Push Button Housing
2. Seal Ring
3. Lock Cylinder
4. Spring
5. Washer
6. Circlip
7. Slotted Nut

NOTE: A screw attached to the push button guide sleeve provides adjustment for push button operation. Adjust screw so that end gate lock is unlatched 0.5 - 1 mm before push button is fully depressed.

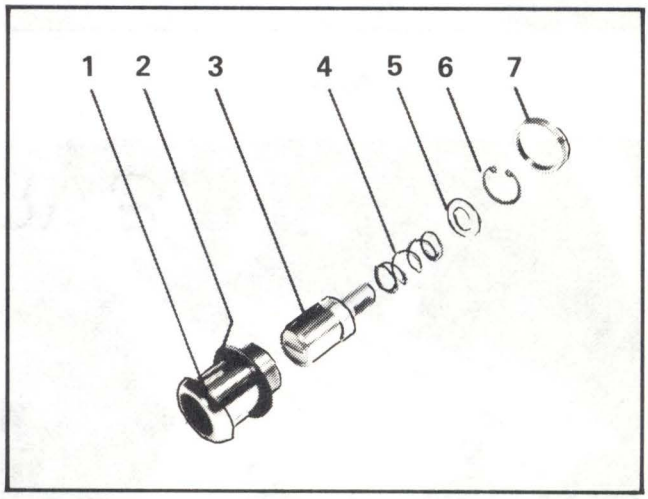

Figure 1-6

END GATE WEATHERSTRIP

The end gate weatherstrip is a rubber bulb section fitted over the upturned flange of the end gate opening. A continuous bead of caulking compound is applied between the lips of the weatherstrip and the flange to achieve a dust and water tight seal.

REAR SEAT BACK COVER

REMOVAL

1. Remove rear seat back operating knobs and guide bushes.
2. Disengage the cover and stiffener '1' and '2' from retainer '3' as shown in Fig. 1-7.
3. Disengage upper section of wire frame from rear seat back 'A' Fig. 1-8.
4. Disengage lower section of wire frame from rear seat back 'B' Fig. 1-9.

INSTALLATION

Reverse removal operations.

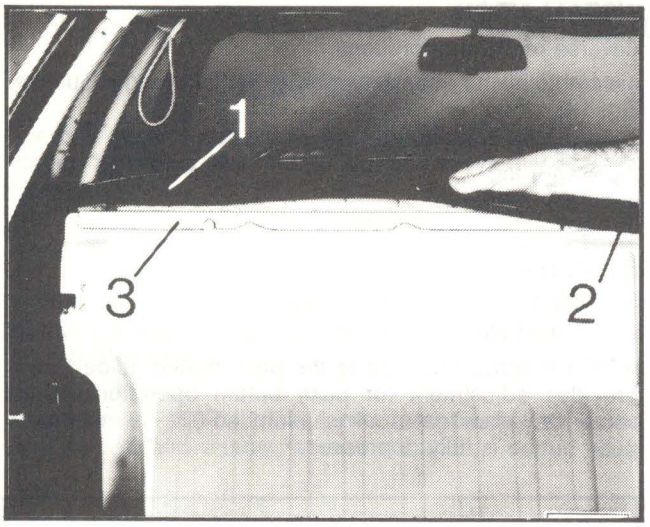

Figure 1-7

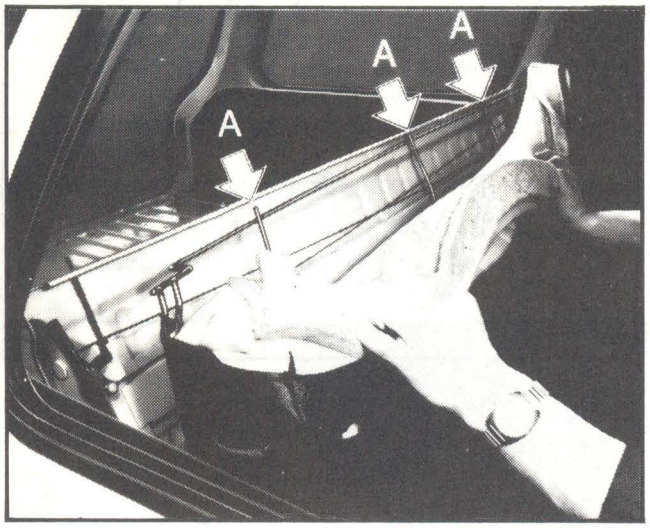

Figure 1-8

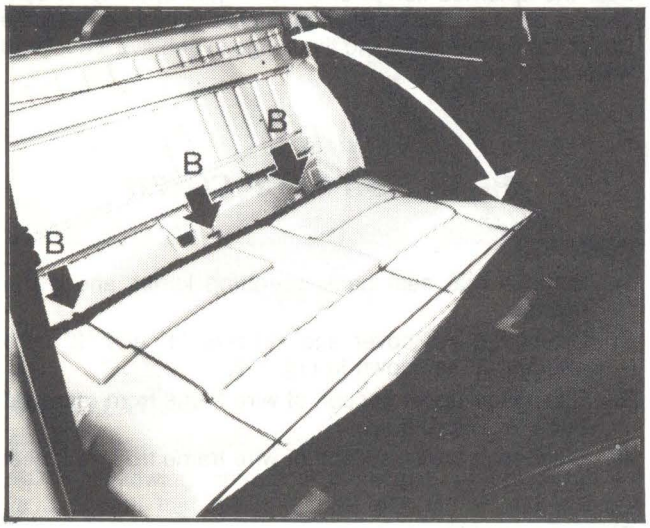

Figure 1-9

REAR SEAT BACK LOCK

REMOVAL

1. Remove seat back lock operating knobs and guide bushes.
2. Partly remove rear seat back cover by disengaging cover and stiffener '1' and '2' from retainer '3' Fig. 1-7.
3. Disengage upper section of wire frame from rear seat back as shown in 'A' Fig. 1-8.
4. Remove screws attaching lock to seat back, refer '1' and '2' Fig. 1-10 and disengage the lock actuating rods 'A' and 'B' as shown in Fig. 1-11.

INSTALLATION

Reverse removal operations.

NOTE: The rear seat back lock striker pins can be adjusted up or down to allow correct engagement between lock and striker.

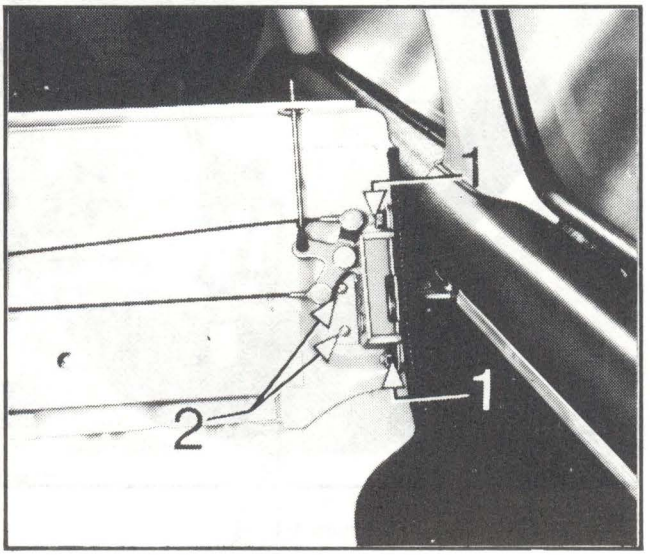

Figure 1-10

REAR SEAT BACK FLAP

REMOVAL

1. Remove torsion spring by engaging the small hooks on torsion spring removal tool KM125 over end of spring and pull spring downwards away from flap. Fig. 1-12.
2. Disengage the left hand end of spring from flap.

INSTALLATION

Insert left hand end of torsion spring into flap. Engage the right hand end of spring with flap using tool KM125 as shown in Fig. 1-13.

NOTE: The torsion spring removal and installation tool KM125 is part of the recommended tool kit for Commodore. This tool is also used on sedan models for removal and installation of rear compartment lid hinge springs.

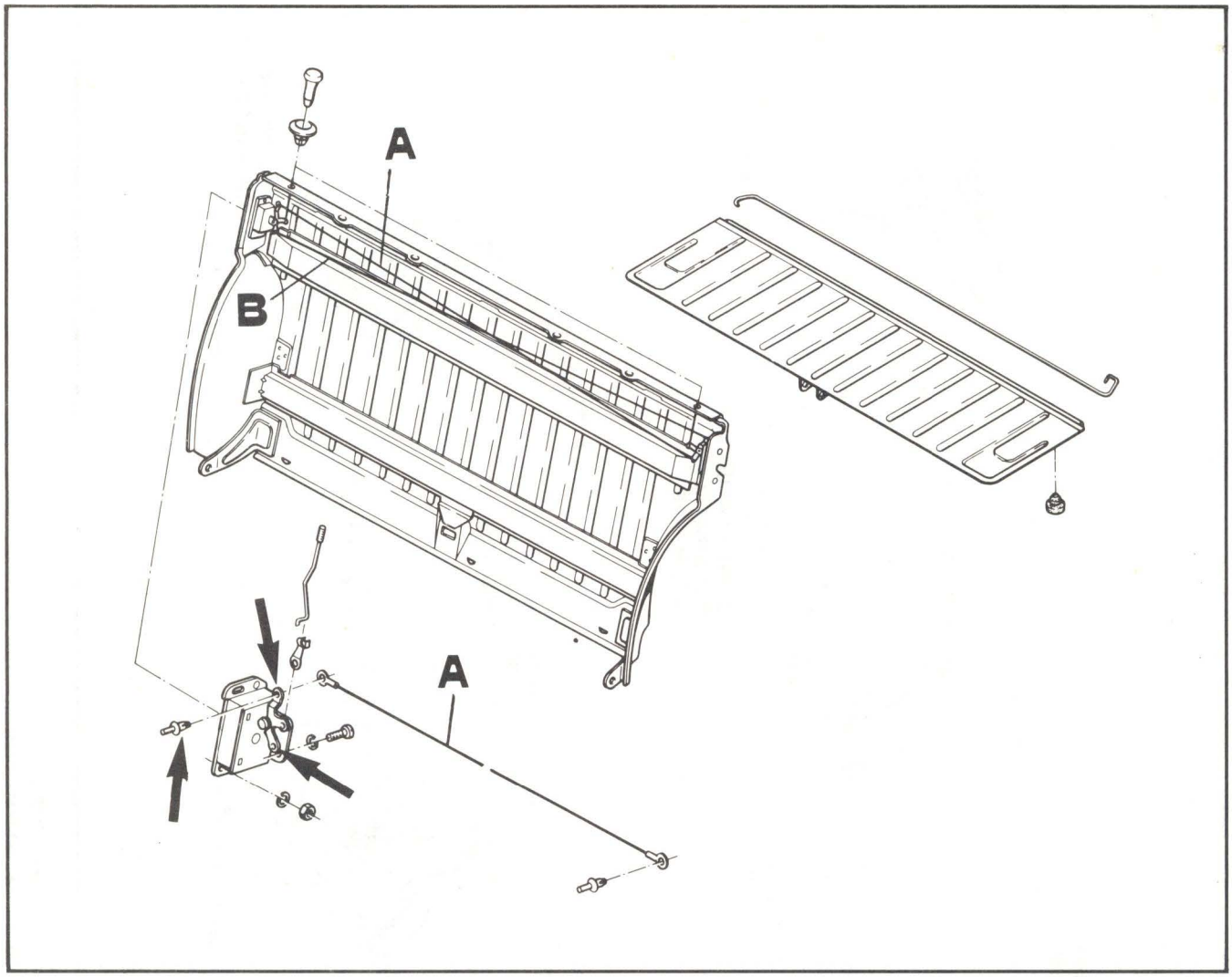

Figure 1-11
Rear Seat Back & Flap

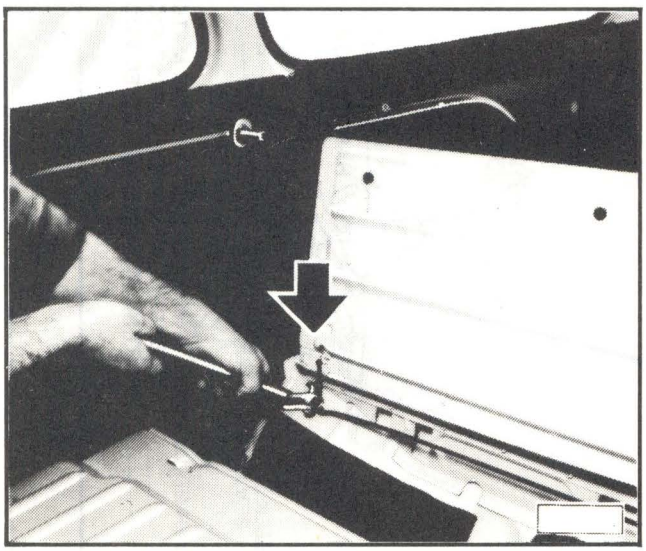

Figure 1-12

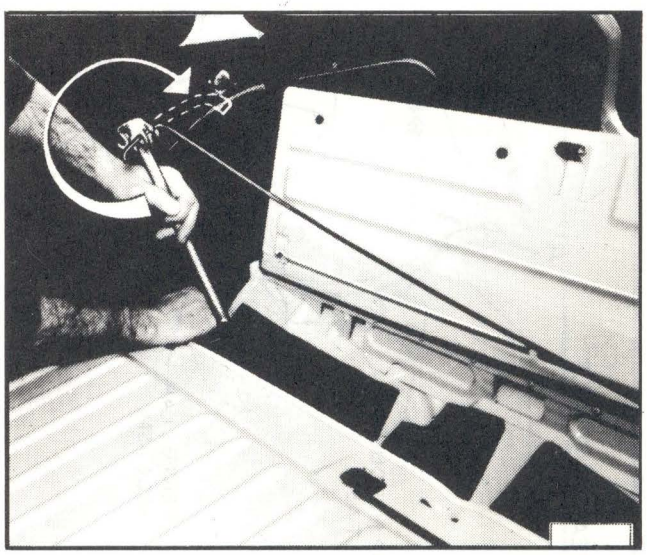

Figure 1-13

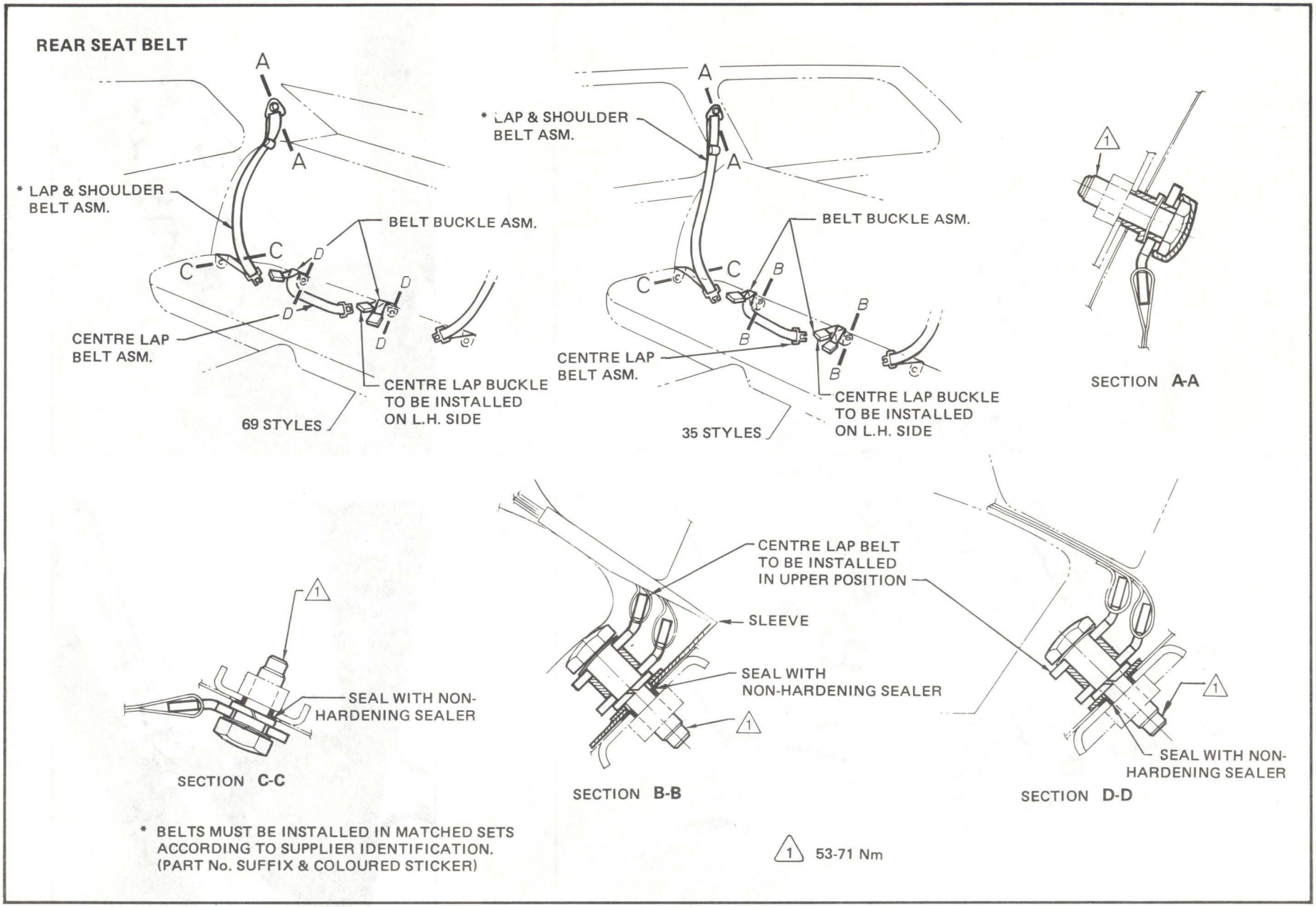

Figure 1-14
Rear Seat Belt Installation

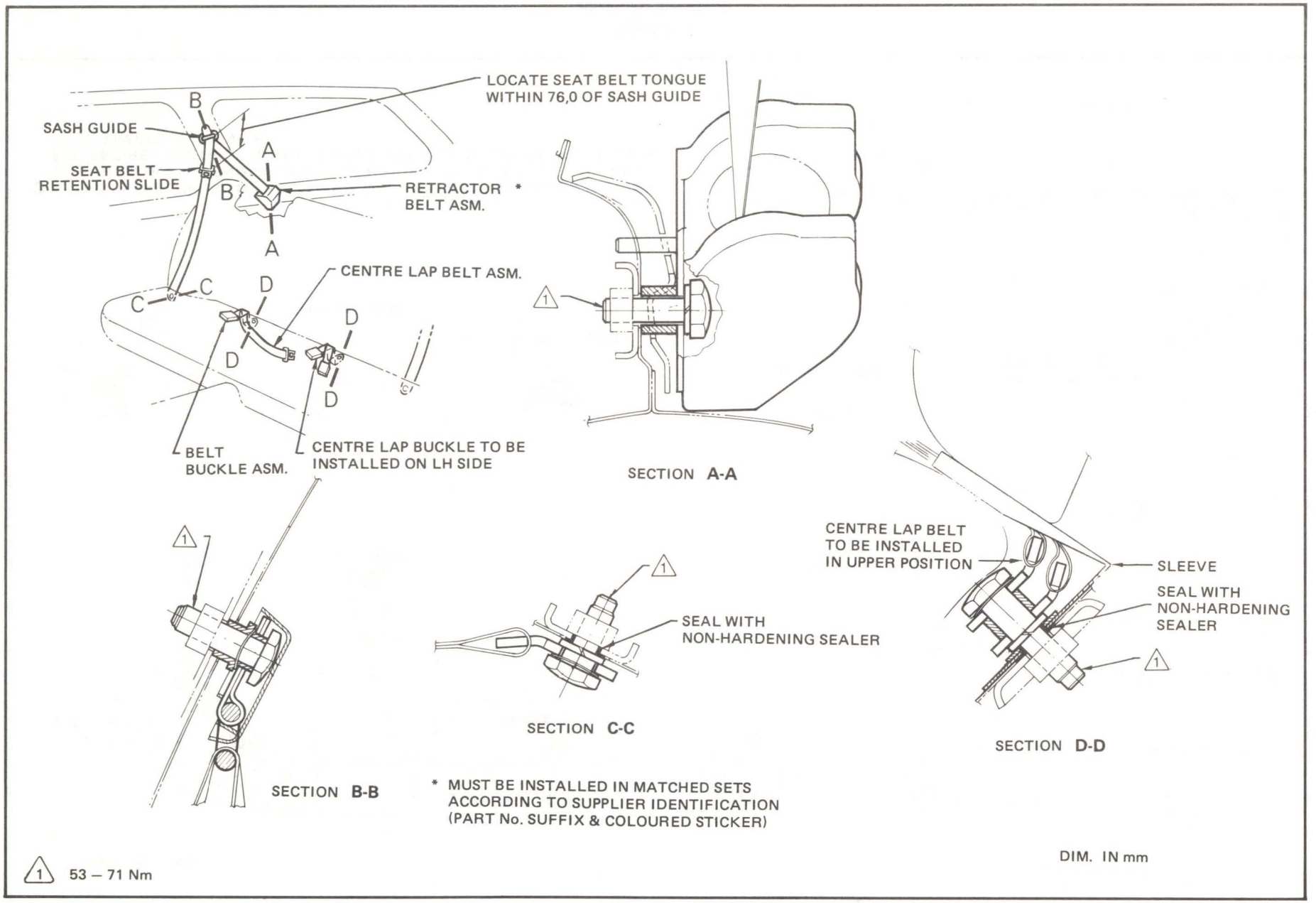

Figure 1-15

Rear Seat Belt - Retractable - Installatio.

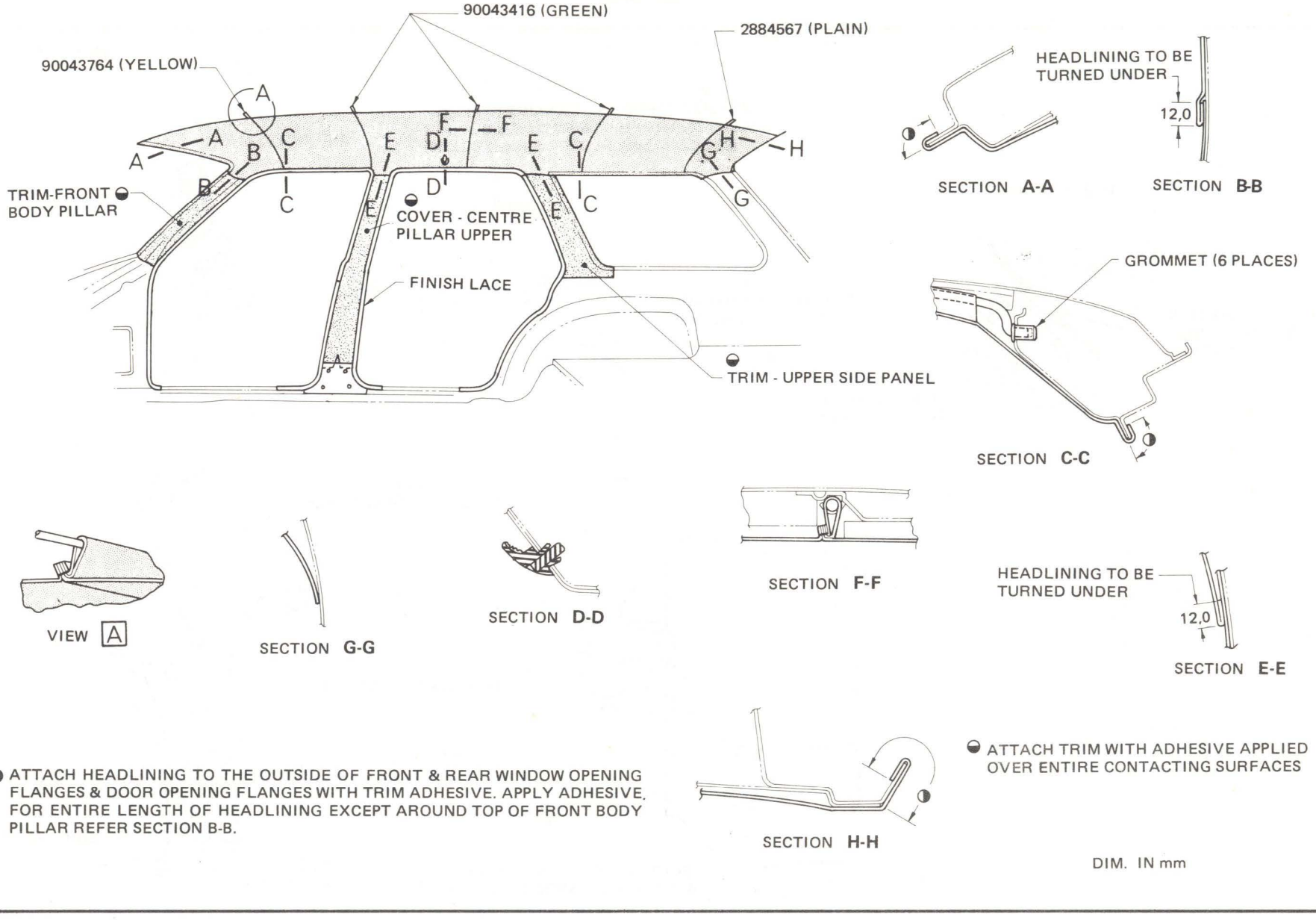

Figure 1-16
Headlining Installation

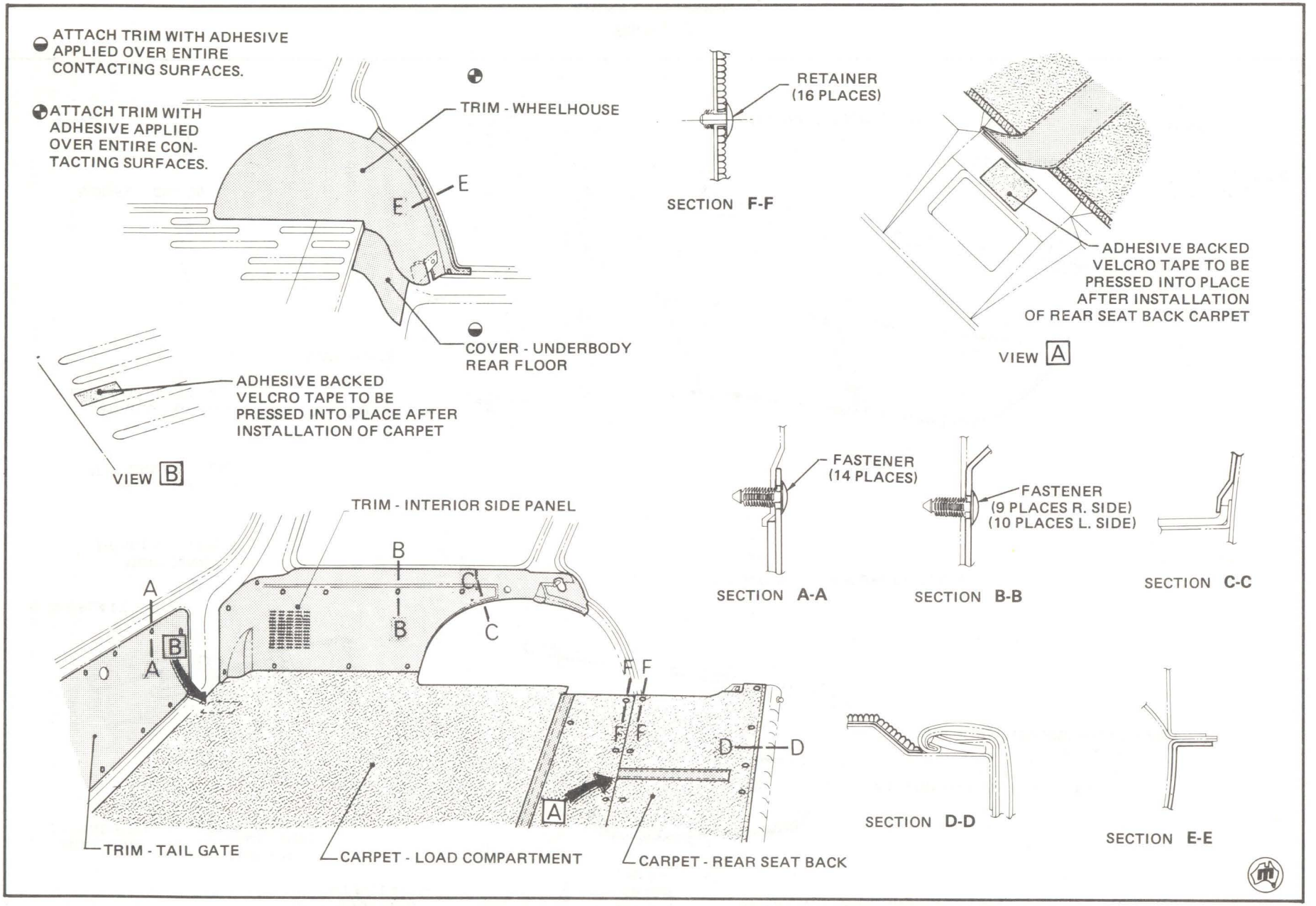

Figure 1-17
Interior Trim Installation

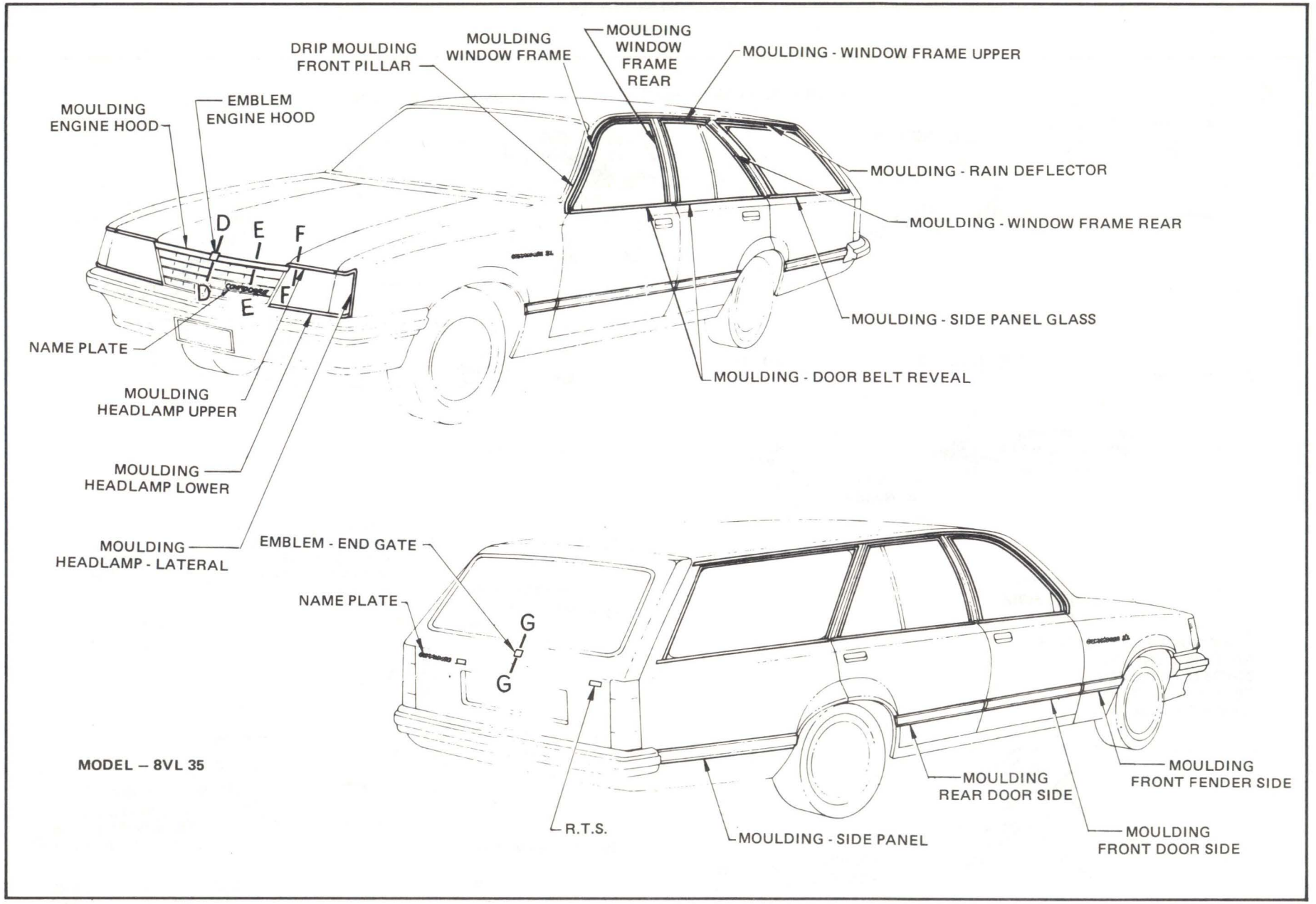

Figure 1-18
Exterior Ornamentation

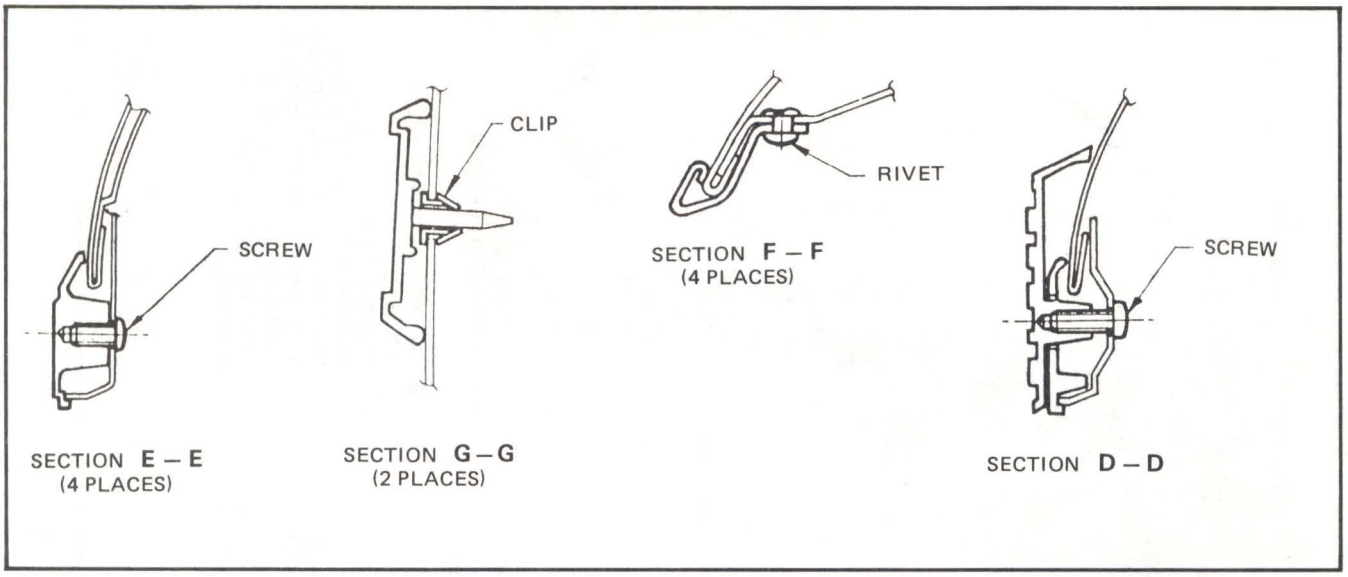

Figure 1-19
Exterior Ornamentation Installation

HEADLINING

The headlining removal and installation procedure for station wagon is basically the same as those specified for sedan models except for the additional operations of removing the side panel glass and removing upper section of seal from end gate opening. Refer Fig. 1-16.

ADHESIVE BACKED BODY SIDE MOULDINGS & NAME PLATES

1. To ensure secure retention of adhesive backed body side mouldings and name plates, it is important that the panel surface is thoroughly cleaned to remove all traces of wax or other contaminants.

   Wipe area of panel to which name plate or moulding is to be applied with Prepsol or an equivalent cleaning agent prior to installation of part.
2. In addition, to achieve an effective bond between moulding/ name plate and panel, panel surface should be warmed to minimum of 20 to 30 degrees C.
3. To install moulding/name plate, mark correct location of part on panel, remove protective backing strip and firmly press part to panel.
4. Any moulding/name plate which shows evidence of bond failure must be replaced with a new part.

MOULDING - SIDE PANEL GLASS

REMOVAL

1. The inside flange of the side panel moulding is retained beneath the side panel glass retaining channel.
2. To remove moulding it is necessary to first remove the side panel glass and rubber channel before prising moulding fastening studs, located at each lower corner of moulding, away from body panel.

INSTALLATION

Apply a bead of non hardening sealer between moulding and body opening flange and reverse removal operations.

GLASS - REAR SIDE PANEL

REMOVAL

1. From inside body use a suitable tool to ease lip of glass retaining channel away from body opening.
2. With the aid of an assistant outside body to support window, commence bumping top of window outwards, using the palm of the hand. Remove and place window assembly on a clean protected surface.

NOTE: As a safety precaution, leather or thick cloth gloves should be worn.

3. Remove windshield sealer from body opening flange and glass retaining channel.
4. Visually check body opening flange and correct any existing irregularities.

INSTALLATION

1. Apply retaining channel to side panel glass.
2. Apply a bead of windshield sealer around complete body opening flange.
3. Insert a strong cord inside body opening flange cavity of glass retaining channel, leaving ends protruding centrally at inside upper edge of retaining channel.
4. Place glass and channel assembly in body opening and while pressing firmly from outside body, have an assistant inside slowly pull cord, seating lip of rubber retaining channel over complete body opening flange.
5. Apply windshield sealer between glass and lip of retaining channel, around complete perimeter of window.
6. Use white spirits to clean off any excess windshield sealer from around window.

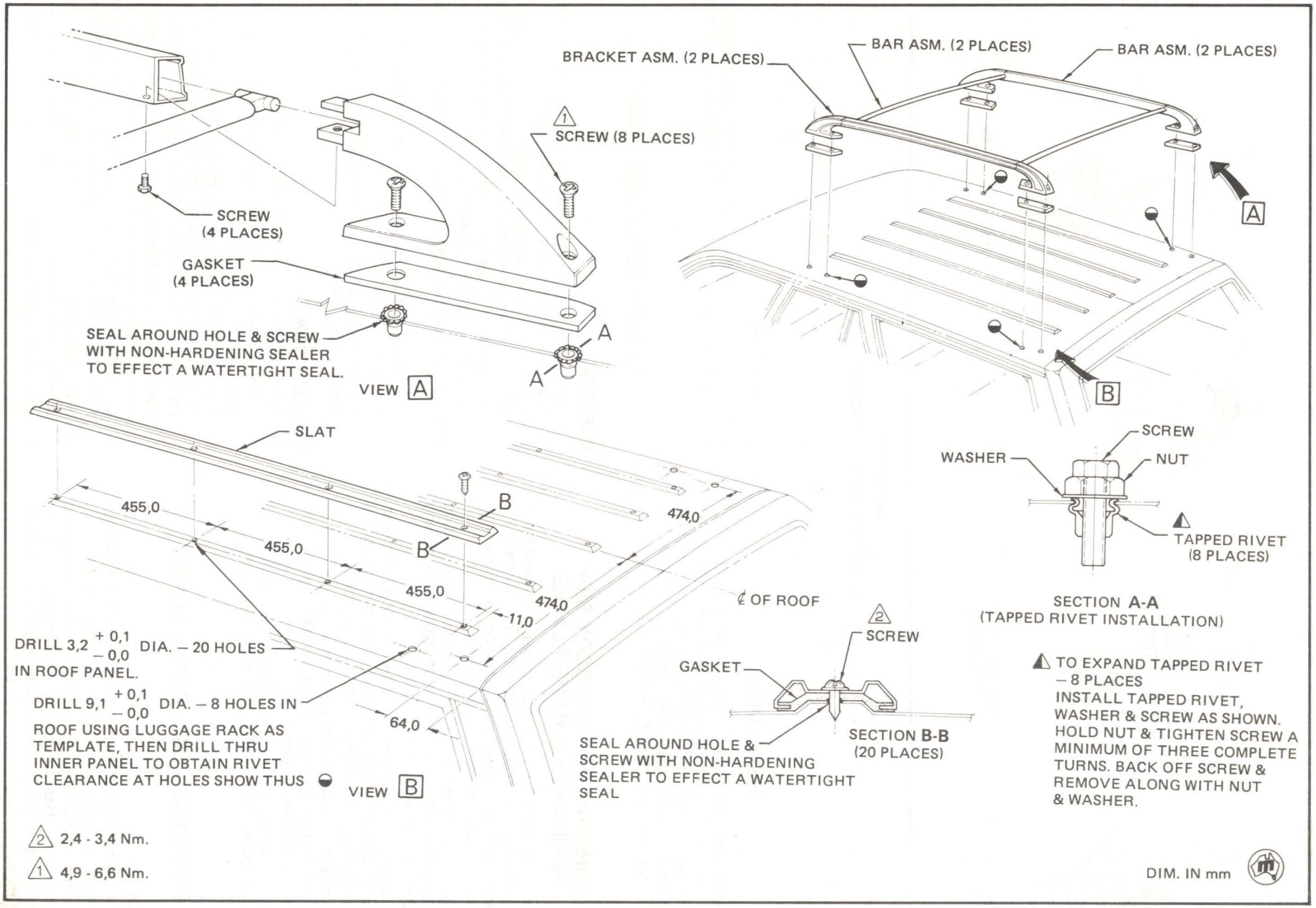

Figure 1-20
Roof Luggage Rack Installation

REAR BUMPER BAR

SERVICE OPERATIONS

REMOVAL

1. Disconnect rear licence plate lamp wiring.
2. From beneath the bumper, remove the bolts 'A' retaining bumper to mounting brackets and bolt 'B' retaining right side of bumper to the rear end panel. Fig. 1-21.
3. From inside the spare wheel well remove bolt 'C' attaching left side of bumper. Fig. 1-22.

INSTALLATION

Reverse removal operations.

NOTE: Prior to installation of bumper assembly, ensure that sealing washers are correctly located between bumper mounting brackets and body.

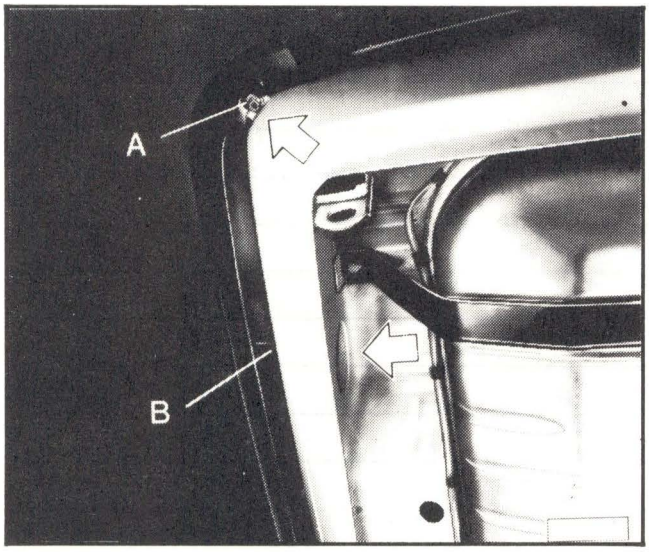

Figure 1-21

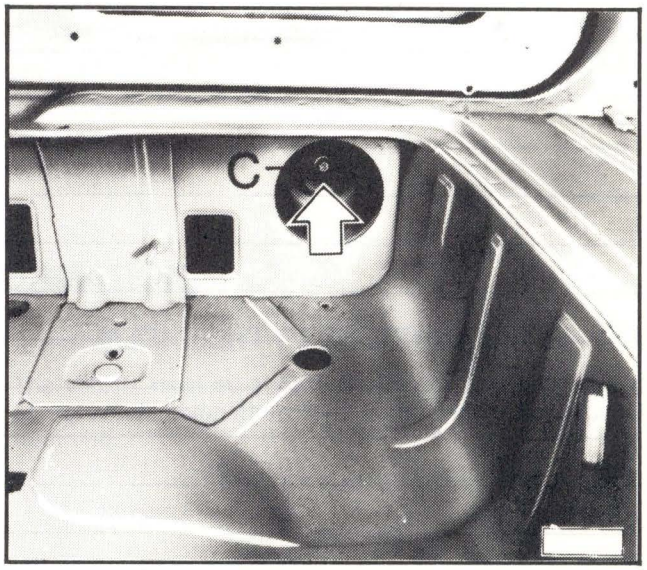

Figure 1-22

NOTES

SECTION 03

FRONT SUSPENSION

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GENERAL INFORMATION

STABILIZER BAR

A larger 26 mm diameter stabilizer bar is fitted to all station wagons.

Larger inside diameter stabilizer insulators are used to accomodate the thicker stabilizer bar.

ALIGNMENT PROCEDURE NOTE:

The vehicle must be at kerb weight with full fuel tank, or 50 kg. in rear compartment with empty tank, when aligning front end.

NOTES

SECTION 04

REAR SUSPENSION AND REAR AXLE

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REAR SUSPENSION

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GENERAL INFORMATION

SPRINGS

Rear spring load capacity has been increased and the progressive rate springs have sufficient roll stiffness to eliminate the need for a stabilizer bar on station wagons.

SHOCK ABSORBERS

Rear shock absorbers are angle mounted to allow a low load floor height and have valving to suit the station wagon body and increased capacity springs.

SERVICE OPERATIONS

SHOCK ABSORBERS

REMOVAL

1. Raise vehicle and support rear axle assembly on safety stands.
2. Lift rear compartment floor cover and remove shock absorber upper mounting cover. Fig. 4-1.
3. Disconnect upper mounting by removing nut, plate and bush.
4. Remove nut retaining lower shock absorber to axle housing bracket.

INSTALLATION

Before installation check shock absorber action and inspect bushes, replace where necessary.

1. Install shock absorber in reverse to removal operations. Note position of stepped bush on upper mounting. Fig. 4-1.
2. Tighten lower attaching nut to 40-51 Nm and upper attaching nut to 12-16 Nm.

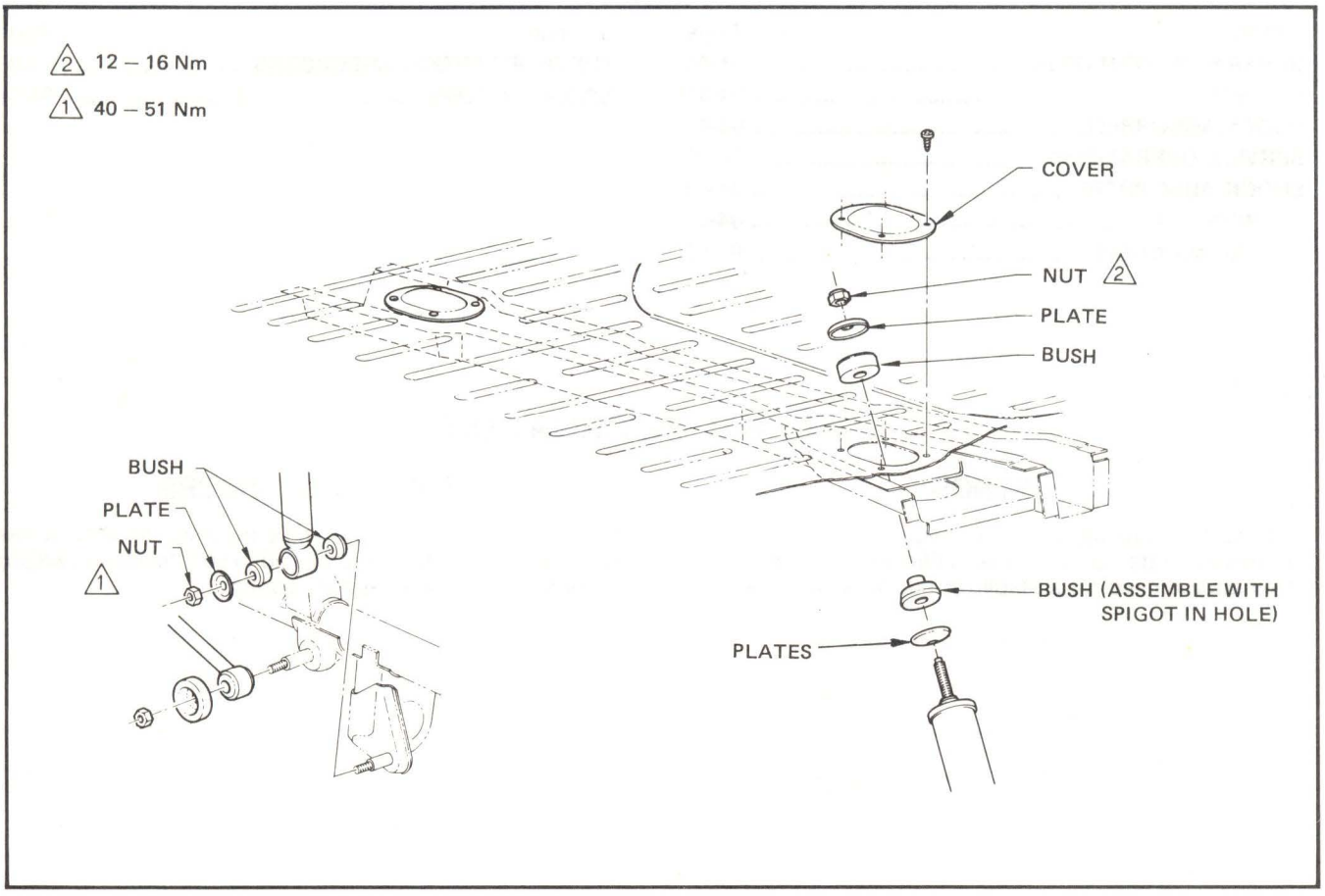

Figure 4-1
Rear Shock Absorber Mounting

SUPERLIFT SHOCK ABSORBERS

Rear superlift shock absorbers are available as an option. Figs. 4-2/A. Air pressure is adjusted by means of a tyre type valve located in the left rear inner panel. Since one valve serves both units, air pressure is equal in both shock absorbers.

To ensure satisfactory operation of the superlift system, observe the following precautions:

(a) Maintain a minimum of 80 kPa (12 psi) for best ride characteristics.

(b) Maximum permissible pressure with vehicle laden is 517 kPa (75 psi).

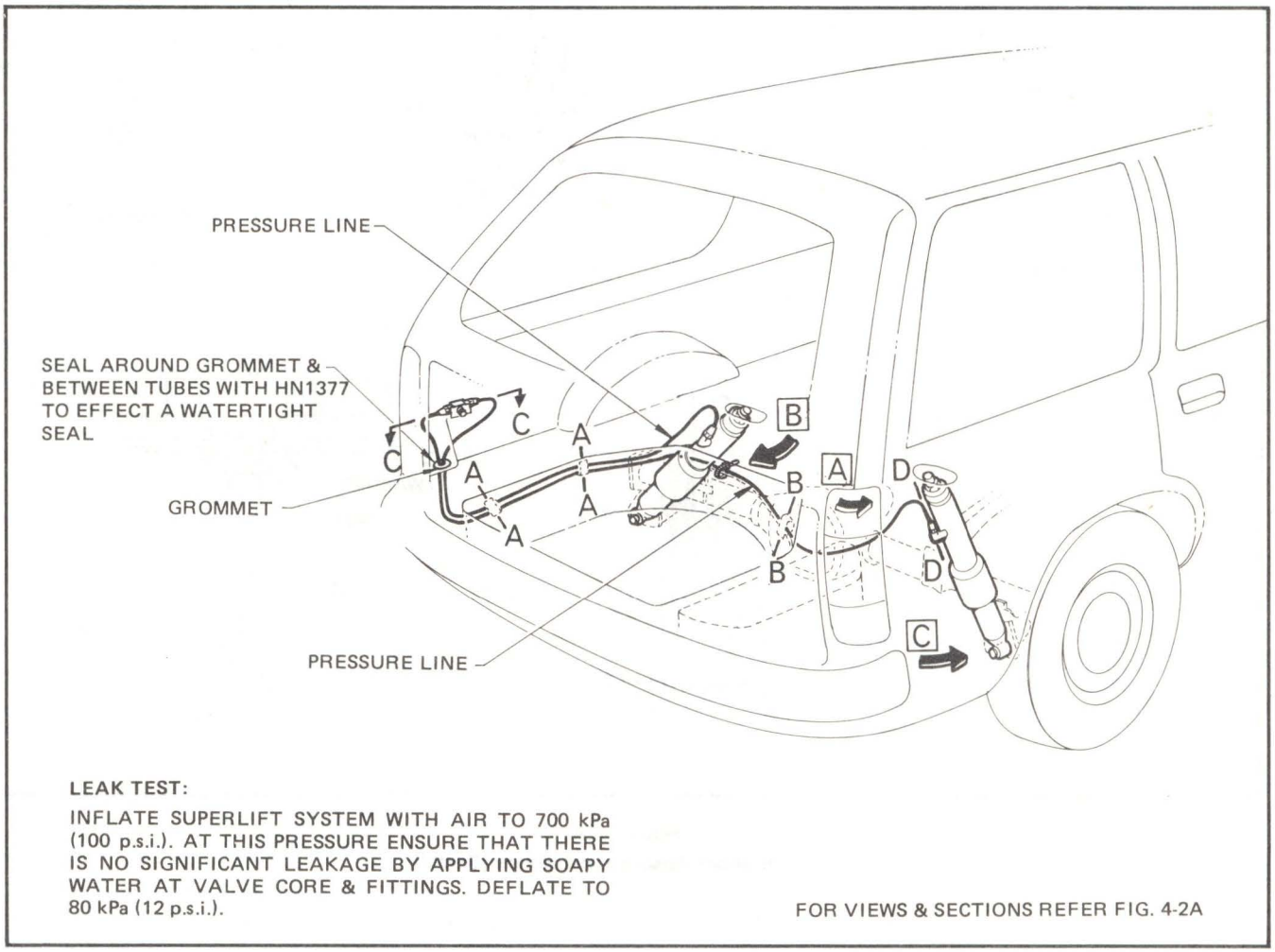

Figure 4-2
Superlift Shock Absorber Installation

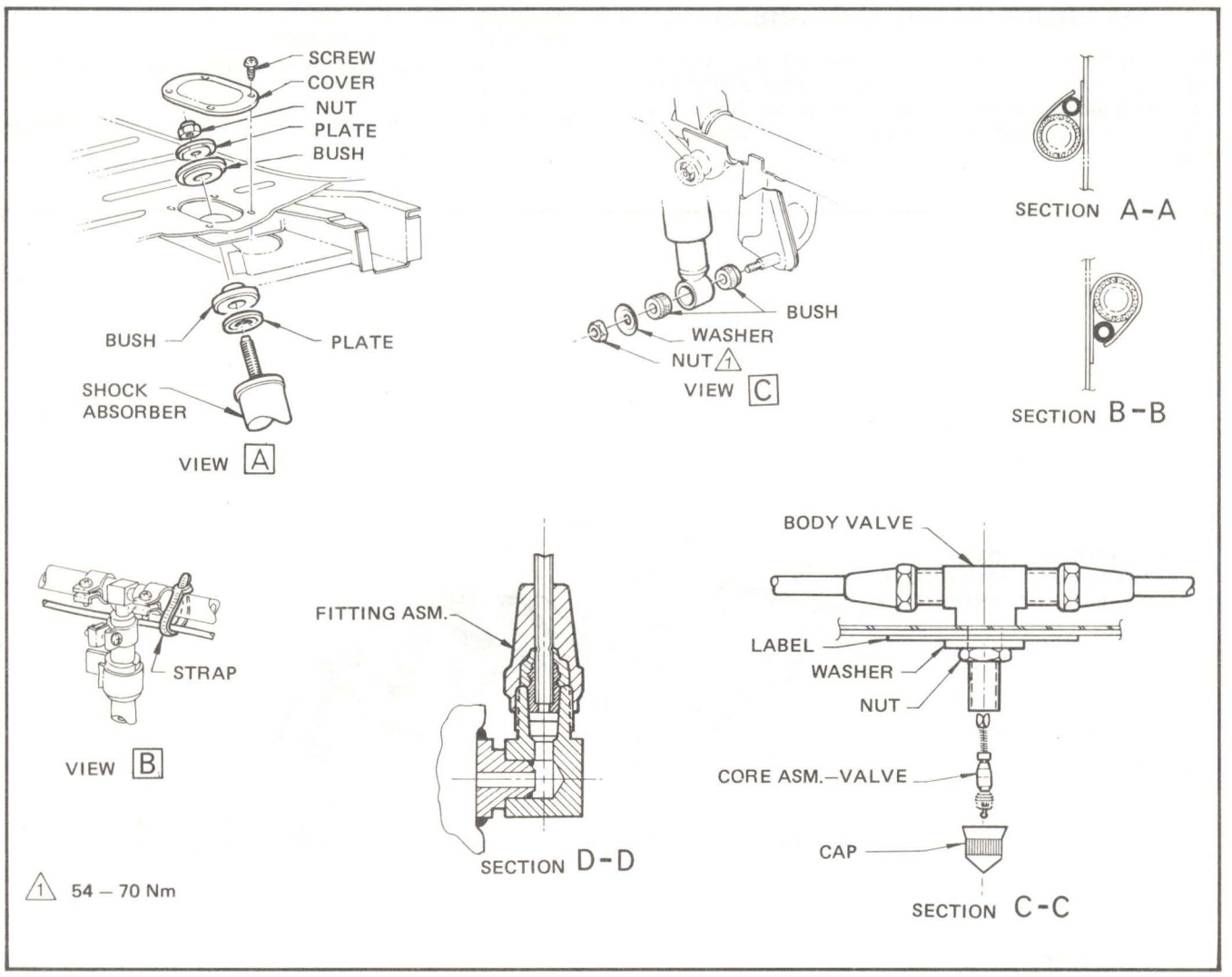

Figure 4-2A
Superlift Shock Absorber Installation (Cont'd)

SPECIFICATIONS

Coil Spring:
Design Height x ID x Dia = 307 mm x 94 mm x Tapered Wire

REAR AXLE

GENERAL INFORMATION

The rear tread on the station wagon has been increased to 1440 mm. This has been achieved by increasing the length of the axle housing tubes and axles. All overhaul and service procedures remain the same as outlined in the Holden Commodore VB Series Service Manual.

CAUTION: *Care must be taken if an axle is being replaced to install the correct length shaft. The station wagon axle shafts are 11.7mm longer than the sedan. (Length from inner end of bearing surface to end of shaft is approx. 685.7 mm).*

NOTES

SECTION 08

FUEL TANK AND EXHAUST SYSTEM

CONTENTS OF THIS SECTION

Subject	Page
FUEL TANK	**08-01**
EXHAUST SYSTEM	**08-05**

FUEL TANK

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Subject	Page
GENERAL INFORMATION	**08-01**
FUEL GAUGE TANK UNIT	**08-01**
FUEL TANK	**08-02**

GENERAL INFORMATION

FUEL GAUGE TANK UNIT

Although station wagons use a gauge with different pick up and float lever attitudes, removal procedures and tools are the same as for sedan models. See Fig. 8-1 for fuel gauge tank unit wiring installation.

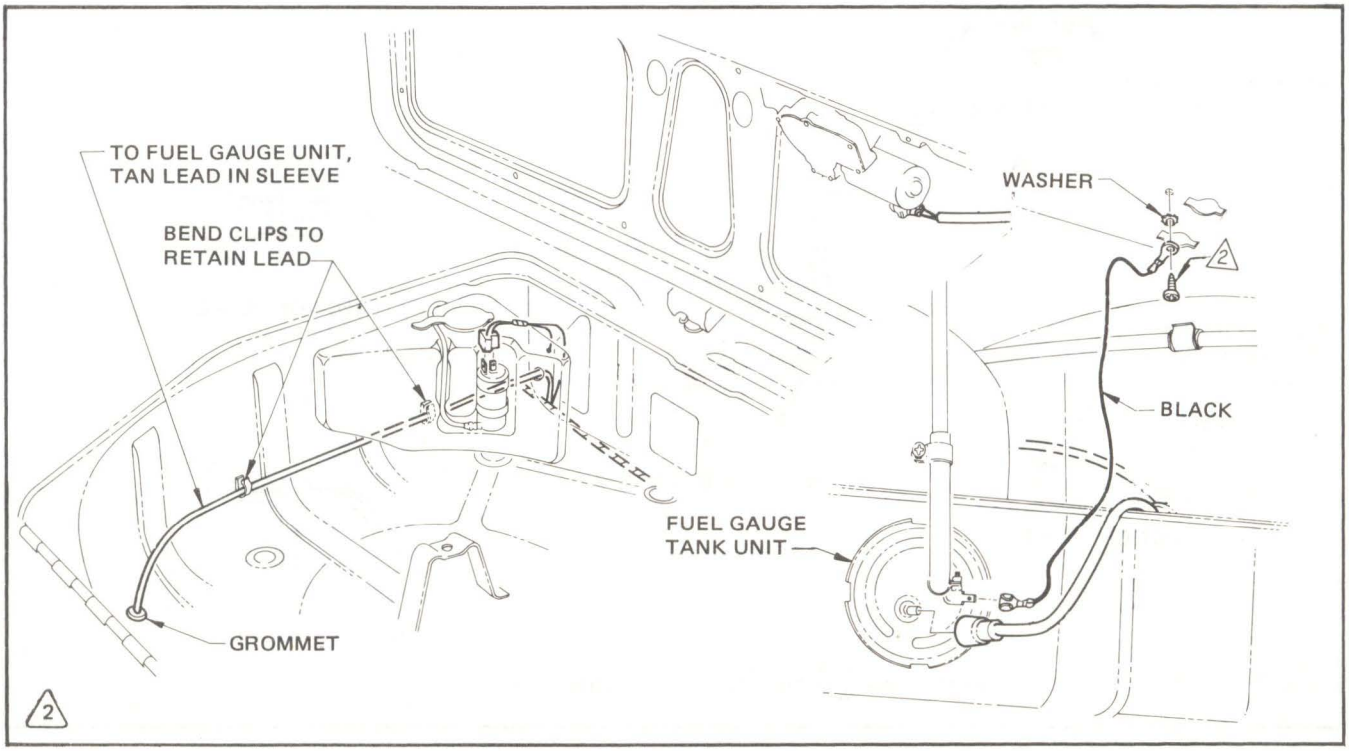

Figure 8-1
Fuel Gauge Tank Unit Wiring Installation

FUEL TANK

The fuel tank has a larger capacity, 68 litres, and is modified to suit the spare wheel stowage and load area. Removal procedures are similar to that outlined in the Commodore VB Series Service Manual, with differences noted in Figs. 8-2 and 8-3. A fuel breather reservoir is not used on station wagons.

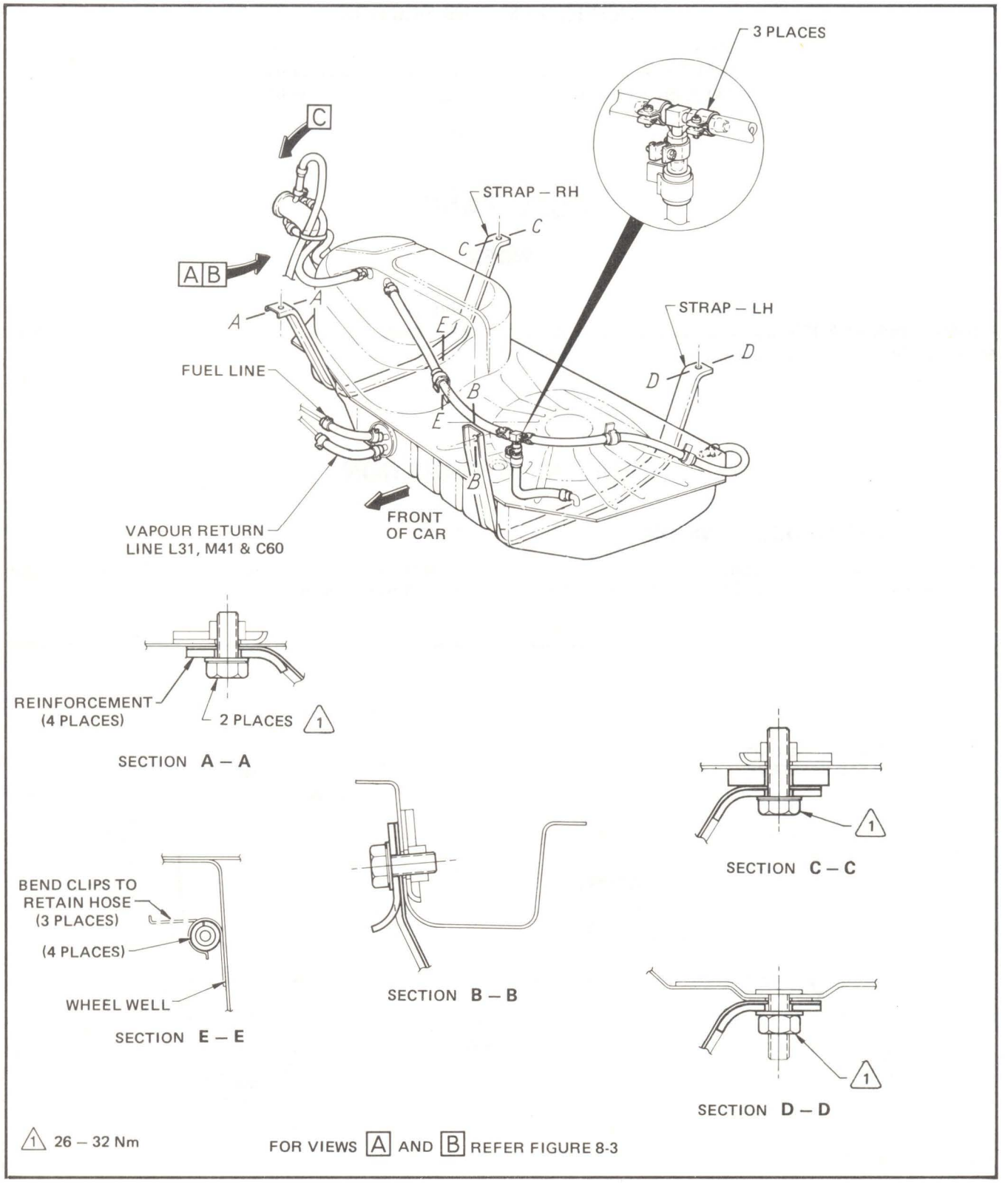

Figure 8-2
Fuel Tank Installation

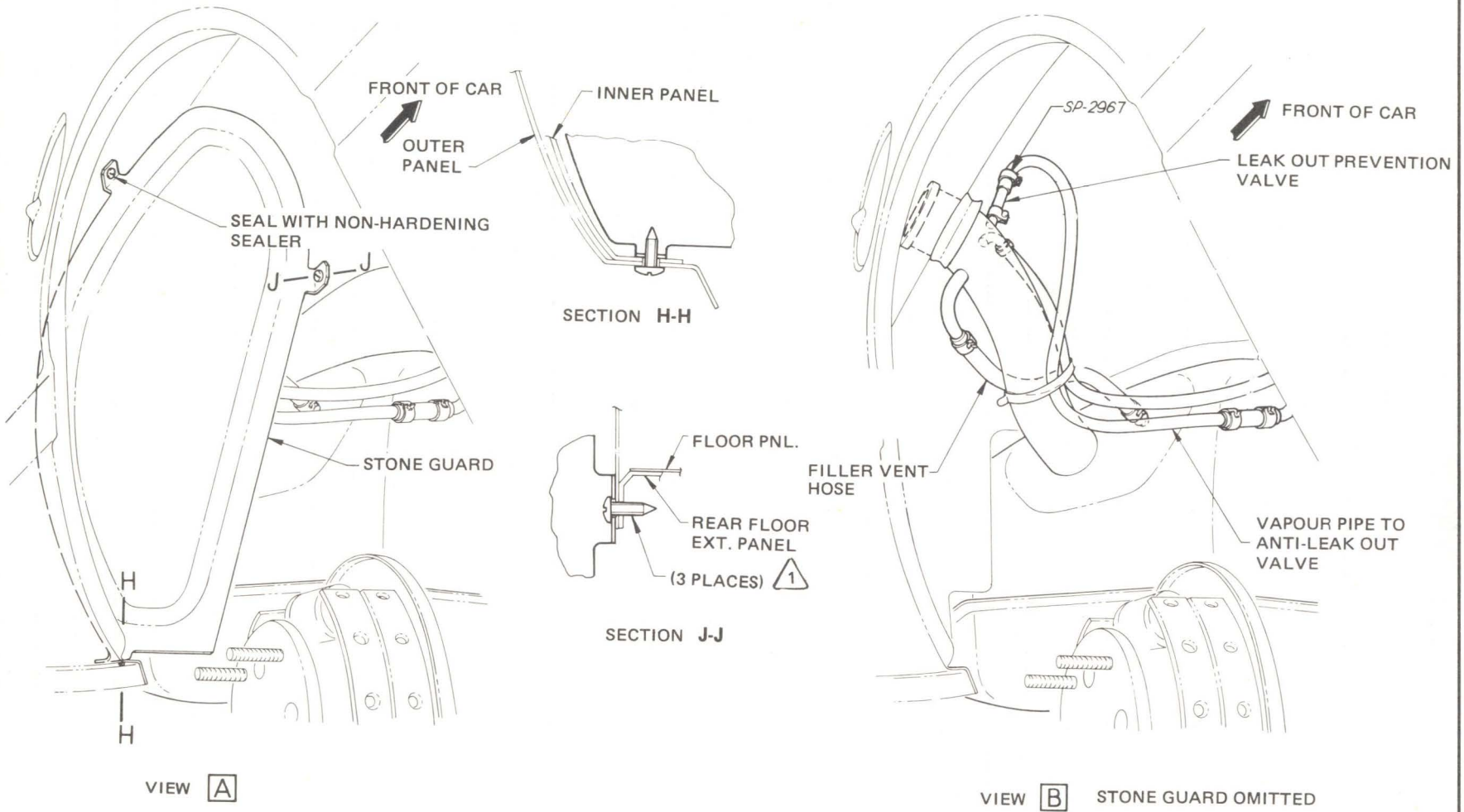

Figure 8-3
Fuel Tank Vent Hose Routing & Stone Guard

NOTES

EXHAUST SYSTEM

GENERAL INFORMATION

Exhaust system removal, replacement and clearance is similar to that outlined in the VB Series Service Manual with the exception of exhaust clearances shown in Fig. 8-4 and 8-5.

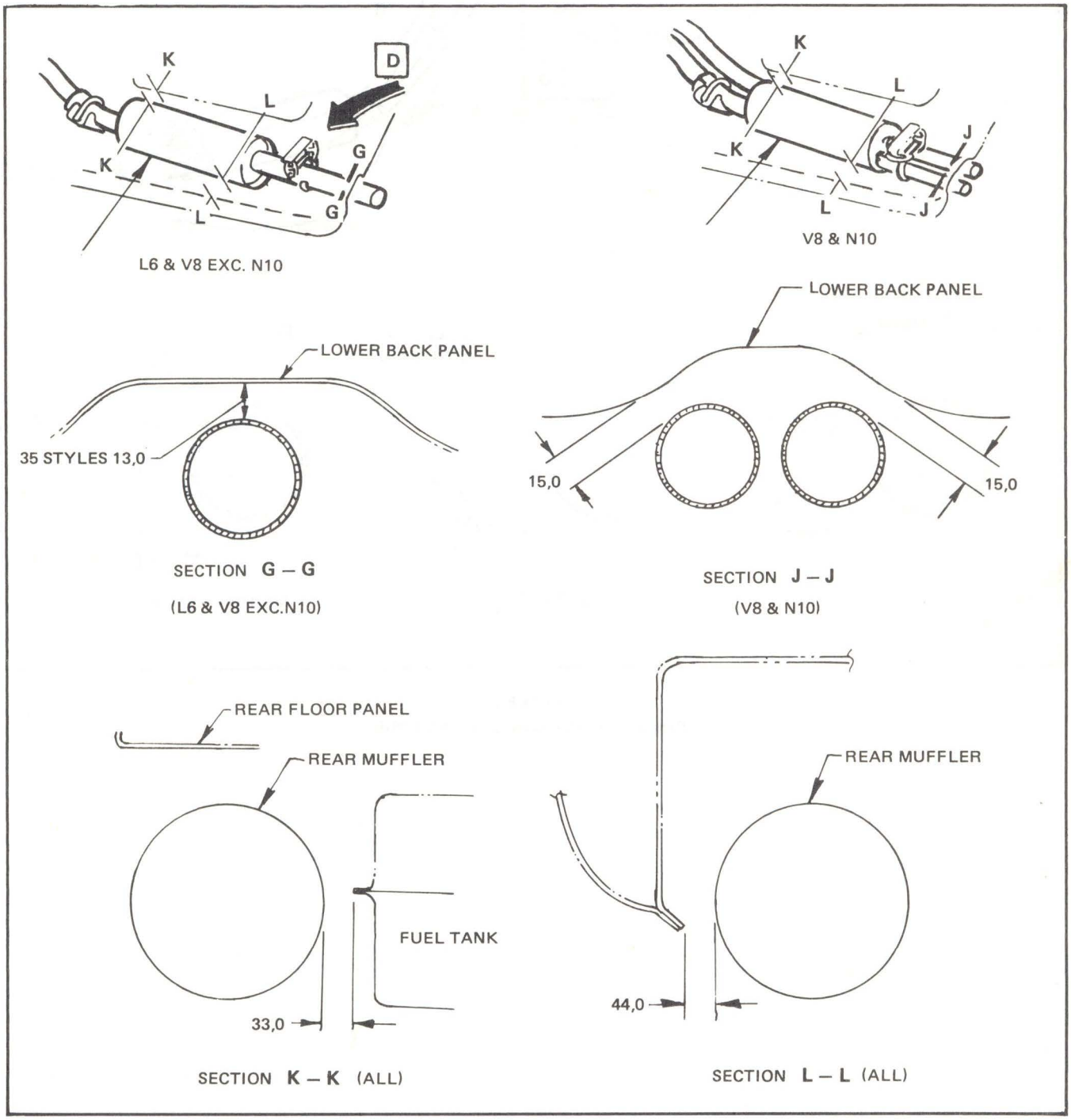

Figure 8-4
Muffler & Extension Clearances

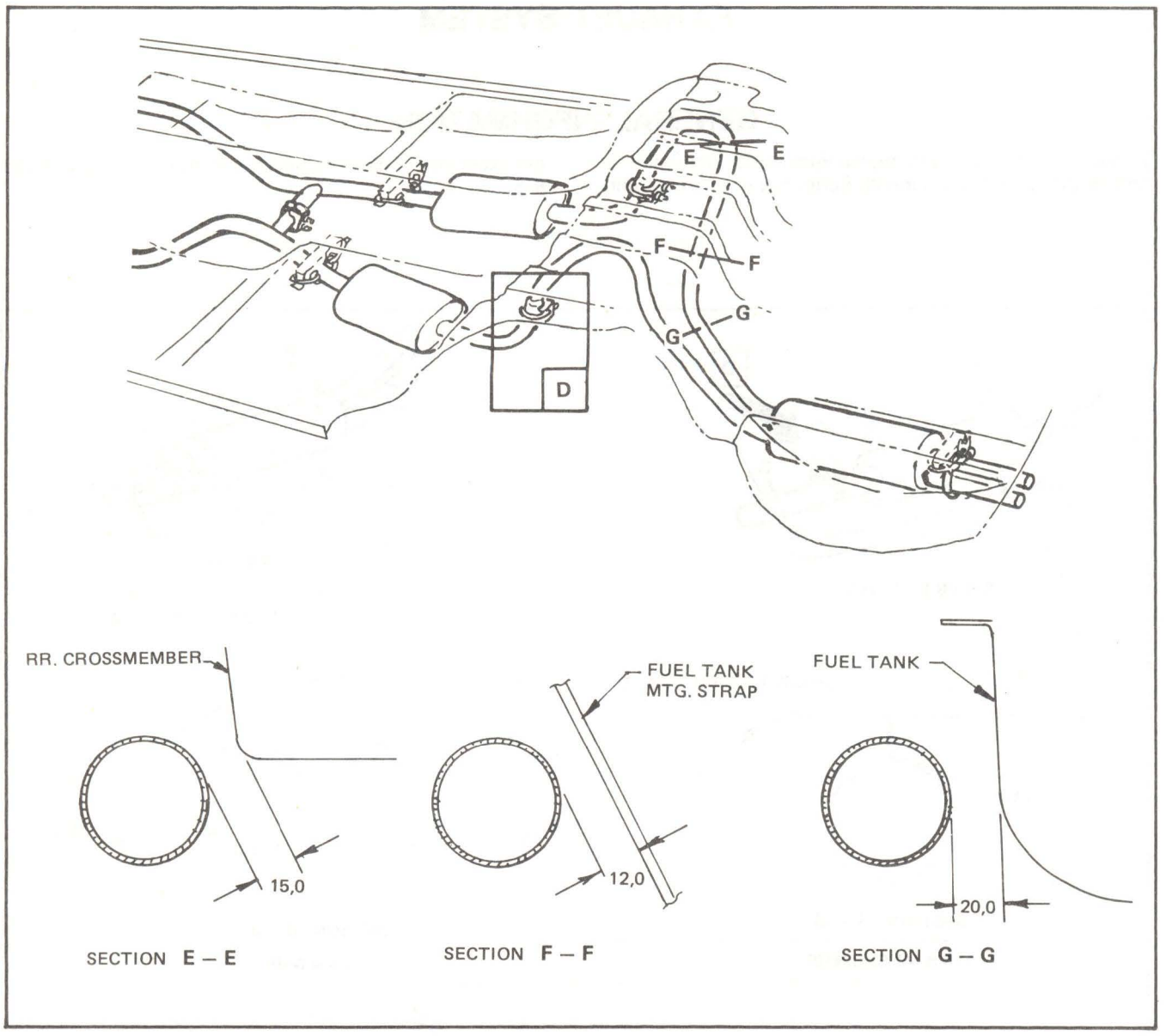

Figure 8-5
Exhaust Tail Pipe Clearance - V8 & N10

SECTION 10

WHEELS AND TYRES

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WHEELS	10-01	JACK & SPARE WHEEL STORAGE	10-02

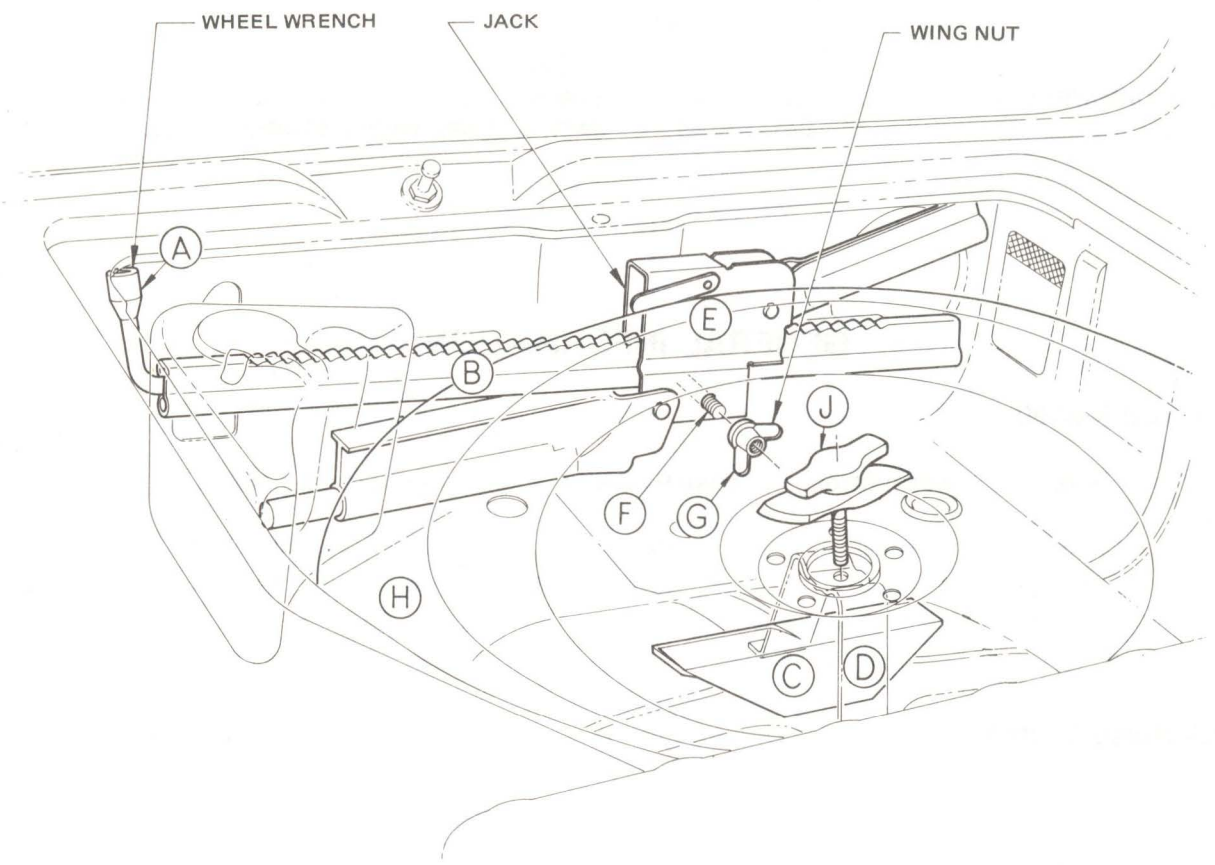
GENERAL INFORMATION

TYRES (Base Model)

SIZE	CONSTRUCTION	CORD MATERIAL	LOAD RATING	MODEL
CR78S14	Radial	Steel	4 PR	8VK/L - L6
CR78H14	Radial	Steel	6 PR	8VK/L - V8

WHEELS (Base Model)

SIZE	MATERIAL	MODEL
6.00JJ x 14	Pressed Steel	8VK, 8VL - 35



1. PLACE WHEEL NUT WRENCH (A) INTO JACK COLUMN (B)
2. POSITION JACK BASE (C) UNDER WHEEL SUPPORT BRACKET (D)
3. SLIDE RATCHET MECHANISM (E) ALONG JACK COLUMN (B) SO THAT THE HOLE IN THE RATCHET MECHANISM WILL LOCATE WITH STUD (F) PROTRUDING FROM THE REAR OF THE WHEEL WELL.
4. POSITION JACK ASSEMBLY AND SECURE WITH WING NUT (G)
5. INSTALL WHEEL (H) IN WHEEL WELL AND SECURE WITH WING BOLT (J)

Figure 10-1
Jack & Spare Wheel Stowage

SECTION 12

ELECTRICAL

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LENS/BULB REPLACEMENT	12-01
LAMP ASSEMBLY/SEAL/PRINTED CIRCUIT REPLACEMENT	12-01
LICENCE PLATE LAMP	12-02
REAR COMPARTMENT LAMP	12-02
REAR WINDOW WIPER ASSEMBLY	12-02
REMOVAL	12-02
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REAR WINDOW WASHER ASSEMBLY	12-02
PUMP REMOVAL	12-02
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REAR WINDOW WIPER/WASHER SWITCH AND HARNESS	12-06
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REAR SPEAKER - INSTALLATION - SINGLE	12-09
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SERVICE OPERATIONS

REAR LAMPS

LENS/BULB REPLACEMENT

1. Remove four screws and plastic washers retaining lens and remove lens. Take care not to lose four rubber seals between lens and body. Fig. 12-1.
2. Replace bulb/s if necessary and install in reverse, inserting screws through lens with plastic washers and threading rubber seals onto screws.

LAMP ASSEMBLY/SEAL/PRINTED CIRCUIT REPLACEMENT

1. Partially remove inner quarter trim panel.
2. Remove three screws attaching assembly to quarter panel and disconnect wiring harness connectors. Fig. 12-1.
3. Remove lens as previously outlined and remove seal.
4. To remove printed circuit, remove all bulbs, release five retaining lugs and remove circuit.
5. Replace in reverse order taking care to properly install seal.

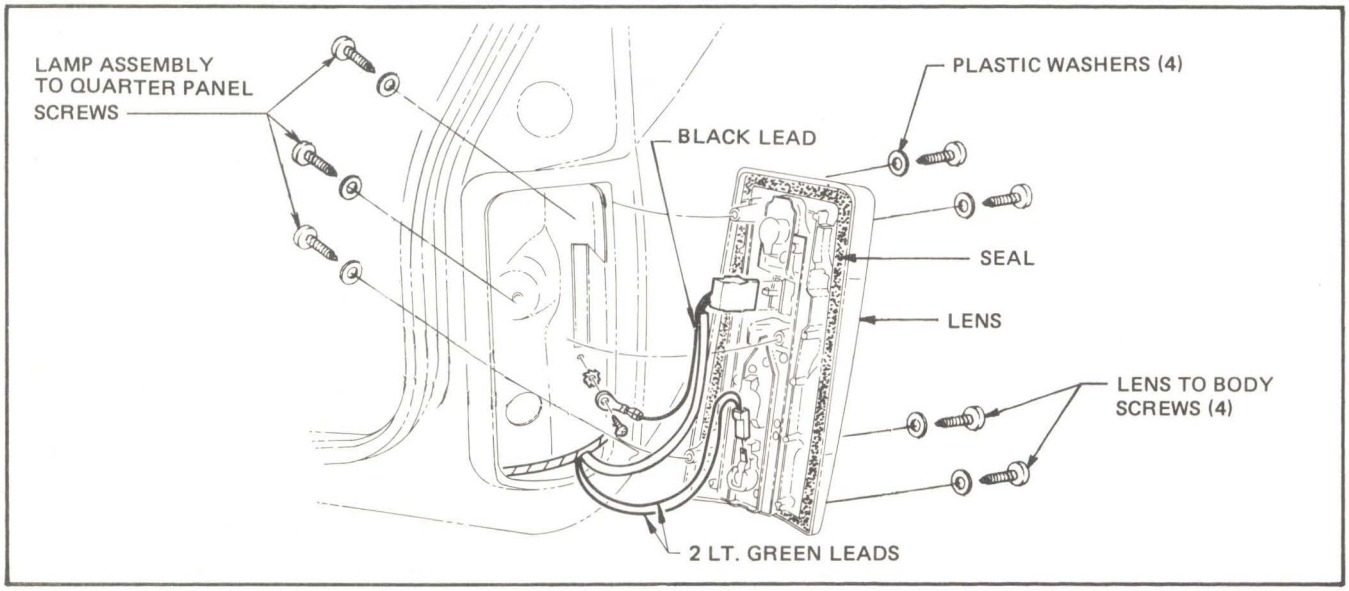

Figure 12-1
Rear Lamp Assembly

LICENCE PLATE LAMP

The licence plate lamp is a snap fit into the rear bumper and the lens is a clip fit to the base. Fig. 12-2.

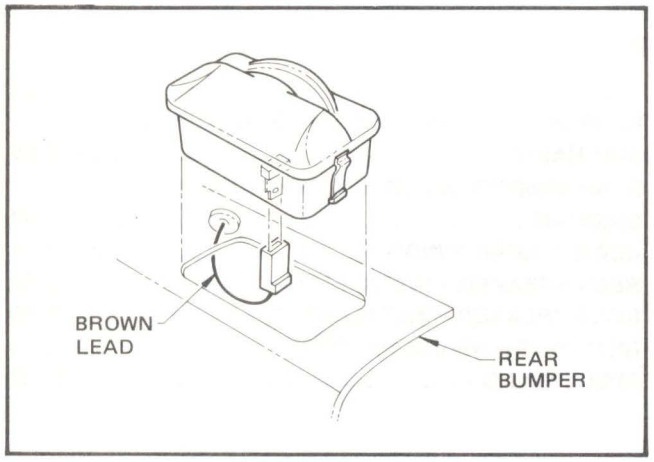

Figure 12-2
Licence Plate Lamp

REAR COMPARTMENT LAMP

The rear compartment lamp switch is a snap fit into the rear roof panel. Before removal of lamp remove fuse No. 2 or disconnect battery to prevent terminals shorting on body.

The end gate switch is attached under the gas operated end gate support strut and is located with a tang to the pillar. Fig. 12-3.

REAR WINDOW WIPER ASSEMBLY

REMOVAL

1. Remove wiper arm assembly and cap. Fig. 12-4.
2. Remove nut, washer and shim from spindle support.
3. Remove end gate trim panel (see Section 1) and disconnect wiring harness connectors.
4. Remove 2 bolts securing wiper bracket assembly and earth lead, pivot assembly and remove.

INSTALLATION

Reverse removal operations, setting wiper blade 22.0 mm above glass weatherstrip. Fig. 12-4.

REAR WINDOW WASHER ASSEMBLY

The back window washer reservoir and pump assembly are located in the spare wheel compartment on a slide on bracket.

PUMP REMOVAL

1. Lift spare wheel cover and disconnect wiring harness connector. Fig. 12-5.
2. Lift reservoir assembly off bracket and drain water into suitable container.
3. Pry pump assembly vertically out of reservoir and disconnect hose.

PUMP INSTALLATION

Reverse removal operations

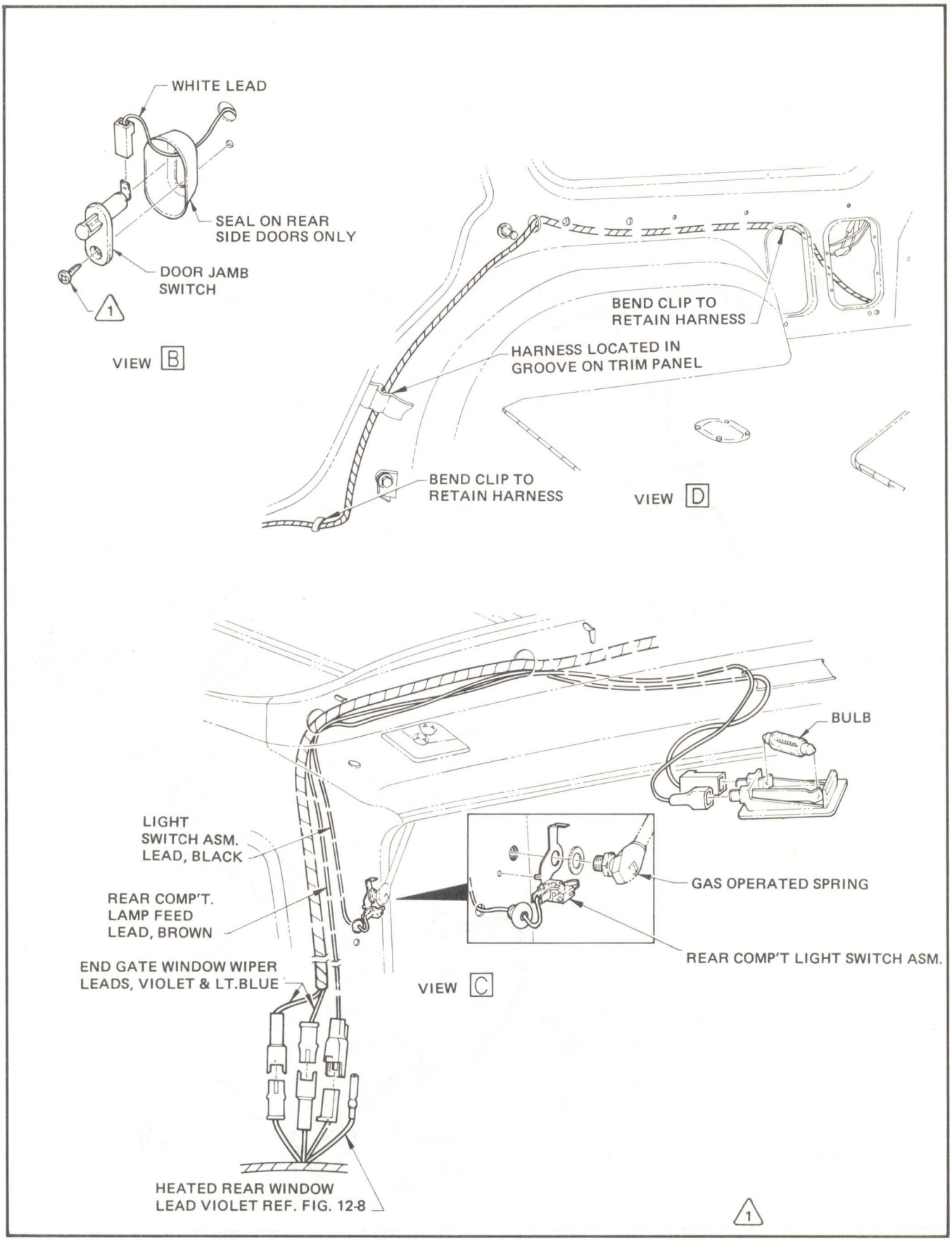

Figure 12-3
Rear Compartment Lamp Assembly

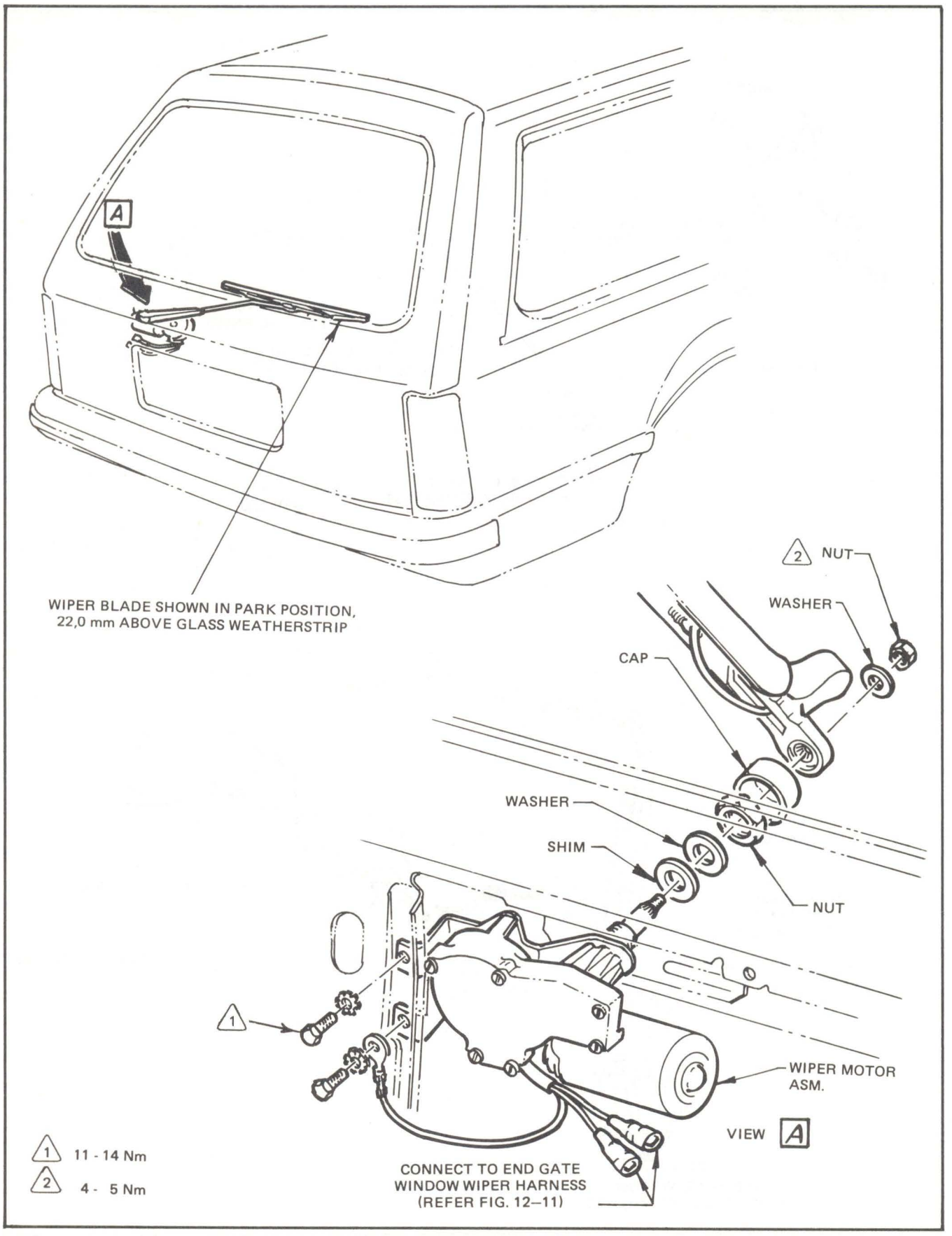

Figure 12-4
Rear Window Wiper Assembly

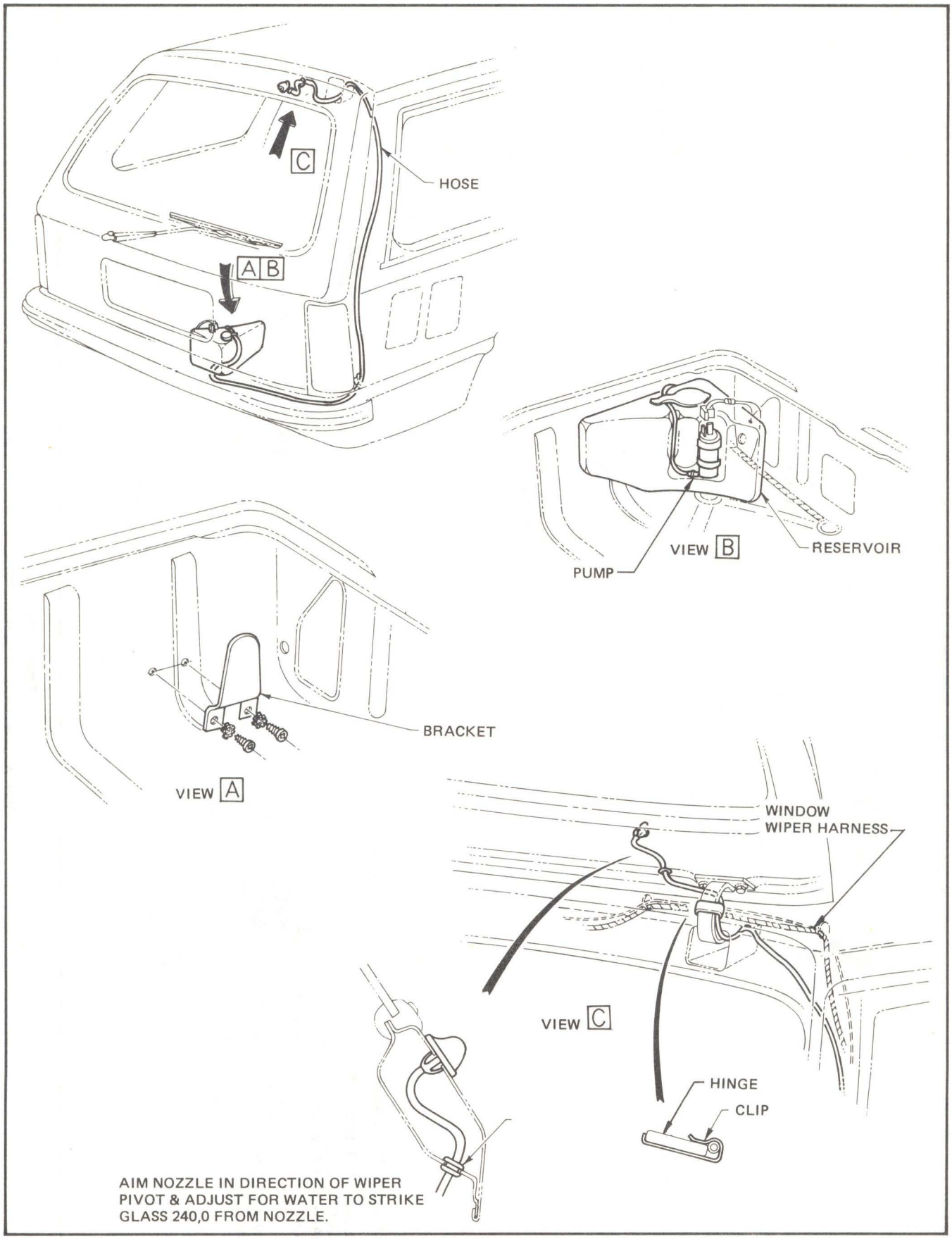

Figure 12-5
Rear Window Washer Assembly

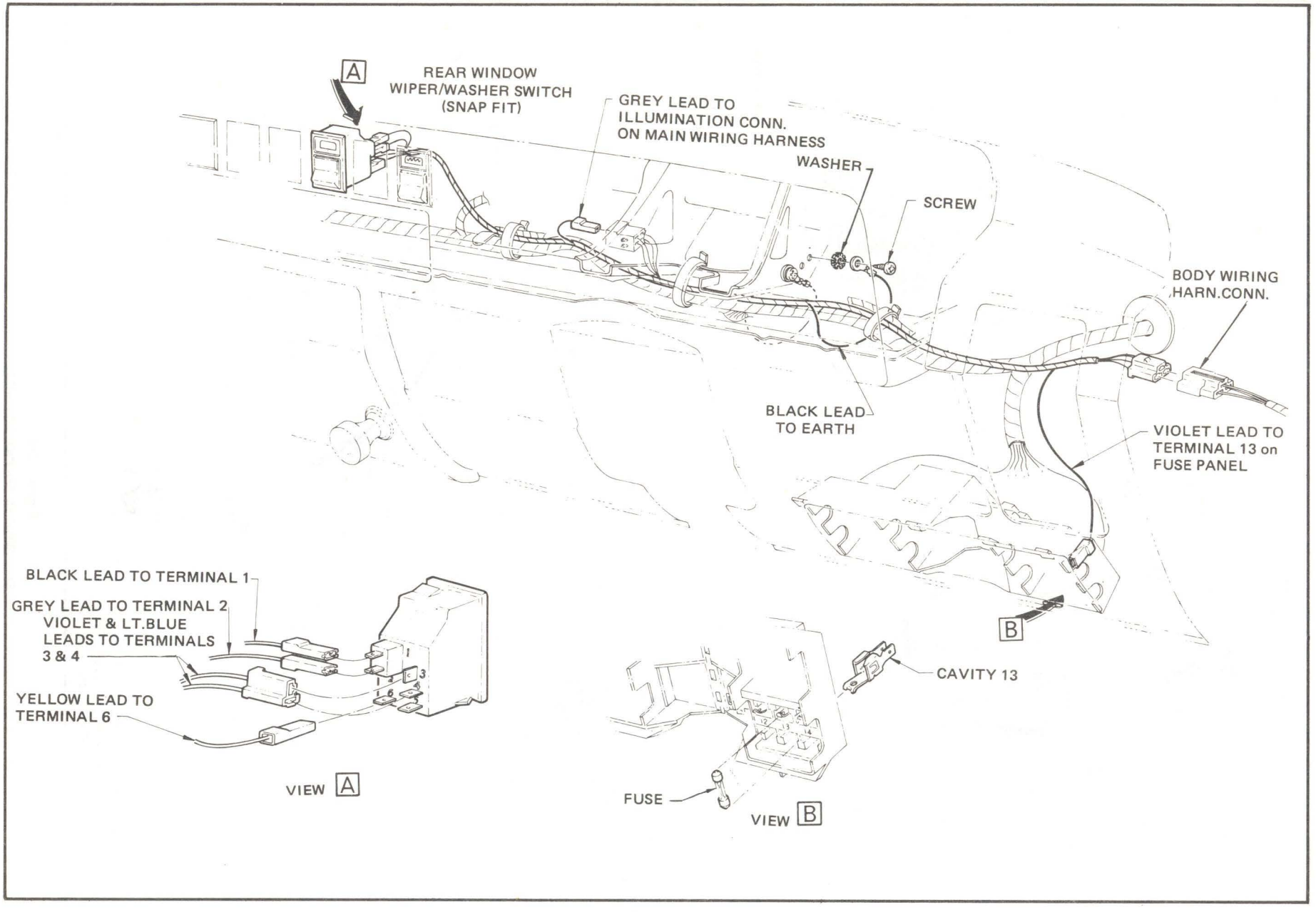

Figure 12-6
Rear Window Wiper Washer Switch & Harness

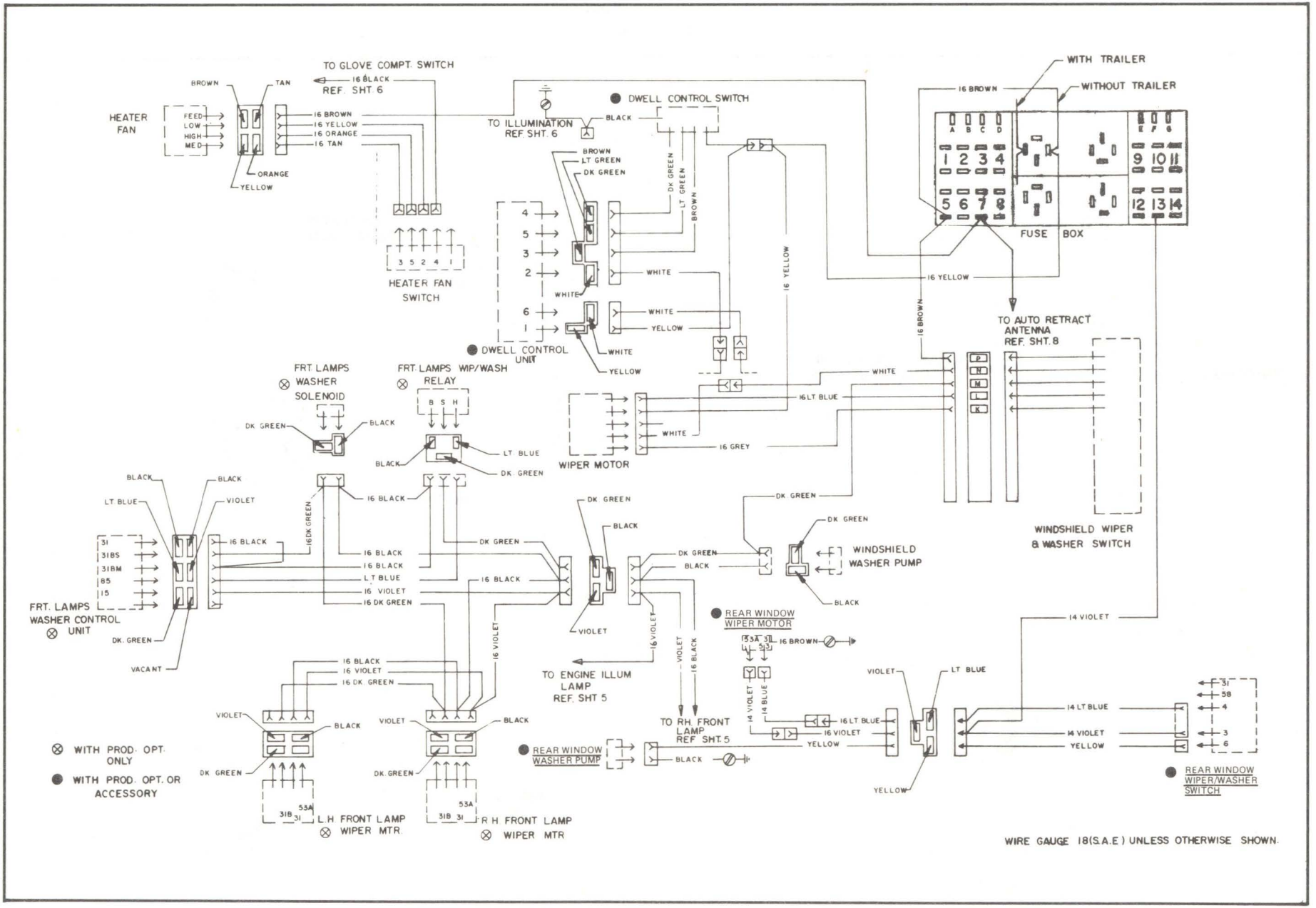

Figure 12-7
Rear Window Wiper Washer Wiring Diagram

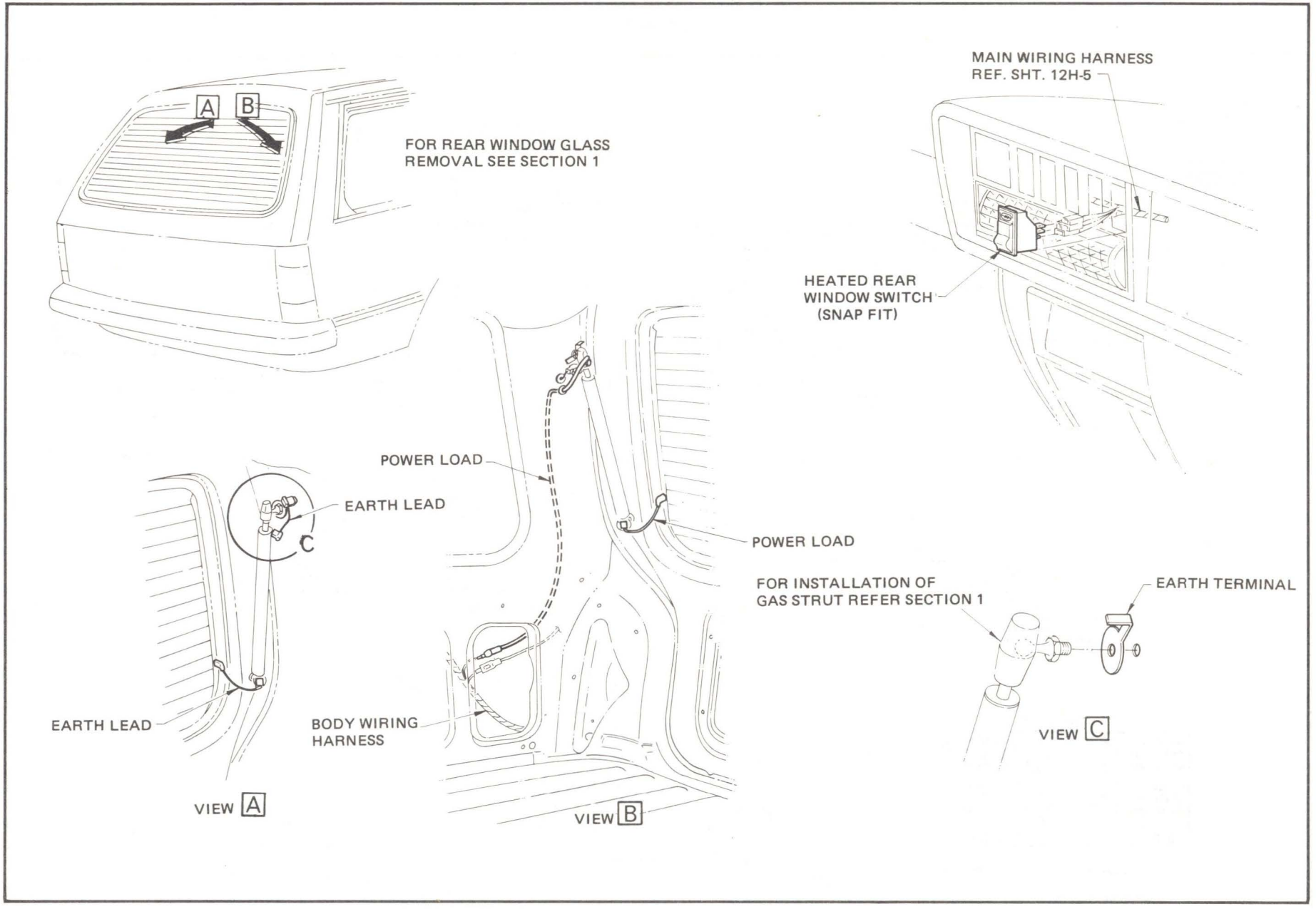

Figure 12-8
Heated Back Window

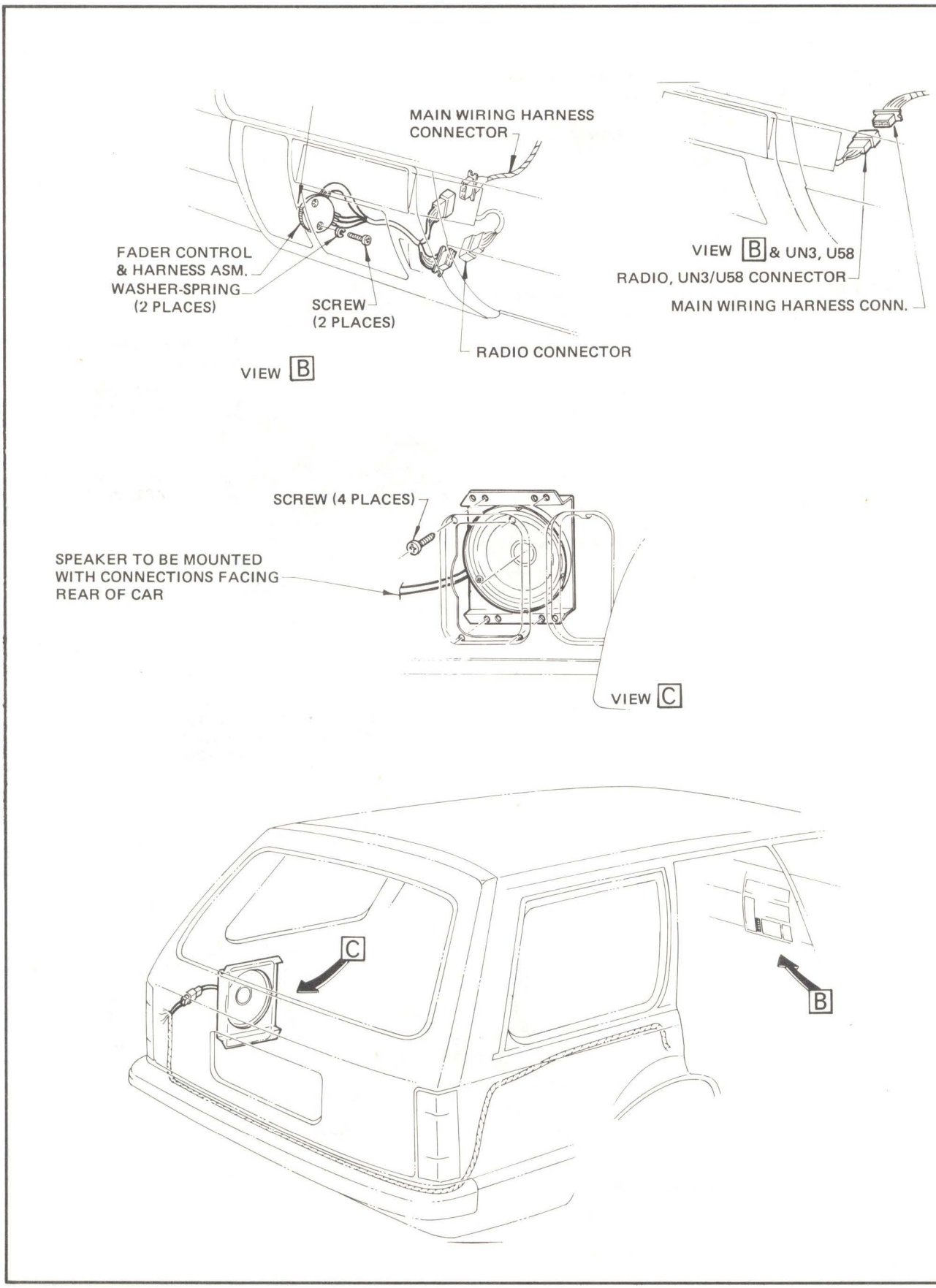

Figure 12-9
Rear Speaker Installation - Single

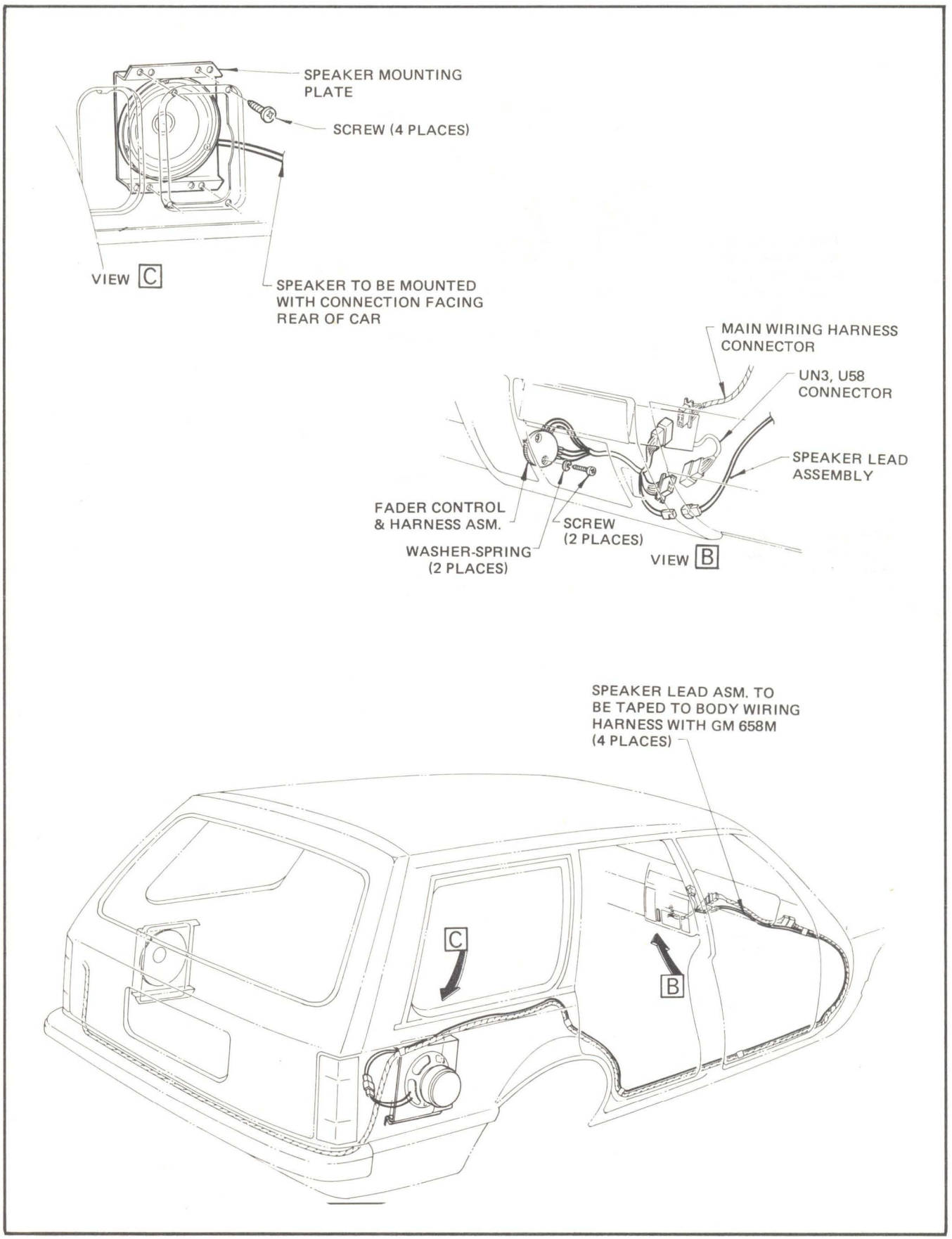

Figure 12-10
Rear Speaker Installation - Dual

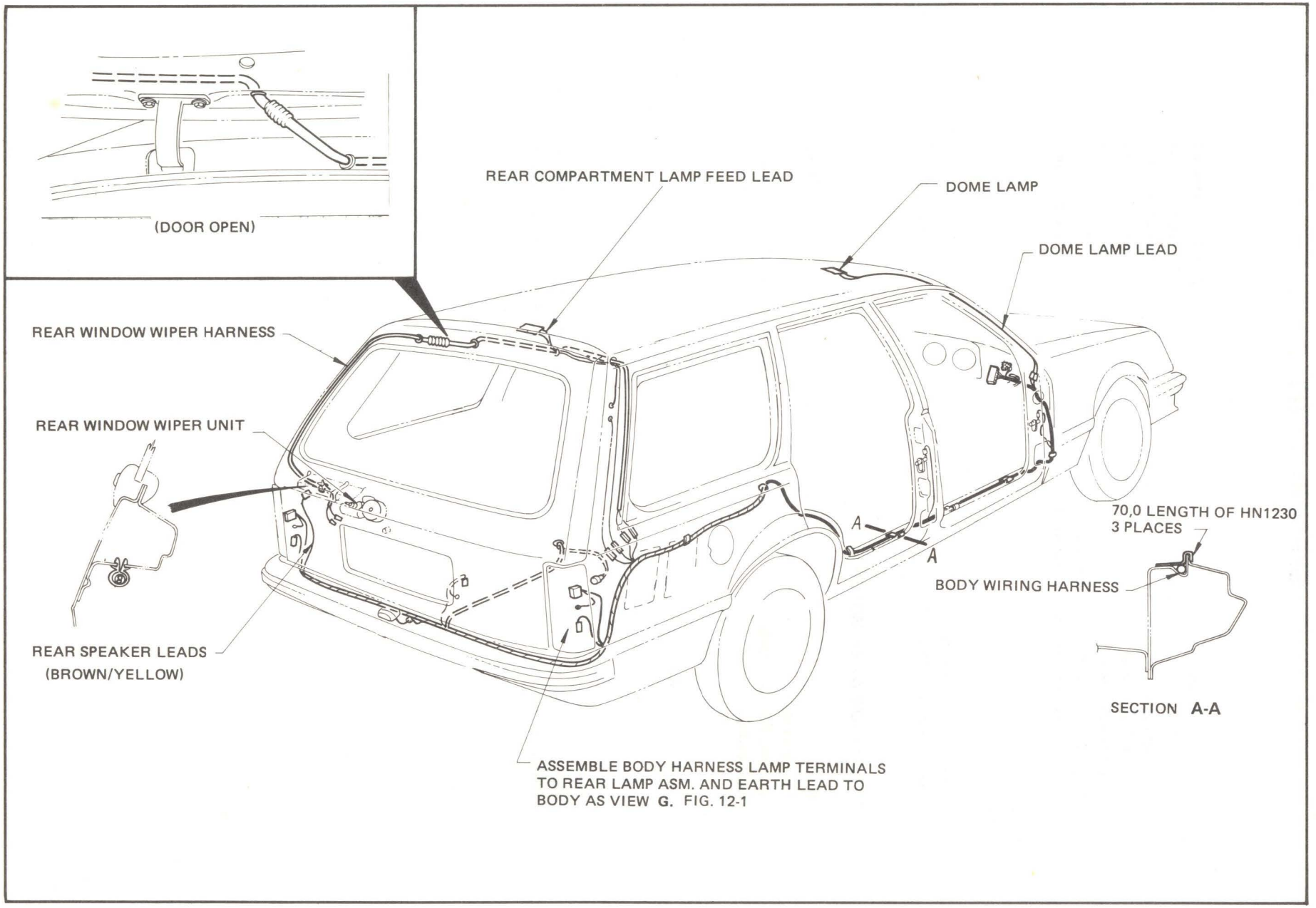

Figure 12-11
Rear Body Wiring Harness

SPECIFICATIONS

BULBS

Stop and Tail Lamp	26/6 Watt Bayonet
Turn Signal Lamp	21 Watt Bayonet
Back-Up Lamp	21 Watt Bayonet
Licence Plate Lamp	10 Watt Bayonet
Rear Compartment Lamp	10 Watt Festoon
Wiper/Washers Switch Illumination	2 C.P. Wedge
Heated Back Window Switch Illumination	2 C.P. Wedge

FUSES

Back Window Wiper/Washer	16 AMP No. 13
Heated Back Window	25 AMP No. 6

REAR WINDOW WIPER MOTOR

Make	Delco
Test Voltage	13
Starting Torque (Cold)	7 Nm minimum at Max 20 amps
No Load Current	3.5 amps

REAR WINDOW WASHER PUMP

Make	Opel
Type	Demand
Test Voltage	13
Water Volume	5cc per second minimum
Current Draw	3.9 amp max, at 13 volts