

Section 10 Body

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GENERAL BODY INFORMATION

- 1. The HUMMER body is constructed from aluminum alloys that have been heat-treated to obtain high strength. Welding cannot be performed to make body repairs. Heat generated by welding will reverse the heat treatment process, causing a reduction in material strength.
- 2. The hood and engine access covers are made of fiberglass (sheet molding compound). Cracks, splits, or holes may be repaired with a glass-reinforced plastic laminate.
- 3. Solid 0.1875 in. (4.8 mm) diameter aluminum rivets are the primary method of joining body components. Each rivet is inserted into a hole through two pieces of metal, and a second head is formed by manual or pneumatic impacting, or by squeezing the rivet. A bucking bar is used to back up the rivet to form a rivet head. When making repairs, use blind rivets of the same size, or oversize, with the appropriate grip length.
- 4. Blind structural aluminum rivets of 0.1875 in. (4.8 mm) diameter are used in applications where there is access from only one side of the part. Blind rivets are installed using a tool that pulls on the rivet stem causing a bulbed head to form on the back side of the part. Fastening is complete when stem breaks off. High strength is obtained in blind rivets by mechanically locking the remaining stem inside the rivet body.
- 5. Steel pull-type lockbolt fasteners of 0.1875 in. (4.8 mm) and 0.25 in. (6.4 mm) diameters are used where tension or high-shear loads exist. Lockbolts are two-piece unthreaded fasteners. One part is a high-strength, steel-headed, bolt-like part with serrations on its shank. The mating part is a collar which is swagged over the serrations causing the fastener to be locked in place.
- 6. To facilitate body repairs, it is acceptable to replace lockbolt fasteners and rivets with 0.25 in. (6.4 mm) series bolts. Do not replace lockbolt fasteners with rivets. Standard threaded fasteners should not be used, as these will quickly wear the aluminum structure. Bolt lengths should be chosen so that the cylinder portion of bolt is bearing on all members being joined. Bolts are designed as AN4-XX or AN4-C-XX, where XX defines grip length. Tighten all bolts to 71 lb in. (8 N•m).
- 7. Fatigue strength of riveted joints and seams is increased by epoxy adhesive application. Epoxy adhesive requires special material storage and metal preparation along with a low temperature heat cycle for curing. Where possible, extra rivets and thicker metal gauges should be used instead of adhesives when making repairs. Parts may be difficult to separate, even after rivets are removed.

BODY INSPECTION AND REPAIR

General Information

Damaged areas should be thoroughly cleaned and inspected to determine the cause and extent of damage. Body parts should be inspected for holes, cracks, dents, distortion, or breaks. Fasteners should be inspected for breaks, stretching, looseness, cracked heads, or hole elongation. Seams, flanges, and joints should be inspected for straightness or local deformation as an indication that fasteners may have been stretched or holes elongated. It is possible for this to happen and fasteners will still appear to be tight in their holes. In addition, thoroughly inspect adjacent areas to determine if high loads have been transmitted from the damaged area to other areas. This can result in secondary damage in the form of distorted panels or seams, loosened or sheared fasteners, elongated fastener holes, and/or cracks.

Classification

After the extent of damage has been determined, affected parts should be classified into one of the following categories:

- Negligible damage
- Damage repairable by patching
- Damage repairable by insertion
- Damage necessitating replacement of parts
- . Negligible damage.

Minor dents, nicks, scores, cracks, and holes in a body panel which are within, or are brought within, reasonable limits by a simple procedure without extensive rework are considered negligible damage. These defects should be considered more serious if located in main structural members such as frame rails, A-pillars, or floor crossmembers rather than in body panels such as cowls or rear wheelhouses. Deep wrinkles of undetermined origin in body panels should not be classed as negligible until the source of the wrinkles has been investigated and positively identified. Damage other than small dents, holes, nicks, and scratches will require repair or replacement of the part.

- Negligible Cracks. Isolated cracks less than 0.50 in. (1.27 cm) long may be classified as negligible cracks provided they are stop drilled at each end to stop propagation.
- Negligible Holes. Isolated holes no more than 0.50 in. (1.27 cm) in diameter (after they are made round with smooth edges) are classified as negligible holes, provided the distance from the edge of the holes to the nearest line of rivets exceeds the diameter of the hole.
- Negligible Dents and Distortion. Small dents and distorted areas may be classed as negligible if they can be repaired by hammering or bending without causing the material to crack. Heat will not be used for reforming.
- 2. Damage repairable by patching.

Non-negligible damage must be repaired; or the section must be replaced. Patches can often be applied over damaged body panels, provided the damaged area is first trimmed to remove sharp edges or notches which could cause the start of new cracks. The patch must then be sized to overlap the area to allow for attaching rivets.

3. Damage Repairable by Insertion.

In certain cases, patch repairs may not be desirable because of impracticality or because a flush surface is desired. In this case, the damaged area must be cut away and replaced with equivalent material inserted flush with adjacent areas, and backed up with a doubler.

4. Damage requiring replacement of parts.

Parts too badly damaged for repair, or cases where replacement is easier than repair, fall into this category. Repair of welded assemblies such as body mounts are also included. Welded assemblies cannot be rewelded without destroying the strength of the part, and must be replaced.

Rivet Failure

Signs of rivet failure include tipped heads, looseness, and sometimes chipped or cracked paint. If heads are tipped in the same direction and rivets are loose in consecutive groups, the joint has undergone excessive load. Rivet heads which are tipped in different directions and are not in groups may be improperly installed. With chipped or cracked paint, it may be necessary to remove paint to check the true condition of rivets. Rivets subjected to critical loads, but showing no distortion should be inspected if failure is suspected. The head should be drilled off, and the shank should be carefully punched out. Failure is indicated by notched rivet shanks and misaligned holes. Flush rivets showing head slippage within the dimple or countersink indicate either sheet bearing or rivet shear failure, and must be removed for replacement. If rivet failure cannot be detected by visual inspection, the joint can be checked by drilling and punching out several rivets. If rivet shanks are notched, rivets should be replaced with the next larger size rivets. If rivet holes show elongation due to local failure in tearing of the sheet, the next larger size rivet must be used in replacement. Any deformation of the sheet around the rivet, tear outs, or cracks between rivets usually indicates partially failed or damaged rivets. Complete repair of the joint will require replacement by the next larger size rivets. Use the next 0.031 in. (0.79 mm) larger diameter rivet to obtain a tight joint when original hole has been enlarged. If original size rivet is installed, the rivet will not be able to carry its share of the shear load, and the joint will not meet its strength requirements.

Lockbolt Fastener Failure

Lockbolts are used to withstand tension loads and high-shear loads. These fasteners are installed in their holes with an interference fit. No looseness can be permitted. Lockbolts showing evidence of being stretched, broken, loose in their holes, or having heads that do not set flat against the surface must be replaced. Guidelines used for detecting rivet failures also apply to lockbolts.

Lockbolt Removal

- 1. Working from head side of lockbolt, if accessible, file a small flat surface on head, if rounded.
- 2. Center punch the head.
- 3. Using a hardened drill bit slightly smaller than lockbolt, drill through the head. In cases where lockbolts are too hard to be drilled with available drills, grind the head down using a cutoff wheel or carbide bit in a die grinder. When using grinder method, cut the head down until it is very thin, but do not grind it off completely, or touch the body part with grinding tool.
- 4. Use a pin punch to pry off head, or shear it off with a sharp chisel. Ensure part is adequately supported while performing this step.
- 5. Drive lockbolt out of its hole with a pin punch. Care must be taken so that hole or part is not distorted.

NOTE: In cases where the lockbolt head is inaccessible, the locking collar must be removed. Remove collar by grinding, or by splitting axially with a sharp chisel.

Rivet Replacement

NOTE: When removing rivets, care should be taken not to enlarge rivet holes. Enlarged rivet holes require oversize or larger replacement rivets.

Solid Rivet Removal

- 1. File a flat surface on the manufactured head, if accessible. It is always preferable to work on a manufactured head rather than one that is bucked over, since the former will always be more symmetrical around the shank.
- 2. Indent center of the filed surface with a center punch.
- 3. Drill through rivet head, using a drill bit slightly smaller than diameter of rivet shank to avoid oversizing rivet hole.
- 4. Shear weakened rivet head off with a sharp chisel. To prevent panel distortion, support back side of rivet and cut rivet head along direction of rivet line or panel edge.
- 5. Firmly support the panel from the opposite side and drive out the shank with a pin punch. If rivet is unduly tight due to swelling between sheets, drill the rivet shank out with an undersized drill bit.

Blind Rivet Removal

- 1. File a small, flat surface on rivet head.
- 2. Center punch the flat surface. Support the back side of the rivet, if possible.
- 3. Using a small drill bit about the size of rivet pin, drill off tapered end of pin which forms the lock.
- 4. Shear lock, using pin punch to drive out pin.

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- 5. Pry out remainder of locking collar.
- 6. Using a drill bit slightly smaller than rivet shank, drill almost through rivet head.
- 7. Pry off rivet head with pin punch.
- 8. Tap out rivet shank with pin punch.

Rivet Hole Drilling

- Center punch all new rivet locations. Center punch mark must be large enough to prevent drill from slipping out of position, yet it must not dent the surface of the material. To prevent denting, place a bucking bar behind material during punching.
- 2. Ensure drill bit is the correct size, and points properly ground ((Table 1, "Drill Bit Sizes for Solid Shank Rivets," on page 10–5) and (Table 2, "Drill Bit Sizes for Blind Rivets," on page 10–5)). A no. 10 drill bit is used to install standard 1.875 in. (48 mm) blind rivets.
- 3. Place drill bit in center mark for new rivet locations, or align drill bit with old hole when replacing old rivets with oversize rivets. When using a power drill, give the bit a few turns with fingers before starting motor to ensure drill does not jump out of position when motor is started.

NOTE: Hold drill at 90 degree angle to material surface. Avoid excessive pressure, or letting the drill wobble. Do not push the drill through material.

- 4. Remove all bumps with metal countersink or file.
- 5. Clean away all drill chips. Ensure that no chips are trapped between metal sheets.
- 6. Apply corrosion-resistant sealing compound to hole and surrounding area.





0.209 in. (5.31 mm)



RIVET DIAMETER	DRILL BIT SIZE	DRILL BIT DIAMETER
0.0625 in. (1.65 mm)	# 51	0.0670 in. (1.70 mm)
0.0938 in. (2.38 mm)	# 41	0.0960 in. (2.44 mm)
0.1250 in. (3.18 mm)	# 30	0.1295 in. (3.29 mm)
0.1563 in. (3.97 mm)	# 21	0.1590 in. (4.04 mm)
0.1875 in. (4.76 mm)	# 10	0.1910 in. (4.85 mm)
0.2500 in. (6.35 mm)	F	0.2570 in. (6.53 mm)
0.3125 in. (7.94 mm)	W	0.3230 in. (8.20 mm)
0.3750 in. (9.53 mm)	W	0.3869 in. (9.83 mm)

Table 1: Drill Bit Sizes for Solid Shank Rivets

Table 2: Drill Bit Sizes for Blind Rivets

Table 2. Drill bit Sizes for billing Rivers						
RIVET DIAMETER	DRILL BIT SIZE	MINIMUM	MAXIMUM			
0.1250 in. (3.18 mm)	#30	0.129 in. (3.28 mm)	0.132 in. (3.35 mm)			
0.1563 in. (3.97 mm)	#20	0.160 in. (4.06 mm)	0.164 in. (4.17 mm)			
0.1875 in. (4.76 mm)	#10	0.192 in. (4.88 mm)	0.196 in. (4.98 mm)			
OVERSIZE DIAMETER						
RIVET DIAMETER	DRILL BIT SIZE	MINIMUM	MAXIMUM			
0.1250 in. (3.18 mm)	#27	0.143 in. (3.63 mm)	0.146 in. (3.71 mm)			
0.1563 in. (3.97 mm)	#16	0.177 in. (4.50 mm)	0.181 in. (4.60 mm)			

0.205 in. (5.21 mm)

#5

0.1875 in. (4.76 mm)

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Hole Countersinking

NOTE: Some rivet installations in the body require the rivet to be flush with the rivet material surface. In these instances, countersunk or flush-head rivets are used.

- 1. When using countersunk rivets, rivet holes must be countersunk with a tool having a 100 degree taper, so rivet head will fit flush with surface.
- 2. When using a hand-operated countersinker, the hole must be tried with a rivet so the recess will not be too deep or too shallow. It is best to use a countersinker with a stop on it so depth of the countersink can be controlled. Typical countersinking dimensions for blind rivets are shown in (Table 3, "Countersinking Dimensions for 100 Degree Countersunk Blind Rivets," on page 10–6). The minimum sheet thickness that can be machined for 100 degree countersunk rivets is given in (Table 4, "Minimum Sheet Gauge for 100 Degree Machine Countersunk Rivets," on page 10–6).
- 3. Do not remove edge of hole on blind side of joint.

Blind Rivet Driving Practices and Precautions

- 1. Rivets should be inspected for proper installation. The grip length of each rivet is marked on top of its head to provide positive identification. Use of proper grip length will produce a rivet installation where locking collar is flush with top surface of rivet head. Tolerance limit on flushness is 0.020 in. (0.51 mm).
- 2. For proper rivet installation, it is imperative that holes be properly prepared, tools be in good working order, and rivets properly installed. When problems occur, the source of trouble could be in any of these areas.

Table 3: Countersinking Dimensions for 100 Degree Countersunk Blind Rivets			
	COUNT	ERSINKING DIMENSIONS (100 E	Degree)
	RIVET DIAMETER	MINIMUM	MAXIMUM
	0.1250 in. (3.18 mm)	0.222 in. (5.64 mm)	0.228 in. (5.79 mm)
um	0.1563 in. (3.97 mm)	0.283 in. (7.19 mm)	0.289 in. (7.34 mm)
	0.1875 in. (4.76 mm)	0.350 in. (8.89 mm)	0.356 in. (9.0 mm)

Table 4: Minimum Sheet Gauge for 100 Degree Machine Countersunk Rivets

RIVET	0.0938 in.	0.1250 in.	0.1563 in.	0.1875 in.	0.2500 in.
SIZE	(2.38 mm)	(3.18 mm)	(3.97 mm)	(4.76 mm)	(6.35 mm)
GAUGE	0.040 in.	0.050 in.	0.064 in.	0.072 in.	0.072 in.
	(1.02 mm)	(1.27 mm)	(1.63 mm)	(1.83 mm)	(1.83 mm)



Blind Rivet Installation

NOTE: Ensure the proper rivet grip length is selected for each application ((Table 5, "Rivet Grip," on page 10–7)). Rivets can tolerate only 0.0468 in. (1.19 mm) variation in material thickness for each particular rivet length. For double dimpled sheets, add countersink head height to materials thickness.

- 1. Insert rivet stem into pulling head of rivet gun or adapter.
- 2. Hold rivet gun in line with axis of rivet as accurately as possible.
- 3. Apply a steady, firm pressure against rivet head.
- 4. Squeeze handles of manual gun. The rivet clamping action will pull sheets together, seat rivet head, and break stem flush with head of rivet.

MATERIA	RIVET GRIP NO.	
MINIMUM	IINIMUM MAXIMUM	
	0.0625 in. (1.65 mm)	1
	0.1250 in. (3.18 mm)	2
0.1250 in. (3.18 mm)	0.1875 in. (4.76 mm)	3
0.1875 in. (4.76 mm)	0.2500 in. (6.35 mm)	
0.2500 in. (6.35 mm)	0.3125 in. (7.94 mm)	5
0.3125 in. (7.94 mm)	0.3750 in. (9.53 mm)	6
0.3750 in. (9.53 mm)	0.4375 in. (11.11 mm)	7
0.4375 in. (11.11 mm)	0.5000 in. (12.70 mm)	8
0.5000 in. (12.70 mm)	0.5625 in. (14.29 mm)	9
0.5625 in. (14.29 mm)	0.6250 in. (15.88 mm)	10
0.6250 in. (15.88 mm)	0.6875 in. (17.46 mm)	11
0.6875 in. (17.46 mm)	0.9750 in. (24.77 mm)	12

Table 5: Rivet Grip

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Aluminum Repair

CAUTION: Repairs should not be made on the body using welding or heat for forming. Heat will only weaken material and cause further problems.

Material

Aluminum material used for repairs should be of the same alloy and temper as the original if possible. In general, 6061-T6 aluminum alloy should be used. Material thickness must be the same or thicker. This alloy will work well for flat repairs, but is not well suited to bending because it is quite hard and cracks easily when bent sharply. When bends must be made, use softer 6061-T4 aluminum alloy and increase material thickness by at least 50 percent. As a general rule of thumb, 6061-T4 aluminum alloy should be bent with a minimum bend radius of one to two times material thickness, whereas 6061-T6 aluminum alloy requires at least three times material thickness radius for bends. In all cases, bends should be closely inspected for cracks. A suitable method for avoiding bending cracks is to obtain angles that are extruded from 6061-T6 aluminum alloy or use preformed angles for repairs.

Epoxy Adhesive

Where it is necessary to remove parts, note that epoxy adhesive is used in joints. Use care in parts removal to avoid unnecessary distortion. Parts should be separated by peeling action. Before parts are reassembled, it will be necessary to remove any remaining cured epoxy from joints so parts will fit together with good, even contact. Use of epoxy requires special storage and application procedures which do not lend themselves to repair. For this reason, epoxy will not be used for repair. To compensate for the lack of epoxy, additional rivets should be used when making repairs to existing joints.

Rivet Patterns

- 1. Rivet patterns are denoted by rivet spacing and rivet edge distance. Rivet edge distance is the distance from center of rivet to nearest edge of sheet. Rivet spacing is defined as the distance from center of rivet to center of adjacent rivet (Figure 10-1).
- Required rivet spacing is determined by strength needed in the joint. A general feel for strength required can be obtained by inspecting rivet patterns in surrounding areas. Body repairs made using single rows of rivets should be performed using rivet spacing not greater than 1.6 in. (4.1 cm) and not less than 0.625 in. (15.9 mm). Use 1 in. (25.4 mm) rivet spacing as a general practice for repairs. Rivet spacing used in original construction may be greater due to additional strength obtained by using epoxy adhesive. Do not use rivet edge distances less than 0.375 in. (9.5 mm).
- 3. High strength joints or large area patterns may require use of double or multiple rows of rivets to obtain sufficient strength.





- 4. Care must be taken to assure rivet hole patterns are transferred accurately in cases where a part with no holes is mated to one which already has rivet holes. Hole patterns may be transferred using one of the following patterns:
 - a. Lay new part in place, and use holes in mating part as a drill template. This requires the new part to be underneath the mating part. Care must be taken not to distort original holes.
 - b. Use the removed part as a drill template by clamping the old and new parts together. This requires that parts rest flat and rivet flange be undistorted.

Joint Design

- Loads are applied through a joint to fasteners that hold it together. These loads are applied to fasteners in the form of shear loads or tension loads. If load is perpendicular to axis of fasteners, the fasteners are loaded in shear. The fasteners are loaded in tension when load is along axis of fastener, causing a pull on each end of fastener.
- Rivets are designed to be loaded in shear. Do not create any new joints during repairs which cause rivets to be used in a tension application. Bolts should be used for tension applications or substituted for rivets in very high shear load applications (Figures 10-2 and 10-3).



Repair Parts

- 1. Paint repair parts or patches with epoxy primer before installation.
- 2. Apply sealing compound to mating surfaces to prevent corrosion.
- 3. Install part or patch.
- 4. Paint repaired area with epoxy primer.
- 5. Paint repaired area with polyurethane as required.

Negligible Damage

- 1. Negligible cracks are repaired by drilling a small hole at each end of crack to stop crack propagation. This is called stop-drilling. Table 6 gives proper drill sizes for stop-drilling cracks.
- 2. Caution: Never use heat to reform parts, as is greatly reduces part strength.
- 3. Small dents and distorted areas may be repaired by bending or hammering as long as the operation does not cause materials to crack or tear. Sharp bends should not be attempted.



Figure 10-3: Rivet Loads in Shear

Repair by Patching

Table 6: Stop-Drill Sizes for Negligible Cracks

SHEET THICKNESS	MINIMUM STOP DRILL BIT SIZE NO.
0-0.032 in. (0-081 mm)	40
0.033 in. (0.84 mm) and thicker	30

Most body panel damage that exceeds the limits of negligible damage may be repaired by patching. This procedure involves removal of damaged area and application of a patch to cover the area. The damaged area is prepared by rounding or smoothing of all corners and edges to ensure cracks will not spread into undamaged areas (Figure 10-4). In case of a large crack, it may be desirable to stop-drill the crack rather than cut out a portion of the panel or structural member. Repair is completed by applying a large overlapping patch over the damaged area (Figure 10-5). The overlap must be sufficient to allow the observance of proper rivet edge distance. Large areas of damage are best repaired by attaching patch with multiple rows of rivets (Figure 10-6).



Figure 10-4: Patching



Figure 10-5: Patching Cracked Areas



Figure 10-6: Proper Rivet Distance

Repair by Insertion

For damage that is large or more severe in nature than a crack or hole, it is often desirable to remove damaged area, insert a piece of material into removed area and reinforce with a doubler. This is termed repair by insertion. This method of repair is typically stronger and stiffer than an added patch (Figures 10-7, 10-8, 10-9, and 10-10).









Figure 10-7: Reinforcing Damaged Area



Fiberglass Repair

General Information

The HUMMER hood and engine access cover are made of fiberglass (sheet molding compound). Crack, splits, or holes may be repaired with a glass reinforced plastic laminate repair kit.

Inspection

NOTE: Hood surface has a thin layer of gel coat that may appear cracked in a spider web-like pattern due to hood flexing. No repair is required.

- 1. Examine cracks to determine if they are on surface only, or are deep breaks into material thickness.
- 2. If filler material chips off at bonding flanges, and appears as cracked but not broken through, the area need not be repaired.
- 3. If total penetration crack greater than 1 in. (25.4 mm) exists in critical areas: hinges, latches, or hood stop areas, repair immediately (Figure 10-11).
- 4. If total penetration cracks exist in noncritical areas, do not repair until size is greater than 3 in. (76 mm).
- 5. If severe breaks develop in one area, remove fragmented material and use repair procedure for holes.



Figure 10-11: Hood Stop and Hinge

Repair

NOTE: Complete procedures for fiberglassing are provided with repair kit (AM General part number 5742835).

1. Repairing cracks or splits.

WARNING: When sanding fiberglass, personal protective equipment (respirator, goggles/shield, gloves, coveralls, etc.) must be used. Failure to do this may result in injury.

- a. Using sandpaper, remove dirt and paint 3-4 in. (8-10 cm) around area of crack.
- b. Rough-sand surface to which mat will be added and underside of surface, if possible. Surface must be dry.
- c. Bevel edges of crack in a broad "V".
- d. Cut a piece of mat and apply to underside of surface with resin mixture. Extend patch beyond break about 2 in. (5 cm). Press patch firmly into place. Saturate patch with additional layer of resin and then allow 1-3 hours to cure.
- e. At the same time, cover top exposed surface with resin, allowing 1 to 3 hours to cure.
- f. For stressed areas, lightly sand first patch and add another patch layer, repeating steps a through c.
- g. Finish-sand exposed surface.
- h. Prime and paint.
- Repairing holes.
- a. Remove damaged material.
- b. Using sandpaper, remove dirt and paint in area of hole extending away 3-4 in. (8-10 cm).
- c. Rough-sand top and underside of surface to which mats will be added.
- d. Cut two same size pieces of fiberglass mat that will extend about 2 in. (5 cm) past edge of hole.
- e. Coat both top and underside of surface, and saturate both pieces of mat with the resin mixture.
- f. When tacky, apply one mat to the inner surface and one to the outer surface. Press the two patches together.
- g. Allow 1-3 hours to cure. Additional coats of resin may be added if necessary for appearance purposes. Sand lightly between coats.
- h. Finish-sand exposed surface.
- i. Prime and paint.





WATER LEAK DETECTION AND REPAIR

If water has leaked into the vehicle, inspect for leakage points. Spray water, under pressure, against the vehicle in the general area where the leak is believed to be located. Have an assistant inside the vehicle locate and mark the point(s) where any water appears.

Water that appears at a certain place inside the vehicle may actually be entering the vehicle from another point. It may be necessary to remove the floor mat, interior trim panels, insulation, dash pad, instrument panel, etc. to gain access and diagnose the leak. Back track the path of water to the point of entry. If it is still not possible to locate the point of entry, try the following:

- 1. Close all windows and doors.
- 2. Run a small stream of water over the suspected area(s) of leakage.
- 3. Using a leak detector-type solution (commercially available), spray a film over the suspect area on the exterior surface.
- 4. From inside the vehicle, use an air wand and force air onto the suspect leak area and check for pressure bubbles that indicate air is escaping from the vehicle.
- 5. Repair the leak.

If the leak is between body panels or around rivet heads, use Silaprene sealant (P/N 05593929) and wipe the sealant into and/or around the leak area. Be sure to remove any excess sealant while it is still pliable.

If the leak is around a door, it may be because the door is not properly aligned. Refer to Door Replacement in this section for instructions on door adjustment. If the door is contacting the weather seal correctly, make sure the weather seal is not damaged and is properly sealed on the door. If the weather seal is not properly sealed, rubber cement can be used to hold it in place. If the weather seal is damaged, replace it.

If the leak is around a window held by a weather seal (i.e., door glass), completely dry the area and apply a new window glass seal. If the new seal still does not close out against the glass, the window opening flange may need to be adjusted inward. If the weather seal is damaged, it should be replaced. Check the flange that holds the weather seal for any nicks or burrs that may have caused the damage.

Windshield leaks should be repaired by removing the glass and the weather seal that is leaking. Clean off any remaining sealer on the windshield frame and the weather seal, and lay a new bead of sealer evenly around the windshield frame and between the glass and the weather seal. Install the glass and weather seal as an assembly into the frame. Attach the retainers, and allow sealer to harden.

6. Retest the entire vehicle for leaks.

CENTER CONSOLE REPLACEMENT

Removal

- 1. Remove four screw and washer assemblies from center console. (Figure 10-12).
- 2. Disconnect four air ducts and hoses from air vents and remove center console from tunnel.
- 3. Remove two beverage containers and four air vents from center console.

Installation

- 1. Install two beverage containers and four air vents in center console (Figure 10-12).
- 2. Route and connect four air ducts and hoses to vents.
- 3. Install center console on tunnel with four screw and washer assemblies.



Figure 10-12: Center Console



FRONT CONSOLE REPLACEMENT

Removal

- Remove center console. 1.
- 2. Remove two capscrews securing front console to two body brackets (Figure 10-13).



Figure 10-14: Radio and Radio Leads

- 18. Remove cigarette lighter element, shell, heater, and bezel from console.
- 19. Remove six capscrews, speednuts, and glovebox from front console (Figure 10-16).
- 20. Remove four capscrews, bezel, and climate control assembly from front console (Figure 10-17).

- 3. Pull front console away from dashboard.
- Disconnect three air ducts and hoses from air vents and re-4. move air vents from front console.
- 5. Disconnect remote lead from radio (Figure 10-14).
- 6. Disconnect converter box connector from radio.
- 7. Disconnect antenna lead from radio.
- Disconnect audio harness connector from radio.
- 10. Disconnect two line output leads from radio.
- 11. Remove fastener and radio mount bracket from radio
- 13. Remove ashtray receptacle, two capscrews, frame, bracket, and radio mount bracket from front console.
- 15. Press side springs and remove radio from sleeve.
- 16. Bend sleeve mount tabs and remove sleeve from front

BOX

SLEEVE

17. Disconnect electrical lead from cigarette heater.



Figure 10-16: Glovebox

Figure 10-17: Climate Control Assembly

10-16 Body



Installation

- 1. Install bezel and climate control assembly on console with four capscrews (Figure 10-17).
- 2. Install glovebox in front console with six speednuts and capscrews (Figure 10-16).
- 3. Install cigarette lighter bezel, heater, shell, and element in front console (Figure 10-15).
- 4. Connect electrical lead to cigarette heater.
- 5. Install sleeve in front console and secure by bending mount tabs.
- 6. Install radio in sleeve.
- 7. Install trim plate on radio.
- 8. Install radio mount bracket, bracket, and frame on console with two capscrews.
- 9. Install ashtray receptacle in frame.
- 10. Install lamp in bracket.
- 11. Install radio mount bracket to radio with fastener.
- 12. Connect two line output leads to radio (Figure 10-14).
- 13. Position converter box on top of sleeve.
- 14. Connect audio harness connector to radio.
- 15. Connect antenna lead to radio.
- 16. Connect converter box connector to radio.
- 17. Connect remote lead to radio.
- 18. Install three air vents in front console and connect air hoses and ducts to air vents (Figure 10-18).
- 19. Install front console to body brackets with two capscrews.
- 20. Install center console.



Figure 10-18: Front Console

INSTRUMENT PANEL, GAUGES, AND SWITCHES

Instrument Panel Replacement

Removal

NOTE: Tag all leads prior to removal for installation. If replacing instrument panel, refer to procedures in this section to remove and/or disconnect the various lamps, switches, and gauges.

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove two nuts, washers, capscrews, and washers securing instrument panel to body (Figure 10-19).
- 3. Remove screw securing instrument panel to body.
- 4. Remove two nuts, washers, capscrews, washers, and instrument panel from steering column mounting bracket.
- 5. Remove four capscrews, window vent, and vent duct from instrument panel.
- 6. Disconnect vent duct from air hose.

Installation

NOTE: Coat vent duct and air hose with sealant.

- 1. Install vent duct and window vent on instrument panel with four capscrews (Figure 10-19).
- 2. Connect air hose to vent duct.
- 3. Install instrument panel on steering column mounting bracket with two washers, capscrews, washers, and nuts.
- 4. Secure instrument panel to body with screw.
- 5. Secure instrument panel to body with two washers, capscrews, washers, and nuts.
- 6. Connect battery ground cable (Section 12).



Figure 10-19: Instrument Panel

Crash Pad Replacement

Removal

- 1. Remove five screw and washer assemblies, two panel fasteners, and crash pad from dashboard (Figure 10-20).
- 2. Disconnect air hose from vent duct.
- 3. Remove four capscrews, window vent, and vent duct from crash pad.

Installation

NOTE: Coat vent duct and air hose with sealant.

- 1. Install vent duct and window vent on crash pad with four capscrews (Figure 10-20).
- 2. Connect air hose to vent duct.
- 3. Install crash pad to dashboard with five screw and washer assemblies and two panel fasteners.





Electrical Gauge Replacement

NOTE: Electrical gauge replacement is basically the same for all instrument panel gauges. This procedure covers the oil pressure gauge.

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove four screws and pull gauge panel away from instrument panel (Figure 10-21).

NOTE: Tag all leads prior to removal for installation.

3. Remove three nut and lockwasher assemblies securing three leads to gauge. Discard nut and lockwasher assemblies.

- 4. Remove nut and lockwasher assembly securing hold-down bracket and gauge to gauge panel. Discard nut and lockwasher assembly.
- 5. Disconnect lamp connector from gauge.
- 6. Remove gauge through front of gauge panel.



- 1. Install gauge in gauge panel (Figure 10-21)
- 2. Connect lamp connector to back of gauge.
- 3. Install hold-down bracket and gauge on gauge panel with nut and lockwasher assembly.
- 4. Install three leads on gauge with nut and lockwasher assemblies.
- 5. Connect battery ground cable (Section 12).
- 6. Start engine and ensure gauge operates properly.
- 7. Install gauge panel on instrument panel with four screws.

10-18 Body-

Instrument Panel Indicator Lamp Replacement

NOTE: All instrument panel indicator lamps are replaced basically the same.

Removal

- 1. Remove instrument panel.
- 2. Remove lamp from indicator light housing (Figure 10-22).
- 3. Turn lamp one-quarter turn, and remove lamp from socket.

Installation

- 1. Install lamp in socket and secure by turning one-quarter turn (Figure 10-22).
- 2. Install lamp in indicator light housing.
- 3. Install instrument panel.
- 4. Start engine and ensure lamp operates properly.

INSTRUMENT PANEL



Speedometer/Odometer Replacement

Removal

- 1. Remove instrument panel.
- 2. Remove two plastic caps from studs on speedometer/ odometer (Figure 10-23).

NOTE: Tag all leads prior to removal for installation.

- 3. Remove two nut and lockwasher assemblies securing ground lead and sending lead to speedometer/odometer. Discard nut and lockwasher assemblies.
- 4. Remove two nut and lockwasher assemblies, leads, and hold-down bracket securing speedometer/odometer to instrument panel and remove speedometer/odometer. Discard nut and lockwasher assemblies.

Installation

- 1. Install speedometer/odometer on instrument panel and secure with hold-down bracket, two leads, and nut and lockwasher assemblies (Figure 10-23).
- 2. Install ground lead and sending lead on speedometer/ odometer with two nut and lockwasher assemblies.
- 3. Install two plastic caps on studs of speedometer/odometer.
- 4. Install instrument panel.



Figure 10-23: Speedometer/Odometer

Instrument Panel Switch Replacement

NOTE: All instrument panel switches are replaced basically the same, with the exception of the dimmer control switch. This procedure covers the main light switch.





Removal

- 1. Remove instrument panel.
- 2. Remove connector from switch (Figure 10-24).
- 3. Remove switch from switch housing.

Installation

- 1. Install switch in switch housing.
- 2. Install connector on switch (Figure 10-24).
- 3. Install instrument panel.

Dimmer Control Switch Replacement

Removal

1. Remove instrument panel.

NOTE: Tag leads prior to removal for installation.

- 2. Disconnect connector from wiring harness (Figure 10-25).
- 3. Remove switch from switch housing.





Installation

- 1. Install switch in switch housing (Figure 10-25).
- 2. Connect connector to wiring harness.
- 3. Install instrument panel.



Tachometer Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Pull front console away from crash pad enough to gain access to tachometer mounting plate (Figure 10-26).
- 3. Disconnect tachometer connector from body harness connector.
- 4. Remove two nuts, mounting plate, tachometer, and grommet from front console.

Installation

- 1. Install grommet, tachometer, and mounting plate on front console with two nuts (Figure 10-26).
- 2. Connect tachometer connector to body harness connector.
- 3. Install front console.
- 4. Connect battery ground cable (Section 12).



Figure 10-26: Tachometer

CIGARETTE LIGHTER REPLACEMENT

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Pull front console away from crash pad enough to gain access to wiring harness connector.
- 3. Remove element from lighter assembly heater (Figure 10-27).
- 4. Remove wiring harness connector from lighter assembly.
- 5. Remove shell from heater, and remove shell, heater, and bezel from console.

Installation

- 1. Install bezel and heater in console (Figure 10-27).
- 2. Install shell on heater.
- 3. Install wiring harness connector on lighter assembly.
- 4. Install element in lighter assembly.
- 5. Connect battery ground cable (Section 12).
- 6. Engage cigarette lighter to ensure proper operation.
- 7. Install front console.



Figure 10-27: Cigarette Lighter



ASHTRAY REPLACEMENT

Removal

- 1. Pull front console away from crash pad to gain access to ashtray mounting bracket.
- 2. Remove ashtray receptacle, two capscrews, and frame from console and bracket (Figure 10-28).

Installation

- 1. Install frame and ashtray receptacle on bracket and console with two capscrews (Figure 10-28).
- 2. Install front console.



GLOVEBOX REPLACEMENT

Removal

Remove six capscrews, speednuts, and glovebox from front console (Figure 10-29).

Installation

Install glovebox in front console with six speednuts and capscrews (Figure 10-29).



Figure 10-29: Glovebox

ENGINE ACCESS COVER

Inner Engine Access Cover Flexible Latch and Hold-Down Striker Replacement

Removal

- 1. Remove engine access cover.
- 2. Remove two rivets and hold-down striker from body (Figure 10-30).
- 3. Remove two rivets and flexible latch from cargo floor.

Installation

- 1. Install flexible latch on cargo floor with two rivets (Figure 10-30).
- 2. Install hold-down striker on body with two rivets.
- 3. Install engine access cover.



Figure 10-30: Inner Engine Access Cover Latch

Engine Access Cover Maintenance

Removal

- 1. Remove console.
- 2. Unlatch two flexible latches from keepers on engine access cover hold-down brackets (Figure 10-31).
- 3. Unlatch two engine access cover hold-down latches from engine access cover hold-down strikers.
- 4. Turn two ring studs and remove access cover.





7. Install insulation on access cover with seven rivets and retainers.



Figure 10-32: Engine Access Cover, Insulation, and





Installation

- 1. Install engine access cover with two ring studs (Figure 10-31).
- 2. Secure two hold-down latches on hold-down strikers.
- 3. Latch two flexible latches on keepers on hold-down brackets.
- 4. Install console.



Disassembly

- 1. Remove seven rivets, retainers, and insulation from engine access cover (Figure 10-32).
- 2. Remove seal from access cover.
- 3. Remove four retaining rings, washers, and two ring studs from access cover (Figure 10-33).
- 4. Remove two locknuts and shoulder bolts securing two latch guide plates and back plates to access cover and remove latches. Discard locknuts.
- 5. Remove four rivets, two latch guide plates, and back plates from access cover.
- 6. Remove two rivets and keepers from hold-down brackets.
- 7. Remove four rivets, nuts, washers, capscrews, two holddown brackets, and backing plates from access cover.

Assembly

- Install two hold-down brackets and backing plates on access cover with four rivets, capscrews, washers, and nuts (Figure 10-33).
- 2. Install two keepers on hold-down brackets with two rivets.
- 3. Install two latch guide plates and back plates on access cover with four rivets.
- 4. Install two latch guide plates on back plates and access cover with two shoulder bolts and locknuts. Install latches.
- 5. Install two washers and ring studs on access cover with two washers and four retaining rings.



SEAT BELT ASSEMBLY REPLACEMENT

NOTE: Replacement of the seat belt assembly is basically the same for all seat locations on all vehicle models. This procedure covers the left front seat belt on four-door hard top vehicles.

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove seat.
- 3. Remove screw and washer assembly, seat buckle, and washer from body (Figure 10-34).
- 4. Remove inner kick panel enough to gain access to seat buckle electrical connector.
- Disconnect seat buckle electrical connector from roof harness connector and pull seat buckle electrical connector through grommet in inner kick panel.



Figure 10-34: Seat Belt Electrical Connector

6. Remove screw and washer assembly, D-ring, webbing guide cover, and washer from B-pillar (Figure 10-35).



7. Remove screw and washer assembly, anchor bracket, and washer from bracket.

NOTE: Steps 8 and 9 are applicable to all vehicles except two-door vehicles with the enlarged cab.

- 8. Remove courtesy light lamp assembly, two rivets, mounting bracket, and two washers from lower B-pillar trim.
- 9. Disconnect body harness connector from courtesy light lamp assembly.
- 10. Remove four screw and washer assemblies securing lower B-pillar trim to B-pillar.
- 11. Remove capscrew, washer, and retractor from retractor mounting bracket. Remove seatbelt assembly from lower B-pillar trim.
- 12. Remove four capscrews, washers, and retractor mounting bracket from B-pillar.
- 13. Remove four capscrews, washers, and bracket from B-pillar and body.

10-24 Body

Installation

- 1. Install bracket on B-pillar and body with four washers and capscrews (Figure 10-35).
- 2. Install retractor mounting bracket on B-pillar with four washers and capscrews.
- 3. Route seat belt assembly through opening in lower B-pillar trim and install retractor to retractor mounting bracket with washer and capscrew.
- 4. Install lower B-pillar trim on B-pillar with four screw and washer assemblies.

NOTE: Steps 5 and 6 are applicable to all vehicles except two-door vehicles with the enlarged cab.

- 5. Connect body harness connector to courtesy light lamp assembly.
- 6. Install courtesy light lamp assembly and mounting bracket to lower B-pillar trim on B-pillar with two washers and rivets.
- 7. Install anchor bracket on bracket with washer and screw and washer assembly.
- 8. Install D-ring and webbing guide cover on B-pillar with washer and screw and washer assembly.
- 9. Route seat buckle electrical connector through grommet in inner kick panel and connect seat buckle electrical connector tor to roof harness connector (Figure 10-34).
- 10. Install inner kick panel.
- 11. Install seat buckle on body with washer and screw and washer assembly.
- 12. Install seat.
- 13. Connect battery ground cable (Section 12).

DRIVER'S AND FRONT PASSENGER'S SEATS

Reclining Driver's and Front Passenger's Seat Replacement

NOTE: Reclining driver's and front passenger's seats are replaced basically the same. This procedure covers the passenger's seat.

Removal

Remove four capscrews, washers, and passenger's seat from seat base (Figure 10-36).

Installation

Install passenger's seat on seat base with four washers and capscrews. Tighten capscrews to 15 lb-ft (20 N•m) (Figure 10-36).



Figure 10-36: Reclining Front Seat

Standard Driver's and Front Passenger's Seat Pedestal Replacement

NOTE: Seat pedestal replacement for driver's and front passenger's seats is basically the same. This procedure covers the driver's seat pedestal.

Removal

- 1. Remove seat from seat pedestal.
- 2. Remove four capscrews, lockwashers, and washers securing seat pedestal to floor. Discard lockwashers (Figure 10-37).
- 3. Remove seat pedestal and four spacers from vehicle.



Installation

- 1. Install four spacers and seat pedestal in vehicle (Figure 10-37).
- 2. Secure seat pedestal to floor with four washers, lockwashers, and capscrews.
- 3. Install seat on seat pedestal.



Figure 10-37: Front Seat Pedestal

Standard Driver's and Passenger's Seat Pedestal Replacement

NOTE: Seat pedestal replacement is basically the same for driver's and front passenger's seats. This procedure covers the driver's seat pedestal.

Removal

- 1. Remove driver's seat pedestal.
- 2. Remove bag from height adjuster (Figure 10-38).
- 3. Remove four nuts, lockwashers, and capscrews securing height adjuster to slide set and remove height adjuster and cover. Discard lockwashers.
- 4. Remove four nuts, lockwashers, and capscrews securing riser to slide set and remove riser. Discard lockwashers.

Installation

- 1. Install riser on slide set with four capscrews, lockwashers, and nuts (Figure 10-38).
- 2. Install cover and height adjuster on slide set with four capscrews, lockwashers, and nuts.
- 3. Install bag on height adjuster.
- 4. Install driver's seat pedestal.



Figure 10-38: Seat Pedestal Assembly

Driver's Seat Armrest Replacement

Removal

- 1. Remove three plastic caps covering exposed screws (Figures 10-39 and 10-40).
- 2. Remove two short screws and lockwashers attaching armrest to bracket.
- 3. If bracket needs to be replaced, remove two long screws attaching bracket to seat support.



Figure 10-39: Driver's Seat Armrest



Figure 10-40: Driver's Seat Wide Armrest

Installation

NOTE: If bracket was removed, perform steps 1 through 3.

- 1. Secure bracket to seat support with one of two long screws. Do not tighten screw (Figures 10-39 and 10-40).
- 2. Use large center hole in bracket to locate upper bracket mounting hole in seat support.
- 3. Secure top section of bracket to seat support with other long screw. Tighten both long screws to 120 lb-in. (14 N•m).
- 4. Secure the armrest to the bracket with the two short screws and lockwashers. Tighten the short screws to 120 lb-in. (14 N•m).
- 5. Position three plastic caps over three exposed screw heads.

NOTE: The entire armrest can be positioned vertically or horizontally by pushing the armrest up or down. To adjust the angle of the armrest while it is in the horizontal position, use the adjusting knob located under the front end of the armrest.

6. Use the adjusting knob to position the armrest as necessary.

REMOVABLE LOAD BARRIER AND MOUNTING BRACKETS MAINTENANCE (STATION WAGON)

Removal

- 1. Remove twelve drive screws and carpet assembly from front and back of removable load barrier (Figure 10-41).
- 2. Remove necessary interior trim to gain access to two mounting brackets.

- 3. Remove removable load barrier by lifting barrier up and out of mounting brackets on inner wheel house panels.
- 4. Remove ten rivets and mounting bracket from left inner wheel house panel.
- 5. Remove ten rivets and mounting bracket from right inner wheel house panel.

Inspection

Inspect bumper strips. If damaged, replace.

Installation

- 1. Install mounting bracket on left inner wheel house panel with ten rivets (Figure 10-41).
- 2. Install mounting bracket on right inner wheel house panel with ten rivets.
- 3. Install removable load barrier in mounting brackets.
- 4. Install interior trim.
- 5. Install carpet assembly on front and back of removable load barrier with twelve drive screws.



CARPET ASSEMBLY

Figure 10-41: Removable Load Barrier



INTERIOR TRIM

B-Bar Replacement

NOTE: This procedure covers replacement of the B-bar for all vehicles except open top models and 2-door models without an enlarged cab.

Removal

- 1. Remove seat belt assemblies.
- 2. Remove trim from B-bar.
- 3. Remove domelight.

NOTE: It may be necessary to remove any duct tape or tie straps securing electrical wiring harnesses to B-bar.

- 4. Remove eight screws, washers, and headliner support from B-bar (Figure 10-42).
- 5. Remove four screws, lockwashers, and two mounting brackets from mounting blocks. Discard lockwashers.
- 6. Remove two B-pillar seals and rabbet seals from B-pillar. Inspect and discard seals if damaged.
- 7. Remove two locknuts, washers, and strikers from B-pillar. Discard locknuts.
- 8. Remove six locknuts, washers, capscrews, washers, and four mounting blocks from B-pillar. Discard locknuts
- 9. Remove B-bar.
- 10. Remove four screws, washers, and two trim mounting brackets from B-bar.



Installation

- 1. Install two trim mounting brackets on B-bar with four washers and screws (Figure 10-42).
- 2. Install B-bar.
- 3. Install four mounting blocks on B-pillar with six washers, capscrews, washers, and locknuts.
- 4. Install two strikers on B-pillar with washers and locknuts.
- 5. Install two B-pillar seals and rabbet seals on B-pillar.
- 6. Install two mounting brackets on mounting blocks with four lockwashers and screws.
- 7. Install headliner support on B-bar with eight washers and screws.
- 8. Install domelight.
- 9. Install trim on B-bar.
- 10. Install seat belt assemblies.



Driver's Compartment Trim Replacement

Removal

- 1. Remove overhead speakers from driver's compartment and passenger's compartment (if applicable) (Section 12).
- 2. Remove visors.

- 3. Remove seat belt assemblies.
- 4. Remove two covers, screws, and grab handle from trim. (Figure 10-43).





- 5. Remove ten screw and washer assemblies and B-bar center trim from roof.
- 6. Remove eight screw and washer assemblies and center trim from windshield frame and roof (Figure 10-44).
- 7. Remove nine screw and washer assemblies and upper A-pillar trim from roof.



10-30 Body-

- 8. Remove screw and washer assembly and lower A-pillar trim from A-pillar.
- 9. Remove six screw and washer assemblies and upper B-bar trim from roof.
- 10. Remove two screws, washers, and B-pillar trim from B-pillar.

NOTE: Replacement of the rear driver's compartment trim for 2-door vehicles with and without an enlarged cab is basically the same. Steps 11 through 13 cover 2-door vehicles without an enlarged cab.

- 11. Remove seats.
- 12. Remove ten screw and washer assemblies and trim from upper rear compartment wall (Figure 10-45).



Figure 10-45: Rear Compartment Wall

- 13. Remove two screw and washer assemblies, B-beam trim, and rear edge trim from B-beam and lower rear compartment wall.
- 14. Remove domelight.
- 15. Remove two panel fasteners and headliner from roof (Figure 10-46).



Figure 10-46: Headliner

Installation

- 1. Position headliner on roof and install with two panel fasteners (Figure 10-46).
- 2. Install domelight.

NOTE: Perform steps 3 through 5 for 2-door vehicles without an enlarged cab.

- Install rear edge trim and B-beam trim on B-beam and rear compartment wall with two screw and washer assemblies (Figure 10-45).
- 4. Install trim on upper rear compartment wall with ten screw and washer assemblies.
- 5. Install seats.
- 6. Install B-pillar trim on B-pillar with two washers and screws (Figure 10-47).



- 7. Install upper B-bar trim on roof with six screw and washer assemblies.
- 8. Install lower A-pillar trim on A-pillar with screw and washer assembly.
- 9. Install upper A-pillar trim on roof with nine screw and washer assemblies (Figure 10-44).
- 10. Install center trim on windshield frame and roof with eight screw and washer assemblies (Figure 10-47).
- 11. Install B-bar center trim on roof with ten screw and washer assemblies.
- 12. Install grab handle on trim with two screws and covers.
- 13. Install seat belt assemblies.
- 14. Install visors.
- 15. Install overhead speakers (if equipped) (Section 12).



Passenger's Compartment Trim Replacement

Removal

- 1. Remove rear seats.
- 2. Remove overhead speakers (Section 12).
- 3. Remove seat belt assemblies.
- 4. Remove ten screw and washer assemblies and B-bar center trim from roof (Figure 10-48).



Figure 10-48: Passenger's Side Interior Trim

- 5. Remove two covers, screws, and grab handle from trim.
- 6. Remove six screw and washer assemblies and upper B- bar trim from roof.
- 7. Remove two screws, washers, and lower B-pillar trim from B-pillar.

NOTE: Perform steps 8 through 10 for station wagon models only.

- 8. Remove eight screw and washer assemblies and C-pillar center trim from roof (Figure 10-49).
- 9. Remove nine screw and washer assemblies and upper C-pillar trim from roof.
- 10. Remove four screw and washer assemblies and lower C-pillar trim from lower C-pillar.



LOWER LOWER CENTER LOWER REAR WHEELHOUSE TRIM PANEL COMPARTMENT TRIM WALL

Figure 10-50: Four-Passenger Vehicle

12. Remove fifteen screw and washer assemblies and window trim from rear compartment wall and roof.



- 13. Remove two panel fasteners and upper wheelhouse trim from wheelhouse.
- 14. Remove two screw and washer assemblies and lower wheelhouse trim from wheelhouse.
- 15. Remove eight screw and washer assemblies and lower center trim panel from lower rear compartment wall.
- 16. Remove domelight.
- 17. Remove two panel fasteners and headliner from roof.

Installation

- 1. Install headliner on roof with two panel fasteners (Figure 10-50).
- 2. Install domelight.
- 3. Install lower center trim panel on lower rear compartment wall with eight screw and washer assemblies.
- 4. Install upper and lower wheelhouse trim panels to wheelhouse with two screw and washer assemblies and panel fasteners.
- 5. Install window trim on rear compartment wall and roof with fifteen screw and washer assemblies.
- 6. Install trim panel on rear compartment wall with four screw and washer assemblies.

NOTE: Perform steps 7 through 9 for station wagon models only.

- 7. Install lower C-pillar trim on lower C-pillar with four screw and washer assemblies (Figure 10-49).
- 8. Install upper C-pillar trim on roof with nine screw and washer assemblies.
- 9. Install C-pillar center trim on roof with eight screw and washer assemblies.

- 10. Install B-pillar trim on B-pillar with two washers and screws (Figure 10-51).
- 11. Install upper B-bar trim on roof with six screw and washer assemblies.
- 12. Install B-bar center trim on roof with ten screw and washer assemblies.



Figure 10-51: B-Pillar and Interior Trim

- 13. Install grab handle on trim with two screws and covers.
- 14. Install seat belt assemblies.
- 15. Install overhead speakers (Section 12).
- 16. Install rear seats.

Station Wagon Rear Compartment Trim Replacement

Removal

- 1. Remove rear seats.
- 2. Remove two capscrews, washers, upper seat belt bracket, and seat belt assembly from C-pillar (Figure 10-52).



Figure 10-52: C- and B-Pillar Trim

- 3. Remove eight screw and washer assemblies and center trim from C-pillar.
- 4. Remove two screw and washer assemblies from edge of trim on upper B-pillar trim.
- 5. Remove six screw and washer assemblies and upper C-pillar trim from C-pillar.
- 6. Remove four screw and washer assemblies and trim from station wagon compartment side wall (Figure 10-53).



Figure 10-53: C-Pillar Trim

7. Remove four screw and washer assemblies and lower C-pillar trim from C-pillar.

8. Remove eight screw and washer assemblies and two trim panels from lower rear compartment wall (Figure 10-54).



- Remove two panel fasteners and trim panel from rear compartment wall.
- 10. Remove domelight.
- 11. Remove four panel fasteners and rear headliner from roof.
- 12. Remove trim from bottom of rear window (Figure 10-55).



Figure 10-55: Rear Window Trim





Installation

- 1. Install trim on bottom of rear window (Figure 10-55).
- 2. Install rear headliner on roof with four panel fasteners (Figure 10-54).
- 3. Install domelight.
- 4. Secure trim panel to compartment wall with two panel fasteners.
- 5. Install two trim panels on lower rear compartment wall with eight screw and washer assemblies.
- 6. Install lower C-pillar trim on lower side of C-pillar with four screw and washer assemblies (Figure 10-56).

- 7. Install trim to upper station wagon compartment side wall with four screw and washer assemblies.
- 8. Install upper C-pillar trim on C-pillar with six screw and washer assemblies.
- 9. Install two screw and washer assemblies on edge of upper trim on B-pillar.
- 10. Install center trim on C-pillar with eight screw and washer assemblies.
- 11. Install seat belt assembly, washer, capscrew, washer, seat belt bracket, and capscrew to C-pillar.
- 12. Install rear seat.





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Inner Kick Panels Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove seats.

NOTE: Remove one capscrew, washer, and seat buckle for two-passenger models.

3. Remove two capscrews, washers, and seat buckles from front and rear of tunnel (Figure 10-57).



Figure 10-57: Seat Belt Buckle Electrical Connector

NOTE: Ensure seat belt buckle electrical connector or wiring harness is pulled out and away from kick panel for ease of installation.

4. Disconnect seat belt buckle electrical connector from wiring harness connector on driver's side.

NOTE: Perform steps 5 and 6 for four-passenger models only.

5. Remove two panel fasteners, four screw and washer assemblies, and rear wall trim from rear compartment wall (Figure 10-58).



Figure 10-58: Rear Compartment Trim

6. Remove five panel fasteners and rear inner kick panel from tunnel (Figure 10-59).



Figure 10-59: Inner Kick Panels

- 7. Remove front and center consoles.
- 8. Remove eleven screw and washer assemblies, panel fastener, and shift control panel from tunnel (Figure 10-59).
- 9. Remove three panel fasteners and left front inner kick

panel from tunnel.


10. Remove five panel fasteners and right front inner kick panel.

NOTE: Perform step 11 for two-passenger models only.

11. Remove panel fastener and inner kick panel from rear of tunnel.

Installation

NOTE: Perform step 1 for two-passenger models only.

- 1. Install rear inner kick panel on right rear of tunnel with panel fastener (Figure 10-59).
- 2. Install right front inner kick panel to tunnel with five panel fasteners.
- 3. Install left front inner kick panel to tunnel with three panel fasteners.
- 4. Install shift control trim panel to tunnel with eleven screw and washer assemblies and panel fastener.
- 5. Install center and front consoles.

NOTE: Perform steps 5 and 6 for four-passenger models only.

- 6. Install rear inner kick panels with five panel fasteners (Figure 10-58).
- 7. Install rear wall trim to rear compartment wall with two panel fasteners and four screw and washer assemblies.
- Connect seat belt buckle electrical connector for driver's side (Figure 10-57).

NOTE: Install one seat buckle for two-passenger models.

- 9. Install two seat buckles to tunnel with washers and capscrews.
- 10. Install seats.
- 11. Connect battery ground cable (Section 12).

Outer Kick Panel Replacement

Removal

NOTE: Soft top models require removal of speakers from front outer kick panels before performing the following task.

- 1. Remove door stop straps.
- 2. Remove two panel fasteners and right front outer kick panel from frame (Figure 10-60).
- 3. Remove four panel fasteners and left front outer kick panel from frame.
- 4. Remove two panel fasteners and left center outer kick panel from frame.
- 5. Remove panel fastener and right center outer kick panel from frame.
- 6. Remove two screws, washers, and rear lower seat belt brackets from frame.
- 7. Remove six panel fasteners and left and right rear outer kick panels from frame.



Figure 10-60: Outer Kick Panels

- 1. Install left and right rear outer kick panels on frame with six panel fasteners (Figure 10-60).
- 2. Install two rear lower seat belt brackets on frame with washers and capscrews.
- 3. Install right center outer kick panel on frame with panel fastener.
- 4. Install left center outer kick panel on frame with two panel fasteners.
- 5. Install left front outer kick panel on frame with four panel fasteners.

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- 6. Install right front outer kick panel to frame with two panel fasteners.
- 7. Install door stop straps.

Tunnel Carpet, Padding, and Hardboard Replacement

Removal

NOTE: Tunnel carpet, padding, and hardboard replacement is basically the same for all models. This task represents four-passenger model carpet replacement.

- 1. Remove inner kick panels.
- 2. Remove carpet from tunnel (Figure 10-61).
- 3. Remove padding from tunnel.
- 4. Remove four panel fasteners and hardboard from tunnel.

Installation

- 1. Install hardboard on tunnel with four panel fasteners (Figure 10-61).
- 2. Install padding on tunnel.
- 3. Install carpet on tunnel.
- 4. Install inner kick panels.

VISOR REPLACEMENT

Removal

NOTE: Visor replacement is the same for each side of the vehicle. This procedure covers the driver's side.

NOTE: If your vehicle has the lighted visor mirror, disconnect the visor mirror lead from the roof harness connector before removing the visor (Figure 10-63).

Remove four screws, lockwashers, washers, and remove visor from body (Figure 10-62).

Installation

Install visor on body with four screws, lockwashers, and washers (Figure 10-62).



Figure 10-63: Visor With Lighted Mirror



Figure 10-61: Carpet and Padding



DOOR MAINTENANCE

NOTE: Door maintenance is basically the same for all doors.

Removal

CAUTION: To avoid damage, support door during removal.

NOTE: Go to step 2 for front doors on vehicles equipped with power mirrors.

- 1. Remove side mirror (front doors only).
- 2. Remove power mirror assembly (Section 13).

NOTE: Go to step 4 for vehicles equipped with power windows.

- 3. Remove power door locks harness from pillar (Section 12).
- 4. Remove power windows and door locks harness from pillar (Section 12).
- 5. Remove door stop strap assembly.
- 6. Remove two twelve-point screws and washers securing upper door hinge to pillar (Figure 10-64).



Figure 10-64: Door Hinges

7. Close door.

8. Remove two twelve-point screws and washers securing lower door hinge to pillar and remove door.

Disassembly

1. Remove six twelve-point screws, washers, and upper and lower hinge plates from door (Figure 10-64).

NOTE: Go to step 4 for front doors on vehicles equipped with power windows. Go to step 5 for rear doors on vehicles equipped with power windows.

- 2. Remove power door locks switch (Section 13).
- 3. Slide cover from top of window regulator handle, and remove screw and handle from regulator (Figure 10-65).



Figure 10-65: Door

- 4. Remove power windows and door locks switches from door (Section 13).
- 5. Remove power windows switch from door (Section 13).
- 6. Remove two screws and door pull handle or armrest from door trim panel.
- 7. Remove four screws securing inside door handle to door trim panel. Pull handle away from trim panel, and disconnect inside operating rod from handle.
- 8. Remove seven screw and washer assemblies and door trim panel from door.
- 9. Remove vapor barrier and moisture barrier flap from door (Figure 10-66).

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10. Disconnect inside operating rod from door latch assembly and remove rod (Figure 10-67).

NOTE: Perform steps 11 and 12 for front doors only.

- 11. Remove lock cylinder clip from lock cylinder.
- 12. Push lock cylinder through outside of door. Remove clip securing lever and lock operating rod to cylinder and remove cylinder from door (Figure 10-68).



Moisture Barrier Flap

- 13. Remove four nuts and lockwashers securing gasket and outside door handle to door. Disconnect outside operating rod from handle, and remove handle. Discard lockwashers.
- 14. Remove three screws, lockwashers, and latch assembly from door. Discard lockwashers (Figure 10-69).
- 15. Remove all rods from door latch assembly.



Figure 10-68: Lock Cylinder and Outside Door Handle



Figure 10-70: Window Regulator

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Assembly

NOTE: Go to step 4 for vehicles equipped with power windows.

- 1. Install regulator on door with two lockwashers and capscrews (Figure 10-70).
- 2. Secure regulator post to door with four lockwashers and capscrews.
- 3. Secure regulator post to window assembly with two lock-washers and nuts.
- 4. Install power windows regulator (Section 13).
- 5. Install all rods on door latch assembly (Figure 10-69).

WARNING: Screws securing latch assembly have metric threads. Substituting non-metric threaded screws can result in door opening during vehicle operation. Do not substitute screws.

- 6. Install latch assembly in door with three lockwashers and screws.
- 7. Connect outside operating rod to outside door handle, and install gasket and outside door handle on door with four nuts and lockwashers (Figure 10-71).

NOTE: Perform steps 8 and 9 for front doors only.

8. Install lock cylinder in door and secure lock operating rod and lever to lock cylinder with clip.



Figure 10-71: Lock Cylinder and Outside Door Handle

- 9. Secure lock cylinder in door with lock cylinder clip (Figure 10-72).
- 10. Install inside operating rod on door latch assembly.



Figure 10-72: Inside Operating Rod



- 11. Install moisture barrier flap and vapor on door (Figure 10-73).
- 12. Install door trim panel on door with seven screw and washer assemblies (Figure 10-74).
- 13. Connect inside operating rod to inside door handle, and install inside door handle on door trim panel with four screws.
- 14. Install door pull handle or armrest on door trim panel with two screws.

NOTE: Go to step 18 for front doors on vehicles equipped with power windows. Go to step 19 for rear doors on vehicles equipped with power windows.

- 15. Install window regulator handle on regulator with screw, and snap handle cover into place.
- 16. Install power door locks switch (Section 13).
- 17. Install power windows and door locks switches on door (Section 13).
- 18. Install power windows switch on door (Section 13).
- 19. Install upper and lower hinge plates on door with six washers and twelve-point screws (Figure 10-75).



Figure 10-73: Vapor Barrier and Moisture Barrier Flap





- 1. Install lower door hinge on pillar with two washers and twelve-point screws. Do not tighten screws (Figure 10-75).
- 2. Install upper door hinge on pillar with two washers and twelve-point screws. Do not tighten screws.
- 3. Install door stop strap assembly.

NOTE: Go to step 5 for vehicles equipped with power windows.

- 4. Install power door locks harness on pillar (Section 12).
- 5. Install power windows and door locks harness on pillar (Section 12).

NOTE: Go to step 7 for front doors on vehicles equipped with power mirrors.

- 6. Install side mirror (front doors only).
- 7. Install power mirror assembly (Section 13).



Figure 10-75: Door Hinges

Adjustment

- 1. Loosen the four twelve-point screws securing the upper and lower door hinges to the pillar (Figure 10-75).
- 2. Raise the door as high as possible. Push the hinges toward the front of the vehicle as far as they will go, and tighten the four twelve-point screws 10 lb-ft (13 N•m).
- 3. Loosen the six twelve-point screws securing the upper and lower hinge plates to the door.
- 4. Close the door and tighten the six twelve-point screws 10 lb-ft (13 N•m).

DOOR SEALS REPLACEMENT

NOTE: The door seals come in bulk and must be cut to the appropriate lengths. For hard top vehicles, cut 12 feet for the doors and 10 feet for the body opening. For soft-top vehicles, cut 6 feet for the doors and 5 feet for the body opening.

Vehicles with Full Doors (Hard-Top Vehicles)

Removal

Remove the old seal from the door frame and the body area with adhesive remover. Clean any remaining adhesive residue from the door surface.

Installation

- 1. Cut the door and body seals to the proper lengths (see note above).
- 2. Beginning at the bottom of the door, press door seal around the outside of the door frame (Figure 10-76).



3. Apply body seal in the same location as the seal that was removed. (Figure 10-77)



Figure 10-77: Body Seals Location



DOOR STOP STRAP ASSEMBLY REPLACEMENT

Removal

- 1. Remove capscrew, washer, and door stop strap assembly from door (Figure 10-78).
- 2. Remove two capscrews, washers, door stop strap assembly, and courtesy light from A-pillar (**front door only**).
- 3. Remove capscrew, washer, and door stop strap assembly from B-pillar (**rear door only**).

Installation

- 1. Install door stop strap assembly on door with washer and capscrew. Tighten capscrew 12 lb-ft (16 N•m) (Figure 10-78).
- 2. Install courtesy light and door stop strap assembly on A-pillar with two washers and capscrews. Tighten capscrews to 12 lb-ft (16 N•m) (**front door only**).
- 3. Install door stop strap assembly on B-pillar with two washers and capscrews. Tighten capscrews to 78 lb-ft (106 N•m) (rear door only).





DOOR GLASS

Door Glass Maintenance

NOTE: Door glass replacement is the same for all doors. This procedure covers the right front door.

Removal

- 1. Remove window regulator.
- 2. Remove upper and lower window channels (Figure 10-79).

NOTE: Mark location of screws prior to removal for installation.

- 3. Remove four screws, lockwashers, left and right channel brackets, and left and right channels from door. Discard lockwashers.
- 4. Rotate glass 90 degrees and remove through window (Figure 10-80).



Figure 10-79: Window Channels

Disassembly

Remove glass from lower channel bracket (Figure 10-80).

Cleaning and Inspection

NOTE: Clean all components, examine for wear or damage, and replace if necessary.

Remove all glass remains from channel bracket and bottom of door (Figures 10-79 and 10-80).

Assembly

Install glass in lower channel bracket (Figure 10-80).

Installation

- 1. Apply a strip of adhesive tape along the bottom of the glass on each side.
- 2. Insert glass into door through window (Figure 10-80).
- 3. Install glass in left and right channels and channel brackets, and secure channels and channel brackets to door with four lockwashers and screws (Figure 10-79).
- 4. Install upper and lower window channels.
- 5. Install window regulator.
- 6. Roll window up and down several times to ensure glass is properly aligned.



Figure 10-80: Lower Channel Bracket

Door Glass "Wind Noise" Diagnosis and Repair

Wind noise or whistle generating from the side windows at highway speeds is the result of inadequate sealing of the glass at the top channel. If pushing gently against the glass stops the wind noise, use the following procedure for a permanent fix.

- 1. Cut a 24 inch strip of 1/4 in. square closed cell foam.
- 2. Roll down window. Remove adhesive backing from strip of foam.
- 3. Insert end of strip into the corner of the window channel. Continue inserting strip along the top channel (Figure 10-80).
- 4. Use a wide scraper or suitable blunt tool to ensure that the foam strip is properly seated in the channel.
- 5. Roll up window to check for proper operation and fit.
- 6. Road test vehicle to verify the absence of wind noise.

REAR WINDOW GLASS REPLACEMENT

Removal

- 1. Temporarily secure rear window frame to body exterior with duct tape. Apply tape strips at each end of frame. Tape will hold window assembly in place when interior capscrews are removed.
- Remove capscrews that attach window retainers to window frame. Total of 24 screws are used on two and four door models. Retain for use in installing new glass assembly.



- 3. Remove window assembly with aid of helper. Remove tape strips securing window assembly in body. Then tilt window assembly outward and remove it from body opening.
- 4. Clean flange in rear window opening with 3M all purpose cleaner or similar product.
- 5. On station wagon models, remove liftgate window as follows:
 - a. Disconnect and remove shock at each side of liftgate. Shocks are secured with a clip at each end (Figure 10-81).
 - b. Remove screws that attach liftgate window to body, and remove window assembly. Retain screws for installation of new window (Figure 10-82).
 - c. Clean window mounting surfaces of liftgate with 3M all purpose cleaner or similar product.



Figure 10-81: Liftgate Shock Attachment



Figure 10-82: Liftgate Retainer Screws

- 1. Align and position window assembly in body opening with aid of helper. Temporarily secure window in place with duct tape.
- Position first U-shaped retainer on window frame. Install retainers one at a time to avoid misalignment problems (Figure 10-83).



Figure 10-83: U-Shaped Window Retainers

- 3. Align retainer screw holes with matching dimples in window frame. Then install one or two self-drilling capscrews to hold frame and retainer in place. Do not fully tighten capscrews at this time.
- 4. Align and install opposite retainer and remaining capscrews. Total of 24 capscrews are required.

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- 5. Verify proper alignment of window frame and retainer halves in body opening. Loosen screws and adjust window position if necessary before proceeding.
- 6. For station wagon models:
 - a. Position window assembly in liftgate.
 - b. Install window frame screws. Total of 15 are required (Figure 10-82).
 - c. Install liftgate shock absorbers (Figure 10-81).

HOOD, HOOD LATCH, AND PROP ROD

Hood Latch and Bracket Maintenance

Removal

NOTE: If only the rubber latch is to be replaced, the spring pin does not have to be completely out of base.

- 1. Remove spring pin and rubber latch from base (Figure 10-84).
- 2. Remove two locknuts, washers, capscrews, washers, and base from body.
- 3. Remove five locknuts, washers, capscrews, latch bracket, latch plate, and hood latch stop bracket from hood. Discard locknuts (Figure 10-85).

Disassembly

Remove cotter pin, pin, two rollers, and hood latch from rubber latch. Discard cotter pin. (Figure 10-84).

Assembly

Install hood latch on rubber latch with two rollers, pin, and cotter pin (Figure 10-84).



Figure 10-84: Hood Latch

Installation

- 1. Install latch plate and hood latch stop bracket on hood with three capscrews, washers, and locknuts. Tighten locknuts to 10 lb-ft (14 N•m) (Figure 10-85).
- 2. Install latch bracket on latch plate with two capscrews, washers, and locknuts. Tighten locknuts to 10 lb-ft (14 N•m).
- Add sealing compound before installing base on body with two washers, capscrews, washers, and locknuts. Tighten capscrews to 6 lb-ft (8 N•m) (Figure 10-84).
- 4. Install rubber latch on base with spring pin.



Figure 10-85: Hood Latch Bracket and Latch Plate

Hood Release Cable Assembly Replacement

Removal

- 1. Raise and secure hood.
- 2. Remove cable handle, two nuts, lockwasher, nut, and cable assembly from cable mounting bracket. Discard lockwasher (Figure 10-86).
- 3. Remove cable assembly from cable clamp bracket (Figure 10-87).
- 4. Remove cable assembly and grommet from body.
- 5. Remove lock pin from cable assembly.

- 1. Install lock pin on cable assembly (Figure 10-87).
- 2. Install grommet and cable assembly on body.
- 3. Install cable assembly on cable clamp bracket.
- 4. Install cable assembly on cable mounting bracket with nut, lockwasher, two nuts, and cable handle (Figure 10-86).
- 5. Lower hood.



Figure 10-86: Hood Release Handle Assembly



Figure 10-87: Hood Release Cable Assembly

Hood Release Latch and Bracket Assembly Replacement

Removal

- 1. Raise and secure hood.
- 2. Remove two capscrews, lockwashers, and latch assembly from hood. Discard lockwashers (Figure 10-88).
- 3. Remove pin, spring, and lock arm from latch assembly (Figure 10-89).
- 4. Remove cable assembly from cable clamp bracket (Figure 10-87).

- 5. Remove three nuts, lockwashers, capscrews, and bracket assembly from body. Discard lockwashers (Figure 10-90).
- 6. Remove two nut and lockwasher assemblies, screws, cable clamp bracket, and spacer from bracket assembly. Discard nut and lockwasher assemblies.
- 7. Inspect three nylon bushings in bracket assembly. Remove and discard bushings if damaged.



Figure 10-89: Pin, Spring, and Lock Arm



Figure 10-90: Cable Clamp Bracket Assembly

Installation

- 1. Install three nylon bushings into bracket assembly, if removed (Figure 10-90).
- 2. Install spacer and cable clamp bracket on bracket assembly with two screws and nut and lockwasher assemblies.
- 3. Install bracket assembly on body with three capscrews, lockwashers, and nuts.
- 4. Install cable assembly on cable clamp bracket (Figure 10-87)
- 5. Install spring and lock arm on latch assembly with pin (Figure 10-89).
- 6. Install latch assembly on hood with two lockwashers and capscrews (Figure 10-88).
- 7. Lower hood.

Hood Prop Rod and Bracket Maintenance

Removal

WARNING: To avoid injury or damage to equipment, support hood during hood prop rod and bracket maintenance.

- 1. Raise and support hood.
- 2. Remove cotter pin, two washers, and hood prop rod from hood. Discard cotter pin (Figure 10-91).
- 3. Remove four screws, lockwashers, bracket, and hood prop rod from airlift bracket. Discard lockwashers (Figure 10-92).







Figure 10-92: Hood Prop Rod and Bracket

Disassembly

- 1. Remove hood prop rod from eyebolt (Figure 10-93).
- 2. Remove locknut, washer, bushing, spring, snapring, bushing, washer, and eyebolt from bracket. Discard lock-washer.

Cleaning and Inspection

NOTE: Clean all components, and examine for wear or damage. Replace if necessary.

Inspect two bushings and spring for cracks, wear, or distortion (Figure 10-93).



Assembly

1. Install bushing on bracket with snapring (Figure 10-93).

NOTE: Length of spring with bracket assembled is 2-1/4 in. (5.7 cm).

- 2. Install washer, eyebolt, spring, bushing, washer, and locknut on bracket.
- 3. Install hood prop rod into eyebolt.



Figure 10-93: Hood Prop Rod and Bracket Assembly

Installation

- Install hood prop rod and bracket on airlift bracket with four lockwashers and screws. Tighten screws to 6 lb-ft (8 N•m) (Figure 10-92).
- 2. Install hood prop rod on hood with two washers and cotter pin (Figure 10-91).
- 3. Lower hood.

Hood and Hinge Maintenance

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Raise and secure hood.

WARNING: To avoid injury, or damage to equipment, support hood during removal and installation.

- 3. Disconnect two connector plugs from connector receptacles (Figure 10-94).
- 4. Remove four cotter pins, washers, and two hinge pins securing upper hinge halves to lower hinge halves. Discard cotter pins.
- 5. Remove cotter pin, two washers, and prop rod from hood. Discard cotter pin (Figure 10-94).
- 6. Remove hood.

NOTE: Perform steps 7 and 8 if replacing hinges.

- 7. Remove four capscrews, washers, two upper hinge halves, and hinge plates from hood (Figure 10-94).
- 8. Remove four locknuts, washers, two hinge plates, four capscrews, washers, and two lower hinge halves from brackets. Discard locknuts.



Figure 10-94: Hood and Hinge Assembly

Inspection and Repair

NOTE: Refer to Fiberglass Repair for inspection and repair of hood.

Installation

NOTE: Perform steps 1 and 2 if hinges were removed.

- 1. Install two lower hinge halves and hinge plates on two brackets with four washers, capscrews, washers, and lock-nuts. Do not tighten capscrews (Figure 10-94).
- Apply sealing compound on two hinge plates and install hinge plates and two upper hinge halves on hood with four washers and capscrews. Tighten capscrews to 28 lb-ft (38 N•m).
- 3. Install hood with two upper hinge halves on lower hinge halves with washers, hinge pins, washers, and four cotter pins.
- 4. Connect two connector plugs to connector receptacles.
- 5. Install hood prop rod on hood with two washers and cotter pin (Figure 10-94).

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- 6. Connect battery ground cable (Section 12).
- 7. Align hood.



Figure 10-95: Hood Prop Rod

Alignment

Alignment should be checked whenever replacing the hood stops, hinges, or latches. Surfaces that adjoin hood seals should be checked for signs of wear from hood movement.

1. Inspect hood prior to adjustment to determine condition of seals, hinges, and stops. Replace or repair any worn parts.



Figure 10-96: Center Hood Stop

2. Open hood and loosen center hood stop guide (Figure 10-96).

 Gently close hood and loosen lower hinge half locknuts (Figure 10-97).



\$10-012

Figure 10-97: Lower Hinge Half Locknuts

- 4. Gently position hood to obtain proper and even clearance with windshield and both front cowl panels.
- Tighten lower hinge half locknuts to lock adjustment. Open hood gently and position center hood stop guide brackets to contact center hood stop. Gently close hood to check guide bracket position (Figures 10-96 and 10-98).
- 6. Tighten and recheck hood stop guide position. When properly positioned, tighten to 10 lb-ft (14 N•m) (Figure 10-96).
- Tighten front lower hinge half locknuts to 28 lb-ft (38 N•m) and recheck hood position (Figure 10-97).



Figure 10-98: Hood Stop Guide and Hood Catch

- 8. Lube all hood stops, hinges, and guide brackets. Latch hood (Figure 10-99).
- 9. Test drive to ensure proper alignment (no squeaks).





Figure 10-99: Bump Stop

Outer Hood Seal Replacement

Removal

Remove two capscrews, seal retainer, and hood seal from body (Figure 10-100).

Installation

Install hood seal on body with seal retainer and two capscrews (Figure 10-100).



Figure 10-100: Outer Hood Seal

Side Hood Stop Replacement

Removal

Remove two locknuts, washers, capscrews, washers, and side hood stop from body. Discard locknuts (Figure 10-101).

Installation

Install side hood stop on body with two washers, capscrews, washers, and locknuts. Tighten capscrews to 6 lb-ft (8 $N \cdot m$) (Figure 10-101).



Figure 10-101: Side Hood Stop

Hood Grille and Screen Replacement

Removal

- 1. Remove six locknuts, washers, capscrews, washers, and grille from hood. Discard locknuts (Figure 10-102).
- 2. Remove six locknuts, washers, screws, washers, and screen from grille. Discard locknuts.

- 1. Install screen on grille with six washers, screws, washers, and locknuts. Tighten locknuts to 6 lb-ft (8 N•m) (Figure 10-102).
- 2. Install grille on hood with six washers, capscrews, washers, and locknuts. Tighten locknuts to 7 lb-ft (9 N•m).



Figure 10-102: Hood Grille and Screen

Center Hood Stop Replacement

Removal

Remove two capscrews, washers, center hood stop, and plate from A-beam (Figure 10-103).

Installation

Install center hood stop and plate on A-beam with two washers and capscrews. Tighten capscrews to 12 lb-ft (16 N•m) (Figure 10-103).



Figure 10-103: Center Hood Stop

Center Hood Stop Guide Bracket Replacement

Removal

Remove six locknuts, washers, two guide brackets, guide plate, six capscrews, washers, and guide plate from hood. Discard locknuts (Figure 10-104).

Installation

Install two guide plates and guide brackets on hood with six washers, capscrews, washers, and locknuts. Tighten locknuts to 10 lb-ft (14 N•m) (Figure 10-104).



Front Hood Screen Replacement

Removal

- 1. Remove three locknuts, washers, and carriage bolts securing front hood screen to hood. Discard locknuts (Figure 10-105).
- 2. Remove three capscrews, harness clamps, washers, and front hood screen from hood.

- Install front hood screen on hood with three washers, harness clamps, and capscrews. Tighten capscrews to 20-30 lb in. (2-3 N•m) (Figure 10-105).
- Secure front hood screen to hood with three carriage bolts, washers, and locknuts. Tighten locknuts to 21 lb-ft (29 N•m).





Figure 10-105: Front Hood Screen

Right Hood Retainer Bracket Replacement

Removal

Remove four bolts, lockwashers, washers, right hood retainer bracket, and spacer from hood. Discard lockwashers (Figure 10-106).

Installation

Install right hood retainer bracket and spacer on hood with four washers, lockwashers, and bolts (Figure 10-106).





Left Hood Retainer Bracket Replacement

Removal

Remove four bolts, lockwashers, washers, left hood retainer bracket, and four washers from hood. Discard lockwashers (Figure 10-107).

Installation

Install left hood retainer bracket on hood with eight washers, four lockwashers, and bolts (Figure 10-107).



Figure 10-107: Left Hood Retainer Bracket

Right Hood Close-Out Seal and Retainer Replacement

Removal

- 1. Remove two screws and upper seal retainer from close-out seal and hood (Figure 10-108).
- 2. Remove two screws, lower seal retainer, and close-out seal from hood.

UPPER SEAL RETAINER



Figure 10-108: Right Hood Close-Out Sea

3. Inspect four wellnuts for damage. Replace if defective or damaged.

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Installation

- 1. Install close-out seal and lower seal retainer on hood with two screws (Figure 10-108).
- 2. Install upper seal retainer on close-out seal and hood with two screws.

Airlift to Hood Seal Replacement

Removal

Remove protector and seal from airlift bracket (Figure 10-109).

Installation

Install seal and protector on airlift bracket (Figure 10-109).



Figure 10-109: Airlift Bracket

ENGINE SPLASH SHIELD MAINTENANCE

Removal

1. Disconnect battery ground cable (Section 12).

WARNING: To avoid injury, or damage to equipment, raise and support hood during removal and installation.

- 2. Remove hood prop rod and bracket.
- 3. Disconnect hood harnesses from connector receptacles (Figure 10-110).
- 4. Remove locknut, washer, capscrew, and washer securing splash shield to support bracket. Discard locknut.
- 5. Remove locknut, three washers, and capscrew securing splash shield to airlift bracket. Discard locknut.
- 6. Remove capscrew, lockwasher, and washer securing splash shield to airlift bracket. Discard lockwasher.
- 7. Remove screw, two lockwashers, locknut, clamp, and two connector receptacles from splash shield. Discard lock-washers and locknut.
- Remove nut and lockwasher assembly and screw securing harness and clamp to splash shield. Discard nut and lockwasher assembly (Figure 10-111).
- Remove locknut, two washers, capscrew and splash shield from bracket. Discard locknut (Figure 10-110).



Figure 10-110: Engine (Left) Splash Shield Assembly



Disassembly

- 1. Remove seven locknuts, washers, capscrews, seal, and two retainers from splash shield (Figure 10-110).
- 2. Remove two locknuts, washers, capscrews, washers, and bracket from splash shield.
- 3. Remove four rivets and bushing from splash shield.

Assembly

- 1. Install bushing on splash shield with four rivets (Figure 10-110).
- 2. Install bracket on splash shield with two washers, capscrews, washers, and locknuts. Tighten locknuts to 6 lb-ft (8 N•m).
- 3. Install seal and two retainers on splash shield with seven capscrews, washers, and locknuts.

Installation

- 1. Install splash shield on bracket with washer, capscrew, washer, and locknut (Figure 10-110).
- 2. Install harness and clamp on splash shield with screw and nut and lockwasher assembly (Figure 10-111).
- 3. Install two connector receptacles on splash shield with clamp, screw, two lockwashers, and locknut (Figure 10-110).
- 4. Secure splash shield on airlift bracket with washer, lockwasher, and capscrew. Tighten capscrew to 10 lbft (14 N•m).
- 5. Secure splash shield on airlift bracket with washer, capscrew, two washers, and locknut. Tighten capscrew to 10 lb-ft (14 N•m).
- 6. Secure splash shield on support bracket with washer, capscrew, washer, and locknut. Tighten capscrew to 6 lb-ft (8 N•m).
- 7. Connect hood harnesses on connector receptacles.
- 8. Install hood prop rod and bracket.
- 9. Connect battery ground cable (Section 12).



Figure 10-111: Splash Shield and Hood Harness

HORN

Horn Assembly Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Disconnect harness connector from horn assembly.
- 3. Remove capscrew and horn assembly from mounting bracket (Figure 10-112).

- 1. Install horn assembly on mounting bracket with capscrew (Figure 10-112).
- 2. Connect harness connector to horn assembly.
- 3. Connect battery ground cable (Section 12).



Figure 10-112: Horn Assembly



Horn Mounting Bracket Replacement

Removal

- 1. Remove two horns.
- 2. Remove two capscrews, inserts, bracket, and horn mounting bracket from airlift bracket (Figure 10-113).

Installation

- 1. Install bracket and horn mounting bracket on airlift bracket with two capscrews and inserts (Figure 10-113).
- 2. Install two horns.



Figure 10-113: Horn Mounting Bracket

WINDSHIELD ASSEMBLY

Windshield Glass and Weatherstrip Replacement

Removal

- 1. Remove windshield wiper arm and blade.
- 2. Remove six capscrews and upper retainer from windshield frame (Figure 10-114).
- 3. Remove four capscrews and center retainer from windshield frame.
- 4. Remove weatherstrip and glass from windshield frame.
- 5. Clean sealing compound from windshield frame.

- 1. Apply a 1/8 in. (3-mm) bead of sealing compound to edge of glass and windshield frame (Figure 10-114).
- 2. Install weatherstrip on glass.
- 3. Install glass and weatherstrip on windshield frame with center retainer and four capscrews.
- 4. Install upper retainer on windshield frame with six capscrews.
- 5. Apply a thin bead of sealing compound to top edge of outside weatherstrip.
- 6. Install windshield wiper arm and blade.



Figure 10-114: Windshield Glass Weatherstrip

Windshield Assembly Maintenance

WARNING: To avoid injury, or damage to equipment, support windshield during removal and installation.

Removal

- 1. Remove soft top.
- 2. Remove windshield wiper blade and arm.
- 3. Remove windshield wiper linkage.
- 4. Remove windshield wiper arm pivots.
- 5. Remove two locknuts and screws securing windshield assembly to A-pillar. Discard locknuts (Figure 10-115).



Figure 10-115: Windshield Assembly

- 6. Remove grommet from windshield center pillar and disconnect two jumper harness leads from body harness leads (Figure 10-116).
- 7. Remove six capscrews and washers securing windshield assembly to two brackets (Figure 10-115).
- 8. Remove windshield assembly from A-pillar.
- 9. Remove two seals from windshield assembly. Discard seals.
- 10. Clean remains of seals from windshield.



Figure 10-116: Center Pillar and Harness Leads

Disassembly

NOTE: Perform steps 1 and 2 for open-top models. Perform step 3 for all other models.

- 1. Remove eleven rivets, former, and seal from windshield assembly (Figure 10-117).
- 2. Inspect eight rivets and two corner caps from windshield assembly, and replace if damaged.
- 3. Remove thirteen rivets, former, and seal from windshield assembly (Figure 10-117).
- 4. Clean remains of seal from windshield assembly.

Assembly

NOTE: Perform step 1 for open-top models. Perform step 2 for all other models.

- 1. Install seal and former on windshield assembly with eleven rivets (Figure 10-117).
- 2. Install seal and former on windshield assembly and secure with thirteen rivets (Figure 10-117).



Figure 10-117: Windshield Assembly

Installation

- 1. Install two seals on windshield assembly (Figure 10-115).
- 2. Install windshield assembly on A-pillar.
- 3. Install windshield assembly on two brackets with six capscrews and washers.
- 4. Connect two jumper harness leads to body harness leads and install grommet on windshield center pillar (Figure 10-116).
- 5. Install windshield assembly on A-pillar with two screws and locknuts (Figure 10-115).
- 6. Install windshield wiper arm pivots.
- 7. Install windshield wiper linkage.
- 8. Install windshield wiper arm and blade.
- 9. Install soft top.

WINDSHIELD WIPER SYSTEM AND COMPONENTS

Windshield Wiper Motor Assembly Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove center trim from windshield assembly.
- 3. Disconnect windshield wiper motor assembly harness from jumper harness (Figure 10-118).
- 4. Remove three capscrews, washers, and lockwashers securing windshield wiper motor assembly to windshield assembly.
- 5. Remove retainer securing windshield wiper linkage to windshield wiper motor cranking pin and remove windshield wiper motor assembly.

- 1. Lubricate windshield wiper motor cranking pin with lubricant and install windshield wiper linkage on windshield wiper motor cranking pin with retainer (Figure 10-118).
- 2. Install windshield wiper motor assembly on windshield assembly with three lockwashers, washers, and capscrews.
- Connect windshield wiper motor assembly harness to jumper harness.
- 4. Install center trim on windshield assembly.
- 5. Connect battery ground cable (Section 12).



Figure 10-118: Windshield Wiper Motor Assembly





Windshield Wiper Linkage Replacement

Removal

NOTE: Left and right side windshield wiper linkage replacement procedure is the same. This procedure covers the left side.

- 1. Remove windshield wiper motor assembly from windshield assembly.
- 2. Remove upper A-pillar trim.
- 3. Disconnect windshield wiper linkage from windshield wiper pivot cranking lever pin and remove windshield wiper linkage (Figure 10-119).

Installation

- 1. Install windshield wiper linkage on windshield wiper pivot cranking lever pin (Figure 10-119).
- 2. Install upper A-pillar trim.
- 3. Install windshield wiper motor assembly on windshield assembly.



Figure 10-119: Windshield Wiper Linkage

Windshield Wiper Pivot Replacement

Removal

NOTE: Left and right side windshield wiper pivot replacement procedure is the same. This procedure covers the left side.

- 1. Remove windshield wiper arm assembly.
- 2. Remove upper A-pillar trim.
- 3. Remove windshield wiper linkage from windshield wiper pivot cranking lever pin (Figure 10-120).
- 4. Remove nut, washer, and rubber washer securing windshield wiper pivot to windshield assembly and remove windshield wiper pivot.

- 1. Install windshield wiper pivot on windshield assembly with rubber washer, washer, and nut (Figure 10-120).
- 2. Install windshield wiper linkage on windshield wiper pivot cranking lever pin.
- 3. Install upper A-pillar trim.
- 4. Install windshield wiper arm assembly.



Figure 10-120: Windshield Wiper Pivot

Windshield Wiper Jumper Harness Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove center trim from windshield assembly.
- 3. Remove windshield wiper motor assembly from windshield assembly.
- 4. Remove console.
- 5. Remove engine access cover.

- 6. Remove eight locknuts, retainer, eight capscrews, and screw securing close-out panel to A-beam. Discard locknuts (Figure 10-121).
- 7. Remove three locknuts, clamp, three capscrews, and clamps securing close-out panel to A-beam and remove close-out panel. Discard locknuts.
- 8. Disconnect jumper harness from body electrical harness and remove jumper harness and two grommets from wind-shield assembly.





- 1. Connect jumper harness to body electrical harness and install jumper harness and two grommets on windshield assembly (Figure 10-121).
- 2. Install close-out panel on A-beam with three clamps, capscrews, clamp, and three locknuts.
- 3. Secure close-out panel to A-beam with retainer, eight capscrews, locknuts, and screw.
- 4. Install engine access cover.
- 5. Install console.
- 6. Install windshield wiper motor assembly on windshield assembly.
- 7. Install center trim on windshield assembly.
- 8. Connect battery ground cable (Section 12).



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Reservoir and Pump Assembly Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Drain reservoir.
- 3. Disconnect pump connector from reservoir and pump assembly (Figure 10-122).
- 4. Disconnect windshield washer hose from reservoir and pump assembly.
- 5. Remove two capscrews, lockwashers, and reservoir and pump assembly from cowl. Discard lockwashers.
- 6. Inspect two wellnuts for damage. Replace if defective or damaged.

WINDSHIELD WASHER HOSE

WELLNUT

Figure 10-122: Windshield Washer Fluid Reservoir and Pump

Installation

- Install reservoir and pump assembly on cowl with two lockwashers and capscrews. Tighten capscrews to 8 lb-ft (11 N•m) (Figure 10-122).
- 2. Connect windshield washer hose on reservoir and pump assembly.
- 3. Connect pump connector to reservoir and pump assembly.
- 4. Fill reservoir.
- 5. Connect battery ground cable (Section 12).

Windshield Washer Hoses Replacement

Removal

- 1. Remove three nuts, washers, capscrews, washers, and clamps securing hose to body (Figure 10-123).
- 2. Disconnect washer hose from pump and tee. Remove clamps from hose.
- 3. Disconnect two hoses from tee and nozzles and remove from clamps.

Installation

- 1. Install two hoses through clamps and connect to tee and nozzles (Figure 10-123).
- 2. Install hose through clamps and connect to tee and pump.
- 3. Secure hose on body with three clamps, washers, capscrews, washers, and nuts.

Windshield Washer Nozzle Replacement

Removal

- 1. Disconnect hose from nozzle (Figure 10-124).
- 2. Remove screw and nozzle from body.

- 1. Install nozzle on body with screw (Figure 10-124).
- 2. Connect hose to nozzle.









Figure 10-124: Windshield Washer Nozzle

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MIRRORS

Side Mirror Replacement

Removal

Remove three screws, mirror, and gasket from door hinge (Figure 10-125).

Installation

Install gasket and mirror on door hinge with three screws (Figure 10-125).



Figure 10-125: Side Mirror Assembly

Rearview Mirror Maintenance

Removal

1. Remove screw and rearview mirror from mirror bracket (Figure 10-126).

NOTE: Perform step 2 only if bracket requires replacement. Mark location of bracket prior to removal.

2. Remove bracket from windshield.

Cleaning and Inspection

Clean epoxy remains from windshield.

Installation

NOTE: Perform step 1 only if bracket was removed.

- 1. Install mirror bracket on windshield with quickdrying epoxy. Allow to dry (Figure 10-126).
- 2. Install rearview mirror on mirror bracket with screw .





A-PILLAR FORMER ASSEMBLY MAINTENANCE (SOFT TOP ONLY)

Removal

- 1. Remove soft top.
- 2. Remove thirteen screws and A-pillar former from A-pillar (Figure 10-127).
- 3. Clean mounting surface on A-pillar.

Cleaning and Inspection

NOTE: Clean all components, examine for wear or damage, and replace if necessary.

Inspect wellnuts. Replace if defective or damaged.

- 1. Peel backing paper from A-pillar former and install former on A-pillar with thirteen screws (Figure 10-127).
- 2. Install soft top.



Figure 10-127: A-Pillar Former Assembly



REAR SUPPORT BOW BRACKET REPLACEMENT

Removal

- 1. Remove rear support bow assembly.
- 2. Remove two screws and support bow bracket from body (Figure 10-128).



Figure 10-128: Rear Support Bow Bracket

Installation

- 1. Install bracket on body with two screws (Figure 10-128).
- 2. Install rear support bow assembly.

FRONT STRIKER REPLACEMENT

Removal

Remove locknut, washer, backing plate, two isolators, and front striker assembly from front door pillar. Discard locknut (Figure 10-129).

Installation

Install front striker assembly on front door pillar with two isolators, backing plate, washer, and locknut (Figure 10-129).



Figure 10-129: Front Striker Assembly

REAR STRIKER ASSEMBLY REPLACEMENT

Removal

Remove two screws, washers, backing plate, and rear striker assembly from rear door pillar (Figure 10-130).

Installation

Install rear striker assembly on rear door pillar with backing plate, two washers, and screws (Figure 10-130).



Figure 10-130: Rear Striker Assembly

BODY MOUNT REPLACEMENT

Removal

NOTE: Removal and installation procedures for intermediate and rear body mounts are the same. This procedure covers the left intermediate body mount.

- 1. Remove locknut, washer, capscrew, washer, and spacer securing sleeve, upper cushion, and lower cushion to body bracket and frame bracket. Discard locknut (Figure 10-131).
- 2. Raise the vehicle at the body reinforcement adjacent to body mount to be removed (Figure 10-132).
- 3. Raise the body far enough to separate the upper cushion from lower cushion and remove sleeve, upper cushion, and lower cushion (Figure 10-131).



Figure 10-131: Body Mount Cushions



Figure 10-132: Left Side Body Mount Locations

Installation

- 1. Install lower cushion, upper cushion, and sleeve between body bracket and frame bracket (Figure 10-131).
- Lower body and ensure lower cushion, sleeve, upper cushion, and body bracket align. Secure with spacer, washer, capscrew, washer, and locknut. Tighten locknut to 90 lb-ft (122 N•m).

LICENSE PLATE BRACKETS

Rear License Plate Bracket Replacement

Removal

- 1. Remove two screws, lockwashers, license plate, and two grommets from bracket. Discard lockwashers (Figure 10-133).
- 2. Remove two capscrews and lockwashers securing bracket to bumper. Discard lockwashers.
- 3. Disconnect two leads from light bracket, and remove bracket.
- 4. Remove two nut and lockwasher assemblies, screws, and light bracket from bracket. Discard nut and lockwasher assemblies.

- 1. Install light bracket on bracket and secure with two screws and nut and lockwasher assemblies (Figure 10-133).
- 2. Connect two leads to light bracket.
- 3. Install bracket on bumper with two lockwashers and capscrews.
- 4. Install license plate on bracket with two grommets, lock-washers, and screws.



Figure 10-133: Rear License Plate Bracket



Front License Plate Bracket Replacement

Removal

- 1. Remove two capscrews, lockwashers, license plate, and two grommets from bracket. Discard lockwashers (Figure 10-134).
- 2. Remove two screws, lockwashers, and bracket from bumper. Discard lockwashers.

Installation

- 1. Install bracket on bumper with two lockwashers and screws (Figure 10-134).
- 2. Install license plate on bracket with two grommets, lock-washers, and capscrews.



Figure 10-134: Front License Plate Bracket

FUEL FILLER HOUSING REPLACEMENT

Removal

- 1. Remove filler cap from filler spout (Figure 10-135).
- 2. Remove three nuts, washers, capscrews, and washers securing fuel filler housing to filler spout.
- 3. Remove six screws and washers securing fuel filler housing to right outer wheelhouse panel.
- 4. Push filler cap through filler housing and remove fuel filler housing.
- 5. Inspect six speednuts for damage. Replace if defective or missing.

- Pull filler cap through fuel filler housing and install housing on right outer wheelhouse panel with six washers and screws. Tighten screws to 18 lb in. (2 N•m) (Figure 10-135).
- 2. Secure fuel filler housing to filler spout with three washers, capscrews, washers, and nuts.
- 3. Install filler cap on filler spout.



Figure 10-135: Fuel Filler Housing



ROADSIDE EMERGENCY EQUIPMENT

Tire Jack and Triangle Warning Kit Hold-Down Bracket Replacement (For Two-Passenger Model)

Removal

- 1. Remove two wingnuts, washers, and hold-down brackets (Figure 10-136).
- 2. Remove tire jack and triangle warning kit.
- 3. Remove two studs from bracket.

Installation

- 1. Place tire jack and triangle warning kit in place (Figure 10-136).
- 2. Install two studs on bracket.
- 3. Install two hold-down brackets on studs with two washers and wing nuts.



Figure 10-136: Emergency Equipment Hold-Down Bracket - Two-Passenger Vehicle

Tire Jack and Triangle Warning Kit Hold-Down Replacement (Four-Passenger Vehicle, Station Wagon, and Open Body)

Removal

- 1. Remove triangle warning kit and tire jack from under right rear seat.
- 2. Remove two wing nuts, washers, screws, clamp bracket, and hold-down bracket from seat support (Figure 10-137).
- 3. Remove nut, washer, screw, washer, and strap bracket from seat support.
- 4. Remove nut, washer, screw, washer, and strap from strap bracket.

- 1. Install strap on strap bracket with screw, two washers, and nut (Figure 10-137).
- 2. Install strap bracket on seat support with screw, two washers, and nut.
- 3. Install hold-down bracket and clamp bracket on seat support with two screws, washers, and wing nuts.
- 4. Position tire jack and triangle warning kit in place, and secure with strap.



Figure 10-137: Emergency Equipment Hold-Down Bracket - Four-Passenger Vehicle

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Figure 10-138: Upper Trim and Windshield Frame

FOUR-PASSENGER SOFT TOP

Interior Trim Replacement

Removal

- 1. Remove front and rear seats.
- 2. Remove front and center consoles.
- 3. Remove speakers from rear wall (Section 12).
- 4. Remove two panel fasteners from upper center trim of windshield frame (Figure 10-138).
- 5. Remove two panel fasteners from upper center trim of windshield frame (Figure 10-138).
- 6. Remove five screw and washer assemblies and upper center and center trim from windshield frame.
- 7. Remove four screw and washer assemblies and trim from side of rear compartment wall (Figure 10-140).
- 8. Remove four screw and washer assemblies and lower B-pillar trim from B-pillar (Figure 10-139).



Figure 10-139: Courtesy Light Electrical Connector
9. Disconnect courtesy light electrical connector, and remove courtesy light lens, two rivets, washers, and courtesy light from trim.



Figure 10-140: Rear Wall Compartment

- 10. Remove four screw and washer assemblies, two panel fasteners, lower trim, and trim from rear compartment wall (Figure 10-140).
- 11. Remove screw and washer assembly and center trim from rear compartment wall.

- 1. Place center trim on rear compartment wall with screw and washer assembly (Figure 10-140).
- 2. Install lower trim and trim on rear compartment wall with two panel fasteners and four screw and washer assemblies.
- 3. Install trim on rear compartment wall with four screw and washer assemblies.
- 4. Connect courtesy light electrical connector, and install courtesy light on trim with two washers and rivets.
- 5. Install courtesy light lens on courtesy light.
- 6. Secure lower B-pillar trim on with four screw and washer assemblies.
- 7. Install center trim on windshield frame with two screw and washer assemblies (Figure 10-141).
- 8. Install upper center trim on windshield frame and center trim with two panel fasteners and three screw and washer assemblies.
- 9. Install speakers on rear wall (Section 12).
- 10. Install front and center consoles.
- 11. Install front and rear seats.



Figure 10-141: Upper Trim and Windshield Frame

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Figure 10-143: Door Assemblies



6. Remove velcro strips and patches from tonneau area (Figure 10-144)

NOTE: Perform steps 6 and 7 for both sides of the vehicle. The left side is shown.

- 7. Remove 41 in. (104 cm) tonneau extrusion from side of wheelhouse.
- 8. Remove 9 in. (23 cm) tonneau extrusion from rear of wheelhouse.
- 9. Remove 43 in. (109 cm) tonneau extrusion from tailgate.
- 10. Remove five capscrews, lockwashers, four self-tapping screws, and tonneau/rear curtain extrusion from body. Discard lockwashers.

NOTE: Perform steps 10 through 13 for both sides of the vehicle. The left side is shown.

11. Remove front and rear door seals (Figure 10-145).



Figure 10-145: Door Seals

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12. Remove ten rivets securing front and rear wind deflectors to A-pillar and B-pillar (Figure 10-146).



Figure 10-146: Wind Deflectors

13. Remove capscrew, washer, and self-tapping screw securing B-pillar extrusion to B-pillar and remove B-pillar extrusion (Figure 10-147).



Figure 10-147: B-Pillar and Close-Off Seal

- 14. Remove close-off seal and B-pillar seal from B-pillar.
- 15. Remove D-strip seal from windshield frame. Do not remove P-strip seal (Figure 10-148).



Figure 10-148: Windshield Frame Seals

NOTE: Perform steps 15 through 17 for both sides of the vehicle. The left side is shown.

- Remove two screws and spacers securing velcro strip and horizontal rail (H-rail) to support structure (Figure 10-149). Remove any spacer washers, if applicable.
- 17. Remove 3 in. (8 cm) piece of P-strip seal from windshield frame.
- 18. Remove two screws, washers, and C-pillar extrusion from C-pillar.



Installation

NOTE: Perform steps 1 through 3 for both sides of the vehicle. The left side is shown.

1. Install C-pillar extrusion on C-pillar with two washers and screws (Figure 10-149).

NOTE: Clean all surface residue with an alcohol base cleaner before installing seals.

2. Install 3 in. (8 cm) piece of P-strip seal on windshield frame at the end of P-strip seal. Do not trim excess seal yet.

NOTE: If shimming is necessary, use spacer washers and longer screws to secure H-rail and to align H-rail door face with windshield frame door face and C-pillar extrusion door face.

- 3. Install H-rail and velcro strip on support structure with two spacers and screws. Trim excess seal installed in step 2 to bottom of H-rail.
- 4. Install D-strip seal on windshield frame in front of P-seal. Trim as necessary (Figure 10-150).



Figure 10-149: Rails and Support Structures



Figure 10-150: Windshield Seals

NOTE: Perform steps 5 through 9 for both sides of the vehicle. The left side is shown.

5. Coat mating surfaces of close-off seal and B-pillar seal with silaprene adhesive and install seals on B-pillar (Figure 10-151).



Figure 10-151: B-Pillar and Close-Off Seal

- 6. Coat mating surface of B-pillar extrusion with silaprene adhesive and install on B-pillar. Secure with washer, capscrew, and self-tapping screw. Seal slot in B-pillar extrusion with silaprene adhesive.
- 7. Coat mating surfaces of front and rear wind deflectors with silaprene adhesive and install on A-pillar and B-pillar with ten rivets (Figure 10-152).
- 8. Install shorter seals on front and rear door frames and cut ends to fit. Trim seals at bottom of wind deflector (Figure 10-153).
- 9. Starting with mitered corner, install longer seals on front and rear door frames and cut ends to fit.

NOTE: Clean all surface residue with an alcohol base cleaner before installing extrusions.

- Install tonneau/rear curtain extrusion on body with five lockwashers, capscrews, and four self-tapping screws (Figure 10-144).
- 11. Install 43 in. (109 cm) tonneau extrusion on tailgate.

NOTE: Perform steps 12 and 13 for both sides of the vehicle. The left side is shown.

- 12. Install 9 in. (23 cm) tonneau extrusion on rear of wheelhouse.
- 13. Install 41 in. (104 cm) tonneau extrusion on side of wheelhouse, 2 in. (5 cm) from rear corner edge of wheelhouse.



Figure 10-152: Wind Deflectors



Figure 10-153: Door Seals

NOTE: Before installing a new velcro strip (of larger size), crease the strip approximately 8 in. (20 cm) from each end by folding the strip back on itself. Unfold the strip before inserting it into the rail or extrusion. The crease will keep the velcro strip from moving excessively inside the extrusion channel.

- 14. Install velcro strips in extrusions.
- 15. Install one velcro patch on each wheelhouse side and two velcro patches on each tailgate chain attachment channel.
- Coat door pins of four upper door assemblies with silicone lubricant and install upper door assemblies on lower door assemblies (Figure 10-154). Press upper door assemblies firmly into place.



Figure 10-154: Door Assemblies

17. Lift the outer flap of each upper door assembly and check for gaps between the upper door assembly and lower door

assembly. If a gap exists, unzip the window and tap on the base of the window frame with an open hand to seat the upper door assembly.

- 18. Check tightness of fit for each upper door assembly by inserting a sheet of paper or similar material between the upper door frame and door opening. Close door. Remove paper or similar material. Slight tension should be felt. Use additional seal material if the fit of the door assembly to the wind deflector is inadequate.
- 19. Install two bow retainer brackets on wheelhouses with four screws (Figure 10-155).

CAUTION: The ideal crown height of the bow is shown. If there is excessive crowning of the bow, cut the end of the wood bow with a saw to reduce the crown. Do not cut more than 0.25 in. (6 mm) at a time, or the bow may become too short.

- Measure and record the distance across the cargo bed, between each rear support bar brace. Add 0.25 to 0.50 in. (6 to 13 mm) to this dimension and mark and cut the wood bow to this dimension.
- 21. Position wood bow in two retainer brackets.
- 22. Install the four-passenger soft top, tonneau cover, and slant-back soft top or station wagon soft top, if applicable. Refer to the owner's manual.



Figure 10-155: Wood Bow

TAILGATE

Tailgate Chain and Latch Brackets Replacement

Removal

Remove four locknuts, washers, capscrews, washers, chain bracket, and latch bracket from body. Discard locknuts (Figure 10-156).

Installation

Install chain bracket and latch bracket on body with four washers, capscrews, washers, and locknuts. Tighten capscrews to 15 lb-ft (20 N•m) (Figure 10-156).



Figure 10-156: Tailgate Brackets

Cargo Tiedown Replacement

NOTE: Cargo tiedown replacement is basically the same for all tiedowns.

Removal

Remove locknut, washer, hex-head screw, and cargo tiedown from cargo floor. Discard locknut (Figure 10-157).

Installation

Install cargo tiedown on cargo floor with hex-head screw, washer, and locknut. Tighten locknut to 65 lb-ft (88 N•m) (Figure 10-157).



Figure 10-157: Cargo Tiedown

Tailgate and Seals Replacement

Removal

- 1. Remove six locknuts, washers, and capscrews securing tailgate to body. Discard locknuts (Figure 10-158).
- 2. Disconnect two chains from tailgate and remove tailgate and shims from body.

NOTE: Perform step 3 for two- and four-door models. Perform step 4 and 5 for station wagon and open body models.

- 3. Remove two vertical seals from tailgate. Discard seals.
- 4. Remove two vertical and horizontal seals from body and four vertical seals and one horizontal seal from tailgate. Remove two corner seals (station wagon model only). Discard seals (Figure 10-159).
- 5. Remove two corner seals from tailgate (station wagon model only).
- 6. Remove two grommets from tailgate.
- 7. Clean adhesive from tailgate and body.



Figure 10-158: Tailgate and Seals

Installation

1. Install two grommets on tailgate (Figure 10-159).

NOTE: Perform steps 2 through 4 for station wagon and open body models. Perform step 5 for two- and four-door models.

- 2. Remove paper backing and install four vertical seals and one horizontal seal on tailgate. Ensure upper vertical seals overlap lower seals.
- 3. Remove paper backing from two horizontal and vertical seals and install on body.
- 4. Remove paper backing from two corner seals and install on tailgate (station wagon model only).
- 5. Remove paper backing from two vertical seals and install seals on tailgate (Figure 10-158).
- 6. Install tailgate on body with six capscrews, washers, and locknuts. Shim hinges as needed to align tailgate with body. When aligned, tighten capscrews 26 lb-ft (35 N•m).
- 7. Secure tailgate to body with two chains.



and Seals

Tailgate Chain Replacement

Removal

- 1. Lower tailgate.
- Open chain cap link and disconnect chain from bracket (Figure 10-160).
- 3. Unhook chain from chain bracket.

Installation

1. Hook chain to chain bracket (Figure 10-160).



Figure 10-160: Tailgate Chain

- 2. Connect chain to bracket.
- 3. Raise tailgate.



NOTE: To facilitate alignment when replacing hinges, place a small strip of masking tape along each side and bottom of hinge before removal.

Removal

Remove tailgate by removing six locknuts, washers, and capscrews from the tailgate while still closed. Discard locknuts. Note number of shims under each hinge and set them aside. Remove tailgate by releasing tailgate chains (Figure 10-161).



Figure 10-161: Tailgate Hinge

Disassembly

- 1. Place tailgate on padded work surface and remove hinge retainer rivets. Remove hinge and clean any debris from rivet holes.
- 2. Clean tailgate and apply a light coat of seam sealant to hinge mounting area.

Assembly

1. Using three 0.187 in. x 0.626 in. rivets, fasten hinge to lower set of holes on tailgate.

NOTE: Install rivets from tailgate into hinge to avoid interference with body and or seals.

2. Fasten hinge to upper set of holes on tailgate with three 0.187 in. x 0.563 in. rivets into tailgate.

Installation

1. Install tailgate into opening and secure with tailgate chains. Loosely install capscrews, washers, and locknuts

into hinges. Insert proper amount of shims under each hinge.

- 2. Slightly tighten capscrews, but not tight enough to restrict movement into alignment with tape marks.
- Align hinges and tailgate into proper position and torque capscrews to 26 lb-ft (35 N•m). Remove any excess sealant from hinges and body.
- 4. Refinish hinges and fasteners as required.

LIFT GATE ASSEMBLY

Lift Gate Assembly Replacement

Removal

- 1. Remove two lift gate shocks.
- 2. Remove fifteen screws, retainer, and insulation securing lift gate assembly to cargo shell and remove lift gate assembly (Figure 10-162).

- 1. Install lift gate assembly on cargo shell with insulation, retainer, and fifteen screws (Figure 10-162).
- 2. Install lift gate shocks.



Figure 10-162: Lift Gate Assembly



Lift Gate Shock Replacement

NOTE: Lift gate shock replacement is the same for the left and right side. This procedure covers the right side.

Removal

- 1. Open and secure lift gate.
- 2. Pry off two clips securing lift gate shock to lift gate assembly and remove lift gate shock (Figure 10-163).

Installation

- 1. Install lift gate shock on lift gate assembly and secure with two clips (Figure 10-163).
- 2. Close lift gate.

Lift Gate Linkage Replacement

Removal

- 1. Pull inner lift gate handle out of the lift gate linkage cover (Figure 10-164).
- 2. Remove lift gate linkage cover from velcro strip on liftgate.
- 3. Remove two screws securing lift gate linkage assembly to lift gate and remove lift gate linkage assembly.

- 1. Install lift gate linkage assembly on lift gate with two screws (Figure 10-164).
- 2. Secure lift gate linkage cover to velcro on lift gate.
- 3. Press inner lift gate handle into the lift gate linkage cover.



Figure 10-163: Lift Gate Shocks

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REAR VERTICAL DOOR MAINTENANCE

Door Replacement

Removal

- 1. Remove eight screws and rear vertical door from hinge (Figure 10-165).
- 2. Remove eight screws and hinge from door frame.



Figure 10-165: Rear Vertical Door

Installation

- 1. Install hinge on door frame with eight screws (Figure 10-165).
- 2. Install rear vertical door on hinge with eight screws.

Window Replacement

Removal

Remove eleven screws, window retainer bracket, and window from rear vertical door (Figure 10-166).



Install window in rear vertical door with window retainer bracket and eleven screws (Figure 10-166).



Door Handle Replacement

Removal

- 1. Remove rear door window.
- 2. Remove four screws and interior door handle from door (Figure 10-167).
- 3. Remove twelve screws and close-out panel from door.
- 4. Remove two cotter pins, washers, and latch rods from exterior door handle. Discard cotter pins.
- 5. Remove four spacers and exterior door handle from door.

Door Latch and Latch Rod Replacement

Removal

- 1. Remove rear door window.
- Remove four screws and interior door handle from door (Figure 10-168).
- 3. Remove twelve screws and close-out panel from door.
- 4. Remove cotter pin, washer, and latch rod from exterior door handle. Discard cotter pin.
- 5. Remove locknut, washer, capscrew, and latch rod from lower door latch. Discard locknut.
- 6. Remove three nuts, lockwashers, screws, and lower door latch from door. Discard lockwashers.



Figure 10-167: Door Handle

Installation

- 1. Install exterior door handle on door with four spacers (Figure 10-167).
- 2. Install latch rods on exterior door handle with two washers and cotter pins.
- 3. Install close-out panel on door with twelve screws.
- 4. Install interior door handle on door with four screws.
- 5. Install rear door window.



Figure 10-168: Door Latch and Latch Rod

- 1. Install lower door latch on door with three screws, lock-washers, and nuts (Figure 10-168).
- 2. Install latch rod on lower door latch with capscrew, washer, and locknut.
- 3. Install latch rod on exterior door handle with washer and cotter pin.
- 4. Install close-out panel on door with twelve screws.
- 5. Install interior door handle with four screws.
- 6. Install rear door window.



Door Stop Replacement

Removal

- 1. Remove rear door window.
- 2. Remove four screws and interior door handle from door (Figure 10-168).
- 3. Remove twelve screws and close-out panel from door.
- 4. Remove capscrew, door stop ball, and retainer from door (Figure 10-169).
- 5. Remove capscrew, washer, door stop socket, and retainer from right rear wheelhouse.



Install latch guide on door frame with two washers and retaining block (Figure 10-169).

Adjustment

Close door and check alignment, then adjust latch guide as necessary.

Door Frame and Seal Replacement

Removal

- 1. Remove vertical doors from door frame.
- 2. Remove upper and lower latch guides.
- 3. Remove fourteen screws and door frame from vehicle (Figure 10-170).
- 4. Remove seal from door frame.



Figure 10-169: Door Stop and Latch Guide

Installation

- 1. Install door stop socket on right rear wheelhouse with washer, capscrew, and retainer (Figure 10-169).
- 2. Install door stop ball on door with capscrew and retainer.
- 3. Install close-out panel on door with twelve screws (Figure 10-168).
- 4. Install interior door handle on close-out panel with four screws.
- 5. Install rear door window.

Latch Guide Replacement

Removal

Remove latch guide, two washers, and retaining block from door frame (Figure 10-169).



Figure 10-170: Door Frame and Seal

- 1. Install seal on door frame (Figure 10-170).
- 2. Install door frame on vehicle with fourteen screws.
- 3. Install upper and lower latch guides.
- 4. Install vertical doors on door frame.



INTERIOR AND EXTERIOR LIGHTING REPLACEMENT

Service Headlight Assembly Replacement

Removal

NOTE: To remove headlight only, perform steps 1 through 3. To remove the entire assembly, continue with steps 5 through 7.

- 1. Disconnect battery ground cable (Section 12).
- 2. Loosen three screws and remove retaining ring from head-light mount (Figure 10-171).
- 3. Disconnect headlight jumper harness from headlight, and remove headlight.
- 4. Loosen two screws securing headlight mount to headlight housing, and remove mount from housing and spring.
- 5. Disconnect headlight jumper harness from headlight housing and remove harness.

- 6. Disconnect three leads from back of housing.
- 7. Remove three nuts, lockwashers, washers, and housing from hood. Discard lockwashers.

Installation

NOTE: To install headlight only, perform steps 5 and 6. To install entire assembly, perform all steps.

- 1. Connect three leads to back of housing (Figure 10-171).
- 2. Install headlight housing on hood with three washers, lockwashers, and nuts.
- 3. Install headlight mount on spring and housing, and tighten two screws.
- 4. Connect headlight jumper harness to headlight housing.
- 5. Connect headlight to jumper harness and install on headlight assembly with retaining ring. Tighten three screws.
- 6. Connect battery ground cable (Section 12).
- 7. Check headlight for proper operation.



Figure 10-171: Headlight Assembly

Side Marker Light Lens and Lamp Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove two screws, door, lens, and lamp from light body (Figure 10-172).

Installation

- 1. Install lamp, lens, and door on light body with two screws (Figure 10-172).
- 2. Connect battery ground cable (Section 12).
- 3. Ensure side marker light operates properly.



Figure 10-172: Side Marker Light Assembly

Identification Light Replacement

NOTE: All identification lights are replaced the same.

Removal

- 1. Carefully pry identification light from light bracket (Figure 10-173).
- 2. Disconnect light from wiring harness.

Installation

- 1. Connect identification light to wiring harness (Figure 10-173).
- 2. Install light on light bracket.



Figure 10-173: Identification Light

Side Marker Light Assembly Replacement

NOTE: Replacement of front and rear light assemblies is basically the same. This procedure covers the left front side marker.

Removal

- blies is `t front
- 1. Disconnect battery ground cable (Section 12).
- 2. Remove four screws, washers, and close-off cover from hood (Figure 10-174).
- 3. Disconnect harness lead from marker light lead (Figure 10-175).
- 4. Remove two screws, door, and lens from marker light.
- 5. Remove four locknuts, washers, ground lead, gasket, four screws, and marker light from hood. Discard locknuts.



Figure 10-174: Side Marker Light Location



Figure 10-175: Side Marker Light Assembly

Installation

- 1. Install gasket, marker light, and ground lead on hood with four screws, washers, and locknuts (Figure 10-175).
- 2. Install lens and door on marker light with two screws.
- 3. Connect marker light lead to harness lead.
- 4. Install close-off cover on hood with four washers and screws (Figure 10-174).
- 5. Connect battery ground cable (Section 12).
- 6. Ensure side marker light operates properly.

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Front Turn Signal Light Replacement

NOTE: Both front turn signal lights are replaced basically the same.

Removal

1. Disconnect battery ground cable (Section 12).

NOTE: To remove lamp only, perform steps 2 and 3.

- 2. Remove four screws, lens, and gasket from turn signal light (Figure 10-176).
- 3. Remove lamp from socket
- 4. Remove four screws, washers, and close-off cover from hood.
- 5. Disconnect two connectors from wiring harness.
- 6. Remove two nut and lockwasher assemblies, washers, bracket, and light from hood. Discard nut and lockwasher assemblies (Figure 10-177).
- 7. Remove two screws, lockwashers, and light from bracket. Discard lockwashers.



Figure 10-176: Front Turn Signal Assembly



Figure 10-177: Front Turn Signal Bracket

Installation

NOTE: To install lamp only, perform steps 5 and 6.

- 1. Install light on bracket with two lockwashers and screws (Figure 10-177).
- 2. Install bracket and light on hood with two washers and nut and lockwasher assemblies.
- 3. Connect two connectors to wiring harness (Figure 10-176).
- 4. Install close-off cover on hood with four screws and washers.
- 5. Install lamp in socket.
- 6. Install gasket and lens on light with four screws.
- 7. Connect battery ground cable (Section 12).
- 8. Ensure turn signal and light work properly.

Rear Turn Signal Light Replacement

NOTE: Both rear turn signal lights are replaced the same.

Removal

1. Disconnect battery ground cable (Section 12).

NOTE: To remove lamps only, perform steps 2 and 3.

2. Remove four screws, lens, and gasket from turn signal light (Figure 10-178).



Figure 10-178: Rear Turn Signal Light Assembly

- 3. Remove two lamps from sockets.
- 4. From behind the light, remove three nuts, lockwashers, four leads, and three washers securing light to light housing. Discard lockwashers (Figures 10-178 and 10-179).
- 5. Remove two nuts, clamps, and capscrews securing harness to shield (Figure 10-179).
- 6. Remove two capscrews, lockwashers, and shield from beam. Discard lockwashers.
- 7. Disconnect two connectors from wiring harness.
- 8. Remove light and grommet from housing (Figure 10-178).





Figure 10-179: Rear Turn Signal Light Location

Installation

NOTE: To install lamps only, perform steps 6 and 7.

- 1. Install light and grommet in housing (Figure 10-178).
- 2. Connect two connectors to wiring harness (Figure 10-179).
- 3. Secure harness to shield with two capscrews, clamps, and nuts.
- 4. Install shield on beam with two lockwashers and capscrews.
- 5. Secure light to light housing with three washers, four leads, three lockwashers, and nuts (Figures 10-178 and 10-179).
- 6. Install two lamps in sockets (Figure 10-178).
- 7. Install gasket and lens on light with four screws.
- 8. Connect battery ground cable (Section 12).
- 9. Ensure turn signal and backup lights work properly.

Standard Domelight Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove domelight lens (Figure 10-180).
- 3. Remove lamp from domelight.
- 4. Remove two screws securing domelight to ground lead and connector.
- 5. Remove screw and domelight from roof bracket.

- 1. Secure domelight, connector, and ground lead to roof bracket with three screws (Figure 10-180).
- 2. Install lamp in domelight.
- 3. Install domelight lens.
- 4. Connect battery ground cable (Section 12).



Figure 10-180: Standard Domelight



Optional Maplight Replacement

NOTE: The maplight will illuminate when the optional remote entry feature is activated.

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Remove maplight assembly from bezel (Figure 10-181).

HEADLINER

Installation

- 1. Install maplight assembly into bezel.
- 2. Connect battery ground cable (Section 12).

Optional Trouble Light Replacement

NOTE: Parking lights or headlights must be on in order to activate the trouble light or the underhood light.

Removal

- 1. Disconnect wiring harness from trouble light (Figure 10-182).
- 2. Remove three nut and lockwasher assemblies and trouble light from mounting bracket. Discard nut and lockwasher assemblies.

- 1. Install trouble light on mounting bracket with three nut and lockwasher assemblies (Figure 10-182).
- 2. Connect wiring harness to trouble light.



Figure 10-181: Optional Maplight



Underhood Light Replacement

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Disconnect two connectors from wiring harness (Figure 10-183).
- 3. Remove two capscrews, washers, ground lead, bracket, and light from hood.
- 4. Remove lamp from light.

Installation

- 1. Install lamp in light (Figure 10-183).
- 2. Install light, bracket, and ground lead on hood with two washers and capscrews.
- 3. Connect two connectors to wiring harness.
- 4. Connect battery ground cable (Section 12).





Removal

- 1. Pull mirror assembly from visor (Figure 10-184).
- 2. Remove lamp.



- 1. Install lamp (Figure 10-184).
- 2. Install mirror assembly by pressing it into the visor.

Figure 10-183: Underhood Light



Driver's Courtesy Light Replacement

Removal

- 1. Carefully pry courtesy light from mounting bracket (Figure 10-185).
- 2. Disconnect light from wiring harness.



Figure 10-185: Driver's Courtesy Light

Installation

- 1. Connect courtesy light to wiring harness (Figure 10-185).
- 2. Install light in mounting bracket.

Front Passenger Courtesy Light Replacement

Removal

- 1. Carefully pry courtesy light from bracket (Figure 10-186).
- 2. Disconnect light from wiring harness.

Installation

- 1. Connect light to wiring harness (Figure 10-186).
- 2. Install the courtesy light assembly to the courtesy light mounting bracket.



Figure 10-186: Front Passenger Courtesy Light



Rear Seat Courtesy Light Replacement

Removal

- 1. Carefully pry courtesy light from mounting bracket (Figure 10-187).
- 2. Disconnect light from electrical connector.



Figure 10-187: Rear Seat Courtesy Light

Installation

- 1. Connect courtesy light to the electrical connector (Figure 10-187).
- 2. Install courtesy light into bracket.

Ashtray Lamp Replacement

Removal

- 1. Remove front console.
- 2. Remove light from bracket (Figure 10-188).
- 3. Remove cover and lamp from light.

- 1. Install lamp and cover in light (Figure 10-188).
- 2. Install light in bracket.
- 3. Install front console.



Daytime Running Lights (DRL) Module Replacement (Canada Only)

Removal

- 1. Disconnect the Daytime Running Lights (DRL) connector from the harness assembly (Figure 10-189).
- 2. Remove two screws, washers, nuts, and DRL module from the kick panel.



Figure 10-189: Daytime Running Lights Module

Installation

- 1. Install DRL module to kick panel with two screws, washers, and nuts (Figure 10-189).
- 2. Connect the DRL connector to the harness assembly.

Service Headlight Electrical Connector and Grommet Replacement

Removal

- 1. Remove headlight and jumper harness.
- 2. Remove connector from grommet (Figure 10-190).
- 3. Remove grommet from headlight housing.

- 1. Install grommet in headlight housing (Figure 10-190).
- 2. Install connector in grommet.
- 3. Install jumper harness and headlight.



Figure 10-190: Headlight Electrical Connector





BACKUP LIGHT SWITCH REPLACEMENT

Removal

- 1. Remove shift controls housing (Section 5).
- 2. Pull neutral start switch leads, backup light switch leads, and light lead through boot and remove boot from shift controls housing (Figure 10-191).
- 3. Remove two screws and lockwashers securing backup light switch to housing. Discard lockwashers.
- 4. Remove tiedown strap securing backup light switch to neutral start switch, and remove backup light switch.

Installation

- 1. Secure backup light switch to neutral start switch with tiedown strap (Figure 10-191).
- 2. Install backup light switch on shift controls housing with two lockwashers and screws.
- 3. Position neutral start switch leads, backup light switch leads, and light lead through boot, and install boot on housing.
- 4. Install shift controls housing (Section 5).

STOPLIGHT SWITCH MAINTENANCE

Removal

- 1. Disconnect battery ground cable (Section 12).
- 2. Disconnect two harness leads from stoplight switch (Figure 10-192).
- 3. Remove stoplight switch from bracket.

Installation

- 1. Install stoplight switch into bracket (Figure 10-192).
- 2. Connect two harness leads to stoplight switch.
- 3. Connect battery ground cable (Section 12).

Adjustment

- 1. Push switch into bracket with brake depressed.
- 2. Pull brake pedal forward. Switch should ratchet outward to proper position.
- 3. Check function with engine running.





Figure 10-192: Stoplight Switch

Figure 10-191: Backup Light Switch Replacement

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