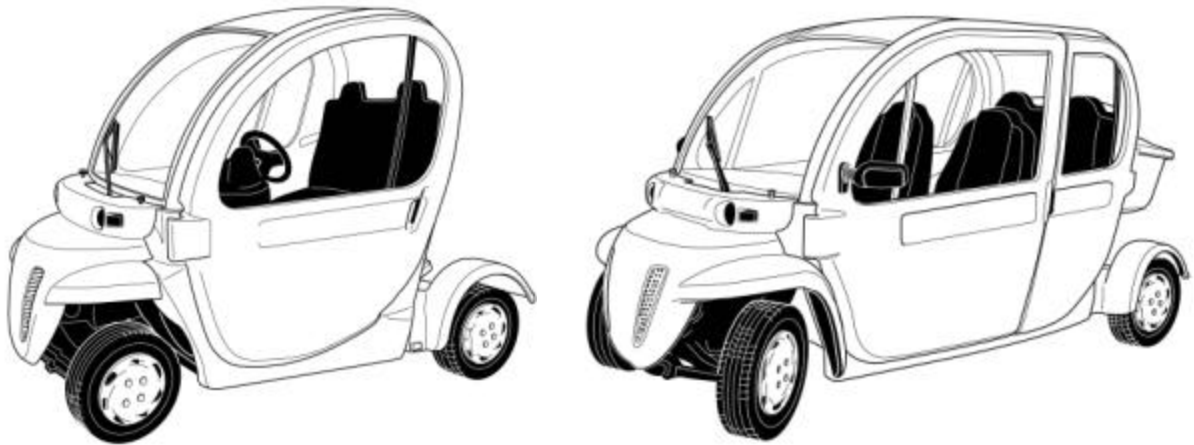


INSTRUCTIONS - HARD DOOR INSTALLATION



Global Electric Motorcars, LLC

A DaimlerChrysler Company

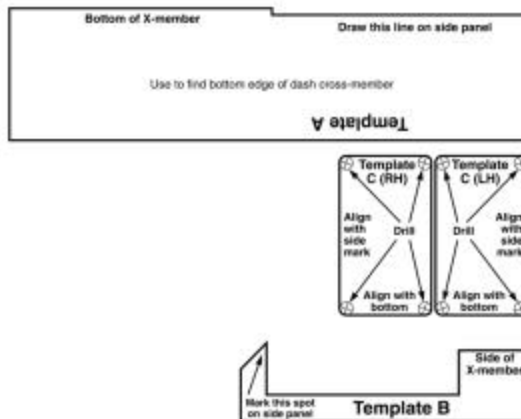


HARD DOOR INSTALLATION



ALL MODELS

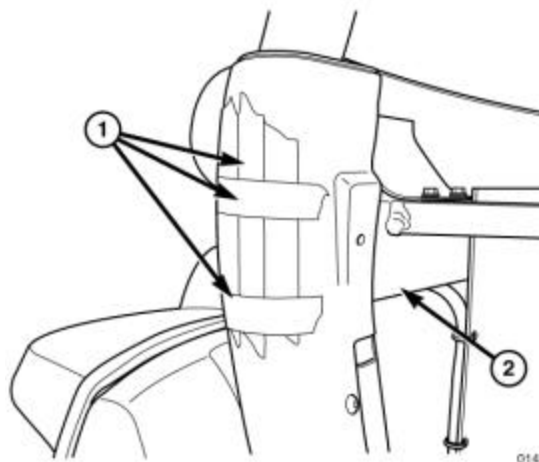
1. Check parts in kit against Bill of Material to make sure all parts are present.
 - Use BOM, part number I-00040 for 2 passenger vehicles.
 - Use BOM, part number I-00041 for 4 passenger vehicles.
2. Utilizing the patterns included on the back cover, create templates “A”, “B” and “C” from card stock, acetate, or other reasonably stiff material.



3. Remove upper and lower dash panels.
4. Remove bench seat cushion and back.
5. With masking tape, cover an area of the front of the body side panel roughly corresponding to the end of the upper dash cross-member.

(See BODY section of Service Manual.)

(See BODY section of Service Manual.)



1. Masking tape
2. Upper dash cross-member

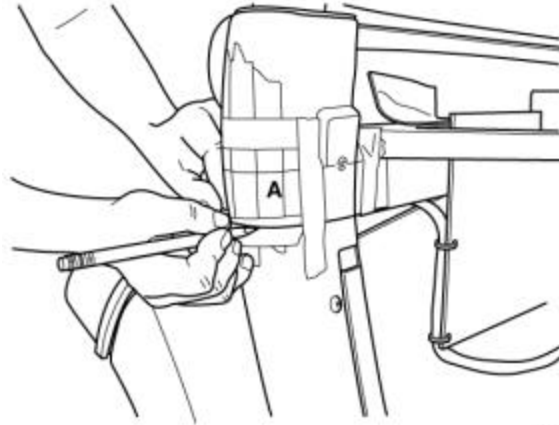
HARD DOOR INSTALLATION



ALL MODELS

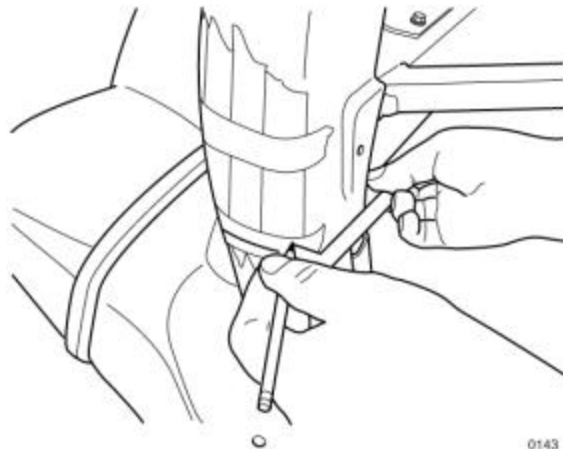


6. Align the lower edge of template “A” with the lower edge of the dash cross-member and tape in place, then bend the template around the body side panel and scribe along the template’s lower edge with a pen or pencil. This will create the first reference mark for mounting the cutting template, “C.”



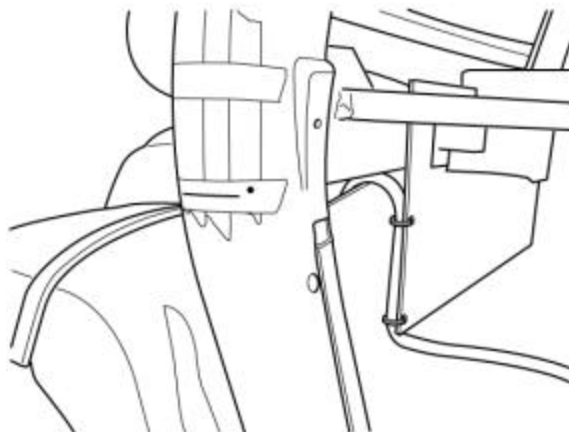
0142

7. Align the wide leg of template “B” with the lower edge of the upper dash cross-member and slide the template inboard until it touches the body side panel. Mark that point on the masking tape with a pen or pencil. This will create the second reference mark for mounting the cutting template “C.”



0143

8. The reference marks created by steps 5 and 6 should look like this.



0144

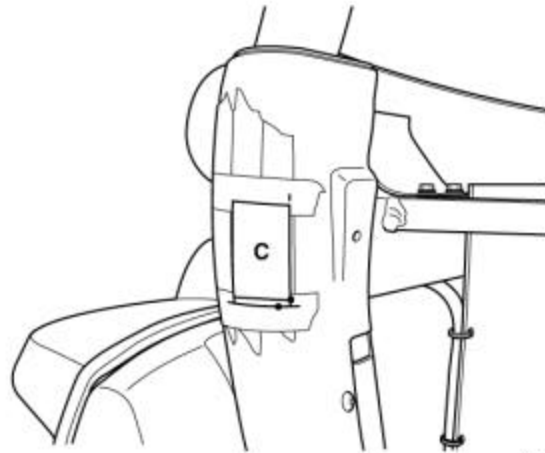
HARD DOOR INSTALLATION



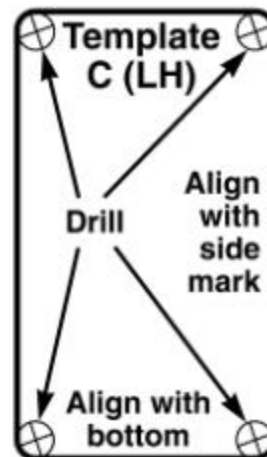
ALL MODELS



9. Tape cutting pattern “C” on the body side panel, aligning the bottom of the pattern with the reference line created in step 5 and the side of the pattern with the reference mark created in step 6.



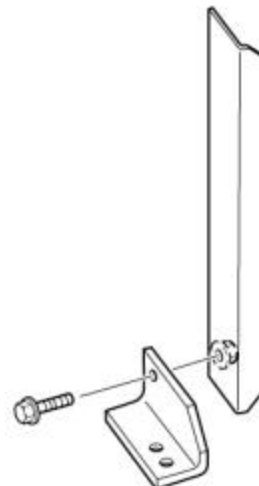
10. Use a ¼” bit to drill the four corners, then use a saber saw or high speed rotary tool (Dremel® or Roto-Zip® type) to complete cutting the hole in the side panel.



11. Remove the body side panel.

(See BODY section of Service Manual.)

12. Loosely assemble rear hinge body bracket assembly (striker bracket for 2-door) to the rear body foot with a single M8x30 bolt and washer to form the rear body structure support assembly.



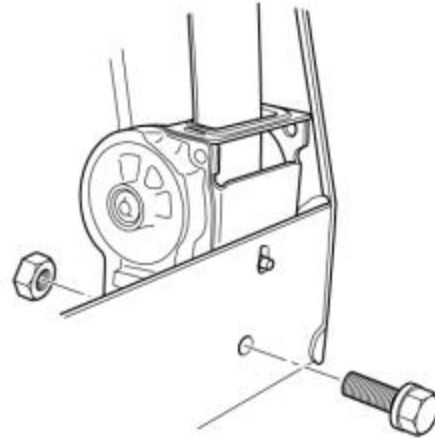
HARD DOOR INSTALLATION



ALL MODELS



- 13.** Detach the seat belt retractor assembly from the seat belt bracket and place on top of the body back panel to prevent damage during Steps 13-16.



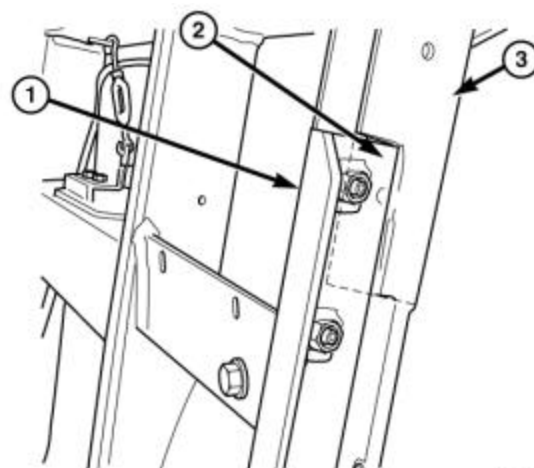
0178

- 14.** Position rear body structure support assembly on vehicle and align:
- A. Rear Body Foot must be flat on seat support cross-member,
 - B. Rear Hinge Body bracket must be flat against outboard side of the seat belt support bracket, with the *leading edges flush* with each other.



0140

NOTE: The body back panel may require trimming to allow the upright bracket to lie flat against the seat belt support bracket.



0207

- 1. Rear hinge body bracket (leading edge flush with seat belt support bracket).
- 2. Portion of body back bracket to be removed.
- 3. Body back panel

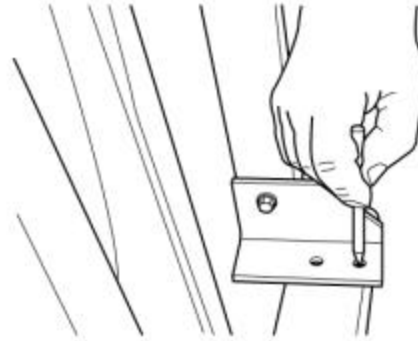
HARD DOOR INSTALLATION



ALL MODELS

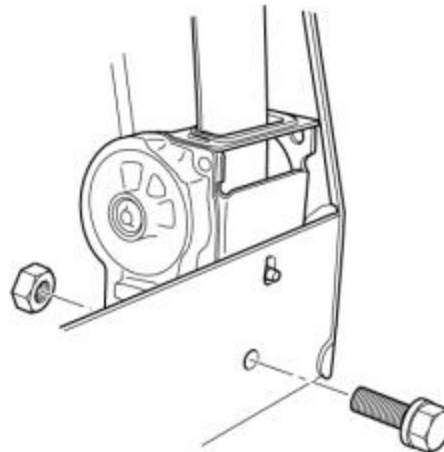


- 15.** Temporarily clamp the rear body structure support assembly in place as established in Step 12 and mark locations for mounting bolt holes in seat support cross-member and in seat belt support bracket.



0139

- 16.** Unclamp and remove the rear body structure support assembly and drill 10mm holes at each marked location.
- 17.** Install rear body mount assembly to the seat support cross-member with two (2) M8x30 hex head bolts, washers and nuts. Use two (2) M8x50 pan head bolts, washers and nuts. Tighten all four bolts and assembly bolt (from step 12) to 22 foot-pounds.
- 18.** Replace seat belt retractor assembly on the seat belt support bracket, making sure the locator pin engages the slot in the bracket. Tighten the mounting bolt to 60 foot-pounds.



0178

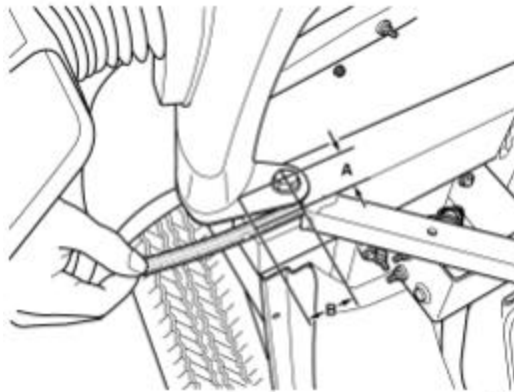
HARD DOOR INSTALLATION



ALL MODELS

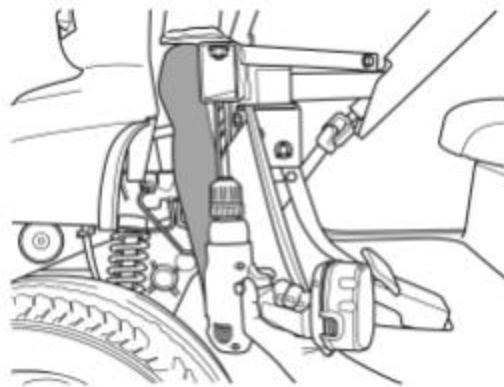


- 19.** The bolt currently holding the front rail to the upper dash cross-member will be replaced by a bolt that goes all the way through the cross-member and attaches the front hinge strut assembly to the vehicle. Measure the location of the roof rail attaching bolt on the cross-member. (Measurements "A" and "B" on illustration..) Remove and discard bolt. Retain the washer nut for use with new bolt at re-assembly.



0158

- 20.** Transfer those dimensions to the bottom of the cross-member to locate the new hole. Then drill a 9/16" hole in the bottom of the cross-member.



0159

NOTE:

**If you are installing doors on a 4-Passenger Model,
go to Step 50 (Page 15).**



**If you are installing doors on a 2-Passenger or Utility
Model, continue with Step 21 on next page.**



HARD DOOR INSTALLATION



2-DOOR MODELS

22. Re-install body side panel on vehicle with phillips-head bolts and backing nuts.

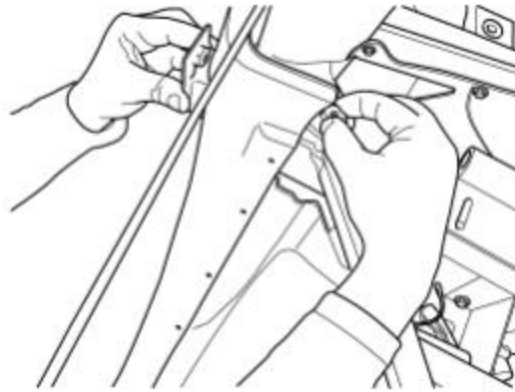
(See BODY SIDE PANEL in BODY section of Service Manual.)

WARNING!

The upper rail is often under tension when attached to the upper dash cross-member and will spring forward as much as 4" when the mounting bolt is removed.

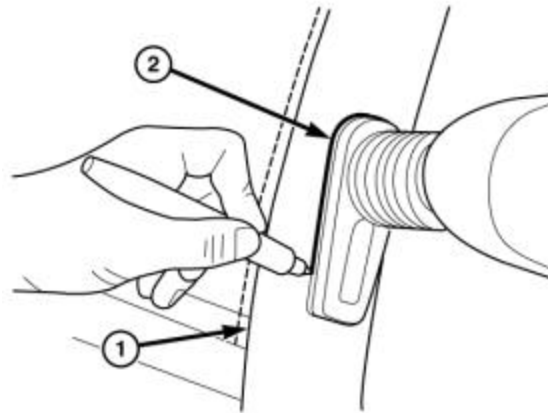
23. Insert the front strut through the hole in the front of the body side panel and into the upper dash cross-member. Push the strut inboard as far as it will go. There should be no interference of the side panel with the upper weld nut on the strut or with the strut itself. Trim side panel to eliminate any interference.

Align the slot in the strut with the holes in the front roof rail and cross-member and insert the new, longer bolt. Loosely install washer-faced nut (saved in step 19) on bolt.



0161

24. Using an erasable felt pen, trace outline of forward half of side mirror on the roof rail. Remove side mounted rear view mirror. (See BODY section in Service Manual.)



0209

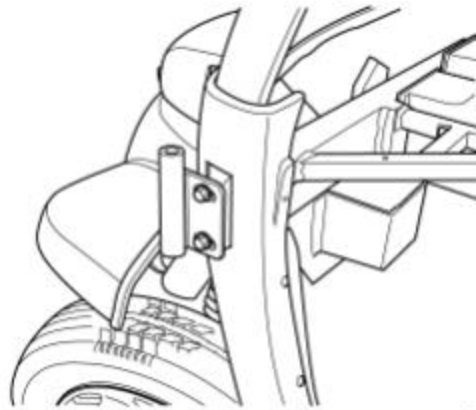
HARD DOOR INSTALLATION



2-DOOR MODELS

- 25.** Attach front hinge plate to front strut

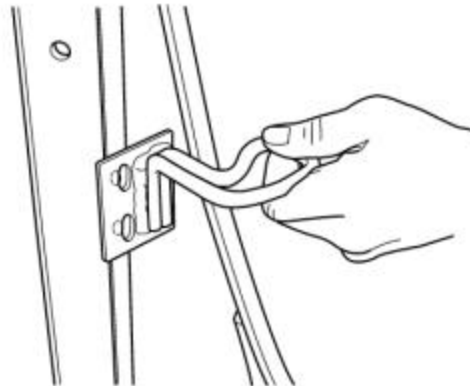
NOTE: Hinge socket should be forward and outboard, with long end pointed up.



0154

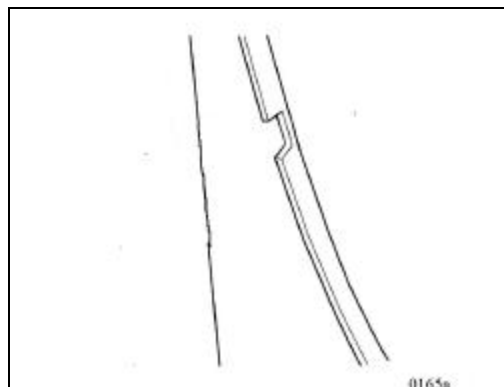
- 26.** Align striker assembly with attaching holes on upper bracket of rear body mount assembly. Mark point on side panel where striker wire touches.

- 27.** Remove striker assembly. Measure and mark $\frac{1}{4}$ " above and $\frac{1}{4}$ " below original mark.



0194

- 28.** Make $\frac{3}{4}$ " long horizontal cuts at the upper and lower mark. Use grinder to remove material between cuts, making sure that the corners are rounded with a $\frac{1}{8}$ " radius..



0165a

HARD DOOR INSTALLATION



2-DOOR MODELS

- 29.** Install striker on upright bracket of rear body structure support assembly.



0175

- 30.** Mount door to hinge plate with hinge pin.

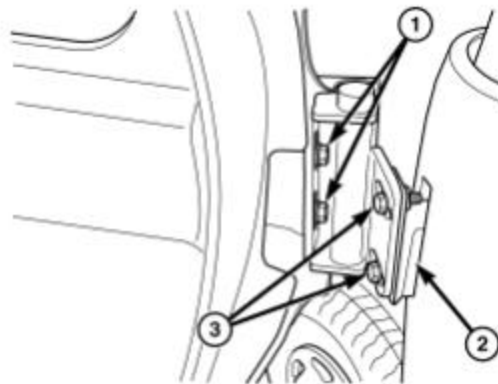
NOTE: The hinge pin is inserted from the top.



0151

- 31.** Door fit is controlled in three axes:

1. Up/Down is controlled by moving the hinge plate on the door.
2. Inboard/Outboard is controlled by moving front strut in or out within the upper dash cross-member.
3. Fore/Aft is controlled by moving the hinge plate on the front strut.



0150

1. Fore/Aft adjustment
2. Inboard/Outboard adjustment
3. Up/Down adjustment

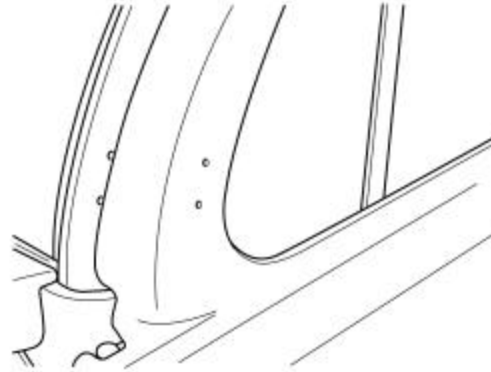
HARD DOOR INSTALLATION



2-DOOR MODELS

Adjust door.

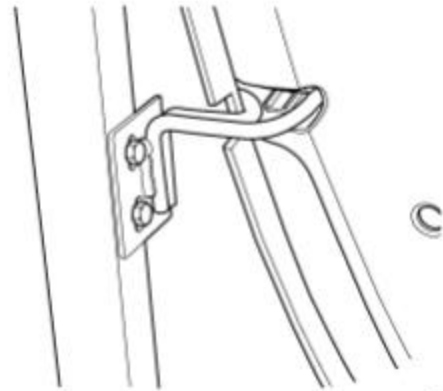
- 32.** Initially position door so that leading edge aligns with old mirror attaching holes on roof rail.



0182

- 33.** Door weatherstrip must meet roof rail and body side panel and be compressed just slightly at all points. There should be an even gap between the outer door panel and the roof rail, and between the outer door panel and body side panel at the front and along the bottom of the door.

Adjust striker up or down until the striker mates smoothly with the door latch.



0166

HARD DOOR INSTALLATION



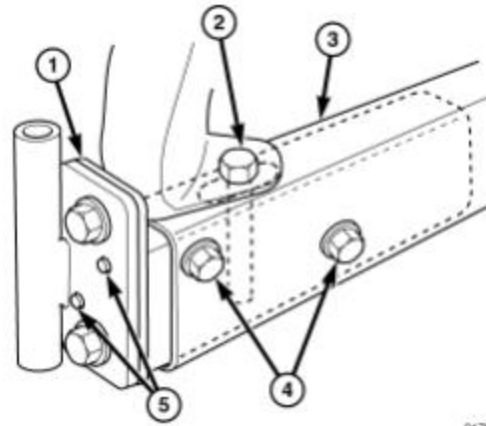
2-DOOR MODELS

- 34.** Once door is properly adjusted for fit and gap, remove hinge pin and door.

Drill two 6mm pilot holes through strut and cross-member, then drive M8x30 self-tapping screws to lock strut in place. (See item 4 in illustration.)

Drill two (2) 5/32" diameter holes through front door hinge plate and strut. Insert two (2) 3/16" roll spring pins to lock hinge plate in place. (See item 5 in illustration.)

Re-attach door with hinge pin.



0172

1. Front strut
2. Replacement through-bolt at roof rail attachment
3. Front dash cross-member.
4. M8x30 self-tapping screws
5. 3/16" roll spring pins

- 35.** Torque striker mounting bolts, door hinge bolts, and hinge plate bolts to 30 N-m (22 foot-pounds).

Torque roof rail attaching bolt to 90 foot-pounds.

- 36.** With door closed and felt pen held horizontal, scribe a line parallel with edge of door, along the length of the roof rail.



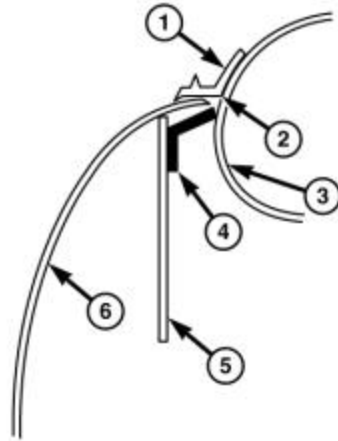
0179

HARD DOOR INSTALLATION



2-DOOR MODELS

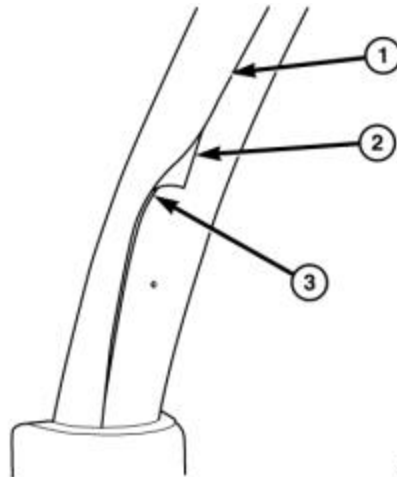
- 37.** Open door and apply drip rail molding to roof rail, keeping the lower edge of the drip rail molding aligned with the scribed line. Begin at upper rear edge of body side panel, and continue to the upper front edge of the body panel.



0191

1. Drip rail molding.
2. Scribed line from previous step
3. Roof rail
4. Door weather seal
5. Door inner panel
6. Door outer panel

NOTE: If doors are to be removed during summer operation, follow the outline of the side mirror base as drawn in Step24. This will allow re-attachment of side mirror to roof rail when doors are removed.



0208

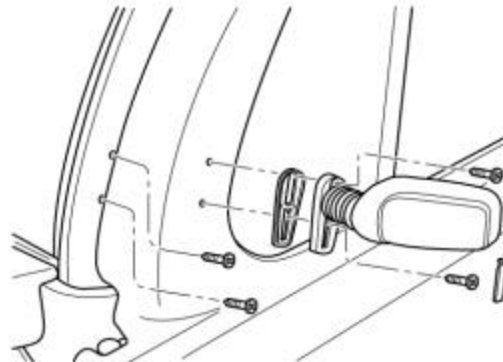
1. Path of rear edge of drip rail molding
2. Traced outline of door edge (from step 36)
3. Traced outline of side mirror (from step 24)

HARD DOOR INSTALLATION



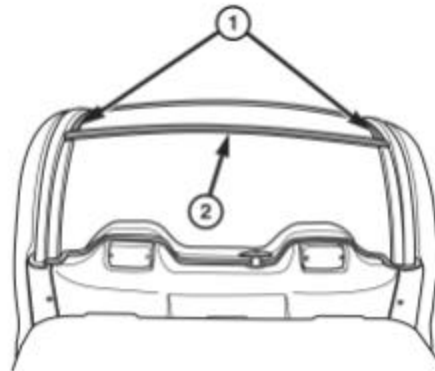
2-DOOR MODELS

- 38.** Install side mounted mirror on front door utilizing pre-drilled holes in outer door panel.
- 39.** Using white plugs/screws, fill original mirror mounting holes on roof rail.



0171

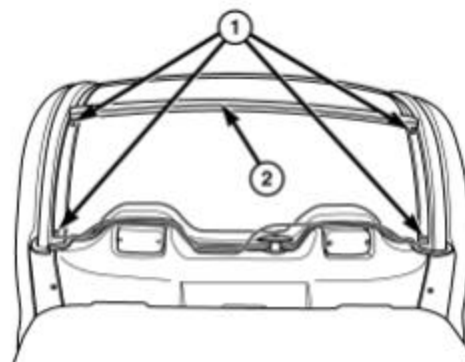
- 40.** Remove and discard rear roof strip.



0173

- 1. Side rear roof trim strips
- 2. Rear roof trim strip

- 41.** Position backlight assembly between rear roof rails, against rear edge of roof. Mark screw hole locations on roof rails. Remove backlight and drill 5/32" diameter holes in rails at marks.
- 42.** Re-position backlight assembly between rails and against rear edge of roof, and attach with four (4) #10x3/4" self-tapping phillips-head screws.



0168

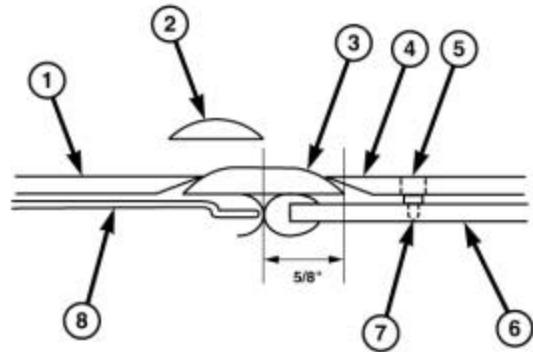
- 1. Screw hole locations
- 2. rear edge of roof

HARD DOOR INSTALLATION



2-DOOR MODELS

- 43. Install new rear roof trim strip so that it fits tightly against roof side rail strips.
- 44. Measure and cut new backlight side strips, mitering end to fit against rear roof strip. Measure and mark location on strips where they overlap the backlight mounting screws. Drill 13/32" diameter holes in strip at each screw location.
- 45. Install backlight side strips on vehicle.



0187

- 1. Existing side rail roof trim strip
- 2. Old rear roof trim strip (discard)
- 3. New rear rear roof trim strip.
- 4. Rear window trim strip (new)
- 5. Rear window mounting screw access hole (13/32" dia.) in rear window trim strip
- 6. Rear window
- 7. Rear window mounting screw (continues into roof rail flange.)
- 8. Roof panel

- 46. Install lower dash panel.
- 47. Install upper dash panel.
- 48. Install bench seat cushion and back.
- 49. Check seat belt for proper operation.

(See Body section of Service Manual.)

(See Body section of Service Manual.)

(See Body section of Service Manual.)

HARD DOOR INSTALLATION

4-DOOR MODELS



50. Re-install body side panel on vehicle.

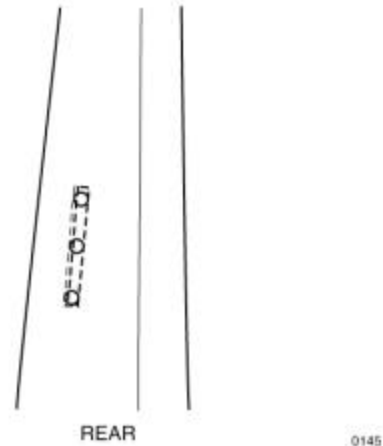
See BODY SIDE PANEL in BODY section of Service Manual.)

51. Determine location for rear hinge access slot in rear of body side panel:

Invert and reverse rear hinge bracket assembly, align it with the mounting holes at the center of the upright bracket, then slide hinge bracket aft until it contacts the inside of the body side panel. Scribe lines on body side panel along the top, bottom, and side of the hinge plate.



52. Using a 1/4"x12" drill bit, drill holes at the top, middle and bottom of cutout lines from previous step. Use a saber saw or high speed rotary tool (Dremel type or Rotozip type) to complete cutout.



53. Install body side panel.

See BODY SIDE PANEL in BODY section of Service Manual.

WARNING!

The upper rail is often under tension when attached to the upper dash cross-member and will spring forward as much as 4" when the mounting bolt is removed.

HARD DOOR INSTALLATION

4-DOOR MODELS

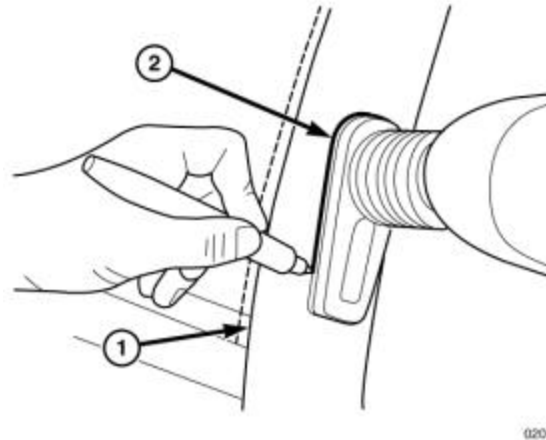


- 54.** Insert the front strut through the hole in the front of the body side panel and into the upper dash cross-member. Push the strut inboard as far as it will go. There should be no interference of the side panel with the upper weld nut on the strut or with the strut itself. Trim side panel to eliminate interference.

Align the slot in the strut with the holes in the front roof rail and cross-member and insert the new, longer bolt. Loosely install washer-faced nut (saved in step 19) on bolt.

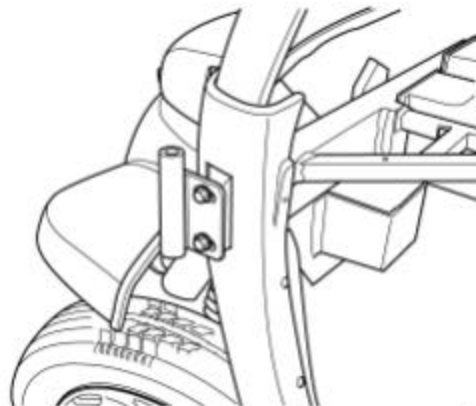


- 55.** Using an erasable felt pen, trace outline of forward half of side mirror on the roof rail. Remove side mounted rear view mirror. (See BODY section in Service Manual.)



- 56.** Attach front hinge plate to front strut.

NOTE: Hinge socket should be forward and outboard, with long end pointed up.



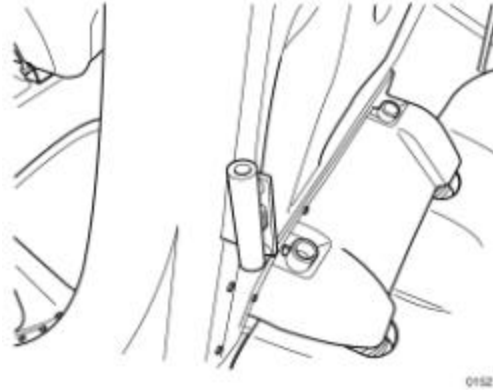
HARD DOOR INSTALLATION

4-DOOR MODELS



- 57.** Attach rear hinge plate to rear mount assembly with two (2) M8x30 bolts. Tighten just snug.

NOTE: Hinge socket should be rearward and outboard, with long end pointed up.

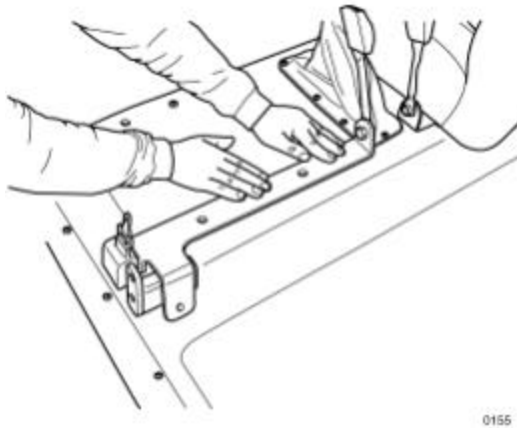


- 58.** Remove bucket seat.

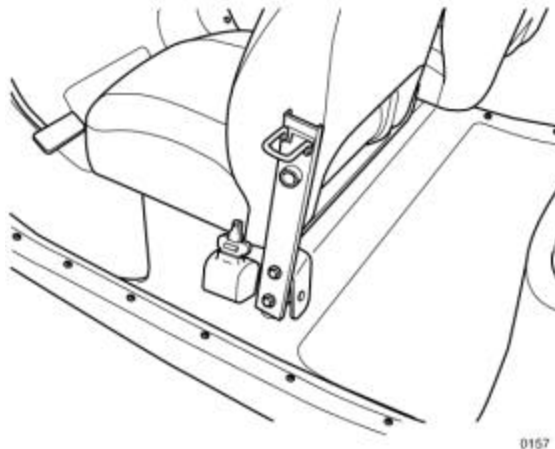
(See BODY section in Service Manual.)

- 59.** Replace existing lap belt bracket with new lap belt/striker tower mounting bracket. Remove lap belt latch assembly and lap belt retractor assembly from old bracket and mount on new bracket. Position inboard latch assembly so that it tilts forward 30° from vehicle. Tighten bolts to 60 foot-pounds.

Re-install bucket seat. Tighten bucket seat mounting bolts/nuts to 225 inch-pounds.



- 60.** Install striker tower on bracket, using two (2) M8x30 bolts. Tighten bolts just snug.



HARD DOOR INSTALLATION

4-DOOR MODELS



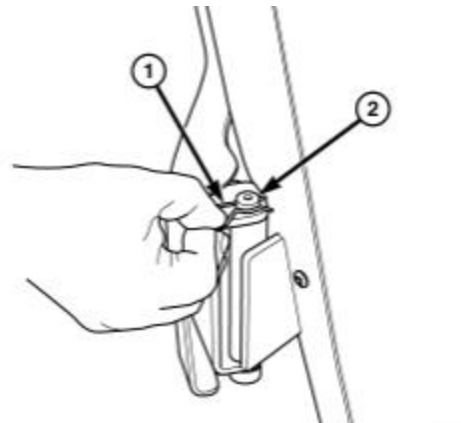
- 61.** Mount front door to front hinge plate with hinge pin.

NOTE: The hinge pin is inserted from the top.



- 62.** Mount rear door to rear hinge plate with hinge pin.

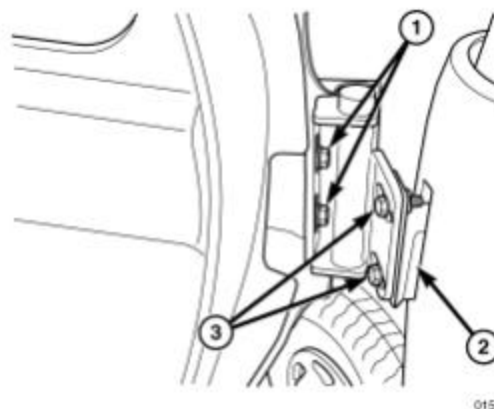
NOTE: The hinge pin is inserted from the bottom, and held in place with a hitch pin.



1. Hitch pin
2. Hinge bolt inserted from underneath

- 63.** Front door fit is controlled in three axes:

1. Up/Down is controlled by moving the hinge plate on the door.
2. Inboard/Outboard is controlled by moving front strut in or out within the upper dash cross-member.
3. Fore/Aft is controlled by moving the hinge plate on the front strut.



1. Up/Down adjustment
2. Inboard/Outboard adjustment
3. Fore/Aft adjustment

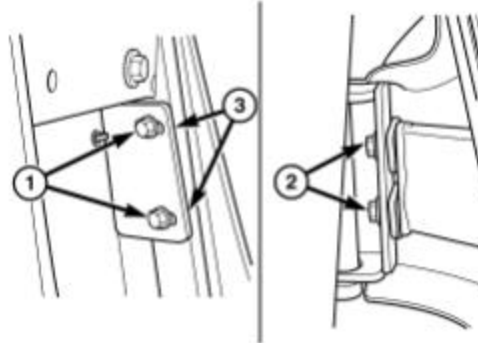
HARD DOOR INSTALLATION

4-DOOR MODELS



64. Rear door fit is also controlled in three axes:

1. Fore/Aft is controlled by moving the hinge plate on the rear body mount.
2. Up/Down is controlled by moving the other half of the hinge on the door
3. Inboard/Outboard is controlled by shims between the rear mount upper bracket and the rear door hinge plate.

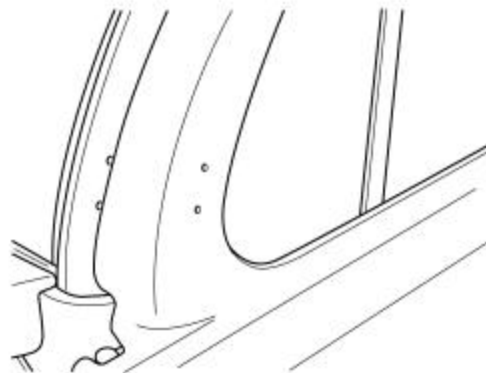


0138

1. Fore/Aft adjustment
2. Up/Down adjustment
3. Inboard/Outboard adjustment

Adjust front door.

65. Initially position door so that leading edge aligns with old mirror attaching holes on roof rail.



0182

66. Door weatherstrip must meet roof rail and body side panel and be compressed just slightly at all points. There should be an even gap between the outer door panel and the roof rail, and between the outer door panel and body side panel at the front and along the bottom of the door.

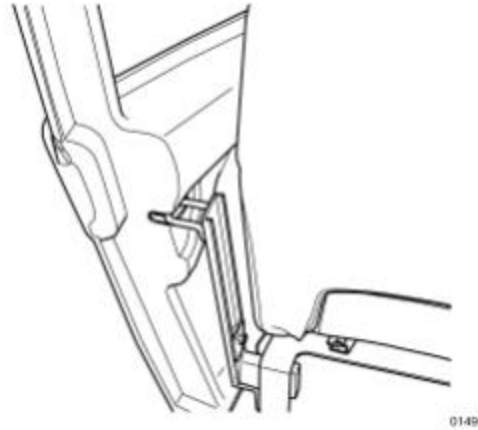
HARD DOOR INSTALLATION

4-DOOR MODELS



- 67.** Adjust striker tower up or down until the striker mates smoothly with the door latch.

Tighten tower mounting bolts to 30 N-m (22 foot-pounds).

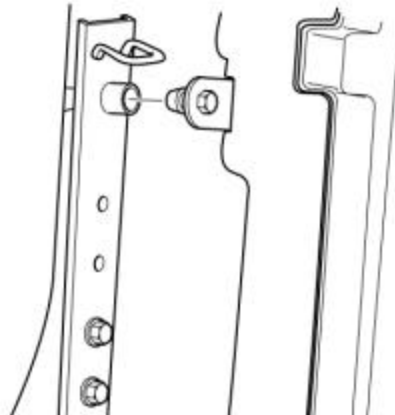


0149

Adjust rear door

- 68.** Weatherstrip must meet roof rail and body side panel and be compressed just slightly at all points. There should be an even gap between the door outer panel and the roof rail, and door outer panel and body side panel at the rear and along the bottom of the door

- 69.** Male friction latch probe must mate smoothly to female friction latch grommet on striker tower. Adjust male friction latch probe accordingly.

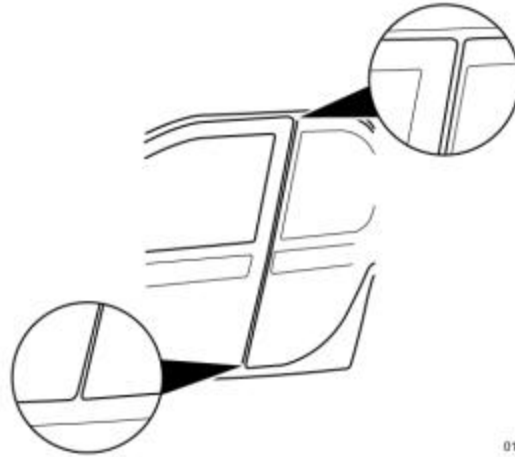


HARD DOOR INSTALLATION

4-DOOR MODELS



- 70.** Front and rear doors must be even with each other at upper and lower edges, with an even gap of $\frac{1}{2}$ " at overlap.



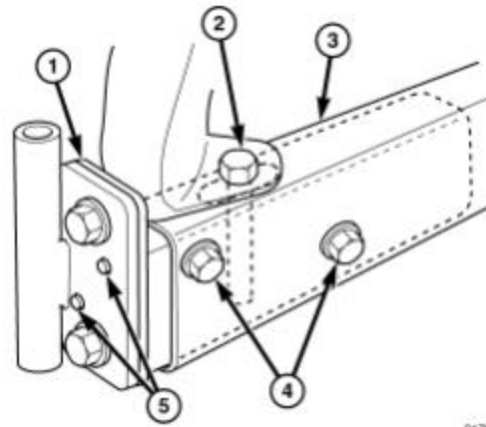
0162

- 71.** Once front door is properly adjusted for fit and gap, remove hinge pin and door.

Drill two 6mm pilot holes through strut and cross-member, then drive M8x30 self-tapping screws to lock strut in place. (See item 4 in illustration.)

Drill two (2) $\frac{5}{32}$ " diameter holes through front door hinge plate and strut. Insert two (2) $\frac{3}{16}$ " roll spring pins to lock hinge plate in place. (See item 5 in illustration.)

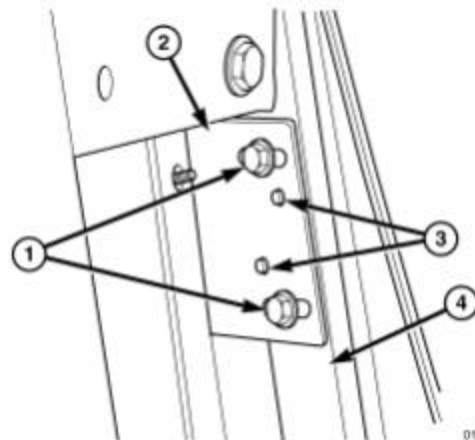
Re-attach door with hinge pin.



0172

1. Front hinge strut
2. Replacement through bolt at roof rail attachment
3. Front dash cross-member
4. M8x30 self-tapping screws
5. $\frac{3}{16}$ " roll spring pins

- 72.** Once rear door is properly adjusted, drill two (2) $\frac{5}{32}$ " holes through rear hinge plate and rear body mount assembly. Insert $\frac{3}{16}$ " spring roll pins to lock hinge plate in place.



0176

HARD DOOR INSTALLATION

4-DOOR MODELS

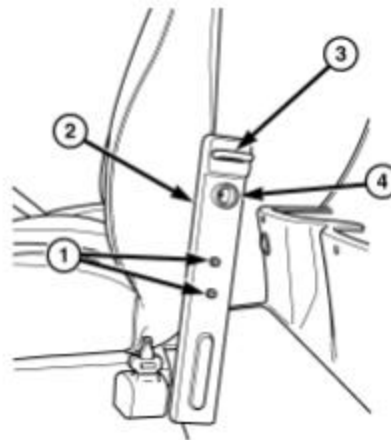


1. Rear hinge plate to rear body mount attaching bolts
2. Rear hinge plate
3. 3/16" roll spring pins
4. Upper bracket, rear body mount assembly

73. Torque striker tower mounting bolts, front and rear door hinge bolts and front and rear hinge plate bolts to 30 N-m (22 foot-pounds).

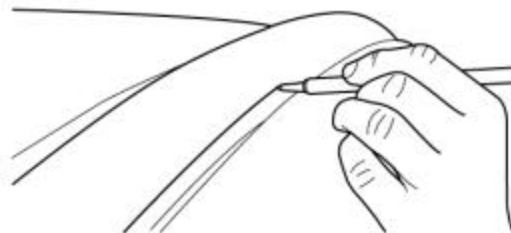
Tighten new roof rail to upper dash cross-member attaching bolt/nut to 90 foot-pounds.

74. Install striker tower cover with two screws.



1. Mounting screws
2. Striker tower cover
3. Striker wire
4. Rear door friction latch (female)

75. With doors closed and felt pen held horizontal, scribe a line, parallel with edge of doors, along the length of the roof rail.

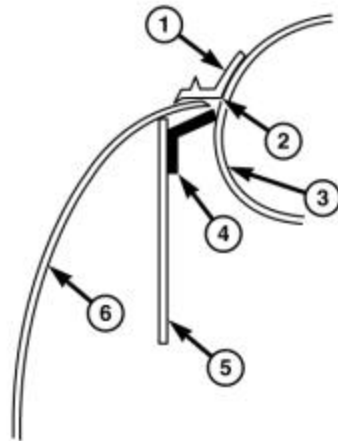


HARD DOOR INSTALLATION

4-DOOR MODELS



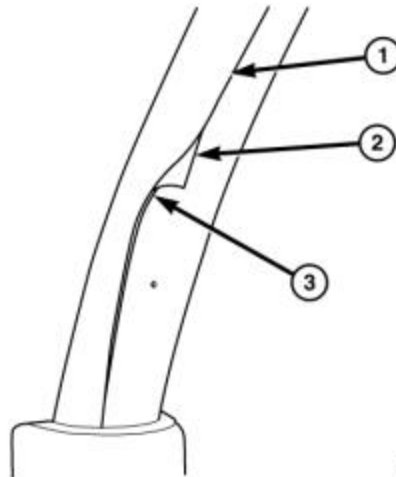
- 76.** Open door and apply drip rail molding to roof rail, keeping the lower edge of the drip rail molding aligned with the scribed line. Begin at upper rear edge of body side panel, and continue to the upper front edge of the body panel.



0191

1. Drip rail molding
2. Scribed line from previous step
3. Roof rail
4. Door weather seal
5. Door inner panel
6. Door outer panel

NOTE: If doors are to be removed during summer operation, follow the outline of the side mirror base as drawn in Step 55. This will allow re-attachment of side mirror to roof rail when doors are removed.



0208

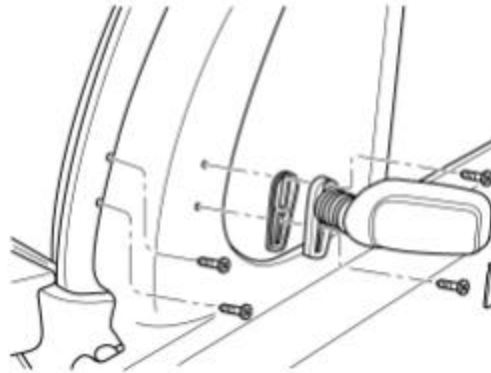
1. Path of rear edge of drip rail molding.
2. Traced outline of door (from step 75)
3. Traced outline of side mirror (from step 55)

HARD DOOR INSTALLATION

4-DOOR MODELS

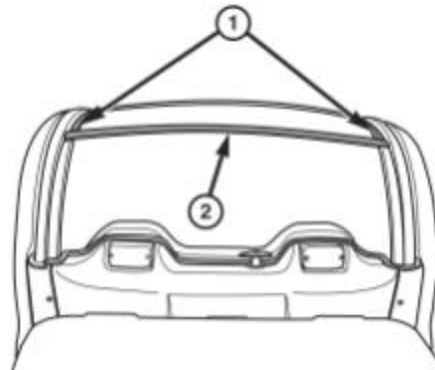


- 77. Install side mounted mirror on front door utilizing pre-drilled holes in outer door panel.
- 78. Using white plugs/screws, fill original mirror mounting holes on roof rail.



0171

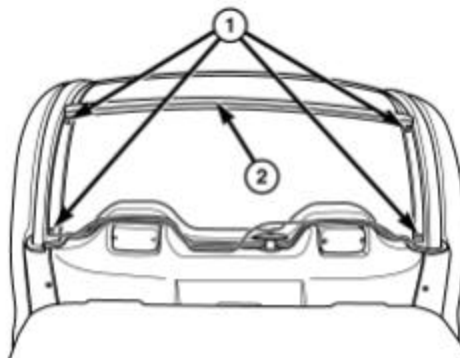
- 79. Remove and discard rear roof strip.



0173

- 1. Rear roof side rail trim strips
- 2. Rear roof trim strip

- 80. Position backlight assembly between rear roof rails, against rear edge of roof. Mark screw hole locations on roof rails. Remove backlight and drill 5/32" diameter holes in rails at marks.
- 81. Re-position backlight assembly between rails and against rear edge of roof, and attach with four (4) #10x3/4 phillips-head screws.



0168

- 1. Screw hole locations
- 2. Rear edge of roof

HARD DOOR INSTALLATION

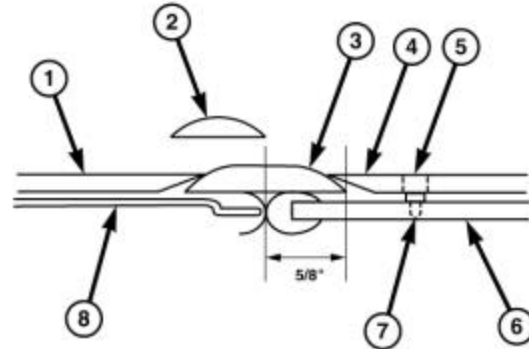
4-DOOR MODELS



82. Install new rear roof trim strip so that it fits tightly against roof side rail strips.

83. Measure and cut new backlight side strips, mitering end to fit against rear roof strip. Measure and mark location on strips where they overlap the backlight mounting screws. Drill 13/32" diameter holes in strip at each screw location

84. Install backlight side strips on vehicle.



0187

1. Existing side rail roof trim strip
2. Old rear roof trim strip (discard)
3. New rear rear roof trim strip.
4. Rear window trim strip (new)
5. Rear window mounting screw access hole (13/32" dia.) in rear window trim strip
6. Rear window
7. Rear window mounting screw (continues into roof rail flange.)
8. Roof panel

85. Install lower dash panel.

(See Body section of Service Manual.)

86. Install upper dash panel.

(See Body section of Service Manual.)

87. Install bench seat cushion and back.

(See Body section of Service Manual.)

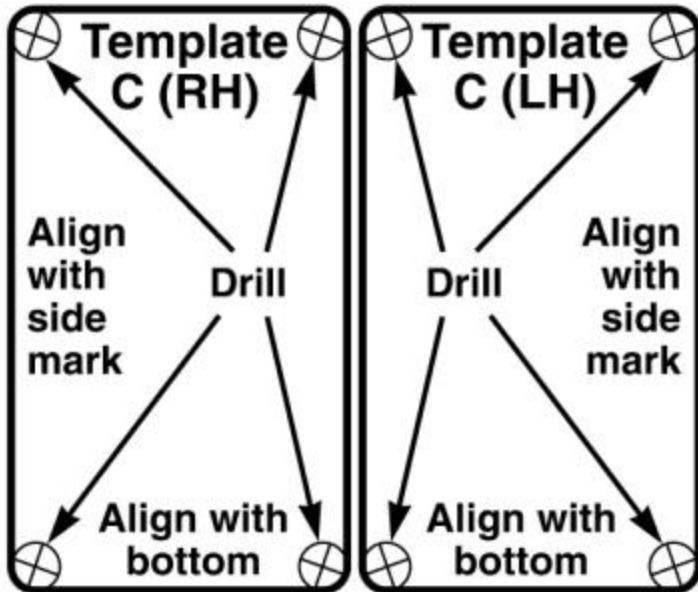
88. Check lap belt and rear seat belt for proper position and operation.

Template A

Use to find bottom edge of dash cross-member

Draw this line on side panel

Bottom of X-member



Template B