Section 13 Accessories

TABLE OF CONTENTS

WINCH TROUBLESHOOTING

Winch Inoperative

1. Check for bound winch cable.
2. Check winch control cable connector for corrosion or looseness. Clean corroded connector or secure loose connection.
3. Check for loose or damaged winch power cables. Using voltmeter, connect positive meter lead to positive power cable (red), and negative meter lead to good ground. If voltage is not present, repair or replace winch power cables.
4. Disconnect winch control from winch. Using a voltmeter, check for continuity between common terminals on winch control while holding control in OUT position. If continuity is present in both positions, replace winch. If continuity is not present in both positions, replace winch control.

WINCH

Winch Replacement

Removal

CAUTION: *To avoid injury or damage, support winch during removal.*

1. Disconnect battery ground cable (Section 12).
2. Remove two battery cable bolts, battery cables, and winch cables from battery (Figure 13-1).

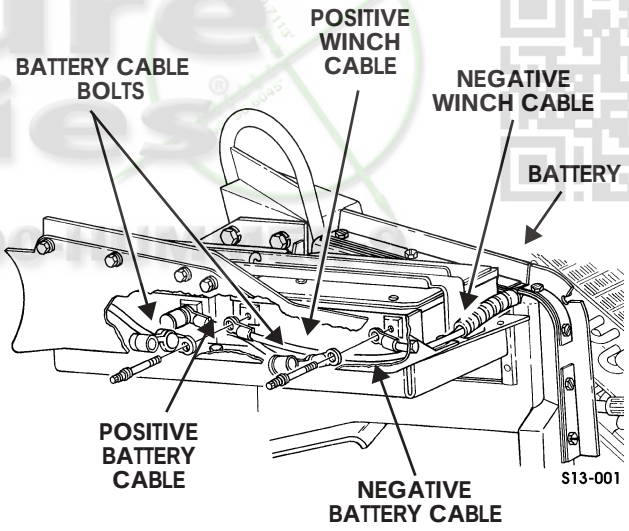


Figure 13-1: Winch Cables On Battery

3. Remove nut, lockwasher, capscrew, and clamp from frame bracket. Discard lockwasher. Pull winch cables to front of vehicle (Figure 13-2).

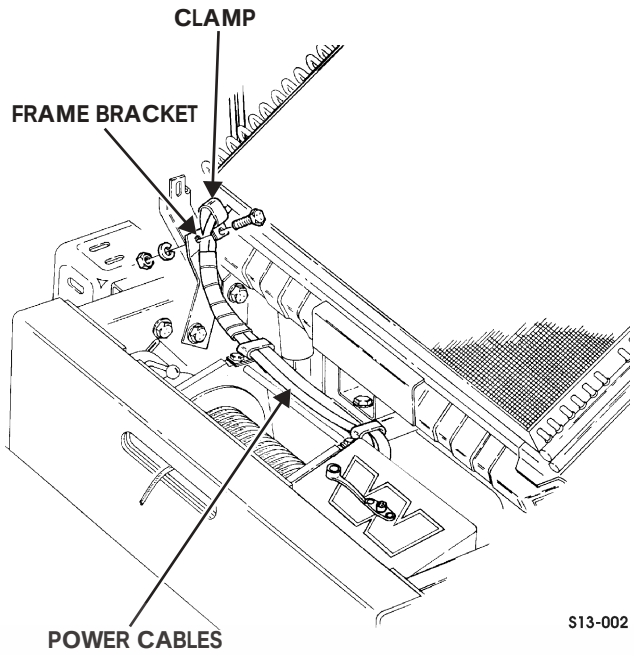


Figure 13-2: Frame Bracket

4. Remove four nuts, washers, capscrews, and winch from front bumper (Figure 13-3).

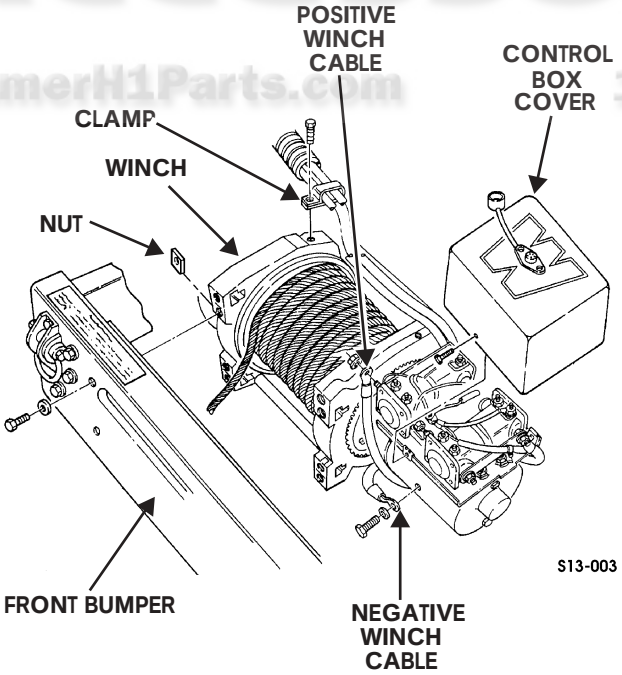


Figure 13-3: Winch and Winch Cables

5. Remove two capscrews and clamps securing winch cables to winch.
6. Remove three capscrews and control box cover from winch.

NOTE: It may be necessary to remove plastic coating compound from winch in order to perform steps 7 and 8.

7. Remove capscrew, washer, and negative winch cable from winch.
8. Remove locknut and positive winch cable from winch. Discard locknut.

Installation

NOTE: Positive winch cable must be positioned to align with the opening in the control box cover.

1. Install positive winch cable on winch with locknut (Figure 13-3).
2. Install negative winch cable on winch with washer and capscrew.
3. Coat motor end of winch with coating compound.
4. Install control box cover on winch with three capscrews.
5. Secure two winch cables to winch with two clamps and capscrews.
6. Install winch on front bumper with four washers, capscrews, and nuts. Tighten capscrews to 60 lb-ft (81 N•m).
7. Install two winch cables and battery cables on battery with two battery cable bolts (Figure 13-1).
8. Install winch cables on frame bracket with clamp, capscrew, lockwasher, and nut (Figure 13-2).
9. Connect battery ground cable (Section 12).

Winch Cable Replacement

WARNING: To avoid injury, wear gloves when handling winch cable.

Removal

1. Disconnect battery ground cable (Section 12).
2. Unwind winch cable.
3. Remove capscrew and winch cable from drum assembly (Figure 13-4).
4. Loosen connector, and remove connector and hook from winch cable.

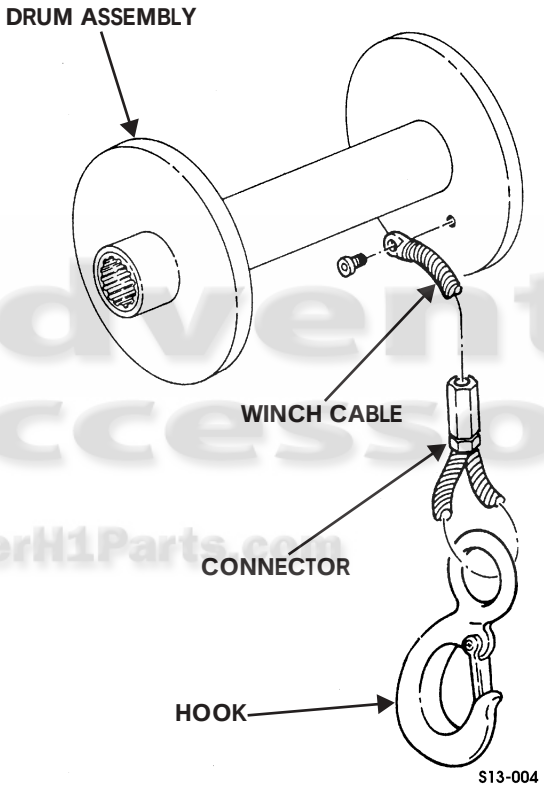


Figure 13-4: Winch Cable

Installation

1. Install hook and connector on winch cable. Tighten connector (Figure 13-4).
2. Install winch cable on drum assembly with capscrew.

CAUTION: *Install winch cable on drum under a load of at least 500 lb (227 kg), or outer wraps will draw into inner wraps and damage cable.*

NOTE: Spool winch cable according to rotation label on winch or brake will not function.

3. Connect battery ground cable (Section 12).
4. Rewind and lubricate winch cable.

Winch Assembly Repair

Disassembly

1. Remove winch and winch cable.

NOTE: Tag leads for assembly.

NOTE: It may be necessary to remove plastic coating from winch in order to perform steps 2 through 5.

2. Remove three nuts and control leads from motor (Figure 13-5).

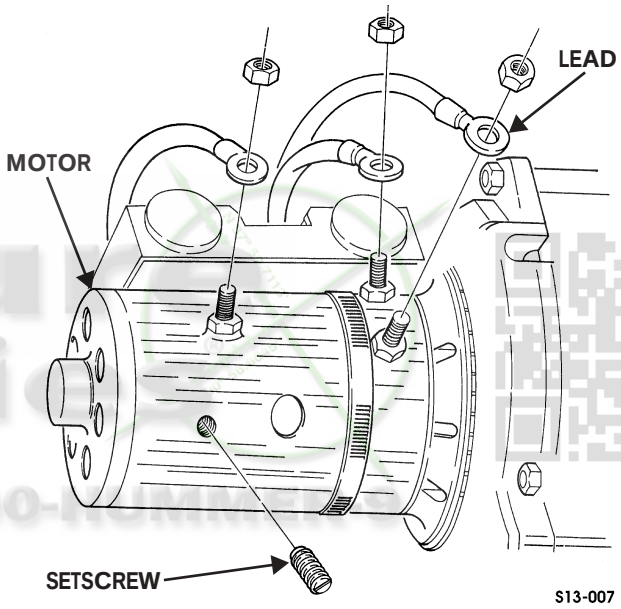


Figure 13-5: Control Leads

3. Remove setscrew from motor.
4. Loosen two clamps and remove control from motor (Figure 13-6).

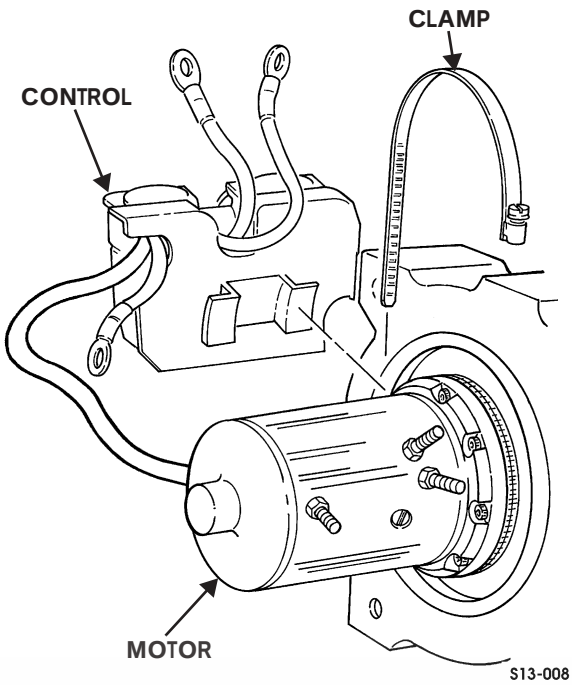


Figure 13-6: Control Unit

5. Remove clamps from motor.
6. Mark motor end drum support, gear train assembly, and gear end drum support for assembly (Figure 13-7).

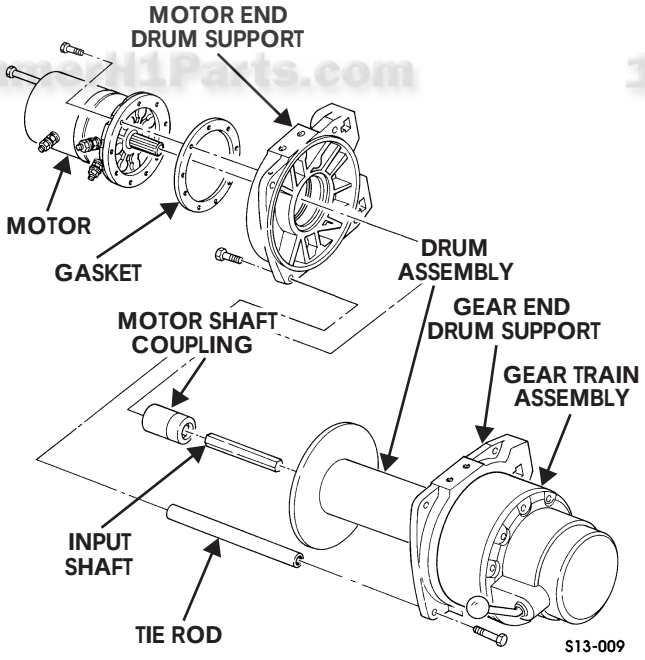


Figure 13-7: Drum Support and Gear Train Assembly

7. Remove six capscrews, three tie rods, motor end and gear end drum supports from winch.
8. Place winch on end with motor end up and remove ten hex- head screws and motor from motor end drum support.
9. Remove motor, gasket, and motor end drum support from drum assembly. Discard gasket.
10. Remove motor shaft coupling and input shaft from drum assembly.
11. Remove drum assembly from gear train assembly.
12. Remove two nylon thrust washers from drum (Figure 13-8).

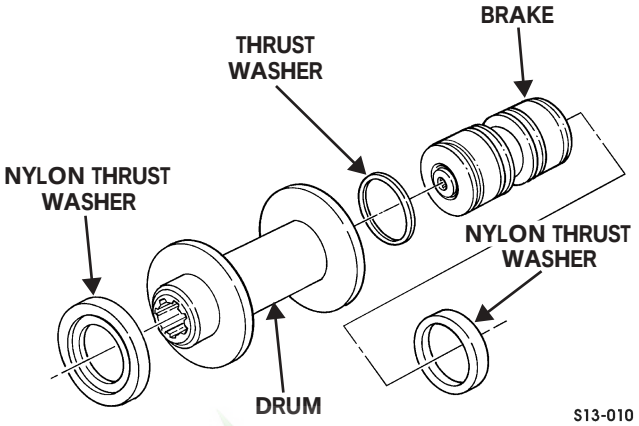


Figure 13-8: Thrust Washers and Brake

13. Push brake through open end of drum and remove.
14. Remove thrust washer from brake.
15. Remove driveshaft from gear train assembly (Figure 13-9).
16. Turn gear train assembly over with gear end drum support down. Remove ten hex-head screws and gear housing from gear end drum support.
17. Remove gasket from gear end drum support. Discard gasket.

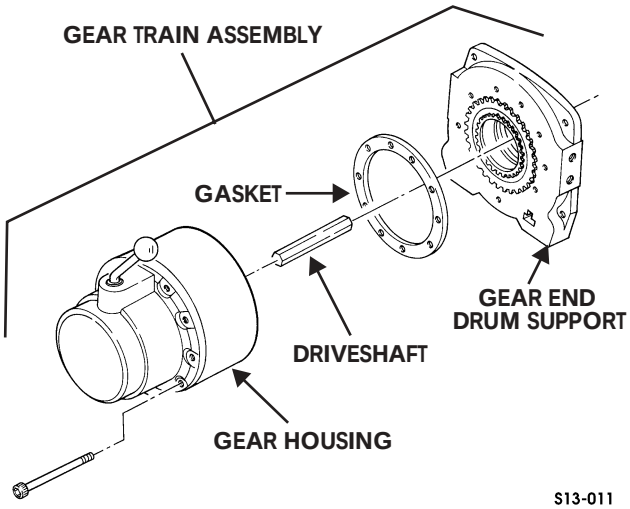


Figure 13-9: Gear Train Assembly

18. Remove detent spacer, spring, and detent ball from gear housing (Figure 13-10).

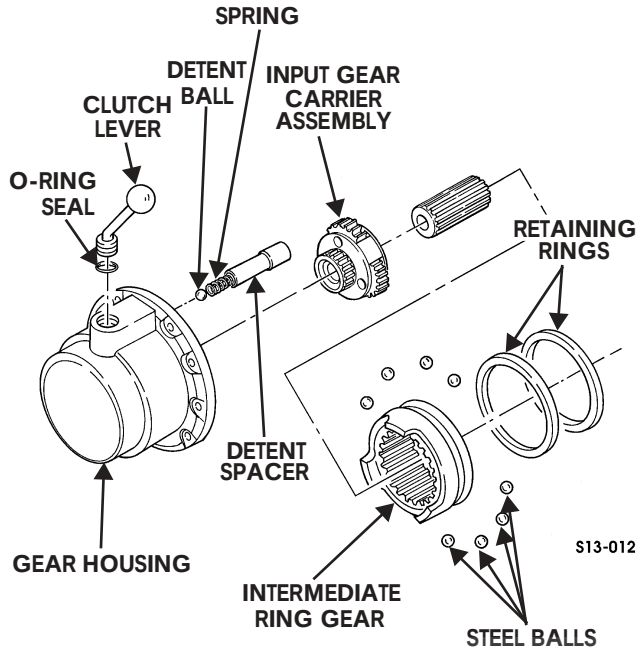


Figure 13-10: Gear Housing

19. Remove clutch lever and O-ring seal from gear housing. Discard O-ring seal.
20. Remove two retaining rings from gear housing.

NOTE: Intermediate ring gear comes out with 85 to 87 steel balls. Be sure to catch all 85 to 87 steel balls.

21. Remove intermediate ring gear and 85 to 87 steel balls from gear housing.
22. Remove input gear carrier assembly from gear housing.
23. Remove intermediate gear carrier and output gear carrier from output ring gear and gear end drum support (Figure 13-11).

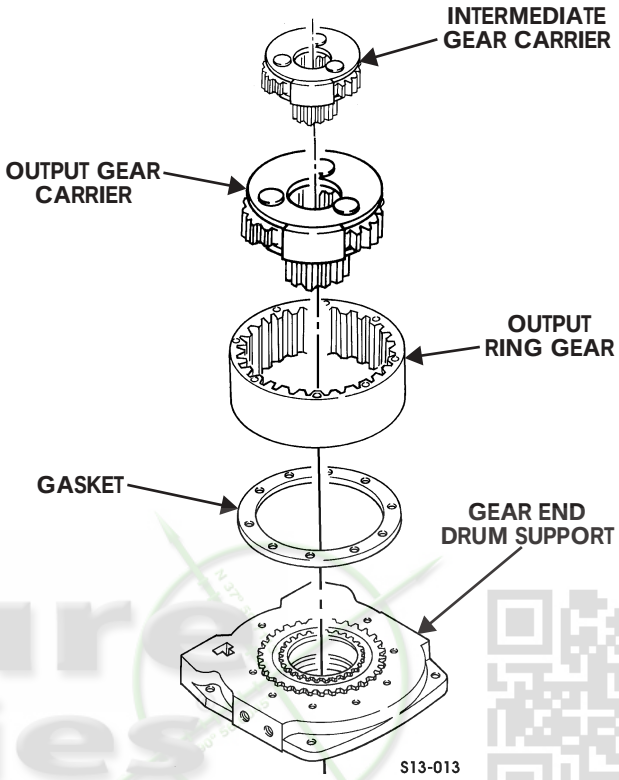


Figure 13-11: Gear Carriers

24. Remove output ring gear and gasket from gear end drum support.

Cleaning

CAUTION: *To avoid damage to equipment, do not clean brake assembly. Clean and inspect all winch components. Replace defective parts.*

Inspection

1. Inspect drum for damage to splined end flanges and tube (Figure 13-12). Replace winch if damaged.

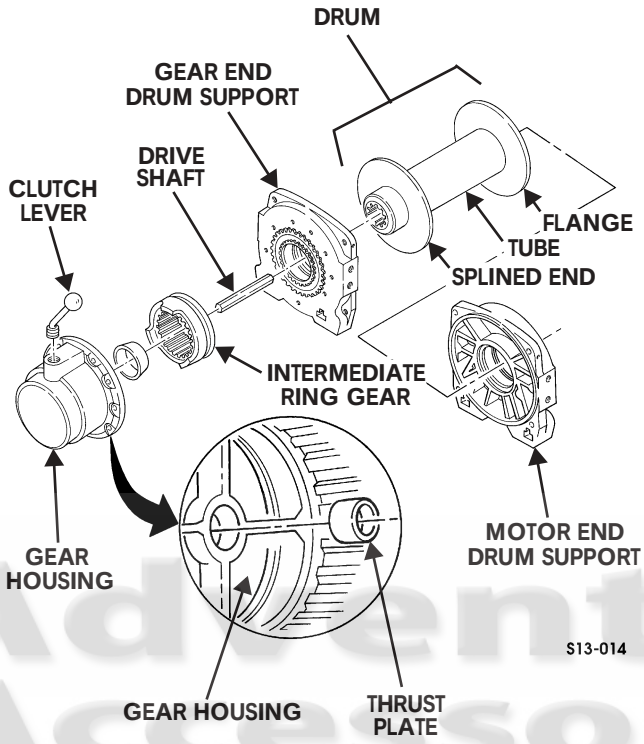


Figure 13-12: Drum Assembly and Gear Housing Assembly

2. Inspect gear end and motor end drum supports for damage. Replace if damaged.
3. Inspect gear housing for damage. Replace if damaged.
4. Inspect thrust plate for damage or wear. Replace if damaged or worn. Apply grease on thrust plate for assembly.
5. Inspect clutch lever and driveshaft for damage. Replace if damaged.
6. Inspect gear teeth and machined surfaces of intermediate ring gear for damage. Replace if damaged.
7. Inspect gear teeth, splines, and machined surfaces of output ring gear, output gear carrier, intermediate gear carrier, and input gear carrier assembly for damage. Replace any damaged parts (Figure 13-13).

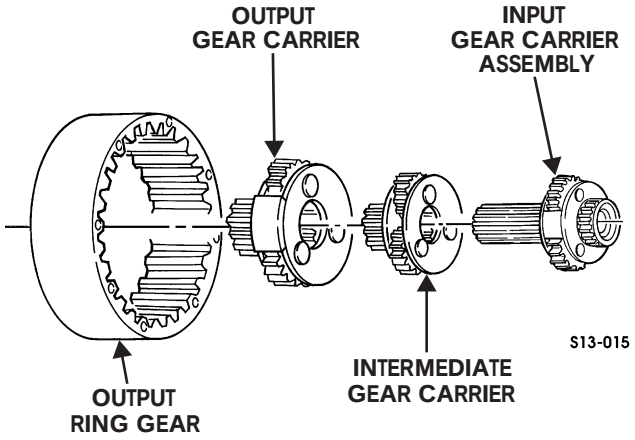


Figure 13-13: Gear Carrier

8. Inspect brake assembly for damage (Figure 13-14).

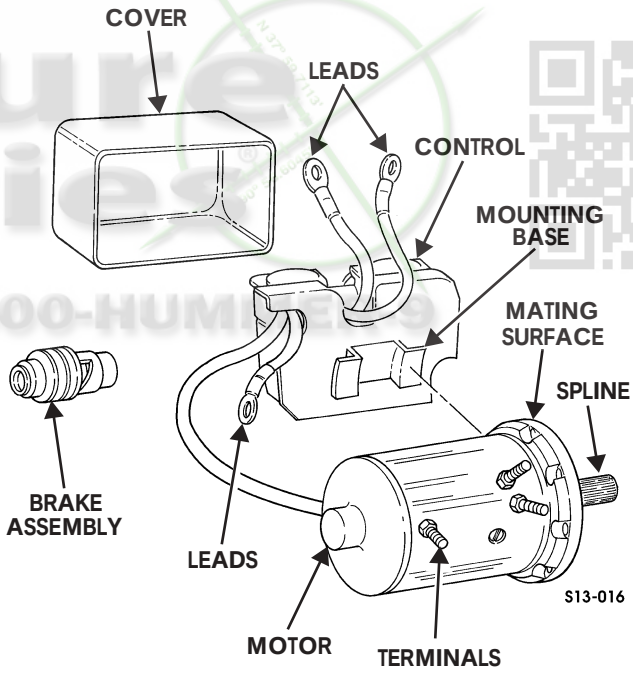


Figure 13-14: Motor and Control Unit

9. Inspect motor, spline, mating surface, and terminals for damage. Replace motor if damaged.
10. Inspect cover for damage. Replace if damaged.
11. Inspect control for damaged leads, breaks in plastic coating, and damaged mounting base. Replace control if damaged or repair plastic coating.

Assembly

1. Position 85 to 87 steel balls in groove of intermediate ring gear and install intermediate ring gear in gear housing (Figure 13-15).

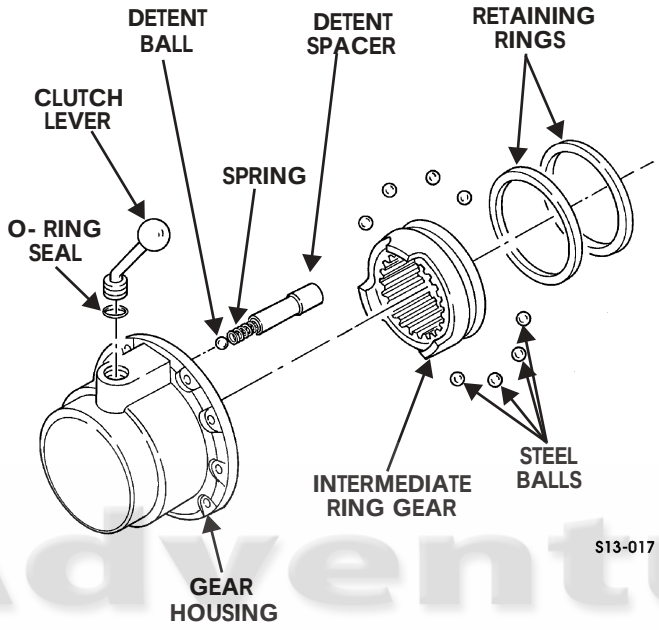


Figure 13-15: Intermediate Ring Gear and Gear Housing

NOTE: Openings in retaining rings should be opposite of each other and 90 degrees from clutch lever.

2. Install two retaining rings in gear housing.
3. Apply light oil to steel balls through the clutch lever hole.
4. Apply grease to clutch lever hole and install O-ring seal and clutch lever in gear housing.
5. Install detent ball, spring, and detent spacer in gear housing.
6. Apply aircraft grease to output gear carrier, intermediate gear carrier, and input gear carrier assembly (Figure 13-16).

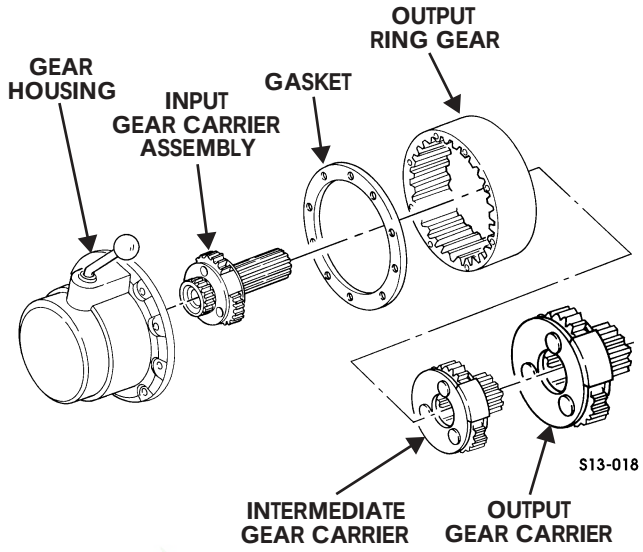


Figure 13-16: Gear Carriers

7. Install input gear carrier assembly in gear housing.

NOTE: Be sure ring gear engages in gear housing.

8. Install gasket and output ring gear on gear housing.
9. Install intermediate gear carrier on gear housing.
10. Install output gear carrier on intermediate gear carrier.
11. Install gasket on output ring gear (Figure 13-17).

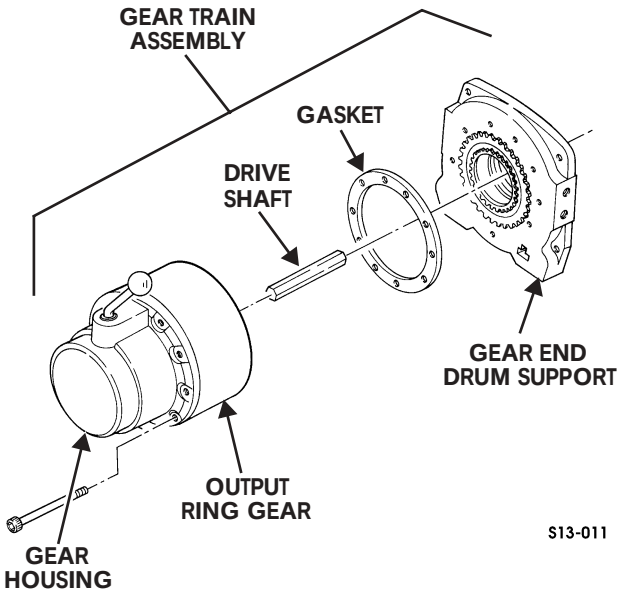


Figure 13-17: Gear Train Assembly

NOTE: Ensure spline on drum support engages in output ring gear.

12. Install gear end drum support on output ring gear and gear housing.
13. Secure gear housing assembly to drum support with ten hex-head screws. Tighten hex-head screws to 100 lb-in. (11 N•m).
14. Turn gear train assembly over with drum support facing up.
15. Install driveshaft in gear train assembly.
16. Apply grease to drum bushings, seals, brake, and output spline (Figure 13-18).

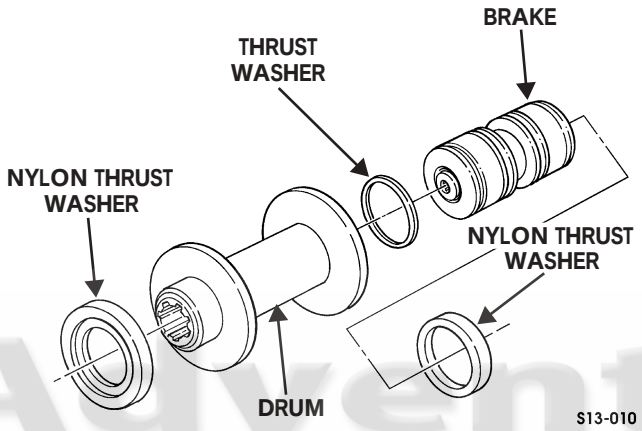


Figure 13-18: Thrust Washers and Brakes

17. Install thrust washer on brake.
18. With drum horizontal, install brake into drum.
19. Install two nylon thrust washers on drum.
20. Install drum assembly on gear train assembly. Rotate drum assembly as needed to engage driveshaft, brake, and output spline (Figure 13-19).

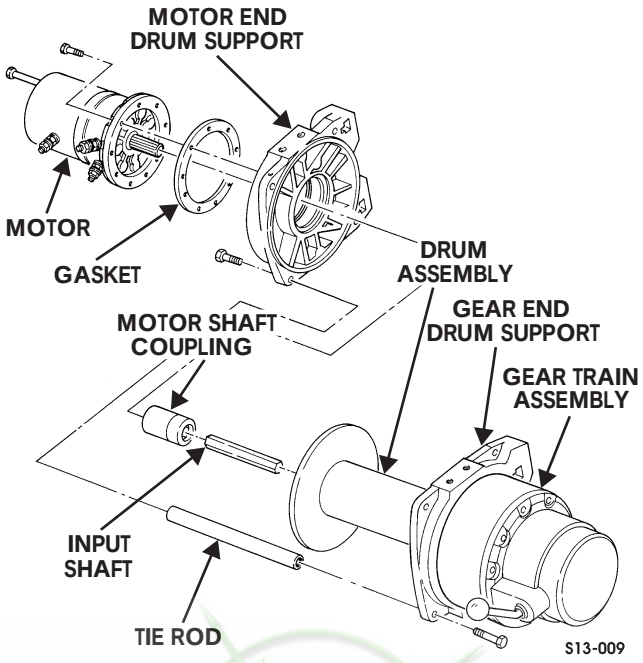


Figure 13-19: Drum Assembly and Gear Train Assembly

21. Install input shaft and motor shaft coupling in drum assembly.
22. Install motor end drum support on drum assembly.
23. Install gasket on motor end drum support.
24. Install motor on motor end drum support, ensuring to engage motor shaft into motor shaft coupling.
25. Secure motor to motor end drum support with ten hex-head screws. Tighten hex-head screws to 35 lb-in. (4 N•m).
26. Install three tie rods between drum supports and secure with six capscrews. Tighten capscrews to 18 lb-ft (24 N•m).

NOTE: If motor or control have been precoated with sealing compound, remove compound from between motor case and control mounting gear contact area. Failure to do so may cause improper grounding of control.

27. Install two clamps on motor (Figure 13-20).

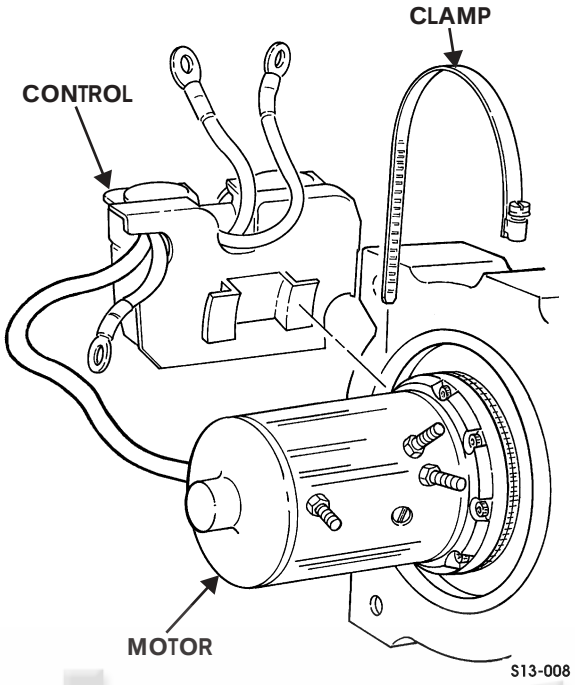


Figure 13-20: Control Unit and Motor

28. Install control on motor.
29. Connect three control leads to terminals and secure with nuts (Figure 13-21).

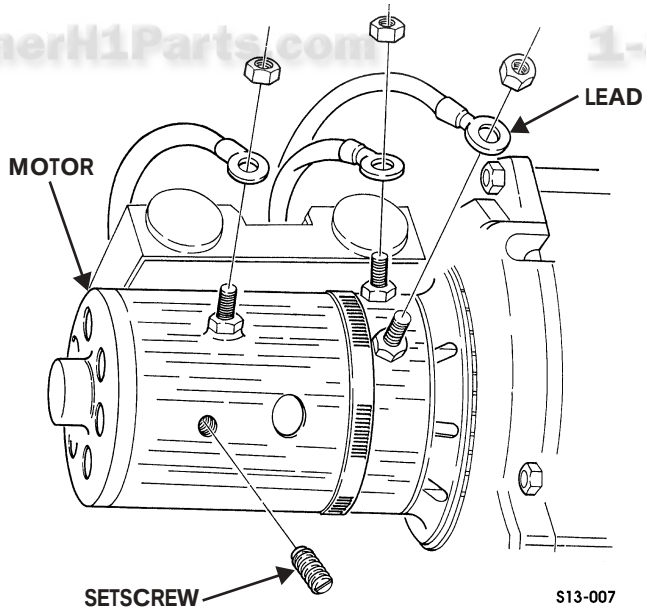


Figure 13-21: Control Leads

30. Secure control to motor with two clamps.
31. Apply pipe sealant to threads of setscrew and install on motor.
32. Install winch assembly and winch cable.

Winch Electric Thermal Switch/Brush Assembly Replacement

Removal

1. Remove winch and winch cable.

NOTE: Tag leads for assembly.

NOTE: It may be necessary to remove plastic coating from winch in order to perform steps 2 through 5.

2. Remove three nuts and control leads from motor (Figure 13-22).

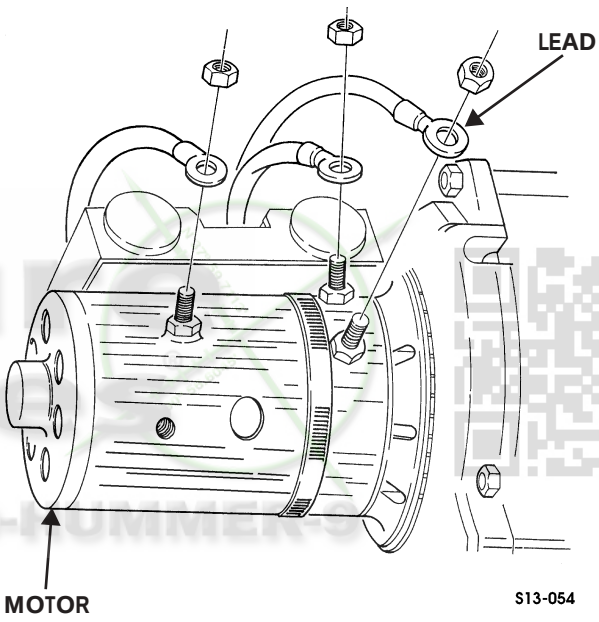


Figure 13-22: Control Leads

3. Loosen two clamps and remove control from motor (Figure 13-23).

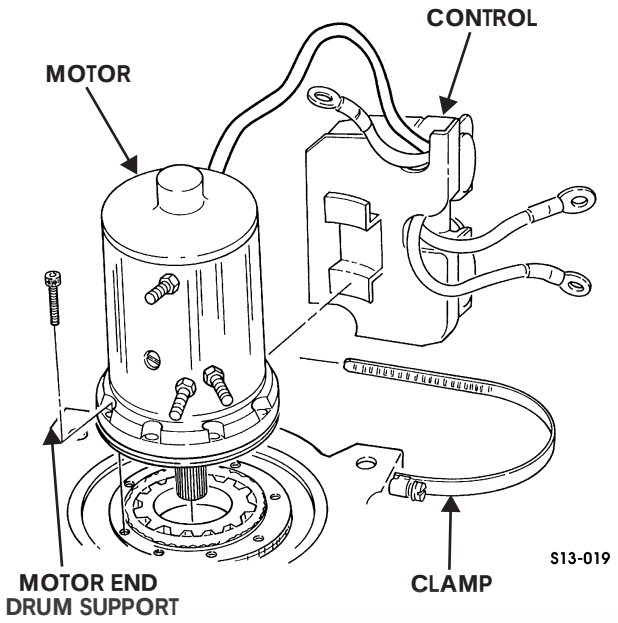


Figure 13-23: Control Unit and Motor

4. Remove clamps from motor.
5. Place winch on end with motor end up and remove ten hex-head screws and motor from motor end drum support.
6. Remove motor and gasket from drum support assembly (Figure 13-24). Discard gasket.
7. Remove two bolt assemblies, front cover, spacer, rear cover, and spacer from motor housing.

NOTE: Perform steps 8 through 12 only if replacing brush assembly.

8. Remove electric thermal switch from two electric thermal switch leads.
9. Remove armature assembly from brush assembly (Figure 13-25).
10. Remove nut, lockwasher, washer, and insulator securing brush assembly power stud to motor housing. Discard lockwasher.
11. Remove three nuts, screws, and brush assembly from motor housing.
12. Remove spacer, insulator, and washer from brush assembly power stud.

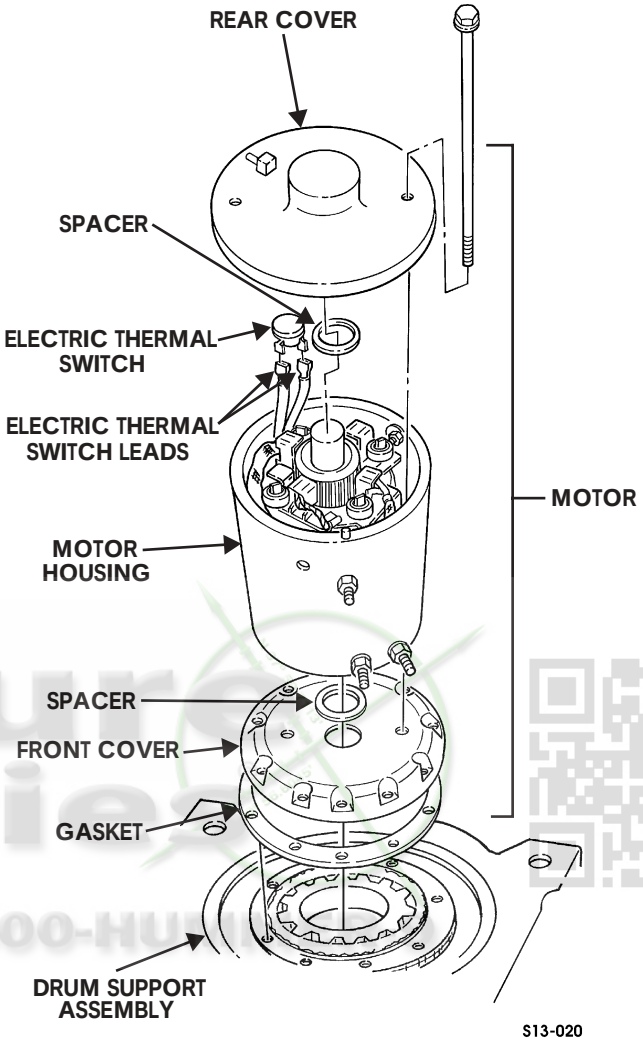


Figure 13-24: Motor and Gasket

Installation

NOTE: Do not apply coating to any electrical contacts of the armature assembly. Perform steps 1 through 5 only if replacing brush assembly.

1. Install washer, insulator, and spacer on brush assembly power stud (Figure 13-25).
2. Install brush assembly in motor housing with three screws and nuts.

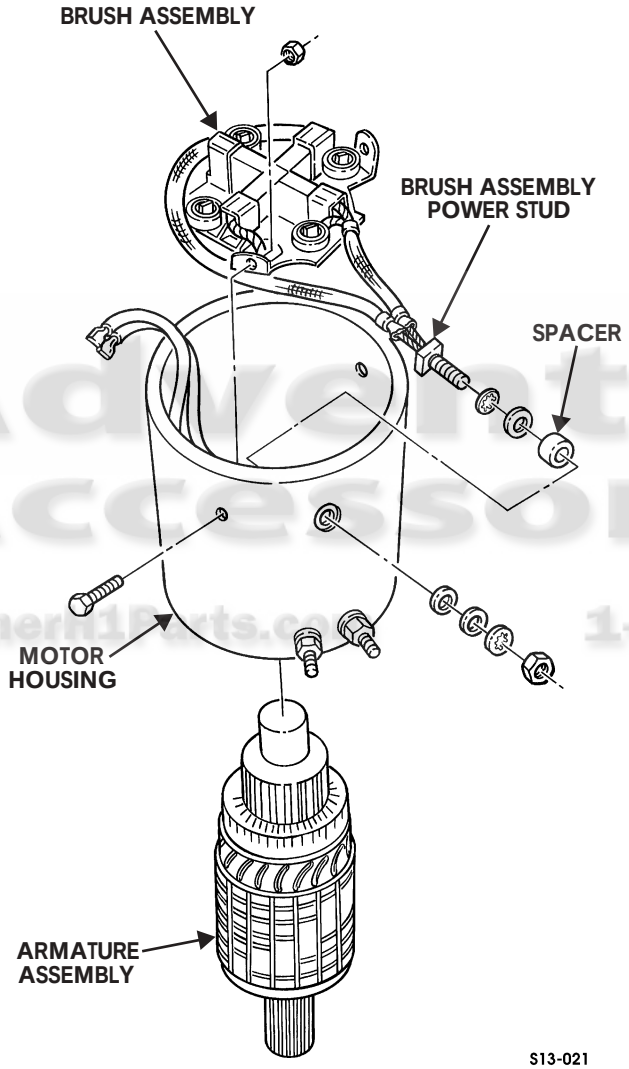


Figure 13-25: Brush Assembly and Armature Assembly

3. Secure brush assembly power stud to motor housing with insulator, washer, lockwasher, and nut.
4. Coat armature shaft with lubricant and install in brush assembly.
5. Coat head of electric thermal switch with lubricant and connect to two electric thermal switch leads (Figure 13-24).
6. Position spacer on inside of front and rear covers, and install front and rear covers on motor housing with two bolt assemblies.
7. Install gasket on motor drum support assembly.
8. Install motor on drum support assembly ensuring to engage motor shaft into motor shaft coupling.
9. Secure motor to motor end drum support with ten hex-head screws. Tighten hex-head screw to 35 lb-in. (4 N•m) (Figure 13-26).

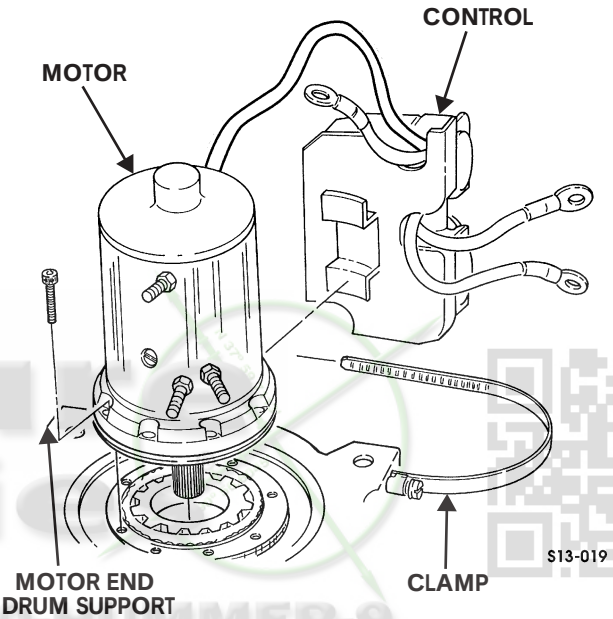


Figure 13-26: Control Unit and Motor

NOTE: If motor or control have been precoated with sealing compound, remove compound from between motor and control mounting gear contact area. Failure to do so may cause improper grounding or control.

10. Install two clamps on motor.
11. Install control on motor.

12. Connect three control leads to terminals and secure with nuts (Figure 13-27).

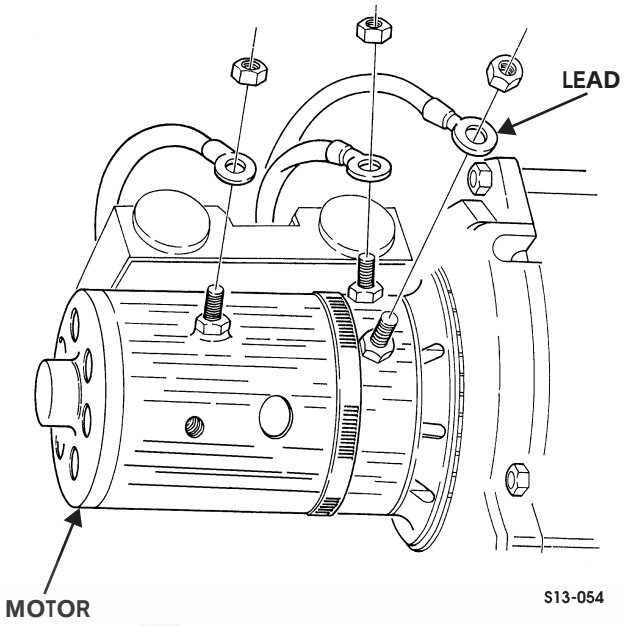


Figure 13-27: Control Leads

13. Secure control to motor with two clamps.
14. Install winch assembly and winch cable.

BRUSHGUARD ASSEMBLY REPLACEMENT

NOTE: Brushguard assemblies may be used on vehicles with or without a winch assembly. The following procedure applies to vehicles without a winch assembly.

Removal

1. Remove two hitch pins from locking pins (Figure 13-28).

WARNING: Stand clear of brushguard after removal of locking pins. Brushguard may swing down, causing personal injury.

2. Remove two locking pins from support brackets and lower brushguard.
3. Remove two locknuts, washers, capscrews, washers, and brushguard from support brackets.
4. Remove four locknuts, washers, capscrews, washers, and two support brackets from bumper

Installation

1. Install two support brackets on bumper with four washers, capscrews, washers, and locknuts. Tighten locknuts to 68 lb-ft (92 N•m) (Figure 13-28).
2. Position brushguard in brackets and secure with two washers, capscrews, washers, and locknuts.

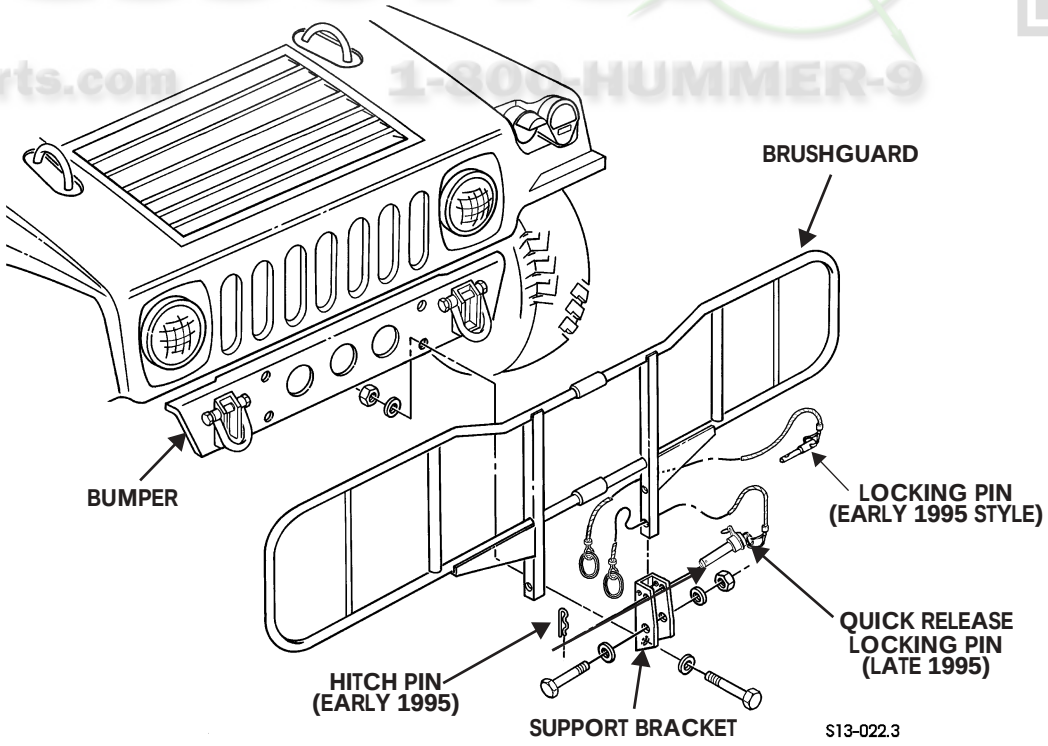


Figure 13-28: Brushguard Assembly

3. Secure brushguard in upward position with two locking pins.
4. Install two hitch pins into locking pins.

SWING-AWAY SPARE TIRE CARRIER REPLACEMENT

Removal

WARNING: Support tire when removing lug nuts. Failure to do so may result in personal injury.

NOTE: Some vehicles may use two lug nuts to secure tire to frame assembly.

1. Remove three lug nuts and tire from frame assembly (Figure 13-29).
2. Remove self-tapping screw and washer securing lanyard assembly to frame assembly and remove lanyard assembly and lock pin.
3. Remove two self-tapping screws and guide block from rear bumper.
4. Remove two locknuts, washers, stop plate, reinforcement stop mounting bracket, two capscrews, washers, and stop bracket from rear bumper. Discard locknuts.
5. Remove capscrew, lockwasher, and retaining plate from bracket assembly. Discard lockwasher.
6. Remove frame assembly from bracket assembly.
7. Remove three plugs from frame assembly.
8. Remove four locknuts, washers, reinforcement bracket, four capscrews, washers, and bracket assembly from rear bumper. Discard locknuts.
9. Remove grease fitting from bracket assembly.

Installation

1. Install grease fitting in bracket assembly (Figure 13-29).
2. Install bracket assembly on rear bumper with four washers, capscrews, reinforcement bracket, four washers, and locknuts. Do not tighten locknuts.
3. Install three plugs into frame assembly.
4. Install frame assembly on bracket assembly.
5. Secure retaining plate to bracket assembly with lockwasher and capscrew.
6. Install stop bracket, reinforcement stop mounting bracket, and stop plate on rear bumper with two washers, capscrews, washers, and locknuts. Do not tighten locknuts.
7. Install guide block on rear bumper with two self-tapping screws.
8. Secure lanyard assembly to frame assembly with washer and self-tapping screw.
9. Install lock pin in frame assembly.
10. Adjust bracket assembly and bracket to allow 0.020-in. (0.5-mm) clearance between frame assembly and guide block. Tighten six locknuts to 90 lb-ft (122 N•m).

NOTE: Some vehicles may use two lug nuts to secure tire to frame assembly.

11. Install tire on frame assembly and secure with three lug nuts.

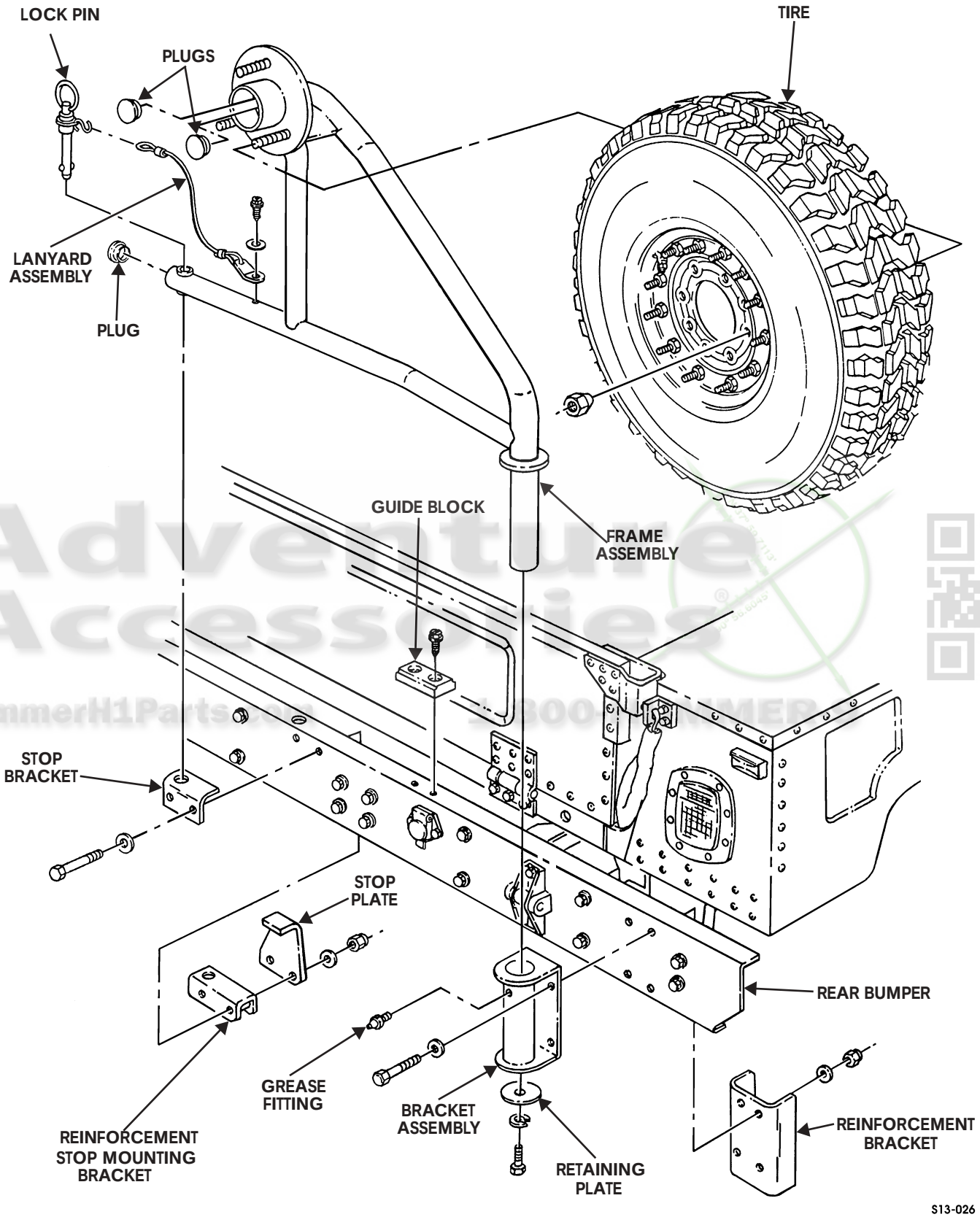


Figure 13-29: Swing-Away Spare Tire Carrier

CARGO DECK MOUNTED SPARE TIRE CARRIER REPLACEMENT

NOTE: Cargo deck mounted spare tire carrier may be located either directly behind the cab or at the left wheelhouse on two door models. On four door models, spare tire carrier will be located at the left wheelhouse.

Removal

NOTE: Perform steps 1 and 2 on vehicles with frame assembly stowed in down position.

1. Disconnect two lock pins and raise frame assembly to upright position (Figure 13-30).

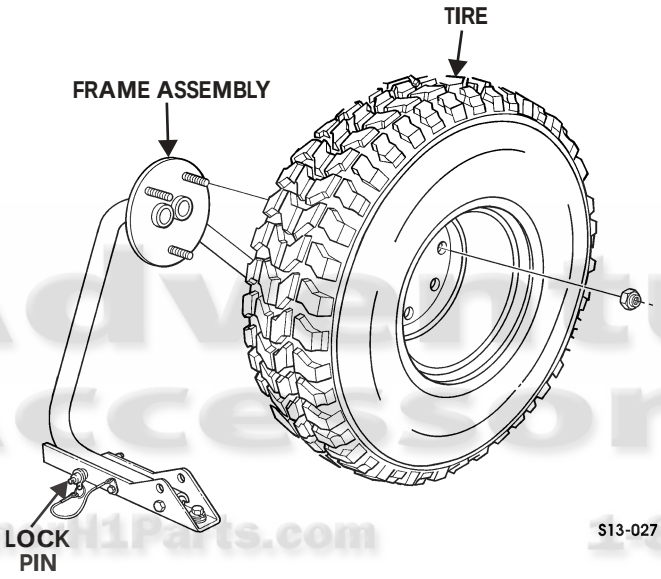


Figure 13-30: Cargo Deck Mounted Spare Tire

2. Secure frame assembly in upright position with two lock pins.
3. Remove three lug nuts securing tire to frame assembly and remove tire.
4. Remove two self-tapping screws, lockwashers, and two lanyard and lock pin assemblies from mounting brackets. Discard lockwashers (Figure 13-31).
5. Remove two locknuts, capscrews and frame assembly from mounting brackets. Discard locknuts.

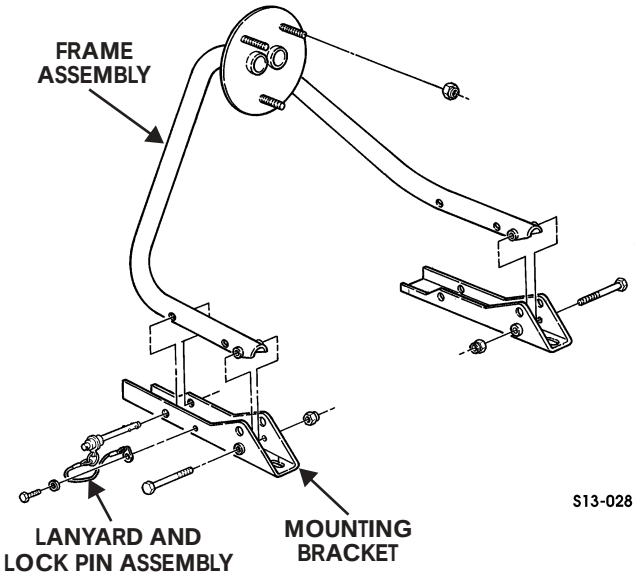


Figure 13-31: Frame Assembly

6. Remove four screws securing mounting brackets to cargo floor (Figure 13-32).

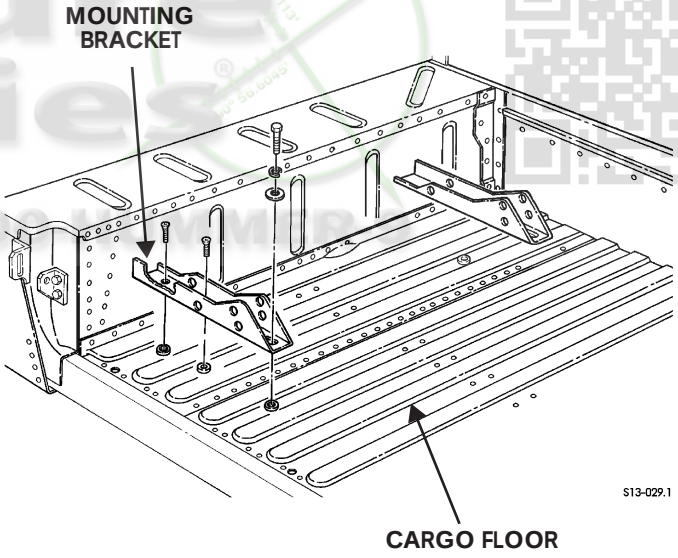


Figure 13-32: Mounting Brackets

7. Remove two capscrews, lockwashers, washers, and mounting brackets from cargo floor. Discard lockwashers.

Installation

1. Install mounting brackets on cargo floor with two washers, lockwashers, and capscrews (Figure 13-32).
2. Secure mounting brackets to cargo floor with four screws. Tighten screws to 16 lb-ft (22 N•m).
3. Install frame assembly on mounting brackets with two capscrews and locknuts (Figure 13-31).

4. Install two lanyard and lock pin assemblies on two mounting brackets and frame assembly with two lockwashers and self-tapping screws.
5. Install tire on frame assembly with three lug nuts (Figure 13-30).

NOTE: Perform steps 6 and 7 to stow frame assembly in down position.

6. Disconnect two lock pins and lower frame assembly to down position.
7. Connect two lock pins.

UNDERBODY PROTECTION

Skid Plate Replacement

Removal

1. Remove three locknuts, washers, capscrews, and washers securing skid plate to front shield. Discard locknuts (Figure 13-33).

NOTE: Go to step 3 for vehicles equipped with a winch.

2. Remove three locknuts, washers, capscrews, washers, and skid plate from front bumper. Discard locknuts.
3. Remove two locknuts, washers, capscrews, washers, and winch skid plate from winch bumper. Discard locknuts.

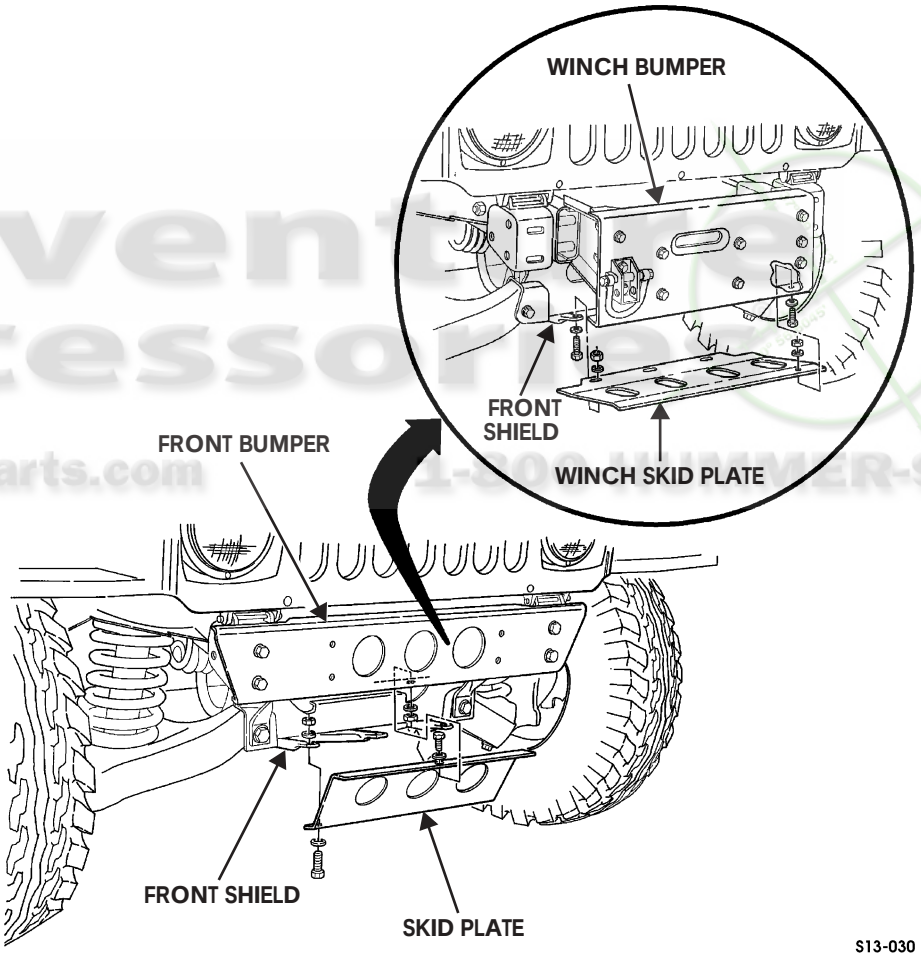


Figure 13-33: Skid Plate

Installation

NOTE: Go to step 2 for vehicles equipped with a winch.

1. Install skid plate on front bumper with three washers, capscrews, washers, and locknuts. Tighten locknuts to 24 lb-ft (33 N•m) (Figure 13-33).
2. Install winch skid plate on winch bumper with two washers, capscrews, washers, and locknuts (Figure 13-33). Tighten locknuts to 24 lb-ft (33 N•m).
3. Secure skid plate to front shield with three washers, capscrews, washers, and locknuts. Tighten locknuts to 24 lb-ft (33 N•m).

Front Shield Replacement

Removal

1. Remove three locknuts, washers, capscrews, washers, and two spacers securing front shield to front crossmember and intermediate shield. Discard locknuts (Figure 13-34).
2. Remove three locknuts, washers, capscrews, washers, and front shield from skid plate. Discard locknuts.

Installation

1. Install front shield on skid plate with three washers, capscrews, washers, and locknuts. Do not tighten locknuts (Figure 13-34).
2. Secure front shield to front crossmember and intermediate shield with two spacers, three washers, capscrews, washers, and locknuts.
3. Tighten locknuts securing front shield to skid plate to 24 lb-ft (33 N•m). Tighten locknuts securing front shield to crossmember and intermediate shield to 44 lb-ft (60 N•m).

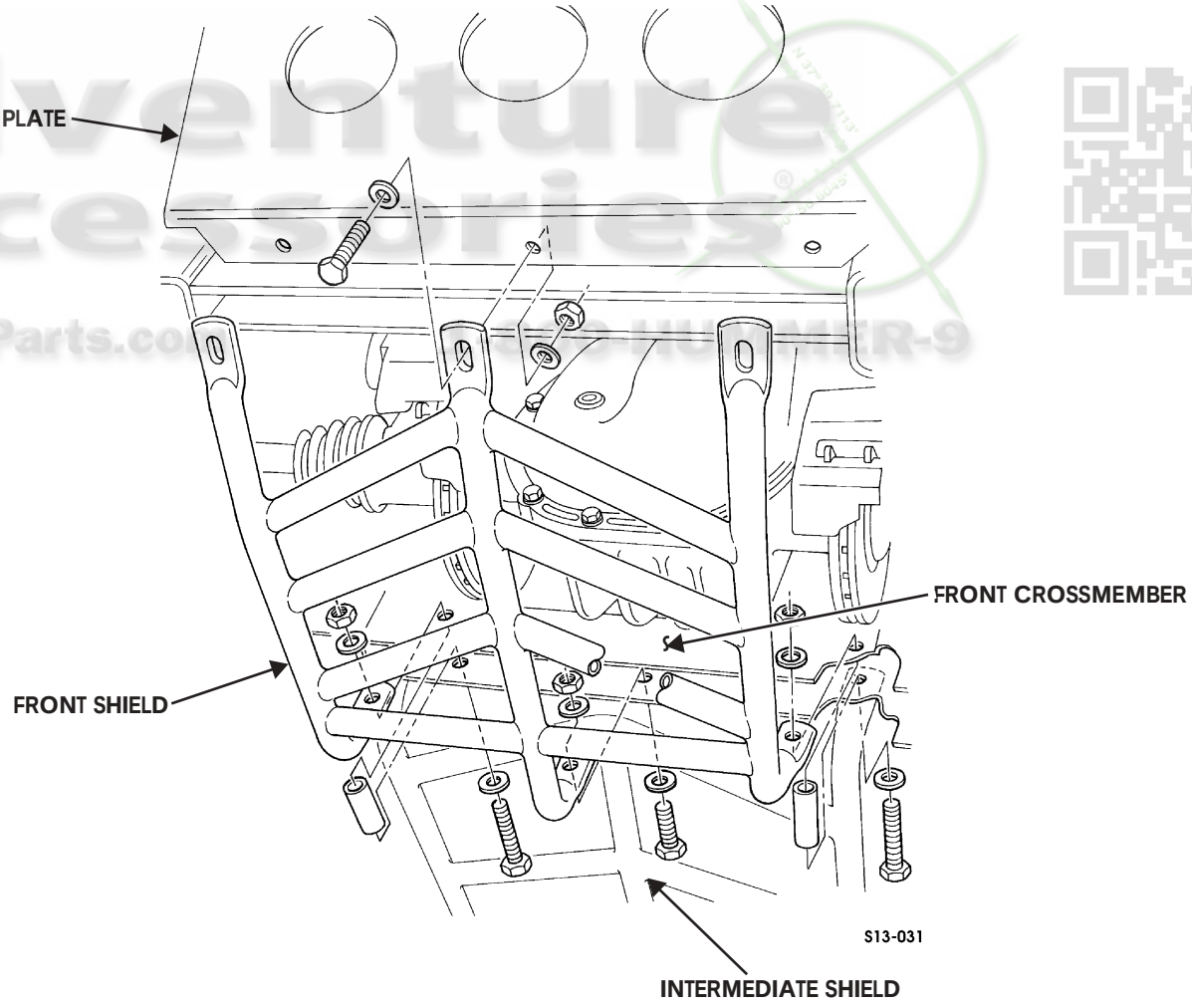


Figure 13-34: Front Shield

Intermediate Shield Replacement

Removal

1. Remove six locknuts, washers, capscrews, washers, and four rubber washers securing two transmission support brackets and intermediate shield to transmission mount crossmember. Remove support brackets. Discard locknuts (Figure 13-35).

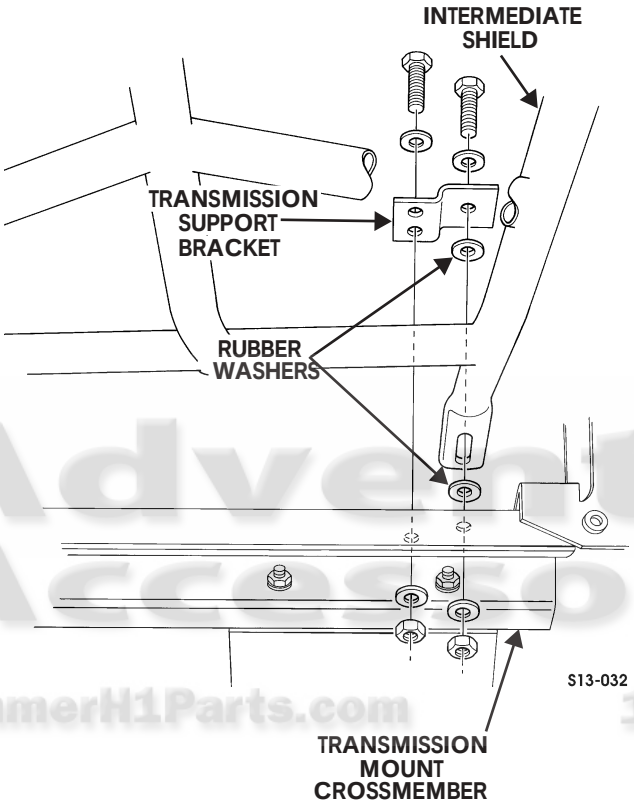


Figure 13-35: Intermediate Shield

2. Remove locknut, washer, capscrew, and washer securing left support bracket to engine mount bracket and frame rail. Discard locknut (Figure 13-36).
3. Remove four locknuts, washers, capscrews, washers, and left support bracket from left mounting bracket. Discard locknuts.

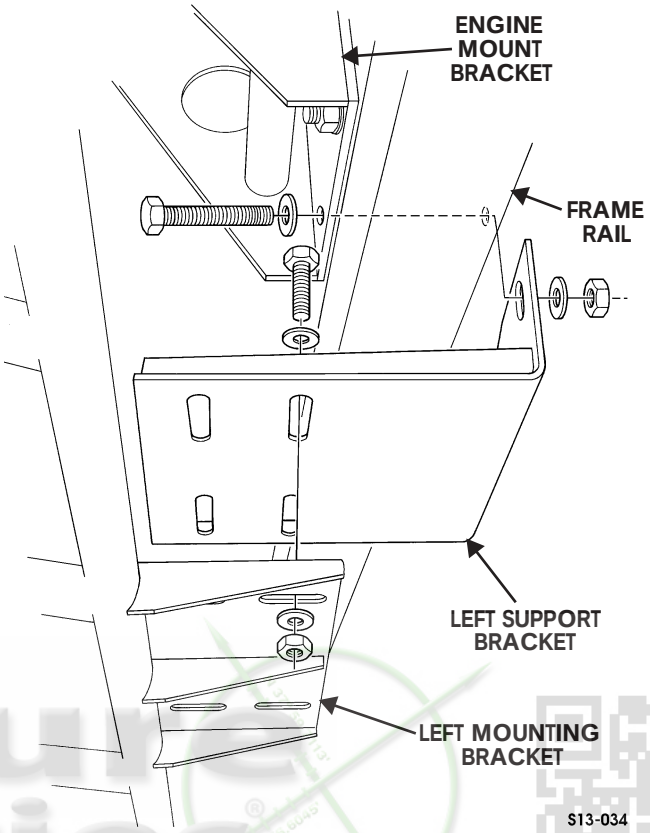


Figure 13-36: Left Support Bracket

4. Remove locknut, washer, capscrew, and washer securing right support bracket to frame rail. Discard locknut (Figure 13-37).
5. Remove four locknuts, washers, capscrews, washers, and right support bracket from right mounting bracket. Discard locknuts.
6. Remove two locknuts, washers, capscrews, washers, spacers, and intermediate shield from front crossmember and front shield. Discard locknuts (Figure 13-38)

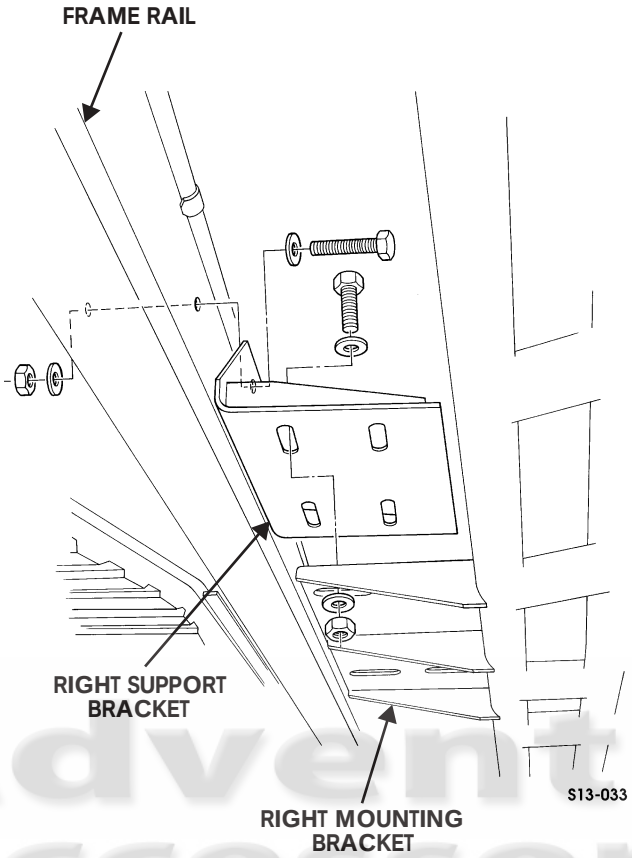


Figure 13-37: Right Support Bracket

Installation

1. Install intermediate shield to front crossmember and front shield with two spacers, washers, capscrews, washers, and locknuts. Tighten locknuts to 44 lb-ft (60 N•m) (Figure 13-38).
2. Install right support bracket on right mounting bracket with four washers, capscrews, washers, and locknuts. Do not tighten locknuts (Figure 13-37).
3. Secure right support bracket to frame rail with washer, capscrew, washer, and locknut. Tighten locknut to 105 lb-ft (142 N•m).
4. Install left support bracket on left mounting bracket with four washers, capscrews, washers, and locknuts. Do not tighten locknuts (Figure 13-36).
5. Secure left support bracket to engine mount bracket and frame rail with washer, capscrew, washer, and locknut. Tighten locknut to 105 lb-ft (142 N•m).
6. Install two transmission support brackets on transmission mount crossmember with four washers, capscrews, washers, and locknuts. Tighten locknuts to 24 lb-ft (33 N•m) (Figure 13-35).
7. Secure intermediate shield to transmission mount crossmember and transmission support brackets with four rubber washers, two washers, capscrews, washers and locknuts. Tighten locknuts to 26 lb-in. (3 N•m).
8. Tighten locknuts securing support brackets to mounting brackets to 24 lb-ft (33 N•m).

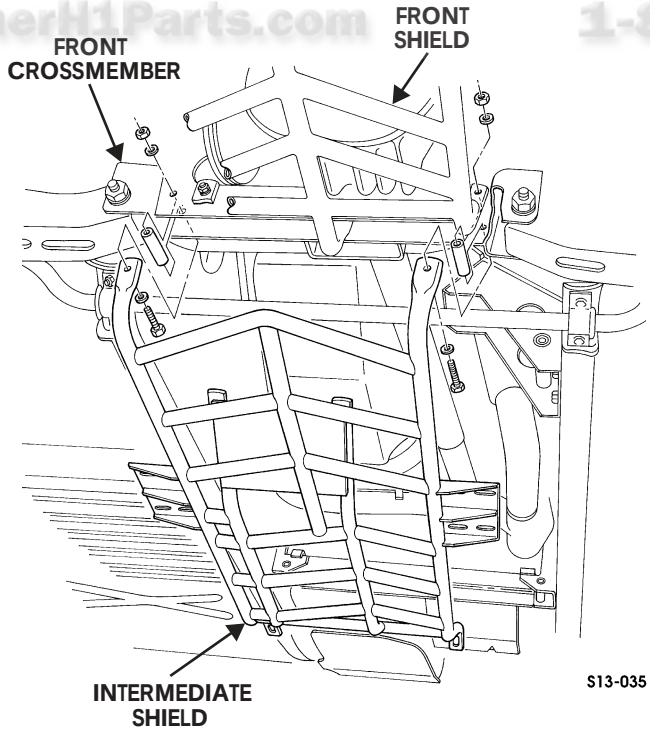


Figure 13-38: Intermediate Shield

Transfer Case Shield Replacement

Removal

Remove two locknuts, washers, capscrews, washers, and transfer case shield from crossmember. Discard locknuts (Figure 13-39).

Installation

Install transfer case shield on crossmember with two washers, capscrews, washers, and locknuts (Figure 13-39).

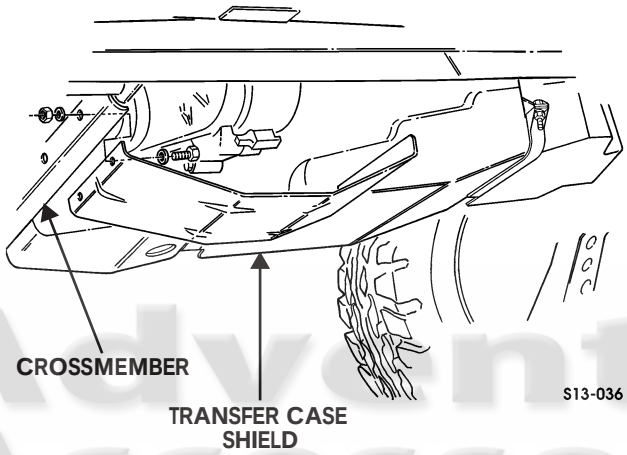


Figure 13-39: Transfer Case Shield

Rear Shield Replacement

Removal

1. Remove three locknuts, washers, capscrews, washers, and spacers securing rear shield to rear-front crossmember. Discard locknuts (Figure 13-40).
2. Remove three locknuts, washers, capscrews, washers, and shield from mounting brackets. Discard locknuts.
3. Remove six locknuts, washers, capscrews, washers, spacers, and three mounting brackets from rear-rear crossmember. Discard locknuts.

Installation

1. Install three mounting brackets on rear-rear crossmember with six spacers, washers, capscrews, washers, and locknuts. Tighten locknuts to 24 lb-ft (33 N•m) (Figure 13-40).
2. Position shield on mounting brackets and secure with three washers, capscrews, washers, and locknuts. Do not tighten locknuts.
3. Secure shield to rear-front crossmember with three spacers, washers, capscrews, washers, and locknuts. Tighten capscrews to 44 lb-ft (60 N•m).
4. Tighten locknuts securing rear shield to mounting brackets to 24 lb-ft (33 N•m).

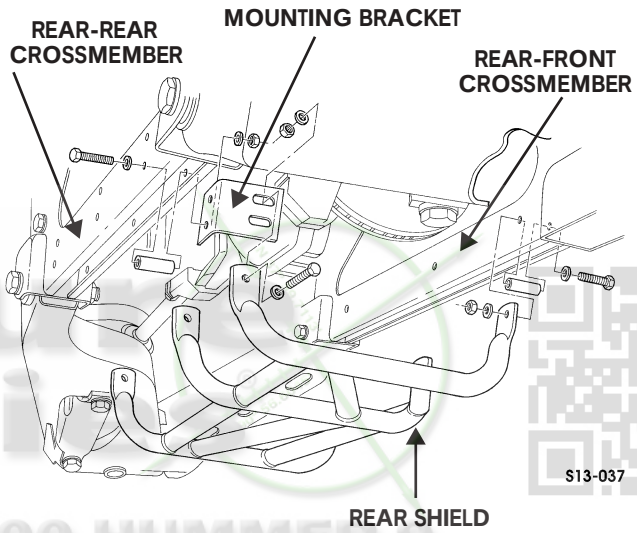


Figure 13-40: Rear Shield

UNDERBODY SKID PANEL REPLACEMENT

Removal

NOTE: Removal of underbody skid panel is similar for both sides. This procedure covers one side only.

1. Remove outer kick panels (Section 10).
2. Pull back carpet from front footwell and rear footwell (4-door models only).

NOTE: Hex-head screws are secured in place with Loctite 242 and may require considerable effort to break loose.

3. Remove nine hex-head screws securing underbody skid panel to body. Support underbody skid panel with floor jack (Figure 13-41).

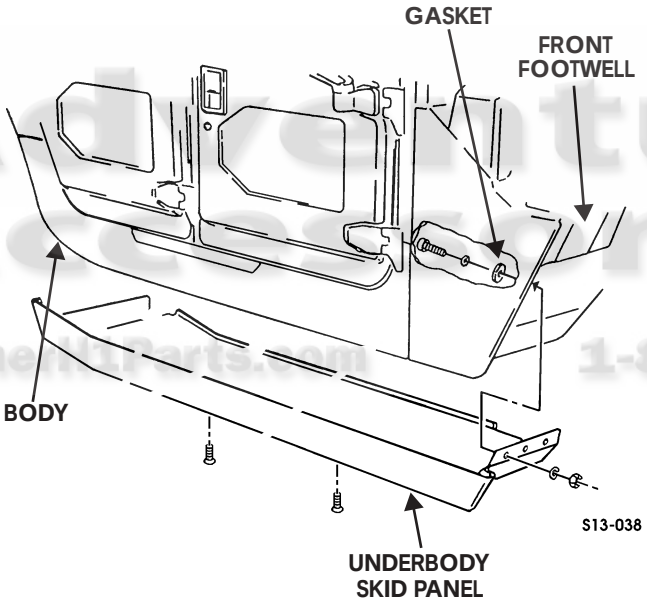


Figure 13-41: Underbody Skid Panel

4. Remove three nuts, washers, capscrews, washers, and gaskets securing skid panel to front footwell. Discard gaskets.
5. Remove three nuts, washers, capscrews, washers, and gaskets securing spacer (if present) and skid panel to rear footwell (Figure 13-42).

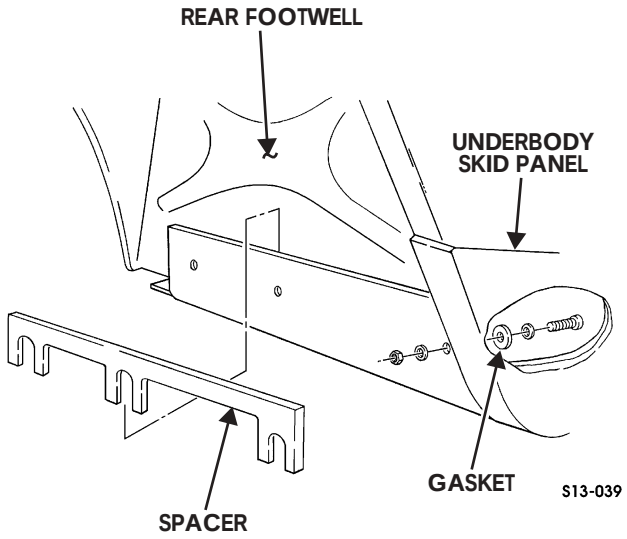


Figure 13-42: Rear Footwell

CAUTION: *Underbody skid panel is heavy. Remove with a floor jack.*

6. Remove underbody skid panel from body.
7. Inspect three retainer nuts on body. Discard if damaged.

Installation

CAUTION: *Underbody skid panel is heavy. Raise into place with a floor jack.*

1. Raise underbody skid panel to body.
2. Secure skid panel to rear footwell with three gaskets, washers, capscrews, washers, and nuts. Do not tighten nuts (Figure 13-42).
3. Secure skid panel to front footwell with three gaskets, washers, capscrews, washers, and nuts. Do not tighten nuts (Figure 13-41).
4. Install spacer between rear footwell and underbody skid panel if necessary. Tighten nuts at front and rear footwells to 37 lb-ft (50 N•m) (Figures 13-39 and 13-42).

NOTE: Apply Loctite 242 to threads of hex-head screws.

5. Remove floor jack and secure underbody skid panel to body with nine hex-head screws. Tighten hex-head screws to 37 lb-ft (50 N•m) (Figure 13-41).
6. Push carpet back in place.
7. Install outer kick panels (Section 10).

TRAILER TOWING CONNECTOR

Assembly Instructions

NOTE: The following procedure provides instructions to assemble a trailer towing connector needed when installing a trailer brake controller. Spare wires have been provided in the body harness and routed from the instrument panel/fuse box area to the trailer connector at the rear of the vehicle (Figure 13-43).

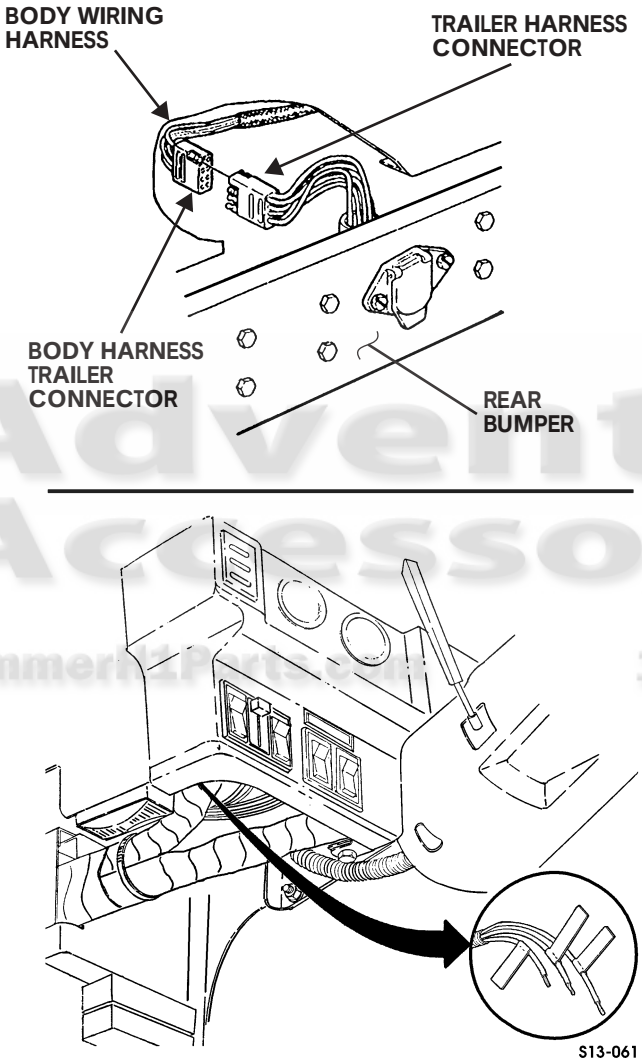


Figure 13-43: Location of Spare Body Harness Wires

1. Disconnect the battery ground cable (Section 12).
2. stall the brake controller using manufacturer's instructions.
3. Carefully remove and discard the heat shrink tubing covering the body harness and trailer harness connectors.
4. Cut the dark blue (43A) wire and the purple (50A) wire 2 in. (5 cm) from the back of the body harness trailer connector (Figure 13-44).

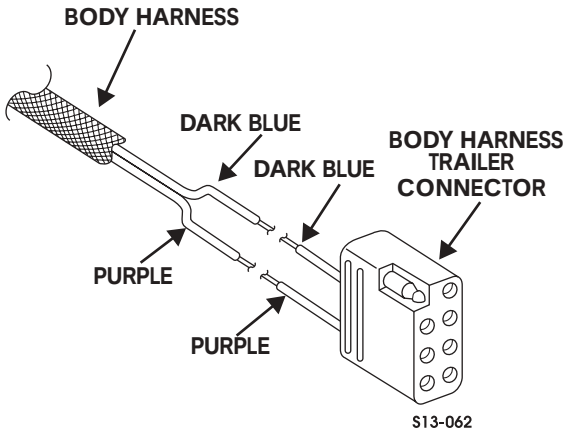


Figure 13-44: Body Harness Wires

5. Slide adhesive wall heat shrink tubing over one end of the dark blue and purple wires.
6. Connect the dark blue body harness wire to the purple connector wire (Figure 13-45).
7. Connect the purple body harness wire to the dark blue connector wire. Secure connections using meltable adhesive crimp butt splices.

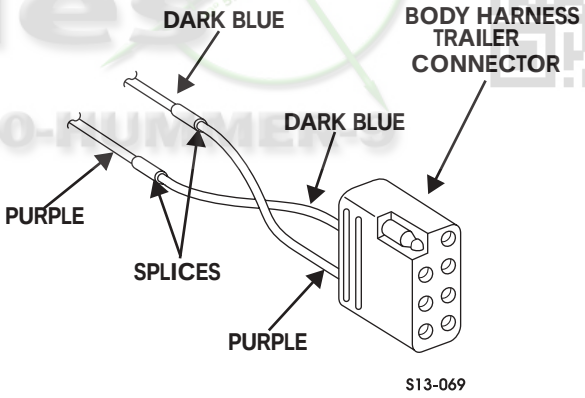


Figure 13-45: Body Harness Trailer Connector

8. Cover both splices with the heat shrink tubing and shrink the tubing with a heat gun.
9. Slide large piece of heat shrink tubing over the body harness connector.
10. Plug connector halves together and position heat shrink tubing over the mated connector.
11. Shrink the tubing with heat gun.
12. Install a fuse in fuse position 7H as required per the brake controller and trailer manufacturer's recommendations.
13. Connect the negative battery cable(s) (Section 12) and test the circuits for proper operation.

TRAILER HITCH REPLACEMENT

Removal

1. Remove four locknuts, washers, capscrews, and washers securing trailer hitch to rear bumper braces. Discard locknuts (Figure 13-46).
2. Remove four locknuts, washers, capscrews, washers, and trailer hitch from rear bumper. Discard locknuts.

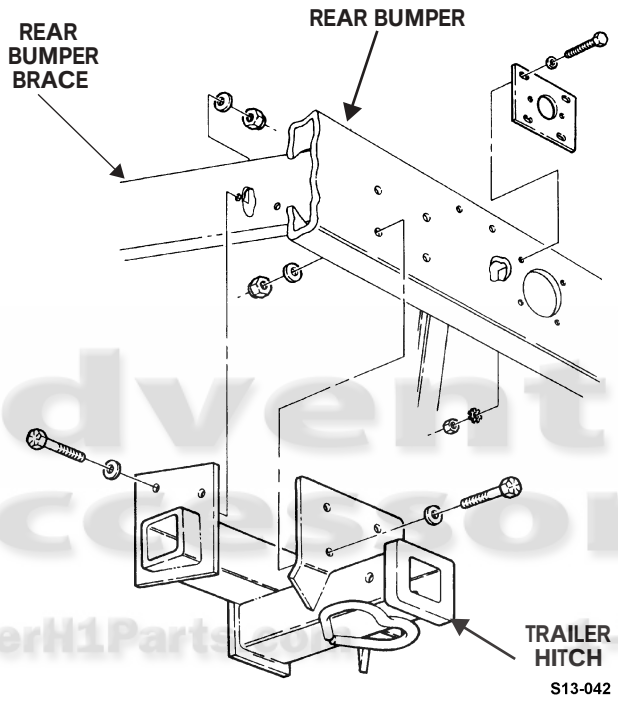


Figure 13-46: Trailer Hitch

Installation

1. Install trailer hitch on rear bumper with four washers, capscrews, washers, and locknuts (Figure 13-46). Do not tighten locknuts.
2. Secure trailer hitch to rear bumper braces with four washers, capscrews, washers, and locknuts.
3. Tighten all locknuts to 107 lb-ft (145 N•m).

RUNNING BOARD REPLACEMENT

Removal

1. Remove two clips and pins securing the right and left curved tubes to the receiver (Figures 13-47 and 13-48).

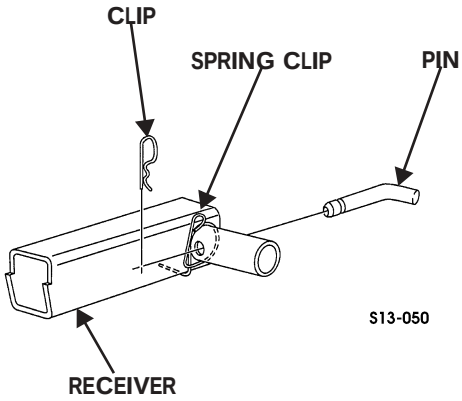


Figure 13-47: Receiver

2. Remove screw, nut, and screw securing the left end cap to the left curved tube (Figure 13-48).

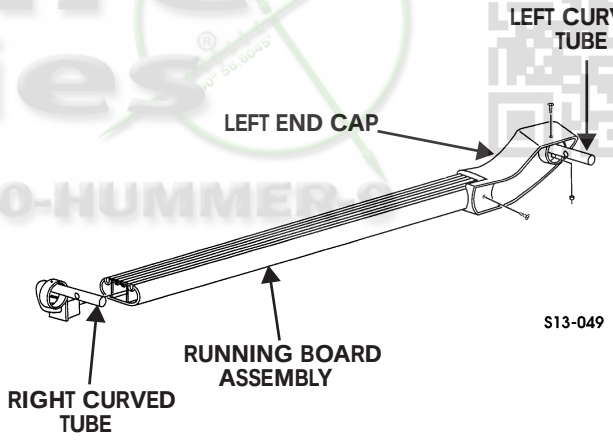


Figure 13-48: Left End Cap Secured to Left Curved Tube

3. Remove screw, nut, and screw securing the right end cap to the right curved tube.
4. Remove left curved tube from running board.
5. Remove right curved tube from running board.

NOTE: If vehicle has underbody skid panels, remove the extra clamp plate used on the forward mounting area between the mounting bracket and receiver.

6. Remove four nuts, washers, and two clamp plates securing two receivers to studs on mounting brackets (Figure 13-49).

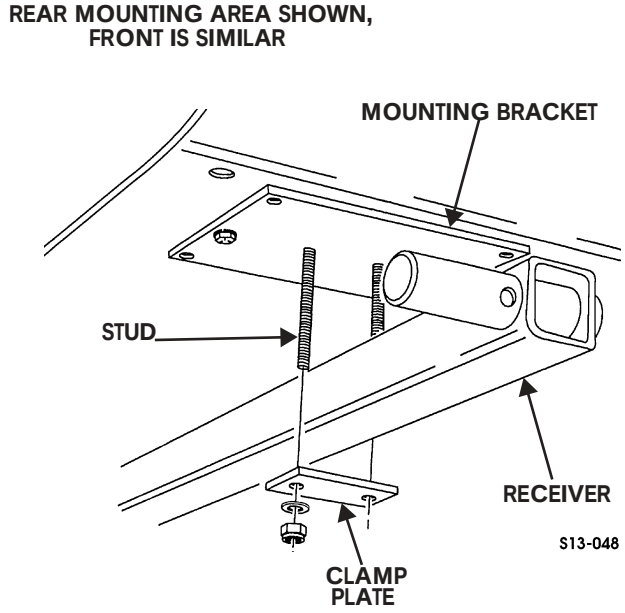


Figure 13-49: Receiver and Clamp Plate

NOTE: If vehicle does not have underbody skid panels, perform steps 7 and 8. If vehicle is equipped with underbody skid panels, perform steps 9 and 10.

7. Remove two capscrews, lockwashers, and rear mounting bracket from body (Figure 13-50).

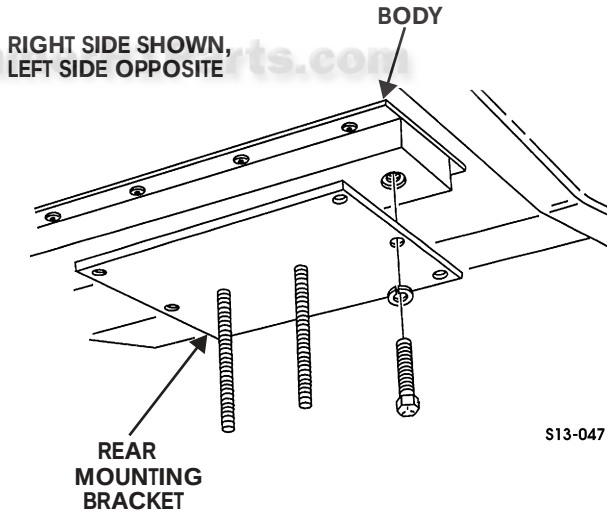


Figure 13-50: Rear Mounting Bracket

8. Remove four capscrews, lockwashers, J-nuts, and front mounting bracket from body (Figure 13-51).

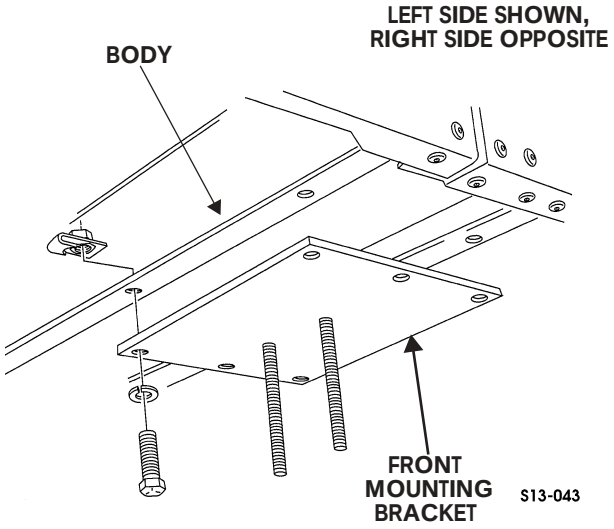


Figure 13-51: Front Mounting Bracket and J-Nut

9. Remove four capscrews, lockwashers, and front mounting bracket from underbody skid panel and body (Figure 13-52).

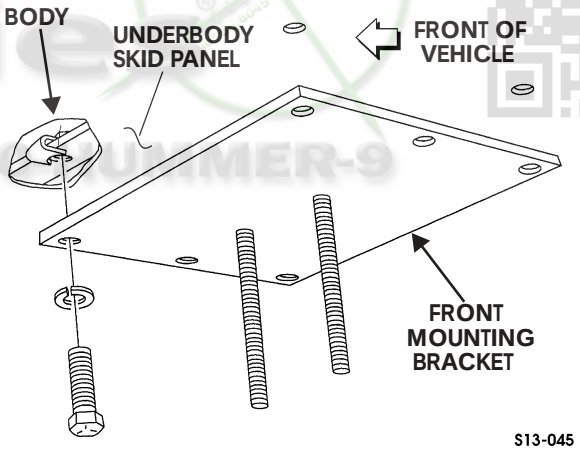


Figure 13-52: Front Mounting Bracket

10. Remove two capscrews, lockwashers, and rear mounting bracket from underbody skid panel and body (Figure 13-53).

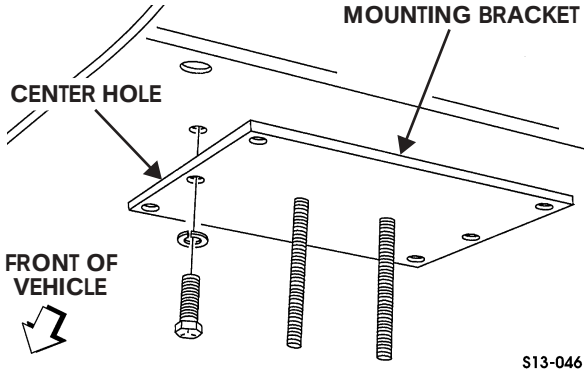


Figure 13-53: Rear Mounting Bracket

Installation

NOTE: If vehicle does not have underbody skid panels, perform steps 1 and 2. If vehicle is equipped with underbody skid panels, perform steps 3 and 4.

1. Install front mounting bracket on body with four J-nuts, lockwashers, and capscrews. Tighten capscrews to 29-31 lb-ft (39-42 N•m) (Figure 13-51).
2. Install rear mounting bracket on body with two lockwashers and capscrews. Tighten capscrews to 29-31 lb-ft (39-42 N•m) (Figure 13-50).
3. Install front mounting bracket on underbody skid panel and body with four lockwashers and capscrews. Tighten capscrews to 29-31 lb-ft (39-42 N•m) (Figure 13-52).

NOTE: If the vehicle does not have underbody protection, an extra clamp plate must be used on the forward mounting area between the mounting bracket and receiver.

4. Install rear mounting bracket on underbody skid panel and body with two lockwashers and capscrews. Tighten capscrews to 29-31 lb-ft (39-42 N•m) (Figure 13-53).
5. Install receiver to studs on two mounting brackets with two clamp plates, four washers, and nuts (Figure 13-49).
6. Remove any extra mounting bracket stud lengths by cutting the stud four thread lengths from the nut.
7. Position right curved tube (with orange plastic bushing) into running board. Ensure right curved tube points toward the side of the running board with the “this side toward frame” decal (Figure 13-48).
8. Position left curved tube (with black plastic bushing) into running board.
9. Position right end cap on right curved tube with screw, nut, and screw.
10. Position left end cap on the left curved tube with screw, nut, and screw.
11. Position two spring clips on receiver. Ensure the spring clips are positioned 180 degrees from each other (Figure 13-47).
12. Secure the right and left curved tubes to the receiver with two pins and clips.

ROOF RACK

Roof Rack Replacement

NOTE: The roof rack is available in three foot, six foot, and nine foot lengths. The following procedure is for a six foot roof rack installed on a station wagon. Three foot and nine foot procedures are similar.

Removal

WARNING: Roof rack is extremely heavy. Several people may be required to remove and install rack safely. Use care in determining ability to lift the rack. Failure to do so may result in injury.

1. Loosen eight support screws on clamps (Figure 13-54).
2. Loosen eight locknuts securing clips to gutter rails.
3. Remove eight clips from under gutter rails and remove rack from vehicle.

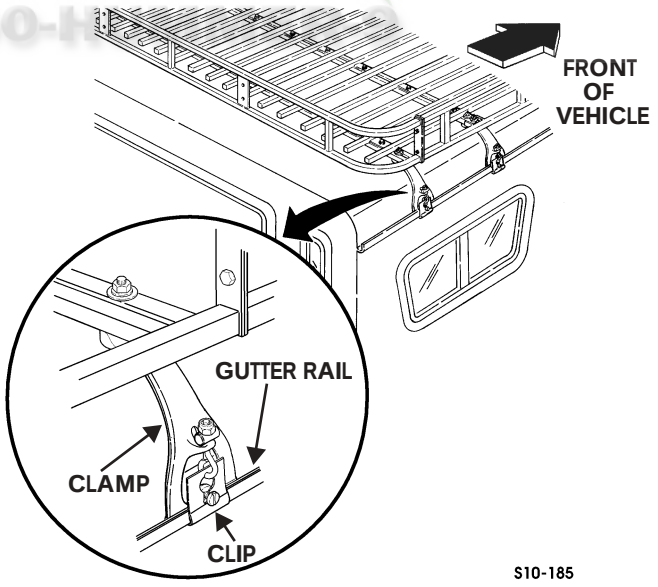


Figure 13-54: Roof Rack Clamp

Installation

CAUTION: *Clamps are made of aluminum. Over-tightening may cause the clamps to crack.*

1. Position roof rack on top of vehicle with rack ends toward front and rear of vehicle (Figure 13-54).
2. Position eight clips (on clamps) under gutter rails and over support screws. Tighten locknuts to 20-25 lb-in. (2-3 N•m).
3. Tighten support screws on clamps.

Roof Rack Floor Piece Replacement

Removal

1. Remove four end caps on floor piece.
2. Remove four locknuts, washers, capscrews, washers, and floor piece from crossbars and rack ends (Figure 13-55).

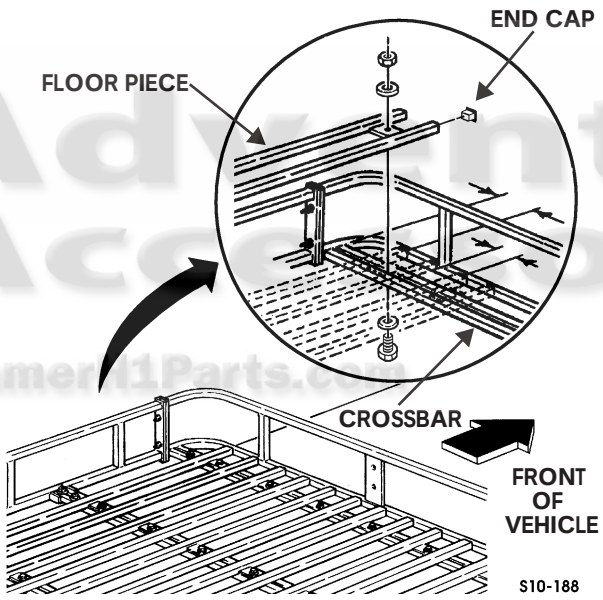


Figure 13-55: Roof Rack Floor Piece

Installation

NOTE: Floor pieces should be positioned 5 inches (13 cm) from the ends and 3 inches (8 cm) apart.

1. Install floor piece on crossbars and rack ends with four washers, capscrews, washers, and locknuts. Tighten locknuts to 25 lb-ft (34 N•m) (Figure 13-55).

NOTE: Apply a small amount of adhesive to each end cap before installing it on the floor piece.

2. Install four end caps on floor piece.

Roof Rack Crossbar Replacement

Removal

1. Remove roof rack from vehicle.
2. Remove ten floor pieces from roof rack.
3. Remove four locknuts, washers, capscrews, washers, and crossbar from sides (Figure 13-56).

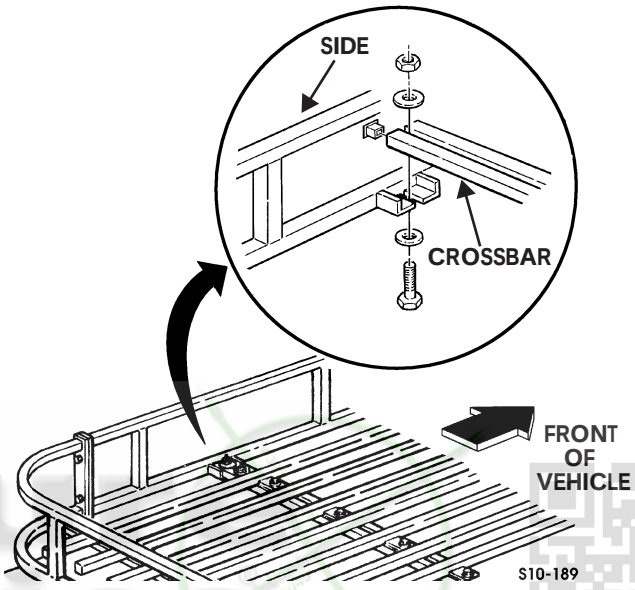


Figure 13-56: Roof Rack Crossbar

Installation

1. Install crossbar on sides with four washers, capscrews, washers, and locknuts. Tighten locknuts to 25 lb-ft (34 N•m) (Figure 13-56).
2. Install ten floor pieces on roof rack.
3. Install roof rack onto vehicle.

Roof Rack End Replacement

Removal

Remove four capscrews, locknuts, and rack end from sides (Figure 13-57).

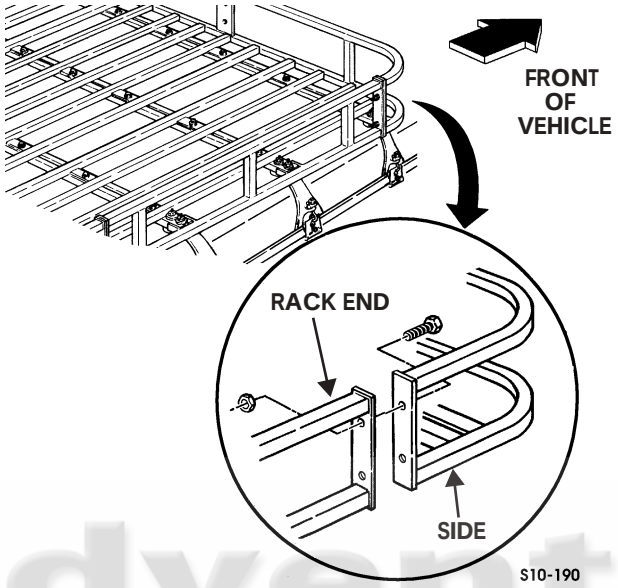


Figure 13-57: Roof Rack End

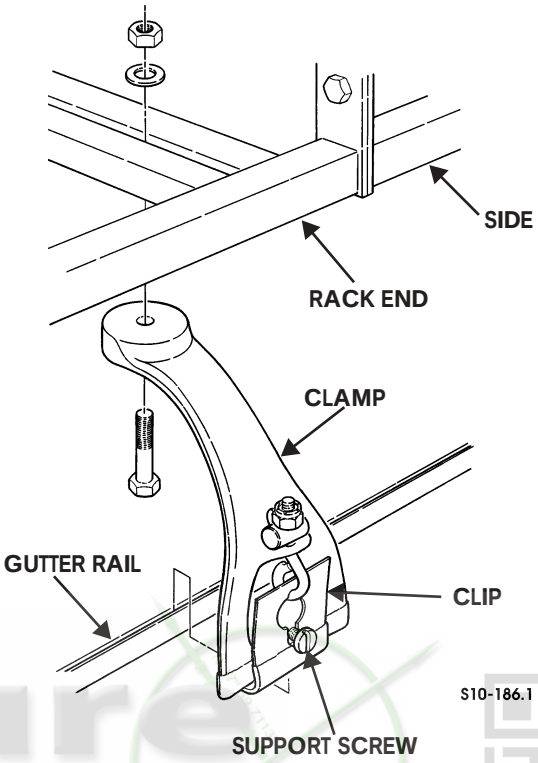


Figure 13-58: Roof Rack Clamp

Installation

Install rack end on sides with four capscrews and locknuts. Tighten locknuts to 15 lb-ft (20 N•m) (Figure 13-57).

Roof Rack Clamp Replacement

Removal

1. Loosen support screw on clamp securing clip to clamp (Figure 13-58).
2. Loosen locknut securing clip to gutter rail.
3. Remove clip from under gutter rail.
4. Remove locknut, washer, capscrew, and clamp from roof rack.

Installation

1. Install clamp on roof rack with capscrew, washer, and locknut.
2. Position clip under gutter rail and over support capscrew.
3. Tighten locknut securing clip to gutter rail to 20-25 lb-in (2-3 N•m).
4. Tighten support screw on clamp. Tighten locknut installed in step 1 to 25 lb-ft (34 N•m).

AUXILIARY AIR HOSE REPLACEMENT

Removal

1. Raise and secure hood.
2. Turn tire selector switch and CTIS inflate/deflate switch to OFF, then shut off engine.

WARNING: CTIS air system components are subject to high air pressure. Always relieve air pressure before loosening or removing air system component(s) by disconnecting quick-disconnect valves. Failure to follow this warning may result in serious personal injury.

3. Disconnect CTIS by depressing metal tab on quick-disconnect valve body. The valve body will pop out approximately 1/4 in. (6 mm) from shuttle. Perform this procedure on remaining three wheels (Figure 13-59).
4. Remove nut securing CTIS hose to connector and remove the ferrule and insert. The nut, ferrule, and insert are part of connector (Figure 13-60).
5. Remove connector and auxiliary air valve from tee.
6. Remove auxiliary tee from existing tee.

Installation

1. Ensure tire selector control knob is in the OFF position.

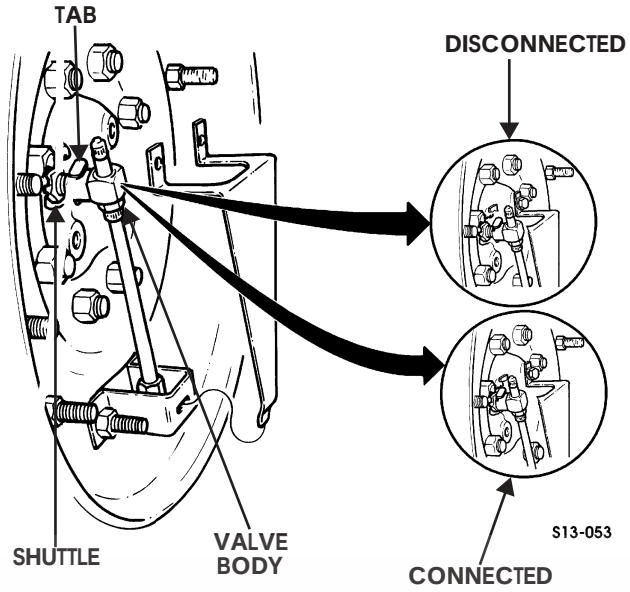


Figure 13-59: CTIS Quick-Disconnect Valve

NOTE: Ensure that any new fittings have pipe sealant pre-applied to threads. If none is present, apply a pipe sealant to fitting threads.

2. Secure auxiliary air hose tee to existing tee on compressor (Figure 13-60).
3. Secure connector and auxiliary air valve to tee.
4. Secure CTIS hose to connector with the nut, ferrule, and insert.
5. Connect CTIS by pushing in quick-disconnect valve body until valve tee section locks (clicks) into place. Perform this procedure on remaining three wheels (Figure 13-59).
6. Start engine and check CTIS for air leaks around installed fittings.
7. Position tire selector switch and CTIS inflate/deflate switch to OFF, then shut off engine.
8. Lower and secure hood.

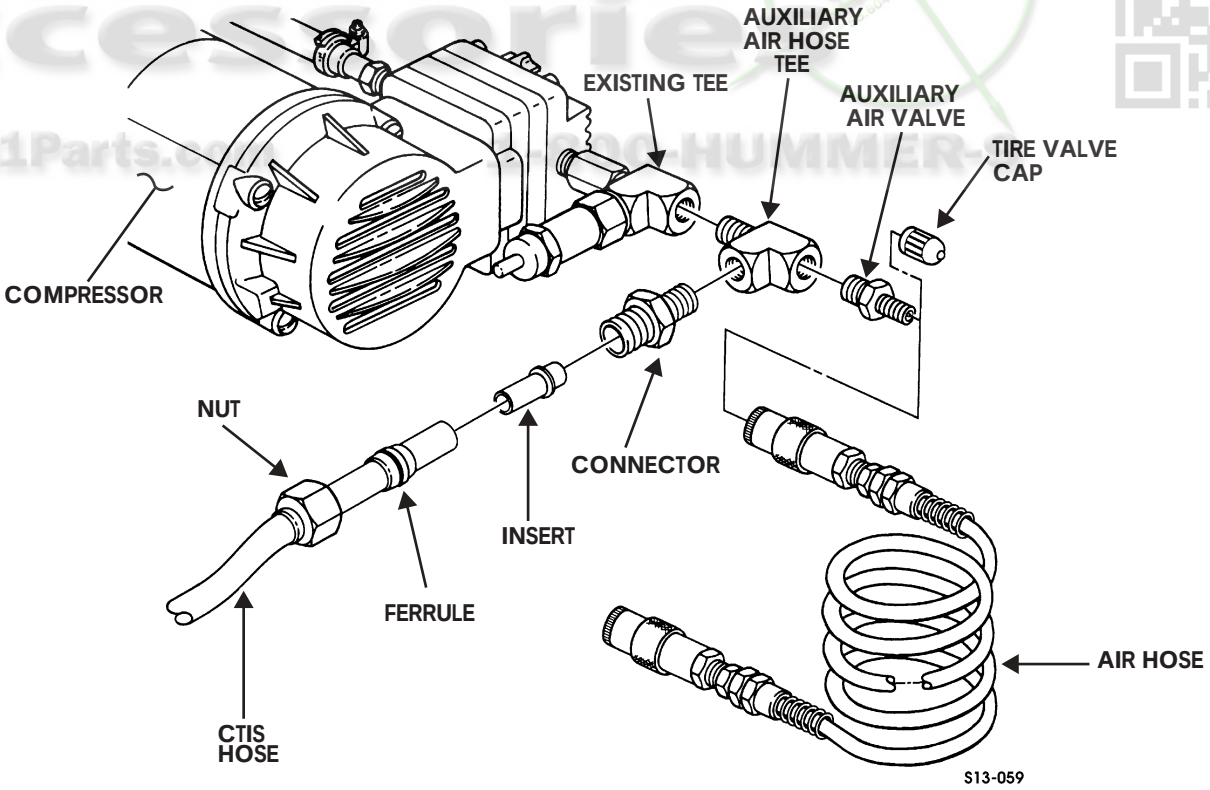


Figure 13-60: CTIS Auxiliary Air Hose

CRUISE CONTROL SYSTEM

General

HUMMERS may be equipped with an electronic cruise control system. This system operates without vacuum, enabling it to be used on the HUMMER regardless of which engine is used.

This system has three major components:

1. Cruise Control Module. This module collects data and inputs from several areas of the vehicle and sends appropriate commands to the control actuator unit (Figure 13-61).

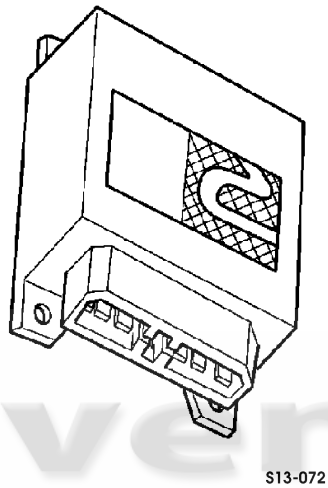


Figure 13-61: Cruise Control Module

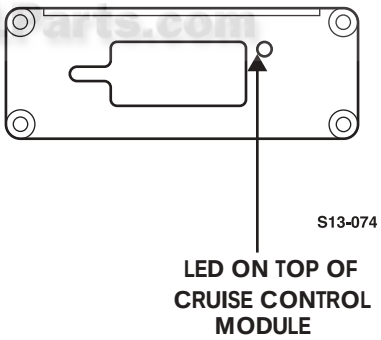


Figure 13-62: LED On Cruise Control Module

2. Electronic Control Actuator. This component is capable of controlling the throttle movement and has the ability to release the throttle to idle rapidly when brakes are applied (Figure 13-63).

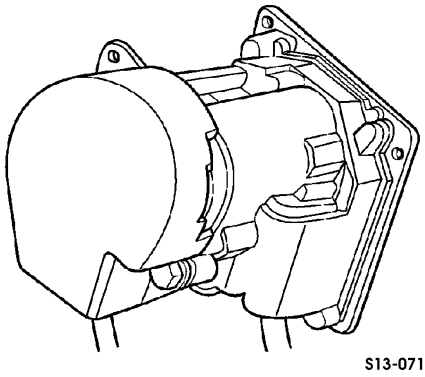


Figure 13-63: Electronic Control Actuator

3. Turn Signal Stalk Lever Assembly. This unit replaces the standard turn signal lever. This new stalk incorporates all of the functions of the original lever and adds the SET OFF, ON, and RESUME/ACCEL functions of the cruise control. The slide switch is on the face of the lever. The SET button is recessed into the end (Figure 13-64).

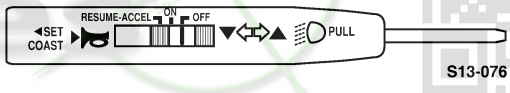


Figure 13-64: Turn Signal Lever With Cruise Control

Diagnosing Problems

1. Road test vehicle to determine if cruise is operating and verify complaint. Look for proper operation at steady speeds and check all switch positions. Verify operation of speedometer.
2. If cruise does not function at all, check LED per following procedure:
   a. Locate cruise control module located to left of steering column under instrument panel.
   b. Gently disengage velcro retainer and position module where LED on opposite end from harness can be seen (Figures 13-61 and 13-62).
   c. Turn cruise control OFF, set parking brake and place transmission in overdrive position.
   d. Turn key to RUN but do not start.
   e. Turn cruise switch ON - LED should not light. If LED is lit, check brake switch and/or neutral switch adjustment.

f. Depress the SET button - LED should illuminate. If not, check fuse # 7C (10 amp) and 10 amp fuse in harness. If there is 12V present at switch connector, replace switch.

g. Press switch to RESUME - LED should be on. If not, check per step f.

h. Press brake switch - LED should be on. If not, check brake switch or fuse 4D (15 amp).

i. Place transmission in P or N position - LED should be ON. If not, check neutral switch circuit.

3. Perform functional test per following steps:

a. With transmission in overdrive, set parking brake, and block wheels.

b. Turn cruise control switch to OFF. Turn ignition to RUN. Do not start.

c. Depress and hold SET button, and slide cruise switch to ON position.

d. Release then depress the SET button to activate the actuator unit. The actuator will slowly move the throttle to Wide Open Throttle (WOT).

e. Verify that throttle is in WOT position when actuator stops movement.

f. When unit has reached WOT, slide the switch to the RESUME/ACCEL position. The throttle should slowly return to idle position. Release when throttle returns to idle.

g. Press and hold SET button until WOT is obtained. Step on brake pedal. Throttle should quickly return to idle.

h. Press SET button again to achieve WOT. Place transmission in P or N. Throttle should return to idle quickly.

Table 13-1 Cruise Control Harness Connector

PIN	Circuit Description	Body Harness Wire Color	Cruise Control Harness Wire Color
A	Brake Switch	DK Green	Black
B	Brake Switch	DK Blue	Black
C	Blank	Blank	Blank
D	Brake Switch - Cold Side	Red	Violet
E	Brake Switch - Hot Side	Orange	Red
F	Neutral Switch	White	DK Blue
G	Speed Signal	Gray	Gray
H	Ground	Blank	Blank
J	Blank	Blank	Blank
K	Ignition +12 Volt DC	Brown	Brown

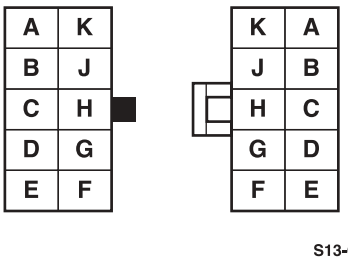


Figure 13-65: Cruise Control Harness

4. Should a unit pass the LED test but fail the functional test procedures, check the actuator module for a disconnected or broken cable. If no mechanical problems found, replace actuator and retest system.

5. Should a unit not pass LED testing, refer to each test and check the designated switch or circuit. See Table 13-1 for more information on the Cruise Control Harness Connector. (Figure 13-65)

6. If the unit passes both tests but does not operate on road, drive vehicle with module LED where it can be seen. The LED should flash with vehicle moving down the road (speed approximately 30 mph.)

7. If no LED flash is noted in step 6, check connections to Digital Ratio Adapter.

Cruise Control Actuator and Mounting Bracket Replacement - Early Build Vehicles

NOTE: The following procedure applies to early 1995 vehicles.

NOTE: There are two different types of actuator/cruise control cables. Early 1995 vehicles have adjusting nuts and a separate spacer (Figure 13-67). Late 1995 vehicles have a "snap-in" mounting grommet and integrated spacer (Figure 13-71).

Removal

1. Disconnect the actuator/cruise control cable electrical connectors from the cruise control harness connectors (Figure 13-66).

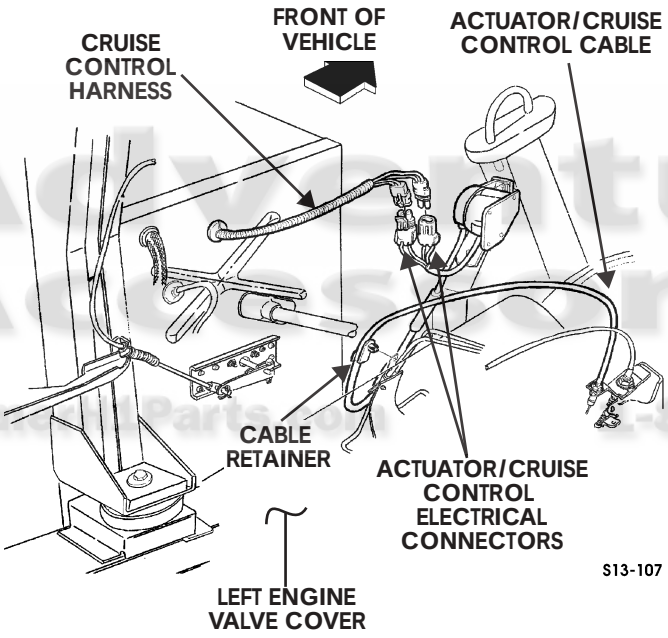


Figure 13-66: Actuator Electrical Connector Location

2. Remove cable retainer and actuator/cruise control cable from injector tube retainer on engine valve cover (Figure 13-66).
3. Remove retaining clip, accelerator cable, washer, cruise control cable linkage, and spacer from throttle shaft stud (Figure 13-67).
4. Loosen adjusting nuts and remove actuator/cruise control cable from cruise control bracket (Figure 13-67).
5. Remove bolts, nuts, washers, and actuator from actuator mounting bracket (Figure 13-68).
6. Remove bolts, nuts, washers, and mounting bracket from vehicle frame.

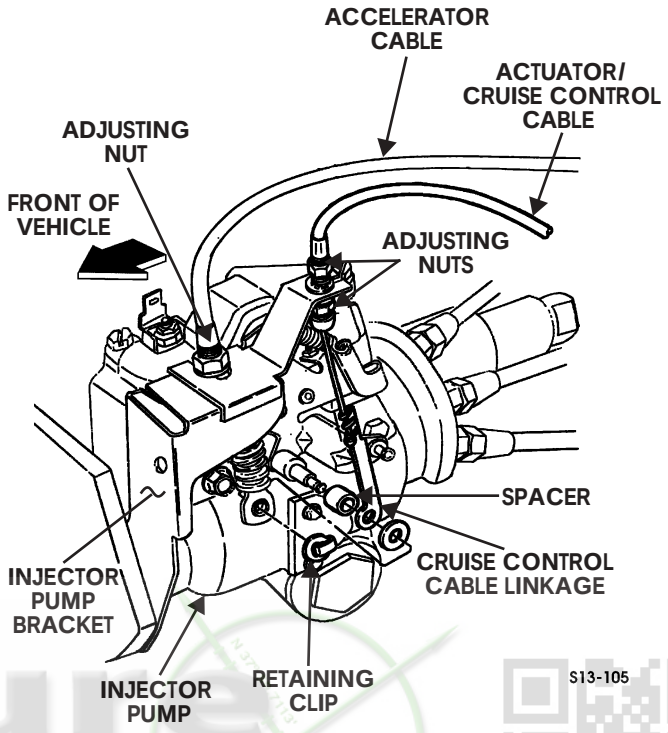


Figure 13-67: Actuator/Cruise Control Cable Mounting

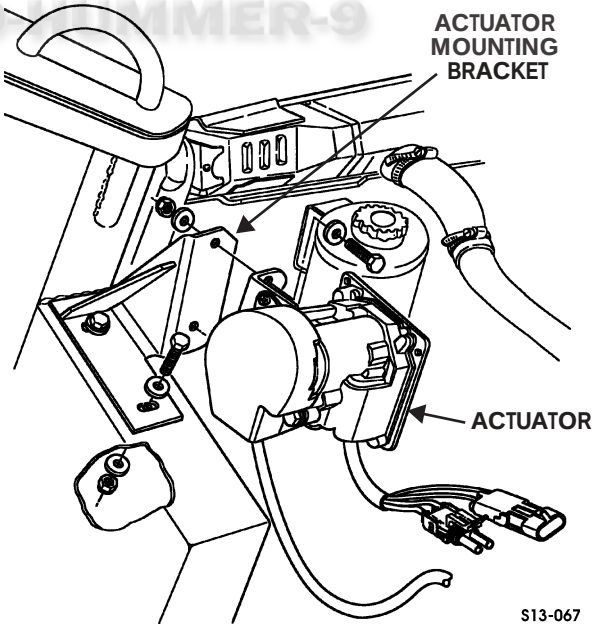


Figure 13-68: Actuator and Mounting Bracket Breakdown

Installation

1. Secure actuator mounting bracket to vehicle frame with bolts, washers, and nuts.
2. Secure actuator to actuator mounting bracket with bolts, washers, and nuts (Figure 13-68).
3. Connect actuator/cruise control electrical connectors to cruise control harness connectors (Figure 13-66).
4. Route actuator/cruise control cable to the top of the engine and secure cable to cruise control bracket on injector pump with adjusting nuts (Figure 13-67).
5. Secure spacer, cruise control cable linkage, washer, and accelerator cable to throttle shaft stud with retaing clip (Figure 13-67).

NOTE: Actuator/Cruise control cable eyelet must face the front of the vehicle.

6. Secure cable retainer and actuator/cruise control cable to injector tube retainer on engine valve cover (Figure 13-66).

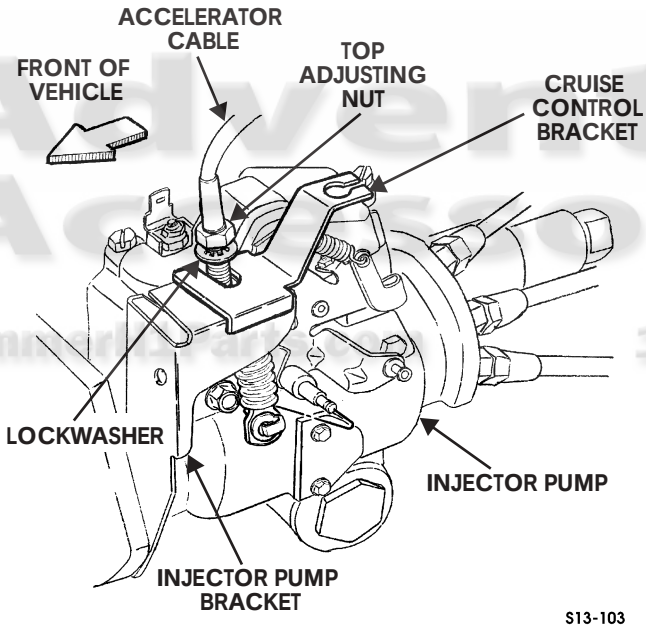


Figure 13-69: Accelerator Cable Mounting

Adjustment

1. Depress accelerator pedal, and hold throttle shaft lever in full throttle position.
2. Adjust accelerator cable adjusting nuts so cable end holds throttle shaft lever in full throttle position. Tighten adjusting nuts (Figure 13-69).
3. Release accelerator pedal. Ensure throttle shaft lever returns to idle position.
4. Loosen actuator/cruise control cable adjusting nuts and position cable in cruise control bracket with one adjusting nut and lockwasher on either side of bracket (Figure 13-67).
5. Adjust cable in bracket to allow for 1/4 inch of horizontal movement of cable at idle. Tighten adjusting nuts.

Cruise Control Actuator and Mounting Bracket Replacement - Late Build Vehicles

NOTE: The following procedure applies to late 1995 vehicles.

NOTE: There are two different types of actuator/cruise control cables. Early 1995 vehicles have adjusting nuts and a separate spacer (Figure 13-67). Late 1995 vehicles have a "snap-in" mounting grommet and integrated spacer (Figure 13-71).

Removal

1. Disconnect the actuator/cruise control cable electrical connectors from the cruise control harness connectors (Figure 13-70).

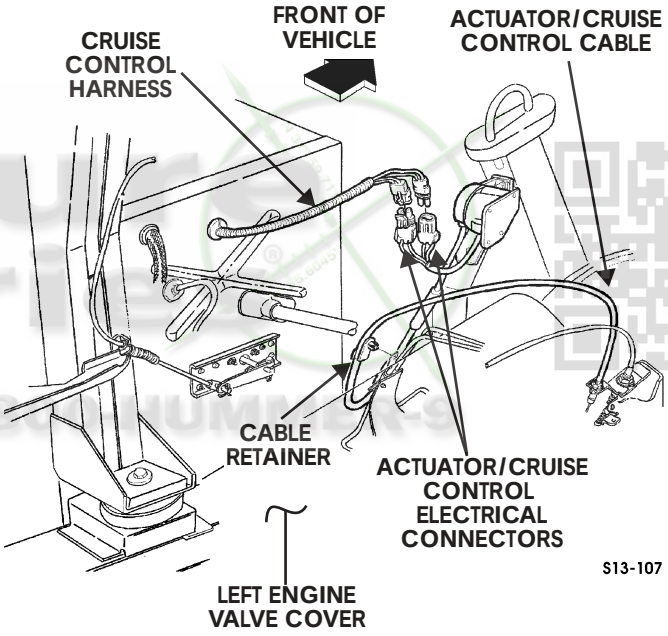


Figure 13-70: Actuator Electrical Connector Location

2. Remove cable retainer and actuator/cruise control cable from injector tube retainer on engine valve cover (Figure 13-70).
3. Remove retaining clip, accelerator cable and cruise control cable linkage from throttle shaft stud (Figure 13-71).
4. Depress plastic tabs on cable mounting grommet. Pull grommet and actuator/cruise control cable from cruise control bracket (Figure 13-71).
5. Remove bolts, nuts, washers and actuator from actuator mounting bracket (Figure 13-72).
6. Remove nuts, washers, bolts, and mounting bracket from vehicle frame.

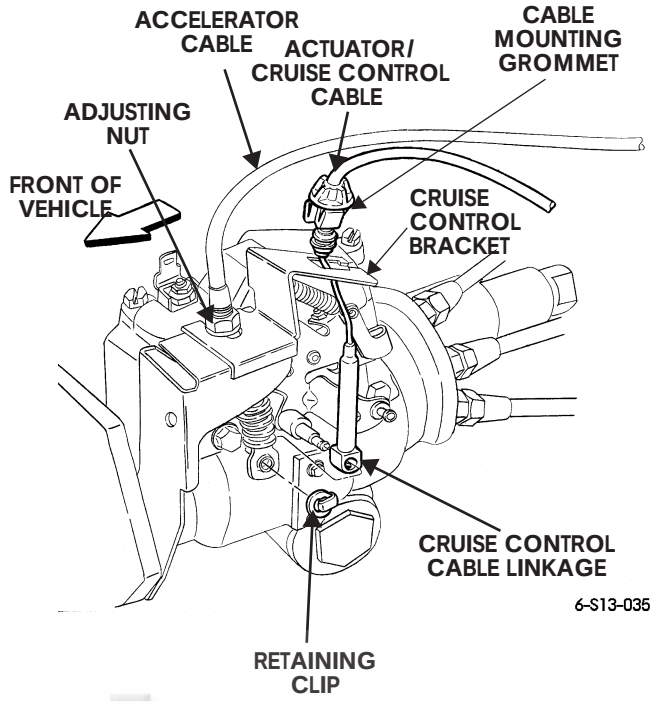


Figure 13-71: Actuator /Cruise Control Cable Mounting

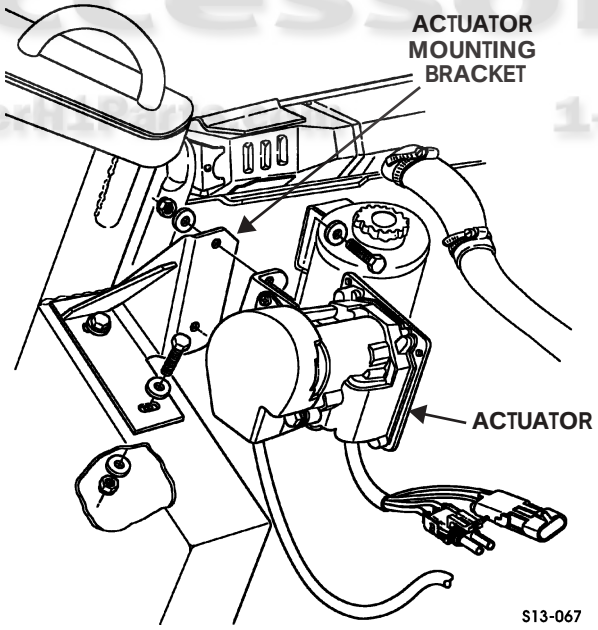


Figure 13-72: Actuator and Mounting Bracket Breakdown

Installation

1. Secure actuator mounting bracket to vehicle frame with bolts, washers, and nuts.
2. Secure actuator to actuator mounting bracket with bolts, washers, and nuts (Figure 13-72).
3. Connect actuator/cruise control electrical connectors to cruise control harness connectors (Figure 13-70).
4. Route actuator/cruise control cable to the top of the engine and snap cable mounting grommet securely into cruise control bracket. (Figure 13-71).
5. Secure cruise control cable linkage and accelerator cable to throttle shaft stud with retaining clip (Figure 13-71).

NOTE: Actuator/Cruise control cable eyelet must face the front of the vehicle.

6. Secure cable retainer and actuator/cruise control cable to injector tube retainer on engine valve cover (Figure 13-70).

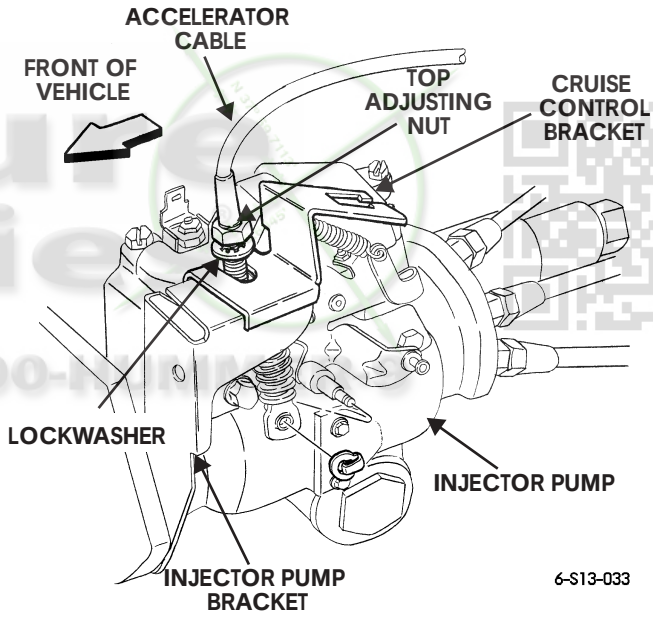


Figure 13-73: Accelerator Cable Mounting

Adjustment

1. Depress accelerator pedal, and hold throttle shaft lever in full throttle position.
2. Adjust accelerator cable adjusting nuts so cable end holds throttle shaft lever in full throttle position. Tighten adjusting nuts (Figure 13-73).
3. Release accelerator pedal. Ensure throttle shaft lever returns to idle position.
4. Adjust actuator/cruise control cable to allow for 1/4 inch of horizontal movement of cable at idle.

Cruise Control Module Replacement

Removal

1. Disconnect cruise control harness connector from module (Figure 13-74).

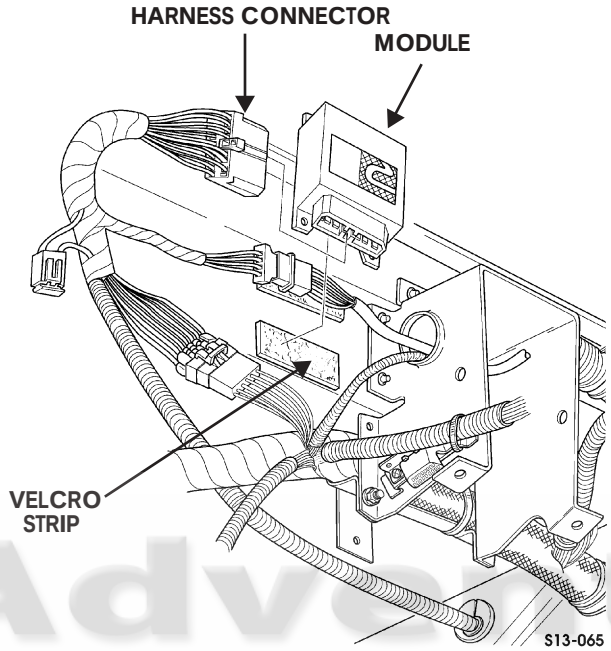


Figure 13-74: Cruise Control Module

2. Remove module from two velcro strips.
3. Inspect two velcro strips and replace if damaged.

Installation

1. Install module on two velcro strips.
2. Connect cruise control harness connector to module (Figure 13-74).

Cruise Control/Turn Signal Switch Replacement

Removal

1. Remove steering column covers from steering column (Section 8).
2. Disconnect switch connector from cruise control harness connector (Figure 13-75).
3. Pull switch out of steering column.

Installation

1. Install switch in steering column (Figure 13-75).
2. Route switch connector through hole in steering column mounting bracket and connect to cruise control harness connector.
3. Install steering column covers on steering column (Section 8).

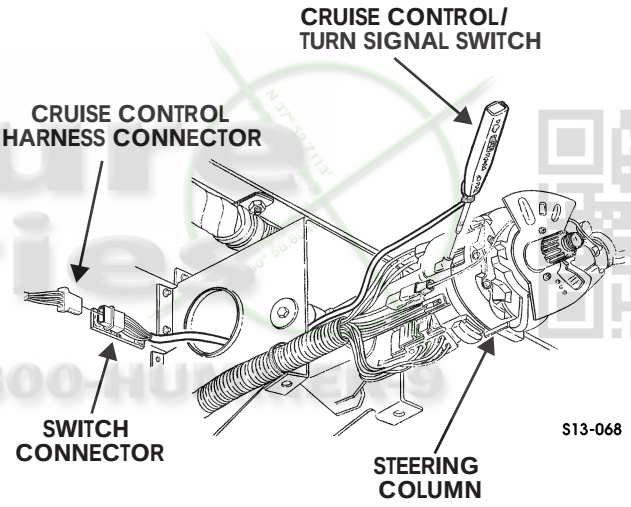


Figure 13-75: Cruise Control/Turn Signal Switch

Cruise Control Harness Replacement

NOTE: Tag leads for installation.

Removal

1. Disconnect two harness connectors from actuator connectors (Figure 13-76).
2. Disconnect harness connector from module (Figure 13-77).
3. Disconnect harness connector from cruise control/turn signal switch connector.
4. Disconnect harness connector from body wiring harness connector.
5. Remove harness and grommet from body.

Installation

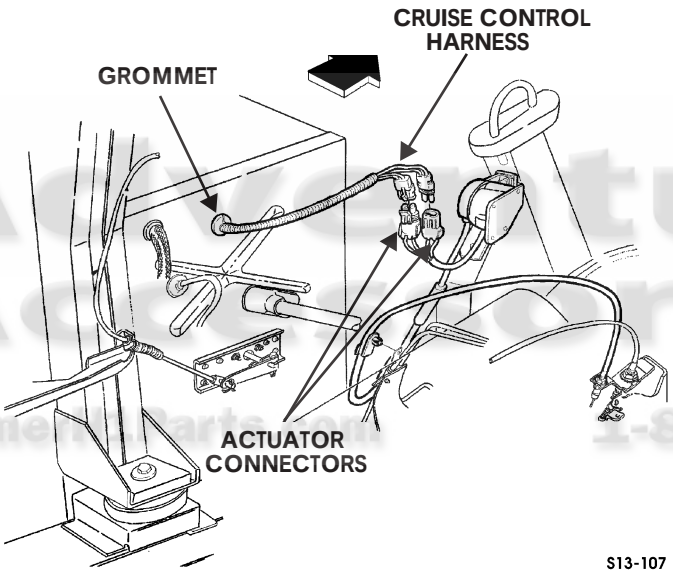


Figure 13-76: Actuator Connectors

1. Install grommet and harness on body (Figure 13-76).
2. Connect harness connector to body wiring harness connector.
3. Connect harness connector to cruise control/turn signal switch connector.
4. Connect harness connector to module.
5. Connect two harness connectors to actuator connectors (Figure 13-77).

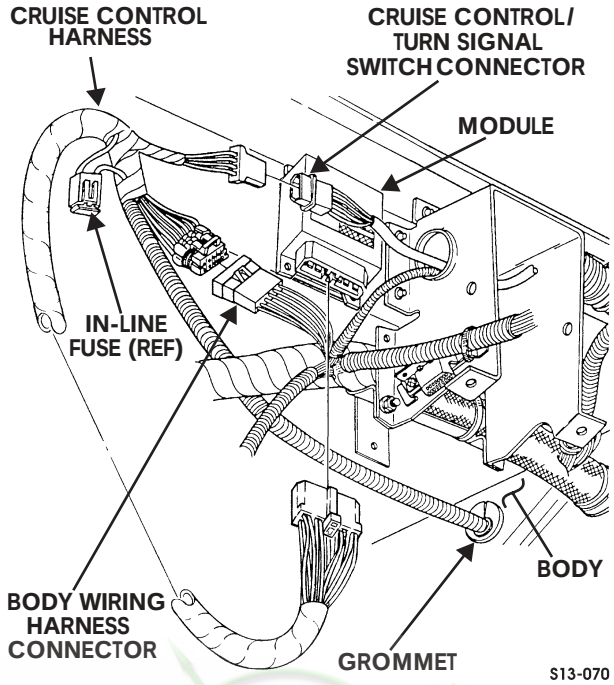


Figure 13-77: Cruise Control Harness

Static Test for Proper Operation of Cruise Control System

This static test should determine that the cruise control system:

- is operating correctly
- is adjusted so that it is capable of near wide open throttle (WOT)
- will disengage when the brake pedal is depressed and when the transmission is shifted to Neutral.

NOTE:
This is a static test and is to be performed with the engine not running and with the parking brake applied.

Static Test of Cruise Control System

1. Turn cruise control to OFF using turn signal stalk control and place transmission shift lever to Park position.
2. Turn ignition switch to the ON position, BUT DO NOT START THE ENGINE.
3. Put the transmission in Overdrive (engine is OFF).
4. Press the SET/COAST button on stalk control and hold it in.
5. Turn cruise control to the ON position on the stalk control.
6. Release the SET/COAST button; press it again and hold it in.
7. Throttle should move slowly to WOT (35-40 seconds).
8. Check for WOT.
9. Release SET/COAST button, press and hold the RESUME/ ACCEL button. Observe throttle pedal moving back to idle position.
10. Release RESUME/ ACCEL button when throttle pedal is returned to idle position.
11. Press SET/COAST button and hold until throttle pedal begins moving.
12. Step on brake and note that throttle pedal is returned to idle position.
13. Press SET/COAST button and hold until throttle begins to move.
14. Move transmission shift lever from Overdrive to Neutral and note that throttle pedal is returned to idle position.
15. Turn off cruise control and ignition switch and return shift lever to Park position.

Road Test of Cruise Control System

NOTE:
Road test should be performed only when weather conditions permit and all traffic laws are obeyed.

1. Accelerate vehicle speed to 40-50 MPH with transmission in Overdrive.
2. Engage the cruise system by depressing the SET/COAST button and then releasing it (slider switch must be in the ON position). The cruise speed will be the vehicle speed at the time the push button is released.
3. Move the slider to the OFF position. The cruise should become disengaged and vehicle speed should decrease.
4. Repeat steps 1 and 2.
5. Depress the brake pedal. The cruise system should disengage and vehicle speed should decrease.
6. Repeat steps 1 and 2.
7. Move transmission shift lever into neutral position. The cruise system should disengage and vehicle speed should decrease. Cruise control system should not engage when transmission is shifted back into Overdrive.
8. Repeat steps 1 and 2.
9. Depress the accelerator pedal to accelerate vehicle speed then release accelerator pedal. Vehicle speed should return to set cruise speed.
10. Hold in SET/COAST button. Vehicle speed should decrease.
11. Release SET/COAST button. Vehicle speed should set at the time the SET/COAST button is released.
12. Accelerate vehicle to 40-50 MPH by moving and holding the slider to RESUME/ACCEL position. Vehicle should accelerate at a controlled rate. The cruise should set at the time the slider is released.
13. Depress the brake pedal allowing the vehicle speed to drop 5-10 MPH. Move and hold the slider to the RESUME/ACCEL position for less than 1.5 seconds then release. Vehicle should accelerate at a controlled rate until vehicle speed returned to the last speed stored in memory.
14. With the cruise control engaged and maintaining a speed of 50 MPH, tap and release set button; vehicle speed should decrease 1 MPH. For additional speed reduction, tap and release again for an additional 1 MPH decrease. To increase the speed in 1 MPH increments, move the RESUME/ACCEL switch to the left and release, and repeat for additional speed increases.

NOTE:If you have static tested and road tested the Cruise Control System and the system still isn't operating properly, refer to the diagnostic portion of Section 13 in the Service Manual.

POWER WINDOWS

Power Window Regulator Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove power window and door lock switches from door. Disconnect switches from power window and door lock harness connectors.
3. Remove door trim and vapor barrier (Section 10).

CAUTION: *Support window during regulator removal to avoid damage.*

NOTE: Prior to removal, mark location of screws for installation.

4. Disconnect power window and door lock harness connector from regulator motor (Figure 13-78).
5. Remove two screws and lockwashers securing regulator bracket to door. Discard lockwashers.
6. Remove screw, lockwasher, and regulator bracket from regulator. Discard lockwashers.
7. Remove screw securing regulator motor to door.
8. Remove four screws and lockwashers cable and bracket assembly to door. Discard lockwashers.
9. Remove two screws, lockwashers, and washers securing regulator cable and bracket assembly to window bracket. Discard lockwashers.
10. Remove tie strap and regulator from door. Discard tie strap.

Installation

1. Install regulator in door and secure with tie strap (Figure 13-78).
2. Secure regulator cable and bracket assembly to window bracket with two washers, lockwashers, and screws.
3. Secure regulator cable and bracket assembly to door with four lockwashers and screws.
4. Secure regulator motor to door with screw.
5. Install regulator bracket on door with two lockwashers and screws.
6. Secure regulator bracket to regulator with lockwasher and screw.
7. Connect power window and door lock harness connector to regulator motor.
8. Install door trim and vapor barrier (Section 10).
9. Install power window and door switches on door. Connect power window and door lock harness connectors to switches.
10. Connect battery ground cable (Section 12).

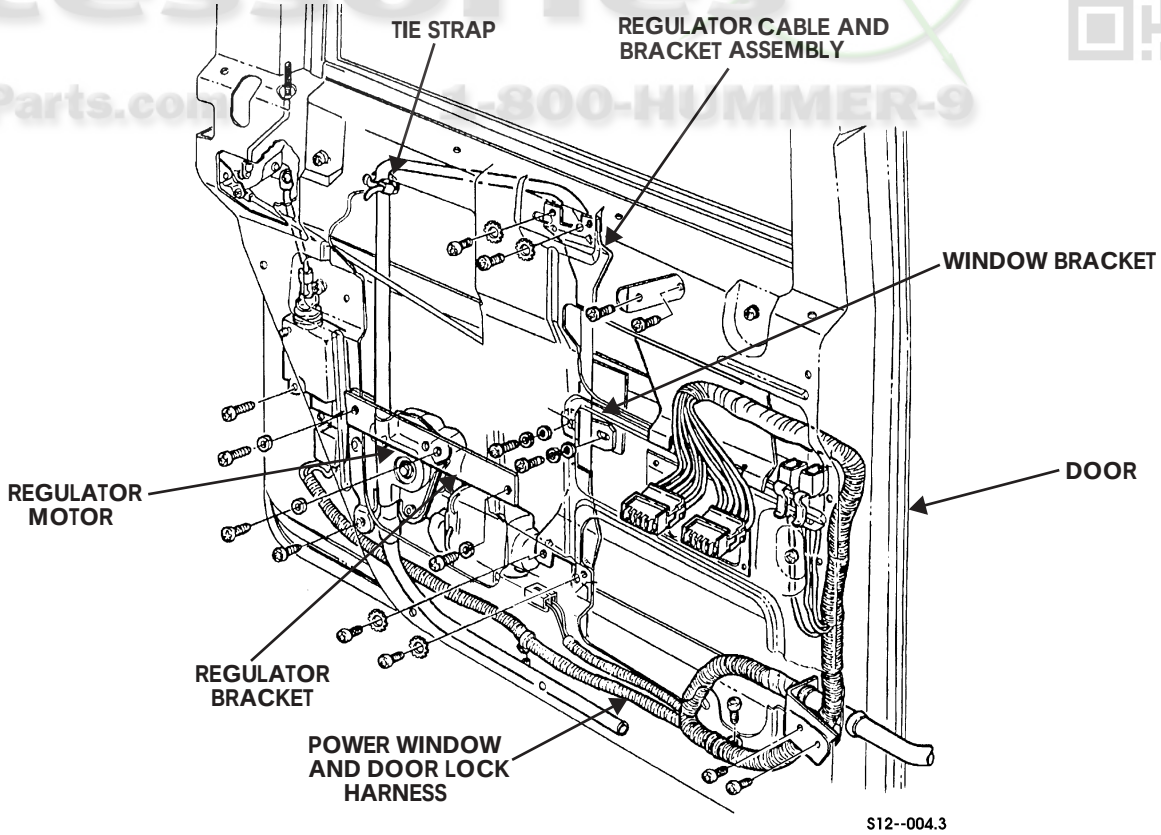


Figure 13-78: Power Window Regulator

Power Window and Lock Switches Replacement (Instrument Panel Mounted)

NOTE: This procedure covers replacement of the power window and lock switches mounted on the instrument panel. For replacement of the power window switches mounted on the front and rear doors, refer to this section.

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove four screws, power window plate, and four J-nuts from instrument panel (Figures 13-79 and 13-80).

NOTE: Tag leads for installation.

NOTE: Perform step 3 for two-door models. Perform step 4 for four-door models.

3. Disconnect harness connector from power window switch and harness connector from power windows lock switch (Figures 13-79 and 13-80).
4. Disconnect three harness connectors from power window switches and one harness connector from power window lock switch (Figures 13-79 and 13-80).
5. Remove switches from plate.

Installation

1. Install power window and lock switches on plate (Figures 13-79 and 13-80).

NOTE: Perform step 2 for two-door models. Perform step 3 for four-door models.

2. Connect harness connector to power window switch, and harness connector to power windows lock switch (Figures 13-79 and 13-80).
3. Connect three harness connectors to power window switches, and one harness connector to power window lock switch (Figures 13-79 and 13-80).
4. Install plate on instrument panel with four J-nuts and screws.
5. Connect battery ground cable (Section 12).
6. Check power window and lock switches for proper operation.

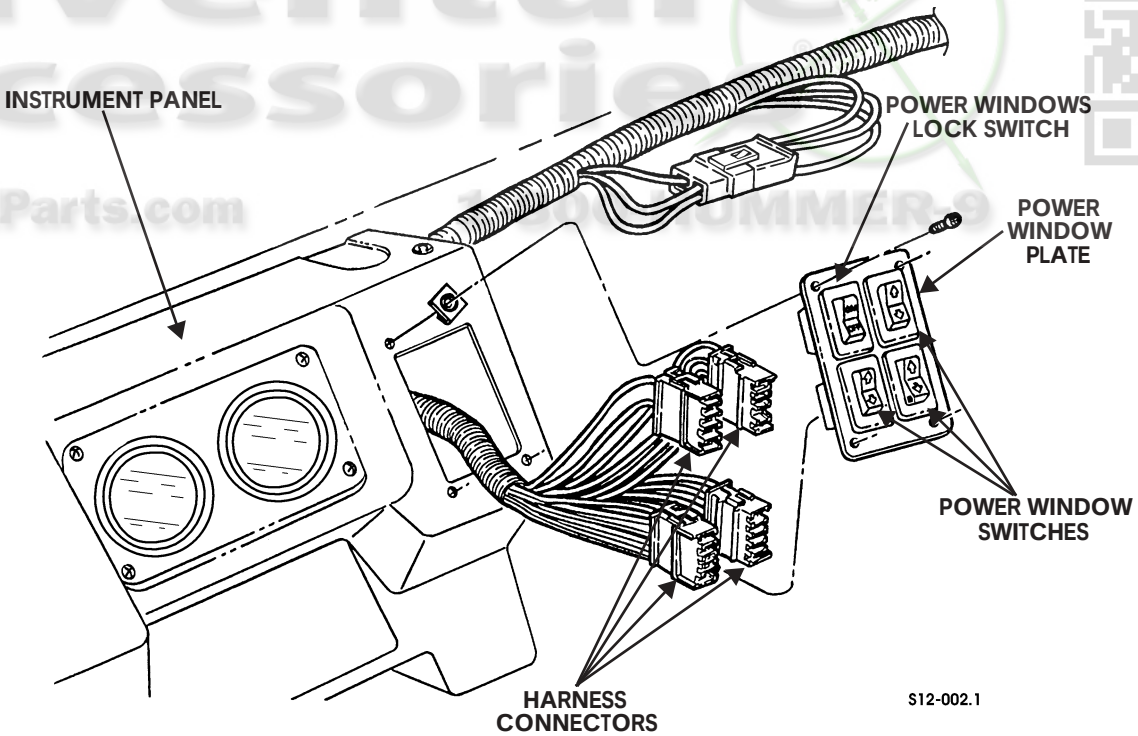


Figure 13-79: Power Windows and Lock Switches - 4-Door Models

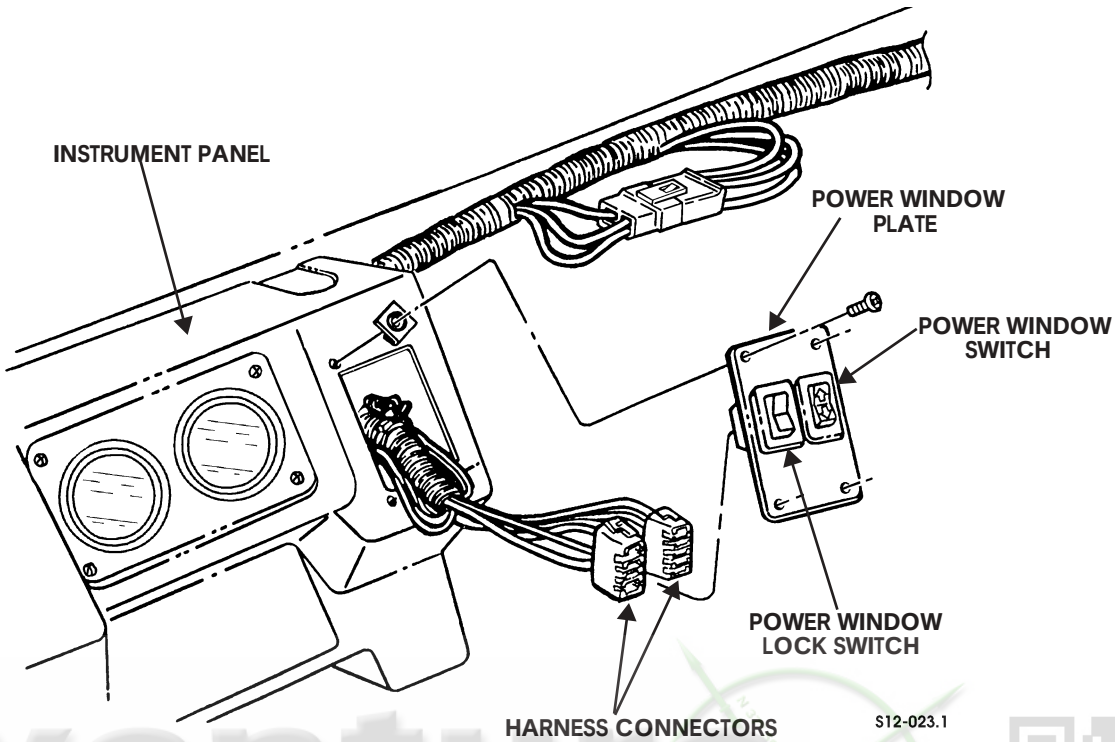


Figure 13-80: Power Window and Lock Switches - 2-Door Models

Power Window And Door Lock Switches Replacement (Front Door Mounted)

NOTE: This procedure covers replacement of the power window and door lock switches mounted on the dual switch bezel on the front door. For replacement of the power door locks switch mounted on a single switch bezel (not including the power window switch), refer to Section 12. For replacement of the power window switches on the rear doors and on the instrument panel, refer to this section.

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove two screws, dual switch bezel, and two J-nuts from door (Figure 13-81).

NOTE: Tag leads for installation.

3. Remove two door harness connectors from power window switch and power door locks switch.
4. Remove switches from dual switch bezel

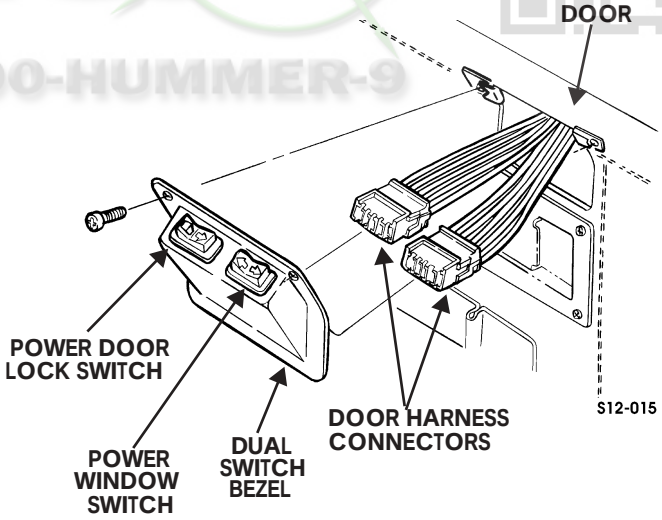


Figure 13-81: Power Window and Door Lock Switches (Front Door Mounted)

Installation

1. Install power window and power door lock switches on dual switch bezel (Figure 13-81).
2. Connect two door harness connectors to power windows switch and power door locks switch.
3. Install dual switch bezel on door with two J-nuts and screws.
4. Connect battery ground cable (Section 12).
5. Check power windows and door locks for proper operation.

Power Window Switch Replacement (Rear Door Mounted)

NOTE: This procedure covers replacement of the power window switch mounted on the rear door. For replacement of the power windows switches mounted on the front doors and on the instrument panel, refer to this section.

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove two screws, single switch bezel, and two J-nuts from door (Figure 13-82).
3. Remove door harness connector from power window switch.
4. Remove switch from single switch bezel.

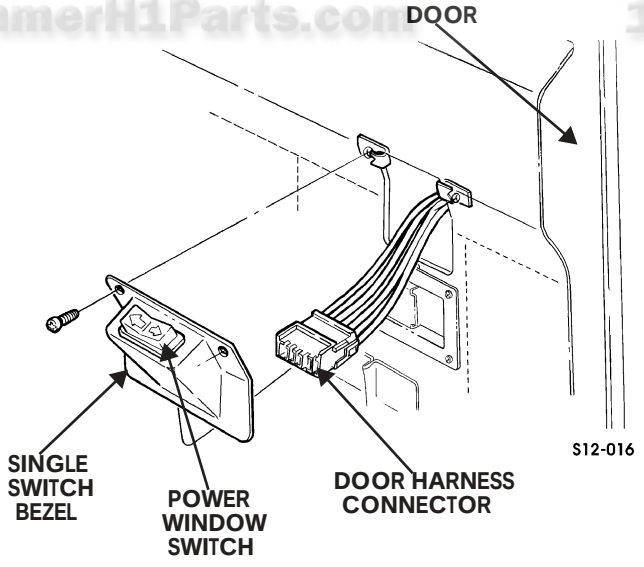


Figure 13-82: Power Window Switch (Rear Door Mounted)

Installation

1. Install power window switch on single switch bezel.
2. Connect door harness connector to switch.
3. Install single switch bezel on door with two J-nuts and screws.
4. Connect battery ground cable (Section 12).
5. Check power window for proper operation.

Power Window and Door Locks Front Door Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove front outer kick panels (Section 10).
3. Remove power window and door lock switches from door.
4. Remove front door trim, vapor barrier, and moisture barrier flap from door (Section 10).

NOTE: Tag leads for installation.

5. Disconnect 4-way and 6-way harness connectors from power windows and door locks body harness connectors (Figure 13-83).

NOTE: Perform step 6 for vehicles equipped with power mirrors.

6. Disconnect two harness connectors from power mirrors body harness connectors.
7. Remove screw, nut and lockwasher assembly, and clamp securing harness to A-pillar. Discard nut and lockwasher assembly
8. Remove harness wires from 4-way and 6-way connectors.

NOTE: Lubricate bushings, grommet, and harness teflon cover with silicone spray.

9. Pull harness through A-pillar rubber grommet.
10. Remove and inspect A-pillar rubber grommet. Replace if damaged.

NOTE: Perform step 11 for vehicles equipped with power mirrors.

11. Disconnect two harness connectors from power mirrors door jumper harness connectors (Figure 13-84).
12. Remove self-tapping screw and clamp securing harness to door reinforcement (Figure 13-85).

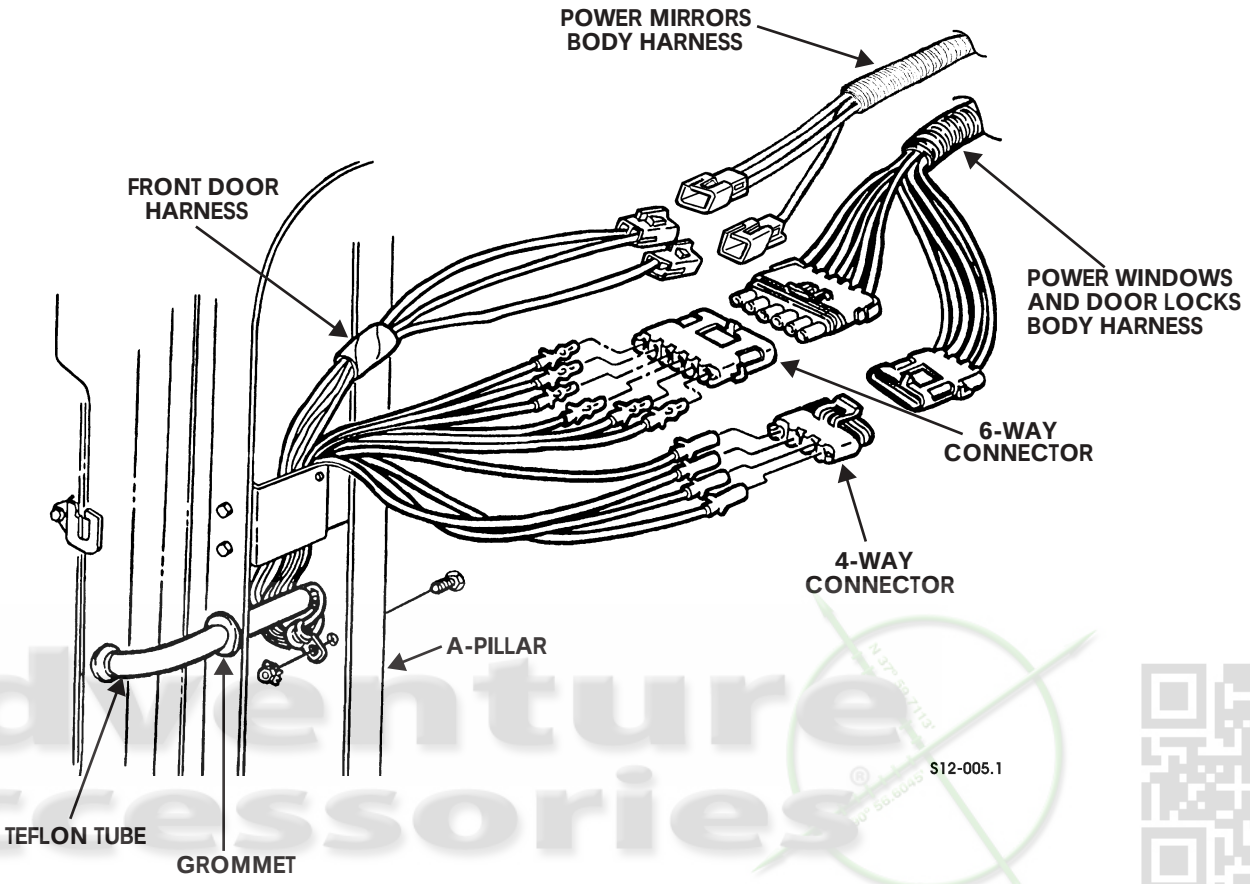
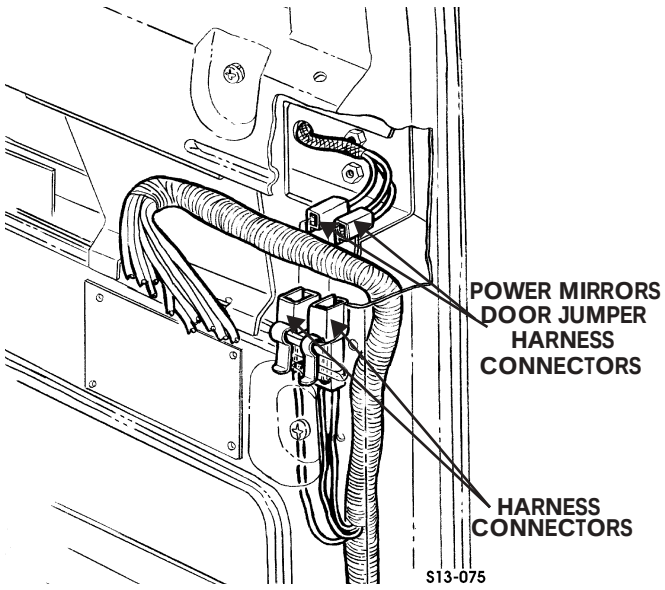


Figure 13-83: Power Windows and Door Locks Harness



13. Remove two self-tapping screws and harness mounting bracket from door assembly.
14. Pull harness through door bushing.
15. Inspect door bushing and replace if damaged.
16. Remove harness mounting bracket and mounting bracket bushing from harness. Inspect bushing and replace if damaged.
17. Disconnect harness connector from power window regulator.
18. Disconnect harness connector from power door locks actuator.
19. Remove retainer and harness from door assembly.

Figure 13-84: Power Mirrors Door Jumper Harness

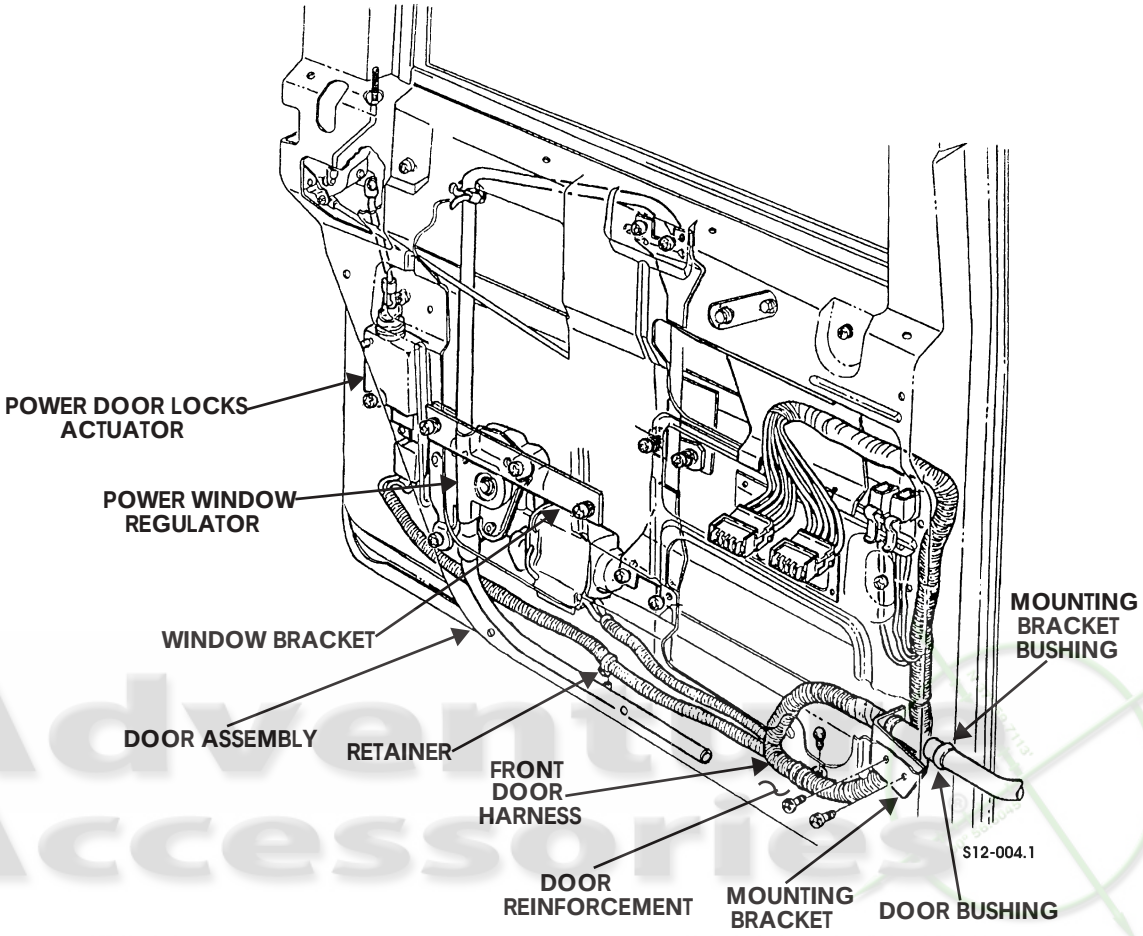


Figure 13-85: Power Windows and Door Locks Harness

Installation

NOTE: Lubricate bushing, grommet, and harness teflon cover with silicone spray.

1. Route harness through harness mounting bracket, mounting bracket bushing, and door bushing (Figure 13-85).
2. Install harness mounting bracket on door assembly with two self-tapping screws (Figure 13-85).
3. Route harness through A-pillar rubber grommet (Figure 13-86).

NOTE: When connecting harness wires to 4-way and 6-way connectors, ensure wire colors align with mating connector wires.

4. Connect harness wires to 4-way and 6-way connectors.
5. Connect 4-way and 6-way harness connectors to power windows and door locks body harness connectors.

NOTE: Perform step 6 for vehicles equipped with power mirrors.

6. Connect two harness connectors to power mirrors body harness connectors.
7. Secure harness to A-pillar with clamp, self-tapping screw, and nut and lockwasher assembly.

NOTE: Perform step 8 for vehicles equipped with power mirrors.

8. Connect two harness connectors to power mirrors door jumper harness connectors (Figure 13-86)

9. Connect harness connector to power window regulator (Figure 13-85).

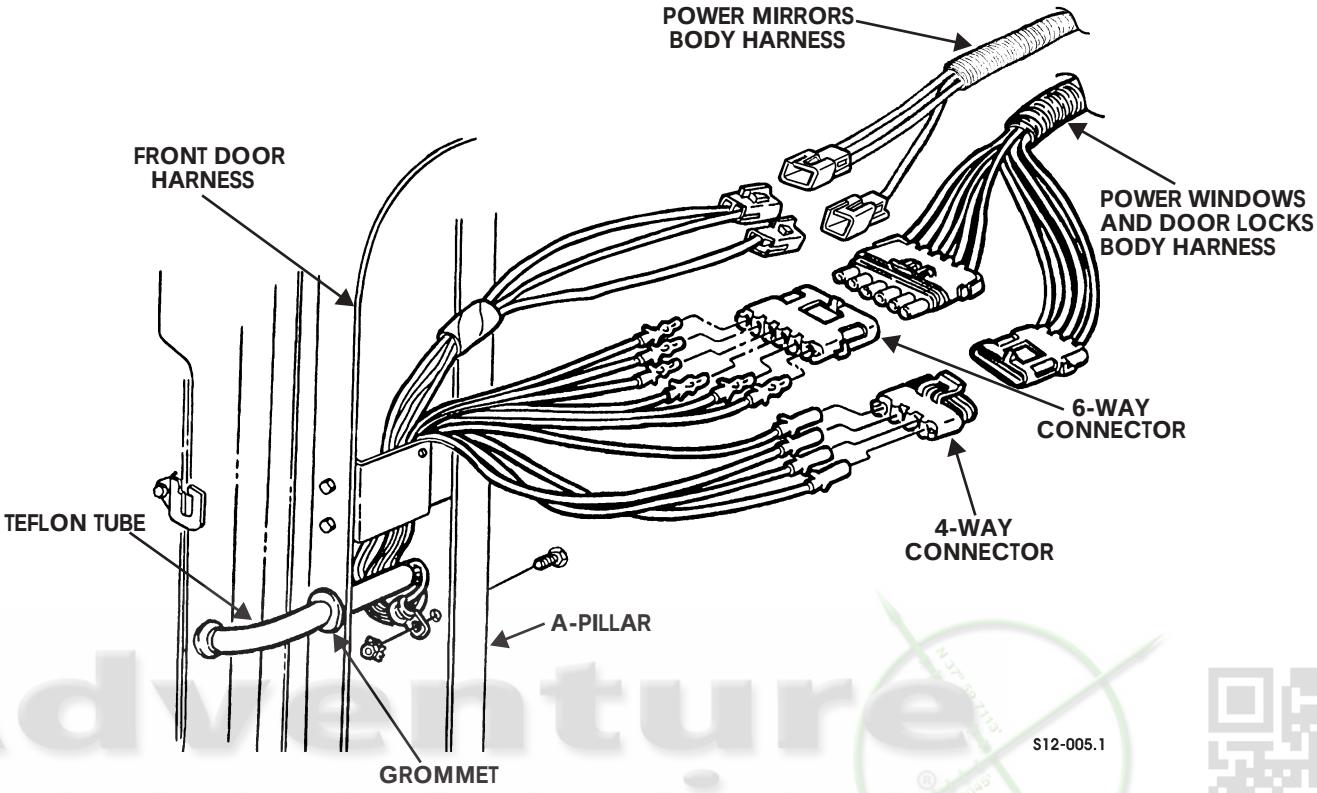


Figure 13-86: Power Windows and Door Locks Harness

10. Connect harness connector to power door lock actuator.
11. Secure harness to door reinforcement with clamp and self-tapping screw.
12. Secure harness to door assembly with retainer.
13. Install moisture barrier flap, vapor barrier, and door trim panel on door (Section 10).
14. Install power window and door lock switches on door.
15. Install front outer kick panels (Section 10).
16. Connect battery ground cable (Section 12).
17. Check power windows and door locks for proper operation.

Power Windows and Door Locks Rear Door Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove center outer kick panel and lower B-pillar trim (Section 10).
3. Remove power windows switch from door.
4. Remove rear door trim, vapor barrier, and moisture barrier flap from door (Section 10).

NOTE: Tag leads for installation.

5. Disconnect 6-way harness connector from power windows and door locks rear door jumper harness connector (Figure 13-87).

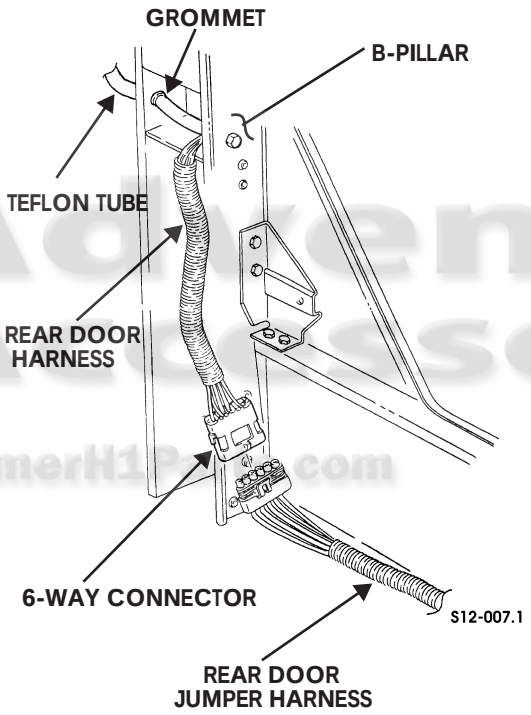


Figure 13-87: Rear Door Harness and Rear Door Jumper Harness

6. Remove harness wires from 6-way connector.
7. Remove screw, nut and lockwasher assembly, and clamp securing harness to B-pillar. Discard nut and lockwasher assembly.

NOTE: Lubricate bushings, grommet, and harness teflon cover with silicone spray.

8. Pull harness through B-pillar rubber grommet.
9. Remove and inspect B-pillar rubber grommet. Replace if damaged.
10. Remove two self-tapping screws and harness mounting bracket from door assembly (Figure 13-88).
11. Pull harness through door bushing.
12. Inspect door bushing and replace if damaged.
13. Remove harness mounting bracket and mounting bracket bushing from harness. Inspect bushing and replace if damaged.
14. Remove self-tapping screw and clamp securing harness to door reinforcement.
15. Disconnect harness connector from power window regulator.
16. Disconnect harness connector from power door lock actuator.
17. Remove retainer securing harness to door assembly.
18. Remove tie strap and harness from door assembly. Discard tie strap.

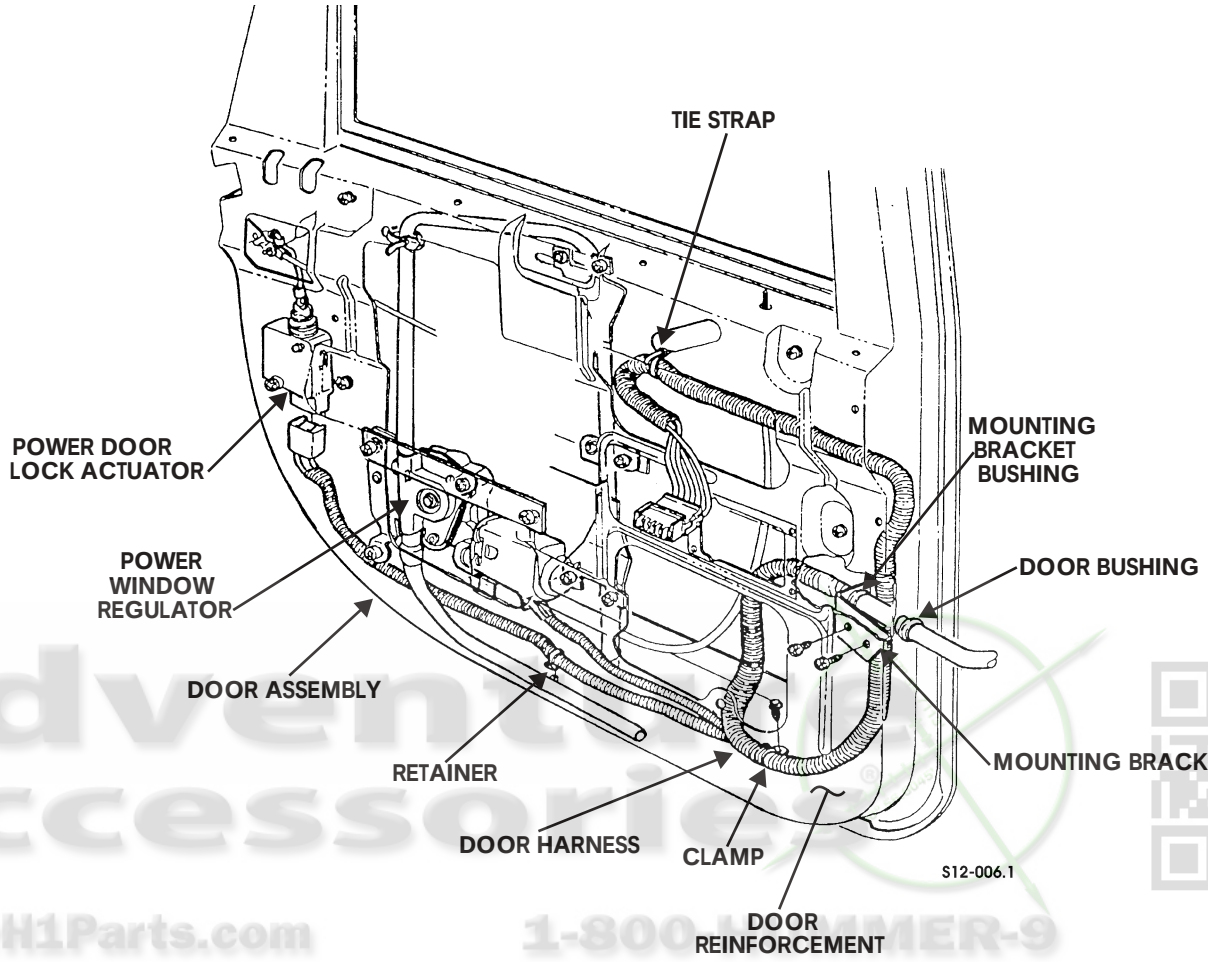


Figure 13-88: Rear Door Harness

Installation

NOTE: Lubricate bushings, grommet, and harness teflon cover with silicone spray.

1. Route harness through harness mounting bracket, mounting bracket bushing, and door bushing (Figure 13-88).
2. Install harness mounting bracket on door assembly with two self-tapping screws
3. Route harness through B-pillar rubber grommet (Figure 13-89).

NOTE: When connecting harness wires to 6-way connector, ensure wire colors align with mating connector wires.

4. Connect harness wires to 6-way connector.
5. Connect 6-way harness connector to power windows and door locks rear door jumper harness connector.
6. Secure harness to B-pillar with clamp, screw, and nut and lockwasher assembly.

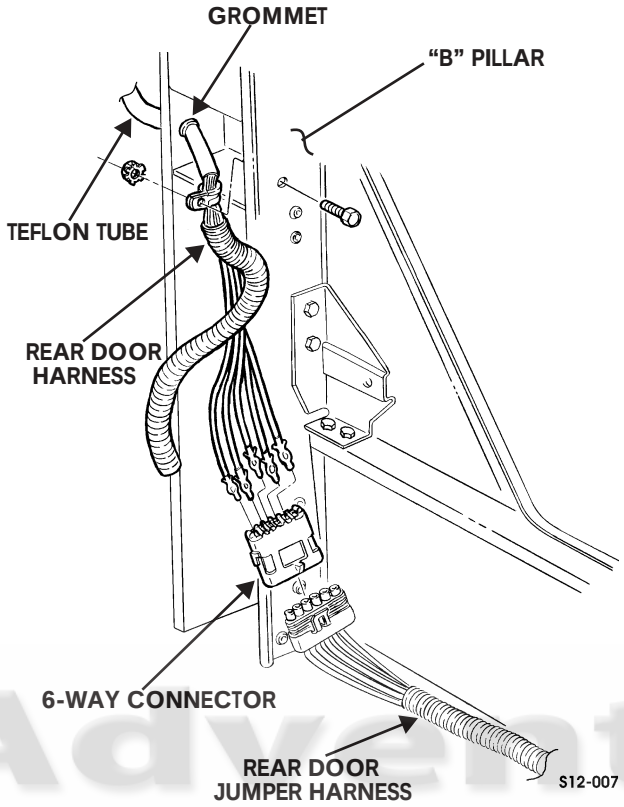


Figure 13-89: Rear Door Harness and Rear Door Jumper Harness

7. Connect harness connector to power window regulator (Figure 13-88).
8. Connect harness connector to power door lock actuator.
9. Secure harness to door reinforcement with clamp and self-tapping screw.
10. Secure harness to door assembly with retainer.
11. Secure harness to door assembly with tie strap.
12. Install moisture barrier flap, vapor barrier, and door trim panel on door (Section 10).
13. Install power windows switch on door.
14. Install lower B-pillar trim and center kick panel (Section 10).
15. Connect battery ground cable (Section 12).
16. Check power windows and door locks for proper operation.

Power Windows and Door Locks Rear Door Jumper Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove front and center outer kick panels and lower B-pillar trim (Section 10).
3. Disconnect jumper harness connector from power windows and door locks body harness connector (Figure 13-90).

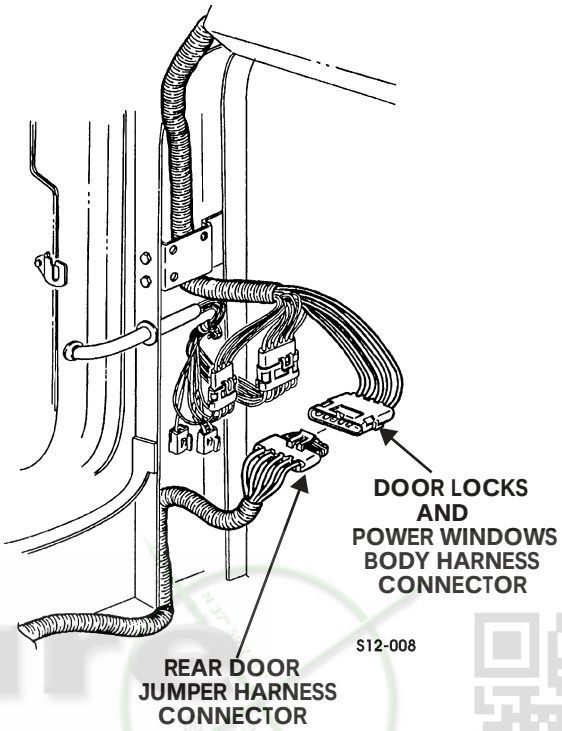


Figure 13-90: Power Windows and Door Locks Body Harness and Rear Door Jumper Harness

4. Disconnect jumper harness connector from power windows and door locks rear door harness connector (Figure 13-91).

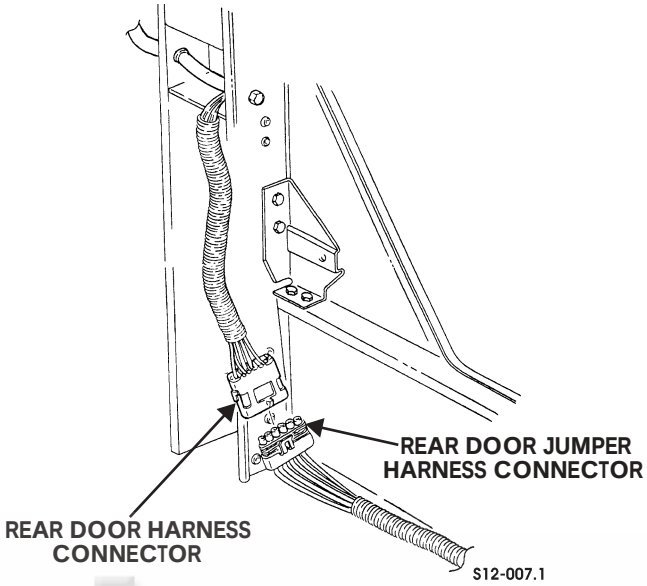


Figure 13-91: Power Windows and Door Locks Rear Door Harness and Rear Door Jumper Harness

Installation

1. Connect jumper harness connector to power windows and door locks rear door harness connector (Figure 13-91).
2. Connect jumper harness connector to power windows and door locks body harness connector (Figure 13-90).
3. Install lower "B" pillar trim and front and center outer kick panels (Section 10).
4. Connect battery ground cable (Section 12)

Power Windows And Door Locks Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove crash pad (Section 10).
3. Remove front outer kick panels (Section 10).
4. Remove engine access cover (Section 10).
5. Remove eight screws and two gauge panels from instrument panel (Section 12).
6. Remove power windows and lock switch from instrument panel.

NOTE: Tag leads for installation.

NOTE: Perform step 7 for vehicles equipped with remote entry.

7. Disconnect two power windows and door locks harness connectors from receiver harness connectors (Figure 13-92).

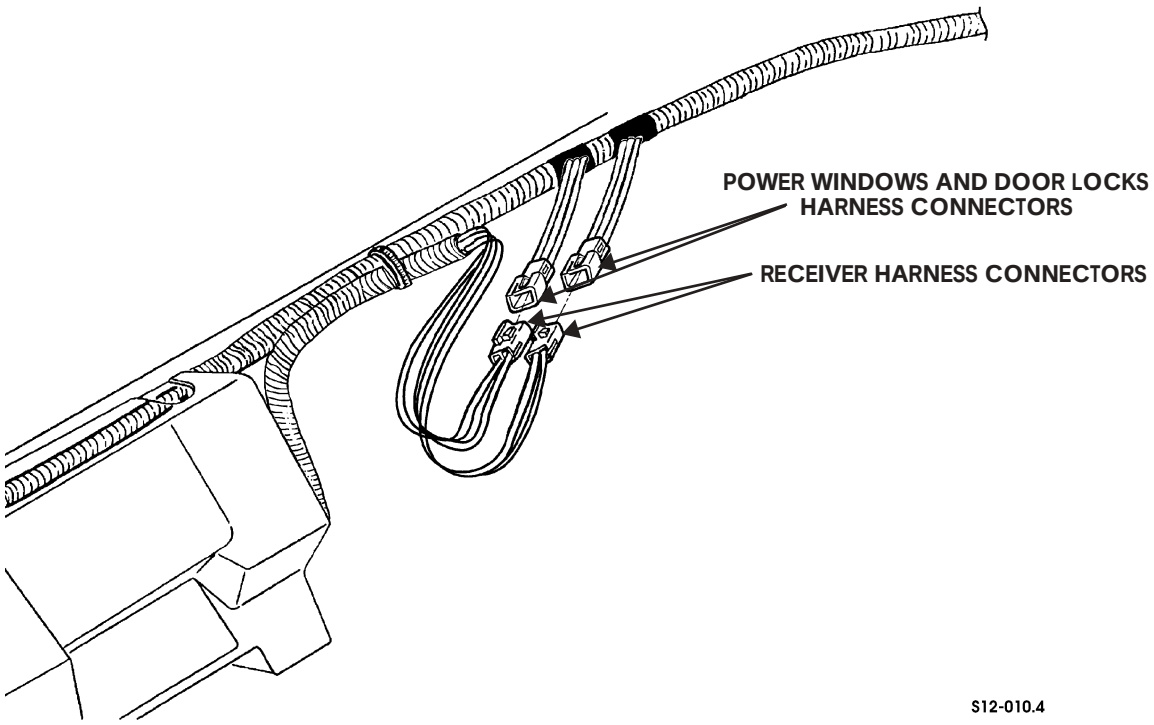


Figure 13-92: Power Windows and Door Locks Harness

8. Disconnect two harness leads from vehicle body harness power leads (Figure 13-93).

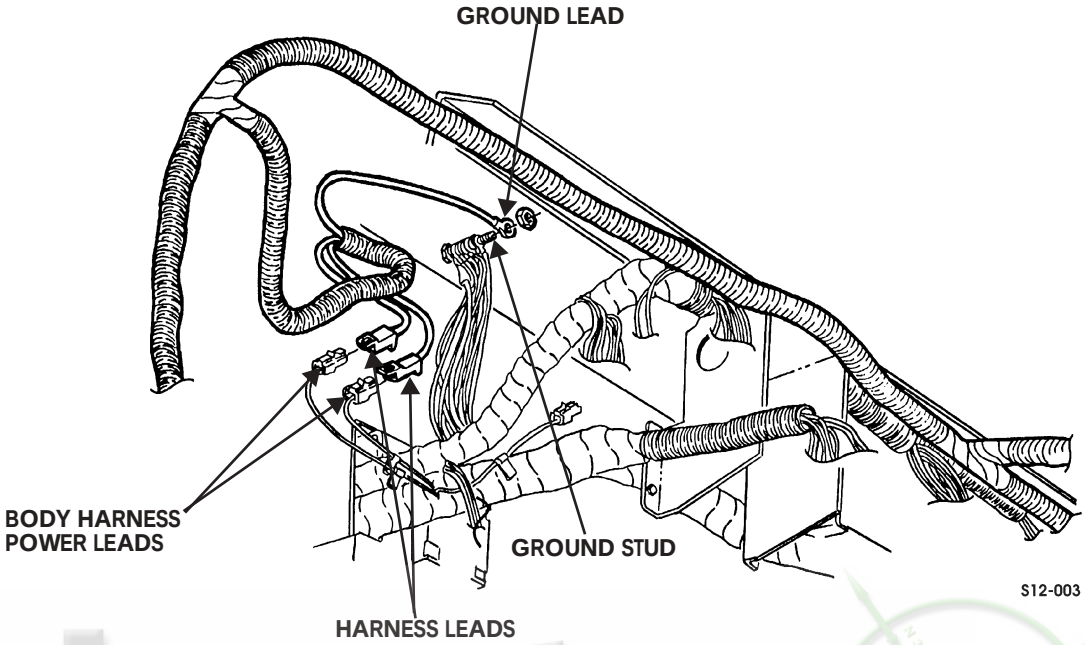


Figure 13-93: Power Windows and Door Locks Body Harness

9. Remove nut and ground lead from ground stud.
10. Disconnect two harness connectors from door harness connectors (Figure 13-94).
11. Repeat step 10 for opposite side.

NOTE: Perform steps 12 and 13 for 4-door vehicles.

12. Disconnect harness connector from rear door jumper harness connector (Figure 13-94).
13. Repeat step 12 for opposite side.
14. Remove seven tie straps securing harness to vehicle body harness and remove harness. Discard tie straps (Figure 13-92).

Installation

1. Route harness through instrument panel and along A- pillar to both sides of vehicle (Figure 13-94).

NOTE: Perform steps 2 and 3 for 4-door vehicles.

2. Connect harness connector to rear door jumper harness connector (Figure 13-94).
3. Repeat step 2 for opposite side.
4. Connect two harness connectors to door harness connectors.
5. Repeat step 4 for opposite side.
6. Install ground lead on ground stud with nut (Figure 13-93).
7. Connect two harness leads to vehicle body harness power leads.

NOTE: Perform step 8 for vehicles equipped with remote entry.

8. Connect two power windows and door locks harness connectors to receiver harness connectors (Figure 13-92).
9. Secure harness to vehicle body harness with seven tie straps.
10. Install power windows and lock switch on instrument panel.
11. Install two gauge panels on instrument panel with eight screws (Section 12).
12. Install engine access cover (Section 10).
13. Install front outer kick panels (Section 10).
14. Install crash pad (Section 10).
15. Connect battery ground cable (Section 12).
16. Check power windows and door lock for proper operation.

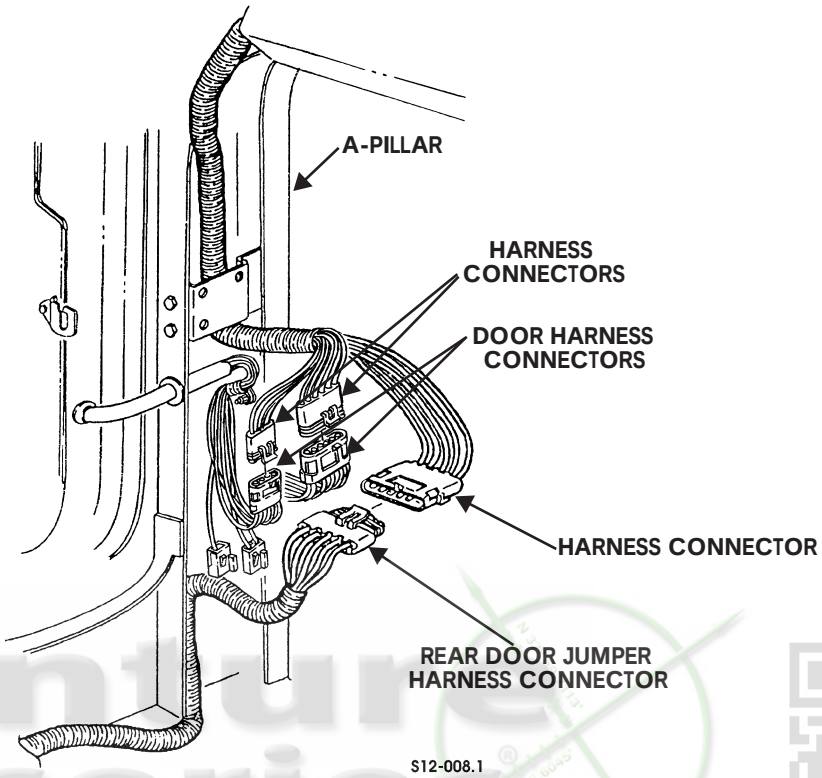


Figure 13-94: Door Harness Connectors

REMOTE ENTRY SYSTEM

Remote Entry Receiver and Harness Assembly Replacement

NOTE: This procedure covers the replacement of the remote entry receiver and harness assembly for vehicles equipped with power windows.

Removal

NOTE: Tag leads for installation.

1. Disconnect battery ground cable (Section 12).
2. Remove front console enough to gain access to receiver and harness assembly (Section 10).
3. Disconnect two receiver harness connectors from power windows and locks harness connectors (Figure 13-95).
4. Disconnect receiver harness connector from receiver.
5. Remove receiver from two velcro strips.
6. Disconnect receiver harness connector from body harness connector.
7. Remove all tie straps securing receiver harness to power windows and door locks body harness and body wiring harness, and remove receiver harness. Discard tie straps.

Installation

1. Install receiver harness and connect two receiver harness connectors to power windows and door locks harness connectors (Figure 13-96).
2. Install receiver on two velcro strips.
3. Connect receiver harness connector to receiver.
4. Connect body harness connector to receiver harness connector.
5. Secure receiver harness to power windows and door locks body harness, and body wiring harness with tie straps.
6. Install front console (Section 10).
7. Connect battery ground cable (Section 12).
8. Check remote entry system for proper operation.

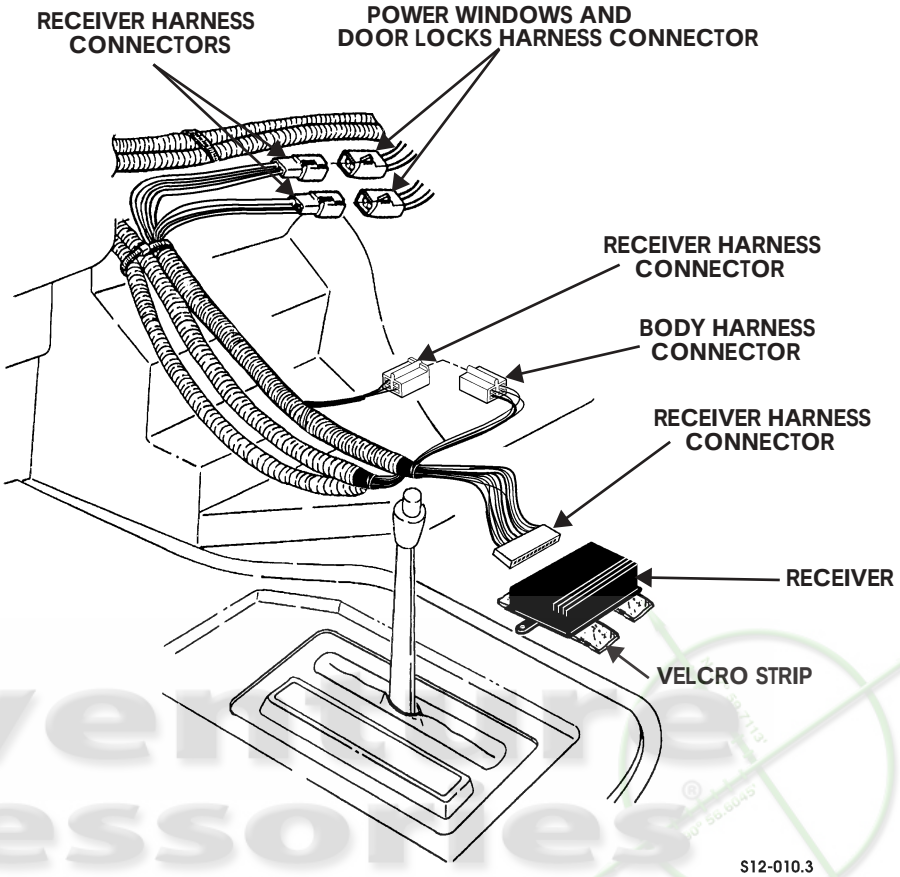


Figure 13-95: Remote Entry Receiver and Harness

POWER MIRRORS

Power Mirror Assembly Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove three screws securing power mirror assembly and gasket to mounting plate (Figure 13-96).
3. Disconnect power mirror assembly connector from door jumper harness.
4. Inspect gasket, and replace if damaged.

Installation

NOTE: Ensure door jumper harness is routed through gasket before connecting to power mirror assembly.

1. Connect power mirror assembly connector to door jumper harness (Figure 13-96).

NOTE: Wires from power mirror assembly must be coiled in mirror housing to ensure clearance of attachments.

2. Install gasket and power mirror assembly on mounting plate with three screws.
3. Connect battery ground cable (Section 12).

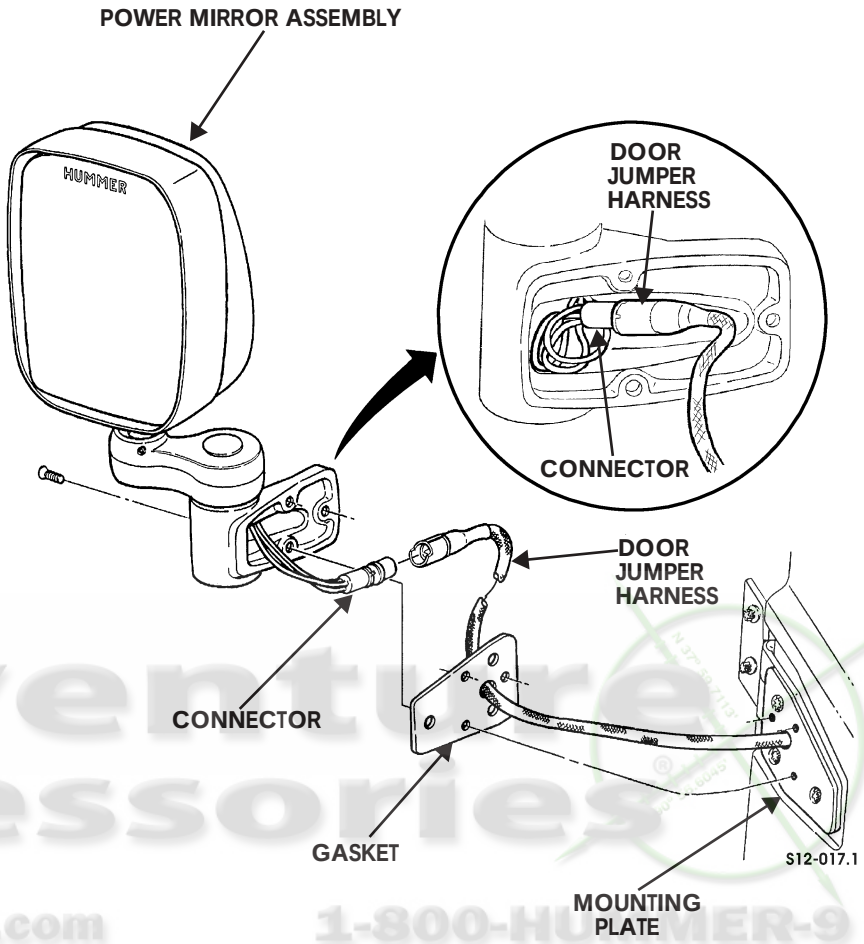


Figure 13-96: Power Mirror Assembly

Power Mirrors Body Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove crash pad (Section 10).
3. Remove instrument panel (Section 12).
4. Remove front outer kick panels (Section 10).

NOTE: Tag leads for installation.

5. Disconnect harness switch connector from switch connector on jumper harness (Figure 13-97).

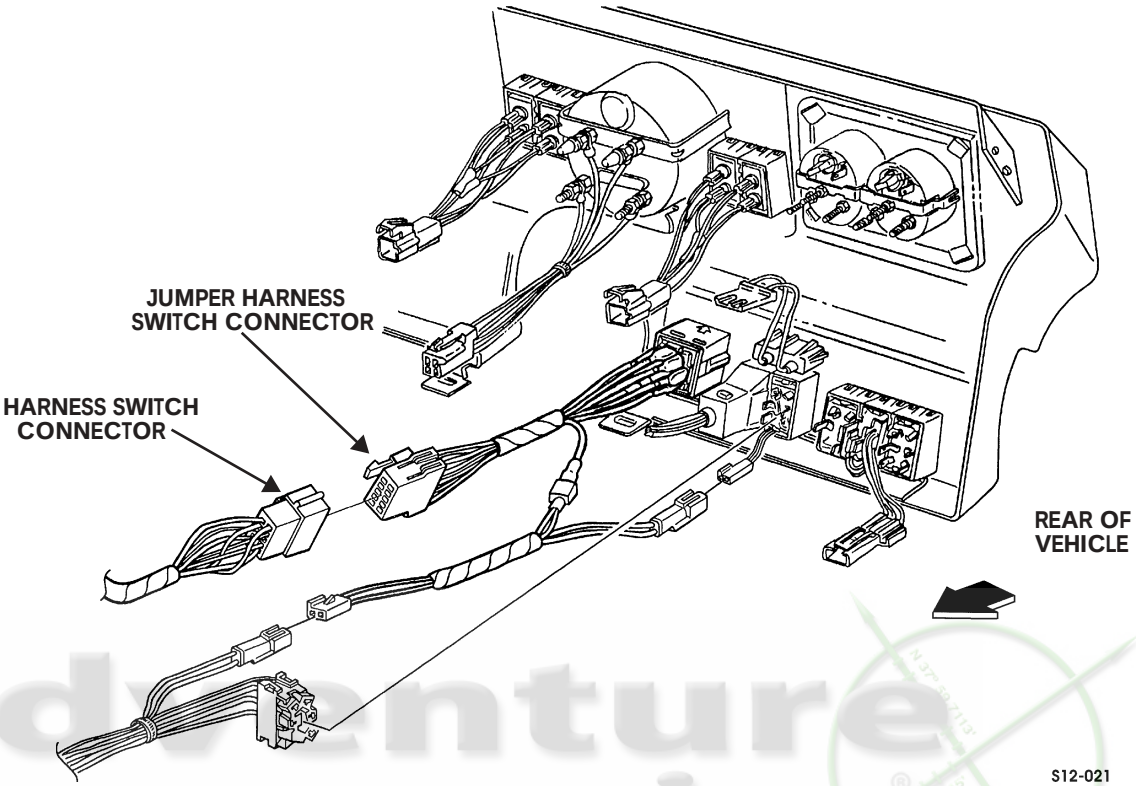


Figure 13-97: Jumper Harness Switch Connector

6. Disconnect two power lock leads from harness connector (Figure 13-98).
7. Remove nut and ground lead from ground stud.
8. Disconnect two harness leads from door harness leads (Figure 13-99).
9. Repeat step 7 for opposite side.
10. Remove five tie straps securing harness to power windows and door locks harness and remove harness. Discard tie straps.

Installation

1. Route harness along A-pillar (Figure 13-99).
2. Connect two harness leads to door harness leads.
3. Repeat step 2 for opposite side.
4. Secure ground lead to ground stud with nut (Figure 13-98).
5. Connect two power lock leads to harness connector.
6. Connect harness switch connector to switch connector on jumper harness (Figure 13-97).
7. Secure harness to power windows and door locks harness with five tie straps (Figure 13-98).
8. Connect battery ground cable (Section 12).
9. Test mirror operation.
10. Install front outer kick panels (Section 10).
11. Install instrument panel (Section 10).
12. Install crash pad (Section 10).

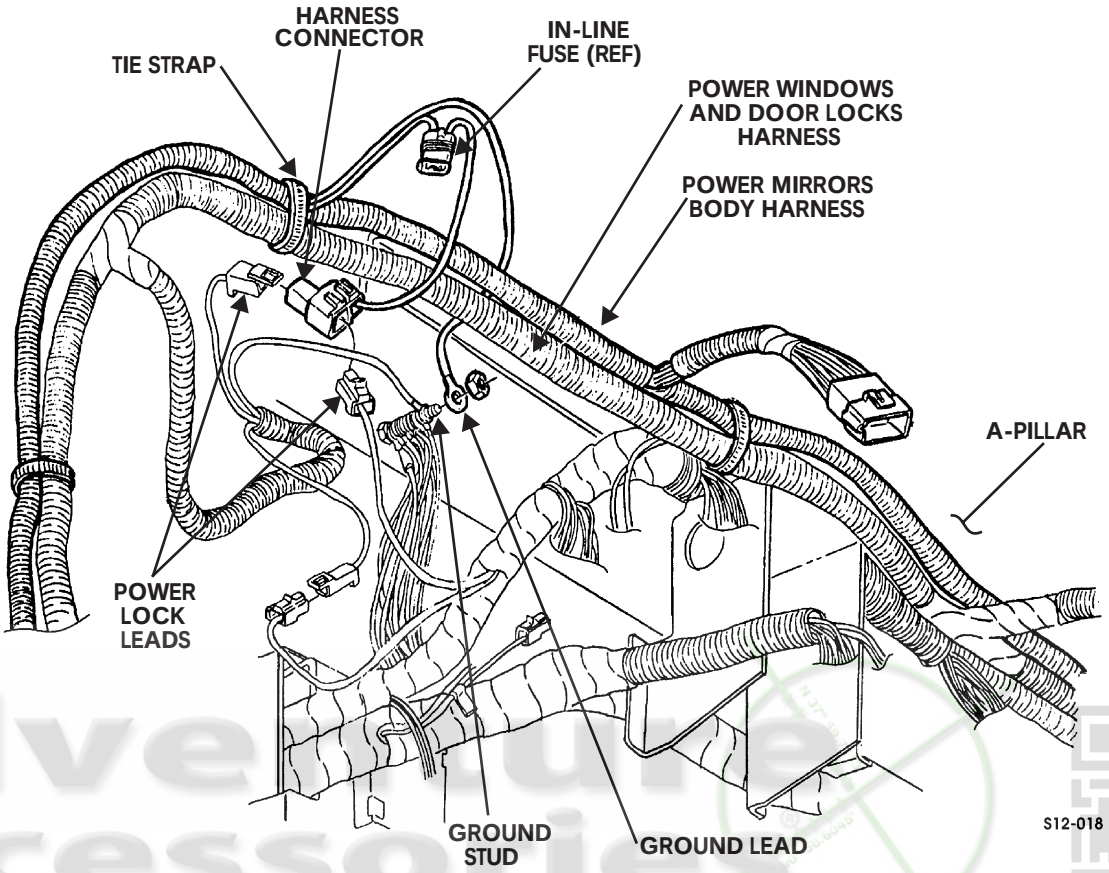


Figure 13-98: Power Mirrors Body Harness.

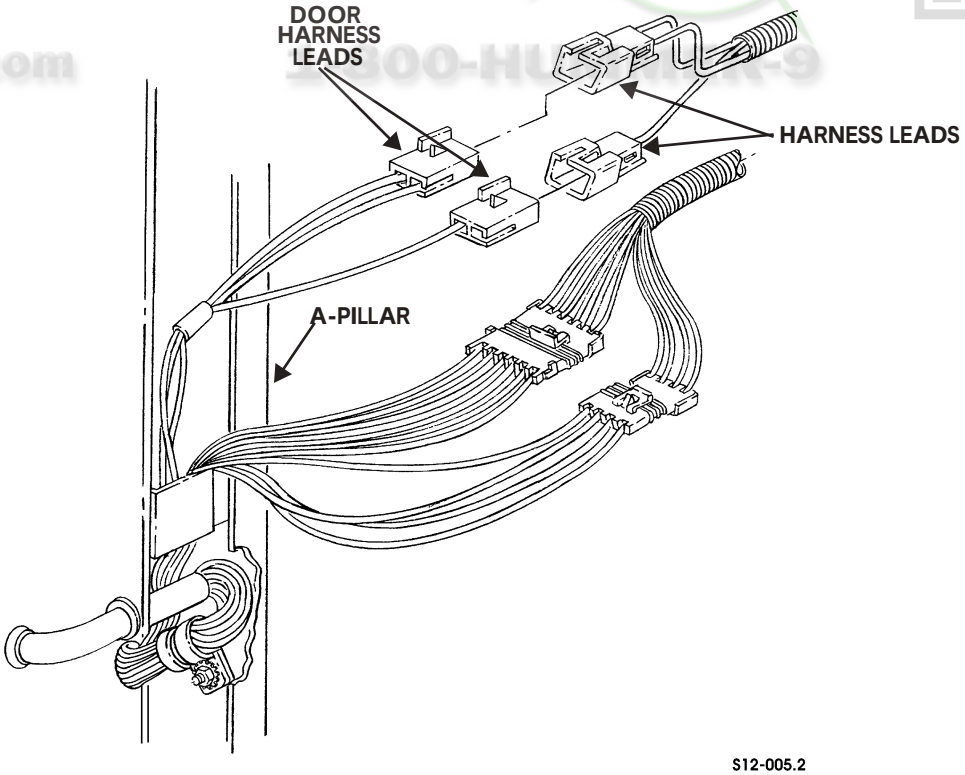


Figure 13-99: Door Harness Leads

Power Mirrors Door Jumper Harness Replacement

Removal

1. Remove power mirror assembly.
2. Remove door trim panel. Peel back portion of vapor barrier to gain access to harness (Section 10).

NOTE: Tag leads for installation.

3. Disconnect two door jumper harness leads from door harness leads (Figure 13-100). Pull door jumper harness through door.

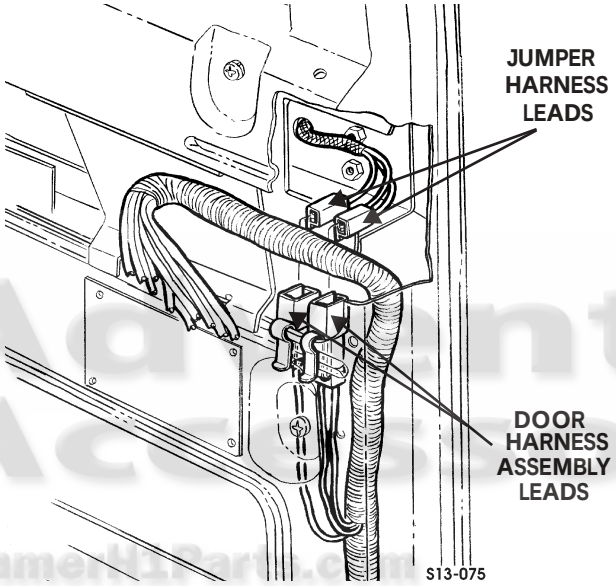


Figure 13-100: Power Mirrors Door Jumper Harness

Installation

1. Route door jumper harness through door (Figure 13-100).
2. Connect two door jumper harness leads to door harness leads.
3. Install power mirror assembly.
4. Test mirror operation.
5. Secure vapor barrier back into position and install door trim panel (Section 10).

Power Mirrors Switch Jumper Harness Replacement

Removal

1. Disconnect battery ground cable (Section 12).
2. Remove instrument panel (Section 12).
3. Disconnect jumper harness connector from connector on power mirrors body harness connector (Figure 13-101).
4. Disconnect jumper harness connector from wiper switch illumination connector on vehicle body harness.
5. Disconnect jumper harness connector from wiper switch illumination connector.
6. Push power mirrors control knob forward and pull jumper harness through square hole in instrument panel

Installation

NOTE: Ensure the top of the power mirrors control knob is positioned upward when installed.

1. Feed jumper harness through square hole in instrument panel until control knob on end of jumper harness snaps into place (Figure 13-101).
2. Connect jumper harness connector to wiper switch illumination connector.
3. Connect jumper harness connector to wiper switch illumination connector on body harness.
4. Connect jumper harness connector on power mirrors body harness connector.
5. Connect battery ground cable (Section 12).
6. Test mirror operation.
7. Install instrument panel (Section 10).

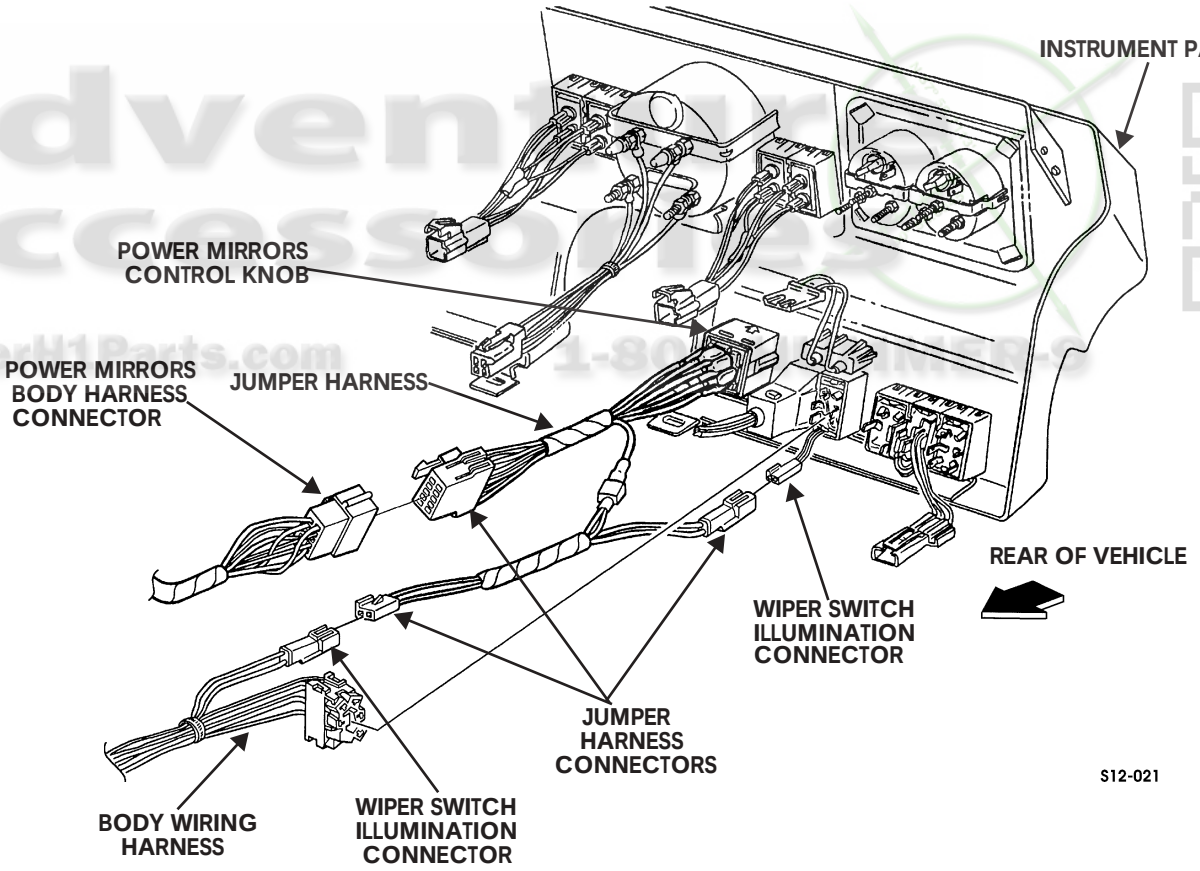


Figure 13-101: Power Mirrors Switch Jumper Harness

AUXILIARY SEAT

Auxiliary Seat Replacement

Removal

1. Release and remove four locking pins from auxiliary seat frame and auxiliary seat (Figure 13-102).
2. Remove auxiliary seat from auxiliary seat frame.

Installation

1. Install auxiliary seat on auxiliary seat frame.
2. Install and fasten four locking pins to auxiliary seat frame and auxiliary seat.

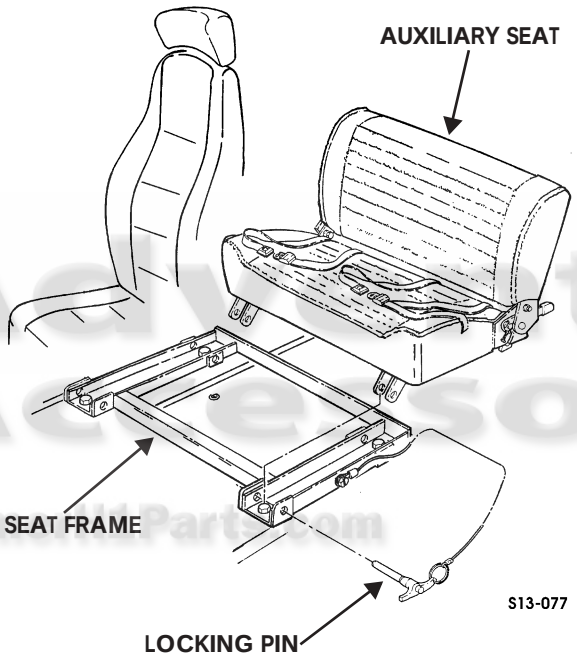


Figure 13-102: Auxiliary Seat

Auxiliary Seat Belt Replacement

Removal

1. Release and tilt forward auxiliary seat.

NOTE: Retain initial seat belt mounting positions during installation.

2. Remove four capscrews, washers, and two auxiliary seat belt assemblies from auxiliary seat (Figure 13-103).

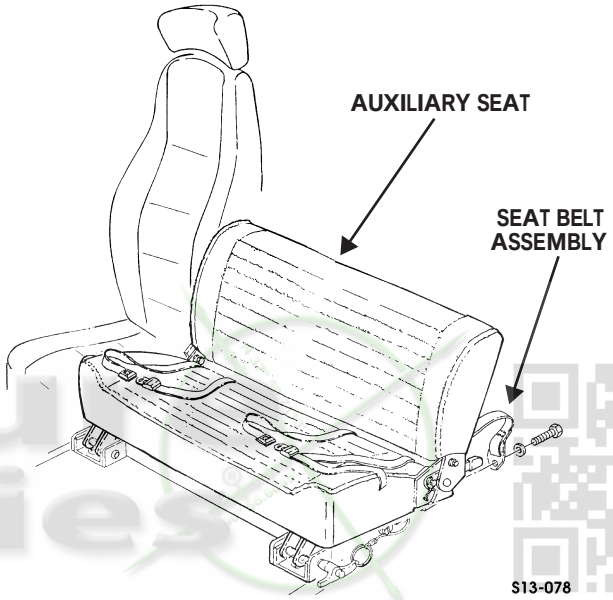


Figure 13-103: Auxiliary Seat Belt

Installation

1. Install two auxiliary seat belt assemblies on auxiliary seat with four washers and capscrews (Figure 13-103).
2. Tilt and fasten auxiliary seat back to normal position.

Auxiliary Seat Frame Replacement

Removal

1. Remove auxiliary seat.
2. Remove auxiliary seat locking pins.
3. Remove four capscrews, washers, and auxiliary seat frame from tunnel floor (Figure 13-104).

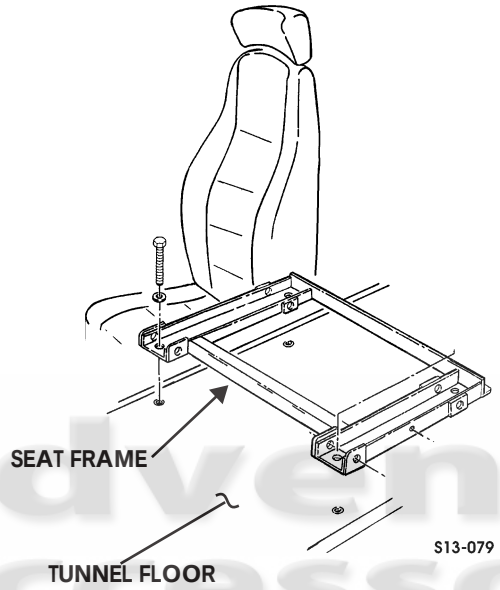


Figure 13-104: Auxiliary Seat Frame

Installation

1. Install auxiliary seat frame on tunnel floor with four washers and capscrews (Figure 13-104). Torque capscrews to 27-30 lb-ft (36-40 N•m).
2. Install auxiliary seat locking pins.
3. Install auxiliary seat.

Auxiliary Seat Locking Pin Replacement

Removal

NOTE: Left and right side locking pins are replaced the same. This procedure covers the left side only.

1. Remove two screws and locking pin cables from auxiliary seat frame (Figure 13-105).
2. Release and remove two locking pins from auxiliary seat frame and auxiliary seat.

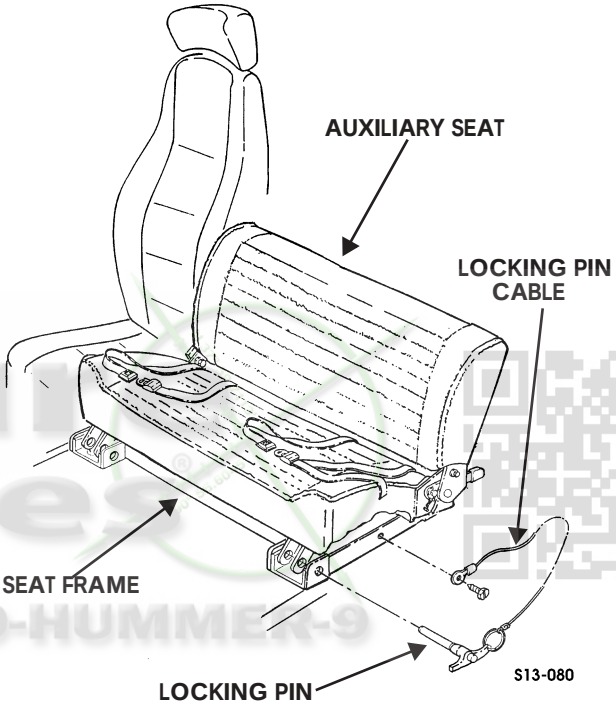


Figure 13-105: Auxiliary Seat Locking Pin

Installation

1. Install and fasten two locking pins on auxiliary seat frame and auxiliary seat (Figure 13-105).
2. Install two locking pin cables on auxiliary seat frame with two screws.

DUAL CONSOLE

Dual Console Replacement

Removal

Remove four screws, washers, and dual console from tunnel (Figure 13-106).

Installation

Install dual console on tunnel with four washers and screws (Figure 13-106).

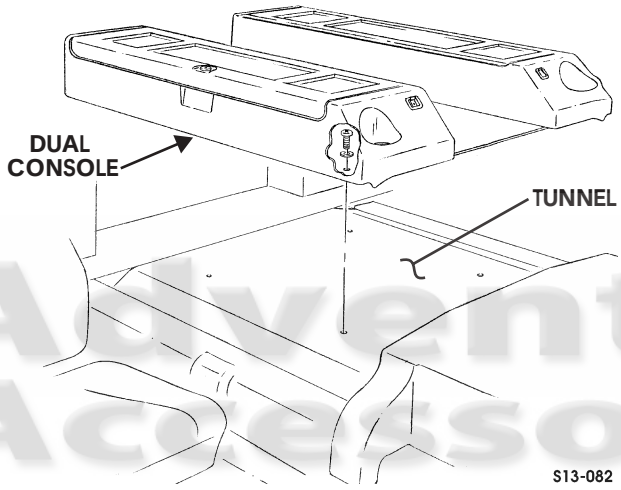


Figure 13-106: Dual Console

Dual Console Lock Cylinder Replacement

Removal

Remove retainer and lock cylinder from dual console (Figure 13-107).

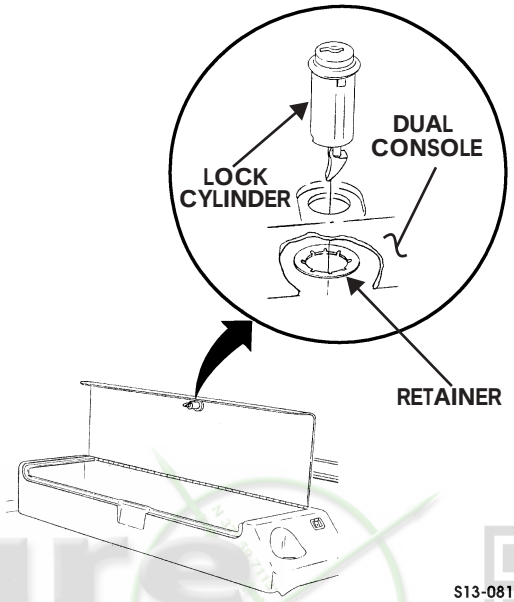


Figure 13-107: Dual Console Lock Cylinder

Installation

Install lock cylinder and retainer on dual console (Figure 13-107).

REAR WINDOW DEFROSTER REPLACEMENT

Rear Window Defroster Switch

Removal

1. Remove rear window defroster switch by gently prying it out of console (Figure 13-108).
2. Disconnect switch from rear defroster timer switch harness.
3. Remove the four screws securing bezel to console and backing plate.

Installation

1. Secure bezel to console and backing plate with four screws (Figure 13-108).
2. Connect defroster switch to rear defroster timer switch harness.
3. Press defroster switch into bezel until in clicks into place.

Rear Defrost Timer Switch Harness Replacement

Removal

1. Disconnect rear window defroster switch from rear defrost timer switch harness (Figure 13-108).
2. Disconnect rear defrost timer switch harness from body harness.

Installation

1. Connect rear defrost timer switch harness to body harness (Figure 13-108).
2. Connect rear window defroster switch to rear defrost timer switch harness.

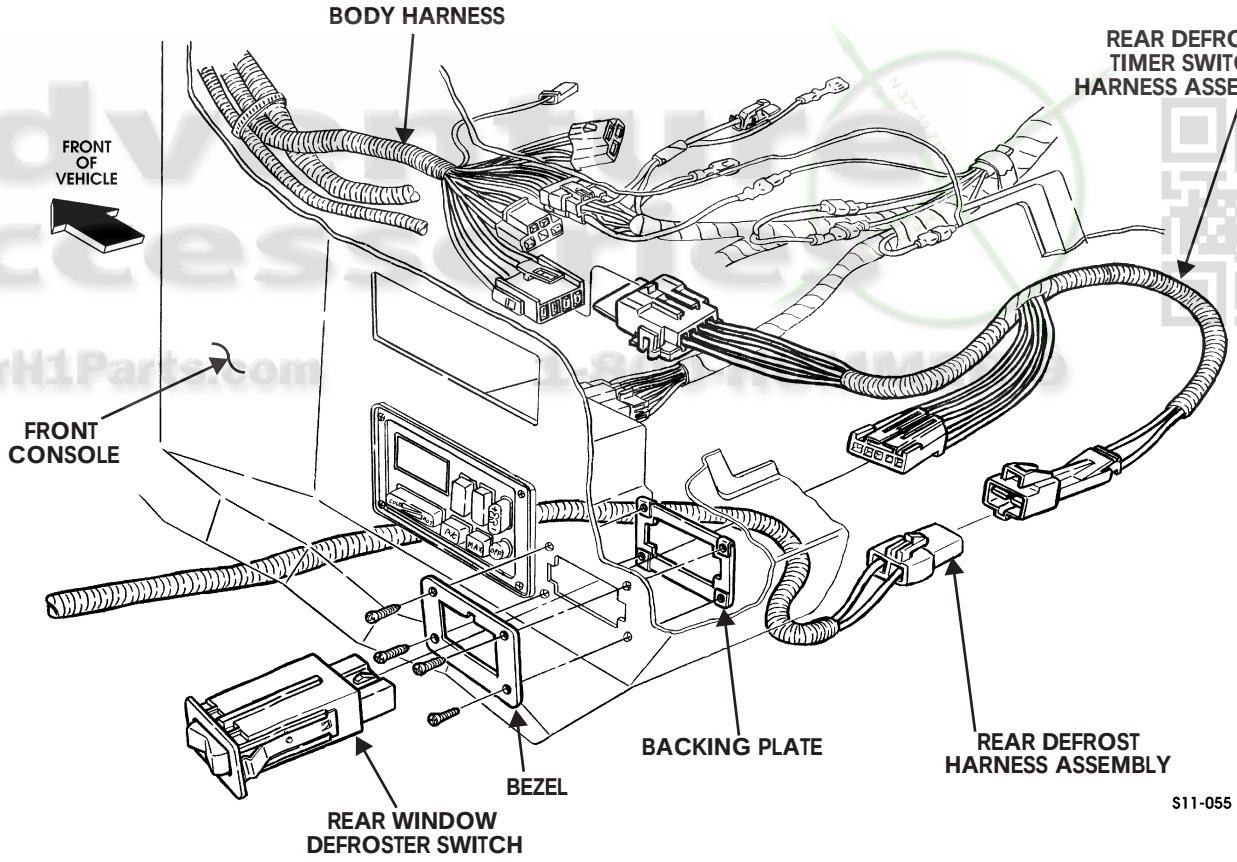


Figure 13-108: Rear Window Defroster Switch and Rear Defrost Timer Switch Harness

Rear Defrost Harness Replacement

Removal

1. Remove front console (Section 10).
2. Remove the front seats (Section 10).

NOTE: Steps 3 and 4 are for four passenger vehicles.

3. Remove center console (Section 10).
4. Remove rear seats (Section 10).
5. Remove rear wall trim (Section 10).
6. Remove trim from rear window (Section 10).
7. Remove carpeting and floor covering (Section 10).
8. Remove tape securing rear defrost harness to body (Figures 13-109, 13-110, 13-111, and 13-112).

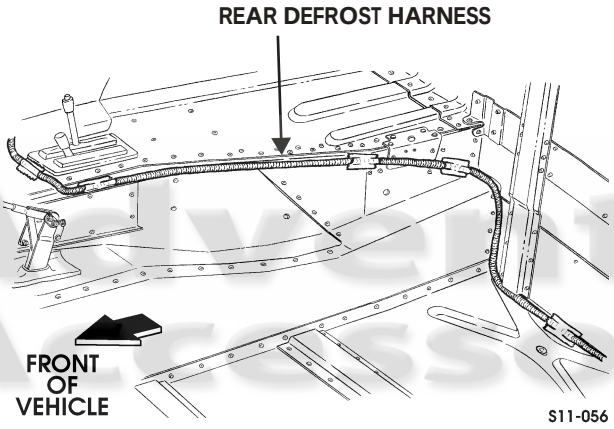


Figure 13-109: Rear Defrost Harness - Two Passenger Vehicle

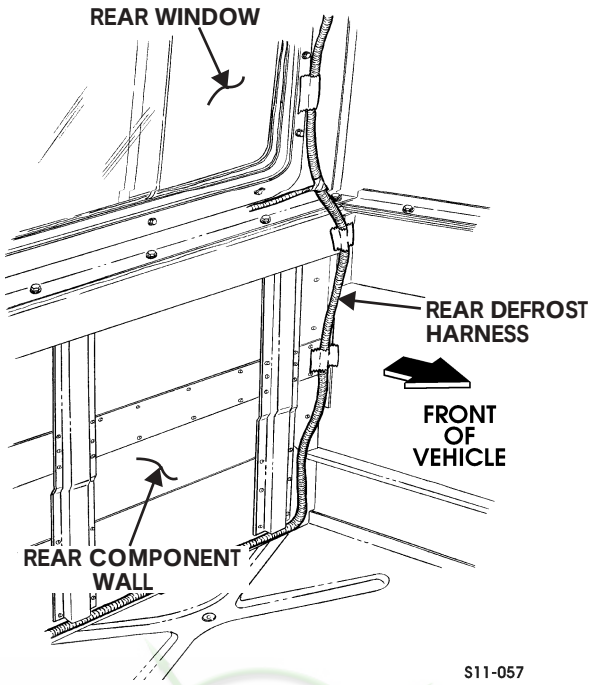


Figure 13-110: Rear Defrost Harness - Two Passenger Vehicle

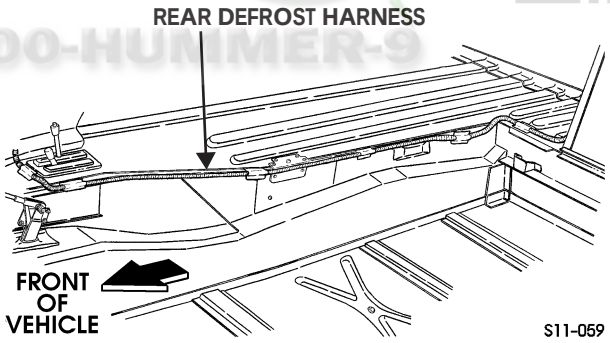


Figure 13-111: Rear Defrost Harness - Four Passenger Vehicle

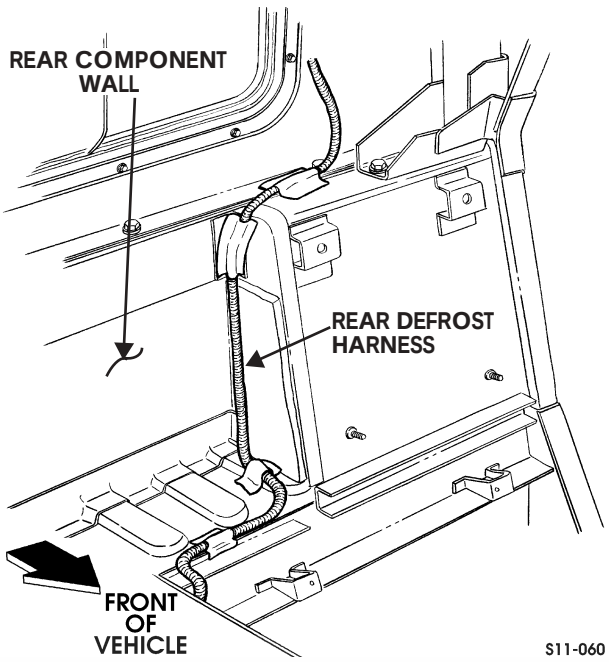


Figure 13-112: Rear Defrost Harness - Four Passenger Vehicle

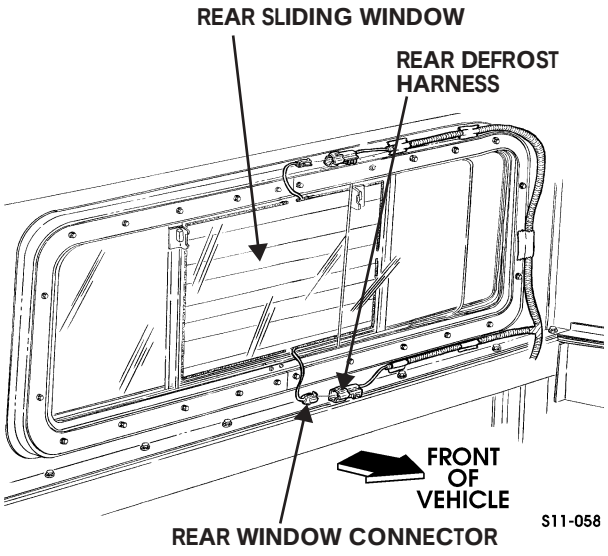


Figure 13-114: Two Passenger Vehicle with Sliding Windows

9. Remove tape securing rear defrost harness around rear window and disconnect two harness connectors from rear window connectors (Figures 13-113, 13-114, and 13-115).

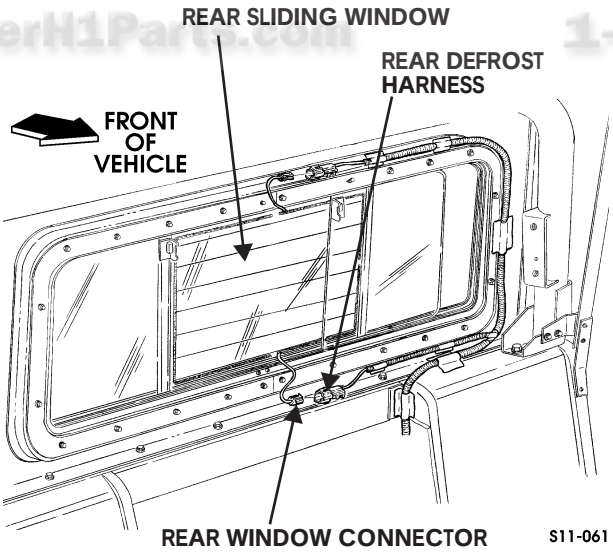


Figure 13-113: Four Passenger Vehicle with Sliding Windows

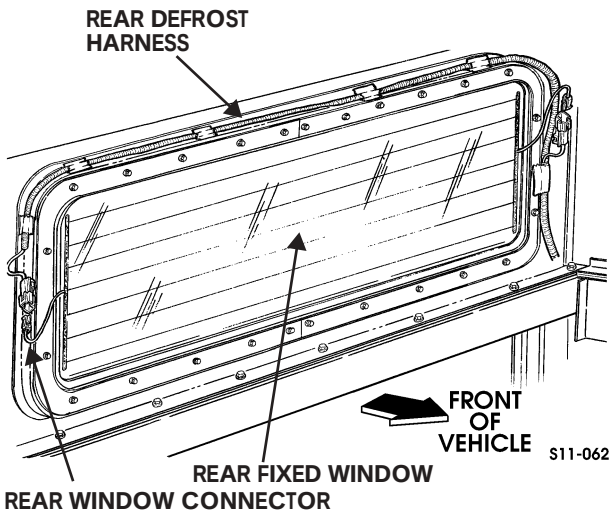


Figure 13-115: Fixed Window

Installation

1. Tape rear defrost harness around rear window and connect two harness connectors to rear window connectors (Figures 13-113, 13-114, and 13-115).
2. Secure rear defrost harness with tape to body (Figures 13-109, 13-110, 13-111, and 13-112)
3. Install the carpeting and floor covering (Section 10).
4. Install trim on rear window (Section 10).
5. Install trim on rear wall (Section 10).

NOTE: Steps 6 and 7 are for 4-passenger vehicles.

6. Install rear seats (Section 10).
7. Install center console (Section 10).
8. Install front seats (Section 10).
9. Install front console (Section 10).

COMPACT DISC (CD) CHANGER REPLACEMENT

Compact Disc Changer

Removal

1. Remove the four screw and washer assemblies securing the compact disc (CD) changer cover to the roof (Figure 13-116).
2. Disconnect the CD changer cable connector from the CD changer.
3. Remove four screws, flatwashers, lockwashers and CD changer from the roof.

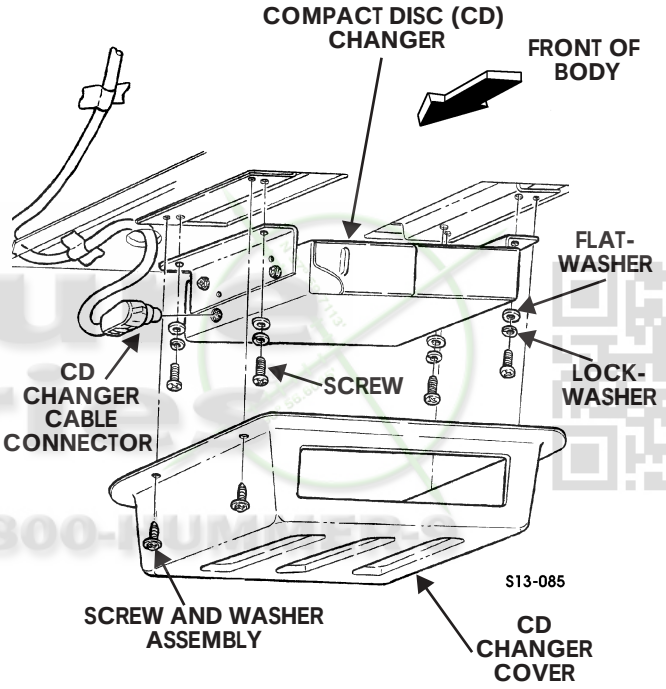


Figure 13-116: CD Changer

Installation

1. Secure CD changer to roof with four flatwashers, lockwashers, and screws (Figure 13-116).
2. Connect CD changer cable connector to the CD changer.
3. Secure CD changer cover to the roof with four screw and washer assemblies.

Compact Disc (CD) Changer Cable (Two-Door Vehicles)

Removal

1. Remove front console (Section 10).
2. Remove the seats (Section 10).
3. Remove the center console (Section 10).
4. Remove the rear wall trim (Section 10).
5. Remove the carpeting and floor covering (Section 10).
6. Remove compact disc changer from roof.
7. Remove the headliner (Section 10).
8. Disconnect the CD changer cable from the radio/compact disc player in the instrument panel (Figure 13-117).

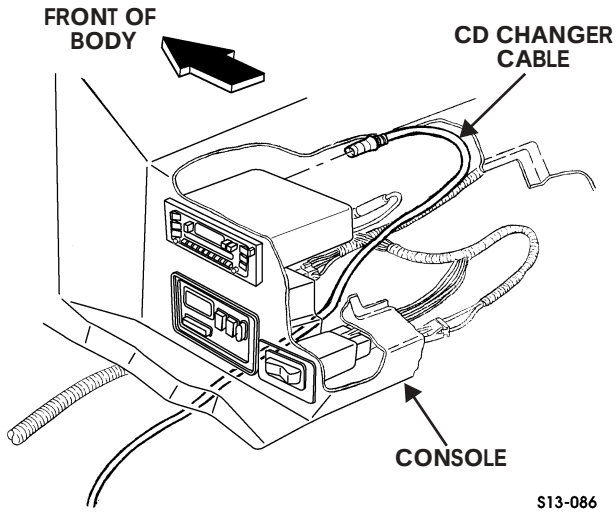


Figure 13-117: CD Changer Cable

9. Remove the tape securing the CD changer cable to the body (Figure 13-118).

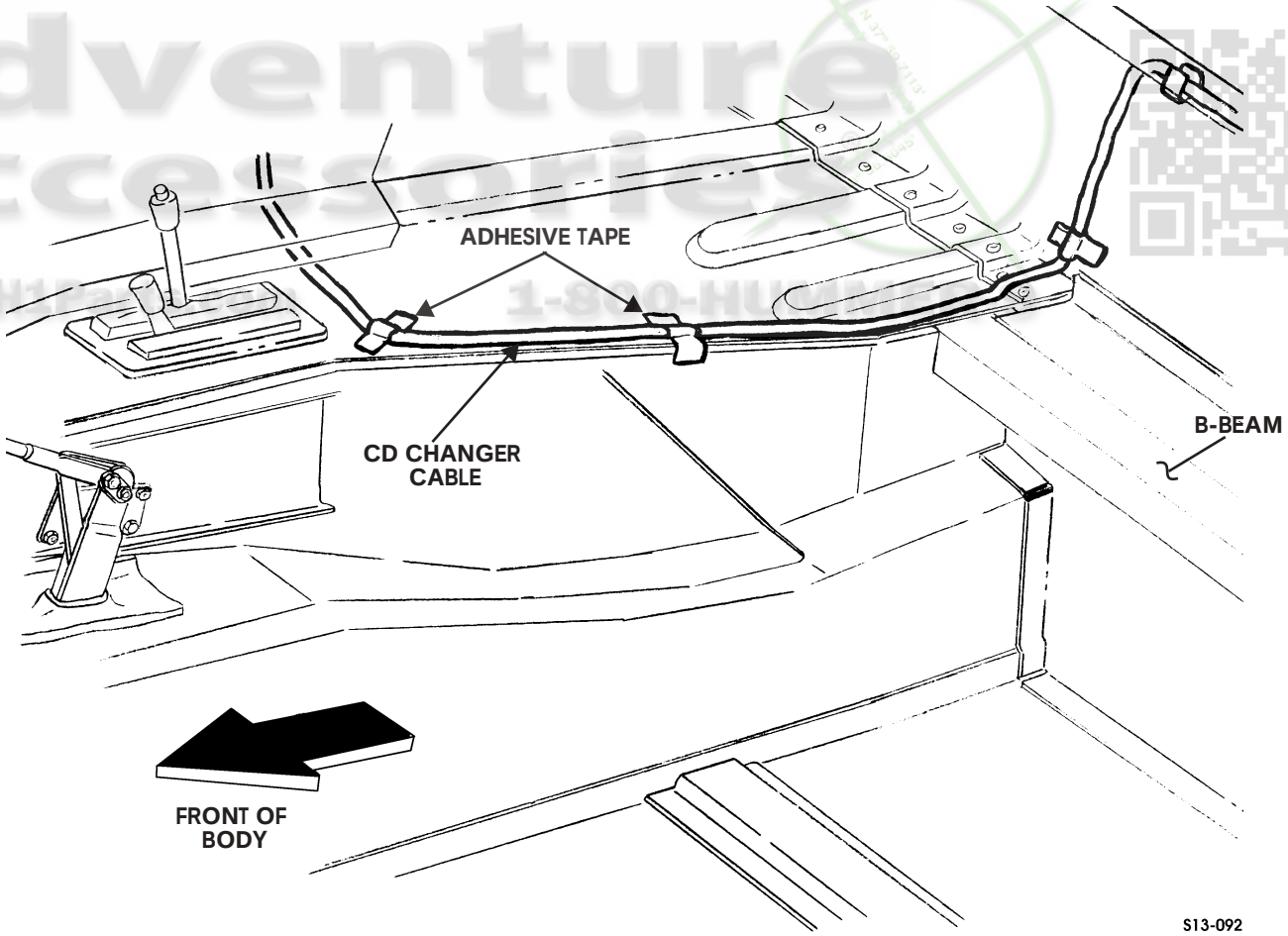


Figure 13-118: CD Changer Cable Routing - Standard Two-Door Vehicles

10. Remove tape securing the CD changer cable to the rear wall, B-pillar and roof ((Figures 13-112 and 13-119).

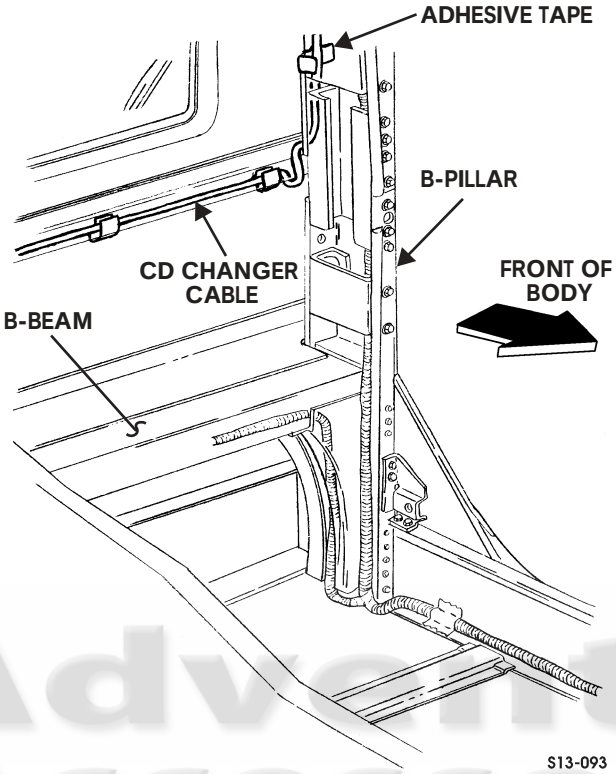


Figure 13-119: Cable Routing Along Rear Wall Standard Two-Door Vehicles

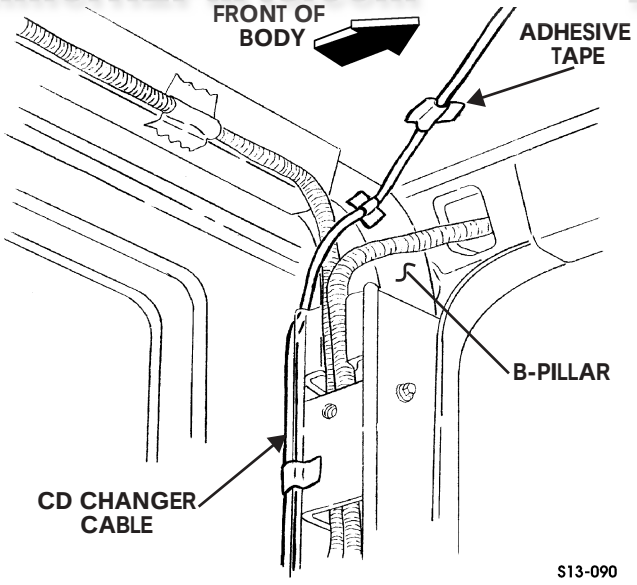


Figure 13-120: Cable Routing Along B-Pillar Standard Two-Door Vehicles

Installation

1. Connect the CD changer cable to the radio/compact disc player in the instrument panel (Figure 13-117).
2. Secure CD changer cable to the body with adhesive tape as shown (Figure 13-118).
3. Secure CD changer cable to roof, B-Pillar, and rear wall with adhesive tape as shown (Figures 13-119 and 13-120).
4. Install compact disc changer to roof.
5. Connect CD changer connector to CD changer.
6. Verify operation of the CD changer.
7. Install headliner (Section 10).
8. Install carpeting and floor covering (Section 10).
9. Install rear wall trim (Section 10).
10. Install the center console (Section 10).
11. Install the seats (Section 10).
12. Install front console (Section 10).

Compact Disc (CD) Changer Cable (Two-Door Extended Cab Vehicles)

Removal

1. Remove front console (Section 10).
2. Remove the seats (Section 10).
3. Remove the center console (Section 10).
4. Remove the rear wall trim (Section 10).
5. Remove the carpeting and floor covering (Section 10).
6. Remove the headliner (Section 10).
7. Disconnect the CD changer cable from the radio/compact disc player in the instrument panel (Figure 13-117).
8. Remove the tape securing the CD changer cable to the body (Figure 13-118).

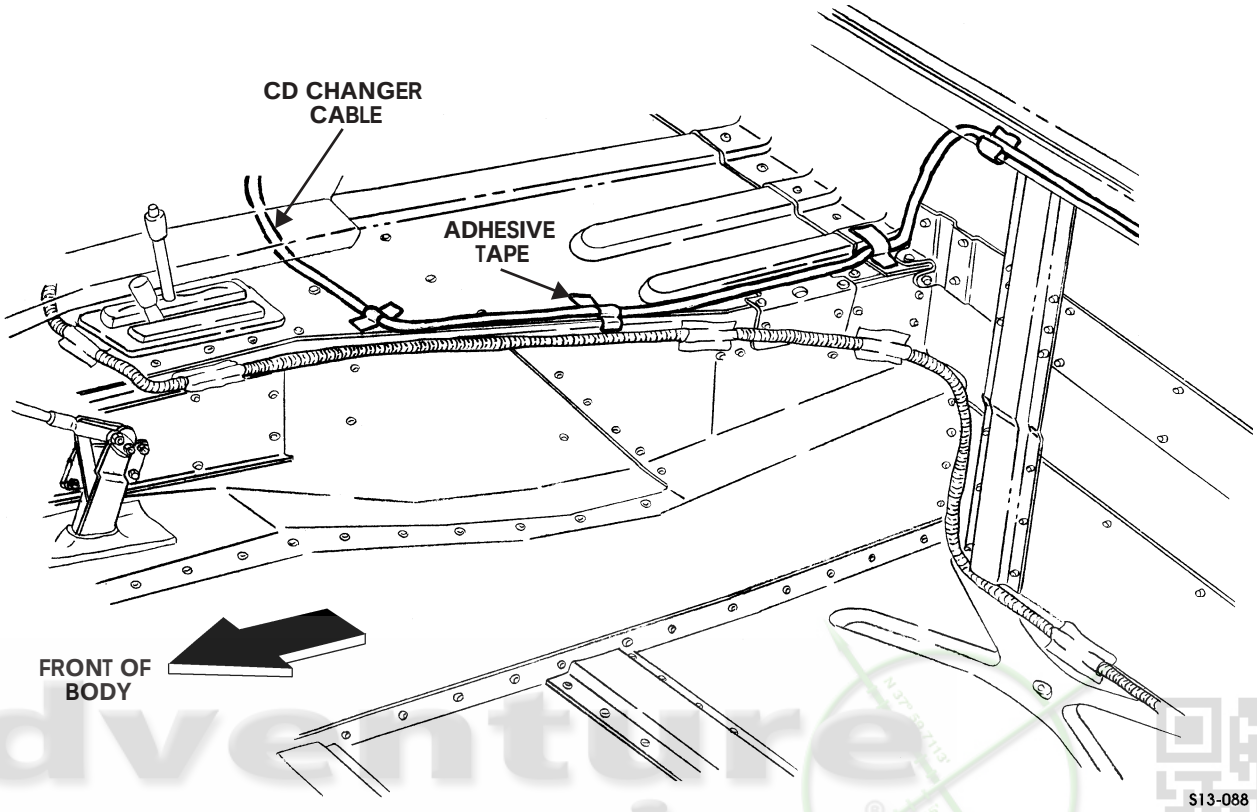


Figure 13-121: CD Changer Cable Routing -Two-Door Extended Cab Vehicles

9. Remove tape securing the CD changer cable to the rear wall, B-pillar and roof (Figures 13-122 and 13-123).

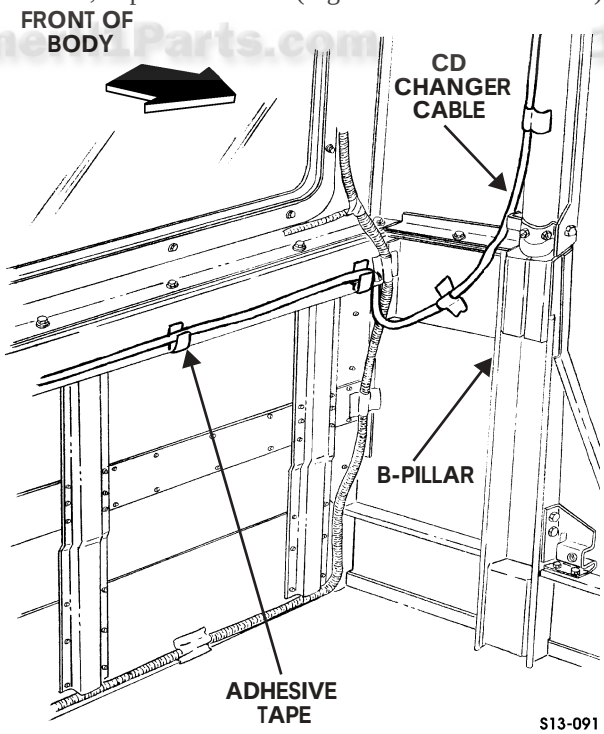


Figure 13-122: Cable Routing Along B-Pillar and Rear Wall - Two-Door Extended Cab Vehicles

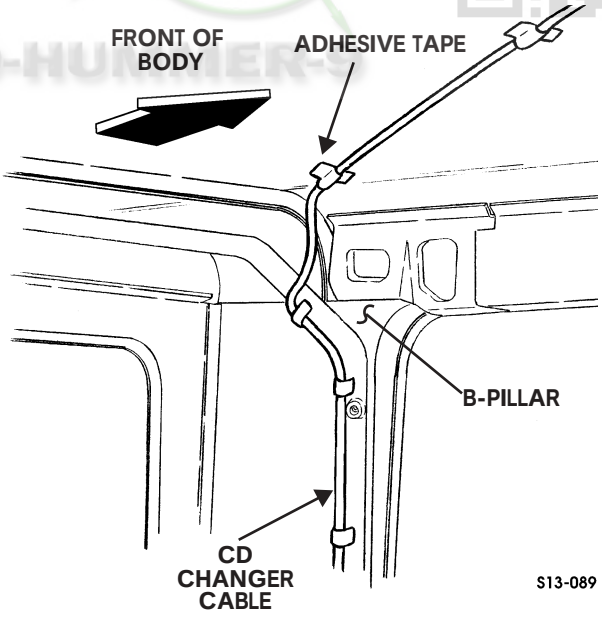


Figure 13-123: Cable Routing Along B-Pillar and Roof Two-Door Extended Cab Vehicles

Installation

1. Connect the CD changer cable to the radio/compact disc player in the instrument panel (Figure 13-117).
2. Secure CD changer cable to the body with adhesive tape (Figure 13-121).
3. Secure CD changer cable to roof, B-Pillar, and rear wall with adhesive tape (Figures 13-122 and 13-123).
4. Install compact disc changer to roof.
5. Connect CD changer connector to CD changer.
6. Verify operation of the CD changer.
7. Install carpeting and floor covering (Section 10).
8. Install rear wall trim (Section 10).
9. Install the center console (Section 10).
10. Install the seats (Section 10).
11. Install front console (Section 10).
12. Install headliner (Section 10).

Compact Disc (CD) Changer Cable (Standard Four-Door Vehicles)

Removal

1. Remove front console (Section 10).
2. Remove the seats (Section 10).
3. Remove the center console (Section 10).
4. Remove the rear wall trim (Section 10).
5. Remove the carpeting and floor covering (Section 10).
6. Remove the headliner (Section 10).
7. Disconnect the CD changer cable from the radio/compact disc player in the instrument panel (Figure 13-124).

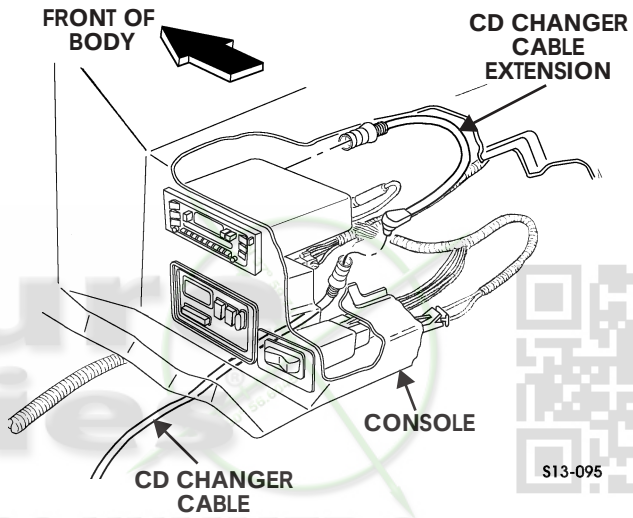


Figure 13-124: CD Changer Cable

8. Remove the tape securing the CD changer cable to the body (Figure 13-125).

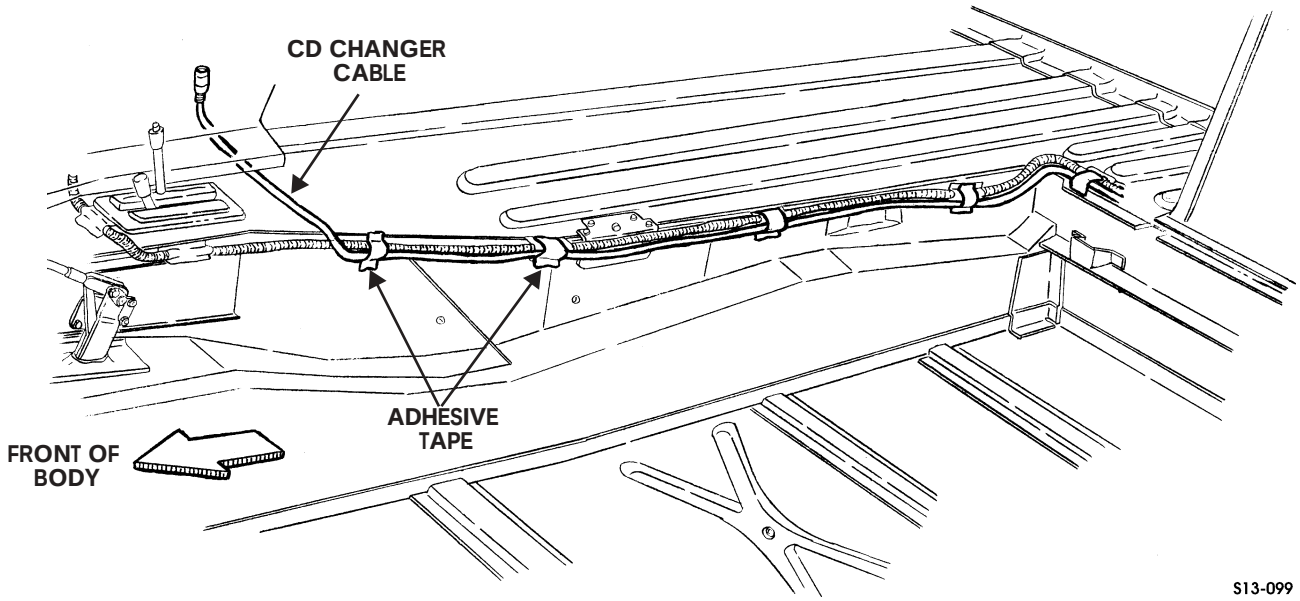


Figure 13-125: CD Changer Cable Routing - Four-Door and Station Wagon Vehicles

9. Remove tape securing the CD changer cable to the rear wall, B-pillar and roof (Figures 13-126, 13-127, and 13-128).

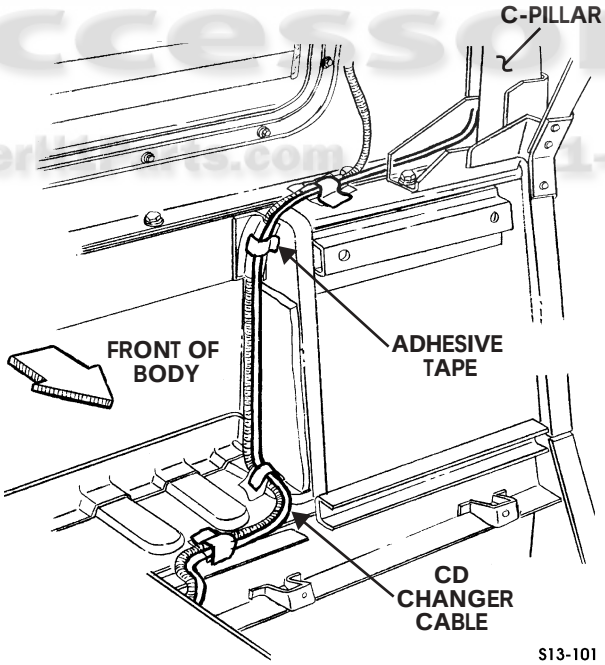


Figure 13-1 Cable Routing Along C-Pillar and Rear Wall - Standard Four-Door Vehicles

Figure 13-126: Cable Routing Along C-Pillar and Rear Wall - Standard Four-Door Vehicles

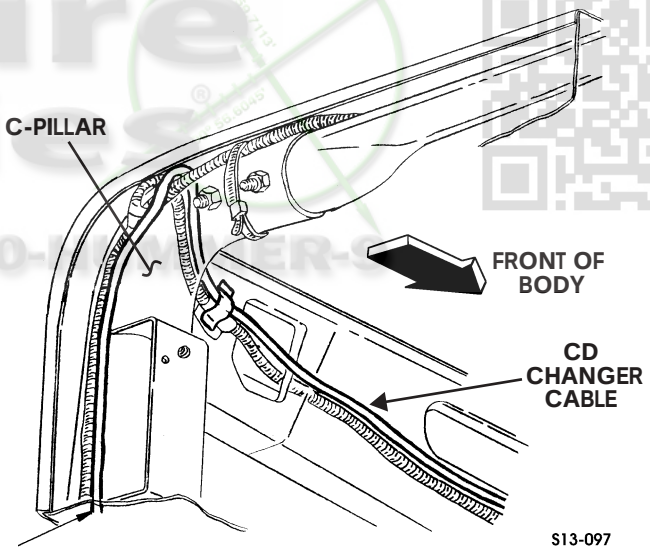


Figure 13-127: Cable Routing Along C-Pillar and Roof - Standard Four-Door Vehicles

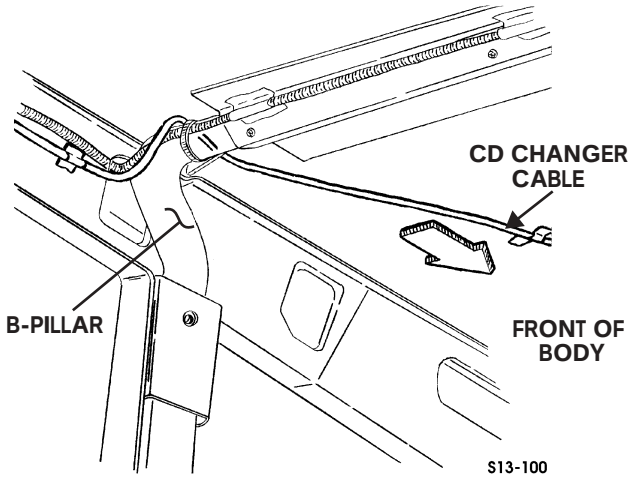


Figure 13-128: Cable Routing Along Roof Standard Four-Door Vehicles

Installation

1. Connect the CD changer cable to the radio/compact disc player in the instrument panel (Figure 13-124).
2. Secure CD changer cable to the body with adhesive tape as shown (Figure 13-125).
3. Secure CD changer cable to roof, B-Pillar, and rear wall with adhesive tape as shown (Figures 13-125, 13-126, 13-127, 13-128, 13-129, 13-130, and 13-131).
4. Install compact disc changer to roof.
5. Connect CD changer connector to CD changer.
6. Verify operation of CD changer.
7. Install carpeting and floor covering (Section 10).
8. Install rear wall trim (Section 10).
9. Install the center console (Section 10).
10. Install the seats (Section 10).
11. Install front console (Section 10).
12. Install headliner (Section 10).

Compact Disc (CD) Changer Cable (Four-Door Station Wagon Vehicles)

Removal

1. Remove front console (Section 10).
2. Remove the seats (Section 10).
3. Remove the center console (Section 10).
4. Remove the rear wall trim (Section 10).
5. Remove the carpeting and floor covering (Section 10).
6. Remove the headliner (Section 10).
7. Disconnect the CD changer cable from the radio/compact disc player in the instrument panel (Figure 13-124).
8. Remove the tape securing the CD changer cable to the body (Figure 13-125).
9. Remove tape securing the CD changer cable to the rear wall, C-pillar and roof (Figures 13-126 through 13-131).

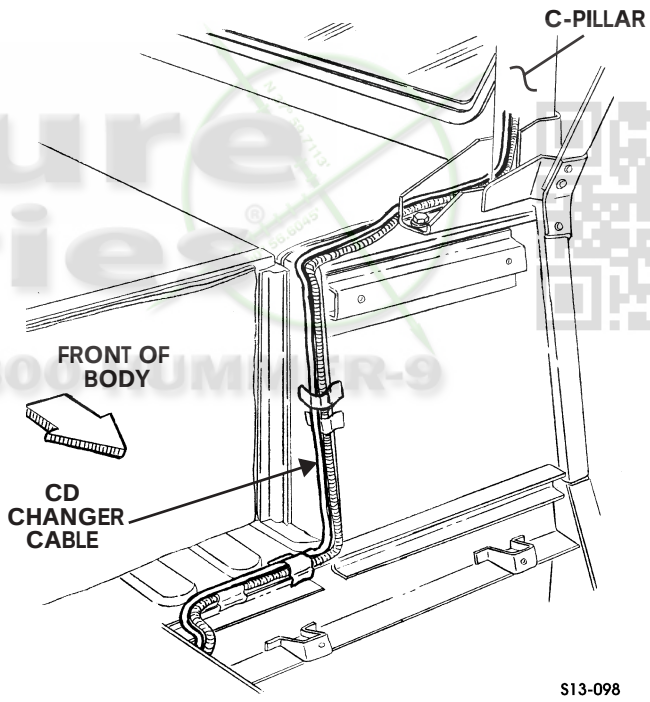


Figure 13-129: Cable Routing Along C-Pillar and Rear Wall - Four-Door Station Wagon Vehicles

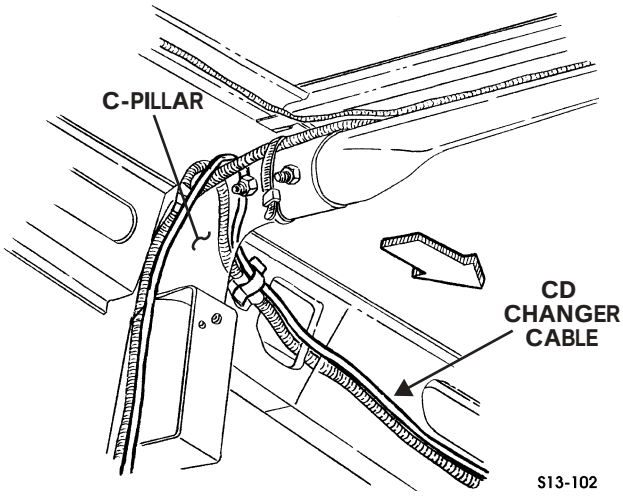


Figure 13-130: Cable Routing Along C-Pillar and Headliner - Four-Door Station Wagon Vehicles

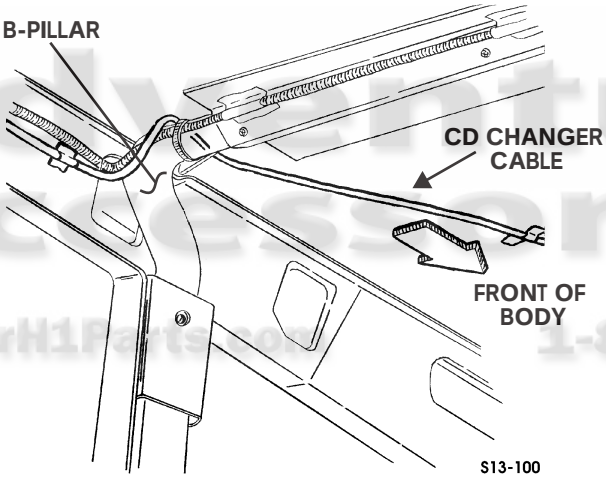


Figure 13-131: Cable Routing Along Roof Four-Door Station Wagon Vehicles

Installation

1. Connect the CD changer cable to the radio/compact disc player in the instrument panel (Figure 13-124).
2. Secure CD changer cable to the body with adhesive tape as shown (Figure 13-125).
3. Secure CD changer cable to roof, B-Pillar, and rear wall with adhesive tape as shown (Figures 13-126 through 13-128).
4. Install compact disc changer to roof.
5. Connect CD changer connector to CD changer.
6. Verify operation of the CD changer.
7. Install headliner (Section 10).
8. Install carpeting and floor covering (Section 10).
9. Install rear wall trim (Section 10).
10. Install the center console (Section 10).
11. Install the seats (Section 10).
12. Install front console (Section 10).

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