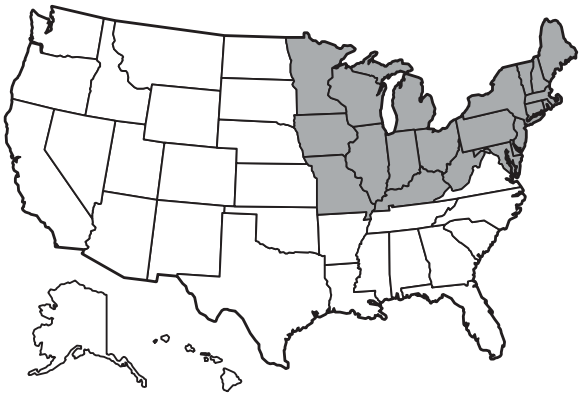
Applies To:**1998–02 Passport** – ALL **December 10, 2010**

Safety Recall: Corrosion On Lower Trailing Link Front Brackets

BACKGROUND

Over time, in areas that use road salt,* excessive corrosion can develop on or near the brackets attaching the lower trailing links to the frame. If the corrosion reaches a heavy stage, a clunking noise may be heard during acceleration and braking. In rare cases of severe corrosion, a trailing link could separate from the frame. If this happens, vehicle handling could be affected, increasing the risk of a crash.

* Road salt is commonly used in an area known as the "salt belt." As shown in the shaded area of the map, the salt belt includes these states: Connecticut, Delaware, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, Wisconsin, and Washington D.C.



CUSTOMER NOTIFICATION

All owners of affected vehicles that were originally purchased or currently registered in a salt belt state will be sent a notification of this campaign. Two different notifications are being sent: one for vehicles less than 10 years old (as of September 22, 2010), and another for vehicles more than 10 years old (as of September 22, 2010). Examples of both customer notifications are at the end of this service bulletin.

Before beginning work on a vehicle, verify its eligibility by checking at least one of these items:

- The customer has a notification letter.
- The vehicle is shown as eligible on an iN VIN status inquiry.

In addition, check for a campaign completion label on the back edge of the driver's door, just below the door latch. This label indicates that the campaign has already been completed.

Some vehicles affected by this campaign may be in your used vehicle inventory. As a matter of federal law, these vehicles **must** be repaired before they are sold.

Should a dealership sell an unrepaired vehicle that subsequently causes an injury or damage because of the recalled item, the dealership will be solely responsible to the damaged party, and will be required to defend and indemnify American Honda for any resulting claims. To see if a vehicle in inventory is affected by this campaign, do an iN VIN status inquiry before selling it.

CORRECTIVE ACTION

Inspect the lower trailing link frame brackets for corrosion (see page 3) and, depending on the stage of corrosion, do one of these repairs:

- **STAGE 1 REPAIR** (about 50 percent of affected vehicles): Apply Noxudol 300 anti-corrosion wax (see page 4).
- **STAGE 2 REPAIR** (about 40 percent of affected vehicles): Apply Noxudol 300 and Noxudol 700 anti-corrosion wax (see page 5).
- **STAGE 3 REPAIR** (about 8 percent of affected vehicles): Install Trailing Link Frame Bracket Kit A, and apply Noxudol 300 and Noxudol 700 anti-corrosion wax (see page 8).
- **STAGE 4 REPAIR** (only about 1 percent of affected vehicles): Install Trailing Link Frame Bracket Kit B, and apply Noxudol 300 and Noxudol 700 anti-corrosion wax (see page 13).

Skill Level R REPAIR

CUSTOMER INFORMATION: The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

PARTS INFORMATION

Frame Rail Side Hole Plug (two required):

P/N 8-97175-885-0

(Needed only if the original plugs are damaged or missing.)

Trailing Link Frame Bracket Kit A:

1998–00 - P/N 8-98181-806-0

2001–02 - P/N 8-98181-813-0

NOTE: *This kit is needed only for a STAGE 3 REPAIR.*

Contains left and right type A reinforcement brackets, flange bolt (2), flange nut (2), bracket bolt (6), pop nut (9), front link bolt (2), front link nut (2), washer*, 3/4 in. round label (8), and pop nut test plate.

* Included in kit P/N 8-98181-806-0 only.

Trailing Link Frame Bracket Kit B:

P/N 8-98181-814-0

NOTE: *This kit is needed only for a STAGE 4 REPAIR.*

Contains left and right type B reinforcement brackets, flange bolt (2), flange nut (2), bracket bolt (32), pop nut (35), rear link bolt (2), rear link nut (2), 3/4 in. round label (32), pop nut test plate, M6 bolt (4), M8 nut (4), wire harness clip (3), fuel hose clip (6), fuel tank mounting bolt (5), fuel tank nut, exhaust pipe gasket (2), EGR valve gasket (2), and brake line clip (7).

REQUIRED MATERIALS

Noxudol 300 Anti-Corrosion Wax: P/N 2-9005D-100-0

STAGE 1 and STAGE 2 REPAIRS: One can repairs four vehicles.

STAGE 3 REPAIR: One can repairs two vehicles.

STAGE 4 REPAIR: One can repairs one vehicle.

Noxudol 700 Anti-Corrosion Wax: P/N 2-9005D-000-0

STAGE 2 and STAGE 3 REPAIRS: One can repairs one vehicle.

STAGE4 REPAIR: Two cans repair one vehicle.

TOOL INFORMATION

NOTE:

- The pop nut installer, the 1/4 in. drill guide, and the 33/64 in. drill bit were auto-shipped to all dealers in the salt belt states as required special tools.
- If you are a dealer located outside the salt belt states, and have a vehicle that requires a STAGE 3 or STAGE 4 REPAIR, please call the Honda Tool Loan Program at **1-800-824-9655** to obtain the above tools on a loaner basis.
- 12–16 oz. hammer (commercially available)
- 3/16 in. x 9 in. flat punch (commercially available)
- 9 in. C-clamp* (two required, commercially available)
- Reciprocating saw and blades (14 TPI or more)* (commercially available)
- 3/8 in. drill motor* (commercially available)
- 1/2 in. drill motor* (commercially available)
- 1/4 in. drill bit* (commercially available)
- Ratcheting strap (2)* (commercially available)
- 4x4x7 in. wood block* (two required, commercially available)
- 4x4x10-1/4 in. wood block* (two required, commercially available)
- Pop Nut Installer*
  Includes Pop Nut Installer, air regulator, and pneumatic fitting
- 1/4 in. Drill Bit Guide*
- 33/64 in. Drill Bit*

* Needed only for STAGE 3 or STAGE 4 REPAIRS.

WARRANTY CLAIM INFORMATION

OP#	Description	FRT
4195A1	Inspect the trailing link front brackets.	0.2
A	Add for removing and reinstalling side steps or running boards	1.0
4195A2	Inspect the trailing link front brackets, and do the STAGE 1 REPAIR.	0.3
4195A3	Inspect the trailing link front brackets, and do the STAGE 2 REPAIR.	0.4
A	Add for removing and reinstalling side steps or running boards	1.0
4195A4	Inspect the trailing link front brackets, and do the STAGE 3 REPAIR.	1.4
A	Add for removing and reinstalling side steps or running boards	1.0
4195A5	Inspect the trailing link front brackets, and do the STAGE 4 REPAIR.	10.0
A	Add for removing and reinstalling side steps or running boards.	1.0

Failed Part: P/N 8-97366-503-0

Defect Code: 5XZ00

Symptom Code: R4800

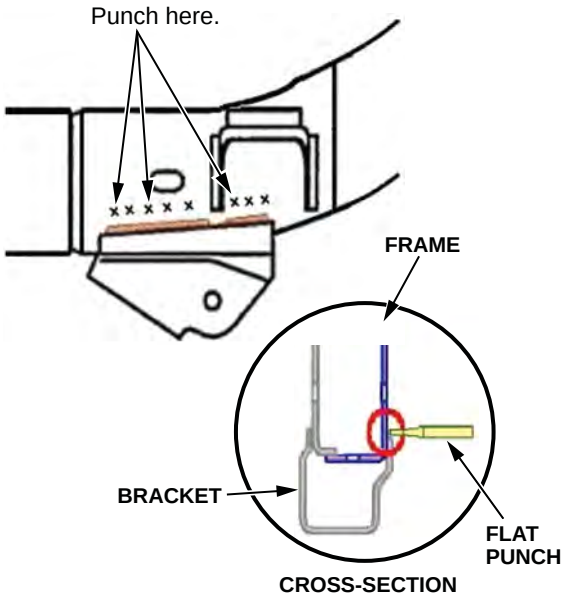
Skill Level: Repair Technician

INSPECTION PROCEDURE

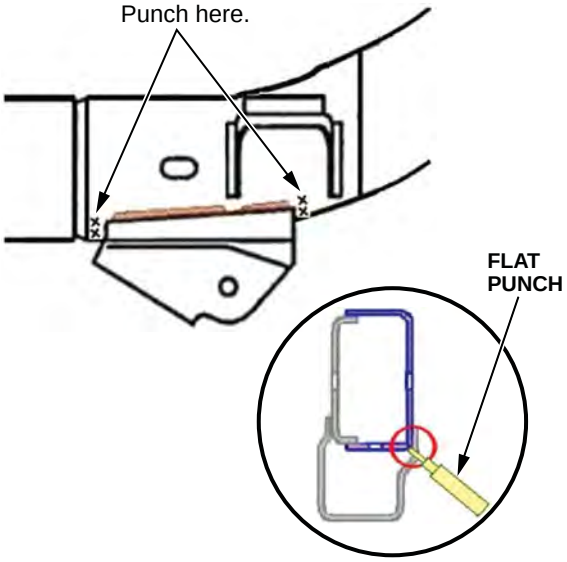
NOTE: Do this inspection on both sides of the vehicle.

1. Raise the vehicle on a lift. To allow enough clearance for the inspection, make sure the rear lifting points are at least 12 inches (300 mm) ahead of the rear trailing link front mounting brackets.
2. Visually inspect the lower trailing link front bracket area at the red circle in the photo below:
   - If the vehicle's bracket area is rusted to a similar or lesser degree than that in the photo, go to STAGE 1 REPAIR (see page 4).
   - If the vehicle's bracket area is rusted to a greater degree than that in the photo, go to the next step.

3. If the vehicle has side steps or running boards, remove them.
4. Use a 3/16 in. x 9 in. flat punch and a 12–16-oz. hammer to strike the frame areas marked X in the illustration below. Swing the hammer with a 10 to 12 inch stroke to be sure enough force is applied to the punch.
   - If the punch doesn't poke a hole in any of the X-marked areas on the frame, go to STAGE 2 REPAIR (see page 5).
   - If the punch pokes a hole in any of the X-marked areas, go to the next step.



5. Use the punch and the hammer to strike the frame corners on each of the X-marked areas in the illustration below. Again, swing the hammer with a 10 to 12 inch stroke to be sure enough force is applied to the punch.
   - If the punch doesn't poke a hole in any of the X-marked areas, go to STAGE 3 REPAIR (see page 8).
   - If the punch pokes a hole in any of the X-marked areas, go to STAGE 4 REPAIR (see page 13).

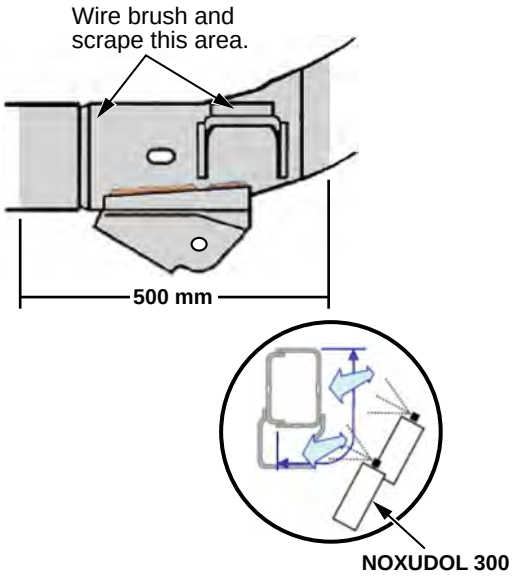


STAGE 1 REPAIR

NOTE:

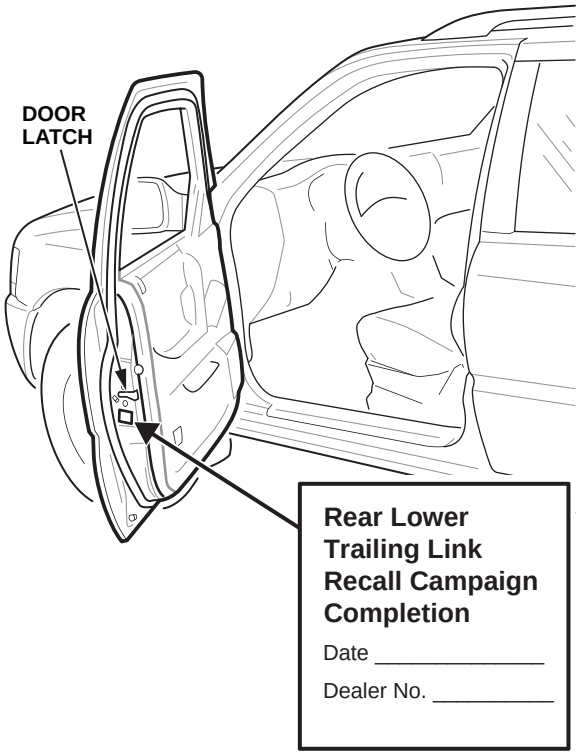
- Do this repair on both sides of the vehicle.
- Noxudol spray is highly flammable. Keep away from ignition sources (no smoking). Keep at a temperature not exceeding 120°F (50°C).
- Wear hand and eye protection to avoid direct contact with the Noxudol spray. Spraying should be done in an area with adequate ventilation.

1. Using a wire brush and a scraper, remove any loose frame coating and rust from the outside frame rail and the lower trailing link frame bracket in the 20-inch (500 mm) section shown below.



2. Use a dry rag to remove any remaining dust or debris. If the area is wet, dry it with an air nozzle.
3. Spray a coat of Noxudol 300 onto the lower trailing link frame brackets, and on the outside of the frame rails in the area you just cleaned. The total spray area is about 20 inches (500 mm). Be careful not to overspray onto the exhaust system or body painted areas.
4. Fill out the information on a campaign completion label. Stick this label to the back edge of the driver's door, just below the door latch.

   NOTE: To order more labels, use reorder number Y0895.



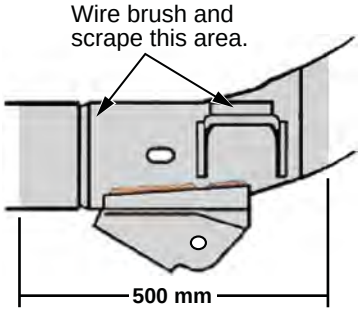
STAGE 2 REPAIR

NOTE:

- Do this repair on both sides of the vehicle.
- Noxudol spray is highly flammable. Keep away from ignition sources (no smoking). Keep at a temperature not exceeding 120°F (50°C).
- Wear hand and eye protection to avoid direct contact with the Noxudol spray. Spraying should be done in an area with adequate ventilation.

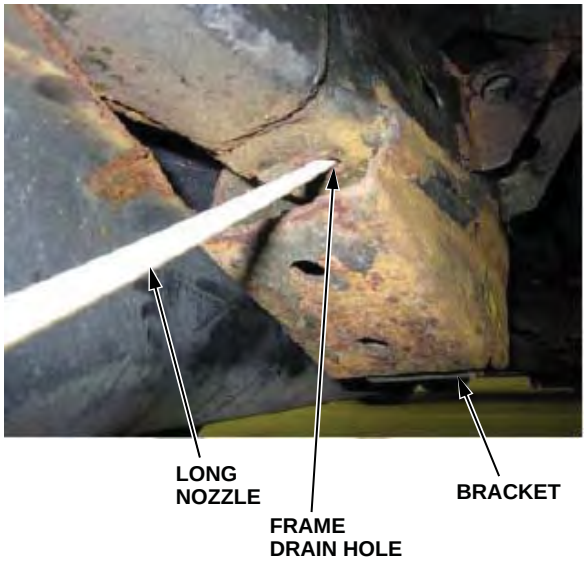
1. Remove the frame rail side hole plug from the driver's and passenger's side frame rails.

2. Using a hammer, knock on the outside of the frame rail around the lower trailing link bracket area to loosen any rust on the inside of the frame.
3. Using an air nozzle, blow into the frame rail hole, up and down inside the frame, to move any debris away from the trailing link bracket area.
4. Using a wire brush and a scraper, remove any loose frame coating and rust from the outside frame rail and the lower trailing link frame bracket in the 20-inch (500 mm) section shown below.

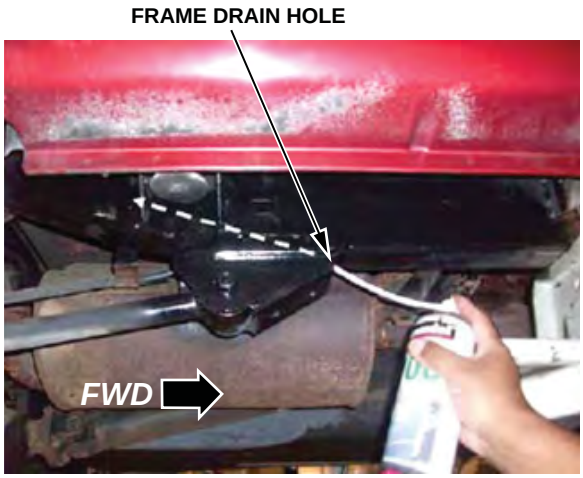


5. Use a dry rag to remove any remaining dust or debris. If the area is wet, dry it with an air nozzle.
6. Attach the long nozzle to the Noxudol 700 can, then use a pen or tape to mark the nozzle at 12 inches (300 mm) and at 7 inches (200 mm) from the nozzle end. These marks indicate how far you will insert the nozzle into the frame rails for some of the following steps.

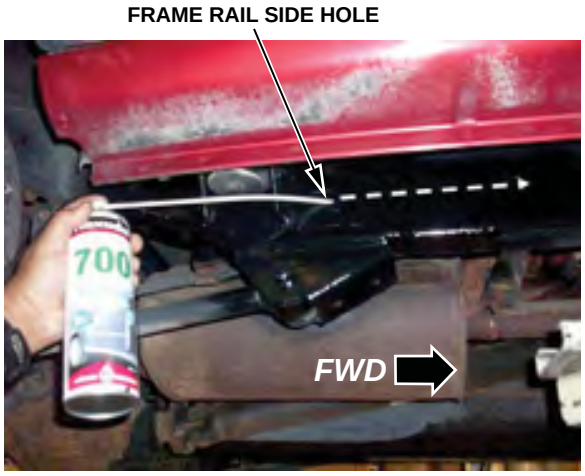
7. Place a drain pan below the frame's drain hole next to the trailing link bracket. This will catch the excess Noxudol 700 that runs out of the frame's drain hole, which is expected and normal.



8. Insert the Noxudol 700 spray nozzle about 12 inches (300 mm) into the frame drain hole located on the bottom of the frame rail, toward the *rear* of the vehicle. Then spray the Noxudol while drawing out the nozzle. Spray *two* times.



9. Insert the Noxudol 700 spray nozzle about 12 inches (300 mm) into the frame rail side hole, toward the *front* of the vehicle. Then spray the Noxudol while drawing out the nozzle. Spray *four* times.

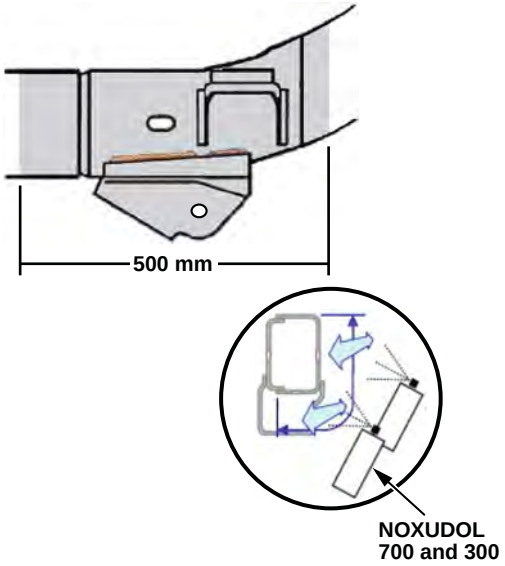


10. Insert the Noxudol 700 spray nozzle about 7 inches (200 mm) into the frame rail side hole, toward the *rear* of the vehicle. Then spray the Noxudol while pulling out the nozzle. Spray *four* times.

11. Insert the Noxudol 700 spray nozzle into the frame rail side hole, *pointing up,* until it touches the top of the frame. Spray the Noxudol upward while pulling out the nozzle. Spray *two* times.

12. Insert the Noxudol 700 spray nozzle into the frame rail side hole, *pointing down*, until it touches the bottom of the frame. Spray the Noxudol downward while pulling out the nozzle. Spray *two* times.

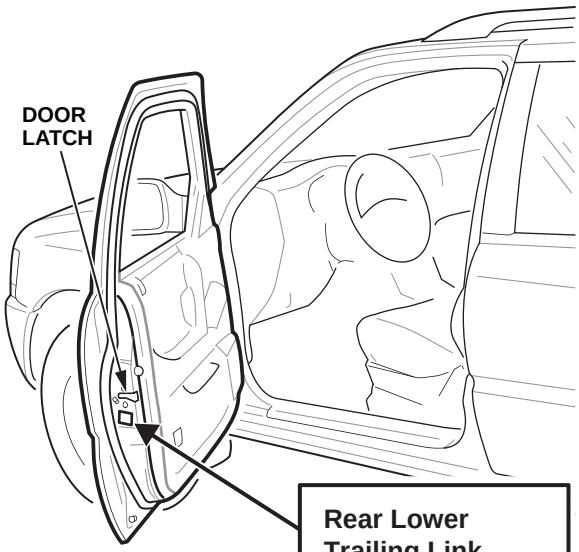
13. Remove the long spray nozzle from the Noxudol 700 can, and attach the regular spray valve. Spray a coat of Noxudol 700 on the outside of both lower trailing link frame brackets and frame rails in the 20-inch (500 mm) section shown below. Be careful not to overspray onto the exhaust system or body painted areas.



14. Spray a coat of Noxudol 300 on the same areas you sprayed in step 13. Be careful not to overspray onto the exhaust system or painted areas on the body.

15. Reinstall both frame rail side hole plugs. If either plug was damaged or missing, install a new one.
16. If the side steps or the running boards were removed, reinstall them.
17. Fill out the information on a campaign completion label. Stick this label to the back edge of the driver's door, just below the door latch.

    NOTE: To order more labels, use reorder number Y0895.



Rear Lower Trailing Link Recall Campaign Completion

Date _____

Dealer No. _____

STAGE 3 REPAIR

NOTE:

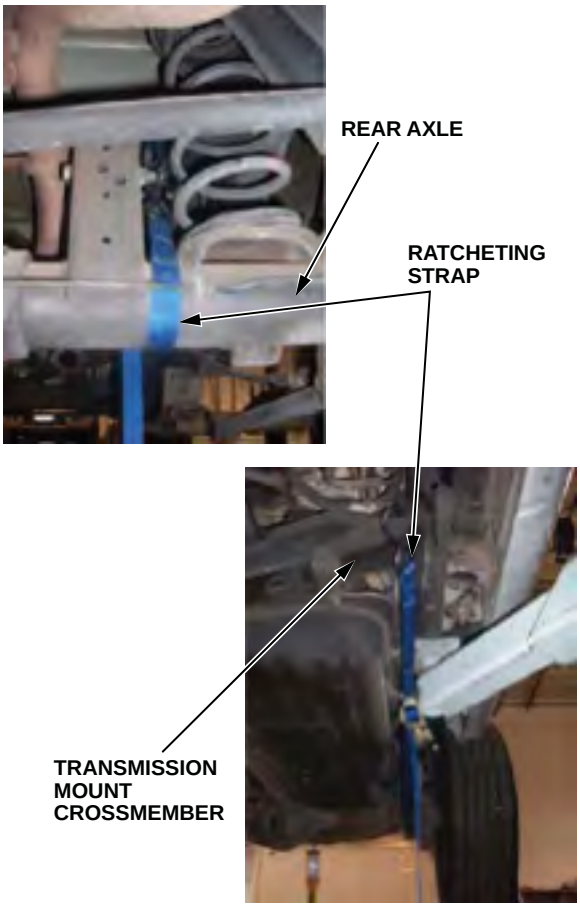
- Trailing Link Frame Bracket Kit A is not available until mid-January 2011. If the vehicle needs a STAGE 3 REPAIR prior to bracket kit availability, submit a warranty claim for inspection only at this time, and return the vehicle to the customer until the bracket kit is available.
- Do this repair on both sides of the vehicle.

1. Remove the frame rail side hole plug from both frame rails.

2. Remove the lower trailing link front mounting nuts from both trailing links. The mounting bolts will be removed later.

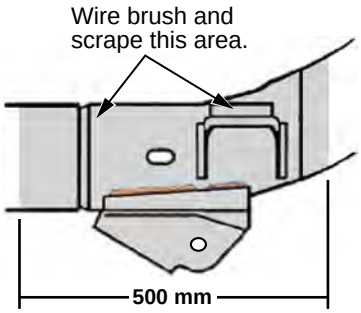
3. Remove the lower half of body mount #4 from both sides of the vehicle.

4. Using two ratcheting straps, lash up both sides of the rear axle to remove the tension on the trailing links:
   - Attach one end of the straps to the lower trailing link rear mounting bracket on rear axle.
   - Route the strap around the rear axle, making sure not to route it over any brake lines.
   - Attach the other end of the straps to the transmission mount crossmember.
   - Ratchet the straps to apply enough forward tension on the rear axle to allow the lower trailing link front mounting bolts to be moved by hand.



5. Using a hammer, knock on the outside of the frame rail around the lower trailing link bracket area to loosen any rust on the inside of the frame.

6. Using a wire brush and a scraper, remove any loose frame coating, weld spatter, and rust from the outside frame rail and the lower trailing link frame bracket in the 20-inch (500 mm) section shown below.



7. Use a dry rag to remove any remaining dust or debris. If the area is wet, dry it with an air nozzle.
8. Temporarily install both type A reinforcement brackets using the original lower trailing link front mounting nuts, C-clamps, and new body mount studs and nuts.

   NOTE:
   - When securing the C-clamp on the passenger's side, be sure not to contact the brake lines on the inside of the frame rail.
   - On some 2000 models and all 2001–02 models, you need to remove the fuel tank protector and its bolt from the driver's side. Save the bolt; it's required for the temporary and the final installation of the driver's side type A reinforcement bracket.

TYPE A REINFORCEMENT BRACKET

Passenger's Side: **All Models**

TYPE A REINFORCEMENT BRACKET

Driver's Side: **Some 2000 models, and all 2001-02 models (Weld nut allows temporary installation of front nut.)**

TYPE A REINFORCEMENT BRACKET

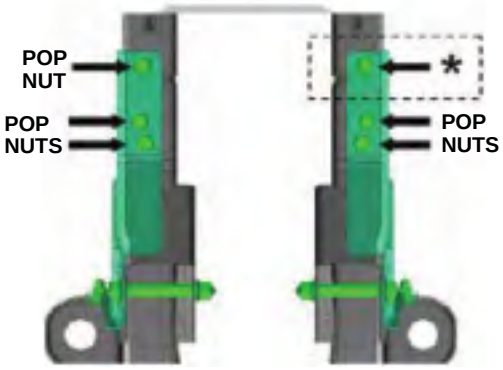
Driver's Side: **All 1998-99 models, and some 2000 models**

9. Using a 3/8 in. drill motor, a 1/4 in. drill guide, and a 1/4 in. bit, drill three pilot holes per side into the bottom of the frame rail, through each hole in the type A reinforcement bracket.

   NOTE: On some 2000 models and all 2001–02 models, the driver's side requires only two holes due to the welded nut inside the frame, at the front bracket hole. Do not drill a hole in this location.

1/4 IN. DRILL GUIDE AND BIT DRILLING THROUGH TYPE A BRACKET AND INTO FRAME

DRILLED PILOT HOLES



*** POP NUT ON ALL 1998-99 AND SOME 2000 MODELS; WELD NUT ON SOME 2000 AND ALL 2001-02 MODELS.**

10. Remove both type A reinforcement brackets. Save the body mount studs and nuts for the final installation, and discard the original trailing link front mount mounting nuts.
11. Using a 1/2 in. drill motor and a 33/64 in. bit, drill final holes where you made the pilot holes.
12. Test fit a pop nut into each hole to be sure drilling is complete.

    NOTE: If a pop nut doesn't fit, don't try to enlarge the hole by pivoting the drill bit. Doing this creates an uneven seating surface for the pop nut. If the pop nut doesn't fit, your drill bit is worn out and needs to be sharpened or replaced.
13. Insert an air gun into the frame rail hole, and blow up and down the inside of the frame rails to move any rust or metal debris away from the area.
14. Attach the pop nut installer to shop air, and adjust the tool's air pressure regulator to between 72 and 87 psi.

    NOTE:
    - The tool's air pressure is critical: if it's too low, the pop nuts cannot be correctly installed; if it's too high, the tool will be damaged.
    - If this is your first time using the pop nut installer, or if you haven't used it in a while, practice installing one or two pop nuts onto the pop nut test plate:
      - Place a pop nut at the tip of installer's threaded mandrel. Make sure to keep your fingers away from the gap between the pop nut and the base of the mandrel. Squeeze the installer's trigger; the pop nut threads onto the mandrel.

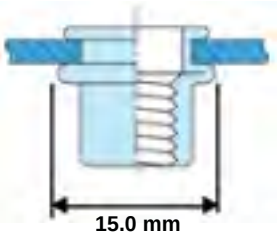
POP NUT INSTALLER WITH AIR PRESSURE REGULATOR

      - Insert the pop nut into a hole on the pop nut test plate. Make sure the pop nut is seated against the plate.

POP NUT TEST PLATE

POP NUTS

- Squeeze and hold the installer's trigger until the mandrel reverses and unthreads the pop nut.
- Measure the diameter of the expanded (crush) section of the installed pop nut; it should be at least 15 mm. If you need more practice, install another pop nut on the test plate.



15. Install pop nuts in the holes you drilled on the frame (six holes for all 1998–99 models and some 2000 models, five holes for some 2000 models and all 2001–02 models). Make sure each pop nut is seated against the frame before you pull the trigger. Continue holding the trigger until the mandrel reverses direction. Once reversed, pull back slightly, and the mandrel unthreads the pop-nut.

PASSENGER-SIDE POP NUTS INSTALLED

16. Cover all six holes with the 3/4 in. round labels from the kit. This will prevent the Noxudol anti-corrosion wax from contaminating the pop nut threads and the weld nut threads (if applicable). Also, use masking tape to cover the other areas shown below. This will prevent the Noxudol from contaminating the bracket mounting surfaces.

17. Apply Noxudol 700 and Noxudol 300 anti-corrosion waxes (see steps 5 thru 13 of STAGE 2 REPAIR).
18. Remove the round labels and the masking tape.
19. Remove the passenger's side lower trailing link front mounting bolt.

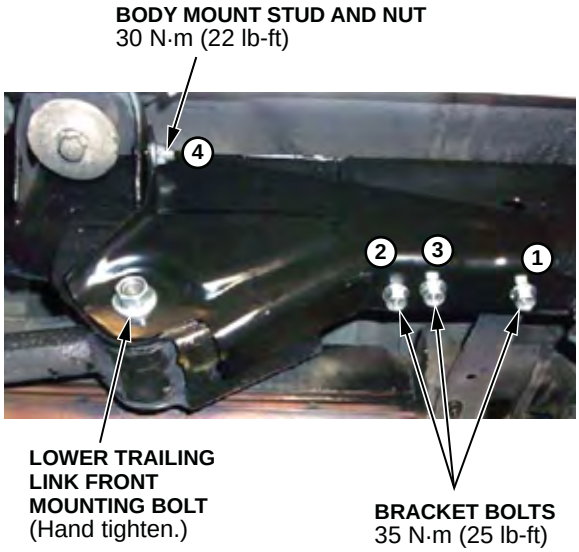
    NOTE: On 2000–02 Passports, interference from the exhaust silencer (muffler) prevents removal of the front mounting bolt. On these vehicles, use a reciprocating saw to cut off the bolt head, then slide the rest of the bolt through the other side of the mount.

20. Install the passenger's side type A reinforcement bracket using the hardware in the kit:

    All 1998–99 models and some 2000 models require three bolts and one body mount stud and nut; some 2000 models require three bolts, one body mount stud and nut, *plus* one washer; all 2001–02 models require three bolts, one body mount stud and nut, *plus* one fuel tank protector bolt.

    Install the trailing link front mounting nut and bolt hand-tight, then torque the remaining bolts and nuts, *in the order shown on the illustration below:*

    - Torque the bracket bolts to **35 N·m (25 lb-ft)**.
    - Torque the body mount stud and nut to **30 N·m (22 lb-ft)**.



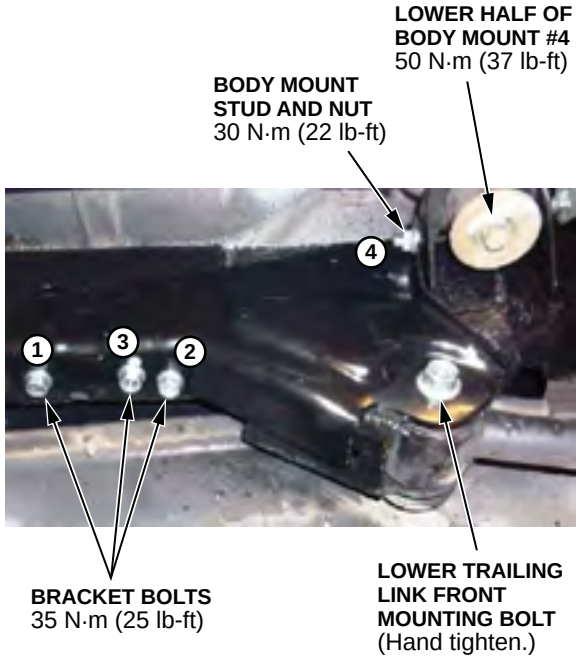
21. Remove the driver's side lower trailing link front mounting bolt:
    - Push the bolt out toward the fuel tank as far as possible.
    - Cut off the bolt head with a reciprocating saw.
    - Push the bolt out through the opposite side of the bracket.

22. Install the driver's side type A reinforcement bracket using the hardware in the kit.

    All 1998–99 models and some 2000 models require three bolts and one body mount stud and nut; some 2000 models require three bolts, one body mount stud and nut, *plus* one washer; all 2001–02 models require three bolts, one body mount stud and nut, *plus* one fuel tank protector bolt.

    Install the lower trailing link front mounting nut and bolt hand-tight, then torque the remaining bolts and nuts, *in the order shown on the illustration below:*

    - Torque the bracket bolts to **35 N·m (25 lb-ft)**.
    - Torque the body mount studs and nut to **30 N·m (22 lb-ft)**.

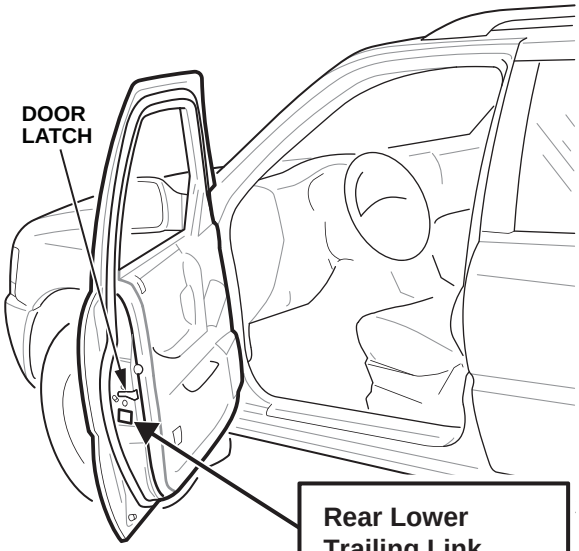


    - Reinstall the lower half of body mount #4 on both sides of the vehicle. Torque the nuts to **50 N·m (37 lb-ft)**.

23. Remove the ratcheting straps.
24. Lower the vehicle to the ground, then torque the lower trailing link front mounting bolts to **165–180 N·m (122–133 lb-ft)**.
25. If the side steps or the running boards were removed, reinstall them.

26. Fill out the information on a campaign completion label. Stick this label to the back edge of the driver's door, just below the door latch.

    NOTE: To order more labels, use reorder number Y0895.

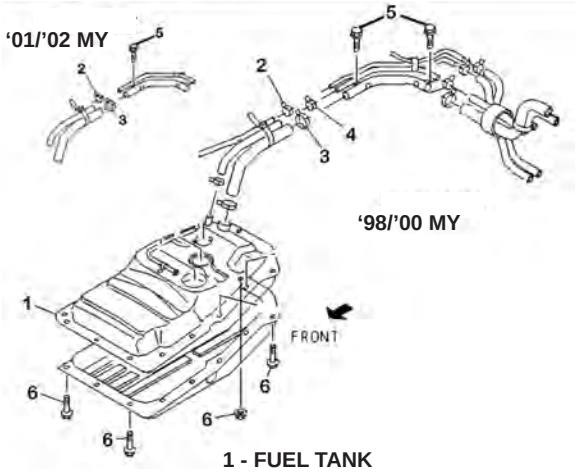


STAGE 4 REPAIR

NOTE:

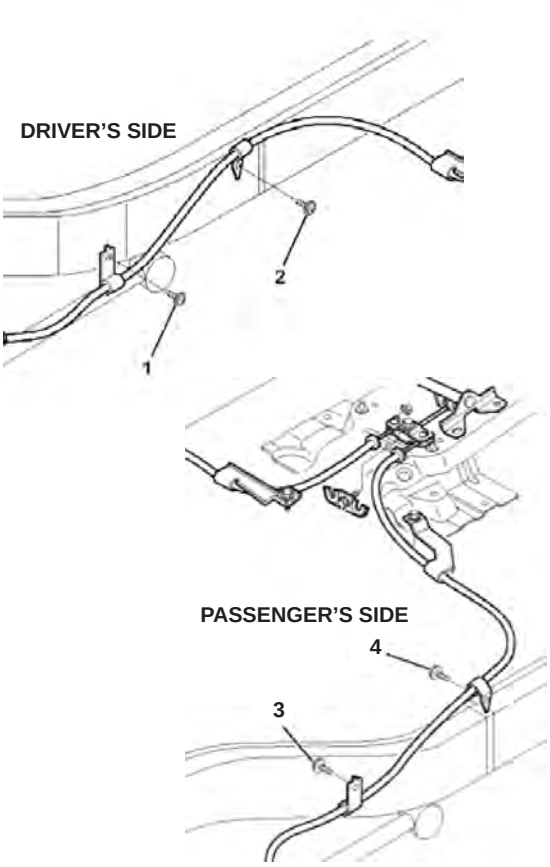
- Trailing Link Frame Bracket Kit B is not available until mid-January 2011. If the vehicle needs a STAGE 4 REPAIR prior to bracket kit availability, submit a warranty claim for inspection only and make provisions for the vehicle to be parked until the bracket kit is available. Instruct the customer that the vehicle is considered unsafe to drive.
- Before doing this repair, thoroughly inspect the vehicle, including the entire underside, and note any damage and/or modifications. Contact Techline for pre-repair approval. Photos of the lower trailing link bracket area will be required to send in to Techline as a part of this approval process. If you find anything that may affect the completion of the repair, contact Techline.
- This repair includes removing and reinstalling the fuel tank assembly, fuel lines, and vent lines. Take normal precautions during removal, storage, and reinstallation of these parts. Make sure to do this repair in a well vented area, away from any ignition sources.
- This repair involves raising the body off the frame and cutting the original rear trailing link front mounting brackets off the frame rails. *To avoid permanent frame damage that would make the vehicle unrepairable, carefully follow all of the steps.* If you are unfamiliar with this type of repair, sublet it to a qualified body/frame repair shop.
- If needed, refer to the appropriate Passport Service Manual for any steps not fully detailed.
- Do this repair on both sides of the vehicle.

1. Remove the radiator grille.
2. Remove the linear EGR valve.
3. Remove the rear bumper assembly.
4. Remove the exhaust silencer (muffler).
5. Remove the fuel tank assembly:
   - Disconnect the fuel line at the fuel filter and the fuel return hoses.
   - Disconnect the fuel tank at locations 2, 3, and 4. shown below.

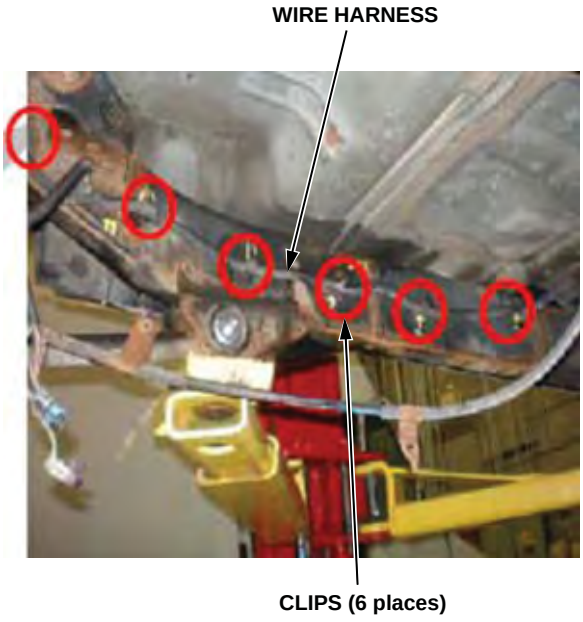


1 - FUEL TANK
2 - FUEL LINE CLIP
3 - FUEL LINE CLIP
4 - FUEL LINE CLIP
5 - FUEL PIPE MOUNTING BOLTS
6 - FUEL TANK MOUNTING BOLTS

6. Loosen the parking brake cable mounting brackets on both sides of the frame (four places).

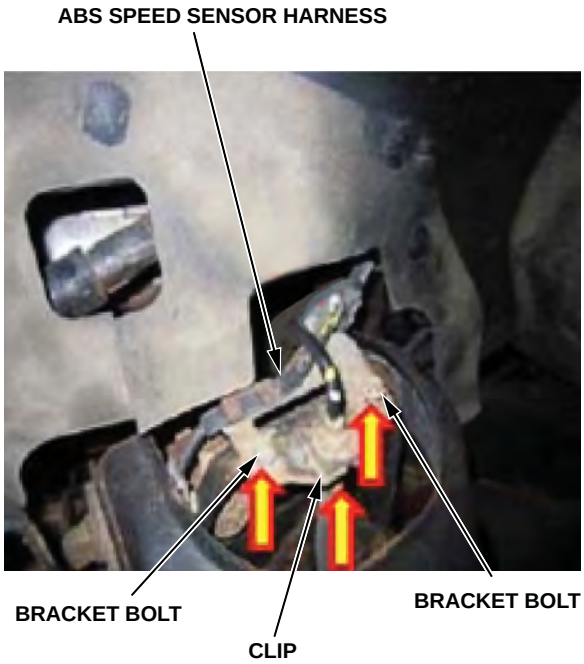


7. On the driver's side of the frame, loosen the six wire harness clips.



8. On the passenger's side of the frame, loosen the four brake line clips.

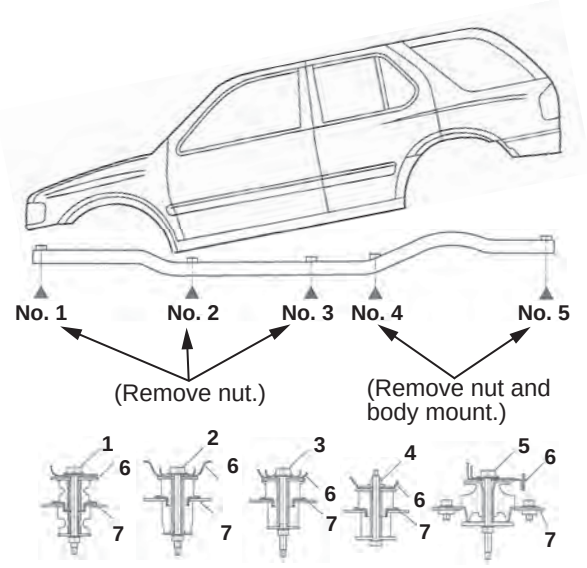
9. Loosen the ABS speed sensor harness bracket bolts and clip from both front fenderwells.



10. Loosen the EVAP canister line from the bulkhead (three clips).

EVAP CANISTER LINE

11. Remove the body mount mounting nuts (mounts No. 1, 2, 4, and 5) and bolt (mount No. 3).



1 - 5 BODY MOUNTS
6 BODY SIDE MOUNTING BRACKET
7 FRAME SIDE MOUNTING BRACKET

12. Using two ratcheting straps, lash up both sides of the rear axle to support it during the following steps:
    - Attach one end of the strap above the axle at the driver's side inside frame rail.
    - Route the other end of the strap down, underneath the rear axle, and then back up above the outside of the driver's side frame rail.
    - Connect both ends of the strap together and remove any slack.
    - Attach the other ratcheting strap to the passenger's side the same way as the driver's side.
13. Lower the vehicle to the ground.
14. Carefully raise the rear of the body about 10 inches off the frame, and temporarily support it. The equipment/method used to raise the body off the frame include, but are not limited to, one of these options:
    - Raise the body at the rear wheelwells using a vehicle hoist with padded swing arms.
    - Raise the body at the bottom of the rear swing out door using a 4x4 in. piece of wood (running the width of the body) and a forklift.

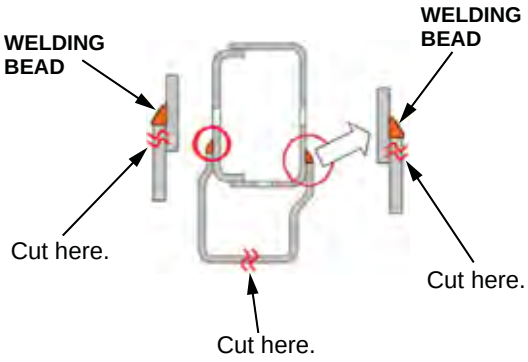
    To prevent injury or vehicle damage, be sure to chose the safest possible method for your particular situation.
15. Remove the mounting bolts for the left and right side No. 5 body mounts, then remove the mounts. Refer to step 11.
16. Remove the top of body mount No. 4 from the left and right sides. Refer to step 11.

17. Insert wood blocks at the No. 4 and 5 body mounts to support the body off of the frame, and provide access for the following steps. The No. 4 body mount should be about 7 inches (175 mm) above the frame, and the No. 5 body mounts should be about 10.25 inches (260 mm) above the frame.

WOOD BLOCK INSTALLED AT #4 BODY MOUNT

WOOD BLOCK INSTALLED AT #5 BODY MOUNT

18. Remove both lower trailing link front mounting nuts and bolts. Discard the nuts and the bolts; new ones are included in the bracket kit.
19. Raise the vehicle on a lift.
20. Cut off the driver's side and the passenger's side lower trailing link front brackets from the frame:
    - Using a cutting wheel, cut just below or through the bracket weld to remove the bracket.
    - Once the bracket is removed, use a disk grinder to remove any excess material and smooth out the frame.



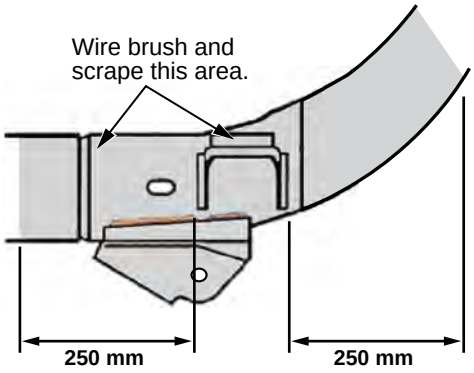
VIEW OF INBOARD FRAME AFTER BRACKET REMOVAL

21. Remove and discard the frame rail side hole plug from both frame rails.

FRAME RAIL SIDE HOLE PLUG

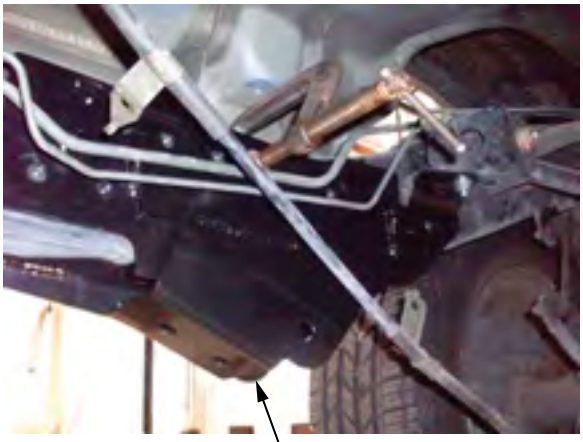
22. Using a hammer, knock on the outside of both frame rails to loosen any rust on the inside of the frame.

23. Using a wire brush and a scraper, remove any loose frame coating and rust from the outside frame rail. Clean 10 inches (250 mm) forward and rearward of the bracket area.



24. Use a dry rag to remove any remaining dust or debris.

25. Temporarily install both type B reinforcement brackets using new body mount studs and nuts, and C-clamps:
    - Secure the bracket to the frame using the new body mount stud and nut at the upper link bracket.
    - Firmly push the bracket up against the frame, and clamp it into place with a C-clamp. Make sure the C-clamp compresses the bracket against the frame so there is no possibility of bracket movement when drilling pilot holes into the frame.



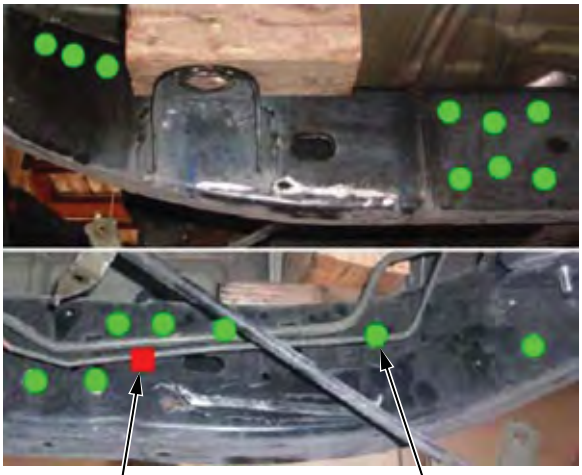
REINFORCEMENT BRACKET (Hold each bracket in place with a new body mount stud and bolt, and a C-clamp.)

26. Using a 3/8 in. drill motor, a 1/4 in. drill guide, and a 1/4 in. bit, drill 16 pilot holes into the frame rail, through each hole in the type B reinforcement bracket.

REINFORCEMENT BRACKET

1/4 IN. DRILL GUIDE AND BIT DRILLING THROUGH TYPE B BRACKET AND INTO FRAME

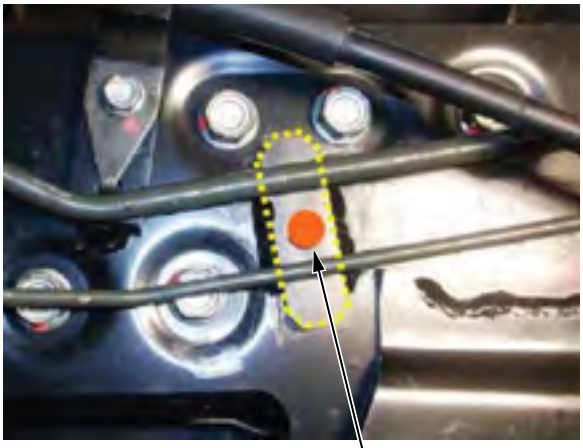
DRILLED PILOT HOLES



RED SQUARE: PILOT HOLE DRILLING LOCATION FOR PASSENGER'S SIDE BRAKE LINE CLIP

GREEN CIRCLES: PILOT HOLE DRILLING LOCATIONS FOR POP NUTS

27. Using a 1/4 in. bit, drill a pilot hole into the passenger's side frame rail, through the type B reinforcement bracket brake clip mounting hole.



BRAKE LINE CLIP MOUNTING HOLE

28. Remove both type B reinforcement brackets. Save the body mount studs and nuts for the final installation.
29. Using a 1/2 in. drill motor and a 33/64 in. bit, final drill the pilot hole you made in step 27, then mark the hole with tape or chalk. This hole creates the clearance needed for the passenger's side brake line clip.

    NOTE: Do not install a pop nut into this hole.
30. Using the 1/2 in. drill motor and the 33/64 in. bit, drill 32 final holes (16 per bracket) where you made the pilot holes.
31. Test fit a pop nut into each of the 32 holes to be sure drilling is complete.

    NOTE: If a pop nut doesn't fit, don't try to try to enlarge the hole by pivoting the drill bit. Doing this creates an uneven seating surface for the pop nut. If the pop nut doesn't fit, your drill bit is worn out; sharpen or replace the drill bit, then redrill the affected final hole(s).
32. Insert an air gun into the frame rail hole, and blow up and down the inside of the frame rails to move any rust or metal debris away from the area.
33. Attach the pop nut installer to shop air, and adjust the tool's air pressure regulator to between 72 and 87 psi.

    NOTE:
    - The tool's air pressure is critical: if it's too low, the pop nuts cannot be correctly installed; if it's too high, the tool will be damaged.
    - If this is your first time using the pop nut installer, or if you haven't used it in a while, practice installing one or two pop nuts onto the pop nut test plate:
      - Place a pop nut at the tip of installer's threaded mandrel. Make sure to keep your fingers away from the gap between the pop nut and the base of the mandrel. Squeeze the installer's trigger; the pop nut threads onto the mandrel.

POP NUT INSTALLER WITH AIR PRESSURE REGULATOR

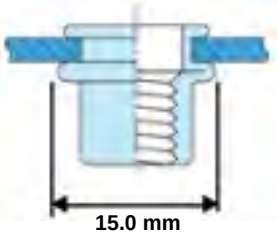
      - Insert the pop nut into a hole on the pop nut test plate. Make sure the pop nut is seated against the plate.

POP NUT TEST PLATE

POP NUTS

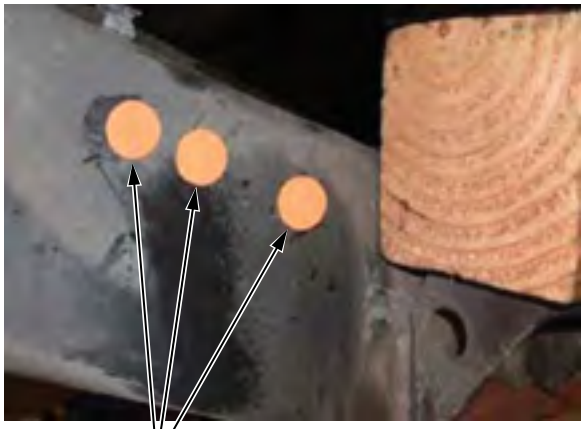
      - Squeeze and hold the installer's trigger until the mandrel reverses and unthreads the pop nut.

- Measure the diameter of the expanded (crush) section of the installed pop nut; it should be at least 15 mm. If you need more practice, install another pop nut on the test plate.



34. Install a pop nut in each of the 32 holes you drilled on the frame rails (16 per bracket). Make sure each pop nut is seated against the frame before you pull the trigger. Continue holding the trigger until the mandrel reverses direction. Once reversed, pull back slightly, and the mandrel unthreads the pop nut.

35. Temporarily install both type B reinforcement brackets again, then make sure all of the bolts can be started in each pop nut.
36. Remove both type B reinforcement brackets.
37. Cover all 32 holes with the 3/4 in. round labels from the kit. This will prevent the Noxudol from contaminating the pop nut threads.



POP NUTS COVERED BY 3/4 IN. ROUND LABELS

38. Use masking tape to cover the upper trailing link brackets. This will prevent the Noxudol from contaminating the bracket mounting surfaces.

UPPER TRAILING LINK BRACKET COVERED WITH MASKING TAPE

39. Apply Noxudol 700 and Noxudol 300 anti-corrosion waxes (see steps 5 thru 19 of STAGE 2 REPAIR).
40. Remove the round labels and the masking tape.

41. Install the left and right type B reinforcement brackets using all of the hardware in the kit. Torque the bolts and nuts, *in the order shown on the illustrations below:*
    - Torque the bracket bolts to **35 N·m (25 lb-ft)**.
    - Torque the body mount studs and nuts to **30 N·m (22 lb-ft)**.

42. Reinstall both lower trailing links with new front mounting nuts and bolts. Hand-tighten the nuts.
43. Remove the ratcheting straps.
44. Lower the vehicle to the ground.
45. Carefully raise the rear of the body off the frame using the method you chose earlier in the repair, then remove the wood blocks.
46. With the body still raised off the frame, reinstall the No. 5 body mounts, and torque the bolts to **50 N·m (37 lb-ft)**.
47. Spray some Noxudol 300 around the No. 4 body mount locations.
48. Carefully lower the body onto the frame, then torque the body mount nuts and bolts to **50 N·m (37 lb-ft)**.
49. Torque the lower trailing link front mounting bolts to **165–180 N·m (122–133 lb-ft)**.
50. Raise the vehicle, then reattach the EVAP canister line to the bulkhead (three clips).
51. Loosen the bracket bolts and clip from both front fenderwells. Reattach the ABS speed sensor harness clips in the front fenderwells, then torque the ABS speed sensor harness bracket bolts to **11 N·m (8 lb-ft).** Reconnect the ABS speed sensor harnesses.
52. Reattach the brake lines to the passenger's side of the frame using the four new clips from the kit.
53. Reattach the wire harness along the driver's side of the frame using the six new clips from the kit.
54. Reinstall the parking brake cable mounting brackets on both sides of the frame using the four new bolts from the kit. Torque the bolts to **7 N·m (5 lb-ft)**.
55. Reinstall the fuel tank assembly using the new mounting bolts, the nut, and the clips from the kit. Torque the mounting bolts and the nut to **68 N·m (50 lb-ft)**.
56. Reinstall the exhaust silencer (muffler) with a new gasket and new nuts. Torque the silencer nuts to **43 N·m (32 lb-ft)**. Torque the silencer bracket mounting nuts to **15 N·m (11 lb-ft)**.
57. Reinstall the rear bumper assembly. Torque the bumper mounting bolts to **147 N·m (108 lb-ft)**
58. Reinstall the linear EGR valve with a new gasket. Torque the bolts to **25 N·m (18 lb-ft).**
59. Reinstall the radiator grille.
60. If the side steps or the running boards were removed, reinstall them.
61. Fill out the information on a campaign completion label. Stick this label to the back edge of the driver's door, just below the door latch.

    NOTE: To order more labels, use reorder number Y0895.