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Ford Customer Service Division

Ford Motor Company
P. O. Box 1904
Dearborn, Michigan 48121

August 28, 2015

TO: All U.S. Ford and Lincoln Dealers

SUBJECT: **Safety Recall 11S16 – *Supplement #9***
Certain 1999-2003 Model Year Windstar Vehicles Operated in Corrosion States
Subframe Front Lower Control Arm Rear Attaching Flanges and Rear Body Mount Attachments Inspection and Repair

REF: **Safety Recall 11S16 – Supplement #8**
Dated May 1, 2012

Safety Recall 10S13 – Supplement #11
Certain 1998-2003 Model Year Windstar Vehicles Operated in Corrosion States
Rear Axle Inspection and Repair
Dated May 1, 2012

New! *REASON FOR THIS SUPPLEMENT*

The purpose of this supplement is to update Special Service Support Center (SSSC) contact information, and to advise dealers to use the SSSC Web Contact Site instead of Digital Imaging.

AFFECTED VEHICLES

Certain 1999 through 2003 model year Windstar vehicles built at the Oakville Assembly Plant from Job #1 1999 through Job Last 2003 and originally sold in, or currently registered in the following states:

Connecticut	Iowa	Michigan	New York	Vermont
Delaware	Kentucky	Minnesota	Ohio	Virginia
District of Columbia	Maine	Missouri	Pennsylvania	West Virginia
Illinois	Maryland	New Hampshire	Rhode Island	Wisconsin
Indiana	Massachusetts	New Jersey	Utah	

Affected vehicles are identified in OASIS. In addition, for a list of vehicles assigned to your dealership, visit https://web.fsavinlists.dealerconnection.com. This information will be available on May 1, 2012.

REASON FOR THIS SAFETY RECALL

In some of the affected vehicles, a front subframe Lower Control Arm (LCA) rear attaching flange or rear body mount could separate from the vehicle subframe after operating in high corrosion areas (where salt is used on the roadways during winter months) for an extended period of time. Separation of one LCA attachment or both rear body mounts may result in a loss of vehicle directional control, increasing the risk of a crash.

SERVICE ACTION

Dealers are to clean and inspect the LCA rear attaching flanges and rear body mount section of the subframe for cracks, perforations (holes), or significant material loss. Based on the results of the inspection, dealers will perform one of the following service actions:

1. **Subframe CAN be Repaired:** Clean and install the brackets per Attachment III – Technical Information and return the vehicle to the owner.

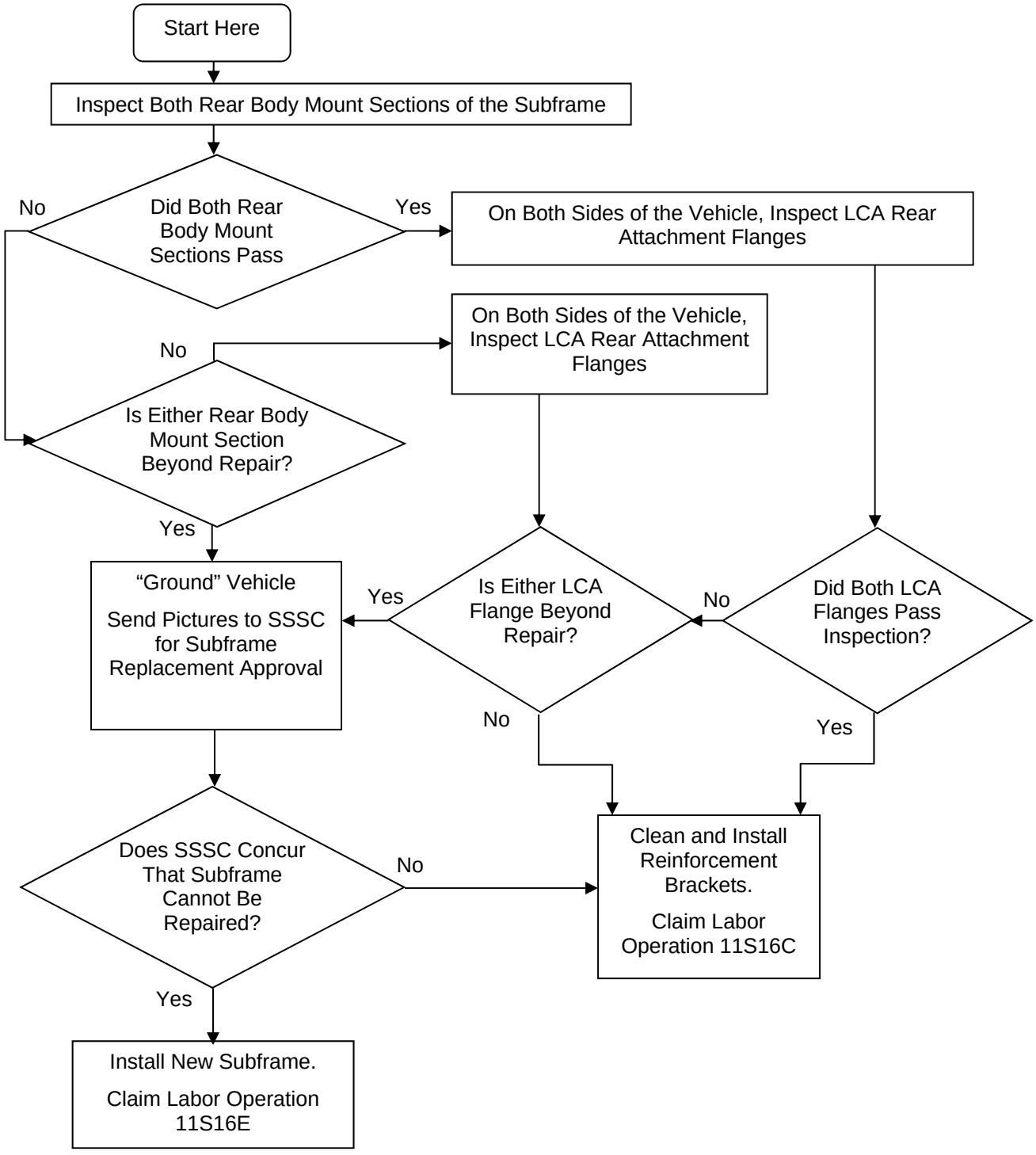
   PLEASE NOTE: The vehicle can be moved from the hoist as soon as the subframe reinforcement brackets are installed (as long as the axle reinforcement brackets for Safety Recall 10S13 are not being installed at the same time). The following guidelines **must** be followed:

   - **2 hour cure time at 21°C (70° F) or higher shop temperature**
   - **3 hour and 15 minute cure time at 16°C (60° F) shop temperature**
   - **If the shop temperature is lower than 16°C (60° F), the adhesive will need to cure overnight**
   - **DO NOT USE HEAT LAMPS TO REDUCE CURE TIME AS EXCESSIVE TEMPERATURES WILL AFFECT BOND STRENGTH OF THE ADHESIVE**

2. **Subframe CANNOT be Repaired:** Send pictures to Special Service Support Center (SSSC) using the SSSC Web Contact Site for vehicle subframe replacement consideration.

This service must be performed on all affected vehicles at no charge to the vehicle owner.

Repair Flow Chart



OWNER NOTIFICATION MAILING SCHEDULE

Owner Letters for the expanded population of vehicles are expected to be mailed the week of June 18, 2012. Dealers should perform an inspection on any affected vehicles identified in OASIS that arrive at their dealerships, whether or not the customer has received a letter.

New! **ATTACHMENTS**

Attachment I: *Administrative Information*
Attachment II: *Labor Allowances and Parts Ordering Information*
Attachment III: *Technical Information*
Attachment IV: *Dealer Q & A*
Owner Notification Letter
Recall Reimbursement Plan

New! ***QUESTIONS & ASSISTANCE***

For questions and assistance, contact the Special Service Support Center (SSSC) via the SSSC Web Contact Site. The site can be accessed through the Professional Technician Society (PTS) website using a the SSSC link listed at the bottom of the OASIS VIN report screen or listed under the SSSC tab.

Sincerely,

Michael A. Berardi

Safety Recall 11S16 – *Supplement #9*
Certain 1999-2003 Model Year Windstar Vehicles Operated in Corrosion States
Subframe Front Lower Control Arm Rear Attaching Flanges and Rear Body Mount Attachments
Inspection and Repair

OASIS ACTIVATED?

Yes, OASIS was activated on January 26, 2011.

FSA VIN LIST ACTIVATED?

Yes, FSA VIN list is available through https://web.fsavinlists.dealerconnection.com. Owner names and addresses will be added on June 29, 2012.

NOTE: Your FSA VIN list may contain owner names and addresses obtained from motor vehicle registration records. The use of such motor vehicle registration data for any purpose other than in connection with this recall is a violation of law in several states, provinces, and countries. Accordingly, you must limit the use of this listing to the follow-up necessary to complete this recall.

STOCK VEHICLES

Inspect and repair all affected units in your used vehicle inventory before delivery.

SOLD VEHICLES

- Owners of affected vehicles will be directed to dealers for inspection and repair.
- Correct other affected vehicles identified in OASIS which are brought to your dealership.

TITLE BRANDED / SALVAGED VEHICLES

Affected title branded and salvaged vehicles are eligible for this recall.

New! *ADDITIONAL LABOR TIME AND/OR PARTS*

Submit a request to the SSSC Web Contact Site prior to the repair if you have any of the following:

- *Damage that you believe was caused by the covered condition.*
- *A condition that requires additional labor and/or parts to complete the repair.*
- *Aftermarket equipment or non-Ford modifications to the vehicle which might prevent the repair of the covered condition.*

Requests for approval after completion of the repair may not be granted. Ford Motor Company reserves the right to deny coverage for related damage in cases where the vehicle owner has not had this recall performed on a timely basis. Additional related damage parts are subject to random selection for return to the Ford Warranty Parts Analysis Center (WPAC).

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OWNER REFUNDS

- **This safety recall must still be performed, even if the owner has paid for a previous repair. Claiming a refund will not close the recall on the vehicle.**
- Ford Motor Company is offering a refund for owner-paid repairs covered by this recall if the repair was performed prior to the date indicated in the reimbursement plan, which is posted with this bulletin. Owners are directed to seek reimbursement through authorized dealers or, at their option, directly through Ford Motor Company at P.O. Box 6251, Dearborn, MI 48121-6251.
- Dealers are also authorized to refund owner-paid emergency repairs that were performed away from an authorized servicing dealer after the end date specified in the reimbursement plan. Non-covered repairs, or those judged by Ford to be excessive, will not be reimbursed.
- Refunds will only be provided for the cost associated with the repair or replacement of a cracked or perforated subframe.

RENTAL VEHICLES

- Ford will pay for up to 2 days of vehicle rental if needed, except for fuel, while the vehicle is at the dealership for subframe replacement.
- Ford will pay for up to 1 day of vehicle rental if needed, except for fuel, while the vehicle is at the dealership for reinforcement bracket installation.
- Due to the unique circumstance of program 11S16, the maximum daily rental rate is $38 a day to cover costs associated with the vehicle and insurance, when required. If you have a customer with unique transportation issues, please contact the SSSC for assistance.
- Since the affected vehicles for Safety Recall 11S16 are generally within the population of 10S13, taxes and local surcharges associated with rental vehicles are eligible for reimbursement. Please note this is a unique exception being made to prevent customer confusion and be consistent with 10S13 Windstar Rear Axle Inspection and Repair.
- **ALL RENTAL EXPENSES, TAXES, AND LOCAL SURCHARGES MUST BE CLAIMED ON A SEPARATE REPAIR LINE UNDER PROGRAM CODE 89M01.**

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New! CLAIMS PREPARATION AND SUBMISSION

■ RELATED DAMAGE, "MT" LABOR, AND REFUND

- Enter claims using Direct Warranty Entry (DWE).
- Refer to ACESII manual for claims preparation and submission information.
- Related damage must be claimed on a repair line that is separate from the repair line on which the FSA is claimed. *Related damage requires prior approval from the SSSC via the SSSC Web Contact Site.*
- "MT" labor should be submitted on a separate repair line with the related damage flag checked. *"MT" labor requires prior approval from the SSSC via the SSSC Web Contact Site (please use Related Damage contact type).*
- Refund Claiming Information (Submit on separate repair line.)
  - Program Code: 11S16
  - Misc. Expense: REFUND
  - Misc. Expense: ADMIN
  - Misc. Expense: 0.2 Hrs.

■ SUBFRAME CAN BE REPAIRED

- **Provision for Subframe Reinforcement Repair:** Includes power steering hose convolute, Roloc™ disc, acid brush, Preval® sprayer and PM-13-A. Submit on same repair line as repair. Applies to Labor Operation 11S16C.
  - Program Code: 11S16
  - Misc. Expense: OTHER
  - Misc. Expense: $4.75
- **Rental Expenses:** Must be claimed on a separate repair line under program code 89M01. Dealers must submit for rental reimbursement (up to $38 per day) within 30 days of the repair date. Contact the SSSC if you have a customer with unique transportation issues.
  - Program Code: 89M01
  - Misc. Expense: RENTAL
  - Misc. Expense: Total amount
- **Rental Taxes and Local Surcharges:** Must be claimed on a separate repair line under program code 89M01. (When possible, these expenses should be claimed on a different line of the same repair order than the Rental Expense was claimed.)
  - Program Code: 89M01
  - Misc. Expense Code: RTAXES
  - Misc. Expense Amount: Total amount

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■ **SUBFRAME CANNOT BE REPAIRED – SUBFRAME REPLACEMENT APPROVED**
Once the SSSC has reviewed and concurred with the inspection results, they will place an order for the parts necessary to replace the subframe.

- **Rental Expenses:** Must be claimed on a separate repair line under program code 89M01. Dealers must submit for rental reimbursement (up to $38 per day) within 30 days of the repair date. Contact the SSSC if you have a customer with unique transportation issues.
  - Program Code: 89M01
  - Misc. Expense: RENTAL
  - Misc. Expense: Total amount
- **Rental Taxes and Local Surcharges:** Must be claimed on a separate repair line under program code 89M01. (When possible, these expenses should be claimed on a different line of the same repair order than the Rental Expense was claimed.)
  - Program Code: 89M01
  - Misc. Expense Code: RTAXES
  - Misc. Expense Amount: Total amount

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LABOR ALLOWANCES

SUBFRAME CAN BE REPAIRED

Description	Labor Operation	Labor Time
1999-2000 Vehicles: Performed inspection, raised transmission, cleaned replacement LCA brackets and subframe, and installed LCA and rear body mount reinforcement brackets.	11S16C	1.9 Hours
2001-2003 Vehicles: Performed inspection, cleaned replacement LCA brackets and subframe, and installed LCA and rear body mount reinforcement brackets.		
Extra time to cut one (1) or two (2) LCA flange(s). Can be claimed with operation 11S16 C.	11S16G	0.2 Hours

SUBFRAME CANNOT BE REPAIRED

Performed inspection and installed new subframe. (This includes 0.2 hrs to submit digital images.)	11S16E	3.2 Hours
Checked and adjusted toe alignment. Should be claimed with operation 11S16E.	11S16F	0.5 Hours

TOOL REQUIREMENTS

TA-10, Dual Cartridge Applicator Gun, is required to install the subframe reinforcement brackets. This tool was provided to support Safety Recall 10S13. If your dealership wishes to order additional applicator guns at the dealer's expense, you should place an order for TA-10 using the DOES II system.

A Preval® Spray Gun is required to apply PM-13-A Anti-Corrosion Coating. One spray gun cartridge will complete approximately 32 LCA reinforcement repairs. Obtain from local hardware stores, home centers, etc. Research indicates spray gun is available at most Sherwin-Williams stores and some Home Depot stores. Reimbursement for spray gun is included in Provision for Subframe Reinforcement Repair allowance. See Attachment I, Claims Preparation and Submission section.

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New! PARTS REQUIREMENTS / ORDERING INFORMATION

Subframe Can Be Repaired

Part Number	Description	Claim Quantity
3F2Z-3B095-A	LCA Reinforcement Bracket and Fastener Kit	1
3F2Z-5L005-A	Rear Body Mount Reinforcement Bracket and Fastener Kit	1
TA-1-B	Metal Bonding Adhesive Notes: 1. One package contains six cartridges of adhesive 2. One cartridge of adhesive is needed per repair	1
PM-13-A	Anti-Corrosion Coating Note: One 16 oz. container will repair approx. 32 vehicles	Claim as MISC OTHER See Attachment I (CLAIMS PREPARATION AND SUBMISSION)
Obtain Locally	Power Steering Hose Convolute • Length: 20 cm (8 in) • Diameter: 19 mm (3/4 inch)	

Note: Six (6) kits of 3B095 and 5L005 and one (1) kit of TA-1-B will repair six (6) vehicles.

We expect that the majority of the subframes can be repaired. All parts to reinforce the subframe can be ordered through normal order processing channels.

Subframe CANNOT Be Repaired and Must Be Replaced

A small percentage of vehicles will require a subframe replacement.

Subframe replacement requires approval from the SSSC via the SSSC Web Contact Site. Orders for the following parts must be placed by the SSSC on the dealer's behalf.

Part Number	Description	Quantity
3F2Z-5C145-CA	Subframe Assembly	1
F3DZ-5E241-A	Gasket – Exhaust Pipe to Flex Pipe Flange	1
N806408-S439	Bolts – Exhaust Pipe to Flex Pipe Flange	2

The DOR/COR number for this recall is 50432.

For questions regarding parts, contact SSSC via the SSSC Web Contact Site.

DEALER PRICE

For latest prices, refer to DOES II.

EXCESS STOCK RETURN

Excess stock returned for credit must have been purchased from Ford Customer Service Division in accordance with Policy Procedure Bulletin 4000.

CERTAIN 1999-2003 MODEL YEAR WINDSTAR VEHICLES OPERATED IN CORROSION STATES — SUBFRAME FRONT LOWER CONTROL ARM REAR ATTACHING FLANGES AND REAR BODY MOUNT ATTACHMENTS INSPECTION AND REPAIR

OVERVIEW

The service procedure involves inspecting four locations of the subframe. See Figure 1. These locations are the driver and passenger rear body mount sections of the subframe and the Lower Control Arm (LCA) rear attachment flanges that are welded to the subframe.

The purpose of these inspections is to determine if the vehicle subframe:

- is repairable and reinforcement brackets can be installed, or
- does not pass inspection and pictures must be sent to Digital Imaging (DI) for subframe replacement consideration.

A subframe may be beyond repair if a vehicle has any of the following conditions:

- **Subframe Rear Body Mount Area**
  - a subframe with a crack or perforation (hole) that is forward of the decision line.
  - non-factory welds or welded reinforcements on sections of the subframe near the mount area.

  NOTE: The decision line is a reference line 50 mm (2 in) from the edge of the tooling hole to the rear. The tooling hole is located approximately 64 mm (2.5 in) forward of the subframe rear body mount.
- **LCA to Subframe Rear Attachment Flanges**
  - both flanges at the LCA rear attachment point are completely missing.
  - LCA rear attachment points that have non-factory welded flanges or non-factory flange reinforcements.

  NOTE: If installing reinforcement brackets, at least a portion of one flange must be present to properly locate the reinforcement bracket.

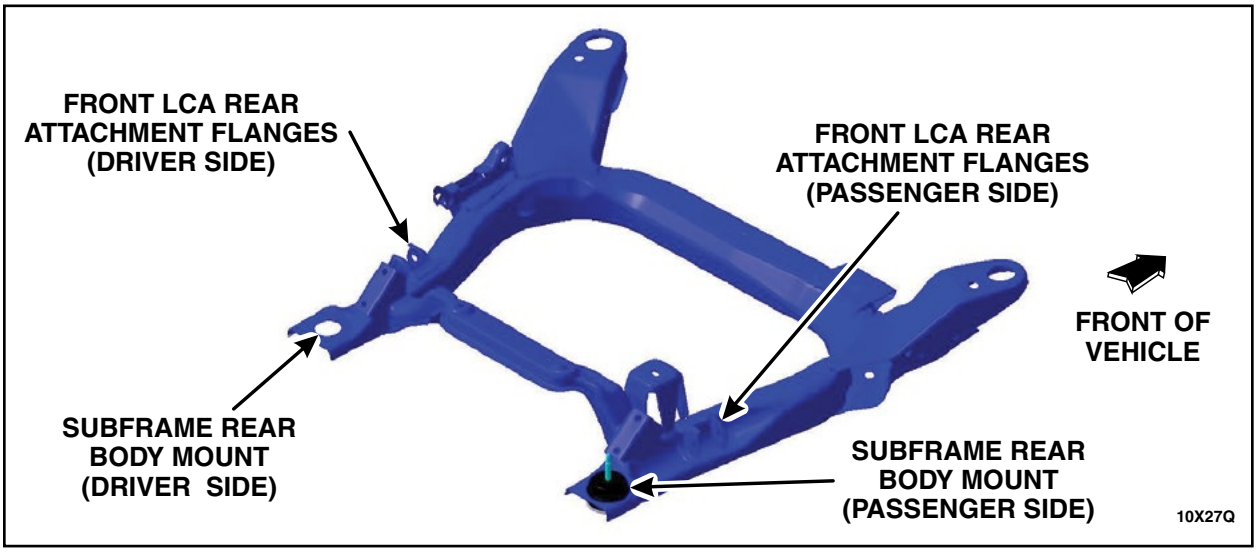

FIGURE 1

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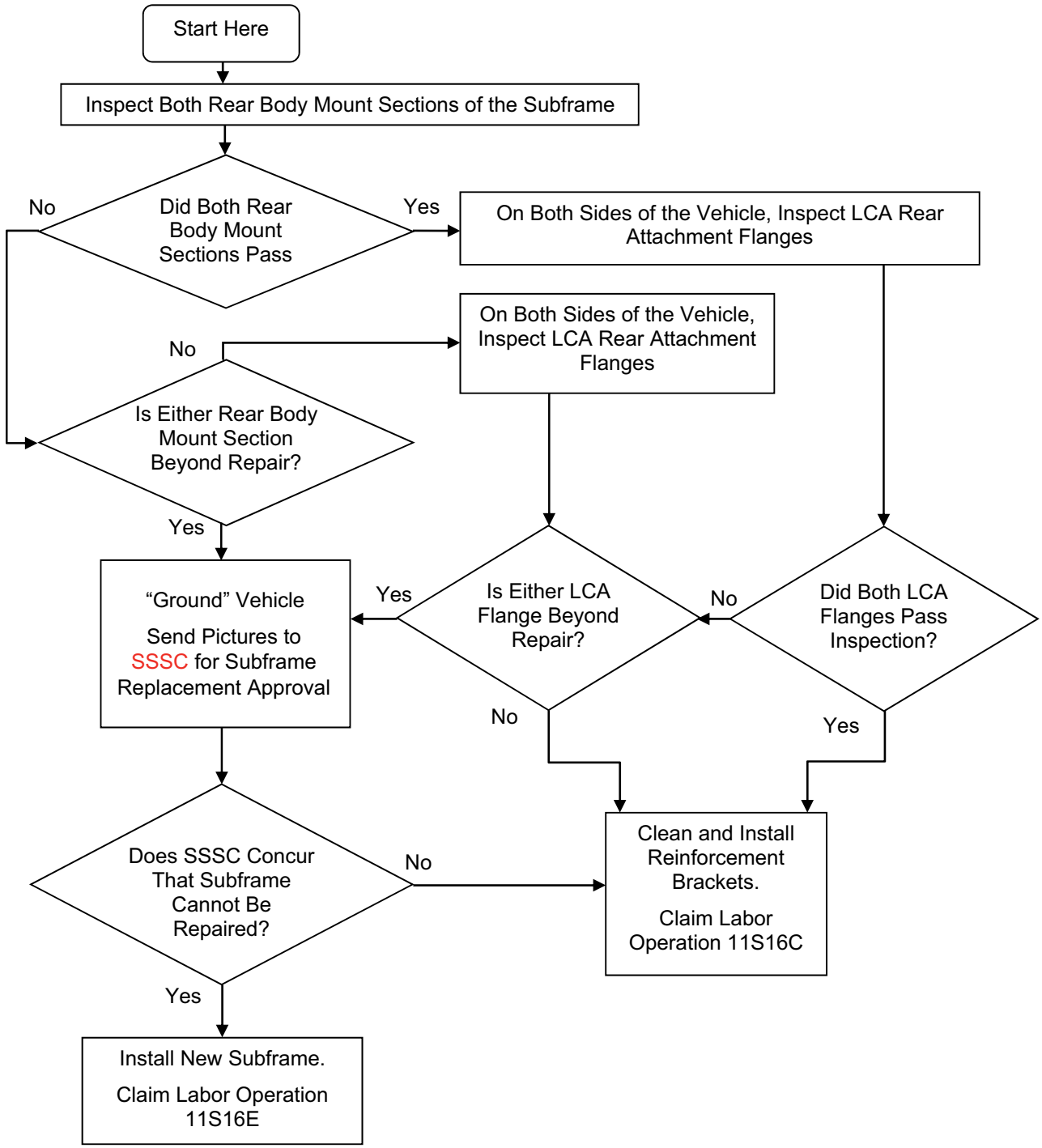
NEW! I. REPAIR FLOWCHART



II. SUBFRAME REAR BODY MOUNT INSPECTION

1. With the gear selector in NEUTRAL, position the vehicle on a hoist and lift the vehicle. For additional information, refer to the WSM, Section 100-02.

2. Inspect the driver and passenger side of the rear body mount area of the subframe for cracks, perforations, gaps and any non-factory welds or reinforcements. See Figures 1, 2, 3 and 4.

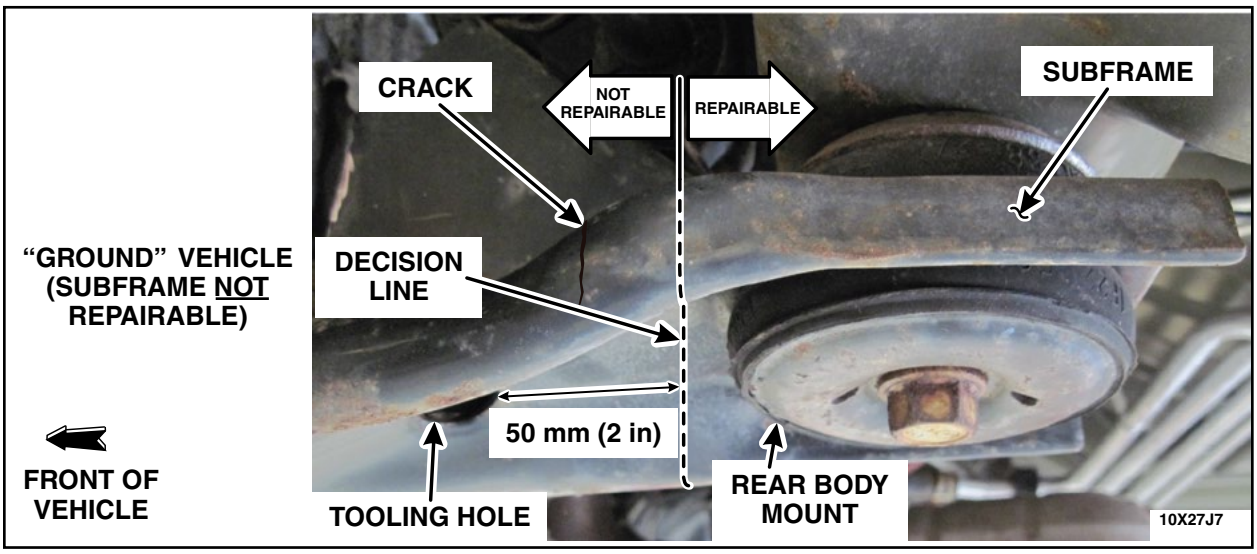


FIGURE 1

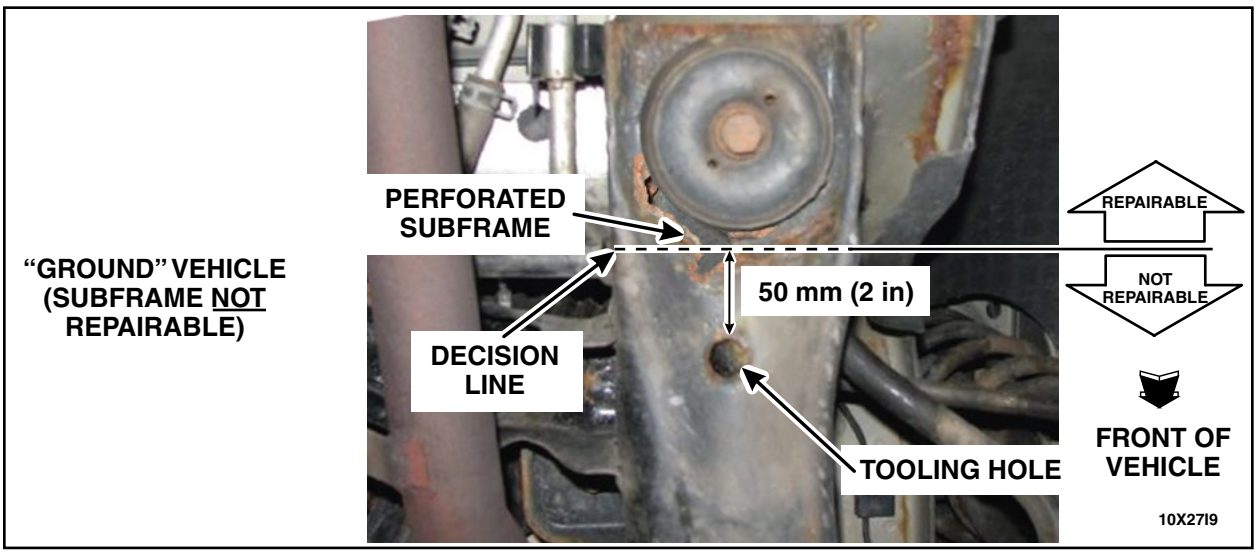


FIGURE 2

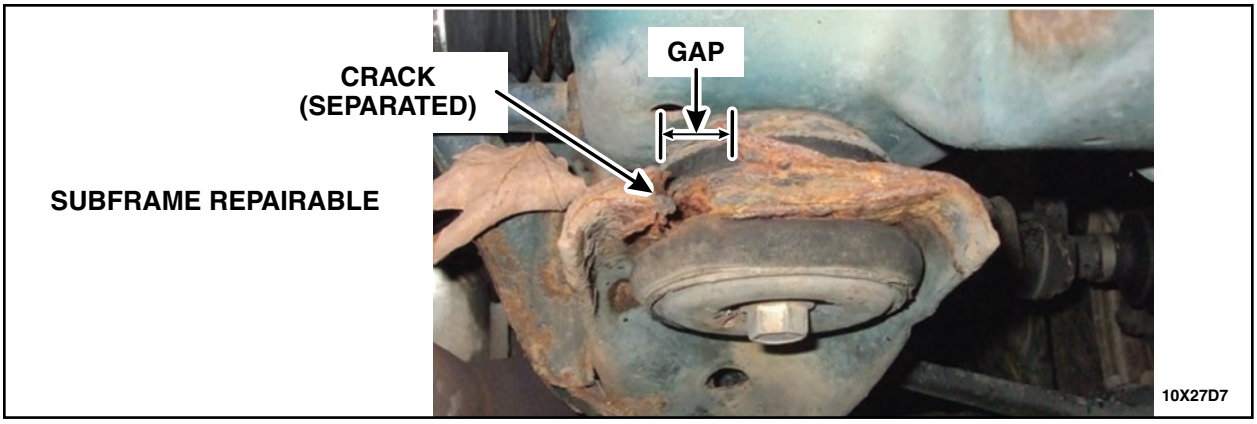


FIGURE 3

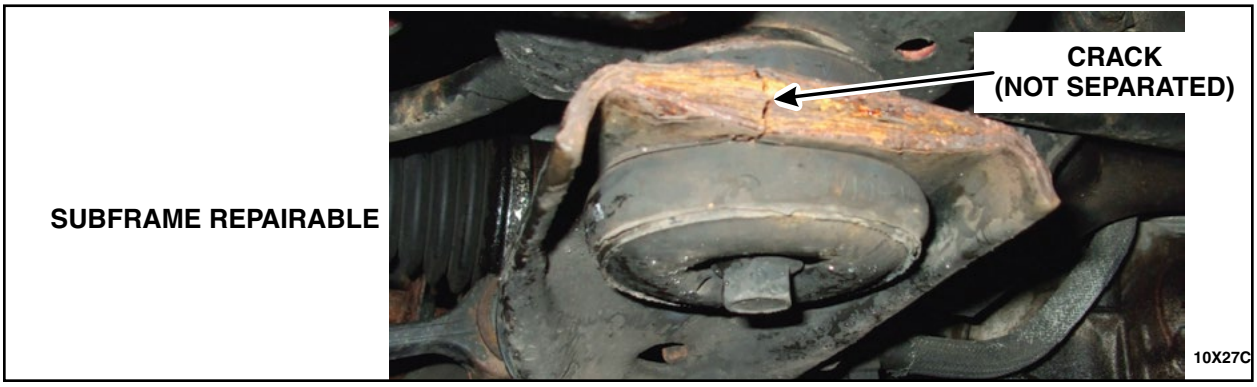


FIGURE 4

3. Inspection Results:

- If non-factory welds or reinforcements are found, the subframe may be beyond repair and pictures must be sent to Digital Imaging (DI) for subframe replacement consideration. Proceed to Digital Imaging Instructions on page 26.
- If a perforation or crack is forward of the decision line, the subframe is beyond repair and pictures must be sent to Digital Imaging (DI) for subframe replacement consideration. Proceed to Digital Imaging Instructions on page 26.
- If none of the above apply, proceed to Lower Control Arm (LCA) Rear Attachment Flange Inspection on page 6.

III. LOWER CONTROL ARM (LCA) REAR ATTACHMENT FLANGE INSPECTION

1. Remove both front wheels. For additional information, refer to the WSM, Section 204-04.
2. Using a hand-held wire brush, clean all loose rust, scale, and debris from both surfaces of the driver and passenger side of the subframe lower control arm (LCA) rear attachment flanges. See Figure 1.

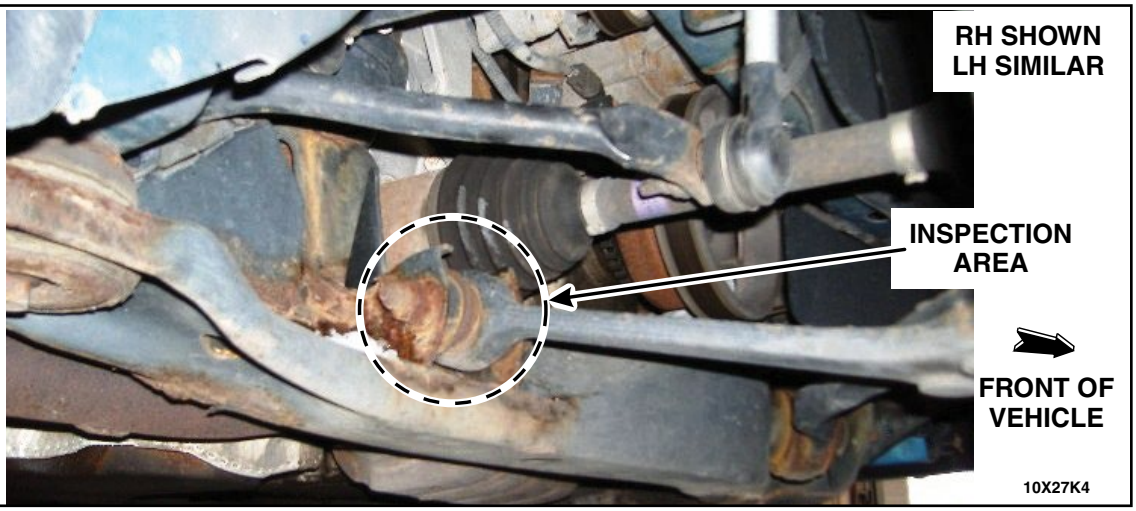


FIGURE 1

3. Inspect both surfaces of the LCA rear attachment flanges on the driver and passenger side of the subframe for cracks, perforations, excessive loss of metal, non-factory welded flanges or reinforcements. See Figures 2, 3, 4 and 5.

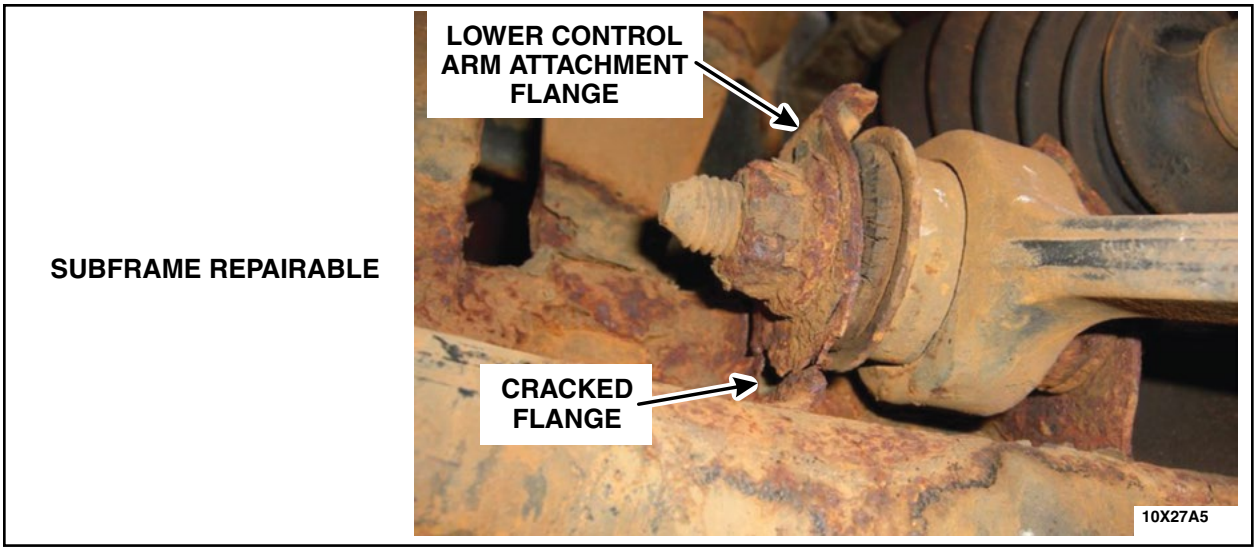


FIGURE 2

SUBFRAME REPAIRABLE

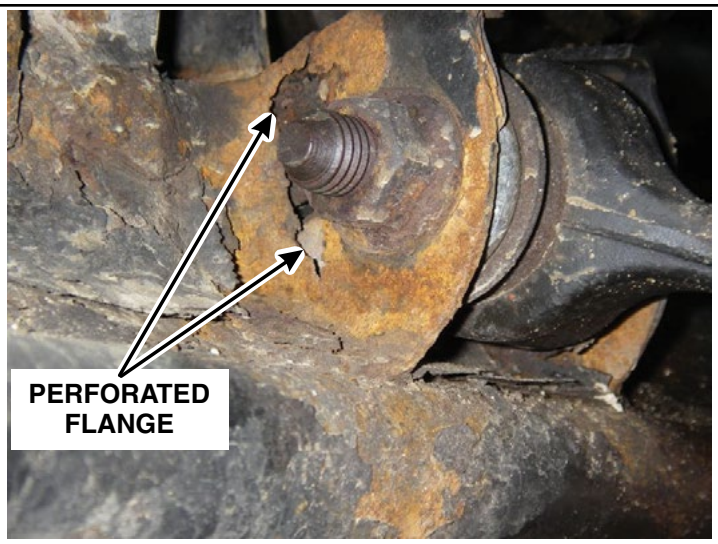


FIGURE 3

SUBFRAME REPAIRABLE

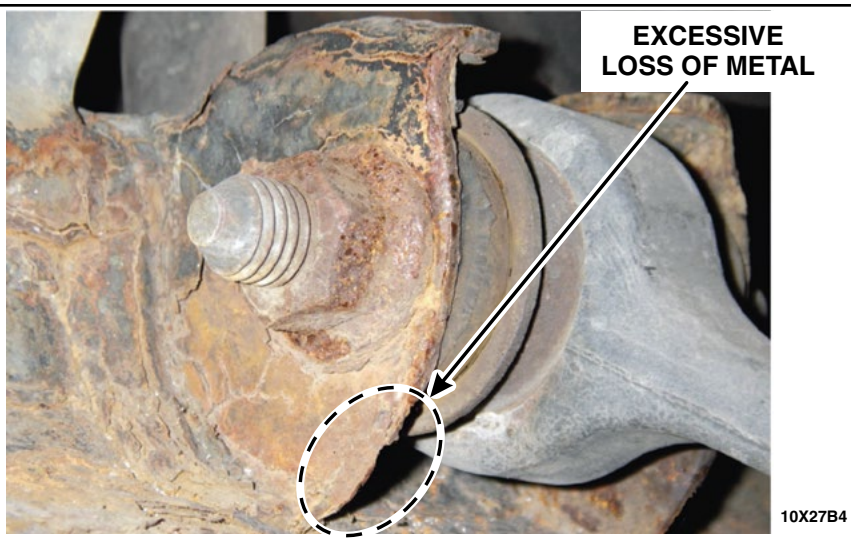


FIGURE 4

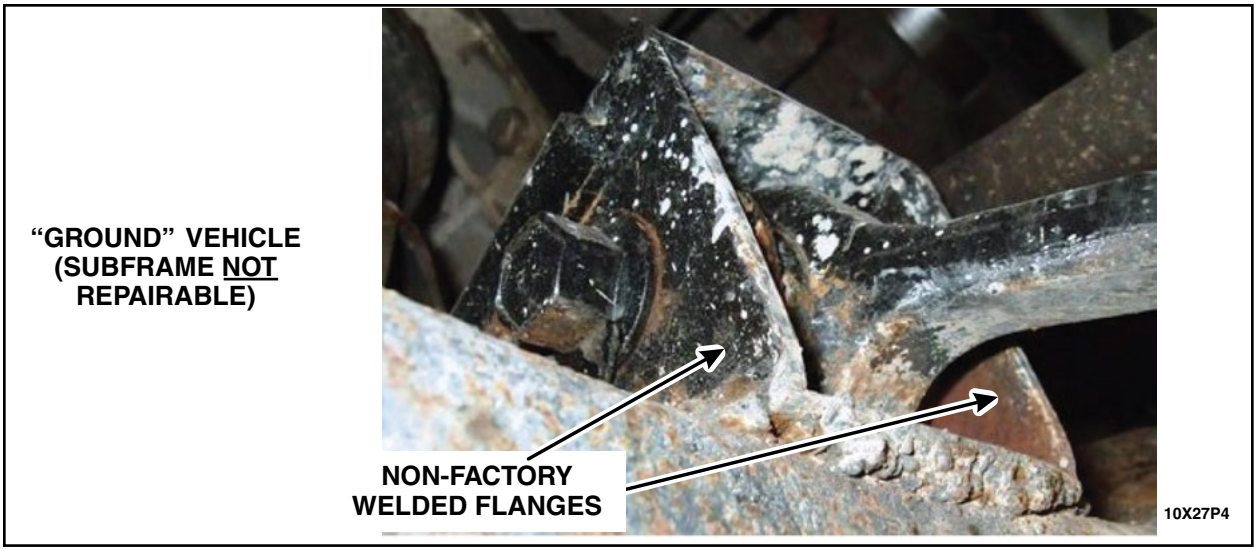


FIGURE 5

4. Inspection Results:

- If non-factory welds or reinforcements are found, the subframe may be beyond repair and pictures must be sent to Digital Imaging (DI) for subframe replacement consideration. Proceed to Digital Imaging Instructions on page 26.
- If both LCA rear attachment point flanges are missing, the subframe may be beyond repair and pictures must be sent to Digital Imaging (DI) for subframe replacement consideration. Proceed to Digital Imaging Instructions on page 26.
- If subframe can be repaired, proceed to Subframe Front LCA Reinforcement Bracket and Rear Body Mount Attachment Reinforcement Bracket Installation on page 9.

IV. SUBFRAME FRONT LCA REINFORCEMENT BRACKET AND REAR BODY MOUNT ATTACHMENT REINFORCEMENT BRACKET INSTALLATION

Important Repair Information

Several of the specified chemical products applied to the reinforcement brackets require special handling as indicated on the product packaging. Please ensure your Parts and Service department personnel access the Material Safety Data Sheets for guidance, and take the necessary precautions.

Metal bonding adhesive is used to secure the LCA reinforcement brackets to the subframe. Please read ALL of the Important Repair Information steps below before attempting any repair.

1. The adhesive will only bond to clean, bare metal. When cleaning the subframe, all rust and E-coat must be removed. Any rust must also be removed from LCA reinforcement brackets. Metal should be shiny in appearance. Do not try to remove deep pits. This may affect the strength of the subframe.

2. After cleaning the subframe and LCA reinforcement brackets, wipe the subframe with Motorcraft® Metal Brake Parts Cleaner. Other brands of brake parts cleaner may leave a residue which could affect the bond strength of the adhesive.

3. The adhesive starts to cure as soon as it is mixed. For this reason, you should only apply the adhesive and install the LCA reinforcement brackets on one side of the subframe at a time. Install a new mixing tip before applying adhesive to the second set of LCA reinforcement brackets.

4. When applying adhesive, spread it evenly over the subframe and the LCA reinforcement brackets as specified. Make sure there is enough applied to fill gaps between the reinforcement brackets and the subframe. When applied correctly, there should be adhesive “squeeze out” from all edges of the LCA reinforcement bracket when the bolts are tightened.

5. After the bolts are tightened, use an acid brush to spread and smooth the adhesive. Make sure all gaps and voids are filled with adhesive.

6. Use only Motorcraft® PM-13-A for corrosion protection. Some corrosion protection chemicals and undercoating materials will prevent the adhesive from curing properly.

7. Obtaining the proper adhesive cure is a critical part of the subframe LCA reinforcement bracket repair. To ensure the adhesive cures properly, the following guidelines must be followed:
   - 2 hour cure time at 21° C (70° F) or higher shop temperature
   - 3 hour and 15 minute cure time at 16° C (60° F) shop temperature
   - If the shop temperature is lower than 16° C (60° F), the adhesive will need to cure overnight
   - **DO NOT USE HEAT LAMPS TO REDUCE CURE TIME AS EXCESSIVE TEMPERATURES WILL AFFECT BOND STRENGTH OF THE ADHESIVE**

Tech Tips - Reducing Exposure to Adhesive Fumes

To reduce exposure to the fumes released while using the adhesive, we suggest that technicians consider the following tips:

- Since the majority of fumes are released while applying and spreading adhesive on the reinforcement brackets, position shop exhaust vent hose(s) next to the work area to help reduce these fumes.
- After installing the reinforcement brackets on the subframe, position shop exhaust vent hose(s) next to the installed reinforcement brackets to help reduce fumes while the adhesive is curing.
- If possible, slightly open a shop door to increase air circulation or perform the repair in an area of the shop that is well ventilated.
- During the repair, clean up excess adhesive that may have dripped on the floor. Also, discard used mixing tips and brushes immediately or wrap them so fumes are contained.

Cleaning Subframe and Front LCA Reinforcement Brackets

1999 and 2000 model year vehicles (2001 - 2003 model year vehicles skip to step 4)

NOTE: The transaxle will need to be raised to provide clearance for the driver side reinforcement bracket installation. Steps 1 through 3 are only required on 1999 and 2000 model year vehicles.

1. Using a block of wood under the transmission pan, provide support to the transmission. See Figure 1.

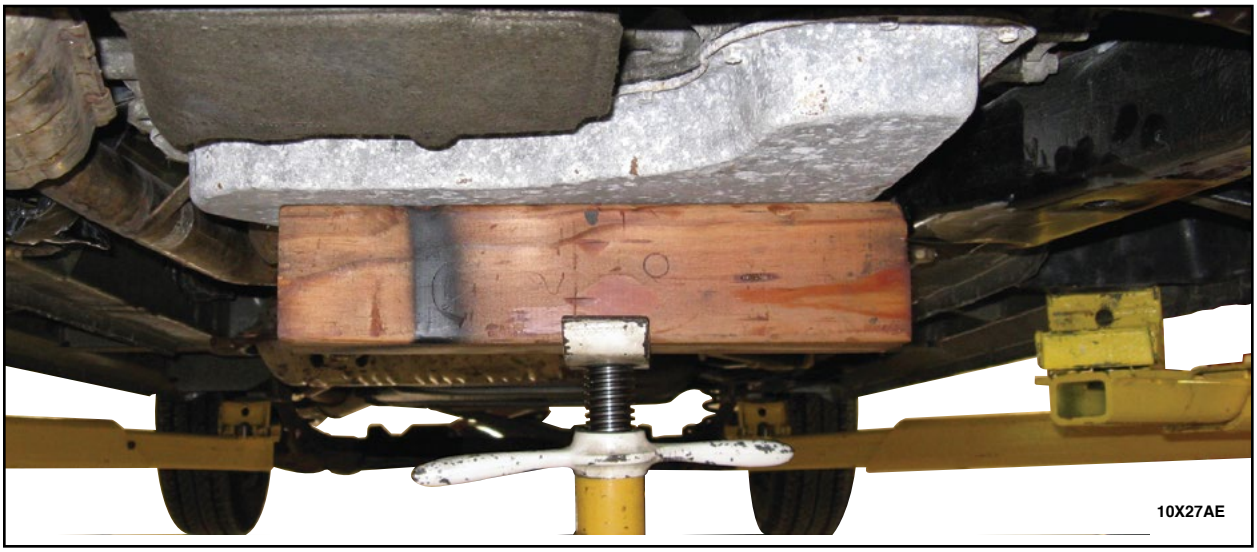


FIGURE 1

2. Remove the two bolts securing the transaxle support insulator bracket to the subframe. See Figure 2.

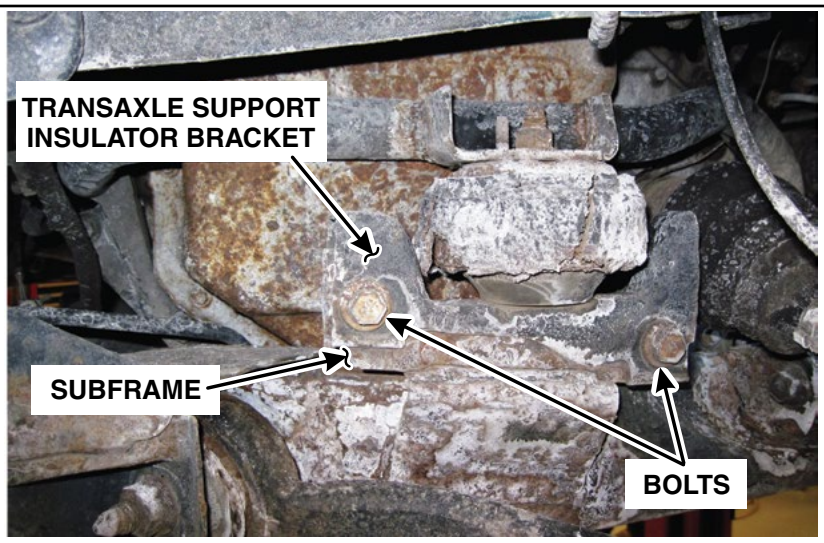


FIGURE 2

3. Raise the transmission approximately 25 mm (1 in). See Figure 3.

FIGURE 3

All vehicles

4. Remove and discard the LCA through bolt and nut from both the driver and passenger side of the subframe. See Figure 4.

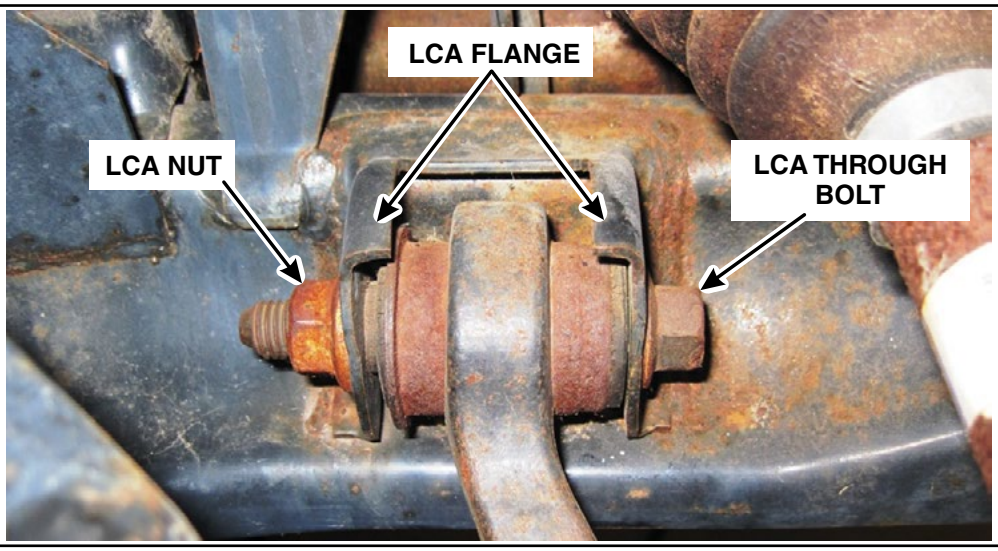


FIGURE 4

5. Remove protective film from all reinforcement brackets.

6. **NOTE:** If a portion of one or both flanges is missing or bent in a manner which would prevent a shim from laying flat against the flange, proceed to Subframe LCA Flange Cutting on page 25 for further instructions. Cutting off a damaged LCA flange will allow the shims to lay flat when installed between the LCA bushing and the reinforcement bracket.

   Dry fit the upper section of the passenger side reinforcement brackets on the subframe by installing over the flanges. Make sure the reinforcement bracket is snug against at least one of the flanges. If you have cut the flanges per the note above, position the reinforcement bracket so the flanges are centered within the bracket. Using a paint pen or marker, outline the outer edges of the base of the LCA reinforcement bracket. See Figure 5.

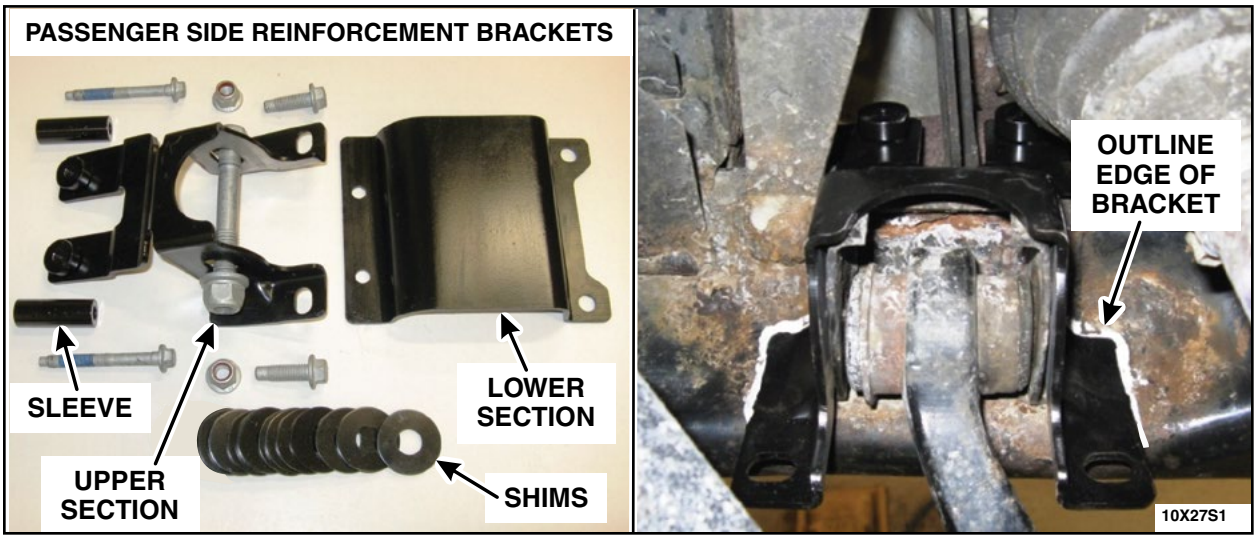


FIGURE 5

7. Dry fit the lower section of the passenger side reinforcement brackets on the subframe by aligning bolt holes with upper section. Using a paint pen or marker, outline the outer edges of the LCA reinforcement bracket. See Figure 6.

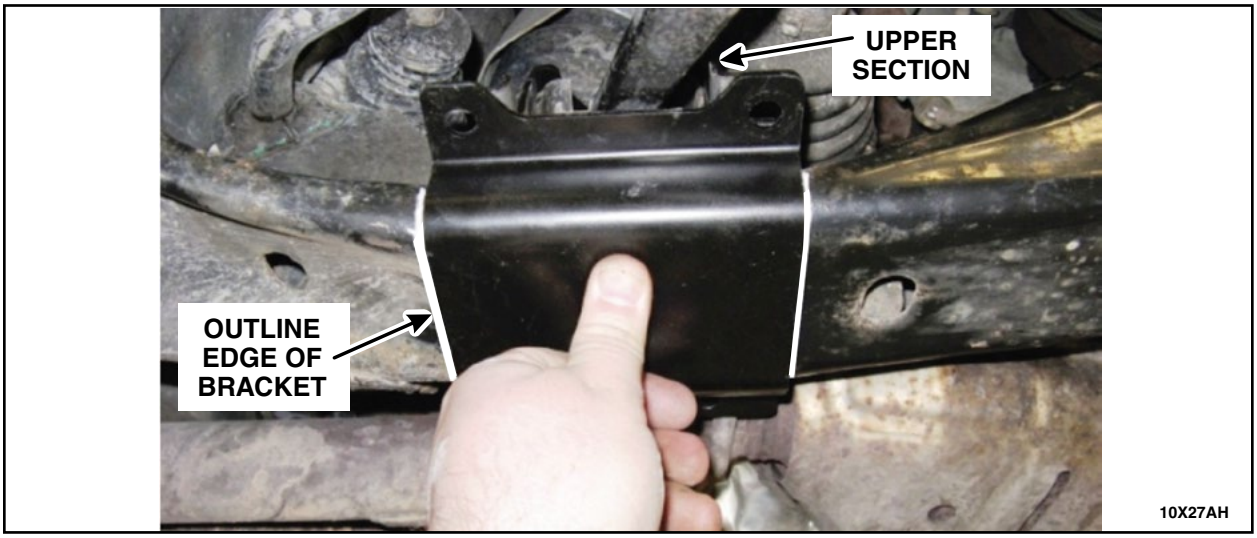


FIGURE 6

8. **NOTE:** If a portion of one or both flanges is missing or bent in a manner which would prevent a shim from laying flat against the flange, proceed to Subframe LCA Flange Cutting on page 25 for further instructions. Cutting off a damaged LCA flange will allow the shims to lay flat when installed between the LCA bushing and the reinforcement bracket.

   Dry fit the upper section of the passenger side reinforcement brackets on the subframe by installing over the flanges. Make sure the reinforcement bracket is snug against at least one of the flanges. If you have cut the flanges per the note above, position the reinforcement bracket so the flanges are centered within the bracket. Using a paint pen or marker, outline the outer edges of the base of the LCA reinforcement bracket. See Figure 7.

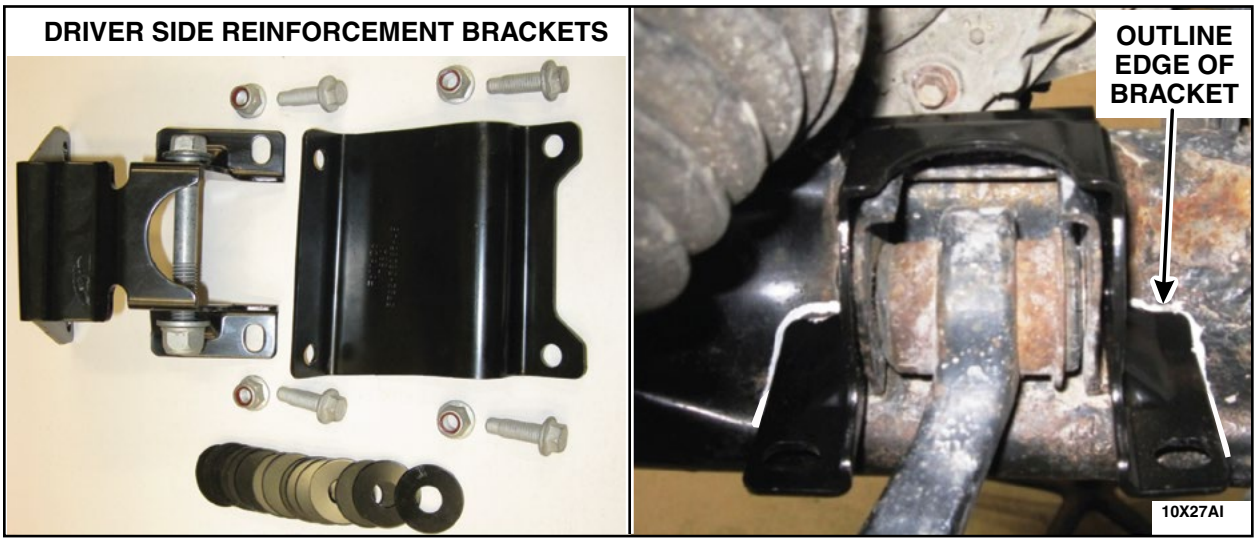


FIGURE 7

9. Dry fit the lower section of the driver side reinforcement brackets on the subframe by aligning bolt holes with upper section. Using a paint pen or marker, outline the outer edges of the LCA reinforcement bracket. See Figure 8.

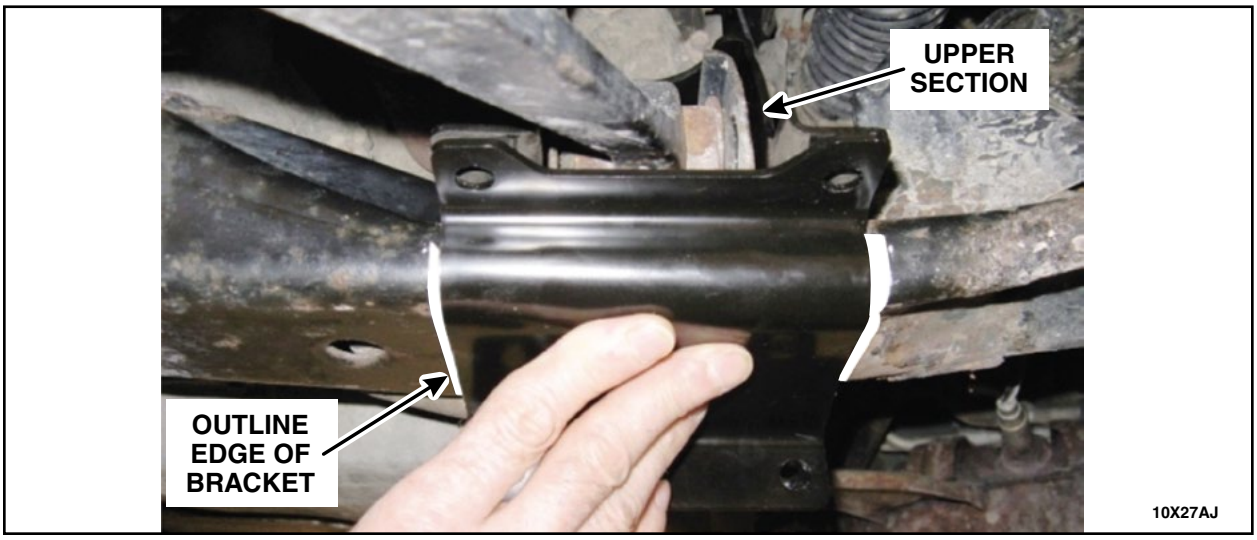


FIGURE 8

CAUTION: Wear safety glasses and proper body protection while cleaning or using any chemicals.

10. Using a 50 mm (2 in) diameter coarse Roloc™ Disc or equivalent, clean the subframe in the marked areas. Remove all E-coat and rust. Metal should be shiny in appearance. (Do not try to remove tool marks or marks caused by deep stone pecking or pitting.) See Figure 9.

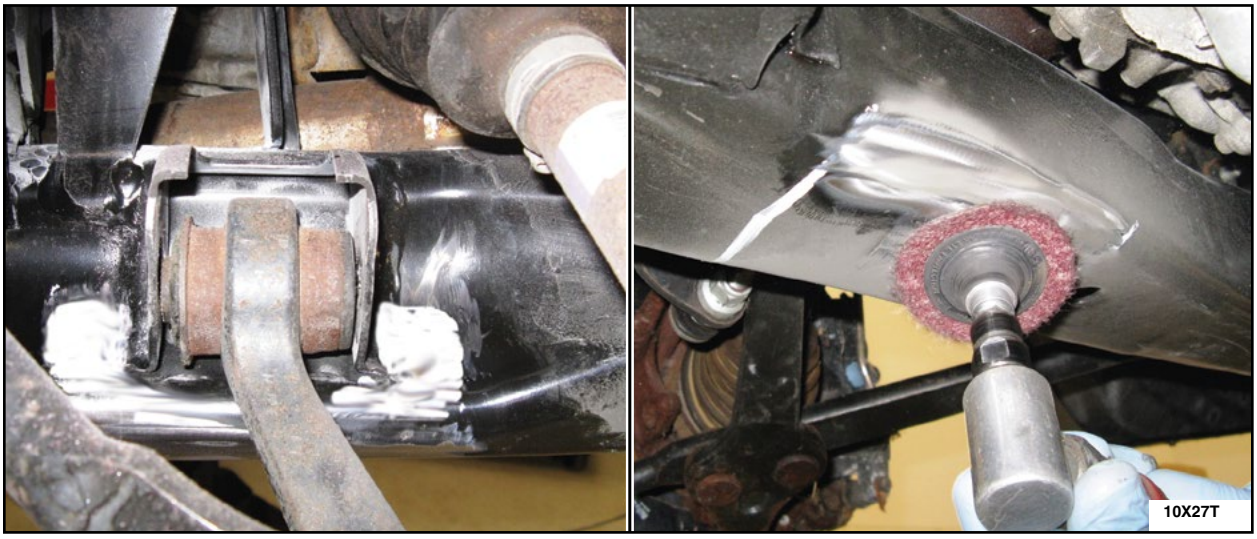


FIGURE 9

11. On some vehicles, the exhaust hanger may protrude past the weld and interfere with the installation of the reinforcement bracket. If present, cut off the portion of the exhaust hanger that protrudes past the weld. See Figure 10.

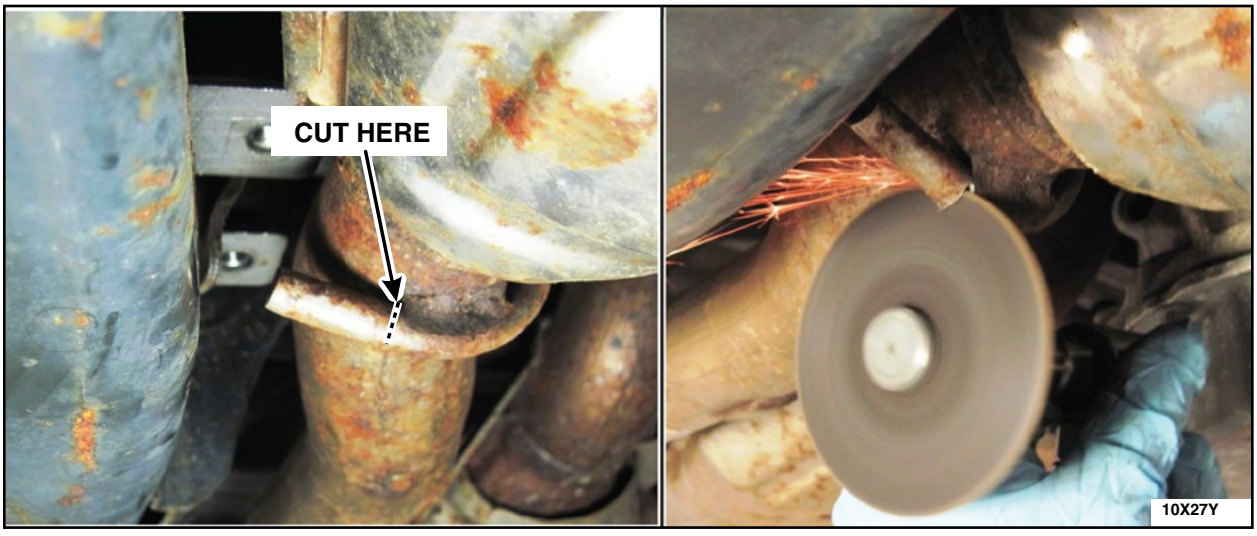


FIGURE 10

12. **NOTICE: The adhesive will not bond properly if the reinforcement brackets have any rust on them. Failure to clean the reinforcement brackets will prevent the adhesive from bonding properly.**

    Using an air grinder and a 50 mm (2 in) diameter coarse Roloc™ Disc or equivalent, remove any rust from all 4 LCA reinforcement brackets. See Figure 11.

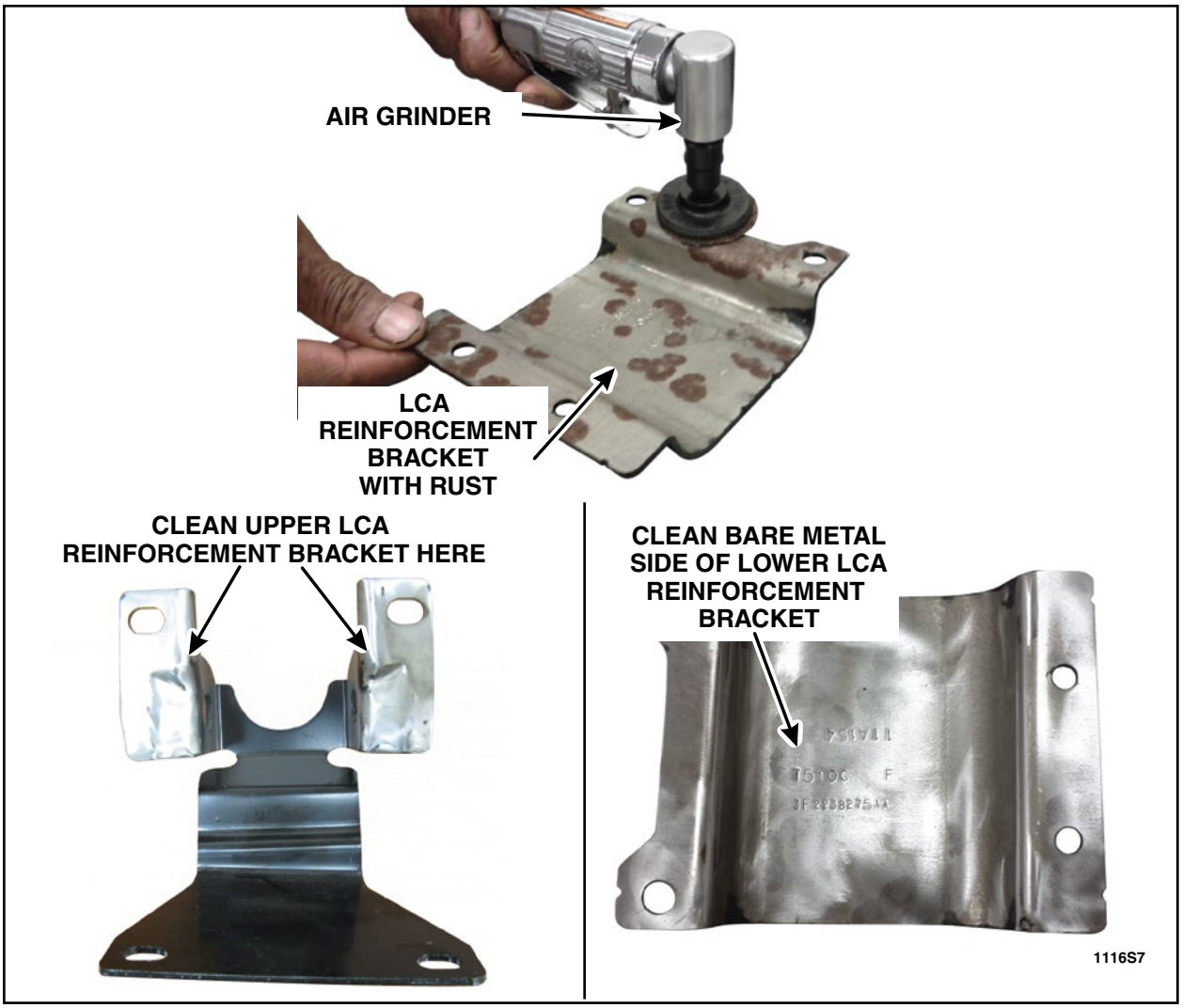


FIGURE 11

13. Wipe the LCA reinforcement brackets and the cleaned surfaces of the subframe with Motorcraft® Metal Brake Parts Cleaner using a clean paper towel.

Preparing Adhesive Cartridge

NOTE: Position the applicator gun, adhesive cartridge, LCA reinforcement brackets, sleeves, bolts, nuts, shims and tools near the work area.

14. Prepare the applicator gun and adhesive cartridge for use.

    1. Make sure the 2:1 plunger is installed on the applicator gun with the arrows pointing toward each other.

    2. Remove the black retaining nut and nose plugs from the adhesive cartridge. Insert the adhesive cartridge into the applicator gun.

    3. Squeeze out a small amount of adhesive to ensure both sides of the adhesive cartridge are flowing equally. See Figure 12A.

    4. Attach the mixing tip and replace the black retaining nut. Dispense a mixing tip length of adhesive onto a piece of scrap cardboard to ensure the product is evenly mixed and the color is consistent. The mixed adhesive should be grayish in color. See Figure 12B.

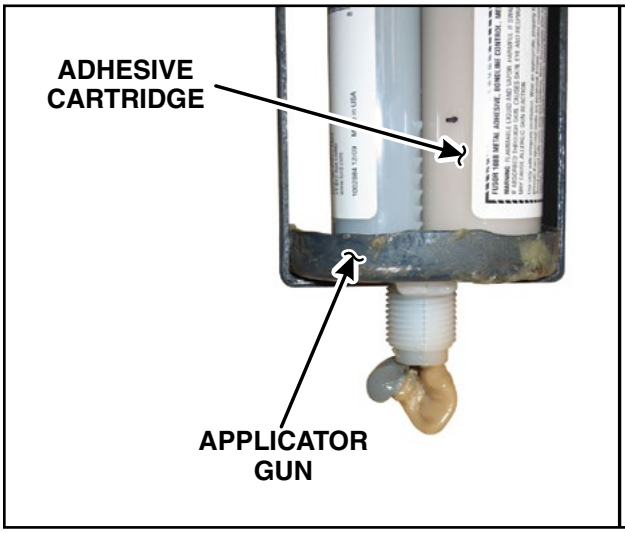


FIGURE 12A

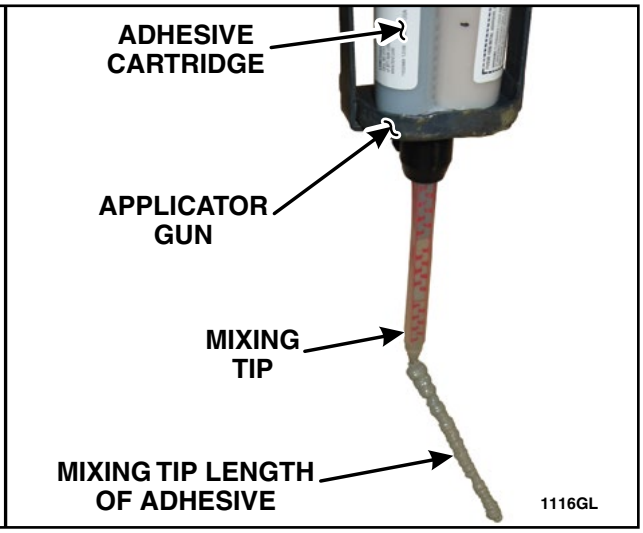


FIGURE 12B

Applying Adhesive

15. **NOTE:** DO NOT ATTEMPT TO INSTALL BOTH THE DRIVER AND PASSENGER SIDE LCA REINFORCEMENT BRACKETS AT THE SAME TIME.

    Using 10 mm (3/8 in) beads, dispense adhesive onto the lower section of the passenger side reinforcement bracket. Make sure to run a bead around the perimeter of the LCA reinforcement bracket. Also, dispense adhesive onto the subframe as shown in Figure 13. Spread the adhesive evenly with an acid brush. See Figure 13.

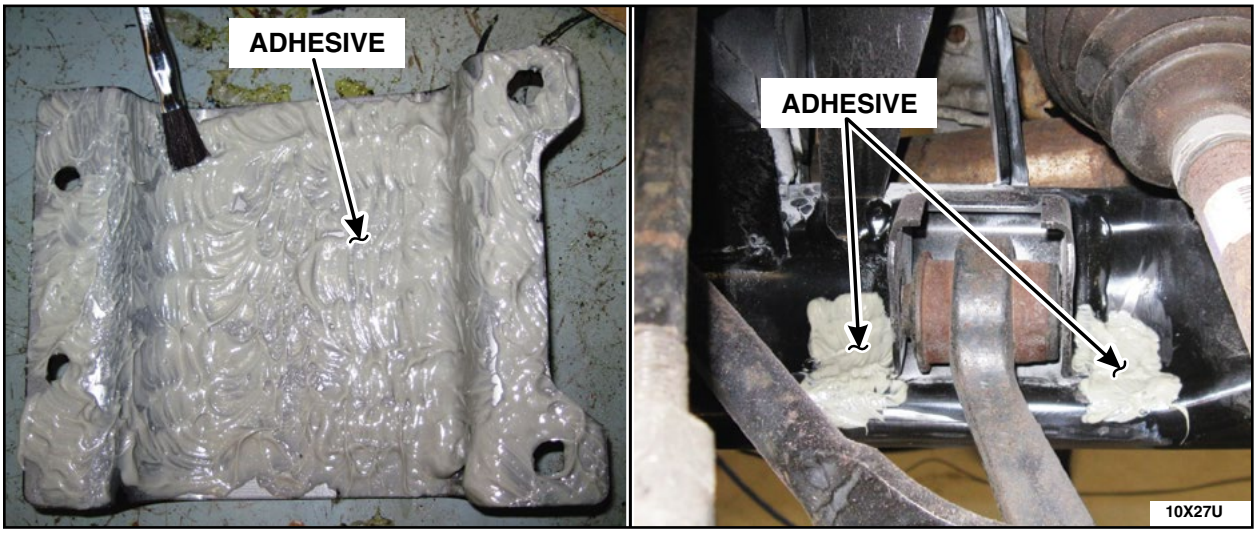


FIGURE 13

Installing LCA Reinforcement Brackets

16. Place the passenger side upper section of the LCA reinforcement bracket onto the subframe. Make sure the reinforcement bracket is snug against at least one of the flanges. If you have cut the flanges, position the reinforcement bracket so the flanges are centered within the bracket. After the LCA reinforcement bracket has been positioned, do not pull it away from the subframe. See Figure 14.

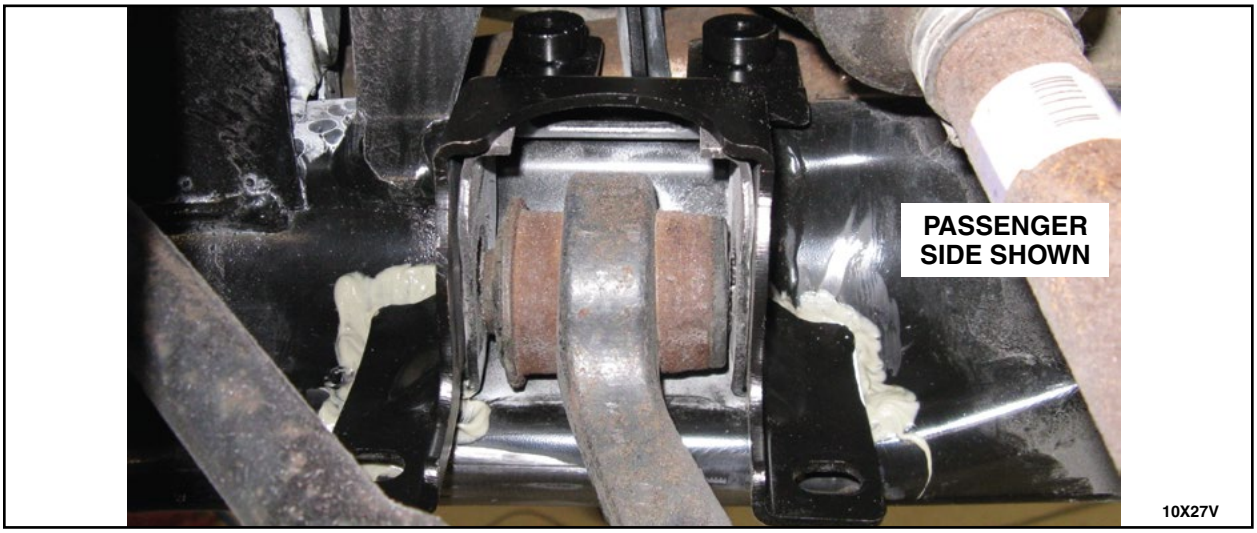


FIGURE 14

17. Align the lower section of the passenger side LCA reinforcement bracket with the upper section. While holding in place, install the bolts, nuts, sleeves and finger tighten. See Figure 15.

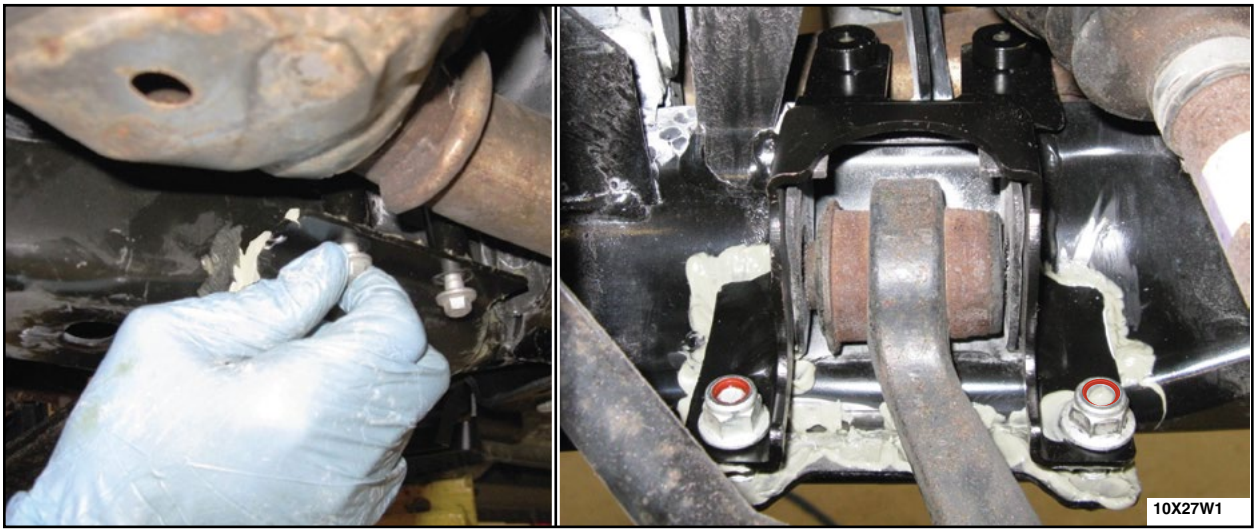


FIGURE 15

18. **NOTE:** Do not tighten the front suspension LCA through bolt and nut at this time.

When both flanges are present, check to see if the thinnest shim will fit between the reinforcement bracket and flange. If not, shims are not required. If so, fill the gap with supplied shims. See Figure 16.

If flanges were cut, install shims to evenly fill the gap between the LCA bushing and reinforcement bracket. Attach the LCA to the reinforcement bracket using the *new* LCA through bolt and nut. See Figure 16.

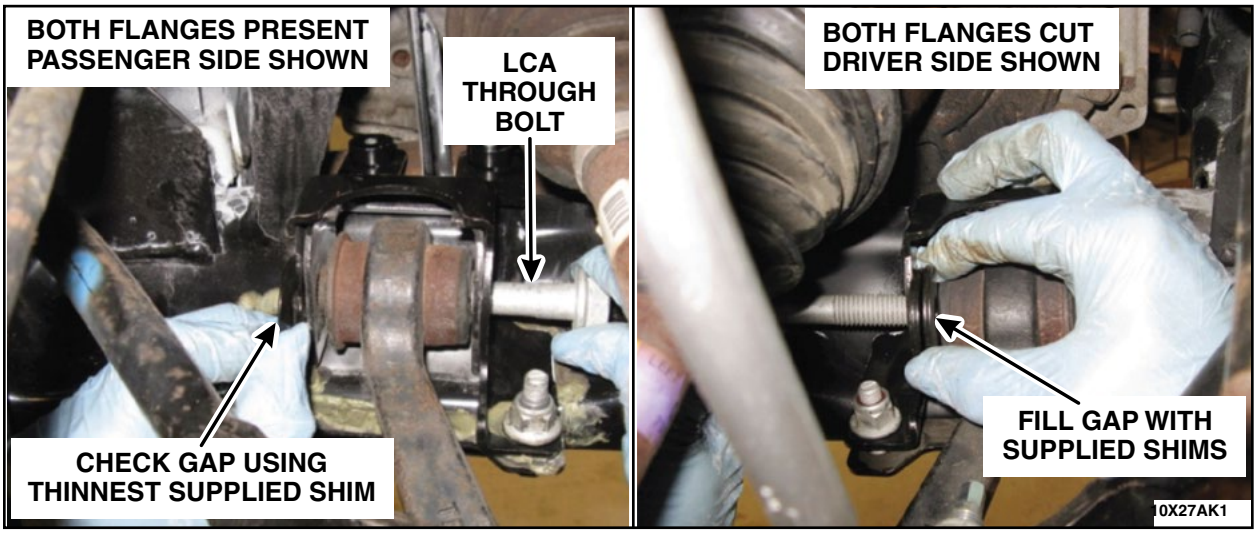


FIGURE 16

19. Tighten the fasteners evenly on the LCA reinforcement brackets. Tighten fasteners as indicated below:
    - Passenger side (See Figure 17): Inboard fasteners 30 Nm (22 lb-ft).
      Outboard fasteners 55 Nm (41 lb-ft).
    - Driver side: Tighten all fasteners to 55 Nm (41 lb-ft).

20. Brush the "squeezed-out" adhesive around all edges of the LCA reinforcement brackets with an acid brush to ensure all openings are completely sealed. See Figure 17.

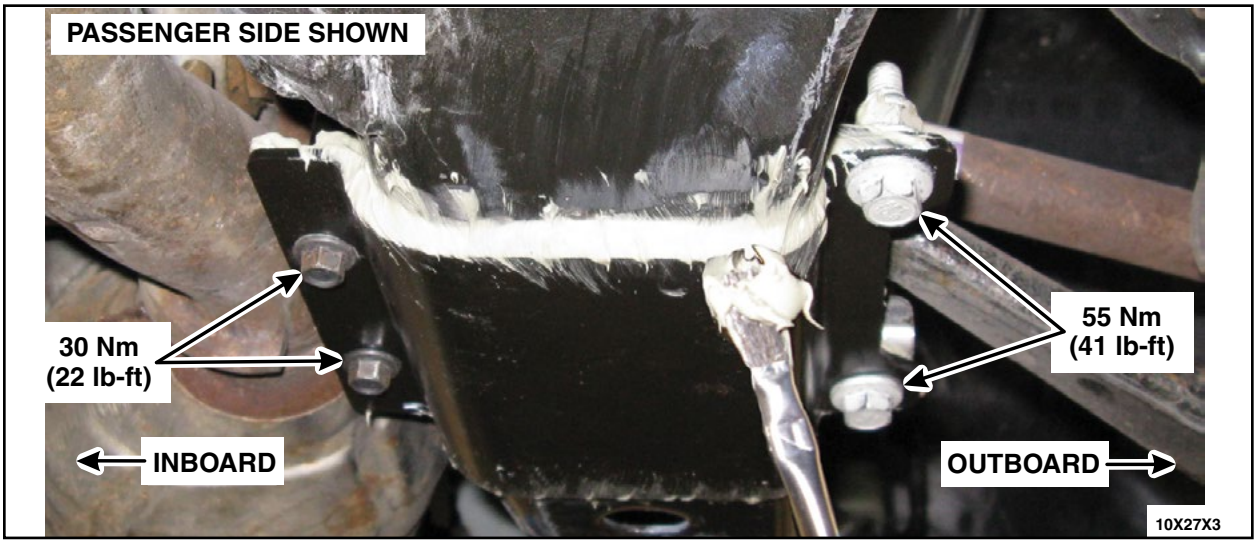


FIGURE 17

21. Install a new mixing tip on the adhesive cartridge. Dispense a mixing tip length of adhesive onto a piece of scrap cardboard to ensure the product is evenly mixed and the color is consistent. The mixed adhesive should be grayish in color. Repeat steps 15 through 20 on the driver side of the subframe.

1999 and 2000 model year vehicles (2001 - 2003 model year vehicles skip to step 24)

NOTE: Steps 21 through 23 are only required on 1999 and 2000 model year vehicles.

22. Lower the transmission.

23. Install the two bolts securing the transaxle support insulator bracket to the subframe. Tighten to 80 Nm (59 lb-ft).

24. Remove support from under the transmission pan.

All vehicles

NOTE: LOADING THE SUSPENSION **-** Do not tighten the front suspension LCA through bolts and nuts until the vehicle's suspension is supporting the vehicle's weight. This may be done by lifting the outboard end of the LCA until the weight of the vehicle is supported by the suspension.

25. Load the front suspension and tighten the *new* LCA through bolts and nuts to 133 Nm (98 lb-ft).

26. Install approximately 20 cm (8 in) of 19 mm (0.75 in) diameter convolute tube over the power steering hose to protect it from wearing on the reinforcement bracket. Ensure convolute tube is oriented with slit facing up as shown. Secure in place. See Figure 18.

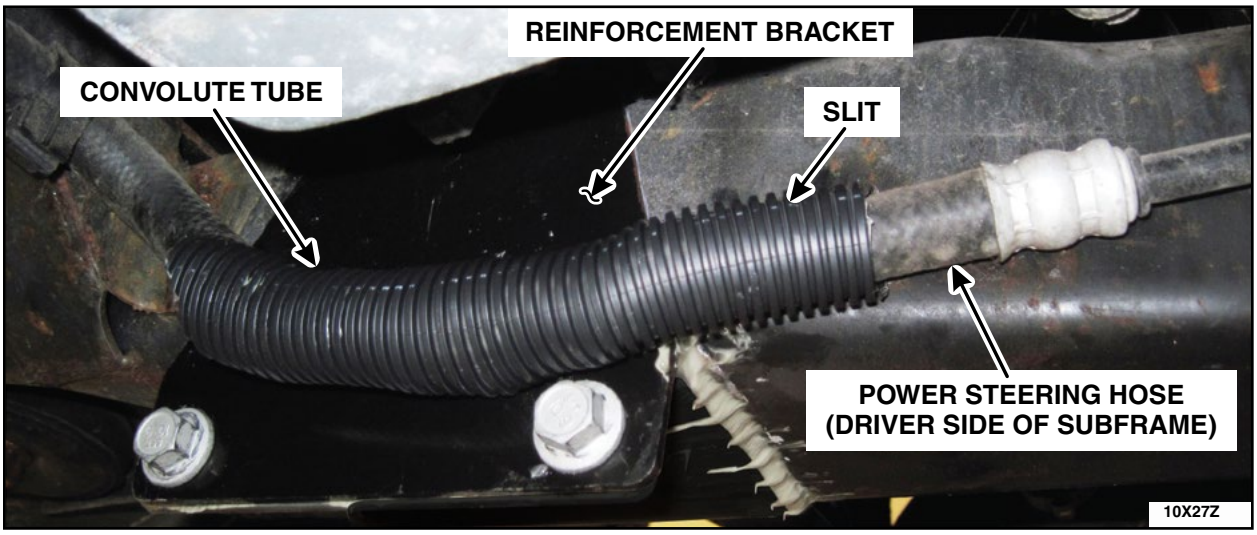


FIGURE 2

Applying Anti-Corrosion Coating

NOTICE: Use only Motorcraft® PM-13-A Anti-Corrosion Coating for this repair. Other products may affect the cure time and strength of the adhesive and may not provide adequate corrosion protection.

1. Obtain one (1) can of PM-13-A Anti-Corrosion Coating and a Preval® sprayer.
2. Vigorously shake the can of PM-13-A Anti-Corrosion Coating.
3. **NOTE:** Do not shake the Preval® sprayer once fluid has been added to the container.

   Pour PM-13-A Anti-Corrosion Coating into the Preval® container.
4. **NOTE:** Observe all warnings and cautions included with the Preval® sprayer.

   Spray PM-13-A Anti-Corrosion Coating on the brackets ensuring all bare metal and adhesive is coated.
5. Clean Preval® sprayer with brake parts cleaner.
6. Proceed to Subframe Rear Body Mount Attachment Reinforcement Bracket Installation on page 22.

Subframe Rear Body Mount Attachment Reinforcement Bracket Installation

1. Support the subframe using a suitable support.

2. Remove the passenger side subframe rear body mount and bolt. Discard bolt. See Figure 1.

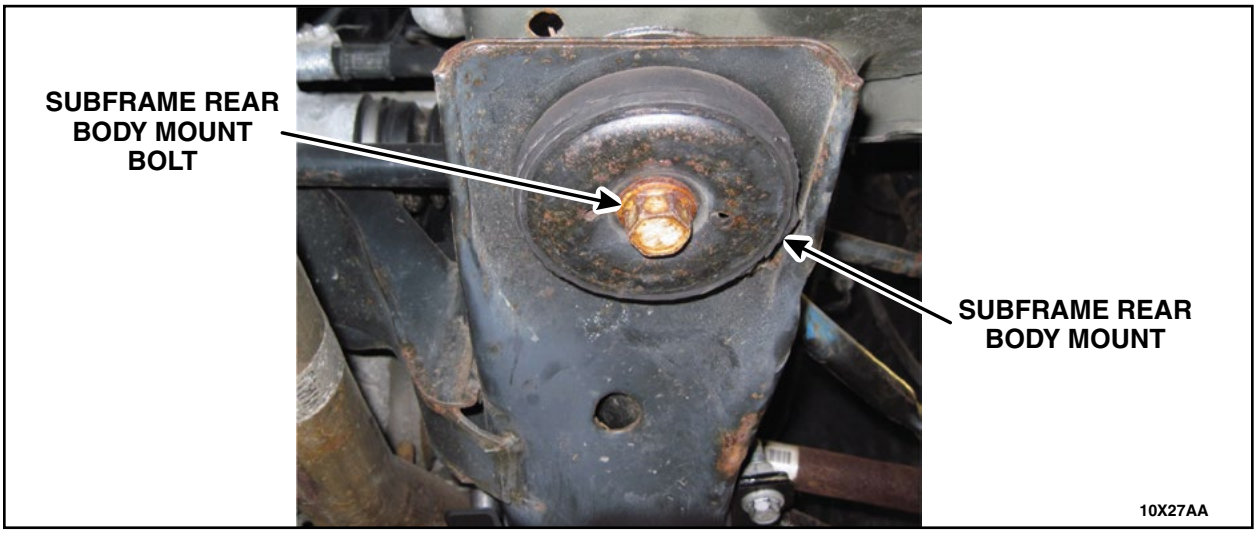


FIGURE 1

3. **NOTE:** Do not tighten the U-bolt nuts at this time.

   Install the subframe rear body mount reinforcement bracket and U-bolt. Make sure the reinforcement bracket is properly positioned over body mount and finger tighten the U-bolt nuts. See Figure 2.

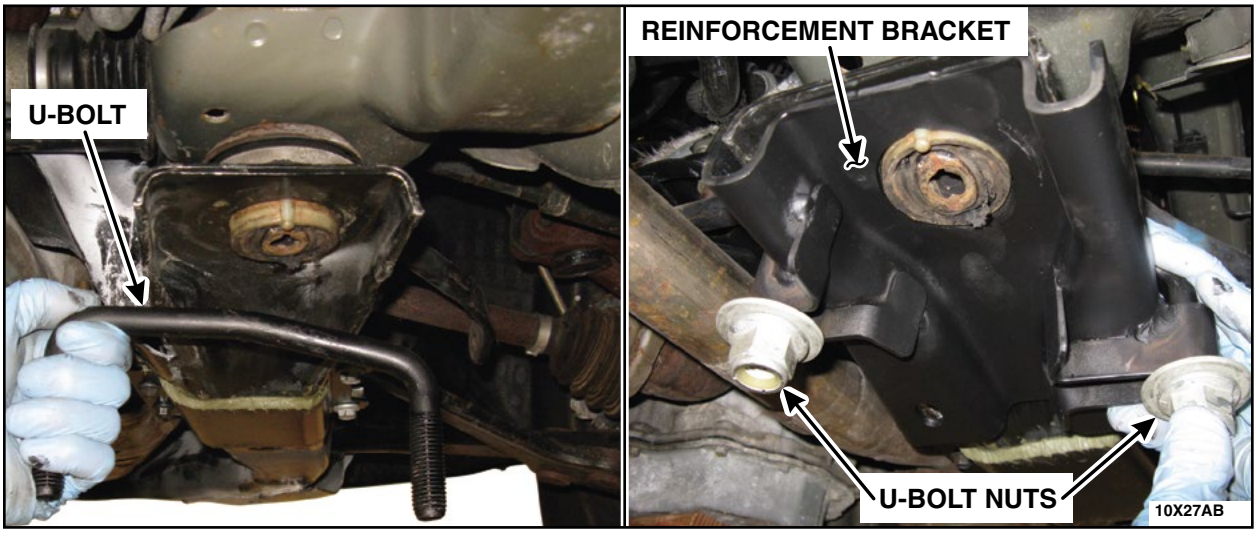


FIGURE 2

4. Install the subframe rear body mount, supplied washer and *new* rear body mount bolt. Tighten to 133 Nm (98 lb-ft). See Figure 3.

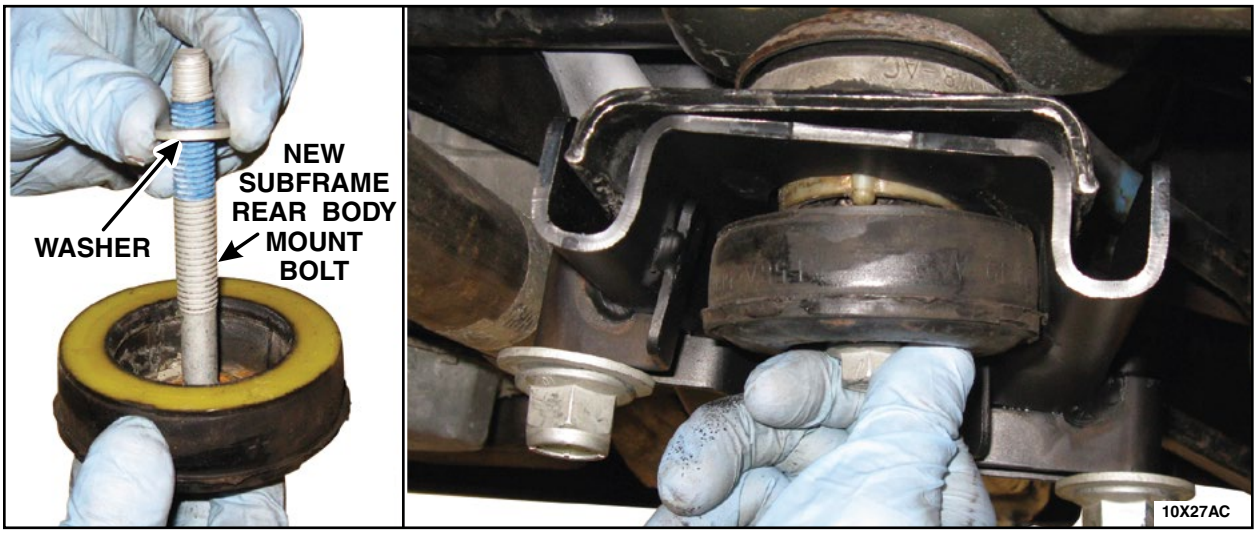


FIGURE 3

5. Starting with the nut that is to the outboard side of the vehicle, evenly tighten the U-bolt nuts. Tighten until one full thread is showing. See Figure 4.

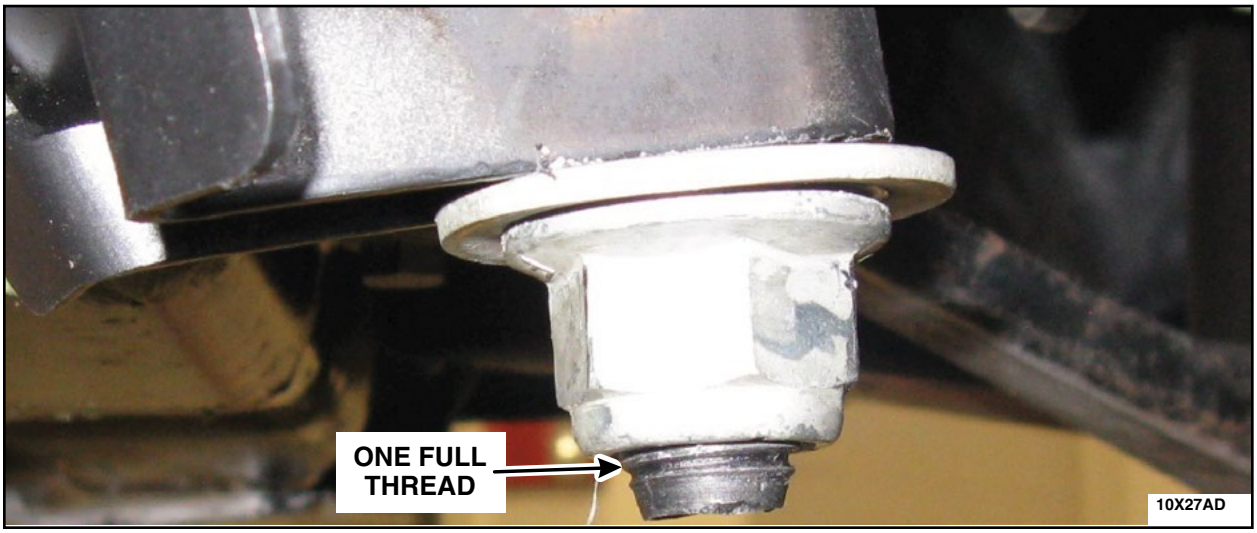


FIGURE 4

6. Repeat steps 2 through 5 on the driver side.

7. Install both front wheels. For additional information, refer to the WSM Section 204-04.

8. Lower the vehicle and allow the adhesive to cure. The vehicle may be removed from the hoist while the adhesive is curing unless Safety Recall 10S13 (Rear Axle Repair) is also being performed. The vehicle can be returned to the customer only after the adhesive has cured. See Adhesive Cure Time below.

Adhesive Cure Time

NOTE: Obtaining the proper adhesive cure is a critical part of the subframe LCA reinforcement bracket repair.

In order for the reinforcement brackets to properly bond to the vehicle subframe, the vehicle must remain in the shop until the adhesive used to install the subframe LCA reinforcement brackets has cured. To ensure the adhesive cures properly, the following guidelines **must** be followed:

- 2 hour cure time at 21° C (70° F) or higher shop temperature
- 3 hour and 15 minute cure time at 16° C (60° F) shop temperature
- If the shop temperature is lower than 16° C (60° F), the adhesive will need to cure overnight
- **DO NOT USE HEAT LAMPS TO REDUCE CURE TIME AS EXCESSIVE TEMPERATURES WILL AFFECT BOND STRENGTH OF THE ADHESIVE**

V. Subframe LCA Flange Cutting

NOTE: Cutting off a damaged LCA flange will allow the shims to lay flat when installed between the LCA bushing and the reinforcement bracket.

Passenger Side Shown

1. Remove the LCA and mark the locations of the areas to be cut with a paint pen or marker. The cuts must be between 5 mm (0.20 in) to 8 mm (0.31 in) from the flange weld. See Figure 1.

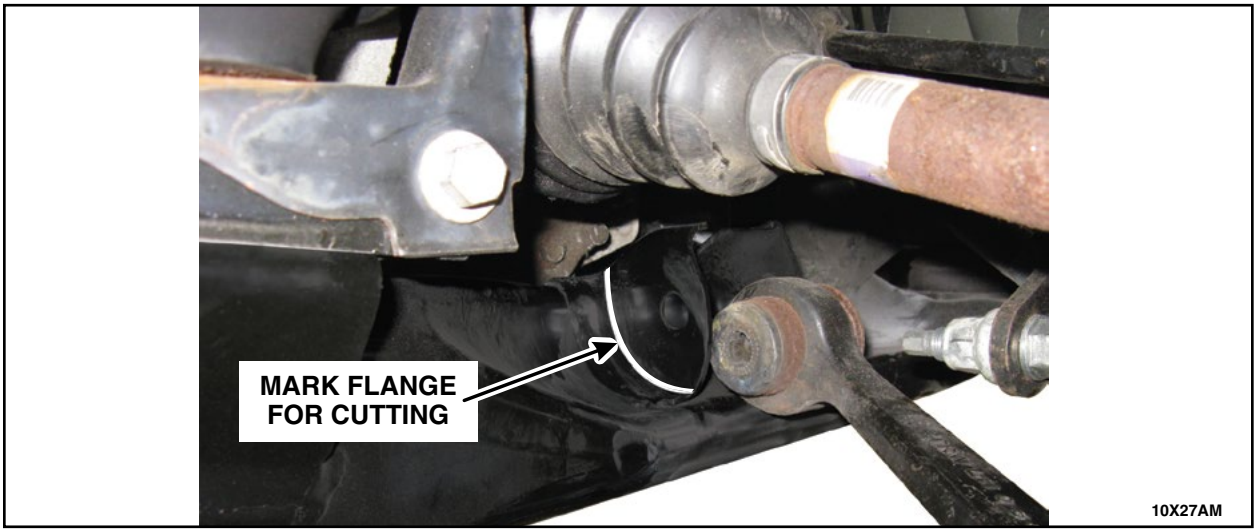


FIGURE 1

2. Using a 3M™ General Purpose Cut-Off Wheel or equivalent, cut the flanges in the marked areas. See Figure 2.

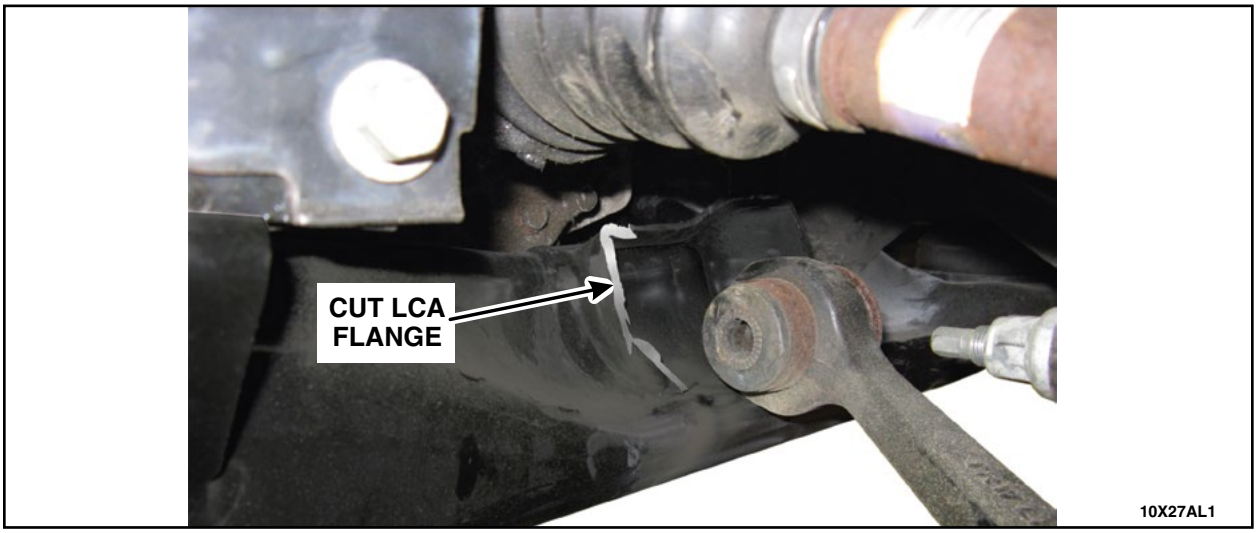


FIGURE 2

3. To continue with procedure for passenger side, return to page 13 step 6. To continue with the procedure for the driver side, return to page 14 step 8.

NEW! VI. REQUIRED PICTURES FOR VEHICLES THAT DID NOT PASS INSPECTION

Send the following pictures *to SSSC via the SSSC Web Contact Site:*

- One picture of the odometer.
- One picture of the Vehicle Certification (VC) Label showing the Vehicle Identification Number (VIN). See Figure 1.
- One picture of the vehicle from the rear passenger side. Picture must clearly show the trim level of the vehicle. See Figure 2.

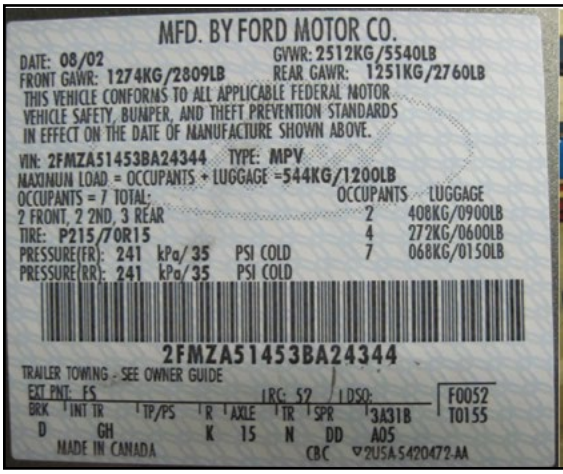


FIGURE 1

FIGURE 2

- Three clear close up pictures showing why the subframe cannot be repaired as well as three pictures of the rear body mount section in the worst condition. Pictures of the rear body mount section must include a ruler to show how far away the crack or perforation is from the tooling hole. The ruler must be flat against the subframe as shown in Figure 4.

NOTE: The angle at which the picture should be taken depends on the reason that the vehicle did not pass inspection. Refer to the following examples for guidance.

Take three close up pictures from the side of the subframe showing the crack and the tooling hole. In order to make a determination, the evaluator will need to be able to see the crack in relationship to the tooling hole. See Figure 3.

FIGURE 3 - Proper angle for a cracked subframe

Take three close up pictures from the bottom of the subframe showing the perforation and the tooling hole. In order to make a determination, the evaluator will need to be able to see the perforation in relationship to the tooling hole. See Figure 4.

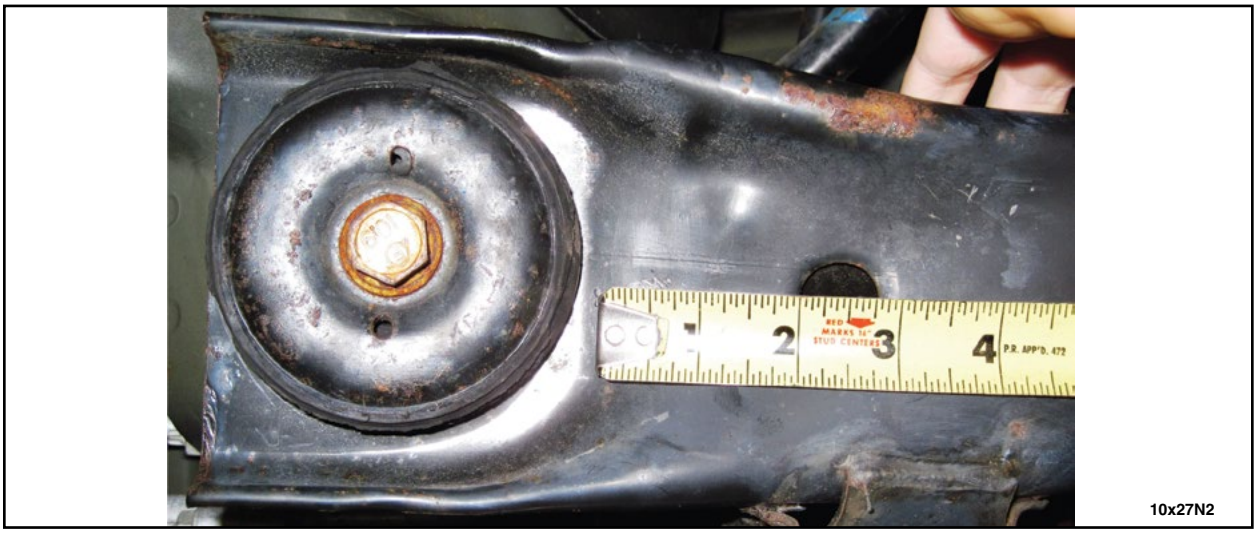


FIGURE 4 - Proper angle for a perforated subframe

Take three close up pictures that clearly show the location and extent of the non-factory welds and/or reinforcements. See Figure 5.

FIGURE 5

If the LCA rear attachment point is missing both flanges, take three close up pictures of the area where the missing flanges were welded to the subframe.

VII. SUBFRAME REMOVAL AND REPLACEMENT

Repair Tips

NOTE: Do not follow the Workshop Manual for subframe replacement. The following service procedure has been developed specifically for Safety Recall 11S16. Some of the special tools called out in the Workshop Manual are now obsolete.

1. **Exhaust Pipe to Flex Pipe Flange Separation:** The flange connection between the exhaust pipe and the flex pipe may be severely rusted on many of the vehicles. Heating the flange on these vehicles will make it easier to remove the bolts.

2. **Preventing Flex Pipe Damage:** Many of the vehicles will have flex pipes that are in poor condition due to vehicle age. Additional damage to the flex pipe can be avoided by using special tool 309-001. This tool is designed to keep the flex pipe straight. If special tool 309-001 is not available, a 71 cm (28 in) length of 31.75 mm (1.25 in) diameter PVC pipe may be inserted through the flex pipe and into the muffler inlet pipe to keep the flex pipe from bending.

3. **Subframe Mounting Bolt Removal:** To assist in removal, apply penetrating oil to the threads that extend above the caged nut. This will improve the chances of removing the bolt without the nut slipping out of its cage and spinning.

Service Procedure

1. Remove the upper radiator shield. See Figure 1.

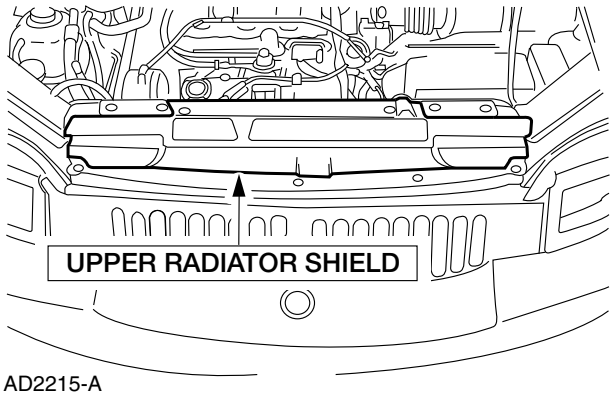


FIGURE 1

2. Remove the cowl grille. For additional information, refer to the WSM, Section 501-02.

3. Install the Engine Lifting Bracket Set special tool 303-D095. See Figure 2.

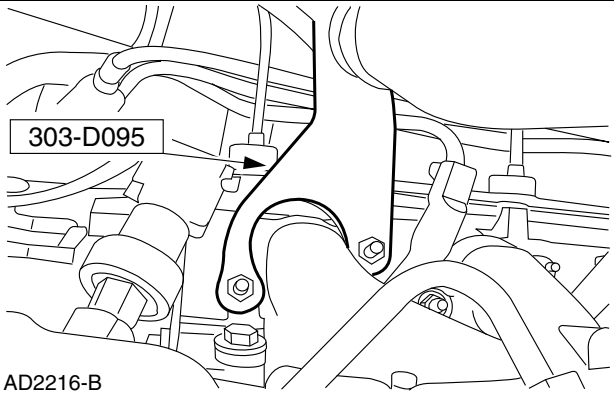


FIGURE 2

4. Install the Three Bar Engine Support Kit special tool 303-290A. See Figure 3.

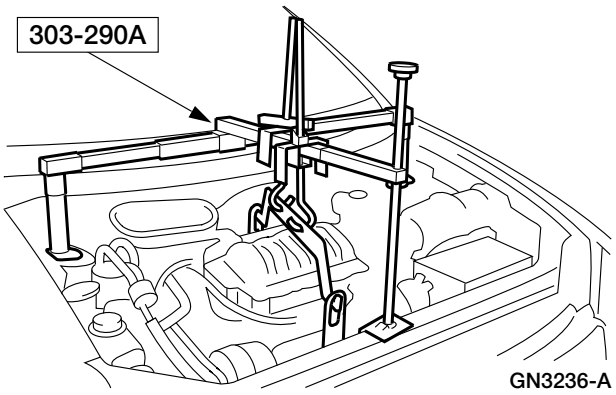


FIGURE 3

5. **NOTE:** If the lower control arm retainers and pinch bolts are not damaged, they may be used for reassembly.

   Remove both front suspension lower control arms. For additional information, refer to the WSM, Section 204-01.

6. Disconnect and remove both catalyst monitor sensors.

   - To install, tighten to 46 Nm (34 lb-ft).

7. Support the exhaust system with a suitable jack stand. See Figure 4.

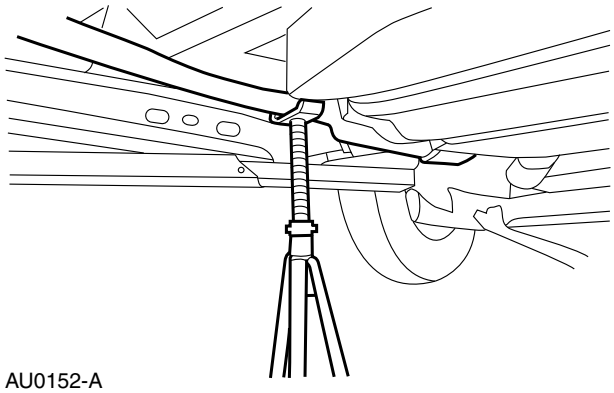


FIGURE 4

8. Remove the exhaust hangers from the rubber insulators.

9. Install the Flexible Exhaust Pipe Holding Fixture special tool 309-001 onto the flex pipe. See Figure 5.

    - If special tool 309-001 is not available, insert a 71 cm (28 in) length of 31.75 mm (1.25 in) diameter PVC pipe into the flex pipe after the flex pipe has been separated from the dual converter Y-pipe. This will prevent excessive movement and/or damage. See Figure 6.

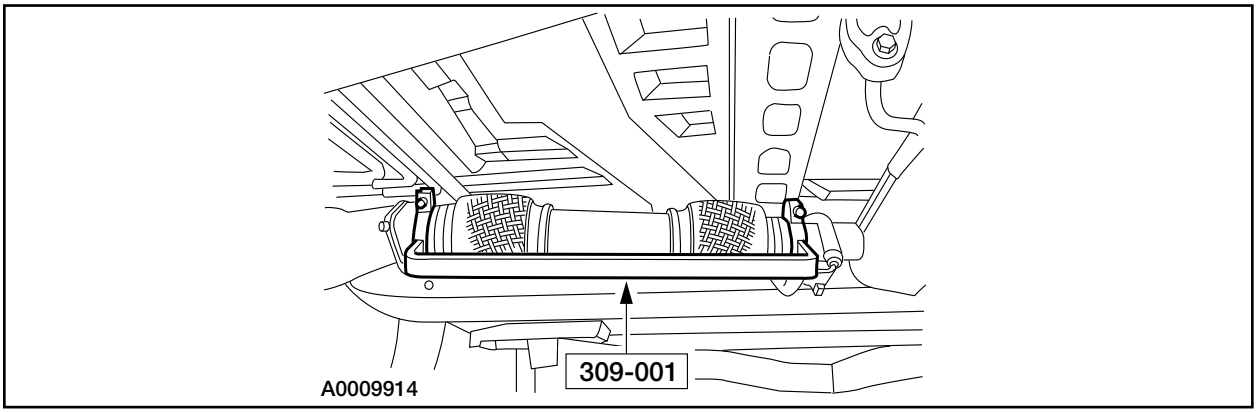


FIGURE 5

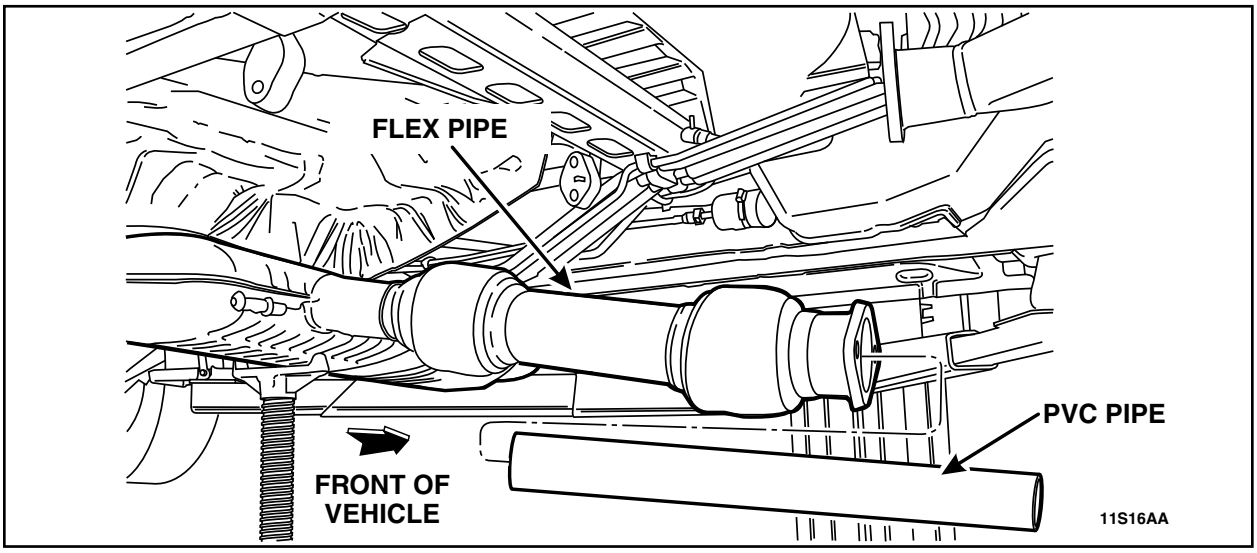


FIGURE 6

10. Remove the two dual converter Y-pipe-to-flex pipe bolts. Discard the bolts and the flange gasket.

    - To install, tighten to 40 Nm (30 lb-ft).

11. Partially lower the exhaust system to aid in subframe removal.

12. Remove the two engine mount nuts. See Figure 7.

    - To install, tighten to 80 Nm (59 lb-ft).

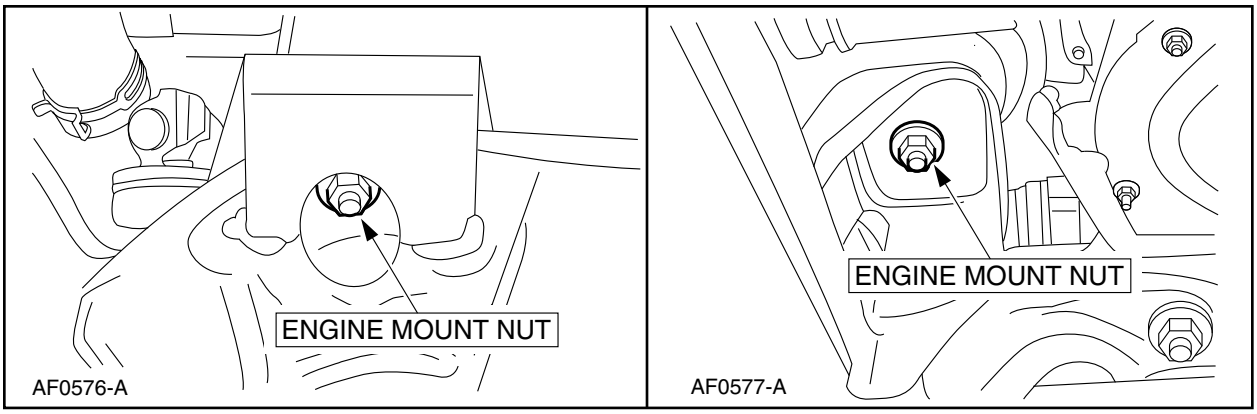


FIGURE 7

13. Remove the two bolts securing the transaxle support insulator bracket to the subframe. See Figure 8.

    - To install, tighten to 80 Nm (59 lb-ft).

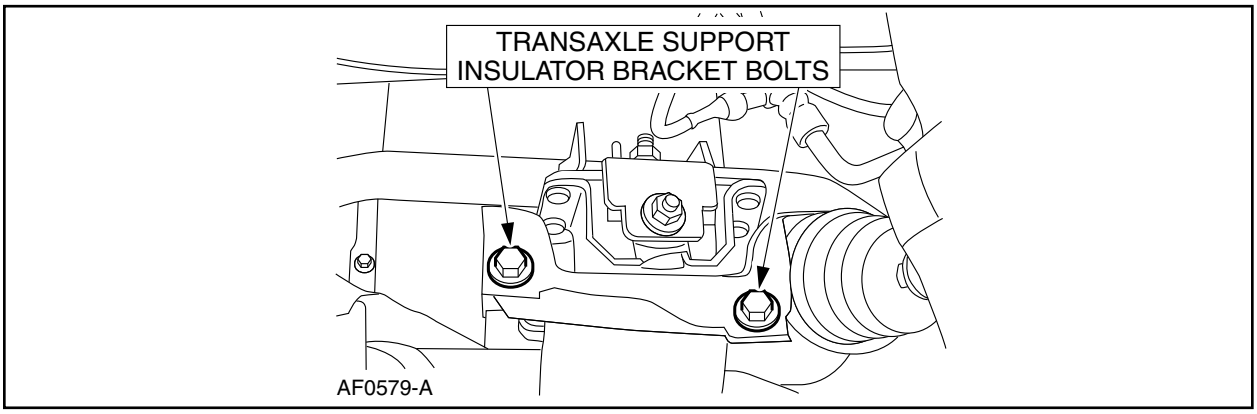


FIGURE 8

14. Remove the two bolts and push pin from the power steering return line and position aside.

    - To install, tighten to 6 Nm (53 lb-in).

15. Disconnect the LH front O2 sensor connector push pin from the subframe.

16. Position a suitable lift under the vehicle and support the subframe.

17. Remove the four front subframe bolts.

    - To install, tighten to 133 Nm (98 lb-ft).

18. Lower the subframe approximately 3-4 inches to gain access to the stabilizer bar bracket insulators.

19. Remove the four stabilizer bar bracket insulator bolts. See Figure 9.

    - To install, tighten to 51 Nm (38 lb-ft).

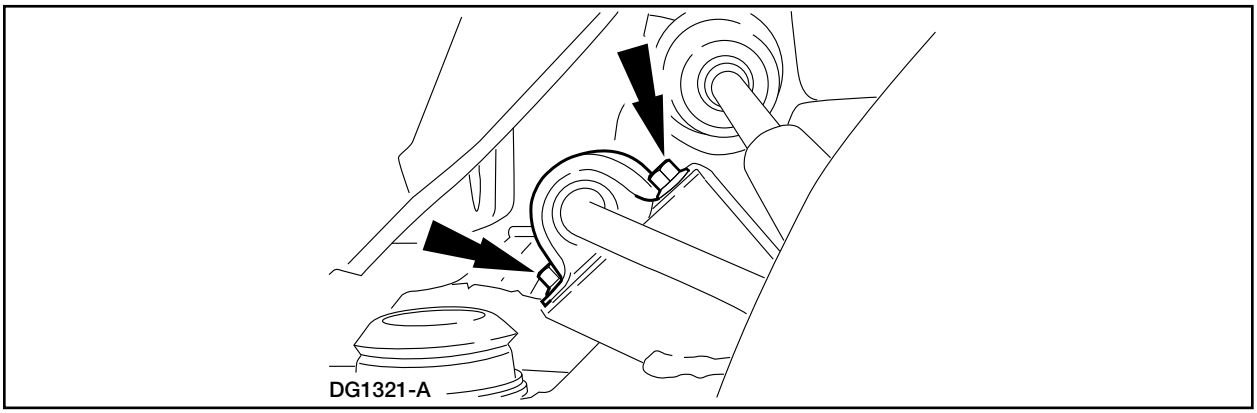


FIGURE 9

20. Remove the steering gear nuts. See Figure 10.

    - To install, tighten to 125 Nm (92 lb-ft).

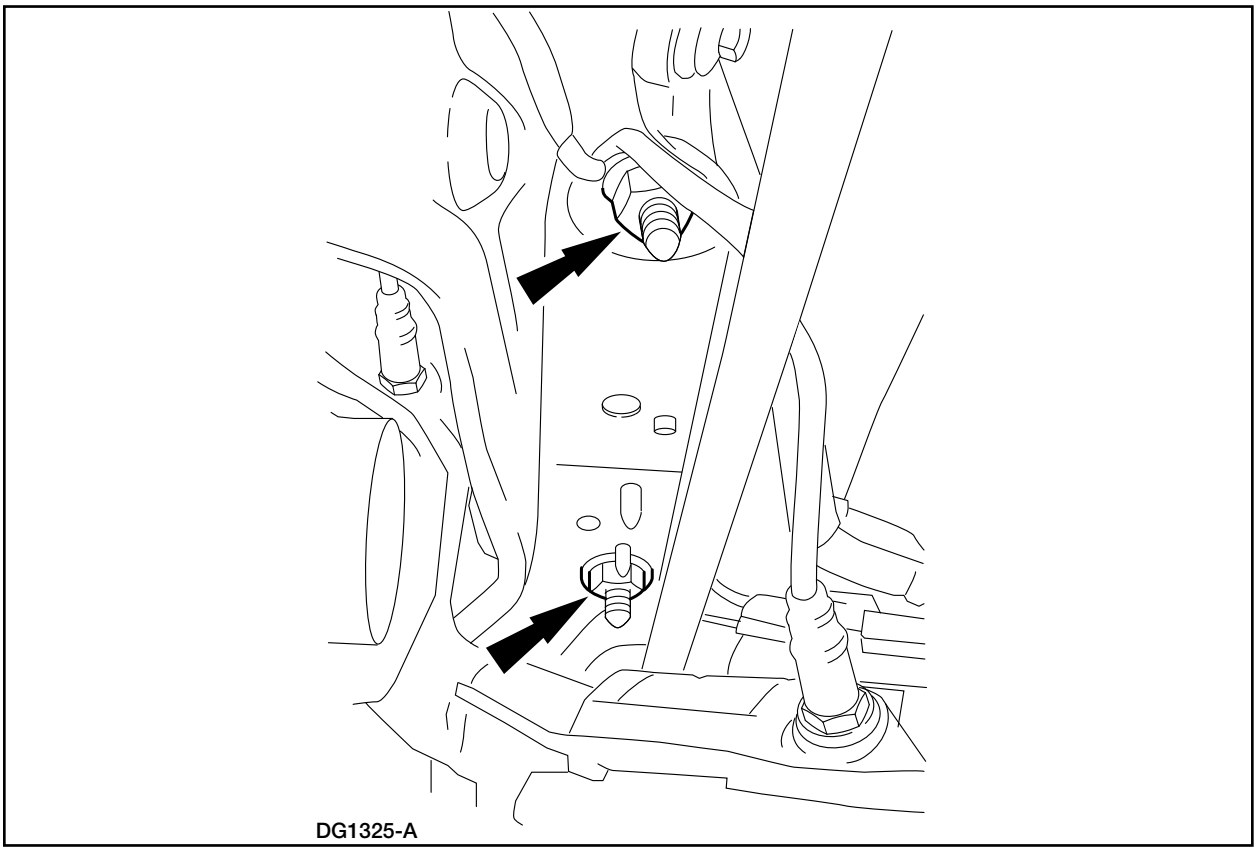


FIGURE 10

21. With the help of an assistant, remove the subframe.
22. Transfer the splash shield from the old subframe to the *new* subframe.
23. Install *new* subframe assembly by reversing the removal procedure.
24. Check toe alignment and adjust if necessary.

Safety Recall 11S16 – Supplement #9
Certain 1999-2003 Model Year Windstar Vehicles Operated in Corrosion States
Subframe Front Lower Control Arm Rear Attaching Flanges and Rear Body Mount Attachments
Inspection and Repair

New! DEALER Q & A

Q1. What is the problem?

A. Ford is voluntarily recalling 1999-2003 Model Year Windstar vehicles to address concerns relating to subframe corrosion. In some of the affected vehicles, a front subframe lower control arm (LCA) rear attaching flange or rear body mount could separate from the vehicle subframe after operating in high corrosion areas (where salt is used on the roadways during winter months) for an extended period of time. Separation of one LCA attachment or both rear body mounts may result in a loss of vehicle directional control, increasing the risk of a crash.

Q2. What should I do if an owner believes their vehicle has been operated in a high corrosion environment and requests their vehicle be inspected?

A. *If the vehicle is not in the program, but is a 1999 through 2003 model year Windstar, contact the SSSC through the SSSC Web Contact Site by running the VIN in OASIS and clicking on the SSSC link at the bottom of the main OASIS page. In the FSA area of the SSSC Assistance Request Initial screen, select "enter FSA" from the drop down list and then type in 11S16. In the Contact Type area of the Initial screen, select "Non-Involved Vehicle" from the drop down list and click submit. Complete the remaining information in the SSSC Main screen and request that the vehicle be covered by Safety Recall 11S16.*

Q3. The 1998-model Windstar was part of the 10S13 rear axle recall. Why are they excluded?

A. 1998 model year and earlier Windstar minivans use a different subframe from the 1999-2003 model year Windstar vehicles and are not part of this Safety Recall 11S16.

Q4. Do I need prior approval to initiate a rental vehicle for a customer?

A. Dealers are empowered to initiate rentals for customers within the following guidelines:

Reinforcement Bracket Installation: Ford will pay for up to 1 day of vehicle rental if needed, except for fuel, while the vehicle is at the dealership for reinforcement bracket installation.

Subframe Replacement: Ford will pay for up to 2 days of vehicle rental if needed, except for fuel, while the vehicle is at the dealership for subframe replacement.

Any rental expenses incurred beyond these guidelines will require approval from the SSSC (*Please submit an assistance request using contact type "Related Damage*").

Q5. How will customers with unique transportation issues (handicap or other extenuating circumstances) be handled?

A. *Dealers should contact the SSSC via the SSSC Web Contact Site for assistance.*

Q6. After the Metal Bonding Adhesive and the Anti-Corrosion Coating is applied, can the vehicle be taken off the hoist?

A. If bracket installation for Safety Recall 10S13 Rear Axle Inspection and Repair is being performed at the same time, then the vehicle must remain on the hoist since the adhesive needs time to cure before load can be placed on the axle. If bracket installation for Safety Recall 10S13 is not being performed along with 11S16, then the vehicle can be removed from the hoist.

Safety Recall 11S16 – Supplement #9
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Inspection and Repair

Q7. What is the consistency of the Metal Bonding Adhesive supposed to be like once it has fully cured?

A. The adhesive will be hard but not brittle. It will be softer than body filler. Also, if Anti-Corrosion Coating is not applied immediately, the surface of the adhesive will react with oxygen as it cures and form a tacky film over the surface of the adhesive. This tacky surface may lead a person, who is not familiar with this product, to believe that the adhesive is not curing properly.

Q8. What is the minimum temperature (vs. time) that will allow the Metal Bonding Adhesive to cure properly?

A. If the shop temperature is lower than 16°C (60° F), the adhesive will need to cure overnight.

Q9. Where can I find more information about the adhesive and the PM-13-A Anti-Corrosion Coating?

A. Access the following web sites and review the MSDS sheets.

- For the adhesive go to: http://www.lord.com/Products-And-Solutions/Adhesives/Metal-Bonding.xml/143/6 and look up the MSDS sheet for metal bonding adhesive 108B.
- For PM-13-A go to: http://www.fcsdchemicalsandlubricants.com/main/product.asp?product=Anti-Corrosion Coating&category=Collision and Body Repair