



Field Service Bulletin

Behind the Cab System Mount Modification

ENP-599
October 6, 2017

1. Introduction

Bolts on 22523000 behind the cab (BTC) system mounts on one customer's fleet are breaking due to excessive vehicle frame twist. This is a modification of an existing design to help mitigate this issue.

The existing mounting bracket, system isolators and bolts are replaced with a modified bracket and isolator system.

This is a service campaign for 40 specific vehicles only, and is not a recall.



Figure 1. Behind the cab system number 22523000 mounted on a Mack LEU633 chassis.

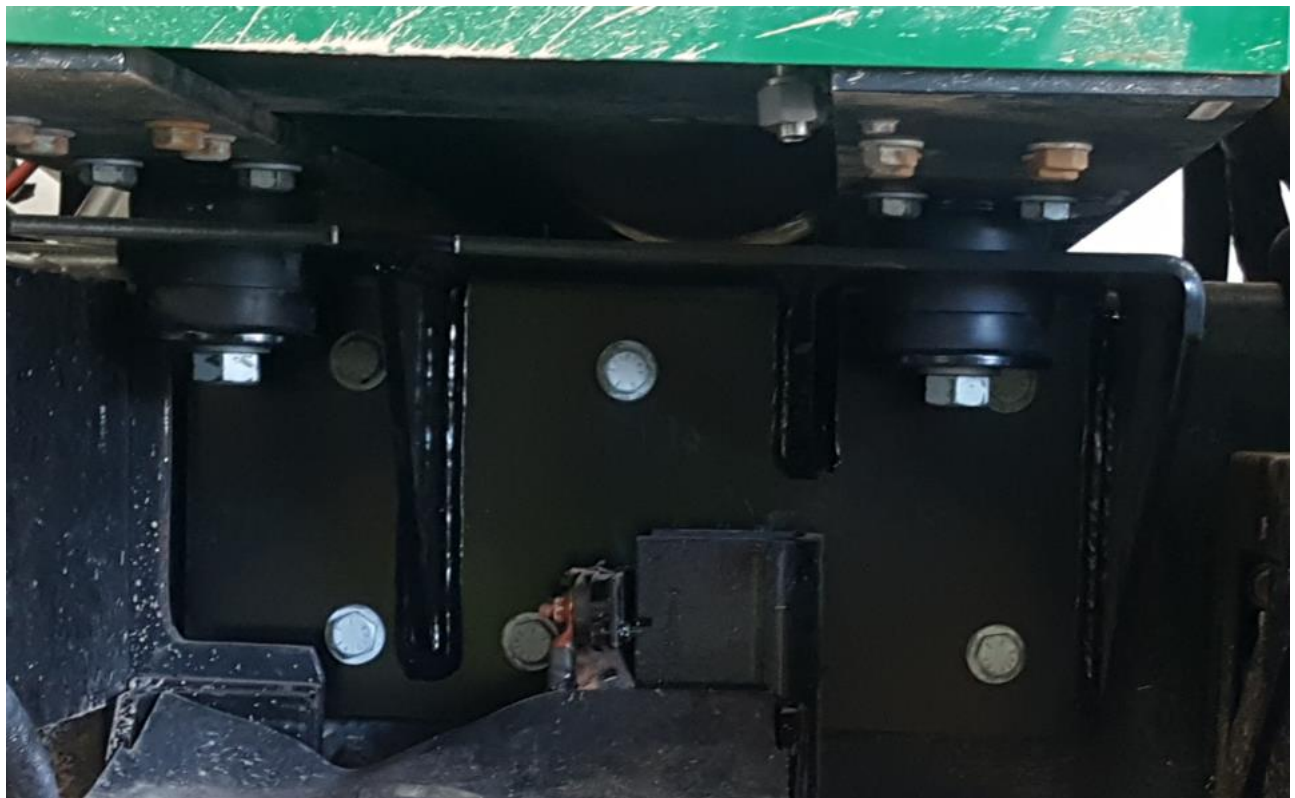
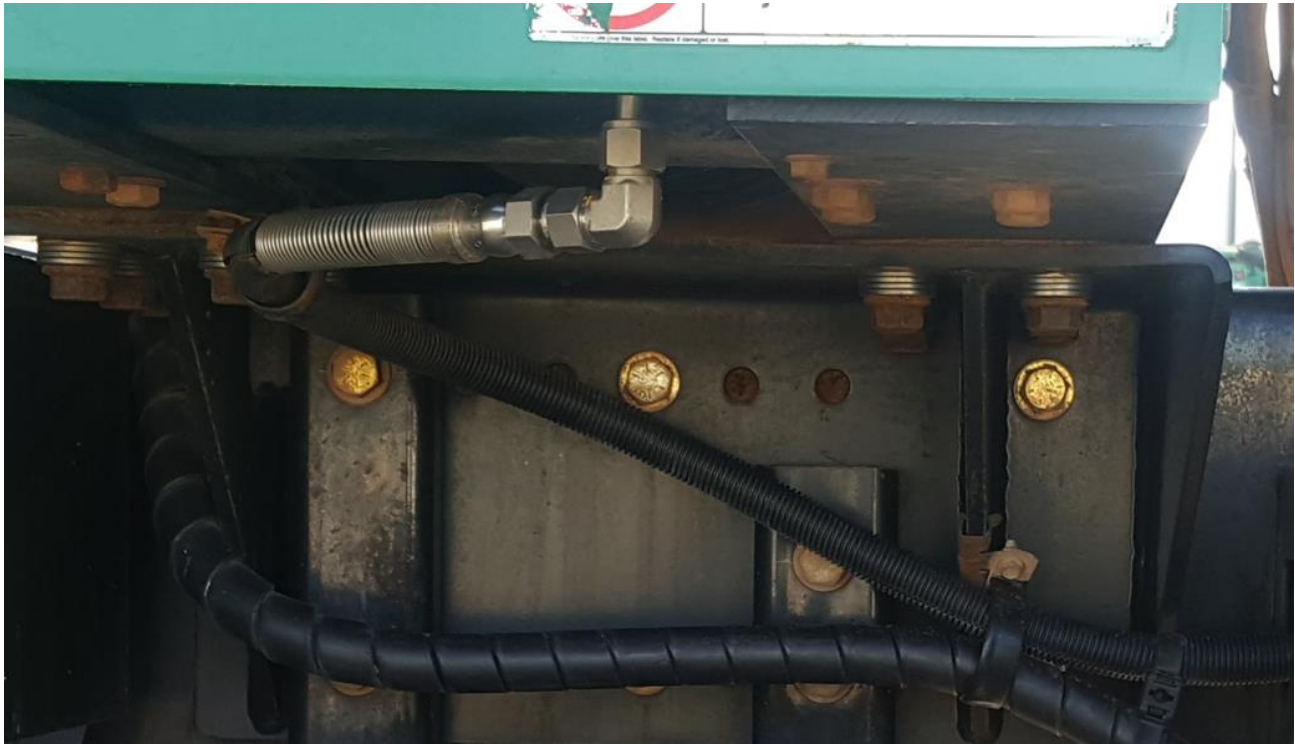


Figure 2. Above: The existing mounting bracket and isolator system is removed and replaced with a modified bracket and four-point isolator system (below).

Warning Messages Used in this Bulletin

DANGER

Personal injury or death will occur if procedures are not followed.

WARNING

Personal injury or death may occur if procedures are not followed.

CAUTION

Damage to equipment, fuel system or vehicle is possible if instructions are not followed.

2. Affected Units

Forty specific 22523000 BTC equipped vehicles in one customer's fleet. This is a special modification, not a repair.

3. Corrective Action

Possibly does not apply. Mounting system failure for similar BTC systems has not been reported on other fleets. This procedure is being performed only on the specific vehicles mentioned above.

4. Tools, Parts and Materials

1. Common hand tools, including torque wrench.
2. Grinder or wire brush for removing corrosion and rust.
3. Crane, hoist or other lifting device to raise the fuel system cabinet up and away from the vehicle chassis. The lift must be safety rated to 2,000 lbs. or more.
4. Personal protective equipment (PPE).
5. A bill of materials list is presented below. The list is for one vehicle system.



Qty.	Part Number	Description
4	10712259	Isolator bushing assembly, neoprene rubber
28	10761012	Flat washer, 5/8, thru hardened, steel, SAE, 720 hour coating
2	10761013	Flat washer, 5/8, thru hardened, steel, USS, 720 hour coating
14	10761306	Flange top lock nut, 5/8-11, Grade 8, steel, UNC, 720 hour coating
2	20300040	Subassembly, nut plate assembly - REAR
2	20300041	Subassembly, nut plate assembly - FRONT
1	22400037	Bracket, mounting, BTC, Mack LEU
1	22400038	Bracket, mounting, BTC, Mack LEU
8	22400190	Washer, snubber
4	22500240	Plate, spacer, isolator
4	22500242	Plate, drill template for REAR lower beam, 22500100
14	10760206-225	Hex cap screw, 5/8-11 x 2.25-in., Grade 8, steel, UNC, 720 hour coating
14	10760206-250	Hex cap screw, 5/8-11 x 2.50-in., Grade 8, steel, UNC, 720 hour coating
4	10760208-550	Hex cap screw, 7/8-9 x 5.5-in., Grade 8, steel, UNC, 720 hour coating**
4	10761016	Flat washer, 7/8, thru hardened, steel, SAE, 720 hour coating
4	10761308	Flange top lock nut, 7/8-9, Grade 8, steel, UNC, 720 hour coating**

**7/8-14 NF fine thread hardware may be substituted, Grade 8 and 720 hour coating. See note on torque specifications below.

5. Procedure

DANGER

- A. Depressurize the system before starting work.**
- B. Defueling is recommended to reduce system weight.**
- C. Use proper lifting techniques to prevent injury and vehicle or system damage.**

1. Remove any vehicle items that may be in the way, such as battery box and wiring or transmission mounts.
2. Disconnect the fuel line.
3. Attach the lift system to the BTC cabinet.

4. The outer covers can remain in place. There should be enough clearance to reach inside the cabinet to access bracket mounting bolts.
5. Remove the vehicle chassis to system bracket mounting bolts. Discard them, they should not be re-used.
6. Lift the system up and away from the vehicle chassis.
 - a. Lift the system to enable safe access to the work area.
 - b. Make sure to brace the system cabinet securely for safety. A piece of lumber placed between the vehicle chassis and the fuel system can be used, as shown below.



Figure 3. A piece of lumber (4 x 4 pictured) can be used to safely rest the fuel system on but above the vehicle chassis.

7. Remove the system mounting brackets and isolators. Discard the bolts, they should not be re-used.

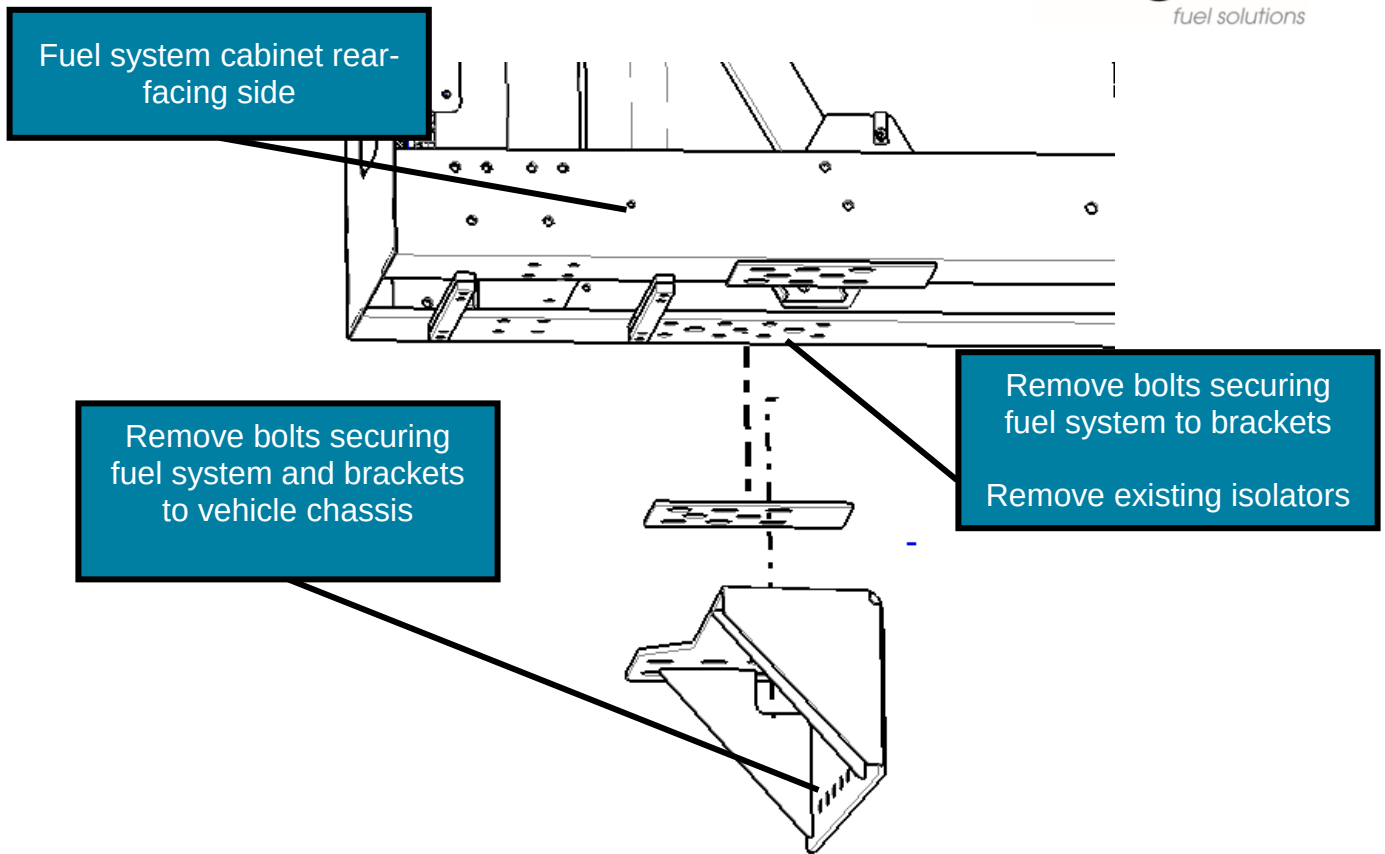


Figure 4. Remove the bolts securing the fuel system cabinet to the vehicle chassis and lift the system up and away from the vehicle. Next, remove the bolts and existing isolators securing the bracket to the fuel system frame.

8. Remove the existing nut plates and rubber isolators.
9. Examine the vehicle chassis and fuel system frame for wear or corrosion, and clean all surfaces.
10. The fuel system frame can remain in place, but new holes are needed in the lower mounting brackets, see Figures 5, 6 and 7.
 - a. A drilling jig is provided (part number 22500242) – this is for the **REAR** beam only.
 - b. The drilling guide is NOT used for the front beam.
11. Match and mount the drill template to two existing holes on the REAR bracket.
12. Bolt the template in place as shown in Figure 8 and drill a 3/16-in. pilot hole through the center hole in the template and the lower angle.
13. Remove the template and enlarge the holes to 15/16-inch.

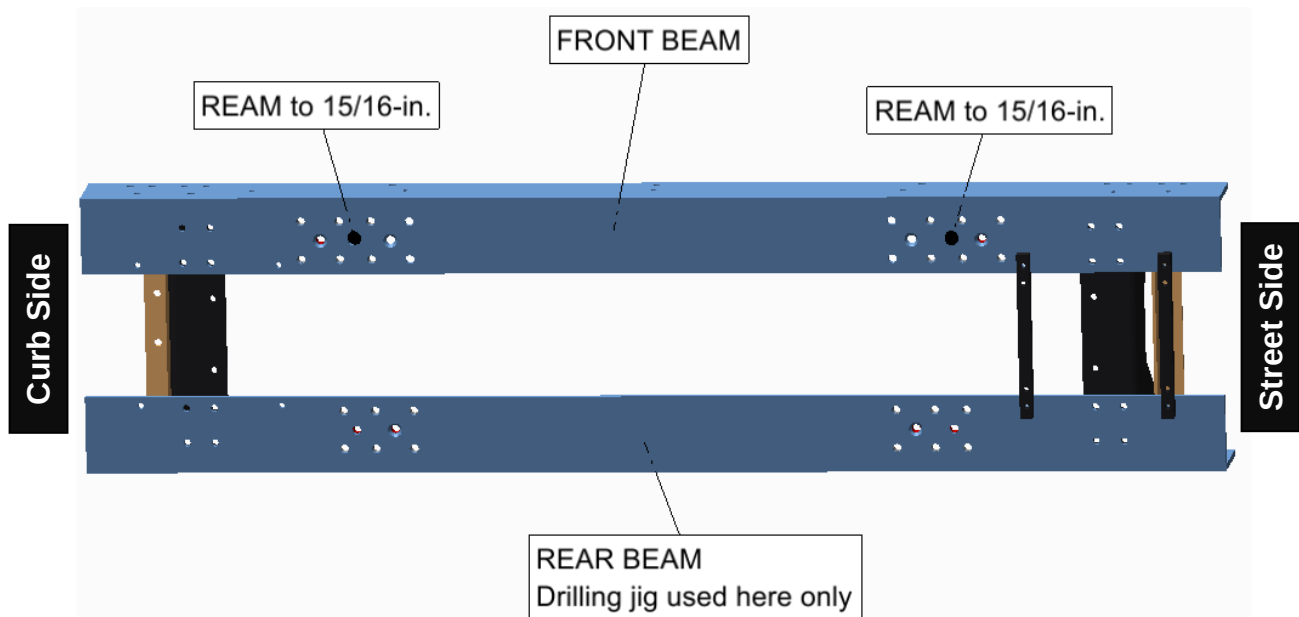


Figure 5. View of system beams from below.

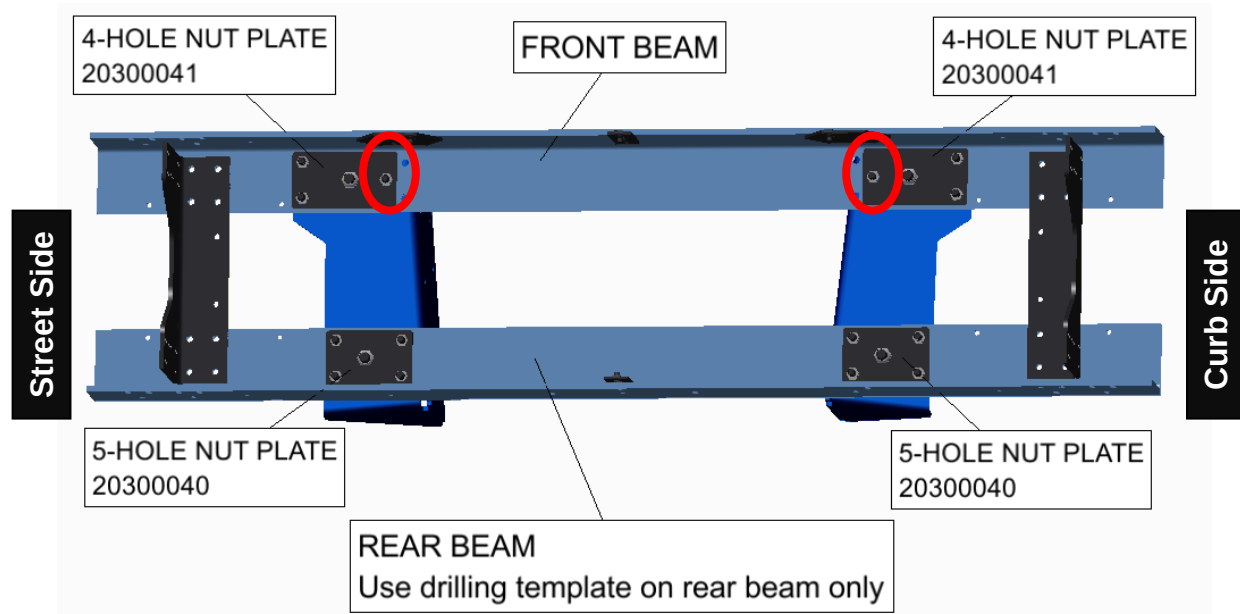


*Figure 6. Overhead view showing beams and drilling locations when work is completed.
Note the two locations and the additional washers needed.*

NOTE: Two bolts on the front beam require **both** an SAE washer and a USS washer underneath the bolt head. The two holes are countersunk and will “dish” into the hole instead of properly spreading the clamp load of the joint. See Figures 6 and 12.

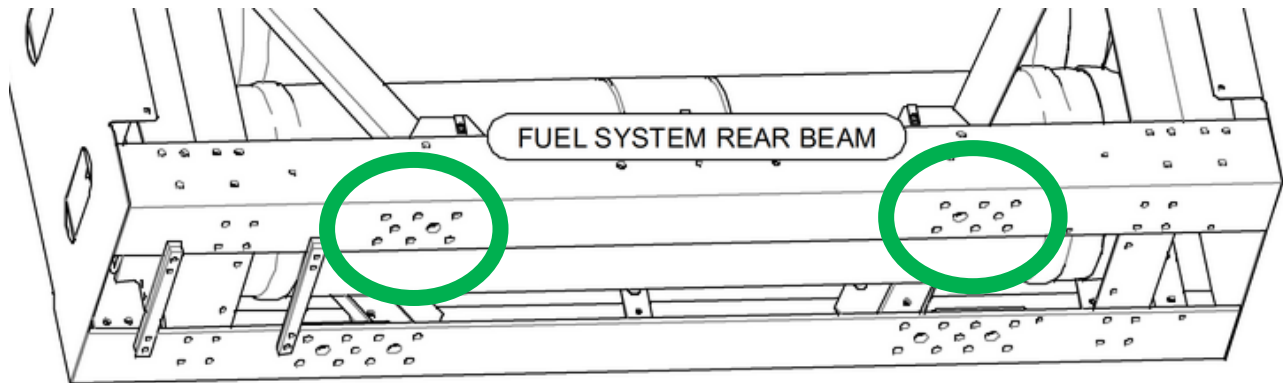


Figure 7. Fuel system beams before drilling. The drilling templates are positioned on the REAR beam only.



Figure 8. Place the drill template (round disk) as shown, bolt it into place and drill a new 3/16-in. pilot hole in the center for the isolator. Then, remove the drill guide and ream the center hole to 15/16-in.

The nut plates capture and hold the 7/8-9 lock nut for the isolator bolt on the fuel system chassis. The center hole has a hexagonal cut-out for the bolt head. The four outer 5/8-11 nuts are pressed into the nut plate. See Figure 9.

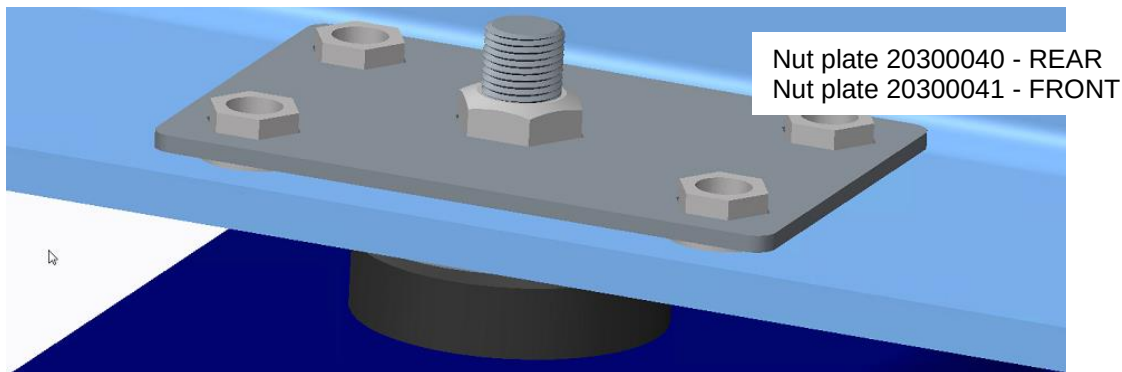


Figure 9. The nut plates capture and hold the center bolt lock nut (7/8-9) in place for each isolator. The outer 5/8-11 nuts are pressed into the plate.

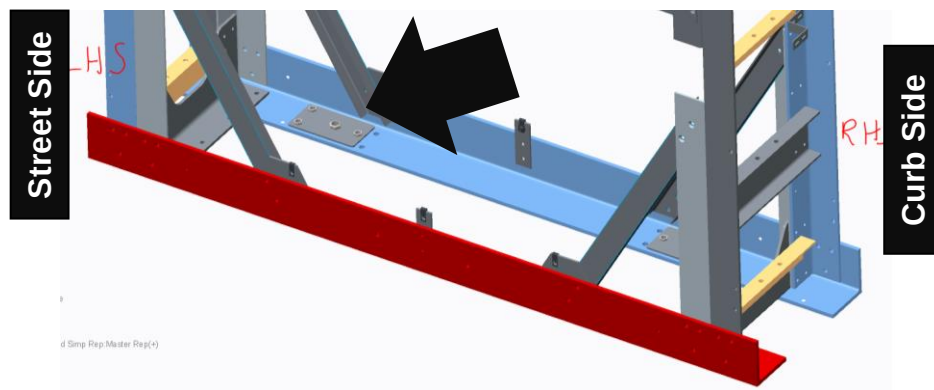


Figure 10. Make sure the 7/8-in. lock nut is trapped under the 20300041 nut plate in the FRONT LHS location as shown. Notice the position of the 3 pressed-in nuts on the plate.

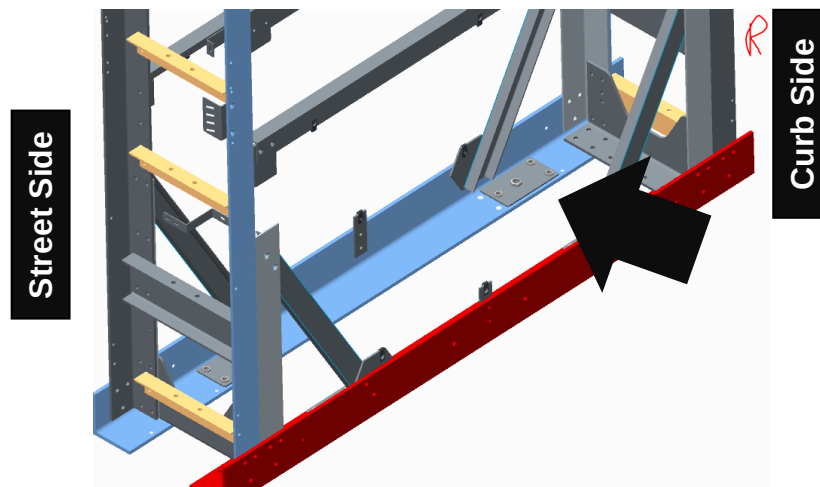


Figure 11. Make sure the 7/8-in. lock nut is trapped underneath the 20300041 nut plate in the FRONT RHS location as shown. Notice the position of the 3 pressed-in nuts on the plate.

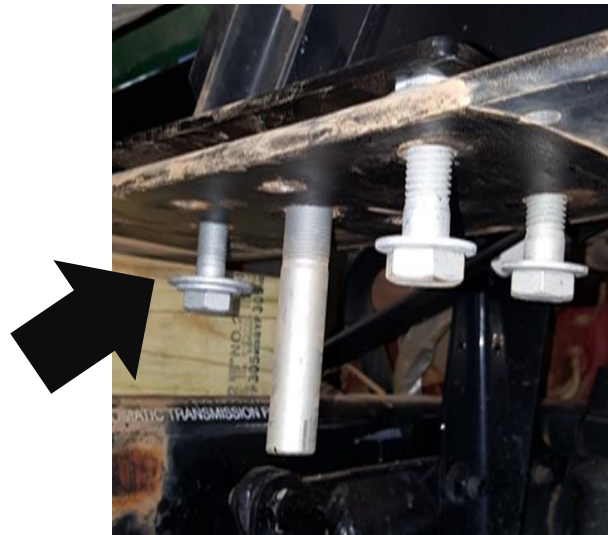


Figure 12. The centered nut plate mounting bolt on the FRONT beams require ONE additional 5/8-in. SS washer under the SAE washer as shown.

14. Loosely install the new nut plates onto the fuel system brackets with 5/8-in. bolts. Part number 20300040 – with 5 holes - is for the rear bracket and 20300041 – with 4 holes - is for the front bracket.
15. Bolt the new system mounting brackets, washers, spacers and isolators in place on the fuel system cabinet.
 - a. The isolator stack component sequence is critical, see Figures 13, 14 and 15.
 - b. Make sure the 7/8-in. nut is captured under the nut plate.
 - c. The new mounting system should look like the picture below.
16. Torque all bolts to specification:
 - a. 7/8-9 isolator retention bolts: 380 ft-lbs desired, 410 ft-lbs maximum.
 - i. If 7/8-14 NF fine thread hardware is used for the isolators, the bolt torque is 425 ft-lbs with a maximum of 460 ft-lbs.
 - b. 5/8-11 chassis rail and bracket bolts: 135 ft-lbs desired, 150 ft-lbs maximum.
17. Use a level to make sure the system cabinet is level.
18. Lower the system onto the vehicle chassis.
19. Mount the system onto the vehicle chassis, drilling new holes if needed.
20. Torque the chassis bolts to 135 ft-lbs desired, 150 ft-lbs maximum.
21. Re-install the fuel line.
22. Pressurize the system and check for leaks.

23. Repair any leaks and the vehicle can be returned to service.

24. Additional drawings of the new isolator and bracket mounts follow below.

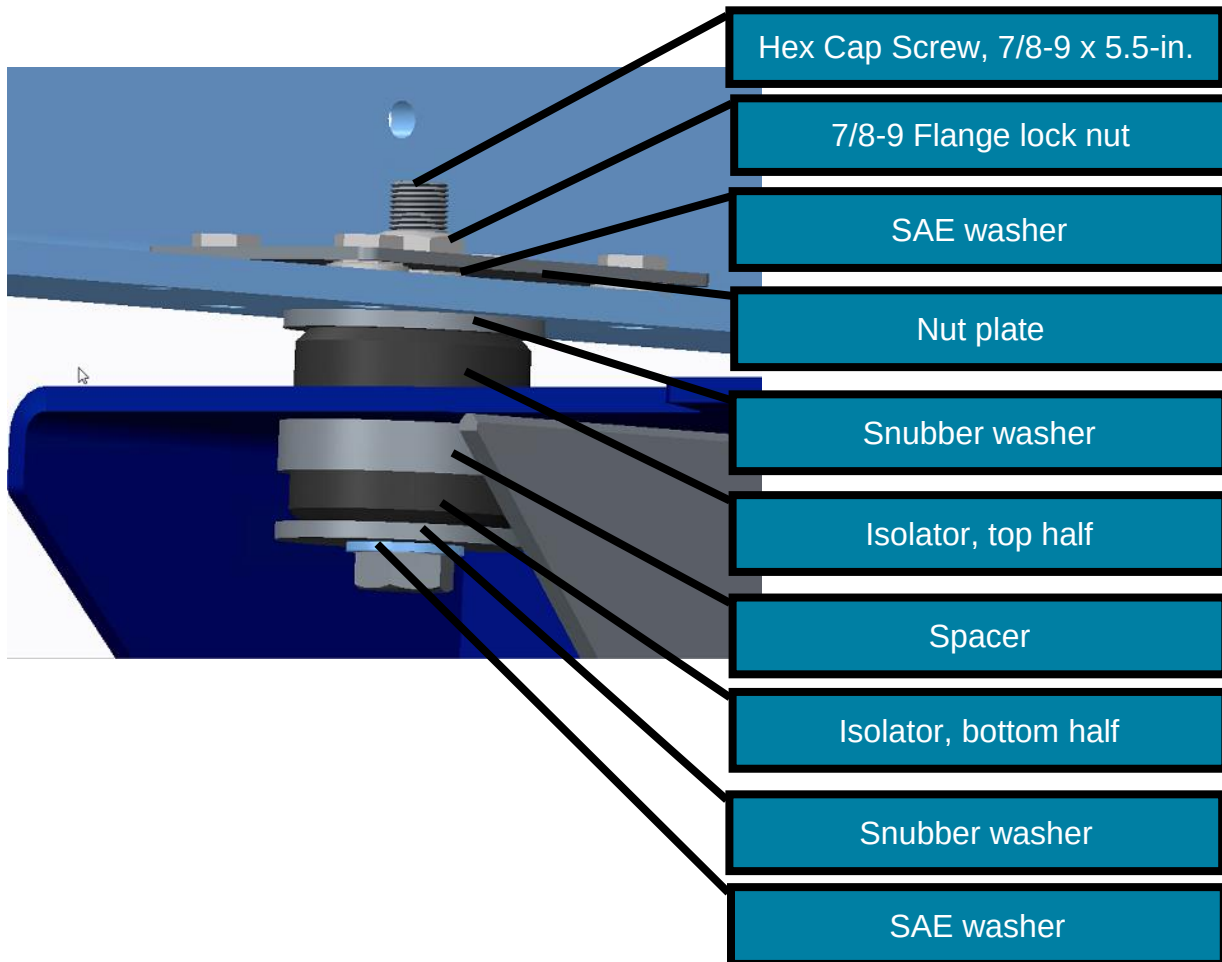


Figure 13. The REAR isolator mounting parts must be arranged as shown.

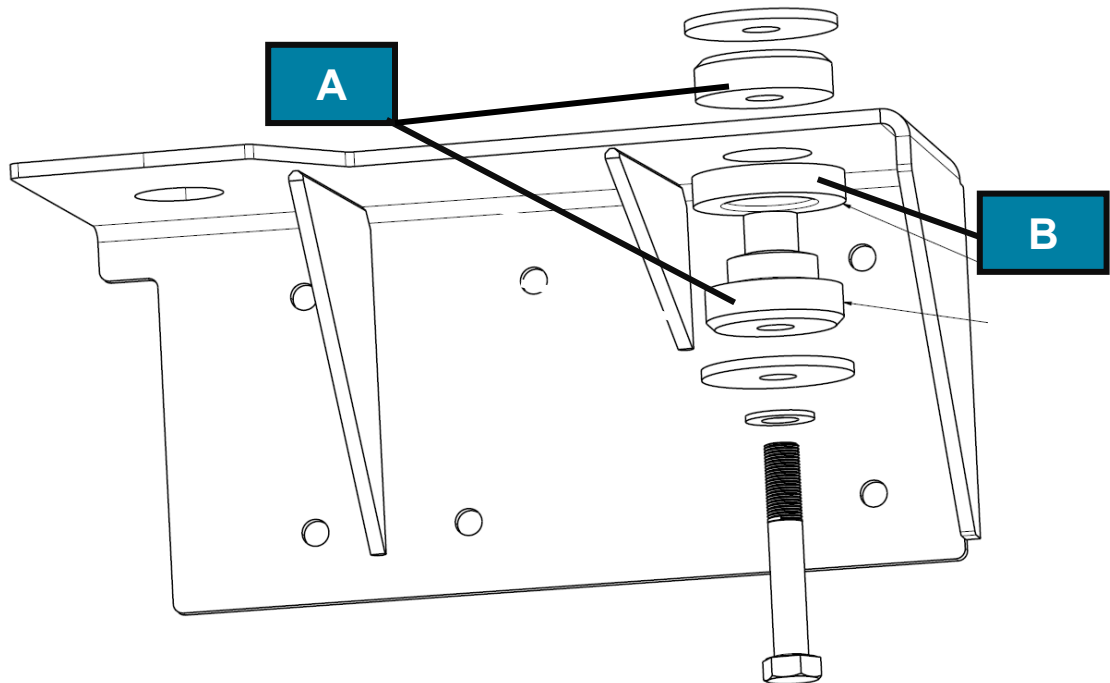


Figure 14. Isolator halves (A) must be assembled in the order and orientation shown. Make sure the rounded edge on the spacer plate (B) faces the lower rubber isolator.



Figure 15. New bracket, bolts and isolator properly installed.

6. Warranty Information

This modification is being covered under warranty. This applies specifically to the 40 vehicles on the list.

Standard repair time (SRT) for this procedure: 10 hours.

If you have any questions, contact Customer Care at +1 949 267 7745 or toll free at +1 855 500 2445 or e-mail: support@agilityfs.com

Parts can be ordered via e-mail: parts@agilityfs.com

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Agility Fuel Solutions
3335 Susan Street, Suite 100
Costa Mesa, CA 92626
www.agilityfuelsolutions.com