

Authorized Field Change

AFC G-05910

Date: November, 2005

Subject File: FUEL TANKS

Subject: Replacement of 100 Gallon Between the Rails (BTR) Fuel Tanks on CE, FE and RE Buses
Built Between March 16, 2005 and July 20, 2005

Vendor: Beach Mfg

Model: CE 200

Start Date: 03/16/2005 End Date: 07/20/2005

Model: CE 300

Start Date: 03/16/2005 End Date: 07/20/2005

Model: FE 300

Start Date: 03/16/2005 End Date: 07/20/2005

Model: RE 200

Start Date: 03/16/2005 End Date: 07/20/2005

Model: RE 300

Start Date: 03/16/2005 End Date: 07/20/2005

DESCRIPTION

Certain CE, FE, and RE bus models built between March 16, 2005 and July 20, 2005 have between the rails 100 gallon fuel tanks that do not meet material specification and rust internally, causing fuel filters to plug, resulting in low engine power.

PARTS INFORMATION

Table 1 **Parts Information**

Part Number	Description
3584274C91	Fuel Tank, 100 Gal. BTR
3586922C91	Fuel Tank, 100 Gal. BTR
3596530C91	Fuel Tank, 100 Gal. BTR

NOTE – When ordering the replacement fuel tank, order the same number listed on the line set ticket.

SERVICE PROCEDURE



WARNING – To avoid property damage, personal injury or death, park the vehicle on a flat level surface, set the parking brake, chock the wheels and turn the engine off.

SERVICE PROCEDURE (CONT.)



WARNING – Diesel fuel is flammable, keep away from ignition sources. Failure to heed this warning may result in property damage, personal injury, and/or death.

1. Inspect the primary fuel filter/strainer (rock catcher) for signs of rust in the fuel system.
 - If evidence of rust is present, the fuel must be drained and discarded following good shop practices and replace the fuel filters.
 - If **no** evidence of rust is found, drain the fuel into a suitable clean container for reuse at the completion of this Service Procedure.

SERVICE PROCEDURE (CONT.)

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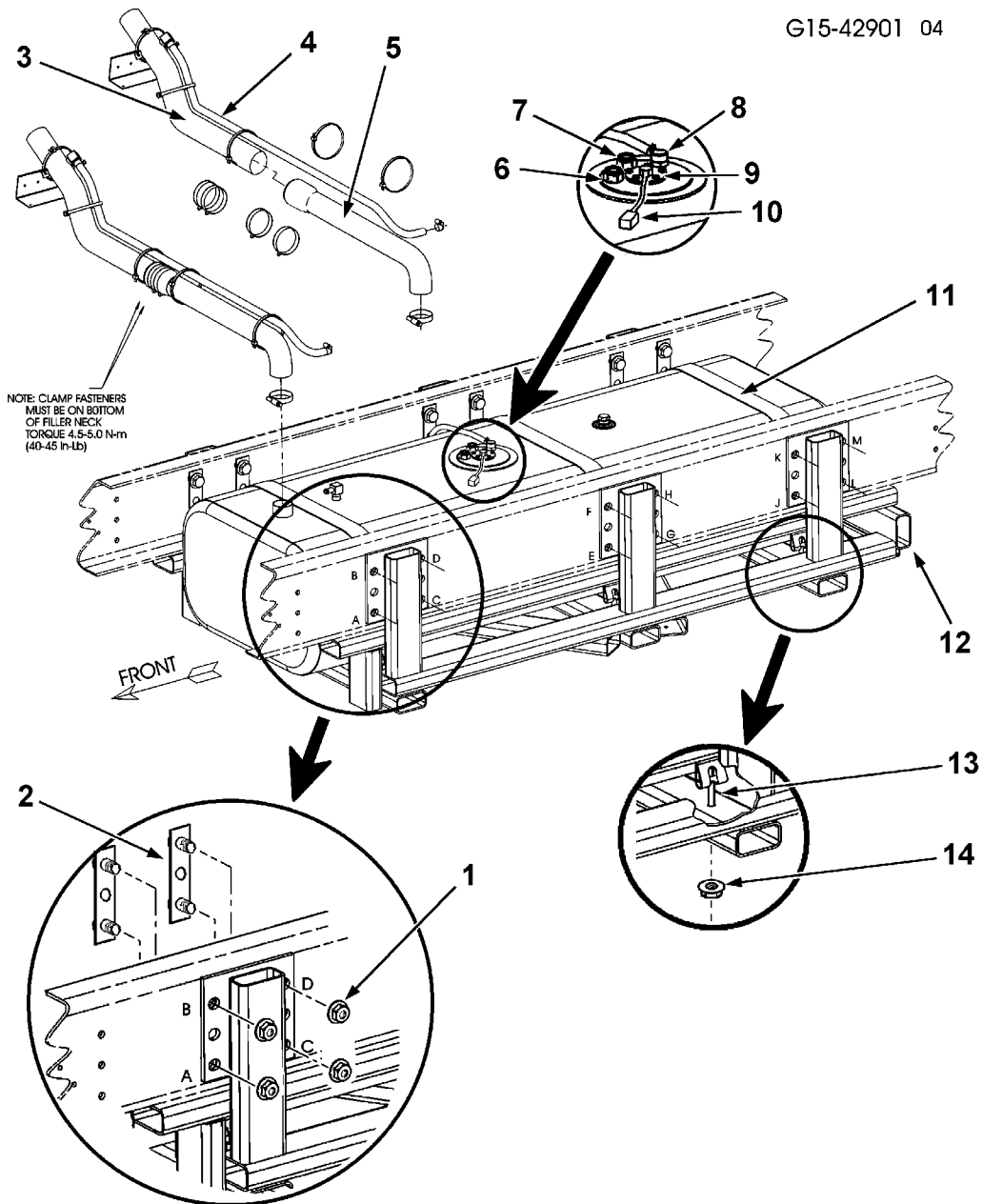


Figure 1 Fuel Tank and Cage Assembly

SERVICE PROCEDURE (CONT.)

1. MOUNTING NUT (24)
 2. MOUNTING BOLT PAIR (12)
 3. FILLER NECK TUBE
 4. VENT HOSE
 5. RUBBER FILLER HOSE
 6. FUEL RETURN LINE
 7. FUEL SUPPLY LINE
 8. CENTER VENT LINE
 9. SENDING UNIT
 10. ELECTRICAL CONNECTOR
 11. TANK HOLDING STRAP
 12. CROSS BAR (CLOSED END)
 13. HOLDING STRAP BOLT (6)
 14. HOLDING STRAP MOUNTING NUT (6)
2. Position a transmission jack or other suitable lifting device under the center of the tank cage assembly, and raise the jack until it just makes contact with the bottom of the cage (Figure 2). The jack should be located at the center of the tank cage assembly to prevent the assembly from tipping while being lowered.



Figure 2 Jack in Contact with Fuel Tank Cage

3. Working on one side of the fuel tank , remove a mounting nut from each of the three (3) tank holding straps (Figure 1, Item 11).
4. Loosen the mounting nut at the other end of each holding strap (3), but do not remove.

SERVICE PROCEDURE (CONT.)

5. Disconnect the rubber filler hose from the filler neck tube by removing the two hose clamps and sliding the hose off of the filler tube (Figure 1). It may be necessary to cut tie-straps to move the fuel hose. Note the original location of all tie-straps to allow correct replacement during installation. If the hose cannot be fully separated from the filler tube, verify that the hose clamps are loose so that the hose will disconnect as the tank is lowered.
6. Secure the tank cage to the jack 'table' using a safety chain or ratchet safety strap. NOTE: Do not position the chain or strap over the tank. Secure only the cage. The tank must be free to remove.

NOTE – The mounting bolts are arranged in vertical pairs. Each pair of bolts is welded to a strap to simplify installation (Figure 1, Item 2 and Figure 3).



Figure 3 Mounting Bolt Pair

7. Leaving one mounting nut installed at each corner of the cage, remove the other 20 nuts securing the fuel tank cage to the vehicle frame (Figure 1, Item 1).



WARNING – To avoid personal injury or death, do not work under the tank and cage assembly while it is supported by the jack.

SERVICE PROCEDURE (CONT.)

8. Remove the four remaining mounting nuts, then raise the jack slightly to allow removal of all remaining mounting bolts. The tank and cage is now free from the vehicle frame, but is still connected by fuel lines and the wire harness.

CAUTION – In the following step, while the tank cage is being lowered, watch for signs of binding and tipping. If necessary, use a pry bar to prevent the cage from binding.

9. Slowly and carefully lower the jack only enough to provide access to the top of the fuel tank (approx. 8 to 12 inches).

NOTE – While it may be possible to access the top of the fuel tank through an access hole in the floor of the vehicle, in most cases, it is easier to access this area from under the vehicle once the tank and cage assembly have been partially lowered.

10. If necessary, finish disconnecting the rubber filler hose from the filler neck tube.
11. Clean the top of the tank in the area of the sending unit and hose connections.

NOTE – When disconnecting lines in the following step, note the placement of any tie-straps that must be removed or relocated. All tie-straps must be replaced in their original location during installation.

12. On the top of the fuel tank (refer to Figure 1):
 - a. Disconnect the electrical connector from the sending unit.
 - b. Disconnect the 'filler' vent hose by removing the hose clamp.
 - c. Disconnect the supply and return fuel lines by disconnecting the Voss fittings (note the fitting that each line is connected to).
 - d. Remove the fuel filler hose from the tank by removing the hose clamp.

13. Slowly lower the jack to its lowest position. Note the orientation of the tank and the cage.

NOTE – Some cages are 'closed' with a cross bar at one end (Figure 1, Item 12). Note which end of the cage faces the front of the vehicle, and whether the filler port is located at the front or the rear of the fuel tank. This information will be needed when installing the replacement tank.

14. Verify that there is clearance to move the tank and cage assembly (and jack) from under the vehicle. If necessary, raise the vehicle to provide the necessary clearance.
15. Move the tank and cage assembly from under the vehicle, to a suitable working location.
16. If a jack was used to raise the vehicle, it can be lowered at this time.
17. If the tank still contains a small amount of fuel, drain it now.
18. Raise the loose ends of the three tank holding straps to allow movement of the tank.

SERVICE PROCEDURE (CONT.)

CAUTION – Removal of the tank from the cage in the following Step will require two people.

19. Slide the fuel tank from the open end of the cage.
20. Transfer the following components from this tank to the replacement tank (Figure 1):
 - a. Fuel sending unit, tighten 5 screws using a criss / cross pattern to 20 to 25 Lbf-in (2.3 to 2.8 Nm)
 - b. Vent hose fitting (front) for vent hose at filler neck
 - c. Vent hose and fitting (center) for vent hose near sending unit (note location of vent hose)
 - d. Fuel supply hose fitting
 - e. Fuel return hose fitting
21. Dispose of the fuel tank using good shop practices.

NOTE – Placing the fuel tank into the tank cage requires two people.

NOTE – While sliding the fuel tank into the cage, position the tank holding straps to prevent them from interfering with the tank.

22. Slide the replacement tank into the cage so that the fuel filler inlet is oriented correctly. The tank should be approximately 1 inch from the cross bar at the closed end of the cage. The other end of the tank should be even with the cage rails.
23. Install the three fuel tank holding straps (Figure 1). Tighten the mounting strap nuts on one side of the cage (call this side A) to 20 to 25 Lbf-ft (27 to 34 Nm) and the strap nuts on the opposite side (call this side B) to 45 to 50 Lbf-ft. (61 to 68 Nm) then return to side A and retighten the nuts to 45 to 50 Lbf-ft (61 to 68 Nm).

NOTE – To gain the clearance needed to perform the following step, it may be necessary to raise the vehicle.

24. Position the tank and cage assembly in its approximate mounting location under the vehicle.
25. If a jack was used to raise the vehicle, lower the vehicle and remove the jack.
26. Using the transmission jack, raise the tank and cage assembly approximately 8 to 12 inches below its final mounting location.

NOTE – In the following Step return all hoses and wires to their original routing and secure with tie-straps, as necessary.

27. On top of the fuel tank (Figure 1):
 - a. Connect the supply and return fuel lines by connecting, and locking, the Voss fittings. (Insure that the lines are connected to the correct fitting, as noted during 'Removal'.)
 - b. Connect the harness to the sending unit electrical connector.
 - c. Connect the vent hose to the tank fitting and install the hose clamp.

SERVICE PROCEDURE (CONT.)

- d. Install the fuel filler hose to the tank, but leave the hose clamp loose to allow final alignment in a later step.
- 28. Slide the two hose clamps onto the top of the rubber filler hose (Figure 1); then, align and connect the rubber filler hose to the filler neck tube. Do not tighten the hose clamps at this time.
- 29. Align the rubber filler hose at the top of the tank to relieve strain or binding; then, tighten the hose clamp.
- 30. Carefully raise the tank and cage assembly until at least one mounting bolt can be installed at each corner of the assembly (Figure 1). Leave the mounting nuts loose enough to allow alignment of the remaining mounting holes.

NOTE – In the following Step it may be necessary to use pry bars and/or adjust the jack to align the remaining cage mounting holes.

- 31. Loosely install the remaining mounting bolts and nuts. Once nuts have been installed on all mounting bolts, tighten all 24 mounting nuts to 340 to 370 Lbf-ft (461 to 502 Nm).
- 32. Remove the safety strap and the transmission jack.
- 33. Verify that the fuel filler tube is fully inserted into the rubber filler hose, and is positioned correctly at the filler door. Tighten the two hose clamps securing the hose to the tube (Figure 1).
- 34. Fill the fuel tank with the fuel that was removed. If **no** evidence of rust was found in Step 1.
- 35. Prime the fuel system following the procedure in the engine manual and start the engine.
- 36. Check for fuel leaks at the new fuel tank.

Operation number must appear on all claims.

Table 2 Labor Information

Operation No.	Description	Time
A40-05910-1	Remove and Replace Fuel Tank	2.6 Hrs.

ADMINISTRATIVE PROCEDURE

Expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Authorized Field Change Number G-05910.

It is important that the coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Manual, Section 7-1. Special attention should be given to Items 39 through 44. To assure this important improvement is made in a timely manner, all claims for G-05910 activity must be submitted by November 30, 2006 or within the normal warranty period for the vehicle, if after November 30, 2006.

GROUP	NOUN	C	WARR.	TP	PAD
GROUP Enter number G—	NOUN Leave blank	C (CAUSE) Enter either 1, 2, 3. (see below)	WARRANTY (Warranty Code) Enter 40.	TYPE PART Enter P for type part causing failure.	PAD Enter 100
		1. Inspected (No repair required).			
		2. Inspected and repaired.			
		3. Defective part from parts stock.			

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