

## CERTAIN 1997 THROUGH 2003 MODEL YEAR F-150, 2004 MODEL YEAR F-150 HERITAGE, 1997 THROUGH 1999 MODEL YEAR F-250 LIGHT DUTY, AND 2002 THROUGH 2003 MODEL YEAR BLACKWOOD VEHICLES OPERATED IN CORROSION STATES — FUEL TANK STRAP INSPECTION AND REPAIR

### OVERVIEW

In some of the affected vehicles, if operated in high corrosion areas for an extended period, one or both fuel tank straps could potentially fracture. Strap fracture may result in the fuel tank contacting the ground. If the fuel tank contacts the ground and develops a leak while driving, there is a potential for fire.

#### Vehicles **NOT EQUIPPED** with a Fuel Tank Skid Plate:

Dealers will inspect the fuel tank straps for cracks, perforations, or separations. Based on the results of the inspection and the availability of fuel tank strap kits, dealers will perform one of the following service actions:

- **Fuel Tank Strap Kits ARE NOT Available and Straps PASSED the Inspection:** Return the vehicle to the owner along with the “Passed Fuel Tank Strap Inspection” Customer Information Sheet.
- **Fuel Tank Strap Kits ARE NOT Available and Straps DID NOT PASS the Inspection:** Install secondary fuel tank cables per Attachment III – Technical Information and return the vehicle to the owner along with the “Did Not Pass Fuel Tank Strap Inspection” Customer Information Sheet.
- **Type 1 New E-coated Fuel Tank Strap Kit or Type 2 E-coated Fuel Tank Reinforcement Strap Kit (See Figure 1) IS Available:** Refer to Inspection Results/Repair Decision Chart on page 5 to determine next steps.

#### Vehicles **EQUIPPED** with a Fuel Tank Skid Plate:

Dealers do not need to inspect vehicles equipped with fuel tank skid plates. Dealers should inform the customer no action is needed at this time and to please return when they receive a letter from Ford.

**NOTE:** The previous level of service fuel tank straps (base part number 9054) do not have sufficient corrosion protection and are not authorized to repair vehicles under Safety Recall 11S21.



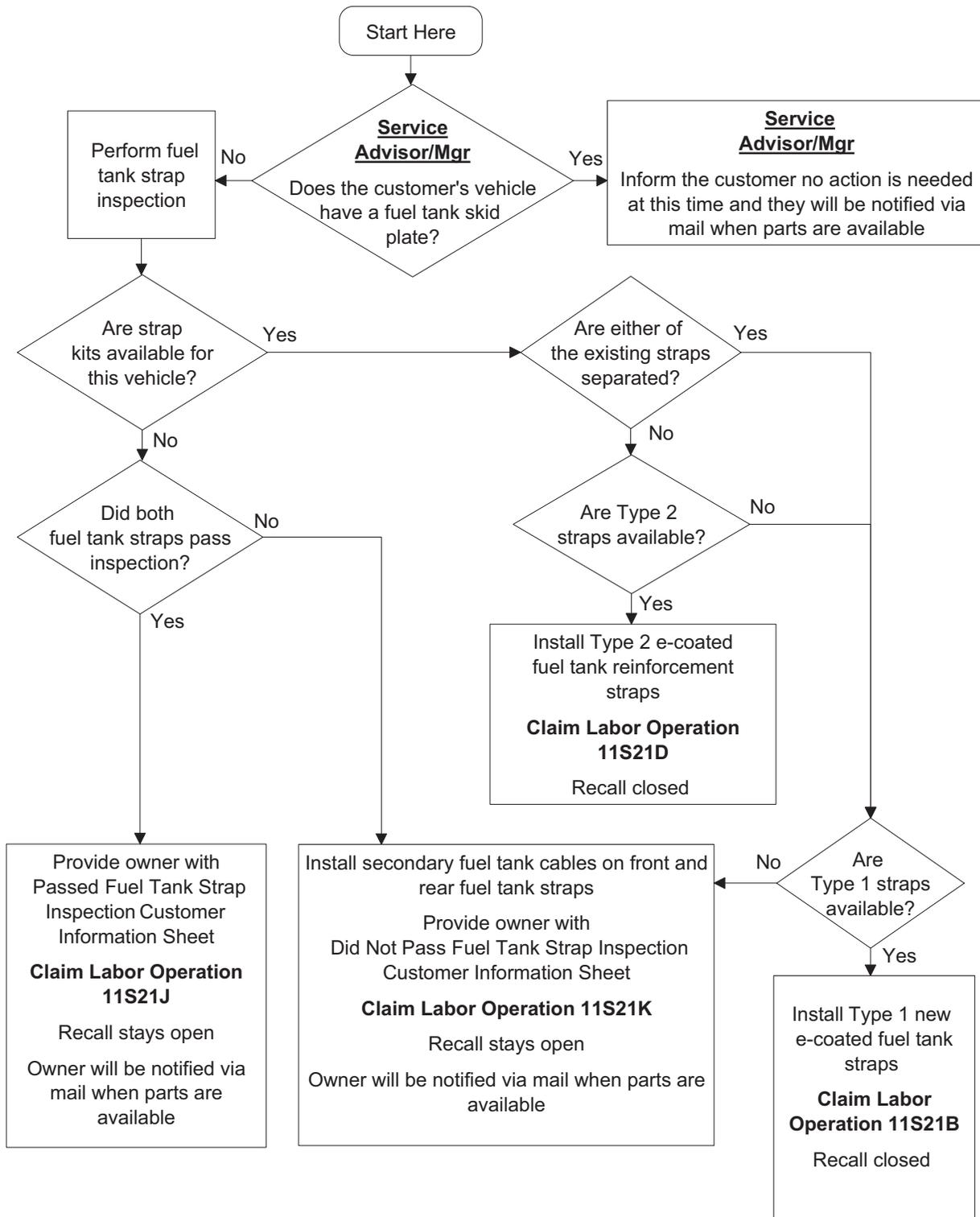
FIGURE 1



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## FUEL TANK STRAP INSPECTION

**NOTE:** If the vehicle is equipped with a fuel tank skid plate, the vehicle will be serviced at a later date.  
Release the vehicle to the customer.

1. Raise and support the vehicle. For additional information, refer to WSM Section 100-02.
2. **NOTICE: The fuel tank may be full of fuel and very heavy. The fuel tank must be fully supported with a suitable jack or the fuel tank straps may release the fuel tank.**

Use a suitable jack to support the center of the fuel tank.

3. Inspect the front and rear fuel tank straps for cracks, perforations, or separation.  
See Figures 1, 2, and 3.

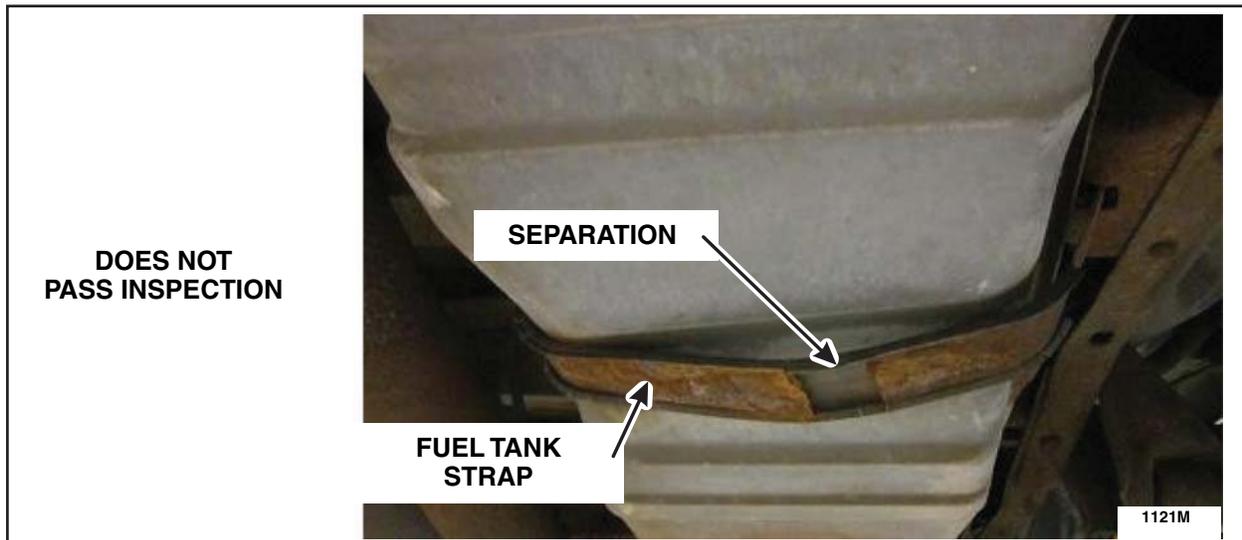


FIGURE 1

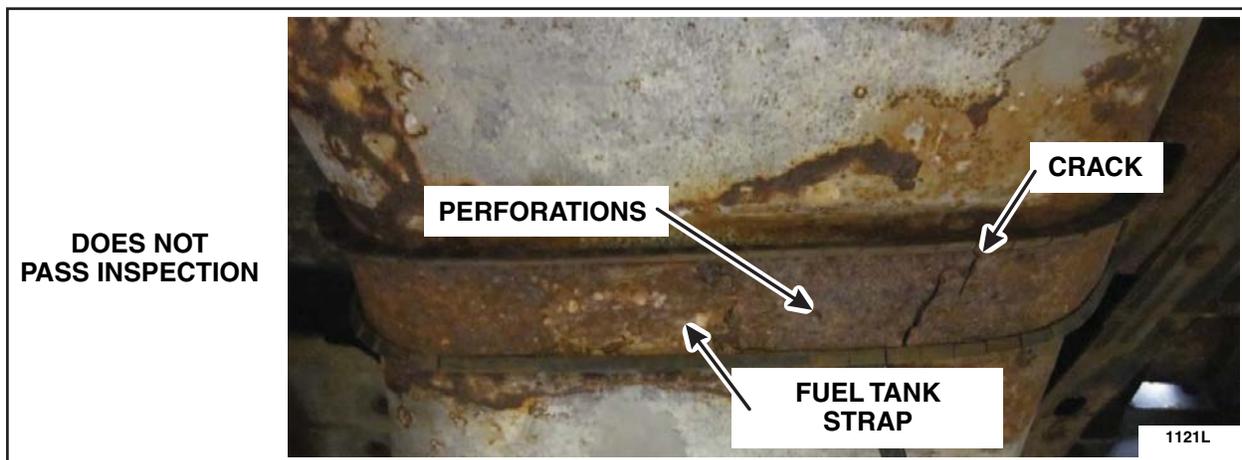
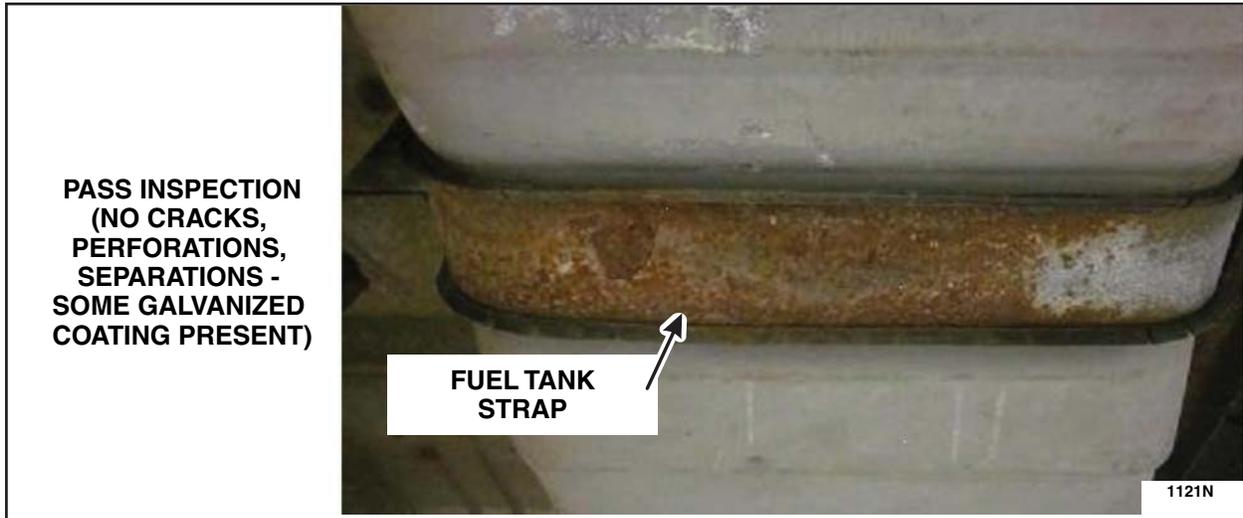


FIGURE 2





**FIGURE 3**

4. Refer to the "Inspection Results / Repair Decision Chart" to determine the appropriate service action.

**INSPECTION RESULTS / REPAIR DECISION CHART**

Strap Availability	Action Based on Strap Condition		
	Pass Inspection	Strap is Cracked or Perforated	Strap is Separated
Type 1 and Type 2 Straps are available	Proceed to "Type 2 E-coated Fuel Tank Reinforcement Strap Installation" on page 6	Proceed to "Type 2 E-coated Fuel Tank Reinforcement Strap Installation" on page 6	Proceed to "Type 1 New E-coated Fuel Tank Strap Installation" on page 10
Only Type 1 Straps are available	Proceed to "Type 1 New E-coated Fuel Tank Strap Installation" on page 10	Proceed to "Type 1 New E-coated Fuel Tank Strap Installation" on page 10	Proceed to "Type 1 New E-coated Fuel Tank Strap Installation" on page 10
Only Type 2 Straps are available	Proceed to "Type 2 E-coated Fuel Tank Reinforcement Strap Installation" on page 6	Proceed to "Type 2 E-coated Fuel Tank Reinforcement Strap Installation" on page 6	Proceed to "Secondary Fuel Tank Cable Installation" on page 10
Neither Type 1 or Type 2 Straps are available	Provide owner with "Passed Fuel Tank Inspection Customer Information Sheet" and return the vehicle to the customer	Proceed to "Secondary Fuel Tank Cable Installation" on page 10	Proceed to "Secondary Fuel Tank Cable Installation" on page 10

**NOTICE: A fuel tank strap that is separated cannot be repaired using a Type 2 strap.**



## TYPE 2 E-COATED FUEL TANK REINFORCEMENT STRAP INSTALLATION

1. Remove the fuel tank straps. See Figure 1.

1. Remove the bolts.
2. Remove the fuel tank straps.

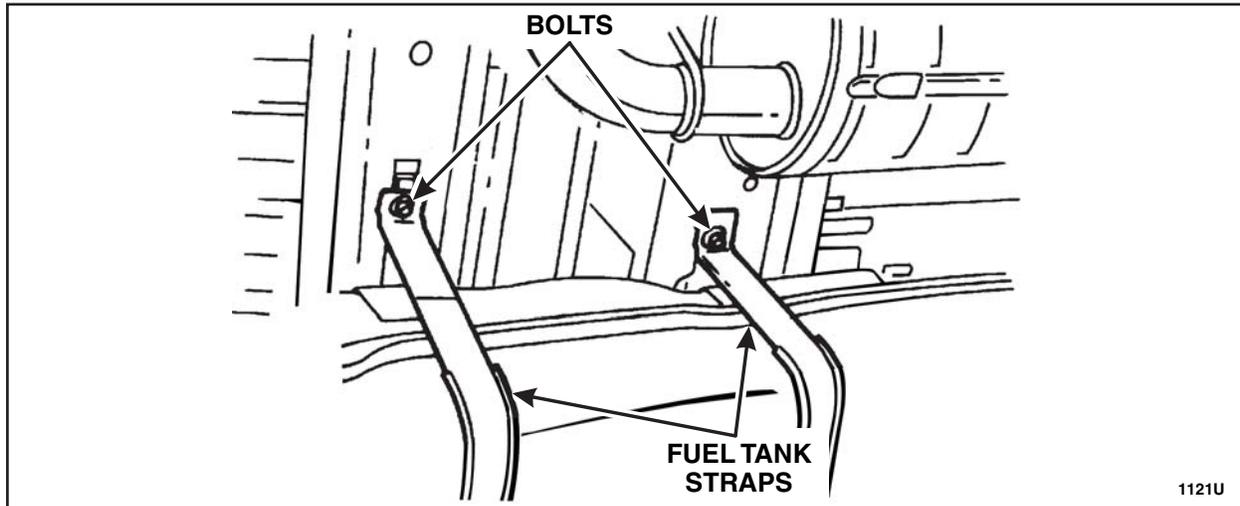


FIGURE 1

2. Inspect the frame rail attachment side of the straps for cracks, perforations, or gaps.

- If no cracks, perforations, or gaps are present, proceed to Step 3.
- If cracks, perforations, or gaps are present, a Type 2 strap **cannot** be used. Proceed to "Type 1 New E-coated Fuel Tank Strap Installation" on page 10 if available. If a Type 1 strap is not available refer to Step 12 to reinstall the fuel tank straps, then proceed to "Secondary Fuel Tank Support Cable Installation" on page 10.



3. Install the appropriate Type 2 strap onto one of the existing fuel tank straps. Position the reinforcement strap upward while keeping it tight against the existing fuel tank strap radius. Ensure that the position of the Type 2 strap mounting hole is at least 8mm (5/16") from the bottom edge of the T-side doubled metal area. See Figure 2.

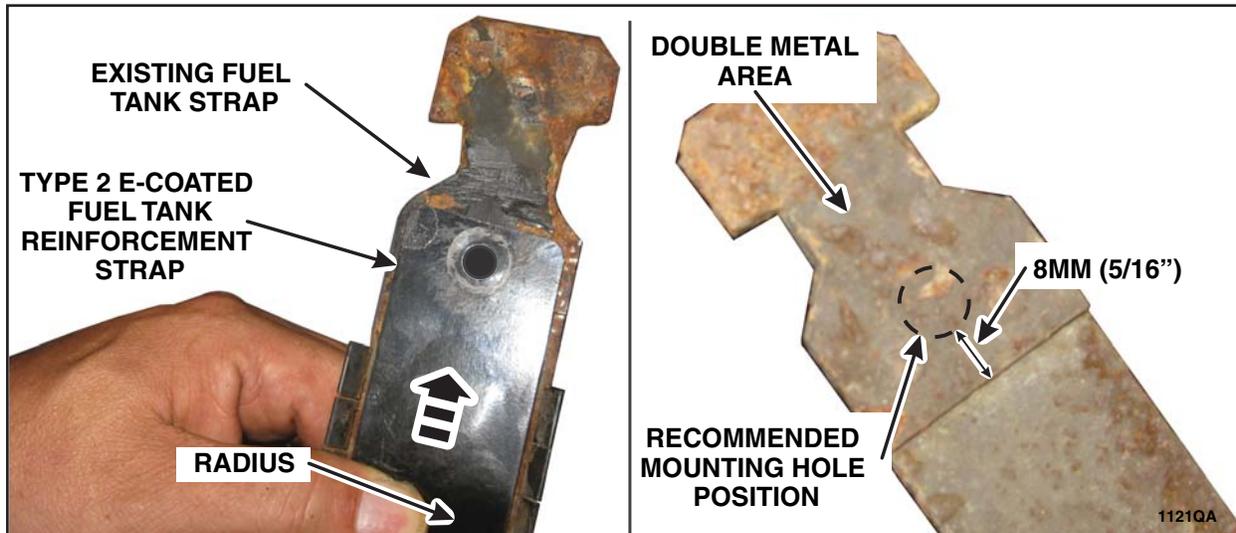


FIGURE 2

**NOTICE:** Use caution not to damage the e-coating on the straps.

4. While keeping the alignment of the Type 2 strap to the existing fuel tank strap, install a vice clamp to the fuel tank strap at the first radius. See Figure 3.

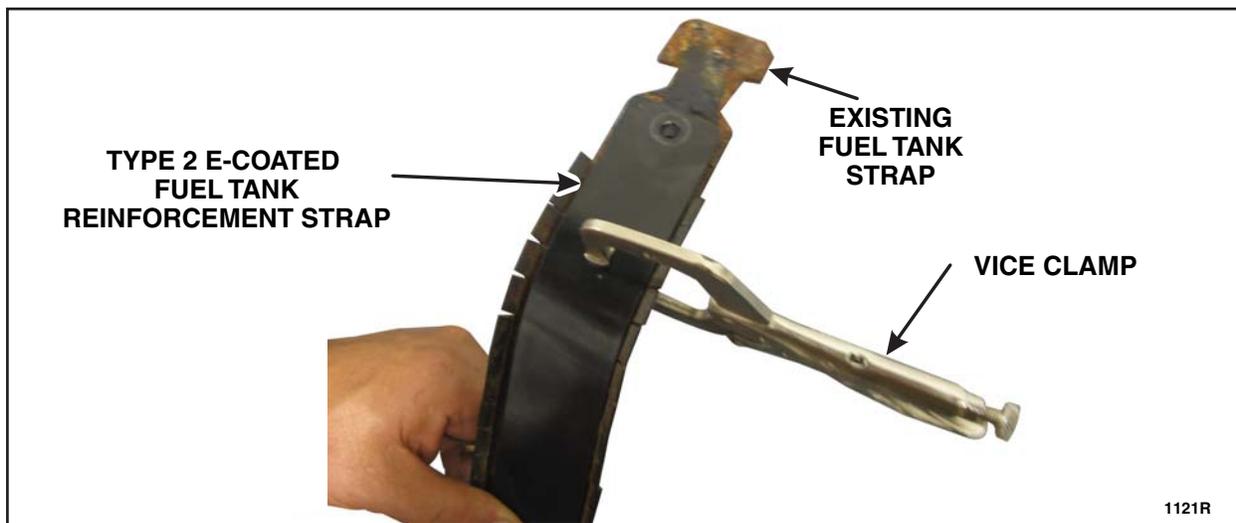
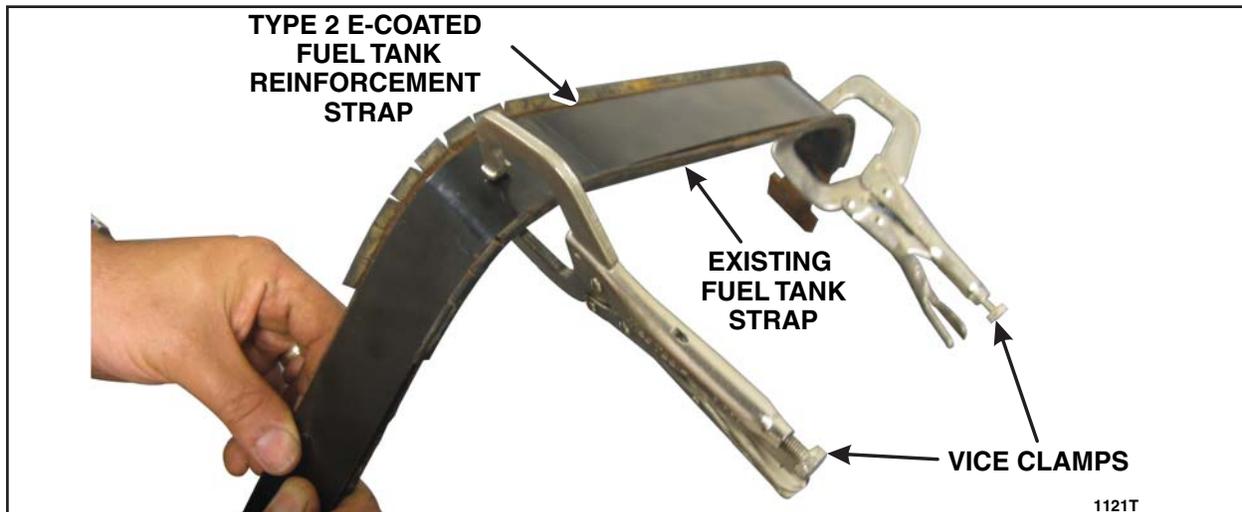


FIGURE 3

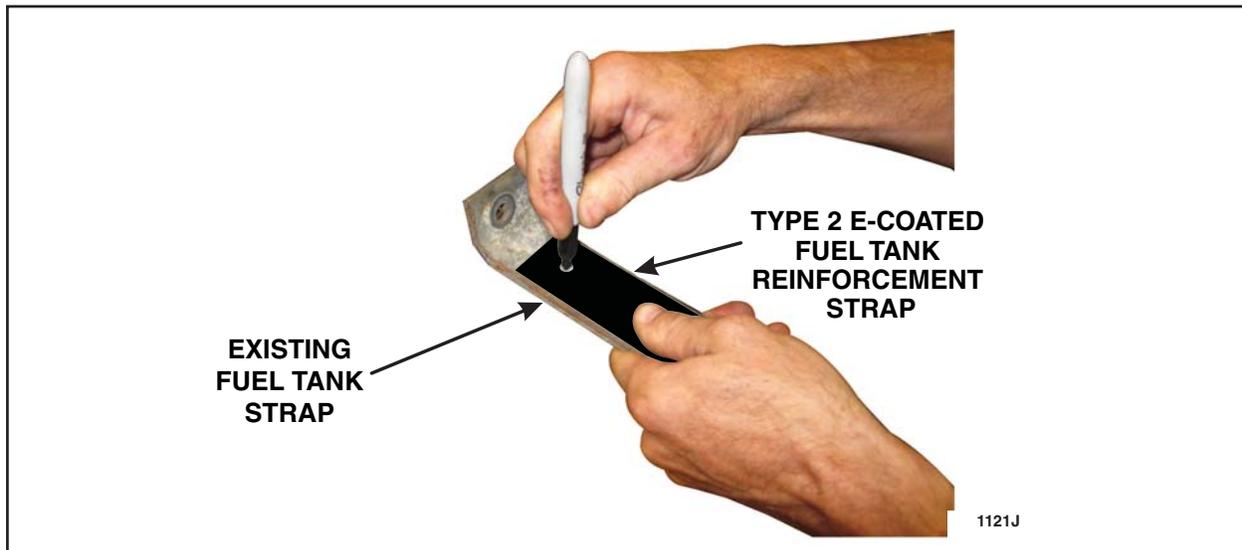


5. Install a vice clamp to the fuel tank strap at the second radius. See Figure 4.



**FIGURE 4**

6. While holding the Type 2 strap tight to the existing fuel tank strap, mark the bolt hole on both sides of the existing fuel tank strap. See Figure 5.



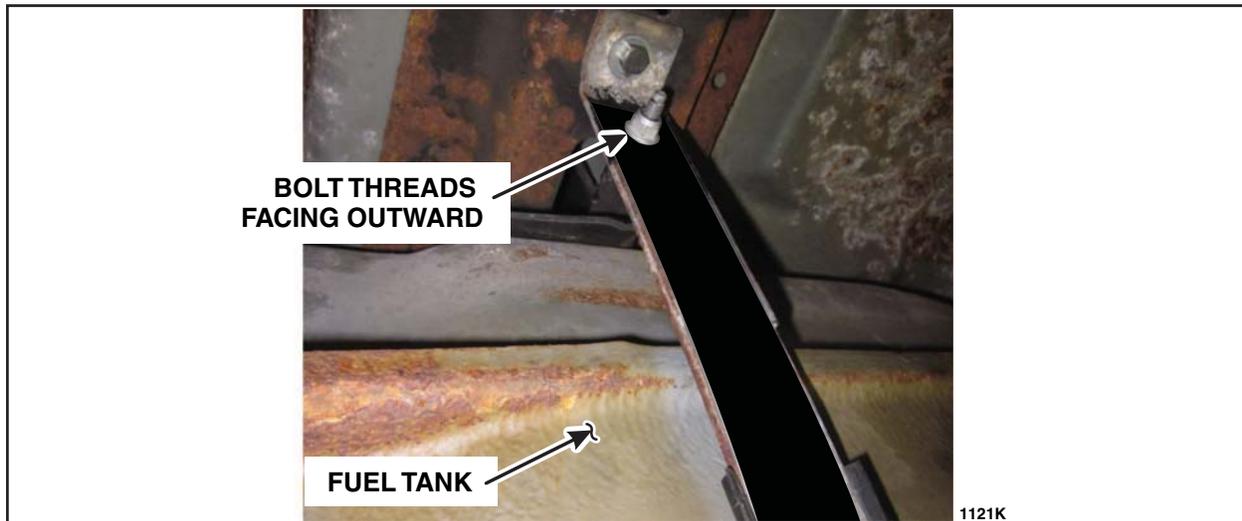
**FIGURE 5**

7. Remove the vice clamps.
8. Using a 5/16" drill bit, drill a hole in the existing fuel tank strap at the marked locations.
9. Repeat Steps 3 through 8 for the remaining strap.



10. Use a wire wheel to clean the doubled metal portion on both sides of the fuel tank straps and apply Motorcraft® PM-13-A to the drilled holes and the cleaned area of the existing fuel tank strap. PM-13-A must also be applied to any location on the Type 2 strap where the e-coating may have been damaged.

**NOTICE: Always install the bolt so the bolt head faces the fuel tank and the threads face away from the tank when the fuel tank strap is installed. See Figure 6.**



**FIGURE 6**

11. Install the Type 2 straps onto the existing fuel tank strap and secure with the provided bolt and nut.
  - Tighten to 13.5 Nm (10 lb-ft).
12. Install the fuel tank straps. See Figure 1.
  1. Install the fuel tank straps at the frame rail.
  2. Install the bolts.
    - Tighten to 29.7 - 40.7 Nm (22-30 lb-ft).
13. Remove the jack from the center of the fuel tank.
14. Inspect for clearance between the Type 2 strap retaining bolt head and the fuel tank flange. If they are in contact, bend that area of the fuel tank flange away slightly to provide clearance.
15. Return vehicle to customer.



## TYPE 1 NEW E-COATED FUEL TANK STRAP INSTALLATION

1. Remove both fuel tank straps. See Figure 1.
  1. Remove the bolts.
  2. Remove the fuel tank straps.

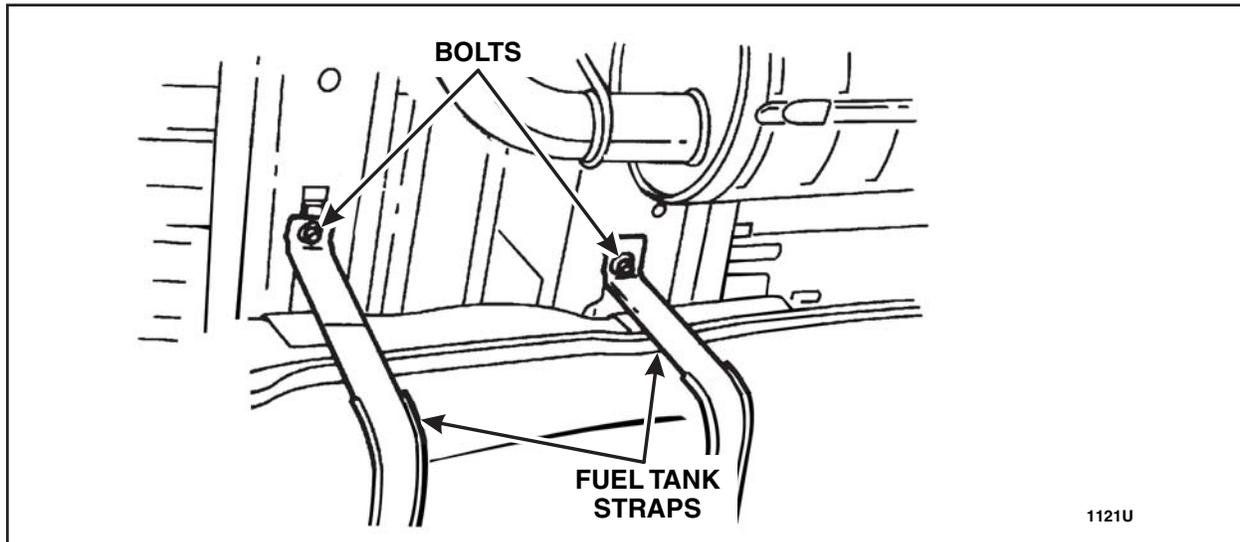


FIGURE 1

2. Install both Type 1 Straps. See Figure 1.
  1. Install the fuel tank straps at the frame rail.
  2. Install the bolts.
    - Tighten to 29.7 - 40.7 Nm (22-30 lb-ft).
3. Remove the jack from the center of the fuel tank.
4. Return vehicle to customer.

## SECONDARY FUEL TANK CABLE INSTALLATION

1. Obtain a 10 ft (3.04m) length of 3/16" (4.76mm) diameter galvanized wire cable, 5ft (1.52m) for each fuel tank strap and (8) 3/16" (4.76mm) galvanized cable clamps (4 for each fuel tank strap), such as LEHIGH #7310 available at Home Depot and other hardware stores.
2. Install (4) 3/16" cable clamps onto each of the 5ft (1.52m) lengths of cable.



3. **NOTICE:** Be careful not to route the cable around wiring, fuel, or brake lines.

Route the cables through the vehicle's frame at locations that provide best alignment with the front and rear fuel tank straps. See Figure 1.

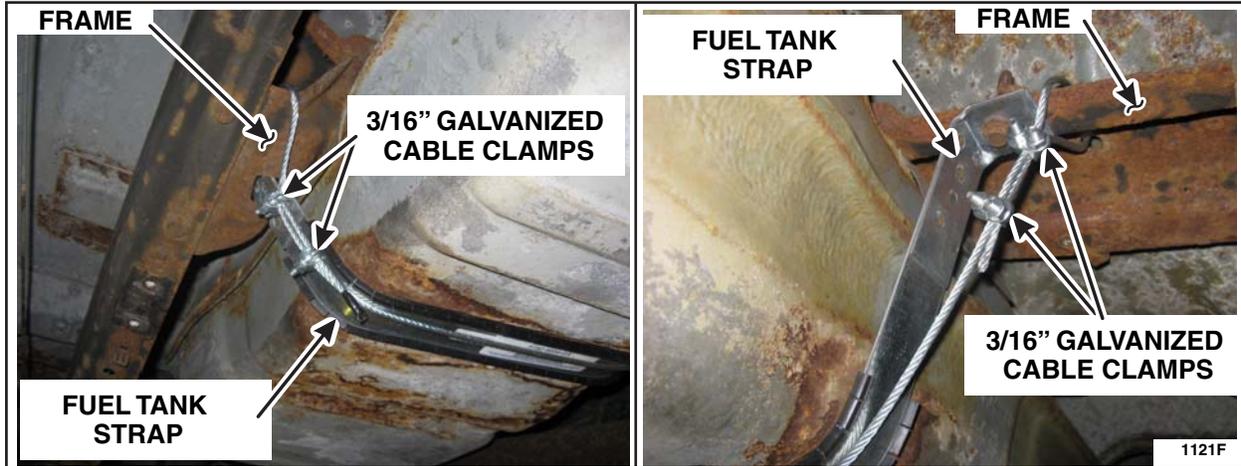


FIGURE 1

4. Pull the cables tight up against both fuel tank straps, then position the cable clamps (2 per side, per cable) so that the u-bolt side is facing the dead end side of the cables. See Figure 2.

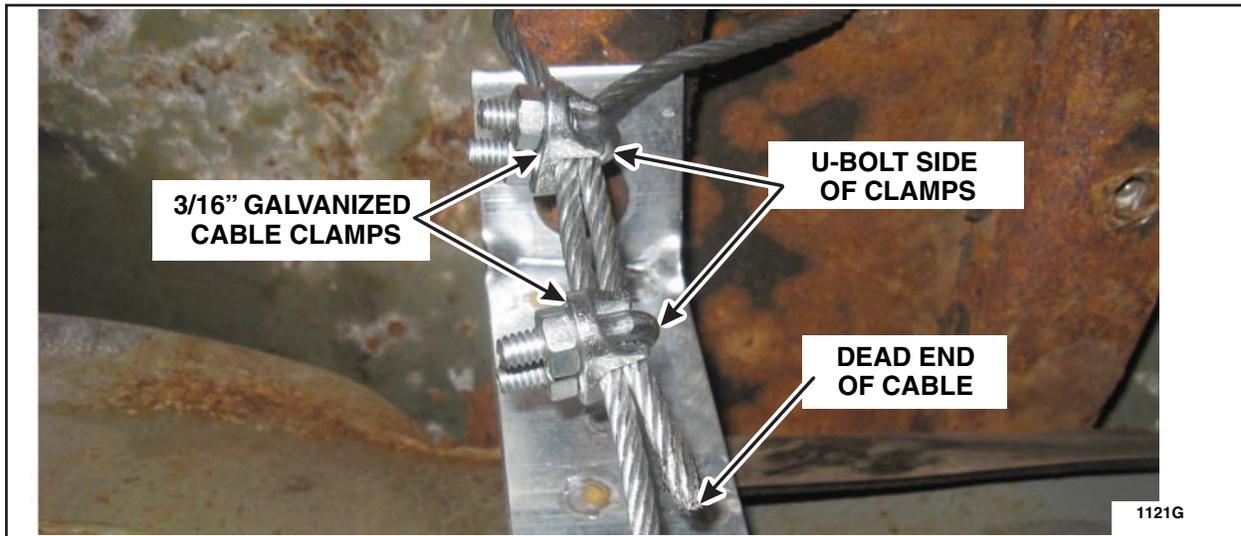
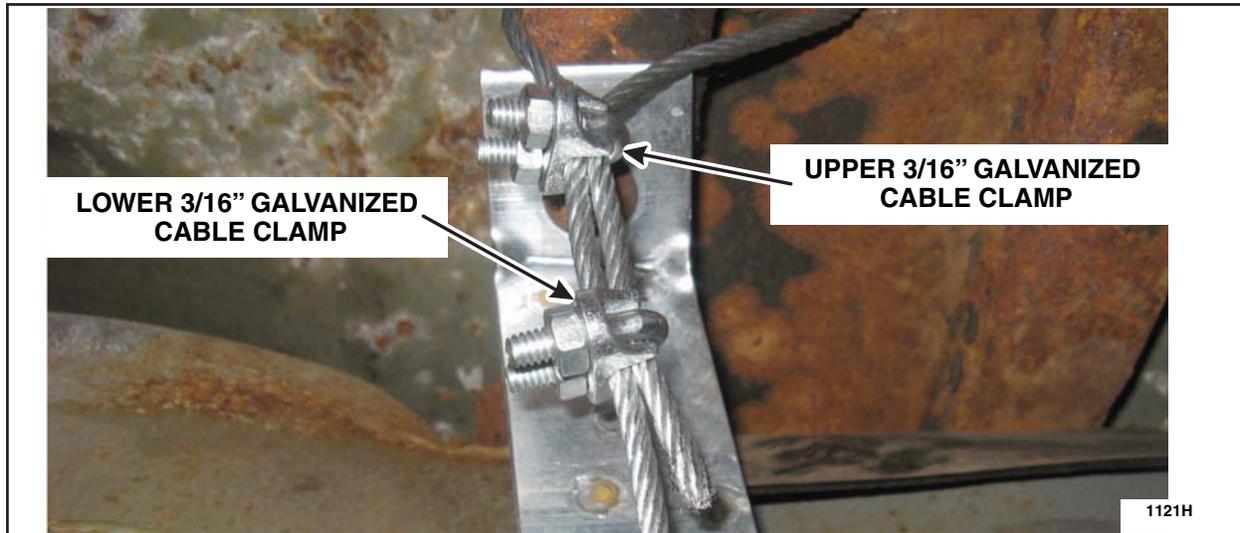


FIGURE 2



5. Tighten the lower clamps on each side of the cables. Then slide the remaining cable clamps on each side up to take the slack out of the cables and tighten. See Figure 3.



**FIGURE 3**

6. Tighten the nuts on all clamps to 10 Nm (7.5 lb-ft).
7. Ensure that the cables are tight against the fuel tank straps.
8. Remove the jack from the center of the fuel tank.
9. Provide the owner with a "Did Not Pass Fuel Tank Inspection" customer information sheet and release the vehicle.

