

## 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

### **NEW!** 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.

*Dealers will inspect the fuel tank straps for cracks, perforations, or separation. Based on the results of the inspection and the availability of fuel tank strap kits, dealers will install either Type 1 New e-coated Fuel Tank Strap Kit or Type 2 e-coated Fuel Tank Reinforcement Strap Kit (See Figure 1). Refer to the inspection/repair flow chart to determine the appropriate type fuel tank strap kit to be used.*

**NOTE:** Sufficient parts, procedures, and labor operations are available so that vehicles can be repaired when brought into the dealership including vehicles equipped with a fuel tank skid plate. In addition, please note that:

- The only exception is 120" WB regular cab 4x4 models for which parts will be available beginning October 3<sup>rd</sup>, 2011.
- Installation of secondary fuel tank cables now requires prior approval from the Special Service Support Center (SSSC). Labor operation codes 11S21J for inspection and 11S21K for installation of secondary fuel tank cables will be deactivated for repairs dated after September 16, 2011.

**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.

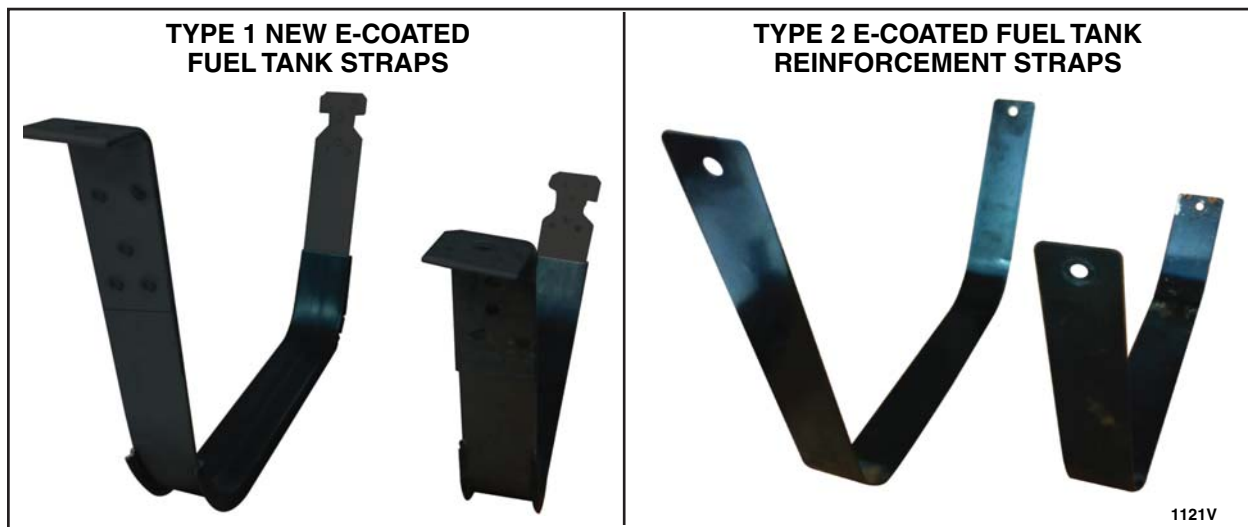


FIGURE 1

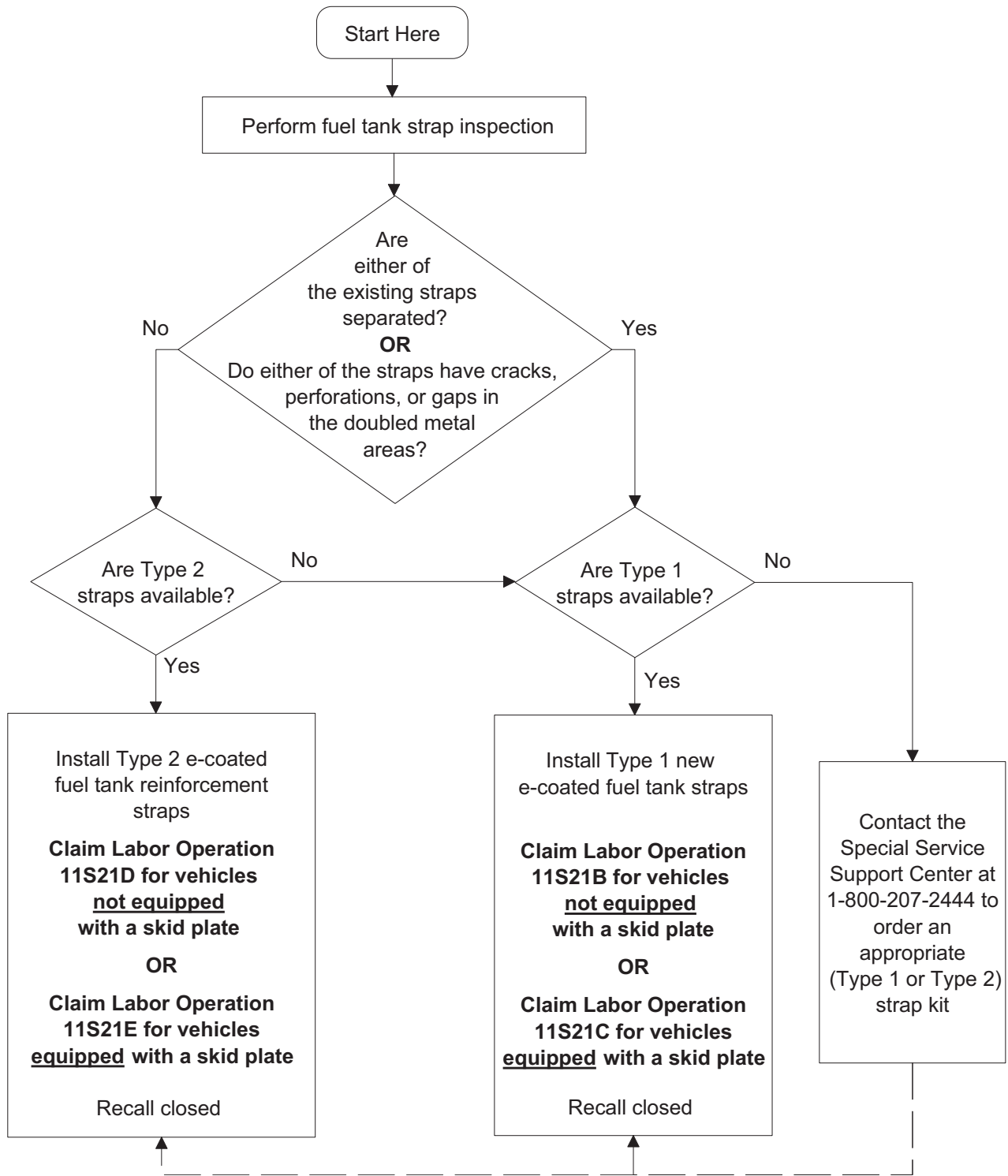


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**NEW!** INSPECTION/REPAIR FLOWCHART



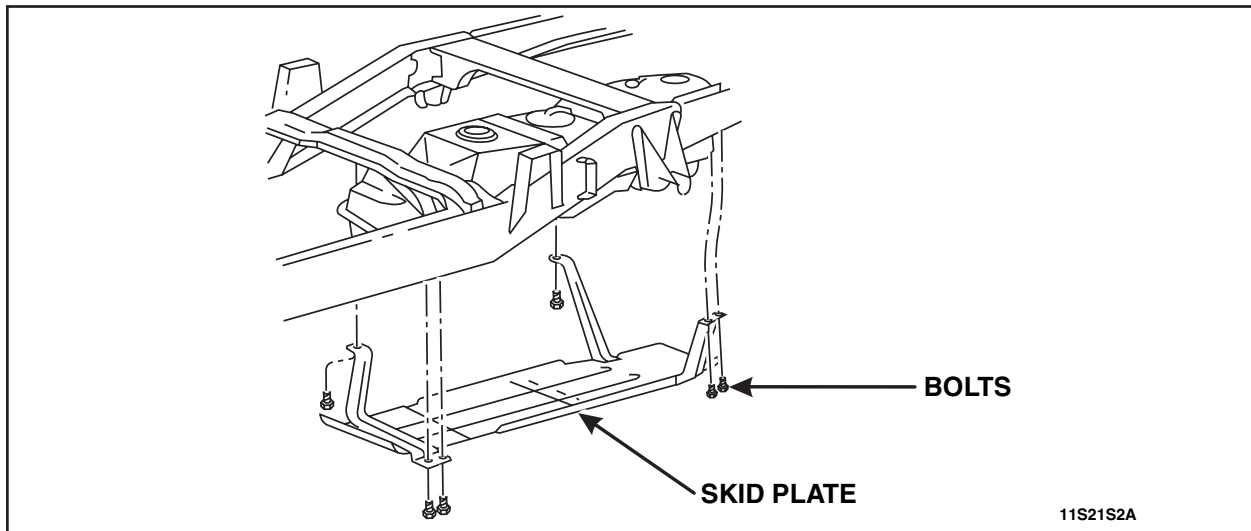
**NEW ! FUEL TANK STRAP INSPECTION**

**All Vehicles**

1. Raise and support the vehicle. For additional information, refer to Workshop Manual (WSM), Section 100-02.

**Vehicles Equipped With Fuel Tank Skid Plate**

2. Visually inspect for fuel tank straps that are separated or if the fuel tank is supported by the fuel tank skid plate. If either of these conditions exist, use suitable ratchet straps to support the fuel tank prior to removal of the fuel tank skid plate.
3. Remove the bolts and the fuel tank skid plate. See Figure 1.



**FIGURE 1**

**All Vehicles**

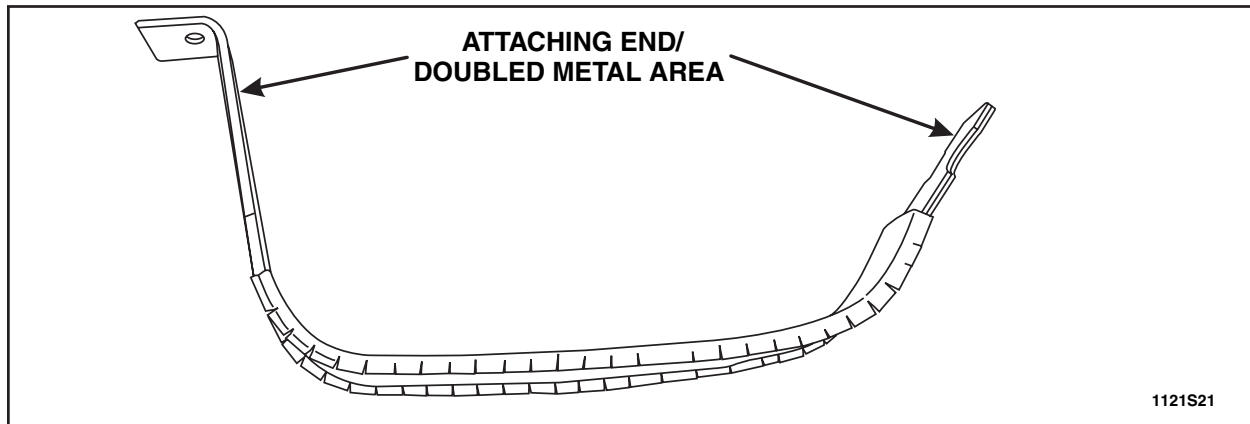
4. **NOTICE:** The fuel tank may be full of fuel and very heavy. The fuel tank must be fully supported with a suitable jack or the fuel tank straps may release the fuel tank.

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



5. Inspect the fuel tank straps in the doubled metal area at both attaching ends for any cracks, perforations, or gaps. See Figure 2.

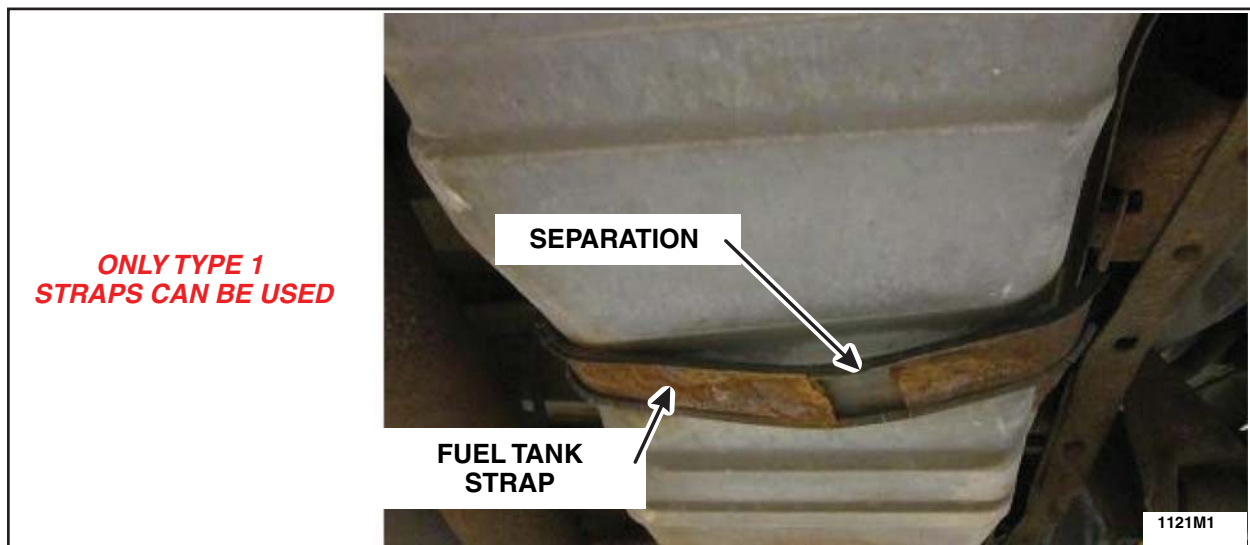
- If cracks, perforations, or gaps are present within the doubled metal area of the straps, Type 2 straps **cannot** be used. Proceed to "Type 1 New e-coated Fuel Tank Strap Installation" on page 11. If Type 1 straps are not available, please call the Special Service Support Center.



**FIGURE 2**

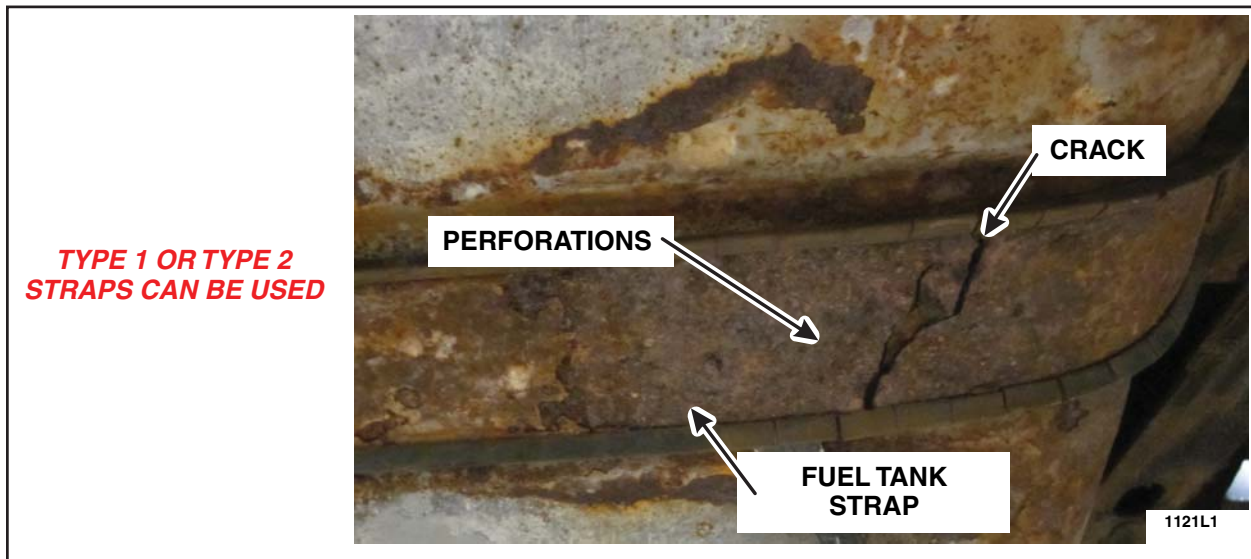
6. Inspect the fuel tank straps for cracks, perforations, or separation. See Figures 3, 4 and 5.

- Install only Type 1 new e-coated fuel tank straps if either fuel tank strap has separation. See Figure 3.
- Install either Type 2 e-coated fuel tank reinforcement straps or Type 1 new e-coated fuel tank straps if both fuel tank straps **do not have** separation. See Figures 4 and 5.



**FIGURE 3**





**FIGURE 4**



**FIGURE 5**

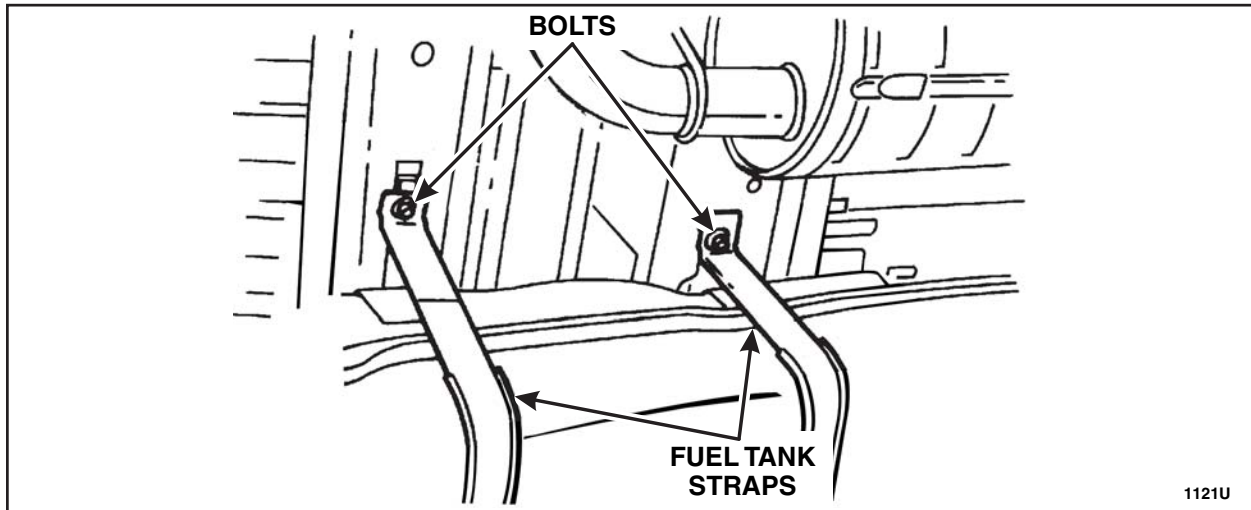


**NEW!** TYPE 2 E-COATED FUEL TANK REINFORCEMENT STRAP INSTALLATION

**All Vehicles**

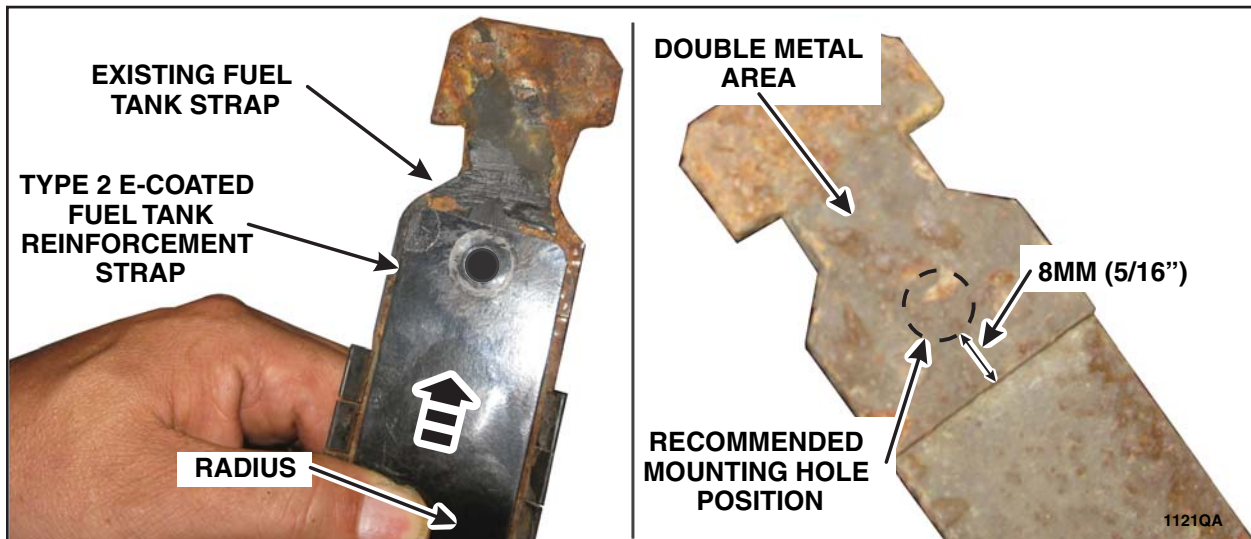
**NOTICE:** A fuel tank strap that is separated cannot be repaired using a Type 2 strap.

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



**FIGURE 1**

2. 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.



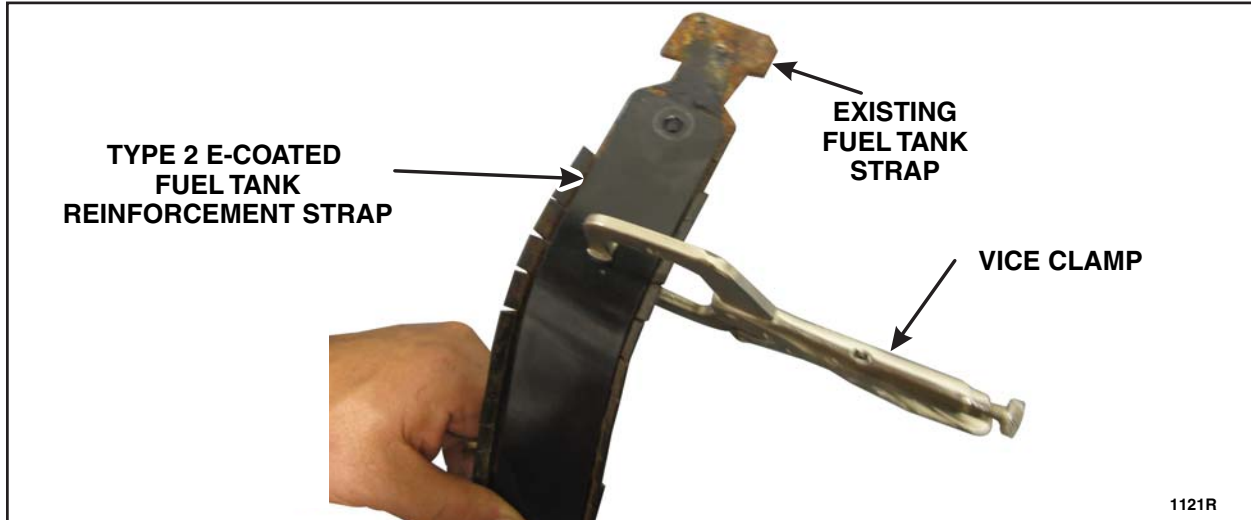
**FIGURE 2**





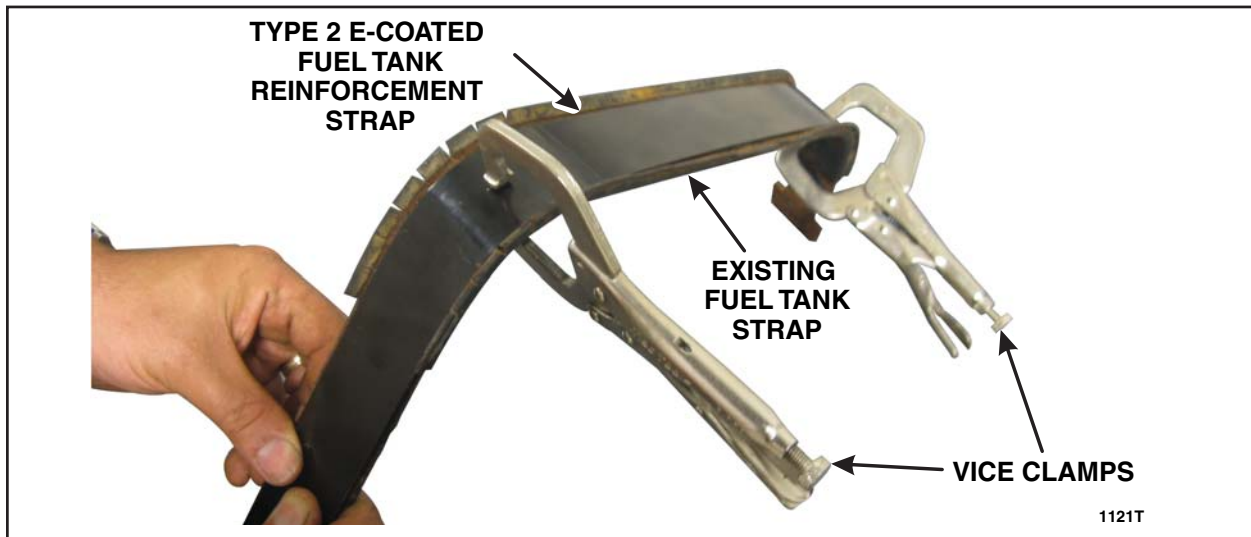
**NOTICE: Use caution not to damage the e-coating on the straps.**

3. 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**

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

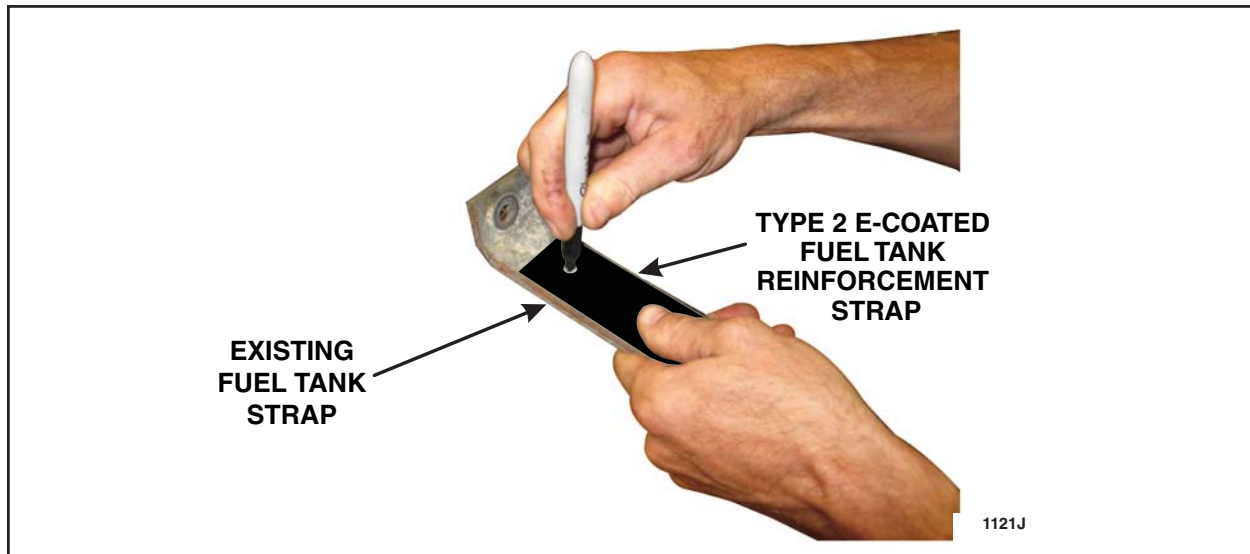


**FIGURE 4**





5. 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.



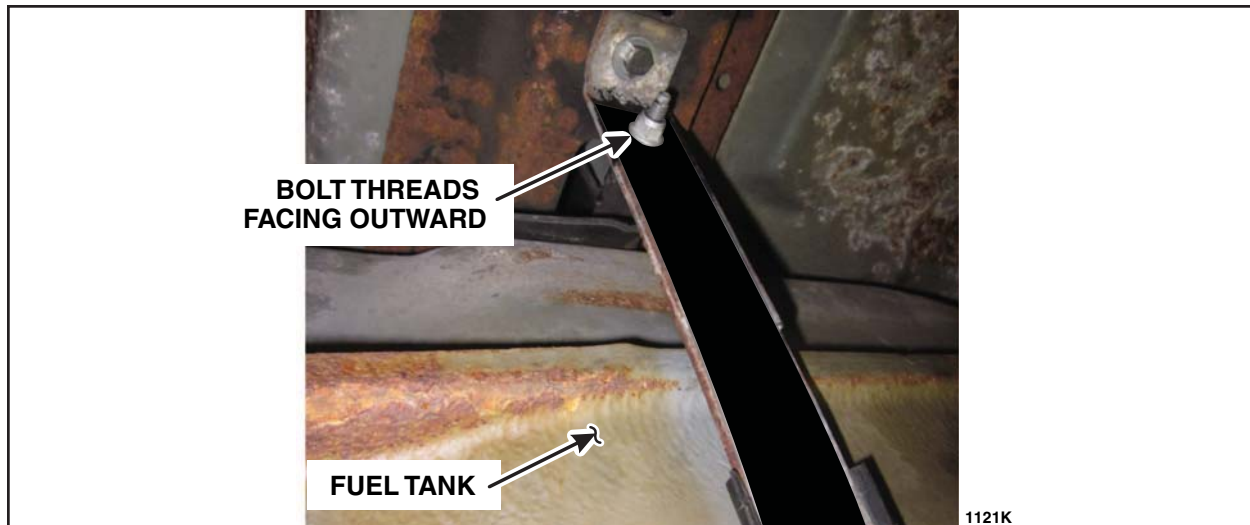
**FIGURE 5**

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



9. 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**

10. 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).
11. 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).
12. Remove the jack from the center of the fuel tank.
13. 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.

### ***Vehicles Equipped With Fuel Tank Skid Plate***

- 14. Install the fuel tank skid plate and bolts.***

- ***Tighten to 12.7 - 17.3 Nm (9-12 lb-ft).***

### ***All Vehicles***

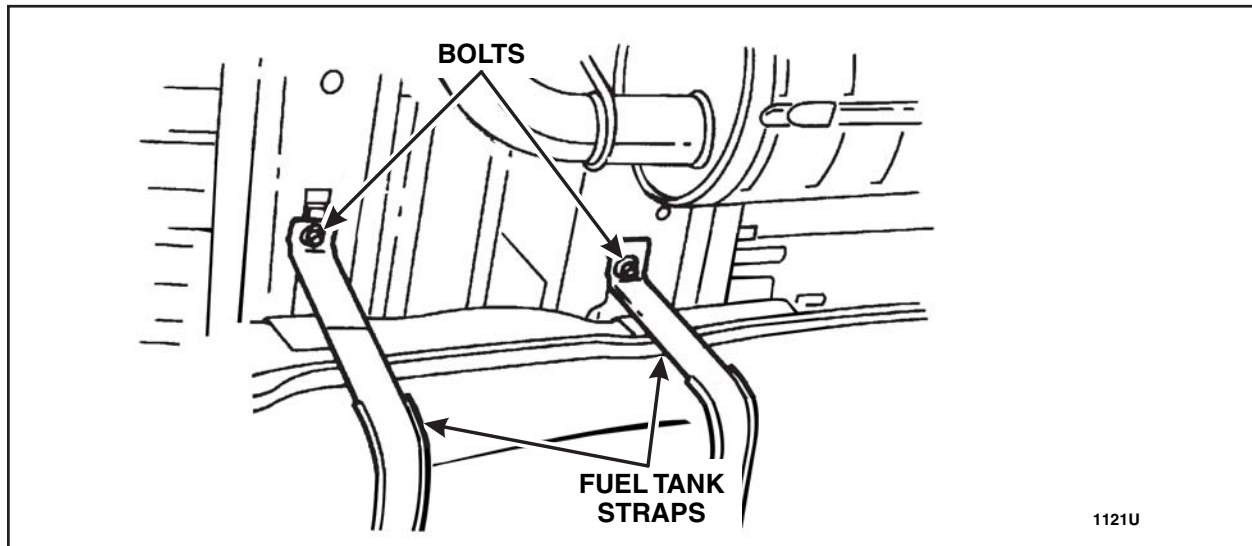
15. Return vehicle to customer.



**NEW!** TYPE 1 NEW E-COATED FUEL TANK STRAP INSTALLATION

**All Vehicles**

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



**FIGURE 1**

2. Install the 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.

**Vehicles Equipped With Fuel Tank Skid Plate**

4. *If previously installed, remove the ratchet straps that were used to support the fuel tank.*
5. *Install the fuel tank skid plate and bolts.*
  - *Tighten to 12.7 - 17.3 Nm (9 - 12 lb-ft).*

**All Vehicles**

6. Return vehicle to customer.

