

Port Injection Fuel Rail

Removal

1. Release the fuel system pressure.

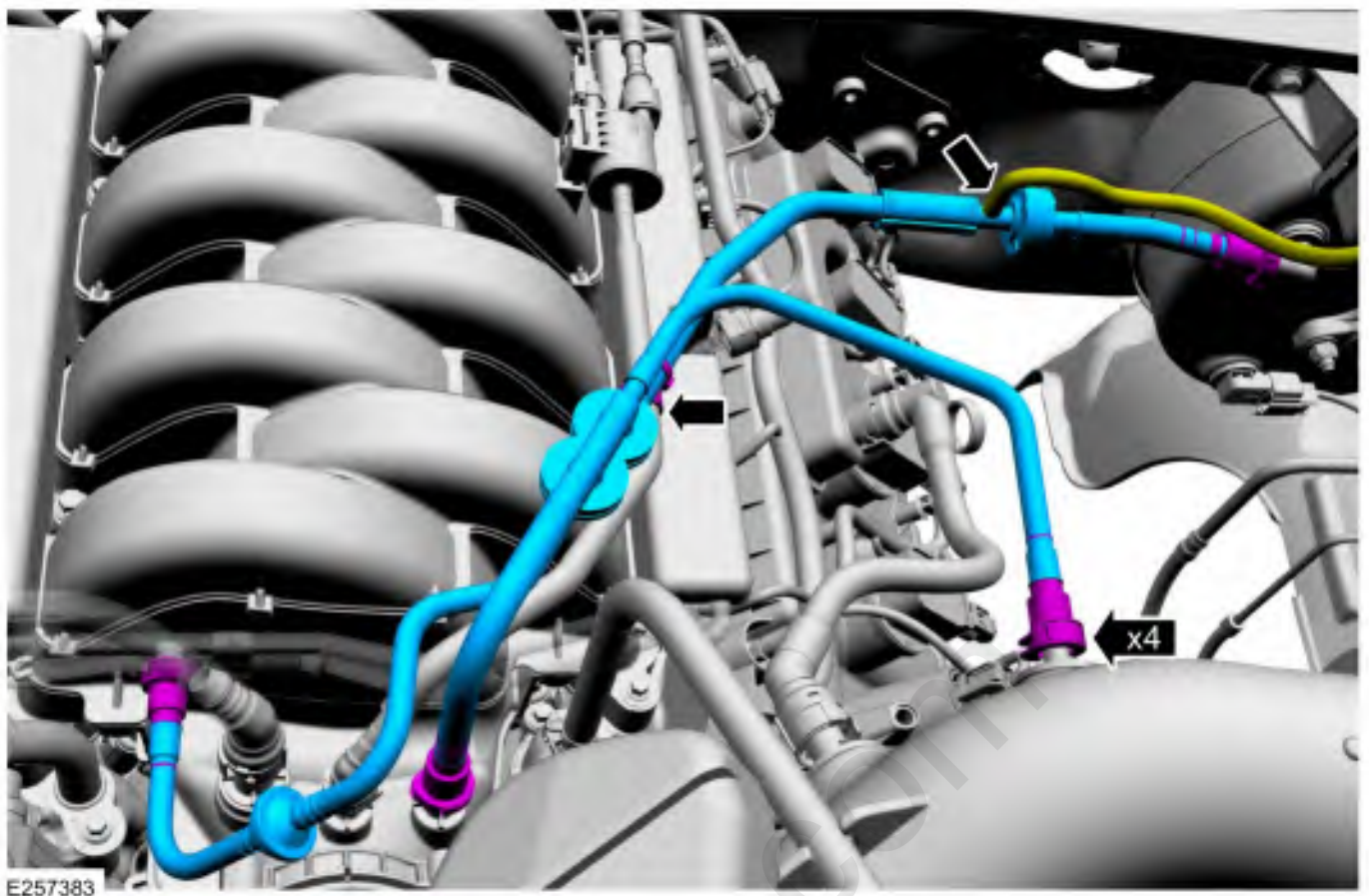
Refer to: [Fuel System Pressure Release](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).

2. Disconnect the battery negative cable.

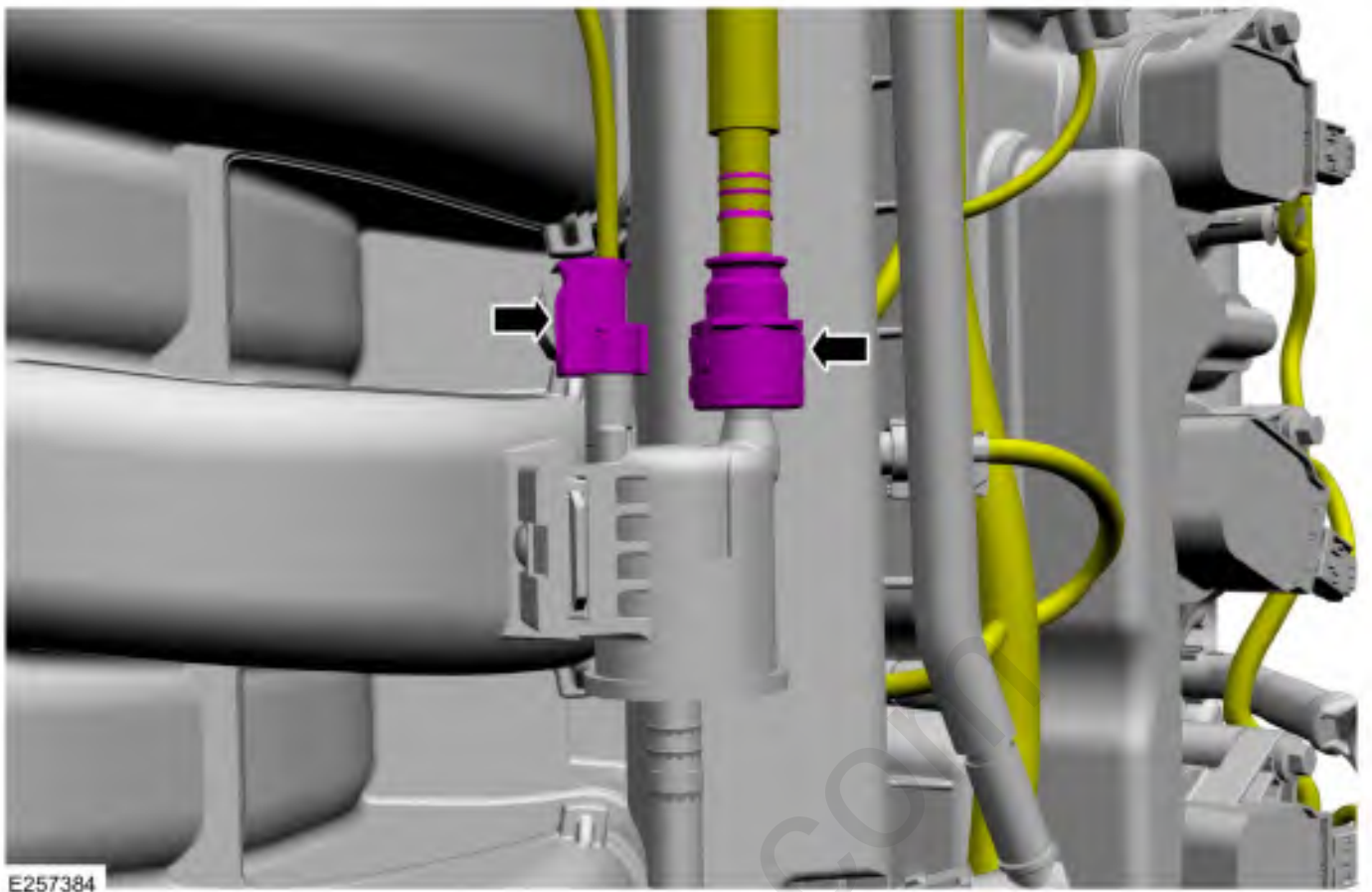
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables) .

- Disconnect the hose.
- Detach the hose retainer.
- Disconnect the quick release couplings.

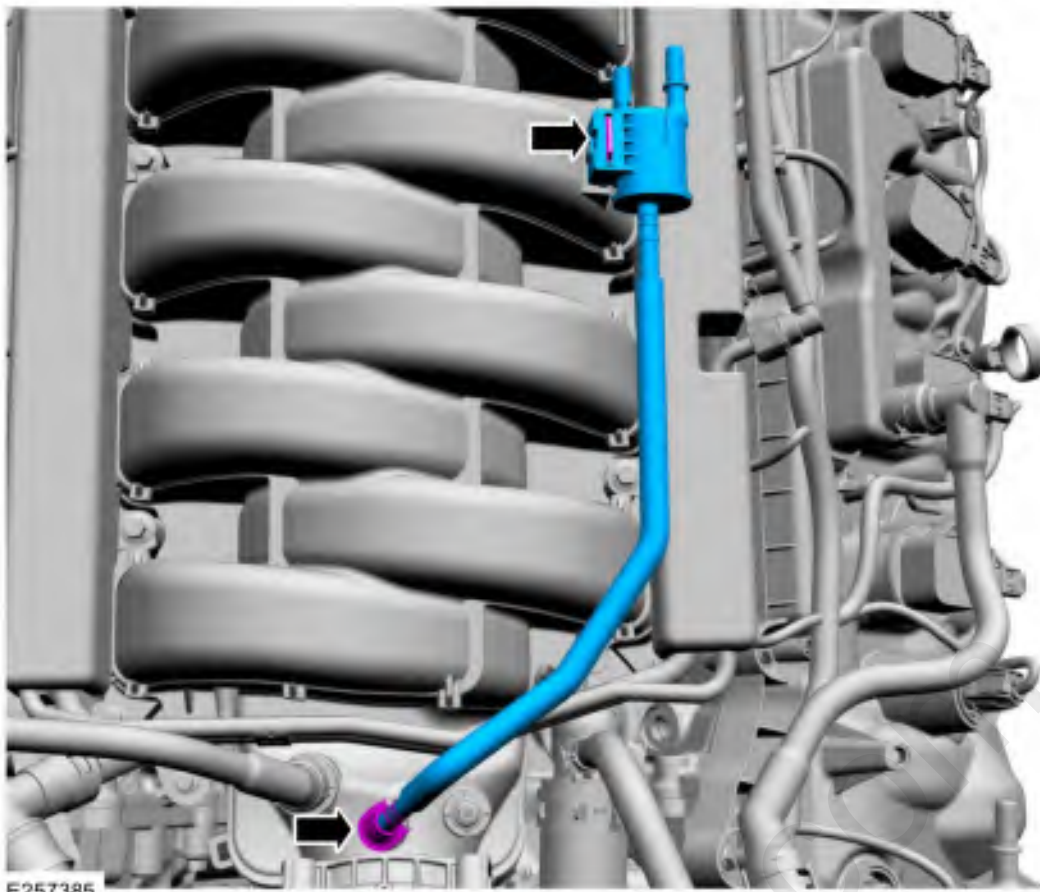
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).



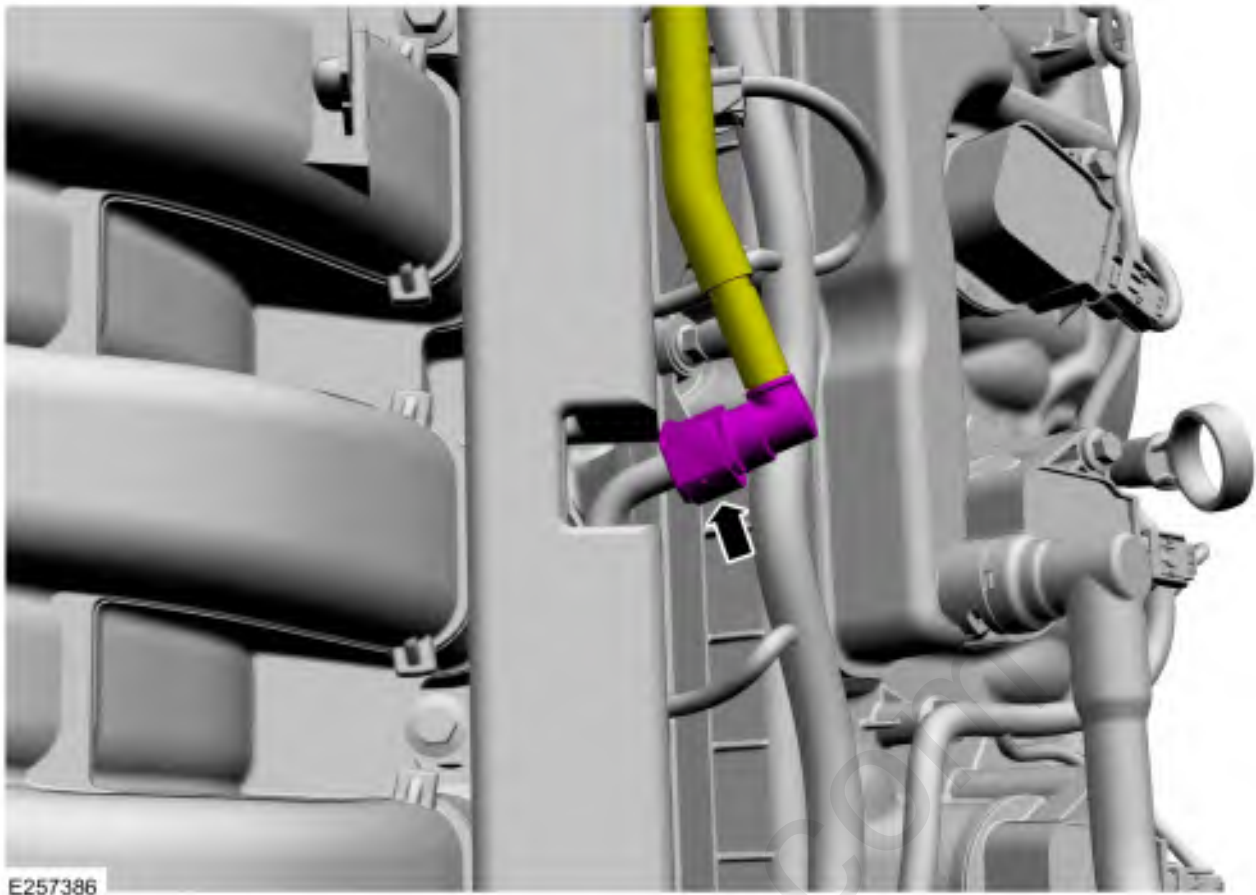
- Disconnect the quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).
- Disconnect the electrical connector.



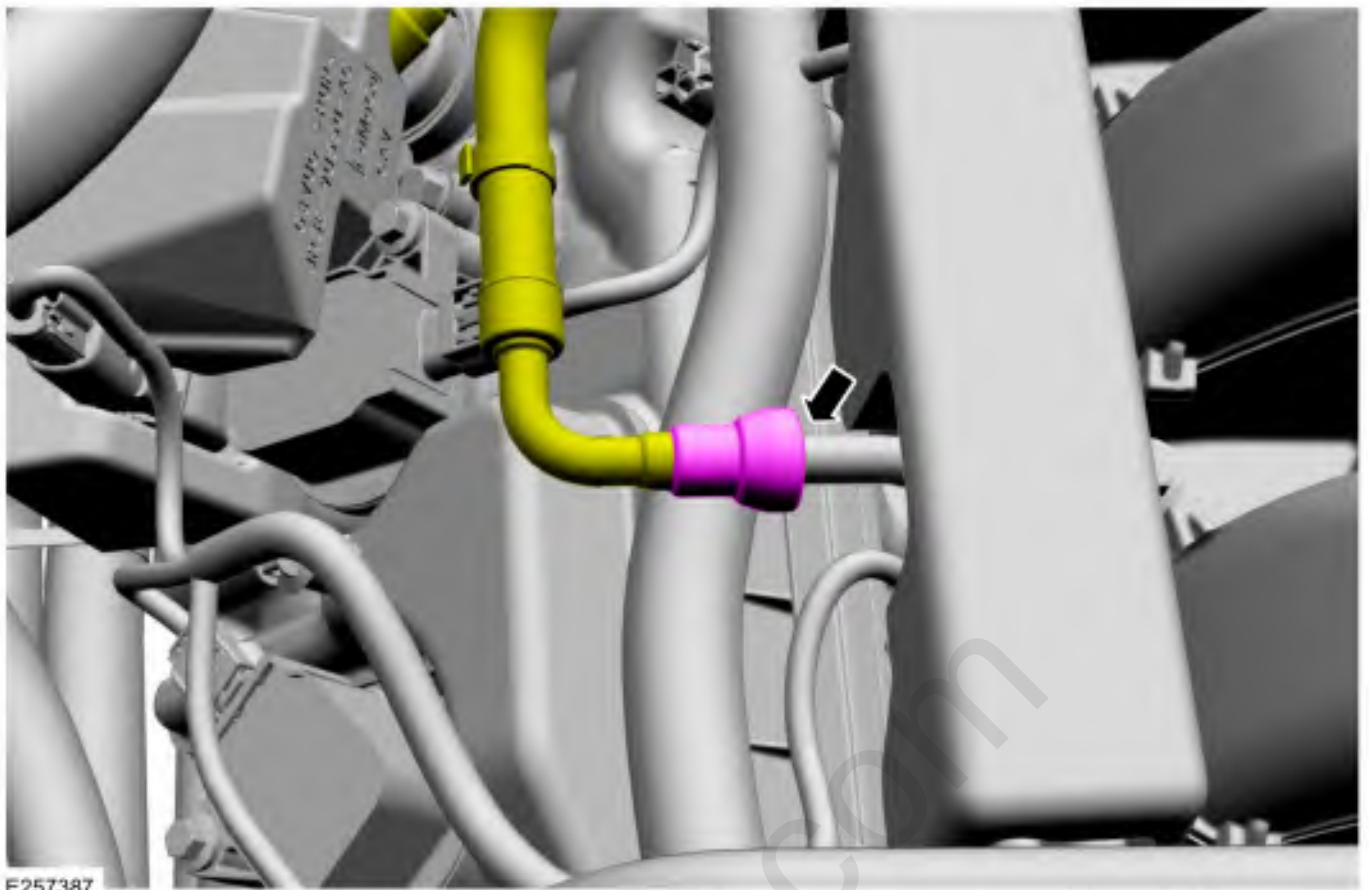
- Disconnect the quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).
- Release the valve from the bracket, then remove the valve assembly.



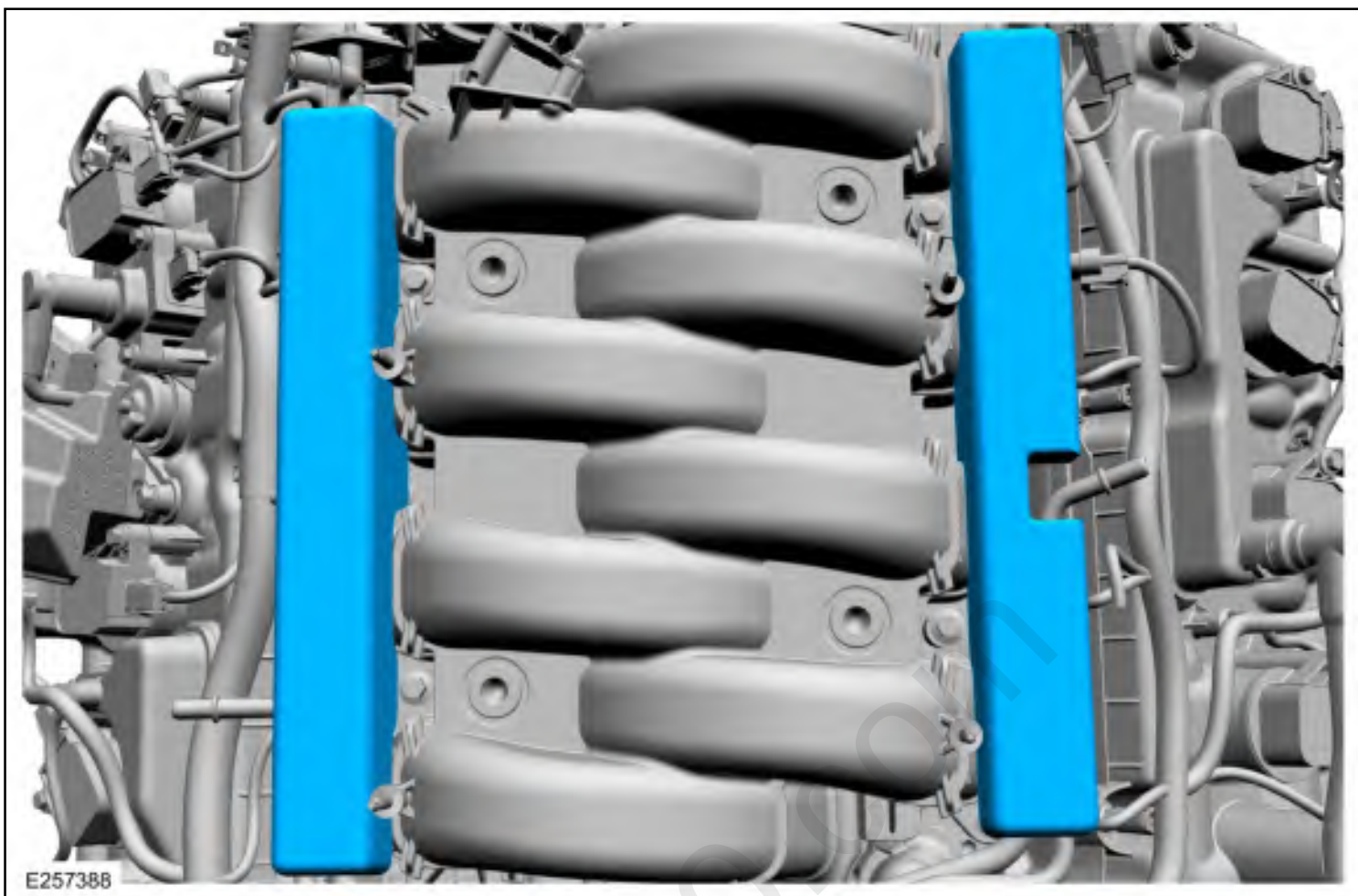
6. Disconnect the fuel supply tube quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).



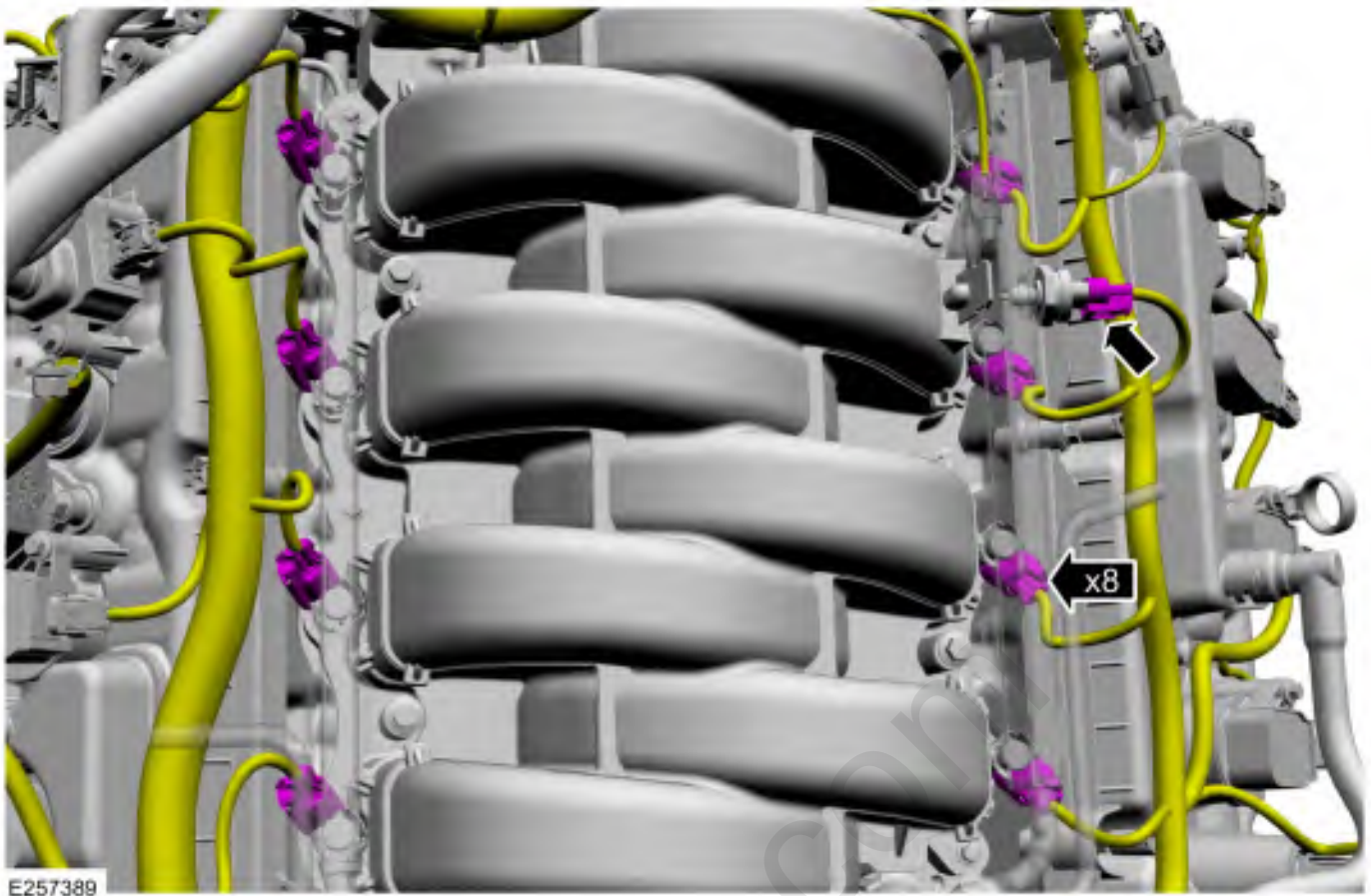
7. Disconnect the fuel high-pressure fuel pump supply tube spring lock coupling.
Refer to: [Spring Lock Couplings](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).



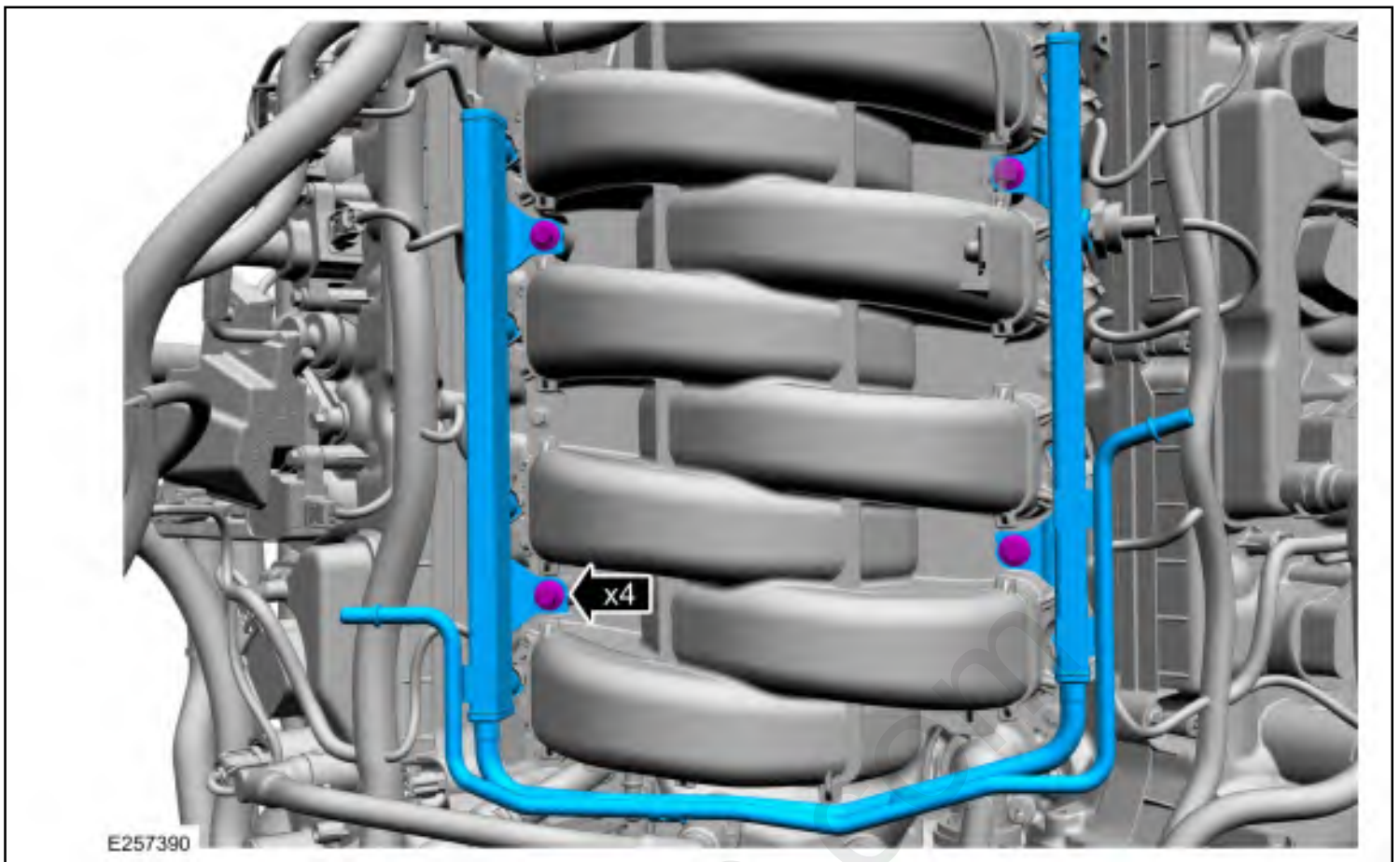
8. Remove the left and the right fuel rail insulators.



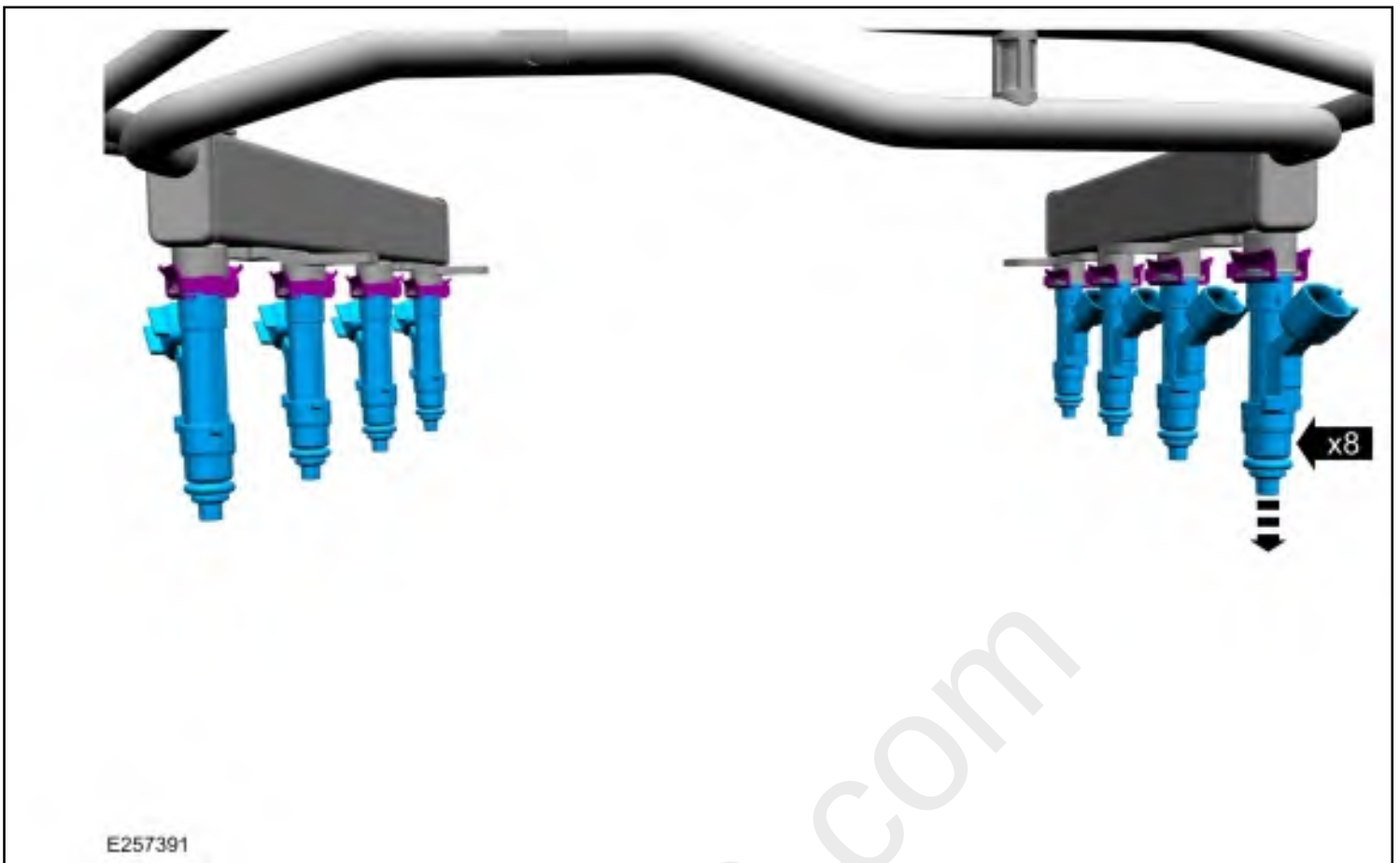
9. Disconnect the fuel injector electrical connectors and the fuel sensor electrical connector.



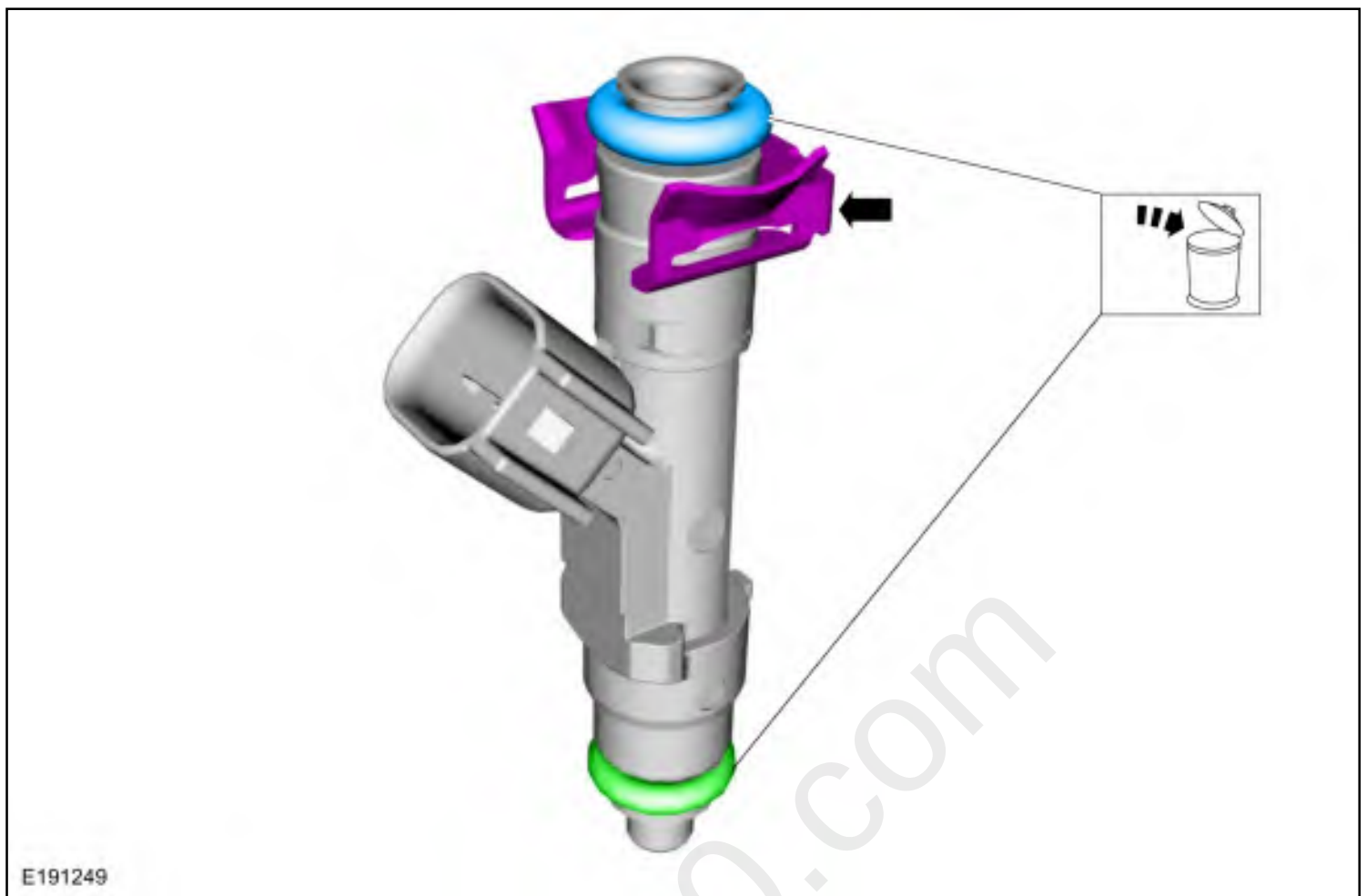
10. Remove the fuel rail retaining bolts, then remove the fuel rail.



11. Remove the fuel injectors from the fuel rail.



12. Remove and discard all of the fuel injector O-ring seals. Remove the fuel injector retaining clips.



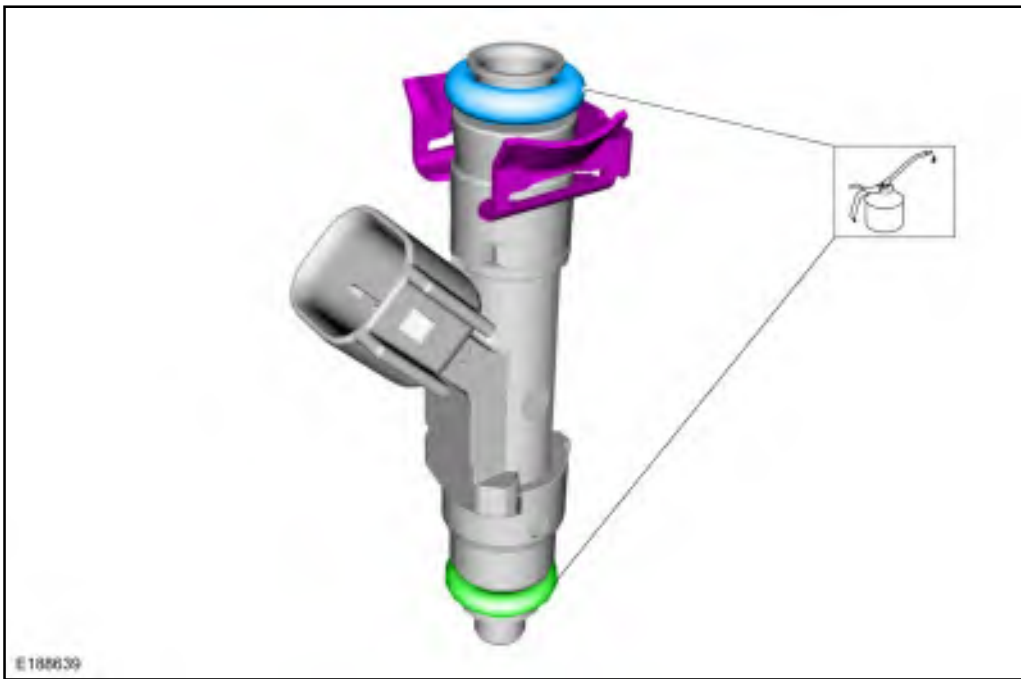
Installation

1. **NOTE:** Make sure that NEW fuel injector O-ring seals are installed.

NOTE: The fuel injector clip can be reused if it is not damaged during removal. If the clip is reused, the 2 sides of the clip should be squeezed back into shape by placing it between index finger and thumb.

Install the NEW fuel injector O-ring seals and the fuel injector retaining clips onto the fuel injectors. Lubricate the NEW fuel injector O-ring seals with clean engine oil.

Refer to: [Specifications](#) (303-01D Engine - 5.0L 32V Ti-VCT, Specifications).

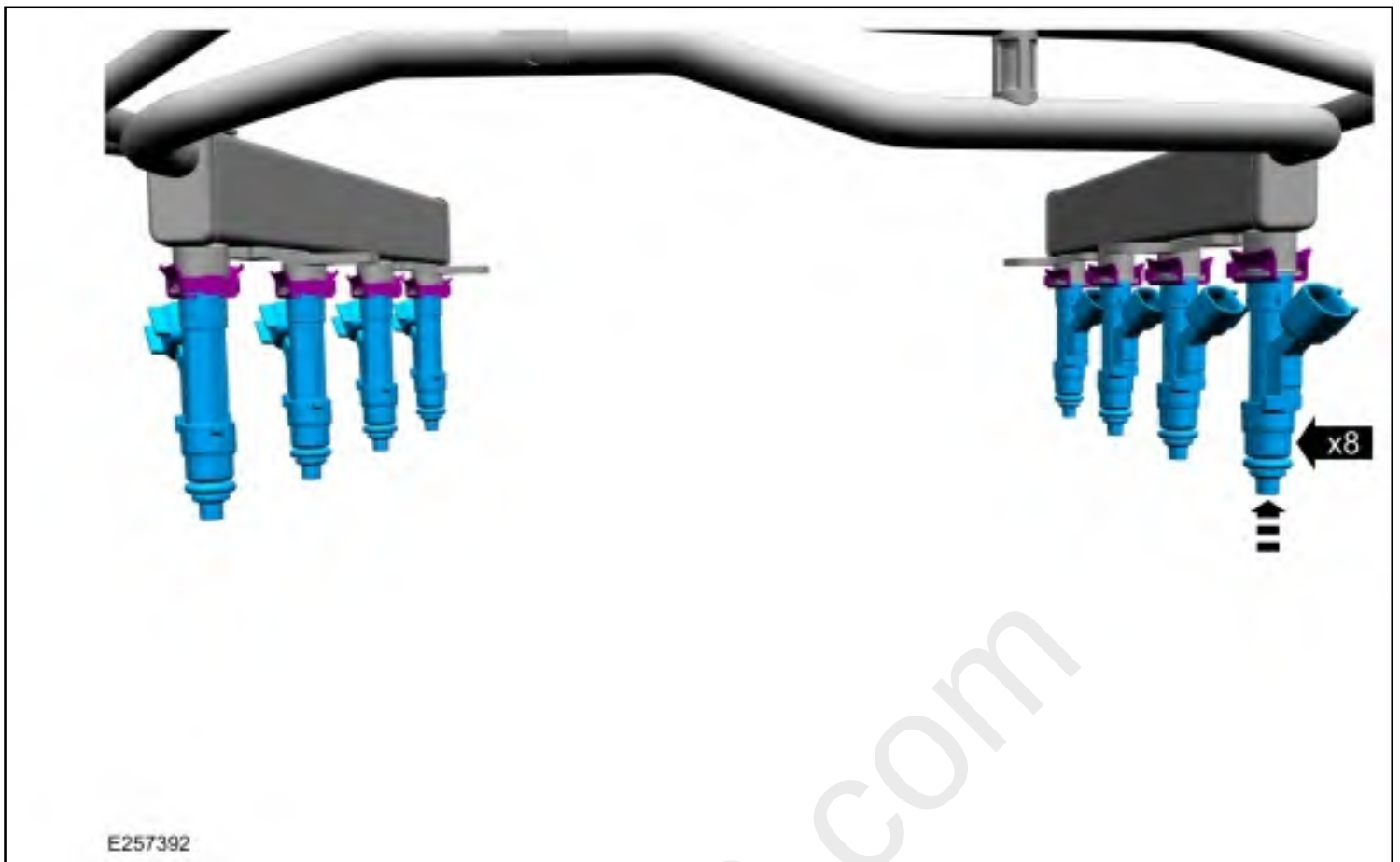


2. **NOTICE:** The fuel rail pressure and temperature sensor must be replaced if it is removed from the fuel rail.

NOTE: Position the fuel injector's so that the flat sides of the fuel rail injector cup is aligned with the flat side of the fuel injector retainer.

Install the fuel injectors into the fuel rail.

Refer to: [Fuel Rail Pressure and Temperature Sensor](#) (303-14D Electronic Engine Controls - 5.0L 32V Ti-VCT, Removal and Installation).

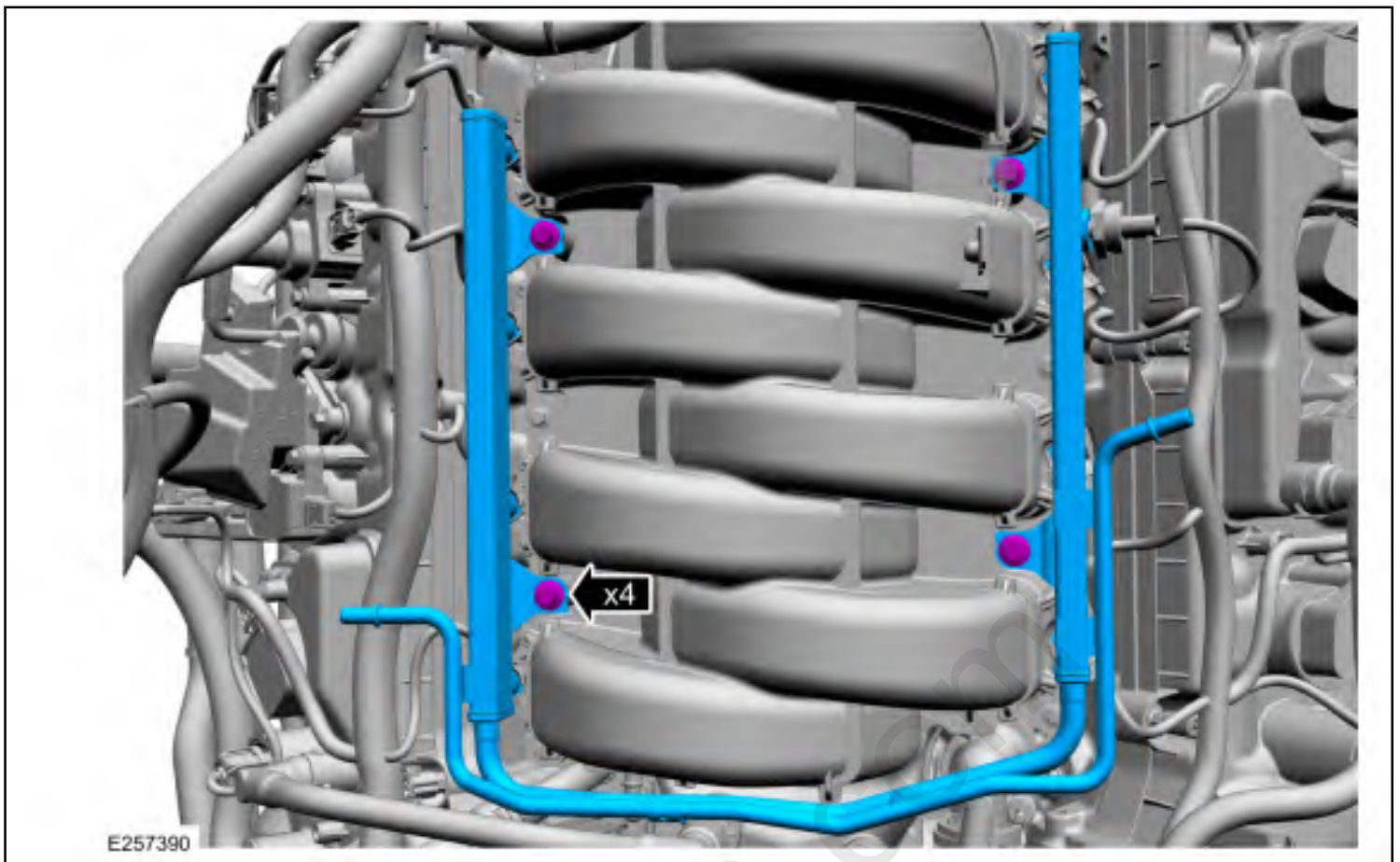


3. Install the fuel rail, then install and tighten the fuel rail retaining bolts in the following 2 stages.

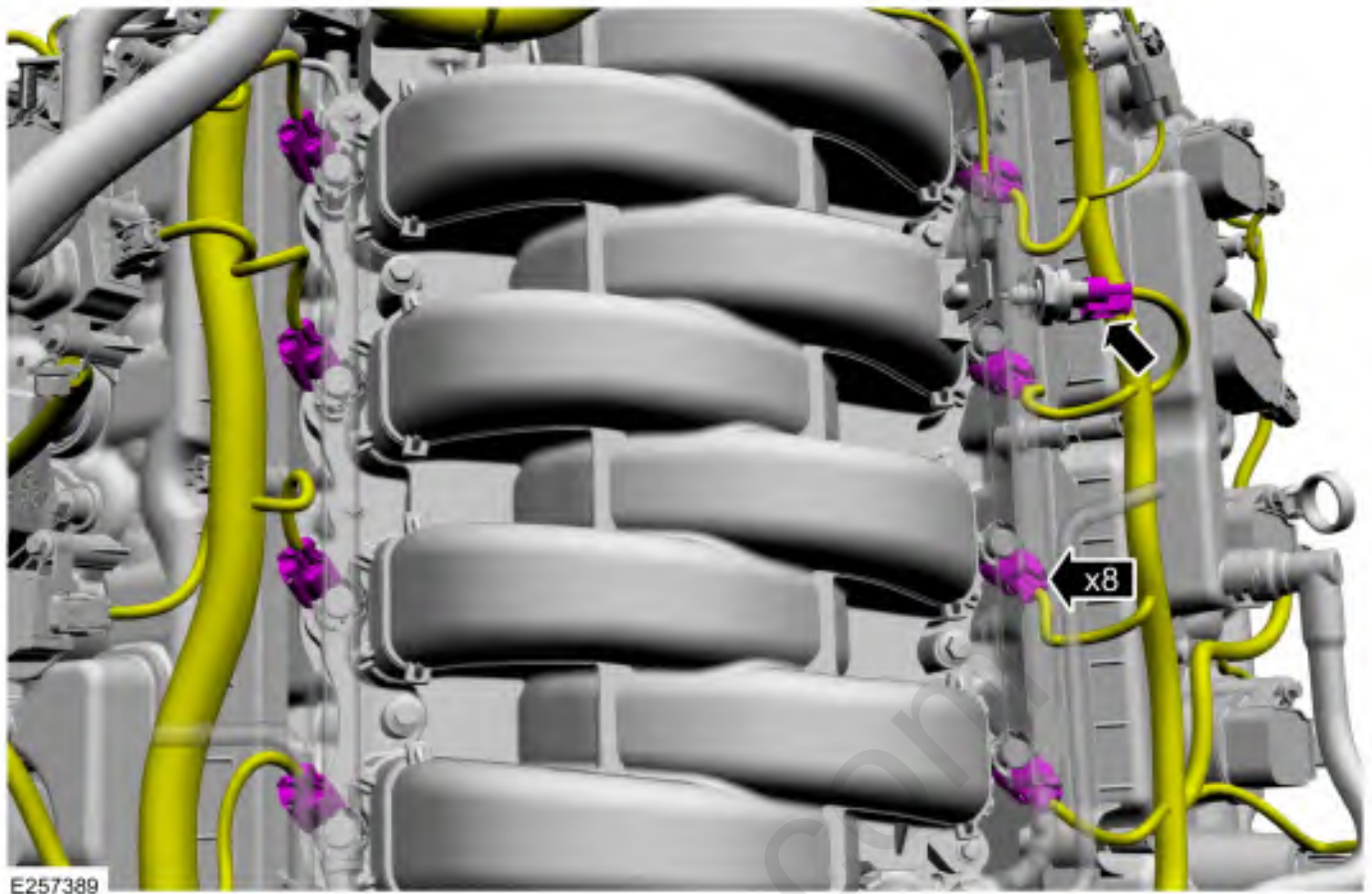
Torque:

Stage 1: 89 lb.in (10 Nm)

Stage 2: 90°



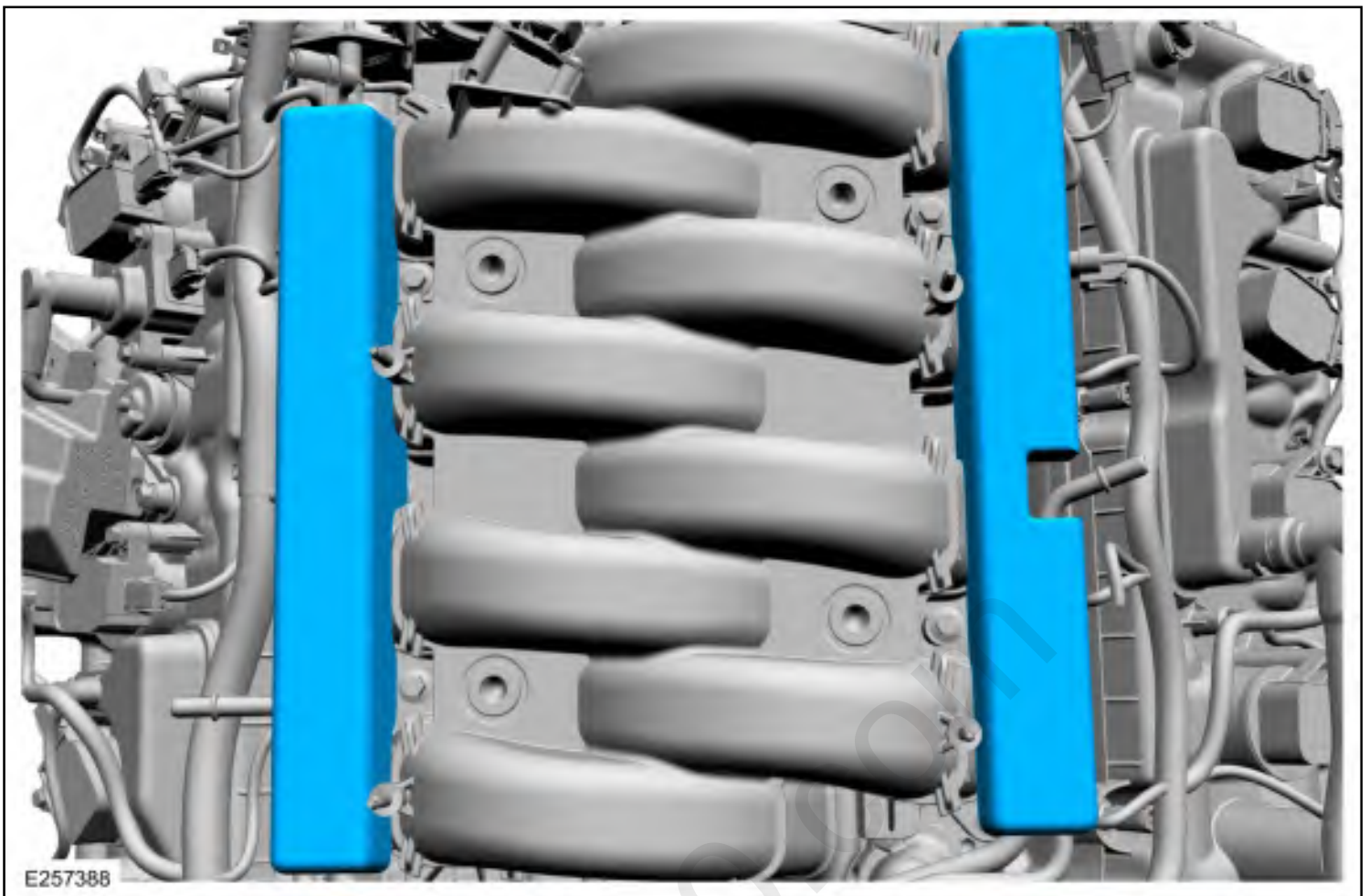
4. Connect the fuel injector electrical connectors and the fuel sensor electrical connector.



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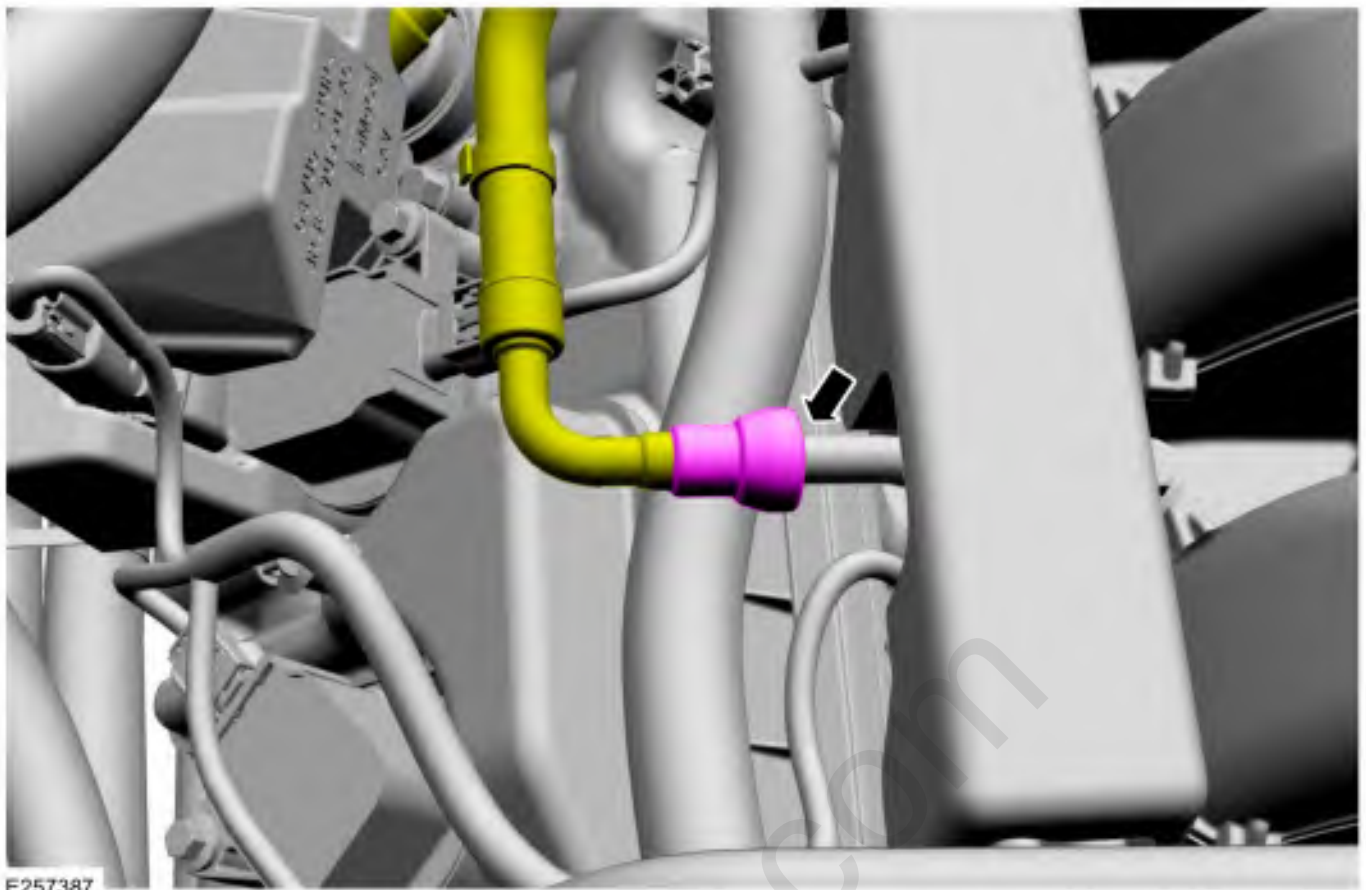
5. Install the left and the right fuel rail insulators.



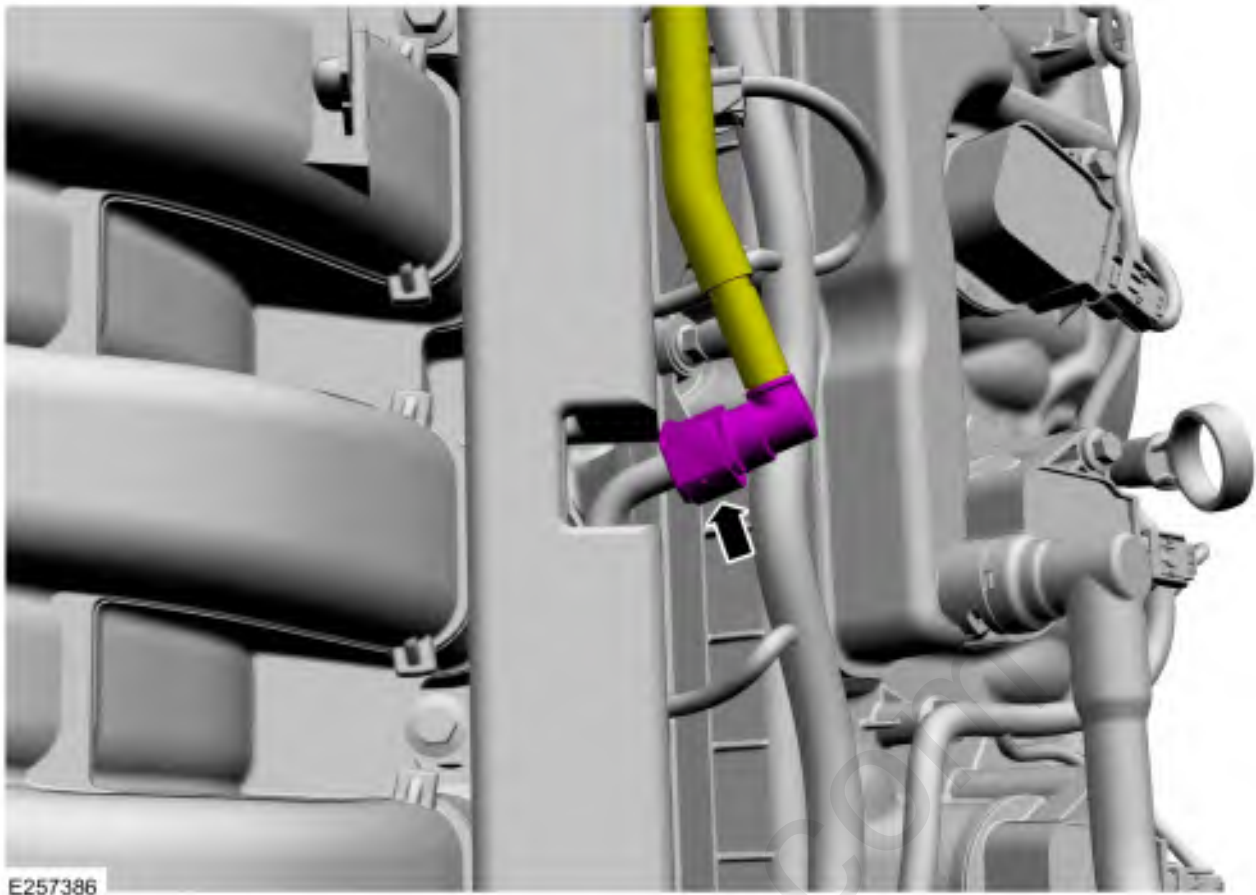
6. **NOTICE:** The fuel high-pressure fuel pump supply tube must be installed with the 90 degree spring lock end installed to the port fuel rail; if it is installed backwards a check valve will prevent the engine from running properly.

Connect fuel high-pressure fuel pump supply tube spring lock coupling.

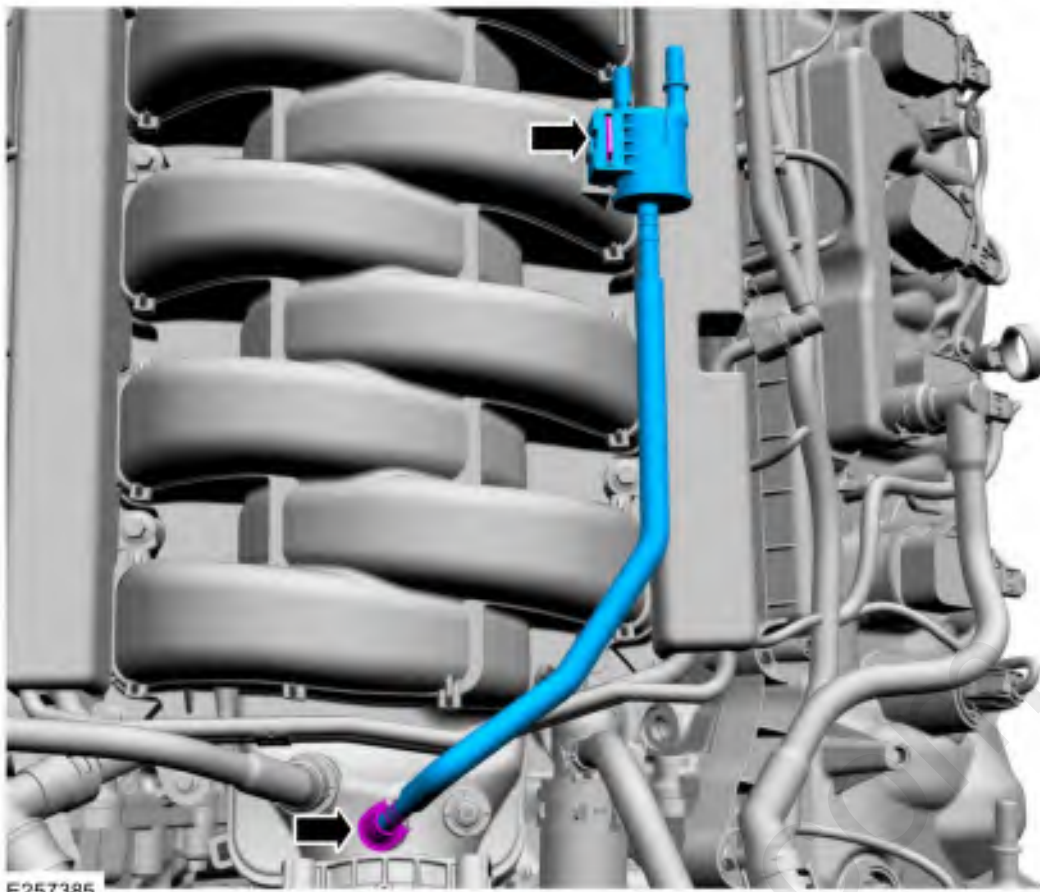
Refer to: [Spring Lock Couplings](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).



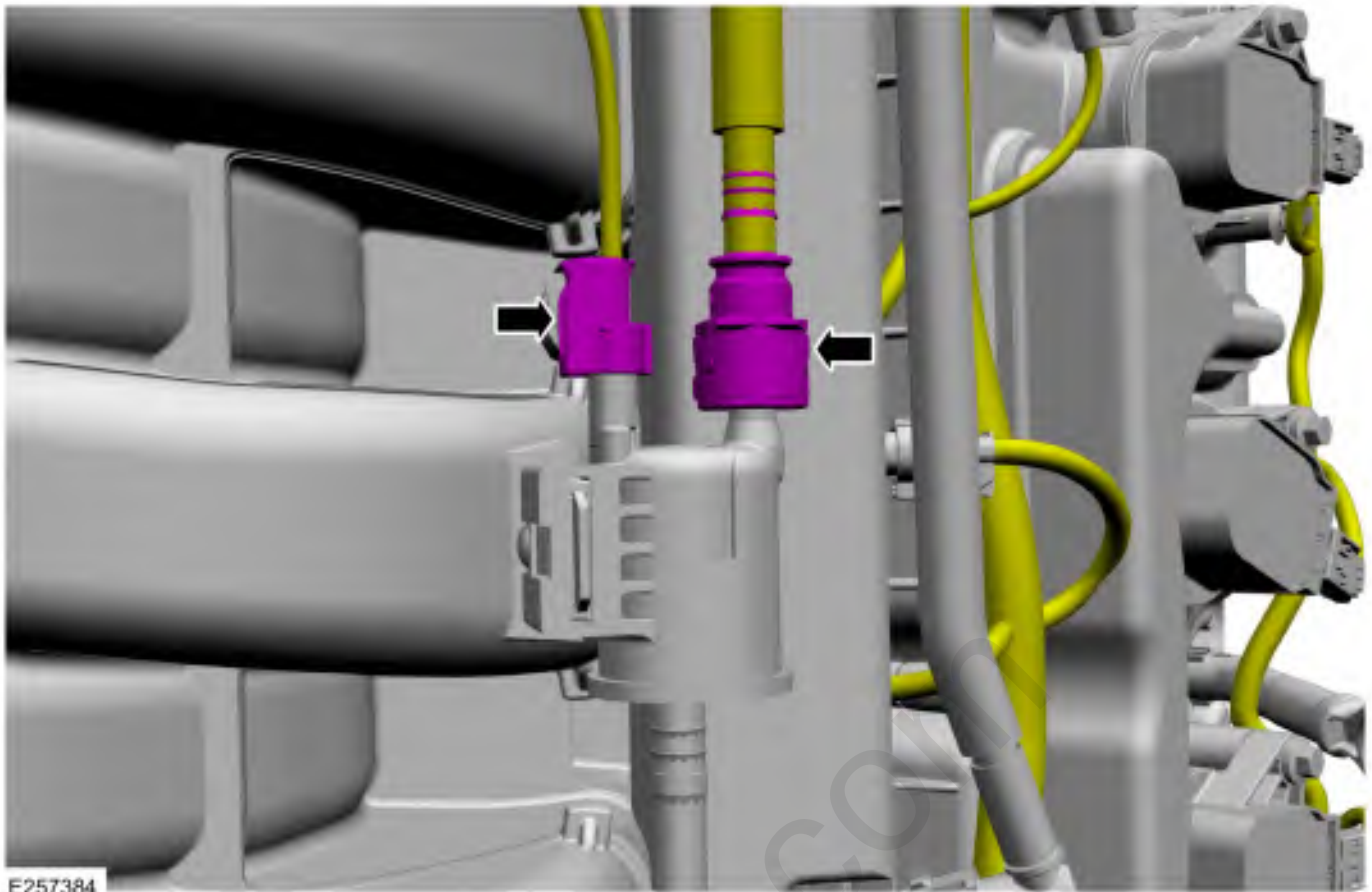
7. Connect the fuel supply tube quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).



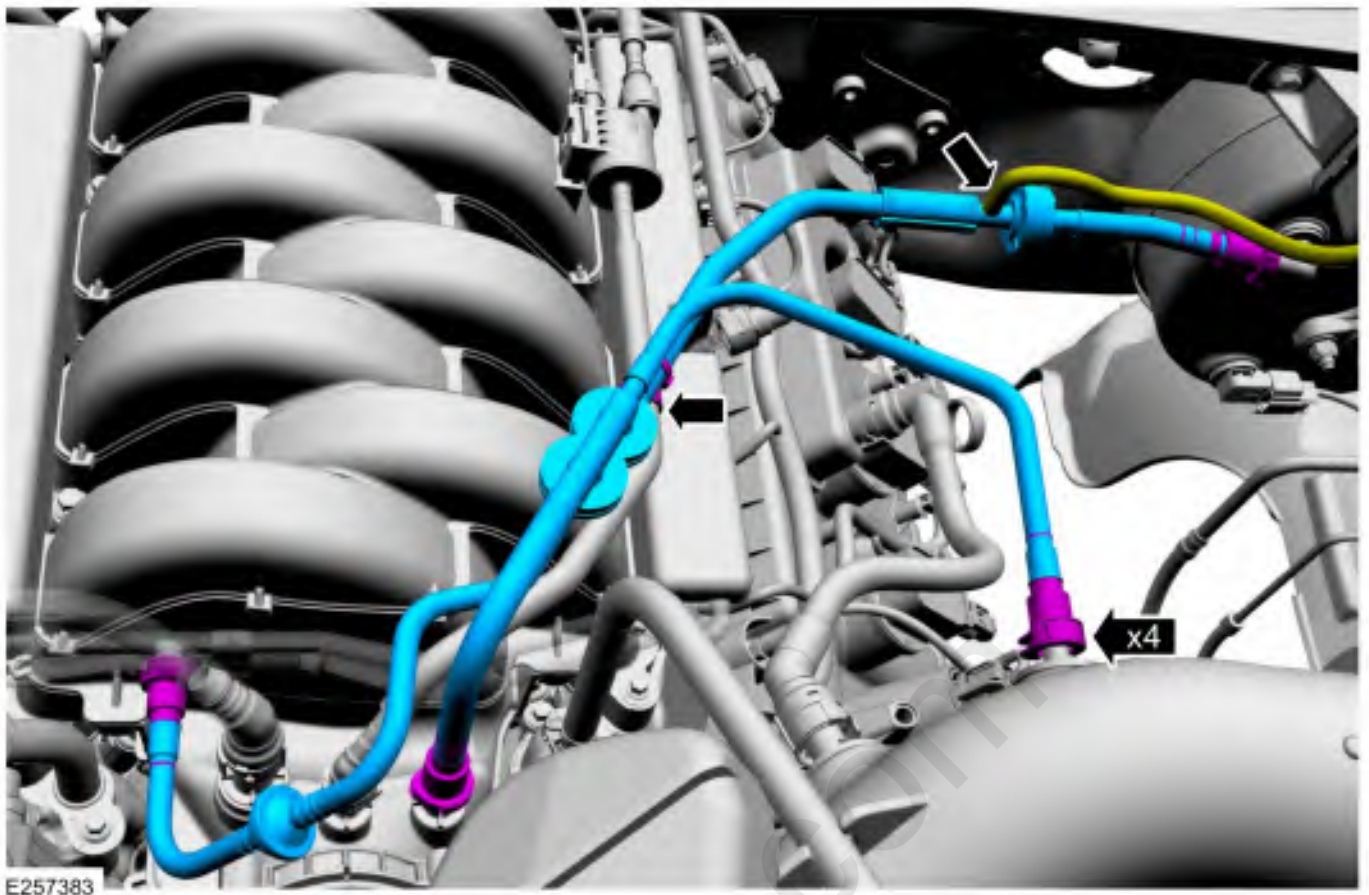
- Connect the quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).
- Install the valve assembly to the bracket.



- Connect the quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).
- Connect the electrical connector.



- Connect the quick release couplings.
Refer to: [Quick Release Coupling](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).
- Attach the hose retainer.
- Connect the hose.



11. Connect the battery negative cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables) .
12. Pressurize the fuel system.
Refer to: [Fuel System Pressure Release](#) (310-00D Fuel System - General Information - 5.0L 32V Ti-VCT, General Procedures).