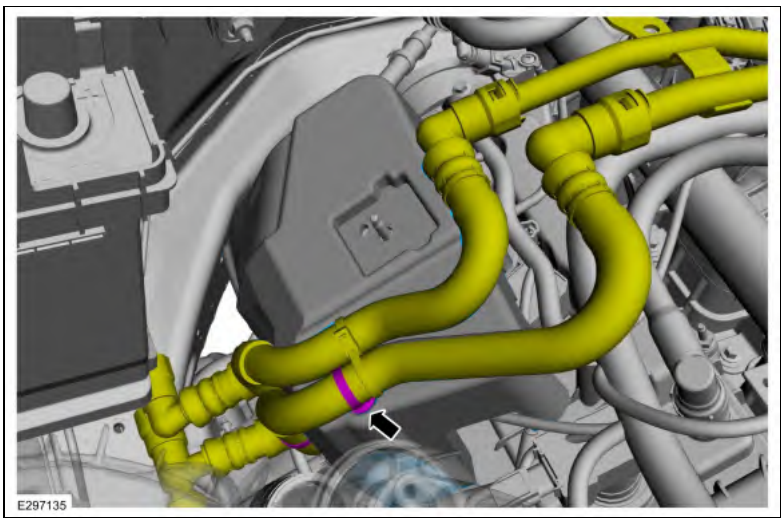
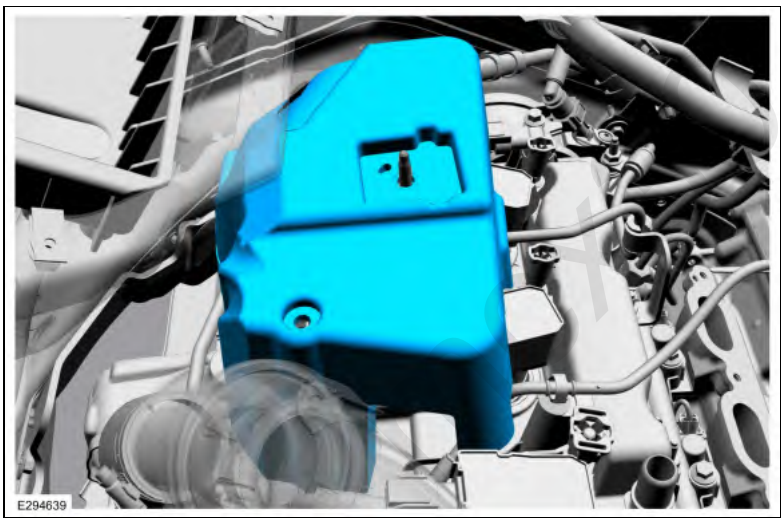


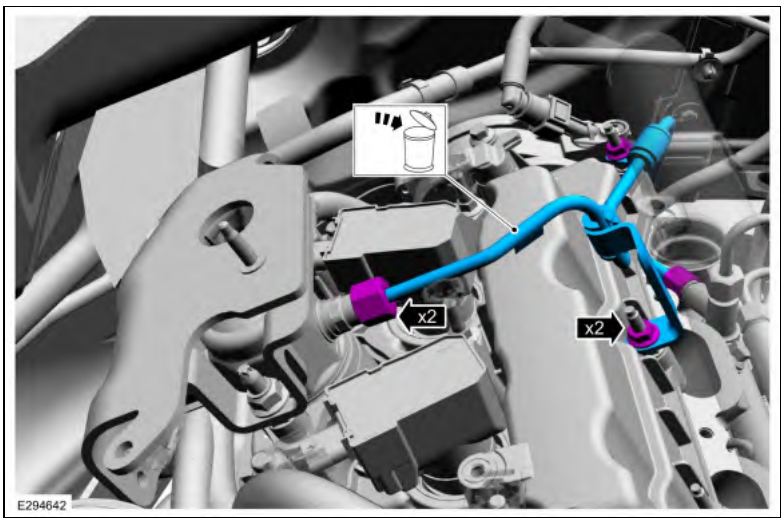
8. **NOTE:** *When removing or installing the fuel injection pump noise insulator, spreading the openings will reduce the risk of damage.*

   Remove the fuel injection pump noise insulator.

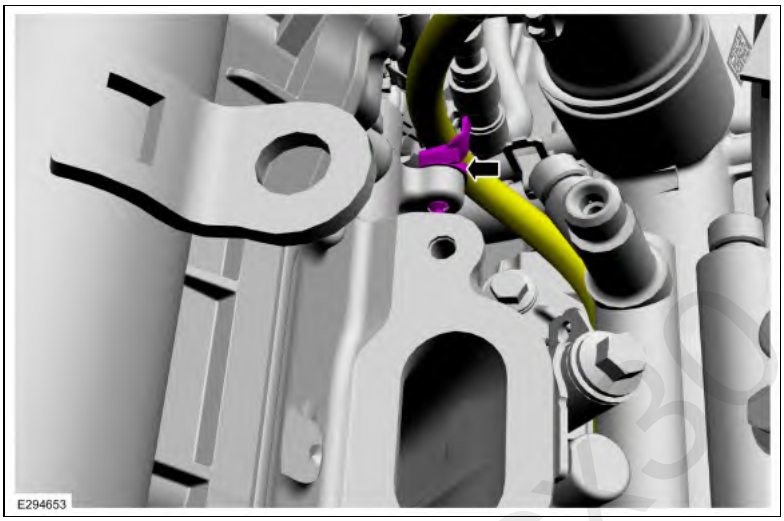


9. **NOTICE: To release the fuel pressure in the high-pressure fuel tube, wrap the high-pressure fuel tube flare nuts with a shop towel to absorb any residual fuel pressure during the loosening of the high-pressure fuel tube flare nuts.**

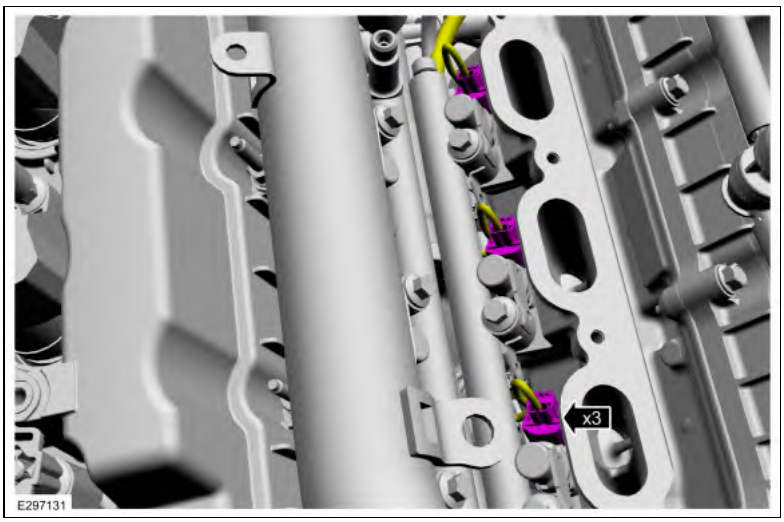
   Remove the high-pressure fuel tube bracket nuts. Disconnect the high-pressure fuel tube flare nuts, then remove and discard the high-pressure fuel tube.



10. Disconnect the fuel injector harness retainer.



11. Disconnect the fuel injector electrical connectors.

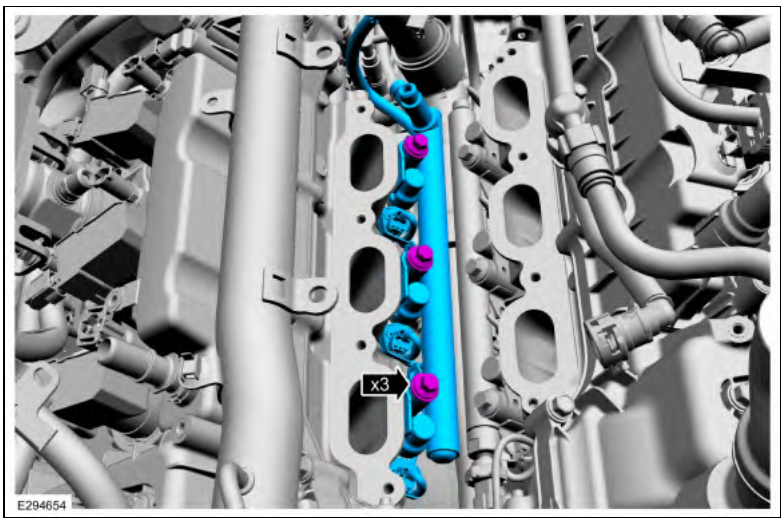


12. **NOTICE: Pull out the fuel rails in the direction of the fuel injector axis or damage may occur to the fuel injectors.**

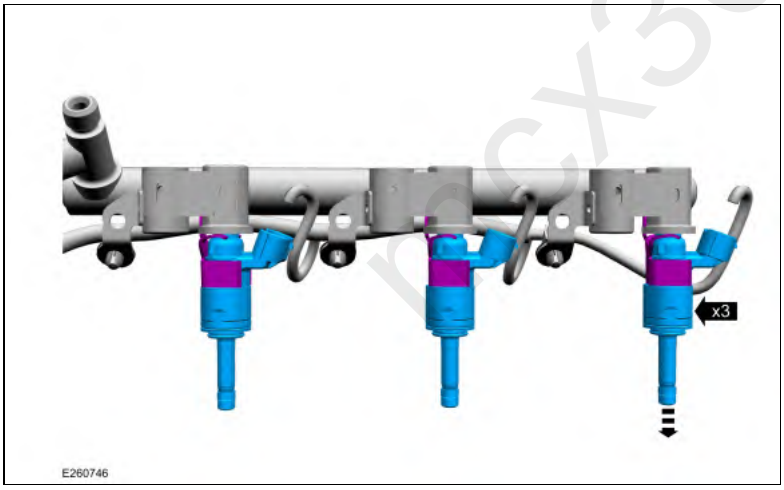
    NOTE: *Use compressed air and remove any dirt or foreign material from the cylinder head, block and general surrounding area of the fuel rail and injectors.*

    NOTE: *When removing the fuel rails, the fuel injectors may remain in the cylinder heads and require the use of a Fuel Injector Remover tool to extract. Wiggling the injector by hand to break it loose may allow the injector to be removed by hand.*

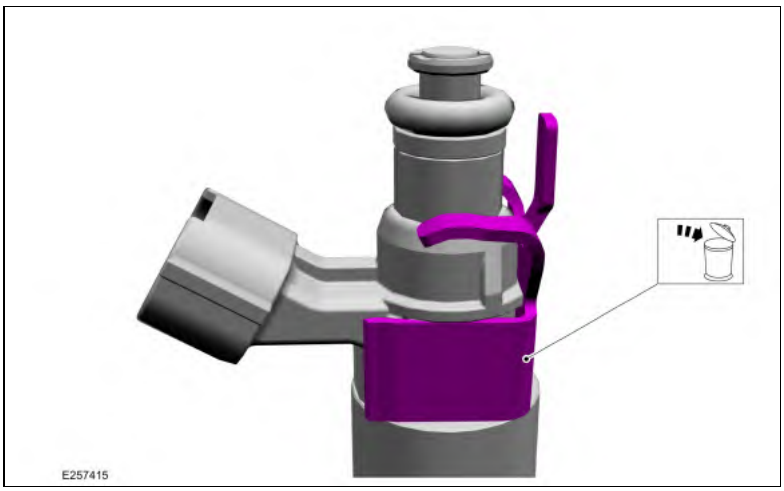
    Remove the fuel rail bolts, then remove the fuel rail.



13. Remove the fuel injectors from the fuel rail.



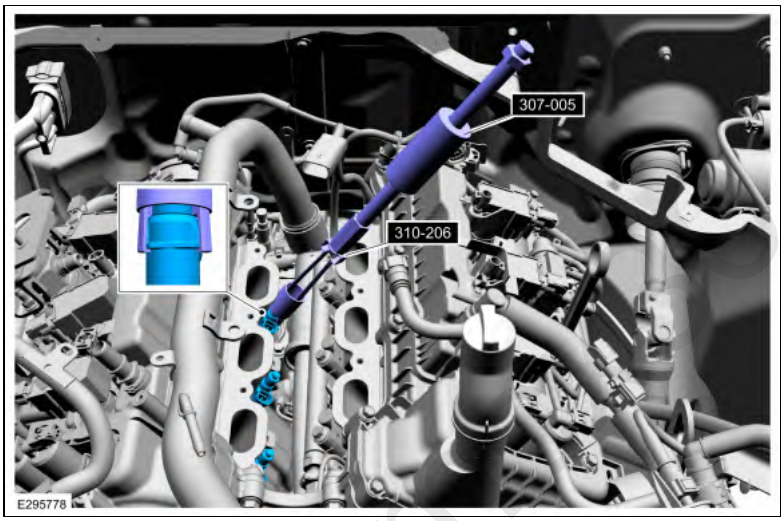
14. Remove and discard the fuel injector clips.



15. **NOTICE: Use minimal force to remove the fuel injectors that remained in the cylinder head with the Fuel Injector Remover tool or damage to the fuel injector assembly may occur. Wiggling the injector by hand to break it loose may allow the injector to be removed by hand.**

    NOTE: *Commercially available OTC 5028 8-1/2" long slide hammer may be substituted for 307-005 where there are clearance concerns.*

    Using the special tools, remove any of the fuel injectors that remained in the cylinder head.
    Use Special Service Tool: 307-005 (T59L-100-B) Slide Hammer. , 310-206 Remover, Fuel Injector.

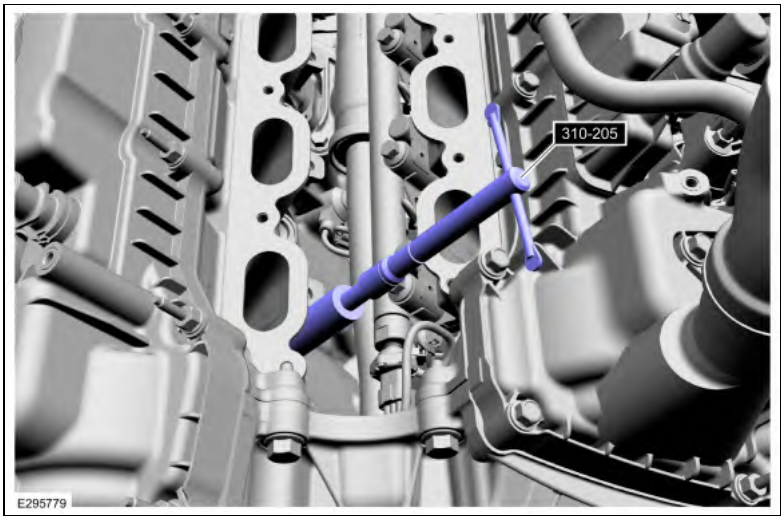


16. **NOTICE: Make sure to thoroughly clean any residual fuel or foreign material from the cylinder head, block and the general surrounding area of the fuel rails and injectors.**

    NOTICE: Do not use compressed air to clean the tip of the fuel injector.

    NOTICE: Do not use a brush to clean the tip of the fuel injector.

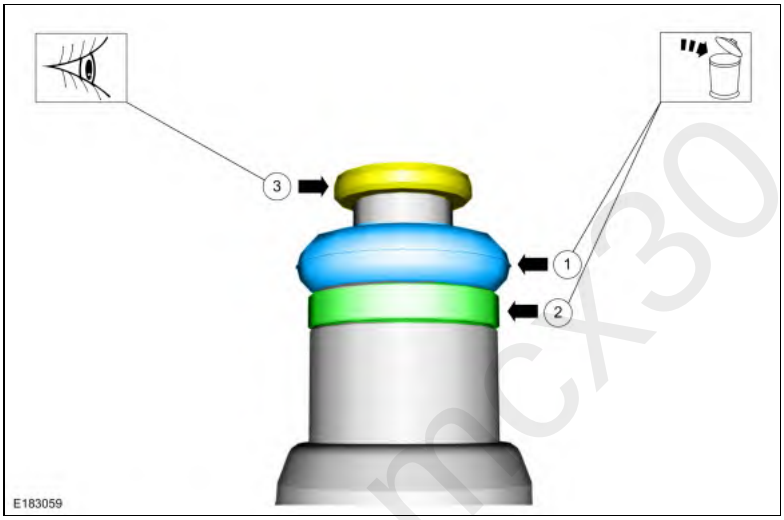
    Using the special tool, clean the cylinder head fuel injector bores.
    Use Special Service Tool: 310-205 Fuel Injector Brush.



17.

1. Remove and discard the fuel injector O-ring seals.
2. **NOTE:** *Note the correct orientation of the fuel injector support rings for correct installation of the NEW fuel injector support rings.*

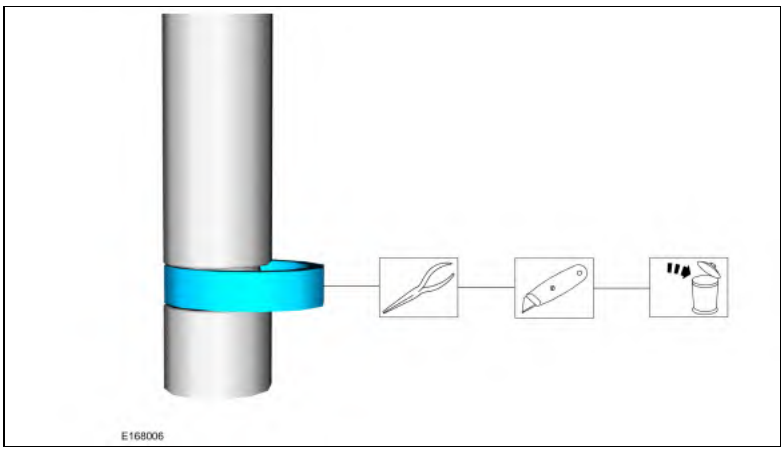
   Remove and discard the fuel injector support rings.
3. Inspect the inlet stopper, if it is damaged or comes off then discard the inlet stopper. The inlet stopper is not needed for proper function. Ensure that any debris from the inlet stopper are removed. If the inlet stopper is intact and undamaged do not remove the inlet stopper from the fuel injector.



18. **NOTICE: Use care when removing the lower TeflonÂ® seals, not to scratch, nick or gouge the fuel injector.**

    NOTICE: Do not attempt to cut the lower TeflonÂ® seal without first pulling it away from the fuel injector or damage to the injector may occur.

    1. Pull the lower TeflonÂ® seal away from the injector.
    2. Carefully cut and discard the lower fuel injector TeflonÂ® seal.

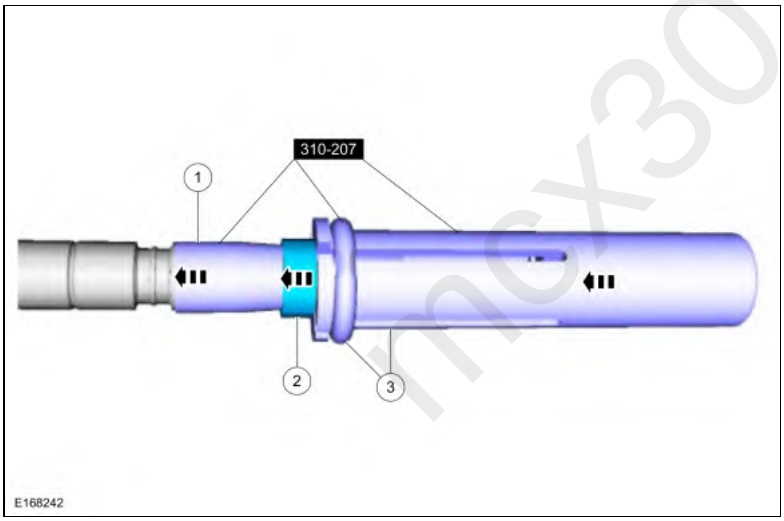


Installation

1. **NOTICE: Do not lubricate the NEW lower TeflonÂ® fuel injector seals.**
    1. Install the TeflonÂ® Seal Guide onto the fuel injector tip.
       Use Special Service Tool: 310-207 Installer, Fuel Injector Seal Assembly.
    2. **NOTICE: Once the TeflonÂ® seal is installed on the TeflonÂ® Seal Guide, it should immediately be installed onto the fuel injector to avoid excessive expansion of the TeflonÂ® seal.**

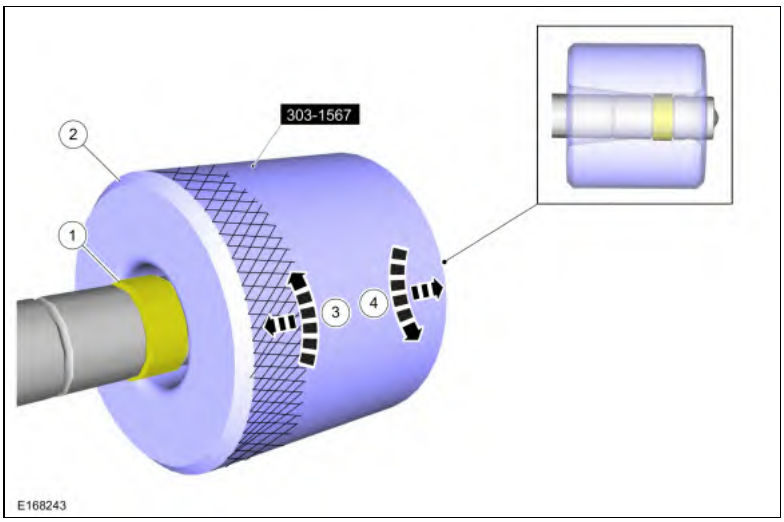
       NOTE: *Make sure that NEW lower fuel injector TeflonÂ® seals are installed.*

       Install the NEW TeflonÂ® seals onto the TeflonÂ® Seal Guide, using the Pusher Tool, slide the TeflonÂ® seals along the TeflonÂ® Seal Guide.
    3. Using the Pusher Tool, slide the TeflonÂ® seals off of the TeflonÂ® Seal Guide and into the groove on the fuel injectors.
       Use Special Service Tool: 310-207 Installer, Fuel Injector Seal Assembly.
    4. Remove the special tools.



2. **NOTE:** *Make sure the TeflonÂ® seal is fully seated in the groove on the fuel injector before sizing the TeflonÂ® seal.*
    1. Massage and warm the TeflonÂ® seal with your fingers before the TeflonÂ® seal sizer tool is installed. This will aid in installing the TeflonÂ® seal sizer tool.
    2. **NOTE:** *The beveled opening of the TeflonÂ® seal sizer tool goes away from the seal.*

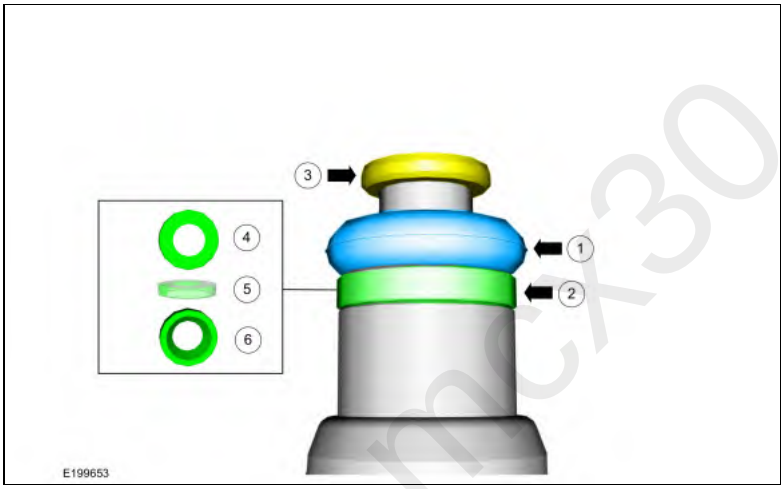
       Position the TeflonÂ® seal sizer tool with the larger opening towards the TeflonÂ® seal. Push while turning the TeflonÂ® seal sizer tool 180 degrees.
       Use Special Service Tool: 303-1567 Sizer, Teflon Seal.
    3. Once the TeflonÂ® seal sizer tool is installed, check and make sure the TeflonÂ® seal is in the sizing portion of the TeflonÂ® seal sizer tool.
    4. After one minute, turn the TeflonÂ® seal sizer tool back 180 degrees and remove.



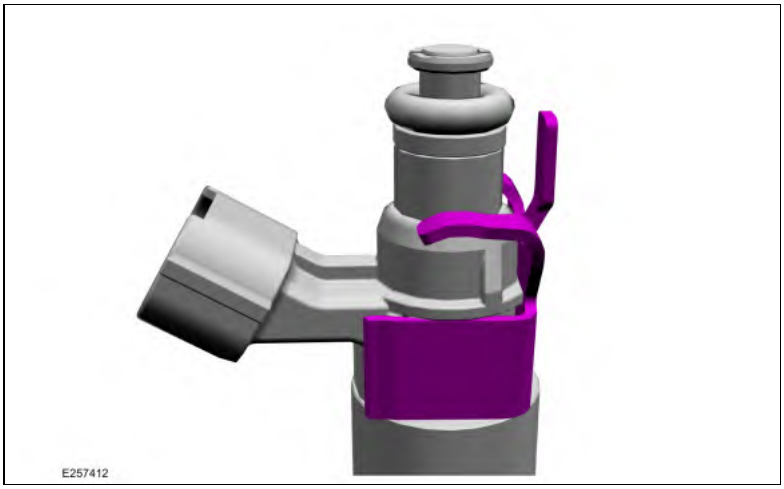
3. **NOTE:** *Make sure that NEW fuel injector support rings and NEW fuel injector O-ring seals are installed.*

    1. Install the new fuel injector O-rings. The O-rings are pre-lubricated, NO ADDITIONAL lubricant is required.
    2. **NOTICE: The NEW the fuel injector support rings must be installed in the correct orientation with the wide surface area facing up against the fuel injector O-ring seals. Improperly installed support rings may cause the fuel system to leak.**

       Install the NEW the fuel injector support rings.
    3. Inspect the inlet stopper, if it is damaged or comes off then discard the inlet stopper. The inlet stopper is not needed for proper function. Ensure that any debris from the inlet stopper are removed. If the inlet stopper is intact and undamaged do not remove the inlet stopper from the fuel injector.
    4. The upper side of the support ring has the wide surface area.
    5. Fuel injector support ring.
    6. The lower side of the support ring has the narrow surface area.

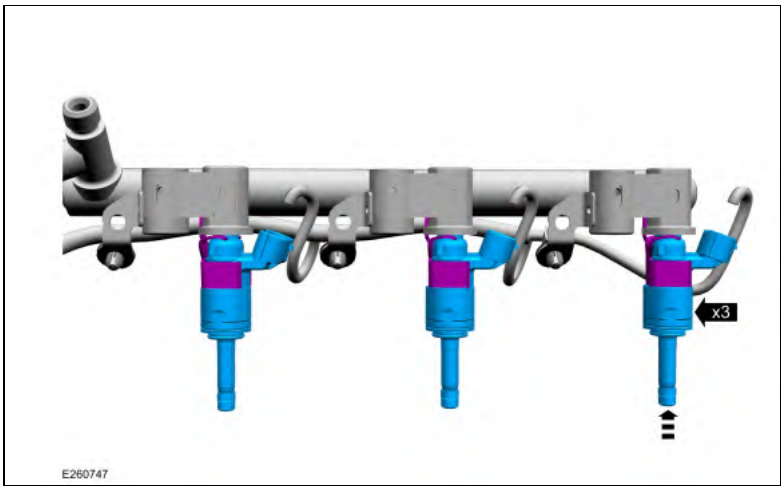


4. Install the NEW fuel injector clips.

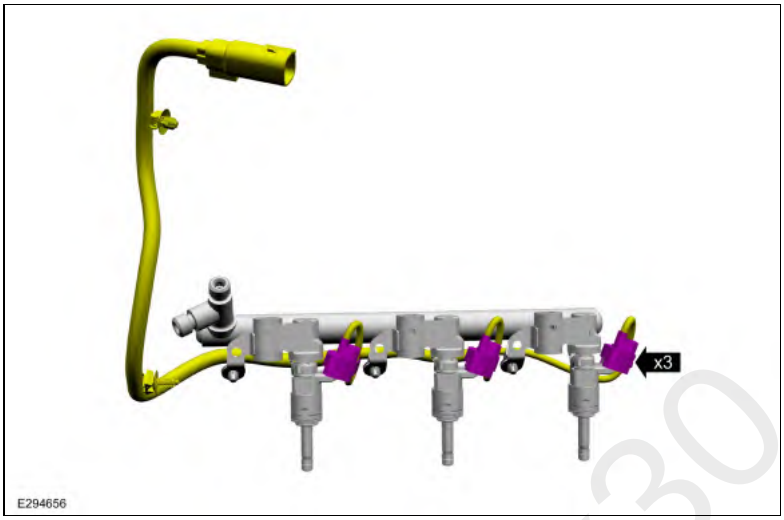


5. **NOTE:** *The anti-rotation finger of the fuel injector must slip into the groove of the fuel rail cup.*

Install the fuel injectors to the fuel rail.

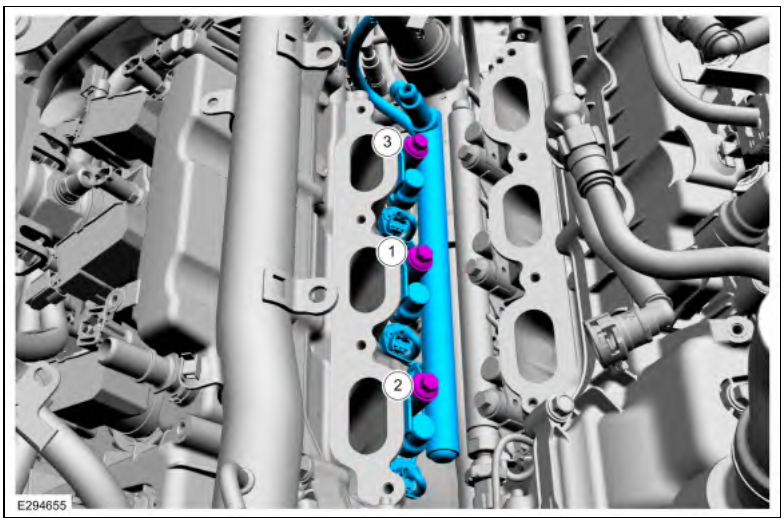


6. Connect the fuel injector electrical connectors.

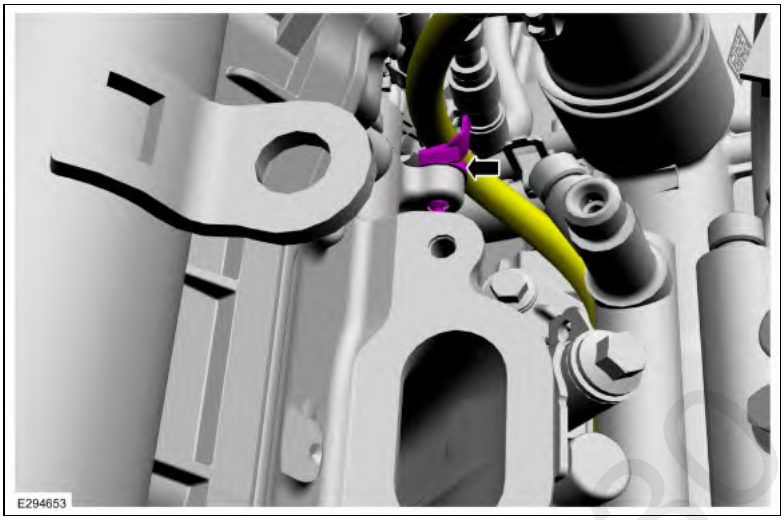


7. **NOTE:** *Do not lubricate the new lower TeflonÂ® fuel injector seals.*

   Install the fuel rail, push down on the fuel rail above the injectors, then tighten the fuel rail bolts in the sequence shown.
   Torque: 18 lb.ft (24 Nm)



8. Connect the fuel injector harness retainer.

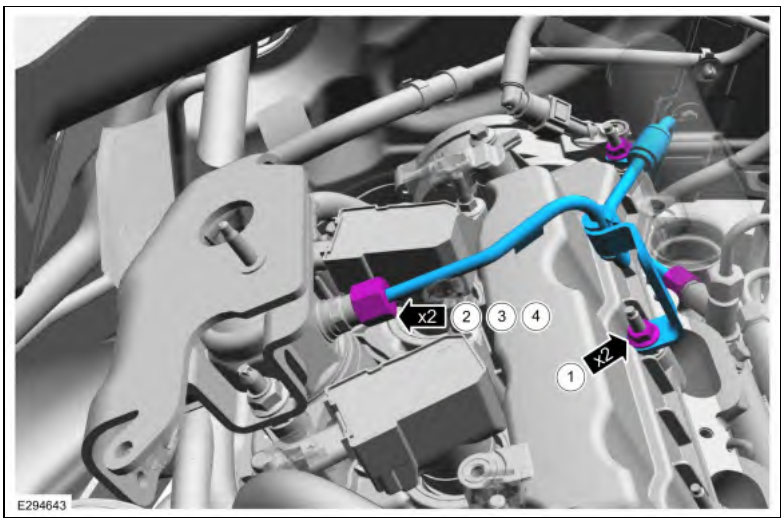


9. **NOTICE: In stage 4, if the torque required to tighten any flare nut on the new high-pressure fuel tube reaches or exceeds 37 lb.ft (50 Nm), then that high pressure fuel tube must be discarded and replaced with another new high-pressure fuel tube.**

   NOTE: *Calculate the correct torque wrench setting for the following torque using the Torque Wrench Adapter Formulas.*

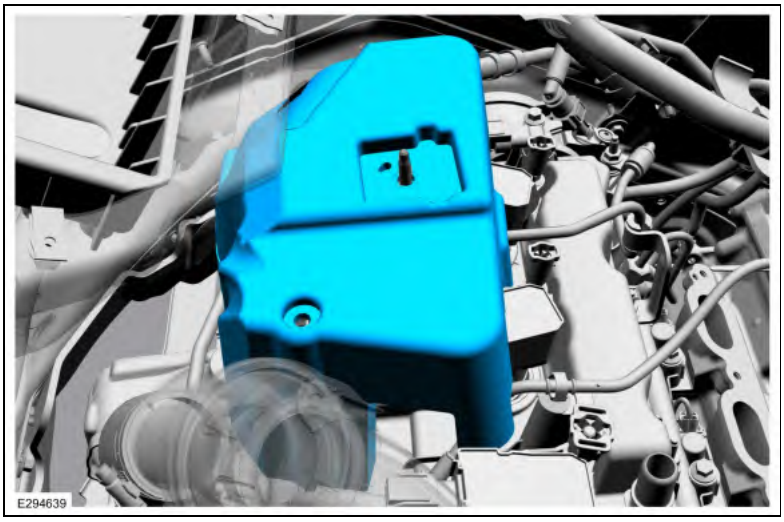
   NOTE: *Make sure that a new high-pressure fuel tube is installed.*

   Install the high-pressure fuel tube and bracket nuts, tighten the high-pressure fuel tube flare nuts and bracket nuts finger tight.
   Torque:
   Stage 1: Tighten the high-pressure fuel tube bracket nuts to, : 89 lb.in (10 Nm)
   Stage 2: Tighten the high-pressure fuel tube flare nuts to, : 62 lb.in (7 Nm)
   Stage 3: Tighten the high-pressure fuel tube flare nuts to, : 89 lb.in (10 Nm)
   Stage 4: Tighten the high-pressure fuel tube flare nuts an additional, : 25Â°

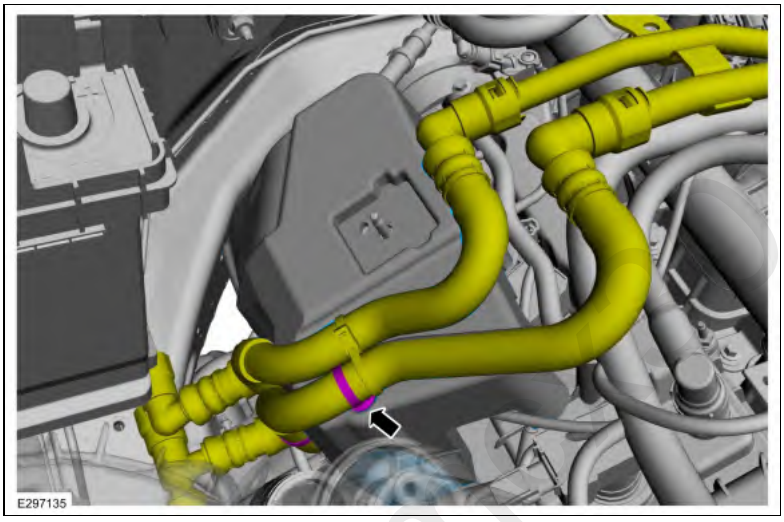


10. **NOTE:** *When removing or installing the fuel injection pump noise insulator, spreading the openings will reduce the risk of damage.*

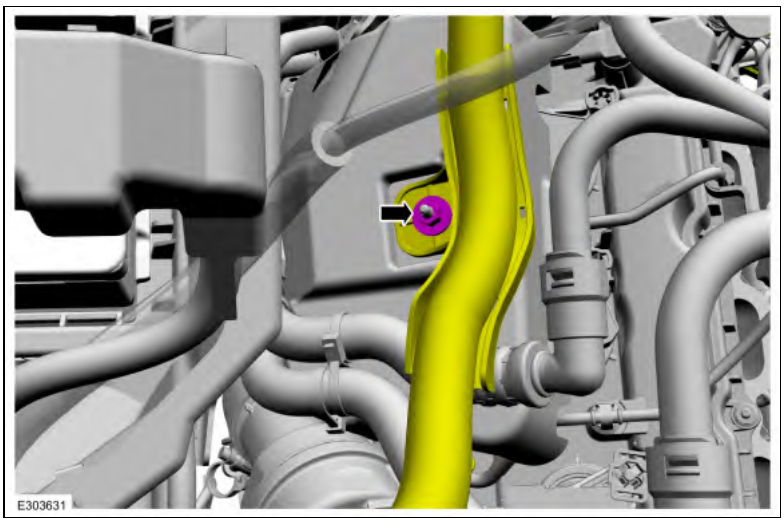
    Install the fuel injection pump noise insulator.



11. Attach the coolant hose retainer.



12. If equipped, install the harness, then install and tighten the wire harness retaining nut.
Torque: 106 lb.in (12 Nm)

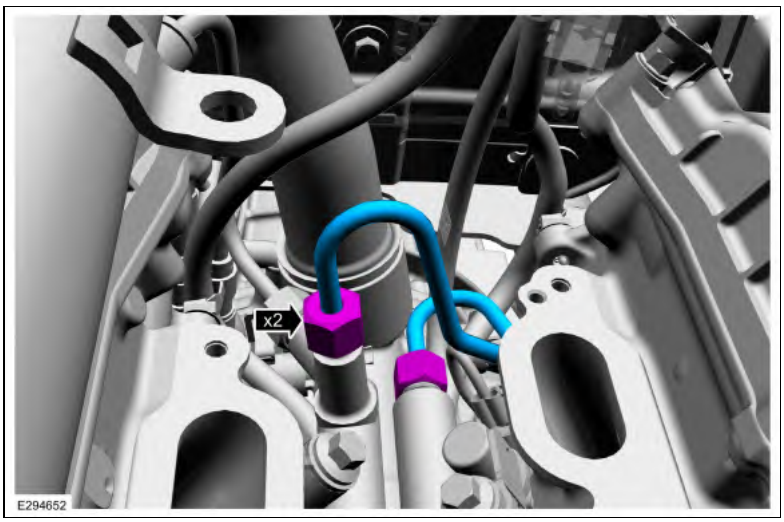


13. **NOTICE: In stage 3, if the torque required to tighten any flare nut on the new high-pressure fuel tube reaches or exceeds 55 lb.ft (75 Nm), then that high pressure fuel tube must be discarded and replaced with another new high-pressure fuel tube.**

    NOTE: *Make sure that a new fuel rail to fuel rail high-pressure fuel tube is installed.*

    NOTE: *Calculate the correct torque wrench setting for the following torque using the Torque Wrench Adapter Formulas.*

    Install the NEW fuel rail to fuel rail high-pressure fuel tube and tighten the flare nuts finger tight, then tighten the flare nuts in the following 3 stages.
    Torque:
    Stage 1: 62 lb.in (7 Nm)
    Stage 2: 89 lb.in (10 Nm)
    Stage 3: Tighten an additional : 25Â°



14. Install the intake manifold.
    Refer to: Intake Manifold (303-01B Engine - 3.0L EcoBoost, Removal and Installation).

15. Install the cowl panel.
    Refer to: Cowl Panel (501-02 Front End Body Panels, Removal and Installation).

16. Connect the battery negative cable.
    Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

17. Pressurize the fuel system.
    Refer to: Fuel System Pressure Release (310-00B Fuel System - General Information - 3.0L EcoBoost, General Procedures).

Fuel Injectors

Removal and Installation

1. The fuel injectors are removed with the fuel rails.
   Refer to: Direct Injection Fuel Rail LH (303-04B Fuel Charging and Controls - 3.0L EcoBoost, Removal and Installation).
   Refer to: Direct Injection Fuel Rail RH (303-04B Fuel Charging and Controls - 3.0L EcoBoost, Removal and Installation).

Fuel Pump Driver Module (FPDM)

Removal

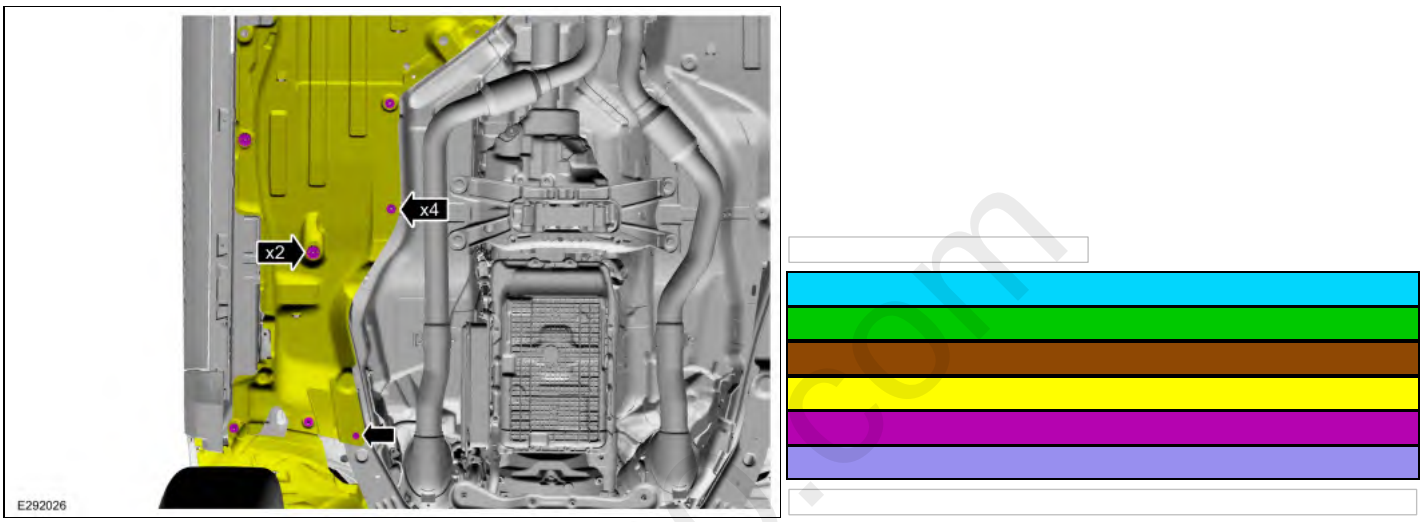
All Vehicles

1. **NOTE:** *The fuel pump driver module is located on the bottom side of the left front floor panel, above the sound insulation panel.*

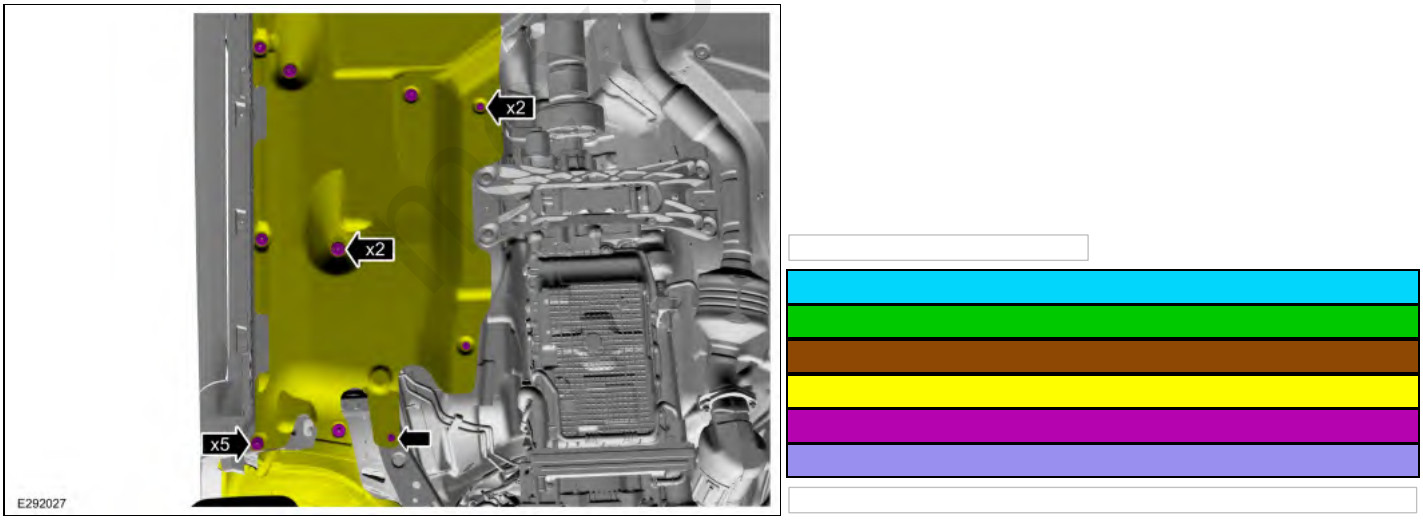
   For fuel pump driver module component location view.
   Refer to: Fuel Charging and Controls - Component Location (303-04A Fuel Charging and Controls - 2.3L EcoBoost (201kW/273PS), Description and Operation).

2. With the vehicle in NEUTRAL, position it on a hoist.
   Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).

3. If equipped, remove the fasteners and position the front of the shield down to access the fuel pump driver module.



4. If equipped, remove the fasteners and position the front of the shield down to access the fuel pump driver module.



Standard fuel pump driver module

5. Disconnect the fuel pump driver module electrical connector.