

# INSTALLATION INSTRUCTIONS

## 20-0433 FUEL RAIL

FORD COYOTE ENGINE

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Document# 19-0191

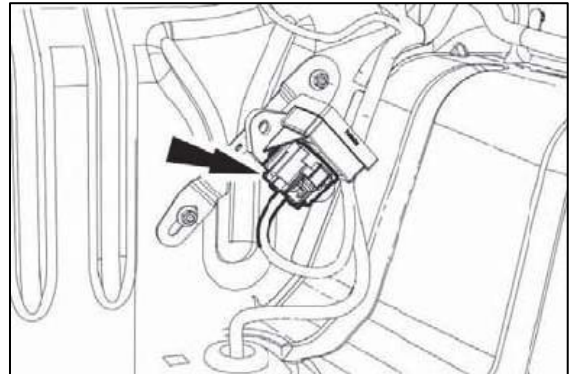
**WARNING: DO NOT EXPOSE WORK AREA TO ANY SPARKS OR FIRE. DO NOT SMOKE WHILE OPERATING ON THE FUEL SYSTEM. CLEAN UP ALL FUEL SPILLS IMMEDIATELY. WORK IN A WELL VENTILATED AREA.**

1. If accessible, refer to the factory Ford Service Manual for disassembly questions.

To relieve fuel pressure, disconnect the Fuel Pump Control Module electrical connector located in the spare tire stowage compartment (as shown). Start and idle the vehicle and allow the engine to stall. Turn the ignition OFF and remove the key.

Using an 8mm wrench, disconnect the battery's (-) negative terminal.

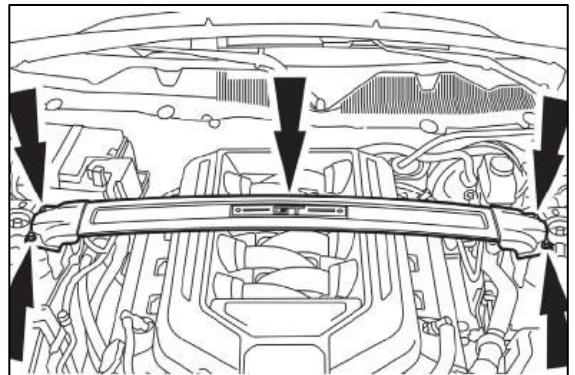
Install fender covers to protect the paint and body.



2. If equipped, remove the 4 nuts and the strut tower cross brace (shown). Reinstall the 4 nuts and torque to 35Nm. Remove the cosmetic engine cover.

Remove the air intake ducting from the throttle body and any vacuum lines connected to the upper intake manifold and position them out of the way. Check for any dirt or debris around the fuel injectors and wash it off with solvent parts cleaner and a clean shop towel.

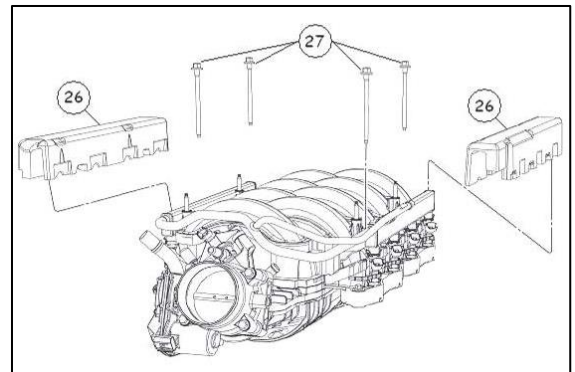
After the engine has cooled, place shop towels down and unplug the 3/8" SAE quick disconnect fuel supply hose from the LH fuel rail (and RH fuel rail for 2018+ only) by unlatching the lock. Catch any fuel that drips out.



3. Remove the fuel rail insulation (shown 26). Disconnect the 8 fuel injector electrical connectors (and fuel sensor for Shelby GT350 and 2018+ Mustang). Using a 10mm socket wrench, remove the 4 fuel rail bolts (shown 27).

To prevent fuel from draining, keep all injectors installed to the fuel rails and carefully remove the entire assembly from the vehicle.

On a work bench, carefully remove the OEM injector retaining clips. Pull each injector out. Inspect the O-rings and replace if necessary. If applicable, unscrew the OEM fuel sensor from the rail. Drain excess fuel into a safe container for disposal.



4. Clean out any dirt or debris found in the intake manifold's injector seat bores.

Find the upstream OEM feed hose connection by the brake master cylinder (on LHD vehicles) near the firewall.

Disconnect the 3/8" SAE quick disconnect fitting (2011-2014 model shown) and catch all spilled fuel.

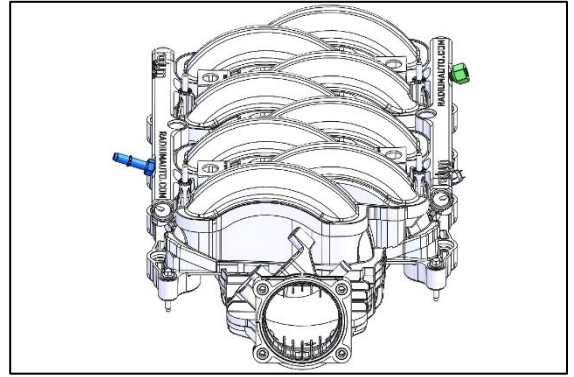
Unclip the hose from the valve cover (shown) and discard the OEM feed line.



5. Follow this step below for installing the plumbing kit.

Install the plugs in the 1/8" NPT fuel rail ports unless the engine is direct injected (install SAE male fitting shown in blue) and/or uses an OEM fuel sensor (install adapter fitting shown in green and the sensor). For proper sealing, apply Teflon paste to the threads. First, hand tighten the NPT fitting, then employ an additional 1.5 (min) to 3 (max) turns with a wrench. Threads will show even when tight.

Install the -8AN ORB plugs into the top center ports and front ports. Install the -6AN male adapter fittings into the rear ports. Apply light oil to the O-rings.



6. The Radium fuel rails are OEM replacements that are compatible with OEM Ford Coyote fuel injectors and aftermarket replacements that use 14mm upper O-rings.

Lubricate the top and bottom O-rings of each fuel injector and the injector bores with light oil. Fully insert the injectors into the Radium fuel rail bores.

Reinstall the 8 OEM fuel injector retaining clips.



7. Position and line up each fuel rail over the intake manifold. Press firmly on the fuel rail to seat the injectors' lower O-rings. Verify that the lower O-ring seal is fully inserted into the lower injector seat before proceeding.

Once everything is positioned correctly, reuse the 4 OEM bolts and torque to 7.1ftlbs (85inlbs, 9.6Nm)

Plug in each of the injector connectors (and fuel sensor if applicable).



8. NOTE: There will be extra hoses and fittings that will NOT be used in the 20-0434 plumbing kit. The proper parts will be determined by the specific vehicle.

If using the 20-0434 plumbing kit on a 2011-2014 (S197) chassis, screw the short hose with straights on both ends to the SAE quick disconnect and Y-fitting. Tighten these 2 connections in a vice. Loosely assemble the included hoses to the Y-adapter.

Shown is the correct hose routing for the 2011-2014 (S197) Mustang. Also pictured is an optional fuel pressure gauge.



9. For the 2015+ (S550) chassis, screw the 90 degree coupler to the SAE quick disconnect and Y-adapter fitting. Tighten these 2 connections in a vice. Next, loosely assemble the included hoses to the Y-adapter fitting.

Shown is the correct hose routing for the 2015+ (S550) Mustang. Also pictured are optional fuel pulse dampers in the top center ports.



10. Using a 5/62" Allen wrench, remove the green lock on the SAE fitting. Lubricate the internal O-rings and insert the SAE fitting onto the OEM SAE male connection. After engaged, reinstall the green lock and secure with the small screw.



11. After everything is reinstalled, cycle the ignition a few times (without starting engine). This allows the fuel pump to prime the system.

**CHECK FOR LEAKS!**

If no leaks are found, start the engine and check for leaks again while the engine is running. NOTE: If reusing the OEM fuel rail insulation, modification will be required.

**Installation Complete**

