

INSTALLATION INSTRUCTIONS

FORD COYOTE FUEL RAIL

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Document# 19-0191

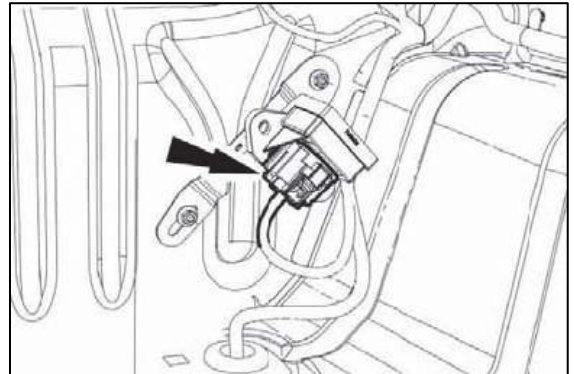
WARNING: DO NOT EXPOSE WORK AREA TO ANY SPARKS OR FIRE. DO NOT SMOKE WHILE OPERATING ON THE FUEL SYSTEM. CLEAN UP ALL FUEL SPILLS IMMEDIATELY. WORK IN A WELL VENTILATED AREA.

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.

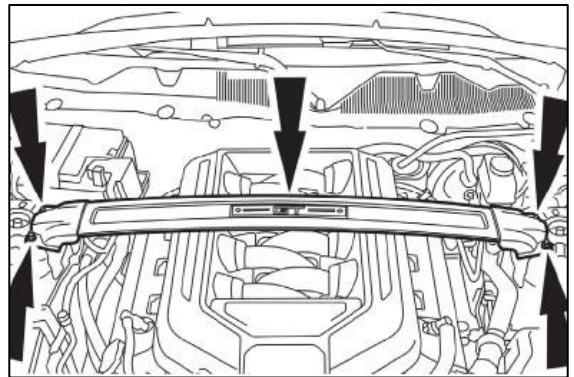
Install fender covers to protect the paint and body.



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.

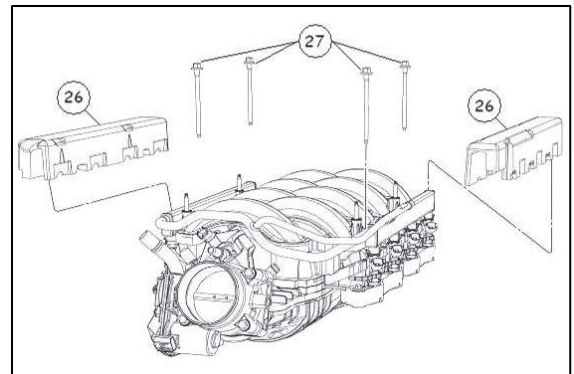
After the engine has cooled, place shop towels down and unplug the 3/8" SAE quick disconnect fuel supply hose from the LH fuel rail (and RH fuel rail for 2018+ only) by unlatching the lock. Catch any fuel that spills.



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 (11-14 S197 model shown) and catch all spilled fuel.

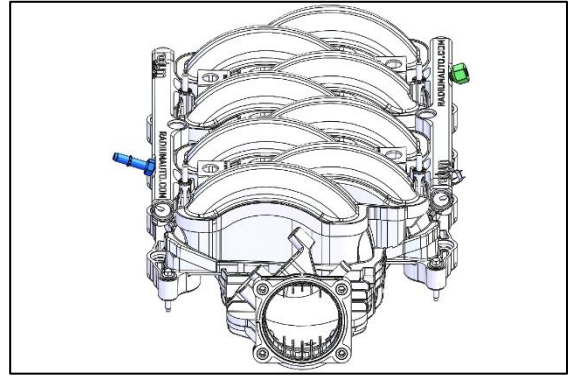
Unclip the hose from the valve cover (shown) and discard the OEM feed line.



5. Follow this step below for installing any of the Radium Engineering plumbing kits.

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 PTFE paste to the threads. First, hand tighten the NPT fitting, then employ an additional 1.5 to 3 turns with a wrench. NOTE: Threads will show even when tight.

Lubricate the O-rings on the -8AN ORB plugs and install into the top center ports and front ports.



6. For all Radium Engineering plumbing kits (excluding 20-1435), install the 8AN ORB to 6AN male (straight) fittings into the rear ports.

For the Radium Engineering 20-1435 plumbing kit, install the 8AN ORB to 6AN male (straight) fitting into the RH rear port and the 8AN ORB to 6AN male swivel banjo (90 degree) fitting to the LH rear fuel rail port, as shown.



7. 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.



8. 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).



9. 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 plumbing kit on a 11-14 (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 11-14 (S197) Mustang. Also pictured is an optional fuel pressure gauge.



10. For the 15-23 (S550) chassis, tighten the 90 degree coupler to the SAE quick disconnect in a vice using a 11/16" non marring wrench.

Next, hand tighten the Y-adaptor fitting to the 90 degree coupler. Do not tighten this connection yet.



11. Shown is the correct hose routing for the 15-23 (S550) Mustang using the previous 20-0434 plumbing kit. Also pictured are optional fuel pulse dampers in the top center ports.



12. Shown is the RH rear fuel rail port when using the 20-1435 plumbing kit. This side of the engine will use the longer PTFE hose provided in the kit. Note how the straight hose end wraps around the backside of the IMRC assembly.



13. Shown is the LH rear fuel rail port when using the 20-1435 plumbing kit. This side of the engine will use the shorter PTFE hose provided in the kit. Note how the 90 degree hose end attaches to the banjo fitting which point towards the center of the engine. This permits the necessary flexibility when connecting this short hose to the nearby OEM feed line.



14. Follow this procedure for connecting the 6AN male adapter (provided in the plumbing kits) to the SAE quick connect fuel feed line on the firewall.

Using a 5/62" Allen wrench, remove the green lock on the provided 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.



15. Shown is the tight engine cover clearance when installing the plumbing kits in a 15-23 Mustang.



16. 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

