

INSTALLATION INSTRUCTIONS

FUEL RAIL KIT

FORD COYOTE ENGINE

Customer Support: info@radiumauto.com

Document# 19-0091

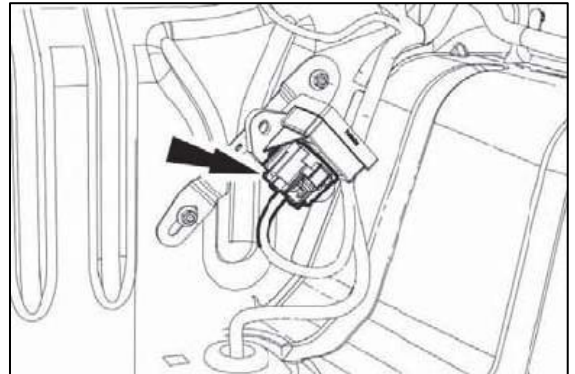
WARNING: DO NOT EXPOSE WORK AREA TO ANY SPARKS OR FIRE. DO NOT SMOKE WHILE OPERATING ON THE FUEL SYSTEM. CLEAN UP ALL FUEL SPILLS IMMEDIATELY. WORK IN A WELL VENTILATED AREA.

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.

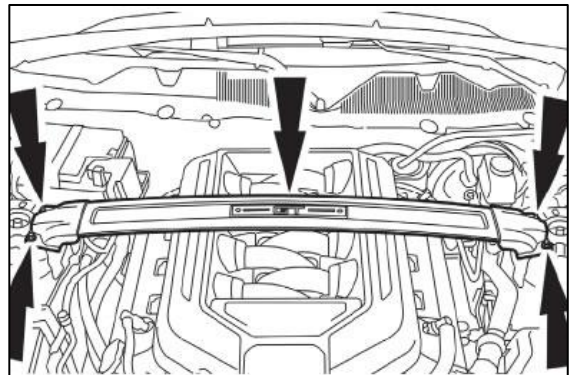
Install fender covers to protect the paint and body.



2. If equipped, remove the four nuts and the strut tower cross brace (shown). Reinstall the four 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.

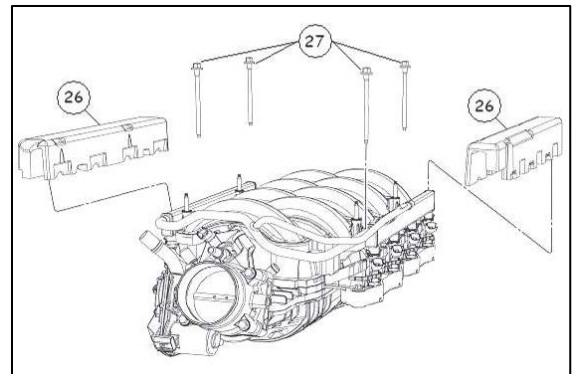
After the engine has cooled, place shop towels down and unplug the 3/8" SAE quick disconnect fuel supply hose from the LH fuel rail by unlatching the blue lock. Catch any gasoline that drips out.



3. Remove the LH and RH fuel rail insulators (shown 26). Disconnect the eight fuel injector electrical connectors. Using a 10mm socket wrench, remove and discard the four fuel rail bolts (shown 27).

To prevent fuel from draining onto the engine, keep all injectors installed to the fuel rails and carefully remove the entire assembly from the vehicle. If an injector would pop out of a rail, a large amount of fuel may spill.

On a clean bench, carefully remove the factory injector retaining clips and pull each fuel injector out of the rails. Drain the excess fuel into a safe container for disposal. Inspect the fuel injector O-rings and replace if necessary.



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

If the optional "plumbing kits" were purchased, 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. Prepare to install the necessary adapters into each port. For the plumbing kits, the -8AN ORB plugs go into the front most ports of bank 1 and 2 and the -6AN male adapter fittings go into the rear ports. Apply light oil to the O-rings.

20-0333 FUEL RAILS (PURCHASED AFTER FEB 2017): Install the -8AN ORB plugs into the top ports. Apply light oil to the O-rings.

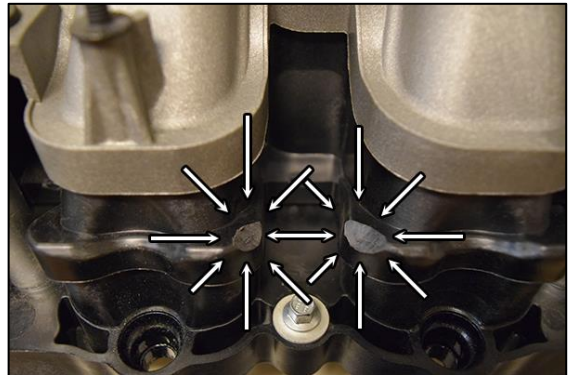
20-0173 FUEL RAILS (PURCHASED BEFORE FEB 2017): Radium 20-0174 plumbing kit is shown at right. For proper sealing, apply Teflon paste to both center port NPT threads. First, hand tighten the NPT fitting, then employ an additional 1.5 (min) to 3 (max) turns with a wrench. Note: threads will show even when tight.



6. 20-0173 FUEL RAILS (PURCHASED BEFORE FEB 2017): If the optional fuel pulse damper(s) were purchased, modification to the OEM (naturally-aspirated) intake manifold is required. Use a die grinder to make just enough clearance for the pulse damper's diaphragm, as shown. The intake manifold is over ~5/8" thick in this area.

The Radium fuel rails are OEM replacements that are compatible with the Ford Coyote fuel injectors. Aftermarket fuel injectors must 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.

20-0333 FUEL RAILS (PURCHASED AFTER FEB 2017): Reuse the 8 OEM injector clips.



7. Position and line up each fuel rail over the intake manifold than press firmly on the fuel rail to seat the injectors' lower O-rings. Once everything is positioned correctly, find the appropriate 4 bolts and torque to 7.1ftlbs (85inlbs, 9.6Nm)

20-0333 FUEL RAILS (PURCHASED AFTER FEB 2017): Reuse the OEM mounting bolts.

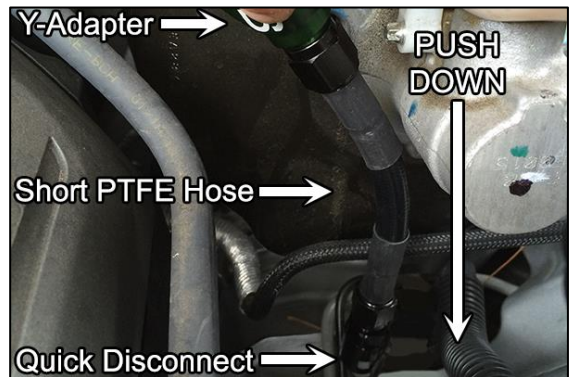
20-0173 FUEL RAILS (PURCHASED BEFORE FEB 2017): Use the included M6 bolts.

As a test, push the fuel injectors downward until they bottom out. Now inspect the injectors' upper O-rings and confirm they are still inserted into the fuel rail injector bores. Do not pressurize fuel system until the proper height is achieved.



8. For the 20-0174 and 20-0334-11 plumbing kits (shown), screw the short hose with straights on both ends to the SAE quick disconnect and Y-fitting. For the 20-0299 and 20-0334-15 plumbing kits (not shown), screw the 90deg coupler to the SAE quick disconnect and Y-fitting. Tighten these 2 connections in a vice. Next, loosely assemble the included hoses.

In the engine bay, push the female SAE quick disconnect fitting over the OEM male receiver all the way down until a positive lock is felt, as shown. With the hoses loosely attached to the Y-adapter, freely rotate them towards each fuel rail. Once a nice radius is reached for each hose, tighten all hose ends using a 11/16" wrench.



9. Here is the correct plumbing kit hose routing for the 2011-2014 (S197) Mustang.

Also pictured is the optional fuel pressure gauge for 20-0173 FUEL RAILS (PURCHASED BEFORE FEB 2017).



10. Here is the correct plumbing kit hose routing for the 2015+ (S550) Mustang.

Also pictured are the optional fuel pulse dampers for 20-0333 FUEL RAILS (PURCHASED AFTER FEB 2017).



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.

Installation complete.

