INSTALLATION INSTRUCTIONS
PORT INJECTION KIT (PIK)
FORD FOCUS 2.3L ECOBOOST

Document: 19-0155
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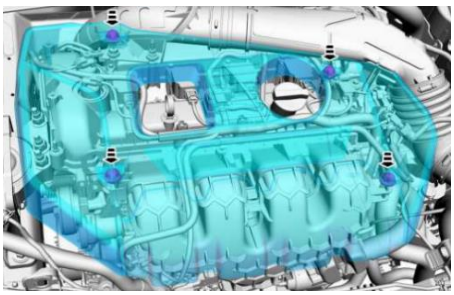
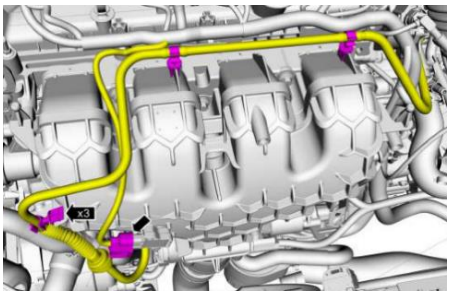
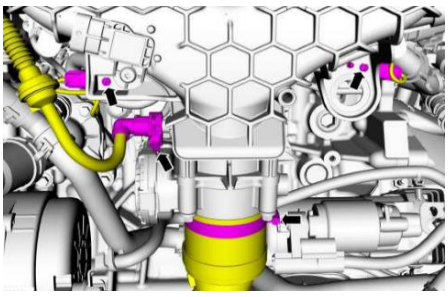
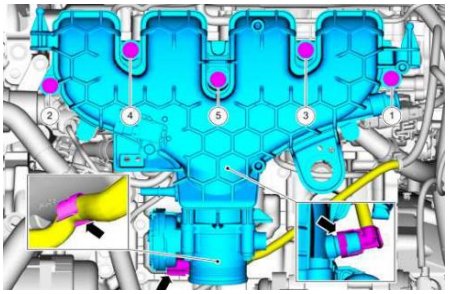
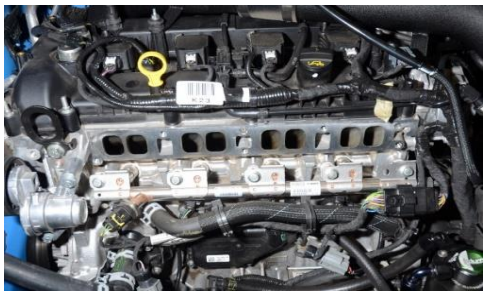
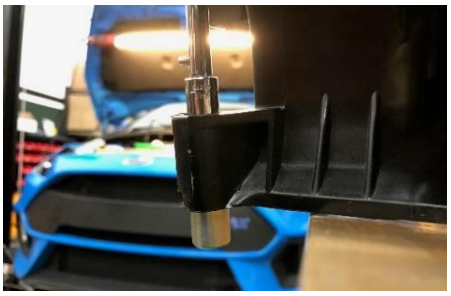
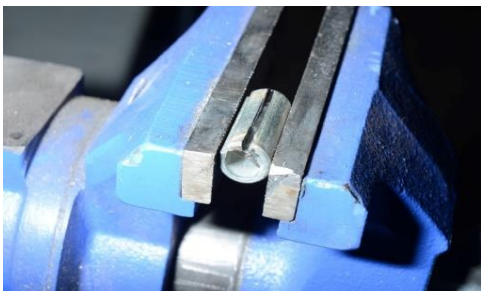
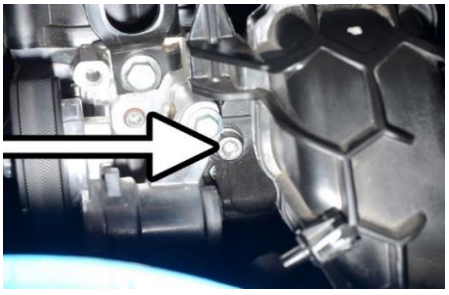
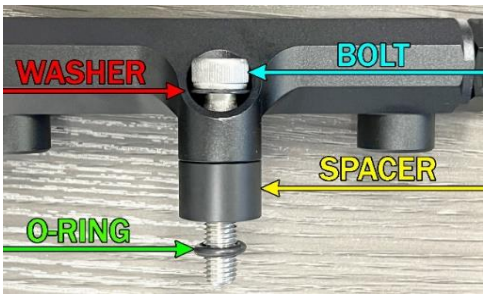
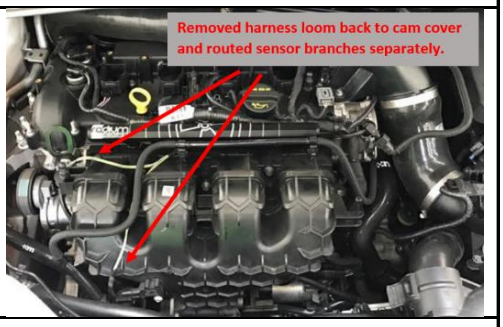
IMPORTANT NOTES:
1. This installation requires minor metal cutting. Air tools are recommended.
2. Fuel injectors are not included and must be sourced elsewhere.

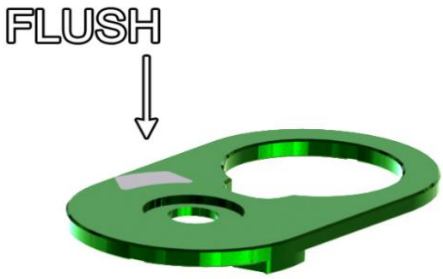
STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	10mm wrench	Prop the hood and disconnect the battery's negative terminal. For Ford Focus models, remove the engine cover by carefully pulling upwards until released. Pay close attention to where the 4 pegs from the cover interface with the rubber grommets. For the Mustang EcoBoost, the engine cover will need to be unbolted. Set the engine cover aside.	
2		Remove the intake manifold by following the steps below: First, disconnect the MAP sensor on the front of the plenum, as shown. In 3 locations, pop off the EVAP purge tube from the intake runners.	
3	Socket/ratchet	To remove the EVAP purge connector fitting, simply press the black tab inwards and pull away from the intake manifold. Unlatch the grey connector housing from the back left side of the intake manifold. It does not need to be disconnected. Loosen the compressor coupler clamp on the throttle body. This will generally be unique to the vehicle. OEM clamps require a 7mm wrench. Aftermarket clamps typically require a 7/16" wrench.	
4	10mm socket	Remove the five M8 bolts that secure the manifold to the cylinder head using a 10mm socket wrench. When pulling the intake manifold away there will be 2 more connections (described below).	

5		To disconnect the electrical plug from the throttle body, first pull the red locking tab back. Next, press the thumb tab in and pull away to release.	
6		To disconnect the PCV tube from the intake manifold simply squeeze each side of the connector fitting and pull away. Remove the intake manifold from the vehicle.	
7		With the intake manifold removed, it is a good time to inspect and clean the cylinder head near the ports. The area should be free of dirt and debris.	
8		Be sure the four gaskets are installed into the adapter plate, as shown. Make sure each one is fully seated.	
9	Anti-seize	Locate the five shorter M8 socket head screws included in the kit. Apply a small amount of anti-seize to the end of each screw.	
10	6mm Allen wrench Torque wrench	Using the 2 dowels, line up and mount the adapter plate to the cylinder head. Loosely install the five 30mm long M8 socket head bolts. Do NOT torque these 5 bolts yet! Temporarily install 5 intake manifold bolts without the intake manifold (use the 55mm long M8 socket head bolt for the RH side hole). With all 10 bolts installed, torque the 5 adapter plate bolts to 15 ft-lbs using a 6mm Allen wrench. Finally, unscrew the intake manifold bolts. NOTE: This step is necessary to prevent the intake manifold bolts from interfering with the adapter plate bolts in later steps.	

11		Locate the intake manifold and find the mounting hole identified in the picture.	
12	Deep socket	Using an appropriate diameter deep socket, push out the metal sleeve from the mounting hole identified in the previous step.	
13		Sleeve removed.	
14	Marker	Use a permanent marker to draw a line along the length of the sleeve as shown. The line should be located about 4mm from the seam of the sleeve.	
15	Metal cutting disc File	Place the metal sleeve into a vice and cut along the line. Remove any sharp edges with a file.	
16		This picture shows the cut sleeve.	

17	Grinder	Use a die grinder with an abrasive bit to shave down the intake manifold in the area around the hole identified in step 11. Grind conservatively and use this picture and the one in the next step as a guide. Clean off any residual plastic shavings from the intake manifold.	
18		Install the metal sleeve back into the mounting hole (as shown) lining up the cut out in the sleeve with the ground down portion of the plastic.	
19		Fit the intake manifold into the engine bay and mate it with the adapter plate. Check clearance near the area where the grinding was done to make sure there is no interference with the idler pulley boss that is on the engine. Holes for dowels on the intake manifold are machined into the adapter plate. Make sure both dowels fully engage. Once fitment is confirmed, pull the intake manifold off the adapter plate and connect the throttle body electrical plug and other items removed in earlier steps. Proceed to final installation of the intake manifold.	
20	10mm Socket	Install four of the five OEM bolts into the intake manifold mounting holes. Snug, but do not fully tighten the screws. Do not install a bolt into the grinded hole.	
21	Anti-seize	Locate the M8 bolt in the kit that is 55mm long. Install the included "clipped" washer onto the bolt and apply a small amount of anti-seize to the tip of the threaded end.	
22	6mm Allen 10mm Socket Torque wrench	Install the bolt from the previous step into the intake manifold hole near the idler pulley. Make sure the clipped side of the washer is facing the idler pulley boss. Snug down the bolt. Tighten all intake manifold mounting bolts, starting with the one in the middle and working outward. Torque all bolts to 15 ft-lb.	

23		Insert the insulating fuel rail spacers into the bosses on the top of the adapter plate, as shown.	
24	4mm Allen Threadlocker Light Oil	Before installing the fuel rail mounting feet, apply a medium strength threadlocker to the four included M5 socket head bolts. Also install any of the plumbing fittings and additional accessories onto the fuel rail at this time. Lubricate all associated O-rings with light oil.	
25	Light Oil	Install the injectors into the fuel rail. Make sure to lubricate all O-rings before installation. NOTE: The port injection kit is specifically designed for "34mm" injectors with 14mm upper and lower O-rings, as shown.	
26	6mm Allen wrench	Press the small end of the spacers (YELLOW) into the underside of the fuel rail mounting bosses, as shown. Place the small washers (RED) under the heads of the 2 mounting bolts (BLUE). Insert the bolts through the fuel rail mounting boss and spacers. Roll the O-ring (GREEN) up the bolt threads. NOTE: This fuel rail is different but all steps apply. Install the assembled rail to the adapter plate. Make sure all injectors fully seat into their ports.	
27		NOTES: 1. If a "rigid" aftermarket charge pipe has been installed, the hose coupler may no longer reach the 2.5" diameter throttle body. An offset coupler (such as HPS P/N: HTSOC-250-BLK) may be required. 2. Ford Focus ST models ONLY: The wire harness branch containing the fuel pressure and MAP sensor connectors will need to be rerouted. Unravel the plastic convoluted loom all the way back to the cam cover behind the fuel rail and reroute the branches separately, as shown.	
28		***The adapter plate, fuel injectors, and fuel rail installation is complete.*** *The following will outline modifications necessary to reinstall the plastic engine cover. Because the Ford Mustang EcoBoost uses a bolt-on engine cover, these next steps are* ***ONLY COMPATIBLE WITH FORD FOCUS ENGINE COVERS.*** Flip over the engine cover and remove the rubber mounts in the two forward positions. Locate the green engine cover relocation mounts provided in the kit.	

29		**Ford Focus RS Engine Cover Only** Install the OEM rubber mounts in the opposing sides of the two mounts (raised bumps are different top to bottom). NOTE: The mounts may be a different color than the green, as shown. Match the bumps in the mounts to the slots in the plastic stand-offs on the engine cover. This will make sure the mounts are oriented correctly and pointing towards the front of the vehicle. See step 34 showing how the bumps engage into the plastic standoffs.	
30		**Ford Focus ST Engine Cover Only** A slight modification to each mount is necessary. A grinder and/or a sanding tool is required. Unlike the Focus RS engine cover that has a notch used for alignment (shown above), the provided mount hardware may need to be adjusted on the Focus ST if not assembled straight in the following steps.	
31	Grinder	**Ford Focus ST Engine Cover Only** Grind down one side of each mount flush, as shown. It does not matter which side is used. When assembling in the following steps, this side will be facing towards the engine cover. The opposite side of the mount does NOT need to be ground flat.	
32	10mm wrench	Locate the two M6 flange nuts and 6mm fender washers in the kit. Capture one of the nuts in the end of a wrench, as shown. Next, slide the nut into the plastic mount with a fender washer trapped as shown.	
33	4mm Allen wrench	While holding the nut and washer in place with the wrench, install the mount and secure in place with the M6 button head screw. Make sure the nut and washer stay centered in the plastic standoff while the screw is tightened.	
34		This picture shows the completed assembly. NOTE: Inherently, there will be interference between the rubber grommet and the engine cover underneath the mount, as shown. To remedy, disassembly and cut the rubber grommet in this area until the clearance is acceptable.	

35		Repeat the process for the other standoff. The finished assembly is shown in the picture. Install the engine cover and manipulate it until all four mounting points are engaged. The cover may slightly contact the air intake tube. This can be remedied by slightly trimming the cover for clearance.	
36		Reinstall all parts in reverse order. Switch the ignition to the ON position without starting the engine. This will prime the fuel pump and pressurize the fuel system. Check for leaks and fix any that may have occurred. Start and idle the engine. Recheck for leaks. INSTALLATION COMPLETE