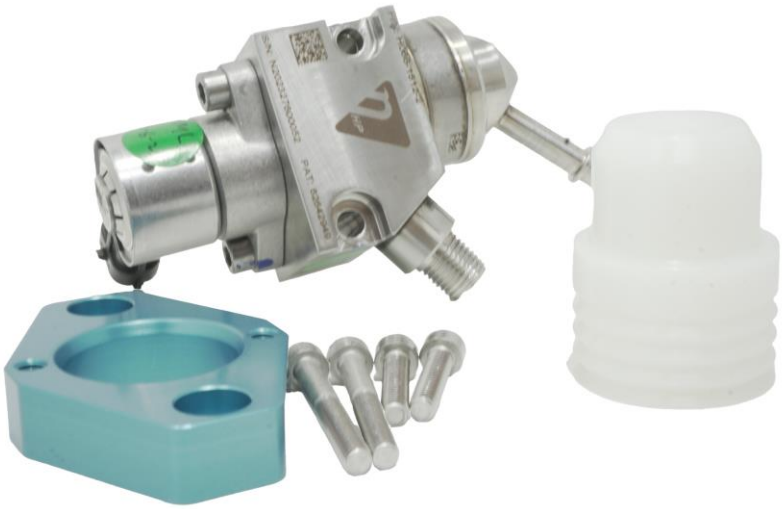
NOSTRUM
HIGH PERFORMANCE



Focus ST 2.0L EcoBoost High-Pressure Fuel Pump Installation Guide

PRODUCT PART SKU#: H086-1844

Warning! Please follow all warnings and instructions found in your vehicle service manual. The following instructions must be read and fully understood before beginning installation. Failure to follow these instructions may result in vehicle damage, personal injury, or death. If these instructions are not fully understood, do not attempt installation.

Please note that this product does require vehicle calibration. Please ensure provisions are made prior to installation. Nostrum Tuning Guides are available upon request. If you are already in touch with a tuner, please have them reach out to support@nostrumshop.com or access the Tuning Guide via the dealer portal on the Nostrum website. If you do not currently have a tuner, we will gladly connect you with someone within the Nostrum dealer network.

Required Tools:

- 7 mm socket
- 8 mm socket
- 10 mm socket
- 5 mm Allen socket adapter
- Ratchet
- Extensions of various lengths
- 10 mm open-end wrench or battery terminal wrench
- 12 mm closed-end wrench
- 17 mm open-end wrench
- 17 mm crow's-foot adapter
- Torque wrench capable of 2 to 20 Nm (30-200 in-lb) **NOTE IMPERIAL UNITS ARE IN INCH-LB.**
- Torque-angle gauge or torque wrench with torque angle capability
- Pick tools
- Hose pliers
- Measuring device – ruler or tape measure
- ECU calibration tool or calibration delivery device
- Safety glasses
- Fire extinguisher (Class B minimum)

Consumables:

- Clean, lint free rags
- Disposable rubber gloves

Optional stock Ford vehicle component part numbers:

Description	Ford Part #	Quantity
Low pressure GDI pump feed line	CV6Z-9J280-D	1
GDI pump camshaft follower (aka "bucket")	8W9Z6C287A	1
High pressure (pump out) fuel line	CJ5Z9J323B	1

H086-1844 Ford Focus ST 2.0L EcoBoost HPFP Pump Kit Parts List:

Description	Part #	Quantity
1150-250 fuel pump assembly	H066-1512	1
Pump flange	H140-1119	1
HPFP flange O-ring to cylinder head, 38x2 mm	9262K201	1
Pump to flange socket head cap screw, stainless, M6x1.0-45 mm	91292A143	2
Flange to head socket head cap screw, stainless, M6x1.0-25 mm	91292A138	2
Flange installation tool	A140-0313	1

1. If you have been driving the vehicle allow it to fully cool before starting the installation process. This is to make the underhood temperatures lower for a safer & more comfortable installation process and to allow the fuel pressure in the system to bleed down.

   Release and remove battery cover by pulling up on the front of the cover and sliding out towards the front of the vehicle.

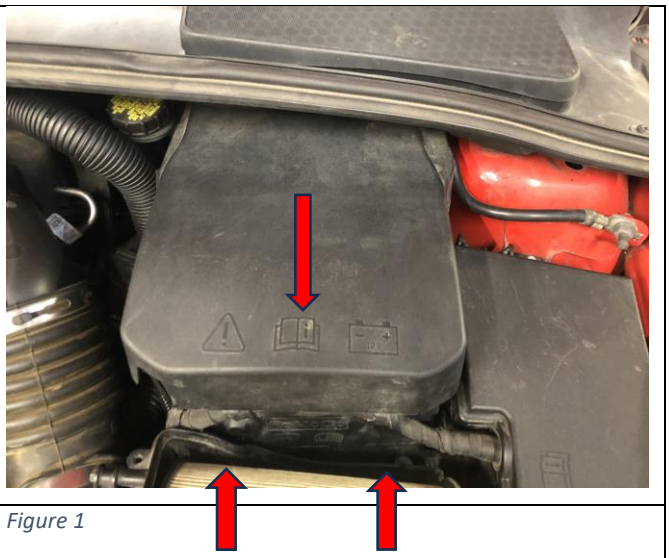


Figure 1

2. Remove the negative battery terminal from the battery using a 10 mm wrench. The negative terminal is the terminal tucked underneath the wiper cowl.

Figure 2

3. Isolate the negative battery terminal with a suitable rag or plastic bag to keep power from accidently being restored.

Figure 3

4. Remove the engine appearance cover by pulling up to release it from the mounting pedestals.

Figure 4

5. Loosen the upper hose clamp using a 7 mm socket. Loosen the lower hose clamp on the intake tubing with an 8 mm socket. Red arrows indicate the locations for these hose clamps. Remove the intake duct.

Note: These air duct clamps have a torque specification of 5 Nm (**44 in-lb**).

Figure 5

6. Once the intake duct is removed, stuff a rag into the opening that goes into the turbocharger to prevent tools or other things from going down the opening.

Figure 6

7. Remove the sound deadening foam cover from the high-pressure fuel pump. Lift the foam cover off, maneuvering it around the low pressure and high-pressure ports of the pump.	
	Figure 7
8. Disconnect the high-pressure fuel pump solenoid connector by squeezing the black connector lever and then sliding the connector off the solenoid.	
	Figure 8
9. Remove the two 10 mm bolts securing the high-pressure fuel pump crash bracket to the fuel pump housing. Remove the crash bracket. The crash bracket will not be reused with the new pump.	
	Figure 9

10. Remove the factory low pressure line by squeezing the two plastic tabs on both sides of fitting that protrude through the fitting windows on either side and pushing the fitting inward towards the pump. Use absorbent rags to catch any fuel spray while disconnecting the fuel lines. After the line is removed cap the HPFP inlet to prevent contamination.

    Safety glasses and rubber gloves are recommended.

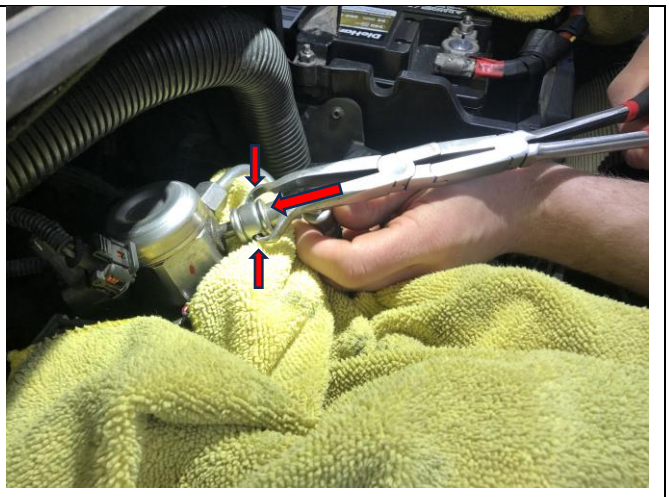


Figure 10

11. Note the Ford low pressure quick connect fittings are notorious for breaking. We recommend exercising patience and replacing the line while doing this fuel pump upgrade (Ford part # CV6Z-9J280-D).

Figure 11

12. Using a 17 mm open-end wrench remove the high-pressure fuel line compression nut at the pump. Wrap with absorbent rags to reduce and capture fuel spray.

    Safety glasses and rubber gloves are recommended.

Figure 12

13. Using an 8 mm socket loosen the upper high-pressure fuel line retaining bolt. This will allow you to pull the fuel line out of the way to remove the fuel pump in the next step.

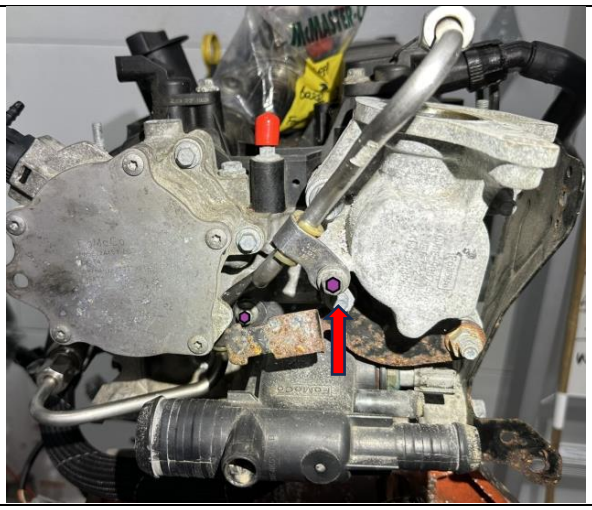


Figure 13

14. Use an 8 mm socket to remove the fasteners securing the high-pressure fuel pump. Gradually loosen the bolts, alternating between the two bolts as you loosen so that you do not side load the factory pump piston. Once the pump bolts are removed the high-pressure pump can be removed. Be sure to cap the high-pressure line and pump inlet & outlet fittings.

Figure 14

15. Now is an appropriate opportunity to inspect the cam follower (aka “bucket”). Performing this inspection is highly recommend on higher mileage vehicles. We recommend replacing the follower if flat spots or significant wear are present. Pay careful attention to the areas highlighted in blue on the right when inspecting the follower. The part number for the cam follower is Ford part #: 8W9Z6C287A.

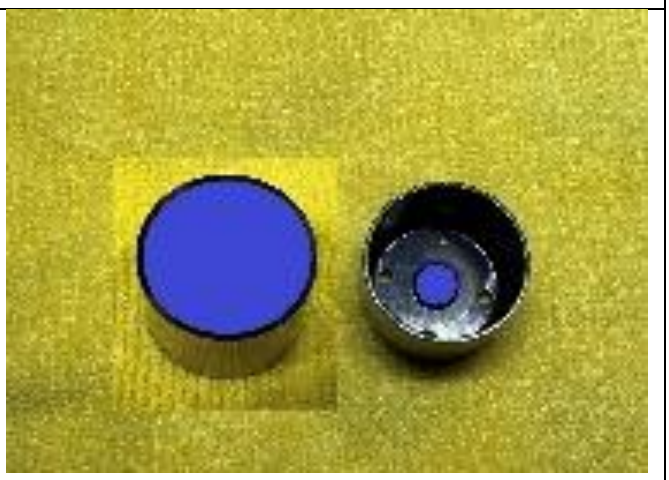


Figure 15

16. Verify that the pre-installed O-ring is in place on the provided pump flange. Then place the provided white plastic flange alignment tool into the provided flange. Place alignment tool and the flange with the O-ring side against the housing. Finger tighten the two provided M6x1-25 mm socket head cap screws (shorter fasteners). Using a 5 mm Allen socket adapter torque the fasteners to 10 Nm (**89 in-lb**). Remove the alignment tool.

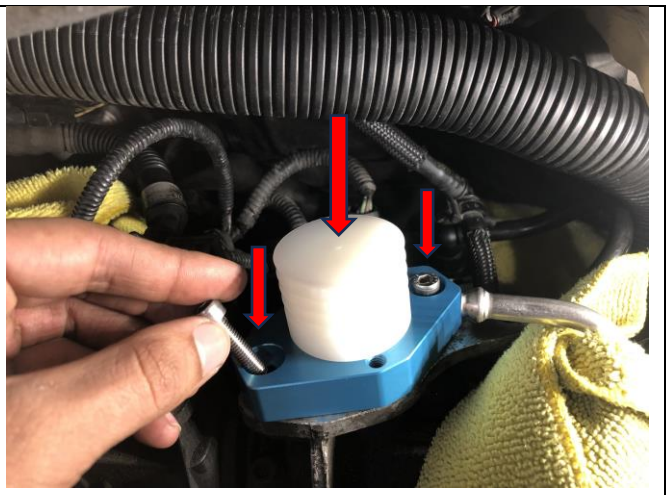


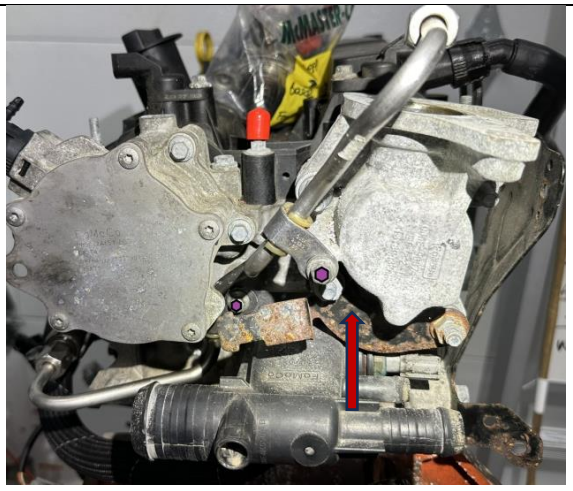
Figure 16

17. Hand tighten the upper 8 mm bolt that secures the high pressure fuel line to begin the tube bending process.

Figure 17

18. Begin bending the high-pressure fuel line with a 12 mm closed end wrench by pulling line towards the driver side of engine bay about 4 mm (0.16”) as shown.

Figure 18

19. Place the wrench towards the bottom of the factory sticker and pull up on the tube to begin bending the tube inward towards the pump.	
	Figure 19
20. The tube fitting should be about 5 mm (0.20”) higher than where it was when bending began and about 5 mm (0.20”) forward of the starting position.	
	Figure 20
21. Remove the upper tube mounting 8 mm bolt. This bolt will no longer be used after the final alignment procedure.	
	Figure 21

22. Remove the protective spring cap from the Nostrum pump. Carefully maneuver the pump into place without contacting the high-pressure fuel line. Align the rotation of the pump as shown and then hand thread the included M6x1.0-45 mm pump to flange bolts using a 5 mm Allen socket. Depending on the cam position the pump may initially sit further from the flange. Alternate tightening the bolts one turn at a time to make sure even pressure is applied and ensure pump bore or spring damage does not occur.

Figure 22

23. Once the pump is fully seated on the flange, torque the two M6x1.0-45 mm fasteners to 14 Nm (**124 in-lb**).

Figure 23

24. Begin to pull the high-pressure tube into alignment with the pump's high-pressure outlet by using the same 12 mm closed end wrench to manipulate the tube fitting into being parallel with the high-pressure outlet of the pump. It takes **time, patience and some muscle** to bend the tube into the correct position.

Figure 24

25. Once the fittings are properly lined up and as parallel as possible you can begin threading the line nut onto the pump. The nut should thread on easily and hand tighten easily. If the nut does not thread on easily recheck your fitting alignment. Do not force the nut in place – you risk damaging the pump. Once the nut is hand tight, use a torque-angle wrench and a 17 mm crow's-foot adapter to torque the nut to 15 Nm (**133 in-lb**) plus 30 degrees.

Figure 25

26. Route the pump electrical connector between the cam sensor and the fuel pump housing, then plug the connector into the Nostrum pump.

Figure 26

27. Connect the low-pressure fuel line. A firm click once pressed on should be felt and heard.

Figure 27

28. Reinstall all the parts in reverse of how they were removed. We recommend you leave the beauty cover off until you have completed the start up and leak check steps mentioned on the next page.	
	Figure 28

Hardware installation is complete.

Calibration

Do not start your vehicle, this product requires calibration. Please contact your tuner or refer to the Nostrum tuning guide (available on request) to make the necessary changes prior to starting the vehicle. Once calibration is complete, please proceed to the next step.

First Start-Up

1. Be sure to remove all installation tools and loose items from the engine compartment. Follow good, safe practices when working on your vehicle. Be sure to reassemble all parts and components according to your OE maintenance manual.

2. Key cycle the vehicle into the "Accessory On" position (do not go to Ignition position). The low-pressure fuel pump with activate and the low-pressure side of the pump will pressurize. Check the high-pressure fuel pump and the low-pressure side for leaks. If no leaks are found, proceed to Step 3.

3. Cycle the key to the ignition position and let the car attempt several start cycles. Remember that the fuel lines, pump and part of the fuel rail are filled with air, therefore this step is necessary to evacuate that air and get the system charged. If it starts, skip to Step 5. If it does not, key off the vehicle. Check the high-pressure lines to the fuel rail, to the pump and the pump itself for leaks. If no leaks are found, proceed to Step 4.

4. Key cycle one more time all the way to ignition. Engine should start-up and idle. If so, move on to Step 5. If not, repeat Steps 2-4 again.

5. Let the car idle for a few minutes. Check for leaks on the low and high-pressure portions again.

6. Installation is complete!

NOTE: a fault code may appear at the first key cycle due to the extended cranking time or the low pressure in the fuel rail, both due to the air in the fuel system.
This code should self-clear after the OEM defined quantity of key cycles.

NOTE: Please check for fuel leaks after driving the car and letting it cool for an extended period of time, fittings may loosen after the first heat cycle due to thermal expansion and contraction. Retighten fittings if needed.

For additional technical & software support please contact:

Email: support@nostrumshop.com
Phone: **734-548-8677 (during normal business hours)**

Revision	Notes	Date
0.1	In process document	3/26/2024
1.0	Production Release	3/27/2024
1.0	Added high pressure line part number. Misc other edits	3/28/2024