



N O S T R U M
HIGH PERFORMANCE



Ford Mustang 2.3EB SB+ HPFP Install Guide

PRODUCT PART SKU#: H086-1516-1

Warning! Please follow all warnings and instructions found in your vehicle owner's 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.

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Required Tools:

- 8mm socket
- 10mm socket
- 13mm socket
- 5mm Allen socket
- 17mm wrench

Consumables:

- Absorbent towels

1. Remove the retainers holding the battery cover in place. Pull the cover off to allow access to the battery.

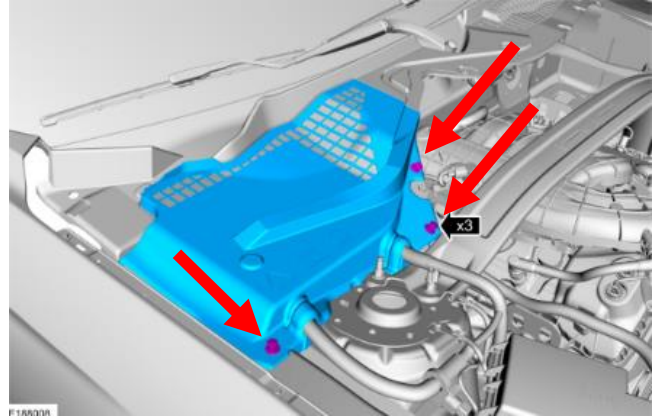


Figure 1

2. Use a 10mm socket to disconnect the negative battery terminal.



Figure 2

3. Use an 8mm and 10mm socket to remove the nuts and bolts respectively holding the engine cover in place. Remove the engine cover from the engine bay.

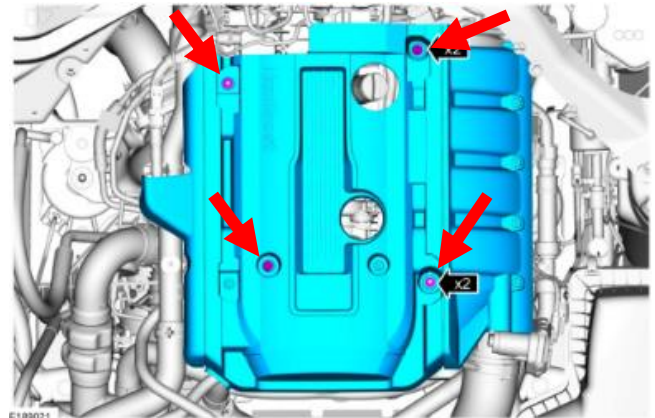


Figure 3

4. Remove the sound dampening foam around the stock fuel pump.



Figure 4

5. Remove the sound dampening foam surrounding the vacuum pump that is below the fuel pump at the back of the engine.



Figure 5

6. Remove the pump electrical connector by squeezing its tab while gently pulling the housing.



Figure 6

7. Remove the rubber low-pressure tube from the pump. The low-pressure line attaches to the pump using a quick connect fitting.

To remove this quick connect fitting, retract the blue quick connect clip first and press in the white clip firmly. The connector will slide off the low-pressure fitting with a firm pull. Disengaging the clips is critical to removing this Ford quick connect style fitting. Make sure to catch spilled fuel with absorbent towels.



Figure 7

8. Remove the heavy gauge black crash bracket surrounding the high-pressure fuel pump by removing the two bolts with a 10mm socket. The two bolts are located on the left side of the pump.

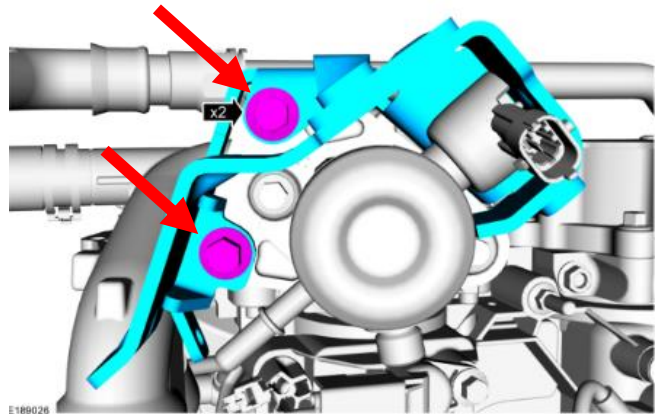


Figure 8

9. To remove the Ford factory high pressure fuel tube first locate the two brackets attaching the tube to the back of the cylinder head. To remove the brackets, you will need a 13mm and 8mm socket. Be careful to not drop the fasteners into the engine bay when removing them from the assembly. Figure 9 shows the bracket locations on the tube once removed from the vehicle.

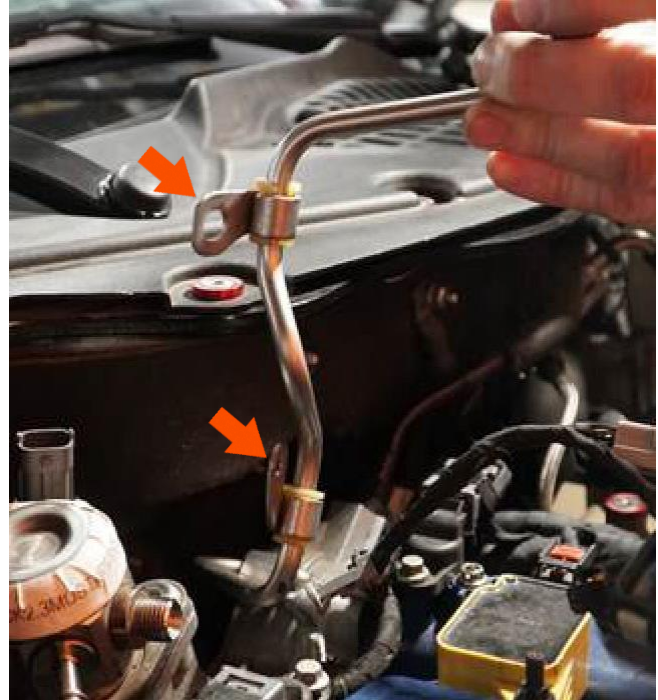


Figure 9

10. Use a 17mm wrench to loosen the compression nuts holding the fuel line to the pump and the fuel rail.

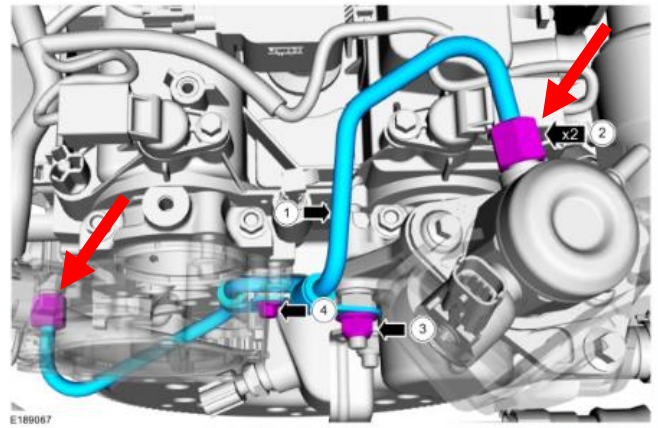


Figure 10

11. Remove the two pump bolts using a 10mm socket. To ensure the pump spring load is centered during removal, alternate between loosening each bolt 2-3 full rotations at a time. Once removed, slowly and carefully remove the high-pressure fuel pump from its housing.



Figure 11

12. Clean the flange mating surface of debris and oil. Place the flange on the pad and start threading the two M6 x 25mm bolts supplied with an 5mm Allen socket



Figure 12

13. Install the Nostrum pump flange alignment tool into the center of the flange until the stop. This will align the flange pump bore to the cylinder head pump bore. Ensure the tool is fully seated into the flange before screwing the two M6 bolts in. Torque the bolts to 14Nm using a 5mm Allen socket.



Figure 13

14. Before installing the new pump, lubricate the Nostrum pump O-ring seal with engine oil.



Figure 14

15. Seat the pump onto the flange, ensuring that it is properly aligned and firmly seated. Ensure the pump solenoid is facing vehicle Front (away from the vehicle firewall) as pictured in Figure 15. Hand start and seat the pump to the flange with the two 45mm M6 bolts supplied in the kit.



Figure 15

16. To secure the pump, alternate tightening each 45mm pump bolt by applying 2-3 rotations at a time. This will ensure the pump is installed evenly as you apply load to the pump spring. Torque both bolts to 14Nm using a 5mm Allen wrench and torque wrench. Note: a standard 3/8" drive 5mm Allen socket will NOT clear the cowl to torque the rear bolt attaching the fuel pump to the flange. A low profile 5mm Allen socket may be required.



Figure 16

17. Install the Nostrum high-pressure fuel line by inserting the fuel rail side of the tube under the passenger side of the vacuum pump housing and over to the inlet of the fuel rail.

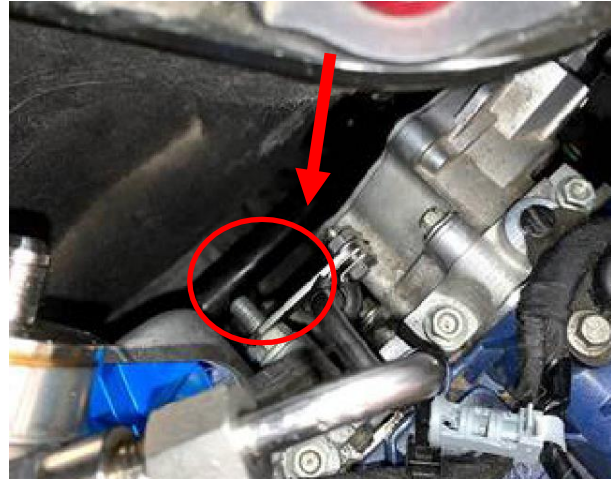


Figure 17

18. Before installing the tube nuts, position the tube bracket by seating the bracket plate onto the stud located on the back of the cylinder head. Figure 18 shows the location of this stud.



Figure 18

19. Aligning the tube: Seat the fuel line spherical fitting on the pump side first, followed by the fuel rail. Do not start the compression nuts yet. Ensure the spherical fittings are centered, straight, and in full contact with the pump fitting cone surface as shown in Figure 19.



Figure 19

20. While holding the line & spherical fitting in proper position, seated firmly in the cone, hand tighten both compression nuts (fuel rail first, pump second). Fitting alignment is essential. Do not force the compression nuts. The nuts should spin freely and without resistance. If there is resistance, ensure the globe fittings are straight and centered to the cones, and try again. It is critical that the spherical fittings are aligned with the female cone, DO NOT USE THE NUT TO "CENTER" THE FITTING.

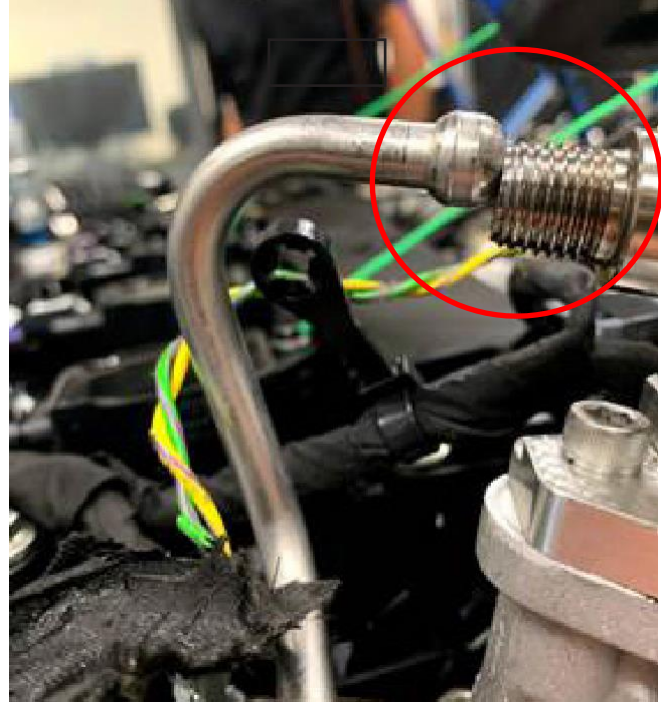


Figure 20

21. Torque both tube compression nuts to 28 Nm. Attempt to gently move the high-pressure hard line at both ends near the fittings. They should not move inside the compression nut. If they do move, remove the line, and return to Step 20.

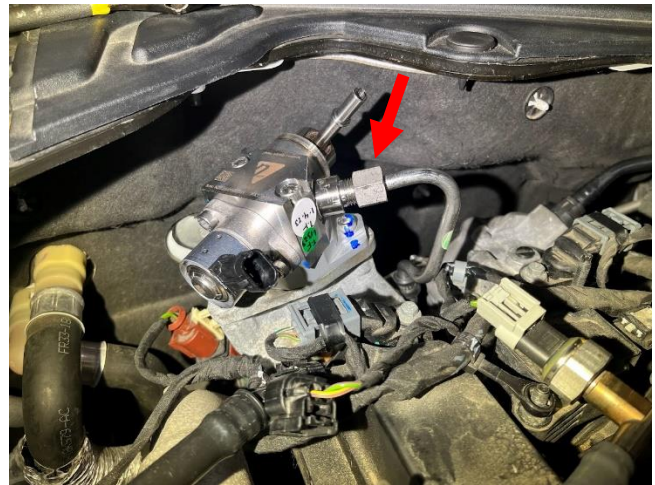


Figure 21



Figure 22

22. Secure the high-pressure tube bracket. Now that the high-pressure tube has been seated and torqued to the inlet and outlet, return to the tube bracket on the cylinder head stud. Thread the upper bracket on with the factory nut using a 13mm wrench or socket. Torque to 17Nm. Thread the bolt on the lower tube bracket using an 8mm wrench or socket. Torque to 10 Nm.

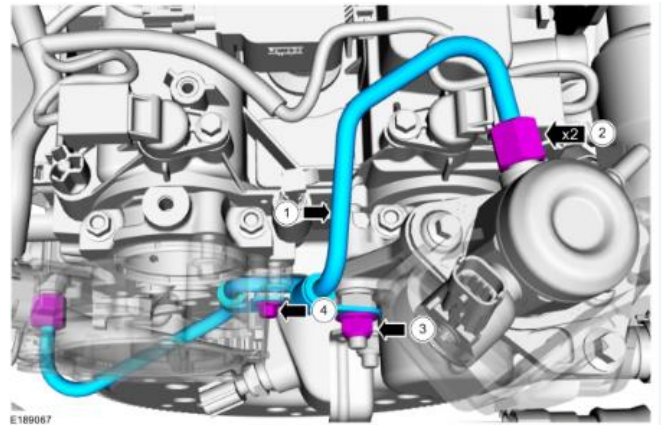


Figure 23

23. Install the Nostrum low pressure fuel line by connecting the female quick connect end to the male quick connect on the fuel pump.

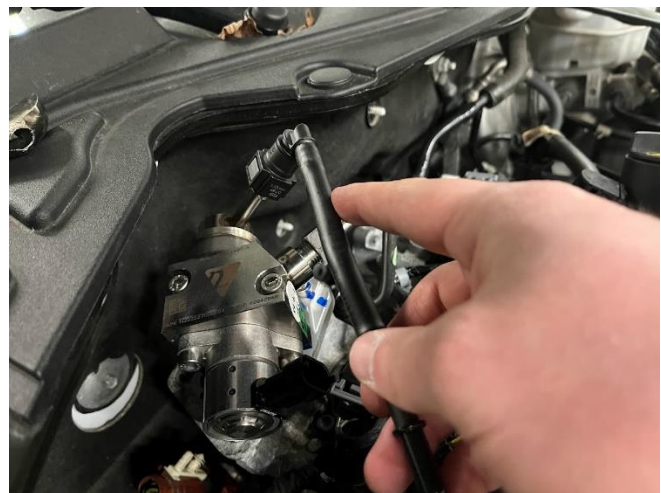


Figure 24

24. Connect the male quick connect of the Nostrum low pressure line to the female end of the stock low pressure line.



Figure 25

25. Place the blue clip back into place on the stock low pressure quick connect to secure the connector.

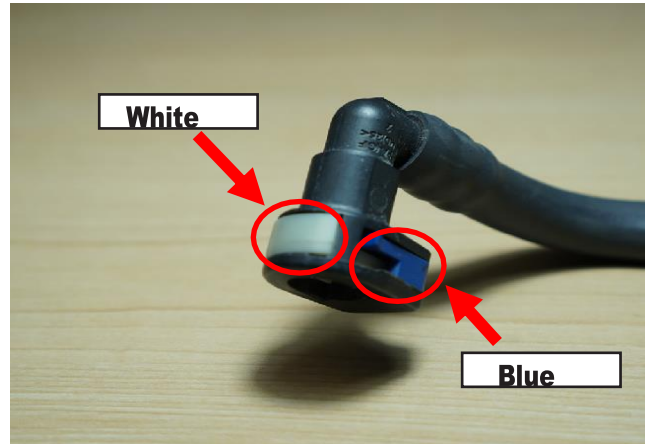


Figure 26

26. Hook the Nostrum retainment clip to the solenoid connector on the Nostrum fuel pump.
27. Reconnect the solenoid electrical connector.

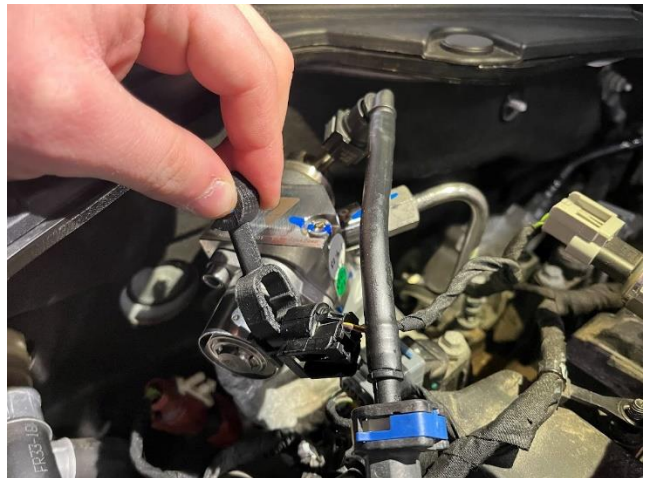


Figure 27

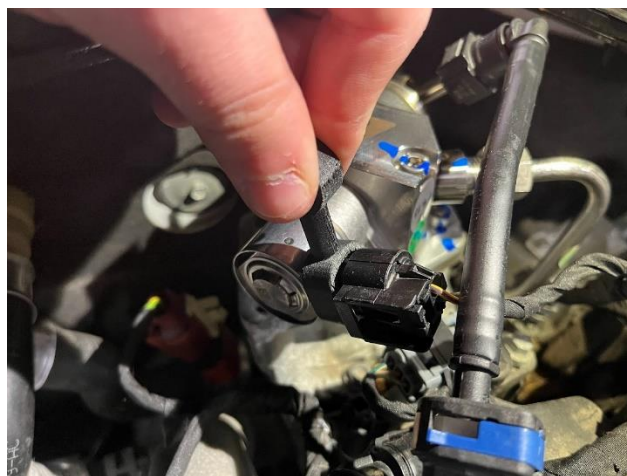


Figure 28

28. Pull the 2 low pressure lines over so that the Nostrum line can be clipped into the retainment clip.



Figure 29

29. Once the low-pressure lines have been installed, reinstallation of all remaining components can begin. Follow the steps of disassembly listed above in reverse to re-install components. Start with step 3. Follow all torque specs that are included in each step where applicable. If torque spec is not included in a step where it seems applicable assume snug fit with a wrench or socket wrench.

Hardware installation is complete.

Calibration

Do not start your vehicle, this product requires calibration. Please refer to the Nostrum supplied tuning guide 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 will 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 ok, proceed to step 3.
3. Key cycle to ignition 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, OK. 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 OK, proceed to step 4.
4. Key cycle one more time all the way to ignition. Engine should start-up and idle. If not, proceed with steps 2-4 again.
5. Let the car idle for a few minutes. Check for leaks on low and high-pressure portions again.
6. Installation is complete!

NOTE: a fault code may appear at the first key cycle due to the long ignition 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.

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For additional technical & software support please contact:

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Revision	Notes	Date
Rev 1	Prototype Release	2/1/23
Rev 2	Added Calibration Details	2/16/23