June 5, 2024

Technical Service Bulletin – 07

Mustang Dark Horse R Engine Calibration

Issue: Some Mustang Dark Horse R's have experienced misfires on track. A revised calibration has been released (2024DarkHorseR v4) to provide misfire monitor robustness at high engine speed. Additionally, the engine speed limit has been increased from 7350 rpm to 7500 rpm.

Action:

- Follow the procedure to update your PCM calibration
- Follow the procedure to relearn the crank misfire profile

Procedure: Follow the flashing procedure from your Owner's Manual

Install ProCal Software on Computer
- Navigate your browser to https://performanceparts.ford.com/download/ and click on "ProCal 4 Installer Download (.zip)"
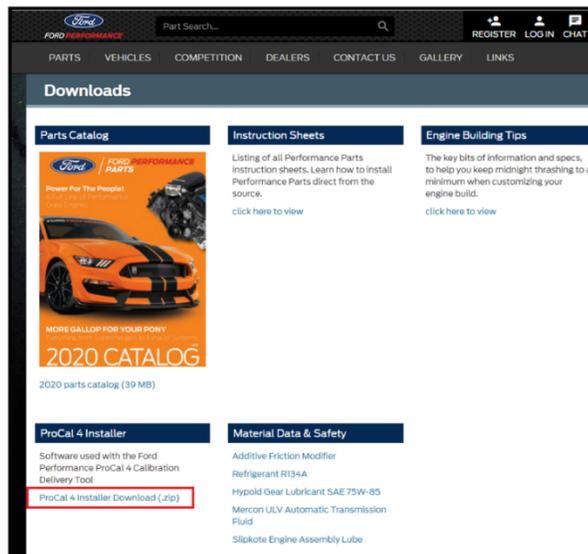
- Extract the files to your computer in a memorable location and run the "setup" file. Follow the prompts to install ProCal.

Updating ProCal Firmware

- Connect the ProCal tool with the USB cable provided and plug it into the computer.
- Open ProCal with the desktop icon (or from the start menu).

> **Attention:** Some company networks may have security set to block access to downloads. Please contact your network's IT administrator if you have problems connecting.

- If database version updates are available, select "Yes."
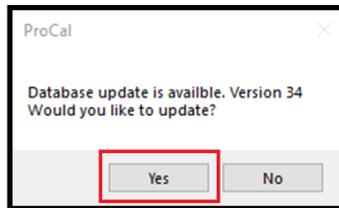
- If PID updates are available, select "Yes."
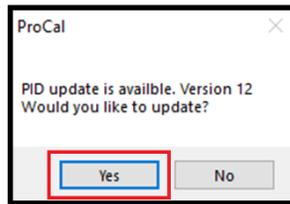
- When prompted Disconnect the USB cable and plug it back in to power cycle the ProCal. Press "O.K."
  - Note: The ProCal tool may take a minute to load.

- The ProCal Device Information should populate. The software version will have to be updated to at least a 2.204 version to flash the calibration to the Dark Horse PCM. If this is not a high enough version press the "Update" button to update the firmware. Follow the prompts to update.
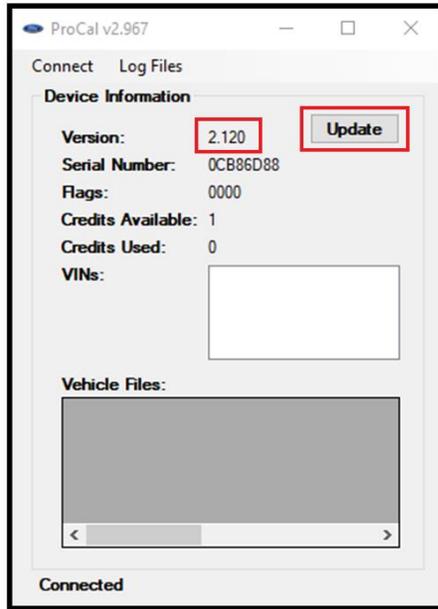
Flashing Calibration into the Vehicle

Note: The Dark Horse R requires a "Force Flash" be done when updating the PCM calibration. This does require a special procedure and unlock code.

- Plug the ProCal into the OBDII port of the vehicle.

- After the PROCAL loads, press and hold "ABOUT DEVICE" for 5 seconds.

- Enter the code "1, 2, 3, 4, 5, 6, 7, 0, 0, 0"

- Press "PROGRAMMING."

- Press and hold "CONTINUE" for 5 seconds.

- Press "CONTINUE."

- Select the file to flash. [2024DarkHorseR v4] The picture is for illustrative purposes.
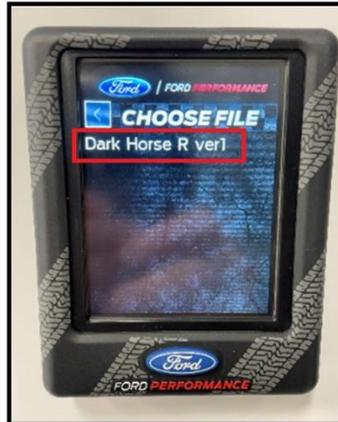
- When prompted, turn the ignition switch off, the flash is complete.

Procedure: Follow the procedure to relearn the crank misfire profile

Learning the Misfire Profile

- If any of the following components have been replaced it is required that the following procedure be performed so that the crank position is calibrated, and the misfire monitor can properly function:
    - Powertrain Control Module (PCM)
    - Crank Position Sensor
    - Engine
    - Transmission (replaced or re-installed)
    - Clutch (replaced or re-installed)
    - Flywheel (replaced or re-installed)

Step 1: Confirm the ProCal tool has been Updated.

- Plug the ProCal tool into the diagnostic port of the vehicle.
- Start the engine.
- Select "SERVICE FUNCTIONS"
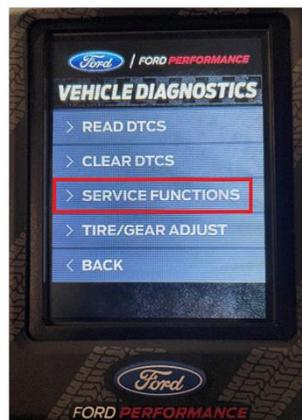
- Select "DIAGNOSTICS & TOOLS"

- Select "Crank Relearn"
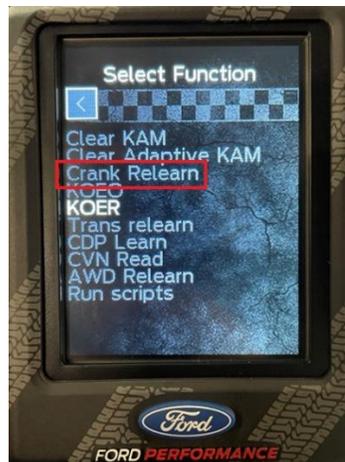
- Follow the prompts. NOTE: The engine will need to be warm.
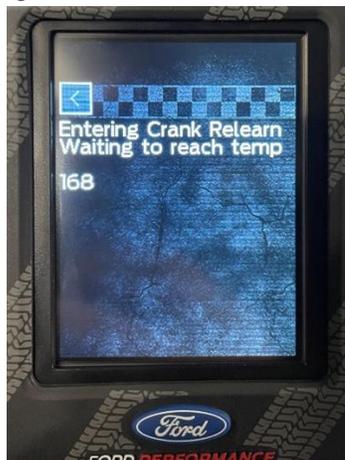
- Raise the engine RPM with the accelerator pedal and fully release the pedal quickly.
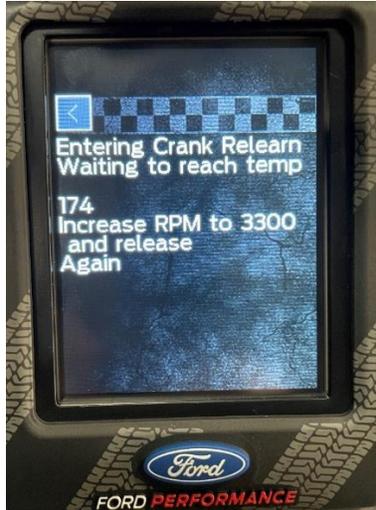
- The ProCal tool will report when the procedure is complete.