



TECHNICAL SERVICE BULLETIN

Misfire With DTCs P0301, P0302, P0303, And/Or P0304 Stored In The PCM

24-2384

20 November
2024

Model:

Ford 2023-2025 Escape	Engine: 1.5L EcoBoost Engine: 2.0L EcoBoost
2025 Explorer	Engine: 2.3L EcoBoost
2024 Mustang	Engine: 2.3L EcoBoost
Lincoln 2023-2025 Corsair	Engine: 2.0L EcoBoost
2024-2025 Nautilus	Engine: 2.0L EcoBoost Engine: 2.0L EcoBoost Hybrid

Markets: North American markets only

Issue: Some 2023-2025 Escape/Corsair vehicles equipped with a 1.5L or 2.0L EcoBoost engine, 2024 Mustang vehicles equipped with a 2.3L EcoBoost engine, 2024-2025 Nautilus, and 2025 Explorer vehicles equipped with a 2.3L EcoBoost engine may exhibit an engine misfire condition with DTCs P0301, P0302, P0303 and/or P0304 set in the PCM. To correct this condition, follow the Service Procedure to diagnose the vehicle.

Action: Follow the Service Procedure to correct the condition on vehicles that meet all of the following criteria:

- One of the following vehicles:
 - 2023-2025 Escape/Corsair
 - 2024 Mustang
 - 2024-2025 Nautilus
 - 2025 Explorer
- One of the following engines:
 - 1.5L EcoBoost
 - 2.0L EcoBoost
 - 2.0L EcoBoost Hybrid
 - 2.3L EcoBoost
- Exhibits an engine misfire condition with any of the following DTCs stored in the PCM: P0301, P0302, P0303 and/or P0304

Warranty Status: Information Only.

Repair/Claim Coding

Causal Part:	IN
Condition Code:	-1

Service Procedure

NOTE: This article is for information only. Determine the causal part number and use available labor times in the SLTS Manual or claim M-time in accordance with the Warranty and Policy Manual. Causal part number IN in this article refers to the information only status and is not able to be claimed.

1. Remove and inspect the condition of all spark plugs. Refer to the WSM, Section 303-07. Are any spark plugs damaged?

(1). Yes - proceed to Step 2.

- (2). No - this article does not apply, replacement of the spark plugs is not necessary, proceed with normal diagnostics found in the WSM.
2. Inspect the 12v battery positive and negative terminals for a loose condition, refer to WSM, Section 414-01 and repair as necessary.
 3. Inspect all PCM ground circuitry for loose connections and/or high resistance and repair as necessary.
 4. Use a borescope to inspect the condition of the affected pistons and cylinder walls. Refer to Figures 1-3 for examples of normal cylinder wall wear and Figures 4-5 for examples of damaged cylinder walls. Additional examples of engine wear can be found in the Engine Failure Analysis GSB > Cylinder Wall and Piston Skirt Inspection. Do the pistons and/or cylinder walls appear to be damaged?

Figure 1 - Showing normal cylinder wall wear



E336316

Figure 2 - Showing normal cylinder wall wear



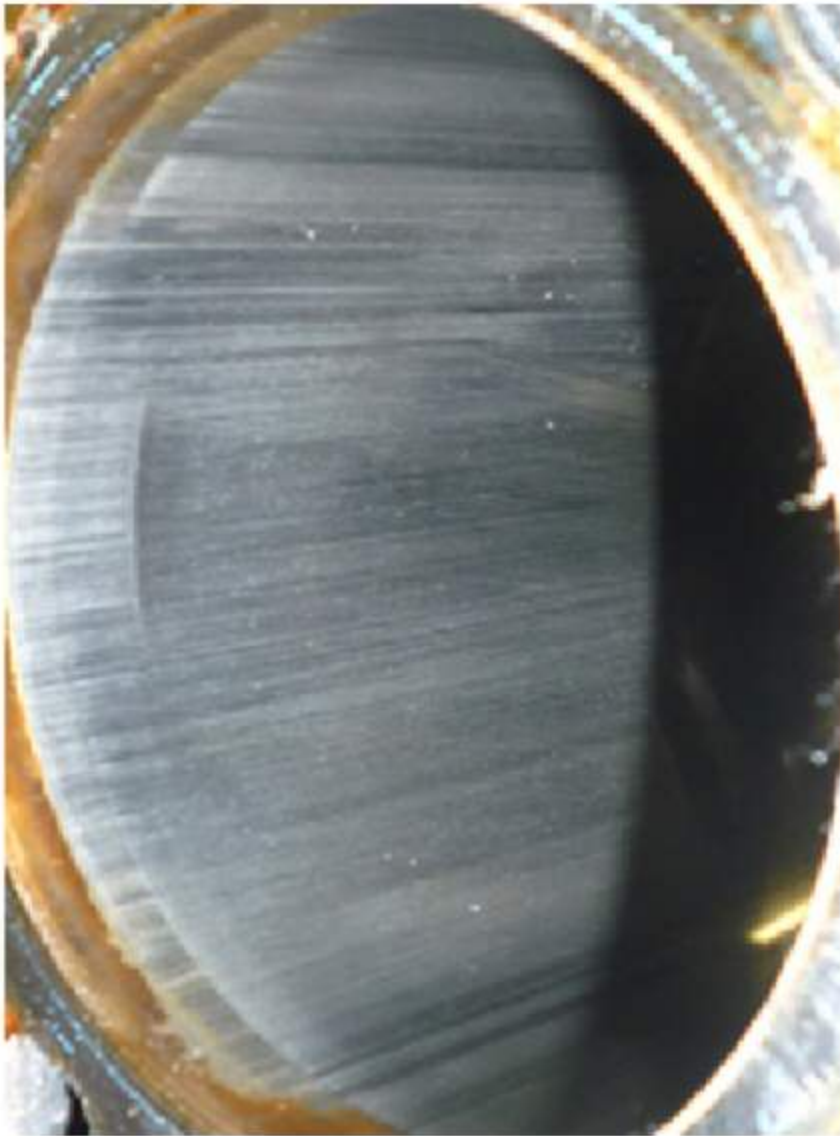
E336317

Figure 3 - Showing normal cylinder wall wear



E336318

Figure 4 - Showing a damaged cylinder wall



E336475

Figure 5 - Showing a damaged cylinder wall



E336477

- (1). Yes - remove the cylinder head to perform a more detailed inspection of the suspect damage. Refer to the Engine Failure Analysis [GSB](#) > Cylinder Wall and Piston Skirt Inspection and repair as necessary. For cylinder head removal, refer to the [WSM](#), Section 303-01.
 - (2). No - perform a compression test and cylinder leakage test following [WSM](#), Section 303-00 and repair as necessary.
5. Replace all damaged spark plugs. Do not discard the damaged spark plugs so Ford can retrieve them following the warranty parts return process.
 6. Submit a [GCR](#) and include photos of damaged components, images from the borescope analysis and anything else of interest that was found during the repair. These images will help improve engine quality for future model vehicles.

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.