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Coding Information

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Title: Diagnosing SPN 3055 FMI 15 - FRP Below Minimum with Maximum Command

Applies To: MaxxForce 11 / 13 Engine

DESCRIPTION

This article provides the procedure for: Diagnosing SPN 3055 FMI 15 - FRP Below Minimum with Maximum Command

TRIAGE

- Check calibration status by checking vehicle calibration scorecard and update if necessary.
 1. Record active or inactive codes before a calibration update is performed.
- Check vehicle history.
- Check for any open campaigns.
- Customer Questionnaire:
 1. Can you explain when the vehicle experiences the problem? For instance, is it at idle, under load or is there anything unique about the circumstances?
 2. Did any lights such as the "check engine" light show up on the dash? Is the code active?
 3. Did the problem just start or has it been getting worse over time?
 4. Has any work been done recently to the engine?
 5. Has the vehicle been in for the same problem before?
 6. If we rode with you, how would you duplicate the problem?

POSSIBLE CAUSES

- Defective Fuel Rail Pressure (FRP) Sensor
- Fuel Delivery Pressure (FDP) is out of specification
- Aerated fuel delivery
- Restricted fuel supply line
- Internal leak in high-pressure fuel system
- Defective FRP relief valve
- Defective high-pressure fuel pump

DIAGNOSTIC PROCEDURES

1. Check signal return voltage of the FRP (fuel rail pressure) sensor by performing the following procedure:
 - A. Start engine.
 - B. Turn the key off and leave the key in the OFF position for 1 minute
 - This action permits the ECM to perform its housekeeping which includes blank shot injections to relieve FRP in an effort to get the FRP as close to 0 psi as possible. It is possible to see up to 650 psi FRP remain after the 1 minute key off action.
 - C. Use ServiceMaxx KOEO Continuous Monitor Test to check FRP sensor voltage (FRP: S_FRP volts)
 - FRP should be equal or less than 650 psi
 - (FRP: S_FRP volts) should be less than .60V
2. If sensor voltage is in specification, go to Step 4. Sensor voltage is referenced in Appendix A in Diagnostic Manual [EGES 470](#).

NOTE:

FRP sensor voltage referenced in the manual is measured at 0 FRP. 0 FRP may not be realized upon each engine shut down.

3. If sensor voltage is not within specification, diagnose per Diagnostic Manual [EGES 470](#) (Electronic Control Systems Diagnostics)

- Following repair, go to Step 6.

4. Perform visual inspection of fuel level, fuel quality and primary fuel filter.

- If concern is discovered and resolved, go to Step 6.
- If concern is not discovered or resolved, go to Step 5.

5. Continue diagnosing the concern using the Fuel Delivery Pressure (FDP) Test located in the Special Test Procedures section under Low-pressure Fuel System in Performance Diagnostics form [EGED-530](#).

If FDP is below specification, continue diagnostics or repairs as directed by the performance diagnostics form using ServiceMaxx and other special tools as referenced in the form.

- If FDP is within specification perform:
 - Fuel Aeration Test as directed by the performance diagnostics form.
 - Fuel Restriction Test if directed by the performance diagnostics form.
 - If concern is discovered and resolved, go to Step 6.
- If no concerns are identified perform:
 - Fuel Injector Return / Fuel Rail Relief Return Flow Test as directed by the performance diagnostics form.
 - If concern is discovered and resolved go to step 6.
- If no concerns are identified perform:
 - Fuel Pump replacement.
 - Following fuel pump replacement, go to Step 6.

6. Complete all open AFCs.

7. Perform the following:

- Clear DTCs
- Test Drive Vehicle (Vehicle must reach normal operating temperature)
- Visually inspect all repairs
- Check for DTCs and repair as necessary

WARRANTY

Repair Operation and Modified Performance Diagnostics SRT Operations:

NOTE:

Claim only those diagnostic or repair SRTs that are required.

Hours	ProStar	TranStar	WorkStar	Description
0.2	R12-2149U	Q12-2149U	N12-2149U	Fuel Delivery Pressure Test
0.3	R12-2150U	Q12-2150U	N12-2150U	Fuel Dead Head Test
0.5	R12-2151U	Q12-2151U	N12-2151U	Aeration Test
0.3	R12-2152U	Q12-2152U	N12-2152U	Restriction Test (Test Point #1, and #2)
0.4	R12-2152U-20	Q12-2152U-20	N12-2152U-20	Restriction Test (Test Point #1, and #2)
0.6	R12-2152U-21	Q12-2152U-21	N12-2152U-21	Restriction Test (Test Point #1, #2, and #3)
2.2	R12-2155U	Q12-2155U	N12-2155U	Fuel Rail Pressure Leak Isolation Test
0.3	R12-2140U	Q12-2140U	N12-2140U	Step 2 Visual Inspection
0.3	R12-2102L	Q12-2102L	N12-2102L	FRP checks
4	R12-7454U	Q12-7454U	N12-7454U	Replace Fuel Pump

WARRANTY CODING

Coding is dependent on the findings during the Performance diagnostic steps.

Links Related to SPN 3055 FMI 15 - FRP Below Minimum with Maximum Command: [IK1200538](#) - 2010 MaxxForce 11 and 13 Fuel System DTC

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