



Fuel and Diesel Exhaust Fluid (DEF) Refill Feature Functionally Test

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. The purpose of this procedure is to test the functionality of the Fuel and Diesel Exhaust Fluid (DEF) Refill Feature, as captured in CG4939. This test will verify the end to end functionality of the Feature outlined CG4568. Users of this procedure must ensure that all elements of the Feature applicable to their application are comprehended in CG4939.

1.2 Applicability. This procedure is applicable to vehicles that incorporate the Fuel and DEF Refill Feature.

1.3 Remarks. This is a vehicle level procedure used for development and/or validation purposes. For vehicles that need infrequent refueling due to the ability to run on alternative energy sources for prolonged periods, GMW16499 will be leveraged to verify Feature functionality.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW16499

2.3 Additional References.

CG4939 Fuel and DEF Refill Feature Functionality Test Plan External Supplement to GMW17800

CG4568 Fuel/DEF Refill Feature Technical Specification

3 Resources

3.1 Facilities. Conduct testing at a facility that can dispense the Fuel or DEF needed for the Feature.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Per CG4939, the Feature variant under test may require the following:

- Serial data equipment for viewing and logging General Motors Local Area Network (GMLAN) signals.
- Parameter Identifier (PID) data.
- Internal software variables.

Note: Verify that the measurement and logging is able to simultaneously show and log the data and signals to be monitored (e.g., using Vehicle Spy software).

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3.3 Test Vehicle/Test Piece. Test vehicle built from the latest build phase with the latest released production intent parts. Final validation must be performed on a vehicle with production-level hardware and software for all pertinent controllers and subsystems.

3.4 Test Time.

Calendar time: ¼ day per sequence

Test time: 2 h per sequence

Coordination time: 3 h

3.5 Test Required Information. Ensure that files containing controller software variable names and memory addresses (Assessing to Learn (A2L) files) and files containing diagnostic data definition (Open Data Exchange (ODX) files) for PIDs are available for the specific software version for any controllers being monitored.

3.6 Personnel/Skills. Test personnel must be familiar with GMLAN signals, PIDs, and software variables and be able to monitor them with a computer and appropriate monitoring test software in order to verify correct system operation.

4 Procedure

4.1 Preparation. Ensure that there are no Diagnostic Trouble Codes (DTC) logged in the vehicle. Test conditions are defined in the tabs of CG4939 based on vehicle/system state.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions. See "Test Summary" tab in CG4939. Complete all tests for the refill feature variant under test as detailed in CG4939.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. Results that are noncompliant with requirements, see "Result" columns in CG4939, shall be entered in the Electrical and Software Issue Management System (ESIMS) or in the Problem Resolution Tracking System (PRTS), as applicable.

5.3 Test Documentation. Complete the test steps given in CG4939. Other documentation (e.g., screen shots, serial data logs) may be maintained as needed for reference purposes.

6 Safety

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

7 Notes

7.1 Glossary.

A2L: Association for Standardization of Automation and Measuring Systems (ASAM) format file containing controller software variable names and memory addresses.

ODX: ASAM format file containing diagnostic data definitions.

7.2 Acronyms, Abbreviations, and Symbols.

ASAM Association for Standardization of Automation and Measuring Systems

A2L Assessing to Learn

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