

## 358.2 SPN 4364/FMI 17 - GHG17

### SCR NOx Conversion Efficiency

SPN 4364/FMI 17	
Description	This Code Sets When the Aftertreatment Control Module (ACM) Detects Poor Selective Catalyst Reduction (SCR) NOx Conversion Efficiency
Monitored Parameter	SCR Inlet NOx Sensor and SCR Outlet NOx Sensor
Typical Enabling Conditions	Diesel Exhaust Fluid (DEF) Dosing Enabled, 1000 to 2100 rpm, 15 to 100% Load
Monitor Sequence	None
Execution Frequency	Continuous When Enabling Conditions Met
Typical Duration	30 Minutes
Dash Lamps	MIL
Engine Reaction	Derate
Verification	Use DiagnosticLink to perform a parked regeneration followed by the SCR efficiency test. Recheck for active fault codes .

Check as follows:

1. Connect DiagnosticLink .
2. Start the ignition (key ON, engine OFF).
3. Check for multiple fault codes. Are there fault codes for any of the following components:
  - Intake Throttle Valve (ITV)
  - Intake Manifold Pressure (IMP) sensor
  - Intake Air Temperature (IAT) Sensor
  - Turbocharger
  - Exhaust Gas Recirculation (EGR) system
  - Fuel system
  - NOx sensors
  - Aftertreatment temperature sensors
  - Aftertreatment pressure sensors
  - 3.a Yes; diagnose the other fault codes.
  - 3.b No; [Go to step 4.](#)
4. Was another emission component-related fault code repaired prior to this step?
  - 4.a Yes; perform the repair verification procedure. If fault code SPN 4364/FMI 17 becomes active, [Go to step 5.](#)
  - 4.b No; [Go to step 5.](#)
5. Turn ignition OFF.
6. Use DEF test strip A0005850202 to check for diesel fuel or oil contamination. [Refer to section "Checking Diesel Exhaust Fluid Quality"](#) . Do the test strips indicate that the DEF is contaminated?
  - 6.a Yes; the DEF system components will need to be replaced. [Refer to section "Fuel in Diesel Exhaust Fluid"](#) for the list of components that need replacing.
  - 6.b No; [Go to step 7.](#)
7. Using the refractometer from DEF Test Kit W060589001900, measure the DEF urea percentage. [Refer to section "Checking Diesel Exhaust Fluid Quality"](#) . Is the DEF urea concentration between 31 and 34 percent?
  - 7.a Yes; [Go to step 8.](#)

- 7.b No; drain and flush the DEF tank and the DEF system with distilled water. Refill the DEF tank with new DEF and perform the repair verification.
- 8. Inspect the area around the DEF dosing unit gasket for DEF crystallization. Is there any DEF crystallization build-up present?
  - 8.a Yes; The presence of DEF build up indicates that the gasket between the DEF doser and the aftertreatment system is leaking and not the DEF dosing unit. The gasket will need to be replaced later in this procedure.
  - 8.b No; [Go to step 9.](#)


- 9. Perform the DEF quantity test. [Refer to section "Diesel Exhaust Fluid Quantity Test - GHG17"](#) . Is the amount of DEF dispensed between 108 and 132 mL (3.7 and 4.5 oz.)?
  - 9.a Yes; reinstall the DEF dosing unit. Use a new gasket and bolts, as they are one-time use. [Refer to section "Installation of the Diesel Exhaust Fluid Dosing Unit "](#) and [Go to step 10.](#)
  - 9.b No; replace the DEF dosing unit. Use a new gasket and bolts, as they are one-time use. [Refer to section "Installation of the Diesel Exhaust Fluid Dosing Unit "](#) . Verify repair.

** WARNING**  
PERSONAL INJURY  
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

** WARNING**  
ENGINE EXHAUST  
To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

** WARNING**  
HOT EXHAUST  
During parked regeneration the exhaust gases will be extremely HOT and could cause a fire if directed at combustible materials. The vehicle must be parked outside.

** WARNING**  
PERSONAL INJURY  
To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

- 10. Start the engine (key ON, engine ON).
- 11. Use DiagnosticLink and perform the NOx Verification test. Does the NOx verification test pass?
  - 11.a Yes; [Go to step 14.](#)

- 11.b No; Go to step 12.
- 12. Replace the inlet NOx sensor.
  - For 1-Box, Refer to section "Removal of the Selective Catalytic Reduction Inlet NOx Sensor" .
  - For 2-Box, Refer to section "Removal of the Selective Catalytic Reduction Inlet NOx Sensor" .
- 13. Use DiagnosticLink and perform the NOx Verification test again. Does the NOx verification test pass?
  - 13.a Yes; perform the repair verification procedure.
  - 13.b No; Replace the outlet NOx sensor. Perform the repair verification procedure.
    - For 1-Box, Refer to section "Removal of the Selective Catalytic Reduction Outlet NOx Sensor" .
    - For 2-Box, Refer to section "Removal of the Selective Catalytic Reduction Outlet NOx Sensor" .
- 14. Use DiagnosticLink and perform a parked regeneration.
- 15. Review the last seven minutes of the log file. Is the NOx efficiency above 85%?
  - 15.a Yes; this fault was likely caused by DEF build-up in the exhaust, which was cleared by the parked regeneration procedure. Perform a Parked SCR Efficiency Test and recheck for the fault code.
  - 15.b No; Refer to the “ **Heavy Duty Aftertreatment Failure Guide (DDC-SVC-MAN-0208)** “ to determine if there are any other causes to the failure ATS and replace the aftertreatment system.
    - For vehicles equipped with the one box system Refer to section "Removal of the 1-BOX™ from the Vehicle" .
    - For vehicles equipped with the two box system Refer to section "Removal of the 2-Box (2V2) from the Vehicle" .

