



## Service Information System

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Welcome: 1145jxa

Product: PACKAGE

Model: 3.4B IOPU PACKAGE CJ3

Configuration: C3.4B IOPU Industrial Engine CJ300001-UP

### Troubleshooting

#### C3.4B Engines

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## Diagnostic Trouble Codes

SMCS - 1900

The following table lists all the J1939 diagnostic trouble codes for the engine. The table includes a description for each code and the recommended troubleshooting procedure that must be performed.

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Table 1

J1939 Code	Description	Refer to Procedure
27-3	Engine Exhaust Gas Recirculation Valve Position : Voltage Above Normal	Valve Position - Test
27-4	Engine Exhaust Gas Recirculation Valve Position : Voltage Below Normal	Valve Position - Test
29-3	Accelerator Pedal Position 2 : Voltage Above Normal	Speed Control - Test
29-4	Accelerator Pedal Position 2 : Voltage Below Normal	Speed Control - Test
51-3	Engine Throttle Valve 1 Position : Voltage Above Normal	Valve Position - Test

51-4	Engine Throttle Valve 1 Position : Voltage Below Normal	Valve Position - Test
91-3	Accelerator Pedal Position 1 : Voltage Above Normal	Speed Control - Test
91-4	Accelerator Pedal Position 1 : Voltage Below Normal	Speed Control - Test
97-15	Water in Fuel Indicator : High - least severe (1)	Fuel Contains Water
100-2	Engine Oil Pressure : Erratic, Intermittent, or Incorrect	Switch Circuits - Test (Oil Pressure Switch)
100-17	Engine Oil Pressure : Low - least severe (1)	Oil Pressure Is Low
102-3	Engine Intake Manifold #1 Pressure : Voltage Above Normal	Sensor Signal (Analog, Active) - Test
102-4	Engine Intake Manifold #1 Pressure : Voltage Below Normal	Sensor Signal (Analog, Active) - Test
102-20	Engine Intake Manifold #1 Pressure : Data Drifted High	Sensor Signal (Analog, Active) - Test
102-21	Engine Intake Manifold #1 Pressure : Data Drifted Low	Sensor Signal (Analog, Active) - Test
105-3	Engine Intake Manifold #1 Temperature : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test
105-4	Engine Intake Manifold #1 Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
107-2	Engine Air Filter 1 Differential Pressure : Erratic, Intermittent, or Incorrect	Switch Circuits - Test (Air Filter Restriction Switch)
107-15	Engine Air Filter 1 Differential Pressure : High - least severe (1)	Inlet Air Is Restricted
107-16	Engine Air Filter 1 Differential Pressure : High - moderate severity (2)	Inlet Air Is Restricted
108-3	Barometric Pressure : Voltage Above Normal	Sensor Signal (Analog, Active) - Test
108-4	Barometric Pressure : Voltage Below Normal	Sensor Signal (Analog, Active) - Test
110-3	Engine Coolant Temperature : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test

110-4	Engine Coolant Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
110-15	Engine Coolant Temperature : High - least severe (1)	Coolant Temperature Is High
110-16	Engine Coolant Temperature : High - moderate severity (2)	Coolant Temperature Is High
152-2	Number Of ECU Resets : Erratic, Intermittent, or Incorrect	ECM Memory - Test
157-0	Engine Injector Metering Rail #1 Pressure : High - most severe (3)	Fuel Rail Pressure Problem
157-2	Engine Injector Metering Rail #1 Pressure : Erratic, Intermittent, or Incorrect	Fuel Rail Pressure Problem
157-3	Engine Injector Metering Rail #1 Pressure : Voltage Above Normal	Sensor Signal (Analog, Active) - Test
157-4	Engine Injector Metering Rail #1 Pressure : Voltage Below Normal	Sensor Signal (Analog, Active) - Test
157-10	Engine Injector Metering Rail #1 Pressure : Abnormal Update Rate	Sensor Signal (Analog, Active) - Test
157-16	Engine Injector Metering Rail #1 Pressure : High - moderate severity (2)	Fuel Rail Pressure Problem
157-17	Engine Injector Metering Rail #1 Pressure : Low - least severe (1)	Fuel Rail Pressure Problem
157-18	Engine Injector Metering Rail #1 Pressure : Low - moderate severity (2)	Fuel Rail Pressure Problem
166-2	Engine Rated Power : Erratic, Intermittent, or Incorrect	ECM Memory - Test
166-14	Engine Rated Power : Special Instuction	ECM Memory - Test
168-3	Battery Potential / Power Input 1 : Voltage Above Normal	Electrical Power Supply - Test
168-4	Battery Potential / Power Input 1 : Voltage Above Normal	Electrical Power Supply - Test
172-3	Engine Air Inlet Temperature : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test
172-4	Engine Air Inlet Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
173-3		Sensor Signal (Analog, Passive) - Test

	Engine Exhaust Gas Temperature : Voltage Above Normal	
173-4	Engine Exhaust Gas Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
174-3	Engine Fuel Temperature 1 : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test
174-4	Engine Fuel Temperature 1 : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
190-8	Engine Speed : Abnormal Frequency, Pulse Width, or Period	Speed/Timing - Test
190-15	Engine Speed : High - least severe (1)	Engine Overspeeds
558-2	Accelerator Pedal 1 Low Idle Switch : Erratic, Intermittent, or Incorrect	Idle Validation - Test
593-31	Engine Idle Shutdown has Shutdown Engine	This code indicates that an engine idle shutdown is about to occur. This code does not represent a fault. If equipped, the warning lamp will come on.
594-31	Engine Idle Shutdown Driver Alert Mode	This code indicates that an engine idle shutdown has occurred. This code does not represent a fault. If equipped, the warning lamp will flash and the shutdown lamp will come on.
623-5	Red Stop Lamp : Current Below Normal	Indicator Lamp - Test
623-6	Red Stop Lamp : Current Above Normal	Indicator Lamp - Test
624-5	Amber Warning Lamp : Current Below Normal	Indicator Lamp - Test
624-6	Amber Warning Lamp : Current Above Normal	Indicator Lamp - Test
630-2	Calibration Memory : Erratic, Intermittent, or Incorrect	Injector Data Incorrect - Test
637-11	Engine Timing Sensor : Other Failure Mode	Speed/Timing - Test
639-9	J1939 Network #1 : Abnormal Update Rate	Data Link - Test
639-14	J1939 Network #1 : Special Instruction	Data Link - Test

651-5	Engine Injector Cylinder #01 : Current Below Normal	Injector Solenoid - Test
651-6	Engine Injector Cylinder #01 : Current Above Normal	Injector Solenoid - Test
651-20	Engine Injector Cylinder #01 : Data Drifted High	Injector Data Incorrect - Test
651-21	Engine Injector Cylinder #01 : Data Drifted Low	Injector Data Incorrect - Test
652-5	Engine Injector Cylinder #02 : Current Below Normal	Injector Solenoid - Test
652-6	Engine Injector Cylinder #02 : Current Above Normal	Injector Solenoid - Test
652-20	Engine Injector Cylinder #02 : Data Drifted High	Injector Data Incorrect - Test
652-21	Engine Injector Cylinder #02 : Data Drifted Low	Injector Data Incorrect - Test
653-5	Engine Injector Cylinder #03 : Current Below Normal	Injector Solenoid - Test
653-6	Engine Injector Cylinder #03 : Current Above Normal	Injector Solenoid - Test
653-20	Engine Injector Cylinder #03 : Data Drifted High	Injector Data Incorrect - Test
653-21	Engine Injector Cylinder #03 : Data Drifted Low	Injector Data Incorrect - Test
654-5	Engine Injector Cylinder #04 : Current Below Normal	Injector Solenoid - Test
654-6	Engine Injector Cylinder #04 : Current Above Normal	Injector Solenoid - Test
654-20	Engine Injector Cylinder #04 : Data Drifted High	Injector Data Incorrect - Test
654-21	Engine Injector Cylinder #04 : Data Drifted Low	Injector Data Incorrect - Test
676-5	Engine Glow Plug Relay : Current Below Normal	Glow Plug Starting Aid - Test
676-6	Engine Glow Plug Relay : Current Above Normal	Glow Plug Starting Aid - Test
676-19	Engine Glow Plug Relay : Data Error	Glow Plug Starting Aid - Test
677-3		Relay - Test (Start Relay)

	Engine Starter Motor Relay : Voltage Above Normal	
677-5	Engine Starter Motor Relay : Current Below Normal	Relay - Test (Start Relay)
677-6	Engine Starter Motor Relay : Current Above Normal	Relay - Test (Start Relay)
723-8	Engine Speed Sensor #2 : Abnormal Frequency, Pulse Width, or Period	Speed/Timing - Test
970-31	Engine Auxiliary Shutdown Switch	This code indicates that the shutdown switch for the engine has been activated. The ECM will disable fuel injection until the switch has been deactivated. No troubleshooting is required.
976-2	PTO Governor State : Erratic, Intermittent, or Incorrect	Power Take-Off - Test
1041-2	Start Signal Indicator : Erratic, Intermittent, or Incorrect	Relay - Test (Start Relay)
1076-2	Engine Fuel Injection Pump Fuel Control Valve : Erratic, Intermittent, or Incorrect	Solenoid Valve - Test
1076-5	Engine Fuel Injection Pump Fuel Control Valve : Current Below Normal	Solenoid Valve - Test
1076-6	Engine Fuel Injection Pump Fuel Control Valve : Current Above Normal	Solenoid Valve - Test
1081-5	Engine Wait to Start Lamp : Current Below Normal	Indicator Lamp - Test
1081-6	Engine Wait to Start Lamp : Current Above Normal	Indicator Lamp - Test
1110-31	Engine Protection System has Shutdown Engine	The engine protection system has shutdown the engine. Troubleshoot all other diagnostic codes in order to clear this code.
1127-16	Engine Turbocharger 1 Boost Pressure : High - moderate severity (2)	Intake Manifold Air Pressure Is High
1127-18	Engine Turbocharger 1 Boost Pressure : Low - moderate severity (2)	Intake Manifold Air Pressure Is Low
1188-5		Solenoid Valve - Test

	Engine Turbocharger Wastegate Actuator 1 Position : Current Below Normal	
1188-6	Engine Turbocharger Wastegate Actuator 1 Position : Current Above Normal	Solenoid Valve - Test
1209-3	Engine Exhaust Gas Pressure : Voltage Above Normal	Sensor Signal (Analog, Active) - Test (Exhaust Gas Pressure Sensor)
1209-4	Engine Exhaust Gas Pressure : Voltage Below Normal	Sensor Signal (Analog, Active) - Test (Exhaust Gas Pressure Sensor)
1221-2	Continuously Monitored Systems Support/Status ; Erratic, Intermittent, or Incorrect	ECM Memory - Test
1221-14	Continuously Monitored Systems Support/Status ; Special Instruction	<p>Another diagnostic code has requested engine speed limitation.</p> <p>The warning lamp will flash. The engine speed is limited to 1200 rpm.</p> <p>Troubleshoot all other diagnostic codes. If this code is the only active diagnostic code, replace the ECM. Refer to Troubleshooting, "ECM - Replace"</p>
1239-0	Engine Fuel Leakage 1 : High - most severe (3)	Fuel Rail Pressure Problem
1485-7	ECM Main Relay : Not Responding Properly	Relay - Test (ECM Main Relay)
1485-14	ECM Main relay : Special Instruction	Relay - Test (ECM Main Relay)
2791-5	Engine Exhaust Gas Recirculation (EGR) Valve Control : Current Below Normal	Motorized Valve - Test
2791-6	Engine Exhaust Gas Recirculation (EGR) Valve Control : Current Above Normal	Motorized Valve - Test
2791-7	Engine Exhaust Gas Recirculation (EGR) Valve Control : Not Responding Properly	Motorized Valve - Test
2797-6	Engine Injector Group 1 : Current Above Normal	Injector Solenoid - Test
2797-7	Engine Injector Group 1 : Not Responding Properly	Injector Solenoid - Test
2798-6	Engine Injector Group 2 : Current Above Normal	Injector Solenoid - Test

2840-12	ECU Instance : Failure	ECM Memory - Test
2840-14	ECU Instance : Special Instruction	Relay - Test (ECM Main Relay)
2880-2	Engine Operator Primary Intermediate Speed Select : Erratic, Intermittent, or Incorrect	Mode Selection - Test/Switch Circuits - Test (Throttle Switch)
2880-3	Engine Operator Primary Intermediate Speed Select : Voltage Above Normal	Mode Selection - Test/Switch Circuits - Test (Throttle Switch)
2880-4	Engine Operator Primary Intermediate Speed Select : Voltage Below Normal	Mode Selection - Test/Switch Circuits - Test (Throttle Switch)
2970-2	Accelerator Pedal 2 Low Idle Switch : Erratic, Intermittent, or Incorrect	Idle Validation - Test
3217-3	Aftertreatment #1 Intake O2 : Voltage Above Normal	Oxygen Level - Test
3217-4	Aftertreatment #1 Intake O2 : Voltage Below Normal	Oxygen Level - Test
3217-5	Aftertreatment #1 Intake O2 : Current Below Normal	Oxygen Level - Test
3217-6	Aftertreatment #1 Intake O2 : Current Above Normal	Oxygen Level - Test
3217-12	Aftertreatment #1 Intake O2 : Failure	Oxygen Level - Test
3217-13	Aftertreatment #1 Intake O2 : Out of Calibration	Oxygen Level - Test
3217-15	Aftertreatment #1 Intake O2 : High - least severe (1)	Oxygen Level - Test
3219-15	Aftertreatment #1 Intake Gas Sensor at Temperature : High - least severe (1)	Oxygen Level - Test
3219-17	Aftertreatment #1 Intake Gas Sensor at Temperature : Low - least severe (1)	Oxygen Level - Test
3222-3	Aftertreatment #1 Intake Gas Sensor Heater : Voltage Above Normal	Oxygen Level - Test
3222-4		Oxygen Level - Test

	Aftertreatment #1 Intake Gas Sensor Heater : Voltage Below Normal	
3222-5	Aftertreatment #1 Intake Gas Sensor Heater : Current Below Normal	Oxygen Level - Test
3242-0	Particulate Trap Intake Gas Temperature : High - most severe (3)	Sensor Signal (Analog, Passive) - Test
3242-3	Particulate Trap Intake Gas Temperature : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test
3242-4	Particulate Trap Intake Gas Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
3251-0	Particulate Trap Differential Pressure : High - most severe (3)	Diesel Particulate Filter Collects Excessive Soot
3251-3	Particulate Trap Differential Pressure : Voltage Above Normal	Sensor Signal (Analog, Active) - Test
3251-4	Particulate Trap Differential Pressure : Voltage Below Normal	Sensor Signal (Analog, Active) - Test
3251-7	Particulate Trap Differential Pressure : Not Responding Properly	Diesel Particulate Filter Has Differential Pressure Problem
3251-10	Particulate Trap Differential Pressure : Abnormal Rate of Change	Diesel Particulate Filter Has Differential Pressure Problem
3251-16	Particulate Trap Differential Pressure : High - moderate severity (2)	Diesel Particulate Filter Collects Excessive Soot
3251-17	Particulate Trap Differential Pressure : Low - least severe (1)	Diesel Particulate Filter Has Differential Pressure Problem
3251-18	Particulate Trap Differential Pressure : Low - moderate severity (2)	Diesel Particulate Filter Has Differential Pressure Problem
3358-10	Engine Exhaust Gas Recirculation 1 Intake Pressure : Abnormal Rate of Change	NRS Mass Flow Rate Problem
3509-2	Sensor Supply Voltage 1 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test
3510-2	Sensor Supply Voltage 2 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test

3511-2	Sensor Supply Voltage 3 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test
3697-5	Particulate Trap Lamp Command : Current Below Normal	Indicator Lamp - Test
3697-6	Particulate Trap Lamp Command : Current Above Normal	Indicator Lamp - Test
3698-5	Exhaust System High Temperature Lamp Command : Current Below Normal	Indicator Lamp - Test
3698-6	Exhaust System High Temperature Lamp Command : Current Above Normal	Indicator Lamp - Test
3702-5	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Below Normal	Indicator Lamp - Test
3702-6	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Above Normal	Indicator Lamp - Test
3719-0	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent : High - most severe (3)	Diesel Particulate Filter Collects Excessive Soot
3719-16	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent : High - moderate severity (2)	Diesel Particulate Filter Collects Excessive Soot
4765-3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Above Normal	Sensor Signal (Analog, Passive) - Test
4765-4	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Below Normal	Sensor Signal (Analog, Passive) - Test
5055-17	Engine Oil Viscosity : Low - least severe (1)	Oil Contains Fuel
5055-18	Engine Oil Viscosity : Low - moderate severity (2)	Oil Contains Fuel
5099-5	Engine Oil Pressure Low Lamp Data - Current Below Normal	Indicator Lamp - Test
5099-6	Engine Oil Pressure Low Lamp Data - Current Above Normal	Indicator Lamp - Test
5246-15		See "Operator Inducement Codes".

	Aftertreatment SCR Operator Inducement Severity : High - least severe (1)	
5246-16	Aftertreatment SCR Operator Inducement Severity : High - moderate severity (2)	See "Operator Inducement Codes".
5319-31	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration	Diesel Particulate Filter Active Regeneration Was Interrupted
5324-7	Engine Glow Plug 1 : Not Responding Properly	Glow Plug Starting Aid - Test
5325-7	Engine Glow Plug 2 : Not Responding Properly	Glow Plug Starting Aid - Test
5326-7	Engine Glow Plug 3 : Not Responding Properly	Glow Plug Starting Aid - Test
5327-7	Engine Glow Plug 4 : Not Responding Properly	Glow Plug Starting Aid - Test
5357-31	Engine Fuel Injection Quantity Error for Multiple Cylinders	ECM Memory - Test
5419-5	Engine Throttle Actuator #1 : Current Below Normal	Motorized Valve - Test
5419-6	Engine Throttle Actuator #1 : Current Above Normal	Motorized Valve - Test
5419-7	Engine Throttle Actuator #1 : Not Responding Properly	Motorized Valve - Test
5571-2	High Pressure Common Rail Fuel Pressure Relief Valve : Erratic, Intermittent, or Incorrect	Fuel Rail Pressure Problem
5571-7	High Pressure Common Rail Fuel Pressure Relief Valve : Not Responding Properly	Fuel Rail Pressure Problem
5571-10	High Pressure Common Rail Fuel Pressure Relief Valve : Abnormal Rate of Change	Fuel Rail Pressure Problem
5571-14	High Pressure Common Rail Fuel Pressure Relief Valve : Special Instruction	Fuel Rail Pressure Problem
5571-16	High Pressure Common Rail Fuel Pressure Relief Valve : High - moderate severity (2)	Fuel Rail Pressure Problem
5826-15		See "Operator Inducement Codes".

	Emission Control System Operator Inducement Severity : High - least severe (1)	
5826- 16	Emission Control System Operator Inducement Severity : High - moderate severity (2)	See "Operator Inducement Codes".

## Operator Inducement Codes

If any of the diagnostic codes listed in Table 2 are active, a 5246 or a 5826 diagnostic code will also be active.

When a 5246 or a 5826 diagnostic code is active, the engine will be derated.

In order to clear an active 5246 or a 5826 diagnostic code, first troubleshoot any active codes that are listed in Table 2. Once all other codes are cleared, cycle the keyswitch in order to clear the 5246 or 5826 diagnostic code.

Table 2

J1939 Code	Description	Refer to Procedure
27-3	Engine Exhaust Gas Recirculation Valve Position : Voltage Above Normal	Valve Position Sensor - Test
27-4	Engine Exhaust Gas Recirculation Valve Position : Voltage Below Normal	Valve Position Sensor - Test
102-3	Engine Intake Manifold #1 Pressure : Voltage Above Normal	Engine Pressure Sensor Open or Short Circuit - Test
102-4	Engine Intake Manifold #1 Pressure : Voltage Below Normal	Engine Pressure Sensor Open or Short Circuit - Test
102-20	Engine Intake Manifold #1 Pressure : Data Drifted High	Engine Pressure Sensor Open or Short Circuit - Test
102-21	Engine Intake Manifold #1 Pressure : Data Drifted Low	Engine Pressure Sensor Open or Short Circuit - Test
105-3	Engine Intake Manifold #1 Temperature : Voltage Above Normal	Engine Temperature Sensor Open or Short Circuit - Test
105-4	Engine Intake Manifold #1 Temperature : Voltage Below Normal	Engine Temperature Sensor Open or Short Circuit - Test
108-3	Barometric Pressure : Voltage Above Normal	Engine Pressure Sensor Open or Short Circuit - Test
108-4	Barometric Pressure : Voltage Below Normal	Engine Pressure Sensor Open or Short Circuit - Test
157-0	Engine Injector Metering Rail #1 Pressure : High - most severe (3)	Fuel Rail Pressure Problem

157-2	Engine Injector Metering Rail #1 Pressure : Erratic, Intermittent, or Incorrect	Fuel Rail Pressure Problem
157-16	Engine Injector Metering Rail #1 Pressure : High - moderate severity (2)	Fuel Rail Pressure Problem
157-18	Engine Injector Metering Rail #1 Pressure : Low - moderate severity (2)	Fuel Rail Pressure Problem
173-3	Engine Exhaust Gas Temperature : Voltage Above Normal	Engine Temperature Sensor Open or Short Circuit - Test
173-4	Engine Exhaust Gas Temperature : Voltage Below Normal	Engine Temperature Sensor Open or Short Circuit - Test
1076-5	Engine Fuel Injection Pump Fuel Control Valve : Current Below Normal	Solenoid Valve - Test
1076-6	Engine Fuel Injection Pump Fuel Control Valve : Current Above Normal	Solenoid Valve - Test
1188-5	Engine Turbocharger Wastegate Actuator 1 Position : Current Below Normal	Solenoid Valve - Test
1209-3	Engine Exhaust Gas Pressure : Voltage Above Normal	Engine Pressure Sensor Open or Short Circuit - Test
1209-4	Engine Exhaust Gas Pressure : Voltage Below Normal	Engine Pressure Sensor Open or Short Circuit - Test
1239-0	Engine Fuel Leakage 1 : High - most severe (3)	Fuel Rail Pressure Problem
2791-5	Engine Exhaust Gas Recirculation (EGR) Valve Control : Current Below Normal	Motorized Valve - Test
2791-6	Engine Exhaust Gas Recirculation (EGR) Valve Control : Current Above Normal	Motorized Valve - Test
2791-7	Engine Exhaust Gas Recirculation (EGR) Valve Control : Not Responding Properly	Motorized Valve - Test
3251-3	Particulate Trap Differential Pressure : Voltage Above Normal	Engine Pressure Sensor Open or Short Circuit - Test
3251-4	Particulate Trap Differential Pressure : Voltage Below Normal	Engine Pressure Sensor Open or Short Circuit - Test
3251-7	Particulate Trap Differential Pressure : Not Responding Properly	Diesel Particulate Filter Has Differential Pressure Problem
3251-10	Particulate Trap Differential Pressure : Abnormal Rate of Change	Diesel Particulate Filter Has Differential Pressure Problem
3251-18	Particulate Trap Differential Pressure : Low - moderate severity (2)	Diesel Particulate Filter Has Differential Pressure Problem
3358-10	Engine Exhaust Gas Recirculation 1 Intake Pressure : Abnormal Rate of Change	NRS Mass Flow Rate Problem

3509-2	Sensor Supply Voltage 1 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test
3510-2	Sensor Supply Voltage 2 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test
3511-2	Sensor Supply Voltage 3 : Erratic, Intermittent, or Incorrect	Sensor Supply - Test
4765-3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Above Normal	Engine Temperature Sensor Open or Short Circuit - Test
4765-4	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Below Normal	Engine Temperature Sensor Open or Short Circuit - Test
5319-31	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration	Diesel Particulate Filter Active Regeneration Was Interrupted
5419-7	Engine Throttle Actuator #1 : Not Responding Properly	Motorized Valve - Test
5571-7	High Pressure Common Rail Fuel Pressure Relief Valve : Not Responding Properly	Fuel Rail Pressure Problem
5571-16	High Pressure Common Rail Fuel Pressure Relief Valve : High - moderate severity (2)	Fuel Rail Pressure Problem