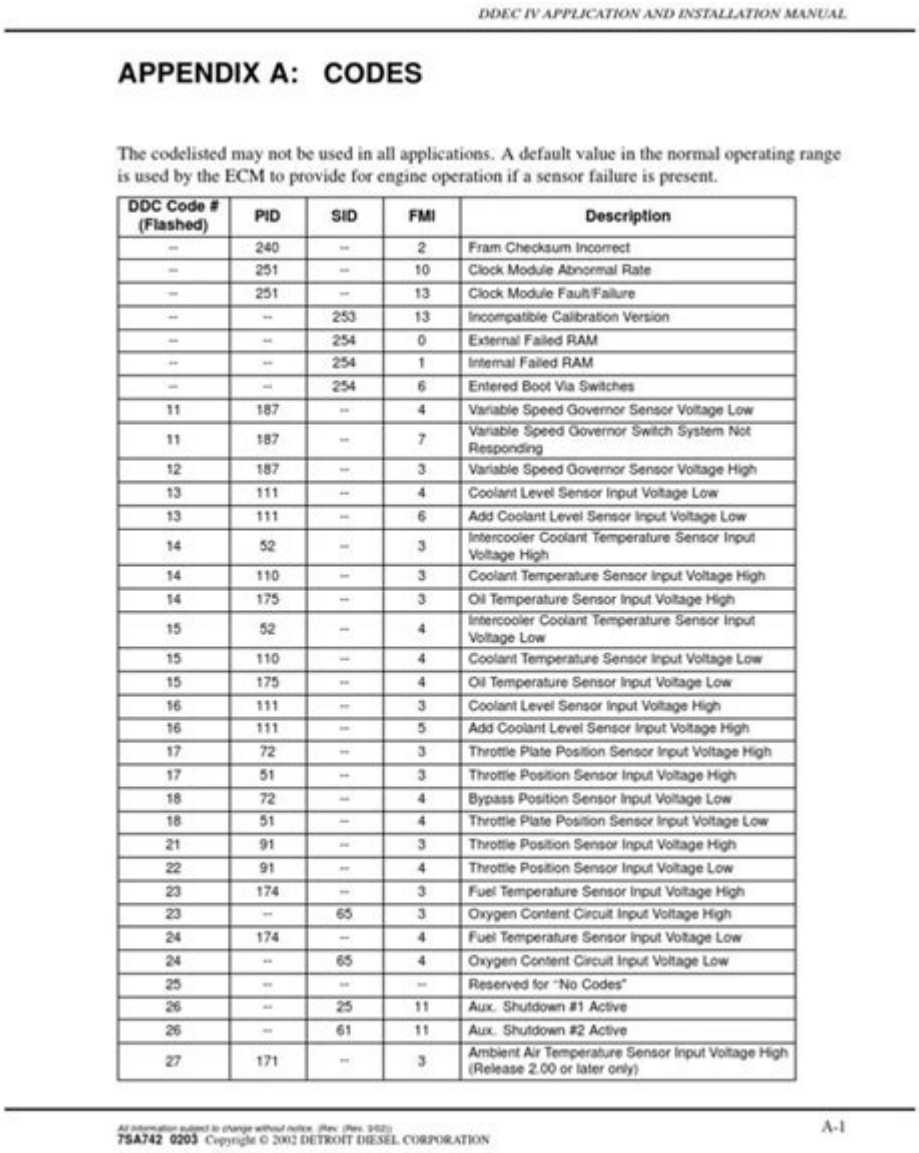
International Truck Engine Fault Codes



APPENDIX A: CODES

The codelisted may not be used in all applications. A default value in the normal operating range is used by the ECM to provide for engine operation if a sensor failure is present.

DDC Code # (Flashed)	PID	SID	FMI	Description
--	240	--	2	Fram Checksum Incorrect
--	251	--	10	Clock Module Abnormal Rate
--	251	--	13	Clock Module Fault/Failure
--	--	253	13	Incompatible Calibration Version
--	--	254	0	External Failed RAM
--	--	254	1	Internal Failed RAM
--	--	254	6	Entered Boot Via Switches
11	187	--	4	Variable Speed Governor Sensor Voltage Low
11	187	--	7	Variable Speed Governor Switch System Not Responding
12	187	--	3	Variable Speed Governor Sensor Voltage High
13	111	--	4	Coolant Level Sensor Input Voltage Low
13	111	--	6	Add Coolant Level Sensor Input Voltage Low
14	52	--	3	Intercooler Coolant Temperature Sensor Input Voltage High
14	110	--	3	Coolant Temperature Sensor Input Voltage High
14	175	--	3	Oil Temperature Sensor Input Voltage High
15	52	--	4	Intercooler Coolant Temperature Sensor Input Voltage Low
15	110	--	4	Coolant Temperature Sensor Input Voltage Low
15	175	--	4	Oil Temperature Sensor Input Voltage Low
16	111	--	3	Coolant Level Sensor Input Voltage High
16	111	--	5	Add Coolant Level Sensor Input Voltage High
17	72	--	3	Throttle Plate Position Sensor Input Voltage High
17	51	--	3	Throttle Position Sensor Input Voltage High
18	72	--	4	Bypass Position Sensor Input Voltage Low
18	51	--	4	Throttle Plate Position Sensor Input Voltage Low
21	91	--	3	Throttle Position Sensor Input Voltage High
22	91	--	4	Throttle Position Sensor Input Voltage Low
23	174	--	3	Fuel Temperature Sensor Input Voltage High
23	--	65	3	Oxygen Content Circuit Input Voltage High
24	174	--	4	Fuel Temperature Sensor Input Voltage Low
24	--	65	4	Oxygen Content Circuit Input Voltage Low
25	--	--	--	Reserved for "No Codes"
26	--	25	11	Aux. Shutdown #1 Active
26	--	61	11	Aux. Shutdown #2 Active
27	171	--	3	Ambient Air Temperature Sensor Input Voltage High (Release 2.00 or later only)

International truck engine fault codes are critical indicators of potential issues within the engine and other components of International trucks. These fault codes, also known as diagnostic trouble codes (DTCs), serve as a universal language for technicians and mechanics, enabling them to diagnose problems effectively and efficiently. Understanding these codes is essential for truck owners, operators, and mechanics to maintain the health of their vehicles and minimize downtime.

Understanding Fault Codes

What Are Fault Codes?

Fault codes are alphanumeric codes generated by a truck's onboard diagnostic system when a malfunction or abnormal condition is detected. These codes can provide valuable

insights into the specific issue affecting the engine or other systems. Each code corresponds to a particular fault and enables technicians to pinpoint the problem quickly.

How Fault Codes Work

When a fault occurs, various sensors within the truck relay information to the Engine Control Module (ECM). The ECM continuously monitors the performance of the engine and other systems. If a parameter exceeds the established limits, the ECM triggers a fault code. This code is then stored in the truck's diagnostic memory and can be retrieved using a diagnostic scanner.

Types of Fault Codes

1. Generic Codes: These codes are standardized across different manufacturers and can be read by any OBD-II scanner. They are useful for basic troubleshooting.

2. Manufacturer-Specific Codes: Unique to specific manufacturers, these codes offer detailed information about particular components and systems within the vehicle. International trucks have their own set of manufacturer-specific codes.

Common International Truck Engine Fault Codes

Overview of Common Codes

International trucks, like many other commercial vehicles, have a range of fault codes that can indicate various issues. Some of the most common fault codes include:

1. SPN 3216 - Engine Oil Pressure
- Indicates low oil pressure, which can lead to severe engine damage if not addressed promptly.

2. SPN 3714 - Coolant Temperature
- Signifies that the engine coolant temperature is outside the normal operating range, which can cause overheating.

3. SPN 5246 - Fuel Rail Pressure
- Points to problems with fuel pressure regulation, which can affect engine performance and efficiency.

4. SPN 155 - Turbocharger Boost Pressure
- Relates to issues with the turbocharger, which can impact the engine's power output.

5. SPN 129 - Engine Speed
- Indicates that the engine speed is outside the expected parameters, which may suggest issues with the throttle or transmission.

Detailed Breakdown of Common Codes

SPN 3216 - Engine Oil Pressure

- Description: This code indicates that the oil pressure is too low, which can lead to serious

engine damage.
- Possible Causes:
- Low oil level
- Faulty oil pump
- Clogged oil filter
- Oil pressure sensor failure
- Recommended Actions:
- Check and top off the oil level.
- Inspect the oil pump for proper operation.
- Replace the oil filter if necessary.
- Test the oil pressure sensor.

SPN 3714 - Coolant Temperature

- Description: This code is triggered when the coolant temperature is too high or too low.
- Possible Causes:
- Failed thermostat
- Cooling system leaks
- Malfunctioning water pump
- Blocked radiator
- Recommended Actions:
- Inspect the cooling system for leaks.
- Replace the thermostat if faulty.
- Ensure the radiator is clear of debris.

SPN 5246 - Fuel Rail Pressure

- Description: Indicates irregularities in fuel rail pressure, affecting engine performance.
- Possible Causes:
- Faulty fuel injectors
- Clogged fuel filter
- Fuel pump failure
- Recommended Actions:
- Check fuel pressure with a gauge.
- Inspect and replace clogged filters.
- Test fuel injectors for proper operation.

SPN 155 - Turbocharger Boost Pressure

- Description: This code signals that the turbocharger is not providing the expected boost pressure.
- Possible Causes:
- Exhaust leaks
- Faulty wastegate
- Turbocharger failure
- Recommended Actions:
- Inspect turbocharger components for damage.
- Check for exhaust leaks.
- Test the wastegate operation.

SPN 129 - Engine Speed

- Description: Reflects abnormalities in engine speed, possibly impacting performance.
- Possible Causes:
- Throttle position sensor failure
- Transmission issues
- Engine control module malfunction
- Recommended Actions:
- Inspect throttle position sensor.
- Check transmission fluid levels and condition.
- Scan ECM for additional codes.

Reading and Interpreting Fault Codes

Using a Diagnostic Scanner

To read fault codes from an International truck, a diagnostic scanner is required. Here are the steps to effectively retrieve and interpret the codes:

1. Connect the Scanner:
- Locate the OBD-II port, typically found under the dashboard near the driver's seat.
- Connect the scanner to the port.

2. Turn on the Ignition:
- Turn the ignition key to the "on" position without starting the engine.

3. Access Codes:
- Follow the scanner’s instructions to retrieve fault codes from the ECM.

4. Interpret the Codes:
- Refer to the scanner’s code definitions or consult the International truck service manual for detailed explanations.

Clearing Fault Codes

After repairs are made, it's essential to clear the fault codes:

1. Reconnect the Scanner:
- Ensure the scanner is still connected to the OBD-II port.

2. Select Clear Codes:
- Use the scanner’s menu to select the option to clear or erase fault codes.

3. Verify Repairs:
- Start the engine and check if the warning lights reappear.

Importance of Regular Maintenance

Maintaining a regular service schedule can significantly reduce the occurrence of fault codes. Regular checks can include:

- Oil Changes: Ensure proper oil levels and quality.
- Fluid Checks: Monitor coolant, transmission fluid, and brake fluid levels.

- Filter Replacements: Regularly replace air and fuel filters.
- Sensor Inspections: Periodically check sensors and wiring for wear and damage.

Conclusion

In summary, understanding international truck engine fault codes is crucial for anyone involved in the operation and maintenance of International trucks. These codes provide invaluable insights into potential issues, helping to prevent costly repairs and ensuring the vehicle operates efficiently. By familiarizing oneself with common fault codes, their meanings, and appropriate actions, truck owners and operators can enhance the longevity and reliability of their vehicles. Regular maintenance and timely diagnostics will ultimately contribute to the safe and effective operation of International trucks on the road.

Frequently Asked Questions

What are international truck engine fault codes?

International truck engine fault codes are diagnostic trouble codes (DTCs) that indicate specific issues within the truck's engine or related systems. These codes help technicians identify malfunctions or performance problems.

How can I retrieve fault codes from my international truck?

You can retrieve fault codes using an On-Board Diagnostics (OBD) scanner or a diagnostic tool specifically designed for international trucks. Connect the scanner to the truck's diagnostic port, usually located under the dashboard, and follow the prompts to read the codes.

What does a fault code like 'SPN 123' mean in international trucks?

The fault code 'SPN 123' refers to a specific Suspect Parameter Number (SPN) that corresponds to a particular issue in the engine or transmission system. To understand its implications, you would need to refer to the manufacturer's documentation for detailed descriptions.

How do I clear fault codes from an international truck's engine?

To clear fault codes, use an OBD scanner to access the truck's diagnostic system. After retrieving the codes, there will typically be an option to clear or erase them. Ensure that the underlying issue has been resolved before clearing the codes to avoid masking potential problems.

What should I do if my international truck is showing multiple fault codes?

If your truck shows multiple fault codes, it's essential to diagnose them systematically. Start with the most critical codes, addressing any serious engine faults first. Consider consulting a professional technician for a thorough diagnosis and repair.

Are there common fault codes that international truck owners should be aware of?

Yes, some common fault codes for international trucks include 'SPN 3216' (engine coolant temperature), 'SPN 5246' (fuel pressure), and 'SPN 1000' (engine speed). Familiarizing yourself with these can help in quick troubleshooting and maintenance.

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