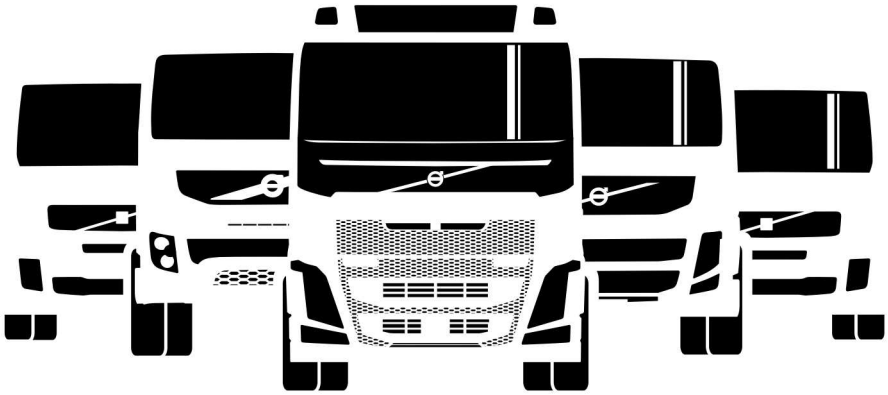
SERVICE INFORMATION

Volvo Bus Corporation

Engine Control Module (ECM), Aftertreatment Control Module (ACM), Electrical System Version 4

Diagnostic Trouble Codes (DTC)

From Build Date 1.5.2016



Foreword

The descriptions and service procedures contained in this manual are based on designs and technical studies carried out through January 2016.

The products are under continuous development. Vehicles and components produced after the above date may therefore have different specifications and repair methods. When this is deemed to have a significant bearing on this manual, an updated version of this manual will be issued to cover the changes.

Each section of this manual contains specific safety information and warnings which must be reviewed before performing any procedure. If a printed copy of a procedure is made, be sure to also make a printed copy of the safety information and warnings that relate to that procedure. The following levels of observations, cautions and warnings are used in this Service Documentation:

Note: Indicates a procedure, practice, or condition that must be followed in order to have the vehicle or component function in the manner intended.

Caution: Indicates an unsafe practice where damage to the product could occur.

Warning: Indicates an unsafe practice where personal injury or severe damage to the product could occur.

Danger: Indicates an unsafe practice where serious personal injury or death could occur.

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Order number: 89233854

USA74438

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U000188 CAN Communication Backbone 2 Net - Bus off

DTC	U000188
Component / System	CAN Communication Backbone 2 Net
Monitor Strategy Description	Bus Off
Fault Limit	It has not been possible to send frames on High Speed CAN Communication Bus and It has not been possible to receive frames on High Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.05s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U001088 CAN Communication Backbone 1 Net - Bus off

DTC	U001088
Component / System	CAN Communication Backbone 1
Monitor Strategy Description	Bus Off
Fault Limit	It has not been possible to send frames on Medium Speed CAN Communication Bus and It has not been possible to receive frames on Medium Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.05s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U010100 Lost Communication with TECU - No Sub Type Information

DTC	U010100
Component / System	CAN Communication Backbone 1
Monitor Strategy Description	Bus Off
Fault Limit	Lost communication with TCM on Medium Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U0010/88U3000/01
Time Required For DTC To Be Set	9.1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P034031 Camshaft Position Sensor "A" Bank 1 or Single Sensor - No Signal

DTC	P034031
Component / System	Camshaft Position Sensor "A" Bank 1
Monitor Strategy Description	No Signal
Fault Limit	No signal is detected on the cam wheel
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	9.1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P034138 Camshaft Position Sensor A Circuit Range/Performance - Signal Frequency Incorrect

DTC	P034138
Component / System	Camshaft Position Sensor A Circuit Range/Performance
Monitor Strategy Description	Signal Frequency Incorrect
Fault Limit	Noisy signal detected
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P042000 Catalyst System Efficiency Below Threshold - No Sub Type Information

DTC	P042000
Component / System	Catalyst System
Monitor Strategy Description	Efficiency Below Threshold

Fault Limit	• Catalyst System Monitor Failure Event
	• AND
	• Ratio of diesel that slipped through the catalyst and oxidized in the Particulate Filter above 2.799999952316284 ratio
	• AND
	• SCR conversion efficiency below (80% + Offset dependent onAverage SCR NOx Catalyst Temperature
	• OR
	• Empty Can Monitor Failure Event
	  • AND
	  • (The number of quick temperature changes before the catalyst / The number of quick temperature changes after catalyst) below 1.75ratio. For current status, read MID 21 - Catalyst Monitor Bank 1, TID 99 - Diesel oxidation catalyst missing substrate, MID 21 - Catalyst Monitor Bank 1, TID 9C - Ratio of diesel that slipped through DOC

Enable Conditions	• Hydrocarbon Conversion Monitor Enable Conditions
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• Engine Speed between 590rpm and 3000rpm
	• AND
	• tc_IndTrqValue between 1Nm and 4000Nm
	• AND
	• Exhaust Aftertreatment Fuel Injecton Active
	• AND
	• Exhaust Gas Temperature Sensor 3 between 200°C and 600°C
	• AND
	• Exhaust Gas Temperature Sensor 1 between 170°C and 400°C
	• AND
	• SCR warming active
	• OR
	  • Empty Can Monitor Enable Conditions
	  • AND
	  • se_AmbAirPres between 75kPa and 120kPa
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • not Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Engine Speed above 550rpm
	  • AND
	  • Exhaust Gas Temperature Sensor 1 above 20°C
	  • AND
	  • Exhaust Gas Temperature Sensor 2 above 20°C
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 1 above 3.75°C
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 2 below 2.5°C
	  • OR
	  • Derivative of Exhaust Gas Temperature Sensor 1 below (-1 * 3.75°C)
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 2 above (-1 * 2.5°C)

Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P2229/00, P2226/13, P0072/00, P0070/15, P20DD/13, P20E0/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, U029D/00, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029E/00, P20EE/00, P2201/64, P225D/00, P229F/64, P225F/00, P20D0/00, P24F6/00, P20DC/00, P20CF/7A, P2229/00, U3000/01
Time Required For DTC To Be Set	1000s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P054100 Intake Air Heater A Circuit Low - No Sub Type Information

DTC	P054100
Component / System	Intake Air Heater A Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:7 above (0.722562V * (UnfilteredBatteryVoltage / 24.0V)) • AND • Voltage on B:7 below (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P054300 Intake Air Heater A Circuit Open - No Sub Type Information

DTC	P054300
Component / System	Intake Air Heater A Circuit Open
Monitor Strategy Description	A Circuit Open

Fault Limit	• Voltage on B:7 above (25.138032V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	  • Voltage on B:7 above (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
	  • OR
	  • Voltage on B:7 below (20.579645V * (UnfilteredBatteryVoltage / 24.0V))

Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P001676 Crankshaft Position - Camshaft Position Correlation - Wrong Mounting Position

DTC	P001676
Component / System	Crankshaft Position
Monitor Strategy Description	Camshaft Position Correlation
Fault Limit	• Phase error due to incorrect angle between cam and flywheel
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P007164 Ambient Air Temperature Sensor Range/Performance - Signal Plausibility Failure

DTC	P007164
Component / System	Ambient Air Temperature Sensor Range/Performance
Monitor Strategy Description	Signal Plausibility Failure
Fault Limit	• Difference during Precrank between mean value of (Engine Exhaust Temperature, HC Heat Temperature, DPF Temperature) and Ambient Air Temperature above 40° C
Enable Conditions	• Engine in Precrank mode • AND • Engine Speed below 100rpm • AND • Engine Soak Time above 28800s
Disable Conditions	No Active DTC's: • P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P2229/00, P2226/13, U3017/00
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02CD00 Cylinder 1 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02CD00
Component / System	Cylinder 1 Fuel Injector
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 86 - Balancing of injector 1, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02CF00 Cylinder 2 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02CF00
Component / System	Cylinder 2
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 86 - Balancing of injector 1, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D100 Cylinder 3 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02D100
Component / System	Cylinder 3 Fuel Injector
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 88 - Balancing of injector 3, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D300 Cylinder 4 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02D300
Component / System	Cylinder 4 Fuel Injector
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 89 - Balancing of injector 4, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D500 Cylinder 5 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02D500
Component / System	Cylinder 5 Fuel Injector
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8A - Balancing of injector 5, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D700 Cylinder 6 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P02D700
Component / System	Cylinder 6 Fuel Injector
Monitor Strategy Description	Fuel Injector Offset
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8A - Balancing of injector 6, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	• The starter motor is active • AND • PTO is active • AND • The indicated torque is not stable • AND • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P033531 Crankshaft Position Sensor "A" - No Signal

DTC	P033531
Component / System	Crankshaft Position Sensor
Monitor Strategy Description	No Signal
Fault Limit	• No crank teeth detected between cam teeth by the control unit
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P033638 Crankshaft Position Sensor A Circuit Range/Performance - Signal Frequency Incorrect

DTC	P033638
Component / System	Crankshaft Position Sensor A
Monitor Strategy Description	Signal Frequency
Fault Limit	• More crank teeth than expected detected between cam teeth by the control unit
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P033900 Crankshaft Position Sensor A Circuit Intermittent - No Sub Type Information

DTC	P033638
Component / System	Crankshaft Position Sensor A
Monitor Strategy Description	Circuit Intermittent
Fault Limit	• Intermittent crank speed signal
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P203F00 Reductant Level Low - No Sub Type Information

DTC	P203F00
Component / System	Reductant System
Monitor Strategy Description	Reductant Level Low
Fault Limit	• Reductant level below 0.100000001490116% for 15s. For current status, read MID 98 - NOx Catalyst Monitor Bank 1, TID A9 - Reductant level
Enable Conditions	• Reductant Tank Temperature above -99°C
Disable Conditions	No Active DTC's: • P205B/64
Time Required For DTC To Be Set	25s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P205B64 Reductant Tank Temperature Sensor Circuit Range/Performance - Signal Plausibility Failure

DTC	P205B64
Component / System	Reductant Tank Temperature Sensor
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Difference during Precrank between mean value of (Boost Temperature, EGR Temperature, Engine Coolant Temperature, Compressor Temperature) and Urea Tank Temperature above 40°C
Enable Conditions	• Engine in Precrank mode • AND • Engine Speed below 100rpm • AND • Engine Soak Time above 28800s
Disable Conditions	No Active DTC's: • P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P2229/00, P2226/13, U3017/00
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208064 Exhaust Gas Temperature Sensor Circuit Range/Performance Bank 1 Sensor 1 - Signal Plausibility Failure

DTC	P208064
Component / System	Exhaust Gas Temperature Sensor Circuit
Monitor Strategy Description	Range/Performance Bank 1 Sensor 1 — Signal Plausibility Failure

Fault Limit	• Evaluation Between The Sensors Performed During Engine Running:
	  • AND
	  • Difference between Exhaust Gas Temperature Sensor 1 and Sensor 2 above 70° C
	  • AND
	  • Difference between Exhaust Gas Temperature Sensor 1 and Sensor 3 above 70° C
	• OR
	  • Exhaust Gas Temperature Sensor 1 below 100°C

Enable Conditions	• Evaluation Between The Sensors Performed During Engine Running:
	  • AND
	  • se_AmbAirPres between 75kPa and 105kPa
	  • AND
	  • AmbientAirTemperature_VMCU between -8°C and 55°C
	  • AND
	  • se_CoolantTemp above 60°C
	  • AND
	  • tc_IndTrqValue between 500Nm and 2000Nm
	  • AND
	  • Modeled Exhaust Gas Temperature at Bank 1 Sensor 1 between 200°C and 400°C and below 25°C
	  • AND
	  • Difference Between Modelled Exhaust Gas Temperature At Sensor 2 And Modelled Exhaust Gas Temperature At Sensor 3 below 25°C
	  • AND
	  • Difference Between Modelled Exhaust Gas Temperature At Sensor 1 And Modelled Exhaust Gas Temperature At Sensor 2 below 25°C

Disable Conditions	No Active DTC's: • P0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01, U3017/00
Time Required For DTC To Be Set	35s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220013 NOx Sensor Bank 1 Sensor 1 - Circuit Open

DTC	P220013
Component / System	NOx Sensor Bank 1 Sensor 1

Monitor Strategy Description	Circuit Open
Fault Limit	• Internal Open Circuit signal containing status and error byte received from Upstream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition key turned ON
Disable Conditions	No Active DTC's: • U029D/00, U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220164 NOx Sensor Bank 1 Sensor 1 - Signal Plausibility Failure

DTC	P220164
Component / System	NOx Sensor Bank 1 Sensor 1
Monitor Strategy Description	Circuit Open
Fault Limit	• The Upstream NOx Difference (upstream NOx sensor measured NOx flow – modeled NOx flow) is compared to a low and high fault threshold map (NOx flow threshold as a function of modeled NOx flow). The difference must be below Low Limit or above High Limit repeatedly 4No Unit times. Evaluation time for each repeated evaluation is 4.5s. For current status, read MID 01 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 1, TID 80 - NOx massflow difference between estimated and measured in g/s
Enable Conditions	• se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Steady state: No quick changes in engine speed and torque • AND • se_CoolantTemp between 60°C and 110°C • AND • tc_IndTrqValue between 1425Nm and 2500Nm • AND • Engine Speed between 1475rpm and 2150rpm above conditions valid for 5s
Disable Conditions	• Exhaust Aftertreatment Fuel Injector is activated • OR • Regeneration ongoing No Active DTC's: • P225D/00, P225F/00, P242B/64, P0420/00, P0402/00, P0401/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P225D/00, P220F/93, P225F/00, U029D/00, U029E/00

Time Required For DTC To Be Set	180s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P060100 Internal Control Module Memory Check Sum Error - No Sub Type Information

DTC	P060100
Component / System	Internal Control Module Memory Check Sum Error
Monitor Strategy Description	Memory Check Sum Error
Fault Limit	• N/A
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	N/A
MIL Illumination	3
Probable Causes	***See Tech Tool***

P061700 Starter Relay Circuit High - No Sub Type Information

DTC	P061700
Component / System	Starter Relay Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	2s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P063051 VIN Not Programmed or Incompatible - ECM/PCM - Not Programmed

DTC	P063051
Component / System	Starter Relay Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• The Vehicle Identification Number is not or incorrectly written (see DID 0xF802)
Enable Conditions	• New key cycle
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	0.5s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P066800 PCM/ECM/TCM Internal Temperature Sensor Circuit Low - No Sub Type Information

DTC	P066800
Component / System	PCM/ECM/TCM Internal Temperature Sensor
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on N/A:ECU internal below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P06B100 Sensor Power Supply A Circuit Low - No Sub Type Information

DTC	P06B100
Component / System	Sensor Power Supply A Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on A:7 below 4.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B200 Sensor Power Supply A Circuit High - No Sub Type Information

DTC	P06B200
Component / System	Sensor Power Supply A Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on A:7 above 5.5V
Enable Conditions	• N/A

Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B400 Sensor Power Supply B Circuit Low - No Sub Type Information

DTC	P06B400
Component / System	Sensor Power Supply A Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:17 below 4.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B500 Sensor Power Supply B Circuit High- No Sub Type Information

DTC	P06B500
Component / System	Sensor Power Supply A Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on B:17 above 5.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20EE00 SCR NOx Catalyst Efficiency Below Threshold (Bank 1) - No Sub Type Information

DTC	P20EE00
Component / System	SCR NOx Catalyst
Monitor Strategy Description	Efficiency Low

Fault Limit	• Average SCR NOx Catalyst Temperature between 255°C and 450°C • AND • Calculated exhaust mass flow between 0.100000001490116kg/s and 0.5kg/s • AND • Engine Speed between 1100rpm and 2050rpm • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • The reductant delivery system is operating normally, the engine is operating in a functional normal engine mode, there is a reductant injection demand • AND • Steady state: No quick changes in engine speed, torque, exhaust mass flow and EATS temperature • AND • Reductant flow since the reductant tank has been refilled above 600g
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • P225D/00, P225F/00, P2201/64, P229F/64, P242B/64, P0420/00, P0402/00, P0401/00, P225C/00, P225E/00, P20FE/9A, P221A/00, P20EE/00, P2080/64, P2084/64, P208E/00, P0072/00, P0070/15, P2229/00, P2226/13, U3000/01, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029D/00, U029E/00, U3017/00
Time Required For DTC To Be Set	1800s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P26067F Intake Air Heater B Circuit Range/Performance - Actuator Stuck Off

DTC	P20EE00
Component / System	Intake Air Heater B
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• The preheat element is inactive when there is a preheat activation request. Only for 12 volt systems. and 2No Unit equals to 2
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P023400 Turbocharger/Supercharger Overboost Condition - No Sub Type Information

DTC	P023400
Component / System	Turbocharger/Supercharger Overboost Condition
Monitor Strategy Description	Overboost Condition
Fault Limit	• Difference between Sensed Boost Pressure and Estimated Boost Pressure above 60kPa. For current status, read MID 85 - Boost Pressure Control Monitor Bank 1, TID 95 - Boost pressure; high pressure evaluation
Enable Conditions	• Engine Speed between 1350rpm and 1650rpm • AND • Engine Torque in percent between 90- and 105- • AND • se_BoostTemp between -25°C and 130°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C • AND • Absolute Engine Speed rate of change below 10rpm • AND • Absolute Engine Torque rate of change below 50Nm • AND • Absolute Estimated Boost Pressure rate of change below 10kPa
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P0097/00, P0095/13, P0108/00, P0105/13
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P029900 Turbocharger/Supercharger Underboost - No Sub Type Information

DTC	P029900
Component / System	Turbocharger/Supercharger
Monitor Strategy Description	Underboost

Fault Limit	• Difference between Sensed Boost Pressure and Estimated Boost Pressure below -50kPa. For current status, read MID 85 - Boost Pressure Control Monitor Bank 1, TID 96 - Boost pressure; low pressure evaluation
Enable Conditions	• Engine Speed between 1350rpm and 1650rpm • AND • Engine Torque in percent between 90- and 105- • AND • se_BoostTemp between -25°C and 130°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C • AND • Absolute Engine Speed rate of change below 10rpm • AND • Absolute Engine Torque rate of change below 50Nm • AND • Absolute Estimated Boost Pressure rate of change below 10kPa
Disable Conditions	No Active DTC's: • U3000/01 P0335/31 P0336/38 P0489/00 P0403/13 P006E/00 P00AF/00 P0046/07 P1148/00 P0097/00 P0095/13 P0108/00 P0105/13
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U300001 Electronic control unit - General Electrical Failure

DTC	U300001
Component / System	Electronic control unit
Monitor Strategy Description	General Electronic Failure
Fault Limit	• Voltage on N/A:ECU internal below 0.148926V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U300041 General Checksum Failure

DTC	U300041
Component / System	Electronic control unit
Monitor Strategy Description	General Electronic Failure
Fault Limit	• Program memory corruption
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300044 Electronic control unit - Data Memory Failure

DTC	U300044
Component / System	Electronic control unit
Monitor Strategy Description	Data Memory Failure
Fault Limit	• RAM corruption
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300045 Electronic control unit - Program Memory Failure

DTC	U300045
Component / System	Electronic control unit
Monitor Strategy Description	Program Memory Failure
Fault Limit	• Program memory corruptionSoftware memory checksum error
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300049 Electronic control unit - Internal Electronic Failure

DTC	U300049
Component / System	Electronic control unit

Monitor Strategy Description	Internal Electronic Failure
Fault Limit	• ECU internal error
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P007015 Ambient Air Temperature Sensor "A" - Circuit Short To Battery or Open

DTC	P007015
Component / System	Ambient Air Temperature Sensor "A"
Monitor Strategy Description	Circuit Short or Open
Fault Limit	• Sensor voltage above 4.5 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	11.4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P007200 Ambient Air Temperature Circuit Low - No Sub Type Information

DTC	P007200
Component / System	Ambient Air Temperature Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Sensor voltage above 4.5 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	11.4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P009A00 Engine Air Intake Temperature - Correlation - No Sub Type Information

DTC	P009A00
Component / System	Air Intake
Monitor Strategy Description	Correlation
Fault Limit	• Difference between Sensed Boost Temperature and Modeled Boost Temperature below -45°C • OR • Difference between Sensed Boost Temperature and Modeled Boost Temperature above 45°C
Enable Conditions	• Engine Running • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Vehicle Speed above 65km/h for 20s • AND • se_CoolantTemp above 60°C • AND • se_CoolantTemp below 120°C • AND • Engine Speed between 1200rpm and 1850rpm • AND • Engine Torque as percent of max rated Torque at current Engine Speed between 0% and 60% • AND • Air Mass Flow between 0.0700000002980232kg/s and 0.360000014305115kg/s • AND • Difference between deteriorated and nominal CAC temperature below 20°C above conditions valid for 5s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P0112/00, P0110/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P011013 Intake Air Temperature Sensor 1 Bank 1 - Circuit Open

DTC	P011013
Component / System	Intake Air Temperature Sensor 1 Bank 1
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:43 above 0.794240V • OR • Voltage on B:43 above 0.023671V • Voltage on B:43 below 0.175672V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P011200 Intake Air Temperature Sensor 1 Circuit Low Bank 1 - No Sub Type Information

DTC	P011013
Component / System	Intake Air Temperature Sensor 1 Circuit Low Bank 1
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:43 below 0.023671V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P01162A Engine Coolant Temperature Circuit Range/Performance - Signal Stuck In Range

DTC	P011013
Component / System	Engine Coolant Temperature Circuit Range/Performance
Monitor Strategy Description	Signal Stuck In Range
Fault Limit	• Difference during Precrank between Engine Coolant Temperature and mean value of(EGR Temperature, Compressor Temperature, Boost Temperature) above 40°C

Enable Conditions	• Coolant Temperature at engine start below 55°C • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Engine Running • AND • Engine considered to be fully warmed up • AND • Engine in Precrank mode • AND • Engine Speed below 100rpm • AND • Engine Soak Time above 28800s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P2229/00, P2226/13, U3017/00
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P011700 Engine Coolant Temperature Circuit Low - No Sub Type Information

DTC	P011700
Component / System	Engine Coolant Temperature Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:27 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P012200 Throttle/Pedal Position Sensor/Switch "A" Circuit Low - No Sub Type Information

DTC	P012200
Component / System	Throttle/Pedal Position Sensor/Switch "A"
Monitor Strategy Description	Circuit Low
Fault Limit	• Sensor voltage below 0.38 V

Enable Conditions	• Key On • AND • Battery Voltage > 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	
Probable Causes	***See Tech Tool***

P012300 Throttle/Pedal Position Sensor/Switch "A" Circuit High - No Sub Type Information

DTC	P012300
Component / System	Throttle/Pedal Position Sensor/Switch "A"
Monitor Strategy Description	Circuit High
Fault Limit	• Sensor voltage above 4.25 V
Enable Conditions	• Key On • AND • Battery Voltage > 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P021700 Engine Coolant Over Temperature Condition - No Sub Type Information

DTC	P021700
Component / System	Engine Coolant Temperature
Monitor Strategy Description	Temperature Over Condition
Fault Limit	• se_CoolantTemp above (3.5No Unit + 107No unit + Output from look-up tables with inputs se_AmbAirPres and EngineCoolantPressure)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P040100 Engine Exhaust Gas Recirculation 1 Valve Position Flow Insufficient Detected - No Sub Type Information

DTC	P040100
Component / System	Engine Exhaust Gas Recirculation 1 Valve
Monitor Strategy Description	Flow Insufficient
Fault Limit	• Percentage of Ratio between Egr Mass Flow and Demanded Egr Mass Flow below (70% + Offset dependent on se_AmbAirPres). For current status, read MID 31 - EGR Monitor Bank 1, TID 84 - Exhaust gas recirculation flow percent of demanded; high flow evaluation
Enable Conditions	• Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C • AND • Engine Speed between 1300rpm and 2200rpm • AND • tc_IndTrqValue between 1500Nm and 2600Nm • AND • Ratio between Egr Mass Flow Demand and sum of Air Mass Flow and Egr Mass Flow Demand between 0.200000002980232ratio and 0.600000023841858ratio • AND • Demanded Egr Mass Flow between 0.100000001490116kg/s and 0.400000005960464kg/s • AND • Demanded Egr Mass Flow rate of change between -0.00999999977648258kg/s and 0.0199999995529652kg/s • AND • Engine Speed rate of change between -5rpm and 20rpm • AND • EGR valve Control PWM between 80% and 100% above conditions valid for 2s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040200 Engine Exhaust Gas Recirculation 1 Valve Position Flow Excessive Detected - No Sub Type Information

DTC	P040200
Component / System	Engine Exhaust Gas Recirculation 1
Monitor Strategy Description	Valve Position Flow Excessive Detected
Fault Limit	• Percentage of Ratio between Egr Mass Flow and Demanded Egr Mass Flow above (130% + Offset dependent on se_AmbAirPres). For current status, read MID 31 - EGR Monitor Bank 1, TID 83 - Exhaust gas recirculation flow percent of demanded; low flow evaluation
Enable Conditions	• Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C • AND • Engine Speed between 600rpm and 2000rpm • AND • tc_IndTrqValue between 1000Nm and 3000Nm • AND • Ratio between Egr Mass Flow Demand and sum of Air Mass Flow and Egr Mass Flow Demand between 0ratio and 0.25ratio • AND • Demanded Egr Mass Flow between 0kg/s and 0.100000001490116kg/s • AND • Demanded Egr Mass Flow rate of change between -0.0299999993294477kg/s and 0.0149999996647239kg/s • AND • Engine Speed rate of change between 0rpm and 200rpm • AND • EGR valve Control PWM between 0% and 90% above conditions valid for 1s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00 P0105/13
Time Required For DTC To Be Set	3s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P048013 Fan 1 Control Circuit - Circuit Open

DTC	P048013
Component / System	Fan 1 Control Circuit
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P050013 Wheel-Based Vehicle Speed - Circuit Open

DTC	P050013
Component / System	Wheel-Based Vehicle Speed
Monitor Strategy Description	Circuit Open
Fault Limit	• Sensor current below 0.1 mA
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	3s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P051B64 Engine High Resolution Crankcase Pressure Circuit Range/Performance - Signal Plausibility Failure

DTC	P051B64
Component / System	Engine High Resolution Crankcase Pressure
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Crankcase pressure compared to reference pressure below -15kPa • OR • Crankcase pressure compared to reference pressure below 15kPa

Enable Conditions	• Engine Speed below 180rpm
	• OR
	• Engine Speed between 10000rpm and 0rpm
	  • AND
	  • tc_IndTrqValue between 10000Nm and 10Nm
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • EGR valve Control PWM between 30% and 100%
	  • AND
	  • Turbocharger/Supercharger A Position between 100% and 0%
	  • AND
	  • No quick changes in engine speed and torque

Disable Conditions	No Active DTC's: • U3000/01, P0105/13, P0108/00, P051D/00, P051A/13, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P051A13 Crankcase Pressure Sensor - Circuit Open

DTC	P051A13
Component / System	Crankcase Pressure Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on B:28 above 4.757080V • AND • Voltage on B:28 below 4.852295V • OR • Voltage on B:28 below 0.307617V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P051D00 Engine High Resolution Crankcase Pressure - No Sub Type Information

DTC	P051D00
Component / System	Engine High Resolution Crankcase Pressure
Monitor Strategy Description	Crankcase Pressure
Fault Limit	• Voltage on B:28 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P052300 Engine Oil Pressure Circuit High - No Sub Type Information

DTC	P052300
Component / System	Engine Oil Pressure Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on B:11 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P052400 Engine Oil Pressure Too Low - No Sub Type Information

DTC	P052400
Component / System	Engine Oil Pressure
Monitor Strategy Description	Oil Pressure Too Low
Fault Limit	• se_OilPres below Output from a look-up table with input EngineSpeed
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.

Disable Conditions	No Active DTC's: • U3000/01, P0523/00, P0520/13
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P222613 Barometric Pressure Circuit - Circuit Open

DTC	P222613
Component / System	Barometric Pressure Circuit
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on N/A:ECU internal above 4.782715V
	  • AND
	  • Voltage on N/A:ECU internal below 4.852295V
	• OR
	• Voltage on N/A:ECU internal below 0.117188V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P222900 Barometric Pressure Circuit High - No Sub Type Information

DTC	P222900
Component / System	Barometric Pressure Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on N/A:ECU internal above 4.852295V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P226600 Water In Fuel Indicator Circuit Low - No Sub Type Information

DTC	P226600
Component / System	Water In Fuel Indicator

Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:8 below 0.208740V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P244B00 Aftertreatment 1 Diesel Particulate Filter Differential Pressure Too High (Bank 1) - No Sub Type Information

DTC	P244B00
Component / System	Aftertreatment 1 Diesel Particulate Filter
Monitor Strategy Description	Differential Pressure Too High
Fault Limit	• Measured differential pressure as percentage of modeled differential pressure above 350 %. For current status, read MID B2 - PM Filter Monitor Bank 1, TID 8E - Diesel particulate filter differential pressure
Enable Conditions	• Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Engine Speed between 1150rpm and 2000rpm • AND • tc_IndTrqValue between 1200Nm and 3000Nm • AND • Exhaust Flow between 0.280000001192093kg/s and 0.699999988079071kg/s • AND • Modeled differential pressure over the DPF between 0kPa and 1120kPa • AND • Exhaust Gas Temperature Sensor 2 between 250°C and 475°C • AND • Exhaust Gas Temperature Sensor 3 between 250°C and 475°C • AND • No quick changes in Engine Speed, Torque, Exhaust Mass Flow, Modeled Differential Pressure, Exhaust Gas Temperature Sensor 2 or Exhaust Gas Temperature Sensor 3
Disable Conditions	• Diesel injection in the aftertreatment system is active No Active DTC's: • P2084/64, P242B/64, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, U3000/01

Time Required For DTC To Be Set	2s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P246300 Particulate Filter Restriction - Soot Accumulation Bank 1 - No Sub Type Information

DTC	P246300
Component / System	Particulate Filter Restriction
Monitor Strategy Description	Soot Accumulation
Fault Limit	• Moderately high soot load in aftertreatment diesel particulate filter.
Enable Conditions	• Engine is running for (30s + 10s)
Disable Conditions	• Diesel injection in the aftertreatment system is active No Active DTC's: • U3000/01
Time Required For DTC To Be Set	4s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P250C00 Engine Oil Level Circuit Low - No Sub Type Information

DTC	P250C00
Component / System	Engine Oil Level
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:4 below 0.05V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	35s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P250F00 Engine Oil Level Too Low - No Sub Type Information

DTC	P250F00
Component / System	Engine Oil Level
Monitor Strategy Description	Level Low

Fault Limit	• If calculated value for oil level below -5% and • AND • Engine must be in prerunning during a specific time, defined by output from map with input se_OilTemp
Enable Conditions	• Engine Not Running
Disable Conditions	No Active DTC's: • U3000/01, P250C/00, P250A/13
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P255613 Engine Coolant Level Sensor/Switch - Circuit Open

DTC	P255613
Component / System	Engine Coolant Level Sensor/Switch
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:23 above (24.424390V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	• Voltage on B:23 above (15.949894V * (UnfilteredBatteryVoltage / 24.0V))
	  • AND
	  • Voltage on B:23 below (23.559100V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	  • Voltage on B:23 above (11.088209V * (UnfilteredBatteryVoltage / 24.0V))
	  • AND
	  • Voltage on B:23 below (13.577035V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	  • Voltage on B:23 above (6.574425V * (UnfilteredBatteryVoltage / 24.0V))
	  • AND
	  • Voltage on B:23 below (8.724271V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	  • Voltage on B:23 above (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
	  • AND
	  • Voltage on B:23 below (4.469182V * (UnfilteredBatteryVoltage / 24.0V))

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P255800 Engine Coolant Level Circuit Low - No Sub Type Information

DTC	P255800
Component / System	Engine Coolant Level
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:23 below (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P255900 Engine Coolant Level Circuit High - No Sub Type Information

DTC	P255900
Component / System	Engine Coolant Level
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on B:23 above (23.559100V * (UnfilteredBatteryVoltage / 24.0V)) • AND • Voltage on B:23 below (24.424390V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P256000 Engine Coolant Level Low - No Sub Type Information

DTC	P256000
Component / System	Engine Coolant Level
Monitor Strategy Description	Circuit High
Fault Limit	• se_CoolantLvl below (1No unit - 0No Unit)
Enable Conditions	• The engine must be running for at least (30s + 0s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P2559/00, P2558/00, P2556/13
Time Required For DTC To Be Set	20s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P256300 Engine Intake Manifold #1 Pressure Circuit Range/Performance - No Sub Type Information

DTC	P256300
Component / System	Engine Intake Manifold #1
Monitor Strategy Description	Pressure Circuit Range
Fault Limit	• Turbo Speed below 0rpm
Enable Conditions	• Engine running • AND • Engine Speed between 1000rpm and 2000rpm • AND • tc_IndTrqValue above 1000Nm above conditions valid for 5s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P257831 Turbocharger Speed Sensor - No Signal

DTC	P257831
Component / System	Turbocharger Speed Sensor
Monitor Strategy Description	No Signal
Fault Limit	• Turbo Speed below 0rpm
Enable Conditions	• Engine running • AND • Engine Speed between 1000rpm and 2000rpm • AND • tc_IndTrqValue above 1000Nm above conditions valid for 5s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P207F00 Reductant Quality - No Sub Type Information

DTC	P207F00
Component / System	Reductant Quality
Monitor Strategy Description	Pressure Circuit Range
Fault Limit	• Increased reductant flow has not improved conversion efficiency and the flow cannot be increased further • AND • Reductant concentration below 18% • AND • Conversion efficiency has decreased rapidly
Enable Conditions	• Average SCR NOx Catalyst Temperature between 255°C and 450°C • AND • Calculated exhaust mass flow between 0.100000001490116kg/s and 0.5kg/s • AND • Engine Speed between 1100rpm and 2050rpm • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • The reductant delivery system is operating normally, the engine is operating in a functional normal engine mode, there is a reductant injection demand • AND • Steady state: No quick changes in engine speed, torque, exhaust mass flow and EATS temperature • AND • Reductant flow since the reductant tank has been refilled above 600g
Disable Conditions	No Active DTC's: • P225D/00, P225F/00, P2201/64, P229F/64, P225C/00, P225E/00, P20FE/9A, P242B/64, P0420/00, P0402/00, P0401/00, P221A/00, P20EE/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P111C/00, P0111/64, P0112/00, P0110/13, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, P1136/00, U029D/00, U029E/00, U3017/00
Time Required For DTC To Be Set	1800s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P108600 Oil Level Moderately Low - No Sub Type Information

DTC	P108600
Component / System	Oil Level
Monitor Strategy Description	Level Low

Fault Limit	• If calculated value for oil level below 4% • AND • Engine must be in prerunning during a specific time, defined by output from map with input se_OilTemp
Enable Conditions	• Engine Not Running
Disable Conditions	No Active DTC's: • U3000/01, P250C/00, P250A/13
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U014100 Lost Communication With VMCU - No Sub Type Information

DTC	U014100
Component / System	VMCU
Monitor Strategy Description	Lost Signal
Fault Limit	• Lost communication with BCM on Medium Speed CAN Communication Bus • OR • Lost communication with BCM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	9.1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P229F64 NOx Sensor Gas Outlet Removed - Signal Plausibility Failure

DTC	P229F64
Component / System	NOx Sensor
Monitor Strategy Description	Outlet Removed
Fault Limit	• The sensor shall respond to tip-in events (sudden power increase). Maximum and minimum NOx levels are saved during evaluation events. When 5No Unit events have passed, the sensor is considered stuck low if the difference between the highest and lowest value is lower than 5No Unit. For current status, read MID 02 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 2, TID 9F - Difference in ppm between highest and lowest NOx level

Enable Conditions	• se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • tc_IndTrqValue between 1200Nm and 1900Nm • AND • Engine Speed above 1200rpm • AND • Average SCR NOx Catalyst Temperature between 150°C and 300°C • AND • Tip-in event: quick increase of power.
Disable Conditions	No Active DTC's: • P225D/00, P225F/00, P242B/64, P0420/00, P0402/00, P0401/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P225D/00, P220F/93, P225F/00, U029D/00, U029E/00
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P229E13 NOx Sensor Bank 1 Sensor 2 - Circuit Open

DTC	P229E13
Component / System	NOx Sensor Bank 1
Monitor Strategy Description	Circuit Open
Fault Limit	• Internal Open Circuit signal containing status and error byte received from Downstream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition Key Turned On
Disable Conditions	• Internal Open Circuit signal containing status and error byte from Downstream NOx sensor not yet evaluated or not yet recieved No Active DTC's: • U029E/00 U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220B1C NOx Sensor Supply Voltage Circuit Bank 1 Sensor 2 - Circuit Voltage Out of Range

DTC	P220B1C
Component / System	NOx Sensor Supply Voltage Circuit Bank 1 Sensor 2
Monitor Strategy Description	Circuit Voltage Out of Range

Fault Limit	• Internal Supply Voltage signal containing status and error byte received from Down-stream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition Key Turned On
Disable Conditions	• Internal Open Circuit signal containing status and error byte from Downstream NOx sensor not yet evaluated or not yet recieved No Active DTC's: • U029E/00 U3000/01
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220F93 NOx Sensor Heater Control Circuit Range/Performance Bank 1 Sensor 2 - No Operation

DTC	P220F93
Component / System	NOx Sensor Heater Control Circuit
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Internal status and error byte recieved from Downstream NOx sensor not evaluated as GOOD within a reasonable time. For current status, read MID 42 - Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 2, TID 9E - Heating Time
Enable Conditions	• se_AmbAirPres between 75kPa 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_BattVolt between 11.5V and 16V • AND • Engine must be running • AND • not Exhaust Aftertreatment Fuel Injecton Active for 30s • AND • Downstream NOx sensor must be activated by EMS
Disable Conditions	• Downstream NOx sensor Start Up Diagnosis reported OK No Active DTC's: • P229E/13, P22A1/00, P220B/1C, U029E/00, U3000/01
Time Required For DTC To Be Set	180s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208E00 Aftertreatment Reagent Dosing Valve Clogged - No Sub Type Information

DTC	P208E00
Component / System	Aftertreatment Reagent Dosing Valve
Monitor Strategy Description	Dosing Valve Clogged
Fault Limit	• Reagent pump dutycycle during high dosingReagent pump dutycycle during low/no dosingshall have a difference smaller than: 18.5No Unit. For current status, read MID 98 - NOx Catalyst Monitor Bank 1, TID A0 - Reductant pump duty cycle
Enable Conditions	• Engine Running • AND • (Reagent Pressure - 900kPa) between (215kPa * -1) and 215kPa • AND • Demanded Reductant Injection Flow below 0.0500000007450581g/s • AND • Catalyst tank temperature between 10°C and 55°C • AND • All conditions from part 1, except: • AND • Demanded Reductant Injection Flow below 0.0500000007450581g/s • AND • Drive the truck for at least 15 minutes in order to raise SCR temperature • AND • Average SCR NOx Catalyst Temperature above 250°C • AND • Demanded Reductant Injection Flowshall have injected at least: 75g • AND • Demanded Reductant Injection Flow above 0.449999988079071g/s
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	1200s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20A013 Reductant Purge Control Valve - Circuit Open

DTC	P20A013
Component / System	Reductant Purge Control Valve
Monitor Strategy Description	Dosing Valve Clogged
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P10A7/00

Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P215A64 Vehicle Speed - Wheel Speed Correlation - Signal Plausibility Failure

DTC	P215A64
Component / System	Vehicle Speed
Monitor Strategy Description	Wheel Speed Correlation
Fault Limit	• Difference between vehicle speed and ABS above 12 km/h
Enable Conditions	• Engine speed above 500 RPM
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P069200 Fan 1 Control Circuit High - No Sub Type Information

DTC	P069200
Component / System	Fan 1 Control Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P069100 Fan 1 Control Circuit Low - No Sub Type Information

DTC	P069100
Component / System	Fan 1 Control Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U015500 Lost Communication With Instrument Panel Cluster (IPC) Control Module - No Sub Type Information

DTC	U015500
Component / System	IPC Control Module
Monitor Strategy Description	Lost Signal
Fault Limit	• Lost communication with IPC on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88, U3000/01
Time Required For DTC To Be Set	15s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P052013 Engine Oil Pressure Sensor/Switch "A" - Circuit Open

DTC	P052013
Component / System	Engine Oil Pressure Sensor/Switch "A"
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on B:11 above 4.787598V AND • Voltage on B:11 below 4.852295V • OR • Voltage on B:11 below 0.212402V
Enable Conditions	• N/A
Disable Conditions	• Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P260513 Intake Air Heater "B" Control - Circuit Open

DTC	P260513
Component / System	Intake Air Heater “B”
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:14 above (25.138032V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	• Voltage on B:14 above (2.863488V * (UnfilteredBatteryVoltage / 24.0V)) AND
	  • AND
	  • Voltage on B:14 below (20.579645V * (UnfilteredBatteryVoltage / 24.0V))

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P06E800 Sensor Power Supply "C" Circuit High - No Sub Type InformationSensor Power Supply "C" Circuit High - No Sub Type Information

DTC	P06E800
Component / System	Power Supply "C"
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on A:1 above 5.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06E700 Sensor Power Supply "C" Circuit Low - No Sub Type Information

DTC	P06E700
Component / System	Sensor Power Supply "C"
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on A:1 below 4.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P00AF00 Turbocharger/Supercharger Boost Control "A" Module Performance - No Sub Type Information

DTC	P00AF00
Component / System	Turbocharger/Supercharger Boost Control “A”
Monitor Strategy Description	Module Performance
Fault Limit	• Internal failure detected by Turbocharger/Supercharger A.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, U010C/00
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P066613 Control Module Internal Temperature Sensor "A" - Circuit Open

DTC	P066613
Component / System	Turbocharger/Supercharger Boost Control “A”
Monitor Strategy Description	Module Performance
Fault Limit	• Voltage on N/A:ECU internal above 0.147705V • AND • Voltage on N/A:ECU internal below 1.119385V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P040C00 Exhaust Gas Recirculation Temperature Sensor "A" Circuit Low - No Sub Type Information

DTC	P040C00
Component / System	Exhaust Gas Recirculation Temperature Sensor "A"
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on B:48 below 0.023671V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030100 Cylinder 1 Misfire Detected - No Sub Type Information

DTC	P030100
Component / System	Exhaust Gas Recirculation Temperature Sensor "A"
Monitor Strategy Description	Circuit Low

Fault Limit	• PTO is not active
	• AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	  • AND
	  • If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020113 Cylinder 1 Injector "A" - Circuit Open

DTC	P020113
Component / System	Cylinder 1 Injector "A"
Monitor Strategy Description	Circuit Open
Fault Limit	• Current driving the injector rises to slow
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030300 Cylinder 3 Misfire Detected - No Sub Type Information

DTC	P030300
Component / System	Cylinder 3
Monitor Strategy Description	Misfire Detected
Fault Limit	• Misfire rate for cylinder 3 above 80%. For current status, read MID A4 - Misfire Cylinder 3 Data, TID 0C - Misfire counts for last/current driving cycles, MID A4 - Misfire Cylinder 3 Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO is not active
	• AND
	• Gear Engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	  • AND
	  • If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020313 Cylinder 3 Injector "A" - Circuit Open

DTC	P020313
Component / System	Cylinder 3 Injector “A”
Monitor Strategy Description	Circuit Open
Fault Limit	• Current driving the injector rises to slow
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020413 Cylinder 4 Injector "A" - Circuit Open

DTC	P020413
Component / System	Cylinder 4 Injector “A”
Monitor Strategy Description	Circuit Open
Fault Limit	• Current driving the injector rises to slow
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020513 Cylinder 5 Injector "A" - Circuit Open

DTC	P020513
Component / System	Cylinder 5 Injector “A”
Monitor Strategy Description	Circuit Open
Fault Limit	• Current driving the injector rises to slow
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020613 Cylinder 6 Injector "A" - Circuit Open

DTC	P020613
Component / System	Cylinder 6 Injector “A”
Monitor Strategy Description	Circuit Open
Fault Limit	• Current driving the injector rises to slow
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220E93 NOx Sensor Heater Control Circuit Range/Performance (Bank 1 Sensor 1) - No Operation

DTC	P220E93
Component / System	NOx Sensor Heater Control Circuit
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Internal status and error byte recieved from Upstream NOx sensor not evaluated as GOOD within a reasonable time. For current status, read MID 41 - Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 1, TID 9E - Heating Time
Enable Conditions	• se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_BattVolt between 11.5V and 16V • AND • Engine must be running • AND • not Exhaust Aftertreatment Fuel Injecton Active for 30s • AND • Upstream NOx sensor must be activated by EMS
Disable Conditions	• Upstream NOx sensor Start Up Diagnosis reported OK No Active DTC's: • P2200/13, P2203/00, P220A/1C, U029D/00, U3000/01
Time Required For DTC To Be Set	180s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P250A13 Engine Oil Level Sensor - Circuit Open

DTC	P250A13
Component / System	Engine Oil Level Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on B:4 above 4.85V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	35s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P026C00 Fuel Injection Quantity Lower Than Expected - No Sub Type Information

DTC	P026C00
Component / System	Fuel Injection Quantity
Monitor Strategy Description	Level Lower than Expected
Fault Limit	• Average of the ratio between estimated and requested fuel quantity. above 75%. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8C - Fuel injection amount

Enable Conditions	• se_CoolantTemp between 60°C and 110°C
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• EGR content in the intake manifold [100 = only EGR, no fresh air] between 0ratio and 20ratio
	• AND
	• se_BoostTemp between -7°C and 120°C
	• AND
	• tc_IndTrqValue between 1000Nm and 4000Nm
	• AND
	• Engine Speed between 1000rpm and 2200rpm
	  • AND
	  • se_EngExhTempOut between 100°C and 460°C
	  • AND
	  • se_HcHeatTempOut between 200°C and 460°C
	  • AND
	  • se_DpfTempOut between 200°C and 460°C
	• AND
	• above conditions valid for 10s
	• AND
	• Exhaust Flow between 0kg/s and 100kg/s
	• AND
	• The estimated lambda must be between the upper and lower limits between 1ratio and 2.599999904632568ratio
	• AND
	• Engine running for 10s
	• AND
	• The diagnosis can be performed only once per driving cycle
	• AND
	• The engine must be in a stable operating state, i,e., engine speed, torque, boost pressure and EGR value should be stable.

Disable Conditions	No Active DTC's: • U3000/01, P0115/13, P0117/00, P2226/13, P2229/00, P0105/13, P0108/00, P0095/13, P0097/00, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0406/00, P0409/13, P2200/13, P2203/00, P0340/31, P0335/31, P2080/64, P2084/64, P242B/64, P0069/64, P0096/64, P0234/00, P0299/00, P040B/64, P04D9/00, P0401/00
Time Required For DTC To Be Set	N/A
MIL Illumination	3
Probable Causes	***See Tech Tool***

P026D00 Fuel Injection Quantity Higher Than Expected - No Sub Type Information

DTC	P026D00
Component / System	Fuel Injection Quantity
Monitor Strategy Description	Higher Level than Expected
Fault Limit	• 128% above Average of the ratio between estimated and requested fuel quantity.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8C - Fuel injection amount

Enable Conditions	• se_CoolantTemp between 60°C and 110°C
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• EGR content in the intake manifold [100 = only EGR, no fresh air] between 0ratio and 20ratio
	• AND
	• se_BoostTemp between -7°C and 120°C
	• AND
	• tc_IndTrqValue between 1000Nm and 4000Nm
	• AND
	• Engine Speed between 1000rpm and 2200rpm
	  • AND
	  • se_EngExhTempOut between 100°C and 460°C
	  • AND
	  • se_HcHeatTempOut between 200°C and 460°C
	  • AND
	  • se_DpfTempOut between 200°C and 460°C
	• AND
	• above conditions valid for 10s
	• AND
	• Exhaust Flow between 0kg/s and 100kg/s
	• AND
	• The estimated lambda must be between the upper and lower limits between 1ratio and 2.599999904632568ratio
	• AND
	• Engine running for 10s
	• AND
	• The diagnosis can be performed only once per driving cycle
	• AND
	• The engine must be in a stable operating state, i,e., engine speed, torque, boost pressure and EGR value should be stable.

Disable Conditions	No Active DTC's: • U3000/01, P0115/13, P0117/00, P2226/13, P2229/00, P0105/13, P0108/00, P0095/13, P0097/00, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0406/00, P0409/13, P2200/13, P2203/00, P0340/31, P0335/31, P2080/64, P2084/64, P242B/64, P0069/64, P0096/64, P0234/00, P0299/00, P040B/64, P04D9/00, P0401/00
Time Required For DTC To Be Set	N/A
MIL Illumination	3
Probable Causes	***See Tech Tool***

P245364 Diesel Particulate Filter Pressure Sensor "A" Circuit Range/Performance - Signal Plausibility Failure

DTC	P245364
Component / System	Fuel Injection Quantity
Monitor Strategy Description	Higher Level than Expected

Fault Limit	• Failure event for diagnosis in AfterRun
	  • AND
	  • Compensated Diesel Particulate Filter Differential Pressure above 1.5kPa
	• OR
	• Failure event for diagnosis during high load
	• AND
	• Compensated Diesel Particulate Filter Differential Pressure below 1.649999976158142kPa

Enable Conditions	• Enable conditions for running the diagnosis in AfterRun
	  • AND
	  • Engine Off
	  • AND
	  • Exhaust Gas Temperature Sensor 2 between -8°C and 400°C
	  • AND
	  • Exhaust Gas Temperature Sensor 3 between -8°C and 400°C
	• OR
	• Enable conditions for running the diagnosis during high load
	• AND
	• Engine Speed between 1400rpm and 1900rpm
	• AND
	• tc_IndTrqValue above 1000Nm
	• AND
	• Exhaust Gas Temperature Sensor 2 between 270°C and 500°C
	• AND
	• Exhaust Gas Temperature Sensor 3 between 240°C and 400°C
	• AND
	• Exhaust Flow above 0.280000001192093kg/s
	• AND
	• Modeled differential pressure over the DPF above 3kPa

Disable Conditions	No Active DTC's: • P2084/64, P242B/64, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, U3000/01
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P249F00 Excessive Time To Enter Closed Loop DPF Regeneration Control - No Sub Type Information

DTC	P249F00
Component / System	DPF
Monitor Strategy Description	Excessive Time to Enter Close Loop
Fault Limit	• Exhaust Aftertreatment Fuel Injecton Control Forced in Open Loop 0.5ratio of the time.

Enable Conditions	• Exhaust Aftertreatment Regeneration Active • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • se_CoolantTemp between 60°C and 120°C • AND • Exhaust Gas Temperature Sensor 1 between 225°C and 550°C • AND • Modeled Exhaust Gas Temperature Sensor 2 between 300°C and 650°C • AND • Exhaust Flow between 0.0500000007450581kg/s and 0.600000023841858kg/s • AND • tc_IndTrqValue below 5Nm
Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01
Time Required For DTC To Be Set	200s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24A000 Closed Loop DPF Regeneration Control At Limit - Temperature Too Low - No Sub Type Information

DTC	P24A000
Component / System	DPF
Monitor Strategy Description	Control At Limit
Fault Limit	• Closed Loop Exhaust Aftertreatment Fuel Injecton Control At Maximum Limit 0.699999988079071ratio of the time. Regeneration Temperature Too Low.

Enable Conditions	• Exhaust Aftertreatment Regeneration Active • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • se_CoolantTemp between 60°C and 120°C • AND • Exhaust Gas Temperature Sensor 1 between 225°C and 550°C • AND • Modeled Exhaust Gas Temperature Sensor 2 between 300°C and 650°C • AND • Exhaust Flow between 0.0500000007450581kg/s and 0.600000023841858kg/s • AND • tc_IndTrqValue below 5Nm
Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01
Time Required For DTC To Be Set	50s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20DC00 Exhaust Aftertreatment Fuel Supply Control Stuck Closed - No Sub Type Information

DTC	P20DC00
Component / System	EATS
Monitor Strategy Description	Fuel Supply Control Stuck Closed

Fault Limit	• Monitor A Failure Event IDTC_ATI1_FP_PL
	• AND
	• se_AhiFuelPres below 100kPa
	  • AND NOT
	  • se_AhiFuelPres below 45kPa
	  • AND
	  • se_AhiFuelPres below 300kPa
	  • OR
	  • se_AhiFuelPres above 200kPa
	  • AND
	  • se_AhiFuelPres above 200kPa
	• OR
	  • Monitor B Failure Event IDTC_ATI1_FP_PL
	  • AND
	  • Fuel Pressure In The Exhaust Aftertreatment Fuel Injector below 0kPa for 60s

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	  • Diagnosis not completed this driving cycle
	  • OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	  • se_CoolantTemp above 20°C
	  • AND
	  • Exhaust Flow above 0.00999999977648258kg/s
	  • AND
	  • Exhaust Gas Temperature Sensor 1 between 0°C and 500°C
	  • AND
	  • Exhaust Gas Temperature Sensor 2 between 120°C and 400°C
	
	• OR
	  • Monitor B Enable Conditions IDTC_ATI1_FP_PL
	  • AND
	  • se_BattVolt between 10V and 16V
	  • AND
	  • Engine Speed between 475rpm and 3500rpm
	  • AND
	  • se_CoolantTemp above 20°C
	  • AND
	  • Exhaust Flow above 0.00999999977648258kg/s
	  • AND
	  • Exhaust Gas Temperature Sensor 1 between 0°C and 500°C
	  • AND
	  • Exhaust Gas Temperature Sensor 2 between 120°C and 400°C

Disable Conditions	No Active DTC's: • P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FA/00, P24F8/13, U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P215A/64
Time Required For DTC To Be Set	90s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20CF7A Exhaust Aftertreatment Fuel Injector "A" Stuck Open - Fluid Leak or Seal Failure

DTC	P20CF7A
Component / System	EATS Injector “A”
Monitor Strategy Description	Stuck Open
Fault Limit	• se_AhiFuelPres below 75kPa

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	• Diagnosis not completed this driving cycle
	  • OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• se_CoolantTemp above 20°C
	• AND
	• Exhaust Flow above 0.00999999977648258kg/s
	• AND
	• Exhaust Gas Temperature Sensor 1 between 0°C and 500°C
	• AND
	• Exhaust Gas Temperature Sensor 2 between 120°C and 400°C

Disable Conditions	No Active DTC's: • P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FA/00, P24F8/13, U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P215A/64
Time Required For DTC To Be Set	90s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269800 Exhaust Aftertreatment Fuel Injector "A" Performance - No Sub Type Information

DTC	P269800
Component / System	EATS Injector “A”
Monitor Strategy Description	Injector Performance
Fault Limit	• Exhaust Aftertreatment Fuel Injector "A" loss of injection above 0.75ratio

Enable Conditions	• Hydrocarbon Conversion Monitor Enable Conditions • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Engine Speed between 590rpm and 3000rpm • AND • tc_IndTrqValue between 1Nm and 4000Nm • AND • Exhaust Aftertreatment Fuel Injecton Active • AND • Exhaust Gas Temperature Sensor 3 between 200°C and 600°C • AND • Exhaust Gas Temperature Sensor 1 between 170°C and 400°C • AND • SCR warming active
Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P2229/00, P2226/13, P0072/00, P0070/15, P20DD/13, P20E0/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, U029D/00, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029E/00, P20EE/00, P2201/64, P225D/00, P229F/64, P225F/00, P20D0/00, P24F6/00, P20DC/00, P20CF/7A, P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FB/00, P24FA/00, P24F8/13, U3000/01
Time Required For DTC To Be Set	1000s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20D000 Exhaust Aftertreatment Fuel Injector "A" Stuck Closed - No Sub Type Information

DTC	P20D000
Component / System	EATS Injector “A”
Monitor Strategy Description	Injector Stuck Closed

Fault Limit	• se_AhiFuelPres above 140kPa
	  • AND NOT
	  • se_AhiFuelPres below 45kPa
	  • AND
	  • se_AhiFuelPres below 300kPa
	  • OR
	  • se_AhiFuelPres above 200kPa
	  • AND
	  • se_AhiFuelPres above 200kPa

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	• Diagnosis not completed this driving cycle
	  • OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• se_CoolantTemp above 20°C
	• AND
	• Exhaust Flow above 0.00999999977648258kg/s
	• AND
	• Exhaust Gas Temperature Sensor 1 between 0°C and 500°C
	• AND
	• Exhaust Gas Temperature Sensor 2 between 120°C and 400°C

Disable Conditions	No Active DTC's: • U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P215A/64
Time Required For DTC To Be Set	90s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P200200 Diesel Particulate Filter Efficiency Below Threshold (Bank 1) - No Sub Type Information

DTC	P200200
Component / System	EATS Injector “A”
Monitor Strategy Description	Injector Stuck Closed
Fault Limit	• Number of PM Sensor evaluations exceeding 330sdivided by total number of PM Sensor evaluations below 0.100000001490116ratio. For current status, read MID B2 - PM Filter Monitor Bank 1, TID AA - Ratio of soot slip through DPF

Enable Conditions	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• se_CoolantTemp between 60°C and 120°C
	• AND
	• Demanded fuel flow from aftertreatment fuel injector below 0.01 for 60s
	• AND
	• Engine Speed between 400rpm and 2750rpm
	• AND
	• Average Particulate Filter Temperature between 400rpm and 2750rpm
	• AND
	  • not Status flag for regeneration active
	  • AND
	  • Engine is running. The running time is accumulated across key cycles. above conditions valid for 1200s
	• AND
	• Engine is running without a reset of DPF Poisoning Levels (R1AGC) occuring. The time since last reset is accumulated across key cycles. for 28800s
	• AND
	  • All DTCs (Diagnostic Trouble Codes) are reset
	  • OR
	  • 2 seconds have passed since EECU startup
	  • OR
	  • A new drive cycle detected
	  • AND
	  • Diesel Particulate Filter OBD not finished this drivecycle
	  • AND
	  • Reset of DPF Poisoning Levels (R1AGC) is activated or a reprogramming of the EECU has occured.
	  • OR
	  • All DTCs (Diagnostic Trouble Codes) are reset
	  • OR
	  • Engine is running after a PM sensor diagnostic evaluation. This time is accumulated across key cycles. for 0s
	  • AND
	  • Dew point for PM sensor reached above conditions valid for 0s

Disable Conditions	No Active DTC's: • P2229/00, P2226/13, P0072/00, P0070/15, P2084/64, P242B/64, U02A3/00, P24D1/00, P24DA/00, P24B1/00, P24FC/00, P24B3/13, P24B5/00, P24B4/92, P24B0/00, P24AF/00, P2AB0/47, P24D0/00, P1034/00
Time Required For DTC To Be Set	335s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208464 Exhaust Gas Temperature Sensor Circuit Range/Performance (Bank 1 Sensor 2) - Signal Plausibility Failure

DTC	P208464
Component / System	Exhaust Gas Temperature Sensor
Monitor Strategy Description	Circuit Range/Performance

Fault Limit	• Evaluation Between The Sensors Performed During Engine Running:
	• AND
	• Difference between Exhaust Gas Temperature Sensor 1 and Sensor 2 above 70°C
	  • AND
	  • Difference between Exhaust Gas Temperature Sensor 2 and Sensor 3 above 70° C
	• OR
	• Exhaust Gas Temperature Sensor 2 below 100°C

Enable Conditions	• Evaluation Between The Sensors Performed During Engine Running: • AND • se_AmbAirPres between 75kPa and 105kPa • AND • AmbientAirTemperature_VMCU between -8°C and 55°C • AND • se_CoolantTemp above 60°C • AND • tc_IndTrqValue between 500Nm and 2000Nm • AND • Modeled Exhaust Gas Temperature at Bank 1 Sensor 1 between 200°C and 400°C • AND • below 25°C • AND • Difference Between Modelled Exhaust Gas Temperature At Sensor 2 And Modelled Exhaust Gas Temperature At Sensor 3 below 25°C • AND • Difference Between Modelled Exhaust Gas Temperature At Sensor 1 And Modelled Exhaust Gas Temperature At Sensor 2 below 25°C
Disable Conditions	• Exhaust Aftertreatment Fuel Injecton Active • OR • Exhaust Pressure Control Valve A PWM above 5% No Active DTC's: • PP0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01, U3017/00
Time Required For DTC To Be Set	35s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P242B64 Exhaust Gas Temperature Sensor Circuit Range/Performance (Bank 1 Sensor 3) - Signal Plausibility Failure

DTC	P242B64
Component / System	Exhaust Gas Temperature Sensor
Monitor Strategy Description	Circuit Range/Performance

Fault Limit	• Evaluation Between The Sensors Performed During Engine Running:
	• AND
	• Difference between Exhaust Gas Temperature Sensor 1 and Sensor 2 above 70°C
	  • AND
	  • Difference between Exhaust Gas Temperature Sensor 2 and Sensor 3 above 70° C
	• OR
	• Exhaust Gas Temperature Sensor 2 below 100°C

Enable Conditions	• Evaluation Between The Sensors Performed During Engine Running: • AND • se_AmbAirPres between 75kPa and 105kPa • AND • AmbientAirTemperature_VMCU between -8°C and 55°C • AND • se_CoolantTemp above 60°C • AND • tc_IndTrqValue between 500Nm and 2000Nm • AND • Modeled Exhaust Gas Temperature at Bank 1 Sensor 1 between 200°C and 400°C • AND • below 25°C • AND • Difference Between Modelled Exhaust Gas Temperature At Sensor 2 And Modelled Exhaust Gas Temperature At Sensor 3 below 25°C • AND • Difference Between Modelled Exhaust Gas Temperature At Sensor 1 And Modelled Exhaust Gas Temperature At Sensor 2 below 25°C
Disable Conditions	• Exhaust Aftertreatment Fuel Injecton Active • OR • Exhaust Pressure Control Valve A PWM above 5% No Active DTC's: • PP0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01, U3017/00
Time Required For DTC To Be Set	35s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P020213 Cylinder 2 Injector "A" - Circuit Open

DTC	P020213
Component / System	Cylinder 2 Injector "A"
Monitor Strategy Description	Circuit Open
Fault Limit	Current driving the injector rises to slow
Enable Conditions	• Engine Running
Disable Conditions	• Exhaust Aftertreatment Fuel Injecton Active • OR • Exhaust Pressure Control Valve A PWM above 5% No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030600 Cylinder 6 Misfire Detected - No Sub Type Information

DTC	P030600
Component / System	Cylinder 6
Monitor Strategy Description	Misfire
Fault Limit	Misfire rate for cylinder 6 above 80%. For current status, read MID A7 - Misfire Cylinder 6 Data, TID 0C - Misfire counts for last/current driving cycles, MID A7 - Misfire Cylinder 6 Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO Not Active
	  • AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	• AND
	• If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24A100 Closed Loop DPF Regeneration Control At Limit - Temperature Too High - No Sub Type Information

DTC	P24A100
Component / System	DPF
Monitor Strategy Description	Regeneration Control At Limit
Fault Limit	• Closed Loop Exhaust Aftertreatment Fuel Injecton Control At Minimum Limit 0.699999988079071ratio of the time. Regeneration Temperature Too Low.

Enable Conditions	• Exhaust Aftertreatment Regeneration Active • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • se_CoolantTemp between 60°C and 120°C • AND • Exhaust Gas Temperature Sensor 1 between 225°C and 550°C • AND • Modeled Exhaust Gas Temperature Sensor 2 between 300°C and 650°C • AND • Exhaust Flow between 0.0500000007450581kg/s and 0.600000023841858kg/s • AND • tc_IndTrqValue below 5Nm
Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P0072/00, P0070/15, P2229/00, P2226/13, P0117/00, P0115/13, U3000/01
Time Required For DTC To Be Set	50s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P245900 Diesel Particulate Filter Regeneration Frequency (Bank 1) - No Sub Type Information

DTC	P245900
Component / System	DPF
Monitor Strategy Description	Filter Regeneration Frequency
Fault Limit	• Difference between pressure based and Kalman filter based soot models above 0.600000023841858ratio • AND • Time since last regeneration above 16400s • AND • Number of too frequent regenerations in a row above 2cnt. For current status, read MID B2 - PM Filter Monitor Bank 1, TID 8F - Soot level compared to estimated soot level

Enable Conditions	• Exhaust Aftertreatment Regeneration Active • AND • se_AmbAirPres between 75kPa and 120kPa • AND • not Status flag for EATS control routine active • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	16400s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24A200 Diesel Particulate Filter Regeneration Incomplete (Bank 1) - No Sub Type Information

DTC	P24A200
Component / System	DPF
Monitor Strategy Description	Filter Regeneration Frequency
Fault Limit	• Too small reduction of actual Diesel Particulate Filter soot loading • AND • Differential pressure percent after parked Diesel Particulate Filter regeneration above 150%. For current status, read MID B2 - PM Filter Monitor Bank 1, TID 90 - Differential pressure over diesel particulate filter, MID B2 - PM Filter Monitor Bank 1, TID 91 - Soot reduction calculated from differential pressure sensor

Enable Conditions	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• se_CoolantTemp between 60°C and 120°C
	• AND
	• AHI-injection demand of 0.01g/s or more for 600s
	• AND
	• not Diesel Particulate Filter regeneration triggered by OBD-tool
	• AND
	• Engine Speed between 550rpm and 2100rpm
	• AND
	• tc_IndTrqValue between 1Nm and 4000Nm
	• AND
	• Exhaust Flow between 0.180000007152557kg/s and 0.699999988079071kg/s
	• AND
	• Average Particulate Filter Temperature between 250°C and 475°C
	• AND
	• No quick changes in engine speed or torque
	• AND
	• No quick changes in Diesel Particulate Filter temperature
	• AND
	• Ongoing moving Diesel Particulate Filter regeneration above conditions valid for 10s
	• OR
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • se_AmbAirPres between 75kPa and 120kPa
	  • AND
	  • se_CoolantTemp between 60°C and 120°C
	  • AND
	  • AHI-injection demand of 0.01g/s or more for 600s
	  • AND
	  • not Diesel Particulate Filter regeneration triggered by OBD-tool
	  • AND
	  • Engine Speed between 800rpm and 2100rpm
	  • AND
	  • tc_IndTrqValue between 1Nm and 4000Nm
	  • AND
	  • Exhaust Flow between 0.200000002980232kg/s and 0.699999988079071kg/s
	  • AND
	  • Average Particulate Filter Temperature between 225°C and 475°C
	  • AND
	  • No quick changes in engine speed or torque
	  • AND
	  • No quick changes in Diesel Particulate Filter temperature
	  • AND

	• Completed parked Diesel Particulate Filter regeneration, and no ongoing moving

Disable Conditions	No Active DTC's: • P2084/64, P242B/64, P2453/64, P0072/00, P0070/15, P0339/00, P0335/31, P0336/38, U3000/01, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13
Time Required For DTC To Be Set	1200s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040B64 Exhaust Gas Recirculation Temperature Sensor "A" Circuit Range/ Performance - Signal Plausibility Failure

DTC	P040B64
Component / System	Intake Air Temperature Sensor 2
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• (se_EgrTemp - se_CoolantTemp) below -45°C • OR • (se_EgrTemp - se_CoolantTemp) above 45°C
Enable Conditions	• Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Engine Speed between 550rpm and 800rpm • AND • tc_IndTrqValue between 0Nm and 500Nm • AND • EGR A Flow between 0kg/s and 0.0799999982118607kg/s • AND • EGR valve Control PWM between 15% and 100% • AND • Engine considered fully warmed up above conditions valid for 30s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0489/00, P0403/13, P040C/00, P040A/13, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P0406/00, P0409/13, P2229/00, P2226/13
Time Required For DTC To Be Set	12s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P052164 Engine Oil Pressure Sensor/Switch Range/Performance - Signal Plausibility Failure

DTC	P052164
Component / System	Intake Air Temperature Sensor 2
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• se_OilPres above 100kPa • OR • se_OilPres above 600kPa • OR • se_OilPres below 230kPa
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P0523/00, P0520/13, U3017/00
Time Required For DTC To Be Set	4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P050700 Idle Control System - RPM Higher Than Expected - No Sub Type Information

DTC	P050700
Component / System	Idle Control System
Monitor Strategy Description	RPM High
Fault Limit	• Average engine speed during the evaluation period above 800rpm
Enable Conditions	• se_CoolantTemp between 60°C and 110°C • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • VehicleSpeed below 0.100000001490116km/h • AND • Power take-off is not active • AND • Engine running for 60s • AND • Stable engine speed • AND • Stable engine torque • AND • Idle governor is active above conditions valid for 5s

Disable Conditions	No Active DTC's: • P0117/00, P0115/13, P2229/00, P0340/31, P0335/31, U3000/01, P0115/13, P0117/00 ,P0070/15, P0072/00, P2229/00, P2226/13, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38, P0016/76, P0340/31, P0341/38, P0500/13, P0502/00, P215A/64
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P206B64 Reductant Quality Sensor Range/Performance - Signal Plausibility Failure

DTC	P206B64
Component / System	Reductant Quality Sensor
Monitor Strategy Description	Signal Plausibility
Fault Limit	• If a DTC in the "Inhibited by the following DTC's"-list is failed or not evaluated, it might inhibit this DTC • AND • Reductant concentration below 18% • AND • Difference between the filtered NOx conversion and the expected NOx conversion, based on reductant concentration, above 5%
Enable Conditions	• Average SCR NOx Catalyst Temperature between 255°C and 450°C • AND • Calculated exhaust mass flow between 0.100000001490116kg/s and 0.5kg/s • AND • Ambient Air Temperature between -8°C and 55°C • AND • Engine Speed between 1100rpm and 2050rpm • AND • The reductant delivery system is operating normally, the engine is operating in a functional normal engine mode, there is a reductant injection demand • AND • Steady state: No quick changes in engine speed, torque, exhaust mass flow and EATS temperature • AND • Reductant flow since the reductant tank has been refilled above 600g
Disable Conditions	No Active DTC's: • U3000/01, P225D/00, P225F/00, P2201/64, P229F/64, P225C/00, P225E/00, P20FE/9A, P242B/64, P0420/00, P0402/00, P0401/00, P221A/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029D/00, U029E/00, U3017/00
Time Required For DTC To Be Set	7200s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P030200 Cylinder 2 Misfire Detected - No Sub Type Information

DTC	P030200
Component / System	Cylinder
Monitor Strategy Description	Misfire Detected
Fault Limit	• Misfire rate for cylinder 2 above 80%. For current status, read MID A3 - Misfire Cylinder 2 Data, TID 0C - Misfire counts for last/current driving cycles, MID A3 - Misfire Cylinder 2 Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO is not active
	• AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	• AND
	• If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01 P0262/00 P0201/13 P0265/00 P0202/13 P0268/00 P0203/13 P0271/00 P0204/13 P0274/00 P0205/13 P0277/00 P0206/13 P0339/00 P0335/31 P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030400 Cylinder 4 Misfire Detected - No Sub Type Information

DTC	P030400
Component / System	Cylinder 4
Monitor Strategy Description	Misfire Detected
Fault Limit	• Misfire rate for cylinder 4 above 80%. For current status, read MID A5 - Misfire Cylinder 4 Data, TID 0C - Misfire counts for last/current driving cycles, MID A5 - Misfire Cylinder 4 Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO is not active
	• AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	• AND
	• If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01 P0262/00 P0201/13 P0265/00 P0202/13 P0268/00 P0203/13 P0271/00 P0204/13 P0274/00 P0205/13 P0277/00 P0206/13 P0339/00 P0335/31 P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030500 Cylinder 5 Misfire Detected - No Sub Type Information

DTC	P030400
Component / System	Cylinder 5
Monitor Strategy Description	Misfire Detected

Fault Limit	• Misfire rate for cylinder 5 above 80%. For current status, read MID A5 - Misfire Cylinder 5 Data, TID 0C - Misfire counts for last/current driving cycles, MID A5 - Misfire Cylinder 4 Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO is not active
	• AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	• AND
	• If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01 P0262/00 P0201/13 P0265/00 P0202/13 P0268/00 P0203/13 P0271/00 P0204/13 P0274/00 P0205/13 P0277/00 P0206/13 P0339/00 P0335/31 P0336/38
Time Required For DTC To Be Set	120s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P054F00 Cylinder 5 Idle Control System - Fuel Quantity Higher Than Expected - No Sub Type Information

DTC	P054F00
Component / System	Idle Control System
Monitor Strategy Description	Fuel Quantity Higher Than Expected
Fault Limit	• Average fuel quantity in each injection for the evaluation period above 140mg/stroke

Enable Conditions	• not Fuel cut inactive • AND • se_CoolantTemp between 60°C and 110°C • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • VehicleSpeed below 0.100000001490116km/h • AND • Power take-off is not active • AND • Engine running for 60s • AND • Stable engine speed • AND • Stable engine torque • AND • Idle governor is active above conditions valid for 5s
Disable Conditions	No Active DTC's: • P0117/00, P0115/13, P2229/00, P0340/31, P0335/31, U3000/01, P0115/13, P0117/00, P0070/15, P0072/00, P2229/00, P2226/13, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38, P0016/76, P0340/31, P0341/38, P0500/13, P0502/00, P215A/64
Time Required For DTC To Be Set	185s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P030000 Random Misfire Detected

DTC	P054F00
Component / System	Cylinder
Monitor Strategy Description	Misfire
Fault Limit	• Total misfire rate above 5%. For current status, read MID A1 - Misfire Monitor General Data, TID 0C - Misfire counts for last/current driving cycles, MID A1 - Misfire Monitor General Data, TID 0B - Moving average misfire counts for last 10 driving cycles

Enable Conditions	• PTO is not active
	  • AND
	  • Gear engaged
	  • AND
	  • EngineSpeed between 550rpm and 1650rpm
	  • AND
	  • Torque value between 406Nm and 1800Nm
	  • AND
	  • Engine is not idling
	• OR
	  • Engine is idling
	  • AND
	  • Torque value between 0Nm and 610Nm
	  • AND
	  • EngineSpeed between 450rpm and 800rpm
	  • AND
	  • Vehicle stand still
	  • AND
	  • If a misfire fault code has been set you will also need to consider similar conditions in order to heal the fault code. Similar conditions window is defined by engine speed, engine torque and coolant temperature at the moment the fault code is set. Considering the similar conditions means that the fault code has to be evaluated in an operating point within the similar conditions window in order to heal it. The similar conditions information relevant to Misfire fault codes is available via P1NL2. Note that for the diagnostic function to be active, the 'similar conditions' and all conditions listed herein must be met.

Disable Conditions	No Active DTC's: • U3000/01, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38
Time Required For DTC To Be Set	480s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P050600 Idle Control System - RPM Lower Than Expected - No Sub Type Information

DTC	P050600
Component / System	Idle Control System
Monitor Strategy Description	Fuel Quantity Higher Than Expected
Fault Limit	• Average engine speed during the evaluation period below 450rpm

Enable Conditions	• not Fuel cut inactive • AND • se_CoolantTemp between 60°C and 110°C • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • VehicleSpeed below 0.100000001490116km/h • AND • Power take-off is not active • AND • Engine running for 60s • AND • Stable engine speed • AND • Stable engine torque • AND • Idle governor is active above conditions valid for 5s
Disable Conditions	No Active DTC's: • P0117/00, P0115/13, P2229/00, P0340/31, P0335/31, U3000/01, P0115/13, P0117/00, P0070/15, P0072/00, P2229/00, P2226/13, P0262/00, P0201/13, P0265/00, P0202/13,P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38, P0016/76, P0340/31, P0341/38, P0500/13, P0502/00, P215A/64
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P25793A Turbocharger Speed Sensor "A" Circuit Range/Performance - Signal Has Too Many Pulses

DTC	P25793A
Component / System	Turbocharger Speed Sensor A
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Ratio between Fault Timer (incremented when Turbo Overspeed Flag is TRUE) and Evaluation Timer above 0.899999976158142ratio

Enable Conditions	• Engine Speed between 1500rpm and 2100rpm • AND • tc_IndTrqValue below (2000Nm - Offset dependent on Engine Speed and se_AmbAirPres) • AND • Engine Speed rate of change between -50rpm and 50rpm • AND • Engine Torque rate of change between -50Nm and 50Nm • AND • Engine Running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C above conditions valid for 2s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	30s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P220300 NOx Sensor Circuit High Bank 1 Sensor 1 - No Sub Type Information

DTC	P220300
Component / System	NOx Sensor
Monitor Strategy Description	Circuit High
Fault Limit	• Internal Short Circuit signal containing status and error byte received from Upstream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition Key Turned On
Disable Conditions	No Active DTC's: • U029D/00, U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P242800 Exhaust Gas Temperature Too High - No Sub Type Information

DTC	P242800
Component / System	NOx Sensor

Monitor Strategy Description	Circuit High
Fault Limit	• EngineExhaustGasTemperature above (540No unit + 0No Unit)
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P100113 Engine stop switch - Circuit Open

DTC	P100113
Component / System	Engine Stop Switch
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on A:27 above (24.424390V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	• Voltage on A:27 above (20.303109V * (UnfilteredBatteryVoltage / 24.0V))
	  • AND
	  • Voltage on A:27 below (23.559100V * (UnfilteredBatteryVoltage / 24.0V))
	• OR
	• Voltage on A:27 above (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
	• AND
	• Voltage on A:27 below (18.135422V * (UnfilteredBatteryVoltage / 24.0V))

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P100211 Preheat Relay - Circuit Short To Ground

DTC	P100211
Component / System	Engine Stop Switch
Monitor Strategy Description	Circuit Open
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P100212 Preheat Relay - Circuit Short To Ground

DTC	P100212
Component / System	Engine Stop Switch
Monitor Strategy Description	Circuit Open
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P100213 Preheat Relay - Circuit Open

DTC	P100213
Component / System	Engine Stop Switch
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P102111 Compression Brake Control Circuit - Circuit Short To Ground

DTC	P102111
Component / System	Compression Brake Control Circuit
Monitor Strategy Description	Short Circuit
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.3s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P102112 Compression Brake Control Circuit - Circuit Short To Ground

DTC	P102112
Component / System	Compression Brake Control Circuit
Monitor Strategy Description	Short Circuit to Battery
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.3s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P102113 Compression Brake Control Circuit - Circuit Open

DTC	P102113
Component / System	Compression Brake Control Circuit
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.3s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U010E00 Lost Communication With Reductant Control Module - No Sub Type Information

DTC	U010E00
Component / System	Reductant Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with EACM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	15s

MIL Illumination	3
Probable Causes	***See Tech Tool***

U012900 Lost Communication With Brake System Control Module - No Sub Type Information

DTC	U012900
Component / System	BSCM
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with BSCM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	9.6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P019513 Engine Oil Temperature Sensor "A" - Circuit Open

DTC	P019513
Component / System	Engine Oil Temperature Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on A:31 above 4.931641V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P20FE9A Reductant Metering Unit Performance - Component or System Operating Conditions

DTC	P20FE9A
Component / System	Reductant Metering Unit Performance
Monitor Strategy Description	Component or System Operating Conditions
Fault Limit	• Reductant concentration below 18% • AND • Filtered NOx conversion below 71%. For current status, read MID 98 - NOx Catalyst Monitor Bank 1, TID AB - Reductant concentration

Enable Conditions	• Average SCR NOx Catalyst Temperature between 255°C and 450°C • AND • Calculated exhaust mass flow between 0.100000001490116kg/s and 0.5kg/s • AND • Engine Speed between 1100rpm and 2050rpm • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • The reductant delivery system is operating normally, the engine is operating in a functional normal engine mode, there is a reductant injection demand • AND • Steady state: No quick changes in engine speed, torque, exhaust mass flow and EATS temperature • AND • Reductant flow since the reductant tank has been refilled above 600g
Disable Conditions	No Active DTC's: • U3000/01, P225D/00, P225F/00, P2201/64, P229F/64, P225C/00, P225E/00, P242B/64, P0420/00, P0402/00, P0401/00, P221A/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029D/00, U029E/00, U3017/00
Time Required For DTC To Be Set	3600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P026500 Injector 2 Short Circuit High - No Sub Type Information

DTC	P026500
Component / System	Injector 2
Monitor Strategy Description	Short Circuit High
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P026800 Injector 3 Short Circuit High - No Sub Type Information

DTC	P026800
Component / System	Injector 3
Monitor Strategy Description	Short Circuit High
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P027100 Injector 4 Short Circuit High - No Sub Type Information

DTC	P027100
Component / System	Injector 4
Monitor Strategy Description	Short Circuit High
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P027400 Injector 5 Short Circuit High - No Sub Type Information

DTC	P027400
Component / System	Injector 5
Monitor Strategy Description	Short Circuit High
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P027700 Injector 6 Short Circuit High - No Sub Type Information

DTC	P027700
Component / System	Injector 5
Monitor Strategy Description	Short Circuit High
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P019664 Oil Temperature - Signal Plausibility Failure

DTC	P019664
Component / System	Injector 5
Monitor Strategy Description	Short Circuit High
Fault Limit	• Difference during Precrank between Oil Temperature and mean value of(EGR Temperature, Boost Temperature, Compressor Temperature, Engine Coolant Temperature) above 40°C
Enable Conditions	• Engine in Precrank mode • AND • Engine Speed below 100rpm • AND • Engine Soak Time above 28800s
Disable Conditions	No Active DTC's: • U3000/01, P0523/00, P0520/13, P0197/00, P0195/13, U3017/00
Time Required For DTC To Be Set	1200s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P019700 Oil Temperature Short Circuit Low - No Sub Type Information

DTC	P019700
Component / System	Oil Temperature Short Circuit Low
Monitor Strategy Description	Short Circuit Low
Fault Limit	• Voltage on A:31 below 0.100098V
Enable Conditions	• E
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P026200 Injector 1 Short Circuit High - No Sub Type Information

DTC	P026200
Component / System	Injector 1 Short Circuit High - No Sub Type Information
Monitor Strategy Description	Short Circuit Low
Fault Limit	• Current driving the injector rises to quickly
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20F400 AdBlue Consumption Too Low - No Sub Type Information

DTC	P20F400
Component / System	Injector 1 Short Circuit High - No Sub Type Information
Monitor Strategy Description	Short Circuit Low
Fault Limit	• Calculated reductant consumption below -101%
Enable Conditions	• This diagnosis is done when engine running
Disable Conditions	• The filtered reductant level between 100mm and 500mm • AND • Reductant Tank Temperature above -5°C for 900s • AND • Reductant consumed in this driving cycle above 1000g No Active DTC's: • P205B/64, U3000/01
Time Required For DTC To Be Set	172800s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U029E00 Lost Communication With NOx Sensor "B" - No Sub Type Information

DTC	U029E00
Component / System	NOx Sensor B
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with NOX2 on Vehicle Communication Engine Subnet

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0080/88
Time Required For DTC To Be Set	9.199999999999999s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U029D00 Lost Communication With NOx Sensor "A" - No Sub Type Information

DTC	U029D00
Component / System	NOx Sensor A
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with NOX1 on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0080/88
Time Required For DTC To Be Set	9.199999999999999s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U010C00 Lost Communication With Turbocharger/Supercharger Control Module A - No Sub Type Information

DTC	U010C00
Component / System	Turbocharger/Supercharger
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with VGTM on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0080/88
Time Required For DTC To Be Set	9.25s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P203B00 Aftertreatment Reagent Level Warning - No Sub Type Information

DTC	P203B00
Component / System	Aftertreatment Reagent Level
Monitor Strategy Description	Lost Communication
Fault Limit	• Deviation between highest and lowest urea tank level measurements during diagnosis below 10mm

Enable Conditions	• Urea level in tank between 140mm and 370mm • AND • Reductant Tank Temperature above -5°C for 900s • AND • Reagent dosing pump active • AND • Accumulated urea demand above 10000g
Disable Conditions	No Active DTC's: • P205B/64, U3000/01
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U016700 Lost Communication With Vehicle Immobilizer Control Module - No Sub Type Information

DTC	U016700
Component / System	Vehicle Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• Signal response time out.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P220A1C NOx Sensor Supply Voltage Circuit (Bank 1 Sensor 1) - Circuit Voltage Out of Range

DTC	P220A1C
Component / System	Vehicle Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• Internal Supply Voltage signal containing status and error byte received from Up-stream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition Key Turned On
Disable Conditions	Internal Supply Voltage signal containing status and error byte from Upstream NOx sensor not yet evaluated or not yet recieved No Active DTC's: • U029D/00, U3000/01
Time Required For DTC To Be Set	600s

MIL Illumination	3
Probable Causes	***See Tech Tool***

U042600 Invalid Data Received From Vehicle Immobilizer Control Module - No Sub Type Information

DTC	U042600
Component / System	Vehicle Immobilizer Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• EMS- and Immobilizer unit security codes do not match.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P22A100 NOx Sensor Circuit High Bank 1 Sensor 2 - No Sub Type Information

DTC	P22A100
Component / System	NOx Sensor Circuit High Bank 1 Sensor 2
Monitor Strategy Description	NOx Sensor Circuit Bank 1 Sensor 2
Fault Limit	• Internal Short Circuit signal containing status and error byte received from Down-stream NOx sensor evaluated as NOT_RELIABLE
Enable Conditions	• Ignition Key Turned On
Disable Conditions	No Active DTC's: • U029E/00, U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P113F11 Buffered Idle Validation Switch Wire - VECU Side - Circuit Short To Ground

DTC	P113F11
Component / System	VECU Side
Monitor Strategy Description	Circuit Short To Ground
Fault Limit	• VECU input IVS1 is high (close to Vbat) and VECU output BUFFIVS is low (close to ground)
Enable Conditions	• Key On • AND • Battery voltage should be above 8V

Disable Conditions	No Active DTC's: • P0643/00, P0642/00
Time Required For DTC To Be Set	5.5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113F12 Buffered Idle Validation Switch Wire - VECU Side - Circuit Short To Battery

DTC	P113F12
Component / System	Idle Validation Switch
Monitor Strategy Description	Circuit Short To Battery
Fault Limit	• VECU input IVS1 is low (close to ground) and VECU output BUFFIVS is high (close to Vbat)
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's: • P0643/00, P0642/00
Time Required For DTC To Be Set	5.5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114113 Buffered Idle Validation Switch Wire - ECM Side - Circuit Open

DTC	P114113
Component / System	Idle Validation Switch
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on B:15 above (7.643673V * (UnfilteredBatteryVoltage / 24.0V)) • AND • Voltage on B:15 below (18.294068V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114123 Buffered Idle Validation Switch Wire - ECM Side - Signal Stuck Low

DTC	P114123
Component / System	Buffered Idle Validation Switch Wire

Monitor Strategy Description	Signal Stuck Low
Fault Limit	• Calculated pedal position percentage above 50% • AND • se_BufferedIvs equals to 0
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P1141/13
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114124 Buffered Idle Validation Switch Wire - ECM Side - Signal Stuck High

DTC	P114124
Component / System	Buffered Idle Validation Switch Wire
Monitor Strategy Description	Signal Stuck Low
Fault Limit	• Calculated pedal position percentage below 1% and se_BufferedIvs equals to 1
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P1141/13
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114212 Fan Thermal Switch - Circuit Short To Battery

DTC	P114212
Component / System	Buffered Idle Validation Switch Wire
Monitor Strategy Description	Signal Stuck Low
Fault Limit	• Voltage on A:5 above 3.999023V • AND • Voltage on A:5 below 4.199219V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114213 Fan Thermal Switch - Circuit Open

DTC	P114213
Component / System	Buffered Idle Validation Switch Wire
Monitor Strategy Description	Signal Stuck Low
Fault Limit	• Voltage on A:5 above 0.816650V • AND • Voltage on A:5 below 3.999023V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114000 Compression Brake (VCB) Control Oil Temperature Too Low - No Sub Type Information

DTC	P114000
Component / System	Buffered Idle Validation Switch Wire
Monitor Strategy Description	Signal Stuck Low
Fault Limit	• Engine oil temperature is too low when engine brake is demanded.
Enable Conditions	• Engine must be running.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P06DD00 Engine Oil Pressure Control Circuit Performance/Stuck Off - No Sub Type Information

DTC	P06DD00
Component / System	Engine Oil Pressure Control Circuit
Monitor Strategy Description	Performance/Stuck Off
Fault Limit	• Difference in Oil Pressure (Piston Cooling Valve forced open) and Oil Pressure (Piston Cooling Valve forced closed) above 180kPa
Enable Conditions	• tc_IndTrqValue between 0Nm and 200Nm • AND • Engine Speed between 1000rpm and 1300rpm • AND • se_OilTemp between 80°C and 120°C

Disable Conditions	No Active DTC's: • U3000/01, P055A/13, P055D/00, P25AB/00, P25AA/00, P25A9/13, P0523/00, P0520/13,P0197/00, P0195/13, U3017/00
Time Required For DTC To Be Set	4s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113711 Oil Thermostat - Circuit Short To Ground

DTC	P113711
Component / System	Oil Thermostat
Monitor Strategy Description	Short Circuit To Ground
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113712 Oil Thermostat - Circuit Short To Battery

DTC	P113712
Component / System	Oil Thermostat
Monitor Strategy Description	Short Circuit To Battery
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113713 Oil Thermostat - Circuit Open

DTC	P113713
Component / System	Oil Thermostat
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected..
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.

Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P011164 Intake Air Temperature Sensor 1 Circuit Range/Performance Bank 1 - Signal Plausibility Failure

DTC	P011164
Component / System	Intake Air Temperature Sensor 1
Monitor Strategy Description	Circuit Range/Performance Bank 1
Fault Limit	• Difference during Precrank between Compressor Temperature and mean value of (EGR Temperature, Engine Coolant Temperature, Boost Temperature) above 40°C
Enable Conditions	• Engine in Precrank mode • AND • Engine Speed below 100rpm • AND • Engine Soak Time above 28800s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P2229/00, P2226/13, U3017/00
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P114500 Reductant Level Moderately Low - No Sub Type Information

DTC	P114500
Component / System	Reductant Level
Monitor Strategy Description	Level Moderately Low
Fault Limit	• Reductant level below 12% for 15s
Enable Conditions	• Reductant Tank Temperature above -99°C
Disable Conditions	No Active DTC's: • P205B/64
Time Required For DTC To Be Set	25s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P115000 Throttle/Pedal Position Sensor/Switch "A"/"D" Voltage Correlation - No Sub Type Information

DTC	P115000
Component / System	Throttle/Pedal Position Sensor/Switch "A"/"D"
Monitor Strategy Description	Voltage Correlation
Fault Limit	• 2 different occasions can set this code: (VECU input IVS1 is low AND VECU input IVS2 is high AND accelerator sensor voltage below 0.65V) OR (VECU input IVS1 is high AND VECU input IVS2 is low AND accelerator pedal sensor voltage above 1.2V)
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's: • P0643/00, P0642/00
Time Required For DTC To Be Set	5.5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P114800 Lost Communication With ECM According To Turbocharger/ Supercharger Control Module "A" - No Sub Type Information

DTC	P114800
Component / System	ECM
Monitor Strategy Description	Lost Communication With ECM
Fault Limit	• Communication failure detected by Turbocharger/Supercharger A.
Enable Conditions	• Delay after ECU startup before diagnose is enabled: 10sec
Disable Conditions	No Active DTC's: • U3000/01, U010C/00
Time Required For DTC To Be Set	3s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P11497E Intake Air Heater "B" Circuit - Actuator Stuck On

DTC	P11497E
Component / System	ECM
Monitor Strategy Description	Lost Communication With ECM
Fault Limit	• The preheat element is active when there is no preheat activation request. Only for 12 volt systems • AND • 2No Unit equals to 2

Enable Conditions	• The engine must be running.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P213600 Throttle/Pedal Position Sensor/Switch "A"/"C" Voltage Correlation - No Sub Type Information

DTC	P213600
Component / System	Throttle/Pedal Position Sensor/Switch "A"/"C"
Monitor Strategy Description	Voltage Correlation
Fault Limit	• Sensor voltage above 6 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P006E00 Turbocharger/Supercharger Boost Control "A" Supply Voltage Circuit - No Sub Type Information

DTC	P006E00
Component / System	Turbocharger/Supercharger Boost Control "A"
Monitor Strategy Description	Supply Voltage Circuit
Fault Limit	• Low voltage detected by Turbocharger/Supercharger A.
Enable Conditions	• Delay after ECU startup before diagnose is enabled: 10sec
Disable Conditions	• U3000/01, U010C/00 No Active DTC's:
Time Required For DTC To Be Set	95s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P021900 Engine Overspeed Condition - No Sub Type Information

DTC	P021900
Component / System	Engine
Monitor Strategy Description	Overspeed Condition

Fault Limit	• Too high engine speed detected.
Enable Conditions	• The engine must be running.
Disable Conditions	• U3000/01 No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P115100 Aftertreatment System Over Temperature - No Sub Type Information

DTC	P115100
Component / System	Aftertreatment System
Monitor Strategy Description	System Over Temperature
Fault Limit	• Temperature in the aftertreatment system above (0No Unit + 490No unit)
Enable Conditions	• The engine must be running (30s + 10s).
Disable Conditions	• Aftertreatment Hydrocarbon Injector is active No Active DTC's: • U3000/01
Time Required For DTC To Be Set	4s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P26047F Intake Air Heater "A" Circuit Range/Performance - Actuator Stuck Off

DTC	P26047F
Component / System	Intake Air Heater A
Monitor Strategy Description	Circuit Range/Performance

Fault Limit	• The preheat element is inactive when there is a preheat activation request
	  • AND
	  • 2No Unit equals to 1
	• OR
	• 2No Unit equals to 2

Enable Conditions	• The engine must be running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P115400 Lost communication between IPC and BCM on Medium Speed CAN Communication Bus

DTC	P115400
Component / System	IPC and BCM
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication between IPC and BCM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P115500 Lost Communication with Aftertreatment Diesel Particulate Filter Regeneration Inhibit Switch - No Sub Type Information

DTC	P115500
Component / System	DPF Inhibit Switch
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with IPC on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	19s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P008B00 Low Pressure Fuel System Pressure - Too High - No Sub Type Information

DTC	P008B00
Component / System	Fuel System
Monitor Strategy Description	Fuel System Pressure Too High
Fault Limit	• se_FuelPres above (100kPa + Offset dependent on fuel value and Engine Speed)
Enable Conditions	• Engine Speed between 400rpm and 2500rpm
Disable Conditions	No Active DTC's: • P0070/15, P0072/00, P2229/00, P2226/13, P24F7/00, P20D0/00, P20CF/7A, P20DC/00, P24F6/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P2542/00, P2539/13, U3000/01
Time Required For DTC To Be Set	5s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U032300 Software Incompatibility With Instrument Panel Control Module - No Sub Type Information

DTC	U032300
Component / System	IPC
Monitor Strategy Description	Software Incompatibility
Fault Limit	• Lost communication with IPC on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	39s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U033100 Software Incompatibility With Body Control Module "A" - No Sub Type Information

DTC	U033100
Component / System	Body Control Module A
Monitor Strategy Description	Software Incompatibility
Fault Limit	• Lost communication with BCM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	39s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U301700 Control Module Timer/Clock Performance - No Sub Type Information

DTC	U301700
Component / System	Control Module
Monitor Strategy Description	Timer/Clock Performance
Fault Limit	• Engine running monitor Failure Condition • AND • not Time that Real Time Clock signal has advanced after 1080shas passed according to ECM between (1080s - 1560s) and (1080s + 1560s)
Enable Conditions	• Engine running monitor Enable Conditions: Engine running

Disable Conditions	No Active DTC's: • P0117/00, P0115/13
Time Required For DTC To Be Set	1080s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P117600 Starter Motor Deactivated - Over Temperature - No Sub Type Information

DTC	P117600
Component / System	Control Module
Monitor Strategy Description	Timer/Clock Performance
Fault Limit	• Starter motor is overheated when start is requested.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • P0617/00
Time Required For DTC To Be Set	1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P117700 Starter Motor Deactivated - Gearbox Not in Neutral - No Sub Type Information

DTC	P117700
Component / System	Starter Motor
Monitor Strategy Description	Gearbox Not in Neutral
Fault Limit	• Gear box is not in neutral position when start is requested.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • P0617/00
Time Required For DTC To Be Set	1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P117900 Starter Motor Deactivated - PTO Active - No Sub Type Information

DTC	P117900
Component / System	Starter Motor
Monitor Strategy Description	Starter Deactivated
Fault Limit	• The starter motor is stopped due to PTO.
Enable Conditions	• N/A

Disable Conditions	No Active DTC's: • P0617/00
Time Required For DTC To Be Set	1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U1FFF68 The factory mode is active through P1HCF

DTC	U1FFF68
Component / System	Factory Mode
Monitor Strategy Description	Factory Mode Active
Fault Limit	• The factory mode is active through P1HCF.
Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040A13 Exhaust Gas Recirculation Temperature Sensor "A" - Circuit Open

DTC	P040A13
Component / System	Exhaust Gas Recirculation Temperature Sensor "A"
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:48 above 0.794240V
	  • OR
	  • Voltage on B:48 above 0.023671V
	  • AND
	  • Voltage on B:48 below 0.175672V

Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P052712 Fan Speed Sensor Circuit Range/Performance - Circuit Short To Battery

DTC	P052712
Component / System	Fan Speed Sensor Circuit Range/Performance
Monitor Strategy Description	Circuit Check

Fault Limit	• se_FanSpd equals to 0 rpm
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01, P0692/00, P0691/00, P0480/13
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P054E00 Idle Control System - Fuel Quantity Lower Than Expected - No Sub Type Information

DTC	P054E00
Component / System	Idle Control System
Monitor Strategy Description	Fuel Quantity Lower Than Expected
Fault Limit	• Average fuel quantity in each injection for the evaluation period below 5mg/stroke
Enable Conditions	• se_CoolantTemp between 60°C and 110°C • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • VehicleSpeed below 0.100000001490116km/h • AND • Power take-off is not active • AND • Engine running for 60s • AND • Stable engine speed • AND • Stable engine torque • AND • Idle governor is active above conditions valid for 5s
Disable Conditions	No Active DTC's: • P0117/00, P0115/13, P2229/00, P0340/31, P0335/31, U3000/01, P0115/13, P0117/00, P0070/15, P0072/00, P2229/00, P2226/13, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13, P0339/00, P0335/31, P0336/38, P0016/76, P0340/31, P0341/38, P0500/13, P0502/00, P215A/64
Time Required For DTC To Be Set	185s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P004607 Turbocharger/Supercharger Boost Control "A" Circuit Range/ Performance - Mechanical Failures

DTC	P004607
Component / System	Turbocharger/Supercharger Boost Control
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Failure detected by Turbocharger/Supercharger A.
Enable Conditions	• Delay after ECU startup before diagnose is enabled: 10sec
Disable Conditions	No Active DTC's: • U3000/01, U010C/00
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P222764 Barometric Pressure Sensor "A" Circuit Range/Performance - Signal Plausibility Failure

DTC	P004607
Component / System	Turbocharger/Supercharger Boost Control
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• se_AmbAirPres below 44kPa • OR • se_AmbAirPres above 114kPa • OR • Ambient air pressure compared to reference pressure below -15kPa • OR • Ambient air pressure compared to reference pressure above 15kPa

Enable Conditions	• Engine Speed below 180rpm
	  • OR
	  • Engine Speed between 10000rpm and 0rpm
	  • AND
	  • tc_IndTrqValue between 10000Nm and 10Nm
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • EGR valve Control PWM between 30% and 100%
	  • AND
	  • Turbocharger/Supercharger A Position between 100% and 0%
	  • AND
	  • No quick changes in engine speed and torque

Disable Conditions	No Active DTC's: • U3000/01, P0105/13, P0108/00, P051D/00, P051A/13, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P2229/00, P2226/13
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24A400 Diesel Particulate Filter Restriction - Soot Accumulation Too High (Bank 1) - No Sub Type Information

DTC	P24A400
Component / System	Diesel Particulate Filter Restriction
Monitor Strategy Description	Soot Accumulation Too High
Fault Limit	• The aftertreatment diesel particulate filter load is considered critically high.
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P009700 Intake Air Temperature Sensor 2 Circuit Low (Bank 1) - No Sub Type Information

DTC	P009700
Component / System	Intake Air Temperature Sensor 2
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on A:47 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P009513 Intake Air Temperature Sensor 2 Bank 1 - Circuit Open

DTC	P009513
Component / System	Intake Air Temperature Sensor 2
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on A:47 above 4.910889V
	  • OR
	  • Voltage on A:47 above 0.147705V
	  • AND
	  • Voltage on A:47 below 0.289307V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P268300 Engine Coolant Bypass Valve Control Circuit High - No Sub Type Information

DTC	P268300
Component / System	Engine Coolant Bypass Valve
Monitor Strategy Description	Control Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P268200 Engine Coolant Bypass Valve Control Circuit Low - No Sub Type Information

DTC	P268200
Component / System	Engine Coolant Bypass Valve
Monitor Strategy Description	Control Circuit Low
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P268113 Engine Coolant Bypass Valve "A" Control - Circuit Open

DTC	P268113
Component / System	Engine Coolant Bypass Valve
Monitor Strategy Description	Control Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P011513 Engine Coolant Temperature Sensor 1 - Circuit Open

DTC	P011513
Component / System	Engine Coolant Bypass Valve
Monitor Strategy Description	Control Circuit Open

Fault Limit	• Voltage on B:27 above 4.913330V
	  • OR
	  • Voltage on B:27 above 0.147705V
	  • AND
	  • Voltage on B:27 below 0.231934V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P012800 Coolant Thermostat (Coolant Temp Below Thermostat Regulating Temperature) - No Sub Type Information

DTC	P012800
Component / System	Engine Coolant Bypass Valve
Monitor Strategy Description	Control Circuit Open
Fault Limit	• se_CoolantTemp below Table derived value dependent on Average Engine Torque (typically 71 C)

Enable Conditions	• Engine running
	• AND
	• se_AmbAirPres between 75kPa and 150kPa
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• Engine considered fully warmed up
	• AND
	• Engine Speed between 500rpm and Table derived value dependent on Ambient Air Temperature (typically 1100 rpm)
	• AND
	• tc_IndTrqValue between 0Nm and Table derived value dependent on Ambient Air Temperature (typically 900 Nm)
	• AND
	• Vehicle Speed above 0km/h above conditions valid for 14s
	  • OR
	  • Engine running
	  • AND
	  • se_AmbAirPres between 75kPa and 150kPa
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • Cumulative Idle Speed percentage during cycle below 50%
	  • AND
	  • Cumulative Fuel Cut percentage during cycle below 50%
	  • AND
	  • Minimum Engine Coolant Temperature below 51°C
	  • AND
	  • Engine considered fully warmed up

Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0116/2A, P0097/00, P0095/13, P2229/00, P2226/13
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P042200 Catalyst 2 Efficiency Below Threshold (Bank 1) - No Sub Type Information

DTC	P042200
Component / System	Catalyst 2
Monitor Strategy Description	Efficiency Below Threshold (Bank 1)

Fault Limit	• SCR conversion efficiency below (80% + Offset dependent onAverage SCR NOx Catalyst Temperature) • AND • Ratio of diesel that slipped through the catalyst and oxidized in the Particulate Filter below 0ratio. For current status, read MID B2 - PM Filter Monitor Bank 1, TID 92 - Ratio of converted NOx

Enable Conditions	• Hydrocarbon Conversion Monitor Enable Conditions
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• Engine Speed between 590rpm and 3000rpm
	• AND
	• tc_IndTrqValue between 1Nm and 4000Nm
	• AND
	• Exhaust Aftertreatment Fuel Injecton Active
	• AND
	• Exhaust Gas Temperature Sensor 3 between 200°C and 600°C
	• AND
	• Exhaust Gas Temperature Sensor 1 between 170°C and 400°C
	• AND
	• SCR warming active
	• OR
	  • Empty Can Monitor Enable Conditions
	  • AND
	  • se_AmbAirPres between 75kPa and 120kPa
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • not Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Engine Speed above 550rpm
	  • AND
	  • Exhaust Gas Temperature Sensor 1 above 20°C
	  • AND
	  • Exhaust Gas Temperature Sensor 2 above 20°C
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 1 above 3.75°C
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 2 below 2.5°C
	  • OR
	  • Derivative of Exhaust Gas Temperature Sensor 1 below (-1 * 3.75°C)
	  • AND
	  • Derivative of Exhaust Gas Temperature Sensor 2 above (-1 * 2.5°C)

Disable Conditions	No Active DTC's: • P2080/64, P2084/64, P242B/64, P2229/00, P2226/13, P0072/00, P0070/15, P20DD/13, P20E0/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, U029D/00, P22FE/00, P220B/1C, P229E/13, P22A1/00, P220F/93, U029E/00, P20EE/00, P2201/64, P225D/00, P229F/64, P225F/00, P20D0/00, P24F6/00, P20DC/00, P20CF/7A, U3000/01
Time Required For DTC To Be Set	1000s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P245700 Exhaust Gas Recirculation Cooler Efficiency Below Threshold - No Sub Type Information

DTC	P245700
Component / System	Exhaust Gas Recirculation Cooler
Monitor Strategy Description	Efficiency Below Threshold
Fault Limit	• Ratio (Modeled Exhaust Manifold Temp - EGR Temp) / (Modeled Exhaust Manifold Temp - Engine Coolant Temp) below 0.769999980926514ratio. For current status, read MID 31 - EGR Monitor Bank 1, TID 82 - Exhaust gas recirculation cooler efficiency
Enable Conditions	• se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Engine Speed between 1400rpm and 1700rpm • AND • tc_IndTrqValue between 1800Nm and 2600Nm • AND • EGR valve Control PWM between 50% and 101% • AND • EGR A Flow between 0.0599999986588955kg/s and 0.200000002980232kg/s • AND • se_CoolantTemp between 60°C and 110°C • AND • Modeled Exhaust Manifold Temperature between 300°C and 650°C • AND • Modeled Exhaust Manifold Temperature rate of change between -10°C and 10° • AND • EGR Mass Flow rate of change between -0.0149999996647239kg/s and 0.0149999996647239kg/s above conditions valid for 2s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0489/00, P0403/13, P040C/00, P040A/13, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P2229/00, P2226/13, P0105/13, P0108/00

Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040913 EGR Differential Pressure Sensor - Circuit Open

DTC	P040913
Component / System	EGR Differential Pressure Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on A:21 below 0.207520V
Enable Conditions	• N/A
Disable Conditions	• Voltage on A:7 below 4.5V • OR • Voltage on A:7 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P046C64 EGR Differential Pressure Sensor - Circuit Open

DTC	P046C64
Component / System	EGR Differential Pressure Sensor
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Difference between estimated and real EGR differential pressure below -10No Unit • OR • Difference between estimated and real EGR differential pressure above 7No Unit • OR • se_EgrDiffPres above 2.180000066757202kPa

Enable Conditions	• Engine Speed between 1100rpm and 1800rpm
	• AND
	• tc_IndTrqValue between 1600Nm and 2800Nm
	• AND NOT
	  • not Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • not se_AmbAirPres between 75kPa and 120kPa
	  • AND
	  • not se_CoolantTemp between 60°C and 120°C
	• AND
	• Turbocharger/Supercharger A Position between 40% and 100%
	• AND
	• EGR valve Control PWM above 5Nm
	• OR
	  • NOT
	  • not Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • not se_AmbAirPres between 75kPa and 120kPa
	  • AND
	  • not se_CoolantTemp between 60°C and 120°C
	  • Engine Speed between 0rpm and 315rpm
	  • AND
	  • EGR valve Control PWM below 0.100000001490116%
	  • AND
	  • Pressure difference between exhaust manifold and inlet manifold below 1000kPa

Disable Conditions	No Active DTC's: • U3000/01, P0406/00, P0409/13, P0489/00, P0403/13, P0105/13, P0108/00, P006E/00, P00AF/00, P0046/07, P1148/00, P2229/00, P2226/13, P0095/13, P0097/00 P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, U029D/00
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040600 EGR Differential Pressure Sensor Circuit High - No Sub Type Information

DTC	P040600
Component / System	EGR Differential Pressure Sensor
Monitor Strategy Description	Circuit Range/Performance
Fault Limit	• Voltage on A:7 below 4.5V OR Voltage on A:7 above 5.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01

Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269000 Cylinder 5 Injector Data Incompatible - No Sub Type Information

DTC	P269000
Component / System	Injector 5
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 5 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269100 Cylinder 6 Injector Data Incompatible - No Sub Type Information

DTC	P269100
Component / System	Injector 6
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 6 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P026A00 Charge Air Cooler Efficiency Below Threshold - No Sub Type Information

DTC	P026A00
Component / System	Injector 6
Monitor Strategy Description	Data Incompatible
Fault Limit	• Ratio between Modeled CaC Temp and difference between Modeled Deteriored and Modeled Nominal CaC Temp below 0.00100000004749745ratio. For current status, read MID 85 - Boost Pressure Control Monitor Bank 1, TID 94 - Charge air cooler efficiency

Enable Conditions	• Engine running • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Vehicle Speed above 65km/h for 20s • AND • se_CoolantTemp above 60°C • AND • se_CoolantTemp below 120°C • AND • Engine Speed between 1400rpm and 1900rpm • AND • Engine Torque as percent of max rated Torque at current Engine Speed between 75% and 102% • AND • Air Mass Flow between 0.280000030994415kg/s and 0.600000023841858kg/s • AND • Difference between deteriorated and nominal CAC temperature above 17°C above conditions valid for 20s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P0097/00, P0095/13, P0112/00, P0110/13, P2229/00, P2226/13, P0108/00, P0105/13, P0105/13, P009A/00
Time Required For DTC To Be Set	0s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P02CC00 Cylinder 1 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P02CC00
Component / System	Cylinder 1 Fuel Injector
Monitor Strategy Description	Offset Learning at Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 86 - Balancing of injector 1, fuel angle

Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C
Disable Conditions	No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P268C00 Cylinder 1 Injector Data Incompatible - No Sub Type Information

DTC	P268C00
Component / System	Cylinder 1 Fuel Injector
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 1 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P268D00 Cylinder 2 Injector Data Incompatible - No Sub Type Information

DTC	P268D00
Component / System	Cylinder 2 Fuel Injector
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 2 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P268E00 Cylinder 3 Injector Data Incompatible - No Sub Type Information

DTC	P268E00
Component / System	Cylinder 3 Fuel Injector
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 3 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P268F00 Cylinder 4 Injector Data Incompatible - No Sub Type Information

DTC	P268F00
Component / System	Cylinder 4 Fuel Injector
Monitor Strategy Description	Data Incompatible
Fault Limit	• Trim Code checksum of Injector 4 is incorrect
Enable Conditions	• Key On
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P050200 Vehicle Speed Sensor "A" Circuit Low - No Sub Type Information

DTC	P050200
Component / System	Vehicle Speed Sensor "A"
Monitor Strategy Description	Circuit Low

Fault Limit	• Sensor voltage below 2.5 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	3s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P05E400 Park Brake Sensor/Switch Circuit Low - No Sub Type Information

DTC	P05E400
Component / System	Park Brake Sensor/Switch
Monitor Strategy Description	Circuit Low
Fault Limit	• Sensor voltage below 0.1 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269A00 Exhaust Aftertreatment Fuel Injector "A" Circuit High - No Sub Type Information

DTC	P269A00
Component / System	Exhaust Aftertreatment Fuel Injector "A"
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P26E800 Actuator Supply Voltage "D" Circuit Low - No Sub Type Information

DTC	P26E800
Component / System	Actuator Supply Voltage “D” Circuit Low

Monitor Strategy Description	Short Circuit
Fault Limit	• Battery voltage is over 38 Volt.
Enable Conditions	• Supply must be fully active, i.e. duty must be 100%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269900 Exhaust Aftertreatment Fuel Injector "A" Circuit Low - No Sub Type Information

DTC	P269900
Component / System	Exhaust Aftertreatment Fuel Injector "A"
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to ground is detected
Enable Conditions	• Actuator must not be fully active, i.e. duty must be above 0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P269713 Exhaust Aftertreatment Fuel Injector "A" - Circuit Open

DTC	P269713
Component / System	Exhaust Aftertreatment Fuel Injector "A"
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20DE00 Exhaust Aftertreatment Fuel Pressure Sensor Circuit Range/ Performance - No Sub Type Information

DTC	P20DE00
Component / System	Exhaust Aftertreatment Fuel Pressure Sensor

Monitor Strategy Description	Circuit Range/Performance

Fault Limit	• se_AhiFuelPres below 45kPa
	• AND
	• se_AhiFuelPres below 300kPa
	• OR
	  • se_AhiFuelPres above 200kPa
	  • AND
	  • se_AhiFuelPres above 200kPa

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	• Diagnosis not completed this driving cycle
	• OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• se_CoolantTemp above 20°C
	• AND
	• Exhaust Flow above 0.00999999977648258kg/s
	• AND
	• Exhaust Gas Temperature Sensor 1 between 0°C and 500°C
	• AND
	• Exhaust Gas Temperature Sensor 2 between 120°C and 400°C
	• AND
	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	• Diagnosis not completed this driving cycle
	• OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• AND
	• Exhaust Flow below 0.5kg/s
	• AND
	• se_CoolantTemp above 30°C

Disable Conditions	No Active DTC's: • P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FA/00, P24F8/13, U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13, P215A/64
Time Required For DTC To Be Set	90s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P20DD13 Exhaust Aftertreatment Fuel Pressure Sensor - Circuit Open

DTC	P20DD13
Component / System	Exhaust Aftertreatment Fuel Pressure Sensor
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on A:50 above 4.787598V
	• AND
	• Voltage on A:50 below 4.852295V
	  • OR
	  • Voltage on A:50 below 0.212402V

Enable Conditions	• N/A
Disable Conditions	• Voltage on A:7 below 4.5V • OR • Voltage on A:7 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P20E000 Exhaust Aftertreatment Fuel Pressure Sensor - Circuit Open

DTC	P20E000
Component / System	Exhaust Aftertreatment Fuel Pressure Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on A:50 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	• Voltage on A:7 below 4.5V • OR • Voltage on A:7 above 5.5V No Active DTC's: • U3000/01

Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P053E00 Exhaust Aftertreatment Fuel Pressure Sensor - Circuit Open

DTC	P053E00
Component / System	Exhaust Aftertreatment Fuel Pressure Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Too high difference between ambient air pressure and crank case pressure.
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P051D/00, P051A/13
Time Required For DTC To Be Set	999s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U012100 Lost Communication With Anti-Lock Brake System (ABS) Control Module - No Sub Type Information

DTC	U012100
Component / System	Anti-Lock Brake System (ABS) Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with ABS on Medium Speed CAN Communication Bus
Enable Conditions	• N/A.
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P226C00 Turbocharger Boost Control "A" Slow Response - No Sub Type Information

DTC	P226C00
Component / System	Turbocharger Boost Control "A"
Monitor Strategy Description	Slow Response
Fault Limit	• Difference of Sensed Boost Pressure evaluated in high and low evaluation windows below 92kPa. For current status, read MID 85 - Boost Pressure Control Monitor Bank 1, TID 97 - Boost system response measurement

Enable Conditions	• Engine Speed between 500rpm and 1400rpm • AND • Engine Torque in percent between 0- and 15- above conditions valid for 5s • AND • Directly followed by a high load operation condition with Engine Speed between 1050rpm and 1800rpm and tc_IndTrqValue between 83- and 105- for (2s + 6s) • AND • se_BoostTemp between -25°C and 130°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P0097/00, P0095/13, P0108/00, P0105/13
Time Required For DTC To Be Set	2s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P04D900 Closed Loop EGR Control At Limit - Flow Too Low - No Sub Type Information

DTC	P04D900
Component / System	Closed Loop EGR Control At Limit
Monitor Strategy Description	Flow Too Low
Fault Limit	• Difference between Demanded and Actual Burned Air Fraction above Output MAP Value dependant on Engine Speed and Engine Torque

Enable Conditions	• Engine Speed between 1400rpm and 1800rpm • AND • tc_IndTrqValue between 1100Nm and 1700Nm • AND • Exhaust Flow between 0.200000002980232kg/s and 0.600000023841858kg/s • AND • Engine Speed rate of change between -25rpm and 25rpm • AND • Engine Torque rate of change between -70Nm and 120Nm • AND • Exhaust Mass Flow rate of change between -0.0399999991059303kg/s and 0.100000001490116kg/s • AND • Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C above conditions valid for 1s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	15s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P04DA00 Closed Loop EGR Control At Limit - Flow Too High - No Sub Type Information

DTC	P04DA00
Component / System	Closed Loop EGR Control At Limit
Monitor Strategy Description	Flow Too High
Fault Limit	• Difference between Demanded and Actual Burned Air Fraction below Output MAP Value dependant on Engine Speed and Engine Torque

Enable Conditions	• Engine Speed between 1400rpm and 1800rpm • AND • tc_IndTrqValue between 1100Nm and 1700Nm • AND • Exhaust Flow between 0.200000002980232kg/s and 0.600000023841858kg/s • AND • Engine Speed rate of change between -25rpm and 25rpm • AND • Engine Torque rate of change between -70Nm and 120Nm • AND • Exhaust Mass Flow rate of change between -0.0399999991059303kg/s and 0.100000001490116kg/s • AND • Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_CoolantTemp between 60°C and 120°C above conditions valid for 1s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	15s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P040313 Closed Loop EGR Control At Limit - Flow Too Low - No Sub Type Information

DTC	P040313
Component / System	EGR "A" Control - Circuit Open
Monitor Strategy Description	Flow Too Low
Fault Limit	• Actuator must be active, i.e. duty must be above 0.0%.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P048900 EGR "A" Control Circuit Low - No Sub Type Information

DTC	P048900
Component / System	EGR "A" Control Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D400 Cylinder 5 Fuel Injector Offset Learning At Min Limit - No Sub Type Information

DTC	P02D400
Component / System	Cylinder 5 Fuel Injector
Monitor Strategy Description	Offset Learning At Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8A - Balancing of injector 5, fuel angle.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable. No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D600 Cylinder 6 Fuel Injector Offset Learning At Min Limit - No Sub Type Information

DTC	P02D600
Component / System	Cylinder 6 Fuel Injector
Monitor Strategy Description	Offset Learning At Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 8A - Balancing of injector 6, fuel angle.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable. No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02D000 Cylinder 3 Fuel Injector Offset Learning At Min Limit - No Sub Type Information

DTC	P02D000
Component / System	Cylinder 3 Fuel Injector
Monitor Strategy Description	Offset Learning At Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 88 - Balancing of injector 3, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable. No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P02CE00 Cylinder 2Fuel Injector Offset Learning At Min Limit - No Sub Type Information

DTC	P02CE00
Component / System	Cylinder 3 Fuel Injector
Monitor Strategy Description	Offset Learning At Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 88 - Balancing of injector 2, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable. No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P02D200 Cylinder 4 Fuel Injector Offset Learning At Min Limit - No Sub Type Information

DTC	P02D200
Component / System	Cylinder 3 Fuel Injector
Monitor Strategy Description	Offset Learning At Min Limit
Fault Limit	• -100Percentage below Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.. For current status, read MID 81 - Fuel System Monitor Bank 1, TID 88 - Balancing of injector 4, fuel angle
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable. No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P25AB00 Piston Cooling Oil Control Circuit High - No Sub Type Information

DTC	P25AB00
Component / System	Piston Cooling Oil Control Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P25AA00 Piston Cooling Oil Control Circuit Low - No Sub Type Information

DTC	P25AA00
Component / System	Piston Cooling Oil Control Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P25AC00 Piston Cooling Oil Control Circuit Performance/Stuck Off - No Sub Type Information

DTC	P25AC00
Component / System	Piston Cooling Oil Control Circuit
Monitor Strategy Description	Performance/Stuck Off
Fault Limit	• When piston cooling valve is forced open and closed the oil pressure change below 30kPa
Enable Conditions	• tc_IndTrqValue between 0Nm and 200Nm • AND • Engine Speed between 1000rpm and 1300rpm • AND • se_OilTemp between 80°C and 120°C
Disable Conditions	No Active DTC's: • U3000/01, P055A/13, P055D/00, P25AB/00, P25AA/00, P25A9/13, P0523/00, P0520/13, P0197/00, P0195/13, U3017/00
Time Required For DTC To Be Set	4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P210900 Throttle/Pedal Position Sensor "A" Minimum Stop Performance - No Sub Type Information

DTC	P210900
Component / System	Throttle/Pedal Position Sensor "A"
Monitor Strategy Description	Performance/Stuck Off
Fault Limit	• Sensor voltage between 0.38 V and 0.65 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P216300 Throttle/Pedal Position Sensor "A" Maximum Stop Performance - No Sub Type Information

DTC	P216300
Component / System	Throttle/Pedal Position Sensor "A"
Monitor Strategy Description	Performance/Stuck Off
Fault Limit	• Sensor voltage between 1.2 V and 4.25 V

Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P006964 Manifold Absolute Pressure - Barometric Pressure Correlation - Signal Plausibility Failure

DTC	P006964
Component / System	Manifold Absolute Pressure
Monitor Strategy Description	Barometric Pressure Correlation
Fault Limit	• Boost pressure compared to reference pressure below -15kPa • OR • Boost pressure compared to reference pressure above 15kPa

Enable Conditions	• Engine Speed below 180rpm
	• OR
	• Engine Speed between 10000rpm and 0rpm
	  • AND
	  • tc_IndTrqValue between 10000Nm and 10Nm
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • EGR valve Control PWM between 30% and 100%
	  • AND
	  • Turbocharger/Supercharger A Position between 100% and 0%
	  • AND
	  • No quick changes in engine speed and torque

Disable Conditions	No Active DTC's: • U3000/01, P0105/13, P0108/00, P051D/00, P051A/13, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00
Time Required For DTC To Be Set	1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20D713 Exhaust Aftertreatment Fuel Supply Control - Circuit Open

DTC	P20D713
Component / System	Exhaust Aftertreatment Fuel Supply Control
Monitor Strategy Description	Circuit Open

Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20DA00 Exhaust Aftertreatment Fuel Supply Control Circuit High - No Sub Type Information

DTC	P20DA00
Component / System	Exhaust Aftertreatment Fuel Supply Control Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20D900 Exhaust Aftertreatment Fuel Supply Control Circuit High - No Sub Type Information

DTC	P20D900
Component / System	Exhaust Aftertreatment Fuel Supply Control Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P010513 Manifold Absolute Pressure/Barometric Pressure Sensor - Circuit Open

DTC	P010513
Component / System	Exhaust Aftertreatment Fuel Supply Control Circuit
Monitor Strategy Description	Circuit High

Fault Limit	• Voltage on A:22 above 4.702148V
	• AND
	• Voltage on A:22 below 4.852295V
	  • OR
	  • Voltage on A:22 below 0.297852V

Enable Conditions	• N/A
Disable Conditions	• Voltage on A:7 below 4.5V • OR • Voltage on A:7 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P010800 Manifold Absolute Pressure/Barometric Pressure Sensor Circuit High - No Sub Type Information

DTC	P010800
Component / System	Manifold Absolute Pressure/Barometric Pressure Sensor
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on A:22 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	• Voltage on A:7 below 4.5V • OR • Voltage on A:7 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P25AE00 Piston Cooling Oil Pressure Too Low - No Sub Type Information

DTC	P25AE00
Component / System	Piston Cooling Oil Pressure
Monitor Strategy Description	Pressure Too Low
Fault Limit	• The signal se_OilPresPcj is above a critical limit
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.

Disable Conditions	No Active DTC's: • U3000/01, P055D/00, P055A/13
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P25A913 Piston Cooling Oil Control - Circuit Open

DTC	P25A913
Component / System	Piston Cooling Oil Control
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P05407E Intake Air Heater "A" Control - Actuator Stuck On

DTC	P05407E
Component / System	Intake Air Heater "A" Control
Monitor Strategy Description	Actuator Stuck On

Fault Limit	• The preheat element is active when there is no preheat activation request
	• AND
	• 2No Unit equals to 1
	  • OR
	  • 2No Unit equals to 2

Enable Conditions	• The engine must be running.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P225C00 NOx Sensor Performance - Signal Stuck High Bank 1 Sensor 1 - No Sub Type Information

DTC	P225C00
Component / System	NOx Sensor Performance

Monitor Strategy Description	Signal Stuck High Bank 1 Sensor 1
Fault Limit	• Upstream NOx level above 50ppm • AND • A filter is applied to the NOx level that may require the evaluation to be repeated a few times to set the fault.. For current status, read MID 01 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 1, TID 81 - NOx concentration in ppm

Enable Conditions	• se_AmbAirPres between 75kPa and 105kPa
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• tc_IndTrqValue between 1200Nm and 1900Nm
	• AND
	• Engine Speed above 1200rpm
	• AND
	• Average SCR NOx Catalyst Temperature between 150°C and 300°C
	• AND
	• Tip-in event: quick increase of power.
	  • OR
	  • se_AmbAirPres between 75kPa and 105kPa
	  • AND
	  • Ambient Air Temperature between -8°C and 55°C
	  • AND
	  • No fuel injected to engine (motoring)
	  • AND
	  • Engine Brake Percentage between 0% and 100%
	  • AND
	  • se_ThrottlePos1 between -1% and 101%
	  • AND
	  • EGR valve Control PWM between -1% and 101%
	  • AND
	  • Engine Speed between 725rpm and 2500rpm
	  • AND
	  • Exhaust Gas Temperature Sensor 1 between 150°C and 300°C
	  • AND
	  • Average SCR NOx Catalyst Temperature above 175°C
	  • AND
	  • not false above conditions valid for 6s

Disable Conditions	• Exhaust Aftertreatment Fuel Injector is activated. • OR • Regeneration ongoing. No Active DTC's: • P225D/00, P225F/00, P242B/64, P0420/00, P0402/00, P0401/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P225D/00, P220F/93, P225F/00, U029D/00, U029E/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P225E00 NOx Sensor Performance - Signal Stuck High Bank 1 Sensor 2 - No Sub Type Information

DTC	P225E00
Component / System	NOx Sensor Performance
Monitor Strategy Description	Signal Stuck High Bank 1 Sensor 2
Fault Limit	• Downstream NOx level above 50ppm • AND • A filter is applied to the NOx level that may require the evaluation to be repeated a few times to set the fault.. For current status, read MID 02 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 2, TID 81 - NOx concentration in ppm
Enable Conditions	• se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • No fuel injected to engine (motoring) • AND • Demanded Reductant Injection Flow below 0.100000001490116g/s • AND • Engine Brake Percentage between 0% and 100% • AND • se_ThrottlePos1 between -1% and 101% • AND • EGR valve Control PWM between -1% and 101% • AND • Engine Speed between 725rpm and 2500rpm • AND • Exhaust Gas Temperature Sensor 1 between 150°C and 300°C • AND • Average SCR NOx Catalyst Temperature above 175°C above conditions valid for 6s

Disable Conditions	• Exhaust Aftertreatment Fuel Injector is activated. • OR • Regeneration ongoing. No Active DTC's: • P225D/00, P225F/00, P242B/64, P0420/00, P0402/00, P0401/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00 P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P225D/00, P220F/93, P225F/00, U029D/00, U029E/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P225F00 NOx Sensor Performance - Signal Stuck Low Bank 1 Sensor 2 - No Sub Type Information

DTC	P225F00
Component / System	NOx Sensor Performance
Monitor Strategy Description	Signal Stuck Low Bank 1 Sensor 2
Fault Limit	• The Downstream NOx Sensor considered removed from the exhaust system when the sensor measure too high lambda value or too low NOx value during high engine speed and high load. The fault evaluation need to be repeated for a number of times to take a decission, and report the IDTC
Enable Conditions	• Engine Speed above 1000rpm • AND • tc_IndTrqValue above 1100Nm • AND • Internal lambda signal quality from Downstream NOx sensor received and evaluated as GOOD
Disable Conditions	• Lambda value measured by the Downstream NOx sensor above 12lambda No Active DTC's: • P229E/13, P22A1/00, P220B/1C, U029E/00, U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P240F00 EGR Slow Response - No Sub Type Information

DTC	P240F00
Component / System	EGR
Monitor Strategy Description	Slow Response
Fault Limit	• EGR valve fails to follow command. For current status, read MID 31 - EGR Monitor Bank 1, TID 85 - Exhaust gas recirculation response measurement

Enable Conditions	• Engine Speed between 1400rpm and 2000rpm • AND • tc_IndTrqValue between 500Nm and 1200Nm • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • se_CoolantTemp between 60°C and 120°C • AND • Exhaust Gas Temperature Sensor 3 above 200°C
Disable Conditions	No Active DTC's: • U3000/01, P0406/00, P0409/13, P0489/00, P0403/13, P0105/13, P0108/00, P006E/00, P00AF/00, P0046/07, P1148/00, P0095/13, P0097/00, P040A/13, P040C/00
Time Required For DTC To Be Set	3600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P056E92 Cold Start Turbocharger/Supercharger Boost Control "A" Performance - Performance or Incorrect Operation

DTC	P056E92
Component / System	Cold Start Turbocharger/Supercharger Boost Control "A"
Monitor Strategy Description	Performance/Operation
Fault Limit	• Any Fault reported from SRA (Vgt) to ECM during Cold Start Mode
Enable Conditions	• Cold start mode is active • AND • se_AmbAirPres between 75kPa and 110kPa • AND • Ambient Air Temperature between -15°C and 50°C above conditions valid for 0s
Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P2229/00, P2226/13
Time Required For DTC To Be Set	0.100000001490116s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P003A00 Turbocharger/Supercharger Boost Control "A" Position Exceeded Learning Limit - No Sub Type Information

DTC	P003A00
Component / System	Cold Start Turbocharger/Supercharger Boost Control "A"
Monitor Strategy Description	Position Exceeded Learning Limit

Fault Limit	• Self-calibration failure detected by Turbocharger/Supercharger A
Enable Conditions	• Self-calibration failure detected by Turbocharger/Supercharger A.
Disable Conditions	No Active DTC's: • U3000/01, U010C/00
Time Required For DTC To Be Set	1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P221A00 NOx Sensor 1/2 Correlation Bank 1 - No Sub Type Information

DTC	P221A00
Component / System	NOx Sensor 1/2
Monitor Strategy Description	Correlation Bank 1
Fault Limit	• Difference between Upstream and Downstream NOx sensor lambda above 1lambda • AND • Lambda difference must be greater than Limit repeatedly this number of times: 15boolDuring this time each: 0.600000023841858s. For current status, read MID 01 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 1, TID 93 - Difference in measured lambda values between NOx sensor 1 and 2
Enable Conditions	• se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Steady state: No quick changes in engine speed and torque • AND • tc_IndTrqValue between 1000Nm and 9999Nm • AND • Engine Speed between 1300rpm and 1900rpm above conditions valid for 9s
Disable Conditions	• Exhaust Aftertreatment Fuel Injector is activated • OR • Regeneration ongoing. No Active DTC's: • P225D/00, P225F/00, P242B/64, P0420/00, P0402/00, P0401/00, P0072/00, P0070/15, P2229/00, P2226/13, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0111/64, P0112/00, P0110/13, P22FB/92, P220A/1C, P2200/13, P2203/00, P220E/93, P22FE/00, P220B/1C, P229E/13, P22A1/00, P225D/00, P220F/93, P225F/00, U029D/00, U029E/00
Time Required For DTC To Be Set	180s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P225D00 NOx Sensor Performance - Signal Stuck Low Bank 1 Sensor 1 - No Sub Type Information

DTC	P225D00
Component / System	NOx Sensor Performance
Monitor Strategy Description	Signal Stuck Low Bank 1 Sensor 1
Fault Limit	• The Upstream NOx Sensor considered removed from the exhaust system when the sensor measure too high lambda value or too low NOx value during high engine speed and high load. The fault evaluation need to be repeated for a number of times to take a decission, and report the IDTC
Enable Conditions	• Engine Speed above 1000rpm • AND • tc_IndTrqValue above 1100Nm • AND • Internal lambda signal quality from Upstream NOx sensor received and evaluated as GOOD
Disable Conditions	• Lambda value measured by the Upstream NOx sensor above 12lambda No Active DTC's: • P2200/13, P2203/00, P220A/1C, U029D/00, U3000/01
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10E100 Particulate Filter Differential Pressure Critically High - No Sub Type Information

DTC	P10E100
Component / System	Particulate Filter Differential Pressure
Monitor Strategy Description	Pressure Critically High
Fault Limit	• Compensated Diesel Particulate Filter Differential Pressure above (30No unit + 0No Unit)
Enable Conditions	• The engine must be running for at least (30s + 0s) seconds.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10E200 Particulate Filter Differential Pressure Moderately High - No Sub Type Information

DTC	P10E200
Component / System	Particulate Filter Differential Pressure
Monitor Strategy Description	Pressure Moderately High

Fault Limit	• Compensated Diesel Particulate Filter Differential Pressure above (30No unit + 999No Unit)
Enable Conditions	• The engine must be running for at least (30s + 0s) seconds.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10EB00 EGR Differential Pressure Sensor "A" Circuit Below Range - No Sub Type Information

DTC	P10EB00
Component / System	EGR Differential Pressure Sensor "A"
Monitor Strategy Description	Circuit Below Range
Fault Limit	• se_EgrDiffPres below -1.600000023841858kPa
Enable Conditions	• se_CoolantTemp above 65°C
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	15s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10EC00 EGR Differential Pressure Sensor "A" Circuit Above Range - No Sub Type Information

DTC	P10EC00
Component / System	EGR Differential Pressure Sensor "A"
Monitor Strategy Description	Circuit Above Range
Fault Limit	• se_EgrDiffPres above 1.600000023841858kPa
Enable Conditions	• se_CoolantTemp above 65°C
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	15s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P22FB92 NOx Sensor Performance - Sensing Element Bank 1 Sensor 1 - Performance or Incorrect Operation

DTC	P22FB92
Component / System	NOx Sensor Performance - Sensing Element Bank 1 Sensor 1
Monitor Strategy Description	Performance or Incorrect Operation
Fault Limit	• Internal status and error byte recieved from Upstream NOx sensor evaluated as bad sensor quality
Enable Conditions	• se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_BattVolt between 11.5V and 16V • AND • Engine must be running • AND • not Exhaust Aftertreatment Fuel Injecton Active for 30s • AND • Upstream NOx sensor must be activated by EMS • AND • Upstream NOx sensor heater quality must be GOOD (sensor heated) • AND • A stable indicated torque value without quick changes below 33Nm for 2s • AND • Internal status and error byte received from Upstream NOx sensor evaluated as GOOD • AND • Internal status and error byte received from Downstream NOx sensor evaluated as GOOD
Disable Conditions	• Upstream NOx sensor Start Up Diagnosis not reported OK No Active DTC's: • P2200/13, P2203/00, P220A/1C, U029D/00, U3000/01
Time Required For DTC To Be Set	250s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P22FE00 NOx Sensor Performance - Sensing Element Bank 1 Sensor 2 - No Sub Type Information

DTC	P22FE00
Component / System	Sensing Element Bank 1 Sensor 2
Monitor Strategy Description	NOx Sensor Performance
Fault Limit	• Internal status and error byte recieved from Downstream NOx sensor evaluated as bad sensor quality

Enable Conditions	• se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • se_BattVolt between 11.5V and 16V • AND • Engine must be running • AND • not Exhaust Aftertreatment Fuel Injecton Active for 30s • AND • Downstream NOx sensor must be activated by EMS • AND • Downstream NOx sensor heater quality must be GOOD (sensor heated) • AND • A stable indicated torque value without quick changes below 33Nm for 2s • AND • Internal status and error byte received from Upstream NOx sensor evaluated as GOOD • AND • Internal status and error byte received from Downstream NOx sensor evaluated as GOOD
Disable Conditions	• Downstream NOx sensor Start Up Diagnosis not reported OK No Active DTC's: • P229E/13, P22A1/00, P220B/1C, U029E/00, U3000/01
Time Required For DTC To Be Set	250s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P110D00 Engine Stop Switch Circuit High - No Sub Type Information

DTC	P110D00
Component / System	Engine Stop Switch Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on A:27 above (23.559100V * (UnfilteredBatteryVoltage / 24.0V)) • AND • Voltage on A:27 below (24.424390V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P110E00 Engine Stop Switch Circuit Low - No Sub Type Information

DTC	P110E00
Component / System	Engine Stop Switch Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Voltage on A:27 above (0.731483V * (UnfilteredBatteryVoltage / 24.0V)) • AND • Voltage on A:27 below (2.863488V * (UnfilteredBatteryVoltage / 24.0V))
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P110F9E Engine Stop Switch Stuck - Stuck On

DTC	P110F9E
Component / System	Engine Stop Switch Stuck
Monitor Strategy Description	Stuck On
Fault Limit	• Stop button is active during start-up • AND • Stop button becomes active when vehicle speed > 0
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P110D/00, P1001/13
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10FE00 Particulate Filter Restriction - Soot Accumulation Moderately High Bank 1 - No Sub Type Information

DTC	P10FE00
Component / System	Particulate Filter Restriction
Monitor Strategy Description	Soot Accumulation Moderately High Bank 1
Fault Limit	• High soot load in aftertreatment diesel particulate filter.
Enable Conditions	• Engine is running for (30s + 10s)
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	4s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P055A13 Engine Oil Pressure Sensor/Switch "B" - Circuit Open

DTC	P055A13
Component / System	Engine Oil Pressure Sensor/Switch "B"
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:19 above 4.787598V
	• AND
	• Voltage on B:19 below 4.852295V
	  • OR
	  • Voltage on B:19 below 0.212402V

Enable Conditions	• Engine is running for (30s + 10s)
Disable Conditions	• Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P055B64 Piston Cooling Oil Pressure Sensor Range/Performance - Signal Plausibility Failure

DTC	P055B64
Component / System	Piston Cooling Oil Pressure Sensor
Monitor Strategy Description	Sensor Range/Performance
Fault Limit	• Difference between demanded piston cooling pressure and measured piston cooling pressure between -30kPa and 30kPa • OR • se_OilPresPcj above 30kPa
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01, P055A/13, P055D/00, P25AB/00, P25AA/00, P25A9/13, P0523/00, P0520/13, P0197/00, P0195/13, U3017/00
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P055D00 Piston Cooling Oil Pressure Sensor Circuit High - No Sub Type Information

DTC	P055D00
Component / System	Piston Cooling Oil Pressure Sensor
Monitor Strategy Description	Circuit High
Fault Limit	• Voltage on B:19 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	• Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P112900 Transmission Fluid Temperature Moderately High - No Sub Type Information

DTC	P112900
Component / System	Transmission Fluid
Monitor Strategy Description	Temperature Moderately High
Fault Limit	• PFTransmissionOilTemp above (154No unit + 0No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	2s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P029800 Engine Oil Over Temperature - No Sub Type Information

DTC	P029800
Component / System	Engine Oil
Monitor Strategy Description	Over Temperature
Fault Limit	• se_OilTemp above (128No unit + 7No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds
Disable Conditions	No Active DTC's: • U3000/01, P0197/00, P0195/13
Time Required For DTC To Be Set	70s

MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P021800 Transmission Fluid Over Temperature Condition - No Sub Type Information

DTC	P021800
Component / System	Transmission Fluid
Monitor Strategy Description	Fluid Over Temperature Condition
Fault Limit	• PFTransmissionOilTemp above (154No unit + 6No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	2s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U116C00 Lost Communication with TCM on Powertrain CAN - No Sub Type Information

DTC	U116C00
Component / System	TCM
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with TCM on Vehicle Communication Powertrain CAN
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U1178/88
Time Required For DTC To Be Set	9.1s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U116F00 Lost Communication with Reductant Control Module on Engine Subnet - No Sub Type Information

DTC	U116F00
Component / System	Reductant Control Module
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with EACM on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0080/88

Time Required For DTC To Be Set	14s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P111A00 Intake Manifold Temperature Too High - No Sub Type Information

DTC	P111A00
Component / System	Intake Manifold
Monitor Strategy Description	Temperature Too High
Fault Limit	• se_BoostTemp above (Output from look-up table with input EngineSpeed + 2No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P0097/00, P0095/13
Time Required For DTC To Be Set	12s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P111C00 Compressor Discharge Temperature Too High - No Sub Type Information

DTC	P111C00
Component / System	Compressor Discharge Temperature
Monitor Strategy Description	Temperature Too High
Fault Limit	• Estimated air temperature out from compressor above (Output from look-up table with input se_AmbAirPres + 0.5No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P0110/13
Time Required For DTC To Be Set	15s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P111D00 Engine Coolant Level Moderately Low - No Sub Type Information

DTC	P111D00
Component / System	Engine Coolant Level
Monitor Strategy Description	Moderately Low
Fault Limit	• se_CoolantLvl below (1No unit - 999No Unit)
Enable Conditions	• The engine must be running for at least (30s + 0s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P2559/00, P2558/00, P2556/13

Time Required For DTC To Be Set	20s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P111E00 Engine Coolant Level Moderately High - No Sub Type Information

DTC	P111E00
Component / System	Engine Coolant Level
Monitor Strategy Description	Moderately High
Fault Limit	• se_CoolantTemp above (3.099999904632568No Unit + 107No unit + Output from look-up tables with inputs se_AmbAirPres and EngineCoolantPressure)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P0117/00, P0115/13
Time Required For DTC To Be Set	4s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P112100 EGR Temperature Too High - No Sub Type Information

DTC	P112100
Component / System	EGR Temperature
Monitor Strategy Description	Temperature Too High
Fault Limit	• se_EgrTemp above (220No unit + 0No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P040C/00, P040A/13
Time Required For DTC To Be Set	40s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P112198 EGR Temperature Too High - Component or System Over Temperature

DTC	P112198
Component / System	EGR Temperature
Monitor Strategy Description	Temperature Too High
Fault Limit	• se_EgrTemp above (220No unit + 0No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P040C/00, P040A/13

Time Required For DTC To Be Set	40s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P05EB00 Cold Start SCR NOx Catalyst Inlet Temperature Too Low - No Sub Type Information

DTC	P05EB00
Component / System	SCR NOx Catalyst
Monitor Strategy Description	Inlet Temperature Too Low
Fault Limit	• EATS heating efficiency below 30%
Enable Conditions	• Hydrocarbon Conversion Monitor Enable Conditions • AND • Engine Speed between 500rpm and 2500rpm • AND • tc_IndTrqValue between 0Nm and 3000Nm • AND • Cold start mode is active • AND • Aftertreatment Diesel Injector Fuel Flow above 9.9999999747524e-07g/s • AND • Exhaust Gas Temperature Sensor 1 between 240°C and 450°C • AND • SCR warming active above conditions valid for 3s
Disable Conditions	No Active DTC's: • P0335/31, P0336/38, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P20DD/13, P20E0/00, P20D0/00, P24F6/00, P20DC/00, P20CF/7A, P20DE/00, P24F7/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, U3000/01
Time Required For DTC To Be Set	1800s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P112200 EGR Temperature Moderately High - No Sub Type Information

DTC	P112200
Component / System	EGR Temperature
Monitor Strategy Description	Inlet Temperature Too Low
Fault Limit	• EATS heating efficiency below 30%

Enable Conditions	• Hydrocarbon Conversion Monitor Enable Conditions • AND • Engine Speed between 500rpm and 2500rpm • AND • tc_IndTrqValue between 0Nm and 3000Nm • AND • Cold start mode is active • AND • Aftertreatment Diesel Injector Fuel Flow above 9.9999999747524e-07g/s • AND • Exhaust Gas Temperature Sensor 1 between 240°C and 450°C • AND • SCR warming active above conditions valid for 3s
Disable Conditions	No Active DTC's: • P0335/31, P0336/38, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P20DD/13, P20E0/00, P20D0/00, P24F6/00, P20DC/00, P20CF/7A, P20DE/00, P24F7/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, U3000/01
Time Required For DTC To Be Set	1800s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P112500 Engine Oil Temperature Moderately High - No Sub Type Information

DTC	P112500
Component / System	Engine Oil Temperature
Monitor Strategy Description	Temperature Moderately High
Fault Limit	• se_OilTemp above (128No unit + 2No Unit)
Enable Conditions	• The engine must be running for at least (30s + 10s) seconds.
Disable Conditions	No Active DTC's: • U3000/01, P0197/00, P0195/13
Time Required For DTC To Be Set	70s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U008088 Vehicle Communication Engine Subnet - Bus off

DTC	U008088
Component / System	Vehicle Communication Engine Subnet
Monitor Strategy Description	Bus Off

Fault Limit	• It has not been possible to send frames on Vehicle Communication Engine Subnet • AND • It has not been possible to receive frames on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.05s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U117888 Vehicle Communication Engine Subnet - Bus off

DTC	U117888
Component / System	Vehicle Communication Engine Subnet
Monitor Strategy Description	Bus Off
Fault Limit	• It has not been possible to send frames on Vehicle Communication Powertrain CAN • AND • It has not been possible to receive frames on Vehicle Communication Powertrain CAN
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	5.05s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P253913 Low Pressure Fuel System Sensor Circuit - Circuit Open

DTC	P253913
Component / System	Low Pressure Fuel System Sensor Circuit
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:16 above 4.787598V
	• AND
	• Voltage on B:16 below 4.852295V
	  • OR
	  • Voltage on B:16 below 0.212402V

Enable Conditions	• N/A

Disable Conditions	• Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P254200 Low Pressure Fuel System Sensor Circuit High - No Sub Type Information

DTC	P254200
Component / System	Low Pressure Fuel System Sensor Circuit
Monitor Strategy Description	Circuit Open

Fault Limit	• Voltage on B:16 above 4.787598V
	• AND
	• Voltage on B:16 below 4.852295V
	  • OR
	  • Voltage on B:16 below 0.212402V

Enable Conditions	• N/A
Disable Conditions	• Voltage on B:17 below 4.5V • OR • Voltage on B:17 above 5.5V No Active DTC's: • U3000/01
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P064200 Sensor Reference Voltage "A" Circuit Low - No Sub Type Information

DTC	P064200
Component / System	Sensor Reference Voltage "A"
Monitor Strategy Description	Circuit Low
Fault Limit	• Sensor voltage below 4 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P064300 Sensor Reference Voltage "A" Circuit High - No Sub Type Information

DTC	P064300
Component / System	Sensor Reference Voltage "A"
Monitor Strategy Description	Circuit High
Fault Limit	• Sensor voltage above 4.5 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P065200 Sensor Reference Voltage "B" Circuit Low - No Sub Type Information

DTC	P065200
Component / System	Sensor Reference Voltage "B"
Monitor Strategy Description	Circuit Low
Fault Limit	• Sensor voltage below 0.1 V
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P04DB00 Crankcase Ventilation System Disconnected - No Sub Type Information

DTC	P04DB00
Component / System	Crankcase Ventilation System
Monitor Strategy Description	System Disconnected
Fault Limit	• Crankcase pressure difference between operation window with high oil pressure and operation window with low pressure below 0.150000005960464kPa

Enable Conditions	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• se_CoolantTemp between 60°C and 120°C
	• AND
	• Engine running time above 2s
	  • OR
	  • se_OilPres between 300kPa and 800kPa
	  • AND
	  • tc_IndTrqValue between 0Nm and 50Nm
	  • AND
	  • Engine Speed between 1150rpm and 3000rpm above conditions valid for 2.5s
	  • se_OilPres between 80kPa and 230kPa
	  • AND
	  • tc_IndTrqValue between 0Nm and 300Nm
	  • AND
	  • Engine Speed between 500rpm and 750rpm above conditions valid for 8s

Disable Conditions	• Engine brake No Active DTC's: • U3000/01, P0523/00, P0520/13, P051D/00, P051A/13
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P04D800 Excessive Time To Enter Closed Loop EGR Control - No Sub Type Information

DTC	P04D800
Component / System	EGR Control
Monitor Strategy Description	Excessive Time To Enter Closed Loop
Fault Limit	• se_CoolantTemp below 20°C
Enable Conditions	• The engine is running • AND • se_AmbAirPres between 75kPa and 105kPa • AND • Ambient Air Temperature between -40°C and 55°C • AND • Engine Speed between 750rpm and 3000rpm • AND • tc_IndTrqValue between 500Nm and 3000Nm • AND • Estimated engine coolant temperature above 20°C above conditions valid for 5s

Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P0072/00, P0070/15, P0117/00, P0115/13, P2229/00, P2226/13
Time Required For DTC To Be Set	250s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P008A00 Low Pressure Fuel System Pressure - Too Low - No Sub Type Information

DTC	P008A00
Component / System	Fuel System
Monitor Strategy Description	Low Pressure
Fault Limit	• se_FuelPres below (100kPa + Offset dependent on fuel value and Engine Speed)
Enable Conditions	• Engine Speed between 400rpm and 2500rpm
Disable Conditions	No Active DTC's: • P0070/15, P0072/00, P2229/00, P2226/13, P2542/00, P2539/13, U3000/01
Time Required For DTC To Be Set	300s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113500 Crankcase Pressure Relative To Ambient Pressure Too High - No Sub Type Information

DTC	P113500
Component / System	Crankcase Pressure
Monitor Strategy Description	Pressure Relative To Ambient Pressure Too High
Fault Limit	• Too high difference between ambient air pressure and crank case pressure.
Enable Conditions	• Engine Speed below 2800rpm • AND • Engine torque below 6000Nm • AND • Ambient temperature below -8°C
Disable Conditions	No Active DTC's: • U3000/01, P2229/00, P2226/13, P051D/00, P051A/13
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P113600 NOx Sensor 1/2 Correlation Calibration Error Bank 1 - No Sub Type Information

DTC	P113600
Component / System	NOx Sensor 1/2 Correlation
Monitor Strategy Description	Correlation Calibration Error Bank 1
Fault Limit	• not Upstream NOx Sensor available in EMS • OR • not Downstream NOx Sensor available in EMS
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P055F00 Engine Oil Pressure Out of Range - No Sub Type Information

DTC	P055F00
Component / System	Engine Oil Pressure
Monitor Strategy Description	Out of Range
Fault Limit	• Difference between estimated oil pressure and real oil pressure below -100kPa
Enable Conditions	• Engine Speed between 900rpm and 1700rpm • AND • se_OilTemp between 80°C and 120°C
Disable Conditions	No Active DTC's: • U3000/01, P055A/13, P055D/00, P25AB/00, P25AA/00, P25A9/13, P0523/00, P0520/13, P0197/00, P0195/13, U3017/00
Time Required For DTC To Be Set	120s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U014200 Lost Communication With Body Control Module "B" - No Sub Type Information

DTC	U014200
Component / System	Body Control Module "B"
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with BBM_TRUCK on Medium Speed CAN Communication Bus
Enable Conditions	• N/A

Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	15s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P04DD00 Cold Start EGR "A" Flow Insufficient Detected - No Sub Type Information

DTC	P04DD00
Component / System	Cold Start EGR "A"
Monitor Strategy Description	Flow Insufficient Detected
Fault Limit	• Percentage of Ratio between Egr Mass Flow and Demanded Egr Mass Flow below (70% + Offset dependent on se_AmbAirPres)
Enable Conditions	• Engine running • AND • se_AmbAirPres between 75kPa and 120kPa • AND • Ambient Air Temperature between -8°C and 55°C • AND • Engine Speed between 1300rpm and 2200rpm • AND • tc_IndTrqValue between 1500Nm and 2600Nm • AND • Ratio between Egr Mass Flow Demand and sum of Air Mass Flow and Egr Mass Flow Demand between 0.200000002980232ratio and 0.600000023841858ratio • AND • Demanded Egr Mass Flow between 0.100000001490116kg/s and 0.400000005960464kg/s • AND • Demanded Egr Mass Flow rate of change between -0.00999999977648258kg/s and 0.200000002980232kg/s • AND • Engine Torque rate of change between -20Nm and 20Nm • AND • Engine Speed rate of change between -5rpm and 20rpm • AND • EGR valve Control PWM between 80% and 100% • AND • se_CoolantTemp above -40°C • AND • Cold start mode is active above conditions valid for 2s

Disable Conditions	No Active DTC's: • U3000/01, P0335/31, P0336/38, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0097/00, P0095/13, P0117/00, P0115/13, P0406/00, P0409/13, P2229/00, P2226/13, P0108/00, P0105/13
Time Required For DTC To Be Set	4s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P101200 Cold Start Cylinder 1 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P101200
Component / System	Cold Start Cylinder 1
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P101400 Cold Start Cylinder 1 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P101400
Component / System	Cold Start Cylinder 2
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.

Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102300 Cold Start Cylinder 3 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P102300
Component / System	Cold Start Cylinder 3
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit

Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102500 Cold Start Cylinder 4 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P102500
Component / System	Cold Start Cylinder 4
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P102700 Cold Start Cylinder 5 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P102700
Component / System	Cold Start Cylinder 5
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102900 Cold Start Cylinder 6 Fuel Injector Offset Learning at Min Limit - No Sub Type Information

DTC	P102900
Component / System	Cold Start Cylinder 5
Monitor Strategy Description	Fuel Injector Offset Learning at Min Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.

Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P101100 Cold Start Cylinder 1 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P101100
Component / System	Cold Start Cylinder 1
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit

Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P101300 Cold Start Cylinder 2 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P101300
Component / System	Cold Start Cylinder 2
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P101D00 Cold Start Cylinder 3 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P101D00
Component / System	Cold Start Cylinder 3
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.

Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102400 Cold Start Cylinder 4 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P102400
Component / System	Cold Start Cylinder 4
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.

Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102600 Cold Start Cylinder 5 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P102600
Component / System	Cold Start Cylinder 5
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit

Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P102800 Cold Start Cylinder 6 Fuel Injector Offset Learning at Max Limit - No Sub Type Information

DTC	P102800
Component / System	Cold Start Cylinder 6
Monitor Strategy Description	Fuel Injector Offset Learning at Max Limit
Fault Limit	• 100Percentage above Cylinder balancing fueling offset ratios in percentage of the fault code limit for each injector.
Enable Conditions	• tc_IndTrqValue above 75Nm • AND • tc_IndTrqValue below 600Nm • AND • se_AmbAirPres above 75kPa • AND • Ambient Air Temperature above -8°C • AND • Ambient Air Temperature below 55°C • AND • The vehicle speed should be zero • AND • Engine Speed above 450rpm • AND • Engine Speed below 800rpm • AND • Accelerator pedal not pressed • AND • se_CoolantTemp above 45°C • AND • This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
Disable Conditions	• The starter motor is active. • OR • PTO is active. • OR • The indicated torque is not stable. • OR • The engine speed is not stable No Active DTC's: • U3000/01, P2229/00, P2226/13, P0300/00, P0301/00, P0302/00, P0303/00, P0304/00, P0305/00, P0306/00, P0115/13, P0117/00, P0262/00, P0201/13, P0265/00, P0202/13, P0268/00, P0203/13, P0271/00, P0204/13, P0274/00, P0205/13, P0277/00, P0206/13
Time Required For DTC To Be Set	600s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P24FC00 Particulate Matter Sensor Heater Control Circuit Driver Current/ Temperature Too High - No Sub Type Information

DTC	P24FC00
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Heater Control Circuit Driver Current/Temperature Too High
Fault Limit	• PM Sensor Module Heater Over Temperature
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode.
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P103B00 Reagent Dosing Valve Inducement - No Sub Type Information

DTC	P103B00
Component / System	Reagent Dosing Valve
Monitor Strategy Description	Dosing Valve Inducement
Fault Limit	• Reagent pump dutycycle when urea injector PWM signal is at a high levelReagent pump dutycycle when urea injector PWM signal is at a low level shall have a difference smaller than 1- Evaluation should be done 1- times, with a fault ratio of 80- • AND • ReagentPumpDCHighRes below (128% - Offset dependent on Catalyst tank temperature)

Enable Conditions	• Engine running • AND • (Reagent Pressure - 900kPa) between (215kPa * -1) and 215kPa • AND • Catalyst tank temperature between 10°C and 55°C • AND • Catalyst system active for at least 810s • AND • Drive the truck for at least 15 minutes in order to raise SCR temperature and allow activation of catalyst dosing • AND • asm_ACRDosageValve between 0% and 1% • AND • All conditions from part 1, except: • AND • asm_ACRDosageValve between 0% and 1% • AND • asm_ACRDosageValve above 97%
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	3600s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P103400 Particulate Matter Sensor System Voltage Too High - No Sub Type Information

DTC	P103400
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Voltage Check
Fault Limit	• PM Sensor Module System Voltage Too High
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P103100 Particulate Matter Sensor Clogged Tip - No Sub Type Information

DTC	P103100
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Sensor Clogged
Fault Limit	• N/A
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode.
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P103200 Particulate Matter Sensor Removed from Exhaust - No Sub Type Information

DTC	P103200
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Sensor Removed from Exhaust
Fault Limit	• N/A
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in sensing mode • AND • PM Sensor has been in sensing mode for 20 minutes.
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U02A300 Lost Communication With PM Sensor - No Sub Type Information

DTC	U02A300
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Lost Communication
Fault Limit	• N/A

Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	9.6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24AF00 Particulate Matter Sensor Circuit Range/Performance - No Sub Type Information

DTC	P24AF00
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Internal Circuit Diagnostics of PM sensor
Fault Limit	• PM Sensor Module Boost Voltage Out of Range • OR • PM Sensor Heater Current Leakage Fault • OR • PM Sensor Module Voltage Reference Out of Range

Enable Conditions	• PM Sensor is in sensing mode
	• OR
	• PM Sensor is in regenerating mode
	• AND
	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
	  • OR
	  • PM Sensor is in regenerating mode.
	  • AND
	  • Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
	  • OR
	  • PM Sensor is in sensing mode.
	  • AND
	  • Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C

Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24B000 Particulate Matter Sensor Circuit Low - No Sub Type Information

DTC	P24B000
Component / System	Particulate Matter Sensor

Monitor Strategy Description	Internal Circuit Diagnostics of PM Sensor
Fault Limit	• PM Sensor Electrodes Short to Ground Fault
Enable Conditions	• PM Sensor is in sensing mode • AND • Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24B100 Particulate Matter Sensor Circuit High - No Sub Type Information

DTC	P24B100
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Internal Circuit Diagnostics of PM Sensor
Fault Limit	• PM Sensor Electrodes Short to Supply Voltage Fault • OR • PM Sensor Internal Short Circuit Fault
Enable Conditions	• PM Sensor is in sensing mode • AND • Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24B313 Particulate Matter Sensor Heater Control - Circuit Open

DTC	P24B313
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Internal Circuit Diagnostics of PM Sensor
Fault Limit	• PM Sensor Electrodes Open Circuit Fault

Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode. • AND • PM Sensor has been in sensing mode for 20 minutes.
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24B492 Particulate Matter Sensor Heater Control Circuit Range/Performance - Performance or Incorrect Operation

DTC	P24B492
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Internal Circuit Diagnostics of PM Sensor
Fault Limit	• PM Sensor Controller Current Out of Range
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode.
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24B500 Particulate Matter Sensor Heater Control Circuit Low - No Sub Type Information

DTC	P24B500
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Internal Circuit Diagnostics of PM Sensor
Fault Limit	• PM Sensor Regeneration Supply Voltage Fault
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode.

Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24F600 Exhaust Aftertreatment Fuel Air Purge Valve Stuck Open - No Sub Type Information

DTC	P24F600
Component / System	Exhaust Aftertreatment Fuel Air Purge Valve
Monitor Strategy Description	Valve Stuck Open

Fault Limit	• se_AhiFuelPres above 50kPa
	• AND
	  • NOT
	  • se_AhiFuelPres below 45kPa
	  • AND
	  • se_AhiFuelPres below 300kPa
	  • OR
	  • se_AhiFuelPres above 200kPa
	  • AND
	  • se_AhiFuelPres above 200kPa

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	  • Diagnosis not completed this driving cycle
	  • OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• Exhaust Flow below 0.5kg/s
	• AND
	• se_CoolantTemp above 30°C

Disable Conditions	No Active DTC's: • P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FA/00, P24F8/13, U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P215A/64
Time Required For DTC To Be Set	90s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P24F700 Exhaust Aftertreatment Fuel Air Purge Valve Stuck Closed - No Sub Type Information

DTC	P24F700
Component / System	Exhaust Aftertreatment Fuel Air Purge Valve
Monitor Strategy Description	Valve Stuck Closed

Fault Limit	• se_AhiFuelPres below 70kPa
	• AND
	  • NOT
	  • se_AhiFuelPres below 45kPa
	  • AND
	  • se_AhiFuelPres below 300kPa
	  • OR
	  • se_AhiFuelPres above 200kPa
	  • AND
	  • se_AhiFuelPres above 200kPa

Enable Conditions	• se_BattVolt between 10V and 16V
	• AND
	• Engine Speed between 475rpm and 3500rpm
	• AND
	  • Diagnosis not completed this driving cycle
	  • OR
	  • Exhaust Aftertreatment Fuel Injecton Active
	  • AND
	  • Diagnosis not completed the last 7200s
	• Exhaust Flow below 0.5kg/s
	• AND
	• se_CoolantTemp above 30°C

Disable Conditions	No Active DTC's: • P2697/13, P2699/00, P20D9/00, P20D7/13, P20E0/00, P20DD/13, P24FA/00, P24F8/13, U3000/01, P0117/00, P0115/13, U3000/01, P20DD/13, P20E0/00, P2697/13, P2699/00, P20D9/00, P20D7/13, P24F8/13, P24FA/00, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P215A/64
Time Required For DTC To Be Set	90s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24F813 Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit - Circuit Open

DTC	P24F813
Component / System	Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit
Monitor Strategy Description	Circuit Open
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24FA00 Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit Low - No Sub Type Information

DTC	P24FA00
Component / System	Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit
Monitor Strategy Description	Circuit Low
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24FB00 Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit High - No Sub Type Information

DTC	P24FB00
Component / System	Exhaust Aftertreatment Fuel Air Purge Valve Control Circuit
Monitor Strategy Description	Circuit High
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must not be fully active, i.e. duty must be below 100.0%.
Disable Conditions	No Active DTC's: • U3000/01
Time Required For DTC To Be Set	6s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P24D000 Particulate Matter Sensor Supply Voltage Circuit Low - No Sub Type Information

DTC	P24D000
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Supply Voltage Circuit Low
Fault Limit	• Supply Voltage to Sensor Low
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's: • P24DA/00, P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24D100 Particulate Matter Sensor Regeneration Incomplete - No Sub Type Information

DTC	P24D100
Component / System	Particulate Matter Sensor
Monitor Strategy Description	PM Sensor Regeneration Incomplete
Fault Limit	• PM Sensor Regeneration Timeout Fault. For current status, read MID 43 - Exhaust Gas Sensor Heater Monitor Bank 1 - Sensor 3, TID A8 - Percentage of the regeneration heating profile
Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C • AND • PM Sensor is in regenerating mode.
Disable Conditions	No Active DTC's: • P24DA/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24DA00 Particulate Matter Sensor Exhaust Sample Error Bank 1 - No Sub Type Information

DTC	P24DA00
Component / System	Particulate Matter Sensor
Monitor Strategy Description	Exhaust Sample Error Bank 1
Fault Limit	• PM Sensor Tip Clogged Fault • OR • PM Sensor Removed From Exhaust Fault • OR • PM Sensor Fixed Resistance Fault • OR • PM Sensor Gain Too Low Fault • PM Sensor Gain Too High Fault. For current status, read MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A2 - Difference between expected temperature decay and actual, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A3 - Internal heater temperature, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID AC - Difference between internal temperature and exhaust temperature, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A4 - Difference between internal heater temperature and the exhaust temperature, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A5 - Percentage of maximum preheat time, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A6 - Difference in resistance of soot measurement sensor element, MID 03 - Exhaust Gas Sensor Monitor Bank 1 - Sensor 3, TID A7 - Resistance of soot measurement sensor element

Enable Conditions	• Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
	• AND
	• PM Sensor is in sensing mode.
	• AND
	• PM Sensor has been in sensing mode for 20 minutes.
	  • OR
	  • Engine Running. Stable engine conditions. No condensated steam in exhaust. The exhaust temperature after SCR is above 250C and below 500C
	  • AND
	  • PM Sensor is in regenerating mode.

Disable Conditions	No Active DTC's: • P24D1/00, P24AF/00, P24B0/00, P24B1/00, P24B5/00, P24FC/00, P24B3/13, P24B4/92, P1034/00, P24D0/00, P2AB0/47
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P05FD00 Turbocharger/Supercharger Boost Control "A" Temperature Too High - No Sub Type Information

DTC	P05FD00
Component / System	Turbocharger/Supercharger Boost Control "A"
Monitor Strategy Description	Temperature Too High
Fault Limit	• High temperature failure detected by Turbocharger/Supercharger A.
Enable Conditions	• Delay after ECU startup before diagnose is enabled: 10sec
Disable Conditions	No Active DTC's: • U3000/01, U010C/00
Time Required For DTC To Be Set	120s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P226D00 Turbocharger/Supercharger Boost Control "A" Temperature Too High - No Sub Type Information

DTC	P226D00
Component / System	Turbocharger/Supercharger Boost Control "A"
Monitor Strategy Description	Temperature Too High
Fault Limit	• Insufficient thermal inertia due to missing particulate filter substrate • AND • The evaluation may need to be repeated a number of times. For current status, read MID B2 - PM Filter Monitor Bank 1, TID A1 - Missing substrate
Enable Conditions	• Ambient Air Temperature between -8°C and 55°C • AND • se_AmbAirPres between 75kPa and 120kPa • AND • se_CoolantTemp between 60°C and 120°C • AND • No recent aftertreatment fuel injection • AND • Engine Speed between 1000rpm and 2500rpm • AND • Average Particulate Filter Temperature between 150°C and 500°C • AND • Exhaust aftertreatment system temperature is increasing or decreasing above conditions valid for 4s
Disable Conditions	No Active DTC's: • P2084/64, P242B/64, P0105/13, P0108/00, P0095/13, P0097/00, P0409/13, P0406/00, P040A/13, P040C/00, P0339/00, P0335/31, P0336/38, U3000/01
Time Required For DTC To Be Set	1200s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P249C00 Excessive Time To Enter Closed Loop Reductant Injection Control - No Sub Type Information

DTC	P249C00
Component / System	Reductant Injection Contro"
Monitor Strategy Description	Excessive Time To Enter Closed Loop Reductant Injection Control
Fault Limit	• Average SCR NOx Catalyst Temperature below 215°C

Enable Conditions	• Heat power calculated from obtained kinetic engine power above 105kW
	• AND
	• se_CoolantTemp above 60°C
	• AND
	• The reductant delivery system is operating normally above conditions valid for 50s
	  • OR
	  • Average SCR NOx Catalyst Temperature above 215°C
	  • AND
	  • The reductant delivery system is operating normally above conditions valid for 30s

Disable Conditions	No Active DTC's: • P0335/31, P0336/38, P0072/00, P0070/15, P0071/64, P0117/00, P0115/13, P242B/64, U3000/01
Time Required For DTC To Be Set	1200s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P2AB047 Particulate Matter Sensor Processor - Watchdog / Safety µC Failure

DTC	P2AB047
Component / System	PM Sensor
Monitor Strategy Description	Safety Failure
Fault Limit	• PM Sensor Processor Performance
Enable Conditions	• Key On • AND • Battery voltage should be above 8V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P027E00 Cold Start Fuel Injection Quantity Lower Than Expected - No Sub Type Information

DTC	P027E00
Component / System	Cold Start Fuel Injection Quantity
Monitor Strategy Description	Quantity Lower Than Expected
Fault Limit	• Average of the ratio between estimated and requested fuel quantity above 75%

Enable Conditions	• This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
	• AND
	• se_CoolantTemp between 60°C and 110°C
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• EGR content in the intake manifold [100 = only EGR, no fresh air] between 0ratio and 20ratio
	• AND
	• se_BoostTemp between -7°C and 120°C
	• AND
	• tc_IndTrqValue between 1000Nm and 4000Nm
	• AND
	• Engine Speed between 1000rpm and 2200rpm
	  • AND
	  • se_EngExhTempOut between 100°C and 460°C
	  • AND
	  • se_HcHeatTempOut between 200°C and 460°C
	  • AND
	  • se_DpfTempOut between 200°C and 460°C
	• AND
	• above conditions valid for 10s
	• AND
	• Exhaust Flow between 0kg/s and 100kg/s
	• AND
	• The estimated lambda must be between the upper and lower limits between 1ratio and 2.599999904632568ratio
	• AND
	• Engine running for 10s
	• AND
	• The diagnosis can be performed only once per driving cycle.
	• AND
	• The engine must be in a stable operating state, i,e., engine speed, torque, boost pressure and EGR value should be stable.

Disable Conditions	• Duty cycle of the aftertreatment air purge valve (part of the aftertreatment diesel injector) below 110% • OR • Accumulated amount of DPF hydrocarbon poisioning below 100ratio • OR • The aftertreatment diesel injection should be inactive for longer than3s No Active DTC's: • U3000/01, P0115/13, P0117/00, P2226/13, P2229/00, P0105/13, P0108/00, P0095/13, P0097/00, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0406/00, P0409/13, P2200/13, P2203/00, P0340/31, P0335/31, P2080/64, P2084/64, P242B/64, P0069/64, P0096/64, P0234/00, P0299/00, P040B/64, P04D9/00, P0401/00
Time Required For DTC To Be Set	N/A
MIL Illumination	3
Probable Causes	***See Tech Tool***

P027F00 Cold Start Fuel Injection Quantity Higher Than Expected - No Sub Type Information

DTC	P027F00
Component / System	Cold Start Fuel Injection Quantity
Monitor Strategy Description	Temperature Too High
Fault Limit	• 128% above Average of the ratio between estimated and requested fuel quantity.

Enable Conditions	• This diagnosis is executed only when the engine is started after the engine has been off for at least 8 hours.
	• AND
	• se_CoolantTemp between 60°C and 110°C
	• AND
	• Ambient Air Temperature between -8°C and 55°C
	• AND
	• se_AmbAirPres between 75kPa and 120kPa
	• AND
	• EGR content in the intake manifold [100 = only EGR, no fresh air] between 0ratio and 20ratio
	• AND
	• se_BoostTemp between -7°C and 120°C
	• AND
	• tc_IndTrqValue between 1000Nm and 4000Nm
	• AND
	• Engine Speed between 1000rpm and 2200rpm
	  • AND
	  • se_EngExhTempOut between 100°C and 460°C
	  • AND
	  • se_HcHeatTempOut between 200°C and 460°C
	  • AND
	  • se_DpfTempOut between 200°C and 460°C
	• AND
	• above conditions valid for 10s
	• AND
	• Exhaust Flow between 0kg/s and 100kg/s
	• AND
	• The estimated lambda must be between the upper and lower limits between 1ratio and 2.599999904632568ratio
	• AND
	• Engine running for 10s
	• AND
	• The diagnosis can be performed only once per driving cycle.
	• AND
	• The engine must be in a stable operating state, i,e., engine speed, torque, boost pressure and EGR value should be stable.

Disable Conditions	• Duty cycle of the aftertreatment air purge valve (part of the aftertreatment diesel injector) below 110% • OR • Accumulated amount of DPF hydrocarbon poisioning below 100ratio • OR • The aftertreatment diesel injection should be inactive for longer than3s No Active DTC's: • U3000/01, P0115/13, P0117/00, P2226/13, P2229/00, P0105/13, P0108/00, P0095/13, P0097/00, P2578/31, P0489/00, P0403/13, P006E/00, P00AF/00, P0046/07, P1148/00, P040C/00, P040A/13, P0072/00, P0070/15, P0406/00, P0409/13, P2200/13, P2203/00, P0340/31, P0335/31, P2080/64, P2084/64, P242B/64, P0069/64, P0096/64, P0234/00, P0299/00, P040B/64, P04D9/00, P0401/00
Time Required For DTC To Be Set	N/A
MIL Illumination	3
Probable Causes	***See Tech Tool***

Aftertreatment Control Module (ACM) Diagnostic Trouble Codes

U000188 CAN Communication Backbone 2 Net - Bus off

DTC	U000188
Component / System	CAN Communication Backbone 2 Net
Monitor Strategy Description	Bus Off
Fault Limit	• It has not been possible to send frames on High Speed CAN Communication Bus and It has not been possible to receive frames on High Speed CAN Communication Bus • AND • It has not been possible to receive frames on High Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.05s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U001088 CAN Communication Backbone 1 Net - Bus off

DTC	U001088
Component / System	CAN Communication Backbone 1
Monitor Strategy Description	Bus Off
Fault Limit	It has not been possible to send frames on Medium Speed CAN Communication Bus and It has not been possible to receive frames on Medium Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.05s

MIL Illumination	3
Probable Causes	***See Tech Tool***

U010000 Lost Communication with EMS - No Sub Type Information

DTC	U010000
Component / System	ACM
Monitor Strategy Description	No Signal
Fault Limit	Lost communication with ECM on Medium Speed CAN Communication Bus
Enable Conditions	N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	10s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P054415 Pre-DOC Temperature Sensor: Open Circuit Check

DTC	P054415
Component / System	Pre-DOC Temperature Sensor - Open
Monitor Strategy Description	Circuit Short To Battery or Open
Fault Limit	Sensor Voltage > 2.26V (850°C) **or** 0.15 - 0.68V (-100 - (-40)°C)
Enable Conditions	• Key Position Key On • Battery Voltage > 8V
Disable Conditions	No Active DTC's: • N/A
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P205A13 Reductant Tank Temperature Sensor - Circuit Open

DTC	P205A13
Component / System	Temperature Sensor - Open
Monitor Strategy Description	Open Circuit
Fault Limit	Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 5
Enable Conditions	• Key Position Key On • Battery Voltage > 8V

Disable Conditions	No Active DTC's: • N/A
Time Required For DTC To Be Set	0.2s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20BA00 Reductant Heater A Control Performance - No Sub Type Information

DTC	P20BA00
Component / System	Temperature Sensor - Open
Monitor Strategy Description	Open Circuit
Fault Limit	"Defrosting has been active for 10800s OR Number of tries to start the pump 1000No Unithas been reached"
Enable Conditions	• ACM_UreaPressure above 500kPa for 30s
Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92
Time Required For DTC To Be Set	30s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P063000 VIN Not Programmed or Incompatible - ECM/PCM - No Sub Type Information

DTC	P063000
Component / System	ECM/PCM
Monitor Strategy Description	VIN Check
Fault Limit	VIN Not Programmed or Incompatible - ECM/PCM - No Sub Type Information
Enable Conditions	• New key cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.5s
MIL Illumination	0
Probable Causes	***See Tech Tool***

P066800 PCM/ECM/TCM Internal Temperature Sensor Circuit Low - No Sub Type Information

DTC	P066800
Component / System	ECM/PCM
Monitor Strategy Description	Temperature Sensor Circuit Check
Fault Limit	Voltage on N/A:ECU internal below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P06B100 Sensor Power Supply A Circuit Low - No Sub Type Information

DTC	P06B100
Component / System	Sensor Power Supply
Monitor Strategy Description	Circuit Low
Fault Limit	Voltage on N/A:ECU internal below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B200 Sensor Power Supply A Circuit High - No Sub Type Information

DTC	P06B200
Component / System	Sensor Power Supply
Monitor Strategy Description	Circuit High
Fault Limit	Voltage on A:50 above 5.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B400 Sensor Power Supply B Circuit Low - No Sub Type Information

DTC	P06B400
Component / System	Sensor Power Supply Circuit B
Monitor Strategy Description	Circuit Low
Fault Limit	Voltage on A:51 below 4.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P06B500 Sensor Power Supply B Circuit High - No Sub Type Information

DTC	P06B400
Component / System	Sensor Power Supply Circuit B
Monitor Strategy Description	Circuit High
Fault Limit	Voltage on A:51 below 5.5V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U300041 Electronic control unit - General Checksum Failure

DTC	U300041
Component / System	Electronic Control Unit
Monitor Strategy Description	Checksum Failure
Fault Limit	Program memory corruption
Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300044 Electronic control unit - Data Memory Failure

DTC	U300044
Component / System	ECU
Monitor Strategy Description	Memory Failure
Fault Limit	RAM Corruption
Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300045 Electronic control unit - Program Memory Failure

DTC	U300045
Component / System	ECU
Monitor Strategy Description	Checksum Error
Fault Limit	Program memory corruptionSoftware memory checksum error
Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

U300049 Electronic control unit - Internal Electronic Failure

DTC	U300049
Component / System	ECU
Monitor Strategy Description	ECU internal error
Fault Limit	ECU internal error
Enable Conditions	• New Key Cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P203115 Exhaust Gas Temperature Sensor Bank 1 Sensor 2 - Circuit Short To Battery or Open

DTC	P203115
Component / System	ECU
Monitor Strategy Description	Exhaust Gas Temperature Sensor
Fault Limit	Short Circuit Check

Enable Conditions	• Voltage on A:34 above 2.260742V
	• OR
	  • Voltage on A:34 above 0.147705V
	  • AND
	  • Voltage on A:34 below 0.677490V

Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P203200 Engine Exhaust Gas Temperature Circuit Low (Bank 1 Sensor 2) - No Sub Type Information

DTC	P203115
Component / System	ECU
Monitor Strategy Description	Exhaust Gas Temperature Sensor
Fault Limit	Voltage on A:34 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P245213 Particulate Filter Pressure Sensor "A" - Circuit Open

DTC	P245213
Component / System	Particulate Filter
Monitor Strategy Description	Pressure Sensor Circuit Check
Fault Limit	Voltage on A:26 above 4.901123V

Enable Conditions	• Voltage on A:50 below 4.5V • OR • Voltage on A:50 above 5.5V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P245400 Aftertreatment 1 Diesel Particulate Filter Differential Pressure Circuit Low - No Sub Type Information

DTC	P245400
Component / System	Particulate Filter
Monitor Strategy Description	Diesel Particulate Filter Differential Pressure
Fault Limit	Voltage on A:26 below 0.147705V
Enable Conditions	• Voltage on A:50 below 4.5V • OR • Voltage on A:50 above 5.5V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U014100 Lost Communication With VMCU - No Sub Type Information

DTC	U014100
Component / System	VMCU
Monitor Strategy Description	DLost Signal
Fault Limit	Lost communication with BCM on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U015500 Lost Communication With Instrument Panel Cluster (IPC) Control Module - No Sub Type Information

DTC	U015500
Component / System	IPC
Monitor Strategy Description	Lost Communication
Fault Limit	Lost communication with IPC on Medium Speed CAN Communication Bus
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0010/88
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P066613 Control Module Internal Temperature Sensor "A" - Circuit Open

DTC	U015500
Component / System	IPC
Monitor Strategy Description	Lost Communication

Fault Limit	• Voltage on N/A:ECU internal above 2.874756V
	• OR
	  • Voltage on N/A:ECU internal above 0.147705V
	  • AND
	  • Voltage on N/A:ECU internal below 1.237793V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P107B13 Retarder Water Temperature Sensor - Circuit Open

DTC	P107B13
Component / System	Retarder Water Temperature Sensor
Monitor Strategy Description	Circuit Check

Fault Limit	• Voltage on A:11 above 2.214355V
	• OR
	  • Voltage on A:11 above 0.147705V
	  • AND
	  • Voltage on A:11 below 1.165771V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P107C13 Retarder Oil Temperature Sensor - Circuit Open

DTC	P107C13
Component / System	Retarder Oil Temperature Sensor
Monitor Strategy Description	Circuit Check

Fault Limit	• Voltage on A:15 above 2.214355V
	• OR
	  • Voltage on A:15 above 0.147705V
	  • AND
	  • Voltage on A:15 below 1.165771V

Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P107D13 Retarder Valve - Circuit Open

DTC	P107D13
Component / System	Retarder Oil Temperature Sensor
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P20A2/00

Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P107E13 Retarder Air Pressure Sensor - Circuit Open

DTC	P107E13
Component / System	Retarder Air Pressure Sensor - Circuit Open
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit fault is detected.

Enable Conditions	• Voltage on A:19 above 4.797363V
	• AND
	• Voltage on A:19 below 4.852295V
	  • OR
	  • Voltage on A:19 below 0.202637V

Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P202D00 Aftertreatment Reagent Pressure Leakage - No Sub Type Information

DTC	P202D00
Component / System	Aftertreatment Reagent Pressure
Monitor Strategy Description	Pressure Leakage
Fault Limit	• Pump duty cycle above (60% + Offset dependent on Reductant Tank Temperature)
Enable Conditions	• ACM_UreaPressure above 500kPa
Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92
Time Required For DTC To Be Set	40s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204A13 Reductant Pressure Sensor - Circuit Open

DTC	P204A13
Component / System	Reductant Pressure Sensor
Monitor Strategy Description	Circuit Open
Fault Limit	• Voltage on A:30 above 4.887695V
Enable Conditions	• Voltage on A:51 below 4.5V • OR • Voltage on A:51 above 5.5V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P205C00 Aftertreatment Reagent Tank Temperature Short Circuit Low - No Sub Type Information

DTC	P205C00
Component / System	Reagent Tank Temperature
Monitor Strategy Description	Temperature Short Circuit
Fault Limit	• Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 4
Enable Conditions	• Voltage on A:51 below 4.5V • OR • Voltage on A:51 above 5.5V
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208A13 Reductant Pump "A" Control - Circuit Open

DTC	P208A13
Component / System	Reductant Pump A
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit is detected.
Enable Conditions	• Actuator must be active.

Disable Conditions	No Active DTC's: • P10A7/00, P0658/00, P10AD/13, P10AF/00, P10AE/00, P20A2/00, P20B3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204B64 Aftertreatment Reagent Pump Orifice Orifice Blocked - Signal Plausibility Failure

DTC	P208A13
Component / System	Aftertreatment Reagent Pump
Monitor Strategy Description	Signal Plausibility Check
Fault Limit	• ACM_UreaPressure below 100kPa

Enable Conditions	• NOT
	• Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• AND
	• not Key off
	• OR
	  • Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• AND
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C

Disable Conditions	No Active DTC's: • P204C/00, P204A/13, P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92
Time Required For DTC To Be Set	10799s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P054500 Exhaust Gas Temperature Short Circuit Low - No Sub Type Information

DTC	P054500
Component / System	Exhaust Gas Temperature

Monitor Strategy Description	Short Circuit Check
Fault Limit	• Voltage on A:42 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20B297 Reductant Heater Coolant Control Valve Performance/Stuck Open - Component or System Operation Obstructed or Blocked

DTC	P20B297
Component / System	Reductant Heater Coolant Control Valve
Monitor Strategy Description	Valve Check

Fault Limit	• Reductant Tank Temperature below 10°C
	• AND
	• Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• Reductant Tank Temperatureshall increase by at least 3°Cduring evaluation time
	• AND
	• Reductant Temperatureshall increase by at least 1°Cduring evaluation time

Enable Conditions	• Reductant Tank Temperature below 10°C
	• AND
	• Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• Reductant Tank Temperatureshall increase by at least 3°Cduring evaluation time
	• AND
	• Reductant Temperatureshall increase by at least 1°Cduring evaluation time
	  • OR
	  • Reductant Tank Temperature below 10°C
	  • AND
	  • not Reductant Tank Temperatureshall increase by at least 3°Cduring evaluation time
	• OR
	• Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• not Reductant Temperatureshall increase by at least 1°Cduring evaluation time

Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92, P208B/00
Time Required For DTC To Be Set	10800s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20B400 Reductant Heater Coolant Control Valve Circuit High - No Sub Type Information

DTC	P20B400
Component / System	Reductant Heater Coolant Control Valve
Monitor Strategy Description	Circuit Check

Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%
Disable Conditions	No Active DTC's: • P0658/00, P10AE/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20B300 Reductant Heater Coolant Control Valve Circuit Low - No Sub Type Information

DTC	P20B300
Component / System	Reductant Heater Coolant Control Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 0%
Disable Conditions	No Active DTC's: • P0658/00, P10AE/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20B113 Reductant Heater Coolant Control Valve Control - Circuit Open

DTC	P20B113
Component / System	Reductant Heater Coolant Control Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 0%
Disable Conditions	No Active DTC's: • P0658/00, P10AE/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	10s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208B00 Reductant Pump "A" Control Performance/Stuck Off - No Sub Type Information

DTC	P208B00
Component / System	Reductant Pump “A”
Monitor Strategy Description	Control Performance Check
Fault Limit	• Error state indicates that a severe error has occurred which prohibits the system from running and Error state is confirmed when the pump has failed to run after 5No Unitwithin300s

Enable Conditions	• ACM_UreaPressure above 500kPa
	• OR
	• Turn engine off
	  • ACM_UreaPressure above 500kPa
	• OR
	  • NOT
	  • Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• not Ambient Air temperature below -1°C
	• AND
	• ACM_UreaPressure below 100kPa
	• AND
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• not Error state indicates that a severe error has occurred which prohibits the system from running
	• AND
	• Defrosting has not been performed

Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92
Time Required For DTC To Be Set	0s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204900 Aftertreatment Reagent Dosing Valve Short Circuit High - No Sub Type Information

DTC	P204900
Component / System	Aftertreatment Reagent Dosing Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204800 Aftertreatment Reagent Dosing Valve Short Circuit Low - No Sub Type Information

DTC	P204800
Component / System	Aftertreatment Reagent Dosing Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204713 Reductant Injection Valve Control Bank 1 Unit 1 - Circuit Open

DTC	P204713
Component / System	Reductant Injection Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit or short circuit to battery is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	6s

MIL Illumination	3
Probable Causes	***See Tech Tool***

P20C400 Aftertreatment Reagent Hose Heater 3 Short Circuit High - No Sub Type Information

DTC	P20C400
Component / System	Aftertreatment Reagent Hose Heater 3
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%
Disable Conditions	No Active DTC's: • P2670/00, P20BB/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20C300 Aftertreatment Reagent Hose Heater 3 Short Circuit Low - No Sub Type Information

DTC	P20C300
Component / System	Aftertreatment Reagent Hose Heater 3
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%
Disable Conditions	No Active DTC's: • P2670/00, P20BB/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20C113 Reductant Heater "C" Control - Circuit Open

DTC	P20C113
Component / System	Aftertreatment Reagent Hose Heater 3
Monitor Strategy Description	Circuit Check

Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be 0.0%
Disable Conditions	No Active DTC's: • P2670/00, P20BB/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20BC00 Aftertreatment Reagent Hose Heater 1 Short Circuit High - No Sub Type Information

DTC	P20BC00
Component / System	Aftertreatment Reagent Hose Heater 1
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • P2670/00, P20C3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20BB00 Aftertreatment Reagent Hose Heater 1 Short Circuit Low - No Sub Type Information

DTC	P20BB00
Component / System	Aftertreatment Reagent Hose Heater 1
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P2670/00, P20C3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20B913 Reductant Heater "A" Control - Circuit Open

DTC	P20B913
Component / System	Reductant Heater A
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P2670/00, P20C3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20A300 Aftertreatment Reagent Direction Valve Short Circuit High - No Sub Type Information

DTC	P20A300
Component / System	Aftertreatment Reagent Direction Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P10A7/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20A200 Aftertreatment Reagent Direction Valve Short Circuit Low - No Sub Type Information

DTC	P20A200
Component / System	Aftertreatment Reagent Direction Valve
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 0.0%.

Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P10A7/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20A107 Aftertreatment Reagent Direction Valve Mechanical Problem - Mechanical Failures

DTC	P20A107
Component / System	Aftertreatment Reagent Direction Valve
Monitor Strategy Description	Mechanical Problem
Fault Limit	• Turn key on • AND • A fault has been set in previous driving cycle

Enable Conditions	• Turn engine off
	• AND
	• ACM_UreaPressure above 500kPa above conditions valid for 30s
	• OR
	  • ACM_UreaPressure above 950kPa
	  • AND
	  • Turn engine off
	  • AND
	  • ACM_UreaPressure above 500kPa

Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92, P208B/00
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P065900 ACM Actuator High Supply 1 Short Circuit High - No Sub Type Information

DTC	P065900
Component / System	ACM Actuator High Supply 1
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.

Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%
Disable Conditions	No Active DTC's: • P20B3/00, P10AE/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P065800 ACM Actuator High Supply 1 Short Circuit Low - No Sub Type Information

DTC	P065800
Component / System	ACM Actuator High Supply 1
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be fully inactive, i.e. duty must be 100%
Disable Conditions	No Active DTC's: • P20B3/00, P10AE/00, P20A2/00, P10A7/000
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208D00 Aftertreatment Reagent Pump Control Short Circut High - No Sub Type Information

DTC	P208D00
Component / System	Aftertreatment Reagent Pump Control
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's: • P10A7/00, P0658/00, P10AD/13, P10AF/00, P10AE/00, P20A2/00, P20B3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P208C00 Aftertreatment Reagent Pump Control Short Circuit Low - No Sub Type Information

DTC	P208C00
Component / System	Aftertreatment Reagent Pump Control
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be active.
Disable Conditions	No Active DTC's: • P10A7/00, P0658/00, P10AD/13, P10AF/00, P10AE/00, P20A2/00, P20B3/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P203A13 Reductant Level Sensor "A" - Circuit Open

DTC	P203A13
Component / System	Reductant Level Sensor A
Monitor Strategy Description	Circuit Check
Fault Limit	• Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 5
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.2s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204364 Aftertreatment Reagent Tank Temperature Sensor Stuck - Signal Plausibility Failure

DTC	P204364
Component / System	Reductant Level Sensor A
Monitor Strategy Description	Circuit Check
Fault Limit	• Reductant Temperatureshall increase by at least 1°Cduring evaluation time • AND • Reductant Tank Temperature below 10°C • AND • not Reductant Tank Temperatureshall increase by at least 3°Cduring evaluation time

Enable Conditions	• Reductant Temperature below -4.5°C
	  • OR
	  • UreaTankTemp below -9.5°C
	• AND
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• not Reductant Temperatureshall increase by at least 1°Cduring evaluation time
	  • OR
	  • Reductant Temperatureshall increase by at least 1°Cduring evaluation time
	  • AND
	  • Reductant Tank Temperature below 10°C
	  • AND
	  • not Reductant Tank Temperatureshall increase by at least 3°Cduring evaluation time

Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92, P208B/00
Time Required For DTC To Be Set	10800s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P056300 ECU Battery Potential Above Range - No Sub Type Information

DTC	P056300
Component / System	ECU
Monitor Strategy Description	Voltage Check
Fault Limit	• not Control Module above 36V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P204C00 Aftertreatment Reagent Pressure Sensor Circuit Low - No Sub Type Information

DTC	P204C00
Component / System	Aftertreatment Reagent Sensor
Monitor Strategy Description	Circuit Check
Fault Limit	• Voltage on A:30 below 0.112305V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P203C00 Aftertreatment Reagent Level Short Circuit Low - No Sub Type Information

DTC	P203C00
Component / System	Aftertreatment Reagent Level
Monitor Strategy Description	Failure Mode Reading
Fault Limit	• Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 4Voltage on A:30 below 0.112305V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P20E892A Reductant Pressure Too Low - Performance or Incorrect Operation

DTC	P20E892
Component / System	Reductant Pressure
Monitor Strategy Description	Operation Rationality Check
Fault Limit	• ACM_UreaPressure above 650kPa

Enable Conditions	• not Reductant Temperature below -4.5°C \
	  • OR
	  • UreaTankTemp below -9.5°C
	• not Ambient Air temperature below -1°C
	• AND
	• ACM_UreaPressure below 100kPa
	• AND
	• EngineSpeed above 500rpm
	• AND
	• Control Module between 10V and 16V
	• AND
	• UreaTankTemp below 68°C
	• AND
	• not Error state indicates that a severe error has occurred which prohibits the system from running
	• OR
	• not ACM_UreaPressure above 500kPa for 3s
	• AND
	• ACM_UreaPressure above 650kPa

Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P21CA00 Reductant Control Module Supply Voltage - No Sub Type Information

DTC	P21CA00
Component / System	Reductant Control Module
Monitor Strategy Description	Voltage Check
Fault Limit	• not Control Module between 10V and 16V
Enable Conditions	• Control Module between 10V and 16V
Disable Conditions	No Active DTC's: • P0562/00, P0563/00
Time Required For DTC To Be Set	20s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10AD13 Reductant Pump "A" Control Low Side - Circuit Open

DTC	P10AD13
Component / System	Reductant Control Pump
Monitor Strategy Description	Circuit Check
Fault Limit	• Open circuit fault is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	5.1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10AE00 Reductant Pump "A" Control Low Side Circuit Low - No Sub Type Information

DTC	P10AE00
Component / System	Reductant Control Pump
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10AF00 Reductant Pump "A" Control Low Side Circuit High - No Sub Type Information

DTC	P10AE00
Component / System	Reductant Control Pump
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%.

Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P20A2/00, P10A7/00
Time Required For DTC To Be Set	5.1s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10CE97 Reductant Return No Flow Detected - Component or System Operation Obstructed or Blocked

DTC	P10CE97
Component / System	Reductant Return
Monitor Strategy Description	Flow Detection
Fault Limit	• ACM_UreaPressure above 1100kPa
Enable Conditions	• ACM_UreaPressure above 500kPa
Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92, P208B/00
Time Required For DTC To Be Set	20s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P24FF00 Reductant Temperature Too High - No Sub Type Information

DTC	P10CE97
Component / System	Reductant Temperature
Monitor Strategy Description	Temperature Check
Fault Limit	• Reductant Tank Temperature above 70°C
Enable Conditions	• ACM_UreaPressure above 500kPa • AND • not Reductant Tank Temperature above 70°C
Disable Conditions	No Active DTC's: • P10AF/00, P10AE/00, P208C/00, P208D/00, P208A/13, P204A/13, P204C/00, P2049/00, P2048/00, P2047/13, P20E8/92
Time Required For DTC To Be Set	2s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U1FFF68 Factory Mode Active - Event Information

DTC	P10CE97
Component / System	Factory Mode
Monitor Strategy Description	Active
Fault Limit	• The factory mode is active through P1HCF
Enable Conditions	• New key cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P206C00 Reductant Quality Sensor Low - No Sub Type Information

DTC	P206C00
Component / System	Reductant Quality Sensor
Monitor Strategy Description	Failure Mode Identified
Fault Limit	• Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 4
Enable Conditions	• New key cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P206A13 Reductant Quality - Circuit Open

DTC	P206A13
Component / System	Reductant Quality Circuit
Monitor Strategy Description	Failure Mode Identified
Fault Limit	• Failure mode identifier broadcasted by reductant quality sensor (UQS) equals to 5
Enable Conditions	• New key cycle
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0.02s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P242C00 Exhaust Gas Temperature Sensor Circuit Low (Bank 1 Sensor 3) - No Sub Type Information

DTC	P206A13
Component / System	Exhaust Gas Temperature Sensor Circuit
Monitor Strategy Description	Voltage Check
Fault Limit	• Voltage on A:39 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P267100 Actuator Supply Voltage "B" Circuit High - No Sub Type Information

DTC	P267100
Component / System	Actuator Supply Voltage "B"
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P20C3/00, P20BB/00
Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P267000 Actuator Supply Voltage "B" Circuit Low - No Sub Type Information

DTC	P267000
Component / System	Actuator Supply Voltage "B"
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%.
Disable Conditions	No Active DTC's: • P20C3/00, P20BB/00

Time Required For DTC To Be Set	5.5s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P242A15 Exhaust Gas Temperature Sensor Bank 1 Sensor 3 - Circuit Short To Battery or Open

DTC	P242A15
Component / System	Exhaust Gas Temperature Sensor Bank 1 Sensor 3
Monitor Strategy Description	Voltage Check

Fault Limit	• Voltage on A:39 above 2.260742V
	• OR
	  • Voltage on A:39 above 0.147705V
	  • AND
	  • Voltage on A:39 below 0.677490V

Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%.
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U02A200 Lost Communication with Reductant Quality Module - No Sub Type Information

DTC	U02A200
Component / System	Reductant Quality Module
Monitor Strategy Description	Lost Signal
Fault Limit	• Lost communication with UQSM on Vehicle Communication Engine Subnet
Enable Conditions	• Actuator must be fully active, i.e. duty must be 100%.
Disable Conditions	No Active DTC's: • U0080/88
Time Required For DTC To Be Set	14s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U114600 Lost Communication With ECM on Engine Subnet - No Sub Type Information

DTC	U114600
Component / System	Engine Subnet
Monitor Strategy Description	Lost Communication
Fault Limit	• Lost communication with UQSM on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's: • U0080/88
Time Required For DTC To Be Set	14s
MIL Illumination	3
Probable Causes	***See Tech Tool***

U008088 Vehicle Communication Engine Subnet - Bus off

DTC	U008088
Component / System	Engine Subnet
Monitor Strategy Description	Lost Communication
Fault Limit	• It has not been possible to send frames on Vehicle Communication Engine Subnet • AND • It has not been possible to receive frames on Vehicle Communication Engine Subnet
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	5.05s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P109A00 Retarder Water Temperature Moderately High - No Sub Type Information

DTC	P109A00
Component / System	Retarder Water Temperature
Monitor Strategy Description	Temperature Check
Fault Limit	• The filtered water temperature of the retarder is above limit.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:

Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P109B00 Retarder Water Temperature Too High - No Sub Type Information

DTC	P109B00
Component / System	Retarder Water Temperature
Monitor Strategy Description	Temperature Check
Fault Limit	• Retarder performance is derated due to high water- or oil temperature.
Enable Conditions	• Engine Running
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P109C00 Retarder Water Temperature Sensor Circuit Low - No Sub Type Information

DTC	P109C00
Component / System	Retarder Water Temperature
Monitor Strategy Description	Sensor Circuit Check
Fault Limit	• Voltage on A:11 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P109D00 Retarder Oil Temperature High - No Sub Type Information

DTC	P109D00
Component / System	Retarder Oil Temperature
Monitor Strategy Description	Temperature Check
Fault Limit	• The retarder oil temperature is above critical limit.

Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P109F00 Retarder Oil Temperature Sensor Circuit Low - No Sub Type Information

DTC	P109F00
Component / System	Retarder Oil Temperature
Monitor Strategy Description	Voltage Check
Fault Limit	• Voltage on A:15 below 0.147705V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	13s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10A300 Retarder Air Pressure High - No Sub Type Information

DTC	P10A300
Component / System	Retarder Air Pressure
Monitor Strategy Description	Air Pressure Evaluation
Fault Limit	• The retarder air pressure is above critical limit.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	0s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10A464 Retarder Air Pressure Sensor Range/Performance - Signal Plausibility Failure

DTC	P10A464
Component / System	Retarder Air Pressure Sensor
Monitor Strategy Description	Air Pressure Evaluation

Fault Limit	• Too big difference between requested retarder pressure and actual retarder pressure.
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	4s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10A500 Retarder Air Pressure Sensor Circuit High - No Sub Type Information

DTC	P10A500
Component / System	Retarder Air Pressure Sensor
Monitor Strategy Description	Voltage Check
Fault Limit	• Voltage on A:19 above 4.852295V
Enable Conditions	• N/A
Disable Conditions	No Active DTC's:
Time Required For DTC To Be Set	7s
MIL Illumination	N/A
Probable Causes	***See Tech Tool***

P10A600 Retarder Air Pressure Sensor Circuit High - No Sub Type Information

DTC	P10A600
Component / System	Retarder Air Pressure Sensor
Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to battery is detected.
Enable Conditions	• Actuator must be active, i.e. duty must be above 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P20A2/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

P10A700 Retarder Valve Circuit Low - No Sub Type Information

DTC	P10A700
Component / System	Retarder Valve Circuit

Monitor Strategy Description	Circuit Check
Fault Limit	• Short circuit to ground is detected.
Enable Conditions	• Actuator must be inactive, i.e. duty must be 0.0%.
Disable Conditions	No Active DTC's: • P0658/00, P20B3/00, P10AE/00, P20A2/00
Time Required For DTC To Be Set	6s
MIL Illumination	3
Probable Causes	***See Tech Tool***

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