1995 4.3L (L35) S/T Truck with auto trans - ENGINE DIAGNOSTIC PARAMETERS

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SENSED PARAMETER	FAULT CODE	SENSOR SIGNAL TYPE	ACCEPTABLE OPERATING RANGE AND RATIONALITY	PRIMARY MALF DETECTION PARAMETERS	SECONDARY MONITORING PARAMETERS AND CONDITIONS	MONITORING TIME LENGTH AND FREQUENCY OF CHECK	MONITORING METHOD	FAULT CODE STORAGE AND MIL ILLUMINATION
MAP Sensor Range/Rationality	P0106	Analog	.3V to 5.0V A change in MAP must be preceeded by a significant change in throttle angle and RPM. If not, a faulty MAP condition such as a "skewed" sensor exisits.	Raw MAP Δ > .58 Volts within 12.5ms	No TP sensor DTC's set Engine Running Engine Speed Δ < 100 RPM Throttle Position Δ < 2% Idle Air Δ < 10 counts EGR Flow Rate Δ < 10% Brake Switch State = no change Clutch Switch State = no change Power Steering State = no change AC Clutch State = no change Above stablized for .5 seconds	30 test failures within a 100 test sample after 2 consecutive trips. Continuous	Pressure Differential Sensor	DTC Type B
MAP Sensor Circuit - Low Input	P0107	Analog	.3V to 5.0V This DTC detects a continuous short to low or open in either the signal circuit or the MAP sensor.	Raw MAP < .31 Volts	No TP sensor DTC's set Engine Running Throttle Position ≥ 0% when Engine speed is ≤ 850 RPM or Throttle Position is ≥ 15% when Engine speed is > 850 RPM	25 test failures within a 100 test sample. Continuous	Pressure Differential Sensor	DTC Type A
MAP Sensor Circuit -High Input	P0108	Analog	.3V to 5.0V This DTC detects a continuous short to high in either the signal circuit or the MAP sensor.	Raw MAP > 4.6 Volts	No TP sensor DTC's set Engine Running Throttle Position ≤ 0% when Engine speed is ≤ 575 RPM or Throttle Position is ≤ 4% when Engine speed is > 575 RPM	200 test failures within a 210 test sample. Continuous	Pressure Differential Sensor	DTC Type A
Intake Air Temp. Sensor Circuit - Low Input	P0112	Analog	.24V to 5.0V The DTC detects a continuous short to ground in the IAT signal circuit or the IAT sensor	**Low Resistance Pullup** Raw IAT < .82 Volts **High Resistance Pullup** Raw IAT < 0 Volts	No VS sensor DTC's set. Vehicle speed ≥ 1mph Engine run time > 240 seconds	250 test failures within a 255 test sample Continuous	Thermistor	DTC Type A
Intake Air Temp. Sensor Circuit - High Input	P0113	Analog	.24V to 5.0V The DTC detects a continuous open or short to high in the IAT signal circuit or the IAT sensor	**Low Resistance pullup** Raw IAT > 5.0 Volts **High Resistance pullup** Raw IAT > 4.9 Volts	No ECT sensor DTC's set No VS sensor DTC's set Vehicle speed < 1mph Air flow < 90 g /second Coolant > 85°C	120 test failures within a 255 test sample Continuous	Thermistor	DTC Type A
Engine Coolant Temp. Sensor Circuit-Low Input	P0117	Analog	.24V to 5.0V The DTC detects a continuous short to ground in the ECTsignal circuit or the ECT sensor	**Low Resistance Pullup** Raw ECT < .82 Volts **High Resistance Pullup** Raw ECT < 0 Volts	Engine run time > 5 seconds	20 test failures within a 100 test sample Continuous	Thermistor	DTC Type A

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Engine Coolant Temp. Sensor Circuit-High Input	P0118	Analog	.24V to 5.0V The DTC detects a continuous short to high or open in the ECT signal circuit or the ECT sensor	**Low Resistance pullup** Raw IAT > 5.0 Volts **High Resistance pullup** Raw IAT > 4.9 Volts	Engine run time > 5 seconds	10 test failures within a 100 test sample Continuous	Thermistor	DTC Type A
Throttle Position Sensor Circuit Range/Rationality	P0121	Analog	.5V to 5.0V The DTC detects a "skewed" or stuck TP sensor	The last throttle position value > predicted throttle position based on engine RPM.	No TP sensor DTC's set or failures flagged No MAP sensor DTC's set Engine Running MAP < 60 kpa TP sensor Δ < 1%	90 test failures within a 100 test sample after 2 consecutive trips. Continuous	Potentiometer	DTC Type B
Throttle Position Sensor Circuit-Low Input	P0122	Analog	.5V to 5.0V This DTC detects a continuous short to low or open in either the signal circuit or the TP sensor.	Raw TP sensor signal < 8 A/D cnts. (.15 volts)	Engine running	40 consecutive test failures within a 100 test sample Continuous	Potentiometer	DTC Type A
Throttle Position Sensor Circuit-High Input	P0123	Analog	.5V to 5.0V This DTC detects a continuous short to high in either the signal circuit or the TP sensor.	Raw TP sensor signal > 249 A/D cnts. (4.9 V)	Engine running	40 consecutive test failures within a 100 test sample Continuous	Potentiometer	DTC Type A
Min. Cool.Temp. to Allow C.L. Op. Not Achieved Without Excess. Time	P0125	Analog	.24V to 5.0V The DTC detects if a stabilized minimum closed-loop is reached and maintained after engine start-up.	Minimum stabilized ECT < 20°C	No ECT sensor tests failing or DTC's set No IAT sensor DTC's set Vehicle speed > 5 mph IAT> -15°C ECT > -17°C Start-up ECT <35°C Closed loop timer ≥500 seconds	100 consecutive test failures Continuous	Thermistor	DTC Type B

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O2S Circuit-Low Voltage(Bank 1, Sensor 1)	P0131	Analog	.1V to 1.0V This DTC determines if the O2 sensor or circuit is shorted to low by checking for a lean condition during steady throttle and PE.	O2 sensor voltage <.26 volts or O2 sensor voltage < .60 volts in PE mode	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Closed loop Air/Fuel ratio ≥ 14.5 but ≤ 14.8 Throttle position > 5% but < 50% Above met for 5 seconds	250 test failures in a 600 test sample Continuous	Exhaust Oxygen Sensor	DTC Type A
O2S Circuit-High Voltage(Bank 1, Sensor 1)	P0132	Analog	.1V to 1.0V This DTC determines if the O2 sensor or circuit is shorted to high by checking for a rich condition during steady throttle and DFCO	O2 sensor voltage >.976 volts or O2 sensor voltage > .70 volts in DFCO mode	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Closed loop Air/Fuel ratio ≥ 14.5 but ≤ 14.8 Throttle position > 5% but < 50% Above met for 5 seconds	400 test failures in a 500 test sample Continuous	Exhaust Oxygen Sensor	DTC Type A
O2S Circuit-Slow Response(Bank 1, Sensor 1)	P0133	Analog	.1V to 1.0V This DTC determines if the O2 sensor functioning properly by checking its response time.	O2 sensor average transition time: L/R > 100 msec R/L > 125 msec or Ratio of average response times: Ratio > 3.25 or < .60	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's DTC P0135 (O2 Heater) not set Closed loop O2 voltage low threshold.300 and high threshold .600 V Throttle position > 10% but < 20%	100 seconds after closed loop enable Once per key cycle	Exhaust Oxygen Sensor	DTC Type B

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O2S Circuit-No Activity Detected (Bank 1,Sensor 1)	P0134	Analog	.1V to 1.0V This DTC determines if the O2 sensor or the O2 sensor circuit has developed an open.	O2 sensor > .300V but < .600V	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Engine run time > 120 seconds ECT > 80°C Air flow > 15 grams/sec for 75 sec.	600 test failures in a 1000 test sample Continuous	Exhaust Oxygen Sensor	DTC Type A
O2S Heater Circuit Malfunction (Bank 1, Sensor 1)	P0135	Software	11.5V to 14.5V This DTC determines if the O2 sensor heater is functioning properly by monitoring the amount of time necessary for the O2 sensor to become active after start - up.	The elapsed time to obtain ± .150V from the mean O2 bias voltage. *Time based on table: Time vs Start Up Coolant Temp.	Throttle position < 37% for 3 seconds Engine run time > 2 seconds ECT < 32°C IAT < 32°C Δ ECT-IAT ≤ 5°C	From cold start to a maximum time of 120 seconds. *Time determined by table.	Exhaust Oxygen Sensor	DTC Type B
O2S Circuit-Low Voltage(Bank 1, Sensor 2)	P0137	Analog	.1V to 1.0V This DTC determines if the O2 sensor or circuit is shorted to low by checking for a lean condition during steady throttle and PE.	O2 sensor voltage <.26 volts or O2 sensor voltage < .40 volts in PE mode	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Closed loop Air/Fuel ratio ≥ 14.5 but ≤ 14.8 Throttle position > 5% but < 50% Above met for 5 seconds	1100 test failures in a 1500 test sample Continuous	Exhaust Oxygen Sensor	DTC Type B
O2S Circuit-High Voltage(Bank 1, Sensor 2)	P0138	Analog	.1V to 1.0V This DTC determines if the O2 sensor or circuit is shorted to high by checking for a rich condition during steady throttle and DFCO	O2 sensor voltage >.993 volts or O2 sensor voltage > .80 volts in DFCO mode	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Closed loop Air/Fuel ratio ≥ 14.5 but ≤ 14.8 Throttle position > 5% but < 50% Above met for 5 seconds	1100 test failures in a 1500 test sample Continuous	Exhaust Oxygen Sensor	DTC Type B

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O2S Circuit-No Activity Detected (Bank 1,Sensor 2)	P0140	Analog	.1V to 1.0V This DTC determines if the O2 sensor or the O2 sensor circuit has developed an open.	O2 sensor > .350 V but < .473 V	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's Engine run time > 120 seconds Closed loop	1100 test failures in a 1500 test sample Continuous	Exhaust Oxygen Sensor	DTC Type B
O2S Heater Circuit Malfunction (Bank 1, Sensor 2)	P0141	Software	11.5V to 14.5V This DTC determines if the O2 sensor heater is functioning properly by monitoring the amount of time necessary for the O2 sensor to become active after start - up.	The elapsed time to obtain ± .150V from the mean O2 bias voltage. *Time based on table: Time vs Start Up Coolant Temp.	Throttle position < 37% for 3 seconds Engine run time > 2 seconds ECT < 32°C IAT < 32°C Δ ECT-IAT ≤ 5°C	From cold start to a maximum time of 235 seconds. *Time determined by table.	Exhaust Oxygen Sensor	DTC Type B
System Too Lean (Bank 1)	P0171	Software	Determines if the system is in a lean condition.	The average of short term fuel trim samples ≥ .00 and The average of adaptive index multiplier samples ≥ 1.24	The following DTC's are not set: O2 sensor DTC's MAP DTC's EGR DTC's Evap. DTC's ECT DTC's IAT DTC's VS sensor DTC's Throttle position < 95% Engine speed > 575 rpm but < 4500 rpm Baro > 70 kpa (10,300 ft) ECT > 0°C but < 100°C MAP > 20 kpa but < 99 kpa IAT > -30 °C but < 70°C Air flow > 3 g/s < 100 g/s Vehicle speed < 85 mph	If lean counter is ≥6 counts Continuous	Short term fuel trim ,adaptive index multiplier and O2 sensor	DTC Type B
System Too Rich (Bank 1)	P0172	Software	Determines if the system is in a rich condition.	The average of short term fuel trim samples ≤ .00 and If adaptive lag factor < .84, then purge is commanded by a value based on air flow . If short term integrator < .0002, fault is present.	The following DTC's are not set: O2 sensor DTC's MAP DTC's EGR DTC's Evap. DTC's ECT DTC's IAT DTC's VS sensor DTC's Throttle position < 95% Engine speed > 575 rpm but < 4500 rpm Baro > 70 kpa (10,300 ft) ECT > 0°C but < 100°C MAP > 20 kpa but < 99 kpa IAT > -30 °C but < 70°C Air flow > 3 g/s < 100 g/s Vehicle speed < 85 mph	If rich counter is ≥6 counts Continuous	Short term fuel trim ,adaptive index multiplier and O2 sensor	DTC Type B

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O2 Sys. Fault - Too Few O2S R/L or L/R Switches, Insufficient Activity (Bank 1, Sensor 1)	P1133	Analog	.1V to 1.0V This DTC determines if the O2 sensor functioning properly by monitoring the number of L/R and R/L switches.	Number of switches in 100 seconds: L/R switches <30 R/L swithes <30	No TP sensor DTC's No Evap. DTC's No IAT sensor DTC's No MAP DTC's No Fuel trim DTC's No EGR DTC's No ECT sensor DTC's DTC P0135 (O2 Heater) not set Closed loop O2 voltage between .300 and .600 V Throttle position > 10% but < 20%	100 seconds after closed loop enable Once per key cycle	Exhaust Oxygen Sensor	DTC Type B
Random Misfire Detected Cylinder 1 Misfire Detected Cylinder 2 Misfire Detected Cylinder 3 Misfire Detected Cylinder 4 Misfire Detected Cylinder 5 Misfire Detected Cylinder 6 Misfire Detected	P0300 P0301 P0302 P0303 P0304 P0305 P0306	Digital	These DTC 's will determine if a random misfire or a cylinder specific misfire is occuring by monitoring crankshaft velocity.	Deceleration index vs Engine Speed vs Load and CamshaftPosition	No TP sensor DTC's No MAP sensor DTC's No ECT sensor DTC's ECT > -6.75°C but < 120°C Engine speed > 250 RPM but < 5500 RPM System voltage > 9 volts but < 16 volts + Throttle position Δ < 6.25%/100ms - Throttle position Δ < 1.5%/100ms Rough Road- Table value based on ABS wheel sensor input vs vehicle speed.	5 failed 200 revolution blocks out of 16 Emission Level 1 failed 200 revolution block Catalyst damaging Level Continuous	Crankshaft position sensor and target wheel and camshaft position sensor	DTC Type B *EMISSION* DTC Type A *CATALYST DAMAGING*
Knock Sensor Circuit Malfunction	P0325	Analog	0V - 5V This DTC will detect an open or short in the knock sensor circuit.	Knock Sensor circuit voltage < .62 V (Short) or > 3.18 V (Open)	---------------------------	Conditions are met for 16 seconds. 100 msec	Piezoelectric Knock Sensor	DTC Type B
Knock Sensor Circuit Range	P0326	Analog	0V - 5V This diagnostic will detect problems with the range of the knock sensor.	Knock sensor noise > 255 A/D counts or < 15 A/D counts	No ECT DTC's set No TP sensor DTC's set ECT >60°C Engine speed > 2200 RPM but < 12799 RPM Throttle position > 6% Engine Run Time > 120 seconds Closed Loop. Filtered KS > 0 Volts	Conditions are met for 5 seconds, counter will increment by 1. 100msec.	Piezoelectric Knock Sensor	DTC Type B

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Crankshaft Position Sensor Circuit- Low Input	P0337	Digital	3X Signal This diagnostic will detect a low duty cycle from the crankshaft sensor.	Crank sensor duty cycle < 50% (or the ratio High Ref/Low Ref < .176)	Engine speed < 2000 RPM	4 ref pulse failures within a 4 sample limit. Once every TDC	Hall Effect Crankshaft Sensor	DTC Type B
Camshaft Position Sensor Circuit Malfunction	P0340	Digital	1X Signal This diagnostic will detect if the Cam Sensor signal is present.	Engine Running Cam Sensor reference pulse is not seen once every 6 cylinders.	---------------------	If Cam signal is not detected within 1.75 seconds, test has failed. Once every TDC	Hall Effect Cam Sensor	DTC Type B
Camshaft Position Sensor Circuit Range/Rationality	P0341	Digital	1X Signal This diagnostic will determine if the Cam Sensor is synchronized correctly.	Engine Running Cam Sensor reference pulse is not detected at the correct interval every 6 cylinders.	---------------------	20 failed tests within a 50 test sample. Once every TDC	Hall Effect Cam Sensor	DTC Type B
Camshaft Sensor Misinstalled	P1345	Digital	1X Signal This diagnostic will determine if the Cam sensor and high voltage switch have been installed correctly.	Cam signal falling edge out of phase ± 30 degrees from crank falling edge.	---------------------	30 test failures within a 50 test sample size. Every crank fall	Hall Effect Cam Sensor	DTC Type A
EST Output High	P1351	Digital	0 V-1V This diagnostic will determine if a failure has occured due to an open circuit.	EST voltage >4.9 V	EST Enabled Engine speed < 250 RPM	20 test failure Once per igniton cycle	Software	DTC Type A
EST Not Toggling After Enable	P1361	Digital	0 V-1V This diagnostic will determine if a failure has occured due to a grounded circuit.	EST voltage <.04V	EST Enabled Engine speed < 250 RPM	20 test failure Once per igniton cycle	Software	DTC Type A

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Exhaust Gas Recirculation - Insufficient Flow Detected	P0401	Analog	This diagnostic will determine if there is a reduction in EGR flow.	With EGR valve open, the peak + MAP Δ is monitored over a time of 0.7 seconds. This value is compared with a threshold from Engine Speed vs Baro table and the difference computed. The result is statistically filtered (EWMA) and compared to a decision limit. DTC is set when the filtered result exceeds the decision limit.	*Test Enable* No TP sensor DTC's set No MAP DTC's set No VS sensor DTC's set No IAT sensor DTC's set No ECT sensor DTC's set No IAC DTC's set No Linear EGR Pintle Position DTC set No Transmission DTC's set No Misfire DTC's set No HVAC DTC's set ECT > 78° C Baro > 70 kpa (10,300 ft) Vehicle Speed > 30 mph IAC Δ < 3 counts AC clutch status is unchanged Transmission status is unchanged *Start Test* Throttle Position < 1% EGR Position < 1% Engine Speed > 1000 rpm but < 1600 rpm MAP Δ < 1 A/D count (.39 kpa) Compensated MAP > 20 kpa but < 35 kpa *Run Test* Stabilized MAP (valve closed) recorded and EGR valve "ramped" open over a time interval and peak MAP value recorded and MAP Δ computed. EGR valve "ramped" closed over a time interval.	0.7 seconds Once per trip	Manifold Absolute Pressure Δ and software	DTC Type A
Catalyst System Efficiency Below Threshold - (Bank 1)	P0420	Analog	This diagnostic will determine the efficiency of the catalytic converter.	Deviation Difference Average = 8 mv from O2 sensor #2	No VS sensor DTC's set No TP sensor DTC's set No O2 sensor DTC's set No Misfire DTC's set No MAP sensor DTC's set No Fuel Trim DTC's set No ECT sensor DTC's set *Converter Warm Up Status* Engine in closed loop Commanded Air/Fuel ratio = 14.7:1 ECT > 75° C Air flow > 16 g/sec Above met for a time > 180 seconds but < 220 seconds *Test Enable* Air Flow ≤ 50 g/sec Δ engine load ≤ 203% / sec Vehicle Speed ≥ 20 mph but ≤ 70 mph (<0 mph with scan tool installed) Engine air load ≤ 99% Engine speed ≤ 4900 rpm	50 tests per trip Continuous	O2 sensor #1 and O2 sensor #2	DTC Type A

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Evap. Emission Control System - Incorrect Purge Flow	P0441	Digital	0V-5V This diagnostic will detect a purge solenoid stuck closed by monitoring the Evap. Purge Vacuum switch state when the Evap. Purge solenoid duty cycle is 100%. The vacuum switch state should change to high (open) if there is vacuum (solenoid open) applied to the system.	Evap. purge vacuum switch state = Low (closed) vacuum for a period > 4 seconds	Evap. Purge Solenoid Diagnostic Vacuum Switch DTC not set No IAC DTC's set No MAP DTC's set No TP sensor DTC's set No EGR DTC's set Baro > 75 kPa (8300 ft) ECT ≤ 110 °C Powerup IAT > -18°C IAT ≤ 90 °C ECT/IAT Δ ≤ 90°C Purge DC ≥ 99% Manifold Vacuum ≥ 20kPa Throttle Position ≥5% but ≤ 60% Engine Speed ≥ 800 RPM but ≤ 3000 RPM	For 5 test failures Continuous	Evap. Purge Vacuum Switch	DTC Type B
Exhaust Gas Recirculation System - Pintle Position Error	P1406	Analog	0V 0 5V This diagnostic will detect three conditions: 1. An open or short 2. Closed valve position too high 3. Position error too high	1. Pintle position < 6 A/D counts for 10 seconds 2. Pintle position > 10 A/D counts from learned closed valve position for 10 seconds 3. Deviation between actual position and desired position > 20% for 10 seconds	Ignition voltage > 9 volts	All three tests must run before a failure is reported. Continuous	Potentiometer	DTC Type B
Evap. Emission Control System - Continuous Open Purge Flow	P1441	Digital	0V-5V This diagnostic will detect a purge solenoid stuck open by monitoring the Evap. Purge Vacuum switch state when the Evap. Purge solenoid duty cycle is 0%. The vacuum switch state should change to low (closed) if there is no vacuum (solenoid closed) applied to the system.	Evap. purge vacuum switch state = High vacuum for a period > 4 seconds	Evap. Purge Solenoid Diagnostic Vacuum Switch DTC not set No IAC DTC's set No MAP DTC's set No TP sensor DTC's set No EGR DTC's set Baro > 75 kPa (8300 ft) ECT ≤ 110 °C Powerup IAT > -18°C IAT ≤ 90 °C ECT/IAT Δ ≤ 90°C Purge DC ≤ 0% Manifold Vacuum ≥ 20kPa Throttle Position ≥5% but ≤ 60% Engine Speed ≥ 800 RPM but ≤ 3000 RPM	For 3 test failures Continuous	Evap. Purge vacuum switch	DTC Type B

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Purge Solenoid Diagnostic Vacuum Switch Malfunction	P1442	Digital	0V-5V This diagnostic is performed as part of the Evap. Solenoid diagnostic inhibit criteria and will detect a Diagnostic Vacuum Switch stuck in the open (high vacuum) position.	Vacuum Switch state = High (open)	Key "ON", Engine "OFF"	On key up until engine run flag Once per ignition cycle	Evap. Purge Vacuum Switch	DTC Type B
Vehicle Speed (VS) Sensor Signal Missing	P0500	Variable Frequency	Filtered Vehicle Speed > 0 MPH. The DTC detects a missing speed siganl between a combination of the rear and front speed sensors.	Vehicle Speed = 0 MPH	No MAP sensor DTC's set MAP < 20 kpa Coolant Temperature > 60° C Engine > 1400 RPM but < 4400 RPM Throttle Position < 3.125 %	Failing > 5 seconds Continuous	Variable Reluctance Transducers	DTC Type A
Idle Control System RPM Lower Than Expexcted	P0506	Software	This DTC will determine if a low idle is the result of a IAC valve or circuit. A low idle is defined as 100 RPM below the desired idle.	Air flow Δ < 2counts	*Test Enable: (Non- intrusive)* No TP sensor DTC's set No VS sensor DTC's set No ECT DTC's set No MAP DTC's set ECT > 72°C System Voltage > 10V but < 18 V IAT > -25°C Engine run time > 30 seconds Baro > 70 kPa (10,300 ft) TP < 1% VS < 2 MPH Above met for a time > 3 seconds to enable diagnostic. If non-intrusive test fails, intrusive test is run. *Run Test: (intrusive)* Air Flow > 17.5 g/sec but < 37.5 g/sec VS > 35 MPH but < 85 MPH TP Δ < 1% Engine Speed Δ < 30 RPM IAC motor commanded 10 %/ 100 msec.	10 seconds Continous after enable	Software and Stepper Motor	DTC Type B
Idle Control System RPM Higher Than Expected	P0507	Software	This DTC will determine if a high idle is the result of a IAC valve or circuit. A high idle is defined as 150 RPM above the desired idle.	Air flow Δ < 2 counts	*Test Enable: (Non- intrusive)* No TP sensor DTC's set No VS sensor DTC's set No ECT DTC's set No MAP DTC's set ECT > 72°C System Voltage > 10V but < 18 V IAT > -25°C Engine run time > 30 seconds Baro > 70 kPa (10,300 ft) TP < 1% VS < 2 MPH Above met for a time > 3 seconds to enable diagnostic. If non-intrusive test fails, intrusive test is run. *Run Test: (intrusive)* Air Flow > 17.5 g/sec but < 37.5 g/sec VS > 35 MPH but < 85 MPH TP Δ < 1% Engine Speed Δ < 30 RPM IAC motor commanded 10 %/ 100 msec.	10 seconds Continous after enable	Software and Stepper Motor	DTC Type B

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Idle Air Control - Low	P1508	Software	This DTC will determine if a low idle is the result of an engine mechnical problem. A low idle is defined as 100 RPM below the desired idle.	Air flow Δ > 2 counts	*Test Enable: (Non- intrusive)* No TP sensor DTC's set No VS sensor DTC's set No ECT DTC's set No MAP DTC's set ECT > 72°C System Voltage > 10V but < 18 V IAT > -25°C Engine run time > 30 seconds Baro > 70 kPa (10,300 ft) TP < 1% VS < 2 MPH Above met for a time > 3 seconds to enable diagnostic. If non-intrusive test fails, intrusive test is run. *Run Test: (Intrusive)* Air Flow > 17.5 g/sec but < 37.5 g/sec VS > 35 MPH but < 85 MPH TP Δ < 1% Engine Speed Δ < 30 RPM IAC motor commanded 10 %/ 100 msec.	10 seconds Continous after enable	Software and Stepper Motor	DTC Type B
Idle Air Control - High	P1509	Software	This DTC will determine if a high idle is the result of an engine mechanical problem. A high idle is defined as 150 RPM above the desired idle.	Air flow Δ > 2 counts	*Test Enable: (Non- intrusive)* No TP sensor DTC's set No VS sensor DTC's set No ECT DTC's set No MAP DTC's set ECT > 72°C System Voltage > 10V but < 18 V IAT > -25°C Engine run time > 30 seconds Baro > 70 kPa (10,300 ft) TP < 1% VS < 2 MPH Above met for a time > 3 seconds to enable diagnostic. If non-intrusive test fails, intrusive test is run. *Run Test: (Intrusive)* Air Flow > 17.5 g/sec but < 37.5 g/sec VS > 35 MPH but < 85 MPH TP Δ < 1% Engine Speed Δ < 30 RPM IAC motor commanded 10 %/ 100 msec.	10 seconds Continous after enable	Software and Stepper Motor	DTC Type B